

MOBILE UTILITY MERCHANDISER INSTALLATION & OPERATIONS MANUAL

02.5UMA (R-290)



ORIGIN²

WARNING / FOR YOUR SAFETY

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

WARNING

R-290 flammable refrigerant in use. Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment.

Table of Contents

General Information	1	Fans & Case Cleaning	6
Case Installation	2	Troubleshooting	7-8
Case Connections	3	Safety Devices & Service.....	9-11
Pre-Power Checklist	4	Parts Ordering	12
Airflow & Defrost	5	Appendix	13

To ensure proper functionality and optimum performance, it is strongly recommended that Hillphoenix display cases be installed/serviced by qualified and certified technicians who have experience working with commercial refrigerated display merchandisers and storage cabinets. For a list of Hillphoenix authorized installation/service contractors, please visit our Web site: www.hillphoenix.com



Hillphoenix[®]

a **DOVER** company

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LIABILITY NOTICE

For Cases with Shelf Lighting Systems

Hillphoenix shelf lighting systems as well as display cases with alternative shelf lighting are not designed to withstand direct or indirect exposure to water or other liquids systems except Clearvoyant™ 4 with the proper use of dielectric grease . The use of a misting system or water hose on a display case with an unapproved shelf lighting system, resulting in the direct or indirect exposure of the lighting system to water, can lead to a number of serious issues (including, without limitation, electrical failures, fire, electric shock, and mold) in turn resulting in personal injury, death, sickness, and/or serious property damage (including, without limitation, to the display case itself, to the location where the display case is situated [e.g., store] and to any surrounding property). Do not use misting systems, water hoses or other devices that spray liquids in Hillphoenix display cases with unapproved lighted shelves.

If a misting system or water hose is installed or used on a display case with a shelf lighting system that is not Clearvoyant™ 4 with the proper use of dielectric grease, then Hillphoenix shall not be subject to any obligations or liabilities (whether arising out of breach of contract, warranty, tort [including negligence], strict liability or other theories of law) directly or indirectly resulting from, arising out of or related to such installation or use, including, without limitation, any personal injury, death or property damage resulting from an electrical failure, fire, electric shock, or mold.

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WARNING: UNDER NO CIRCUMSTANCES should any component be replaced or added without consulting Hillphoenix Field Service Engineering. Utilizing improper components may result in serious injury to persons or damage to the system.

Important

At Hillphoenix®, the safety of our customers and employees, as well as the ongoing performance of our products, are top priorities. To that end, we include important warning messages in all Hillphoenix installation and operations handbooks, accompanied by an alert symbol paired with the word "DANGER", "WARNING", or "CAUTION."

All warning messages will inform you of the potential hazard; how to reduce the risk of case damage, personal injury or death; and what may happen if the instructions are not properly followed.

Hillphoenix® recommends that the installers and technicians installing and conducting maintenance of our refrigerated cases must take reasonable care of their own health and safety. As such Hillphoenix® requires the use of safety glasses, ear plugs, steel toed shoes, gloves, arm sleeves, knee guards, back supports and other such personal protective equipment as deemed reasonable for one's safety and protection during the installation and maintenance of our cases or as otherwise required by local ordinance, the general contractor or other governing authority.

DANGER

Indicates an immediate threat of death or serious injury if all instructions are not followed carefully.

WARNING

Indicates a potential threat of death or serious injury if all instructions are not followed carefully.

CAUTION

Indicates that failure to properly follow instructions may result in case damage.

Revision History

Rev.	Date	Change Description	Author
1.00	02/28/25	New R-290 manual	T.A.G.
1.01	05/28/25	New tech sheets	T.A.G.
1.02	02/10/26	New GFCI information	T.A.G.

Thank you for choosing Hillphoenix for your food merchandising needs. This manual contains important technical information and will assist you with the installation and operation of your new Hillphoenix refrigerated display cases. By closely following the instructions, you can expect peak performance; attractive fit and finish; and long case life.

We are always interested in your suggestions for improvements (e.g. case design, technical documents, etc.). Please feel free to contact our Marketing Services group at the number listed below. Thank you for choosing Hillphoenix, and we wish you the very best in outstanding food merchandising.

CASE DESCRIPTION

This manual specifically covers the O2.5UMA mobile self-contained case.

STORE CONDITIONS

Hillphoenix cases are designed to operate in an air-conditioned store that maintains a 75°F (24°C) store temperature and 55% (max) relative humidity (CRMA conditions). Case operation will be adversely affected by exposure to excessively high ambient temperatures and/or humidity.

REFRIGERATION SYSTEM OPERATION

Air-cooled condensing units require adequate ventilation for efficient performance. Minimum condensing temperatures should be no less than 70°F.

THIS UNIT CONTAINS R-290 FLAMMABLE REFRIGERANT. USE CAUTION WHEN HANDLING, MOVING OR SERVICING THE DISPLAY CASE. AVOID DAMAGING THE REFRIGERANT TUBING WHICH COULD INCREASE THE RISK OF A LEAK.

SHIPPING CASES

Transportation companies assume all liability from the time a shipment is received by them until the time it is delivered to the consumer. Our liability ceases at the time of shipment.

RECEIVING CASES

Examine fixtures carefully and in the event of shipping damage and/or shortages, please contact the Service Parts Department at the number listed to the right.

CASE DAMAGE

Claims for obvious damage must be 1) noted on either the freight bill or the express receipt and 2) signed by the carrier's

agent; otherwise, the carrier may refuse the claim. If damage becomes apparent after the equipment is unpacked, retain all packing materials and submit a written request to the carrier for inspection within 14 days of receipt of the equipment.

Failure to follow this procedure will result in refusal by the carrier to honor any claims with a consequent loss to the consumer.

If a UPS shipment has been damaged, retain the damaged material, the carton and notify us at once. We will file a claim.

LOST/MISSING ITEMS

Equipment has been carefully inspected to insure the highest level of quality. Any claim for lost/missing items must be made to Hillphoenix within 48 hours of receipt of the equipment. When making a claim please use the number listed below.

SERVICE PARTS & TECHNICAL SUPPORT

For service parts questions regarding our cases, please contact our Service Parts Department at 1-833-372-7871 or orderparts@doverfoodretail.com

For technical questions regarding our cases, please contact our Technical Support Department at 1-833-280-5714.

CONTACTING THE FACTORY

If you need to contact Hillphoenix regarding a specific fixture, be certain that you have both the case model number and serial number. This information can be found on the data tag, located at the top-left interior, rear exterior panel or interior rear lower storage of the case. *Location may vary based on case design.* When you have this information, call the toll-free number listed above.

Hillphoenix
1925 Ruffin Mill Rd
Colonial Heights, VA 23834
Mon.-Fri. (8 a.m. to 5 p.m.)
Tel: 804-526-4455/Fax: 804-526-1926
www.hillphoenix.com

CASE INSTALLATION

INSTALLATION

Do not locate the case next to an area of measurable air flow. Examples of these locations would be directly under an air vent or near a main entrance or exit. If the cases are set against a wall, be sure to allow a one foot spacing between the rear sill and the wall to provide sufficient airflow to the condenser.

All of the exterior panels are shipped attached to the case. If access to the area directly under the tank is required, the panels can be easily removed in the following manner. The front and rear panels are screwed on. The screws are located under the 1" plug buttons in the face of each panel. The front and rear panels must be removed in order to remove the side panels, which are also screwed on. A drain pan access panel is located in the right hand side panel and is attached with quarter turn bolts. See Fig. 1 below for details on panel attachment.

The case height can be adjusted by removing the side panels and lowering the adjustable legs. Simply lift up the side of the case with a johnson bar, pull out the cotter pin holding the leg in place, adjust the leg to a desired height, and replace the cotter pin through the frame and leg. See Fig. 2 below.

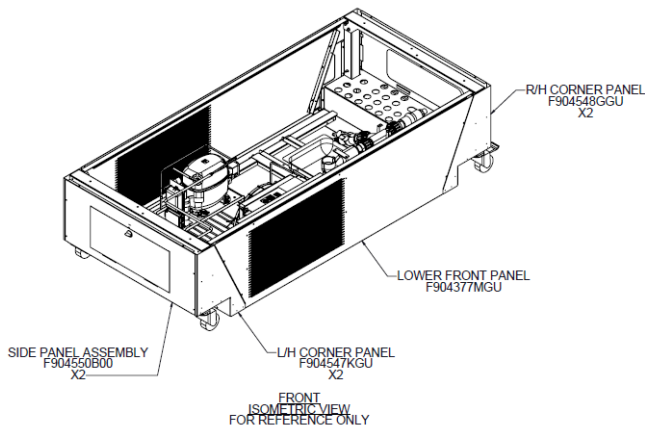


Fig. 1 Panel attachment

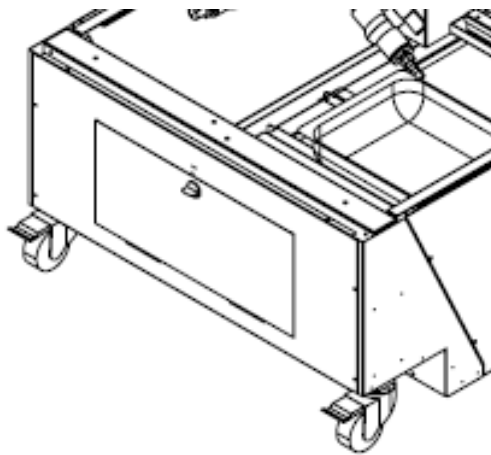


Fig. 2 Cotter pin and leg

REFRIGERATION COMPONENTS

Refrigeration components for the mobile self-contained cases are easily accessible in the tank and underneath the case. The suction line 1/4" access valve is located in the left hand front side of the tank and is accessible without lifting the fan plenum. This component may be reached by lifting only the left hand deck pan which minimizes the need to remove product.

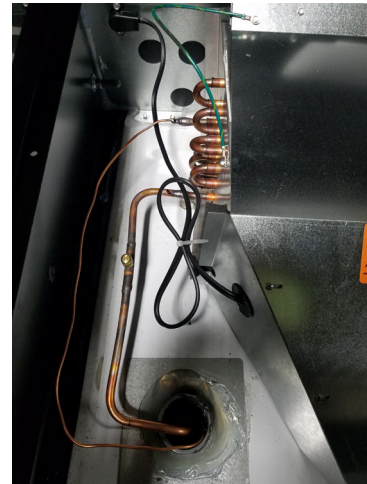


Fig. 3 Access valve

PLUMBING

The “P” trap assembly is attached to the case at the factory so no assembly is required. The standard drain assembly, as shown in Fig. 4, is designed to allow two options for case run off. The drain valve directs the case drainage either to the drain pan or the store drainage system. The drain pan valve is accessed through the right hand side panel, see Fig. 5, and has a two-way slide actuator. Remove the red lock on the valve stem, slide the plunger down and twist to close off valve to the evaporator pan. Twist the valve stem, pull the plunger up, and clip the red plastic lock back onto the valve stem to open the drain to the evaporator pan.

The case drain is located at the front right of the case for convenient access. Should any future maintenance issues arise, it is important to note the outlet is specially molded of PVC material and the “P” trap is constructed of PVC. Care should be given to make certain that all connections are water tight and sealed with appropriate PVC primer and PVC cement. Make sure the case is correctly leveled to assure proper drainage.

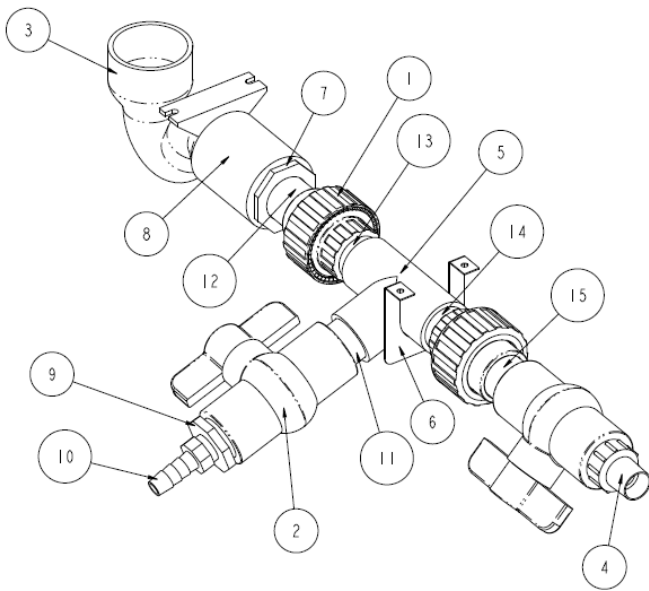


Fig. 4 Standard drain assembly

ELECTRICAL HOOK-UP

The cases come pre-wired with a NEMA-Type 120 volt, three prong, twist-lock plug.

The ON/OFF switch for the case is located on the left side of the case. Open the access panel, the switch is mounted in the junction box.

⚠ DANGER

SHOCK HAZARD

Always disconnect power to case when servicing or cleaning. Failure to do so may result in serious injury or death.

⚠ CAUTION

This case must be powered only in electrical installations with ground fault circuit interrupter (GFCI) circuit breakers or residual current device (RCD).

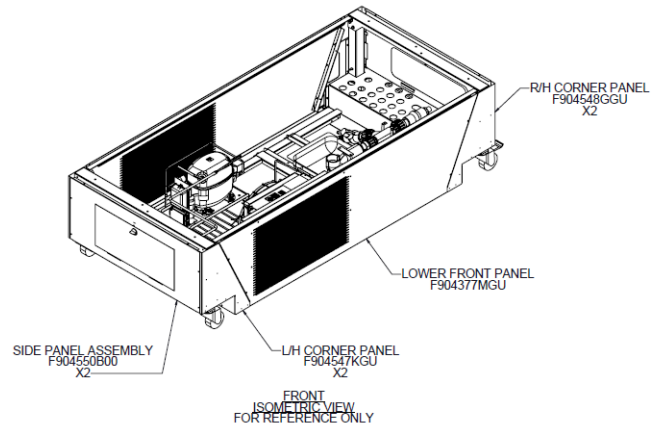


Fig. 5 Panel assembly

PRE-POWER CHECKLIST

Before powering-up the case, be certain that all of the steps listed below have been completed to ensure proper case functionality, safety and compliance with warranty terms.

- Have you thoroughly examined the case for shipping damage? (see pg. 1)
- Have you removed and discarded the casters? (see pg. 2)
- Have you checked the vertical plumb of the case? The horizontal level? (see pg. 3)
- Have you applied the foam tape gasket and sealant between adjoining cases? (see pg. 3)
- Have you sealed the case-to-case joints by applying caulk and acrylic tape to the pipe-chase seam? (see pg. 3)
- Have you removed the shipping blocks from the refrigeration lines? (see pg. 3)
- Have you sealed any tank penetrations? (see pg. 3)



ATTENTION!

Be certain to clear the case of any loose packaging or case materials before energizing the case. Failure to do so may result in case damage or malfunction.



ATTENTION!

Be certain that all piping and electrical connections comply with local codes.



ATTENTION!

Installation of 3rd-party materials may result in diminished case performance.

AIR FLOW & PRODUCT LOAD

Do not overload the food product display so that it impinges on the air flow pattern—doing so will result in diminished performance and loss of proper temperature levels, particularly when the discharge honeycomb and return air grille are covered. Please keep products within the load limit line shown on the diagram below (Fig. 6).

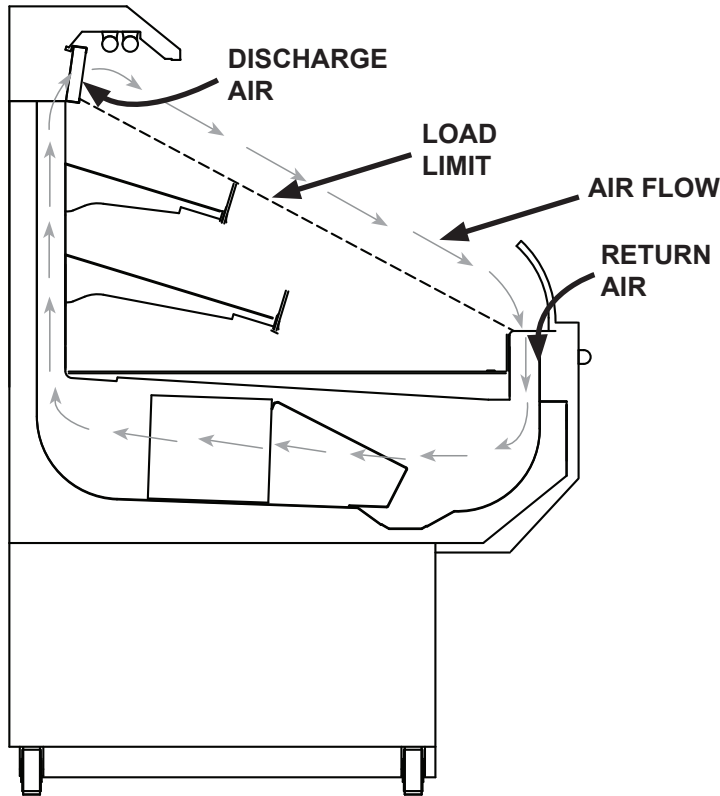


Fig. 6 Airflow

DEFROST & TEMPERATURE CONTROLS

Hillphoenix cases utilize electric, hot gas, or timed-off defrost. The primary components used for the defrost cycle are the various defrost termination sensors, which work to terminate the defrost cycle in the case. These controls may include 1) a Klixon® thermostat, 2) a sensor probe, or 3) a dial-type thermostat with sensor bulb (the thermostat will always be mounted with the electrical controls of the case, either in an electrical junction box or in the electrical raceway, etc.

If electric defrost is used, the defrost termination sensor will be located either behind the rear baffle or mounted to the coil. If hot gas defrost is used, the defrost termination sensor will be mounted to the dump line—the sensor should always be mounted on the coil-side of the check valve or solenoid valve. Finally, if timed-off defrost is used, the refrigeration cycle is simply turned off by the case controls for a specified amount of time; therefore, there are generally no active defrost components utilized.

The discharge air probe monitors the temperature of the discharge air and may be used as the defrost termination sensor. The probe can generally be found behind the rear baffle, in the upper baffle, or in front of the honeycomb. **NOTE:** if the discharge air probe is used for defrost termination, none of the termination sensors listed earlier will be installed in the case.

For more detailed information on suggested defrost times and settings, see **Appendix A**. Further adjustment may be

FANS & CASE CLEANING



DANGER!

SHOCK HAZARD

Always disconnect power to case when servicing or cleaning. Failure to do so may result in serious injury or death.



CAUTION!

Exercise extreme caution when working in a case with the coil cover removed. The coil contains many sharp edges that can cause severe cuts to the hands and arms.

FANS

The fans are 8" in diameter. It is important that the fan speed be maintained as specified. Do not attempt a field modification by altering the fan speed as this will affect case performance.

Fan motors may be changed with an easy two-step process without lifting up the plenum, thereby avoiding the necessity to unload the entire product display to change the fan assembly:

1. Unplug the fan motor (Fig. 7), easily accessible outside the plenum. Be certain to push the power cord back through the plenum opening to avoid damage to the power cord.
2. Remove fasteners, then lift out the entire fan basket.

Reverse procedure when re-installing fan basket.

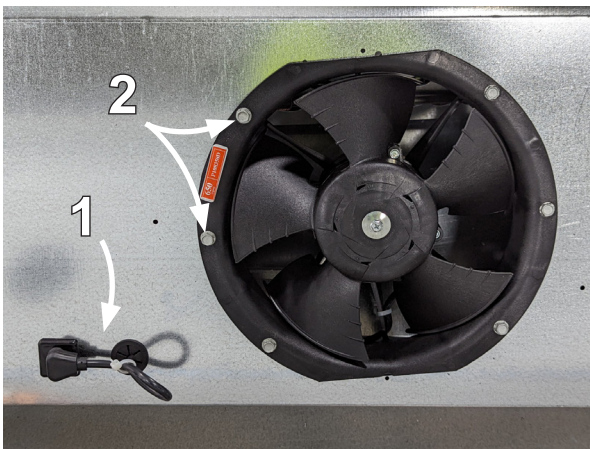


Fig. 7 Fan basket



ATTENTION!

Power cord must be pushed back through the plenum opening before removing the fan basket. Failure to do so may result in damage to the power cord.

CLEANING PROCEDURES

A periodic cleaning schedule should be established to maintain proper sanitation, insure maximum operating efficiency, and avoid the corrosive action of food fluids on metal parts that are left on for long periods of time. We recommend cleaning once a week.

- Be certain that all electricity to the case is turned off before servicing or cleaning to avoid electrical shock. In some cases, more than one switch may need to be turned off to completely de-energize the case.
- All surfaces pitch downward to a deep-drawn drain trough, funneling liquids and other debris to the waste outlet. Check waste outlet before starting the cleaning process to insure it is unclogged. Avoid introducing water faster than the case drain can carry it away.
- Lift the fan plenum to gain access to the coil for cleaning and maintenance (Fig. 8).

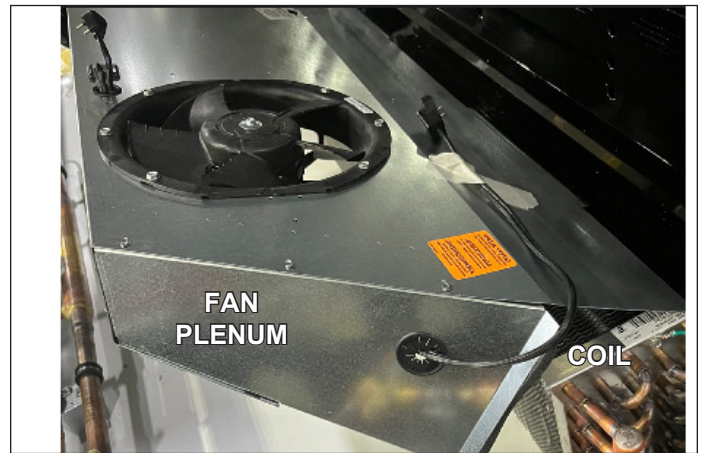


Fig. 8 Single-piece fan plenum and coil cover

- To clean the lights, shut off the lights in the case, then wipe them down with a soft, damp cloth. Avoid using harsh or abrasive cleaners as they may damage the lights. Be certain that the lights are completely dry before re-energizing.
- If any potentially harmful cleaners are used, be certain to provide a temporary separator (e.g., cardboard, plastic wrap, etc.) between those cases that are being cleaned and those that may still contain product.
- Avoid spraying cleaning solutions directly on electrical connections.
- Allow cases to be turned off long enough to clean any frost or ice from coil and pans.
- Remove kickplate and clean underneath the case with a broom and a long-handled mop. Use warm water and a disinfecting cleaning solution when cleaning underneath the cases.

PARTS SUBJECT TO WEAR & SPARE PARTS

Most spare parts carry clear, complete ID information. It is important that the refrigerated case parts be replaced by analogous parts of equivalent safety and quality; to order spare parts please contact Hillphoenix, stating the case model and serial number, found in this manual or on the case ID plate, and provide a description of the component and the desired quantity. Refer to the Parts section in the back of the manual for parts ordering and to identify parts that may need to be replaced.

CAUTION
Do not pressure wash equipment as damage to electrical components may result.

INSTRUCTIONS FOR PERSONNEL

In the Event of General Emergency

Immediately inform those in the vicinity of the perceived danger, gesticulating if necessary; cut the electrical power to the cabinet.

In the Event of Fire

In the event that the refrigerated case catches fire or is involved in a fire it is possible to use an extinguisher with a powder-type or CO2 extinguishing agent.

Resetting the Case

To restore normal operation it is necessary to eliminate all the causes of the emergency situation; if necessary repair or replace damaged parts.

Note: If safety devices are tripped it will be necessary to identify the cause before continuing work.

CAUTION
Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

CAUTION
R-290 flammable refrigerant in use. Improper installation, adjustment, alteration, service or maintenance can cause property damage, injury or death. Read the installation operating and maintenance instructions thoroughly before installing or servicing this equipment.

! DANGER
FLAMMABLE
DANGER - Risk of Fire or Explosion. Flammable Refrigerant Used. Do Not Use Mechanical Devices To Defrost Refrigerator. Do Not Puncture Refrigerant Tubing.



FAILURES AND TROUBLESHOOTING

Failures

In the event of a failure of mechanical/electrical/refrigeration parts the initial safety conditions must be restored immediately by replacing or repairing such faulty parts.

TABLE OF FAILURES AND TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
The refrigerated cabinet does not work.	<ol style="list-style-type: none"> 1. The main circuit breaker is set to OFF; 2. The power line between refrigerated cabinet and power socket is faulty; 3. The switch on the refrigerated cabinet control panel switch is not on. 	<ol style="list-style-type: none"> 1. Turn the main power on; 2. Make sure the plug is inserted properly in the socket; 3. Turn the power switch on the refrigerated cabinet panel ON.
The refrigeration effect of the refrigerated cabinet is poor.	<ol style="list-style-type: none"> 1. The product door is not closed tightly; 2. The product temperature is set too high. 3. The product is exposed to direct sunlight or close to hot objects; 4. The goods are placed higher than the load line 	<ol style="list-style-type: none"> 1. Close the door tightly; 2. Lower the product temperature; 3. Keep the product in a cool place; 4. Place goods below the load line
The outer surface of the product is hot.	The outer surface of the product is wrapped with a condenser, which will generate heat during refrigeration.	This phenomenon is normal.


(Cont'd) NEXT PAGE

TROUBLESHOOTING

TABLE OF FAILURES AND TROUBLESHOOTING (Cont'd)

PROBLEM	POSSIBLE CAUSE	SOLUTION
The product is noisy	<ol style="list-style-type: none"> 1. The product is in the high-frequency operation stage at the initial stage of operation; 2. The product is in the defrosting stage; 3. The product is not placed stably. 	<ol style="list-style-type: none"> 1. After one to two hours of operation, the noise will be significantly reduced; 2. The defrosting cycle of the product is 24 hours. In the defrosting stage, high noise is a phenomenon of genuine production; 3. Adjust the foot to make the cabinet stable.
Condensation occurs on the glass door	The ambient temperature and humidity of the product are too high	The operating environment of the product is 75°F/55RH. In case of excessive humidity, please wipe off the water stains on the surface with a rag
There is peculiar smell inside the product	<ol style="list-style-type: none"> 1. New products will smell like plastic; 2. Check whether there are deteriorated goods in the cabinet; 3. The product has not been cleaned for a long time. 	<ol style="list-style-type: none"> 1. After the product is used for a period of time, the smell will disappear naturally; 2. Clean up spoiled food in time; 3. Clean the product regularly.

SAFETY DEVICES

 **WARNING**

It is absolutely forbidden for the user to tamper with safety devices. Before using the refrigerated case check that mechanical safety covers are properly in place. Any tampering shall render the warranty null and void and exonerate Hillphoenix from any liability with regard to users of the refrigerated case.

Only maintenance personnel may carry out maintenance tasks involving safety devices. These tasks are listed below:

SAFETY DEVICE	SCOPE OF INTERVENTION	ACTION
Incorporated over-pressure cut-out	On incorporated condenser unit	Cuts the electrical power of the compressor if the pressure of the refrigerant rises above the safety limits.
Ignition proof zone established around electrical junction box	On incorporated Condensing unit Condensor Fan	Prevents leak access to electrical components. Fans operate 100% of the times.
Case Internal leak mitigation system	External Blower system connected to the Tank drain adapter	Facilitates evacuation and dissipation of leaked charge during defrost cycle
Safety Housing (on cases with greater than 150gm charge) to be removed with tools for servicing	Sheet metal housing on Condensing unit	Prevents access to and protects piping in the Condensing Unit
Piping Cover (on cases with greater than 150gm charge) to be removed with tools for servicing	Sheet metal housing on external Copper piping	Prevents access to and protects external piping at the rear of the case

DESCRIPTION OF RESIDUAL DANGERS AND RISK

Residual Dangers

Dangers that have not been reduced/eliminated with the safety measures adopted on the refrigerated case can nevertheless be reduced/eliminated as long as users apply proper managerial practices.

- Ensure that all safety warning and labels are always in good condition; inspect them periodically and have them replaced whenever necessary.
- Do not install any spare parts that are not identical to the originals or of equivalent performance.
- Do not carry out any modifications or structural work without approval from Hillphoenix or a qualified field service technician.

- Should the refrigerated case be dented, inspect the structure visually or have qualified personnel carry out an inspection.

After a long period of disuse have a qualified field service technician carry out an inspection of the case to check that it is in good condition and working properly.

Residual Risks


While the refrigerated case has been designed to ensure maximum safety, there nevertheless remain some residual risks. Hillphoenix has identified the main **dangers and residual risks for users and maintenance personnel** as follows in the “Scheduled Maintenance Table” on the next page.

REFRIGERANT

This piece of equipment uses an R-290 Refrigeration system. This equipment has been clearly marked on the serial tag the type of refrigerant that is being used. There is also a warning label stating that the unit contains R-290 refrigerant.

No smoking or open flames when servicing this equipment. If needed, use a Class B (CO2 or dry powder) type fire extinguisher.

Only an authorized service technician, certified in R-290 system should service this equipment.

 **DANGER**

SHOCK HAZARD

Always disconnect power to case when servicing. Failure to do so may result in injury or death.

Use an R-290 approved fan for constant ventilation while working.

- If an R-290 approved fan is not available, make sure fan is at least 10’ away from cabinet.
- Remove at least two panels from the base to allow air flow through the unit.
- Point the fan towards the bottom of the work area as R-290 is heavier than air.

The work area must be free from sources of ignition such as open flames and sparking electrical devices, like light switches. Keep a 10’ perimeter around the case of clearance.

The propane gas used in the unit has no odor. The lack of smell does not indicate a lack of escaped gas.

Recommend posting a “Flammable Refrigerant” placard in the area prior to servicing.

MANIFOLD SET

A R-134a manifold set can be used for servicing this equipment.

REFRIGERANT RECOVERY

Follow all national and local regulations for R-290 refrigerant recovery.

SCHEDULED MAINTENANCE TABLE

DESCRIPTION OF RESIDUAL RISK	CAUSE	SAFETY MEASURES
Danger of falls in area surrounding the cabinet	Presence of: stairs, columns etc. and/or slippery floors and objects and/or work tools	Mark out the relevant zones and highlight them with warning signs and symbols (e.g. yellow/black striped marker tape on stairs etc.) that are visible during both routine use and maintenance.
Danger of objects accidentally falling	Haphazard storage of tools/objects.	Use tool boxes in work areas. Ensure personnel are trained.
Danger of injury to hands, arms, legs and head	During cleaning and maintenance there may be objects or parts of the cabinet protruding from the case itself (e.g. glass covers open during cleaning)	Mark out the work area with appropriate barriers. Always use the recommended personal safety devices.
Risk of refrigerating gas leaks	Accidental damage to pipes	Immediate shutdown of case operation. Disconnect electrical power supply. Contact a service technician.

LEAKING CHECKING AND REPAIR

Leak check an R-290 system the same way you would an R-134a or R-404a system with the following exceptions.

1. Do not use a Halide leak detector on an R-290 system.
2. Electronic leak detector must be designated specifically for combustible gas.

A quality combustible gas leak detector is mandatory for hydro-carbon service work. Leak detector should be placed near the bottom of the cabinet, as R-290 is heavier than air.

When repairing a leak, it is recommended using oxygen free dry nitrogen with a trace gas not exceeding 200PSI.

When accessing an R-290 system, proper charge is to be weighed into the system and the system is to be leak checked afterwards.

The R-290 equipment must have red process tubes and other devices through which the refrigerant is serviced, such as any service port. This color marking must remain on the equipment. If marking is removed, it must be replaced and extended at least 2.5 centimeters (1") from the compressor.

CAUTION

Component parts shall be replaced with like components. Service work shall be done by factory authorized service personnel, so as to minimize the risk of possible ignition due to incorrect parts or improper service.

CHARGING

Follow the charge amount specified on the data tag. It is recommended to use the shortest hoses possible to prevent under-charging.

- Component parts shall be replaced with like components. Service work shall be done by factory authorized service personnel, so as to minimize the risk of possible ignition due to incorrect parts or improper service.
- Ensure the system is sealed and leak checked
- Evacuate system to a minimum 500 microns
- Weigh in correct charge
- Leak check the system again
- Bleed the refrigerant from the high side hose to the low side hose
- Disconnect the hoses
- Remove line taps

DANGER

FLAMMABLE

DANGER - Risk of Fire or Explosion. Flammable Refrigerant Used. Do Not Use Mechanical Devices To Defrost Refrigerator. Do Not Puncture Refrigerant Tubing.



 **CAUTION**

It is highly recommended that a technician servicing a case with HC refrigerant is aware of safety considerations and maintenance procedures on how to safely handle flammable refrigerants.

DE-ICING EVENTS

Depending on the severity of the icing event, there may not be enough capacity in the pan to accommodate all of the water. The recommended procedure is for the service technician to:

1. Carry a 3/8" vinyl tube
2. Connect this tube to the outlet of the pump
3. Pump excess water to a drain or into a 5 gallon bucket

If the technician does not have this hose on-hand, then they can use the one attached to the pump by disconnecting it at the top of the case and reinstalling it when finished.

Hillphoenix®

a **DOVER** company

Contact the Service Parts Department at:

1-833-372-7871

or

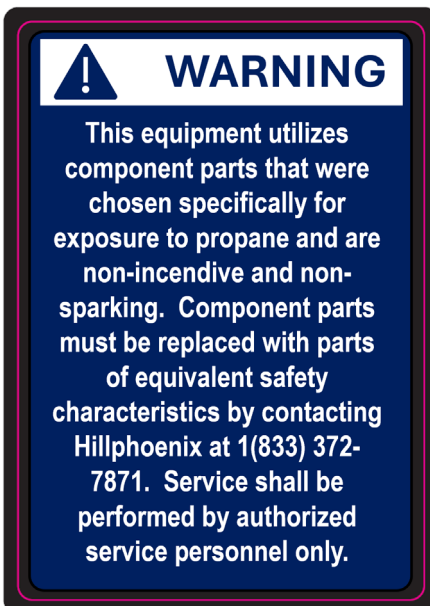
orderparts@doverfoodretail.com

Provide the following information about the part you are ordering:

- **Model number and serial number*** of the case for which the part is intended.
- **Length of the part** (if applicable).
- **Color of part** (if painted) or color of polymer part.
- **Whether part is for left or right-hand application.**
- **Quantity**

***Data tag is located on the left end exterior panel or top interior of the case.**

If the parts are to be returned for credit, contact the Parts Department. Do not send parts without authorization.



A **TECHNICAL REFERENCE SHEETS**

B **WIRING DIAGRAM**

C **SPORLAN CHART**

D **CONTROLLER SETTINGS**

E **PARTS LIST**

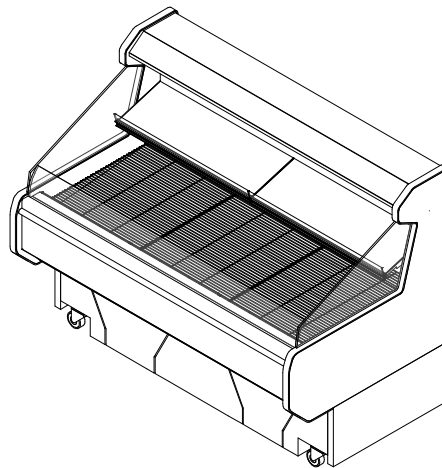
O2.5UMA-NRG

4' & 6' Multi-Deck Mobile Self-Contained Merchandiser
Bakery/Dairy/Cut Produce/Meat/Seafood/Deli



GENERAL NOTES:

- "---" indicates that the feature is not an option on this case model and/or the data is not yet available yet.
- LED lights only.
- Maximum of 2 rows of standard output LED lighted shelves.
- Nose lights are not available.
- WARNING: R-290 flammable refrigerant in use. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment.



SHIPPING WEIGHT	
Case	Weight
O2.5UMA-NRG	---



ALL MEASUREMENTS ARE TAKEN PER ASHRAE-72 SPECIFICATIONS. HILLPHOENIX REFRIGERATED DISPLAY CASES FOR SALE IN THE UNITED STATES MEET OR EXCEED DEPARTMENT OF ENERGY 2017 REQUIREMENTS.

O2.5UMA-NRG

Rev. Date	Rev. #	Rev. Title
05-15-25	5	DATA UPDATE
05-02-25	4	DATA UPDATE



a **DAVEITA** company

O2.5UMA-NRG

4' & 6' Multi-Deck Mobile Self-Contained Merchandiser
Bakery/Dairy/Cut Produce/Meat/Seafood/Deli



SYSTEM REQUIREMENTS								
Case Length	Volts	Wiring Type	Phase	Frequency (Hz)	Plug	Minimum Circuit Ampacity	Maximum Overcurrent Protection	24hr Energy Usage (kWh)
4'	120	2 Wire + Gnd	1	60	NEMA L5-20	16.9	20.0	16.5
6'	120	2 Wire + Gnd	1	60	NEMA L5-20	18.3	25.0	24.9

ELECTRICAL DATA					
Case Length	Fans Per Case	High Efficiency Fans		Drain Pan	
		120 Volts		120 Volts	
		Amps	Watts	Amps	Watts
4'	1	0.42	34	4.2	500
6'	2	0.84	68	4.2	500

LIGHTING DATA				
Case Length	Lights Per Row	Light Length	Standard Power (Cornice or Shelf)	
			120 Volts	
			Amps	Watts
4'	1	4'	0.05	5.90
6'	2	3'	0.08	9.40

GUIDELINES AND CONTROL SETTINGS				
Case Length	Suction Pressure @ Case Outlet (psig)	Superheat Set Point @ Bulb (°F)	Discharge Air (°F)	Discharge Air Velocity (FPM)
4'	50	6 - 8	34	110
6'	50	6 - 8	34	110

CONDENSING UNIT DATA								
Case Length	Volts	Phase	Frequency (Hz)	Horsepower	Running Load Amps (RLA)	Locked Rotor Amps (LRA)	Refrigerant	Refrigerant (g)
4'	120	1	60	1/2	8.37	40.2	R-290	120
6'	120	1	60	3/5	8.98	56.6	R-290	126

DEFROST CONTROLS		
Defrosts Per Day	Timed-Off Defrost	
	Fail-Safe (Min)	Termination Temp (°F)
6	45	47

NOTES:

- "---" indicates that the data is not yet available. R-290 has shown to be more efficient than typical HFC refrigerants. Finalized Energy Data will be available at a later date.
- Listed discharge air velocity represents the average velocity immediately after defrost completion using a Testo 410i vane anemometer with anemometer air scoop (HP part number P109185M) positioned adjacent to the interior edge of the discharge honeycomb.
- The recommended evaporator temperature and defrost settings may need to be adjusted based on system setup, store conditions, etc. The minimum recommended evaporator temperature is 4°F below the listed evaporator temperature.



ALL MEASUREMENTS ARE TAKEN PER ASHRAE-72 SPECIFICATIONS. HILLPHOENIX REFRIGERATED DISPLAY CASES FOR SALE IN THE UNITED STATES MEET OR EXCEED DEPARTMENT OF ENERGY 2017 REQUIREMENTS.

O2.5UMA-NRG

Rev. Date	Rev. #	Rev. Title
05-15-25	5	DATA UPDATE
05-02-25	4	DATA UPDATE



O2.5UMA-NRG

4' & 6' Multi-Deck Mobile Self-Contained Merchandiser
Bakery/Dairy/Cut Produce/Meat/Seafood/Deli



REAR SILL OPTIONS		END OPTIONS	
<p>STANDARD REAR SILL</p> <p>8 1/2" [21.7 cm]</p>	<p>SOLID END</p>	<p>FULL VIEW END</p>	
<p>16" REAR SILL (REAR DISCHARGE)</p> <p>16" [40.7 cm]</p>			
FRONT OPTIONS			
ORIGIN 2 FRONT	CLASSIC 2 FRONT	FLAT FRONT ANGLED TOP	FLAT FRONT FLAT TOP
<p>STANDARD FRONT</p> <p>33" [83.9 cm]</p>	<p>C2 POLYMER FRONT</p> <p>33" [83.9 cm]</p>	<p>STANDARD FRONT</p> <p>34 1/8" [86.6 cm]</p>	<p>STANDARD FRONT</p> <p>33" [83.9 cm]</p>
<p>STANDARD FRONT</p> <p>33" [83.9 cm]</p>	<p>C2 METAL FRONT</p> <p>33" [83.9 cm]</p>	<p>6" THERMOPANE FRONT</p> <p>39 3/8" [100.2 cm]</p>	<p>6" THERMOPANE FRONT</p> <p>39 1/8" [99.3 cm]</p>
			<p>6" PLEXIGLAS FRONT</p> <p>39 1/8" [99.5 cm]</p>

NOTES:

- Front and rear sill heights vary with base frame height.
- Extended front sills are required on meat applications to maintain proper product temperature.



COMPONENT

ALL MEASUREMENTS ARE TAKEN PER ASHRAE-72 SPECIFICATIONS. HILLPHOENIX REFRIGERATED DISPLAY CASES FOR SALE IN THE UNITED STATES MEET OR EXCEED DEPARTMENT OF ENERGY 2017 REQUIREMENTS.

O2.5UMA-NRG

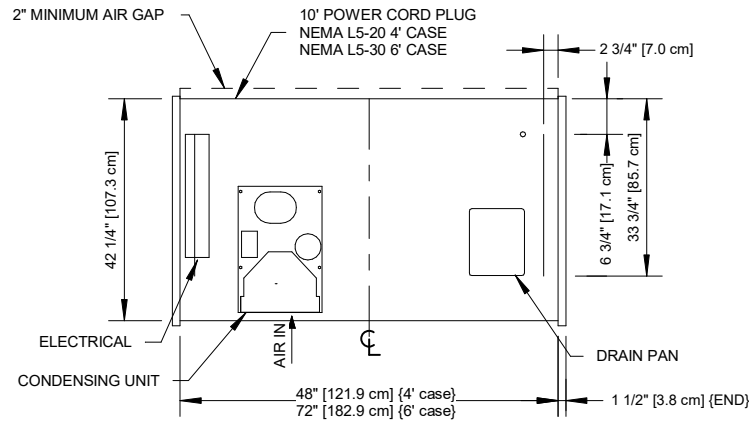
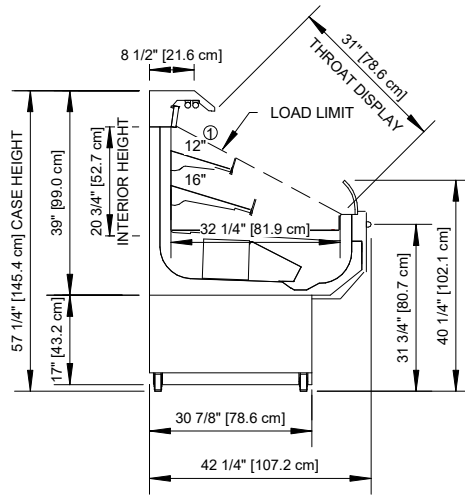
Rev. Date	Rev. #	Rev. Title
05-15-25	5	DATA UPDATE
05-02-25	4	DATA UPDATE



a DAVIDA company

O2.5UMA-NRG

4' & 6' Multi-Deck Mobile Self-Contained Merchandiser
Bakery/Dairy/Cut Produce/Meat/Seafood/Deli



NOTES:

- * :STUB-UP AREA
- ** :RECOMMENDED STUB-UP CENTERLINE FOR ELECTRICAL AND HUB DRAINS AVAILABLE UPON REQUEST
- ① :AVAILABLE SHELF SIZES: 10", 12", 14" & 16"

- Ends add approximately 1 inch to case height.
- Product on top shelf should be 3 inches below discharge.



COMPONENT
ALL MEASUREMENTS ARE TAKEN PER ASHRAE-72 SPECIFICATIONS. HILLPHOENIX REFRIGERATED DISPLAY CASES FOR SALE IN THE UNITED STATES MEET OR EXCEED DEPARTMENT OF ENERGY 2017 REQUIREMENTS.

O2.5UMA-NRG

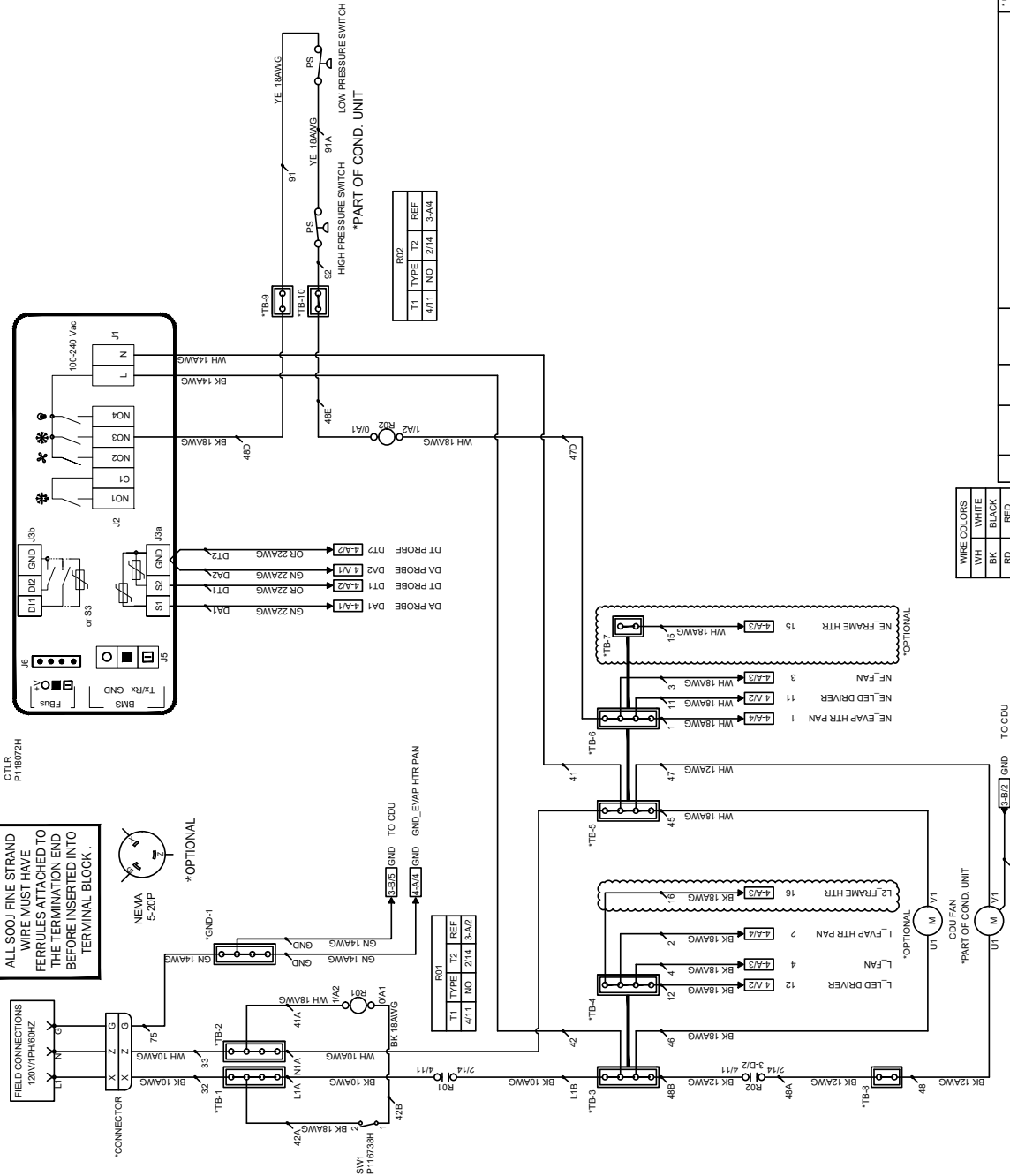
Rev. Date	Rev. #	Rev. Title
05-15-25	5	DATA UPDATE
05-02-25	4	DATA UPDATE



a **DAVEITA** company

ASSEMBLY NOTE
 LABEL ALL TERMINAL BLOCK LANDING POINTS WITH WIRE NUMBER.
 LABEL ALL TERMINAL BLOCK GROUPS AS SHOWN ON DIAGRAM

ASSEMBLY NOTE
 ALL 1800J FINE STRAND WIRE MUST HAVE FERRULES ATTACHED TO THE TERMINATION END BEFORE INSERTED INTO TERMINAL BLOCK.
 NEMA 5-20P
 *OPTIONAL



T1	TYPE	T2	REF
4/11	NO	2/14	3-A4

T1	TYPE	T2	REF
4/11	NO	2/14	3-A2

WIRE COLORS	WH	WHITE	
BK	BLACK	RD	RED
BU	BLUE	GRN	GREEN
GN	GREEN	OR	ORANGE
YE	YELLOW	BR	BROWN
PK	PURPLE	GY	GRAY
VO	VIOLET		

REV	DATE	REV BY	ECN	DESCRIPTION
2	03-27-2025	SHS	124943	PAN HTR NEUTRAL WIRE COLOR CHANGE
1	02-04-2025	SHS	123768	PAN HTR WIRING UPDATED AND WIRE RUN LIST ADDED
0	10-21-2024	SRAI	121845	FOR INITIAL REVIEW AND RELEASE

LOCATION: J-BOX
 REF: WI, MT, OT,
 O25UMA / UPA,120V
 MPX ZERO ADV, CTRL WITHOUT
 CONNECTORS, R290.

DATE: 10-21-2024
 DRAWN BY: SRAI

CHECKED BY: MVC
 FILE NAME: R903864.PG3
 DRAWING NO: R903864

DATE: 10-21-2024

DATE: 10-21-2024

DATE: 10-21-2024

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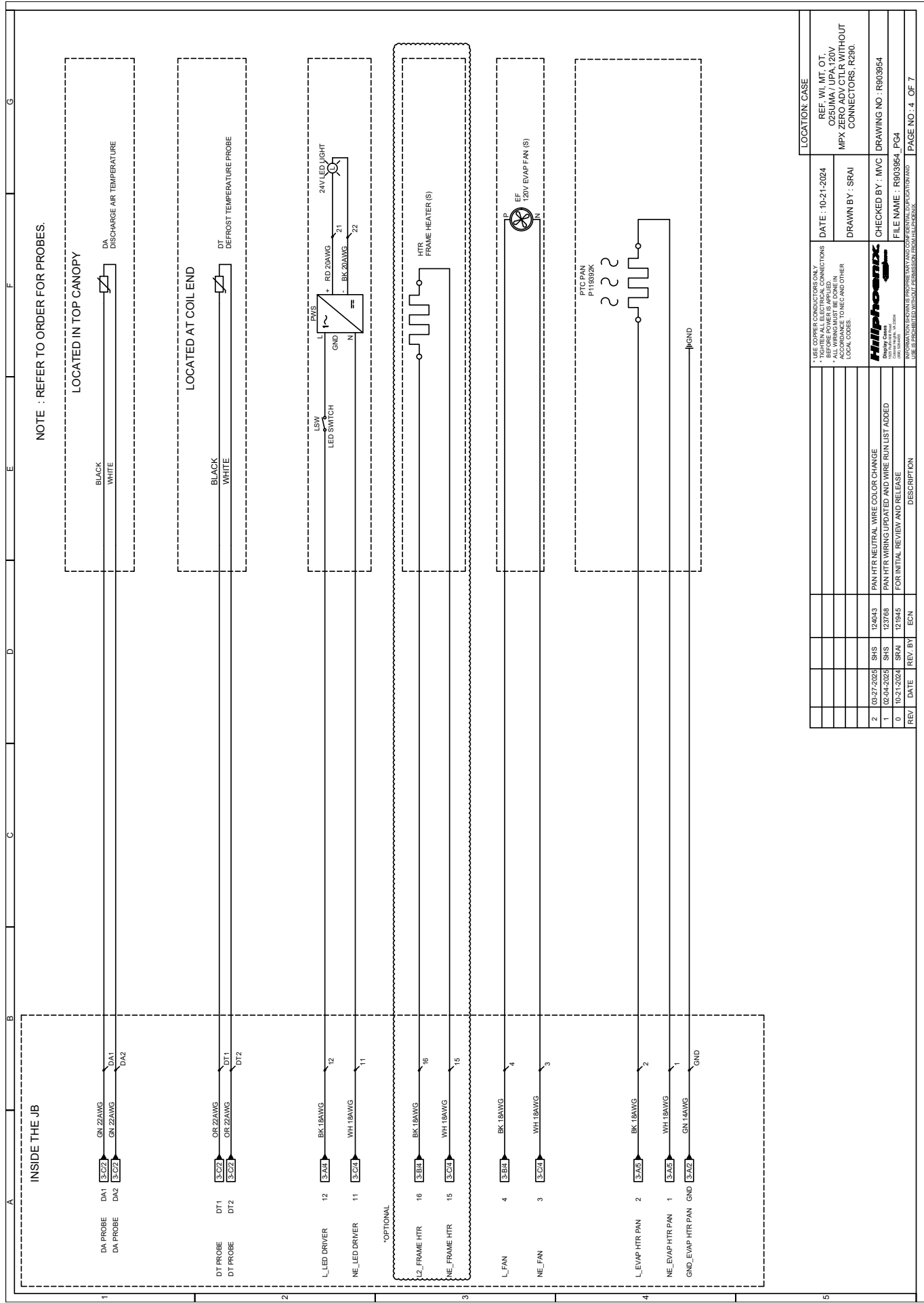
DATE: 10-21-2024

DATE: 10-21-2024

DATE: 10-21-2024

DATE: 10-21-2024

B3 WIRING DIAGRAM



B5 WIRING DIAGRAM

A B C D E F G

SLNO	WIRE #	LENGTH	COLOR	AWG	WIRE P#	WIRE FROM	WIRE TO	STRIP LENGTH	STRIP LENGTH	REMARKS
R290, OZSUMA/UPA- R903954										
INCOMER WIRES										
1	L1	18"	BLACK	10AWG	P001631A	STORE	TB-1	0.35"(9MM)	0.47"(12MM)	
2	L1A	18"	BLACK	10AWG	P001631A	TB-3	R01(4/11)	0.35"(9MM) (RED FLG-P096492E)	0.47"(12MM)	
3	L1B		CONNECTOR		R01(2/14)					
4	N1		TB-2		STORE					
5	N1A	142"(HARNES)	GREEN	14AWG	P002454G	GND-1	TB-5	0.47"(12MM)	0.35"(9MM)	
6	75	18"	BLACK	10AWG	P001631A	CONNECTOR	TB-1	0.35"(9MM)	0.47"(12MM)	
7	32		WHITE		P001632K	TB-2				
8	33	CONTROLLER								
9	42	18"	BLACK	14AWG	P001548G	CTLR(L)	TB-3	0.35"(9MM)	0.47"(12MM)	
10	41	18"	WHITE	14AWG	P001547K	CTLR(N)	TB-5			
11	GND	20"	GREEN	14AWG	P002454G	CDU	GND-1			
12	GND	20"	GREEN	14AWG	P002454G	DOOR		0.35"(9MM)	0.47"(12MM)	
13	48D	10"	BLACK	18AWG	P001278A	CTLR(NO3)	TB-9			
RELAYS										
14	47D	10"	WHITE	18AWG	P001277C	R02(1/A2)	TB-6	0.35"(9MM) (RED FLG-P096492E)	0.47"(12MM)	
15	41A		R01(1/A2)		TB-2					
16	48E		R02(0/A1)		TB-10					
17	42A	18"	BLACK	12AWG	P001278A	SW1(2)	TB-1	0.35"(9MM)	0.47"(12MM)	
18	42B		SW1(1)		R01(1/A2)					
19	48B	18"	BLACK	12AWG	P001629E	R02(4/11)	TB-3	0.35"(9MM) (RED FLG-P096492E)	0.47"(12MM)	
20	48A		R02(2/14)		TB-8					
21	48		CDU		TB-8					
22	47	18"	WHITE	18AWG	P001415K	CDU	TB-5	0.35"(9MM)	0.47"(12MM)	
23	45		RED		TB-5					
24	46		BLACK		TB-3					

LOCATION: J-BOX		REF. W/ INT. CT.
DATE: 10-21-2024		OZSUMA / UPA 120V
DRAWN BY: SRAI		MPX ZERO ADV/CTLR WITHOUT CONNECTORS: R290.
CHECKED BY: MVC		DRAWING NO: R903954
FILE NAME: R903954.PG6		
PAGE NO: 6 OF 7		

A B C D E F G

R290, O25UMA/JPA -- R903954
END COMPONENTS

25	DA1	GREEN	22AWG	DISCHARGE AIR PROBE	0.35"(9MM)	CTLR(S1)
26	DA2	ORANGE	22AWG	DEFROST TERM PROBE	0.35"(9MM)	CTLR(GND)
27	DT2	WHITE	18"	FRAME HTR	0.35"(9MM)	CTLR(S2)
28	DT1	BLACK				TB-7
29	15	WHITE	18AWG	LIGHTS	0.35"(9MM)	TB-4
30	16	BLACK				TB-6
31	11	WHITE				TB-4
32	12	BLACK				TB-6
33	3	WHITE	18AWG	EVAPORATOR FAN	0.35"(9MM)	TB-4
34	4	BLACK				TB-9
35	91	YELLOW	18AWG	LP SWITCH	0.35"(9MM)	LP SWITCH
36	91A	YELLOW	18AWG	HP SWITCH	0.35"(9MM)	TB-10
37	92	YELLOW	18AWG	HP SWITCH	0.35"(9MM)	TB-6
38	1	WHITE	18AWG	EVAP PAN HTR	0.47"(12MM)	TB-4
39	2	BLACK	18AWG	EVAP PAN HTR	0.47"(12MM)	TB-4

USE COMPLETE CONDUCTOR ONLY * BEFORE POWER IS APPLIED. * ACCORDANCE TO NEC AND OTHER LOCAL CODES		DATE : 10-21-2024 DRAWN BY : SRAI	LOCATION : J-BOX REF. W/ INT. CT O25UMA/JPA 120V MPX ZERO ADV/CTLR WITHOUT CONNECTORS: R290.
INFORMATION SHOWN IS PROPRIETARY AND CONFIDENTIAL. PERMISSION IS REQUIRED FOR REPRODUCTION. USE IS PROHIBITED WITHOUT PERMISSION FROM HILTI.		CHECKED BY : MVC FILE NAME : R903954.PGT	DRAWING NO : R903954 PAGE NO : 7 OF 7
2 03-27-2025 SHS 124643 PAN HTR NEUTRAL WIRE COLOR CHANGE 1 02-04-2025 SHS 123768 PAN HTR WIRING UPDATED AND WIRE RUN LIST ADDED 0 10-21-2024 SRAI 121845 FOR INITIAL REVIEW AND RELEASE	REV DATE REV.BY ECN DESCRIPTION		

C1 SPORLAN TEMPERATURE CHART



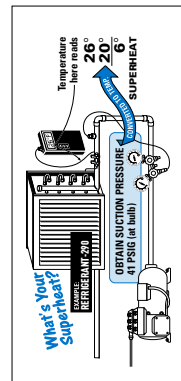
TEMPERATURE - PRESSURE CHART NATURAL REFRIGERANTS

At Sea Level, psig

www.sporlanonline.com

TEMP.	REFRIGERANT TYPE (SAFETY CLASS)						REFRIGERANT TYPE (SAFETY CLASS)						REFRIGERANT TYPE (SAFETY CLASS)					
	NATURAL REFRIGERANTS						400-SERIES BLENDS						400-SERIES BLENDS					
°F	HC (A3) 170(K)	HC (A3) 290(O)	HC (A3) 441A	HC (A3) 608a(U)	AMMONIA (B2A) 717(A)	CO2 (A1) 744	HC (A3) 170(K)	HC (A3) 290(O)	HC (A3) 441A	HC (A3) 608a(U)	AMMONIA (B2A) 717(A)	CO2 (A1) 744	HC (A3) 170(K)	HC (A3) 290(O)	HC (A3) 441A	HC (A3) 608a(U)	AMMONIA (B2A) 717(A)	CO2 (A1) 744
-50	-45.6	78.9	4.3	19.7	14.3	103.4	-11	-12.2	239.7	31.8	0.5	23.8	345.7	480.9	93.0	77.9	92.9	733.1
-45	-42.8	88.1	0.9	21.7	11.7	116.6	10	-11.7	243.5	32.7	6.3	0.0	24.7	483.2	96.3	80.6	96.9	753.2
-40	-40.0	98.1	1.4	18.1	8.8	131.0	12	-11.1	247.2	33.6	6.8	0.4	25.6	505.7	99.7	83.4	101.1	773.8
-35	-37.2	108.7	3.4	16.3	5.4	146.5	13	-10.6	251.1	34.5	7.2	0.7	26.5	512.1	101.4	84.7	103.2	784.2
-30	-34.4	120.0	5.7	14.3	3.8	163.1	14	-10.0	254.9	35.4	7.7	1.0	27.5	518.5	103.1	86.2	105.3	794.8
-28	-33.9	122.4	6.1	13.8	3.8	166.6	15	-9.4	258.8	36.3	8.2	1.4	28.4	518.5	103.1	86.2	105.3	794.8
-28	-33.3	124.7	6.6	13.4	3.8	168.1	16	-8.9	262.7	37.2	8.7	1.8	29.4	518.5	103.1	86.2	105.3	794.8
-27	-32.8	127.1	7.1	12.9	3.8	173.7	17	-8.3	266.7	38.2	9.2	2.1	30.4	518.5	103.1	86.2	105.3	794.8
-26	-32.2	129.6	7.6	12.5	3.8	177.3	18	-7.8	270.7	39.2	9.7	2.4	31.4	518.5	103.1	86.2	105.3	794.8
-25	-31.7	132.1	8.1	12.0	3.8	181.0	19	-7.2	274.8	40.1	10.3	2.8	32.4	518.5	103.1	86.2	105.3	794.8
-24	-31.1	134.6	8.6	11.5	3.8	184.8	20	-6.7	278.9	41.1	10.8	3.2	33.4	518.5	103.1	86.2	105.3	794.8
-23	-30.6	137.1	9.1	11.0	3.8	188.5	21	-6.1	283.0	42.1	11.3	3.5	34.4	518.5	103.1	86.2	105.3	794.8
-22	-30.0	139.7	9.6	10.5	3.8	192.4	22	-5.6	287.2	43.2	11.9	3.9	35.7	518.5	103.1	86.2	105.3	794.8
-21	-29.4	142.3	10.2	10.0	3.8	196.3	23	-5.0	291.4	44.2	12.5	4.3	36.8	518.5	103.1	86.2	105.3	794.8
-20	-28.9	144.9	10.7	9.5	3.8	200.2	24	-4.4	295.7	45.2	13.0	4.7	37.9	518.5	103.1	86.2	105.3	794.8
-19	-28.3	147.6	11.3	9.0	3.8	204.2	25	-3.9	300.0	46.3	13.6	5.1	39.0	518.5	103.1	86.2	105.3	794.8
-18	-27.8	150.3	11.8	8.4	3.8	208.3	26	-3.3	304.4	47.4	14.2	5.5	40.2	518.5	103.1	86.2	105.3	794.8
-17	-27.2	153.0	12.4	7.9	3.8	212.4	27	-2.8	308.8	48.5	14.8	5.9	41.4	518.5	103.1	86.2	105.3	794.8
-16	-26.7	155.7	13.0	7.3	3.8	216.5	28	-2.2	313.2	49.6	15.4	6.3	42.6	518.5	103.1	86.2	105.3	794.8
-15	-26.1	158.5	13.6	6.7	3.8	220.8	29	-1.7	317.7	50.7	16.0	6.8	43.8	518.5	103.1	86.2	105.3	794.8
-14	-25.6	161.4	14.2	6.1	3.8	225.0	30	-1.1	322.3	51.8	16.6	7.2	45.0	518.5	103.1	86.2	105.3	794.8
-13	-25.0	164.2	14.8	5.5	3.8	229.4	31	-0.6	326.8	53.0	17.3	7.6	46.3	518.5	103.1	86.2	105.3	794.8
-12	-24.4	167.1	15.4	4.9	3.8	233.8	32	0.0	331.5	54.1	17.9	8.1	47.6	518.5	103.1	86.2	105.3	794.8
-11	-23.9	170.0	16.1	4.3	3.8	238.2	33	0.6	336.1	55.3	18.6	8.5	48.9	518.5	103.1	86.2	105.3	794.8
-10	-23.3	173.0	16.7	3.7	3.8	242.7	34	1.1	340.9	56.5	19.2	9.0	50.2	518.5	103.1	86.2	105.3	794.8
-9	-22.8	176.0	17.4	3.0	3.8	247.3	35	1.7	345.6	57.7	19.9	9.4	51.6	518.5	103.1	86.2	105.3	794.8
-8	-22.2	179.0	18.0	2.4	3.8	251.9	36	2.2	350.4	58.9	20.6	9.9	52.9	518.5	103.1	86.2	105.3	794.8
-7	-21.7	182.1	18.7	1.7	3.8	256.6	37	2.8	355.3	60.1	21.3	10.4	54.3	518.5	103.1	86.2	105.3	794.8
-6	-21.1	185.2	19.4	1.0	3.8	261.3	38	3.3	360.2	61.4	22.0	10.9	55.7	518.5	103.1	86.2	105.3	794.8
-5	-20.6	188.3	20.1	0.3	3.8	266.1	39	3.9	365.2	62.7	22.7	11.4	57.2	518.5	103.1	86.2	105.3	794.8
-4	-20.0	191.5	20.8	0.2	3.8	271.0	40	4.4	370.2	63.9	23.4	11.9	58.6	518.5	103.1	86.2	105.3	794.8
-3	-19.4	194.7	21.5	0.6	3.8	275.9	41	5.0	375.2	65.2	24.2	12.4	60.1	518.5	103.1	86.2	105.3	794.8
-2	-18.9	197.9	22.2	0.9	3.8	280.9	42	5.6	380.3	66.6	24.9	12.9	61.6	518.5	103.1	86.2	105.3	794.8
-1	-18.3	201.2	22.9	1.3	3.8	285.9	43	6.1	385.5	67.9	25.7	13.4	63.1	518.5	103.1	86.2	105.3	794.8
0	-17.8	204.5	23.7	1.7	3.8	291.0	44	6.7	390.7	69.2	26.4	14.0	64.7	518.5	103.1	86.2	105.3	794.8
1	-17.2	207.9	24.5	2.1	3.8	296.2	45	7.2	395.9	70.6	27.2	14.5	66.3	518.5	103.1	86.2	105.3	794.8
2	-16.7	211.3	25.2	2.5	3.8	301.5	46	7.8	401.2	72.0	28.0	15.0	67.9	518.5	103.1	86.2	105.3	794.8
3	-16.1	214.7	26.0	2.9	3.8	306.8	48	8.9	412.0	74.8	29.6	16.2	71.1	518.5	103.1	86.2	105.3	794.8
4	-15.6	218.2	26.8	3.3	3.8	312.1	50	10.0	422.9	77.6	31.3	17.3	74.5	518.5	103.1	86.2	105.3	794.8
5	-15.0	221.7	27.6	3.7	3.8	317.6	52	11.1	434.1	80.6	32.9	18.5	78.0	518.5	103.1	86.2	105.3	794.8
6	-14.4	225.2	28.4	4.1	3.8	323.1	54	12.2	445.5	83.6	34.5	19.7	81.6	518.5	103.1	86.2	105.3	794.8
7	-13.9	228.8	29.2	4.5	3.8	328.6	55	12.8	457.0	85.1	36.1	20.3	83.4	518.5	103.1	86.2	105.3	794.8
8	-13.3	232.4	30.1	4.8	3.8	334.2	56	13.3	467.1	86.7	37.7	20.9	85.2	518.5	103.1	86.2	105.3	794.8
9	-12.8	236.0	30.9	5.4	3.8	339.9	58	14.4	468.9	89.8	39.3	22.2	88.0	518.5	103.1	86.2	105.3	794.8

To determine Subcooling for 400-Series blends, use Bubble Point in Gray.
To determine Superheat for 400-Series blends, use Dew Point in Blue.
Pressure, psig (pounds per square inch gauge), BOLD
Vacuum, inHg (Inches of Mercury), Italics



USE THIS QR CODE TO DOWNLOAD CHILLMASTER P-T APP

What's Your Superheat? Temperature here no sub. 26°C 26°F OBTAIN SUCTION PRESSURE 41 PSIG (at bulb) SUPERHEAT



Form S-4917 (2016)
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Parameter table

Code	Description	Def	Min	Max	UOM	User Terminal	MEAT O25UMA
Analogue inputs							
/P1	Type of probe, group 1 (S1, S2, S3) 0 = PT1000 Standard Range -40T150 °C 1 = NTC Standard Range -40T190°C	1	0	1	-	S	YES
/P5	Configuration of analogue output Y1: 0 = 0-10 V, 6 = PWM.	6	0	6	-	S	NO
/P6	Configuration of analogue output Y2: 0 = 0-10 V, 6 = PWM.	6	0	6	-	S	NO
/FA	0 = Function disabled 1 = Probe S1 2 = Probe S2 3 = Probe S3 4 = Serial probe S14	1	4	3	-	S	YES
/FB	Assign defrost temperature probe (SD) - see /FA	2	4	3	-	S	YES
/FC	Assign intake temperature probe (SI) - see /FA	3	4	3	-	S	YES
/FF	Assign defrost temperature probe 2 (SD2) - see /FA	0	4	3	-	S	NO
/FG	Assign auxiliary temperature/pressure probe 1 (Saux1) - see /FA	0	4	3	-	S	NO
/FH	Assign auxiliary temperature/pressure probe 2 (Saux2) - see /FA	0	4	3	-	S	NO
/FI	Assign ambient temperature probe (SA) - see /FA	0	4	3	-	S	NO
/FL	Assign ambient humidity probe (SU) - see /FA	0	4	3	-	S	NO
/FM	Assign glass temperature probe (SV) - see /FA	0	4	3	-	S	NO
/Fn	Assign dewpoint value (SiP) - see /FA	0	4	3	-	S	NO
/GA	Outlet temperature probe (Sm) calibration	0	-20	20	°C/F	S	NO
/GB	Defrost temperature probe (Sd) calibration	0	-20	20	°C/F	S	NO
/GC	Intake temperature probe (Ss) calibration	0	-20	20	°C/F	S	NO
/GD	Defrost temperature probe 2 (SD2) calibration	0	-20	20	°C/F	S	NO
/GE	Auxiliary temperature/pressure probe 1 (Saux1) calibration	0	-20	20	°C/F	S	NO
/GF	Auxiliary temperature/pressure probe 2 (Saux2) calibration	0	-20	20	°C/F	S	NO
/GH	Ambient temperature/pressure probe 1 (Saux1) calibration	0	-20	20	°C/F	S	NO
/GI	Ambient temperature/pressure probe 2 (Saux2) calibration	0	-20	20	°C/F	S	NO
/GL	Ambient humidity probe (SU) calibration	0	-20	20	°C/F	S	NO
/GM	Glass temperature probe (SV) calibration	0	-20	20	°C/F	S	NO
/GN	Dewpoint value (SiP) calibration	0	-20	20	°C/F	S	NO
/GO	Compressor temperature probe calibration	0	-20	20	°C/F	M	NO
/GZ	Analogue probe measurement stability	9	1	15	-	M	NO

Control	ON	ON/OFF command 0 = OFF, 1 = ON	0	0	1	-	S	YES
/A	Virtual probe composition	0	0	100	%	S	NO	
/r1	0 = Air off probe Sm 100 = Air on probe Sr	0	0	100	%	S	NO	
/r2	Minimum set point	-50	-50	r2	°C/F	M	NO	
/r3	Maximum set point	50	r1	200	°C/F	M	NO	
/r4	Automatic night set point variation	0	-50	50	°C/F	S	NO	
/r6	Probe for night-time control	0	0	1	-	S	NO	
/r7	0/1 = virtual probe Sv, 1 = Intake probe Sr	0	0	1	-	S	NO	
/ro	Control offset with probe error	0	0	20	°C/F	S	NO	
/r7	Master solenoid valve configuration 0 = local valve, 1 = network valve (connected to Main)	0	0	1	-	S	YES	
/Sf	Set point	50	r1	r2	°C/F	U	YES	
/S2	Intake probe set point with double thermostat	50	r1	r2	°C/F	U	NO	
/rd	Differential	2	0.1	99.9	°C/F	U	YES	
/rc	Operating mode 0 = Direct, 1 = Reverse	0	0	1	-	U	NO	
/rd2	Set point SIZ differential with double thermostat 0,0 = function disabled	0	0	99.9	°C/F	S	NO	
/rHs	Virtual probe composition for glass temp. probe estimate 0 = Air off probe Sv 100 = Air on probe Sr	20	0	100	%	S	NO	
/HA	Coeff. A for glass temp. probe estimate	2	-20	20	°C/F	S	NO	
/HB	Coeff. B for glass temp. probe estimate	2	-20	100	°C/F	S	NO	
/Hb	Offset for air speed reduction	0	-20	20	°C/F	S	NO	
/Hd	Differential for anti-sweat heater modulation	0	0	20	°C/F	S	NO	
/Hu	Manual anti-sweat heater activation percentage (of period 'Ht')	70	0	100	%	S	NO	
/Ht	Manual anti-sweat heater activation period 0 = function disabled	5	0	180	min	S	NO	
/CLt	Max time for Clean status	0	0	999	min	U	NO	
/Stt	Maximum time for Standby status	0	0	240	min	S	NO	
/H14	Time light stays on after closing the door	0	0	240	min	U	NO	
/dbs	Safety timeout for double thermostat function	0	0	240	min	M	NO	
/db1	Double thermostat function logic 0 = AND logic, 1 = OR logic	0	0	1	-	M	NO	

Code	Description	Def	Min	Max	UOM	User Terminal	MEAT O25UMA
Digital outputs							
DOA	Assign solenoid/compressor digital output 0 = not configured 1 = digital input 1 (ID1) 2 = digital output 2 (ID2) 3 = digital input 3 (ID3) 4 = digital input 4 (ID4)	2	0	4	-	S	NO
DOB	Assign alarm digital output - see DOA	0	0	4	-	S	NO
DOC	Assign auxiliary digital output - see DOA	0	0	4	-	S	NO
DOd	Assign auxiliary digital output serving the Main on the Secondary devices - see DOA	0	0	4	-	S	NO
DOE	Assign light digital output serving the Main on the Secondary devices - see DOA	4	0	4	-	S	NO
DOF	Assign defrost digital output - see DOA	1	0	4	-	S	NO
D0G	Assign auxiliary evaporator defrost digital output - see DOA	0	0	4	-	S	NO
D0H	Assign second ON/OFF compressor digital output - see DOA	0	0	4	-	S	NO
D0I	Assign evaporator fan digital output - see DOA	3	0	4	-	S	NO
D0J	Assign digital output for liquid valve (pump down)	0	0	4	-	S	NO
D0K	Assign gas heater digital output - see DOA	0	0	4	-	M	NO
D0L	Assign anti-sweat heater digital output - see DOA	0	0	4	-	S	NO
D0M	Assign hot gas defrost digital output - see DOA	0	0	4	-	M	NO
D0N	Assign digital output for max fan speed connection	0	0	4	-	M	NO
D0O	Assign digital output for min fan speed connection	0	0	4	-	M	NO
D0P	Solenoid/compressor digital output logic 0 = direct, 1 = reverse	0	0	1	-	M	NO
r0b	Alarm digital output logic - see ROA	0	0	1	-	M	NO
r0c	Auxiliary digital output logic - see ROA	0	0	1	-	M	NO
r0d	Auxiliary serving the Main on the Secondary devices digital output logic - see ROA	0	0	1	-	M	NO
r0E	Light digital output logic - see ROA	0	0	1	-	S	NO
r0F	Light serving the Main on the Secondary devices digital output logic - see ROA	0	0	1	-	S	NO
r0G	Defrost digital output logic - see ROA	0	0	1	-	S	NO
r0H	Auxiliary evaporator defrost digital output logic - see ROA	0	0	1	-	S	NO
r0I	Evaporator fan digital output logic - see ROA	0	0	1	-	M	NO
r0n	Liquid valve digital output logic - see ROA	0	0	1	-	M	NO
r0P	Drain heater digital output logic - see ROA	0	0	1	-	M	NO
r0Q	Anti-sweat heater digital output logic - see ROA	0	0	1	-	M	NO
r0AA	Hot gas defrost digital output logic - see ROA	0	0	1	-	M	NO
r0I	Maximum fan speed connection digital output logic - see ROA	0	0	1	-	M	NO
r0U	Minimum fan speed connection digital output logic - see ROA	0	0	1	-	M	NO
H9	Output switched with time bands 0 = Light 1 = AUX	0	0	1	-	S	NO
DOT1	Relay Type 0: normal mode 1: delayed mode 2: cycled mode 3: zero crossing	-	-	-	-	-	-
DOT2		-	-	-	-	-	-
DOT3		-	-	-	-	-	-
DOT4		-	-	-	-	-	-
Digital Inputs							
DId	Assign start defrost digital input - see DIA	0	-1	2	-	S	NO

Note:
For full parameter list and instructions, please refer to Carel's website
<https://www.carel.com/documents/10191/0/%2B0300106E%2B0a54c-0dec-45b4-92b4-bc812d1fc3fa?version=1.0>

ALL BENDS 90° UNLESS SPECIFIED
UNITS = INCHES (MM)
TOLERANCES: UNLESS SPECIFIED
ALL ANGULAR DIMENSIONS ON FORMED PARTS ± 0.3
DIMENSIONS ON FORMED PARTS ± 0.3
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Display Cases
Cleveland, OH 44115
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DRAWN BY: AKM | DATE: 02/01/25
SETPOINTS, MPXzero
O25UMA, 120V,
R290
R908480

Code	Description	Def	Min	Max	UOM	User Terminal	MEAT O2SUMA
Solenoid/compressor							
c0	Delay to enable solenoid/compressor and evaporation fans at power-on	0	0	240	min	M	NO
c1	Minimum time between consecutive compressor starts	0	0	15	min	M	NO
c2	Minimum compressor OFF time	0	0	15	min	M	NO
c3	Minimum compressor ON time	0	0	15	min	M	NO
c4	ON time for duty setting operation (Toff = 15 minutes, fixed value) 0 = compressor/valve always OFF 100 = compressor/valve always ON	0	0	100	min	M	NO
cc	Running time in continuous cycle	1	0	15	hours	M	NO
c5	Low temperature alarm bypass time after continuous cycle	60	0	240	min	M	NO
c11	Second compressor start delay	4	0	250	s	S	NO
c12	Second compressor start mode 0 = delay at start and in normal control 1 = delay sta start only	0	0	1	-	S	NO

Code	Description	Def	Min	Max	UOM	User Terminal	MEAT O2SUMA
Connectivity							
In	Type of unit 0 = Secondary, 1 = Main	0	0	1	-	S	YES
H0	Serial or Main/Secondary network address	199	0	247	-	S	YES
H1	BMS serial port configuration (stop bits and parity) 0 = 1 stop bit, no parity 1 = 2 stop bit, even parity 2 = 1 stop bit, odd parity 3 = 2 stop bit, even parity 4 = 1 stop bit, odd parity 5 = 2 stop bit, odd parity	1	0	5	-	S	YES
H2	BMS serial port baudrate (bits) 0 = 1200 1 = 2400 2 = 4800 3 = 9600 4 = 19200 5 = 38400 6 = 57600 7 = 115200	4	0	8	-	S	YES
H3	BMS serial port protocol 0 = Carel, 1 = Modbus	1	0	1	-	S	YES

Fieldbus							
Sn	No. of slaves in the local network 0 = no slaves	0	0	9	-	S	NO
H4	Field port baudrate (bits) 0 = 1200 1 = 2400 2 = 4800 3 = 9600 4 = 19200	4	0	1	-	S	NO

Notes: on fixed DEFAULT values for VCC serial

Display							
I5	Unit of measure 0 = C/barg, 1 = F/psig	0	0	1	-	S	YES
I6	Display decimal point 0 = Yes, 1 = No	0	0	1	-	S	NO
A1	Display on user terminal 0 = Terminal disabled 1 to 3 = Probe 1 to 3 4 to 8 = Reserved 9 = Control probe	9	0	15	-	S	NO
H5	Enable keypad and NFC functions 0 = Disabled, 1 = Enabled	1	0	1	-	U	NO
H8	Buzzer 0 = No, 1 = Yes	1	0	1	-	U	NO
ON	Unit On/Off command on display	1	0	1	-	S	NO
ONK	Enable unit On/Off from display	1	0	1	-	S	NO
ONS	Enable unit On/Off from supervisor	0	0	1	-	S	NO

Day/Night							
Is1..8-d	Start time band 1 to 8 day/day - see (td1...8-d)	0	0	11	day	S	NO
Is1..8-h	Start time band 1 to 8 day: hours	0	0	23	hours	S	NO
Is1..8-mm	Start time band 1 to 8 day: minutes	0	0	59	minutes	S	NO
IE1..8-d	End time band 1 to 8 day/day - see (td1...8-d)	0	0	11	day	S	NO
IE1..8-h	End time band 1 to 8 day: hours	0	0	23	hours	S	NO
IE1..8-mm	End time band 1 to 8 day: minutes	0	0	59	minutes	S	NO

Code	Description	Def	Min	Max	UOM	User Terminal	MEAT O2SUMA
A0	High and low temp. alarm reset differential	2	0.1	20	°C/F	S	YES
A1	Alarm thresholds (AL, AH) relative to the set point St or absolute 0/I = relative absolute	0	0	1	-	S	NO
A2	Alarm thresholds (AL2, AH2) relative to the set point S12 or absolute 0/I = relative absolute	0	0	1	-	S	NO
A6	Configure compressor operation during external alarm (immediate or delayed) with fixed 15 min OFF time 0 = always OFF 100 = always ON	0	0	100	min	S	NO
A10	Configure solenoid/compressor control during external alarm (immediate or delayed) with fixed 15 min OFF time 0 = always ON 100 = always ON	0	0	100	min	S	NO
A11	Delay time for delayed external alarm 0 = Significantly alarm 1 = Virtual probe (Sv) Assign probe for high (AHA/AHA) and low (ALA/ALA) temperature alarm 0 = Not configured 1 = Outlet (Sv) 2 = Defrost (Sd) 3 = Intake (Si) 4 = Defrost 2 (Sd2) 5 = Auxiliary 1 (Saux1) 6 = Auxiliary 2 (Saux2) 7 = Ambient (Sa) 8 = Reserved 9 = Glass temperature (Sv) 10 = Dewpoint (SdP) 11 = Virtual probe (Sv)	0	0	240	min	S	NO
AA	Assign probe for high (AHA/AHA) and low (ALA/ALA) temperature alarms - see AA	1	0	11	-	S	NO
AA2	Assign probe for high (AH2/AH2) and low (AL2/AL2) temperature alarms - see AA	4	0	50	°C/F	S	YES
ALA	Low temperature alarm threshold (relative to set point)	0	-50	50	°C/F	S	NO
AHA	High temperature alarm threshold (relative to set point)	10	0	50	°C/F	S	YES
AL2	Low temperature alarm threshold 2 (absolute threshold)	0	-50	200	°C/F	S	NO
AH2	High temperature alarm threshold 2 (absolute threshold)	0	-50	50	°C/F	S	NO
AHA2	High temperature alarm threshold 2 (absolute threshold)	0	-50	200	°C/F	S	NO
Ad	Delay time for high and low temperature alarms (AH/AHA, AL/ALA)	120	0	240	min	U	YES
AZ	Delay time for high and low temp. alarms (AH2/AH2, AL2/AL2)	30	1	240	min	U	NO
Ar	Signal alarms from Secondary to Main 0 = not enabled, 1 = enabled	1	0	1	-	S	NO
Ado	High temperature alarm bypass time for door open	30	1	240	min	U	NO
Toor	Door open alarm delay	30	1	240	min	U	NO
Htd	HACCP alarm delay 0 = monitoring disabled	0	0	240	min	S	NO

Notice *: for alarms with an absolute activation threshold (A1=1) the thresholds ALA/AHA2 and AHA/AHA2 need to be set correctly (default full scale, absolute alarms disabled).

ALL BENDS 90° UNLESS SPECIFIED
 UNITS = INCHES (MM)
 TOLERANCES: UNLESS SPECIFIED
 DIMS: ALL ANGULAR DIMS TO CENTER UNLESS NOTED OTHERWISE
 DIMENSIONS ON FORMED PARTS ± 0.3
 DRAWING NOT TO SCALE

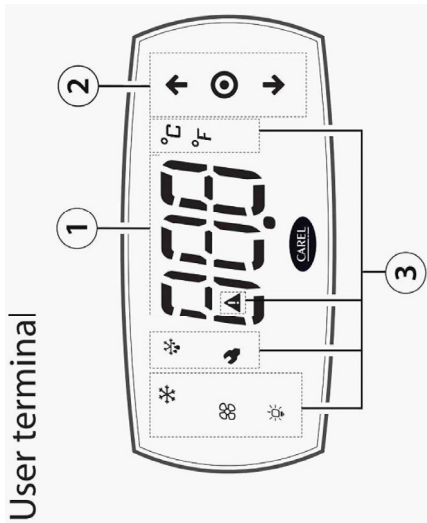
HiPhoenIX
 Display Cases
 10000 10000 10000
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 10000 10000 10000

SETPOINTS, MPXzero
 O2SUMA, 120V,
 R290

REV: 02/01/25 123764 RELEASED TO PRODUCTION
 BY: DATE: ECN: NOIR/ DESCRIPTION: DRAWN BY: AKM DATE: 02/01/25

R908480
 SHEET 3 OF 4

Parameter categories visible on the user terminal



User terminal

- Key:**
- 1 Main field
 - 2 Keypad
 - 3 Operating mode

3.2.1 Display

The icons provide information on device operation and/or the activation of certain functions, as shown in the table.

Icon	Function	On	Flashing
	Solenoid/compressor	Solenoid/compressor active	Compressor rthms.active
	Evaporator fan	Evaporator fan on	-
	Lights	Light on	-
	Defrost	Defrost active	Awaiting defrost
	Service	Maintenance request	-
	Alarm	Alarm acknowledged	Alarm active
	Unit of measure: degrees Celsius	Unit of measure: °C	-
	Unit of measurement display parameter:	Unit of measure: °F	-

3.2.1 Keypad

Button	Description	Function
UP / DOWN		<ul style="list-style-type: none"> • Increase/decrease the value • Scroll direct access functions • Enter direct access function menu parameters, direct access functions • LED flashing (set parameter values)
PRG		<ul style="list-style-type: none"> • Pressed briefly: <ul style="list-style-type: none"> • Save value and return to the parameter code • Mute buzzer • Pressed and held (hold until "--" is shown): <ul style="list-style-type: none"> • Enter direct access function menu (from main screen) and activate/disable functions • Pressed and held (hold after "--" is shown): <ul style="list-style-type: none"> • Enter programming mode or return to previous level without saving • LED on: main screen/programming mode

Notice: when scrolling, a button is enabled only when illuminated.

Procedure: To navigate the menu tree, use the following buttons:

- UP and DOWN to navigate the menu and set the values;
- PRG to enter the menu items and save the changes made;
- PRG (8s) to select the menu item or ESC to return to the previous branch. Example of how to set parameter St (set point):

1. Wait for the standard display to be shown.
2. Press PRG, the display will show "LoC" (display locked).
3. Press and hold PRG and until "PRSt" is shown.
4. When PRSt is shown, press PRG and use the UP arrow to enter the password: 33.
5. Press DOWN: the first category of parameters is displayed: "UIS" (display locked).
6. Press DOWN: the second category of parameters is displayed: "CoL" (Control).
7. Press UP/DOWN to modify the parameter St (set point) and PRG to display the value.
8. Press UP/DOWN to modify the value.
9. Press PRG to save the setting and return to the parameter code.
10. Press PRG for 3 sec or alternatively, in the parameter level, select ESC and press PRG to return to the parameter categories.
11. Press DOWN to move to the next category: DEF (Defrost) and follow steps 5 to 9 to set the other categories: press ESC and then PRG; or press PRG for 3 s.
12. After having completed the settings, to exit either: a) from the categories press ESC and then PRG; or b) press PRG for 3 s.

Mobile device and PC

The APPLICA app and SPARK software can be used to configure the controller from a mobile device (smartphone, tablet), via NFC (Near Field Communication) or Bluetooth. The controller can be programmed according to the profile used for access to APPLICA or SPARK, with different parameter visibility depending on the rights associated with each profile (User, Service, Manufacturer). Procedure:

1. download the APPLICA app;
2. (on the mobile device) start the app for commissioning the controller;
3. activate NFC;
4. move the device closer to the controller, less than 10 mm away;
5. follow the instructions shown on the display.

3.2.5 Direct functions

The following functions can be activated directly from the keypad or via the app:

Icon	Display	On/Off
	LoC	Cabinet light
	CoL	Continuous cycle
	deF	Defrost
	deM	Network defrost (Main only)
	CLn	Clean cabinet
	ON	Unit ON with control request

Tab. 3.3h

Procedure:

1. go to the standard display;
2. press PRG until "--" is shown and then release immediately to unlock the display;
3. press PRG again to access the direct commands (the first item will be the light command Lnt);
4. press PRG to turn the light on/off and DOWN to move to the next direct function;
5. follow the previous steps for all the other functions;
6. When finished, press Esc to exit.

1. Go to the standard display;
2. Press PRG until "--" is displayed and then release immediately.
3. Press PRG again: Lnt is displayed, the UP and DOWN buttons light up. Press PRG to turn the light on/off. The icon will come on or go off. Press DOWN to access the next function (CoL) or press Esc to exit.
4. Select Esc to exit.
5. The standard display is shown.

ALL DIMENSIONS 90° UNLESS SPECIFIED
UNITS = INCHES (MM)
TO USE THESE UNITS, SELECT: UNITS
ALL ANGULAR DIMENSIONS ARE IN DEGREES
DIMENSIONS OF FORMING TOOLS DRAWING NOT TO SCALE
Hiilphoenix
Display Case
Model No. 8180
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Manufactured by Hiilphoenix, Inc. 10000 N. 10th St. Suite 100
Scottsdale, AZ 85258
DRAWN BY: AKM DATE: 02/01/25

SEIPOINTS, MPXzero
O25UMA, 120V,
R290

R908480

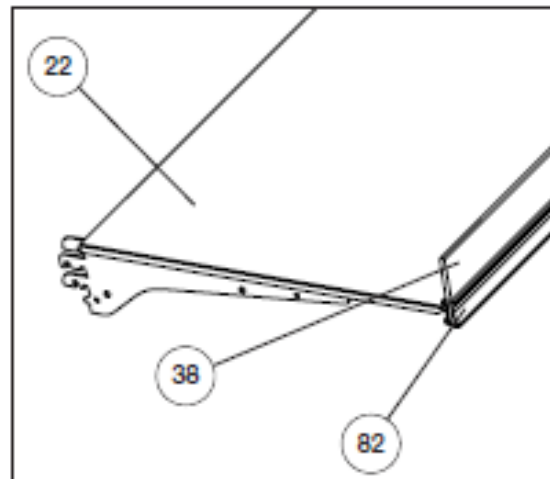
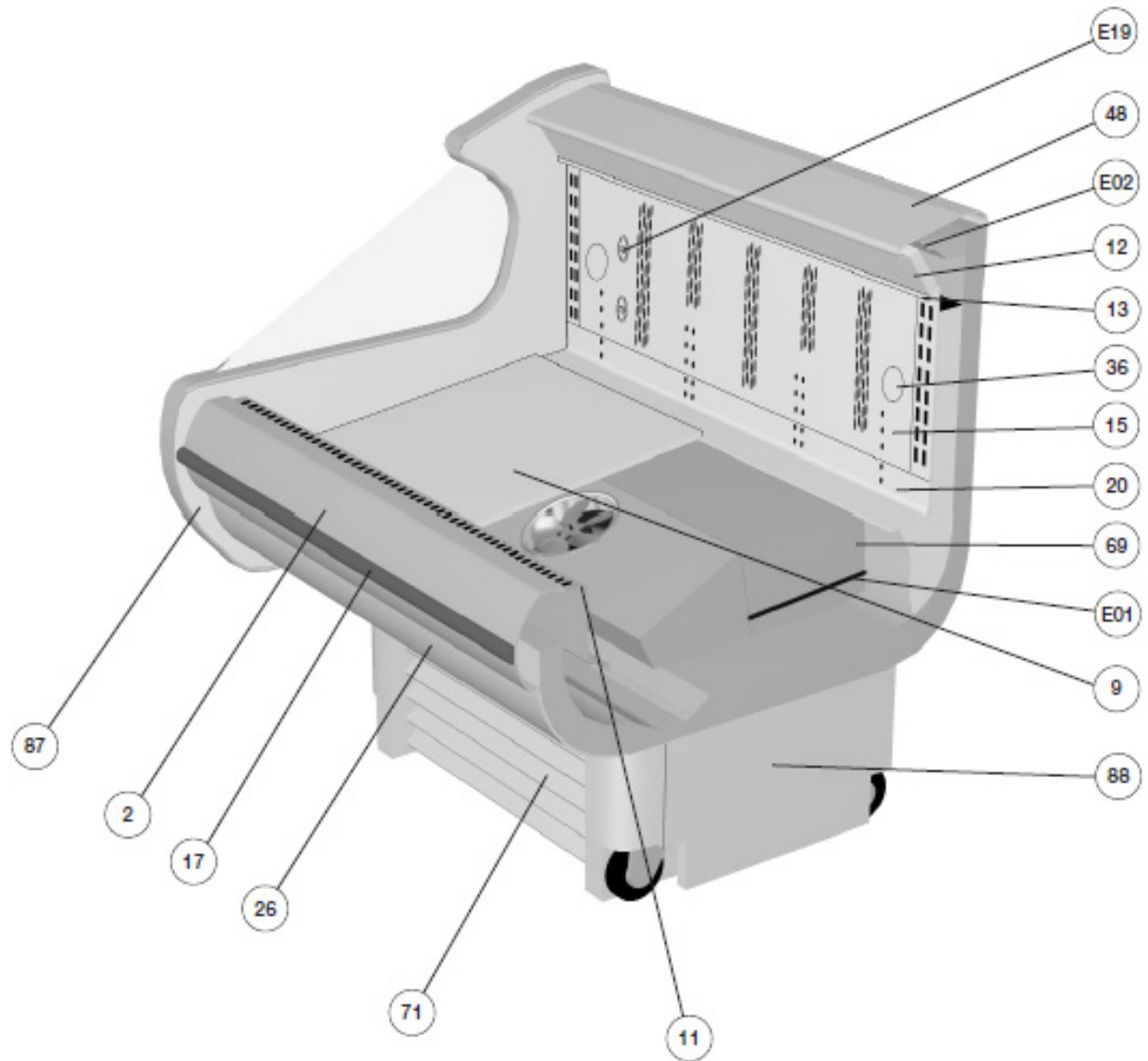
SHEET 4 OF 4

REV:	DATE:	ECN:	NO:	DESCRIPTION:
02/01/25	123764	X		RELEASED TO PRODUCTION

MODEL 02.5UMA

LOCATION NUMBER	PART DESCRIPTIONS
2	Master Bumper , Polymer, Featherstone, Smoke, White, French Vanilla, Black
9	Deck Pan , Painted White or Custom Color, Stainless Steel
12	Honeycomb , Discharge, 1" x 4" x 48"
13	Honeycomb Retainer , Painted White, Custom Color, or Stainless
15	Rear Baffle , Painted White or Custom Color, Stainless Steel
17	Nose Bumper , Polymer, Custom Color
20	Lower Rear Baffle , Painted White or Custom Color, Stainless Steel
22	Shelves , Unlighted, Painted White or Custom Color, Stainless Steel
26	Front Panel , Curved, Painted Custom Color
36	Plug Button
38	Shelf Package Stop , Plexiglas or Wire Fence
11	Front Baffle , 4' Aluminum, Painted White or Custom Color, Stainless Steel
48	Rear Sill , Painted Custom Color, Stainless Steel
69	Coil
71	Louvered Front Panel , Painted Custom Color
75	Drain Pan , Stainless Steel (Not Shown, located under case)
81	Bottom Wire Racks , (Not Shown)
82	Tag Moulding , Shelf, Aluminum
83	Thermometer , and Bracket (Not Shown)
87	End Assembly , left hand or right hand, full view or solid
88	End Panel , Painted Custom Color
E01	Defrost Heater
E02	Anti-Condensate Heater
E09	Fan Motor - STATE HIGH EFFICIENCY OR STANDARD
E10	Fan Blade
E11	Fan Basket
E19	Receptacle , Recessed Dummy Plug, White or Black
E20	Fan Cord-Set , High Efficiency or Standard

E2 PARTS LIST





A  COMPANY

LIMITED & GENERAL WARRANTY TERMS

Hill Phoenix, Inc's. (hereinafter "Hillphoenix") products are warranted to be free from defects in materials and workmanship under normal use and maintenance for a period of 14 months from date and place of shipment from Hillphoenix (the "Base Warranty Period"), provided that the installation and maintenance of such products have been performed strictly in accordance with Hillphoenix's designated specifications.

Anthony products supplied as original equipment on Hillphoenix products receive Hillphoenix warranty.

All warranty repairs must be approved in advance before services are started. In the event of a qualifying warranty claim, the extent of Hillphoenix's liability under the Warranty is limited to the repair or replacement, at Hillphoenix's option, of any non-conforming products without charge. If required, a new or rebuilt part to replace any defective part will be provided without charge and will be shipped via standard ground freight, with shipping charges being covered by Hillphoenix during the base warranty period. The replacement part is covered under this warranty for the remainder of the applicable Base Warranty Period. In order to be eligible for warranty coverage, customer must: (i) notify Hillphoenix in writing within twenty-four hours upon discovery of a warrant defect, and (ii) comply with the warranty claim procedures provided by Hillphoenix from time to time. These warranty terms are incorporated into and governed by the Hill Phoenix Terms and Conditions of Sale.

This equipment warranty does not include labor or other costs incurred for diagnosing, repairing, removing, installing, shipping, servicing, or handling of either defective parts or replacement parts. Unauthorized modifications to set-points, parameters, and controls may result in deteriorated performance and/or equipment failure. Any unauthorized modifications could result in the warranty being voided.

The warranty shall not apply:

1. To any unit or any part thereof which has been subject to an accident, alteration, negligence, misuse or abuse, or which has not been operated in accordance with the manufacturer's recommendations, or in conditions outside of Manufacturer's specifications, or if the serial number of the unit has been altered, defaced, or removed.
2. When the unit, or any part thereof, is damaged by fire, flood, or other act of God.
3. To products that are impaired or damaged due to improper installation.
4. When installation and startup forms are not properly completed or returned within two weeks after startup.
5. If the defective part is not returned to the Manufacturer.
6. To service, maintenance or wear and tear parts (such as lights, starters and ballasts).
7. To cosmetic damage (e.g., scratches, dents, chips, and other damage to appliance finishes), unless such damage results from defects in materials and workmanship and is reported to Hillphoenix within 30 days from date of purchase.
8. To shipping damage.
9. To use in a non-commercial application.
10. Corrosion, discoloration, oxidation, or rust due to exposure to predisposed corrosive environments/atmospheres or contact with product damaging material/chemicals.
11. To service trips where no problem is diagnosed or found in the discretion of Hillphoenix.
12. To Removal/reinstallation of product for repair if installed in an inaccessible location.
13. To use of non-OEM parts for warrantable repair unless directed by Hillphoenix.
14. To repair/service tools/items.
15. To service trips to teach customer how to use product.
16. To product pick-up or delivery for repair purposes; repairs should take place on the customer's site unless directed by Hillphoenix.
17. To misdiagnosis or misrepair, including subsequent labor/component repair or replacement.
18. To stolen components.
19. To replacement service parts lost or misplaced on arrival by receiving personnel.
20. To service events on non-DFR products.
21. To excess repair time.
22. To excess required consumables charges, at the discretion of Hillphoenix.
23. If a service contractor takes longer than 120 days from the date of repair completion to submit a warranty invoice/claim.
24. To component/equipment failures, equipment shutdowns, operational performance degradation due to deviations and unauthorized changes to required and/or recommended set-points, parameters, and controls.

Examples of non-warrantable situations include, but are not limited to:

- Non-factory electrical connection or component issues
- Product is operated on low or improper voltages
- Use of extension cords to power the product

- Lack of basic preventative maintenance as outlined by product manuals
- Installation into a mobile application
- Failures or symptoms that result from site mechanical or electrical failures
- Loading of food or other content that prevents the product from operating properly
- 'Yellowing' of lighting products
- Any physical modifications or changes to product(s) will invalidate the warranty

MODIFICATIONS TO GENERAL WARRANTY

The following sets forth certain modifications to the General Warranty for specific products of Manufacturer:

DISPLAY CASE AND SPECIALTY PRODUCTS CLEARVOYANT® LED LIGHTING

The warranty period for Clearvoyant LED lighting components within the Clearvoyant lighting system is five years from date of shipment.

NO WARRANTY FOR NON-STANDARD PRODUCTS

A " Non-Standard Product" is any product that is different in any manner from any Hillphoenix product that has been previously designed and manufactured by Hillphoenix in accordance with its standard specifications. A Non-Standard Product also includes any standard Hillphoenix product that has been specially designed or modified to meet a particular Buyer specification, or that contains any additional or substituted product, part, accessory, equipment, fixture, component or material, or that has been assembled, manufactured, produced, or installed by any method or process, which is different from Hillphoenix' s standard specifications for such product. Hillphoenix expressly disclaims and makes no warranties, express or implied, as to the condition, design, utility, quality, adequacy, or capacity with respect to any standard or Non-Standard Product, including, without limitation, any warranty of merchantability or fitness of such product for a particular purpose or intended use, whether or not such product has been designated by Hillphoenix as a Non-Standard Product. All Non-Standard Products, whether sold separately, or incorporated and/or attached to standard Hillphoenix products, and all services relating to such products, are sold to and accepted by Buyer " as is" and "with all faults". Without limiting any other provision of this purchase order, Hillphoenix shall have no liability to Buyer for any claim, loss, damage, consequential damages or expenses associated with any Non-Standard Product and/or its use or operation, or any other equipment or property of Buyer caused by or alleged by to be caused by any such product or its use or operation, whether directly, indirectly, incidentally or consequentially, or by any inadequacy thereof or deficiency or defect therein. The foregoing exclusion of warranty cannot be modified or waived except as expressly set forth in a writing signed by an officer of Hillphoenix authorized to make such modification or waiver.

REMEDY LIMITATION/DAMAGES EXCLUSION

THE REMEDY OF REPAIR OR PROVISION OF A REPLACEMENT PART WITHOUT CHARGE SHALL BE THE EXCLUSIVE REMEDY FOR ANY WARRANTY CLAIM HEREUNDER. WITHOUT LIMITING THE FOREGOING, HILLPHOENIX SHALL NOT BE LIABLE UNDER ANY CIRCUMSTANCES FOR INCIDENTAL, INDIRECT, LIQUIDATED OR CONSEQUENTIAL DAMAGES, INCLUDING LOSS OF PROFIT, LABOR COST, LOSS OF REFRIGERANT OR FOOD PRODUCTS.

EXCLUSIVE WARRANTY

THE FOREGOING WARRANTY IS THE EXCLUSIVE WARRANTY WITH RESPECT TO THE PRODUCTS. ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, THE WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE HEREBY DISCLAIMED AND EXCLUDED. NO IMPLIED WARRANTY SHALL BE DEEMED CREATED BY COURSE OF DEALING OR USAGE OF TRADE. NO OTHER PERSON IS AUTHORIZED TO EXPAND OR CREATE ANY OBLIGATION GREATER THAN OR MORE EXPANSIVE THAN THE WARRANTY PROVIDED HEREIN.

THE ABOVE WARRANTY IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. HILLPHOENIX SHALL NOT BE RESPONSIBLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING BUT NOT LIMITED TO INJURY TO PERSONS OR PROPERTY. NOTWITHSTANDING ANYTHING TO THE CONTRARY, HILLPHOENIX'S ENTIRE LIABILITY, AND BUYER'S EXCLUSIVE REMEDY, IN LAW AND EQUITY OR OTHERWISE, WITH RESPECT TO ANY PRODUCTS PROVIDED BY HILLPHOENIX IS SOLELY LIMITED TO THE AMOUNT PAID BY BUYER FOR THE PRODUCTS TO WHICH THE APPLICABLE CLAIM RELATES.

THIS DOCUMENT DOES NOT GOVERN EXTENDED WARRANTIES AND ANY EXTENDED WARRANTIES PROVIDED BY HILLPHOENIX SHALL BE GOVERNED BY A SEPARATE DOCUMENT AGREED UPON BY HILLPHOENIX

Submit warranty claims to: hpx-warranty-wa-invoices@doverfoodretail.com

For warranty service, please contact Hill Phoenix at: Phone: 1-833-280-5714

Warning Maintenance & Case Care

When cleaning cases the following must be performed PRIOR to cleaning:

To avoid electrical shock, be sure all electric power is turned off before cleaning. In some installations, more than one switch may have to be turned off to completely de-energize the case.

Do not spray cleaning solution or water directly on fan motors or any electrical connections.

All lighting receptacles must be dried off prior to insertion and re-energizing the lighting circuit.

Please refer to the Use and Maintenance section of this installation manual.



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Due to our commitment to continuous improvement, all specifications are subject to change without notice.

Hillphoenix is a Sustaining Member of the American Society of Quality.

Visit our website at www.hillphoenix.com

