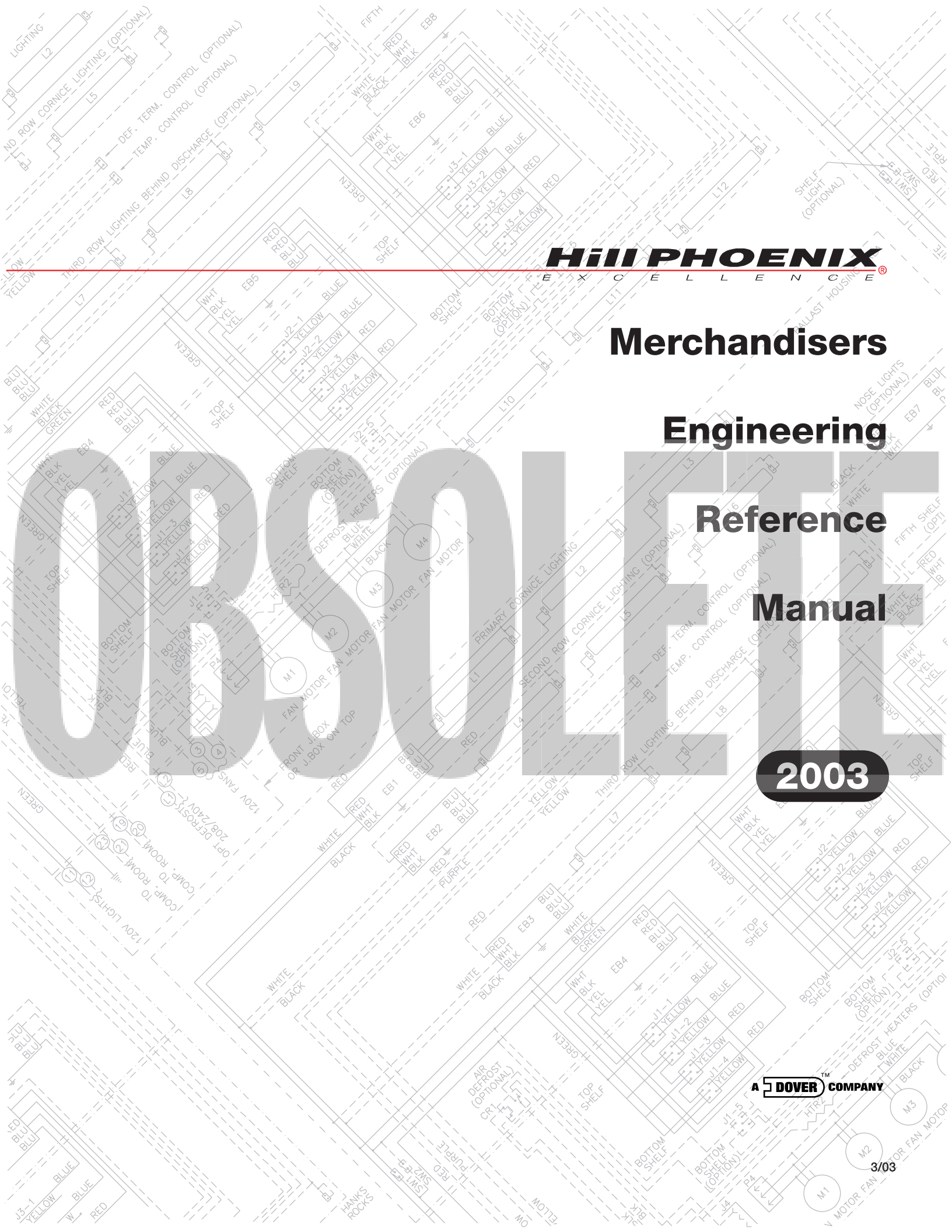

Hill PHOENIX
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Merchandisers

Engineering Reference Manual

2003

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3/03

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Welcome to the 2003 **Merchandisers Engineering Reference Manual.** This manual is designed to provide you with cross-sections, footprints and technical data for all of our current production models. This manual is divided into sections based on design considerations which put similar case models together (single deck merchandisers, multi-deck merchandisers, reach-in merchandisers, etc.). This makes it easy to find just the right case to fit your new, or existing, store layout. The table of contents lists our cases by design application and by departmental 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.

This entire manual is posted to our web site at *www.hillphoenix.com* in the Information Center. Any new cases that are released during the year or any revisions to technical information on our current cases will be posted to our web site. If you have questions about our display merchandisers or need more information please contact one of our Sales Representatives. The phone number and address for our Colonial Heights facility is listed on the back cover of this manual and further contact information is available on our web site.

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Revisions From the 2002 Merchandisers Engineering Reference Manual

Release 1/02

New Case Models Added

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Global Changes

The 4’ footprint has been combined with the standard footprint on all case models available in 4’ lengths that had separate footprints for the 4’ model

All 2” drain connections have been changed to 1 1/2” drain connections.

The naming scheme on all dairy style fronts has changed to reflect a new naming convention.

Revisions

OC	Page 4	New suction temperature added.
OM	Page 6	New suction temperature added.
OMZD	Page 10	Standard fan amperage changed.
OP	Page 18	New suction temperature added for both applications.
ONZ	Page 14	Standard fan amperage changed.
OSIO	Page 24	Standard fan amperage changed. Suction temperature changed.
OWSIO	Page 26	Standard fan amperage changed. Suction temperature changed.
OSIOP	Page 28	Standard fan amperage changed.
OSIOZ	Page 30	Standard fan amperage changed.

UP	Page 32	Standard fan amperage changed.
BB	Page 36	Standard fan amperage changed.
ONUMD	Page 38	New suction temperature added.
ON2UM	Page 40	New suction temperature added.
O2UM	Page 44	New suction temperature added.
ON2.5UM	Page 50	New suction temperature added.
O2.5UM	Page 54	New suction temperature added.
ON3UM	Page 62	New suction temperature added.
O3UM	Page 66	New suction temperature added.
O3UD	Page 72	New suction temperature added.
ON3.5UM	Page 74	New suction temperature added.
O3.5UM	Page 78	New suction temperature added.
O3.5UD	Page 82	New suction temperature added.
ON4UM	Page 84	New suction temperature added.
O4UM	Page 88	New suction temperature added.
O5UM	Page 92	New suction temperature added.
O6UM	Page 100	New suction temperature added.
ON5DM	Page 104	5” extended front data added to model. New suction temperature added for all applications. BTUH/ft changed for dairy application.
ON5DMH	Page 108	5” extended front data added to model. New suction temperature added for all applications.
O5DM	Page 110	New suction temperature added for all applications. BTUH/ft changed for dairy application.
O5DMH	Page 116	New suction temperature added for all applications.
O5DR	Page 120	New suction temperature added for all applications.
ONHM	Page 124	New suction temperature added.
ONHMH	Page 126	New suction temperature added.
OHM	Page 128	New suction temperature added. BTUH/ft changed at 17^{O} suction temperature.

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Release 1/02

OHMH	Page 130	Anti-Condensate heater amperage changed. New suction temperature added. BTUH/ft changed at 17° suction temperature.
ONHP	Page 134	New suction temperature added for both applications.
ONHPH	Page 136	New suction temperature added for both applications.
OHP	Page 138	Defrost schedule changed. New suction temperature added for both applications.
OHPH	Page 140	Anti-Condensate heater amperage changed. Suction temperatures changed and new suction temperature added for both applications.
ONNA	Page 146	Standard fan amperage changed.
ORDR	Page 152	Footprint updated with new locations of suspension brackets.
KRZH	Page 174	Anti-Condensate heater amperage changed. Maximum lighting data for the 4 door case changed. Cross-Section updated.
ONRB	Page 176	Cross-Section and footprint updated with new baseframe dimensions.
ONRBH	Page 178	Cross-Section and footprint updated with new baseframe dimensions.
ONRZ	Page 184	Cross-Section and footprint updated with new baseframe dimensions.
ONRZH	Page 186	Cross-Section and footprint updated with new baseframe dimensions.
ONRIZ	Page 194	BTUH/ft load changed. Added 2 door case to data and footprint.
ONRIZH	Page 196	BTUH/ft load changed. Added 2 door case to data and footprint.
ONIM	Page 200	Standard fan amperage changed.
ONIMA	Page 204	Standard fan amperage changed.
ONIMBA	Page 206	Standard fan amperage changed.
OIM	Page 208	Standard fan amperage changed.
OIMA	Page 212	Standard fan amperage changed.
OIMBA	Page 214	Standard fan amperage changed.
OIP	Page 216	Standard fan amperage changed.
OIPA	Page 220	Standard fan amperage changed.
ONIZ	Page 222	Standard fan amperage changed.
OIZ	Page 226	Standard fan amperage changed.
OWIZ	Page 228	Standard fan amperage changed.

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OWEZ	Page 230	Standard fan amperage changed.
O3IM	Page 234	New suction temperature added.
O3IP	Page 238	Standard fan amperage changed.
O4ID	Page 242	New suction temperature added.
OSA	Page 248	Standard fan amperage changed.
OSAG	Page 254	Standard fan amperage changed. New suction temperature added.
OSM	Page 258	Standard fan amperage changed.
OGM	Page 262	Fan data removed from model. Cross-Section Updated to reflect bottom coil.
OSI	Page 266	Standard fan amperage changed.
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OSIF	Page 274	Standard fan amperage changed.
OLF	Page 276	Standard fan amperage changed.
OLFG	Page 278	Standard fan amperage changed. New suction temperature added.
MDCA	Page 282	Updated discharge air velocity. Added 6' case to data and footprint.
MMCA	Page 284	Updated discharge air velocity. Added 6' and 8' case to data and footprint.
O2SI	Page 308	Cross-Section updated to match OSI model. Standard fan amperage changed.
OB	Page 312	Standard fan amperage changed.
OBOL	Page 318	Standard fan amperage changed.
OBO	Page 320	Standard fan amperage changed.
PNDIF	Page 342	Number of fans changed on all case lengths. Cross-Section with 9" baseframe added. Standard fan amperage changed.
PDIF	Page 346	Number of fans changed on all case lengths. Cross-Section with 9" baseframe added. Standard fan amperage changed.

30° Curved Case	Page 374	Footprint updated.
45° Curved Case	Page 375	Footprint updated.
60° Curved Case	Page 376	Footprint updated.
90° Curved Case	Page 377	Footprint updated.

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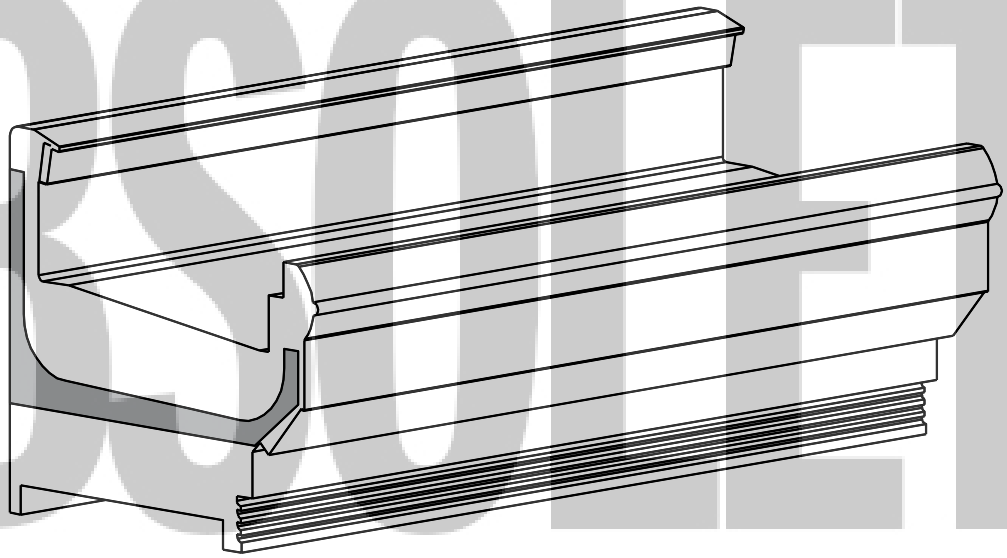

Notes:

- *Cases comply with ANSI / NSF* Standard 7. Units marked as components require remote refrigeration.*
- *Allow for an extra 1/8" per joint when lining up merchandisers.*
- *Front sill height does not affect case performance unless specifically shown.*
- *Front and rear sill heights vary with baseframe height.*

* *ANSI - American National Standard Institute*
NSF - National Sanitation Foundation

Single Deck Produce Merchandiser

MPC - 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts 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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
MPC	8'	- - -	- - -	- - -	- - -
	12'	- - -	- - -	- - -	- - -

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[1]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[2] (FPM)
MPC	617	22	6-8	30	42	163

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
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
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.

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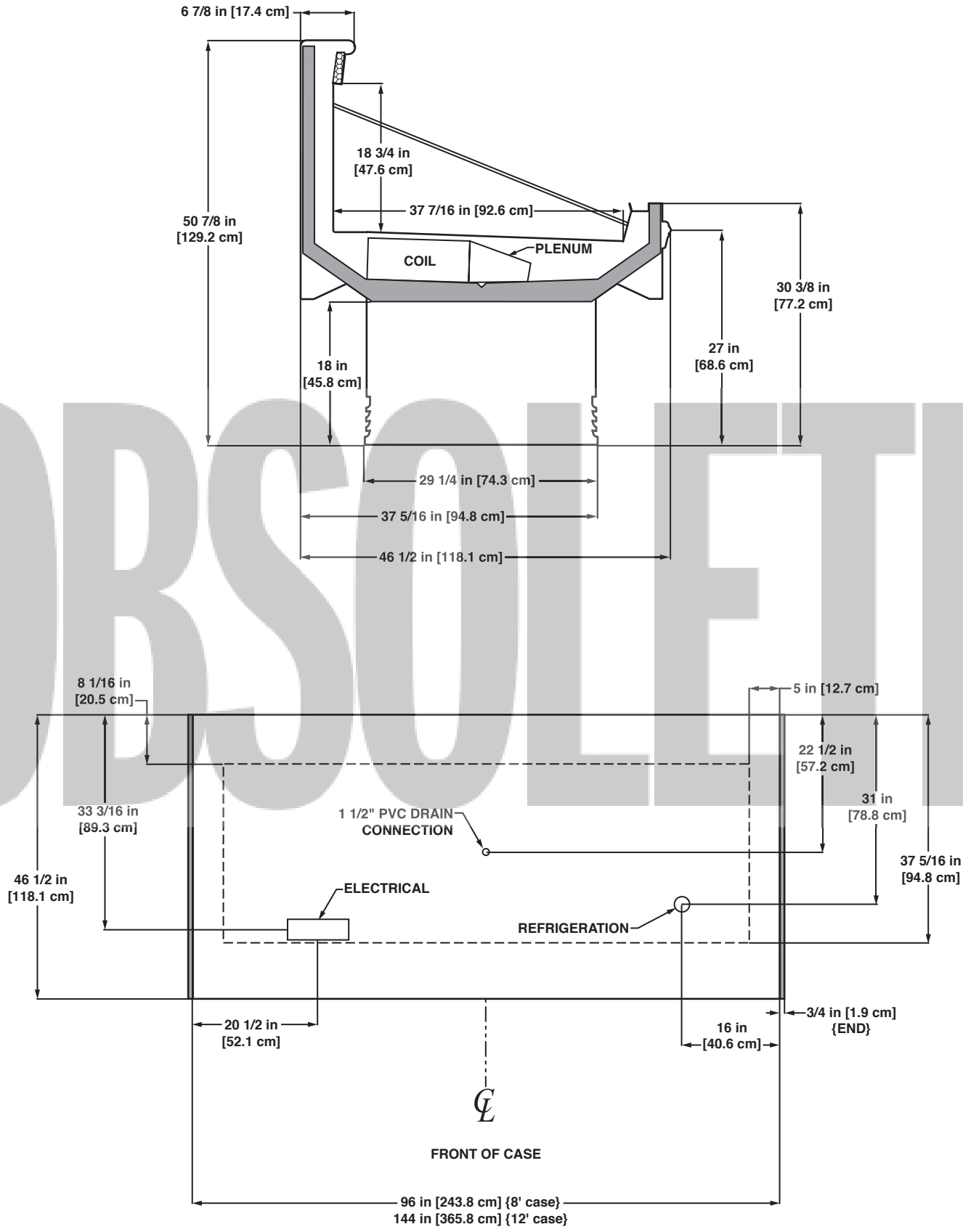
6 7/8 in [17.4 cm]
18 3/4 in [47.6 cm]
37 7/16 in [92.6 cm]
50 7/8 in [129.2 cm]
COIL
PLENUM
30 3/8 in [77.2 cm]
27 in [68.6 cm]
18 in [45.8 cm]
29 1/4 in [74.3 cm]
37 5/16 in [94.8 cm]
46 1/2 in [118.1 cm]
8 1/16 in [20.5 cm]
5 in [12.7 cm]
22 1/2 in [57.2 cm]
31 in [78.8 cm]
33 3/16 in [89.3 cm]
1 1/2" PVC DRAIN CONNECTION
37 5/16 in [94.8 cm]
46 1/2 in [118.1 cm]
ELECTRICAL
REFRIGERATION
20 1/2 in [52.1 cm]
16 in [40.6 cm]
3/4 in [1.9 cm] {END}
FRONT OF CASE
96 in [243.8 cm] {8' case}
144 in [365.8 cm] {12' case}

OBSOLETE

Single Deck Deli/Cheese Merchandiser

OC - 4', 6', 8' & 12

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters[1] 120 Volts Amps	Anti-Condensate Heaters[1] 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
OC	4'	2	1.00	60	0.60	40	0.14	17	1.92	400	2.22	532
	6'	2	1.00	60	0.60	40	0.20	24	2.88	600	3.33	798
	8'	2	1.00	60	0.60	40	0.25	30	3.85	800	4.44	1065
	12'	3	1.50	90	0.90	60	0.38	46	5.77	1200	6.67	1600

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OC	4'	0.57	68	0.57	68
	6'	0.57	68	0.57	68
	8'	0.57	68	0.57	68
	12'	0.77	92	0.77	92

OBSOLETE

Guidelines & Control Settings

Model	Front Sill Heights	BTUH/ft[1]	Coil[2] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
OC	Standard	480	Std.	17	6-8	26	39	305
	All Others	415	Std.	17	6-8	26	35	305
	Standard	480	Enh.	22	6-8	26	39	305
	All Others	415	Enh.	22	6-8	26	35	305

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[3] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OC	2	6 - 8	40	49	70	47	26	45	40	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 CRMA specifications.

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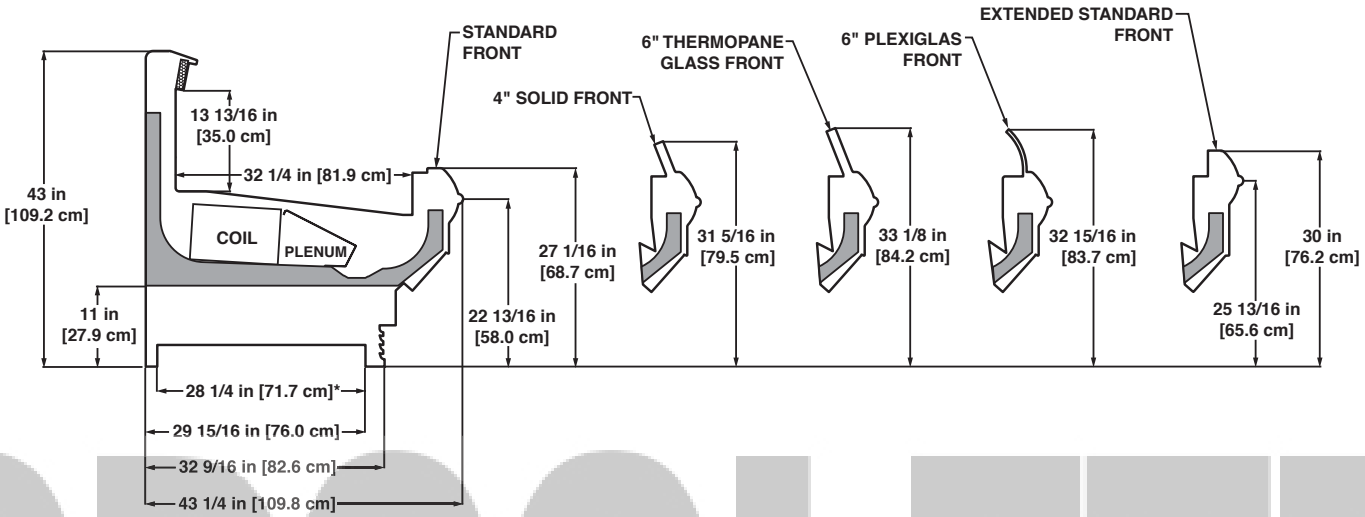

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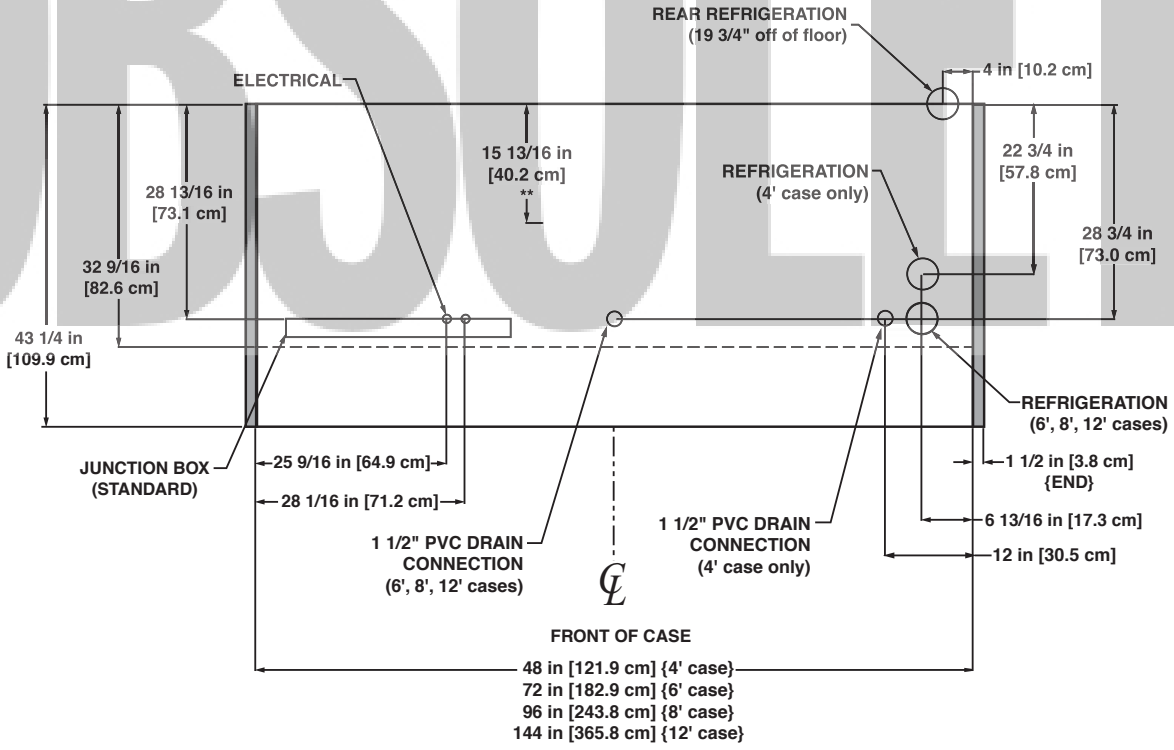

NOTES:

* 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 - 7/8", LIQUID LINE - 1/2"

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Single Deck Deli/Meat/Seafood Merchandiser

OM - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
OM	4'	2	1.00	60	0.60	40	0.28	34	1.92	400	2.22	532
	6'	2	1.00	60	0.60	40	0.40	48	2.88	600	3.33	798
	8'	2	1.00	60	0.60	40	0.50	60	3.85	800	4.44	1065
	12'	3	1.50	90	0.90	60	0.77	92	5.77	1200	6.67	1600

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OM	4'	0.57	68	0.57	68
	6'	0.57	68	3.11	373
	8'	0.57	68	3.11	373
	12'	0.77	92	4.13	496

OBSOLETE

Guidelines & Control Settings

Model	Front Sill Heights	BTUH/ft[1]	Coil[2] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
OM	Standard	560	Std.	12	6-8	22	37	305
	Standard	480	Std.	17	6-8	26	39	305
	All Others	415	Std.	17	6-8	26	35	305
	Standard	480	Enh.	22	6-8	26	39	305
	All Others	415	Enh.	22	6-8	26	35	305

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[3] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OM	2	6 - 8	40	49	70	47	26	45	40	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 CRMA specifications.

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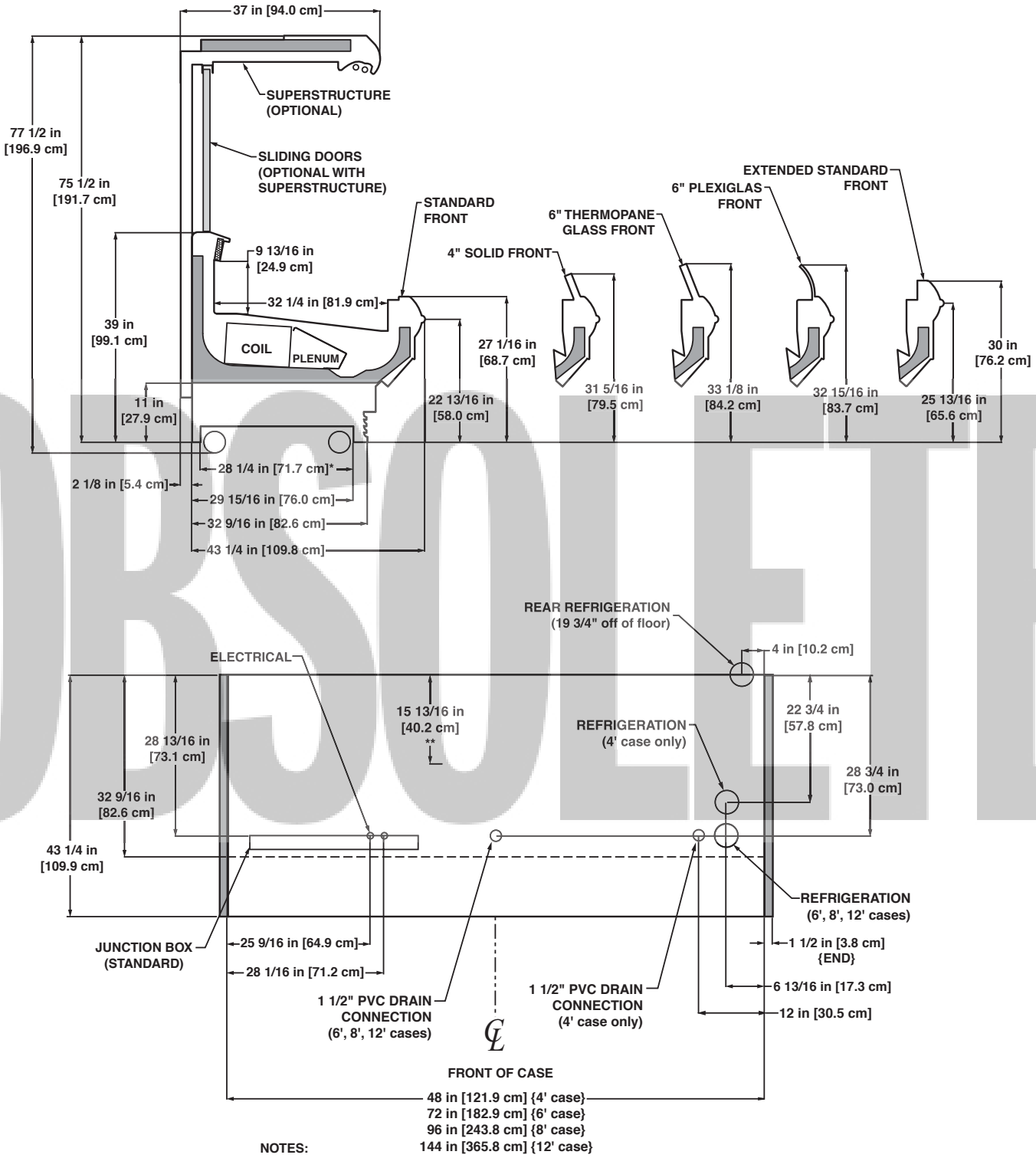

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NOTES:

* 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 - 7/8", LIQUID LINE - 1/2"

Single Deck Frozen Meat Merchandiser

OMZ - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters[1] 120 Volts Amps	Anti-Condensate Heaters[1] 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
OMZ	4'	2	1.00	60	0.64	34	0.60	72	3.33[1]	1200	3.84[1]	1596
	6'	2	1.00	60	0.64	34	0.90	108	5.00[1]	1800	5.76[1]	2394
	8'	2	1.00	60	0.64	34	0.96	115	6.66[1]	2400	7.69[1]	3195
	12'	3	1.50	90	0.96	51	1.83	220	7.99[1]	2880	9.24[1]	3840

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

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OMZ	4'	0.57	68	0.57	68
	6'	0.57	68	0.57	68
	8'	0.57	68	0.57	68
	12'	0.77	92	0.77	92

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[2]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
OMZ	550	-22	3-5	-10	0	120

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OMZ	4	13 - 15	45	47	- - -[4]	- - -	20	60	- - -	- - -

[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 CRMA specifications.

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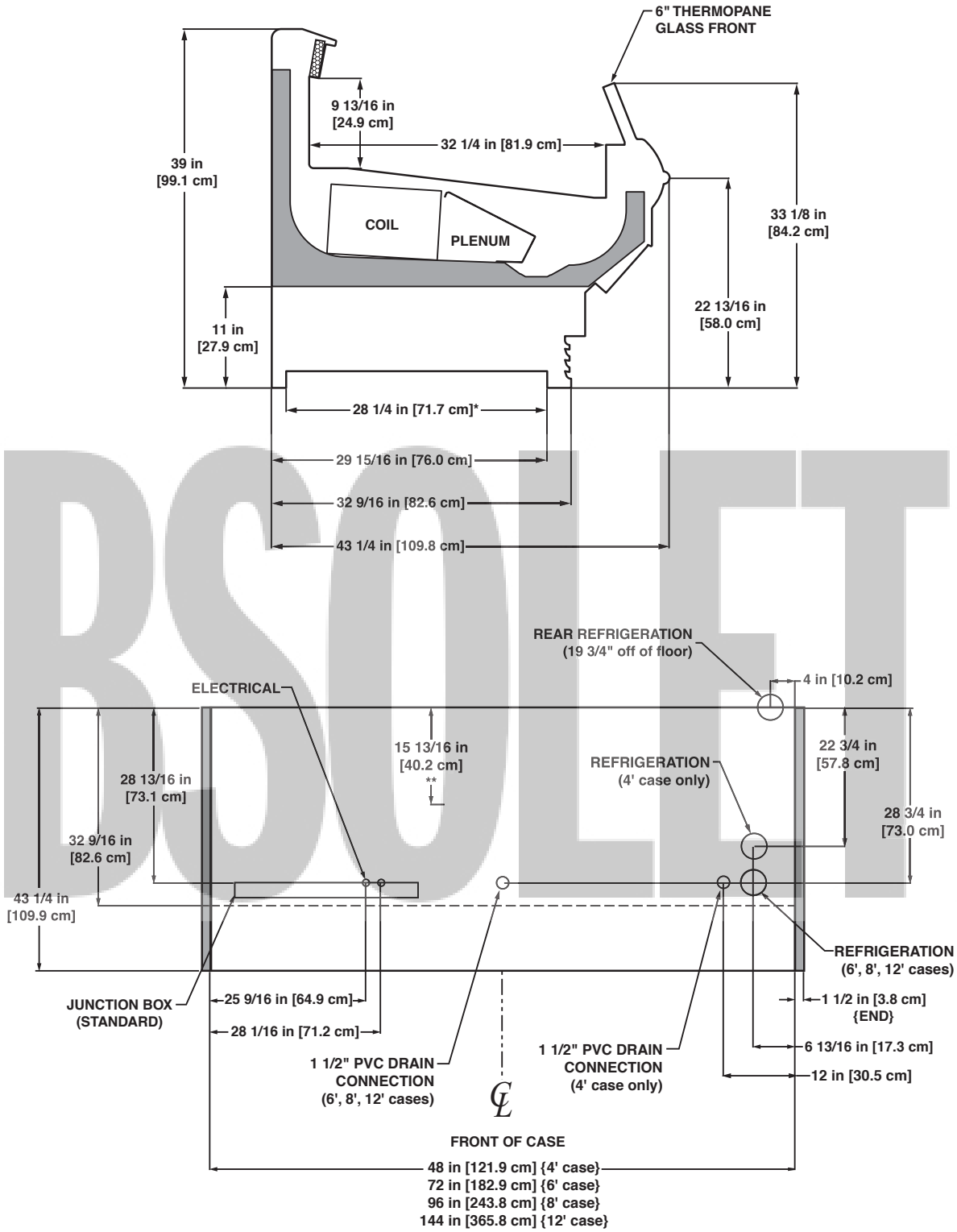

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NOTES:

* 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"

Single Deck Frozen Food/Ice Cream Merchandiser

OMZD - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Defrost Heaters 208 Volts		Defrost Heaters 240 Volts	
			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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OMZD	4'	0.57	68	0.57	68
	6'	0.57	68	0.57	68
	8'	0.57	68	0.57	68
	12'	0.77	92	0.77	92

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[1]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[2] (FPM)
OMZD-F[3]	456	-17	3-5	-8	2	240
OMZD-C[3]	476	-27	3-5	-18	-8	240

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Average discharge air velocity at peak of defrost.

[3] F=frozen food, C=ice cream.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OMZD	1	13 - 15	45	48	- - -[4]	- - -	20	60	- - -	- - -

[4] 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 CRMA specifications.

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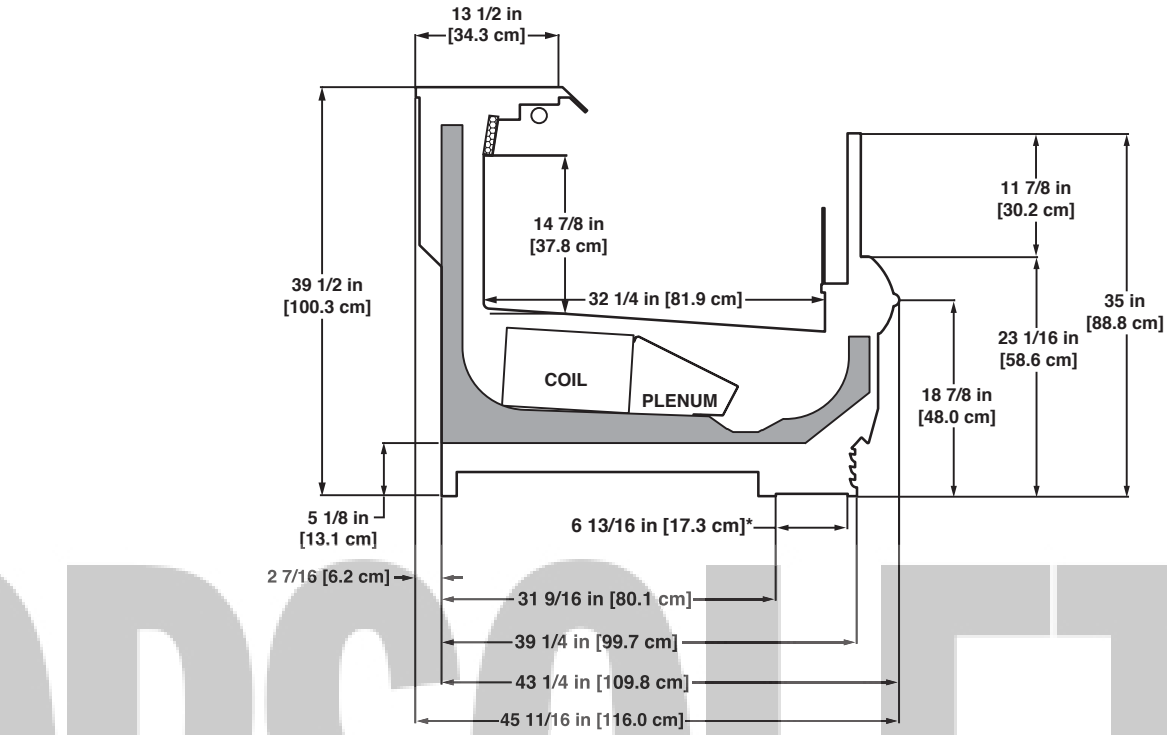

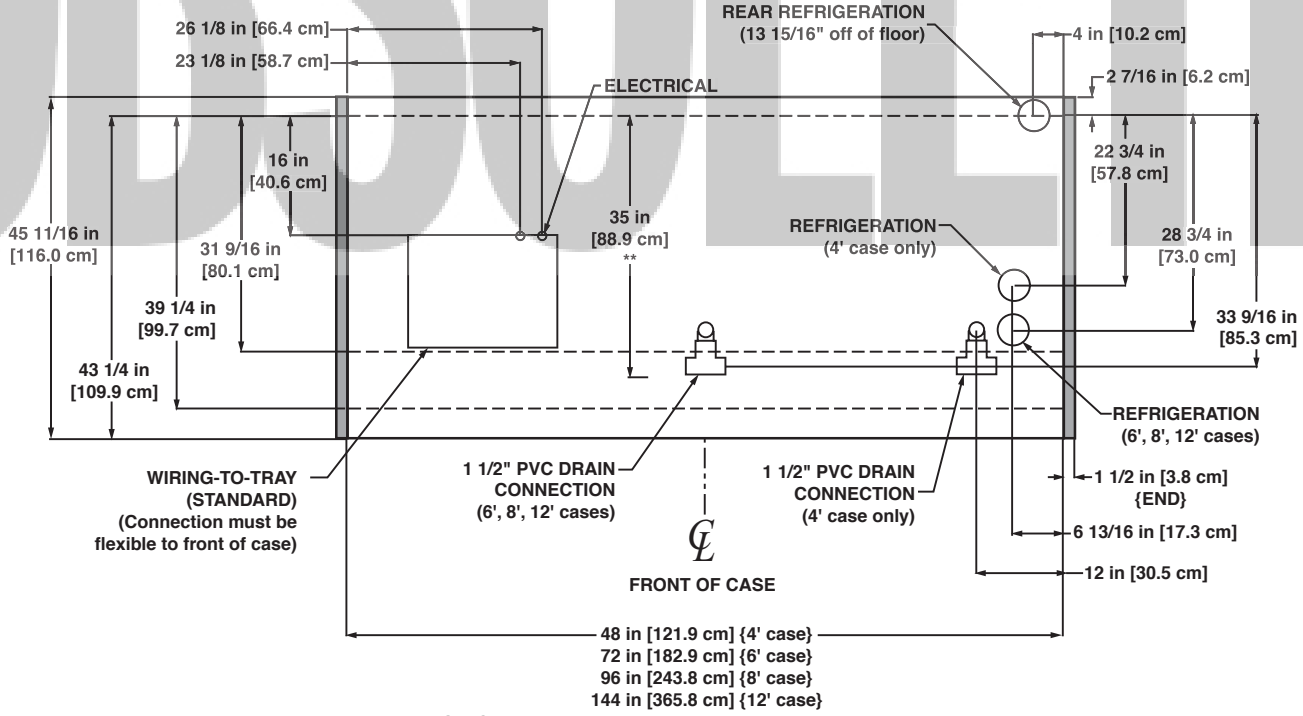

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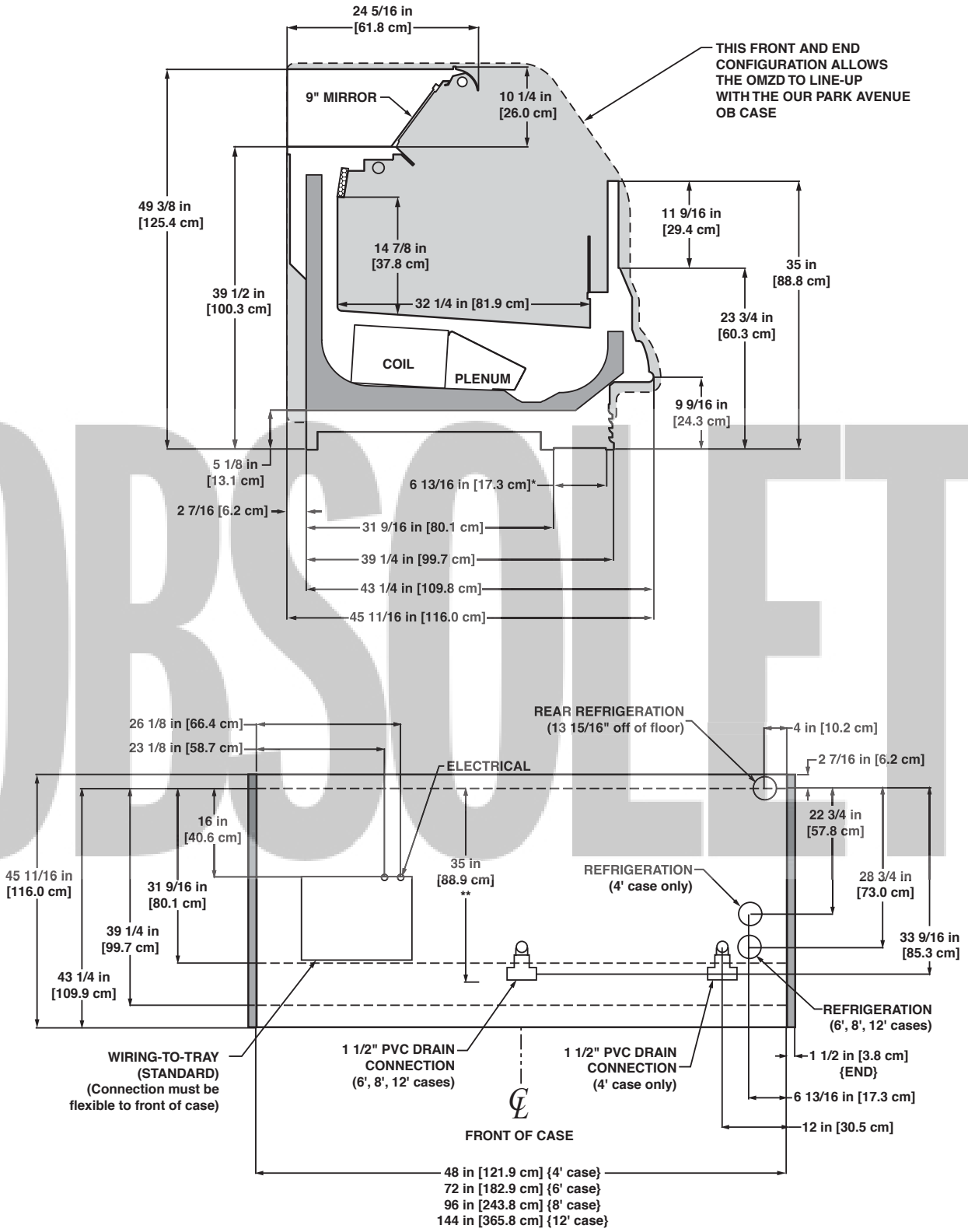
NOTES:

* 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"



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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"

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Single Deck Frozen Food/Ice Cream Merchandiser

ONZ - 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts	Drain Heaters 120 Volts Amps	Drain Heaters 120 Volts Watts
ONZ	F-8'[1]	2	0.68	34	0.30	22	1.93	232	7.69	1600	8.88	2130	0.13	15
	F-12'	3	1.02	51	0.45	33	2.70	324	11.54	2400	13.31	3195	0.13	15
	C-8'	2	0.68	34	0.30	22	1.93	232	15.38	3200	17.75	4260	0.13	15
	C-12'	3	1.02	51	0.45	33	2.70	324	23.08	4800	26.63	6390	0.13	15

[1] F = frozen food, C = ice cream.

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ONZ	8'	- - -[2]	- - -	- - -	- - -
	12'	- - -	- - -	- - -	- - -

[2] NOTE: - - - not an option on this case model.

Guidelines & Control Settings

Model	BTUH/ft[3]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
ONZ - F	369	-22	3-5	-12	0	180
ONZ - C	412	-32	3-5	-22	-9	180

[3] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ONZ	1	13 - 15	48	47	- - -	- - -	20	60	- - -	- - -

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 CRMA specifications.

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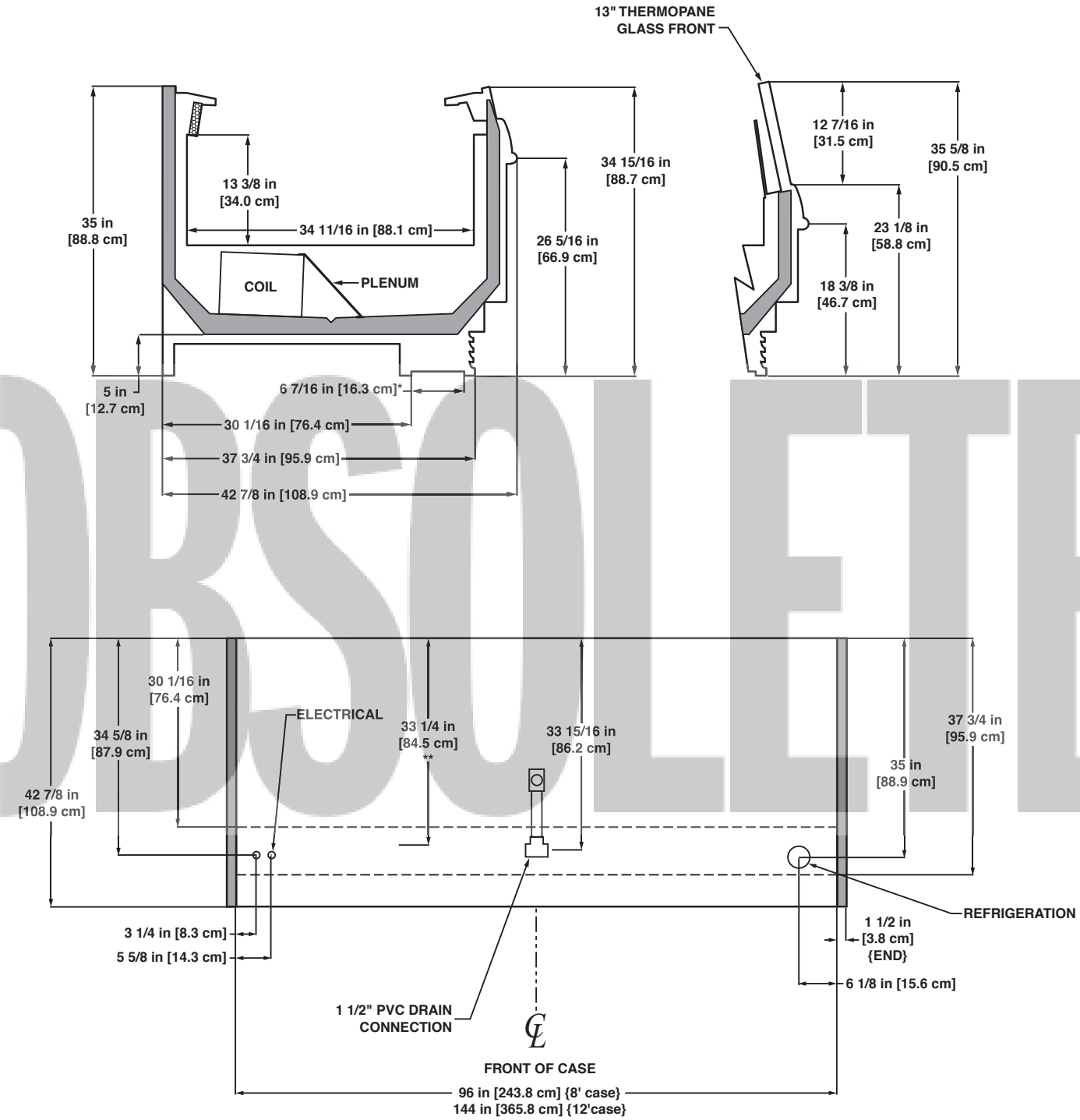

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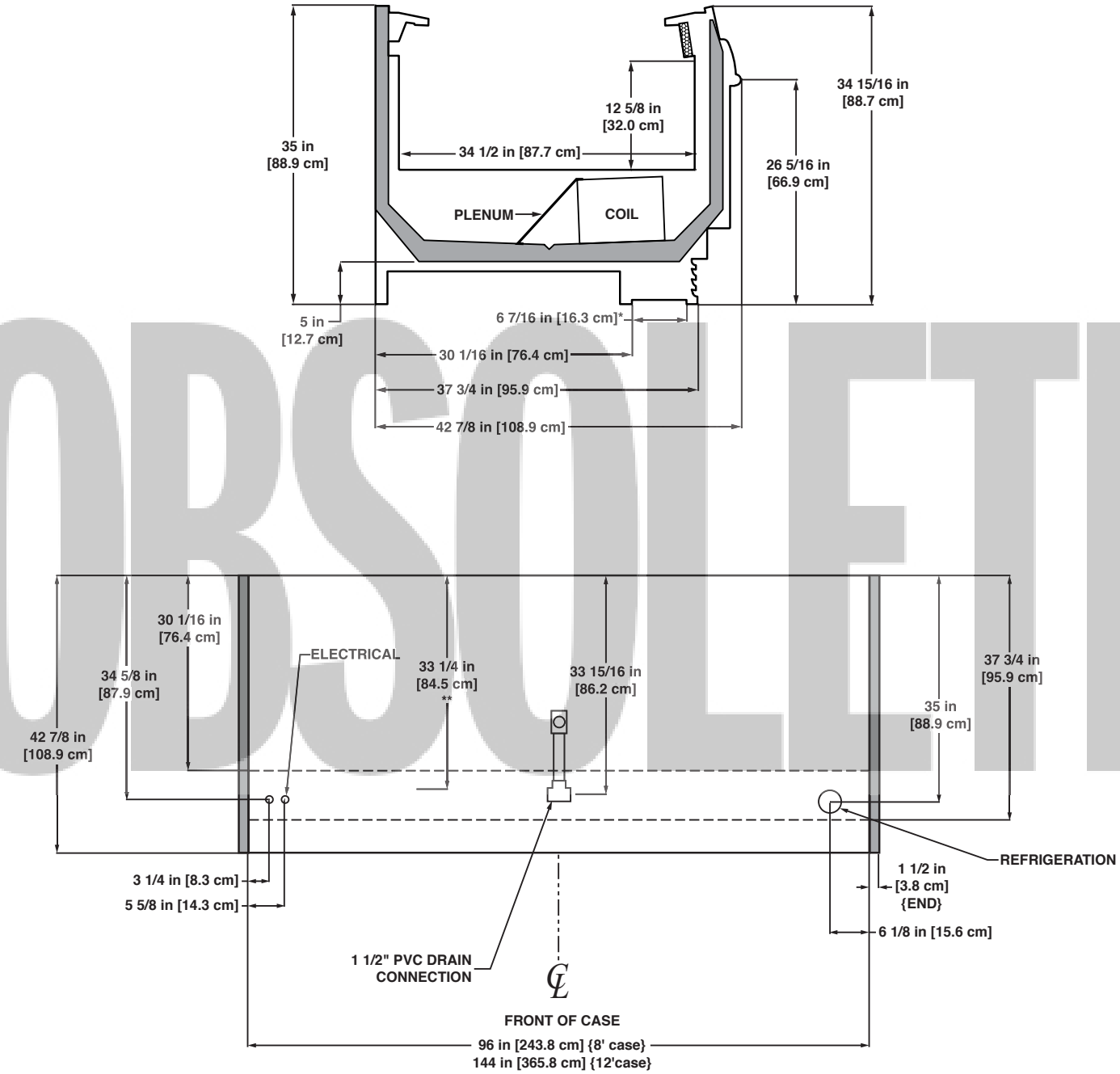
NOTES:

* 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"



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NOTES:

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- 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"

OBSOLETE

Single Deck Produce Merchandiser

OP - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
OP	4'	2	1.00	60	0.60	40	0.14	17	1.92	400	2.22	532
	6'	2	1.00	60	0.60	40	0.20	24	2.88	600	3.33	798
	8'	2	1.00	60	0.60	40	0.25	30	3.85	800	4.44	1065
	12'	3	1.50	90	0.90	60	0.39	47	5.77	1200	6.67	1600

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OP	4'	0.57	68	0.57	68
	6'	0.57	68	0.57	68
	8'	0.57	68	0.57	68
	12'	0.77	92	0.77	92

Guidelines & Control Settings

Model	Rear Sill Heights	BTUH/ft[1]	Coil[2] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
OP Cut Produce	39"	288	Std.	22	6-8	31	42	180
	43"	401	Std.	22	6-8	30	45	210
	39"	288	Enh.	26	6-8	31	42	180
	43"	401	Enh.	26	6-8	30	45	210
OP Bulk Produce	39"	230	Std.	27	6-8	36	44	180
	43"	374	Std.	27	6-8	35	47	210
	39"	230	Enh.	29	6-8	36	44	180
	43"	374	Enh.	29	6-8	35	47	210

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[3] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OP	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
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm

All measurements are taken per CRMA specifications.

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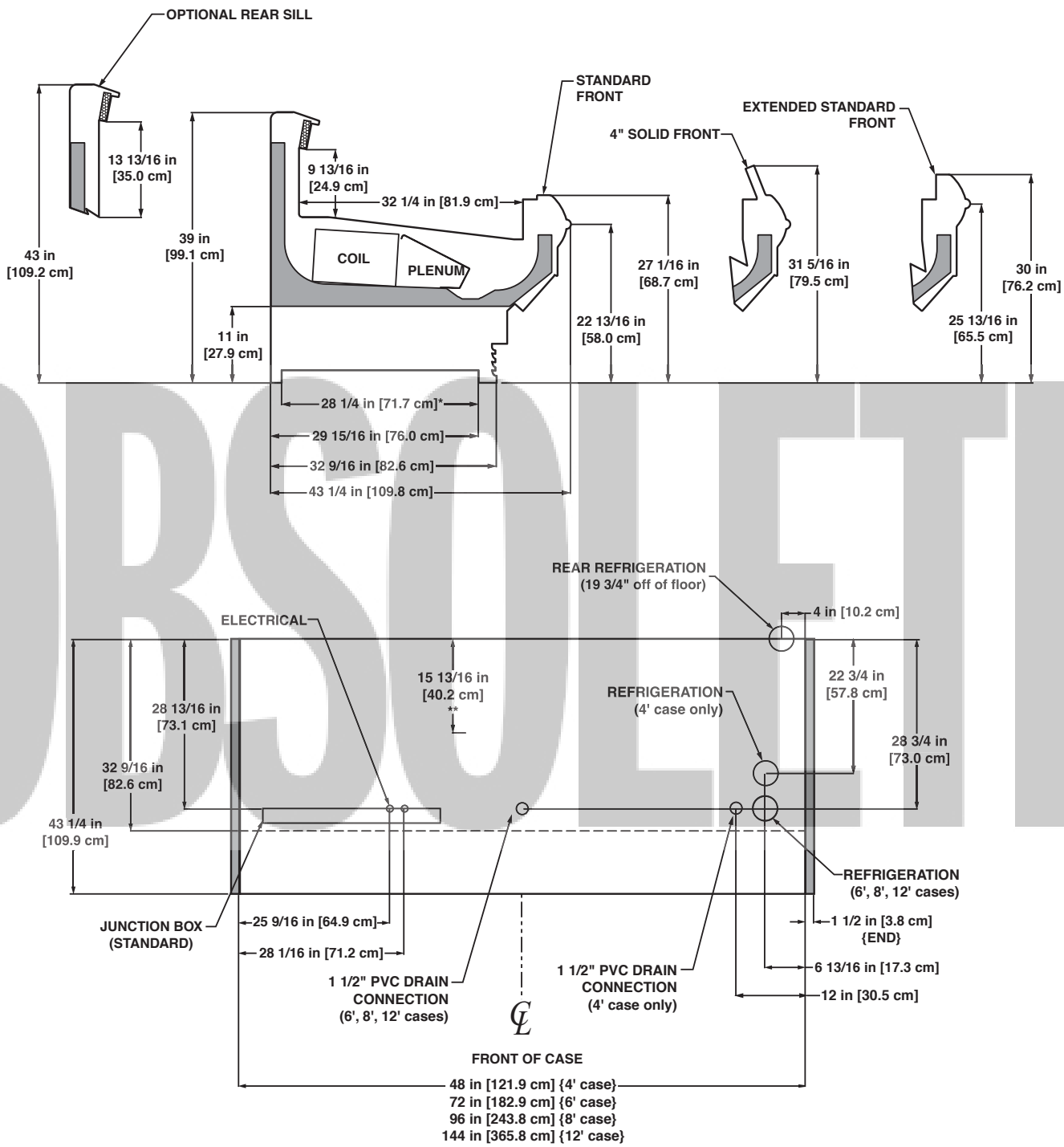

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NOTES:

* 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"

Single Deck Produce Self-Contained Merchandiser

OPA - 6', 8' & 12'

System Requirements

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Fuse Size
OPA	6'	120	1	60	2 wire + ground	12.5	20
	8'	120	1	60	2 wire + ground	17.6	25
	12'	120	1	60	2 wire + ground	21.2	30

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts		Condenser Fan 208 Volts		Anti-Condensate Heaters 120 Volts		Defrost Heaters 120 Volts		Drain Heater 120 Volts	
			Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OPA	6'	2	1.00	60	0.36	33	0.20	24	5.00	600	4.17	500
	8'	2	1.00	60	0.58	44	0.25	30	6.67	800	4.17	500
	12'	3	1.50	90	1.40	101	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[1] (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)	HP	RLA[2] (amps)	LRA[3] (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

Model	Defrosts Per Day	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost 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	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.

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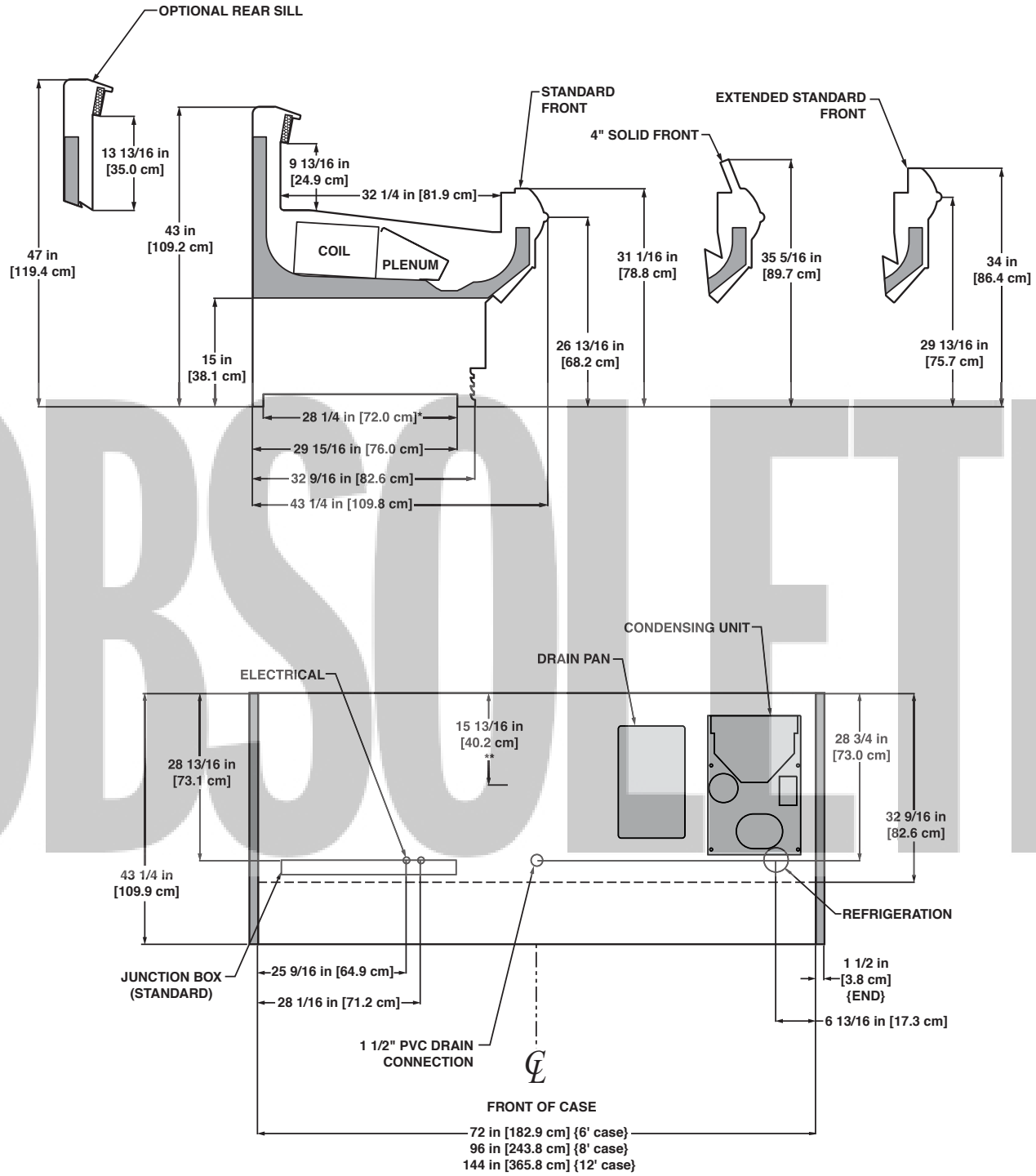

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NOTES:

* STUB-UP AREA
** RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAIN

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

Wide Single Deck Produce Merchandiser

OWP - 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
OWP	8'	2	1.00	60	0.60	40	0.25	30	3.85	800	4.44	1065
	12'	3	1.50	90	0.90	60	0.39	47	5.77	1200	6.67	1600

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OWP	8'	0.57	68	0.57	68
	12'	0.77	92	0.77	92

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Guidelines & Control Settings

Model	Rear Sill Heights	BTUH/ft[1]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[2] (FPM)
OWP Cut Produce	39"	377	22	6-8	31	42	180
	43"	525	22	6-8	30	45	210
OWP Bulk Produce	39"	301	27	6-8	36	44	180
	43"	490	27	6-8	35	47	210

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Average discharge air velocity at peak of defrost.

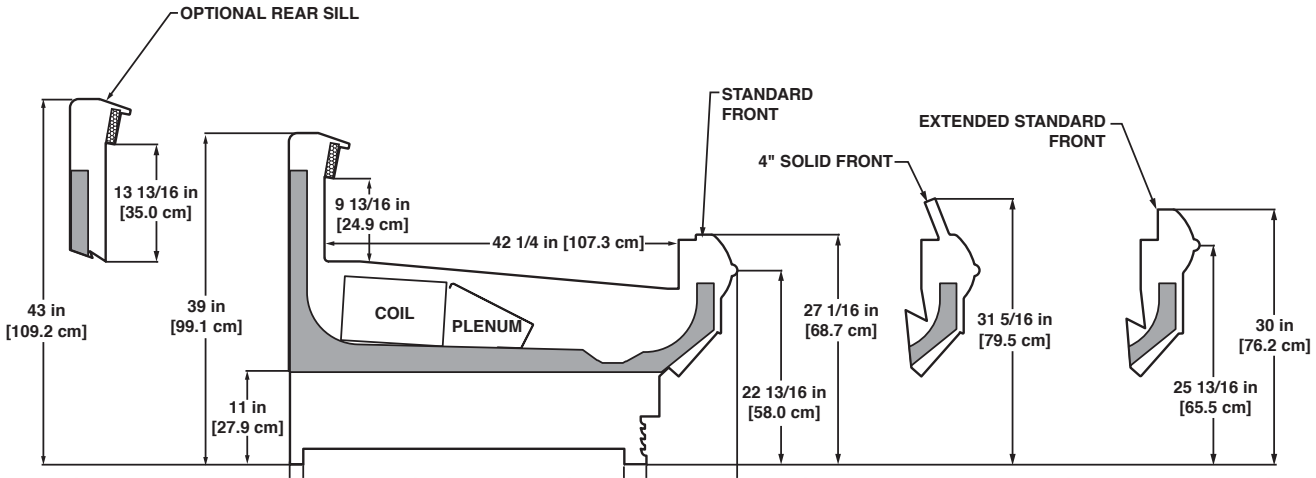
Defrost Controls

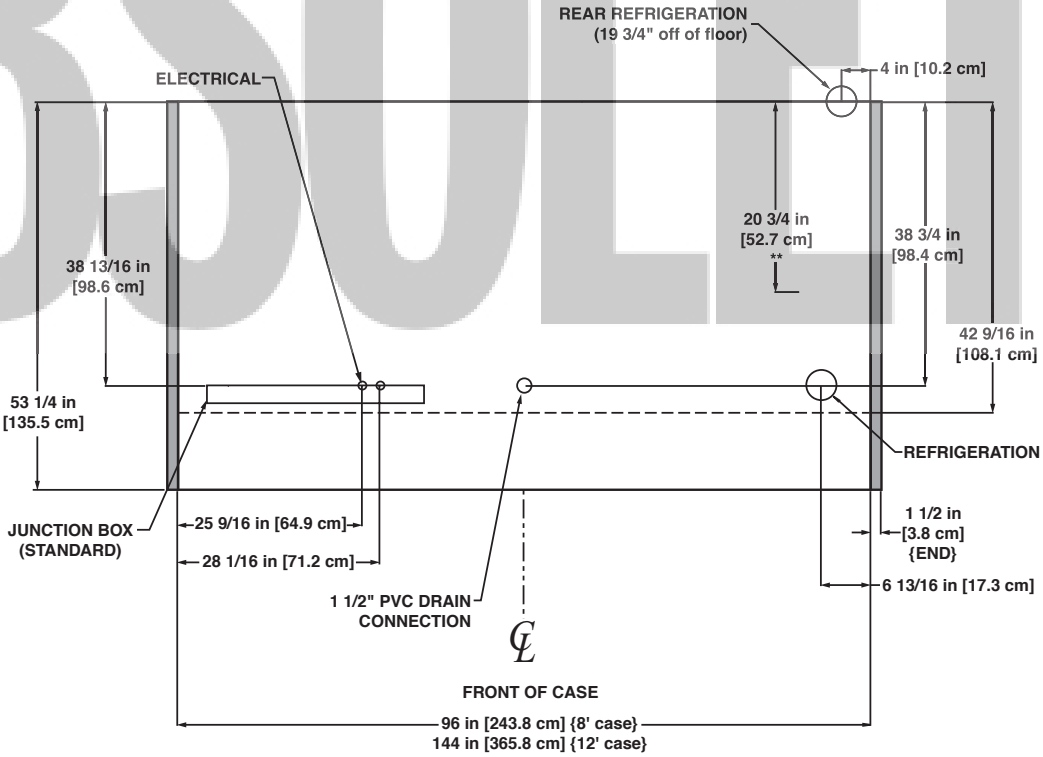
Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OWP	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
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm

All measurements are taken per CRMA specifications.





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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"

International Style Single Deck Deli/Meat/Seafood Merchandiser

OSIO - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
OSIO	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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OSIO	4'	0.57	68	0.57	68
	6'	0.57	68	0.57	68
	8'	0.57	68	0.57	68
	12'	0.77	92	0.77	92

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Guidelines & Control Settings

Model	BTUH/ft[1]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[2] (FPM)
OSIO	695	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 1.04.

[2] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OSIO	3	6 - 8	35	47	55	47	26	45	- - -[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	12 - 6 am - 12 - 6 pm

All measurements are taken per CRMA specifications.

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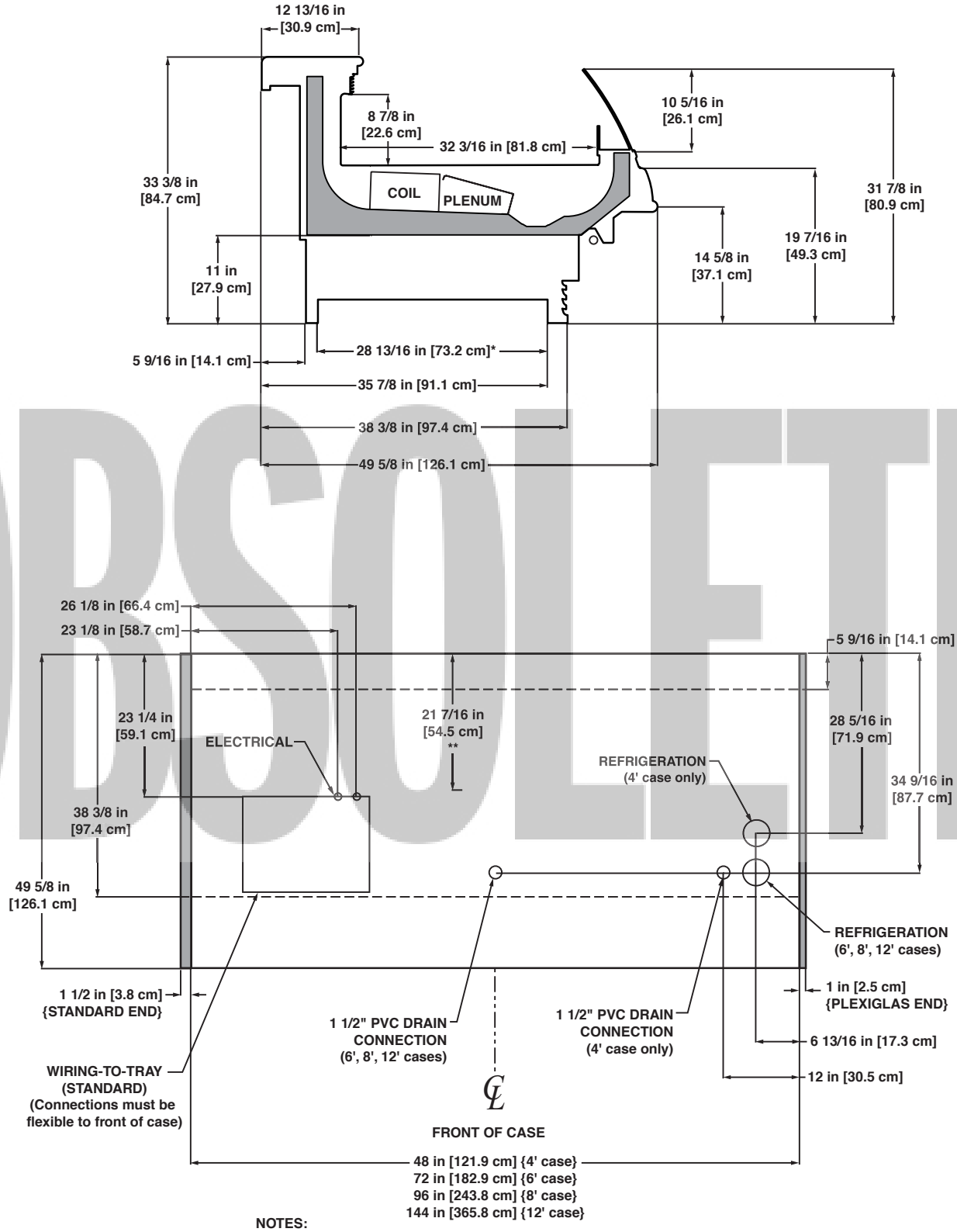

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NOTES:

* 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"

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Wide International Style Single Deck Deli/Meat/Seafood Merchandiser

OWSIO - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
OWSIO	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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OWSIO	4'	0.57	68	0.57	68
	6'	0.57	68	0.57	68
	8'	0.57	68	0.57	68
	12'	0.77	92	0.77	92

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Guidelines & Control Settings

Model	BTUH/ft[1]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[2] (FPM)
OWSIO	795	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 1.04.

[2] Average discharge air velocity at peak of defrost.

Defrost Controls

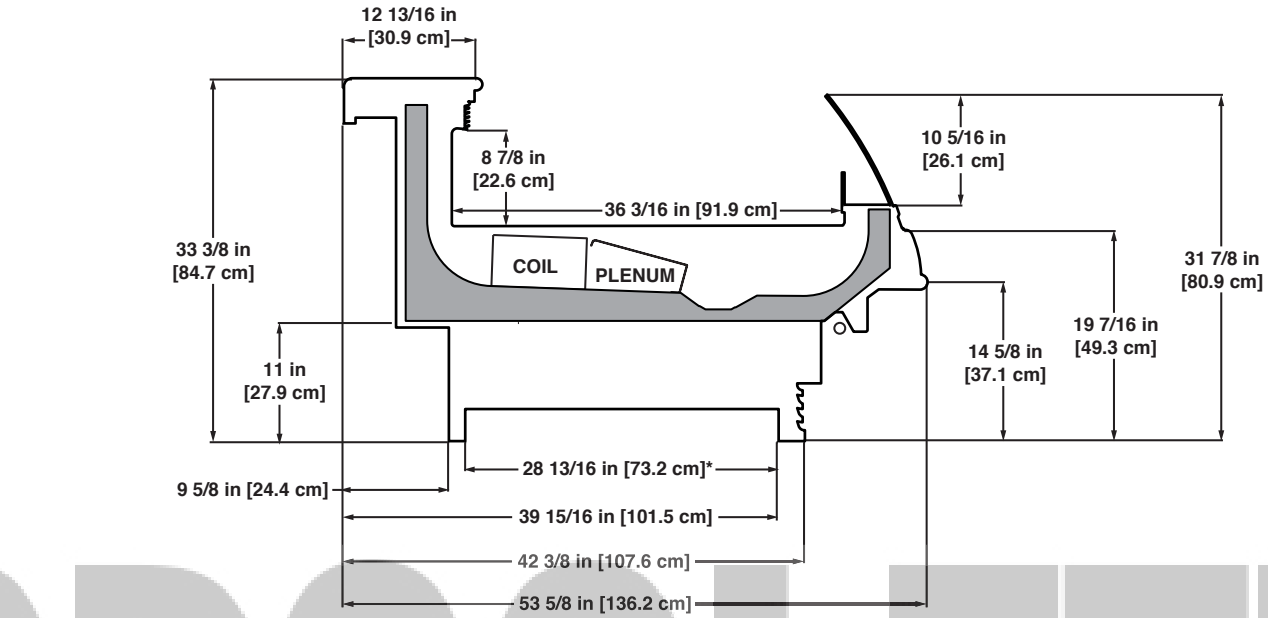
Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OWSIO	3	6 - 8	35	47	55	47	26	45	- - -[3]	- - -

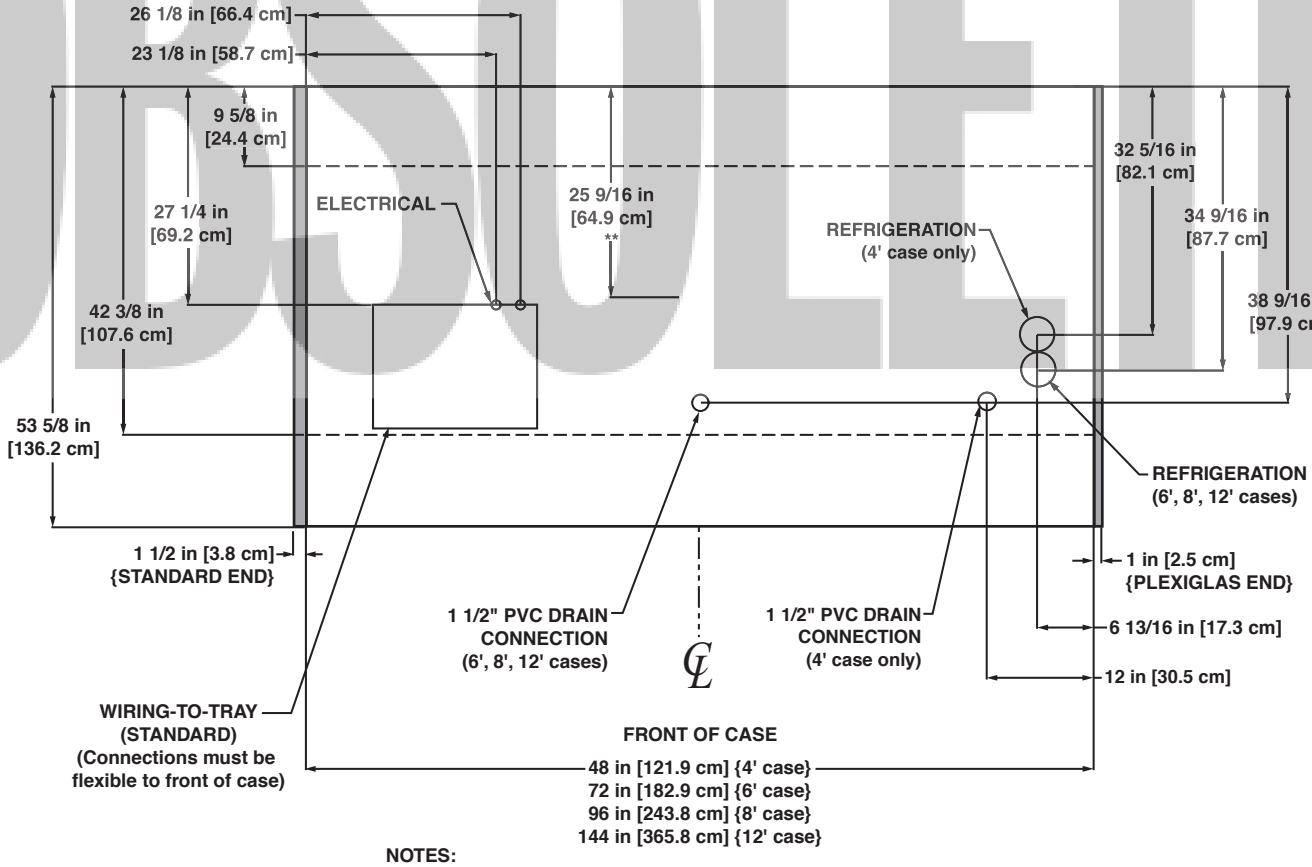
[3] NOTE: - - - not an option on this case model.

Medium Temperature Defrost Schedule

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

All measurements are taken per CRMA specifications.





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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"

International Style Single Deck Deli/Meat/Seafood Prep. Merchandiser

OSIOP - 4'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
OSIOP	4'	2	0.68	34	0.30	22	0.62	74	1.92	400	2.22	532

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OSIOP	4'	- - -	- - -	0.48	58

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Guidelines & Control Settings

Model		BTUH/ft[1]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[2] (FPM)
OSIOP	Deli	425	17	6 - 8	34	36	200
OSIOP	Meat	475	12	6 - 8	32	36	200

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OSIOP	2	6 - 8	40	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	12 - 6 am - 12 - 6 pm

All measurements are taken per CRMA specifications.

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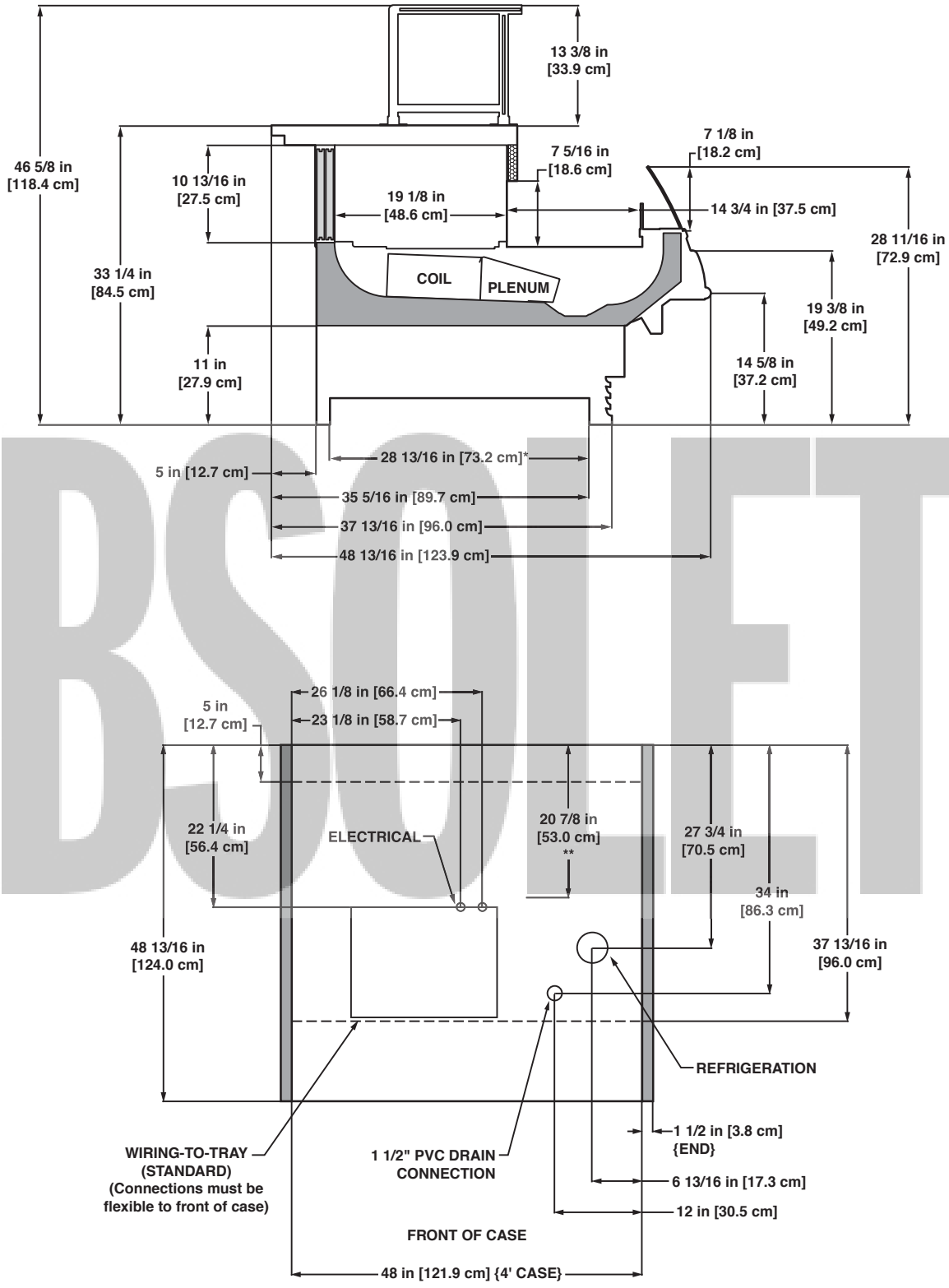

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NOTES:

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

- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- SUCTION LINE - 7/8", LIQUID LINE - 1/2"

International Style Single Deck Dual Temp. Merchandiser

OSIOZ - 4’

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
OSIOZ	4’	2	0.68	34	0.30	22	1.10	132	1.92	400	2.22	532

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OSIOZ	4’	0.57	68	0.57	68

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[1]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[2] (FPM)
OSIOZ	560	-32	3 - 5	-24	-10	220

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OSIOZ	2	13 - 15	47	45	- - -[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	12 - 6 am - 12 - 6 pm

All measurements are taken per CRMA specifications.

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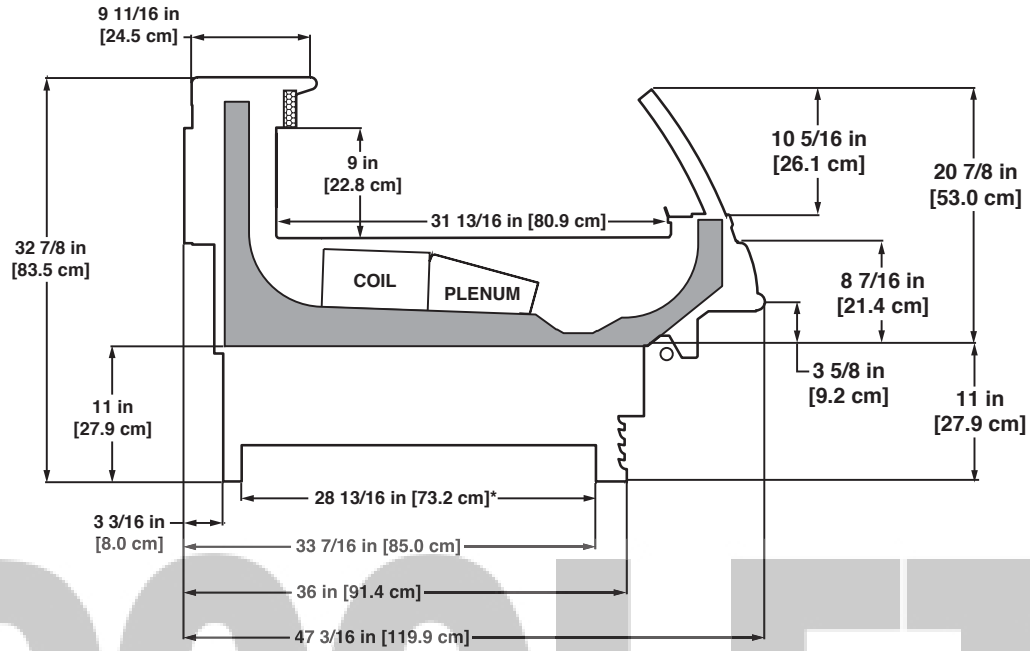

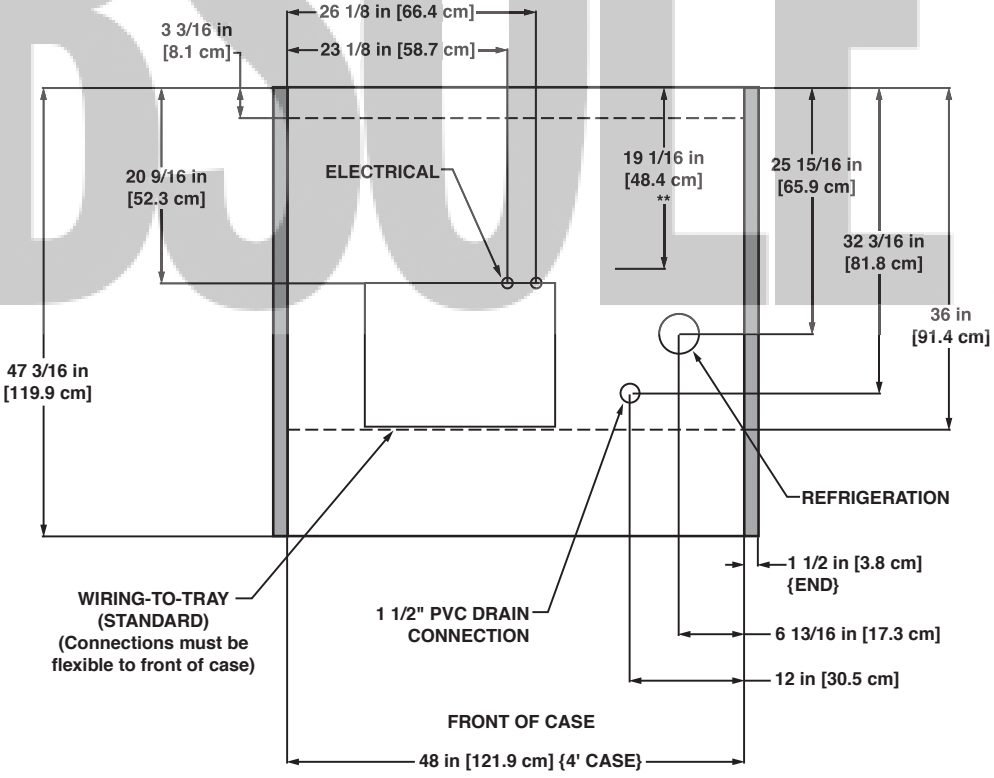

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NOTES:

* 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"

Single Deck Boxed Produce Merchandiser

UP-8'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
UP	8'	3	1.02	51	0.45	33	- - -[1]	- - -	3.85	800	4.44	1065

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

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
UP	8'	0.57	68	1.84	221

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[2]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
UP	600	22	6-8	32	42	275

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
UP	3	40	45[4]	45	45	- - -	- - -	- - -	- - -

[4] At discharge honeycomb.

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.

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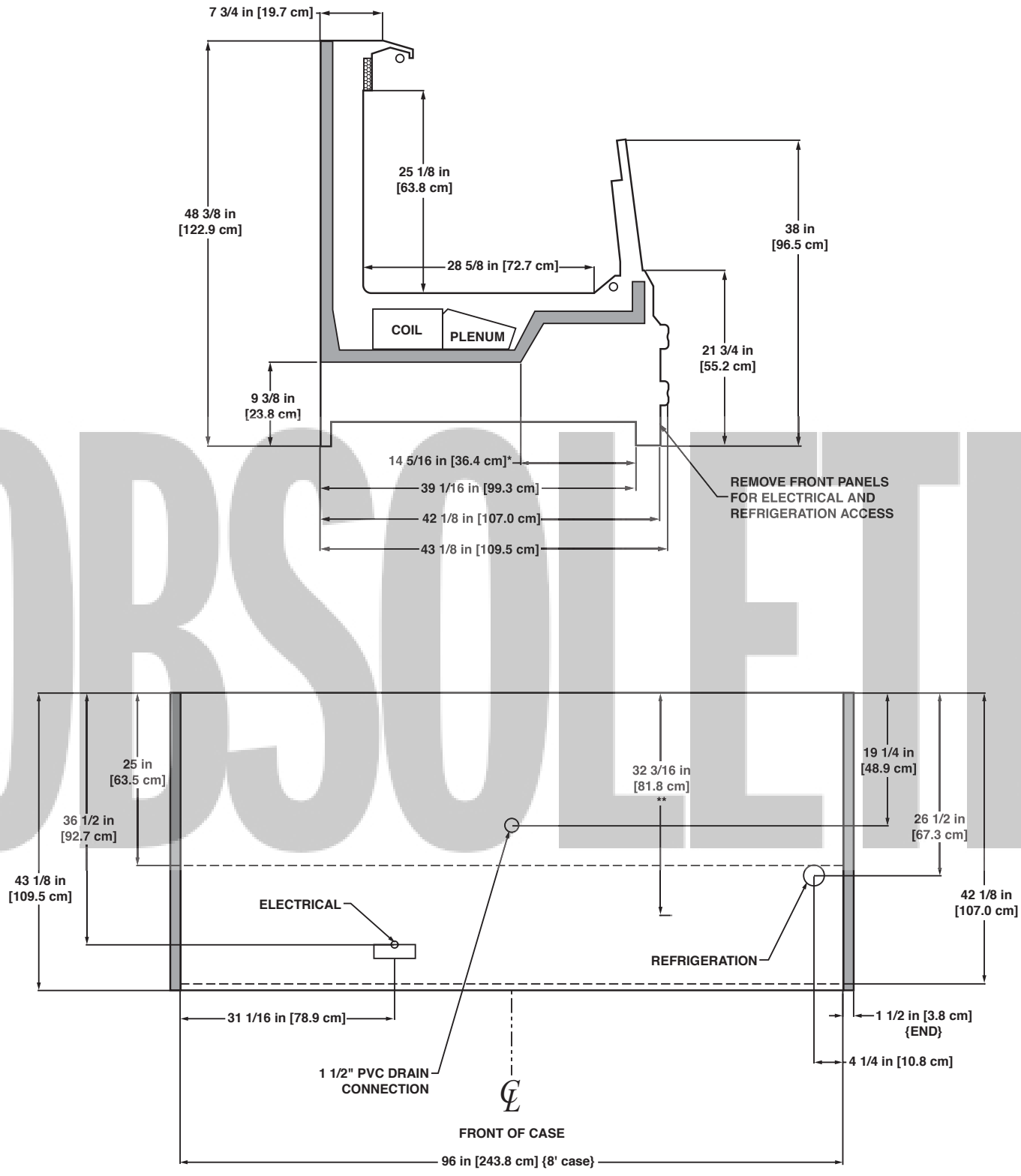

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NOTES:

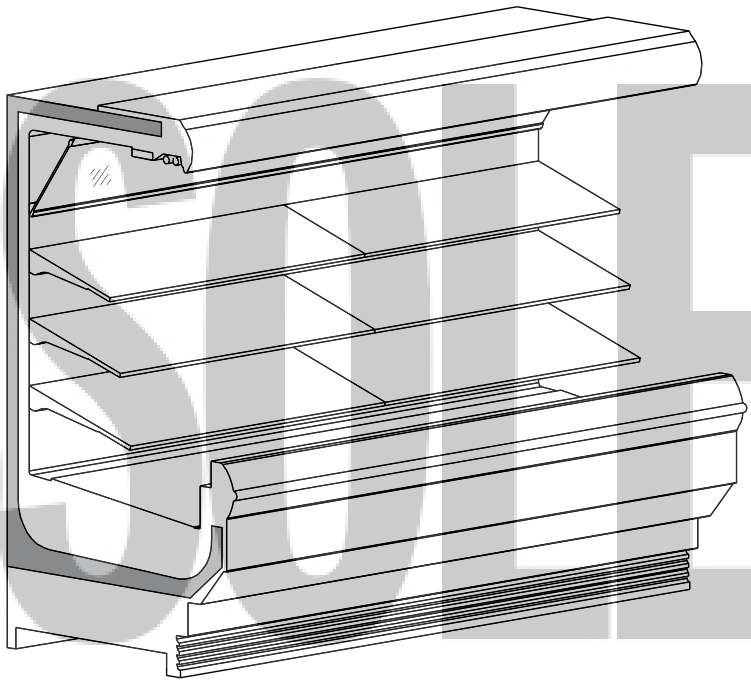
* STUB-UP AREA
** RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS

- 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 - 7/8", LIQUID LINE - 1/2"
- AVAILABLE SHELF SIZES: 10", 12", 14", & 16"

OBSOLETE

MULTI-DECK

OBSOLETE



Notes:

- *Cases comply with ANSI / NSF* Standard 7. Units marked as components require remote refrigeration.*
- *Allow for an extra 1/8" per joint when lining up merchandisers.*
- *Front sill height does not affect case performance unless specifically shown.*
- *Front and rear sill heights vary with baseframe height.*

* *ANSI - American National Standard Institute*
NSF - National Sanitation Foundation

Multi-Deck Deli Back Bar Merchandiser

BB- 6' & 8'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Auxiliary Fans (Optional) 120 Volts		Anti-Condensate Heaters 120 Volts		Defrost Heaters 208 Volts		Defrost Heaters 240 Volts	
			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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
BB	6'	0.57	68	2.76	331
	8'	0.57	68	2.76	331

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[2]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
BB	1290	17	6-8	32	45	325

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Average discharge air velocity at peak of defrost.

Defrost Controls

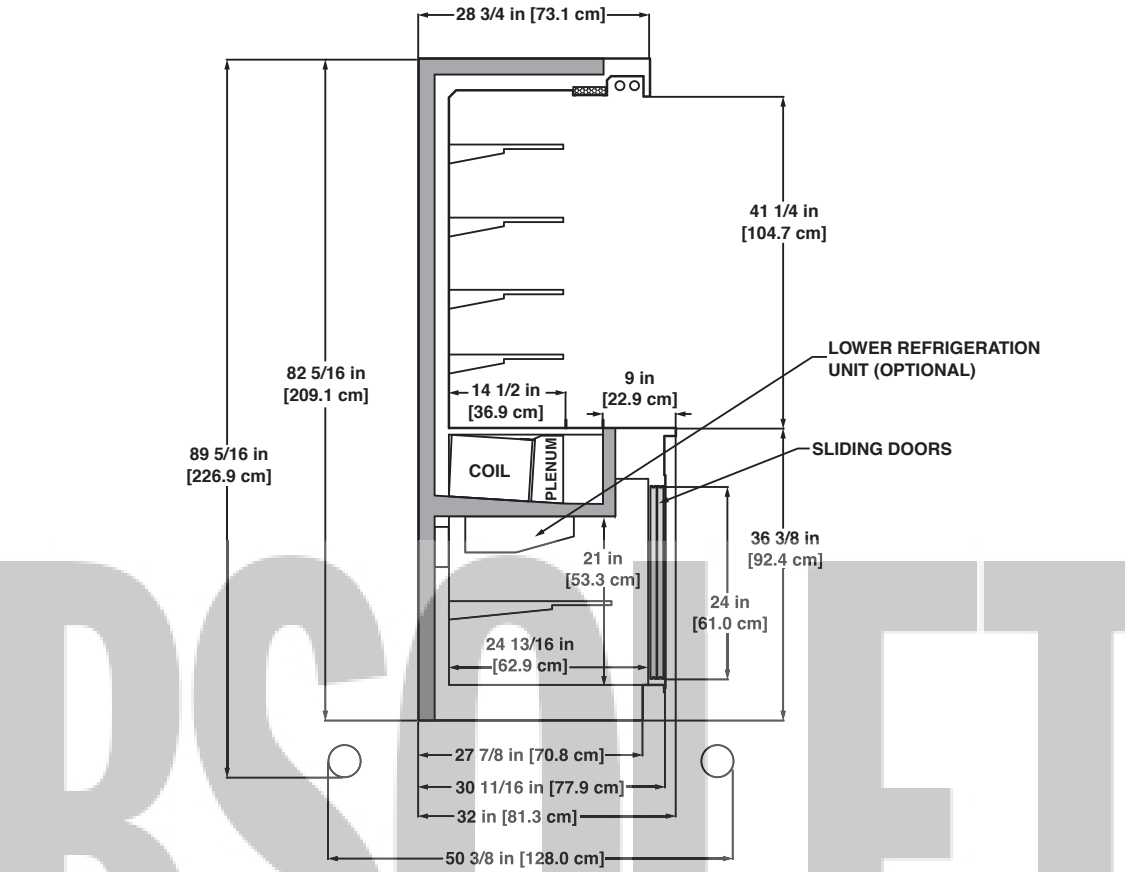
Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
BB	4	6 - 8	30	47[4]	45	47[4]	- - -	- - -	45	45

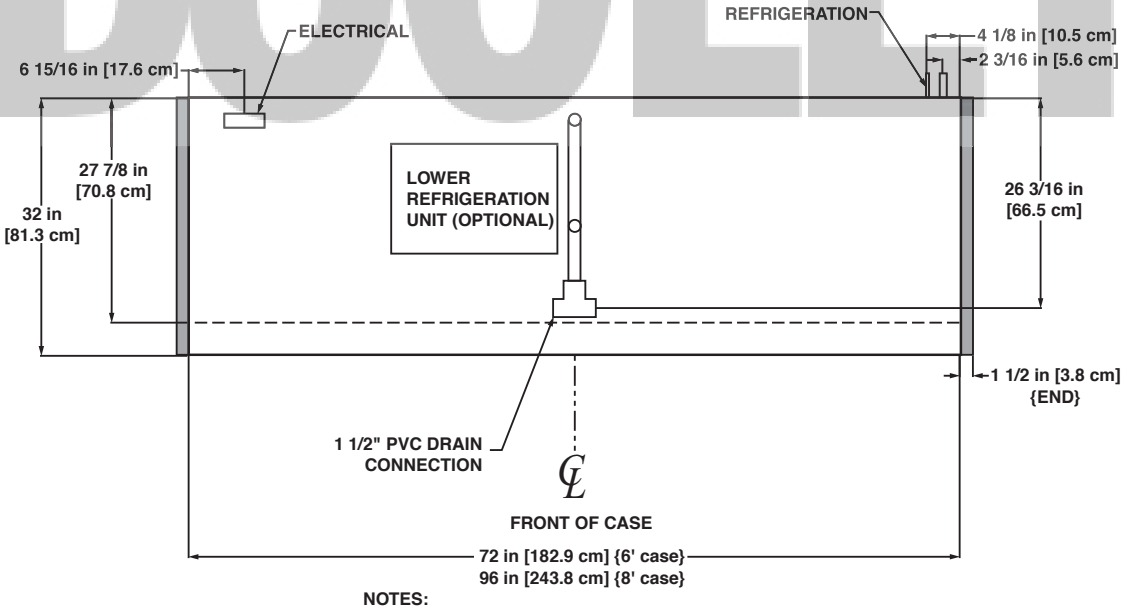
[4] Termination Temperature measured at the honeycomb.

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:

- 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"
- AVAILABLE SHELF SIZES: (UPPER SECTION) 12" & 14"
  (LOWER SECTION) 22"

OBSOLETE

Narrow Multi-Deck Dome Deli Merchandiser

ONUMD - 8' & 12'

Electrical Data

Model		Fans per Case		Ambient[1] Fans		Standard Fans		High Efficiency Fans		Anti-Condensate Heaters		Defrost Heaters			
				120 Volts		120 Volts		120 Volts		120 Volts		208 Volts		240 Volts	
		Pri.	Amb.	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONUMD	8'	3	4	0.40	22	1.50	90	0.90	60	0.25	30	3.85	800	4.44	1065
	12'	4	6	0.60	33	2.00	120	1.20	80	0.39	47	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.

Electrical Data (Continued)

Model		Secondary[2] Fans	
		120 Volts	
		Amps	Watts
ONUMD	8'	2.19	158
	12'	2.19	158

[2] Secondary Fans are for the Bohn unit on the rear coil.

Lighting Data

Model		Typical per Light Row		Maximum Lighting	
		120 Volts		120 Volts	
		Amps	Watts	Amps	Watts
ONUMD	8'	0.57	68	1.71	205
	12'	0.77	92	2.31	277

Guidelines & Control Settings

Model	BTUH/ft[3]	Coil[4] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[5] (FPM)
ONUMD	1390	Std.	17	6-8	29	40	250
	1390	Enh.	22	6-8	29	40	250

[3] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[5] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
			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	47	26	45	- - -[6]	- - -

[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

All measurements are taken per CRMA specifications.

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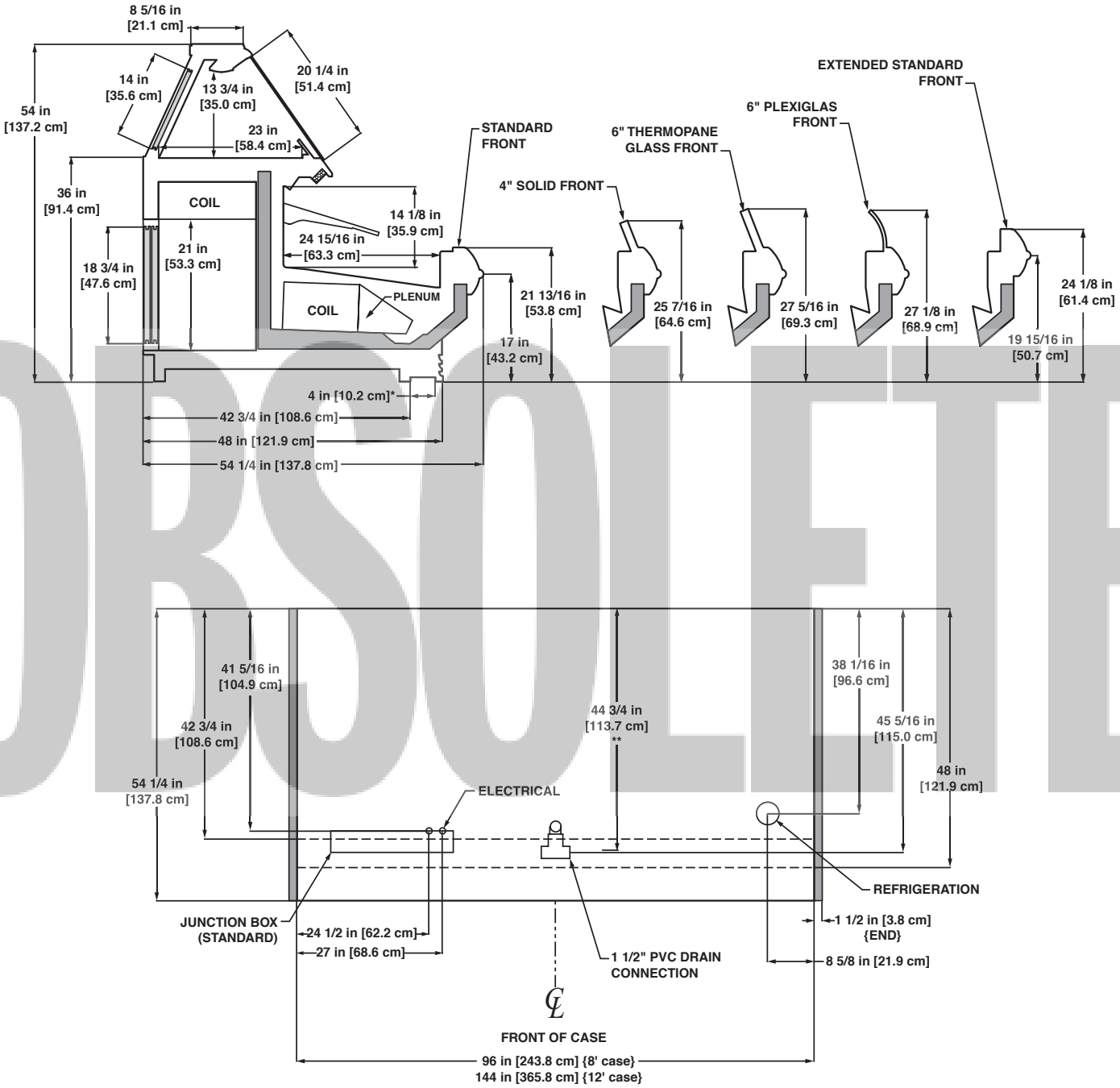

NOTES:

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

- FRONT AND REAR SILL HEIGHT VARY WITH BASEFRAME HEIGHT
- SUCTION LINE - 7/8", LIQUID LINE - 1/2"
- AVAILABLE SHELF SIZES: 10", 12", 14" & 16"

OBSOLETE

Narrow Multi-Deck Produce/Dairy/Deli/Meat/Seafood Merchandiser

ON2UM - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters[1] 120 Volts Amps	Anti-Condensate Heaters[1] 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
ON2UM	4'	2	1.00	60	0.60	40	0.14[1]	17	1.92	400	2.22	532
	6'	2	1.00	60	0.60	40	0.20[1]	24	2.88	600	3.33	798
	8'	3	1.50	90	0.90	60	0.25[1]	30	3.85	800	4.44	1065
	12'	4	2.00	120	1.20	80	0.38[1]	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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ON2UM	4'	0.57	68	1.14	137
	6'	0.57	68	1.49	179
	8'	0.57	68	1.49	179
	12'	0.77	92	2.31	277

OBSOLETE

Guidelines & Control Settings

Model[2]	BTUH/ft[3]	Coil[4] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[5] (FPM)
ON2UM	657	Std.	17	6-8	28	35	280
	657	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's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[5] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ON2UM	2	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 CRMA specifications.

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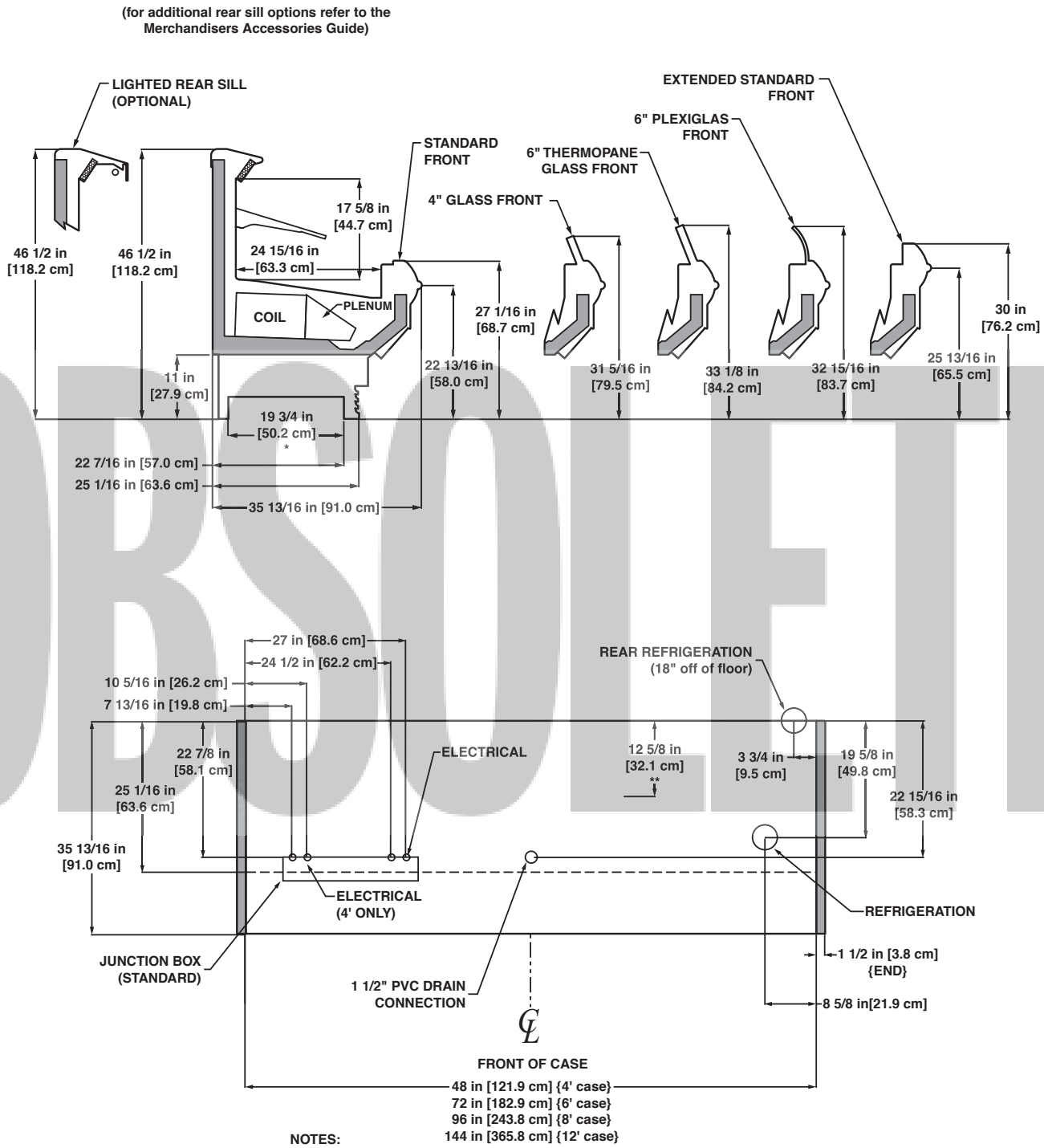

NOTES:

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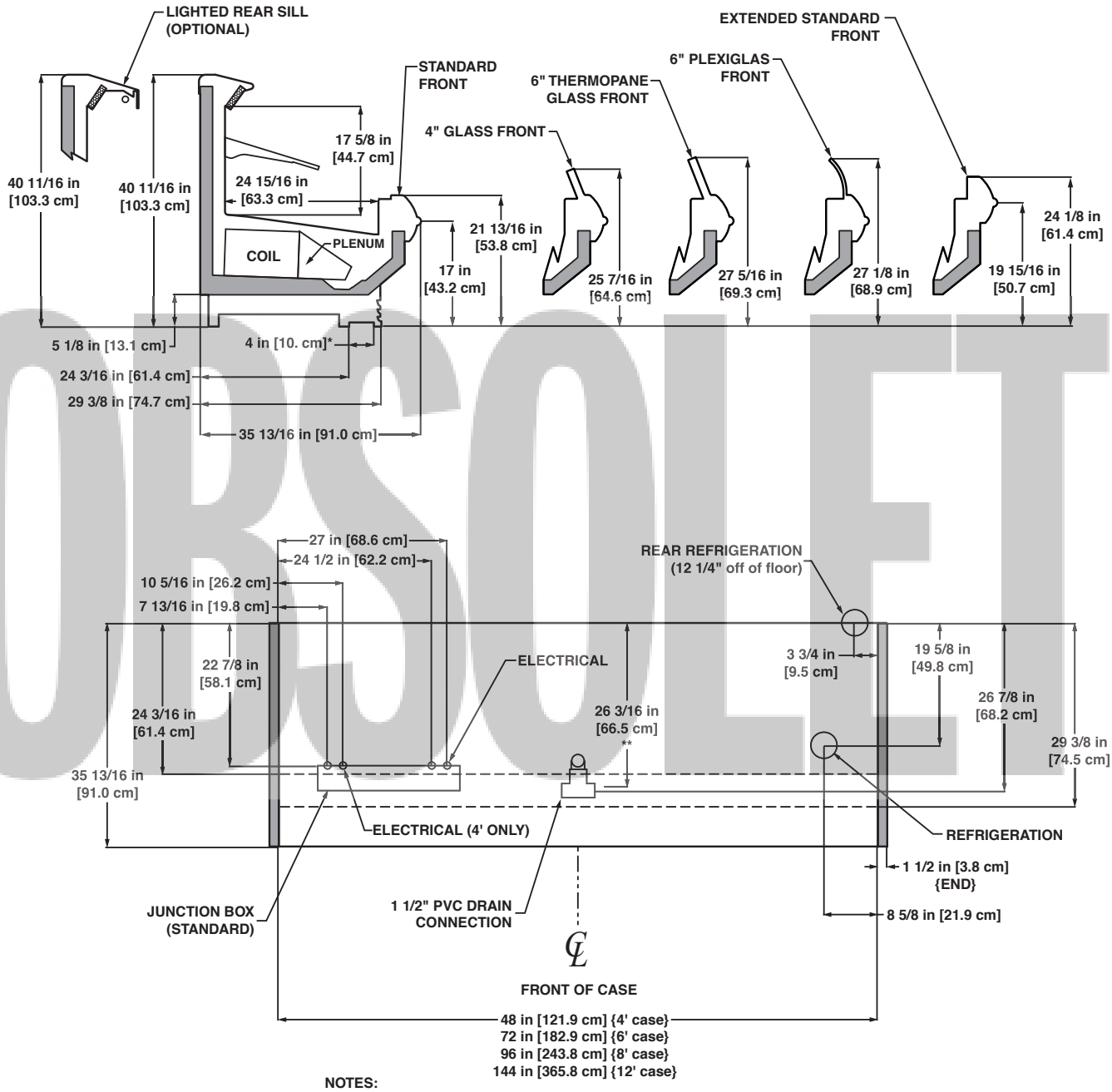
** RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS

- 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"
- AVAILABLE SHELF SIZES: 10", 12", 14" & 16"

(for additional rear sill options refer to the Merchandisers Accessories Guide)



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- SUCTION LINE - 7/8", LIQUID LINE - 1/2"
- AVAILABLE SHELF SIZES: 10", 12", 14" & 16"

MULTI-DECK

Produce/Dairy/Deli/Meat/Seafood

OBSOLETE

Multi-Deck Produce/Dairy/Deli/Meat/Seafood Merchandiser

O2UM - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
O2UM	4'	2	1.00	60	0.60	40	0.14[1]	17	1.92	400	2.22	532
	6'	2	1.00	60	0.60	40	0.20[1]	24	2.88	600	3.33	798
	8'	3	1.50	90	0.90	60	0.25[1]	30	3.85	800	4.44	1065
	12'	4	2.00	120	1.20	80	0.38[1]	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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O2UM	4'	0.57	68	1.14	137
	6'	0.57	68	2.06	247
	8'	0.57	68	2.06	247
	12'	0.77	92	3.08	370

OBSOLETE

Guidelines & Control Settings

Model[2]	BTUH/ft[3]	Coil[4] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[5] (FPM)
O2UM	1000	Std.	17	6-8	27	40	340
	1000	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's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[5] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
O2UM	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

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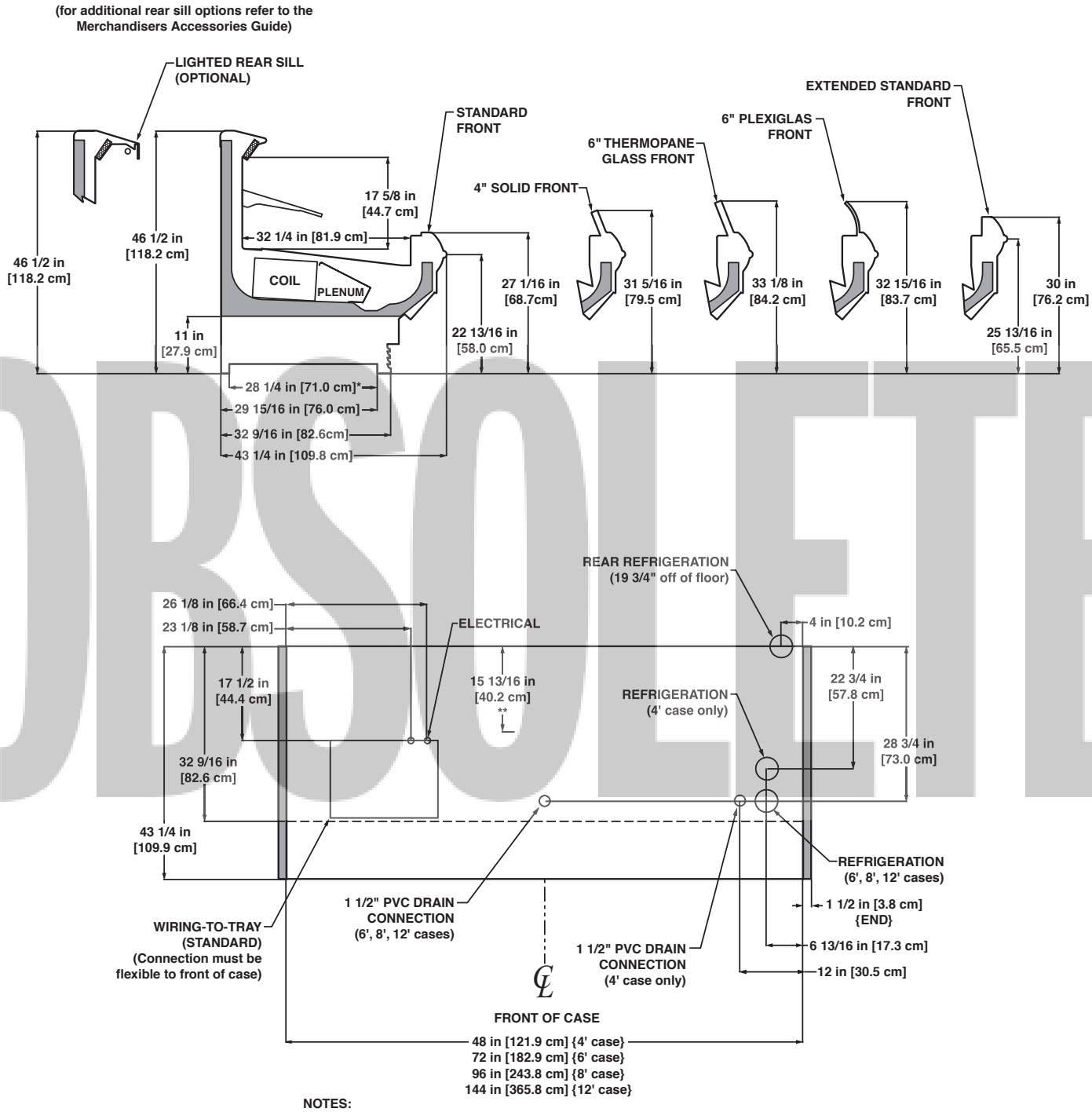
All measurements are taken per CRMA specifications.



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NOTES:

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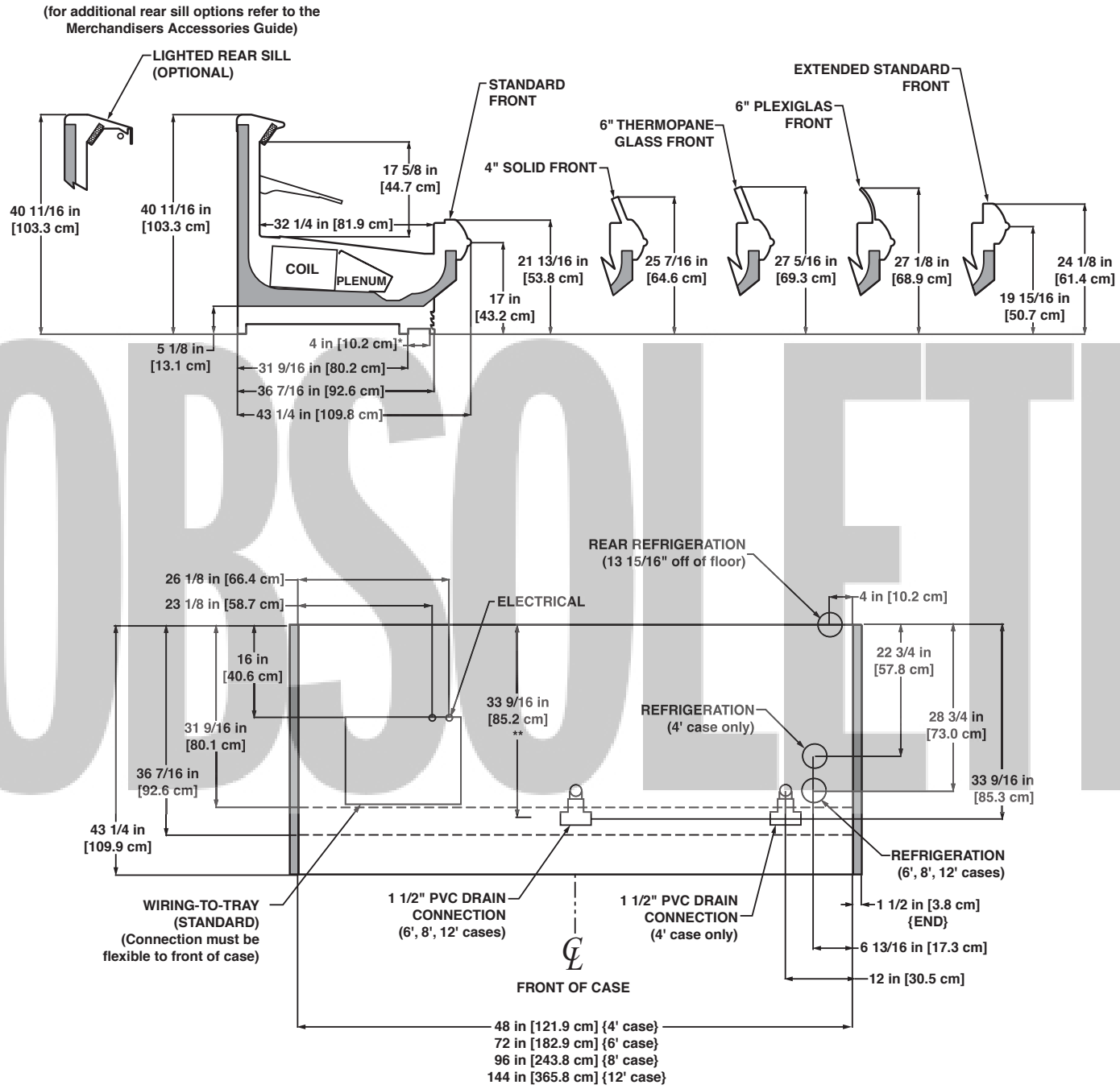
** RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS

- 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"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"

O2UM
(5" BASEFRAME)



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- SUCTION LINE - 7/8", LIQUID LINE - 1/2"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"

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MULTI-DECK

Produce/Dairy/Deli/Meat/Seafood

OBSOLETE

Wide Multi-Deck Produce/Dairy/Deli Merchandiser

OW2UM - 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
OW2UM	8'	3	1.50	90	0.90	60	0.25[1]	30	3.85	800	4.44	1065
	12'	4	2.00	120	1.20	80	0.38[1]	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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OW2UM	8'	0.57	68	2.06	247
	12'	0.77	92	3.08	370

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[2]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
OW2UM	1236	17	6-8	27	40	340

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OW2UM	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 CRMA specifications.

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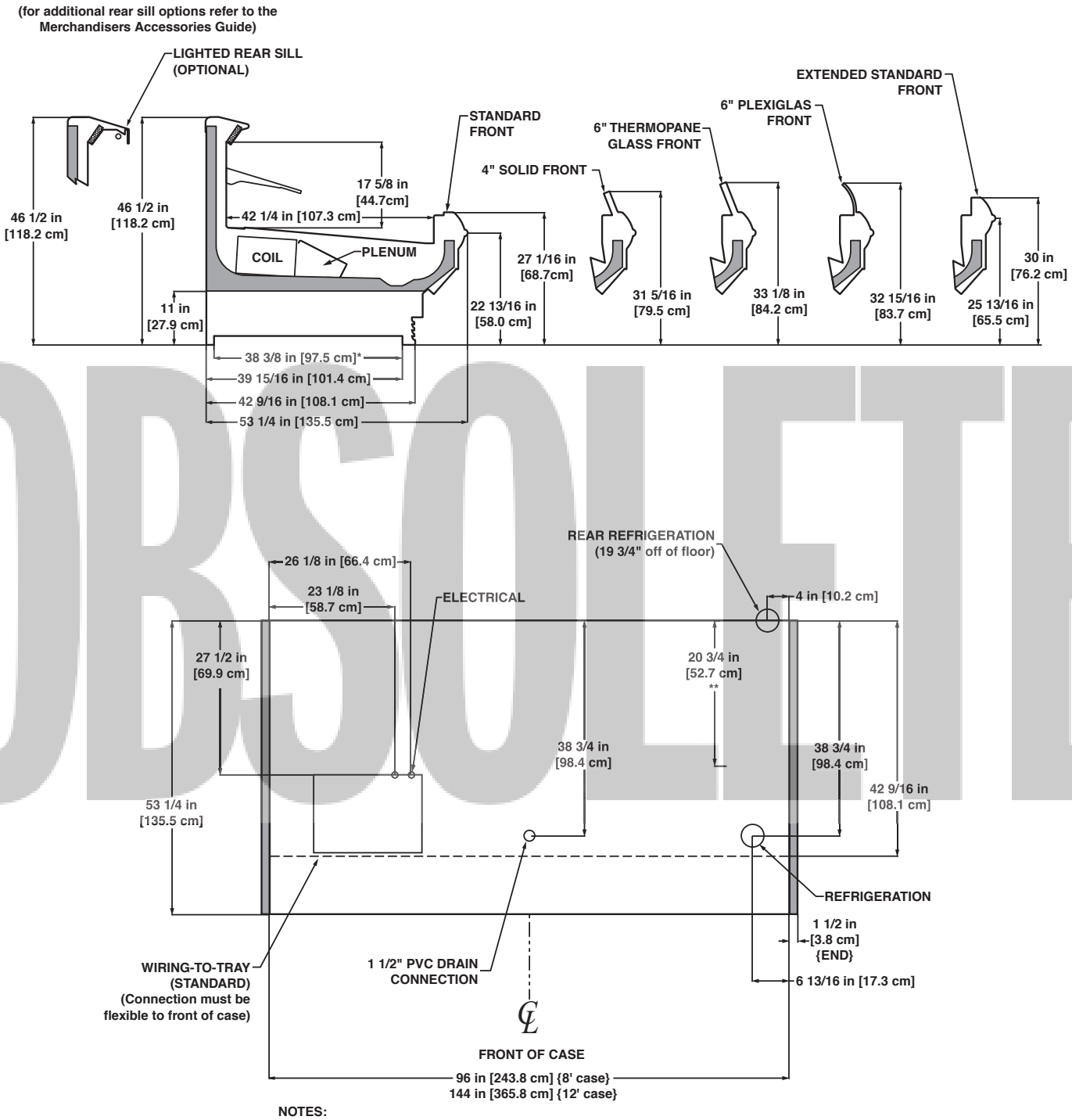

OBSOLETE

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** 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"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"

Narrow Multi-Deck Produce/Dairy/Deli/Meat/Seafood Merchandiser

ON2.5UM - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
ON2.5UM	4'	2	1.00	60	0.60	40	0.14[1]	17	1.92	400	2.22	532
	6'	2	1.00	60	0.60	40	0.20[1]	24	2.88	600	3.33	798
	8'	3	1.50	90	0.90	60	0.25[1]	30	3.85	800	4.44	1065
	12'	4	2.00	120	1.20	80	0.38[1]	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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ON2.5UM	4'	0.57	68	1.14	137
	6'	0.57	68	1.84	221
	8'	0.57	68	1.84	221
	12'	0.77	92	3.25	390

OBSOLETE

Guidelines & Control Settings

Model[2]	BTUH/ft[3]	Coil[4] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[5] (FPM)
ON2.5UM	811	Std.	17	6-8	28	35	284
	811	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's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[5] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ON2.5UM	2	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 CRMA specifications.

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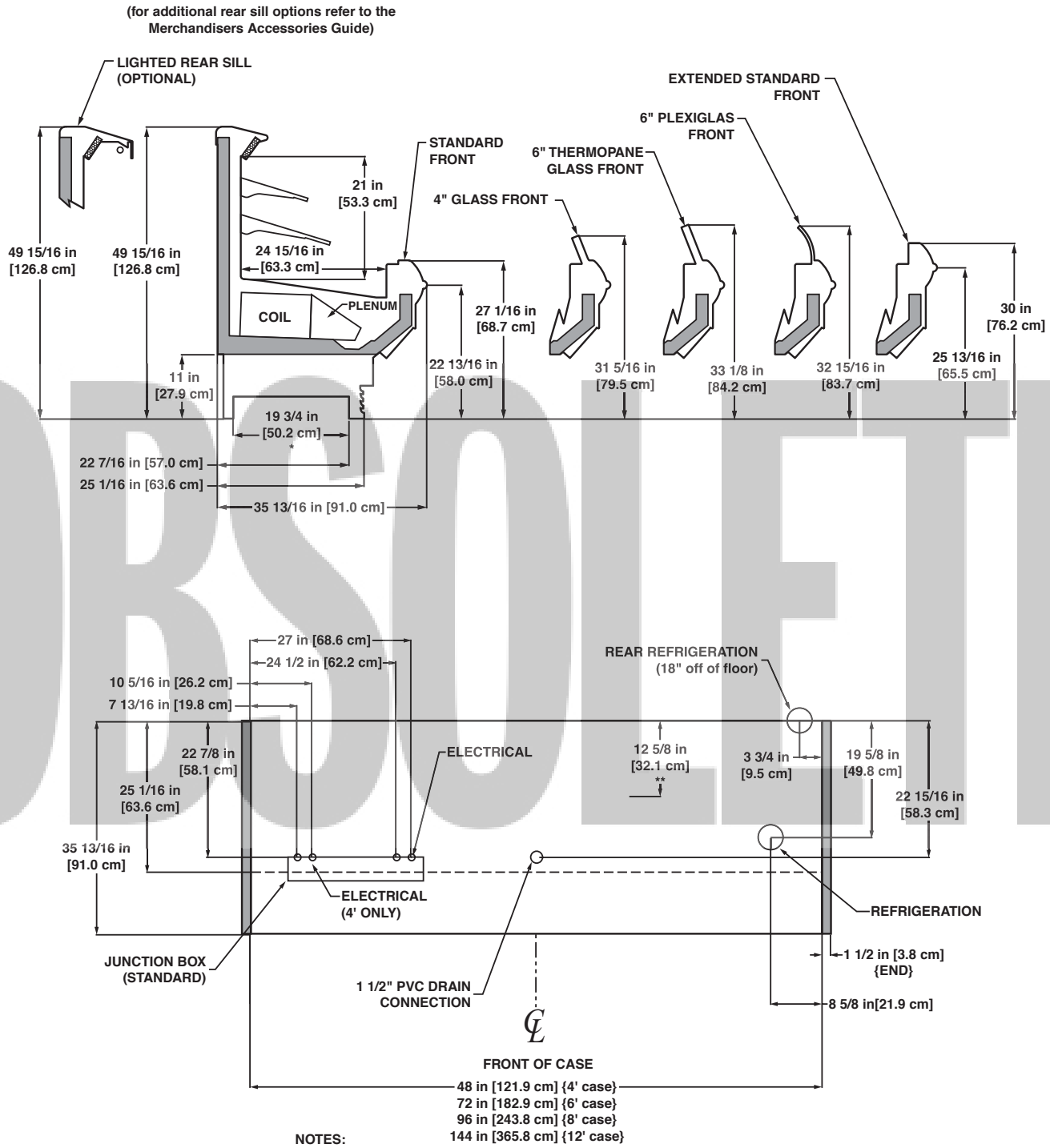

NOTES:

* 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"
- AVAILABLE SHELF SIZES: 10", 12", 14" & 16"

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ON2.5UM
(5" BASEFRAME)

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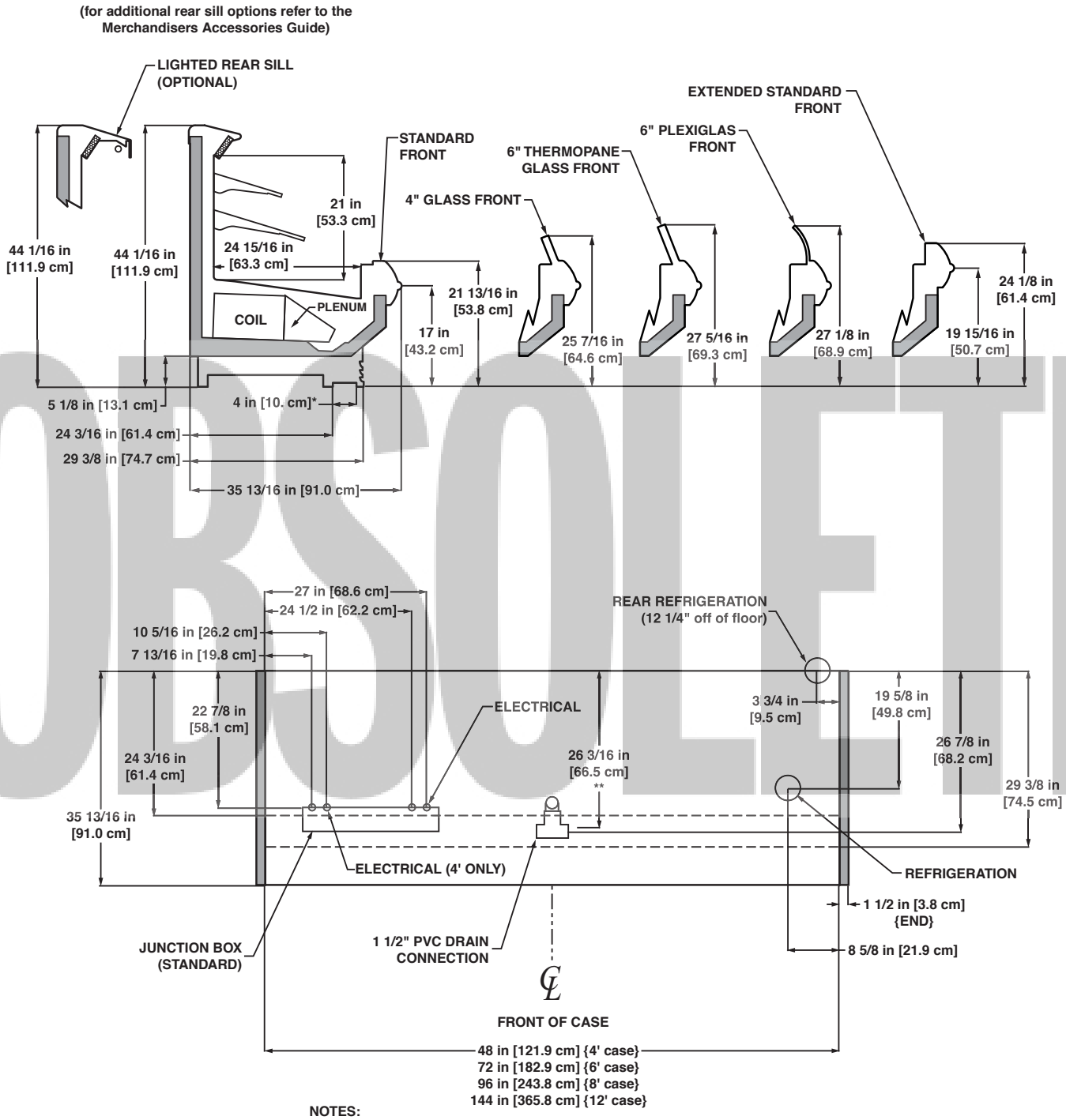

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Multi-Deck Produce/Dairy/Deli/Meat/Seafood Merchandiser

O2.5UM - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
O2.5UM	4'	2	1.00	60	0.60	40	0.14[1]	17	1.92	400	2.22	532
	6'	2	1.00	60	0.60	40	0.20[1]	24	2.88	600	3.33	798
	8'	3	1.50	90	0.90	60	0.25[1]	30	3.85	800	4.44	1065
	12'	4	2.00	120	1.20	80	0.38[1]	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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O2.5UM	4'	0.57	68	1.71	205
	6'	0.57	68	2.41	289
	8'	0.57	68	2.41	289
	12'	0.77	92	4.02	482

OBSOLETE

Guidelines & Control Settings

Model[2]	BTUH/ft[3]	Coil[4] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[5] (FPM)
O2.5UM[6]	1020	Std.	17	6-8	27	45	225
	1020	Enh.	22	6-8	27	45	225
O2.5UM w/Plexi Dome	1380	Std.	17	6-8	32	46	305
	1380	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] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[5] Average discharge air velocity at peak of defrost.

[6] For cases with rear refrigerated storage boxes add 110 BTUH/ft

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
O2.5UM	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

All measurements are taken per CRMA specifications.

O2.5UM
(11" BASEFRAME)

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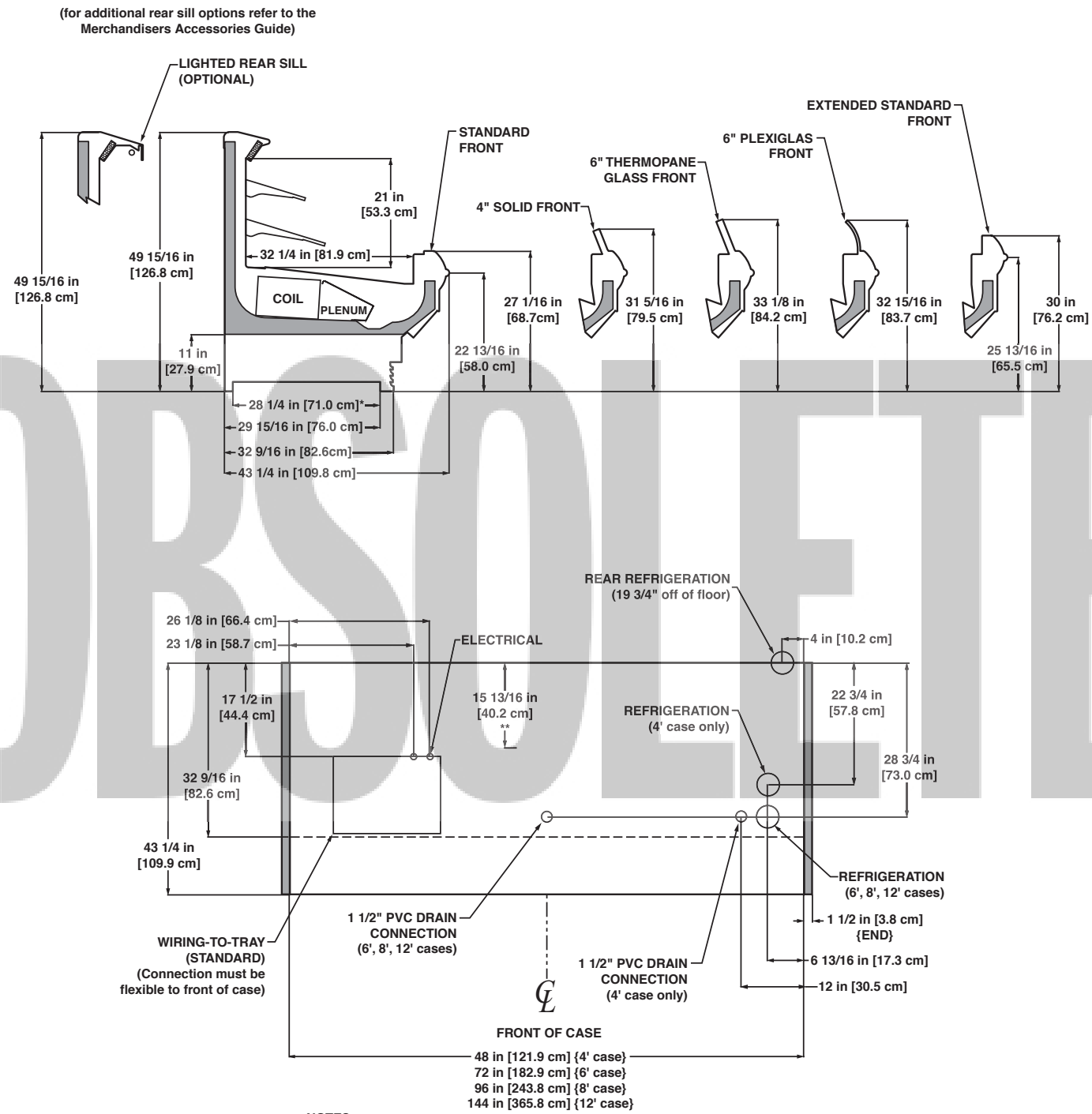

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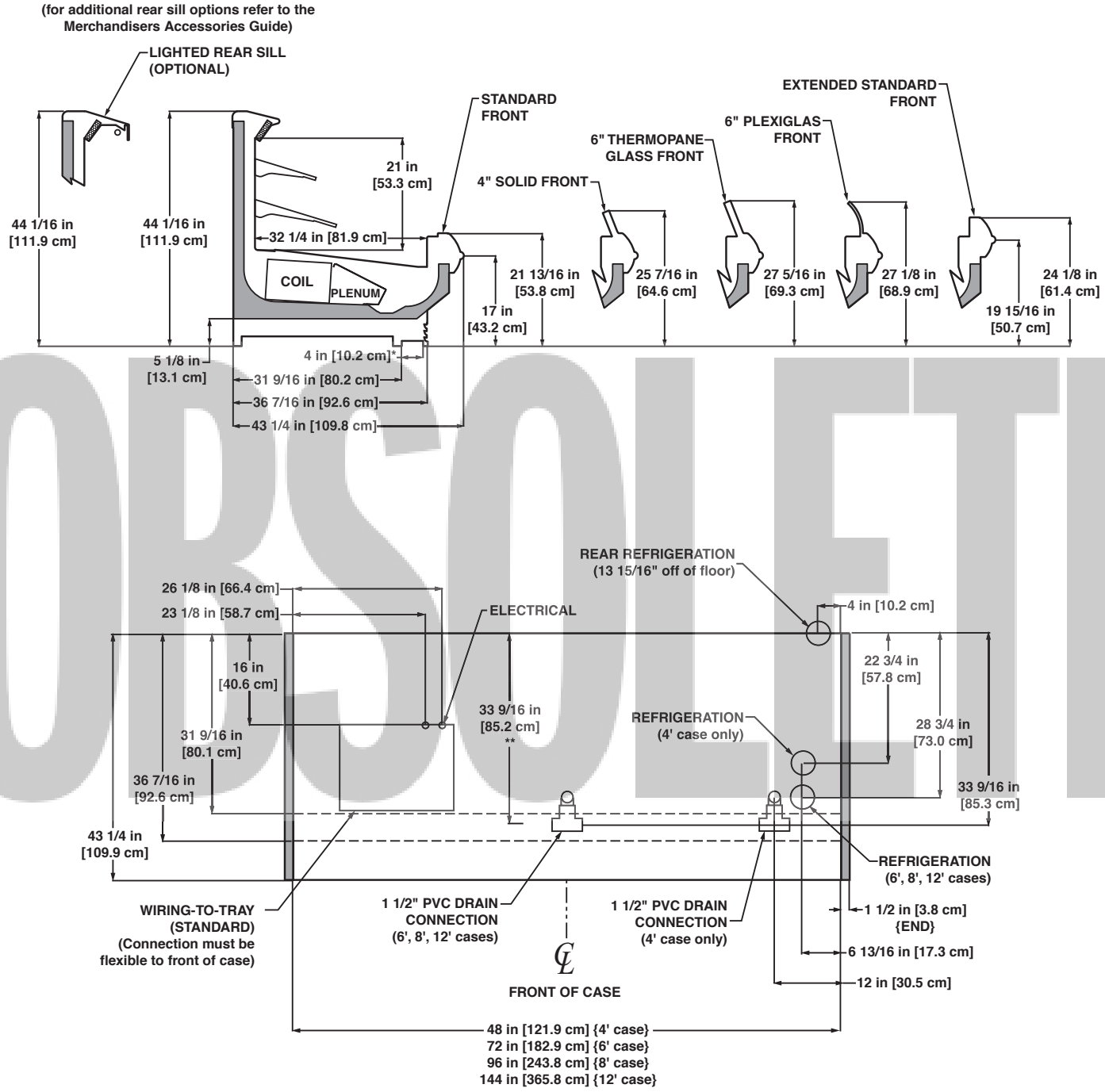

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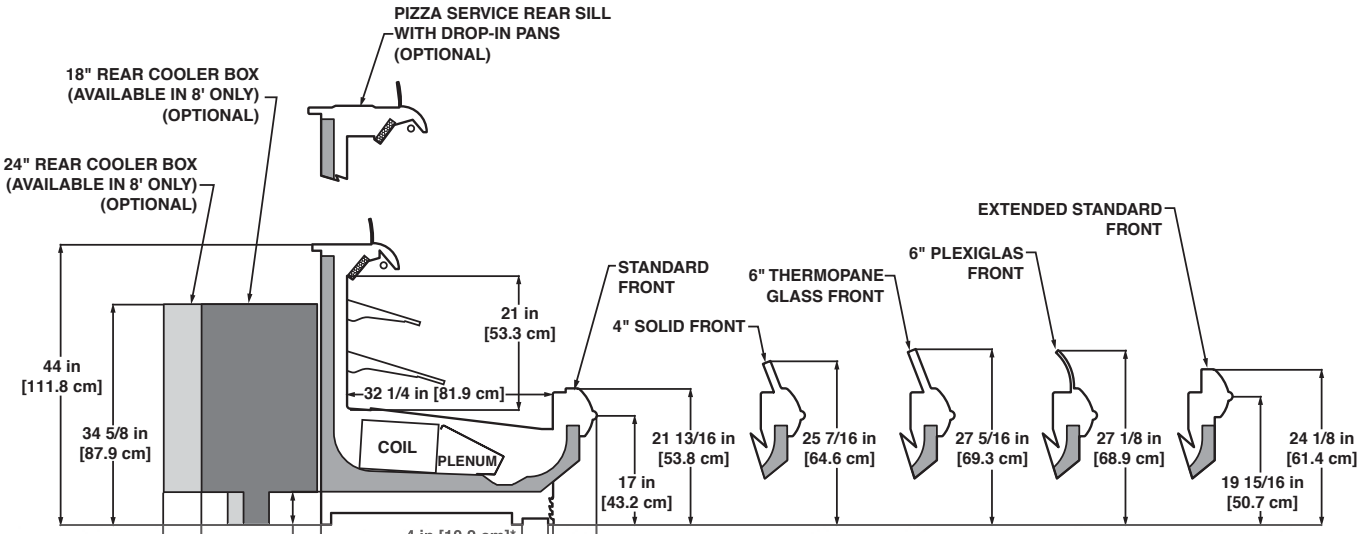

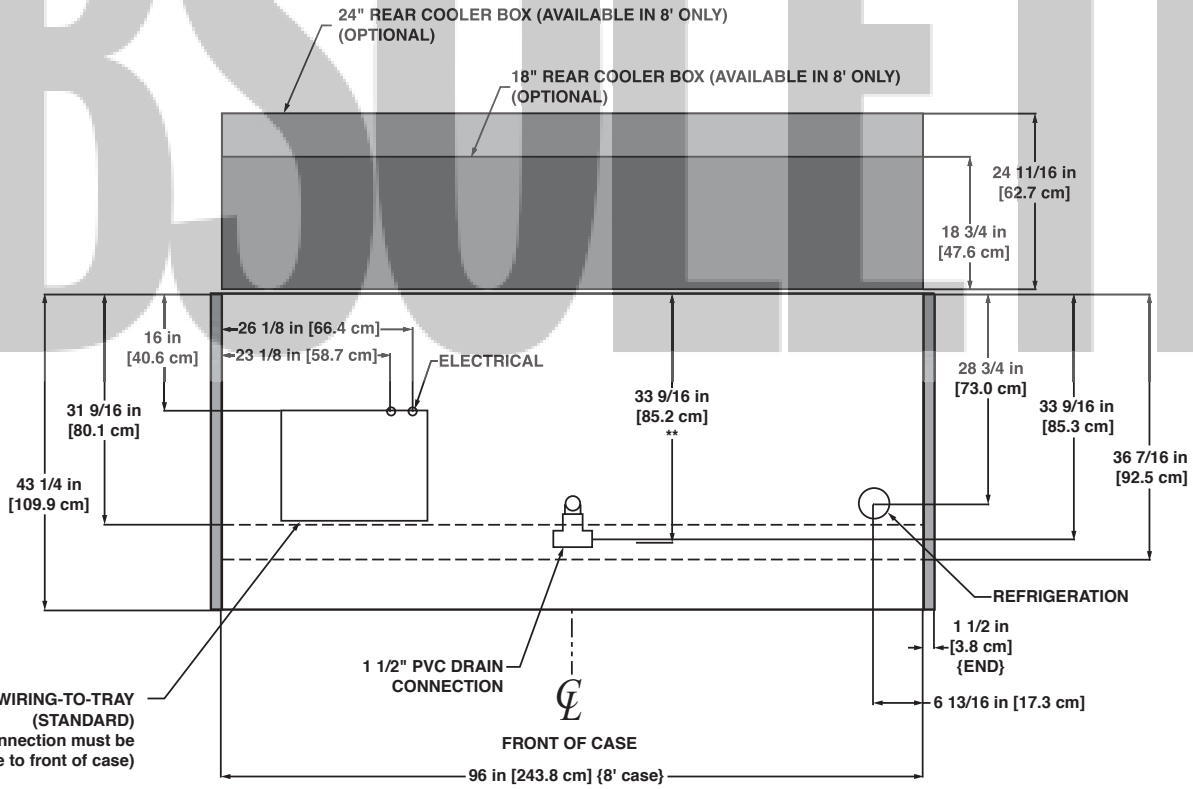

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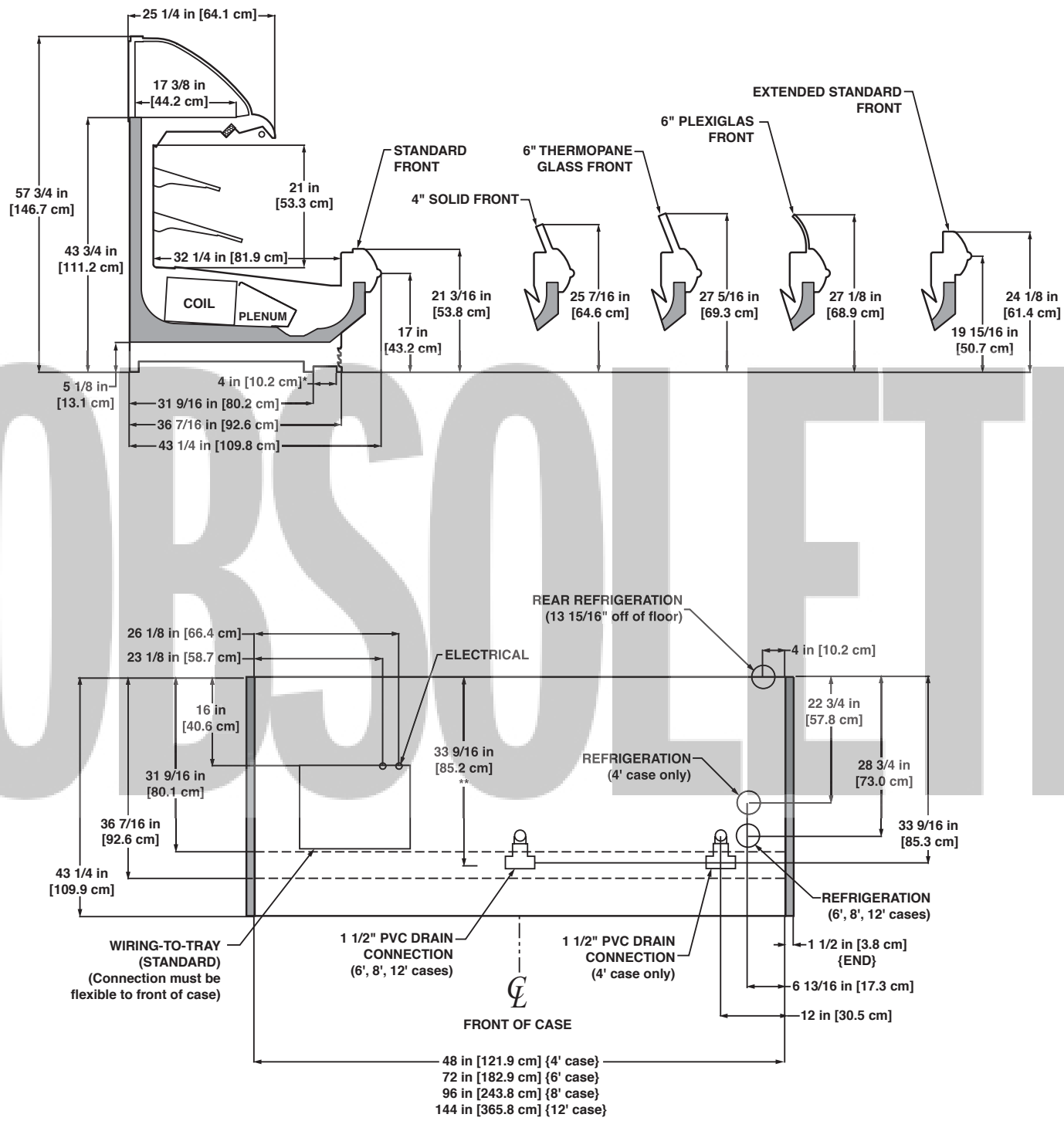
NSF COMPONENT c UL us

A DOVER COMPANY



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OBSOLETE

Multi-Deck Self-Contained Produce/Dairy/Deli/Meat/Seafood Merchandiser

O2.5UMA - 8'

System Requirements

Model	Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Fuse Size
O2.5UMA-8'	208	1	60	3 wire + ground	19.81	25

Electrical Data

Model	Fans per Case	Standard Fans		Condenser Fan		Anti-Condensate Heaters		Maximum Lighting		Defrost Heaters	
		120 Volts		208 Volts		120 Volts		120 Volts		208 Volts	
		Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O2.5UMA-8'	3	1.50	90	0.85	130	0.25[1]	30	2.41	289	3.85	800

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

OBSOLETE

Guidelines & Control Settings

Model[4]	24 hr Energy Usage (kWh)	Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[5] (FPM)
O2.5UMA-8'		40	6-8	29	43	225

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

[5] Average discharge air velocity at peak of defrost.

Condensing Unit Data

Model	Volts	Phase	Frequency (Hz)	HP	RLA[2] (amps)	LRA[3] (amps)	Refrig.	lbs of Refrig.
O2.5UMA-8'	208	1	60	1	10.4	48.2	R22	5.25

[2] RLA - Running Load Amps.

[3] LRA - Locked Rotor Amps.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
			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	- - -[6]	- - -	- - -	- - -

[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

All measurements are taken per CRMA specifications.

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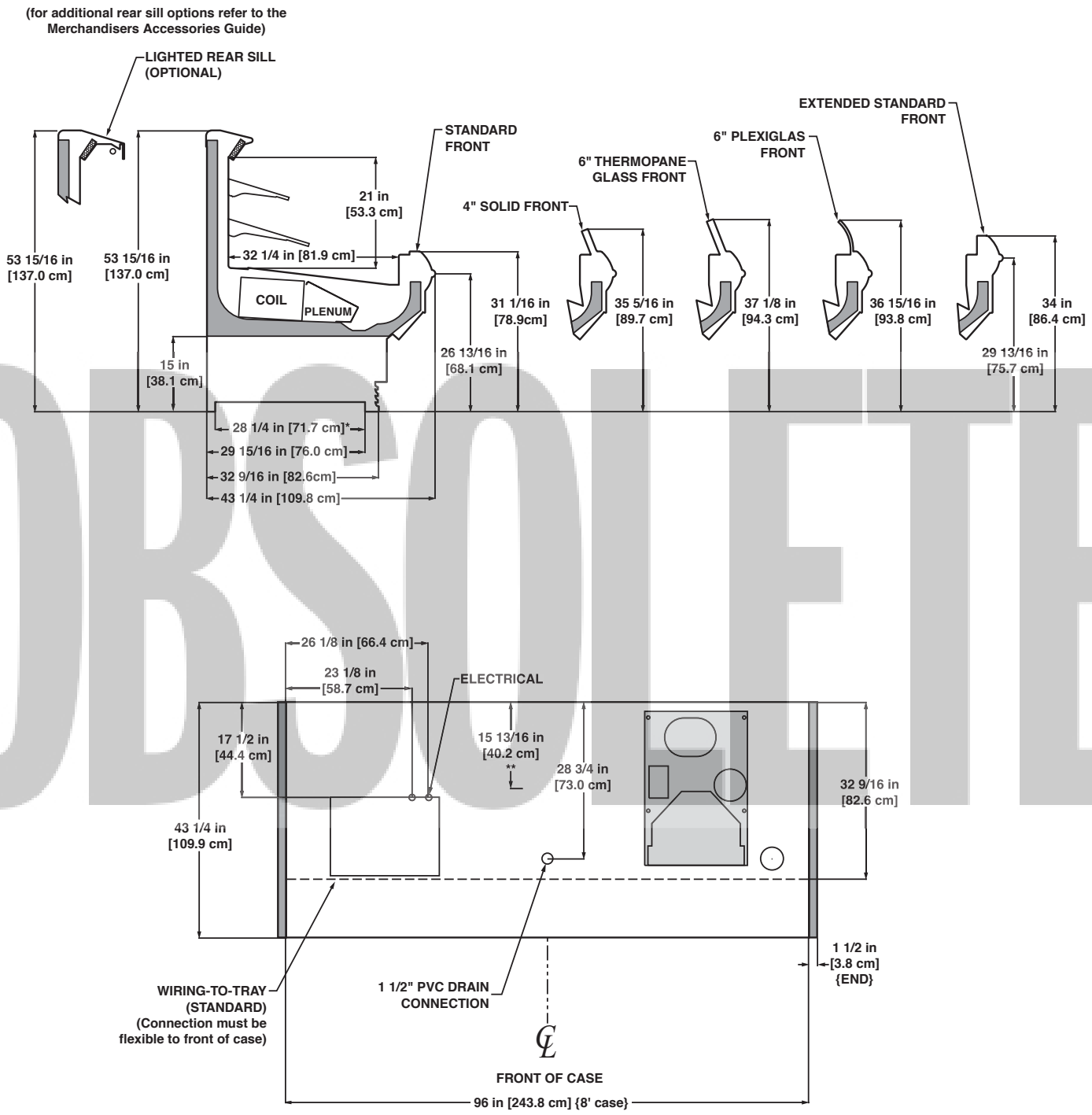

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- AVAILABLE SHELF SIZES: 10", 12", 14" & 16"

Narrow Multi-Deck Produce/Dairy/Deli/Meat/Seafood Merchandiser

ON3UM - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
ON3UM	4'	2	1.00	60	0.60	40	0.14[1]	17	1.92	400	2.22	532
	6'	2	1.00	60	0.60	40	0.20[1]	24	2.88	600	3.33	798
	8'	3	1.50	90	0.90	60	0.25[1]	30	3.85	800	4.44	1065
	12'	4	2.00	120	1.20	80	0.38[1]	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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ON3UM	4'	0.57	68	1.14	137
	6'	0.57	68	1.84	221
	8'	0.57	68	1.84	221
	12'	0.77	92	3.25	390

Guidelines & Control Settings

Model[2]	BTUH/ft[3]	Coil[4] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[5] (FPM)
ON3UM	824	Std.	17	6-8	28	35	230
	824	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's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[5] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ON3UM	2	6 - 8	40	47	45	45	26	45	45	45

Medium Temperature Defrost Schedule

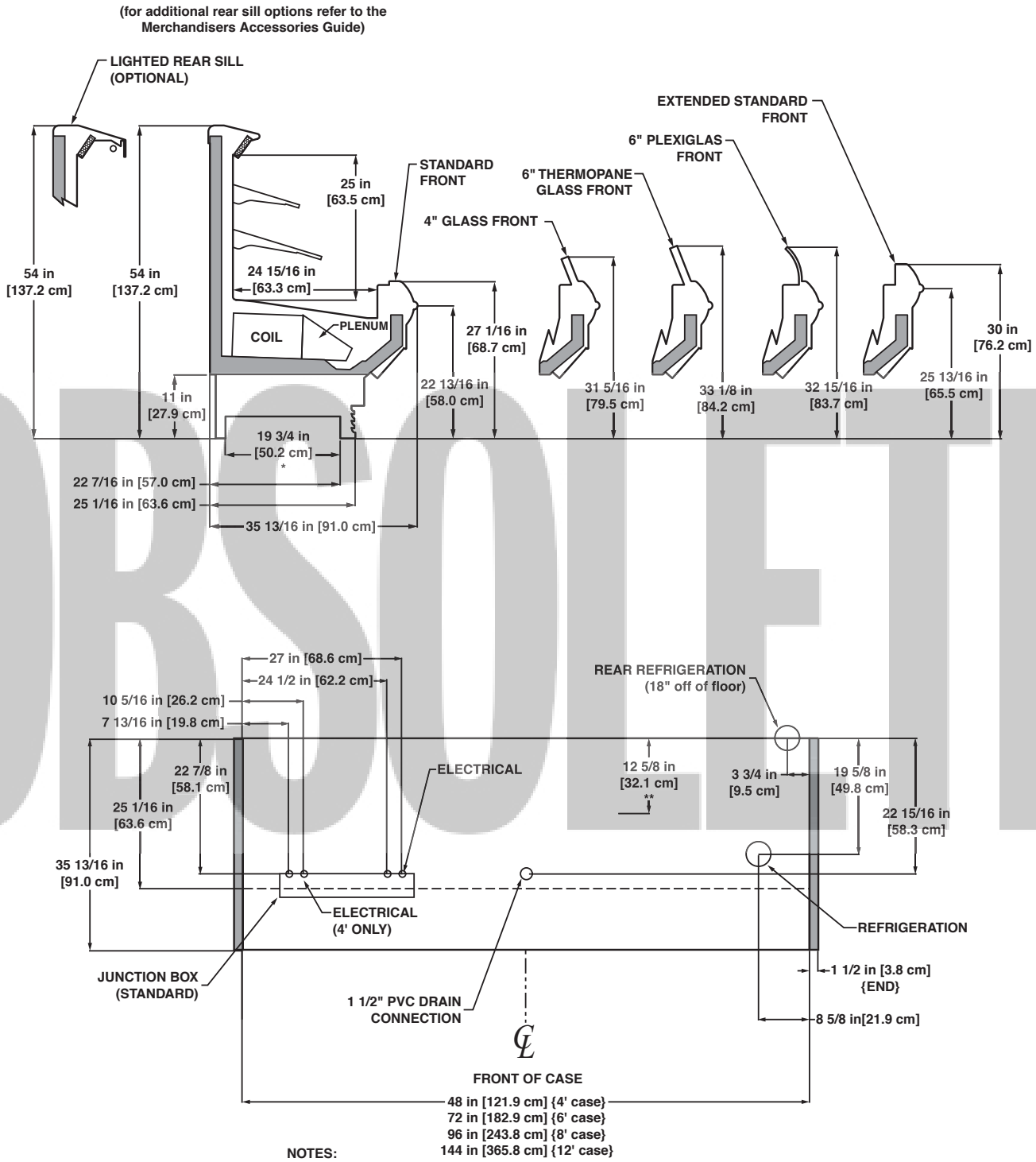
No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm

All measurements are taken per CRMA specifications.

OBSOLETE

ON3UM
(11" BASEFRAME)

OBSOLETE



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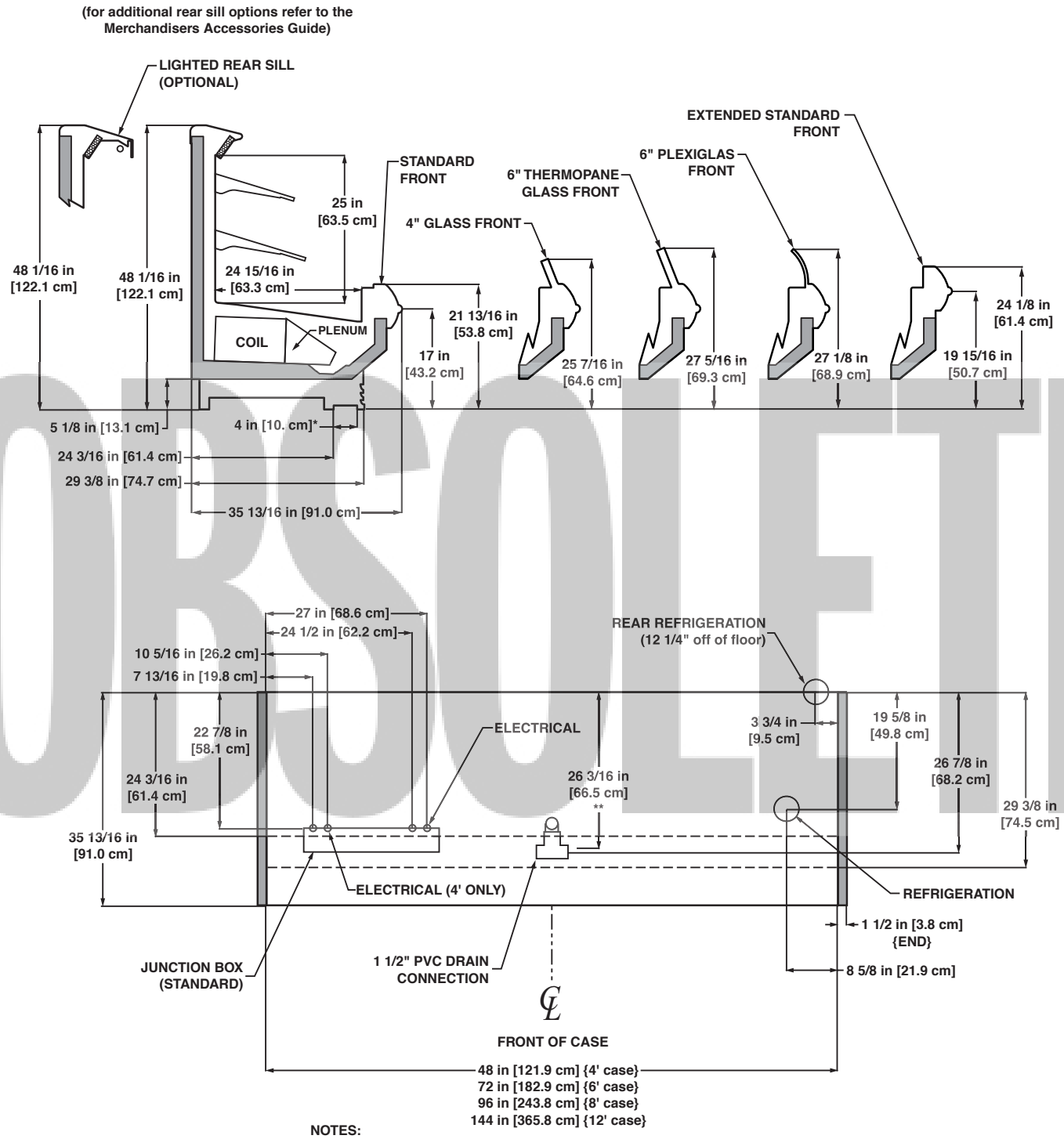
NSF COMPONENT c UL us

A DOVER COMPANY

ON3UM
(5" BASEFRAME)

OBSOLETE



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NSF COMPONENT c UL us

A DOVER COMPANY

OBSOLETE

Multi-Deck Produce/Dairy/Deli/Meat/Seafood Merchandiser

O3UM - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
O3UM	4'	2	1.00	60	0.60	40	0.14[1]	17	1.92	400	2.22	532
	6'	2	1.00	60	0.60	40	0.20[1]	24	2.88	600	3.33	798
	8'	3	1.50	90	0.90	60	0.25[1]	30	3.85	800	4.44	1065
	12'	4	2.00	120	1.20	80	0.38[1]	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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O3UM	4'	0.57	68	1.71	205
	6'	0.57	68	2.41	289
	8'	0.57	68	2.41	289
	12'	0.77	92	4.02	482

Guidelines & Control Settings

Model[2]	BTUH/ft[3]	Coil[4] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[5] (FPM)
O3UM	1030	Std.	17	6-8	27	45	225
	1030	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's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[5] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
O3UM	3	6 - 8	40	47	45	45	26	45	45	45

Medium Temperature Defrost Schedule

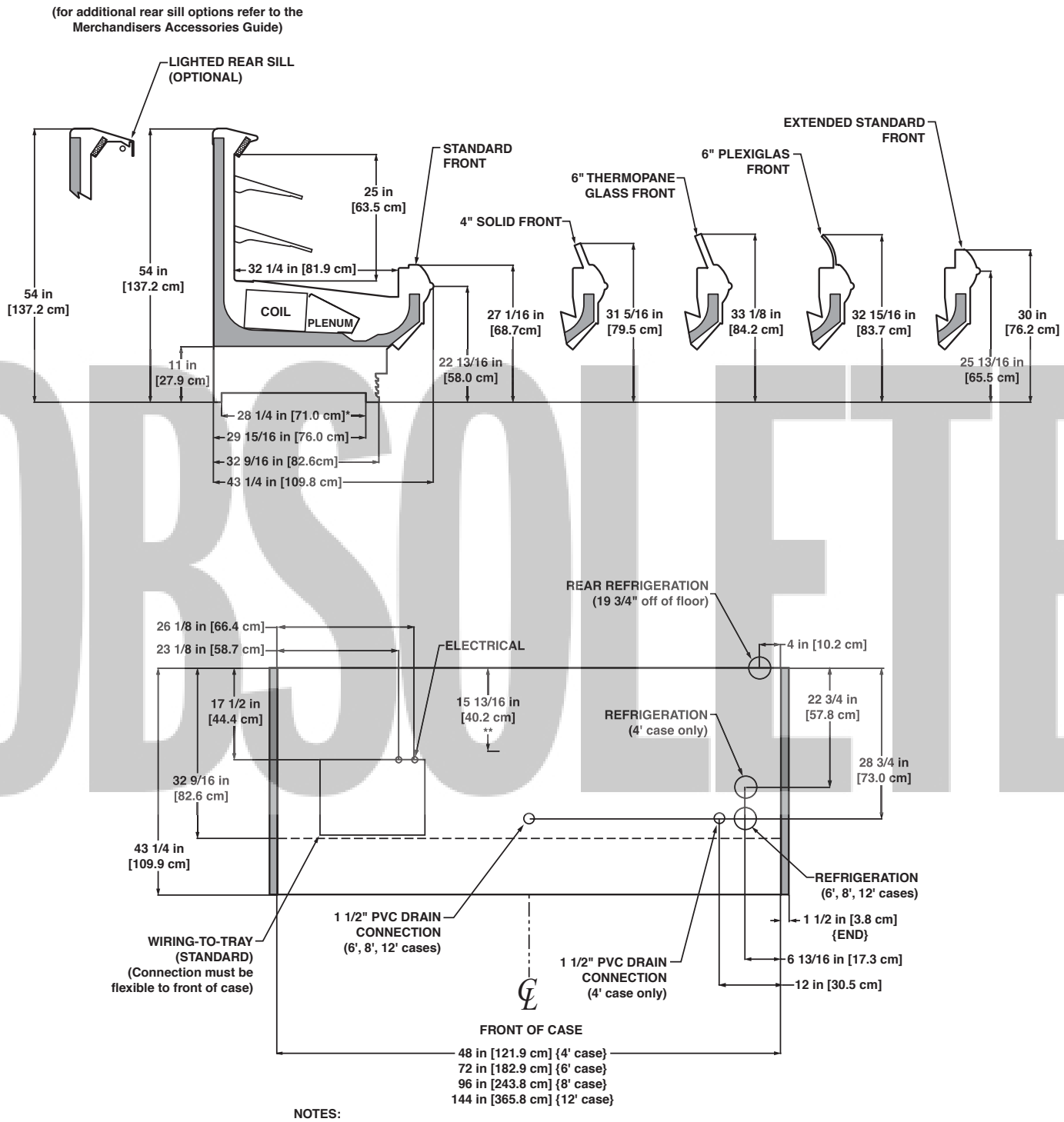
No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm

OBSOLETE

All measurements are taken per CRMA specifications.

O3UM
(11" BASEFRAME)

OBSOLETE



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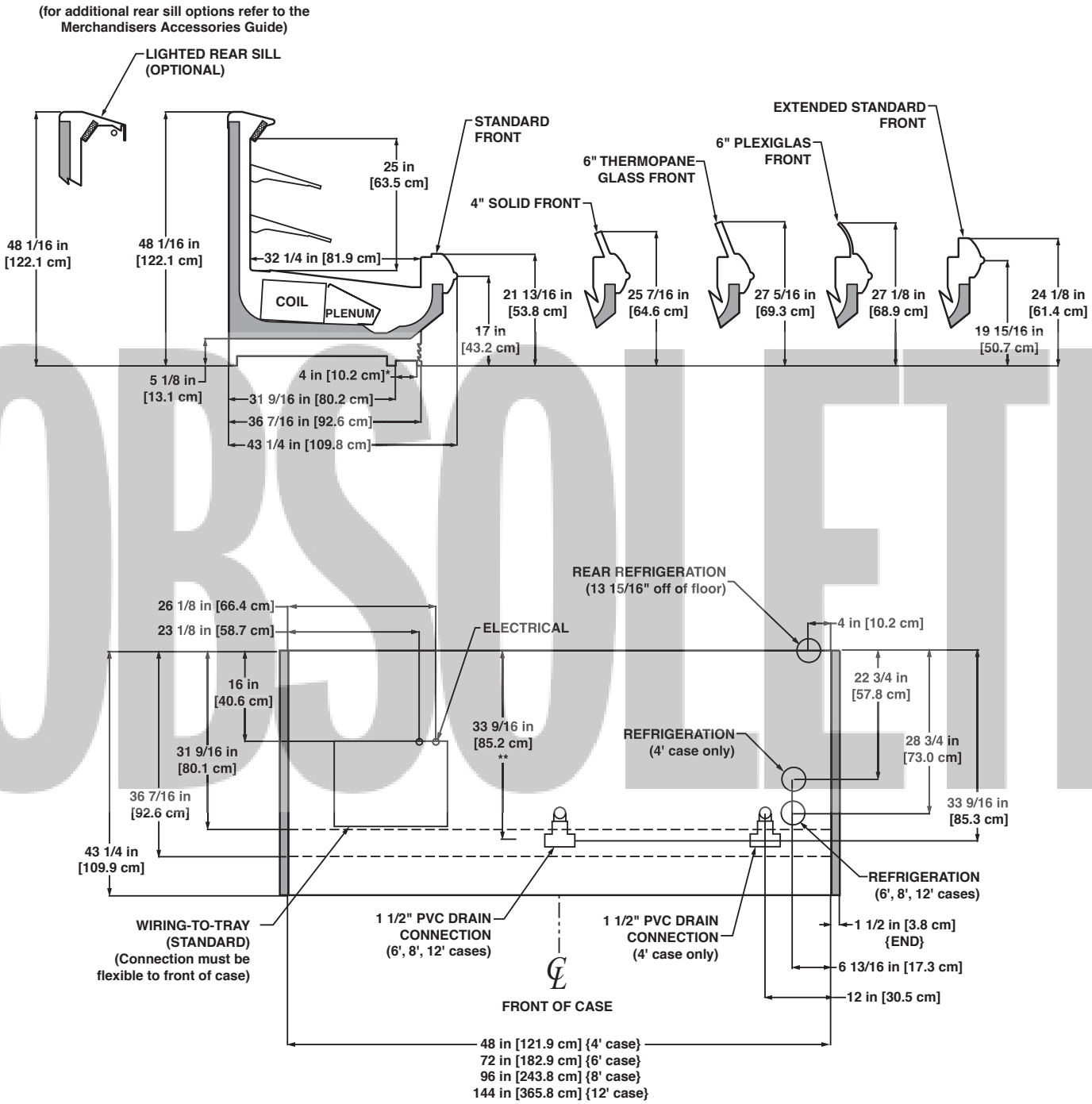
NSF COMPONENT
c UL us
A DOVER COMPANY

O3UM
(5" BASEFRAME)



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NSF COMPONENT c UL us

A DOVER COMPANY

OBSOLETE

Wide Multi-Deck Produce/Dairy/Deli Merchandiser

OW3UM - 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans		High Efficiency Fans		Anti-Condensate Heaters		Defrost Heaters			
			120 Volts		120 Volts		120 Volts		208 Volts		240 Volts	
			Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OW3UM	8'	3	1.50	90	0.90	60	0.25[1]	30	3.85	800	4.44	1065
	12'	4	2.00	120	1.20	80	0.38[1]	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

Model		Typical per Light Row		Maximum Lighting	
		120 Volts		120 Volts	
		Amps	Watts	Amps	Watts
OW3UM	8'	0.57	68	2.41	289
	12'	0.77	92	4.02	482

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[2]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
OW3UM	1349	17	6-8	27	45	225

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Average discharge air velocity at peak of defrost.

Defrost Controls

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

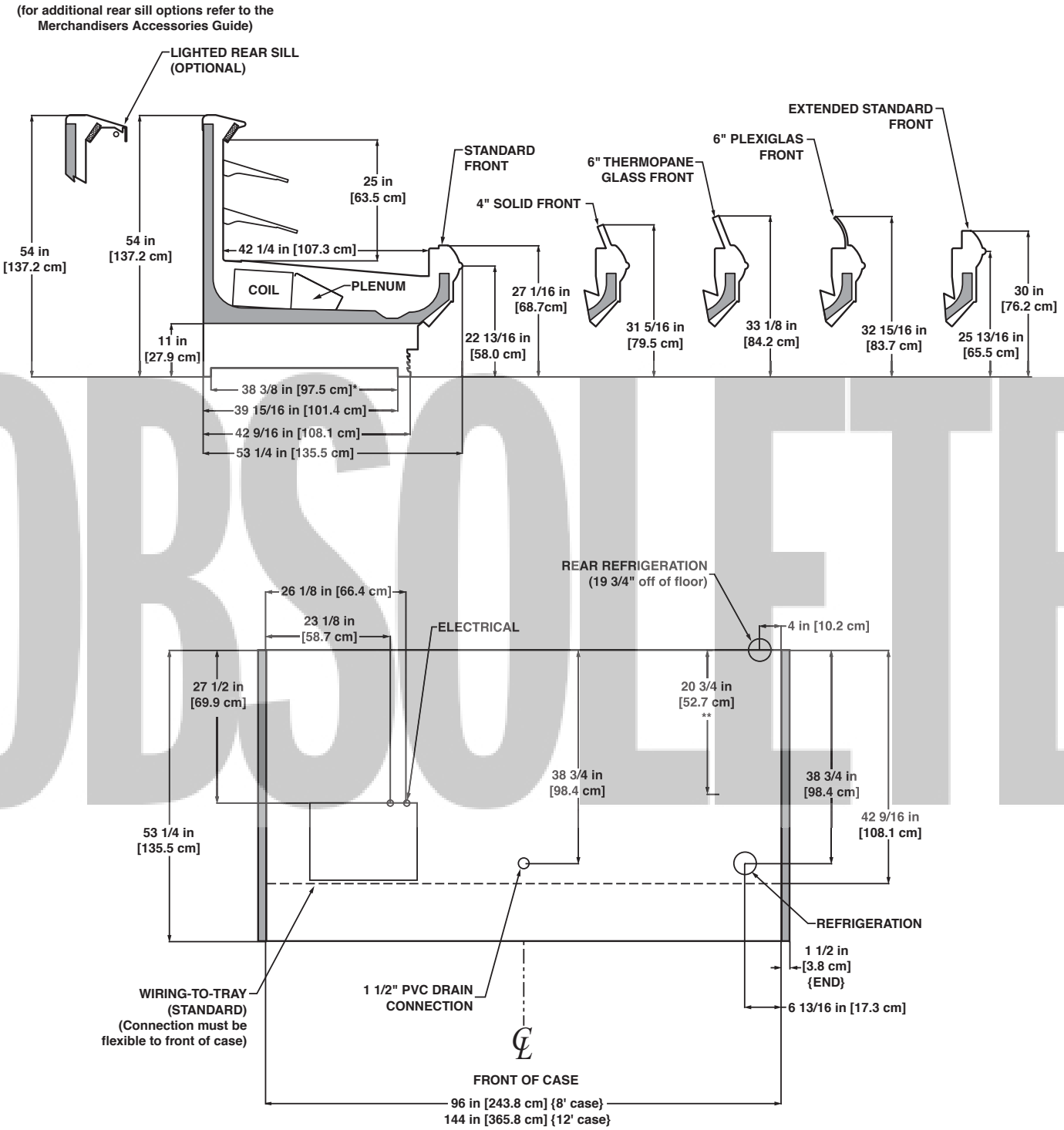
Medium Temperature Defrost Schedule

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

All measurements are taken per CRMA specifications.

Hill PHOENIX EXCELLENCE

A DOVER COMPANY



OBSOLETE

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c UL us

A DOVER COMPANY

Multi-Deck Produce/Dairy/Deli Merchandiser

O3UD - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
O3UD	4'	2	1.00	60	0.60	40	0.14	17	1.92	400	2.22	532
	6'	2	1.00	60	0.60	40	0.20	24	2.88	600	3.33	798
	8'	3	1.50	90	0.90	60	0.25	30	3.85	800	4.44	1065
	12'	4	2.00	120	1.20	80	0.38	46	5.77	1200	6.67	1600

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O3UD	4'	0.57	68	1.14	137
	6'	0.57	68	1.49	179
	8'	0.57	68	1.49	179
	12'	0.77	92	2.31	277

Guidelines & Control Settings

Model	Front Sill Heights	BTUH/ft[1]	Coil[2] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
O3UD	Std. Dairy	1030	Std.	17	6-8	30	45	225
	Std. Dairy	1030	Enh.	22	6-8	30	45	225

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[3] Average discharge air velocity at peak of defrost.

Defrost Controls

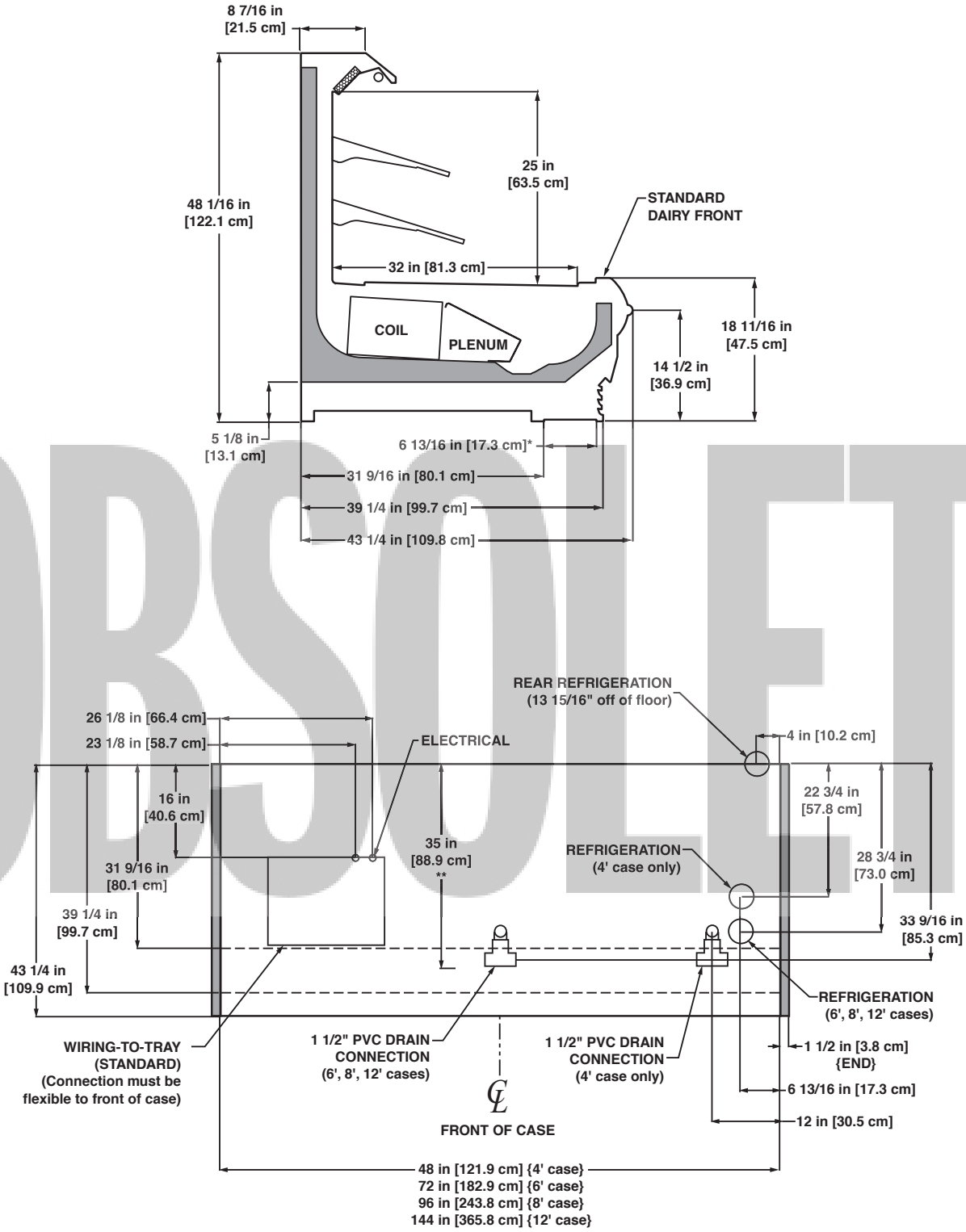
Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
O3UD	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

OBSOLETE

All measurements are taken per CRMA specifications.



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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"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"

Narrow Multi-Deck Produce/Dairy/Deli/Meat/Seafood Merchandiser

ON3.5UM - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Defrost Heaters 208 Volts		Defrost Heaters 240 Volts	
			Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ON3.5UM	4'	2	1.00	60	0.60	40	0.14[1]	17	1.92	400	2.22	532
	6'	2	1.00	60	0.60	40	0.20[1]	24	2.88	600	3.33	798
	8'	3	1.50	90	0.90	60	0.25[1]	30	3.85	800	4.44	1065
	12'	4	2.00	120	1.20	80	0.38[1]	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

Model		Typical per Light Row 120 Volts		Maximum Lighting 120 Volts	
		Amps	Watts	Amps	Watts
ON3.5UM	4'	0.57	68	1.34	161
	6'	0.57	68	2.46	295
	8'	0.57	68	2.46	295
	12'	0.77	92	3.85	462

Guidelines & Control Settings

Model[2]	BTUH/ft[3]	Coil[4] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[5] (FPM)
ON3.5UM	1019	Std.	17	6-8	28	35	204
	1019	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's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[5] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost 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	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.

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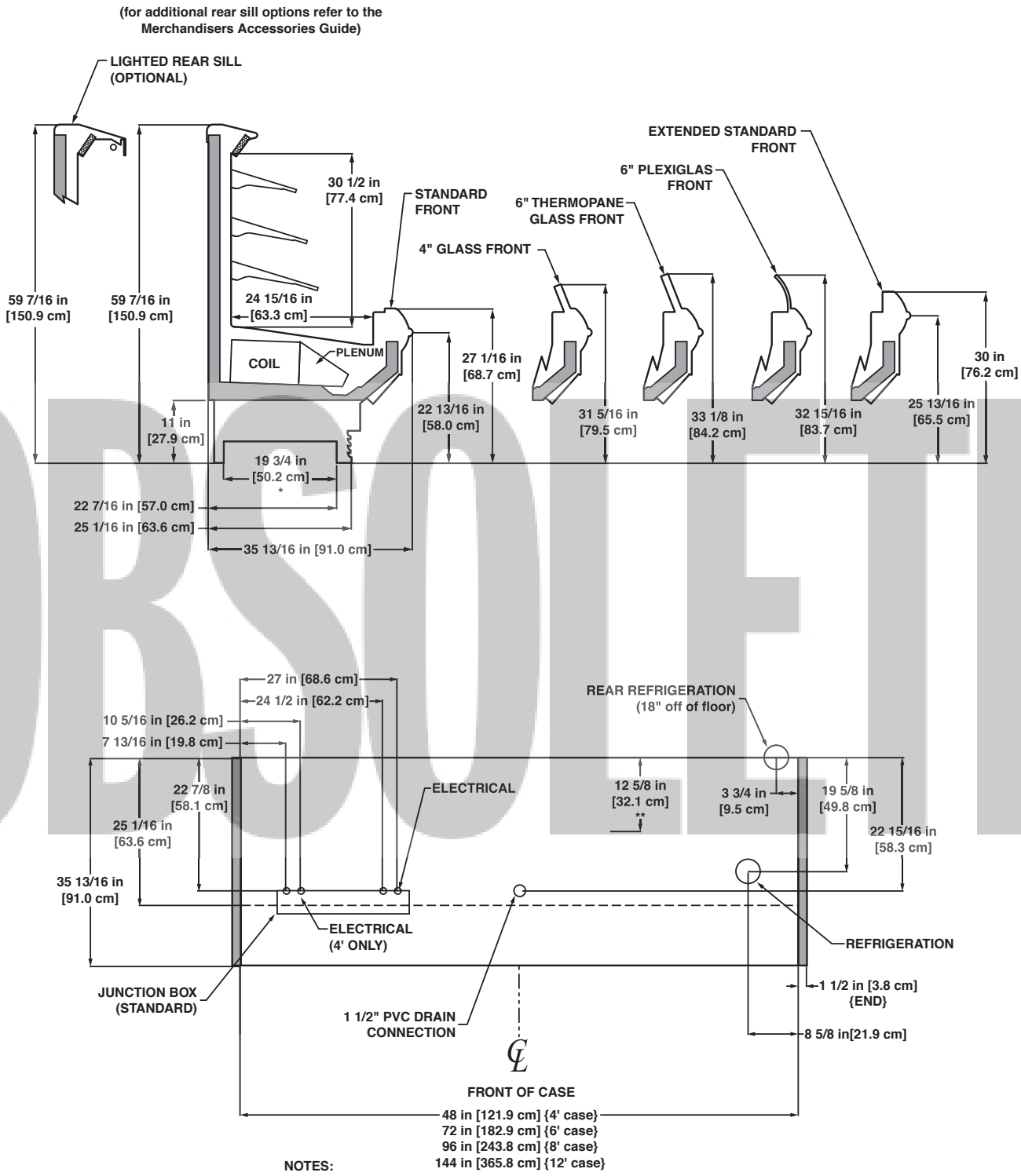

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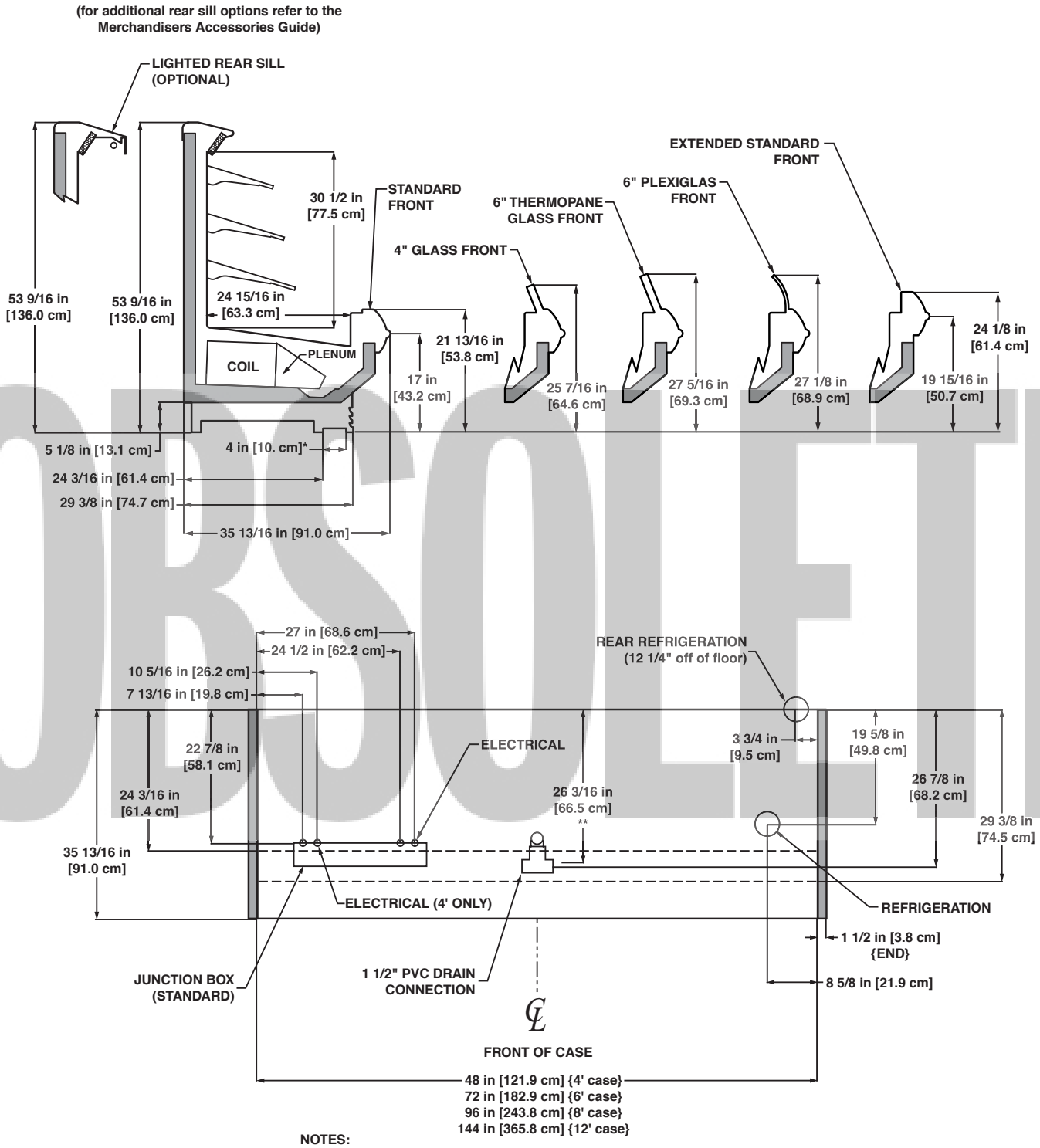
- AVAILABLE SHELF SIZES: 10", 12", 14" & 16"

NSF COMPONENT
c UL us

A DOVER COMPANY



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MULTI-DECK

Produce/Dairy/Deli/Meat/Seafood

OBSOLETE

Multi-Deck Produce/Dairy/Deli/Meat/Seafood Merchandiser

O3.5UM - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
O3.5UM	4'	2	1.00	60	0.60	40	0.14[1]	17	1.92	400	2.22	532
	6'	2	1.00	60	0.60	40	0.20[1]	24	2.88	600	3.33	798
	8'	3	1.50	90	0.90	60	0.25[1]	30	3.85	800	4.44	1065
	12'	4	2.00	120	1.20	80	0.38[1]	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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O3.5UM	4'	0.57	68	1.34	229
	6'	0.57	68	3.03	364
	8'	0.57	68	3.03	364
	12'	0.77	92	4.62	554

OBSOLETE

Guidelines & Control Settings

Model[2]	BTUH/ft[3]	Coil[4] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[5] (FPM)
O3.5UM	1300	Std.	17	6-8	30	45	300
	1300	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's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[5] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination 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

All measurements are taken per CRMA specifications.

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A DOVER COMPANY

O3.5UM
(11" BASEFRAME)

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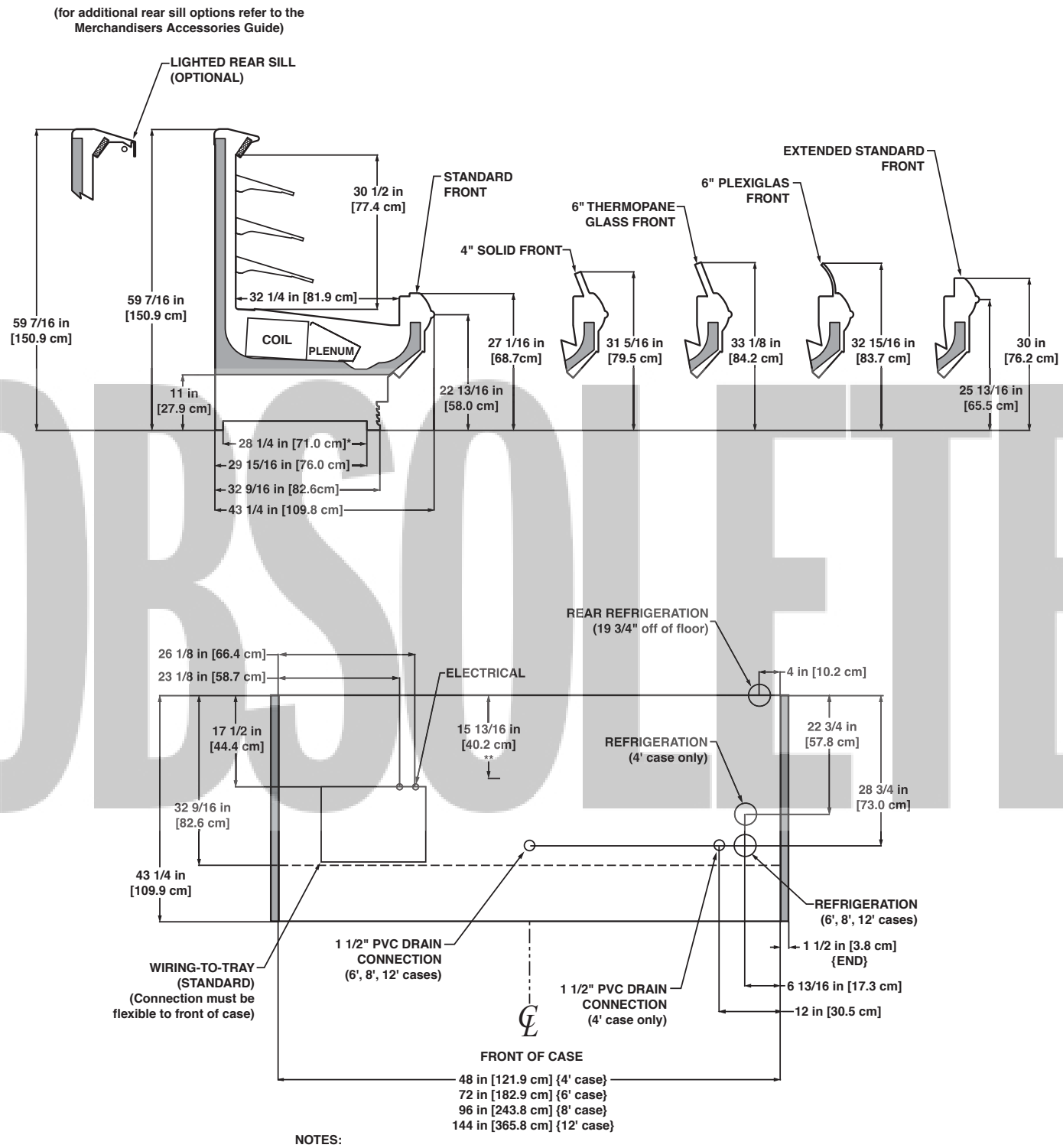

NOTES:

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- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
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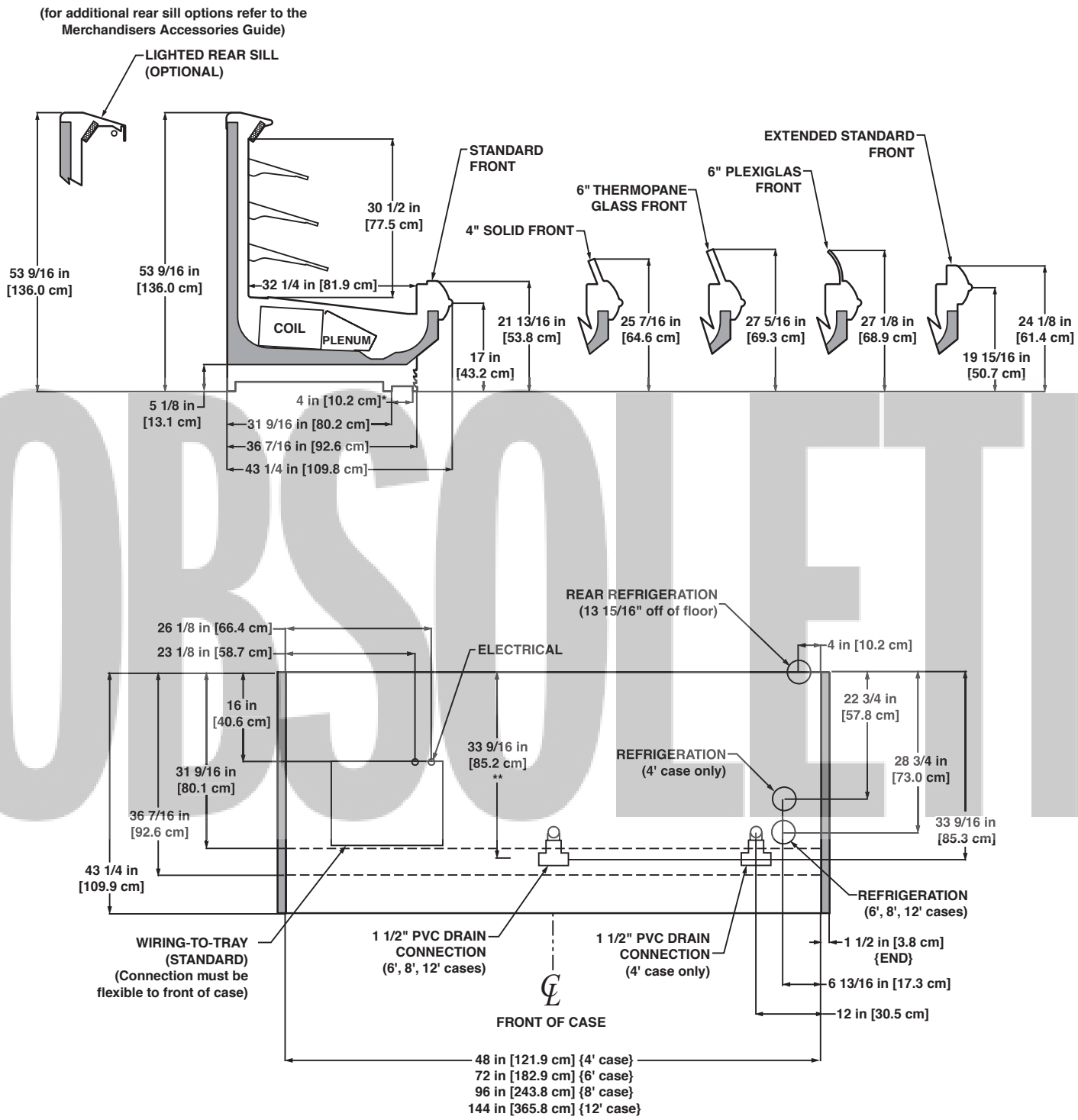
- SUCTION LINE - 7/8", LIQUID LINE - 1/2"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"

NSF COMPONENT c UL us

A DOVER COMPANY



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- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"

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Multi-Deck Produce/Dairy/Deli Merchandiser

O3.5UD - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
O3.5UD	4'	2	1.00	60	0.60	40	0.14	17	1.92	400	2.22	532
	6'	2	1.00	60	0.60	40	0.20	24	2.88	600	3.33	798
	8'	3	1.50	90	0.90	60	0.25	30	3.85	800	4.44	1065
	12'	4	2.00	120	1.20	80	0.38	46	5.77	1200	6.67	1600

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O3.5UD	4'	0.57	68	1.34	161
	6'	0.57	68	2.11	253
	8'	0.57	68	2.11	253
	12'	0.77	92	3.08	370

OBSOLETE

Guidelines & Control Settings

Model	Front Sill Heights	BTUH/ft[1]	Coil[2] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
O3.5UD	Std. Dairy	1300	Std.	17	6-8	30	45	300
	Std. Dairy	1300	Enh.	22	6-8	30	45	300

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[3] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
O3.5UD	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 CRMA specifications.

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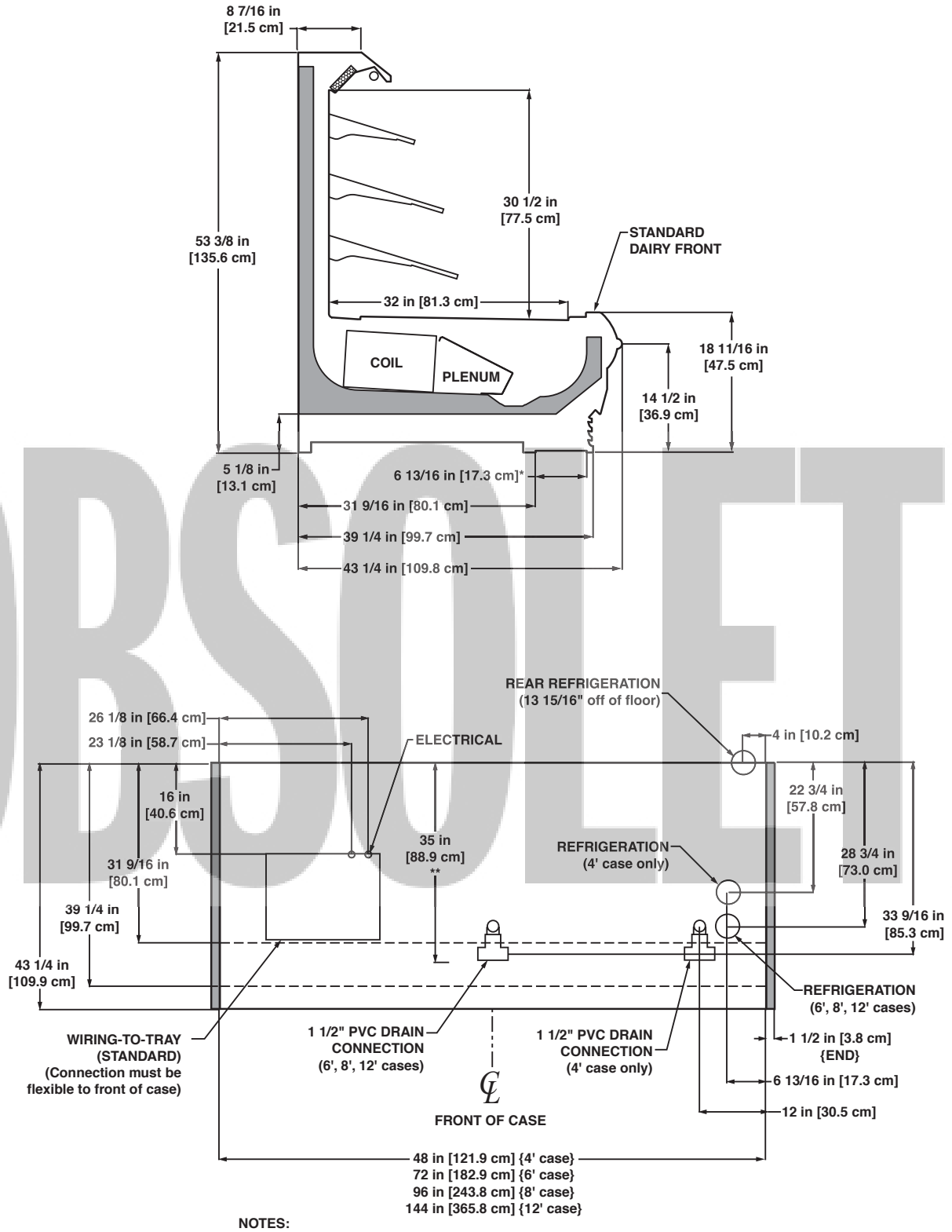
Hill PHOENIX EXCELLENCE

A DOVER COMPANY



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NOTES:

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

- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
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- SUCTION LINE - 7/8", LIQUID LINE - 1/2"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"

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Narrow Multi-Deck Produce/Dairy/Deli Merchandiser

ON4UM - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
ON4UM	4'	2	1.00	60	0.60	40	0.14[1]	17	1.92	400	2.22	532
	6'	2	1.00	60	0.60	40	0.20[1]	24	2.88	600	3.33	798
	8'	3	1.50	90	0.90	60	0.25[1]	30	3.85	800	4.44	1065
	12'	4	2.00	120	1.20	80	0.38[1]	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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ON4UM	4'	0.57	68	1.34	161
	6'	0.57	68	2.46	295
	8'	0.57	68	2.46	295
	12'	0.77	92	3.85	462

Guidelines & Control Settings

Model[2]	BTUH/ft[3]	Coil[4] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[5] (FPM)
ON4UM	1135	Std.	17	6-8	31	33	203
	1135	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's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[5] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ON4UM	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 CRMA specifications.

OBSOLETE

ON4UM
(11" BASEFRAME)

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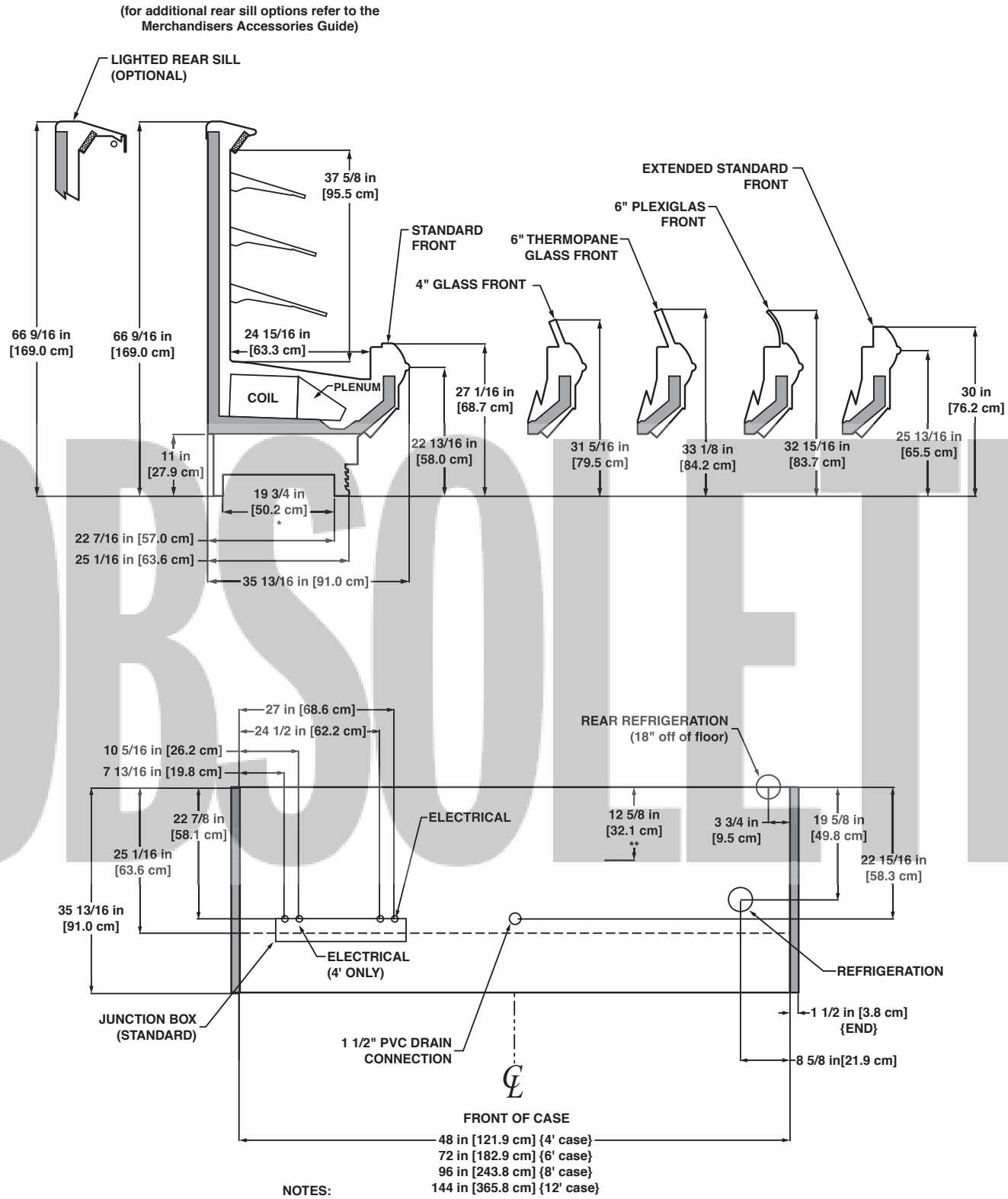

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- AVAILABLE SHELF SIZES: 10", 12", 14" & 16"

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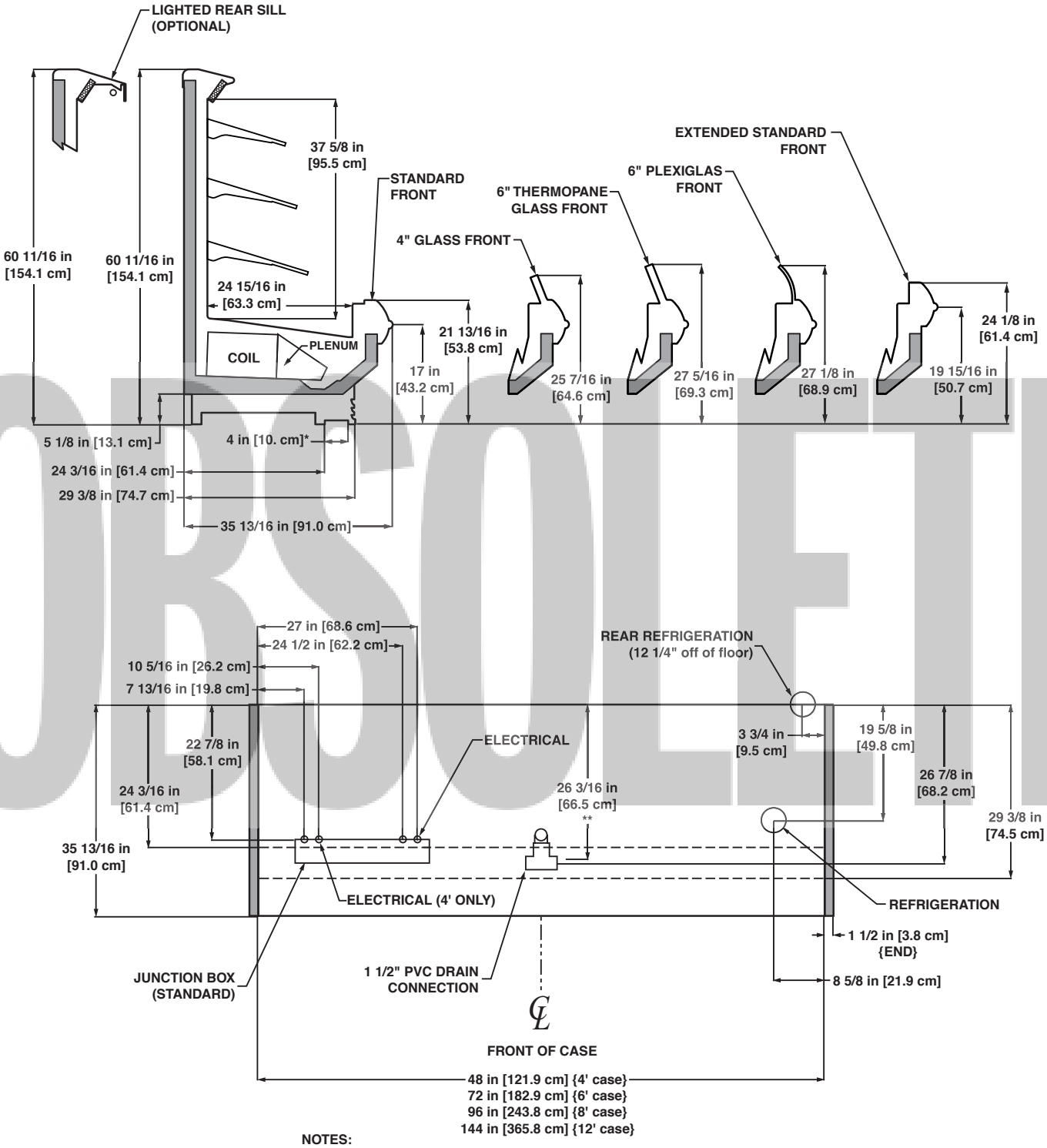
(for additional rear sill options refer to the Merchandisers Accessories Guide)



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Multi-Deck Produce/Dairy/Deli Merchandiser

O4UM - 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
O4UM	6'	2	1.00	60	0.60	40	0.20[1]	24	2.88	600	3.33	798
	8'	3	1.50	90	0.90	60	0.25[1]	30	3.85	800	4.44	1065
	12'	4	2.00	120	1.20	80	0.38[1]	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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O4UM	6'	0.57	68	3.03	364
	8'	0.57	68	3.03	364
	12'	0.77	92	4.62	554

Guidelines & Control Settings

Model[2]	BTUH/ft[3]	Coil[4] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[5] (FPM)
O4UM	1460	Std.	17	6-8	30	43	300
	1460	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's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[5] Average discharge air velocity at peak of defrost.

Defrost Controls

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

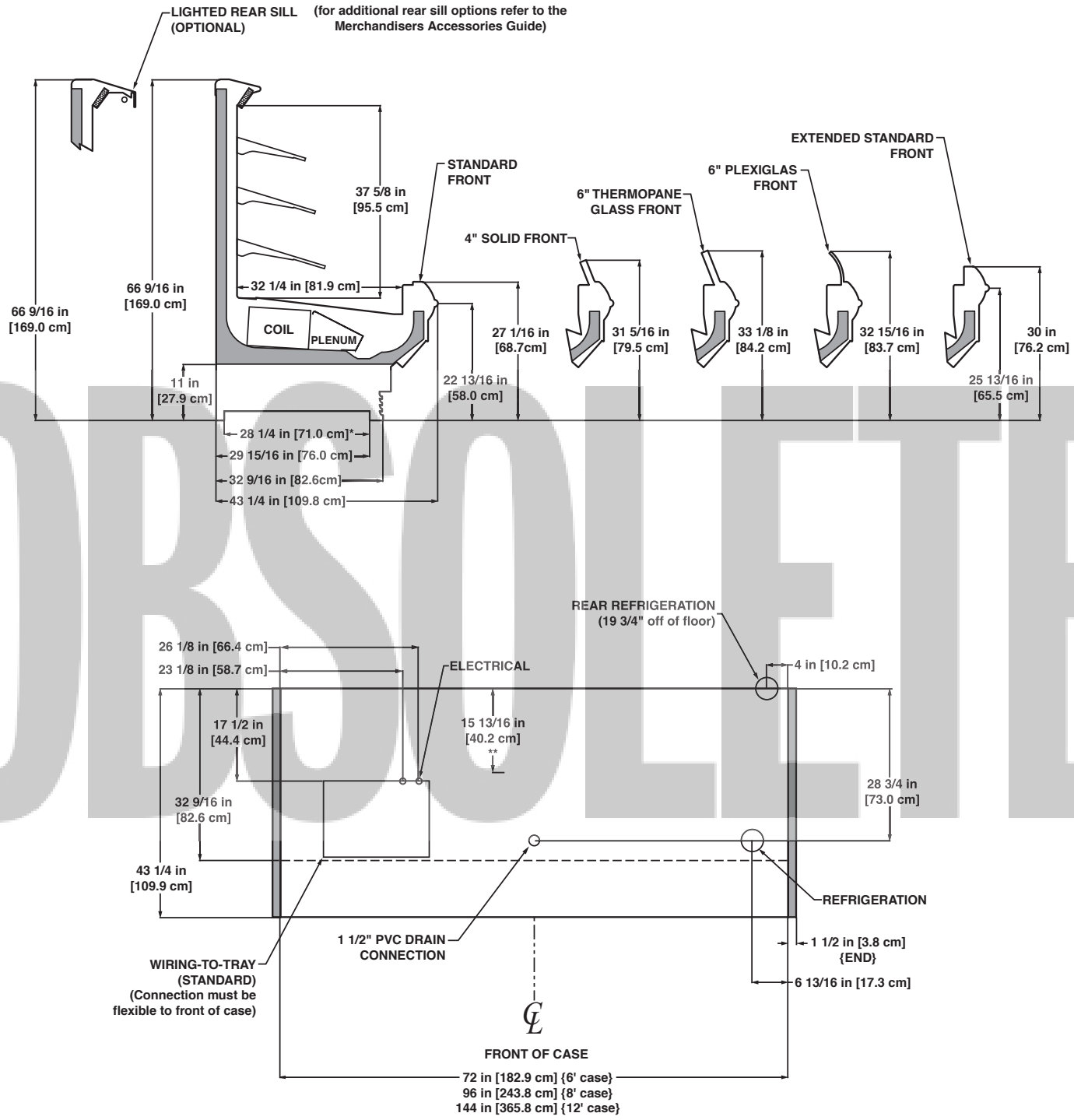
Medium Temperature Defrost Schedule

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

All measurements are taken per CRMA specifications.

OBSOLETE

O4UM
(11" BASEFRAME)



OBSOLETE

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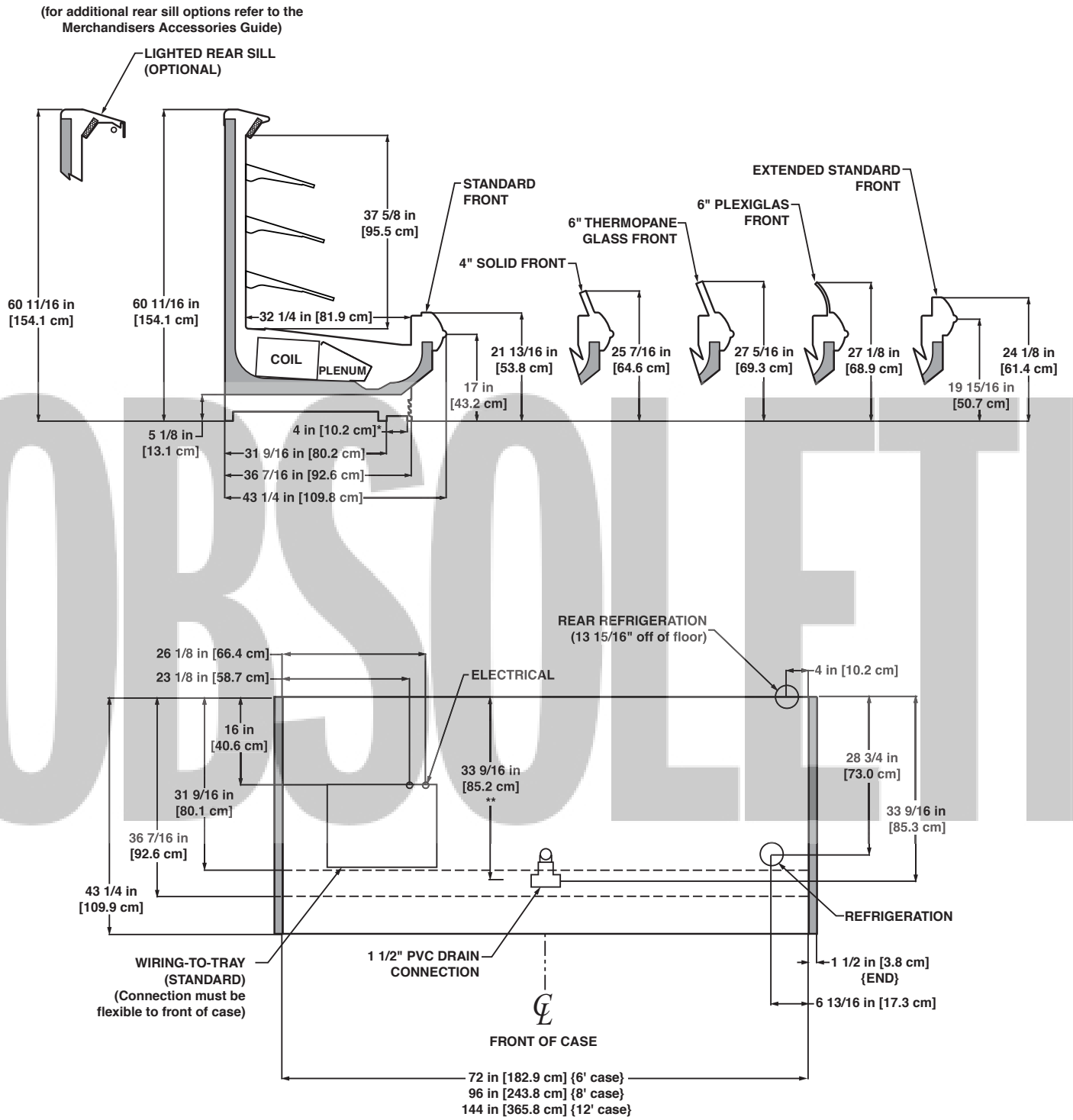
- SUCTION LINE - 7/8", LIQUID LINE - 1/2"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"



OBSOLETE

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"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"

NSF COMPONENT
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OBSOLETE

Multi-Deck Produce/Dairy/Deli Merchandiser

O5UM - 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
O5UM	6'	2	1.00	60	0.60	40	0.20[1]	24	2.88	600	3.33	798
	8'	3	1.50	90	0.90	60	0.25[1]	30	3.85	800	4.44	1065
	12'	4	2.00	120	1.20	80	0.38[1]	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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O5UM	6'	0.57	68	3.33	400
	8'	0.57	68	3.33	400
	12'	0.77	92	5.07	608

Guidelines & Control Settings

Model[2]	BTUH/ft[3]	Coil[4] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[5] (FPM)
O5UM	1490	Std.	17	6-8	30	42	300
	1490	Enh.	22	6-8	30	42	300

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

[3] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[5] Average discharge air velocity at peak of defrost.

Defrost Controls

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

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

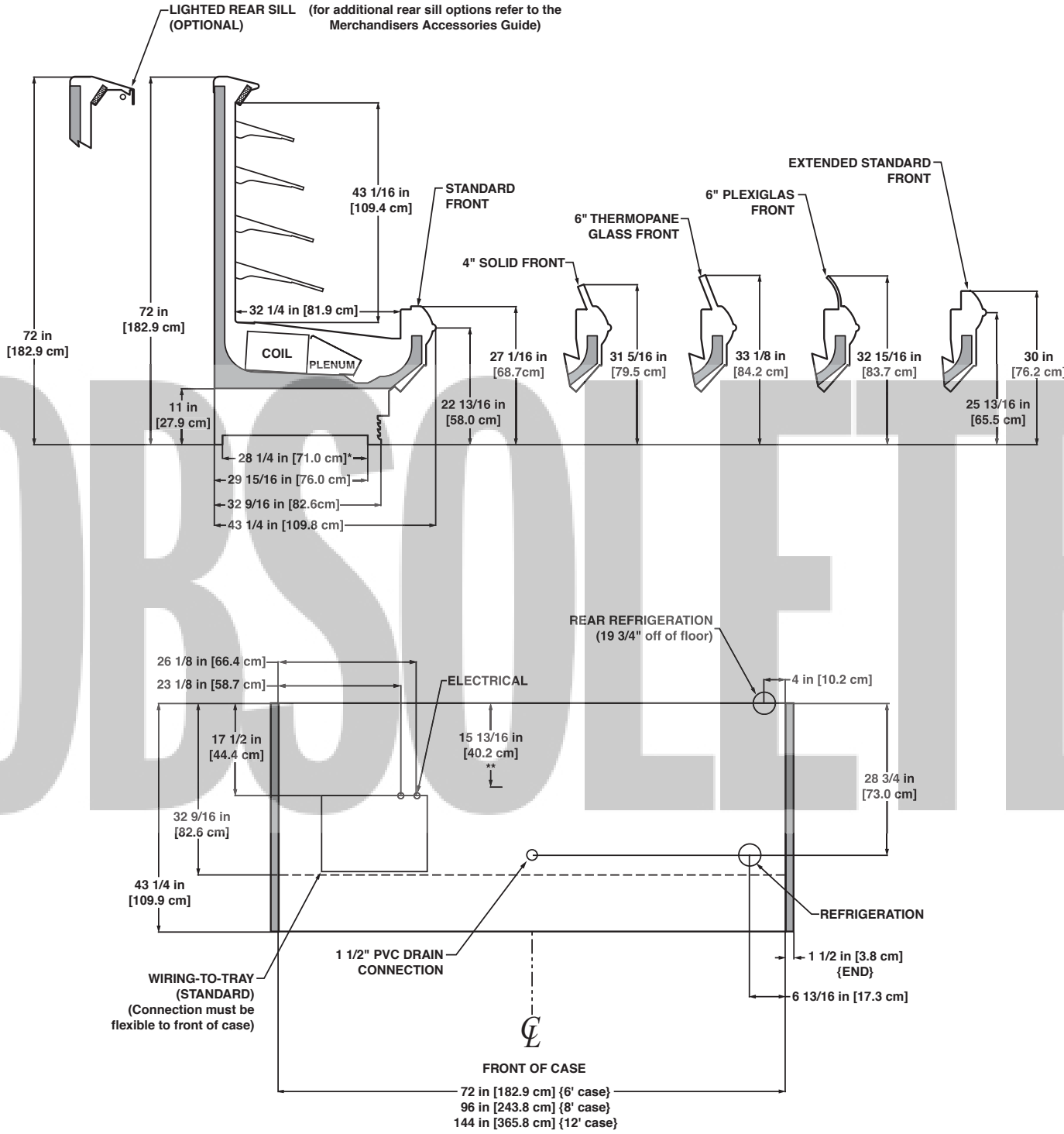
Medium Temperature Defrost Schedule

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

All measurements are taken per CRMA specifications.

OBSOLETE

O5UM
(11" BASEFRAME)



OBSOLETE

NOTES:

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** 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"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"

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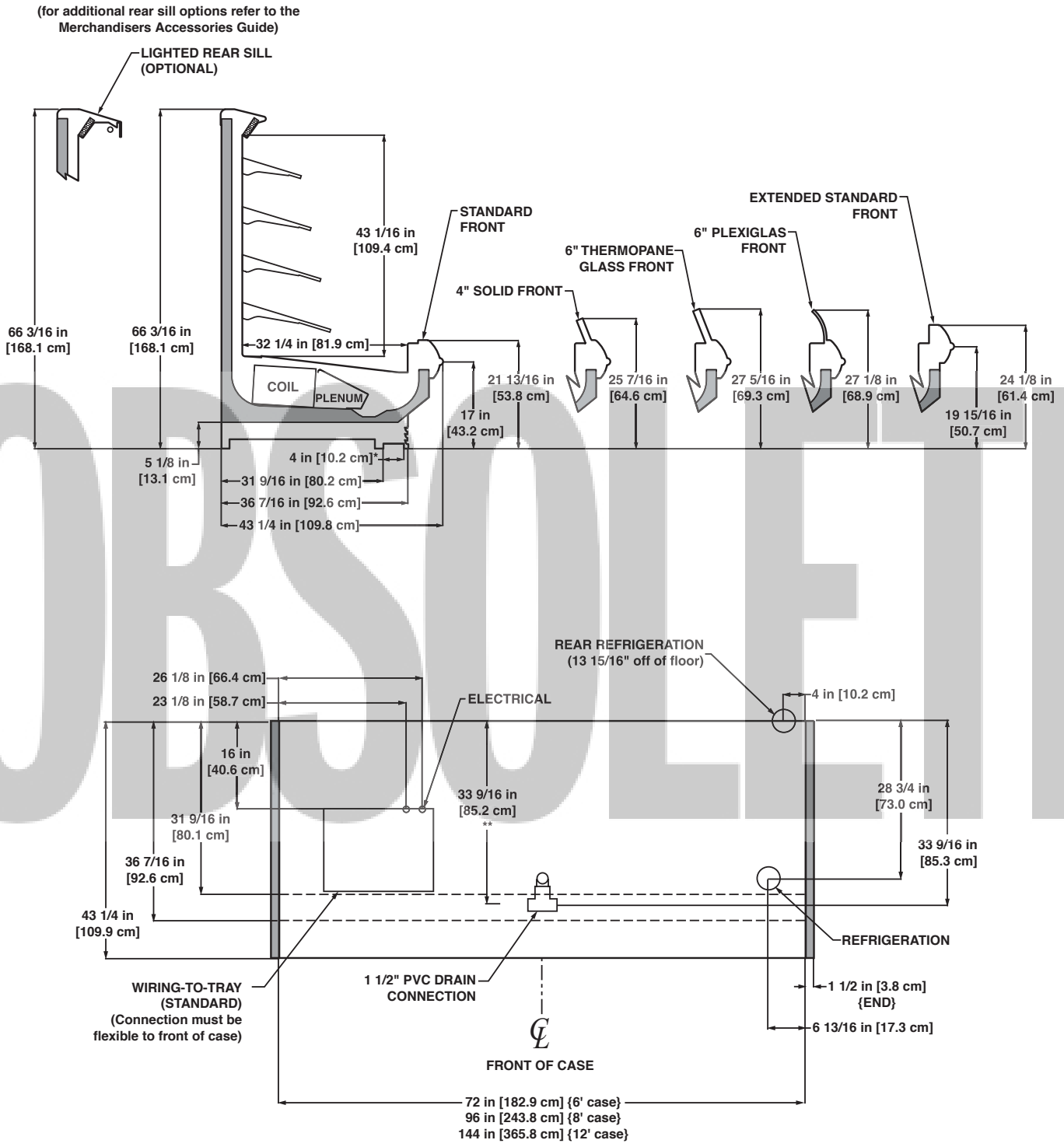
O5UM
(5" BASEFRAME)



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NOTES:

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** 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
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- SUCTION LINE - 7/8", LIQUID LINE - 1/2"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"

NSF COMPONENT c UL us

A DOVER COMPANY

MULTI-DECK

Produce/Dairy/Deli

OBSOLETE

Narrow Multi-Deck Produce/Dairy/Deli Merchandiser

ON6UM - 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
ON6UM	8'	3	1.50	90	0.90	60	0.25[1]	30	3.85	800	4.44	1065
	12'	4	2.00	120	1.20	80	0.38[1]	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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ON6UM	8'	0.57	68	3.33	400
	12'	0.77	92	5.07	608

Guidelines & Control Settings

Model[2]	BTUH/ft[3]	Coil[4] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[5] (FPM)
ON6UM	1092	Std.	17	6-8	28	40	300
	1092	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's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[5] Average discharge air velocity at peak of defrost.

Defrost Controls

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

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

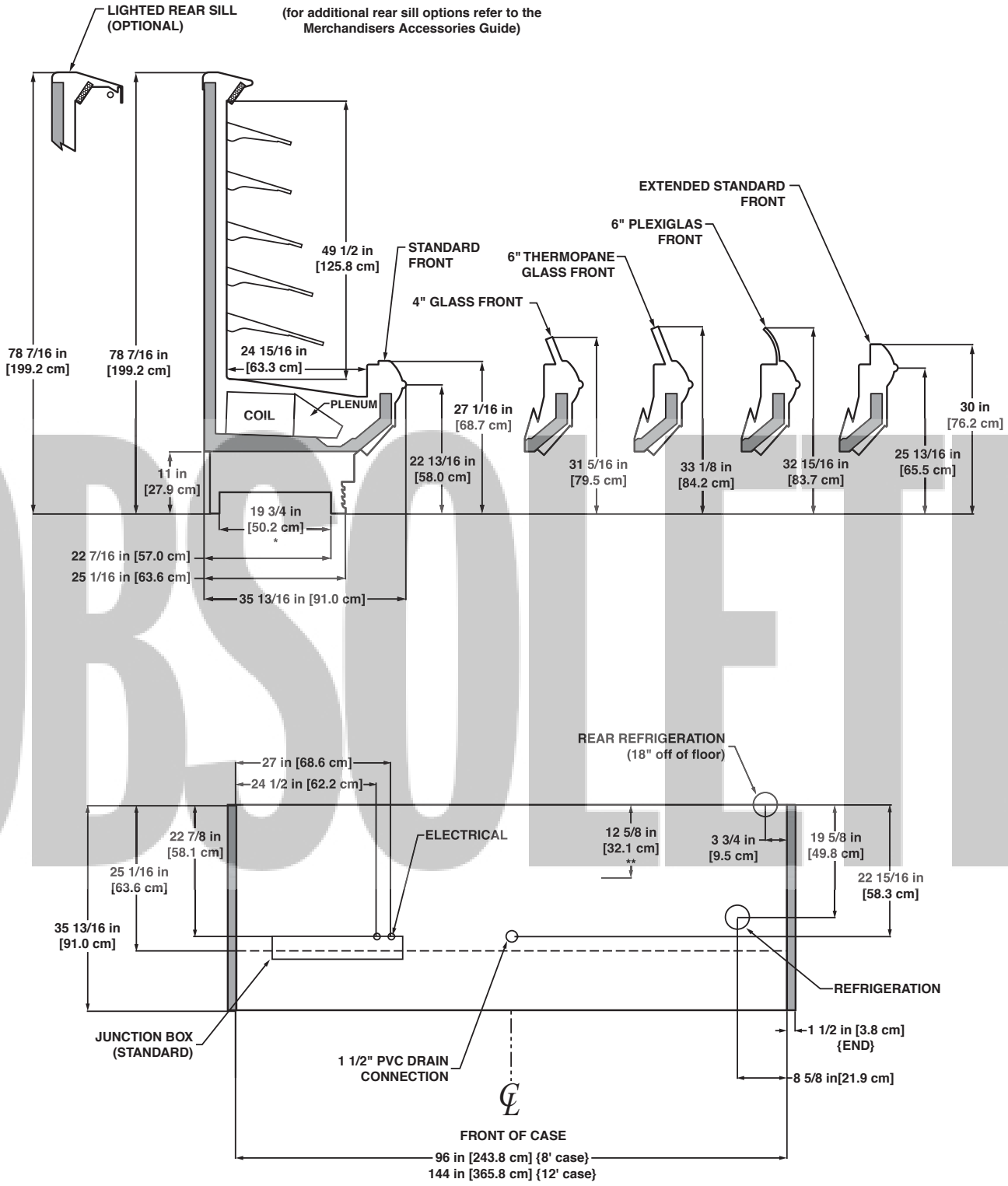
Medium Temperature Defrost Schedule

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

All measurements are taken per CRMA specifications.

OBSOLETE

ON6UM
(11" BASEFRAME)



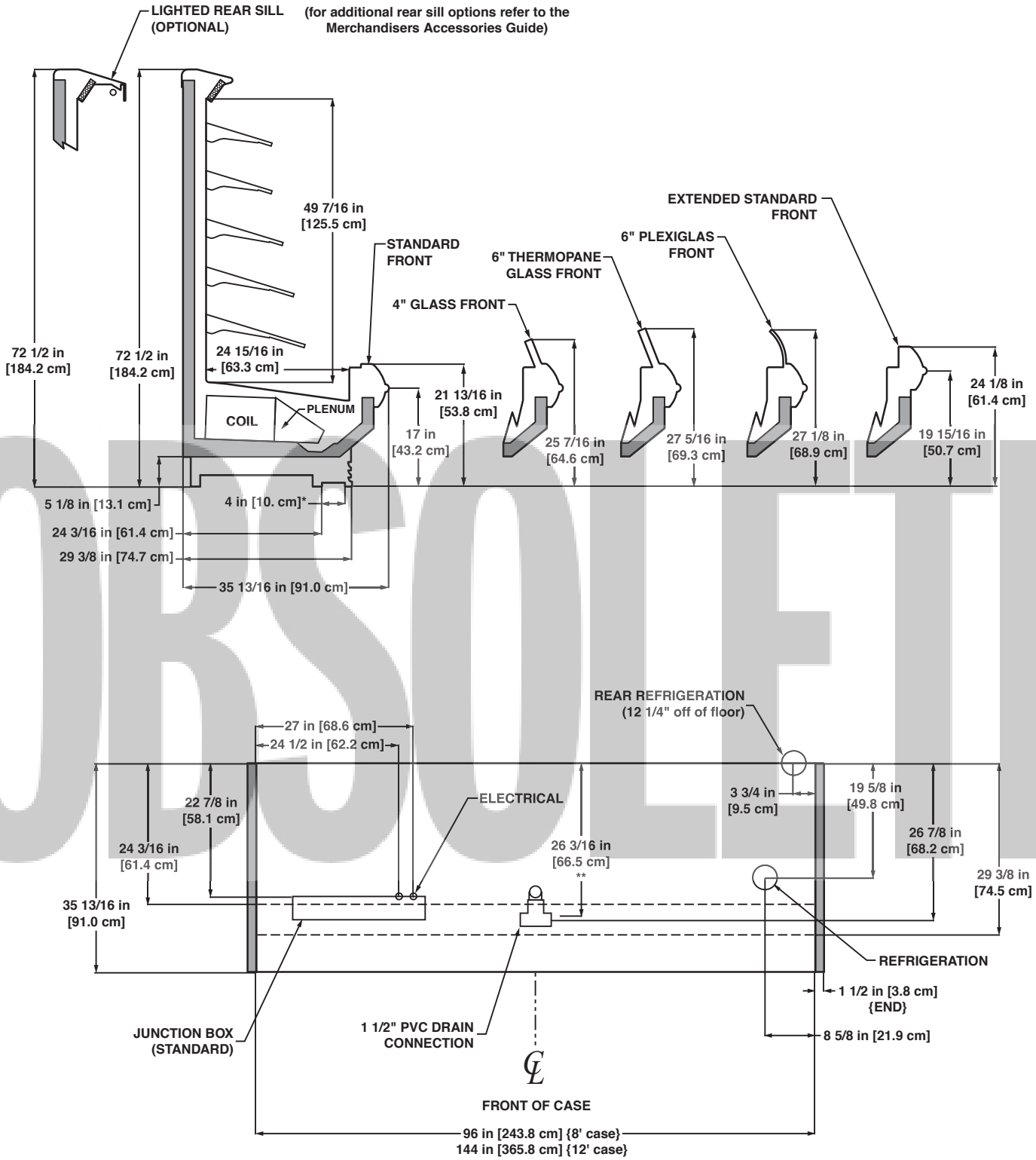
OBSOLETE

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"
- AVAILABLE SHELF SIZES: 10", 12", 14" & 16"

ON6UM
(5" BASEFRAME)



OBSOLETE

NOTES:

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

- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
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- SUCTION LINE - 7/8", LIQUID LINE - 1/2"
- AVAILABLE SHELF SIZES: 10", 12", 14" & 16"

MULTI-DECK

Produce/Dairy/Deli

OBSOLETE

Multi-Deck Produce/Dairy/Deli Merchandiser

O6UM - 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Defrost Heaters 208 Volts		Defrost Heaters 240 Volts	
			Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O6UM	6'	2	1.00	60	0.60	40	0.20[1]	24	2.88	600	3.33	798
	8'	3	1.50	90	0.90	60	0.25[1]	30	3.85	800	4.44	1065
	12'	4	2.00	120	1.20	80	0.38[1]	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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O6UM	6'	0.57	68	3.33	400
	8'	0.57	68	3.33	400
	12'	0.77	92	5.07	608

OBSOLETE

Guidelines & Control Settings

Model[2]	BTUH/ft[3]	Coil[4] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[5] (FPM)
O6UM	1405	Std.	17	6-8	29	41	300
	1405	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's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[5] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost 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 Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm

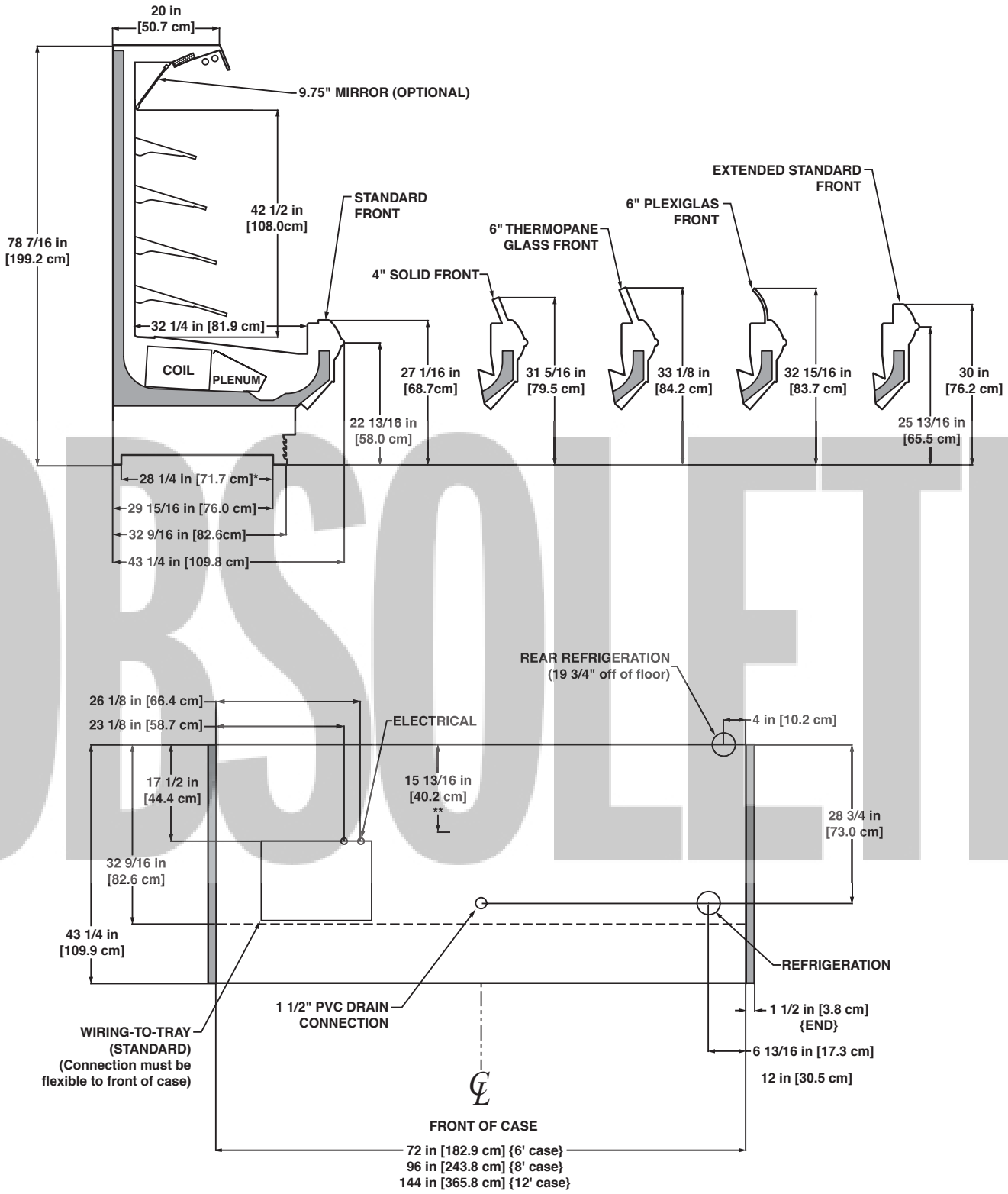
All measurements are taken per CRMA specifications.

NSF COMPONENT c UL us

Hill PHOENIX EXCELLENCE

A DOVER COMPANY

O6UM
(11" BASEFRAME)



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NOTES:

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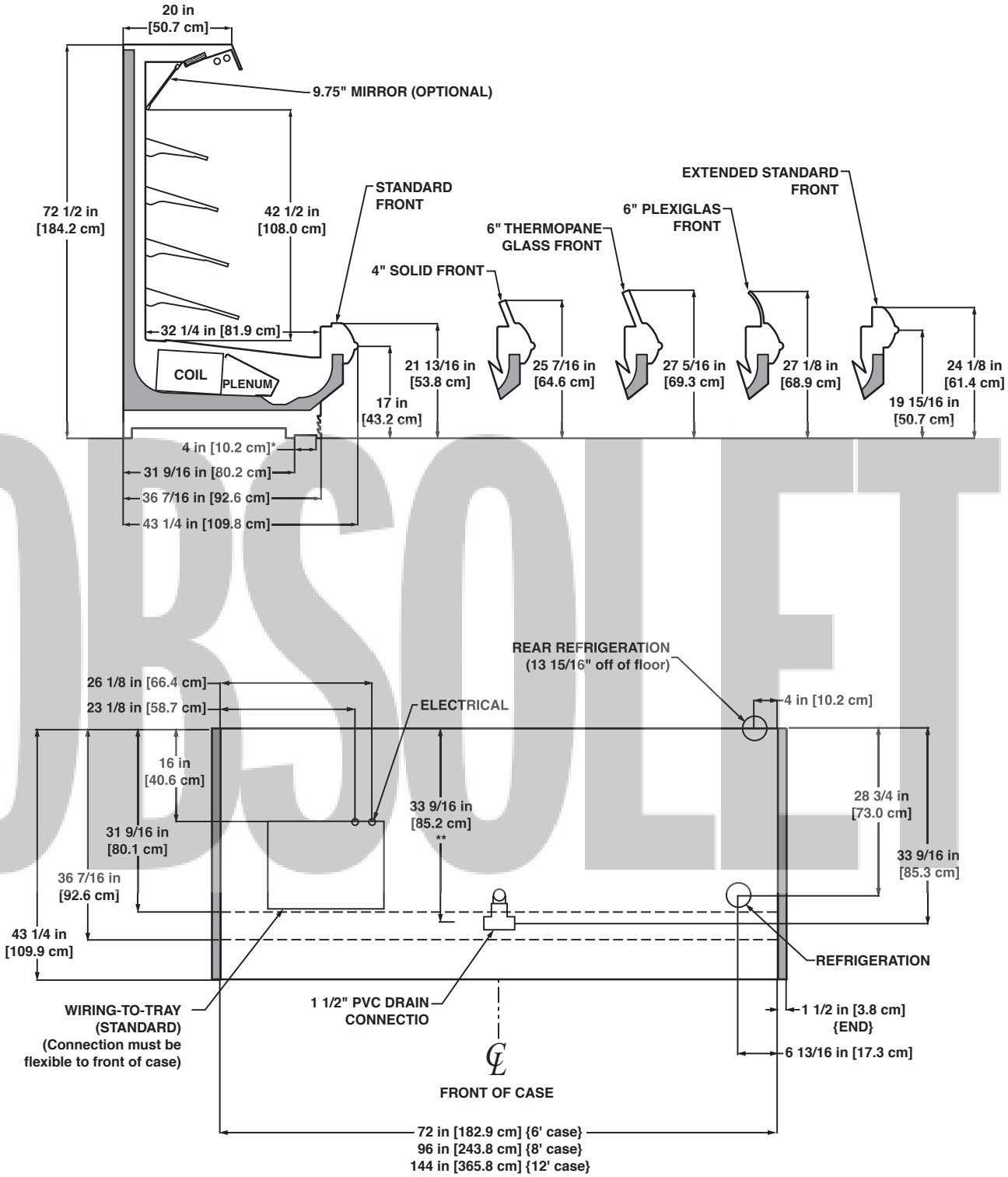
** RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS

- 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"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"

NSF COMPONENT
c UL us
A DOVER COMPANY

O6UM
(5" BASEFRAME)



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NOTES:

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

- FRONT AND REAR SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
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- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- SUCTION LINE - 7/8", LIQUID LINE - 1/2"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"

NSF COMPONENT
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A DOVER COMPANY

OBSOLETE

Narrow Multi-Deck Produce/Dairy Merchandiser

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

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
ON5DM	4'	2	1.00	60	1.00	34	- - -[1]	- - -	1.92	400	2.22	532
	6'	3	1.50	90	1.50	51	- - -	- - -	2.88	600	3.33	798
	8'	4	2.00	120	2.00	69	- - -	- - -	3.85	800	4.44	1065
	12'	5	2.50	150	2.50	85	- - -	- - -	5.77	1200	6.67	1600

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

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ON5DM	4'	0.57	68	3.62	434
	6'	0.57	68	4.95	594
	8'	0.57	68	4.95	594
	12'	0.77	92	7.09	851

Guidelines & Control Settings

Model	Front Sill Heights	BTUH/ft[2]	Coil[3] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
ON5DM Dairy Cut Produce	Std. Dairy	1811	Std.	17	6-8	32	47	215
	2.5" Ext.	1766	Std.	17	6-8	31	44	215
	5" Ext.	1739	Std.	17	6-8	31	40	215
	7.5" Ext.	1681	Std.	17	6-8	31	40	215
	Std. Dairy	1811	Enh.	22	6-8	32	47	215
	2.5" Ext.	1766	Enh.	22	6-8	31	44	215
	5" Ext.	1739	Enh.	22	6-8	31	40	215
	7.5" Ext.	1681	Enh.	22	6-8	31	40	215
ON5DM Beverage Bulk Produce	Std. Dairy	1670	Std.	27	6-8	37	53	215
	2.5" Ext.	1628	Std.	27	6-8	36	52	215
	5" Ext.	1576	Std.	27	6-8	36	52	215
	7.5" Ext.	1550	Std.	27	6-8	36	52	215
	Std. Dairy	1670	Enh.	29	6-8	37	53	215
	2.5" Ext.	1628	Enh.	29	6-8	36	52	215
	5" Ext.	1576	Enh.	29	6-8	36	52	215
	7.5" Ext.	1550	Enh.	29	6-8	36	52	215

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[4] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost 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
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.

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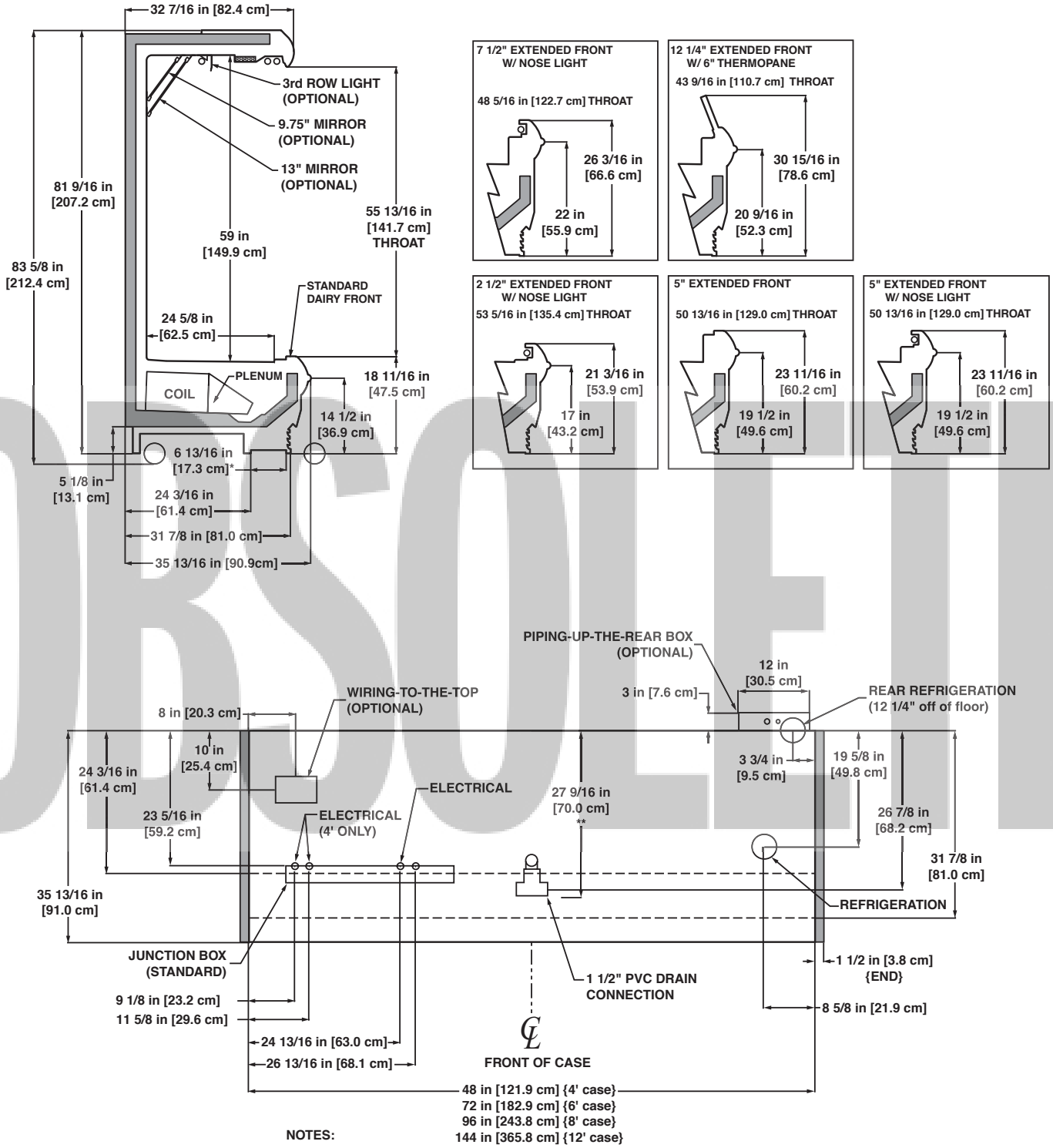

NOTES:

* 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 (WHEN CASE IS PIPED TO THE REAR A 3" TO 4" GAP MAY BE REQUIRED)
- BACK PANELS ADD APPROXIMATELY 1" TO THE REAR OF THE CASE
- SUCTION LINE - 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED-UP-THE-REAR - 5/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"

OBSOLETE

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Narrow Multi-Deck Self-Contained Produce/Dairy Merchandiser

ON5DMA - 6' & 8'

System Requirements

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Fuse Size
ON5DMA	6'	208/230	1	60	3 wire + ground	29.36	30
	8'	208/230	1	60	3 wire + ground	29.83	30

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts		Condenser Fan 208 Volts		Drain Pump 120 Volts		Evap. Pan Heater 208 Volts		Maximum Lights 120 Volts	
			Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ON5DMA	6'	3	1.50	90	1.10	111	1.10	132	7.21	1500	4.95	594
	8'	4	2.00	120	1.10	111	1.10	132	7.21	1500	4.95	594

OBSOLETE

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[1] (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

Model	Volts	Phase	Frequency (Hz)	HP	RLA[2] (amps)	LRA[3] (amps)	Refrig.	lbs of Refrig.
ON5DMA-6'	208/230	1	60	1 3/4	10.9	56	R404A	
ON5DMA-8'	208/230	1	60	2 1/4	12.4	61	R404A	

[2] RLA - Running Load Amps.

[3] LRA - Locked Rotor Amps.

Defrost Controls

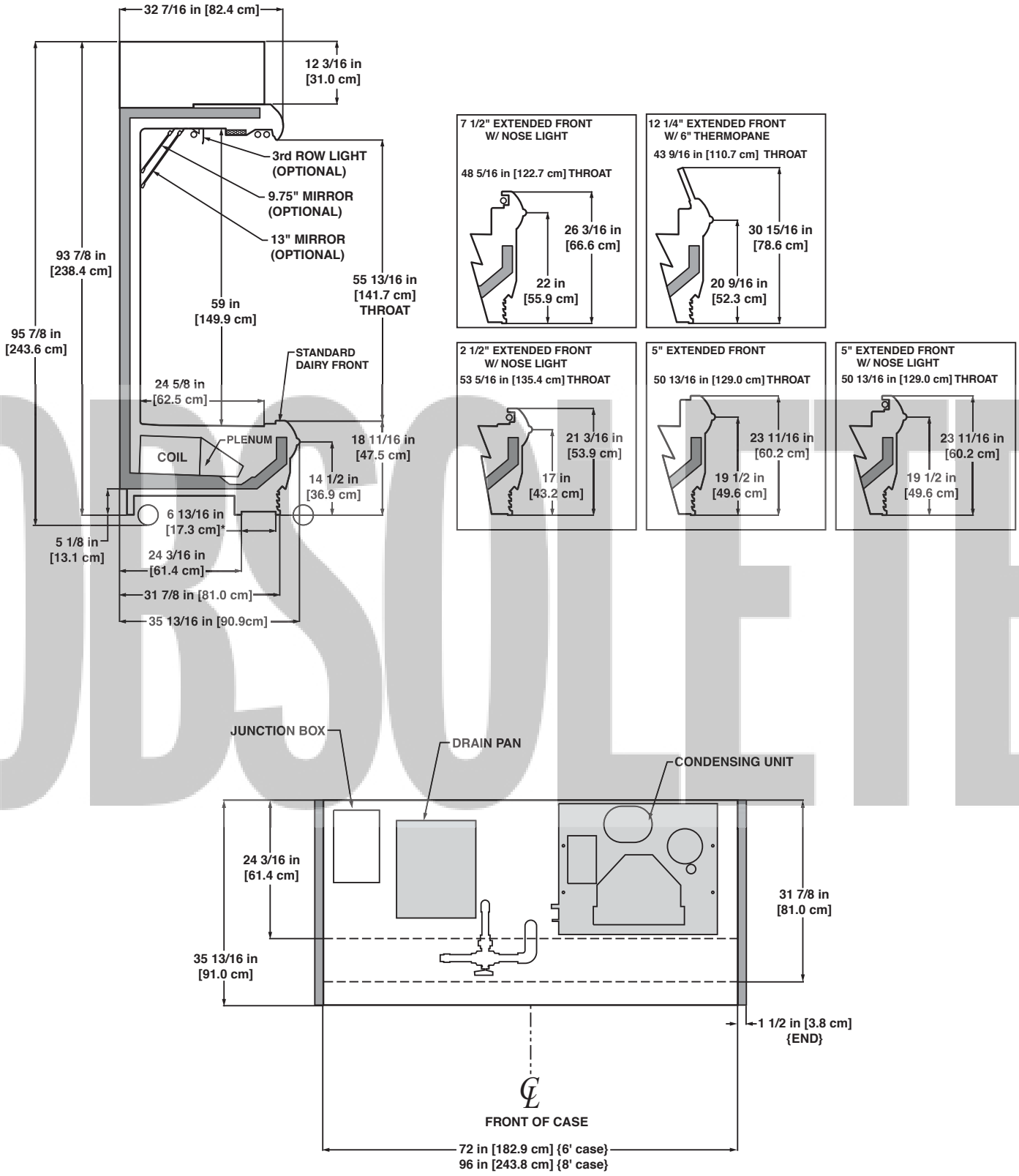
Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ON5DMA	4	6 - 8	- - -[4]	- - -	42	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 pm
4	12 - 6 am - 12 - 6 pm

All measurements are taken per CRMA specifications.



NOTES:

- 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"

OBSOLETE

High Narrow Multi-Deck Produce/Dairy Merchandiser

ON5DMH - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
ON5DMH	4'	2	1.00	60	1.00	34	- - -[1]	- - -	1.92	400	2.22	532
	6'	3	1.50	90	1.50	51	- - -	- - -	2.88	600	3.33	798
	8'	4	2.00	120	2.00	69	- - -	- - -	3.85	800	4.44	1065
	12'	5	2.50	150	2.50	85	- - -	- - -	5.77	1200	6.67	1600

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

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ON5DMH	4'	0.57	68	3.62	434
	6'	0.57	68	4.95	594
	8'	0.57	68	4.95	594
	12'	0.77	92	7.09	851

Guidelines & Control Settings

Model	Front Sill Heights	BTUH/ft[2]	Coil[3] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
ON5DMH Dairy Cut Produce	Std. Dairy	1840	Std.	17	6-8	33	48	215
	2.5" Ext.	1795	Std.	17	6-8	33	45	215
	5" Ext.	1779	Std.	17	6-8	32	41	215
	7.5" Ext.	1700	Std.	17	6-8	32	41	215
	Std. Dairy	1840	Enh.	22	6-8	33	48	215
	2.5" Ext.	1795	Enh.	22	6-8	33	45	215
	5" Ext.	1779	Enh.	22	6-8	32	41	215
	7.5" Ext.	1700	Enh.	22	6-8	32	41	215
ON5DMH Beverage Bulk Produce	Std. Dairy	1700	Std.	27	6-8	37	54	215
	2.5" Ext.	1640	Std.	27	6-8	37	53	215
	5" Ext.	1608	Std.	27	6-8	36	52	215
	7.5" Ext.	1595	Std.	27	6-8	36	52	215
	Std. Dairy	1700	Enh.	29	6-8	37	54	215
	2.5" Ext.	1640	Enh.	29	6-8	37	53	215
	5" Ext.	1608	Enh.	29	6-8	36	52	215
	7.5" Ext.	1595	Enh.	29	6-8	36	52	215

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[4] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost 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	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.

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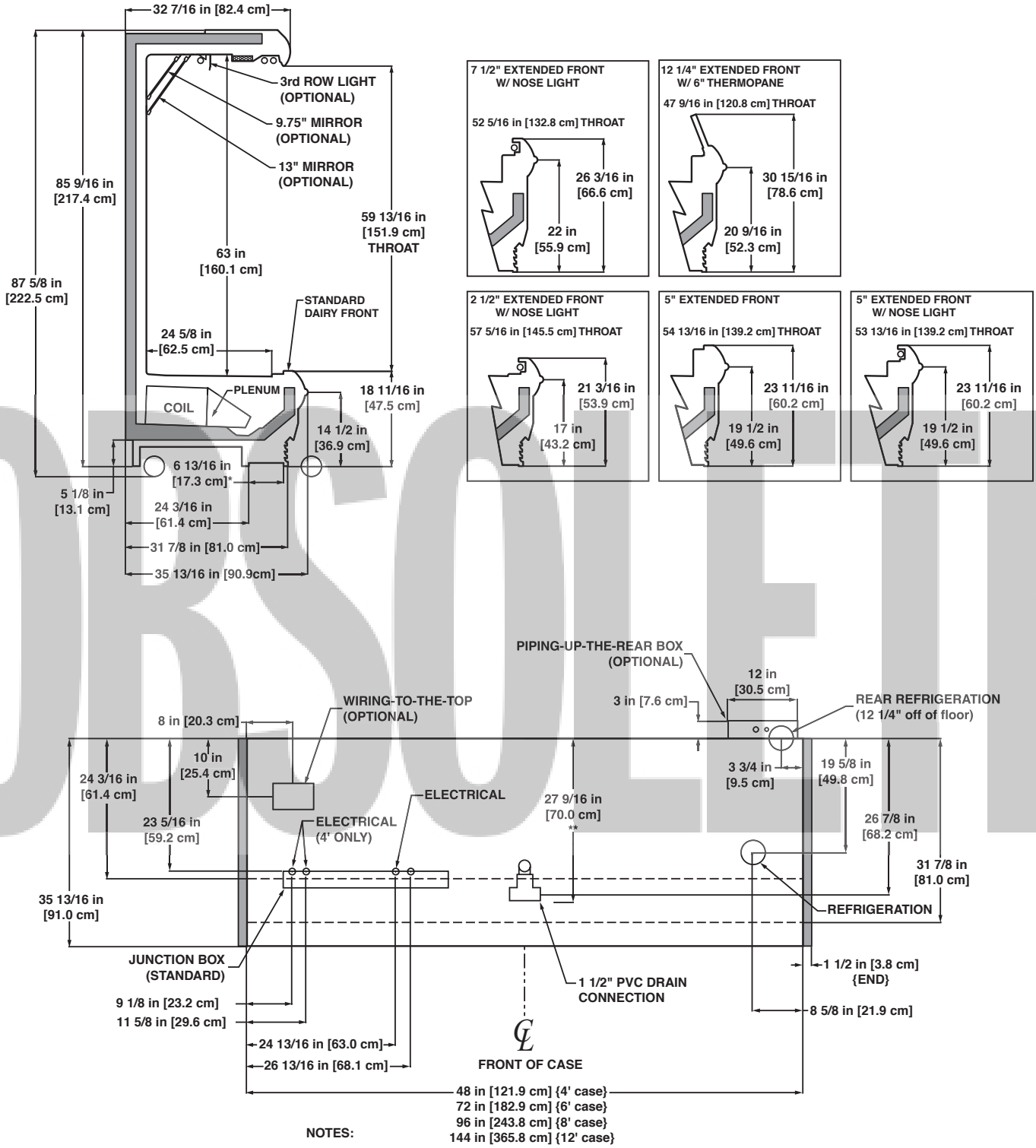

NOTES:

* 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 (WHEN CASE IS PIPED TO THE REAR A 3" TO 4" GAP MAY BE REQUIRED)
- BACK PANELS ADD APPROXIMATELY 1" TO THE REAR OF THE CASE
- SUCTION LINE - 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED-UP-THE-REAR - 5/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"

OBSOLETE

Multi-Deck Produce/Dairy/Deli Merchandiser

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

Electrical Data

Model		Fans per Case	Standard Fan 120 Volts Amps	Standard Fan 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
O5DM	4'	2	1.00	60	1.00	34	- - -[1]	- - -	1.92	400	2.22	532
	6'	2	1.00	60	1.00	34	- - -	- - -	2.88	600	3.33	798
	8'	3	1.50	90	1.50	51	- - -	- - -	3.85	800	4.44	1065
	12'	4	2.00	120	2.00	69	- - -	- - -	5.77	1200	6.67	1600

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

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O5DM	4'	0.57	68	3.62	434
	6'	0.57	68	4.95	594
	8'	0.57	68	4.95	594
	12'	0.77	92	7.09	851

Guidelines & Control Settings

Model	Front Sill Heights	BTUH/ft[2]	Coil[3] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
O5DM Deli w/ Shelf Lights	2.5" Ext.	1570	Std.	17	6-8	30	44	270
	5" Ext.	1530	Std.	17	6-8	30	44	270
	7.5" Ext.	1500	Std.	17	6-8	30	44	270
	2.5" Ext.	1570	Enh.	22	6-8	30	44	270
	5" Ext.	1530	Enh.	22	6-8	30	44	270
	7.5" Ext.	1500	Enh.	22	6-8	30	44	270
O5DM Dairy Cut Produce w/ Shelf Lights	Std. Dairy	1470	Std.	22	6-8	34	47	270
	2.5" Ext.	1431	Std.	22	6-8	34	47	270
	5" Ext.	1401	Std.	22	6-8	34	47	270
	7.5" Ext.	1370	Std.	22	6-8	34	47	270
	Std. Dairy	1470	Enh.	26	6-8	34	47	270
	2.5" Ext.	1431	Enh.	26	6-8	34	47	270
	5" Ext.	1401	Enh.	26	6-8	34	47	270
	7.5" Ext.	1370	Enh.	26	6-8	34	47	270
O5DM Beverage Bulk Produce w/o Shelf Lights	Std. Dairy	1490	Std.	27	6-8	36	52	270
	2.5" Ext.	1450	Std.	27	6-8	36	52	270
	5" Ext.	1420	Std.	27	6-8	36	52	270
	7.5" Ext.	1390	Std.	27	6-8	36	52	270
	Std. Dairy	1490	Enh.	29	6-8	36	52	270
	2.5" Ext.	1450	Enh.	29	6-8	36	52	270
	5" Ext.	1420	Enh.	29	6-8	36	52	270
	7.5" Ext.	1390	Enh.	29	6-8	36	52	270

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[4] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
O5DM	3	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

All measurements are taken per CRMA specifications.

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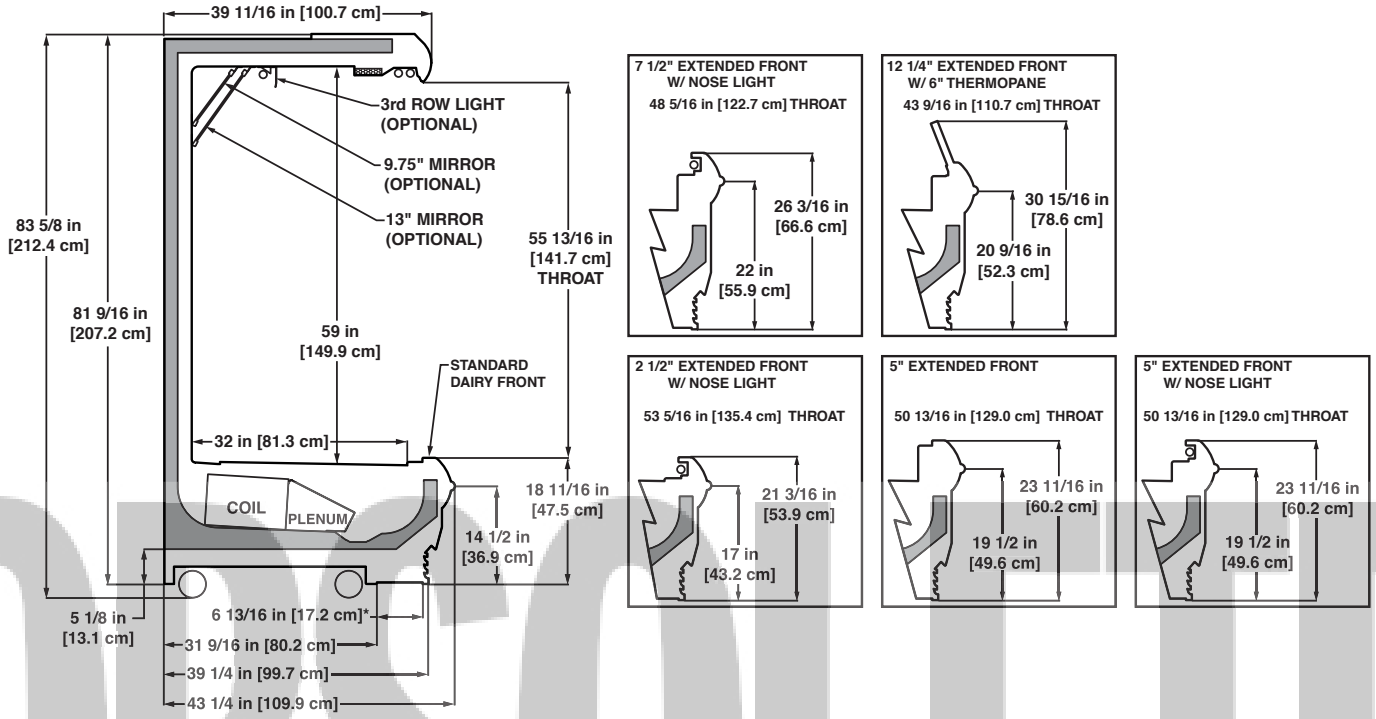

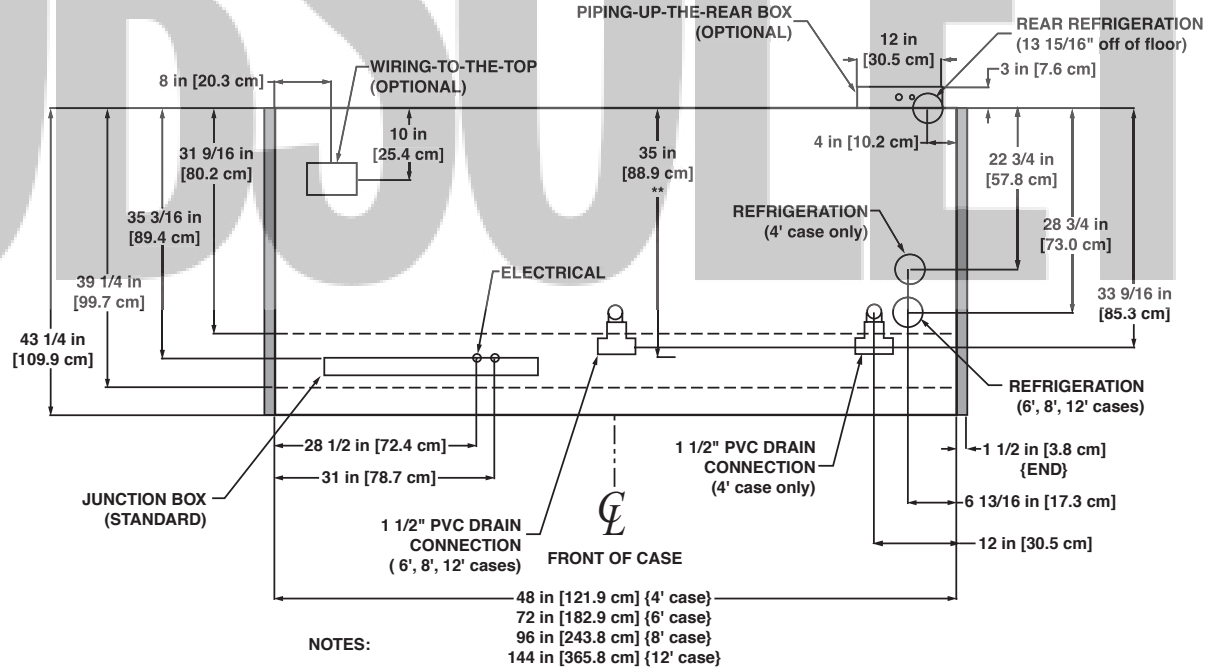

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- SUCTION LINE - 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED-UP-THE-REAR - 5/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18", 20", 22" & 24"

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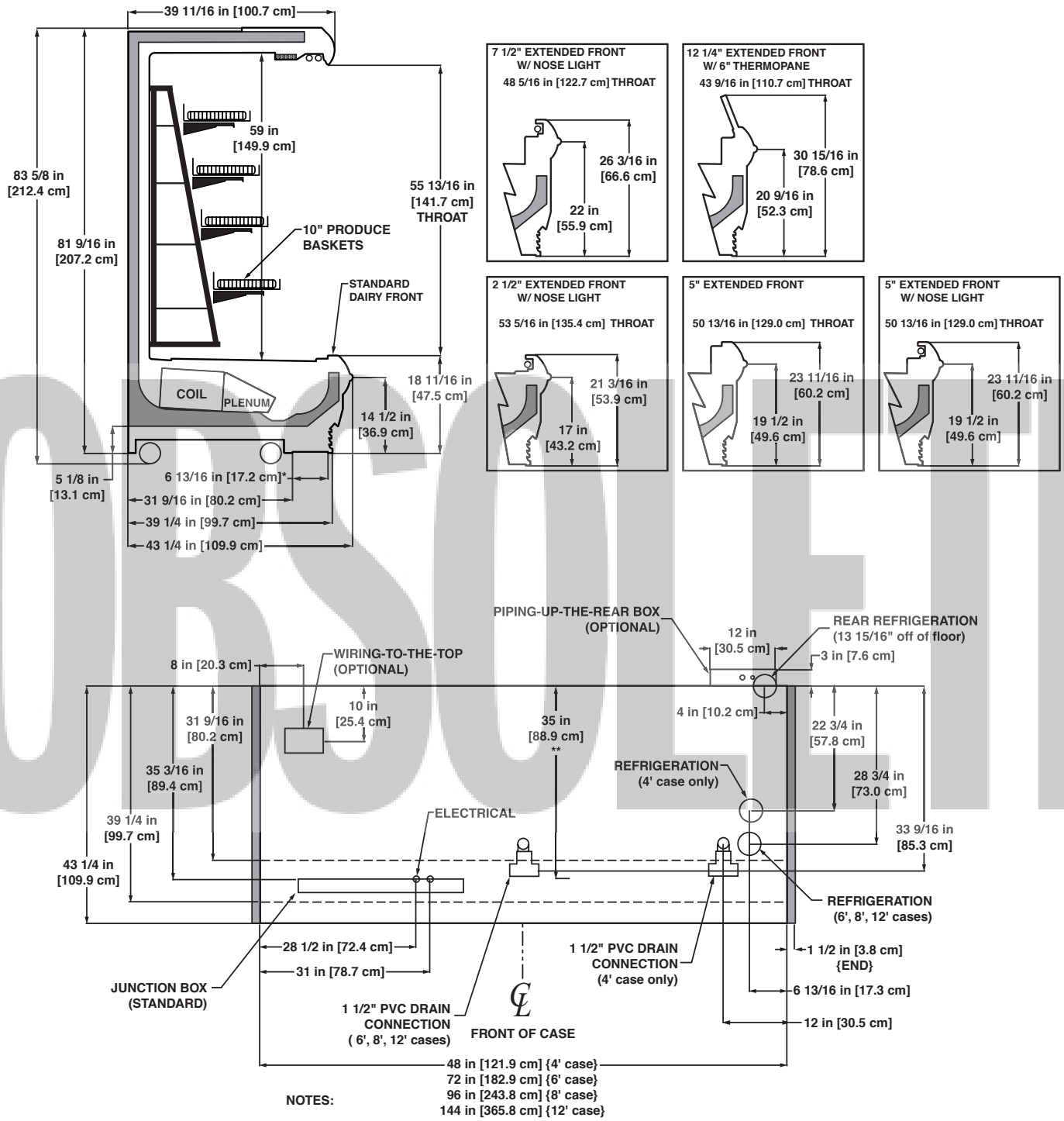

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- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18", 20", 22" & 24"

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Multi-Deck Self-Contained Produce/Dairy/Deli Merchandiser

O5DMA - 4', 6' & 8'

System Requirements

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Fuse Size
O5DMA	4'	208/230	1	60	3 wire + ground	25.7	30
	6'	208/230	1	60	3 wire + ground	29.0	40
	8'	208/230	1	60	3 wire + ground	31.4	40

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	Condenser Fan 208 Volts Amps	Condenser Fan 208 Volts Watts	Drain Pump 120 Volts Amps	Drain Pump 120 Volts Watts	Evap. Pan Heater 240 Volts Amps	Evap. Pan Heater 240 Volts Watts	Maximum Lights 120 Volts Amps	Maximum Lights 120 Volts Watts
O5DMA	4'	2	1.00	60	0.85	130	1.10	132	7.21	1500	3.62	434
	6'	2	1.00	60	1.10	111	1.10	132	7.21	1500	4.95	594
	8'	3	1.50	90	1.10	111	1.10	132	7.21	1500	4.95	594

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[1] (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

[1] Average discharge air velocity at peak of defrost.

Condensing Unit Data

Model	Volts	Phase	Frequency (Hz)	HP	RLA[2] (amps)	LRA[3] (amps)	Refrig.	lbs of Refrig.
O5DMA-4'	208/230	1	60	1	9.6	51	404A	4.5
O5DMA-6'	208/230	1	60	1 3/4	10.9	56	404A	
O5DMA-8'	208/230	1	60	2	12.4	61	404A	

[2] RLA - Running Load Amps.

[3] LRA - Locked Rotor Amps.

Defrost Controls

Model	Defrosts Per Day	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
O5DMA	3	- - - [4]	- - -	42	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 pm
4	12 - 6 am - 12 - 6 pm

All measurements are taken per CRMA specifications.

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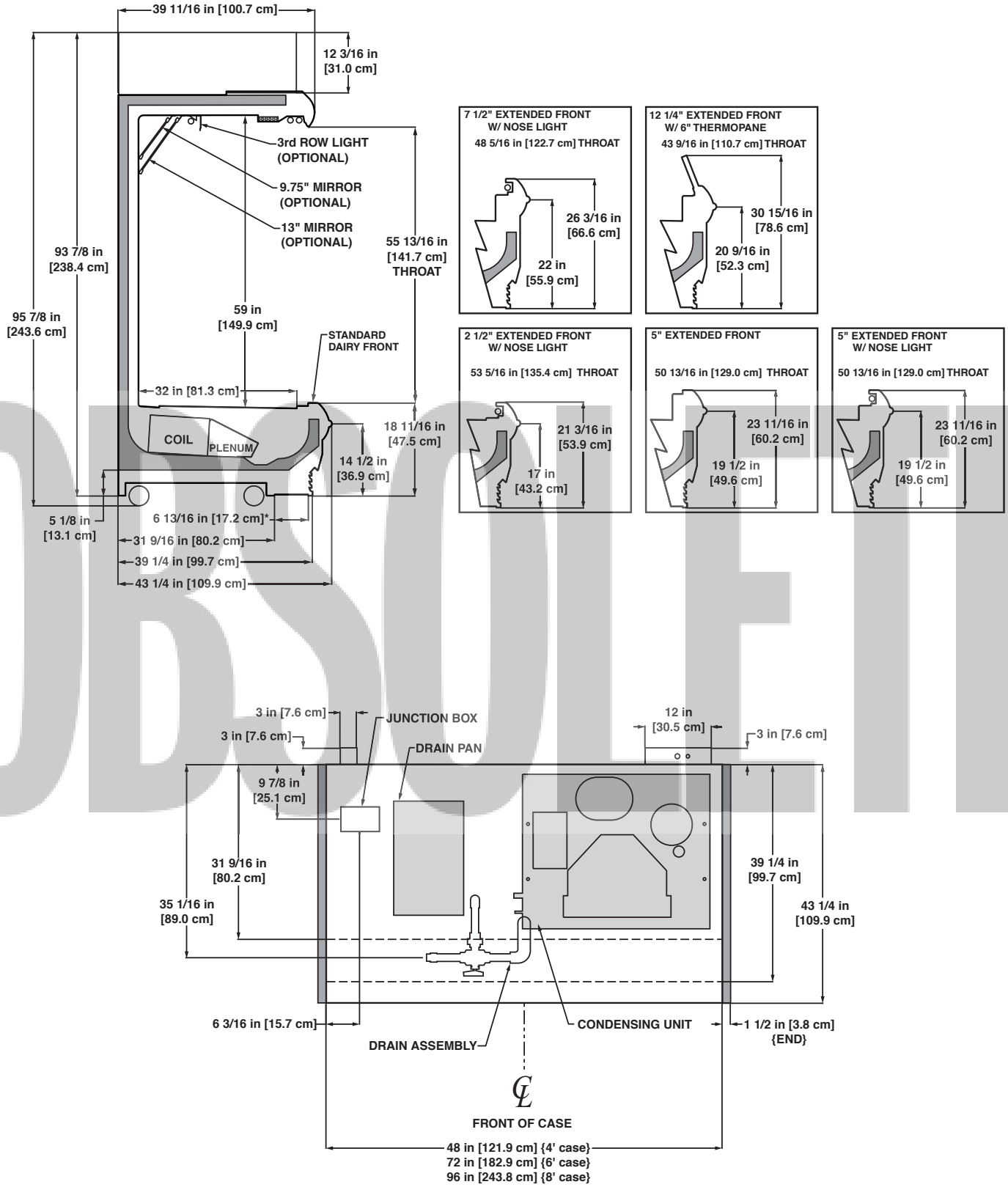

NOTES:

- 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"

OBSOLETE

High Multi-Deck Produce/Dairy/Deli Merchandiser

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

Electrical Data

Model		Fans per Case	Standard Fan 120 Volts Amps	Standard Fan 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
O5DMH	4'	2	1.00	60	1.00	34	- - -[1]	- - -	1.92	400	2.22	532
	6'	3	1.50	90	1.50	51	- - -	- - -	2.88	600	3.33	798
	8'	4	2.00	120	2.00	69	- - -	- - -	3.85	800	4.44	1065
	12'	5	2.50	150	2.50	85	- - -	- - -	5.77	1200	6.67	1600

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

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O5DMH	4'	0.57	68	3.62	434
	6'	0.57	68	4.95	594
	8'	0.57	68	4.95	594
	12'	0.77	92	7.09	851

Guidelines & Control Settings

Model	Front Sill Heights	BTUH/ft[2]	Coil[3] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
O5DMH Deli w/ Shelf Lights	2.5" Ext.	1620	Std.	17	6-8	31	43	250
	5" Ext.	1570	Std.	17	6-8	31	43	250
	7.5" Ext.	1540	Std.	17	6-8	31	43	250
	2.5" Ext.	1620	Enh.	22	6-8	31	43	250
	5" Ext.	1570	Enh.	22	6-8	31	43	250
	7.5" Ext.	1540	Enh.	22	6-8	31	43	250
O5DMH Dairy Cut Produce w/ Shelf Lights	Std. Dairy	1555	Std.	22	6-8	35	47	265
	2.5" Ext.	1500	Std.	22	6-8	35	47	265
	5" Ext.	1470	Std.	22	6-8	35	47	265
	7.5" Ext.	1440	Std.	22	6-8	35	47	265
	Std. Dairy	1555	Enh.	26	6-8	35	47	265
	2.5" Ext.	1500	Enh.	26	6-8	35	47	265
	5" Ext.	1470	Enh.	26	6-8	35	47	265
	7.5" Ext.	1440	Enh.	26	6-8	35	47	265
O5DMH Beverage Bulk Produce w/o Shelf Lights	Std. Dairy	1495	Std.	27	6-8	37	52	270
	2.5" Ext.	1455	Std.	27	6-8	36	53	270
	5" Ext.	1426	Std.	27	6-8	36	52	270
	7.5" Ext.	1397	Std.	27	6-8	36	52	270
	Std. Dairy	1495	Enh.	29	6-8	37	52	270
	2.5" Ext.	1455	Enh.	29	6-8	36	53	270
	5" Ext.	1426	Enh.	29	6-8	36	52	270
	7.5" Ext.	1397	Enh.	29	6-8	36	52	270

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[4] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
O5DMH	3	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

All measurements are taken per CRMA specifications.

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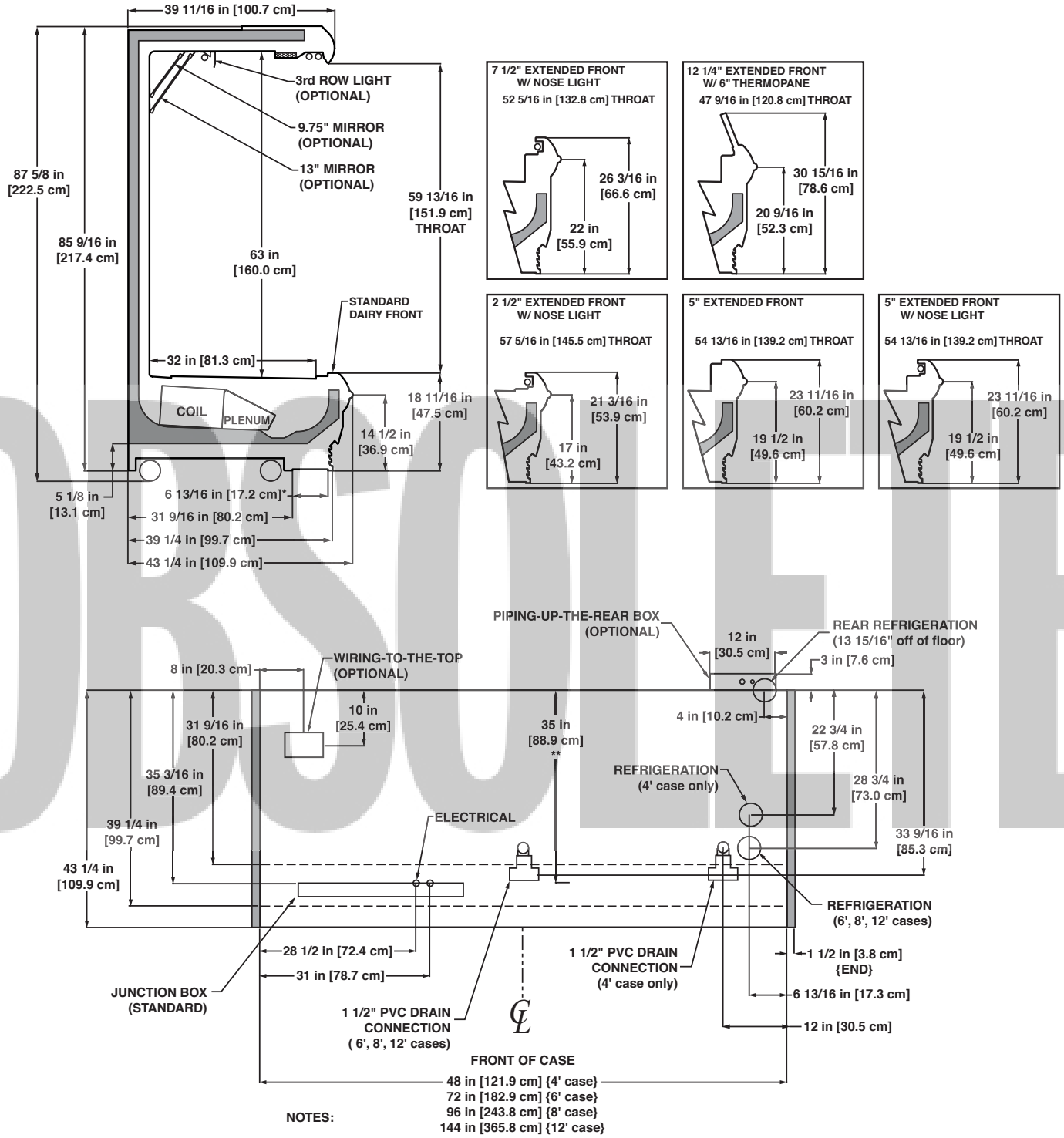

NOTES:

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- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
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- SUCTION LINE - 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED-UP-THE-REAR - 5/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18", 20", 22" & 24"

NSF COMPONENT

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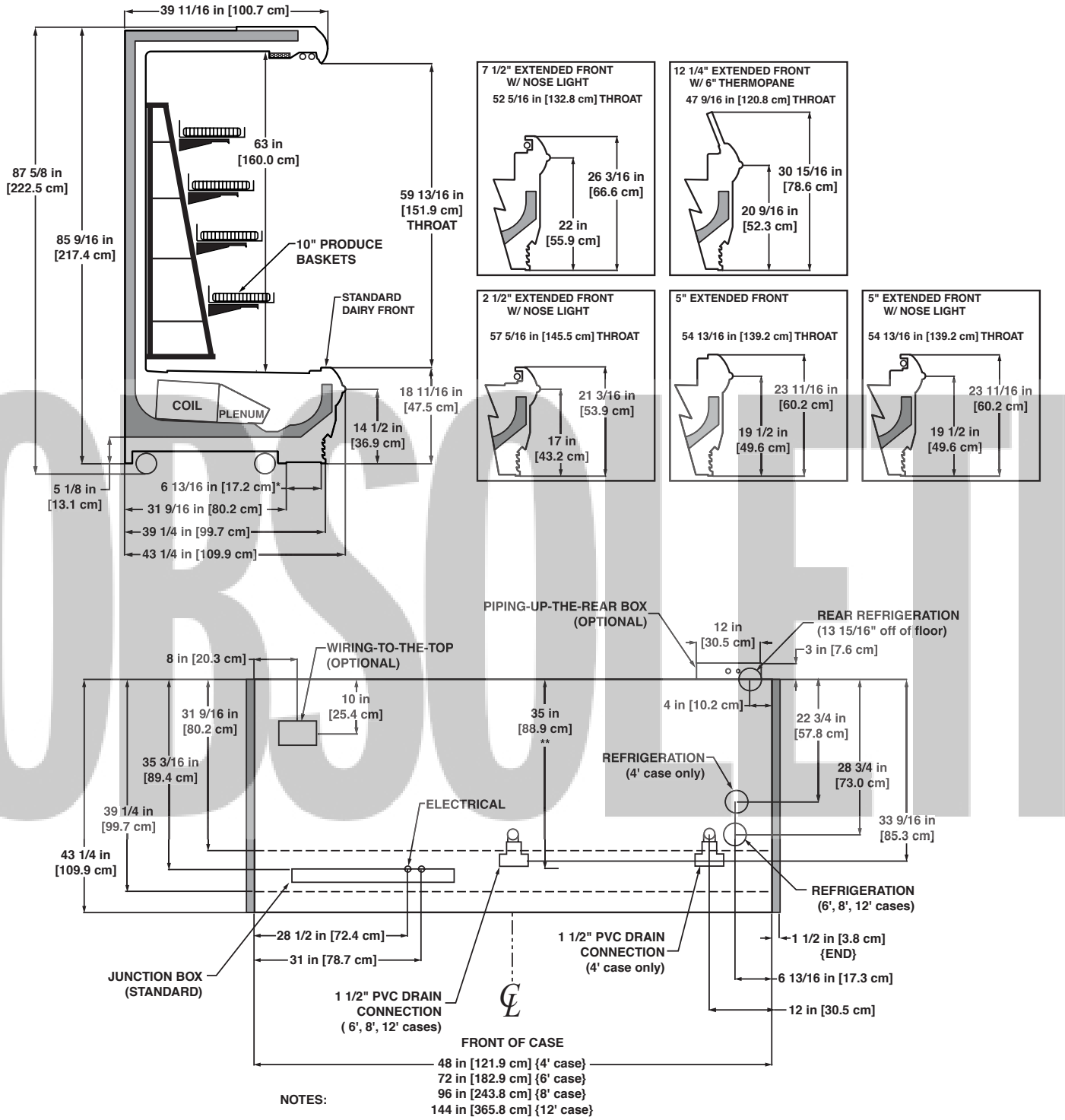

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- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18", 20", 22" & 24"

OBSOLETE

OBSOLETE

Multi-Deck Rear Load Dairy Merchandiser

O5DR - 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fan 120 Volts Amps	Standard Fan 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
O5DR	8'	4	2.00	120	2.00	69	- - -[1]	- - -	3.85	800	4.44	1065
	12'	5	2.50	150	2.50	85	- - -	- - -	5.78	1200	6.67	1600

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

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O5DR	8'	0.57	68	4.95	594
	12'	0.77	92	7.09	851

OBSOLETE

Guidelines & Control Settings

Model	Front Sill Heights	BTUH/ft[2]	Coil[3] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
O5DR Dairy	Std. Dairy	1502	Std.	17	6-8	32	47	275
	2.5" Ext.	1502	Std.	17	6-8	32	46	275
	5" Ext.	1453	Std.	17	6-8	32	42	275
	7.5" Ext.	1425	Std.	17	6-8	32	42	275
	Std. Dairy	1502	Enh.	22	6-8	32	47	275
	2.5" Ext.	1502	Enh.	22	6-8	32	46	275
	5" Ext.	1453	Enh.	22	6-8	32	42	275
	7.5" Ext.	1425	Enh.	22	6-8	32	42	275
O5DR Dairy	2.5" Ext.	1389	Std.	22	6-8	35	48	275
	5" Ext.	1422	Std.	22	6-8	35	47	275
	2.5" Ext.	1389	Enh.	26	6-8	35	48	275
	5" Ext.	1422	Enh.	26	6-8	35	47	275

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[4] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
O5DR	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	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm

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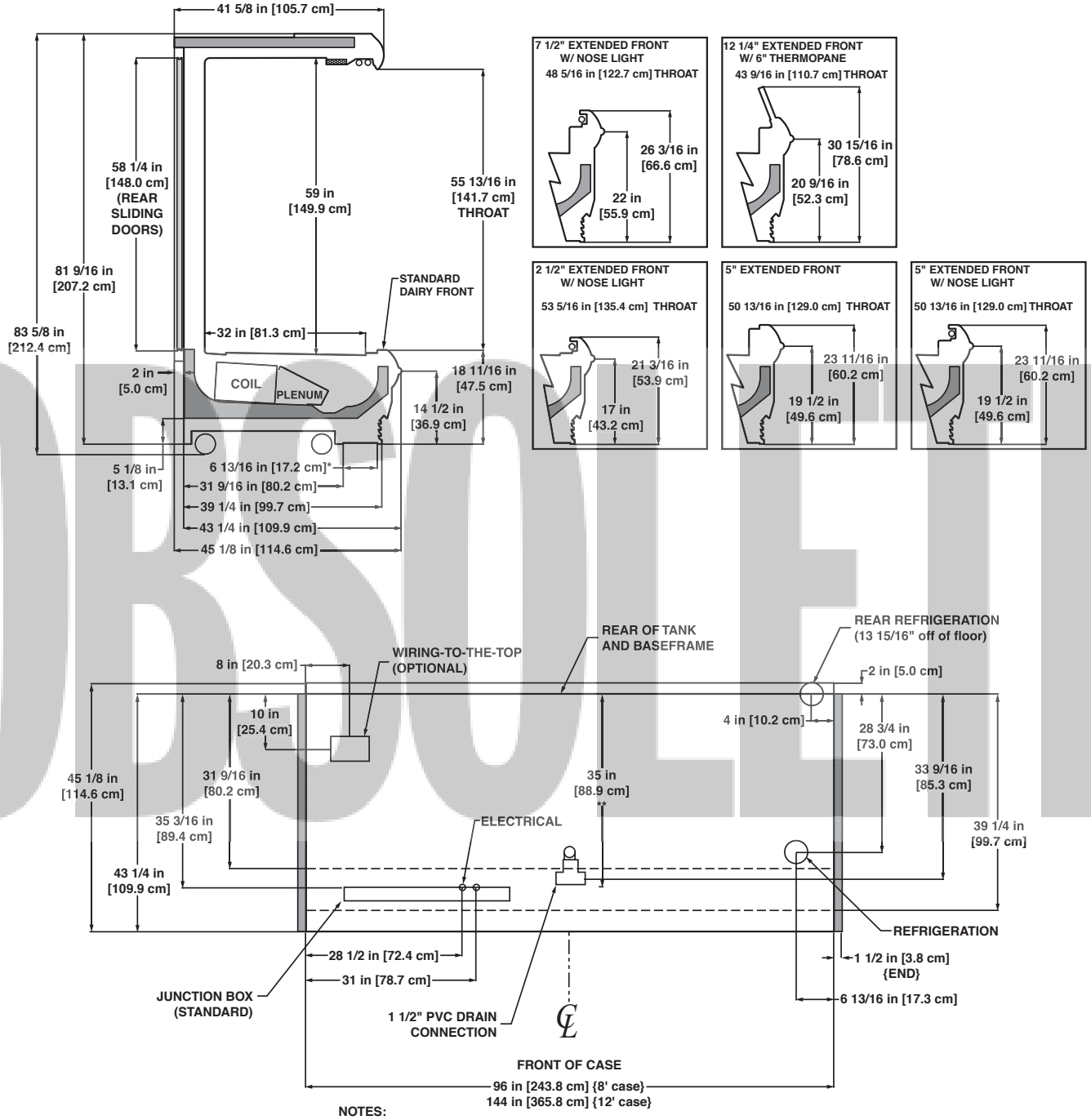

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- FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
- SUCTION LINE - 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED-UP-THE-REAR - 5/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18", 20", 22" & 24"

OBSOLETE

Multi-Deck Frozen Food Merchandiser

O5Z - 6', 8' & 12'

Electrical Data

Model		Fans per Case				Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Defrost Heaters 208 Volts		Defrost Heaters 240 Volts	
		Pri.[1]	Sec.	Amb.	Total	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O5Z	6'	4	2	2	8	4.56	280	2.04	187	2.25[2]	270	9.99[3]	3600	11.53[3]	4794
	8'	5	3	2	10	5.70	352	2.55	233	3.10[2]	344	13.32[3]	4800	15.37[3]	6390
	12'	7	4	3	14	7.98	490	3.57	327	4.68[2]	562	20.00[3]	7200	23.06[3]	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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O5Z	6'	0.57	68	1.71	205
	8'	0.57	68	1.71	205
	12'	0.77	92	2.31	277

Air Defrost Option

Model		Defrost Heaters 120 Volts Amps	Defrost Heaters 120 Volts Watts
O5Z	6'	- - -[4]	- - -
	8'	6.69	803
	12'	9.20	1104

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

Guidelines & Control Settings

Model	BTUH/ft[5]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[6] (FPM) Pri.	Sec.	Amb.
O5Z	1840	-17	3-5	-5	0	650	425	275

[5] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[6] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
O5Z	3	13 - 15	34	50	- - -	- - -	24	60	50	50

Low Temperature Defrost Schedule

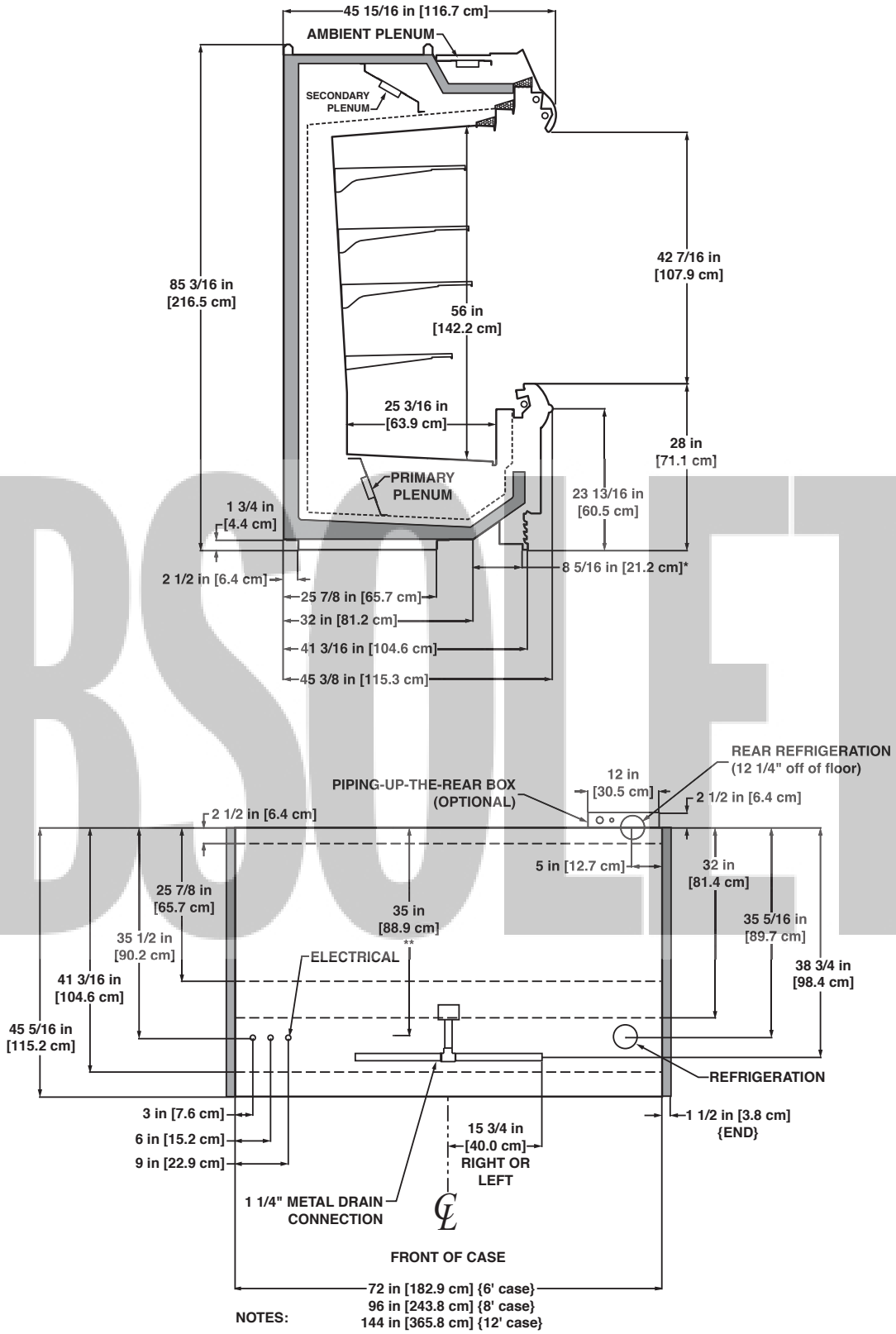
No. Per Day	Hours
1	10 pm
2	6 am - 10 pm**

** Or immediately after store closing hour

All measurements are taken per CRMA specifications.

OBSOLETE

OBSOLETE



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 - 1 1/8", LIQUID LINE - 5/8"
- AVAILABLE SHELF SIZES: 18" & 22"

NSF COMPONENT c UL us

A DOVER COMPANY

Narrow Multi-Deck Deli/Meat Merchandiser

ONHM - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters[1] 120 Volts Amps	Anti-Condensate Heaters[1] 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
ONHM	4'	2	1.00	60	1.00	40	- - -[1]	- - -	1.92	400	2.22	532
	6'	3	1.50	90	1.50	60	- - -	- - -	2.88	600	3.33	798
	8'	4	2.00	120	2.00	80	- - -	- - -	3.85	800	4.44	1065
	12'	5	2.50	150	2.50	100	- - -	- - -	5.77	1200	6.67	1600

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

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ONHM	4'	0.57	68	2.48	298
	6'	0.57	68	3.81	457
	8'	0.57	68	3.81	457
	12'	0.77	92	5.55	666

OBSOLETE

Guidelines & Control Settings

Model	Front Sill Heights	BTUH/ft[2]	Coil[3] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
ONHM	Standard	1440	Std.	17	6-8	30	41	340
	All Others	1340	Std.	17	6-8	30	41	340
	Standard	1440	Enh.	22	6-8	30	41	340
	All Others	1340	Enh.	22	6-8	30	41	340

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[4] Average discharge air velocity at peak of defrost.

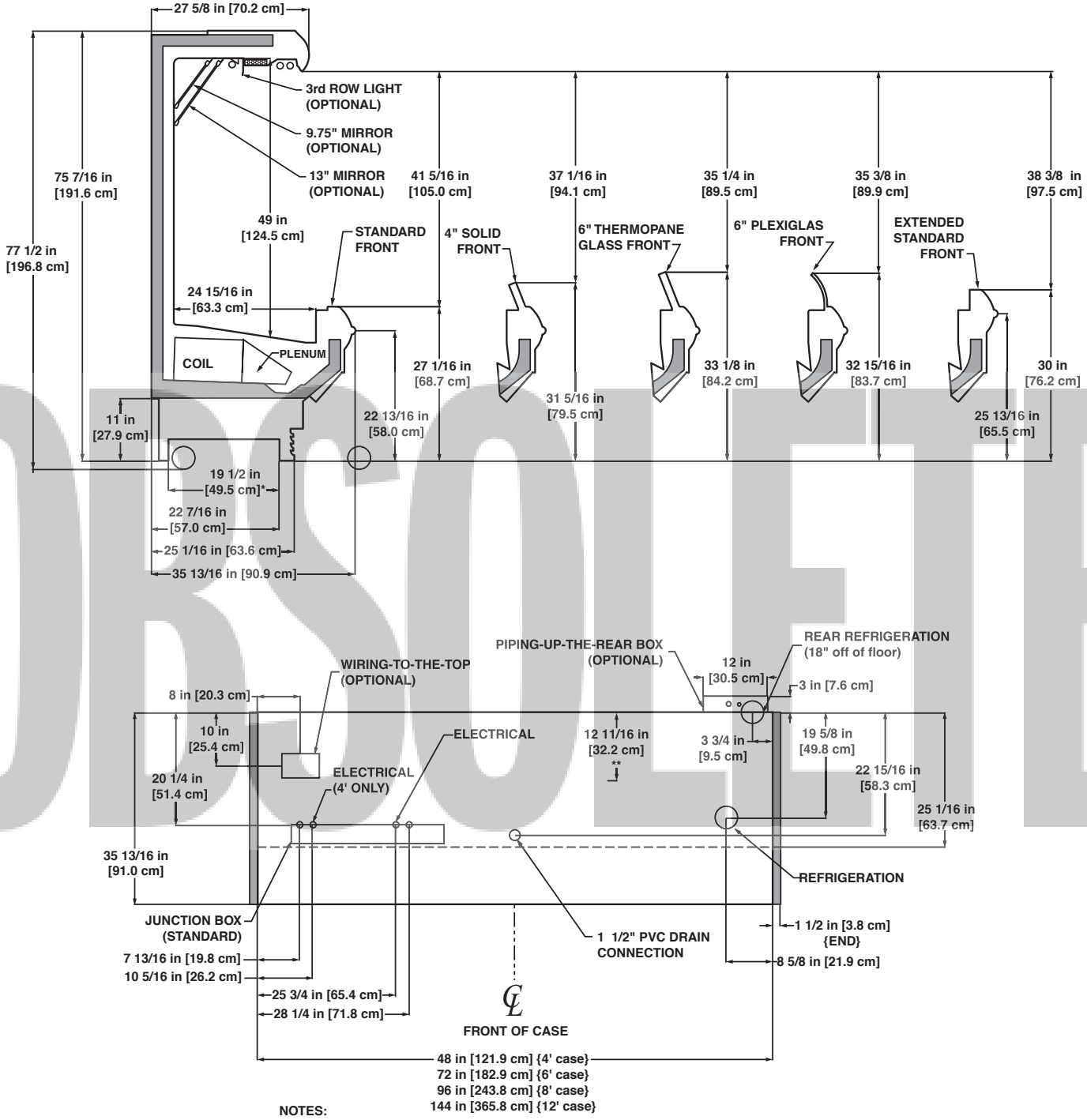
Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost 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

All measurements are taken per CRMA specifications.



NOTES:

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- BACK PANELS ADD APPROXIMATELY 1" TO THE REAR OF THE CASE
- SUCTION LINE - 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED-UP-THE-REAR - 5/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18" & 20"

OBSOLETE

High Narrow Multi-Deck Deli/Meat Merchandiser

ONHMH - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters[1] 120 Volts Amps	Anti-Condensate Heaters[1] 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
ONHMH	4'	2	1.00	60	1.00	40	- - -[1]	- - -	1.92	400	2.22	532
	6'	3	1.50	90	1.50	60	- - -	- - -	2.88	600	3.33	798
	8'	4	2.00	120	2.00	80	- - -	- - -	3.85	800	4.44	1065
	12'	5	2.50	150	2.50	100	- - -	- - -	5.77	1200	6.67	1600

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

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ONHMH	4'	0.57	68	3.05	366
	6'	0.57	68	4.38	526
	8'	0.57	68	4.38	526
	12'	0.77	92	6.32	758

OBSOLETE

Guidelines & Control Settings

Model	Front Sill Heights	BTUH/ft[2]	Coil[3] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
ONHMH	Standard	1440	Std.	17	6-8	30	41	340
	All Others	1340	Std.	17	6-8	29	40	340
	Standard	1440	Enh.	22	6-8	30	41	340
	All Others	1340	Enh.	22	6-8	29	40	340

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[4] Average discharge air velocity at peak of defrost.

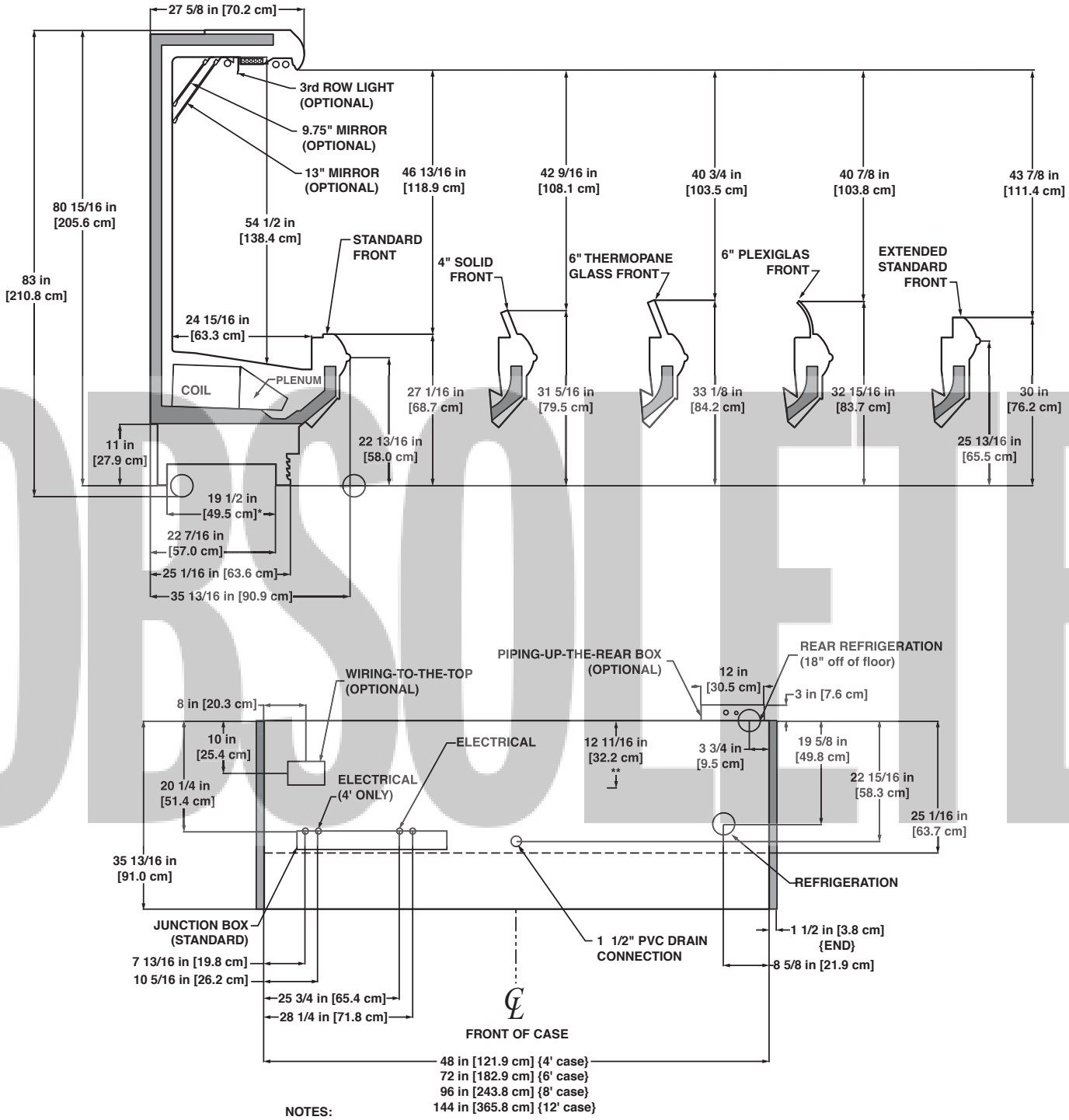
Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ONHMH	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

All measurements are taken per CRMA specifications.



NOTES:

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

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- SUCTION LINE - 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED-UP-THE-REAR - 5/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18" & 20"

OBSOLETE

Multi-Deck Deli/Meat Merchandiser

OHM - 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
OHM	6'	2	1.00	60	1.00	34	0.40	48	2.88	600	3.33	798
	8'	3	1.50	90	1.50	51	0.58	70	3.85	800	4.44	1065
	12'	4	2.00	120	2.00	69	0.83	100	5.77	1200	6.67	1600

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OHM	6'	0.57	68	4.38	526
	8'	0.57	68	4.38	526
	12'	0.77	92	6.32	758

OBSOLETE

Guidelines & Control Settings

Model	Front Sill Heights	BTUH/ft[1]	Coil[2] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
OHM	Standard	1451	Std.	12	6-8	25	35	350
	Standard	1385	Std.	17	6-8	28	38	350
	All Others	1341	Std.	17	6-8	28	37	350
	Standard	1385	Enh.	22	6-8	28	38	350
	All Others	1341	Enh.	22	6-8	28	37	350

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[3] Average discharge air velocity at peak of defrost.

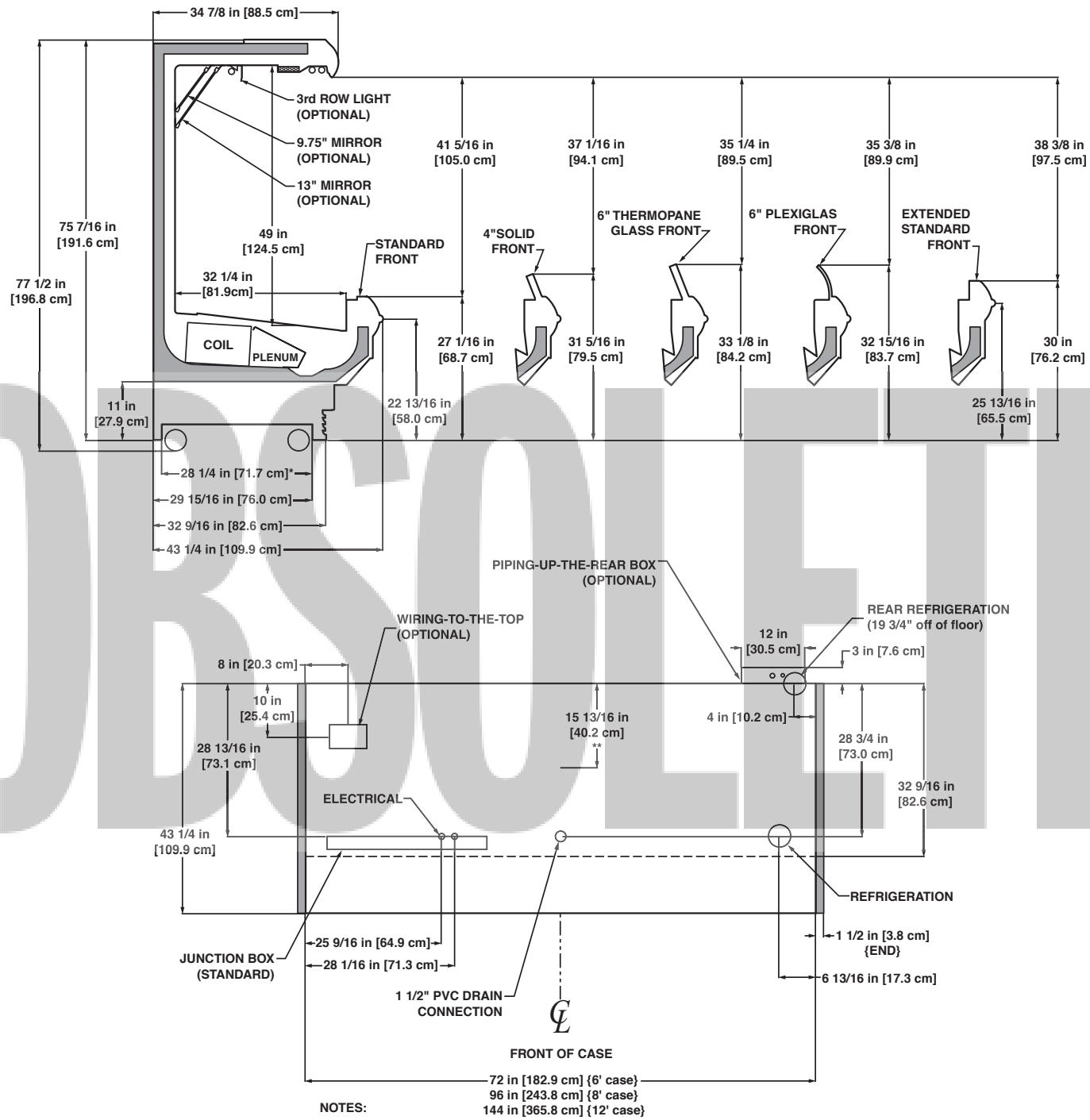
Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OHM	3	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

All measurements are taken per CRMA specifications.



NOTES:

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

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- SUCTION LINE - 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED-UP-THE-REAR - 5/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18" & 20"

OBSOLETE

High Multi-Deck Deli/Meat Merchandiser

OHMH- 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
OHMH	6'	3	1.50	90	0.90	60	0.40	48	2.88	600	3.33	798
	8'	4	2.00	120	1.20	80	0.58	70	3.85	800	4.44	1065
	12'	5	2.50	150	1.50	100	0.83	100	5.77	1200	6.67	1600

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OHMH	6'	0.57	68	4.95	594
	8'	0.57	68	4.95	594
	12'	0.77	92	7.09	851

Guidelines & Control Settings

Model	Front Sill Heights	BTUH/ft[1]	Coil[2] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
OHMH	Standard	1550	Std.	12	6-8	26	37	330
	Standard	1434	Std.	17	6-8	29	41	330
	All Others	1340	Std.	17	6-8	29	38	330
	Standard	1434	Enh.	22	6-8	29	41	330
	All Others	1340	Enh.	22	6-8	29	38	330

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[3] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OHMH	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

All measurements are taken per CRMA specifications.

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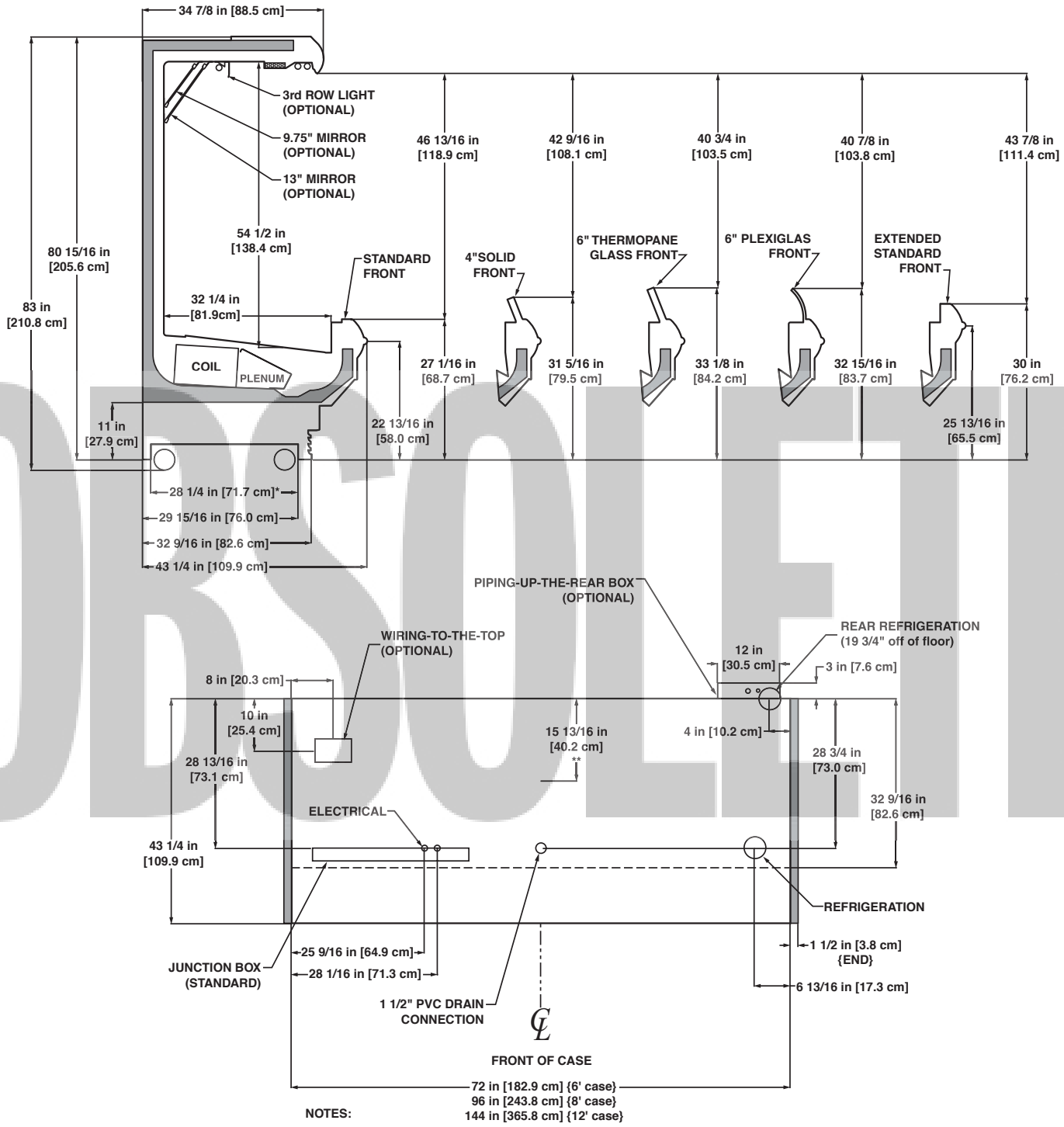

NOTES:

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- SUCTION LINE - 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED-UP-THE-REAR - 5/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18" & 20"

OBSOLETE

Multi-Deck Over-Under Dual Temp Merchandiser

OHMZOU - 4', 6', 8' & 12'

Electrical Data

Model		Top Fans per Case	Bot. Fans per Case	Bottom Standard Fans		Bottom High Efficiency Fans		Top Fans		Anti-Condensate Heaters		Drain Heaters	
				120 Volts		120 Volts		120 Volts		120 Volts		120 Volts	
				Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OHMZOU	4'	2	2	0.90	34	0.30	22	0.90	34	1.14	137	0.13	15
	6'	2	2	0.90	34	0.30	22	0.90	34	1.28	154	0.13	15
	8'	3	3	1.35	51	0.45	33	1.35	51	1.45	174	0.13	15
	12'	4	4	1.80	68	0.60	44	1.80	68	2.59	311	0.13	15

Lighting Data

Model		Typical per Light Row		Maximum Lighting	
		120 Volts		120 Volts	
		Amps	Watts	Amps	Watts
OHMZOU	4'	0.57	68	1.14	137
	6'	0.57	68	1.49	179
	8'	0.57	68	1.49	179
	12'	0.77	92	2.31	277

Defrost Heater Data

Model		Bottom Defrost Heaters				Top Defrost Heaters			
		208 Volts		240 Volts		208 Volts		240 Volts	
		Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OHMZOU	4'	3.85	800	4.43	1064	1.92	400	2.22	532
	6'	11.54	2400	13.31	3196	2.88	600	3.33	798
	8'	15.38	3200	17.75	4260	3.85	800	4.44	1065
	12'	23.08	4800	26.63	6390	5.77	1200	6.67	1600

Guidelines & Control Settings

Model	BTUH/ft[1]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[2] (FPM)
OHMZOU-Top	1030	17	6-8	31	39	220
OHMZOU-Bottom	550	-18	3-5	-8	2	240

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
			Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
OHMZOU-Top	3	6 - 8	35	47	- - -[3]	- - -	25	45	- - -	- - -
OHMZOU-Bottom	2	13 - 15	45	47	- - -	- - -	30	60	- - -	- - -

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

Low Temperature Defrost Schedule

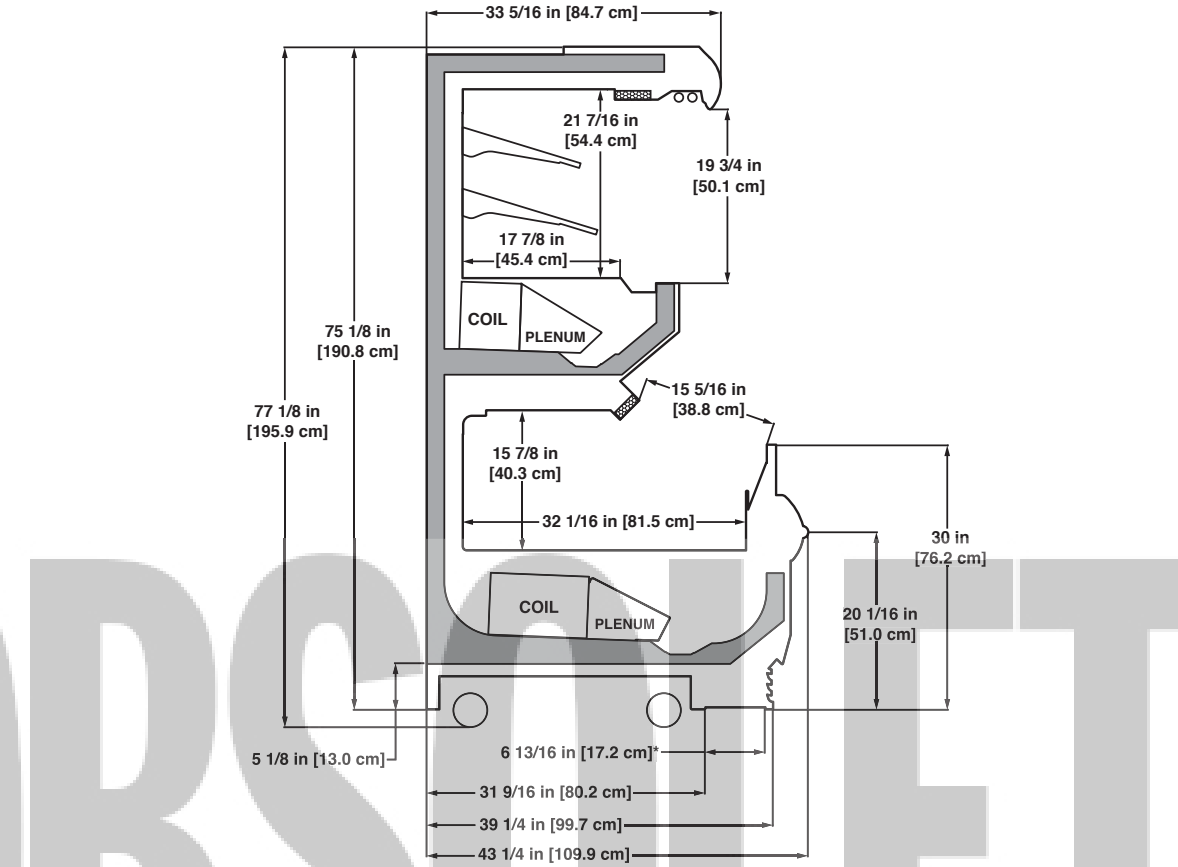
No. Per Day	Hours
1	10 pm
2	10 pm - 6 pm**

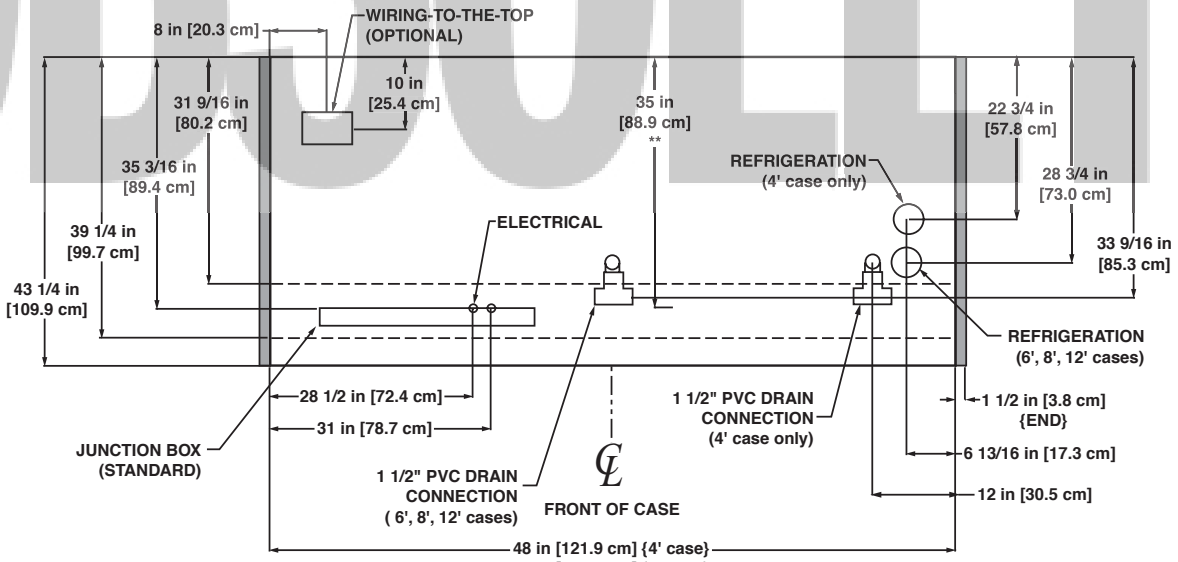
** Or immediately after store closing hour

All measurements are taken per CRMA specifications.

OBSOLETE

OBSOLETE





NOTES:

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- FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT
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- SUCTION LINE - 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED-UP-THE-REAR - 5/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", & 16"

A DOVER COMPANY

Narrow Multi-Deck Produce Merchandiser

ONHP - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters[1] 120 Volts Amps	Anti-Condensate Heaters[1] 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
ONHP	4'	2	1.00	60	1.00	40	- - -[1]	- - -	1.92	400	2.22	532
	6'	2	1.00	60	1.00	40	- - -	- - -	2.88	600	3.33	798
	8'	3	1.50	90	1.50	60	- - -	- - -	3.85	800	4.44	1065
	12'	4	2.00	120	2.00	80	- - -	- - -	5.77	1200	6.67	1600

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

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ONHP	4'	0.57	68	2.48	298
	6'	0.57	68	3.81	457
	8'	0.57	68	3.81	457
	12'	0.77	92	5.59	666

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[2]	Coil[3] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
ONHP Cut Produce	1310	Std.	22	6-8	32	45	360
	1310	Enh.	26	6-8	32	45	360
ONHP Bulk Produce	930	Std.	27	6-8	36	48	360
	930	Enh.	29	6-8	36	48	360

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[4] Average discharge air velocity at peak of defrost.

Defrost Controls

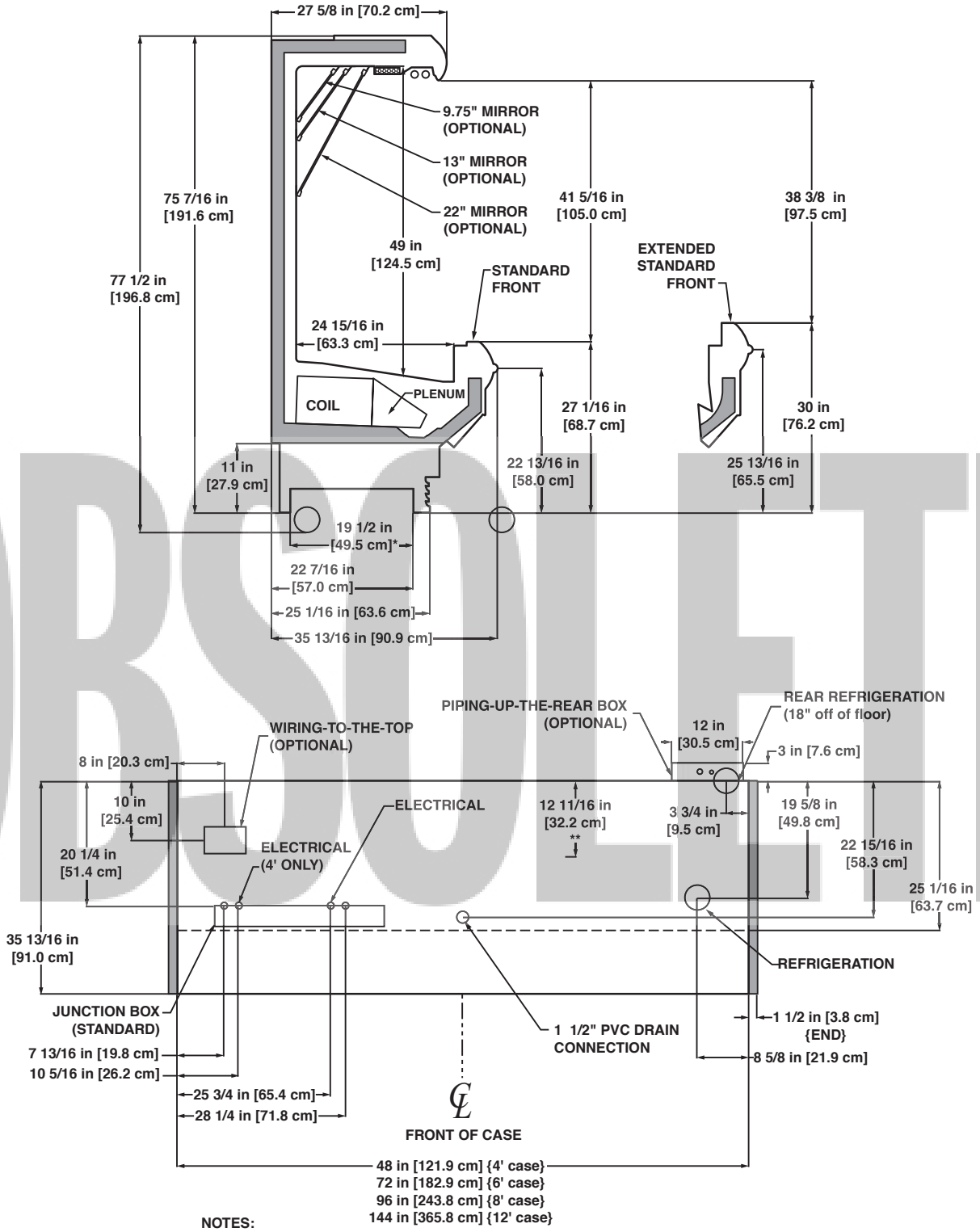
Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ONHP	3	6 - 8	35	47	45	47	- - -[5]	- - -	45	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

All measurements are taken per CRMA specifications.



OBSOLETE

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 (WHEN CASE IS PIPED TO THE REAR A 3" TO 4" GAP MAY BE REQUIRED)
- BACK PANELS ADD APPROXIMATELY 1" TO THE REAR OF THE CASE
- SUCTION LINE - 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED-UP-THE-REAR - 5/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18" & 20"

High Narrow Multi-Deck Produce Merchandiser

ONHPH - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters[1] 120 Volts Amps	Anti-Condensate Heaters[1] 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
ONHPH	4'	2	1.00	60	1.00	40	- - -[1]	- - -	1.92	400	2.22	532
	6'	3	1.50	90	1.50	60	- - -	- - -	2.88	600	3.33	798
	8'	4	2.00	120	2.00	80	- - -	- - -	3.85	800	4.44	1065
	12'	5	2.50	150	2.50	100	- - -	- - -	5.77	1200	6.67	1600

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

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ONHPH	4'	0.57	68	3.05	366
	6'	0.57	68	4.38	526
	8'	0.57	68	4.38	526
	12'	0.77	92	6.32	758

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[2]	Coil[3] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
ONHPH Cut Produce	1330	Std.	22	6-8	34	46	360
	1330	Enh.	26	6-8	34	46	360
ONHPH Bulk Produce	945	Std.	27	6-8	37	47	360
	945	Enh.	29	6-8	37	47	360

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[4] Average discharge air velocity at peak of defrost.

Defrost Controls

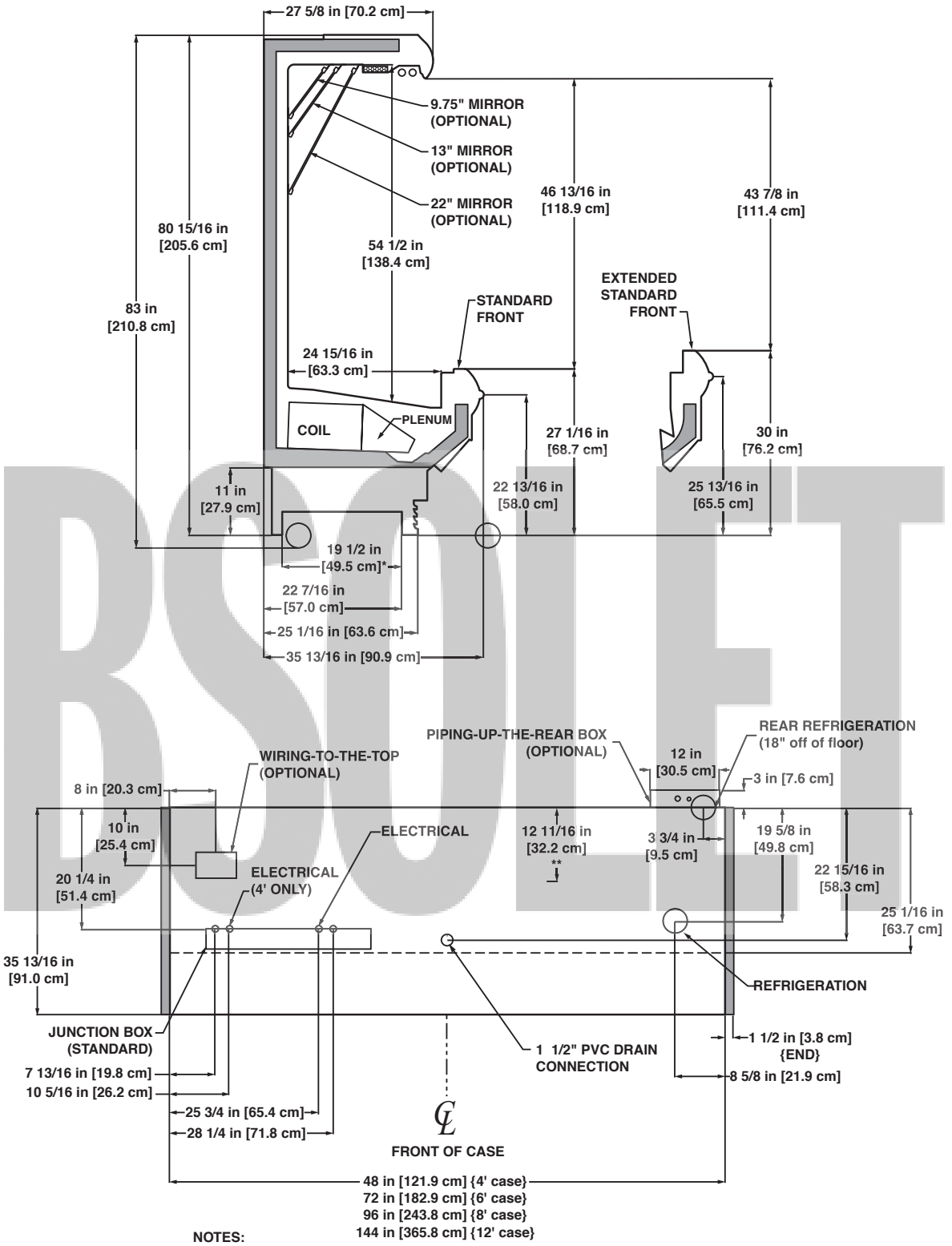
Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse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

All measurements are taken per CRMA specifications.



NOTES:

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

- FRONT SILL HEIGHT AND OVERALL CASE HEIGHT VARYS WITH BASEFRAME HEIGHT
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- WIRING-TO-THE-TOP ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
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- SUCTION LINE - 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED-UP-THE-REAR - 5/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18" & 20"

NSF COMPONENT

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A DOVER COMPANY

Multi-Deck Produce Merchandiser

OHP - 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
OHP	6'	2	1.00	60	0.64	34	0.40[1]	48	2.88	600	3.33	798
	8'	3	1.50	90	0.96	51	0.58[1]	70	3.85	800	4.44	1065
	12'	4	2.00	120	1.28	69	0.83[1]	100	5.77	1200	6.67	1600

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

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OHP	6'	0.57	68	4.38	526
	8'	0.57	68	4.38	526
	12'	0.77	92	6.32	758

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[2]	Coil[3] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
OHP Cut Produce	1215	Std.	22	6-8	31	45	440
	1215	Enh.	26	6-8	31	45	440
OHP Bulk Produce	855	Std.	27	6-8	36	48	250
	855	Enh.	29	6-8	36	48	250

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[4] Average discharge air velocity at peak of defrost.

Defrost Controls

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

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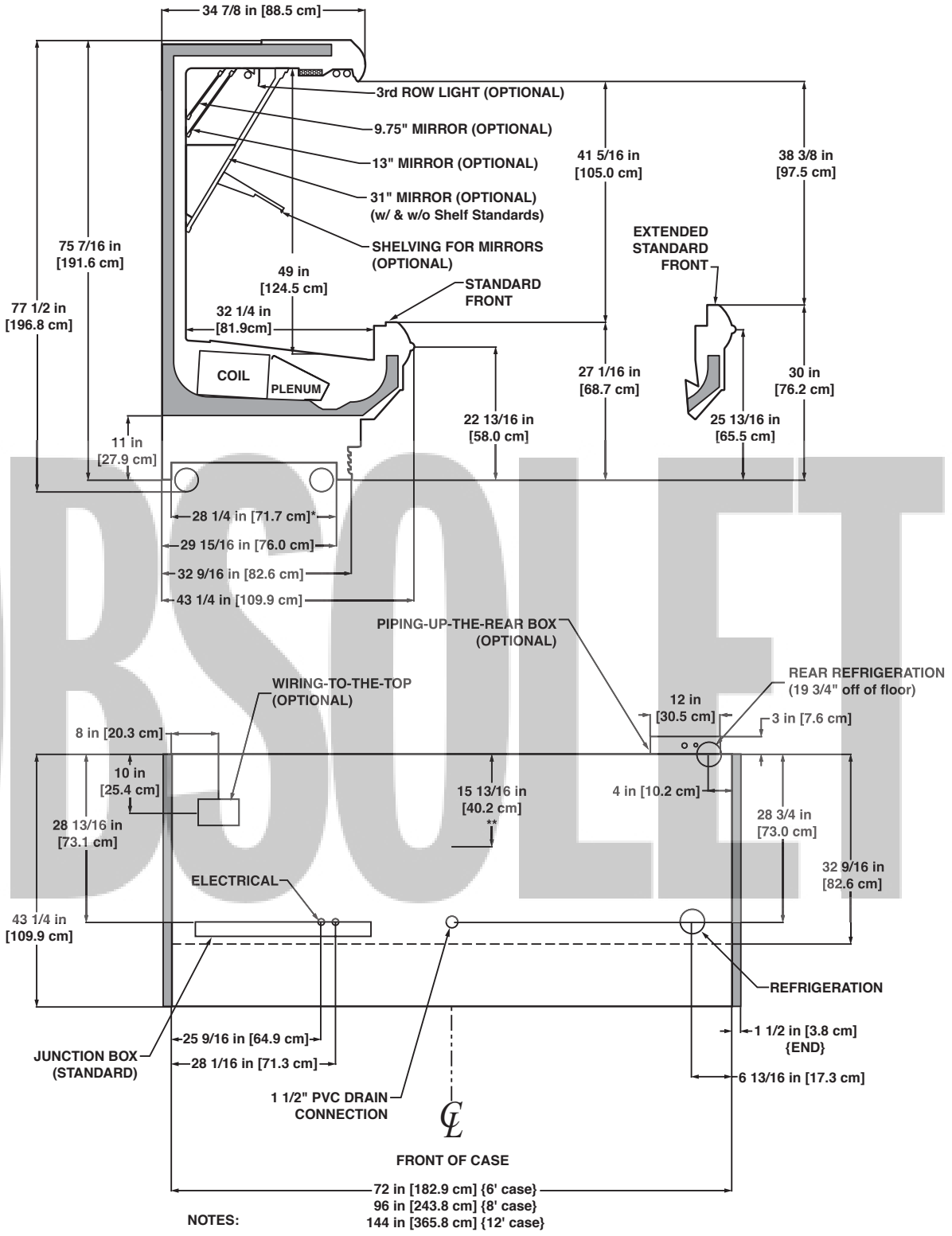

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- SUCTION LINE - 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED-UP-THE-REAR - 5/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18" & 20"

OBSOLETE

High Multi-Deck Produce Merchandiser

OHPH- 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Defrost Heaters 208 Volts		Defrost Heaters 240 Volts	
			Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OHPH	6'	3	1.50	90	0.90	60	0.40	48	2.88	600	3.33	798
	8'	4	2.00	120	1.20	80	0.58	70	3.85	800	4.44	1065
	12'	5	2.50	150	1.50	100	0.83	100	5.77	1200	6.67	1600

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OHPH	6'	0.57	68	4.95	594
	8'	0.57	68	4.95	594
	12'	0.77	92	7.09	851

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[2]	Coil[3] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
OHPH Cut Produce	1460	Std.	22	6-8	30	45	315
	1460	Enh.	26	6-8	30	45	315
OHPH Bulk Produce	1215	Std.	27	6-8	31	45	440
	1215	Enh.	29	6-8	31	45	440

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[4] Average discharge air velocity at peak of defrost.

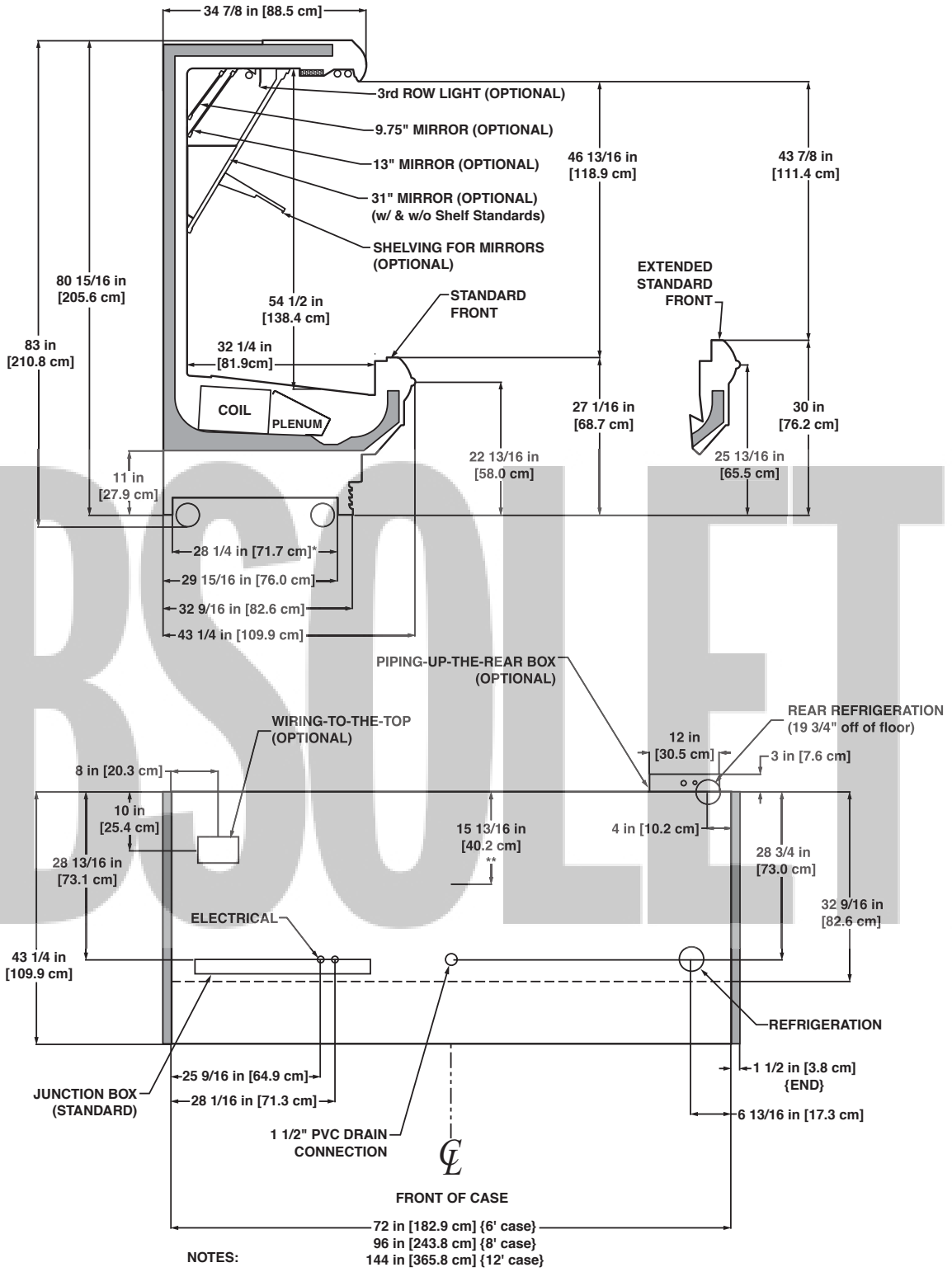
Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OHPH	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

All measurements are taken per CRMA specifications.



NOTES:

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

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- BACK PANELS ADD APPROXIMATELY 1" TO THE REAR OF THE CASE
- SUCTION LINE - 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED-UP-THE-REAR - 5/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18" & 20"

OBSOLETE

Wide Multi-Deck Produce Merchandiser

OWHP - 8’ & 12’

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
OWHP	8’	3	1.50	90	0.96	51	0.58[1]	70	3.85	800	4.44	1065
	12’	4	2.00	120	1.28	69	0.83[1]	100	5.77	1200	6.67	1600

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

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OWHP	8’	0.57	68	4.38	526
	12’	0.77	92	6.32	758

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[2]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
OWHP Cut Produce	1592	22	6-8	31	45	440
OWHP Bulk Produce	1120	27	6-8	36	48	250

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Average discharge air velocity at peak of defrost.

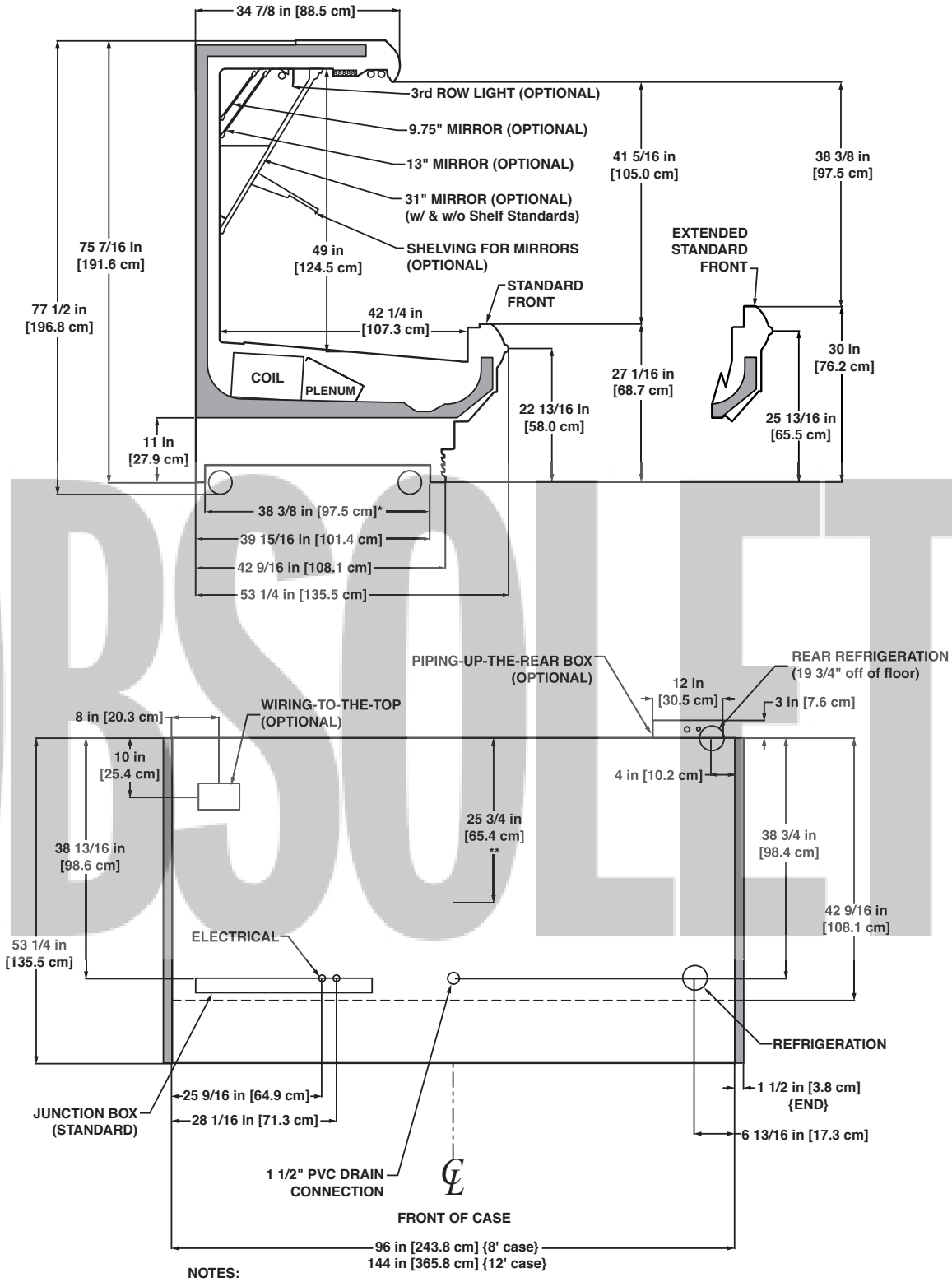
Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost 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

All measurements are taken per CRMA specifications.



NOTES:

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

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- BACK PANELS ADD APPROXIMATELY 1" TO THE REAR OF THE CASE
- SUCTION LINE - 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED-UP-THE-REAR - 5/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18" & 20"

OBSOLETE

Wide High Multi-Deck Produce Merchandiser

OWHPH - 8’ & 12’

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
OWHPH	8’	4	2.00	120	1.20	80	0.58	70	3.85	800	4.44	1065
	12’	5	2.50	150	1.50	100	0.83	100	5.77	1200	6.67	1600

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OWHPH	8’	0.57	68	4.95	594
	12’	0.77	92	7.09	851

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[1]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[2] (FPM)
OWHPH Cut Produce	1913	17	6-8	30	45	315
OWHPH Bulk Produce	1592	22	6-8	31	45	440

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Average discharge air velocity at peak of defrost.

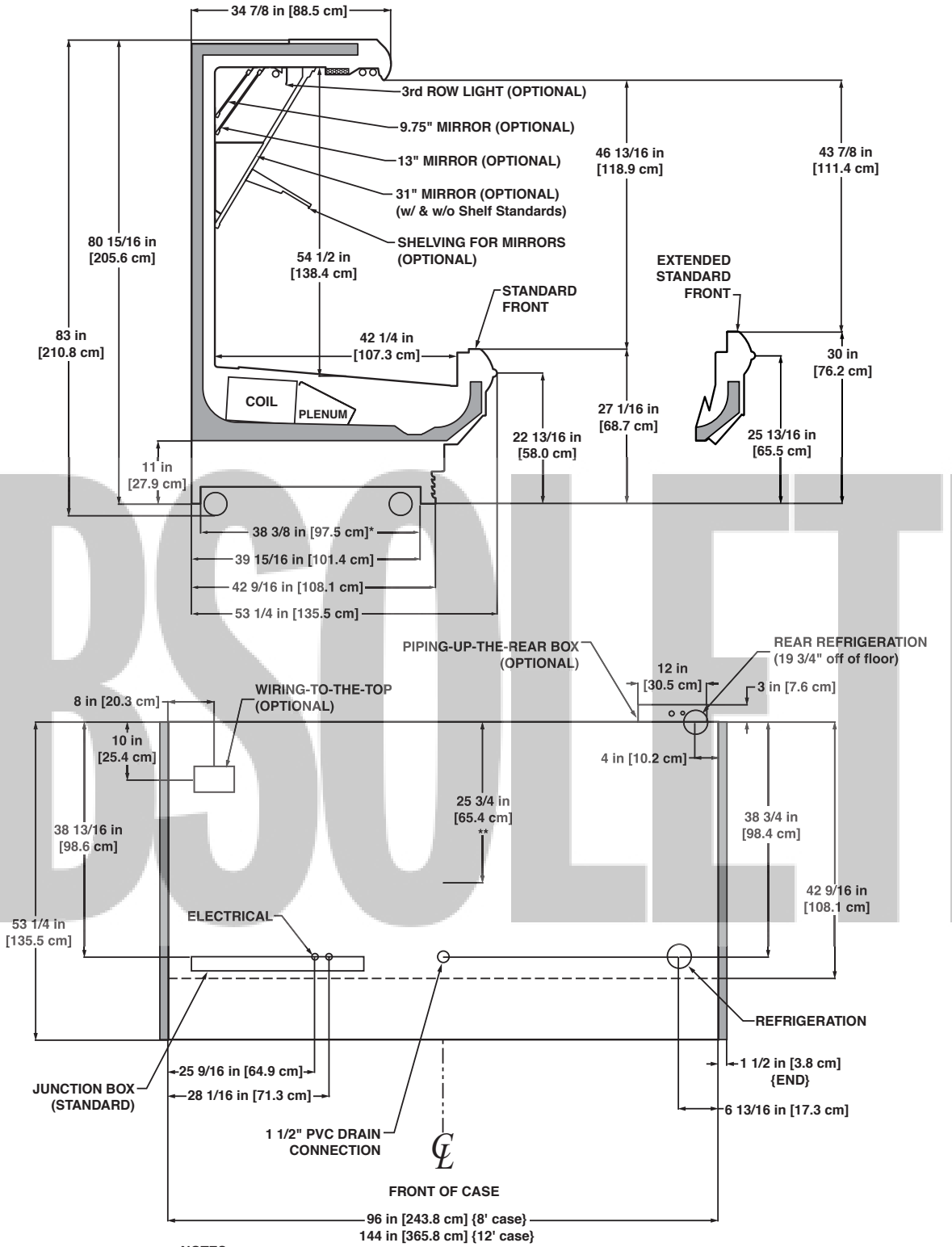
Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OWHPH	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

All measurements are taken per CRMA specifications.



NOTES:

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

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- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL (WHEN CASE IS PIPED TO THE REAR A 3" TO 4" GAP MAY BE REQUIRED)
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- SUCTION LINE - 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED-UP-THE-REAR - 5/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16", 18" & 20"

OBSOLETE

Narrow Multi-Deck Self-Contained Dairy Merchandiser

ONNA

System Requirements

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Fuse Size
ONNA	47”	208/230	1	60	3 wire + ground	18.5	25

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	Condenser Fan 208 Volts Amps	Condenser Fan 208 Volts Watts	Drain Pump 120 Volts Amps	Drain Pump 120 Volts Watts	Evap. Pan Heater 240 Volts Amps	Evap. Pan Heater 240 Volts Watts	Maximum Lights 120 Volts Amps	Maximum Lights 120 Volts Watts
ONNA	47”	3	1.02	51	0.85	130	0.9	47	6.28	1500	0.57	68

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[2] (FPM)
ONNA-47”	37.2	15.5	6-8	35	43	275

[1] Average discharge air velocity at peak of defrost.

Condensing Unit Data

Model	Volts	Phase	Frequency (Hz)	HP	RLA[2] (amps)	LRA[3] (amps)	Refrig.	lbs of Refrig.
ONNA-47”	208/230	1	60	3/4	6.8	33.5	R134A	3.5

[2] RLA - Running Load Amps.

[3] LRA - Locked Rotor Amps.

Defrost Controls

Model	Defrosts Per Day	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ONNA	4	- - -	- - -	40	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 CRMA specifications.

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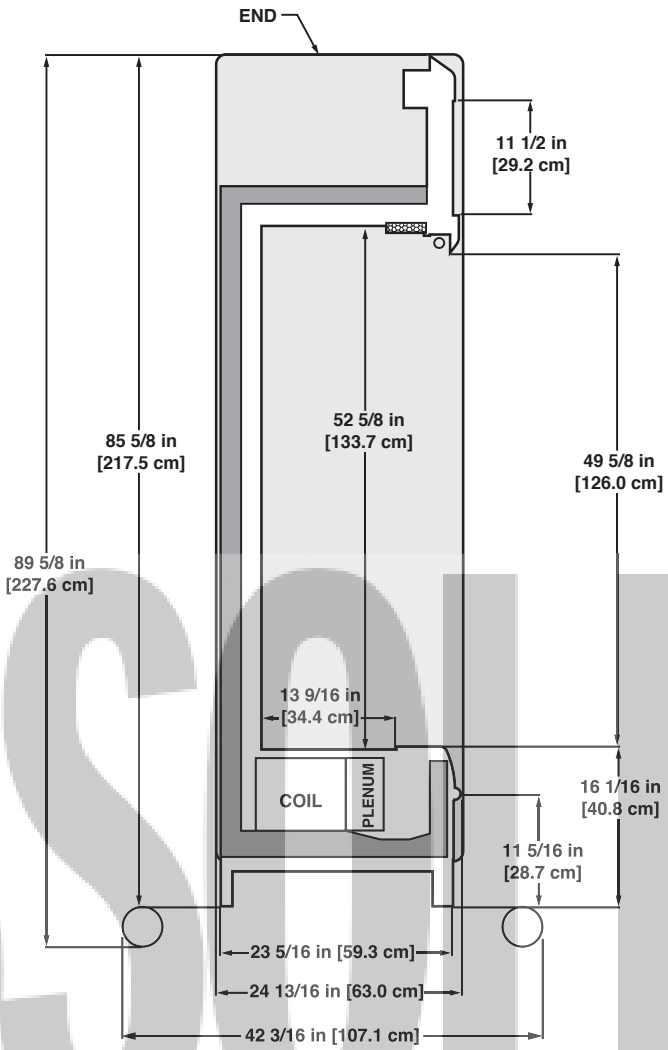

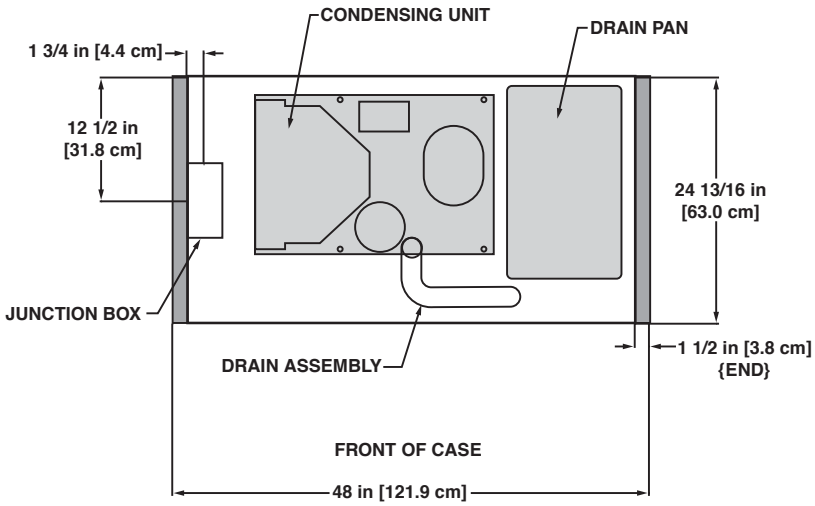

NOTES:

- A 2" MINIMUM AIR GAP IS REQUIRED BETWEEN THE REAR OF THE CASE AND A WALL
- AVAILABLE SHELF SIZES: 12"

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Narrow Multi-Deck Produce/Dairy/Deli/Meat Merchandiser

ONU- 4'/47" & 6'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
ONU	4'/47"	2	1.00	60	1.00	34	- - -[1]	- - -	1.92	400	2.22	532
	6'	3	1.50	90	1.50	51	- - -	- - -	2.88	600	3.33	798

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

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ONU	4'/47"	0.57	68	2.63	316
	6'	0.77	92	3.90	468

Guidelines & Control Settings

Model[2]	BTUH/ft[3]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
ONU	1450	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] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ONU	4	6 - 8	35	47	45[5]	47[5]	25	45	- - -	- - -

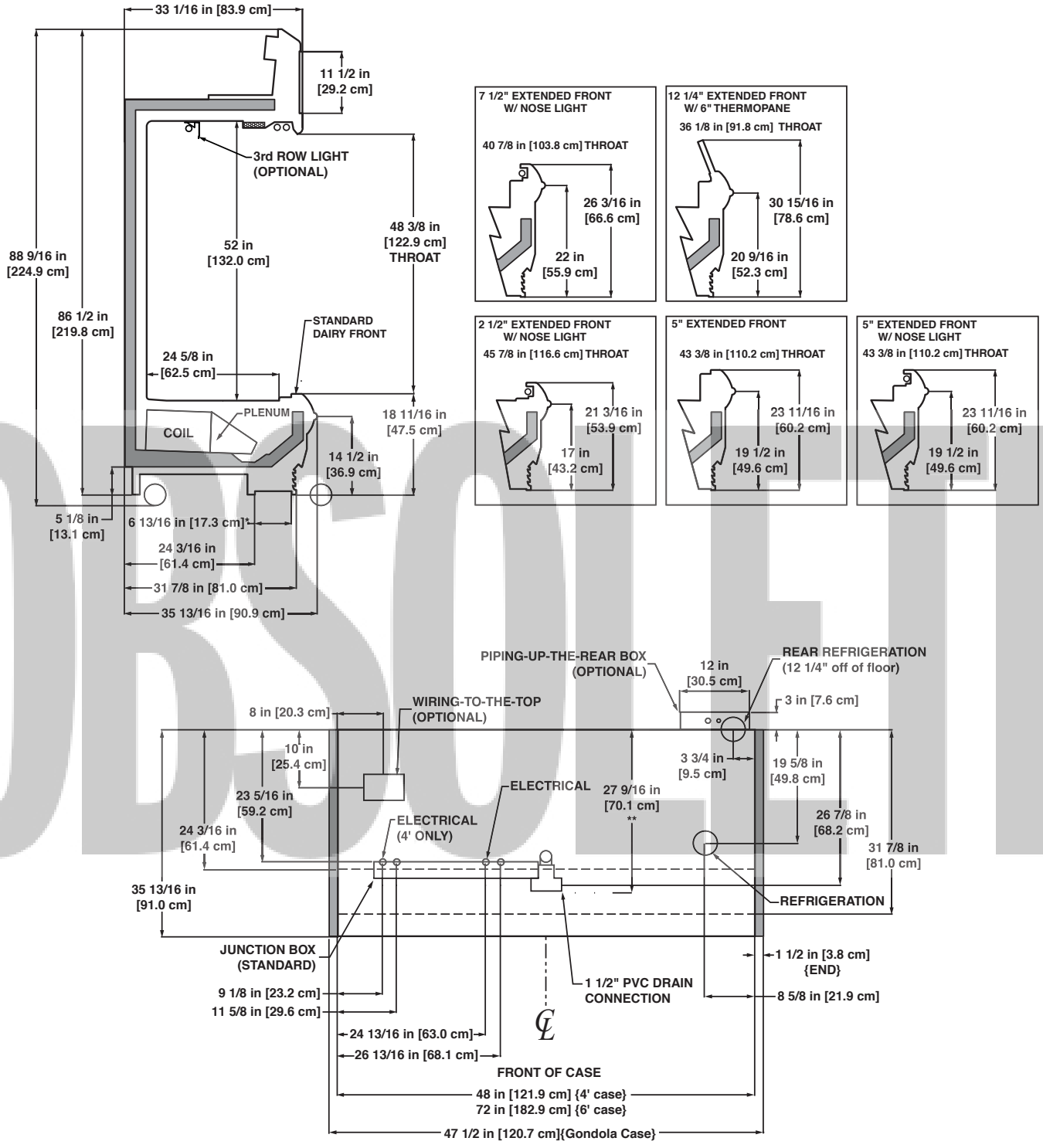
[5] Timed Off Defrost not recommended for Fresh Meat application.

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.

OBSOLETE



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 (WHEN CASE IS PIPED TO THE REAR A 3" TO 4" GAP MAY BE REQUIRED)
- BACK PANELS ADD APPROXIMATELY 1" TO THE REAR OF THE CASE
- SUCTION LINE - 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED-UP-THE-REAR - 5/8"
- AVAILABLE SHELF SIZES: 10", 12", 14", 16" & 18"

OBSOLETE

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 Fuse Size
ONUA	4'/47"	208/230	1	60	3 wire + ground	22.2	30
	6'	208/230	1	60	3 wire + ground	26.7	35

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts		Condenser Fan 208 Volts		Drain Pump 120 Volts		Evap. Pan Heater 240 Volts		Maximum Lights 120 Volts	
			Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONUA	4'/47"	2	1.00	60	2.60	130	0.90	108	6.28	1500	2.63	316
	6'	3	1.50	90	1.1	111	0.90	108	6.28	1500	3.90	468

OBSOLETE

Guidelines & Control Settings

Model[1]	24 hr Energy Usage (kWh)	Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[2] (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

Model	Volts	Phase	Frequency (Hz)	HP	RLA[3] (amps)	LRA[4] (amps)	Refrig.	lbs of Refrig.
ONUA-4'/47"	208/230	1	60	1	7.0	34.2	R-22	5.9
ONUA-6'	208/230	1	60	1 1/2	10.4	48.2	R-22	6.75

[3] RLA - Running Load Amps.

[4] LRA - Locked Rotor Amps.

Defrost Controls

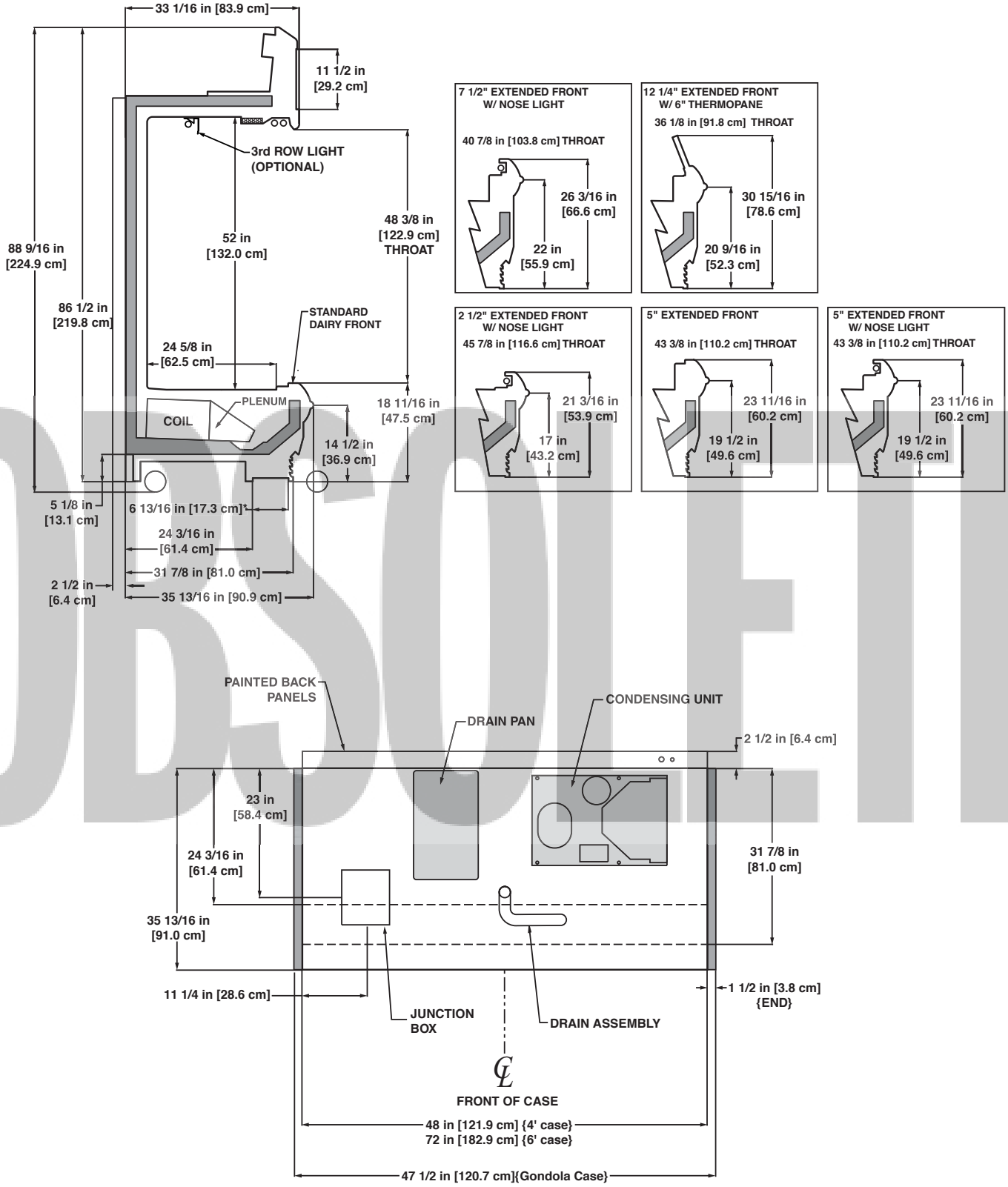
Model	Defrosts Per Day	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ONUA	4	- - - [5]	- - -	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

All measurements are taken per CRMA specifications.



NOTES:

- 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"

OBSOLETE

Roll-In Rear Load Dairy Merchandiser

ORDR - 8’ & 12’ dairy

Electrical Data

Model		Fans per Case		Upper Standard Fans		Lower Standard Fans		Upper High Efficiency Fans		Lower High Efficiency Fans		Anti-Condensate Heaters	
				120 Volts		120 Volts		120 Volts		120 Volts		120 Volts	
		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

Electrical Data (Continued)

Model		Defrost Heaters			
		208 Volts		240 Volts	
		Amps	Watts	Amps	Watts
ORDR	8’	3.85	800	4.44	1066
	12’	5.77	1200	6.67	1600

Lighting Data

Model		Typical per Light Row		Maximum Lighting	
		120 Volts		120 Volts	
		Amps	Watts	Amps	Watts
ORDR	8’	0.57	68	4.17	500
	12’	0.77	92	6.33	760

Guidelines & Control Settings

Model	BTUH/ft[1]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[2] (FPM)
ORDR[3]	739	17	6-8	28	44	310

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Average discharge air velocity at peak of defrost.

[3] 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

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
			Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
ORDR	4	6 - 8	30	47	30	47	26	45	- - -[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 CRMA specifications.

Hill PHOENIX EXCELLENCE

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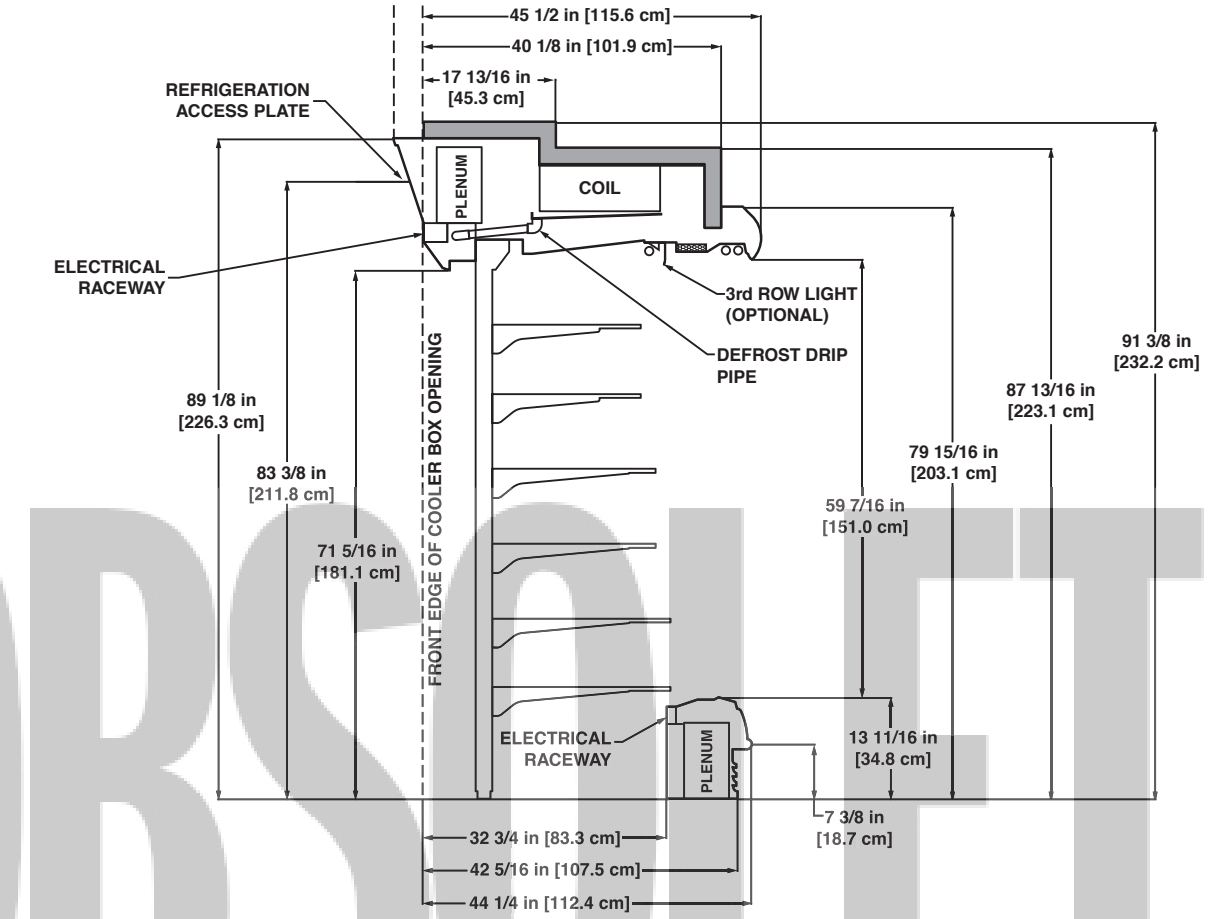
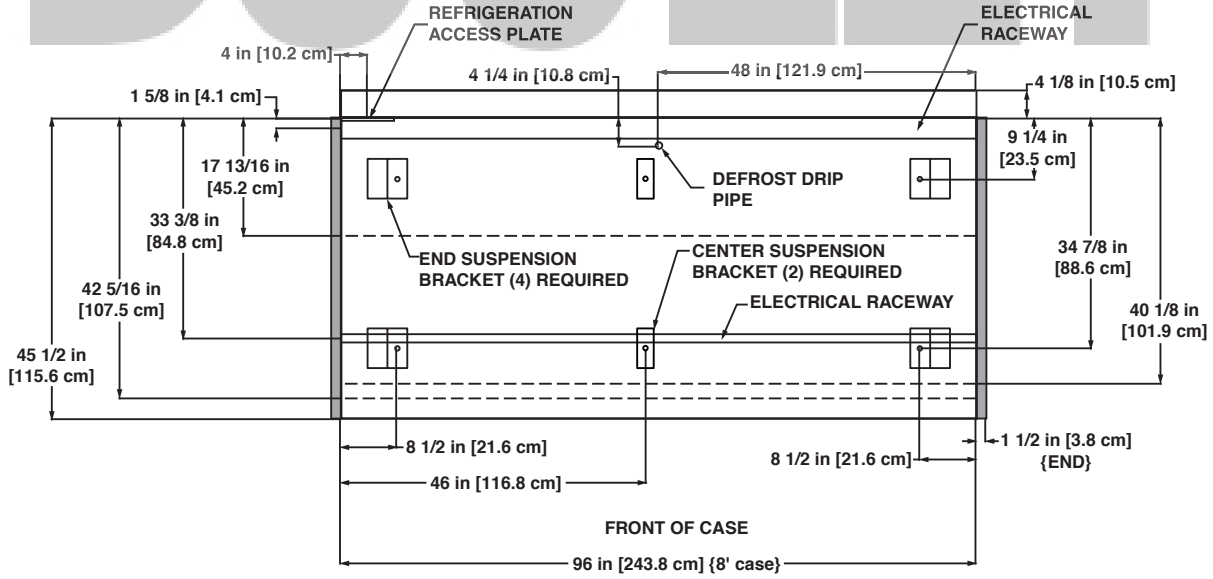
OBSOLETE





NOTES:

- SUCTION LINE - 7/8", LIQUID LINE - 1/2"
- AVAILABLE SHELF SIZES: 20", 22" & 24"

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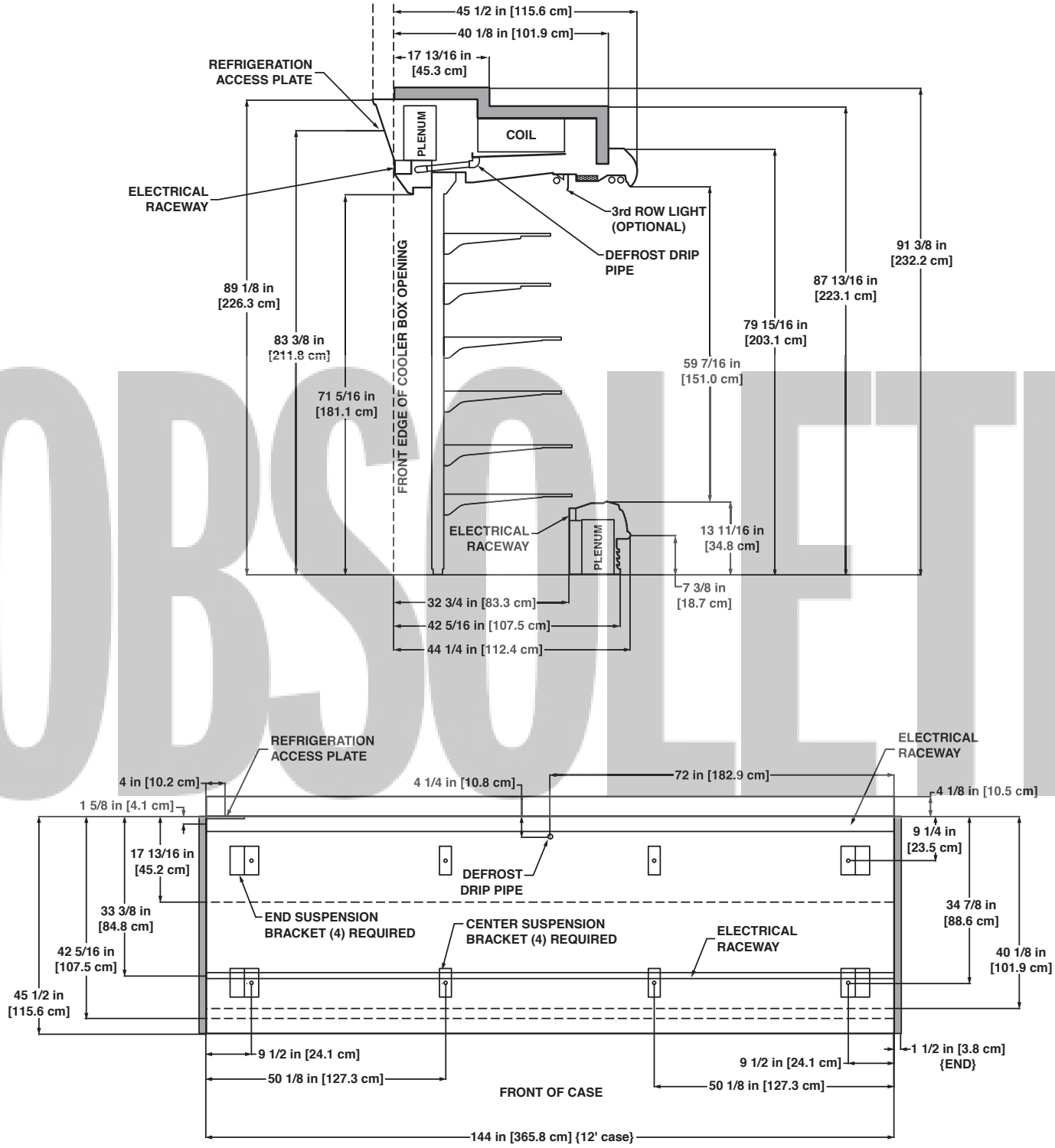

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NOTES:

- SUCTION LINE - 7/8", LIQUID LINE - 1/2"
- AVAILABLE SHELF SIZES: 20", 22" & 24"

END CAPS

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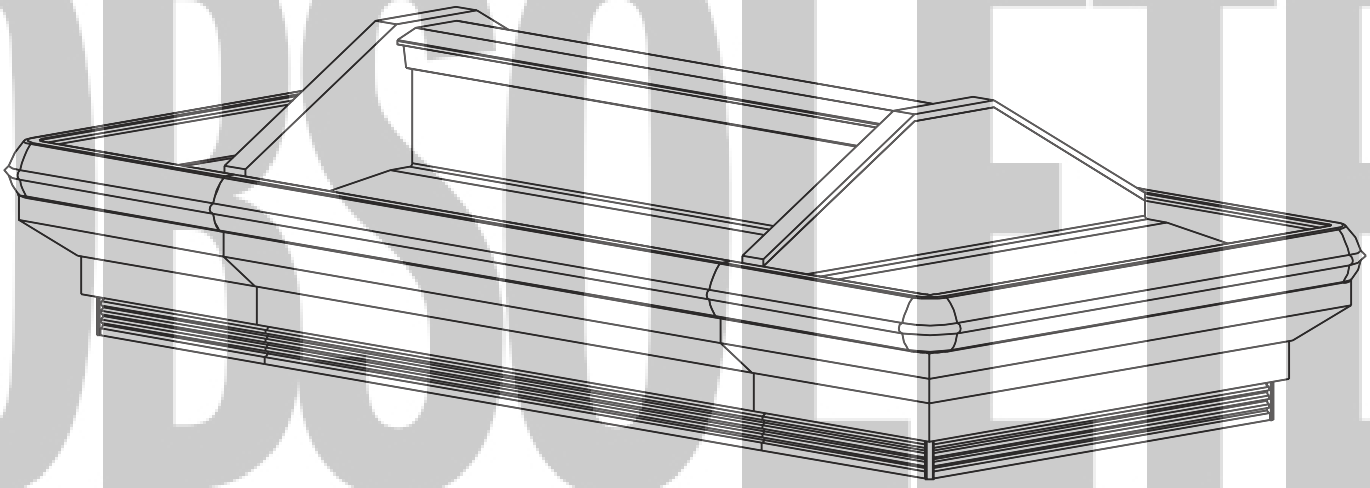


Notes:

- *Cases comply with ANSI / NSF* Standard 7. Units marked as components require remote refrigeration.*
- *Allow for an extra 1/8” per joint when lining up merchandisers.*
- *Front sill height does not affect case performance unless specifically shown.*
- *Front and rear sill heights vary with baseframe height.*

* *ANSI - American National Standard Institute*
NSF - National Sanitation Foundation

Single-Deck Deli/Meat End Cap Merchandiser

OEM

Electrical Data

Model	Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
OEM	2	1.00	60	0.6	40	0.35	42	2.88	600	3.33	798

Lighting Data

Model	Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OEM	- - -[1]	- - -	- - -	- - -

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

OBSOLETE

Guidelines & Control Settings

Model	BTUH/cs[2]	Coil[3] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
OEM	2918	Std.	17	6-8	29	37	232
	2918	Enh.	22	6-8	29	37	232

[2] BTUH's/case listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[4] Average discharge air velocity at peak of defrost.

Defrost Controls

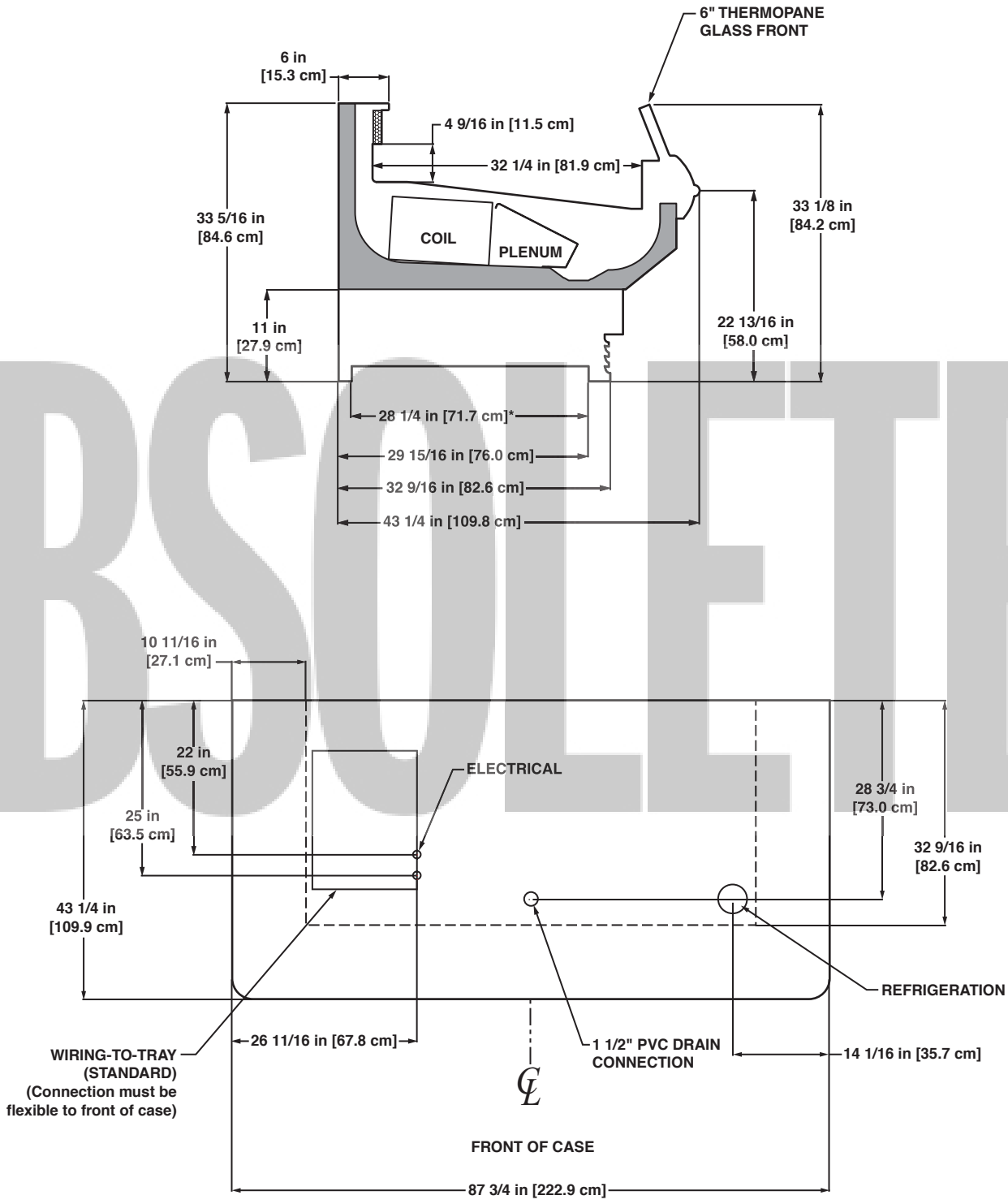
Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OEM	2	6-8	40	49	70	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

All measurements are taken per CRMA specifications.

OBSOLETE



NOTES:

* STUB-UP AREA

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

NSF COMPONENT

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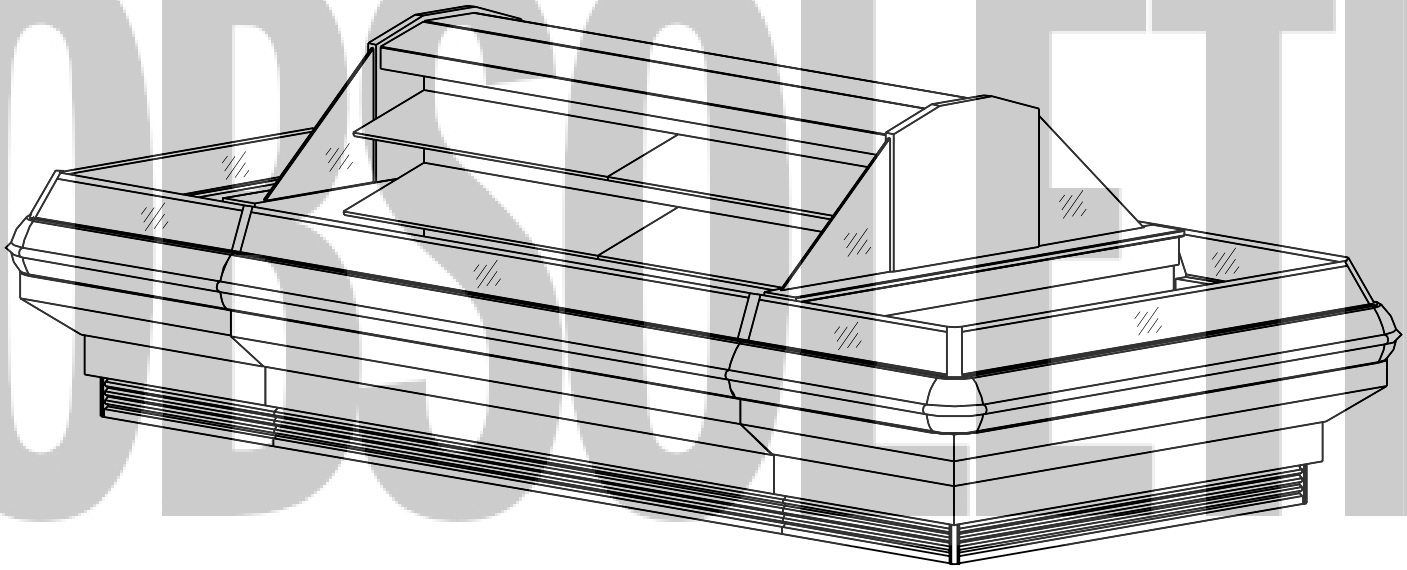
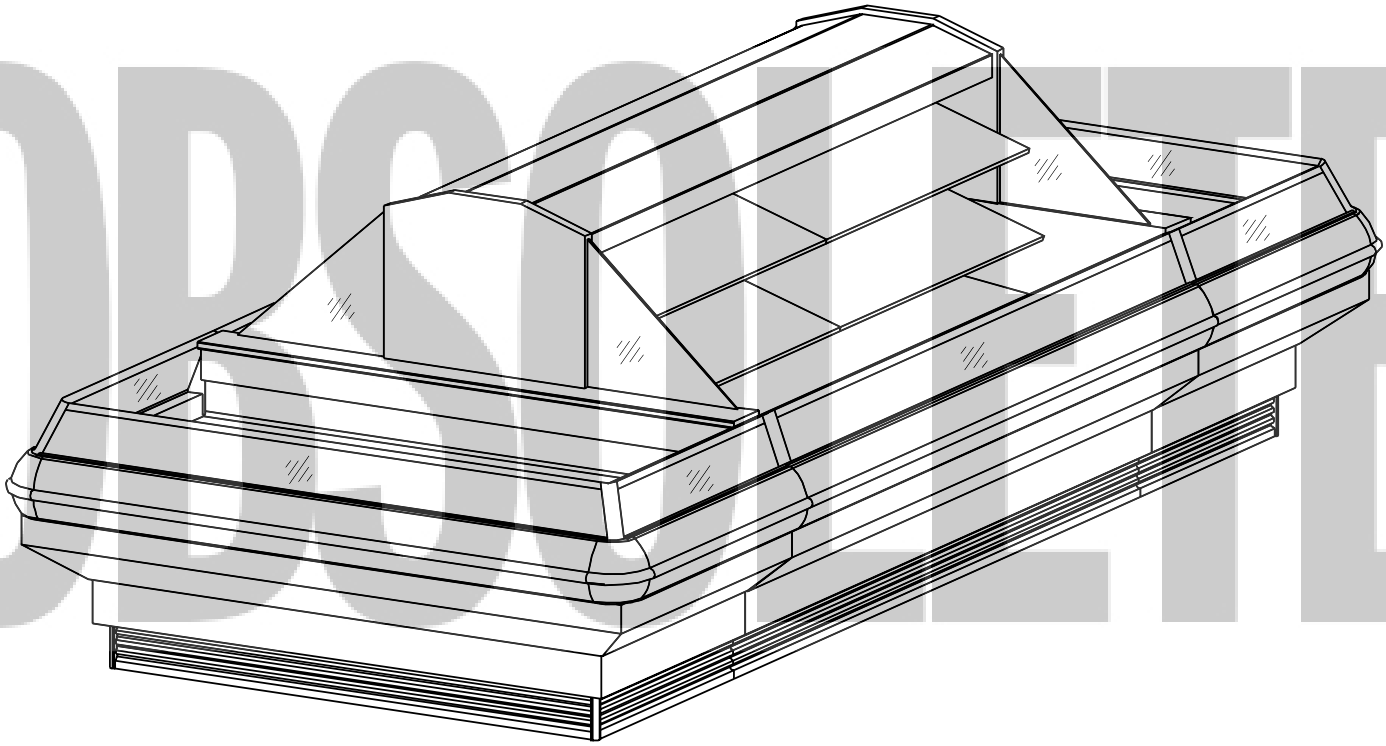
The OEMs shown below are unitized with two O3UM-8'cases with lighted rear sills and thermopane glass fronts.

OBSOLETE



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



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Single Deck Bulk Produce End Cap Merchandiser

OEP

Electrical Data

Model	Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
OEP	2	1.00	60	0.60	40	- - -[1]	- - -	2.88	600	3.33	798

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

Lighting Data

Model	Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OEP	- - -	- - -	- - -	- - -

OBSOLETE

Guidelines & Control Settings

Model	BTUH/cs[2]	Coil[3] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
OEP Bulk Produce	2244	Std.	27	6-8	35	47	210
	2244	Enh.	29	6-8	35	47	210

[2] BTUH's/case listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[4] Average discharge air velocity at peak of defrost.

Defrost Controls

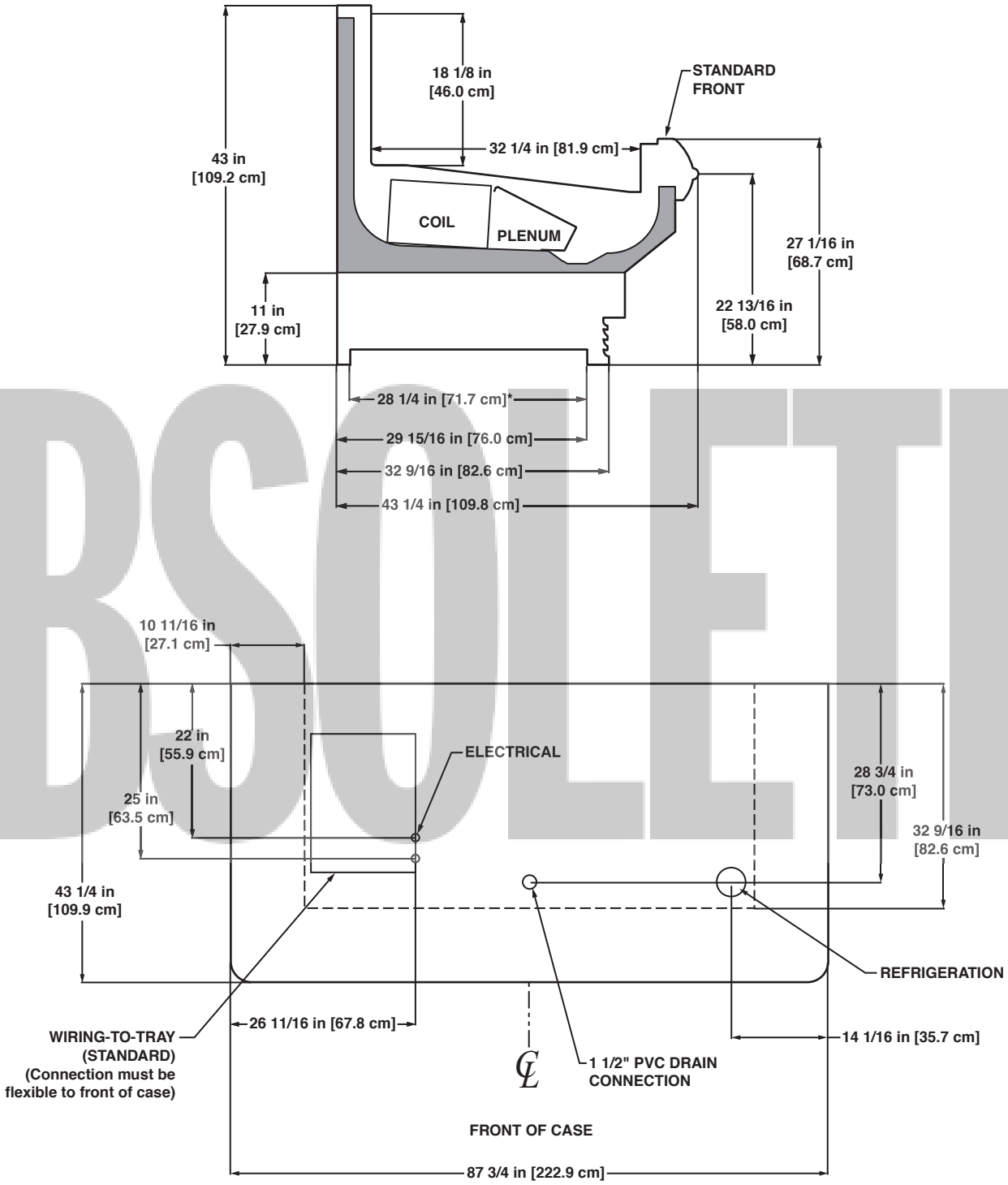
Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse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

All measurements are taken per CRMA specifications.

OBSOLETE



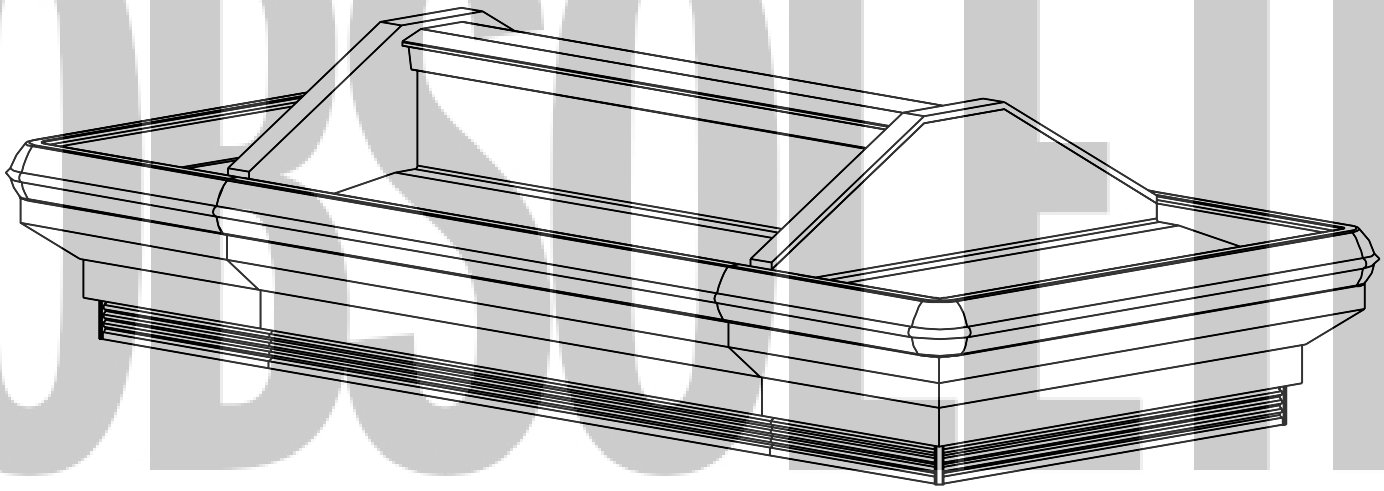
NOTES:

* STUB-UP AREA

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

The OEPs shown below are unitized with two OP-8'cases with 43" rear sills and standard fronts.

OBSOLETE



The OEPs shown below are unitized with two OP-8'cases with 43" rear sills and standard fronts.

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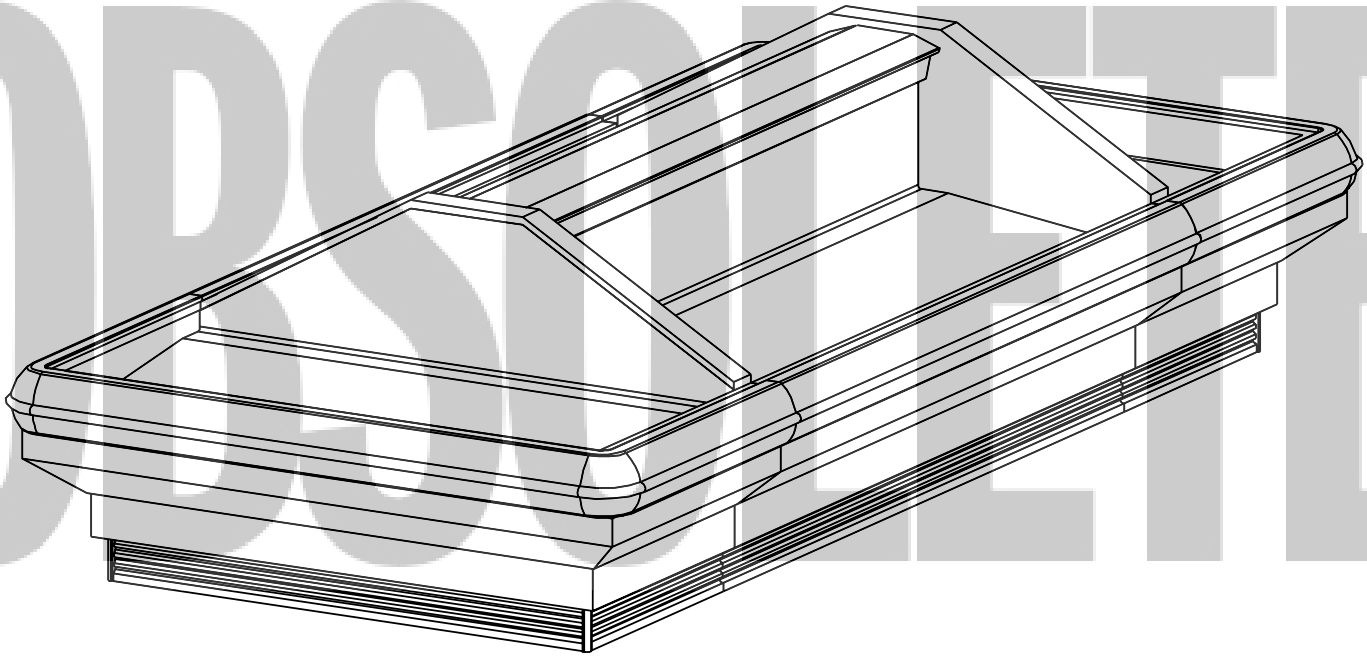


Multi-Deck Bulk Produce End Cap Merchandiser

O3EP

Electrical Data

Model	Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
O3EP	2	1.00	60	0.60	40	- - -[1]	- - -	2.88	600	3.33	798

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

Lighting Data

Model	Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O3EP	- - -	- - -	- - -	- - -

OBSOLETE

Guidelines & Control Settings

Model	BTUH/cs[2]	Coil[3] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
O3EP Bulk Produce	2917	Std.	27	6-8	36	47	200
	2917	Enh.	29	6-8	36	47	200

[2] BTUH's/case listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[4] Average discharge air velocity at peak of defrost.

Defrost Controls

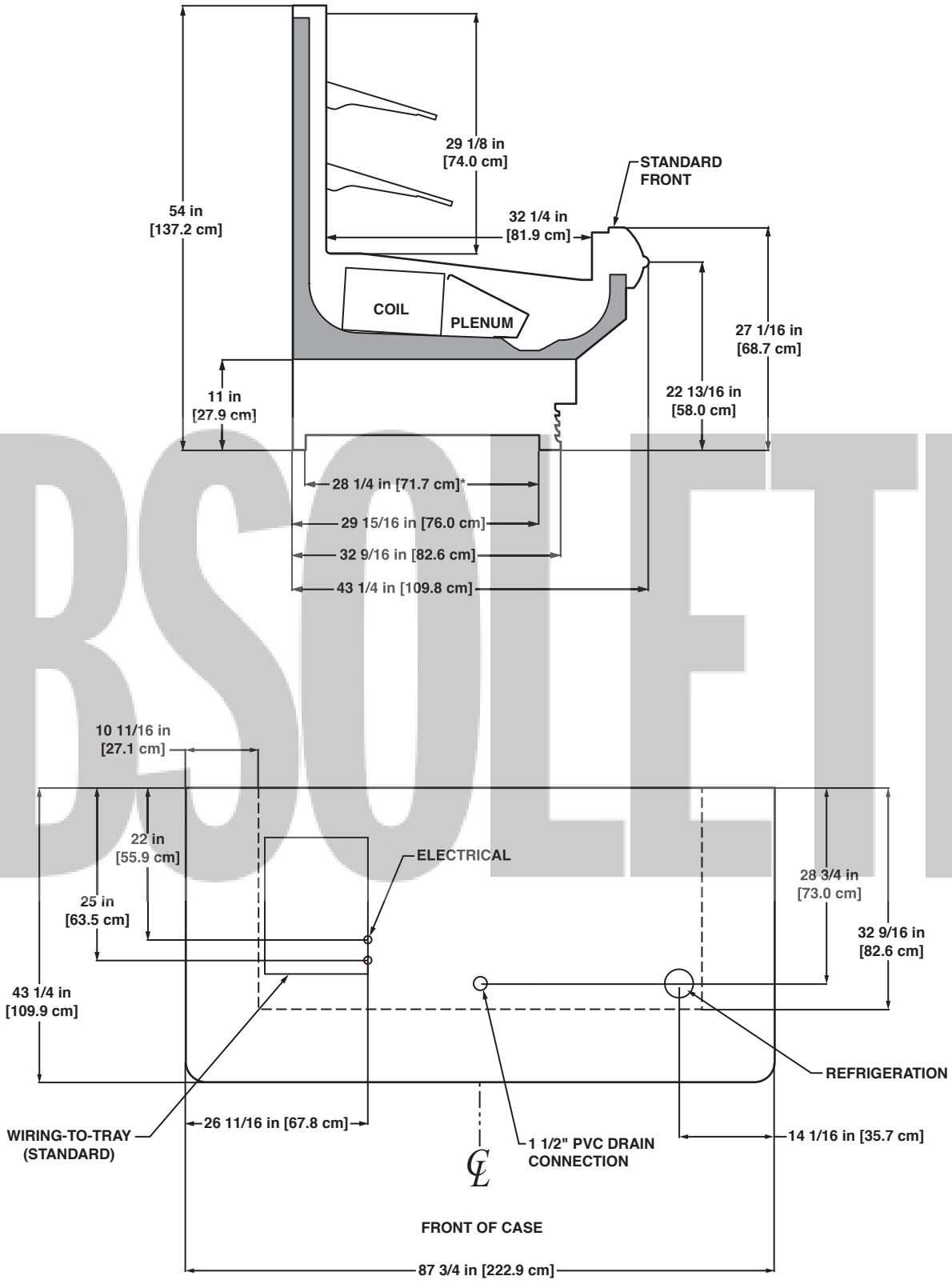
Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
O3EP	2	6 - 8	40	49	60	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

All measurements are taken per CRMA specifications.

OBSOLETE



NOTES:

* STUB-UP AREA

- SUCTION LINE - 7/8", LIQUID LINE - 1/2"

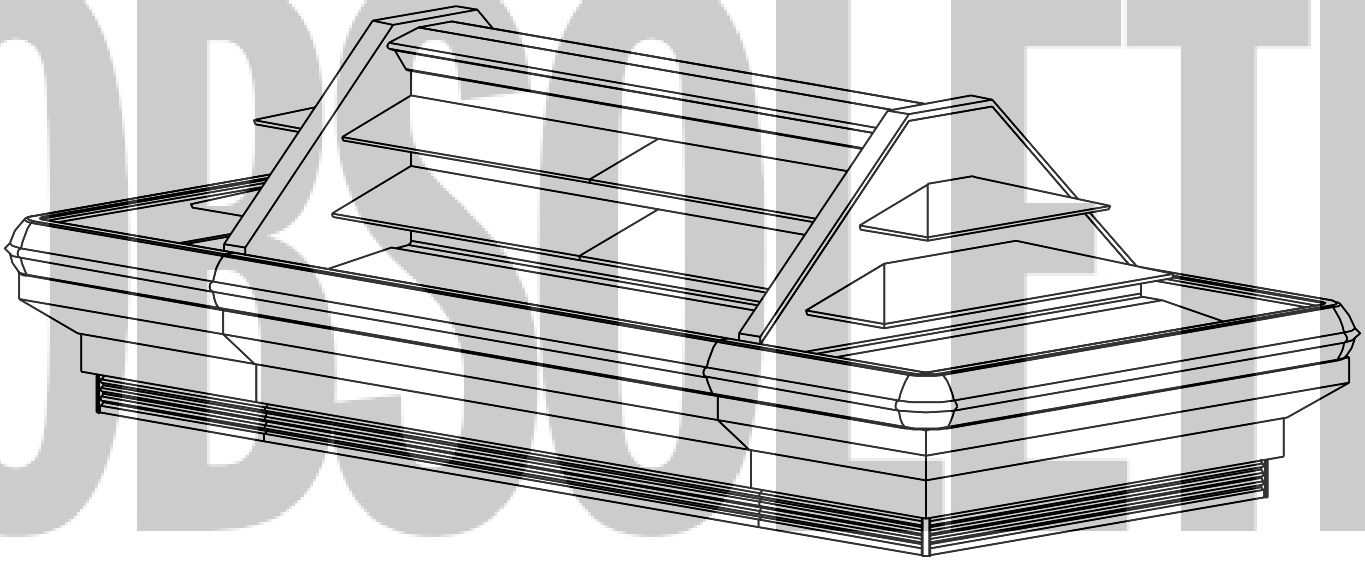
NSF COMPONENT

c UL us

A DOVER COMPANY

The O3EPs shown below are unitized with two O3UM-8'cases with standard rear sills, standard fronts, and 14" & 16" shelves.

OBSOLETE



The O3EPs shown below are unitized with two O3UM-8'cases with standard rear sills, standard fronts, and 14" & 16" shelves.

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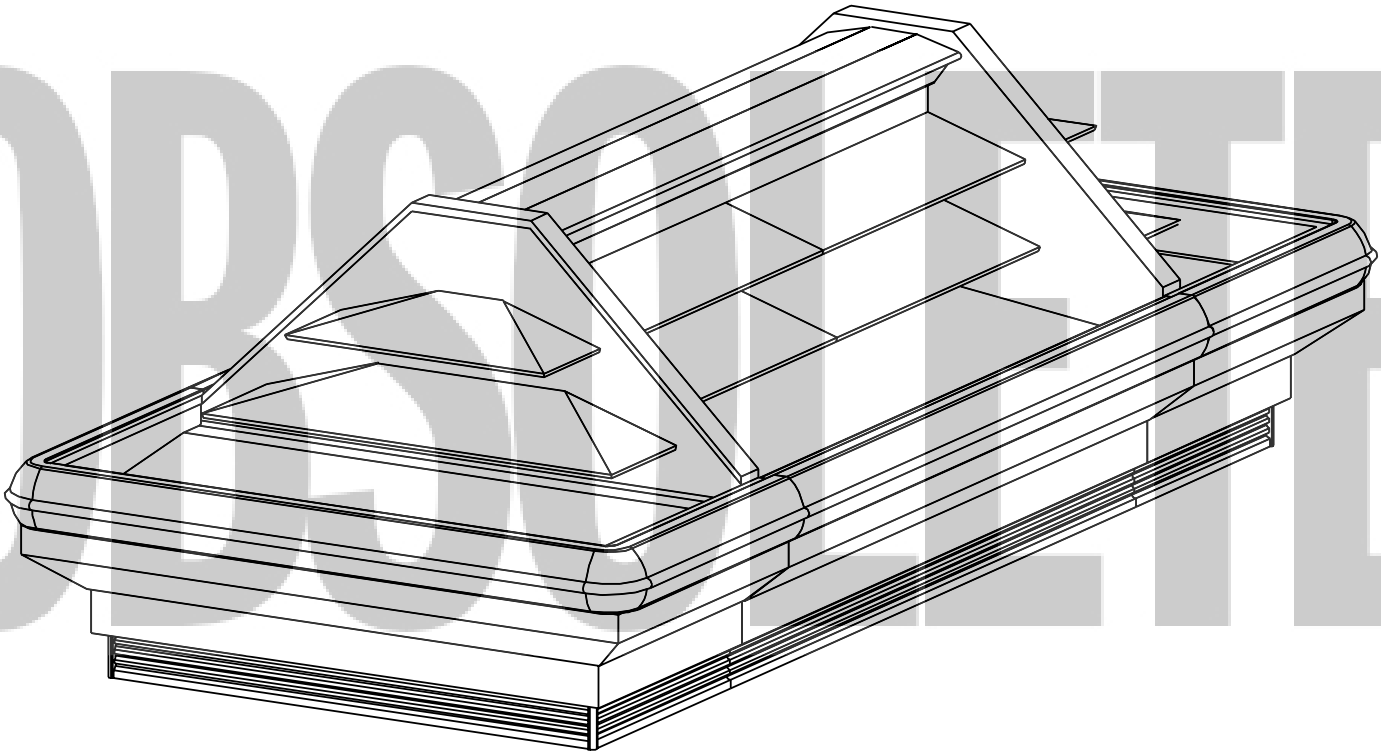

Narrow Multi-Deck Deli/Meat End Cap Merchandiser

ON3EM

Electrical Data

Model	Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
ON3EM	2	1.00	60	0.60	40	1.89	227	2.31	480	2.66	640

Lighting Data

Model	Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ON3EM	0.57	68	1.14	137

OBSOLETE

Guidelines & Control Settings

Model	BTUH/cs[1]	Coil[2] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
ON3EM	6000	Std.	17	6-8	33	45	275
	6000	Enh.	22	6-8	33	45	275

[1] BTUH's/case listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[3] Average discharge air velocity at peak of defrost.

Defrost Controls

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

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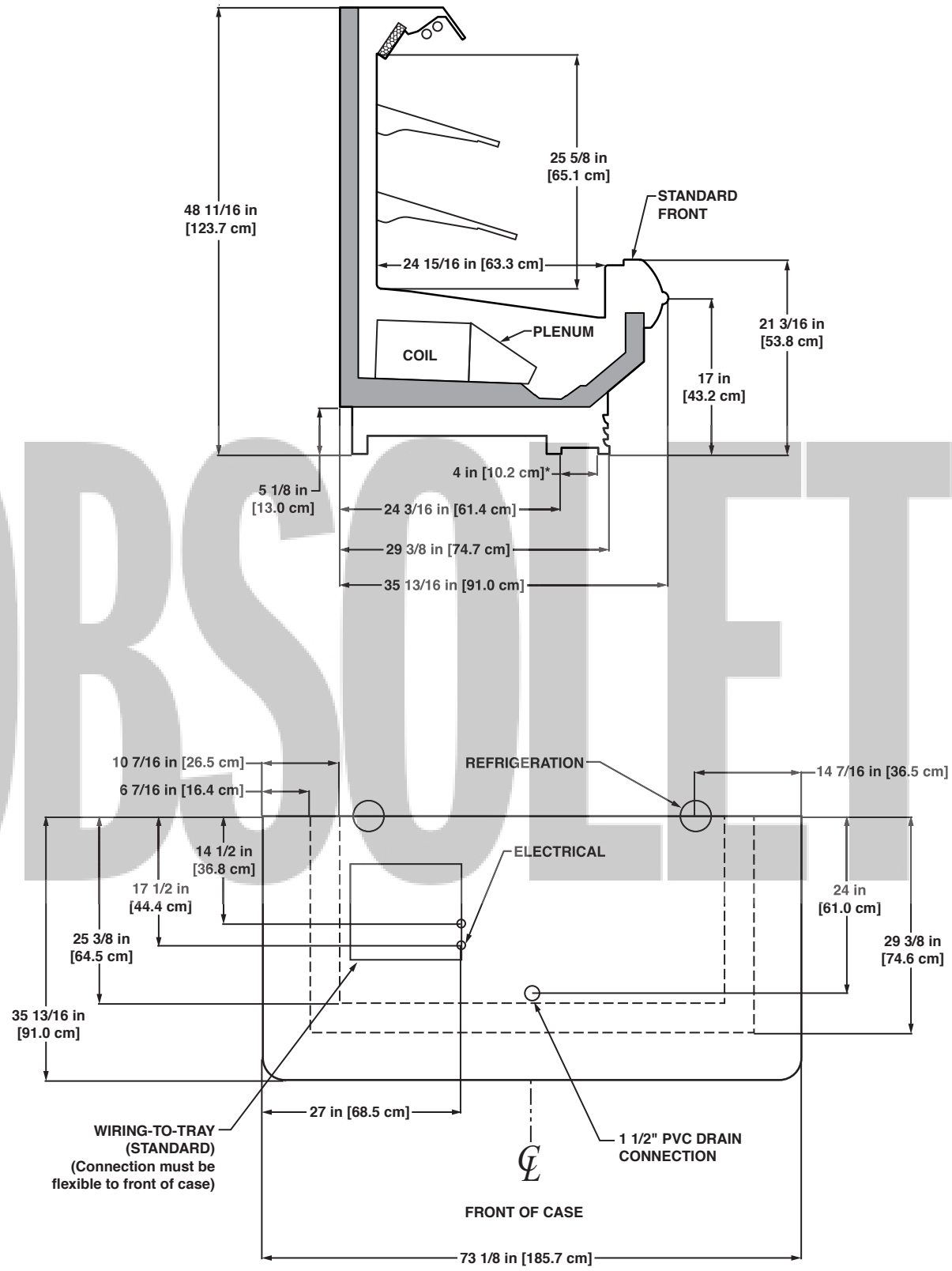

NOTES:

* STUB-UP AREA

- SUCTION LINE - 7/8", LIQUID LINE - 1/2"
- AVAILABLE SHELF SIZES: 10", 12", 14" & 16"

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

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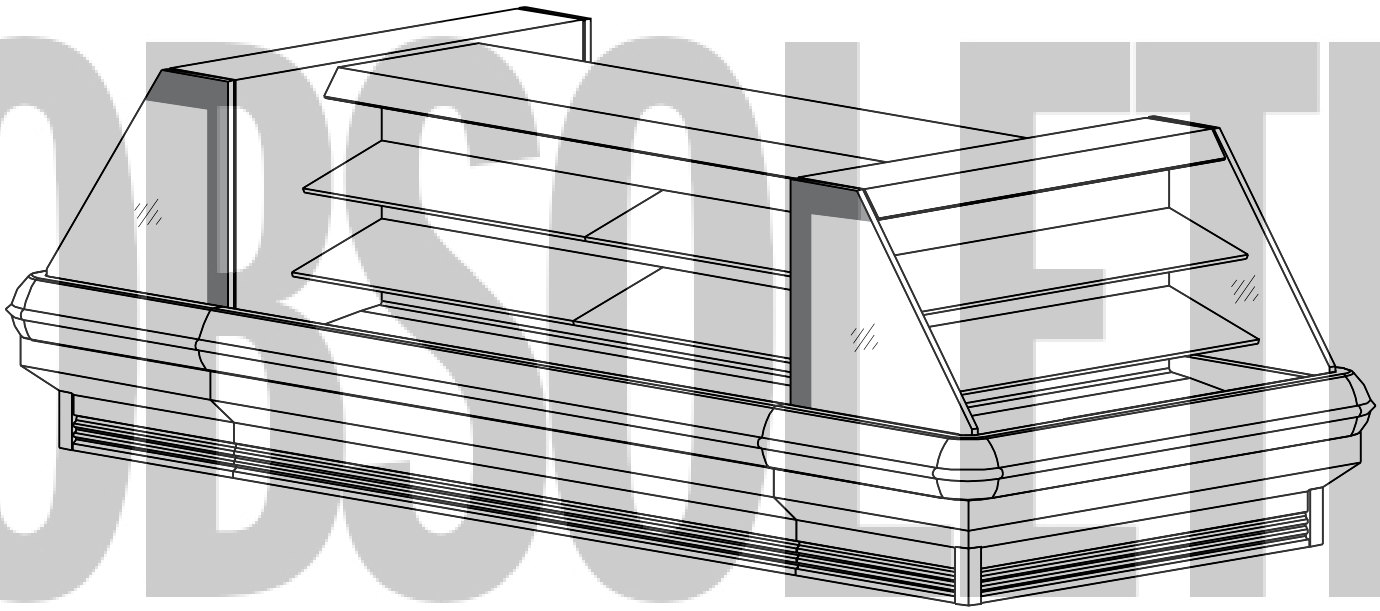

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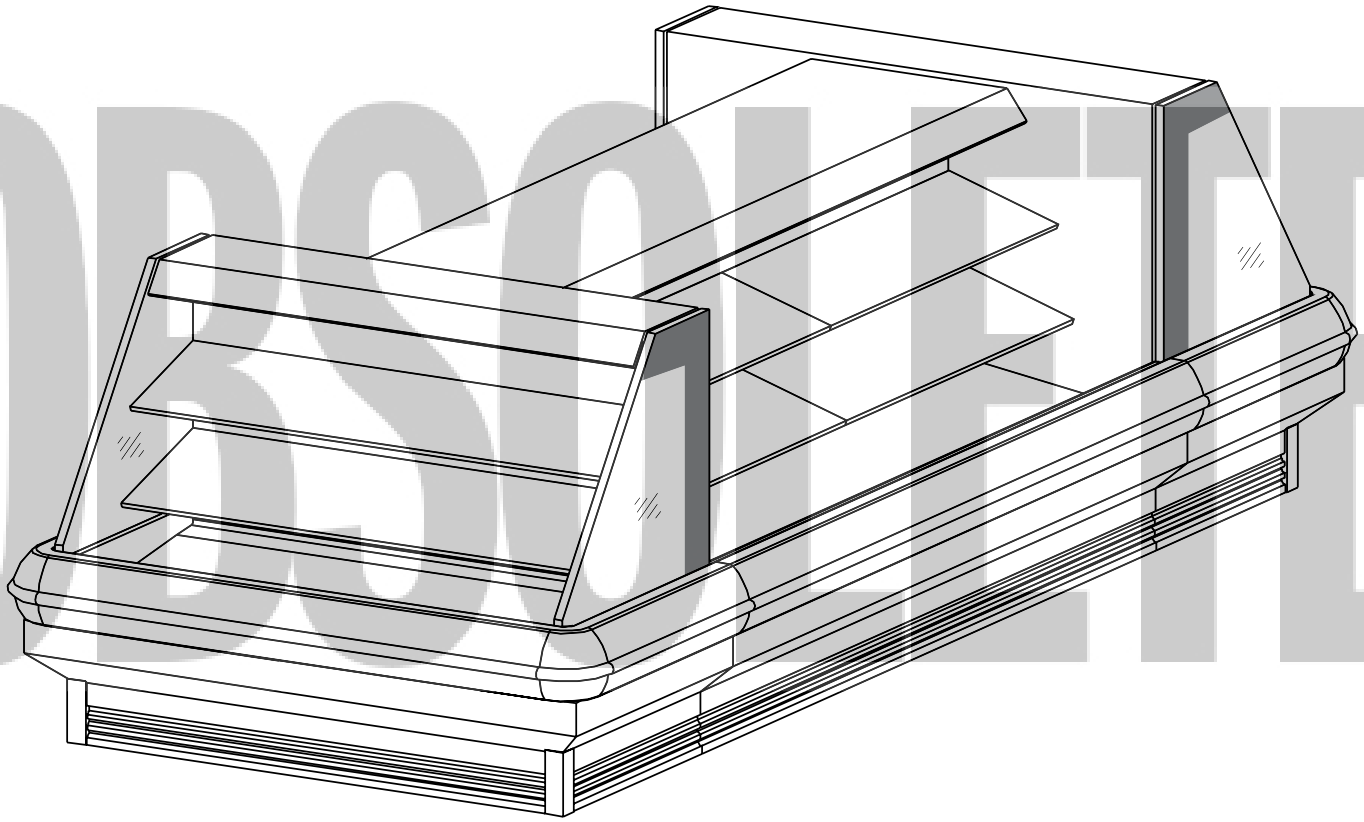
The ON3EMs shown below are unitized with two ON3UM-8'cases with lighted rear sills, standard fronts, and 14" & 16" shelves.



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REACH-IN

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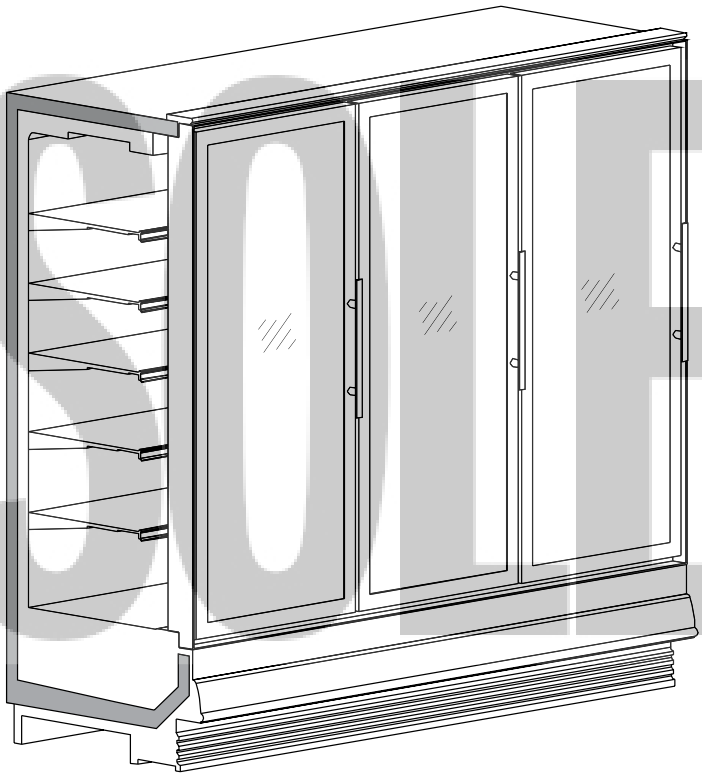

Notes:

- *Cases comply with ANSI / NSF* Standard 7. Units marked as components require remote refrigeration.*
- *Allow for an extra 1/8" per joint when lining up merchandisers.*
- *Front sill height does not affect case performance unless specifically shown.*
- *Front and rear sill heights vary with baseframe height.*

* *ANSI - American National Standard Institute*
NSF - National Sanitation Foundation

Glass Door Reach-in Frozen Food/Ice Cream Merchandiser

KRZH - 2, 3, 4 & 5-door reach in freezer

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Drain Pan Heaters 208 Volts Amps	Drain Pan Heaters 208 Volts Watts	Drain Pan Heaters 240 Volts Amps	Drain Pan Heaters 240 Volts Watts
KRZH	2-door	2	2.20	167	6.06	727	0.86	179	0.99	238
	3-door	3	3.30	250	8.48	1018	0.86	179	0.99	238
	4-door	4	4.40	333	10.82	1298	0.86	179	0.99	238
	5-door	5	5.50	417	12.88	1545	0.86	179	0.99	238

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

Lighting Data

Model		Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
KRZH	2-door	1.88	226
	3-door	2.50	300
	4-door	3.13	376
	5-door	3.75	450

Defrost Heater Data

Model		Defrost Heaters[2] Hot Gas Defrost 208 Volts Amps	208 Volts Watts	240 Volts Amps	240 Volts Watts	Defrost Heaters Electric Defrost 208 Volts Amps	208 Volts Watts	240 Volts Amps	240 Volts Watts
KRZH	2-door	1.92	400	2.22	533	5.77	1200	6.66	1593
	3-door	1.92	400	2.22	533	7.69	1600	8.88	2128
	4-door	1.92	400	2.22	533	12.02	2500	13.87	3355
	5-door	2.40	500	2.78	666	15.39	3200	17.75	4260

[2]Note: Hot gas defrost requires electric assist heaters.

Guidelines & Control Settings

Model	BTUH/door[4]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[5] (FPM)
KRZH - F[3]	1850	-12	3-5	-8	-3	420
KRZH - C[3]	2200	-22	3-5	-12	-7	420

[3] F = Frozen food, C = Ice cream.

[4] BTUH's/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[5] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
KRZH	1	13 - 15	60	73	- - -[6]	- - -	24	73	- - -	- - -

[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

All measurements are taken per CRMA specifications.

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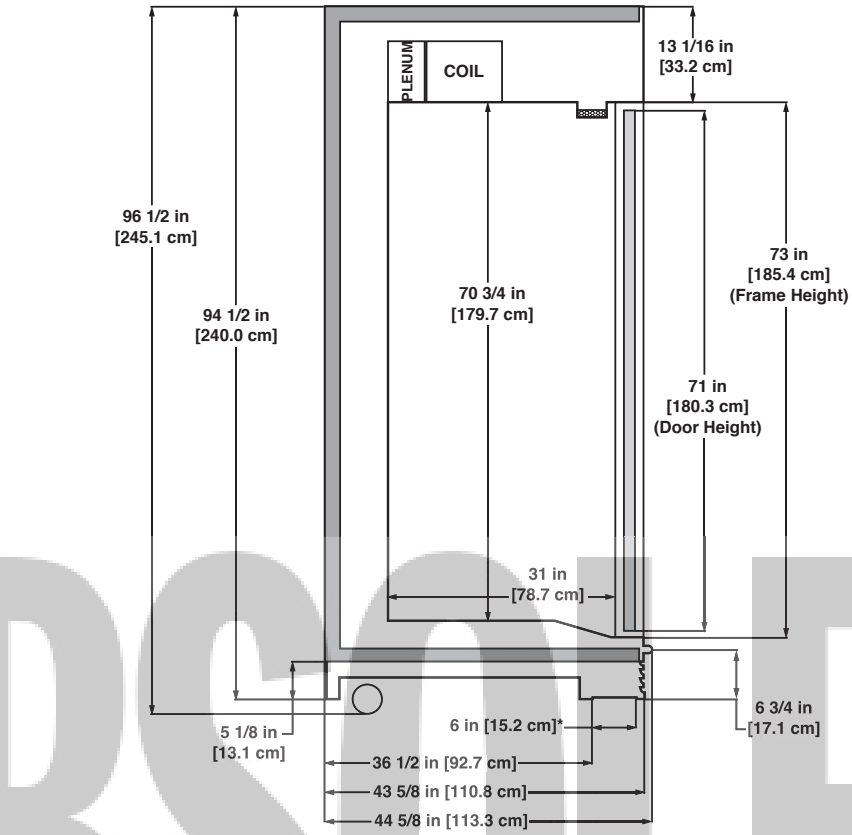

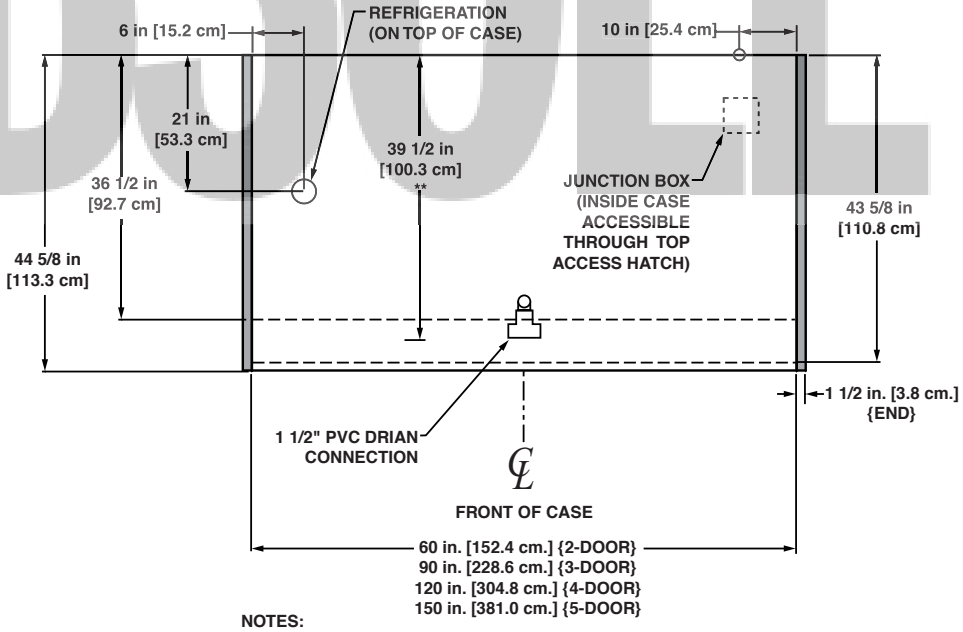

NOTES:

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

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- 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 - 1/2"
- AVAILABLE SHELF SIZES: WIRE SHELVES 16", 18", 20", 22", & 23 1/2"
  SOLID SHELVES 18", 20", 22", & 24"

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Narrow Glass Door Reach-in Beverage Merchandiser

ONRB - 2, 3, 4 & 5-door

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Defrost Heaters 208 Volts		Defrost Heaters 240 Volts	
			Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONRB	2-door	2	1.00	60	0.64	34	2.40	288	4.39	914	5.06	1215
	3-door	3	1.50	90	0.96	51	3.28	394	4.96	1032	5.71	1370
	4-door	4	2.00	120	1.28	69	4.33	520	6.51	1355	7.55	1813
	5-door	5	2.50	150	1.60	85	5.30	636	7.96	1655	9.17	2201

Lighting Data

Model		Typical per Light Row 120 Volts		Maximum Lighting 120 Volts	
		Amps	Watts	Amps	Watts
ONRB	2-door	NA[1]	NA	1.45	174
	3-door	NA	NA	1.94	233
	4-door	NA	NA	2.42	290
	5-door	NA	NA	2.91	349

[1] Not applicable.

Guidelines & Control Settings

Model	BTUH/door[3]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
ONRB[2]	900	22	6-8	32	35	460

[2] All data listed is for an ONRB configured with 20" shelves.

[3] BTUH's/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ONRB	1	6 - 8	30	47	45	47	24	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 CRMA specifications.

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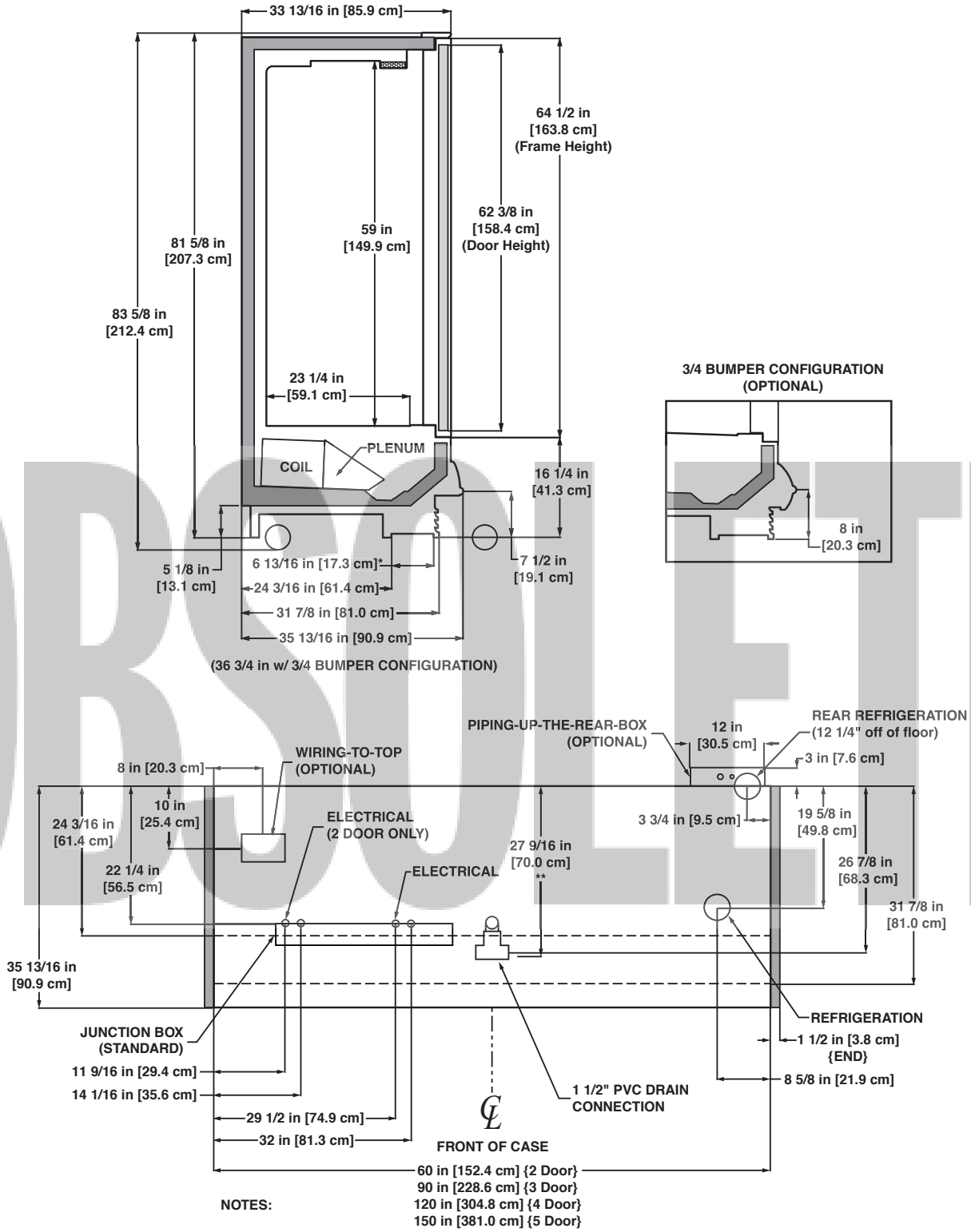

NOTES:

* STUB-UP AREA

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

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- 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 (WHEN THE CASE IS PIPED TO THE REAR A 3" TO 4" GAP MAY BE REQUIRED)
- BACK PANELS ADD APPROXIMATELY 1" TO THE REAR OF THE CASE
- SUCTION LINE 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED TO TOP 5/8"
- 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 3 22" SHELVES BELOW TOP SHELF)

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High Narrow Glass Door Reach-in Beverage Merchandiser

ONRBH - 2, 3, 4 & 5-door

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
ONRBH	2-door	2	1.00	60	0.64	34	2.45	294	4.39	914	5.06	1215
	3-door	3	1.50	90	0.96	51	3.35	402	4.96	1032	5.71	1370
	4-door	4	2.00	120	1.28	69	4.42	530	6.51	1355	7.55	1813
	5-door	5	2.50	150	1.60	85	5.41	649	7.96	1655	9.17	2201

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ONRBH	2-door	NA[1]	NA	1.45	174
	3-door	NA	NA	1.94	233
	4-door	NA	NA	2.42	290
	5-door	NA	NA	2.91	349

[1] Not applicable.

Guidelines & Control Settings

Model	BTUH/door[3]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
ONRBH[2]	900	22	6-8	32	35	405

[2] All data listed is for an ONRBH configured with 20" shelves.

[3] BTUH's/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ONRBH	1	6 - 8	30	47	45	47	24	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 CRMA specifications.

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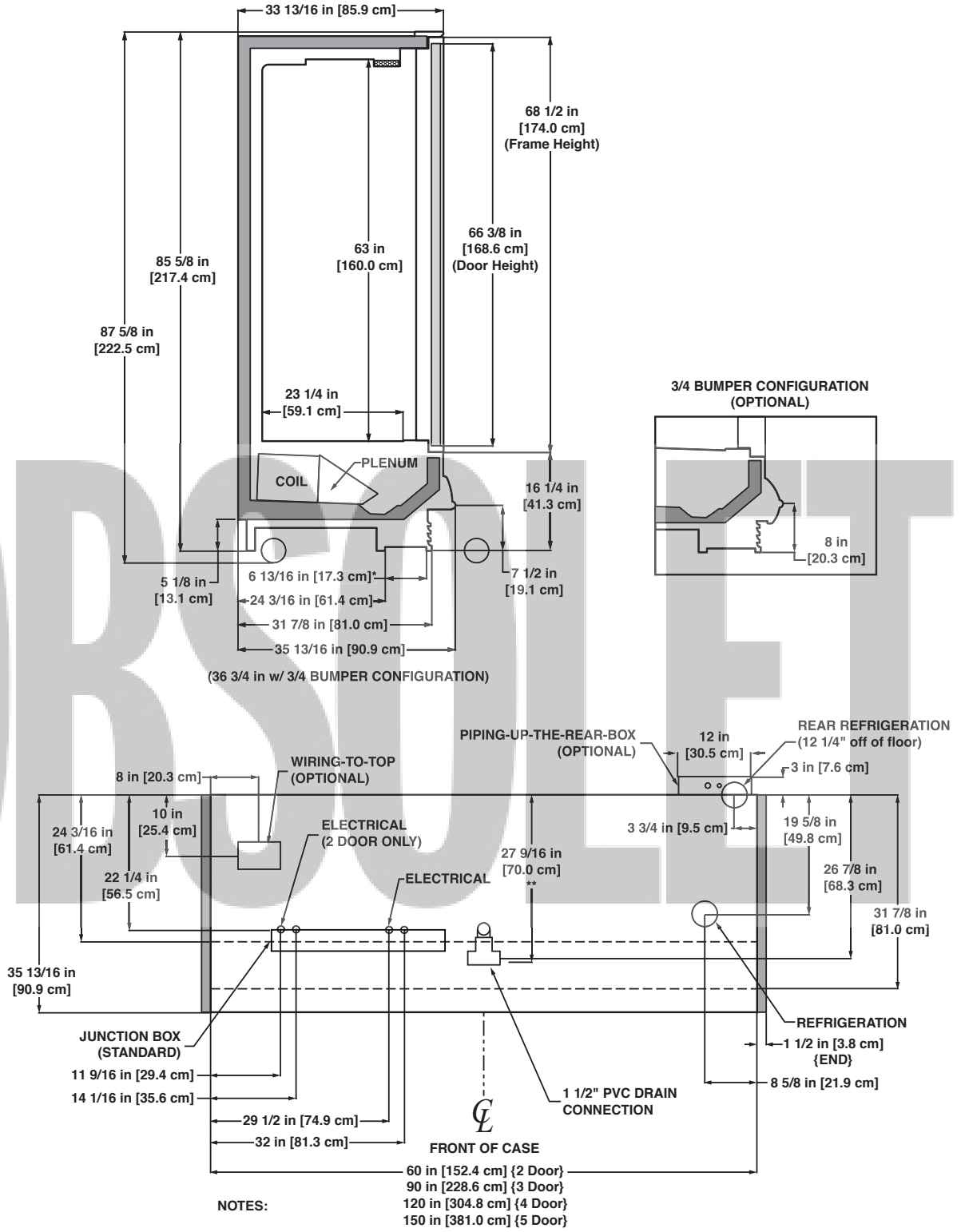

NOTES:

* STUB-UP AREA

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

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
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- BACK PANELS ADD APPROXIMATELY 1" TO THE REAR OF THE CASE
- SUCTION LINE 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED TO TOP 5/8"
- 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 3 22" SHELVES BELOW TOP SHELF)

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Glass Door Reach-in Beverage Merchandiser

ORB - 2, 3, 4 & 5-door

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Defrost Heaters 208 Volts		Defrost Heaters 240 Volts	
			Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ORB	2-door	2	1.00	60	0.64	34	2.40	288	4.39	914	5.06	1215
	3-door	3	1.50	90	0.96	51	3.28	394	4.96	1032	5.71	1370
	4-door	4	2.00	120	1.28	69	4.33	520	6.51	1355	7.55	1813
	5-door	5	2.50	150	1.60	85	5.30	636	7.96	1655	9.17	2201

Lighting Data

Model		Typical per Light Row 120 Volts		Maximum Lighting 120 Volts	
		Amps	Watts	Amps	Watts
ORB	2-door	NA[1]	NA	1.45	174
	3-door	NA	NA	1.94	233
	4-door	NA	NA	2.42	290
	5-door	NA	NA	2.91	349

[1] Not applicable.

Guidelines & Control Settings

Model	BTUH/door[2]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
ORB	900	22	6-8	27	30	380

[2] BTUH's/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ORB	1	6 - 8	30	47	45	47	24	45	- - -[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 CRMA specifications.

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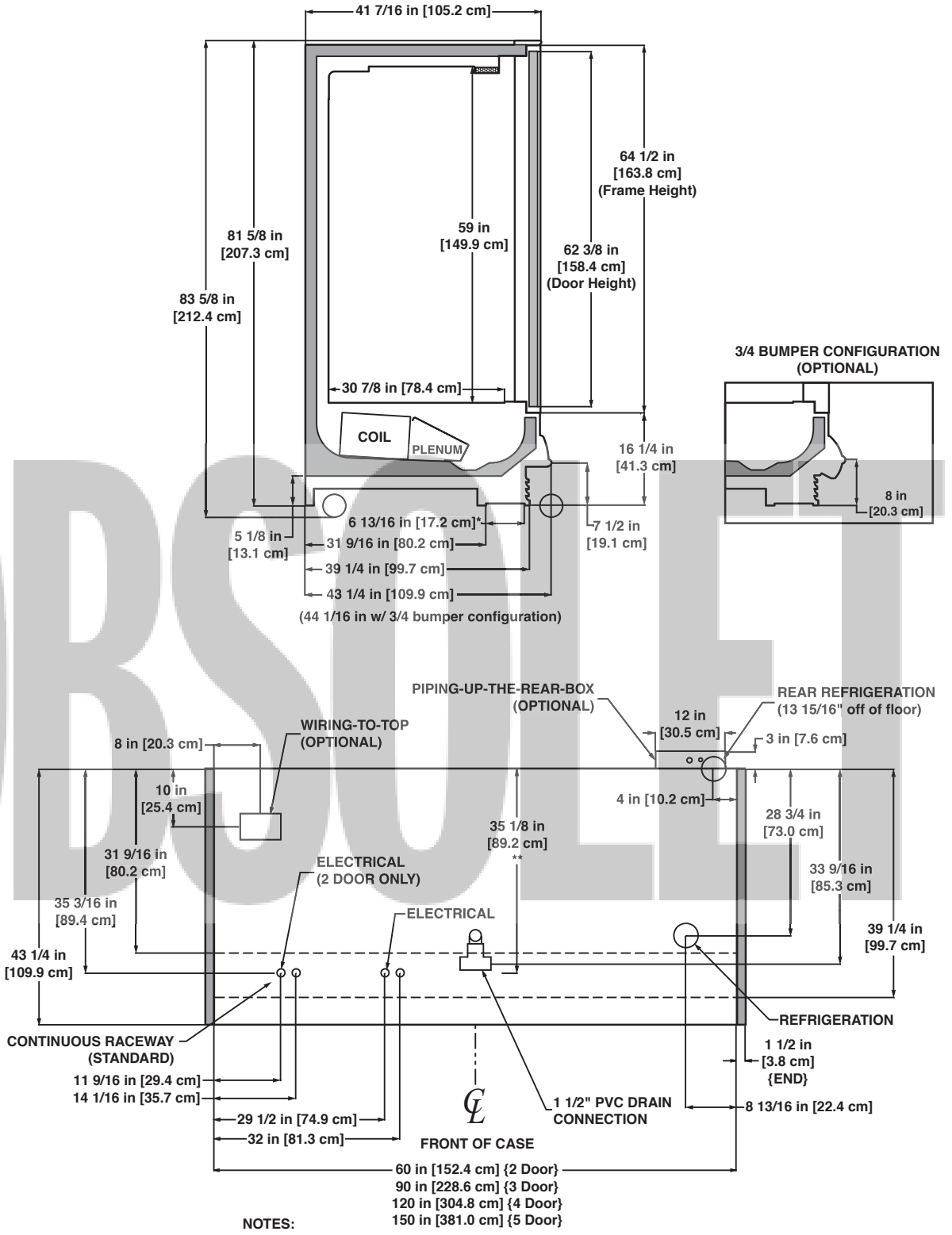

NOTES:

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- AVAILABLE SHELF SIZES: WIRE SHELVES 16", 18", 20", 22" & 23 1/2" SOLID SHELVES 18", 20", 22" & 24"

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High Glass Door Reach-in Beverage Merchandiser

ORBH - 2, 3, 4 & 5-door

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
ORBH	2-door	2	1.00	60	0.64	34	2.45	294	4.39	914	5.06	1215
	3-door	3	1.50	90	0.96	51	3.35	402	4.96	1032	5.71	1370
	4-door	4	2.00	120	1.28	69	4.42	530	6.51	1355	7.55	1813
	5-door	5	2.50	150	1.60	85	5.41	649	7.96	1655	9.17	2201

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ORBH	2-door	NA[1]	NA	1.45	174
	3-door	NA	NA	1.94	233
	4-door	NA	NA	2.42	290
	5-door	NA	NA	2.91	349

[1] Not applicable.

Guidelines & Control Settings

Model	BTUH/door[2]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
ORBH	900	22	6-8	27	30	280

[2] BTUH's/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ORBH	1	6 - 8	30	47	45	47	24	45	- - -[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 CRMA specifications.

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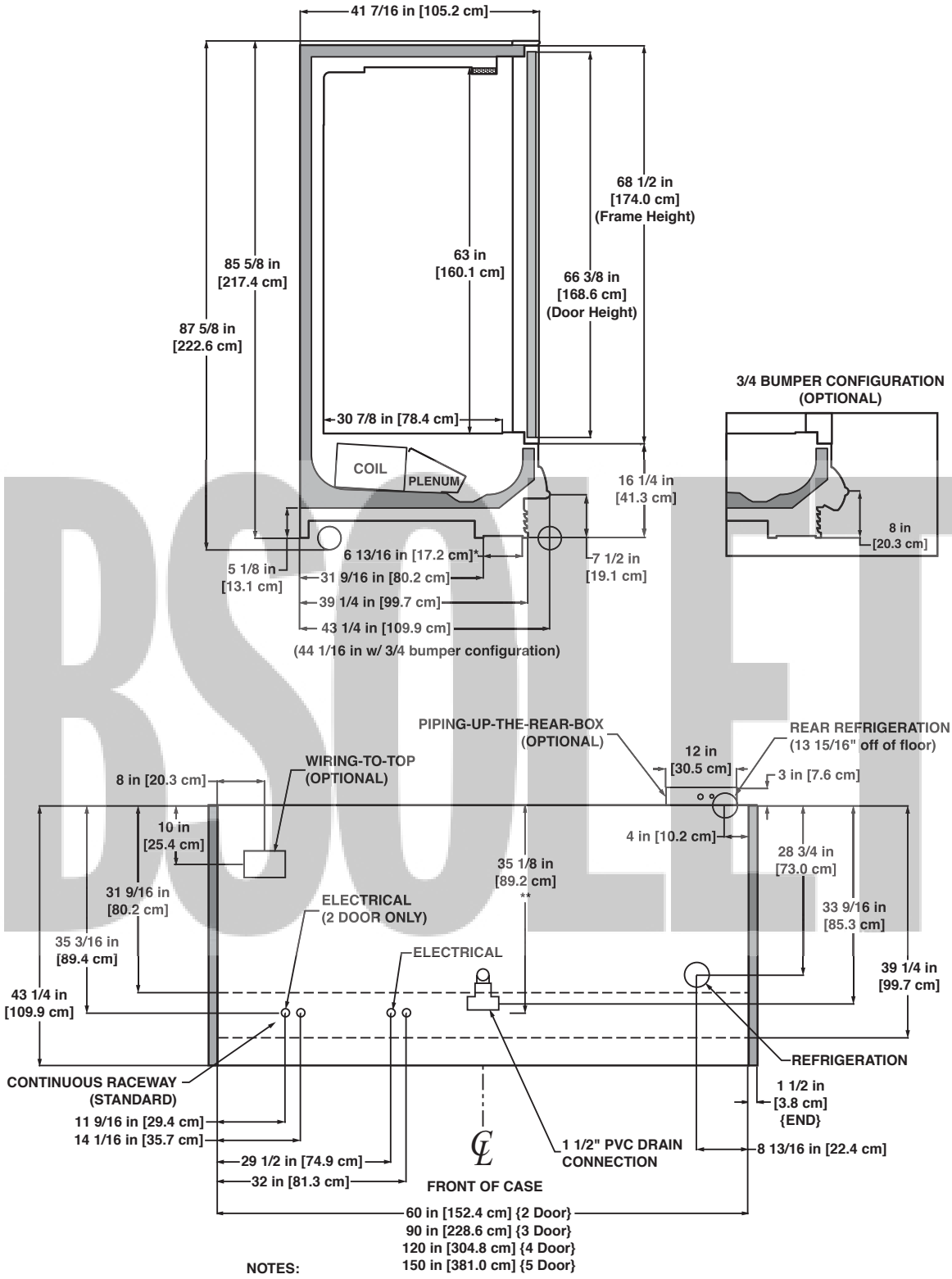

NOTES:

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

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- AVAILABLE SHELF SIZES: WIRE SHELVES 16", 18", 20", 22" & 23 1/2"
  SOLID SHELVES 18", 20", 22" & 24"

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Narrow Glass Door Reach-in Frozen Food/Ice Cream Merchandiser

ONRZ - 2, 3, 4 & 5-door

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
ONRZ	2-door	2	1.00	60	0.64	34	3.82	458	7.61[1]	2742	8.77[1]	3645
	3-door	3	1.50	90	0.96	51	5.31	637	8.59[1]	3096	9.89[1]	4110
	4-door	4	2.00	120	1.28	69	6.93	832	11.28[1]	4065	13.08[1]	5439
	5-door	5	2.50	150	1.60	85	8.56	1027	13.78[1]	4965	15.88[1]	6603

[1] Note: 3 phase load. Figure given is maximum amps per phase.

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ONRZ	2-door	NA[2]	NA	1.45	174
	3-door	NA	NA	1.94	233
	4-door	NA	NA	2.42	290
	5-door	NA	NA	2.91	349

[2] Not applicable.

OBSOLETE

Guidelines & Control Settings

Model	BTUH/door[5]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[6] (FPM)
ONRZ[3] - F[4]	1500	-12	3-5	-2	2	460
ONRZ[3] - C[4]	1600	-22	3-5	-12	-8	460

[3] All data listed is for an ONRZ configured with 20" shelves.

[4] F = Frozen food, C = Ice cream.

[5] BTUH's/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[6] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ONRZ	1	13 - 15	46	73	- - -[7]	- - -	24	60	- - -	- - -

[7] 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 CRMA specifications.

NSF COMPONENT

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A DOVER COMPANY

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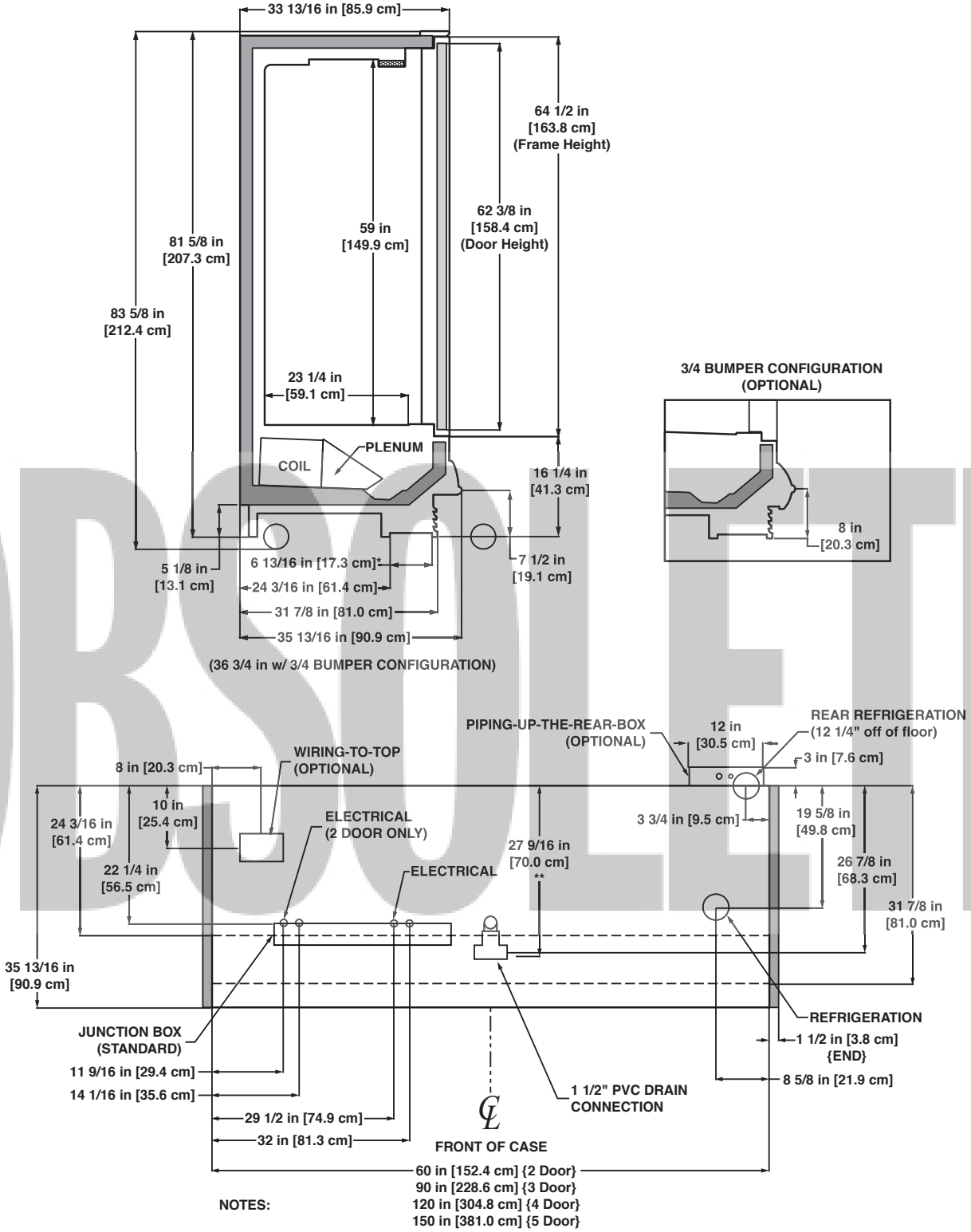

NOTES:

* STUB-UP AREA

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

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- 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 (WHEN THE CASE IS PIPED TO THE REAR A 3" TO 4" GAP MAY BE REQUIRED)
- BACK PANELS ADD APPROXIMATELY 1" TO THE REAR OF THE CASE
- SUCTION LINE 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED TO TOP 5/8"
- 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 3 22" SHELVES BELOW TOP SHELF)

NSF COMPONENT c UL us

A DOVER COMPANY

High Narrow Glass Door Reach-in Frozen Food/Ice Cream Merchandiser

ONRZH - 2, 3, 4 & 5-door

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
ONRZH	2-door	2	1.00	60	0.64	34	3.84	457	7.61[1]	2742	8.77[1]	3645
	3-door	3	1.50	90	0.96	51	5.40	648	8.59[1]	3096	9.89[1]	4110
	4-door	4	2.00	120	1.28	69	6.97	836	11.28[1]	4065	13.08[1]	5439
	5-door	5	2.50	150	1.60	85	8.64	1037	13.78[1]	4965	15.88[1]	6603

[1] Note: 3 phase load. Figure given is maximum amps per phase.

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ONRZH	2-door	NA[2]	NA	1.45	174
	3-door	NA	NA	1.94	233
	4-door	NA	NA	2.42	290
	5-door	NA	NA	2.91	349

[2] Not applicable.

Guidelines & Control Settings

Model	BTUH/door[5]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[6] (FPM)
ONRZH[3] - F[4]	1500	-12	3-5	-8	-4	405
ONRZH[3] - C[4]	1600	-22	3-5	-12	-4	405

[3] All data listed is for an ONRZH configured with 20" shelves.

[4] F = Frozen food, C = Ice cream.

[5] BTUH's/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[6] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ONRZH	1	13 - 15	46	73[7]	- - -[7]	- - -	24	60	- - -	- - -

[7] 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 CRMA specifications.

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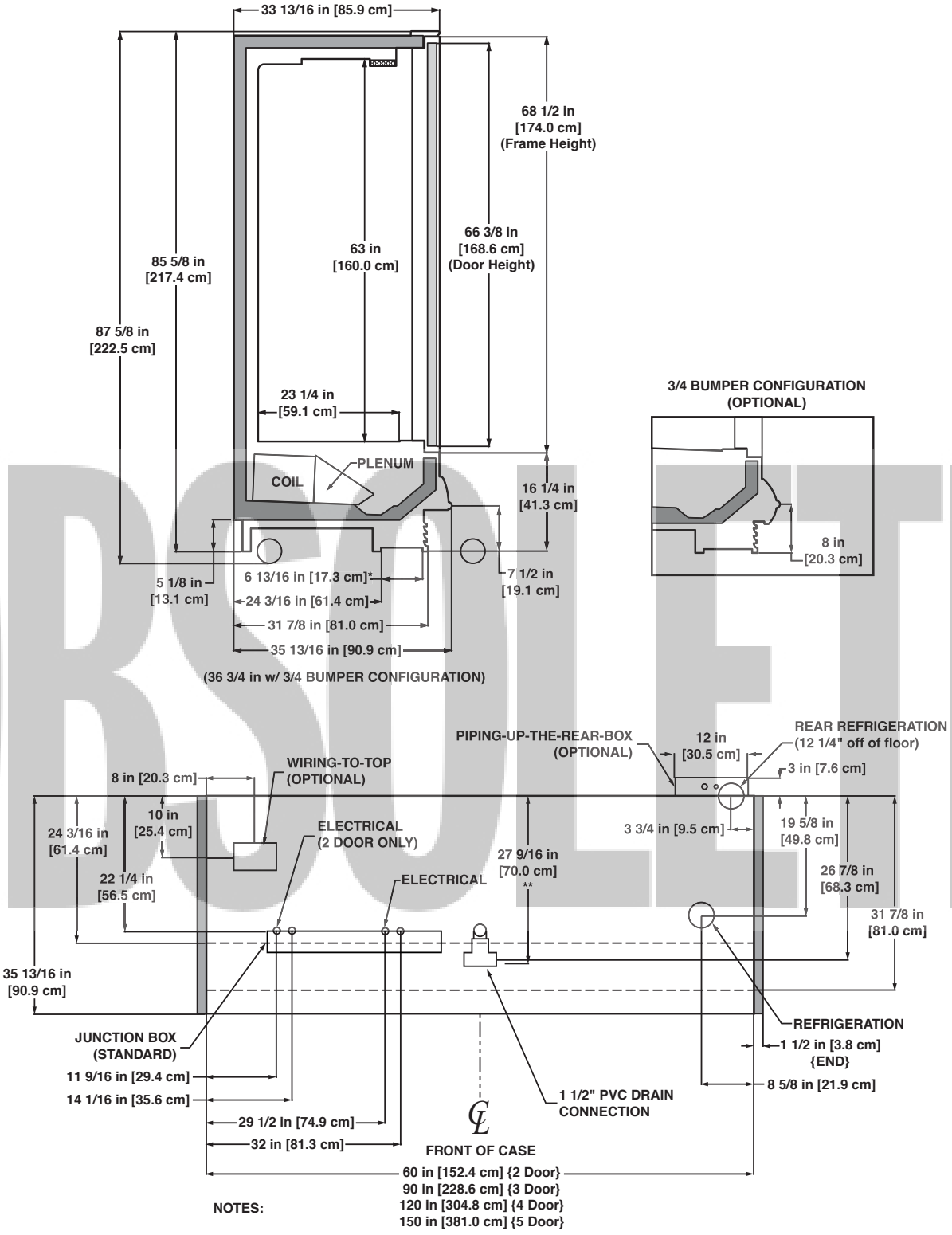

NOTES:

* STUB-UP AREA

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

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- 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
  (WHEN THE CASE IS PIPED TO THE REAR A 3" TO 4" GAP MAY BE REQUIRED)
- BACK PANELS ADD APPROXIMATELY 1" TO THE REAR OF THE CASE
- SUCTION LINE 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED TO TOP 5/8"
- 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 3 22" SHELVES BELOW TOP SHELF)

OBSOLETE

Glass Door Reach-in Frozen Food/Ice Cream Merchandiser

ORZ - 2, 3, 4 & 5-door

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
ORZ	2-door	2	1.00	60	0.64	34	3.82	458	7.61[1]	2742	8.77[1]	3645
	3-door	3	1.50	90	0.96	51	5.31	637	8.59[1]	3096	9.89[1]	4110
	4-door	4	2.00	120	1.28	69	6.93	832	11.28[1]	4065	13.08[1]	5439
	5-door	5	2.50	150	1.60	85	8.56	1027	13.78[1]	4965	15.88[1]	6603

[1] Note: 3 phase load. Figure given is maximum amps per phase.

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ORZ	2-door	NA[2]	NA	1.45	174
	3-door	NA	NA	1.94	233
	4-door	NA	NA	2.42	290
	5-door	NA	NA	2.91	349

[2] Not applicable.

OBSOLETE

Guidelines & Control Settings

Model	BTUH/door[4]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[5] (FPM)
ORZ - F[3]	1400	-12	3-5	-8	-5	380
ORZ - C[3]	1600	-22	3-5	-12	-4	380

[3] F = Frozen food, C = Ice cream.

[4] BTUH's/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[5] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ORZ	1	13 - 15	46	73	- - -[6]	- - -	24	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

All measurements are taken per CRMA specifications.

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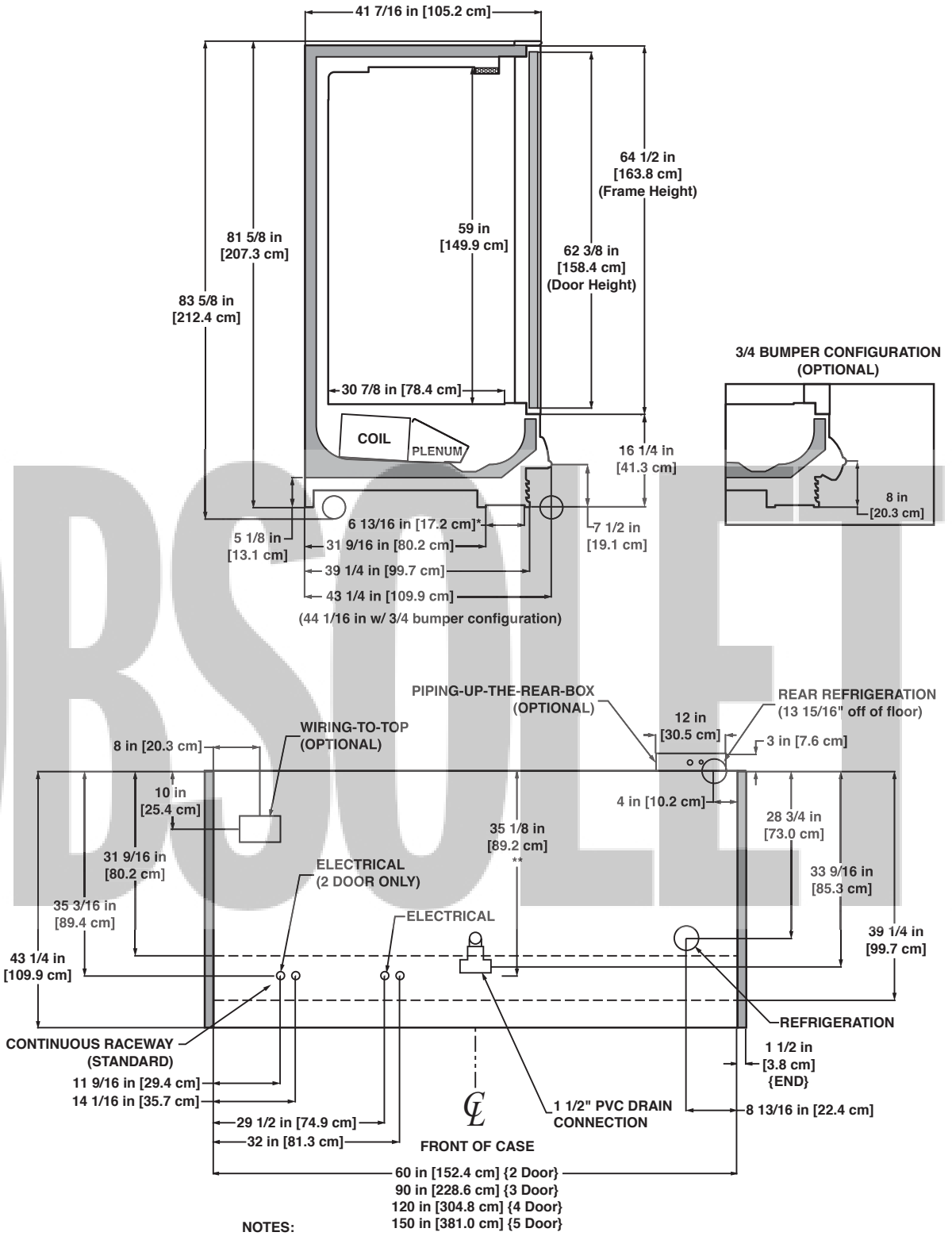

NOTES:

* STUB-UP AREA

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

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- 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 (WHEN THE CASE IS PIPED TO THE REAR A 3" TO 4" GAP MAY BE REQUIRED)
- BACK PANELS ADD APPROXIMATELY 1" TO THE REAR OF THE CASE
- SUCTION LINE 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED TO TOP 5/8"
- AVAILABLE SHELF SIZES: WIRE SHELVES 16", 18", 20", 22" & 23 1/2" SOLID SHELVES 18", 20", 22" & 24"

NSF COMPONENT c UL us

A DOVER COMPANY

OBSOLETE

High Glass Door Reach-in Frozen Food/Ice Cream Merchandiser

ORZH - 2, 3, 4 & 5-door

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
ORZH	2-door	2	1.00	60	0.64	34	3.84	457	7.61[1]	2742	8.77[1]	3645
	3-door	3	1.50	90	0.96	51	5.40	648	8.59[1]	3096	9.89[1]	4110
	4-door	4	2.00	120	1.28	69	6.97	836	11.28[1]	4065	13.08[1]	5439
	5-door	5	2.50	150	1.60	85	8.64	1037	13.78[1]	4965	15.88[1]	6603

[1] Note: 3 phase load. Figure given is maximum amps per phase.

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ORZH	2-door	NA[2]	NA	1.45	174
	3-door	NA	NA	1.94	233
	4-door	NA	NA	2.42	290
	5-door	NA	NA	2.91	349

[2] Not applicable.

Guidelines & Control Settings

Model	BTUH/door[4]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[5] (FPM)
ORZH - F[3]	1500	-12	3-5	-8	-4	405
ORZH - C[3]	1600	-22	3-5	-12	-4	405

[3] F = Frozen food, C = Ice cream.

[4] BTUH's/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[5] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ORZH	1	13 - 15	46	73	- - -[6]	- - -	24	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

All measurements are taken per CRMA specifications.

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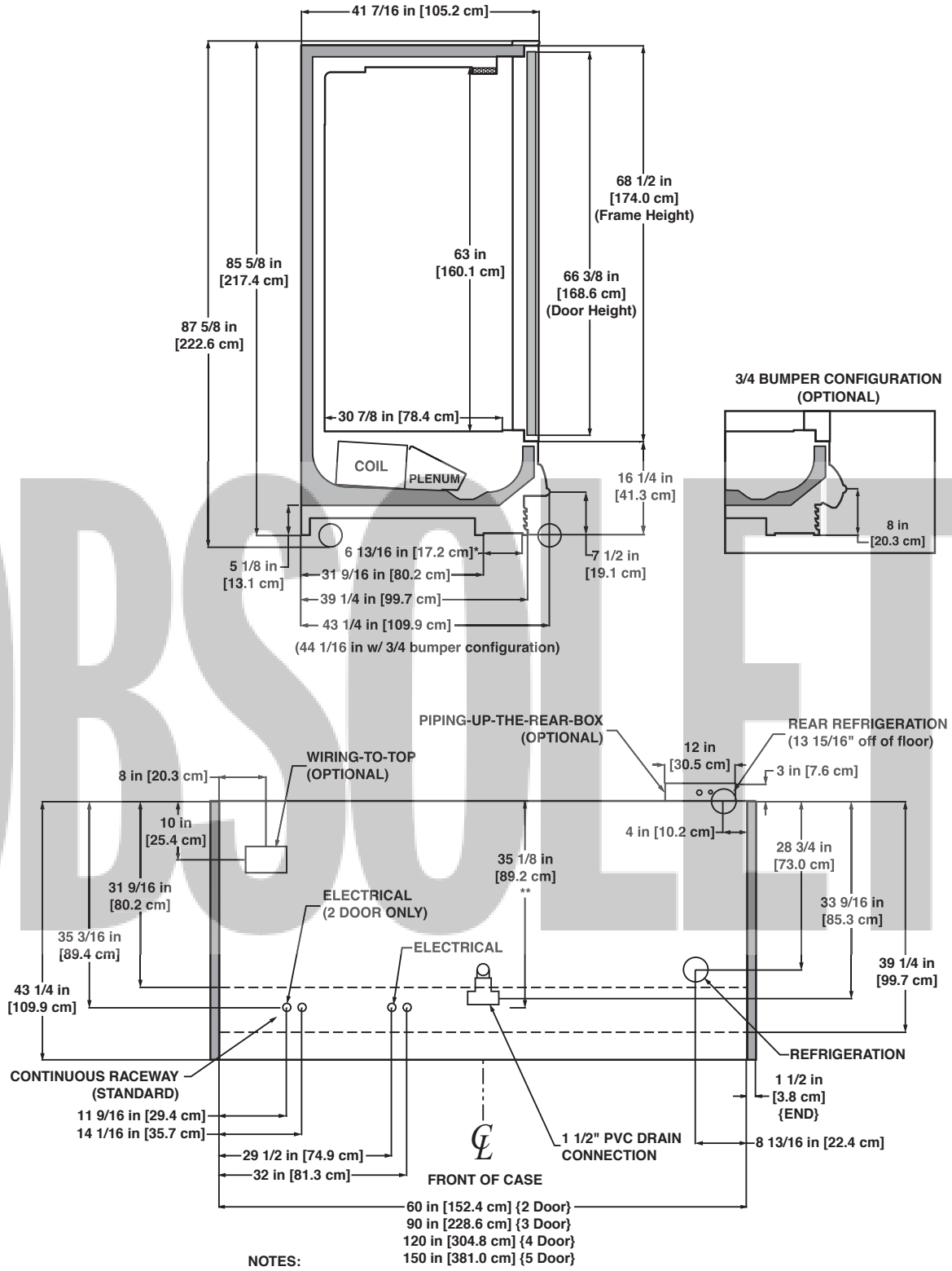

NOTES:

* STUB-UP AREA

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

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- 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 (WHEN THE CASE IS PIPED TO THE REAR A 3" TO 4" GAP MAY BE REQUIRED)
- BACK PANELS ADD APPROXIMATELY 1" TO THE REAR OF THE CASE
- SUCTION LINE 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED TO TOP 5/8"
- AVAILABLE SHELF SIZES: WIRE SHELVES 16", 18", 20", 22" & 23 1/2"
  SOLID SHELVES 18", 20", 22" & 24"

NSF COMPONENT c UL us

A DOVER COMPANY

Glass Door Reach-in Crown End Frozen Food/Ice Cream Merchandiser

OREZ

Electrical Data

Model	Fans per Case	Standard Fans		High Efficiency Fans		Anti-Condensate Heaters		Defrost Heaters			
		120 Volts		120 Volts		120 Volts		208 Volts		240 Volts	
		Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OREZ	3	1.50	90	0.96	51	6.52	782	5.00[1]	1800	5.77[1]	2394

[1] Note: 3 phase load. Figure given is maximum amps per phase.

Lighting Data

Model	Typical per Light Row		Maximum Lighting	
	120 Volts		120 Volts	
	Amps	Watts	Amps	Watts
OREZ	NA[2]	NA	2.91	349

[2] Not applicable.

OBSOLETE

Guidelines & Control Settings

Model	BTUH/door[4]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[5] (FPM)
OREZ - F[3]	1768	-12	3-5	2	7	350
OREZ - C[3]	1811	-22	3-5	-6	-1	340

[3] F = Frozen food, C = Ice cream.

[4] BTUH's/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[5] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
			Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
OREZ-F	1	13 - 15	55	73	- - -[6]	- - -	26	60	- - -	- - -
OREZ-C	1	13 - 15	75	73	- - -	- - -	26	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

All measurements are taken per CRMA specifications.

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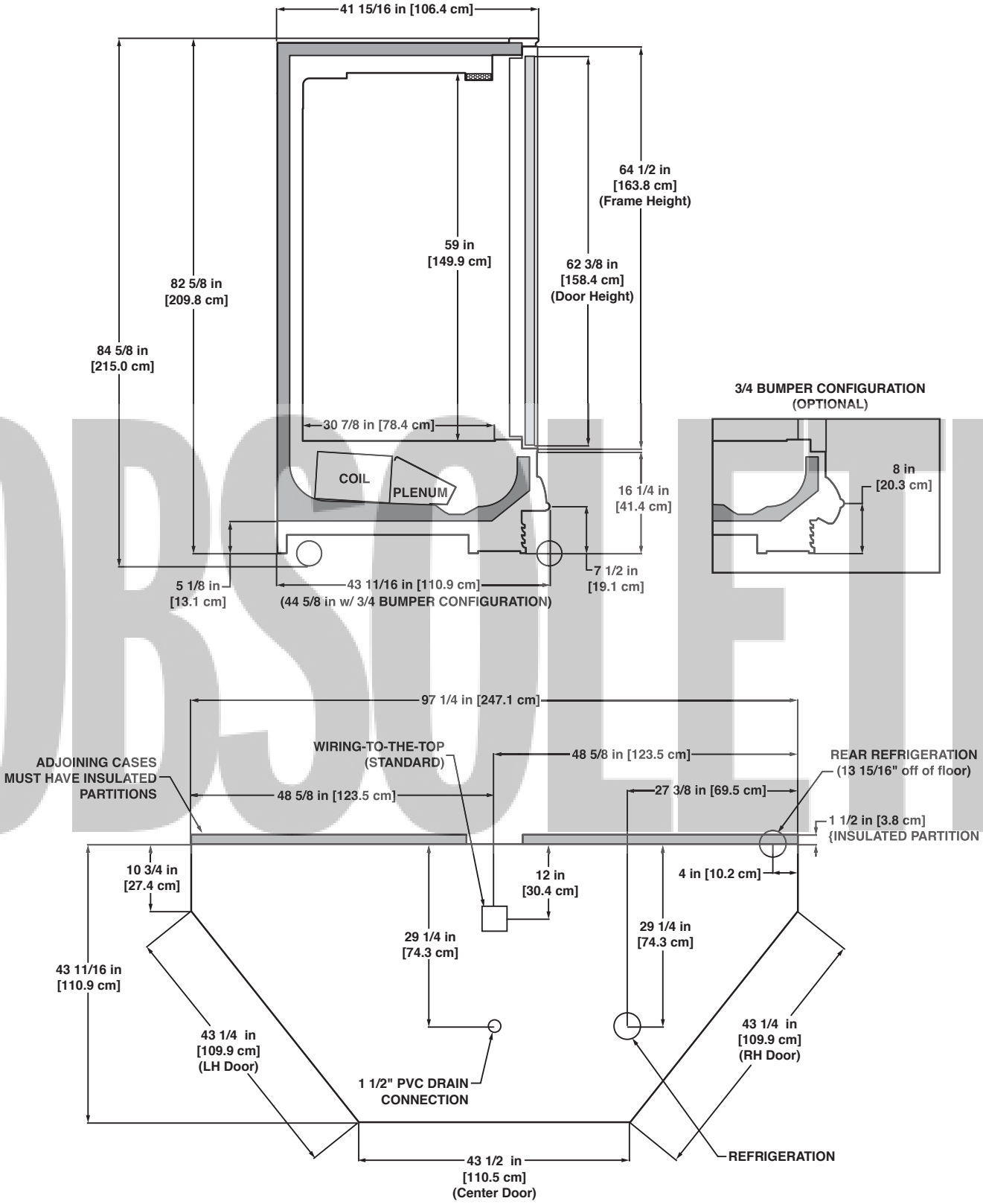

NOTES:

- 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 - 1/2"
- AVAILABLE SHELF SIZES: WIRE SHELVES 23 1/2"

NSF COMPONENT

c UL us

A DOVER COMPANY

Narrow Glass Door Reach-in Back-to-Back Frozen Food/Ice Cream Merchandiser

ONRIZ - 2, 3, 4 & 5-door

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
ONRIZ	2-door	4	2.00	120	1.28	68	7.64	916	15.22[1]	5484	17.54[1]	7290
	3-door	6	3.00	180	1.92	102	10.62	1274	17.18[1]	6192	1978[1]	8220
	4-door	8	4.00	240	2.56	138	13.86	1664	22.56[1]	8130	26.16[1]	10878
	5-door	10	5.00	300	3.20	170	17.12	2054	27.56[1]	9930	31.76[1]	13206

[1] Note: 3 phase load. Figure given is maximum amps per phase.

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ONRIZ	2-door	NA[2]	NA	2.90	348
	3-door	NA	NA	3.88	466
	4-door	NA	NA	4.84	580
	5-door	NA	NA	5.82	698

[2] Not applicable.

Guidelines & Control Settings

Model	BTUH/door[4]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[5] (FPM)
ONRIZ - F[3]	1210	-12	3-5	-2	2	460
ONRIZ - C[3]	1405	-22	3-5	-12	-8	460

[3] F = Frozen food, C = Ice cream.

[4] BTUH's/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[5] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ONRIZ	1	13 - 15	46	73	- - -[6]	- - -	24	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

All measurements are taken per CRMA specifications.

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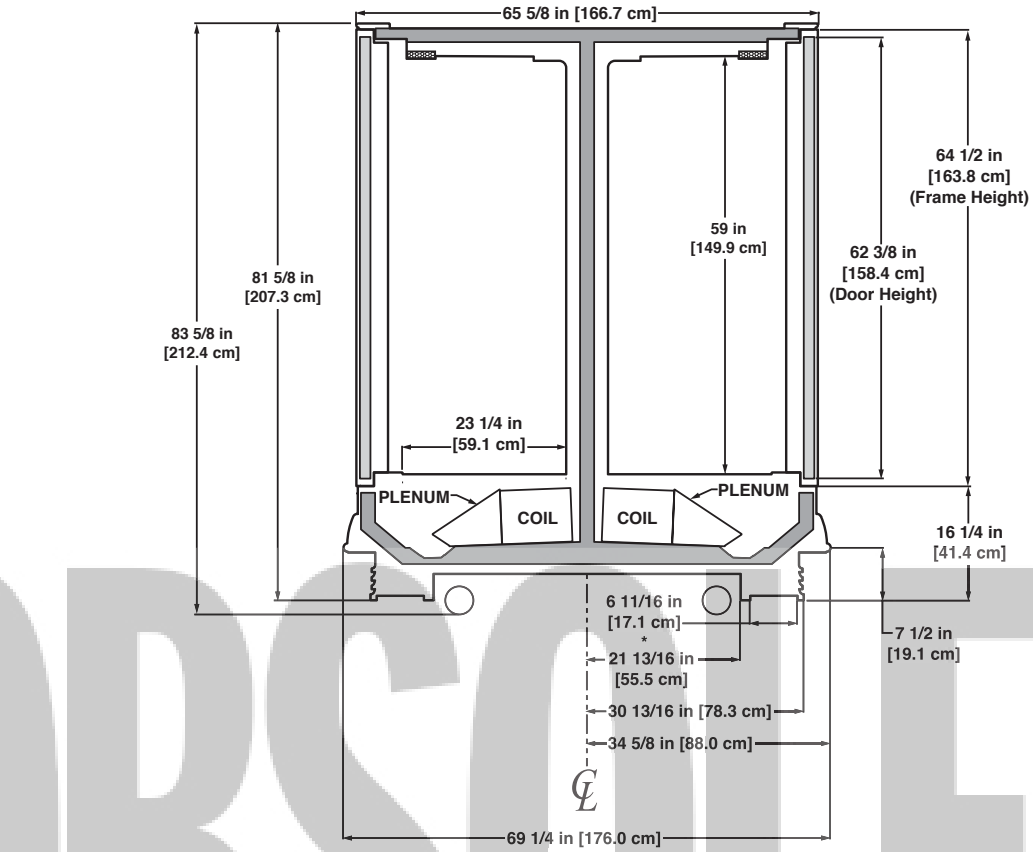

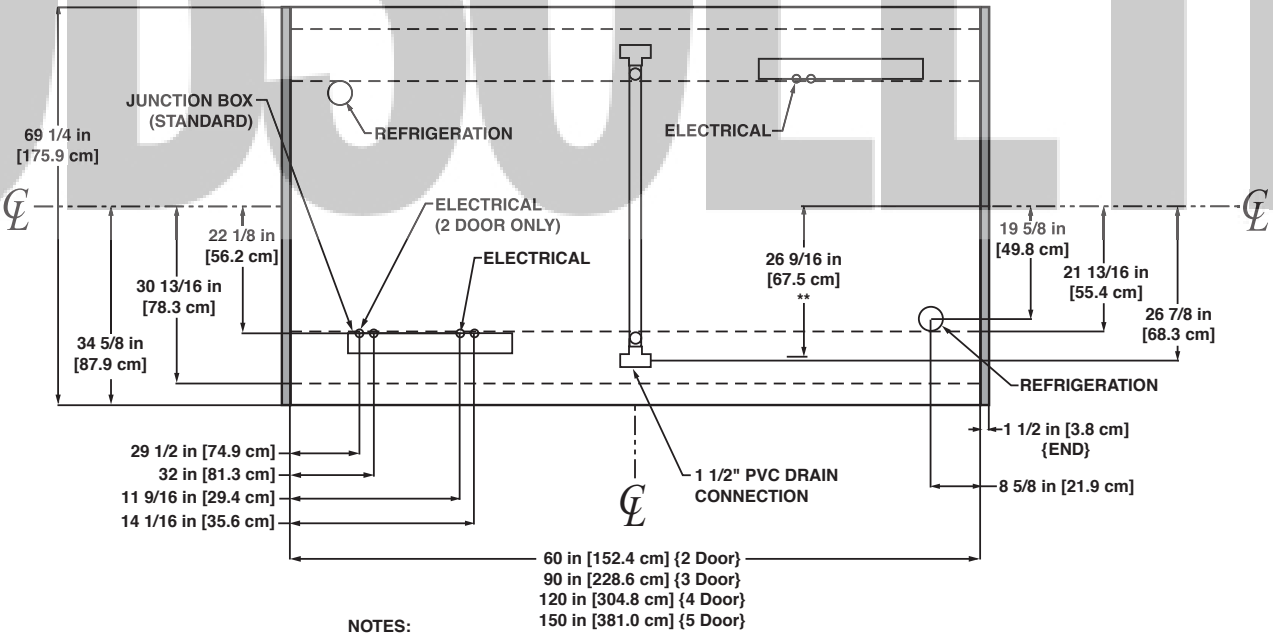

NOTES:

* STUB-UP AREA

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

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-TO-THE-TOP- ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
- SUCTION LINE 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED TO TOP 5/8"
- 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 3 22" SHELVES BELOW TOP SHELF)

NSF COMPONENT c UL us

A DOVER COMPANY

High Narrow Glass Door Reach-in Back-to-Back Frozen Food/Ice Cream Merchandiser

ONRIZH - 2, 3, 4 & 5-door

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
ONRIZH	2-door	4	2.00	120	1.28	68	7.68	922	15.22[1]	5484	17.54[1]	7290
	3-door	6	3.00	180	1.92	102	10.80	1296	17.18[1]	6192	1978[1]	8220
	4-door	8	4.00	240	2.56	138	13.94	1673	22.56[1]	8130	26.16[1]	10878
	5-door	10	5.00	300	3.20	170	17.28	2074	27.56[1]	9930	31.76[1]	13206

[1] Note: 3 phase load. Figure given is maximum amps per phase.

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ONRIZH	2-door	NA[2]	NA	2.90	348
	3-door	NA	NA	3.88	466
	4-door	NA	NA	4.84	580
	5-door	NA	NA	5.82	698

[2] Not applicable.

Guidelines & Control Settings

Model	BTUH/door[4]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[5] (FPM)
ONRIZH - F[3]	1210	-12	3-5	-2	2	460
ONRIZH - C[3]	1405	-22	3-5	-12	-8	460

[3] F = Frozen food, C = Ice cream.

[4] BTUH's/door listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[5] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ONRIZH	1	13 - 15	46	73	- - -[6]	- - -	24	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

All measurements are taken per CRMA specifications.

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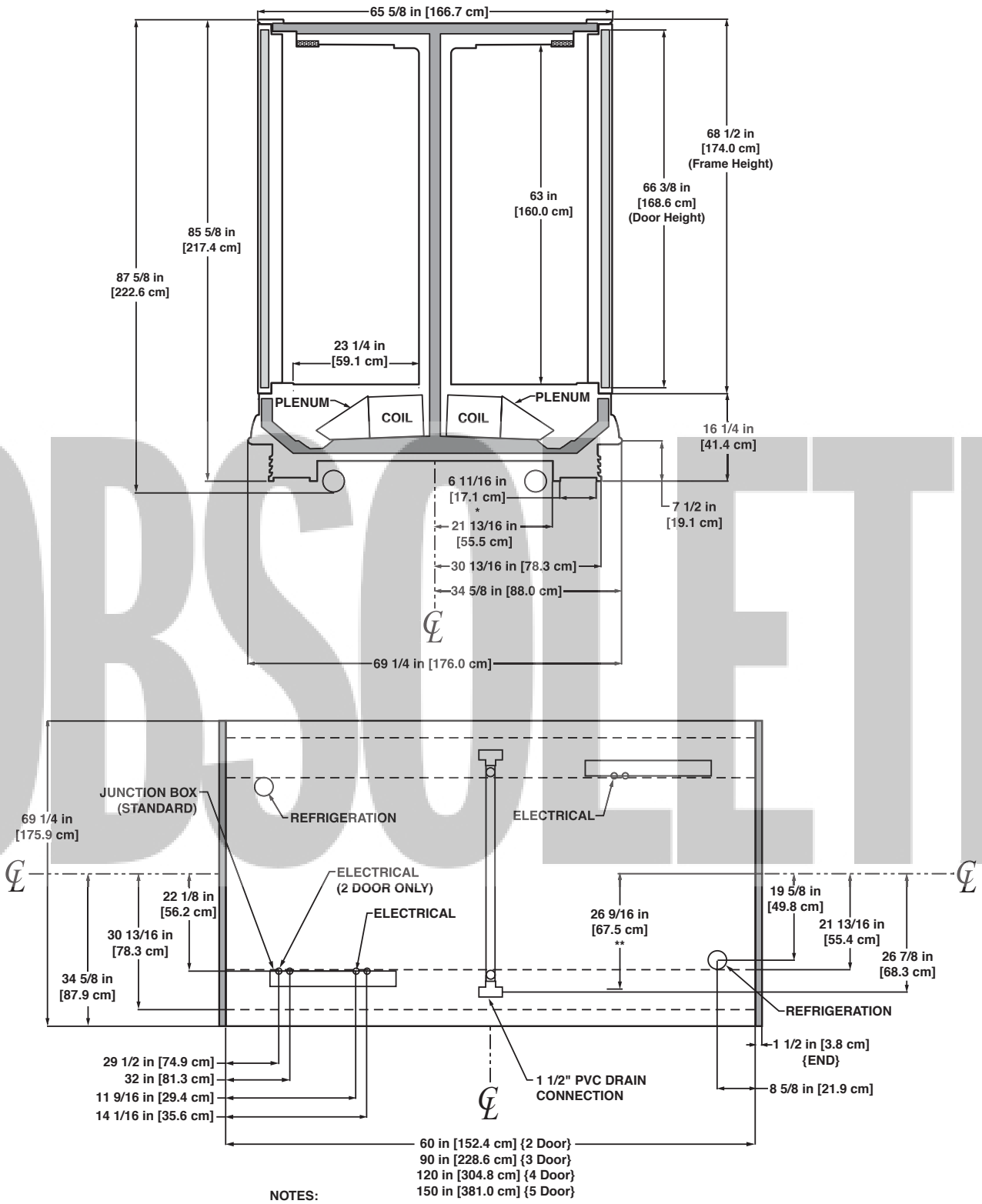


NOTES:

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

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- WIRING-TO-THE-TOP- ADDS APPROXIMATELY 1 INCH TO CASE HEIGHT
- SUCTION LINE 7/8", LIQUID LINE - 1/2", LIQUID LINE PIPED TO TOP 5/8"
- 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 3 22" SHELVES BELOW TOP SHELF)

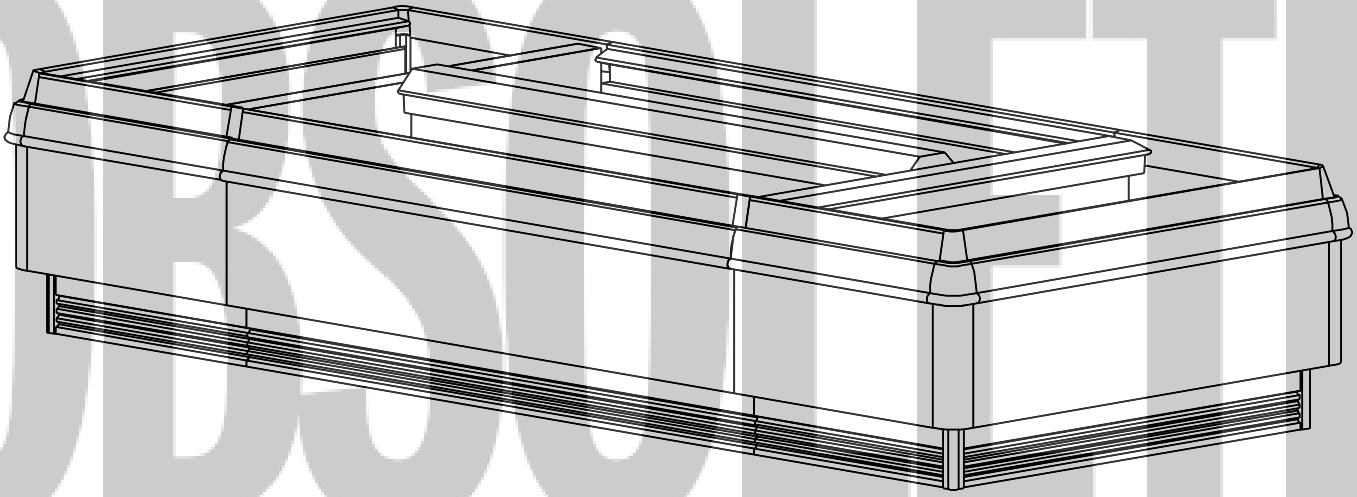
NSF COMPONENT c UL us

A DOVER COMPANY

OBSOLETE

SINGLE DECK ISLAND

OBSOLETE



Notes:

- *Cases comply with ANSI / NSF* Standard 7. Units marked as components require remote refrigeration.*
- *Allow for an extra 1/8" per joint when lining up merchandisers.*
- *Front sill height does not affect case performance unless specifically shown.*
- *Front and rear sill heights vary with baseframe height.*

* *ANSI - American National Standard Institute*
NSF - National Sanitation Foundation

Narrow Island Deli/Meat Merchandiser

ONIM - 8’ & 12’ double wraparound ends
ONIMB - 8’ & 12’ single wraparound end

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts 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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ONIM	8’	NA[1]	NA	1.26	151
	12’	NA	NA	1.46	175
ONIMB	8’	NA	NA	1.26	151
	12’	NA	NA	1.46	175

[1] Not applicable.

Guidelines & Control Settings

Model	BTUH/ft[2]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
ONIM/ONIMB Meat	885[4]	12	6-8	25	34	180
ONIM/ONIMB Deli	860[5]	17	6-8	28	37	180

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Average discharge air velocity at peak of defrost.

[4] ONIM (meat): +400 BTUH per wraparound end.

[5] ONIM (deli): +250 BTUH per wraparound end.

Defrost Controls

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

[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

All measurements are taken per CRMA specifications.

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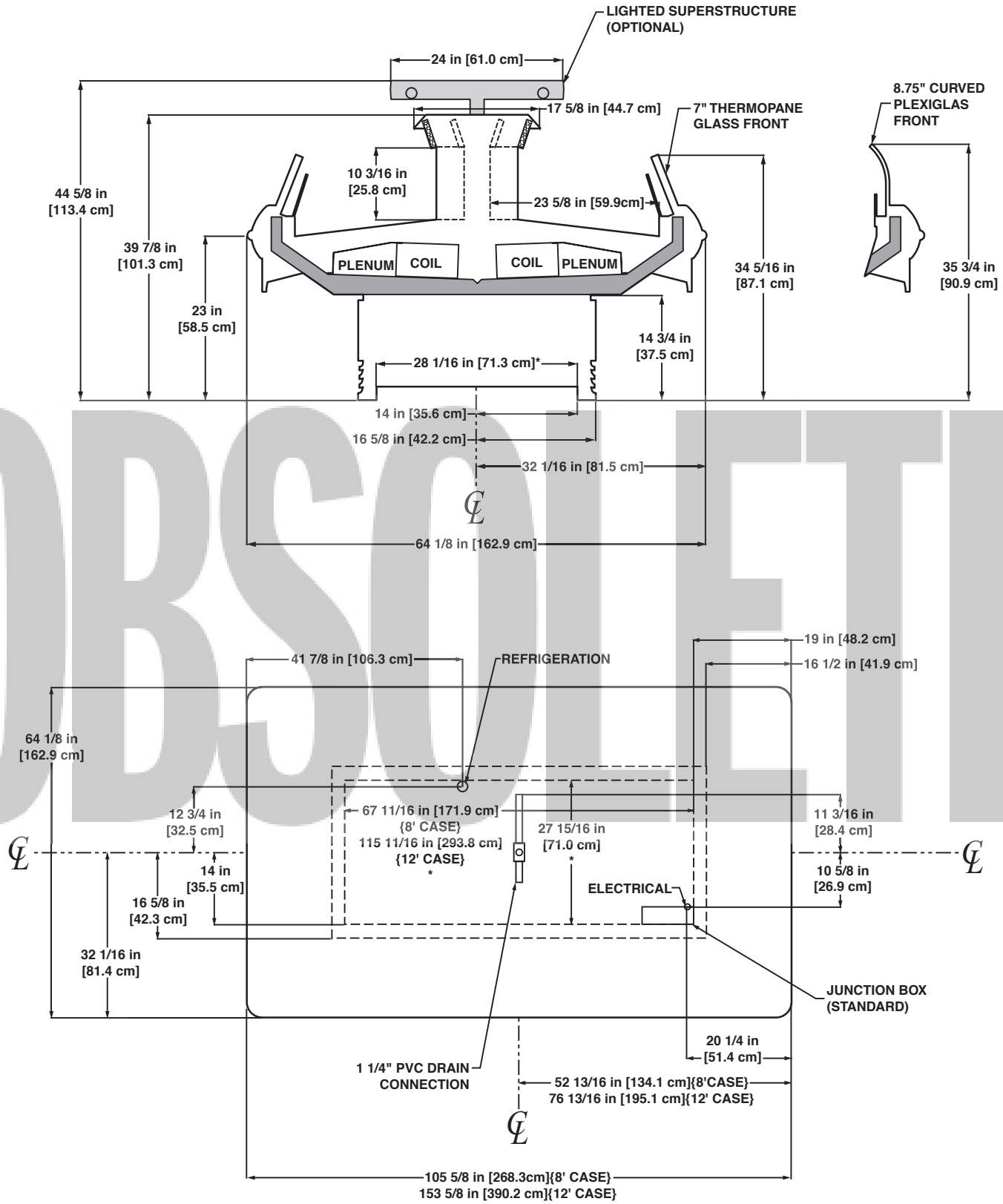

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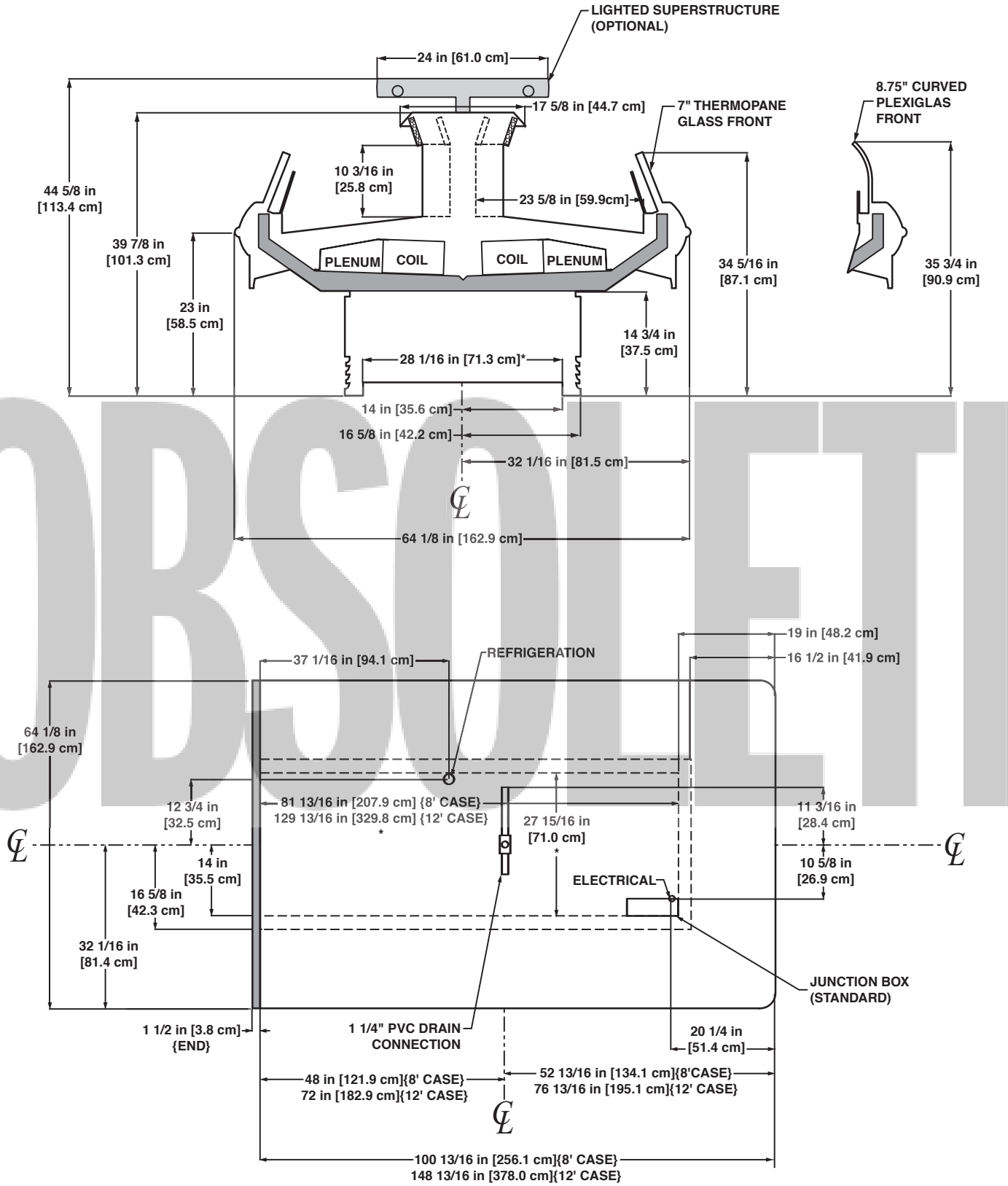
NOTES:

* STUB-UP AREA

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



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NOTES:

* STUB-UP AREA

- SUCTION LINE - 7/8", LIQUID LINE - 1/2"

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SINGLE DECK ISLAND Deli/Meat

Narrow Island Self-Contained Deli/Meat Merchandiser

ONIMA - 8' & 12'

System Requirements

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Fuse Size
ONIMA	8'	208/230	1	60	3 wire + ground	23.3	30
	12'	208/230	1	60	3 wire + ground	29.1	35

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts		Condenser Fans 208 Volts		Anti-Condensate Heaters 120 Volts		Defrost Heaters 208 Volts		Defrost Heaters 240 Volts		Drain Heater 240 Volts		Maximum Lights 120 Volts	
			Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONIMA	8'	6	2.04	102	0.85	130	0.82	98	4.34	902	5.00	1200	5.55	1331	1.26	151
	12'	8	2.72	136	1.70	260	1.08	130	7.22	1502	8.33	2000	5.55	1331	1.46	175

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[1] (FPM)
ONIMA-8'		35	6-8	25	34	180
ONIMA-12'		35	6-8	25	34	180

[1] Average discharge air velocity at peak of defrost.

Condensing Unit Data

Model	Volts	Phase	Frequency (Hz)	HP	RLA[3] (amps)	LRA[4] (amps)	Refrig.	lbs of Refrig.
ONIMA-8'	208/230	1	60	1	10.36	48.2	R22	8.2
ONIMA-12'[2]	208/230	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

Model	Defrosts Per Day	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ONIMA	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
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm

All measurements are taken per CRMA specifications.

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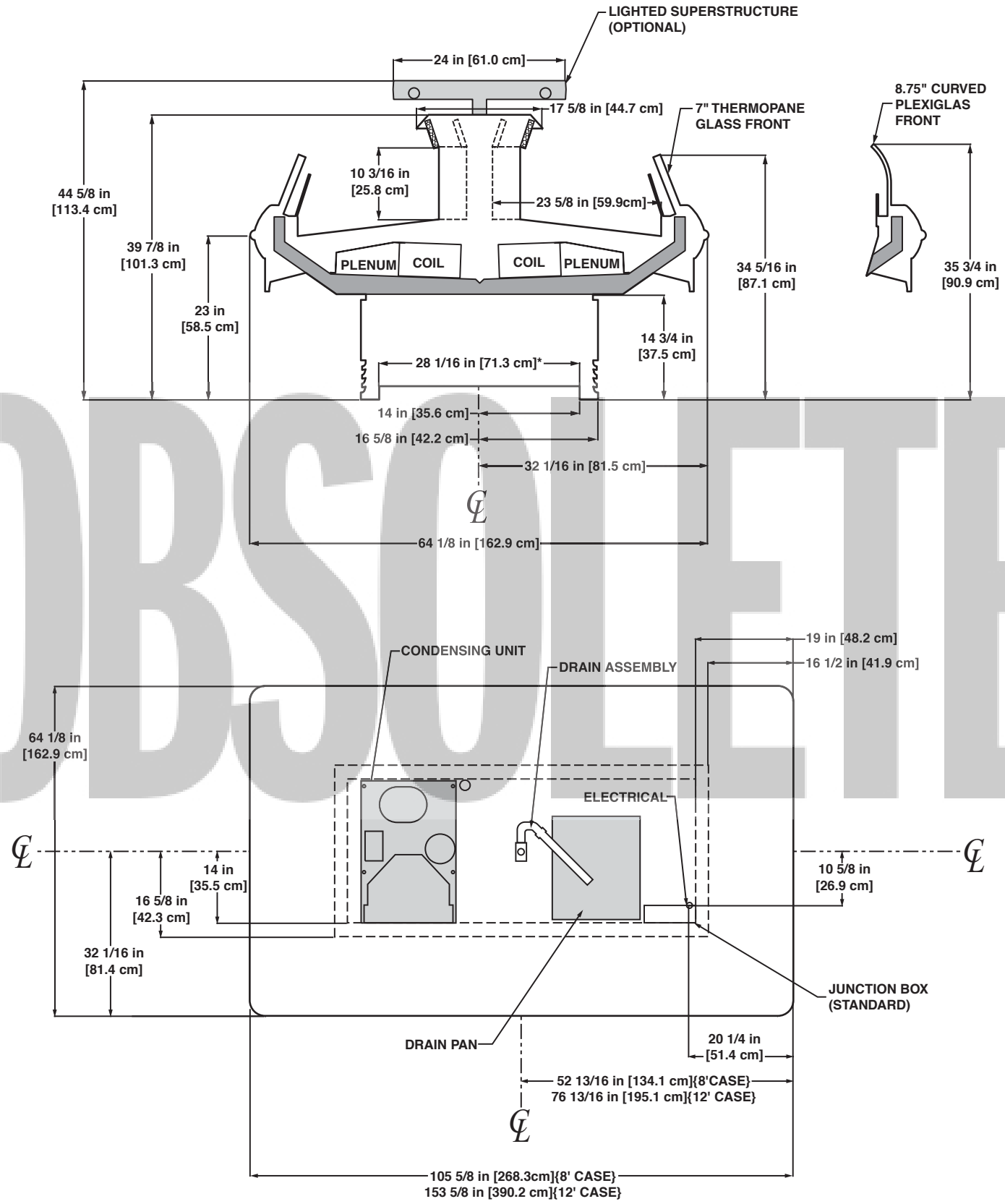

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SINGLE DECK ISLAND Deli/Meat

NOTES:

* STUB-UP AREA

Narrow Island Self-Contained Deli/Meat Merchandiser

ONIMBA - 8’ & 12’

System Requirements

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Fuse Size
ONIMBA	8’	208/230	1	60	3 wire + ground	23.3	30
	12’	208/230	1	60	3 wire + ground	29.1	35

Electrical Data

			Standard Fans		Condenser Fans		Anti-Condensate Heaters		Defrost Heaters				Drain Heater		Maximum Lights	
		Fans per Case	120 Volts		208 Volts		120 Volts		208 Volts		240 Volts		240 Volts		120 Volts	
Model			Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONIMBA	8’	6	2.04	102	0.85	130	0.75	90	4.34	902	5.00	1200	5.55	1331	1.26	151
	12’	8	2.72	136	1.70	260	1.17	140	7.22	1502	8.33	2000	5.55	1331	1.46	175

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[1] (FPM)
ONIMBA-8’		35	6-8	28	37	180
ONIMBA-12’		35	6-8	28	37	180

[1] Average discharge air velocity at peak of defrost.

Condensing Unit Data

Model	Volts	Phase	Frequency (Hz)	HP	RLA[3] (amps)	LRA[4] (amps)	Refrig.	lbs of Refrig.
ONIMBA-8’	208/230	1	60	1	10.36	48.2	R22	8.2
ONIMBA-12’[2]	208/230	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 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)
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
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm

All measurements are taken per CRMA specifications.

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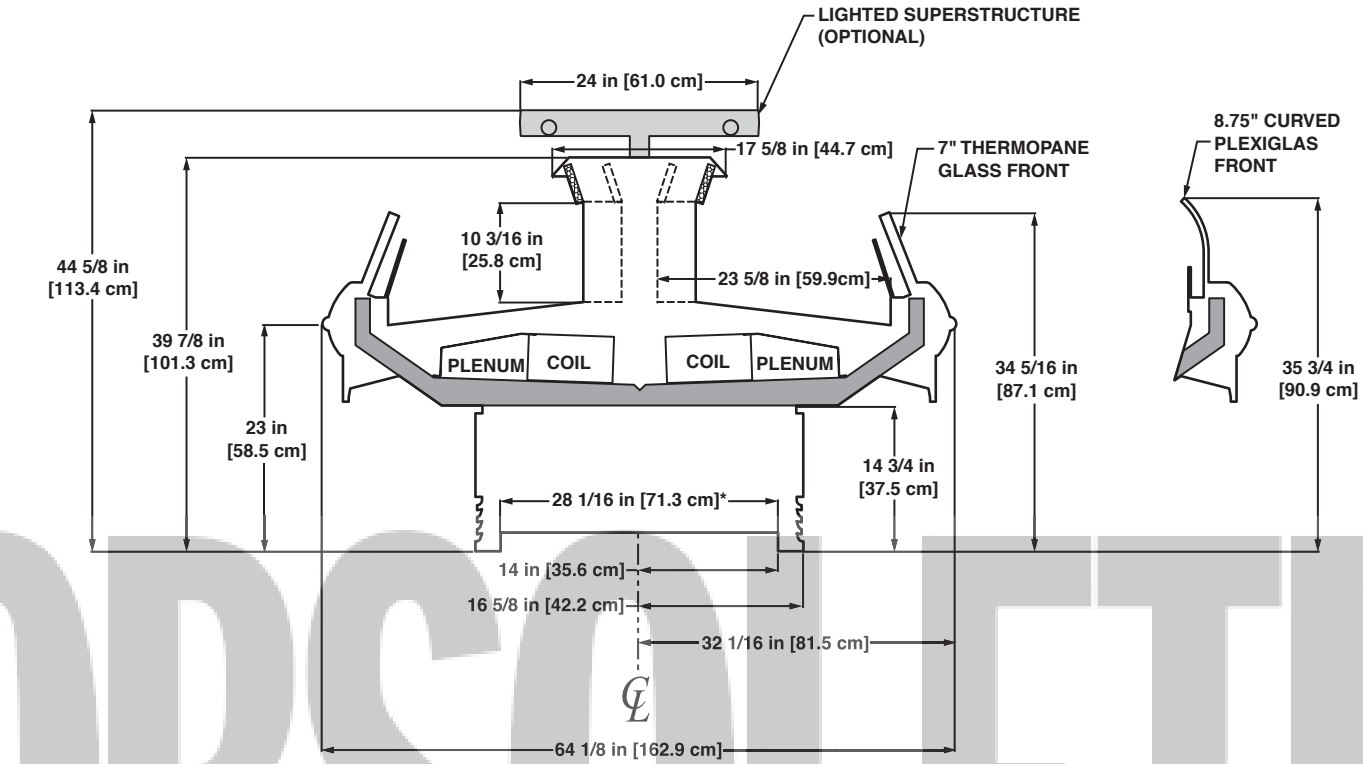

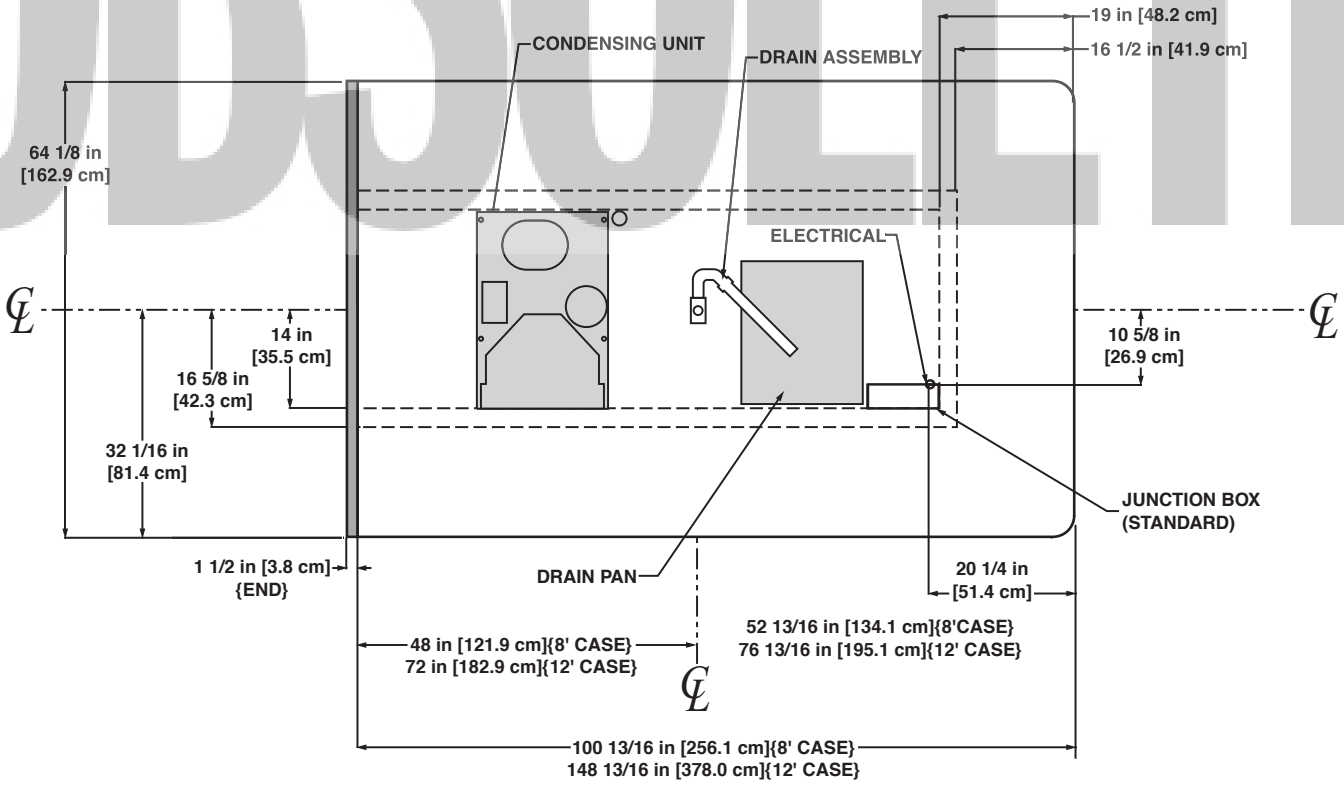

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NOTES:

* STUB-UP AREA

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

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts 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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OIM	8’	NA[1]	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.

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[2]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
OIM/OIMB/OIMBB Meat	770[4]	12	6-8	26	31	140
OIM/OIMB/OIMBB Deli	560[5]	17	6-8	28	33	140

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Average discharge air velocity at peak of defrost.

[4] OIM (meat): +400 BTUH per wraparound end.

[5] OIM (deli): +250 BTUH per wraparound end.

Defrost Controls

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

[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

All measurements taken per CRMA specifications.

NSF COMPONENT

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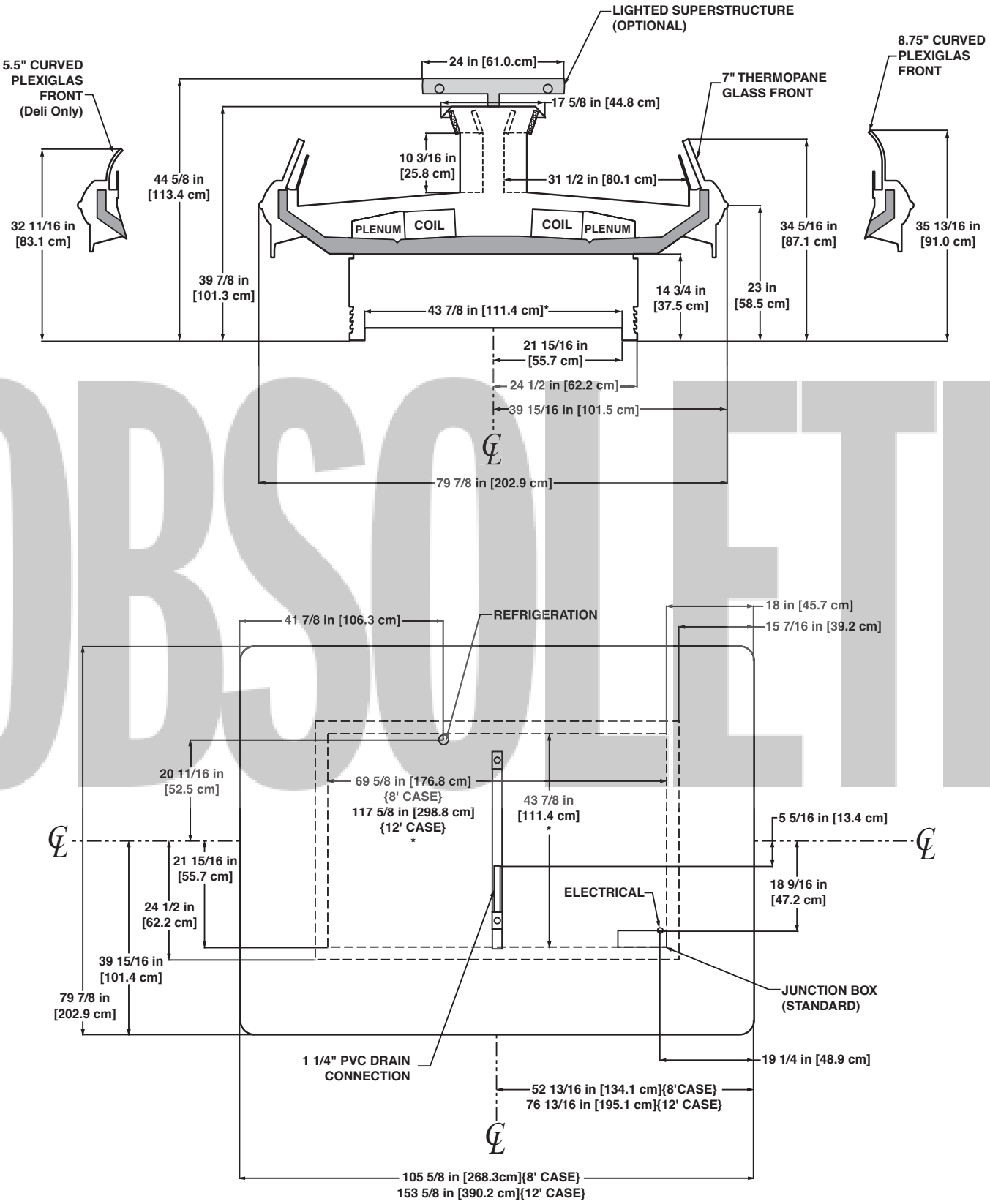
Hill PHOENIX EXCELLENCE

A DOVER COMPANY



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NOTES:

* STUB-UP AREA

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

NSF COMPONENT
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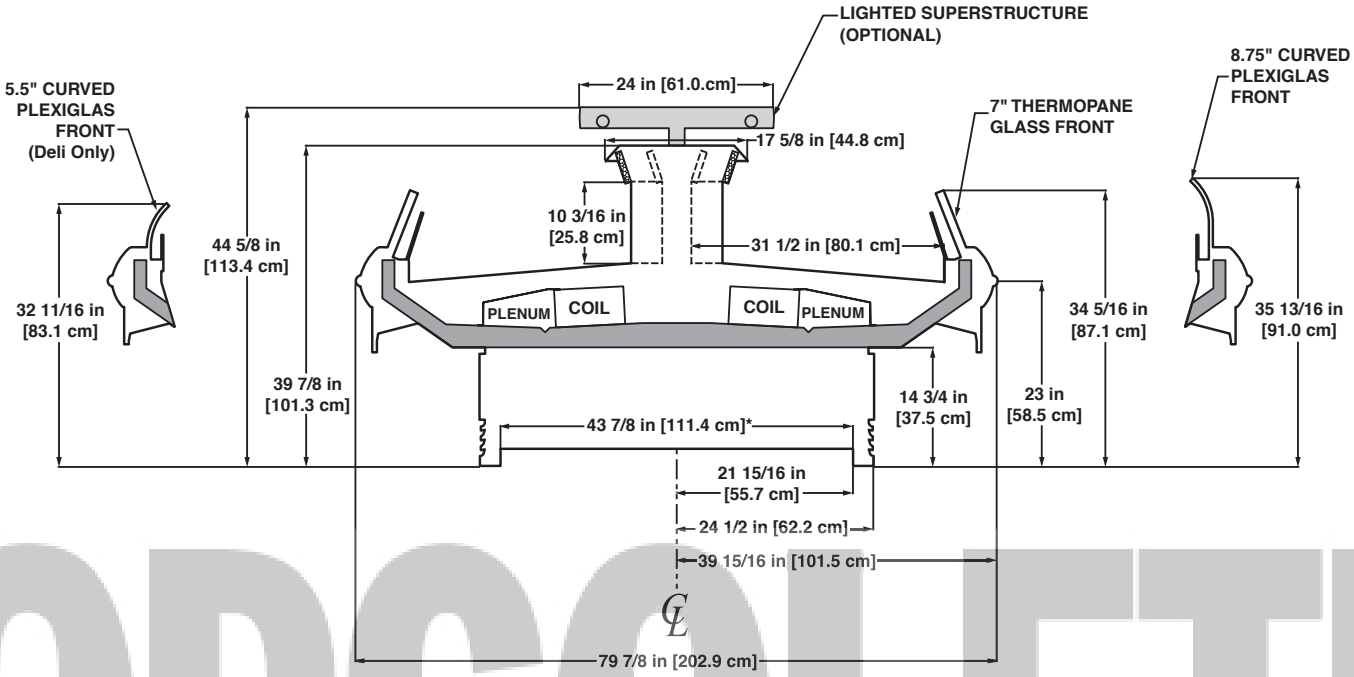

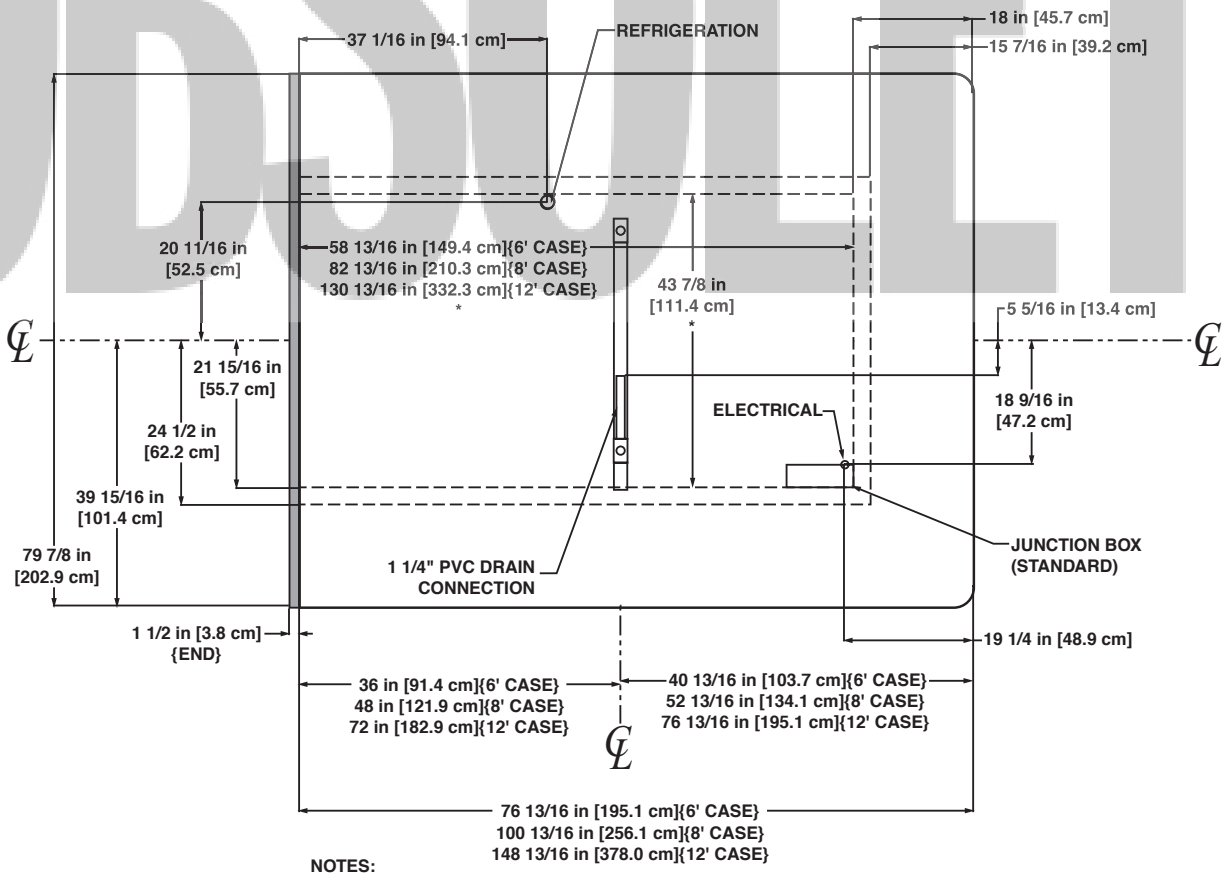

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NOTES:

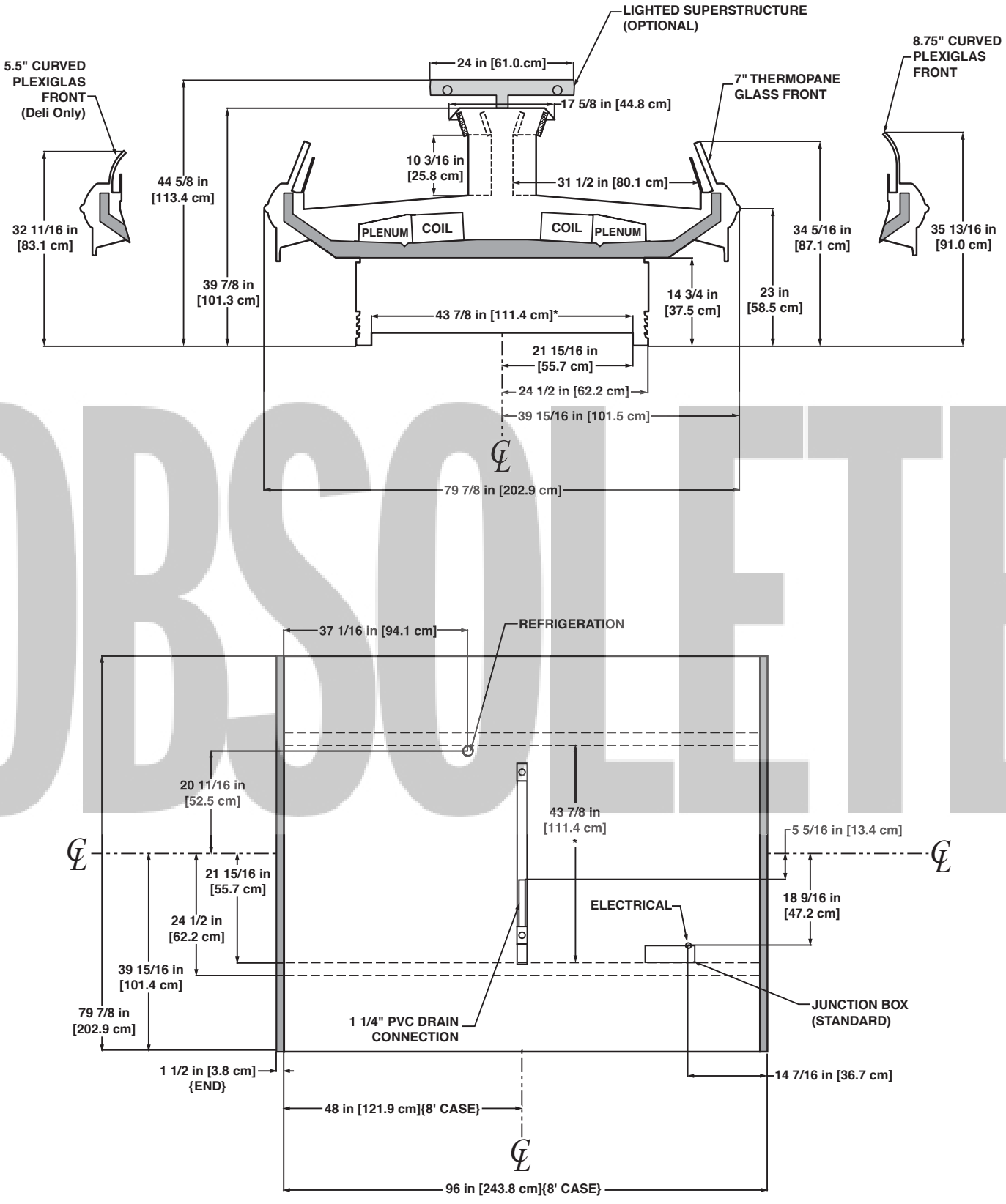
* STUB-UP AREA

- SUCTION LINE - 7/8", LIQUID LINE - 1/2"

NSF COMPONENT

c UL us

A DOVER COMPANY



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NOTES:

* STUB-UP AREA

- SUCTION LINE - 7/8", LIQUID LINE - 1/2"

NSF COMPONENT c UL us

A DOVER COMPANY

Wide Island Self-Contained Deli/Meat Merchandiser

OIMA - 8' & 12'

System Requirements

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Fuse Size
OIMA	8'	208/230	1	60	3 wire + ground	27.9	40
	12'	208/230	1	60	3 wire + ground	34.2	40

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts		Condenser Fans 208 Volts		Anti-Condensate Heaters 120 Volts		Defrost Heaters 208 Volts		Defrost Heaters 240 Volts		Drain Heater 240 Volts		Maximum Lights 120 Volts	
			Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OIMA	8'	6	2.04	102	0.85	130	0.82	98	4.34	9.02	5.00	1200	5.55	1331	5.04	606
	12'	8	2.72	136	1.70	260	1.08	130	7.22	1502	8.33	2000	5.55	1331	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[1] (FPM)
OIMA-8'		35	6-8	26	31	140
OIMA-12'		35	6-8	26	31	140

[1] Average discharge air velocity at peak of defrost.

Condensing Unit Data

Model	Volts	Phase	Frequency (Hz)	HP	RLA[3] (amps)	LRA[4] (amps)	Refrig.	lbs of Refrig.
OIMA-8'	208/230	1	60	1	10.36	48.2	R22	8.2
OIMA-12'[2]	208/230	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

Model	Defrosts Per Day	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost 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
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm

All measurements are taken per CRMA specifications.

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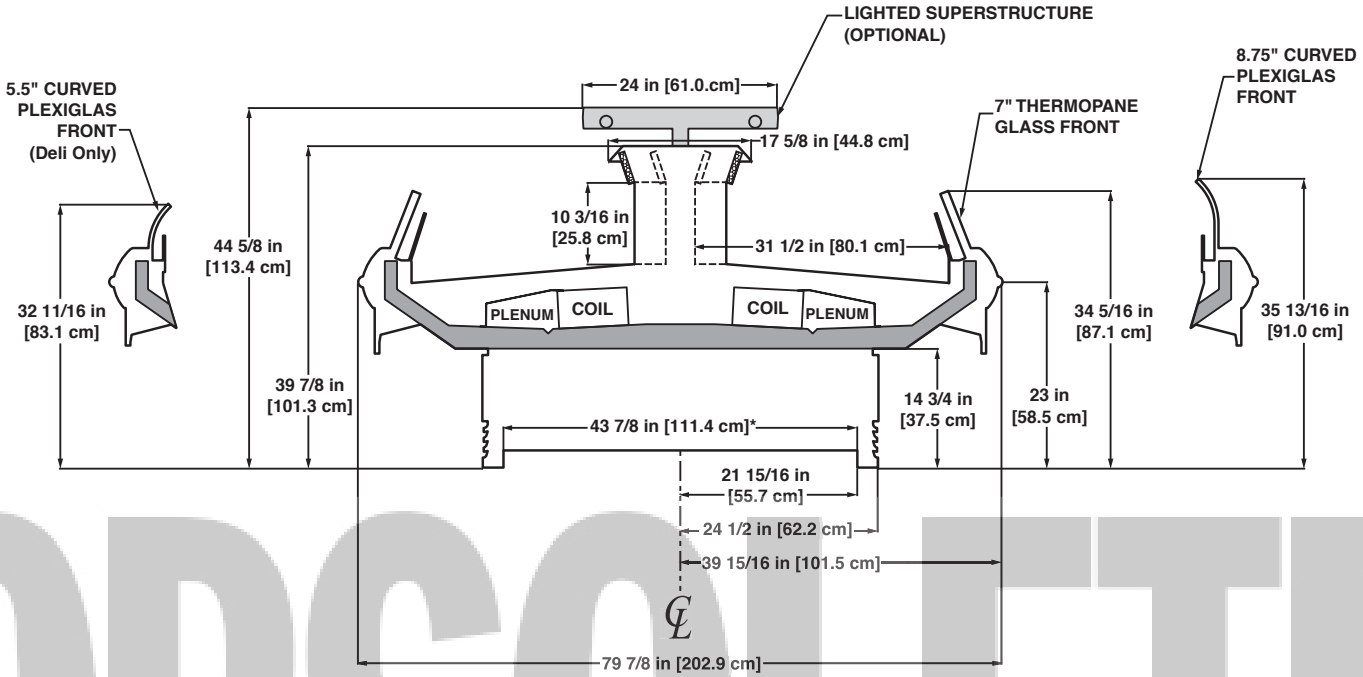

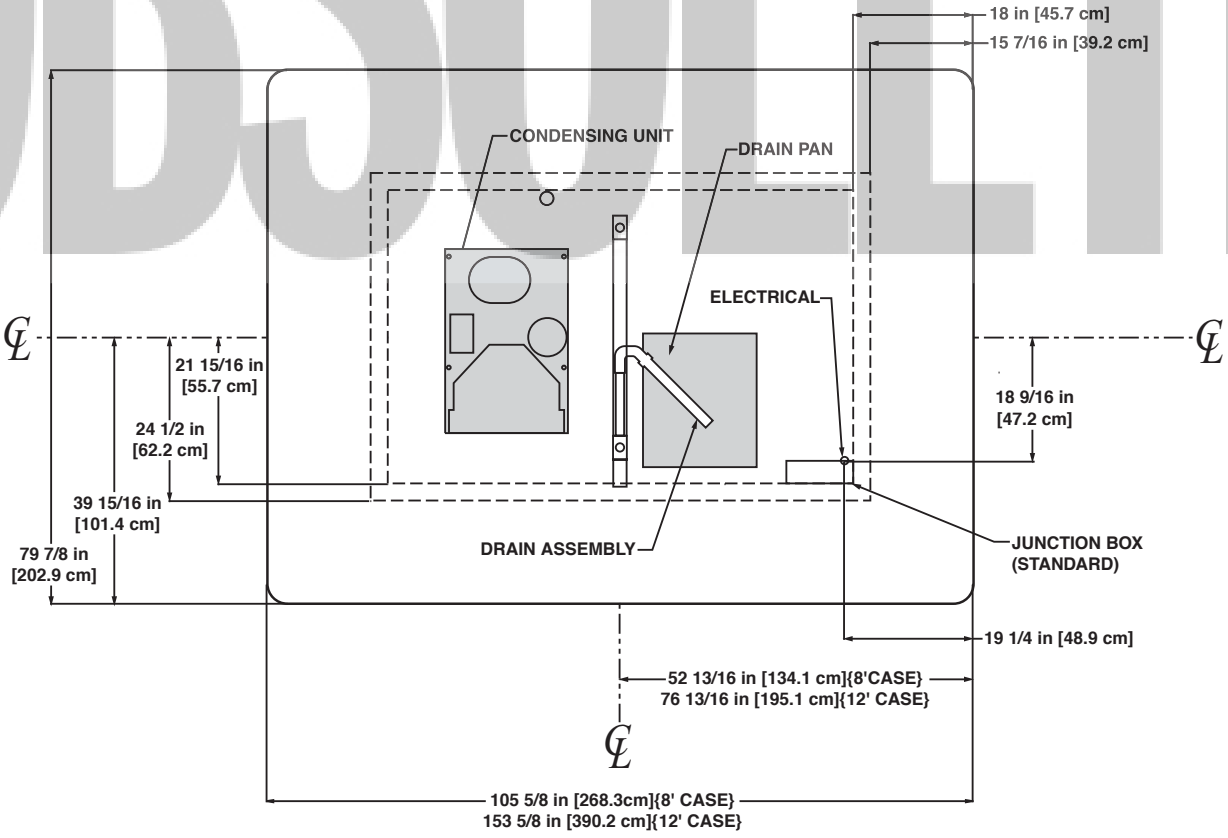

NOTES:

* STUB-UP AREA

OBSOLETE

Wide Island Self-Contained Deli/Meat Merchandiser

OIMBA - 6' & 12'

System Requirements

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Fuse Size
OIMBA	6'	208/230	1	60	3 wire + ground	21.3	30
	12'	208/230	1	60	3 wire + ground	33.1	40

Electrical Data

			Standard Fans		Condenser Fan		Anti-Condensate Heaters		Defrost Heaters				Drain Heater		Maximum Lights	
		Fans per Case	120 Volts		208 Volts		120 Volts		208 Volts		240 Volts		240 Volts		120 Volts	
Model			Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OIMBA	6'	4	1.36	76	0.85	130	0.57	68	3.25	676	3.75	900	5.55	1331	3.78	454
	12'	8	2.72	136	1.70	260	1.23	148	7.22	1502	8.33	2000	5.55	1331	5.24	629

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[1] (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

Model	Volts	Phase	Frequency (Hz)	HP	RLA[3] (amps)	LRA[4] (amps)	Refrig.	lbs of Refrig.
OIMBA-6'	208/230	1	60	1	7.0	34.2	R22	8.2
OIMBA-12'[2]	208/230	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 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)
OIMBA	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
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm

All measurements are taken per CRMA specifications.

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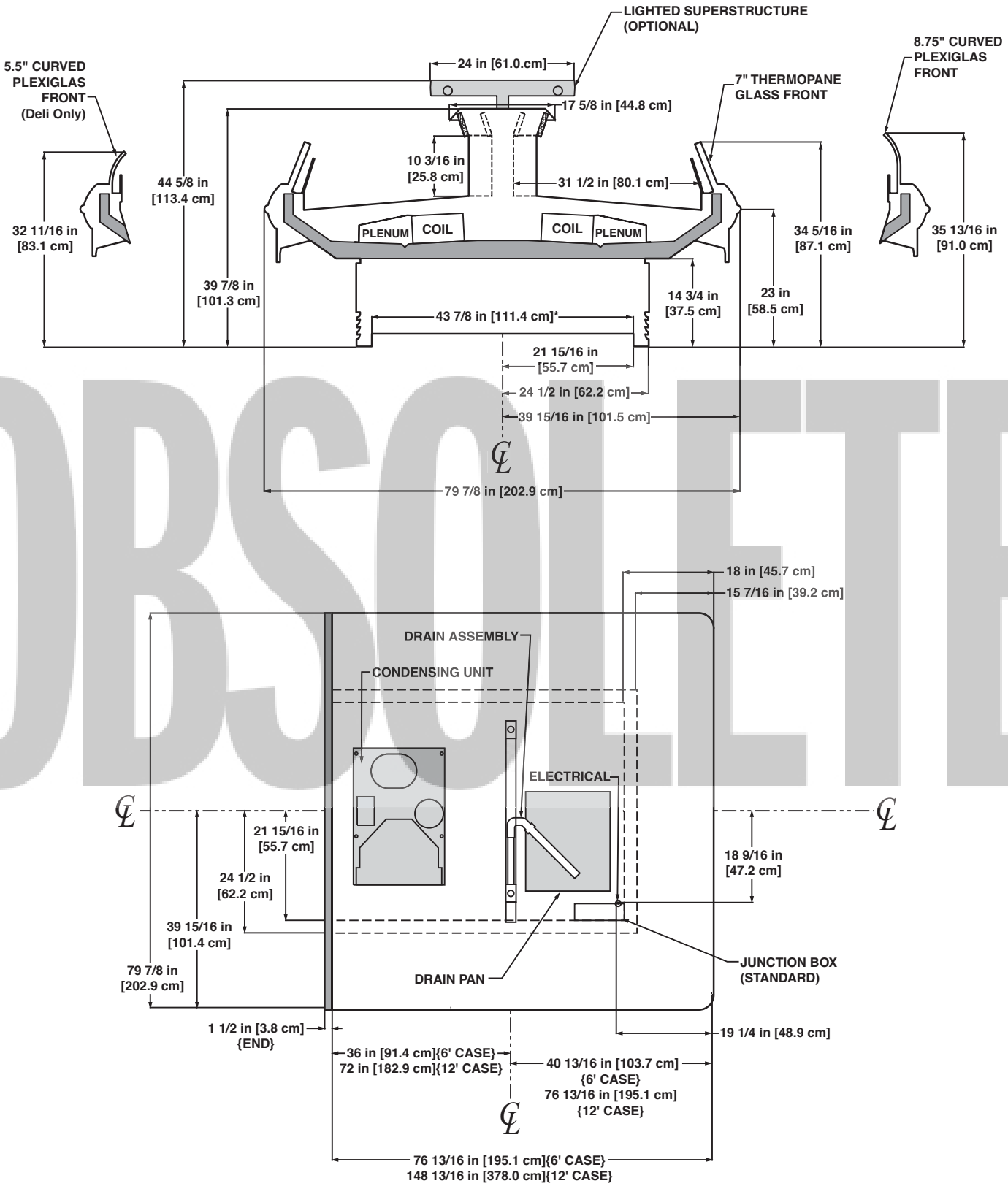

NOTES:

* STUB-UP AREA

OBSOLETE

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

Model		Fans per Case	Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Defrost Heaters 208 Volts		Defrost Heaters 240 Volts	
			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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OIP	8'	NA[2]	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

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[3]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
OIP/OIPB/OIPBB	650[5]	22	6-8	34	48	140

[3] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Average discharge air velocity at peak of defrost.

[5] OIP: +600 BTUH per wraparound end.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OIP/OIPB/OIPBB	3	6 - 8	- - -	- - -	44	38	- - -	- - -	- - -	- - -

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.

NSF COMPONENT

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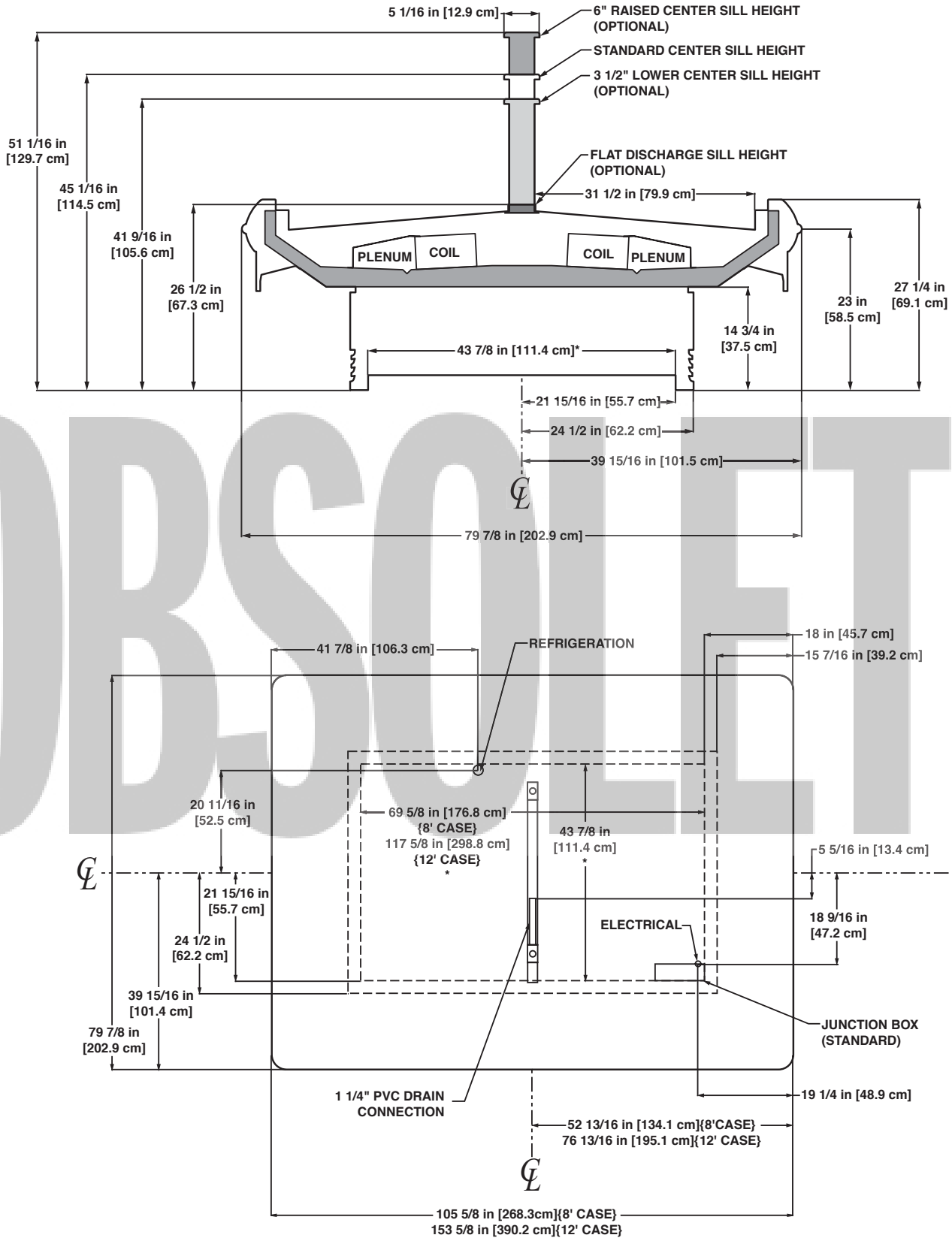
Hill PHOENIX EXCELLENCE

A DOVER COMPANY



OBSOLETE

NOTES:

* STUB-UP AREA

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

NSF COMPONENT
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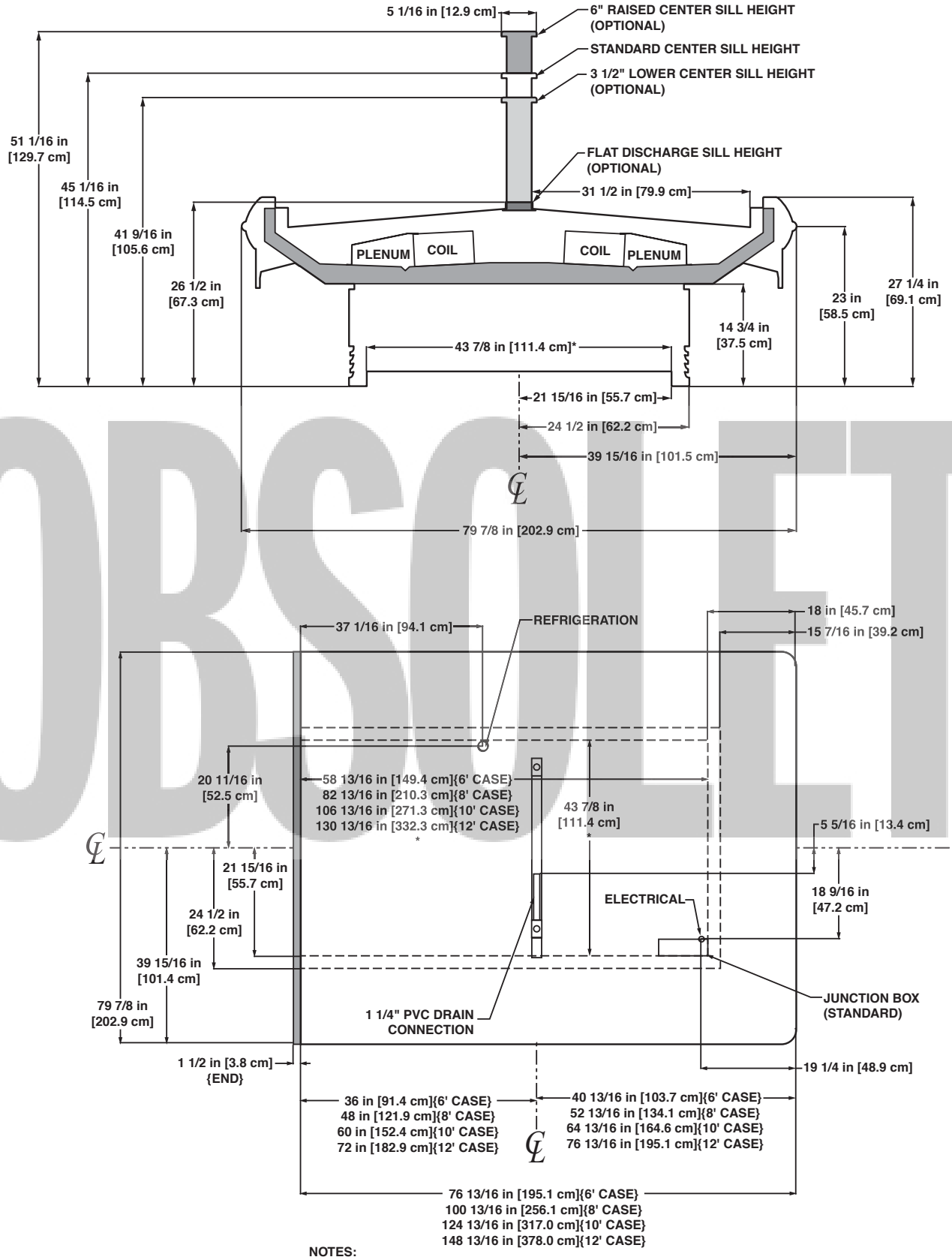

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NOTES:

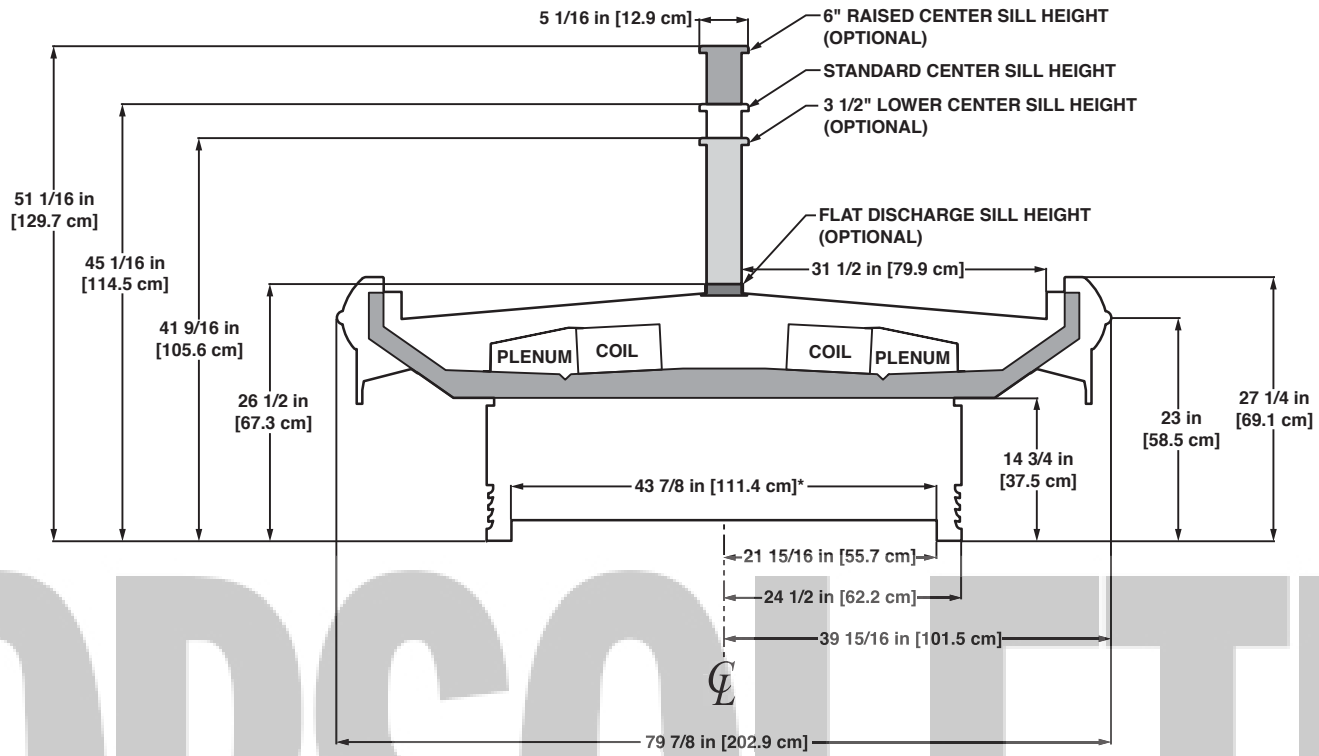
* STUB-UP AREA

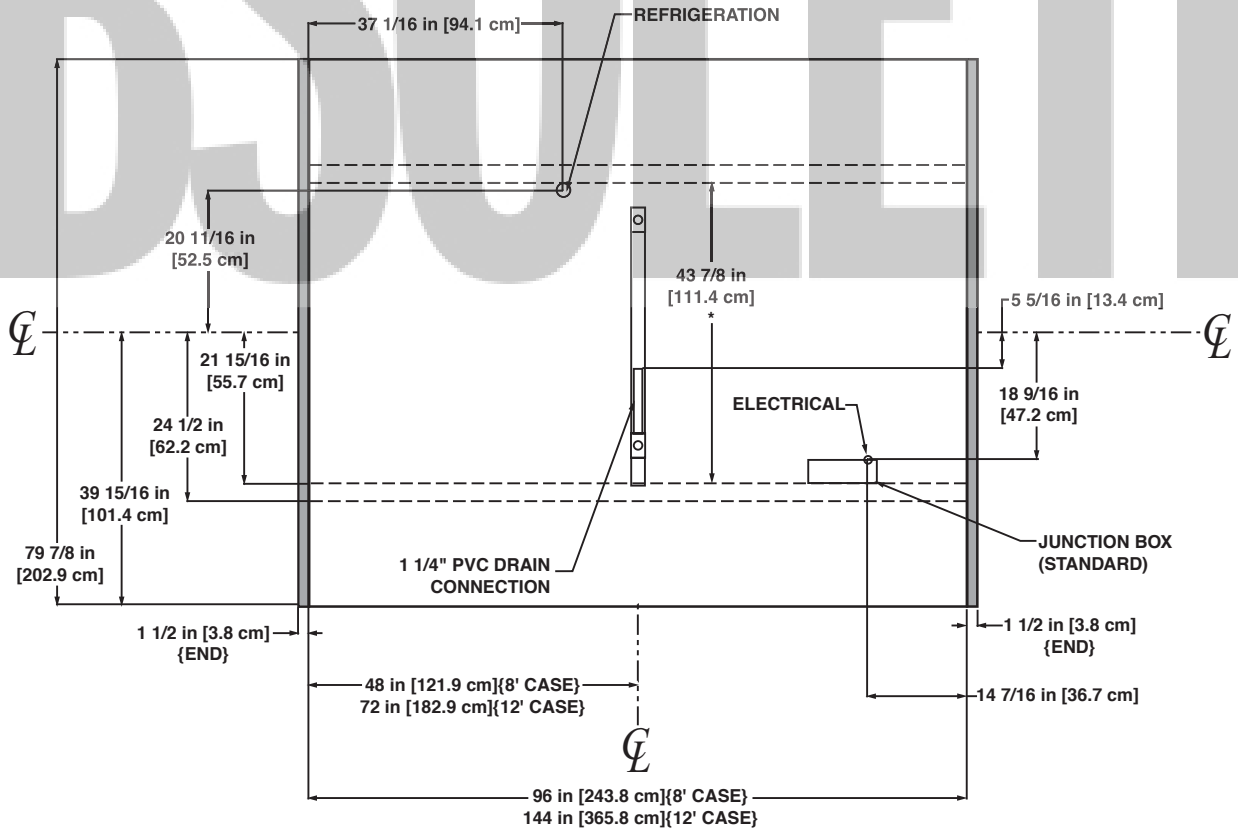
• SUCTION LINE - 7/8", LIQUID LINE - 1/2"

NSF COMPONENT

c UL us

A DOVER COMPANY





NOTES:

* STUB-UP AREA

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

OBSOLETE

Wide Island Self-Contained Bulk Produce Merchandiser

OIPA - 8’ & 12’

System Requirements

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Fuse Size
OIPA	8’	208/230	1	60	3 wire + ground	21.5	30
	12’	208/230	1	60	3 wire + ground	37.6	50

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts		Condenser Fan 208 Volts		Anti-Condensate Heaters 120 Volts		Defrost Heaters 208 Volts		Defrost Heaters 240 Volts		Drain Heater 240 Volts		Maximum Lights 120 Volts	
			Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OIPA	8’	6	2.04	102	0.85	130	0.23	28	- - - [1]	- - -	- - -	- - -	5.55	1331	3.78	454
	12’	8	2.72	136	1.70	260	0.55	66	- - -	- - -	- - -	- - -	5.55	1331	5.04	605

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

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[2] (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[4] (amps)	LRA[5] (amps)	Refrig.	lbs of Refrig.
OIPA-8’	208/230	1	60	1	6.7	33.5	R22	7.8
OIPA-12’[3]	**208/230**	**1**	**60**	**3/4**	**9.4**	**48.2**	**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

Model	Defrosts Per Day	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OIPA	3	- - -	- - -	44	38	- - -	- - -	- - -	- - -

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.

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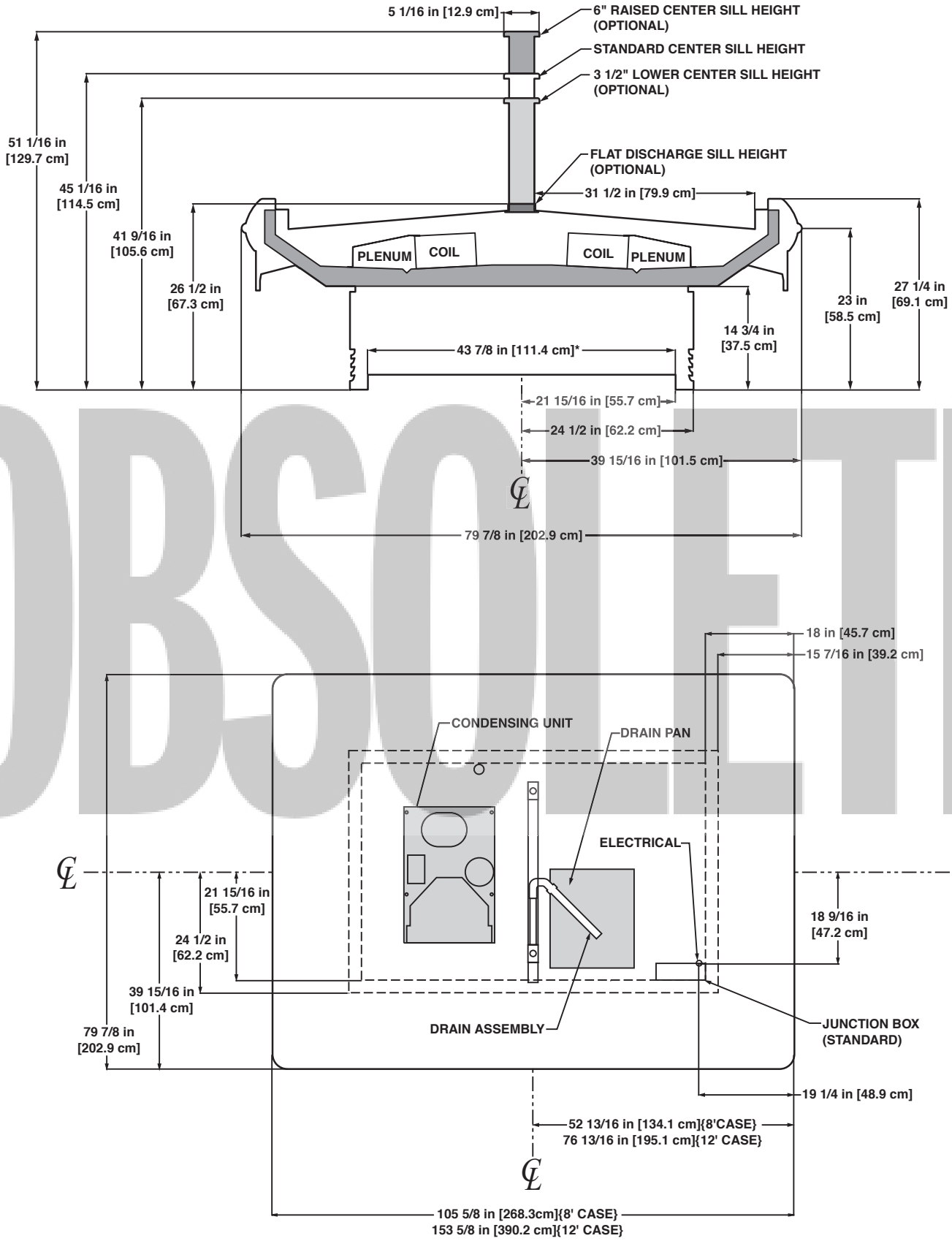

OBSOLETE

NOTES:

* STUB-UP AREA

Narrow Island Frozen Food/Ice Cream Merchandiser

ONIZ - 6', 8', 10' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Defrost Heaters 208 Volts		Defrost Heaters 240 Volts		Drain Heaters 120 Volts	
			Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
ONIZ	F-6'[1]	2	0.68	34	0.30	22	3.15	378	5.77	1200	6.66	1598	0.13	15
	F-8'	3	1.02	51	0.45	33	3.09	371	7.69	1600	8.88	2130	0.13	15
	F-10'	3	1.02	51	0.45	33	3.43	412	9.62	2000	11.10	2663	0.13	15
	F-12'	4	1.36	68	0.60	44	3.95	474	11.54	2400	13.31	3195	0.13	15
	C-6'[1]	2	0.68	34	0.30	22	3.15	378	11.54	2400	13.32	3196	0.13	15
	C-8'	3	1.02	51	0.45	33	3.09	371	15.38	3200	17.75	4260	0.13	15
	C-10'	3	1.02	51	0.45	33	3.43	412	16.13	3355	18.65	4476	0.13	15
	C-12'	4	1.36	68	0.60	44	3.95	474	23.08	4800	26.63	6390	0.13	15

[1] F = Frozen food, C = Ice cream.

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ONIZ	6'	- - -[2]	- - -	- - -	- - -
	8'	- - -	- - -	- - -	- - -
	10'	- - -	- - -	- - -	- - -
	12'	- - -	- - -	- - -	- - -

[2] NOTE: - - - not an option on this case model.

Guidelines & Control Settings

Model	BTUH/ft[3]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
ONIZ-F	440	-12	3-5	-2	7	393
ONIZ-C	500	-22	3-5	-13	-3	400

[3] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ONIZ	2	13 - 15	35	47	- - -	- - -	20	60	- - -	- - -

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 CRMA specifications.

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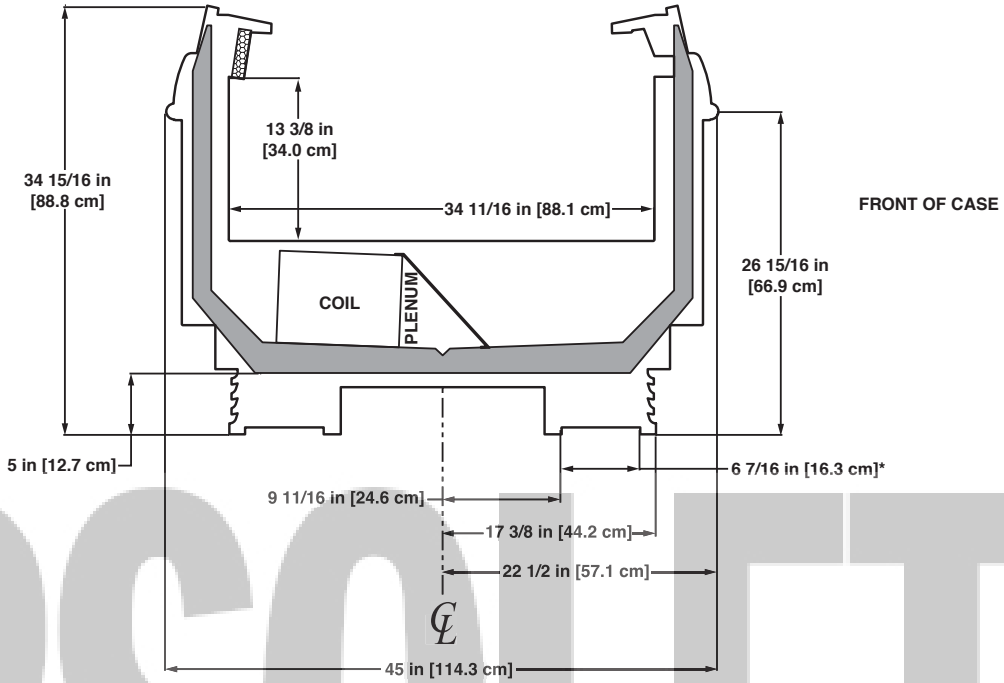
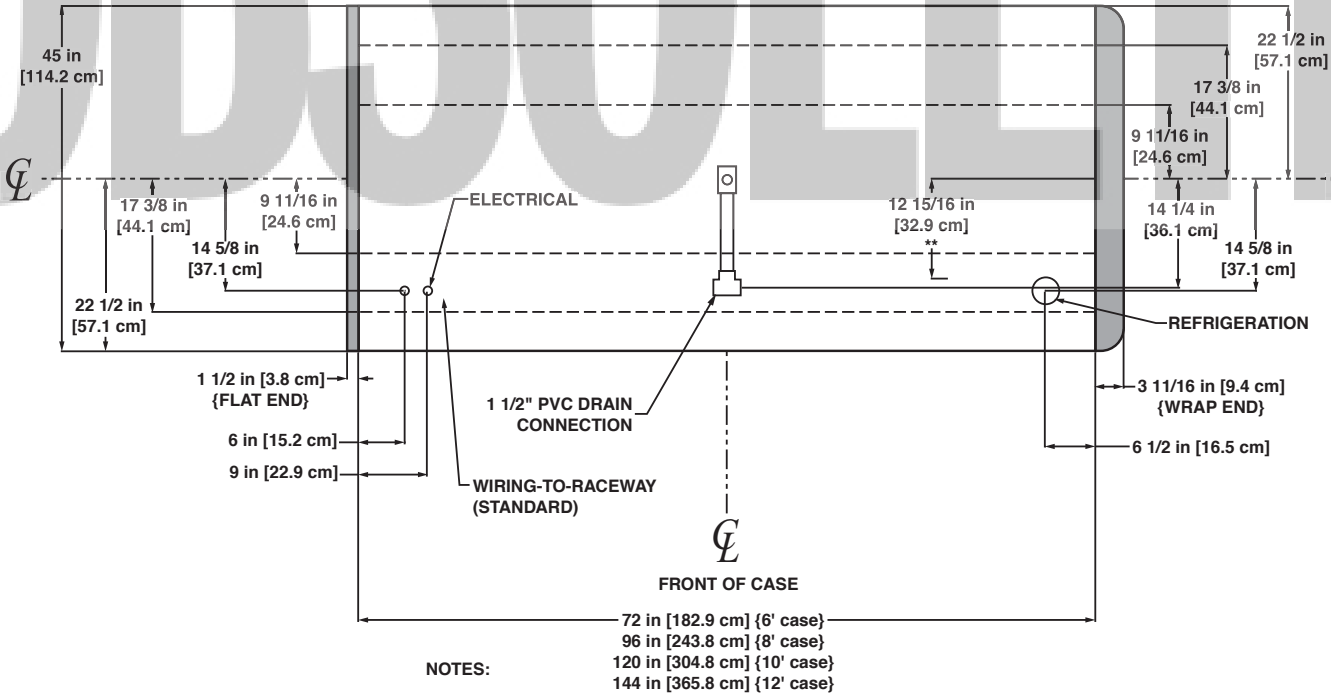




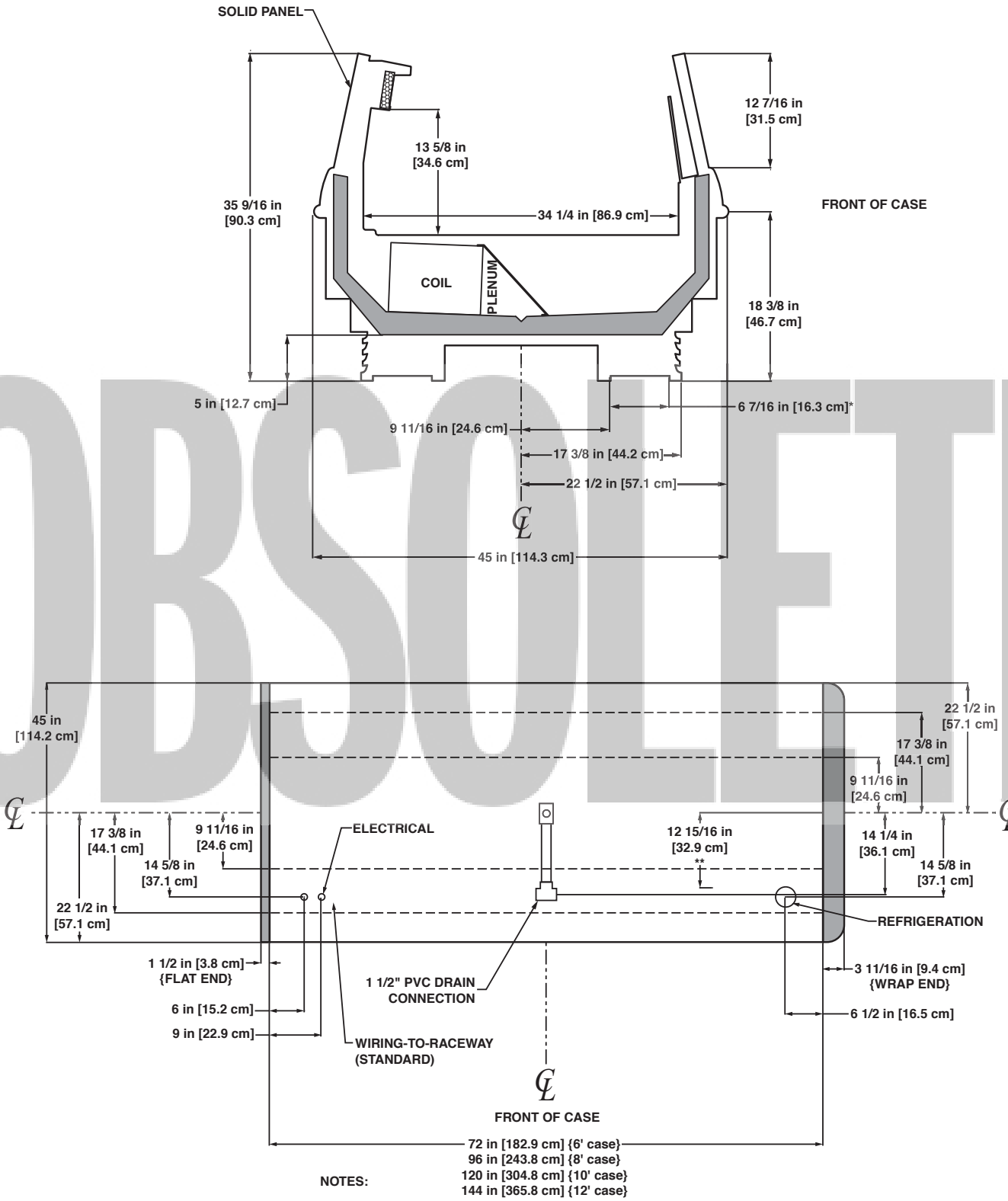
NOTES:

* STUB-UP AREA

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

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

OBSOLETE



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NOTES:

* STUB-UP AREA

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

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

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OBSOLETE

SINGLE DECK ISLAND Frozen Food/Ice Cream

Island Frozen Food Merchandiser

OIZ - 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts	Drain Heaters 120 Volts Amps	Drain Heaters 120 Volts 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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OIZ	8'	- - -[1]	- - -	- - -	- - -
	12'	- - -	- - -	- - -	- - -

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

Guidelines & Control Settings

Model	BTUH/ft[2]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
OIZ[4]	520	-22	3-5	-12	-4	200

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Average discharge air velocity at peak of defrost.

[4] Not intended for Frozen Juice application

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OIZ	1	13 - 15	45	47	- - -	- - -	20	60	- - -	- - -

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 CRMA specifications.

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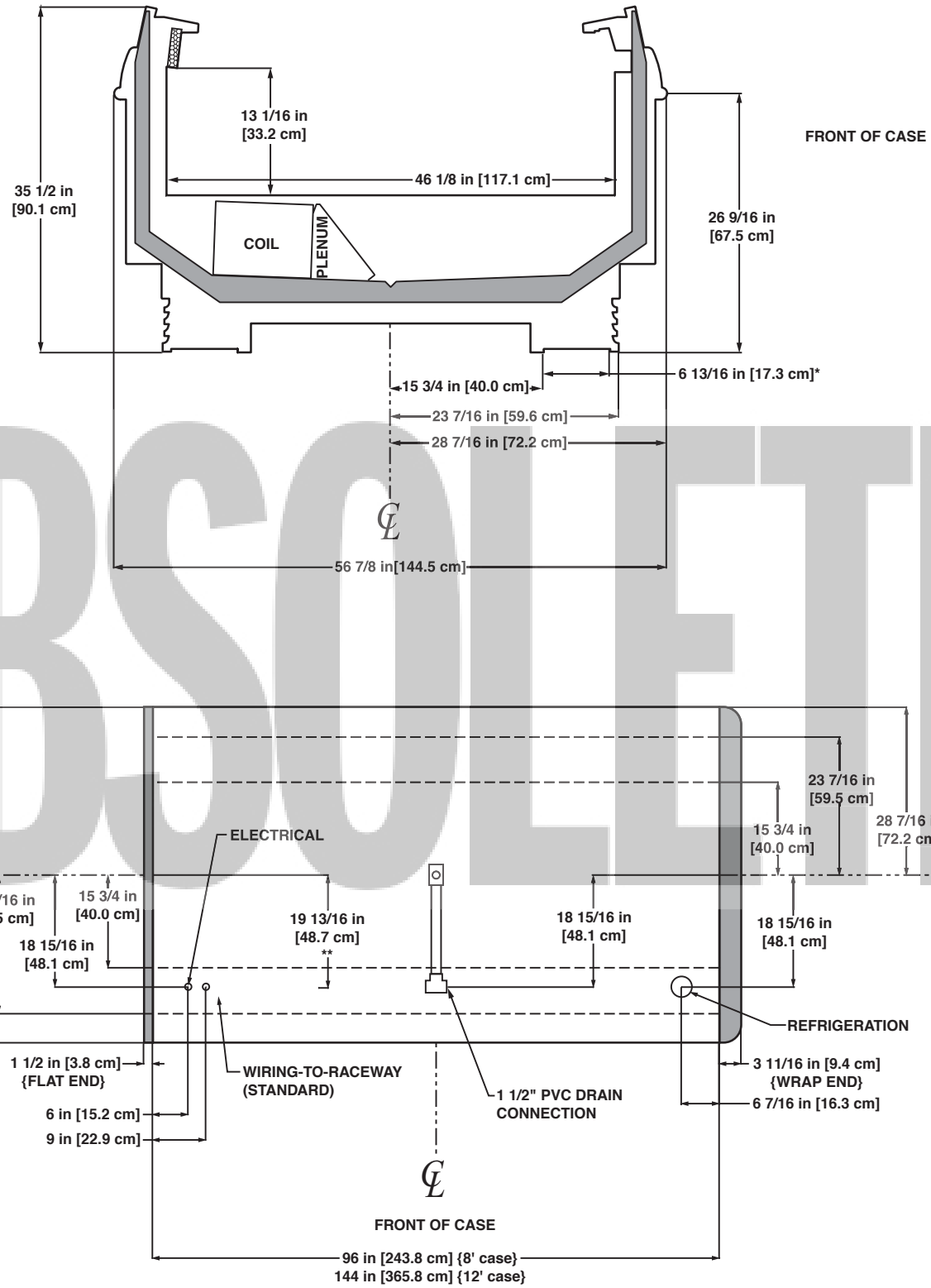

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NOTES:

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

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

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Wide Island Frozen Food/Ice Cream Merchandiser

OWIZ - 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fan 120 Volts Amps	Standard Fan 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts	Drain Heaters 120 Volts Amps	Drain Heaters 120 Volts Watts
OWIZ	F-8'[1]	4	1.36	68	0.60	44	5.96[2]	715	7.69[3]	1600	8.88[3]	2130	0.26	30
	F-12'	6	2.04	102	0.90	66	8.06[2]	967	11.54[3]	2400	13.31[3]	3195	0.26	30
	C-8'	4	1.36	68	0.60	44	5.96[2]	715	11.54[3]	2400	13.31[3]	3195	0.26	30
	C-12'	6	2.04	102	0.90	66	8.06[2]	967	17.31[3]	3600	19.98[3]	4795	0.26	30

[1] F = frozen food, C = ice cream.

[2] Anti-Condensate heater data for Double Wrap End configuration.

[3] Defrost data for one side of case only.

Lighting Data[4]

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OWIZ	8'	NA[5]	NA	5.20	624
	12'	NA	NA	7.48	898

[4] Lighting is for cases with superstructures.

[5] Not applicable.

Guidelines & Control Settings

Model	BTUH/ft[6]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[7] (FPM)
OWIZ - F	600	-17	3-5	-12	0	180
OWIZ - C	700	-32	3-5	-20	-12	180

[6] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[7] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OWIZ	1	13 - 15	60	49	- - -[8]	- - -	20	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

All measurements are taken per CRMA specifications.

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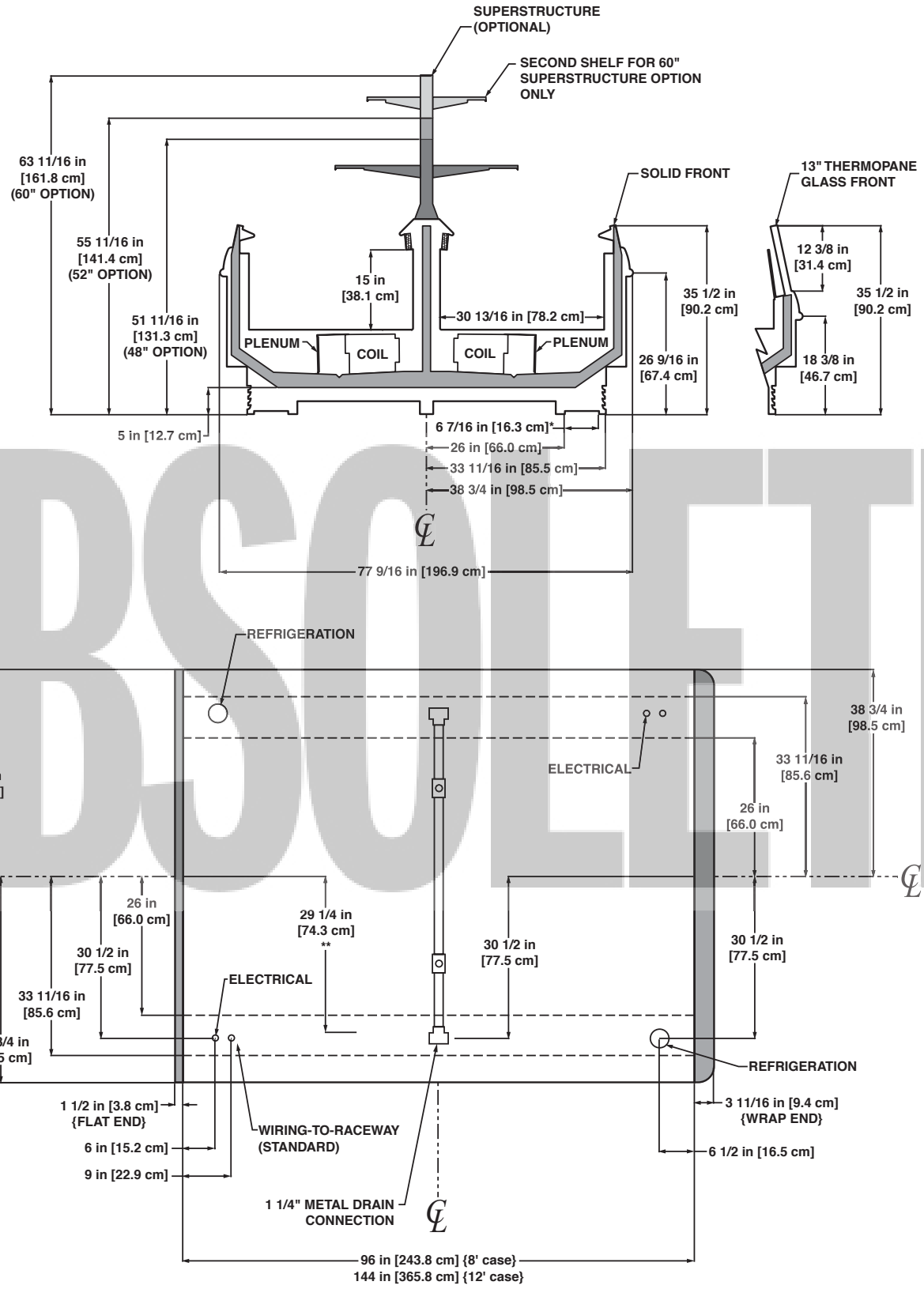


NOTES:

* 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", & 16"

OBSOLETE

Wide Island End Cap Frozen Food/Ice Cream Merchandiser

OWEZ

Electrical Data

Model		Fans per Case	Standard Fan 120 Volts Amps	Standard Fan 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts	Drain Heaters 120 Volts Amps	Drain Heaters 120 Volts Watts
OWEZ	F[1]	2	0.68	34	0.30	22	2.46	295	5.77	1200	6.65	1596	0.13	15
	C	2	0.68	34	0.30	22	2.46	295	8.65	1800	9.98	2394	0.13	15

[1] F = Frozen food, C = Ice cream

Lighting Data

Model	Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OWEZ	- - -[2]	- - -	- - -	- - -
	- - -	- - -	- - -	- - -

[2] NOTE: - - - not an option on this case model.

OBSOLETE

Guidelines & Control Settings

Model	BTUH/cs[3]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
OWEZ - F	2700	-17	3-5	-12	0	200
OWEZ - C	3300	-32	3-5	-22	-12	200

[3] BTUH's/case listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OWEZ	1	13 - 15	60	49	- - -	- - -	20	60	- - -	- - -

Low Temperature Defrost Schedule

No. Per Day	Hours
1	10 pm
2	6 am - 10 pm**

** Or immediately after store closing hour

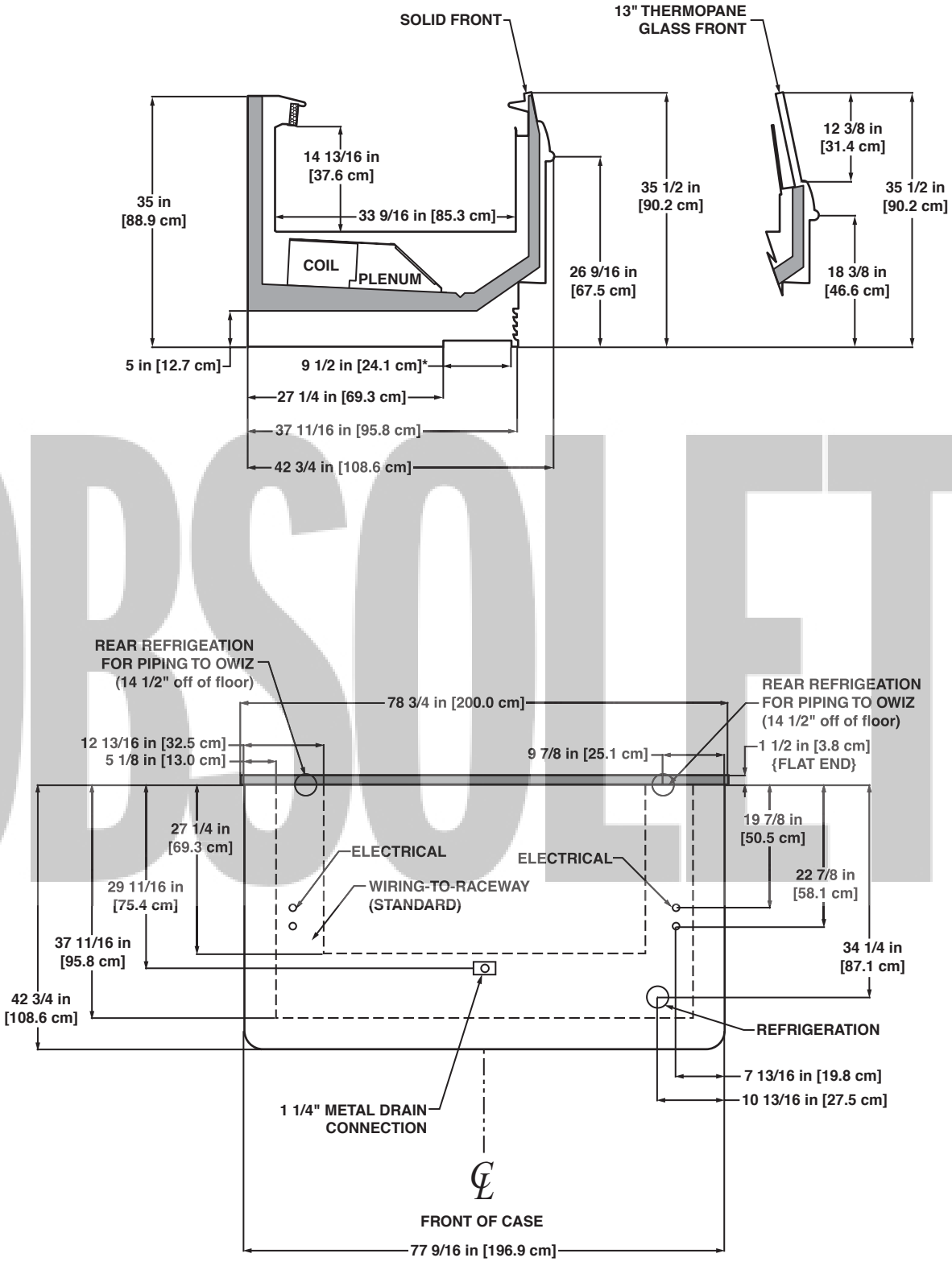
All measurements are taken per CRMA specifications.

NSF COMPONENT

c UL us

Hill PHOENIX EXCELLENCE

A DOVER COMPANY



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NOTES:

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

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

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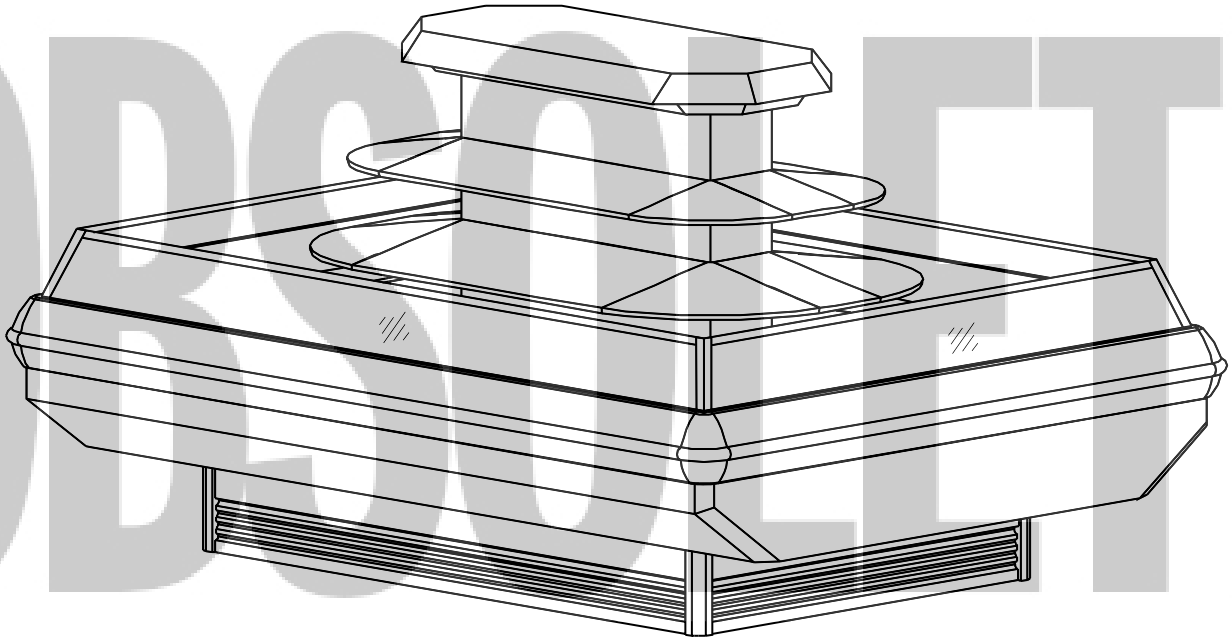
OBSOLETE

MULTI-DECK ISLAND

OBSOLETE



Notes:

- *Cases comply with ANSI / NSF* Standard 7. Units marked as components require remote refrigeration.*
- *Allow for an extra 1/8" per joint when lining up merchandisers.*
- *Front sill height does not affect case performance unless specifically shown.*
- *Front and rear sill heights vary with baseframe height.*

* *ANSI - American National Standard Institute*
NSF - National Sanitation Foundation

Wide Island Multi-Deck Deli/Meat Merchandiser

O3IM - 8' & 12' double wraparound end
O3IMB - 6', 8' & 12' single wraparound end
O3IMBB - 8' double joint end

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
O3IM	8'	6	3.00	180	1.80	120	0.67	80	7.70	1600	8.88	2130
	12'	8	4.00	240	2.40	160	1.06	127	11.54	2400	13.32	3200
O3IMB	6'	4	2.00	120	1.20	80	0.63	76	5.77	1200	6.66	1596
	8'	6	3.00	180	1.80	120	0.88	106	7.70	1600	8.88	2130
	12'	8	4.00	240	2.40	160	1.24	149	11.54	2400	13.32	3200
O3IMBB	8'	6	3.00	180	1.80	120	0.91	109	7.70	1600	8.88	2130

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O3IM	8'	NA[1]	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

[1] Not applicable.

Guidelines & Control Settings

Model	BTUH/ft²[2]	Coil[3] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
O3IM	1527	Std.	17	6-8	28	38	270
	1527	Enh.	22	6-8	28	38	270
O3IMB	1548	Std.	17	6-8	28	38	270
	1548	Enh.	22	6-8	28	38	270
O3IMBB	1315	Std.	17	6-8	28	38	270
	1315	Enh.	22	6-8	28	38	270

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[4] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
O3IM/O3IMB/O3IMBB	3	6 - 8	30	47	- - -[5]	- - -	26	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

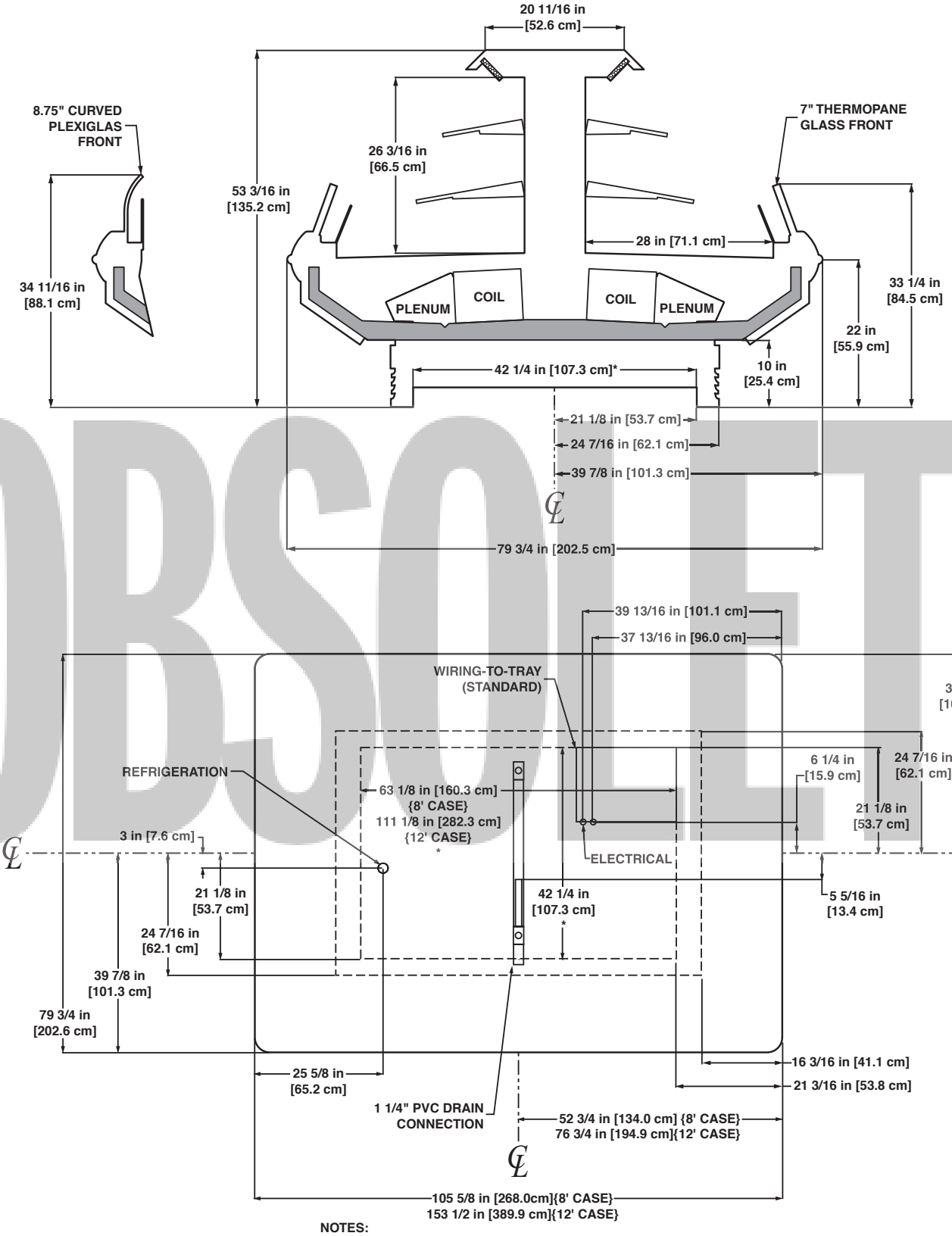
All measurements are taken per CRMA specifications.

NSF COMPONENT

Hill PHOENIX EXCELLENCE

A DOVER COMPANY

OBSOLETE



OBSOLETE

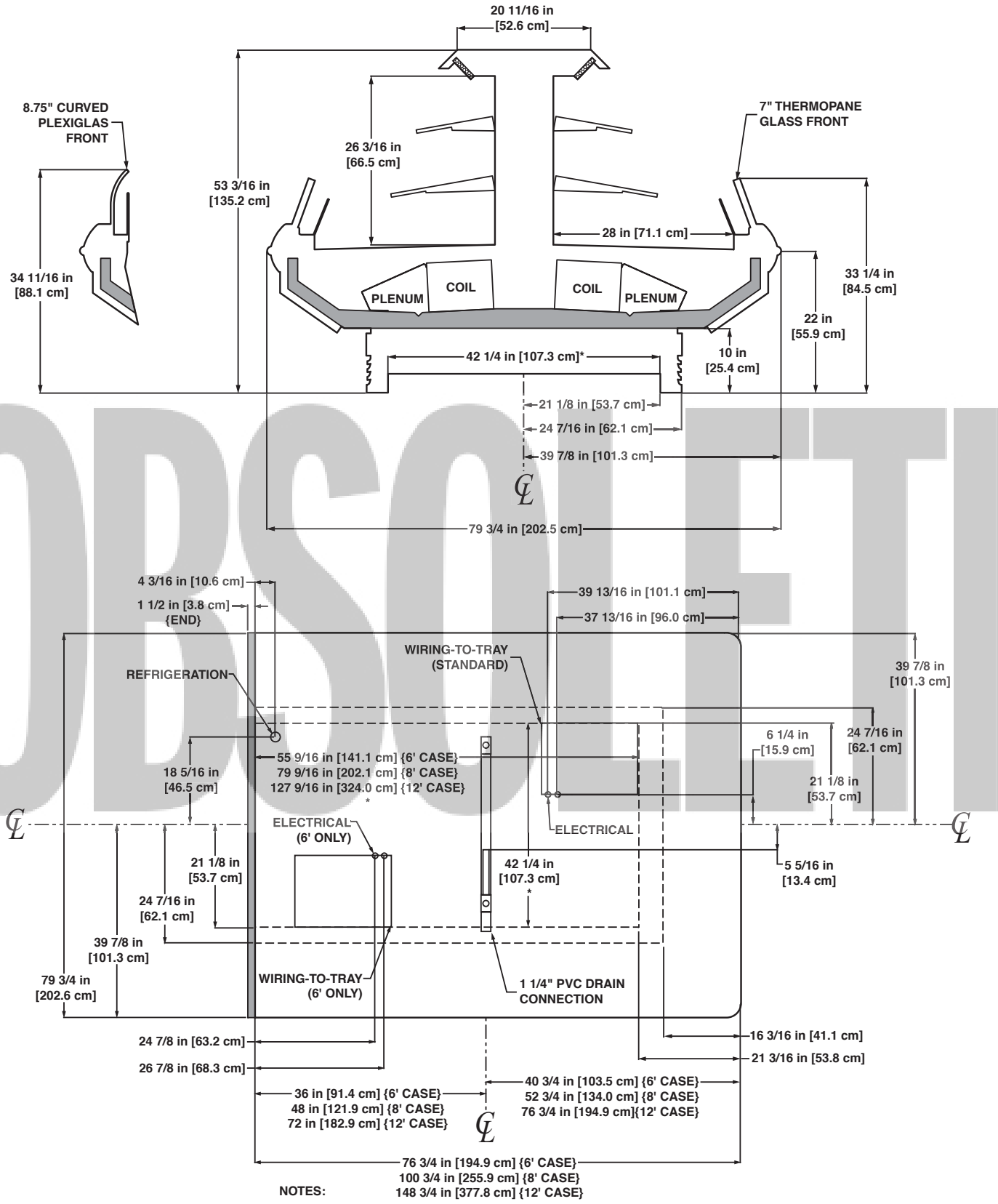
NOTES:

* STUB-UP AREA

- FRONT AND CENTER SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- SUCTION LINE - 7/8", LIQUID LINE - 1/2"
- AVAILABLE SHELF SIZES: 12" & 16"

NSF COMPONENT

A DOVER COMPANY



OBSOLETE

NOTES:

* STUB-UP AREA

- FRONT AND CENTER SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
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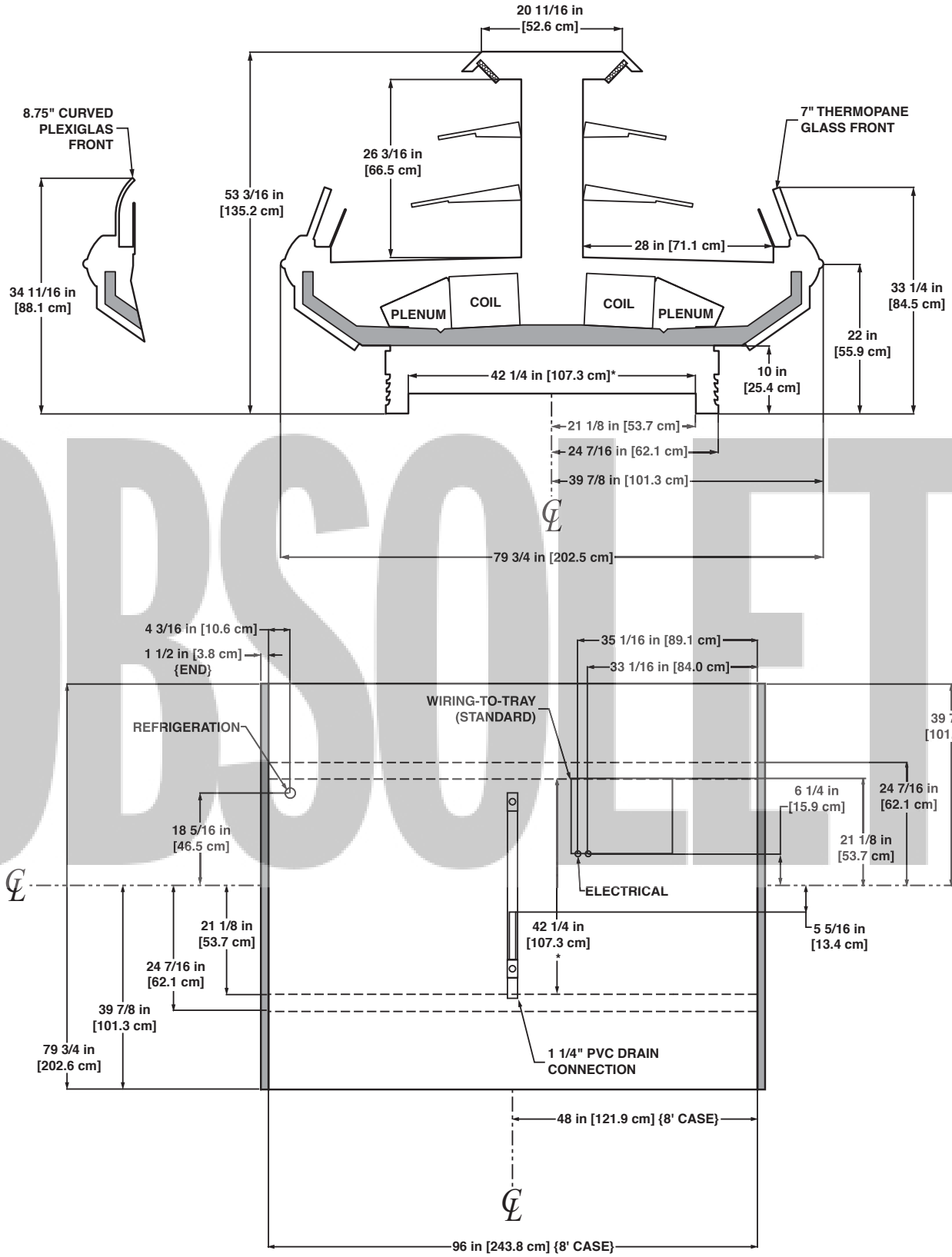
NSF COMPONENT

A DOVER COMPANY



NOTES:

* STUB-UP AREA

- FRONT AND CENTER SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- SUCTION LINE - 7/8", LIQUID LINE - 1/2"
- AVAILABLE SHELF SIZES: 12" & 16"

OBSOLETE

Wide Island Multi-Deck Produce Merchandiser

O3IP - 8’ & 12’ wide island double wraparound end
O3IPB - 8’ & 12’ wide island single wraparound end

Electrical Data

Model		Fans per Case	Standard Fan 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Defrost Heaters 208 Volts		Defrost Heaters 240 Volts	
			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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O3IP	8’	NA[1]	NA	5.71	546
	12’	NA	NA	7.46	779
O3IPB	8’	NA	NA	4.76	514
	12’	NA	NA	6.02	665

[1] Not applicable.

Guidelines & Control Settings

Model	BTUH/ft[2]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
O3IP/O3IPB	1050[4]	22	6-8	34	48	160

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Average discharge air velocity at peak of defrost.

[4] Add 650 BTUH per wrap end.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
O3IP/O3IPB	4	6 - 8	30	47	44	38	- - -[5]	- - -	- - -	- - -

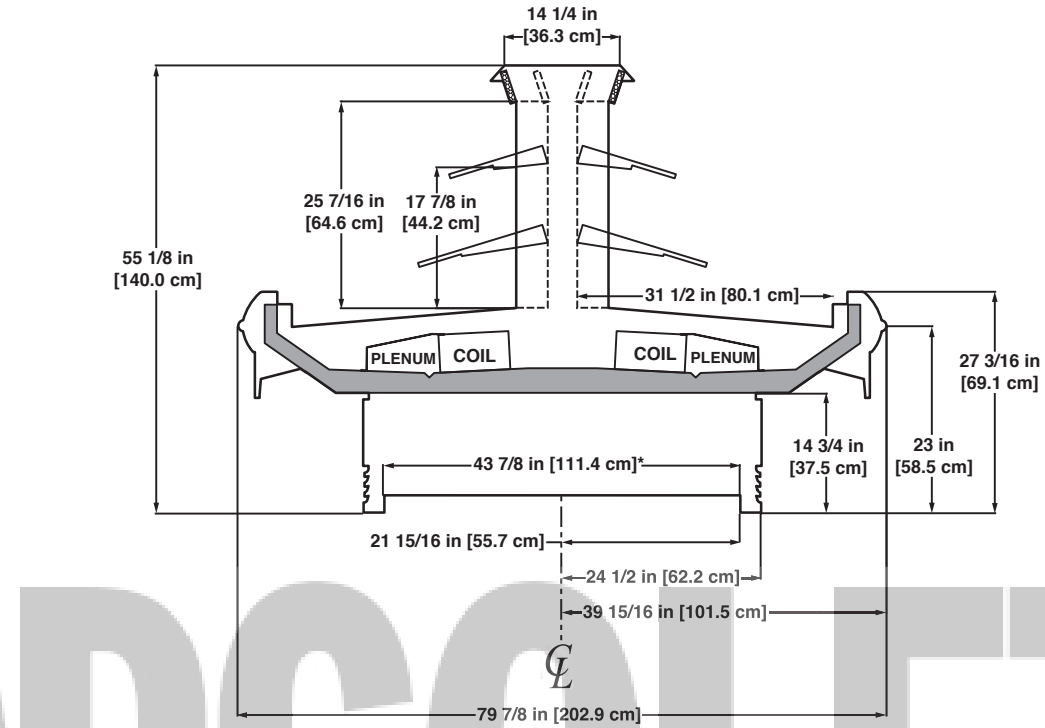
[5] NOTE: --- not an option on this case model.

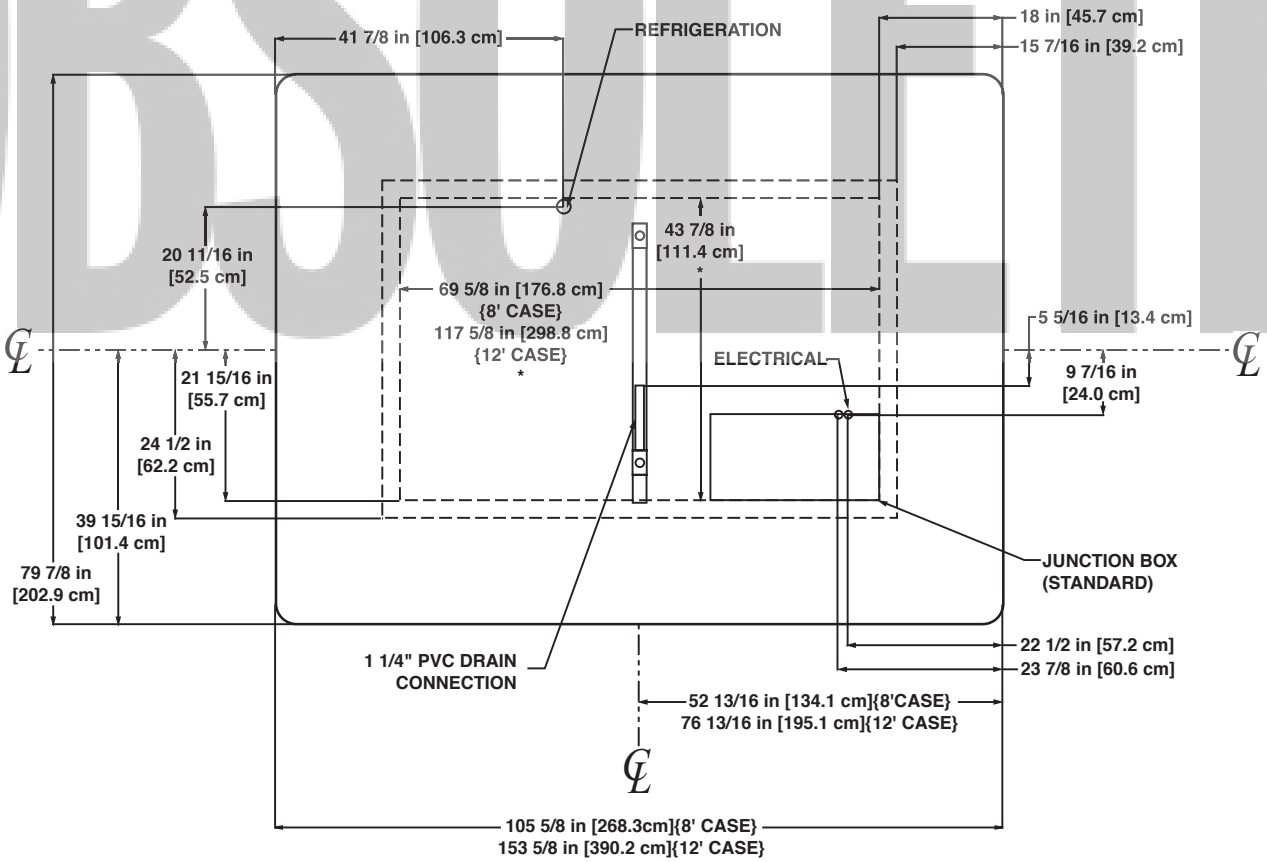
Medium Temperature Defrost Schedule

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 CRMA specifications.

OBSOLETE



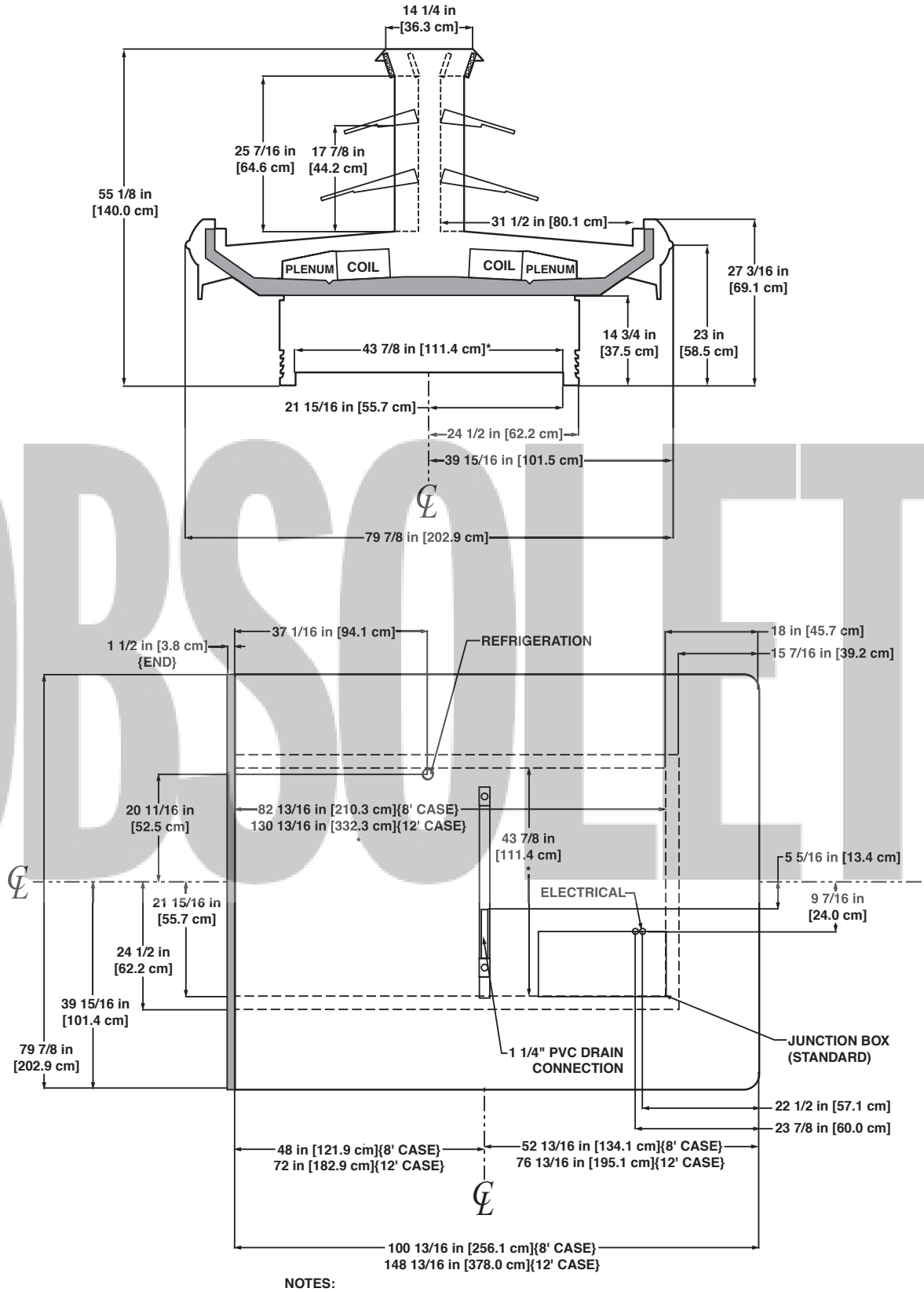


OBSOLETE

NOTES:

* STUB-UP AREA

- FRONT AND CENTER SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- SUCTION LINE - 7/8", LIQUID LINE - 1/2"
- AVAILABLE SHELF SIZES: 12" & 16"



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NOTES:

* STUB-UP AREA

- FRONT AND CENTER SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- SUCTION LINE - 7/8", LIQUID LINE - 1/2"
- AVAILABLE SHELF SIZES: 12" & 16"

OBSOLETE

Wide Island Multi-Deck Deli Merchandiser

O4ID - 8' & 12' double wraparound end
O4IDB - 6', 8' & 12' single wraparound end
O4IDBB - 8' double joint end
Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
O4ID	8'	6	3.00	180	1.80	120	0.67	80	7.70	1600	8.88	2130
	12'	8	4.00	240	2.40	160	1.06	127	11.54	2400	13.32	3200
O4IDB	6'	4	2.00	120	1.20	80	0.63	76	5.77	1200	6.66	1596
	8'	6	3.00	180	1.80	120	0.88	106	7.70	1600	8.88	2130
	12'	8	4.00	240	2.40	160	1.24	149	11.54	2400	13.32	3200
O4IDBB	8'	6	3.00	180	1.80	120	0.91	109	7.70	1600	8.88	2130

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O4ID	8'	NA[1]	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

[1] Not applicable.

Guidelines & Control Settings

Model	BTUH/ft[2]	Coil[3] Type	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
O4ID	2450	Std.	12	6-8	28	43	130
	2450	Enh.	17	6-8	28	43	130
O4IDB	2484	Std.	12	6-8	28	43	130
	2484	Enh.	17	6-8	28	43	130
O4IDBB	2110	Std.	12	6-8	28	43	130
	2110	Enh.	17	6-8	28	43	130

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Coil Type is either Standard Efficiency (Std.) or Enhanced Efficiency (Enh.).

[4] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
O4ID	3	6 - 8	30	47	- - -[5]	- - -	26	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

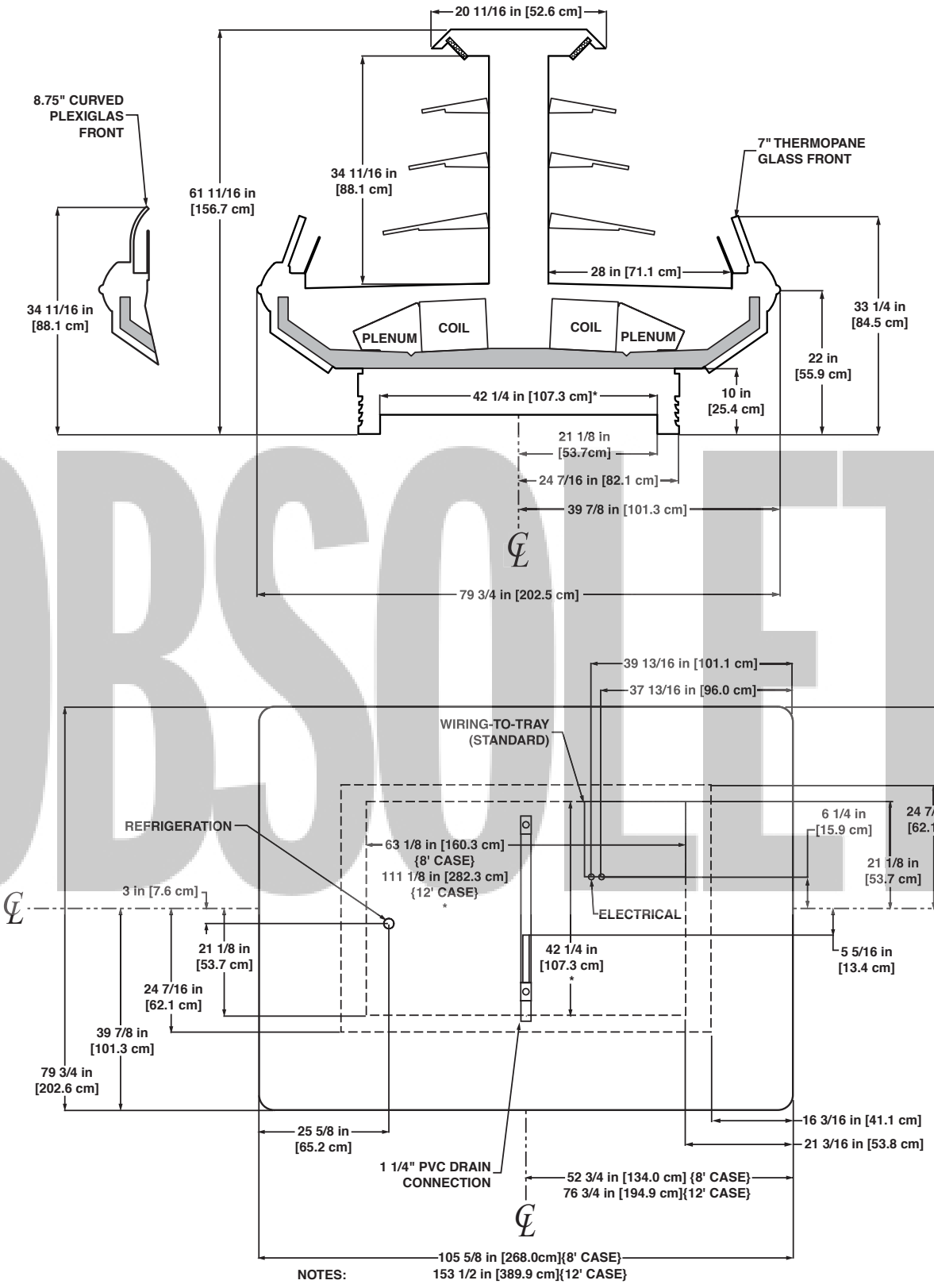
All measurements are taken per CRMA specifications.

NSF COMPONENT

Hill PHOENIX EXCELLENCE

A DOVER COMPANY

OBSOLETE

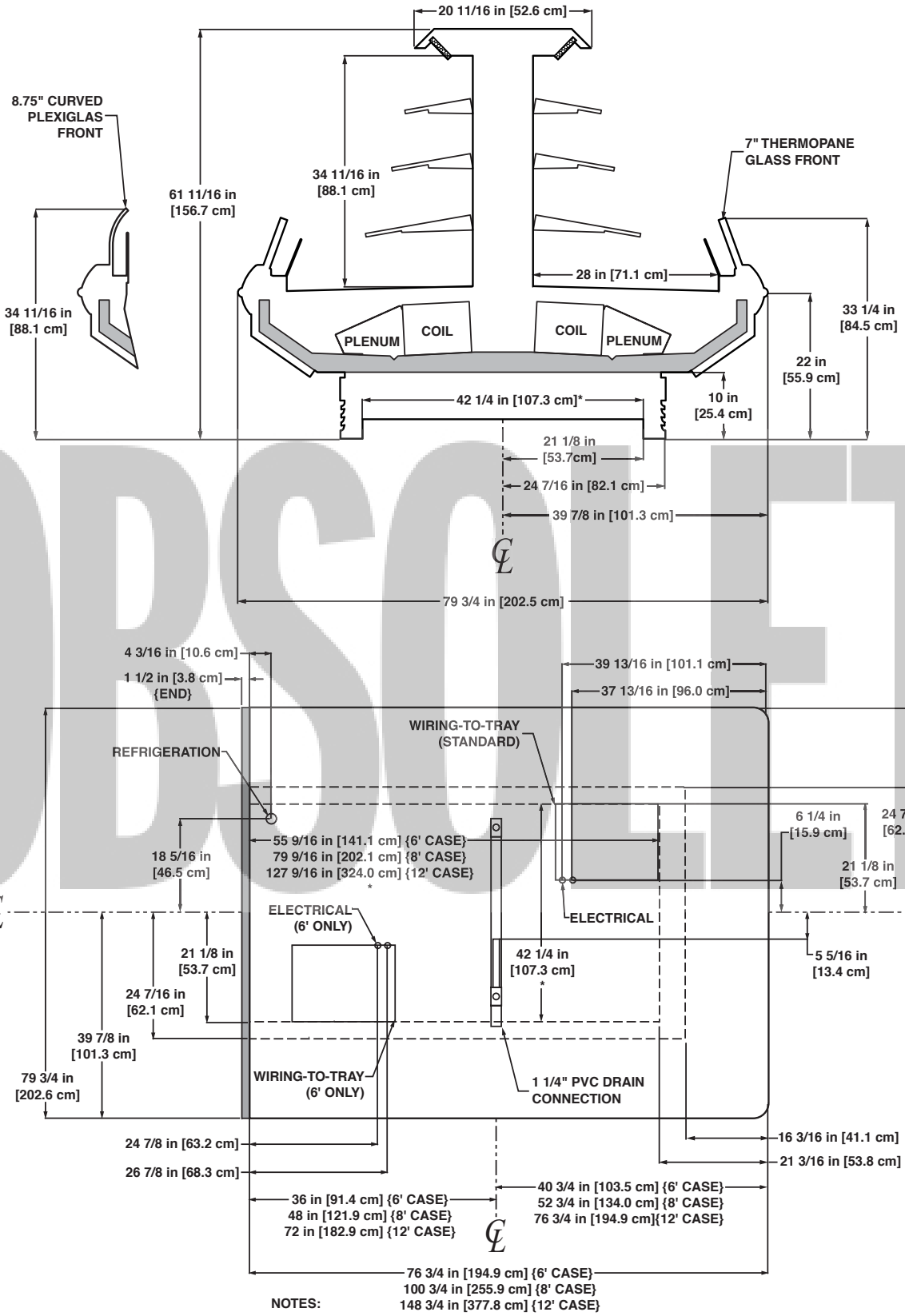


NOTES:

* STUB-UP AREA

- FRONT AND CENTER SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- SUCTION LINE - 7/8", LIQUID LINE - 1/2"
- AVAILABLE SHELF SIZES: 10", 12" & 14"

OBSOLETE



NOTES:

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- FRONT AND CENTER SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
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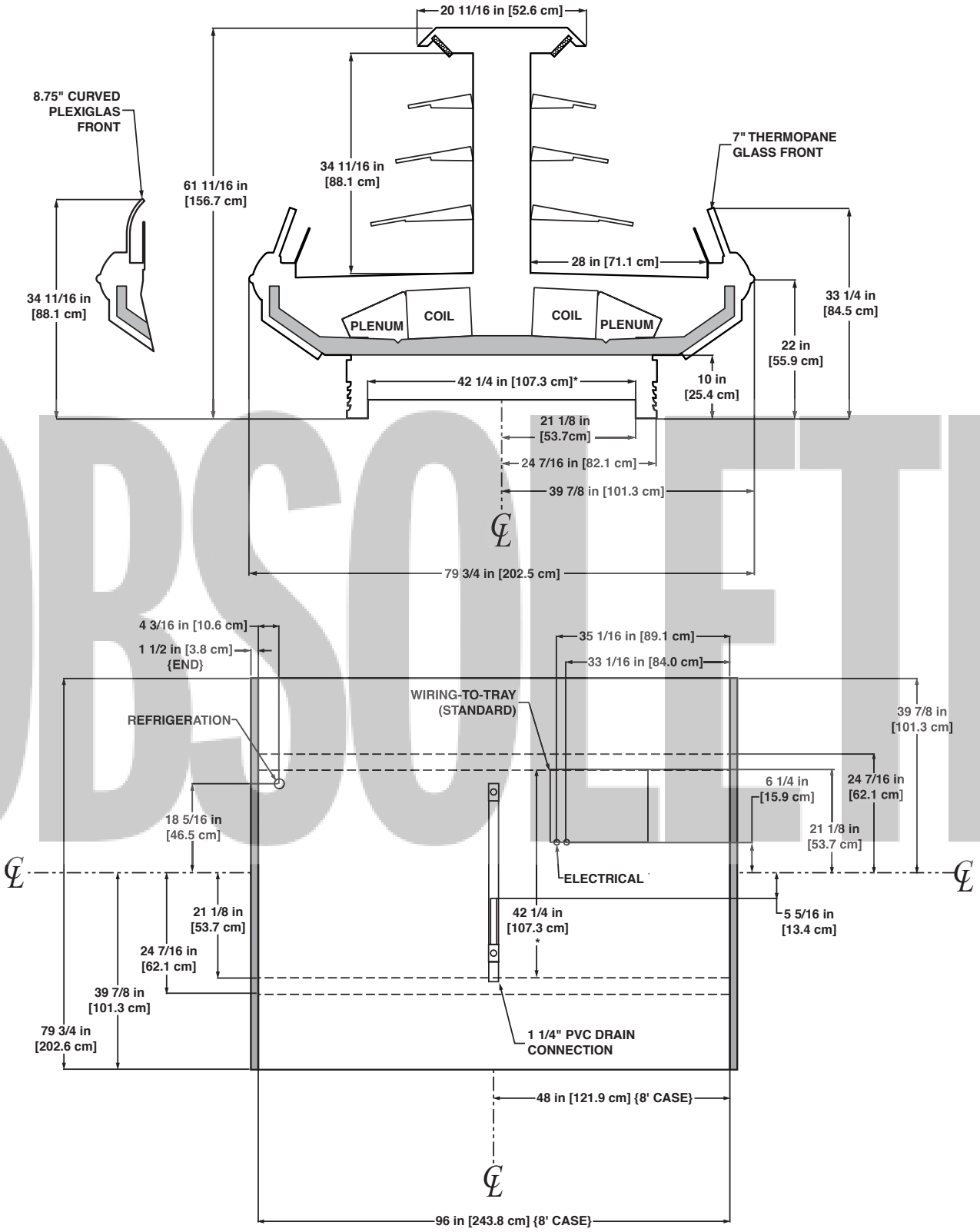

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NOTES:

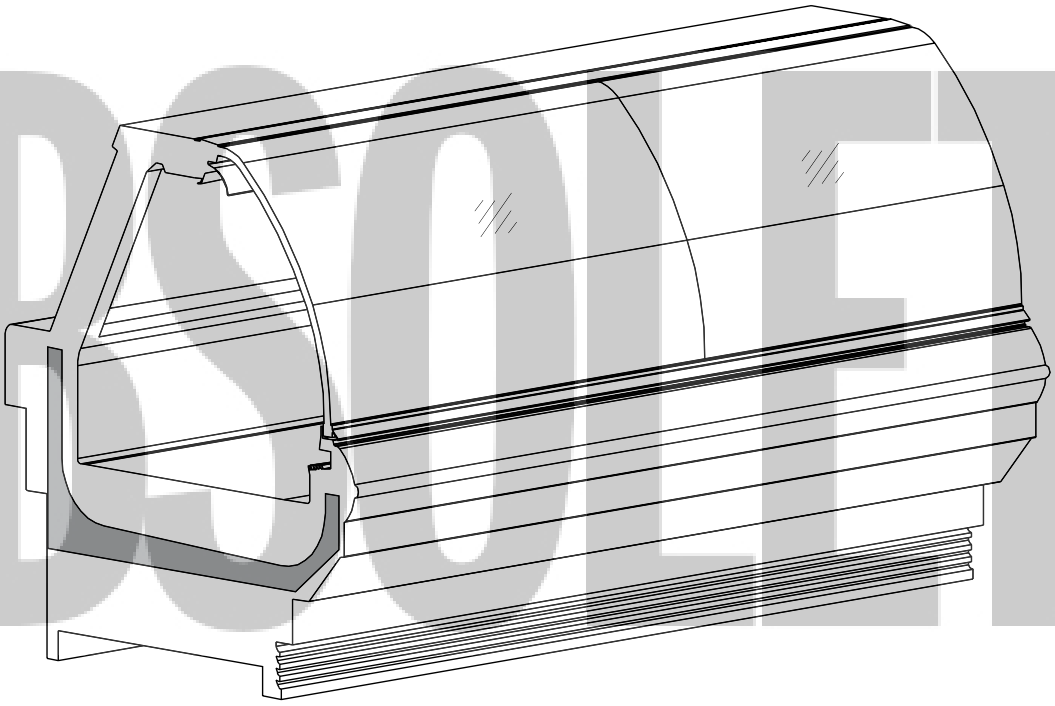
* STUB-UP AREA

- FRONT AND CENTER SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- SUCTION LINE - 7/8", LIQUID LINE - 1/2"
- AVAILABLE SHELF SIZES: 10", 12" & 14"

OBSOLETE

SERVICE

OBSOLETE



Notes:

- *Cases comply with ANSI / NSF* Standard 7. Units marked as components require remote refrigeration.*
- *Allow for an extra 1/8” per joint when lining up merchandisers.*
- *Front sill height does not affect case performance unless specifically shown.*
- *Front and rear sill heights vary with baseframe height.*

* *ANSI - American National Standard Institute*
NSF - National Sanitation Foundation

American Style Curved Glass Service Deli Merchandiser

OSA - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters[1] 120 Volts Amps	Anti-Condensate Heaters[1] 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts 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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OSA	4'	0.57	68	1.71	205
	6'	0.57	68	2.06	247
	8'	0.57	68	2.41	289
	12'	0.77	92	3.85	462

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[1]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[2] (FPM)
OSA w/ Shelf Lights	320	22	6-8	30	39	235
OSA w/o Shelf Lights	290	22	6-8	30	39	235

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OSA	2	6 - 8	35	50	75[3]	50[3]	20	45	- - -[4]	- - -

[3] Not recommended on this model due to long defrost time.

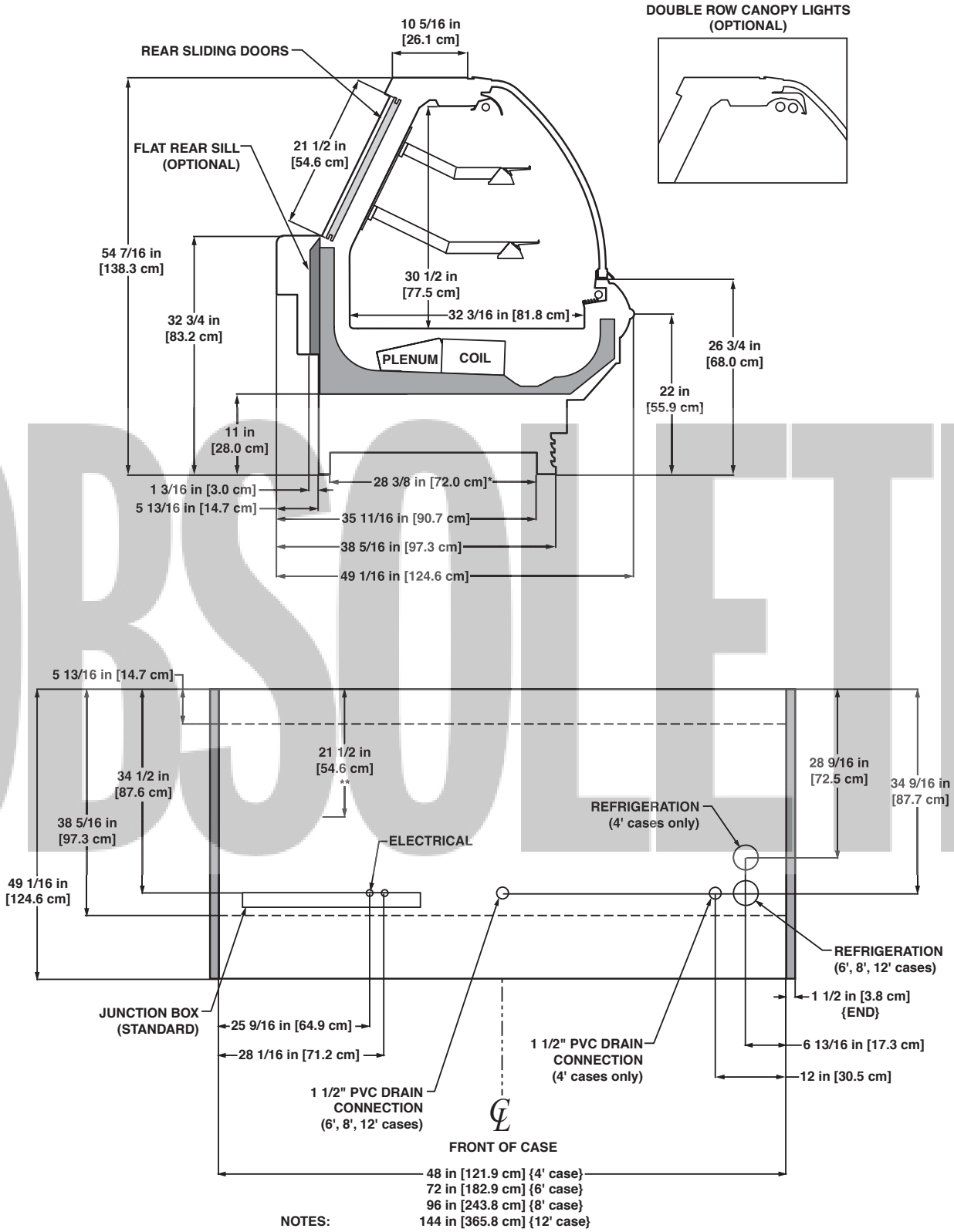
[4] NOTE: - - - not an option on this case model.

Medium Temperature Defrost Schedule

No. Per 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.

OSA
(11" BASEFRAME)



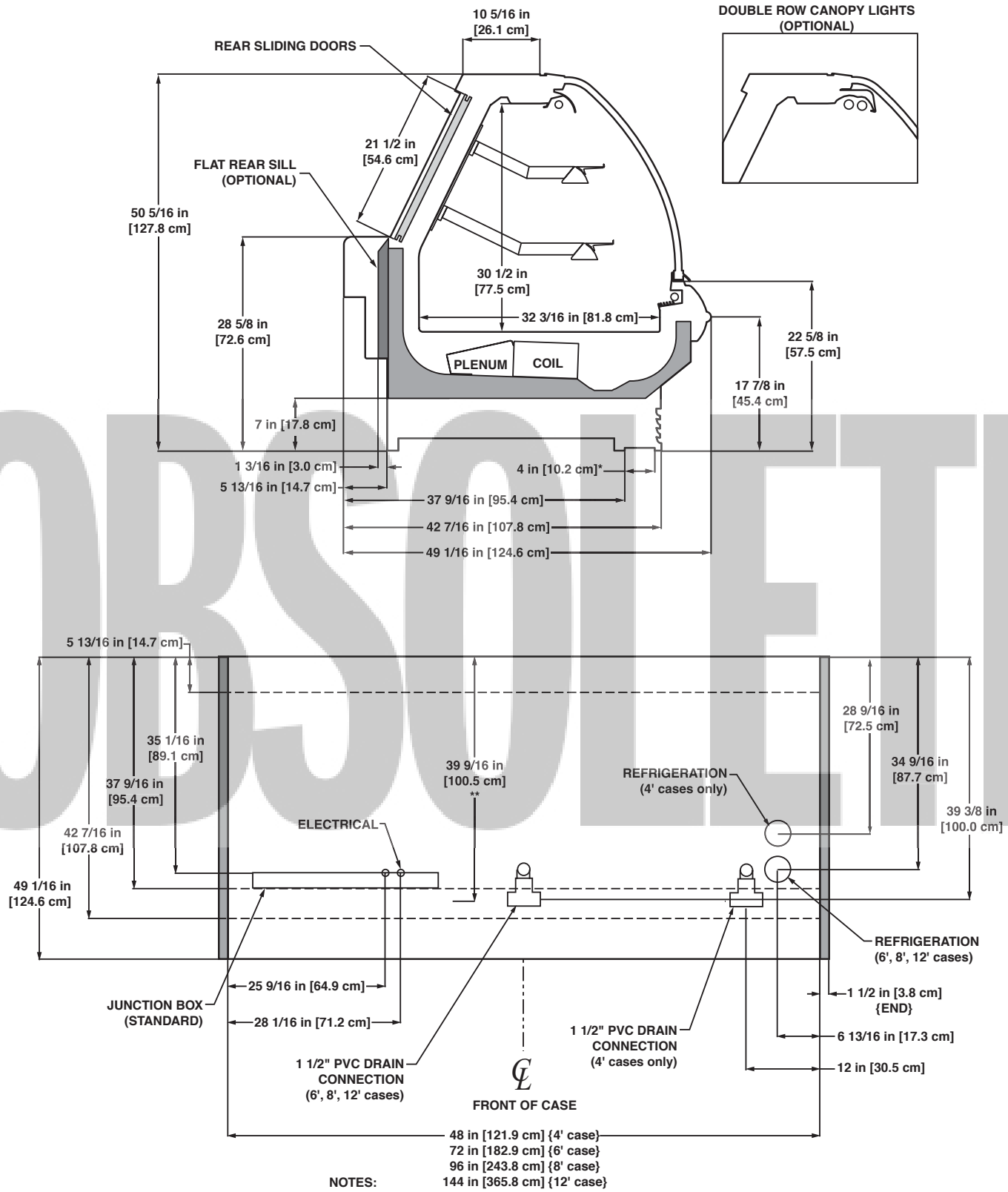
NOTES:

* 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"
- AVAILABLE SHELF SIZES: 10" & 12"

OBSOLETE



OBSOLETE

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"
- AVAILABLE SHELF SIZES: 10" & 12"

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American Style Self-Contained Curved Glass Service Deli Merchandiser

OSAA - 6'

System Requirements

Model		Volts	Hz	Wire	Minimum Circuit Ampacity	Maximum Fuse Size
OSAA	6'	120	60	2 wire + ground	9.74	15

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts		Condenser Fan 120 Volts		Drain Pan Heater 120 Volts		Anti-Condensate Heaters 120 Volts		Defrost Heaters 120 Volts	
			Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OSAA	6'	3	1.02	51	0.53	66	4.16	500	0.42	50	5.0	600

OBSOLETE

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[1] (FPM)
OSAA-6'		20	6-8	30	39	235

[1] Average discharge air velocity at peak of defrost.

Condensing Unit Data

Model	Volts	Phase	Frequency (Hz)	HP	RLA[2] (amps)	LRA[3] (amps)	Refrig.	lbs of Refrig.
OSAA-6'	115	1	60	1/3	7.45	37.5	R134A	2.5

[2] RLA - Running Load Amps.

[3] LRA - Locked Rotor Amps.

Defrost Controls

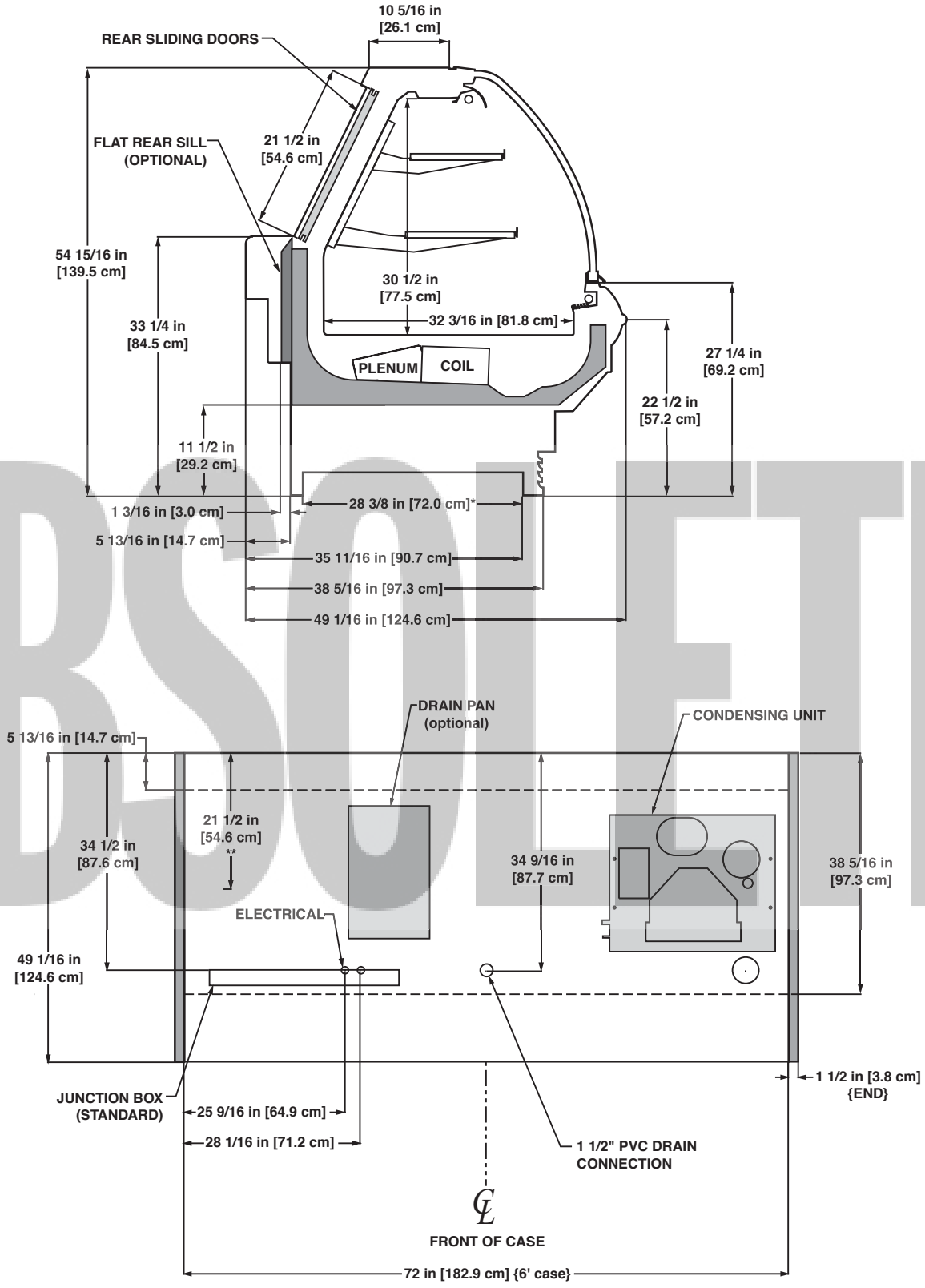
Model	Defrosts Per Day	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OSAA-6'	2	35	49	- - -[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 CRMA specifications.



NOTES:

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

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- AVAILABLE SHELF SIZES: 10" & 12"

OBSOLETE

American Style Curved Glass Service Deli/Meat/Seafood Gravity Coil Merchandiser

OSAG - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters[1] 120 Volts Amps	Anti-Condensate Heaters[1] 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
OSAG	4'	2	0.68	34	0.30	22	1.08	130	- - -[1]	- - -	- - -	- - -
	6'	2	0.68	34	0.30	22	1.33	160	- - -	- - -	- - -	- - -
	8'	3	1.02	51	0.45	33	2.11	253	- - -	- - -	- - -	- - -
	12'	4	1.36	68	0.60	44	2.93	352	- - -	- - -	- - -	- - -

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

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OSAG	4'	057	68	1.71	205
	6'	0.57	68	2.06	247
	8'	0.57	68	2.41	289
	12'	0.77	92	3.85	462

Guidelines & Control Settings

Model	BTUH/ft[2]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
OSAG[4]	270	15	6-8	21-31	38	125

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Average discharge air velocity at peak of defrost.

[4] If the OSAG is piped to a suction header lower than 10°F an EPR with a suction stop solenoid is required. A liquid line solenoid alone does not allow the case to cycle properly. The thermostat probe should be located on the inlet of the top coil. The cut out point should be set to 15°F and the cut in point should be set so that refrigeration starts as soon as the top coil ice starts to drip.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OSAG	2	6 - 8	- - -	- - -	65	46	20	45	- - -	- - -

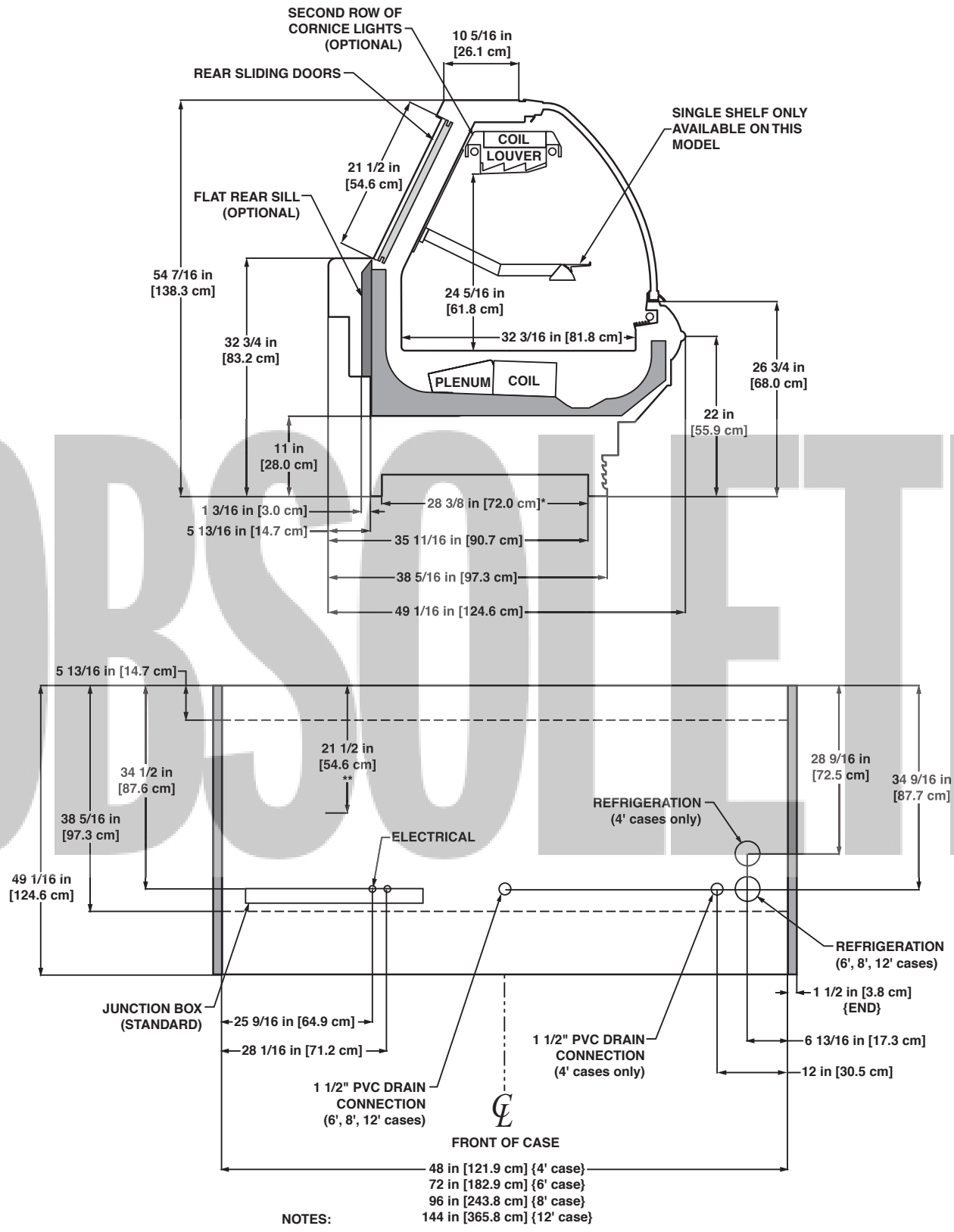
Medium Temperature Defrost Schedule

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

All measurements are taken per CRMA specifications.

OBSOLETE

OSAG
(11" BASEFRAME)



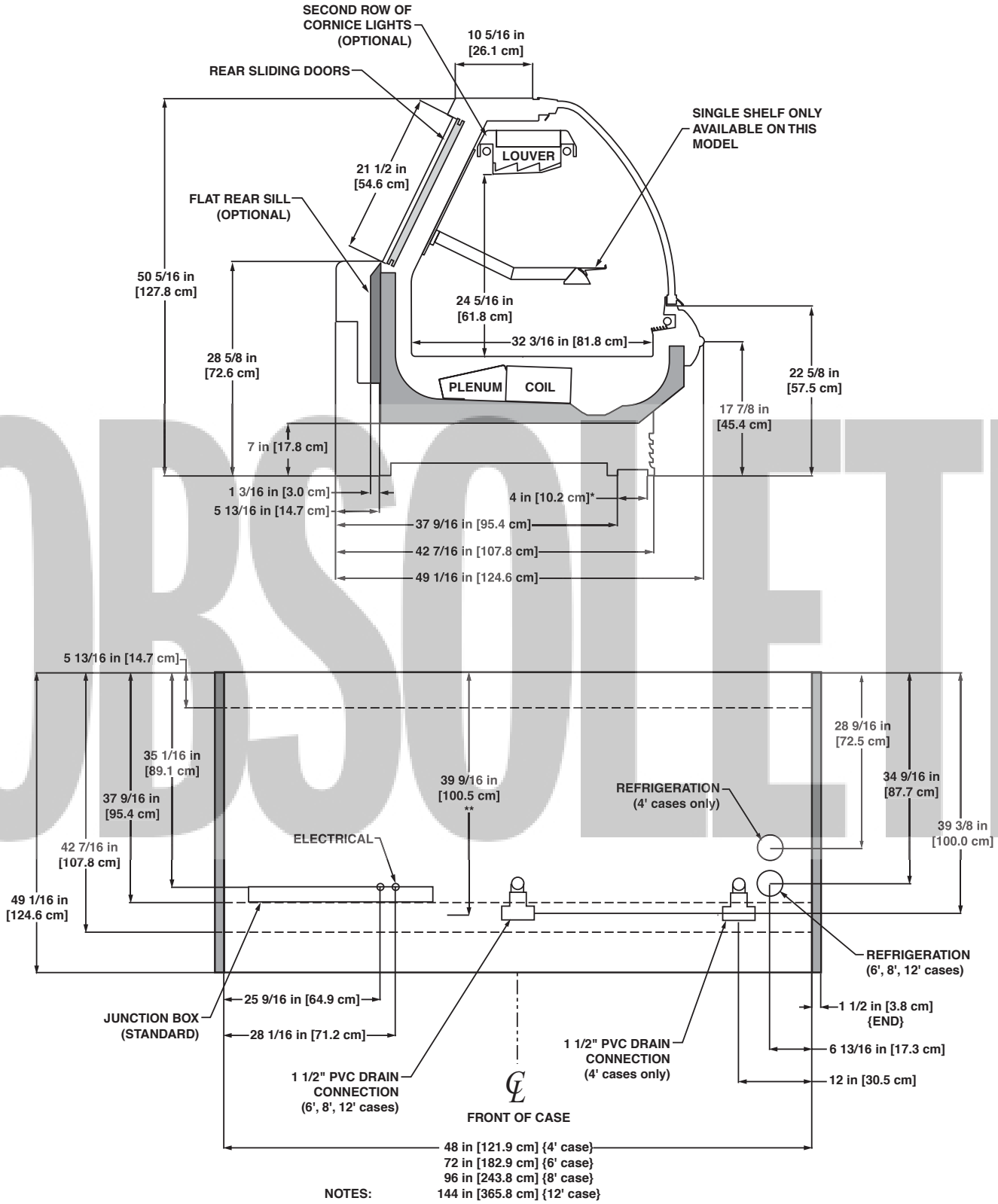
NOTES:

* 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"
- AVAILABLE SHELF SIZES: 10" & 12" (SINGLE ROW OF SHELVES PER CASE)

OBSOLETE



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"
- AVAILABLE SHELF SIZES: 10" & 12"

OBSOLETE

OBSOLETE

American Style Vertical Glass Service Deli Merchandiser

OSM - 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts 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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OSM	6'	0.57	68	2.28	274
	8'	0.57	68	2.63	316
	12'	0.77	92	3.85	462

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[1]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[2] (FPM)
OSM	320	22	6-8	30	39	235

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OSM	2	6 - 8	35	50	75[3]	50[3]	20	45	- - -[4]	- - -

[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 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.

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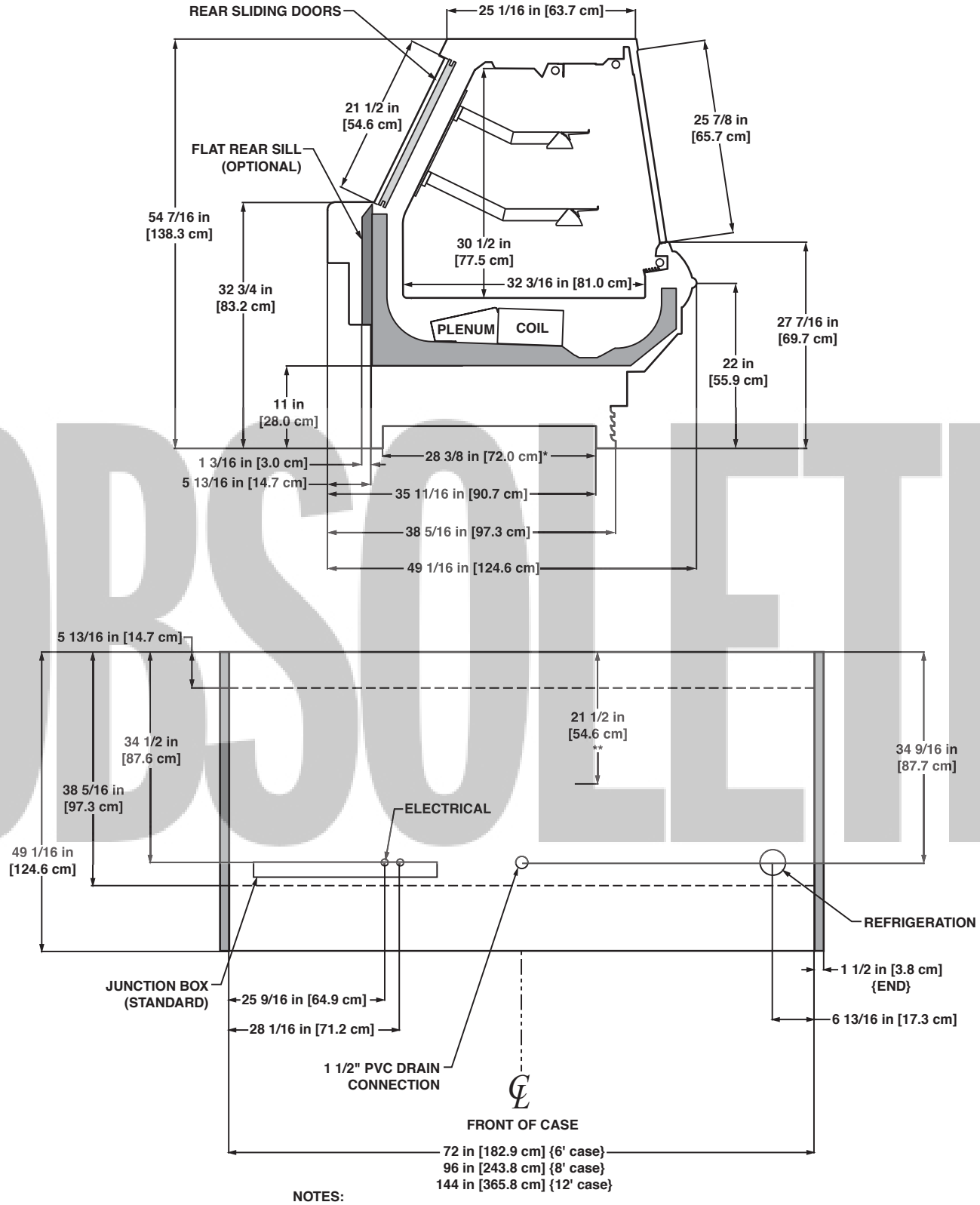
OSM
(11" BASEFRAME)

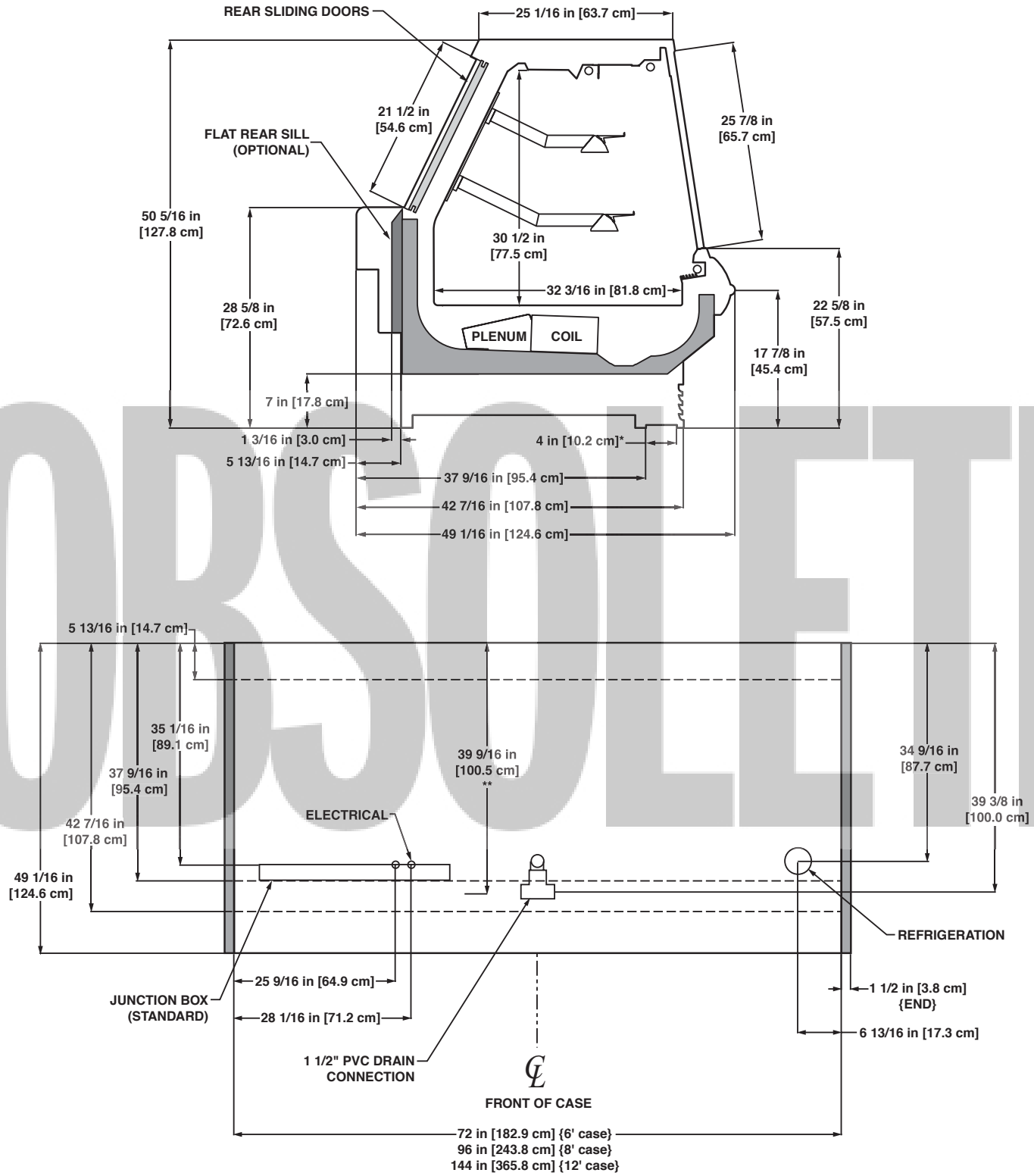


OBSOLETE

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"
- AVAILABLE SHELF SIZES: 10" & 12"



OBSOLETE

NOTES:

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

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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"

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American Style Vertical Glass Service Deli/Meat/Seafood Gravity Coil Merchandiser

OGM - 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
OGM	6'	na	- - -[1]	- - -	- - -	- - -	1.33	160	- - -	- - -	- - -	- - -
	8'	na	- - -	- - -	- - -	- - -	2.11	253	- - -	- - -	- - -	- - -
	12'	na	- - -	- - -	- - -	- - -	2.93	352	- - -	- - -	- - -	- - -

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

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OGM	6'	0.57	68	2.63	316
	8'	0.57	68	2.98	358
	12'	0.77	92	4.62	554

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[2]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
OGM[4]	226	17	6-8	21-31	38	125

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Average discharge air velocity at peak of defrost.

[4] If the OGM is piped to a suction header lower than 15°F an EPR with a suction stop solenoid is required. A liquid line solenoid alone does not allow the case to cycle properly. The thermostat probe should be located on the inlet of the top coil. The cut out point should be set to 17°F and the cut in point should be set so that refrigeration starts as soon as the top coil ice starts to drip.

Defrost Controls

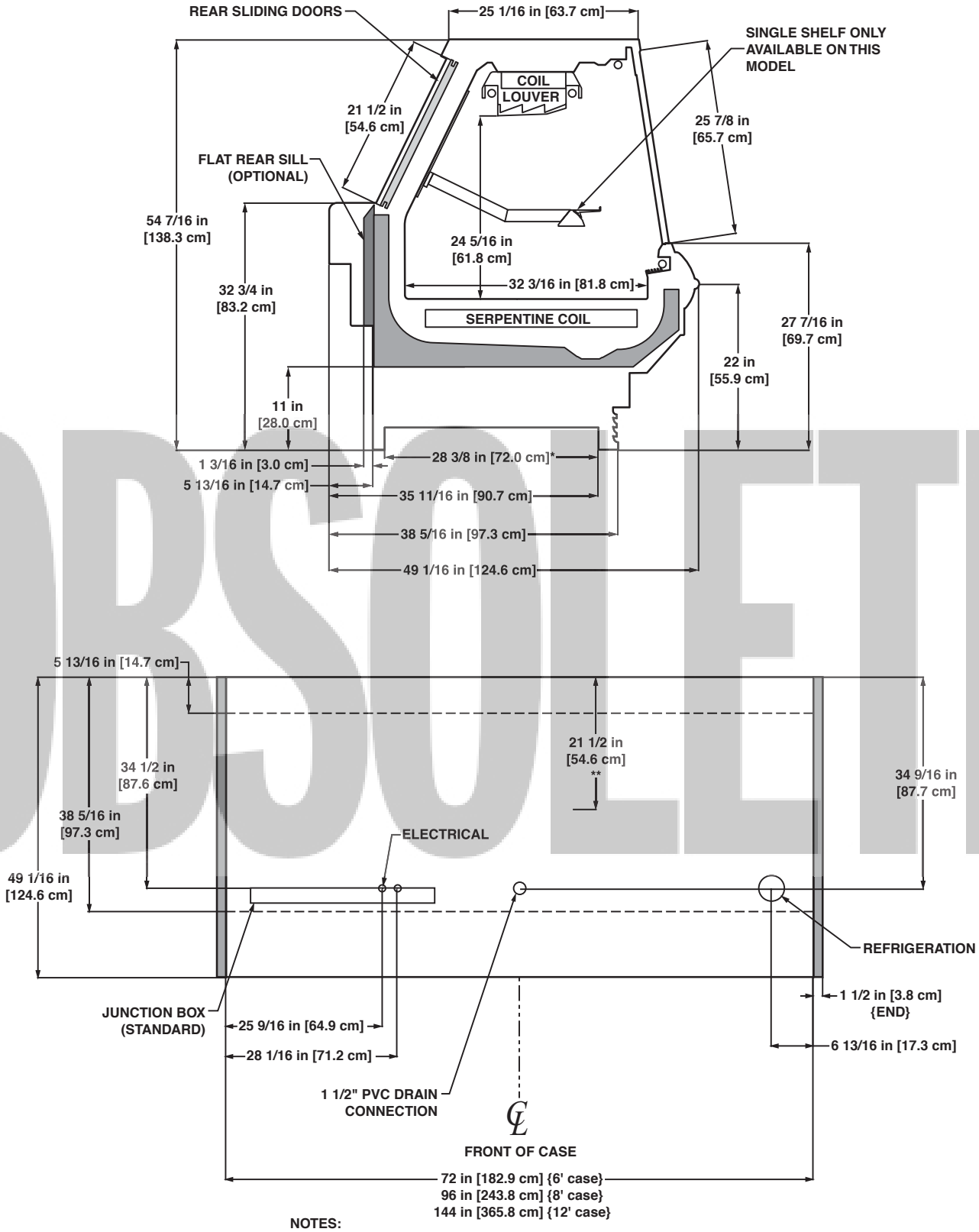
Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
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

All measurements are taken per CRMA specifications.

OGM
(11" BASEFRAME)

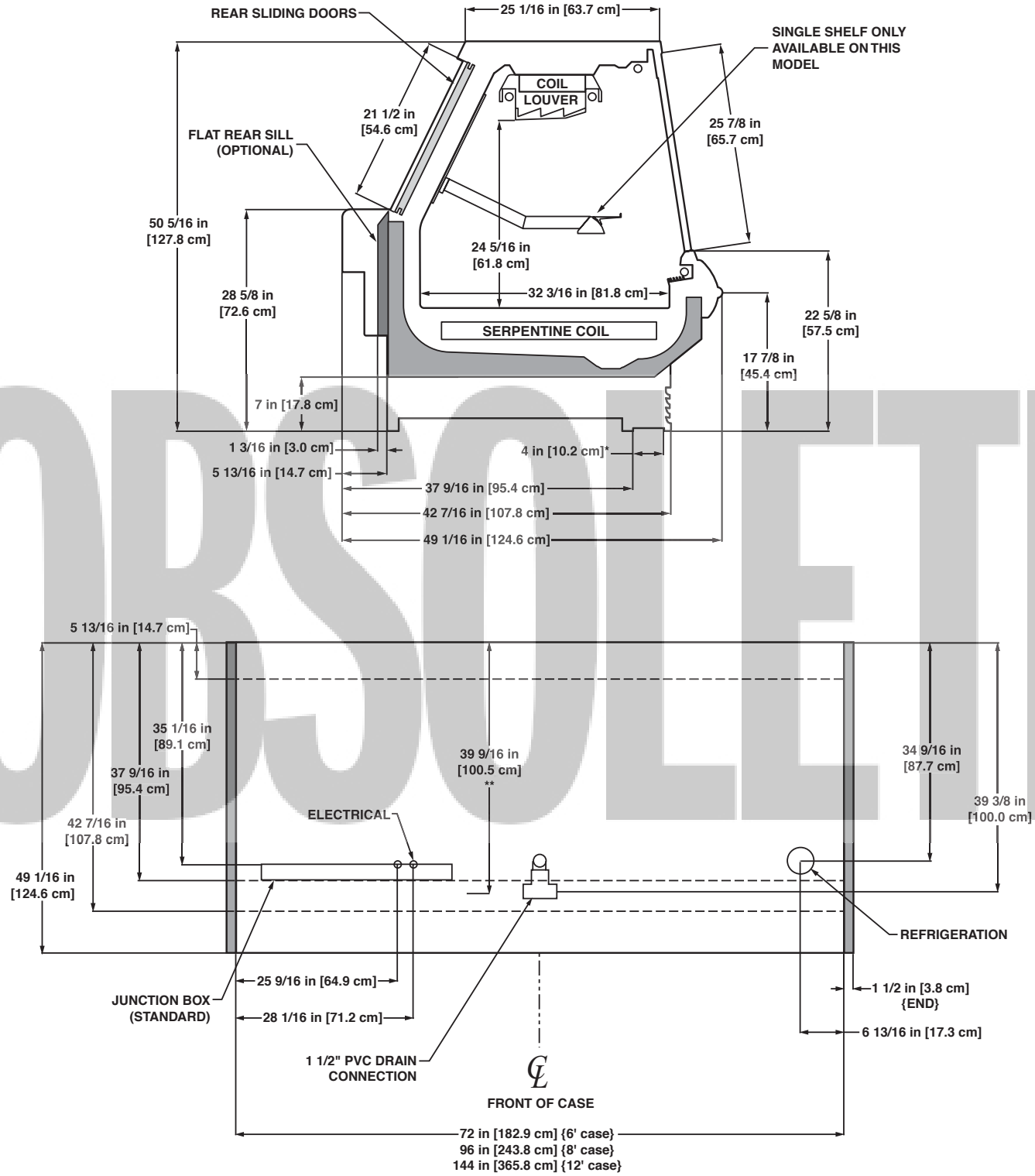


NOTES:

* 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"
- AVAILABLE SHELF SIZES: 10" & 12" (SINGLE ROW OF SHELVES PER CASE)

OBSOLETE



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NOTES:

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** 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"

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International Style Service Deli/Meat/Seafood Merchandiser

OSI - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Defrost Heaters 208 Volts		Defrost Heaters 240 Volts	
			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

Model		Typical per Light Row 120 Volts		Maximum Lighting 120 Volts	
		Amps	Watts	Amps	Watts
OSI	4'	0.57	68	1.14	137
	6'	0.57	68	1.43	172
	8'	0.57	68	1.49	179
	12'	0.77	92	2.31	277

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[1]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[2] (FPM)
OSI[3]	350	22	6-8	31	38	175

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Average discharge air velocity at peak of defrost.

[3] Humidification system required on this case when used for Fresh Meat application

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OSI	3	6 - 8	30	47	60[4]	47[4]	26	45	- - -[5]	- - -

[4] Not recommended on this model due to long defrost time.

[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.

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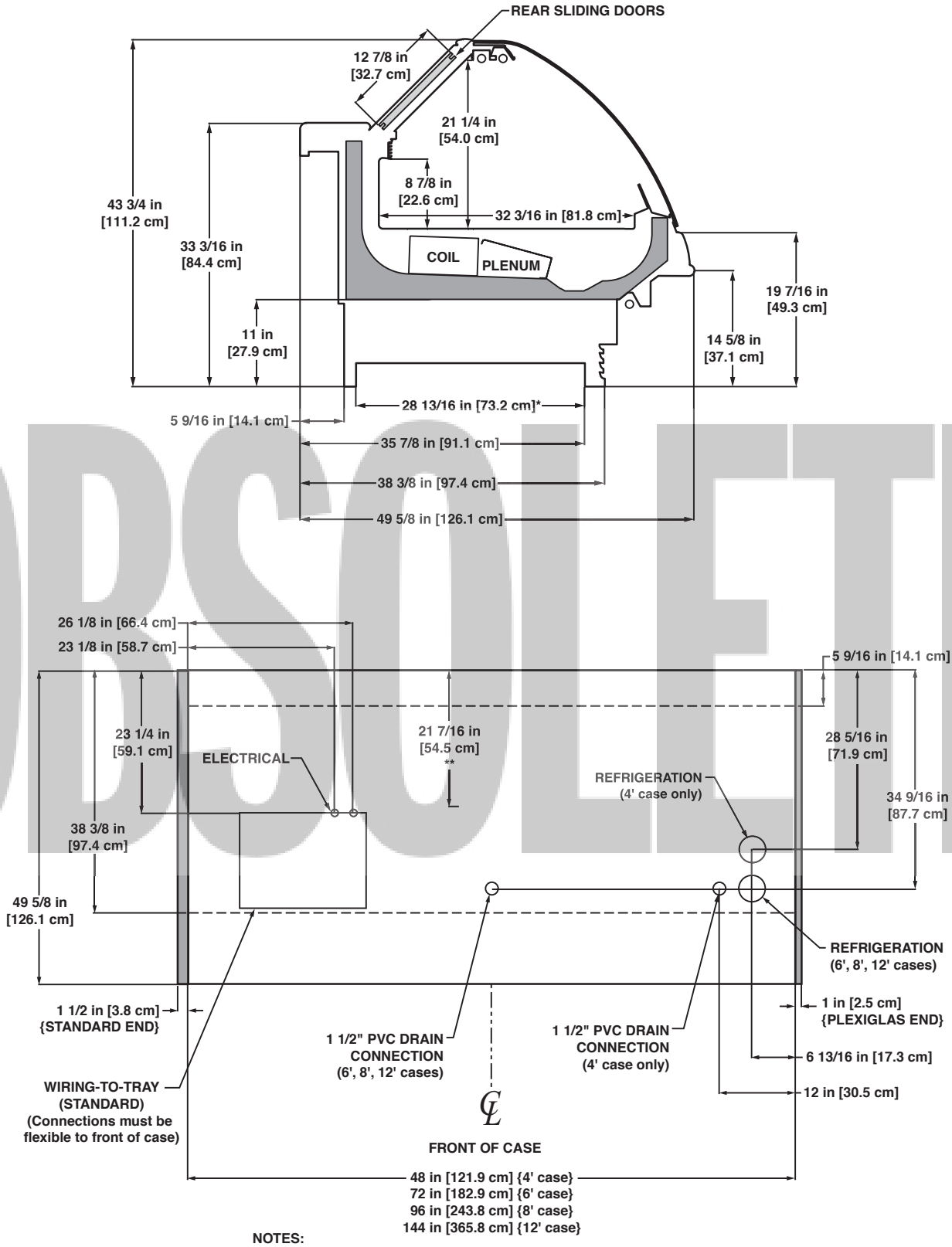

OBSOLETE

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"

International Style Service Hot Foods Merchandiser

OSIH - 4', 6', & 8'

Electrical Data (Domestic)

Model		Number of Hot Wells	Single Phase						Three Phase					
			208 Volts			220 Volts			208 Volts			220 Volts		
			Amps	Watts	Breaker	Amps	Watts	Breaker	Amps	Watts	Breaker	Amps	Watts	Breaker
OSIH	4'	3	16	3300	20	17.1	3800	25	10.0	3300	15	10.7	3800	15
	6'	5	25.3	5600	35	28.6	6300	40	15.8	5600	20	17.6	6300	25
	8'	7	36.9	7700	50	41.6	8700	55	23.7	7700	30	26.7	8700	35

OBSOLETE

Electrical Data (European)

Model		Number of Hot Wells	Single Phase			Three Phase		
			220 Volts			380 Volts		
			Amps	Watts	Breaker	Amps	Watts	Breaker
OSIH	4'	3	17.1	3800	25	- - -	- - -	- - -
	6'	5	- - -	- - -	- - -	10.2	6300	15
	8'	7	- - -	- - -	- - -	15.3	8700	20

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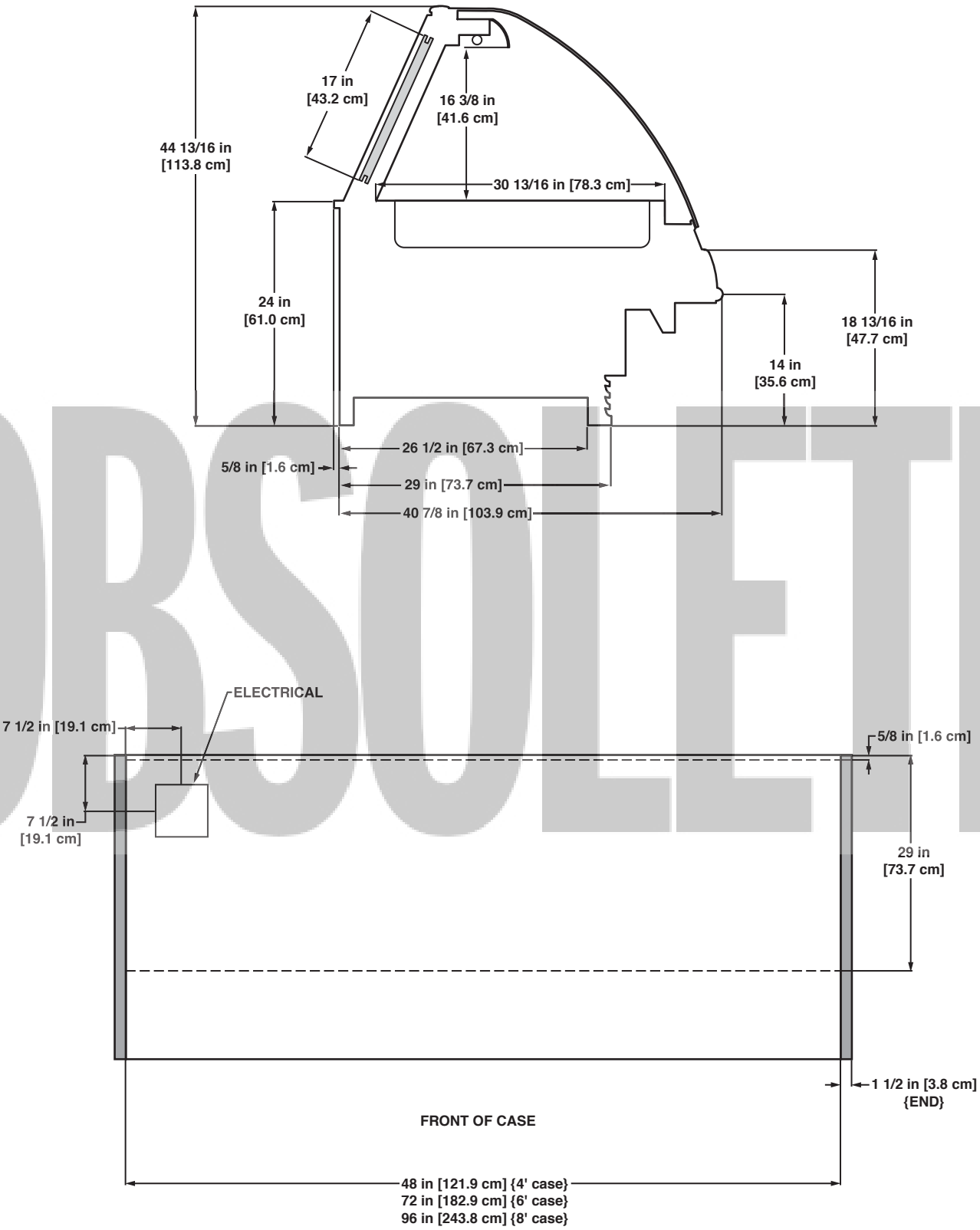


OBSOLETE

NOTES:

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- HOT WELLS ARE 27 3/16" X 12" X 5"

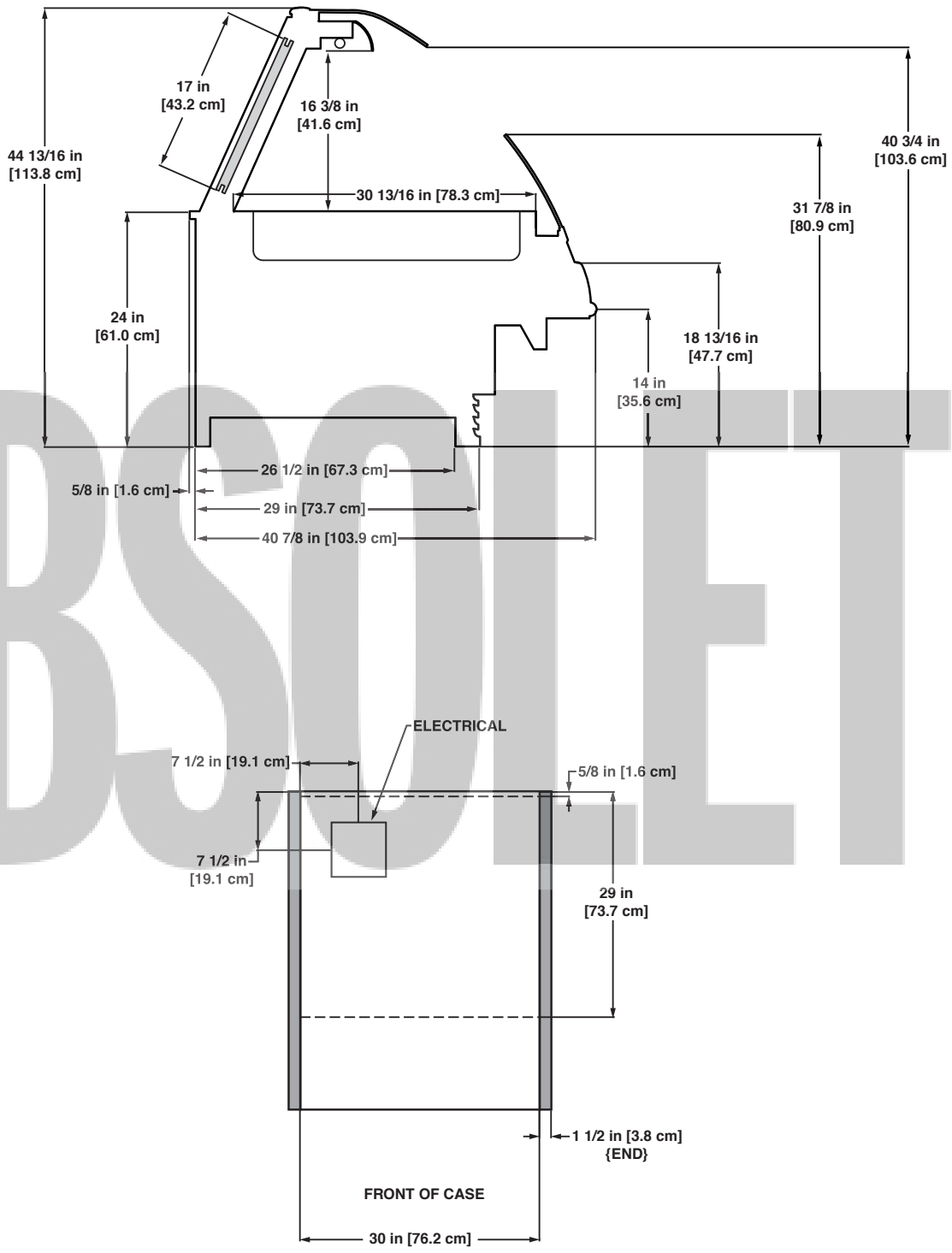
International Style Self Service Hot Foods Merchandiser

OSIHO - 30”

Electrical Data (Domestic)

Model		Number of Hot Wells	Single Phase					
			208 Volts			220 Volts		
			Amps	Watts	Breaker	Amps	Watts	Breaker
OSIHO	30”	2	11	2244	15	12	2536	15

OBSOLETE



OBSOLETE

NOTES:

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- HOT WELLS ARE 27 3/16" X 12" X 5"

Wide International Style Service Deli/Meat/Seafood Merchandiser

OWSI - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts 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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OWSI	4'	0.57	68	1.14	137
	6'	0.57	68	1.43	172
	8'	0.57	68	1.49	179
	12'	0.77	92	2.31	277

Guidelines & Control Settings

Model	BTUH/ft[1]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[2] (FPM)
OWSI[3]	450	22	6-8	31	38	175

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Average discharge air velocity at peak of defrost.

[3] Humidification system required on this case when used for Fresh Meat application

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OWSI	3	6 - 8	30	47	60[4]	47[4]	26	45	- - -[5]	- - -

[4] Not recommended on this model due to long defrost time.

[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.

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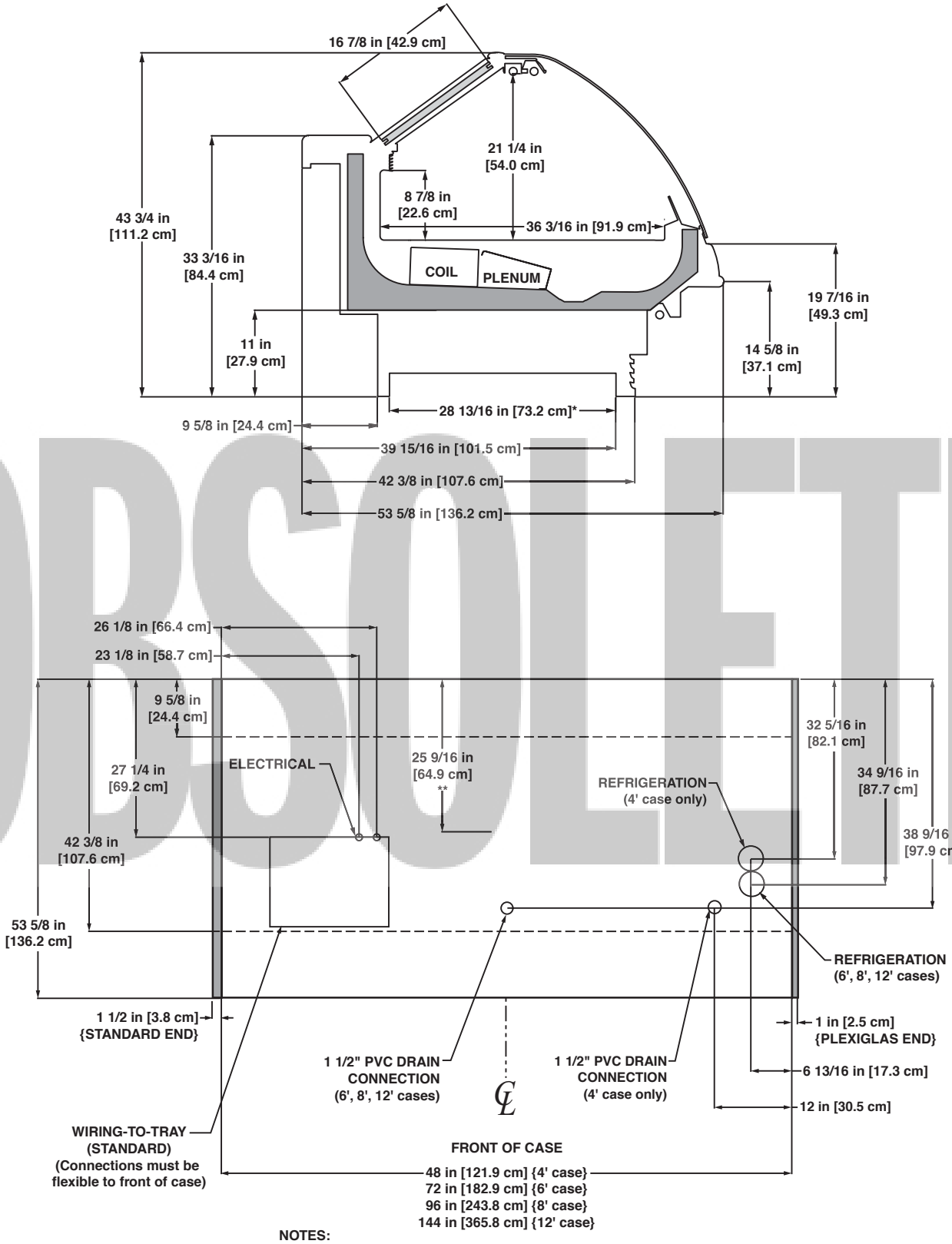

NOTES:

* 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"

OBSOLETE

International Style Flat Glass Service Deli/Meat/Seafood Merchandiser

OSIF - 4', 6', 8', & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts 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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OSIF	4'	0.57	68	1.14	137
	6'	0.57	68	1.43	172
	8'	0.57	68	1.49	179
	12'	0.77	92	2.31	277

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[1]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[2] (FPM)
OSIF[3]	350	22	6-8	31	38	175

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Average discharge air velocity at peak of defrost.

[3] Humidification system required on this case when used for Fresh Meat application

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OSIF	3	6 - 8	30	47	60[4]	47[4]	26	45	- - -[5]	- - -

[4] Not recommended on this model due to long defrost time.

[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.

NSF COMPONENT

Hill PHOENIX EXCELLENCE

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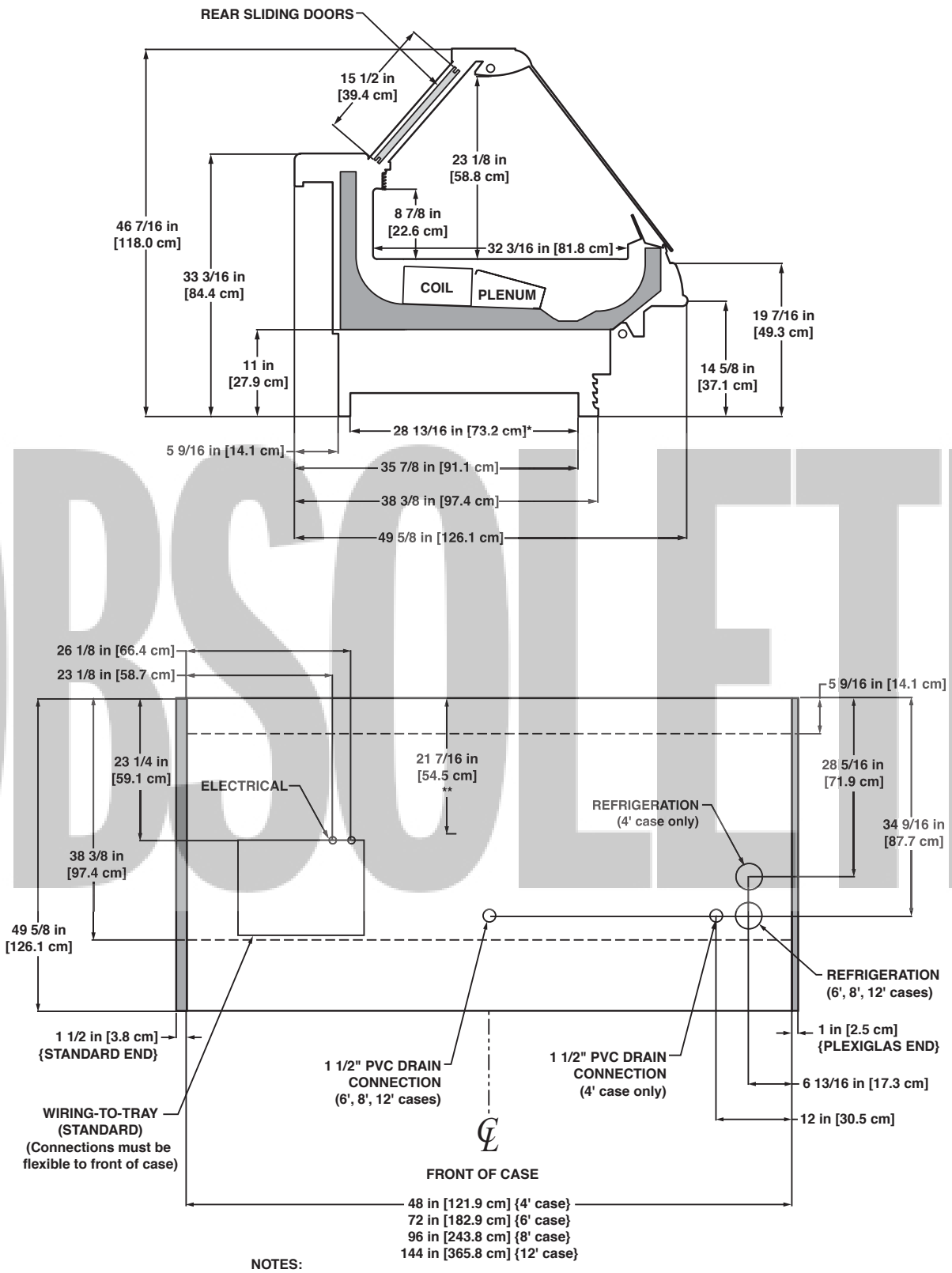


NOTES:

* 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"

OBSOLETE

Flat Glass Service Deli Merchandiser

OLF - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case		Ambient Fans[1] 120 Volts		Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Defrost Heaters 208 Volts		Defrost Heaters 220 Volts	
		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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OLF	4'	0.57	68	2.28	274
	6'	0.57	68	2.98	358
	8'	0.57	68	2.98	358
	12'	0.77	92	4.62	554

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[2]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
OLF	431	17	6-8	27	34	235

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OLF	2	6 - 8	35	47	50[4]	47[4]	20	45	- - -[5]	- - -

[4] Not recommended on this model due to long defrost time.

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

Medium Temperature Defrost Schedule

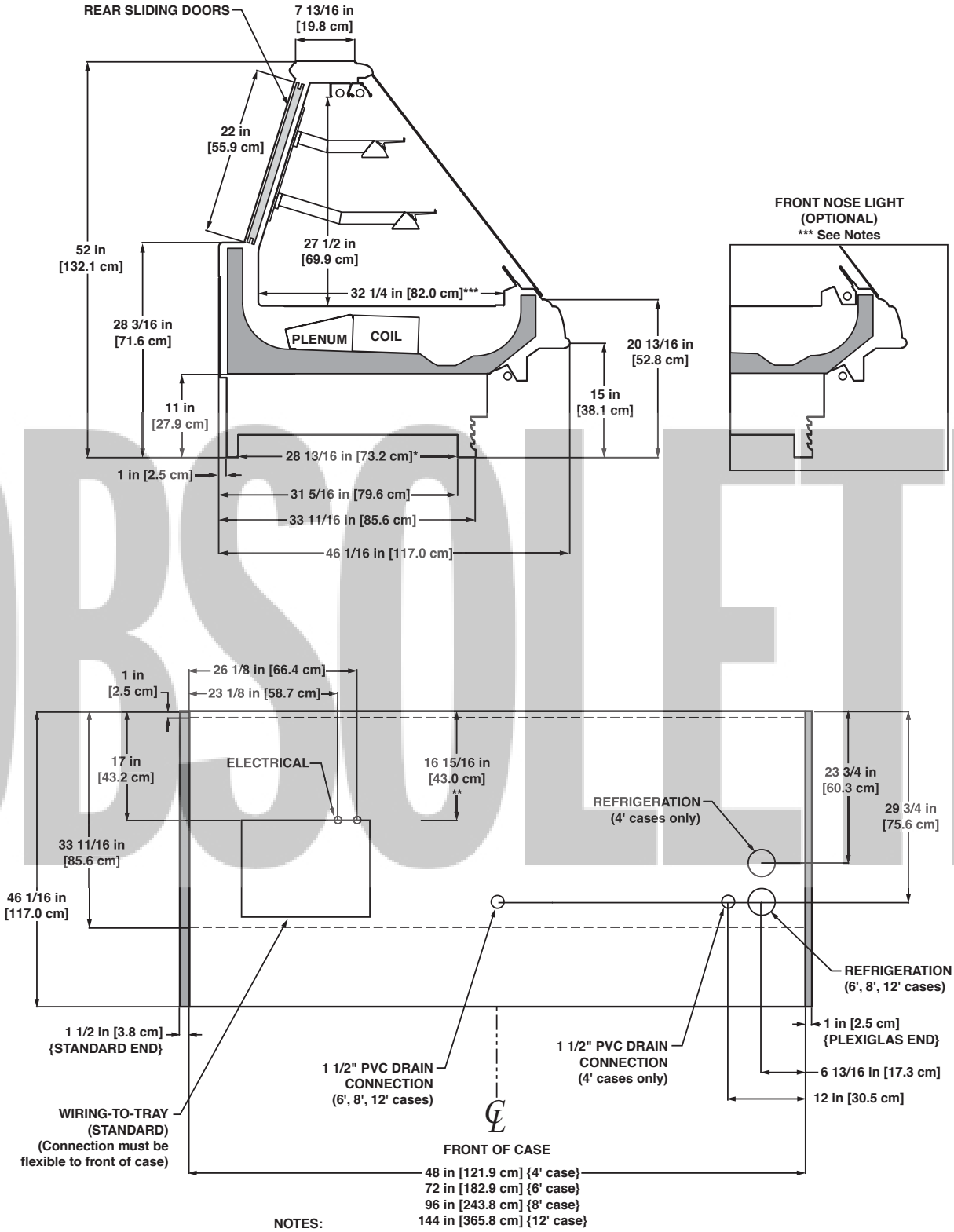
No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm

All measurements are taken per CRMA specifications.

NSF COMPONENT

Hill PHOENIX EXCELLENCE

A DOVER COMPANY



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"

OBSOLETE

Flat Glass Service Deli Gravity Coil Merchandiser

OLFG - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case		Ambient Fans[1] 120 Volts		Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Defrost Heaters 208 Volts		Defrost Heaters 220 Volts	
		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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OLFG	4'	0.57	68	2.28	274
	6'	0.57	68	2.98	358
	8'	0.57	68	2.98	358
	12'	0.77	92	4.62	554

Guidelines & Control Settings

Model	BTUH/ft[2]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
OLFG[4]	275	15	6-8	31	38	125

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Average discharge air velocity at peak of defrost.

[4] If the OLFG is piped to a suction header lower than 10°F an EPR with a suction stop solenoid is required. A liquid line solenoid alone does not allow the case to cycle properly. The thermostat probe should be located on the inlet of the top coil. The cut out point should be set to 15°F and the cut in point should be set so that refrigeration starts as soon as the top coil ice starts to drip.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OLFG	2	6 - 8	35	47	65	47	20	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

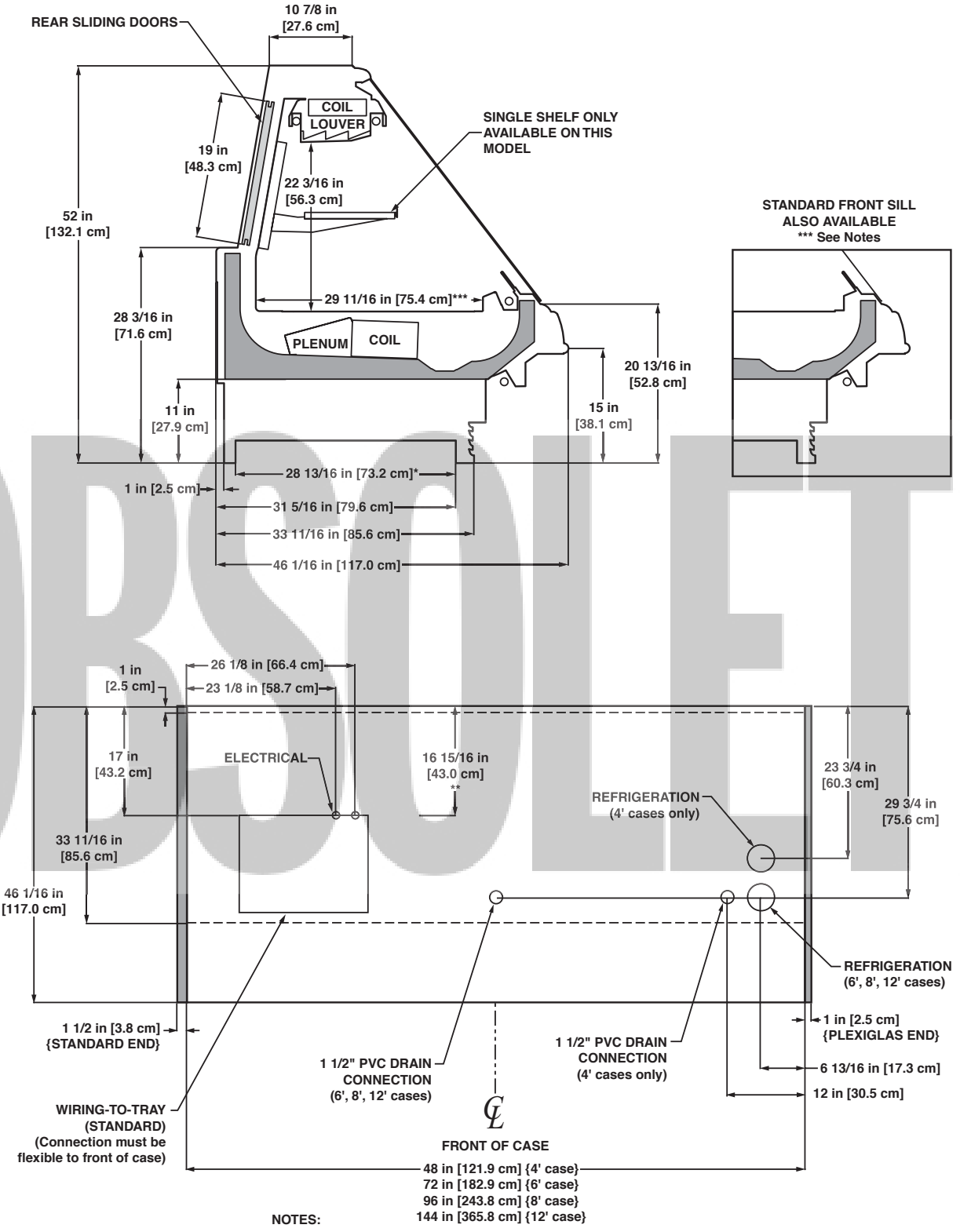
All measurements are taken per CRMA specifications.

NSF COMPONENT

Hill PHOENIX EXCELLENCE

A DOVER COMPANY

OBSOLETE



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"

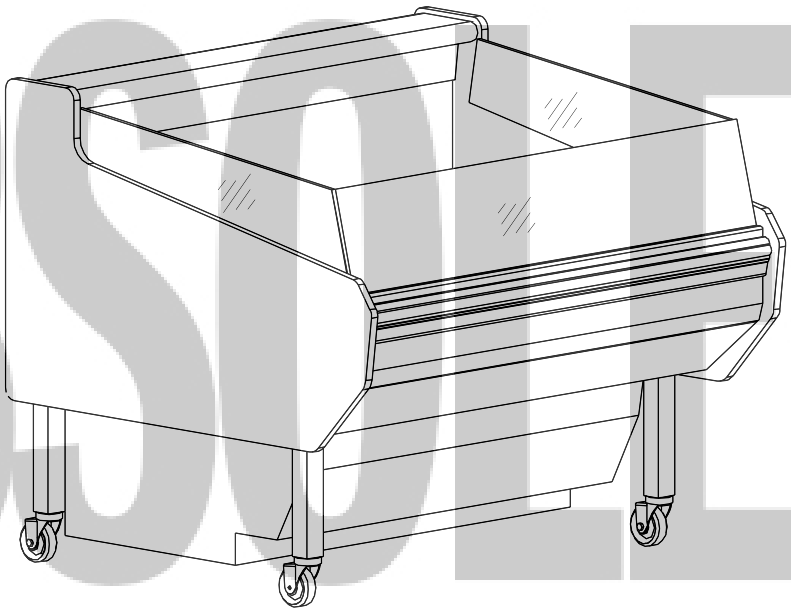
- FRONT, REAR AND TOP SILL HEIGHTS VARY WITH BASEFRAME HEIGHT
- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- SUCTION LINE - 7/8", LIQUID LINE - 1/2"
- AVAILABLE SHELF SIZES: 10" & 12" (SINGLE ROW OF SHELVES PER CASE)

OBSOLETE

OBSOLETE

MOBILE SELF-CONTAINED

OBSOLETE



Notes:

- *Cases comply with ANSI / NSF* Standard 7. Units marked as components require remote refrigeration.*
- *Allow for an extra 1/8" per joint when lining up merchandisers.*
- *Front sill height does not affect case performance unless specifically shown.*
- *Front and rear sill heights vary with baseframe height.*

* *ANSI - American National Standard Institute*
NSF - National Sanitation Foundation

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 L5-20 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[2] (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.

OBSOLETE

Condensing Unit Data

Model	Volts	Phase	Frequency (Hz)	HP	RLA[2] (amps)	LRA[3] (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	51.0	R404A	

[2] RLA - Running Load Amps.
[3] LRA - Locked Rotor Amps.

Defrost Controls

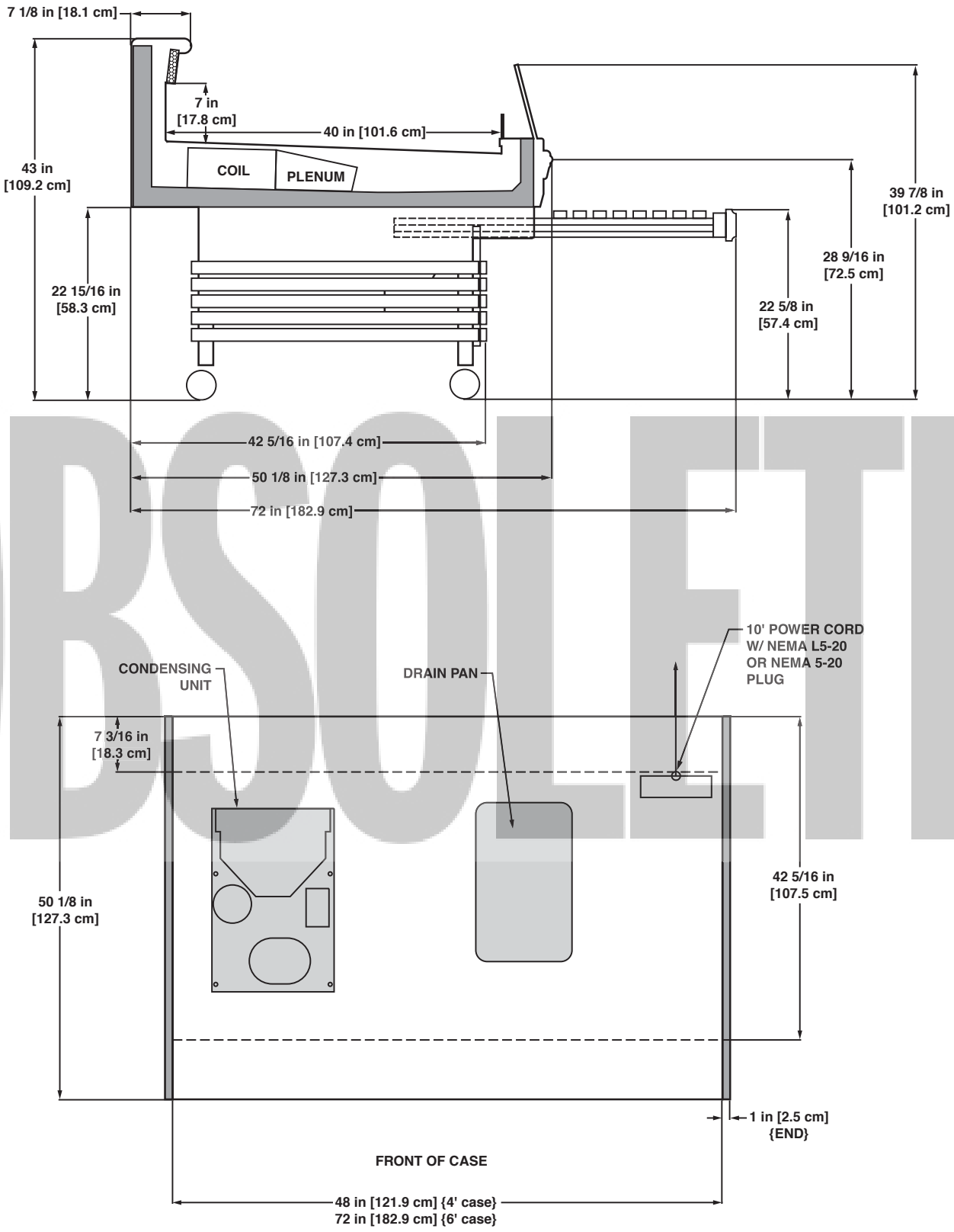
		Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
MDCA	4	35	47	- - -[4]	- - -	- - -	- - -	- - -	- - -

[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 CRMA specifications.



OBSOLETE

NOTES:

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- CASE BASEFRAME ALLOWS OVERALL HEIGHT TO BE LOWERED AS MUCH AS 6" IN 1" INCREMENTS

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 L5-20 or NEMA 5-20	10 ft
MMCA-8'	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[2] (FPM)
MMCA-4'	17.2	49	6-8	24	35	140
MMCA-6'		49	6-8	24	35	140
MMCA-8'		49	6-8	24	35	140

[1] Average discharge air velocity at peak of defrost.

OBSOLETE

Condensing Unit Data

Model	Volts	Phase	Frequency (Hz)	HP	RLA[2] (amps)	LRA[3] (amps)	Refrig.	lbs of Refrig.
MMCA-4'	115	1	60	1/3	7.4	29.8	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.

Defrost Controls

Model	Defrosts Per Day	Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
		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
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm

All measurements are taken per CRMA specifications.

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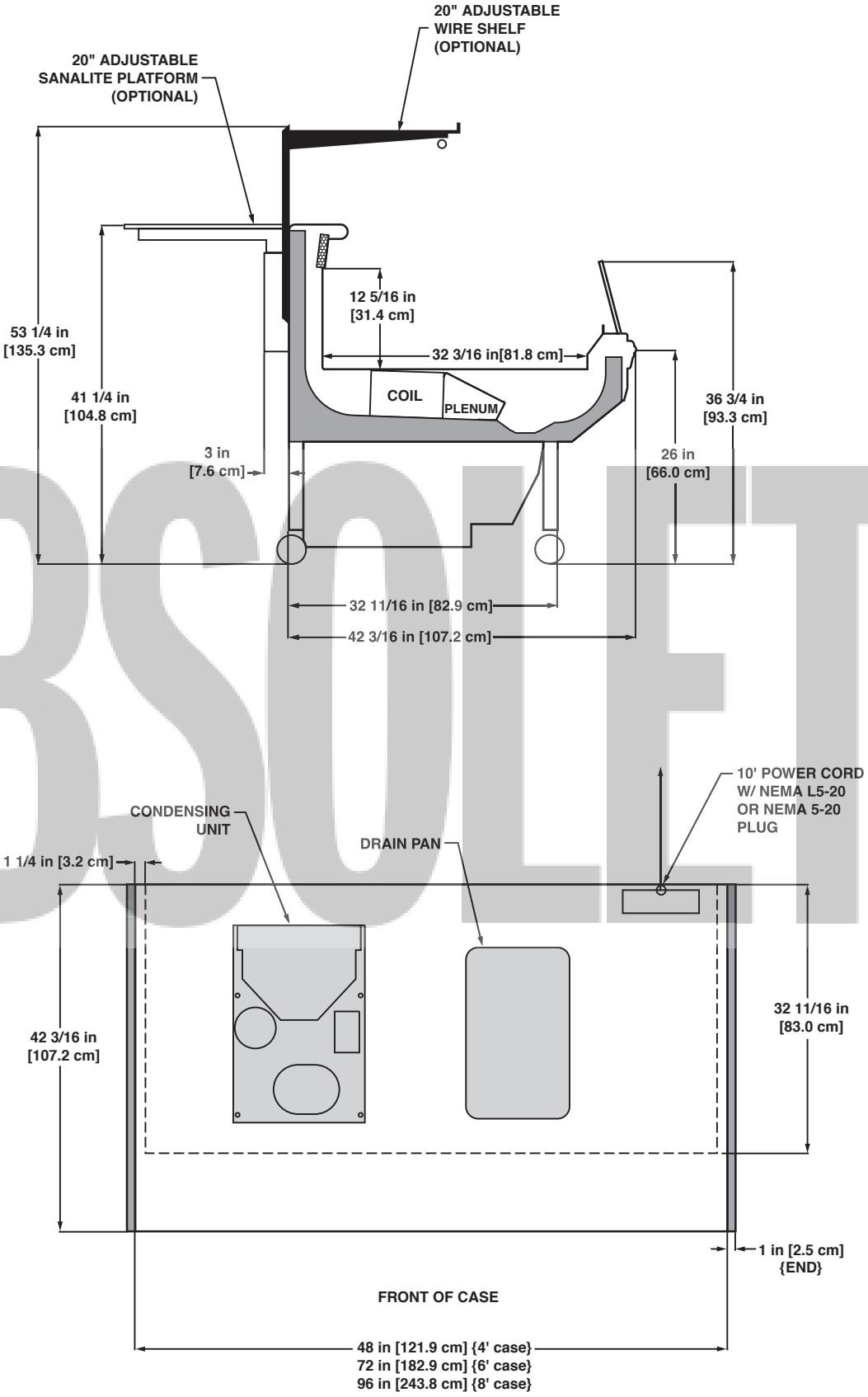

OBSOLETE

NOTES:

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

Single Deck Self-Contained Mobile Produce Merchandiser

MPCA - 8’

System Data

Model	Volts	Phase	Hz	Plug Style	Cord Length
MPCA	120	1	60	NEMA L5-20 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[2] (FPM)
MPCA		19.9	6-8	30	42	163

[1] Average discharge air velocity at peak of defrost.

OBSOLETE

Condensing Unit Data

Model	Volts	Phase	Frequency (Hz)	HP	RLA[2] (amps)	LRA[3] (amps)	Refrig.	lbs of Refrig.
MPCA	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 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)
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	12 - 6 am - 12 - 6 pm

Hill PHOENIX EXCELLENCE®

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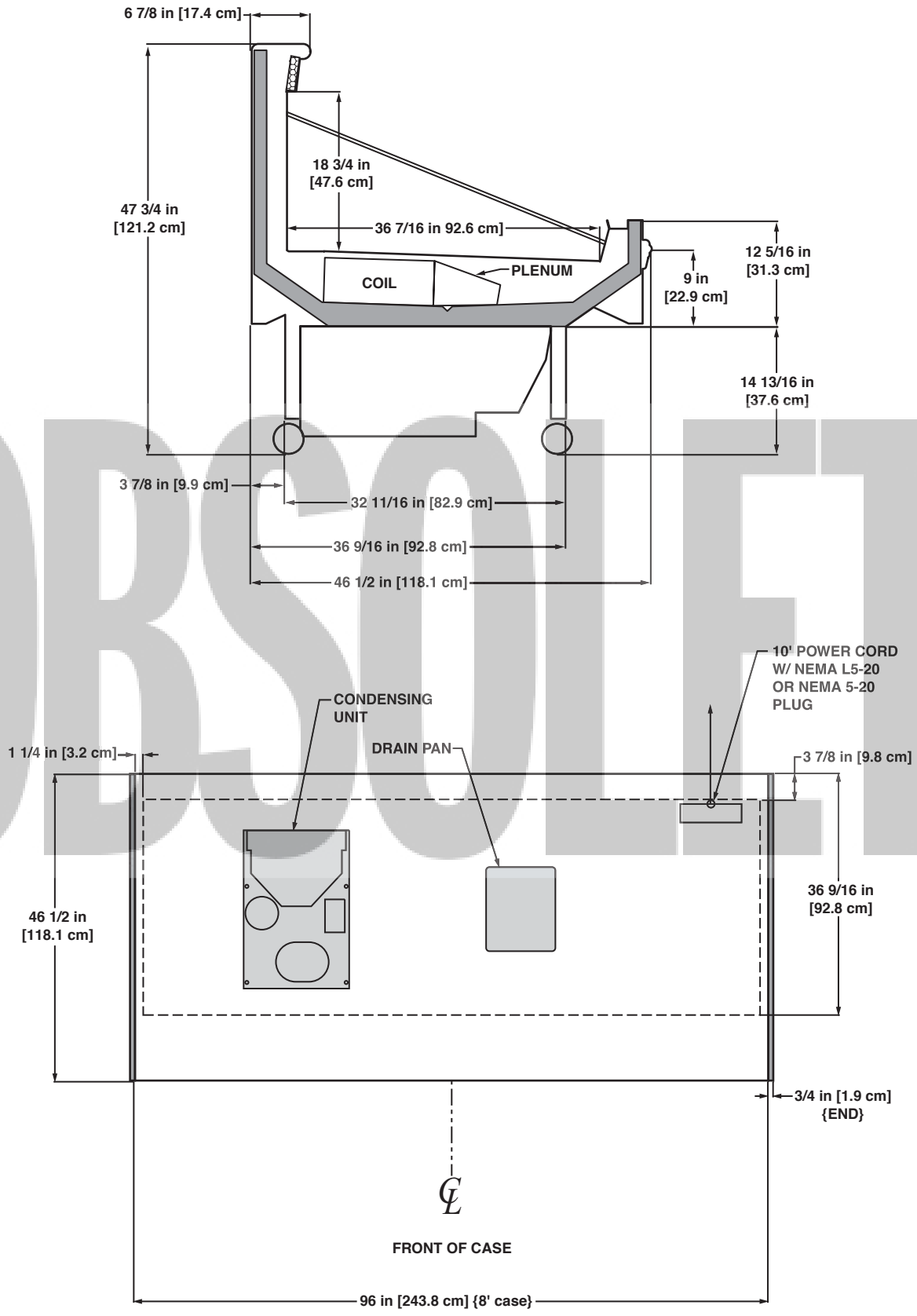
All measurements are taken per CRMA specifications.


6 7/8 in [17.4 cm]
18 3/4 in
[47.6 cm]
47 3/4 in
[121.2 cm]
36 7/16 in 92.6 cm]
COIL
PLENUM
9 in
[22.9 cm]
12 5/16 in
[31.3 cm]
14 13/16 in
[37.6 cm]
3 7/8 in [9.9 cm]
32 11/16 in [82.9 cm]
36 9/16 in [92.8 cm]
46 1/2 in [118.1 cm]
10' POWER CORD
W/ NEMA L5-20
OR NEMA 5-20
PLUG
CONDENSING
UNIT
DRAIN PAN
1 1/4 in [3.2 cm]
3 7/8 in [9.8 cm]
36 9/16 in
[92.8 cm]
46 1/2 in
[118.1 cm]
3/4 in [1.9 cm]
{END}
FRONT OF CASE
96 in [243.8 cm] {8' case}

OBSOLETE

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[1] (FPM)
OSIOA	14.1	12-14	6-8	26	34	182

[1] Average discharge air velocity at peak of defrost.

OBSOLETE

Condensing Unit Data

Model	Volts	Phase	Frequency (Hz)	HP	RLA[2] (amps)	LRA[3] (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

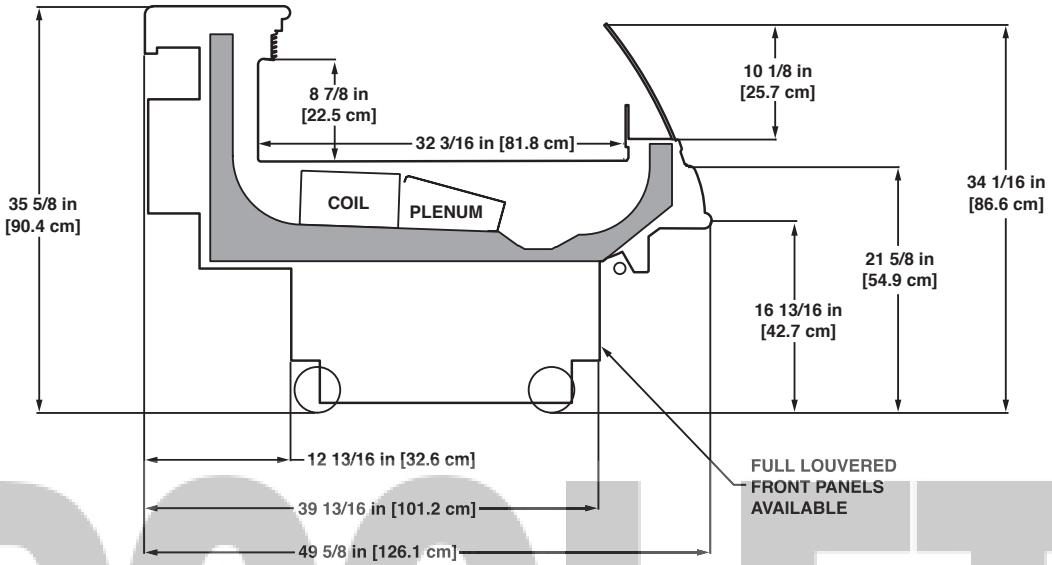
Model	Defrosts Per Day	Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
		Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
OSIOA	4	40	47	- - -[4]	- - -	- - -	- - -	- -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

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

Medium Temperature Defrost Schedule

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

All measurements are taken per CRMA specifications.



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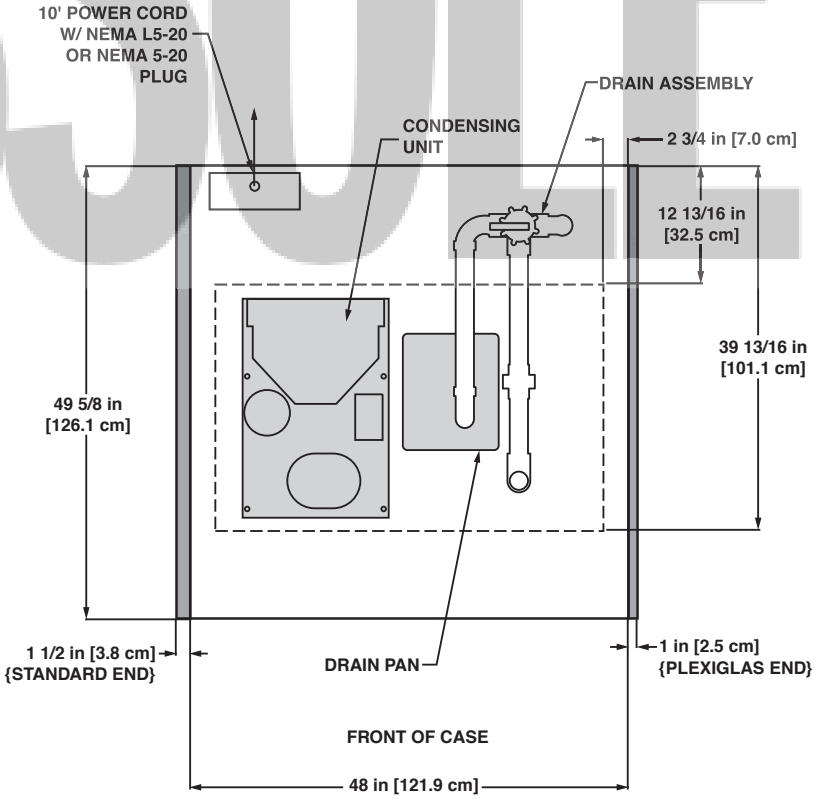


NOTES:

- 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[1] (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.

OBSOLETE

Condensing Unit Data

Model	Volts	Phase	Frequency (Hz)	HP	RLA[2] (amps)	LRA[3] (amps)	Refrig.	lbs of Refrig.
OSIOPA	120	1	60	1/3	7.2	29.0	134A	2.25

[2] RLA - Running Load Amps.
[3] LRA - Locked Rotor Amps.

Defrost Controls

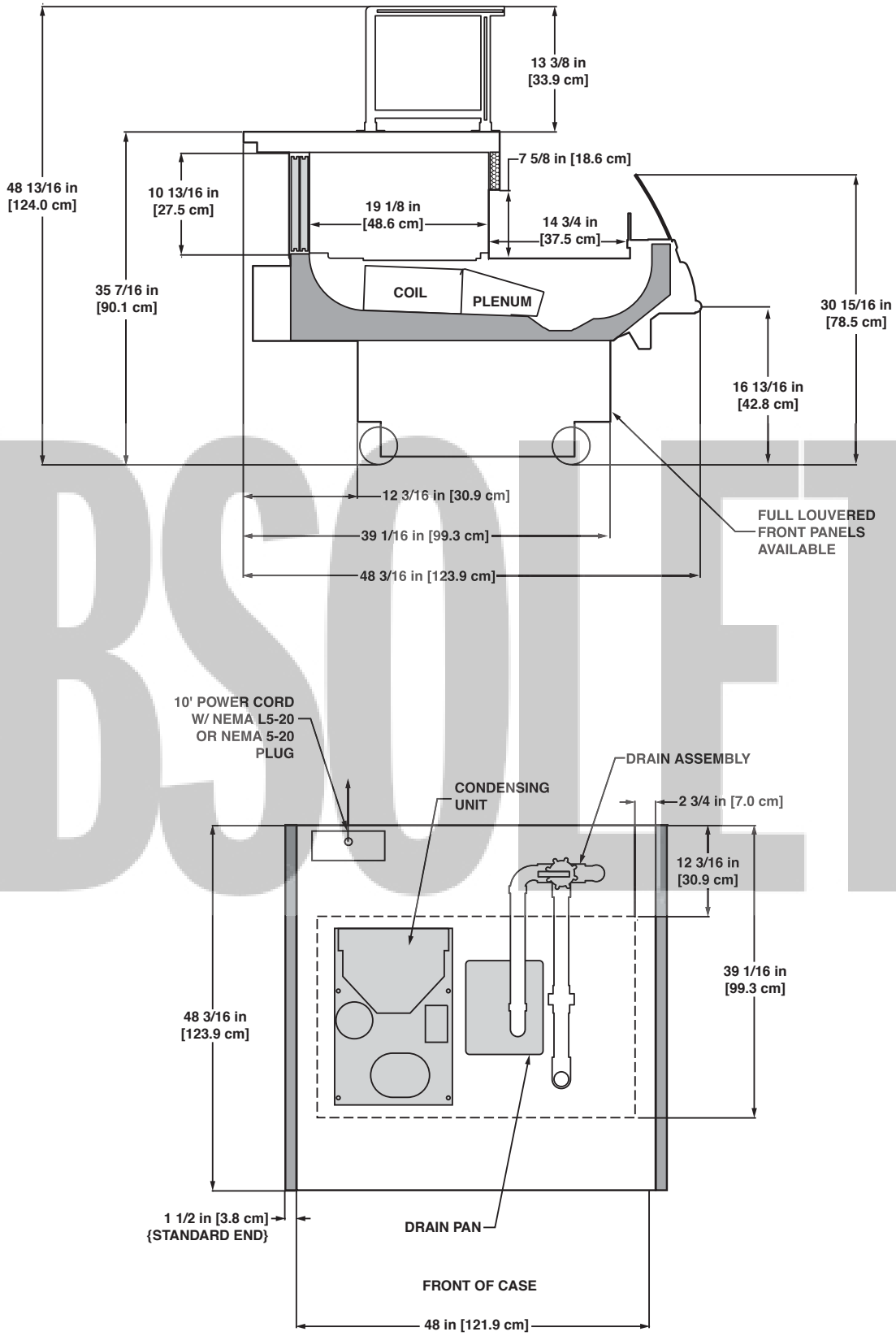
		Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
OSIOPA	2	40	47	- - -[4]	- - -	- - -	- - -	- - -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

[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

All measurements are taken per CRMA specifications.



OBSOLETE

NOTES:

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

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

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[1] (FPM)
OSIOZA	25.0	12-14	3-4	-24	-10	220

[1] Average discharge air velocity at peak of defrost.

OBSOLETE

Condensing Unit Data

Model	Volts	Phase	Frequency (Hz)	HP	RLA[2] (amps)	LRA[3] (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

		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)
OSIOZA	2	47	45	- - -[4]	- - -	- - -	- - -	- - -	- - -

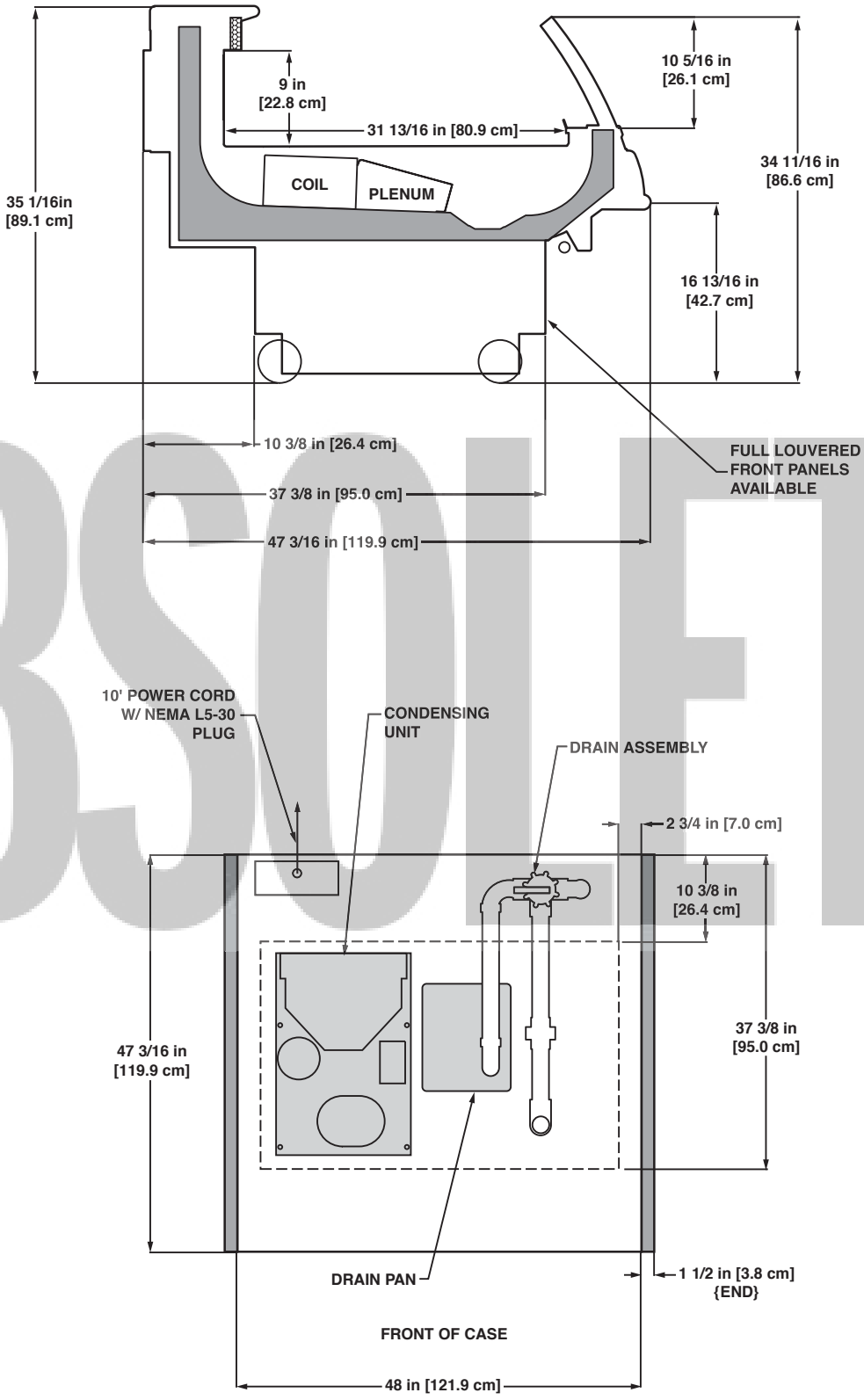
[4] NOTE: - - - not an option on this case model.

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 CRMA specifications.



OBSOLETE

NOTES:

- 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	24 hr Energy Usage (kWh)	Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[2] (FPM)
UPA	37	20	6-8	32	42	275

[1] Average discharge air velocity at peak of defrost.

OBSOLETE

Condensing Unit Data

Model	Volts	Phase	Frequency (Hz)	HP	RLA[2] (amps)	LRA[3] (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)
UPA	3	- - -[4]	- - -	45	45	- - -	- - -	- - -	- - -

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

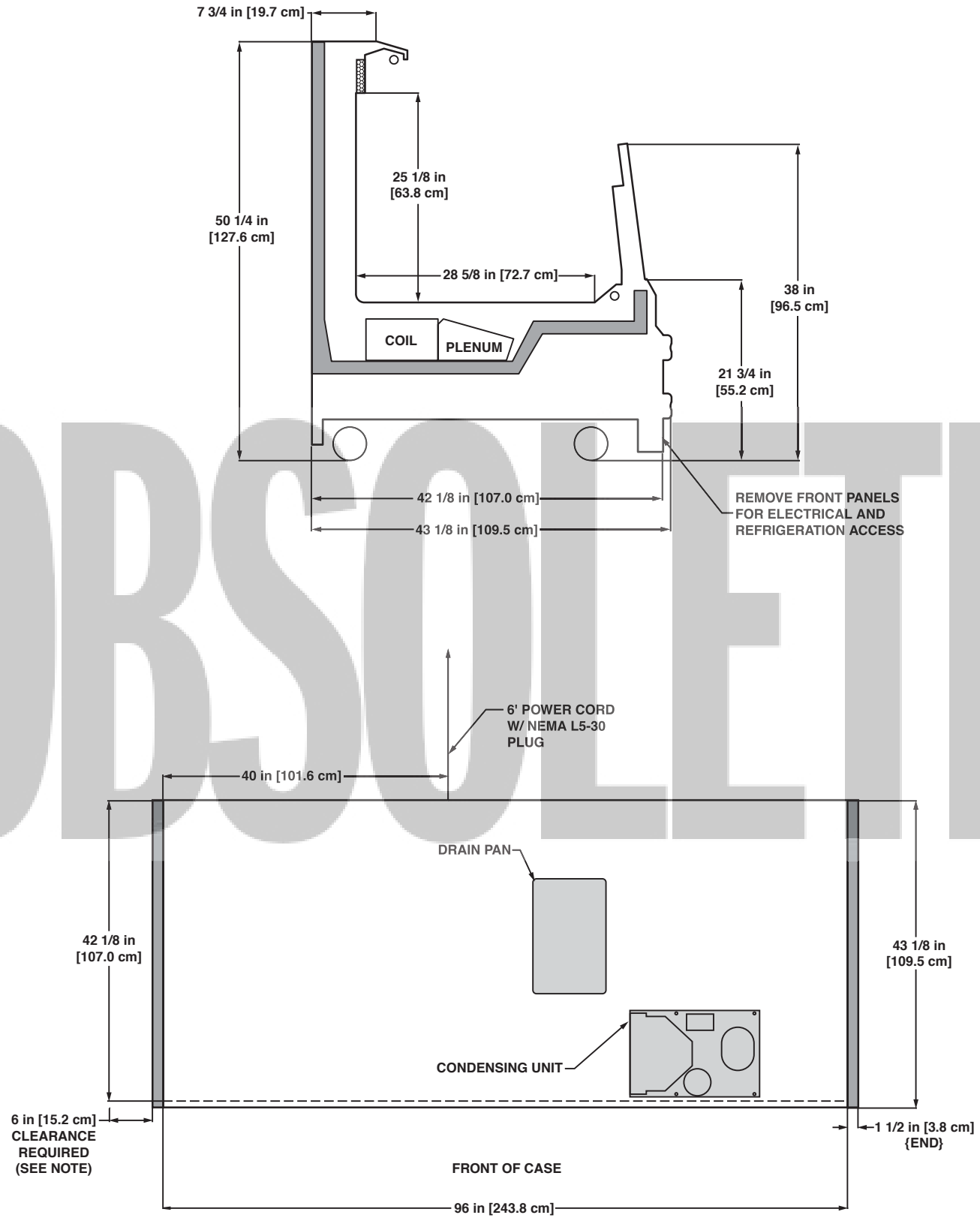
Medium Temperature Defrost Schedule

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 CRMA specifications.

Hill PHOENIX EXCELLENCE®

A DOVER™ COMPANY



OBSOLETE

NOTES:

- CASE CLEARANCE: MINIMUM 6" FROM BOTH ENDS
- AVAILABLE SHELF SIZES: 10", 12", 14", & 16"

A DOVER COMPANY

Multi-Deck Self-Contained Mobile Produce/Dairy/Deli/Meat Merchandiser

O2.5UMA - 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[2] (FPM)
O2.5UMA Produce	Standard[1]	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.

OBSOLETE

Condensing Unit Data

Model	Volts	Phase	Frequency (Hz)	HP	RLA[3] (amps)	LRA[4] (amps)	Refrig.	lbs of Refrig.	Max. Evap. Temp. (°F)	High Side Press. (psig)	Low Side Press. (psig)
O2.5UMA	115	1	60	1/2	12.9	66.3	R134A	3.6	25	440	162

[3] RLA - Running Load Amps.

[4] LRA - Locked Rotor Amps.

Defrost Controls

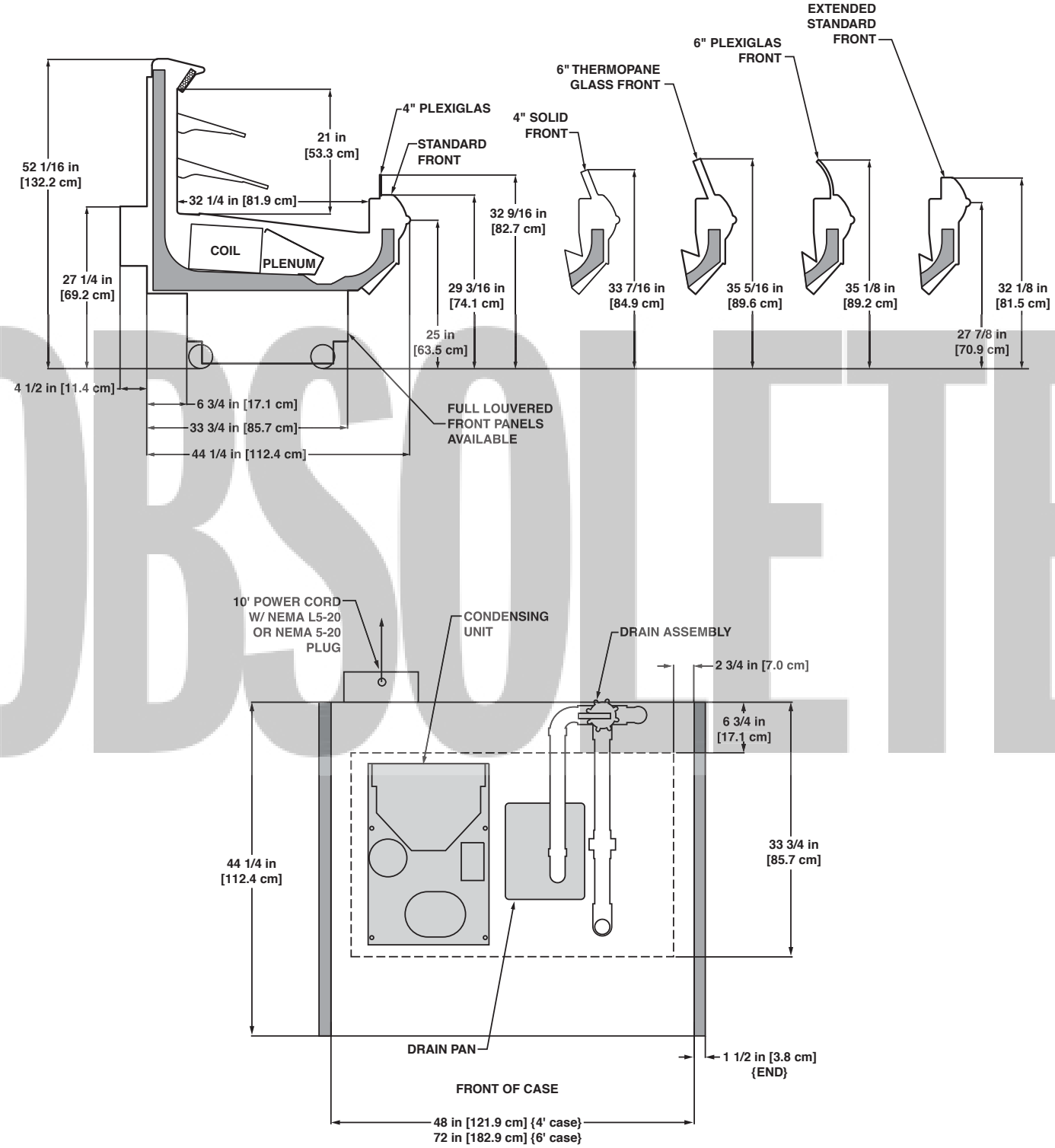
Model	Defrosts Per Day	Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
		Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
O2.5UMA	3	40	47	- - -[5]	- - -	- - -	- - -	- - -	- - -

[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 CRMA specifications.



NOTE:
ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

OBSOLETE

A DOVER COMPANY

Multi-Deck Self-Contained Mobile Produce/Dairy/Deli/Meat Merchandiser

O3UMA - 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	24 hr Energy Usage (kWh)	Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[1] (FPM)
O3UMA	Solid	32.1	12-14	6-8	26	35	230

[1] Average discharge air velocity at peak of defrost.

OBSOLETE

Condensing Unit Data

Model	Volts	Phase	Frequency (Hz)	HP	RLA[2] (amps)	LRA[3] (amps)	Refrig.	lbs of Refrig.	Max. Evap. Temp. (°F)	High Side Press. (psig)	Low Side Press. (psig)
O3UMA	115	1	60	1/2	12.9	66.3	134A	3.6	25	440	162

[2] RLA - Running Load Amps.
[3] LRA - Locked Rotor Amps.

Defrost Controls

Model	Defrosts Per Day	Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
		Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
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

All measurements are taken per CRMA specifications.

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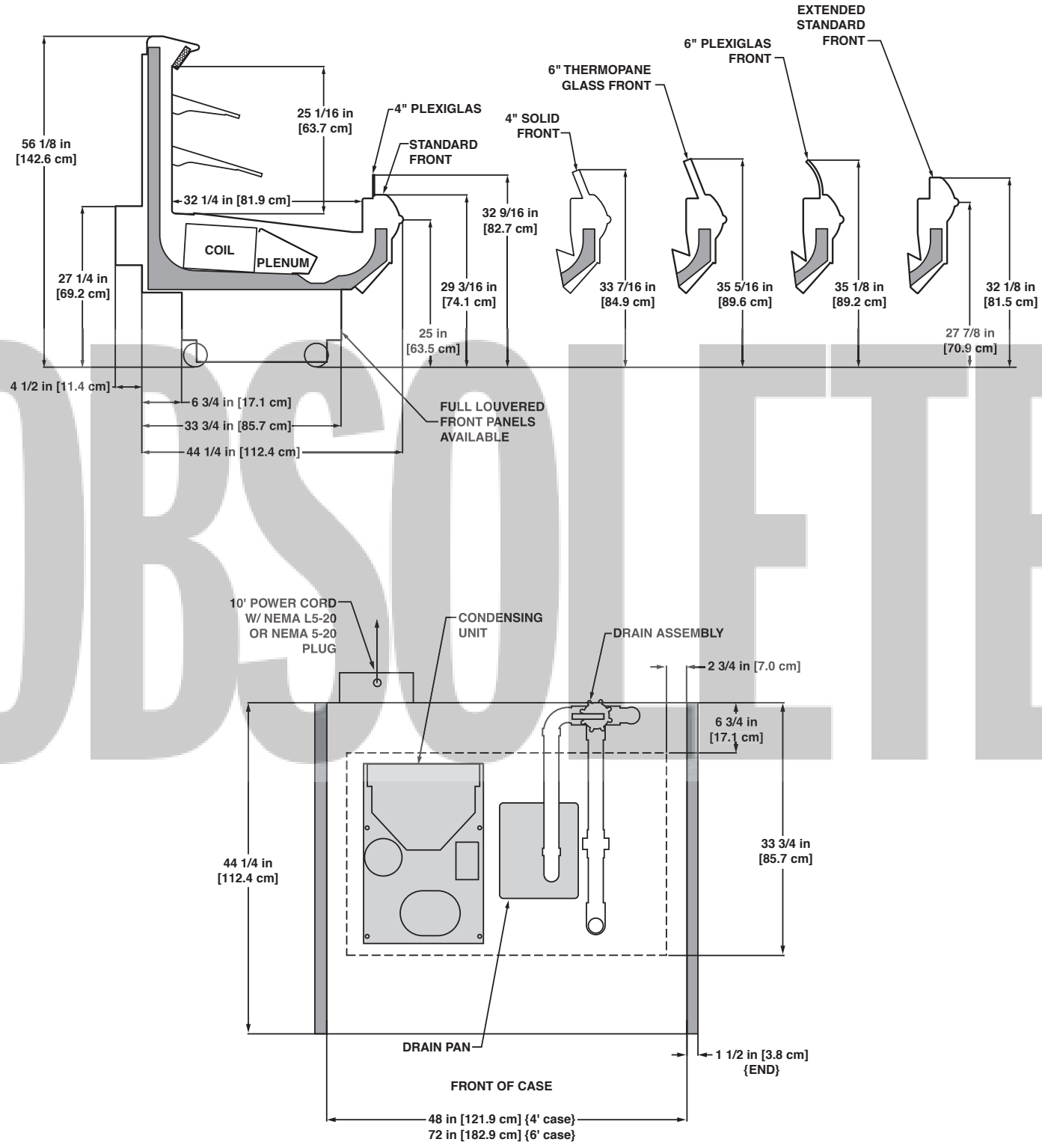

NOTE:
ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

OBSOLETE

Multi-Deck Self-Contained Mobile Deli/Cheese Merchandiser

OMCA-3' & 4'

System Data

Model	Volts	Phase	Hz	Plug Style	Cord Length
OMCA-3'	120	1	60	NEMA L5-20 or NEMA 5-20	10 ft
OMCA-4'	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[2] (FPM)
OMCA	23.1	45	6-8	28	40	235

[1] Average discharge air velocity at peak of defrost.

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Condensing Unit Data

Model	Volts	Phase	Frequency (Hz)	HP	RLA[2] (amps)	LRA[3] (amps)	Refrig.	lbs of Refrig.
OMCA-3'	115	1	60	1/4	8.0	34.6	R404A	3.0
OMCA-4'	115	1	60	1/3	7.4	29.8	R404A	3.5

[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)
OMCA	4	- - -[4]	- - -	35	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 pm
4	12 - 6 am - 12 - 6 pm

All measurements are taken per CRMA specifications.

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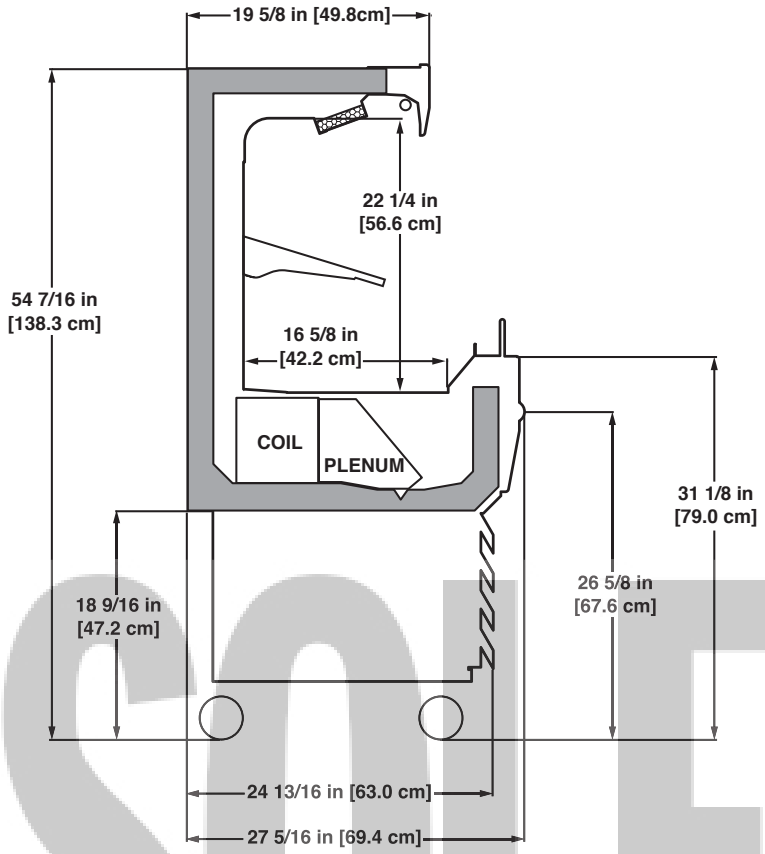

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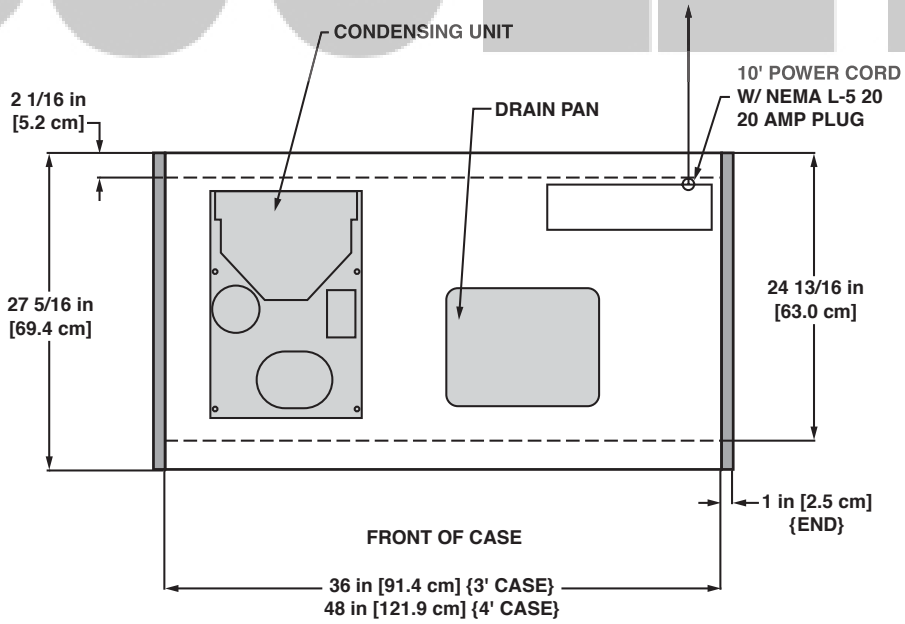


NOTES:

- ENDS ADD APPROXIMATELY 1" TO CASE HEIGHT
- AVAILABLE SHELF SIZES: 10" & 12"

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	24 hr Energy Usage (kWh)	Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[1] (FPM)
OSIA		12-14	6-8	26	34	175

[1] Average discharge air velocity at peak of defrost.

OBSOLETE

Condensing Unit Data

Model	Volts	Phase	Frequency (Hz)	HP	RLA[2] (amps)	LRA[3] (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

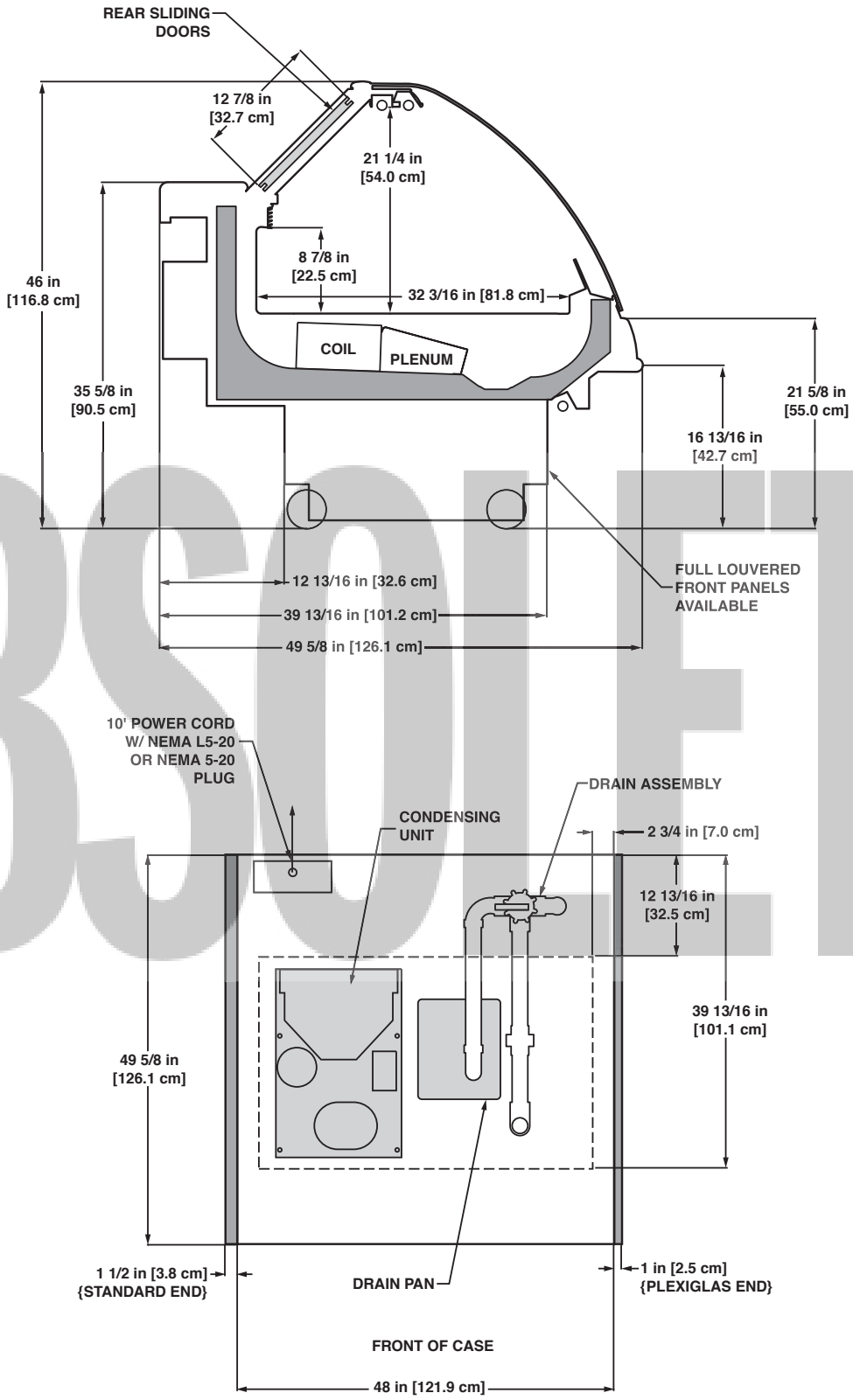
		Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
Model	Defrosts Per Day	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
OSIA	2	45	47	- - -[4]	- - -	- - -	- - -	- - -	- - -

[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 pm
4	12 - 6 am - 12 - 6 pm

All measurements are taken per CRMA specifications.



NOTES:

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

OBSOLETE

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)	Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[1] (FPM)
O2SIA	14.02	16	6-8	24	35	540

[1] Average discharge air velocity at peak of defrost.

OBSOLETE

Condensing Unit Data

Model	Volts	Phase	Frequency (Hz)	HP	RLA[2] (amps)	LRA[3] (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

Model	Defrosts Per Day	Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
		Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
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

All measurements are taken per CRMA specifications.

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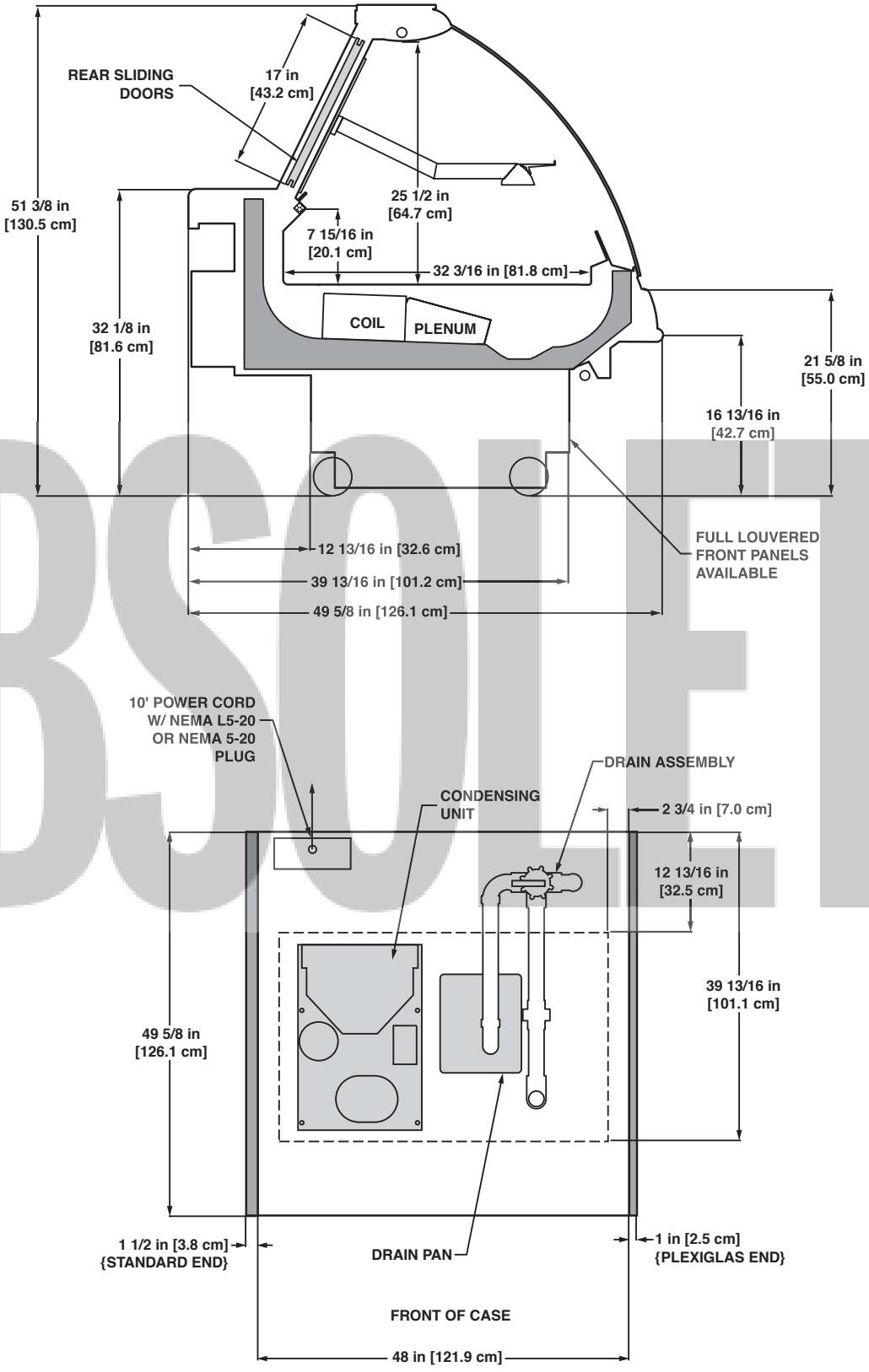

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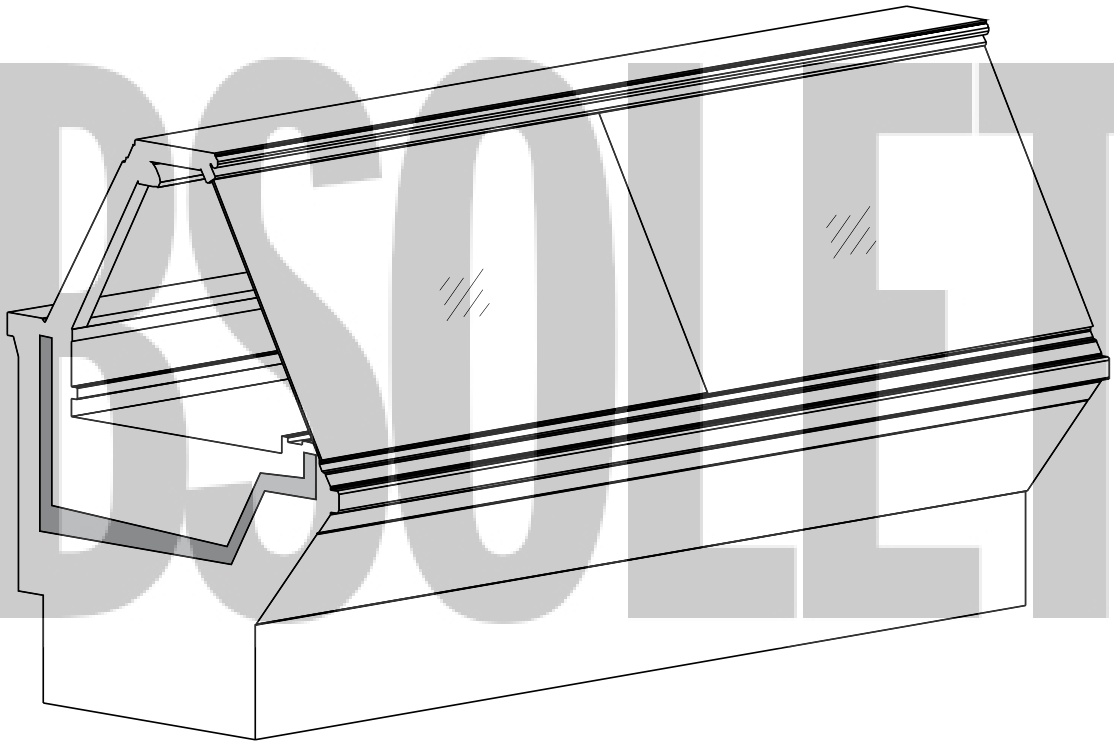
NOTES:

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT

OBSOLETE

SPECIALTY

OBSOLETE



Notes:

- *Cases comply with ANSI / NSF* Standard 7 unless otherwise specified. Units marked as components require remote refrigeration.*
- *Allow for an extra 1/8" per joint when lining up merchandisers.*
- *Front sill height does not affect case performance unless specifically shown.*
- *Front and rear sill heights vary with baseframe height.*

* *ANSI - American National Standard Institute*
NSF - National Sanitation Foundation

International Style Service Deli/Meat/Seafood Merchandiser

O2SI - 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
O2SI	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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O2SI	8'	0.57	68	1.49	179
	12'	0.77	92	2.31	277

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[1]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[2] (FPM)
O2SI[3]	300	22	6-8	24	35	540

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Average discharge air velocity at peak of defrost.

[3] Humidification system required on this case when used for Fresh Meat application

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
O2SI	3	6 - 8	30	47	60[4]	47[4]	26	45	- - -[5]	- - -

[4] Not recommended on this model due to long defrost time.

[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.

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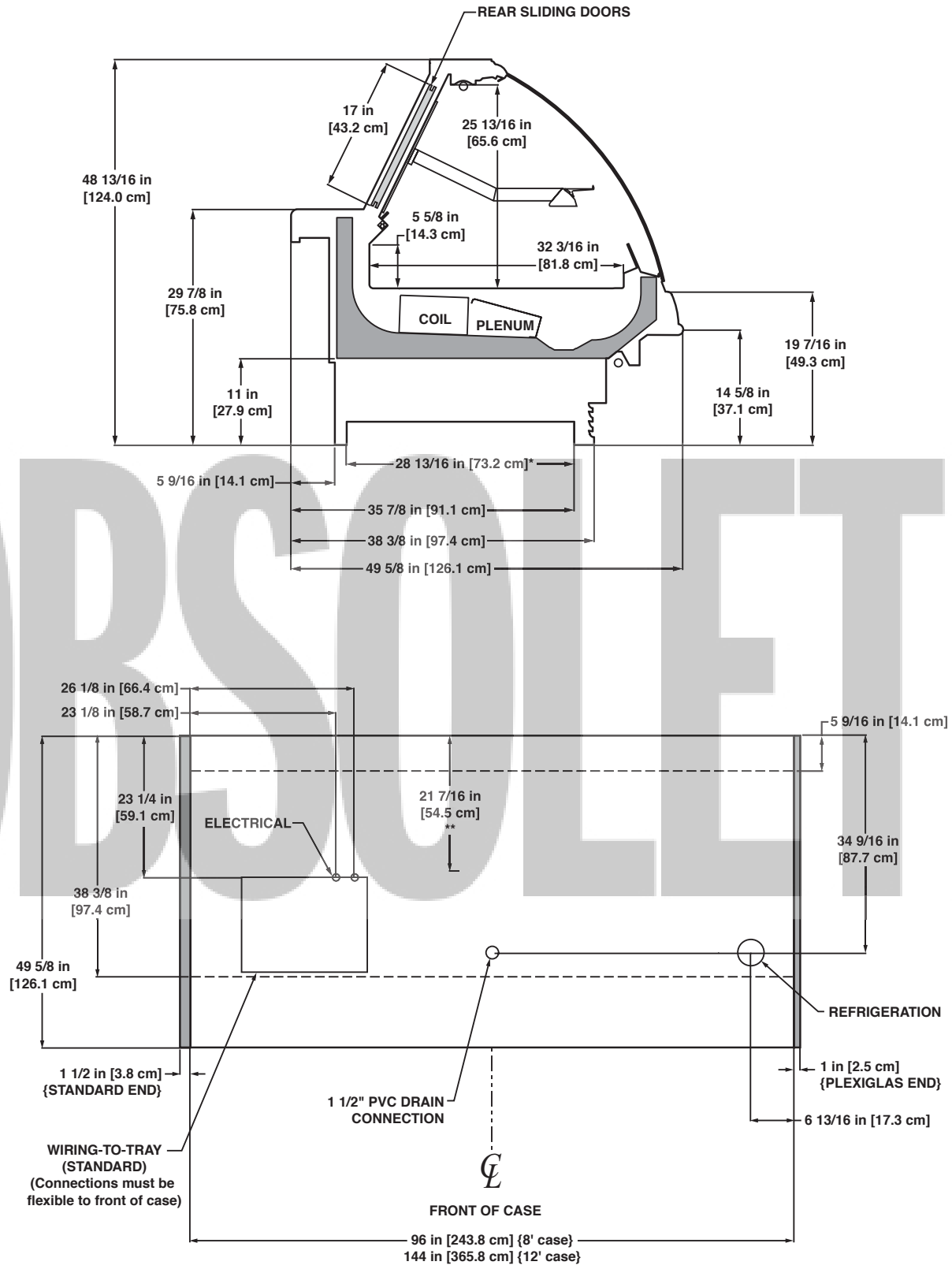

OBSOLETE

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"

NSF COMPONENT c UL us

A DOVER COMPANY

International Style Flat Glass Service Deli/Meat/Seafood Merchandiser

O2SIF - 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts 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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O2SIF	8'	0.57	68	1.49	179
	12'	0.77	92	2.31	277

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[1]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[2] (FPM)
O2SIF[3]	300	22	6-8	24	35	540

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Average discharge air velocity at peak of defrost.

[3] Humidification system required on this case when used for Fresh Meat application

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
O2SIF	3	6 - 8	30	47	60[4]	47[4]	26	45	- - -[5]	- - -

[4] Not recommended on this model due to long defrost time.

[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

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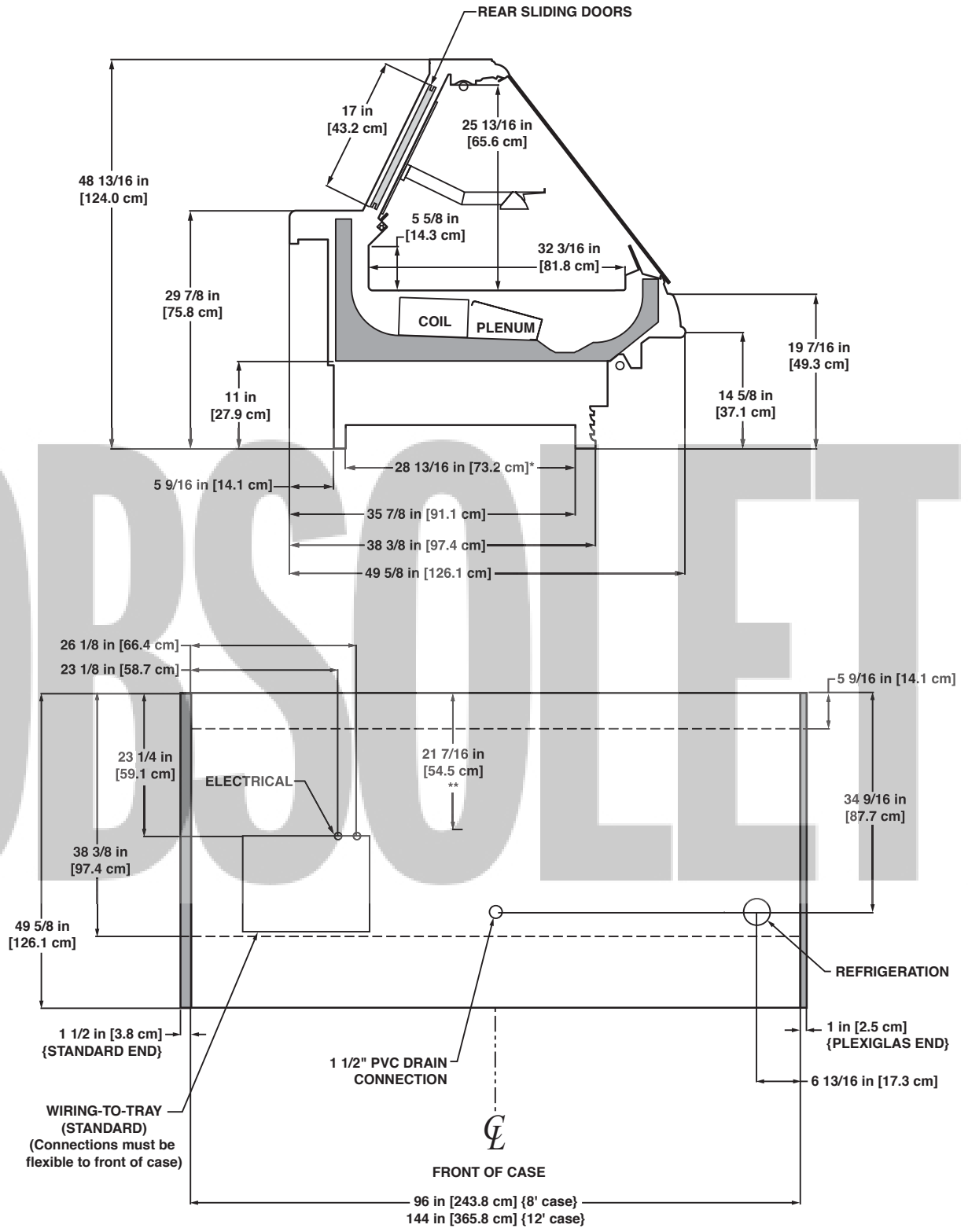
All measurements are taken per CRMA specifications.



OBSOLETE

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"

A DOVER COMPANY

Full Service Bakery Merchandiser

OB - 4', 5', 6.5', & 8'

Electrical Data

Model		Fans per Case		Ambient Fans[1] 120 Volts		Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Defrost Heaters 208 Volts		Defrost Heaters 240 Volts	
		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	1.92	400	2.22	532
	5'	2	2	0.30	11	0.68	34	0.30	22	2.0	240	2.40	500	2.77	665
	6.5'	2	3	0.45	17	0.68	34	0.30	22	2.4	288	2.88	600	3.33	798
	8'	3	4	0.60	22	1.02	51	0.45	33	2.8	336	3.85	800	4.44	1065

[1] Ambient fans are standard equipment for this case model. The primary fans can either be standard or high efficiency.

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OB	4'	0.57	68	1.34	161
	5'	0.57	68	1.34	161
	6.5'	0.57	68	2.46	295
	8'	0.57	68	2.46	295

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[2]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
OB	212	27	6-8	32	39	338

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OB	3	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

All measurements are taken per CRMA specifications.

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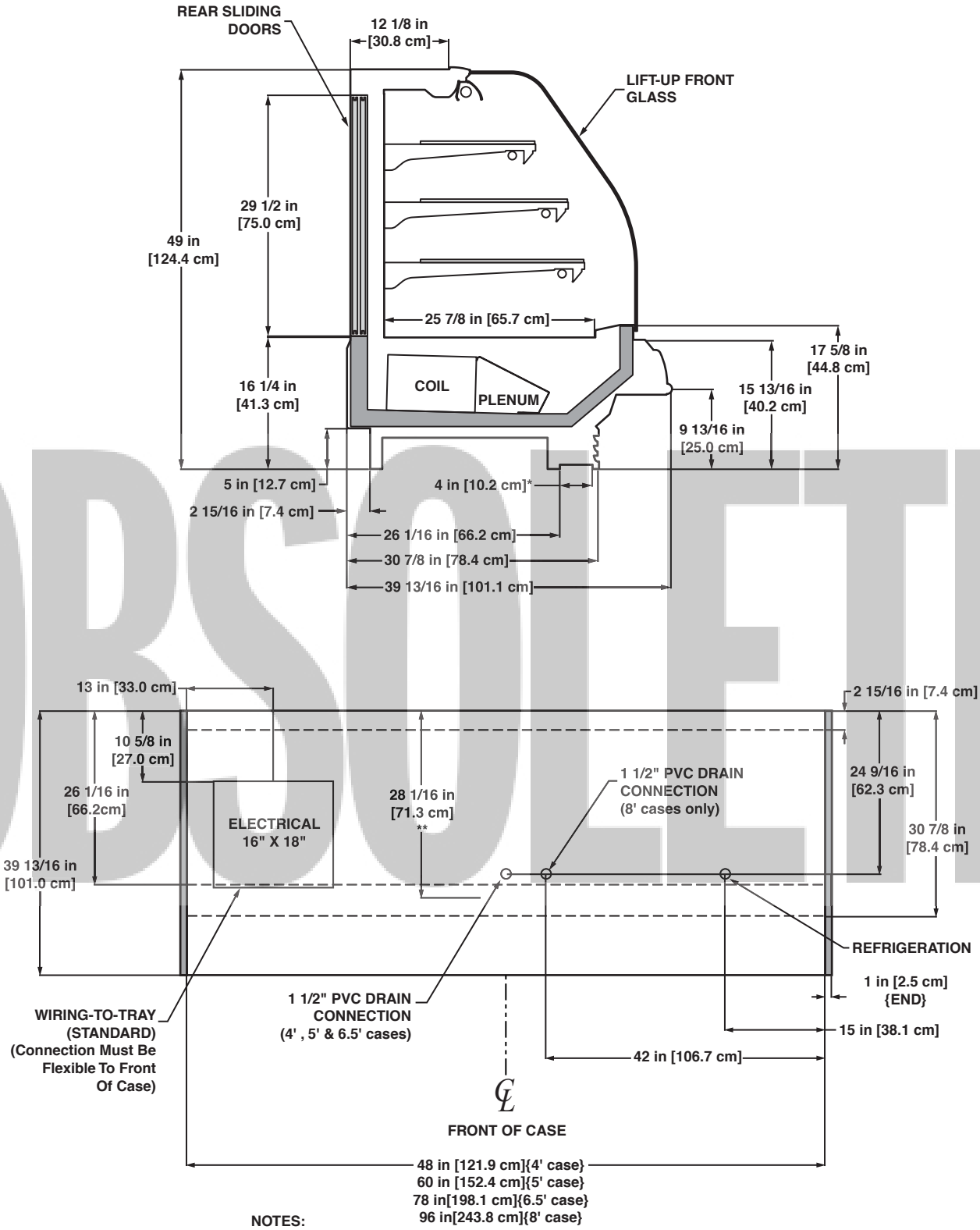

OBSOLETE

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: 14", 16", 18", 20" & 22"
- MAXIMUM OF 3 SHELVES PER CASE
- TOP SHELF CAN BE 14" OR 16" ONLY

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	17.40	20
	5'	120	1	60	2 wire + ground	18.30	25
	6.5'	120	1	60	2 wire + ground	20.25	25
	8'	120	1	60	2 wire + ground	22.50	25

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[1] (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

Model	Volts	Phase	Frequency (Hz)	HP	RLA[2] (amps)	LRA[3] (amps)	Refrig.	lbs of Refrig.
OBA-4'	120	1	60	1/4	8	34.6	404A	3.1
OBA-5'	120	1	60	1/2	12.9	66.3	404A	3.6
OBA-6.5'	120	1	60	1/2	12.9	66.3	404A	3.6
OBA-8'	120	1	60	3/4	10.9	85.5	404A	3.75

[2] RLA - Running Load Amps.

[3] LRA - Locked Rotor Amps.

Defrost Controls

Model	Defrosts Per Day	Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
		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
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm

OBSOLETE

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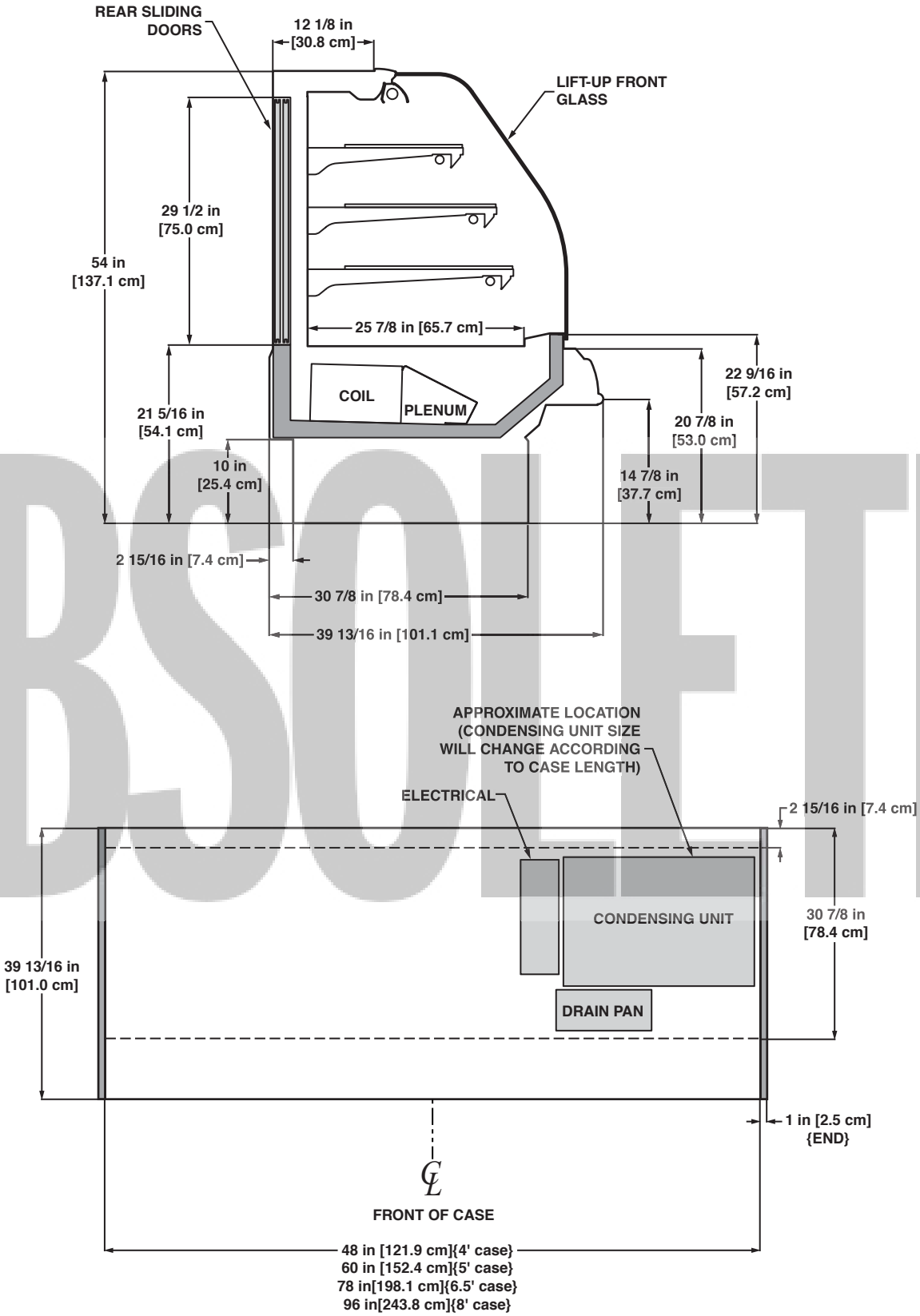
All measurements are taken per CRMA specifications.



OBSOLETE

NOTES:

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- AVAILABLE SHELF SIZES: 14", 16", 18", 20" & 22"
- MAXIMUM OF 3 SHELVES PER CASE
- TOP SHELF CAN BE 14" OR 16" ONLY

A DOVER COMPANY

Full Service Dry Bakery Merchandiser

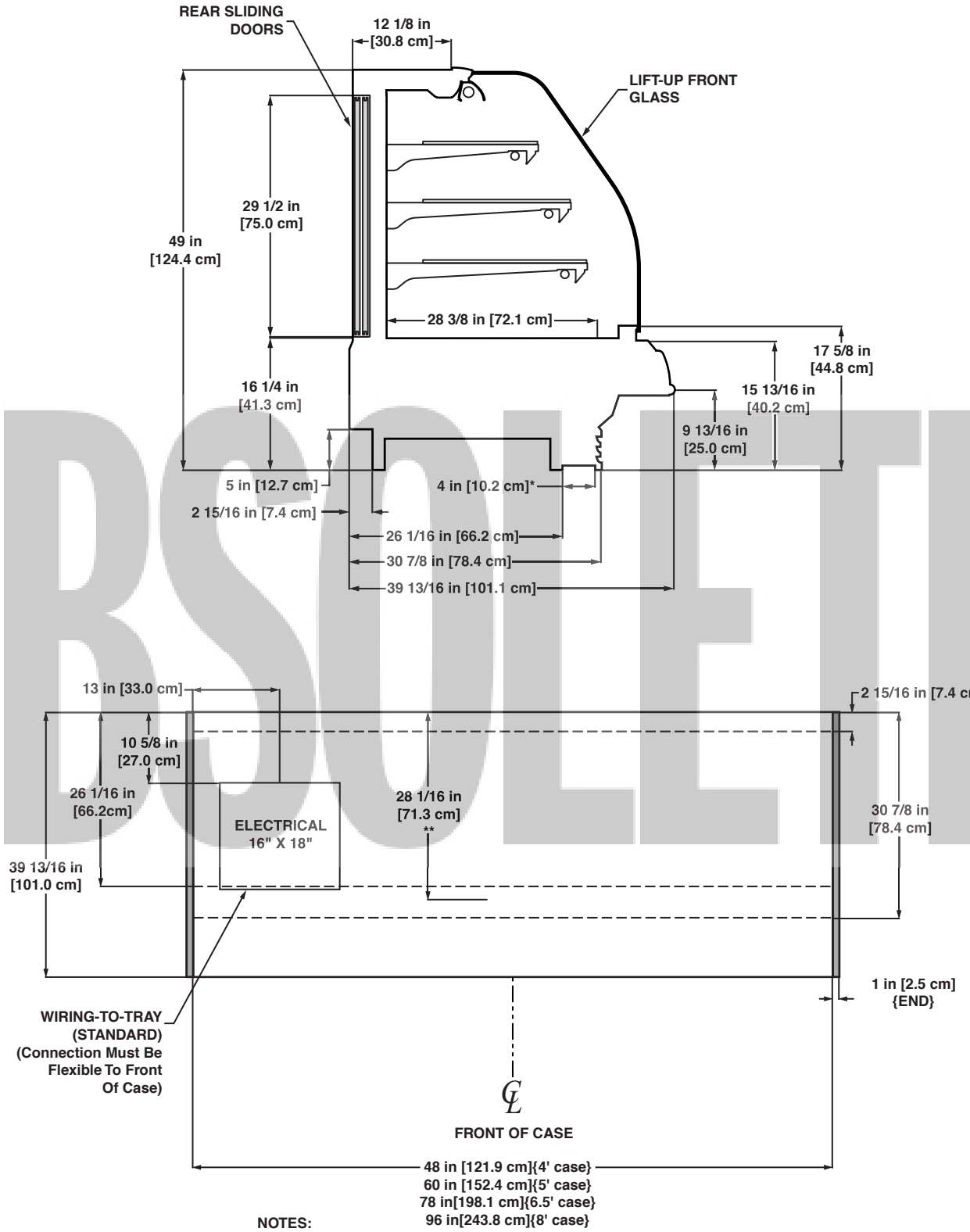
OBD - 4', 5', 6.5', & 8'

Lighting Data

Model		Typical per Light Row		Maximum Lighting	
		120 Volts		120 Volts	
		Amps	Watts	Amps	Watts
OBD	4'	0.57	68	1.34	161
	5'	0.57	68	1.34	161
	6.5'	0.57	68	2.46	295
	8'	0.57	68	2.46	295

OBSOLETE

Note: The OBD model is Certified to NSF Standard 2.



OBSOLETE

NOTES:

* STUB-UP AREA

** RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL CONNECTIONS

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- AVAILABLE SHELF SIZES: 14", 16", 18", 20" & 22"

Note: The OBD model is Certified to NSF Standard 2.

A DOVER COMPANY

Self Service Bakery/Deli Merchandiser

OBOL - 4', 5', 6.5', & 8'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters[1] 120 Volts Amps	Anti-Condensate Heaters[1] 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
OBOL	4'	2	0.68	34	0.30	22	- - -	- - -	1.92	400	2.22	532
	5'	2	0.68	34	0.30	22	- - -	- - -	2.40	500	2.77	665
	6.5'	2	0.68	34	0.30	22	- - -	- - -	2.88	600	3.33	798
	8'	3	1.02	51	0.45	33	- - -	- - -	3.85	800	4.44	1065

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

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OBOL	4'	0.57	68	1.14	137
	5'	0.57	68	1.14	137
	6.5'	0.57	68	1.49	179
	8'	0.57	68	1.49	179

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[2]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
OBOL bakery	509	27	6-8	33	40	305
OBOL deli	534	22	6-8	30	37	305

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Average discharge air velocity at peak of defrost.

Defrost Controls

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

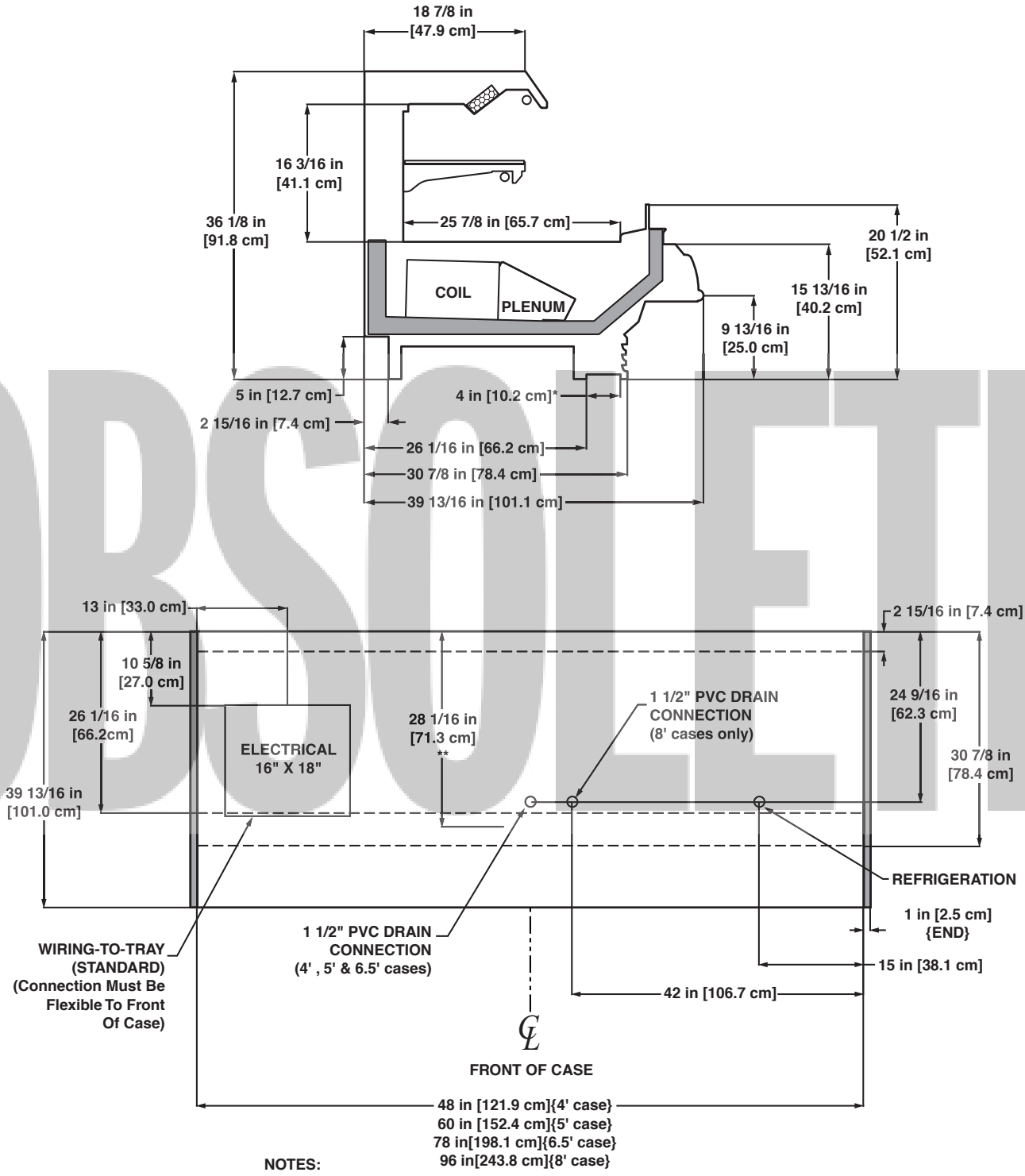
Medium Temperature Defrost Schedule

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

All measurements are taken per CRMA specifications.

Hill PHOENIX EXCELLENCE

A DOVER COMPANY



OBSOLETE

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: 14", 16", 18", 20" & 22"
- MAXIMUM OF 3 SHELVES PER CASE
- TOP SHELF CAN BE 14" OR 16" ONLY

Self Service Bakery/Deli Merchandiser

OBO - 4', 5', 6.5', & 8'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters[1] 120 Volts Amps	Anti-Condensate Heaters[1] 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
OBO	4'	2	0.68	34	0.30	22	- - -	- - -	1.92	400	2.22	532
	5'	2	0.68	34	0.30	22	- - -	- - -	2.40	500	2.77	665
	6.5'	2	0.68	34	0.30	22	- - -	- - -	2.88	600	3.33	798
	8'	3	1.02	51	0.45	33	- - -	- - -	3.85	800	4.44	1065

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

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OBO	4'	0.57	68	1.34	161
	5'	0.57	68	1.34	161
	6.5'	0.57	68	2.46	295
	8'	0.57	68	2.46	295

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[1]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[2] (FPM)
OBO	530	22	6-8	34	41	305

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Average discharge air velocity at peak of defrost.

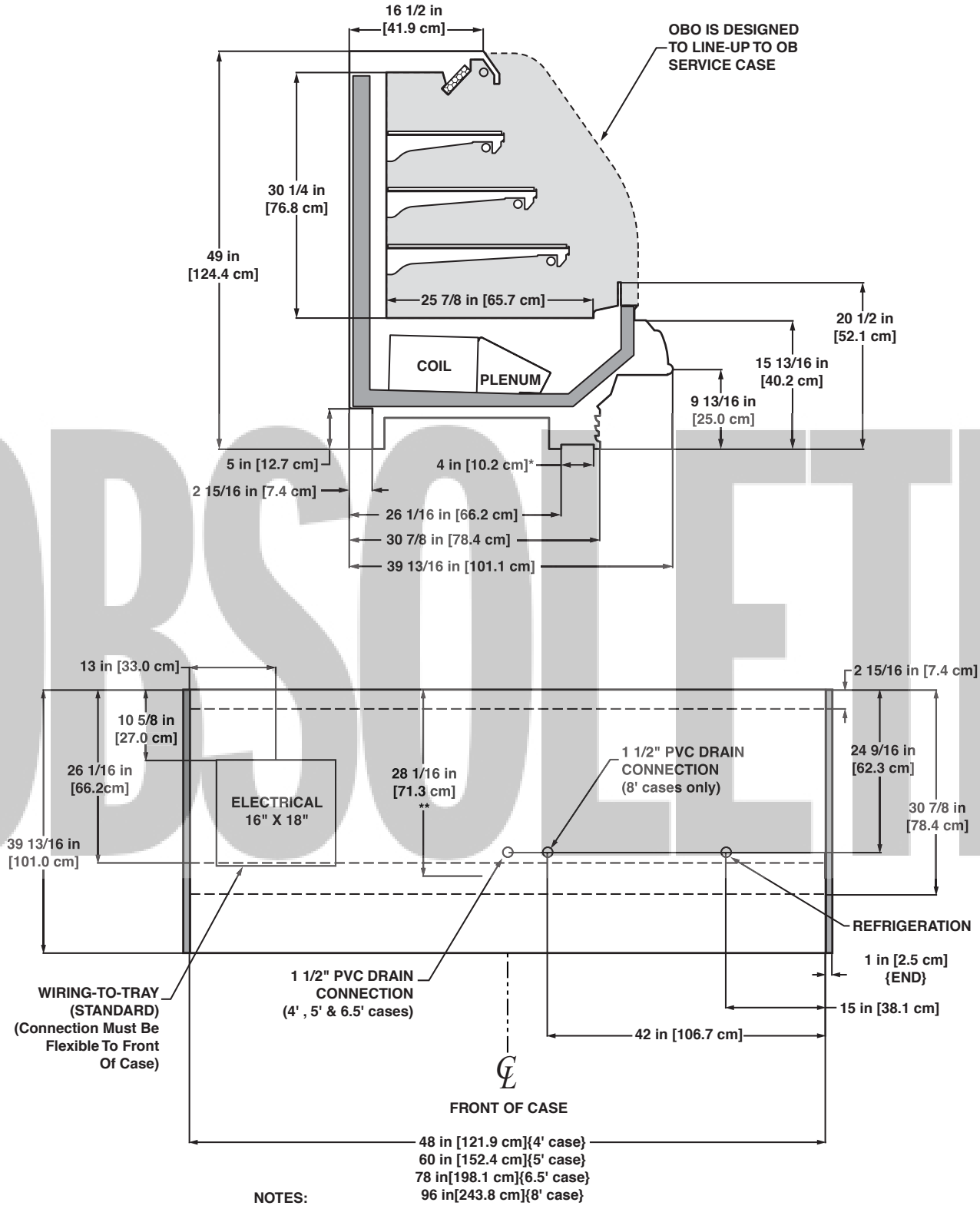
Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OBO	3	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

All measurements are taken per CRMA specifications.



OBSOLETE

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: 14", 16", 18", 20" & 22"
- MAXIMUM OF 3 SHELVES PER CASE
- TOP SHELF CAN BE 14" OR 16" ONLY

Self Service Self-Contained Bakery/Deli Merchandiser

OBOA - 4', 5', 6.5', & 8'

System Requirements

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Fuse Size
OBOA	4'	120	1	60	2 wire + ground	15.5	20
	5'	120	1	60	2 wire + ground	16	20
	6.5'	120	1	60	2 wire + ground	17.4	25
	8'	120	1	60	2 wire + ground	19.1	25

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[1] (FPM)
OBOA-4'	26.5	54-58	6-8	29-30	40-42	210-240
OBOA-5'	30.2	54-58	6-8	29-30	40-42	210-240
OBOA-6.5'	32.3	54-48	6-8	29-30	40-42	210-240
OBOA-8'	34.1	54-58	6-8	29-30	40-42	210-240

[1] Average discharge air velocity at peak of defrost.

Condensing Unit Data

Model	Volts	Phase	Frequency (Hz)	HP	RLA[2] (amps)	LRA[3] (amps)	Refrig.	lbs of Refrig.
OBOA-4'	120	1	60	1/4	8	34.6	404A	3.1
OBOA-5'	120	1	60	1/2	12.9	66.3	404A	3.6
OBOA-6.5'	120	1	60	1/2	12.9	66.3	404A	3.6
OBOA-8'	120	1	60	3/4	10.9	85.5	404A	3.75

[2] RLA - Running Load Amps.

[3] LRA - Locked Rotor Amps.

Defrost Controls

Model	Defrosts Per Day	Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
		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	- - - [4]	- - -	40	49	- - -	- - -	- - -	- - -

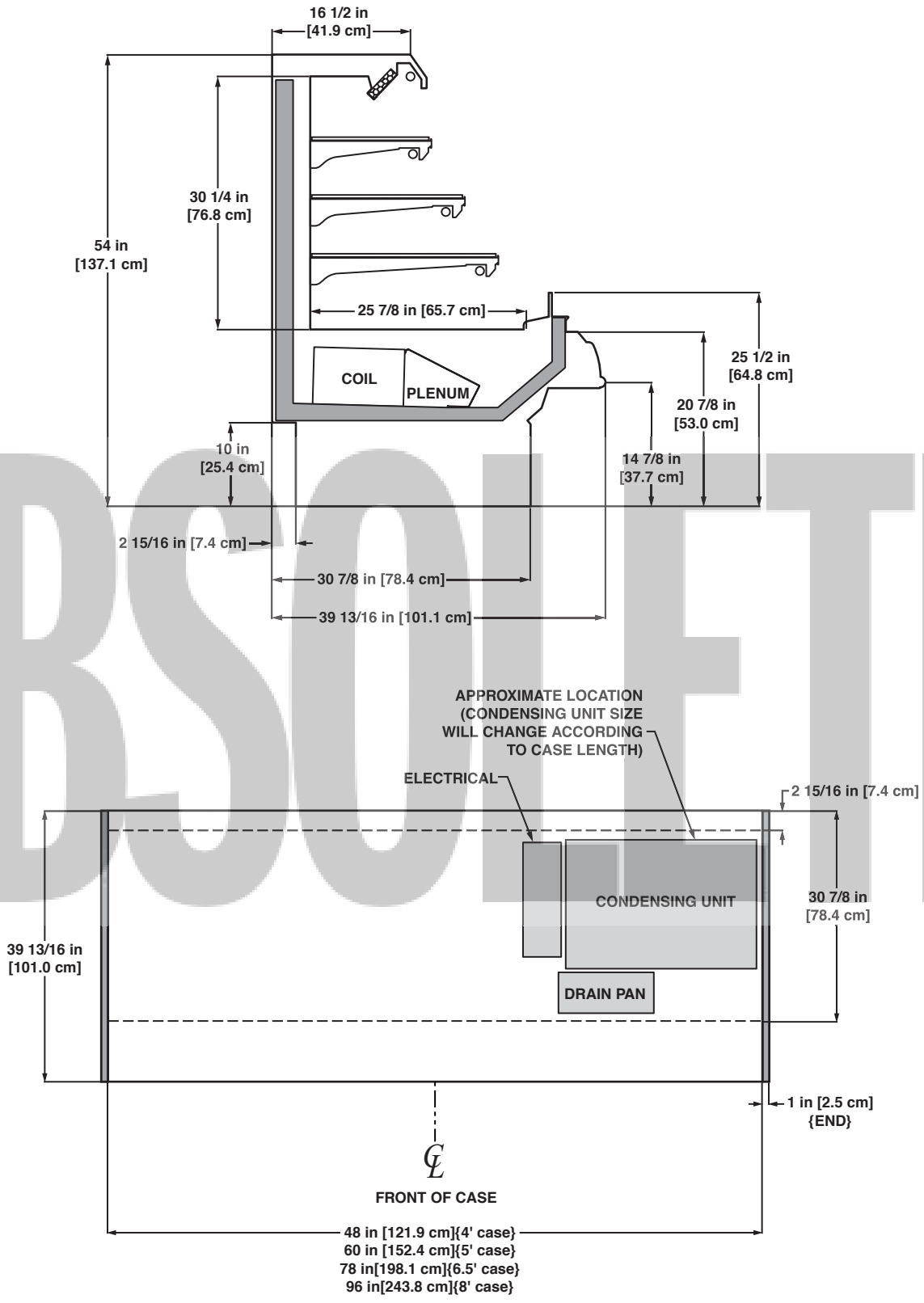
[4] NOTE: - - - not an option on this case model.

Medium Temperature Defrost Schedule

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

All measurements are taken per CRMA specifications.

OBSOLETE



OBSOLETE

NOTES:

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- AVAILABLE SHELF SIZES: 14", 16", 18", 20" & 22"
- MAXIMUM OF 3 SHELVES PER CASE
- TOP SHELF CAN BE 14" OR 16" ONLY

Full Service Flat Glass Bakery Merchandiser

OBIF - 4', 5', 6.5' & 8'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts 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	- - -	- - -	- - -	- - -	- - -	- - -
	8'	3	1.02	51	0.45	33	- - -	- - -	- - -	- - -	- - -	- - -

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

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OBIF	4'	0.57	68	1.34	161
	5'	0.57	68	1.34	161
	6.5'	0.57	68	2.46	295
	8'	0.57	68	2.46	295

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[2]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
OBIF	300	27	6-8	29-30	40-42	210-240

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
OBIF	4	35	47	40	49	- - -	- - -	- - -	- - -

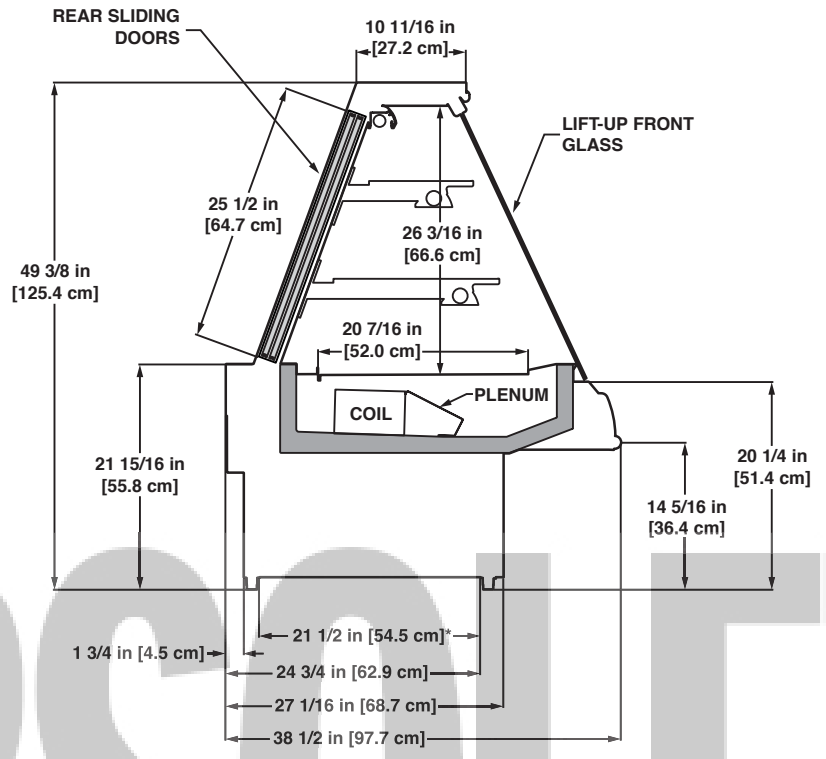
Medium Temperature Defrost Schedule

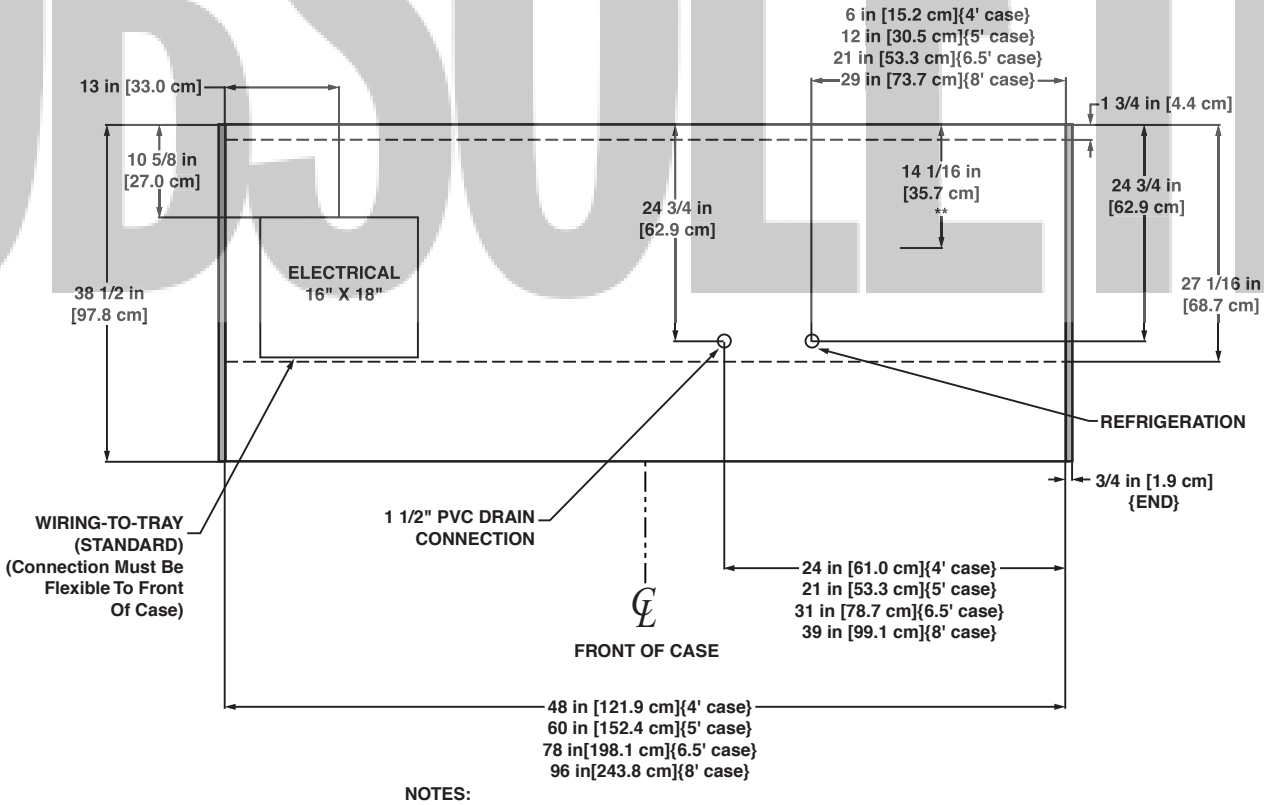
No. Per Day	Hours
1	12 midnight
2	12 am - 12 pm
3	6 am - 2 pm - 10 pm
4	12 - 6 am - 12 - 6 pm

Hill PHOENIX EXCELLENCE

A DOVER COMPANY

All measurements are taken per CRMA specifications.





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: 10" & 16"

OBSOLETE

Full Service Flat Glass Self-Contained Bakery Merchandiser

OBIFA - 4', 5', 6.5' & 8'

System Requirements

Model		Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Fuse Size
OBIFA	4'	120	1	60	2 wire + ground	15.5	20
	5'	120	1	60	2 wire + ground	19.3	25
	6.5'	120	1	60	2 wire + ground	20.1	25
	8'	120	1	60	2 wire + ground	26.8	35

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[1] (FPM)
OBIFA-4'	26.5	72-74	6-8	29-30	40-42	210-240
OBIFA-5'	35.3	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
OBIFA-8'	53.1	72-74	6-8	29-30	40-42	210-240

[1] Average discharge air velocity at peak of defrost.

Condensing Unit Data

Model	Volts	Phase	Frequency (Hz)	HP	RLA[2] (amps)	LRA[3] (amps)	Refrig.	lbs of Refrig.
OBIFA-4'	120	1	60	1/4	4.94	25	404A	3.1
OBIFA-5'	120	1	60	1/3	7.20	29	404A	3.3
OBIFA-6.5'	120	1	60	1/3	7.20	29	404A	3.5
OBIFA-8'	120	1	60	1/2	11.00	51	404A	3.7

[2] RLA - Running Load Amps.

[3] LRA - Locked Rotor Amps.

Defrost Controls

Model	Defrosts Per Day	Electric Defrost		Timed Off Defrost		Hot Gas Defrost		Reverse Air Defrost	
		Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
OBIFA	4	- - - [4]	- - -	40	49	- - -	- - -	- - -	- - -

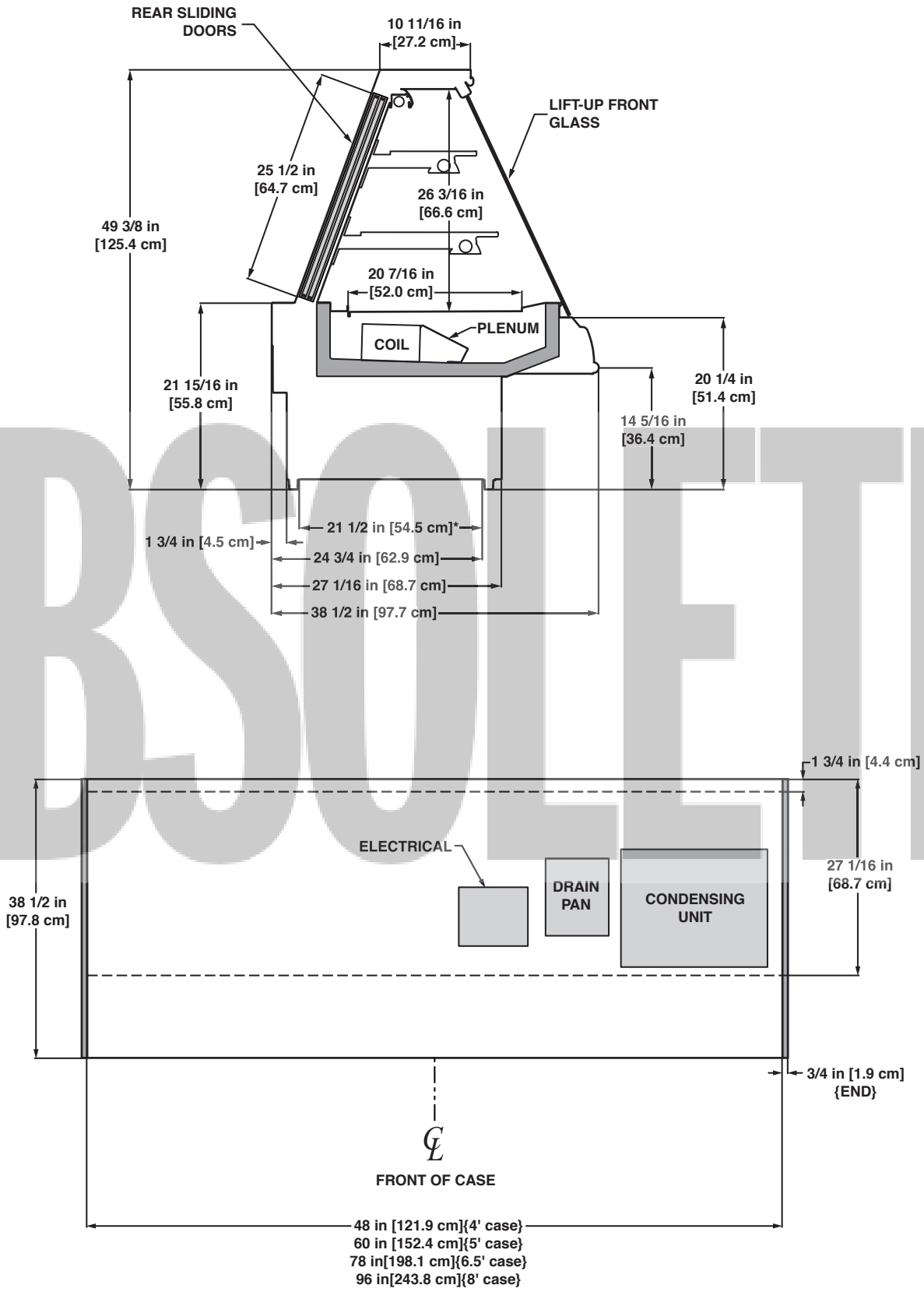
[4] NOTE: - - - not an option on this case model.

Medium Temperature Defrost Schedule

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

All measurements are taken per CRMA specifications.

OBSOLETE



OBSOLETE

NOTES:

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- AVAILABLE SHELF SIZES: 10" & 16"

Full Service Flat Glass Dry Bakery Merchandiser

OBIFD - 4', 5', 6.5', & 8'

Lighting Data

Model		Typical per Light Row		Maximum Lighting	
		120 Volts		120 Volts	
		Amps	Watts	Amps	Watts
OBIFD	4'	0.57	68	1.14	137
	5'	0.57	68	1.14	137
	6.5'	0.57	68	2.06	247
	8'	0.57	68	2.06	247

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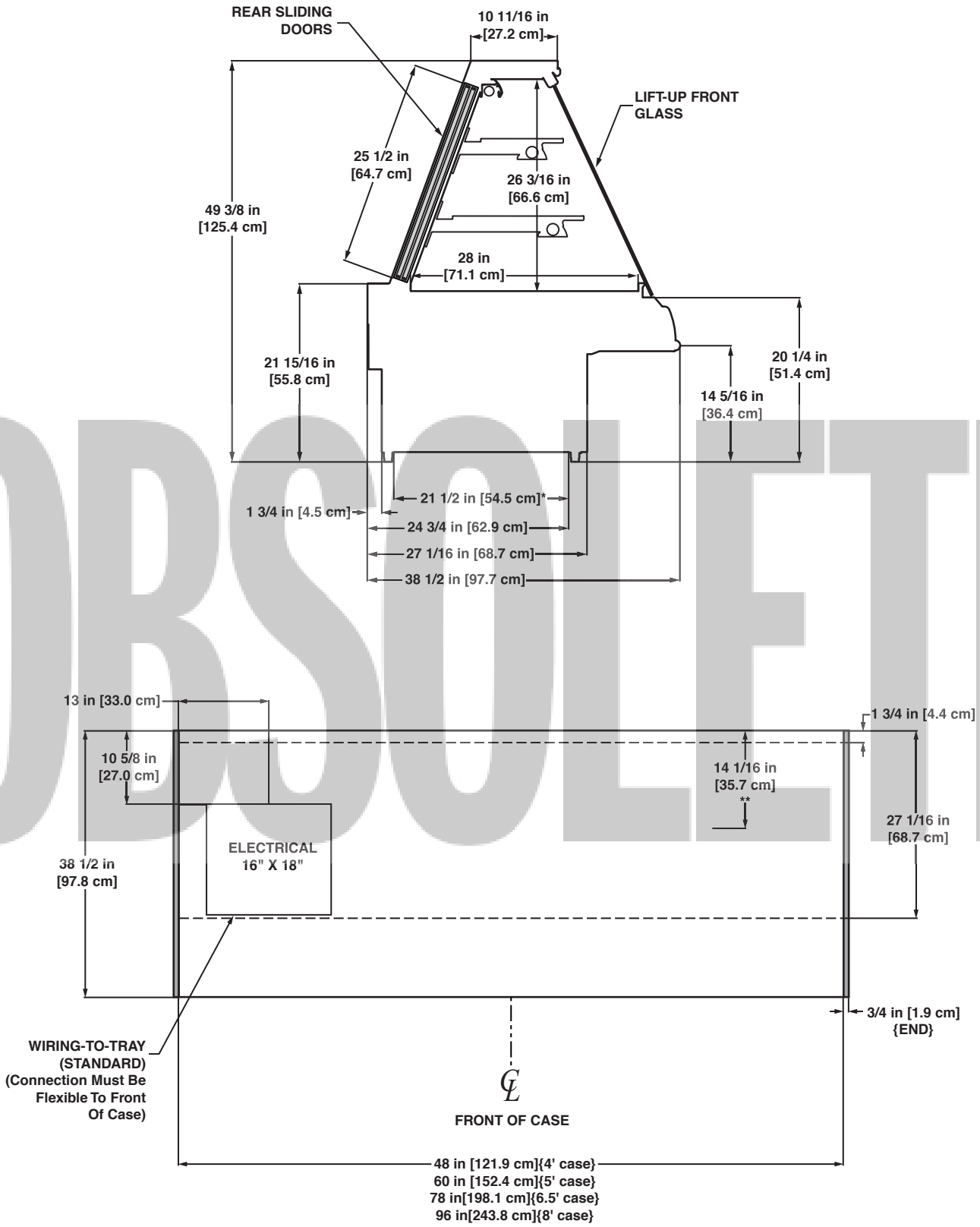


OBSOLETE

NOTES:

* STUB-UP AREA
** RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL CONNECTIONS

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- AVAILABLE SHELF SIZES: 10" & 16"

A DOVER COMPANY

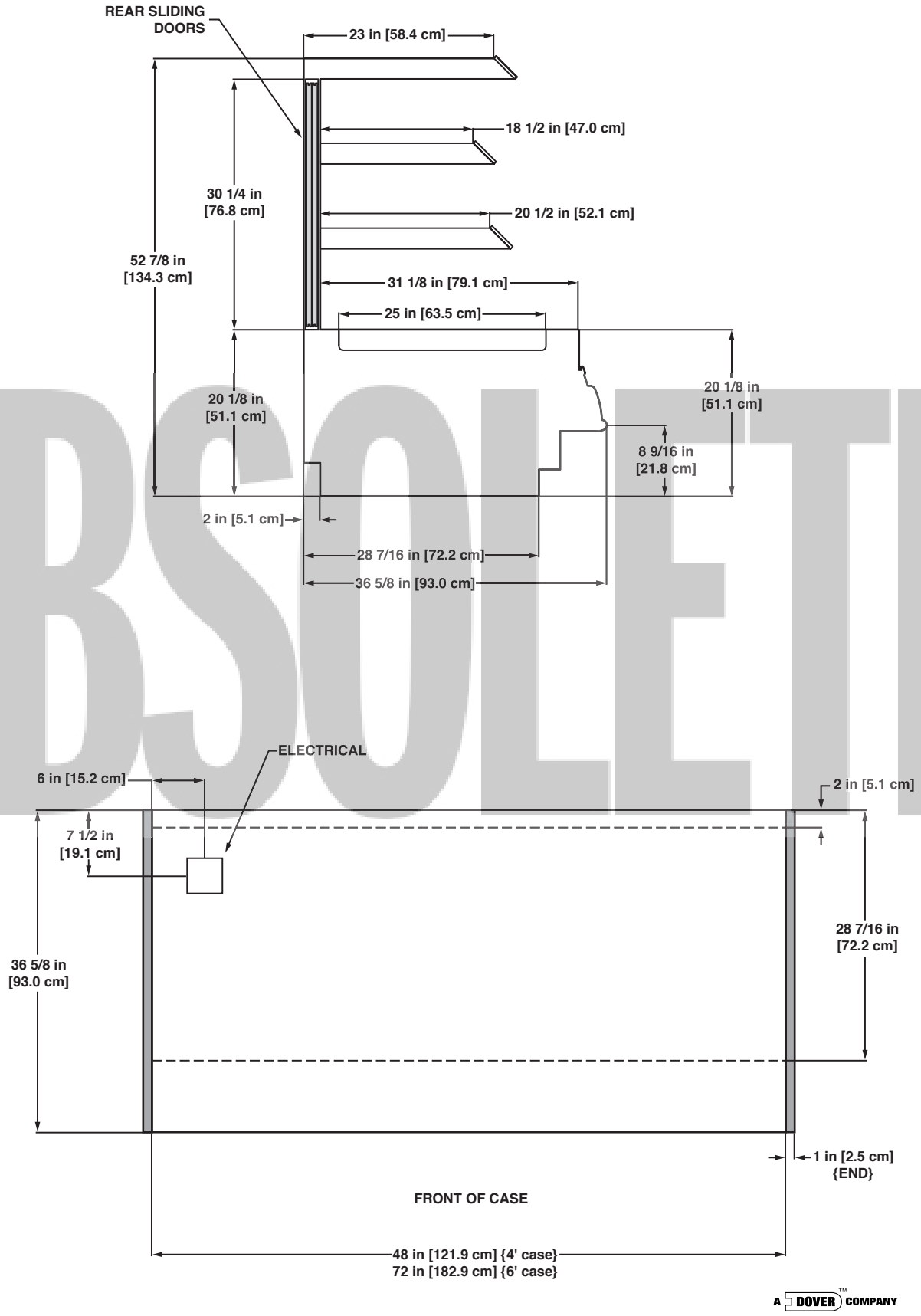
Multi-Deck Self Service Hot Foods Merchandiser

ON3W - 4’ & 6’

Electrical Data

		Three Phase		
		208 Volts		
Model		Amps	Watts	Breaker
ON3W	4’	13.8	4972	20
	6’	21.6	7782	25

OBSOLETE


REAR SLIDING DOORS
23 in [58.4 cm]
18 1/2 in [47.0 cm]
30 1/4 in [76.8 cm]
20 1/2 in [52.1 cm]
52 7/8 in [134.3 cm]
31 1/8 in [79.1 cm]
25 in [63.5 cm]
20 1/8 in [51.1 cm]
20 1/8 in [51.1 cm]
8 9/16 in [21.8 cm]
2 in [5.1 cm]
28 7/16 in [72.2 cm]
36 5/8 in [93.0 cm]
ELECTRICAL
6 in [15.2 cm]
2 in [5.1 cm]
7 1/2 in [19.1 cm]
28 7/16 in [72.2 cm]
36 5/8 in [93.0 cm]
1 in [2.5 cm] {END}
FRONT OF CASE
48 in [121.9 cm] {4' case}
72 in [182.9 cm] {6' case}

OBSOLETE

Narrow Gravity Coil Flat Glass Service Deli Merchandiser

ONFG - 4', 6', 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
ONFG	4'	NA[1]	- - -[2]	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
	6'	NA	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
	8'	NA	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -
	12'	NA	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -	- - -

[1] Not applicable.

[2] NOTE: - - - not an option on this case model.

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
ONFG	4'	0.57	68	0.77	92
	6'	0.57	68	0.77	92
	8'	0.57	68	1.54	185
	12'	0.57	68	1.54	185

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[3]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
ONFG	220	17	6-8	NA	NA	NA

[3] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Average discharge air velocity at peak of defrost.

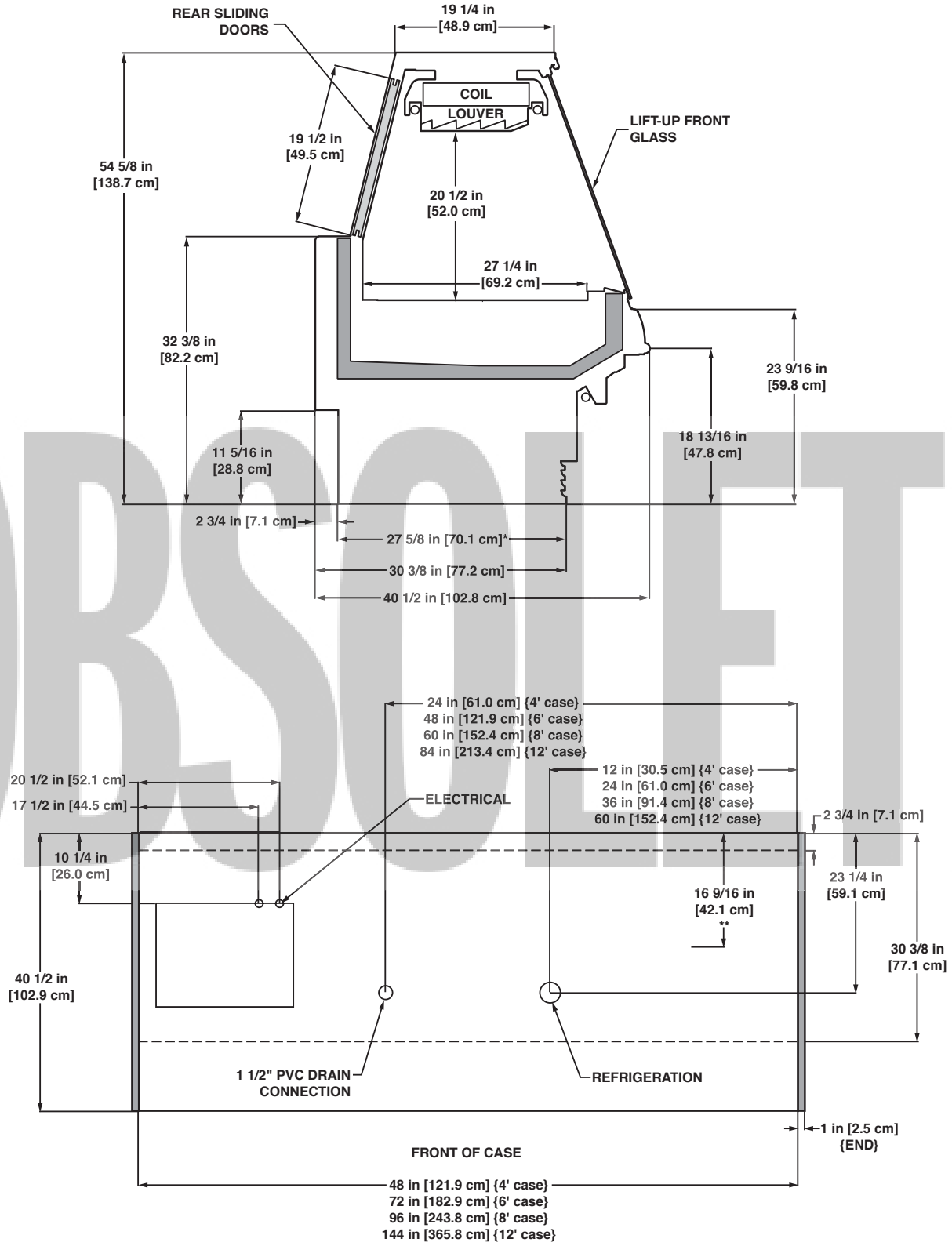
Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
ONFG	2	6 - 8	- - -	- - -	65	48	- - -	- - -	- - -	- - -

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.



OBSOLETE

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"

A DOVER COMPANY

International Style Service Hot Foods Merchandiser

OSIW - 1m, 1.25m, 1.5m, 2m, 2.25m & 2.5m

Electrical Data

Model		Number of Hot Wells	Three Phase 208 Volts Amps	Watts	Breaker
OSIW	1m	3	18.7	6729	25
	1.25m	3	18.7	6729	25
	1.5m	4	24.6	8852	35
	2m	6	30.3	10903	40
	2.25m	6	30.3	10903	40
	2.5m	7	36.3	13062	50

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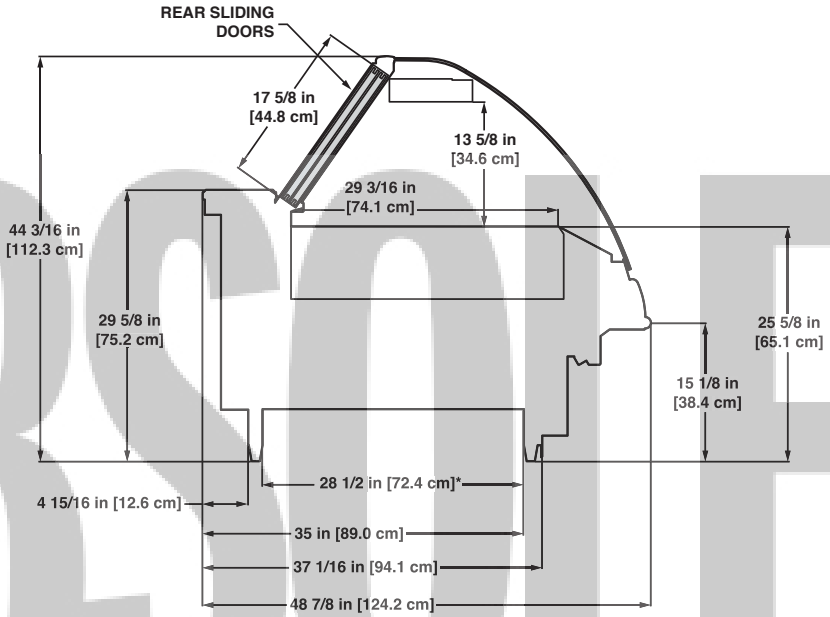
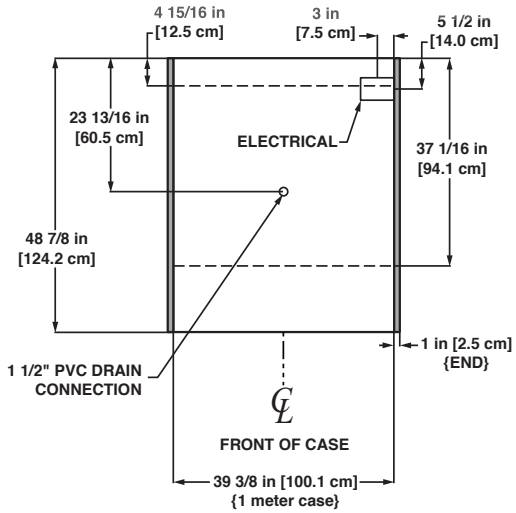
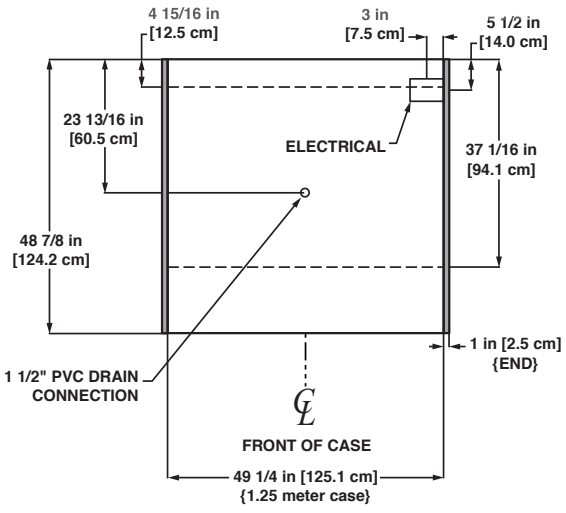
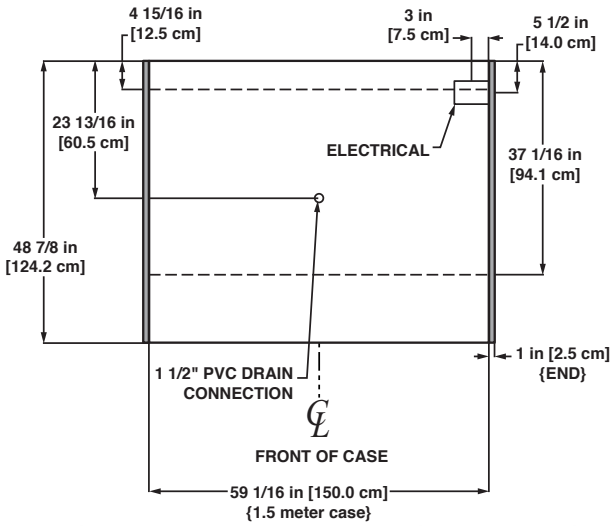
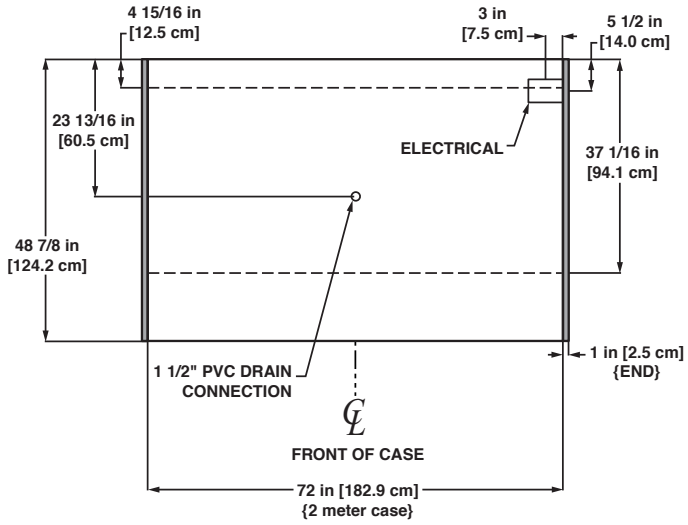






Note: The OSIW model is Certified to NSF Standard 4.





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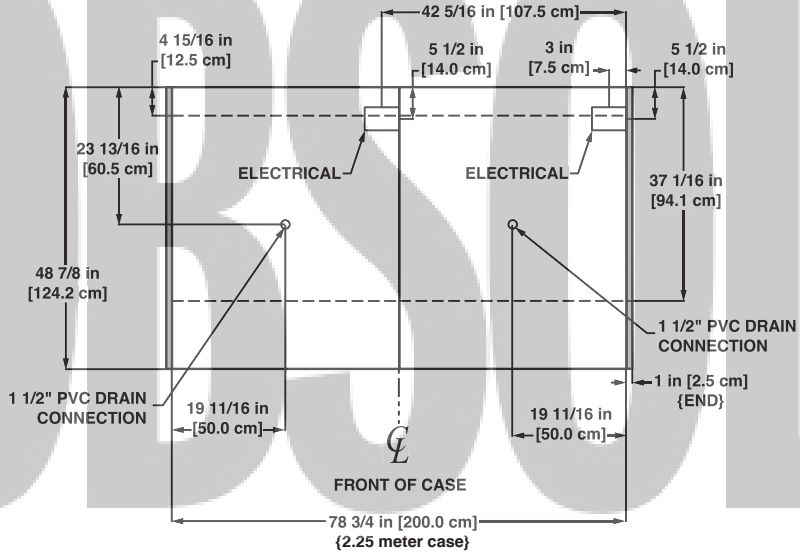

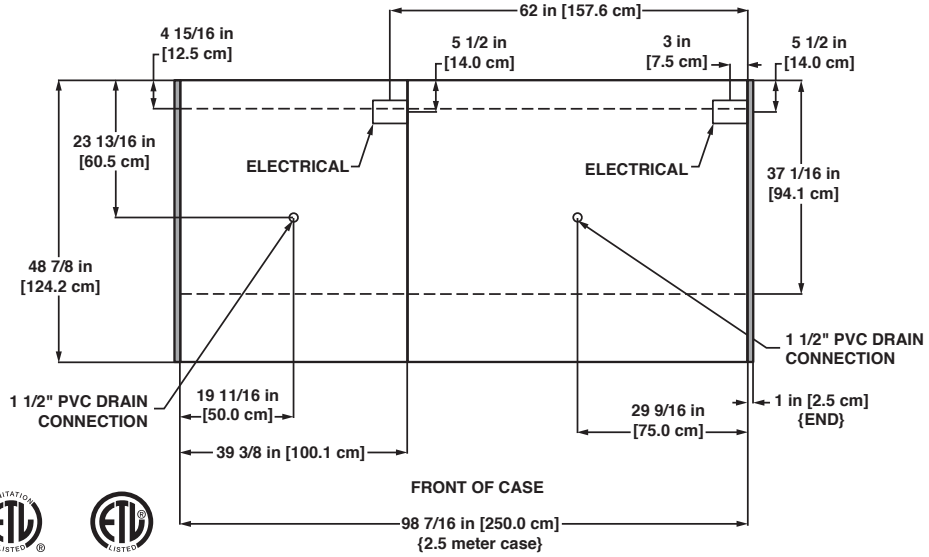

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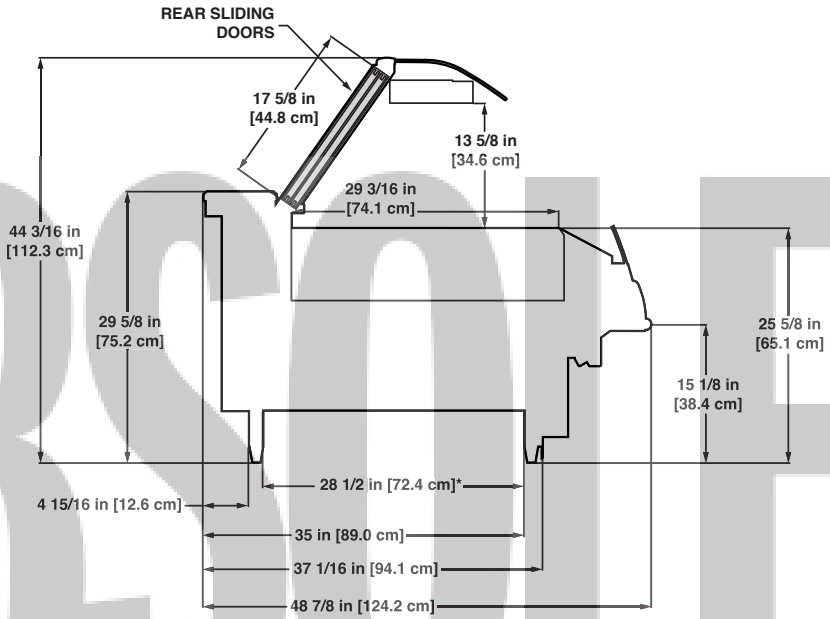
Note: The OSIW model is Certified to NSF Standard 4.

International Style Self Service Hot Foods Merchandiser

OSIWO - 1m, 1.25m, 1.5m, 2m, 2.25m & 2.5m

Electrical Data

Model		Number of Hot Wells	Three Phase 208 Volts Amps	Watts	Breaker
OSIWO	1m	3	18.7	6729	25
	1.25m	3	18.7	6729	25
	1.5m	4	24.6	8852	35
	2m	6	30.3	10903	40
	2.25m	6	30.3	10903	40
	2.5m	7	36.3	13062	50



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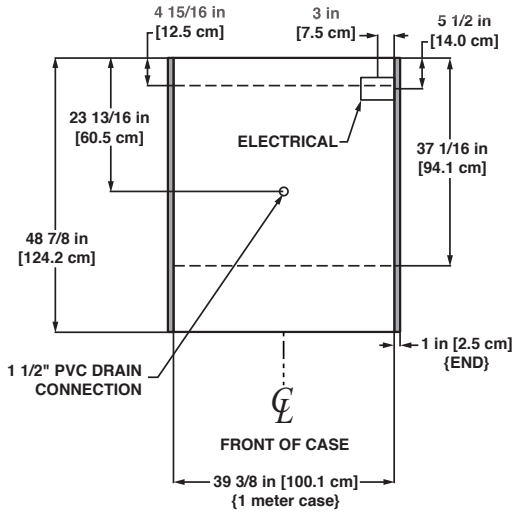

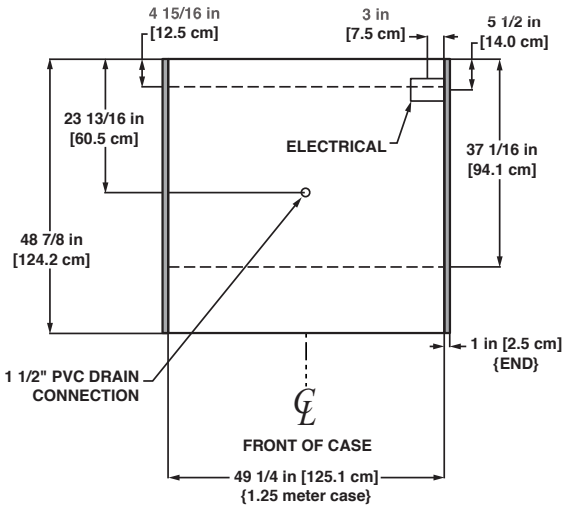

Hill PHOENIX EXCELLENCE

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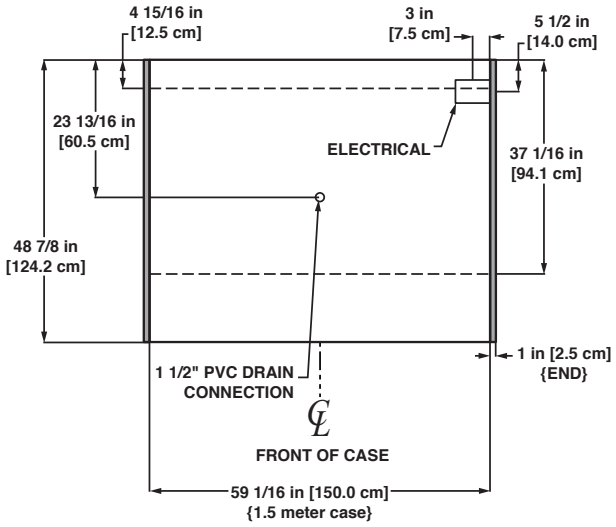

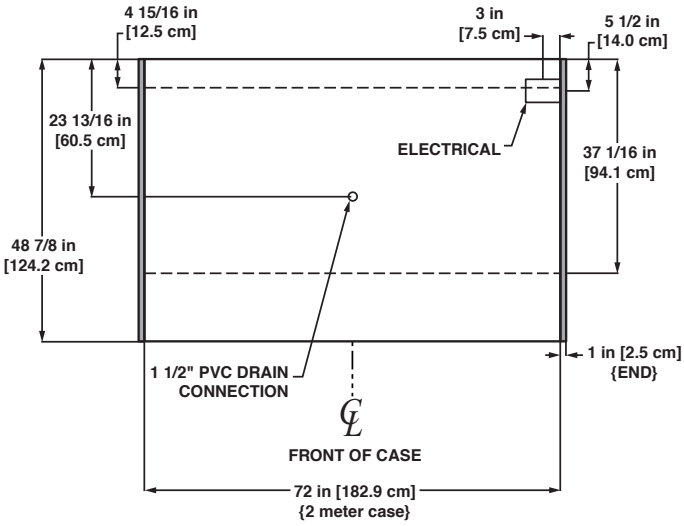

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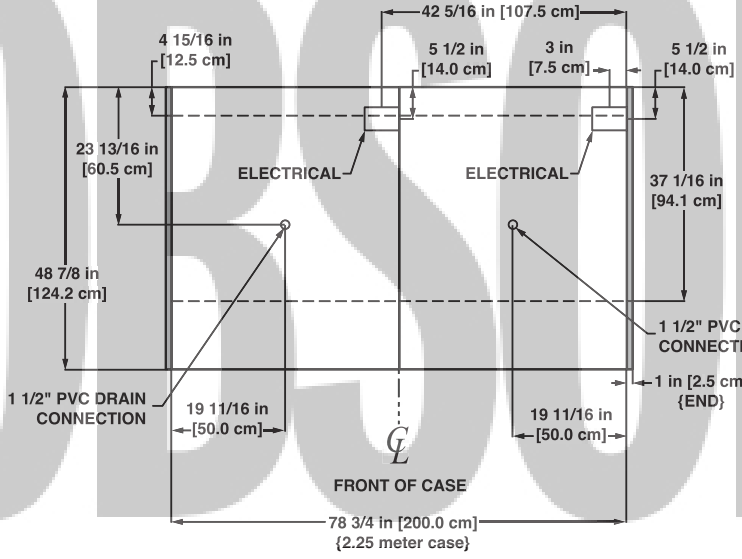

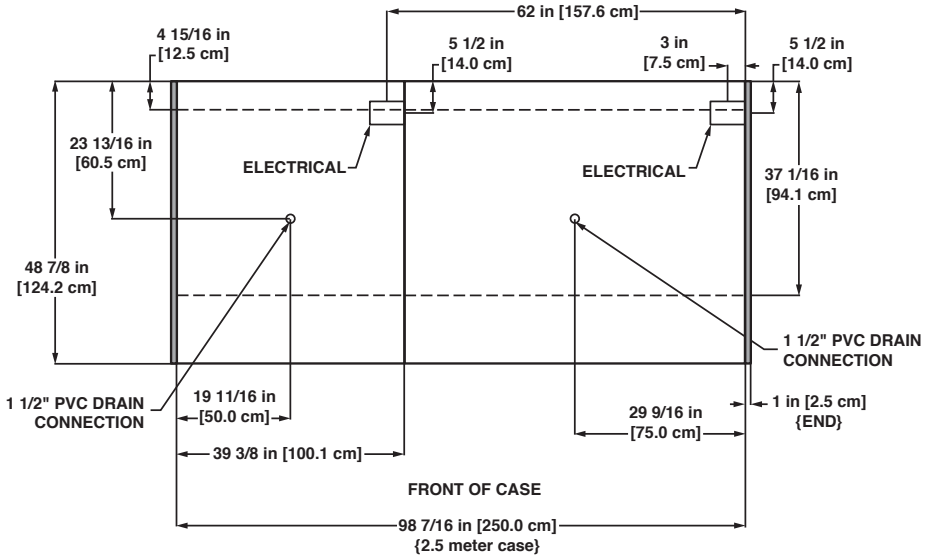

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Multi-Deck Back Bar Deli Merchandiser

PBB - 6’

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
PBB	6’	4	1.36	68	0.60	44	- - -[1]	- - -	- - -	- - -	- - -	- - -

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

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
PBB	6’	0.57	68	2.11	253

Guidelines & Control Settings

Model	BTUH/ft[2]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
PBB	990	20	6-8	33	44	245

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
PBB	4	6 - 8	- - -	- - -	30	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 CRMA specifications.

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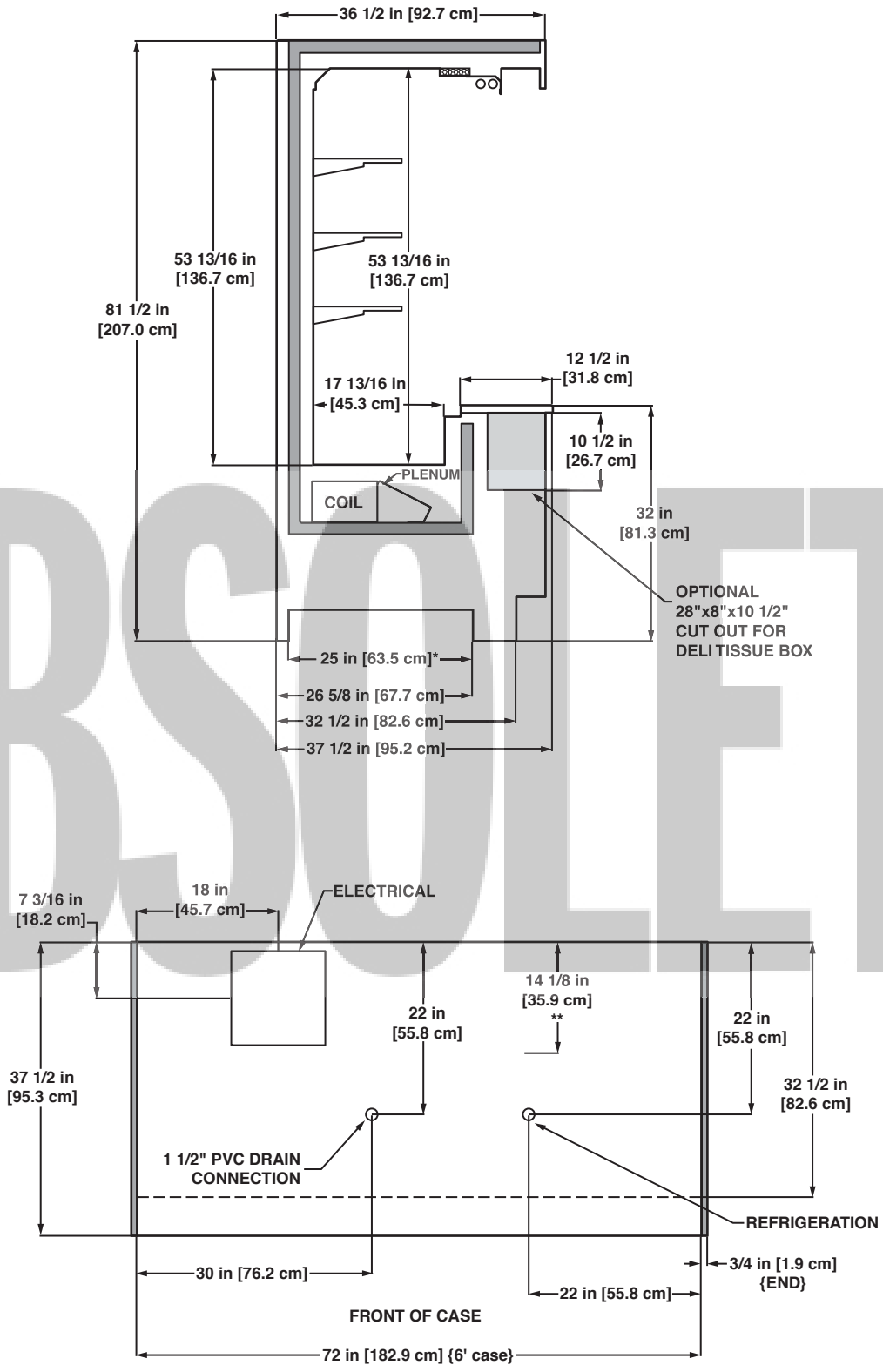


NOTES:

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

- ENDS ADD APPROXIMATELY 1 INCH TO CASE HEIGHT
- SUCTION LINE - 7/8", LIQUID LINE - 1/2"
- AVAILABLE SHELF SIZES: 12" & 14"

NSF COMPONENT c UL us

A DOVER COMPANY

Full Service Curved Glass Deli Merchandiser

PDIC - 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Ambient Fans 120 Volts Amps	Ambient Fans 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
PDIC	8'	3	1.02	51	0.45	33	0.60	22	3.85	800	4.44	1065
	12'	4	1.36	68	0.60	44	0.90	33	5.77	1200	6.67	1600

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
PDIC	8'	0.57	68	1.49	179
	12'	0.77	92	2.31	277

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[2]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[3] (FPM)
PDIC[1]	350	15	6-8	24	41	225

[1] Humidification system required with this case when used for fresh meat application.

[2] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[3] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
PDIC	4	6 - 8	30	47	60[4]	47[4]	26	45	- - -[5]	- - -

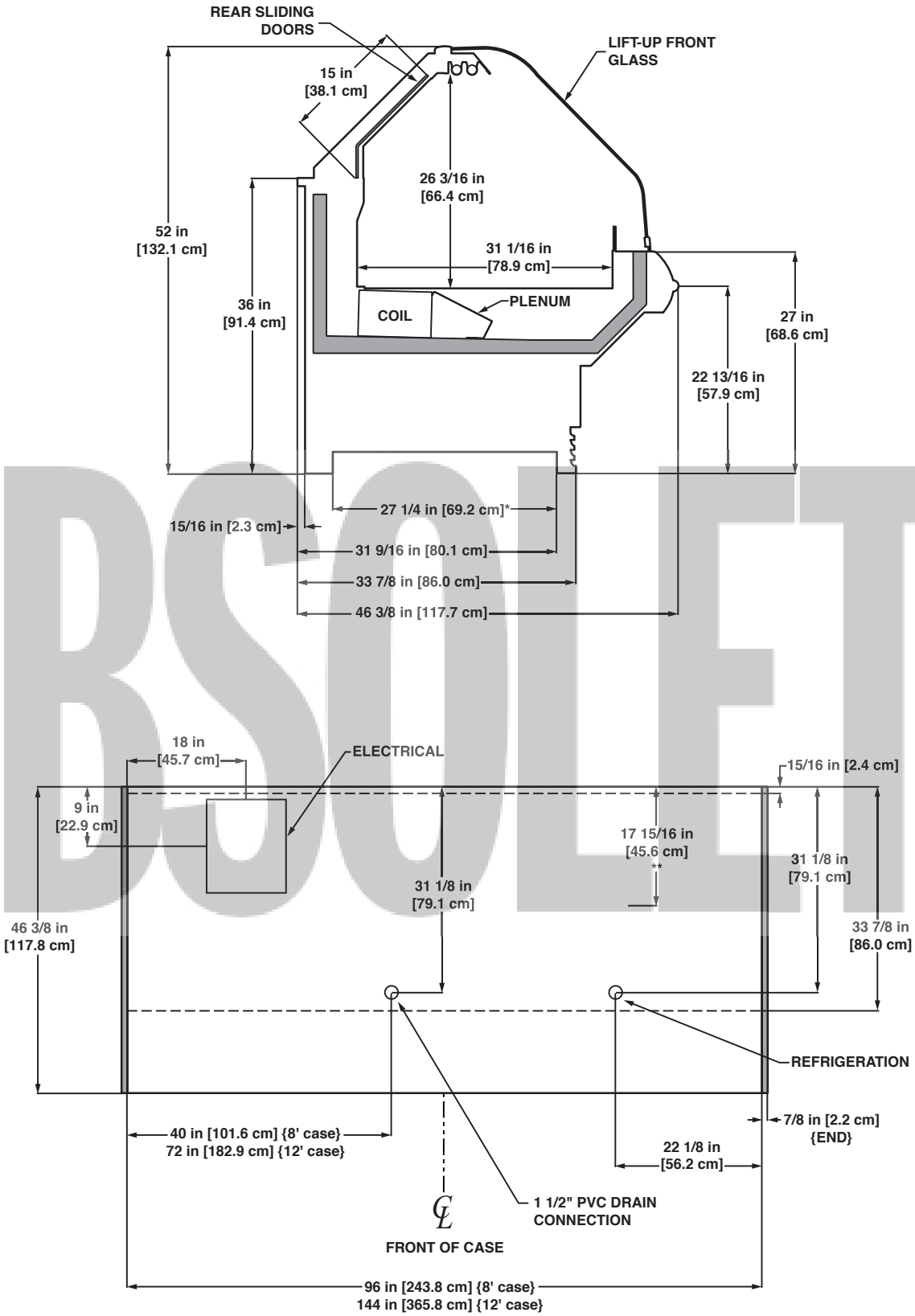
[4] Timed Off Defrost is not recommended on this model due to long defrost time.

[5] NOTE: - - - not an option on this 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.



OBSOLETE

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"

Narrow Full Service Flat Glass Deli Merchandisers

PNDIF - 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
PNDIF	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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
PNDIF	8'	0.57	68	0.57	68
	12'	0.57	68	0.57	68

OBSOLETE

Guidelines & Control Settings

Model	Front Sill Height	BTUH/ft[1]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[2] (FPM)
PNDIF	27 3/4"	285	22	6-8	28	39	100

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Average discharge air velocity at peak of defrost.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
PNDIF	4	6 - 8	30	47	40	47	26	45	- - -[3]	- - -

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.

Hill PHOENIX EXCELLENCE

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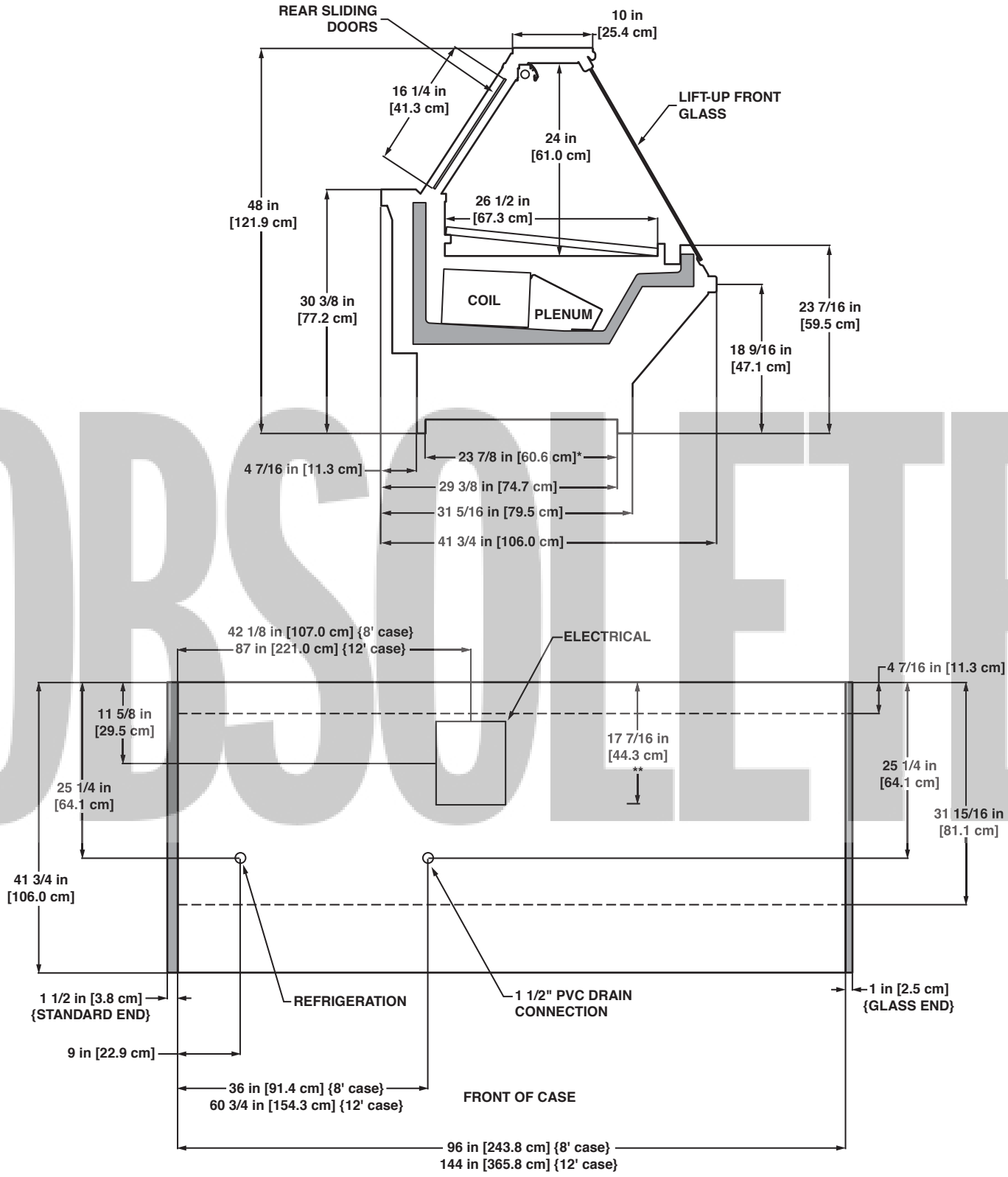
PNDIF
48" HIGH

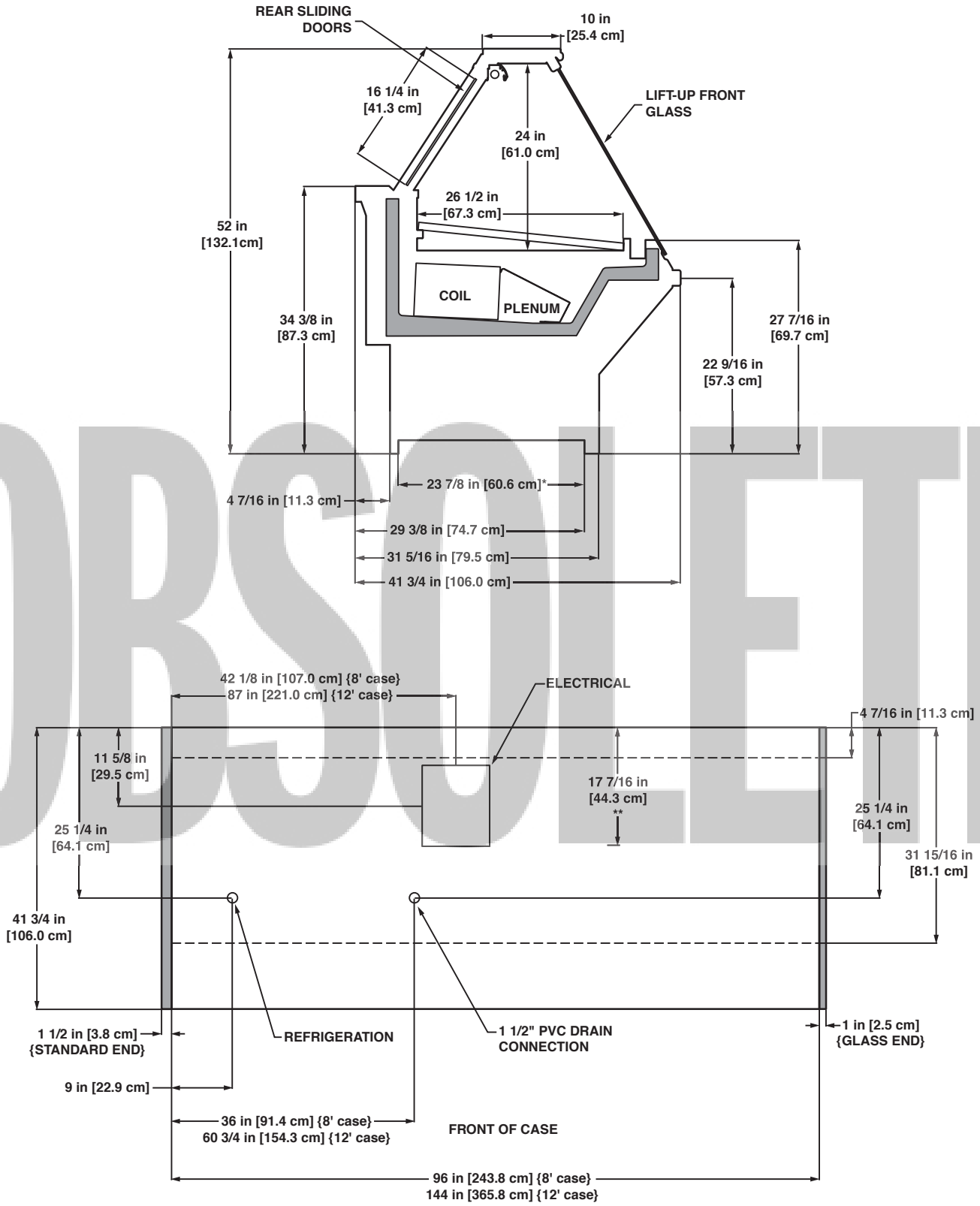


OBSOLETE

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"



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"

OBSOLETE

OBSOLETE

Full Service Flat Glass Deli Merchandiser

PDIF - 8' & 12'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
PNDIF	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

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
PNDIF	8'	0.57	68	0.57	68
	12'	0.57	68	0.57	68

OBSOLETE

Guidelines & Control Settings

Model	BTUH/ft[1]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[2] (FPM)
PDIF	300	22	6-8	28	39	100

[1] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] Average discharge air velocity at peak of defrost.

Defrost Controls

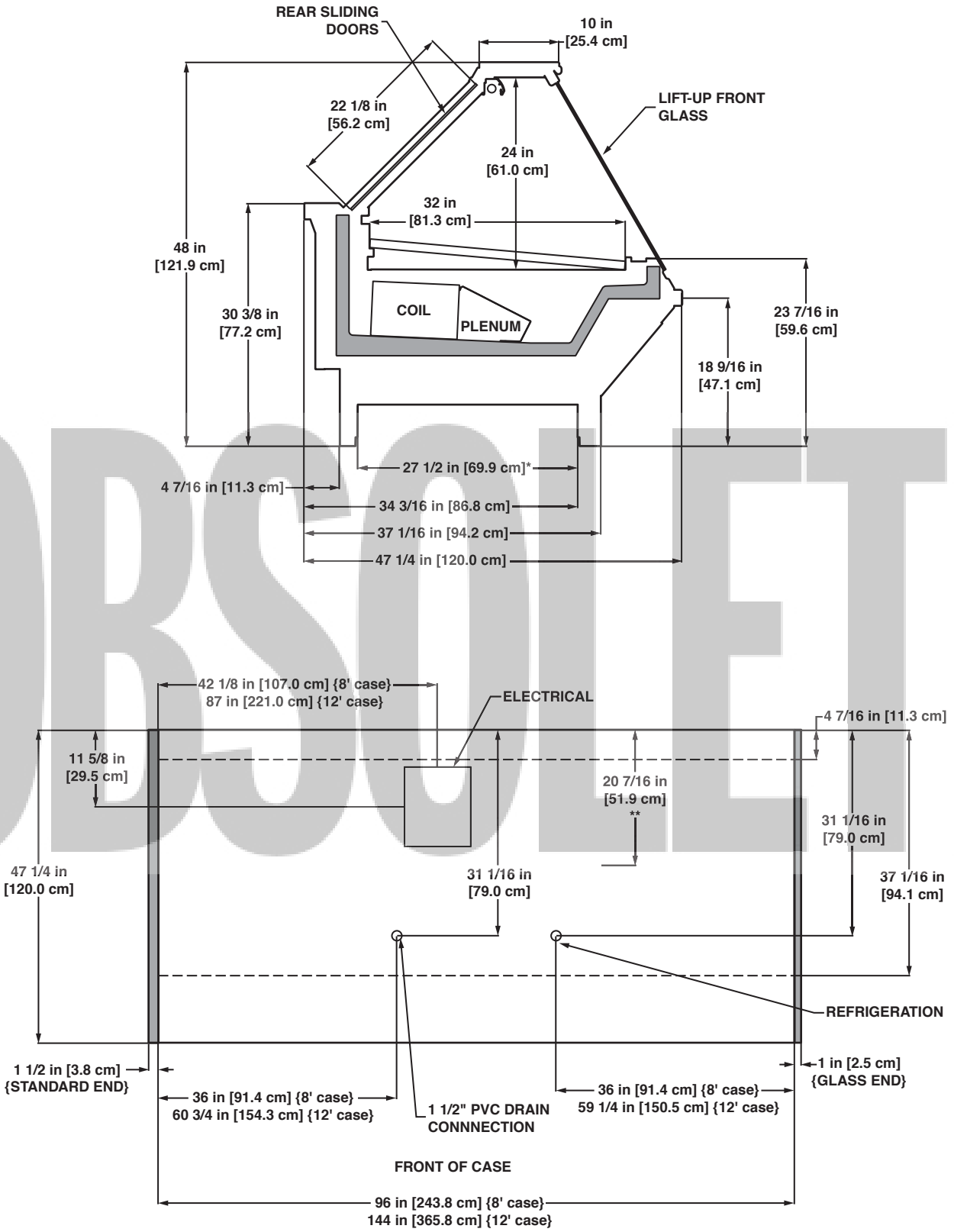
Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
PDIF	4	6 - 8	30	47	40	47	26	45	- - -[3]	- - -

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.

PDIF
48” HIGH

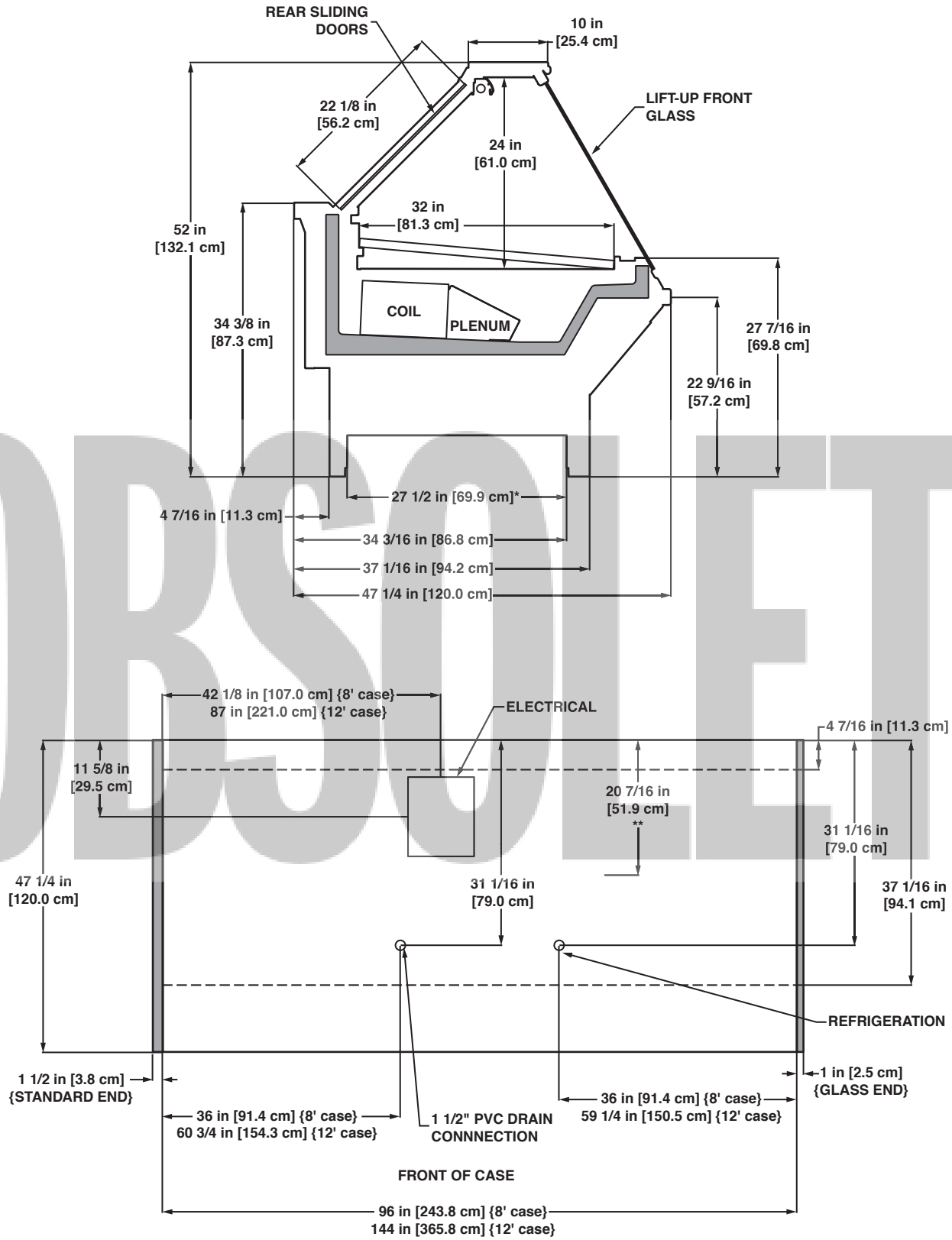


OBSOLETE

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"



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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
- SUCTION LINE - 7/8", LIQUID LINE - 1/2"

OBSOLETE

Flat Glass Service Seafood Merchandiser

PNSF - 2' & 3'
PSF - 4' & 5'

Electrical Data

Model		Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Defrost Heaters 208 Volts Amps	Defrost Heaters 208 Volts Watts	Defrost Heaters 240 Volts Amps	Defrost Heaters 240 Volts Watts
PNSF	2'	1	0.34	17	0.15	11	- - -[1]	- - -	- - -	- - -	- - -	- - -
	3'	1	0.34	17	0.15	11	- - -	- - -	- - -	- - -	- - -	- - -
PSF	4'	2	0.68	34	0.30	22	- - -	- - -	- - -	- - -	- - -	- - -
	5'	2	0.68	34	0.30	22	- - -	- - -	- - -	- - -	- - -	- - -

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

Lighting Data

Model		Typical per Light Row 120 Volts Amps	Typical per Light Row 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
PNSF	2'	- - -	- - -	- - -	- - -
	3'	- - -	- - -	- - -	- - -
PSF	4'	- - -	- - -	- - -	- - -
	5'	- - -	- - -	- - -	- - -

OBSOLETE

Guidelines & Control Settings

Model[2]	BTUH/ft[3]	Evaporator (°F)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity[4] (FPM)
PNSF	200	27	6-8	36		180
PSF	350	27	6-8	36		180

[2] Cases require an ice bed to maintain product temperatures.

[3] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[4] Average discharge air velocity at peak of defrost.

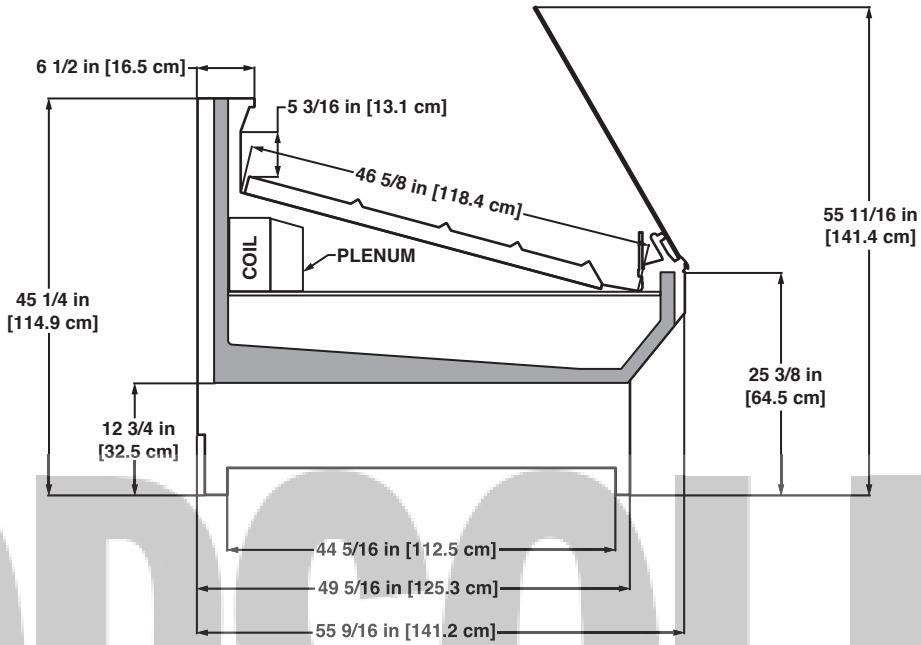
Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost Fail-safe (min)	Electric Defrost Termination Temp. (°F)	Timed Off Defrost Fail-safe (min)	Timed Off Defrost Termination Temp. (°F)	Hot Gas Defrost Fail-safe (min)	Hot Gas Defrost Termination Temp. (°F)	Reverse Air Defrost Fail-safe (min)	Reverse Air Defrost Termination Temp. (°F)
PNSF	3	6 - 8	- - -[4]	- - -	45	47	- - -	- - -	- - -	- - -
PSF	3	6 - 8	- - -	- - -	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 CRMA specifications.



PSF

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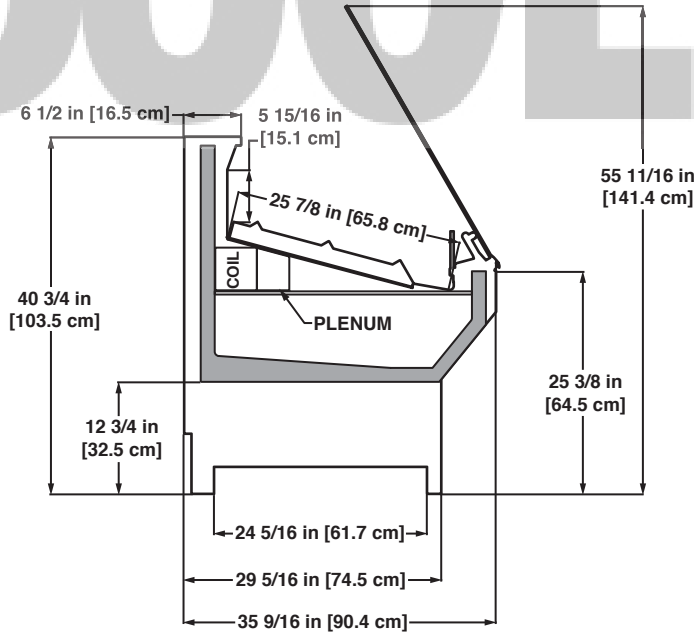
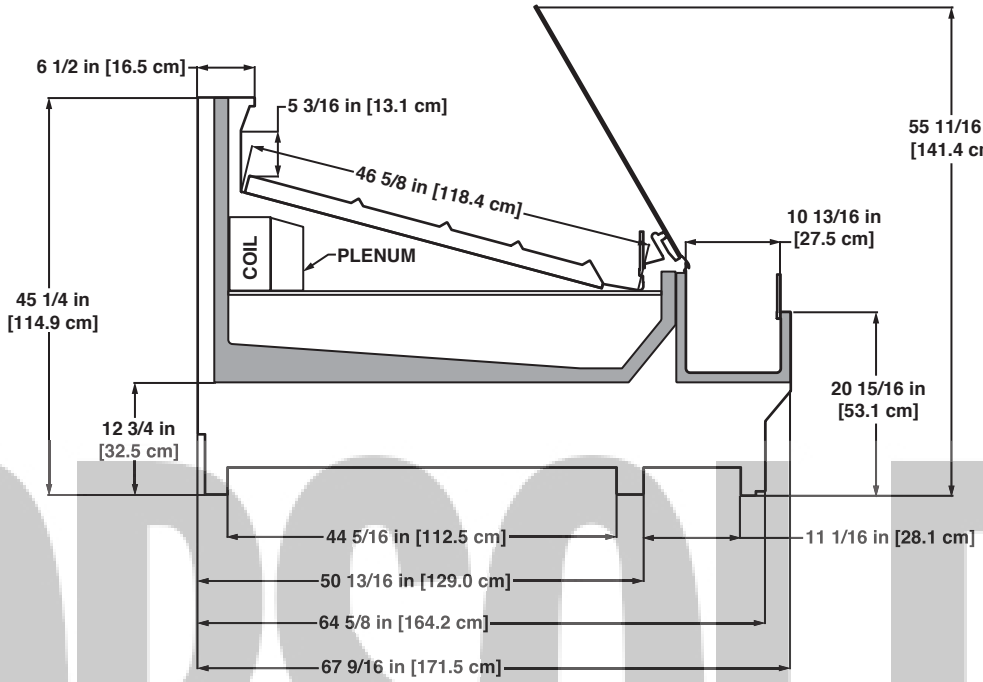


PNSF



PSF

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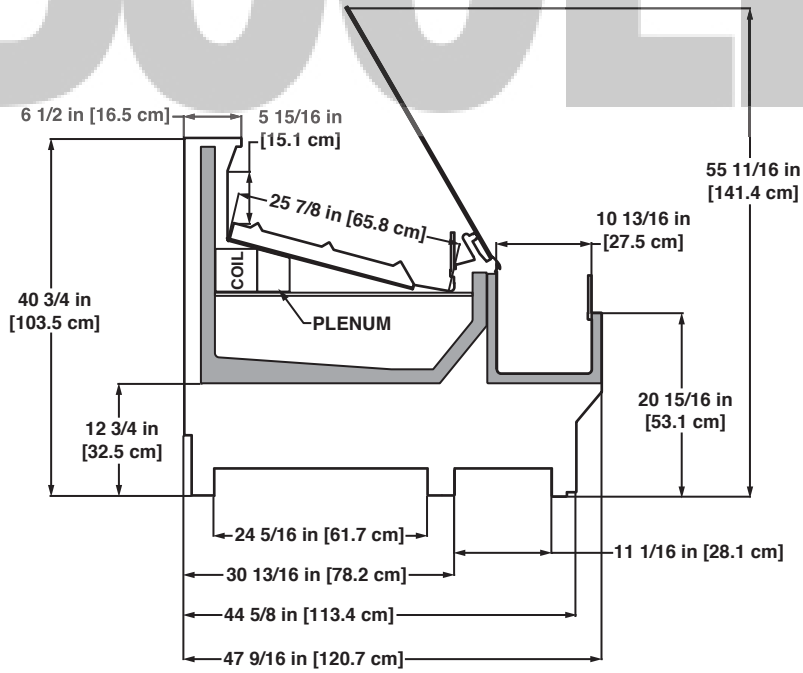
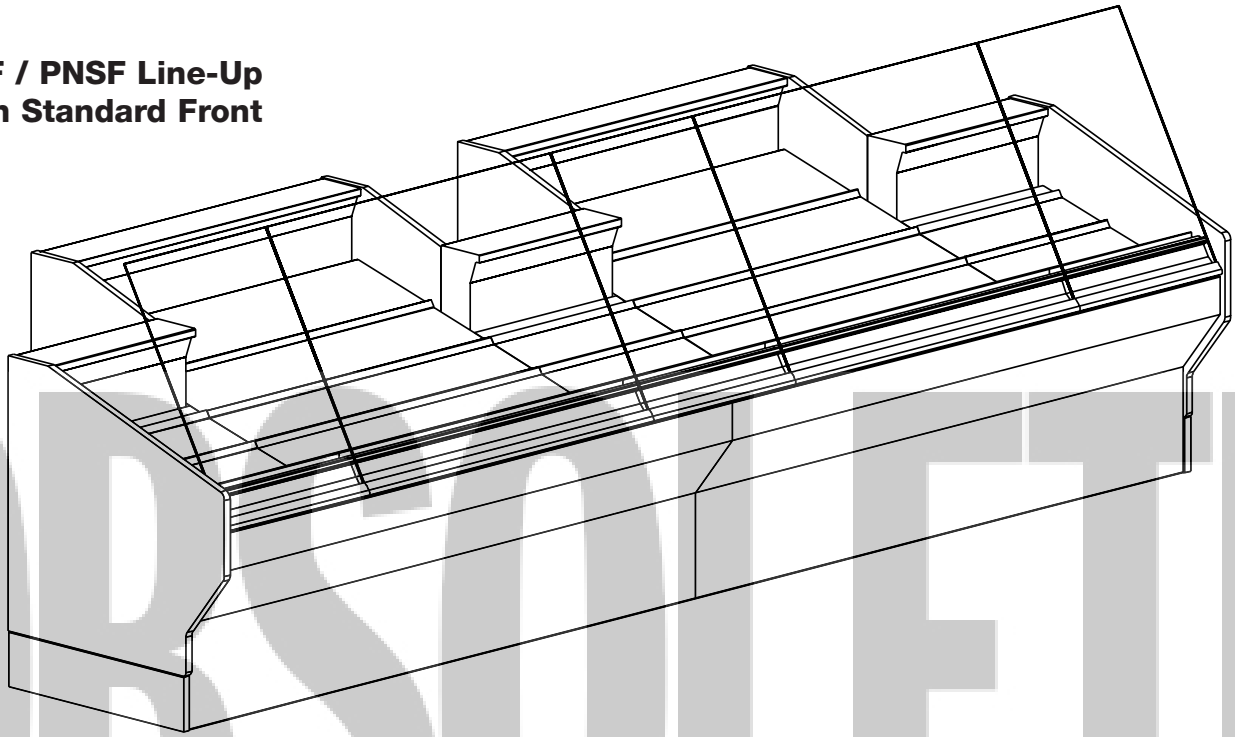


PNSF

A DOVER COMPANY

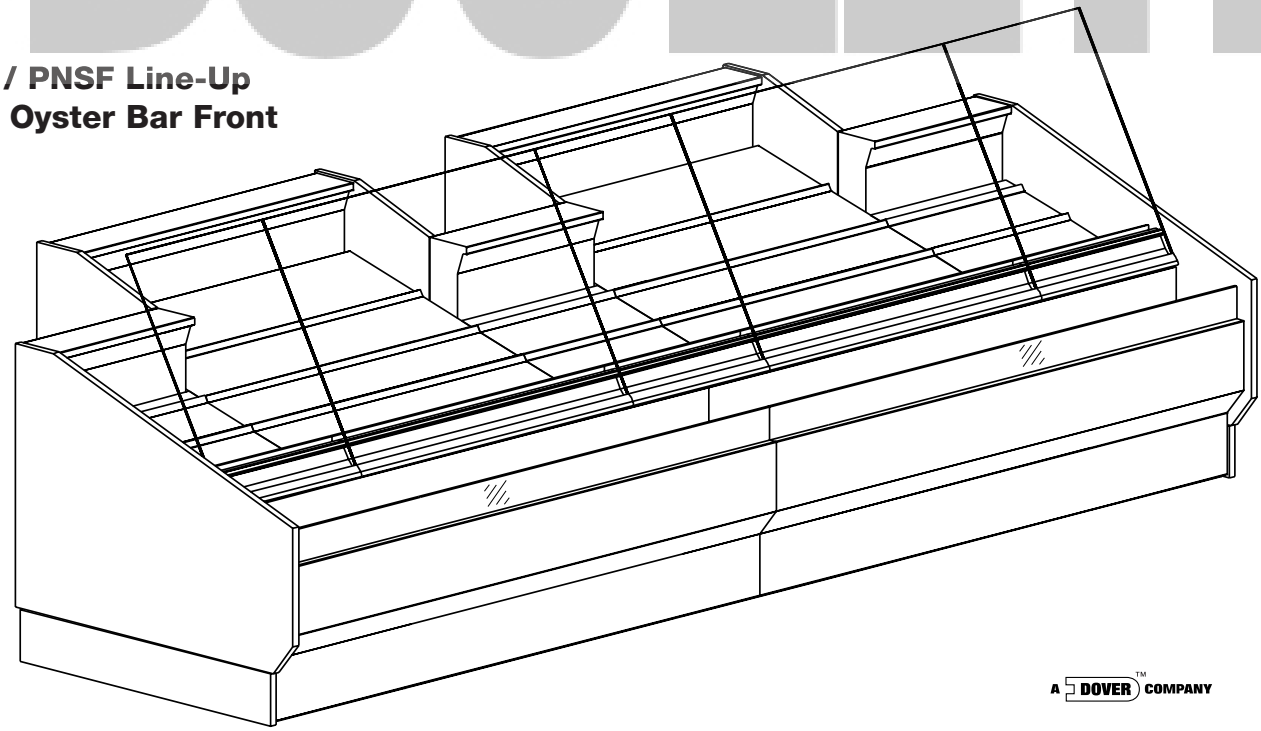
The PSF / PNSF line-ups shown below can be custom configured to meet specific layout needs. For specific information about configuration options and floorplans contact our Park Avenue facility at 515-288-1001.

PSF / PNSF Line-Up with Standard Front



OBSOLETE

PSF / PNSF Line-Up with Oyster Bar Front



Secondary Coolant Gravity Coil Meat Merchandiser

PSG - 4', 6', 8', 12, E30 & E45

Electrical Data

Model		Air Defrost[1] Fan / Coil		Secondary[1] Coolant Pump		Anti-Condensate Heaters	
		115 Volts		120 Volts		120 Volts	
		Amps	Watts	Amps	Watts	Amps	Watts
PSG	4'	2.10	242	1.40	168	0.55	66
	6'	2.10	242	1.40	168	1.03	124
	8'	2.10	242	1.40	168	1.03	124
	12'	2.10	242	2.10	242	1.60	192
	E30	2.10	242	1.40	168	1.03	124
	E45	2.10	242	1.40	168	1.03	124

[1] Air defrost fan and secondary coolant pump are only applicable to the semi-self-contained version.

Lighting Data

Model		Typical per Light Row		Maximum Lighting	
		120 Volts		120 Volts	
		Amps	Watts	Amps	Watts
PSG	4'	0.57	68	0.57	68
	6'	0.57	68	0.57	68
	8'	0.57	68	0.57	68
	12'	0.57	68	0.80	96
	E30	0.57	68	0.57	68
	E45	0.57	68	0.57	68

Guidelines & Control Settings - Remote

Model	BTUH/ft	Supply Temp. (°F)	Flow Rate GPM/ft	Charge GAL/ft	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity (FPM)
PSG	400	20	0.38	3	na[2]	na	na

[2] Not Applicable.

Guidelines & Control Settings - Semi-Self-Contained

Model	BTUH/ft[3]	Supply Temp. (°F)	Saturated Suction Temp. (°F)	Flow Rate GPM/ft	Charge GAL/ft	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity (FPM)
PSG	480	20	15	0.38	3	na	na	na

[3] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost		Timed Off Defrost		Warm Fluid		Reverse Air Defrost	
			Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
PSG - SSC	24	5	- - -[5]	- - -	- - -	- - -	7	45	- - -	- - -
PSG - Remote	4-6[4]	5	- - -	- - -	- - -	- - -	7	45	- - -	- - -

[4] Dependent on condition of secondary coolant supplied to case. Cooler liquid and higher inlet pressure require more frequent defrosts.

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

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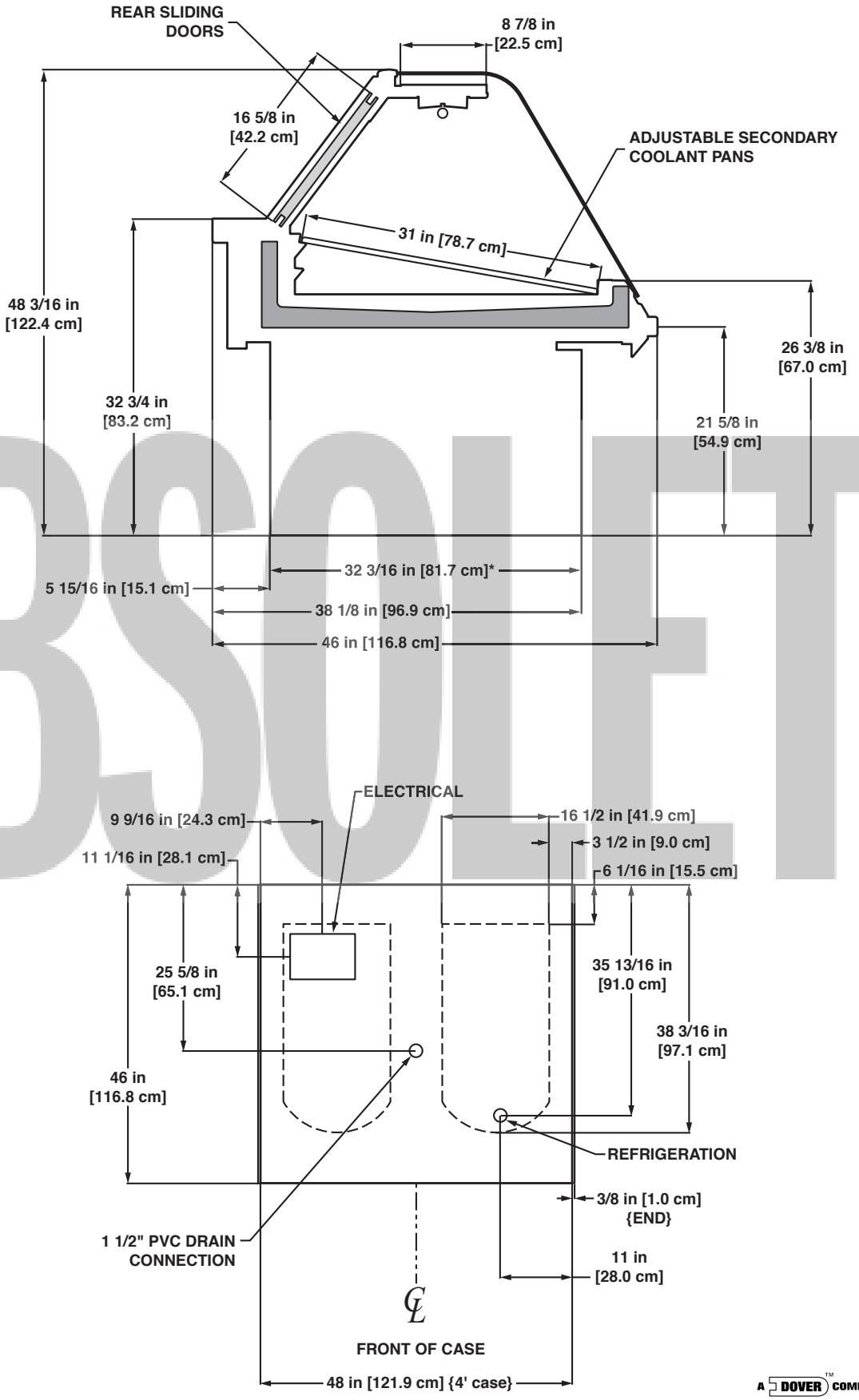
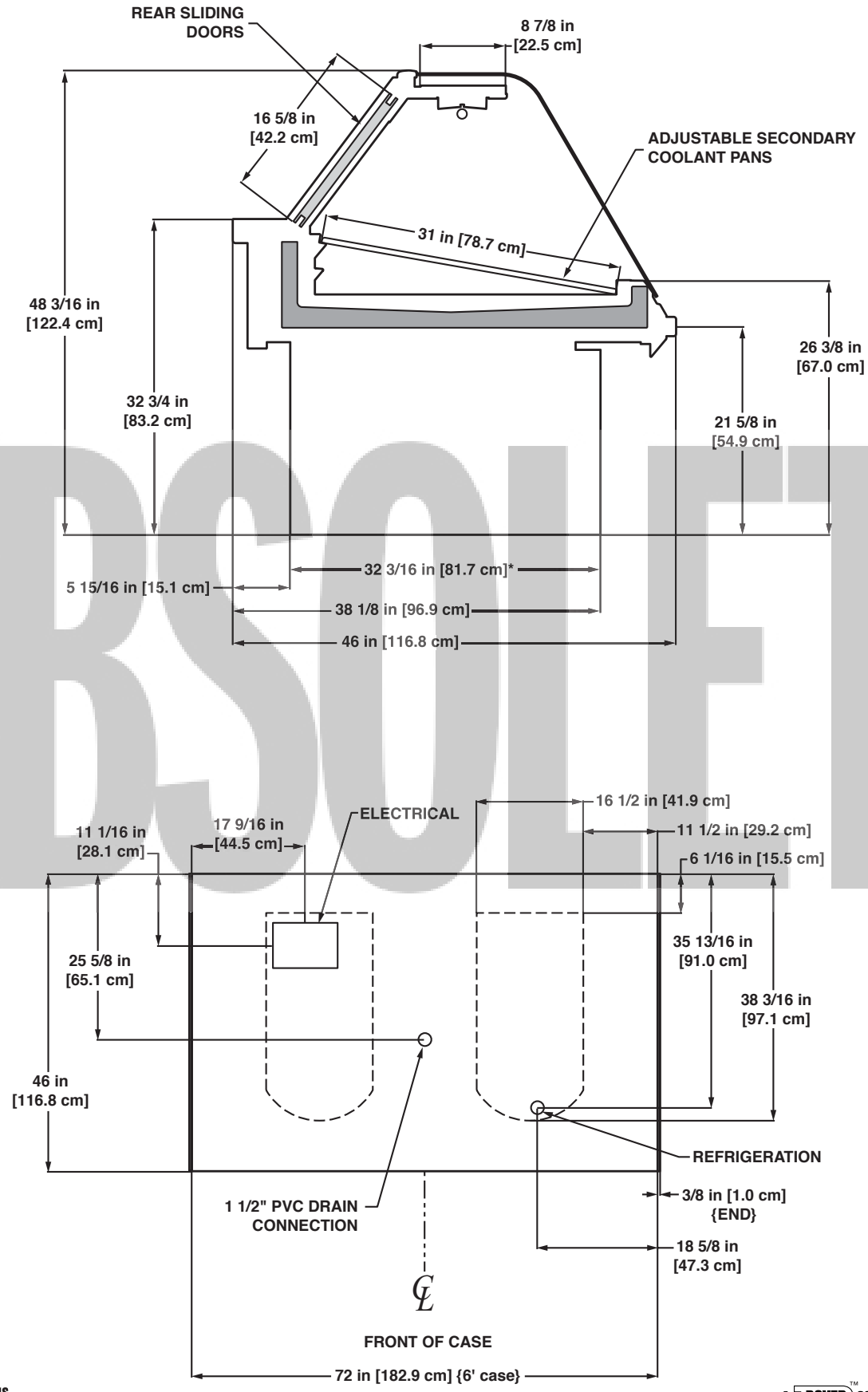
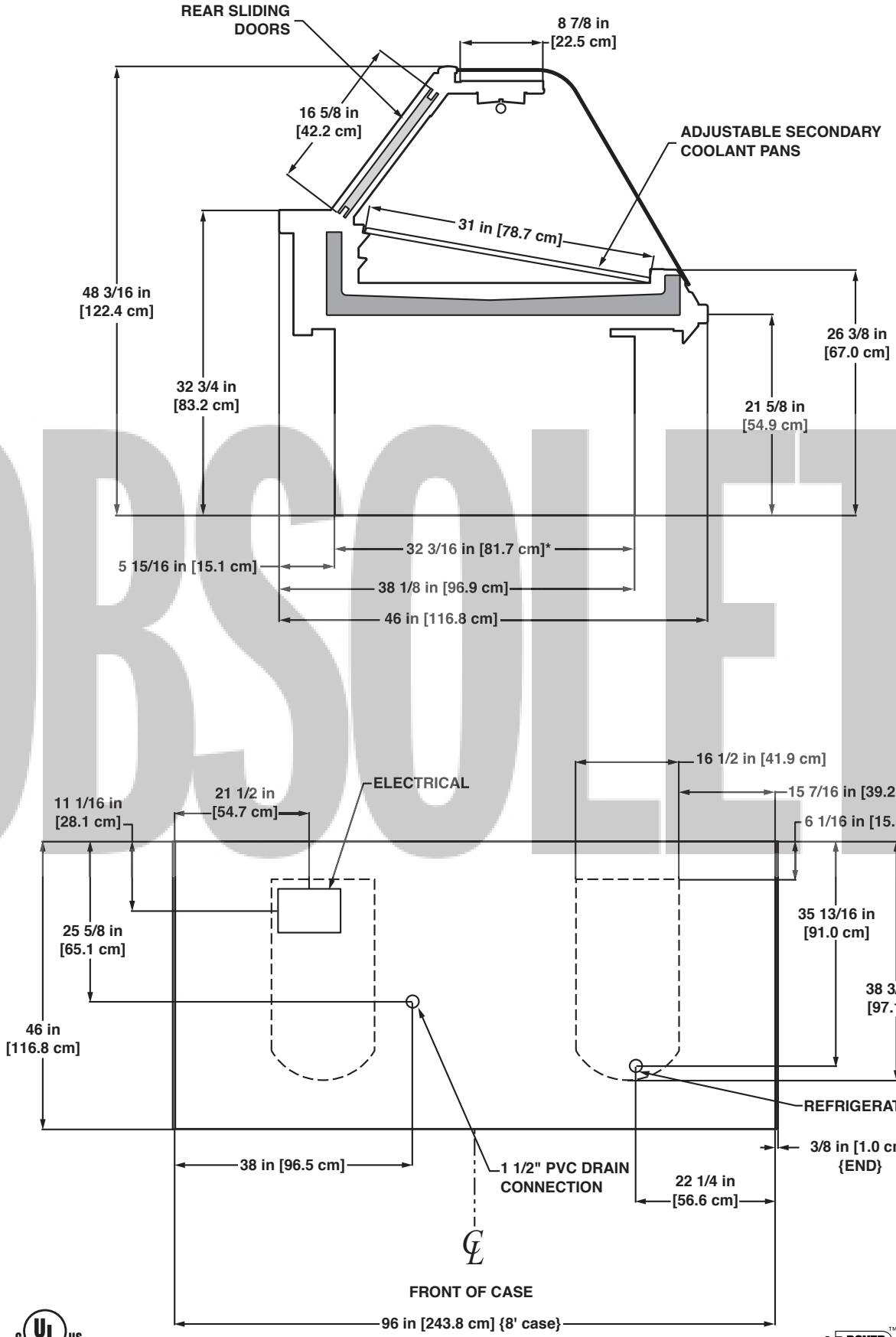

REAR SLIDING DOORS
8 7/8 in [22.5 cm]
16 5/8 in [42.2 cm]
ADJUSTABLE SECONDARY COOLANT PANS
31 in [78.7 cm]
48 3/16 in [122.4 cm]
26 3/8 in [67.0 cm]
32 3/4 in [83.2 cm]
21 5/8 in [54.9 cm]
32 3/16 in [81.7 cm]*
5 15/16 in [15.1 cm]
38 1/8 in [96.9 cm]
46 in [116.8 cm]
ELECTRICAL
9 9/16 in [24.3 cm]
16 1/2 in [41.9 cm]
3 1/2 in [9.0 cm]
11 1/16 in [28.1 cm]
6 1/16 in [15.5 cm]
25 5/8 in [65.1 cm]
35 13/16 in [91.0 cm]
38 3/16 in [97.1 cm]
46 in [116.8 cm]
REFRIGERATION
3/8 in [1.0 cm] {END}
1 1/2" PVC DRAIN CONNECTION
11 in [28.0 cm]
FRONT OF CASE
48 in [121.9 cm] {4' case}

OBSOLETE


REAR SLIDING DOORS
8 7/8 in [22.5 cm]
16 5/8 in [42.2 cm]
ADJUSTABLE SECONDARY COOLANT PANS
31 in [78.7 cm]
48 3/16 in [122.4 cm]
26 3/8 in [67.0 cm]
32 3/4 in [83.2 cm]
21 5/8 in [54.9 cm]
32 3/16 in [81.7 cm]*
5 15/16 in [15.1 cm]
38 1/8 in [96.9 cm]
46 in [116.8 cm]
16 1/2 in [41.9 cm]
11 1/2 in [29.2 cm]
6 1/16 in [15.5 cm]
ELECTRICAL
11 1/16 in [28.1 cm]
17 9/16 in [44.5 cm]
35 13/16 in [91.0 cm]
25 5/8 in [65.1 cm]
38 3/16 in [97.1 cm]
46 in [116.8 cm]
REFRIGERATION
1 1/2" PVC DRAIN CONNECTION
3/8 in [1.0 cm] {END}
18 5/8 in [47.3 cm]
FRONT OF CASE
72 in [182.9 cm] {6' case}

OBSOLETE



OBSOLETE

NSF COMPONENT
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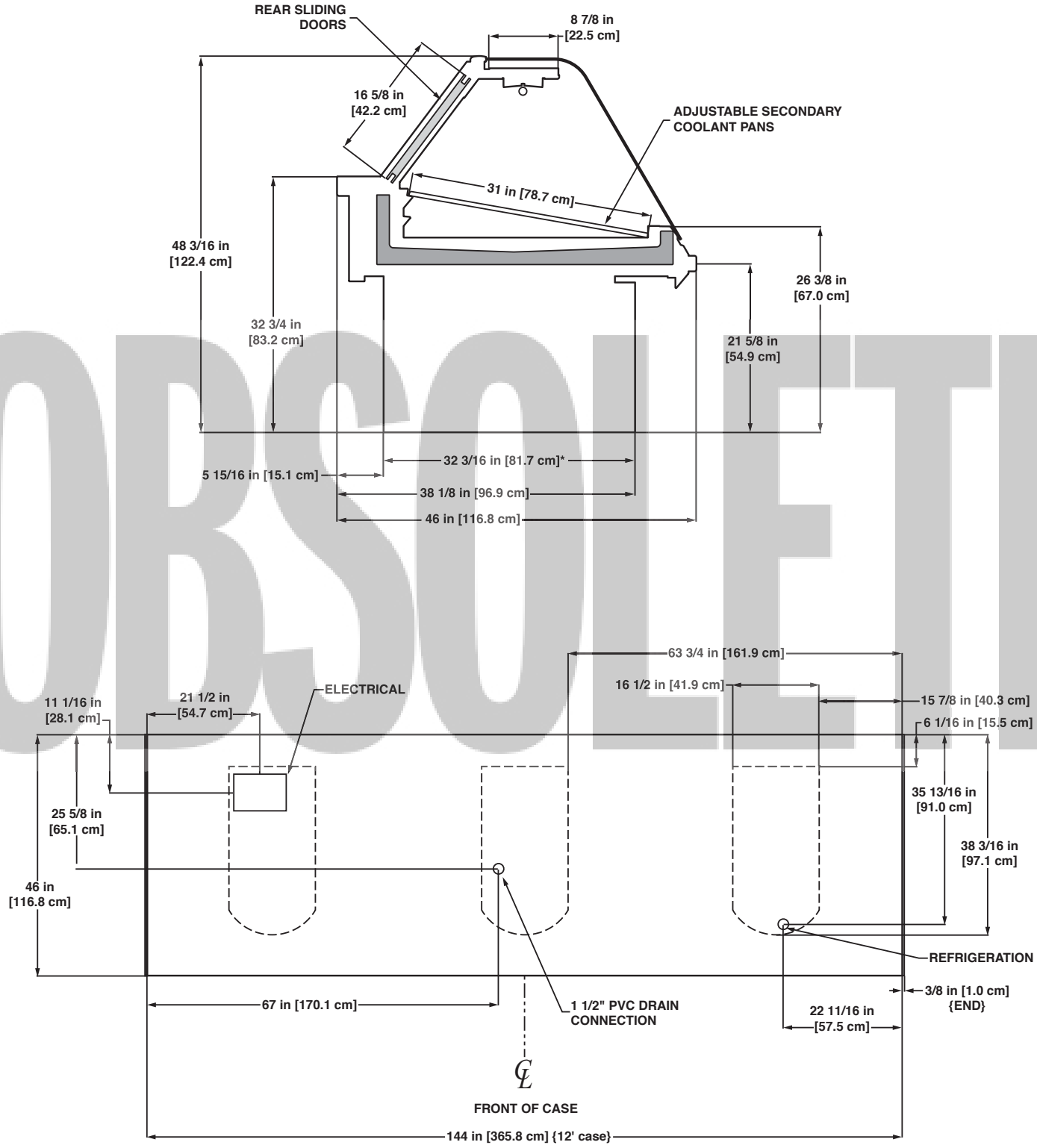
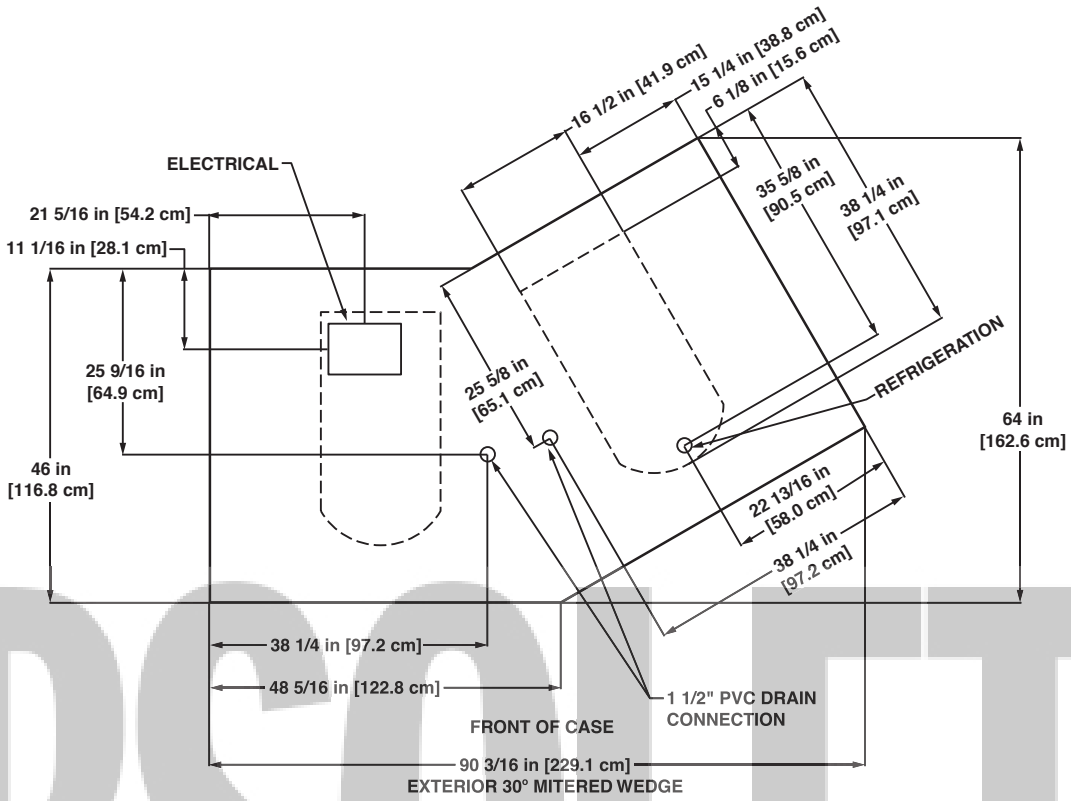
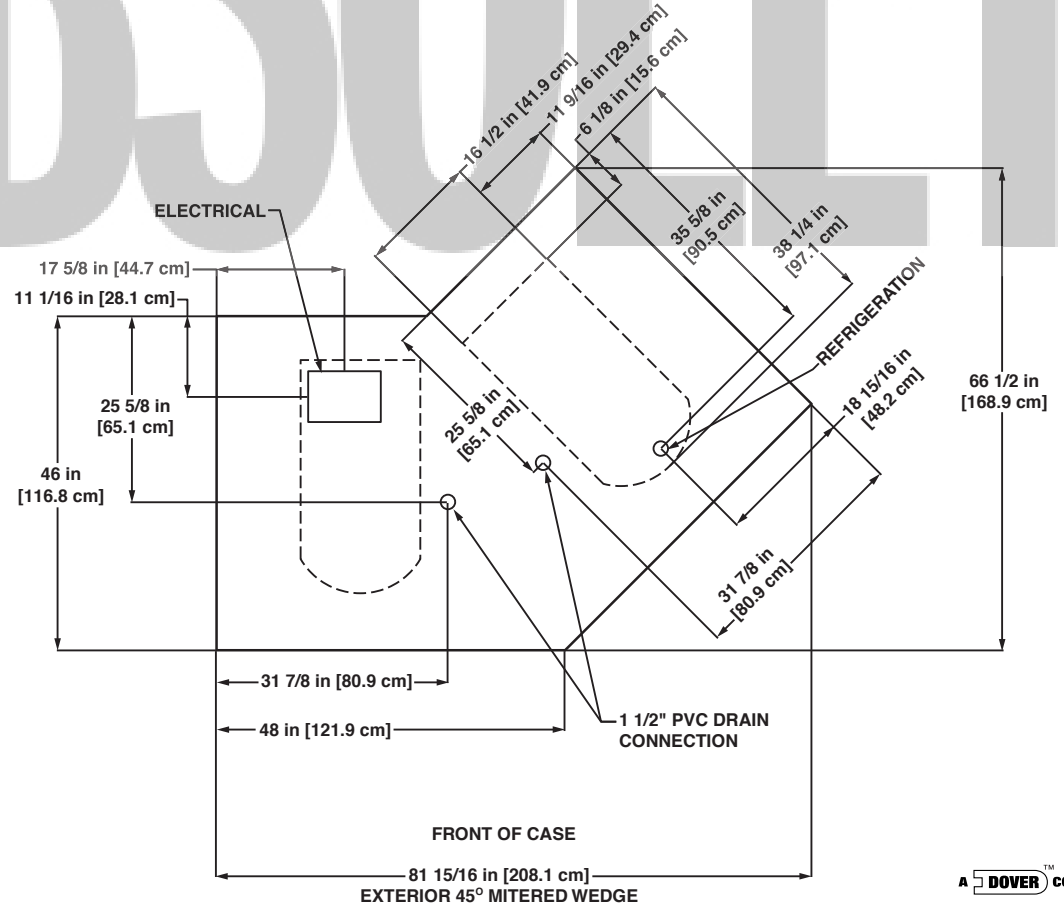

REAR SLIDING DOORS
8 7/8 in [22.5 cm]
16 5/8 in [42.2 cm]
ADJUSTABLE SECONDARY COOLANT PANS
31 in [78.7 cm]
48 3/16 in [122.4 cm]
26 3/8 in [67.0 cm]
32 3/4 in [83.2 cm]
21 5/8 in [54.9 cm]
32 3/16 in [81.7 cm]*
5 15/16 in [15.1 cm]
38 1/8 in [96.9 cm]
46 in [116.8 cm]
63 3/4 in [161.9 cm]
16 1/2 in [41.9 cm]
15 7/8 in [40.3 cm]
6 1/16 in [15.5 cm]
11 1/16 in [28.1 cm]
21 1/2 in [54.7 cm]
ELECTRICAL
35 13/16 in [91.0 cm]
25 5/8 in [65.1 cm]
38 3/16 in [97.1 cm]
46 in [116.8 cm]
REFRIGERATION
3/8 in [1.0 cm] {END}
67 in [170.1 cm]
1 1/2" PVC DRAIN CONNECTION
22 11/16 in [57.5 cm]
FRONT OF CASE
144 in [365.8 cm] {12' case}

OBSOLETE


16 1/2 in [41.9 cm]
15 1/4 in [38.8 cm]
6 1/8 in [15.6 cm]
ELECTRICAL
21 5/16 in [54.2 cm]
11 1/16 in [28.1 cm]
35 5/8 in [90.5 cm]
38 1/4 in [97.1 cm]
25 9/16 in [64.9 cm]
25 5/8 in [65.1 cm]
REFRIGERATION
64 in [162.6 cm]
46 in [116.8 cm]
22 13/16 in [58.0 cm]
38 1/4 in [97.2 cm]
38 1/4 in [97.2 cm]
48 5/16 in [122.8 cm]
1 1/2" PVC DRAIN CONNECTION
FRONT OF CASE
90 3/16 in [229.1 cm]
EXTERIOR 30° MITERED WEDGE


16 1/2 in [41.9 cm]
11 9/16 in [29.4 cm]
6 1/8 in [15.6 cm]
ELECTRICAL
35 5/8 in [90.5 cm]
38 1/4 in [97.1 cm]
17 5/8 in [44.7 cm]
11 1/16 in [28.1 cm]
REFRIGERATION
25 5/8 in [65.1 cm]
25 5/8 in [65.1 cm]
18 15/16 in [48.2 cm]
66 1/2 in [168.9 cm]
46 in [116.8 cm]
31 7/8 in [80.9 cm]
31 7/8 in [80.9 cm]
48 in [121.9 cm]
1 1/2" PVC DRAIN CONNECTION
FRONT OF CASE
81 15/16 in [208.1 cm]
EXTERIOR 45° MITERED WEDGE

OBSOLETE

Secondary Coolant Flat Glass Gravity Coil Meat Merchandiser

PSGF - 8' & 12'

Electrical Data

Model		Air Defrost[1] Fan / Coil		Secondary[1] Coolant Pump		Anti-Condensate Heaters	
		115 Volts		120 Volts		120 Volts	
		Amps	Watts	Amps	Watts	Amps	Watts
PSGF	8'	2.10	242	1.40	168	1.03	124
	12'	2.10	242	2.10	242	1.60	192

[1] Air defrost fan and secondary coolant pump are only applicable to the semi-self-contained version.

Lighting Data

Model		Typical per Light Row		Maximum Lighting	
		120 Volts		120 Volts	
		Amps	Watts	Amps	Watts
PSGF	8'	0.57	68	0.57	68
	12'	0.57	68	0.80	96

OBSOLETE

Guidelines & Control Settings - Remote

Model	BTUH/ft	Supply Temp. (°F)	Flow Rate GPM/ft	Charge GAL/ft	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity (FPM)
PSGF	400	20	0.38	3	na[2]	na	na

[2] Not Applicable.

Guidelines & Control Settings - Semi-Self-Contained

Model	BTUH/ft[3]	Supply Temp. (°F)	Saturated Suction Temp. (°F)	Flow Rate GPM/ft	Charge GAL/ft	Discharge Air (°F)	Return Air (°F)	Discharge Air Velocity (FPM)
PSGF	480	20	15	0.38	3	na	na	na

[3] BTUH's/ft listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

Defrost Controls

Model	Defrosts Per Day	Run-Off Time (min)	Electric Defrost		Timed Off Defrost		Warm Fluid		Reverse Air Defrost	
			Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)	Fail-safe (min)	Termination Temp. (°F)
PSGF	24	5	- - -[4]	- - -	- - -	- - -	7	45	- - -	- - -

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

Hill PHOENIX EXCELLENCE

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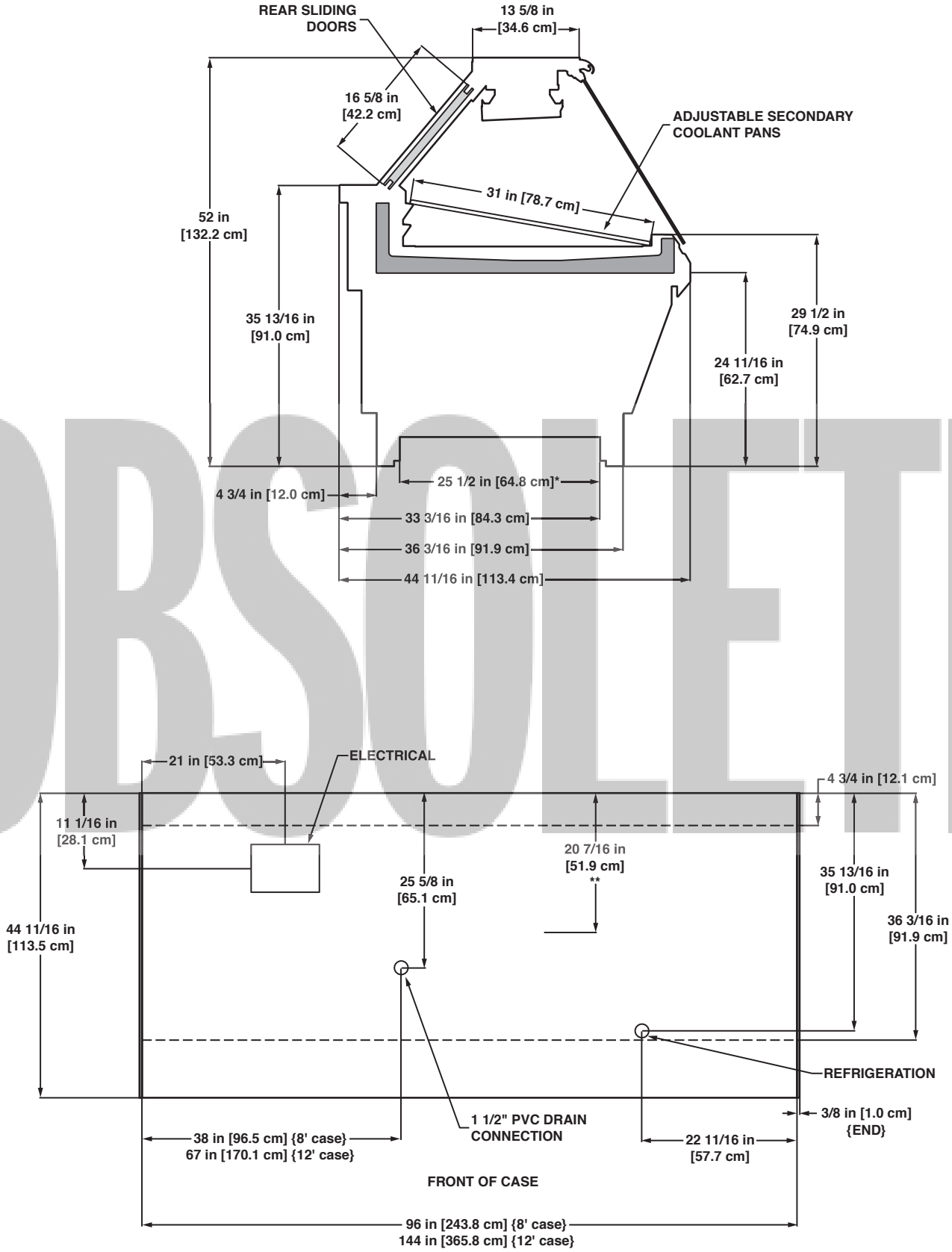
All measurements are taken per CRMA specifications.



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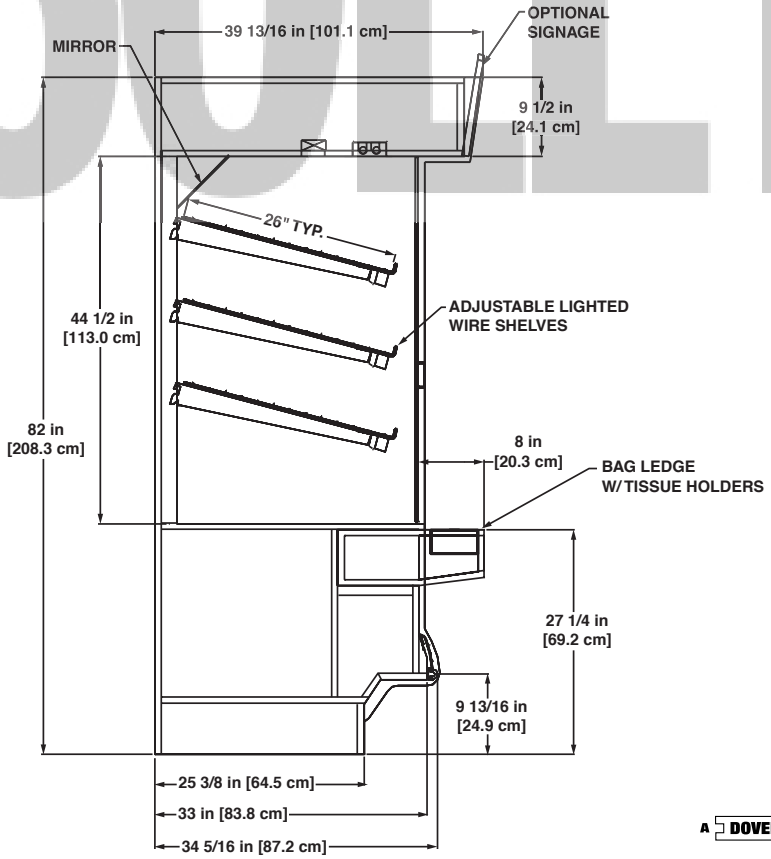
NOTES:

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

Our Specialty Case division offers a variety of bakery and crusty bread merchandisers with a full range of options. For specific information about these merchandisers, contact our Park Avenue facility at 515-288-1001

OBSOLETE



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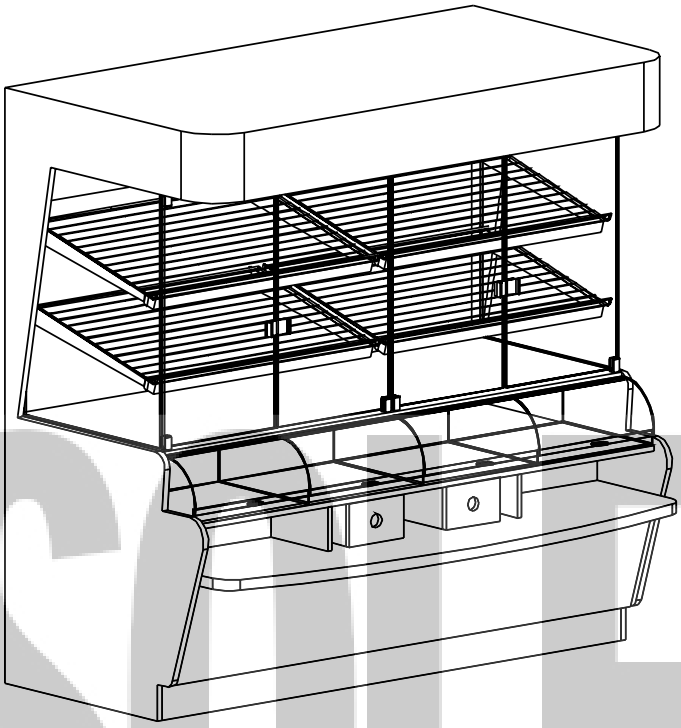

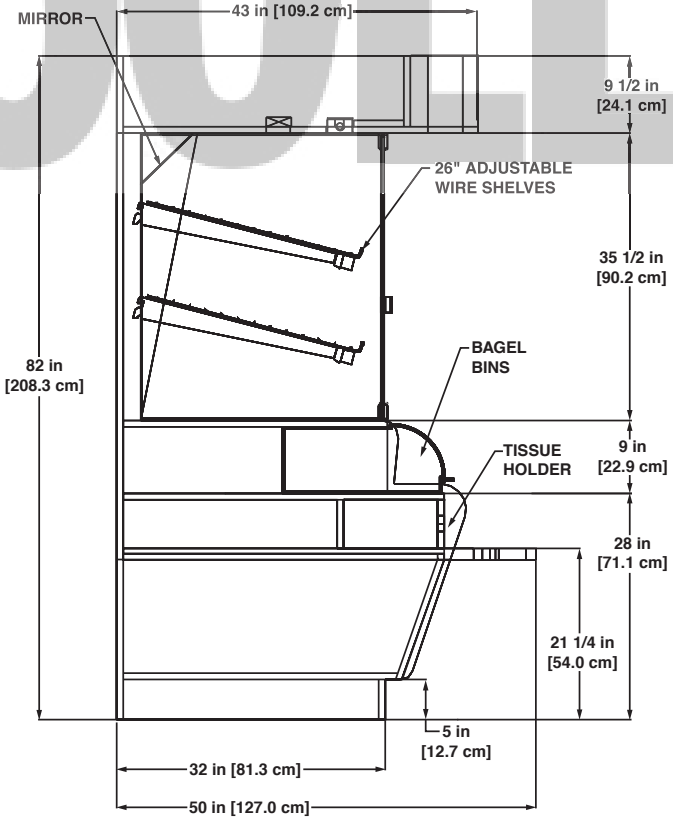

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BACK COUNTER CONFIGURATION

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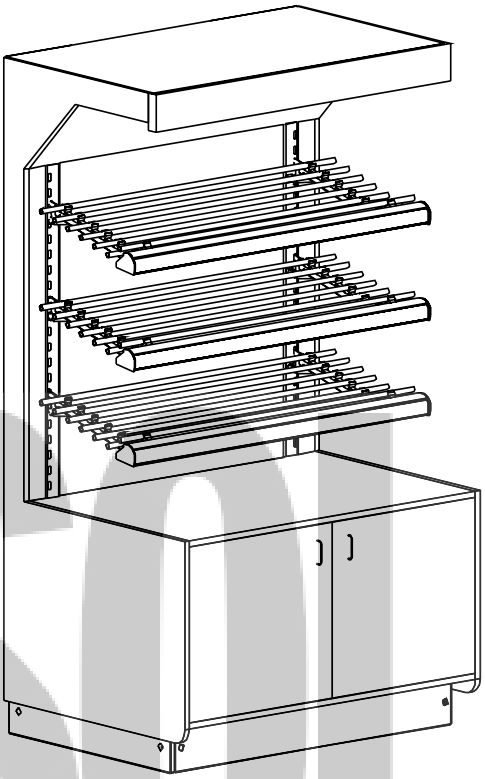
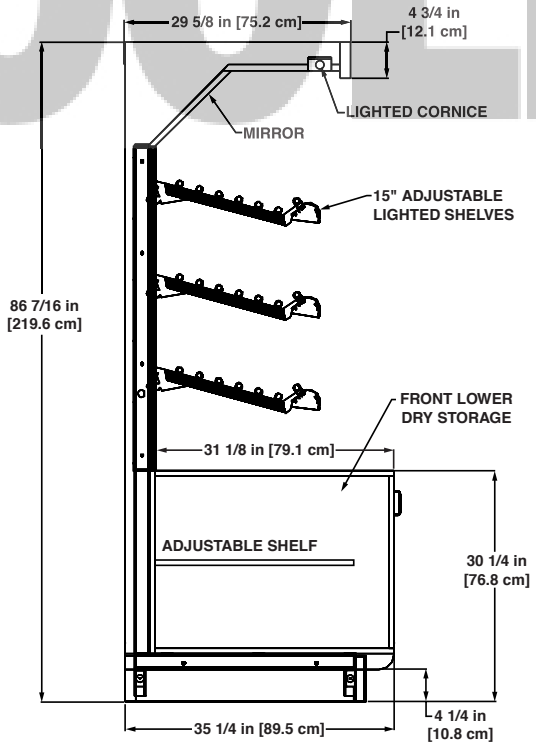
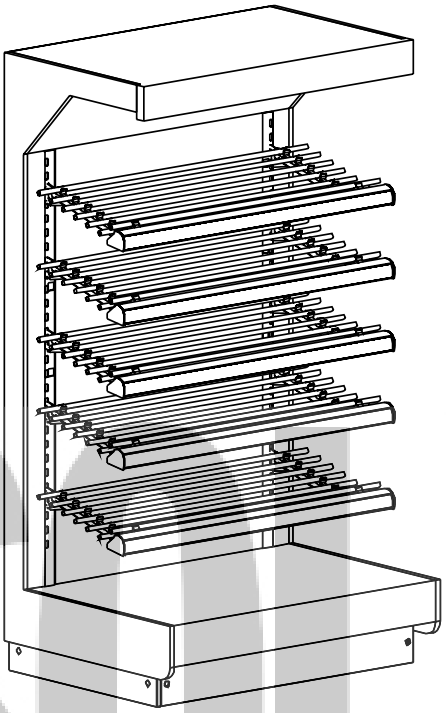


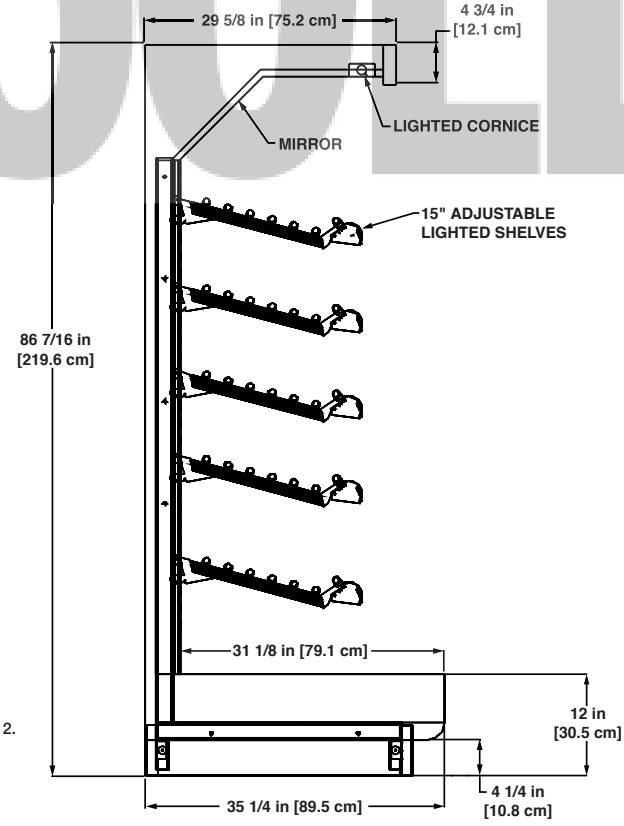


Note: The BWD model is Certified to NSF Standard 2.

Our Specialty Case division offers a variety of bakery and crusty bread merchandisers with a full range of options. For specific information about these merchandisers, contact our Park Avenue facility at 515-288-1001

OBSOLETE





Note: The BWD model is Certified to NSF Standard 2.

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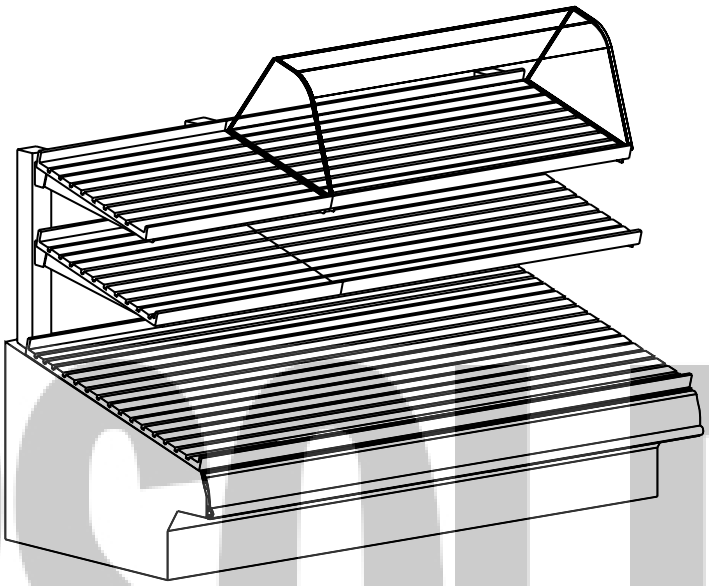

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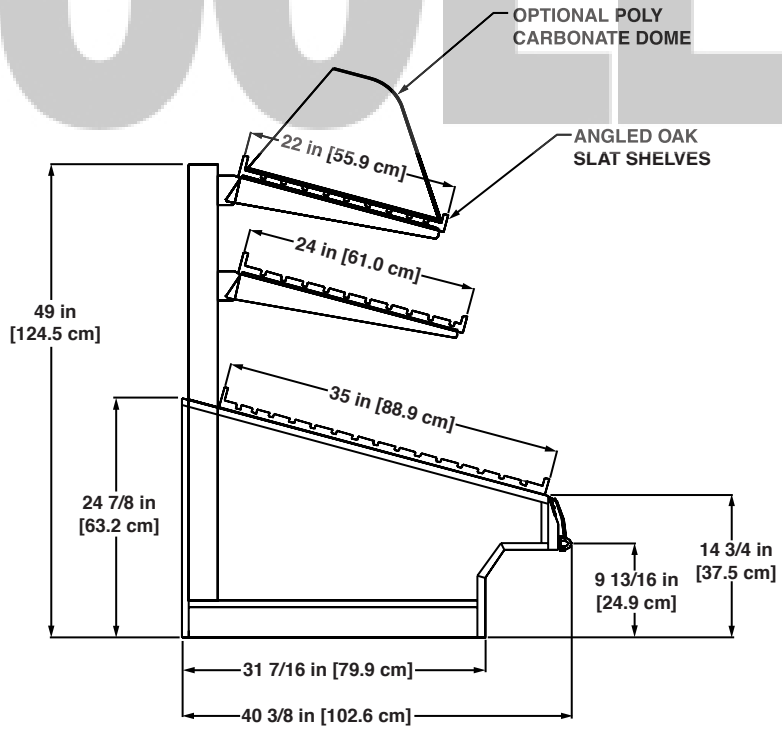
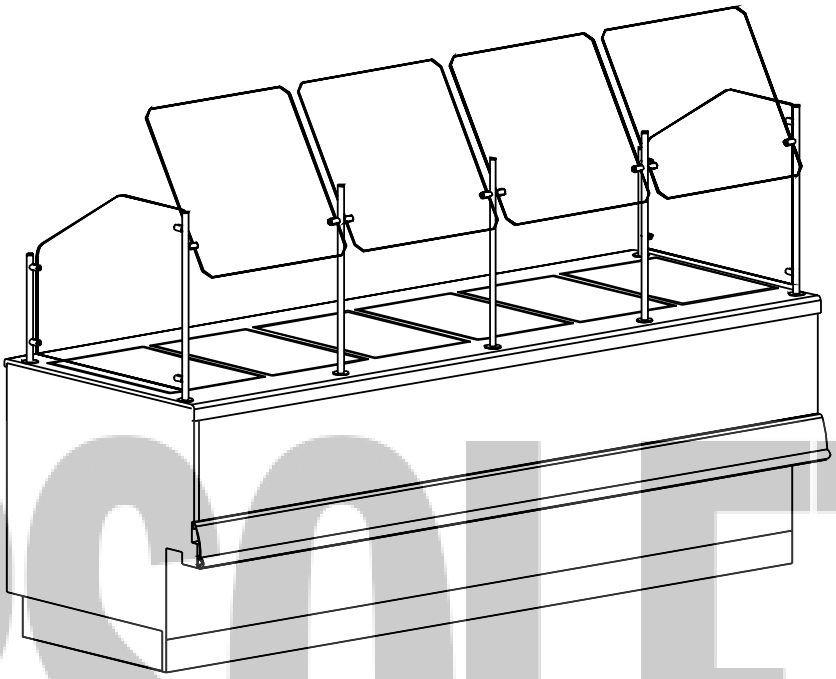
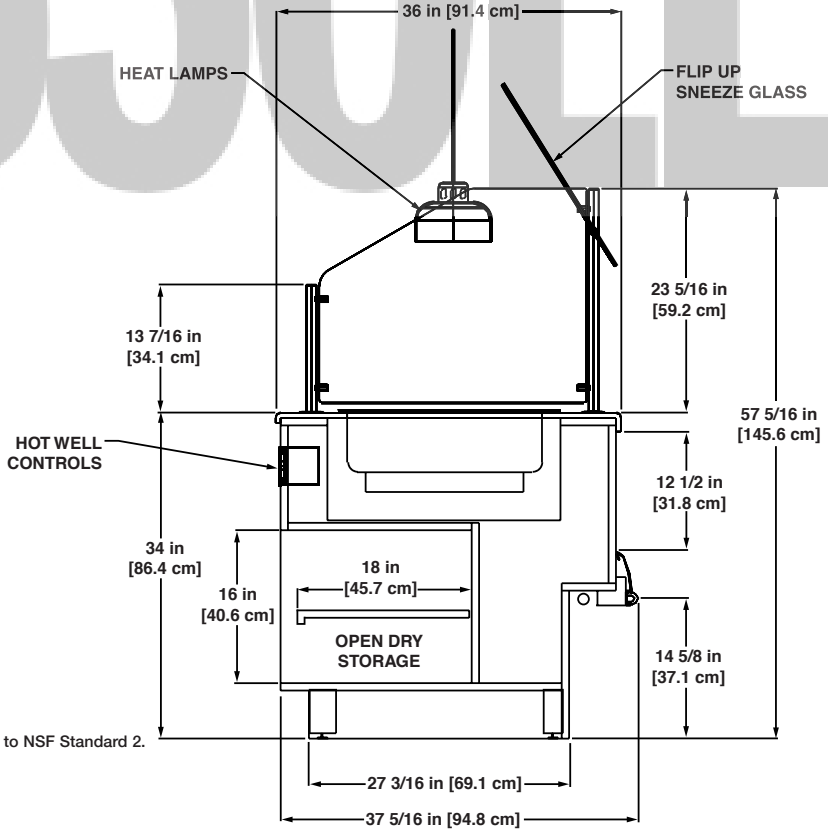


SC-PH
HOT CASE

Our Specialty Case division offers a variety of hot foods merchandisers with a full range of options. For specific information about these merchandisers, contact our Park Avenue facility at 515-288-1001

OBSOLETE





Note: The SC-PH model is Certified to NSF Standard 2.

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OBSOLETE

CURVED CASES

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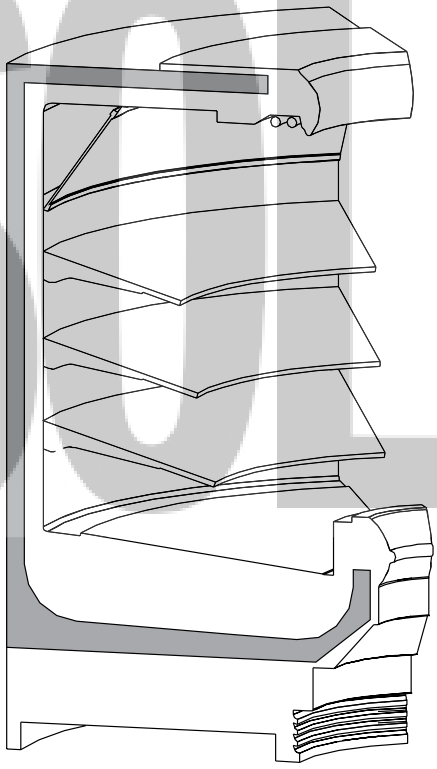

Curved Case Merchandisers

30°, 45°, 60°, & 90° Inside and Outside

Case Model	Wedge Model	Volume (ft^3)	BTUH[1]	Suction Temp. (°F)	Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OC	30° I/S	7.5	550	17	1	0.50	30	0.30	20	0.15	18	- - -	- - -
	45° I/S	11.3	820	17	1	0.50	30	0.30	20	0.21	25	- - -	- - -
	60° I/S	15.1	1090	17	1	0.50	30	0.30	20	0.26	31	- - -	- - -
	90° I/S	22.6	1630	17	2	1.00	60	0.60	40	0.39	47	- - -	- - -
	30° O/S	6.5	480	17	1	0.50	30	0.30	20	0.04	5	- - -	- - -
	45° O/S	9.8	710	17	1	0.50	30	0.30	20	0.05	6	- - -	- - -
	60° O/S	13.1	950	17	1	0.50	30	0.30	20	0.08	10	- - -	- - -
	90° O/S	19.6	1420	17	2	1.00	60	0.60	40	0.10	12	- - -	- - -

Case Model	Wedge Model	Volume (ft^3)	BTUH[1]	Suction Temp. (°F)	Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OM	30° I/S	6.6	570	17	1	0.50	30	0.30	20	0.15	18	0.75	90
	45° I/S	9.9	850	17	1	0.50	30	0.30	20	0.21	25	0.75	90
	60° I/S	13.3	1140	17	1	0.50	30	0.30	20	0.26	31	1.50	180
	90° I/S	19.9	1700	17	2	1.00	60	0.60	40	0.39	47	1.50	180
	30° O/S	6.1	530	17	1	0.50	30	0.30	20	0.04	5	0.75	90
	45° O/S	9.2	790	17	1	0.50	30	0.30	20	0.05	6	0.75	90
	60° O/S	12.2	1050	17	1	0.50	30	0.30	20	0.08	10	1.50	180
	90° O/S	18.3	1570	17	2	1.00	60	0.60	40	0.10	12	1.50	180

Case Model	Wedge Model	Volume (ft^3)	BTUH[1]	Suction Temp. (°F)	Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OP 39" Rear Sill	30° I/S	6.1	410	27	1	0.50	30	0.30	20	- - -	- - -	- - -	- - -
	45° I/S	6.2	620	27	1	0.50	30	0.30	20	- - -	- - -	- - -	- - -
	60° I/S	12.2	820	27	1	0.50	30	0.30	20	- - -	- - -	- - -	- - -
	90° I/S	18.4	1230	27	2	1.00	60	0.60	40	- - -	- - -	- - -	- - -
	30° O/S	5.4	360	27	1	0.50	30	0.30	20	- - -	- - -	- - -	- - -
	45° O/S	8.1	540	27	1	0.50	30	0.30	20	- - -	- - -	- - -	- - -
	60° O/S	10.8	720	27	1	0.50	30	0.30	20	- - -	- - -	- - -	- - -
	90° O/S	16.1	1080	27	2	1.00	60	0.60	40	- - -	- - -	- - -	- - -

Case Model	Wedge Model	Volume (ft^3)	BTUH[1]	Suction Temp. (°F)	Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
OP 43" Rear Sill	30° I/S	7.0	580	27	1	0.50	30	0.30	20	- - -	- - -	- - -	- - -
	45° I/S	10.5	860	27	1	0.50	30	0.30	20	- - -	- - -	- - -	- - -
	60° I/S	14.0	1150	27	1	0.50	30	0.30	20	- - -	- - -	- - -	- - -
	90° I/S	21.0	1720	27	2	1.00	60	0.60	40	- - -	- - -	- - -	- - -
	30° O/S	5.8	480	27	1	0.50	30	0.30	20	- - -	- - -	- - -	- - -
	45° O/S	8.7	720	27	1	0.50	30	0.30	20	- - -	- - -	- - -	- - -
	60° O/S	11.6	950	27	1	0.50	30	0.30	20	- - -	- - -	- - -	- - -
	90° O/S	17.4	1430	27	2	1.00	60	0.60	40	- - -	- - -	- - -	- - -

[1] BTUH's listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

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Case Model	Wedge Model	Volume (ft^3)	BTUH[1]	Suction Temp. (°F)	Fans per Case	Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Maximum Lighting 120 Volts	
						Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O2UM	30° I/S	7.8	1350	17	1	0.50	30	0.30	20	0.15[2]	18	1.55	186
	45° I/S	11.7	2030	17	1	0.50	30	0.30	20	0.21[2]	25	1.55	186
	60° I/S	15.6	2700	17	1	0.50	30	0.30	20	0.26[2]	31	1.90	288
	90° I/S	23.4	4050	17	2	1.00	60	0.60	40	0.39[2]	47	2.85	342
	30° O/S	6.5	1130	17	1	0.50	30	0.30	20	0.04[2]	5	1.55	186
	45° O/S	9.8	1690	17	1	0.50	30	0.30	20	0.05[2]	6	1.55	186
	60° O/S	13.0	2260	17	1	0.50	30	0.30	20	0.08[2]	10	1.90	288
	90° O/S	19.5	3380	17	2	1.00	60	0.60	40	0.10[2]	12	2.85	342

Case Model	Wedge Model	Volume (ft^3)	BTUH[1]	Suction Temp. (°F)	Fans per Case	Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Maximum Lighting 120 Volts	
						Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O2.5UM	30° I/S	8.4	1450	17	1	0.50	30	0.30	20	0.15[2]	18	2.35	282
	45° I/S	12.7	2170	17	1	0.50	30	0.30	20	0.21[2]	25	2.35	282
	60° I/S	16.9	2890	17	1	0.50	30	0.30	20	0.26[2]	31	2.55	306
	90° I/S	25.3	4340	17	2	1.00	60	0.60	40	0.39[2]	47	4.45	534
	30° O/S	6.9	1190	17	1	0.50	30	0.30	20	0.04[2]	5	2.35	282
	45° O/S	10.4	1780	17	1	0.50	30	0.30	20	0.05[2]	6	2.35	282
	60° O/S	13.8	2370	17	1	0.50	30	0.30	20	0.08[2]	10	2.55	306
	90° O/S	20.7	3550	17	2	1.00	60	0.60	40	0.10[2]	12	4.45	534

Case Model	Wedge Model	Volume (ft^3)	BTUH[1]	Suction Temp. (°F)	Fans per Case	Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Maximum Lighting 120 Volts	
						Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O3UM	30° I/S	9.3	1510	17	1	0.50	30	0.30	20	0.15[2]	18	2.35	282
	45° I/S	14.0	2260	17	1	0.50	30	0.30	20	0.21[2]	25	2.35	282
	60° I/S	18.7	3020	17	1	0.50	30	0.30	20	0.26[2]	31	2.55	306
	90° I/S	28.0	4520	17	2	1.00	60	0.60	40	0.39[2]	47	4.45	534
	30° O/S	7.5	1220	17	1	0.50	30	0.30	20	0.04[2]	5	2.35	282
	45° O/S	11.3	1830	17	1	0.50	30	0.30	20	0.05[2]	6	2.35	282
	60° O/S	15.1	2440	17	1	0.50	30	0.30	20	0.08[2]	10	2.55	306
	90° O/S	22.6	3650	17	2	1.00	60	0.60	40	0.10[2]	12	4.45	534

Case Model	Wedge Model	Volume (ft^3)	BTUH[1]	Suction Temp. (°F)	Fans per Case	Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Maximum Lighting 120 Volts	
						Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
O3.5UM	30° I/S	10.4	1880	17	1	0.50	30	0.30	20	0.15[2]	18	3.15	378
	45° I/S	15.7	2820	17	1	0.50	30	0.30	20	0.21[2]	25	3.15	378
	60° I/S	20.9	3760	17	1	0.50	30	0.30	20	0.26[2]	31	3.20	384
	90° I/S	31.3	5640	17	2	1.00	60	0.60	40	0.39[2]	47	6.05	726
	30° O/S	8.2	1480	17	1	0.50	30	0.30	20	0.04[2]	5	3.15	378
	45° O/S	12.3	2210	17	1	0.50	30	0.30	20	0.05[2]	6	3.15	378
	60° O/S	16.4	2950	17	1	0.50	30	0.30	20	0.08[2]	10	3.20	384
	90° O/S	24.6	4420	17	2	1.00	60	0.60	40	0.10[2]	12	6.05	726

[1] BTUH's listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

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

Curved Case Merchandisers

30°, 45°, 60°, & 90° Inside and Outside

Case Model	Wedge Model	Volume (ft^3)	BTUH[1]	Suction Temp. (°F)	Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O4UM	30° I/S	12.1	2040	17	1	0.50	30	0.30	20	0.15[2]	18	3.15	378
	45° I/S	18.2	3060	17	1	0.50	30	0.30	20	0.21[2]	25	3.15	378
	60° I/S	24.3	4080	17	1	0.50	30	0.30	20	0.26[2]	31	3.20	384
	90° I/S	36.4	6120	17	2	1.00	60	0.60	40	0.39[2]	47	6.05	726
	30° O/S	9.4	1580	17	1	0.50	30	0.30	20	0.04[2]	5	3.15	378
	45° O/S	14.0	2360	17	1	0.50	30	0.30	20	0.05[2]	6	3.15	378
	60° O/S	18.7	3150	17	1	0.50	30	0.30	20	0.08[2]	10	3.20	384
	90° O/S	28.1	4720	17	2	1.00	60	0.60	40	0.10[2]	12	6.05	726

Case Model	Wedge Model	Volume (ft^3)	BTUH[1]	Suction Temp. (°F)	Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O5UM	30° I/S	13.2	2090	17	1	0.50	30	0.30	20	0.15[2]	18	3.95	474
	45° I/S	19.8	3130	17	1	0.50	30	0.30	20	0.21[2]	25	3.95	474
	60° I/S	26.3	4170	17	1	0.50	30	0.30	20	0.26[2]	31	3.85	462
	90° I/S	39.5	6260	17	2	1.00	60	0.60	40	0.39[2]	47	7.65	918
	30° O/S	10.1	1600	17	1	0.50	30	0.30	20	0.04[2]	5	3.95	474
	45° O/S	15.1	2390	17	1	0.50	30	0.30	20	0.05[2]	6	3.95	474
	60° O/S	20.1	3190	17	1	0.50	30	0.30	20	0.08[2]	10	3.85	462
	90° O/S	30.2	4780	17	2	1.00	60	0.60	40	0.10[2]	12	7.65	918

Case Model	Wedge Model	Volume (ft^3)	BTUH[1]	Suction Temp. (°F)	Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O5DM Deli	30° I/S	21.3	2020	17	1	0.50	30	0.30	20	- - -	- - -	5.00	600
	45° I/S	32.0	3030	17	1	0.50	30	0.30	20	- - -	- - -	5.00	600
	60° I/S	42.6	4030	17	1	0.50	30	0.30	20	- - -	- - -	5.25	630
	90° I/S	64.0	6050	17	2	1.00	60	0.60	40	- - -	- - -	10.00	1200
	30° O/S	20.5	1940	17	1	0.50	30	0.30	20	- - -	- - -	5.00	600
	45° O/S	30.8	2910	17	1	0.50	30	0.30	20	- - -	- - -	5.00	600
	60° O/S	41.0	3880	17	1	0.50	30	0.30	20	- - -	- - -	5.25	630
	90° O/S	61.5	5820	17	2	1.00	60	0.60	40	- - -	- - -	10.00	1200

Case Model	Wedge Model	Volume (ft^3)	BTUH[1]	Suction Temp. (°F)	Fans per Case	Standard Fans 120 Volts Amps	Standard Fans 120 Volts Watts	High Efficiency Fans 120 Volts Amps	High Efficiency Fans 120 Volts Watts	Anti-Condensate Heaters 120 Volts Amps	Anti-Condensate Heaters 120 Volts Watts	Maximum Lighting 120 Volts Amps	Maximum Lighting 120 Volts Watts
O5DM Dairy	30° I/S	21.3	1890	22	1	0.50	30	0.30	20	- - -	- - -	5.00	600
	45° I/S	32.0	2840	22	1	0.50	30	0.30	20	- - -	- - -	5.00	600
	60° I/S	42.6	3780	22	1	0.50	30	0.30	20	- - -	- - -	5.25	630
	90° I/S	64.0	5670	22	2	1.00	60	0.60	40	- - -	- - -	10.00	1200
	30° O/S	20.5	1820	22	1	0.50	30	0.30	20	- - -	- - -	5.00	600
	45° O/S	30.8	2730	22	1	0.50	30	0.30	20	- - -	- - -	5.00	600
	60° O/S	41.0	3640	22	1	0.50	30	0.30	20	- - -	- - -	5.25	630
	90° O/S	61.5	5460	22	2	1.00	60	0.60	40	- - -	- - -	10.00	1200

[1] BTUH's listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

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

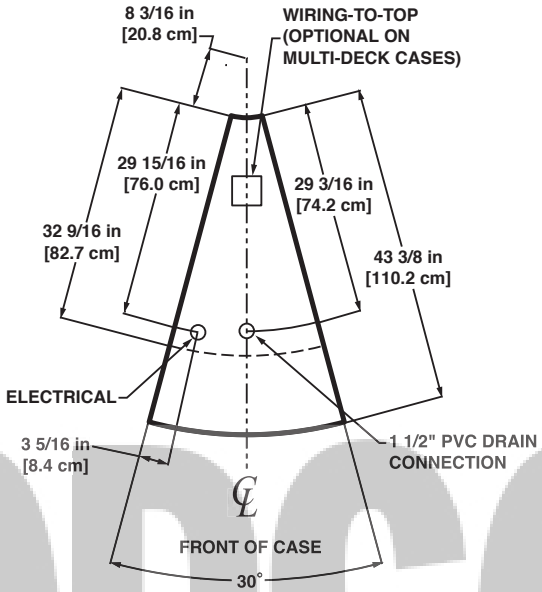
Case Model	Wedge Model	Volume (ft^3)	BTUH[1]	Suction Temp. (°F)	Fans per Case	Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Maximum Lighting 120 Volts	
						Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OHM	30° I/S	17.3	1780	17	1	0.50	30	0.30	20	0.04	5	3.95	474
	45° I/S	26.0	2660	17	1	0.50	30	0.30	20	0.10	12	3.95	474
	60° I/S	34.6	3550	17	1	0.50	30	0.30	20	0.34	41	4.10	492
	90° I/S	52.0	5320	17	2	1.00	60	0.60	40	0.32	38	7.90	948
	30° O/S	16.2	1660	17	1	0.50	30	0.30	20	0.10	12	3.95	474
	45° O/S	24.2	2480	17	1	0.50	30	0.30	20	0.14	17	3.95	474
	60° O/S	32.3	3310	17	1	0.50	30	0.30	20	0.18	22	4.10	492
	90° O/S	48.5	4960	17	2	1.00	60	0.60	40	0.28	34	7.90	948

Case Model	Wedge Model	Volume (ft^3)	BTUH[1]	Suction Temp. (°F)	Fans per Case	Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Maximum Lighting 120 Volts	
						Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OHMH	30° I/S	18.3	1980	12	1	0.50	30	0.30	20	0.08	10	4.75	570
	45° I/S	27.4	2970	12	1	0.50	30	0.30	20	0.20	24	4.75	570
	60° I/S	36.6	3960	12	1	0.50	30	0.30	20	0.68	82	4.75	570
	90° I/S	54.9	5940	12	2	1.00	60	0.60	40	0.64	77	9.50	1140
	30° O/S	15.9	1730	12	1	0.50	30	0.30	20	0.20	24	4.75	570
	45° O/S	23.9	2590	12	1	0.50	30	0.30	20	0.28	34	4.75	570
	60° O/S	31.8	3450	12	1	0.50	30	0.30	20	0.36	44	4.75	570
	90° O/S	47.8	5170	12	2	1.00	60	0.60	40	0.56	68	9.50	1140

Case Model	Wedge Model	Volume (ft^3)	BTUH[1]	Suction Temp. (°F)	Fans per Case	Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Maximum Lighting 120 Volts	
						Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OHP	30° I/S	17.2	1650	22	1	0.50	30	0.30	20	- - -	- - -	3.95	474
	45° I/S	25.8	2470	22	1	0.50	30	0.30	20	- - -	- - -	3.95	474
	60° I/S	34.4	3300	22	1	0.50	30	0.30	20	- - -	- - -	4.10	492
	90° I/S	51.6	4940	22	2	1.00	60	0.60	40	- - -	- - -	7.90	948
	30° O/S	16.1	1550	22	1	0.50	30	0.30	20	- - -	- - -	3.95	474
	45° O/S	24.2	2320	22	1	0.50	30	0.30	20	- - -	- - -	3.95	474
	60° O/S	32.3	3090	22	1	0.50	30	0.30	20	- - -	- - -	4.10	492
	90° O/S	48.4	4640	22	2	1.00	60	0.60	40	- - -	- - -	7.90	948

Case Model	Wedge Model	Volume (ft^3)	BTUH[1]	Suction Temp. (°F)	Fans per Case	Standard Fans 120 Volts		High Efficiency Fans 120 Volts		Anti-Condensate Heaters 120 Volts		Maximum Lighting 120 Volts	
						Amps	Watts	Amps	Watts	Amps	Watts	Amps	Watts
OHPH	30° I/S	18.3	17	1860	1	0.50	30	0.30	20	0.04	5	4.75	570
	45° I/S	27.5	17	2790	1	0.50	30	0.30	20	0.10	12	4.75	570
	60° I/S	36.7	17	3720	1	0.50	30	0.30	20	0.34	41	4.75	570
	90° I/S	55.0	17	5580	2	1.00	60	0.60	40	0.32	38	9.50	1140
	30° O/S	15.8	17	1610	1	0.50	30	0.30	20	0.10	12	4.75	570
	45° O/S	23.7	17	2410	1	0.50	30	0.30	20	0.14	17	4.75	570
	60° O/S	31.6	17	3210	1	0.50	30	0.30	20	0.18	22	4.75	570
	90° O/S	47.4	17	4810	2	1.00	60	0.60	40	0.28	34	9.50	1140

[1] BTUH's listed are for parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.



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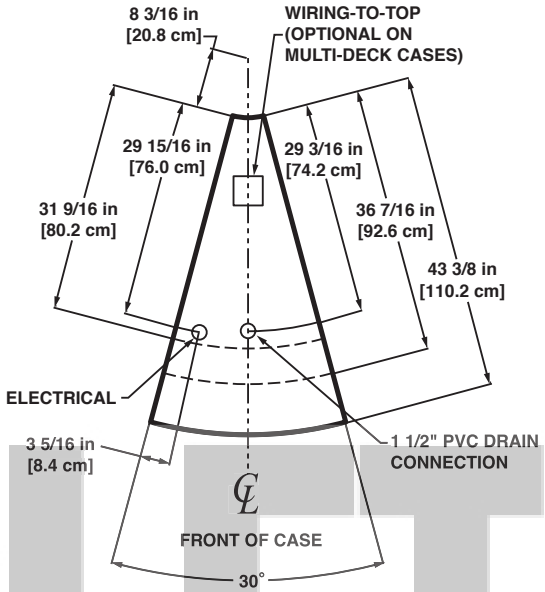

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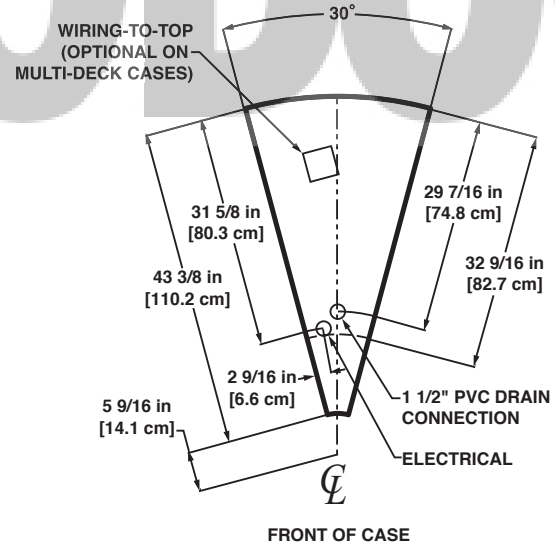

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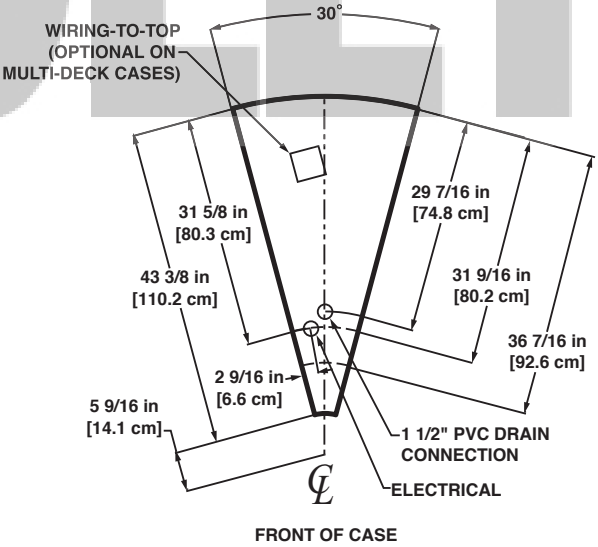

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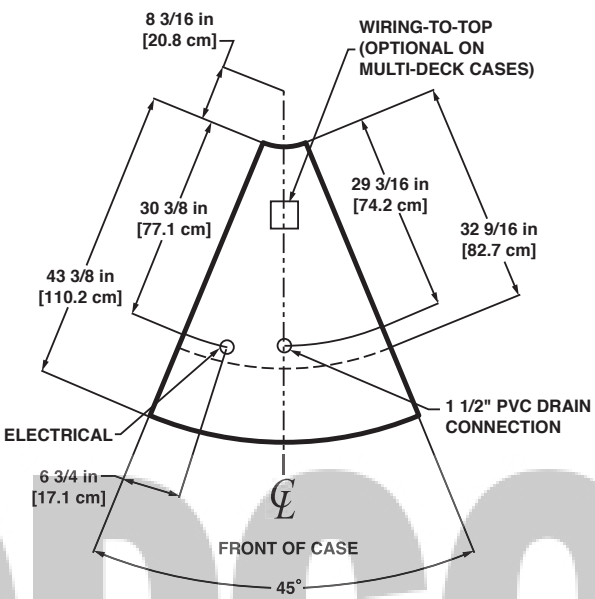
OBSOLETE

NOTE: Curved case cross-sections are the same as the standard model



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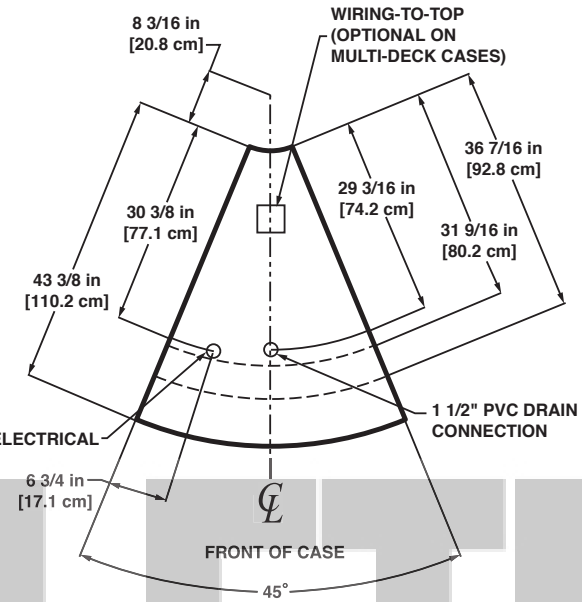

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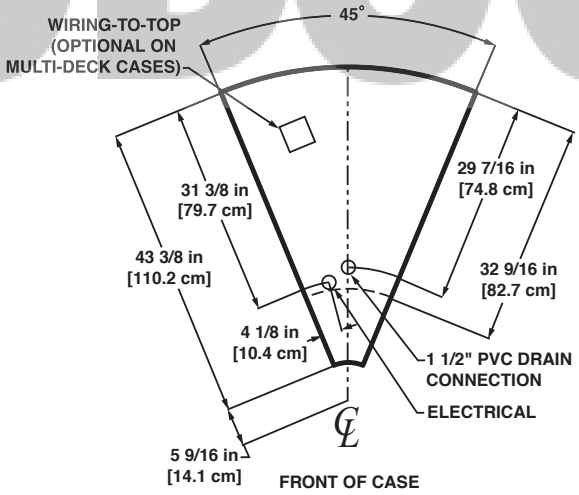

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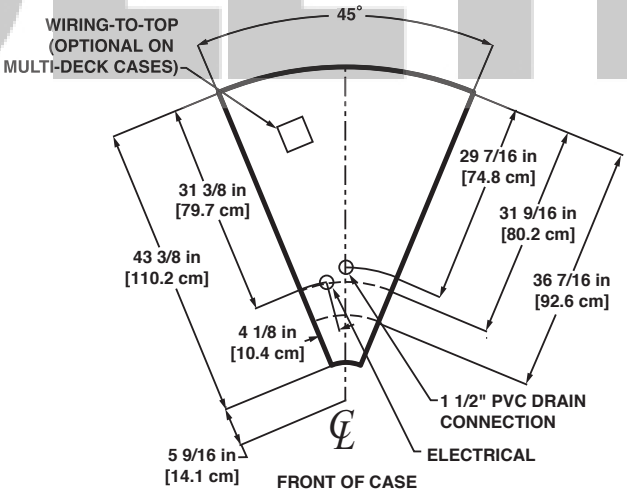
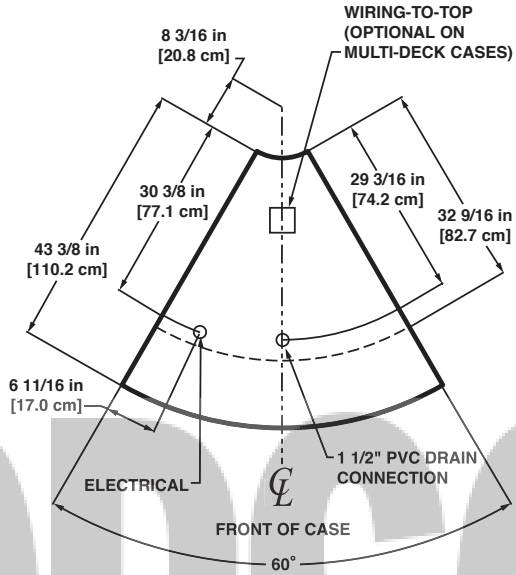


45° OUTSIDE
(5" BASEFRAME)

OBSOLETE

NOTE: Curved case cross-sections are the same as the standard model

OBSOLETE



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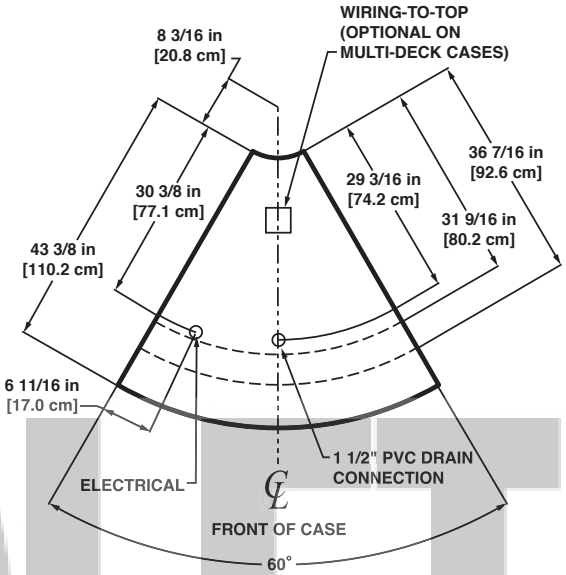

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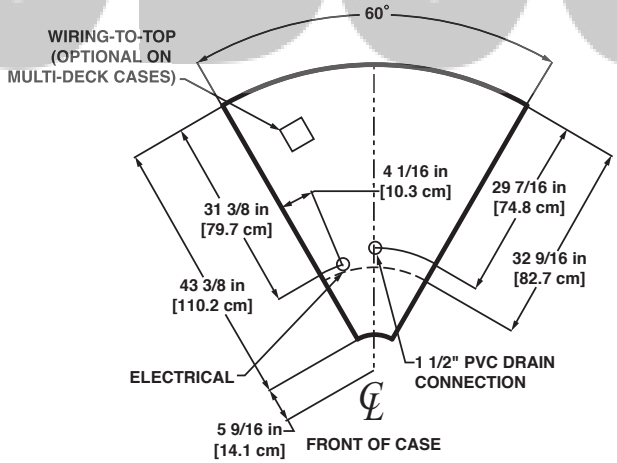

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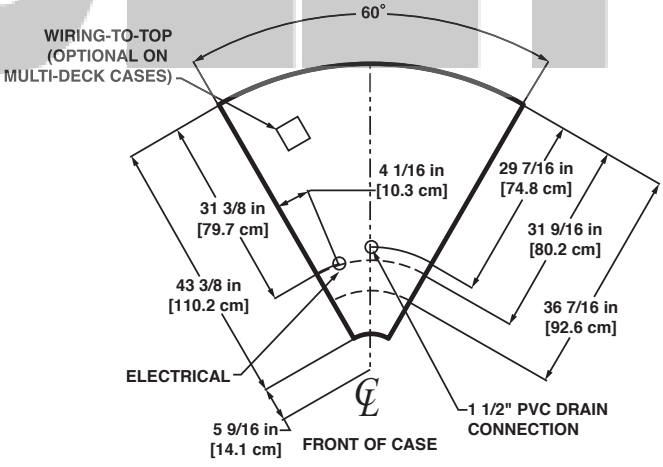

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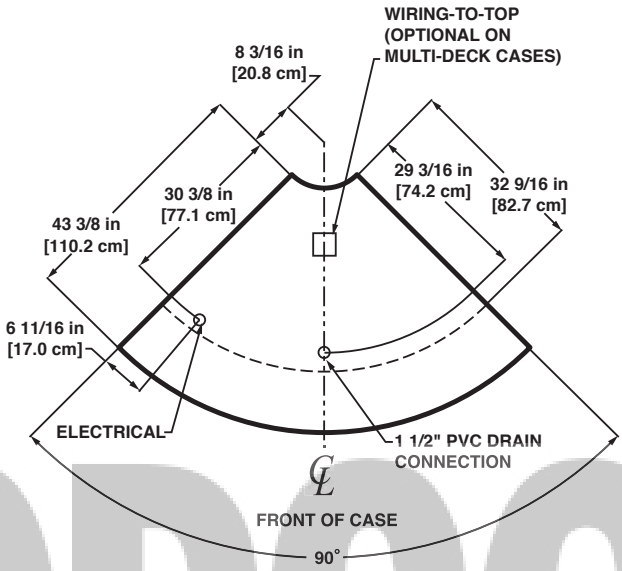
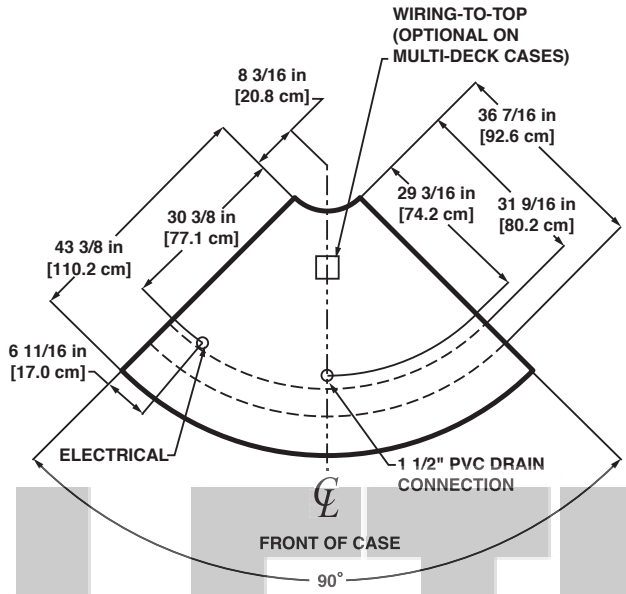
NOTE: Curved case cross-sections are the same as the standard model

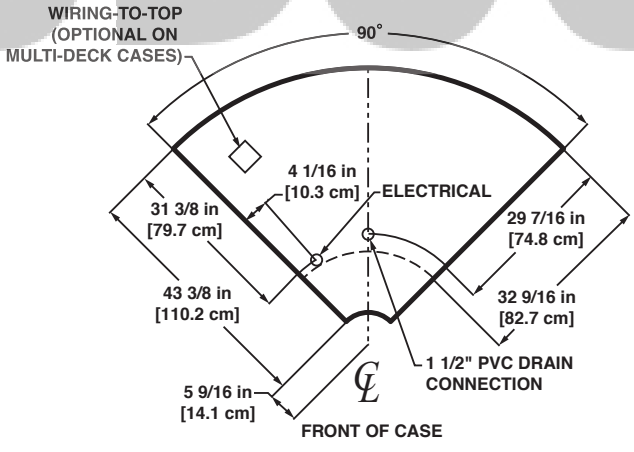


90° INSIDE
(11" BASEFRAME)

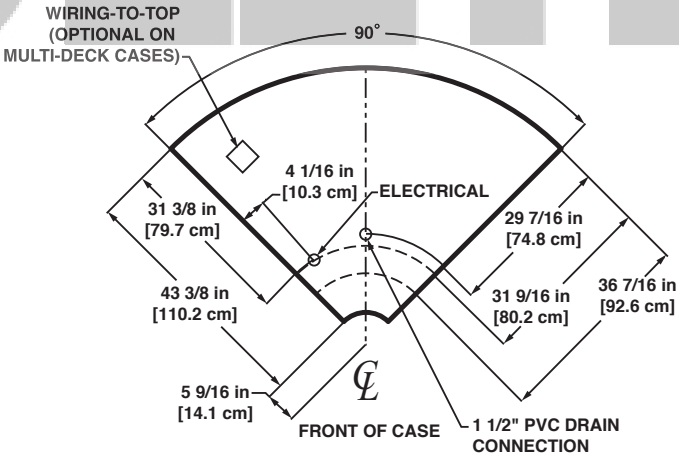


90° INSIDE
(5" BASEFRAME)

OBSOLETE



90° OUTSIDE
(11" BASEFRAME)



90° OUTSIDE
(5" BASEFRAME)

NOTE: Curved case cross-sections are the same as the standard model

OBSOLETE

APPENDIX A

OBSOLETE

OBSOLETE

2003 DIRECT EXPANSION CASE REFRIGERATION REQUIREMENTS TABLE - Standard Efficiency

Hill PHOENIX EXCELLENCE® ORIGIN2® A DOVER™ COMPANY

CASE MODEL	FRONT SILL TYPE	BTUH/ft [1] or BTUH/Door	TEMPERATURE (ºF) EVAP.	DISC. AIR	RET. AIR	AIR VELOCITY [2] FPM	SUPERHEAT SETPOINT @ BULB (ºF)	RUN-OFF TIME (MINUTES)	DEFROST # DEF.	Electric Fail Safe (Minutes)	Electric Temp. (ºF)	Timed Off Fail Safe (Minutes)	Timed Off Temp. (ºF)	Hot Gas Fail Safe (Minutes)	Hot Gas Temp. (ºF)	Reverse Air Fail Safe (Minutes)	Reverse Air Temp. (ºF)
SINGLE DECK MERCHANDISERS																	
MPC	Standard MPC	617	22	30	42	163	6 - 8	6 - 8	3	40	49	60	47	---	---	---	---
OC	Standard	480	17	26	39	305	6 - 8	6 - 8	2	40	49	70	47	26	45	40	45
	All Other Fronts	415	17	26	35	305	6 - 8	6 - 8	2	40	49	70	47	26	45	40	45
OM	Standard	560	12	22	37	305	6 - 8	6 - 8	2	40	49	70	47	26	45	40	45
	Standard	480	17	26	39	305	6 - 8	6 - 8	2	40	49	70	47	26	45	40	45
	All Other Fronts	415	17	26	35	305	6 - 8	6 - 8	2	40	49	70	47	26	45	40	45
OMZ	6" Thermopane	550	-22	-10	0	120	3 - 5	13 - 15	4	45	47	---	---	20	60	---	---
OMZD Frozen Food	11" Thermopane	456	-17	-8	2	240	3 - 5	13 - 15	1	45	48	---	---	20	60	---	---
Ice Cream	11" Thermopane	476	-27	-18	-8	240	3 - 5	13 - 15	1	45	48	---	---	20	60	---	---
ONZ Frozen Food	4" Solid	369	-22	-12	0	180	3 - 5	13 - 15	1	48	47	---	---	20	60	---	---
Ice Cream	4" Solid	412	-32	-22	-9	180	3 - 5	13 - 15	1	48	47	---	---	20	60	---	---
OP Cut Produce	39" (Rear Sill)	288	22	31	42	180	6 - 8	6 - 8	2	40	49	60	47	26	45	40	45
	43" (Rear Sill)	401	22	30	45	210	6 - 8	6 - 8	2	40	49	60	47	26	45	40	45
OP Bulk Produce	39" (Rear Sill)	230	27	36	44	180	6 - 8	6 - 8	2	40	49	60	47	26	45	40	45
	43" (Rear Sill)	374	27	35	47	210	6 - 8	6 - 8	2	40	49	60	47	26	45	40	45
OWP Cut Produce	39" (Rear Sill)	377	22	31	42	180	6 - 8	6 - 8	2	40	49	60	47	26	45	40	45
	43" (Rear Sill)	525	22	30	45	210	6 - 8	6 - 8	2	40	49	60	47	26	45	40	45
OWP Bulk Produce	39" (Rear Sill)	301	27	36	44	180	6 - 8	6 - 8	2	40	49	60	47	26	45	40	45
	43" (Rear Sill)	490	27	35	47	210	6 - 8	6 - 8	2	40	49	60	47	26	45	40	45
OSIO	Std. International	695	17	24	33	180	6 - 8	6 - 8	3	35	47	55	47	26	45	---	---
OWSIO	Std. International	795	17	24	33	180	6 - 8	6 - 8	3	40	47	---	---	---	---	---	---
OSIOP Meat	Std. International	475	12	32	36	200	6 - 8	6 - 8	2	40	47	---	---	---	---	---	---
Deli	Std. International	425	17	34	36	200	6 - 8	6 - 8	2	40	47	---	---	---	---	---	---
OSIOZ	Std. International	560	-32	-24	-10	220	6 - 8	6 - 8	2	47	45	---	---	---	---	---	---
UP	Std. International	600	22	32	42	275	6 - 8	6 - 8	3	40	45	45	45	---	---	---	---
MULTI-DECK MERCHANDISERS																	
BB	Standard BB	1290	17	32	45	325	6 - 8	6 - 8	4	30	47	45	47	---	---	45	45
ONUMD	All Fronts	1390	17	29	40	250	6 - 8	6 - 8	3	40	47	50	45	26	45	---	---
ON2UM	All Fronts	657	17	28	35	280	6 - 8	6 - 8	2	40	47	45	45	26	45	45	45
O2UM	All Fronts	1000	17	27	40	340	6 - 8	6 - 8	3	40	47	45	45	26	45	45	45
OW2UM	All Fronts	1236	17	27	40	340	6 - 8	6 - 8	3	40	47	45	45	26	45	45	45
ON2.5UM	All Fronts	811	17	28	35	284	6 - 8	6 - 8	2	40	47	45	45	26	45	45	45
O2.5UM [3]	All Fronts	1020	17	27	45	225	6 - 8	6 - 8	3	40	47	45	45	26	45	45	45
w/ Plexiglas Dome	All Fronts	1380	17	32	46	305	6 - 8	6 - 8	3	40	47	45	45	26	45	45	45
ON3UM	All Fronts	824	17	28	35	230	6 - 8	6 - 8	2	40	47	45	45	26	45	45	45
O3UM	All Fronts	1030	17	27	45	225	6 - 8	6 - 8	3	40	47	45	45	26	45	45	45
O3UD	Standard Dairy	1030	17	30	35	225	6 - 8	6 - 8	3	40	47	45	45	26	45	45	45
OW3UM	All Fronts	1349	17	27	45	225	6 - 8	6 - 8	3	40	47	45	45	26	45	45	45
ON3.5UM	All Fronts	1019	17	28	35	204	6 - 8	6 - 8	3	40	47	45	45	26	45	45	45
O3.5UM	All Fronts	1300	17	30	45	300	6 - 8	6 - 8	3	40	47	45	45	26	45	45	45
O3.5UD	Standard Dairy	1300	17	30	45	300	6 - 8	6 - 8	3	40	47	45	45	26	45	45	45
ON4UM	All Fronts	1135	17	31	33	203	6 - 8	6 - 8	3	40	47	45	45	26	45	45	45
O4UM	All Fronts	1460	17	30	43	300	6 - 8	6 - 8	4	40	47	45	45	26	45	45	45
O5UM	All Fronts	1490	17	30	42	300	6 - 8	6 - 8	4	40	47	---	---	26	45	45	45
ON6UM	All Fronts	1092	17	28	40	300	6 - 8	6 - 8	4	35	48	---	---	26	45	---	---
O6UM	All Fronts	1405	17	29	41	300	6 - 8	6 - 8	4	35	48	---	---	26	45	---	---
ON5DM Dairy	Standard Dairy	1811	17	32	47	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
Cut Produce	2.5" Extended	1766	17	31	44	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
	5" Extended	1739	17	31	40	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
	7.5" Extended	1681	17	31	40	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
ON5DM Beverage	Standard Dairy	1670	27	37	53	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
Bulk Produce	2.5" Extended	1628	27	36	52	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
	5" Extended	1576	27	36	52	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
	7.5" Extended	1550	27	36	52	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
ON5DMH Dairy	Standard Dairy	1840	17	33	48	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
Cut Produce	2.5" Extended	1795	17	33	45	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
	5" Extended	1779	17	32	41	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
	7.5" Extended	1700	17	32	41	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
ON5DMH Beverage	Standard Dairy	1700	27	37	54	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
Bulk Produce	2.5" Extended	1640	27	37	53	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
	5" Extended	1608	27	36	52	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
	7.5" Extended	1595	27	36	52	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
O5DM Deli	2.5" Extended	1570	17	30	44	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
	5" Extended	1530	17	30	44	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
w/ Shelf Lights	7.5" Extended	1500	17	30	44	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
O5DM Dairy	Standard Dairy	1470	22	34	47	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
Cut Produce	2.5" Extended	1431	22	34	47	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
	5" Extended	1401	22	34	47	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
w/ Shelf Lights	7.5" Extended	1370	22	34	47	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
O5DM Beverage	Standard Dairy	1490	27	36	52	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
Bulk Produce	2.5" Extended	1450	27	36	52	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
	5" Extended	1420	27	36	52	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
w/o Shelf Lights	7.5" Extended	1390	27	36	52	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
O5DMH Deli	2.5" Extended	1620	17	31	43	250	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
	5" Extended	1570	17	31	43	250	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
w/ Shelf Lights	7.5" Extended	1540	17	31	43	250	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
O5DMH Dairy	Standard Dairy	1555	22	35	47	265	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
Cut Produce	2.5" Extended	1500	22	35	47	265	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
	5" Extended	1470	22	35	47	265	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
w/ Shelf Lights	7.5" Extended	1440	22	35	47	265	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
O5DMH Beverage	Standard Dairy	1495	27	37	52	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
Bulk Produce	2.5" Extended	1455	27	36	53	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
	5" Extended	1426	27	36	52	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
w/o Shelf Lights	7.5" Extended	1397	27	36	52	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
O5DR Dairy	Standard Dairy	1502	17	32	47	275	6 - 8	6 - 8	4	32	47	45	47	26	45	42	45
	2.5" Extended	1502	17	32	46	275	6 - 8	6 - 8	4	32	47	45	47	26	45	42	45
	5" Extended	1453	17	32	42	275	6 - 8	6 - 8	4	32	47	45	47	26	45	42	45
	7.5" Extended	1425	17	32	42	275	6 - 8	6 - 8	4	32	47	45	47	26	45	42	45
O5DR Dairy	2.5" Extended	1389	22	35	48	275	6 - 8	6 - 8	4	32	47	45	47	26	45	42	45
	5" Extended	1422	22	35	47	275	6 - 8	6 - 8	4	32	47	45	47	26	45	42	45
O5Z	Standard O5Z	1840	-17	-5	0	[4]	3 - 5	13 - 15	3	34	50	---	---	24	60	50	50
ONHM	Standard	1440	17	30	41	340	6 - 8	6 - 8	4	35	47	45	47	26	45	45	45
	All Other Fronts	1340	17	30	41	340	6 - 8	6 - 8	4	35	47	45	47	26	45	45	45
ONHMH	Standard	1440	17	30	41	340	6 - 8	6 - 8	4	35	47	45	47	26	45	45	45
	All Other Fronts	1340	17	29	40	340	6 - 8	6 - 8	4	35	47	45	47	26	45	45	45
OHM	Standard	1451	12	25	35	350	6 - 8	6 - 8	3	35	47	45	47	26	45	45	45
	Standard	1385	17	28	38	350	6 - 8	6 - 8	3	35	47	45	47	26	45	45	45
	All Other Fronts	1341	17	28	37	350	6 - 8	6 - 8	3	35	47	45	47	26	45	45	45
OHMH	Standard	1550	12	26	37	330	6 - 8	6 - 8	4	35	47	45	47	26	45	45	45
	Standard	1434	17	29	41	330	6 - 8	6 - 8	4	35	47	45	47	26	45	45	45
	All Other Fronts	1340	17	29	38	330	6 - 8	6 - 8	4	35	47	45	47	26	45	45	45

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Requirements comply with CRMA conditions.
Due to Our Commitment to Continuous Improvement All Specifications are Subject to Change Without Notice.
ASH3030

HILL PHOENIX EXCELLENCE® ORIGIN 2® A DOVER™ COMPANY

CASE MODEL		FRONT SILL TYPE	BTUH/ft [1] or BTUH/Door	TEMPERATURE (ºF) EVAP.	DISC. AIR	RET. AIR	AIR VELOCITY [2] FPM	SUPERHEAT SETPOINT @ BULB (ºF)	RUN-OFF TIME (MINUTES)	DEFROST # DEF.	Electric Fail Safe (Minutes)	Electric Temp. (ºF)	Timed Off Fail Safe (Minutes)	Timed Off Temp. (ºF)	Hot Gas Fail Safe (Minutes)	Hot Gas Temp. (ºF)	Reverse Air Fail Safe (Minutes)	Reverse Air Temp. (ºF)
MULTI-DECK MERCHANDISERS (Continued)																		
OHMZOU	Top	4" Solid	1030	17	31	39	220	6 - 8	6 - 8	3	---	---	---	---	25	45	---	---
	Bottom	4" Solid	550	-18	-8	2	240	3 - 5	13 - 15	3	---	---	---	---	25	60	---	---
ONHP	Cut Produce	Standard	1310	22	32	45	360	6 - 8	6 - 8	3	35	47	45	47	---	---	45	45
	Bulk Produce	Standard	930	27	36	48	360	6 - 8	6 - 8	3	35	47	45	47	---	---	45	45
ONHPH	Cut Produce	Standard	1330	22	34	46	360	6 - 8	6 - 8	3	35	47	45	47	---	---	45	45
	Bulk Produce	Standard	945	27	37	47	360	6 - 8	6 - 8	3	35	47	45	47	---	---	45	45
OHP	Cut Produce	Standard	1215	22	31	45	440	6 - 8	6 - 8	3	35	47	45	47	26	45	30	45
	Bulk Produce	Standard	855	27	36	48	250	6 - 8	6 - 8	2	35	47	45	47	26	45	30	45
OHPH	Cut Produce	Standard	1460	17	30	45	315	6 - 8	6 - 8	3	35	47	45	47	26	45	50	45
	Bulk Produce	Standard	1215	22	31	45	440	6 - 8	6 - 8	3	35	47	45	47	26	45	50	45
OWHP	Cut Produce	Standard	1592	22	31	45	440	6 - 8	6 - 8	3	35	47	45	47	26	45	50	45
	Bulk Produce	Standard	1120	27	36	48	250	6 - 8	6 - 8	3	35	47	45	47	26	45	50	45
OWHPH	Cut Produce	Standard	1913	17	30	45	315	6 - 8	6 - 8	3	35	47	45	47	26	45	50	45
	Bulk Produce	Standard	1592	22	31	45	440	6 - 8	6 - 8	3	35	47	45	47	26	45	50	45
ONU		2.5" Extended	1450	17	30	40	310	6 - 8	6 - 8	3	35	47	45	47	25	45	---	---
ORDR [5]		Standard ORDR	739	17	28	44	310	6 - 8	6 - 8	4	30	47	30	47	26	45	---	---
END CAP MERCHANDISERS																		
OEM		6" Thermopane	2918	17	29	37	232	6 - 8	6 - 8	2	40	49	70	47	26	45	---	---
OEP		Standard	2244	27	35	47	210	6 - 8	6 - 8	2	40	49	60	47	26	45	---	---
O3EP		Standard	2917	27	36	47	200	6 - 8	6 - 8	2	40	49	60	47	26	45	---	---
ON3EM		Standard	6000	17	33	45	275	6 - 8	6 - 8	4	40	47	45	45	---	---	---	---
GLASS DOOR REACH-IN MERCHANDISERS																		
KRZH	Frozen Food	Standard KRZH	1850	-12	-8	-3	420	3 - 5	13 - 15	1	60	73	---	---	24	73	---	---
	Ice Cream	Standard KRZH	2200	-22	-12	-7	420	3 - 5	13 - 15	1	60	73	---	---	24	73	---	---
ONRB [6]		Std. 1/2 Bumper	900	22	32	35	460	6 - 8	6 - 8	1	30	47	45	47	24	45	---	---
ONRBH [6]		Std. 1/2 Bumper	900	22	32	35	405	6 - 8	6 - 8	1	30	47	45	47	24	45	---	---
ORB		Std. 1/2 Bumper	900	22	27	30	380	6 - 8	6 - 8	1	30	47	45	47	24	45	---	---
ORBH		Std. 1/2 Bumper	900	22	27	30	280	6 - 8	6 - 8	1	30	47	45	47	24	45	---	---
ONRZ [6]	Frozen Food	Std. 1/2 Bumper	1500	-12	-2	2	460	3 - 5	13 - 15	1	46	73	---	---	24	60	---	---
	Ice Cream	Std. 1/2 Bumper	1600	-22	-12	-8	460	3 - 5	13 - 15	1	46	73	---	---	24	60	---	---
ONRZH [6]	Frozen Food	Std. 1/2 Bumper	1500	-12	-8	-4	405	3 - 5	13 - 15	1	46	73	---	---	24	60	---	---
	Ice Cream	Std. 1/2 Bumper	1600	-22	-12	-4	405	3 - 5	13 - 15	1	46	73	---	---	24	60	---	---
ORZ	Frozen Food	Std. 1/2 Bumper	1400	-12	-8	-5	380	3 - 5	13 - 15	1	46	73	---	---	24	60	---	---
	Ice Cream	Std. 1/2 Bumper	1600	-22	-12	-4	380	3 - 5	13 - 15	1	46	73	---	---	24	60	---	---
ORZH	Frozen Food	Std. 1/2 Bumper	1500	-12	-8	-4	405	3 - 5	13 - 15	1	46	73	---	---	24	60	---	---
	Ice Cream	Std. 1/2 Bumper	1600	-22	-12	-4	405	3 - 5	13 - 15	1	46	73	---	---	24	60	---	---
OREZ	Frozen Food	Std. 1/2 Bumper	1768	-12	2	7	350	3 - 5	13 - 15	1	55	73	---	---	26	60	---	---
	Ice Cream	Std. 1/2 Bumper	1811	-22	-6	-1	340	3 - 5	13 - 15	1	75	73	---	---	26	60	---	---
ONRIZ	Frozen Food	Std. 1/2 Bumper	1210	-12	-2	2	460	3 - 5	13 - 15	1	46	73	---	---	24	60	---	---
	Ice Cream	Std. 1/2 Bumper	1405	-22	-12	-8	460	3 - 5	13 - 15	1	46	73	---	---	24	60	---	---
ONRIZH	Frozen Food	Std. 1/2 Bumper	1210	-12	-8	-4	405	3 - 5	13 - 15	1	46	73	---	---	24	60	---	---
	Ice Cream	Std. 1/2 Bumper	1405	-22	-12	-4	405	3 - 5	13 - 15	1	46	73	---	---	24	60	---	---
SINGLE DECK ISLAND MERCHANDISERS																		
ONIM	Meat	7" Thermopane	885 [7]	12	25	34	180	6 - 8	6 - 8	3	35	47	45	47	26	45	---	---
	Deli	7" Thermopane	860 [8]	17	28	37	180	6 - 8	6 - 8	3	35	47	45	47	26	45	---	---
OIM	Meat	7" Thermopane	770 [9]	12	26	31	140	6 - 8	6 - 8	3	40	47	45	47	26	45	---	---
	Deli	7" Thermopane	560 [10]	17	28	33	140	6 - 8	6 - 8	3	40	47	45	47	26	45	---	---
OIP	Bulk Produce	Standard	650 [11]	22	34	48	140	6 - 8	6 - 8	3	---	---	44	38	---	---	---	---
ONIZ	Frozen Food	4" Solid	440	-12	-2	7	393	3 - 5	13 - 15	1	35	47	---	---	20	60	---	---
	Ice Cream	4" Solid	500	-22	-13	-3	400	3 - 5	13 - 15	1	35	47	---	---	20	60	---	---
OIZ [12]	Frozen Food	4" Solid	520	-22	-12	-4	200	3 - 5	13 - 15	1	45	47	---	---	20	60	---	---
OWIZ	Frozen Food	4" Solid	600	-17	-12	0	180	3 - 5	13 - 15	1	60	49	---	---	20	60	---	---
	Ice Cream	4" Solid	700	-32	-20	-12	180	3 - 5	13 - 15	1	60	49	---	---	20	60	---	---
OWEZ	Frozen Food	4" Solid	2700	-17	-12	0	200	3 - 5	13 - 15	1	60	49	---	---	20	60	---	---
	Ice Cream	4" Solid	3300	-32	-22	-12	200	3 - 5	13 - 15	1	60	49	---	---	20	60	---	---
MULTI-DECK ISLAND MERCHANDISERS																		
O3IM		6" Thermopane	1527	17	28	38	270	6 - 8	6 - 8	3	30	47	---	---	26	45	---	---
O3IMB		6" Thermopane	1548	17	28	38	270	6 - 8	6 - 8	3	30	47	---	---	26	45	---	---
O3IMBB		6" Thermopane	1315	17	28	38	270	6 - 8	6 - 8	3	30	47	---	---	26	45	---	---
O3IP		Standard	1050 [13]	22	34	48	160	6 - 8	6 - 8	4	30	47	44	38	---	---	---	---
O4ID		6" Thermopane	2450	12	28	43	130	6 - 8	6 - 8	3	30	47	---	---	26	45	---	---
O4IDB		6" Thermopane	2484	12	28	43	130	6 - 8	6 - 8	3	30	47	---	---	26	45	---	---
O4IDBB		6" Thermopane	2110	12	28	43	130	6 - 8	6 - 8	3	30	47	---	---	26	45	---	---
SERVICE MERCHANDISERS																		
OSA	w/ Shelf Lights	Std. American	320	22	30	39	235	6 - 8	6 - 8	2	35	50	75 [14]	50	20	45	---	---
	w/o Shelf Lights	Std. American	290	22	30	39	235	6 - 8	6 - 8	2	35	50	75 [14]	50	20	45	---	---
OSAG [15]		Std. American	270	15	21-31	38	125	6 - 8	6 - 8	2	---	---	65	46	20	45	---	---
OSM		Std. American	320	22	30	39	235	6 - 8	6 - 8	2	35	50	75 [14]	50	20	45	---	---
OGM [16]		Std. American	226	17	21-31	38	125	6 - 8	6 - 8	2	---	---	65	46	20	45	---	---
OSI [17]		Std. International	350	22	31	38	175	6 - 8	6 - 8	3	30	47	60 [14]	47	26	45	---	---
OWSI [17]		Std. International	450	22	31	38	175	6 - 8	6 - 8	3	30	47	60 [14]	47	26	45	---	---
OSIF [17]		Std. International	350	22	31	38	175	6 - 8	6 - 8	3	30	47	60 [14]	47	26	45	---	---
OLF		Standard OLF	431	17	27	34	235	6 - 8	6 - 8	2	35	47	50	47	20	45	---	---
OLFG [15]		Standard OLF	275	15	31	38	125	6 - 8	6 - 8	2	35	47	65	47	20	45	---	---

[1] BTUHs/ft listed are for the parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.
[2] Average discharge air velocity at peak of defrost.
[3] For cases with rear refrigerated boxes add 110 BTUH/ft
[4] Primary- 650, Secondary- 425, Ambient- 275.
[5] Back-up coils with a capacity of 1666 BTUH/ft at a suction temperature of 20ºF 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.
[6] All data listed is for cases configured with a 20" top shelf and 3-22" shelves below top shelf.
[7] ONIM (meat): +400 BTUH per wrap-around end.
[8] ONIM (deli): +250 BTUH per wrap-around end.
[9] OIM (meat): +400 BTUH per wrap-around end.
[10] OIM (deli): +250 BTUH per wrap-around end.
[11] OIP: +600 BTUH per wrap-around end.
[12] Not intended for Frozen Juice application.
[13] O3IP: +650 BTUH per wrap-around end.
[14] Not recommended on this model due to long defrost time.
[15] If the case is piped to a suction header lower than 10ºF an EPR with a suction stop solenoid is required. A liquid line solenoid alone does not allow the case to cycle properly. The thermostat probe should be located on the inlet of the top coil. The cut out point should be set to 12ºF and the cut in point should be set so that refrigeration starts as soon as the top coil ice starts to drip.
[16] If the case is piped to a suction header lower than 15ºF an EPR with a suction stop solenoid is required. A liquid line solenoid alone does not allow the case to cycle properly. 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.
[17] Humidification system required on this case when used for Fresh Meat application.

2003 DIRECT EXPANSION CASE REFRIGERATION REQUIREMENTS TABLE - Enhanced Efficiency

Hill PHOENIX EXCELLENCE® ORIGIN2® A DOVER™ COMPANY

CASE MODEL	FRONT SILL TYPE	BTUH/ft [1] or BTUH/Door	TEMPERATURE (ºF) EVAP.	DISC. AIR	RET. AIR	AIR VELOCITY [2] FPM	SUPERHEAT SETPOINT @ BULB (ºF)	RUN-OFF TIME (MINUTES)	DEFROST # DEF.	Electric Fail Safe (Minutes)	Electric Temp. (ºF)	Timed Off Fail Safe (Minutes)	Timed Off Temp. (ºF)	Hot Gas Fail Safe (Minutes)	Hot Gas Temp. (ºF)	Reverse Air Fail Safe (Minutes)	Reverse Air Temp. (ºF)
SINGLE DECK MERCHANDISERS																	
OC	Standard	480	22	26	39	305	6 - 8	6 - 8	2	40	49	70	47	26	45	40	45
	All Other Fronts	415	22	26	35	305	6 - 8	6 - 8	2	40	49	70	47	26	45	40	45
OM	Standard	480	22	26	39	305	6 - 8	6 - 8	2	40	49	70	47	26	45	40	45
	All Other Fronts	415	22	26	35	305	6 - 8	6 - 8	2	40	49	70	47	26	45	40	45
OP Cut Produce	39" (Rear Sill)	288	26	31	42	180	6 - 8	6 - 8	2	40	49	60	47	26	45	40	45
	43" (Rear Sill)	401	26	30	45	210	6 - 8	6 - 8	2	40	49	60	47	26	45	40	45
OP Bulk Produce	39" (Rear Sill)	230	29	36	44	180	6 - 8	6 - 8	2	40	49	60	47	26	45	40	45
	43" (Rear Sill)	374	29	35	47	210	6 - 8	6 - 8	2	40	49	60	47	26	45	40	45
MULTI-DECK MERCHANDISERS																	
ONUMD	All Fronts	1390	22	29	40	250	6 - 8	6 - 8	3	40	47	50	45	26	45	---	---
ON2UM	All Fronts	657	22	28	35	280	6 - 8	6 - 8	2	40	47	45	45	26	45	45	45
O2UM	All Fronts	1000	22	27	40	340	6 - 8	6 - 8	3	40	47	45	45	26	45	45	45
ON2.5UM	All Fronts	811	22	28	35	284	6 - 8	6 - 8	2	40	47	45	45	26	45	45	45
O2.5UM [3]	All Fronts	1020	22	27	45	225	6 - 8	6 - 8	3	40	47	45	45	26	45	45	45
w/ Plexiglas Dome	All Fronts	1380	22	32	46	305	6 - 8	6 - 8	3	40	47	45	45	26	45	45	45
ON3UM	All Fronts	824	22	28	35	230	6 - 8	6 - 8	2	40	47	45	45	26	45	45	45
O3UM	All Fronts	1030	22	27	45	225	6 - 8	6 - 8	3	40	47	45	45	26	45	45	45
O3UD	Standard Dairy	1030	22	30	35	225	6 - 8	6 - 8	3	40	47	45	45	26	45	45	45
ON3.5UM	All Fronts	1019	22	28	35	204	6 - 8	6 - 8	3	40	47	45	45	26	45	45	45
O3.5UM	All Fronts	1300	22	30	45	300	6 - 8	6 - 8	3	40	47	45	45	26	45	45	45
O3.5UD	Standard Dairy	1300	22	30	45	300	6 - 8	6 - 8	3	40	47	45	45	26	45	45	45
ON4UM	All Fronts	1135	22	31	33	203	6 - 8	6 - 8	3	40	47	45	45	26	45	45	45
O4UM	All Fronts	1460	22	30	43	300	6 - 8	6 - 8	4	40	47	45	45	26	45	45	45
O5UM	All Fronts	1490	22	30	42	300	6 - 8	6 - 8	4	40	47	---	---	26	45	45	45
ON6UM	All Fronts	1092	22	28	40	300	6 - 8	6 - 8	4	35	48	---	---	26	45	---	---
O6UM	All Fronts	1405	22	29	41	300	6 - 8	6 - 8	4	35	48	---	---	26	45	---	---
ON5DM Dairy	Standard Dairy	1811	22	32	47	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
Cut Produce	2.5" Extended	1766	22	31	44	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
	5" Extended	1739	22	31	40	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
	7.5" Extended	1681	22	31	40	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
ON5DM Beverage	Standard Dairy	1670	29	37	53	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
Bulk Produce	2.5" Extended	1628	29	36	52	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
	5" Extended	1576	29	36	52	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
	7.5" Extended	1550	29	36	52	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
ON5DMH Dairy	Standard Dairy	1840	22	33	48	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
Cut Produce	2.5" Extended	1795	22	33	45	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
	5" Extended	1779	22	32	41	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
	7.5" Extended	1700	22	32	41	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
ON5DMH Beverage	Standard Dairy	1700	29	37	54	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
Bulk Produce	2.5" Extended	1640	29	37	53	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
	5" Extended	1608	29	36	52	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
	7.5" Extended	1595	29	36	52	215	6 - 8	6 - 8	4	32	47	42	47	26	45	42	45
O5DM Deli	2.5" Extended	1570	22	30	44	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
	5" Extended	1530	22	30	44	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
w/ Shelf Lights	7.5" Extended	1500	22	30	44	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
O5DM Dairy	Standard Dairy	1470	26	34	47	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
Cut Produce	2.5" Extended	1431	26	34	47	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
	5" Extended	1401	26	34	47	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
w/ Shelf Lights	7.5" Extended	1370	26	34	47	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
O5DM Beverage	Standard Dairy	1490	29	36	52	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
Bulk Produce	2.5" Extended	1450	29	36	52	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
	5" Extended	1420	29	36	52	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
w/o Shelf Lights	7.5" Extended	1390	29	36	52	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
O5DMH Deli	2.5" Extended	1620	22	31	43	250	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
	5" Extended	1570	22	31	43	250	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
w/ Shelf Lights	7.5" Extended	1540	22	31	43	250	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
O5DMH Dairy	Standard Dairy	1555	26	35	47	265	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
Cut Produce	2.5" Extended	1500	26	35	47	265	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
	5" Extended	1470	26	35	47	265	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
w/ Shelf Lights	7.5" Extended	1440	26	35	47	265	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
O5DMH Beverage	Standard Dairy	1495	29	37	52	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
Bulk Produce	2.5" Extended	1455	29	36	53	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
	5" Extended	1426	29	36	52	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
w/o Shelf Lights	7.5" Extended	1397	29	36	52	270	6 - 8	6 - 8	3	32	47	42	47	26	45	42	45
O5DR Dairy	Standard Dairy	1502	22	32	47	275	6 - 8	6 - 8	4	32	47	45	47	26	45	42	45
	2.5" Extended	1502	22	32	46	275	6 - 8	6 - 8	4	32	47	45	47	26	45	42	45
	5" Extended	1453	22	32	42	275	6 - 8	6 - 8	4	32	47	45	47	26	45	42	45
	7.5" Extended	1425	22	32	42	275	6 - 8	6 - 8	4	32	47	45	47	26	45	42	45
O5DR Dairy	2.5" Extended	1389	26	35	48	275	6 - 8	6 - 8	4	32	47	45	47	26	45	42	45
	5" Extended	1422	26	35	47	275	6 - 8	6 - 8	4	32	47	45	47	26	45	42	45
ONHM	Standard	1440	22	30	41	340	6 - 8	6 - 8	4	35	47	45	47	26	45	45	45
	All Other Fronts	1340	22	30	41	340	6 - 8	6 - 8	4	35	47	45	47	26	45	45	45
ONHMH	Standard	1440	22	30	41	340	6 - 8	6 - 8	4	35	47	45	47	26	45	45	45
	All Other Fronts	1340	22	29	40	340	6 - 8	6 - 8	4	35	47	45	47	26	45	45	45
OHM	Standard	1385	22	28	38	350	6 - 8	6 - 8	3	35	47	45	47	26	45	45	45
	All Other Fronts	1341	22	28	37	350	6 - 8	6 - 8	3	35	47	45	47	26	45	45	45
OHMH	Standard	1434	22	29	41	330	6 - 8	6 - 8	4	35	47	45	47	26	45	45	45
	All Other Fronts	1340	22	29	38	330	6 - 8	6 - 8	4	35	47	45	47	26	45	45	45
ONHP Cut Produce	Standard	1310	26	32	45	360	6 - 8	6 - 8	3	35	47	45	47	---	---	45	45
Bulk Produce	Standard	930	29	36	48	360	6 - 8	6 - 8	3	35	47	45	47	---	---	45	45
ONHPH Cut Produce	Standard	1330	26	34	46	360	6 - 8	6 - 8	3	35	47	45	47	---	---	45	45
Bulk Produce	Standard	945	29	37	47	360	6 - 8	6 - 8	3	35	47	45	47	---	---	45	45
OHP Cut Produce	Standard	1215	26	31	45	440	6 - 8	6 - 8	3	35	47	45	47	26	45	30	45
Bulk Produce	Standard	855	29	36	48	250	6 - 8	6 - 8	2	35	47	45	47	26	45	30	45
OHPH Cut Produce	Standard	1460	22	30	45	315	6 - 8	6 - 8	3	35	47	45	47	26	45	50	45
Bulk Produce	Standard	1215	26	31	45	440	6 - 8	6 - 8	3	35	47	45	47	26	45	50	45
END CAP MERCHANDISERS																	
OEM	6" Thermopane	2918	22	29	37	232	6 - 8	6 - 8	2	40	49	70	47	26	45	---	---
OEP	Standard	2244	27	35	47	210	6 - 8	6 - 8	2	40	49	60	47	26	45	---	---
O3EP	Standard	2917	27	36	47	200	6 - 8	6 - 8	2	40	49	60	47	26	45	---	---
ON3EM	Standard	6000	22	33	45	275	6 - 8	6 - 8	4	40	47	45	45	---	---	---	---
MULTI-DECK ISLAND MERCHANDISERS																	
O3IM	6" Thermopane	1527	22	28	38	270	6 - 8	6 - 8	3	30	47	---	---	26	45	---	---
O3IMB	6" Thermopane	1548	22	28	38	270	6 - 8	6 - 8	3	30	47	---	---	26	45	---	---
O3IMBB	6" Thermopane	1315	22	28	38	270	6 - 8	6 - 8	3	30	47	---	---	26	45	---	---
O4ID	6" Thermopane	2450	17	28	43	130	6 - 8	6 - 8	3	30	47	---	---	26	45	---	---
O4IDB	6" Thermopane	2484	17	28	43	130	6 - 8	6 - 8	3	30	47	---	---	26	45	---	---
O4IDBB	6" Thermopane	2110	17	28	43	130	6 - 8	6 - 8	3	30	47	---	---	26	45	---	---

[1] BTUHs/ft listed are for the parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.
[2] Average discharge air velocity at peak of defrost.
[3] For cases with rear refrigerated boxes add 110 BTUH/ft

OBSOLETE

Requirements comply with CRMA conditions.
Due to Our Commitment to Continuous Improvement All Specifications are Subject to Change Without Notice.
ASH3030

OBSOLETE

2003 SPECIALTY CASE REFRIGERATION REQUIREMENTS TABLE

Hill PHOENIX EXCELLENCE® | PARK AVENUE™ | A DOVER™ COMPANY

BAKERY MERCHANDISERS

CASE MODEL	BTUH/ft [1]	TEMPERATURE (ºF) EVAP.	DISC. AIR	RET. AIR	AIR VELOCITY [2] FPM	SUPERHEAT SETPOINT @ BULB (ºF)	RUN-OFF TIME (MINUTES)	# DEF.	DEFROST Electric Fail Safe (Minutes)	Electric Temp. (ºF)	Timed Off Fail Safe (Minutes)	Timed Off Temp. (ºF)	Hot Gas Fail Safe (Minutes)	Hot Gas Temp. (ºF)	Reverse Air Fail Safe (Minutes)	Reverse Air Temp. (ºF)
OB	212	27	32	39	338	6 - 8	6 - 8	3	35	47	45	47	26	45	45	45
OBA	212	27	32	39	338	6 - 8	6 - 8	3	35	47	45	47	- - -	- - -	- - -	- - -
OBIF	300	27	29-30	40-42	210-240	6 - 8	6 - 8	4	35	47	40	49	- - -	- - -	- - -	- - -
OBIFA	300	27	29-30	40-42	210-240	6 - 8	6 - 8	4	35	47	40	49	- - -	- - -	- - -	- - -
OBO	530	22	34	41	305	6 - 8	6 - 8	3	35	47	45	47	26	45	45	45
OBOA	530	22	34	41	305	6 - 8	6 - 8	3	35	47	45	47	- - -	- - -	- - -	- - -
OBOL Bakery	509	27	33	40	305	6 - 8	6 - 8	3	35	47	45	47	26	45	45	45
OBOL Deli	534	22	30	37	305	6 - 8	6 - 8	3	35	47	45	47	26	45	45	45

DELI / MEAT / SEAFOOD MERCHANDISERS

CASE MODEL	BTUH/ft [1]	TEMPERATURE (ºF) EVAP.	DISC. AIR	RET. AIR	AIR VELOCITY [2] FPM	SUPERHEAT SETPOINT @ BULB (ºF)	RUN-OFF TIME (MINUTES)	# DEF.	DEFROST Electric Fail Safe (Minutes)	Electric Temp. (ºF)	Timed Off Fail Safe (Minutes)	Timed Off Temp. (ºF)	Hot Gas Fail Safe (Minutes)	Hot Gas Temp. (ºF)	Reverse Air Fail Safe (Minutes)	Reverse Air Temp. (ºF)
O2SI [3]	300	22	24	35	540	6 - 8	6 - 8	3	30	47	60 [4]	47 [4]	26	45	- - -	- - -
O2SIF [3]	300	22	24	35	540	6 - 8	6 - 8	3	30	47	60 [4]	47 [4]	26	45	- - -	- - -
ONFG	220	17	na [5]	na	na	6 - 8	6 - 8	2	- - -	- - -	65	48	- - -	- - -	- - -	- - -
OSI [3]	350	22	31	38	175	6 - 8	6 - 8	3	30	47	60 [4]	47 [4]	26	45	- - -	- - -
OSIF	350	22	31	38	175	6 - 8	6 - 8	3	30	47	60 [4]	47	26	45	- - -	- - -
OSIO	695	12	24	33	180	6 - 8	6 - 8	3	35	47	55	47	26	45	- - -	- - -
OWSI [3]	450	22	31	38	175	6 - 8	6 - 8	3	30	47	60 [4]	47 [4]	26	45	- - -	- - -
OWSIO	795	12	24	33	180	6 - 8	6 - 8	3	35	47	55	47	26	45	- - -	- - -
PBB	990	20	33	44	245	6 - 8	6 - 8	4	- - -	- - -	30	47	- - -	- - -	- - -	- - -
PDIC	350	15	24	41	225	6 - 8	6 - 8	4	30	47	60 [4]	47 [4]	26	45	- - -	- - -
PDIF	300	22	28	39	100	6 - 8	6 - 8	4	30	47	40	47	26	45	- - -	- - -
PNDIF	285	22	28	39	100	6 - 8	6 - 8	4	30	47	40	47	26	45	- - -	- - -
PNSF	200	27	36		180	6 - 8	6 - 8	3	- - -	- - -	45	47	- - -	- - -	- - -	- - -
PSF	350	27	36		180	6 - 8	6 - 8	3	- - -	- - -	45	47	- - -	- - -	- - -	- - -

PARK AVENUE PRESTIGE™

DELI / MEAT / SEAFOOD MERCHANDISERS

CASE MODEL	BTUH/ft [1]	SATURATED SUCTION TEMP (ºF)	TEMPERATURE (ºF) SUPPLY	DISC. AIR	RET. AIR	AIR VELOCITY [2] FPM	FLOW RATE GPM/ft	CHARGE GAL/ft	# DEF.	DEFROST Electric Fail Safe (Minutes)	Electric Temp. (ºF)	Timed Off Fail Safe (Minutes)	Timed Off Temp. (ºF)	Warm Fluid Fail Safe (Minutes)	Warm Fluid Temp. (ºF)	Reverse Air Fail Safe (Minutes)	Reverse Air Temp. (ºF)
PSG	400	na	20	na	na	na	0.38	3	4-6 [6]	- - -	- - -	- - -	- - -	7	45	- - -	- - -
PSGF	400	na	20	na	na	na	0.38	3	4-6 [6]	- - -	- - -	- - -	- - -	7	45	- - -	- - -
PSG-SSC	480	15	20	na	na	na	0.38	3	24	- - -	- - -	- - -	- - -	7	45	- - -	- - -
PSGF-SSC	480	15	20	na	na	na	0.38	3	24	- - -	- - -	- - -	- - -	7	45	- - -	- - -

[1] BTUHs/ft listed are for the parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.
[2] Average discharge air velocity at peak of defrost.
[3] Humidification system required on this case when used for Fresh Meat application.
[4] Not recommended on this model due to long defrost time.
[5] Not Applicable
[6] Dependant on condition of secondary coolant supplied to case. Cooler liquid and higher inlet pressure require more frequent defrosts.

Requirements comply with CRMA conditions.
Due to Our Commitment to Continuous Improvement All Specifications are Subject to Change Without Notice.
ASH3030

2003 SPECIALTY CASE REFRIGERATION EFFECTS TABLE

Hill PHOENIX EXCELLENCE®

PARK AVENUE™

A DOVER™ COMPANY

All data given is for 75°F dry bulb temperature and 55% relative humidity

BAKERY MERCHANDISERS

CASE MODEL	BTUH/ft [1] or BTUH/Door	EVAP. TEMPERATURE (ºF)	Watts/ft or Watts/Door	Electrical Input BTUH/ft or BTUH/Door	Latent Heat BTUH/ft or BTUH/Door	Sensible Heat BTUH/ft or BTUH/Door	Refrigeration Credits BTUH/ft or BTUH/Door
OB	212	27	85	290	-20	-59	-29
OBIF	300	27	43	147	38	115	57
OBO	530	22	43	147	96	287	172
OBOL Bakery	509	27	29	99	102	307	184
Deli	534	22	29	99	109	326	196

DELI / MEAT / SEAFOOD MERCHANDISERS

CASE MODEL	BTUH/ft [1] or BTUH/Door	EVAP. TEMPERATURE (ºF)	Watts/ft or Watts/Door	Electrical Input BTUH/ft or BTUH/Door	Latent Heat BTUH/ft or BTUH/Door	Sensible Heat BTUH/ft or BTUH/Door	Refrigeration Credits BTUH/ft or BTUH/Door
O2SI [3]	300	22	44	150	45	105	52
O2SIF [3]	300	22	44	150	45	105	52
ONFG	220	17	15	51	68	101	51
OSI [3]	350	22	44	150	80	120	60
OSIF	350	22	44	150	80	120	60
OSIO	695	12	21	72	249	374	224
OWSI [3]	450	22	44	150	120	180	90
OWSIO	795	12	21	72	289	434	260
PBB	990	20	54	184	322	483	290
PDIC	350	15	32	109	96	144	72
PDIF	300	22	46	157	57	86	43
PNDIF	285	22	43	147	55	83	41
PNSF	200	27	6	20	72	108	54
PSF	350	27	7	24	130	196	98

PARK AVENUE PRESTIGE™

MEAT MERCHANDISERS

CASE MODEL	BTUH/ft [1] or BTUH/Door	EVAP. TEMPERATURE (ºF)	Watts/ft or Watts/Door	Electrical Input BTUH/ft or BTUH/Door	Latent Heat BTUH/ft or BTUH/Door	Sensible Heat BTUH/ft or BTUH/Door	Refrigeration Credits BTUH/ft or BTUH/Door
PSG	400	20 [4]	24	82	127	191	95
PSGF	400	20 [4]	24	82	127	191	95
PSG-SSC	480	15	24	82	159	239	119
PSGF-SSC	480	15	24	82	159	239	119

[1] BTUHs/ft listed are for the parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.
[2] Average discharge air velocity at peak of defrost.
[3] Humidification system required on this case when used for Fresh Meat application.
[4] The PSG and PSGF are secondary coolant cases. This number represents the supply fluid temperature to the case.

Note: The following factors are used for calculating case credits
a. 0.60 for open cases b. 0.45 for reach-ins c. 0.50 for service cases
For all cases the sensible BTUH/ft from the table above is used for calculating the net credit.

OBSOLETE

2003 CASE REFRIGERATION EFFECTS TABLE

Hill PHOENIX EXCELLENCE®

ORIGIN 2®

A DOVER™ COMPANY

All data given is for 75°F dry bulb temperature and 55% relative humidity

CASE MODEL	FRONT SILL TYPE	BTUH/ft [1] or BTUH/Door	EVAP. TEMPERATURE (°F)	Watts/ft or Watts/Door	Electrical Input BTUH/ft or BTUH/Door	Latent Heat BTUH/ft or BTUH/Door	Sensible Heat BTUH/ft or BTUH/Door	Refrigeration Credits BTUH/ft or BTUH/Door
SINGLE DECK MERCHANDISERS								
MPC	Custom Wood	617	22	14	48	142	427	256
OC	Standard	480	17	11	38	111	332	199
	All Other Fronts	415	17	11	38	94	283	170
OM	Standard	560	12	35	120	110	330	198
	Standard	480	17	35	120	90	270	162
	All Other Fronts	415	17	35	120	74	222	133
OMZ	6" Thermopane	550	-22	28	96	114	341	204
OMZD Frozen Food	11" Thermopane	456	-17	39	133	81	242	145
Ice Cream	11" Thermopane	476	-27	39	133	86	257	154
ONZ Frozen Food	4" Solid	369	-22	31	106	66	197	118
Ice Cream	4" Solid	412	-32	31	106	77	230	138
OP Cut Produce	39" (Rear Sill)	288	22	11	38	50	200	120
	43" (Rear Sill)	401	22	11	38	73	291	174
OP Bulk Produce	39" (Rear Sill)	230	27	11	38	38	154	92
	43" (Rear Sill)	374	27	11	38	67	269	161
OWP Cut Produce	39" (Rear Sill)	377	22	11	38	68	272	163
	43" (Rear Sill)	525	22	11	38	97	390	234
OWP Bulk Produce	39" (Rear Sill)	301	27	11	38	53	211	126
	43" (Rear Sill)	490	27	11	38	90	362	217
OSIO	Std. International	695	17	21	72	153	458	275
OWSIO	Std. International	795	17	21	72	178	533	320
OSIOP Meat	Std. International	475	12	42	143	66	249	149
Deli	Std. International	425	17	42	143	56	211	127
OSIOZ	Std. International	560	-32	42	143	83	312	187
UP	Std. International	600	22	34	116	97	363	218
MULTI-DECK MERCHANDISERS								
BB	Standard BB	1290	17	64	219	321	750	450
ONUMD	All Fronts	1390	17	40	137	376	877	526
ON2UM	All Fronts	657	17	41	140	207	310	186
O2UM	All Fronts	1000	17	41	140	344	516	310
OW2UM	All Fronts	1236	17	41	140	438	658	395
ON2.5UM	All Fronts	811	17	50	171	256	384	230
O2.5UM	All Fronts	1020	17	50	171	340	510	306
w/ Plexiglas Dome	All Fronts	1380	17	37	126	501	752	451
ON3UM	All Fronts	824	17	50	171	261	392	235
O3UM	All Fronts	1030	17	50	171	344	516	309
O3UD	Standard Dairy	1030	17	37	126	361	542	325
OW3UM	All Fronts	1349	17	50	171	471	707	424
ON3.5UM	All Fronts	1300	17	56	191	444	665	399
O3.5UM	All Fronts	1300	17	56	191	444	665	399
O3.5UD	Standard Dairy	1300	17	45	154	459	688	413
ON4UM	All Fronts	1135	17	56	191	378	566	340
O4UM	All Fronts	1460	17	56	191	508	761	457
O5UM	All Fronts	1490	17	61	208	513	769	461
ON6UM	All Fronts	1092	17	57	195	359	538	323
O6UM	All Fronts	1405	17	57	195	484	726	436
ON5DM Dairy	Standard Dairy	1811	17	76	260	465	1086	652
	2.5" Extended	1766	17	83	283	445	1038	623
	5" Extended	1739	17	83	283	437	1019	611
	7.5" Extended	1681	17	83	283	419	978	587
ON5DM Beverage	Standard Dairy	1670	27	76	260	423	987	592
Produce	2.5" Extended	1628	27	83	283	403	941	565
	5" Extended	1576	27	83	283	388	905	543
	7.5" Extended	1550	27	83	283	380	887	532
ON5DMH Dairy	Standard Dairy	1840	17	76	260	474	1106	664
	2.5" Extended	1795	17	83	283	453	1058	635
	5" Extended	1779	17	83	283	449	1047	628
	7.5" Extended	1700	17	83	283	425	992	595
ON5DMH Beverage	Standard Dairy	1700	27	76	260	432	1008	605
Produce	2.5" Extended	1640	27	83	283	407	950	570
	5" Extended	1608	27	83	283	397	927	556
	7.5" Extended	1595	27	83	283	393	918	551
O5DM Deli	2.5" Extended	1570	17	81	277	388	905	543
	5" Extended	1530	17	81	277	376	877	526
w/ Shelf Lights	7.5" Extended	1500	17	81	277	367	856	514
O5DM Dairy	Standard Dairy	1470	22	73	249	366	854	513
Cut Produce	2.5" Extended	1431	22	81	277	346	808	485
	5" Extended	1401	22	81	277	337	787	472
w/ Shelf Lights	7.5" Extended	1370	22	81	277	328	875	525
O5DM Beverage	Standard Dairy	1490	27	40	137	406	947	568
Bulk Produce	2.5" Extended	1450	27	48	164	386	900	540
	5" Extended	1420	27	48	164	377	879	528
w/o Shelf Lights	7.5" Extended	1390	27	48	164	368	858	515
O5DMH Deli	2.5" Extended	1620	17	86	294	398	928	557
	5" Extended	1570	17	86	294	383	893	536
w/ Shelf Lights	7.5" Extended	1540	17	86	294	374	872	523
O5DMH Dairy	Standard Dairy	1555	22	79	270	386	900	540
Cut Produce	2.5" Extended	1500	22	86	294	362	844	507
	5" Extended	1470	22	86	294	353	823	494
w/ Shelf Lights	7.5" Extended	1440	22	86	294	344	802	481
O5DMH Beverage	Standard Dairy	1495	27	40	137	408	951	571
Bulk Produce	2.5" Extended	1455	27	48	164	387	904	542
	5" Extended	1426	27	48	164	379	883	530
w/o Shelf Lights	7.5" Extended	1397	27	48	164	370	863	518
O5DR Dairy	Standard Dairy	1502	17	76	260	373	870	522
	2.5" Extended	1502	17	83	283	366	853	512
	5" Extended	1453	17	83	283	351	819	491
	7.5" Extended	1425	17	83	283	342	799	479
O5DR Dairy	2.5" Extended	1389	22	40	137	376	877	526
w/o Shelf Lights	5" Extended	1422	22	48	164	377	881	528
O5Z	Standard O5Z	1840	-17	111	379	438	1023	614
ONHM	Standard	1440	17	68	232	483	725	435
	All Other Fronts	1340	17	68	232	443	665	399
ONHMH	Standard	1440	17	76	260	472	708	425
	All Other Fronts	1340	17	76	260	432	648	389
OHM	Standard	1451	12	74	253	479	719	431
	Standard	1385	17	74	253	453	679	408
	All Other Fronts	1341	17	74	253	435	653	392
OHMH	Standard	1550	12	92	314	494	741	445
	Standard	1434	17	92	314	448	672	403
	All Other Fronts	1340	17	92	314	410	615	369

OBSOLETE

Requirements comply with CRMA conditions.
Due to Our Commitment to Continuous Improvement All Specifications are Subject to Change Without Notice.
ASH3030

2003 CASE REFRIGERATION EFFECTS TABLE

Hill PHOENIX EXCELLENCE

ORIGIN 2

A DOVER COMPANY

All data given is for 75°F dry bulb temperature and 55% relative humidity

CASE MODEL		SILL HEIGHT INCHES	BTUH/ft [1] or BTUH/Door	EVAP. TEMPERATURE (°F)	Watts/ft or Watts/Door	Electrical Input BTUH/ft or BTUH/Door	Latent Heat BTUH/ft or BTUH/Door	Sensible Heat BTUH/ft or BTUH/Door	Refrigeration Credits BTUH/ft or BTUH/Door
MULTI-DECK MERCHANDISERS									
OHMZOU	Top	4" Solid	1030	17	29	99	251	680	408
	Bottom	4" Solid	550	-18	23	79	127	344	206
ONHP	Cut Produce	Standard	1310	22	66	225	293	792	475
	Bulk Produce	Standard	930	27	66	225	190	514	309
ONHPH	Cut Produce	Standard	1330	22	76	260	289	781	469
	Bulk Produce	Standard	945	27	76	260	185	500	300
OHP	Cut Produce	Standard	1215	22	66	225	267	722	433
	Bulk Produce	Standard	855	27	74	253	163	440	264
OHPH	Cut Produce	Standard	1460	17	92	314	309	836	502
	Bulk Produce	Standard	1215	22	92	314	243	658	395
OWHP	Cut Produce	Standard	1592	22	66	225	369	998	599
	Bulk Produce	Standard	1120	27	74	253	234	633	380
OWHPH	Cut Produce	Standard	1913	17	92	314	432	1167	700
	Bulk Produce	Standard	1592	22	92	314	345	933	560
ONU		2.5" Extended	1450	17	93	318	340	793	476
ORDR [2]		Standard ORDR	739	17	90	307	129	302	181
END CAP MERCHANDISERS									
OEM		6" Thermopane	2918	17	102	348	771	1799	1079
OEP		Standard	2244	27	60	205	612	1427	856
O3EP		Standard	2917	27	60	205	814	1898	1139
ON3EM		Standard	6000	17	424	1448	1366	3186	1912
GLASS DOOR REACH-IN MERCHANDISERS									
KRZH	Frozen Food	Standard KRZH	1850	-12	592	2022	-39	-132	-59
	Ice Cream	Standard KRZH	2200	-22	592	2022	41	137	62
ONRB [3]		Std. 1/2 Bumper	900	22	227	775	29	96	43
ONRBH [3]		Std. 1/2 Bumper	900	22	230	785	26	88	40
ORB		Std. 1/2 Bumper	900	22	227	775	29	96	43
ORBH		Std. 1/2 Bumper	900	22	230	785	26	88	40
ONRZ [3]	Frozen Food	Std. 1/2 Bumper	1500	-12	305	1042	105	353	159
	Ice Cream	Std. 1/2 Bumper	1600	-22	305	1042	128	430	193
ONRZH [3]	Frozen Food	Std. 1/2 Bumper	1500	-12	307	1048	104	348	156
	Ice Cream	Std. 1/2 Bumper	1600	-22	307	1048	127	425	191
ORZ	Frozen Food	Std. 1/2 Bumper	1400	-12	305	1042	82	276	124
	Ice Cream	Std. 1/2 Bumper	1600	-22	305	1042	128	430	193
ORZH	Frozen Food	Std. 1/2 Bumper	1500	-12	307	1048	104	348	156
	Ice Cream	Std. 1/2 Bumper	1600	-22	307	1048	127	425	191
OREZ	Frozen Food	Std. 1/2 Bumper	1768	-12	407	1390	87	291	131
	Ice Cream	Std. 1/2 Bumper	1811	-22	407	1390	97	324	146
ONRIZ [3]	Frozen Food	Std. 1/2 Bumper	1210	-12	610	2083	-201	-672	-303
	Ice Cream	Std. 1/2 Bumper	1405	-22	610	2083	-156	-522	-235
ONRIZH [3]	Frozen Food	Std. 1/2 Bumper	1210	-12	614	2097	-204	-683	-307
	Ice Cream	Std. 1/2 Bumper	1405	-22	614	2097	-159	-533	-240
SINGLE DECK ISLAND MERCHANDISERS									
ONIM	Meat	7" Thermopane	885 [5]	12	22	75	263	614	368
	Deli	7" Thermopane	860 [4]	17	22	75	248	579	347
OIM	Meat	7" Thermopane	770 [6]	12	22	75	229	533	320
	Deli	7" Thermopane	560 [7]	17	22	75	158	369	221
OIP	Bulk Produce	Standard	650 [8]	22	17	58	138	554	332
ONIZ	Frozen Food	4" Solid	369	-22	45	154	54	161	97
	Ice Cream	4" Solid	412	-32	45	154	65	194	116
OIZ [9]	Frozen Food	4" Solid	520	-22	45	154	92	275	165
OWIZ	Frozen Food	4" Solid	600	-17	89	304	74	222	133
	Ice Cream	4" Solid	700	-32	89	304	99	297	178
OWEZ	Frozen Food	4" Solid	2700	-17	329	1124	394	1182	709
	Ice Cream	4" Solid	3300	-32	329	1124	544	1632	979
MULTI-DECK ISLAND MERCHANDISERS									
O3IM		6" Thermopane	1527	17	88	301	491	736	442
O3IMB		6" Thermopane	1548	17	64	219	532	798	479
O3IMBB		6" Thermopane	1315	17	85	290	410	615	369
O3IP		Standard	1050 [10]	22	87	297	301	452	271
O4ID		6" Thermopane	2450	12	91	311	856	1284	770
O4IDB		6" Thermopane	2484	12	88	301	873	1310	786
O4IDBB		6" Thermopane	2110	12	96	328	713	1069	642
SERVICE MERCHANDISERS									
OSA	w/ Shelf Lights	Std. American	320	22	74	253	20	47	24
	w/o Shelf Lights	Std. American	290	22	58	198	28	64	32
OSAG [11]		Std. American	270	15	74	253	5	12	6
OSM		Std. American	320	22	74	253	20	47	24
OGM [12]		Std. American	226	17	81	277	-15	-35	-18
OSI [13]		Std. International	350	22	44	150	60	140	70
OWSI [13]		Std. International	450	22	44	150	90	210	105
OSIF [13]		Std. International	350	22	44	150	60	140	70
OLF		Standard OLF	431	17	155	529	-29	-69	-34
OLFG [11]		Standard OLF	275	15	155	529	-76	-178	-89

[1] BTUHs/ft listed are for the parallel operation. Conventional ratings may be approximated by multiplying listed rating by 1.04.

[2] 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.

[3] All data listed is for cases configured with a 20" top shelf and 3-22" shelves below top shelf.

[4] ONIM (meat): +400 BTUH per wrap-around end.

[5] ONIM (deli): +250 BTUH per wrap-around end.

[6] OIM (meat): +400 BTUH per wrap-around end.

[7] OIM (deli): +250 BTUH per wrap-around end.

[8] OIP: +600 BTUH per wrap-around end.

[9] Not intended for Frozen Juice application.

[10] O3IP: +650 BTUH per wrap-around end.

[11] If the case is piped to a suction header lower than 10°F an EPR with a suction stop solenoid is required. A liquid line solenoid alone does not allow the case to cycle properly. The thermostat probe should be located on the inlet of the top coil. The cut out point should be set to 12°F and the cut in point should be set so that refrigeration starts as soon as the top coil ice starts to drip.

[12] If the case is piped to a suction header lower than 15°F an EPR with a suction stop solenoid is required. A liquid line solenoid alone does not allow the case to cycle properly. The thermostat probe should be located on the inlet of the top coil. The cut out point should be set to 17°F and the cut in point should be set so that refrigeration starts as soon as the top coil ice starts to drip.

[13] Humidification system required on this case when used for Fresh Meat application.

Note: The following factors are used for calculating case credits

a. 0.60 for open cases b. 0.45 for reach-ins c. 0.50 for service cases

For all cases the sensible BTUH/ft from the table above is used for calculating the net credit.

OBSOLETE

2003 SELF-CONTAINED CASE ELECTRICAL AND REFRIGERATION REQUIREMENTS TABLE

HILL PHOENIX EXCELLENCE® ORIGIN 2® A DOVER™ COMPANY

MOBILE SELF-CONTAINED MERCHANDISERS

CASE MODEL	24 HR ENERGY USAGE (kWh)	SUCTION PRESSURE @ CASE OUTLET (PSIG)	REFRIGERANT TYPE	TEMPERATURE (ºF) DISC. AIR	TEMPERATURE (ºF) RET. AIR	AIR VELOCITY [1] (FPM)	SUPERHEAT SETPOINT @ BULB (ºF)	DEFROST # DEF.	DEFROST Electric Fail Safe (Minutes)	DEFROST Electric Temp. (°F)	DEFROST Timed Off Fail Safe (Minutes)	DEFROST Timed Off Temp. (°F)
MDCA-4'	16.6	52	R404A	25	36	295	6 - 8	4	35	47	- - -	- - -
MDCA-6'		52	R404A	25	36	295	6 - 8	4	35	47	- - -	- - -
MMCA-4'	17.2	49	R404A	24	35	140	6 - 8	3	35	47	- - -	- - -
MMCA-6'		49	R404A	24	35	140	6 - 8	3	35	47	- - -	- - -
MMCA-8'		49	R404A	24	35	140	6 - 8	3	35	47	- - -	- - -
MPCA-8'		19.9	R134A	30	42	163	6 - 8	3	40	49	60	47
OSIOA-4'	14.1	12-14	R134A	26	34	182	6 - 8	4	40	47	- - -	- - -
OSIOPA-4' deli	13.6	20	R134A	34	36	200	6 - 8	2	40	47	- - -	- - -
meat	18.0	16	R134A	32	36	200	6 - 8	2	40	47	- - -	- - -
OSIOZA-4'	25.0	12-14	R404A	-24	-10	220	3 -4	2	47	45	- - -	- - -
UPA	37.0	20	R134A	32	42	275	6 - 8	3	- - -	- - -	45	45
O2.5UMA-4' (standard)	32.3	12-14	R134A	29	41	228	6 - 8	3	40	47	- - -	- - -
(solid)	30.2	12-14	R134A	26	40	230	6 - 8	3	40	47	- - -	- - -
(thermopane)	30.3	12-14	R134A	25	37	226	6 - 8	3	40	47	- - -	- - -
O3UMA-4'	32.1	12-14	R134A	26	35	230	6 - 8	3	40	47	- - -	- - -
OMCA	23.1	12-14	R134A	26	34	175	6 - 8	2	45	47	- - -	- - -
OSIA-4'		12-14	R134A	26	34	175	6 - 8	2	45	47	- - -	- - -
O2SIA-4'	14.0	16	R134A	24	35	540	6 - 8	3	45	50	- - -	- - -

PERMANENTLY CONNECTED SELF-CONTAINED MERCHANDISERS

CASE MODEL	24 HR ENERGY USAGE (kWh)	SUCTION PRESSURE @ CASE OUTLET (PSIG)	REFRIGERANT TYPE	TEMPERATURE (ºF) DISC. AIR	TEMPERATURE (ºF) RET. AIR	AIR VELOCITY [1] (FPM)	SUPERHEAT SETPOINT @ BULB (ºF)	DEFROST # DEF.	DEFROST Electric Fail Safe (Minutes)	DEFROST Electric Temp. (°F)	DEFROST Timed Off Fail Safe (Minutes)	DEFROST Timed Off Temp. (°F)
OPA-6'		19.9	R134A	30	45	210	6 - 8	2	40	47	60	47
OPA-8'		19.9	R134A	30	45	210	6 - 8	2	40	47	60	47
OPA-12'		19.9	R134A	30	45	210	6 - 8	2	40	47	60	47
O2.5UMA-8'		40	R22	29	43	225	6 - 8		40	47	45	45
ON5DMA-6'		52	R404A	31	44	215	6 - 8	4	- - -	- - -	42	47
ON5DMA-8'		52	R404A	31	44	215	6 - 8	4	- - -	- - -	42	47
O5DMA-4'		52	R404A	30	44	250	6 - 8	3	- - -	- - -	42	47
O5DMA-6'		52	R404A	30	44	250	6 - 8	3	- - -	- - -	42	47
O5DMA-8'		52	R404A	30	44	250	6 - 8	3	- - -	- - -	42	47
ONNA-47"	37.2	15.5	R134A	35	43	275	6 - 8	4	- - -	- - -	35	48
ONUA-4'	43.9	33	R22	28	39	310	6 - 8	4	- - -	- - -	40	45
ONUA-6'	59.3	33	R22	28	39	310	6 - 8	4	- - -	- - -	40	45
ONIMA-8'		35	R22	25	34	180	6 - 8	3	35	47	- - -	- - -
ONIMA-12'		35	R22	25	34	180	6 - 8	3	35	47	- - -	- - -
ONIMBA-8'		35	R22	25	34	180	6 - 8	3	35	47	- - -	- - -
ONIMBA-12'		35	R22	25	34	180	6 - 8	3	35	47	- - -	- - -
OIMA-8'		35	R22	26	31	140	6 - 8	3	40	42	- - -	- - -
OIMA-12'		35	R22	26	31	140	6 - 8	3	40	42	- - -	- - -
OIMBA-6'		35	R22	26	31	140	6 - 8	3	40	42	- - -	- - -
OIMBA-12'		35	R22	26	31	140	6 - 8	3	40	42	- - -	- - -
OIPA-8'		45	R22	34	48	140	6 - 8	3	- - -	- - -	44	38
OIPA-12'		45	R22	34	48	140	6 - 8	3	- - -	- - -	44	38
OSAA		20	R134A	30	39	235	6 - 8	2	35	49	- - -	- - -

[1] Average discharge air velocity at peak of defrost.

Requirements comply with CRMA conditions.
Due to Our Commitment to Continuous Improvement All Specifications are Subject to Change Without Notice.
ASH3030

2003 SELF-CONTAINED CASE ELECTRICAL AND REFRIGERATION REQUIREMENTS TABLE

Hill PHOENIX EXCELLENCE® ORIGIN2® A DOVER™ COMPANY

MOBILE SELF-CONTAINED					
CASE 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 L5-20 or NEMA 5-20	10 ft
MMCA-4'	120	1	60	NEMA L5-20 or NEMA 5-20	10 ft
MMCA-6'	120	1	60	NEMA L5-20 or NEMA 5-20	10 ft
MMCA-8'	120	1	60	NEMA L5-20 or NEMA 5-20	10 ft
MPCA-8'	120	1	60	NEMA L5-20 or NEMA 5-20	10 ft
OSIOA-4'	120	1	60	NEMA L5-20 or NEMA 5-20	10 ft
OSIOPA-4'	120	1	60	NEMA L5-20 or NEMA 5-20	10 ft
OSIOZA-4'	120	1	60	NEMA L5-30	10 ft
UPA-8'	120	1	60	NEMA L5-30	10 ft
O2.5UMA-4'	120	1	60	NEMA L5-20 or NEMA 5-20	10 ft
O3UMA-4'	120	1	60	NEMA L5-20 or NEMA 5-20	10 ft
OMCA	120	1	60	NEMA L5-20 or NEMA 5-20	10 ft
OSIA-4'	120	1	60	NEMA L5-20 or NEMA 5-20	10 ft
O2SIA-4'	120	1	60	NEMA L5-20 or NEMA 5-20	10 ft

PERMANENTLY CONNECTED SELF-CONTAINED						
CASE MODEL	Volts	Phase	Hz	Wire	Minimum Circuit Ampacity	Maximum Fuse Size
OPA-6'	208/230	1	60	3-wire + ground	12.5	20
OPA-8'	208/230	1	60	3-wire + ground	17.6	25
OPA-12'	208/230	1	60	3-wire + ground	21.2	30
O2.5UMA-8'	208	1	60	3-wire + ground	19.81	25
ON5DMA-6'	208/230	1	60	3-wire + ground	29.36	30
ON5DMA-8'	208/230	1	60	3-wire + ground	29.83	30
O5DMA-4'	208/230	1	60	3-wire + ground	25.7	30
O5DMA-6'	208/230	1	60	3-wire + ground	29	40
O5DMA-8'	208/230	1	60	3-wire + ground	31.4	40
ONNA-47"	208/230	1	60	3-wire + ground	18.5	25
ONUA-4'	208/230	1	60	3-wire + ground	22.2	30
ONUA-6'	208/230	1	60	3-wire + ground	26.7	35
ONIMA-8'	208/230	1	60	3-wire + ground	23.3	30
ONIMA-12'	208/230	1	60	3-wire + ground	29.1	35
ONIMBA-8'	208/230	1	60	3-wire + ground	23.3	30
ONIMBA-12'	208/230	1	60	3-wire + ground	29.1	35
OIMA-8'	208/230	1	60	3-wire + ground	27.9	40
OIMA-12'	208/230	1	60	3-wire + ground	34.2	40
OIMBA-6'	208/230	1	60	3-wire + ground	21.3	30
OIMBA-12'	208/230	1	60	3-wire + ground	33.1	40
OIPA-8'	208/230	1	60	3-wire + ground	21.5	30
OIPA-12'	208/230	1	60	3-wire + ground	37.6	50
OSAA	120	1	60	2-wire + ground	9.74	15

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