HUSSMANN®

EcoShine ULTRA

Vertical LED Lights

for Reach-in & Walk-in Merchandisers

Upgrade Installation Manual

P/N 3108101_A
December 2019

Spanish 3108102
French 3108103

BEFORE YOU BEGIN

Read these instructions completely and carefully.

ANSI Z535.5 DEFINITIONS

- **DANGER –** Indicate[s] a hazardous situation which, if not avoided, will result in death or serious injury.

- **WARNING –** Indicate[s] a hazardous situation which, if not avoided, could result in death or serious injury.

- **CAUTION –** Indicate[s] a hazardous situation which, if not avoided, could result in minor or moderate injury.

- **NOTICE –** *Not related to personal injury –* Indicates[s] situations, which if not avoided, could result in damage to equipment.

NOTICE

Only those open holes indicated in the photographs and / or drawings may be made or altered as a result of kit installation. do not leave any other open holes in an enclosure of wiring or eletrical components.

WARNING

Risk of fire or electrical shock.
Luminaire wiring and electrical parts may be damaged when drilling for installation of led retrofit kit. Check for enclosed wiring and components. To prevent wiring damage or abrasion, do not expose wiring to edges of sheet metal or other sharp objects.

WARNING

Fluorescent lamps contain mercury vapor. Mercury exposure at high levels can harm the brain, heart, kidneys, lungs, and immune system of people of all ages. Do not break or puncture fluorescent lamps. Dispose of, or store, all fluorescent lamps in accordance with Federal (40 CFR 273), State, and local hazardous waste requirements. Refer to: http://www.epa.gov/mercury/about.htm

WARNING

Risk of fire or electric shock. LED retrofit kit installation requires knowledge of luminaires' electrical systems. If not qualified, do not attempt installation.
Contact a qualified electrician.

WARNING

— LOCK OUT / TAG OUT —
To avoid serious injury or death from electrical shock, always disconnect the electrical power at the main disconnect when servicing or replacing any electrical component. This includes, but is not limited to, such items as doors, lights, fans, heaters, and thermostats.

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REVISION HISTORY
REVISION *A* — Original Issue

IMPORTANT
KEEP IN STORE FOR FUTURE REFERENCE
Quality that sets industry standards!

HUSSMANN®
12999 St. Charles Rock Road • Bridgeton, MO 63044-2483
U.S. & Canada 1-800-922-1919 • Mexico 01-800-890-2900
www.hussmann.com

SAFETY

There are two main hazard areas that service technicians may encounter on a day-to-day basis. They are: working within close proximity to the public and personal safety. Before starting work, review these hazards by completing the following checklist:

Working Near the Public

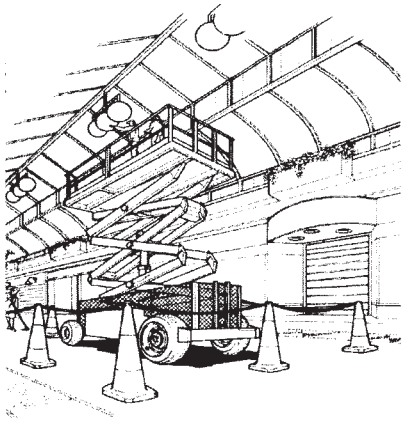
Cordon off all work areas with cones, caution tape, warning signs and/or barricades. Maintain a work area of at least five feet from the public. Is a second person required to prevent the public from entering the work area when the work area cannot be adequately cordoned off?

Hazardous materials

Can the public be exposed to any chemicals, refrigerants or fumes? If yes, can steps be taken to eliminate or reduce the risk of exposure? to guard against accidental release of refrigerants, make sure the work area is adequately cordoned off (instead of posting a *WET FLOOR* sign, use *CAUTION* tape to prevent the public from entering the area). Are wet floors going to create a slip hazard for pedestrians? If yes, be sure to post *WET FLOOR* signs and establish a schedule for clean up as soon as the work is complete.

Electrical hazards

Are all live electrical hazards protected from public access; i.e., de-energized/locked out or cordoned off? Is proper signage in place? Will high work be conducted from a ladder or a scissor lift? Make sure the work area is cordoned off.



Personal safety

Over 90% of accidents are due to human error or from complacency about the job. This checklist is provided to remind you of the potentially hazardous conditions at the jobsite.

Do you have the appropriate personal protective equipment (PPE) for working at height (safety harness/lanyard)?

Confined Space work

Will you be working in any confined spaces? If yes, have you received appropriate training? A confined space has limited means of entry/egress, is not designed for human occupancy, and is large enough for bodily entry. Is a permit required? If yes, have appropriate steps been taken for safe entry, such as permit issuance. If in doubt, DO NOT START WORK and inform the client.

Electrical / LOTO

Does the project require you to work with live electricity? If yes, have you received appropriate training? Do you have appropriate locks and tags to de-energize or isolate the electrical supply?

• Read and observe all CAUTIONS and WARNINGS shown throughout these instructions.

• Each person working on or near the installation described must wear safety glasses or goggles.

• Block access to the work area by customers or other personnel to prevent injury.

• Read and follow all industry safety recommendations and established procedures.

• Wiring must be 2 wire with ground and rated for 75°C (176°F).

GENERAL INFORMATATION

LED LIGHT FIXTURES
EcoShine ULTRA LEDs were specifically designed to maximize product appeal and reduce energy costs. These LEDs work well for dimming or on/off operation using an occupancy sensor (optional kits). They can be turned on and off in a cold environment with no warm-up time and no negative impact on lamp life. This instruction explains how to remove original equipment manufactured (OEM) fluorescent lamp fixtures and replace them with Hussmann LED light bars.

ELECTRICAL CONNECTIONS
All wiring must be in compliance with NEC and local codes. All electrical connections are to be made in the wireway or mullion or LED light fixture.

IDENTIFICATION OF WIRING
Leads for all electrical circuits are identified by colored plastic bands. These bands correspond to the *color code sticker* (shown below) located inside the merchandiser's wireway cover. Anthony doors may not conform to this chart. Refer to the manufacturer's manual for their information.

SHIPPING DAMAGE
All equipment should be thoroughly examined for shipping damage before and during unloading. This equipment has been carefully inspected at our factory. Any claim for loss or damage must be made to the carrier. The carrier will provide any necessary inspection reports and/or claim forms.

Apparent Loss Or Damage
If there is an obvious loss or damage, it must be noted on the freight bill or express receipt and signed by the carrier's agent; otherwise, carrier may refuse claim.

Concealed Loss Or Damage
When loss or damage is not apparent until after equipment is uncrated, retain all packing materials and submit a written request to the carrier for inspection, within 15 days.

Missing Parts
Every effort is made to ship all parts for the kit. The Hussmann Service Center can be reached by calling

- from U.S. & Canada 1-800-922-1919
- from Mexico 1-800-890-2900

WIRING COLOR CODE

Leads for all electrical circuits are identified by a colored plastic band: neutral wire for each circuit has either White insulation or a White plastic sleeve in addition to the color band.

PINK ..... REFRIG. THERMOSTAT LOW TEMP.	ORANGE OR TAN ..... LIGHTS
LIGHT BLUE . REFRIG. THERMOSTAT NORM TEMP.	
DARK BLUE . DEFROST TERM. THERMOSTAT	MAROON .. RECEPTACLES
PURPLE ..... CONDENSATE HEATERS	YELLOW ... DEFROST HEATERS 120V
BROWN ..... FAN MOTORS	RED ..... DEFROST HEATERS 208V
GREEN* ..... GROUND	

*EITHER COLORED SLEEVE OR COLORED INSULATION

ELECTRICIAN NOTE: Use copper conductor wire only.
CASE MUST BE GROUNDED

THESE ARE MARKER COLORS WIRES MAY VARY.

EcoShine ULTRA Vertical LEDs for Reach-In/Walk-In Door Lighting

Factory, Replacement, and Upgrade Parts

	Hussmann Part Number	Description	Energy Watts (DC) Per Fixture	Energy Watts (AC) Per Fixture	CRI Rating (Typical)	Length (inches)	Efficacy (Lumens/ Watt) Nominal
WARM NEUTRAL	3071852	LED-ES ULTRA CTR 34IN 3500K	10	11	93+	34.0	110
	3071873	LED-ES ULTRA LH 34IN 3500K	6	7	93+	34.0	105
	3071891	LED-ES ULTRA RH 34IN 3500K	6	7	93+	34.0	105
	3071853	LED-ES ULTRA CTR 46IN 3500K	14	15	93+	46.7	110
	3071874	LED-ES ULTRA LH 46IN 3500K	9	10	93+	46.7	105
	3071892	LED-ES ULTRA RH 46IN 3500K	9	10	93+	46.7	105
	3071854	LED-ES ULTRA CTR 58IN 3500K	17	18	93+	58.6	110
	3071875	LED-ES ULTRA LH 58IN 3500K	11	12	93+	58.6	105
	3071894	LED-ES ULTRA RH 58IN 3500K	11	12	93+	58.6	105
	3071855	LED-ES ULTRA CTR 65IN 3500K	19	21	93+	65.7	110
	3071876	LED-ES ULTRA LH 65IN 3500K	12	14	93+	65.7	105
	3071895	LED-ES ULTRA RH 65IN 3500K	12	14	93+	65.7	105
	3071856	LED-ES ULTRA CTR 73IN 3500K	22	25	93+	73.5	110
	3071877	LED-ES ULTRA LH 73IN 3500K	14	15	93+	73.5	105
	3071896	LED-ES ULTRA RH 73IN 3500K	14	15	93+	73.5	105
NEUTRAL WHITE	3071857	LED-ES ULTRA CTR 34IN 4000K	10	11	93+	34.0	110
	3071878	LED-ES ULTRA LH 34IN 4000K	6	7	93+	34.0	105
	3071897	LED-ES ULTRA RH 34IN 4000K	6	7	93+	34.0	105
	3071858	LED-ES ULTRA CTR 46IN 4000K	14	15	93+	46.7	110
	3071879	LED-ES ULTRA LH 46IN 4000K	9	10	93+	46.7	105
	3071898	LED-ES ULTRA RH 46IN 4000K	9	10	93+	46.7	105
	3071859	LED-ES ULTRA CTR 58IN 4000K	17	18	93+	58.6	110
	3071880	LED-ES ULTRA LH 58IN 4000K	11	12	93+	58.6	105
	3071899	LED-ES ULTRA RH 58IN 4000K	11	12	93+	58.6	105
	3071860	LED-ES ULTRA CTR 65IN 4000K	19	21	93+	65.7	110
	3071881	LED-ES ULTRA LH 65IN 4000K	12	14	93+	65.7	105
	3071900	LED-ES ULTRA RH 65IN 4000K	12	14	93+	65.7	105
	3071861	LED-ES ULTRA CTR 73IN 4000K	22	25	93+	73.5	110
	3071882	LED-ES ULTRA LH 73IN 4000K	14	15	93+	73.5	105
	3071901	LED-ES ULTRA RH 73IN 4000K	14	15	93+	73.5	105
COOL WHITE	3071862	LED-ES ULTRA CTR 34IN 5000K	10	11	93+	34.0	110
	3071883	LED-ES ULTRA LH 34IN 5000K	6	7	93+	34.0	105
	3071904	LED-ES ULTRA RH 34IN 5000K	6	7	93+	34.0	105
	3071863	LED-ES ULTRA CTR 46IN 5000K	14	15	93+	46.7	110
	3071884	LED-ES ULTRA LH 46IN 5000K	9	10	93+	46.7	105
	3071906	LED-ES ULTRA RH 46IN 5000K	9	10	93+	46.7	105
	3071864	LED-ES ULTRA CTR 58IN 5000K	17	18	93+	58.6	110
	3071885	LED-ES ULTRA LH 58IN 5000K	11	12	93+	58.6	105
	3071907	LED-ES ULTRA RH 58IN 5000K	11	12	93+	58.6	105
	3071865	LED-ES ULTRA CTR 65IN 5000K	19	21	93+	65.7	110
	3071886	LED-ES ULTRA LH 65IN 5000K	12	14	93+	65.7	105
	3071909	LED-ES ULTRA RH 65IN 5000K	12	14	93+	65.7	105
	3071866	LED-ES ULTRA CTR 73IN 5000K	22	25	93+	73.5	110
	3071887	LED-ES ULTRA LH 73IN 5000K	14	15	93+	73.5	105
	3071910	LED-ES ULTRA RH 73IN 5000K	14	15	93+	73.5	105

Specifications subject to change without notice. For additional resources, contact your representative or visit www.hussmann.com.

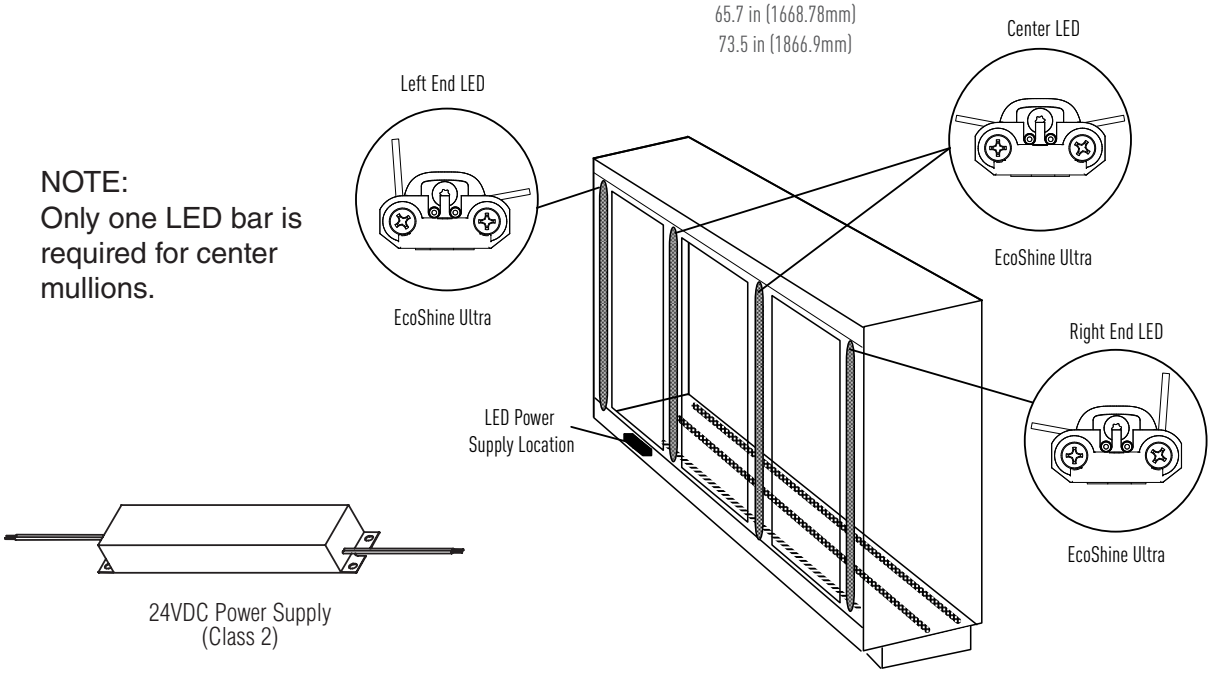
Dimensions and Placement

EcoShine ULTRA Vertical Mullion Length (including installation bracket)

ECOSHINE ULTRA
VERTICAL LED LIGHT LENGTHS

34 in (863.6mm)
46.7 in (1186.18mm)
58.6 in (1488.44mm)
65.7 in (1668.78mm)
73.5 in (1866.9mm)

NOTE:
Only one LED bar is required for center mullions.



(Standard RL Merchandiser Shown)

RECOMMENDED TOOLS AND SUPPLIES


Safety Eye-wear

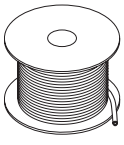

Tape Measure


Heat Shrink Butt Terminals


Wire Nuts


Gloves


DMM
Digital Multimeter


Wire


Battery-powered Drill


Diagonal Pliers


Wire Stripper

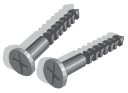

Bit Depth Collar

Phillips and Flat Blade Screwdrivers

7/64 Drill Bit

9/64 Drill Bit

5/32 Drill Bit


#6 Self-Tapping (2 per Bracket)

REPLACING EXISTING VERTICAL LIGHTING

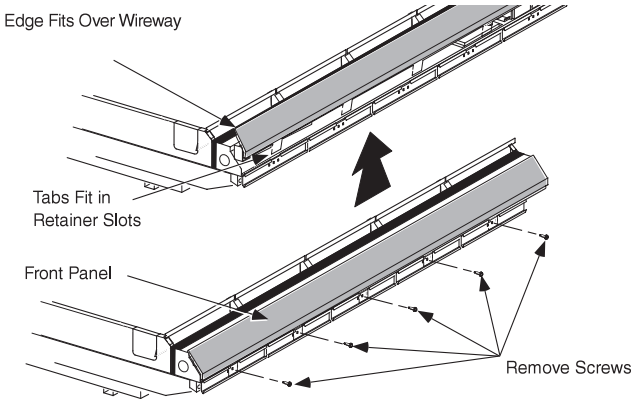
IF REMOVING INNOVATOR DOOR FLUORESCENT LIGHTING:

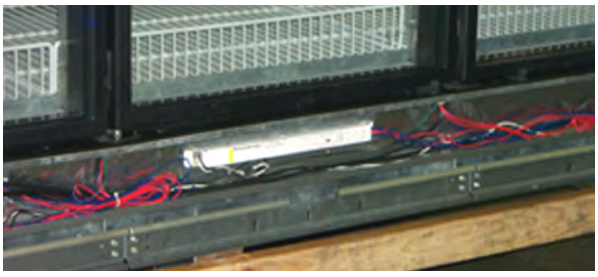
1. Remove product from the merchandiser and store at appropriate product temperature.

2. Turn the light switch to off. The switch is located inside the case on the door mullion.

3. Lock out and tag out the circuit breaker for the lighting circuit of the case where the LED light fixtures are being installed.

4. Remove appropriate bumpers and front panels to access the electrical wireway, then remove wireway cover. Use a VOLTMETER to verify there is no voltage at the ballasts.





Remove Panels to Locate Ballast
(Typical Installation)

5. Remove and discard the lenses covering the fluorescent tubes.

6. Remove the fluorescent tubes.

Fluorescent Lamp Disposal: The United States Environmental Protection Agency has information regarding environmentally-safe fluorescent lamp waste management programs.

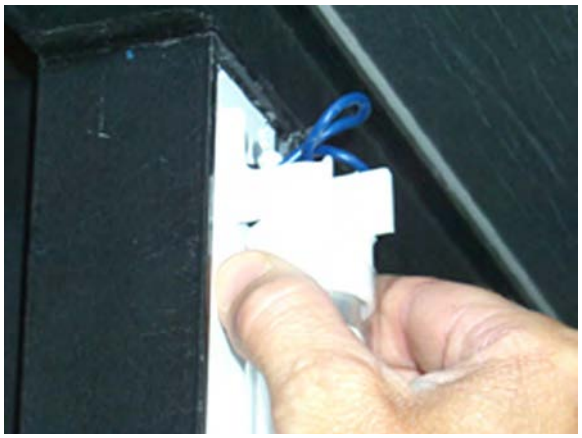
On the Net: EPA Web site:
http://www.epa.gov/osw/hazard/wastetypes/universal/lamps/recycle.htm

⚠ CAUTION

Prior to drilling make sure that there are no existing components inside the mullion in the areas marked off for the designated holes.

7. Remove the tombstones from the UPPER mounting clips. Cut wires from the tombstones as close to the tombstones as possible. Discard tombstones. Leave the existing fluorescent ballast wires protruding from the mullion for connecting LED light fixture.

8. Use a 9/64 inch drill bit to remove the rivets holding the UPPER tombstone mounting clip in place. Remove and discard all UPPER clips.

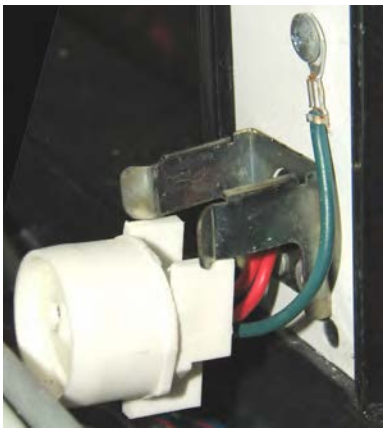


Remove Top Tombstone and Tombstone Support

9. Remove the tombstones from the LOWER mounting clips. Remove or cut wires from the tombstones. If cutting wires, cut them off flush with the existing grommet. Cut off other end of wires as they enter the wireway. Discard tombstones.

Seal all LOWER cutouts in the mullion using approved silicone sealant.

10. Use a 9/64-inch drill bit to remove the rivets holding the UPPER tombstone mounting clip in place. Remove and discard all UPPER clips.



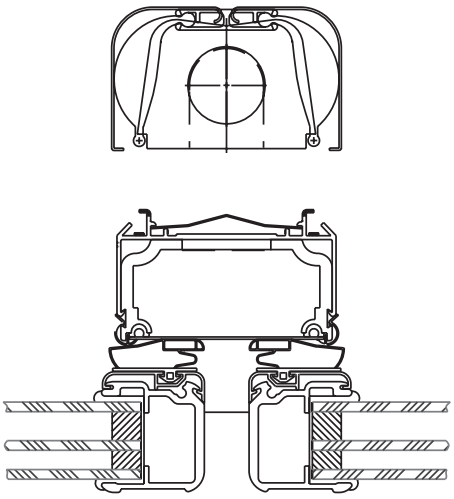
Remove Tombstones

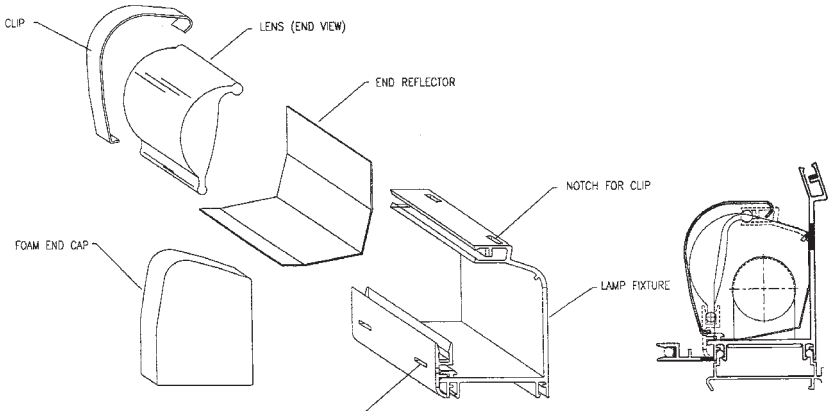
IF REMOVING ANTHONY DOOR FLUORESCENT LAMPS:

1. *Center Mullions:* Remove top and bottom clips. Remove both lenses, and bridge covering the fluorescent tube.

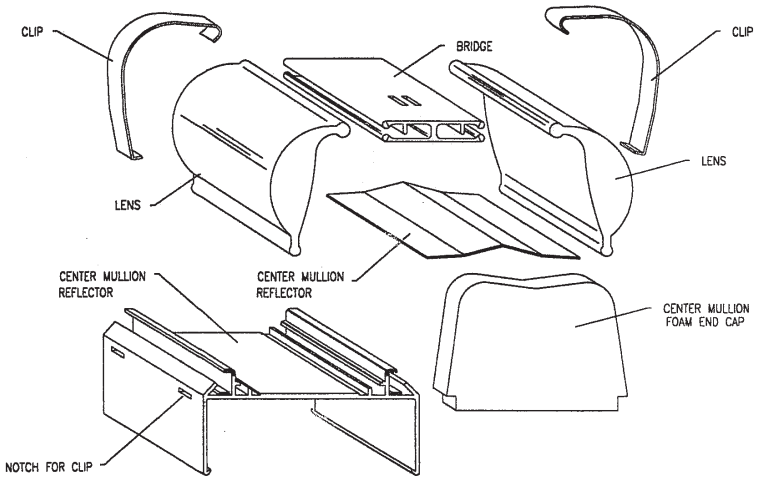
2. *End Mullion:* Remove top and bottom clips. Remove lens covering and fluorescent tube.

3. Remove the fluorescent lamps and insulator tubes. Remove the end caps.





Remove Anthony End Mullion
Fluorescent Lamps



Remove Anthony Center Mullion
Fluorescent Lamps

4. Cut wires from lamp-holder, leaving as much wire as possible. Remove End Lamp Fixture. Leave the busing and existing fluorescent ballast wires protruding from the mullion for connecting light fixture.

5. Remove the lamp-holders from the LOWER mounting clips. Remove the cut wires from the lamp-holders. If removing wires, reinstall the bushing into the electrical cutout. If cutting wires, cut them off flush with the grommet. Cut off other end of wires as they enter the wireway. Discard lamp-holders.

REFER TO FLUORESCENT WIRING DIAGRAMS TO LOCATE AND REMOVE THE BALLASTS.

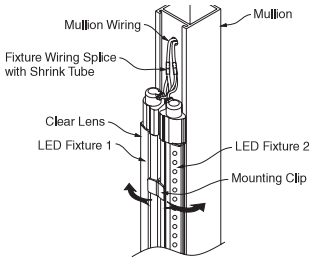
6. Seal off the LOWER cutouts in the mullion using approved silicone sealant.

7. Leave the LOWER lamp-holder clip in place on all CENTER mullion to locate and hold the new light fixture.

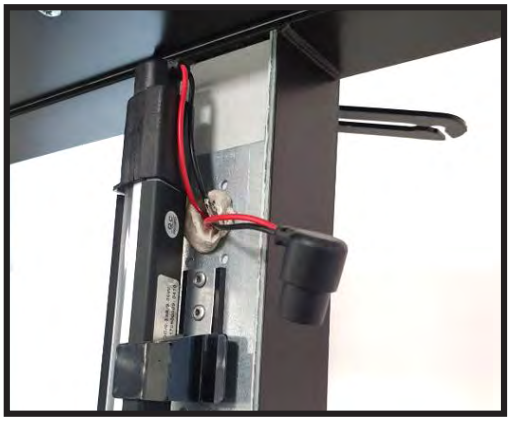
8. Remove the LOWER lamp-holder clips from the center and end mullion. The reflector is a stainless steel sheet metal part that runs the length of the mullions. It will interfere with the installation of the mounting clips. Wear gloves to prevent injury when handling the reflector. Use a flat-bladed screwdriver to pry the reflector from its mounting.

IF REMOVING ECOSHINE II LEDS

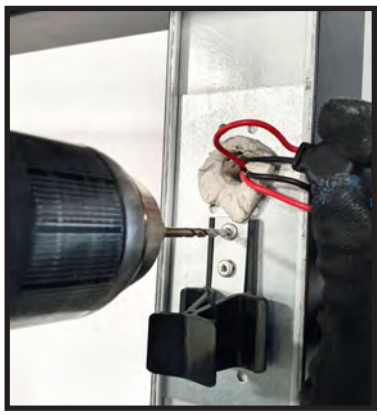
1. Use a flat head screw driver to pry the LEDs out of the brackets that secure LEDs to the mullions.



2. Remove the LED from the wire connector. Connectors are at end of light bar.



3. Drill out screws to remove brackets from the mullion.



ECOSHINE ULTRA LED INSTALLATION

Ensure that all open holes in the mullion have been sealed using an approved silcone sealant or permagum sealing compound.

Ensure end of LED bar with the wiring is facing the direction (up or down) of power supply wiring. LED bars should be oriented with wires pointed down if wireway is at the bottom of the doors, on top if the wireway is on top of the doors.

1. Vertical LED bars should be centered on the mullion.

2. Mark and drill 5/32 inch diameter holes.

⚠ CAUTION

Prior to drilling make sure that there are no existing components inside the mullion in the areas marked off for the designated holes.

IMPORTANT!

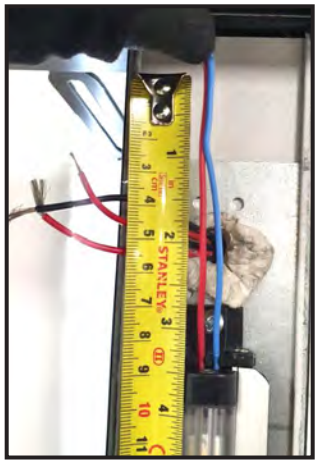
Do not leave any other open holes in an enclosure of wiring or electrical components. Do not use self-tapping screws. Do not tighten fasteners more than 1 lbs of torque.

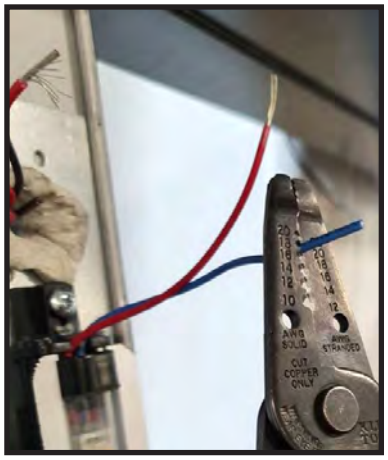
Hole Locations

3. Apply VHB tape to back of LED bar and center of mullion (3 places, top, bottom of center.)

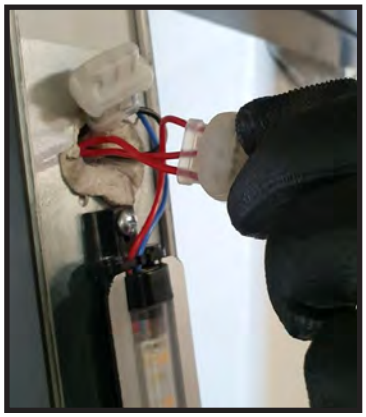
4. Use two #10 sheet metal screws to fasten. There is one screw location at the top and one at the bottom of the LED bar.

5. Cut the plug from the mullion LED harness. Cut the LED wires to about 3 inches. Strip wires 3/8 inches.





6. Reconnect wiring with new connectors for the new LED bar. Be sure to crimp connection using crimping plyers. Hide wiring so that no wires are exposed. Verify circuit against appropriate wiring diagram. Wiring diagrams for EcoShine Ultra cases are shown begining on Page 15 of this manual. If existing wiring is present, use the wiring to fish the new LED wiring to the power supply location.



CONNECT LED POWER SUPPLY

1. Remove Ballast(s) (if installed) from the mullion(s) or electrical wireway. Walk-in ballasts are usually located at the top of the doors. Reach-in power supplies are located at the bottom of the doors, but may be at the top for some models.

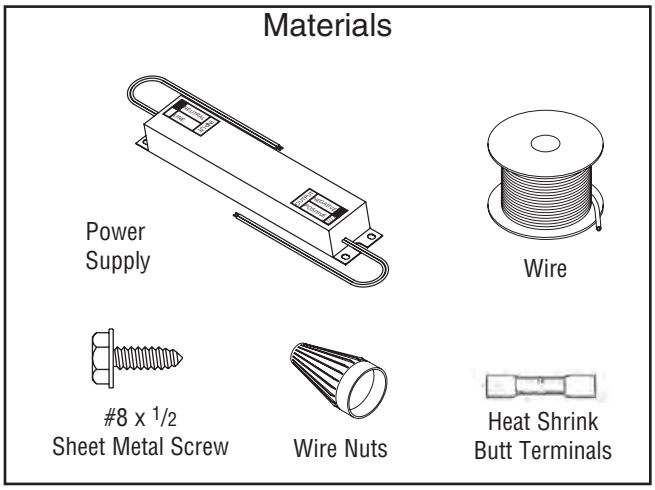
2. Mount the LED power supply in the mullion or wireway. Existing wiring may be used. If mounting power supply in mullion, trial fit the mullion cover before permanently mounting the power supply. Power supply has a 120V 50/60 Hz input and a 24V DC output.

Remove Ballast & Install Power Supply
(Typical Installation)

DO NOT LEAVE ANY EXPOSED WIRE NUTS OR CONNECTORS. RETROFIT LED FIXTURES HAVE LONG WIRING. FISH NEW WIRING THROUGH MULLION USING EXISTING POWER SUPPLY / BALLAST WIRING.

⚠ CAUTION

Ensure that all connection points are sealed for damp location using the appropriate method per the NEC or local electrical code.



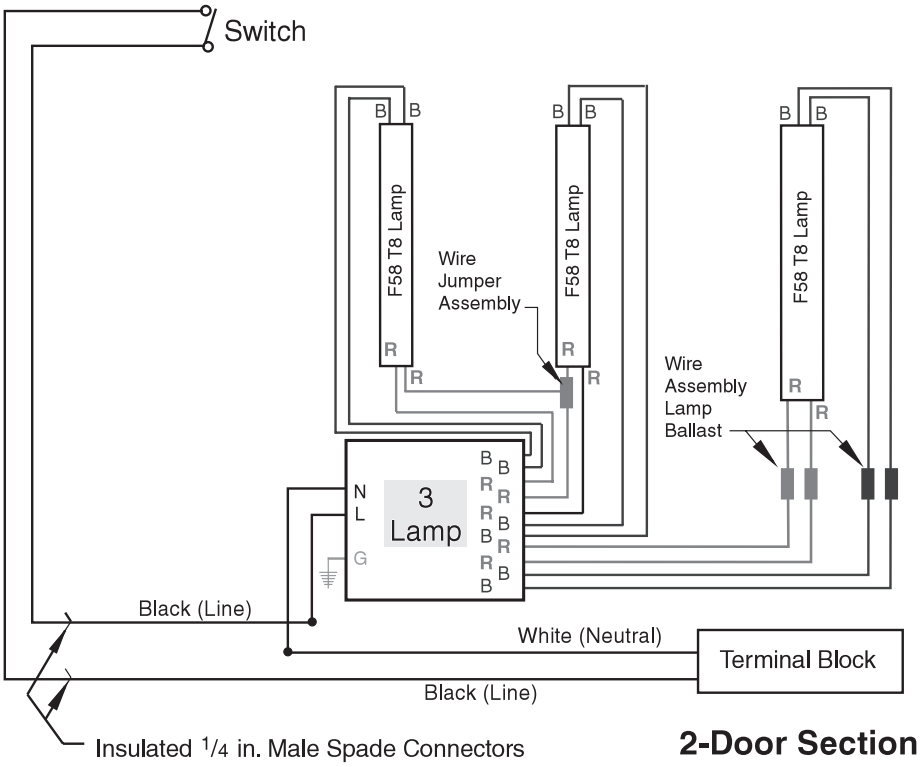
3. Follow appropriate wiring diagram on the following pages. Connect the original load and neutral wires to LED power supply input wires (black and white wires) and secure with approved wiring nuts. **All wiring from the LEDs is to fed to the wireway through existing wireway electrical knockout holes. All connections should be made in the wireway as shown in the photo at left. No holes need to be drilled.**

4. Connect the LED power supply output wires (red and blue wires) to existing wiring. LED light fixtures are not polarity sensitive.

5. Additional wiring may be needed to connect the power supply to existing wiring in the wireway. Use conductors of proper size and rating.

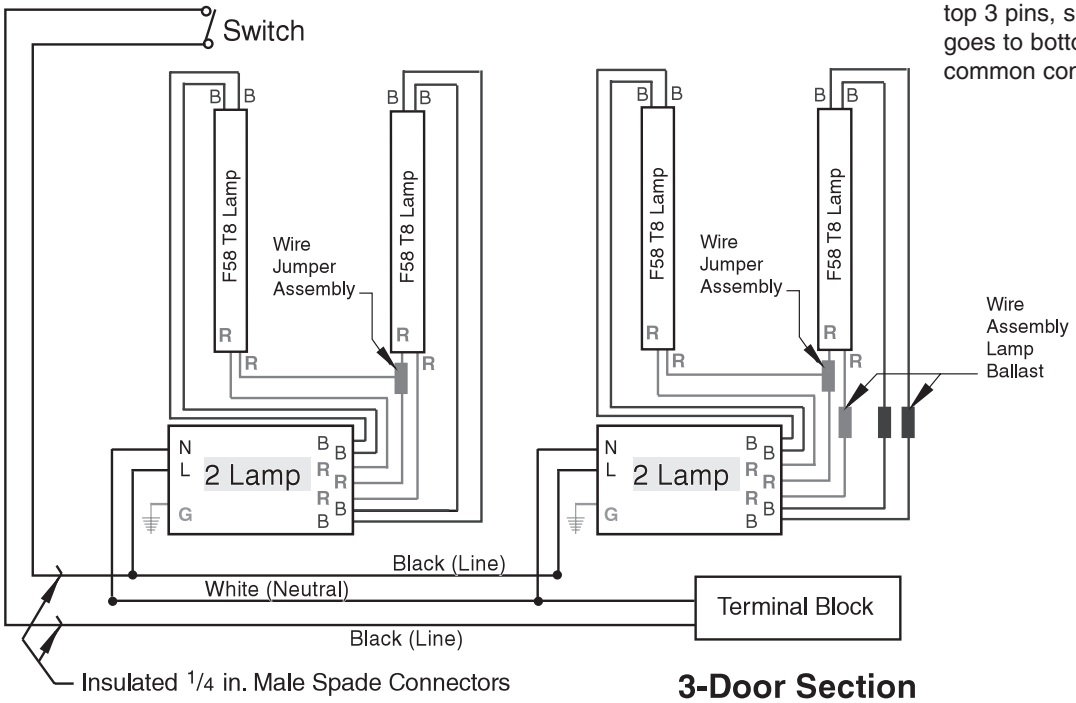
6. Ground power supply by either a) using the green ground wire, if provided with the power supply, b) directly by attaching a green wire with screws to both the refrigerator raceway and power supply case, or c) electrically bonded by fasteners holding the power supply to the raceway.

120V Electronic Ballast Wiring Diagrams



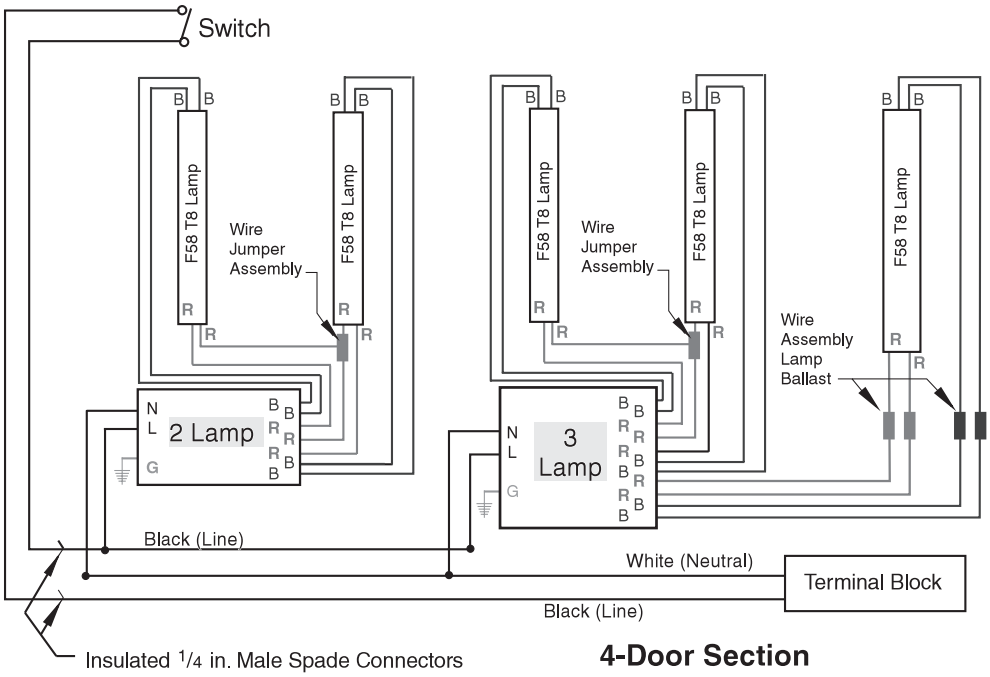
2-Door Section

Two lamp wiring has a red wire from each lamp spliced together and returning to the ballast. Two blue wires and one red wire go to the ballast as a group from each lamp. Note that one lamp goes to top 3 pins, second lamp goes to bottom 3 pins, with a common connection between.

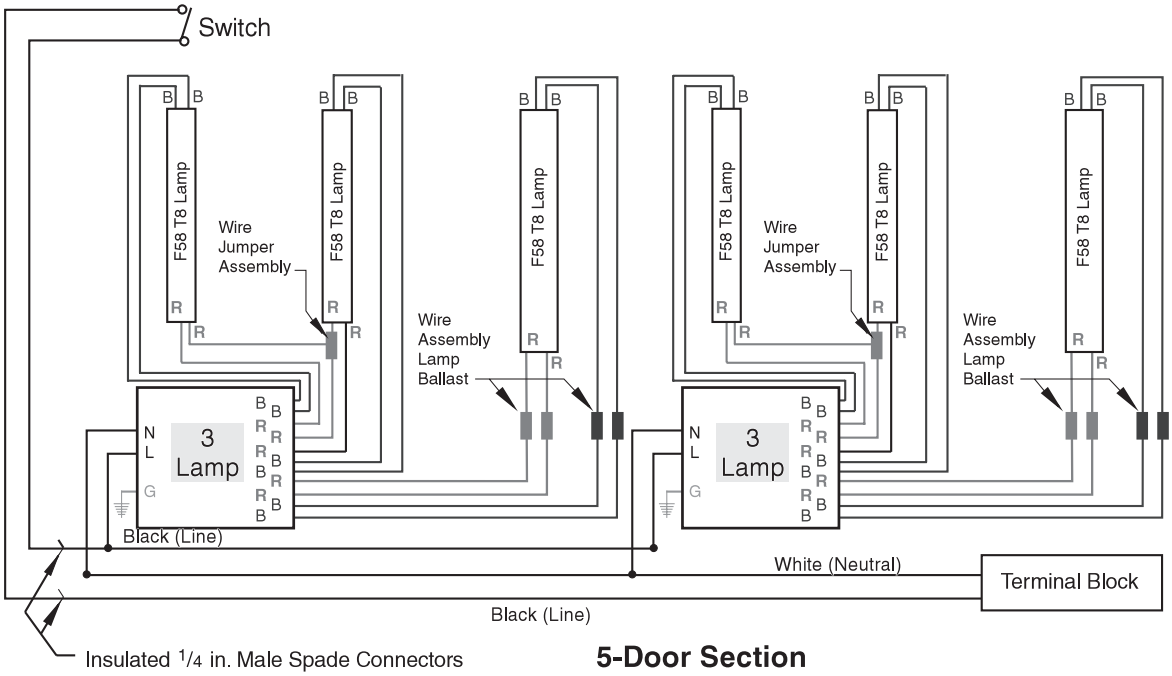


3-Door Section

120V Electronic Ballast Wiring Diagrams



4-Door Section



5-Door Section

WIRING DIAGRAMS

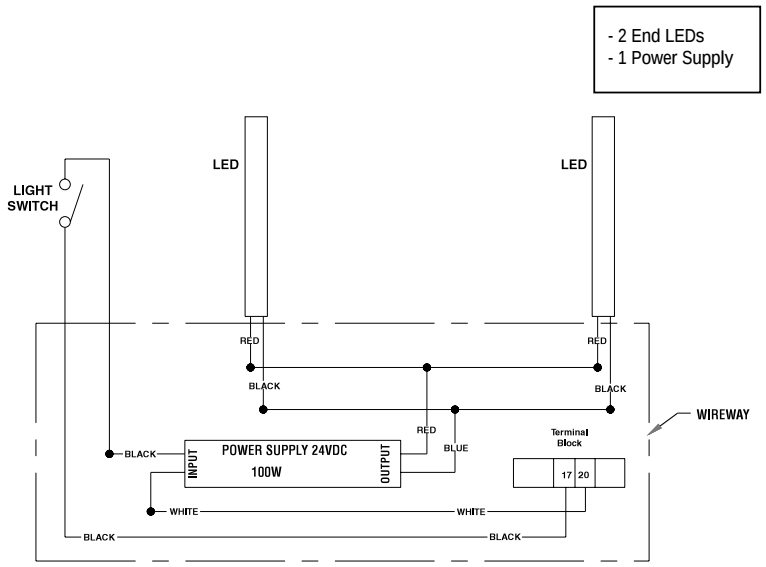
Wiring diagrams are shown below for 1-door and 2-door cases or walk-in doors.

NOTE: Wiring diagrams for Anthony Doors are contained in the manufacturer's documentation.

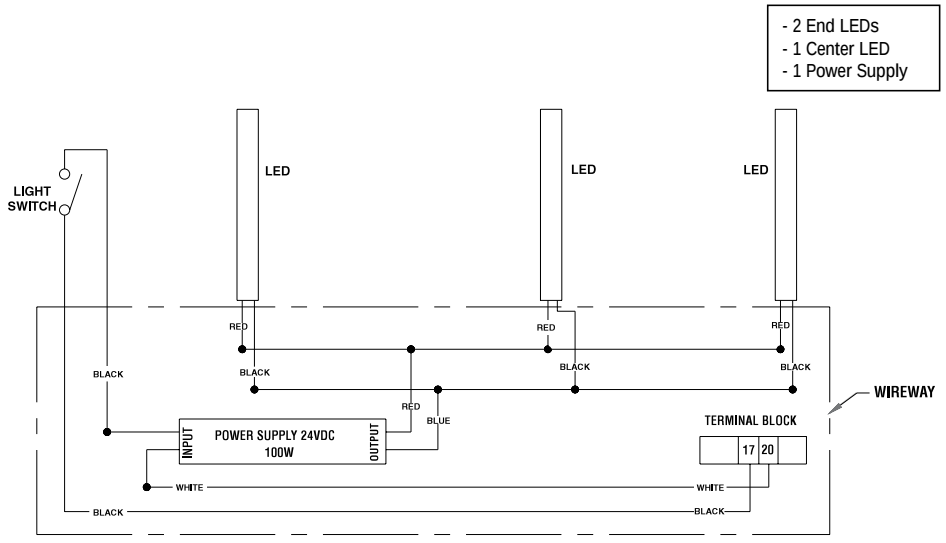
NOTE:

- Represents wiring splice LED fixtures are not polarity sensitive

1 DOOR LED LIGHT WIRING DIAGRAM



2 DOOR LED LIGHT WIRING DIAGRAM



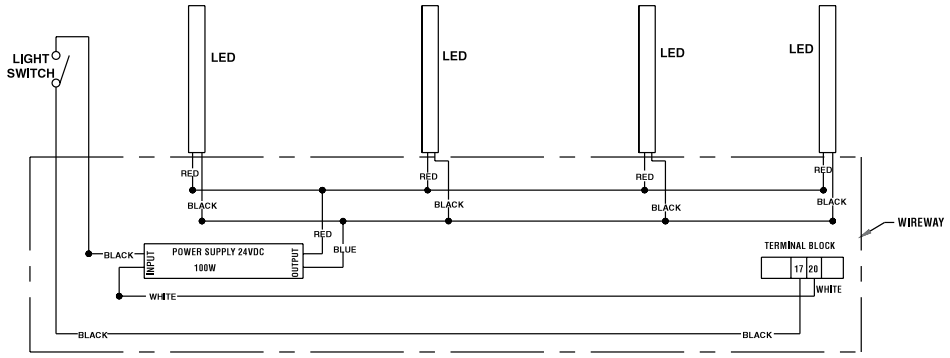
NOTE: Wiring diagrams shown above are for merchandisers with 58 in. and 65 in. EcoShine ULTRA Vertical LEDs.

Wiring diagrams are shown below for 3-door and 4-door cases or walk-in doors.

NOTE:
Represents wiring splice
LED fixtures are not polarity sensitive

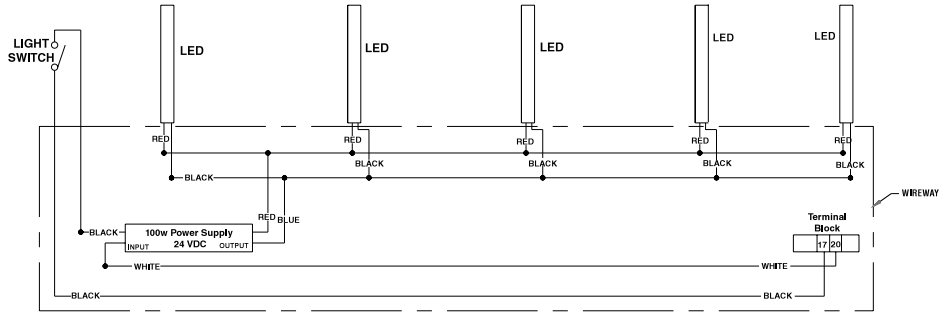
3 DOOR LED LIGHT WIRING DIAGRAM

- 2 End LEDs
- 2 Center LEDs
- 1 Power Supply



4 DOOR LED LIGHT WIRING DIAGRAM

- 2 End LEDs
- 3 Center LEDs
- 1 Power Supply



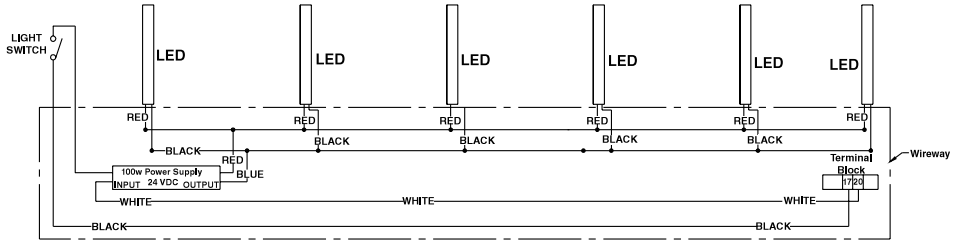
NOTE: Wiring diagrams shown above are for merchandisers with 58 in. and 65 in. EcoShine ULTRA Vertical LEDs.

Wiring diagrams are shown below for 5-door cases or walk-in doors.

NOTE:
Represents wiring splice
LED fixtures are not polarity sensitive

5 DOOR LED LIGHT WIRING DIAGRAM

- 2 End LEDs
- 4 Center LEDs
- 1 Power Supply



NOTE: Wiring diagrams shown above are for merchandisers with 58 in. and 65 in. EcoShine ULTRA Vertical LEDs.

FINISHING THE INSTALLATION

1. Replace wireway cover.

2. Turn circuit breaker to ON

3. Remove protective film from lens (if applicable.)

4. Turn light switch to ON.

5. Check operation of LED light fixtures.

6. Replace front panels and associated hardware and bumpers.

7. Clean up work area.

8. Replace bottom wire racks.

9. Return product to merchandiser after merchandiser reaches appropriate product temperature.

ALWAYS*CLEAR™ GLASS

Hussmann recommends using a soft cloth with isopropyl (rubbing) alcohol to clean the inside (coated) glass surface. Isopropyl alcohol does not freeze and evaporates without leaving residue. Always allow the surface to dry before closing the door. Use of abrasives may damage the coated surface and void the warranty. Labels (stickers) applied to the coated surface will cause damage and void the warranty.

CLEANING LED FIXTURES

Use a lint-free cloth to wipe the surface of the luminaires. Do NOT use scouring pads, bleach, solvents, or detergents. This may damage the surface of the clear plastic cover.

Do not get these LEDs wet when cleaning the merchandiser. These LEDs are not for use in damp or wet environments.

HUSSMANN®

To obtain warranty information or other support, contact your Hussmann representative. Please include the model and serial number of the product.

Hussmann Corporation, Corporate Headquarters: Bridgeton, Missouri, U.S.A. 63044-2483 01 October 2012

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