

HUSSMANN®

EcoShine II Horizontal LEDs

*for Service, Self-Service and Specialty Merchandisers
Shelf, Rail and Canopy*



Upgrade Installation Manual

P/N 0524983_D
October 2016

MANUAL- KIT INSTALLATION ECOSHINE II SERVICE, SELF-SERVICE SPECIALTY

Spanish 0527938
French 0531196



BEFORE YOU BEGIN

Read these instructions completely and carefully.



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.

WARNING

TO PREVENT WIRING DAMAGE OR ABRASION, DO NOT EXPOSE WIRING TO EDGES OF SHEET METAL OR OTHER SHARP OBJECTS.

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.

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 ELECTRICAL COMPONENTS.

WARNING

RISK OF FIRE OR ELECTRICAL SHOCK. INSTALL THIS KIT ONLY IN THE LUMINAIRES THAT HAVE THAT HAVE THE CONSTRUCTION FEATURES AND DIMENSIONS SHOWN IN THE PHOTOGRAPHS AND / OR DRAWINGS.

WARNING

TO PREVENT WIRING DAMAGE OR ABRASION, DO NOT EXPOSE WIRING TO EDGES OF SHEET METAL OR OTHER SHARP OBJECTS.

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REVISION HISTORY

REVISION D — Removed ES Plus, updated LED charts, new pictures of canopy LEDs

REVISION C — Added high output LEDs, updated brackets and power supply parts

REVISION B — Added caution boxes on Page 2. Updated Lighting Chart, Page 9; New drawing of shelf clip page 13.

REVISION A — Original Issue

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

HUSSMANN®

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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

KEEPING THE PUBLIC OUT:

The following techniques reduce the risk of injury to third parties (shoppers, store employees, etc.):

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

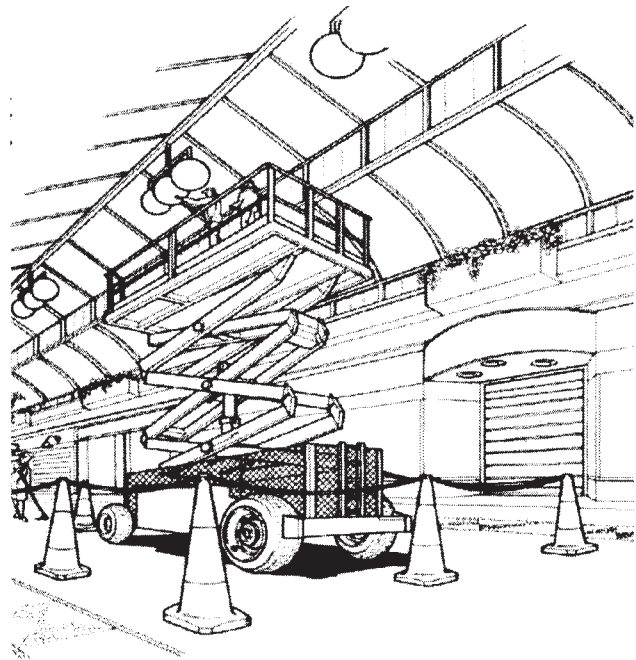
Can the public be exposed to any chemicals, refrigerants or fumes? If yes, can steps be taken to eliminate or reduce the risk of exposure? to guard against accidental release of refrigerants, make sure the work area is adequately cordoned off (instead of posting a *WET FLOOR* sign, use *CAUTION* tape 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?

Do light bulbs need to be replaced: If yes, will high work be conducted from a ladder or a scissor lift? Make sure the work area is cordoned off as shown below.



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>

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.

WORKING AT HEIGHT

Will you be working more than six feet off the ground? If yes, have you received appropriate training (i.e., ladder, scissor lifts and personal fall-arrest systems)?

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

Will you be working on roofs with unprotected edges? If yes, make sure actions are taken to prevent a fall (i.e., identification of **adequate** anchor points for safety harnesses).

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 permit-required confined space entry required? If yes, have appropriate steps been taken for safe entry, such as permit issuance. **If in doubt, DO NOT ENTER 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?


REMOTE AND LIMITED USE LOCATIONS


Is there the potential to contact poisonous plants (ivy, oak or sumac)? If yes, make sure you wear proper PPE (gloves, long pants and long sleeves).

Check for snakes, vermin and bees / wasps. If stung or bitten, do you have reactions that require medical treatment, such as Epinephrine EpiPen? If yes, inform the client prior to starting work.

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.

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.

LED LIGHT FIXTURES

EcoShine II LED (light emitting diode) lights 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.

Hussmann EcoShine II LED light fixtures normally perform for up to 50,000 hours. That is 5.7 years of continuous, 24 hour operation. They are backed by a multi-year materials warranty on the LED light strips and a five-year materials warranty on the power supply.

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.

GENERAL

This instruction explains how to remove original equipment manufacture (OEM) fluorescent lamp fixtures and replace them with Hussmann LED light bars for service and specialty merchandisers.

FOR YOUR SAFETY

- 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).

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.

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

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

THESE ARE MARKER COLORS, WIRES MAY VARY.

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 01-800-890-2900

REMOVE EXISTING FLUORESCENT LIGHTING (IF PREVIOUSLY INSTALLED)

1. Remove product from the merchandiser and store at appropriate product temperature.
2. Lock out and tag out the circuit breaker for the lighting circuit of the case where the LED light fixtures are being installed.

3. If fluorescent lighting is present in the shelves; it should be removed.
4. Remove and discard the lenses covering the fluorescent tubes.
5. Remove the fluorescent tubes.

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.

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>

EcoShine II Horizontal Lighting

- Shelf, Rail and Canopy for Specialty and Service

Factory, Replacement and Upgrade Parts

	Aftermarket Part Number	Description	Energy Watts (DC) per Fixture	Energy Watts (AC) / per Fixture	CRI Rating (Typical)	Length (inches)	Efficacy (Lumens/Watt) Typical
Warm White	3004880	EcoShine II Shelf 3000K 12 in.	1.8	2.1	93	12	90
	3004883	EcoShine II Shelf 3000K 18 in.	2.9	3.4	93	18	90
	3004886	EcoShine II Shelf 3000K 24 in.	4.0	4.7	93	24	90
	3004889	EcoShine II Shelf 3000K 36 in.	6.2	7.2	93	36	90
	3004892	EcoShine II Shelf 3000K 36 in. High Output	10.2	11.9	93	36	90
	3004895	EcoShine II Shelf 3000K 48 in.	8.7	10.1	93	48	90
	3004898	EcoShine II Shelf 3000K 48 in. High Output	14.7	17.1	93	48	90
	3004901	EcoShine II Shelf 3000K 60 in.	10.2	11.9	93	60	90
	3004904	EcoShine II Shelf 3000K 72 in.	13.4	15.6	93	72	90
Warm Neutral	3004881	EcoShine II Shelf 3500K 12 in.	1.8	2.1	93	12	90
	3004884	EcoShine II Shelf 3500K 18 in.	2.9	3.4	93	18	90
	3004887	EcoShine II Shelf 3500K 24 in.	4.0	4.7	93	24	90
	3004890	EcoShine II Shelf 3500K 36 in.	6.2	7.2	93	36	90
	3004893	EcoShine II Shelf 3500K 36 in. High Output	10.2	11.9	93	36	90
	3004896	EcoShine II Shelf 3500K 48 in.	8.7	10.1	93	48	90
	3004899	EcoShine II Shelf 3500K 48 in. High Output	14.7	17.1	93	48	90
	3004902	EcoShine II Shelf 3500K 60 in.	10.2	11.9	93	60	90
	3004905	EcoShine II Shelf 3500K 72 in.	13.4	15.6	93	72	90
Neutral White	3004882	EcoShine II Shelf 4000K 12 in.	1.8	2.1	93	12	90
	3004885	EcoShine II Shelf 4000K 18 in.	2.9	3.4	93	18	90
	3004888	EcoShine II Shelf 4000K 24 in.	4.0	4.7	93	24	90
	3004891	EcoShine II Shelf 4000K 36 in.	6.2	7.2	93	36	90
	3004894	EcoShine II Shelf 4000K 36 in. High Output	10.2	11.9	93	36	90
	3004897	EcoShine II Shelf 4000K 48 in.	8.7	10.1	93	48	90
	3004900	EcoShine II Shelf 4000K 48 in. High Output	14.7	17.1	93	48	90
	3004903	EcoShine II Shelf 4000K 60 in.	10.2	11.9	93	60	90
	3004906	EcoShine II Shelf 4000K 72 in.	13.4	15.6	93	72	90

EcoShine II Horizontal LED lights are covered by a limited 5 year parts and labor warranty. See Hussmann warranty policy for additional details.

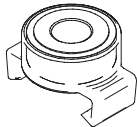
These luminaires are IP67 rated. IP stands for ingress protection. The lights are totally protected from dust ingress and from the effects of fluid immersion between 5.9 in (15cm) and 3.28 ft (1m).

PARTS IDENTIFICATION CHART

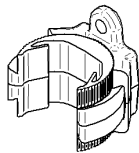
EcoShine II Horizontal LED Shelf/ Canopy Light Fixture



Shelf Magnets or Adjustable Shelf Bracket

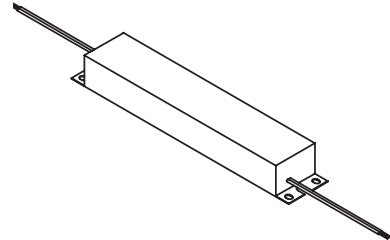


Magnet



Bracket

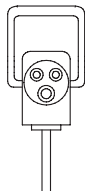
100W 24VDC Power Supply Class 2



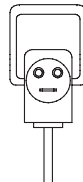
Standard 100W Power Supply
Part Number: 0547639
or
Slimline 100W Power Supply
Part Number: 4483262

Common Shelf Plugs

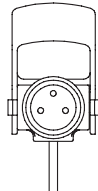
Contact your Hussmann representative to order other custom plug types.



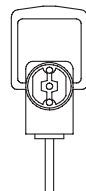
Kysor
3-pin
0523769



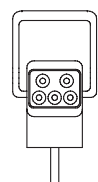
Tyler
3-pin
0523770



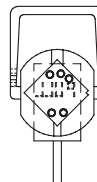
Hill Phoenix
3-pin
0523771



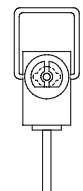
Hill Phoenix
5-pin Barrel
0523766



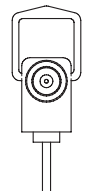
Hill Phoenix
5-pin Square
0523765



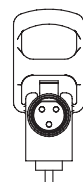
Hussmann
5-pin
0523764



Hussmann
3-pin
0523763



Hussmann
1-pin
0523768



Hussmann
SLC 3-pin
0523767



RECOMMENDED TOOLS AND SUPPLIES



Safety Eye-wear



Tape Measure



Heat Shrink Butt Terminals



Wire Nuts



Battery-powered Drill



Diagonal Pliers



Wire Stripper

Phillips and Flat Blade Screwdrivers

7/64 Drill Bit

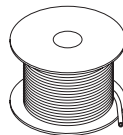
9/64 Drill Bit



Gloves



DMM
Digital Multimeter



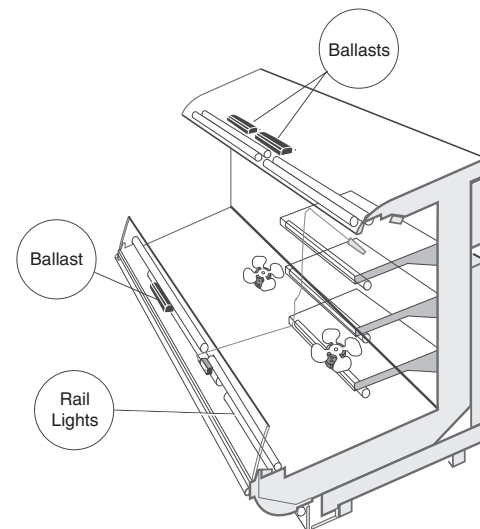
Wire



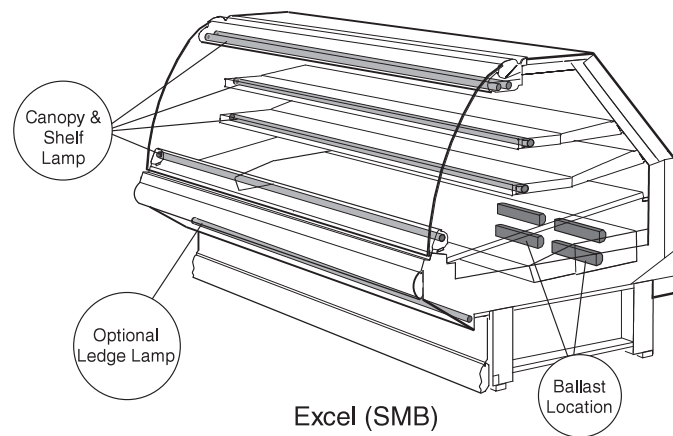
Bit Depth Collar

LOCATE AND REMOVE SHELF BALLASTS:

1. **DISCONNECT POWER TO THE MERCHANDISER.**
2. LED power supplies are installed in the same location as existing ballasts. The ballast location is specific to the case model. If retrofitting a Hussmann case, refer to the technical data sheet for ballast location.
3. Disconnect wires from shelf and canopy ballasts. Note the color of power source wires.
4. Locate and remove the ballasts. Mount the LED power supply(s) in a secure location near where the ballast was located. Power supply has a 120V 50/60 Hz input and a 24VDC output.



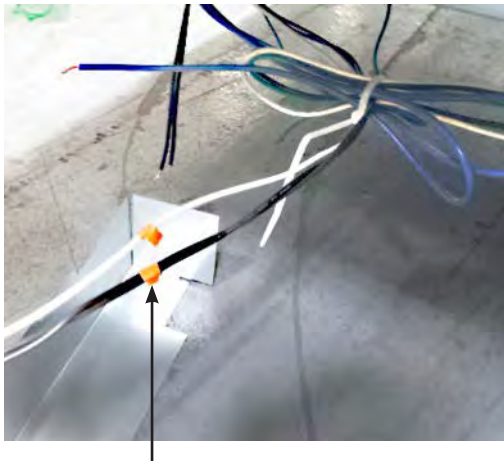
Elite (E3) Shown

Excel (SMB)
Merchandiser Shown

CONNECT WIRING TO POWER SUPPLY

1. Connect the leads to the power supply. Follow the wiring diagrams on the last two pages as a guide. Connect the original load and neutral wires to LED power supply input wires (black and white wires), and secure with approved wiring connectors.
2. Connect the LED power supply output wires to wiring leads.
3. Additional wiring may be needed to connect the power supply to existing wiring in the wireway. Use conductors of proper size and rating.
4. The power supply case is grounded. Attach power supply to a ground point in the refrigerated merchandiser, either directly with a screw, or by using a green wire to attach to a remote ground point

DO NOT LEAVE ANY EXPOSED WIRE NUTS OR CONNECTORS. RETROFIT LED FIXTURES HAVE LONG WIRING LEADS , CLIP OR MAGNETS. FISH NEW WIRING THROUGH MULLION USING EXISTING BALLAST WIRING.



Orange Band

NOTE: Orange or tan band indicates light wiring for Hussmann cases. The photo above shows Hussmann Elite fluorescent shelf wiring. Canopy wiring has a separate outlet for these merchandisers.

TIP: Hussmann factory LED case light wiring is a thicker wire than traditional fluorescent wiring. LED wire colors are black, white and green.

IMPORTANT

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

⚠ WARNING

— LOCK OUT / TAG OUT —

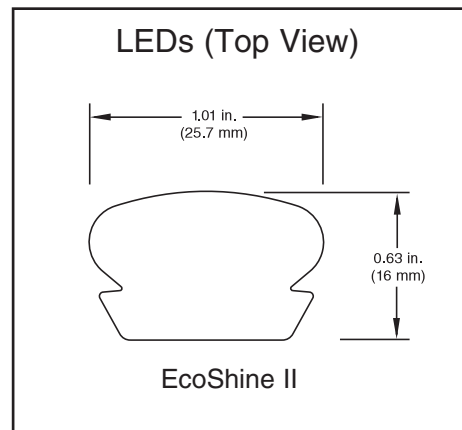
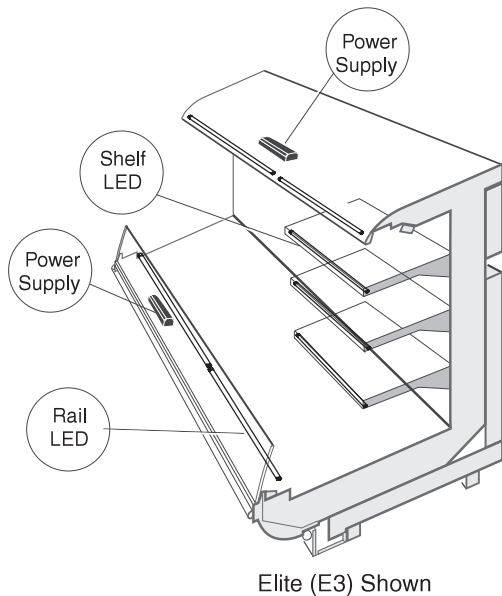
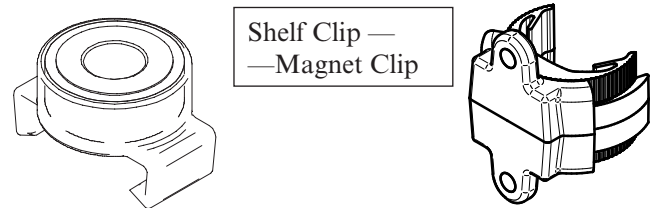
To avoid serious injury or death from electrical shock, always disconnect the electrical power at the main disconnect when servicing or replacing any electrical component. This includes, but is not limited to, such items as doors, lights, fans, heaters, and thermostats.

SHELF/RAIL LIGHT INSTALLATION

1. Remove all existing shelf lights and mounting clips.
2. Use the magnetic clips or shelf clips to affix the light bar to the underside of the shelf.

NOTE:

One power supply can provide power for as many as 10 shelf lights.



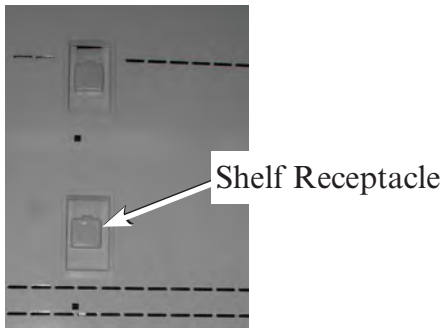
Shelf Lighting - Typical Case Wattage (AC)

Number of Shelves	4 foot	6 foot	8 foot	12 foot
EcoShine II (1 Row)	10.1	14.4	20.2	30.3
EcoShine II (2 Row)	20.2	28.8	40.5	60.7
EcoShine II (3 Row)	30.3	43.3	60.7	91
EcoShine II (4 Row)	40.5	57.7	80.9	121.4
EcoShine II (5 Row)	50.6	72.1	101.2	151.7
EcoShine II (6 Row)	60.7	86.5	121.4	182.1
EcoShine II (7 Row)	70.8	100.9	141.6	212.4

These wattages are to be used for guideline purposes only.

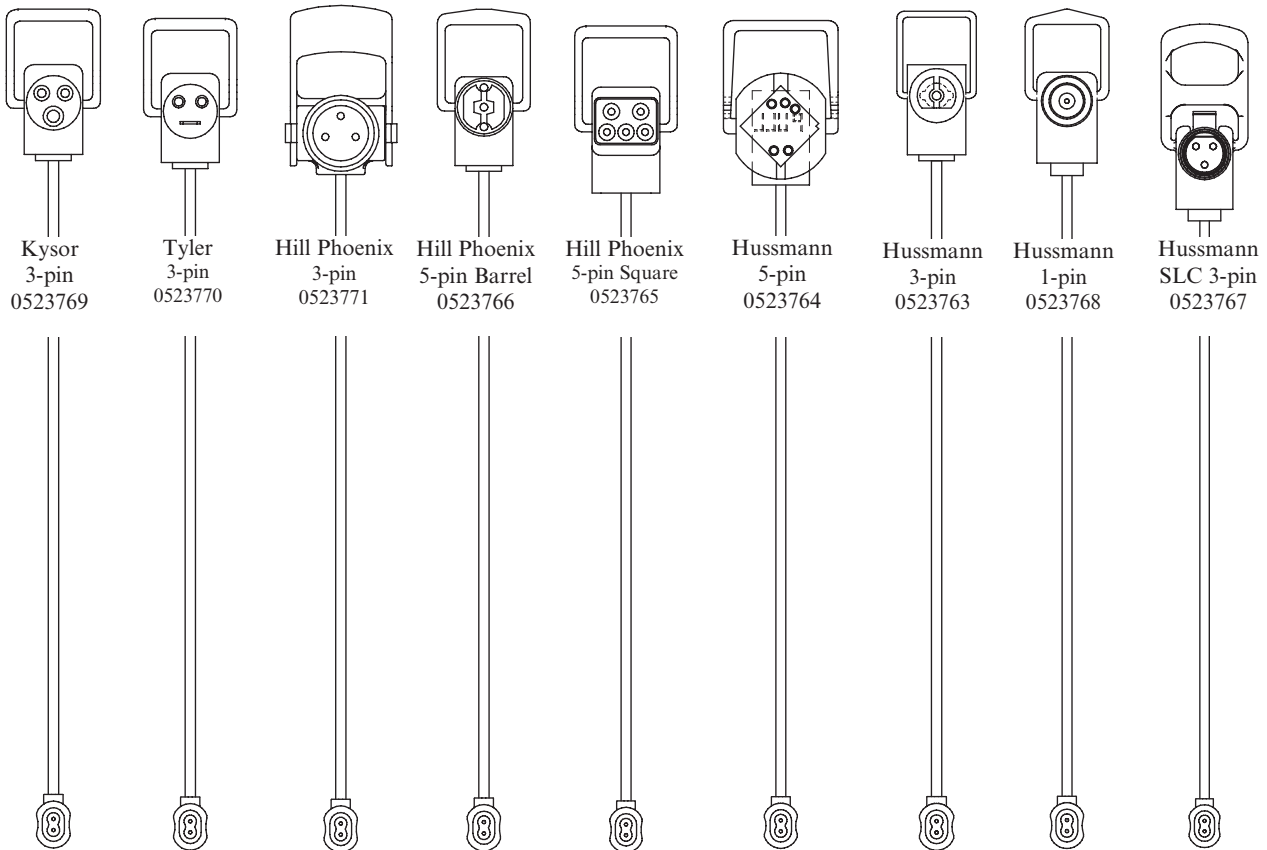
3. Plug the quick-connect plugs into the shelf receptacles at the back of the merchandiser.
4. Use a tie wrap to contain any excess plug wire. Do not allow wire to lie on product or hang loose.

NOTE: Free cord length from last clip (strain relief) to outlet must be less than 12 inches (305 mm). Longer lengths must be constrained. Inspect all shelf lamp plugs and receptacles for arcing, corrosion or other damage. Replace as necessary.

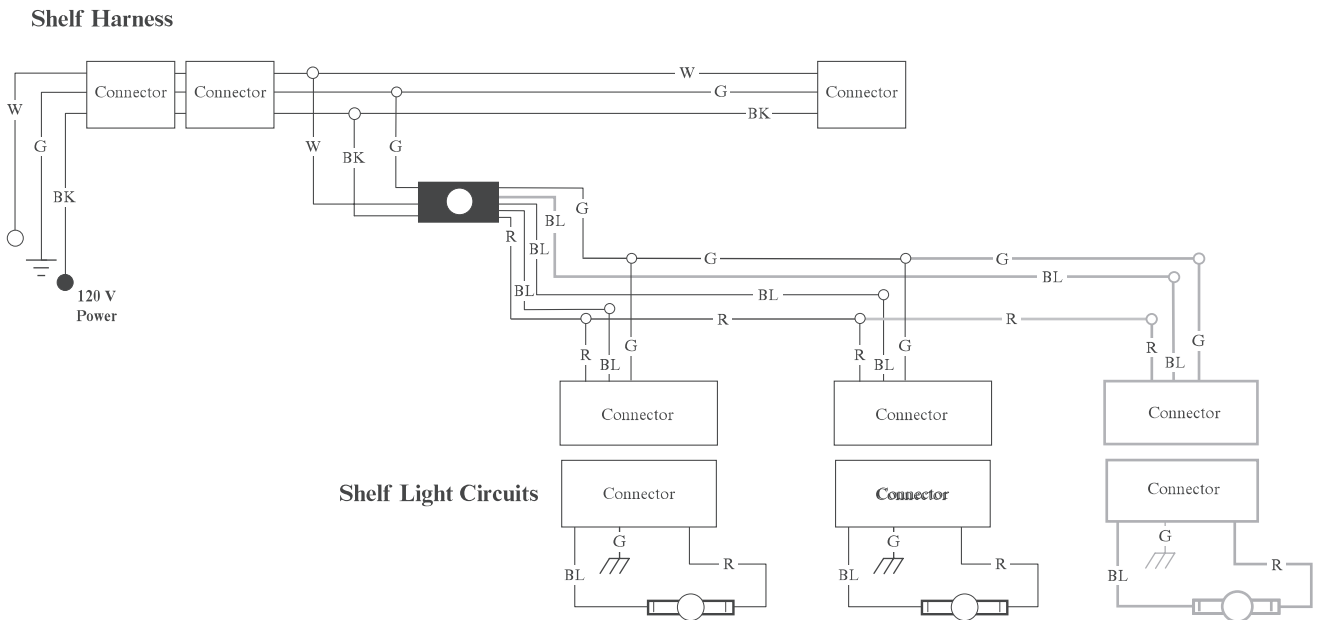


Common Shelf Plugs

Contact your Hussmann representative to order other custom plug types.



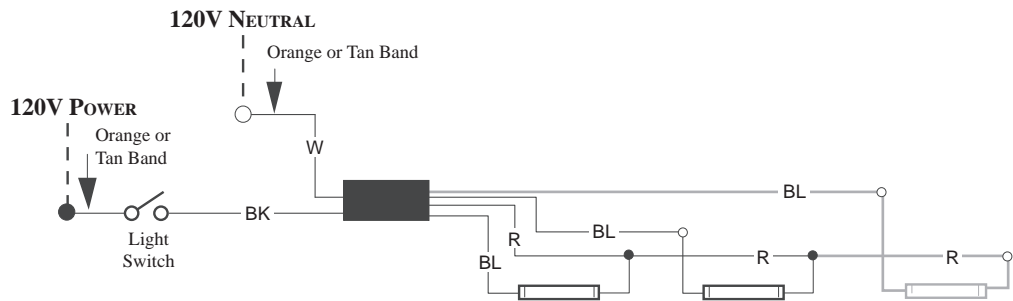
Optional Shelf Harness and Light Circuits for One Row of Shelves



(Typical Hussmann Service Shelf Lighting Wiring Diagram)

If working on a case from a different manufacturer, refer to that models wiring diagrams. Hussmann wiring diagrams for specific models are located in the technical data sheets at Hussmann.com.

Optional Lighting 1 Row Ledge or 1 Row Rail



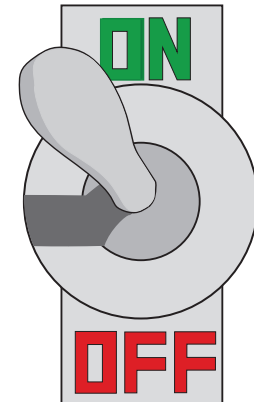
(Typical Hussmann Service Case Canopy Lighting Wiring Diagram)

If working on a case from a different manufacturer, refer to that models wiring diagrams. Hussmann wiring diagrams for specific models are located in the technical data sheets at Hussmann.com.

CANOPY LIGHT INSTALLATION

1. Route electrical wiring connections for the canopy. Connection can be made at the power supply using a molex connector, or use approved wire connectors or heat shrink butt connectors.
2. Attach the Canopy LEDs to the canopy using mounting clips and screws.

3. Restore power to the merchandiser. Verify proper orientation of all canopy light bars.



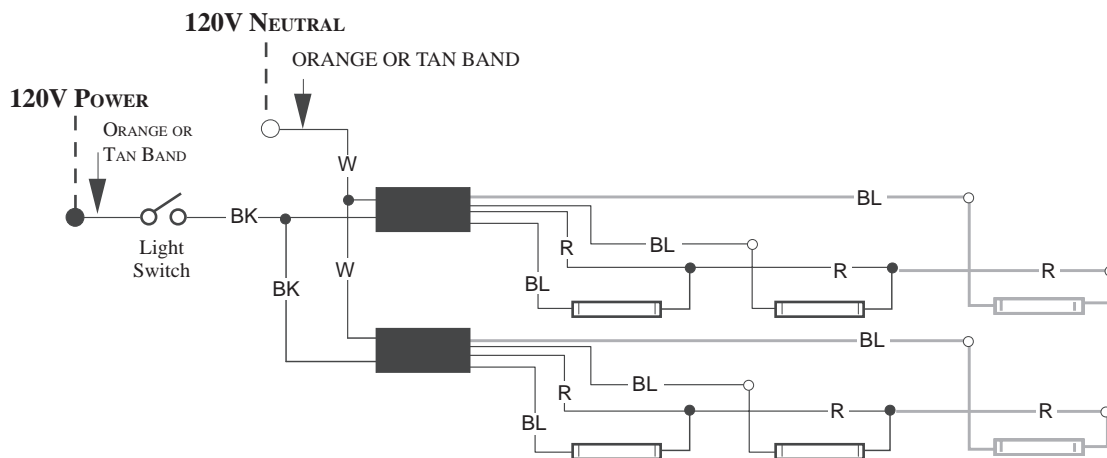
Canopy Lighting - Typical Case Wattage (AC)

Shelf

Shelf/Service Canopy Lighting	4 ft	6 ft	8 ft	12 ft
EcoShine II Shelf (1 Row)	10.1	14.4	20.2	30.3
EcoShine II Shelf (2 Rows)	20.2	28.8	40.5	60.7

These wattages are to be used for guideline purposes only.

Light Circuits for Two Rows of Canopy LED



(Typical Hussmann Service Case Canopy Lighting Wiring Diagram)

If working on a case from a different manufacturer, refer to that models wiring diagrams. Hussmann wiring diagrams for specific models are located in the technical data sheets at Hussmann.com.



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**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

Husmann Corporation

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