





Welcome to the 2009 **Merchandisers Engineering Reference Manual**. This manual provides detailed cross-sections, footprints, and technical data for all of our current production models.

The case data contained in this manual is organized into sections so that similar case models are grouped together (e.g. single deck merchandisers, multi-deck merchandisers, reach-in merchandisers, etc.). This makes it easier to find just the right case to fit your new or existing store layout.

The table of contents lists our cases by design application, giving you the ability to see which cases are available for specific functions. The index at the back of this manual lists the cases in alphabetical order, allowing you to find a specific case model at a glance.

The entire manual is also posted to our Web site at **www.hillphoenix.com** on the **"Technical Information Center"** page. Any new cases that are released during 2009 (or any revisions to the technical information pertaining to our current cases) will be posted to the Hill PHOENIX Web site.

If you have any questions or need more information about our display merchandisers, please contact one of our Sales Representatives toll-free at (800) 283-1109. Further contact information for our Colonial Heights facility is listed on the back cover of this manual and is also available on our Web site.

Thank you for choosing Hill PHOENIX for your food merchandising needs.

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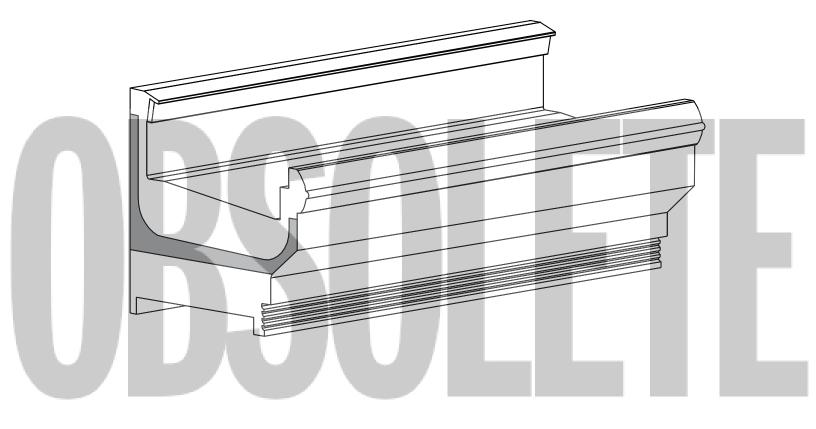
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# SINGLE DECK



#### NOTES

- Cases shown with an ANSI/NSF\* Mark are Certified by NSF
- Cases shown with an UL\* Mark are Listed by Underwriters Laboratories Inc.
- Allow for an extra 1/8" per joint when lining up merchandisers.
- Technical information contained herein is subject to change without notice.

\* ANSI - American National Standard Institute NSF - National Sanitation Foundation UL - Underwriters Laboratories Inc

#### Single Deck Produce Merchandiser MPC - 8' & 12'

#### **Electrical Data**

			Standar	d Fans	0	ficiency ans		ndensate aters		Defrost	Heaters	
		Fans per	120 \	/olts	120 Volts		120	Volts	208	208 Volts 240		
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
MPC	8'	3	1.35	51	0.45	33	0.58	70	3.85	800	4.44	1065
	12'	4	1.80	68	0.60	44	0.83	100	5.77	1200	6.67	1600

#### **Lighting Data**



3 Average discharge air velocity at peak of defrost.

### **Defrost Controls**

l				Electric	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse Air Defrost		
	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
l	MPC	3	6 - 8	40	49	60	47	3				

3 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

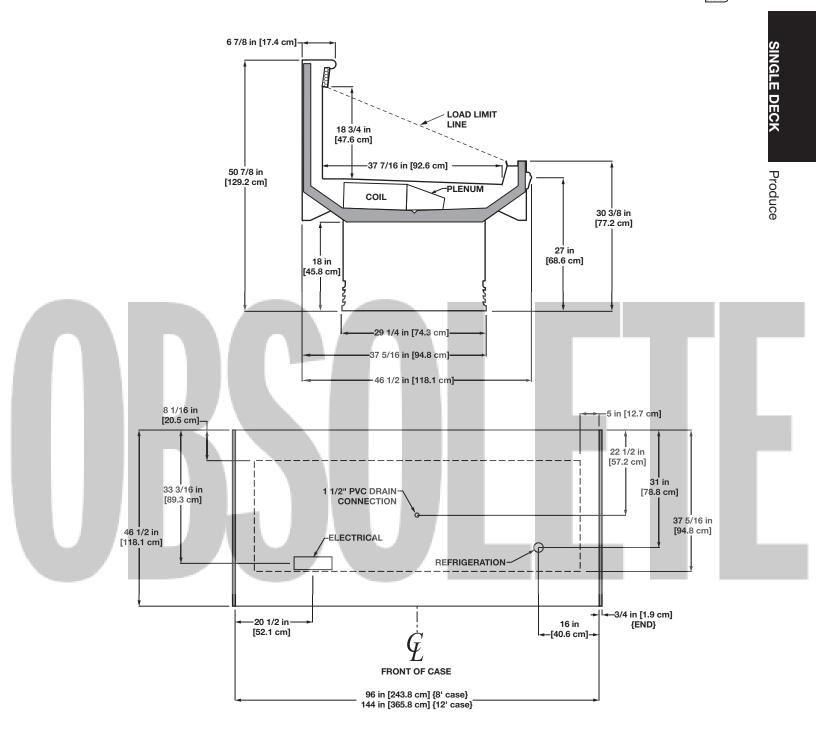
No. Per Day Hours

- 12 midnight 1
- 2
- 12 am 12 pm 6 am 2 pm 10 pm 12 6 am 12 6 pm 3 4











## Single Deck Deli/Cheese Merchandiser OC - 4', 6', 8' & 12

**Electrical Data** 

Γ				Standar	d Fans	0	fficiency ans		ndensate aters		Defrost	Heaters	
			Fans per	120 \	/olts	120	Volts	120	120 Volts		Volts	240 Volts	
	Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
	OC	4'	2	1.00	60	0.15	9.2	0.14	17	1.92	400	2.22	532
		6'	2	1.00	60	0.15	9.2	0.20	24	2.88	600	3.33	798
		8'	2	1.00	60	0.15	9.2	0.25	30	3.85	800	4.44	1065
		12'	3	1.50	90	0.23	13.8	0.38	46	5.77	1200	6.67	1600

### **Lighting Data**

	_							
1			Bulbs		Light	al per Row	Maxi Ligh	ting 🦯
	Model		per Row	Bulb Length	Amps	Volts Watts	120 Amps	Watts
	OC	4'	1	4'	0.23	28	0.23	28
		6'	2	3'	0.37	44	0.37	44
		8'	2	4'	0.47	56	0.47	56
		12'	3	4'	0.70	84	0.70	84
	Guide	line	s & C	ontrol	Sett	ings		

Model	Front Sill Heights	<sup>1,2</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>4</sup> (FPM)
OC	Standard	456 <sup>3</sup>	Enh.	22	6-8	26	39	<b>30</b> 5
	All Others	391 <sup>3</sup>	Enh.	22	6-8	26	35	305

1 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

2 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

3 Standard fans increase refrigeration load by 96 BTUH/fan.

4 Average discharge air velocity at peak of defrost.

### **Defrost Controls**

				Electric Defrost		Timed Off Defrost		Hot Ga	s Defrost	Reverse	Air Defrost
Ν	Vodel	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
	OC	3	6 - 8	40	49	70	47	26	45	40	45

Medium Temperature Defrost Schedule

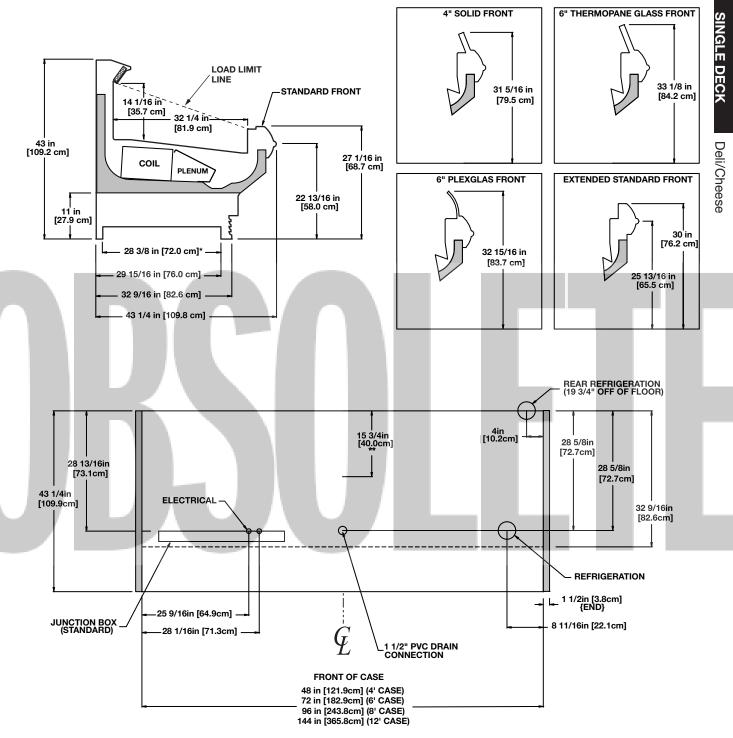
No.	Per	Day	/	Hours

- 12 midnight 1 2 12 am - 12 pm
- 3
- 6 am 2 pm 10 pm 12 6 am 12 6 pm 4









OC

NOTES:

- STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAIN
  - FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
  - ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
  - A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
  - SUCTION LINE (4' & 6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8"
  - DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



## Single Deck Deli/Meat/Seafood Merchandiser OM - 4', 6', 8' & 12

#### **Electrical Data**

				d Fans		fficiency ans		ndensate aters		Defrost	Heaters	
		Fans per	120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OM	4'	2	1.00	60	0.15	9.2	0.14 <sup>1</sup>	17	1.92	400	2.22	532
	6'	2	1.00	60	0.15	9.2	0.20 <sup>1</sup>	24	2.88	600	3.33	798
	8'	2	1.00	60	0.15	9.2	0.25 <sup>1</sup>	30	3.85	800	4.44	1065
	12'	3	1.50	90	0.23	13.8	0.38 <sup>1</sup>	46	5.77	1200	6.67	1600

1 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

## **Lighting Data**

l			Bulbs per	Bulb	Light	al per Row Volts	Ligh	mum iting Volts
	Model		Row	Length	Amps	Watts	Amps	Watts
	OM	4'	1	4'	0.23	28	1.67	140
		6'	2	3'	0.37	44	1.83	220
18		8'	2	4'	0.47	56	2.33	280
- 1		12'	3	4'	0.70	84	3.50	420
	Т							

### **Guidelines & Control Settings**

Model	Front Sill Heights	<sup>2,3</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
OM	Standard	456 <sup>4</sup>	Enh.	22	6-8	26	39	305
	All Others	391 <sup>4</sup>	Enh.	22	6-8	26	35	305

2 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

ľ				Electric Defrost		Timed Off Defrost		Hot Ga	as Defrost Reverse		Air Defrost	
	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)							
	OM	3	6 - 8	40	49	70	47	26	45	40	45	

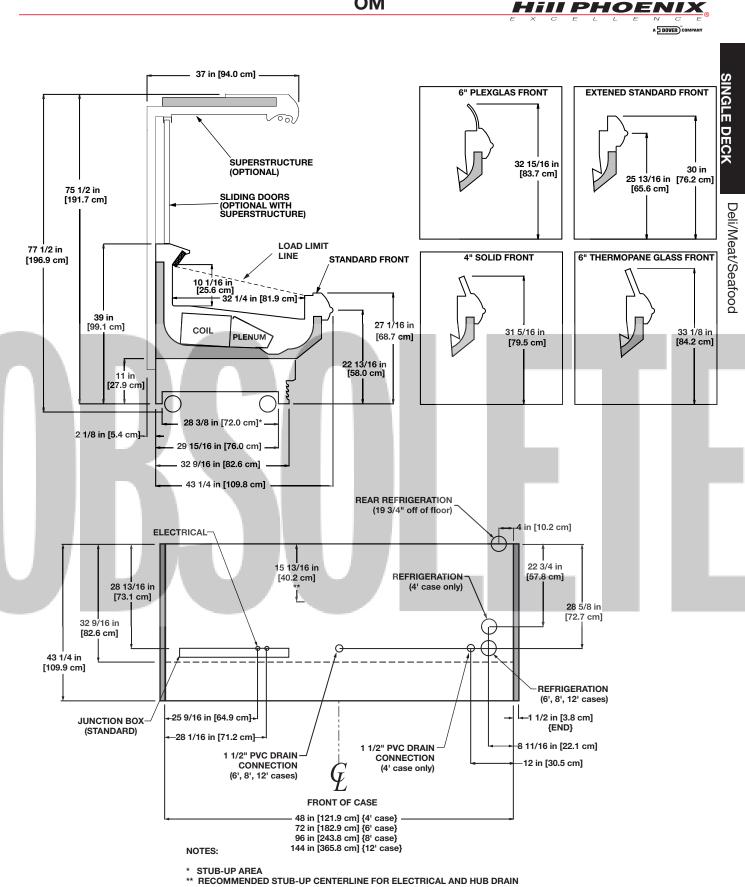
Medium Temperature Defrost Schedule

No.	Per	Day	/ Hours

- 1 12 midnight 12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 2 3
- 4







OM

- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (4' & 6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8"
   DASHED LINES SIGNIFY AREA INSIDE THE BASE RAIL BEHIND THE KICK-PLATE

NSF

#### **Electrical Data**

			Standar	d Fans	High Efficiency Anti-Condensate Fans Heaters				Defrost Heaters			
		Fans per	120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONMZ	6'	2	1.00	60	0.23	14	0.90	108	5.00 <sup>1</sup>	1800	5.76 <sup>1</sup>	2394
	8'	2	1.00	60	0.23	14	0.96	115	6.66 <sup>1</sup>	2400	7.69 <sup>1</sup>	3195
	12'	3	1.50	90	0.35	21	1.83	220	7.99 <sup>1</sup>	2880	9.24 <sup>1</sup>	3840

1 NOTE: 3 phase load. Figures given in maximum amps per phase.

## **Lighting Data**

1			Bulbs per	Bulb	Light	al per Row Volts		mum iting Volts	
- 8	Model		Row	Length	Amps	Watts	Amps	Watts	
- 1	ONMZ	6'	2	3'	0.37	44	0.37	44	
_		8'	2	4'	0.47	56	0.47	56	
_		12'	3	4'	0.70	84	0.70	84	
							•		

#### **Guidelines & Control Settings**

۱	Model	<sup>2,3</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)		Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
I	ONMZ	406 <sup>4</sup>	0	3-5	12	25	220

2 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.14.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH

Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

### **Defrost Controls**

				Electric Defrost		Timed Off Defrost		Hot Ga	s Defrost	Reverse Air Defrost	
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
l	ONMZ	4	13 - 15	45	47	<sup>6</sup>		20	60		

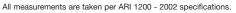
NSF

6 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Da	y Hours

- 1 12 midnight
- 2 12 am 12 pm
- 3 6 am 2 pm 10 pm 4 12 - 6 am - 12 - 6 pm





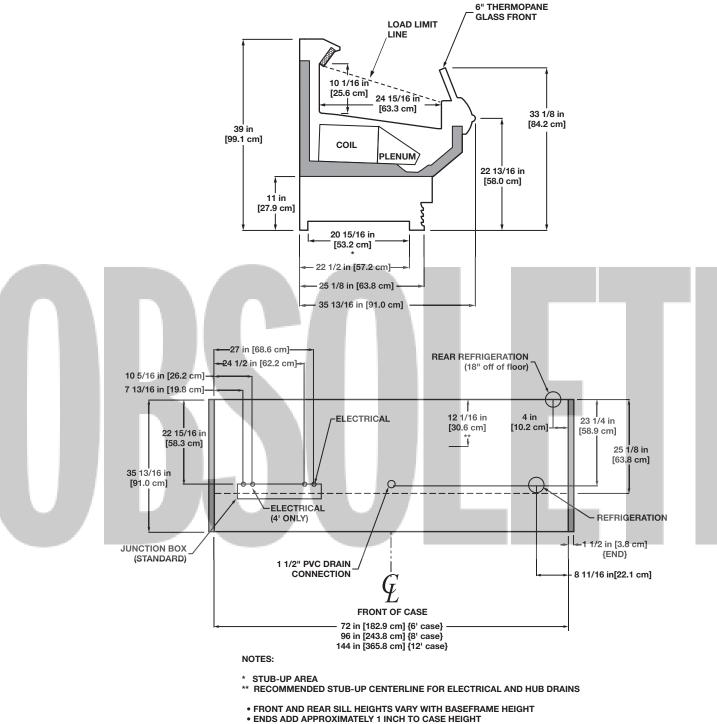


## ONMZ



SINGLE DECK

Frozen Meat



- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE 7/8", LIQUID LINE 3/8"
  DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



#### Single Deck Frozen Meat Merchandiser OMZ - 4', 6', 8' & 12'

#### **Electrical Data**

			Standar	d Fans		ficiency ans		ndensate aters		Defrost	Heaters	
	Fans per		120 Volts		120	Volts	120 Volts		208 Volts		240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OMZ	4'	2	1.00	60	0.23	14	0.60	72	3.33 <sup>1</sup>	1200	3.84 <sup>1</sup>	1596
	6'	2	1.00	60	0.23	14	0.90	108	5.00 <sup>1</sup>	1800	5.76 <sup>1</sup>	2394
	8'	2	1.00	60	0.23	14	0.96	115	6.66 <sup>1</sup>	2400	7.69 <sup>1</sup>	3195
	12'	3	1.50	90	0.35	21	1.83	220	7.99 <sup>1</sup>	2880	9.24 <sup>1</sup>	3840

1 NOTE: 3 phase load. Figures given in maximum amps per phase.

## **Lighting Data**

		Bulbs	Bulb	Typical per         Maximum           Light Row         Lighting           120 Volts         120 Volts					
Model		Row	Length	Amps	Watts	Amps	Watts		
OMZ	4'	1	4'	0.23	28	0.23	28		
	6'	2	3'	0.37	44	0.37	44		
	8'	2	4'	0.47	56	0.47	56		
	12'	3	4'	0.70	84	0.70	84		

### **Guidelines & Control Settings**

	Model	<sup>2,3</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)		Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
1	OMZ	526 <sup>4</sup>	-22	3-5	-10	0	220

2 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.14.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH

Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

### **Defrost Controls**

			Electric	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse Air Defrost		
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
OMZ	4	13 - 15	45	47	<sup>6</sup>		20	60			

6 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

No. Per [	Day	Hours

12 midnight 1

2 12 am - 12 pm

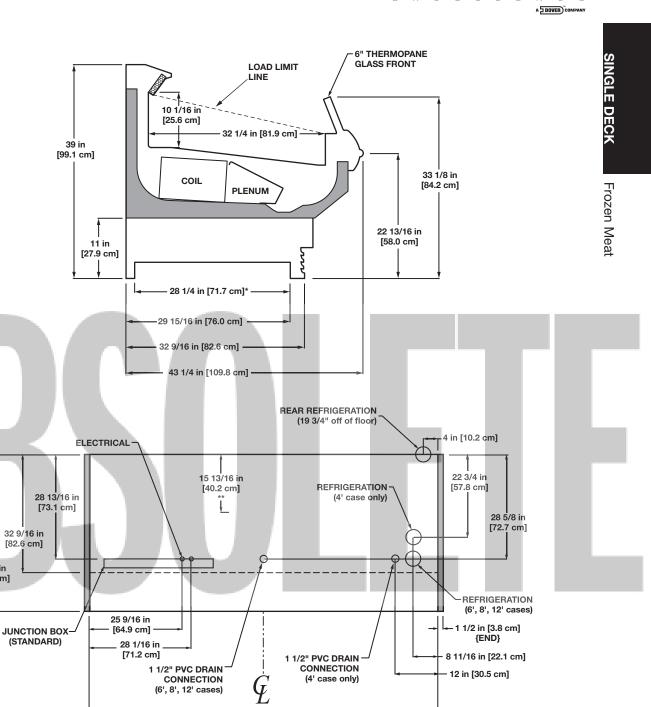
6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 3 4











FRONT OF CASE 48 in [121.9 cm] {4' case} 72 in [182.9 cm] {6' case} 96 in [243.8 cm] {8' case} 144 in [365.8 cm] {12' case}

NOTES:

- STUB-UP AREA \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
  A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE 7/8", LIQUID LINE 3/8"
- DASHED LINES SIGNIFY AREA INSIDE THE BASE RAIL BEHIND KICK-PLATE



43 1/4 in [109.9 cm]

#### **Electrical Data**

			Standar	d Fans		High Efficiency Fans		ndensate aters		Defrost	Heaters	
	Fans per		120 Volts		120	Volts	120 Volts		208 Volts		240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OMZD	4'	2	0.68	34	0.30	22	1.14	137	3.85	800	4.43	1064
	6'	2	0.68	34	0.30	22	1.28	154	11.54	2400	13.31	3196
	8'	3	1.02	51	0.45	33	1.45	174	15.38	3200	17.75	4260
	12'	4	1.36	68	0.60	44	2.59	311	23.08	4800	26.63	6390

## **Lighting Data**

Γ			Bulbs		Light	al per Row	Ligh	<u> </u>
			per	Bulb	120	Volts	120	Volts
	Model		Row	Length	Amps	Watts	Amps	Watts
Г	OMZD	4'	1	4'	0.23	28	0.23	28
Ľ		6'	2	3'	0.37	44	0.37	44
		8'	2	4'	0.47	56	0.47	56
		12'	3	4'	0.70	84	0.70	84

## **Guidelines & Control Settings**

Model	<sup>2,3</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
OMZD-F <sup>1</sup>	4244	-17	3-5	-8	2	240
OMZD-C <sup>1</sup>	444 <sup>4</sup>	-27	3-5	-18	-8	240

1 F=frozen food, C=ice cream.

2 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.03.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4! lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH

Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

				Electric	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse Air Defrost		
I		Defrosts	Run-Off	Fail-safe	Termination	Fail-safe	Termination	Fail-safe	Termination	Fail-safe	Termination	
I	Model	Per Day	Time (min)	(min)	Temp. (°F)	(min)	Temp. (°F)	(min)	Temp. (°F)	(min)	Temp. (°F)	
l	OMZD	1	13 - 15	45	48	<sup>6</sup>		20	60			

6 NOTE: "- - -" not an option on this case model.

Low Temperature Defrost Schedule

No. Per Day Hours 1 10 pm

2 6 am - 10 pm\*\*

\*\* Or immediately after store closing hour



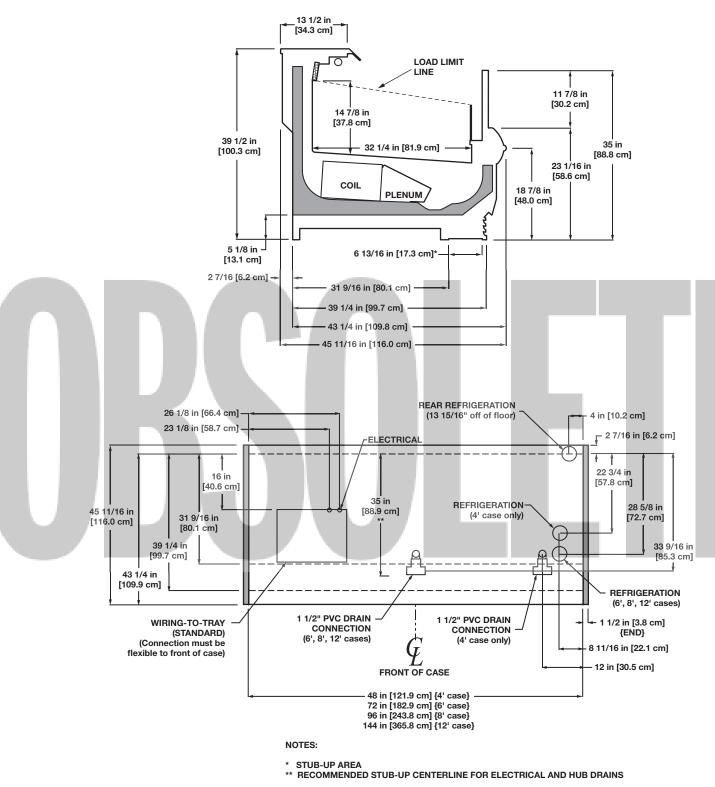




A DOVER

SINGLE DECK

Frozen Food/Ice Cream



- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- SUCTION LINE (4') 1/2", SUCTION LINE (6' & 8') 5/8", SUCTION LINE (12') 7/8"
- LIQUID LINE (ALL LENGTHS) 3/8"
- DASHED LINES SIGNIFY AREA INSIDE THE BASE RAIL BEHIND KICK-PLATE



#### Narrow Single Deck Produce Merchandiser ONP - 4', 6', 8' & 12'

#### **Electrical Data**

			Standar	d Fans	0	fficiency ans		ndensate aters		Defrost	Heaters	
	Fans per		120 Volts		120	Volts	120 Volts		208 Volts		240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONP	4'	2	1.00	60	0.15	9.2	<sup>1</sup>		1.92	400	2.22	532
	6'	2	1.00	60	0.15	9.2			2.88	600	3.33	798
	8'	2	1.00	60	0.15	9.2			3.85	800	4.44	1065
	12'	3	1.50	90	0.23	13.8			5.77	1200	6.67	1600

1 NOTE: "- - -" not an option on this case model.

### **Lighting Data**

Ē			Bulbs per	Bulb	Light	al per Row Volts		mum iting Volts
	Model		Row	Length	Amps	Watts	Amps	Watts
	ONP	4'	1	4'				
		6'	2	3'				
		8'	2	4'				
		12'	3	4'				

## **Guidelines & Control Settings**

Model	Rear Sill Heights	<sup>2,3</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)		Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
ONP - Bulk Produce	43"	377 <sup>4</sup>	Enh.	26	6-8	30	45	NA <sup>6</sup>

2 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.06.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

6 Not Applicable.

## **Defrost Controls**

					c Defrost	Timed Off Defrost		Hot Ga	s Defrost	Reverse Air Defrost		
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
	ONP	2	6 - 8	40	49	60	47	26	45	40	45	

Medium Temperature Defrost Schedule

No. Per Day	Hours

1 12 midnight 2 12 am - 12 pm

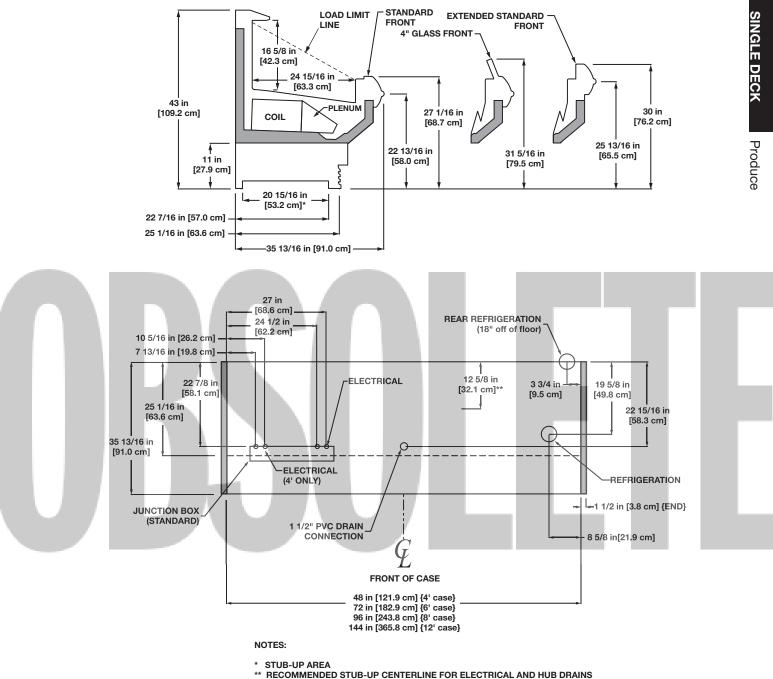




<sup>6</sup> am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 3

<sup>4</sup> 





- - FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
  - ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
  - A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL

  - SUCTION LINE 7/8", LIQUID LINE 1/2"
     DASHED LINES SIGNIFY AREA INSIDE THE BASE RAIL BEHIND KICK-PLATE



#### Single Deck Produce Merchandiser OP - 4', 6', 8' & 12'

#### **Electrical Data**

			Standar	d Fans	0	fficiency ans		ndensate aters		Defrost Heaters		
	Fans per		120 \	120 Volts		120 Volts		120 Volts		Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OP	4'	2	1.00	60	0.15	9.2	0.14	17	1.92	400	2.22	532
	6'	2	1.00	60	0.15	9.2	0.20	24	2.88	600	3.33	798
	8'	2	1.00	60	0.15	9.2	0.25	30	3.85	800	4.44	1065
	12'	3	1.50	90	0.23	13.8	0.38	46	5.77	1200	6.67	1600

## **Lighting Data**

		Bulbs		Typic Light	al per Row	Maxi Ligh	mum nting
		per	Bulb	120	Volts	120	Volts
Model	Model Row		Length	Amps	Watts	Amps	Watts
OP 4'		1	4'	0.23	28	0.23	28
	6'	2	3'	0.37	44	0.37	44
	8'	2	4'	0.47	56	0.47	56
	12'	3	4'	0.70	84	0.70	84

## **Guidelines & Control Settings**

Model	Rear Sill Heights	<sup>1,2</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>4</sup> (FPM)
OP	39"	264 <sup>3</sup>	Enh.	26	6-8	31	42	180
Cut Produce	43"	377 <sup>3</sup>	Enh.	26	6-8	30	45	210
OP	39"	206 <sup>3</sup>	Enh.	29	6-8	36	44	180
Bulk Produce	43"	350 <sup>3</sup>	Enh.	29	6-8	35	47	210

1 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.06.

2 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

3 Standard fans increase refrigeration load by 96 BTUH/fan.

4 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

I					Electric Defrost		Timed Off Defrost		s Defrost	Reverse Air Defrost		
	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
l	OP	2	6 - 8	40	49	60	47	26	45	40	45	

Medium Temperature Defrost Schedule

No. Per Day	Hours	

1 12 midnight 2

3

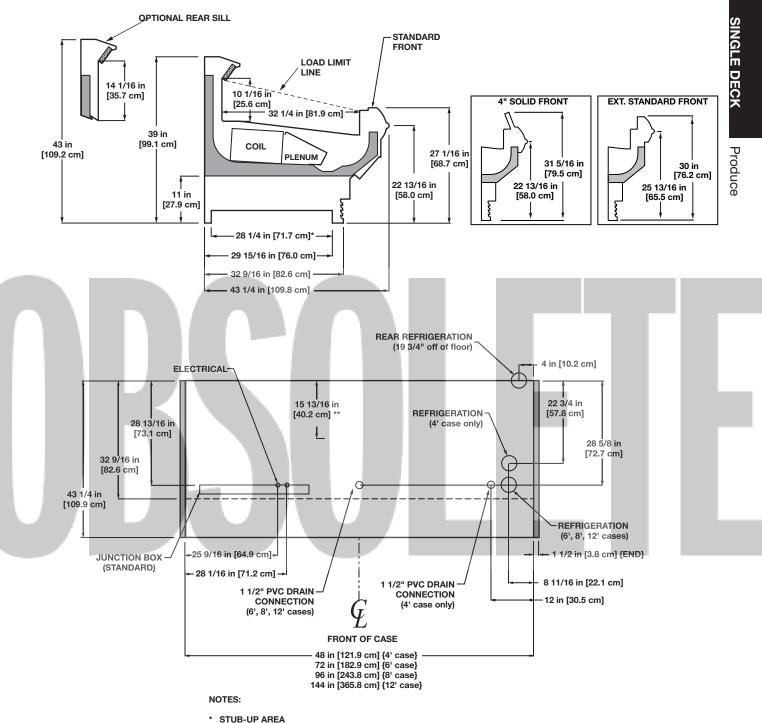
12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 4

All measurements are taken per ARI 1200 - 2002 specifications.

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OP

\*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS

- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
  A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
  SUCTION LINE (4' & 6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8"
  DASHED LINES SIGNIFY AREA INSIDE THE BASE RAIL BEHIND KICK-PLATE



## Single Deck Produce Self-Contained Merchandiser OPA - 6', 8' & 12'

**System Requirements** 

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Overcurrent Protection
OPA	6'	120	1	60	2 wire + ground	10.748	20
	8'	120	1	60	2 wire + ground	14.648	30
	12'	120	1	60	2 wire + ground	16.848	35

#### **Electrical Data**

			Standa	rd Fans	Condenser Fan		Anti-Condensate Heaters		Defrost Heaters		Drain Heater	
	Fans per		120	Volts	Its 120 Volts		120 Volts		120 Volts		120 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OPA	6'	2	1.00	60	0.82	49	0.20	24	5.00	600	4.17	500
	8'	2	1.00	60	0.82	49	0.25	30	6.67	800	4.17	500
	12'	3	1.50	90	0.82	49	0.38	46	10.00	1200	4.17	500

## **Guidelines & Control Settings**

Model	24 hr Energy Usage (kWh)	Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>1</sup> (FPM)
OPA-6'		19.9	6-8	30	45	210
OPA-8'		19.9	6-8	30	45	210
OPA-12'		19.9	6-8	30	45	210

1 Average discharge air velocity at peak of defrost.

### **Condensing Unit Data**

Model	Volts	Phase	Frequency (Hz)	нр	RLA <sup>2</sup> (amps)	LRA <sup>3</sup> (amps)	Refrig.	lbs of Refrig.
OPA-6'	120	1	60	1/4	5.4	34	R134A	
OPA-8'	120	1	60	1/2	9.3	36	R134A	
OPA-12'	120	1	60	1/2	11	51	R134A	

2 RLA - Running Load Amps.

3 LRA - Locked Rotor Amps.

## **Defrost Controls**

		Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
OPA	2	40	47	60	47	4			

4 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

No.	Per	Day	Hours

1

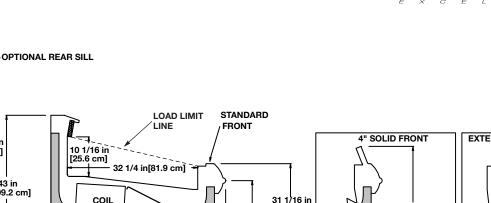
2

12 midnight 12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 3 4

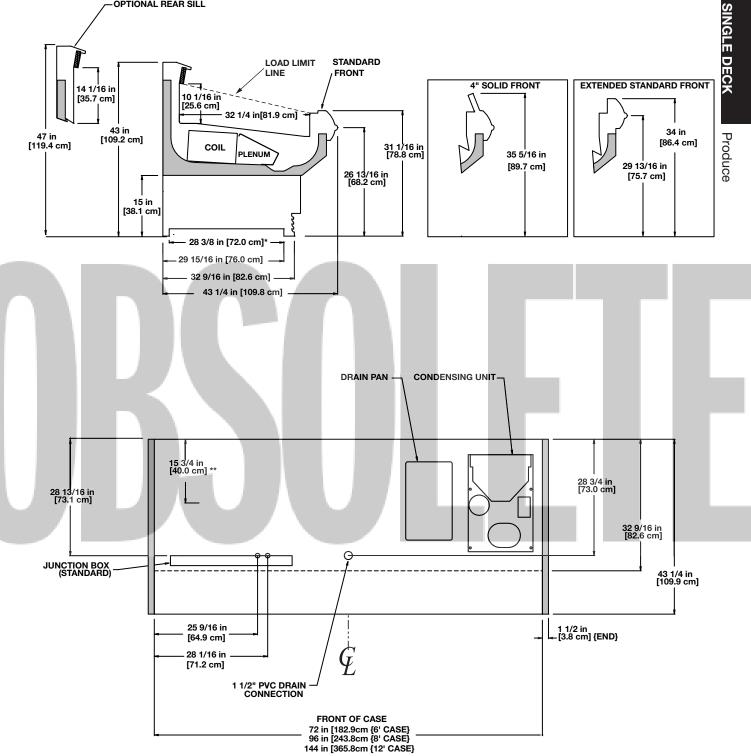








**OPA** 



#### NOTES:

\* STUB-UP AREA

\*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- DASHED LINES SIGNIFY AREA INSIDE THE BASE RAIL BEHIND KICK-PLATE



#### Wide Single Deck Produce Merchandiser OWP - 8' & 12'

#### **Electrical Data**

				Standard Fans		High Efficiency Fans		Anti-Condensate Heaters		Defrost Heaters			
		Fans per	120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	
OWP	8'	2	1.00	60	0.15	9.2	0.25	30	3.85	800	4.44	1065	
	12'	3	1.50	90	0.23	13.8	0.38	46	5.77	1200	6.67	1600	

## **Lighting Data**

			Bulbs			al per Row		mum Iting
	Model		per Row	Bulb Length	120 Volts Amps Watts		120 Volts Amps Watts	
Ī	OWP	8'	2	4'	0.47	56	0.47	56
		12'	3	4'	0.70	84	0.70	84

Guid	elines	& Cor	ntrol Set	tings			- 1
		Door Sill		Osil	E	Sup	orhoat S

Model	Rear Sill Heights	<sup>1,2</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>4</sup> (FPM)
OWP Cut Produce	39"	353 <sup>3</sup>	Enh.	26	6-8	31	42	180
Cut Produce	43"	501 <sup>3</sup>	Enh.	26	6-8	30	45	210
OWP	39"	277 <sup>3</sup>	Enh.	29	6-8	36	44	180
Bulk Produce	43"	466 <sup>3</sup>	Enh.	29	6-8	35	47	210

1 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.06.

2 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

3 Standard fans increase refrigeration load by 96 BTUH/fan.

4 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

				Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)							
OWP	2	6 - 8	40	49	60	47	26	45	40	45	

#### Medium Temperature Defrost Schedule

No. Per Day	Hours	

12 midnight 1

2

12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 3 4

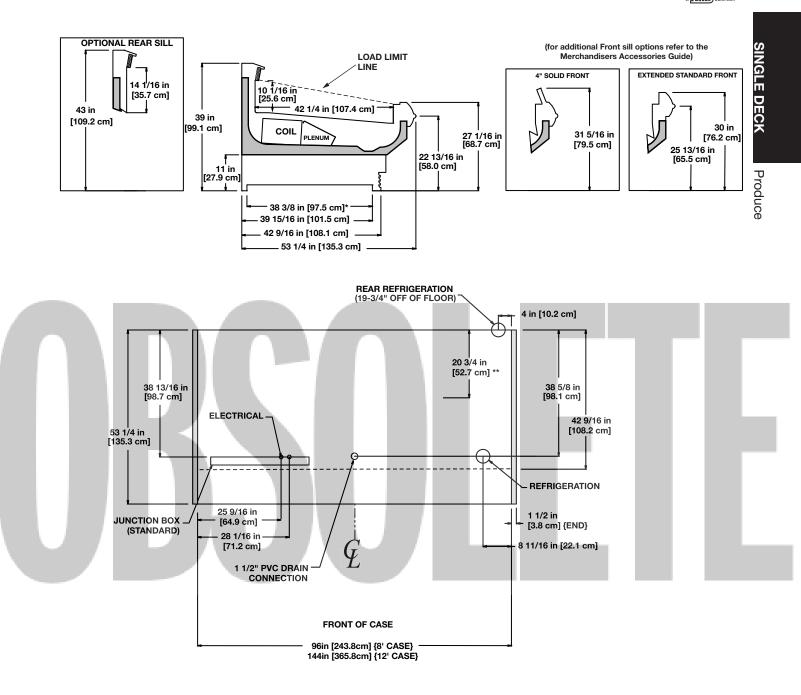
All measurements are taken per ARI 1200 - 2002 specifications.



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#### NOTES:

\* STUB-UP AREA

\*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE 5/8"; LIQUID LINE 3/8"
   FRONT AND REAR SILLS HEIGHTS VARY WITH BASE FRAME HEIGHT
   DASHED LINES SIGNIFY AREA INSIDE THE BASE RAIL BEHIND KICK-PLATE



#### **System Requirements**

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Overcurrent Protection
OWPA	8'	120	1	60	2 wire + ground	22.49	40

#### **Electrical Data**

				Standa	rd Fans	Condenser Fan		Anti-Condensate Heaters		Defrost Heaters		Drain Heater	
I			Fans per	120 Volts		120 Volts		120 Volts		120 Volts		120 Volts	
	Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
	OWPA	8'	2	1.00	60	0.82	49	0.25	30	6.67	800	4.17	500

## **Guidelines & Control Settings**

Model Usage (kWh)	Case Outlet (psig)	@ Bulb (°F)	( <sup>o</sup> F)	(°F)	Discharge Air Velocity <sup>1</sup> (FPM)
OWPA-8'	19.9	6-8	30	45	210

1 Average discharge air velocity at peak of defrost.

### **Condensing Unit Data**

ľ	Model	Volts	Phase	Frequency (Hz)	HP	RLA <sup>2</sup> (amps)	LRA <sup>3</sup> (amps)	Refrig.	lbs of Refrig.
U.	OWPA-8'	120	1	60	1/2	12.9	66.3	R134A	

2 RLA - Running Load Amps.

3 LRA - Locked Rotor Amps.

## **Defrost Controls**

		Electric Defrost		Timed Off Defrost		Hot G	as Defrost	Reverse Air Defrost		
Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
OWPA	2	40	47	60	47	4				

4 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

No.	Per	Day	/ Hours

1

12 midnight 12 am - 12 pm 2

6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 3 4

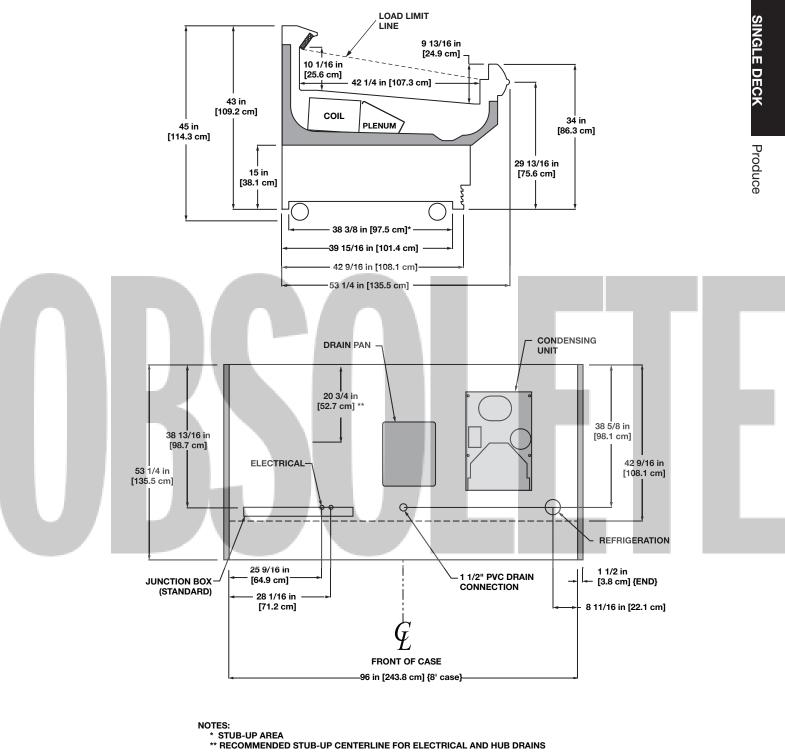




#### **OWPA**



A DOVER COMPANY



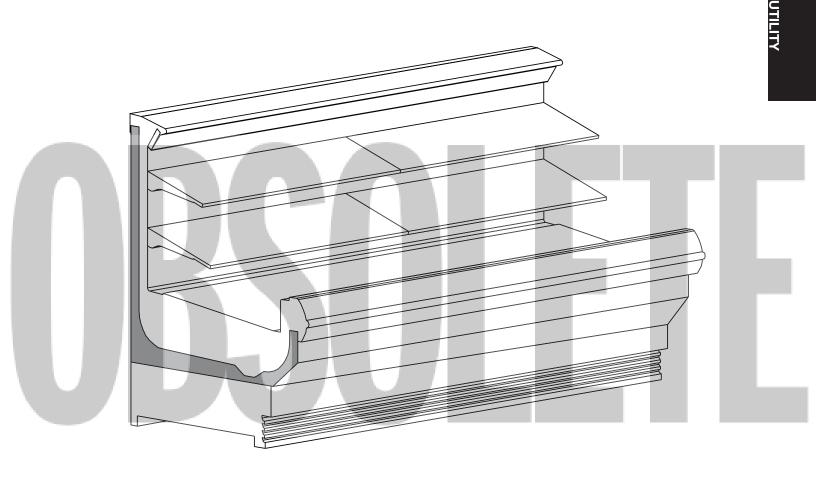
• ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

• A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL • DASHED LINES SIGNIFY AREA INSIDE THE BASE RAIL BEHIND KICK-PLATE

NSF



# UTILITY



#### **NOTES**

- Cases shown with an ANSI/NSF\* Mark are Certified by NSF
- Cases shown with an UL\* Mark are Listed by Underwriters Laboratories Inc.
- Allow for an extra 1/8" per joint when lining up merchandisers.
- Technical information contained herein is subject to change without notice.

\* ANSI - American National Standard Institute NSF - National Sanitation Foundation UL - Underwriters Laboratories Inc

# Narrow Multi-Deck Produce/Dairy/Deli/Meat/Seafood Merchandiser ONUM - 4', 6', 8' & 12'

#### **Electrical Data**

				d Fans		fficiency ans		ndensate ters <sup>1</sup>		Defrost	Heaters	
	Fans per		120 \	/olts	Its 120 Volts		120 Volts		208 Volts		240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONUM	4'	2	1.00	60	0.15	9.2	0.14 <sup>1</sup>	17	1.92	400	2.22	532
	6'	2	1.00	60	0.15	9.2	0.20 <sup>1</sup>	24	2.88	600	3.33	798
	8'	3	1.50	90	0.23	13.8	0.25 <sup>1</sup>	30	3.85	800	4.44	1065
	12'	4	2.00	120	0.31	18.4	0.38 <sup>1</sup>	46	5.77	1200	6.67	1600

1 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

# Lighting Data

		Bulbs per	Bulb	Light	al per Row Volts	Maximum Lighting 120 Volts		
Model		Row	Length	Amps	Watts	Amps	Watts	
ONUM	4'	1	4'	0.23	28	0.70	84	
	6'	2	3'	0.37	44	1.10	132	
	8'	2	4'	0.47	56	1.40	168	
	12'	3	4'	0.70	84	2.10	252	

## Guidelines & Control Settings

Mode	3	<sup>,4</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb ( <sup>o</sup> F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
ONUM	2	478 <sup>5</sup>	Enh.	22	6-8	28	35	280

2 Model ONUM only available for meat application with a thermopane-glass front or a curved plexiglass front.

3 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH

Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

				Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
r	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
C	ONUM	3	6 - 8	40	47	45	45	26	45	45	45

Medium Temperature Defrost Schedule

No.	Per	Day	/	Hours

1 12 midnight 2 12 am - 12 pm 3 6 am - 2 pm - 10 pm 4 12 - 6 am - 12 - 6 pm



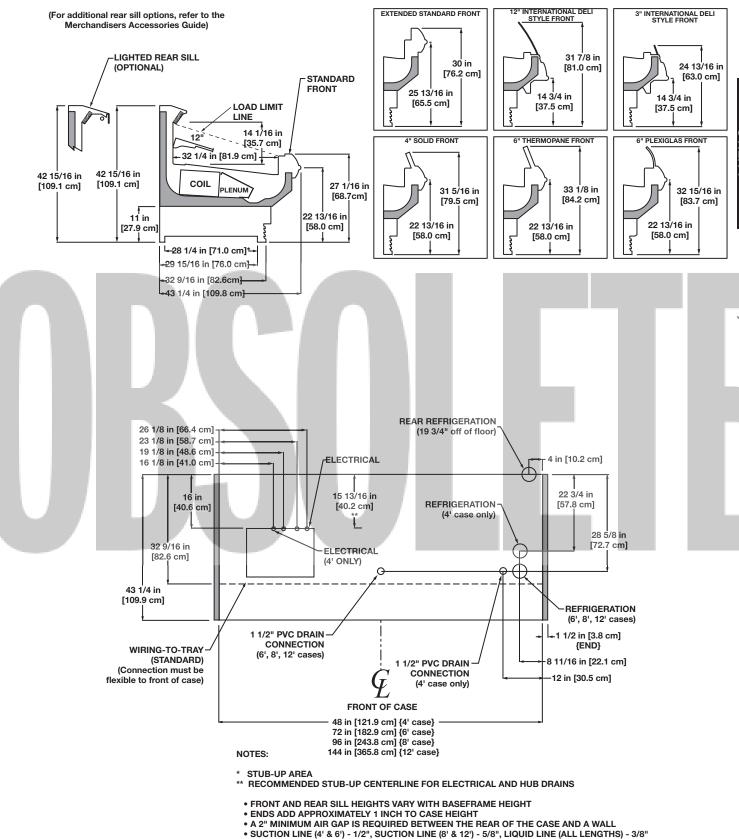


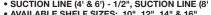


#### ONUM (11" BASEFRAME)





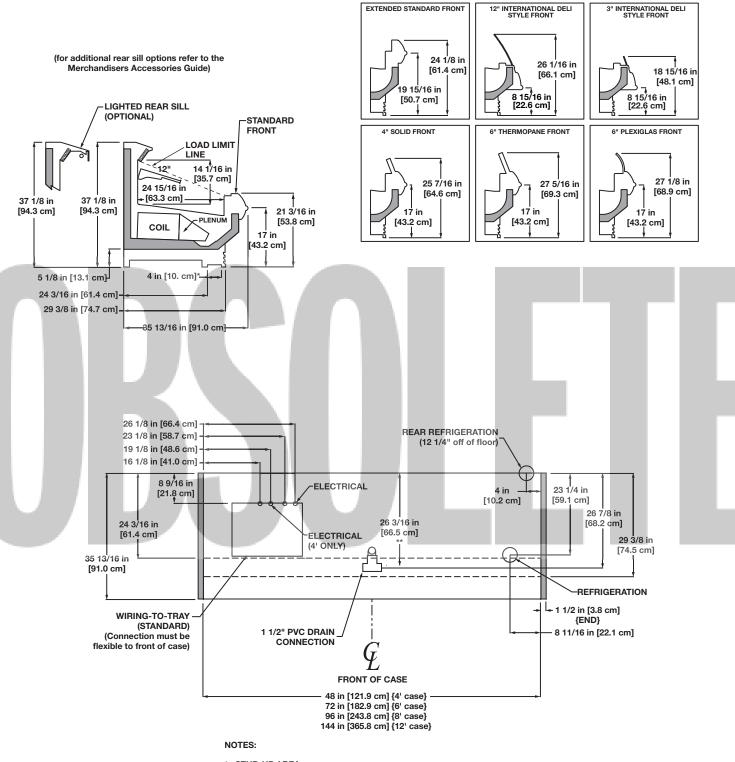




- AVAILABLE SHELF SIZES: 10", 12", 14" & 16"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

#### ONUM (5" BASEFRAME)



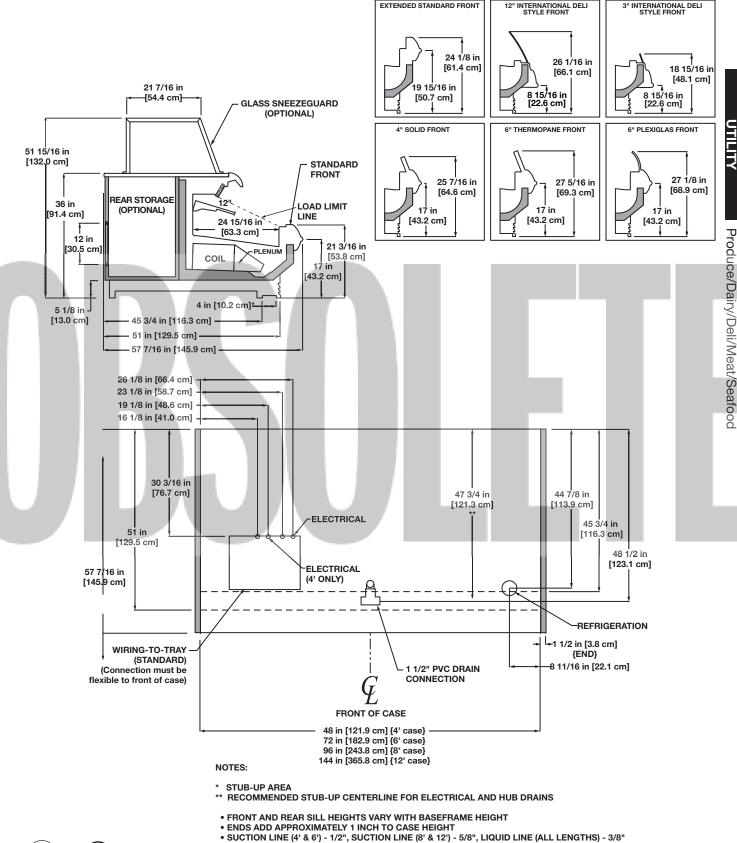


- STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (4' & 6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8" AVAILABLE SHELF SIZES: 10", 12", 14" & 16"
- PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

ONUM (PREPARED FOODS)

EXTENDED STANDARD FRONT





- AVAILABLE SHELF SIZES: 10", 12", 14" & 16"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
   RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

COMPONENT 04/09

# Multi-Deck Produce/Dairy/Deli/Meat/Seafood Merchandiser OUM - 4', 6', 8' & 12'

#### **Electrical Data**

				Standar	d Fans		fficiency ans		ndensate ters¹		Defrost	Heaters	
I			Fans per	120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts
I	Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
I	OUM	4'	2	1.00	60	0.15	9.2	0.14 <sup>1</sup>	17	1.92	400	2.22	532
I		6'	2	1.00	60	0.15	9.2	0.20 <sup>1</sup>	24	2.88	600	3.33	798
I		8'	3	1.50	90	0.23	13.8	0.25 <sup>1</sup>	30	3.85	800	4.44	1065
I		12'	4	2.00	120	0.31	18.4	0.38 <sup>1</sup>	46	5.77	1200	6.67	1600

1 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

# **Lighting Data**

		Bulbs	Bulb	Light	al per Row Volts	Maximum Lighting 120 Volts		
Model		per Row	Length	Amps	Watts	Amps	Watts	
OUM	4'	1	4'	0.23	28	0.70	84	
	6'	2	3'	0.37	44	1.10	132	
	8'	2	4'	0.47	56	1.40	168	
	12'	3	4'	0.70	84	2.10	252	

## **Guidelines & Control Settings**

Model <sup>3,4</sup> BTU	Coil	Evaporator	Superheat Set	Discharge Air	Return Air	Discharge Air Velocity <sup>6</sup>
	H/ft Type	(°F)	Point @ Bulb ( <sup>o</sup> F)	(°F)	(°F)	(FPM)
OUM <sup>2</sup> 758	<sup>5</sup> Enh.	22	6-8	27	40	340

2 Model OUM only available for meat application with a thermopane glass front or a curved plexiglas front.

3 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH

Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

		Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost		
Mode	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
OUM	3	6 - 8	40	47	45	45	26	45	45	45

Medium Temperature Defrost Schedule

No.	Per	Day	/ Hours

1 12 midnight 2 12 am - 12 pm 3 6 am - 2 pm - 10 pm 4 12 - 6 am - 12 - 6 pm

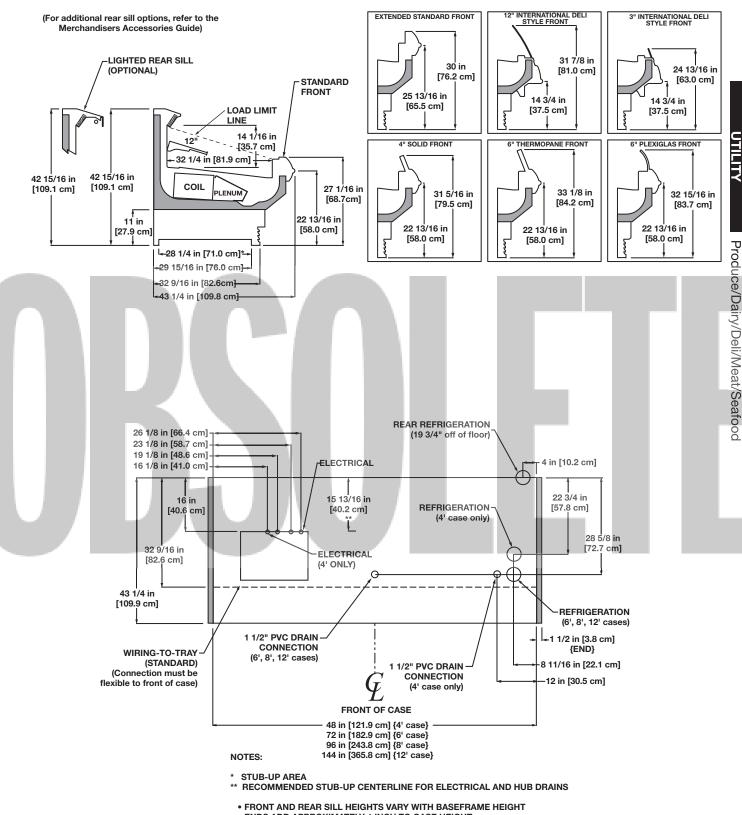






#### OUM (11" BASEFRAME)





• ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

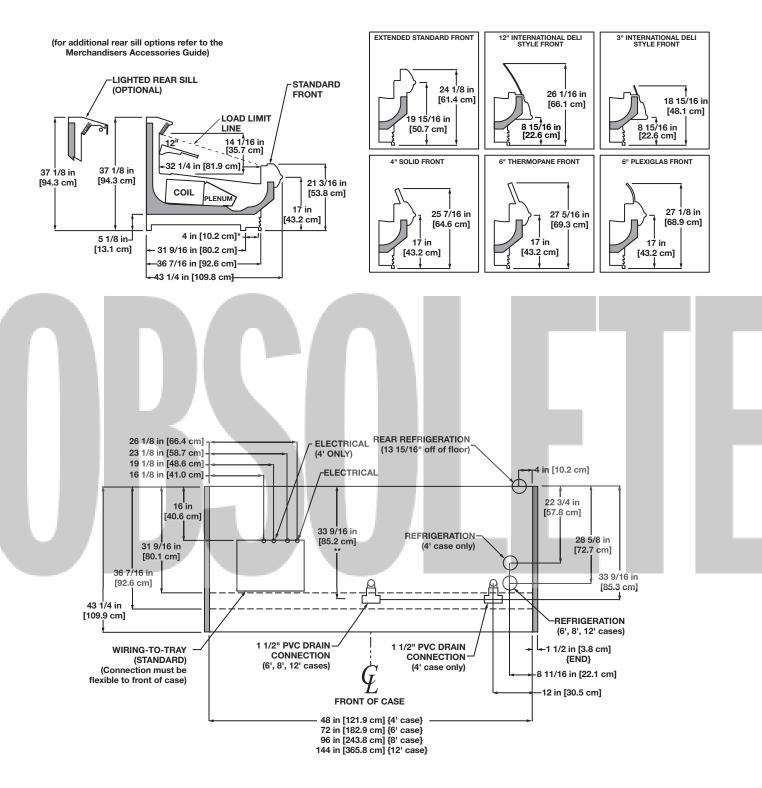
• A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL

- SUCTION LINE (4' & 6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8"
- AVAILABLE SHELF SIZES: 10", 12", 14" & 16"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF<sub>@</sub>

#### OUM (5" BASEFRAME)





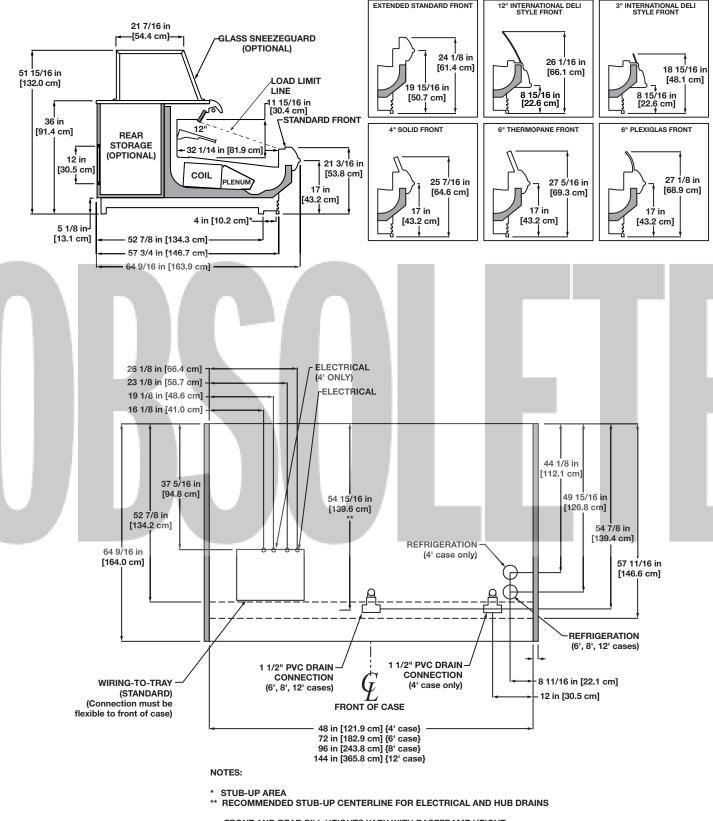
#### NOTES:

- STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
  - FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
  SUCTION LINE (4' & 6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8"
  AVAILABLE SHELF SIZES: 10", 12", 14" & 16"
  PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

CON 34



#### OUM (PREPARED FOODS)





- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT SUCTION LINE (4' & 6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8" AVAILABLE SHELF SIZES: 10", 12", 14" & 16" PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE

- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

COMPONENT 04/09

(NSF)

UTILITY

# Narrow Multi-Deck Produce/Dairy/Deli/Meat/Seafood Merchandiser ON2UM - 4', 6', 8' & 12'

#### **Electrical Data**

					d Fans		fficiency ans	Anti-Cor Hea	ndensate ters <sup>1</sup>		Defrost	Heaters	
	Fans per		120 \	/olts	120 Volts		120 Volts		208 Volts		240	Volts	
	Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
	ON2UM	4'	2	1.00	60	0.15	9.2	0.14 <sup>1</sup>	17	1.92	400	2.22	532
I		6'	2	1.00	60	0.15	9.2	0.20 <sup>1</sup>	24	2.88	600	3.33	798
I		8'	3	1.50	90	0.23	13.8	0.25 <sup>1</sup>	30	3.85	800	4.44	1065
I		12'	4	2.00	120	0.31	18.4	0.38 <sup>1</sup>	46	5.77	1200	6.67	1600

1 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

# **Lighting Data**

		Bulbs per Bulb		Light	al per Row Volts	Maximum Lighting 120 Volts		
Model		Row	Length	Amps	Watts	Amps	Watts	
ON2UM	4'	1	4'	0.23	28	0.70	84	
	6'	2	3'	0.37	44	1.10	132	
	8'	2	4'	0.47	56	1.40	168	
	12'	3	4'	0.70	84	2.10	252	

## **Guidelines & Control Settings**

Mod	el <sup>3,</sup>	<sup>4</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb ( <sup>o</sup> F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
ON2U	IM <sup>2</sup>	6055	Enh.	22	6-8	28	35	280

2 Model ON2UM only available for meat application with a thermopane glass front or a curved plexiglas front.

3 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH

Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

l					Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Air Defrost
I		Defrosts	Run-Off	Fail-safe	Termination	Fail-safe	Termination	Fail-safe	Termination	Fail-safe	Termination
I	Model	Per Day	Time (min)	(min)	Temp. (°F)	(min)	Temp. (°F)	(min)	Temp. (°F)	(min)	Temp. (°F)
I	ON2UM	3	6 - 8	40	47	45	45	26	45	45	45

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm

All measurements are taken per ARI 1200 - 2002 specifications.

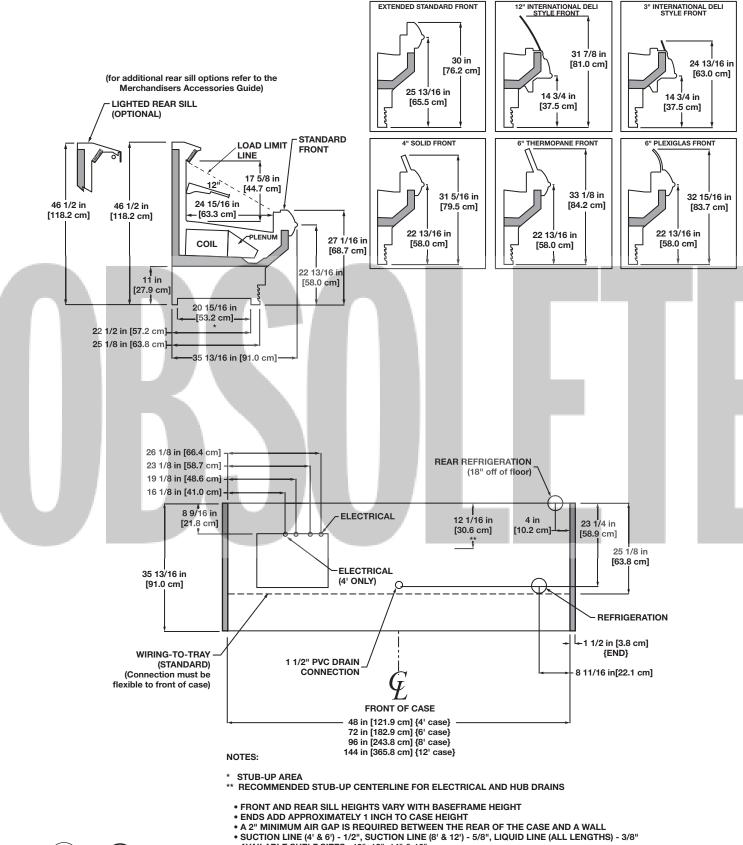




## ON2UM (11" BASEFRAME)



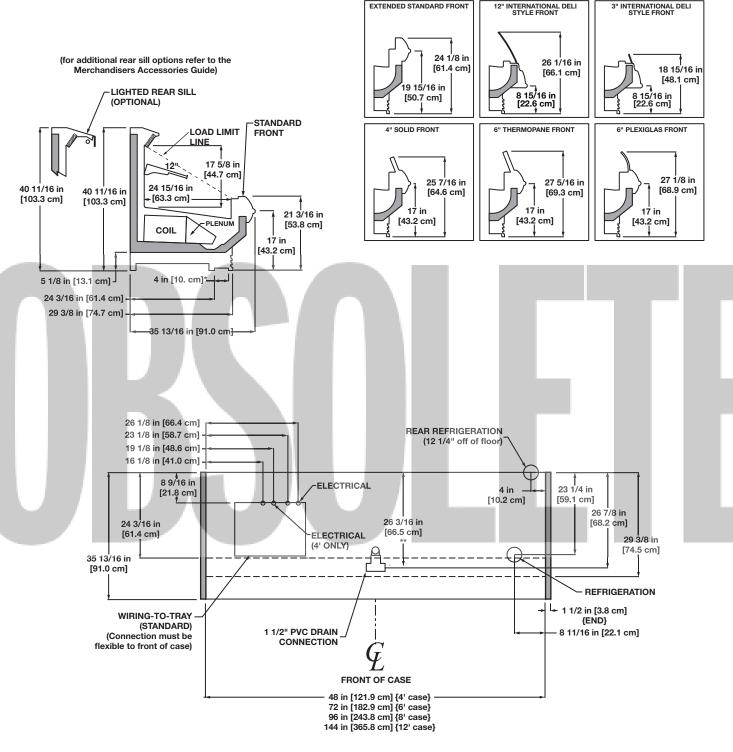
Produce/Dairy/Deli/Meat/Seafooc



- AVAILABLE SHELF SIZES: 10", 12", 14" & 16"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

#### **ON2UM** (5" BASEFRAME)





NOTES:

- STUB-UP AREA \*
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- A 2 MINIMUM AIR GAP IS REQUIRED BE IWEEN THE REAR OF THE CASE AND A WALL
  SUCTION LINE (4' & 6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8"
  AVAILABLE SHELF SIZES: 10", 12", 14" & 16"
  PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
  RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12"
  DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

UTILITY



# Multi-Deck Produce/Dairy/Deli/Meat/Seafood Merchandiser 02UM - 4', 6', 8' & 12'

#### **Electrical Data**

			Standar	d Fans		fficiency ans		ndensate iters		Defrost	Heaters	
Fans per		120 Volts		120 Volts		120 Volts		208 Volts		240	Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O2UM	4'	2	1.00	60	0.15	9.2	0.14 <sup>1</sup>	17	1.92	400	2.22	532
	6'	2	1.00	60	0.15	9.2	0.20 <sup>1</sup>	24	2.88	600	3.33	798
	8'	3	1.50	90	0.23	13.8	0.25 <sup>1</sup>	30	3.85	800	4.44	1065
	12'	4	2.00	120	0.31	18.4	0.38 <sup>1</sup>	46	5.77	1200	6.67	1600

1 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

## **Lighting Data**

1			Bulbs per	Bulb	Light 120	al per Row Volts		ting Volts
	Model		Row	Length	Amps	Watts	Amps	Watts
	O2UM	4'	1	4'	0.23	28	0.70	84
		6'	2	3'	0.37	44	1.10	132
		8'	2	4'	0.47	56	1.40	168
		12'	3	4'	0.70	84	2.10	252
					Z	1	1 m	

## Guidelines & Control Settings

Model	<sup>3,4</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb ( <sup>o</sup> F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
O2UM <sup>2</sup>	948 <sup>5</sup>	Enh.	22	6-8	27	40	340

2 Model O2UM only available for meat application with a thermopane glass front or a curved plexiglas front.

3 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH

Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

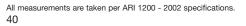
## **Defrost Controls**

	Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost			
Mode	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
O2UN	3	6 - 8	40	47	45	45	26	45	45	45

Medium Temperature Defrost Schedule

No.	Per	Day	Hours

- 1 12 midnight
- 2 12 am 12 pm 3 6 am - 2 pm - 10 pm
- 4 12 6 am 12 6 pm
- 12 0 am 12 0 pm





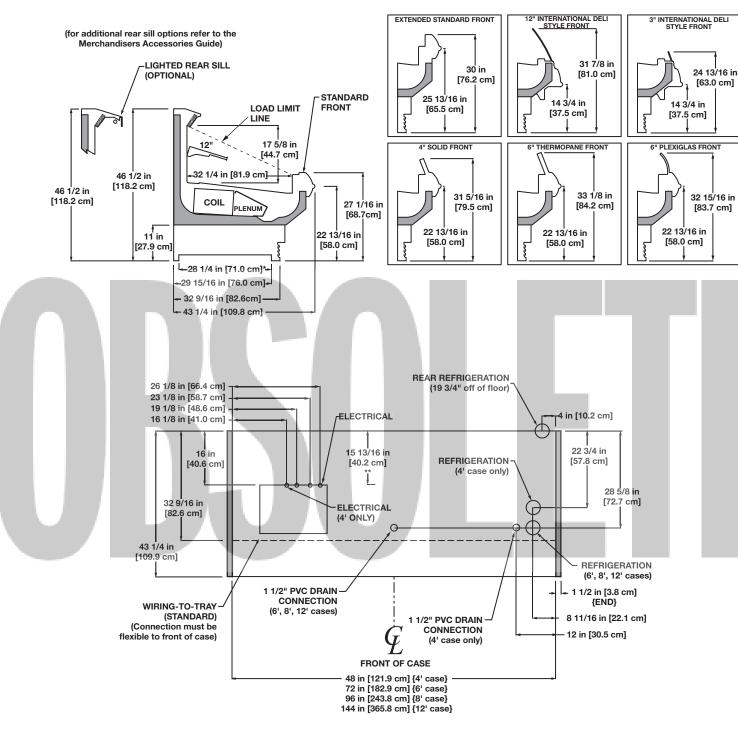


#### **O2UM** (11" BASEFRAME)



UTILITY

Produce/Dairy/Deli/Meat/Seafooc



#### NOTES:

STUB-UP AREA

- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
  SUCTION LINE (4' & 6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8"
  AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
  PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE

- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

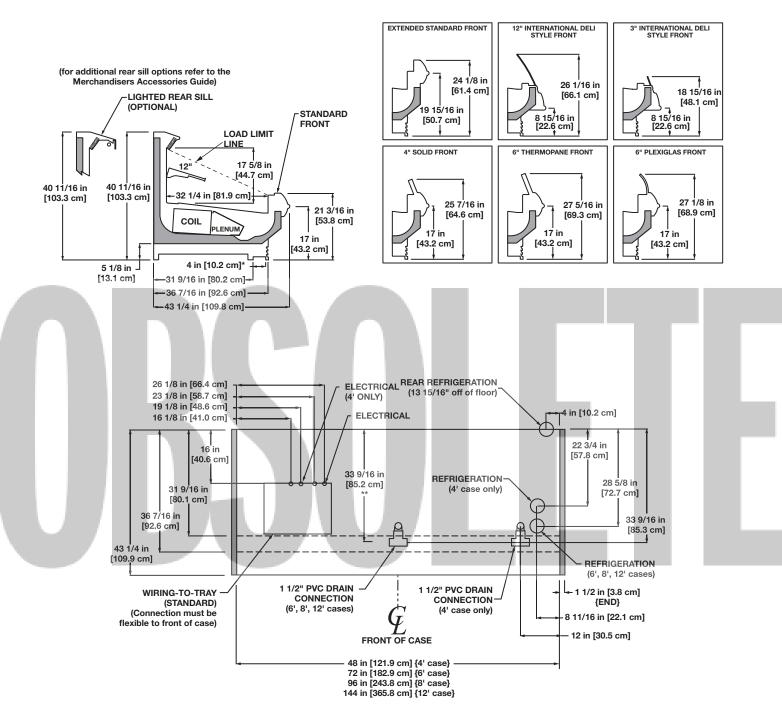
(NSF) COMPONENT

04/09



#### **O2UM** (5" BASEFRAME)





#### NOTES:

- \* STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
  - FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
  - ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
  - A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (4' & 6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



UTILITY



#### **Electrical Data**

			Standar	d Fans		High Efficiency Fans		Anti-Condensate Heaters		Defrost Heaters			
		Fans per	120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	
OW2UM	8'	3	1.50	90	0.23	13.8	0.25 <sup>1</sup>	30	3.85	800	4.44	1065	
	12'	4	2.00	120	0.31	18.4	0.38 <sup>1</sup>	46	5.77	1200	6.67	1600	

1 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

# **Lighting Data**

		Bulbs per	Bulb	Light	al per Row Volts	Maximum Lighting 120 Volts		
Model		Row	Length	Amps	Watts	Amps	Watts	
OW2UM	8'	2	4'	0.47	56	1.40	168	
	12'	3	4'	0.70	84	2.10	252	

#### **Guidelines & Control Settings**

l	Model	<sup>2,3</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb ( <sup>o</sup> F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
I	OW2UM	1184 <sup>4</sup>	Enh.	22	6-8	27	40	340

2 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH

Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

l		Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost			
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
	OW2UM	3	6 - 8	40	47	45	45	26	45	45	45

#### Medium Temperature Defrost Schedule

No. Per Dav	Hours	

12 midnight 1

2

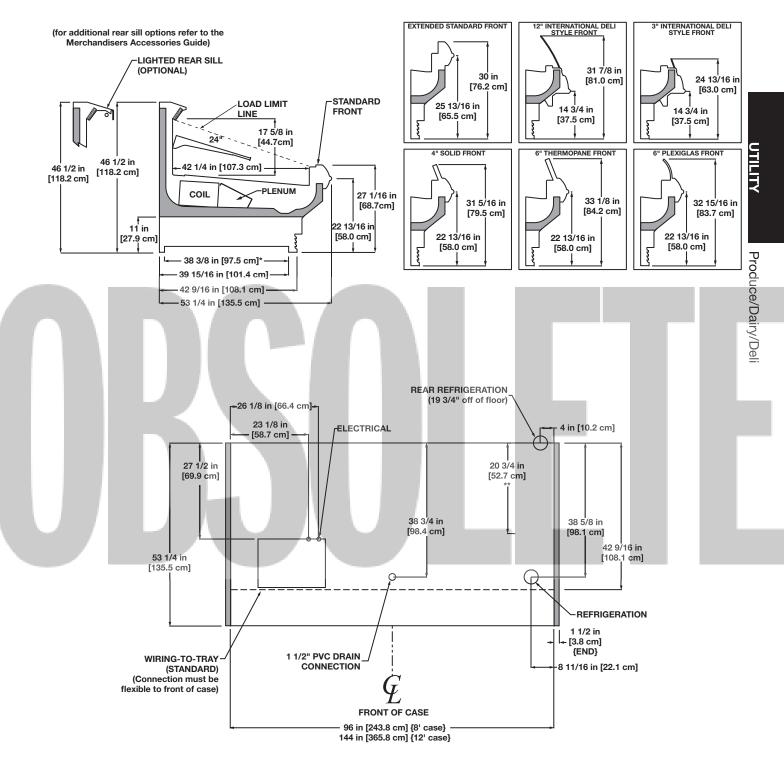
12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 3 4

All measurements are taken per ARI 1200 - 2002 specifications.









NOTES:

- STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE 5/8", LIQUID LINE 3/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18", 20", 22" & 24"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-24
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

COMPONENT 04/09

(NSF)

# Narrow Multi-Deck Produce/Dairy/Deli/Meat/Seafood Merchandiser ON2.5UM - 4', 6', 8' & 12'

#### **Electrical Data**

			Standar	d Fans	0	fficiency ans		ndensate iters		Defrost	Heaters	
	Fans per		120 Volts		120	Volts	120 Volts		208 Volts		240 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ON2.5UM	4'	2	1.00	60	0.15	9.2	0.14 <sup>1</sup>	17	1.92	400	2.22	532
	6'	2	1.00	60	0.15	9.2	0.20 <sup>1</sup>	24	2.88	600	3.33	798
	8'	3	1.50	90	0.23	13.8	0.25 <sup>1</sup>	30	3.85	800	4.44	1065
	12'	4	2.00	120	0.31	18.4	0.38 <sup>1</sup>	46	5.77	1200	6.67	1600

1 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

## **Lighting Data**

		Bulbs		Light	al per Row	Maximum Lighting		
		per	Bulb	120	Volts	120	Volts	
Model		Row	Length	Amps	Watts	Amps	Watts	
ON2.5UM	4'	1	4'	0.23	28	0.93	112	
	6'	2	3'	0.37	44	1.47	176	
	8'	2	4'	0.47	56	1.87	224	
	12'	3	4'	0.70	84	2.80	336	

## **Guidelines & Control Settings**

Model	<sup>3,4</sup> BTUH/ft		Evaporator (°F)	Superheat Set Point @ Bulb ( <sup>o</sup> F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
ON2.5UM	<sup>2</sup> 739 <sup>5</sup>	Enh.	22	6-8	28	35	284

2 Model ON2.5UM only available for meat application with a thermopane glass front or a curved plexiglas front.

3 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

				Electric	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse Air Defrost		
Mod	I	Defrosts Per Day	Run-Off Time (min)	Fail-safe Termination (min) Temp. (°F)		Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
ON2.5	5UM	3	6 - 8	40	47	45	45	26	45	45	45	

NSF

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 nm

12 am 12 pm 6 am - 2 pm - 10 pm

3 4 12 - 6 am - 12 - 6 pm

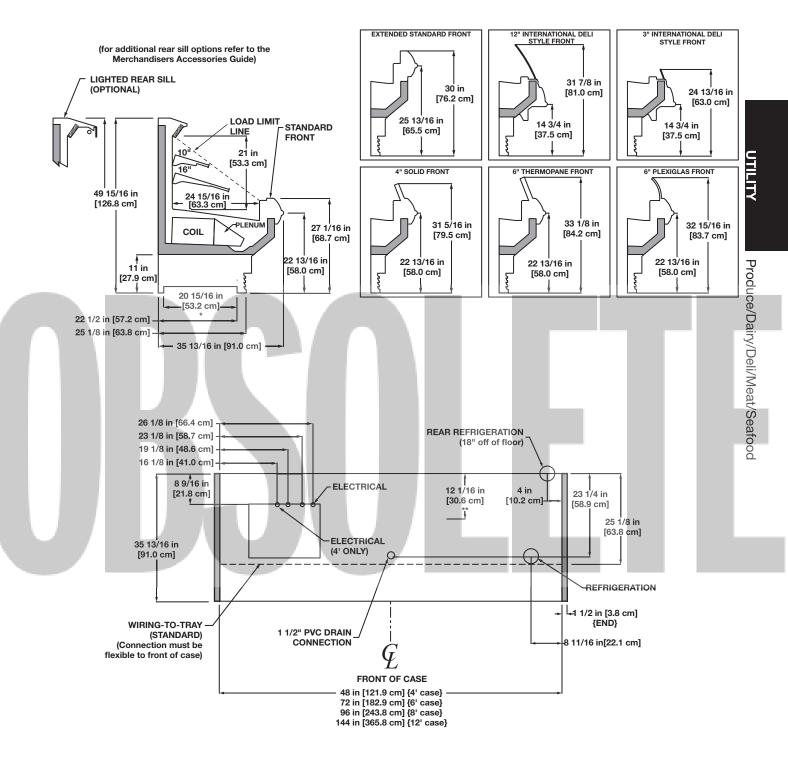
All measurements are taken per ARI 1200 - 2002 specifications.





## **ON2.5UM** (11" BASEFRAME)





NOTES:

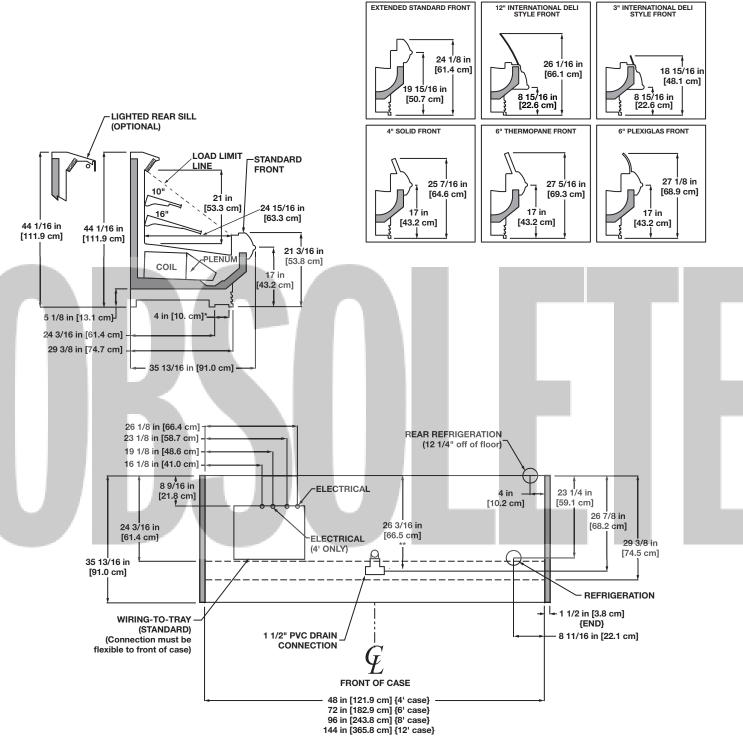
- STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (4' & 6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8"
- AVAILABLE SHELF SIZES: 10", 12", 14" & 16"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
   RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-10" & 1-16"

- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

NSF COMPONENT 04/09

ON2.5UM (5" BASEFRAME)





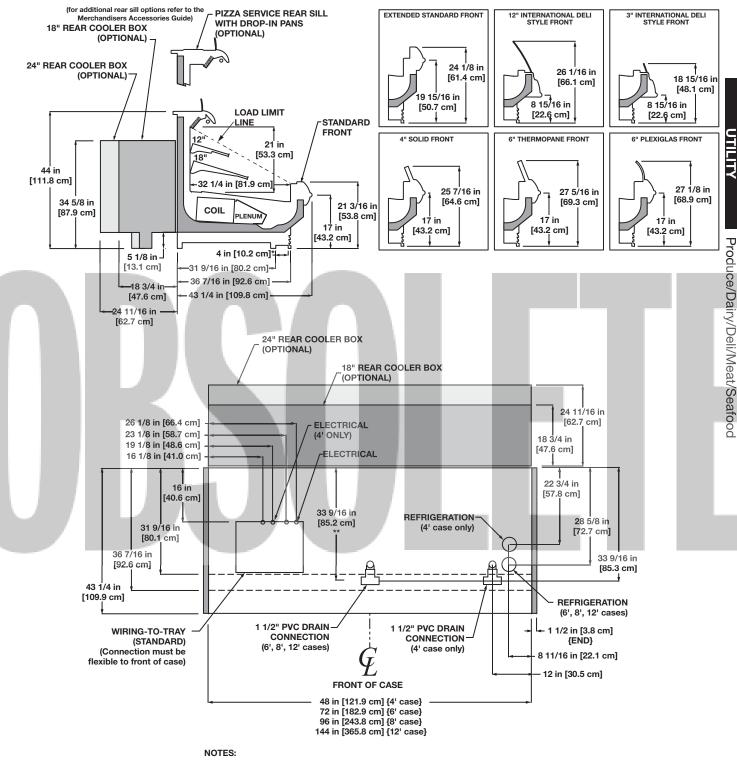
NOTES:

- \* STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL • SUCTION LINE (4' & 6') - 1/2", SUCTION LINE (8' & 12') - 5/8", LIQUID LINE (ALL LENGTHS) - 3/8"



#### **ON2.5UM** REAR REFRIGERATED BOX





STUB-UP AREA

- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (4' & 6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
   RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12" & 1-18"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

COMPONENT 04/09

#### **Electrical Data**

			Standar	d Fans		High Efficiency Fans		Anti-Condensate Heaters		Defrost Heaters			
	Fans per		120 Volts		120	Volts	120 Volts		208 Volts		240 Volts		
Model			Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	
O2.5UM	4'	2	1.00	60	0.15	9.2	0.14 <sup>1</sup>	17	1.92	400	2.22	532	
	6'	2	1.00	60	0.15	9.2	0.20 <sup>1</sup>	24	2.88	600	3.33	798	
	8'	3	1.50	90	0.23	13.8	0.25 <sup>1</sup>	30	3.85	800	4.44	1065	
	12'	4	2.00	120	0.31	18.4	0.38 <sup>1</sup>	46	5.77	1200	6.67	1600	

1 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

## Lighting Data

	1	Bulbs	Bulb	Light	al per Row Volts	Maximum Lighting 120 Volts		
Model		per Row	Length	Amps	Watts	Amps	Watts	
02.5UM	4'	1	4'	0.23	28	1.40	168	
	6'	2	3'	0.37	44	2.20	264	
	8'	2	4'	0.47	56	2.80	336	
	12'	3	4'	0.70	84	4.20	504	

## **Guidelines & Control Settings**

Model	<sup>4,5</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb ( <sup>O</sup> F)		ir Return Air (°F)	Discharge Air Velocity <sup>7</sup> (FPM)
02.5UM <sup>2,3</sup>	1308 <sup>6</sup>	Enh.	22	6-8	27	45	225
O2.5UM w/Plexi Dome <sup>2</sup>	948 <sup>4</sup>	Enh.	22	6-8	32	46	305

2 Model O2.5UM only available for meat application with a thermopane glass front or a curved plexiglas front.

3 For cases with rear refrigerated storage boxes add 110 BTUH/ft

4 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

5 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

6 Standard fans increase refrigeration load by 96 BTUH/fan.

7 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

I				Electri	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse Air Defrost		
	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)			Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
	O2.5UM	3	6 - 8	40	47	45	45	26	45	45	45	

Medium Temperature Defrost Schedule

1 12 midnight 2 12 am - 12 pm

6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 3 4

All measurements are taken per ARI 1200 - 2002 specifications.

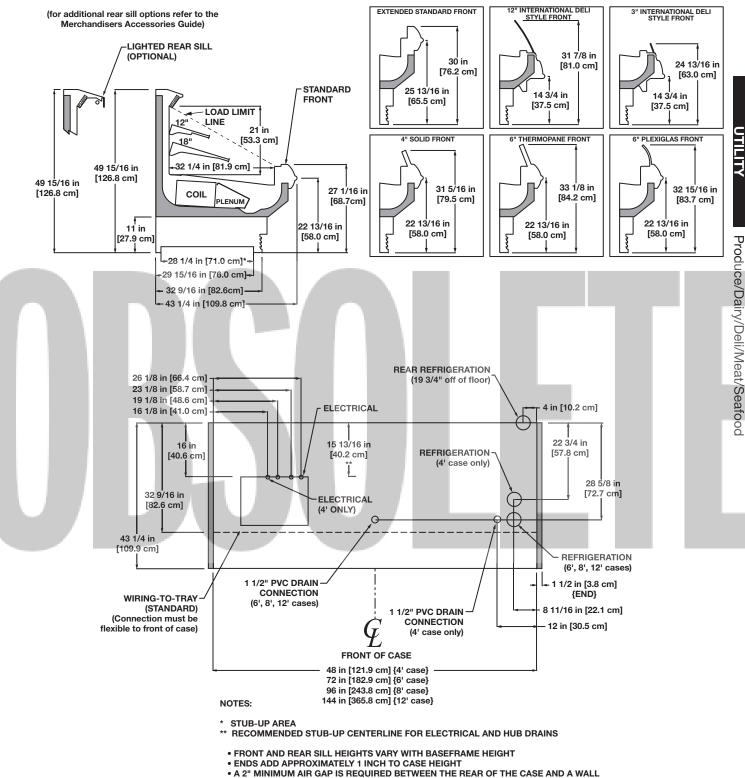


50

No. Per Day Hours

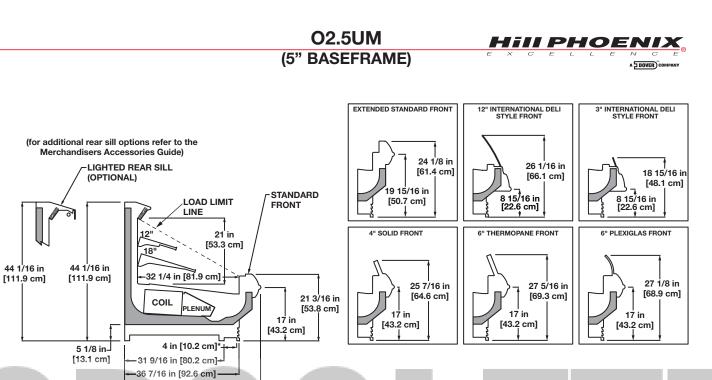
#### **O2.5UM** (11" BASEFRAME)

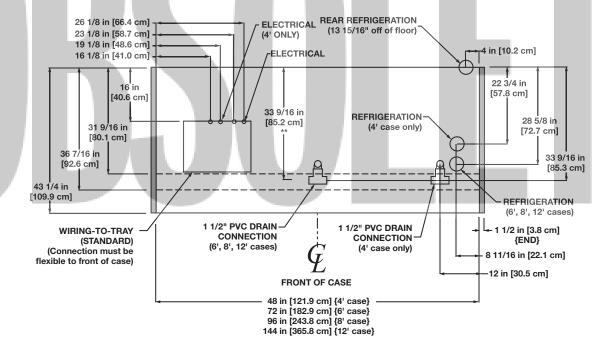




- A 2 MINIMUM AIR GAP IS REQUIRED BE IWEEN THE REAR OF THE CASE AND A WALL
   SUCTION LINE (4' & 6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8"
   AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12" & 1-18"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE







NOTES:

43 1/4 in [109.8 cm]

- \* STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (4' & 6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12" & 1-18"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

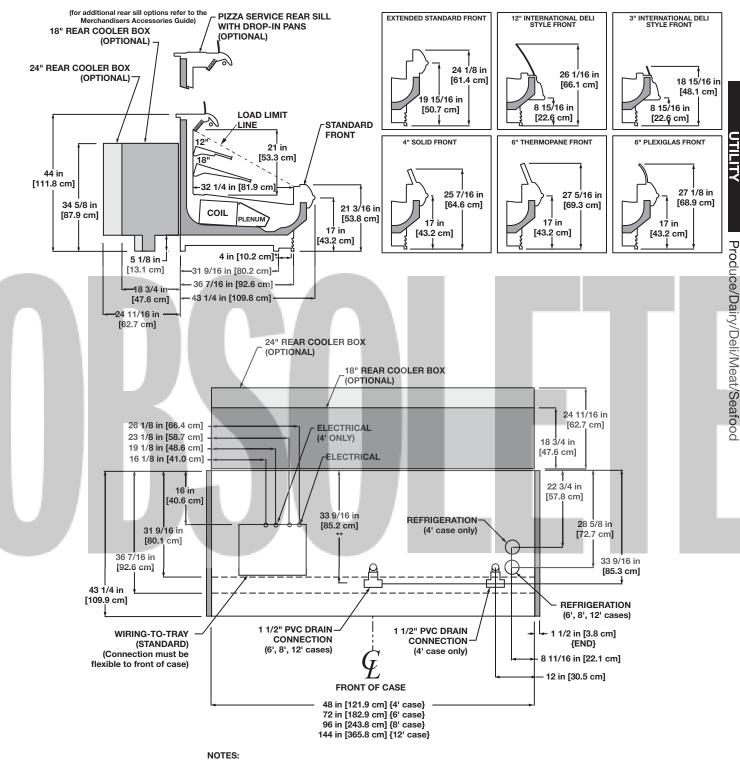


CON

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#### **O2.5UM** REAR REFRIGERATED BOX





STUB-UP AREA

- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (4' & 6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
   RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12" & 1-18"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

COMPONENT 04/09

# Multi-Deck Self-Contained Produce/Dairy/Deli/Meat/Seafood Merchandiser 02.5UMA - 8'

#### **System Requirements**

Model	Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Overcurrent Protection
O2.5UMA-8'	208	1	60	3 wire + ground	13.560	30

#### **Electrical Data**

		Standard Fans 120 Volts		Condenser Anti-Condensate andard Fans Fan Heaters					mum nting	Defrost Heaters			
	Fans per			120 Volts 208 Vo		ts 120 Volts		120 Volts		208 Volts		240 Volts	
Model	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O2.5UMA-8'	3	1.50	90	0.85	85	0.25 <sup>1</sup>	30	1.41	169	3.85	800	4.44	1065

1 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

## **Guidelines & Control Settings**

	Model	0,7	Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>3</sup> (FPM)
l	02.5UMA-8'2		40	6-8	29	43	225

2 Model O2.5UMA only available for meat application with a thermopane glass front or a curved plexiglas front.

3 Average discharge air velocity at peak of defrost.

## **Condensing Unit Data**

				Frequency		RLA⁴	LRA <sup>5</sup>		lbs of	h
ų	Model	Volts	Phase	(Hz)	HP	(amps)	(amps)	Refrig.	Refrig.	
	02.5UMA-8'	208	1	60	1	10.4	48.2	R22	5.25	

4 RLA - Running Load Amps.

5 LRA - Locked Rotor Amps.

## **Defrost Controls**

			Electric Defrost		Timed Off Defrost		Hot Ga	s Defrost	Reverse Air Defrost	
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
O2.5UMA-8'	3	6 - 8	40	47	45	45	<sup>6</sup>			

6 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day Hours

1 12 midnight

2 12 am - 12 pm

3 6 am - 2 pm - 10 pm 4 12 - 6 am - 12 - 6 pm

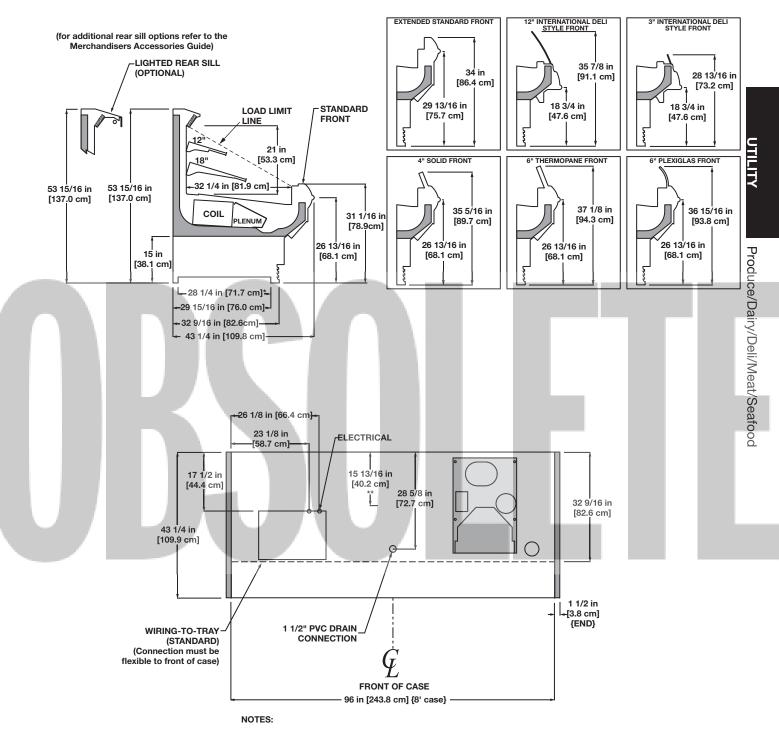
4 12 - 6 am - 12 - 6 pm











\* STUB-UP AREA

- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12" & 1-18"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



04/09

# Multi-Deck Produce/Dairy/Deli/Meat/Seafood Merchandiser 02.75UM - 4', 6', 8' & 12'

#### **Electrical Data**

			Standard Fans			fficiency ans		ndensate aters	Defrost Heaters			
Fans per		120 Volts		120 Volts		120 Volts		208 Volts		240	Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O2.75UM	4'	2	1.00	60	0.15	9.2	0.14 <sup>1</sup>	17	1.92	400	2.22	532
	6'	2	1.00	60	0.15	9.2	0.20 <sup>1</sup>	24	2.88	600	3.33	798
	8'	3	1.50	90	0.23	13.8	0.25 <sup>1</sup>	30	3.85	800	4.44	1065
	12'	4	2.00	120	0.31	18.4	0.38 <sup>1</sup>	46	5.77	1200	6.67	1600

1 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

# **Lighting Data**

		Bulbs		Typic Light		ximum ghting	
_		per	Bulb	120	Volts	120	Volts
Model		Row	Length	Amps	Watts	Amps	Watts
02.75UM	4'	1	4'	0.23	28	0.93	112
	6'	2	3'	0.37	44	1.47	176
	8'	2	4'	0.47	56	1.87	224
	12'	3	4'	0.70	84	2.80	336

## **Guidelines & Control Settings**

Model <sup>2</sup>	<sup>3,4</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb ( <sup>o</sup> F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
02.75UM	953 <sup>5</sup>	Enh.	22	6-8	27	45	225

2 Model O2.75UM only available for meat application with a thermopane glass front or a curved plexiglas front.

3 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

			Electric Defrost			Off Defrost	Hot Ga	s Defrost	Reverse Air Defrost		
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
O2.75UM	3	6 - 8	40	47	45	45	26	45	45	45	

Medium Temperature Defrost Schedule

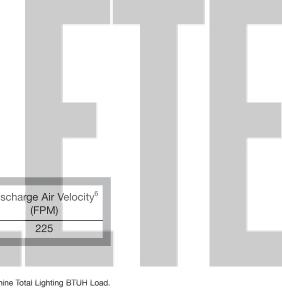
No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
2	6 am - 2 pm - 10 r

3 6 am - 2 pm - 10 pm 4 12 - 6 am - 12 - 6 pm

All measurements are taken per ARI 1200 - 2002 specifications.

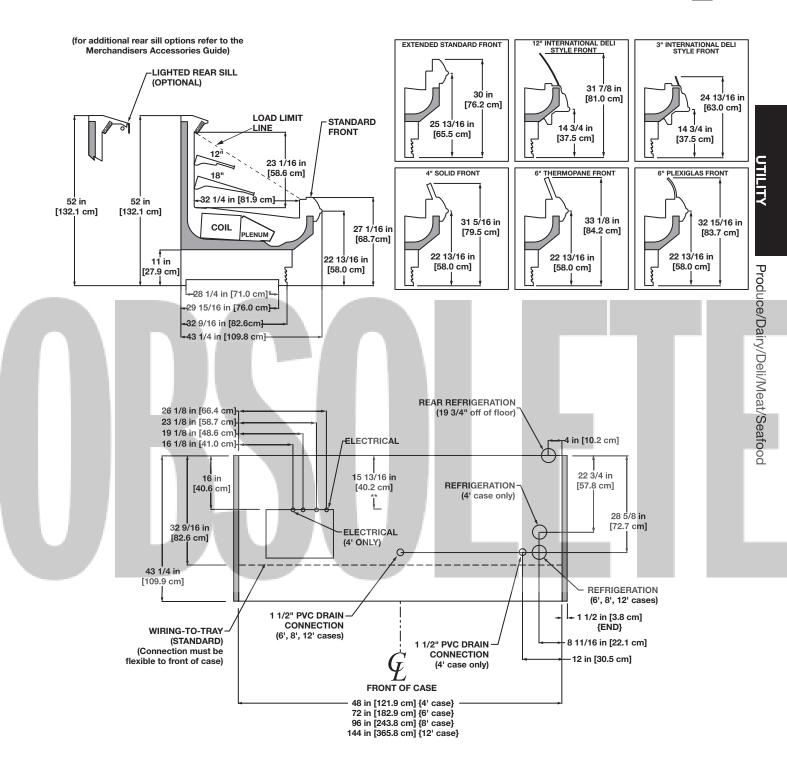






#### **O2.75UM** (11" BASEFRAME)





#### NOTES:

STUB-UP AREA

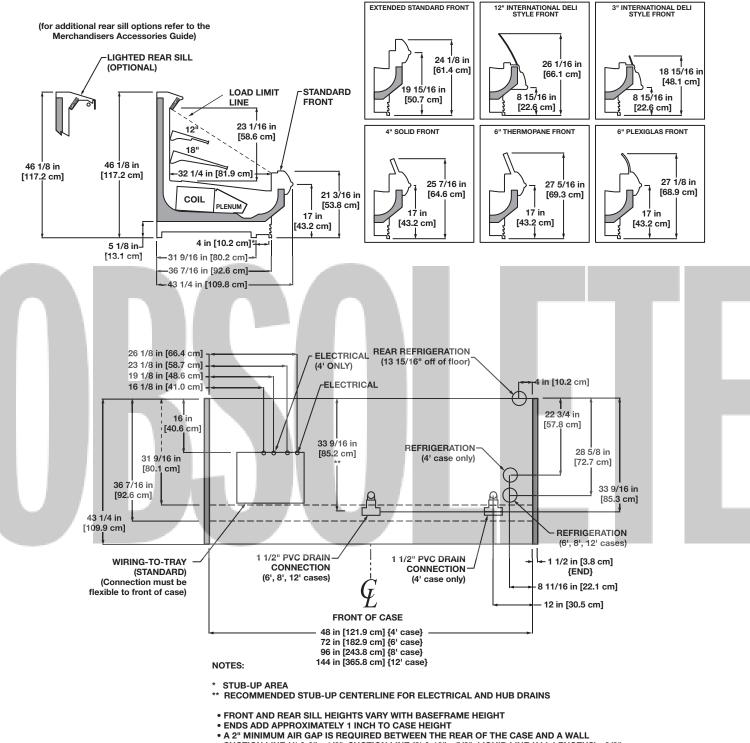
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
   A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- A 2 MINIMUM AIR GAP IS REQUIRED BE WEEK THE REAR OF THE CASE AND A WALL
  SUCTION LINE (4' & 6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8"
  AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
  PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12" & 1-18"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF)

COMPONENT

#### **O2.75UM** (5" BASEFRAME)





- SUCTION LINE (4' & 6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8"

  - AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
     PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE

  - RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12" & 1-18"
     DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



NSF CON

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UTILITY



#### **Electrical Data**

			Standard Fans 120 Volts		0	High Efficiency Fans		Anti-Condensate Heaters		Defrost Heaters			
		Fans per			120 Volts		120 Volts		208 Volts		240 Volts		
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	
02.75MZD	8'	3	1.02	51	0.45	33	1.45	174	15.38	3200	17.75	4260	

## **Lighting Data**

		Bulbs		Typic Light		Maxi Ligh	
Model		per Row	Bulb Length	120 Amps	Volts Watts	120 Amps	Volts Watts
02.75MZD	8'	1	4'	0.47	56	0.47	56

## **Guidelines & Control Settings**

Model	<sup>2,3</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity⁵ (°F)
02.75MZD - F <sup>1</sup>	949 <sup>4</sup>	Enh.	-22	3-5	-8	11	340
O2.75MZD - MT <sup>6</sup>	620	Enh	17	6-8	27	35	340

1 F=frozen food.

2 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH

Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

6 Indicates medium temperature application.

## **Defrost Controls**

	Defrosts		Electri	c Defrost	Timed-0	Off Defrost	Hot Ga	is Defrost	Reverse	Air Defrost
Model	per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)						
02.75MZD - F	4	13-15	45	65	<sup>7</sup>		20	60		
O2.75MZD - MT <sup>8</sup>	1	13-15	35	49			20	60		

7 NOTE: "- - -" not an option on this case model.

8 Indicates medium temperature application.

Defrost Schedule

No. Per Day Hours

1 12 midnight 2 12 am - 12 pm

2 12 am - 12 pm 3 6 am - 2 pm - 10 pm

4 12 - 6 am - 12 - 6 pm

All measurements are taken per ARI 1200 - 2002 specifications.

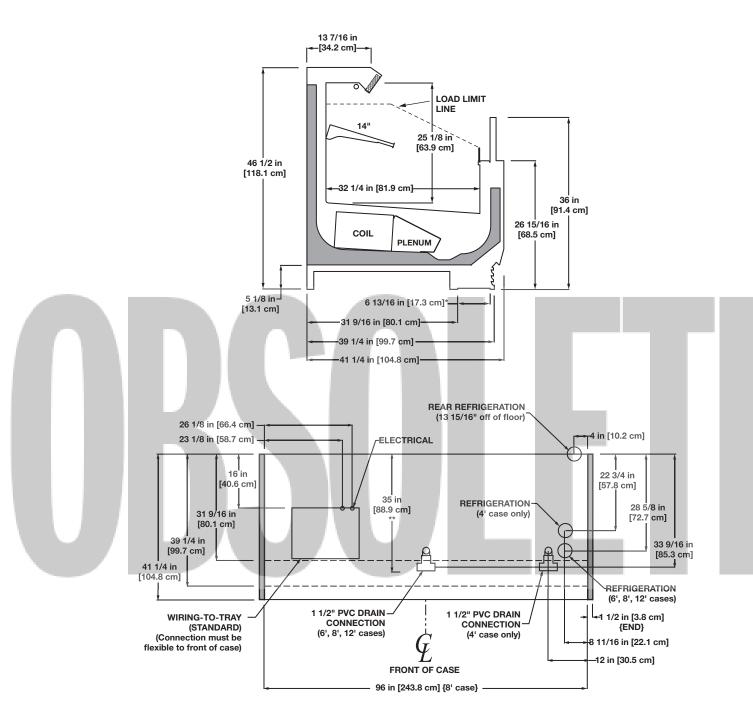






UTILITY

Frozen Food



NOTES:

- STUB-UP AREA \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
   A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
   SUCTION LINE 7/8", LIQUID LINE 3/8"
- AVAILABLE SHELF SIZES: 14"
- PRODUCT ON TOP SHELF SHOULD BE 4" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-14"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



# Narrow Multi-Deck Produce/Dairy/Deli/Meat/Seafood Merchandiser ON3UM - 4', 6', 8' & 12'

#### **Electrical Data**

			Standar	d Fans	High Efficiency Fans		Anti-Condensate Heaters		Defrost Heaters			
	Fans per		120 Volts		120 Volts		120 Volts		208 Volts		240 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ON3UM	4'	2	1.00	60	0.15	9.2	0.14 <sup>1</sup>	17	1.92	400	2.22	532
	6'	2	1.00	60	0.15	9.2	0.20 <sup>1</sup>	24	2.88	600	3.33	798
	8'	3	1.50	90	0.23	13.8	0.25 <sup>1</sup>	30	3.85	800	4.44	1065
	12'	4	2.00	120	0.31	18.4	0.38 <sup>1</sup>	46	5.77	1200	6.67	1600

1 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

## **Lighting Data**

		Bulbs			al per Row		mum nting
		per	Bulb	120	Volts	120	Volts
Model		Row	Length	Amps	Watts	Amps	Watts
ON3UM	4'	1	4'	0.23	28	0.93	112
	6'	2	3'	0.37	44	1.47	176
	8'	2	4'	0.47	56	1.87	224
	12'	3	4'	0.70	84	2.80	336

## **Guidelines & Control Settings**

I	Model	<sup>3,4</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb ( <sup>o</sup> F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
	ON3UM <sup>2</sup>	752 <sup>5</sup>	Enh.	22	6-8	28	35	230

2 Model ON3UM only available for meat application with a thermopane glass front or a curved plexiglas front.

3 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

				Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
l	ON3UM	3	6 - 8	40	47	45	45	26	45	45	45

Medium Temperature Defrost Schedule

No.	Per	Day	/	Hours

1 12 midnight

2 12 am - 12 pm

3 6 am - 2 pm - 10 pm 4 12 - 6 am - 12 - 6 pm

All measurements are taken per ARI 1200 - 2002 specifications.

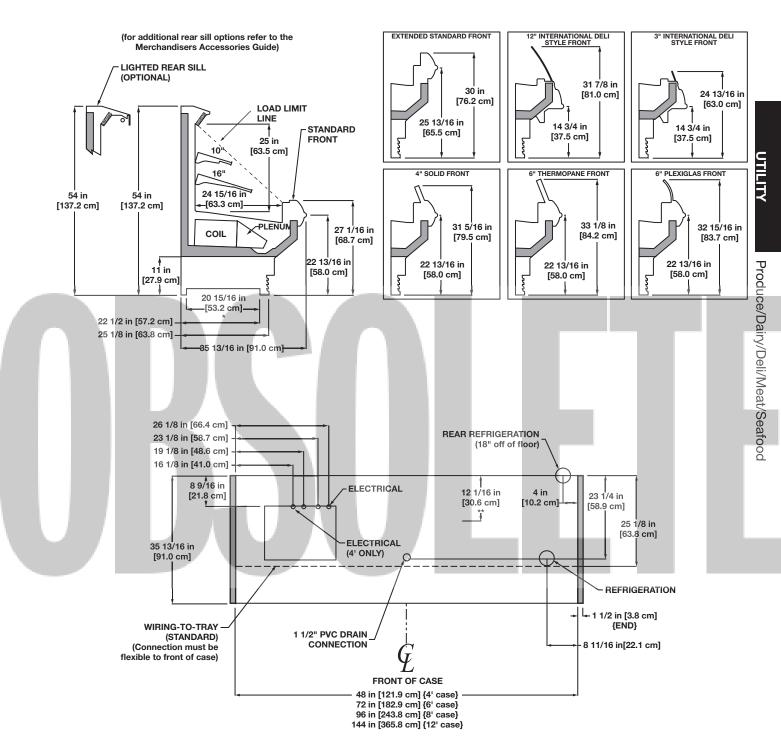




## **ON3UM** (11" BASEFRAME)







NOTES:

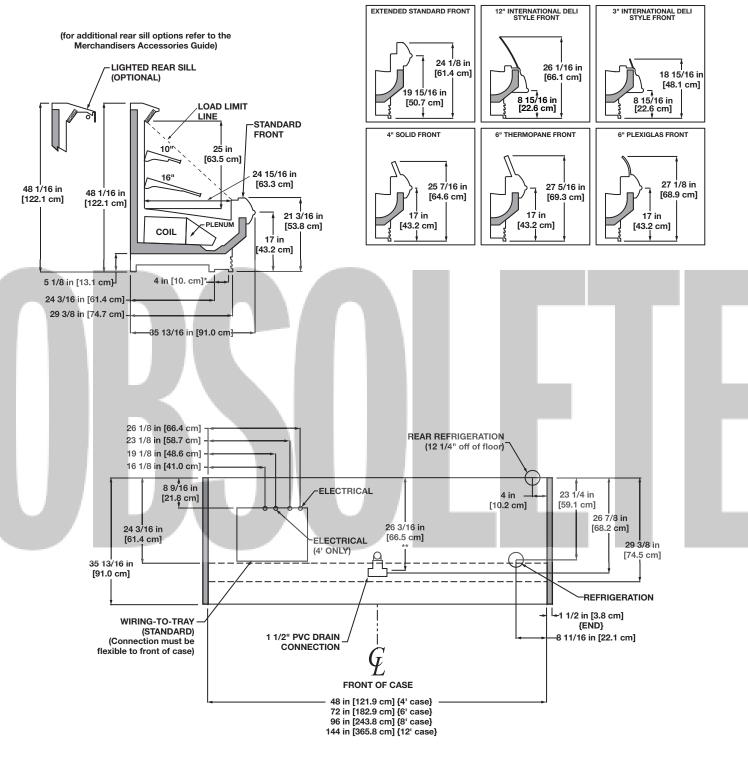
- STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT

- ENDN AND REAR SILL HEIGHT VART WITH DASETRAIME HEIGHT
  ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
  A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
  SUCTION LINE (4' & 6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8"
  AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
- PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-10" & 1-16"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

COMPONENT 04/09

## **ON3UM** (5" BASEFRAME)





NOTES:

- STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (4' & 6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8"
  AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
  PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE

- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-10" & 1-16"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

NSF

UTILITY



# Multi-Deck Produce/Dairy/Deli/Meat/Seafood Merchandiser O3UM - 4', 6', 8' & 12'

### **Electrical Data**

				Standar	d Fans		ficiency ans		ndensate aters		Defrost	Heaters	
I	Fans per 120 Volts 12		120	Volts	120 Volts		208 Volts		240 Volts				
I	Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
	O3UM	4'	2	1.00	60	0.15	9.2	0.14 <sup>1</sup>	17	1.92	400	2.22	532
I		6'	2	1.00	60	0.15	9.2	0.20 <sup>1</sup>	24	2.88	600	3.33	798
I		8'	3	1.50	90	0.23	13.8	0.25 <sup>1</sup>	30	3.85	800	4.44	1065
		12'	4	2.00	120	0.31	18.4	0.38 <sup>1</sup>	46	5.77	1200	6.67	1600

1 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

# **Lighting Data**

		Bulbs per		Bulb		al per Row Volts	Ligh	mum nting Volts	
Model		Row	1	ength	Amps	Watts	Amps	Watts	
O3UM	4'	1		4'	0.23	28	0.93	112	
	6'	2		3'	0.37	44	1.47	176	
	8'	2		4'	0.47	56	1.87	224	
	12'	3		4'	0.70	84	2.80	336	

## **Guidelines & Control Settings**

I	Model	<sup>3,4</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb ( <sup>o</sup> F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
	O3UM <sup>2</sup>	958 <sup>5</sup>	Enh.	22	6-8	27	45	225

2 Model O3UM only available for meat application with a thermopane glass front or a curved plexiglas front.

3 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

				Electri	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse	Air Defrost
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
l	O3UM	3	6 - 8	40	47	45	45	26	45	45	45

Medium Temperature Defrost Schedule

No.	Per	Day	/	Hours

12 midnight 1 2 12 am - 12 pm 3 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm

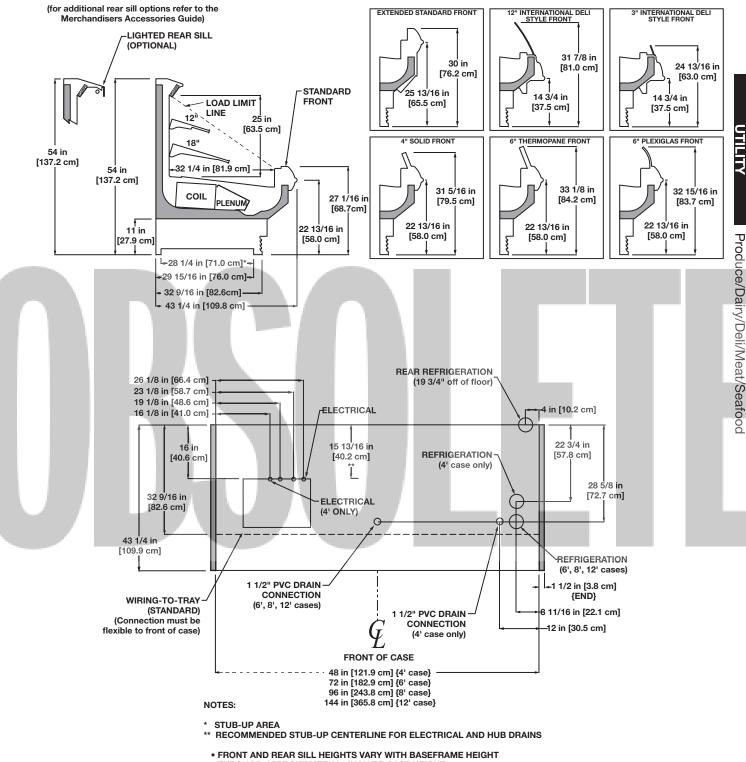
4





**O3UM** (11" BASEFRAME)





- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (4: & 6) 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8" AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
- PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12" & 1-18"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



**O3UM** (5" BASEFRAME)



EXTENDED STANDARD FRONT 3" INTERNATIONAL DELI STYLE FRONT 12" INTERNATIONAL DELI STYLE FRONT (for additional rear sill options refer to the Merchandisers Accessories Guide) LIGHTED REAR SILL 24 1/8 in (OPTIONAL) 26 1/16 in [61.4 cm] 18 15/16 in [66.1 cm] [48.1 cm] 19 15/16 in 8 15/16 in -STANDARD 8 15/16 in [50.7 cm] FRONT [22.6 cm] [22.6 cm] LOAD LIMIT 25 in [63.5 cm] 4" SOLID FRONT **6" THERMOPANE FRONT 6" PLEXIGLAS FRONT** 18" 48 1/16 in 48 1/16 in [122.1 cm] 32 1/4 in [81.9 cm] [122.1 cm] 27 1/8 in 25 7/16 in 27 5/16 in [64.6 cm] [68.9 cm] [69.3 cm] 21 3/16 in COIL [53.8 cm] PLENUM 17 in 17 in 17 in 17 in [43.2 cm] [43.2 cm] [43.2 cm] [43.2 cm] 4 in [10.2 cm]\*-5 1/8 in [13.1 cm] -31 9/16 in [80.2 cm]-36 7/16 in [92.6 cm]-43 1/4 in [109.8 cm]-ELECTRICAL REAR REFRIGERATION 26 1/8 in [66.4 cm] (13 15/16" off of floor) 23 1/8 in [58.7 cm] (4' ONLY) 19 1/8 in [48.6 cm] 4 in [10.2 cm] ELECTRICAL 16 1/8 in [41.0 cm]  $\triangle$ 22 3/4 in 16 in [57.8 cm] [40.6 cm] 33 9/16 in REFRIGERATION 28 5/8 in [85.2 cm] 31 9/**16** in (4' case only) [72.7 cm] [80.1 cm] 36 7/16 in 33 9/16 in [92.6 cm] [85.3 cm] 43 1/4 in [109.9 cm] REFRIGERATION (6', 8', 12' cases) 1 1/2" PVC DRAIN 1 1/2" PVC DRAIN WIRING-TO-TRAY 1 1/2 in [3.8 cm] CONNECTION CONNECTION (STANDARD) {END} (6', 8', 12' cases) (4' case only) (Connection must be 8 11/16 in [22.1 cm] flexible to front of case) 12 in [30.5 cm] FRONT OF CASE 48 in [121.9 cm] {4' case} 72 in [182.9 cm] {6' case} 96 in [243.8 cm] {8' case} 144 in [365.8 cm] {12' case}

NOTES:

\* STUB-UP AREA

- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (4' & 6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8"
   AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE

- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12" & 1-18"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



68

UTILITY



### **Electrical Data**

			Standar	d Fans		ficiency ans		ndensate aters		Defrost	Heaters	
		Fans per	120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OW3UM	8'	3	1.50	90	0.23	13.8	0.25 <sup>1</sup>	30	3.85	800	4.44	1065
	12'	4	2.00	120	0.31	18.4	0.38 <sup>1</sup>	46	5.77	1200	6.67	1600

1 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

# **Lighting Data**

		Bulbs			al per Row		mum iting
	_	per	Bulb	120	Volts	120	Volts
Model		Ŕow	Length	Amps	Watts	Amps	Watts
OW3UM	8'	2	4'	0.47	56	1.87	224
	12'	3	4'	0.70	84	2.80	336

## **Guidelines & Control Settings**

l	Model	<sup>2,3</sup> BTUH/ft		Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
I	OW3UM	1277 <sup>4</sup>	Enh.	22	6-8	27	45	225

2 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

			Electric	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse	Air Defrost
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
OW3UM	3	6 - 8	40	47	45	45	26	45	45	45

Medium Temperature Defrost Schedule

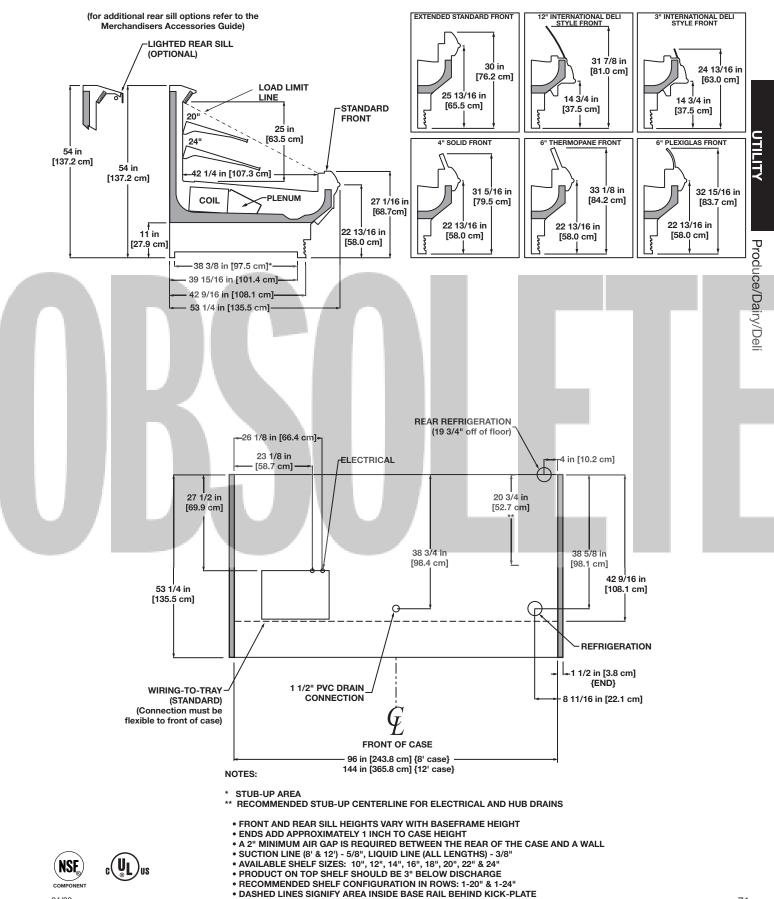
No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm

4 12 - 6 am - 12 - 6 pm









04/09

### **Electrical Data**

			Standar	d Fans	0	fficiency ans		ndensate aters		Defrost	Heaters	
	Fans per 120 Volts		120 Volts 120 Volts		208	Volts	240 Volts					
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O3UD	4'	2	1.00	60	0.15	9.2	0.14	17	1.92	400	2.22	532
	6'	2	1.00	60	0.15	9.2	0.20	24	2.88	600	3.33	798
	8'	3	1.50	90	0.23	13.8	0.25	30	3.85	800	4.44	1065
	12'	4	2.00	120	0.31	18.4	0.38	46	5.77	1200	6.67	1600

## **Lighting Data**

		Bulbs			al per t Row	Maxir Ligh						
		per	Bulb	120	Volts	120 \	/olts					
Model		Row	Length	Amps	Watts	Amps	Watts					
O3UD	4'	1	4'	0.23	28	0.70	84					
	6'	2	3'	0.37	44	1.10	132					
	8'	2	4'	0.47	56	1.40	168					
	12'	3	4'	0.70	84	2.10	252					
Guideli	ines	6 & Co	ontrol	Sett	ings				L			
Model		Front S Heights		TUH/ft	Coil Type	Evaporato (°F)	or Sup Point	erheat Set @ Bulb ( <sup>o</sup> f	rge Air F)	Retur (°F	Discharge Air Ve (FPM)	elocity <sup>4</sup>

30

45

225

1 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

Enh.

958<sup>3</sup>

22

2 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

6-8

3 Standard fans increase refrigeration load by 96 BTUH/fan.

Std. Dairy

4 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

O3UD

			Electric	c Defrost	Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
O3UD	3	6 - 8	40	47	45	45	26	45	45	45

Medium Temperature Defrost Schedule

No.	Per	Day	/ H	lours

72

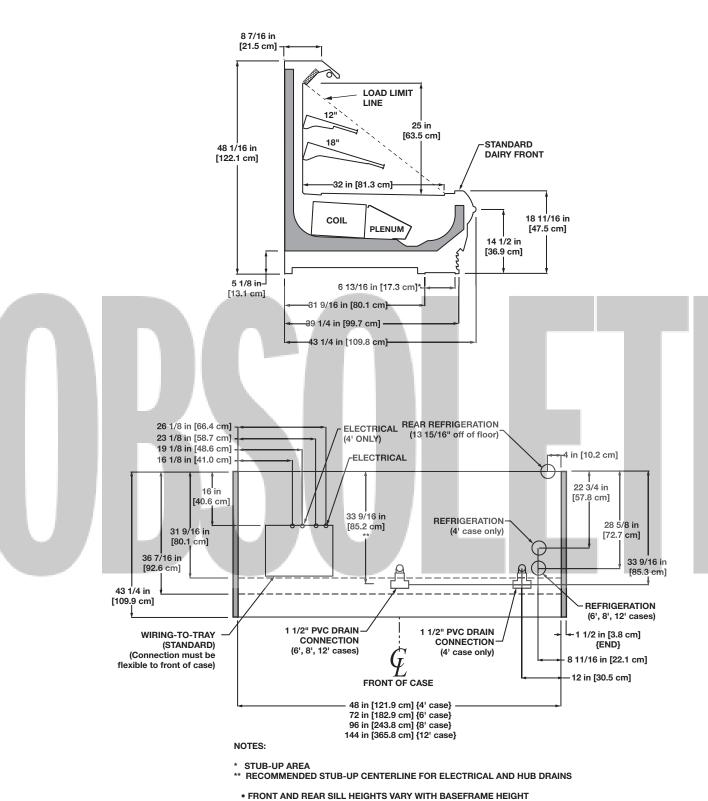
- 1 12 midnight 12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 2 3
- 4











• ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12" & 1-18"
 DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
SUCTION LINE (4' & 6') - 1/2", SUCTION LINE (8' & 12') - 5/8", LIQUID LINE (ALL LENGTHS) - 3/8"
AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE

UTILITY

# Narrow Multi-Deck Produce/Dairy/Deli/Meat/Seafood Merchandiser ON3.5UM - 4', 6', 8' & 12'

## **Electrical Data**

	Standard Fans		0	fficiency ans		ndensate iters	Defrost Heaters					
	Fans per		120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ON3.5UM	4'	2	1.00	60	0.15	9.2	0.14 <sup>1</sup>	17	1.92	400	2.22	532
	6'	2	1.00	60	0.15	9.2	0.20 <sup>1</sup>	24	2.88	600	3.33	798
	8'	3	1.50	90	0.23	13.8	0.25 <sup>1</sup>	30	3.85	800	4.44	1065
	12'	4	2.00	120	0.31	18.4	0.38 <sup>1</sup>	46	5.77	1200	6.67	1600

1 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

# **Lighting Data**

		Bulbs			al per Row	Maximum Lighting		
		per	Bulb	120	Volts	120	Volts	
Model		Row	Length	Amps	Watts	Amps	Watts	
ON3.5UM	4'	1	4'	0.23	28	1.67	140	
	6'	2	3'	0.37	44	1.83	220	
	8'	2	4'	0.47	56	2.33	280	
	12'	3	4'	0.70	84	3.50	420	

## **Guidelines & Control Settings**

Model	<sup>3,4</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb ( <sup>o</sup> F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
ON3.5UM <sup>2</sup>	927 <sup>5</sup>	Enh.	22	6-8	28	35	204

2 Model ON3.5UM only available for meat application with a thermopane glass front or a curved plexiglas front.

3 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

				Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Dav	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)							
ON3.5UM	3	6 - 8	40	47	45	45	26	45	45	45	

Medium Temperature Defrost Schedule

No.	Per	Day	Hours

1 12 midnight

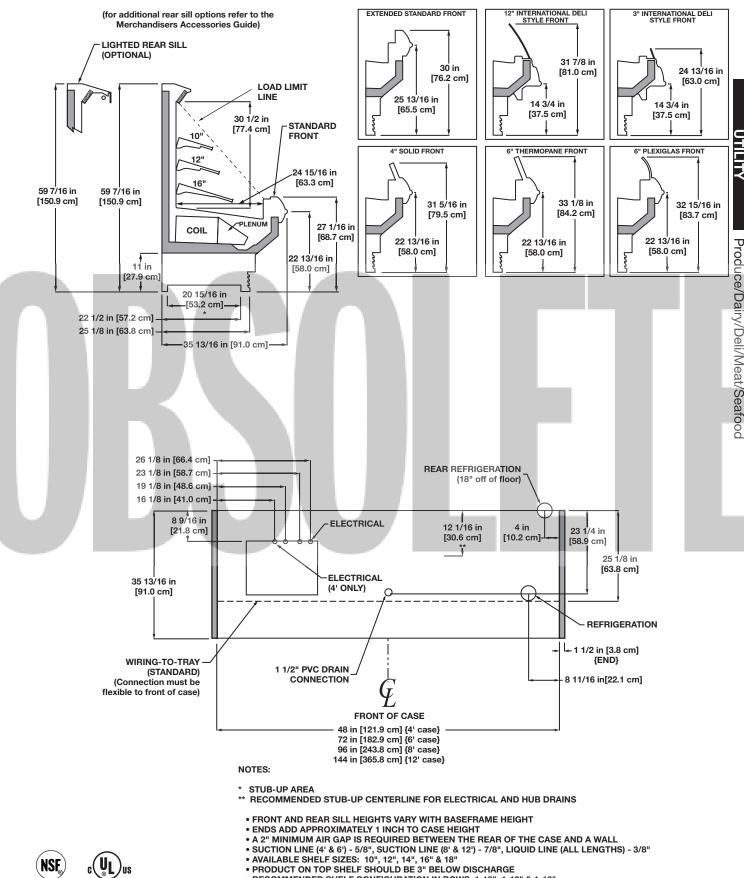
2 3

12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 4



## **ON3.5UM** (11" BASEFRAME)

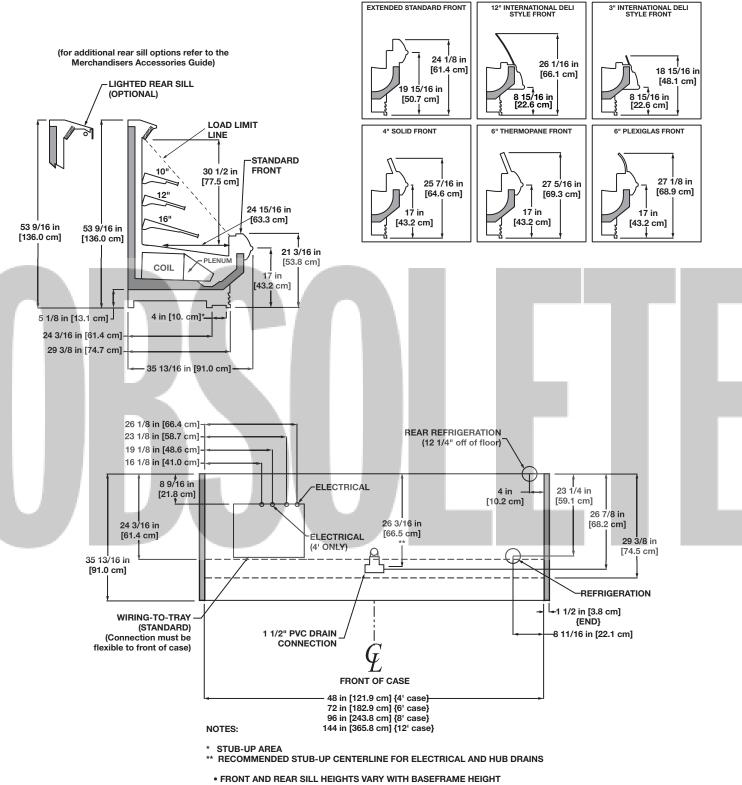




- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-10", 1-12" & 1-16"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

## ON3.5UM (5" BASEFRAME)





- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (4' & 6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8"



UTILITY



# Multi-Deck Produce/Dairy/Deli/Meat/Seafood Merchandiser 03.5UM - 4', 6', 8' & 12'

## **Electrical Data**

	Standard Fans				0	High Efficiency Fans		ndensate aters	Defrost Heaters			
	Fans per		120 \	/olts	120	Volts	120 Volts		208	Volts	240 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O3.5UM	4'	2	1.00	60	0.39	23.4	0.14 <sup>1</sup>	17	1.92	400	2.22	532
	6'	2	1.00	60	0.39	23.4	0.20 <sup>1</sup>	24	2.88	600	3.33	798
	8'	3	1.50	90	0.59	35.1	0.25 <sup>1</sup>	30	3.85	800	4.44	1065
	12'	4	2.00	120	0.78	46.8	0.38 <sup>1</sup>	46	5.77	1200	6.67	1600

1 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

# **Lighting Data**

		Bulbs			Light	al per Row	Ligh	mum nting
		per		Bulb	120	Volts	120	Volts
Model		Row	ļ	Length	Amps	Watts	Amps	Watts
03.5UM	4'	1	Γ	4'	0.23	28	1.67	140
	6'	2	Γ	3'	0.37	44	1.83	220
	8'	2	Γ	4'	0.47	56	2.33	280
	12'	3		4'	0.70	84	3.50	420

## Guidelines & Control Settings

	Model <sup>2</sup>	<sup>3,4</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb ( <sup>o</sup> F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
I	03.5UM	1208 <sup>5</sup>	Enh.	22	6-8	30	45	300

2 Model O3.5UM only available for meat application with a thermopane glass front or a curved plexiglas front.

3 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

	Electric Defrost				Timed Off Defrost		Hot Ga	s Defrost	Reverse Air Defrost	
	Defrosts	Run-Off	Fail-safe	Termination	Fail-safe	Termination	Fail-safe	Termination	Fail-safe	Termination
Model	Per Day	Time (min)	(min)	Temp. (°F)	(min)	Temp. (°F)	(min)	Temp. (°F)	(min)	Temp. (°F)
O3.5UM	3	6 - 8	40	47	45	45	26	45	45	45

Medium Temperature Defrost Schedule

No.	Per	Day	/ Hours

1 12 midnight

2 12 am - 12 pm

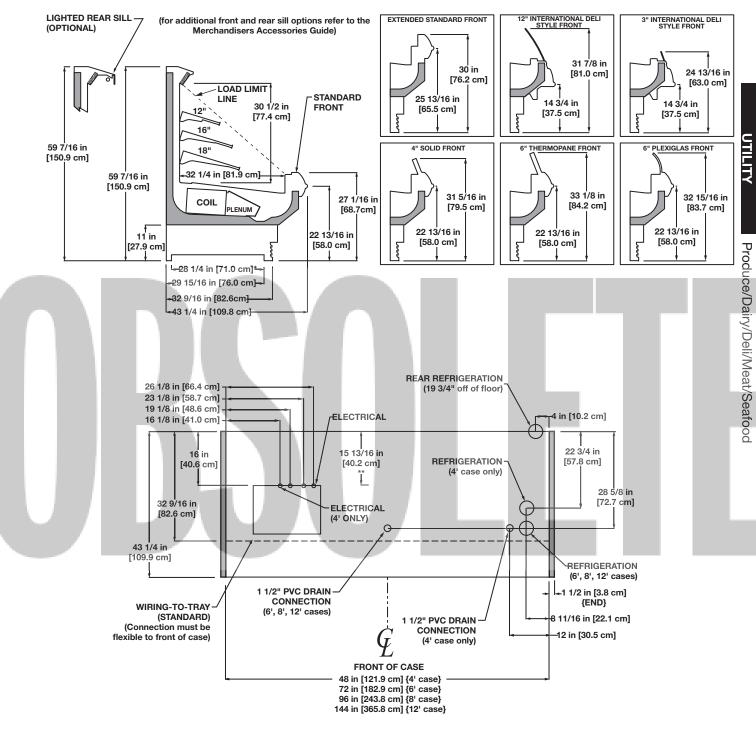
3 6 am - 2 pm - 10 pm 4 12 - 6 am - 12 - 6 pm





## **O3.5UM** (11" BASEFRAME)





NOTES:

STUB-UP AREA

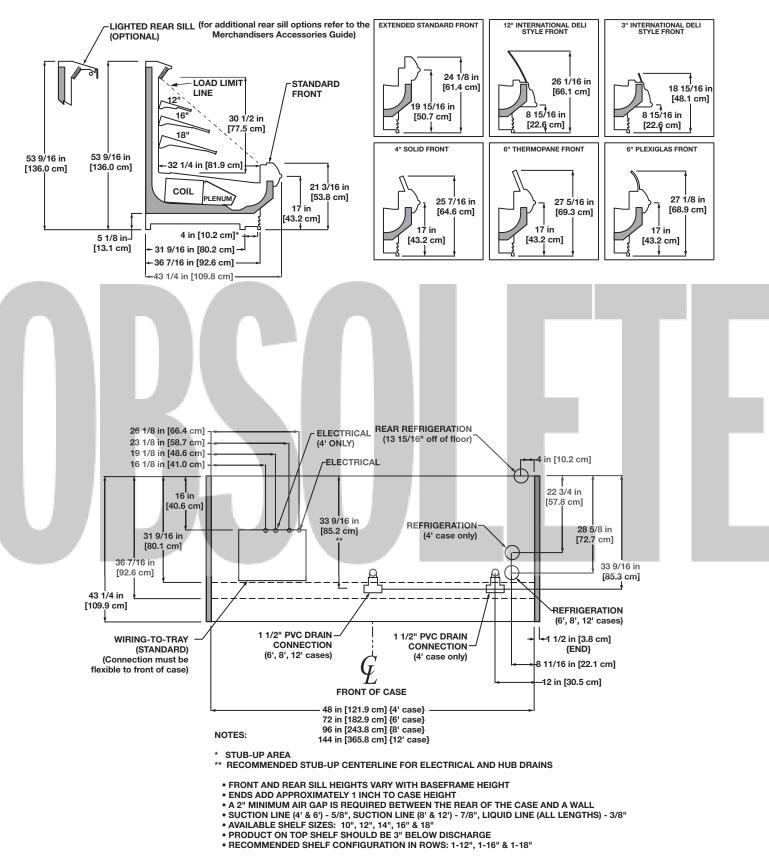
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (4' & 6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12", 1-16" & 1-18"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



04/09

## O3.5UM (5" BASEFRAME)







UTILITY



## Multi-Deck Produce/Dairy/Deli Merchandiser O3.5UD - 4', 6', 8' & 12'

## **Electrical Data**

			Standar	d Fans	0	fficiency ans		ndensate aters		Defrost	Heaters	
	Fans per		120 Volts		120 Volts		120 Volts		208 Volts		240 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O3.5UD	4'	2	1.00	60	0.15	9.2	0.14	17	1.92	400	2.22	532
	6'	2	1.00	60	0.15	9.2	0.20	24	2.88	600	3.33	798
	8'	3	1.50	90	0.23	13.8	0.25	30	3.85	800	4.44	1065
	12'	4	2.00	120	0.31	18.4	0.38	46	5.77	1200	6.67	1600

## **Lighting Data**

1			Bulbs per	Bulb	Light	al per Row Volts	Ligh	mum iting Volts	
	Model		Row	Length	Amps	Watts	Amps	Watts	
	O3.5UD	4'	1	4'	0.23	28	0.93	112	
		6'	2	3'	0.37	44	1.47	176	
		8'	2	4'	0.47	56	1.87	224	
		12'	3	4'	0.70	84	2.80	336	
				- A.					

## **Guidelines & Control Settings**

	_								
	Model	Front Sill Heights	<sup>1,2</sup> BTUH/ft	Coil <sup>2</sup> Type	Evaporator (°F)	Superheat Set Point @ Bulb ( <sup>o</sup> F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>4</sup> (FPM)
I	O3.5UD	Std. Dairy	1208 <sup>3</sup>	Enh.	22	6-8	30	45	300

1 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

2 Listed case BTUH/t indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

3 Standard fans increase refrigeration load by 96 BTUH/fan.

4 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

			Electric Defrost		Timed Off Defrost		Hot Ga	s Defrost	Reverse Air Defrost		
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
O3.5UD	3	6 - 8	40	47	45	45	26	45	45	45	

Medium Temperature Defrost Schedule

No.	Per	Day	Hours

12 midnight 12 am - 12 pm 1

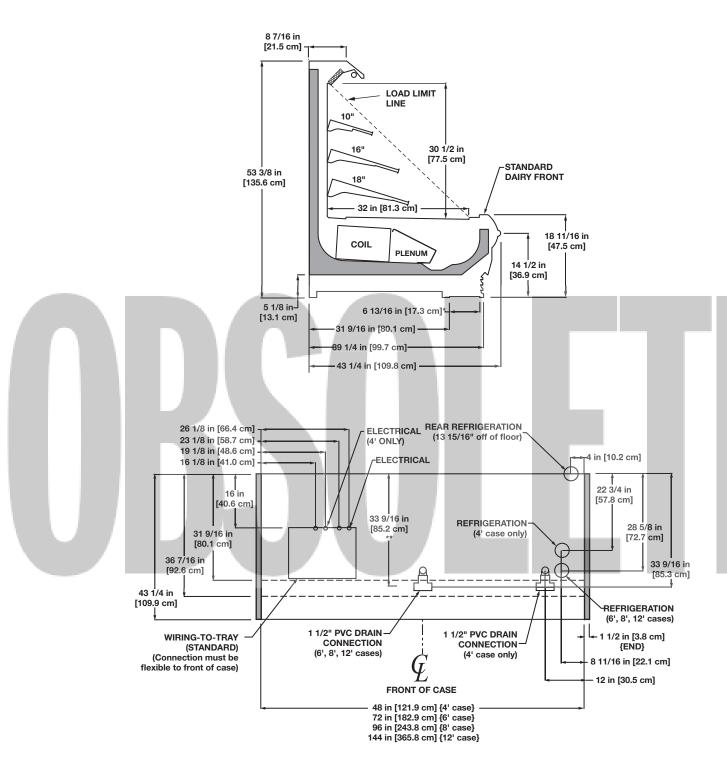
2

6 am - 2 pm - 10 pm 3 4 12 - 6 am - 12 - 6 pm









NOTES:

- STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
  SUCTION LINE (4' & 6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8"
  AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
  PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-10", 1-16" & 1-18"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

NSF

# Narrow Multi-Deck Produce/Dairy/Deli Merchandiser ON4UM - 4', 6', 8' & 12'

## **Electrical Data**

			Standar	d Fans	0	fficiency ans		ndensate aters		Defrost	Heaters	
	Fans per		120 Volts		120 Volts		120 Volts		208 Volts		240 Volts	
Mode	1	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ON4U	VI 4	' 2	1.00	60	0.15	9.2	0.14 <sup>1</sup>	17	1.92	400	2.22	532
	6	' 2	1.00	60	0.15	9.2	0.20 <sup>1</sup>	24	2.88	600	3.33	798
	8	' 3	1.50	90	0.23	13.8	0.25 <sup>1</sup>	30	3.85	800	4.44	1065
	12	' 4	2.00	120	0.31	18.4	0.38 <sup>1</sup>	46	5.77	1200	6.67	1600

1 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

# **Lighting Data**

		Bulbs		Light	al per Row	Maximum Lighting 120 Volts		
Model		per Row	Bulb Length	Amps	Volts Watts	Amps	Watts	
ON4UM	4'	1	4'	0.23	28	1.67	140	
	6'	2	3'	0.37	44	1.83	220	
	8'	2	4'	0.47	56	2.33	280	
	12'	3	4'	0.70	84	3.50	420	

## **Guidelines & Control Settings**

Model	<sup>3,4</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb ( <sup>o</sup> F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
ON4UM <sup>2</sup>	1043 <sup>5</sup>	Enh.	22	6-8	31	33	203

2 Model ON4UM only available for deli application with a thermopane glass front or a curved plexiglas front.

3 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.13.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

l				Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
l	ON4UM	4	6 - 8	40	47	45	45	26	45	45	45

Medium Temperature Defrost Schedule

No.	Per	Day	/ Hours

1 12 midnight

2 12 am - 12 pm

3 6 am - 2 pm - 10 pm 4 12 - 6 am - 12 - 6 pm







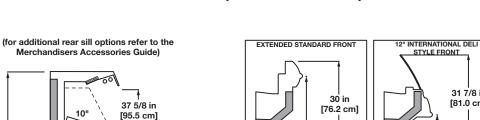


STYLE FRONT

3" INTERNATIONAL DELI

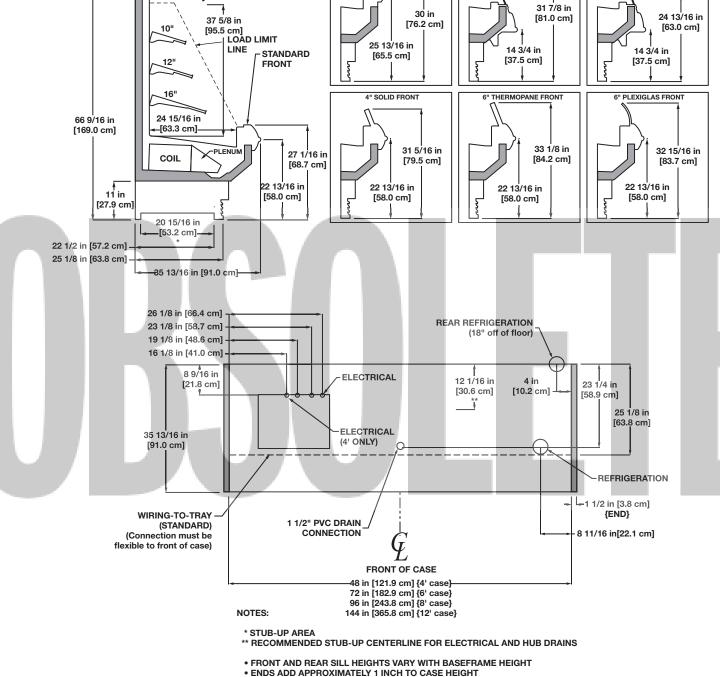
STYLE FRONT

Produce/Dairy/Deli



Merchandisers Accessories Guide)

60



• A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL

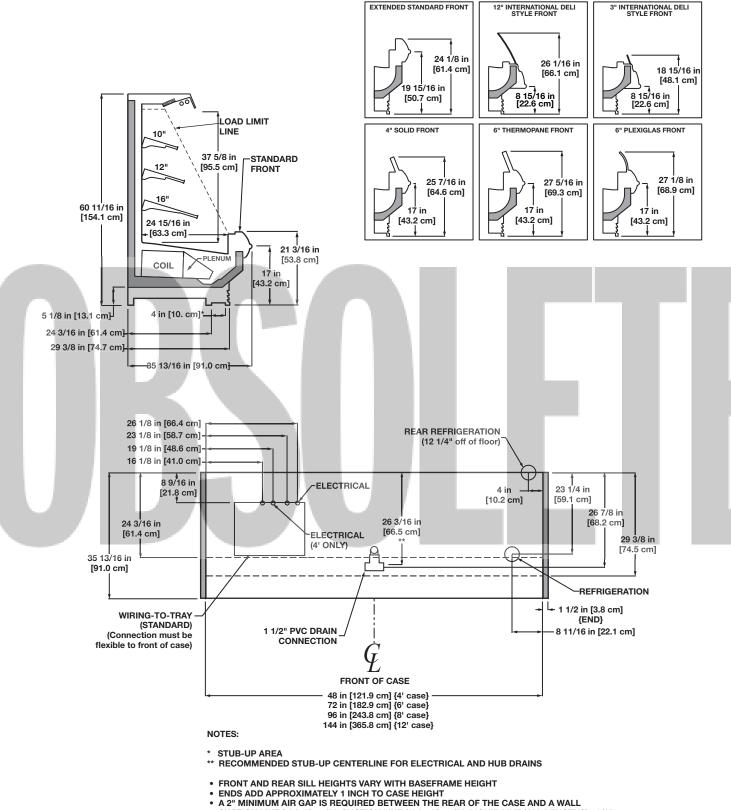
- SUCTION LINE (4' & 6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8"
   AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-10", 1-12" & 1-16"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

NSF

COMPONENT 04/09

ON4UM (5" BASEFRAME)





- SUCTION LINE (4' & 6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8"
  - AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18" - PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
    - RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-10", 1-12" & 1-16"

NSF



## Multi-Deck Produce/Dairy/Deli Merchandiser 04UM - 4', 6', 8' & 12'

## **Electrical Data**

			Standar	d Fans	0	fficiency ans		ndensate aters		Defrost	Heaters	
	Fans pe		120 Volts		120 Volts		120 Volts		208 Volts		240 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O4UM	4'	2	1.00	60	0.39	23.4	0.14 <sup>1</sup>	17	1.92	400	2.22	532
	6'	2	1.00	60	0.39	23.4	0.20 <sup>1</sup>	24	2.88	600	3.33	798
	8'	3	1.50	90	0.59	35.1	0.25 <sup>1</sup>	30	3.85	800	4.44	1065
	12'	4	2.00	120	0.78	46.8	0.38 <sup>1</sup>	46	5.77	1200	6.67	1600

1 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

# **Lighting Data**

		Bulbs			al per Row		mum nting
		per	Bulb	120	Volts	120	Volts
Model		Row	Length	Amps	Watts	Amps	Watts
O4UM	4	1	4'	0.23	28	1.67	140
	6	2	3'	0.37	44	1.83	220
	8	2	4'	0.47	56	2.33	280
	12	3	4'	0,70	84	3.50	420
				1.	-		

## Guidelines & Control Settings

۱	Model	<sup>3,4</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb ( <sup>o</sup> F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
1	O4UM <sup>2</sup>	1368 <sup>5</sup>	Enh.	22	6-8	30	43	300

2 Model O4UM only available for deli application with a thermopane glass front or a curved plexiglas front.

3 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.13.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

l		Electric Defrost				Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
	O4UM	4	6 - 8	40	47	45	45	26	45	45	45

Medium Temperature Defrost Schedule

No. Per Day	Hours	

1 12 midnight

2 12 am - 12 pm 3 6 am - 2 pm - 10 pm

4 12 - 6 am - 12 - 6 pm

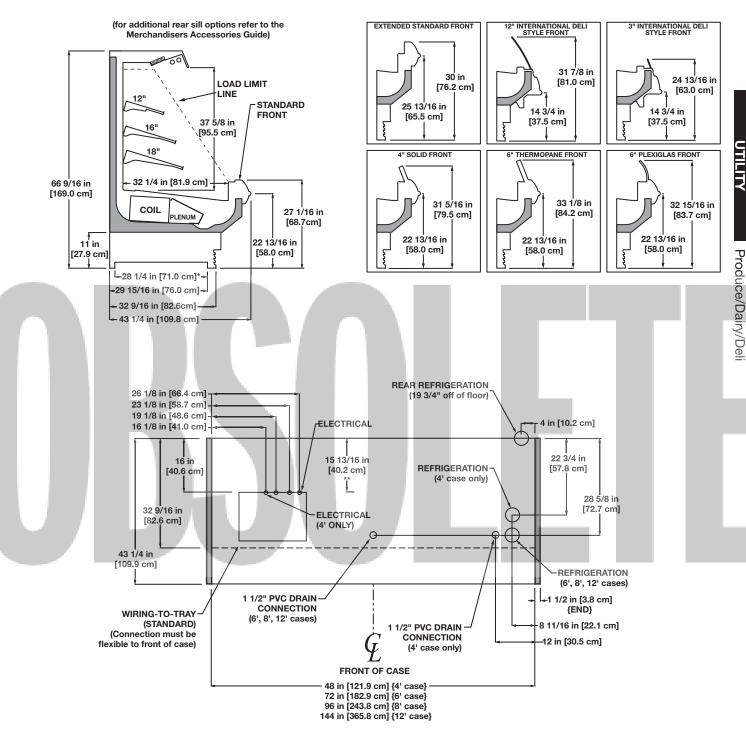




### **O4UM** (11" BASEFRAME)







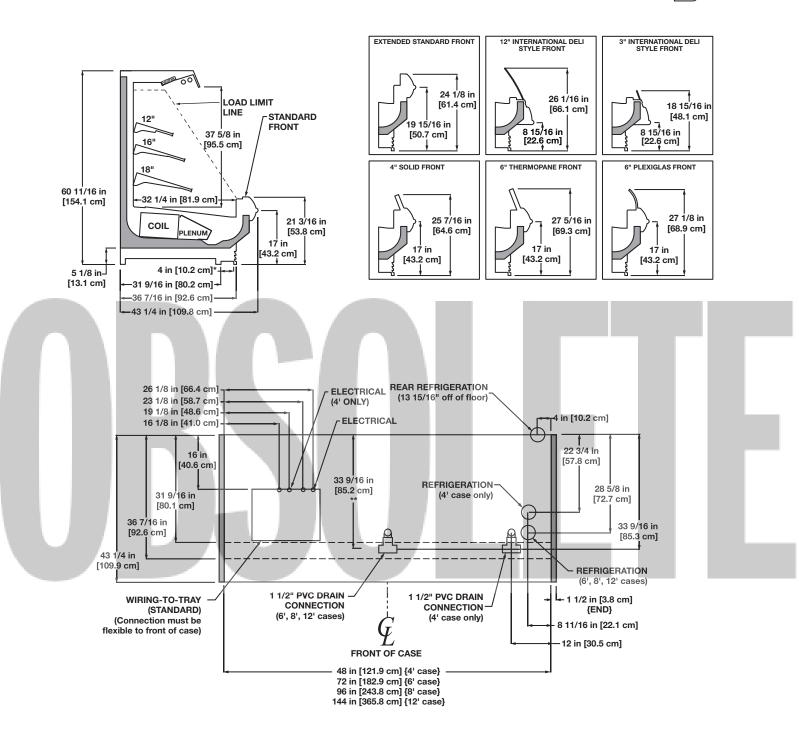
#### NOTES:

- \* STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
   A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (4' & 6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
- PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12", 1-16" & 1-18"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF)

**O4UM** (5" BASEFRAME)





#### NOTES:

STUB-UP AREA

- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
  - FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
  A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
  SUCTION LINE (4' & 6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8"
  AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
  PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12", 1-16" & 1-18"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE





#### **Electrical Data**

			Standar	d Fans	0	High Efficiency Fans		ndensate aters	Defrost Heaters			
	Fans per		120 Volts		120 Volts		120 Volts		208 Volts		240 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ON5UM	4'	2	1.00	60	0.39	23.4	0.14 <sup>1</sup>	17	1.92	400	2.22	532
	6'	2	1.00	60	0.39	23.4	0.20 <sup>1</sup>	24	2.88	600	3.33	798
	8'	3	1.50	90	0.59	35.1	0.25 <sup>1</sup>	30	3.85	800	4.44	1065
	12'	4	2.00	120	0.78	46.8	0.38 <sup>1</sup>	46	5.77	1200	6.67	1600

1 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

# **Lighting Data**

		Bulbs per		Bulb	Typical perMaximumLight RowLighting120 Volts120 Volts				
Model		Row	1	ength	Amps	Watts	Amps	Watts	
ON5UM	4'	1		4'	0.23	28	1.38	166	
	6'	2		3'	0.37	44	2.20	264	
	8'	2		4'	0.47	56	2.80	336	
	12'	3		4'	0.70	84	4.20	504	

## **Guidelines & Control Settings**

Model	<sup>3,4</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb ( <sup>o</sup> F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
ON5UM <sup>2</sup>	1093 <sup>5</sup>	Enh.	22	6-8	31	43	240

2 Model ON5UM only available for deli application with a thermopane glass front or a curved plexiglass front.

3 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.13.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

				c Defrost	Timed Off Defrost		Hot Ga	s Defrost	Reverse Air Defrost	
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
ON5UM	4	6 - 8	40	47	45	47	26	45	45	45

NSF

Defrost Schedule

No. Per Day Hours

1	12 mic	Inight	

2 12 am - 12 pm 3 6 am - 2 pm - 10 pm

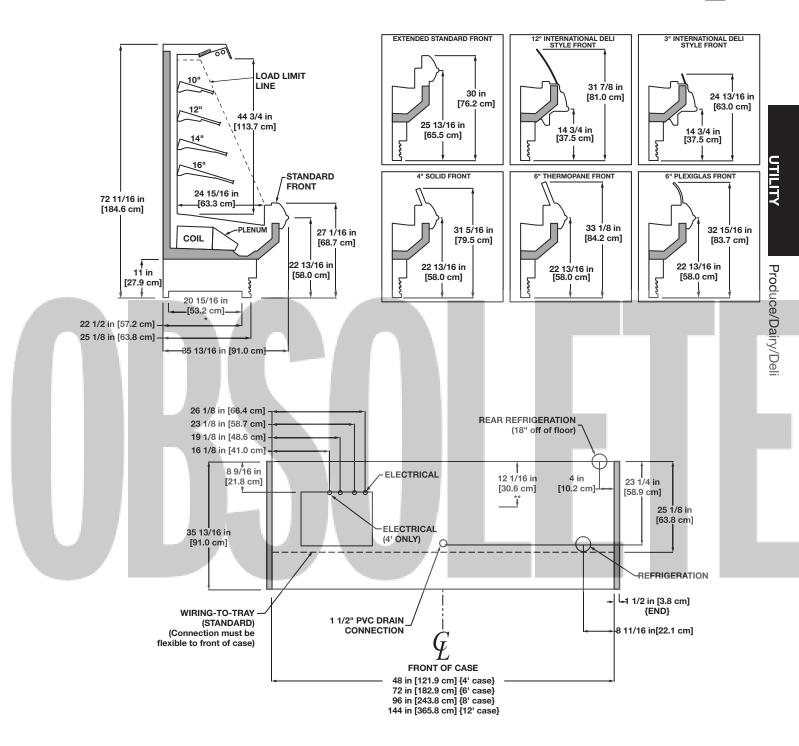
4 12 - 6 am - 12 - 6 pm





## ON5UM (11" BASEFRAME)





#### NOTES:

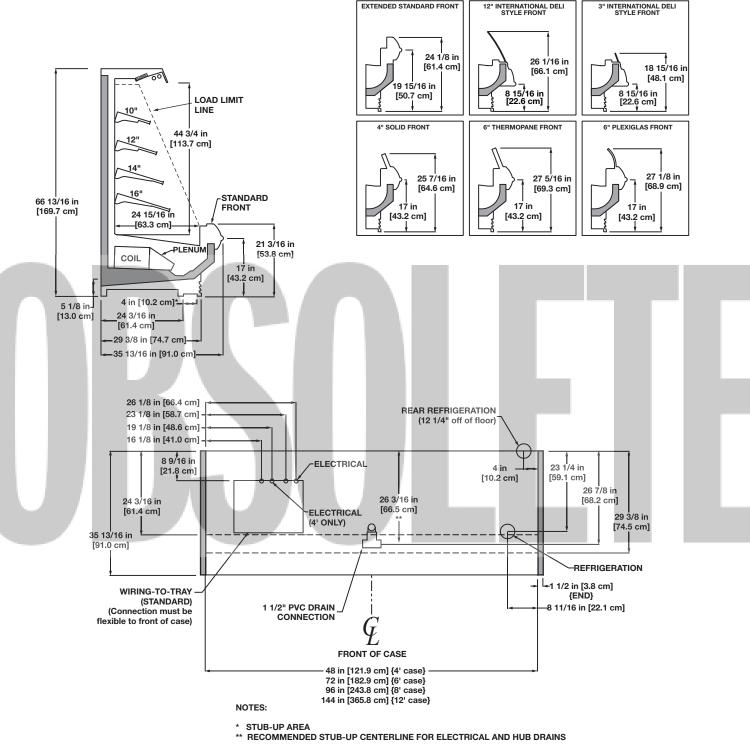
- \* STUB-UP AREA \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
   ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE 5/8", LIQUID LINE 3/8"
- AVAILABLE SHELF SIZES: 10", 12", 14" & 16"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-10", 1-12", 1-14" & 1-16"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE





**ON5UM** (5" BASEFRAME)





- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE 5/8", LIQUID LINE 3/8"
- AVAILABLE SHELF SIZES: 10", 12", 14" & 16"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-10", 1-12", 1-14" & 1-16"





## Multi-Deck Produce/Dairy/Deli Merchandiser O5UM - 4', 6', 8' & 12'

#### **Electrical Data**

			Standar	d Fans	0	fficiency ans		ndensate aters		Defrost	Heaters	
	Fans per		ans per 120 Volt		120	Volts	120 Volts		208 Volts		240 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O5UM	4'	2	1.00	60	0.39	23.4	0.14 <sup>1</sup>	17	1.92	400	2.22	532
	6'	2	1.00	60	0.39	23.4	0.20 <sup>1</sup>	24	2.88	600	3.33	798
	8'	3	1.50	90	0.59	35.1	0.25 <sup>1</sup>	30	3.85	800	4.44	1065
	12'	4	2.00	120	0.78	46.8	0.38 <sup>1</sup>	46	5.77	1200	6.67	1600

1 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

# **Lighting Data**

		Bulbs		Light	al per Row	Ligh	mum nting
		per	Bulb	120	Volts	120	Volts
Model		Row	Length	Amps	Watts	Amps	Watts
O5UM	4'	1	4'	0.23	28	1.38	166
	6'	2	3'	0.37	44	2.20	264
	8'	2	4'	0.47	56	2.80	336
	12'	3	4'	0.70	84	4.20	504

## **Guidelines & Control Settings**

Model	<sup>3,4</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb ( <sup>o</sup> F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
O5UM <sup>2</sup>	1378 <sup>5</sup>	Enh.	22	6-8	30	42	300

2 Model O5UM only available for dell application with a thermopane glass front or a curved plexiglas front.

3 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.13.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

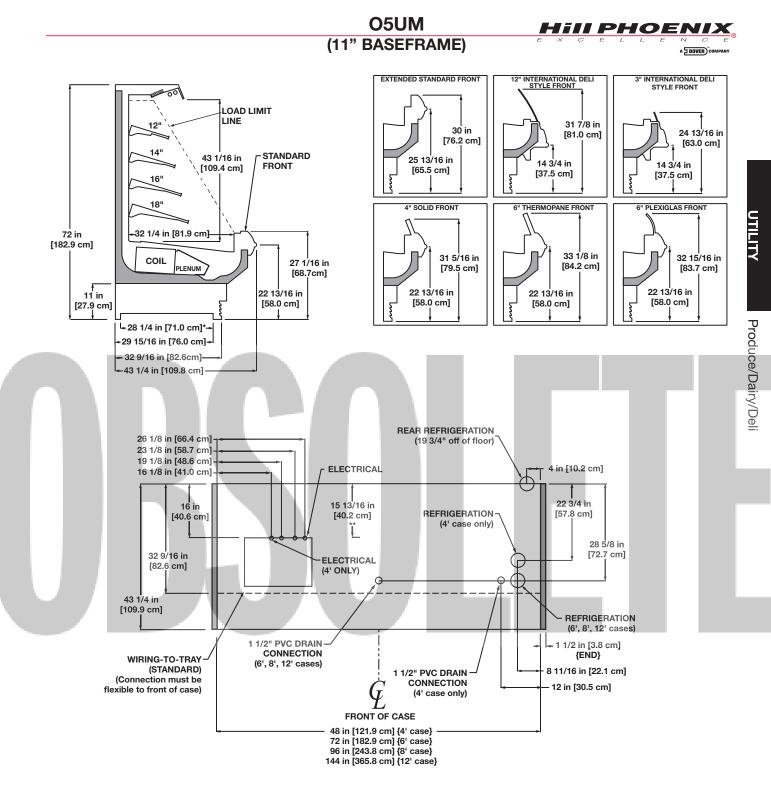
			Electric	c Defrost	Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
O5UM	4	6 - 8	40	47	45	47	26	45	45	45

Medium Temperature Defrost Schedule

Per	Dav	/ Hours	

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm





#### NOTES:

STUB-UP AREA

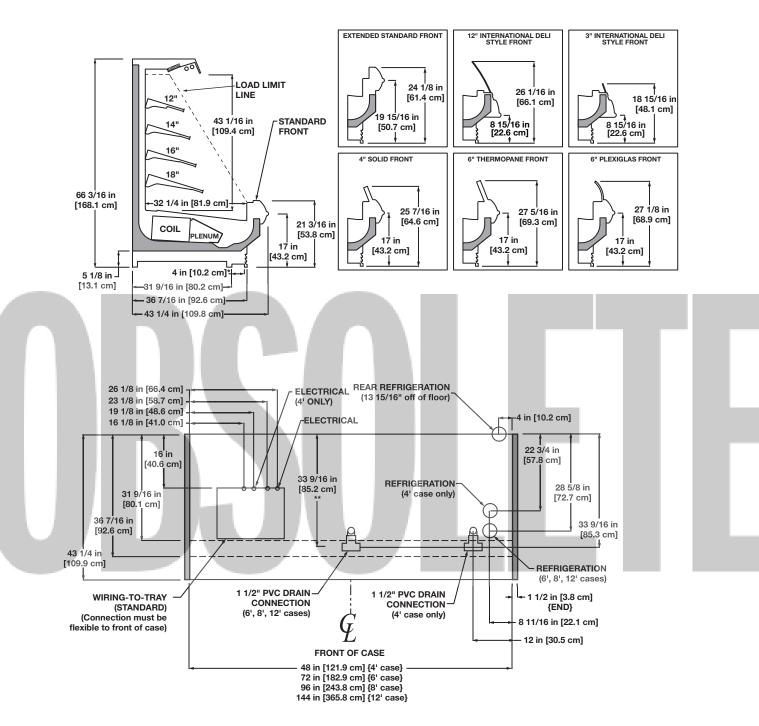
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (4' & 6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8"
  AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
  PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12", 1-14", 1-16" & 1-18"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE





**O5UM** (5" BASEFRAME)





NOTES:

STUB-UP AREA

- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (4' & 6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12", 1-14", 1-16" & 1-18"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



			Standar	d Fans	High Efficiency Fans		Anti-Condensate Heaters		Defrost Heaters			
		Fans per	120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ON6UM	8'	3	1.50	90	0.70	42	0.25 <sup>1</sup>	30	3.85	800	4.44	1065
	12'	4	2.00	120	0.93	56	0.38 <sup>1</sup>	46	5.77	1200	6.67	1600

1 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

# **Lighting Data**

		Bulbs			al per Row		mum nting
Model		per Row	Bulb Length	120 ' Amps	Volts Watts	120 Amps	Volts Watts
ON6UM	8'	2	4'	0.47	56	3.27	392
	12'	3	4'	0.70	84	4.90	588

## **Guidelines & Control Settings**

	Model	<sup>3,4</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb ( <sup>o</sup> F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
l	ON6UM <sup>2</sup>	960 <sup>5</sup>	Enh.	22	6-8	28	40	300

2 Model ON6UM only available for deli application with a thermopane glass front or a curved plexiglas front.

3 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.11. 4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

l					Electric Defrost		Timed Off Defrost		s Defrost	Reverse Air Defrost	
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
l	ON6UM	4	6 - 8	35	48	6		26	45		

6 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

No.	Per	Day	/ Hours

1 12 midnight

2	12	am - 12	pm
-	-	-	·

3 6 am - 2 pm - 10 pm 4 12 - 6 am - 12 - 6 pm

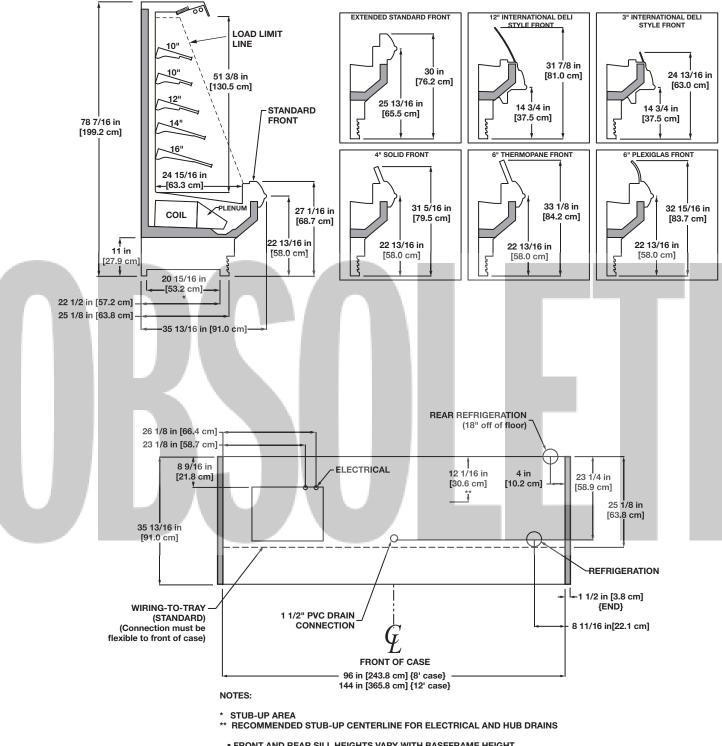




# ON6UM (11" BASEFRAME)



Produce/Dairy/Deli

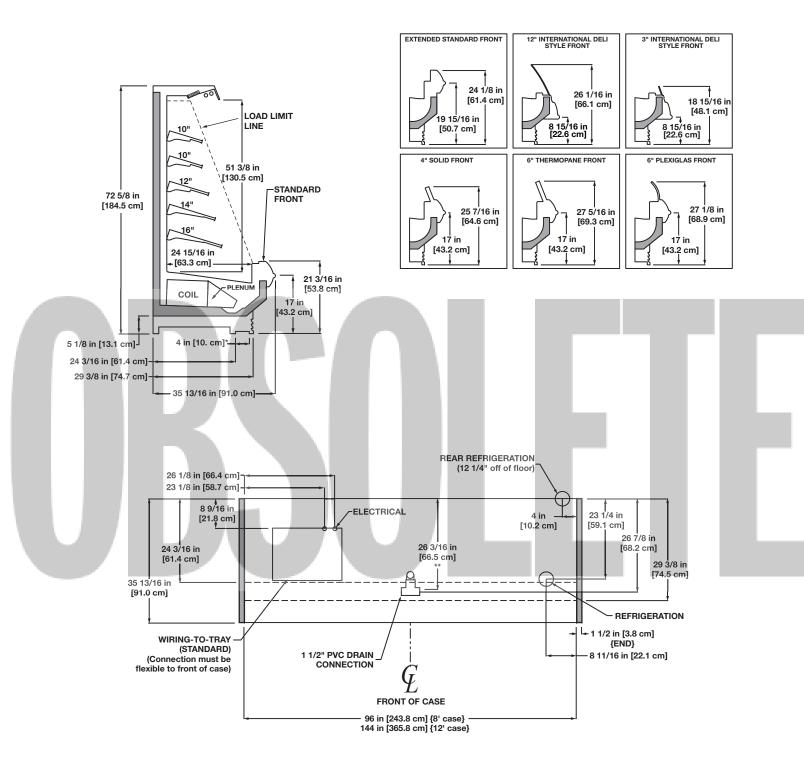


- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE 7/8", LIQUID LINE 3/8"
   AVAILABLE SHELF SIZES: 10", 12", 14" & 16"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 2-10", 1-12", 1-14" & 1-16"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



ON6UM (5" BASEFRAME)





NOTES:

STUB-UP AREA

\*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS

• FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT

• ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

• A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL

• SUCTION LINE - 7/8". LIQUID LINE - 1/2"





	Standa				High Efficien Standard Fans Fans			ndensate aters	Defrost Heaters			
	Fans per		120 Volts		120	Volts	120 Volts		208 Volts		240 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O6UM	6'	2	1.00	60	0.31	18.4	0.20 <sup>1</sup>	24	2.88	600	3.33	798
	8'	3	1.50	90	0.46	27.6	0.25 <sup>1</sup>	30	3.85	800	4.44	1065
	12'	4	2.00	120	0.61	36.8	0.38 <sup>1</sup>	46	5.77	1200	6.67	1600

1 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

## **Lighting Data**

		Bulbs per	Bulb	Light	al per Row Volts	Maximum Lighting 120 Volts		
Model		Row	Length	Amps	Watts	Amps	Watts	
O6UM	6'	2	3'	0.37	44	2.57	308	
	8'	2	4'	0.47	56	3.27	392	
	12'	3	4'	0.70	84	4.90	588	

#### **Guidelines & Control Settings**

	Model	<sup>3,4</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb ( <sup>o</sup> F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
1	O6UM <sup>2</sup>	1273⁵	Enh.	22	6-8	29	41	300

2 Model O6UM only available for deli application with a thermopane glass front or a curved plexiglas front.

3 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.11.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

l					Electric Defrost		Timed Off Defrost		s Defrost	Reverse Air Defrost	
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
	O6UM	4	6 - 8	35	48	6		26	45		

6 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

No.	Per	Dav	v .	Hours

1 12 midnight

2	-	12	am	- 12	pm
		-		-	·

3 6 am - 2 pm - 10 pm 4 12 - 6 am - 12 - 6 pm

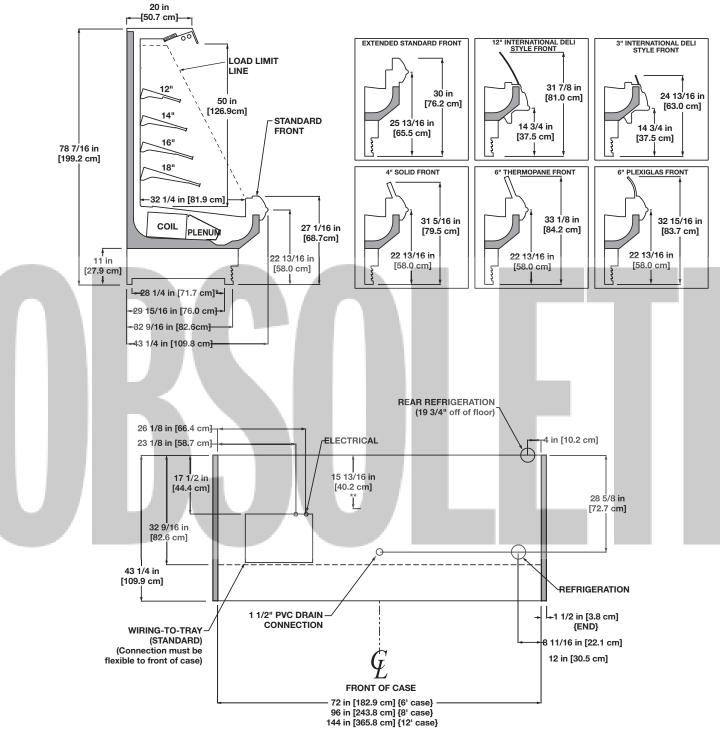




**O6UM** (11" BASEFRAME)



Produce/Dairy/Deli



NOTES:

\* STUB-UP AREA

- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8"
   AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE

- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12", 1-14", 1-16" & 1-18"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

COMPONENT 04/09

NSF

**O6UM** (5" BASEFRAME)



EXTENDED STANDARD FRONT 12" INTERNATIONAL DELI STYLE FRONT 3" INTERNATIONAL DELI STYLE FRONT 20 in [50.7 cm] 24 1/8 in 26 1/16 in ~ [61.4 cm] 18 15/16 ir [66.1 cm] [48.1 cm] LOAD LIMIT 19 15/16 in LINE 8 15/16 in [22.6 cm] 8 15/16 in [22.6 cm] [50.7 cm] 12" 42 1/2 in 4" SOLID FRONT 6" THERMOPANE FRONT PLEXIGLAS FRONT 6 14' [108.0 cm] STANDARD FRONT 72 1/2 in [184.2 cm] 16' 27 1/8 in 25 7/16 in 27 5/16 in 18" [64.6 cm] [68.9 cm] [69.3 cm] 17<sup>'</sup> in 17 in 17 in [43.2 cm] [43.2 cm] -32 1/4 in [81.9 cm]-[43.2 cm] 21 3/16 in COIL PLENUM [53.8 cm] 17 in 43.2 cm] 4 in [10.2 cm]\* 5 1/8 in -31 9/16 in [80.2 cm]-[13.1 cm] -36 7/16 in [92.6 cm] -43 1/4 in [109.8 cm] REAR REFRIGERATION (13 15/16" off of floor) 26 1/8 in [66.4 cm] 4 in [10.2 cm] ELECTRICAL 23 1/8 in [58.7 cm]  $\uparrow$ 16 in [40.6 cm] 28 5/8 in 33 9/16 in [72.7 cm] [85.2 cm] 31 9/16 in [80.1 cm] 33 9/16 in [85.3 cm] 36 7/16 in [92.6 cm] 43 1/4 in [109.9 cm] REFRIGERATION 1 1/2" PVC DRAIN-WIRING-TO-TRAY -(STANDARD) + 1 1/2 in [3.8 cm] CONNECTIO {END} (Connection must be 8 11/16 in [22.1 cm] flexible to front of case) FRONT OF CASE 72 in [182.9 cm] {6' case} 96 in [243.8 cm] {8' case} 144 in [365.8 cm] {12' case}

#### NOTES:

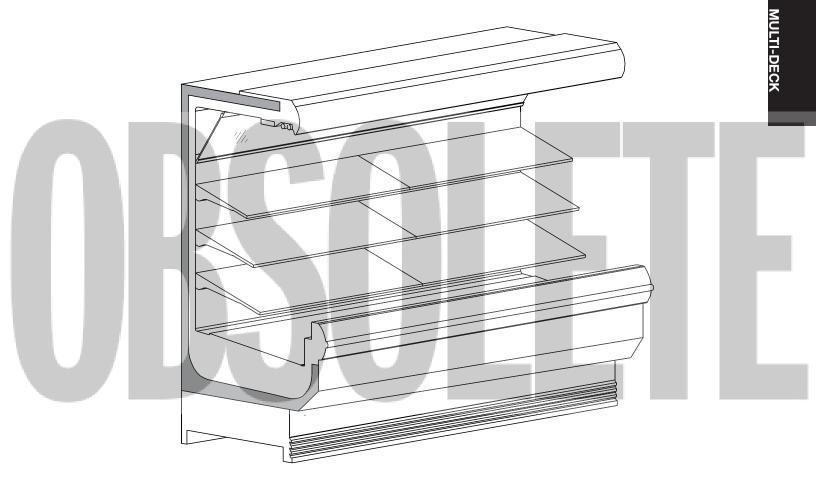
- STUB-UP AREA RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS \*\*
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
   A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (6') 5/8'', SUCTION LINE (8' & 12') 7/8'', LIQUID LINE (ALL LENGTHS) 3/8''
   AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12", 1-14", 1-16" & 1-18"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE







# **MULTI-DECK**



#### **NOTES**

- Cases shown with an ANSI/NSF\* Mark are Certified by NSF
- Cases shown with an UL\* Mark are Listed by Underwriters Laboratories Inc.
- Allow for an extra 1/8" per joint when lining up merchandisers.
- Technical information contained herein is subject to change without notice.

\* ANSI - American National Standard Institute NSF - National Sanitation Foundation UL - Underwriters Laboratories Inc

#### **System Requirements**

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Overcurrent Protection
ONN35UA	4'	120	1	60	2 wire + ground	23.63	45

#### **Electrical Data**

				Standa	rd Fans		lenser an		rain Imp	Evap Hea		Maxi Lig	mum hts
			Fans per	120	Volts	120	Volts	120	Volts	120 \	Volts	120 \	Volts
	Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
l	ONN35UA	4'	3	1.02	51	0.85	88	0.9	54	8.34	1000	0.57	68

# **Guidelines & Control Settings**

	24 hr Energy	Suction Pressure @	Superheat Set Point	Discharge Air	Return Air	Discharge Air Velocity <sup>1</sup>
Model	Usage (kWh)	Case Outlet (psig)	@ Bulb (°F)	(°F)	(°F)	(FPM)
ONN35UA		19.9	6-8	35	45	275

1 Average discharge air velocity at peak of defrost.

# **Condensing Unit Data**

		_		Frequency		RLA <sup>2</sup>	LRA <sup>3</sup>		lbs of
1	Model	Volts	Phase	(Hz)	HP	(amps)	(amps)	Refrig.	Refrig.
	ONN35UA	120	1	60	1/2	12.9	66.3	R134A	2

2 RLA - Running Load Amps.

3 LRA - Locked Rotor Amps.

# **Defrost Controls**

		Electri	c Defrost	Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
ONN35UA	3	40	47	4					

4 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

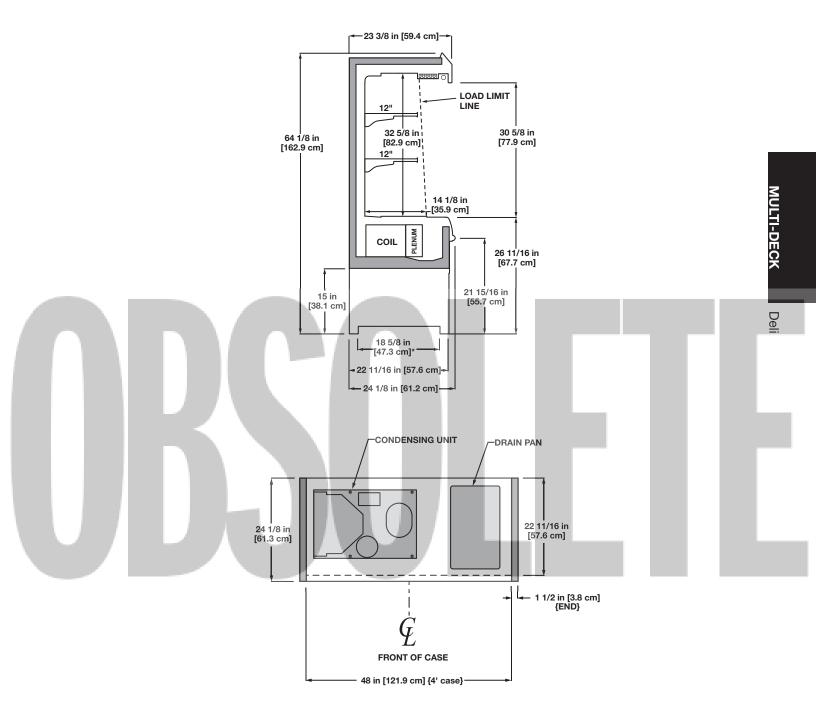
No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm

4 12 - 6 am - 12 - 6 pm









• DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



US

# Narrow Multi-Deck Produce/Dairy/Deli Merchandiser

# ON5DM - 4, 6', 8' & 12'

#### **Electrical Data**

			Standar	d Fans		High Efficiency Fans		ndensate aters	Defrost Heaters			
		Fans per	120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ON5DM	4'	2	1.00	60	0.47	28	1		1.92	400	2.22	532
	6'	3	1.50	90	0.70	42			2.88	600	3.33	798
	8'	4	2.00	120	0.93	56			3.85	800	4.44	1065
	12'	5	2.50	150	1.17	70			5.77	1200	6.67	1600

1 NOTE: "- - -" not an option on this case model.

# Lighting Data

		Bulbs			al per Row		mum nting
		per	Bulb	120	Volts	120	Volts
Model		Row	Length	Amps	Watts	Amps	Watts
ON5DM	4'	1	4'	0.23	28	2.10	252
	6'	2	3'	0.37	44	3.30	396
	8'	2	4'	0.47	56	4.20	504
	12'	3	4'	0.70	84	6.30	756

Guid	elines	2 (	Control	Settings
aura	CIIICO	u .	201101	octungs

Model	Front Sill Heights	<sup>2,3</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
ON5DM	Std. Dairy	1691 <sup>4</sup>	Enh.	22	6-8	32	47	215
Deli Dairy	2.5" Ext.	1646 <sup>4</sup>	Enh.	22	6-8	31	44	215
Cut Produce	5" Ext.	1619 <sup>4</sup>	Enh.	22	6-8	31	40	215
	7.5" Ext.	1561 <sup>4</sup>	Enh.	22	6-8	31	40	215
ON5DM	Std. Dairy	1550 <sup>4</sup>	Enh.	29	6-8	37	53	<b>2</b> 15
Beverage Bulk Produce	2.5" Ext.	1508 <sup>4</sup>	Enh.	29	6-8	36	52	215
	5" Ext.	1456 <sup>4</sup>	Enh.	29	6-8	36	52	215
	7.5" Ext.	1430 <sup>4</sup>	Enh.	29	6-8	36	52	215

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.10.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

	Electric Defrost				Timed C	Off Defrost	Hot Ga	s Defrost	Reverse Air Defrost	
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
ON5DM	4	6 - 8	32	47	42	47	26	45	42	45

Medium Temperature Defrost Schedule

No.	Per	Day	Hours

1 12 midnight

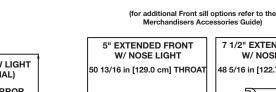


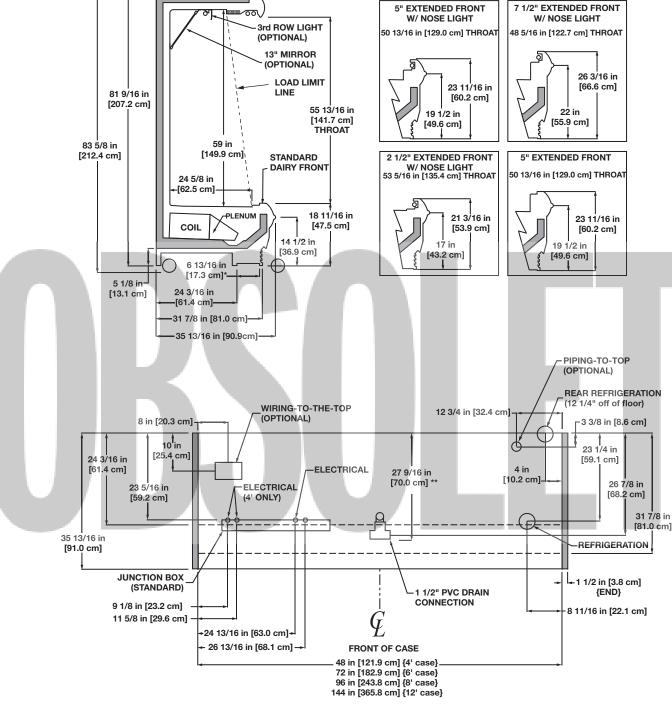


<sup>2</sup> 3

<sup>12</sup> am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 4







STUB-UP AREA

32 7/16 in [82.4 cm]

- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (4' & 6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18" TOP SHELF MUST BE 16" OR SHORTER.
   RECOMMENDED CONFIGURATION IS 16" SHELF AND 3 OR 4 18" SHELVES BELOW TOP SHELF)
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

NSF

COMPONENT

# Narrow Multi-Deck Self-Contained Produce/Dairy Merchandiser ON5DMA - 6' & 8'

#### **System Requirements**

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Overcurrent Protection
ON5DMA	6'	208	1	60	3 wire + ground	25.412	45
	8'	208	1	60	3 wire + ground	25.534	45

#### **Electrical Data**

			Standa	rd Fans		lenser an		rain ump	Evap Hea		Maximum Lights	
		Fans per	120 Volts		208 Volts		120 Volts		208 Volts		120 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ON5DMA	6'	3	1.50	90	1.10	114	1.10	66	7.21	1500	4.70	564
	8'	4	2.00	120	1.10	114	1.10	66	7.21	1500	4.70	564

# **Guidelines & Control Settings**

Model	Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>1</sup> (FPM)
ON5DMA-6'	52	6-8	31	44	215
ON5DMA-8'	52	6-8	31	44	215

1 Average discharge air velocity at peak of defrost.

# **Condensing Unit Data**

k				Frequency		RLA <sup>2</sup>	LRA <sup>3</sup>		lbs of
	Model	Volts	Phase	(Hz)	HP	(amps)	(amps)	Refrig.	Refrig.
	ON5DMA-6'	208	1	60	1 3/4	10.9	56	R404A	
1	ON5DMA-8'	208	-1	60	2 1/4	12.4	61	R404A	

2 RLA - Running Load Amps.

3 LRA - Locked Rotor Amps.

## **Defrost Controls**

l					c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse Air Defrost	
l	Model	Model Defrosts Run-Off Per Day Time (min)		Fail-safe (min)	Termination Temp. (°F)	Fail-safe Termination (min) Temp. (°F)		Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
l	ON5DMA	4	6 - 8	4		42	47				

4 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

No.	Per	Dav	Hours

1

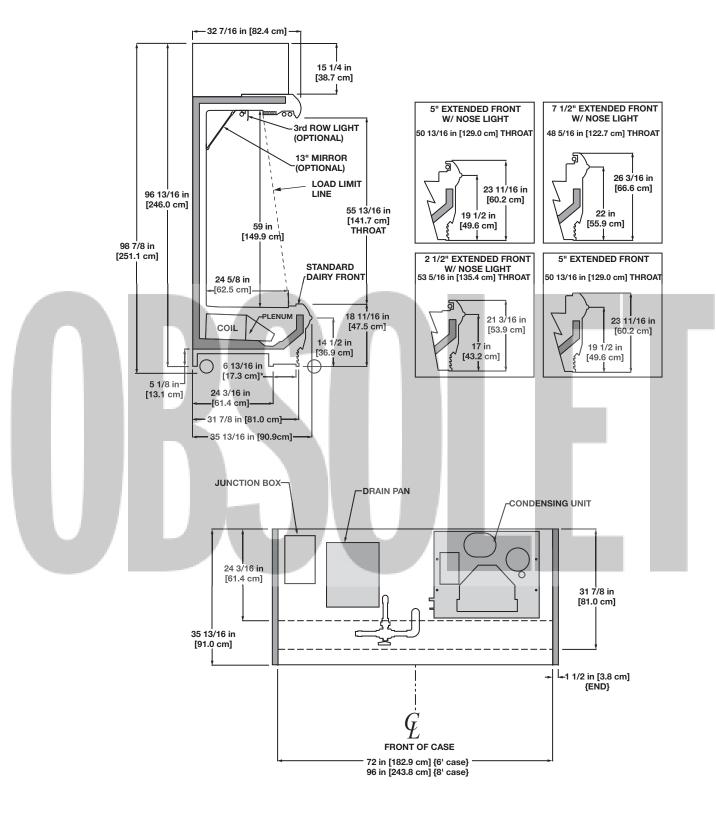
12 midnight 12 am - 12 pm 2

3 6 am - 2 pm - 10 pm 4 12 - 6 am - 12 - 6 pm









• FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT

- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18" TOP SHELF MUST BE 16" OR SHORTER.
   RECOMMENDED CONFIGURATION IS 16" SHELF AND 3 OR 4 18" SHELVES BELOW TOP SHELF
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

**MULTI-DECK** 

**Produce/Dairy** 

	Fans per		Standar	d Fans		ficiency Ins		ndensate aters	Defrost Heaters			
			120 Volts		120 Volts		120 Volts		208 Volts		240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ON5DMH	4'	2	1.00	60	0.47	28	<sup>1</sup>		1.92	400	2.22	532
	6'	3	1.50	90	0.70	42			2.88	600	3.33	798
	8'	4	2.00	120	0.93	56			3.85	800	4.44	1065
	12'	5	2.50	150	1.17	70			5.77	1200	6.67	1600

1 NOTE: "- - -" not an option on this case model.

# **Lighting Data**

		Bulbs per	Bulb		al per Row Volts	Maximum Lighting 120 Volts		
Model		Row	Length	Amps	Watts	Amps	Watts	
ON5DMH	4'	1	4'	0.23	28	2.10	252	
	6'	2	3'	0.37	44	3.30	396	
	8'	2	4'	0.47	56	4.20	504	
	12'	3	4'	0.70	84	6.30	756	

# **Guidelines & Control Settings**

Model	Front Sill Heights	<sup>2,3</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
ON5DMH	Std. Dairy	1720 <sup>4</sup>	Enh.	22	6-8	33	48	215
Dairy Cut Produce	2.5" Ext.	1675 <sup>4</sup>	Enh.	22	6-8	33	45	215
	5" Ext.	1659 <sup>4</sup>	Enh.	22	6-8	32	41	215
	7.5" Ext.	1580 <sup>4</sup>	Enh.	22	6-8	32	41	215
ON5DMH	Std. Dairy	1580 <sup>4</sup>	Enh.	29	6-8	37	54	215
Beverage Bulk Produce	2.5" Ext.	1520 <sup>4</sup>	Enh.	29	6-8	37	53	215
	5" Ext.	1488 <sup>4</sup>	Enh.	29	6-8	36	52	215
	7.5" Ext.	1475 <sup>4</sup>	Enh.	29	6-8	36	52	215

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.10.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

#### **Defrost Controls**

				c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse Air Defrost		
Model	Model Defrosts Run-Off Per Day Time (min)		Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
ON5DMH	4	6 - 8	32	47	42	47	26	45	42	45	

Medium Temperature Defrost Schedule

No.	Per	Day	/ Hours

1 12 midnight

2 3

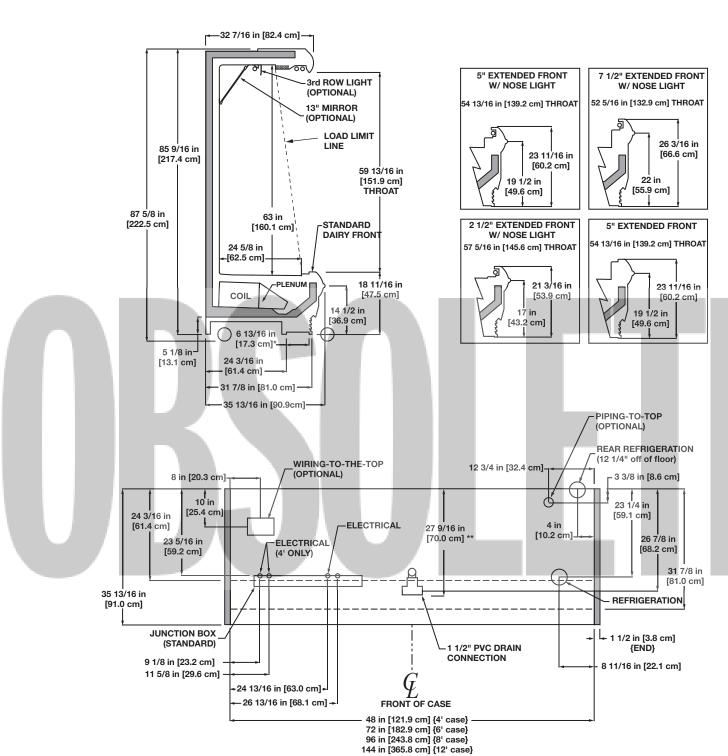
12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 4











STUB-UP AREA

- RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT

- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL SUCTION LINE (4' & 6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8" AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18" TOP SHELF MUST BE 16" OR SHORTER
- RECOMMENDED CONFIGURATION IS 16" SHELF AND 3 OR 4 18" SHELVES BELOW TOP SHELF
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

**NSF** 

COMPONENT

# Multi-Deck Produce/Dairy/Deli Merchandiser

# O5DM - 4', 6', 8' & 12'

#### **Electrical Data**

			Standa	rd Fan	High Ef Fa			ndensate iters		Defrost I	Heaters	
	Fans per		120 Volts		120 '	120 Volts		120 Volts		/olts	240 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O5DM	4'	2	1.00	60	0.47	28	1		1.92	400	2.22	532
	6'	2	1.00	60	0.47	28			2.88	600	3.33	798
	8'	3	1.50	90	0.70	42			3.85	800	4.44	1065
	12'	4	2.00	120	0.93	56			5.77	1200	6.67	1600

1 NOTE: "- - -" not an option on this case model.

# **Lighting Data**

		Bulbs		Typic Light	al per Row	Maxi Ligh	
		per	Bulb	120	Volts	120 Volts	
Model		Row	Length	Amps	Watts	Amps	Watts
O5DM	4'	1	4'	0.23	28	2.10	252
	6'	2	3'	0.37	44	3.30	396
	8'	2	4'	0.47	56	4.20	504
	12'	3	4'	0.70	84	6.30	756

# **Guidelines & Control Settings**

ľ	Model	Front Sill Heights	<sup>2,3</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
	O5DM	2.5" Ext.	1458 <sup>4</sup>	Enh.	22	6-8	30	44	270
	Deli	5" Ext.	1418 <sup>4</sup>	Enh.	22	6-8	30	44	270
		7.5" Ext.	1388 <sup>4</sup>	Enh.	22	6-8	30	44	270
	O5DM	Std. Dairy	1358 <sup>4</sup>	Enh.	26	6-8	34	47	270
	Dairy Cut Produce	2.5" Ext.	1319 <sup>4</sup>	Enh.	26	6-8	34	47	270
B.		5" Ext.	1289 <sup>4</sup>	Enh.	26	6-8	34	47	270
		7.5" Ext.	1258 <sup>4</sup>	Enh.	26	6-8	34	47	270
	O5DM	Std. Dairy	<b>13</b> 78 <sup>4</sup>	Enh.	29	6-8	36	52	270
1	Beverage Bulk Produce	2.5" Ext.	1338 <sup>4</sup>	Enh.	29	6-8	36	52	270
		5" Ext.	1308 <sup>4</sup>	Enh.	29	6-8	36	52	270
		7.5" Ext.	1278 <sup>4</sup>	Enh.	29	6-8	36	52	270

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.10.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

#### **Defrost Controls**

l				Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
	O5DM	4	6 - 8	32	47	42	47	26	45	42	45

Medium Temperature Defrost Schedule

No.	Per	Day	/ Hours

1 12 midnight

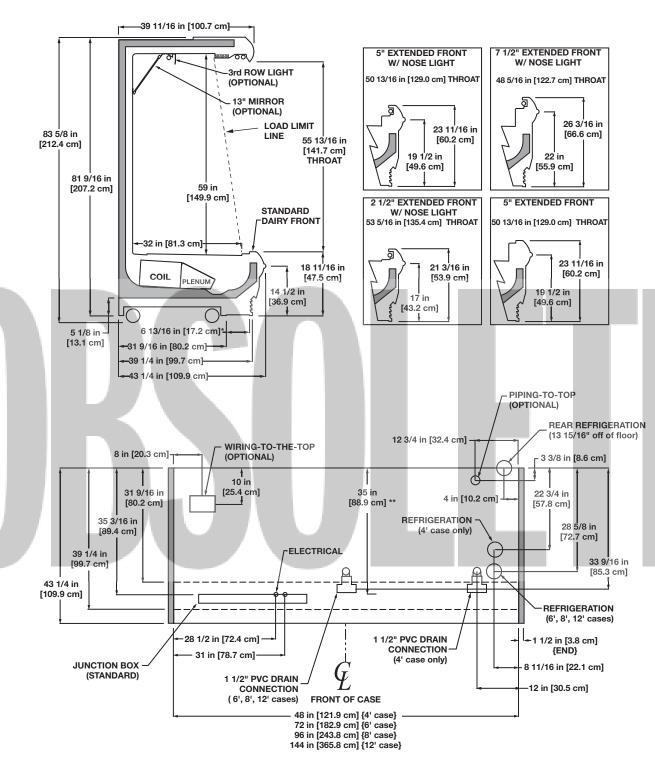
2 3

12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 4









- STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (4' & 6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18", 20", 22" & 24"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF<sub>g</sub>)

COMPONENT

#### **System Requirements**

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Overcurrent Protection
O5DMA	4'	208	1	60	3 wire + ground	22.096	35
	6'	208	1	60	3 wire + ground	23.034	40
	8'	208	1	60	3 wire + ground	23.934	45

#### **Electrical Data**

				Standard Fans		Condenser Fan		Drain Pump		Evap. Pan Heater		Maxi Lig	mum hts
I			Fans per	120	20 Volts 208 Volts		120 Volts		208 Volts		120 Volts		
	Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
	O5DMA	4'	2	1.00	60	0.85	88	1.10	66	7.21	1500	3.18	382
ľ		6'	2	1.00	60	1.10	114	1.10	66	7.21	1500	4.59	551
Í		8'	3	1.50	90	2.60	270	1.10	66	7.21	1500	4.59	551

# **Guidelines & Control Settings**

Model	24 hr Energy Usage (kWh)	Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>†</sup> (FPM)
O5DMA-4'		52	6-8	30	44	250
O5DMA-6'		52	6-8	30	44	250
O5DMA-8'		52	6-8	30	44	250

Average discharge air velocity at peak of defrost.

## **Condensing Unit Data**

I	Model	Volts	Phase	Frequency (Hz)	НР	RLA <sup>2</sup> (amps)	LRA <sup>3</sup> (amps)	Refrig.	lbs of Refrig.
1	O5DMA-4'	208	1	60	-1	9.6	51	R404A	4.5
	O5DMA-6'	208	1	60	1 3/4	10.9	56	R404A	
	O5DMA-8'	208	1	60	2 1/4	12.4	61	R404A	9.7

2 RLA - Running Load Amps.

3 LRA - Locked Rotor Amps.

## **Defrost Controls**

I			Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
l	Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
	O5DMA	4	4		42	47				

4 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

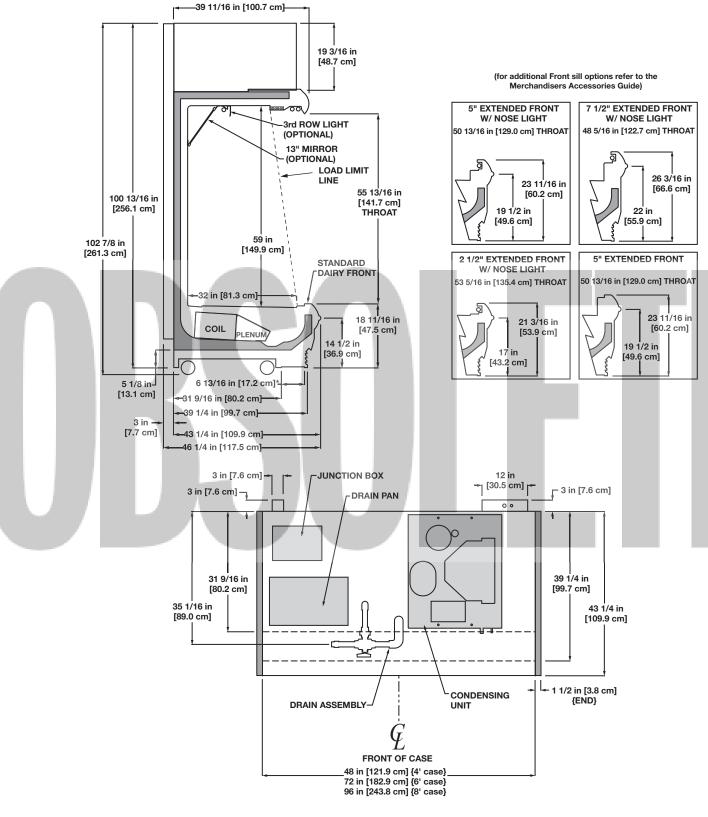
No.	Per	Day	Hours

- 12 midnight 1 2
- 3
- 12 am 12 pm 6 am 2 pm 10 pm 12 6 am 12 6 pm 4









• FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT • A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL

- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18", 20", 22" & 24"
   ADASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF<sub>®</sub>)

COMPONENT

MULTI-DECK

Produce/Dairy/Deli

# High Multi-Deck Produce/Dairy/Deli Merchandiser

# O5DMH - 4', 6', 8' & 12'

#### **Electrical Data**

				rd Fan	High Efficiency Fans		Anti-Condensate Heaters		Defrost Heaters			
	Fans per		120 Volts		120 Volts		120 Volts		208 Volts		240 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O5DMH	4'	2	1.00	60	0.47	28	1		1.92	400	2.22	532
	6'	3	1.50	90	0.70	42			2.88	600	3.33	798
	8'	4	2.00	120	0.93	56			3.85	800	4.44	1065
	12'	5	2.50	150	1.17	70			5.77	1200	6.67	1600

1 NOTE: "- - -" not an option on this case model.

# **Lighting Data**

		Bulbs			al per Row	Maximum Lighting		
		per	Bulb	120	Volts	120 Volts		
Model		Row	Length	Amps	Watts	Amps	Watts	
O5DMH	4'	1	4'	0.23	28	2.10	252	
	6'	2	3'	0.37	44	3.30	396	
	8'	2	4'	0.47	56	4.20	504	
	12'	3	4'	0.70	84	6.30	756	

# Guidelines & Control Settings

Model	Front Sill Heights	<sup>2,3</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
O5DMH	2.5" Ext.	1500 <sup>4</sup>	Enh.	22	6-8	31	43	250
Deli	5" Ext.	1450 <sup>4</sup>	Enh.	22	6-8	31	43	250
	7.5" Ext.	1420 <sup>4</sup>	Enh.	22	6-8	31	43	250
O5DMH	Std. Dairy	1435 <sup>4</sup>	Enh.	26	6-8	35	47	265
Dairy Cut Produce	2.5" Ext.	1380 <sup>4</sup>	Enh.	26	6-8	35	47	265
	5" Ext.	1350 <sup>4</sup>	Enh.	26	6-8	35	47	265
	7.5" Ext.	1320 <sup>4</sup>	Enh.	26	6-8	35	47	265
O5DMH	Std. Dairy	1375 <sup>4</sup>	Enh.	29	6-8	37	52	270
Beverage Bulk Produce	2.5" Ext.	1335 <sup>4</sup>	Enh.	29	6-8	36	53	270
	5" Ext.	1306 <sup>4</sup>	Enh.	29	6-8	36	52	270
	7.5" Ext.	1277 <sup>4</sup>	Enh.	29	6-8	36	52	270

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.10.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

#### **Defrost Controls**

ľ				Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
	O5DMH	4	6 - 8	32	47	42	47	26	45	42	45

Medium Temperature Defrost Schedule

No. Per Day Hours

1 12 midnight

2 12 am - 12 pm

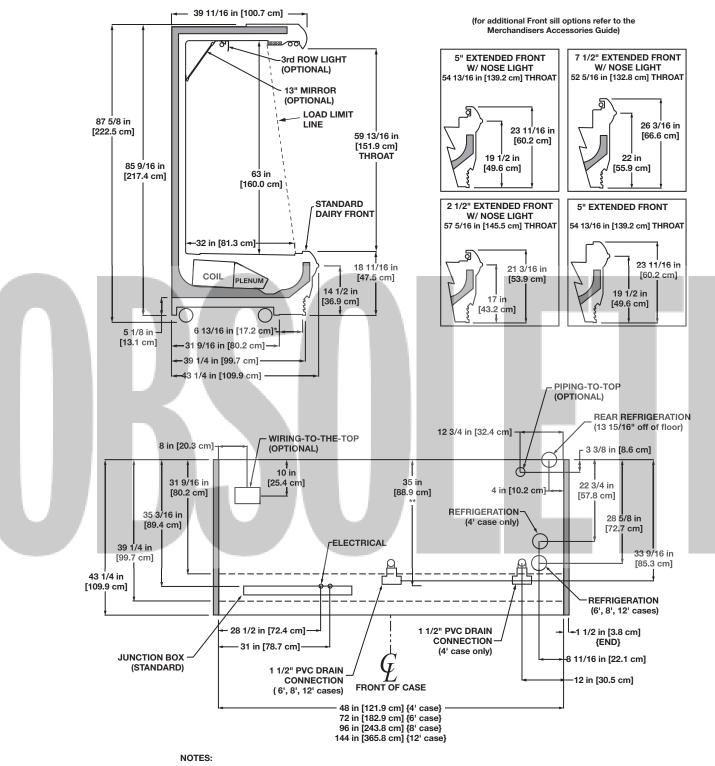
3 6 am - 2 pm - 10 pm 4 12 - 6 am - 12 - 6 pm

4 12 - 6 am - 12 - 6 pm









STUB-UP AREA

- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
  - FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT
  - ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

  - WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
    A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
    SUCTION LINE (4' & 6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8"
    AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18", 20", 22" & 24"
    DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

**NSF**<sub>®</sub>

MULTI-DECK

Produce/Dairy/Deli

			Standa	rd Fan	High Ef Fa			ndensate iters		Defrost I	Heaters	
		Fans per	120 \	/olts	120	Volts	120	Volts	208 \	/olts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O5DR	8'	4	3.20	213	1.44	142	1		3.85	800	4.44	1065
	12'	5	4.00	267	1.80	178			5.78	1200	6.67	1600

1 NOTE: "- - -" not an option on this case model.

## **Lighting Data**

		Bulbs			al per Row	Maximum Lighting		
		per	Bulb	120	Volts	120	Volts	
Model		Row	Length	Amps	Watts	Amps	Watts	
O5DR	8'	2	4'	0.47	56	4.20	504	
	12'	3	4'	0.70	84	6.30	756	

# **Guidelines & Control Settings**

Model	Front Sill Heights	<sup>2,3</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Di	scharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
O5DR	Std. Dairy	1382 <sup>4</sup>	Enh.	22	6-8		32	47	275
Dairy	2.5" Ext.	1382 <sup>4</sup>	Enh.	22	6-8		32	46	275
	5" Ext.	1333 <sup>4</sup>	Enh.	22	6-8		32	42	275
	7.5" Ext.	1305 <sup>4</sup>	Enh.	22	6-8		32	42	275
O5DR	2.5" Ext.	13024	Enh.	26	6-8		35	48	275
Beverage	5" Ext.	<b>12</b> 69 <sup>4</sup>	Enh.	26	6-8		35	47	275

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.10.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

				Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)							
O5DR	4	6 - 8	32	47	45	47	26	45	42	45	

NSF

Medium Temperature Defrost Schedule

No. Per Day	Hours	

12 midnight 1 2

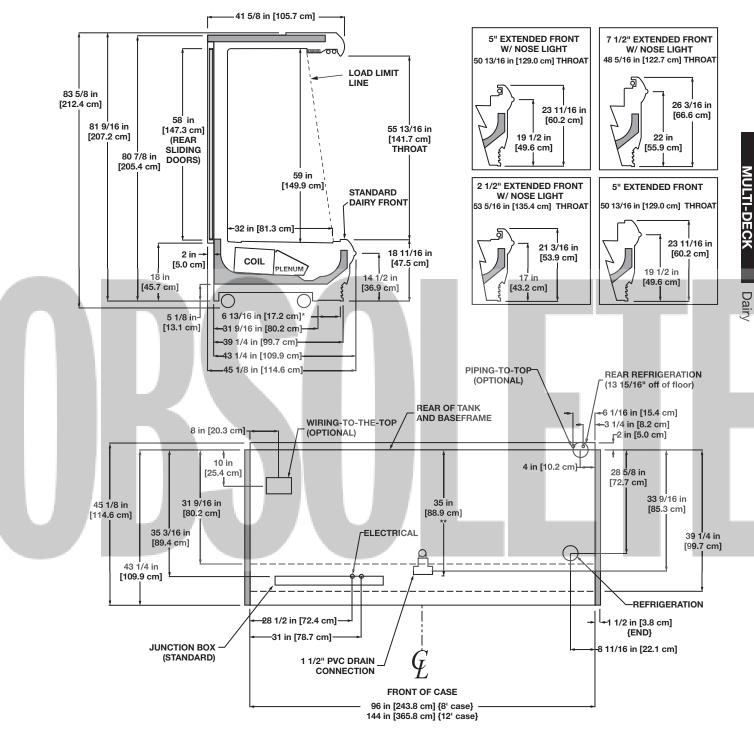
12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 3

4









- STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
   WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
- COOLER OPENING SHOULD BE 82" X CASE LENGTH
- SUCTION LINE 7/8", LIQUID LINE 3/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18", 20", 22" & 24"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF<sub>®</sub> COMPONENT

			Standa	rd Fan	High Ef Fa	,	Anti-Cor Hea	ndensate iters		Defrost I	Heaters	
		Fans per	120 \	/olts	120 \	Volts	120	Volts	208 \	/olts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O5DRH	8'	4	3.20	213	1.44	142	1		3.85	800	4.44	1065
	12'	5	4.00	267	1.80	178			5.78	1200	6.67	1600

1 NOTE: "- - -" not an option on this case model.

# **Lighting Data**

		Bulbs			al per Row		mum nting
		per	Bulb	120	Volts	120	Volts
Model		Row	Length	Amps	Watts	Amps	Watts
O5DRH	8'	2	4'	0.47	56	4.20	504
	12'	3	4'	0.70	84	6.30	756

# **Guidelines & Control Settings**

Model	Front Sill Heights	<sup>2,3</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Dis	scharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
O5DRH	Std. Dairy	1423 <sup>4</sup>	Enh.	22	6-8		32	47	275
Dairy	2.5" Ext.	1423 <sup>4</sup>	Enh.	22	6-8		32	46	275
	5" Ext.	1373 <sup>4</sup>	Enh.	22	6-8		32	42	275
	7.5" Ext.	1344 <sup>4</sup>	Enh.	22	6-8		32	42	275
O5DRH	2.5" Ext.	1341 <sup>4</sup>	Enh.	26	6-8		35	48	275
Beverage	5" Ext.	1307 <sup>4</sup>	Enh.	26	6-8		35	47	275

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.10.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan. 5 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

			Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
O5DRH	4	6 - 8	32	47	45	47	26	45	42	45

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm

3 4 6 am - 2 pm - 10 pm

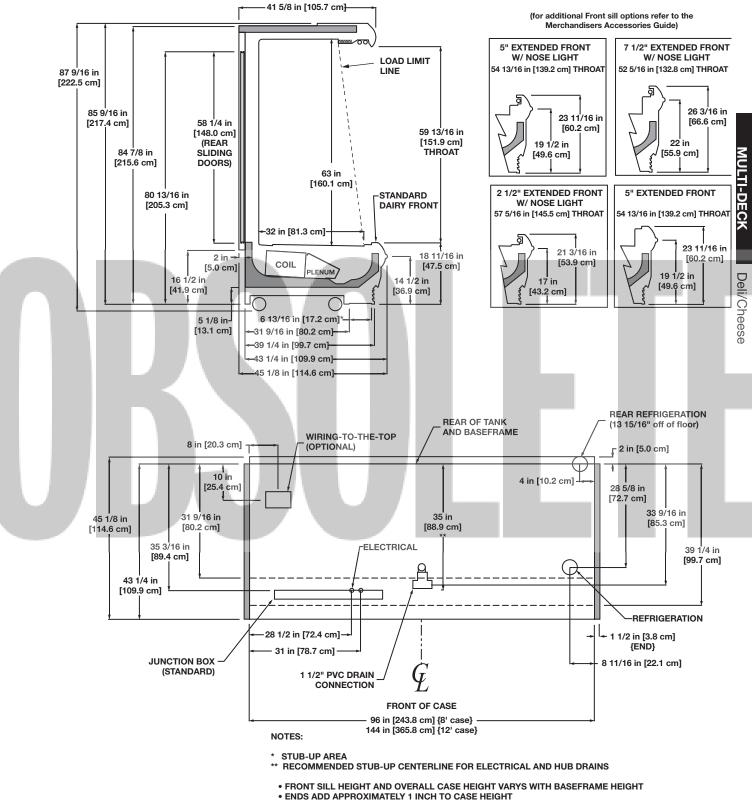
12 - 6 am - 12 - 6 pm











WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT

- COOLER OPENING SHOULD BE 86" X CASE LENGTH
- SUCTION LINE 7/8", LIQUID LINE 3/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18", 20", 22" & 24"



#### Multi-Deck Deli/Meat Merchandiser 05M - 4', 6', 8' & 12'

#### **Electrical Data**

			High Ef Fa			ndensate iters		Defrost I	Heaters	
		Fans per	120 \	Volts	120	Volts	208 \	/olts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O5M	4'	2	0.47	28	1		1.92	400	2.22	532
	6'	2	0.47	28			2.88	600	3.33	798
	8'	3	0.70	42			3.85	800	4.44	1065
	12'	4	0.93	56			5.77	1200	6.67	1600

1 NOTE: "- - -" not an option on this case model.

## **Lighting Data**

1			Bulbs	Bulb	Light	al per Row Volts	Maxi Ligh									
	Model		per Row	Length	Amps	Watts	Amps	Watts								
	O5M	4'	1	4'	0.23	28	1.15	138								
		6'	2	3'	0.37	44	1.85	222								
		8'	2	4'	0.47	56	2.35	282								
		12'	3	4'	0.70	84	3.50	420								
	Guideli	nes	s & C	ontrol	Setti	ings						E			ľ	1
				Fror	nt Sill		Coil	Evapor	ator Superheat	Set Dise	charge Air	Return Air	Discharge Air	· Velocity <sup>5</sup>		

Point @ Bulb (°F)

(°F)

26

(°F)

38

O5M Fresh Meat Thermopane 1680<sup>4</sup> Enh. 17 6-8

Height

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.20.

<sup>2,3</sup>BTUH/ft

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

(°F)

Type

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

Application

#### **Defrost Controls**

Model

128

				Electric Defrost		Timed Off Defrost		Hot Ga	s Defrost	Reverse Air Defrost		
	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
l	O5M	6	6 - 8	40	47	45	45	26	45	45	45	

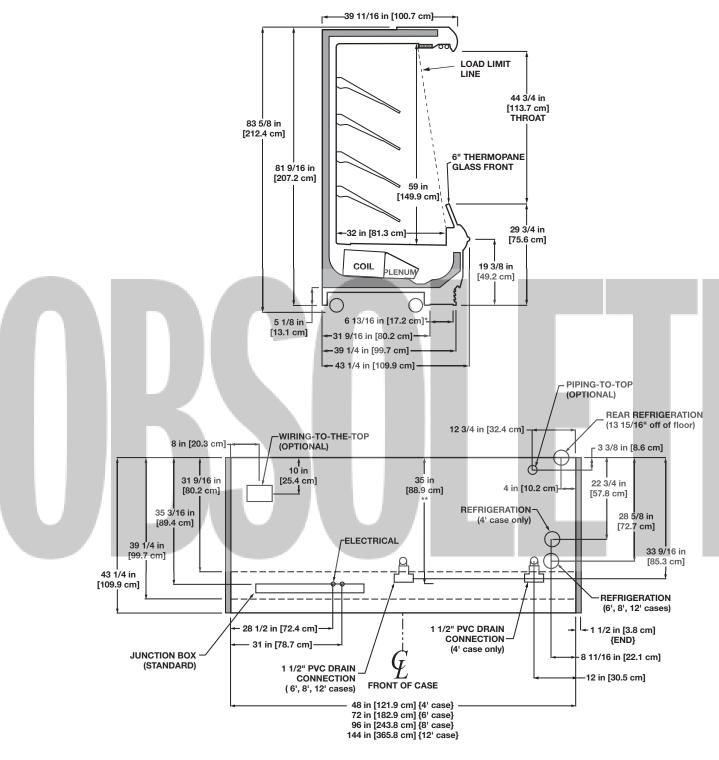




(FPM)

225





- STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL BACK PANELS ADD APPROXIMATELY 1" TO THE REAR OF THE CASE
- SUCTION LINE (4' & 6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8" AVAILABLE SHELF SIZES: 18" & 20" ARTICULATED ONLY (4 ROWS RECOMMENDED)
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF<sub>g</sub> COMPONENT 04/09

			High Efi Fa		Anti-Cor Hea			Defrost I	Heaters	
		Fans per	120 \	Volts	120	Volts	208 \	/olts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O5MR	8'	4	1.44	142	<sup>1</sup>		3.85	800	4.44	1065
	12'	5	1.80	178			5.78	1200	6.67	1600

1 NOTE: "- - -" not an option on this case model.

# **Lighting Data**

		Bulbs per	Bulb	Light 120	al per Row Volts	120	iting Volts
Model		Row	Length		Watts		Watts
O5MR	8'	2	4'	0.47	56	2.35	282
	12'	3	4'	0.70	84	3.50	420
						•	

#### **Guidelines & Control Settings**

Model	Application	Front Sill Height	<sup>2,3</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
O5MR	Fresh Meat	Thermopane	1587 <sup>4</sup>	Enh.	17	6-8	31	40	275

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.20.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

			Electric Defrost		Timed C	Off Defrost	Hot Ga	s Defrost	Reverse Air Defrost		
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
O5MR	6	6 - 8	40	47	45	45	26	45	45	45	

Medium Temperature Defrost Schedule

No.	Per	Day	Hours

 1
 12 midnight

 2
 12 am - 12 pm

 3
 6 am - 2 pm - 10 pm

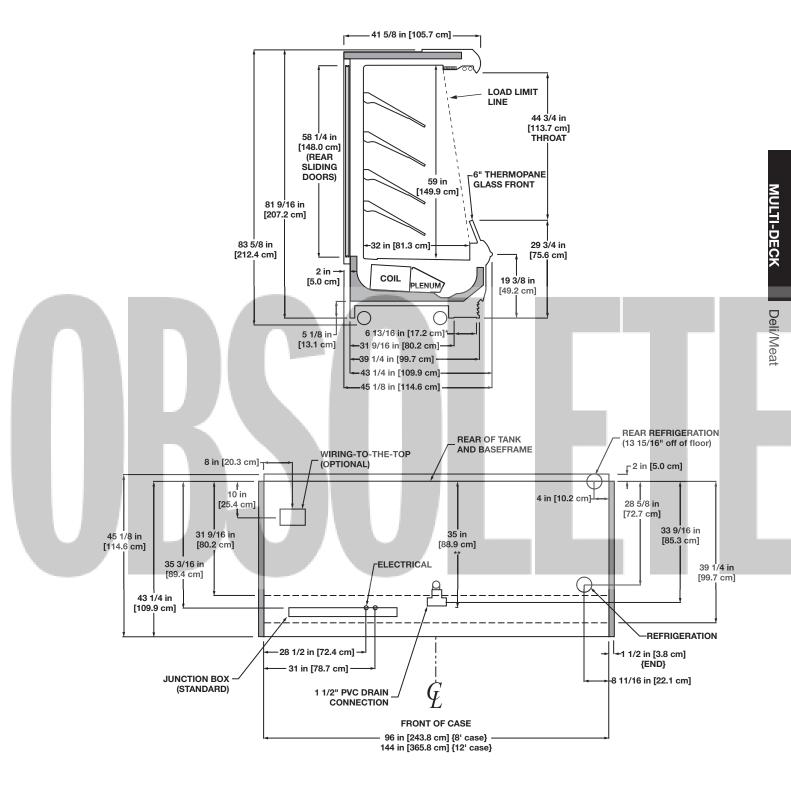
 4
 12 - 6 am - 12 - 6 pm











- \* STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
- SUCTION LINE 7/8", LIQUID LINE 3/8"
- AVAILABLE SHELF SIZES: 18" & 20" ARTICULATED ONLY (4 ROWS RECOMMENDED)
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF<sub>®</sub>)

COMPONENT

## Multi-Deck Frozen Food Merchandiser 05Z 22" FRONT - 6', 8' & 12'

#### **Electrical Data**

						Standar	d Fans	0	fficiency ans		ndensate aters		Defrost	Heaters	
	Fans per Case			120 Volts		120	Volts	120	Volts	208	Volts	240	Volts		
Model		Pri. <sup>1</sup>	Sec.	Amb.	Total	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O5Z	6'	4	2	2	8	4.56	280	1.47	124	2.25 <sup>2</sup>	270	9.99 <sup>3</sup>	3600	11.53 <sup>3</sup>	4794
	8'	5	3	2	10	5.70	352	1.84	155	3.10 <sup>2</sup>	344	13.32 <sup>3</sup>	4800	15.37 <sup>3</sup>	6390
	12'	7	4	3	14	7.98	490	2.57	217	4.18 <sup>2</sup>	493	20.00 <sup>3</sup>	7200	23.06 <sup>3</sup>	9585

1 Pri.=Primary, Sec.=Secondary, Amb.=Ambient

2 Cases equipped with windowed ends add 1.85 amps per end.

3 3 phase load. Figure given is maximum amps per phase.

# **Lighting Data**

		Bulbs		Typic Light	al per Row		mum nting
		per	Bulb	120	Volts	120	Volts
Model		Row	Length	Amps	Watts	Amps	Watts
O5Z	6'	2	3'	0.37	44	1.10	132
	8'	2	4'	0.47	56	1.40	168
	12'	3	4'	0.70	84	2.16	254

# **Guidelines & Control Settings**

			Superheat Set Point	Discharge	Return	Discha	arge Air Ve (FPM)	elocity <sup>7</sup>
Model	<sup>4, 5</sup> BTUH/ft	Evaporator (°F)	@bulb (°F)	Air (°F)	Air (°F)	Pri.	Sec.	Amb.
O5Z-22"	1683 <sup>6</sup>	-17	3-5	-5	0	650	425	275
O5Z-28"	1648 <sup>6</sup>	-17	3-5	-5	-5	650	425	275

4 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.08.

5 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

6 Standard fans increase refrigeration load by 96 BTUH/fan.

7 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

			Electric Defrost		Timed C	Off Defrost	Hot Ga	s Defrost	Reverse Air Defrost		
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
O5Z	3	13 - 15	34	50	<sup>8</sup>		24	60			

8 NOTE: "- - -" not an option on this case model.

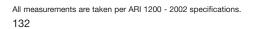
Low Temperature Defrost Schedule

 No. Per Day
 Hours

 1
 10 pm

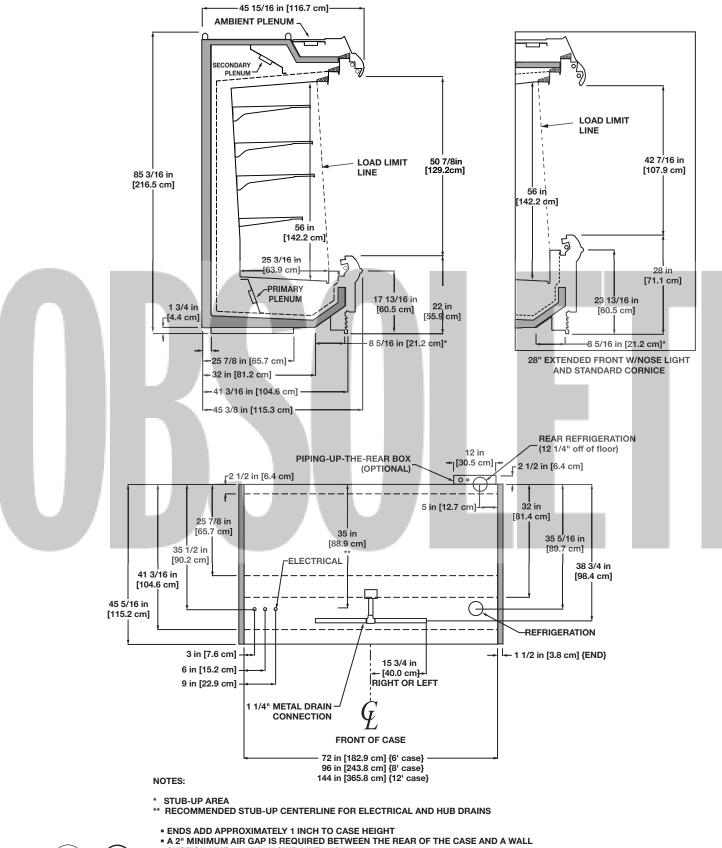
 2
 6 am - 10 pm\*\*

\*\* Or immediately after store closing hour









- SUCTION LINE 1 1/8", LIQUID LINE 5/8"
- AVAILABLE SHELF SIZES: 18" & 22"
- RECOMMENDED CONFIGURATION IS 3 22" SHELVES ON TOP AND 1 18" SHELF ON THE BOTTOM
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

NSF

US

**MULTI-DECK** 

Frozen Food

				Standard Fans		High Efficiency Fans		Anti-Condensate Heaters <sup>1</sup>		Defrost Heaters			
	Fans per		120 Volts		120 Volts		120 Volts		208 Volts		240 Volts		
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	
ONHM	4'	2	1.00	60	0.47	28	1		1.92	400	2.22	532	
	6'	3	1.50	90	0.70	42			2.88	600	3.33	798	
	8'	4	2.00	120	0.93	56			3.85	800	4.44	1065	
	12'	5	2.50	150	1.17	70			5.77	1200	6.67	1600	

1 NOTE: "- - -" not an option on this case model.

# **Lighting Data**

Bulbs					Row	Maximum Lighting		
		per	Bulb	120	Volts	120	Volts	
Model Ro		Row	Length	Amps	Watts	Amps	Watts	
ONHM	4'	1	4'	0.23	28	1.63	196	
	6'	2	3'	0.37	44	2.57	308	
	8'	2	4'	0.47	56	3.27	392	
	12'	3	4'	0.70	84	4.90	588	

## **Guidelines & Control Settings**

1	Model	Front Sill Heights	<sup>2,3</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
	ONHM	Standard	1320 <sup>4</sup>	Enh.	22	6-8	30	41	340
ų		All Others	1220 <sup>4</sup>	Enh.	22	6-8	30	41	340

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.11.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

			Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
ONHM	4	6 - 8	35	47	45	47	26	45	45	45

Medium Temperature Defrost Schedule

No.	Per	Day	Hours

1 12 midnight

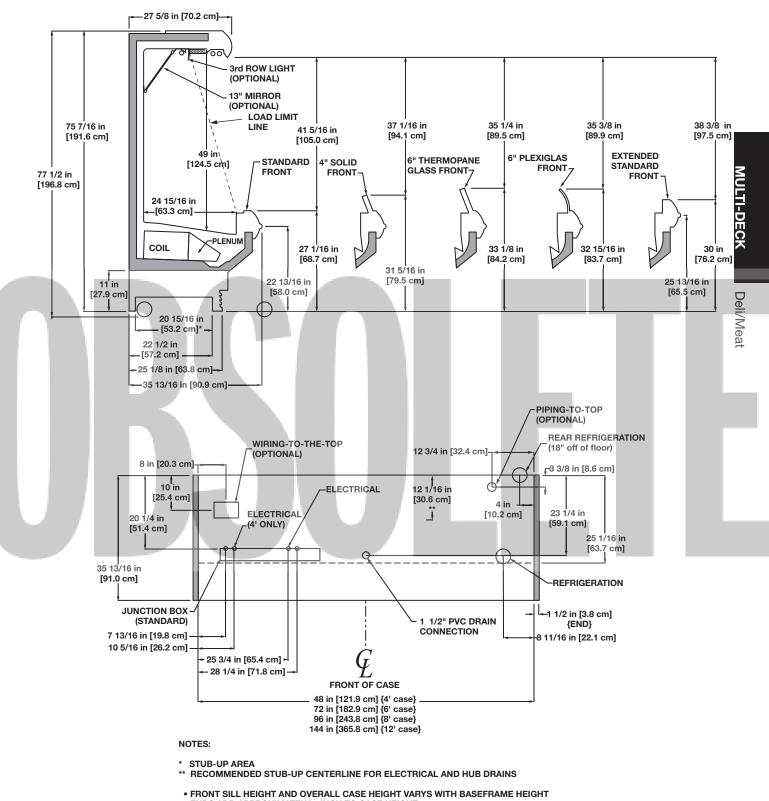
2 12 am - 12 pm

3 6 am - 2 pm - 10 pm 4 12 - 6 am - 12 - 6 pm









- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (4' & 6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8" AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18" & 20" RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12", 1-14", 1-16" & 1-18"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

#### **Electrical Data**

	Standard Fans		0	High Efficiency Fans		Anti-Condensate Heaters <sup>1</sup>		Defrost Heaters				
	Fans per		120 Volts		120 Volts		120 Volts		208 Volts		240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONHMH	4'	2	1.00	60	0.47	28	1		1.92	400	2.22	532
	6'	3	1.50	90	0.70	42			2.88	600	3.33	798
	8'	4	2.00	120	0.93	56			3.85	800	4.44	1065
	12'	5	2.50	150	1.17	70			5.77	1200	6.67	1600

1 NOTE: "- - -" not an option on this case model.

## **Lighting Data**

		Bulbs per	Bulb	Light	al per Row Volts	Maximum Lighting 120 Volts		
Model		Row	Length	Amps	Watts	Amps	Watts	
ONHMH	4'	1	4'	0.23	28	1.87	224	
	6'	2	3'	0.37	44	2.93	352	
	8'	2	4'	0.47	56	3.73	448	
	12'	3	4'	0.70	84	5.60	672	

#### **Guidelines & Control Settings**

۱	Madal	Front Sill	<sup>2</sup> BTUH/ft	Coil	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air	Discharge Air Velocity <sup>4</sup> (FPM)
	Model	Heights	BI0H/π	Туре	(Г)		( - )	(Г)	(FFIVI)
	ONHMH	Standard	1320 <sup>3</sup>	Enh.	22	6-8	30	41	340
ų		All Others	1220 <sup>3</sup>	Enh.	22	6-8	29	40	340

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.11.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

#### **Defrost Controls**

				Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
	ONHMH	4	6 - 8	35	47	45	47	26	45	45	45

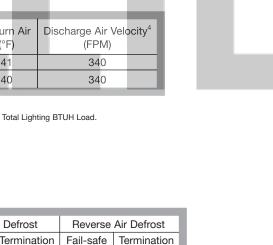
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Medium Temperature Defrost Schedule

No.	Per	Day	/ Hours

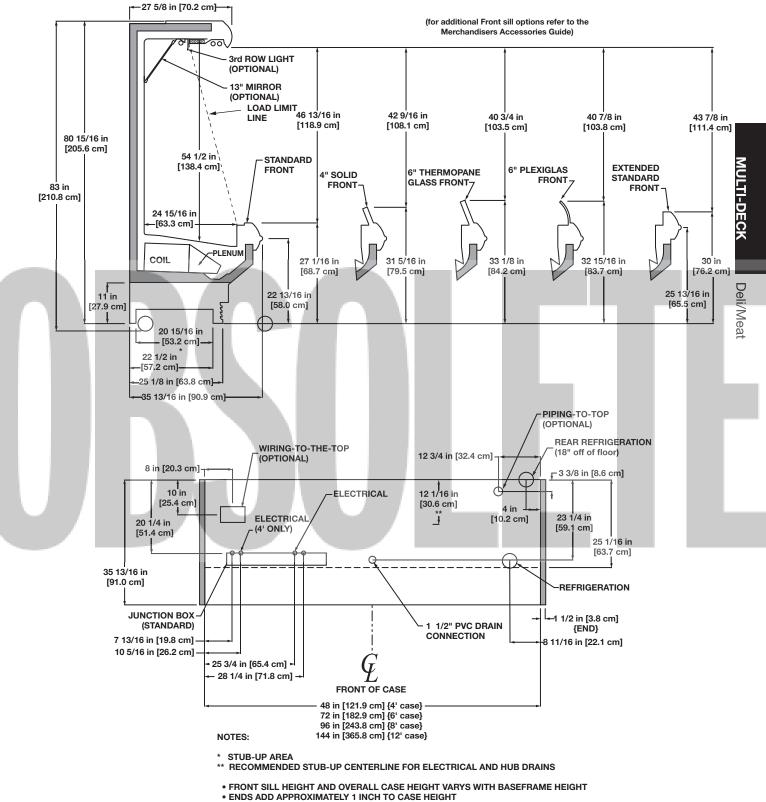
1 12 midnight

- 2 12 am 12 pm
- 3 6 am 2 pm 10 pm 4 12 - 6 am - 12 - 6 pm









• ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT • WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT

- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (4' & 6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8"
   AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18" & 20"
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12", 1-14", 1-16", 1-18" & 1-20"



#### Multi-Deck Deli/Meat Merchandiser OHM - 6', 8' & 12'

#### **Electrical Data**

			Standar	rd Fans		fficiency ans	Anti-Con Hea			Defrost	Heaters	
	Fans per		120 Volts		120 Volts		120 Volts		208 Volts		240 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OHM	6'	2	1.00	60	0.39	23.4	1		2.88	600	3.33	798
	8'	3	1.50	90	0.59	35.1			3.85	800	4.44	1065
	12'	4	2.00	120	0.78	46.8			5.77	1200	6.67	1600

1 NOTE: "- - -" not an option on this case model.

#### **Lighting Data**

		Bulbs		<b>Typic</b> Light	al per Row	Maximum Lighting		
		per	Bulb	120 Volts		120 Volts		
Model		Row	Length	Amps	Watts	Amps	Watts	
OHM	6'	2	3'	0.37	44	2.57	308	
	8'	2	4'	0.47	56	3.27	392	
	12'	3	4'	0.70	84	4.90	588	

#### **Guidelines & Control Settings**

Model	Front Sill Heights	<sup>2,3</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
OHM	Standard	1273 <sup>4</sup>	Enh.	22	6-8	28	38	350
	All Others	1229 <sup>4</sup>	Enh.	22	6-8	28	37	350

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.11. 3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

			Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
OHM	4	6 - 8	35	47	45	47	26	45	45	45

Medium Temperature Defrost Schedule

No.	Per	Day	Hours
		-	

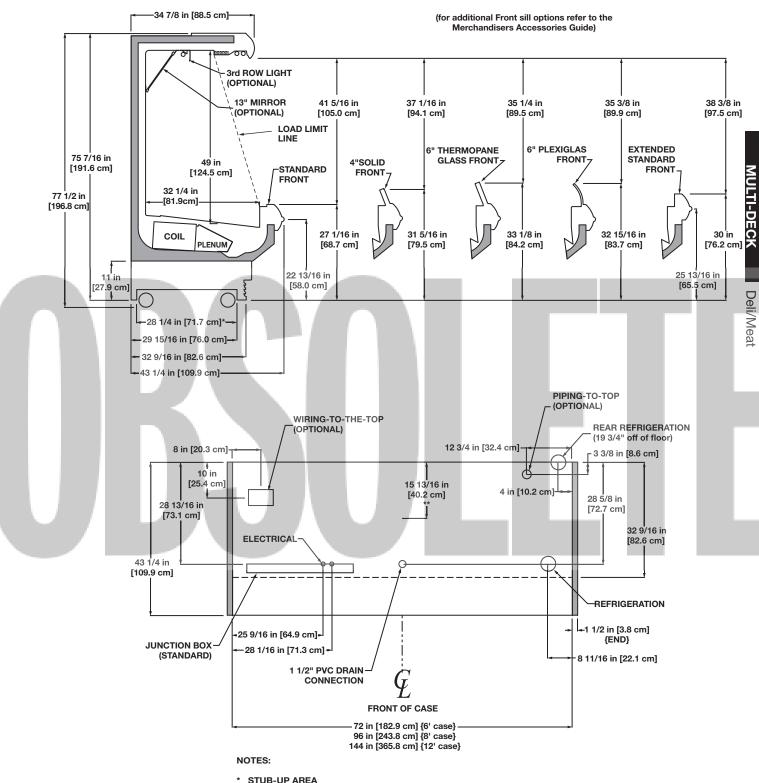
- 1 12 midnight
- 2 12 am - 12 pm
- 6 am 2 pm 10 pm 12 6 am 12 6 pm 3 4





#### OHM (11" BASEFRAME)





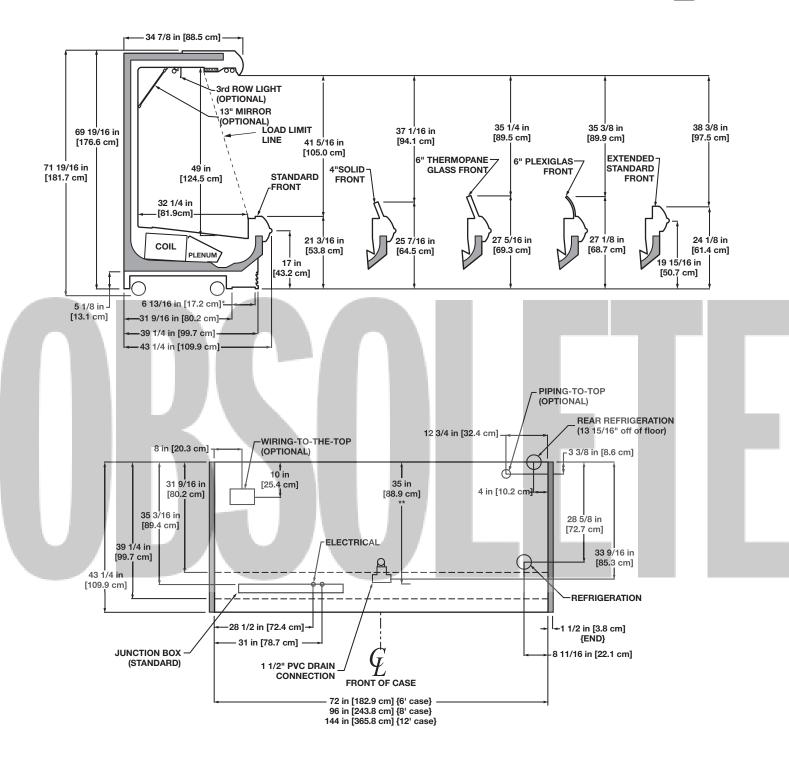
\*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS

- FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
  SUCTION LINE (6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8"
  AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18" & 20"
  DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF<sub>g</sub>) COMPONENT

OHM (5" BASEFRAME)





NOTES:

- \* STUB-UP AREA \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18" & 20
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

NSF



#### High Multi-Deck Deli/Meat Merchandiser OHMH- 4', 6', 8' & 12'

#### **Electrical Data**

			Standard Fans		High Efficiency Fans		Anti-Condensate Heaters		Defrost Heaters			
	Fans per		120 Volts		120 Volts		120 Volts		208 Volts		240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OHMH	4'	2	1.00	60	0.47	28	1		1.92	400	2.22	532
	6'	3	1.50	90	0.70	42			2.88	600	3.33	798
	8'	4	2.00	120	0.93	56			3.85	800	4.44	1065
	12'	5	2.50	150	1.17	70			5.77	1200	6.67	1600

1 NOTE: "- - -" not an option on this case model.

## **Lighting Data**

		Bulbs per	Bulb	Typic: Light 120 '	Row	Maximum Lighting 120 Volts		
Model		Row	Length	Amps	Watts	Amps	Watts	
ОНМН	4'	1	4'	0.23	28	1.87	224	
	6'	2	3'	0.37	44	2.93	352	
	8'	2	4'	0.47	56	3.73	448	
	12'	3	4'	0.70	84	5.60	672	

#### **Guidelines & Control Settings**

Model	Front Sill Heights	<sup>2,3</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
OHMH	Standard	1314 <sup>4</sup>	Enh.	22	6-8	29	41	330
	All Others	1220 <sup>4</sup>	Enh.	22	6-8	29	38	330

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.11.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

					Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Air Defrost
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
	ОНМН	4	6 - 8	35	47	45	47	26	45	45	45

Medium Temperature Defrost Schedule

No. Per Dav	/ Hours	

1

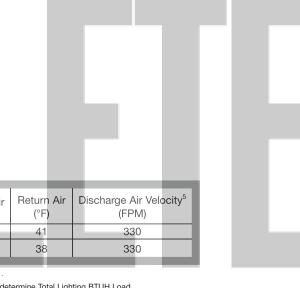
12 midnight 12 am - 12 pm 6 am - 2 pm - 10 pm 2 3

4 12 - 6 am - 12 - 6 pm





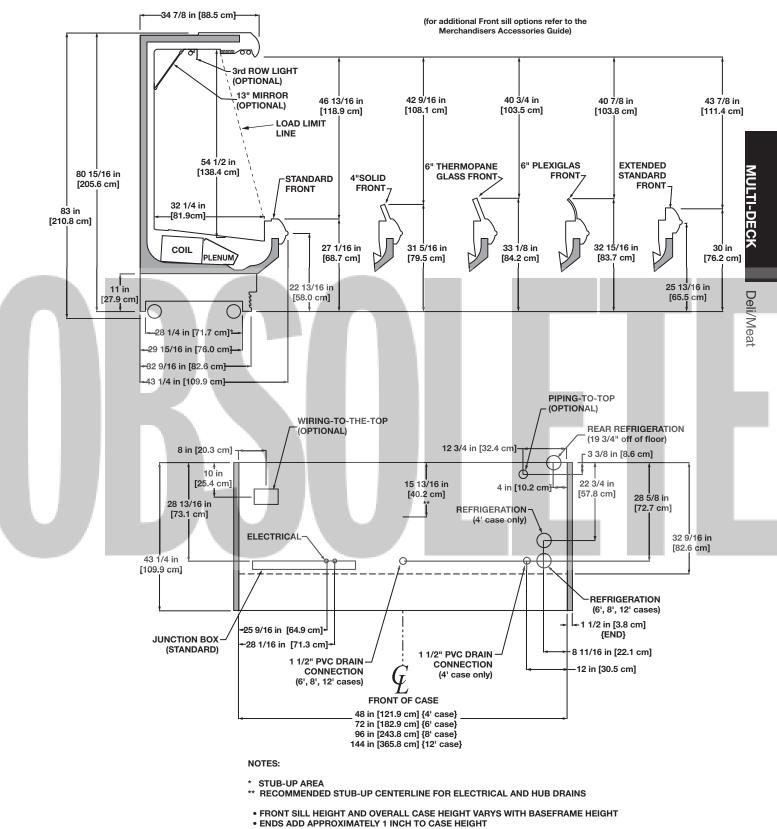




## OHMH (11" BASEFRAME)





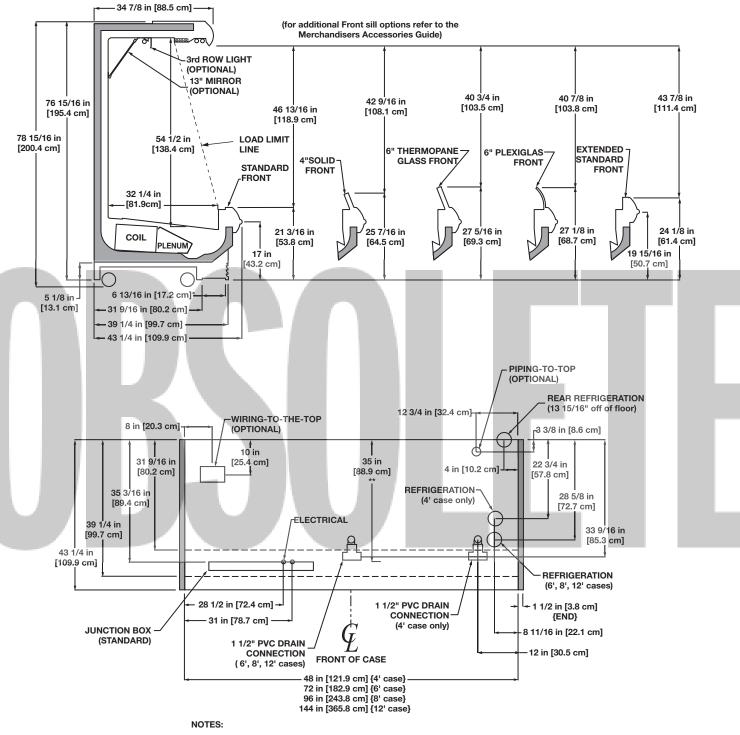


- WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- AUZ MINIMUM AIR GAP IS REQUIRED BE INVEEN THE REAR OF THE CASE AND A WALL SUCTION LINE (4' & 6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8" AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18" & 20" DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF<sub>®</sub> COMPONENT 04/09

#### OHMH (5" BASEFRAME)





- STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
  - SUCTION LINE (4' & 6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8"
     AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18" & 20
     DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE





#### Narrow Multi-Deck Produce Merchandiser ONHP - 4', 6', 8' & 12'

#### **Electrical Data**

			Standar	d Fans		fficiency ans		ndensate ters¹		Defrost	Heaters	
	Fans per		120 Volts		120 Volts		120 Volts		208 Volts		240 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONHP	4'	2	1.00	60	0.47	28	1		1.92	400	2.22	532
	6'	2	1.00	60	0.47	28			2.88	600	3.33	798
	8'	3	1.50	90	0.70	42			3.85	800	4.44	1065
	12'	4	2.00	120	0.93	56			5.77	1200	6.67	1600

1 NOTE: "- - -" not an option on this case model.

## **Lighting Data**

		Bulbs			al per Row		/laximum Lighting	
		per	Bulb	120	Volts	120	Volts	
Model		Row	Length	Amps	Watts	Amps	Watts	
ONHP	4'	1	4'	0.23	28	1.63	196	
	6'	2	3'	0.37	44	2.57	308	
	8'	2	4'	0.47	56	3.27	392	
	12'	3	4'	0.70	84	4.90	588	

#### **Guidelines & Control Settings**

Model	<sup>2,3</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
	1198 <sup>4</sup>	Enh.	26	6-8	32	45	350
ONHP Bulk Produce	818 <sup>4</sup>	Enh.	29	6-8	36	48	250

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.08.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

#### **Defrost Controls**

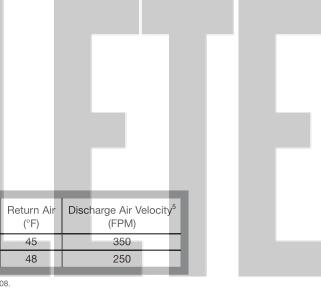
					Electric Defrost		Timed Off Defrost		s Defrost	Reverse Air Defrost	
	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
l	ONHP	3	6 - 8	35	47	45	47	<sup>5</sup>		45	45

6 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm

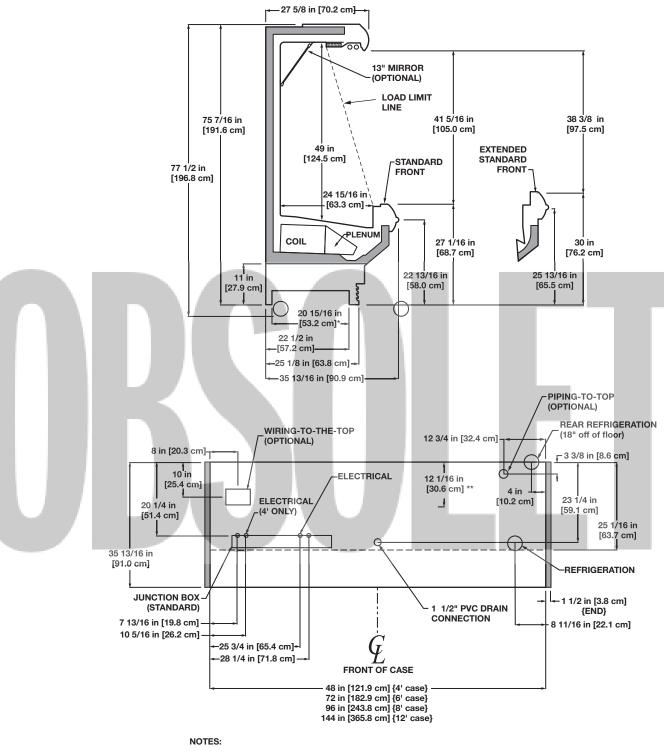






**MULTI-DECK** 

Produce



- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- A 2 MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
  BULK PRODUCE, SUCTION LINE (6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8"
  CUT PRODUCE, SUCTION LINE (6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8"
  AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18" & 20"
  DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

147



#### **Electrical Data**

			Standar	d Fans	0	High Efficiency Fans		Anti-Condensate Heaters <sup>1</sup>		Defrost Heaters			
	Fans per		120 Volts		120	Volts	120 Volts		208 Volts		240 Volts		
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	
ONHPH	4'	2	1.00	60	0.47	28	1		1.92	400	2.22	532	
	6'	3	1.50	90	0.70	42			2.88	600	3.33	798	
	8'	4	2.00	120	0.93	56			3.85	800	4.44	1065	
	12'	5	2.50	150	1.17	70			5.77	1200	6.67	1600	

1 NOTE: "- - -" not an option on this case model.

#### **Lighting Data**

		Bulbs		Typic Light		aximum ghting	
		per	Bulb	120	Volts	120	Volts
Model		Row	Length	Amps	Watts	Amps	Watts
ONHPH	4'	1	4'	0.23	28	1.87	224
	6'	2	3'	0.37	44	2.93	352
	8'	2	4'	0.47	56	3.73	448
	12'	3	4'	0.70	84	5.60	672

#### **Guidelines & Control Settings**

Model 2,3	BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
	1210 <sup>4</sup>	Enh.	26	6-8	34	46	330
ONHPH Bulk Produce	825 <sup>4</sup>	Enh.	29	6-8	37	47	230

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.08.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

					Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Air Defrost
		Defrosts	Run-Off	Fail-safe	Termination	Fail-safe	Termination	Fail-safe	Termination	Fail-safe	Termination
I	Model	Per Day	Time (min)	(min)	Temp. (°F)	(min)	Temp. (°F)	(min)	Temp. (°F)	(min)	Temp. (°F)
	ONHPH	3	6 - 8	35	47	45	47	<sup>5</sup>		45	45

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6 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

No.	Per	Day	Hours

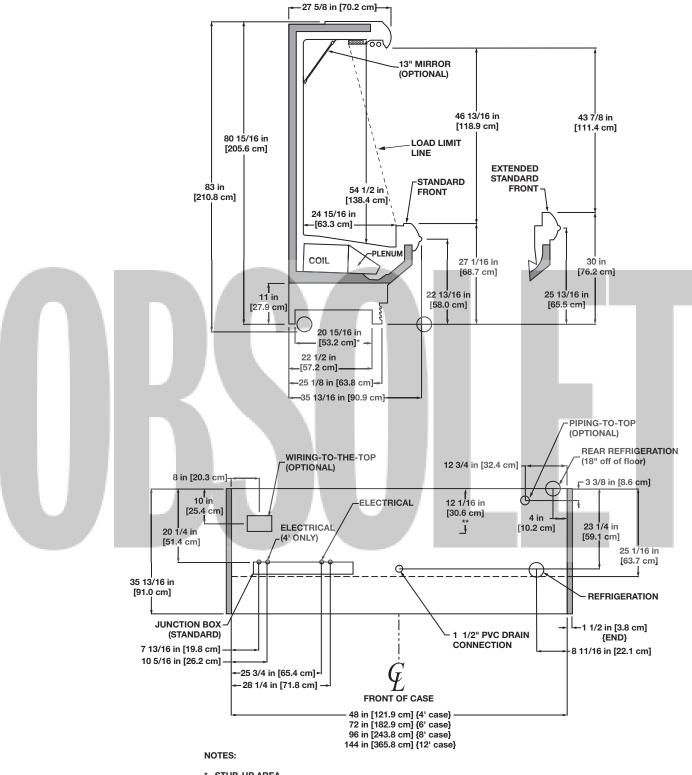
12 midnight 1

12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 2 3

4







- STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT
  - ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
  WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
  A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
  BULK PRODUCE, SUCTION LINE (6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8"
  CUT PRODUCE, SUCTION LINE (6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8"
  AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18" & 20"

- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF<sub>®</sub>

**MULTI-DECK** 

Produce

#### **Multi-Deck Produce Merchandiser** OHP - 4', 6', 8' & 12'

#### **Electrical Data**

	Sta					fficiency ans		ndensate ters¹	Defrost Heaters			
	Fans per		120 Volts		120 Volts		120 Volts		208 Volts		240 Volts	
Model			Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OHP	OHP 4' 2		1.00	60	0.47	28	0.30 <sup>1</sup>	36	1.92	400	2.22	532
	6'	2	1.00	60	0.47	28	0.40 <sup>1</sup>	48	2.88	600	3.33	798
	8'	3	1.50	90	0.70	42	0.58 <sup>1</sup>	70	3.85	800	4.44	1065
	12'	4	2.00	120	0.93	56	0.83 <sup>1</sup>	100	5.77	1200	6.67	1600

1 Anti-condensate heater data for reduced (cut produce) temperature option only.

## **Lighting Data**

		Bulbs			Row	Maximum Lighting		
		per	Bulb	120	Volts	120	Volts	
Model		Row	Length	Amps	Watts	Amps	Watts	
OHP	4'	1	4'	0.23	28	1.63	196	
	6'	2	3'	0.37	44	2.57	308	
	8'	2	4'	0.47	56	3.27	392	
	12'	3	4'	0.70	84	4.90	588	

#### **Guidelines & Control Settings**

Model	<sup>2,3</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
OHP Cut Produce	1103 <sup>4</sup>	Enh.	26	6-8	31	45	350
OHP Bulk Produce	743 <sup>4</sup>	Enh.	29	6-8	36	48	250

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.08.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

#### **Defrost Controls**

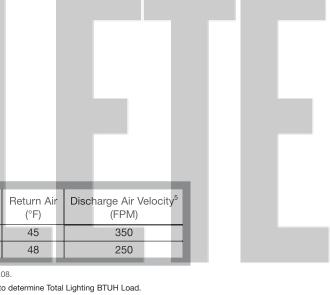
			Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
OHP	3	6 - 8	35	47	45	47	26	45	30	45

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Medium Temperature Defrost Schedule

No.	Per	Day	Hours

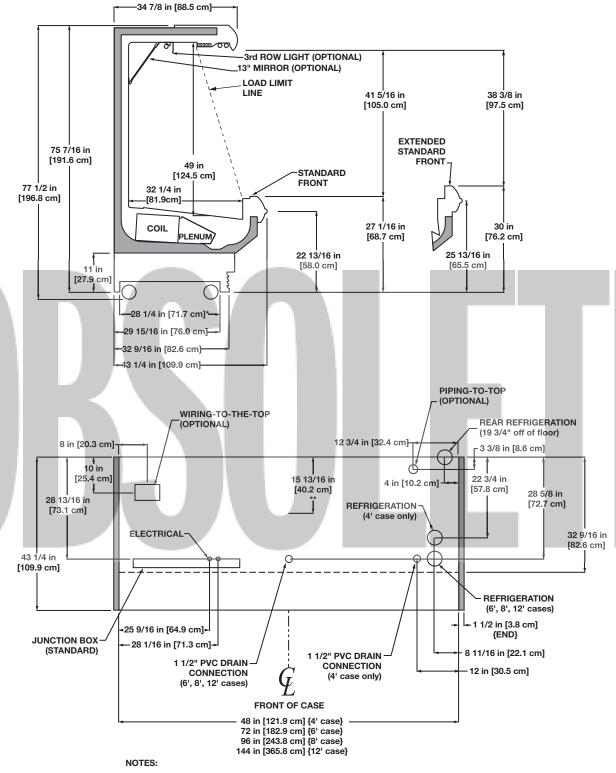
- 1 12 midnight
- 2 3





<sup>12</sup> am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 4





\* STUB-UP AREA

- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINING-INE-TOP ADDS AFPROAMMENTELLT INCOME TO CASE HIGHT
  A 2" MININUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
  BULK PRODUCE, SUCTION LINE (4' & 6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8"
  CUT PRODUCE, SUCTION LINE (4' & 6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8"
  AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18" & 20"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF<sub>®</sub> COMPONENT 04/09

#### High Multi-Deck Produce Merchandiser OHPH- 6', 8' & 12'

#### **Electrical Data**

			Standar	rd Fans	0	fficiency ans	Anti-Con Hea		Defrost Heaters			
	Fans per		120 \	Volts	/olts 120 Volts		120 Volts		208 Volts		240 Volts	
Model	Model Case		Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OHPH	OHPH 6' 3		1.50	90	0.70	42	0.40 <sup>1</sup>	48	2.88	600	3.33	798
	8'	4	2.00	120	0.93	56	0.58 <sup>1</sup>	70	3.85	800	4.44	1065
	12'	5	2.50	150	1.17	70	0.83 <sup>1</sup>	100	5.77	1200	6.67	1600

1 Anti-condensate heater data for reduced (cut produce) temperature option only.

## **Lighting Data**

		Bulbs			al per Row		mum nting
		per	Bulb	120 '	Volts	120	Volts
Model		Row	Length	Amps	Watts	Amps	Watts
OHPH	6'	2	3'	0.37	44	2.93	352
	8'	2	4'	0.47	56	3.73	448
	12'	3	4'	0.70	84	5.60	672

#### **Guidelines & Control Settings**

Model	<sup>2,3</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
OHPH Cut Produce	1340 <sup>4</sup>	Enh.	26	6-8	30	45	330
OHPH Bulk Produce	1095 <sup>4</sup>	Enh.	29	6-8	31	45	230

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.08.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

#### **Defrost Controls**

l				Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
I		Defrosts	Run-Off	Fail-safe	Termination	Fail-safe	Termination	Fail-safe	Termination	Fail-safe	Termination
I	Model	Per Day	Time (min)	(min)	Temp. (°F)	(min)	Temp. (°F)	(min)	Temp. (°F)	(min)	Temp. (°F)
l	OHPH	3	6 - 8	35	47	45	47	26	45	50	45

Medium Temperature Defrost Schedule

No. Per Day Hours

1

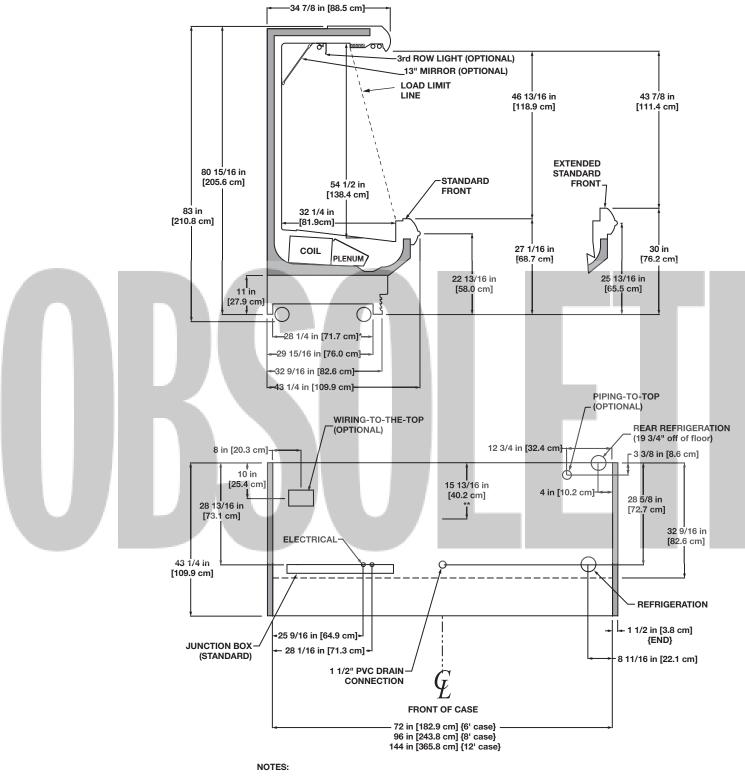
2 3

12 midnight 12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 4









- STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT

- FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT
  ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
  WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
  A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
  BULK PRODUCE, SUCTION LINE (6') 1/2", SUCTION LINE (8' & 12') 5/8", LIQUID LINE (ALL LENGTHS) 3/8"
  CUT PRODUCE, SUCTION LINE (6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8"
  AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18" & 20"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

COMPONENT 04/09

(NSF<sub>®</sub>

**MULTI-DECK** 

Produce

#### Wide Multi-Deck Produce Merchandiser OWHP - 8' & 12'

#### **Electrical Data**

			Standar	d Fans		ficiency ans		ndensate aters		Defrost	Heaters	
	Fans per		120 \	/olts	120 Volts		120 Volts		208 Volts		240 Volts	
Model	Model Case		Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OWHP	8'	3	1.50	90	0.70	42	0.58 <sup>1</sup>	70	3.85	800	4.44	1065
	12'	4	2.00	120	0.93	56	0.83 <sup>1</sup>	100	5.77	1200	6.67	1600

<sup>1</sup> Anti-condensate heater data for reduced (cut produce) temperature option only.

#### **Lighting Data**

		Bulbs		Typic: Light	al per Row		imum nting
Model		per Row	er Bulb	120 Y Amps	Volts Watts	120 Amps	Volts Watts
OWHP	8'	2	4'	0.47	56	3.27	392
	12'	3	4'	0.70	84	4.90	588

#### **Guidelines & Control Settings**

Model	<sup>2,3</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
	1480 <sup>4</sup>	Enh.	26	6-8	31	45	350
OWHP Bulk Produce	1008 <sup>4</sup>	Enh.	29	6-8	36	48	250

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.08.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

				Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
	OWHP	3	6 - 8	35	47	45	47	26	45	50	45

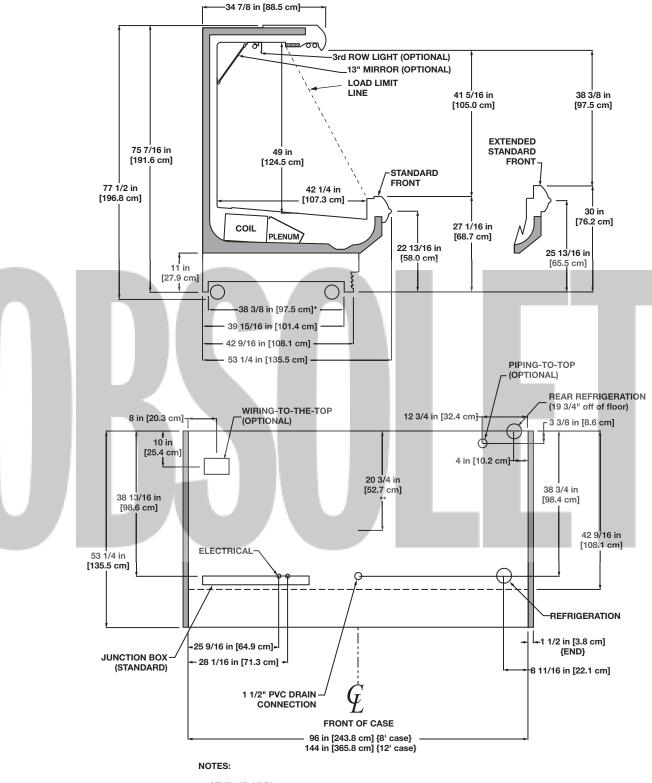
Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm









STUB-UP AREA

- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
   A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- BULK PRODUCE, SUCTION LINE 5/8", LIQUID LINE 3/8"
   CUT PRODUCE, SUCTION LINE 7/8", LIQUID LINE 3/8"

- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18", 20" & 22"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

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#### **Electrical Data**

			H Standard Fans			High Efficiency A Fans		Anti-Condensate Heaters		Defrost Heaters			
		Fans per	120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	
OWHPH	8'	4	2.00	120	0.93	56	0.58 <sup>1</sup>	70	3.85	800	4.44	1065	
	12'	5	2.50	150	1.17	70	0.83 <sup>1</sup>	100	5.77	1200	6.67	1600	

1 Anti-condensate heater data for reduced (cut produce) temperature option only.

#### **Lighting Data**

		Bulbs			al per Row		ximum ghting	
		per	Bulb	120			Volts	
Model		Row	Length	Amps	Watts	Amps	Watts	
OWHPH	8'	2	4'	0.47	56	3.73	448	
	12'	3	4'	0.70	84	5.60	672	

#### **Guidelines & Control Settings**

Model	<sup>2,3</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity⁵ (FPM)
OWHPH Cut Produce	179 <b>3</b> 4	Enh.	26	6-8	30	45	330
OWHPH Bulk Produce	1472 <sup>4</sup>	Enh.	29	6-8	31	45	230

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.08.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

#### **Defrost Controls**

			Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Run-Off Per Day Time (min)		Fail-safe (min)	Termination Temp. (°F)	Fail-safe Termination (min) Temp. (°F)		Fail-safe Termination (min) Temp. (°F)		Fail-safe (min)	Termination Temp. (°F)
OWHPH	3	6 - 8	35	47	45	47	26	45	50	45

NSF

Medium Temperature Defrost Schedule

No. Per Day	Hours	

1 12 midnight

2 3

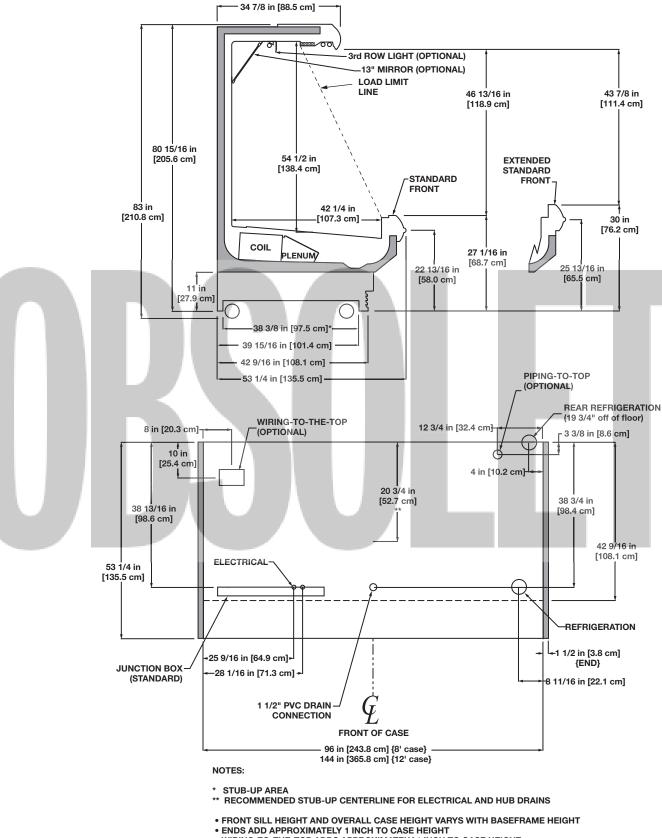
12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 4





#### **OWHPH**





- WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL

- A 2 MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE
  BULK PRODUCE, SUCTION LINE 5/8", LIQUID LINE 3/8"
  CUT PRODUCE, SUCTION LINE 7/8", LIQUID LINE 3/8"
  AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18", 20" & 2
  DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE2"

COMPONENT 04/09

(NSF<sub>®</sub>

Produce

#### **System Requirements**

Model	Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Overcurrent Protection
ONNA-47"	120	1	60	2 wire + ground	23.63	45

#### **Electrical Data**

				Standa	Conde Standard Fans Fa		lenser an	Drain Pump		Evap. Pan Heater		Maximum Lights	
I			Fans per	120 Volts		120 Volts		120 Volts		120 Volts		120 Volts	
I	Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
J	ONNA	47"	3	1.02	51	0.85	88	0.9	54	8.34	1000	0.57	68

#### **Guidelines & Control Settings**

Model	0,	Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Disch <b>arge</b> Air Velocity <sup>1</sup> (FPM)
ONNA-47"	37.2	19.9	6-8	35	43	275

1 Average discharge air velocity at peak of defrost.

## **Condensing Unit Data**

I						<b>D</b> 2	1 - 1 - 3			i.
ų	Model	Volts	Phase	Frequency (Hz)	HP	RLA <sup>2</sup> (amps)	LRA <sup>3</sup> (amps)	Refrig.	lbs of Refrig.	Į.
ł	ONNA-47"	120	1	60	1/2	12.9	66.3	R134A	2	

2 RLA - Running Load Amps.

3 LRA - Locked Rotor Amps.

#### **Defrost Controls**

		_	Electri	c Defrost	Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
l	Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
	ONNA	6			40	47				

(NSF)

Medium Temperature Defrost Schedule

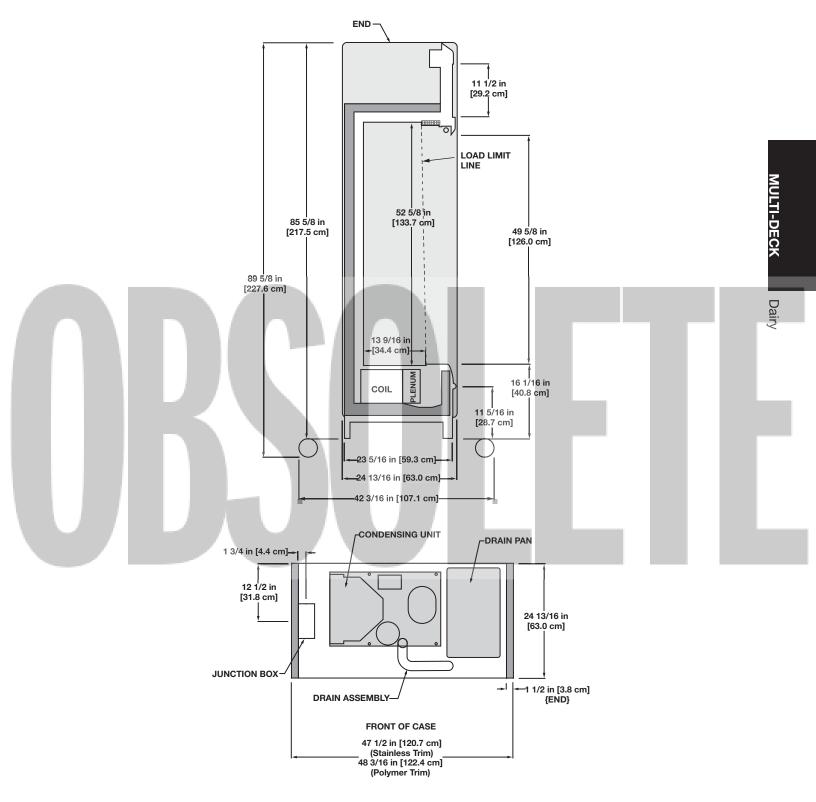
No.	Per	Day	Hours

- 12 midnight 1 2
- 12 am 12 pm 6 am 2 pm 10 pm 12 6 am 12 6 pm

3 4







NOTES:

- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- ENDS ARE ALSO AVAILABLE IN 1" WIDTHS AVAILABLE SHELF SIZES: 12"



#### **Electrical Data**

			Standa	rd Fans	0	High Efficiency Fans		ndensate iters	Defrost Heaters			
		Fans per	120	Volts	120 \	Volts	120 \	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONU	4'/47"	2	1.00	60	0.47	28	<sup>1</sup>		1.92	400	2.22	532
	6'	3	1.50	90	0.70	42			2.88	600	3.33	798

1 NOTE: "- - -" not an option on this case model.

# Lighting Data

ĺ			Bulbs			al per Row	Maxi Ligh	mum iting
			per	Bulb	120	Volts	120	Volts
	Model		Row	Length	Amps	Watts	Amps	Watts
I	ONU	4'/47"	1	4'	0.23	28	1.87	<b>2</b> 24
		6'	2	3'	0.37	44	2.93	<b>3</b> 52
						•		

#### **Guidelines & Control Settings**

l	Model	<sup>3,4</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)		Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
I	ONU <sup>2</sup>	1322 <sup>5</sup>	17	6-8	30	40	310

2 Model ONU only available for meat application with the 7 1/2"extended front w/ nose lights and no shelf lights.

3 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.11.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

#### **Defrost Controls**

				c Defrost	Timed Off Defrost Hot C		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
ONU	4	6 - 8	35	47	45 <sup>7</sup>	47 <sup>7</sup>	25	45		

7 Timed Off Defrost not recommended for Fresh Meat application.

Medium Temperature Defrost Schedule

No. Per Day	Hours	

12 midnight 1 2

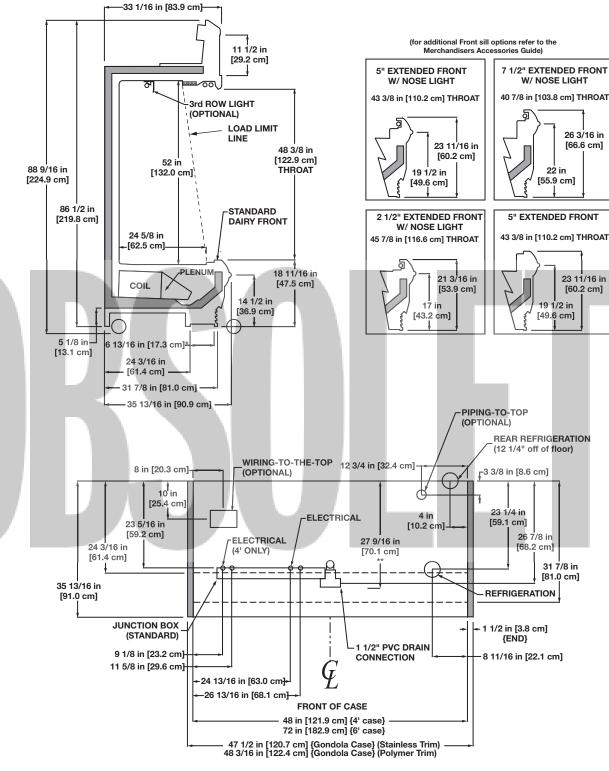
3

12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 4









#### NOTES:

- \* STUB-UP AREA \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE 7/8", LIQUID LINE 3/8", LIQUID LINE PIPED-TO-TOP 5/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

COMPONENT 04/09

(NSF<sub>®</sub>

MULTI-DECK

Produce/Dairy/Deli/Meat

#### Narrow Multi-Deck Self-Contained Produce/Dairy/Deli/Meat Merchandiser ONUA - 4'/47" & 6'

#### **System Requirements**

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Overcurrent Protection
ONUA	4'/47"	208	1	60	3 wire + ground	16.220	30
	6'	208	1	60	3 wire + ground	22.000	40

#### **Electrical Data**

			Condenser Standard Fans Fan		Drain Pump		Evap. Pan Heater		Maxi Lig	mum hts		
	Fans per		120 '	Volts	208	Volts	120	Volts	208 \	Volts	s 120 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONUA	4'/47"	2	1.00	60	2.60	130	0.90	108	7.21	1500	1.87	224
	6'	3	1.50	90	1.10	114	0.90	108	7.21	1500	2.93	352

## **Guidelines & Control Settings**

Model <sup>1</sup>	24 hr Energy Usage (kWh)	Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>2</sup> (FPM)
ONUA-4'/47"	43.9	33	6-8	27.5	39	310
ONUA-6'	59.3	33	6-8	27.5	39	310

1 Model ONUA only available for meat application with the 7 1/2"extended front w/ nose lights and no shelf lights.

2 Average discharge air velocity at peak of defrost.

# **Condensing Unit Data**

l	Model	Volts	Phase	Frequency (Hz)	НР	RLA <sup>3</sup> (amps)	LRA <sup>4</sup> (amps)	Refrig.	lbs of Refrig.	h
ų	ONUA-4'/47"	208	1	60	1	7.0	34.2	R22	5.9	
ł	ONUA-6'	208	1	60	1 1/2	10.4	48.2	R22	6.75	

3 RLA - Running Load Amps.

4 LRA - Locked Rotor Amps.

## **Defrost Controls**

I		Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost		
l	Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)						
I	ONUA	4	<sup>5</sup>		40	45				

5 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

No.	Per	Day	Hours

1 12 midnight	
---------------	--

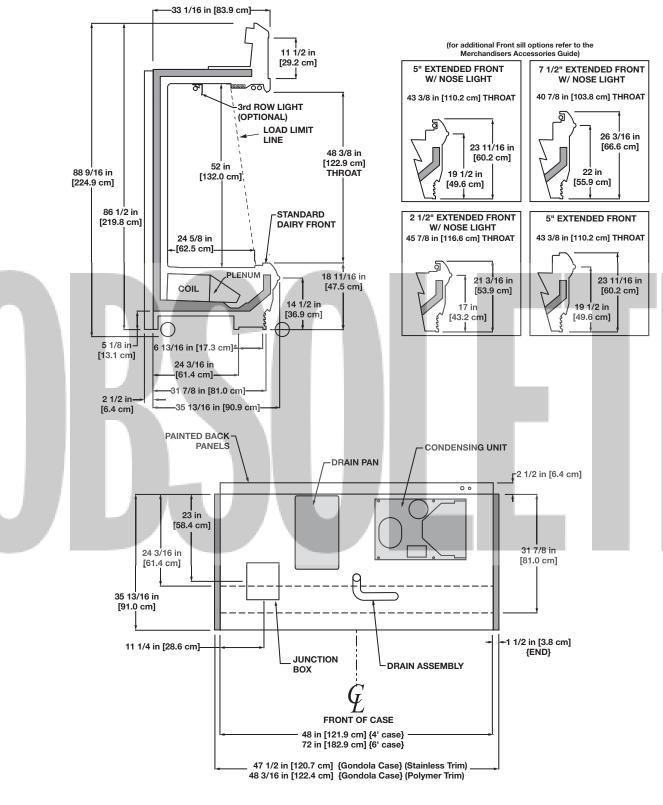
2 12 am - 12 pm 3 6 am - 2 pm - 10 pm

4 12 - 6 am - 12 - 6 pm









- FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF<sub>g</sub>)

#### Roll-In Rear Load Dairy Merchandiser ORDR - 8' & 12' dairy

#### **Electrical Data**

		Fans per		Upp Standar		Lov Standar		Upper Efficient	r High cy Fans	Lowe Efficien	0	Anti-Cor Hea	
			ise	120	Volts	120	Volts	120	Volts	120	Volts	120	Volts
Model		Upper	Lower	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ORDR	8'	3	4	1.50	90	1.80	68	0.90	60	0.60	44	0.58	70
	12'	4	6	2.00	120	2.70	102	1.20	80	0.90	66	0.83	100

Lighting Data

#### Electrical Data (Continued)

			Defrost Heaters							
		208	Volts	240	Volts					
Model		Amps	Watts	Amps	Watts					
ORDR	8'	3.85	3.85 800		1066					
	12'	5.77	1200	6.67	1600					

#### Maximum Typical per Light Row Lighting Bulbs 120 Volts 120 Volts Bulb per Model Row Length Amps Watts Amps Watts ORDR 8' 2 $\Delta$ 0.47 56 4.17 500 12' 3 4' 0.70 84 6.33 760

#### **Guidelines & Control Settings**

l	Model	<sup>2,3</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)		Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
I	ORDR <sup>1</sup>	659 <sup>4</sup>	17	6-8	28	44	310

1 Back-up coils with a capacity of 1666 BTUH/ft at a suction temperature of 20°F must be used for each case to refrigerate the area immediately behind the line-up to a depth of 10°. If the cooler is longer than the ORDR line-up and deeper than 10°, other coils are needed to refrigerate the balance of the cooler area. Each auxiliary coil should be centered on each case and set back a distance of 3' to 5' from the back of the ORDR. The cooler box must have a maximum temperature of no more than 34°F.

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

			Electri	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse	Air Defrost
Mode	Defrosts I Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
ORDF		6 - 8	30	47	30	47	26	45	<sup>6</sup>	

6 NOTE: "- - -" not an option on this case model.

#### Medium Temperature Defrost Schedule

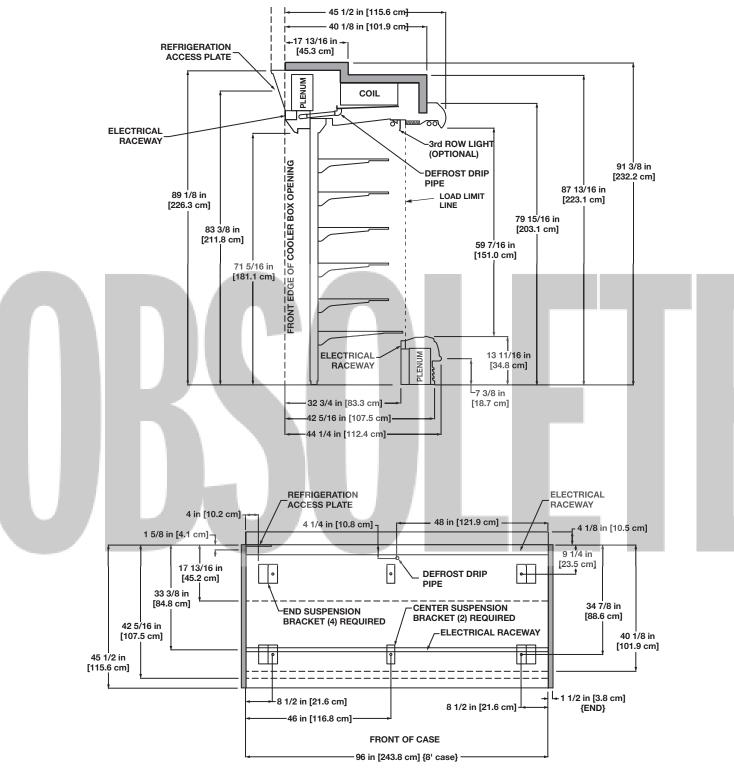
No.	Per	Dav	Hours

- 1 12 midnight
- 2 12 am 12 pm
- 3 6 am 2 pm 10 pm 4 12 - 6 am - 12 - 6 pm









NOTES:

• SUCTION LINE - 7/8", LIQUID LINE - 3/8"

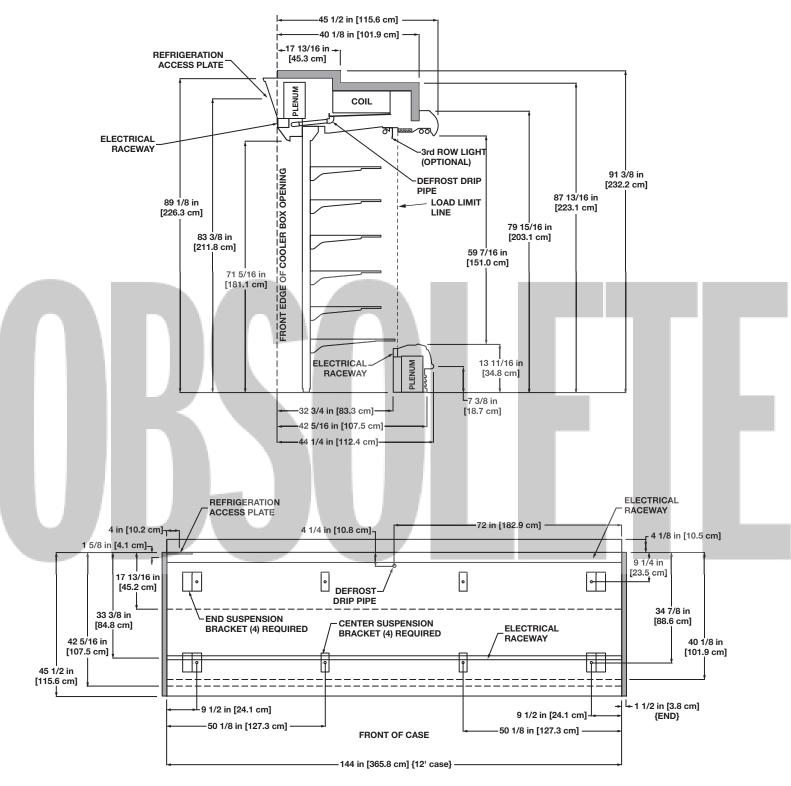
AVAILABLE SHELF SIZES: 20" & 24"
 RECOMMENDED CONFIGURATION IS 5 ROWS OF 20" SHELVES WITH 1 ROW OF 24"SHELVES IN THE LOWEST POSITION



**MULTI-DECK** 

Dair





#### NOTES:

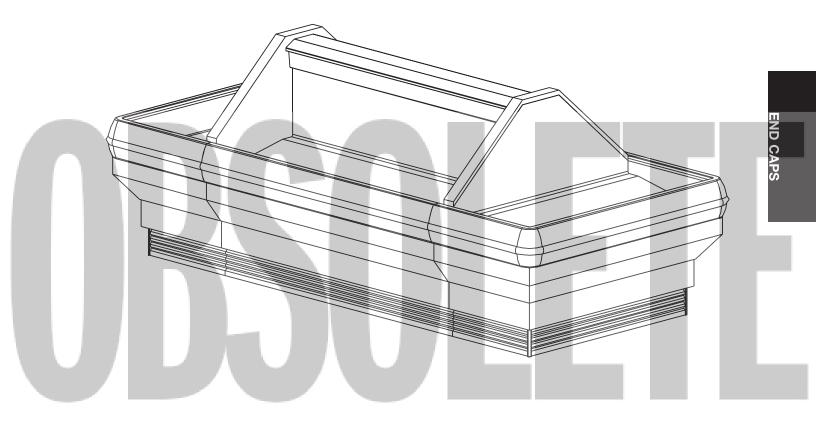
• SUCTION LINE - 7/8", LIQUID LINE - 3/8"

AVAILABLE SHELF SIZES: 20" & 24"

• RECOMMENDED CONFIGURATION IS 5 ROWS OF 20" SHELVES WITH 1 ROW OF 24"SHELVES IN THE LOWEST POSITION



# **END CAPS**



#### NOTES

- Cases shown with an ANSI/NSF\* Mark are Certified by NSF
- Cases shown with an UL\* Mark are Listed by Underwriters Laboratories Inc.
- Allow for an extra 1/8" per joint when lining up merchandisers.
- Technical information contained herein is subject to change without notice.

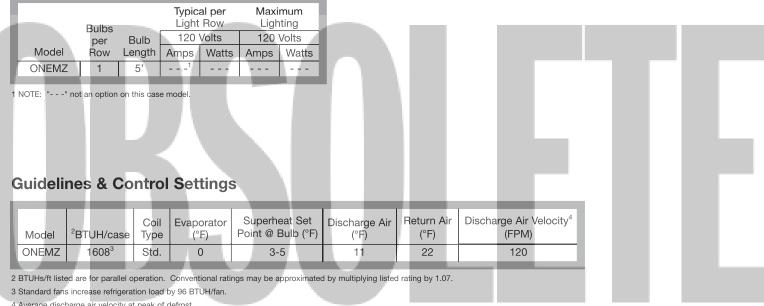
\* ANSI - American National Standard Institute NSF - National Sanitation Foundation UL - Underwriters Laboratories Inc

## Narrow Single-Deck Frozen Meat End Cap Merchandiser ONEMZ

#### **Electrical Data**

		Standard Fans		High EfficiencyAnti-CondensateStandard FansFansHeaters		Defrost Heaters					
	Fans per	120 Volts		120 Volts		120 Volts		208 Volts		240 Volts	
Model	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONEMZ	2	1.00	60	0.23	14	0.35	42	2.88	600	3.33	798

#### **Lighting Data**



4 Average discharge air velocity at peak of defrost.

#### **Defrost Controls**

				c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse	Air Defrost
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
ONEMZ	2	13-15	45	47			20	60		

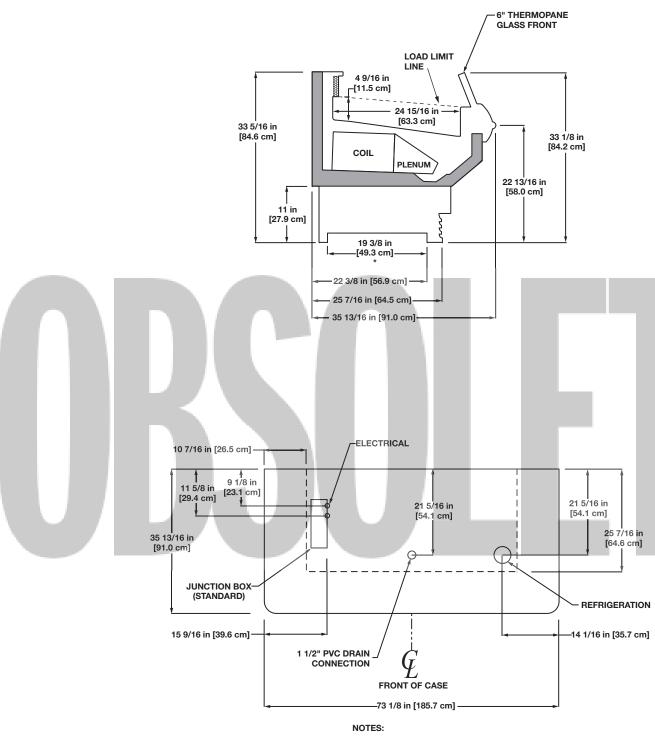
Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm









\* STUB-UP AREA

- SUCTION LINE 7/8", LIQUID LINE 3/8"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

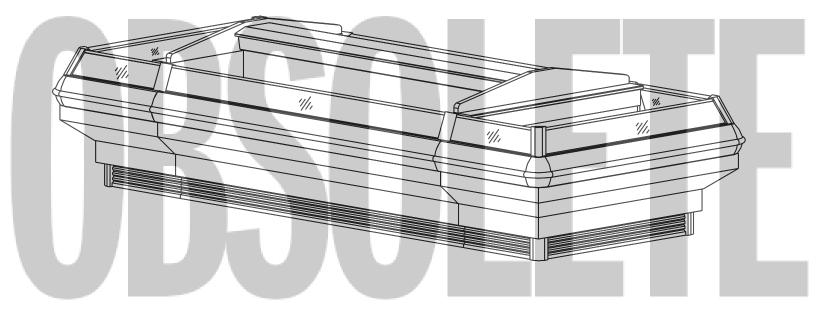


04/09

END



The ONEMZs shown below are unitized with two ONMZ-8'cases with standard rear sills, and thermopane glass fronts.



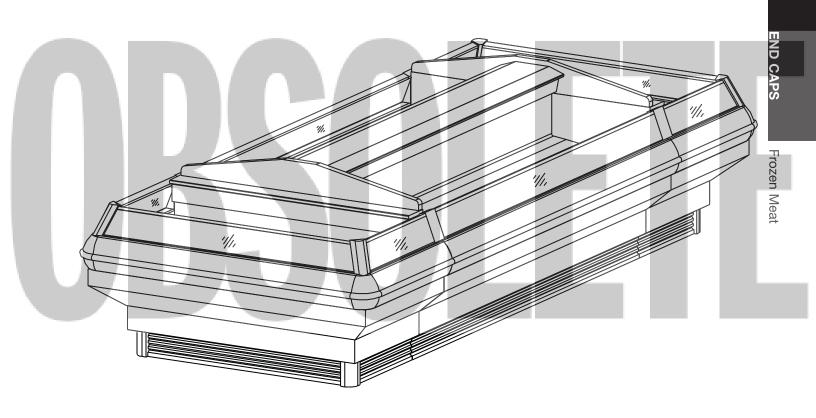
ONEMZ

**3D Model** 





The ONEMZs shown below are unitized with two ONMZ-8'cases with standard rear sills, and thermopane glass fronts.



ONEMZ

3D Model



04/09

		Standard Fans		0	High Efficiency Fans		ndensate iters	Defrost Heaters			
	Fans per	120 Volts		120 Volts		120 Volts		208 Volts		240 Volts	
Model	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OEM	2	1.00	60	0.15	9.2	0.35	42	2.88	600	3.33	798

# **Lighting Data**

1		Bulbs		Typical per Light Row	Maximum Lighting						
41		per	Bulb	120 Volts	120 Volts						
	Model	Row	Length	Amps Watt	s Amps Watts						
10	OEM	2	3'		A						
1 N	IOTE: "	-" not an optio	n on this cas	model.							
G	uideli	ines & l	Contro	I Setting	s						
G	uideli	ines &	Contro	I Setting	s						
Ir.	uideli	i <b>nes &amp;</b> ( <sup>2</sup> BTUH/ca	Coil	Evaporator		Discharge Air (°F)	Return Air (°F)	Discharge Air (FPM)			
	1		Coil	Evaporator (°F)	Superheat Set			-			

# **Defrost Controls**

ľ				Electric	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse	Air Defrost
	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
	OEM	2	6-8	40	49	70	47	26	45		

Medium Temperature Defrost Schedule

No. Per Day	Hours

1

2 3 4

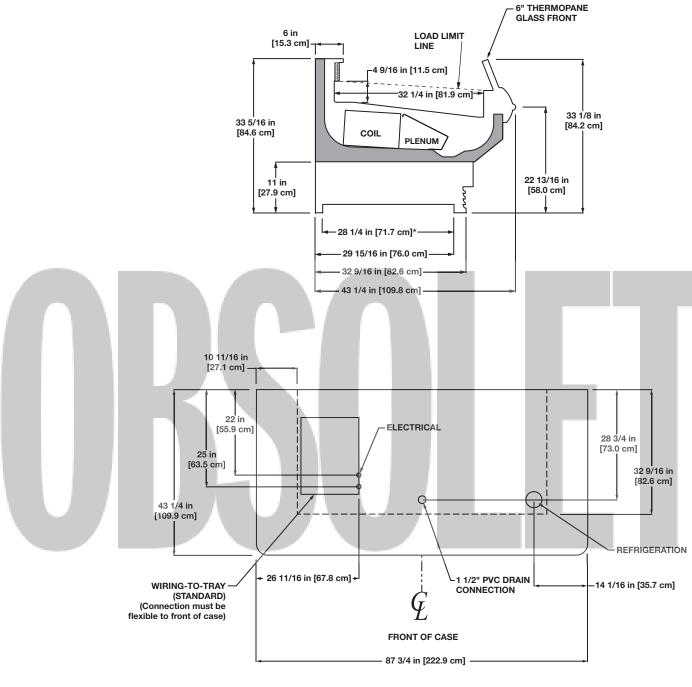
12 midnight 12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm

All measurements are taken per ARI 1200 - 2002 specifications.









NOTES:

\* STUB-UP AREA

• SUCTION LINE - 7/8", LIQUID LINE - 3/8"

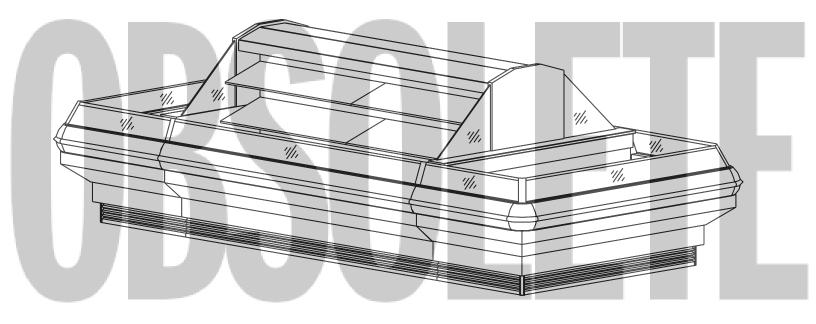


END CAPS

Deli/Meat



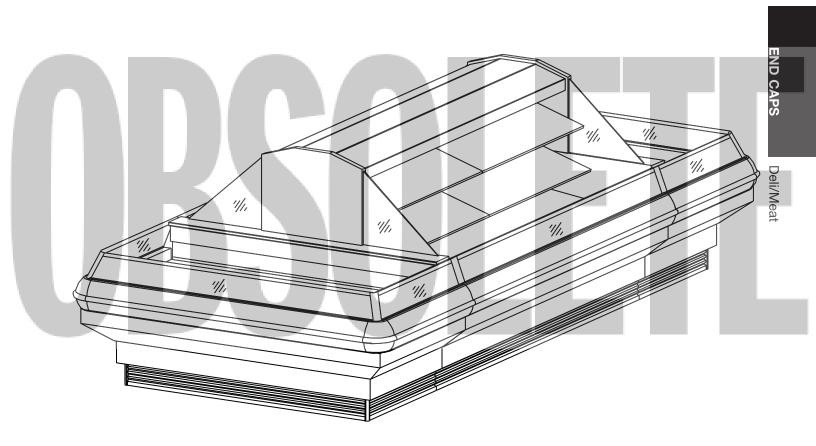
The OEMs shown below are unitized with two O3UM-8'cases with lighted rear sills and thermopane glass fronts.







The OEMs shown below are unitized with two O3UM-8'cases with lighted rear sills and thermopane glass fronts.



04/09

		Standard Fans 120 Volts		High Efficiency Fans 120 Volts			Anti-Condensate Heaters		Defrost Heaters			
	Fans per					120 Volts		208 '	Volts	240	Volts	
Model	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	
<b>ON3EM</b>	2	1.00	60	0.23	14	1.89	227	2.31	480	2.66	640	

# **Lighting Data**

	Dullas		Typica Light		Maximum Lighting						
	Bulbs per	Bulb	120 V	/olts	120 Volts						
Model		Length	Amps	Watts	Amps Watts						
ON3EN	vi 1	5'	0.28	34	1.13 136				-		
				-	_						
											_
Cuidali		ontro	L Cott	lingo							
Guid <mark>e</mark> li	ines & C	ontro	I Sett	tings							
Guideli	ines & C										
-1		Coil	Evapo	orator	Superheat Set	Discharge Air	Return Air	Discharge Air			
Model	<sup>1,2</sup> BTUH/cas	Coil se Type	Evapo (°F	orator F)	Superheat Set Point @ Bulb (°F)	(°F)	(°F)	(FPN	1)		
-1		Coil	Evapo (°F	orator F)	Superheat Set			•	1)		
Model ON3EM	<sup>1,2</sup> BTUH/cas 5648 <sup>3</sup>	coil e Type Enh.	Evapo (°F	prator F) 2	Superheat Set Point @ Bulb (°F) 6-8	(°F) 33	(°F) 45	(FPN	1)		
Model ON3EM 1 BTUHs/ft list	<sup>1,2</sup> BTUH/cas 5648 <sup>3</sup> ted are for paralle	Coil Type Enh.	Evapo (°F	orator F) 2	Superheat Set Point @ Bulb (°F)	(°F) 33 d by multiplying listed	(°F) 45 Frating by 1.13.	(FPM 275	1)		

3 Standard fans increase refrigeration load by 96 BTUH/fan.

4 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

				Electric Defrost		Timed Off Defrost		s Defrost	Reverse Air Defrost	
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
ON3EM	4	6 - 8	40	47	45	45	5			

5 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm

6 am - 2 pm - 10 pm 3 4

12 - 6 am - 12 - 6 pm

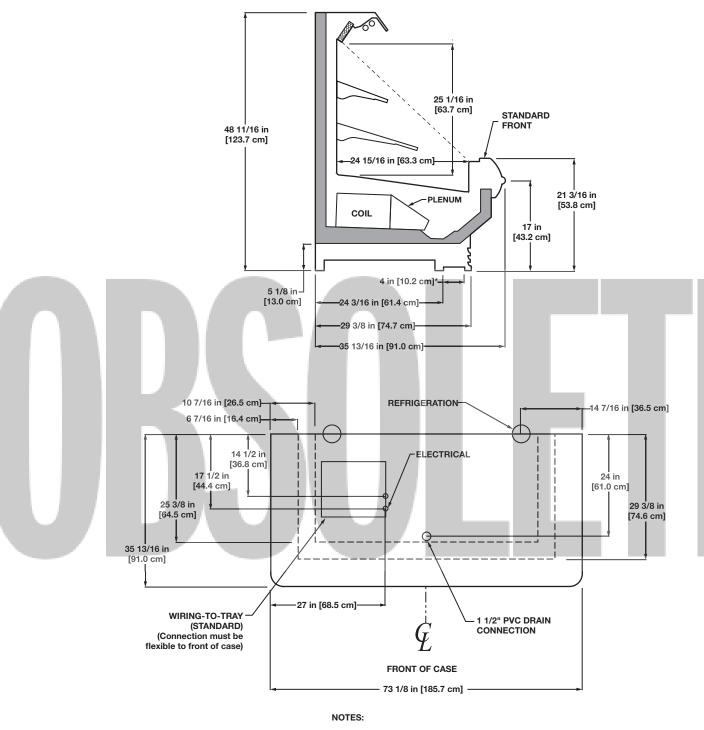
All measurements are taken per ARI 1200 - 2002 specifications.



US







\* STUB-UP AREA

SUCTION LINE - 7/8", LIQUID LINE - 3/8"
AVAILABLE SHELF SIZES: 10", 12", 14" & 16"

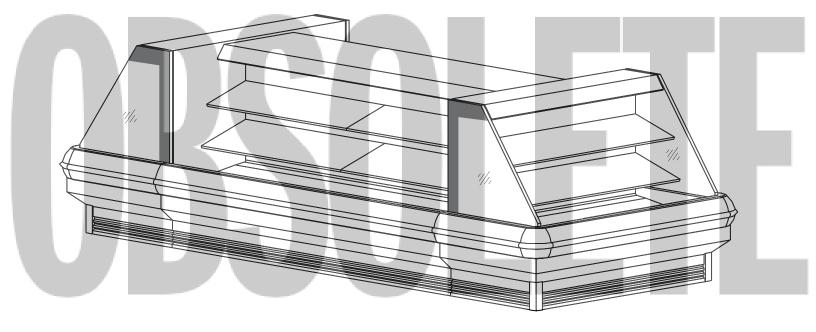


END CAPS

Deli/Meat



The ON3EMs shown below are unitized with two ON3UM-8'cases with lighted rear sills, standard fronts, and 14" & 16" shelves.

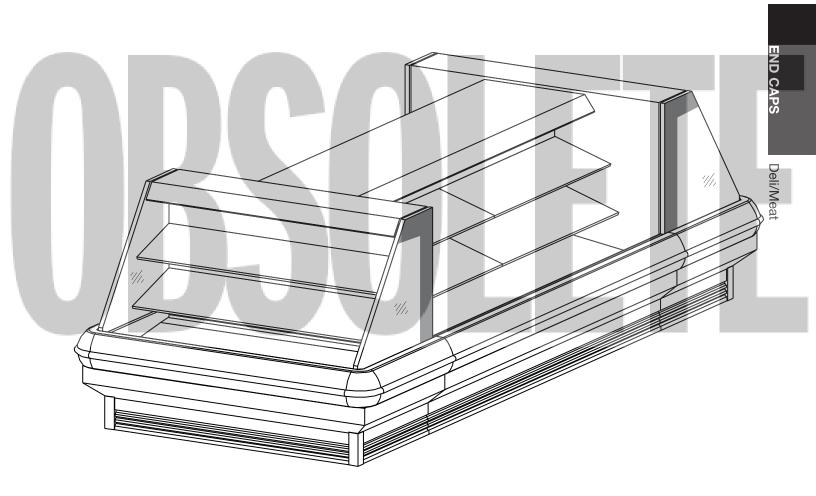


**ON3EM** 

3D Model



The ON3EMs shown below are unitized with two ON3UM-8'cases with lighted rear sills, standard fronts, and 14" & 16" shelves.





c(UL)us

		Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Defrost Heaters			
	Fans per							208 '	Volts	240	Volts
Model	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O3EM	2	1.00	60	0.23	14	1.89	227	2.31	480	2.66	640

# **Lighting Data**

M	odel	Bulbs per Row	Bulb Length	Typical per Light Row 120 Volts Amps Watte	Maximum Lighting 120 Volts					
	BEM	Row	3'	Amps Watts 0.37 44	Amps Watts					
				7 1						
Guid	eline	s & C	Contro	ol Setting	s					
	-	-						_		_
Мос	el <sup>1,2</sup> E	BTUH/ca	Coil se Type		Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity (FPM)	,4	
O3E	M	6388 <sup>3</sup>	Enh	. 22	6-8	33	45	275		
1 BTUHs	ft listed ar	e for paral	lel operatior	n. Conventional rat	ings may be approximated	d by multiplying listed	I rating by 1.13.			
					BTUH per 5' lighted shelf,	80 BTUH per 4' light	ed shelf, and 60	BTUH per 3' lighted shelf to	_	

determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

3 Standard fans increase refrigeration load by 96 BTUH/fan.

4 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

Γ				Electri	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse	Air Defrost
	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
	O3EM	4	6 - 8	40	47	45	45	<sup>5</sup>			

5 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight

2 12 am - 12 pm

3 6 am - 2 pm - 10 pm 4 12 - 6 am - 12 - 6 pm

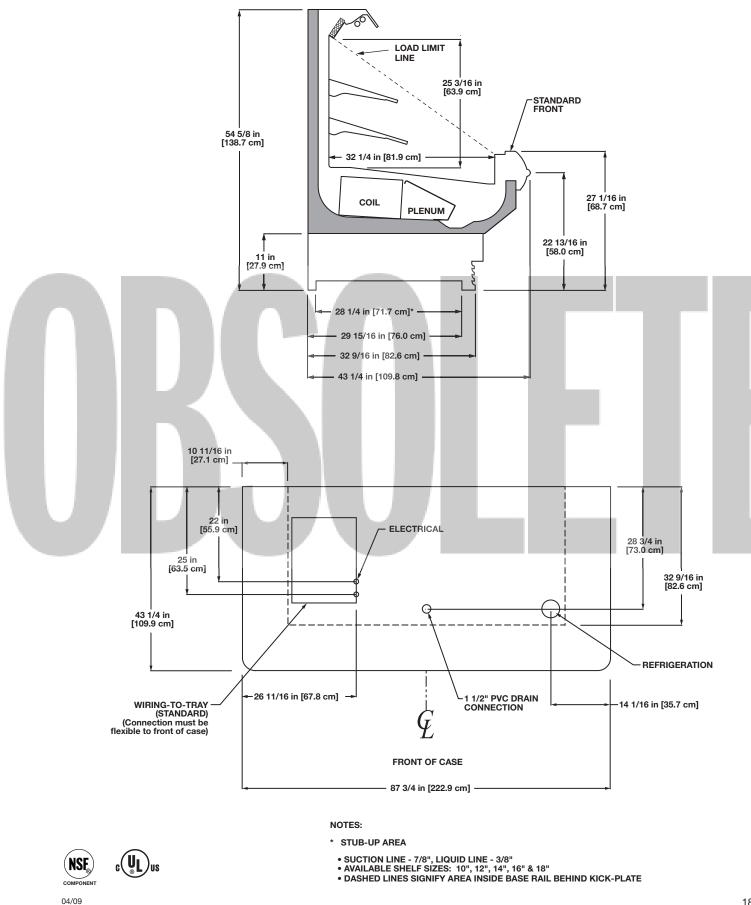
All measurements are taken per ARI 1200 - 2002 specifications.



US







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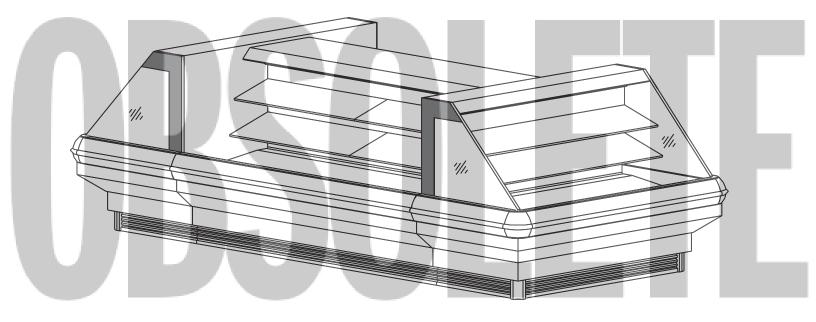
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PS

Deli/Meat

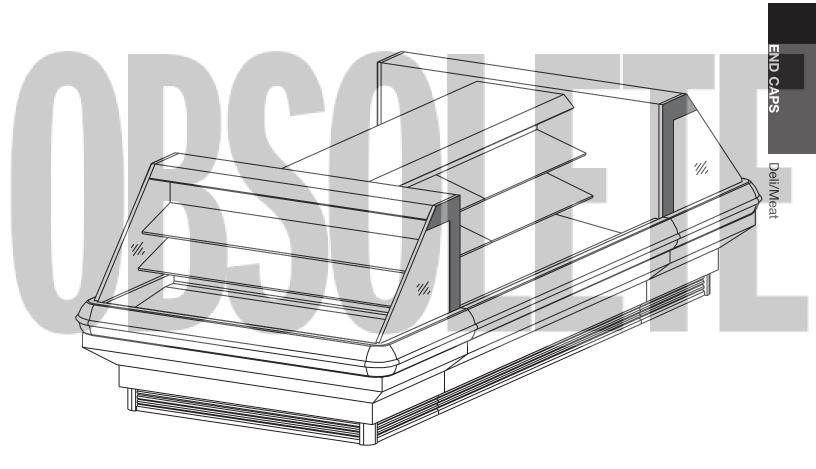


The O3EMs shown below are unitized with two O3UM-8'cases with lighted rear sills, standard fronts, and 14" & 16" shelves.





The O3EMs shown below are unitized with two O3UM-8'cases with lighted rear sills, standard fronts, and 14" & 16" shelves.





			Standar	d Fans	0	ficiency Ins		aters Defrost Heaters				
l		Fans per	120 Volts		120	Volts	120 Volts		208 Volts		240 Volts	
I	Model	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
l	ON3.5EM	2	1.00	60	0.23	14	1.89	227	2.31	480	2.66	640

# **Lighting Data**

ł		Bulbs			al per Row	Maxi Ligh			
1	Model	per Row	Bulb Length	120 Amps	Volts Watts	120 Amps	Volts Watt <b>s</b>	ſ	
	ON3.5EM	1	5'	0.28	34	1.42	170		
17									

# **Guidelines & Control Settings**

	Model	<sup>1,2</sup> BTUH/case	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)		Return Air (°F)	Discharge Air Velocity <sup>4</sup> (FPM)
I	ON3.5EM	6668 <sup>3</sup>	Enh.	22	6-8	33	45	275

1 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.13.

2 Listed case BTUH/ft indicates unlighted shelves. Add 100BTUH per 5' lighted shelf, 80 BTUH per 4' lighted shelf, and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.
 3 Standard fans increase refrigeration load by 96 BTUH/fan.

4 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

				c Defrost	st Timed Off Defrost Hot Gas Defrost			s Defrost	Reverse Air Defrost		
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
ON3.5EM	4	6 - 8	40	47	45	45	4				

5 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

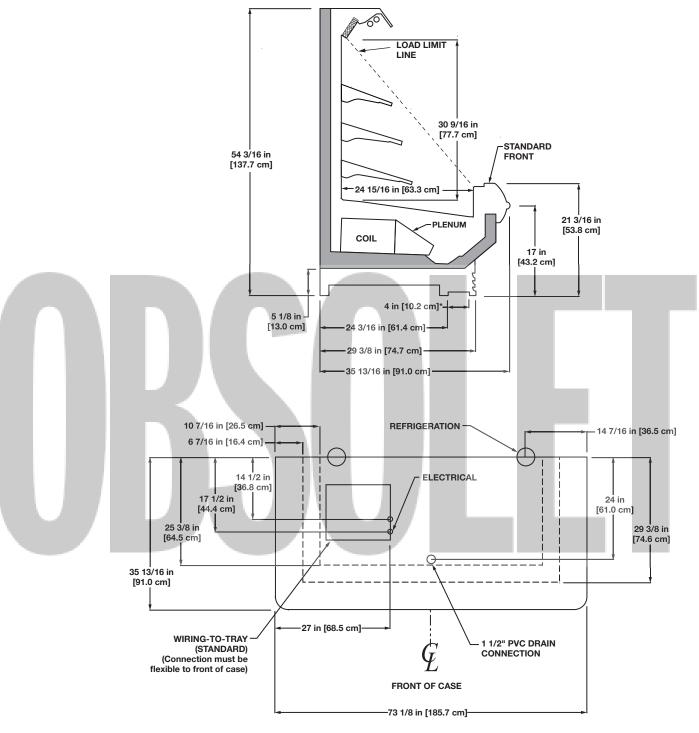
No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm

4 12 - 6 am - 12 - 6 pm

All measurements are taken per CRMA specifications.







NOTES:

- \* STUB-UP AREA
- SUCTION LINE 7/8", LIQUID LINE 3/8" AVAILABLE SHELF SIZES: 10", 12", 14" & 16"

(NSF COMPONENT END CAPS

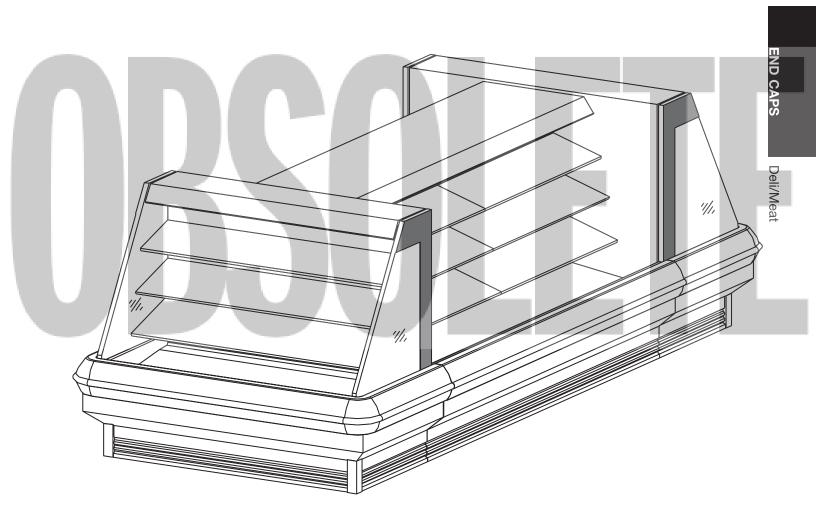
Deli/Meat







The ON3.5EMs shown below are unitized with two ON3.5UM-8' cases with lighted rear sills, standard fronts, and 12, 14" & 16" shelves.





C(UL)

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		Standar	d Fans	0	fficiency ans	Anti-Condensate Heaters Defrost Heaters					
	Fans per	120 Volts		120 Volts 120 Volts		Volts	208 '	Volts	240 Volts		
Model	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O3.5EM	2	1.00	60	0.39	23.4	1.89	227	2.31	480	2.66	640

# **Lighting Data**

		Bulbs-			<b>al per</b> Row		mum Iting	
1	Model	per Row	Bulb Length	120 Volts Amps Watts		120 Volts Amps Watts		
	03.5EM	2	3'	0.37	44	1.83	220	

# **Guidelines & Control Settings**

l	Model	<sup>1,2</sup> BTUH/case	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>4</sup> (FPM)
I	03.5EM	8037 <sup>3</sup>	Enh.	22	6-8	33	45	275

BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.13.
 Listed case BTUH/ft indicates unlighted shelves. Add 100BTUH per 5' lighted shelf, 80 BTUH per 4' lighted shelf, and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.
 Standard fans increase refrigeration load by 96 BTUH/fan.

4 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

l					c Defrost	Defrost Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
	O3.5EM	4	6 - 8	40	47	45	45	<sup>5</sup>			

5 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
•	0 0 40

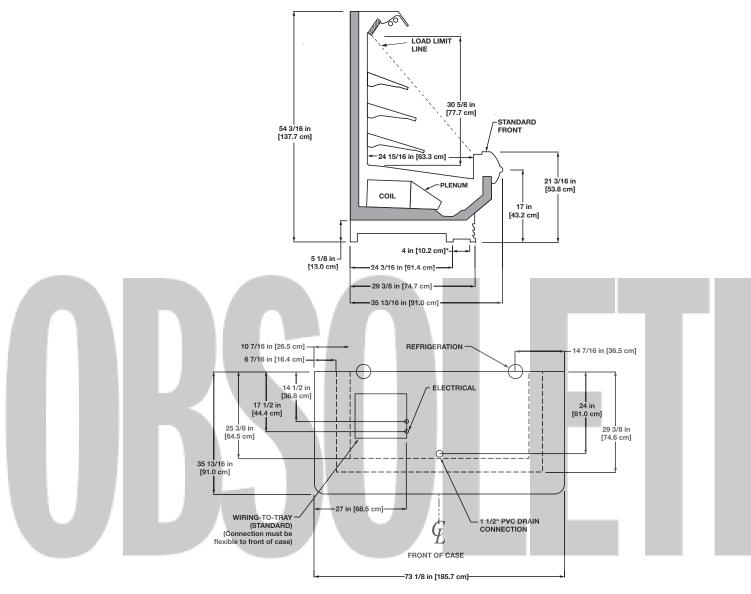
3 6 am - 2 pm - 10 pm 4 12 - 6 am - 12 - 6 pm

All measurements are taken per ARI 1200 - 2002 specifications.









NOTES:

\* STUB-UP AREA

SUCTION LINE - 7/8", LIQUID LINE - 3/8"
 AVAILABLE SHELF SIZES: 10", 12", 14" & 16"
 DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



(NSF)

COMPONENT

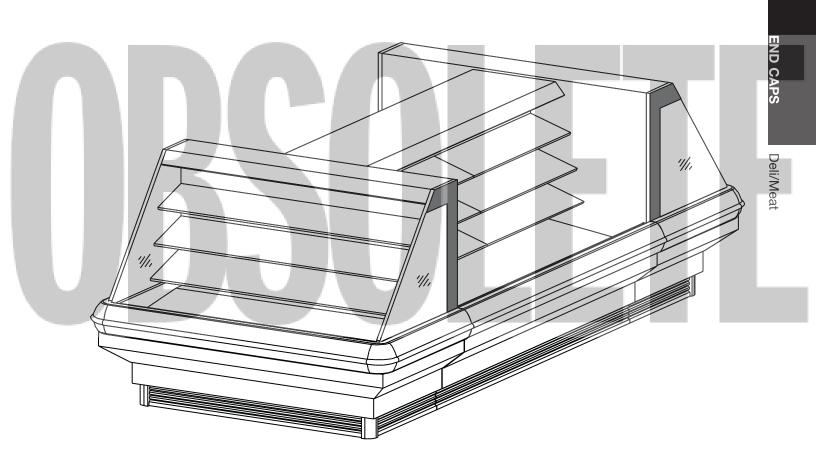
c(UL

END CAPS

Deli/Meat



The O3.5EMs shown below are unitized with two O3.5UM-8'cases with lighted rear sills, standard fronts, and 12", 14" & 16" shelves.



**O3.5EM** 

3D Model



		Standar	d Fans	0	ficiency Ins	Anti-Condensate Heaters Defrost Heaters					
	Fans per	120 Volts		120	Volts	120 Volts		208 Volts		240 Volts	
Model	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ON4EM	2	1.00	60	0.23	14	0.99	119	2.31	480	2.66	640

## **Lighting Data**

_	/lodel N4EM	Bulbs per Row	Bulb Length 5'	Typical per Light Row120 VoltsAmpsWatts0.2834	Maximum Lighting120 VoltsAmpsAmps1.42				T	
Gui	delin	es & C	ontro	I Setting	5					
Мо	del 1,2	BTUH/ca:	Coil se Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>4</sup> (FPM)		
ON	4EM	5998 <sup>3</sup>	Enh.	22	6-8	30	40	280		
1 BTUH	s/ft listed	are for parall	el operation	. Conventional rati	ngs may be approximated	d by multiplying listed	d rating by 1.20.			

2 Listed case BTUH/ft indicates unlighted shelves. Add 100BTUH per 5' lighted shelf, 80 BTUH per 4' lighted shelf, and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case. 3 Standard fans increase refrigeration load by 96 BTUH/fan.

4 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

l				Electric	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse	Air Defrost
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
l	ON4EM	6	6 - 8	40	47	45	47	<sup>5</sup>			

NSF

5 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm

3 4 6 am - 2 pm - 10 pm

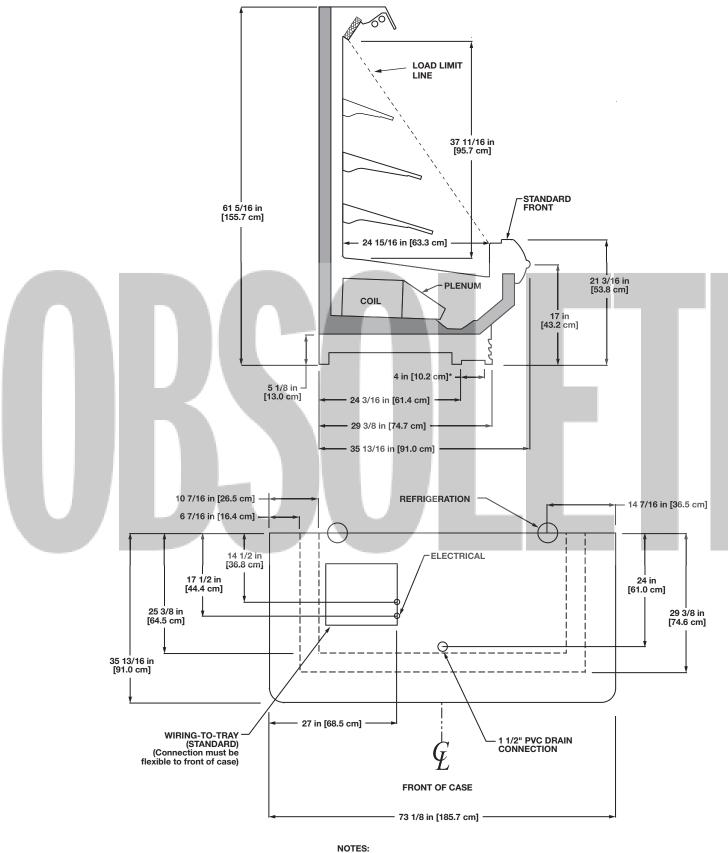
12 - 6 am - 12 - 6 pm











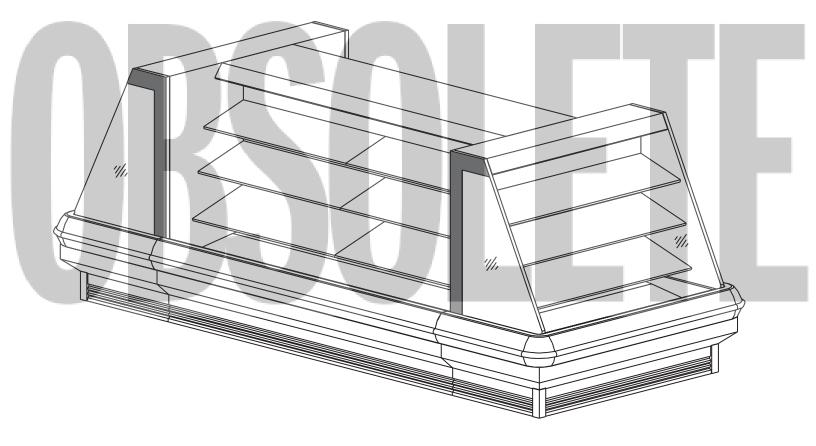
- \* STUB-UP AREA
- SUCTION LINE 7/8", LIQUID LINE 1/2" • AVAILABLE SHELF SIZES: 10", 12", 14" & 16"

END

) CAPS

Deli

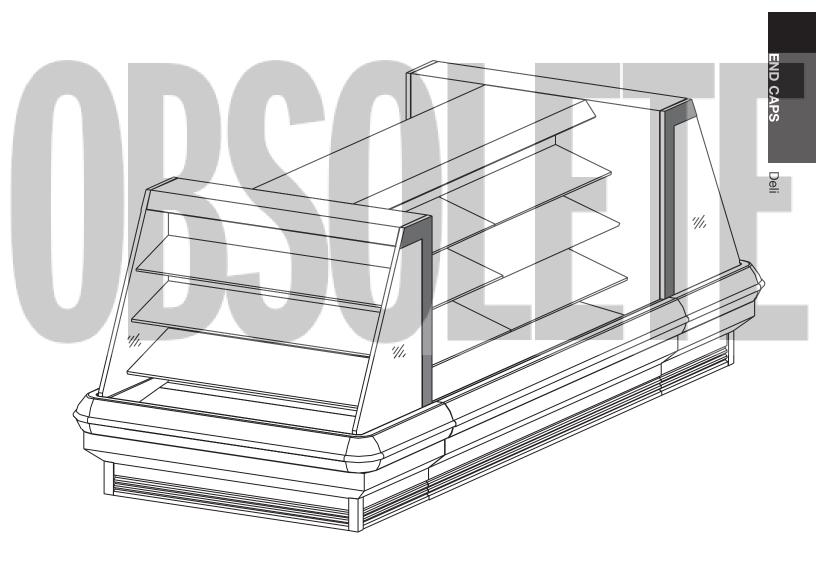
The ON4EMs shown below are unitized with two ON4UM-8' cases with lighted rear sills, standard fronts, and 14", 16" & 18" shelves.







The ON4EMs shown below are unitized with two ON4UM-8' cases with lighted rear sills, standard fronts, and 14", 16" & 18" shelves.





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		Standar	d Fans	0	ficiency Ins		ndensate iters		Defrost	Heaters	
	Fans per	120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts
Model	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ON5EM	2	1.00	60	0.23	14	1.89	227	2.31	480	2.66	640

# **Lighting Data**

	Bulbs_		Typical p Light Ro		Maxin Light										
	per	Bulb	120 Vol	ts	120 V	olts									
Model	Row	Length	Amps N	atts A	mps	Watts									
ON5EM		5'	0.28	34	1.42	170	1								
ìuidelii	nes & C	ontro	l Settir	ngs											
	nes & (	Coil	Evapora	tor S	uperhe int @ B	at Set ulb (°F)	Discharg (°F)	e Air	Return Aiı (°F)	r Discha	arge Air ' (FPM)	Velocity <sup>4</sup>			

determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case. 3 Standard fans increase refrigeration load by 96 BTUH/fan.

4 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

			Electric	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse	Air Defrost
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
ON5EM	6	6 - 8	40	47	45	47	<sup>5</sup>			

5 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

1	No.	Per	Dav	/	Hours

1

12 midnight 12 am - 12 pm 6 am - 2 pm - 10 pm 2

3 4 12 - 6 am - 12 - 6 pm

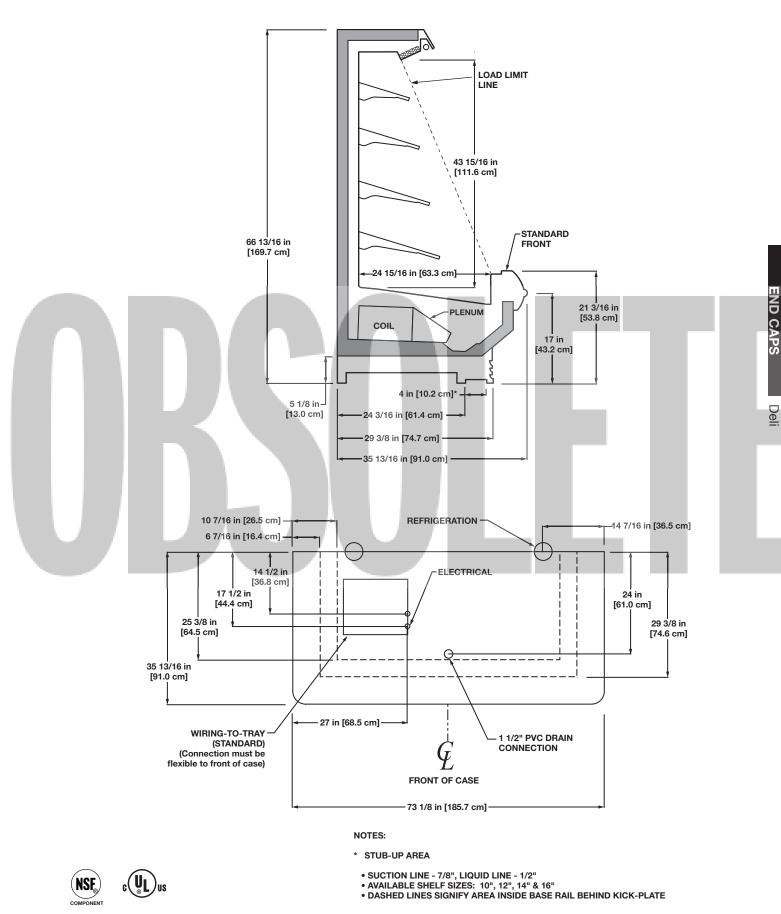
All measurements are taken per ARI 1200 - 2002 specifications.



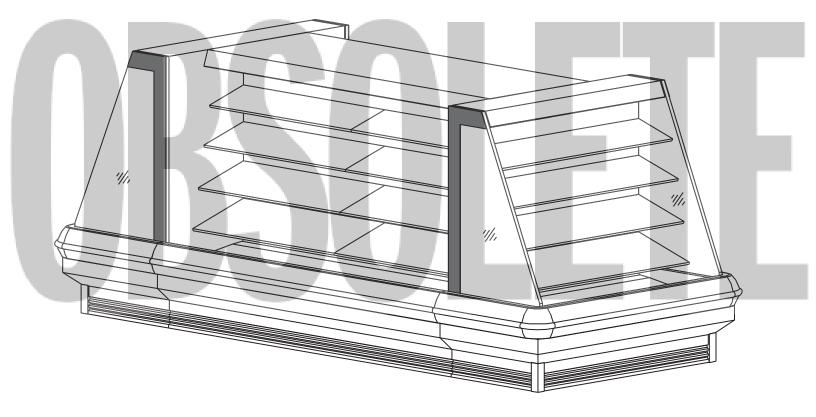
US







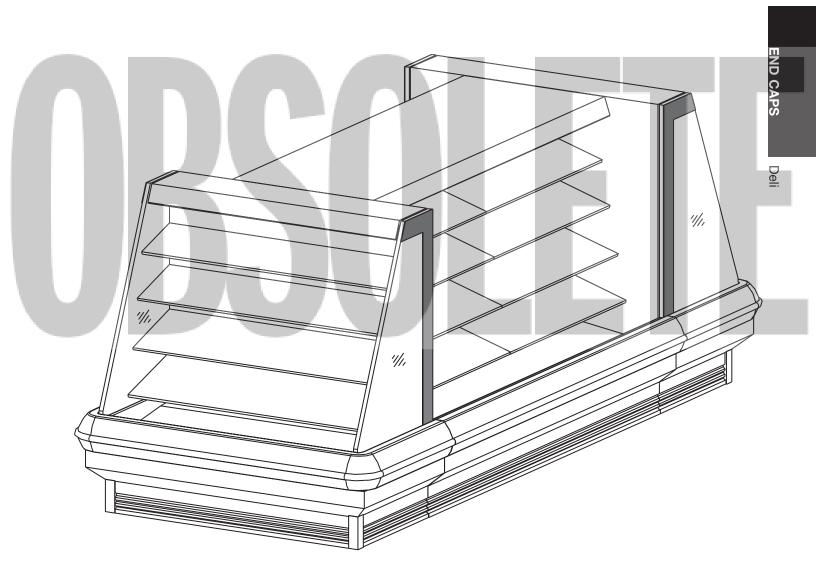
The ON5EMs shown below are unitized with two ON5UM-8' cases with lighted rear sills, standard fronts, and 12, 14" & 16" shelves.





A DOVER

The ON5EMs shown below are unitized with two ON5UM-8' cases with lighted rear sills, standard fronts, and 12, 14" & 16" shelves.



**ON5EM** 

3D Model



199

04/09

		Standar	d Fans		fficiency ans		ndensate iters		Defrost	Heaters	
	Fans per	120 \	/olts	120	Volts	120	Volts	208 '	Volts	240	Volts
Model	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OEP	2	1.00			14	1		2.88	600	3.33	798

1 NOTE: "- - -" not an option on this case model.

# **Lighting Data**

Model OEP Guideline	Bulbs per Row	Bulb Length		Row Li olts 12 Watts Amp	aximum ghting 0 Volts s Watts 					
Model	<sup>2</sup> E	3TUH/case	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>4</sup> (FPM)		
	luce	2052 <sup>3</sup>	Enh.	29	6-8	NA	47	NA <sup>5</sup>		
2 BTUHs/case listed 3 Standard fans inc 4 Average discharge 5 Not Applicable	rease refr	rigeration load	by 96 BTUI		iy be approximated by mi	Iltiplying listed rating	by 1.06.			

## **Defrost Controls**

			Electri	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse	Air Defrost
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
OEP	2	6 - 8	40	49	60	47	26	45		

#### Medium Temperature Defrost Schedule

No. Per Day Hours

1

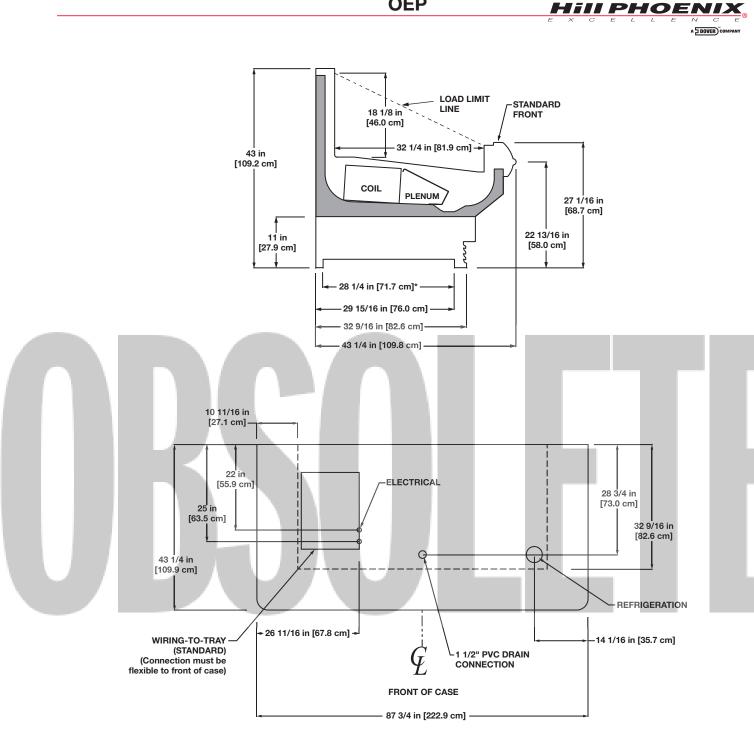
2

12 midnight 12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 3 4

All measurements are taken per ARI 1200 - 2002 specifications.







**OEP** 

#### NOTES:

\* STUB-UP AREA

• SUCTION LINE - 7/8", LIQUID LINE - 3/8"



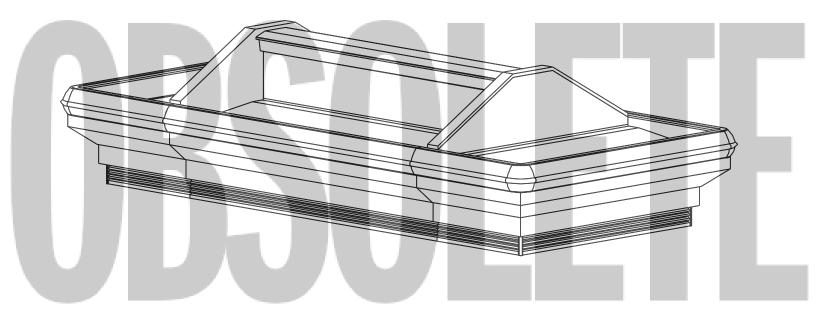


END CAPS

**Bulk Produce** 



The OEPs shown below are unitized with two OP-8'cases with 43" rear sills and standard fronts.

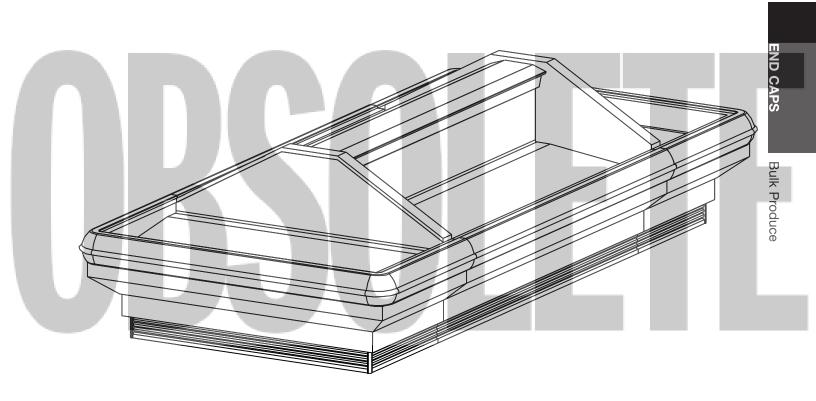




202



The OEPs shown below are unitized with two OP-8'cases with 43" rear sills and standard fronts.



04/09



# Narrow Multi-Deck Bulk Produce End Cap Merchandiser **ON3EP**

#### **Electrical Data**

		Standar	d Fans	0	ficiency Ins		ndensate iters		Defrost	Heaters	
	Fans per	120 \	/olts	120	Volts	120	Volts	208 '	Volts	240	Volts
Model	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ON3EP	2	1.00	60	0.15	9.2	1		2.31	480	2.66	640

1 NOTE: "- - -" not an option on this case model.

# **Lighting Data**

	Model ON3EP	Bulbs per Row	Bulb	Typical Light F 120 Vo mps	Row Li	aximum ghting 0 Volts s Watts 				ľ	
(	Guidelin	es & (	Control	Setti	ings						
	Guidelin Mode		Control BTUH/case	Coil	ings Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>4</sup> (FPM)	1	F.
	- 11	I 2		Coil	Evaporator					]	Ľ

## **Defrost Controls**

				c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse	Air Defrost
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
ON3EP	2	6 - 8	40	49	60	47	26	45		

Medium Temperature Defrost Schedule

No.	Per	Dav	/	Hours
		,		

1

2

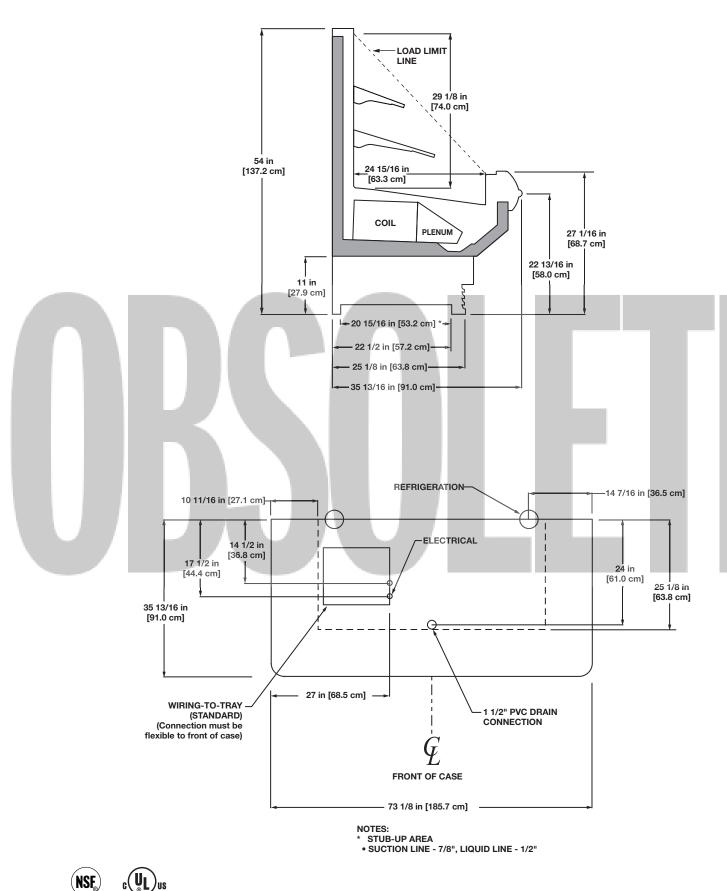
12 midnight 12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 3 4

All measurements are taken per ARI 1200 - 2002 specifications.

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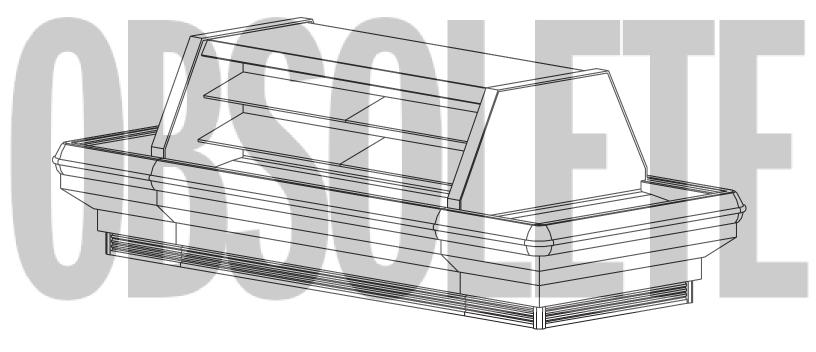






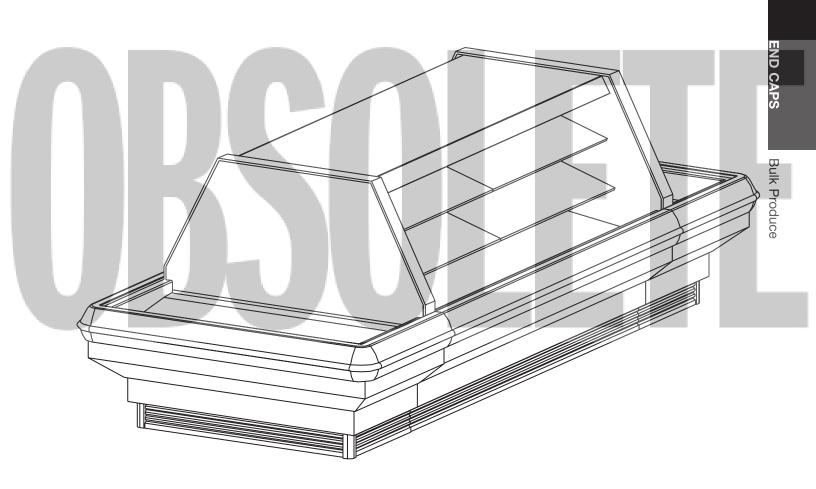
END CAPS Bulk Produce

The ON3EPs shown below are unitized with two ON3UM-8' cases with 16" lighted rear sills, standard fronts, and 14" & 16" shelves.





The ON3EPs shown below are unitized with two ON3UM-8' cases with 16" lighted rear sills, standard fronts, and 14" & 16" shelves.



**ON3EP** 

3D Model



#### **Electrical Data**

		Standar	d Fans	0	ficiency Ins		ndensate iters	Defrost Heaters			
	Fans per	120 Volts		120 Volts		120 Volts		208 '	Volts	240	Volts
Model	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O3EP	2	1.00	60	0.15	9.2	1		2.88	600	3.33	798

1 NOTE: "- - -" not an option on this case model.

# **Lighting Data**

	Model O3EP	Bulbs per Row	Ĵ		Row Li olts 12 Watts Amp	aximum ghting 0 Volts s Watts				Ľ
	Model	<sup>2</sup> E	STUH/case	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>4</sup> (FPM)	
	O3EP Bulk Proc	luce	2405 <sup>3</sup>	Enh.	29	6-8	NA	47	NA <sup>5</sup>	
3	BTUHs/case listed Standard fans incr Average discharge Not Applicable	ease refri	geration load b	y 96 BTU		ay be approximated by m	ultiplying listed rating	by 1.06.		

## **Defrost Controls**

			Electric	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse Air Defrost		
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
O3EP	2	6 - 8	40	49	60	47	26	45			

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight

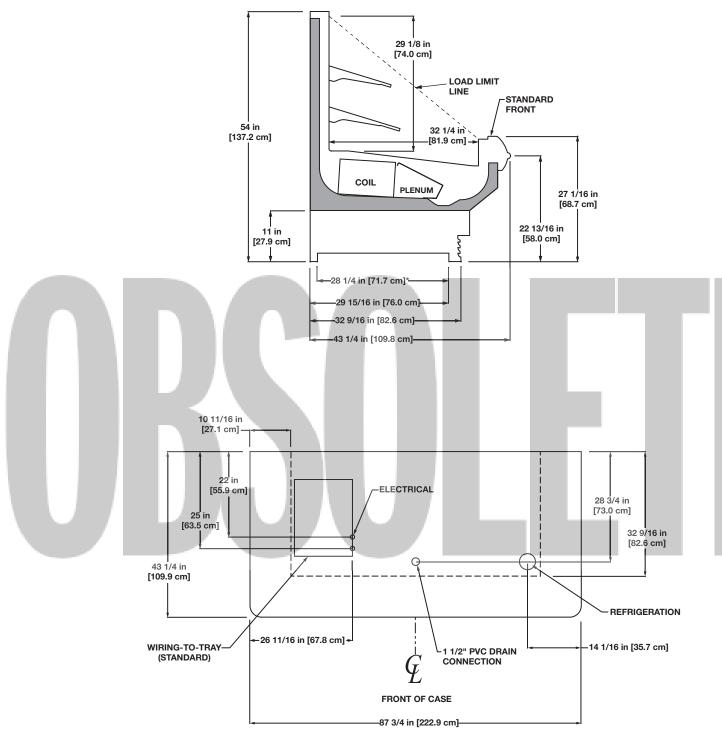
12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 2 3 4



)us







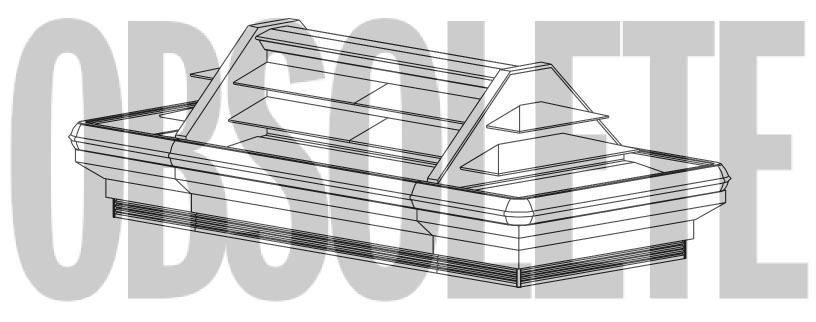
NOTES:

- \* STUB-UP AREA
- SUCTION LINE 7/8", LIQUID LINE 3/8"

END CAPS



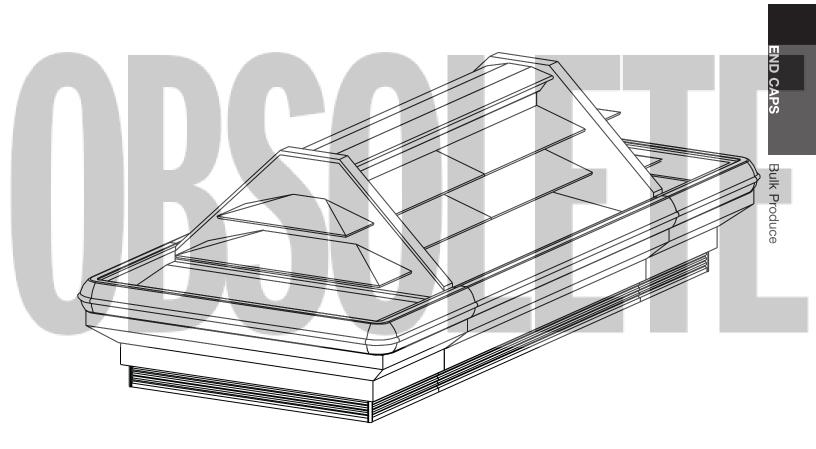
The O3EPs shown below are unitized with two O3UM-8'cases with standard rear sills, standard fronts, and 14" & 16" shelves.





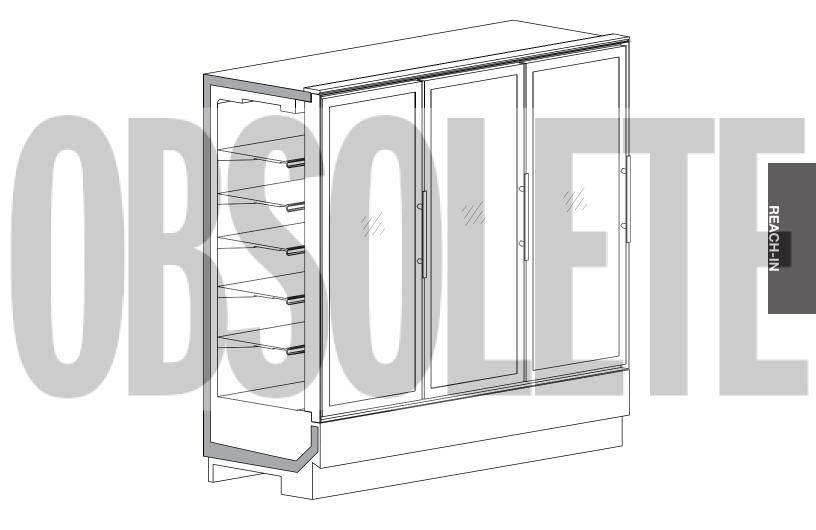


The O3EPs shown below are unitized with two O3UM-8'cases with standard rear sills, standard fronts, and 14" & 16" shelves.





# **REACH-IN**



#### **NOTES**

- Cases shown with an ANSI/NSF\* Mark are Certified by NSF
- Cases shown with an UL\* Mark are Listed by Underwriters Laboratories Inc.
- Allow for an extra 1/8" per joint when lining up merchandisers.
- Technical information contained herein is subject to change without notice.

\* ANSI - American National Standard Institute NSF - National Sanitation Foundation UL - Underwriters Laboratories Inc

# Narrow Glass Door Reach-in Beverage Merchandiser ONRB - 2, 3, 4, 5 & 6-door

#### **Electrical Data**

Defrost Heaters       Volts     240 Volts       Watts     Amps     Watts
Watts Amps Watts
914 5.06 1215
1032 5.71 1370
1355 7.55 1813
1655 9.17 2201
1955 10.79 2589

#### **Lighting Data**

		Fluore	escent		nax 2 ED		Ge			Cros		
		120	Volts	120	Volts	imax 2 H Credit	120 Volts		Gen 3 BTUH Credit	120 Volts		Crossfire BTUH Credit
Model		Amps	Watts	Amps	Watts	r door)	Amps	Watts	(per door)	Amps	Watts	(per door)
ONRB	2-door	1.50	180	0.57	68	115	0.48	58	126	0.58	70	113
	3-door	1.90	228	0.85	102	100	0.73	87	112	0.88	105	97
	4-door	2.40	288	1.13	136	 92	0.97	116	105	1.17	140	90
	5-door	2.90	348	1.42	170	88	1.21	145	100	1.46	175	86
	6-door	3.40	408	1.70	204	85	1.45	174	98	1.75	210	83

# **Anti-Condensate Heater Data**

I			Anthony 101			ony <sup>1</sup> nator	Anth	iony <sup>1</sup> ator 2		ntron a (NT)
Ì			120 Volts			Volts		Volts	120 Volts	
I	Model		Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
	ONRB	2-door	1.02	122	0.75	90	0.75	90	0.97	116
		3-door	1.50	180	1.11	133	1.11	133	1.43	172
		4-door	1.97	236	1.44	173	1.44	173	1.93	231
		5-door	2.41	289	1.75	210	1.75	210	2.40	288
		6-door	2.93	351	2.14	257	2.14	257	3.60	432

1 Eliminator values given for doors with no heat on the glass.

#### Medium Temperature Defrost Schedule

- 1
- 2
- 12 midnight 12 am 12 pm 6 am 2 pm 10 pm 12 6 am 12 6 pm 3 4

All measurements are taken per ARI 1200 - 2002 specifications.





#### **Guidelines & Control Settings**

Model	BTUHs <sup>3</sup> per door	Coil Type	Evaporator (°F)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity⁵ (°F)
ONRB <sup>2</sup> : Deli/Dairy	734 <sup>4</sup>	Enh.	32	6-8	36	38	460
ONRB <sup>2</sup> : Beverage	704 <sup>4</sup>	Enh	34	6-8	39	40	460

2 All data listed is for an ONRB configured with 20" shelves.

3 BTUHs/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

				Electri	c Defrost	Timed-	Off Defrost	Hot Ga	as Defrost	Reverse	Air Defrost
med off defrost is utilized. If electric or hot gas defrost is utilized case only requires 1 defrost per day.	Model										
	ONRB	46	6-8	30	47	30	40	24	47	7	

**NSF** 

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No. Per Day Hours

1

2

12 midnight 12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 3 4

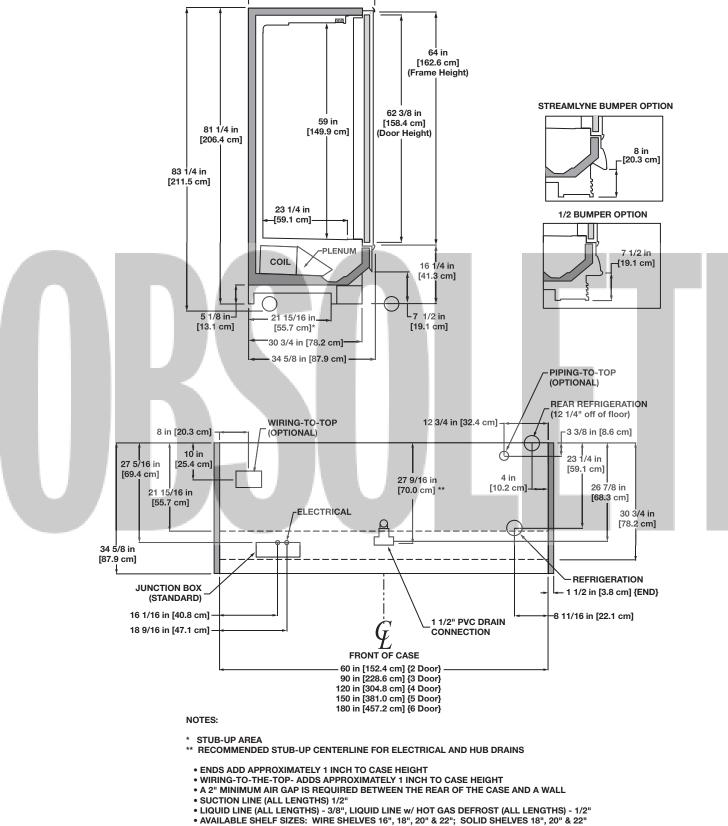
All measurements are taken per ARI 1200 - 2002 specifications.



A DOVER COMPANY

34 5/8 in [88.0 cm]





- TOP SHELF MUST BE 20" OR SHORTER
- RECOMMENDED CONFIGURATION IS 20" SHELF AND 4 22" SHELVES BELOW TOP SHELF
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

NSF

COMPONEN





# High Narrow Glass Door Reach-in Beverage Merchandiser ONRBH - 2, 3, 4 & 5-door

## **Electrical Data**

Γ				Standa	rd Fans		ficiency ns		Defrost	Heaters	
			Fans per	120	Volts	120	Volts	208	Volts	240	Volts
Ν	Vodel		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
0	NRBH	2-door	2	1.00	60	0.31	118	4.39	914	5.06	1215
		3-door	3	1.50	90	0.46	28	4.96	1032	5.71	1370
		4-door	4	2.00	120	0.61	37	6.51	1355	7.55	1813
		5-door	5	2.50	150	0.77	46	7.96	1655	9.17	2201

# **Lighting Data**

İ				escent Volts	LE	nax 2 ED Volts	Optimax 2	LE	n 3 D Volts	Gen 3	Cros LE 120 V	D	Crossfire
7	Model		Amps	Watts	Amps	Watts	BTUH Credit (per door)	Amps	Watts	BTUH Credit (per door)	Amps	Watts	BTUH Credit (per door)
	ONRBH	2-door	1.50	180	0.57	68	115	0.48	58	126	0.58	70	113
I		3-door	1.90	228	0.85	102	100	0.73	87	112	0.88	105	97
I		4-door	2.40	288	1.13	136	92	0.97	116	105	1.17	140	90
l		5-door	2.90	348	1.42	170	88	1.21	145	100	1.46	175	86

# Anti-Condensate Heater Data

			Antho	ony 101		hony <sup>1</sup> inator		nony <sup>1</sup> nator 2		ntron a (NT)
1	1		120 Volts		120	Volts	120	Volts	120 Volts	
	Model		Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
1	ONRBH	2-door	1.06	127	0.78	94	0.78	94	1.00	121
I		3-door	1.54	185	1.13	136	1.13	136	1.49	179
		4-door	2.06	247	1.51	181	1.51	181	2.00	242
		5-door	2.53	304	1.84	221	1.84	221	2.48	298

1 Eliminator values given for doors with no heat on the glass.





#### **Guidelines & Control Settings**

Model	BTUHs <sup>3</sup> per door	Coil Type	Evaporator (°F)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity⁵ (°F)
ONRBH <sup>2</sup> : Deli/Dairy	734 <sup>4</sup>	Enh.	32	6-8	36	38	405
ONRBH <sup>2</sup> : Beverage	704 <sup>4</sup>	Enh.	34	6-8	38	40	405

2 All data listed is for an ONRBH configured with 20" shelves.

3 BTUHs/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

				Electric Defrost		Timed-0	Off Defrost	Hot Ga	as Defrost	Reverse Air Defrost		
	Model	Defrost per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	
C	ONRBH	4 <sup>6</sup>	6-8	30	47	30	40	24	47	<sup>7</sup>		

#### Medium Temperature Defrost Schedule

No. Per Day <u>Hours</u>

- 12 midnight 1
- 2 12 am - 12 pm
- 6 am 2 pm 10 pm 12 6 am 12 6 pm 3
- 4

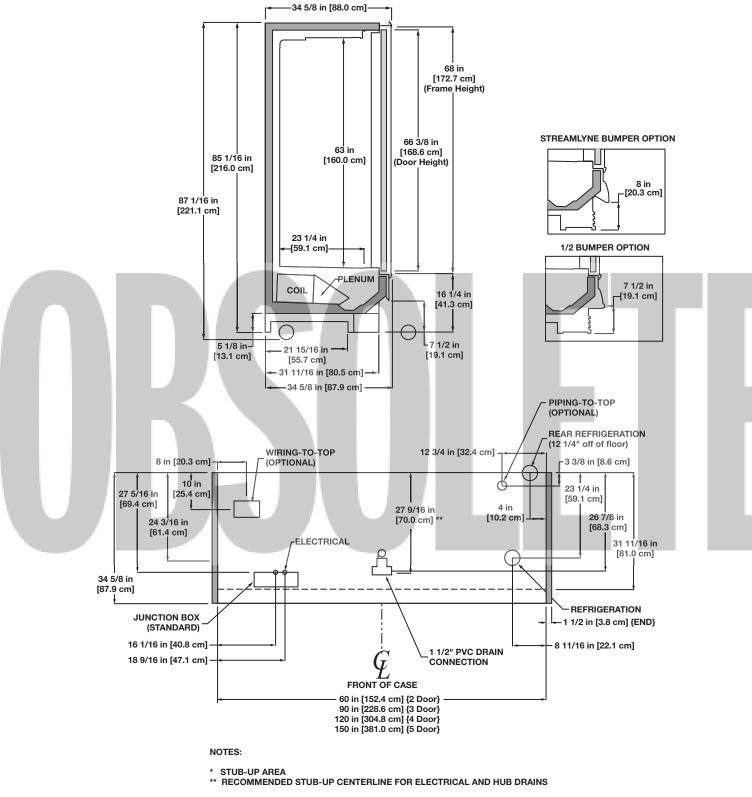
All measurements are taken per ARI 1200 - 2002 specifications.



US







- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-TO-THE-TOP- ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- A 2 MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
  SUCTION LINE (ALL LENGTHS) 1/2"
  LIQUID LINE (ALL LENGTHS) 3/8", LIQUID LINE w/ HOT GAS DEFROST (ALL LENGTHS) 1/2"
  AVAILABLE SHELF SIZES: WIRE SHELVES 16", 18", 20" & 22"; SOLID SHELVES 18", 20" & 22"
  TOP SHELF MUST BE 20" OR SHORTER
- RECOMMENDED CONFIGURATION IS 20" SHELF AND 4 22" SHELVES BELOW TOP SHELF
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

**NSF** 

COMPONEN<sup>®</sup>





# Glass Door Reach-in Beverage Merchandiser ORB - 2, 3, 4, 5 & 6-door

## **Electrical Data**

I												
				Standa	rd Fans		ficiency .ns	Defrost Heaters				
			Fans per	120	Volts	120	Volts	208 Volts		240	Volts	
	Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	
	ORB	2-door	2	1.00	60	0.31	18	4.39	914	5.06	1215	
l		3-door	3	1.50	90	0.46	28	4.96	1032	5.71	1370	
I		4-door	4	2.00	120	0.61	37	6.51	1355	7.55	1813	
		5-door	5	2.50	150	0.77	46	7.96	1655	9.17	2201	
		6-door	6	3.00	180	0.92	55	9.40	1955	10.79	2589	
1												

# **Lighting Data**

		Fluore	escent		nax 2 ED			Ge			Cros		
Model		120	Volts	120 Volts		Optimax 2 BTUH Credit		120 Volts		Gen 3 BTUH Credit	120 Volts		Crossfire BTUH Credit
Model		Amps	Watts	Amps	Watts		r door)	Amps	Watts	(per door)	Amps	Watts	(per door)
	2-door	1.50	180	0.57	68		115	0.48	58	126	0.58	70	113
	3-door	1.90	228	0.85	102		100	0.73	87	112	0.88	105	97
ORB	4-door	2.40	288	1.13	136		92	0.97	116	105	1.17	140	90
	5-door	2.90	348	1.42	170		88	1.21	145	100	1.46	175	86
	6-door	3.40	408	1.70	204		85	1.45	174	98	1.75	210	83

# Anti-Condensate Heater Data

Į			Antho	Anthony 101		ony <sup>1</sup> nator	Anth Elimin	ony <sup>1</sup> ator 2	Gemtron Tundra (NT)	
ł			120	120 Volts		Volts	120	Volts	120 Volts	
	Model		Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
		2-door	1.02	122	0.75	90	0.75	90	0.97	116
		3-door	1.50	180	1.11	133	1.11	133	1.43	172
	ORB	4-door	1.97	236	1.44	173	1.44	173	1.93	231
		5-door	2.41	289	1.75	210	1.75	210	2.40	288
		6-door	2.93	351	2.14	257	2.14	257	3.60	432

1 Eliminator values given for doors with no heat on the glass.





## **Guidelines & Control Settings**

Model	BTUHs <sup>2</sup> per door	Coil Type	Evaporator (°F)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>4</sup> (°F)
ORB: Deli/Dairy	734 <sup>3</sup>	Enh.	32	6-8	36	38	380
ORB: Beverage	704 <sup>3</sup>	Enh.	34	6-8	38	40	380

2 BTUHs/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

3 Standard fans increase refrigeration load by 96 BTUH/fan.

4 Average discharge air velocity at peak of defrost.

#### **Defrost Controls**

			Electri	ic Defrost	Timed-	Off Defrost	Hot Ga	as Defrost	Reverse	Air Defrost
vlodel	Defrost per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)						
ORB	4 <sup>5</sup>	6-8	30	47	30	40	24	47	<sup>6</sup>	
ned off de	frost is utilized	If electric or hot (	nas defrost is ut	tilized case only red	uires 1 defrost	per dav	_		_	_
		this case model.	-			por day.				
							_			

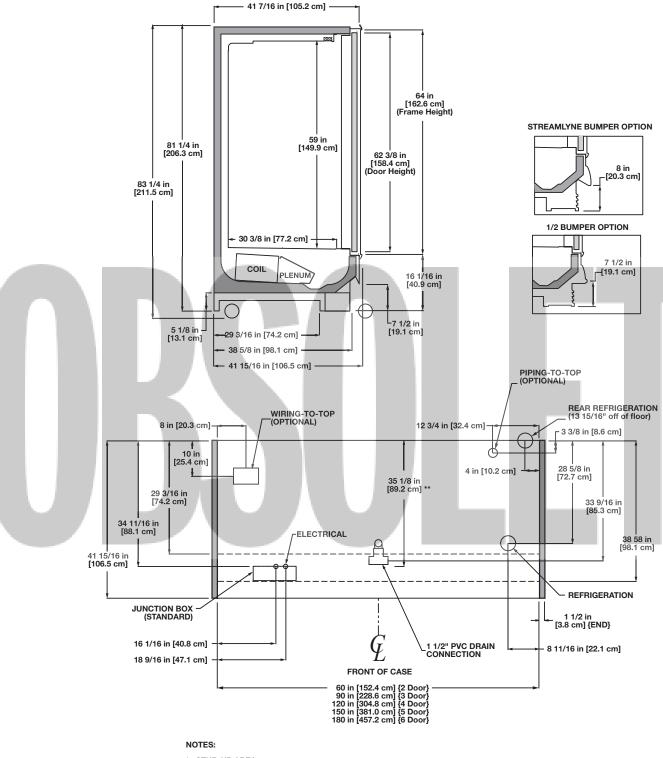
No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm











- \* STUB-UP AREA \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
  WIRING-TO-THE-TOP- ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
  A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
  SUCTION LINE (ALL LENGTHS) 1/2"
  LIQUID LINE (ALL LENGTHS) 3/8", LIQUID LINE w/ HOT GAS DEFROST (ALL LENGTHS) 1/2"
  AVAILABLE SHELF SIZES: WIRE SHELVES 16", 18", 20", 22", 8.23 1/2"; SOLID SHELVES 18", 20", 22", 24" & 27"
  TOP SHELF MUST BE 24" OR SHORTER WHEN USING 27" SHELVES.
  RECOMMENDED CONFIGURATION IS 1 24" SHELF AND 4 27" SHELVES BELOW TOP SHELF
  ADSIED LINES AND LINES AND LINES AND LINE AND LINE SHELVES DE AND LINE SHELVES AND LINES AND LINE

- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE







# Glass Door Reach-in Rear Load Beverage Merchandiser ORBR - 8' & 12'

#### **Electrical Data**

I	Fans			Standa	rd Fans		ficiency Ins	Defrost Heaters				
I			Fans per	120	Volts	120	Volts	208	Volts	240	Volts	
	Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	
I	0000	8'	3	1.50	90	0.46	28	3.85	800	4.44	1065	
	ORBR 12' 4		4	2.00	120	0.61	37	5.75	1200	6.67	1600	

# **Lighting Data**

ľ		Fluorescent		escent		nax 2 D		Ge LE	n 3 ED		Cros LE	sfire D	
			120	Volts	120	Volts	Optimax 2 BTUH Credit	120	Volts	Gen 3 BTUH Credit	120	Volts	Crossfire BTUH Credit
1	Model		Amps	Watts	Amps	Watts	(per door)	Amps	Watts	(per door)	Amps	Watts	(per door)
	0000	8'	1.90	228	0.93	102	100	0.73	87	115	0.88	105	101
ľ	ORBR	12'	2.40	288	1.23	136	92	0.93	116	106	1.17	140	91

# Anti-Condensate Heater Data

		Antho	ny 101	Anth Elimi	iony <sup>1</sup> nator	Anth Elimin	iony <sup>1</sup> ator 2	
		120	Volts	120	Volts	120 Volts		
Model		Amps	Watts	Amps	Watts	Amps	Watts	
0000	8'	1.55	93	1.13	135	1.13	135	
ORBR	12'	2.15	258	1.56	187	1.56	187	
						Concession of the local division of the loca		

1 Eliminator values given for doors with no heat on the glass.

# **Guidelines & Control Settings**

Model	BTUHs <sup>3</sup> per door	Coil Type	Evaporator (°F)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity⁵ (°F)
ORBR <sup>2</sup>	1054 <sup>4</sup>	Enh.	34	6-8	38	40	380

2 ORBR-8' has 3 doors, ORBR-12' has 4 doors.

3 BTUHs/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.





# Glass Door Reach-in Rear Load Beverage Merchandiser ORBR - 8' & 12'

# **Defrost Controls**

			Electri	c Defrost	Timed-0	Off Defrost	Hot Ga	as Defrost	Reverse Air Defrost		
Model	Defrosts per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	
ORBR	4 <sup>6</sup>	6-8	30	47	30	40	24	47	7		

6 If timed off defrost is utilized. If electric or hot gas defrost is utilized case only requires 1 defrost per day.

7 NOTE: "---" not an option on this case model.



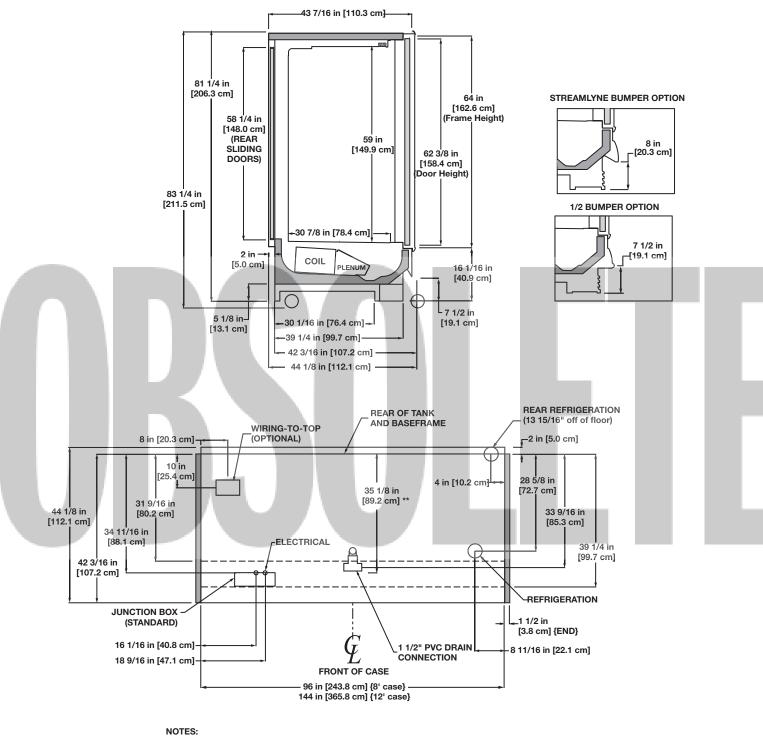
Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm









- STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-TO-THE-TOP- ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
- SUCTION LINE (ALL LENGTHS) 1/2"
- LIQUID LINE (ALL LENGTHS) 3/8", LIQUID LINE w/ HOT GAS DEFROST (ALL LENGTHS) 1/2" AVAILABLE SHELF SIZES: WIRE SHELVES 16", 18", 20", 22" & 23 1/2"; SOLID SHELVES 18", 20", 22", 24" & 27" TOP SHELF MUST BE 24" OR SHORTER WHEN USING 27" SHELVES
- RECOMMENDED CONFIGURATION IS 1 24" SHELF AND 4 27" SHELVES BELOW TOP SHELF
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

NSF COMPONEN





# High Glass Door Reach-in Beverage Merchandiser ORBH - 2, 3, 4, 5, 6-door, 8' & 12'

#### **Electrical Data**

ers
240 Volts
os Watts
6 1215
1 1370
5 1813
7 2201
79 2589
4 1065
7 1600
.7 4

# **Lighting Data**

		Fluorescent 120 Volts		Optimax 2 LED 120 Volts		Optimax 2 BTUH Credit	Gen 3 LED 120 Volts		Gen 3 BTUH Credit	Crossfire LED 120 Volts		Crossfire BTUH Credit
Model		Amps	Watts	Amps	Watts	(per door)	Amps	Watts	(per door)	Amps	Watts	(per door)
ORBH	2-door	1.50	180	0.57	68	115	0.48	58	126	0.58	70	113
	3-door	1.90	228	0.85	102	100	0.73	87	112	0.8 <mark>8</mark>	105	97
	4-door	2.40	288	1.13	136	92	0.97	116	105	1.17	140	90
	5-door	2.90	348	1.42	170	88	1.21	145	100	1.46	175	86
	6-door	3.40	408	1.70	204	85	1.45	174	98	1.75	210	83
	8'	1.90	228	0.85	102	100	0.73	87	115	0.8 <b>8</b>	<b>10</b> 5	101
	12'	2.40	288	1.13	136	92	0.97	116	106	1.17	140	91

(NSF<sub>@</sub>)

## Anti-Condensate Heater Data

		Antho	ny 101	Anth Elimi	ony <sup>1</sup> nator	Anth Elimin	ony <sup>1</sup> ator 2		ntron a (NT)	
		120	Volts	120	Volts	120	Volts	120 Volts		
Model		Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	
ORBH	2-door	1.06	127	0.78	94	0.78	94	1.00	121	
	3-door	1.54	185	1.13	136	1.13	136	1.49	179	
	4-door	2.06	247	1.51	181	1.51	181	2.00	242	
	5-door	2.53	304	1.84	221	1.84	221	2.48	298	
	6-door	3.05	366	2.23	267	2.23	267	2.97	356	
	8'	1.61 193		2						
	12'	2.23	268							

1 Eliminator values given for doors with no heat on the glass.

2 NOTE: "---" indicates that this feature is not available for this case model.





ORBH - 2, 3, 4, 5, 6-door, 8' & 12'

#### **Guidelines & Control Settings**

Model	BTUHs <sup>4</sup> per door	Coil Type	Evaporator (°F)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (°F)
ORBH: Deli/Dairy (2-, 3-, 4-, 5-, & 6-door)	734 <sup>5</sup>	Enh.	32	6-8	36	38	280
ORBH: Beverage (2-, 3-, 4-, 5-, & 6-door)	704 <sup>5</sup>	Enh.	34	6-8	38	40	280
ORBH: Deli/Dairy (8' & 12') <sup>3</sup>	853⁵	Enh.	32	6-8	36	38	280
ORBH: Beverage (8' & 12') <sup>3</sup>	823 <sup>5</sup>	Enh.	34	6-8	38	40	280

3 ORBH-8' has 3 doors, ORBH-12' has 4 doors.

4 BTUHs/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

# Defrost Controls

			Electri	c Defrost	Timed-	Off Defrost	Hot Ga	as Defrost	Reverse Air Defrost		
Model	Defrosts per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	
ORBH	47	6-8	30	47	30	40	24	47	<sup>8</sup>		

7 If timed off defrost is utilized. If electric or hot gas defrost is utilized case only requires 1 defrost per day.

8 NOTE: "---" not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day Hours

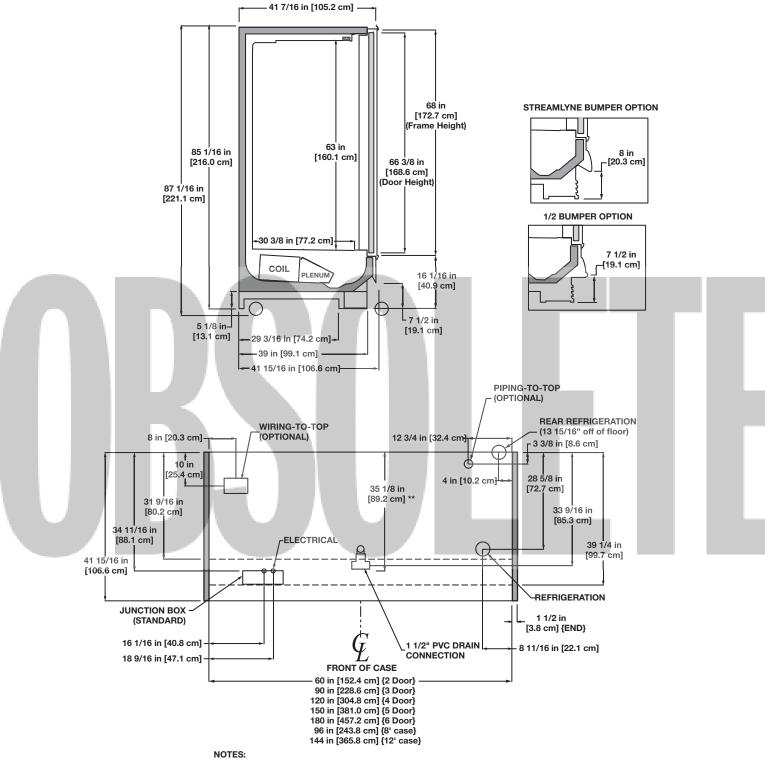
- 1
- 2 3
- 12 midnight 12 am 12 pm 6 am 2 pm 10 pm 12 6 am 12 6 pm 4











\* STUB-UP AREA

- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
   WIRING-TO-THE-TOP- ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
   A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (ALL LENGTHS) 1/2"
- LIQUID LINE (ALL LENGTHS) 3/8", LIQUID LINE w/ HOT GAS DEFROST (ALL LENGTHS) 1/2"
- AVAILABLE SHELF SIZES: WIRE SHELVES 16", 18", 20", 22" & 23 1/2"; SOLID SHELVES 18", 20", 22", 24" & 27"
   TOP SHELF MUST BE 24" OR SHORTER WHEN USING 27" SHELVES
- RECOMMENDED CONFIGURATION IS 1 24" SHELF AND 4 27" SHELVES BELOW TOP SHELF
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE





# Narrow Glass Door Reach-in Frozen Food/Ice Cream Merchandiser ONRZ - 2, 3, 4, 5 & 6-door

## **Electrical Data**

	Fans per		Standard Fans		High Ef Fa	ficiency ns			Heaters hase)		Defrost Heaters (3-Phase)			
			120 Volts		120 Volts		208	208 Volts		Volts	208 Volts		240 Volts	
Model			Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps <sup>1</sup>	Watts	Amps <sup>1</sup>	Watts	
ONRZ	2-door	2	1.00	60	0.31	18	13.17	2742	15.18	3645	7.62	2742	8.78	3645
	3-door	3	1.50	90	0.46	28	14.88	3096	17.13	4110	8.60	3096	9.90	4110
	4-door	4	2.00	120	0.611	37	19.53	4065	22.65	5439	11.30	4065	13.10	5439
	5-door	5	2.50	150	0.77	46	23.88	4965	27.51	6603	13.80	4965	15.90	6603
	6-door	6	3.00	180	0.92	55	28.20	5865	32.37	7767	16.30	5865	18.71	7767

1 Figure given is maximum amps per phase.

# **Lighting Data**

	10		100	1			100						
		Fluore	escent		nax 2 D			Ge LE			Cros LE		Crossfire
		120	Volts	120	Volts	Optima BTUH C		120 '	Volts	Gen 3 BTUH Credit	120	Volts	BTUH Credit
Model		Amps	Watts	Amps	Watts	(per do	or)	Amps	Watts	(per door)	Amps	Watts	(per door)
ONRZ	2-door	1.50	180	0.57	68	115		0.48	58	126	0.58	70	113
	3-door	1.90	228	0.85	102	100		0.73	87	112	0.88	105	97
	4-door	2.40	288	1.13	136	92		0.97	116	105	1.17	140	90
	5-door	2.90	348	1.42	170	88		1.21	145	100	1.46	175	86
	6-door	3.40	408	1.70	204	85		1.45	174	98	1.75	210	83

# Anti-Condensate Heater Data

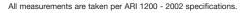
P			Antho	ony 101		hony <sup>2</sup> inator		nony² nator 2		ntron olar		ntron ar LE		ntron ar EF
1			120	120 Volts		120 Volts		120 Volts		Volts	120	Volts	120 Volts	
	Model		Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
E	ONRZ	2-door	3.42	410	1.74	209	1.21	145	2.69	323	1.67	201	1.21	145
		3-door	4.90	588	2.58	309	1.78	213	4.00	480	2.47	297	1.78	213
L		4-door	6.37	764	3.36	403	2.30	276	5.39	648	3.35	404	2.43	292
	5-door 7.85 942		942	4.22	506	2.89	346	6.67	801	4.12	496	2.97	356	
		6-door	9.34	1121	5.06	607	3.47	416	8.00	961	4.94	595	3.56	427

**NSF** 

)us

2 Eliminator values given for doors with no heat on the glass.





#### **Guidelines & Control Settings**

Model	BTUHs⁵ per door	Coil Type	Evaporator (°F)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>7</sup> (°F)
ONRZ: F <sup>3</sup> - Standard	1249 <sup>6</sup>	Enh.	-11	3-5	-3	0	460
ONRZ: C <sup>3</sup> - Standard	1309 <sup>6</sup>	Enh.	-17	3-5	-8	-5	460
ONRZ: F <sup>3</sup> - Eliminator/Polar LE <sup>4</sup>	1095 <sup>6</sup>	Enh.	-11	3-5	-3	0	460
ONRZ: C <sup>3</sup> - Eliminator/Polar LE <sup>4</sup>	1133 <sup>6</sup>	Enh.	-17	3-5	-8	-5	460

3 "F" = Frozen food, "C" = Ice cream.

4 Data given for cases with Eliminator and Polar LE Doors.

5 BTUHs/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

6 Standard fans increase refrigeration load by 96 BTUH/fan.

7 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

			Electri	c Defrost	Timed-0	Off Defrost	Hot Ga	as Defrost	Reverse	Air Defrost
Model	Defrosts per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)						
ONRZ	1	13-15	46	73 <sup>8</sup>	9		24	73 <sup>10</sup>		

8 The recommended location is in the center of the coil on the second pass. If using a discharge air temperature to terminate defrost, utilize a 55°F termination temp. 9 NOTE: "---" not an option on this case model.

10 The recommended location is on the dump line. If using a discharge air temperature to terminate defrost, utilize a 55°F termination temp.

Low Temperature Defrost Schedule

 No. Per Day
 Hours

 1
 10 pm

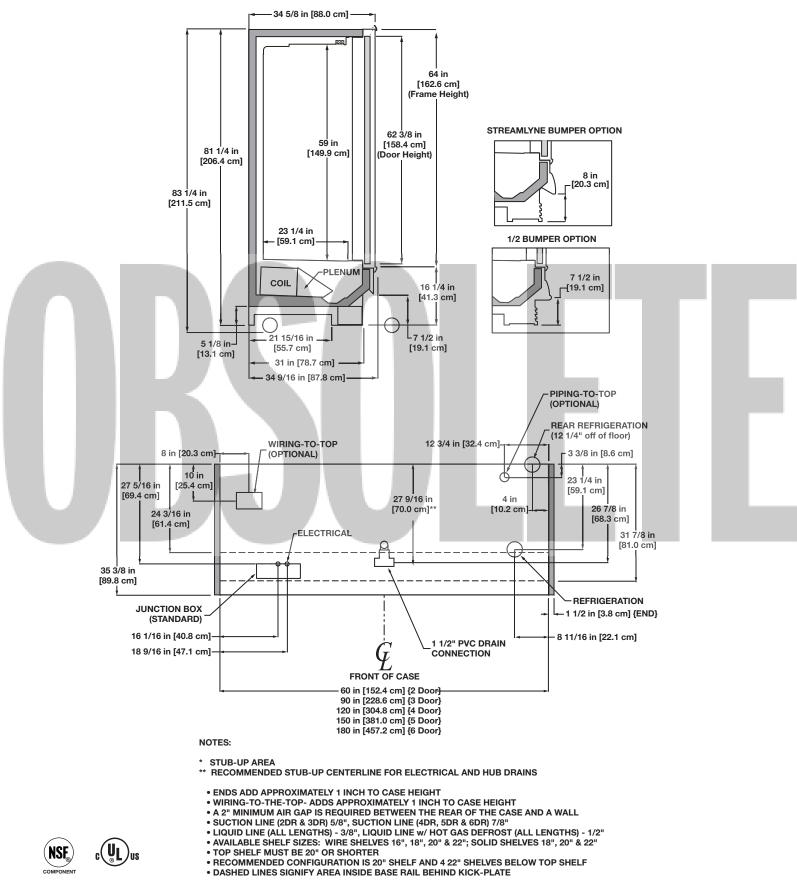
 2
 6 am - 10 pm\*\*

\*\* Or immediately after store closing hour













# High Narrow Glass Door Reach-in Frozen Food/Ice Cream Merchandiser ONRZH - 2, 3, 4, 5 & 6-door

## **Electrical Data**

		_	Standa	rd Fans		ficiency Ins			Heaters hase)				Heaters nase)	
		Fans per	120	Volts	120	Volts	208	Volts	240	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps <sup>1</sup>	Watts	Amps <sup>1</sup>	Watts
ONRZH	2-door	2	1.00	60	0.31	18	13.17	2742	15.18	3645	7.62	2742	8.78	3645
	3-door	3	1.50	90	0.46	28	14.88	3096	17.13	4110	8.60	3096	9.90	4110
	4-door	4	2.00	120	0.611	37	19.53	4065	22.65	5439	11.30	4065	13.10	5439
	5-door	5	2.50	150	0.77	46	23.88	4965	27.51	6603	13.80	4965	15.90	6603
	6-door	6	3.00	180	0.92	55	28.20	5865	32.37	7767	16.30	5865	18.71	7767

1 Figure given is maximum amps per phase.

# **Lighting Data**

		_	escent Volts	LE	nax 2 ED Volts	timax 2	LE	n 3 ED Volts	Gen 3		sfire D Volts	Crossfire
Model		Amps	Watts	Amps	Watts	 H Credit r door)	Amps	Watts	BTUH Credit (per door)	Amps	Watts	BTUH Credit (per door)
ONRZH	2-door	1.50	180	0.57	68	115	0.48	58	126	0.58	70	113
	3-door	1.90	228	0.85	102	100	0.73	87	112	0.88	105	97
	4-door	2.40	288	1.13	136	92	0.97	116	105	1.17	140	90
	5-door	2.90	348	1.42	170	88	1.21	145	100	1.46	175	86
	6-door	3.40	408	1.70	204	85	1.45	174	98	1.75	210	83

# **Anti-Condensate Heater Data**

ļ			Antho	ony 101		hony <sup>2</sup> inator		nony <sup>2</sup> nator 2		ntron plar		ntron ar LE		ntron ar EF
I			120	Volts	120	Volts	120	Volts	120	Volts	120	Volts	120	Volts
I	Model		Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
	ONRZH	2-door	4.10	492	1.79	214	1.24	149	2.39	287	1.67	201	1.19	143
		3-door	5.89	707	2.63	315	1.81	217	3.58	430	2.50	301	1.78	214
		4-door	7.77	932	3.46	415	2.37	284	4.77	573	3.33	401	2.37	285
I		5-door	9.61	1154	4.35	522	2.98	358	6.00	720	4.20	505	3.00	360
		6-door	11.23	1347	5.20	624	3.56	427	7.14	857	4.98	599	3.54	425

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2 Eliminator values given for doors with no heat on the glass.



#### **Guidelines & Control Settings**

Model	BTUHs⁵ per door	Coil Type	Evaporator (°F)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>7</sup> (°F)
ONRZH: F <sup>3</sup> - Standard	1249 <sup>6</sup>	Enh.	-11	3-5	-3	0	405
ONRZH: C <sup>3</sup> - Standard	1309 <sup>6</sup>	Enh.	-17	3-5	-8	-5	405
ONRZH: F <sup>3</sup> - Eliminator/Polar LE <sup>4</sup>	1095 <sup>6</sup>	Enh.	-11	3-5	-3	0	405
ONRZH: C <sup>3</sup> - Eliminator/Polar LE <sup>4</sup>	1133 <sup>6</sup>	Enh.	-17	3-5	-8	-5	405

3 "F" = Frozen food, "C" = Ice cream.

4 Data given for cases with Eliminator and Polar LE Doors.

5 BTUHs/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

6 Standard fans increase refrigeration load by 96 BTUH/fan.

7 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

			Electri	c Defrost	Timed-0	Off Defrost	Hot Ga	as Defrost	Reverse	Air Defrost
Model	Defrosts per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)						
ONRZH	1	13-15	46	73 <sup>8</sup>	9		24	73 <sup>10</sup>		

8 The recommended location is in the center of the coil on the second pass. If using a discharge air temperature to terminate defrost, utilize a 55°F termination temp. 9 NOTE: "---" not an option on this case model.

10 The recommended location is on the dump line. If using a discharge air temperature to terminate defrost, utilize a 55°F termination temp.

Low Temperature Defrost Schedule

 No. Per Day
 Hours

 1
 10 pm

 2
 6 am - 10 pm\*\*

\*\* Or immediately after store closing hour







-34 5/8 in [88.0 cm]-6553 68 in [172.7 cm] (Frame Height) 66 3/8 in 63 in [168.6 cm] STREAMLYNE BUMPER OPTION 85 1/16 in [160.0 cm] (Door Height) [216.0 cm] 8 in 87 1/1<sup>6</sup> in [20.3 cm] [221.1 cm] 23 1/4 in -[59.1 cm]-1/2 BUMPER OPTION PLENUM COIL 16 1/4 in 7 1/2 in [41.3 cm] [19.1 cm] 21 15/16 in -**7 1**/2 in 5 1/8 in [19.1 cm] [55.7 cm] [13.1 cm] 31 11/16 in [80.5 cm] --34 5/8 in [87.9 cm] PIPING-TO-TOP (OPTIONAL) REAR REFRIGERATION (12 1/4" off of floor) WIRING-TO-TOP 12 3/4 in [32.4 cm] 8 in [20.3 cm]-(OPTIONAL) 3 3/8 in [8.6 cm] 10<sup>1</sup> in Ć 23 1/4 in 27 5/16 in [25.4 cm] [59.1 cm] [69.4 cm] 27 9/16 in 4 in 26 7/8 in [70.0 cm]\* [10.2 cm] 21 15/16 in [68.3 cm] [55.7 cm] ELECTRICAL 31 11/16 in [80.5 cm] 34 5/8 in [87.9 cm] REFRIGERATION JUNCTION BOX - 1 1/2 in [3.8 cm] {END} (STANDARD) 16 1/16 in [40.8 cm] -8 11/16 in [22.1 cm] 1 1/2" PVC DRAIN 18 9/16 in [47.1 cm] CONNECTION  $\boldsymbol{J}$ FRONT OF CASE 60 in [152.4 cm] {2 Door} 90 in [228.6 cm] {3 Door} 120 in [304.8 cm] {4 Door} 150 in [381.0 cm] {5 Door} NOTES: 180 in [457.2 cm] {6 Door} STUB-UP AREA \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS • ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

- WIRING-TO-THE-TOP- ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
   A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (2DR & 3DR) 5/8", SUCTION LINE (4DR, 5DR & 6DR) 7/8"
- LIQUID LINE (ALL LENGTHS) 3/8", LIQUID LINE w/ HOT GAS DEFROST (ALL LENGTHS) 1/2"

- AVAILABLE SHELF SIZES: WIRE SHELVES 16", 18", 20" & 22"; SOLID SHELVES 18", 20" & 22"
   TOP SHELF MUST BE 20" OR SHORTER
   RECOMMENDED CONFIGURATION IS 20" SHELF AND 4 22" SHELVES BELOW TOP SHELF)
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

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# Glass Door Reach-in Back-to-Back Frozen Food/Ice Cream Merchandiser ONRZHBO - 2-door

#### **Electrical Data**

l			_	Standa	rd Fans	High Ef Fa				Heaters nase)				Heaters nase)	
I			Fans per	120	Volts	120	Volts	208	Volts	240	Volts	208	Volts	240	Volts
	Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps <sup>1</sup>	Watts	Amps <sup>1</sup>	Watts
	ONRZHBO	2-door	4	1.0	60	0.4	18	13.17	2742	15.18	3645	7.62	2742	8.78	3645

1 Figure given is maximum amps per phase.

## **Lighting Data**

			Fluore	escent	Optin LE	nax 2 ED		Ge LE	-	
			120	Volts	120	Volts	Optimax 2 BTUH Credit	120	Volts	Gen 3 BTUH Credit
l	Model		Amps	Watts	Amps	Watts	(per door)	Amps	Watts	(per door)
	ONRZHBO	2-door	1.50	180	0.57	68	115	0.48	58	126

# Anti-Condensate Heater Data

		Antho	ny C2K		hony² inator		hony <sup>2</sup> nator 2		ntron olar		ntron ar LE		ntron ar EF
		120	Volts	120	Volts	120	Volts	120	Volts	120	Volts	120	Volts
Model		Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONRZHBO	2-door	4.25	510	<sup>3</sup>									

2 Eliminator values given for doors with no heat on the glass.

3 NOTE: "---" not an option on this case model.



**NSF** 



# Glass Door Reach-in Back-to-Back Frozen Food/Ice Cream Merchandiser **ONRZHBO - 2-door**

## **Guidelines & Control Settings**

Model	BTUHs <sup>4</sup> per door	Coil Type	Evaporator (°F)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (°F)
ONRZHBO	1194 <sup>5</sup>	Enh.	-17	3 - 5	-8	-5	405

4 BTUHs/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

#### **Defrost Controls**

			Electri	c Defrost	Timed-(	Off Defrost	Hot Ga	as Defrost	Reverse	Air Defrost
Model	Defrosts per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)						
ONRZHBO	1	13-15	46 <sup>7</sup>	73	<sup>8</sup>		24	73 <sup>9</sup>		
he recommende	ed location is in t	the center of the o	oil on the seco	nd pass. If using a	a discharge air t	emperature to term	ninate defrost, u	itilize a 55°F termin	ation temp.	
he recommende	ed location is on	the dump line. If	using a discha	ge air temperature	to terminate de	efrost, utilize a 55°F	termination ter	mp.		
		$\sim$								
							_			

Low Temperature Defrost Schedule

No. Per Day Hours 1

10 pm 6 am - 10 pm\*\* 2

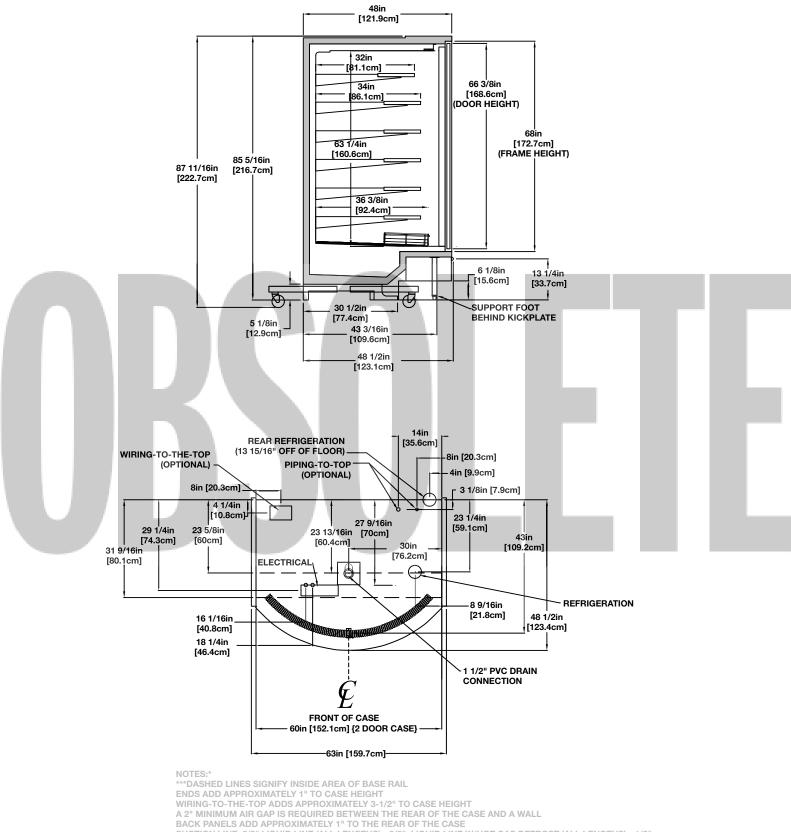
\*\* Or immediately after store closing hour













AVAILABLE SHELF SIZES: SOLID SHELVES 32" & 34" (RECOMMENDED CONFIGURATION IS 32" TOP SHELF AND 34" SHELVES BELOW TOP SHELF)







## **Electrical Data**

		_	Standa	rd Fans	High Ef Fa				Heaters hase)				Heaters nase)	
		Fans per	120	Volts	120	Volts	208	Volts	240	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps <sup>1</sup>	Watts	Amps <sup>1</sup>	Watts
ORZ	2-door	2	1.00	60	0.31	18	13.17	2742	15.18	3645	7.62	2742	8.78	3645
	3-door	3	1.50	90	0.46	28	14.88	3096	17.13	4110	8.60	3096	9.90	4110
	4-door	4	2.00	120	0.611	37	19.53	4065	22.65	5439	11.30	4065	13.10	5439
	5-door	5	2.50	150	0.77	46	23.88	4965	27.51	6603	13.80	4965	15.90	6603
	6-door	6	3.00	180	0.92	55	28.20	5865	32.37	7767	16.30	5865	18.71	7767

1 Figure given is maximum amps per phase.

## **Lighting Data**

			escent Volts	ĹĔ	nax 2 ED Volts	 timax 2	LE	n 3 ED Volts	Gen 3	Cros LE		Crossfire
Model		Amps	Watts	Amps	Watts	H Credit r door)	Amps	Watts	BTUH Credit (per door)	Amps	Watts	BTUH Credit (per door)
ORZ	2-door	1.50	180	0.57	68	115	0.48	58	126	0.58	70	113
	3-door	1.90	228	0.85	102	100	0.73	87	112	0.88	105	97
	4-door	2.40	288	1.13	136	92	0.97	116	105	1.17	140	90
	5-door	2.90	348	1.42	170	88	1.21	145	100	1.46	175	86
	6-door	3.40	408	1.70	204	85	1.45	174	98	1.75	210	83

# Anti-Condensate Heater Data

ł			Antho	Anthony 101		hony <sup>2</sup> inator	Anthony <sup>2</sup> Eliminator 2			ntron olar	Gemtron Polar LE			ntron ar EF
			120 Volts		120	Volts	120	Volts	120	Volts	120	Volts	120	Volts
	Model		Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
	ORZ	2-door	3.42	410	1.74	209	1.21	145	2.69	323	1.67	201	1.21	145
		3-door	4.90	588	2.58	309	1.78	213	4.00	480	2.47	297	1.78	213
		4-door	6.37	764	3.36	403	2.30	276	5.39	648	3.35	404	2.43	292
		5-door	7.85	942	4.22	506	2.89	346	6.67	801	4.12	496	2.97	356
		6-door	9.34	1121	5.06	607	3.47	416	8.00	961	4.94	595	3.56	427

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2 Eliminator values given for doors with no heat on the glass.





### **Guidelines & Control Settings**

Model	BTUHs⁵ per door	Coil Type	Evaporator (°F)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>7</sup> (°F)
ORZ: F <sup>3</sup> - Standard	1249 <sup>6</sup>	Enh.	-11	3-5	-3	0	405
ORZ: C <sup>3</sup> - Standard	1309 <sup>6</sup>	Enh.	-17	3-5	-8	-5	405
ORZ: F <sup>3</sup> - Eliminator/Polar LE <sup>4</sup>	1095 <sup>6</sup>	Enh.	-11	3-5	-3	0	405
ORZ: C <sup>3</sup> - Eliminator/Polar LE <sup>4</sup>	1133 <sup>6</sup>	Enh.	-17	3-5	-8	-5	405

3 "F" = Frozen food, "C" = Ice cream.

4 Data given for cases with Eliminator and Polar LE Doors.

5 BTUHs/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

6 Standard fans increase refrigeration load by 96 BTUH/fan.

7 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

1				Electri	c Defrost	Timed-0	Off Defrost	Hot Ga	as Defrost	Reverse	Air Defrost
l	Model	Defrosts per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)						
	ORZ	1	13-15	46	73 <sup>8</sup>	9		24	73 <sup>10</sup>		

8 The recommended location is in the center of the coil on the second pass. If using a discharge air temperature to terminate defrost, utilize a 55°F termination temp. 9 NOTE: "---" not an option on this case model.

10 The recommended location is on the dump line. If using a discharge air temperature to terminate defrost, utilize a 55°F termination temp.

Low Temperature Defrost Schedule

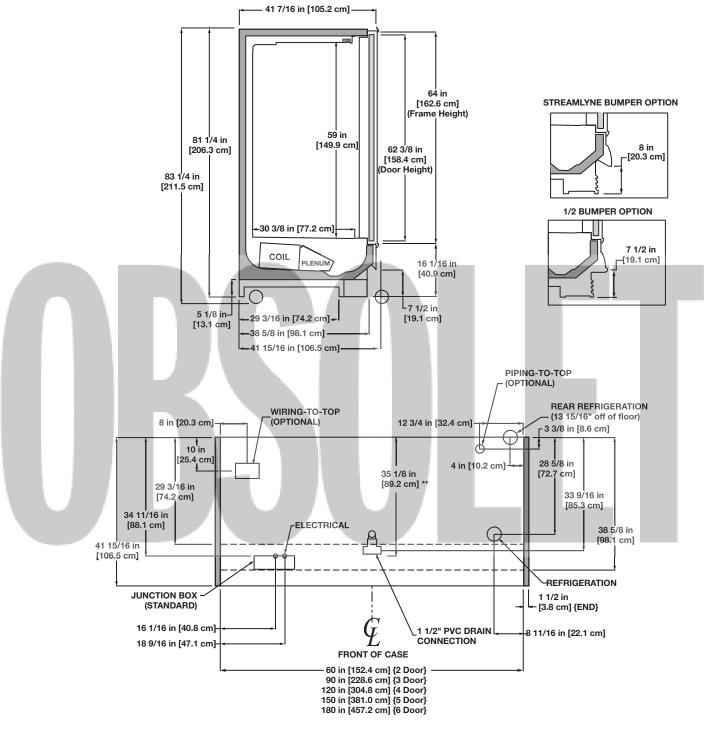
No. Per Day	Hours
1	10 pm
2	6 am - 10 pm**

\*\* Or immediately after store closing hour









NOTES:

STUB-UP AREA

- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
  - ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-TO-THE-TOP- ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
   A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
   SUCTION LINE (2DR & 3DR) 5/8", SUCTION LINE (4DR, 5DR & 6DR) 7/8"
- LIQUID LINE (ALL LENGTHS) 3/8", LIQUID LINE w/ HOT GAS DEFROST (ALL LENGTHS) 1/2"
- AVAILABLE SHELF SIZES: WIRE SHELVES 16", 18", 20", 22" & 23 1/2"; SOLID SHELVES 18", 20", 22", 24" & 27"
- TOP SHELF MUST BE 24" OR SHORTER WHEN USING 27" SHELVES
- RECOMMENDED CONFIGURATION IS 1 24" SHELF AND 4 27" SHELVES BELOW TOP SHELF
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

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# High Glass Door Reach-in Frozen Food/Ice Cream Merchandiser ORZH - 2, 3, 4, 5 & 6-door

## **Electrical Data**

								1							
l			_	Standa	rd Fans	High Ef Fa				Heaters hase)				Heaters nase)	
I			Fans per	120	Volts	120	Volts	208	Volts	240	Volts	208	Volts	240	Volts
	Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps <sup>1</sup>	Watts	Amps <sup>1</sup>	Watts
I	ORZH	2-door	2	1.00	60	0.31	18	13.17	2742	15.18	3645	7.62	2742	8.78	3645
I		3-door	3	1.50	90	0.46	28	14.88	3096	17.13	4110	8.60	3096	9.90	4110
l		4-door	4	2.00	120	0.611	37	19.53	4065	22.65	5439	11.30	4065	13.10	5439
		5-door	5	2.50	150	0.77	46	23.88	4965	27.51	6603	13.80	4965	15.90	6603
		6-door	6	3.00	180	0.92	55	28.20	5865	32.37	7767	16.30	5865	18.71	7767

1 Figure given is maximum amps per phase.

## **Lighting Data**

		Fluore	escent	Optin LE	nax 2 D		Ge	n 3 ED		Cros	sfire ED	
		120	Volts	120	Volts	Optimax 2 BTUH Credit	120	Volts	Gen 3 BTUH Credit	120	Volts	Crossfire BTUH Credit
Model		Amps	Watts	Amps	Watts	(pe <b>r door</b> )	Amps	Watts	(per door)	Amps	Watts	(per do <b>or)</b>
ORZH	2-door	1.50	180	0.57	68	115	0.48	58	126	0.58	70	113
	3-door	1.90	228	0.85	102	100	0.73	87	112	0.88	105	97
	4-door	2.40	288	1.13	136	92	0.97	116	105	1.17	140	90
	5-door	2.90	348	1.42	170	88	1.21	145	100	1.46	175	86
	6-door	3.40	408	1.70	204	85	1.45	174	98	1.75	210	83

# **Anti-Condensate Heater Data**

ļ			Anthony 101			hony <sup>2</sup> inator		nony² nator 2	Gemtron Polar		Gemtron Polar LE		Gemtron Polar EF	
I			120 Volts		120	Volts	120	Volts	120	Volts	120	Volts	120	Volts
	Model		Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
	ORZH	2-door	4.10	492	1.79	214	1.24	149	2.39	287	1.67	201	1.19	143
		3-door	5.89	707	2.63	315	1.81	217	3.58	430	2.50	301	1.78	214
		4-door	7.77	932	3.46	415	2.37	284	4.77	573	3.33	401	2.37	285
I		5-door	9.61	1154	4.35	522	2.98	358	6.00	720	4.20	505	3.00	360
		6-door	11.23	1347	5.20	624	3.56	427	7.14	857	4.98	599	3.54	425

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2 Eliminator values given for doors with no heat on the glass.



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### **Guidelines & Control Settings**

Model	BTUHs⁵ per door	Coil Type	Evaporator (°F)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>7</sup> (°F)
ORZH: F <sup>3</sup> - Standard	1249 <sup>6</sup>	Enh.	-11	3-5	-3	0	405
ORZH: C <sup>3</sup> - Standard	1309 <sup>6</sup>	Enh.	-17	3-5	-8	-5	405
ORZH: F <sup>3</sup> - Eliminator/Polar LE <sup>4</sup>	1095 <sup>6</sup>	Enh.	-11	3-5	-3	0	405
ORZH: C <sup>3</sup> - Eliminator/Polar LE <sup>4</sup>	1133 <sup>6</sup>	Enh.	-17	3-5	-8	-5	405

3 "F" = Frozen food, "C" = Ice cream.

4 Data given for cases with Eliminator and Polar LE Doors.

5 BTUHs/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

6 Standard fans increase refrigeration load by 96 BTUH/fan.

7 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

			Electri	c Defrost	Timed-0	Off Defrost	Hot Ga	as Defrost	Reverse	Air Defrost
Model	Defrosts per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)						
ORZH	1	13-15	46	73 <sup>8</sup>	9		24	73 <sup>10</sup>		

8 The recommended location is in the center of the coil on the second pass. If using a discharge air temperature to terminate defrost, utilize a 55°F termination temp. 9 NOTE: "---" not an option on this case model.

10 The recommended location is on the dump line. If using a discharge air temperature to terminate defrost, utilize a 55°F termination temp.

Low Temperature	Defrost Schedule
-----------------	------------------

No.	Per	Day	Hours

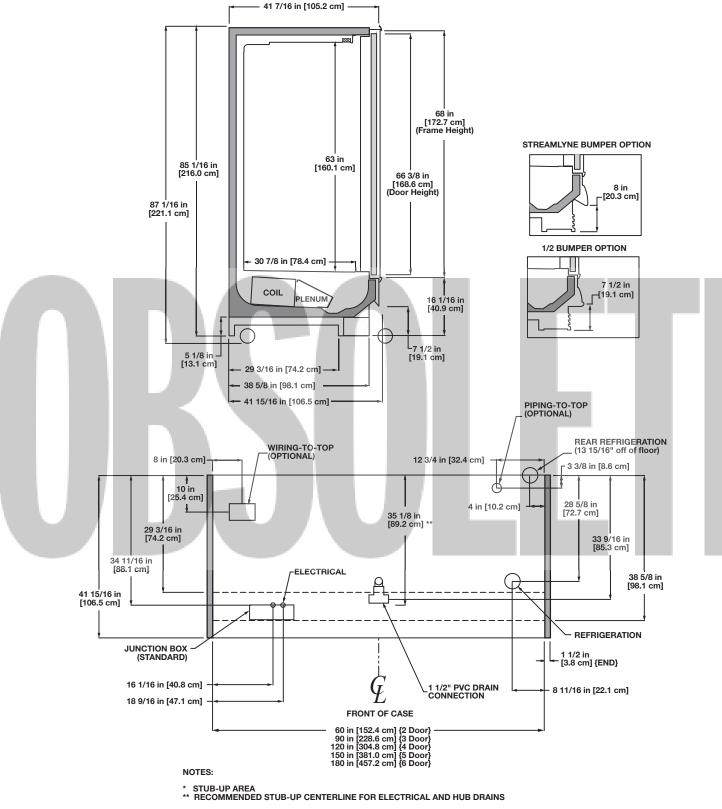
1 10 pm 2 6 am - 10 pm\*\*

\*\* Or immediately after store closing hour









- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
  WIRING-TO-THE-TOP- ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
  A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
  SUCTION LINE (2DR & 3DR) 5/8", SUCTION LINE (4DR, 5DR & 6DR) 7/8"
  LIQUID LINE (ALL LENGTHS) 3/8", LIQUID LINE WHOT GAS DEFROST (ALL LENGTHS) 1/2"
  AVAILABLE SHELF SIZES: WIRE SHELVES 16", 18", 20", 22" & 23 1/2"; SOLID SHELVES 18", 20", 22", 24" & 27"
  TOP SHELF MUST BE 24" OR SHORTER WHEN USING 27" SHELVES
  DECOMMENDED CONFERENTION LINE (4DR, 5DR) 4 07" SHELVES
- RECOMMENDED CONFIGURATION IS 1 24" SHELF AND 4 27" SHELVES BELOW TOP SHELF
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

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# Narrow Glass Door Reach-in Back-to-Back Frozen Food/Ice Cream **Merchandiser**

ONRIZ - 4, 6, 8, 10 & 12-door

## **Electrical Data**

BACK-T	О-ВАСК С	ONFIGU	RATION	1										
			Standa	rd Fans	0	ficiency ns		Defrost   (1-Ph					Heaters hase)	
		Fans per	120	Volts	120	Volts	208	Volts	240	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps <sup>2</sup>	Watts	Amps <sup>2</sup>	Watts
ONRIZ	4-door	4	2.00	120	0.61	37	26.34	5484	30.36	7290	15.24	5484	17.56	7290
	6-door	6	3.00	180	0.92	55	29.76	6192	34.26	8220	17.21	6192	19.80	8220
	8-door	8	4.00	240	1.22	74	39.06	8130	45.3	10878	22.59	8130	26.20	10878
	10-door	10	5.00	300	1.53	92	47.76	9930	55.02	13206	27.60	9930	31.81	13206
	12-door	12	6.00	360	1.84	110	56.4	11730	64.74	15534	32.60	11730	37.41	15534
SINGLE-	SIDE DAT	A												
ONRIZ	2-door	2	1.00	60	0.31	18	13.17	2742	15.18	3645	7.62	2742	8.78	3645
	3-door	3	1.50	90	0.46	28	14.88	3096	17.13	4110	8.60	3096	9.90	4110
	4-door	4	2.00	120	0.611	37	19.53	4065	22.65	5439	11.30	4065	13.10	5439

23.8**8** 

28.20

4965

5865

27.51

32.37

6603

7767

13.80

16.30 5865

4965

15.90

**6**603 18.71 7767

1For back-to-back configurations, customers are required to install seperate current-limiting devices for each side of the case per the amperages listed.

0.77

0.92

46

55

(Current-limiting devices are available for purchase through Hill PHOENIX)

5

6

2.50

3.00

150

**18**0

2 Figure given is maximum amps per phase

5-door

6-door

# Lighting Data

BACK-T	BACK-TO-BACK CONFIGURATION													
			escent Volts		nax 2 ED Volts	Optimax 2		n 3 ED Volts	Gen 3	LE	sfire D Volts	Crossfire		
Model		Amps	Watts	Amps	Watts	BTUH Credit (per door)	Amps	Watts	BTUH Credit (per door)	Amps	Watts	BTUH Credit (per door)		
ONRIZ	4-door	3.00	360	1.13	136	115	0.97	116	126	1.17	140	113		
	6-door	3.80	456	1.70	204	100	1.45	174	112	1.75	210	97		
	8-door	4.80	576	2.27	272	92	1.93	232	105	2.33	280	90		
	10-door	5.80	696	2.83	340	88	2.42	290	100	2.92	350	86		
	12-door	6.80	816	3.40	408	85	2.90	348	98	3.50	420	83		
SINGLE-	SIDE DATA											_		
ONRIZ	2-door	1.50	180	0.57	68	115	0.48	58	126	0.58	70	113		
	3-door	1.90	228	0.85	102	100	0.73	87	112	0.88	105	97		
	4-door	2.40	288	1.13	136	92	0.97	116	105	1.17	140	90		
	5-door	2.90	348	1.42	170	88	1.21	145	100	1.46	175	86		
	6-door	3.40	408	1.70	204	85	1.45	174	98	1.75	210	83		



# Narrow Glass Door Reach-in Back-to-Back Frozen Food/Ice Cream Merchandiser

ONRIZ - 4, 6, 8, 10 & 12-door

## Anti-Condensate Heater Data

BACK-TC	BACK-TO-BACK CONFIGURATION														
_		Antho	ony 101		hony <sup>3</sup> inator		nony <sup>3</sup> nator 2		ntron olar		ntron ar LE		ntron ar EF		
		120	Volts	120	Volts	120	Volts	120	Volts	120	Volts	120	Volts		
Model		Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts		
ONRIZ	4-door	6.83	820	3.48	418	2.42	290	5.38	646	3.34	402	2.42	290		
	6-door	9.79	1176	5.15	618	3.56	427	8.00	961	4.94	595	3.56	427		
	8-door	12.73	1528	6.72	807	4.60	552	10.78	1296	6.70	808	4.86	584		
	10-door	15.70	1884	8.43	1012	5.77	693	13.34	1602	8.24	992	5.94	712		
	12-door	18.67	2241	10.13	1215	6.93	832	16.00	1922	9.88	1190	7.12	854		

#### SINGLE-SIDE DATA

ONRIZ	2-door	3.42	410	1.74	209	1.21	145	2.69	323	1.67	201	1.21	145
	3-door	4.90	588	2.58	309	1.78	213	4.00	480	2.47	297	1.78	213
	4-door	6.37	764	3.36	403	2.30	276	5.39	648	3.35	404	2.43	292
	5-door	7.85	942	4.22	506	2.89	346	6.67	801	4.12	496	2.97	356
	6-door	9.34	1121	5.06	607	3.47	416	8.00	961	4.94	595	3.56	427

3 Eliminator values given for doors with no heat on the glass.

# **Guidelines & Control Settings**

Model	BTUHs <sup>6</sup> per door ( <b>per sid</b> e)	Coil Type	Evaporator (°F)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>8</sup> (°F)
ONRIZ: F <sup>4</sup> - Standard	1066 <sup>7</sup>	Enh.	-11	3-5	-3	0	460
ONRIZ: C <sup>4</sup> - Standard	1138 <sup>7</sup>	Enh.	-17	3-5	-8	-5	460
ONRIZ: F <sup>4</sup> - Eliminator/Polar LE <sup>5</sup>	966 <sup>7</sup>	Enh.	-11	3-5	-3	0	460
ONRIZ: C <sup>4</sup> - Eliminator/Polar LE <sup>5</sup>	983 <sup>7</sup>	Enh.	-17	3-5	-8	-5	460

4 "F" = Frozen food, "C" = Ice cream.

5 Data given for cases with Eliminator and Polar LE Doors.

6 BTUHs/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04. BTUHs listed are per side/per door.

7 Standard fans increase refrigeration load by 96 BTUH/fan.

8 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

Г				Electric Defrost		Timed-0	Off Defrost	Hot Ga	as Defrost	Reverse	Air Defrost
N	Vodel	Defrosts per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)						
C	ONRIZ	1	13-15	46	73 <sup>9</sup>	<sup>10</sup>		24	73 <sup>11</sup>		

9 The recommended location is in the center of the coil on the second pass. If using a discharge air temperature to terminate defrost, utilize a 55°F termination temp. 10 NOTE: "---" not an option on this case model.

11 The recommended location is on the dump line. If using a discharge air temperature to terminate defrost, utilize a 55°F termination temp.

#### Low Temperature Defrost Schedule

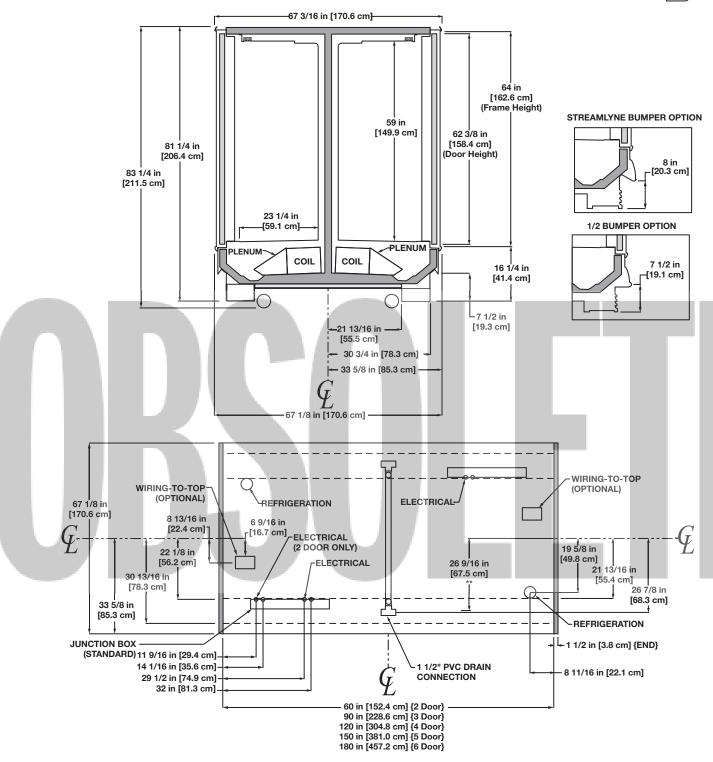
No. Per Day Hours

- 1 10 pm
- 2 6 am 10 pm\*\*









NOTES:

\* STUB-UP AREA

- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-TO-THE-TOP- ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-10-1RE-10P- ADDS APPROXIMATELY TINCH TO CASE HEIGHT
  SUCTION LINE (2DR & 3DR) 5/8", SUCTION LINE (4DR, 5DR & 6DR) 7/8"
  LIQUID LINE (ALL LENGTHS) 3/8", LIQUID LINE w/ HOT GAS DEFROST (ALL LENGTHS) 1/2"
  AVAILABLE SHELF SIZES: WIRE SHELVES 16", 18", 20" & 22"; SOLID SHELVES 18", 20" & 22"
  TOP SHELF MUST BE 20" OR SHORTER
- RECOMMENDED CONFIGURATION IS 20" SHELF AND 4 22" SHELVES BELOW TOP SHELF
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

NSF





# High Narrow Glass Door Reach-in Back-to-Back Frozen Food/Ice Cream Merchandiser

ONRIZH - 4, 6, 8, 10 & 12-door

## **Electrical Data**

ВАСК-ТО	-BACK CO	ONFIGUE	RATION <sup>1</sup>											
			Standa	rd Fans		ficiency Ins			Heaters nase)				Heaters hase)	
		Fans per	120	Volts	120	Volts	208	Volts	240	Volts	208	Volts	240	Volts
Model		Case	Amps	·		Watts	Amps	Watts	Amps	Watts	Amps <sup>2</sup>	Watts	Amps <sup>2</sup>	Watts
ONRIZH	4-door	4	2.00	120	0.61	37	26.34	5484	30.36	7290	15.24	5484	17.56	7290
	6-door	6	3.00	180	0.92	55	29.76	6192	34.26	8220	17.21	6192	19.80	8220
	8-door	8	4.00	240	1.22	74	39.06	8130	45.3	10878	22.59	8130	26.20	10878
	10-door	10	5.00	300	1.53	92	47.76	9930	55.02	13206	27.60	9930	31.81	13206
	12-door	12	6.00	360	1.84	110	56.4	11730	64.74	15534	32.60	11730	37.41	15534
SINGLE-S	IDE DATA													
ONRIZH	2-door	2	1.00	60	0.31	18	13.17	2742	15.18	3645	7.62	2742	8.78	3645
	3-door	3	1.50	90	0.46	28	14.88	3096	17.13	4110	8.60	3096	9.90	4110

19.53

23.8**8** 

4065

4965

22.65

27.51

5439

6603

6-door 6 3.00 180 0.92 55 28.20 5865 32.37 7767 16.30 5865

37

46

1 For back-to-back configurations, customers are required to install seperate current-limiting devices for each side of the case per the amperages listed.

0.611

0.77

(Current-limiting devices are available for purchase through Hill PHOENIX)

4

5

2.00

2.50

120

150

2 Figure given is maximum amps per phase.

4-door

5-door

# Lighting Data

BACK-TO	-ВАСК СО	NFIGUF	RATION									
			escent Volts	LE	nax 2 ED Volts	Optimax 2	LE	n 3 ED Volts	Gen 3	LE	ssfire ED Volts	Crossfire
Model		Amps	Watts	Amps	Watts	BTUH Credit (per door)	Amps	Watts	BTUH Credit (per door)	Amps	Watts	BTUH Credit (per door)
ONRIZH	4-door	3.00	360	1.13	136	115	0.97	116	126	1.17	140	113
	6-door	3.80	456	1.70	204	100	1.45	174	112	1.75	210	97
	8-door	4.80	576	2.27	272	92	1.93	232	105	2.33	280	90
	10-door	5.80	696	2.83	340	88	2.42	290	100	2.92	350	86
	12-door	6.80	816	3.40	408	85	2.90	348	98	3.50	420	83
SINGLE-S	IDE DATA											
ONRIZH	2-door	1.50	180	0.57	68	115	0.48	58	126	0.58	70	113
	3-door	1.90	228	0.85	102	100	0.73	87	112	0.88	105	97
	4-door	2.40	288	1.13	136	92	0.97	116	105	1.17	140	90
	5-door	2.90	348	1.42	170	88	1.21	145	100	1.46	175	86
	6-door	3.40	408	1.70	204	85	1.45	174	98	1.75	210	83



11.30 4065

4965

13.80

13.10

15.90

18.71 7767

5439

**6**603

# High Narrow Glass Door Reach-in Back-to-Back Frozen Food/Ice Cream Merchandiser

ONRIZH - 4, 6, 8, 10 & 12-door

## Anti-Condensate Heater Data

BACK-TO-	BACK-TO-BACK CONFIGURATION													
		Antho	ony 101	1	nony <sup>3</sup> inator		nony <sup>3</sup> nator 2		ntron blar		ntron ar LE		ntron ar EF	
	120 Volts		Volts	120 Volts		120	Volts	120 Volts		120	Volts	120	Volts	
Model				Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	
ONRIZH	4-door	8.20	985	3.57	428	2.48	297	4.78	574	3.34	402	2.38	286	
	6-door	11.78	1414	5.26	631	3.62	434	7.16	860	5.00	602	3.56	428	
	8-door	15.54	1864	6.92	830	4.74	568	9.54	1145	6.66	801	4.74	569	
	10-door	19.23	2308	8.70	1044	5.97	716	12.00	1440	8.40	1010	6.00	720	
	12-door	22.45	2694	10.40	1248	7.12	855	14.28	1715	9.96	1199	7.08	851	

SINGLE-SIDE DATA

ONRIZH	2-door	4.10	492	1.79	214	1.24	149	2.39	287	1.67	201	1.19	143
	3-door	5.89	707	2.63	315	1.81	217	3.58	430	2.50	301	1.78	214
	4-door	7.77	932	3.46	415	2.37	284	4.77	573	3.33	401	2.37	285
	5-door	9.61	1154	4.35	522	2.98	358	6.00	720	4.20	505	3.00	360
	6-door	11.23	1347	5.20	624	3.56	427	7.14	857	4.98	599	3.54	425

3 Eliminator values given for doors with no heat on the glass.

# **Guidelines & Control Settings**

Model	BTUHs <sup>6</sup> per door (per side)	Coil Type	Evaporator (°F)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>8</sup> (°F)
ONRIZH: F <sup>4</sup> - Standard	1066 <sup>7</sup>	Enh.	-11	3-5	-3	0	460
ONRIZH: C <sup>4</sup> - Standard	1138 <sup>7</sup>	Enh.	-17	3-5	-8	-5	460
ONRIZH: F <sup>4</sup> - Eliminator/Polar LE <sup>5</sup>	966 <sup>7</sup>	Enh.	-11	3-5	-3	0	460
<b>ONRIZH:</b> C <sup>4</sup> - Eliminator/Polar LE <sup>5</sup>	983 <sup>7</sup>	Enh.	-17	3-5	-8	-5	460

4 "F" = Frozen food, "C" = Ice cream.

5 Data given for cases with Eliminator and Polar LE Doors.

6 BTUHs/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04. BTUHs listed are per side/per door.

7 Standard fans increase refrigeration load by 96 BTUH/fan.

8 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

l				Electri	c Defrost	Timed-0	Off Defrost	Hot Ga	as Defrost	Reverse	Air Defrost
	Model	Defrosts per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)						
	ONRIZH	1	13-15	46	73 <sup>9</sup>	10		24	73 <sup>11</sup>		

9 The recommended location is in the center of the coil on the second pass. If using a discharge air temperature to terminate defrost, utilize a 55°F termination temp. 10 NOTE: "---" not an option on this case model.

11 The recommended location is on the dump line. If using a discharge air temperature to terminate defrost, utilize a 55°F termination temp.

Low Temperature Defrost Schedule

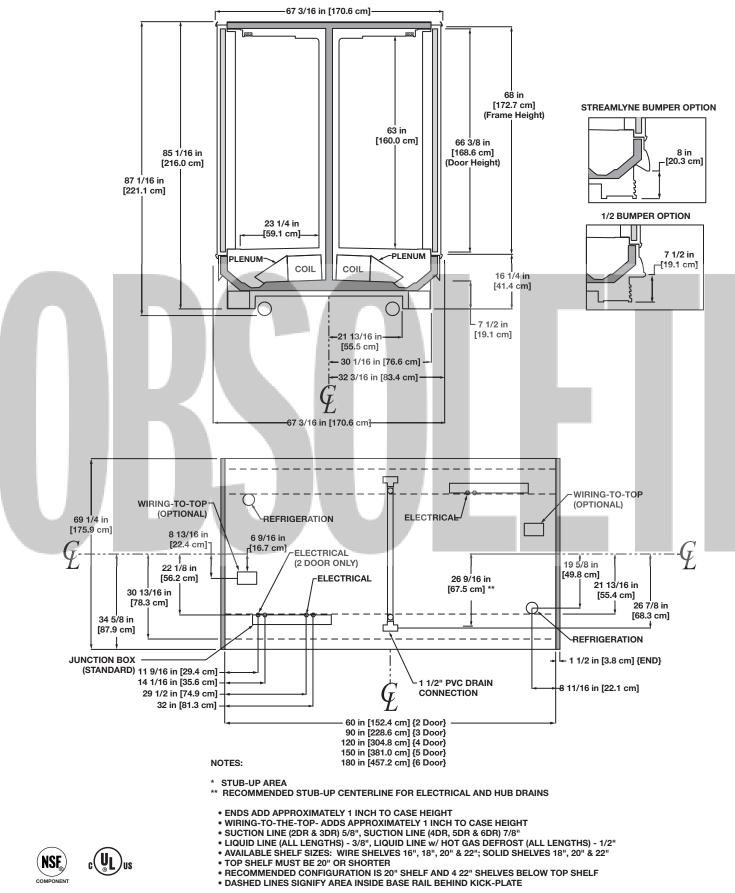
No. Per Day Hours

- 1 10 pm
- 2 6 am 10 pm\*\*













# Glass Door Reach-in Back-to-Back Frozen Food/Ice Cream Merchandiser ORIZ - 4, 6, 8, 10 & 12-door

### **Electrical Data**

BACK-T	О-ВАСК С	ONFIGU	RATION	1										
		_	Standa	rd Fans		ficiency Ins			Heaters hase)				Heaters hase)	
		Fans per	120	Volts	120	Volts	208	Volts	240	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps <sup>2</sup>	Watts	Amps <sup>2</sup>	Watts
ORIZ	4-door	4	2.00	120	0.61	37	26.34	5484	30.36	7290	15.24	5484	17.56	7290
	6-door	6	3.00	180	0.92	55	29.76	6192	34.26	8220	17.21	6192	19.80	8220
	8-door	8	4.00	240	1.22	74	39.06	8130	45.3	10878	22.59	8130	26.20	10878
	10-door	10	5.00	300	1.53	92	47.76	9930	55.02	13206	27.60	9930	31.81	13206
	12-door	12	6.00	360	1.84	110	56.4	11730	64.74	15534	32.60	11730	37.41	15534
SINGLE-	SIDE DAT	4												/
ORIZ	2-door	2	1.00	60	0.31	18	13.17	2742	15.18	3645	7.62	2742	8.78	3645
	3-d <b>oor</b>	3	1.50	90	0.46	28	14.88	3096	17.13	4110	8.60	3096	9.90	4110
	4-door	4	2.00	120	0.611	37	19.53	4065	22.65	5439	11.30	4065	13.10	5439
	5-door	5	2.50	150	0.77	46	23.88	4965	27.51	6603	13.80	4965	15. <b>90</b>	6603
	6-door	6	3.00	180	0.92	55	28.20	5865	32.37	7767	16.30	5865	18.71	7767
													_	

1 For back-to-back configurations, customers are required to install seperate current-limiting devices for each side of the case per the amperages listed.

(Current-limiting devices are available for purchase through Hill PHOENIX)

2 Figure given is maximum amps per phase.

# Lighting Data

BACK-T	о-васк с	ONFIGU	RATIO	I								
		-	escent Volts		nax 2 ED Volts	Optimax 2		n 3 ED Volts	Gen 3	LE	ssfire D Volts	Crossfire
Model		Amps	Watts	Amps	Watts	BTUH Credit (per door)	Amps	Watts	BTUH Credit (per door)	Amps	Watts	BTUH Credit (per door)
ORIZ	4-door	3.00	360	1.13	136	115	0.97	116	126	1.17	140	113
	6-door	3.80	456	1.70	204	100	1.45	174	112	1.75	210	97
ĺ	8-door	4.80	576	2.27	272	92	1.93	232	105	2.33	280	90
	10-door	5.80	696	2.83	340	88	2.42	290	100	2.92	350	86
	12-door	6.80	816	3.40	408	85	2.90	348	98	3.50	420	83
SINGLE-	SIDE DATA											
ORIZ	2-door	1.50	180	0.57	68	115	0.48	58	126	0.58	70	113
	3-door	1.90	228	0.85	102	100	0.73	87	112	0.88	105	97
	4-door	2.40	288	1.13	136	92	0.97	116	105	1.17	140	90
	5-door	2.90	348	1.42	170	88	1.21	145	100	1.46	175	86
	6-door	3.40	408	1.70	204	85	1.45	174	98	1.75	210	83



## Anti-Condensate Heater Data

#### BACK-TO-BACK CONFIGURATION

		Antho	ny 101	1	nony <sup>3</sup> inator		nony <sup>3</sup> nator 2		ntron olar		ntron ar LE		ntron ar EF
		120	Volts	120	Volts	120	Volts	120	Volts	120	Volts	120	Volts
Model			Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ORIZ	4-door	6.83	820	3.48	418	2.42	290	5.38	646	3.34	402	2.42	290
	6-door	9.79	1176	5.15	618	3.56	427	8.00	961	4.94	595	3.56	427
	8-door	12.73	1528	6.72	807	4.60	552	10.78	1296	6.70	808	4.86	584
	10-door	15.70	1884	8.43	1012	5.77	693	13.34	1602	8.24	992	5.94	712
	12-door	18.67	2241	10.13	1215	6.93	832	16.00	1922	9.88	1190	7.12	854

SINGLE-SIDE DATA

ORIZ	2-door	3.42	410	1.74	209	1.21	145	2.69	323	1.67	201	1.21	145
	3-door	4.90	588	2.58	309	1.78	213	4.00	480	2.47	297	1.78	213
	4-door	6.37	764	3.36	403	2.30	276	5.39	648	3.35	404	2.43	292
	5-door	7.85	942	4.22	50 <b>6</b>	2.89	346	6.67	801	4.12	496	2.97	356
	6-door	9.34	1121	5.06	607	3.47	416	8.00	961	4.94	595	3.56	427

3 Eliminator values given for doors with no heat on the glass.

## Guidelines & Control Settings

Model	BTUHs <sup>6</sup> per door (per side)	Coil Type	Evaporator (°F)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>8</sup> (°F)
ORIZ: F <sup>4</sup> - Standard	1066 <sup>7</sup>	Enh.	-11	3-5	-3	0	460
ORIZ: C <sup>4</sup> - Standard	1138 <sup>7</sup>	Enh.	-17	3-5	-8	-5	460
ORIZ: F <sup>4</sup> - Eliminator/Polar LE <sup>5</sup>	966 <sup>7</sup>	Enh.	-11	3-5	-3	0	460
ORIZ: C <sup>4</sup> - Eliminator/Polar LE <sup>5</sup>	983 <sup>7</sup>	Enh.	-17	3-5	-8	-5	460

4 "F" = Frozen food, "C" = Ice cream.

5 Data given for cases with Eliminator and Polar LE Doors.

6 BTUHs/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04. BTUHs are listed per door/per side.

7 Standard fans increase refrigeration load by 96 BTUH/fan.

8 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

			Electri	c Defrost	Timed-0	Off Defrost	Hot Ga	as Defrost	Reverse	Air Defrost
Model	Defrosts per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)						
ORIZ	1	13-15	46	73 <sup>9</sup>	<sup>10</sup>		24	73 <sup>11</sup>		

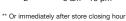
9 The recommended location is in the center of the coil on the second pass. If using a discharge air temperature to terminate defrost, utilize a 55°F termination temp. 10 NOTE: "---" not an option on this case model.

11 The recommended location is on the dump line. If using a discharge air temperature to terminate defrost, utilize a 55°F termination temp.

Low Temperature Defrost Schedule

No. Per Day Hours

1 10 pm 2 6 am - 10 pm\*\*

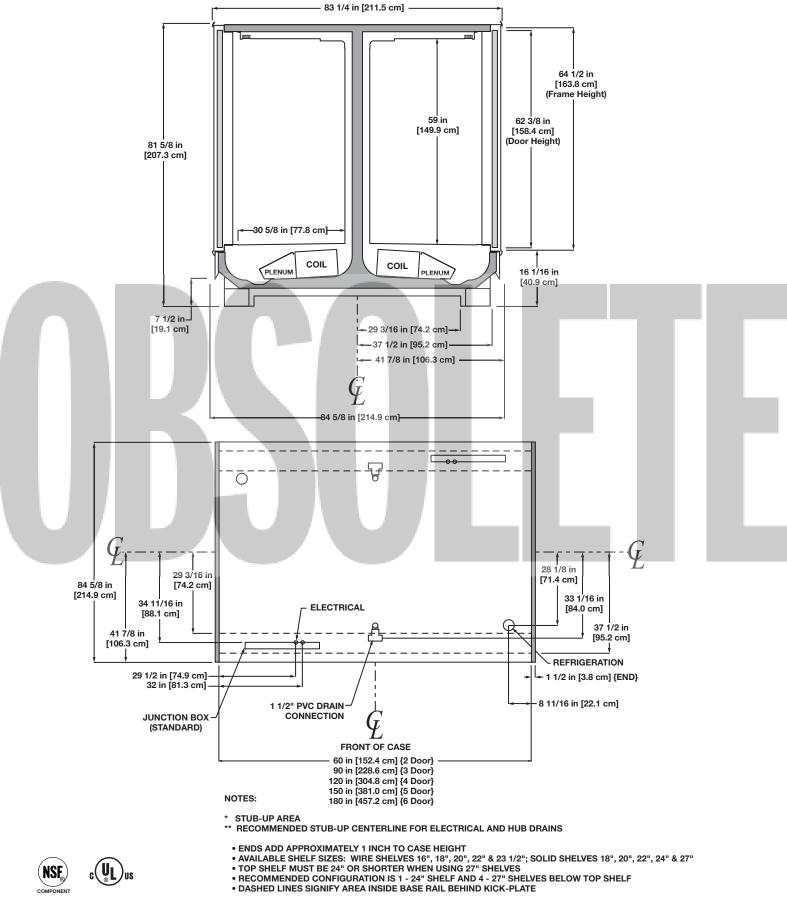
















# Glass Door Reach-in Back-to-Back Frozen Food/Ice Cream Merchandiser ORIZH - 4, 6, 8, 10 & 12-door

## **Electrical Data**

-ВАСК СС	ONFIGUE	RATION 1											
	_	Standa	rd Fans										
		120	Volts	120	Volts	208	Volts	240	Volts	208	Volts	240	Volts
	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps <sup>2</sup>	Watts	Amps <sup>2</sup>	Watts
4-door	4	2.00	120	0.61	37	26.34	5484	30.36	7290	15.24	5484	17.56	7290
6-door	6	3.00	180	0.92	55	29.76	6192	34.26	8220	17.21	6192	19.80	8220
8-door	8	4.00	240	1.22	74	39.06	8130	45.3	10878	22.59	8130	26.20	10878
10-door	10	5.00	300	1.53	92	47.76	9930	55.02	13206	27.60	9930	31.81	13206
12-door	12	6.00	360	1.84	110	56.4	11730	64.74	15534	32.60	11730	37.41	15534
SIDE DATA													
2-door	2	1.00	60	0.31	18	13.17	2742	15.18	3645	7.62	2742	8.78	3645
3-door	3	1.50	90	0.46	28	14.88	3096	17.13	4110	8.60	3096	9.90	4110
4-door	4	2.00	120	0.611	37	19.53	4065	22.65	5439	11.30	4065	13.10	5439
5-door	5	2.50	150	0.77	46	23.88	4965	27.51	6603	13.80	4965	15.90	6603
6-door	6	3.00	180	0.92	55	28.20	<b>58</b> 65	32.37	7767	16.30	5865	18.71	7767
	4-door 6-door 8-door 10-door 12-door <b>3-door</b> 4-door 5-door	Fans per Case 4-door 4 6-door 6 8-door 8 10-door 10 12-door 12 <b>IDE DATA</b> 2-door 2 3-door 3 4-door 4 5-door 5	Fans per Case         120           4-door         4         2.00           6-door         6         3.00           8-door         8         4.00           10-door         10         5.00           12-door         12         6.00           DATA           2-door         2         1.00           3-door         3         1.50           4-door         4         2.00	Fans per Case         Standar Fans           4-door         4         2.00         120           6-door         6         3.00         180           8-door         6         3.00         180           8-door         8         4.00         240           10-door         10         5.00         300           12-door         12         6.00         360           SIDE DATA         2-door         2         1.00         60           3-door         3         1.50         90           4-door         4         2.00         120           5-door         5         2.50         150	Fans per Case         Standard Fans         High Ef Fans 120 Volts         1200           4-door         4         2.00         120         0.61           6-door         6         3.00         180         0.92           8-door         8         4.00         240         1.22           10-door         10         5.00         300         1.53           12-door         12         6.00         360         1.84           SIDE DATA         2-door         2         1.00         60         0.31           3-door         3         1.50         90         0.46           4-door         4         2.00         120         0.611	Fans per Case         Standard Fans         High Efficiency Fans           4-door         4         2.00         120         Volts           4-door         4         2.00         120         0.61         37           6-door         6         3.00         180         0.92         55           8-door         8         4.00         240         1.22         74           10-door         10         5.00         300         1.53         92           12-door         12         6.00         360         1.84         110           SiDE DATA           2-door         2         1.00         60         0.31         18           3-door         3         1.50         90         0.46         28           4-door         4         2.00         120         0.611         37	Fans per Case         Standard Fans         High Efficiency Fans         208           4-door         4         2.00         120         0.61         37         26.34           6-door         6         3.00         180         0.92         55         29.76           8-door         8         4.00         240         1.22         74         39.06           10-door         10         5.00         300         1.53         92         47.76           12-door         12         6.00         360         1.84         110         56.4           SiDE DATA           2-door         2         1.00         60         0.31         18         13.17           3-door         3         1.50         90         0.46         28         14.88           4-door         4         2.00         120         0.611         37         19.53	Fans per Case         Standard Fans         High Efficiency Fans         Defrost (1-Pl Sadd           4-door         4         2.00         120         Volts         208         Volts           4-door         4         2.00         120         0.61         37         26.34         5484           6-door         6         3.00         180         0.92         55         29.76         6192           8-door         8         4.00         240         1.22         74         39.06         8130           10-door         10         5.00         300         1.53         92         47.76         9930           12-door         12         6.00         360         1.84         110         56.4         11730           IDE DATA           2-door         2         1.00         60         0.31         18         13.17         2742           3-door         3         1.50         90         0.46         28         14.88         3096           4-door         4         2.00         120         0.611         37         19.53         4065           5-door         5         2.50         150         0.77	Fans per Case         Standard Fans         High Efficiency Fans         Defrost Heaters (1-Phase)           4-door         4         2.00         120         Volts         208         Volts         240           4-door         4         2.00         120         0.61         37         26.34         5484         30.36           6-door         6         3.00         180         0.92         55         29.76         6192         34.26           8-door         8         4.00         240         1.22         74         39.06         8130         45.3           10-door         10         5.00         300         1.53         92         47.76         9930         55.02           12-door         12         6.00         360         1.84         110         56.4         11730         64.74           StDE DATA           2-door         2         1.00         60         0.31         18         13.17         2742         15.18           3-door         3         1.50         90         0.46         28         14.88         3096         17.13           4-door         4         2.00         120         0.611	High Efficiency Fans         Defrost Heaters (1-Phase)           Fans per Case         Standard Fans         High Efficiency Fans         Defrost Heaters (1-Phase)         Defrost Heaters (1-Phase)           4-door         4         2.00         120         Volts         208         Volts         240         Volts           4-door         4         2.00         120         0.61         37         26.34         5484         30.36         7290           6-door         6         3.00         180         0.92         55         29.76         6192         34.26         8220           8-door         8         4.00         240         1.22         74         39.06         8130         45.3         10878           10-door         10         5.00         300         1.53         92         47.76         9930         55.02         13206           12-door         12         6.00         360         1.84         110         56.4         11730         64.74         15534           EV           2-door         2         1.00         60         0.31         18         13.17         2742         15.18         3645 <tr< td=""><td>Fans per Case         Standard Fans         High Efficiency Fans         Defrost Heaters (1-Phase)         Defrost Heaters (1-Phase)         200           4-door         4         2.00         120         0.61         37         26.34         5484         30.36         7290         15.24           6-door         6         3.00         180         0.92         55         29.76         6192         34.26         8220         17.21           8-door         8         4.00         240         1.22         74         39.06         8130         45.3         10878         22.59           10-door         10         5.00         300         1.53         92         47.76         9930         55.02         13206         27.60           12-door         12         6.00         360         1.84         110         56.4         11730         64.74         1534         32.60           Stote Data           2-door         2         1.00         60         0.31         18         13.17         2742         15.18         3645         7.62           3-door         3         1.50         90         0.46         28         14.88         3096</td><td><th< td=""><td><math display="block"> \begin{array}{ c c c c c c c c c c c c c c c c c c c</math></td></th<></td></tr<>	Fans per Case         Standard Fans         High Efficiency Fans         Defrost Heaters (1-Phase)         Defrost Heaters (1-Phase)         200           4-door         4         2.00         120         0.61         37         26.34         5484         30.36         7290         15.24           6-door         6         3.00         180         0.92         55         29.76         6192         34.26         8220         17.21           8-door         8         4.00         240         1.22         74         39.06         8130         45.3         10878         22.59           10-door         10         5.00         300         1.53         92         47.76         9930         55.02         13206         27.60           12-door         12         6.00         360         1.84         110         56.4         11730         64.74         1534         32.60           Stote Data           2-door         2         1.00         60         0.31         18         13.17         2742         15.18         3645         7.62           3-door         3         1.50         90         0.46         28         14.88         3096	<th< td=""><td><math display="block"> \begin{array}{ c c c c c c c c c c c c c c c c c c c</math></td></th<>	$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$

1 For back-to-back configurations, customers are required to install seperate current-limiting devices for each side of the case per the amperages listed.

(Current-limiting devices are available for purchase through Hill PHOENIX)

2 Figure given is maximum amps per phase.

# Lighting Data

BACK-T	о-васк с	ONFIGU	RATIO	1								
		-	escent Volts	LE	nax 2 ED Volts	Optimax 2 BTUH Credit	LE	n 3 ED Volts	Total BTUH BTUH Credit	LE	ssfire ED Volts	Crossfire BTUH Credit
Model		Amps	Watts	Amps	Watts	(per door)	Amps	Watts	(per door)	Amps	Watts	(per door)
ORIZH	4-door	3.00	360	1.13	136	115	0.97	116	126	1.17	140	113
	6-door	3.80	456	1.70	204	100	1.45	174	112	1.75	210	97
	8-door	4.80	576	2.27	272	92	1.93	232	105	2.33	280	90
	10-door	5.80	696	2.83	340	88	2.42	290	100	2.92	350	86
	12-door	6.80	816	3.40	408	85	2.90	348	98	3.50	420	83
SINGLE-	SIDE DATA											
ORIZH	2-door	1.50	180	0.57	68	115	0.48	58	126	0.58	70	113
	3-door	1.90	228	0.85	102	100	0.73	87	112	0.88	105	97
	4-door	2.40	288	1.13	136	92	0.97	116	105	1.17	140	90
	5-door	2.90	348	1.42	170	88	1.21	145	100	1.46	175	86
	6-door	3.40	408	1.70	204	85	1.45	174	98	1.75	210	83



## Anti-Condensate Heater Data

BACK-TO	-ВАСК СОІ	NFIGURA	TION										
		Antho	ony 101		nony <sup>3</sup> inator		nony <sup>3</sup> nator 2		ntron olar		ntron ar LE		ntron ar EF
		120	Volts	120	Volts	120	Volts	120	Volts	120	Volts	120	Volts
Model		Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ORIZH	4-door	8.20	985	3.57	428	2.48	297	4.78	574	3.34	402	2.38	286
	6-door	11.78	1414	5.26	631	3.62	434	7.16	860	5.00	602	3.56	428
	8-door 10-door	15.54	1864	6.92	830	4.74	568	9.54	1145	6.66	801	4.74	569
		19.23	2308	8.70	1044	5.97	716	12.00	1440	8.40	1010	6.00	720
	12-door	22.45	2694	10.40	1248	7.12	855	14.28	1715	9.96	1199	7.08	851
_	·												

SINGLE-SIDE DATA

ORIZH	2-door	4.10	492	1.79	214	1.24	149	2.39	287	1.67	201	1.19	143
	3-door	5.89	707	2.63	315	1.81	217	3.58	430	2.50	301	1.78	214
	4-door	7.77	932	3.46	415	2.37	284	4.77	573	3.33	401	2.37	285
	5-door	9.61	1154	4.35	522	2.98	358	6.00	720	4.20	505	3.00	360
	6-door	11.23	1347	5.20	624	3.56	427	7.14	857	4.98	599	3.54	425

3 Eliminator values given for doors with no heat on the glass.

# **Guidelines & Control Settings**

Model	BTUHs <sup>6</sup> per door (per side)	Coil Type	Evaporator (°F)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>8</sup> (°F)
ORIZH: F <sup>4</sup> - Standard	1066 <sup>7</sup>	Enh.	-11	3-5	-3	0	460
<b>ORIZH:</b> C <sup>4</sup> - Standard	1138 <sup>7</sup>	Enh.	-17	3-5	-8	-5	460
ORIZH: F <sup>4</sup> - Eliminator/Polar LE <sup>5</sup>	966 <sup>7</sup>	Enh.	-11	3-5	-3	0	460
<b>ORIZH:</b> C <sup>4</sup> - Eliminator/Polar LE <sup>5</sup>	983 <sup>7</sup>	Enh.	-17	3-5	-8	-5	460

4 "F" = Frozen food, "C" = Ice cream.

5 Data given for cases with Eliminator and Polar LE Doors.

6 BTUHs/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04. BTUHs are listed per door/per side. These do not include both sides of the case.

7 Standard fans increase refrigeration load by 96 BTUH/fan.

8 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

			Electric Defrost		Timed-Off Defrost		Hot Ga	as Defrost	Reverse Air Defrost		
Model	Defrosts per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	
ORIZH	1	13-15	46	73 <sup>9</sup>	<sup>10</sup>		24	73 <sup>11</sup>			

9 The recommended location is in the center of the coil on the second pass. If using a discharge air temperature to terminate defrost, utilize a 55°F termination temp. 10 NOTE: "---" not an option on this case model.

11The recommended location is on the dump line. If using a discharge air temperature to terminate defrost, utilize a 55°F termination temp.

Low Temperature Defrost Schedule Hours

No. Per Day

- 10 pm 1
- 2 6 am - 10 pm\*\*

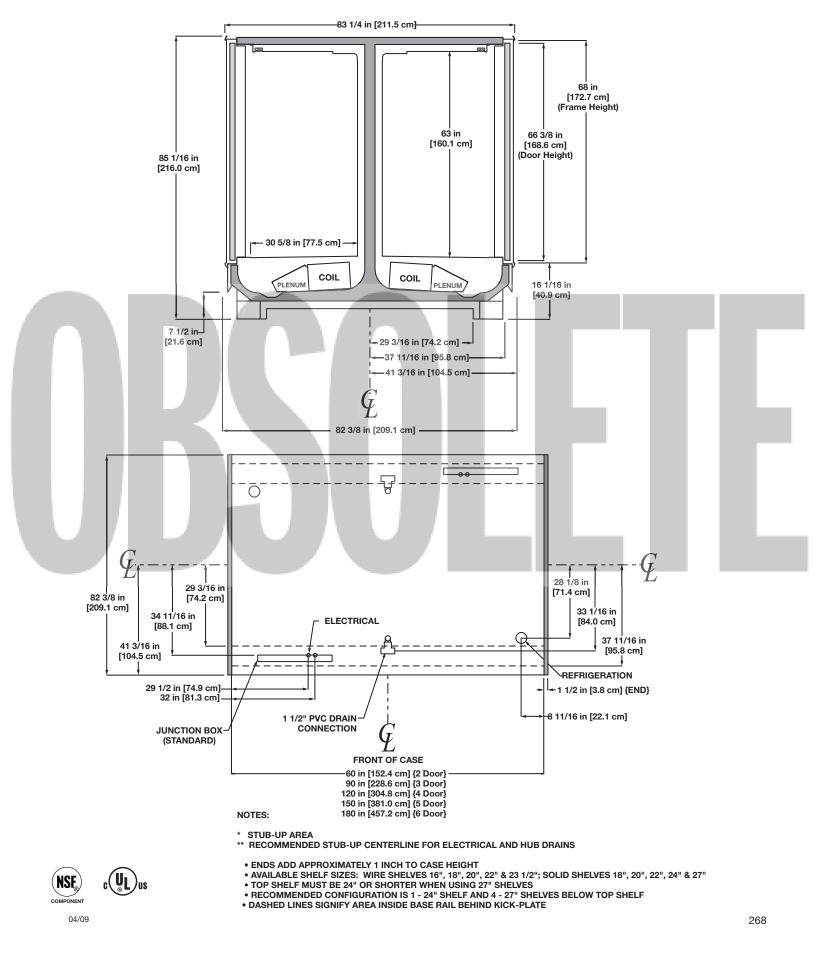




REACH-IN

Frozen Food/Ice Cream









## **Electrical Data**

		_	Standar	rd Fans <sup>1</sup>		ficiency .ns		Defrost	Heaters	
		Fans per	120	Volts	120	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
RBH	8'	2			0.31	18	3.85	800	4.44	1065
	12'	3			0.46	28	5.78	1200	6.67	1600

1 NOTE: "---" not an option on this case model.

# **Lighting Data**

			Fluorescent		Optimax 2 LED			Ge	n 3 ED		Cros LE	sfire D	
Í		_	120	Volts	120	Volts	Optimax 2 BTUH Credit	120	Volts	Gen 3 BTUH Credit	120	Volts	Crossfire BTUH Credit
I	Model		Amps	Watts	Amps	Watts	(per door)	Amps	Watts	(per door)	Amps	Watts	(per door)
I	RBH	8'	2.50	300	0.98	117	150	0.85	102	162	1.05	126	142
l		12'	3.13	376	1.30	156	135	1.13	136	<b>1</b> 47	1.40	168	128

# **Guidelines & Control Settings**

Model	BTUHs <sup>3</sup> per door	Coil Type	Evaporator (°F)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (°F)
RBH <sup>2</sup>	1035 <sup>4</sup>	Enh.	34	6-8	38	40	380

2 ORBR-8' has 3 doors, ORBR-12' has 4 doors.

3 BTUHs/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

l				Electri	Electric Defrost		Timed-Off Defrost		Hot Gas Defrost		Air Defrost
l	Model	Defrosts per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)						
	RBH	4 <sup>6</sup>	6-8	30	47	30	40	24	47		

6 If timed off defrost is utilized. If electric or hot gas defrost is utilized case only requires 1 defrot per day.

Low Temperature Defrost Schedule

No. Per Day Hours 10 pm 1 6 am - 10 pm\*\*

\*\* Or immediately after store closing hour

All measurements are taken per ARI 1200 - 2002 specifications.

## Anti-Condensate Heater Data

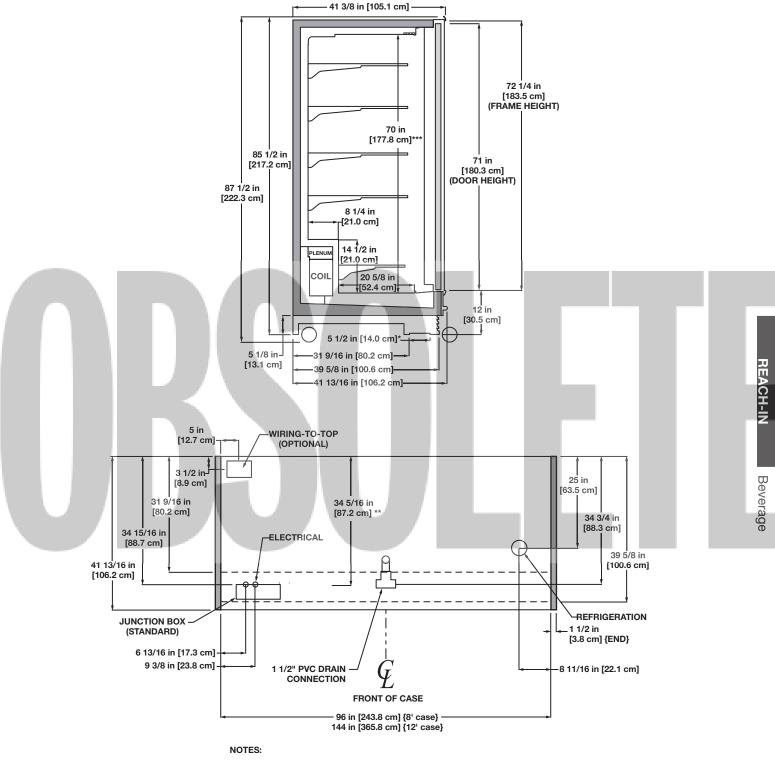
		Antho	ny 101				
		120 Volts					
Model		Amps	Watts				
	8'	1.62	<b>1</b> 94				
RBH	12'	2.26	272				











- \* STUB-UP AREA \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- \*\*\* CASE-TO-CASE PIPING REDUCES THE INTERIOR DIMENSION TO 68"
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
  WIRING-TO-THE-TOP- ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
  A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
  SUCTION LINE (ALL LENGTHS) 1/2"
  LIQUID LINE (ALL LENGTHS) 3/8", LIQUID LINE w/ HOT GAS DEFROST (ALL LENGTHS) 1/2"
  AVAILABLE SHELF SIZES: WIRE SHELVES 16", 18", 20", 22" & 23 1/2"; SOLID SHELVES 18", 20", 22", 24" & 27"
  RECOMMENDED CONFIGURATION IS 4 27" SHELVES AND 1 18" SHELF AT THE BOTTOM OF THE CASE
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

NSF COMPONENT

# Glass Door Reach-in Frozen Food/Ice Cream Merchandiser RZH - 2, 3, 4, & 5-door

## **Electrical Data**

I				, <u> </u>	ficiency ns		escent iting		Heaters Gas)			Heaters ctric)	
I	Mar dal		Fans per	120	Volts	120 Volts		120	Volts	208	Volts	240	Volts
	Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps <sup>1</sup>	Watts	Amps <sup>1</sup>	Watts
I	RZH	2-door	2	0.63	54	1.88	226	5.44	653	14.41	2996	15.06	3616
		3-door	3	1.25	108	2.50	300	6.97	837	18.22	3791	18.54	4452
I		4-door	4	1.90	161	3.13	376	9.17	1100	23.22	4829	23.44	5627
		5-door	5	2.50	215	3.75	450	10.84	1300	28.91	6014	29.02	6967

1 Figure given is maximum amps per phase.

# **Lighting Data**

		Fluore	escent		nax 2 ED			n 3 ED		Cros LE		
		120	Volts	120	Volts	Optimax 2 BTUH Credit	120	Volts	Gen 3 BTUH Credit	120	Volts	Crossfire BTUH Credit
Model		Amps	Watts	Amps	Watts	(per door)	Amps	Watts	(per door)	Amps	Watts	(per do <b>or)</b>
RZH	2-door	1.88	226	0.65	78	182	0.57	68	194	0.70	84	174
	3-door	2.50	300	0.98	117	150	0.85	102	162	1.05	126	142
	4-door	3.13	376	1.30	156	135	1.13	136	<b>1</b> 47	1.40	168	128
	5-door	3.75	450	1.63	195	125	1.42	170	138	1.75	210	118
		the second s										

**NSF** 

c(UL)us

## Anti-Condensate Heater Data

- 8								
		7	Antho	ony 101		hony² inator		nony² nator 2
			120	Volts	120	Volts	120	Volts
ų	Model		Amps	Watts	Amps	Watts	Amps	Watts
ł	RZH	2-door	4.40	528	1.86	223	1.28	153
		3-door	6.15	738	2.77	332	1.89	227
		4-door	7.99	958	3.63	435	2.46	295
		5-door	9.90	1188	4.57	548	3.11	373

2 Eliminator values given for doors with no heat on the glass.





### **Guidelines & Control Settings**

Model	BTUHs⁵ per door	Coil Type	Evaporator (°F)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>7</sup> (°F)
RZH: F <sup>3</sup> - Standard	1434 <sup>6</sup>	Enh.	-11	3-5	-4	3	550
RZH: C <sup>3</sup> - Standard	1534 <sup>6</sup>	Enh.	-17	3-5	-10	-3	550
RZH: F <sup>3</sup> - Eliminator/Polar LE <sup>4</sup>	1258 <sup>6</sup>	Enh.	-11	3-5	-4	3	550
RZH: C <sup>3</sup> - Eliminator/Polar LE <sup>4</sup>	1358⁵	Enh.	-17	3-5	-10	-3	550

3 "F" = Frozen food, "C" = Ice cream.

4 Data given for cases with Eliminator and Polar LE Doors.

5 BTUHs/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

6 Standard fans increase refrigeration load by 96 BTUH/fan.

7 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

			Electri	c Defrost	Timed-0	Off Defrost	Hot Ga	as Defrost	Reverse Air Defrost		
Model	Defrosts per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	
RZH	1	13-15	52	48 <sup>8</sup>			24	73 <sup>9</sup>			

8 The recommended location is on the left end of the coil on the top crossover.

9 The recommended location is on the dump line.



No. Per Day Hours 1 10 pm

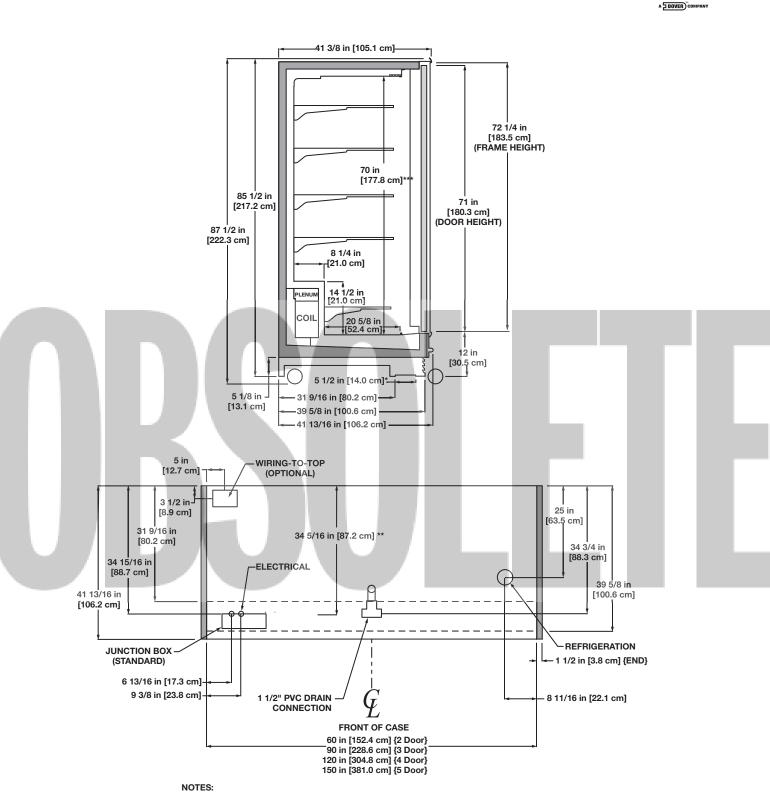
2 6 am - 10 pm\*\*

\*\* Or immediately after store closing hour









**RZH** 

Hill PHOENIX

STUB-UP AREA

- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- \*\*\* CASE-TO-CASE PIPING REDUCES THE INTERIOR DIMENSION TO 68"
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
   WIRING-TO-THE-TOP- ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
   A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE (2DR & 3DR) 5/8", SUCTION LINE (4DR & 5DR) 7/8"
- LIQUID LINE (ALL LENGTHS) 3/8", LIQUID LINE w/ HOT GAS DEFROST (ALL LENGTHS) 1/2"

  - AVAILABLE SHELF SIZES: WIRE SHELVES 16", 18", 20", 22" & 23 1/2"; SOLID SHELVES 16", 20", 22", 24" & 27"
     RECOMMENDED CONFIGURATION IS 4 27" SHELVES AND 1 18" SHELF AT THE BOTTOM OF THE CASE
     DASHED LINES SIGNIFY THE AREA INSIDE THE BASE RAIL BEHIND THE KICK-PLATE



NSF





# Glass Door Reach-in Back-to-Back Frozen Food/Ice Cream Merchandiser RIZH - 4, 6, 8 & 10-door

## **Electrical Data**

BACK-T	О-ВАСК С	ONFIGU	<b>RATION</b> <sup>1</sup>							
		_		ficiency Ins		Heaters Gas)		2011001	Heaters ctric)	
		Fans per	120	Volts	120	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps <sup>2</sup>	Watts	Amps <sup>2</sup>	Watts
RIZH	4-door	4	0.94	56	4.22	506	19.60	4076	22.58	5420
	6-door	6	1.40	84	7.28	874	23.60	4910	27.16	6520
	8-door	8	1.86	112	10.00	1200	31.22	6492	36.16	8680
	10-door	10	2.34	140	13.33	1600	38.70	8050	44.62	10708
SINGLE-	SIDE DAT	A								
RIZH	2-door	2	0.47	28	2.11	253	9.80	2038	11.29	2710
	3-door	3	0.70	42	3.64	437	11.80	2455	13.58	3260
	4-door	4	0.93	56	5.00	600	15.61	3246	18.08	4340
	5-door	5	1.17	70	66.7	800	19.35	4025	22.31	5354
		and the second se		and the second			No. of Concession, name			

1 For back-to-back configurations, customers are required to install separate current-limiting devices for each side of the case per the amperages listed. (Current-limiting devices are available for purchase through Hill PHOENIX)

2 Figure given is maximum amps per phase.

# Lighting Data

BACK-TO	-васк со	NFIGUR	ATION									
		Fluorescent 120 Volts		Optimax 2 LED 120 Volts		Optimax 2 BTUH Credit	Gen 3 LED 120 Volts		Gen 3 BTUH Credit	Crossfire LED 120 Volts		Crossfire BTUH Credit
Model		Amps	Watts	Amps	Watts	(per door)	Amps	Watts	(per door)	Amps	Watts	(per door)
RIZH	4-door	3.76	452	1.30	156	182	1.13	136	194	1.40	168	174
	6-door	5.00	600	1.95	234	150	1.70	204	162	2.10	252	142
	8-door	6.26	752	2.60	312	135	2.27	272	147	2.80	336	128
	10-door	7.50	900	3.25	390	125	2.83	340	138	3.50	420	118
SINGLE-SIDE DATA												
RIZH	2-door	1.88	226	0.65	78	182	0.57	68	194	0.70	84	174
	3-door	2.50	300	0.98	117	150	0.85	102	162	1.05	126	142
	4-door	3.13	376	1.30	156	135	1.13	136	147	1.40	168	128
	5-door	3.75	450	1.63	195	125	1.42	170	138	1.75	210	118

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## Anti-Condensate Heater Data

BACK-TO-BACK CONFIGURATION											
		Antho	ony 101	1	hony <sup>3</sup> inator	Anthony <sup>3</sup> Eliminator 2					
		120	Volts	120	Volts	120 Volts					
Model		Amps	Watts	Amps	Watts	Amps	Watts				
RIZH	4-door	8.80	1056	3.72	446	2.55	306				
	6-door	12.30	1476	5.54	664	3.78	454				
	8-door	15.97	1916	7.25	870	4.92	590				
	10-door	19.80	2376	9.14	1097	6.22	747				
SINGLE-S	IDE DATA										
RIZH	2-door	4.40	528	1.86	223	1.28	153				
	3-door	6.15	738	2.77	332	1.89	227				
	4-door	7.99	958	3.63	435	2.46	295				
	5-door	9.90	1188	4.57	548	3.11	373				
		and the second se	A DESCRIPTION OF TAXABLE PARTY.	State of Concession, Name	and the second se	Carlot and the second second					

3 Eliminator values given for doors with no heat on the glass.

## **Guidelines & Control Settings**

Model	BTUHs <sup>6</sup> per door	Coil Type	Evaporator (°F)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>8</sup> (°F)
RIZH: F <sup>4</sup> - Standard	1281 <sup>7</sup>	Enh.	-11	3-5	-4	3	550
RIZH: C <sup>4</sup> - Standard	1371 <sup>7</sup>	Enh.	-17	3-5	-10	-3	550
RIZH: F <sup>4</sup> - Eliminator/Polar LE <sup>5</sup>	1123 <sup>7</sup>	Enh.	-11	3-5	-4	3	550
RIZH: C <sup>4</sup> - Eliminator/Polar LE <sup>5</sup>	1213 <sup>7</sup>	Enh.	-17	3-5	-10	-3	550

4 "F" = Frozen food, "C" = Ice cream.

5 Data given for cases with Eliminator and Polar LE Doors.

6 BTUHs/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

7 Standard fans increase refrigeration load by 96 BTUH/fan.

8 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

			Electric Defrost		Timed-Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)
RIZH	1	13-15	60	73 <sup>9</sup>			24	73 <sup>10</sup>		

9 The recommended location is on the left end of the coil on the top crossover.

10 The recommended location is on the dump line.

Low Temperature Defrost Schedule

No. Per Day Hours

2 6 am - 10 pm\*\*

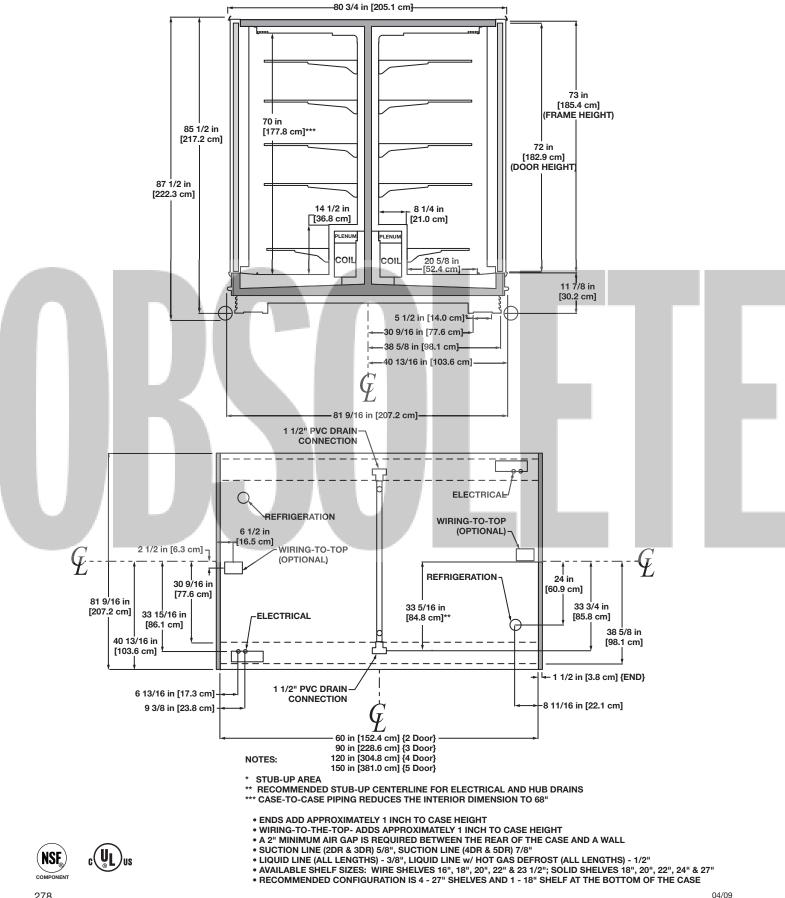
\*\* Or immediately after store closing hour





REACH-IN





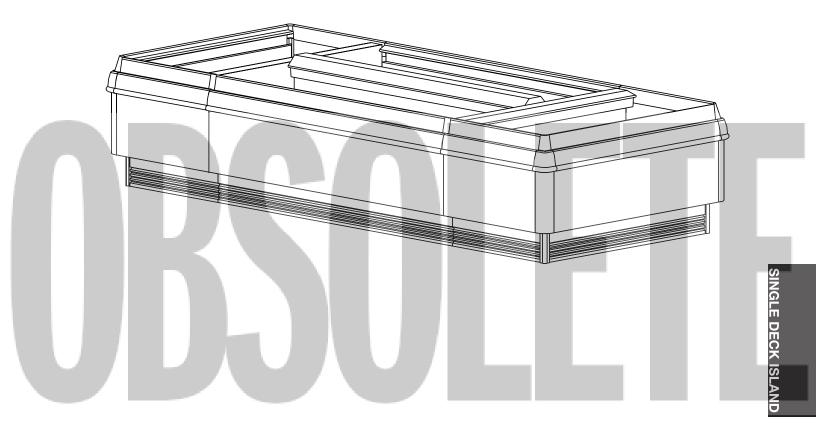








# SINGLE DECK ISLAND



#### NOTES

- Cases shown with an ANSI/NSF\* Mark are Certified by NSF
- Cases shown with an UL\* Mark are Listed by Underwriters Laboratories Inc.
- Allow for an extra 1/8" per joint when lining up merchandisers.
- Technical information contained herein is subject to change without notice.

\* ANSI - American National Standard Institute NSF - National Sanitation Foundation UL - Underwriters Laboratories Inc

## Narrow Island Deli/Meat Merchandiser ONIM - 8' & 12' double wraparound ends

ONIMB - 8' & 12' single wraparound end

## **Electrical Data**

			Standar	rd Fans		fficiency ans		ndensate aters		Defrost	Heaters	
		Fans per	120 Volts		120 Volts		120	Volts	208	Volts	240 Volts	
Model			Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONIM	8'	6	2.04	102	0.90	66	0.82	98	4.34	902	5.00	1200
	12'	8	2.72	136	1.20	88	1.08	130	7.22	1502	8.33	2000
ONIMB	8'	6	2.04	102	0.90	66	0.75	90	4.34	902	5.00	1200
	12	8	2.72	136	1.20	88	1.17	140	7.22	1502	8.33	2000

## **Lighting Data**

		Typic Ligh	al per t Row		mum nting
		120	Volts	120	Volts
Model	1	Amps	Watts	Amps	Watts
ONIM	8'	NA <sup>1</sup>	NA	1.26	151
	12'	NA	NA	1.46	175
ONIMB	8'	NA	NA	1.26	151
	12'	NA	NA	1.46	175

Not applicable.

# **Guidelines & Control Settings**

Model	<sup>3,4</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
ONIM/ONIMB <sup>2</sup> Meat	821 <sup>5</sup>	12	6-8	25	34	180
ONIM/ONIMB <sup>2</sup> Deli	796 <sup>5</sup>	17	6-8	28	37	180

2 For "Meat" application, add 400 BTUH for each wraparound end; for "Deli" application, add 250 BTUH for each wraparound end.

3 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.08.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

I					c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse Air Defrost		
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)			Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
	ONIM/ONIMB	3	6 - 8	35	47	45	47	26	45	<sup>7</sup>		

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7 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

```
No. Per Day
            Hours
```

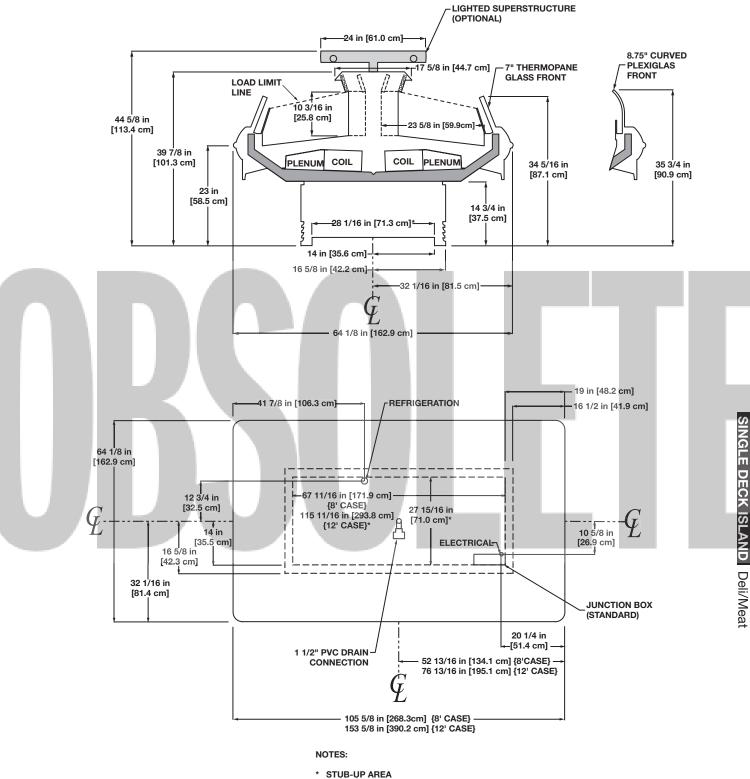
12 midnight

2 12 am - 12 pm 6 am - 2 pm - 10 pm

3 4 12 - 6 am - 12 - 6 pm



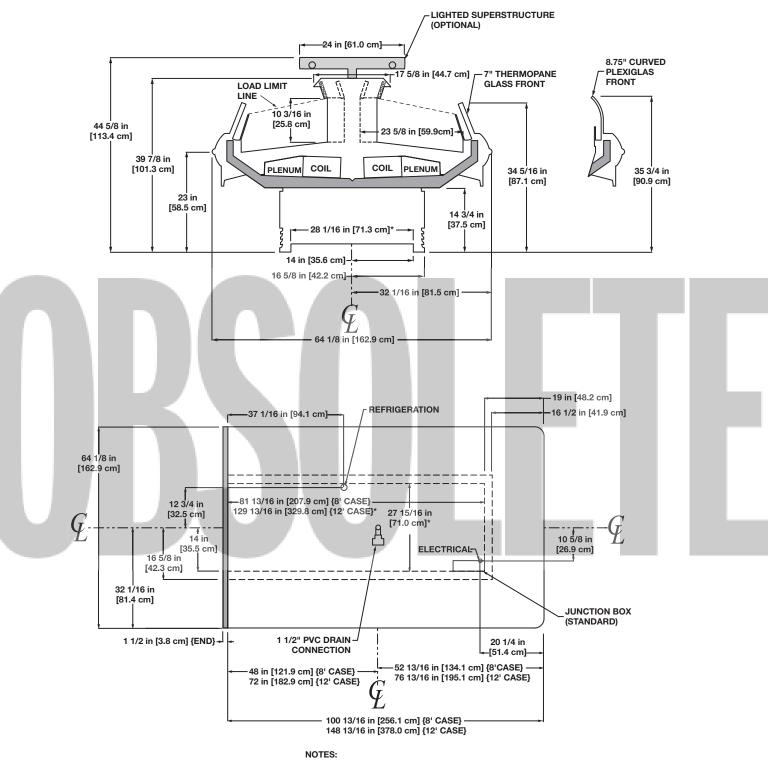




- SUCTION LINE 7/8", LIQUID LINE 3/8"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE







- \* STUB-UP AREA
- SUCTION LINE 7/8", LIQUID LINE 3/8"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE





#### System Requirements

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Overcurrent Protection
ONIMA	8'	208	1	60	3 wire + ground	19.325	35
	12'	208	1	60	3 wire + ground	23.343	40

#### **Electrical Data**

			Standard Fans			lenser ans		ondensate aters		Defrost	Heaters			Drain Heater		mum hts
	Fans per 120 Volts		208	208 Volts 120 Volts		) Volts	208 Volts 240 Volts			Volts	208	Volts	120 \	Volts		
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONIMA	8'	6	2.04	102	0.85	88	0.82	98	4.34	902	5.00	1200	4.81	1000	1.26	151
	12'	8	2.72	136	2.60	270	1.08	130	7.22	1502	8.33	2000	4.81	1000	1.46	175

## **Guidelines & Control Settings**

l	Model	24 hr Energy Usage (kWh)		Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>1</sup> (FPM)
l	ONIMA-8'		35	6-8	25	34	180
L	ONIMA-12'		35	6-8	25	34	180

Average discharge air velocity at peak of defrost.

## **Condensing Unit Data**

Model	Volts	Phase	Frequency (Hz)	HP	RLA <sup>3</sup> (amps)	LRA⁴ (amps)	Refrig.	lbs of Refrig.
ONIMA-8'	208	1	60	1	10.36	48.2	R22	8.2
ONIMA-12'2	208	1	60	1	7.0	34.2	R22	12.6

2 This case uses two of the condensing units listed above.

3 RLA - Running Load Amps.

4 LRA - Locked Rotor Amps.

## **Defrost Controls**

		Electri	c Defrost	Timed (	Off Defrost	Hot Ga	as Defrost	Reverse Air Defrost		
Model	Defrosts Per Day	Fail-safe (min)Termination Temp. (°F)		Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
ONIMA	3	3 35 47		<sup>5</sup>						

5 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

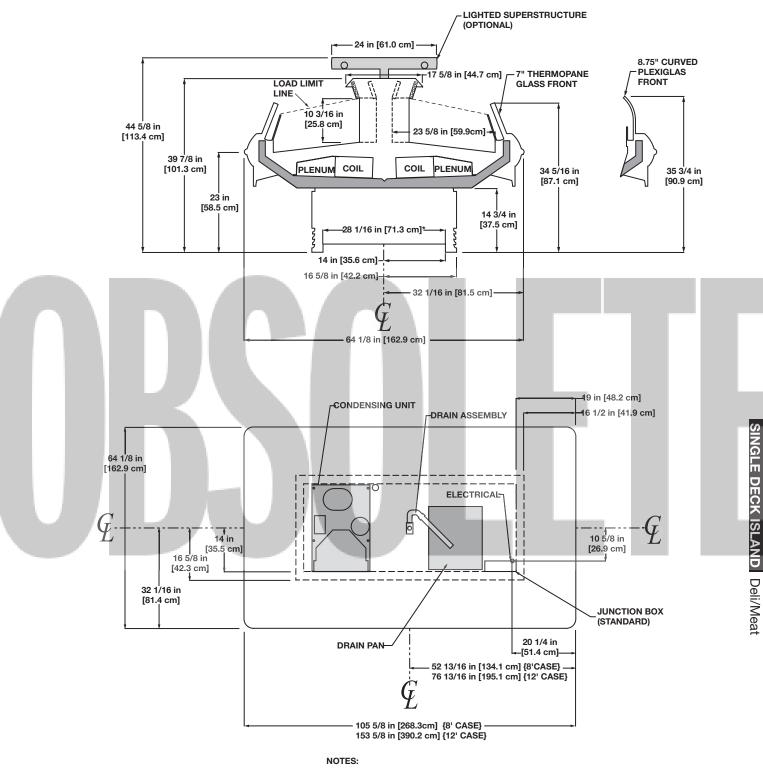
No.	Per	Day	Hours

- 1 12 midnight
- 2
- 12 am 12 pm 6 am 2 pm 10 pm 12 6 am 12 6 pm 3 4









\* STUB-UP AREA

#### System Requirements

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Overcurrent Protection
ONIMBA	8'	208	1	60	3 wire + ground	17.999	35
	12'	208	1	60	3 wire + ground	26.619	45

#### **Electrical Data**

			Standard Fans			lenser ans	Anti-Condensate Heaters			Defrost	Heaters			Drain Heater		mum hts
		Fans per	120 Volts		208 Volts		120 Volts		208	Volts	240 Volts		208 Volts		120 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONIMBA	8'	6	2.04	102	0.85	88	0.75	90	4.34	902	5.00	1200	4.81	1000		
	12'	8	2.72	136	2.60	270	1.23	148	7.22	1502	8.33	2000	7.21	1500		

## **Guidelines & Control Settings**

Model	24 hr Energy Usage (kWh)		Pressure @ itlet (psig)	Superheat S @ Bulb	Discharge Air (°F)	Return Air (°F)	Discha	arge Air Velocity <sup>1</sup> (FPM)
ONIMBA-8'		3	35	6-8	25	34		180
ONIMBA-12'			35	6-8	25	34		180

Average discharge air velocity at peak of defrost.

## **Condensing Unit Data**

Model	Volts	Phase	Frequency (Hz)	HP	RLA <sup>3</sup> (amps)	LRA⁴ (amps)	Refrig.	lbs of Refrig.	L
ONIMBA-8'	208	1	60	1	10.36	48.2	R22	8.2	
ONIMBA-12'2	208	1	60	1	7.0	34.2	R22	12.6	P

2 This case uses two of the condensing units listed above.

3 RLA - Running Load Amps.

4 LRA - Locked Rotor Amps.

## **Defrost Controls**

			Electric Defrost		Timed Off Defrost		Hot Ga	as Defrost	Reverse Air Defrost		
l	Model	Defrosts Per Day	Fail-safeTermination(min)Temp. (°F)				Fail-safe (min)Termination Temp. (°F)		Fail-safe (min)	Termination Temp. (°F)	
I	ONIMBA	3	35	47	5						

5 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

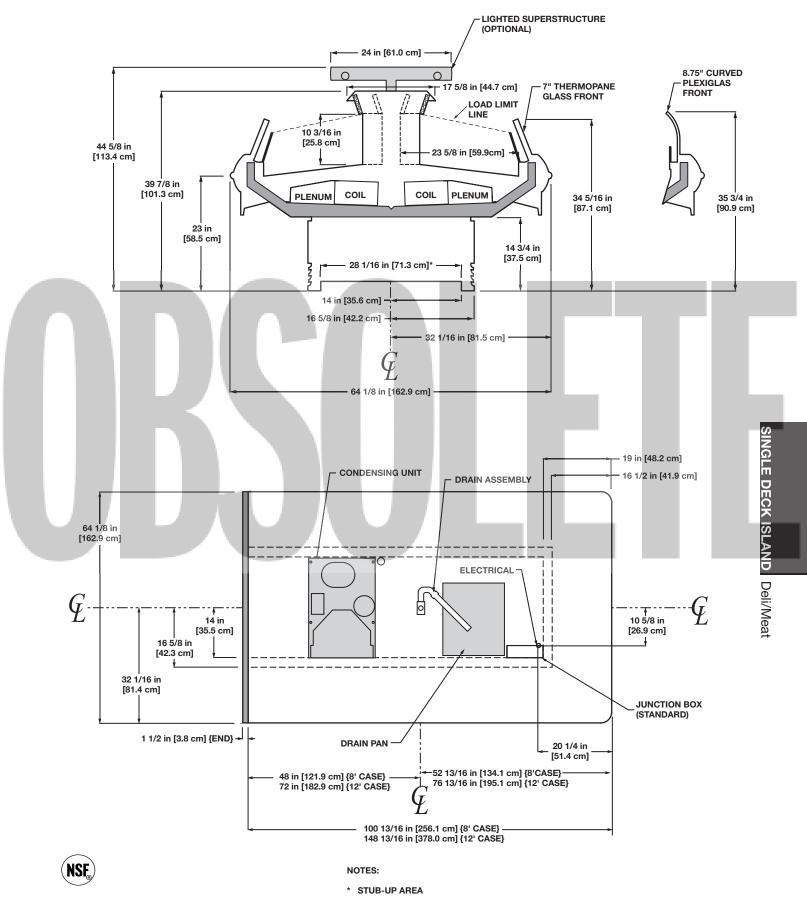
No.	Per	Day	Hours

- 1 12 midnight
- 2
- 12 am 12 pm 6 am 2 pm 10 pm 12 6 am 12 6 pm 3 4









# Wide Island Deli/Meat Merchandiser

#### OIM - 8' & 12' double wraparound ends OIMB - 6', 8' & 12' single wraparound end OIMBB - 8' double joint ends

#### **Electrical Data**

	_		Standar		Fa	fficiency ans	Hea	ndensate aters			Heaters	
		Fans per	120 \	/olts	120 Volts		120	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OIM	8'	6	2.04	102	0.90	66	0.82	98	4.34	902	5.00	1200
	12'	8	2.72	136	1.20	88	1.08	130	7.22	1502	8.33	2000
OIMB	6'	4	1.36	76	0.60	44	0.57	68	3.25	676	3.75	900
	8'	6	2.04	102	0.90	66	0.75	90	4.34	902	5.00	1200
	12'	8	2.72	136	1.20	88	1.23	148	7.22	1502	8.33	2000
OIMBB	8'	6	2.04	102	0.90	66	0.92	110	4.34	902	5.00	1200

#### **Lighting Data**

			al per Row	Maximum Lighting			
		120	Volts	120 Volts			
Model		Amps	Watts	Amps	Watts		
OIM	8'	NA <sup>1</sup> NA		5.04	605		
	12'	NA	NA	6.50	780		
OIMB	6'	NA	NA	3.78	454		
	8'	NA	NA	4.61	553		
	12'	NA	NA	5.24	629		
OIMBB	8'	NA	NA	3.25	390		
					-		

1 Not applicable.

#### **Guidelines & Control Settings**

Model	<sup>3,4</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
OIM/OIMB/OIMBB <sup>2</sup> Meat	706 <sup>5</sup>	12	6-8	26	31	140
OIM/OIMB/OIMBB <sup>2</sup> Deli	496 <sup>5</sup>	17	6-8	28	33	140

2 For "Meat" application, add 400 BTUH for each wraparound end; for "Deli" application, add 250 BTUH for each wraparound end.

3 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

I				Electri	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse Air Defrost		
	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
	OIM/OIMB/OIMBB	3	6 - 8	40	47	45	47	26	45	7		

7 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule All measurements taken per ARI 1200 - 2002 specifications.

- No. Per Day Hours
  - 1 12 midnight
  - 2 12 am 12 pm
  - 3 6 am 2 pm 10 pm 4 12 - 6 am - 12 - 6 pm
  - 4 12

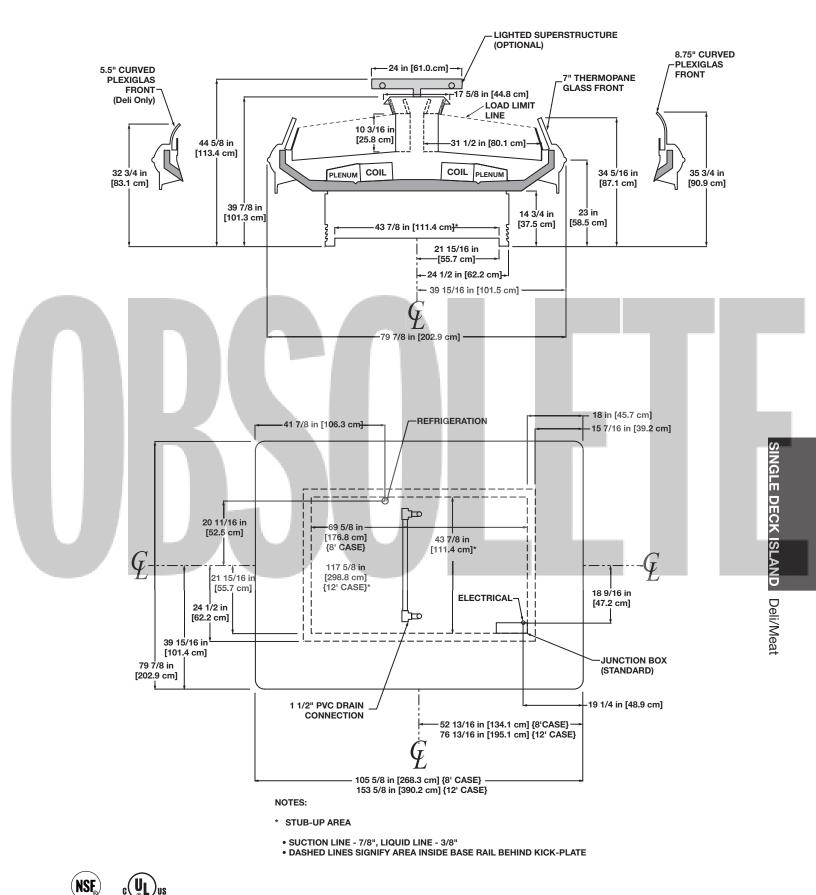






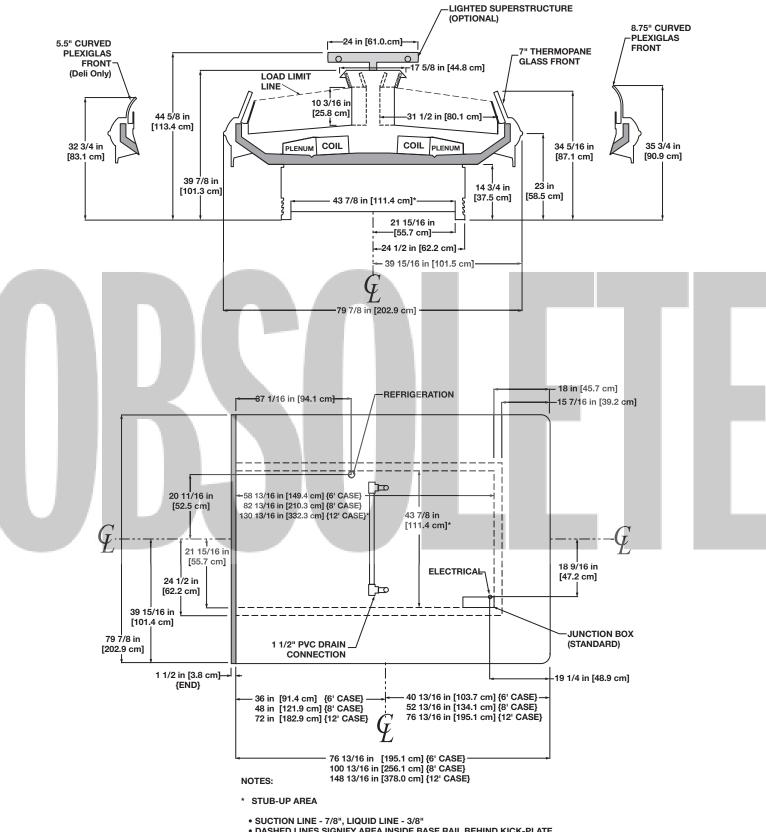






COMPONENT

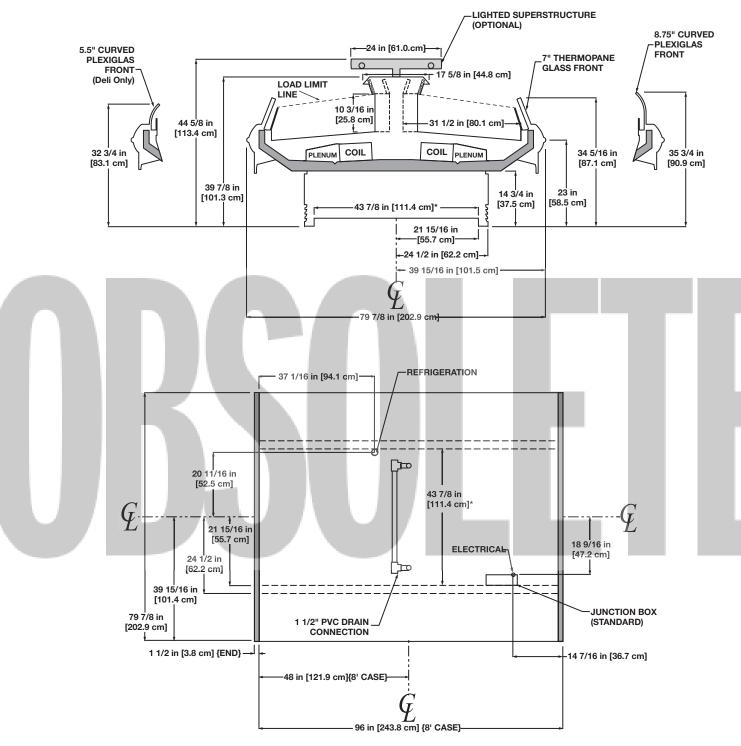




• DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

NSF





#### NOTES:

- \* STUB-UP AREA
- SUCTION LINE 7/8", LIQUID LINE 3/8"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



#### **System Requirements**

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Overcurrent Protection
OIMA	8'	208	1	60	3 wire + ground	23.655	40
	12'	208	1	60	3 wire + ground	28.435	45

#### **Electrical Data**

	Standard Fans			Condenser An Fans		Anti-Condensate Heaters		Defrost	Heaters	i	Drain Heater		Maximum Lights			
		Fans per	120	Volts	208	Volts	120	) Volts	208 '	Volts	240	Volts	208 \	Volts	120 \	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OIMA	8'	6	2.04	102	0.85	88	0.71	85	4.34	9.02	5.00	1200	4.81	1000	5.04	606
	12'	8	2.72	136	2.60	270	0.79	95	7.22	1502	8.33	2000	4.81	1000	6.50	780

## **Guidelines & Control Settings**

Model	24 hr Energy Usage (kWh)	Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>1</sup> (FPM)
OIMA-8'		35	6-8	26	31	140
OIMA-12'		35	6-8	26	31	140

Average discharge air velocity at peak of defrost.

## **Condensing Unit Data**

Model	Volts	Phase	Frequency (Hz)	HP	RLA <sup>3</sup> (amps)	LRA⁴ (amps)	Refrig.	lbs of Refrig.
OIMA-8'	208	1	60	1	10.36	48.2	R22	8.2
OIMA-12'2	208	1	60	1	7.0	34.2	R22	12.6

2 This case uses two of the condensing units listed above.

3 RLA - Running Load Amps.

4 LRA - Locked Rotor Amps.

## **Defrost Controls**

			Electric Defrost		Timed Off Defrost		Hot Ga	as Defrost	Reverse Air Defrost	
L	Model Defrosts Per Day		Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
	OIMA	3	40	47	5					

5 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

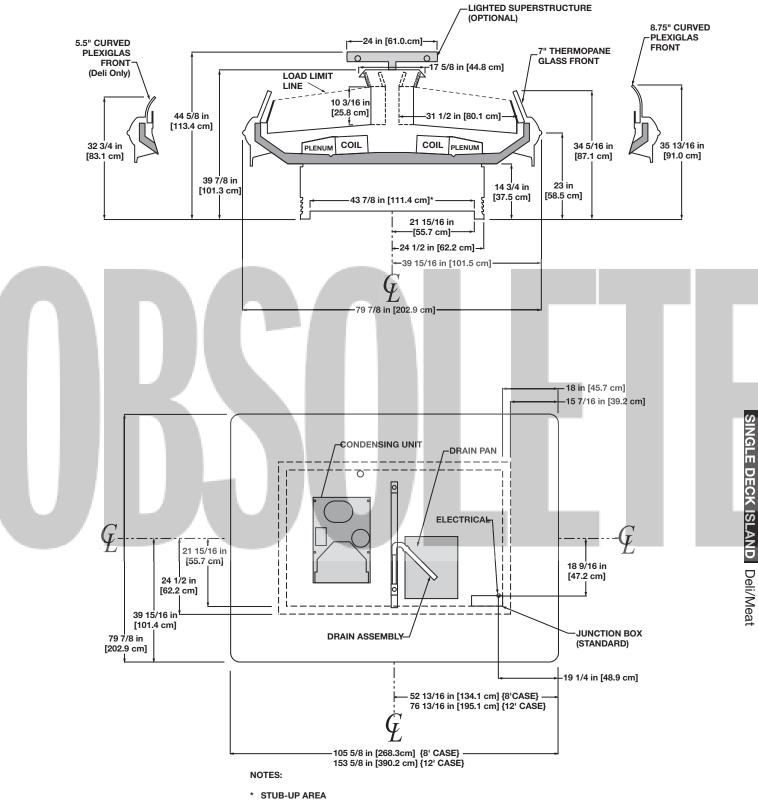
No.	Per	Day	Hours

- 1 12 midnight
- 2
- 12 am 12 pm 6 am 2 pm 10 pm 12 6 am 12 6 pm 3 4









• DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

NSF

#### System Requirements

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Overcurrent Protection
OIMBA	6'	208	1	60	3 wire + ground	17.047	30
	12'	208	1	60	3 wire + ground	26.619	45

#### **Electrical Data**

Stand		Standa	rd Fans		lenser an		ondensate aters		Defrost	Heaters	i		ain ater	Maxi Lig	mum hts	
Fans per		120	Volts	208	Volts	120	) Volts	208	Volts	240	Volts	208 \	Volts	120 \	√olts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OIMBA	6'	4	1.36	76	2.60	270	0.57	68	3.25	676	3.75	900	7.21	1500	1.26	151
	12'	8	2.72	136	2.60	270	1.23	148	7.22	1502	8.33	2000	7.21	1500	1.46	175

## **Guidelines & Control Settings**

Model	24 hr Energy Usage (kWh)		Supe <mark>rheat S</mark> et Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>1</sup> (FPM)
OIMBA-6'		35	6-8	26	31	140
OIMBA-12'		35	6-8	26	31	140

1 Average discharge air velocity at peak of defrost.

# **Condensing Unit Data**

l	_	_		Frequency		RLA <sup>3</sup>	LRA <sup>4</sup>		lbs of
I	Model	Volts	Phase	(Hz)	HP	(amps)	(amps)	Refrig.	Refrig.
I	OIMBA-6'	208	1	60	1 🖓	7.0	34.2	R22	8.2
T	OIMBA-12'2	208	1	60	1	7.0	34.2	R22	12.6

2 This case uses two of the condensing units listed above.

3 RLA - Running Load Amps.

4 LRA - Locked Rotor Amps.

## **Defrost Controls**

l			Electric Defrost		Timed Off Defrost		Hot Ga	as Defrost	Reverse Air Defrost		
l	Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
	OIMBA	3	40	47	<sup>5</sup>						

5 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

No.	Per	Day	Hours

1 12 midnight

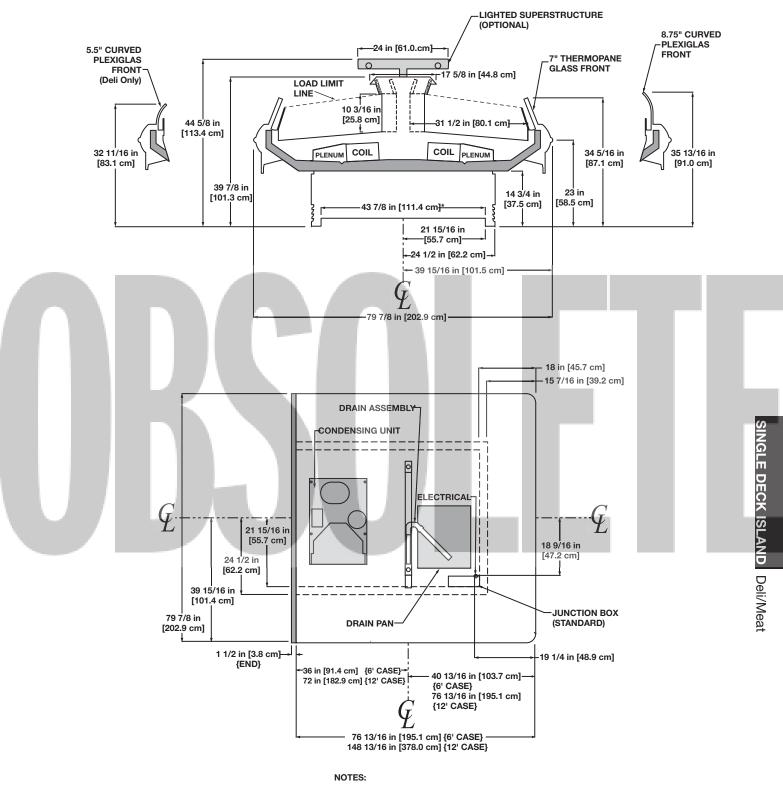
2

12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 3 4









\* STUB-UP AREA

NSF

• DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

# Narrow Island Bulk Produce Merchandiser

#### ONIP - 8' & 12' narrow island double wraparound end ONIPB - 6', 8', 10' & 12' narrow island single wraparound end ONIPBB - 8' & 12' narrow island double joint

#### **Electrical Data**

_					High Et	ficiency	Anti-Cor	ndensate				_
			Standar	rd Fans	Fans		Hea	Heaters		Defrost	Heaters	
		Fans per	120 \	120 Volts		120 Volts		Volts	208 Volts		240 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONIP	8'	6	2.04	102	0.90	66	0.23	28	1			
	12'	8	2.72	136	1.20	88	0.55	66				
ONIPB	6'	4	1.36	76	0.60	44	0.31	37				
	8'	6	2.04	102	0.90	66	0.46	55				
	10'	6	2.04	102	0.90	66	0.66	79				
	12'	8	2.72	136	1.20	88	0.78	94				
ONIPBB	8'	6	2.04	102	0.90	66	0.84	101				
	12'	8	2.72	136	1.20	88	1.26	151				

1 NOTE: "- - -" not an option on this case model.

#### Lighting Data

_								
			al per t Row		imum nting			
		120	Volts	120 Volts				
Model		Amps	Watts	Amps	Watts			
ONIP	8'	NA <sup>2</sup>	NA	NA	NA			
	12'	NA	NA	NA	NA			
ONIPB	6'	NA	NA	NA	NA			
	8'	NA	NA	NA	NA			
	10'	NA	NA	NA	NA			
	12'	NA	NA	NA	NA			
ONIPBB	8'	NA	NA	NA	NA			
	12'	NA	NA	NA	NA			

2 Not applicable.

#### **Guidelines & Control Settings**

18							
			Evaporator	Superheat Set Point	Discharge Air	Return Air	Discharge Air Velocity <sup>7</sup>
	Model	<sup>4,5</sup> BTUH/ft	(°F)	@ Bulb (°F)	(°F)	(°F)	(FPM)
	ONIP <sup>3</sup> /B/BB	586 <sup>6</sup>	22	6-8	34	48	140

3 For ONIP, add 600 BTUH for each wraparound end.

4 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.10.

5 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

6 Standard fans increase refrigeration load by 96 BTUH/fan.

7 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

			Electric Defrost Timed Off Defro		Off Defrost	ost Hot Gas Defrost		Reverse Air Defrost		
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safeTermination(min)Temp. (°F)		Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
ONIP/B/BB	3	6 - 8			44	38				

#### Medium Temperature Defrost Schedule

No. Per Day Hours

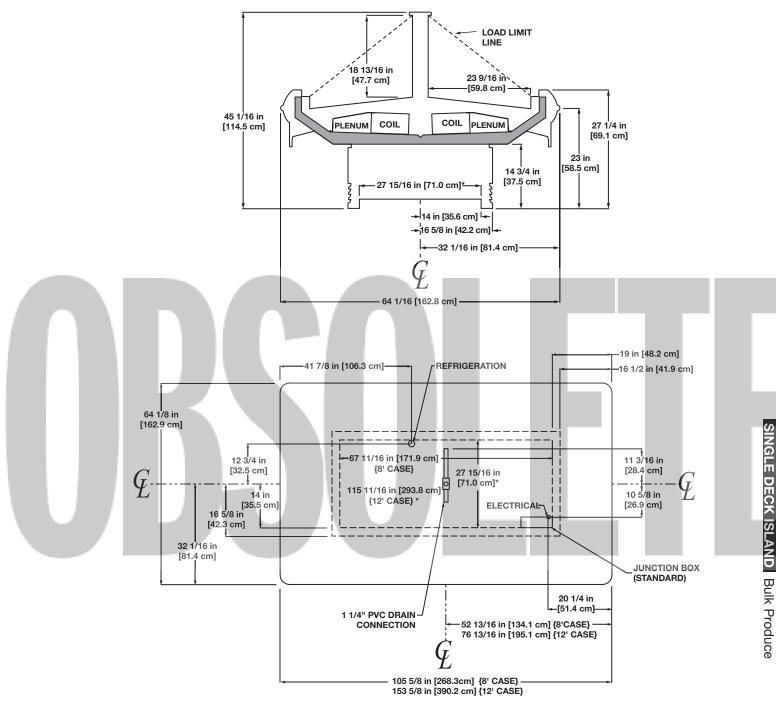
- 1 12 midnight 2
- 12 am 12 pm 6 am 2 pm 10 pm 12 6 am 12 6 pm 3
- Δ









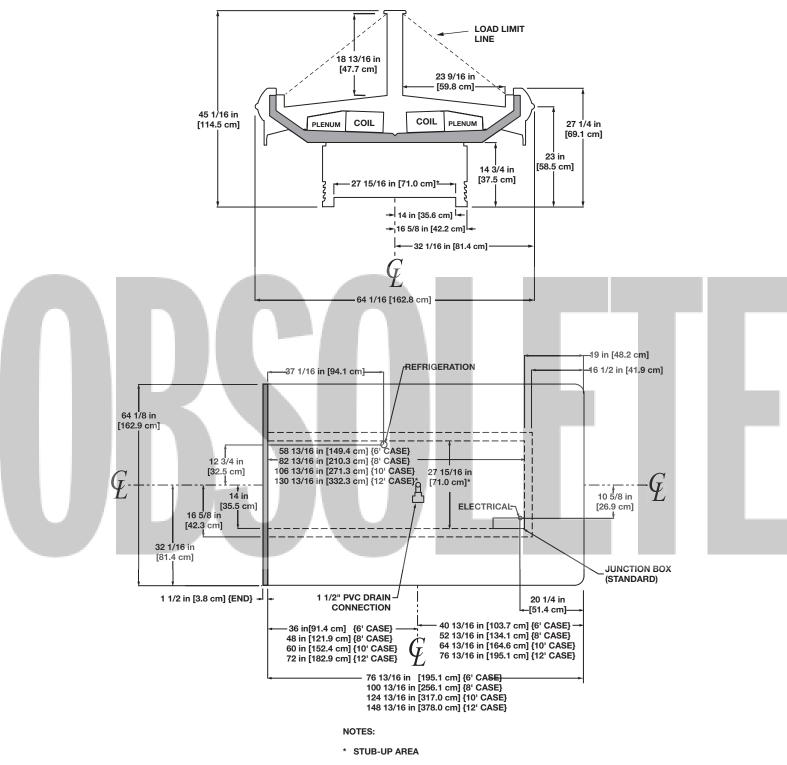


#### NOTES:

- \* STUB-UP AREA
- SUCTION LINE 7/8", LIQUID LINE 1/2"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



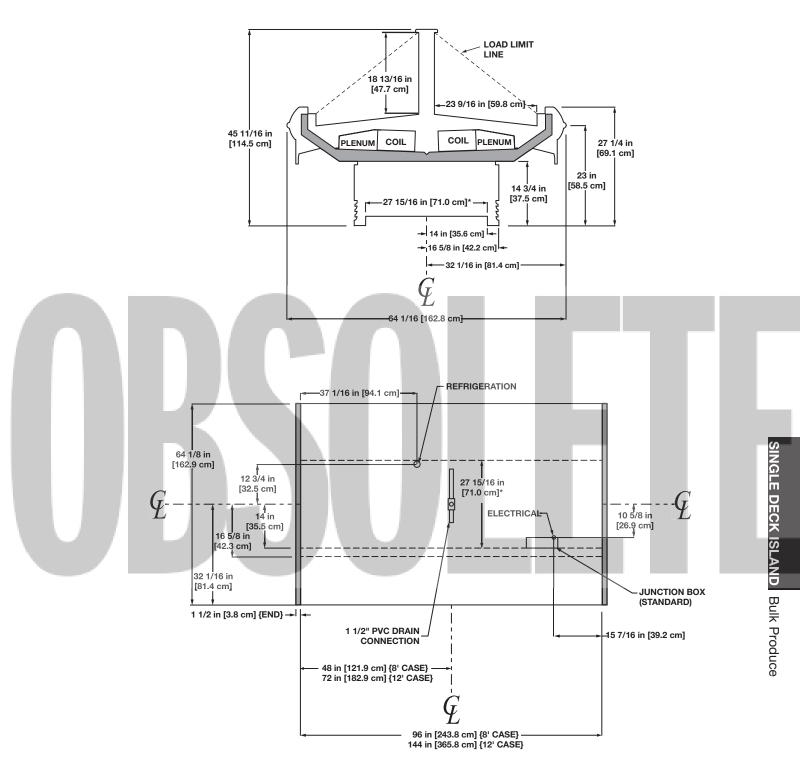




- SUCTION LINE 7/8", LIQUID LINE 3/8"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE







#### NOTES:

- \* STUB-UP AREA
- SUCTION LINE 7/8", LIQUID LINE 3/8"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



(NSF<sub>®</sub>)

# Wide Island Bulk Produce Merchandiser

#### OIP - 8' & 12' wide island double wraparound end OIPB - 6', 8', 10' & 12' wide island single wraparound end OIPBB - 8' & 12' wide island double joint

#### **Electrical Data**

_					High Ef	fficiency	Anti-Cor	ndensate				_
			Standar	d Fans	Fa	ans	Hea	aters		Defrost	Heaters	
		Fans per	120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OIP	8'	6	2.04	102	0.90	66	0.23	28	1			
	12'	8	2.72	136	1.20	88	0.55	66				
OIPB	6'	4	1.36	76	0.60	44	0.31	37				
	8'	6	2.04	102	0.90	66	0.46	55				
	10'	6	2.04	102	0.90	66	0.66	79				
	12'	8	2.72	136	1.20	88	0.78	94				
OIPBB	8'	6	2.04	102	0.90	66	0.84	101				
	12'	8	2.72	136	1.20	88	1.26	151				

1 NOTE: "- - -" not an option on this case model.

#### Lighting Data

						h
		Light	al per t Row	Ligh	mum nting	
		120	Volts	120	Volts	
Model		Amps	Watts	Amps	Watts	
OIP	8'	NA <sup>2</sup>	NA	3.78	454	
	12'	NA	NA	5.04	605	
OIPB	6'	NA	NA	1.89	227	
	8'	NA	NA	3.15	378	
	10'	NA	NA			
	12'	NA	NA	4.41	529	
OIPBB	8'	NA	NA	2.52	302	
	12'	NA	NA	3.78	454	
					100 C	

2 Not applicable.

#### **Guidelines & Control Settings**

200							
			Evaporator	Superheat Set Point	Discharge Air	Return Air	Discharge Air Velocity <sup>7</sup>
	Model	<sup>4,5</sup> BTUH/ft	(°F)	@ Bulb (°F)	(°F)	(°F)	(FPM)
	OIP <sup>3</sup> /OIPB/OIPBB	586 <sup>6</sup>	22	6-8	34	48	140

3 For OIP, add 600 BTUH for each wraparound end.

4 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.10.

5 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

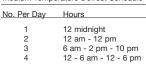
6 Standard fans increase refrigeration load by 96 BTUH/fan.

7 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

			Electri	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse Air Defrost		
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
OIP/OIPB/OIPBB	3	6 - 8			44	38					

#### Medium Temperature Defrost Schedule

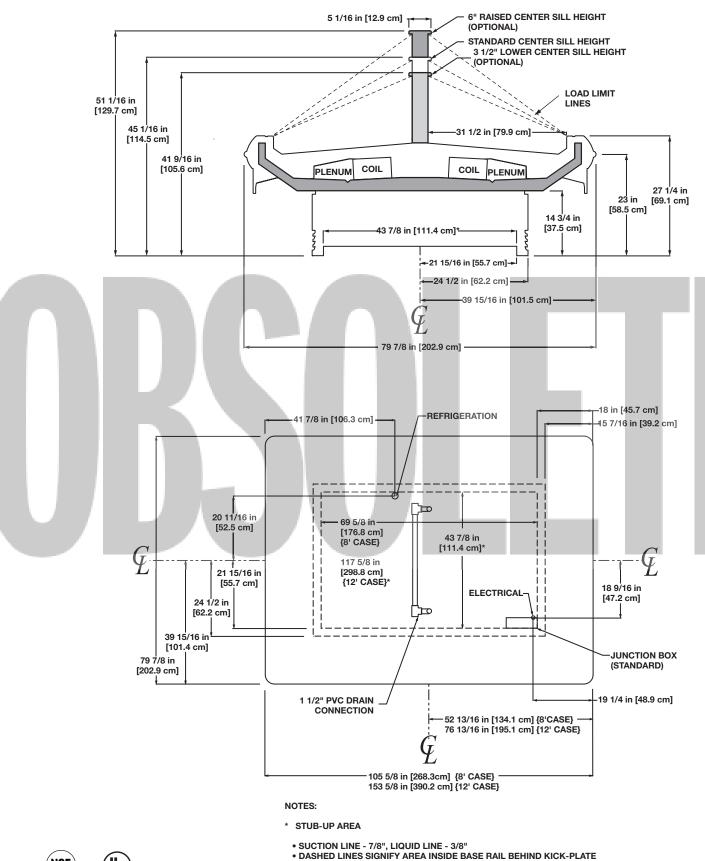


- 3
- Δ



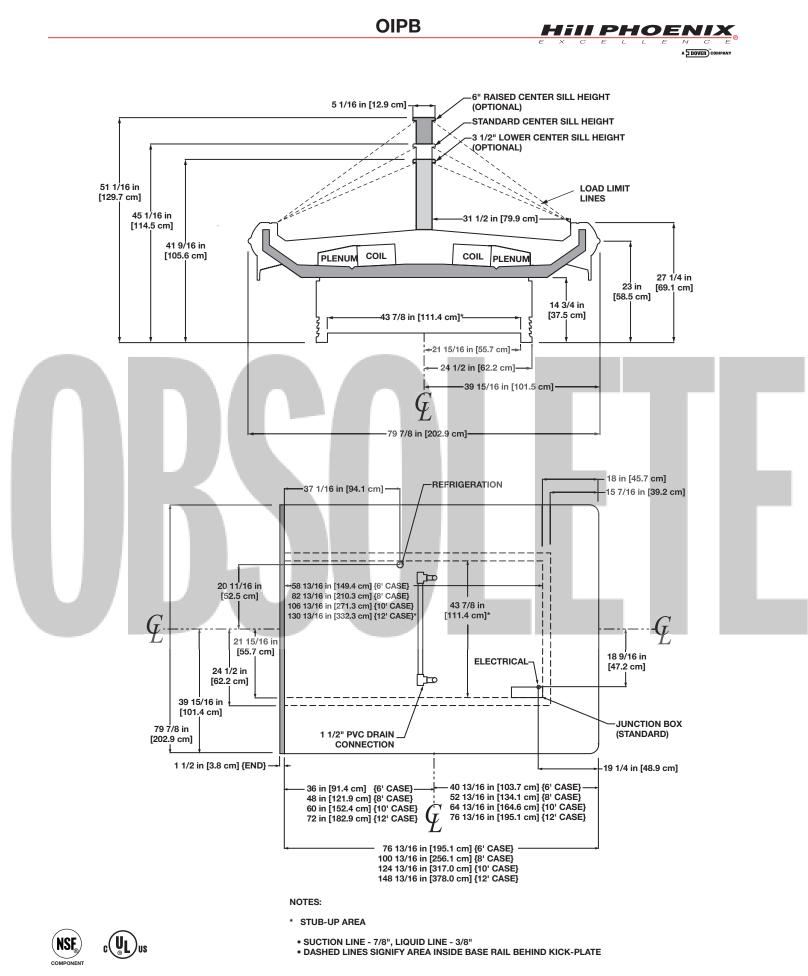




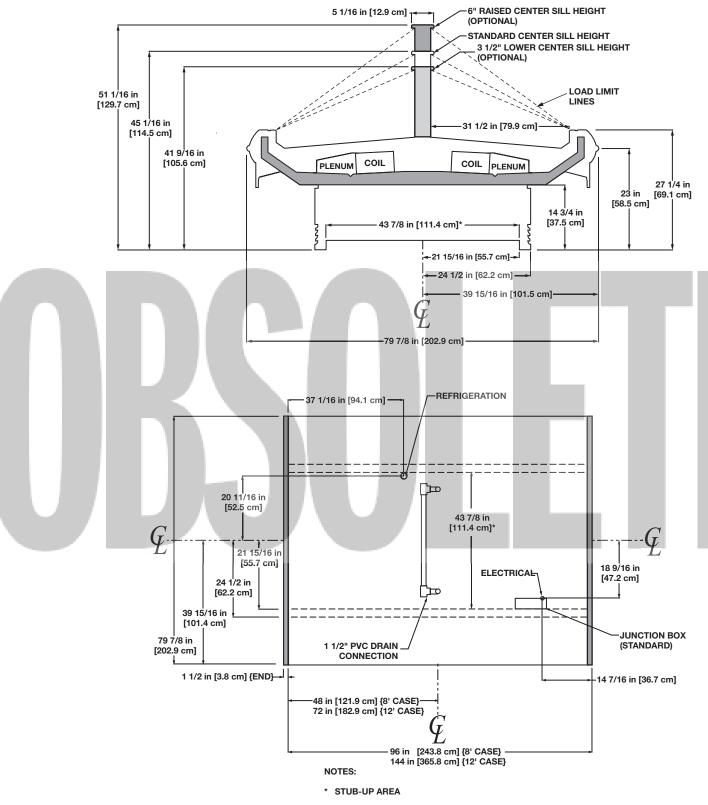


OIP

04/09







SUCTION LINE - 7/8", LIQUID LINE - 3/8"
 DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF<sub>®</sub>)

#### **System Requirements**

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Overcurrent Protection
OIPA	8'	208	1	60	3 wire + ground	8.973	20
	12'	208	1	60	3 wire + ground	29.119	40

#### **Electrical Data**

			Standa	rd Fans		lenser an		ondensate aters		Defrost	Heaters		Dra Hea	ain ater	Maxi Lig	mum hts
		Fans per	120	Volts	208	Volts	120	) Volts	208	Volts	240	Volts	208	Volts	120 \	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OIPA	8'	6	2.04	102	0.85	88	0.23	28	1				4.81	1000	3.78	454
	12'	8	2.72	136	2.60	270	0.55	66					4.81	1000	5.04	605

1 NOTE: "- - -" not an option on this case model.

## **Guidelines & Control Settings**

Model	24 hr Energy Usage (kWh)		Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>2</sup> (FPM)
OIPA-8'	-	45	6-8	34	48	140
OIPA-12'		45	6-8	34	48	140

2 Average discharge air velocity at peak of defrost.

## **Condensing Unit Data**

Model	Volts	Phase	Frequency (Hz)	HP	RLA <sup>4</sup> (amps)	LRA⁵ (amps)	Refrig.	lbs of Refrig.
OIPA-8'	208	1	60	1	6.7	33.5	R22	7.8
OIPA-12'3	208	1	60	3/4	7.14	35.5	R22	11.9

3 This case uses two of the condensing units listed above.

4 RLA - Running Load Amps.

5 LRA - Locked Rotor Amps.

## **Defrost Controls**

			Electric Defrost		Timed Off Defrost		Hot Ga	as Defrost	Reverse Air Defrost		
l	Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
	OIPA	3			44	38					

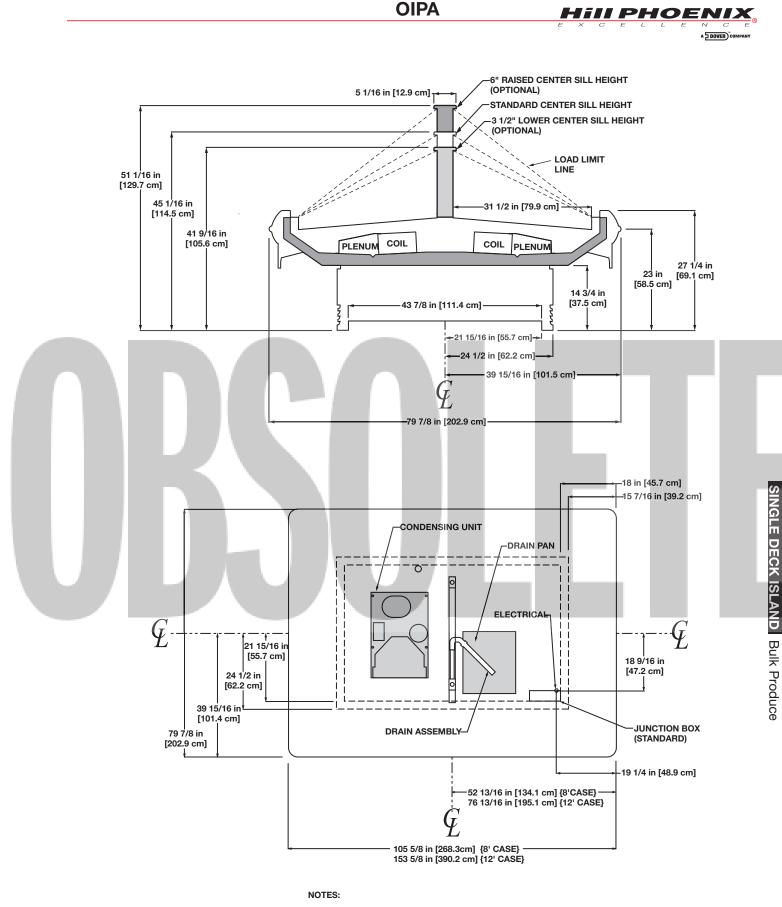
Medium Temperature Defrost Schedule

|--|

- 1 12 midnight
- 2
- 12 am 12 pm 6 am 2 pm 10 pm 12 6 am 12 6 pm 3 4







• DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

NSF

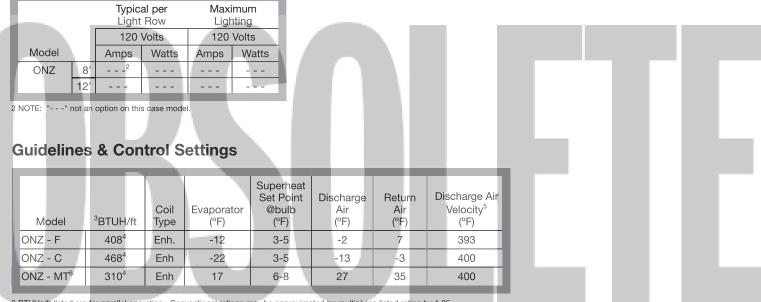
307

#### **Electrical Data**

			Standa	rd Fans	0	ficiency Ins		ndensate Iters		Defrost	Heaters			ain aters
		Fans per	120	Volts	120	Volts	120	Volts	208	Volts	240	Volts	120	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONZ	F-8' <sup>1</sup>	3	1.02	51	0.45	33	1.93	232	7.69	1600	8.88	2130	0.13	15
	F-12'	4	1.36	68	0.60	44	2.70	324	11.54	2400	13.31	3195	0.13	15
	C-8'	3	1.02	51	0.45	33	1.93	232	15.38	3200	17.75	4260	0.13	15
	C-12'	4	1.36	68	0.60	44	2.70	324	23.08	4800	26.63	6390	0.13	15

1 F = frozen food, C = ice cream.

## **Lighting Data**



3 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.05.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

6 Indicates medium temperature application.

## **Defrost Controls**

			Electri	c Defrost	Timed-0	Off Defrost	Hot Ga	as Defrost	Reverse Air Defrost	
Model	Defrosts per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)
ONZ	2	13-15	35	47			20	60		
ONZ - MT <sup>7</sup>	1	13-15	35	49			20	60		

7 Indicates medium temperature application.

Defrost Schedule

No. Per Day Hours 1 10 pm

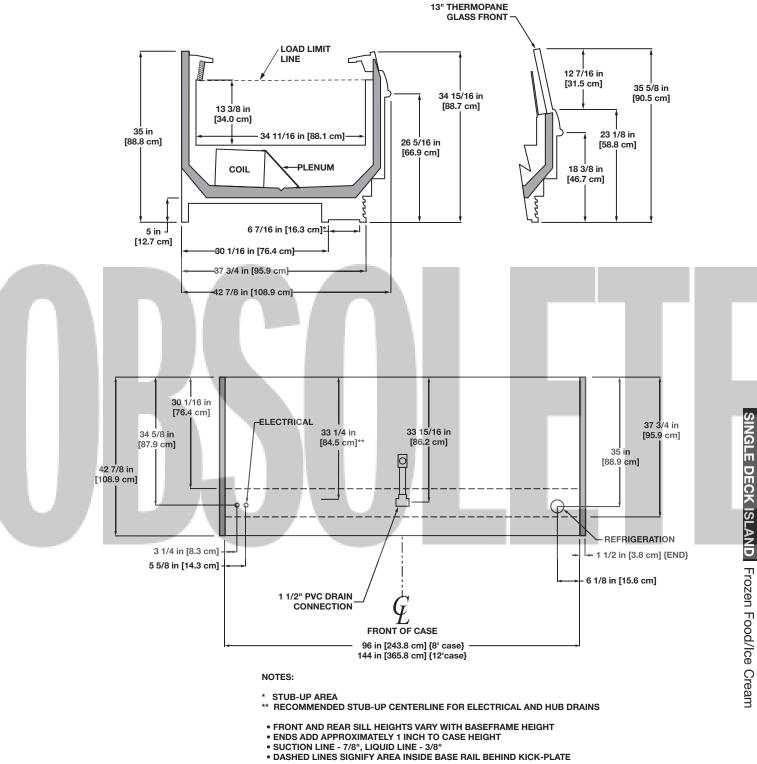
1 10 pm 2 6 am - 10 pm\*\*

\*\* Or immediately after store closing hour









(NSF<sub>@</sub>

# Narrow Island Frozen Food/Ice Cream Merchandiser ONIZ - 6', 8', 10' & 12'

#### **Electrical Data**

			Standar	d Fans		ficiency .ns		Defrost	Heaters		Drain Heaters		
		Fans per	120 \	/olts	120	Volts	208	Volts	240	Volts	120 Volts		
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	
ONIZ	F-6'1	2	0.68	34	0.30	22	5.77	1200	6.66	1598	0.13	15	
	F-8'	3	1.02	51	0.45	33	7.69	1600	8.88	2130	0.13	15	
	F-10'	3	1.02	51	0.45	33	9.62	2000	11.10	2663	0.13	15	
	F-12'	4	1.36	68	0.60	44	11.54	2400	13.31	3195	0.13	15	
	C-6'1	2	0.68	34	0.30	22	11.54	2400	13.32	3196	0.13	15	
	C-8'	3	1.02	51	0.45	33	15.38	3200	17.75	4260	0.13	15	
	C-10'	3	1.02	51	0.45	33	16.13	3355	18.65	4476	0.13	15	
	C-12'	4	1.36	68	0.60	44	23.08	4800	26.63	6390	0.13	15	

1 F = Frozen food, C = Ice cream.

#### Lighting Data

		al per Row		mum iting			
	120	Volts	120 Volts				
Model	Amps	Watts	Amps	Watts			
ONIZ-6'	2						
ONIZ-8'							
ONIZ-10'							
ONIZ-12'							

2 NOTE: "- - -" not an option of this case model.

#### Anti-Condensate Heater Data

l	Solid Front 120 Volts		ont	Solid Front <sup>3</sup> Glass Cap 120 Volts		Solid Wrap <sup>4</sup> End 120 Volts		Glass Front 120 Volts		Glass Front <sup>3</sup> Glass Cap 120 Volts		Glass Wrap <sup>4</sup> End 120 Volts	
ľ	Model	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
I	ONIZ-6'	0.91	109	0.42	50	0.26	31	1.69	203	0.37	44	0.57	68
I	ONIZ-8'	0.86	103	0.90	108	0.26	31	1.66	199	0.42	50	0.57	68
1	ONIZ-10'	1.00	120	1.20	144	0.26	31	1.95	234	0.62	74	0.57	68
	ONIZ-12'	1.27	152	1.42	170	0.26	31	2.35	282	0.74	89	0.57	68

3 Glass cap heater for stainless steel glass cap option only.4 Data given for one glass wrap-around end.

## **Guidelines & Control Settings**

D.								
	Model	<sup>6</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>8</sup> (°F)
ï	ONIZ - F⁵	408 <sup>7</sup>	Enh.	-12	3-5	-2	7	393
l	ONIZ - C <sup>5</sup>	468 <sup>7</sup>	Enh	-22	3-5	-13	-3	400
	ONIZ - MT <sup>9</sup>	310 <sup>7</sup>	Enh	17	6-8	27	35	400

5 "F" = Frozen food, "C" = Ice cream.

6 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.05.

7 Standard fans increase refrigeration load by 96 BTUH/fan.

8 Average discharge air velocity at peak of defrost.

9 Indicates medium temperature application.

## **Defrost Controls**

			Electri	Electric Defrost		Timed-Off Defrost		Hot Gas Defrost		Air Defrost
Model	Defrosts per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)						
ONIZ	2	13-15	35	47			20	60		
ONIZ - MT <sup>10</sup>	1	13-15	35	49			20	60		

10 Indicates medium temperature application.

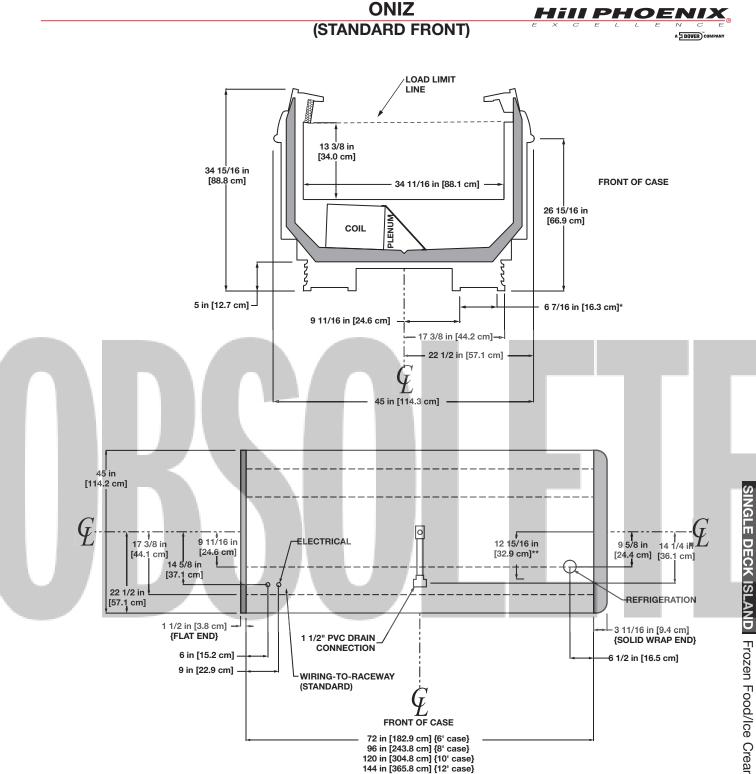




#### Defrost Schedule



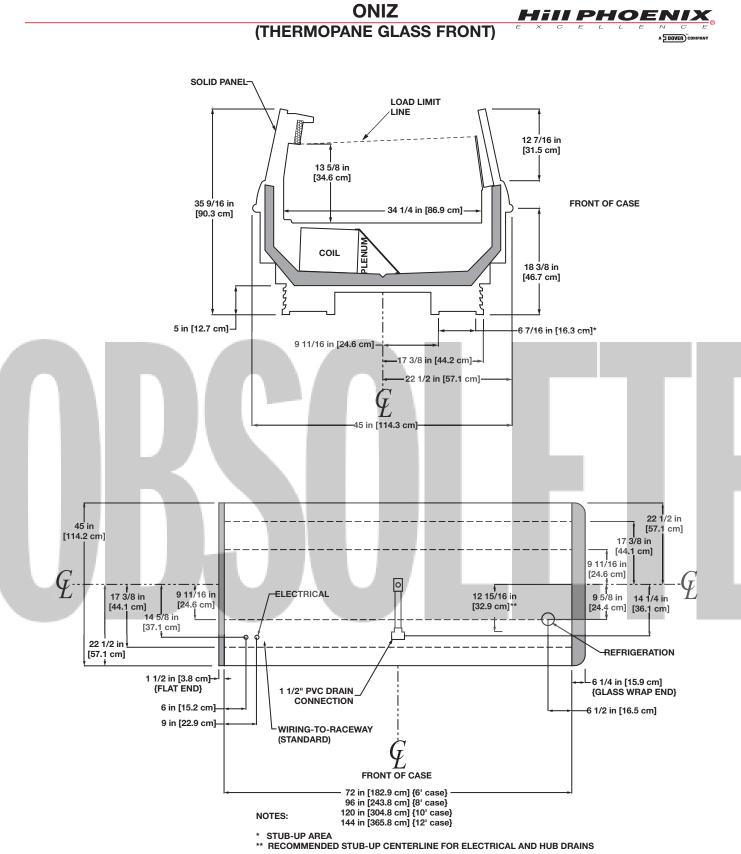
\*\* Or immediately after store closing hour



NOTES:

- \* STUB-UP AREA \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
  - SUCTION LINE 7/8", LIQUID LINE 3/8"
  - DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE





- SUCTION LINE 7/8", LIQUID LINE 3/8"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

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#### **Electrical Data**

			Standard Fans		0	High Efficiency Fans		Anti-Condensate Heaters		Defrost Heaters				
		Fans per	120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts	120	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONIZGG	F-8' <sup>1</sup>	3	1.02	51	0.45	33	2.54	305	7.69	1600	8.88	2130	0.13	15
	F-12'	4	1.36	68	0.60	44	1.87	224	11.54	2400	13.31	3195	0.13	15

1 "F" = Frozen food

#### **Lighting Data**

		Typic Light	al per Row	Maximum Lighting			
		120	Volts	120 Volts			
Model		Amps	Watts	Amps	Watts		
ONIZGG	8'	<sup>2</sup>		1			
	12'						

2 NOTE: "- - -" not an option on this case model.

## **Guidelines & Control Settings**

ľ	Model	<sup>3</sup> BTUH/ft	Evaporator (°F)	Superheat Set Poin @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity⁵ (FPM)
II.	ONIZGG-F	530 <sup>4</sup>	-22	3-5	-10	2	255

3 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.05.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

Г				Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
	ONIZGG	2	13 - 15	35	47			20	60		

Low Temperature Defrost Schedule

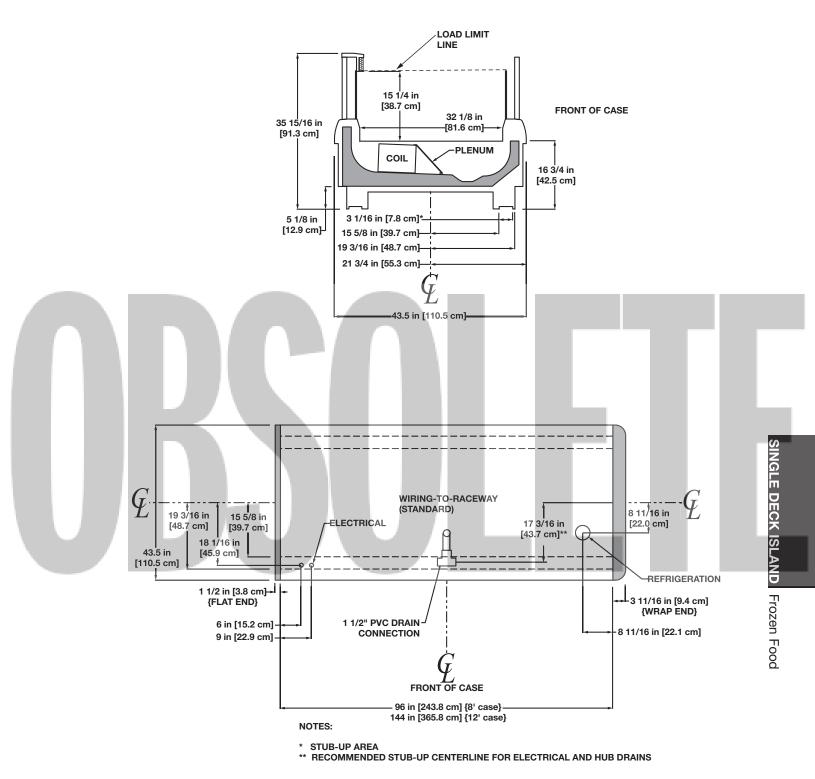
No. Per Day Hours

 $^{\star\star}$  Or immediately after store closing hour









# Island Frozen Food Merchandiser OIZ - 8' & 12'

#### **Electrical Data**

	High Effic Standard Fans Fans				ndensate iters		Defrost	Heaters		Drain Heaters				
		Fans per	120 '	Volts	120	Volts	120	Volts	208	Volts	240	Volts	120	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OIZ	8'	3	1.02	51	0.45	33	3.14	377	7.69	1600	8.88	2130	0.13	15
	12'	4	1.36	68	0.60	44	3.97	476	11.54	2400	13.31	3195	0.13	15

# **Lighting Data**

		Typic Light	al per Row		mum iting	
		120	Volts	120 Volts		
Model	Model		Watts	Amps	Watts	
OIZ	OIZ 8'					
	12'					

1 NOTE: "- - -" not an option on this case model.

# **Guidelines & Control Settings**

Model	<sup>3</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity⁵ (°F)
OIZ <sup>2</sup>	488 <sup>4</sup>	Enh.	-22	3-5	-12	-4	200
OIZ - MT <sup>6</sup>	320 <sup>4</sup>	Enh	17	6-8	27	35	200

2 Not intended for Frozen Juice application

3 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.03.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

6 Indicates medium temperature application.

## **Defrost Controls**

			Electric Defrost		Timed-Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)
OIZ	1	13-15	45	47			20	60		
OIZ - MT <sup>7</sup>	1	13-15	35	49			20	60		

7 Indicates medium temperature application.

Low Temperature Defrost Schedule

No. Per Day Hours

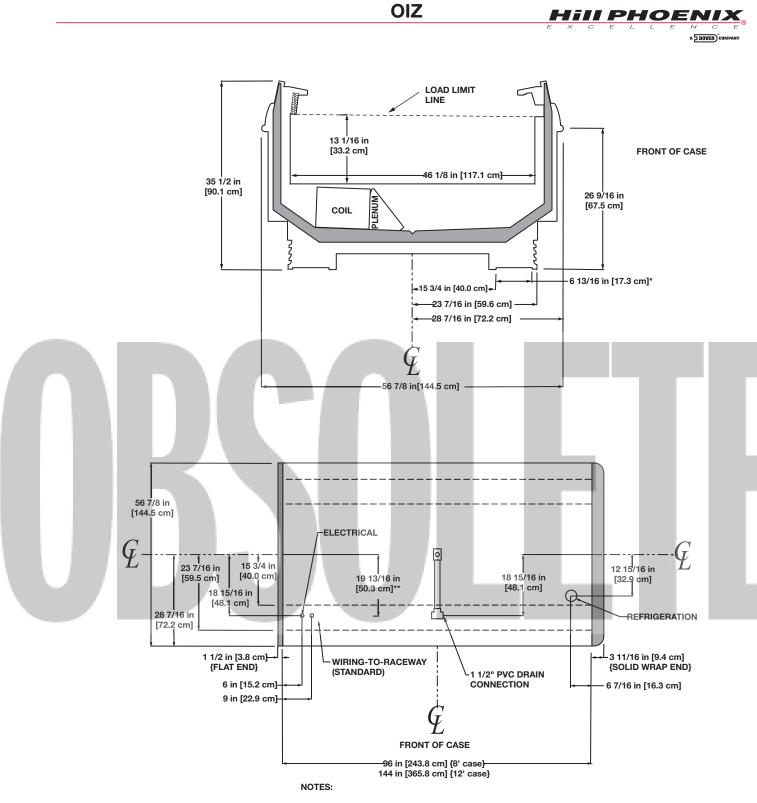
1 10 pm 2 6 am - 10 pm\*\*

\*\* Or immediately after store closing hour

All measurements are taken per ARI 1200 - 2002 specifications.







- STUB-UP AREA \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- SUCTION LINE 7/8", LIQUID LINE 3/8"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



(NSF<sub>g</sub>)

# Wide Island Frozen Food/Ice Cream Merchandiser OWIZ - 8' & 12'

#### **Electrical Data**

	High Efficiency Standard Fan Fans Defrost Heaters											ain Iters
	Fans per		120 \	/olts	120 '	Volts	208 Volts		240 Volts		120 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OWIZ	F-8' <sup>1</sup>	4	1.36	68	0.60	44	7.69 <sup>2</sup>	1600	8.88 <sup>2</sup>	2130	0.26	30
	F-12'	6	2.04	102	0.90	66	11.54 <sup>2</sup>	2400	13.31 <sup>2</sup>	3195	0.26	30
	C-8'	4	1.36	68	0.60	44	11.54 <sup>2</sup>	2400	13.31 <sup>2</sup>	3195	0.26	30
	C-12'	6	2.04	102	0.90	66	17.31 <sup>2</sup>	3600	19.98 <sup>2</sup>	4795	0.26	30

1 F = frozen food, C = ice cream.

2 Defrost data for one side of case only.

3 Lighting is for cases with superstructures.

4 Not applicable.

# Lighting Data<sup>3</sup>

		al per Row		mum nting	
	120	Volts	120 Volts		
Model	Amps	Watts	Amps	Watts	
OWIZ-8'	NA <sup>4</sup>	NA	5.20	624	
OWIZ-12'	NA	NA	7.48	898	

**Guidelines & Control Settings** 

## **Anti-Condensate Heater Data**

	Solid⁵ Front		Front			Glass <sup>6</sup> Cap		Wrap <sup>7</sup> nd	Super Structure		
	120 Volts		120 Volts		120 Volts		120 Volts		120 Volts		
Model	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	
OWIZ-8'	2.62	314	3.02	362	0.50	60	0.68	82	0.50	60	
OWIZ-12'	3.96	475	4.3 <mark>8</mark>	526	0.74	89	0.68	82	0.76	91	

5 Solid wrap-around ends have no anti-condensate heaters.

6 Glass cap heater for stainless steel glass cap option only.

7 Data given for one glass wrap-around end.

Model	<sup>8, 9</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>11</sup> (°F)
OWIZ - F	587 <sup>10</sup>	Enh.	-12	3-5	-6	0	180
OWIZ - C	692 <sup>10</sup>	Enh	-22	3-5	-16	-10	180
OWIZ - MT <sup>10</sup>	450 <sup>10</sup>	Enh	17	6-8	27	35	180

8 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04

(BTUHs/ft listed are for both sides of the case.)

9 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

10 Standard fans increase refrigeration load by 96 BTUH/fan.

11 Average discharge air velocity at peak of defrost.

12 Indicates medium temperature application.

# **Defrost Controls**

			Electri	Electric Defrost		Off Defrost	Hot Ga	as Defrost	Reverse	Air Defrost
Model	Defrosts per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)						
OWIZ	1	13-15	60	49	<sup>13</sup>		20	60		
OWIZ - MT <sup>14</sup>	1	13-15	35	49			20	60		

13 NOTE: "- - -" not an option on this case model.

14 Indicates medium temperature application.

Defrost Schedule

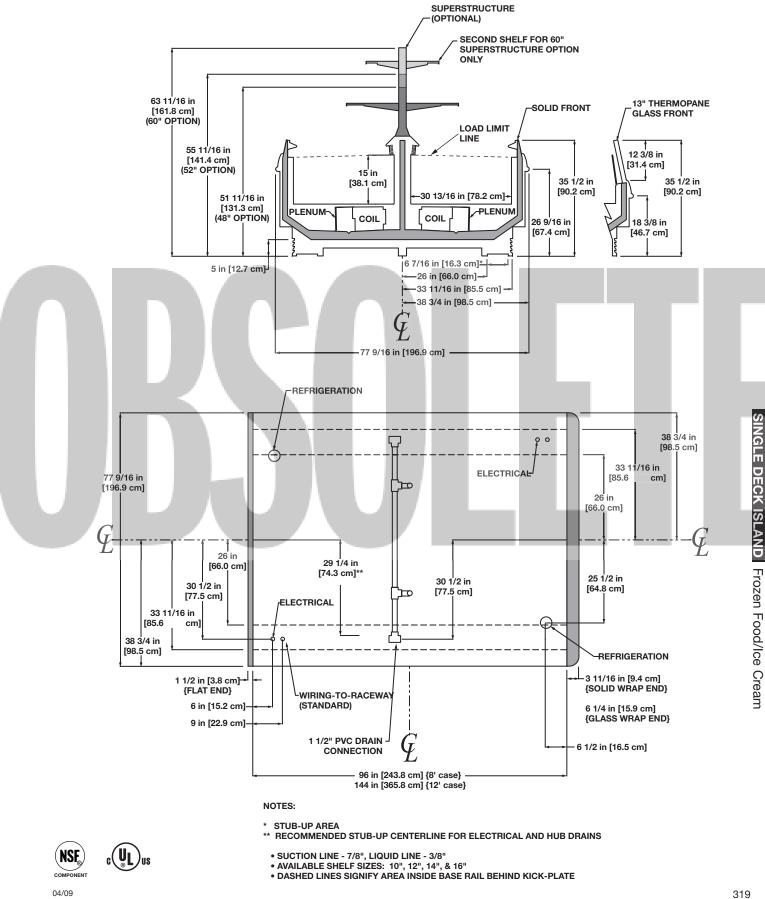
\*\* Or immediately after store closing hour

All measurements are taken per ARI 1200 - 2002 specifications. 318



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# Wide Island End Cap Frozen Food/Ice Cream Merchandiser **OWEZ**

#### **Electrical Data**

			Standa	rd Fan	High Ef Fa			Defrost I	Heaters		Drain Heaters	
Fans per		120 Volts		120 Volts		208 Volts		240 Volts		120 Volts		
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OWEZ	F <sup>1</sup>	2	0.68	34	0.30	22	5.77	1200	6.65	1596	0.13	15
	C <sup>1</sup>	2	0.68	34	0.30	22	8.65	1800	9.98	2394	0.13	15

1 F = Frozen food, C = Ice cream

# **Lighting Data**

		al per Row	Maximum Lighting			
	120	Volts	120 Volts			
Model	Amps	Watts	Amps	Watts	1	
OWEZ	2				l	

2 NOTE: "- - -" not an option on this case model.

## **Anti-Condensate Heater Data**

	Solid Front					Glass <sup>3</sup> Cap		
	120	Volts	120	Volts	120 Volts			
Model	Amps	Watts	Amps	Watts	Amps	Watts		
OWEZ	1.56 187		1.96 235		0.51	61		

3 Glass cap heater for stainless steel glass cap option only.

# **Guidelines & Control Settings**

Model	<sup>4</sup> BTUH/cs	Coil Type	Evaporator (°F)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (°F)
OWEZ - F	<b>266</b> 3 <sup>5</sup>	Enh.	-12	3-5	-6	0	200
OWEZ - C	3298 <sup>5</sup>	Enh	-22	3-5	-16	-10	200
OWEZ - MT <sup>7</sup>	2150 <sup>5</sup>	Enh	17	6-8	27	35	200

4 BTUHs/case listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

7 Indicates medium temperature application.

# **Defrost Controls**

			Electri	c Defrost	Timed-0	Off Defrost	Hot Ga	as Defrost	Reverse	Air Defrost
Model	Defrosts per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)						
OWEZ	1	13-15	60	49			20	60		
OWEZ - MT <sup>8</sup>	1	13-15	35	49			20	60		

NSF

8 Indicates medium temperature application.

Low Temperature Defrost Schedule

No. Per Day	Hours
1	10 pm

2 . 6 am - 10 pm\*\*

\*\* Or immediately after store closing hour

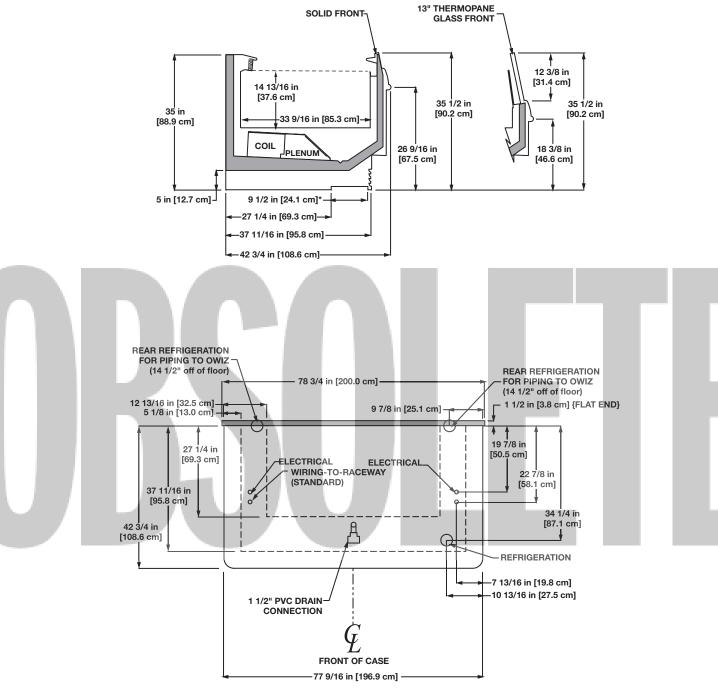
All measurements are taken per ARI 1200 - 2002 specifications.





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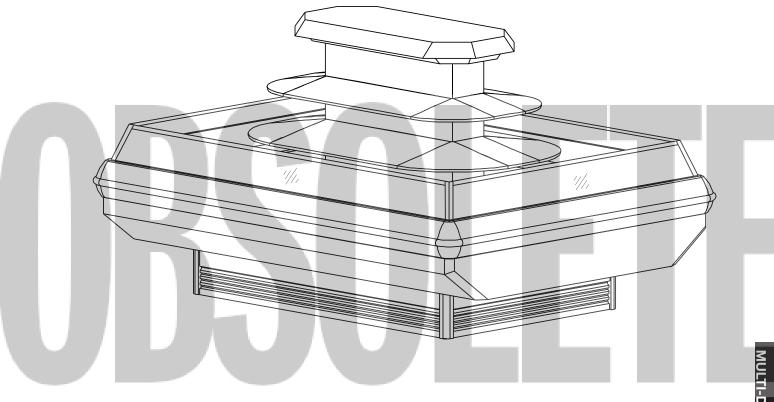
#### NOTES:

- \* STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- SUCTION LINE 7/8", LIQUID LINE 3/8"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE





# **MULTI-DECK ISLAND**



#### NOTES

- Cases shown with an ANSI/NSF\* Mark are Certified by NSF
- Cases shown with an UL\* Mark are Listed by Underwriters Laboratories Inc.
- Allow for an extra 1/8" per joint when lining up merchandisers.
- Technical information contained herein is subject to change without notice.

\* ANSI - American National Standard Institute NSF - National Sanitation Foundation UL - Underwriters Laboratories Inc 

#### **Electrical Data**

	High Efficiency Anti-Condense Standard Fans Fans Heaters					Defrost Heaters						
		Fans per	120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O2IM	8'	6	3.00	180	0.46	27.6	0.67	80	7.70	1600	8.88	2130

#### **Lighting Data**

T				al per Row		imum nting						
			120	Volts	120	Volts						
	Model	A	mps	Watts	Amps	Watts						
1	O2IM	8'	NA <sup>1</sup>	NA	0.95	114						
	uideli			ntrol S	1		Superheat Set	Discharge Air	Return Air	Discharge Air Veloci	<b>t</b> v.4	
	Model	Applica	tion	<sup>2</sup> BTUH/ft	Coil Type	Evaporator (°F)	Point @ Bulb (°F)	Discharge Air (°F)	(°F)	(FPM)	ity'	
Ī	D2IM	Mea		1188 <sup>3</sup>	Enh.	17	6-8	26	38	270		
		Deli		1102 <sup>3</sup>	Enh.	22	6-8	30	40	270		
3 S	tandar <mark>d fan</mark>	s increase r	efrigerati	peration. Con ion load by 96 peak of defro	6 BTUHs/fa		, proximated by multiplying	listed rating by 1.09.				

## **Defrost Controls**

			Electric	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse	Air Defrost
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
O2IM	4	6 - 8	30	47	45⁵	45⁵	26	45	6	

 $^5$  Only recommended with the high efficiency coil at a 22°F evaporator.

<sup>6</sup> NOTE: - - - not an option on this case model.

Medium Temperature Defrost Schedule

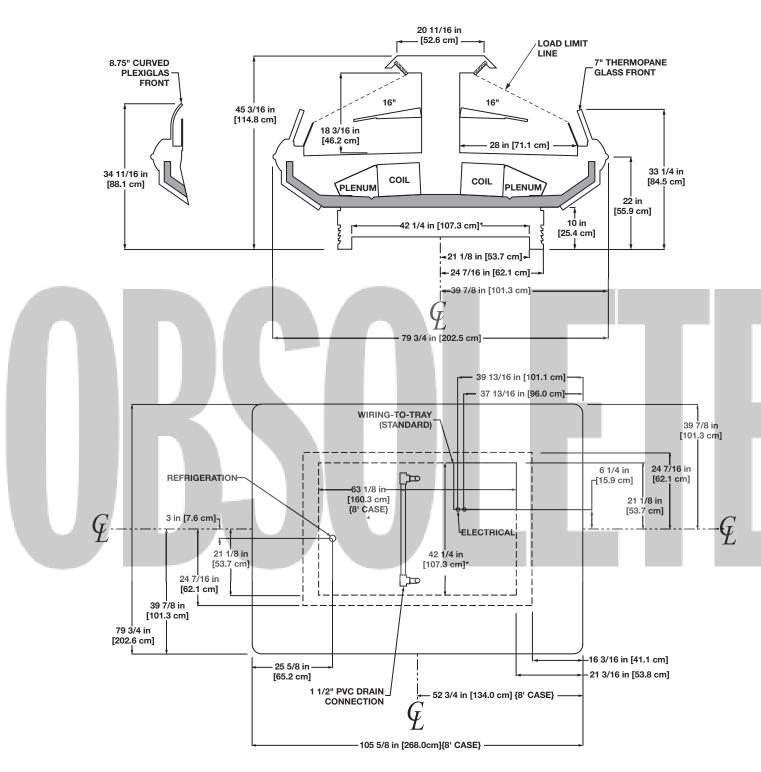
No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm



)us







NOTES:

\* STUB-UP AREA

- FRONT AND CENTER SILL HEIGHTS VARY WITH BASEFRAME HEIGHT

- SUCTION LINE 7/8", LIQUID LINE 3/8"
   AVAILABLE SHELF SIZES: 10", 12", 14" & 16"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF COMPONENT

#### **Electrical Data**

			Standar	d Fans	0	fficiency ans		ndensate aters	Defrost Heaters			
		Fans per	120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ON3IM	8'	6	3.00	180	0.46	27.6	0.67	80	7.70	1600	8.88	2130
	12'	8	4.00	240	0.62	36.8	1.06	127	11.54	2400	13.32	3200

#### **Lighting Data**

			al per Row		mum nting	
		120	Volts	120 Volts		
Model		Amps Watts		Amps	Watts	
ON3IM	8'	NA <sup>1</sup> NA		1.88	226	
	12'	NA	NA	5.69	683	

<sup>1</sup> Not applicable.

# **Guidelines & Control Settings**

Model	Application	<sup>2</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Vel (FPM)	ocity <sup>4</sup>
ON3IM	Meat	1139 <sup>3</sup>	Enh.	17	6-8	26	38	270	
	Deli	1035 <sup>3</sup>	Enh.	22	6-8	30	40	270	

<sup>2</sup> BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

<sup>3</sup> Standard fans increase refrigeration load by 96 BTUHs/fan.

<sup>4</sup> Average discharge air velocity at peak of defrost.

## **Defrost Controls**

			Electric	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse	Air Defrost
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
ON3IM	4	6 - 8	30	47	45⁵	45 <sup>5</sup>	26	45	6	

<sup>5</sup> Only recommended with the high efficiency coil at a 22°F evaporator.

<sup>6</sup> NOTE: - - not an option on this case model.

Medium Temperature Defrost Schedule

No.	Per	Day	Hours

- 12 midnight 1
- 2
- 12 am 12 pm 6 am 2 pm 10 pm 12 6 am 12 6 pm 3 4

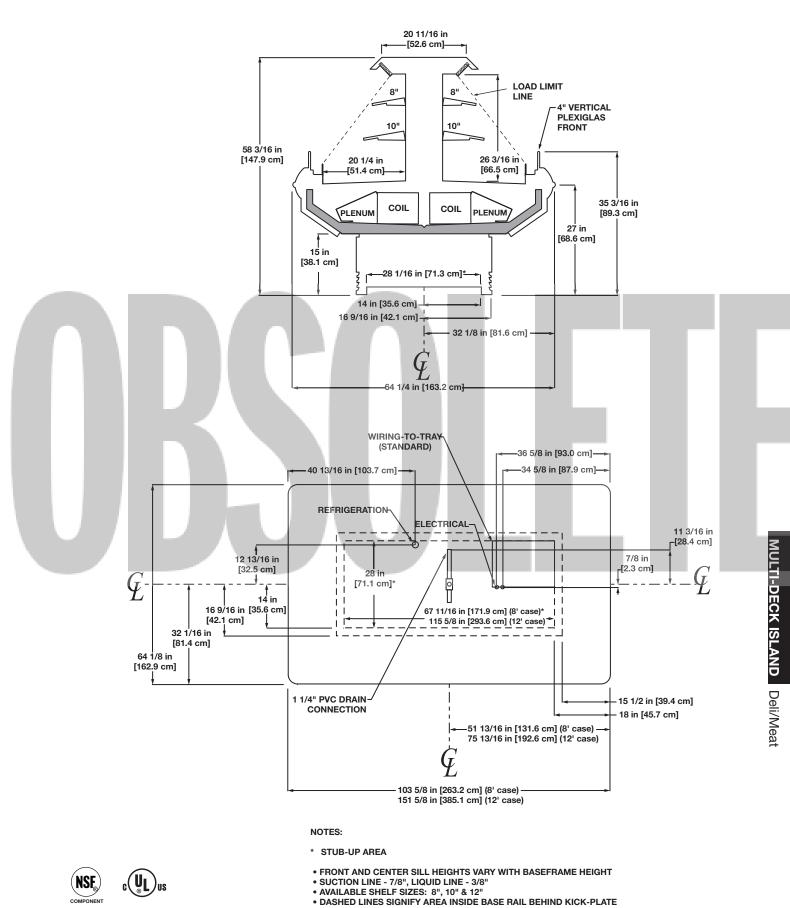
All measurements are taken per ARI 1200 - 2002 specifications.



US







COMPONENT

# Wide Island Multi-Deck Deli/Meat Merchandiser O3IM - 8' & 12' (Double Wrap-Around End) O3IMB - 6', 8' & 12' (Single Wrap-Around End) O3IMBB - 8' (Double Joint End)

#### **Electrical Data**

	Fans per		Standar	d Fans	0_	High Efficiency Fans		Anti-Condensate Heaters		Defrost	Heaters	
			120 Volts		120 Volts		120 Volts		208	8 Volts 240 Volts		
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O3IM	8'	6	3.00	180	0.46	27.6	0.67	80	7.70	1600	8.88	2130
	12'	8	4.00	240	0.62	36.8	1.06	127	11.54	2400	13.32	3200
O3IMB	6'	4	2.00	120	0.31	18.4	0.63	76	5.77	1200	6.66	1596
	8'	6	3.00	180	0.46	27.6	0.88	106	7.70	1600	8.88	2130
	12'	8	4.00	240	0.62	36.8	1.24	149	11.54	2400	13.32	3200
O3IMBB	8'	6	3.00	180	0.46	27.6	0.91	109	7.70	1600	8.88	2130

#### **Lighting Data**

		Light	al per Row Volts	Maximum Lighting 120 Volts			
Model		Amps Watts		Amps	Watts		
O3IM	8'	NA <sup>1</sup>	NA	1.88	226		
	12'	NA	NA	5.69	683		
O3IMB	6'	NA	NA	1.40	168		
	8'	NA	NA	2.02	242		
	12'	NA	NA	3.24	389		
O3IMBB	8'	NA	NA	1.84	221		
			-				

Not applicable.

## **Guidelines & Control Settings**

Model	Application	<sup>2</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity⁴ (FPM)
O3IM	Meat	1456 <sup>3</sup>	Enh.	17	6-8	26	38	270
	Deli	1326 <sup>3</sup>	Enh.	22	6-8	30	40	270
O3IMB	Meat	1456 <sup>3</sup>	Enh.	17	6-8	26	38	270
	Deli	1326 <sup>3</sup>	Enh.	22	6-8	30	40	270
O3IMBB	Meat	1226 <sup>3</sup>	Enh.	17	6-8	26	38	270
	Deli	1138 <sup>3</sup>	Enh.	22	6-8	30	40	270

<sup>2</sup> BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

<sup>3</sup> Standard fans increase refrigeration load by 96 BTUHs/fan.

<sup>4</sup> Average discharge air velocity at peak of defrost.

# **Defrost Controls**

				Electric Defrost			Timed C	Off Defrost	Hot Ga	s Defrost	Reverse Air Defrost	
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)			Termination Temp. (°F)	Fail-safe Termination (min) Temp. (°F)		Fail-safe Termination (min) Temp. (°F)			
O3IM/O3IMB/O3IMBB	4	6 - 8	30	47	45⁵	45⁵	26	45	6			

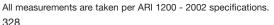
<sup>5</sup> Only recommended with the high efficiency coil at a 22°F evaporator.

<sup>6</sup> NOTE: - - not an option on this case model.

Medium Temperature Defrost Schedule

No.	Per	Day	Hours

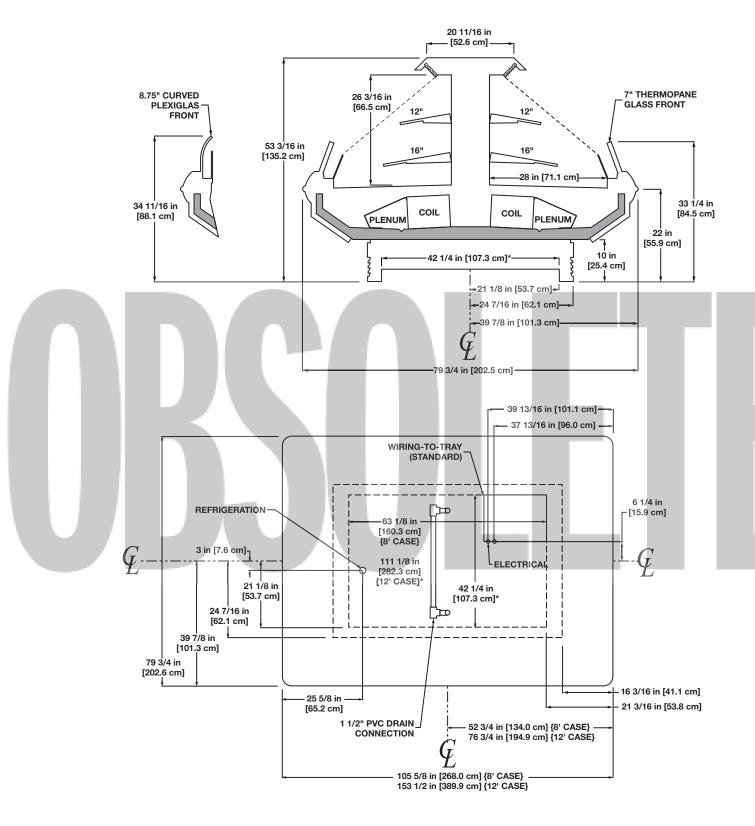
- 12 midnight 1
- 12 am 12 pm 6 am 2 pm 10 pm 2 3
- 4 12 - 6 am - 12 - 6 pm











NOTES:

\* STUB-UP AREA



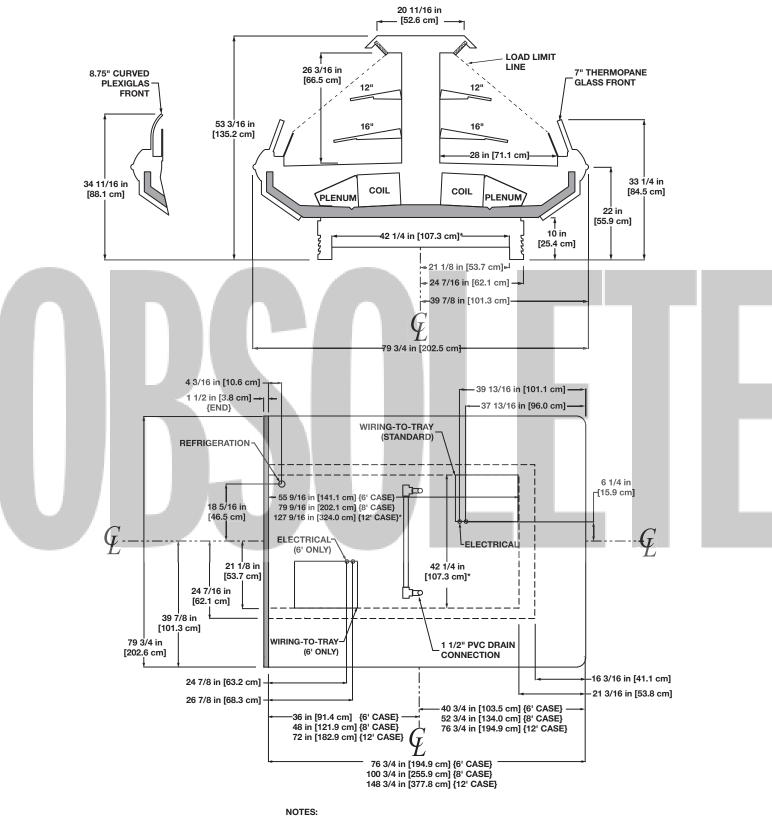
- FRONT AND CENTER SILL HEIGHTS VARY WITH BASEFRAME HEIGHT

- SUCTION LINE 7/8", LIQUID LINE 3/8"
   AVAILABLE SHELF SIZES: 10", 12", 14" & 16"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

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MULTI-DECK ISLAND Deli/Meat



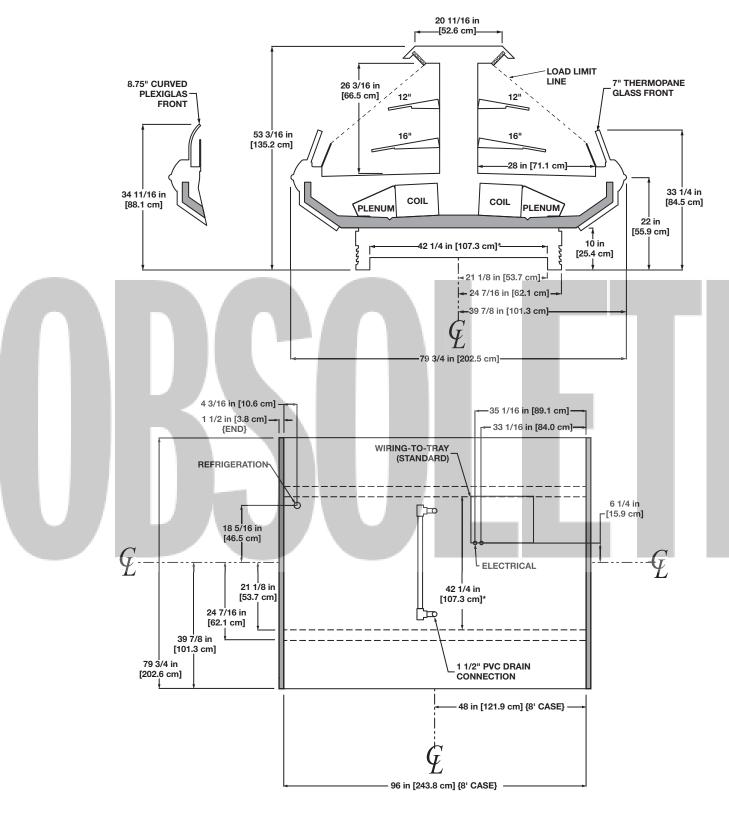




- FRONT AND CENTER SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- SUCTION LINE 7/8", LIQUID LINE 3/8"
- AVAILABLE SHELF SIZES: 10", 12", 14" & 16"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

# **O3IMBB**





NOTES:

#### \* STUB-UP AREA

- FRONT AND CENTER SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- SUCTION LINE 7/8", LIQUID LINE 3/8"
   AVAILABLE SHELF SIZES: 10", 12", 14" & 16"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF

## **Electrical Data**

			Standa	rd Fan	High Efficiency Fans		Anti-Condensate Heaters		Defrost Heaters			
Fa		Fans per	120 \	/olts	120	Volts	120	Volts	208 \	/olts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O3IP	8'	6	2.04	102	0.90	66	0.82	98	4.34	902	5.00	1200
	12'	8	2.72	136	1.20	88	1.08	130	7.22	1502	8.33	2000
O3IPB	8'	6	2.04	102	0.90	66	0.75	90	4.34	902	5.00	1200
	12'	8	2.72	136	1.20	88	1.17	140	7.22	1502	8.33	2000

## **Lighting Data**

4			Light	al per Row	Lig	kimum Ihting				
			120	Volts	120	Volts				
	Model		Amps	Watts	Amps	Watts				
	O3IP	8'	NA <sup>1</sup>	NA	5.71	546				
		12'	NA	NA	7.46	779				
	O3IPB	8'	NA	NA	4.76	514				
		12'	NA	NA	6.02	665				
0	Not applica Guideli Mode	nes	<b>&amp; Co</b> I	Evap	oorator	<b>gs</b> Superheat Set Point @ Bulb (°F)	Discharge Air	Return Air (°F)	Discharge Air Velocity4 (FPM)	Г
					· · ·		. /	. ,		
	O3IP/03	IPB	906 <sup>3,4</sup>	•	22	6-8	34	48	160	
	DTUUL (C. Y.									

<sup>2</sup> BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

 $^{3}$  Standard fans increase refrigeration load by 96 BTUHs/fan.

<sup>4</sup> Add 650 BTUH per wrap-around end.

<sup>4</sup> Average discharge air velocity at peak of defrost.

# **Defrost Controls**

				Electri	c Defrost	Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
l	O3IP/O3IPB	4	6 - 8	30	47	44	38	5			

<sup>5</sup> NOTE: --- not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day	Hours	

1	12 midnight
2	12 am - 12 pm

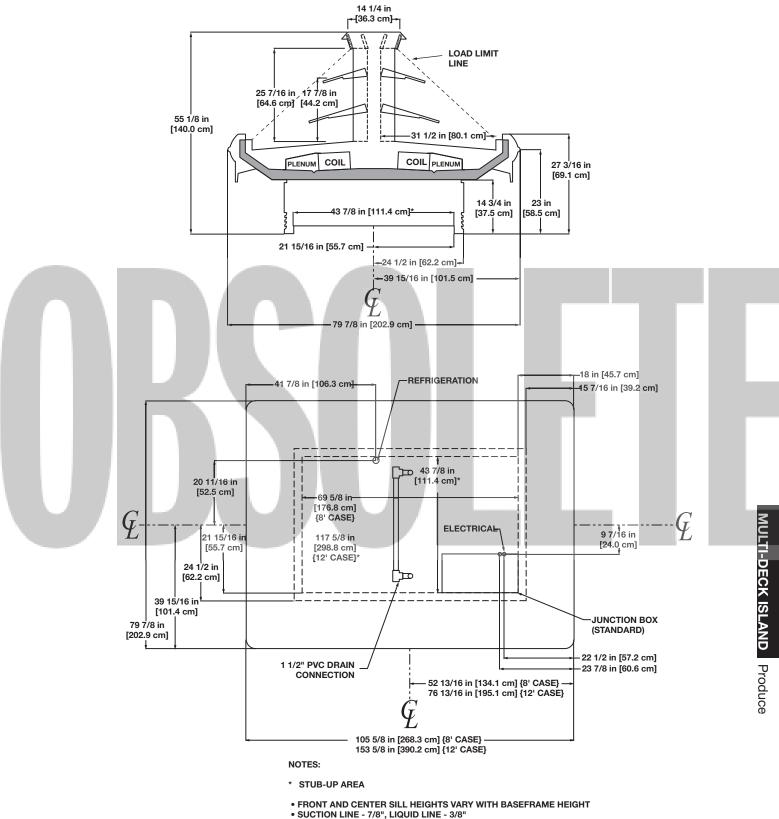
2 12 am - 12 pm 3 6 am - 2 pm - 10 pm

4 12 - 6 am - 12 - 6 pm





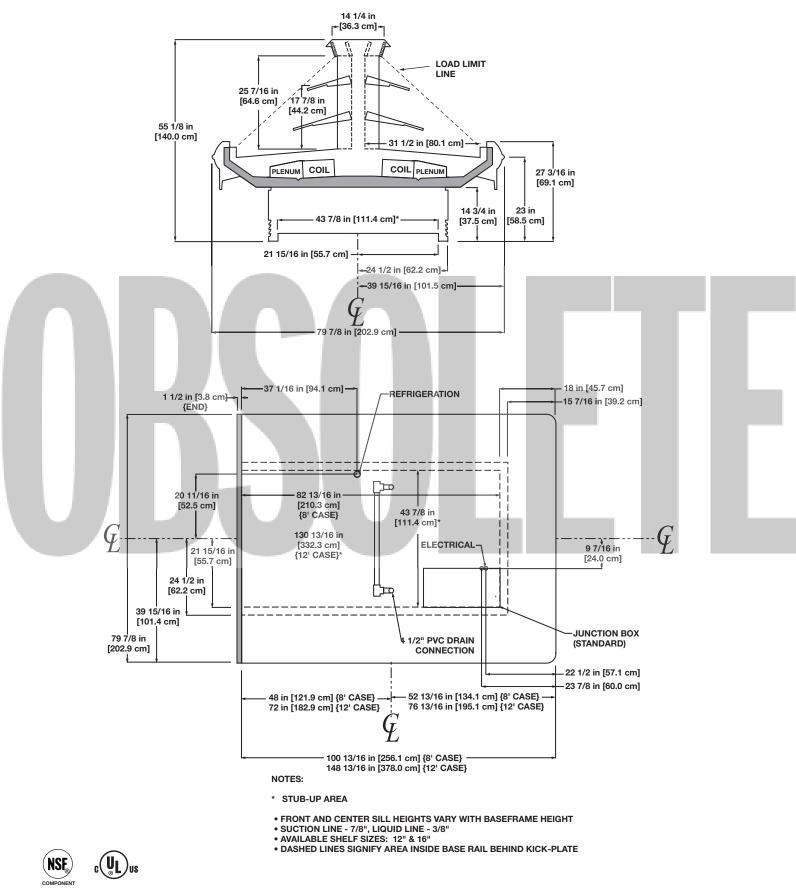




SUCTION LINE - 7/8", LIQUID LINE - 3
 AVAILABLE SHELF SIZES: 12" & 16"

04/09







# Multi-Deck Produce/Dairy/Deli/Meat Merchandiser O3EIF - Island End Cap

#### **Electrical Data**

		High Ef Fa			ondensate aters		Defrost	Heaters	
	Fans per	120	120 Volts		120 Volts		Volts	240 \	/olts
MODEL	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O3EIF	2	0.3	21						

## **Lighting Data**

				Typical p 12" La		ximum ghting						
Í	MODEL	Bulbs per Shelf	Bulb Length	120 V Amps	olts 120 Watts Amps	O Volts Watts						
	O3EIF	3	12"	0.15	16 0.71	72						
										_		
(	Guidelines	& Con	ntrol S	etting	s							
		-	T				-				1	
	Model	BTUH/cas	se <sup>1</sup> C	oil Type	Evaporator (		eat Set Point Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity (FPM) <sup>2</sup>		
	O3EIF	2600		Enh.	22°		6 <b>-8</b> °	<b>3</b> 0°	40°	235		
1	BTUH/case listed is	for parallel ope	eration. Con	ventional rat	onal ratings may a	pproximated by	/ multiplying listed	rating by 1.04.				
2	Average discharge air ve	locity at peak def	frost									

## **Defrost Controls**

			Electric Defrost		Time C	ff Defrost	Reverse Air Defrost		
Model	Defrosts per Day	Run-Off Time (min)		Termination Temp.(°F)	Fail-safe (min.)	Termination Temp.(°F)	Fail-safe (min.)	Termination Temp. (°F)	
O3EIF	4	0			40	47			

<sup>5</sup> NOTE: --- not an option on this case model.

Medium Temperature Defrost Schedule

No.	Per	Day	/ Hours

1	12 midnight
2	12 am - 12 pm

12 am - 12 pm 6 am - 2 pm - 10 pm 3

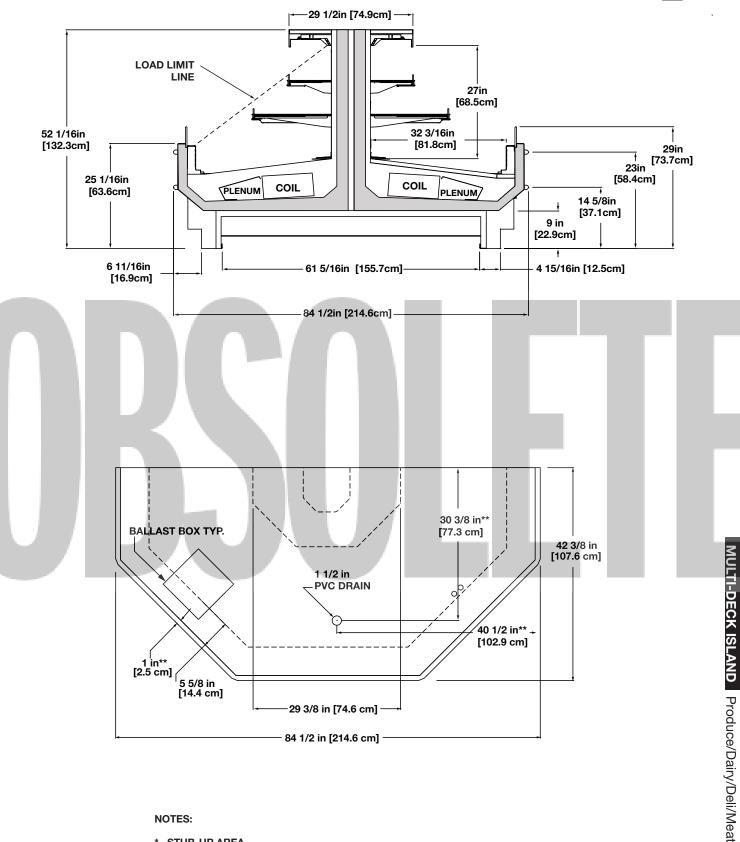
4 12 - 6 am - 12 - 6 pm





# **O3EIF**





#### NOTES:

\* STUB-UP AREA

- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS



- - FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT
  - REFER TO O3UM FOR SUCTION AND LIQUID LINE SIZES
  - SHELF SIZES BASED ON O3UM SHELF SLECTION
  - DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

04/09

#### Wide Island Multi-Deck Deli/Meat Merchandiser O4ID - 8' & 12' (Double Wrap-Around End) O4IDB - 6', 8' & 12' (Single Wrap-Around End) O4IDBB - 8' (Double Joint End)

#### **Electrical Data**

		Fans per	Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Defrost Heaters			
Model Case		Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	
O4ID	8'	6	3.00	180	0.70	42.0	0.67	80	7.70	1600	8.88	2130
	12'	8	4.00	240	0.94	56.0	1.06	127	11.54	2400	13.32	3200
O4IDB	6'	4	2.00	120	0.47	28.0	0.63	76	5.77	1200	6.66	1596
	8'	6	3.00	180	0.70	42.0	0.88	106	7.70	1600	8.88	2130
	12'	8	4.00	240	0.94	56.0	1.24	149	11.54	2400	13.32	3200
O4IDBB	8'	6	3.00	180	0.70	42.0	0.91	109	7.70	1600	8.88	2130

#### **Lighting Data**

			al per Row	Maximum Lighting			
		120	Volts	120	Volts		
Model		Amps	Watts	Amps	Watts		
O4ID	8'	NA <sup>1</sup>	NA	3.90	468		
	12' NA		NA	6.06	727		
O4IDB	6'	NA	NA	3.07	368		
	8'	NA	NA	3.79	455		
	12'	NA	NA	5.53	664		
O4IDBB	8'	NA	NA	4.00	480		

<sup>1</sup> Not applicable.

## **Guidelines & Control Settings**

Model	Application	<sup>2</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>4</sup> (FPM)
O4ID	Meat	1956 <sup>3</sup>	Enh.	17	6-8	25	40	130
	Deli	1806 <sup>3</sup>	Enh.	22	6-8	28	43	130
O4IDB	Meat	1956 <sup>3</sup>	Enh.	17	6-8	25	40	130
	Deli	1806 <sup>3</sup>	Enh.	22	6-8	28	43	130
O4IDBB	Meat	1657 <sup>3</sup>	Enh.	17	6-8	25	40	130
	Deli	1551 <sup>3</sup>	Enh.	22	6-8	28	43	130

<sup>2</sup> BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

<sup>3</sup> Standard fans increase refrigeration load by 96 BTUHs/fan.

<sup>4</sup> Average discharge air velocity at peak of defrost.

#### **Defrost Controls**

			Electri	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse Air Defrost	
	Defrosts	Run-Off	Fail-safe	Termination	Fail-safe	Termination	Fail-safe	Termination	Fail-safe	Termination
Model	Per Day	Time (min)	(min)	Temp. (°F)	(min)	Temp. (°F)	(min)	Temp. (°F)	(min)	Temp. (°F)
O4ID/O4IDB/O4IDBB	4	6 - 8	30	47	45⁵	45⁵	26	45	6	

<sup>5</sup> Only recommended with the enhanced efficiency coil at a 22°F evaporator.

<sup>6</sup> NOTE: --- not an option on this case model.

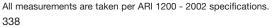
Medium Temperature Defrost Schedule

No.	Per	Day	Hours
-			

- 1 12 midnight
- 2 12 am 12 pm
- 3
   6 am 2 pm 10 pm

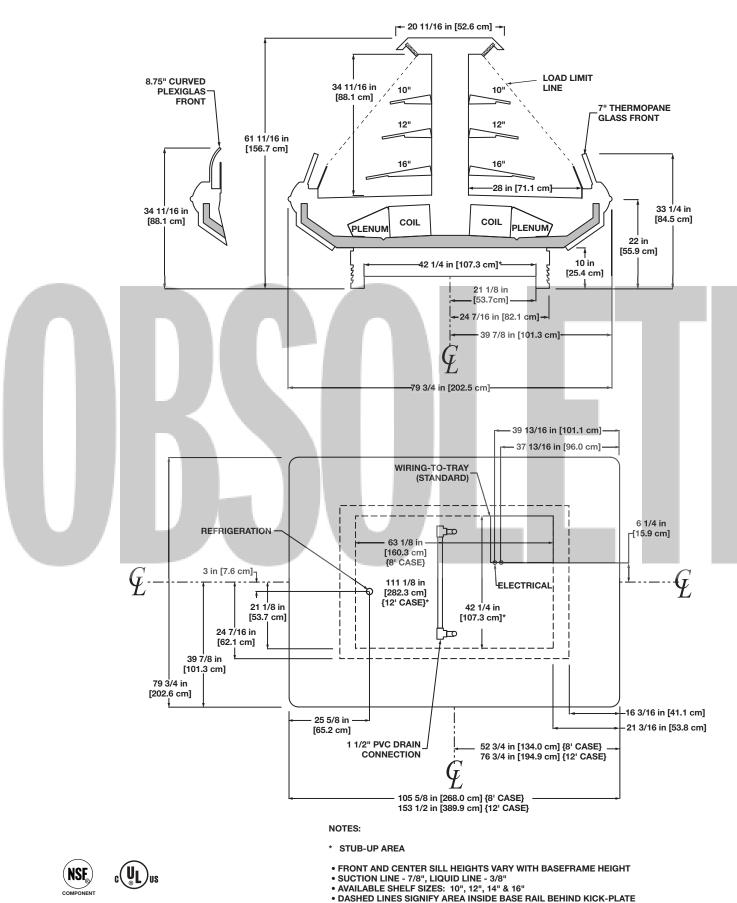
   4
   12 6 am 12 6 pm





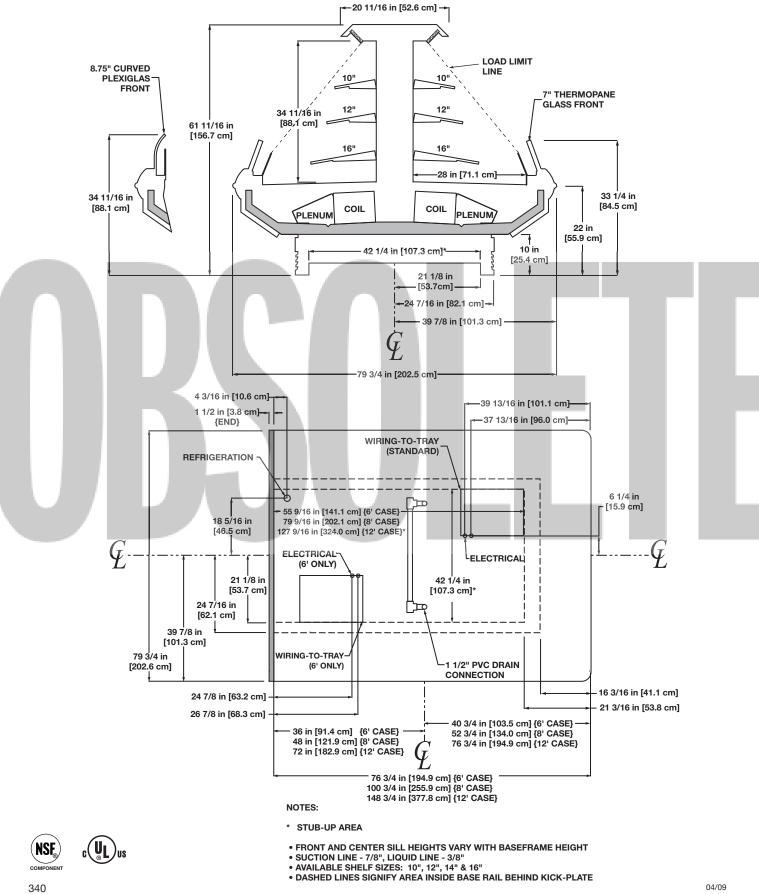




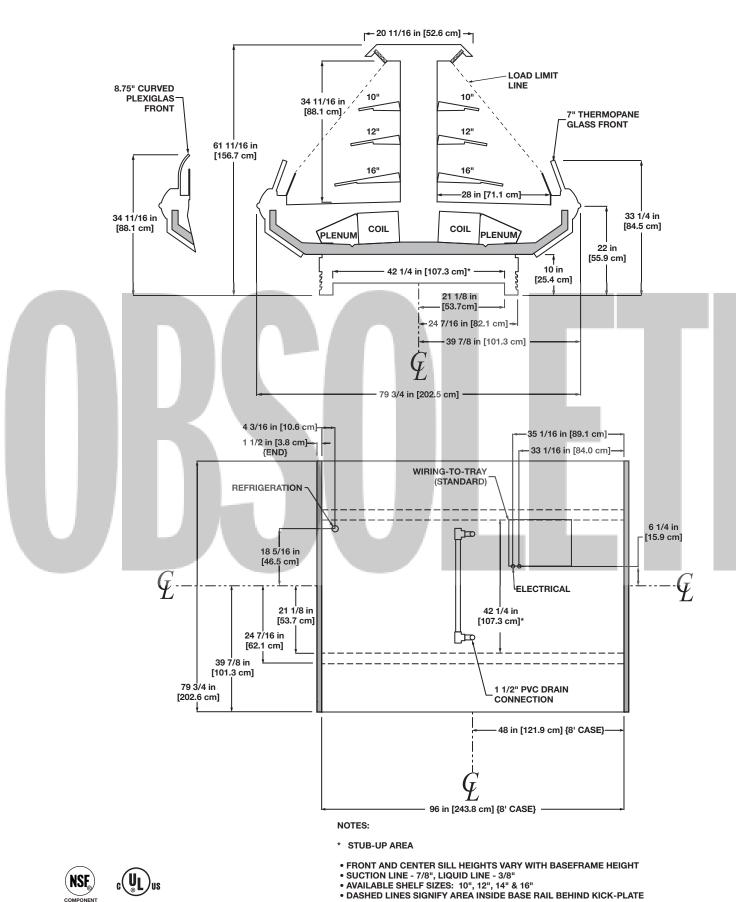


MULTI-DECK ISLAND Deli





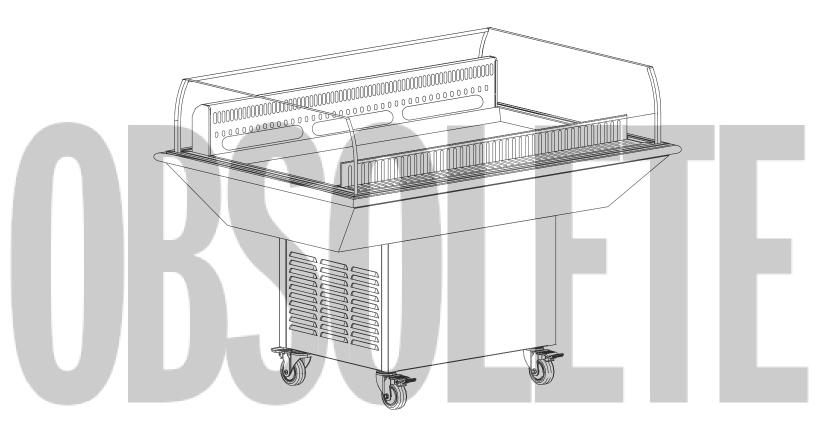




COMPONENT



# **MOBILE SELF-CONTAINED**



#### NOTES

- Cases shown with an ANSI/NSF\* Mark are Certified by NSF
- Cases shown with an UL\* Mark are Listed by Underwriters Laboratories Inc.
- Allow for an extra 1/8" per joint when lining up merchandisers.
- Technical information contained herein is subject to change without notice.

\* ANSI - American National Standard Institute NSF - National Sanitation Foundation UL - Underwriters Laboratories Inc

# Single Deck Self-Contained Mobile Deli Merchandiser MDCA-4' & 6'

#### System Data

Model	Volts	Phase	Hz	Plug Style	Cord Length
MDCA-4'	120	1	60	NEMA L5-20 or NEMA 5-20	10 ft
MDCA-6'	120	1	60	NEMA L5-30	10 ft

#### **Guidelines & Control Settings**

Model		Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>1</sup> (FPM)
MDCA-4'	16.6	52	6-8	25	36	295
MDCA-6'		52	6-8	25	36	295

1 Average discharge air velocity at peak of defrost.

# **Condensing Unit Data**

Model	Volts	Phase	Frequency (Hz)	HP	RLA <sup>2</sup> (amps)	LRA <sup>3</sup> (amps)	Refrig.	lbs of Refrig.
MDCA-4'	115	1	60	1/3	7.4	29.8	R404A	3.5
MDCA-6'	115	1	60	1/2	10.1	<b>51</b> .0	R404A	

2 RLA - Running Load Amps.

3 LRA - Locked Rotor Amps.

## **Defrost Controls**

		Electri	c Defrost	Timed 0	Off Defrost	Hot G	as Defrost	Reverse Air Defrost		
Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
MDCA	4	35	47	4						

4 NOTE: " - - - " not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day	Hours	

 1
 12 midnight

 2
 12 am - 12 pm

 3
 6 am - 2 pm - 10 pm

 4
 12 - 6 am - 12 - 6 pm

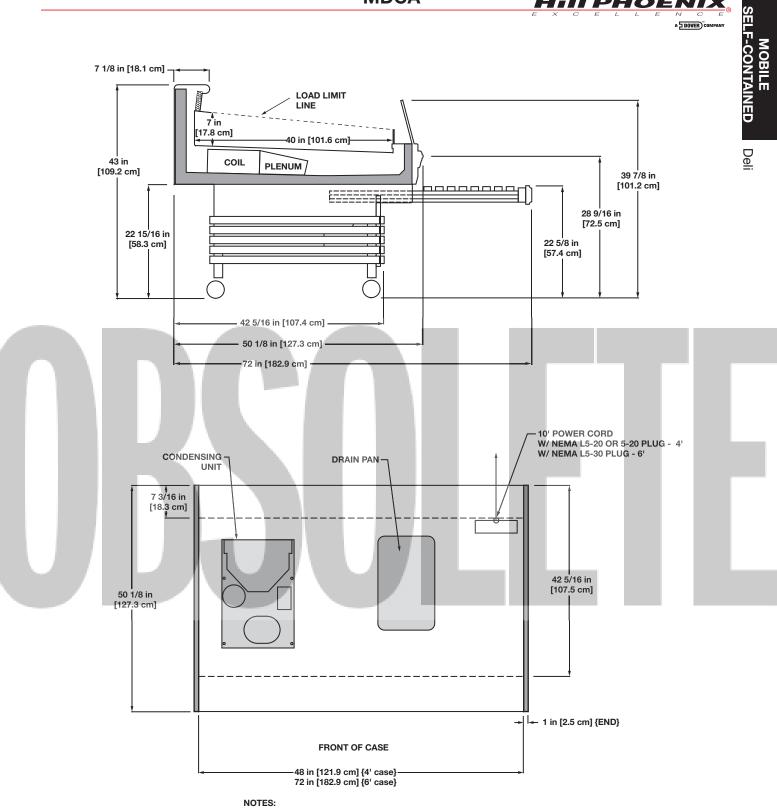
All measurements are taken per ARI 1200 - 2002 specifications.







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ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
 CASE BASEFRAME ALLOWS OVERALL HEIGHT TO BE LOWERED AS MUCH AS 6" IN 1" INCREMENTS



#### **System Requirements**

Model	Volts	Phase	Hz	Plug Style	Cord Length
MIDA - 4'	120	1	60	NEMA L5-20 NEMA 5-20	10 ft.

## **Guidelines & Control Settings**

Model	24hr Energy Usage (Kw/h)	Suction Pressure @ Case Outle (psig)	Superheat Set Point @bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (°F)
MIDA - 4	7.85	60.5	6 - 8	23	36	70

1 Average discharge air velocity at peak of defrost.

# **Condensing Unit Data**

Model	Volts	Phase	Frequency (Hz)	HP	RLA <sup>2</sup> (amps)	LRA <sup>2</sup> (amps)	Refrig.	Lbs. of Refrig.
MIDA - 4'	1115	1	60	<b>1</b> /444	8.0	34.6	R404A	2.1

2 RLA - Running Load Amps.

3 LRA - Locked Rotor Amps.

## **Defrost Controls**

			Electri	c Defrost	Timed-(	Off Defrost	Hot Ga	as Defrost	Reverse	Air Defrost
Model	Defrosts per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)						
MIDA - 4'	4	6-8		, X	45	47				

Medium Temperature Defrost Schedule

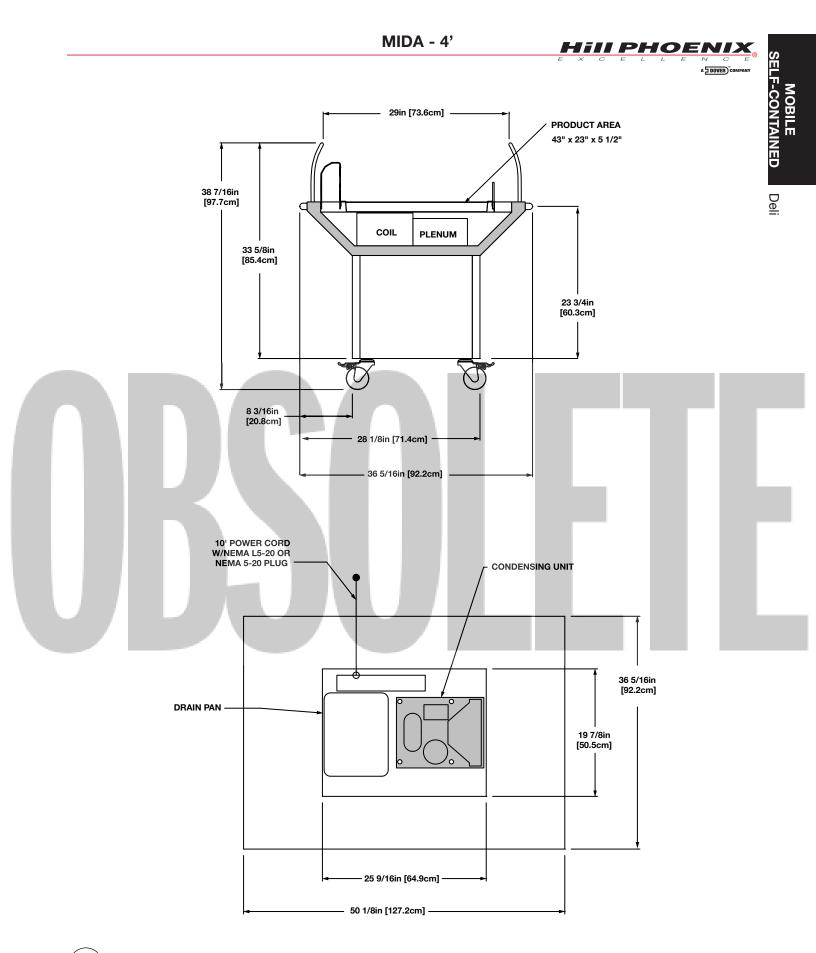
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
	10 0 10 0

4 12 - 6 am - 12 - 6 pm

All measurements are taken per ARI 1200 - 2002 specifications.







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# Single Deck Self-Contained Mobile Deli/Meat Merchandiser MMCA-4', 6' & 8'

#### System Data

Model	Volts	Phase	Hz	Plug Style	Cord Length
MMCA-4'	120	1	60	NEMA L5-20 or NEMA 5-20	10 ft
MMCA-6'	120	1	60	NEMA L5-30	10 ft
MMCA-8'	120	1	60	NEMA L5-30	10 ft

#### **Guidelines & Control Settings**

	Model	0,	Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>1</sup> (FPM)
l	MMCA-4'	17.2	49	6-8	24	35	140
ļ	MMCA-6'		49	6-8	24	35	140
đ	MMCA-8'		49	6-8	24	35	140

1 Average discharge air velocity at peak of defrost.

#### **Condensing Unit Data**

Model	Volts	Phase	Frequency (Hz)	HP	RLA <sup>2</sup> (amps)	LRA <sup>3</sup> (amps)	Refrig.	lbs of Refrig.
MMCA-4'	115	1	60	1/3	7.4	<b>29</b> .8	R404A	3.5
MMCA-6'	115	1	60	1/2	10.1	51.0	R404A	
MMCA-8'	115	1	60	1/2	10.1	51.0	R404A	

2 RLA - Running Load Amps. 3 LRA - Locked Rotor Amps.

3 LRA - LOCKED ROLOF AMPS

#### **Defrost Controls**

		Electric Defrost		Electric Defrost Timed Off Defrost		Hot Ga	as Defrost	Reverse Air Defrost	
Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
MMCA	3	35	47	4					

4 NOTE: " - - - " not an option on this case model.

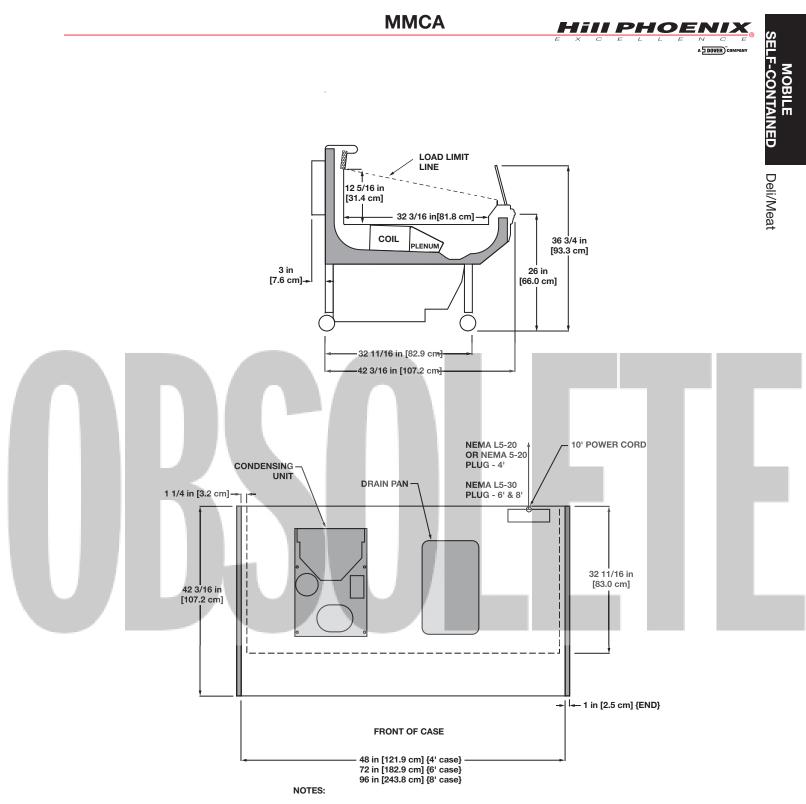
Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm

4 12 - 6 am - 12 - 6 pm

All measurements are taken per ARI 1200 - 2002 specifications.









# Single Deck Self-Contained Mobile Deli/Meat Merchandiser MMRA - 2', 3', 4' & 6'

#### System Data

Model	Volts	Phase	Hz	Plug Style	Cord Length
MMRA	120	1	60	NEMA 5-20	6 ft

#### **Guidelines & Control Settings**

Model	24 hr Energy Usage (kWh)		Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>1</sup> (FPM)
MMRA		15	6-8	29	39	180

1 Average discharge air velocity at peak of defrost.

## **Condensing Unit Data**

			Frequency		RLA <sup>2</sup>	LRA <sup>3</sup>		lbs of
Model	Volts	Phase	(Hz)	HP	(amps)	(amps)	Refrig.	Refrig.
MMRA - 2'	115	1	60	1/4	4.94	25	134A	1.75
MMRA - 3'	115	1	60	1/4	7.20	29	134A	1.94
MMRA - 4'	115	1	60	1/3	9.30	36	134A	3.00
MMRA - 6'	115	1	60	1/2	9.00	51	134A	3.38

2 RLA - Running Load Amps. 3 LRA - Locked Rotor Amps.

## **Defrost Controls**

Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost			
Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
MMRA	4	4		30	47				

4 NOTE: " - - - " not an option on this case model.

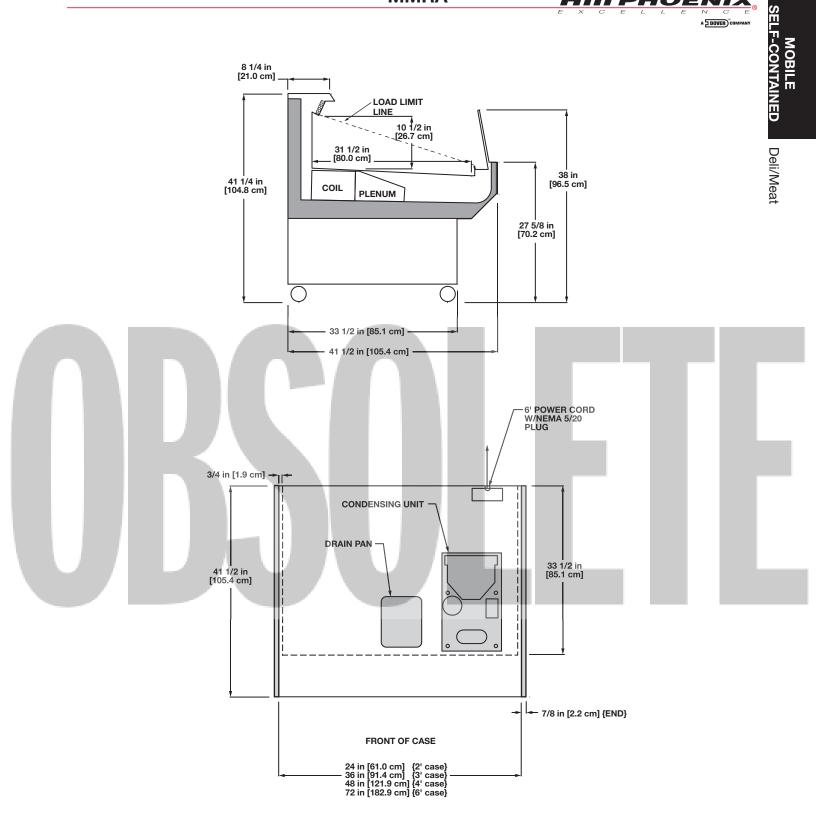
Medium Temperature Defrost Schedule

No. Per Day	Hours	
1	12 midnight	

1	12 miuniyni
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm

All measurements are taken per CRMA specifications.





NOTE: ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

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# Single Deck Self-Contained Mobile Produce Merchandiser MPCA - 8'

#### System Data

Model	Volts	Phase	Hz	Plug Style	Cord Length
MPCA	120	1	60	NEMA L5-30	10 ft

#### **Guidelines & Control Settings**

Model	 Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>1</sup> (FPM)
MPCA	19.9	6-8	30	42	163

1 Average discharge air velocity at peak of defrost.

# **Condensing Unit Data**

							- N		
l	Model	Volts	Phase	Frequency (Hz)	HP	RLA <sup>2</sup> (amps)	LRA <sup>3</sup> (amps)	Refrig.	lbs of Refrig.
I	MPCA	120	1	60	1/2	12.9	66.3	R134A	

2 RLA - Running Load Amps.

3 LRA - Locked Rotor Amps.

# **Defrost Controls**

I				Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
9	MPCA	3	6 - 8	40	49	60	47	3			

3 NOTE: " - - - " not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	40 0 40 0

4 12 - 6 am - 12 - 6 pm

All measurements are taken per ARI 1200 - 2002 specifications.



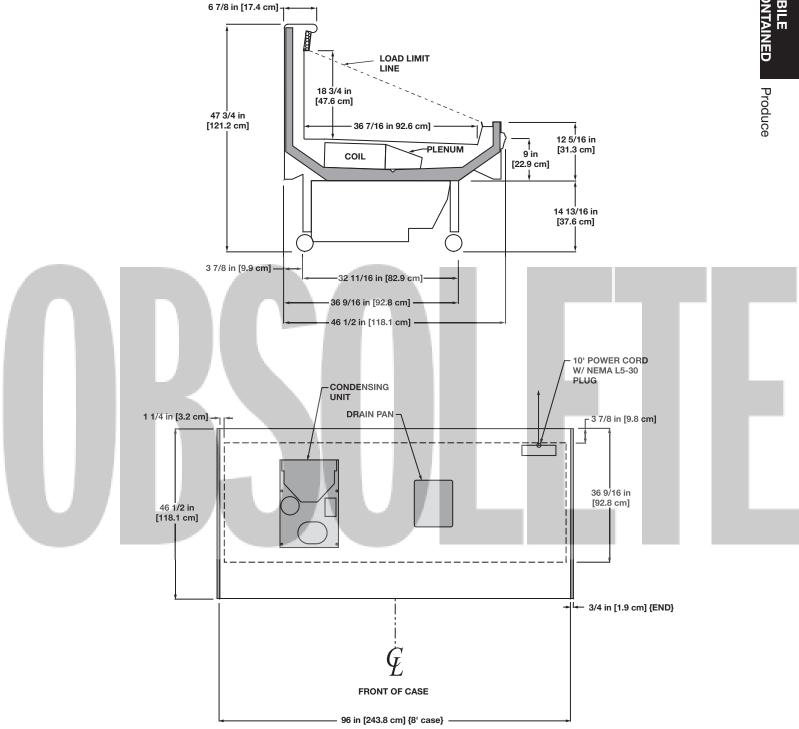
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# Hill PHOENIX



MOBILE SELF-CONTAINED



# International Style Self-Contained Mobile Deli/Meat/Seafood Merchandiser OSIOA-4'

#### System Data

Model	Volts	Phase	Hz	Plug Style	Cord Length
OSIOA	120	1	60	NEMA L5-20 or NEMA 5-20	10 ft

#### **Guidelines & Control Settings**

	Model	24 hr Energy Usage (kWh)	Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>1</sup> (FPM)
I	OSIOA	14.1	12-14	6-8	26	34	182

1 Average discharge air velocity at peak of defrost.

# **Condensing Unit Data**

Model	Volts	Phase	Frequency (Hz)	HP	RLA <sup>2</sup> (amps)	LRA <sup>3</sup> (amps)	Refrig.	lbs of Refrig.
OSIOA	115	1	60	1/2	10.4	48.0	R134A	3.25

2 RLA - Running Load Amps.

3 LRA - Locked Rotor Amps.

# **Defrost Controls**

ľ	Electric Defrost			Timed (	Off Defrost	Hot G	Hot Gas Defrost		Reverse Air Defrost	
l	Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
	OSIOA	4	40	47	4					

4 NOTE: " - - - " not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day	Hours	

1	12 midnight
2	12 am - 12 nm

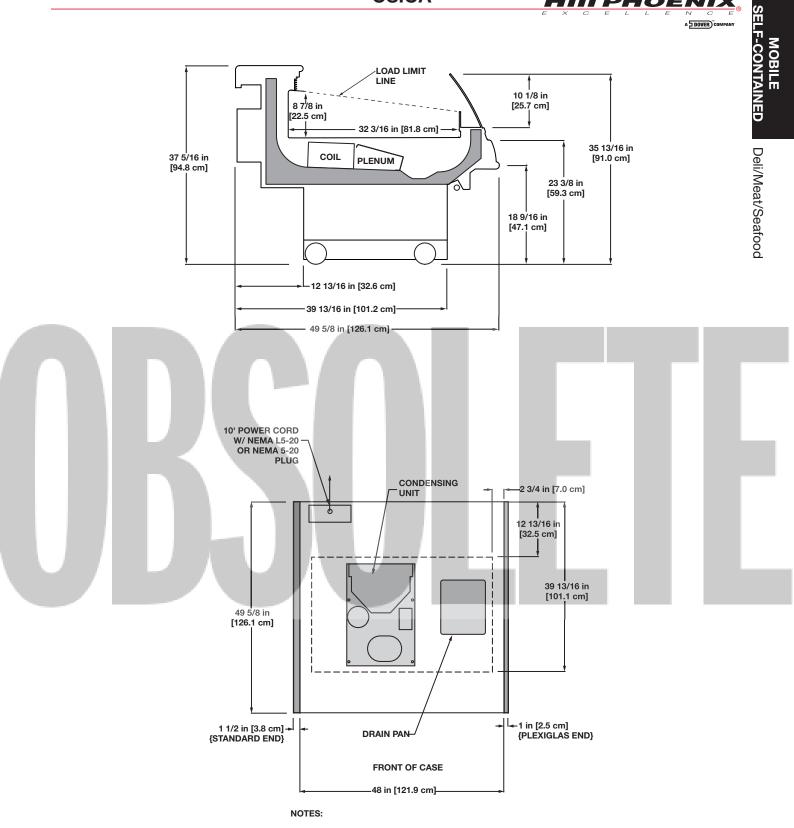
2 3 4 6 am - 2 pm - 10 pm

12 - 6 am - 12 - 6 pm





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• ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT



# International Style Self-Contained Mobile Deli/Meat/Seafood Prep Merchandiser

OSIOPA-4'

#### System Data

Model	Volts	Phase	Hz	Plug Style	Cord Length
OSIOPA	120	1	60	NEMA L5-20 or NEMA 5-20	10 ft

#### **Guidelines & Control Settings**

Model	24 hr Energy Usage (kWh)	Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>1</sup> (FPM)
OSIOPA deli	13.6	20	6-8	34	36	200
OSIOPA meat	18.0	16	6-8	32	36	200

1 Average discharge air velocity at peak of defrost.

# **Condensing Unit Data**

Model	Volts	Phase	Frequency (Hz)	HP	RLA <sup>2</sup> (amps)	LRA <sup>3</sup> (amps)	Refrig.	lbs of Refrig.
OSIOPA	120	1	60	1/3	7.2	29.0	R134A	2.25

2 RLA - Running Load Amps. 3 LRA - Locked Rotor Amps.

# **Defrost Controls**

1			Electri	c Defrost	Timed 0	Off Defrost	Hot G	as Defrost	Reverse	Air Defrost
	Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)						
	OSIOPA	2	40	47	4					

4 NOTE: " - - - " not an option on this case model.

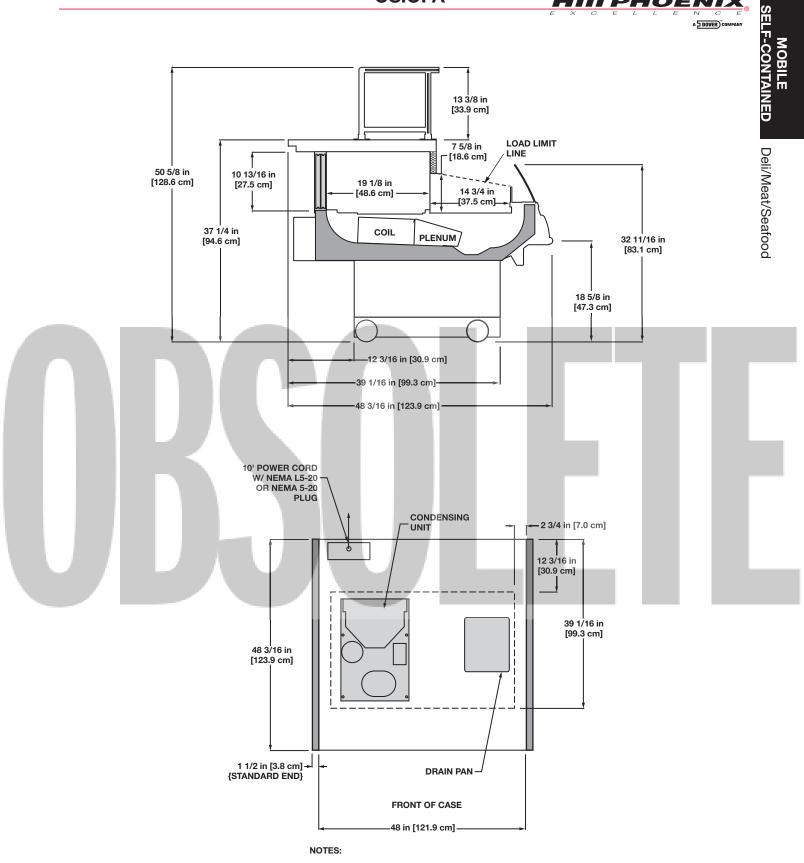
Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm

4 12 - 6 am - 12 - 6 pm







• ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

# International Style Self-Contained Mobile Sushi Prep Merchandiser OSIOA-P-4'

#### System Data

Model	Volts	Phase	Hz	Plug Style	Cord Length
OSIOA-P	120	1	60	NEMA L5-30	10 ft

#### **Guidelines & Control Settings**

l	Model	24 hr Energy Usage (kWh)		Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>1</sup> (FPM)
	OSIOA-P	32.0	12-14	6-8	26	34	182

1 Average discharge air velocity at peak of defrost.

#### **Condensing Unit Data**

		_		_		_		
Model	Volts	Phase	Frequency (Hz)	HP	RLA <sup>2</sup> (amps)	LRA <sup>3</sup> (amps)	Refrig.	lbs of Refrig.
OSIOA-P	120	1	60	3/4	15.2	66.3	R134A	

2 RLA - Running Load Amps.

3 LRA - Locked Rotor Amps.

# **Defrost Controls**

			Electri	c Defrost	Timed C	Off Defrost	Hot G	as Defr <b>os</b> t	Reverse	e Air Defrost
l	Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)						
ų	OSIOA-P	2	40	47	4					

4 NOTE: " - - - " not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day	Hours
-------------	-------

1 12 r	nidnight
--------	----------

2 12 am - 12 pm

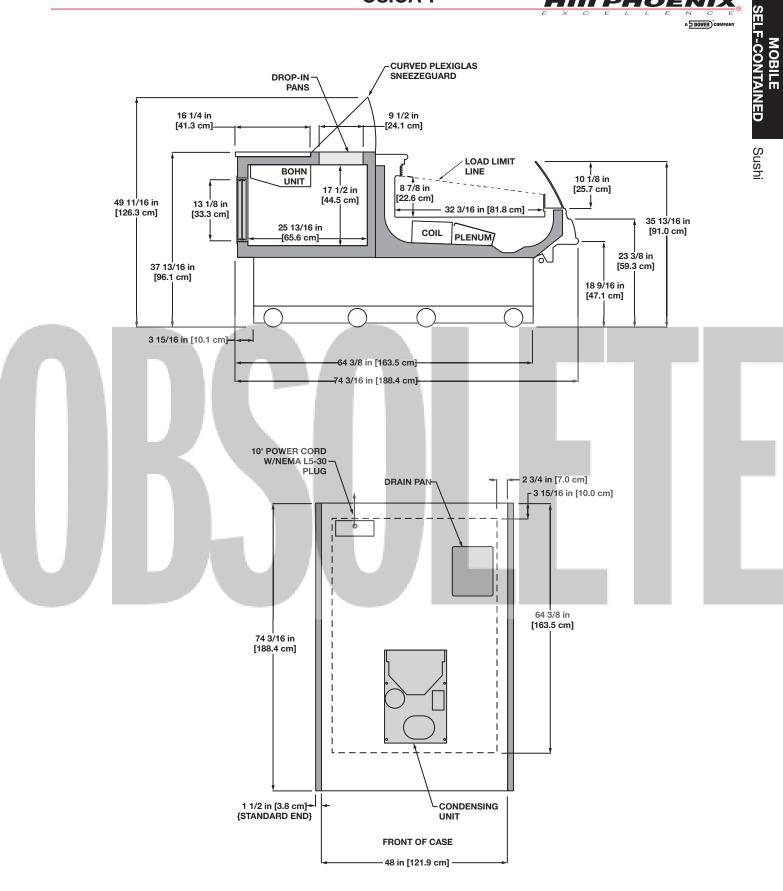
3 6 am - 2 pm - 10 pm 4 12 - 6 am - 12 - 6 pm



# **OSIOA-P**



A DOVER COMPANY



# International Style Self-Contained Mobile Dual Temp. Merchandiser OSIOZA-4'

#### System Data

Model	Volts	Phase	Hz	Plug Style	Cord Length
OSIOZA	120	1	60	NEMA L5-30	10 ft

#### **Guidelines & Control Settings**

l	Model	24 hr Energy Usage (kWh)		Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>1</sup> (FPM)
l	OSIOZA	25.0	12-14	3-4	-24	-10	220

1 Average discharge air velocity at peak of defrost.

#### **Condensing Unit Data**

	1			<u></u>		-		
Model	Volts	Phase	Frequency (Hz)	HP	RLA <sup>2</sup> (amps)	LRA <sup>3</sup> (amps)	Refrig.	lbs of Refrig.
OSIOZA	115	1	60	3/4	10.9	85.5	R404A	3.75

2 RLA - Running Load Amps.

3 LRA - Locked Rotor Amps.

# **Defrost Controls**

	7	Electri	c Defrost	Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
OSIOZA	2	45	45	4					

4 NOTE: " - - - " not an option on this case model.

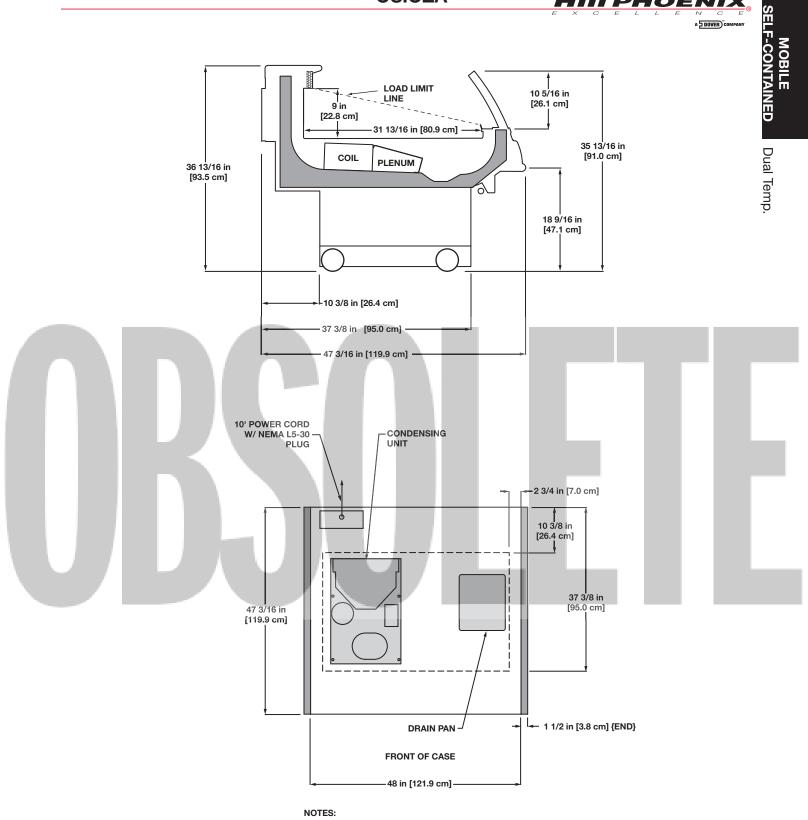
Low Temperature Defrost Schedule



\*\* Or immediately after store closing hour







• ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

# Single Deck Self-Contained Mobile Boxed Produce Merchandiser UPA-8'

#### System Data

Model	Volts	Phase	Hz	Plug Style	Cord Length
UPA	120	1	60	NEMA L5-30	6'

#### **Guidelines & Control Settings**

	Model		Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>1</sup> (FPM)
I	UPA	37	20	6-8	32	42	200

1 Average discharge air velocity at peak of defrost.

# **Condensing Unit Data**

								-
Model	Volts	Phase	Frequency (Hz)	HP	RLA <sup>2</sup> (amps)	LRA <sup>3</sup> (amps)	Refrig.	lbs of Refrig.
UPA	115	1	60	1/2	12.9	66.3	R134A	4.0

2 RLA - Running Load Amps.

3 LRA - Locked Rotor Amps.

#### **Defrost Controls**

			Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
	Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
1	UPA	4	4		45	47				

4 NOTE: " - - - " not an option on this case model.

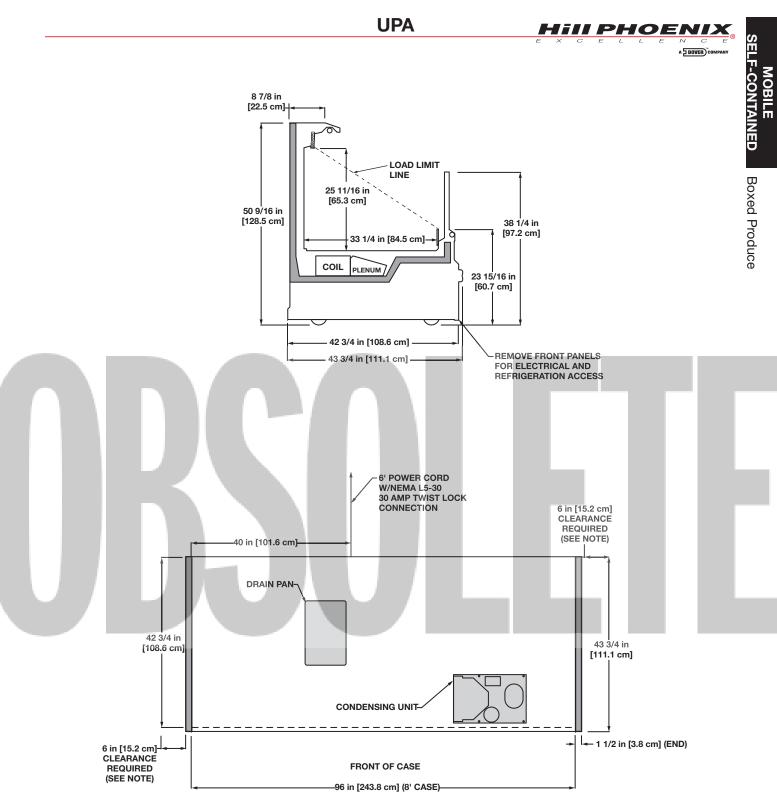
Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 p

3 6 am - 2 pm - 10 pm 4 12 - 6 am - 12 - 6 pm







NOTES:

• CASE CLEARANCE: MINIMUM 6" FROM BOTH ENDS • AVAILABLE SHELF SIZES: 10", 12", 14", & 16"

# Multi-Deck Self-Contained Mobile Produce/Dairy/Deli/Meat Merchandiser 02.5UMA - 4'

#### System Data

Model	Volts	Phase	Hz	Plug Style	Cord Length
O2.5UMA	120	1	60	NEMA L5-20 or NEMA 5-20	10 ft

#### **Guidelines & Control Settings**

Model	Front Sill	24 hr Energy Usage (kWh)	Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>2</sup> (FPM)
D2.5UMA Produce	Standard <sup>1</sup>	32.3	12-14	6-8	29-30	40-42	228
Deli	Solid/Extd.	30.2	12-14	6-8	25-27	39-41	230
Meat	Thermopane	30.3	12-14	6-8	25-26	36-38	226

1 Note: when ordering the standard front a 4" piece of straight plexiglass must be placed in front of the return air baffle. 2 Average discharge air velocity at peak of defrost.

# **Condensing Unit Data**

Model	Volts	Phase	Frequency (Hz)	HP	RLA <sup>3</sup> (amps)	LRA <sup>4</sup> (amps)	Refrig.	lbs of Refrig.
O2.5UMA	115	1	60	1/2	12.9	66.3	R134A	3.6

3 RLA - Running Load Amps.

4 LRA - Locked Rotor Amps.

# **Defrost Controls**

1										
			Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
	Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
	O2.5UMA	3	40	47	<sup>5</sup>					

5 NOTE: " - - - " not an option on this case model.

#### Medium Temperature Defrost Schedule

No.	Per	Dav	Hours

1 12 midnight

2 12 am - 12 pm 3 6 am - 2 pm - 10 pm

4 12 - 6 am - 12 - 6 pm



EXTENDED STANDARD FRONT

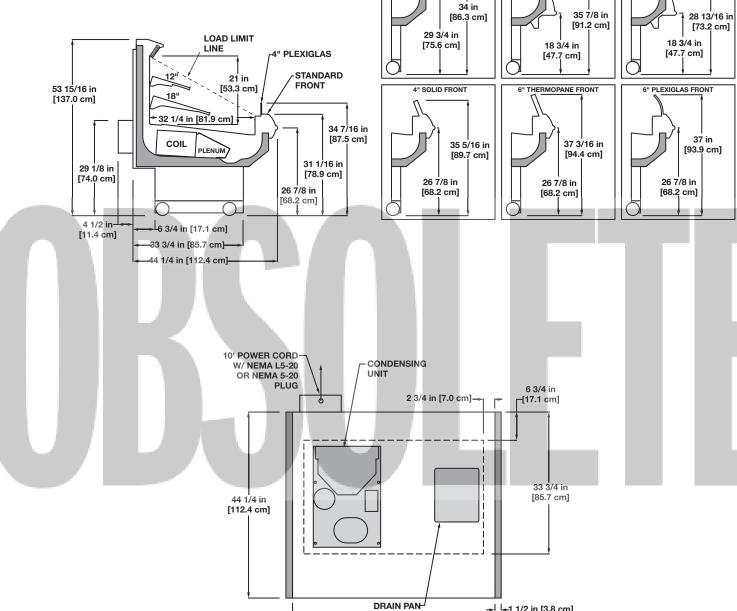
# **HIII PHOENIX**

12" INTERNATIONAL DELI

A DOVER CO







NOTES:

FRONT OF CASE - 48 in [121.9 cm] {4' case} -

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18" PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12" & 1-18"

- [-1 1/2 in [3.8 cm] {END}



# Multi-Deck Self-Contained Mobile Produce/Dairy/Deli/Meat Merchandiser 03UMA - 4'

#### System Data

Model	Volts	Phase	Hz	Plug Style	Cord Length
O3UMA	120	1	60	NEMA L5-20 or NEMA 5-20	10 ft

#### **Guidelines & Control Settings**

Model	Front Sill		Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>1</sup> (FPM)
O3UMA	Solid	32.1	12-14	6-8	26	35	230

1 Average discharge air velocity at peak of defrost.

# **Condensing Unit Data**

Model	Volts	Phase	Frequency (Hz)	HP	RLA <sup>2</sup> (amps)	LRA <sup>3</sup> (amps)	Refrig.	lbs of Refrig.
Infoder	Voits	Thase	(, , , , , , , , , , , , , , , , , , ,		(amp3)	(amps)	nonig.	. tomg.
O3UMA	115	1	60	1/2	12.9	66.3	R134A	3.6

2 RLA - Running Load Amps.

3 LRA - Locked Rotor Amps.

#### **Defrost Controls**

			Electri	c Defrost	Timed (	Off Defrost	Hot Ga	as Defrost	Reverse	Air Defrost
l	Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)						
1	O3UMA	3	40	47	4					

4 NOTE: " - - - " not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm





EXTENDED STANDARD FRONT

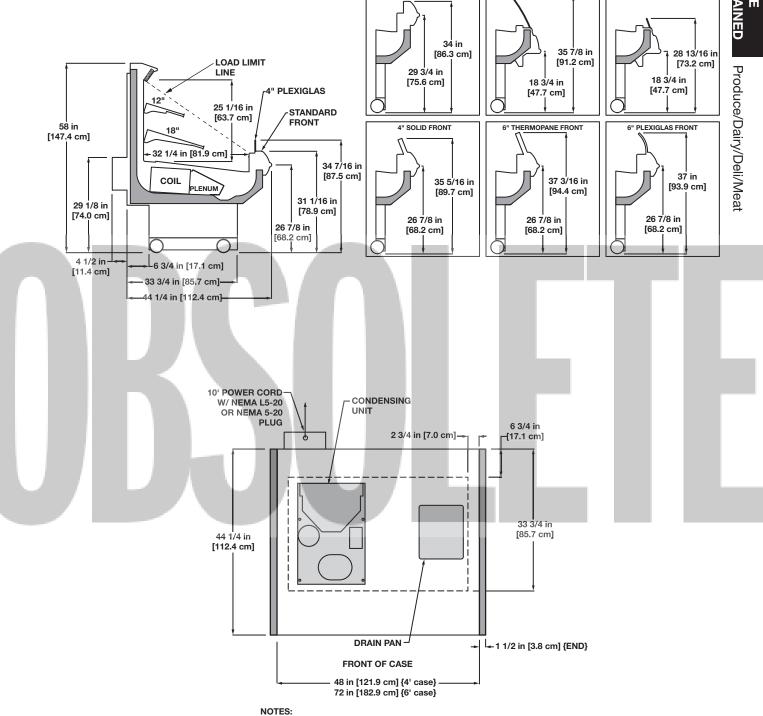
# **HIII PHOENIX**

12" INTERNATIONAL DELI

A DOVER CO

3" INTERNATIONAL DELI STYLE FRONT

# MOBILE SELF-CONTAINED



- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1-12" & 1-18"



# Multi-Deck Self-Contained Mobile Produce/Dairy/Deli/Meat Merchandiser 03UMA-56" - 4'

#### System Data

Model	Volts	Phase	Hz	Plug Style	Cord Length
O3UMA-56	120	1	60	NEMA L5-20 or NEMA 5-20	10 ft

#### **Guidelines & Control Settings**

	Model	0,	Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>1</sup> (FPM)
l	O3UMA-56	24.1	18-20	6-8	31	41	230

1 Average discharge air velocity at peak of defrost.

# **Condensing Unit Data**

Madel	) (alta	Dhase	Frequency (Hz)		RLA <sup>2</sup>	LRA <sup>3</sup>	Defrie	lbs of Refrig.
Model	Volts	Phase	(ПZ)	HP	(amp <b>s)</b>	(amps)	Refrig.	neing.
O3UMA-56	115	1	60	1/2	10.2	51.0	R134A	2.84

2 RLA - Running Load Amps.

3 LRA - Locked Rotor Amps.

#### **Defrost Controls**

		Electri	c Defrost	Timed (	Off Defrost	Hot Ga	as Defrost	Reverse	Air Defrost
Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)						
O3UMA-56	6	40	47	4					

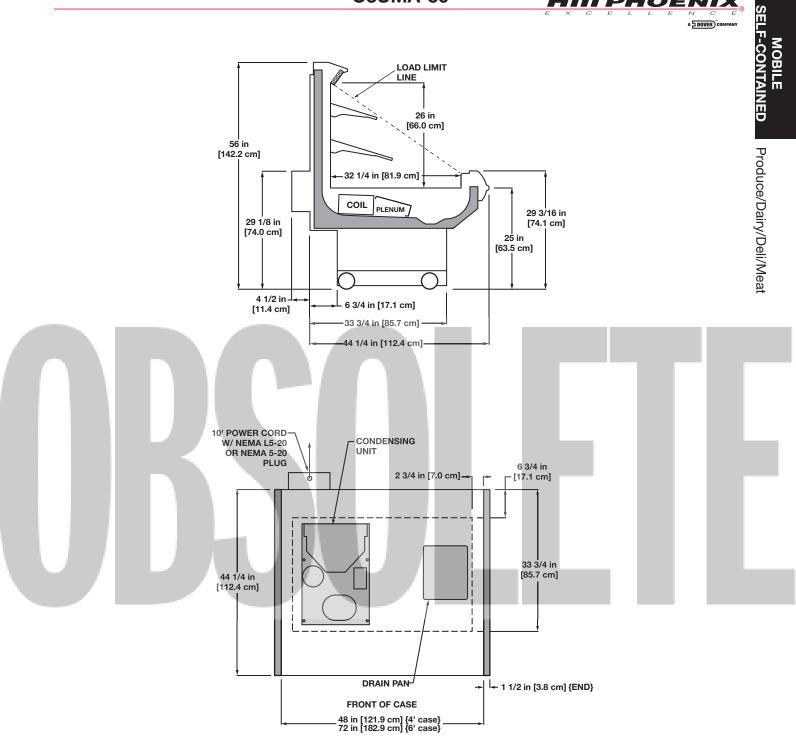
4 NOTE: " - - - " not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm

4 12 - 6 am - 12 - 6 pm





NOTE:

ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

# International Style Self-Contained Mobile Service Deli/Meat/Seafood Merchandiser

OSIA-4'

#### System Data

Model	Volts	Phase	Hz	Plug Style	Cord Length
OSIA	120	1	60	NEMA L5-20 or NEMA 5-20	10 ft

# **Guidelines & Control Settings**

Model	 Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>1</sup> (FPM)
OSIA	12-14	6-8	26	34	175

1 Average discharge air velocity at peak of defrost.

# **Condensing Unit Data**

_					- 1			_
Model	Volts	Phase	Frequency (Hz)	HP	RLA <sup>2</sup> (amp <b>s</b> )	LRA <sup>3</sup> (amps)	Refrig.	lbs of Refrig.
OSIA	115	-1	60	1/3	7.2	29.0	R134A	2.25

2 RLA - Running Load Amps.

3 LRA - Locked Rotor Amps.

#### **Defrost Controls**

			Electri	c Defrost	Timed (	Off Defrost	Hot G	as Defrost	Reverse Air Defrost		
ų	Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
	OSIA	2	45	47	4						

4 NOTE: " - - - " not an option on this case model.

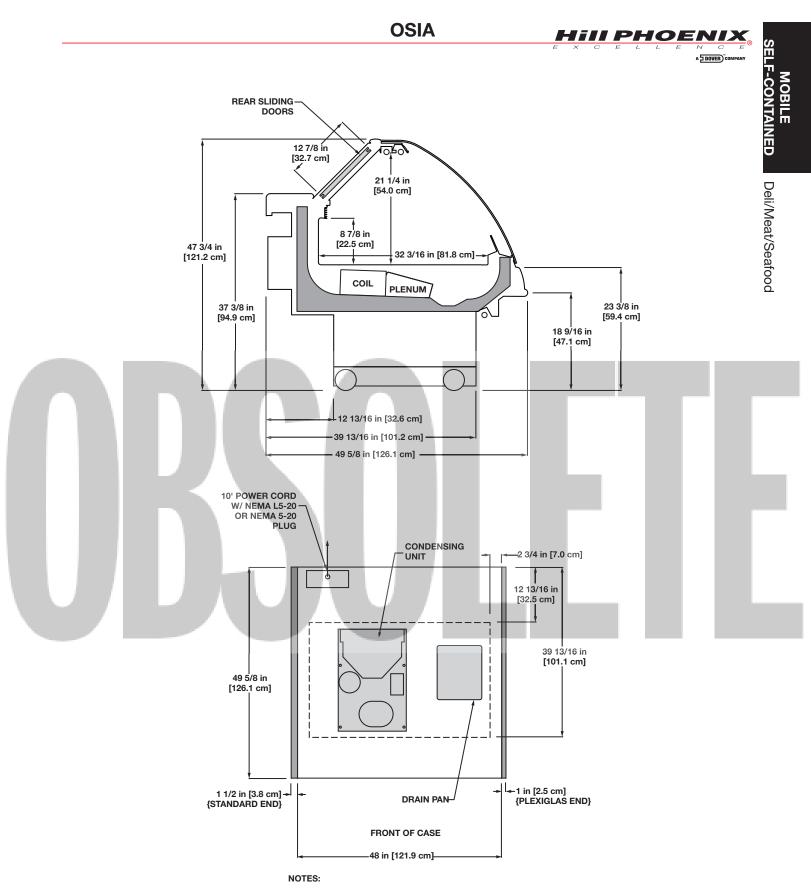
Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm

3 6 am - 2 pm - 10	l pn

4 12 - 6 am - 12 - 6 pm





• ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT



# International Style Self-Contained Mobile Service Deli/Meat/Seafood Merchandiser

O2SIA-4'

#### System Data

Model	Volts	Phase	Hz	Plug Style	Cord Length
O2SIA	120	1	60	NEMA L5-20 or NEMA 5-20	10 ft

# **Guidelines & Control Settings**

Model	24 hr Energy Usage (kWh)		Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>1</sup> (FPM)
O2SIA	14.02	16	6-8	24	35	540

1 Average discharge air velocity at peak of defrost.

#### **Condensing Unit Data**

Model	Volts	Phase	Frequency (Hz)	HP	RLA² (amps)	LRA <sup>3</sup> (amps)	Refrig.	lbs of Refrig.
O2SIA	115	-1	60	1/3	7.2	29.0	R134A	2.25

2 RLA - Running Load Amps.

3 LRA - Locked Rotor Amps.

#### **Defrost Controls**

			Electri	c Defrost	Defrost Timed Off Defrost			as Defrost	Reverse Air Defrost		
4	Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
1	O2SIA	3	45	50	4						

4 NOTE: " - - - " not an option on this case model.

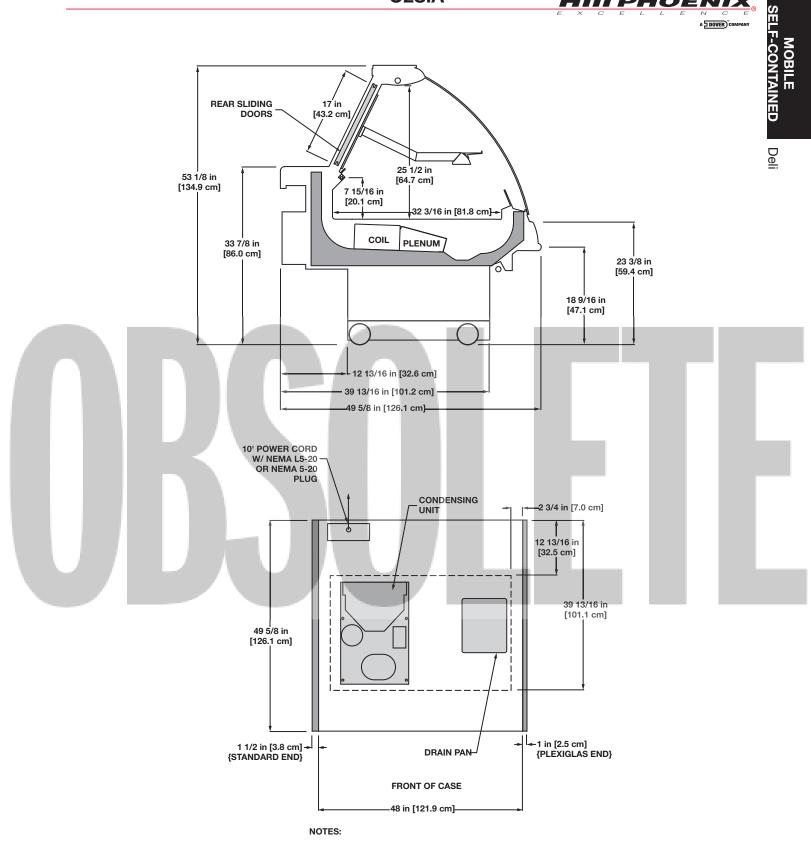
Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm





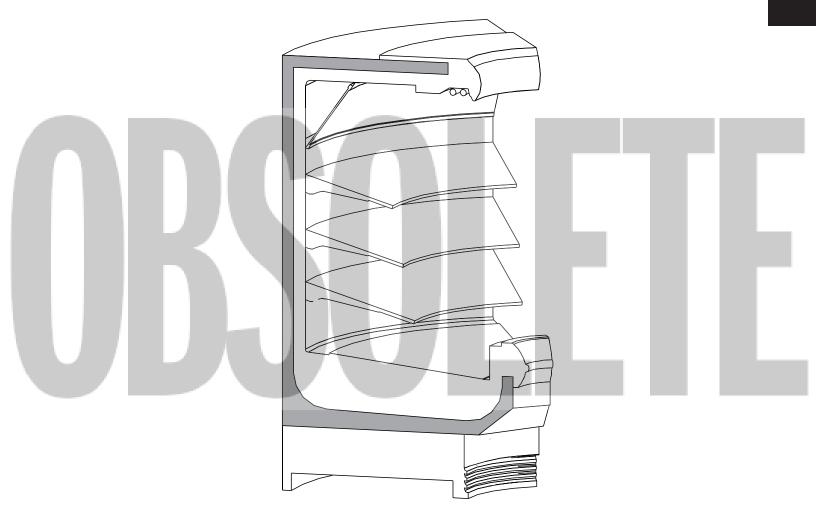




• ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

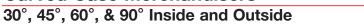


# **CURVED CASES**



#### NOTES

- Allow for an extra 1/8" per joint when lining up merchandisers.
- Technical information contained herein is subject to change without notice.





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						Standa	rd Fans	High Efficiency Fans		Anti-Condensate Heaters		Maxii Ligh	
Case	Wedge	Volume		Suction	Fans per	120 \	Volts	120	Volts	120	Volts	120	Volts
Model	Model	(ft <sup>3</sup> )	<sup>1</sup> BTUH	Temp. (°F)	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OC	30° I/S	7.5	550	22	1	0.80	53	0.36	36	0.15 <sup>4</sup>	18		
	45° I/S	11.3	820	22	1	0.80	53	0.36	36	0.214	25		
	60° I/S	15.1	1090	22	1	0.80	53	0.36	36	0.264	31		
	90° I/S	22.6	1630	22	2	1.60	107	0.72	71	0.394	47		
	30° O/S	6.5	480	22	1	0.80	53	0.36	36	0.044	5		
	45° O/S	9.8	710	22	1	0.80	53	0.36	36	0.054	6		
	60° O/S	13.1	950	22	1	0.80	53	0.36	36	0.084	10		
	90° O/S	19.6	1420	22	2	1.60	107	0.72	71	0.10 <sup>4</sup>	12		

						Standard Fans			High Efficiency Fans		Anti-Condensate Heaters		mum ting
Case	Wedge	Volume		Suction	Fans per	ans per 120 Volts		120	Volts	120 Volts		120 Volts	
Model	Model	(ft <sup>3</sup> )	<sup>1,3</sup> BTUH	Temp.(°F)	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OM	30° I/S	6.6	570	22	1	0.80	53	0.36	36	0.154	18	0.75	90
	45° I/S	9.9	850	22	1 /	0.80	53	0.36	36	0.21 <sup>4</sup>	25	0.75	90
	60° I/S	13.3	1140	22	1	0.80	53	0.36	36	0.264	31	1.50	180
	90° I/S	19.9	1700	22	2	1.60	107	0.72	71	<b>0.3</b> 9 <sup>4</sup>	47	1.50	180
	30° O/S	6.1	530	22	1	0.80	53	0.36	36	0.044	5	0.75	90
	45° O/S	9.2	790	22	1	0.80	53	0.36	36	<b>0.0</b> 5 <sup>4</sup>	6	0.75	90
	60° O/S	12.2	1050	22	1	0.80	53	0.36	36	<b>0.0</b> 8 <sup>4</sup>	10	1.50	180
	90° O/S	18.3	1570	22	2	1.60	107	0.72	71	0.104	12	1.50	180

								High Efficiency ard Fans Fans		Anti-Condensate Heaters		Maxii Ligh	
Case	Wedge	Volume		Suction	Fans per	120	Volts	120	Volts	120	Volts	120	Volts
Model	Model	(ft <sup>3</sup> )	<sup>2</sup> BTUH	Temp. (°F)	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OP	30° I/S	6.1	410	29	1	0.80	53	0.36	36				
39" Rear Sill	45° I/S	6.2	620	29	1	0.80	53	0.36	36				
	60° I/S	12.2	820	29	1	0.80	53	0.36	36				
	90° I/S	18.4	1230	29	2	1.60	107	0.72	71				
	30° O/S	5.4	360	29	1	0.80	53	0.36	36				
	45° O/S	8.1	540	29	1	0.80	53	0.36	36				
	60° O/S	10.8	720	29	1	0.80	53	0.36	36				
	90° O/S	16.1	1080	29	2	1.60	107	0.72	71				

						Standar	rd Fans	0	ficiency Ins		ndensate iters	Maxiı Ligh	
Case	Wedge	Volume		Suction	Fans per	120 \	Volts	120	Volts	120	Volts	120	Volts
Model	Model	(ft <sup>3</sup> )	<sup>2</sup> BTUH	Temp. (°F)	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OP	30° I/S	7.0	580	29	1	0.80	53	0.36	36				
43" Rear Sill	45° I/S	10.5	860	29	1	0.80	53	0.36	36				
	60° I/S	14.0	1150	29	1	0.80	53	0.36	36				
	90° I/S	21.0	1720	29	2	1.60	107	0.72	71				
	30° O/S	5.8	480	29	1	0.80	53	0.36	36				
	45° O/S	8.7	720	29	1	0.80	53	0.36	36				
	60° O/S	11.6	950	29	1	0.80	53	0.36	36				
	90° O/S	17.4	1430	29	2	1.60	107	0.72	71				

<sup>1</sup> BTUHs listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

<sup>2</sup> BTUHs listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.06.

3 Listed case BTUH indicates lighted shelves/cornice.

4 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

# 30°, 45°, 60°, & 90° Inside and Outside

						Standar	d Fans	0	ficiency Ins		ndensate iters	Maxir Ligh	
Case	Wedge	Volume		Suction	Fans per	120 \	Volts	120	Volts	120	Volts	120 \	Volts
Model	Model	(ft <sup>3</sup> )	<sup>1,2</sup> BTUH	Temp. (°F)	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O2UM	30° I/S	7.8	1350	22	1	0.80	53	0.36	36	0.15 <sup>3</sup>	18	1.55	186
	45° I/S	11.7	2030	22	1	0.80	53	0.36	36	0.21 <sup>3</sup>	25	1.55	186
	60° I/S	15.6	2700	22	1	0.80	53	0.36	36	0.26 <sup>3</sup>	31	1.90	288
	90° I/S	23.4	4050	22	2	1.60	107	0.72	71	0.39 <sup>3</sup>	47	2.85	342
	30° O/S	6.5	1130	22	1	0.80	53	0.36	36	0.04 <sup>3</sup>	5	1.55	186
	45° O/S	9.8	1690	22	1	0.80	53	0.36	36	0.05 <sup>3</sup>	6	1.55	186
	60° O/S	13.0	2260	22	1	0.80	53	0.36	36	0.08 <sup>3</sup>	10	1.90	288
	90° O/S	19.5	3380	22	2	1.60	107	0.72	71	0.10 <sup>3</sup>	12	2.85	342

							Standar	d Fans	0	ficiency .ns	Anti-Cor Hea	ndensate iters	Maxii Ligh	
	Case	Wedge	Volume		Suction	Fans per	120 \	Volts	120	Volts	120	Volts	120	Volts
	Model	Model	(ft <sup>3</sup> )	<sup>1,2</sup> BTUH	Temp. (°F)	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
di.	O2.5UM	-30° I/S	8.4	1450	22	1	0.80	53	0.36	36	0.15 <sup>3</sup>	18	2.35	282
		45° I/S	12.7	2170	22	1	0.80	53	0.36	36	0.21 <sup>3</sup>	25	2.35	282
1		60° I/S	16.9	2890	22	1	0.80	53	0.36	36	0.26 <sup>3</sup>	31	2.55	306
		90° I/S	25.3	4340	22	2	1.60	107	0.72	71	0.39 <sup>3</sup>	47	4.45	534
		30° O/S	6.9	1190	22	1	0.80	53	0.36	36	0.04 <sup>3</sup>	5	2.35	282
		45° O/S	10.4	1780	22	1	0.80	53	0.36	36	0.05 <sup>3</sup>	6	2.35	282
		60° O/S	13.8	2370	22	1	0.80	53	0.36	36	0.08 <sup>3</sup>	10	2.55	306
		90° O/S	20.7	3550	22	2	1.60	107	0.72	71	_0.10 <sup>3</sup>	12	4.45	534

						Standar	rd Fans	U U	ficiency Ins		ndensat <mark>e</mark> iters	Maxii Ligh	
Case	Wedge	Volume		Suction	Fans per	120 \	Volts	120	Volts	120	Volts	120	Volts
Model	Model	(ft <sup>3</sup> )	<sup>1,2</sup> BTUH	Temp. (°F)	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O3UM	30° I/S	9.3	1510	22	1	0.80	53	0.36	36	0.15 <sup>3</sup>	18	2.35	282
	45° I/S	14.0	2260	22	1	0.80	53	0.36	36	0.21 <sup>3</sup>	25	2.35	282
	60° I/S	18.7	3020	22	1	0.80	53	0.36	36	0.26 <sup>3</sup>	31	2.55	306
	90° I/S	28.0	4520	22	2	1.60	107	0.72	71	0.39 <sup>3</sup>	47	4.45	534
	30° O/S	7.5	1220	22	1	0.80	5 <u>3</u>	0.36	36	0.04 <sup>3</sup>	5	2.35	282
	45° O/S	11.3	1830	22	1	0.80	53	0.36	36	0.05 <sup>3</sup>	6	2.35	282
	60° O/S	15.1	2440	22	1	0.80	53	0.36	36	0.08 <sup>3</sup>	10	2.55	306
	90° O/S	22.6	3650	22	2	1.60	107	0.72	71	0.10 <sup>3</sup>	12	4.45	534

						Standar	d Fans	0	ficiency Ins		ndensate iters	Maxi Ligh	
Case	Wedge	Volume		Suction	Fans per	120 \	Volts	120	Volts	120	Volts	120	Volts
Model	Model	(ft <sup>3</sup> )	<sup>1,2</sup> BTUH	Temp. (°F)	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O3.5UM	30° I/S	10.4	1880	22	1	0.80	53	0.36	36	0.15 <sup>3</sup>	18	3.15	378
	45° I/S	15.7	2820	22	1	0.80	53	0.36	36	0.21 <sup>3</sup>	25	3.15	378
	60° I/S	20.9	3760	22	1	0.80	53	0.36	36	0.26 <sup>3</sup>	31	3.20	384
	90° I/S	31.3	5640	22	2	1.60	107	0.72	71	0.39 <sup>3</sup>	47	6.05	726
	30° O/S	8.2	1480	22	1	0.80	53	0.36	36	0.04 <sup>3</sup>	5	3.15	378
	45° O/S	12.3	2210	22	1	0.80	53	0.36	36	0.05 <sup>3</sup>	6	3.15	378
	60° O/S	16.4	2950	22	1	0.80	53	0.36	36	0.08 <sup>3</sup>	10	3.20	384
	90° O/S	24.6	4420	22	2	1.60	107	0.72	71	0.10 <sup>3</sup>	12	6.05	726

<sup>1</sup> BTUHs listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

2 Listed case BTUH indicates lighted shelves/cornice.

3 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

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						Standar	d Fans	0	ficiency Ins		ndensate iters	Maxi Ligh	
Case	Wedge	Volume		Suction	Fans per	120 \	/olts	120	Volts	120	Volts	120	Volts
Model	Model	(ft <sup>3</sup> )	<sup>1,3</sup> BTUH	Temp. (°F)	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O4UM	30° I/S	12.1	2040	22	1	0.80	53	0.36	36	0.15 <sup>4</sup>	18	3.15	378
	45° I/S	18.2	3060	22	1	0.80	53	0.36	36	0.21 <sup>4</sup>	25	3.15	378
	60° I/S	24.3	4080	22	1	0.80	53	0.36	36	0.264	31	3.20	384
	90° I/S	36.4	6120	22	2	1.60	107	0.72	71	0.39 <sup>4</sup>	47	6.05	726
	30° O/S	9.4	1580	22	1	0.80	53	0.36	36	0.044	5	3.15	378
	45° O/S	14.0	2360	22	1	0.80	53	0.36	36	0.05 <sup>4</sup>	6	3.15	378
	60° O/S	18.7	3150	22	1	0.80	53	0.36	36	0.08 <sup>4</sup>	10	3.20	384
	90° O/S	28.1	4720	22	2	1.60	107	0.72	71	0.104	12	6.05	726

						Standar	d Fans	0	ficiency Ins		ndensate aters	Maxii Ligh	
Case	Wedge	Volume		Suction	Fans per	120 \	/olts	120	Volts	120	Volts	120	Volts
Model	Model	(ft <sup>3</sup> )	<sup>1,3</sup> BTUH	Temp. (°F)	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O5UM	30° I/S	13.2	2090	22	1	0.80	53	0.36	36	0.15 <sup>4</sup>	18	3.95	474
	45° I/S	19.8	3130	22	1	0.80	53	0.36	36	0.214	25	3.95	474
	60° I/S	26.3	4170	22	1	0.80	53	0.36	36	0.264	31	3.85	462
	90° I/S	39.5	6260	22	2	1.60	107	0.72	71	<b>0.3</b> 9 <sup>4</sup>	47	7.65	918
	30° O/S	10.1	1600	22	1	0.80	53	0.36	36	0.044	5	3.95	474
	45° O/S	15.1	2390	22	1	0.80	53	0.36	36	<b>0.0</b> 5 <sup>4</sup>	6	3.95	474
	60° O/S	20.1	3190	22	1	0.80	53	0.36	36	<b>0.0</b> 8 <sup>v</sup>	10	3.85	462
	90° O/S	30.2	4780	22	2	1.60	107	0.72	71	<b>0.1</b> 0 <sup>4</sup>	12	7.65	918

						Standar	d Fans	0	fficiency ans		ndensate iters	Maxi Ligh	
Case	Wedge	Volume		Suction	Fans per	120	/olts	120	Volts	120	Volts	120	Volts
Model	Model	(ft <sup>3</sup> )	<sup>2,3</sup> BTUH	Temp. (°F)	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O5DM	30° I/S	21.3	2020	22	1	0.80	53	0.36	36			5.00	600
Deli	45° I/S	32.0	3030	22	1	0.80	53	0.36	36			5.00	600
	60° I/S	42.6	4030	22	1	0.80	53	0.36	36			5.25	630
	90° I/S	64.0	6050	22	2	1.60	107	0.72	71			10.00	120 <b>0</b>
	30° O/S	20.5	1940	22	1	0.80	53	0.36	36			5.00	600
	45° O/S	30.8	2910	22	1	0.80	53	0.36	36			5.00	600
	60° O/S	41.0	3880	22	1	0.80	53	0.36	36			5.25	630
	90° O/S	61.5	5820	22	2	1.60	107	0.72	71			10.00	1200

						Standar	d Fans	0	ficiency ns		ndensate iters	Maxiı Ligh	
Case	Wedge	Volume		Suction	Fans per	120 \	/olts	120	Volts	120	Volts	120	Volts
Model	Model	(ft <sup>3</sup> )	<sup>2,3</sup> BTUH	Temp. (°F)	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O5DM	30° I/S	21.3	1890	26	1	0.80	53	0.36	36			5.00	600
Dairy	45° I/S	32.0	2840	26	1	0.80	53	0.36	36			5.00	600
	60° I/S	42.6	3780	26	1	0.80	53	0.36	36			5.25	630
	90° I/S	64.0	5670	26	2	1.60	107	0.72	71			10.00	1200
	30° O/S	20.5	1820	26	1	0.80	53	0.36	36			5.00	600
	45° O/S	30.8	2730	26	1	0.80	53	0.36	36			5.00	600
	60° O/S	41.0	3640	26	1	0.80	53	0.36	36			5.25	630
	90° O/S	61.5	5460	26	2	1.60	107	0.72	71			10.00	1200

<sup>1</sup> BTUHs listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.13.

2 BTUHs listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.10.

3 Listed case BTUH indicates lighted shelves/cornice.

4 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

# 30°, 45°, 60°, & 90° Inside and Outside



#### 

CURVED CASE

						Standa	d Fans	0	ficiency Ins		ndensate iters	Maxi Ligh	
Case	Wedge	Volume		Suction	Fans per	120 \	/olts	120	Volts	120	Volts	120	Volts
Model	Model	(ft <sup>3</sup> )	<sup>1,3</sup> BTUH	Temp. (°F)	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OHM	30° I/S	17.3	1780	22	1	0.80	53	0.36	36	0.04 <sup>4</sup>	5	3.95	474
	45° I/S	26.0	2660	22	1	0.80	53	0.36	36	0.10 <sup>4</sup>	12	3.95	474
	60° I/S	34.6	3550	22	1	0.80	53	0.36	36	0.34 <sup>4</sup>	41	4.10	492
	90° I/S	52.0	5320	22	2	1.60	107	0.72	71	0.32 <sup>4</sup>	38	7.90	948
	30° O/S	16.2	1660	22	1	0.80	53	0.36	36	0.10 <sup>4</sup>	12	3.95	474
	45° O/S	24.2	2480	22	1	0.80	53	0.36	36	0.14 <sup>4</sup>	17	3.95	474
	60° O/S	32.3	3310	22	1	0.80	53	0.36	36	0.18 <sup>4</sup>	22	4.10	492
	90° O/S	48.5	4960	22	2	1.60	107	0.72	71	0.28 <sup>4</sup>	34	7.90	948

I							Standar	d Fans	0	ficiency Ins		ndensate aters	Maxiı Ligh	
	Case	Wedge	Volume		Suction	Fans per	120 \	/olts	120	Volts	120	Volts	120	Volts
	Model	Model	(ft <sup>3</sup> )	<sup>1,3</sup> BTUH	Temp. (°F)	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
÷	OHMH	30° I/S	18.3	1980	22	1	0.80	53	0.36	36	0.08 <sup>4</sup>	10	4.75	570
		45° I/S	27.4	2970	22	1	0.80	53	0.36	36	0.20 <sup>4</sup>	24	4.75	570
Ц		60° I/S	36.6	3960	22	1	0.80	53	0.36	36	0.68 <sup>4</sup>	82	4.75	570
1		90° I/S	54.9	5940	22	2	1.60	107	0.72	71	0.644	77	9.50	1140
		30° O/S	15.9	1730	22	1	0.80	53	0.36	36	0.204	24	4.75	570
		45° O/S	23.9	2590	22	1	0.80	53	0.36	36	0.28 <sup>4</sup>	34	4.75	570
		60° O/S	31.8	3450	22	1	0.80	53	0.36	36	0.364	44	4.75	570
		90° O/S	47.8	5170	22	2	1.60	107	0.72	71	0.56 <sup>4</sup>	68	9.50	1140

ľ							Standa	d Fans	0	ficiency Ins		ndensat <mark>e</mark> aters	Maxii Ligh	
I.	Case	Wedge	Volume		Suction	Fans per	י 120	/olts	120	Volts	120	Volts	120	Volts
	Model	Model	(ft <sup>3</sup> )	<sup>2,3</sup> BTUH	Temp. (°F)	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
Г	OHP	30° I/S	17.2	1650	26	1	0.80	53	0.36	36			3.95	474
I.		45° I/S	25.8	2470	26	1	0.80	53	0.36	36			3.95	474
		60° I/S	34.4	3300	26	1	0.80	53	0.36	36			4.10	492
1		90° I/S	51.6	4940	26	2	1.60	107	0.72	71			7.90	948
L		$30^{\circ} \text{ O/S}$	16.1	15 <b>50</b>	26	1	0.80	53	0.36	36			3.95	474
Т		45° O/S	24.2	2320	26	1	0.80	53	0.36	36			3.95	474
I.		60° O/S	32.3	3090	26	1	0.80	53	0.36	36			4.10	492
L		90° O/S	48.4	4640	26	2	1.60	107	0.72	71			7.90	948

							Standard Fans		High Efficiency Fans		Anti-Condensate Heaters		Maximum Lighting	
Case Model	Wedge Model	Volume (ft <sup>3</sup> )	<sup>2,3</sup> BTUH	Suction Temp. (°F)	Fans per Case	120 Volts		120 Volts		120 Volts		120 Volts		
						Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	
ОНРН	30° I/S	18.3	1860	26	1	0.80	53	0.36	36	0.04 <sup>4</sup>	5	4.75	570	
	45° I/S	27.5	2790	26	1	0.80	53	0.36	36	0.10 <sup>4</sup>	12	4.75	570	
	60° I/S	36.7	3720	26	1	0.80	53	0.36	36	0.34 <sup>4</sup>	41	4.75	570	
	90° I/S	55.0	5580	26	2	1.60	107	0.72	71	0.32 <sup>4</sup>	38	9.50	1140	
	30° O/S	15.8	1610	26	1	0.80	53	0.36	36	0.10 <sup>4</sup>	12	4.75	570	
	45° O/S	23.7	2410	26	1	0.80	53	0.36	36	0.14 <sup>4</sup>	17	4.75	570	
	60° O/S	31.6	3210	26	1	0.80	53	0.36	36	0.18 <sup>4</sup>	22	4.75	570	
	90° O/S	47.4	4810	26	2	1.60	107	0.72	71	0.28 <sup>4</sup>	34	9.50	1140	

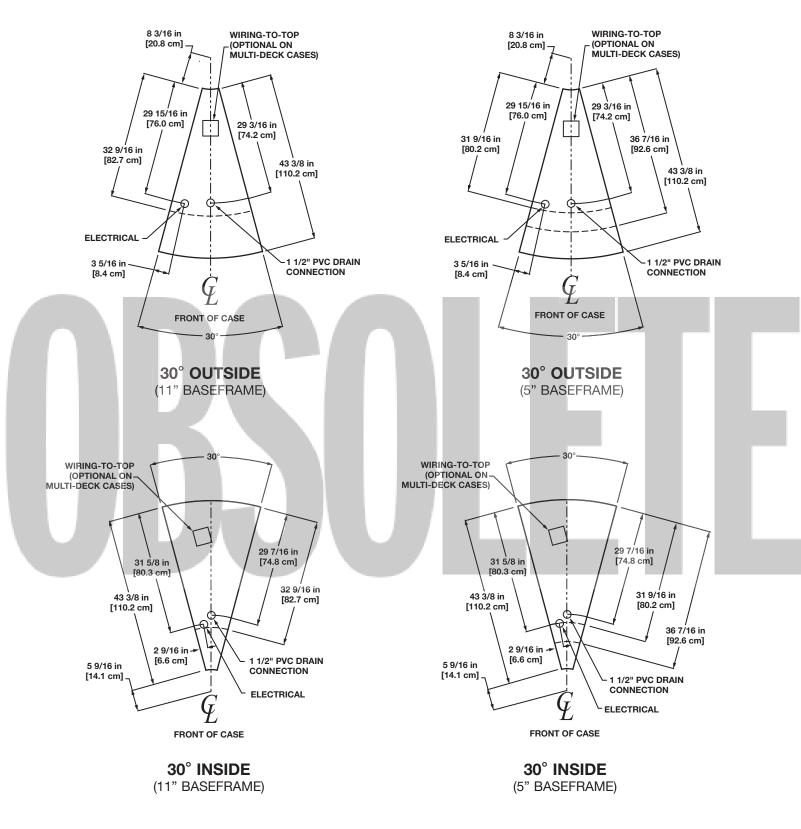
<sup>1</sup> BTUHs listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.11.

2 BTUHs listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.08.

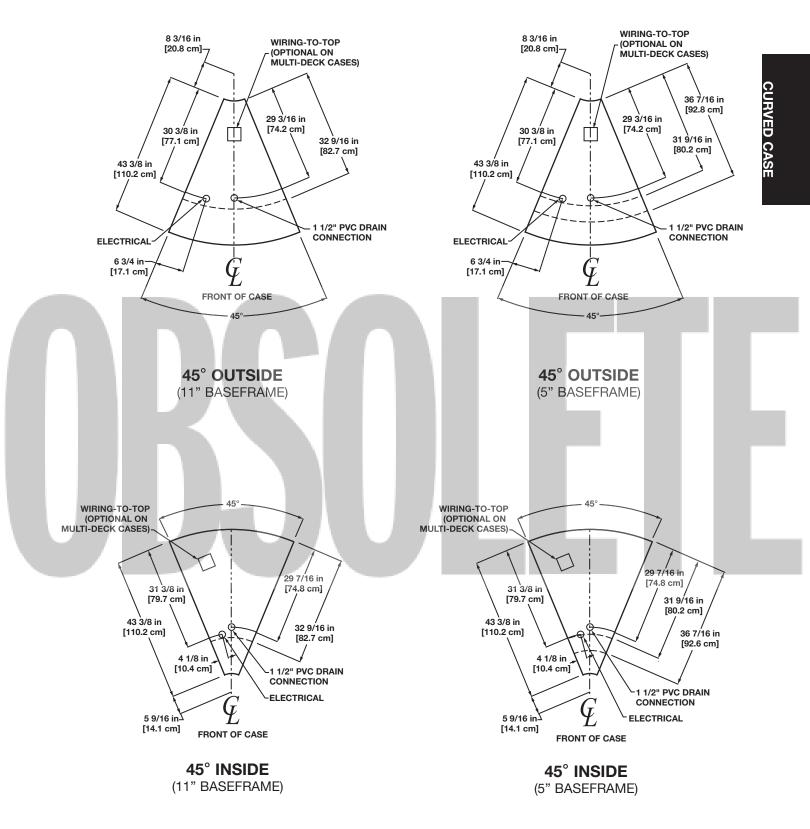
3 Listed case BTUH indicates lighted shelves/cornice.

4 Anti-condensate heater data for unlighted rear sill. For lighted rear sill, double the values.

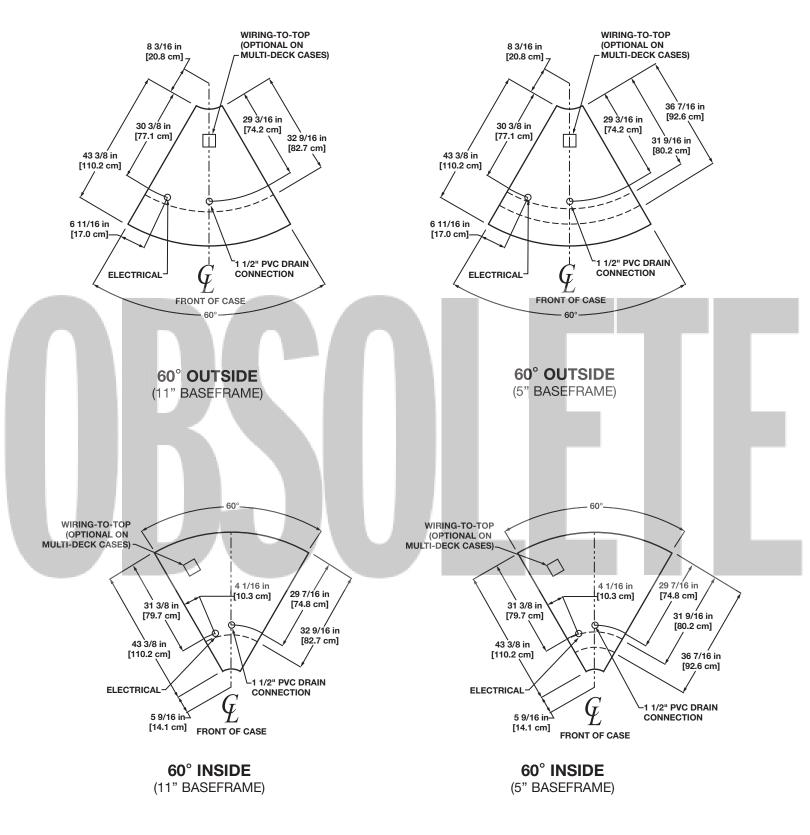




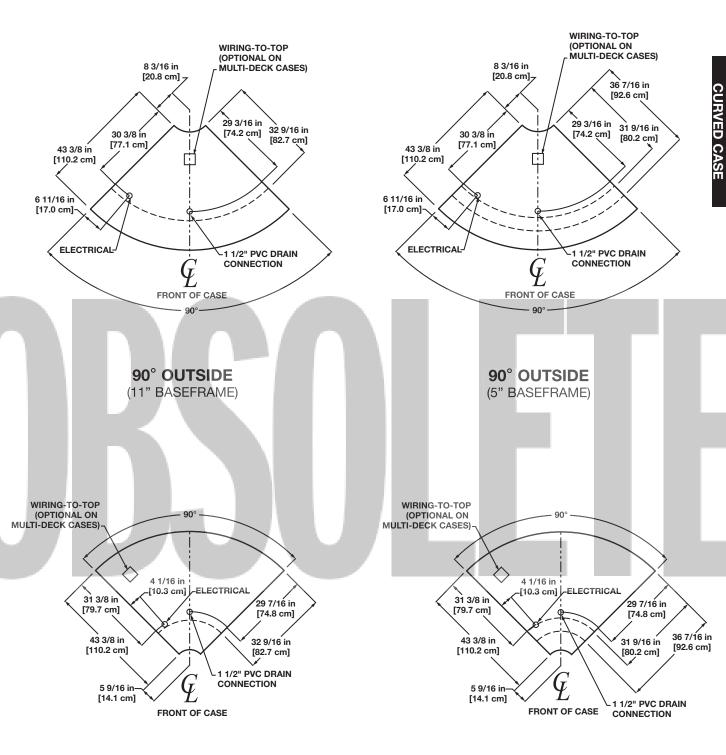












**90° INSIDE** (11" BASEFRAME)

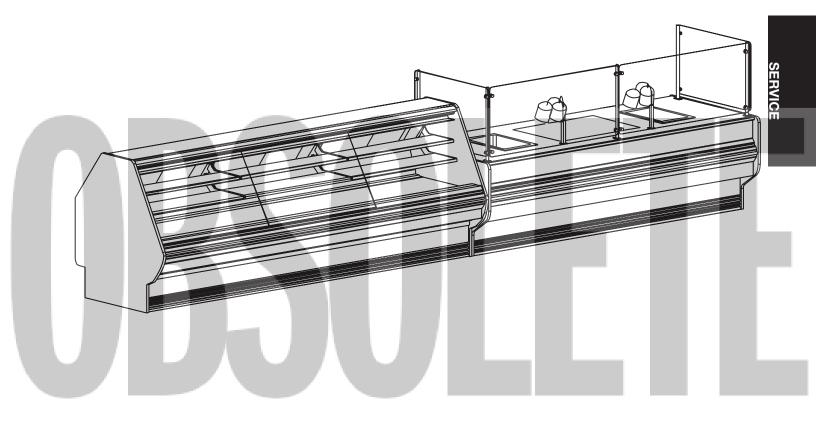
90° INSIDE (5" BASEFRAME)







# SERVICE



#### NOTES

- Cases shown with an ANSI/NSF\* Mark are Certified by NSF
- Cases shown with an UL\* Mark are Listed by Underwriters Laboratories Inc.
- Allow for an extra 1/8" per joint when lining up merchandisers.
- Technical information contained herein is subject to change without notice.

\* ANSI - American National Standard Institute NSF - National Sanitation Foundation UL - Underwriters Laboratories Inc

# American Style Vertical Glass Service Deli/Meat/Seafood Gravity Coil **Merchandiser**

OGM - 6', 8' & 12'

### **Electrical Data**

			Standa	rd Fans	High Efficiency Anti-Condensate Fans Heaters Defrost Heaters							
	Fans per			/olts	120 Volts		120 Volts		208	Volts 240 V		Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OGM	6'	NA <sup>1</sup>	<b></b> <sup>2</sup>				1.93	232				
	8'	NA					2.91	349				
	12'	NA					4.13	496				

1 Not applicable.

2 NOTE: "- - -" not an option on this case model.

### **Lighting Data**

		Bulbs		Light	al per Row	Ligh	mum nting
		per	Bulb	120	Volts	120	Volts
Model		Row	Length	Amps	Watts	Amps	Watts
OGM	6'	2	3'	0.37	44	1.48	178
	8'	2	4'	0.47	56	1.88	226
	12'	3	4'	0.70	84	2.80	336

### **Guidelines & Control Settings**

Model	<sup>4,5</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
OGM <sup>3</sup>	226	17	6-8	NA	NA	NA

3 If the OGM is piped to a suction header lower than 15oF an EPR with a suction stop solenoid is required. If a suction stop solenoid is not provided at the rack a suction stop solenoid is required at the case. A liquid line solenoid alone will not allow the case to cycle properly and is not recommended for control of this case. The thermostat probe should be located on the inlet of the top coil. The cut out point should be set to 17oF and the cut in point should be set so that refrigeration starts as soon as the top coil ice starts to drip.

4 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.10.

5 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

6 Average discharge air velocity at peak of defrost.

### **Defrost Controls**

l				Electric Defrost		Timed Off Defrost		Hot Ga	s Defrost	Reverse	Air Defrost
I		Defrosts	Run-Off	Fail-safe	Termination	Fail-safe	Termination	Fail-safe	Termination	Fail-safe	Termination
	Model	Per Day	Time (min)	(min)	Temp. (°F)	(min)	Temp. (°F)	(min)	Temp. (°F)	(min)	Temp. (°F)
I	OGM	2	6 - 8			65	46	20	45		

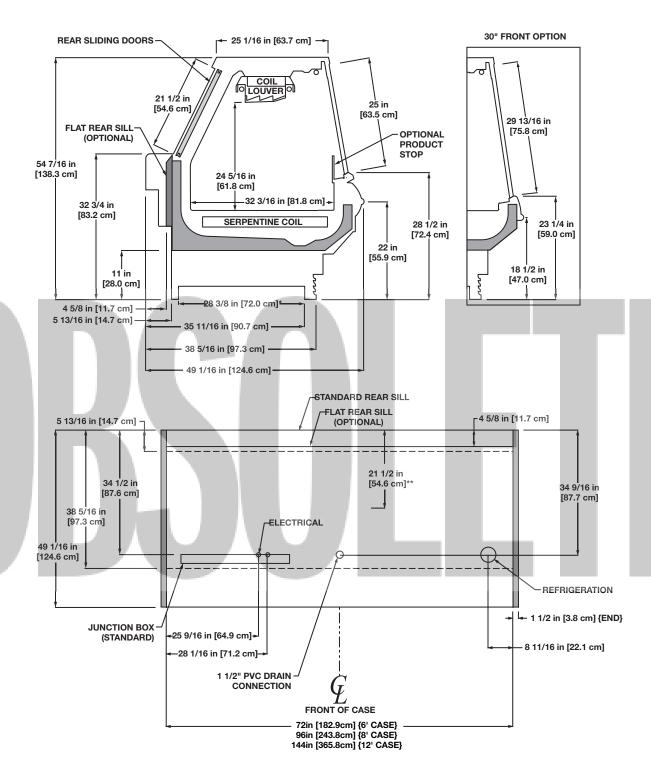
Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm





#### OGM (11" BASEFRAME)



#### NOTES:

- STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT, REAR AND TOP SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
   ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
   SUCTION LINE 7/8", LIQUID LINE 1/2"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

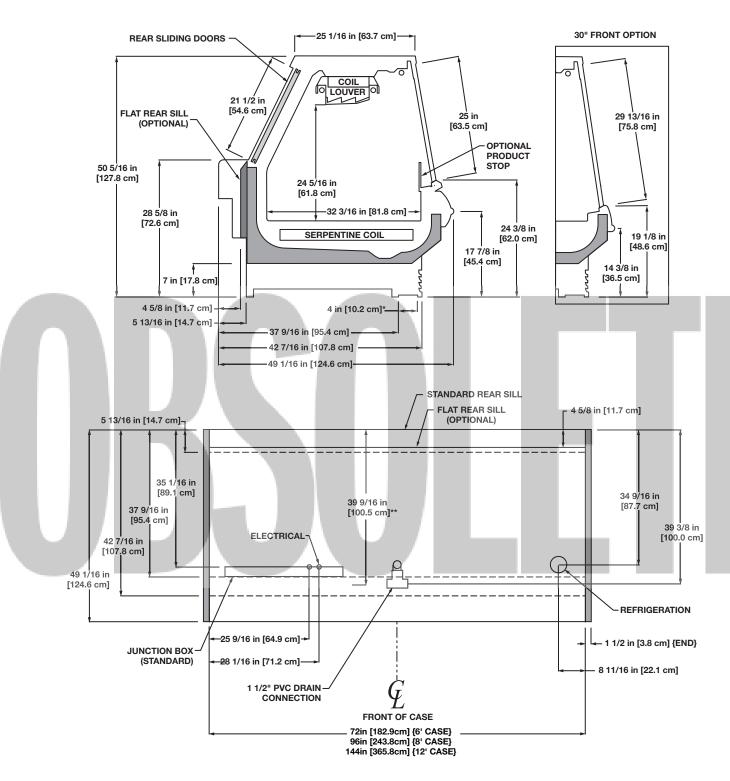
A DOVER PANY

**HIII PHOENIX** 

(NSF<sub>®</sub>)

#### OGM (7" BASEFRAME)





NOTES:

- STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT, REAR AND TOP SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
   ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
   SUCTION LINE 7/8", LIQUID LINE 1/2"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

NSF





			Standar	d Fans		fficiency ans		ndensate aters		Defrost	Heaters	
		Fans per	120 \	/olts	120	Volts	120	Volts	208 Volts 240 Volt			Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O2SI	4'	2	0.68	34	0.30	22	0.55	66	1.92	400	2.22	532
	6'	2	0.68	34	0.30	22	1.03	124	2.88	600	3.33	798
	8'	3	1.02	51	0.45	33	0.99	119	3.85	800	4.44	1065
	12'	4	1.36	68	0.60	44	1.49	179	5.77	1200	6.67	1600

### **Lighting Data**

		Bulbs per	Bulb	Typical per Light RowMaximum Lighting120 Volts120 Volts				
Model		Row	Length	Amps	Watts	Amps	Watts	
O2SI	4'	1	4'	0.23	28	0.70	84	
	6'	2	3'	0.37	44	1.10	132	
	8'	2	4'	0.47	56	1.40	168	
	12'	3	4'	0.70	84	2.10	252	

### **Guidelines & Control Settings**

l	Model	<sup>2,3</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
ı	O2SI <sup>1</sup>	396 <sup>4</sup>	17	6-8	24	35	540

1 Humidification system required on this case when used for Fresh Meat application

2 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.07.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH

Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

F				Electric Defrost		Timed Off Defrost <sup>6</sup>		Hot Ga	s Defrost	Reverse Air Defrost	
	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
	O2SI	3	6 - 8	30	47	60	47	26	45	<sup>7</sup>	

6 Not recommended on this model due to long defrost time.

7 NOTE: " - - - " not an option on this case model.

Medium Temperature Defrost Schedule

No.	Per	Day	Hours

- 12 midnight 1
- 2 12 am - 12 pm

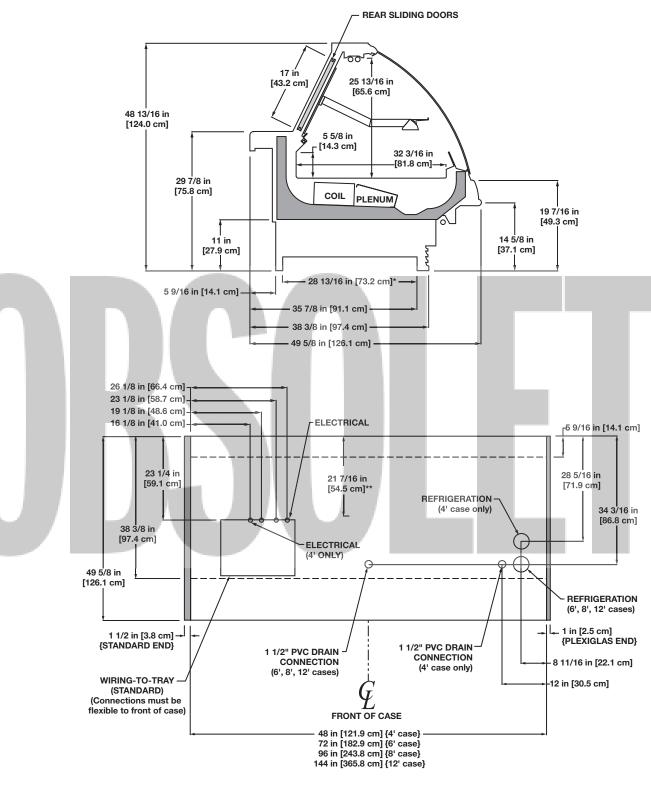
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6 am - 2 pm - 10 pm
12 - 6 am - 12 - 6 pm
3
4
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**02SI** 



• DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE NOTES:

STUB-UP AREA

- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT, REAR AND TOP SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT SUCTION LINE 7/8", LIQUID LINE 1/2"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

04/09

NSF

### International Style Flat Glass Service Deli/Meat/Seafood Merchandiser O2SIF - 8' & 12'

#### **Electrical Data**

	Standard Fans					ligh Efficiency Anti-Condensate Fans Heaters Defrost Heater			Heaters	ers		
	Fans per		120 \	/olts	120	Volts	120 Volts 20		208	Volts 240 Volts		Volts
Model			Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O2SIF	8'	3	1.02	51	0.45	33	0.99	119	3.85	800	4.44	1065
	12'	4	1.36	68	0.60	44	1.49	179	5.77	1200	6.67	1600

### **Lighting Data**

		Bulbs			al per Row		mum nting	
		per	Bulb	120	Volts	120 Volts		
Model		Row	Length	Amps	Watts	Amps	Watts	
O2SIF	8'	2	4'	0.47	56	1.40	168	
	12'	3	4'	0.70	84	2.10	252	

### **Guidelines & Control Settings**

	Model	<sup>2,3</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
l	O2SIF <sup>1</sup>	396 <sup>4</sup>	17	6-8	24	35	540

1 Humidification system required on this case if customer decides to use for Fresh Meat application.

2 BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.07.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

### **Defrost Controls**

			Electri	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse	Air Defrost
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
O2SIF	3	6 - 8	30	47	60 <sup>6</sup>	47 <sup>6</sup>	26	45	<sup>7</sup>	

6 Not recommended on this model due to long defrost time.

7 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm

4 12 - 6 am - 12 - 6 pm





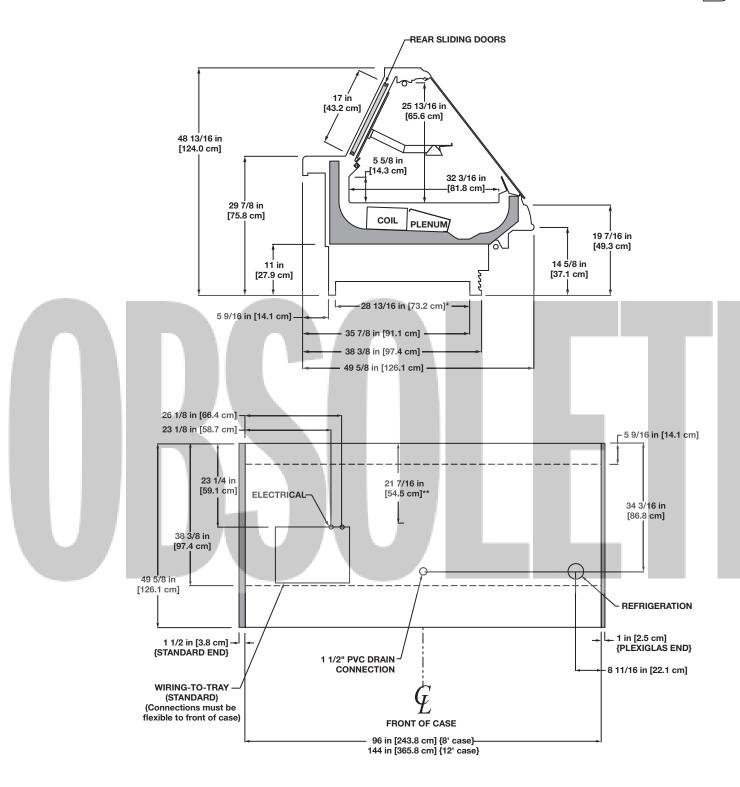
### **O2SIF**



SPECIALTY PRODUCTS

SERVICE

Deli/Meat/Seafood



#### NOTES:

STUB-UP AREA

- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT, REAR AND TOP SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
   ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
   SUCTION LINE 7/8", LIQUID LINE 1/2"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

### Flat Glass Service Deli Merchandiser OLF - 4', 6', 8' & 12'

#### **Electrical Data**

		Far	is per	Ambier	it Fans <sup>1</sup>	Standa	rd Fans	High Ef Fa		Anti-Cor Hea			Defrost	Heaters	
		С	ase	120	Volts	120	Volts	120	Volts	120	Volts	208	Volts	220	Volts
Model		Pri.	Amb.	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OLF	4'	2	2	0.30	11	0.68	34	0.30	22	3.33	400	1.92	400	2.22	532
	6'	2	3	0.45	17	0.68	34	0.30	22	5.00	600	2.88	600	3.33	798
	8'	3	4	0.60	22	1.02	51	0.45	33	6.66	800	3.85	800	4.44	1065
	12'	4	6	0.90	33	1.36	68	0.60	44	10.00	1200	5.77	1200	6.67	1600

1 Ambient fans are standard equipment for this case model. The primary fans can either be standard or high efficiency.

### **Lighting Data**

		Bulbs			al per Row		mum nting
		per	Bulb	120	Volts	120	Volts
Model		Row	Length	Amps	Watts	Amps	Watts
OLF	4'	1	4'	0.23	28	1.40	168
	6'	2	3'	0.37	44	2.20	264
	8'	2	4'	0.47	56	2.80	336
	12'	3	4'	0.70	84	4.20	504

### **Guidelines & Control Settings**

Model	<sup>1,2</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>4</sup> (FPM)
OLF	319 <sup>3</sup>	17	6-8	27	34	235

1 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.05.

2 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

3 Standard fans increase refrigeration load by 96 BTUH/fan

4 Average discharge air velocity at peak of defrost.

### **Defrost Controls**

			Electric Defrost		Timed Off Defrost <sup>5</sup>		Hot Ga	s Defrost	Reverse Air Defrost		
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
	OLF	2	6 - 8	35	47	50	47	20	45	<sup>6</sup>	

5 Not recommended on this model due to long defrost time.

6 NOTE: " - - - " not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm



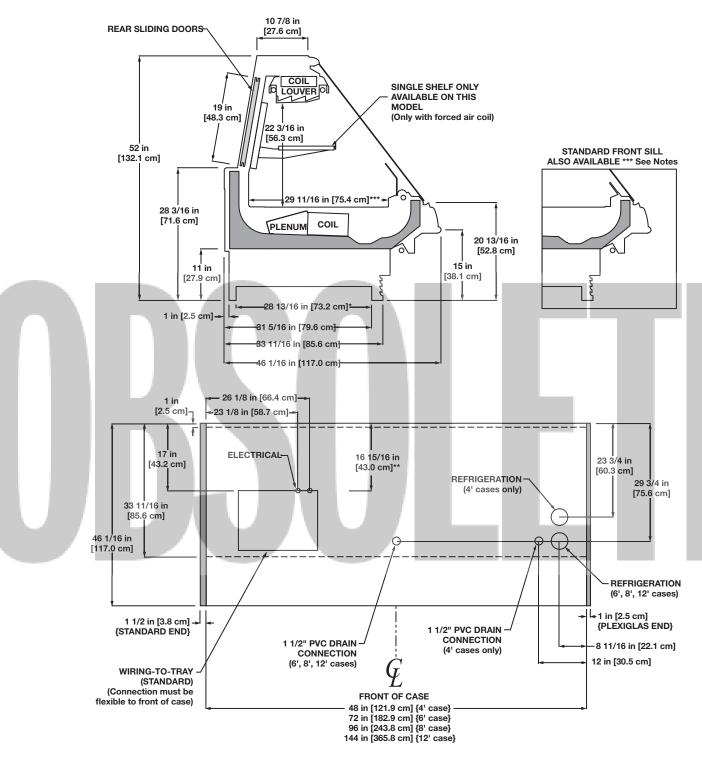




SPECIALTY

SERVIC

Del



NOTES:

- STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- \*\*\* WHEN CASE IS EQUIPPED WITH A NOSE LIGHT THE INTERIOR WIDTH IS 29 11/16"
- FRONT, REAR AND TOP SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- SUCTION LINE 7/8", LIQUID LINE 1/2"
- AVAILABLE SHELF SIZES: 10" & 12" (SINGLE ROW OF SHELVES PER CASE)
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

**NSF** 

COMPONENT

### Flat Glass Service Deli Gravity Coil Merchandiser OLFG - 4', 6', 8' & 12'

#### **Electrical Data**

		Fan	s per	Ambier	it Fans <sup>1</sup>	Standa	rd Fans	High Ef Fa			ndensate iters		Defrost	Heaters	
		Ca	ase	120	Volts	120	Volts	120	Volts	120	Volts	208	Volts	220	Volts
Model		Pri.	Amb.	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OLFG	4'	2	2	0.30	11	0.68	34	0.30	22	3.33	400	1.92	400	2.22	532
	6'	2	3	0.45	17	0.68	34	0.30	22	5.00	600	2.88	600	3.33	798
	8'	3	4	0.60	22	1.02	51	0.45	33	6.66	800	3.85	800	4.44	1065
	12'	4	6	0.90	33	1.36	68	0.60	44	10.00	1200	5.77	1200	6.67	1600

1 Ambient fans are standard equipment for this case model. The primary fans can either be standard or high efficiency.

## Lighting Data

		Bulbs			al per Row		mum nting
		per	Bulb	120	Volts	120	Volts
Model		Row	Length	Amps	Watts	Amps	Watts
OLFG	4'	1	4'	0.23	28	1.40	168
	6'	2	3'	0.37	44	2.20	264
	8'	2	4'	0.47	56	2.80	336
	12'	3	4'	0.70	84	4.20	504

### **Guidelines & Control Settings**

l	Model	<sup>3,,4</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
I	OLFG <sup>2</sup>	163⁵	15	6-8	31	38	125

2 If the OLFG is piped to a suction header lower than 10oF an EPR with a suction stop solenoid is required. If a suction stop solenoid is not provided at the rack a suction stop solenoid is required at the case. A liquid line solenoid alone will not allow the case to cycle properly and is not recommended for control of this case. The thermostat probe should be located on the inlet of the top coil. The cut out point should be set to 15oF and the cut in point should be set so that refrigeration starts as soon as the top coil ice starts to drip.

3 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.05.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

### **Defrost Controls**

				Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
N	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
C	OLFG	2	6 - 8	35	47	65	47	20	45	<sup>7</sup>	

7 NOTE: " - - - " not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm

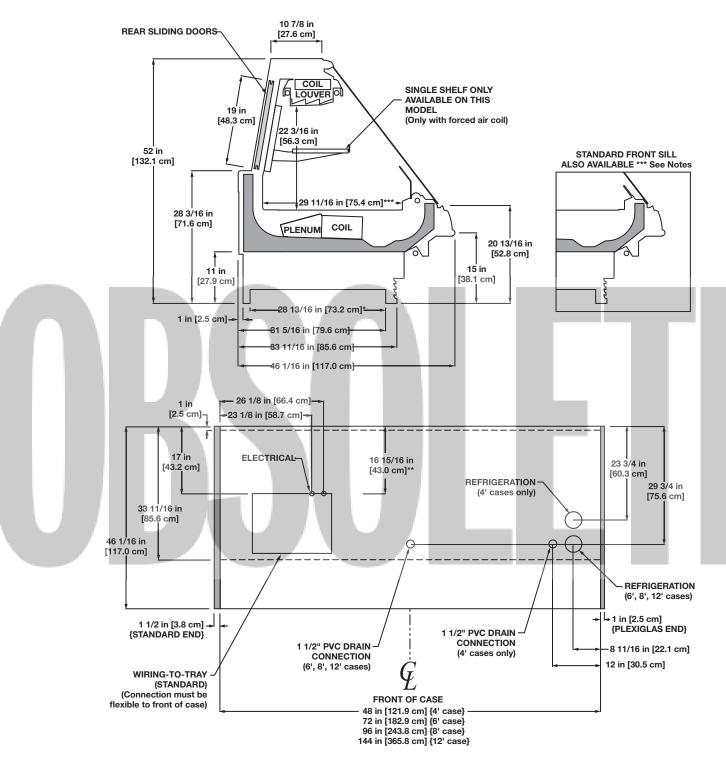
4 12 - 6 am - 12 - 6 pm





## **OLFG**





#### NOTES:

- \* STUB-UP AREA \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- \*\*\* WHEN CASE IS EQUIPPED WITH A NOSE LIGHT THE INTERIOR WIDTH IS 29 11/16"
- FRONT, REAR AND TOP SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- SUCTION LINE 7/8", LIQUID LINE 1/2"
   AVAILABLE SHELF SIZES: 10" & 12" (SINGLE ROW OF SHELVES PER CASE)
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



SERVIC

Del

		Si	ingle Ph	ase	т	hree Ph	ase
			240 Vol	ts		240 Vol	ts
Model		Amps	Watts	Breaker	Amps	Watts	Breaker
ON3W <sup>1</sup>	4'	18.2	4340	30			
	6'	<b></b> <sup>2</sup>			19	6480	30
	8'				25	8680	40

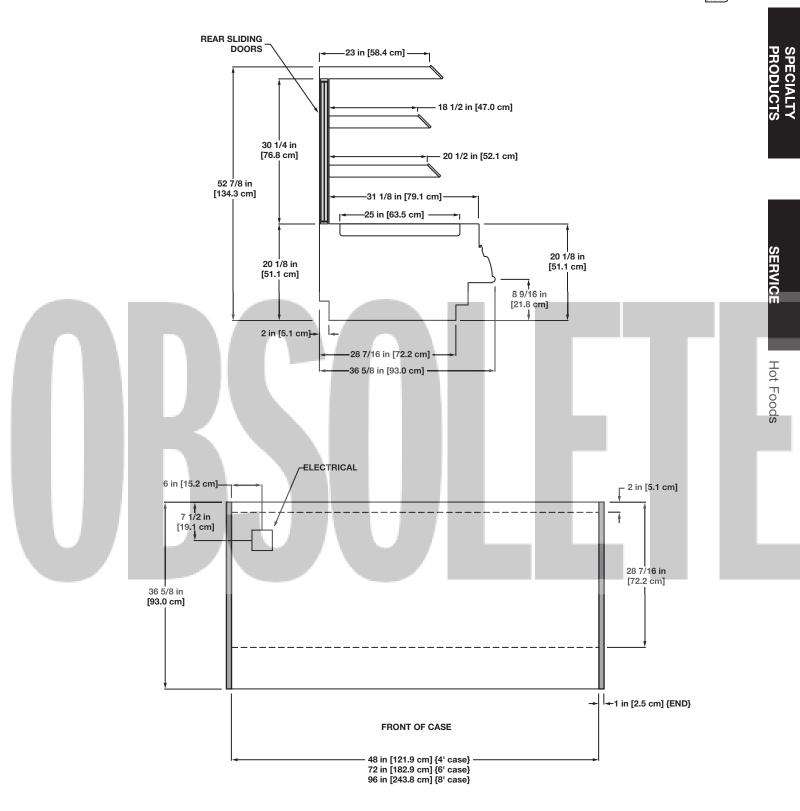
1 Wiring configuration is 3 wire + ground on 4' models and 4 wire + ground on 6' & 8' models. 2 NOTE: "- - - " not an option on this case model.











	Standard Fans			5			ndensate aters		Defrost	Heaters		
	Fans per		120 \	/olts	120	Volts	120 Volts		208 Volts		240 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OSA	4'	2	0.68	34	0.30	22	1.08	130	1.92	400	2.22	532
	6'	2	0.68	34	0.30	22	1.33	160	2.88	600	3.33	798
	8'	3	1.02	51	0.45	33	2.11	253	3.85	800	4.44	1065
	12'	4	1.36	68	0.60	44	2.93	352	5.77	1200	6.67	1600

### **Lighting Data**

		Bulbs			al per Row		mum nting
		per	Bulb	120	Volts	120	Volts
Model		Row	Length	Amps	Watts	Amps	Watts
OSA	4'	1	4'	0.23	28	1.17	140
	6'	2	3'	0.37	44	1.83	220
	8'	2	4'	0.47	56	2.33	280
	12'	3	4'	0.70	84	3.50	420

### **Guidelines & Control Settings**

Model	<sup>1</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>2</sup> (FPM)
OSA w/ Shelf Lights	208	22	6-8	30	39	235

1 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

2 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

3 Standard fans increase refrigeration load by 96 BTUH/fan.

4 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

			Electric Defrost		Timed Off Defrost <sup>3</sup>		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
OSA	2	6 - 8	35	50	75	50	20	45	4	

NSF

3 Not recommended on this model due to long defrost time.

4 NOTE: " - - - " not an option on this case model.

Medium Temperature Defrost Schedule

No.	Per	Dav	/	Hours

1 12 midnight

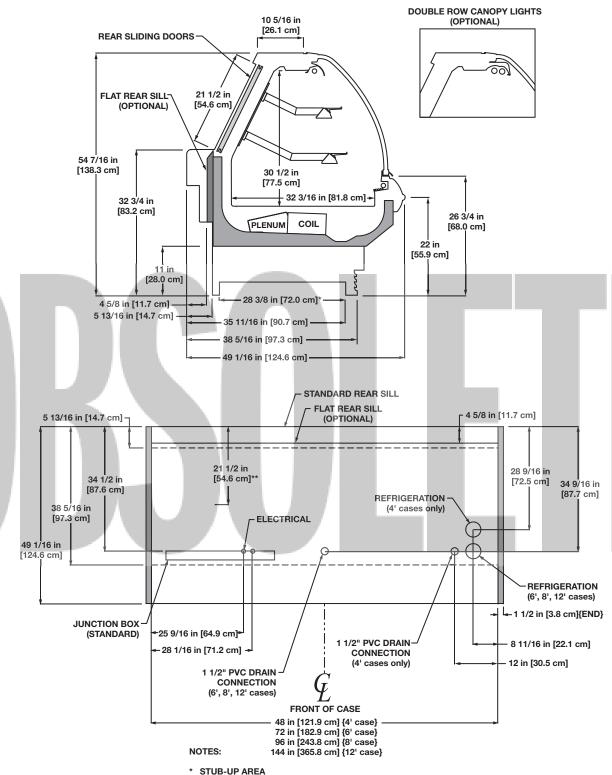
2 3

12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 4



#### **OSA** (11" BASEFRAME)





- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT, REAR AND TOP SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
   SUCTION LINE 7/8", LIQUID LINE 1/2"
   AVAILABLE SHELF SIZES: 10" & 12"

- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

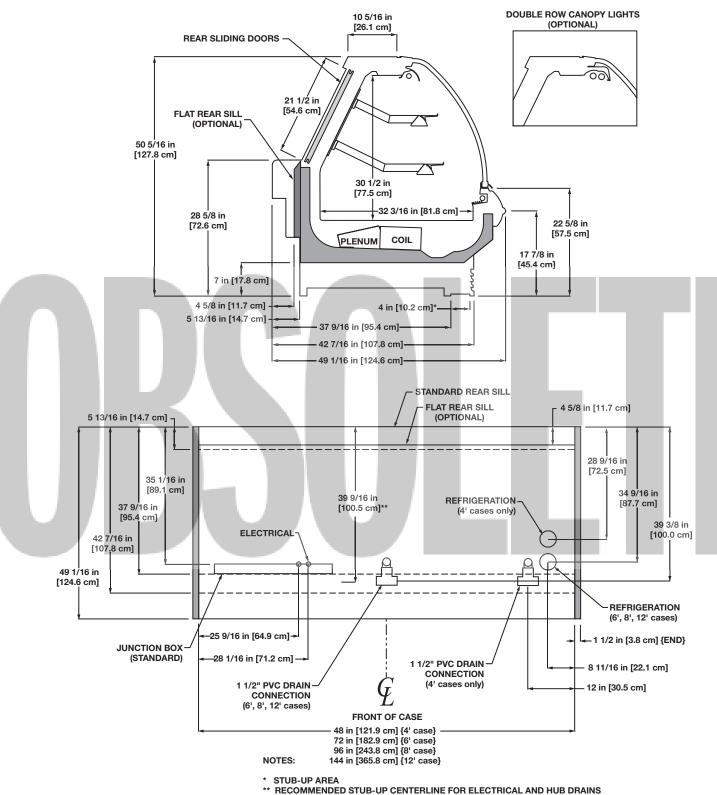


04/09

Deli

#### **OSA** (7" BASEFRAME)





- FRONT, REAR AND TOP SILL HEIGHTS VARY WITH BASEFRAME HEIGHT ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- SUCTION LINE 7/8", LIQUID LINE 1/2" • AVAILABLE SHELF SIZES: 10" & 12"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE







### American Style Curved Glass Service Deli/Meat/Seafood Gravity Coil Merchandiser

OSAG - 4', 6', 8' & 12'

### **Electrical Data**

	Standard Fans				High Efficiency An Standard Fans Fans					Defrost	Heaters	
	Fans per		120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OSAG	4'	2	0.68	34	0.30	22	1.48	178	<sup>1</sup>			
	6'	2	0.68	34	0.30	22	1.93	232				
	8'	3	1.02	51	0.45	33	2.91	349				
	12'	4	1.36	68	0.60	44	4.13	496				

1 NOTE: " - - - " not an option on this case model.

### **Lighting Data**

	I	Bulbs			al per Row		mum nting
		per	Bulb	120	Volts	120	Volts
Model		Row	Length	Amps	Watts	Amps	Watts
OSAG	4	' 1	4'	0.23	28	1.17	140
	6	' 2	3'	0.37	44	1.83	220
	8	' 2	4'	0.47	56	2.33	280
	12	' 3	4'	0.70	84	3.50	420
						1	

### Guidelines & Control Settings

Vodel	<sup>3,4</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
OSAG <sup>2</sup>	158⁵	15	6-8	21-31	38	125

2 A suction stop solenoid installed in the top coil's suction line is required for this case. Control of the solenoid can be achieved with a thermostat at the case or an external controller. A liquid line solenoid alone will not allow the case to cycle properly and is not recommended for control of this case. The thermostat probe should be located on the inlet of the top coil. The cut out temperature should be set to 300F and the cut in temperature should be set to 350F. These are recommended starting values and may need to be adjusted based on store conditions.

3 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.10.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

### **Defrost Controls**

			Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
OSAG	2	6 - 8			65	46	20	45		

NSF

Medium Temperature Defrost Schedule

No.	Per	Day	/ Hours

1 12 midnight

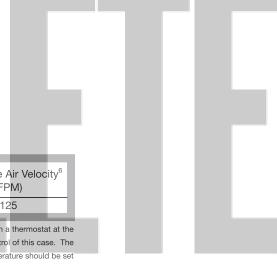
2 12 am - 12 pm

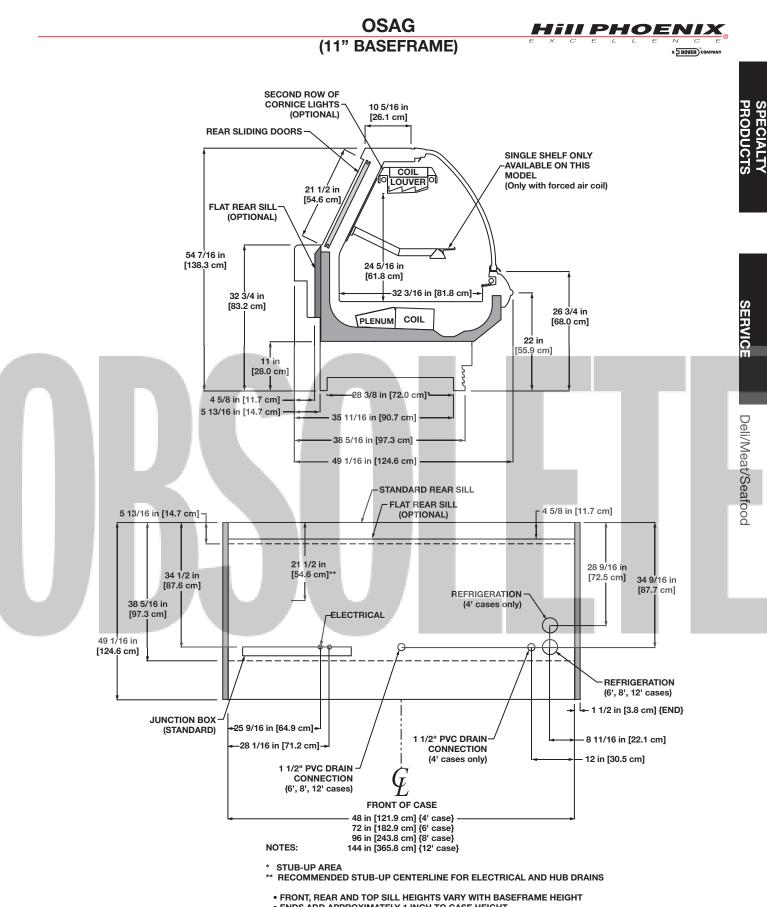
3 6 am - 2 pm - 10 pm 4 12 - 6 am - 12 - 6 pm





F	- 6		P	PH	C	DE	EN		X
E	×	С	E	L	L	E	N	C	E
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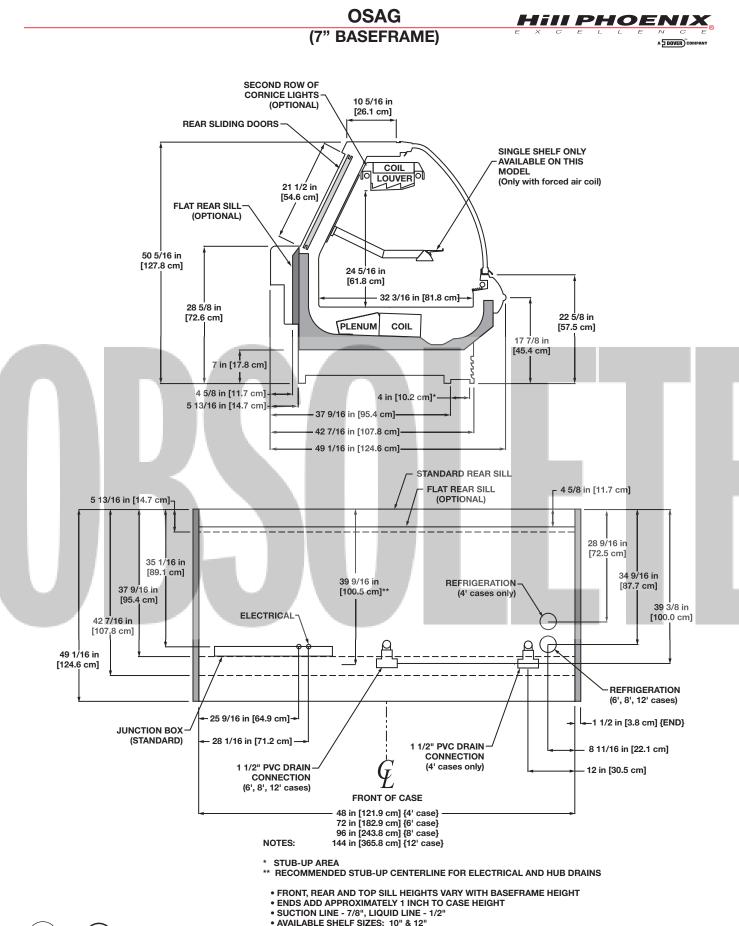




ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
 SUCTION LINE - 7/8", LIQUID LINE - 1/2"

- AVAILABLE SHELF SIZES: 10" & 12"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF<sub>®</sub>)



AVAILABLE SHELF SIZES. 10 & 12
 O &

NSF





			Standa	Standard Fans		High-Efficiency Fans		ndensate iters	Single-Pane Glass Ambient Fans		
			120 Volts		120 Volts		120 Volts		120 Volts		
Model		Fans per Case	Amps	Watts	Amps	Watts	Amps	Watts	Fans per Case	Amps	Watts
OSF	4'	2	0.68	34	0.30	22	0.17	20	2	0.30	22
	6'	2	0.68	34	0.30	22	0.70	84	3	0.50	33
	8'	3	1.02	51	0.45	33	0.74	89	4	0.60	44
	12'	4	1.36	68	0.60	44	1.10	132	6	0.90	66

### **Lighting Data**

				Typic Light	al per Row	Maximum Lighting 120 Volts		
		Bulbs per	Bulb	120	Volts			
Model		Row	Length	Amps	Watts	Amps	Watts	
OSF	4'	1	4'	0.23	28	1.15	140	
	6'	2	3'	0.37	44	1.85	220	
	8'	2	4'	0.47	56	2.35	280	
	12'	3	4'	0.70	84	3.50	420	

#### **Guidelines & Control Settings**

	Model	<sup>1,2</sup> BTUH/ft	Evaporator (F°)	Superheat Set Point @ bulb (F°)	Discharge Air (F°)	Return Air (F°)	Discharge Air Velocity <sup>4</sup> (F°)
I	OSF (Single Pane)	420 <sup>3</sup>	20	6-8	30	39	235
Į	OSF (Thermal Pane)	360 <sup>3</sup>	22	6-8	30	39	235

1 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.??.

2 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

3 Standard fans increase refrigeration load by 96 BTUH/fan.

4 Average discharge air velocity at peak of defrost.

### **Defrost Controls**

			Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)
OSF (Single Pane)	2	6-8	75	50	20	45	<sup>5</sup>	
OSF (Thermal Pane)	2	6-8	75	50	20	45		

US

5 NOTE: "- - -" indicates that this is not an option on this case model.

Medium Temperature Defrost Schedule

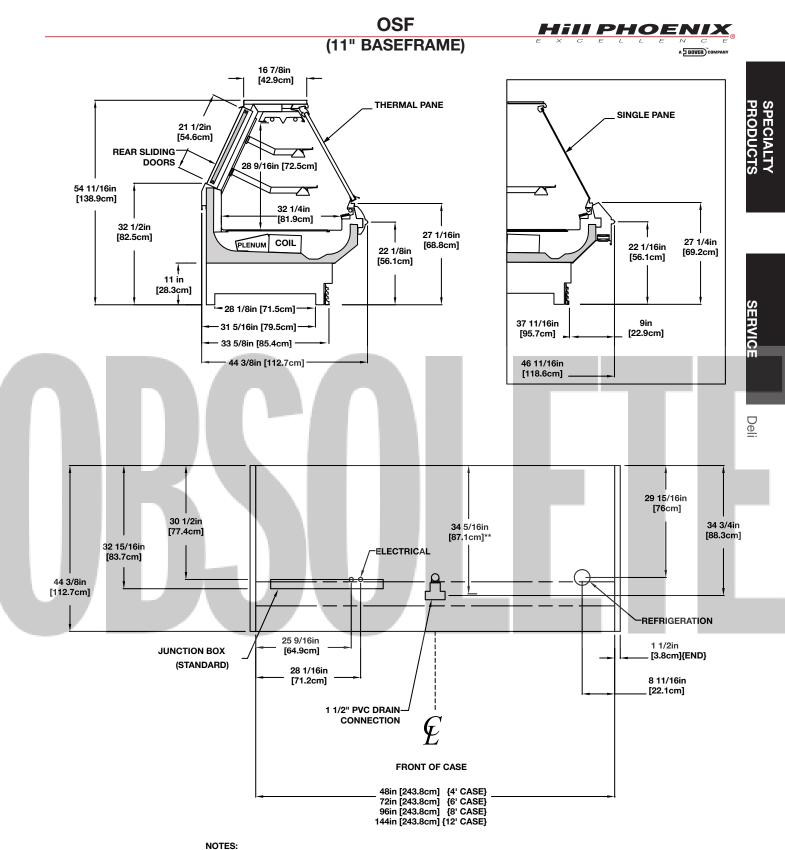
No.	Per	Day	Hours

12 midnight 6 am - 2 pm - 10 pm 1

2 4 12 - 6 am - 12 - 6 pm







\* : STUB-UP AREA

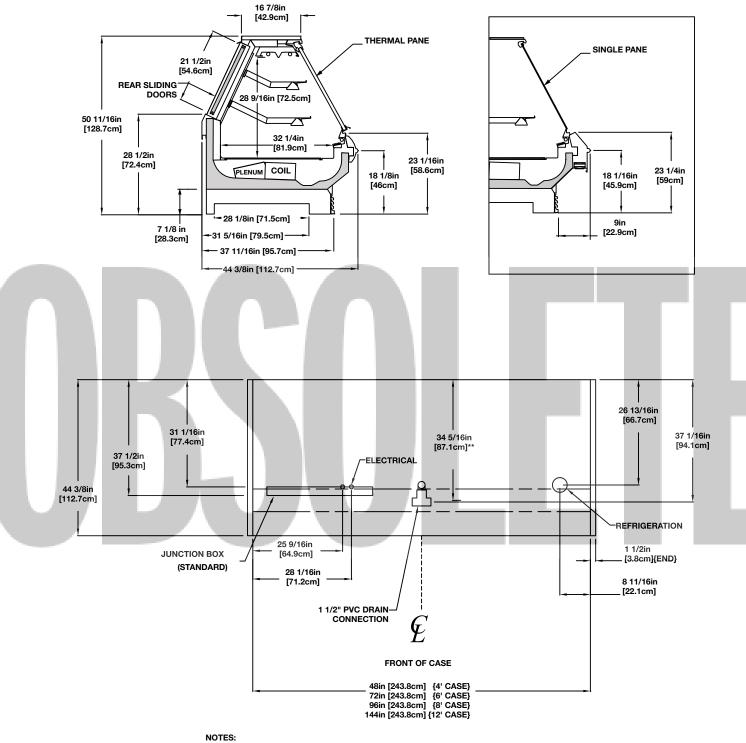
04/09

\*\* : RECOMMENDED STUP-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS

• DASHED LINES SIGNIFY INSIDE AREA OF BASE RAIL BEHIND KICK\_PLATE • ENDS ADD APPROXIMATELY 1" TO CASE HEIGHT • SUCTION LINE - 7/8", LIQUID LINE - 1/2" • AVAILABLE SHELF SIZES: 10" & 12"



#### OSF (7" BASEFRAME)



\*: STUB-UP AREA \*: STUB-UP AREA \*\* : RECOMMENDED STUP-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS

• DASHED LINES SIGNIFY INSIDE AREA OF BASE RAIL BEHIND KICK\_PLATE

ENDS ADD APPROXIMATELY 1" TO CASE HEIGHT
 SUCTION LINE - 7/8", LIQUID LINE - 1/2"
 AVAILABLE SHELF SIZES: 10" & 12"









## American Style Flat Glass Service Deli/Meat/Seafood Gravity Coil

#### Merchandiser

OSGF - 4', 6', 8' & 12'

### **Electrical Data**

I				Standar	d Fans	0	High Efficiency Fans		Anti-Condensate Heaters		Defrost Heaters			
	Fans per		Fans per	120 \	/olts	120	0 Volts 120 Volts		208	Volts	240 Volts			
	Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	
	OSGF	4'	2	0.68	34	0.30	22	1.48	178	1				
		6'	2	0.68	34	0.30	22	1.93	232					
		8'	3	1.02	51	0.45	33	2.91	349					
		12'	4	1.36	68	0.60	44	4.13	496					

1 NOTE: " - - - " not an option on this case model.

### **Lighting Data**

10 mm							
	Bulbs					mum nting	
		Bulb	120	Volts	120 Volts		
	Row	Length	Amps	Watts	Amps	Watts	
4'	1	4'	0.23	28	1.17	140	
6'	2	3'	0.37	44	1.83	220	
8'	2	4'	0.47	56	2.33	280	
12'	3	4'	0.70	84	3.50	420	
	6' 8'	4' 1 6' 2 8' 2	per Row         Bulb Length           4'         1         4'           6'         2         3'           8'         2         4'	Bulbs         Light           per         Bulb         120           Row         Length         Amps           4'         1         4'         0.23           6'         2         3'         0.37           8'         2         4'         0.4'	per Row         Bulb Length         120 Volts           4'         1         4'         0.23         28           6'         2         3'         0.37         44           8'         2         4'         0.47         56	Bulbs         Light Row         Light           per         Bulb         120 ∪olts         120           Row         Length         Amps         Watts         Amps           4'         1         4'         0.23         28         1.17           6'         2         3'         0.37         44         1.83           8'         2         4'         0.47         56         2.33	

### Guidelines & Control Settings

l	Model	<sup>3,4</sup> BTUH/ft		Superheat Set Point @ Bulb (°F)		Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
ъ	OSGF <sup>2</sup>	278 <sup>5</sup>	17	6-8	21	30	125

2 A suction stop solenoid installed in the top coil's suction line is required for this case. Control of the solenoid can be achieved with a thermostat at the case or an external controller. A liquid line solenoid alone will not allow the case to cycle properly and is not recommended for control of this case. The thermostat probe should be located on the inlet of the top coil. The cut out temperature should be set to 300F and the cut in temperature should be set to 350F. These are recommended starting values and may need to be adjusted based on store conditions.

3 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.10.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

### **Defrost Controls**

				Electri	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse	Air Defrost
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
l	OSGF	2	6 - 8			65	46	20	45		

Medium Temperature Defrost Schedule

No.	Per	Day	Hours

1 12 midnight

2 12 am - 12 pm

3 6 am - 2 pm - 10 pm 4 12 - 6 am - 12 - 6 pm

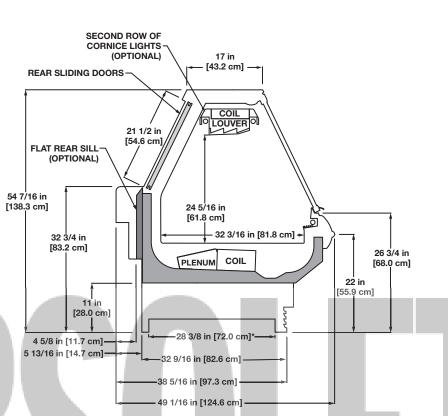


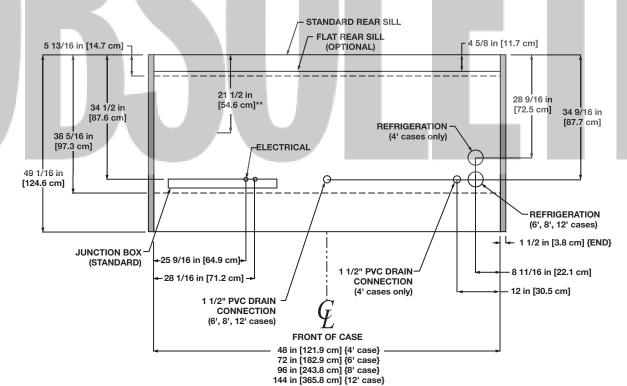






A DOVER



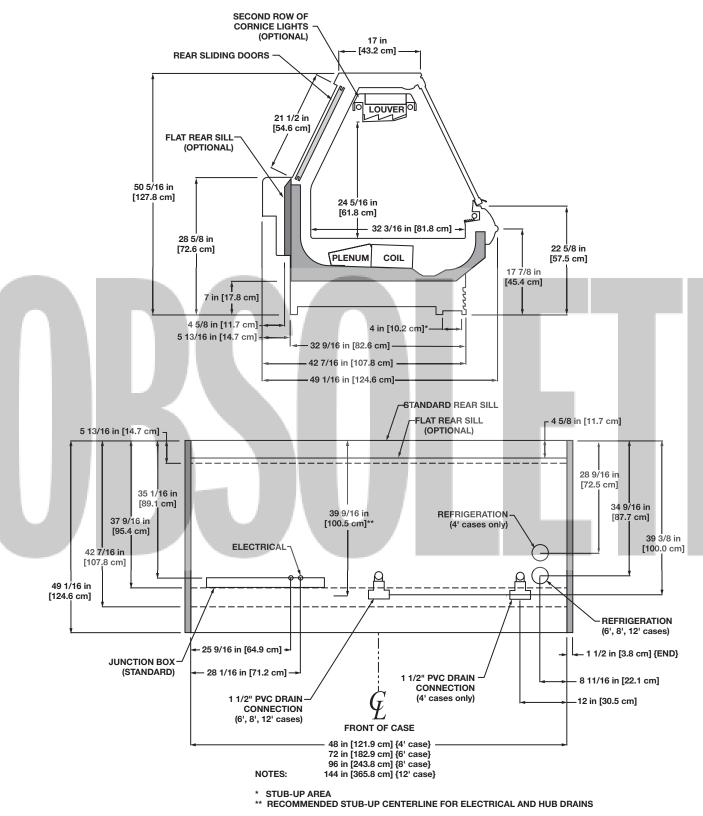


#### NOTES:

- \* STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT, REAR AND TOP SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- SUCTION LINE 7/8", LIQUID LINE 1/2"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

NSF





• FRONT, REAR AND TOP SILL HEIGHTS VARY WITH BASEFRAME HEIGHT

• ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

- SUCTION LINE 7/8", LIQUID LINE 1/2"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE







			Standar	d Fans		fficiency ans		ndensate aters		Defrost	Heaters	
	Fans per		120 \	/olts	120	120 Volts 120 Volts 208 Vol		Volts	240	Volts		
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OSI	4'	2	0.68	34	0.30	22	0.55	66	1.92	400	2.22	532
	6'	2	0.68	34	0.30	22	1.03	124	2.88	600	3.33	798
	8'	3	1.02	51	0.45	33	0.99	119	3.85	800	4.44	1065
	12'	4	1.36	68	0.60	44	1.49	179	5.77	1200	6.67	1600

### **Lighting Data**

		Bulbs		Light	al per Row	Maximum Lighting		
		per	Bulb	120	Volts	120	Volts	
Model		Row	Length	Amps	Watts	Amps	Watts	
OSI	4'	1	4'	0.23	28	0.70	84	
	6'	2	3'	0.37	44	1.10	132	
	8'	2	4'	0.47	56	1.40	168	
	12'	3	4'	0.70	84	2.10	252	

### **Guidelines & Control Settings**

l	Model	<sup>2,3</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
I	OSI <sup>1</sup>	318 <sup>4</sup>	22	6-8	31	38	175

1 Humidification system required on this case if customer decides to use for Fresh Meat application.

2 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.07.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH

Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

### **Defrost Controls**

l					Electric Defrost		Timed Off Defrost <sup>6</sup>		Hot Gas Defrost		Reverse Air Defrost	
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
	OSI	3	6 - 8	30	47	60	47	26	45	7		

NSF

6 Not recommended on this model due to long defrost time.

7 NOTE: " - - - " not an option on this case model.

Medium Temperature Defrost Schedule

No.	Per	Day	Hours

1 12 midnight

2 12 am - 12 pm

4 12 - 6 am - 12 - 6 pm





<sup>3 6</sup> am - 2 pm - 10 pm



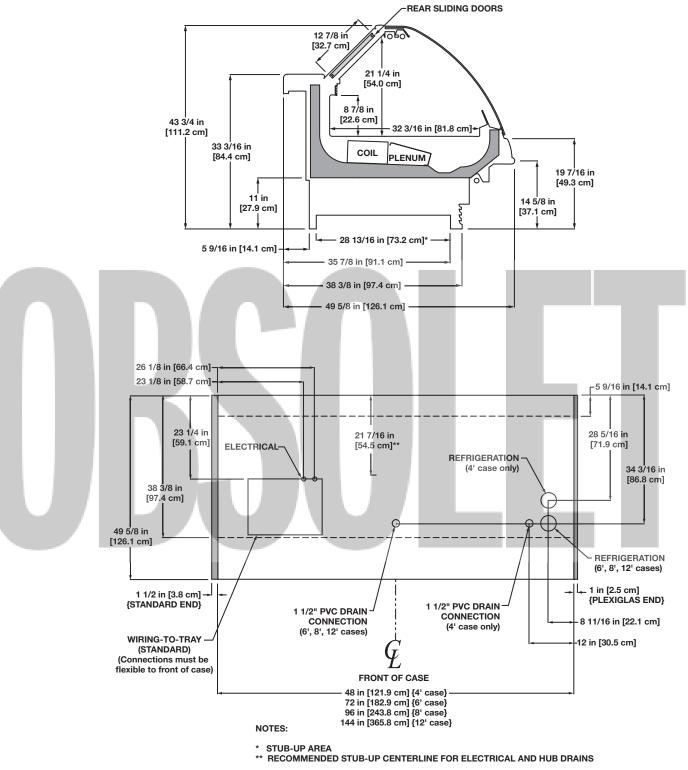
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Deli/Seafood



**OSI** 

• FRONT, REAR AND TOP SILL HEIGHTS VARY WITH BASEFRAME HEIGHT

• ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

- SUCTION LINE 7/8", LIQUID LINE 1/2"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF COMPONENT

### International Style Flat Glass Service Deli/Meat/Seafood Merchandiser OSIF - 4', 6', 8', & 12'

#### **Electrical Data**

			Standar	d Fans		fficiency ans		ndensate aters		Defrost	Heaters	
		Fans per	120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OSIF	4'	2	0.68	34	0.30	22	0.55	66	1.92	400	2.22	532
	6'	2	0.68	34	0.30	22	1.03	124	2.88	600	3.33	798
	8'	3	1.02	51	0.45	33	0.99	119	3.85	800	4.44	1065
	12'	4	1.36	68	0.60	44	1.49	179	5.77	1200	6.67	1600

### **Lighting Data**

			Bulbs	Bulb	Light	al per Row Volts	Maximum Lighting 120 Volts			
1	Model		per Row	Length	Amps	Watts	Amps	Watts		
	OSIF	4'	1	4'	0.23	28	0.70	84		
		6'	2	3'	0.37	44	1.10	132		
I		8'	2	4'	0.47	56	1.40	168		
I		12'	3	4'	0.70	84	2.10	252		

### **Guidelines & Control Settings**

l	Model	<sup>2,3</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
l	OSIF <sup>1</sup>	318 <sup>4</sup>	22	6-8	31	38	175

1 Humidification system required on this case when used for Fresh Meat application

2 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.07.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH

Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

### **Defrost Controls**

				Electric Defrost Time		Timed C	Off Defrost <sup>6</sup>	Hot Ga	s Defrost	Reverse Air Defrost	
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
l	OSIF	3	6 - 8	30	47	60	47	26	45	7	

6 Not recommended on this model due to long defrost time.

7 NOTE: " - - - " not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm







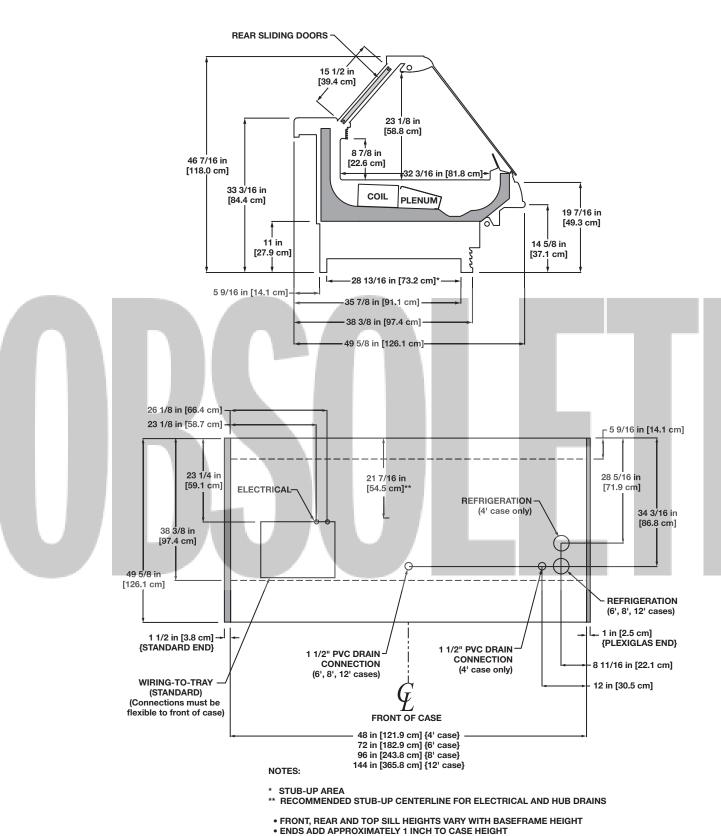
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Deli/Meat/Seafood





• SUCTION LINE - 7/8", LIQUID LINE - 1/2"

• DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF COMPONENT

				d Fans	0	fficiency ans		ndensate aters		Defrost	Heaters	
		Fans per	120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OSIO	4'	2	0.68	34	0.30	22	0.77	92	1.92	400	2.22	532
	6'	2	0.68	34	0.30	22	1.39	167	2.88	600	3.33	798
	8'	3	1.02	51	0.45	33	1.50	180	3.85	800	4.44	1065
	12'	4	1.36	68	0.60	44	2.22	266	5.77	1200	6.67	1600

### **Lighting Data**

		Bulbs		Light	al per Row	Maximum Lighting		
		per	Bulb	120	Volts	120	Volts	
Model		Row	Length	Amps	Watts	Amps	Watts	
OSIO	4'	1	4'	0.23	28	0.23	28	ĩ
	6'	2	3'	0.37	44	0.37	44	
	8'	2	4'	0.47	56	0.47	56	
	12'	3	4'	0.70	84	0.70	84	

### **Guidelines & Control Settings**

	Model	<sup>1,2</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>4</sup> (FPM)
I	OSIO	663 <sup>3</sup>	17	6-8	24	33	180

1 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.08.

2 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH

Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

3 Standard fans increase refrigeration load by 96 BTUH/fan.

4 Average discharge air velocity at peak of defrost.

### **Defrost Controls**

l				Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
l	OSIO	3	6 - 8	35	47	55	47	26	45	<sup>5</sup>	

NSF

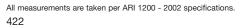
5 NOTE: " - - - " not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day	Hours				
1	12 midnight				
2	12 am - 12 pm				

3 6 am - 2 pm - 10 pm 4 12 - 6 am - 12 - 6 pm

- 12 - 0 am - 12 - 0 pm





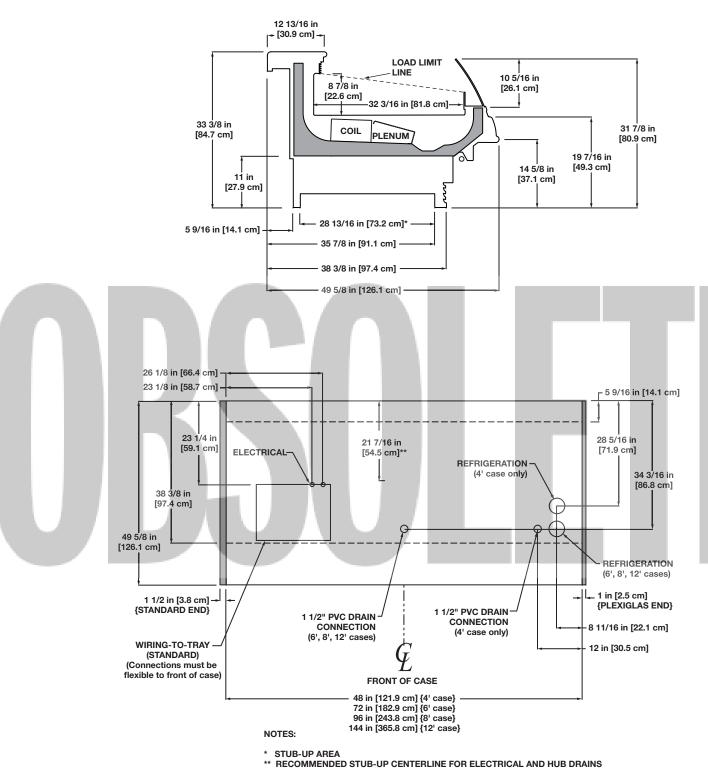


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SERVICE

Deli/Seafood



• FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- SUCTION LINE 7/8", LIQUID LINE 1/2"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

COMPONENT

(NSF

### **Electrical Data**

			Standa	rd Fans	0	fficiency ans	Anti-Con Hea			Defrost	Heaters	
		Fans per	120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OSM	6'	2	0.68	34	0.30	22	1.33	160	2.88	600	3.33	798
	8'	3	1.02	51	0.45	33	2.11	253	3.85	800	4.44	1065
	12'	4	1.36	68	0.60	44	2.93	352	5.77	1200	6.67	1600

# **Lighting Data**

		Bulbs			al per Row		mum Iting
		per	Bulb	120	Volts	120	Volts
Model	_	Row	Length	Amps	Watts	Amps	Watts
OSM	6'	2	3'	0.37	44	1.48	178
	8'	2	4'	0.47	56	1.88	226
	12'	3	4'	0.70	84	2.80	336

# **Guidelines & Control Settings**

Model	<sup>1,2</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>4</sup> (FPM)
OSM	208 <sup>3</sup>	22	6-8	30	39	235

1 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.05.

2 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH

Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

3 Standard fans increase refrigeration load by 96 BTUH/fan.

4 Average discharge air velocity at peak of defrost.

### **Defrost Controls**

l					Electric Defrost		Timed Off Defrost <sup>5</sup>		s Defrost	Reverse Air Defrost		
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
	OSM	2	6 - 8	35	50	75	50	20	45	<sup>6</sup>		

NSF

5 Not recommended on this model due to long defrost time.

6 NOTE: " - - - " not an option on this case model.

Medium Temperature Defrost Schedule

No.	Per	Dav	Hours

12 midnight 1

2

12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 3 4

All measurements are taken per ARI 1200 - 2002 specifications.





### OSM (11" BASEFRAME)

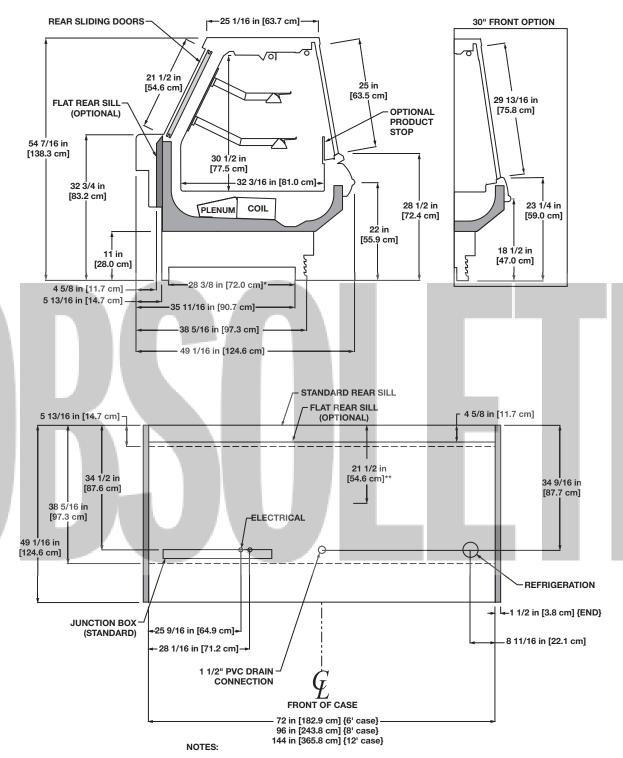


SPECIALTY PRODUCTS

SERVIC

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Deli



\* STUB-UP AREA

\*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS

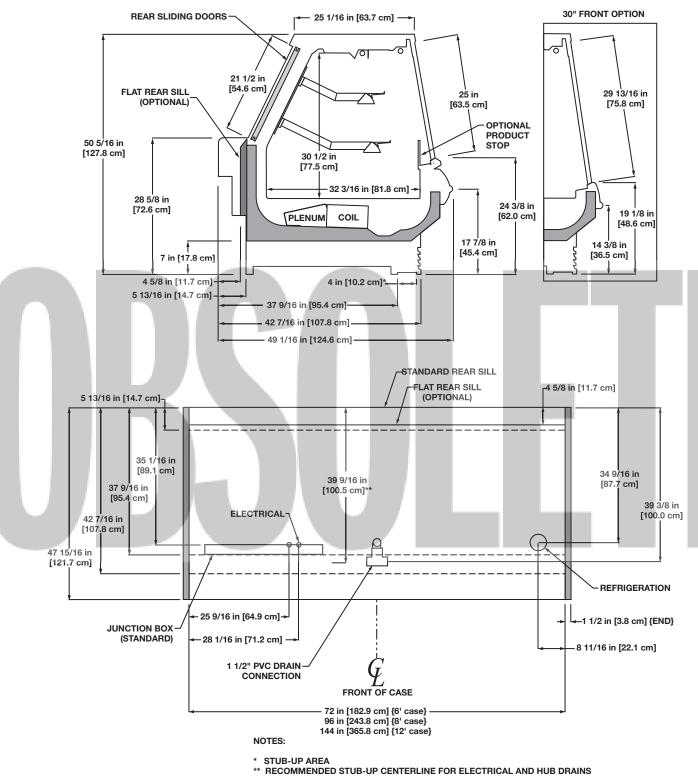
• FRONT, REAR AND TOP SILL HEIGHTS VARY WITH BASEFRAME HEIGHT

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
   SUCTION LINE 7/8", LIQUID LINE 1/2"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



(NSF

### **OSM** (7" BASEFRAME)



- FRONT, REAR AND TOP SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

- SUCTION LINE 7/8", LIQUID LINE 1/2"
   AVAILABLE SHELF SIZES: 10" & 12" \
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE











# American Style Flat Glass Service Frozen Food Merchandiser OSMLZ - 4' & 6'

### **Electrical Data**

	Stand				High Ef Standard Fans Fa			ndensate aters	Defrost Heaters				
	Fans per		120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	
OSMLZ	4'	2	0.68	34	0.30	22	1.09	131	3.85	800	4.43	1064	
	6'	2	0.68	34	0.30	22	1.53	184	5.77	1200	6.65	1596	

# **Lighting Data**

	Bulbs			Typic Light	al per Row		mum iting
Model		per Row	Bulb Length	120 Amps	Volts Watts	120 Amps	Volts Watts
OSMLZ	4'	1	3'	0.19	23	0.38	46
	6'	1	5'	0.28	34	0.56	67

# **Guidelines & Control Settings**

l	Model	<sup>1,2</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>4</sup> (FPM)
ł	OSMLZ	198 <sup>3</sup>	Enh.	-10	3-5	5	15	120

1 BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.07.

2 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

3 Standard fans increase refrigeration load by 96 BTUH/fan.

4 Average discharge air velocity at peak of defrost.

### **Defrost Controls**

l				Electri	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse Air Defrost		
	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	
	OSMLZ	2	13 - 15	45	48	5		20	60			

5 NOTE: "- - -" not an option on this case model.

Low Temperature Defrost Schedule

 No. Per Day
 Hours

 1
 10 pm

 2
 6 am - 10 pm\*\*

\*\* Or immediately after store closing hour

All measurements are taken per ARI 1200 - 2002 specifications.  $428\,$ 



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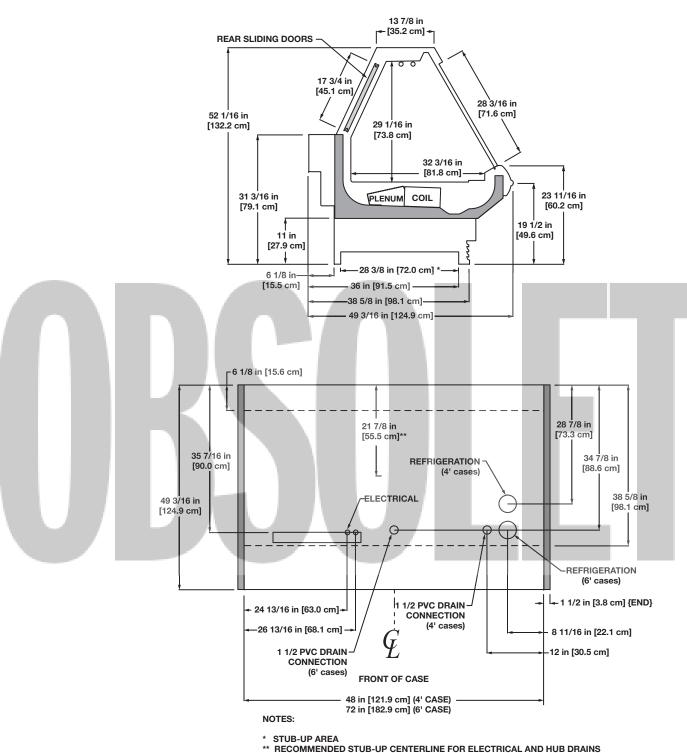


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> SPECIALTY PRODUCTS

SERVICE

Frozen Food



- FRONT, REAR AND TOP SILL HEIGHTS VARY WITH BASEFRAME HEIGHT

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
   SUCTION LINE 7/8", LIQUID LINE 3/8"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF<sub>®</sub> COMPONENT

04/09

### **Electrical Data**

			Standar	d Fans	0	fficiency ans		ndensate aters		Defrost	Heaters	
		Fans per	120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OWSI	4'	2	0.68	34	0.30	22	0.55	66	1.92	400	2.22	532
	6'	2	0.68	34	0.30	22	1.03	124	2.88	600	3.33	798
	8'	3	1.02	51	0.45	33	0.99	119	3.85	800	4.44	1065
	12'	4	1.36	68	0.60	44	1.49	179	5.77	1200	6.67	1600

# **Lighting Data**

		Bulbs		Light	al per Row	Ligh	mum Iting
		per	Bulb	120	Volts	120	Volts
Model		Row	Length	Amps	Watts	Amps	Watts
OWSI	4'	1	4'	0.23	28	0.70	84
	6'	2	3'	0.37	44	1.10	132
	8'	2	4'	0.47	56	1.40	168
	12'	3	4'	0.70	84	2.10	252

# **Guidelines & Control Settings**

I	Model	<sup>2,3</sup> BTUH/ft		Superheat Set Point @ Bulb (°F)		Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
	OWSI <sup>1</sup>	418 <sup>4</sup>	22	6-8	31	38	175

1 Humidification system required on this case if customer decides to use for Fresh Meat application.

2 BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.07. 3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

				c Defrost	Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Mode	el Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
OWS	SI 3	6 - 8	30	47	60 <sup>6</sup>	47 <sup>6</sup>	26	45	<sup>7</sup>	

6 Not recommended on this model due to long defrost time.

7 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	10 6 cm 10 6 cm

4 12 - 6 am - 12 - 6 pm

All measurements are taken per ARI 1200 - 2002 specifications.







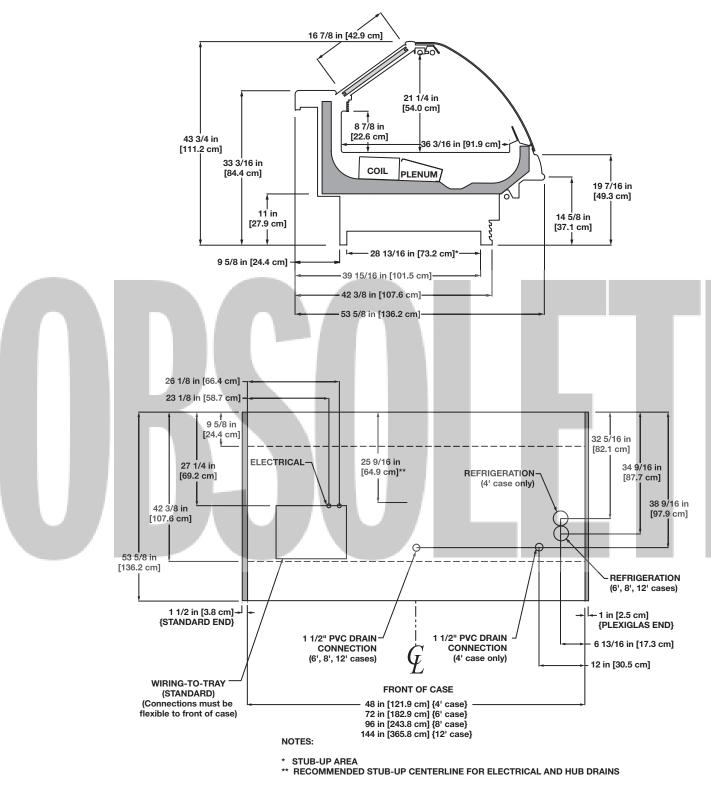




SPECIALTY PRODUCTS

SERVICE

Deli/Seafood



• FRONT, REAR AND TOP SILL HEIGHTS VARY WITH BASEFRAME HEIGHT

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- SUCTION LINE 7/8", LIQUID LINE 1/2"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF)

# Wide International Style Single Deck Deli/Seafood Merchandiser OWSIO - 4', 6', 8' & 12'

### **Electrical Data**

			Standar	d Fans	0	High Efficiency Fans		ndensate aters		Defrost	Heaters	
	Fans per		120 Volts		120	Volts	120 Volts		208 Volts		240 Volts	
Model	Model Case		Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OWSIO	SIO 4' 2		0.68	34	0.30	22	0.77	92	1.92	400	2.22	532
	6'	2	0.68	34	0.30	22	1.39	167	2.88	600	3.33	798
	8'	3	1.02	51	0.45	33	1.50	180	3.85	800	4.44	1065
	12'	4	1.36	68	0.60	44	2.22	266	5.77	1200	6.67	1600

### **Lighting Data**

		Bulbs		Light	al per Row	Maximum Lighting		
		per	Bulb	120	Volts	120	Volts	
Model		Row	Length	Amps	Watts	Amps	Watts	
OWSIO	4'	1	4'	0.23	28	0.23	28	
	6'	2	3'	0.37	44	0.37	44	
	8'	2	4'	0.47	56	0.47	56	
	12'	3	4'	0.70	84	0.70	84	

### **Guidelines & Control Settings**

	Model	<sup>1.2</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>4</sup> (FPM)
k	OWSIO	763 <sup>3</sup>	17	6-8	24	33	180

1 BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.08.

2 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

3 Standard fans increase refrigeration load by 96 BTUH/fan.

4 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

l			Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost		
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
I	OWSIO	3	6 - 8	35	47	55	47	26	45	<sup>5</sup>	

5 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

No.	Per	Day	Hours
		_	

- 1 12 midnight
- 2 12 am 12 pm 3 6 am - 2 pm - 10 pm

4 12 - 6 am - 12 - 6 pm

All measurements are taken per ARI 1200 - 2002 specifications. 432



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# **HIII PHOENIX**

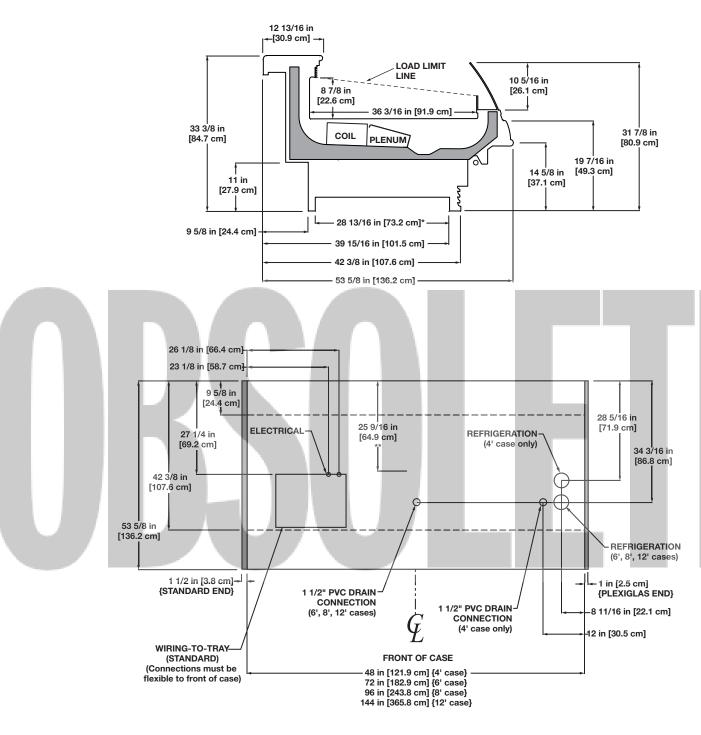
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> SPECIALTY PRODUCTS

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Deli/Seafood



NOTES:

- \*
- STUB-UP AREA \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- SUCTION LINE 7/8", LIQUID LINE 1/2"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF COMPONENT

# Flat Glass Gravity Coil Meat Merchandiser with CoolGenix<sup>™</sup> Technology P2SGF - 4', 6', 8', 12'

### **Electrical Data**

			ndary <sup>1</sup> It Pump	Anti-Condensate Heaters			
		120	Volts	120	Volts		
Model		Amps Watts		Amps	Watts		
P2SGF	4'	2.00	240	0.55	66		
	6'	2.00	240	1.03	124		
	8'	2.00	240	1.03	124		
	12'	2.00	240	1.60 192			

1 Secondary coolant pump is only applicable for the semi-self-contained version.

# Lighting Data

		Bulbs			al per Row	Maximum Lighting 120 Volts	
		per	Bulb	120	Volts		
Model		Row	Length	Amps	Watts	Amps	Watts
P2SGF	4	4' 1	4'	0.23	28	0.23	28
	6	6' 2	3'	0.37	44	0.37	44
	8	3' 2	4'	0.47	56	0.47	56
	12	2' 3	4'	0.70	84	0.70	84

# Guidelines & Control Settings - Semi-Self-Contained

Model	<sup>3,4</sup> BTUH/ft	Supply Temp. (°F)	Chiller Temp. (°F)	Flow Rate <sup>6</sup> GPM/ft	Charge <sup>7</sup> GAL/ft	Max. Working Pressure (PSIG)	Max. Static Pressure (PSIG)
P2SGF <sup>2</sup>	350 <sup>5</sup>	26	20	0.45	0.27	50	70

### Guidelines & Control Settings - Remote Secondary

		3407044	Supply Temp. (°F)	Flow Rate	
	Model	<sup>o,•</sup> BTUH/ft	Temp. (*F)	GPM/ft°	GAL/ft
	P2SGF <sup>2</sup>	300 <sup>5</sup>	26	0.45	0.27
ŀ					0

2 When calculating charge I45 wedges are equivalent to an 8' case and E90 wedges are equivalent to an 12' case.

3 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Minimum flow rate.

7 For semi-self-contained cases, add 2.75 gallon of fluid for the chiller to the total charge.

# **Defrost Controls**

	Top Coil		Electric Defrost		Timed Off Defrost		Warm Fluid Defrost		Reverse Air Defrost	
Model	Defrosts	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
P2SGF	1	5	<sup>8</sup>		50	45				

8 NOTE: "- - -" not an option on this case model.





# Cut in / Cut Out

Pans

Top Coil

Cut Out

Temp. (°F)

29

31

Cut in

Temp. (°F)

33

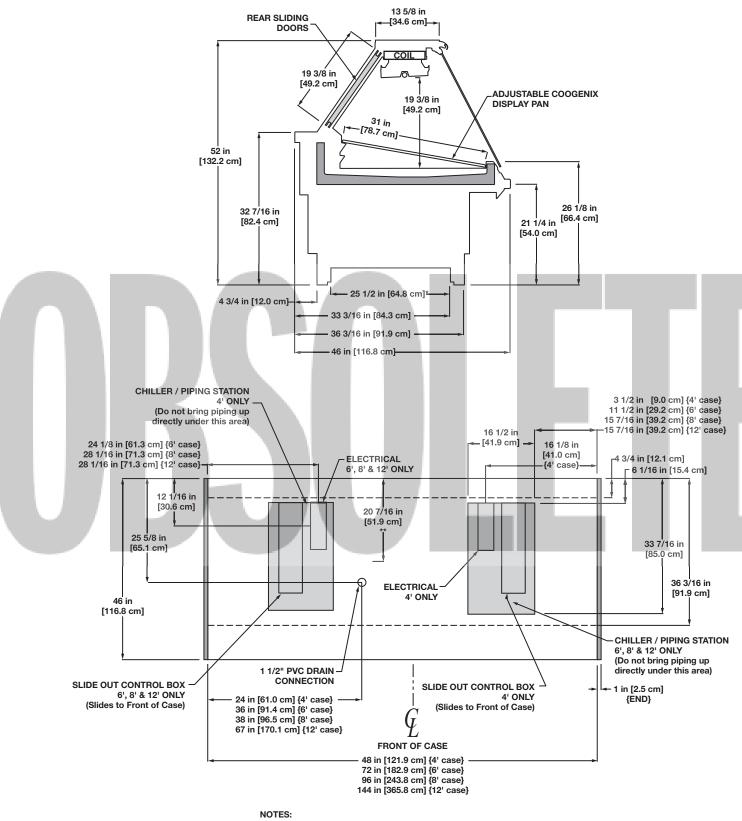


SPECIALTY PRODUCTS

SERVIC

11

Meat



--

\* STUB-UP AREA \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS



### **Electrical Data**

			Standar	d Fans		ficiency Ins		ndensate iters		Defrost	Heaters	
		Fans per	120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
PDIF	8'	3	1.02	51	0.45	33	2.10	252	3.85	800	4.44	1065
	12'	4	1.36	68	0.60	44	3.20	384	5.77	1200	6.67	1600

# Lighting Data

		Bulbs		Typical per Light Row		Maximum Lighting	
		per	Bulb	120	Volts	120	Volts
Model		Row	Length	Amps	Watts	Amps	Watts
PDIF	8'	2	4'	0.47	56	0.47	56
	12'	3	4'	0.70	84	0.70	84

# **Guidelines & Control Settings**

I	Model	<sup>1,2</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)		Return Air (°F)	Discharge Air Velocity <sup>4</sup> (FPM)
E	PDIF	361 <sup>3</sup>	17	6-8	28	39	100

1 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.05.

2 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

3 Standard fans increase refrigeration load by 96 BTUH/fan.

4 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

			Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost		
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
	PDIF	4	6 - 8	30	47	40	47	26	45	5	

5 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

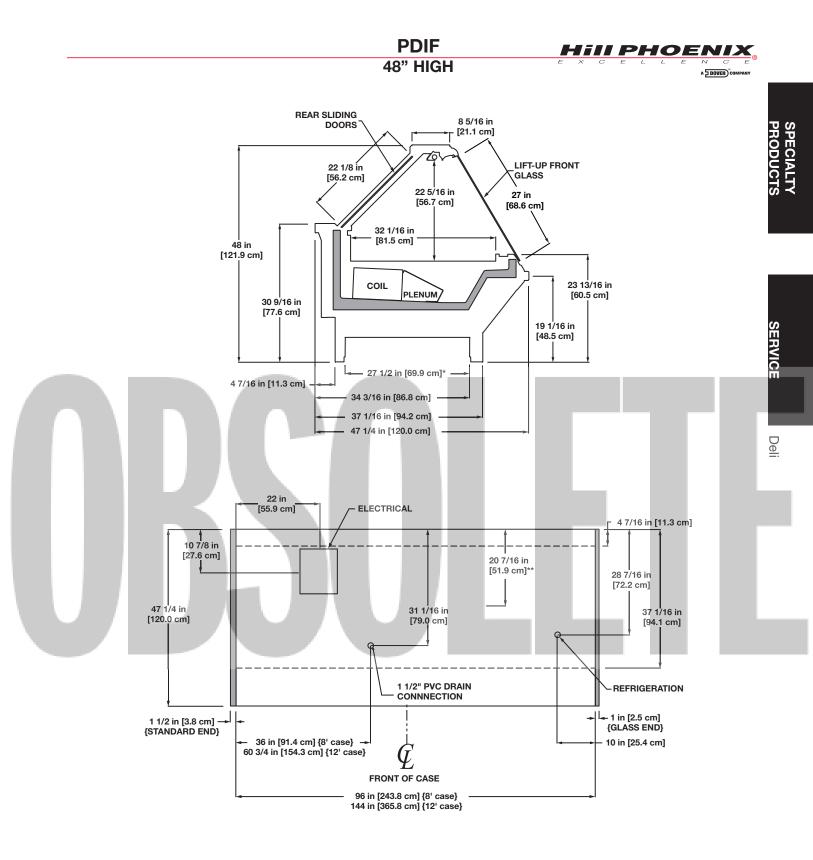
No. Per Day	Hours	

1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm

All measurements are taken per ARI 1200 - 2002 specifications.







#### NOTES:

- \* STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

- DX: SUCTION LINE 7/8", LIQUID LINE 1/2"
   SC: SUPPLY LINE 7/8", RETURN LINE 7/8"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



# Gravity Coil Meat Merchandiser with CoolGenix<sup>™</sup> Technology PSG - 4', 6', 8', 12, E30 & E45

### **Electrical Data**

			ndary <sup>1</sup> It Pump	Anti-Condensate Heaters		
		120	Volts	120 Volts		
Model		Amps	Watts	Amps	Watts	
PSG	4'	2.00	240	0.55	66	
	6'	2.00	240	1.03	124	
	8'	2.00	240	1.03	124	
	12'	2.00	240	1.60	192	
	E30	2.00	240	1.03	124	
	E45	2.00	240	1.03	124	

1 Secondary coolant pump is only applicable for the semi-self-contained version.

# Lighting Data

Bulbs per		Bulb	Typical per Light Row 120 Volts		Maximum Lighting 120 Volts	
	Row	Length	Amps	Watts	Amps	Watts
4'	1	4'	0.23	28	0.23	28
6'	2	3'	0.37	44	0.37	44
8'	2	4'	0.47	56	0.47	56
12'	3	4'	0.70	84	0.70	84
E30	2	3'	0.37	44	0.37	44
E45	2	3'	0.37	44	0.37	44
	6' 8' 12' E30	Row           4'         1           6'         2           8'         2           12'         3           E30         2	Row         Length           4'         1         4'           6'         2         3'           8'         2         4'           12'         3         4'           E30         2         3'	Row         Length         Amps           4'         1         4'         0.23           6'         2         3'         0.37           8'         2         4'         0.47           12'         3         4'         0.70           E30         2         3'         0.37	Row         Length         Amps         Watts           4'         1         4'         0.23         28           6'         2         3'         0.37         44           8'         2         4'         0.47         56           12'         3         4'         0.70         84           E30         2         3'         0.37         44	Row         Length         Amps         Watts         Amps           4'         1         4'         0.23         28         0.23           6'         2         3'         0.37         44         0.37           8'         2         4'         0.47         56         0.47           12'         3         4'         0.70         84         0.70           E30         2         3'         0.37         44         0.37

### Guidelines & Control Settings - Semi-Self-Contained

Model	<sup>3,4</sup> BTUH/ft	Supply Temp. (°F)		Flow Rate <sup>3</sup> GPM/ft	5	Max. Working Pressure (PSIG)	Max. Static Pressure (PSIG)
PSG <sup>2</sup>	350 <sup>5</sup>	26	20	0.45	0.27	50	70

### Guidelines & Control Settings - Remote Secondary

Model	<sup>3,4</sup> BTUH/ft	Supply Temp. (°F)	Flow Rate GPM/ft <sup>6</sup>	Charge GAL/ft <sup>7</sup>
PSG <sup>2</sup>	300 <sup>5</sup>	26	0.45	0.27

2 When calculating charge, E30 and E45 wedges are equivalent to an 8' case.

3 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Minimum flow rate.

7 For semi-self-contained cases, add 2.75 gallon of fluid for the chiller to the total charge.

# **Defrost Controls**

	Top Coil			Electri	c Defrost	Timed C	Off Defrost	Warm Fl	uid Defrost	Reverse	Air Defrost
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
	PSG	1	5	<sup>8</sup>		50	45				

8 NOTE: "- - -" not an option on this case model.





### Cut in / Cut Out

Pans

Top Coil

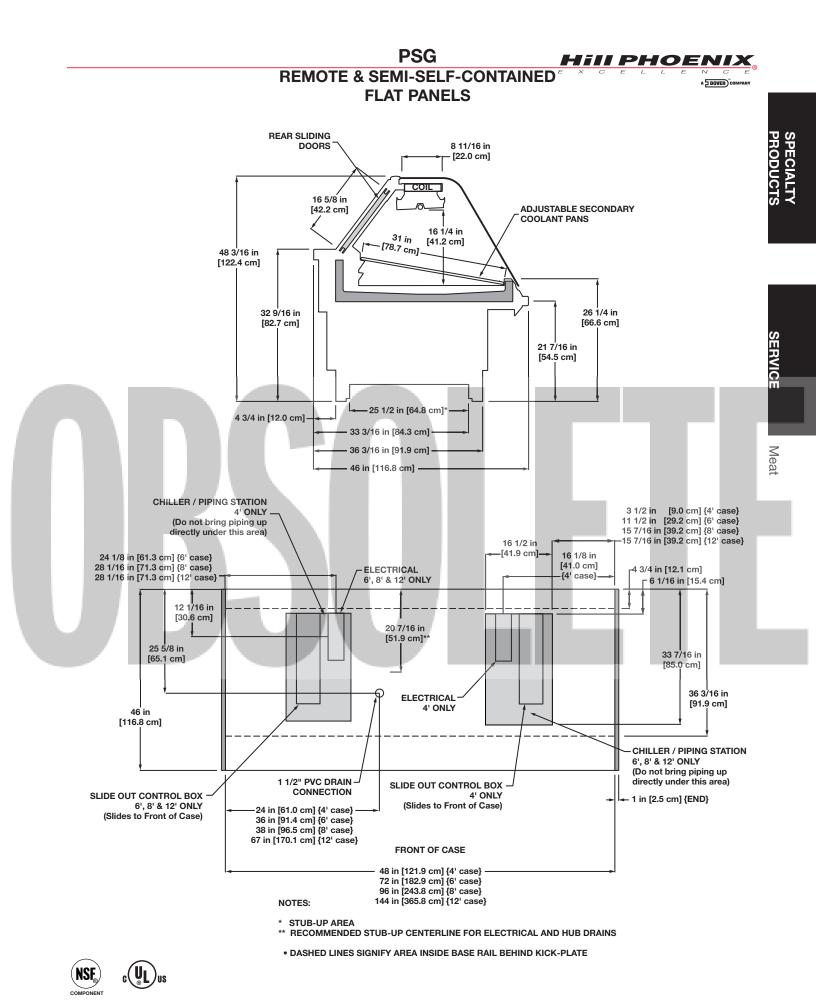
Cut Out

Temp. (°F)

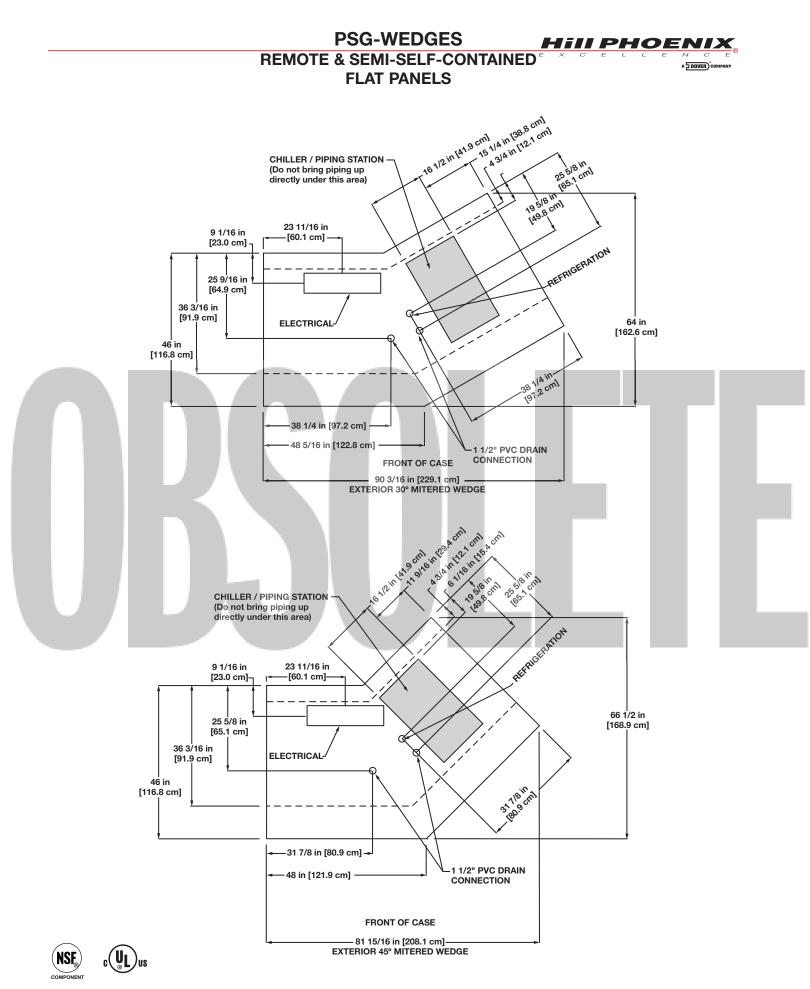
29

31

Cut in Temp. (°F)



04/09







# Flat Glass Gravity Coil Meat Merchandiser with CoolGenix<sup>™</sup> Technology PSGF - 4', 6', 8', 12' & E90

### **Electrical Data**

			ndary <sup>1</sup> It Pump	Anti-Condensate Heaters		
		120	Volts	120 Volts		
Model		Amps	Watts	Amps	Watts	
PSGF	4'	2.00	240	0.55	66	
	6'	2.00	240	1.03	124	
	8'	2.00	240	1.03	124	
	12'	2.00	240	1.60	192	
	E90	2.00	240	1.60	192	

1 Secondary coolant pump is only applicable for the semi-self-contained version.

# Lighting Data

Model		per Row	Bulb	120	Volts	120	
Model		Dow				120	vona
		HOW	Length	Amps	Watts	Amps	Watts
PSGF	4'	1	4'	0.23	28	0.23	28
	6'	2	3'	0.37	44	0.37	44
	8'	2	4'	0.47	56	0.47	56
	12'	3	4'	0.70	84	0.70	84
E	90	3	3'	0.55	66	0.55	66

### Guidelines & Control Settings - Semi-Self-Contained

Model	<sup>3,4</sup> BTUH/ft	Supply Temp. (°F)	Chiller Temp. (°F)	Flow Rate GPM/ft <sup>6</sup>	Charge GAL/ft <sup>7</sup>	Max. Working Pressure (PSIG)	Max. Static Pressure (PSIG)
PSGF <sup>2</sup>	350 <sup>5</sup>	26	20	0.45	0.27	50	70

# Guidelines & Control Settings - Remote Secondary

		Supply	Flow Rate	Charge
Model	<sup>3,4</sup> BTUH/ft	Temp. (°F)	GPM/ft <sup>6</sup>	GAL/ft
PSGF <sup>2</sup>	300 <sup>5</sup>	26	0.45	0.27

2 When calculating charge, I45 wedges are equivalent to an 8' case and E90 wedges are equivalent to an 12' case.

3 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Minimum flow rate.

7 For semi-self-contained cases, add 2.75 gallon of fluid for the chiller to the total charge.

# **Defrost Controls**

		Top Coil		Electric		Timed C	Timed Off Defrost		uid Defrost	Reverse Air Defrost	
	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
l	PSGF	1	5	<sup>8</sup>		50	45				

8 NOTE: "- - -" not an option on this case model.





# Cut in / Cut Out

Pans

Top Coil

Cut Out

Temp. (°F)

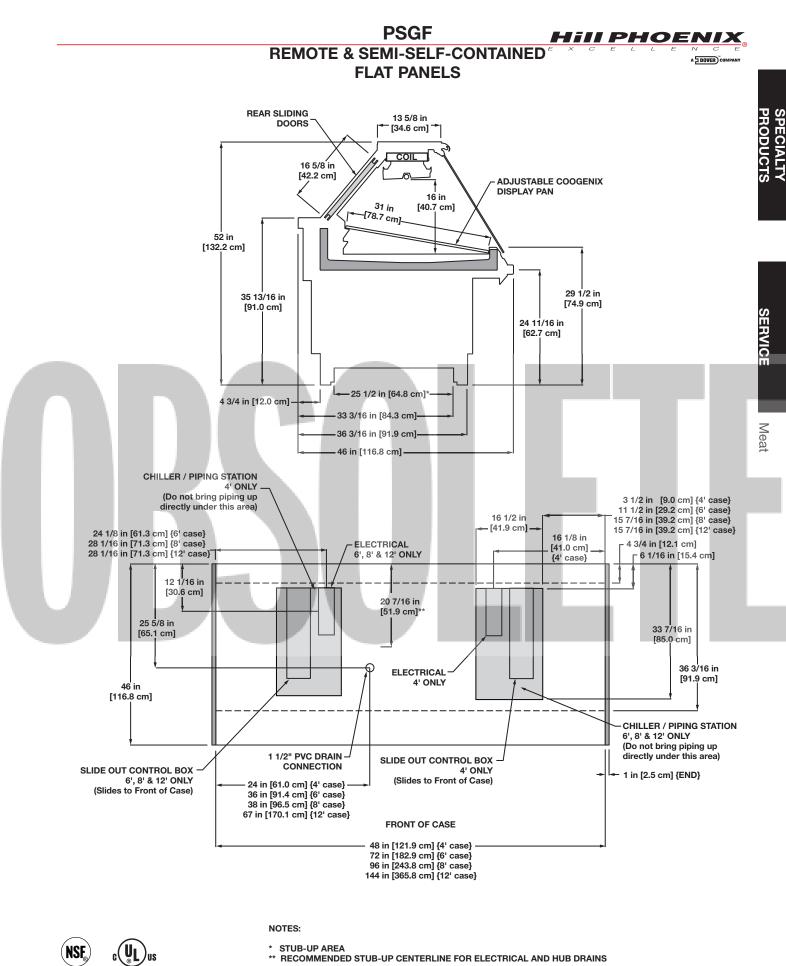
29

31

Cut in

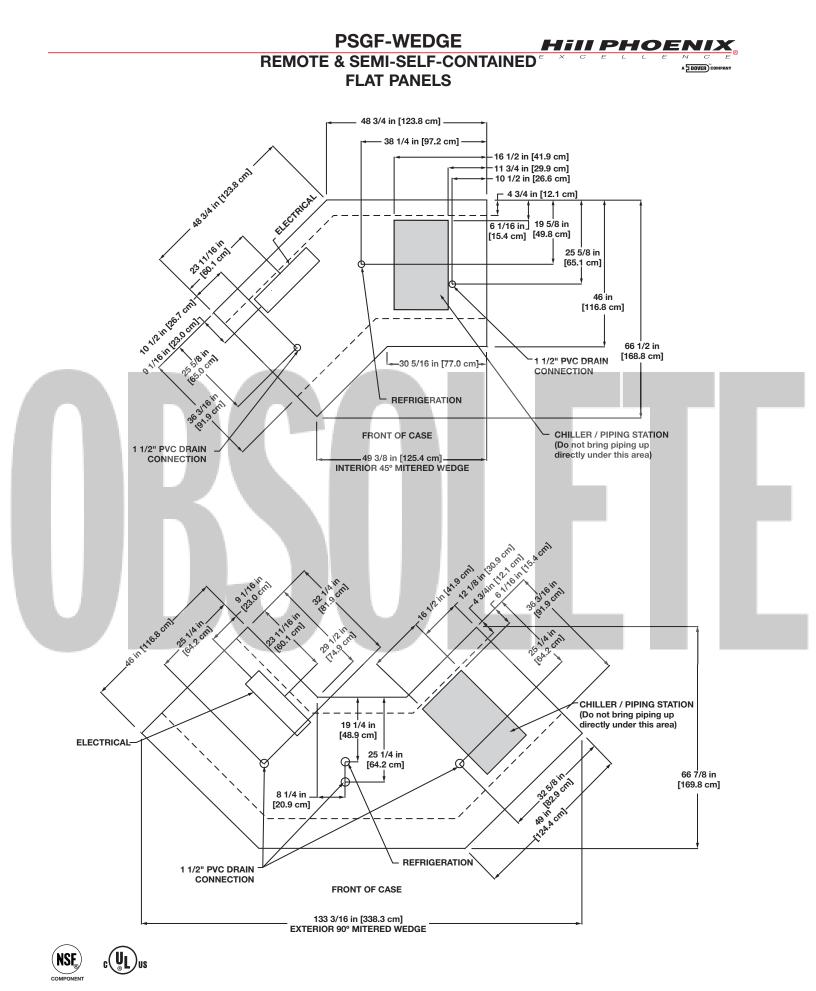
Temp. (°F)

33



• DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

COMPONENT







### **2-Tier Service Deli Merchandiser** S2SB

### **Electrical Data**

		Fans		120 Volts		High-Efficiency Fans 120 Volts		Fans	Ambient Fans		Defrost Heaters			
			per	120	VOITS	120	VOIts	per	120	VOIts	208	VOITS	240	VOITS
	Model		Ċase	Amps	Watts	Amps	Watts	Ċase	Amps	Watts	Amps	Watts	Amps	Watts
I	S2SB	4'	2	0.68	34	0.30	22	3	33	54	1.92	400	2.22	532
		6'	2	0.68	34	0.30	22	5	55	90	2.88	600	3.33	798
		8'	3	1.02	51	0.45	33	6	66	108	3.85	800	4.44	1065
		12'	4	1.36	68	0.60	44	9	99	162	5.77	1200	6.67	1600

# **Lighting Data**

i					Typic Light	al per Row	Maxi Ligh	
	-		Bulbs per	Bulb	120	Volts	120	Volts
ľ	Model		Row	Length	Amps	Watts	Amps	Watts
l	S2SB	4'	1	4'	0.23	28	1.17	140
		6'	2	3'	0.37	44	1.83	220
		8'	2	4'	0.47	56	2.33	280
		12'	3	4'	0.70	84	3.50	420

# **Guidelines & Control Settings**

	Model	<sup>1,2</sup> BTUH/ft	Evaporator (F°)	Superheat Set Point @ bulb (F°)	Discharge Air (F°)	Return Air (F°)	Discharge Air Velocity <sup>4</sup> (F°)
I	S2SB	435 <sup>3</sup>	22	6-8	30	38	235

1 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.15.

2 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

3 Standard fans increase refrigeration load by 96 BTUH/fan.

4 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

			Electri	Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)							
S2SB	4	6-8	35	50	75	50	20	45	<sup>5</sup>		

5 NOTE: "- - -" indicates that this is not an option on this case model.

Medium Temperature Defrost Schedule

No.	Per	Day	Hours

1 12 midnight

2 3

12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 4

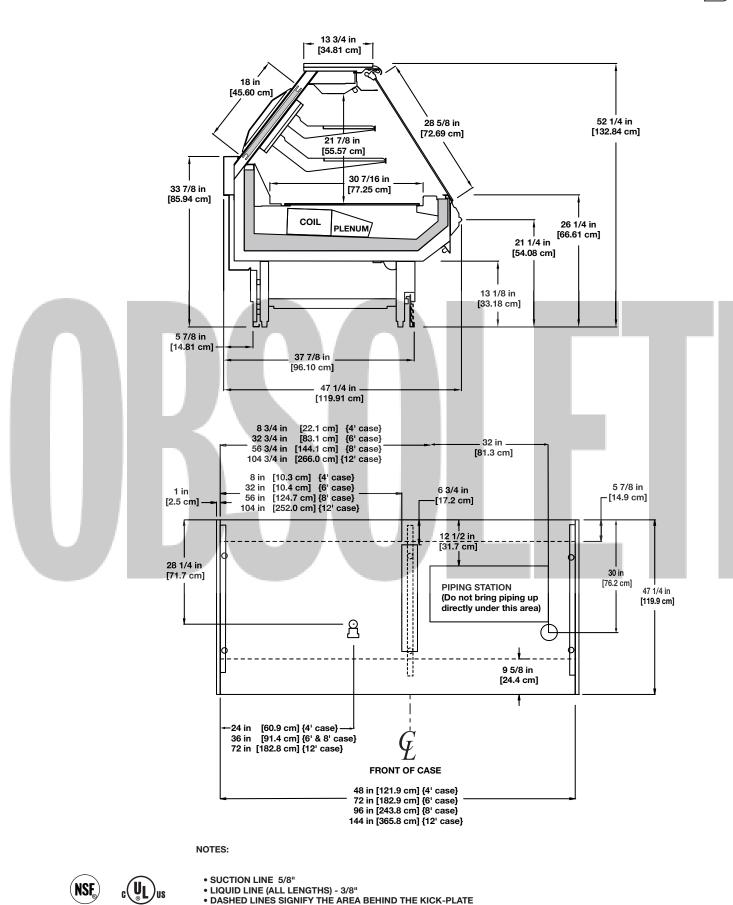
All measurements are taken per ARI 1200 - 2002 specifications.













# **3-Tier Service Deli/Bakery Merchandiser** S3SBV

### **Electrical Data**

		Fans		rd Fans		ins	Fans		nt Fans			Heaters	
		per	120	Volts	120	Volts	per	120	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Case	Amps	Watts	Amps	Watts	Amps	Watts
S3SBV	4'	2	0.68	34	0.30	22	3	33	54	1.92	400	2.22	532
	6'	2	0.68	34	0.30	22	5	55	90	2.88	600	3.33	798
	8'	3	1.02	51	0.45	33	6	66	108	3.85	800	4.44	1065
	12'	4	1.36	68	0.60	44	9	99	162	5.77	1200	6.67	1600

# **Lighting Data**

					al per Row	Maxi Ligh	
		Bulbs per	Bulb	120	Volts	120	Volts
Model		Row	Length	Amps	Watts	Amps	Watts
S3SBV	4'	1	4'	0.23	28	1.38	168
	6'	2	3'	0.37	44	2.22	264
	8'	2	4'	0.47	56	2.82	336
	12'	3	4'	0.70	84	4.20	504

# **Guidelines & Control Settings**

l	Model	<sup>2,3</sup> BTUH/ft	Evaporator (F°)	Superheat Set Point @ bulb (F°)	Discharge Air (F°)	Return Air (F°)	Discharge Air Velocity <sup>5</sup> (F°)
l	S3SBV <sup>1</sup>	435 <sup>4</sup>	22	6-8	30	38	235

1 All settings apply for both deli and bakery application.

2 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.15.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

			Electri	c Defrost	Timed (	Off Defrost	Hot Ga	as Defrost
Model	Defrosts Per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)
S3SBV	4	6-8	35	50	60	47	20	45

Medium Temperature Defrost Schedule

No.	Per	Day	Hours
		_	

- 1 12 midnight
- 2 3
- 12 am 12 pm 6 am 2 pm 10 pm 12 6 am 12 6 pm 4



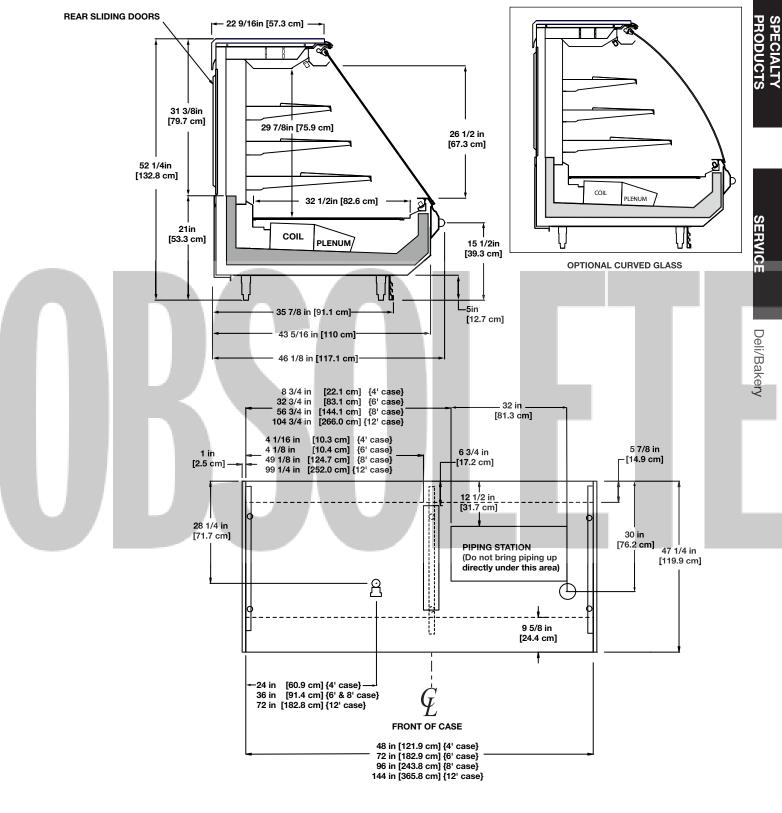
US



### S3SBV

**HIII PHOENIX** 

A DOVER COMPANY



NOTES:

- SUCTION LINE 5/8"
   LIQUID LINE (ALL LENGTHS) 3/8"
- DASHED LINES SIGNIFY THE AREA BEHIND THE KICK-PLATE

04/09

(NSF<sub>®</sub>)

COMPONENT

c( UL

# 2-Tier Gravity Coil Meat Merchandiser with CoolGenix<sup>™</sup> Technology S2SGC - 4', 6', 8', 12'

### **Electrical Data**

		Secondary Coolant Pump <sup>1</sup> 120 Volts	
Model		Amps	Watts
	4'	2.00	240
S2SGC	6'	2.00	240
32360	8'	2.00	240
	12'	2.00	240

### Cut-In/Cut-Out

	Cut-Out Temp (F°)	Cut-In Temp (F°)
Pans	29	33
Top Coil	31	36
Shelves	29	33

1 NOTE: Secondary coolant pump is only available for the semi-self contained version.

# **Lighting Data**

					al per Row	Maxi Ligh	mum iting
		Bulbs per	Bulb	120	Volts	120	Volts
Model		Row	Length	Amps	Watts	Amps	Watts
	4'	1	4'	0.23	28	0.23	28
S2SGC	6'	2	3'	0.37	44	0.37	44
32360	8'	2	4'	0.47	56	0.47	56
	12'	-3	4'	0.70	84	0.70	84

### **Guidelines & Control Settings (Remote Secondary)**

Model	<sup>2,3</sup> BTUH/ft	Supply Temp. (F°)	Flow Rate GPM/ft	Charge GAL/ft
S2SGC	315 <sup>4</sup>	26	0.45	0.30

# **Guidelines & Control Settings (Semi-Self Contained)**

Model	<sup>2,3</sup> BTUH/ft	Supply Temp. (F°)	Chiller Temp. (F°)	Flow Rate GPM/ft <sup>4</sup>	Charge GAL/ft ⁵	Max. Working Pressure (PSIG)	Max. Static Pressure (PSIG)
S2SGC	365	26	20	0.45	0.30	50	70

2 BTUH/ft listings are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Minimum flow rate.

5 For semi-self contained cases, add 2.75 gallons of fluid to ensure that the chiller reaches full charge.

# **Defrost Controls**

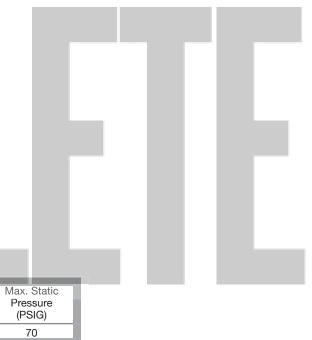
			Timed Off Defrost		
Model	Defrosts Per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)	
S2SGC	1	5	50	45	

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm





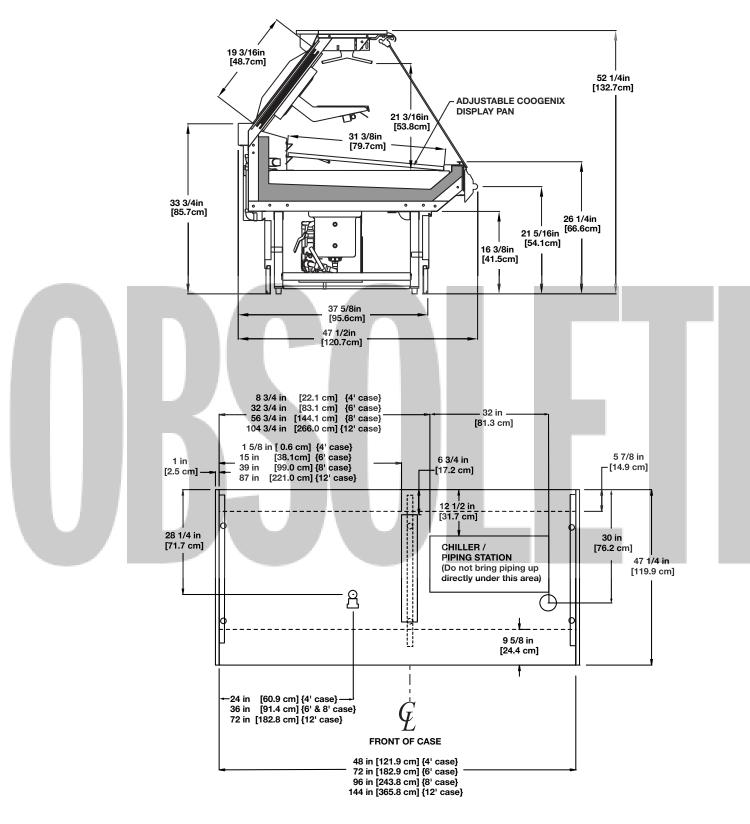




SPECIALTY PRODUCTS

SERVICE

Meat



NOTES:



115

SUCTION LINE 5/8"
 I ΙΟΙ ΙΙΟ Ι ΙΝΕ (ΔΙ Ι Ι ΕΝΩΤΗS) - 3/8"

04/09

# Open Fish Service Merchandiser with CoolGenix<sup>™</sup> Technology SSFO

### **Electrical Data**

		Fans per Case	120 Volts		
Model			Amps	Watts	
SSFO	4'	2	0.34	33.6	
	6'	3	0.51	50.4	
	8'	4	0.68	67.2	
	10'	5	0.85	84.0	
	12'	6	1.02	100.8	
	14'	7	1.19	117.6	
	16'	8	1.36	134.4	

### **Guidelines & Control Settings**

Model	<sup>1</sup> BTUH/ft	Evaporator (F°)	Discharge Air (F°) <sup>1</sup>	
SSFO	685	20°	28°	Ľ

1 BTUH/ft listings are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.14. 2 Average discharge air velocity at peak of defrost.

### **Defrost Controls**

l			Electri	c Defrost	Timed C	Off Defrost <sup>4</sup>
	Model	Defrosts Per Day	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)
	SSFO	3	<b>-</b> <sup>3</sup>	· ····	45	47

3 NOTE: "- - -" not an option on this case model.

4 Fan status is "ON".



Medium Temperature Defrost Schedule

- No. Per Day Hours
  - 1 12 midnight
  - 2 12 am - 12 pm 3
  - 6 am 2 pm 10 pm 12 6 am 12 6 pm

4

All measurements are taken per ARI 1200 - 2002 specifications.

**NSF** 

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**HIII PHOENIX** 

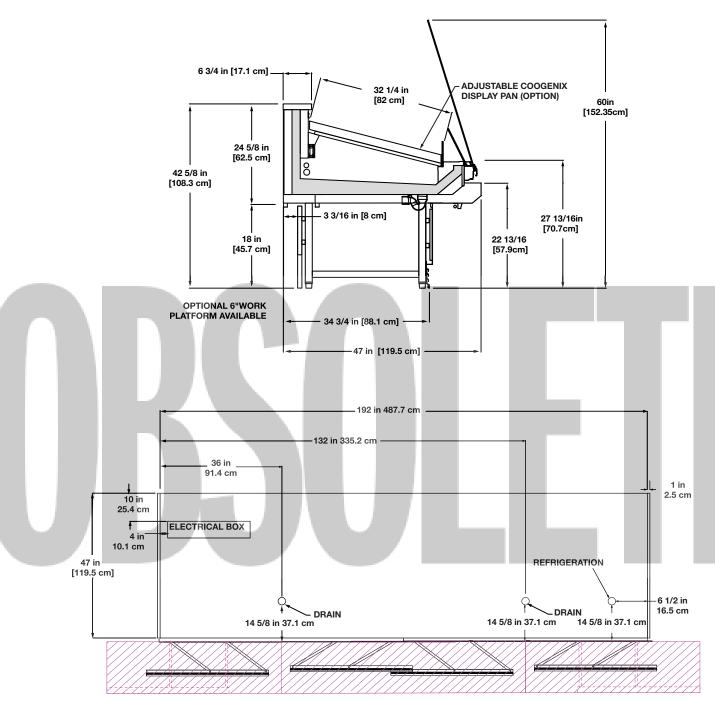


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SPECIALTY PRODUCTS

SERVICE

Seafood



Egress Locations

CASE LENGTH (FT)	SSFO Drain Locations (in)†
4	24
6	36
8	36
10	60
12	72
14	36 and 132
16	36 and 132

† Drain dimensions are from the left-hand side without end panel attached. Drain is 14 5/8 in. from casefront.

Refrigeration Egress is 6 1/2 in. from R/H end of case and 14 5/8 in from casefront. Electrical Box is 4 in. from L/H end and 10 in from back of case.

#### NOTES:

**\*STUB-UP AREA** 

\*\*ELECTRICAL CONNECTION MUST BE FLEXIBLE TO JUNCTION BOX \*\*\*SUCTION LINE - 5/8", LIQUID LINE - 3/8" \*\*\*\*ALLOW 25" OF CLEARANCE FOR GLASS TO SWING OUTWARD ENDS ADD APPROXIMATELY 1" TO CASE HEIGHT VARIOUS CASE SIZES AVAILABLE

REFER TO CHART FOR OTHER CASE DRAIN LOCATIONS



# Open Fish Inlet/Outlet Service (Wide) Merchandiser with CoolGenix™ Technology SSFOW

### **Electrical Data**

			NS			
	24" and 3	36" Secti	on	48" and 60" Section		
	120 Volts			120 Volts		
Model	Number per Section	Amps	Watts	Number per Section	Amps	Watts
SSFOW	1	0.17	16.8	2	0.34	33.6

### **Guidelines & Control Settings**

Model	BTUH/ft	Evaporator (F°)	Discharge Air (F°)
SSFOW (Inlet)	380	20°	28°
SSFOW (Outlet)	685	20°	28°

1 BTUH/ft listings are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.14. 2 Average discharge air velocity at peak of defrost.

### **Defrost Controls**

		Electri	c Defrost	Timed (	Off Defrost <sup>4</sup>
Model	Defrosts Per Day	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)
SSFOW	3	<sup>3</sup>		45	47

3 NOTE: "- - -" not an option on this case model.

4 Fan status is "ON"



Medium Temperature Defrost Schedule

- No. Per Day Hours
  - 1 12 midnight

12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 2

3 4

All measurements are taken per ARI 1200 - 2002 specifications.





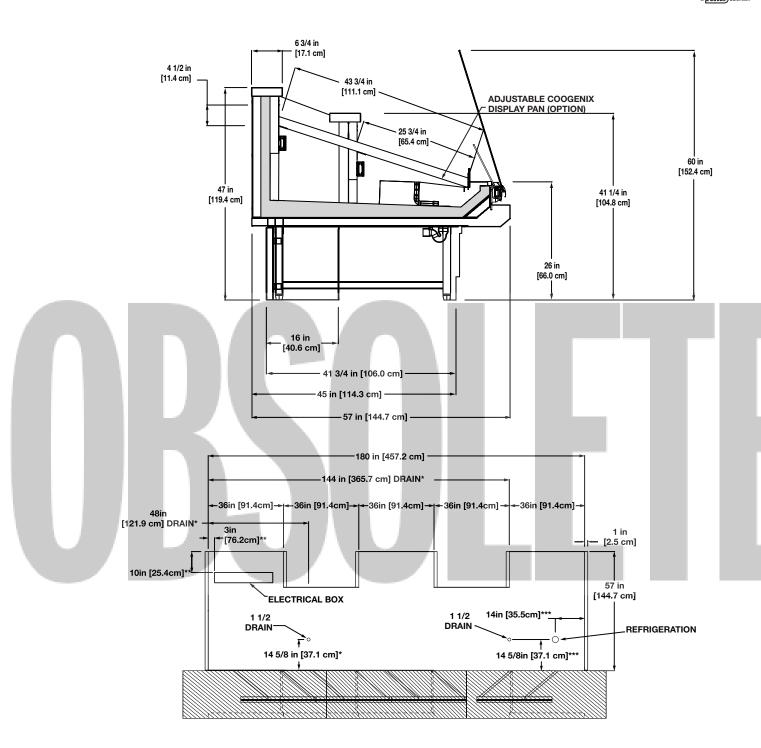




SPECIALTY PRODUCTS

SERVICE

Seafood



#### NOTES:

**\*STUB-UP AREA** 

\*\*ELECTRICAL CONNECTION MUST BE FLEXIBLE TO JUNCTION BOX

- \*\*\*SUCTION LINE 5/8", LIQUID LINE 3/8" \*\*\*\*ALLOW 25" OF CLEARANCE FOR GLASS TO SWING OUTWARD
- ENDS ADD APPROXIMATELY 1" TO CASE HEIGHT

VARIOUS CASE SIZES AVAILABLE REFER TO CHART FOR OTHER CASE DRAIN LOCATIONS





	*	——180 in [457.:	2 cm]		I	
		4 in [365.7 cm] DI	BAIN*	- <b>-</b>		
	36 in [91.4 cm]	108 in [27	'4.3 cm] ————	36 in [91.4 cm]		
48in [121.9 cm] DRAIN* -				[o irr oiii]	4 in	
					1 in ∣+— [2.5 cm]	
-	;⊶3 in [7.6 cm]**					
10 in [25.4 cm]**				LL	57 in [144.7 cm]	
	ELECTRI	CAL BOX	14 in	n [35.5 cm]* <u>**</u>		
	1 1/2 DRAIN -		1 1/2 DRAIN		REFRIGERAT	ION
	Ì Ĩ Ĩ			••••••••••••••••••••••••••••••••••••••		
	14 5/8in [37.1cm] 1	ŧ	14 5/8	3 in [37.1 cm]*** ↓		
					<u>µ</u> ¥	
	NOTE	ES:				
	*STU	B-UP AREA				
	**ELE	CTRICAL CONNE	CTION MUST BE FLEXI	IBLE TO JUNCTION	вох	
	***SU ****A	CTION LINE - 5/8	", LIQUID LINE - 3/8" ARANCE FOR GLASS T			
	ENDS	S ADD APPROXIM	ATELY 1" TO CASE HEI	GHT	-	
		DUS CASE SIZES R TO CHART FOR	AVAILABLE R OTHER CASE DRAIN L			
			SFOW Drain			
		(FT) Lo	cations (in) <sub>†</sub>			
				_	_	
		5	24 36			
		6	36			
		7	48			
		8	48			
	-	9	60			
		10	60			
		11	72			
		12	72			
		13 48 a	nd 120			
		14 48 a	nd 120			
		15 48 a	nd 144			
		16 48 a	nd 144			
	t D	Drain dimensions rain is 14 5/8 in. fi	are from the left-hand s rom casefront.	side without end pan	el attached.	

Drain is 14.5/8 in. from casefront. Refrigeration Egress is 6 1/2 in. from R/H end of case and 14.5/8 in from casefront.







### **Electrical Data**

			_		ficiency ns	Sill L (1 r	ight <sup>1</sup> ow)	Total L	ights <sup>1</sup>		Defrost	Heaters	
I			Fans per	120	Volts	120	Volts	120	Volts	208	Volts	240	Volts
I	Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
	SSFOW	12'	6	1.02	101	<sup>2</sup>							
	ONZ	12'	6	0.60	44	0.69	84	0.69	84	11.54	2400	13.31	3195

1 T-5 Lighting with electronic ballasts.

2 NOTE: "- - -" indicates that this is not an option on this case model.

### **Guidelines & Control Settings**

i	Model ⁵ <sup>3</sup> BTUH/ft		Evaporator (F°)	Unit Sizing (F°)	Discharge Air (F°)	Discharge Air Velocity <sup>4</sup> (F°)		
	SSFOW	482	20	18	28	100		
	ONZ	400	-17	-20	-10	180		

3 BTUH/ft listings are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.14 (SSFOW) and/or 1.05 (ONZ).

2 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine

Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case. 4 Average discharge air velocity at peak of defrost.

5 Each case section requires independent circuit for temperature and defrost control.

# **Defrost Controls**

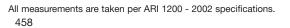
Į			Electri	c Defrost	Timed	Off Defrost
i	Model	Defrosts Per Day	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)
I	SSFOW	3			45	47
	OWZ	3 45		47		

Medium Temperature Defrost Schedule

No. Per Day Hours

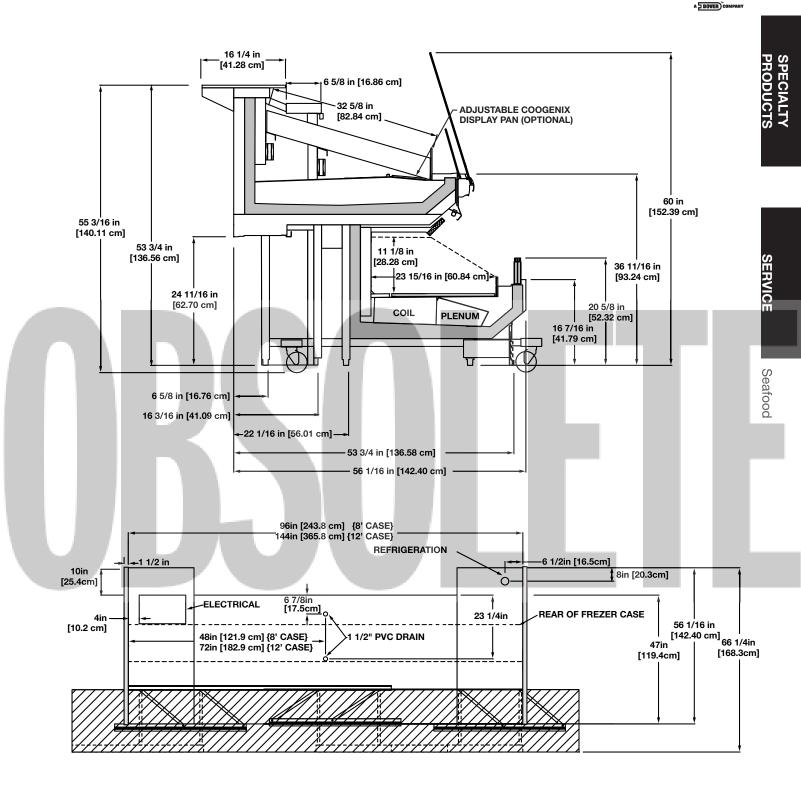
> 1 12 midnight 2

12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 3 4









NOTES:

\* STUB-UP AREA

- \*\* RECOMMENDED STUB-UP CENTERLINE FOR HUB DRAIN \*\*\* ALLOW 25" OF CLEARANCE FOR GLASS TO SWING OUTWARD

ENDS ADD APPROXIMATELY 1" TO CASE HEIGHT SUCTION LINE - 5/8", LIQUID LINE - 3/8" ELECTRICAL CONNECTION MUST BE FLEXIBLE TO JUNCTION BOX

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### **Electrical Data**

		Secondary Coolant Pump <sup>1</sup>	
		120	Volts
Model		Amps	Watts
SSGC	4'	2.00	240
	6'	2.00	240
	8'	2.00	240
	12'	2.00	240

### Cut-In/Cut-Out

	Cut-Out Temp (F°)	Cut-In Temp (F°)
Pans	29	33
Top Coil	31	36

1 NOTE: Secondary coolant pump is only available for the semi-self contained version.

### **Lighting Data**

		Bulbs		Light	al per Row Volts		mum iting Volts
Model		per Row	Bulb Length	Amps	Watts	Amps	Watts
SSGC	4'	1	4'	0.23	28	0.23	28
	6'	2	3'	0.37	44	0.37	44
	8'	2	4'	0.47	56	0.47	56
	12'	3	4'	0.70	84	0.70	84

### **Guidelines & Control Settings (Remote Secondary)**

Model	<sup>2,3</sup> BTUH/ft	Supply Temp. (F°)	Flow Rate GPM/ft	Charge GAL/ft
SSGC	315 <sup>4</sup>	26	0.45	0.27

# **Guidelines & Control Settings (Semi-Self Contained)**

Model	<sup>2,3</sup> BTUH/ft	Supply Temp. (F°)	Chiller Temp. (F°)	Flow Rate GPM/ft <sup>4</sup>	Charge GAL/ft ⁵	Max. Working Pressure (PSIG)	Max. Static Pressure (PSIG)
SSGC	365	26	20	0.45	0.27	50	70

2 BTUH/ft listings are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Minimum flow rate

5 For semi-self contained cases, add 2.75 gallons of fluid to ensure that the chiller reaches full charge.

### **Defrost Controls**

			Timed (	Off Defrost
Model	Defrosts Per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)
SSGC	1	5	50	45

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm



All measurements are taken per ARI 1200 - 2002 specifications.

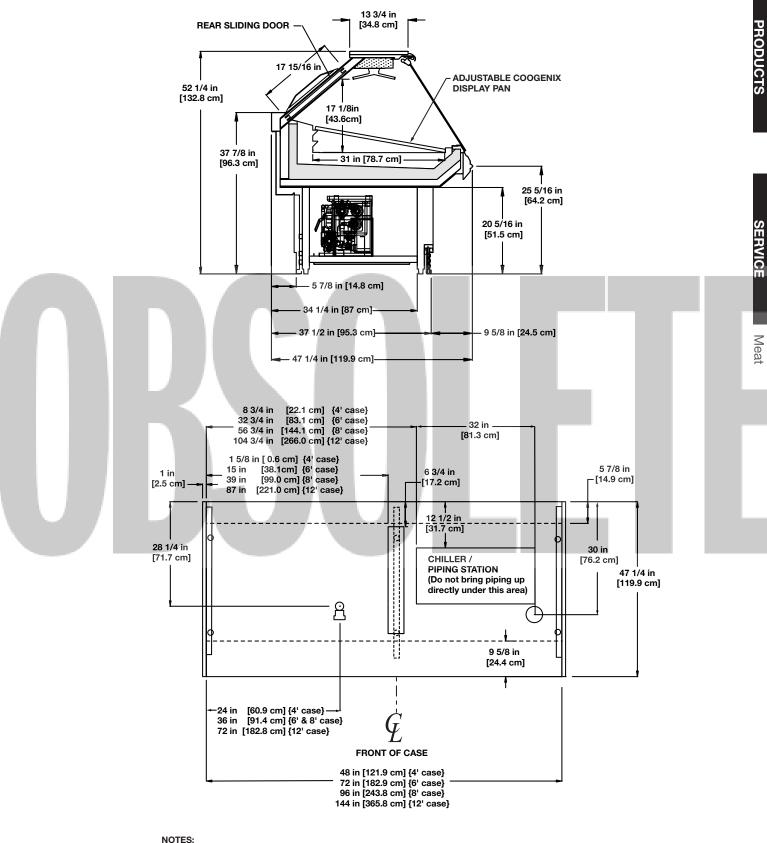




### SSGC



SPECIALTY



#### NOTES:

- SUCTION LINE 5/8"
- LIQUID LINE (ALL LENGTHS) 3/8"
- DASHED LINES SIGNIFY THE AREA BEHIND THE KICK-PLATE

04/09

(NSF<sub>®</sub>)

COMPONENT

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# Single Deck Cub Case Merchandiser CUBN - 4', 6' & 8'

### **Electrical Data**

	Standard Fans			fficiency ans	Anti-Con Hea			Defrost	Heaters			
		Fans per	120 \	Volts	120	Volts	120 \	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
CUBN	4'	2	0.30	36	1							
	6'	2	0.30	36								
	8'	3	0.45	54								

1 NOTE: "- - -" not an option on this case model.

# **Lighting Data**

	Bulbs				al per Row		mum nting
		per	Bulb	120	Volts	120	Volts
Model		Row	Length	Amps	Watts	Amps	Watts
CUBN	4'	1	4'	0.25	30	0.25	30
	6'	2	3'	0.50	60	0.50	60
	8'	2	4'	0.50	60	0.50	60

### **Guidelines & Control Settings**

Model	<sup>2</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)
CUBN	498	22	6-8

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

### **Defrost Controls**

		Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost			
Мо	del	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
CUI	BN	3	6 - 8			20	47				

Medium Temperature Defrost Schedule

No.	Per	Day	Hours

- 1
- 2

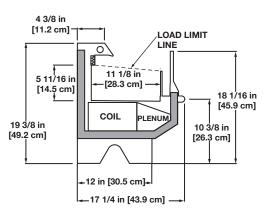
12 midnight 12 am - 12 pm 6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 3 4

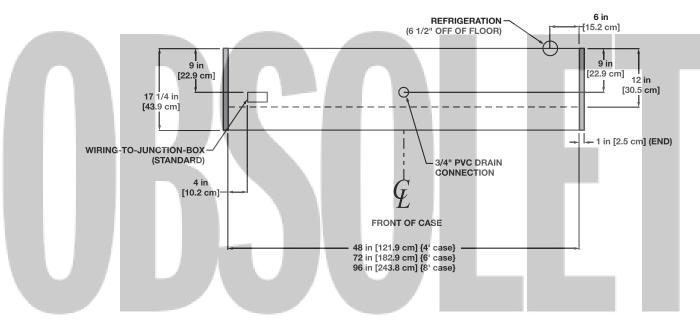
All measurements are taken per ARI 1200 - 2002 specifications. 462





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NOTES:

• DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

### Single Deck Cub Case Merchandiser CUBNH - 4', 6' & 8'

### **Electrical Data**

			Standar	d Fans	High Efficiency Fans		Anti-Condensate Heaters		Defrost Heaters			
	Fans per		120 Volts		120	120 Volts		120 Volts		Volts	240 Volts	
Model	Case		Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
CUBNH	4' 2		0.30	36	1							
	6' 2		0.30	36								
	8'	3	0.45	54								

1 NOTE: "- - -" not an option on this case model.

# **Lighting Data**

		Bulbs			al per Row	Maximum Lighting 120 Volts		
		per	Bulb	120	Volts			
Model		Row	Length	Amps	Watts	Amps	Watts	
CUBNH	4'	1	4'	0.25	30	0.25	30	
	6'	2	3'	0.50	60	0.50	60	
	8'	2	4'	0.50	60	0.50	60	

### **Guidelines & Control Settings**

Model	<sup>2</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)
CUBNH	614	22	6-8

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

### **Defrost Controls**

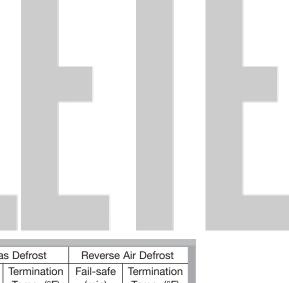
			Electric Defrost		Timed C	Off Defrost	Hot Ga	s Defrost	Reverse Air Defrost	
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)			Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
CUBNH	3	6 - 8			20	47				

Medium Temperature Defrost Schedule

No.	Per	Day	Hours

- 1
- 2
- 3 4
- 12 midnight 12 am 12 pm 6 am 2 pm 10 pm 12 6 am 12 6 pm

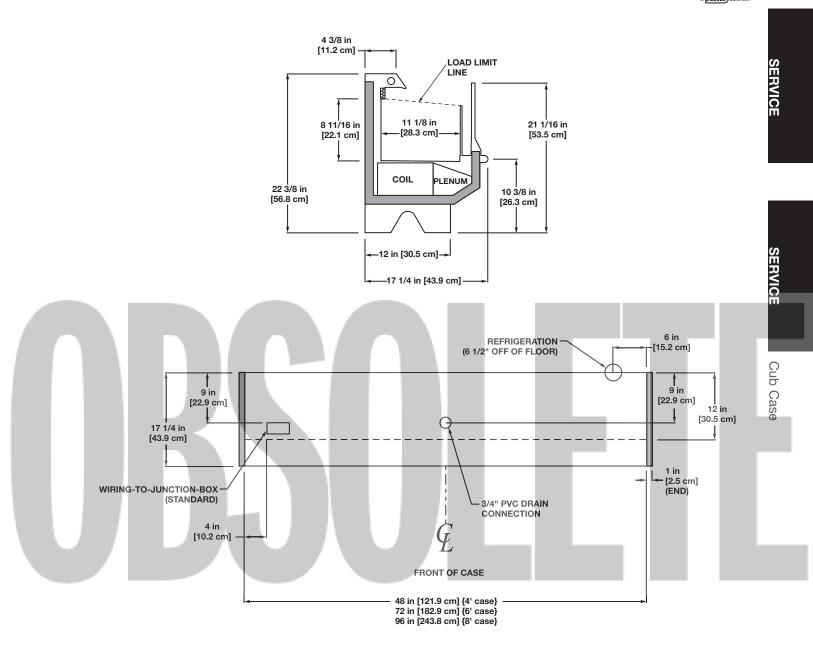
All measurements are taken per ARI 1200 - 2002 specifications. 464



04/09

### **CUBNH**





NOTES:

• DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

### Single Deck Cub Case Merchandiser CUBW - 4', 6' & 8'

### **Electrical Data**

			Standar	d Fans	High Efficiency Fans		Anti-Condensate Heaters		Defrost Heaters			
		Fans per	120 Volts		120	120 Volts		120 Volts		Volts	240 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
CUBW	4' 2		0.30	36	1							
	6' 2		0.30	36								
	8'	3	0.45	54								

1 NOTE: "- - -" not an option on this case model.

# **Lighting Data**

	1	Bulbs		Light	al per Row Volts	Ligh	i <b>mum</b> nting Volts
Model		per Row	Bulb Length	Amps	Watts	Amps	Watts
CUBW	4	' 1	4'	0.25	30	0.25	30
	6	' 2	3'	0.50	60	0.50	60
	8	' 2	4'	0.50	60	0.50	60

### **Guidelines & Control Settings**

Model	<sup>2</sup> BTUH/ft	Evaporator (°F)	berheat t @ Bu	
CUBW	614	22	6-8	

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

### **Defrost Controls**

Г				Electric Defrost		Timed 0	Off Defrost	Hot Ga	s Defrost	Reverse Air Defrost	
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe Termination (min) Temp. (°F)		Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
	CUBW	3	6 - 8			20	47				

Medium Temperature Defrost Schedule

Hours
12 midnight

12 am - 12 pm 2

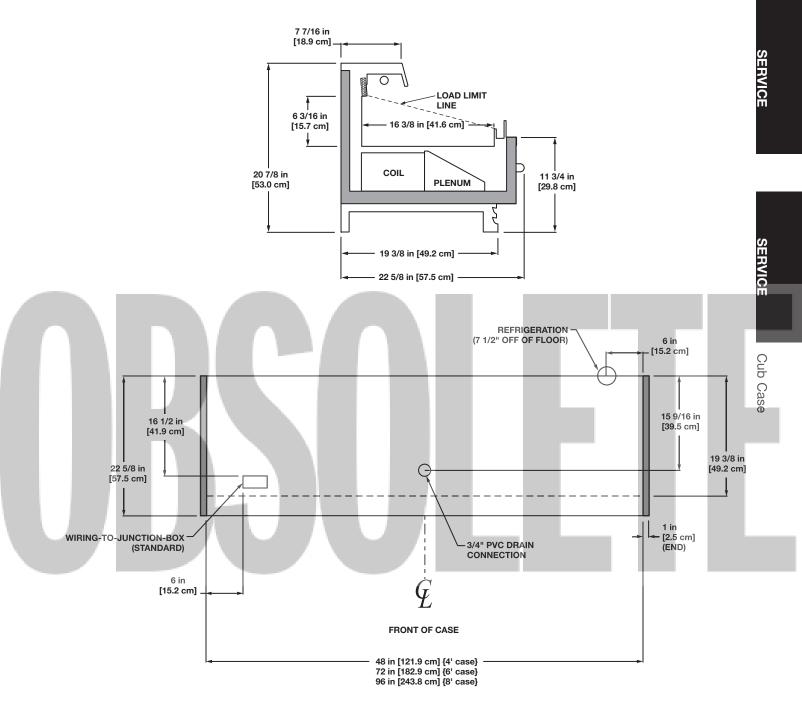
6 am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 3 4



04/09







NOTES:

• DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

# Single Deck Ice Cub Case Merchandiser CUBD - 4', 6' & 8'

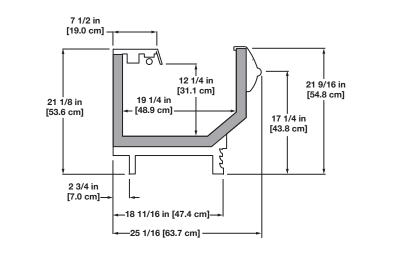
# Lighting Data

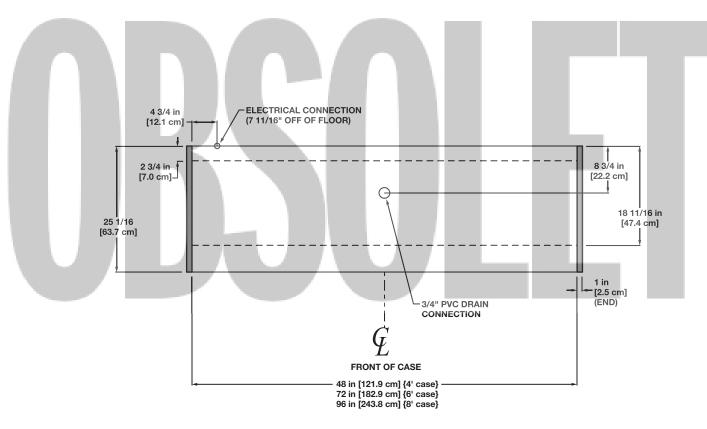
		Bulbs			al per Row	Maximum Lighting		
		per	Bulb	120	Volts	120	Volts	
Model		Row	Length	Amps	Watts	Amps	Watts	
CUBD	4'	1	4'	0.25	30	0.25	30	
	6'	2	3'	0.50	60	0.50	60	
	8' 2		4'	0.50	60	0.50	60	











NOTES:

• DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

### Multi-Deck Deli Back Bar Merchandiser BB- 6' & 8'

### **Electrical Data**

			Standa	rd Fans	High Efficiency Fans			Auxiliary Fans (Optional)		Anti-Condensate Heaters		Defrost Heaters			
		Fans per			120 Volts		120	120 Volts		Volts	208 Volts		240 Volts		
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	
BB	6'	4	1.36	68	0.60	44	1.60	92	1		2.88	600	3.33	798	
	8'	5	1.70	85	0.75	55	1.60	92			3.85	800	4.44	1065	

1 NOTE: "- - -" not an option on this case model.

### **Lighting Data**

		Bulbs		Typic: Light			mum nting
		per	Bulb	120 '	Volts	120	Volts
Model		Row	Length	Amps	Watts	Amps	Watts
BB	6'	2	3'	0.37	44	2.20	264
	8'	2	4'	0.47	56	2.80	336

### **Guidelines & Control Settings**

Model	<sup>2,3</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity⁵ (FPM)
BB	1150 <sup>4</sup>	17	6-8	32	45	325

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.15.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.5 Average discharge air velocity at peak of defrost.

### **Defrost Controls**

			Electri	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse	Air Defrost
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
BB	4	6 - 8	30	47 <sup>5</sup>	45	47 <sup>4</sup>			45	45

5 Termination Temperature measured at the honeycomb.

Medium Temperature Defrost Schedule

No.	Per	Dav	Hours

1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm

4 12 - 6 am - 12 - 6 pm

All measurements are taken per ARI 1200 - 2002 specifications.

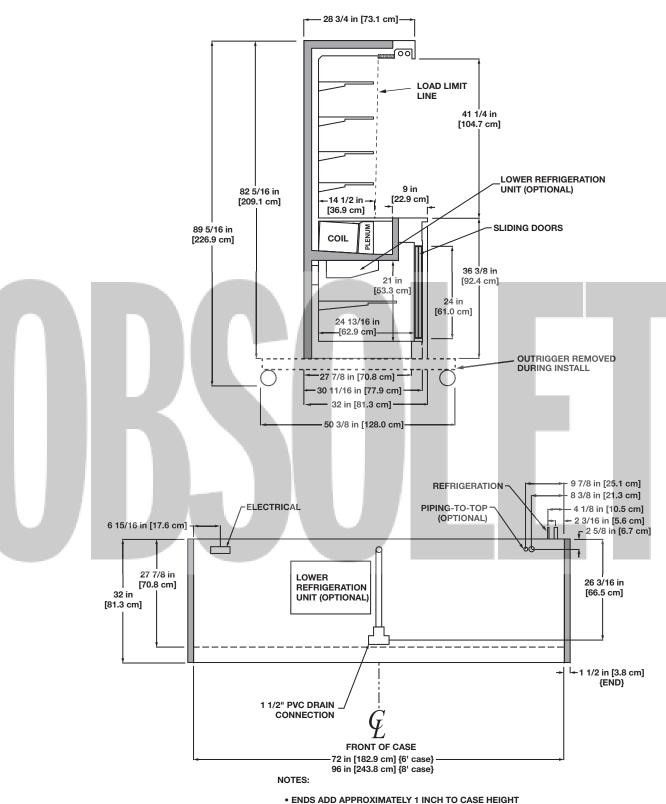


SPECIALTY PRODUCTS

Deli

SERVICE

Deli



BB

- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE 7/8", LIQUID LINE 3/8"
   AVAILABLE SHELF SIZES: (UPPER SECTION) 12" & 14 (LOWER SECTION) 22"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

(NSF COMPONENT

### **Electrical Data**

			Standa	rd Fans	High Ef Fa	,		ndensate iters		Defrost	Heaters	
		Fans per	120	Volts	120 '	Volts	120 \	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONN	47"	3	1.02	51	0.45	33	<sup>1</sup>		1.92	400	2.22	532

1 NOTE: "- - -" not an option on this case model.

### **Lighting Data**

		Bulbs			al per Row	Maxi Ligh	
		per	Bulb	120 '	Volts	120	Volts
Model	_	Row	Length	Amps	Watts	Amps	Watts
ONN	47"	1	3'	0.19	23	0.19	23

### **Guidelines & Control Settings**

ľ	Model	<sup>2</sup> BTUH/case	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>4</sup> (FPM)
I.	ONN	3612 <sup>3</sup>	Enh.	22	6-8	31	43	275

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.24.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

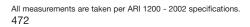
### **Defrost Controls**

i			Electri	c Defrost	Timed C	Off Defrost	Hot Ga	as Defrost	Reverse	Air Defrost
l	Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)						
l	ONN	6	35	47	40	47	25	45		

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm

4 12 - 6 am - 12 - 6 pm



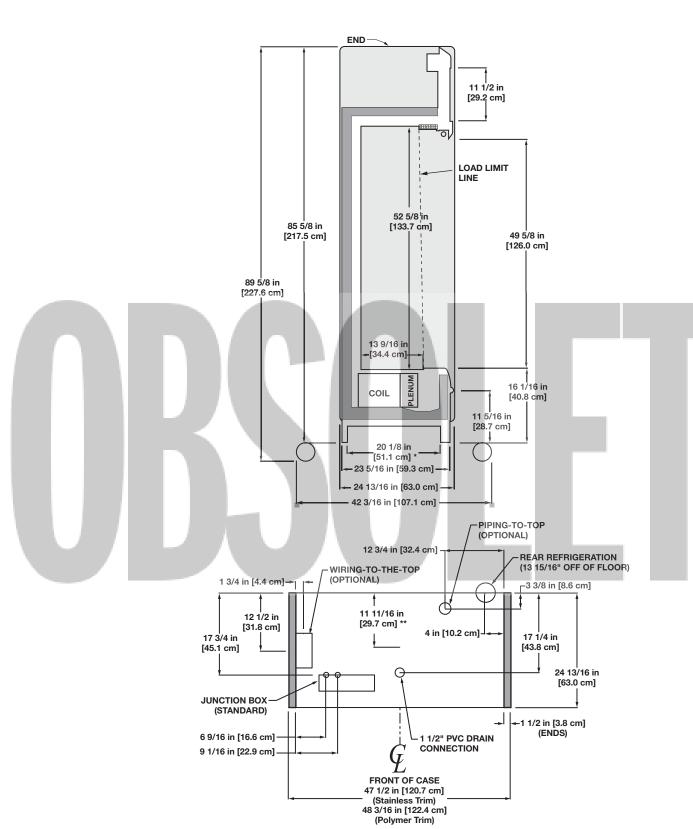








SPECIALTY PRODUCTS



NOTES:

\* STUB-UP AREA \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS

SUCTION LINE 7/8", LIQUID LINE - 3/8", LIQUID LINE PIPED-TO-TOP - 5/8"
 AVAILABLE SHELF SIZES: 12"

• ENDS ARE ALSO AVAILABLE IN 1" WIDTHS

• A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL

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### Narrow Multi-Deck Deli Merchandiser ONN3.5U - 4', 6', 8' & 12'

### **Electrical Data**

			Standar	rd Fans	0	fficiency ans		ndensate aters		Defrost	Heaters	
		Fans per	120 \	Volts	120	Volts	120	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONN35U	4'	3	1.02	51	0.45	33	1		1.92	400	2.22	532
	6'	4	1.36	68	0.60	44			2.88	600	3.33	798
	8'	4	1.36	68	0.60	44			3.85	800	4.44	1065
	12'	6	2.04	102	0.90	66			5.77	1200	6.67	1600

1 NOTE: "- - -" not an option on this case model.

# **Lighting Data**

		Bulbs			al per Row	Ligh	mum nting
Model		per Row	Bulb Length	Amps	Watts	Amps	Volts Watts
ONN35U	4'	1	4'	0.23	28	0.93	112
	6'	2	3'	0.37	44	1.47	176
	8'	2	4'	0.47	56	1.87	224
	12'	3	4'	0.70	84	2.80	336

# Guidelines & Control Settings

Model	<sup>2,3</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
ONN35U	612 <sup>4</sup>	22	6-8	35	45	275

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.11.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

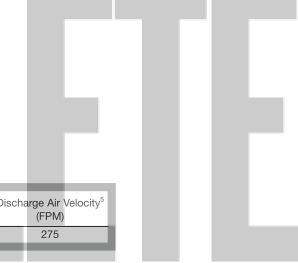
### **Defrost Controls**

					Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Air Defrost
l	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
	ONN35U	4	6 - 8	35	47	45	47	26	45		

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm





#### **HIII PHOENIX** PANY

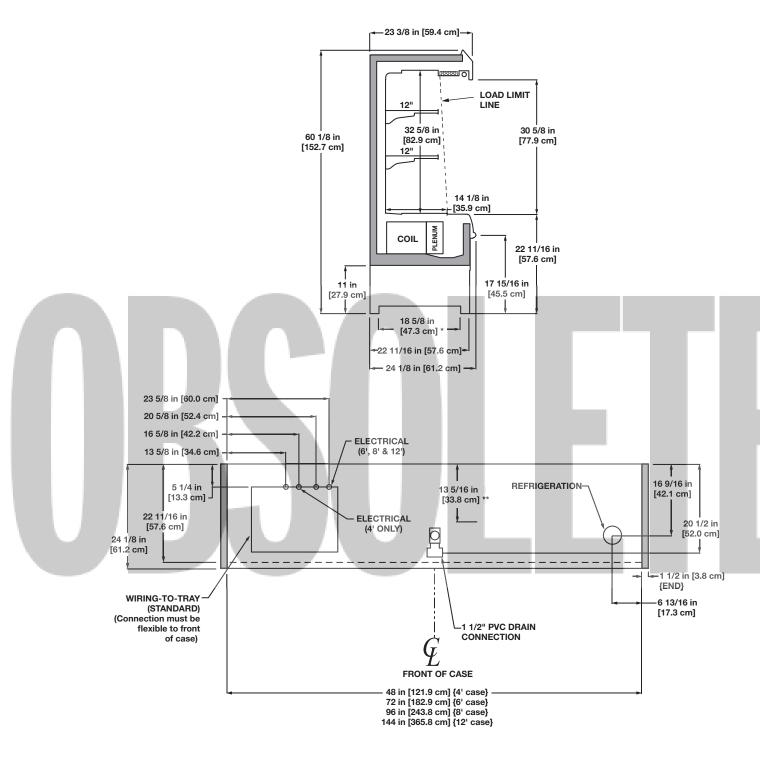
A DOVER CO

SPECIALTY PRODUCTS

Deli

SERVICE

Deli



NOTES:

- \* STUB-UP AREA \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
   SUCTION LINE 7/8", LIQUID LINE 3/8"
   AVAILABLE SHELF SIZES: 10" & 12"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



# Narrow Multi-Deck Self-Contained Deli Merchandiser ONN3.5UW - 4', 6', 8', 10' & 12'

### **Electrical Data**

				Standa	rd Fans		ficiency Ins		ndensate aters		Defrost	Heaters	
I			Fans per	120	Volts	120	Volts	120	Volts	208	Volts	240	Volts
	Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
l	ONN35UW	4'	2	1.00	60	0.39	23.4	1		1.92	400	2.22	532
l		6'	2	1.00	60	0.39	23.4			2.88	60	3.33	798
l		8'	3	1.50	90	0.59	35.1			3.85	800	4.44	1065
I		10'	4	2.00	120	0.78	46.8			4.81	1000	5.54	1330
I		12'	4	2.00	120	0.78	46.8			5.77	1200	6.67	1600
1			1		-	-	1	1	1			-	

1 NOTE: "- - -" not an option on this case model.

### **Lighting Data**

		$\sim$		al Light Row		imum nting
		Bulb	120	Volts	120	Volts
	Row	Length	Amps	Watts	Amps	Watts
4'	1	4'	0.23	28	1.40	168
6'	2	3'	0.37	44	2.20	264
8'	2	4'	0.47	56	2.80	336
10'	2	3'	0.60	70	2 60	432
10	1	4'	0.00	12	3.00	432
12'	3	4'	0.70	84	4.20	504
	6' 8' 10'	4' 1 6' 2 8' 2 10' 2 10' 1	per Row         Bulb Length           4'         1         4'           6'         2         3'           8'         2         4'           10'         2         3'           11         4'         4'	Bulbs per Row         Bulb Bulb Length         per 120           4'         1         4'         0.23           6'         2         3'         0.37           8'         2         4'         0.47           10'         2         3'         0.37           10'         2         3'         0.47           10'         1         4'         0.47	Bulbs         Bulb         Per Row           Bulbs         Bulb         120 Volts           Amps         Watts           4'         1         4'         0.23         28           6'         2         3'         0.37         44           8'         2         4'         0.47         56           10'         2         3'         0.60         72	$\begin{array}{c c c c c c c c c c c c c c c c c c c $

### **Guidelines & Control Settings**

	23 071 11 1/2	Evaporator	Superheat Set Point @bulb	Discharge Air	Return Air	Discharge Air Velocity <sup>5</sup>	l
Model	<sup>2,3</sup> BTUH/ft	(°F)	(°F)	(°F)	(°F)	(FPM)	
ONN35UW	916 <sup>4</sup>	20	6 - 8	33	44	245	

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.11.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

### **Defrost Controls**

			Electri	c Defrost	Timed-0	Off Defrost	Hot Ga	as Defrost	Reverse	Air Defrost
Model	Defrosts per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)						
ONN35UW	4	6 - 8	35	47	45	47	24	73 <sup>10</sup>		

Medium Temperature Defrost Schedule

No.	Per	Dav	/	Hours

1	12 midnight

2 12 am - 12 pm 3

All measurements are taken per ARI 1200 - 2002 specifications.



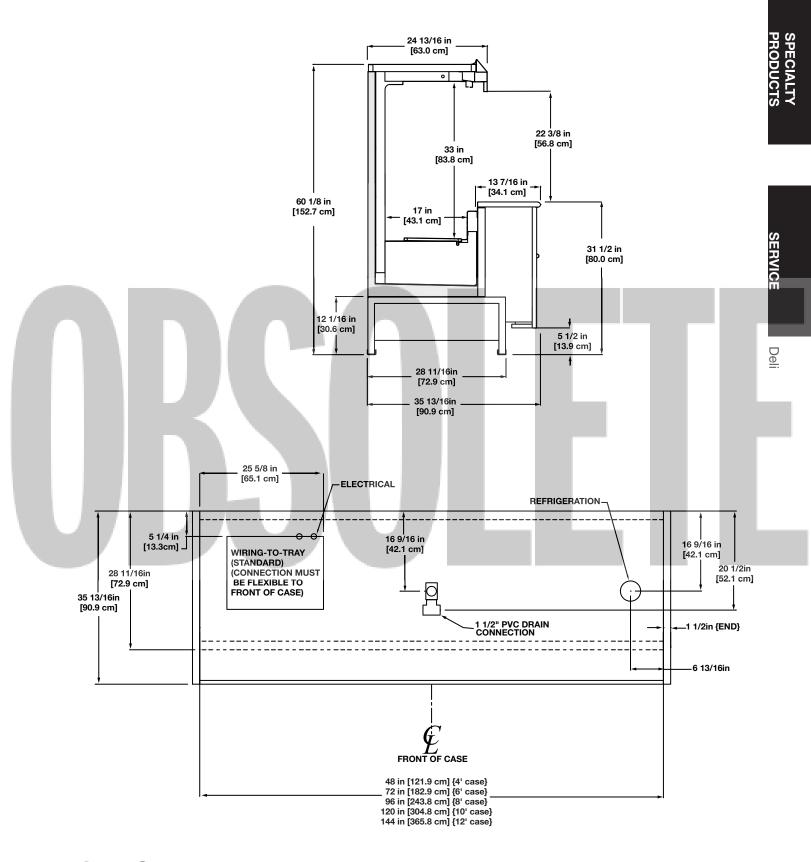




<sup>6</sup> am - 2 pm - 10 pm 12 - 6 am - 12 - 6 pm 4



A DOVER COMPANY



NSF® C

### Multi-Deck Utility Deli Merchandiser ONN5U - 4', 6', 8' & 12'

### **Electrical Data**

			Standar	d Fans	0	fficiency ans		ndensate aters		Defrost	Heaters	
		Fans per	120 \	/olts	120	Volts	120	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONN5U	4'	2	1.00	60	0.39	23.4	1		1.92	400	2.22	532
	6'	2	1.00	60	0.39	23.4			2.88	600	3.33	798
	8'	3	1.50	90	0.59	35.1			3.85	800	4.44	1065
	12'	4	2.00	120	0.78	46.8			5.77	1200	6.67	1600

1 NOTE: "- - -" not an option on this case model.

### **Lighting Data**

		Bulbs per	Bulb	Light	al per Row Volts	Ligh	mum iting Volts	
Model		Ŕow	Length	Amps	Watts	Amps	Watts	
ONN5U	4'	1	4'	0.23	28	1.40	168	
	6'	2	3'	0.37	44	2.20	264	
	8'	2	4'	0.47	56	2.80	336	
	12'	3	4'	0.70	84	4.20	504	

### **Guidelines & Control Settings**

N	lodel	<sup>2,3</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
0	NN5U	878 <sup>4</sup>	20	6-8	33	44	245

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.11.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

### **Defrost Controls**

Г				Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
	Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
	ONN5U	4	6 - 8	35	47	45	47				

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm

All measurements are taken per ARI 1200 - 2002 specifications.



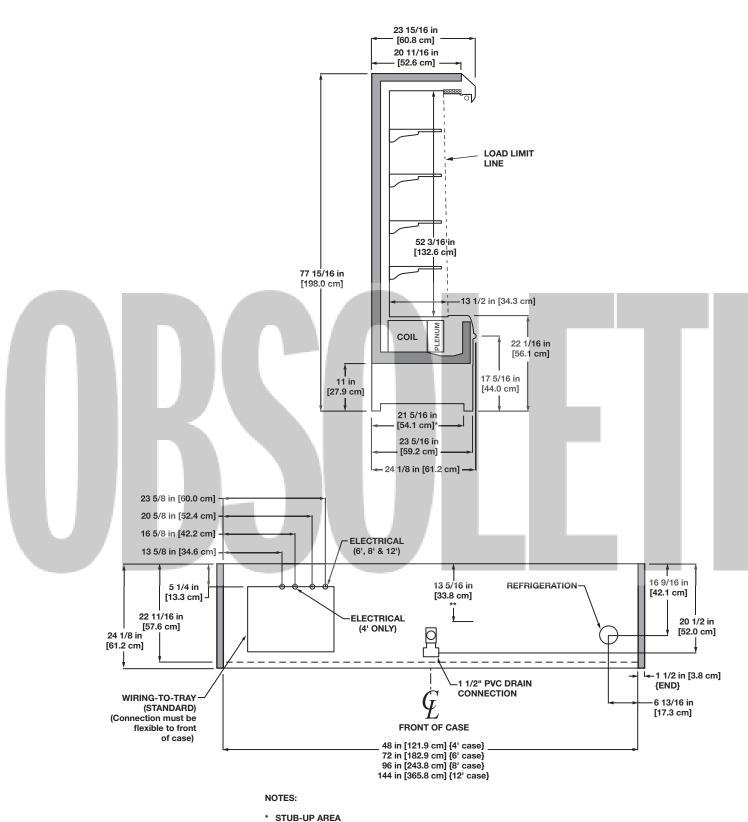


SPECIALTY PRODUCTS

Deli

SERVICE

Deli



- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
   SUCTION LINE 7/8", LIQUID LINE 3/8"
   AVAILABLE SHELF SIZES: 10" & 12"

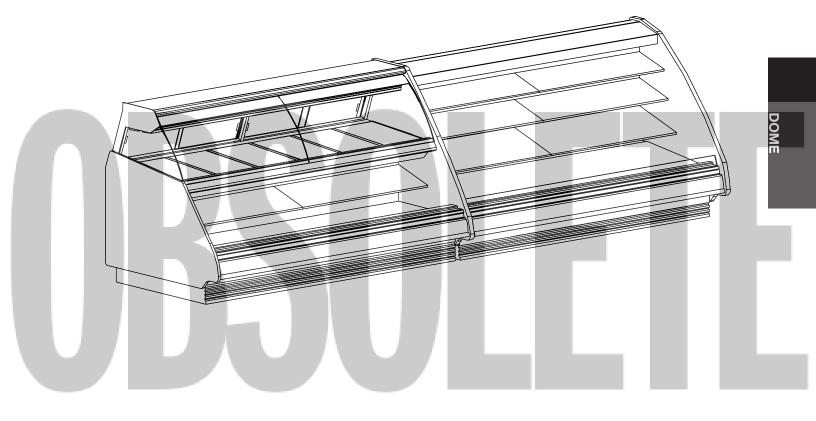
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

COMPONENT 04/09

(NSF<sub>®</sub>



# DOME



### NOTES

- Cases shown with an ANSI/NSF\* Mark are Certified by NSF
- Cases shown with an UL\* Mark are Listed by Underwriters Laboratories Inc.
- Allow for an extra 1/8" per joint when lining up merchandisers.
- Technical information contained herein is subject to change without notice.

\* ANSI - American National Standard Institute NSF - National Sanitation Foundation UL - Underwriters Laboratories Inc SPECIALTY PRODUCTS

### Narrow Multi-Deck Dome Deli Merchandiser ONUMD - 4', 6', 8' & 12'

### **Electrical Data**

	Fans per				vient <sup>1</sup> Ins		idard ins	High Ef Fa	ficiency ns		ndensate aters		Defrost	Heaters	
	Case		ise	120	120 Volts		120 Volts		120 Volts		Volts	208	Volts	240 Volts	
Model		Pri.	Amb.	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONUMD	4'	2	2	0.20	11	1.00	60	0.47	28	0.14	17	1.92	400	2.22	532
	6'	2	2	0.20	11	1.00	60	0.47	28	0.20	24	2.88	600	3.33	798
	8'	3	4	0.40	22	1.50	90	0.70	42	0.25	30	3.85	800	4.44	1065
	12'	4	6	0.60	33	2.00	120	0.93	56	0.38	46	5.77	1200	6.67	1600

1 Ambient fans are standard equipment for this case model. The primary fans can be either standard or high efficiency.

### **Lighting Data**

			Bulbs per	Bulb	Light	al per Row Volts	Maximum Lighting 120 Volts		
Moc	lel		Row	Length	Amps	Watts	Amps	Watts	
ONU	MD	4'	1	4'	0.23	28	0.70	84	
		6'	2	3'	0.37	44	1.10	132	
		8'	2	4'	0.47	56	1.40	168	
		12'	3	4'	0.70	84	2.10	252	

### Electrical Data (Continued)

		Secondary <sup>2</sup> Fans				
		120	Volts			
Model		Amps	Watts			
ONUMD	4'	2.19	158			
	6'	2.19	158			
	8'	2.19	158			
	12'	2.19	158			

2 Secondary Fans are for the Bohn unit on the rear coil.

### **Guidelines & Control Settings**

	Model	<sup>3,4</sup> BTUH/ft	Coil Type	Evaporator (°F)	Superheat Set Point @ Bulb ( <sup>o</sup> F)	Discharge Air (°F)	Return Air (°F)	Discha <b>rge Air</b> Velocity <sup>6</sup> (FPM)
I.	ONUMD	1338 <sup>5</sup>	Enh.	22	6-8	29	40	250

3 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

4 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

# **Defrost Controls**

			Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
ONUMD	3	6 - 8	40	47	50	45	26	45	<sup>7</sup>	

7 NOTE: " - - - " not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day	Hours
4	10 midnia

1 12 midnight 2 12 am - 12 pm

3 6 am - 2 pm - 10 pm

4 12 - 6 am - 12 - 6 pm

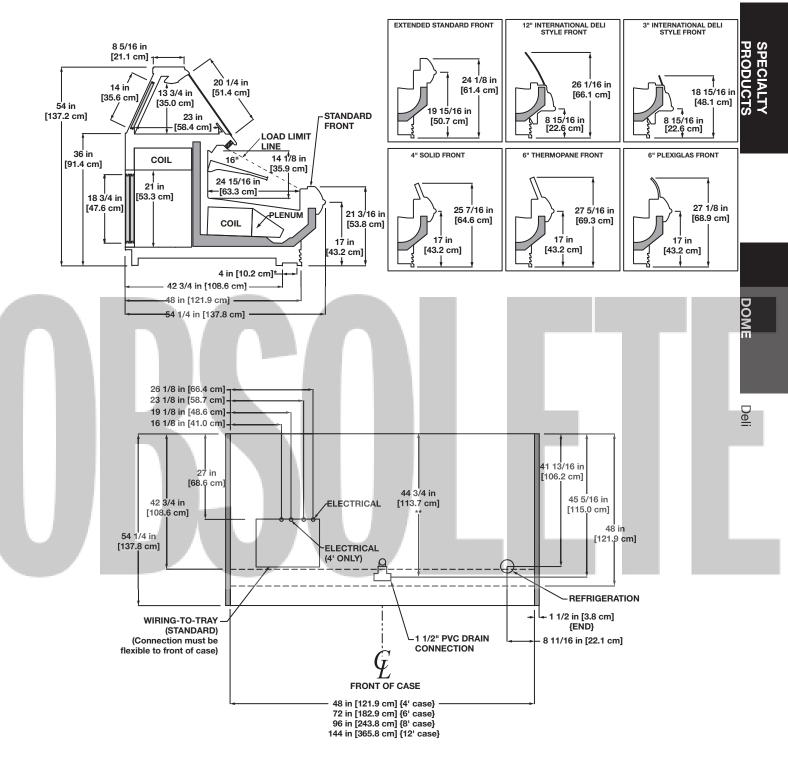
All measurements are taken per ARI 1200 - 2002 specifications.







A DOVER)



#### NOTES:

STUB-UP AREA

- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- FRONT AND REAR SILL HEIGHT VARY WITH BASEFRAME HEIGHT
- SUCTION LINE (4' & 6') 5/8", SUCTION LINE (8' & 12') 7/8", LIQUID LINE (ALL LENGTHS) 3/8"
  AVAILABLE SHELF SIZES: 10", 12", 14" & 16"
  PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE

- RECOMMENDED SHELF CONFIGURATION IN ROWS: 1 16"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

# Multi-Deck Curved Glass Dome Deli/Meat/Seafood Merchandiser PDNUM - 4', 6', 8' & 12'

### **Electrical Data**

ľ	Fans		Dome Fans	Standa	rd Fans	High Ef Fa		Service Fa	e Dome ns		ndensate iters		Defrost I	Heaters <sup>1</sup>		
			Der	per	120	Volts	120	Volts	120	Volts	120	Volts	208	Volts	240	Volts
	Model		Case	Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
I	PDNUM	4'	3	2	0.68	34	0.30	22	0.52	52	0.55	66	1.92	400	2.22	532
		6'	4	2	1.36	68	0.60	44	0.52	52	1.03	124	2.88	600	3.33	798
		8'	4	3	1.36	68	0.60	44	0.78	78	1.03	124	3.85	800	4.44	1065
L		12'	6	4	2.04	102	0.90	66	1.04	104	1.60	192	5.77	1200	6.67	1600

1 When using electric defrost in both the service and self-service sections of the case, double the values.

# Lighting Data

		Duille			al per Row		mum nting	
		Bulbs per	Bulb		Volts		Volts	
Model		Row	Length	Amps	Watts	Amps	Watts	
PDNUM	4'	1	4'	0.23	28	0.92	110	E.
	6'	2	3'	0.37	44	1.48	178	
	8'	2	4'	0.47	56	1.88	226	
	12'	3	4'	0.70	84	2.80	336	

### Guidelines & Control Settings - Self Service Portion

Model 7	<sup>2,3</sup> BTUH/ft	Coil <sup>5</sup> Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)
PDNUM - Self Service	494 <sup>4</sup>	Std.	17	6-8	33	40	260
PDNUM - Service Dome	214 <sup>4</sup>	Std.	17	6-8	30	33	360
PDNUM - Self Service	494 <sup>4</sup>	Enh.	22	6-8	33	40	260
PDNUM - Service Dome	2144	Enh.	22	6-8	30	33	360

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Coil type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.)

6 Average discharge air velocity at peak of defrost.

7 Independent circuit control is recommended for each case section.

### **Defrost Controls**

			Electri	c Defrost	Timed (	Off Defrost	Hot Gas	
	Defrosts	Run-Off	Fail-safe	Termination	Fail-safe	Termination	Fail-safe	Termination
Model	Per Day	Time (min)	(min)	Temp. (°F)	(min)	Temp. (°F)	(min)	Temp. (°F)
PDNUM - Self Service	4	6 - 8	30	47	30	47	26	45
PDNUM - Service Dome	4	6 - 8	30	47	30	47	26	45

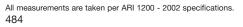
7 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day Hours

- 1 12 midnight
- 2 12 am 12 pm 3 6 am - 2 pm - 10 pm
- 4 12 6 am 12 6 pm

4 12 - 6 am - 12 - 6 pm





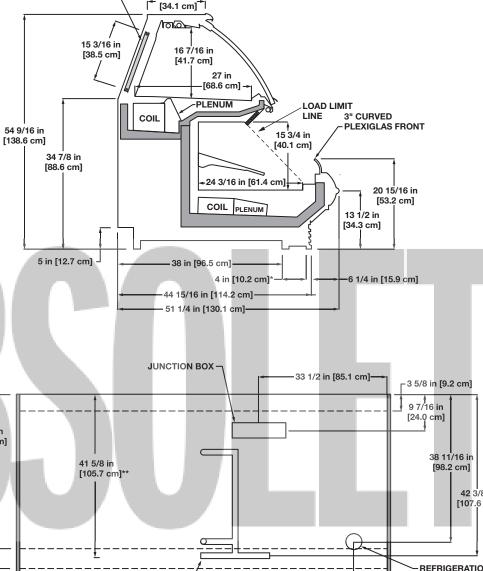


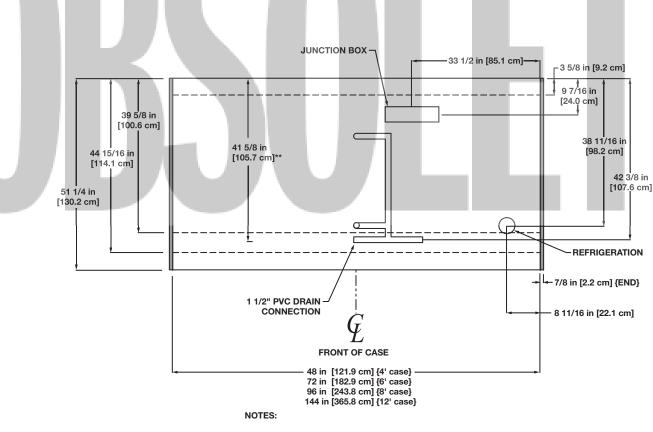
13 7/16 in

REAR SLIDING DOORS









- \* STUB-UP AREA \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- SUCTION LINE 7/8", LIQUID LINE 1/2"
   AVAILABLE SHELF SIZES: 10", 12" & 14"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



# Multi-Deck Flat Glass Dome Meat/Seafood Merchandiser with CoolGenix™ Technology PMFN2UM - 4', 6', 8' & 12'

### **Electrical Data**

	Fans <sup>1</sup>	Standard Fans		High Ef Fa	ficiency Ins		Anti-Condensate Heaters		Secondary <sup>2</sup> Coolant Pump		Defrost	Heaters				
	per		per		120	Volts	120 Volts		120 Volts		120 Volts		208 Volts		240 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts		
PMFN2UM	4'	3	0.68	34	0.30	22	0.55	66	2.10	252	1.92	400	2.22	532		
	6'	4	1.36	68	0.60	44	1.03	124	2.10	252	2.88	600	3.33	798		
	8'	4	1.36	68	0.60	44	1.03	124	2.10	252	3.85	800	4.44	1065		
	12'	6	2.04	102	0.90	66	1.60	192	2.10	252	5.77	1200	6.67	1600		

1 Applicable for self service portion of PMFN2UM case only.

2 Secondary coolant pump is only applicable for the semi-self-contained version of the service dome.

### **Lighting Data**

		Bulbs		Light	al per Row	Maximum Lighting 120 Volts		
		per	Bulb	120	Volts	120	Volts	
Model		Row	Length	Amps	Watts	Amps	Watts	
PMFN2UM	4'	1	4'	0.23	28	0.92	110	
	6'	2	3'	0.37	44	1.48	178	
	8'	2	4'	0.47	56	1.88	226	
	12'	3	4'	0.70	84	2.80	336	

### Cut in / Cut Out

	ASHRAE C	Conditions <sup>3</sup>	Suggested Meat Prep. Settings <sup>4</sup>				
	Cut Out Temp. (°F)	F) Temp. (°F) Temp. (°F) Temp. (°F)					
Pans	26	31	29	33			
Top Coil	26	31	29	34			

3 These temperatures are based on cases running at ASHRAE conditions.

4 These specifications should be considered a guide and may need to be adjusted based on store conditions. Because these cases are often installed in stores near a meat preparation area where standard ASHRAE conditions may not apply; the following suggested meat prep. setting may prove useful.

### Guidelines & Control Settings - Semi-Self-Contained

l	Model	<sup>5,6</sup> BTUH/ft	Evaporator (°F)	Superhea Point @ Bi		Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>8</sup> (FPM)
l	PMFN2UM - Self Service	764 <sup>7</sup>	17	6-8		29	44	275 - 300
Ē						_		-
Į	Model	<sup>5,6</sup> BTUH/ft	Supply Temp. (°F)	Chiller Temp. (°F)	Flow Ra GPM/ft		Max. Worki Pressure (PS	U U
	PMFN2UM - Dome9	322	20	15	0.75	0.25	50	70

5 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.14 (Self-Service) or 1.04 (Dome).

6 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

7 Standard fans increase refrigeration load by 96 BTUH/fan.

8 Average discharge air velocity at peak of defrost.

9 The dome portion of the PMFN2UM case operates using our patented secondary coolant Coolgenix technology. 10 Minimum flow rate.

11 For semi-self-contained cases, add 2.75 gallon of fluid for the chiller to the total charge.

### **Defrost Controls**

			Electric	lectric Defrost Timed Off Defrost			Warm Fluid		
	Defrosts	Run-Off	Fail-safe	Termination	Fail-safe	Termination	Fail-safe	Termination	
Model	Per Day	Time (min)	(min)	Temp. (°F)	(min)	Temp. (°F)	(min)	Temp. (°F)	
PMFN2UM - Self Service	6	6 - 8	30	47	30	47			
PMFN2UM - Dome	1	5	<sup>12</sup>		60	45			

12 NOTE: " - - - " not an option on this case model.



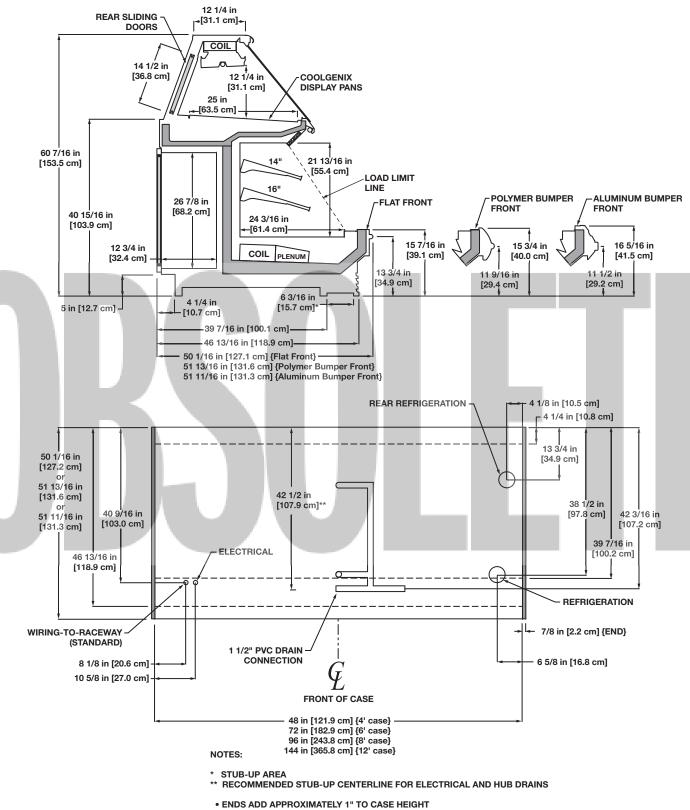




SPECIALTY PRODUCTS

DOM

Meat/Seafood



- SUCTION LINE 7/8", LIQUID LINE 1/2"
   AVAILABLE SHELF SIZES: 10", 12", 14" & 16"
   PRODUCT ON TOP SHELF SHOULD BE 3" BELOW DISCHARGE
- RECOMMENDED SHELF CONFIGURATION IS ROWS: 1-14" & 1-16"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

04/09

# Multi-Deck Flat Glass Dome Meat/Seafood Merchandiser with CoolGenix™

# Technology PMFNUM - 4', 6', 8' & 12'

### **Electrical Data**

	Fans <sup>1</sup>	Standard Fans		0 ,			Anti-Condensate Secondary <sup>2</sup> Heaters Coolant Pump			Defrost Heaters						
	per		per		120 Volte		120 Volts		120 Volts		120 Volts		208 Volts		240 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts		
PMFNUM	4'	3	1.02	51	1.45	33	0.55	66	2.10	252	1.92	400	2.22	532		
	6'	4	1.36	68	0.60	44	0.80	96	2.10	252	2.88	600	3.33	798		
	8'	4	1.36	68	0.60	44	1.03	124	2.10	252	3.85	800	4.44	1065		
	12'	6	2.04	102	0.90	66	1.60	192	2.10	252	5.77	1200	6.67	1600		

1 Applicable for self service portion of PMFNUM case only.

2 Secondary coolant pump is only applicable for the semi-self-contained version of the service dome.

### Lighting Data

		Bulbs		Light		Ligh	mum iting	
		per	Bulb	120	Volts	120	Volts	
Model		Row	Length	Amps	Watts	Amps	Watts	
PMFNUM	4'	1	4'	0.23	28	0.70	84	
	6'	2	3'	0.37	44	1.10	132	
	8'	2	4'	0.47	56	1.40	168	
	12'	3	4'	0.70	84	2.10	252	

### Guidelines & Control Settings - Semi-Self-Contained

# Cut in / Cut Out

	ASHRAE C	Conditions <sup>3</sup>	Suggested Meat Prep. Settings <sup>4</sup>			
	Cut Out Temp. (°F)	Cut in Temp. (°F)	Cut Out Temp. (°F)	Cut in Temp. (°F)		
Pans	26	31	29	33		
Top Coil	26	31	29	34		

3 These temperatures are based on cases running at ASHRAE conditions. 4 These specifications should be considered a guide and may need to be adjusted based on store conditions. Because these cases are often installed in stores near a meat preparation area where standard ASHRAE conditions may not apply; the following suggested meat prep. setting may prove useful.

Model	<sup>5,6</sup> BTUH/ft	Evaporator (°F)	Superhea Point @ Bi		Dischar (°F		Return Air (°F)	Discharge Air Velocity (FPM)
PMFNUM - Self Service	771 <sup>7</sup>	17	6-8		29		44	275 - 300
Model	<sup>5,6</sup> BTUH/ft	Supply Temp. (°F)	Chiller Temp. (°F)	Flow R GPM/1		narge L/ft <sup>11</sup>	Max. Worki Pressure (PS	ing Max. Static SIG) Pressure (PSIG)
PMFNUM - Dome <sup>9</sup>	329	20	15	0.75	5 0	).25	50	70

5 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.14 (Self-Service) or 1.04 (Dome).

6 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

7 Standard fans increase refrigeration load by 96 BTUH/fan.

8 Average discharge air velocity at peak of defrost.

9 The dome portion of the PMFNUM case operates using our patented secondary coolant Coolgenix technology.

10 Minimum flow rate.

11 For semi-self-contained cases, add 2.75 gallon of fluid for the chiller to the total charge.

### Guidelines & Control Settings - Remote Secondary

Model	BTUH/ft	Supply Temp. (°F)	Flow Rate GPM/ft	Charge GAL/ft
PMFNUM - Self Service	840	20	0.65	0.54
PMFNUM - Dome	350	20	0.75	0.50

### **Defrost Controls**

			Electri	c Defrost	Timed C	Off Defrost	t Warm Fluid		
	Defrosts	Run-Off	Fail-safe	Termination	Fail-safe	Termination	Fail-safe	Termination	
Model	Per Day	Time (min)	(min)	Temp. (°F)	(min)	Temp. (°F)	(min)	Temp. (°F)	
PMFNUM - Self Service	6	6 - 8	30	47	30	47	15 <sup>13</sup>	45 <sup>13</sup>	
PMFNUM - Dome	FNUM - Dome 1 5		<b></b> <sup>12</sup>		60	45			

12 NOTE: " - - - " not an option on this case model

13 This option only available on the remote secondary version.





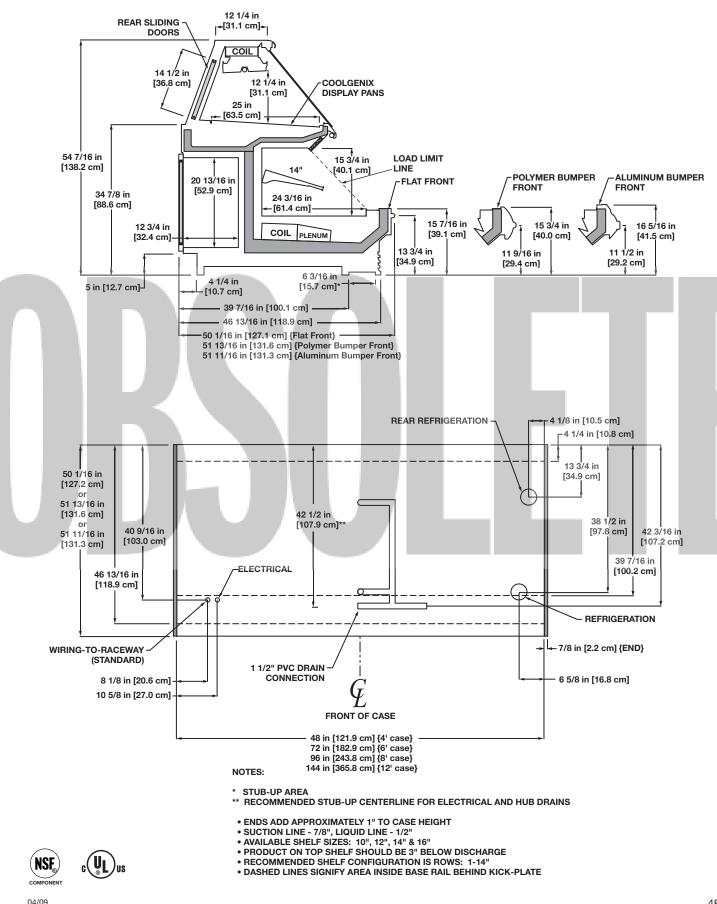


SPECIALTY

PRODUCTS

DOM

Meat/Seafood



# Multi-Deck Curved Glass Dome Meat/Seafood Merchandiser with CoolGenix™ Technology PMN2UM - 4', 6', 8' & 12'

### **Electrical Data**

			Standard Fans		High Efficiency Anti-Condensate Fans Heaters			Secor Coolan	,		Defrost	Heaters		
per		120	120 Volts		120 Volts		120 Volts		120 Volts		208 Volts		Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
PMN2UM	4'	3	0.68	34	0.30	22	0.55	66	2.10	252	1.92	400	2.22	532
	6'	4	1.36	68	0.60	44	1.03	124	2.10	252	2.88	600	3.33	798
	8'	4	1.36	68	0.60	44	1.03	124	2.10	252	3.85	800	4.44	1065
	12'	6	2.04	102	0.90	66	1.60	192	2.10	252	5.77	1200	6.67	1600

1 Applicable for self service portion of PMN2UM case only.

2 Secondary coolant pump is only applicable for the semi-self-contained version of the service dome.

# **Lighting Data**

		Bulbs			al per Row		mum nting
		per	Bulb	120	Volts	120	Volts
Model		Row	Length	Amps	Watts	Amps	Watts
PMN2UM	4'	1	4'	0.23	28	0.92	110
	6'	2	3'	0.37	44	1.48	178
	8'	2	4'	0.47	56	1.88	226
	12'	3	4'	0.70	84	2.80	336

### Cut in / Cut Out

	ASHRAE C	Conditions <sup>3</sup>	Suggested Meat Prep. Settings <sup>4</sup>			
	Cut Out Temp. (°F)	Cut in Temp. (°F)	Cut Out Temp. (°F)	Cut in Temp. (°F)		
Pans	26	31	29	33		
Top Coil	26	31	29	34		

3 These temperatures are based on cases running at ASHRAE conditions.

4 These specifications should be considered a guide and may need to be adjusted based on store conditions. Because these cases are often installed in stores near a meat preparation area where standard ASHRAE conditions may not apply; the following suggested meat prep. setting may prove useful.

### Guidelines & Control Settings - Semi-Self-Contained

Model	<sup>5,6</sup> BTUH/ft	Evaporator (°F)	Superhea Point @ B		Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>8</sup> (FPM)
PMN2UM - Self Service	764 <sup>7</sup>	17	6-8		29	44	275 - 300
Model	<sup>5,6</sup> BTUH/ft	Supply Temp. (°F)	Chiller Temp. (°F)	Flow Ra GPM/	U U	Max. Worki Pressure (PS	ng Max. Static SIG) Pressure (PSIG)
PMN2UM - Dome <sup>9</sup>	322	20	15	0.75	0.25	50	70

5 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.14 (Self-Service) or 1.04 (Dome).

6 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

7 Standard fans increase refrigeration load by 96 BTUH/fan.

8 Average discharge air velocity at peak of defrost.

9 The dome portion of the PMNUM case operates using our patented secondary coolant Coolgenix technology.

10 Minimum flow rate.

11 For semi-self-contained cases, add 2.75 gallon of fluid for the chiller to the total charge.

### **Defrost Controls**

			Electri	c Defrost	Timed C	Off Defrost	Warr	n Fluid
	Defrosts	Run-Off	Fail-safe	Termination	Fail-safe	Termination	Fail-safe	Termination
Model	Per Day	Time (min)	(min)	Temp. (°F)	(min)	Temp. (°F)	(min)	Temp. (°F)
PMN2UM - Self Service	6	6 - 8	30	47	30	47		
PMN2UM - Dome	1	5	<sup>12</sup>		60	45		

12 NOTE: "- - -" not an option on this case model.





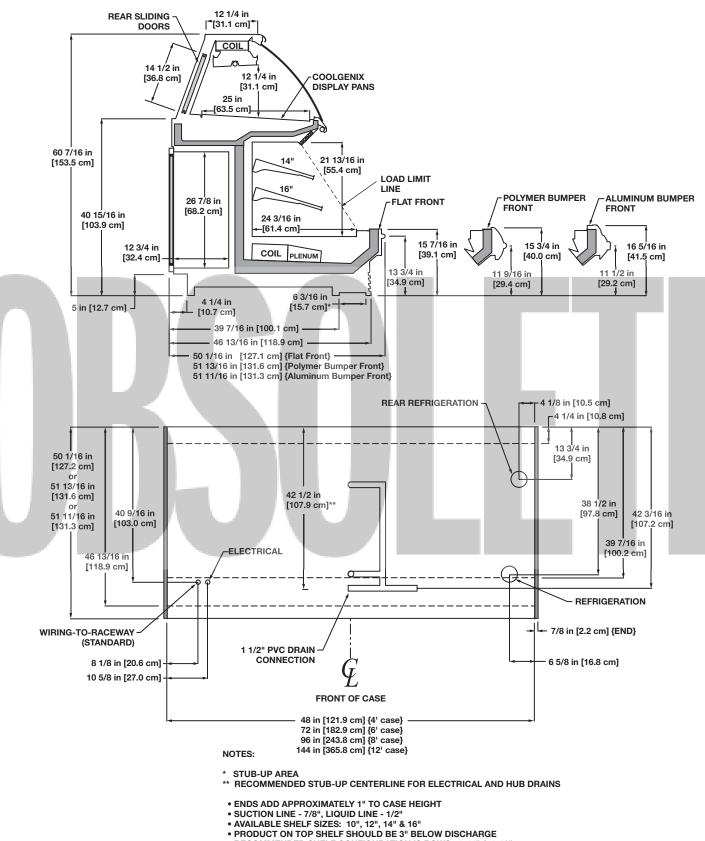


SPECIALTY

PRODUCTS

DOM

Meat/Seafood



- RECOMMENDED SHELF CONFIGURATION IS ROWS: 1-14" & 1-16"
- DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



# Multi-Deck Curved Glass Dome Meat/Seafood Merchandiser with CoolGenix<sup>™</sup> Technology PMNUM - 4', 6', 8' & 12'

### **Electrical Data**

		Standard Fan		Standard Fans		Condensate Secondary <sup>2</sup> leaters Coolant Pump			Defrost Heaters					
		per	120	Volts	120	Volts	120	Volts	120	Volts	208	Volts	240	Volts
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
PMNUM	4'	3	0.68	34	0.30	22	0.55	66	2.10	252	1.92	400	2.22	532
	6'	4	1.36	68	0.60	44	1.03	124	2.10	252	2.88	600	3.33	798
	8'	4	1.36	68	0.60	44	1.03	124	2.10	252	3.85	800	4.44	1065
	12'	6	2.04	102	0.90	66	1.60	192	2.10	252	5.77	1200	6.67	1600

1 Applicable for self service portion of PMNUM case only.

2 Secondary coolant pump is only applicable for the semi-self-contained version of the service dome.

### Lighting Data

		Bulbs per	Bulb	Light	al per Row Volts	Maximum Lighting 120 Volts	
Model		Row	Length	Amps	Watts	Amps	Watts
PMNUM	4'	1	4'	0.23	28	0.70	84
	6'	2	3'	0.37	44	1.10	132
	8'	2	4'	0.47	56	1.40	168
	12'	3	4'	0.70	84	2.10	252

### Guidelines & Control Settings - Semi-Self-Contained

### Cut in / Cut Out

	ASHRAE C	Conditions <sup>3</sup>	Suggested Meat Prep. Settings <sup>4</sup>			
	Cut Out Temp. (°F)	Cut in Temp. (°F)	Cut Out Temp. (°F)	Cut in		
Pans	26	31	29	33		
Top Coil	26	31	29	34		

These temperatures are based on cases running at ASHRAE conditions.
 These specifications should be considered a guide and may need to be adjusted based on store conditions. Because these cases are often installed in stores near a meat preparation area where standard ASHRAE conditions may not apply; the following suggested meat prep. setting may prove useful,

Model	<sup>5,6</sup> BTUH/ft	Evaporator (°F)	Superhea Point @ Bi		Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>8</sup> (FPM)
PMNUM - Self Service	764 <sup>7</sup>	17	6-8		29	44	275 - 300
Model	<sup>5,6</sup> BTUH/ft	Supply Temp. (°F)	Chiller Temp. (°F)	Flow Rat GPM/ft <sup>10</sup>		Max. Worki Pressure (PS	ing Max. Static SIG) Pressure (PSIG)
PMNUM - Dome <sup>9</sup>	322	20	15	0.75	0.25	50	70

### Guidelines & Control Settings - Remote Secondary

Model	<sup>5,6</sup> BTUH/ft	Supply Temp. (°F)	Flow Rate GPM/ft <sup>10</sup>	Charge GAL/ft
PMNUM - Self Service	764 <sup>7</sup>	20	0.65	0.54
PMNUM - Dome	322	20	0.75	0.50

5 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.14 (Self-Service) or 1.04 (Dome).

6 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load.

To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

7 Standard fans increase refrigeration load by 96 BTUH/fan.

8 Average discharge air velocity at peak of defrost.

9 The dome portion of the PMNUM case operates using our patented secondary coolant Coolgenix technology.

10 Minimum flow rate.

11 For semi-self-contained cases, add 2.75 gallon of fluid for the chiller to the total charge.

### **Defrost Controls**

			Electric Defrost		Timed C	Off Defrost	Warm Fluid	
	Defrosts	Run-Off	Fail-safe	Termination	Fail-safe	Termination	Fail-safe	Termination
Model	Per Day Time (min)		(min)	Temp. (°F)	(min)	Temp. (°F)	(min)	Temp. (°F)
PMNUM - Self Service	6	6 - 8	30	47	30	47	15 <sup>13</sup>	45 <sup>13</sup>
PMNUM - Dome	1	5	<b></b> <sup>12</sup>		60	45		

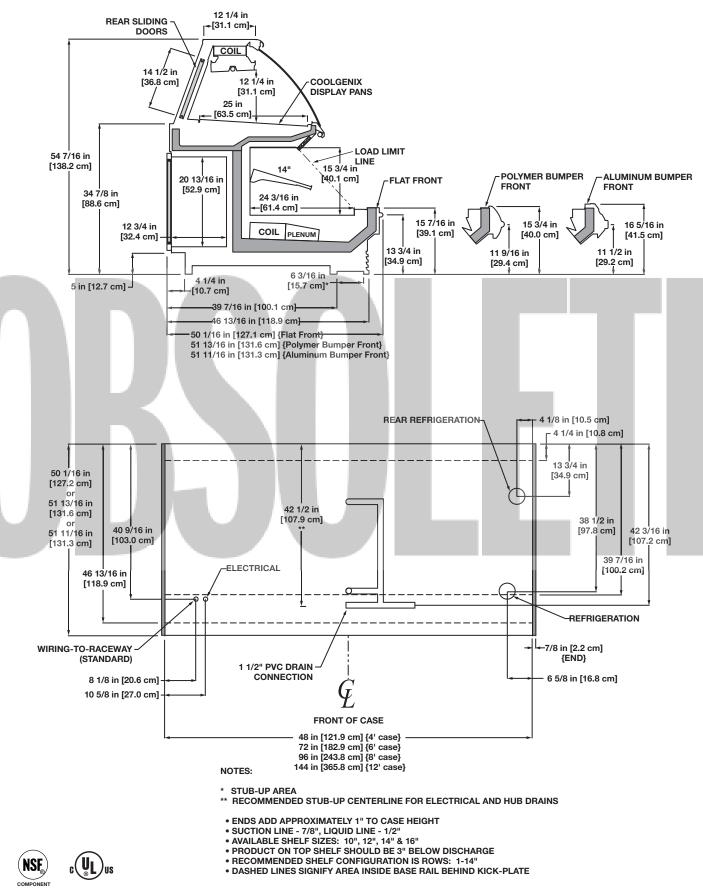
12 NOTE: "- - -" not an option on this case model.

11 This option only available on the remote secondary version.









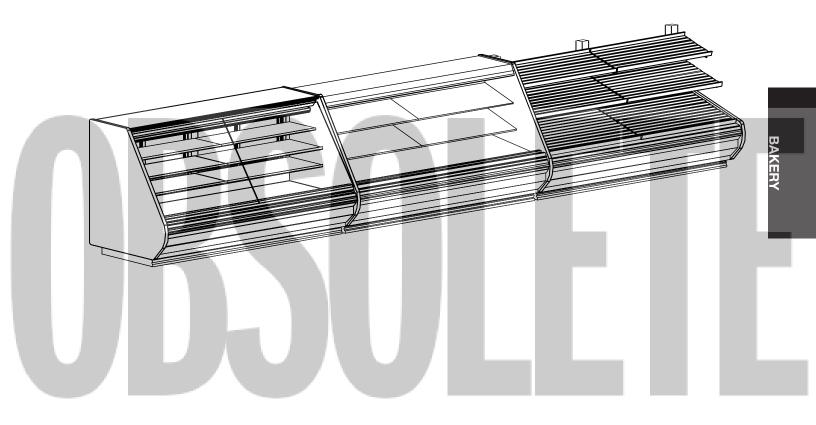
04/09

SPECIALTY

DOM



# BAKERY



### NOTES

- Cases shown with an ANSI/NSF\* Mark are Certified by NSF
- Cases shown with an UL\* Mark are Listed by Underwriters Laboratories Inc.
- Allow for an extra 1/8" per joint when lining up merchandisers.
- Technical information contained herein is subject to change without notice.

\* ANSI - American National Standard Institute NSF - National Sanitation Foundation UL - Underwriters Laboratories Inc

## Secondary Coolant Curved Glass Blower Coil Deli/Bakery Merchandiser S3SBV

#### **Electrical Data**

		Fans	Standa	rd Fans	High-Ef Fa	ficiency ns	Farra	Ambier	nt Fans		Defrost	Heaters	
		per	120	120 Volts 12		Volts	Fans per	120 Volts		208	Volts	240 Volts	Volts
Model		Case	Amps	Watts	Amps	Watts	Case	Amps	Watts	Amps	Watts	Amps	Watts
S3SBV	4'	2	0.68	34	0.30	22	3	33	54	1.92	400	2.22	532
	6'	2	0.68	34	0.30	22	5	55	90	2.88	600	3.33	798
	8'	3	1.02	51	0.45	33	6	66	108	3.85	800	4.44	1065
	12'	4	1.36	68	0.60	44	9	99	162	5.77	1200	6.67	1600

## **Lighting Data**

				Typic Light	al per Row	Maxi Ligh		
		Bulbs per	Bulb	120	Volts	120 Volts		
Model		Row	Length	Amps	Watts	Amps	Watts	
S3SBV	4'	1	4'	0.23	28	1.38	168	
	6'	2	3'	0.37	44	2.22	264	
	8'	2	4'	0.47	56	2.82	336	
	12'	3	4'	0.70	84	4.20	504	

## **Guidelines & Control Settings**

L	Model	<sup>2,3</sup> BTUH/ft	Evaporator (F°)	Superheat Set Point @ bulb (F°)	Discharge Air (F°)	Return Air (F°)	Discharge Air Velocity <sup>5</sup> (F°)
S	S3SBV <sup>1</sup>	435 <sup>4</sup>	22	6-8	30	38	235

1 All settings apply for both deli and bakery application.

2 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.15.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

	Electric Defrost		Timed (	Off Defrost	Hot Gas Defrost				
Mod	lel	Defrosts Per Day	Run-Off Time (min)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)	Fail-Safe (min)	Termination Temp (°F)
S3SE	BV	4	6-8	35	50	60	47	20	45

Medium Temperature Defrost Schedule

No.	Per	Day	Hours
		_	

- 1 12 midnight
- 12 am 12 pm 6 am 2 pm 10 pm 2 3
- 12 6 am 12 6 pm 4



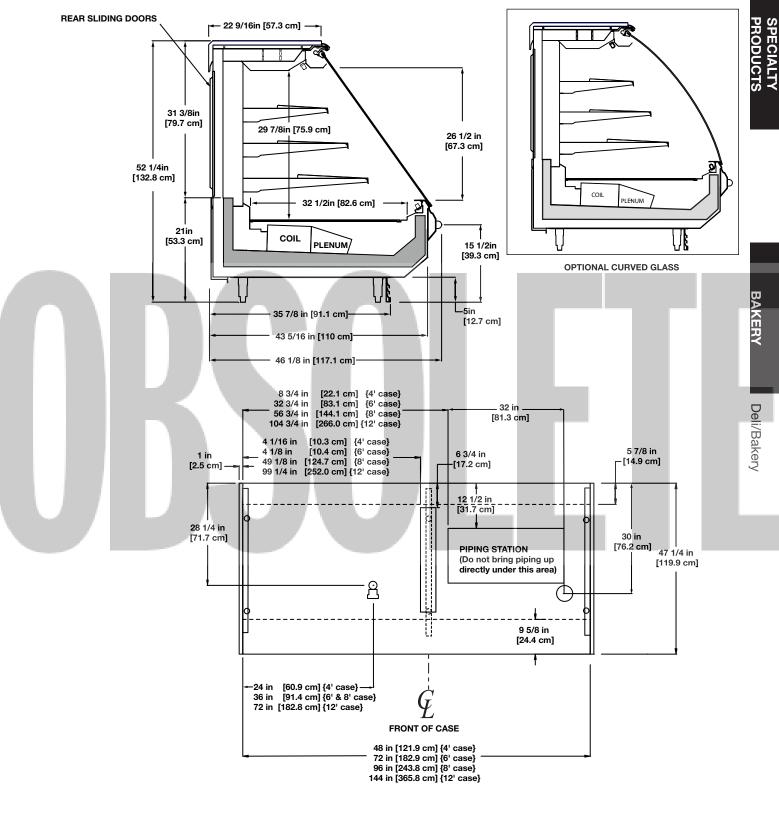
US





#### S3SBV

**HIII PHOENIX** A DOVER COMPANY



NOTES:

- SUCTION LINE 5/8"
   LIQUID LINE (ALL LENGTHS) 3/8"
- DASHED LINES SIGNIFY THE AREA BEHIND THE KICK-PLATE

(NSF<sub>®</sub>)

COMPONENT

c( UL

## Full Service Bakery Merchandiser OB - 4', 5', 6.5', & 8'

## **Electrical Data**

	Fans per Case		s per	Ambier	nt Fans <sup>1</sup>	Standar	d Fans	0	ficiency Ins		ndensate aters		Defrost	Heaters	
			ase	120 Volts		120 Volts		120 Volts		120 Volts		208 Volts		240 Volts	
Model		Pri.	Amb.	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OB	4'	2	2	0.30	11	0.68	34	0.30	22	1.6	192	<sup>2</sup>			
	5'	2	2	0.30	11	0.68	34	0.30	22	2.0	240				
	6.5'	3	2	0.30	11	1.02	51	0.45	33	2.4	288				
	8'	4	3	0.45	17	1.36	68	0.60	44	2.8	336				

1 Ambient fans are standard equipment for this case model. The primary fans can be either standard or high efficiency.

2 NOTE: " - - - " not an option on this case model.

## **Lighting Data**

		Light	al per Row Volts	Ligh	imum nting Volts					
Model		Amps	Watts	Amps	Watts					
OB	4'	0.57	68	1.14	137					
	5'	0.57	68	1.14	137					
	6.5'	0.57	68	2.11	253					
	8'	0.57	68	2.11	253					
<b>Guideli</b> Model		<b>&amp; Сс</b>	Eva	Setti porator (°F)	ngs Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>6</sup> (FPM)		F.
OB		522 <sup>5</sup>		27	6-8	32	39	338		
	-				l ratings may be approxir d 80 BTUH per 4' lighted			10. f to determine Total Lighting BTUł	4	

Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

5 Standard fans increase refrigeration load by 96 BTUH/fan.

6 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

			Electri	c Defrost	Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
OB	3	6 - 8			45	47	26	45	45	45

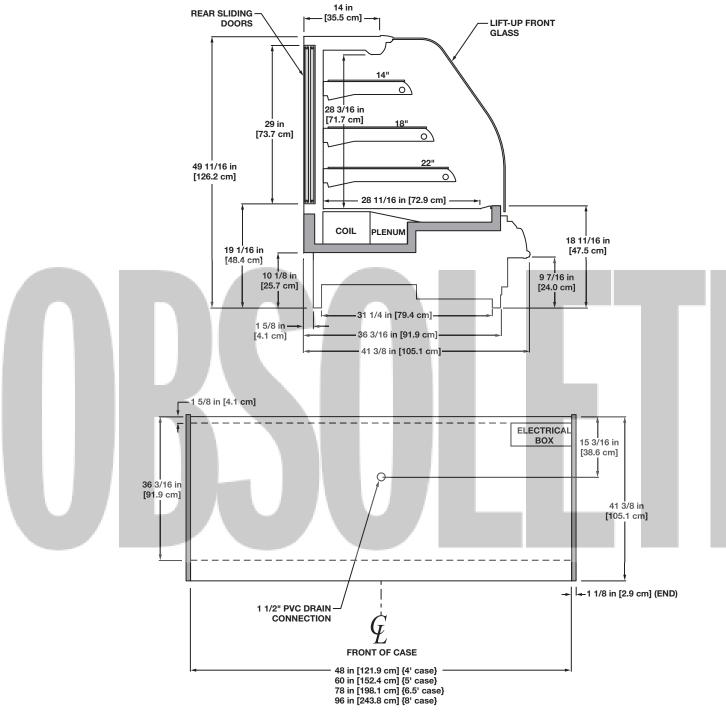
Medium Temperature Defrost Schedule

No. Per Day	Hours
4	10 midnight
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm



BAKERY

Bakery



OB

NOTES:

AVAILABLE SHELF SIZES: 14", 18", & 22"
 DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

# Full Service Self-Contained Bakery Merchandiser

OBA - 4', 5', 6.5', & 8'

#### **System Requirements**

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Fuse Size
OBA	4'	120	1	60	2 wire + ground	12.5	20
	5'	120	1	60	2 wire + ground	12.5	20
	6.5'	120	1	60	2 wire + ground	17.8	25
	8'	220	1	60	3 wire + ground	14.8	20

## **Lighting Data**

		Typic: Light		Maximum Lighting		
	1	120 \	Volts	120 Volts		
Model		Amps	Watts	Amps	Watts	
OBA	OBA 4'		68	1.14	137	
	5'	0.57	68	1.14	137	
	6.5'	0.57	68	2.11	253	
	8'	0.57	68	2.11	253	
	1. I I I I I I I I I I I I I I I I I I I					

## **Guidelines & Control Settings**

Model	24 hr Energy Usage (kWh)		Supe <mark>rheat Se</mark> t Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>1</sup> (FPM)
OBA-4'		54-58	6-8	32	39	338
OBA-5'		54-58	6-8	32	39	338
OBA-6.5'		54-48	6-8	32	39	338
OBA-8'		54-58	6-8	32	39	338

1 Average discharge air velocity at peak of defrost.

## **Condensing Unit Data**

l	Model	Volts	Phase	Frequency (Hz)	HP	RLA <sup>2</sup> (amps)	LRA <sup>3</sup> (amps)	Refrig.	lbs of Refrig.
ï	OBA-4'	120	1	60	1/4	9.3	36.0	R134A	3.1
i	OBA-5'	120	1	60	1/2	9.0	51.0	R134A	3.6
	OBA-6.5'	120	1	60	1/2	12.9	66.3	R134A	5
I	OBA-8'	220	1	60	3/4	10.9	56	R134A	3.75

2 RLA - Running Load Amps.

3 LRA - Locked Rotor Amps.

## **Defrost Controls**

		Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
OBA	4	4		40	49				

4 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

No.	Per	Day	Hours
-			

1	12 midnight
---	-------------

```
12 am - 12 pm
6 am - 2 pm - 10 pm
12 - 6 am - 12 - 6 pm
2
3
```

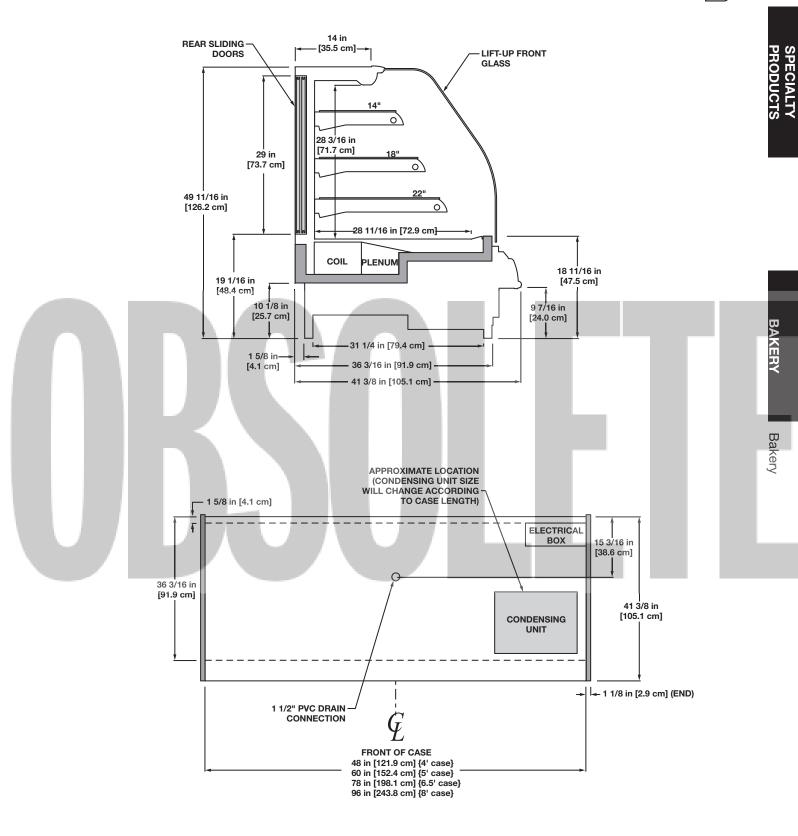
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4
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04/09

# Full Service Dry Bakery Merchandiser OBD - 4', 5', 6.5', & 8'

## Lighting Data

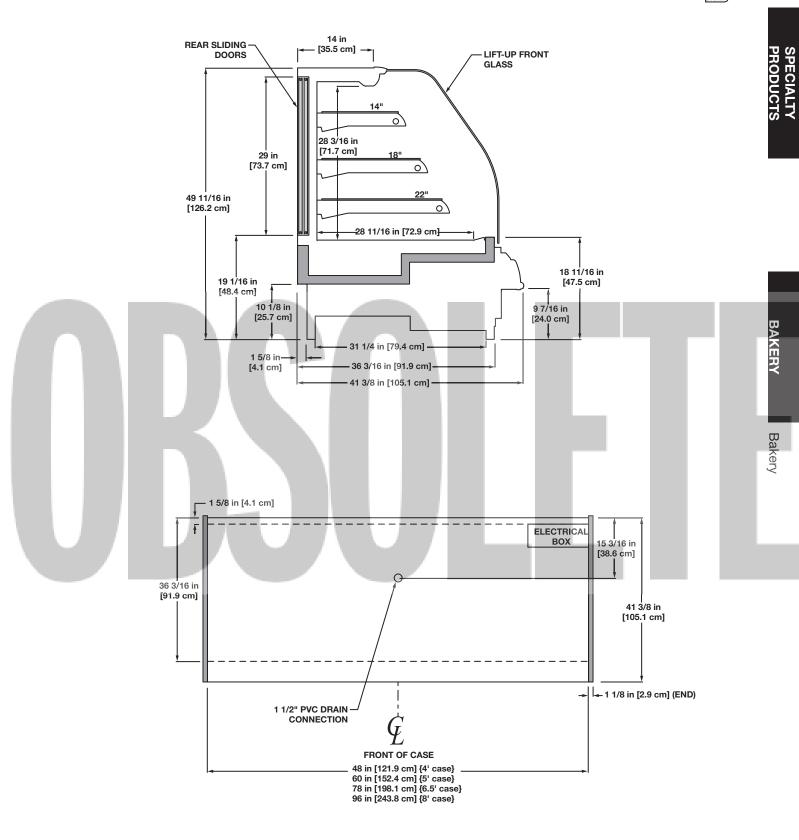
			al per Row	Maximum Lighting		
		120	120 Volts 120 Volt			
Model		Amps	Watts	Amps	Watts	
OBD	4'	0.57	68	1.14	137	
	5'	0.57	68	1.14	137	
	6.5'	0.57	68	2.11	253	
	8'	0.57	68	2.11	253	











04/09

#### **Electrical Data**

	Standard Fans				High Efficiency Fans		Anti-Condensate Heaters		Defrost Heaters			
Fans per		120 \	120 Volts		120 Volts		120 Volts		208 Volts		240 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OBIF	4'	2	0.68	34	0.30	22	1					
	5'	2	0.68	34	0.30	22						
	6.5'	3	1.02	51	0.45	33						

1 NOTE: " - - - " not an option on this case model.

## **Lighting Data**

		Light	al per Row Volts	Maximum Lighting 120 Volts		
Model		Amps	Watts	Amps	Watts	
OBIF	OBIF 4'		68	1.14	137	
	5'	0.57	68	1.14	137	
	6.5'	0.57	68	2.11	<b>2</b> 53	

## **Guidelines & Control Settings**

l	Model	<sup>2,3</sup> BTUH/ft	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)
I	OBIF	526 <sup>4</sup>	27	6-8	29-30	40-42	210-240

2 BTUH/ft listing is for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.13.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

Г			Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
L	Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
	OBIF	4			40	49				

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm

3 6 am - 2 pm - 10 pm

4 12 - 6 am - 12 - 6 pm

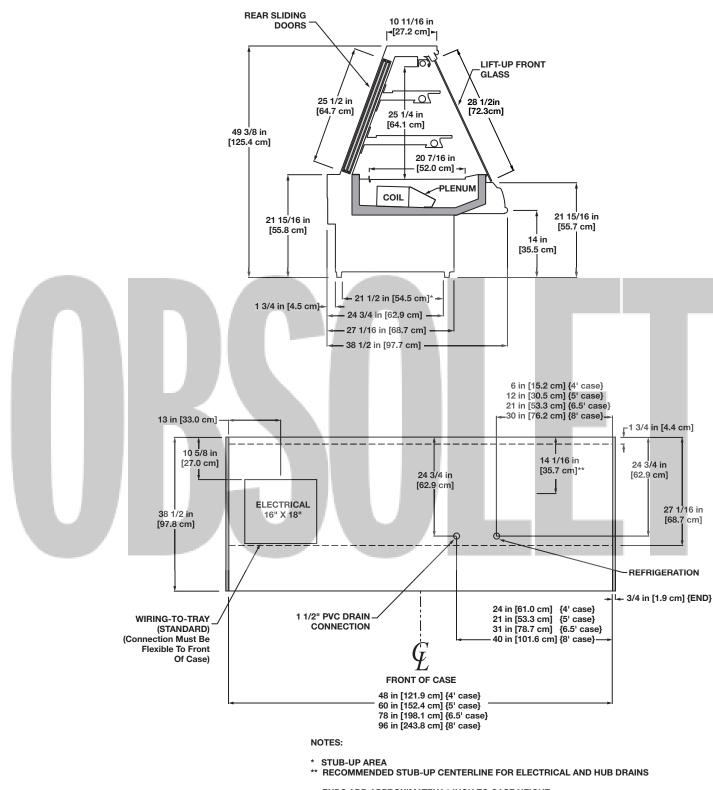






BAKERY

Bakery



- AVAILABLE SHELF SIZES: 10" & 16"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

## **System Requirements**

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Fuse Size
OBIFA	4'	120	1	60	2 wire + ground	15.5	20
	6.5'	120	1	60	2 wire + ground	20.1	25

## **Lighting Data**

			Typic Light		Maximum Lighting			
l			120	Volts	120	120 Volts		
l	Model		Amps	Watts	Amps	Watts		
ľ	OBIFA	4'	0.57	68	1.14	137		
		6.5'	0.57 68		2.11	253		

## **Guidelines & Control Settings**

Model	24 hr Energy Usage (kWh)	Suction Pressure @ Case Outlet (psig)	Supe <mark>rheat Se</mark> t Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>1</sup> (FPM)
OBIFA-4'	26.5	72-74	6-8	29-30	40-42	210-240
OBIFA-6.5'	35.3	72-74	6-8	29-30	40-42	210-240

1 Average discharge air velocity at peak of defrost.

## **Condensing Unit Data**

			Frequency		RLA <sup>2</sup>	LRA <sup>3</sup>		lbs of
Model	Volts	Phase	(Hz)	HP	(amps)	(amps)	Refrig.	Refrig.
OBIFA-4'	120	1	60	1/4	4.94	25	R134A	3.1
OBIFA-6.5'	120	-1	60	1/3	7.20	29	R134A	3.5

2 RLA - Running Load Amps.

3 LRA - Locked Rotor Amps.

## **Defrost Controls**

Г			Electri	c Defrost	Timed (	Off Defrost	Hot Ga	as Defrost	Reverse	Air Defrost
l	Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)						
	OBIFA	4	4		40	49				

4 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

No. Per Day Hours
-------------------

1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	10 Cam 10 Cam

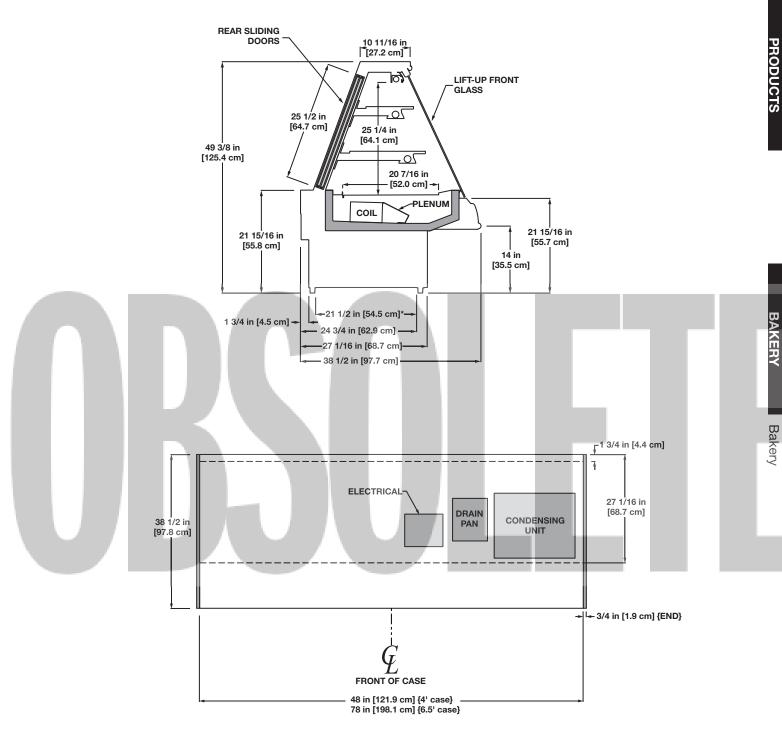
4 12 - 6 am - 12 - 6 pm



## **OBIFA**



SPECIALTY



NOTES:

• ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

AVAILABLE SHELF SIZES: 10" & 16"
 ADALABLE SHELF SIZES: 10" & 16"
 ADASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

## **Lighting Data**

				al per Row	Maximum Lighting		
			120	Volts	120 Volts		
Mod	Model		Amps	Watts	Amps	Watts	
OBI	D	4'	0.57	68	1.14	137	
		6.5'	0.57	68	2.11	253	

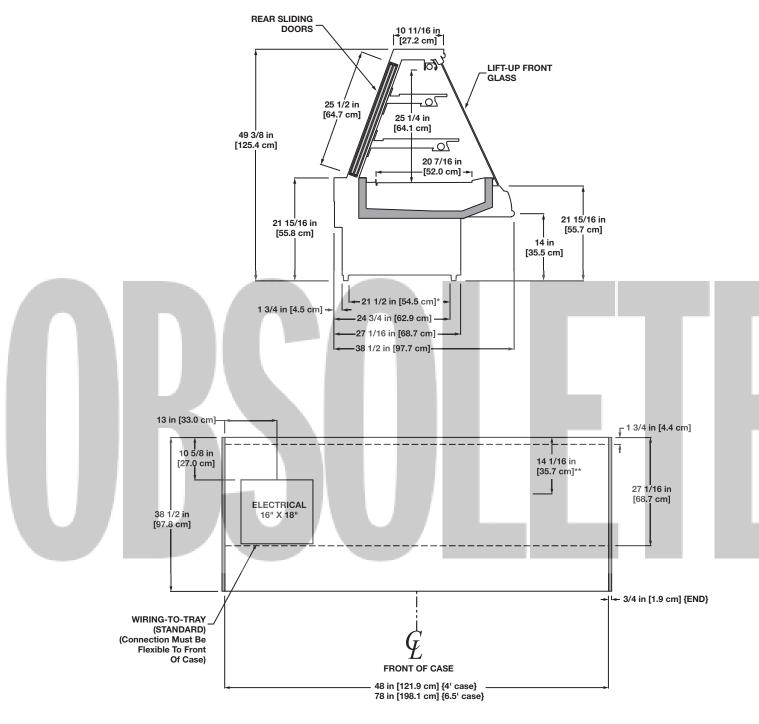






BAKERY

Bakery



#### NOTES:

- \* STUB-UP AREA \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL CONNECTIONS

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
   AVAILABLE SHELF SIZES: 10" & 16"
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE

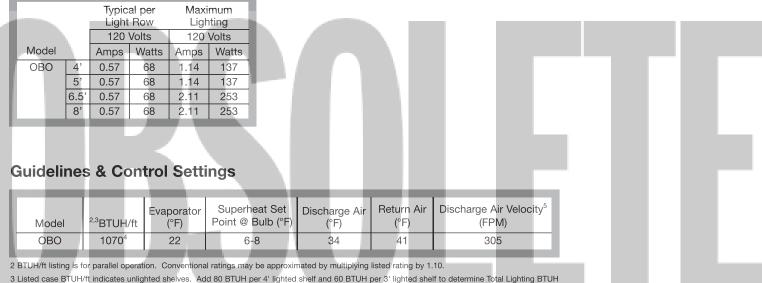
## Self Service Bakery/Deli Merchandiser OBO - 4', 5', 6.5', & 8'

#### **Electrical Data**

Г			Standar	d Fans	0	High Efficiency Fans		Anti-Condensate Heaters <sup>1</sup>		Defrost Heaters			
	Fans per		120 \	120 Volts		120 Volts 120 Volts		Volts	208 Volts		240 Volts		
	Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
	OBO	4'	2	0.68	34	0.30	22	1					
		5'	2	0.68	34	0.30	22						
		6.5'	2	0.68	34	0.30	22						
		8'	3	1.02	51	0.45	33						

1 NOTE: "- - -" not an option on this case model.

## **Lighting Data**



Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

			Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost		
M	odel	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
0	BO	3	6 - 8			45	47	26	45	45	45

Medium Temperature Defrost Schedule

No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm

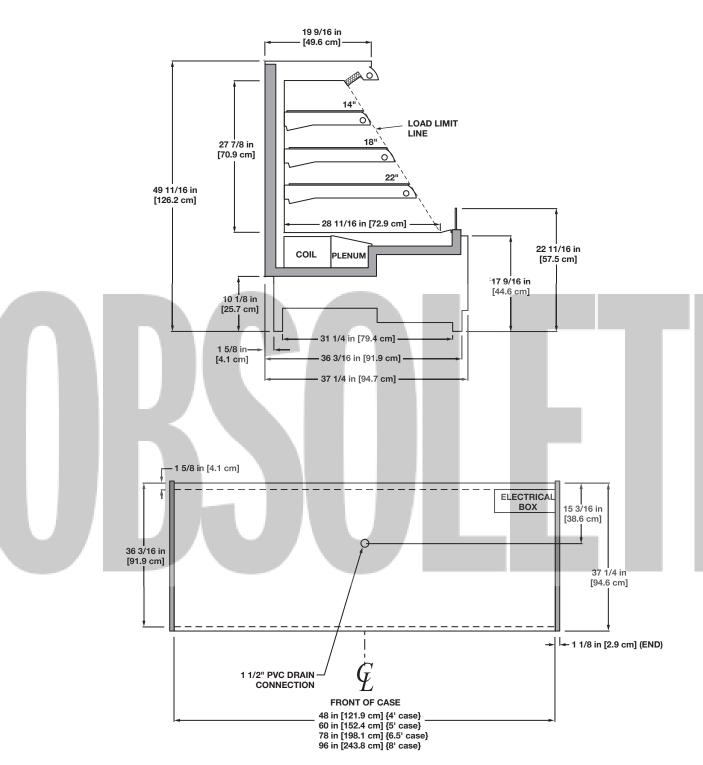
4 12 - 6 am - 12 - 6 pm





BAKERY

Bakery



NOTES:

AVAILABLE SHELF SIZES: 14", 18", & 22"
 DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



#### **System Requirements**

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Fuse Size
OBOA	4'	120	1	60	2 wire + ground	15.5	20

## **Lighting Data**

			al per Row	Maximum Lighting		
		120 Volts		120 Volts		
Model	Model		Watts	Amps	Watts	
OBOA	OBOA 4'		0.57 68		137	

## **Guidelines & Control Settings**

1 Average discharge air velocity at peak of defrost.

## **Condensing Unit Data**

Model Vo	olts	Phase	Frequency (Hz)	ΗР	RLA <sup>2</sup> (amps)	LRA <sup>3</sup> (amps)	Refrig.	lbs of Refrig.
OBOA-4' 12	20	1	60	1/4	7.6	35.5	R134A	3.0
LA - Running Load Amps RA - Locked Rotor Amps								

#### **Defrost Controls**

		Electric Defrost		Timed (	Off Defrost	Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
OBOA	4	<sup>4</sup>		40	49				

4 NOTE: "- - -" not an option on this case model.

Medium Temperature Defrost Schedule

Hours
12 midnight
12 am - 12 pm
6 am - 2 pm - 10 pm
12 - 6 am - 12 - 6 pm

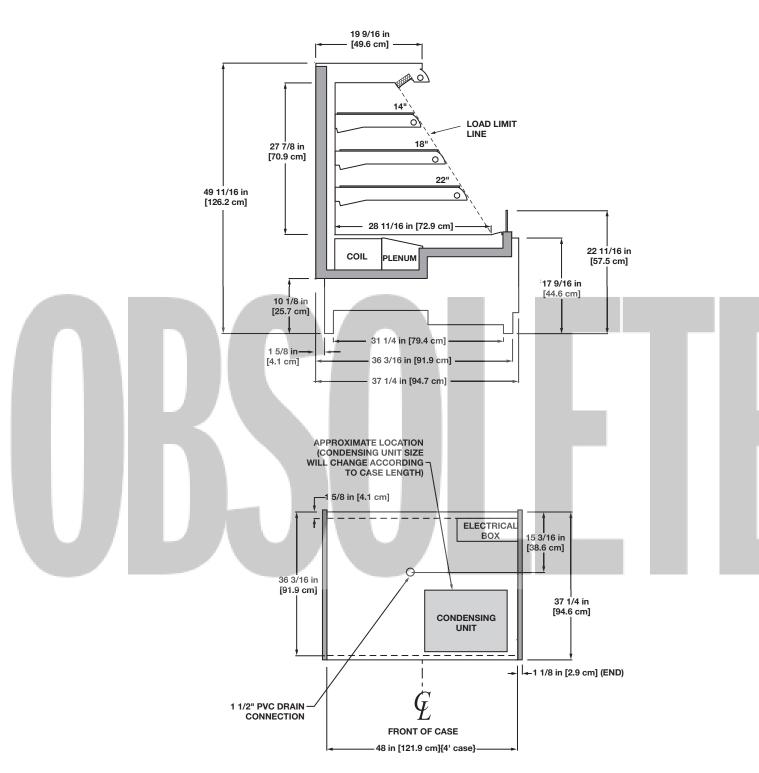






BAKERY

**Deli/Bakery** 



04/09

## Self Service Bakery/Deli Merchandiser OBOL - 4', 5', 6.5', & 8'

#### **Electrical Data**

			Standar	d Fans	High Efficiency Fans		Anti-Condensate Heaters <sup>1</sup>		Defrost Heaters			
	Fans per		r 120 Volts		120 Volts		120 Volts		208 Volts		240 Volts	
Model		Case	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OBOL	4'	2	0.68	34	0.30	22	1					
	5'	2	0.68	34	0.30	22						
	6.5'	2	0.68	34	0.30	22						
	8'	3	1.02	51	0.45	33						

1 NOTE: "- - -" not an option on this case model.

## **Lighting Data**

Į			Typica Light I 120 V	Row	Ligi	imum hting Volts				
	Model			Watts	Amps					
Ir.	OBOL	4'	0.57	68	1.14	137				
		5'	0.57	68	1.14	137				
		6.5'	0.57	68	1.14	137				
н.		8'	0.57	68	1.14	137				
G	uideliı	nes	& Co							
L	Model	:	<sup>2,3</sup> BTUH/f	Evar t	oorator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity <sup>5</sup> (FPM)	
0	)BOL bake	ery	370 <sup>4</sup>		27	6-8	33	40	305	
	)BOL deli		370 <sup>4</sup>		22	6-8	30	37	305	

2 BTUHs/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.09.

3 Listed case BTUH/ft indicates unlighted shelves. Add 80 BTUH per 4' lighted shelf and 60 BTUH per 3' lighted shelf to determine Total Lighting BTUH

Load. To obtain the BTUH/ft contribution for the lighting, divide the Total Lighting BTUH Load by the length of the case.

4 Standard fans increase refrigeration load by 96 BTUH/fan.

5 Average discharge air velocity at peak of defrost.

## **Defrost Controls**

			Electri	c Defrost	Timed C	Off Defrost	Hot Ga	s Defrost	Reverse	Air Defrost
Model	Defrosts Per Day	Run-Off Time (min)	Fail-safe (min)	Termination Temp. (°F)						
OBOL	3	6 - 8			45	47	26	45	45	45

Medium Temperature Defrost Schedule

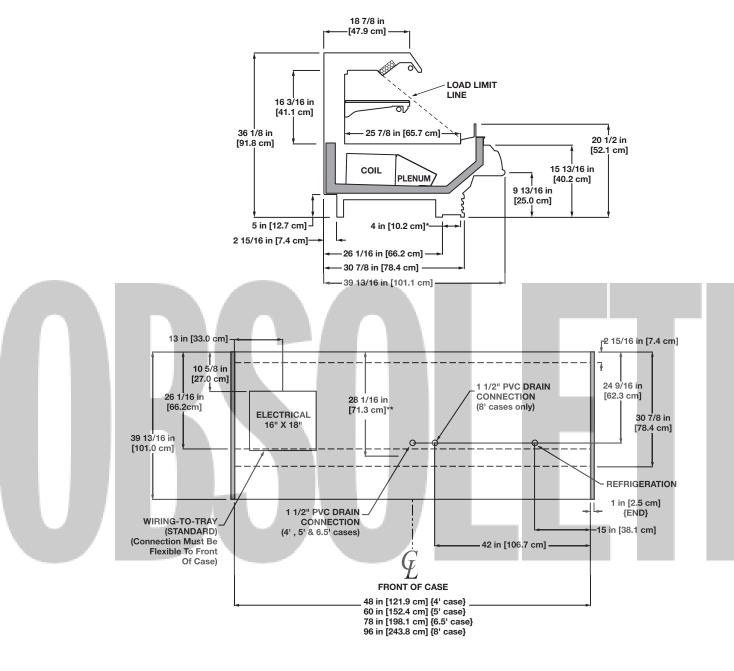
No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm

4 12 - 6 am - 12 - 6 pm









NOTES:

- \* STUB-UP AREA
- \*\* RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

- SUCTION LINE 7/8", LIQUID LINE 1/2"
   AVAILABLE SHELF SIZES: 12" & 14"
   MAXIMUM OF 1 SHELF PER CASE
   DASHED LINES SIGNIFY AREA INSIDE BASE RAIL BEHIND KICK-PLATE



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