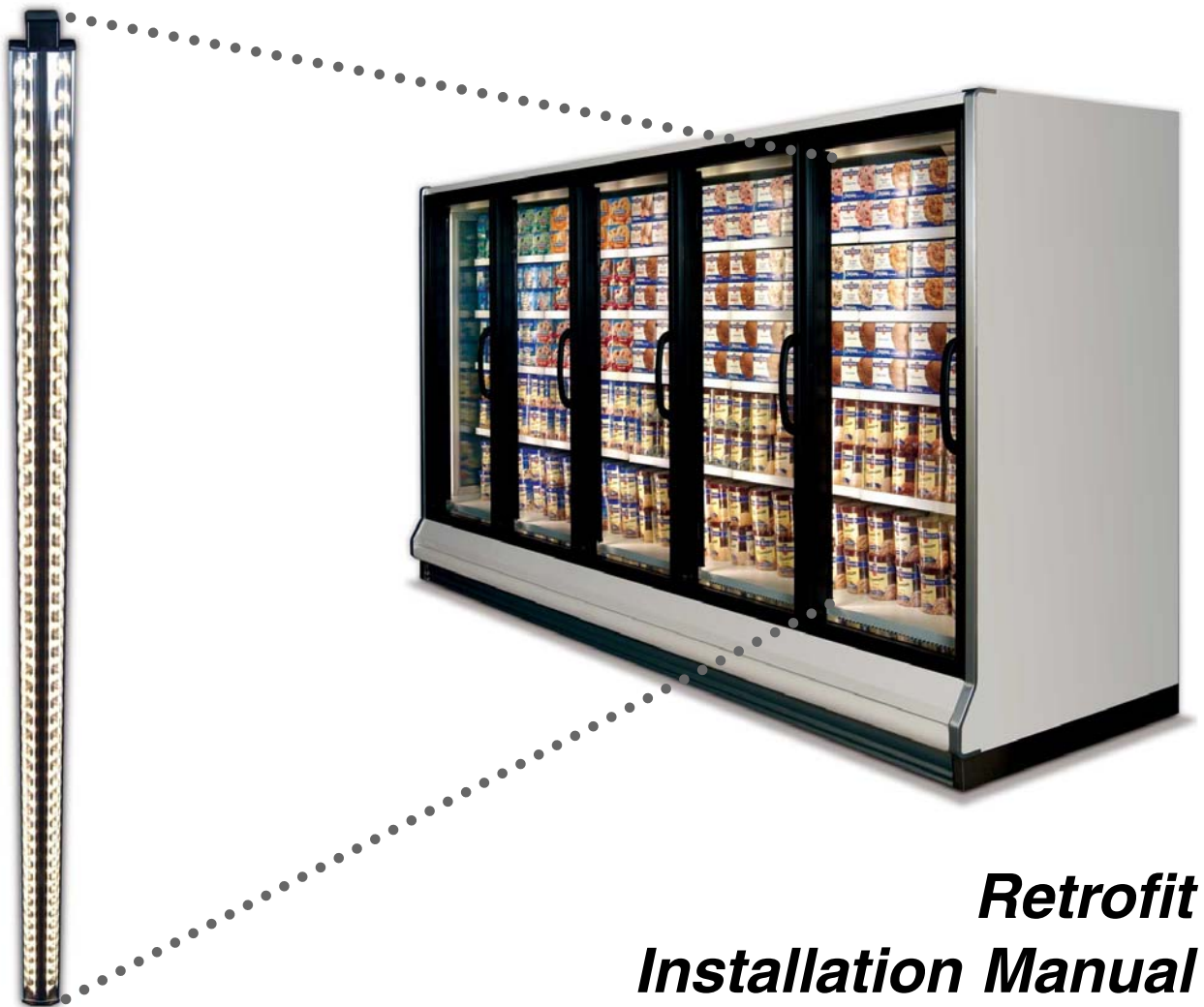


HUSSmann®

IMPACT™ Merchandisers

LED Lighting

Reach-In Merchandisers



Retrofit Installation Manual

P/N 0503148_C

P/N 4150328_C

Impact Series

March 2009



BEFORE YOU BEGIN
Read these instructions completely and carefully.



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REMOVING LED FIXTURE 4-1

REVISION HISTORY

REVISION C — March 2009; replaced parts list 1-2, replaced wiring diagrams 2-7 - 2-11, updated fluorescent bulb information, replaced #8 screw drawings.

REVISION B — February 2009; added backing plate for Anthony Doors - Section 3

REVISION A — Original Issue

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

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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

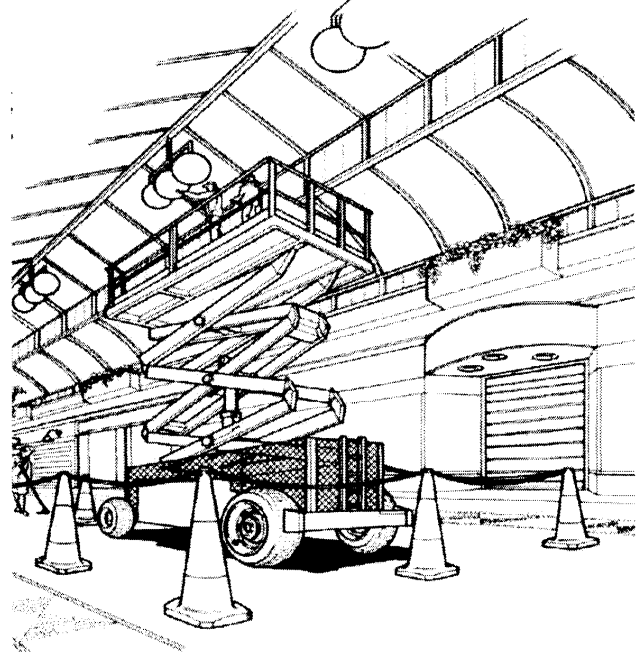
Can the public be exposed to any chemicals, refrigerants or fumes? If yes, can steps be taken to eliminate or reduce the risk of exposure? to guard against accidental release of refrigerants, make sure the work area is adequately cordoned off (instead of posting a *WET FLOOR* sign, use *CAUTION* tape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



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.

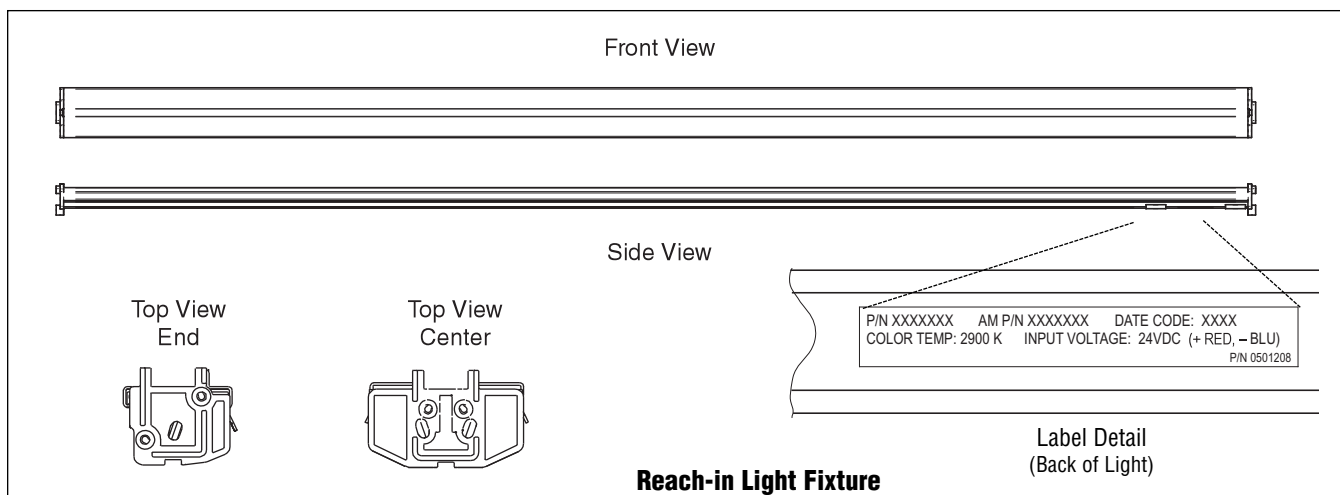


• **CAUTION** – Indicate[s] a hazardous situation which, if not avoided, could result in minor or moderate injury.

• **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.



GENERAL

This instruction explains how to remove Reach-in original equipment manufacture (OEM) fluorescent lamp fixtures and replace them with Hussmann LED light bars.

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.

PINKREFRIG. THERMOSTAT LOW TEMP.
 LIGHT BLUE .REFRIG. THERMOSTAT NORM TEMP.
 DARK BLUE..DEFROST TERM. THERMOSTAT
 PURPLECONDENSATE HEATERS
 BROWNFAN MOTORS
 GREEN*GROUND

ORANGE OR
 TANLIGHTS
 MAROON ..RECEPTACLES
 YELLOW....DEFROST HEATERS 120V
 REDDEFROST HEATERS 208V

*EITHER COLORED SLEEVE OR COLORED INSULATION

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

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 1-800-522-1900 •

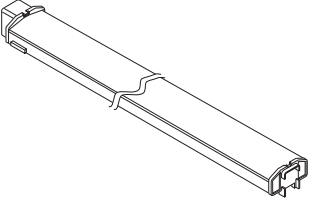
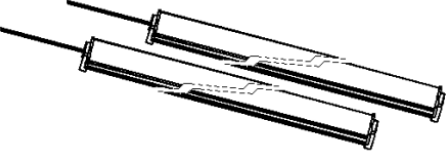
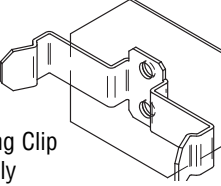
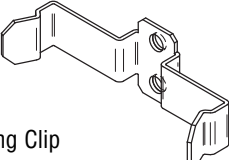
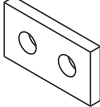
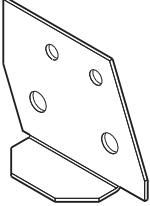
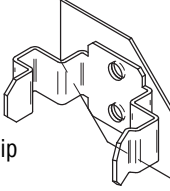
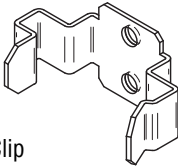
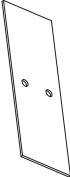
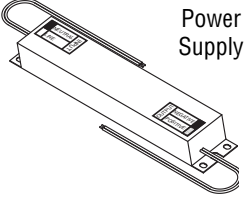
Parts List

Part Number


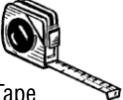










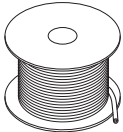

Description

4441328	Reach-In 60 in. LED 3500K Center
4441329	Reach-In 60 in. LED 3500K End
4441330	Reach-In 60 in. LED 4100K Center
4441331	Reach-In 60 in. LED 4100K End
4441358	Reach-In 72 in. LED 3500K Center
4441359	Reach-In 72 in. LED 3500K End
4441360	Reach-In 72 in. LED 4100K Center
4441361	Reach-In 72 in. LED 4100K End
4481668	Power Supply
4914498	Innovator LED Center Clip
4914497	Innovator LED end Clip
4914459	LED Center Clip
4914460	LED End Clip
4914468	Bottom Support Plate
4551282	LED Clip Spacer
4990938	LED Clip Backing Plate
4550795	#8 x 1/2 Screw

PARTS IDENTIFICATION CHART

<p>Center LED Light Fixture</p> 	<p>End (Right & Left) LED Light Fixture</p> 
<p>Accessories</p> <div>  <p>Center Mounting Clip Assembly</p>  <p>Center Mounting Clip</p>  <p>Spacer</p>  <p>Bottom Support Plate</p>  <p>End Mounting Clip Assembly</p>  <p>End Mounting Clip</p>  <p>Backing Plate</p>  <p>Power Supply</p> </div>	

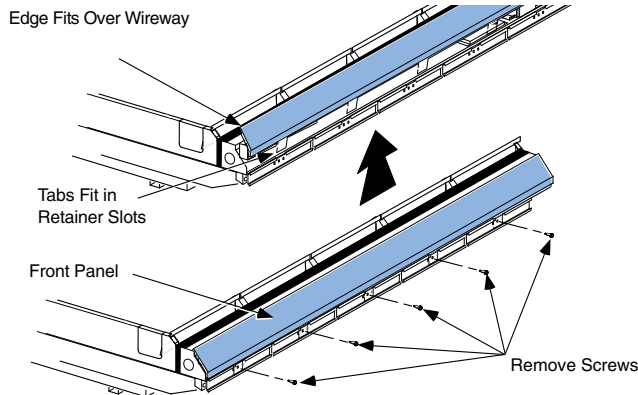
TOOLS AND SUPPLIES NEEDED

 <p>Safety Eye-wear</p>	 <p>Tape Measure</p>	 <p>Heat Shrink Butt Terminals</p>	 <p>7/64 Drill Bit</p>	 <p>Battery-powered Drill</p>	 <p>Phillips and Flat Blade Screwdrivers</p>
 <p>Gloves</p>	 <p>Voltmeter</p>	 <p>Wire Nuts</p>	 <p>9/64 Drill Bit</p>	 <p>Diagonal Pliers</p>	 <p>Wire Stripper</p>
		 <p>Wire</p>	 <p>Wire</p>		

INNOVATOR DOOR LED LIGHT FIXTURE INSTALLATION

REMOVE EXISTING FLUORESCENT LIGHTING

- a. Remove product from the bottom of the case and store appropriately.
- b. Remove the wire racks from the bottom of the case, taking care to store them out of the way of customers and store personnel.
- c. Turn the light switch to off. The switch is located inside the case on the door mullion.
- d. Lock out and tag out the circuit breaker for the lighting circuit of the case where the LED light fixtures are being installed.
- e. Remove appropriate bumpers and front panels to access the electrical wireway, then remove wireway cover.



**Remove Panels to Locate Ballast
(Typical Installation)**



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.

- f. Use a *VOLTMETER* to verify that there is no voltage at the ballasts.
- g. Remove and discard the lenses covering the fluorescent tubes.
- h. Remove the fluorescent tubes.



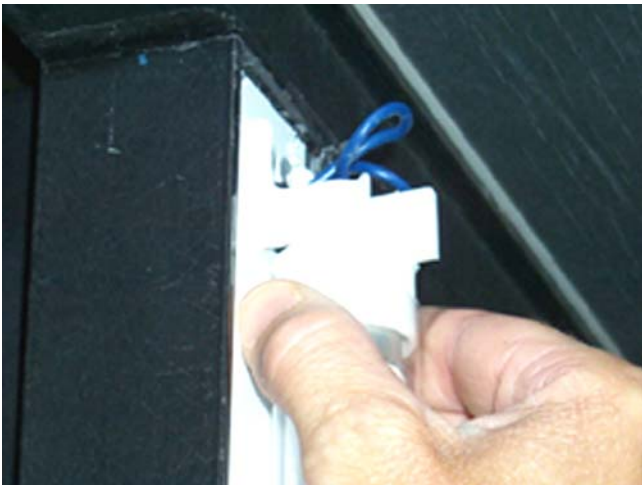
CAUTION

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>

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>

i. 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.



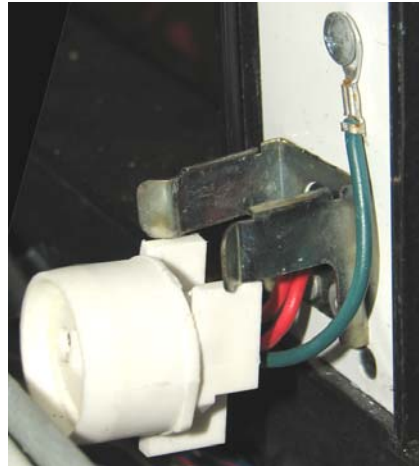
Remove Top Tombstone and Tombstone Support

j. Use a $\frac{9}{64}$ -inch drill bit to remove the rivets holding the UPPER tombstone mounting clip in place. Remove and discard all UPPER clips.

NOTICE

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

k. 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.



Remove Tombstones but Retain All Bottom Center Tombstone Supports

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

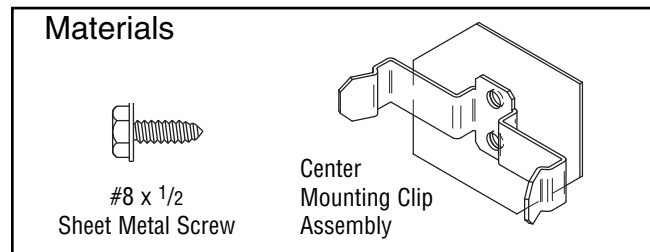
m. Leave the LOWER tombstone clip in place on all CENTER mullion. This clip will help to locate and hold the new light fixture.

m. Remove the LOWER tombstone clips from both END mullion. Use a $\frac{9}{64}$ -inch drill bit to remove rivets holding the lower tombstone mounting clip in place.

n. Remove the light reflectors from the end mullion. The reflector is a sheet metal part, painted white, that runs the length of the end mullion. It will interfere with installing the light fixture mounting clips. Use a $\frac{9}{64}$ -inch drill bit to remove the rivets holding the tombstone clips and reflector in place.

Reflectors do not need to be removed when used on center mullion. The mounting clip assemblies will be installed over the existing reflector.

INSTALL CENTER MOUNTING CLIP ASSEMBLIES



a. Install three mounting clip assemblies on each center mullion.

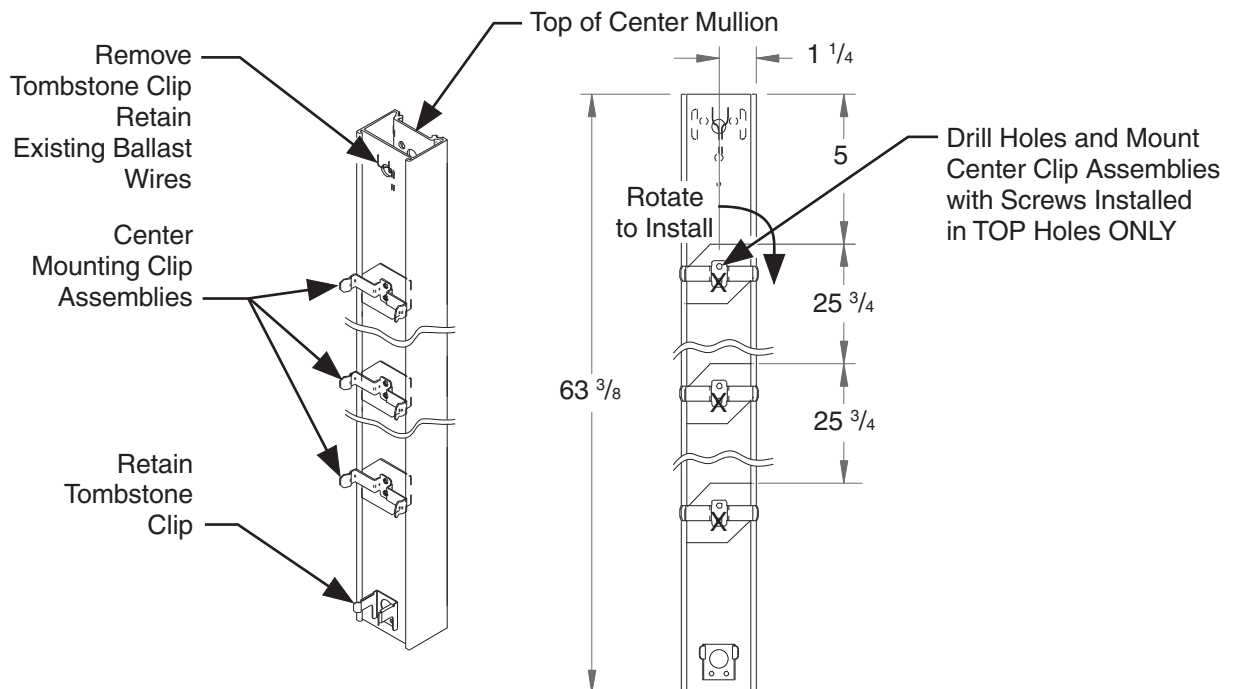
b. Rotate each mounting clip assembly into place on the center mullion at approximately the dimensions shown below.

c. Using the top hole in the mounting clip assembly as a template, mark and drill a $\frac{7}{64}$ -inch diameter hole in the mullion.

d. Lock each mounting clip assembly in place with a #8 sheet metal screw in the top hole.

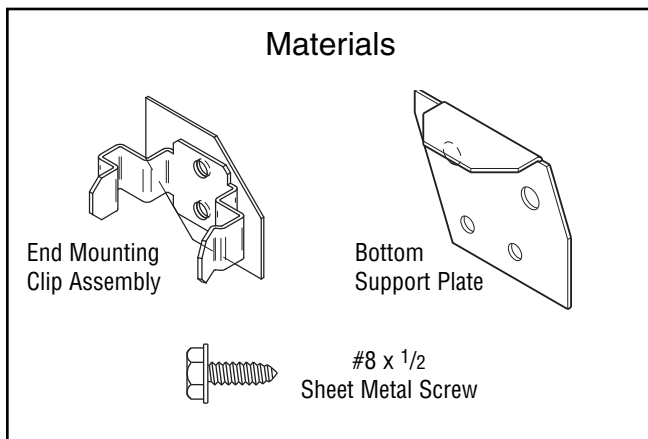
NOTICE

Do NOT use a SELF-DRILLING SCREW. The composite mullion will be damaged and the screw will not properly secure the mounting clip assembly to the mullion



Install Mounting Clip Assemblies into Center Mullion

INSTALL END MOUNTING CLIP ASSEMBLIES



- a. Install three mounting clip assemblies on the LH end mullion.
- b. Rotate each mounting clip into place. Location and proper orientation are shown in the illustration on the next page.
- c. Using the TOP hole in the mounting clip assembly as a template, locate and drill a $\frac{7}{64}$ -inch diameter hole in the mullion at each clip.

NOTICE

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

- d. Lock the mounting clip assemblies in place with a #8 sheet metal screw in the TOP hole. Ensure that the mounting clip assembly is oriented correctly so the end fixture can be properly installed. The clip assembly is not symmetrical. Refer to *MATERIALS* box at left and illustration on next page.

NOTICE

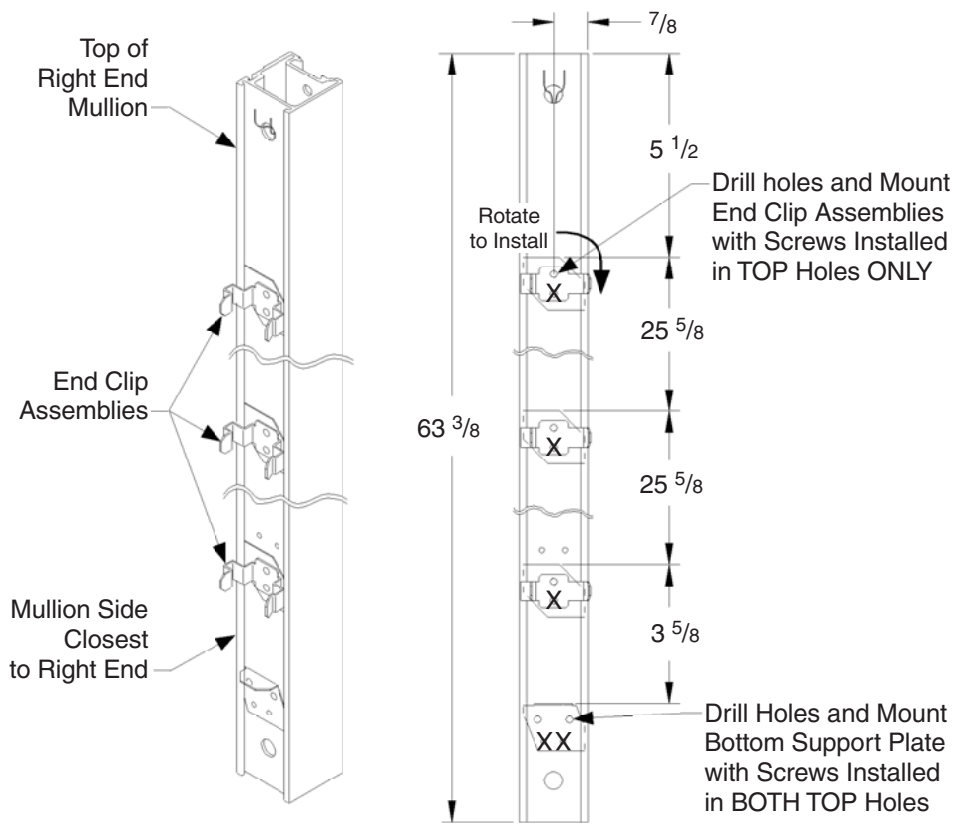
Do NOT USE A SELF-DRILLING SCREW. The composite mullion will be damaged, and the screw will not properly secure the mounting clip assembly to the mullion.

- e. Using the two TOP holes in the bottom support plate as a template, locate and drill two $\frac{7}{64}$ -inch diameter holes in the mullion.
- f. Install the bottom support plate at dimension shown. Use two #8 sheet metal screws in the two TOP holes to secure the support plate in place.
- g. Repeat for the RH end mullion. Refer to the illustration on the next page to ensure that the orientation of the clip assemblies is correct.

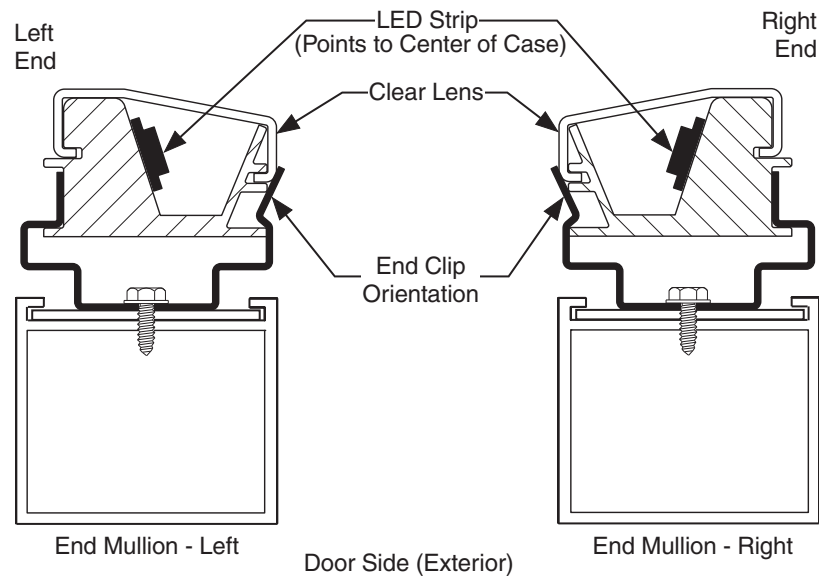
! WARNING

— 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.

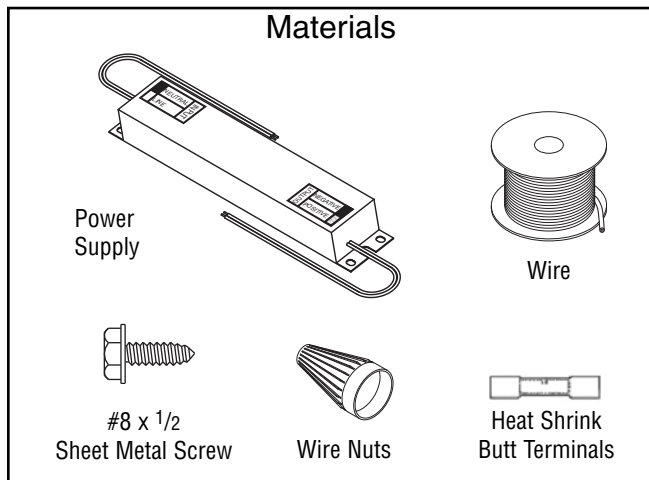


Install End Mounting Clip Assemblies onto End Mullion



Proper End Clip Orientation — Left End versus Right End (View looking down from top of mullion)

CONNECT LED POWER SUPPLY



a. Remove the ballast from the wireway.

b. Mount the LED power supply in the wireway near where the ballast was located.

The power supply has a 120V 50/60Hz input and a 24V DC output.



Remove Ballast & Install Power Supply
(Typical Installation)

d. Using the appropriate wiring diagram from the following pages, connect the original load and neutral wires to the power supply input wires (black and white wires) using damp-location-approved connection method.

e. Connect the power supply output wires (red and blue wires) to the wires that previously went to the upper fluorescent tombstones, using approved connectors for low temperature usage.

LED light fixtures are polarity sensitive. The red power supply wire (positive) must be electrically connected to the red wires of the light fixture. The blue power supply wire (negative) must be connected electrically to the black wires.

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

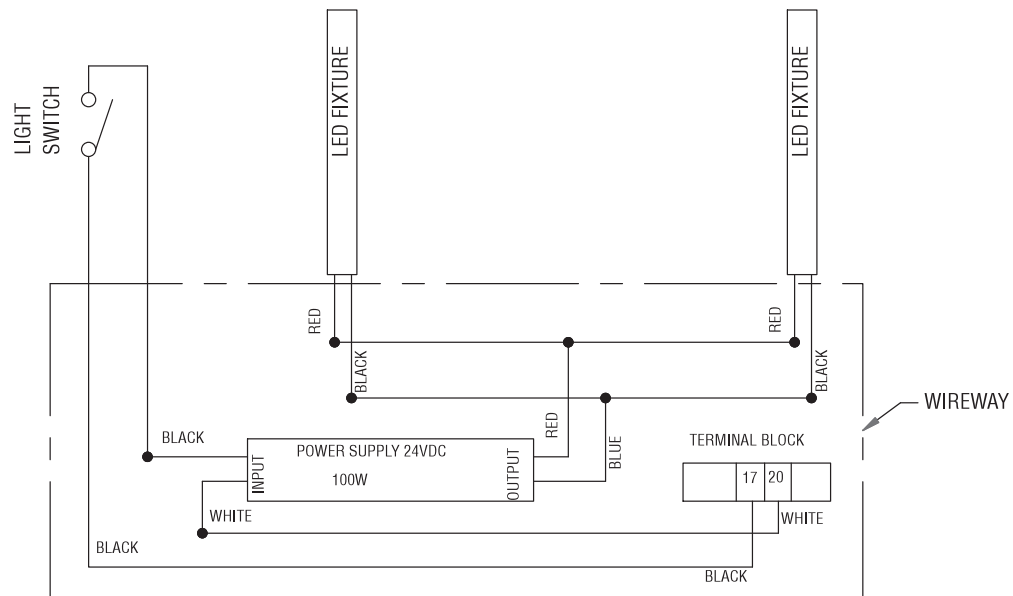
g. The power supply housing is grounded. Attach power supply to a ground point in the refrigerated case either directly with a screw, or by using a green wire to attach to a remote ground point.

NOTICE

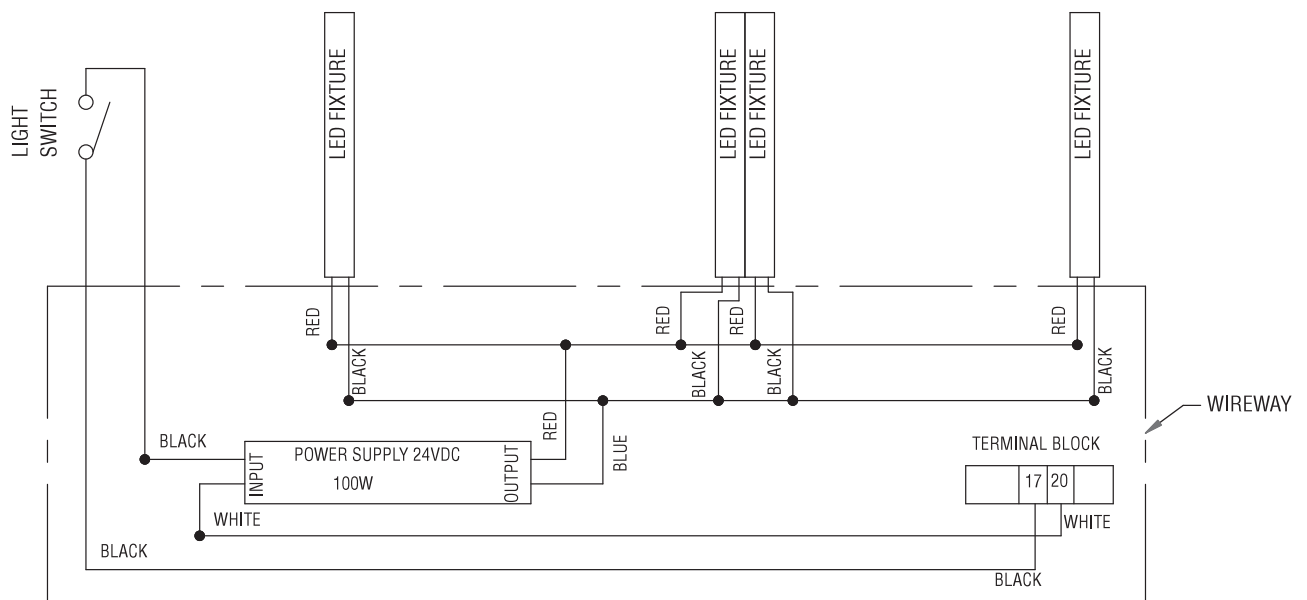
Ensure that all connection points are sealed for damp location using the appropriate method per the NEC or local electrical code.

WIRING DIAGRAMS

Wiring diagrams for 1-door and 2-door 60 in. merchandiser configuration shown below.



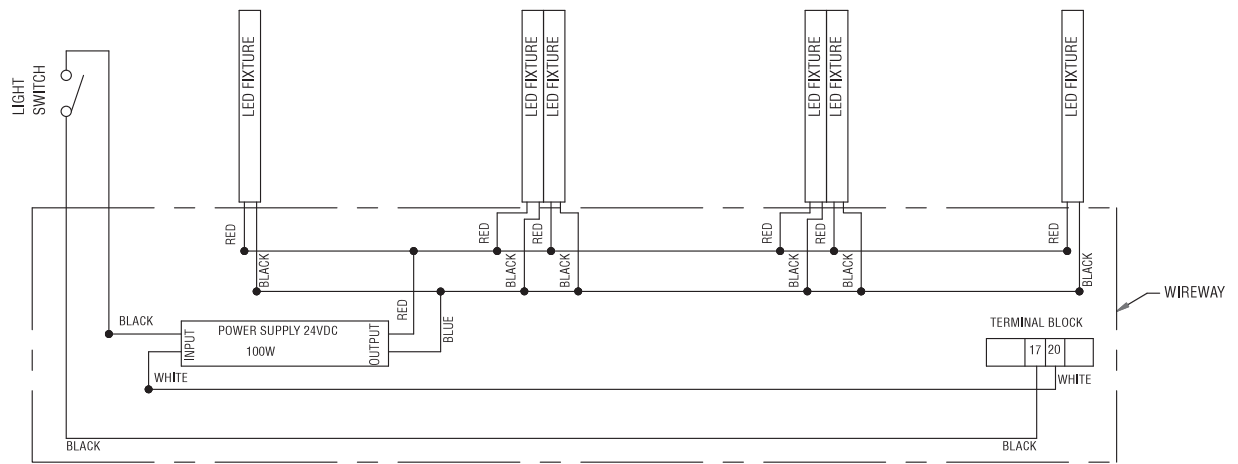
1 DOOR LED LIGHT WIRING DIAGRAM



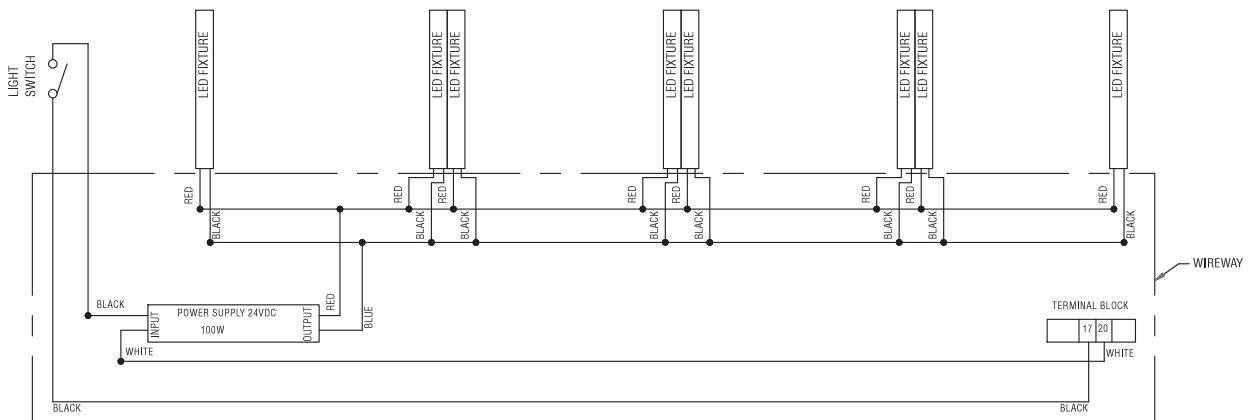
2 DOOR LED LIGHT WIRING DIAGRAM



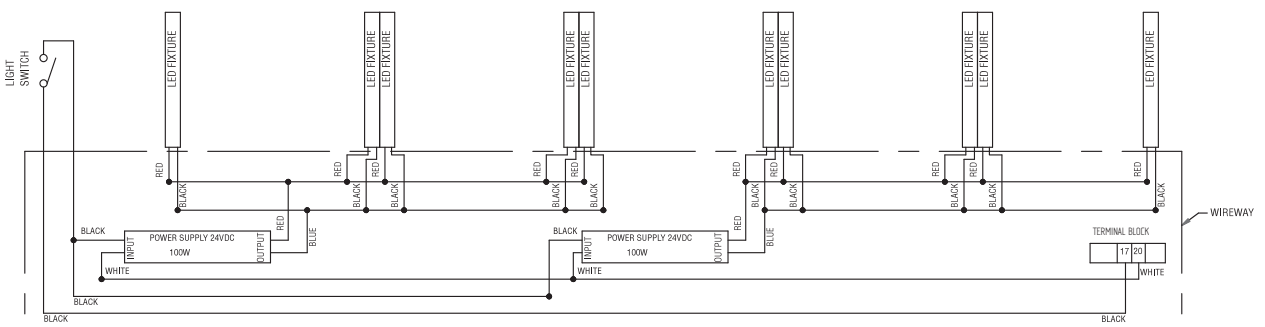
Wiring diagrams for 3-door, 4-door and 5-door
60 in. merchandisers are shown below.



3 DOOR LED LIGHT WIRING DIAGRAM

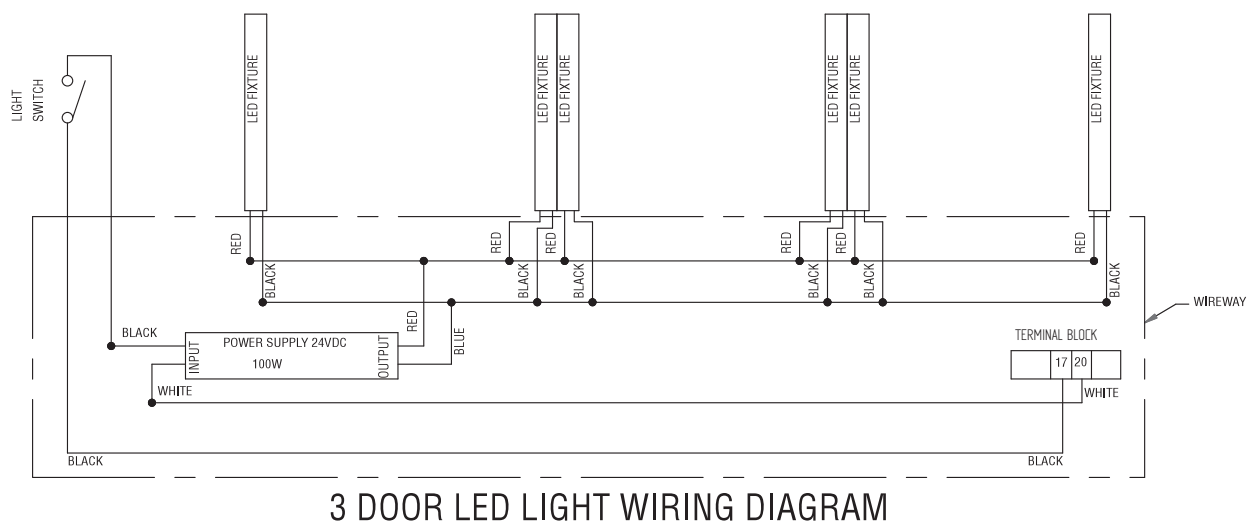
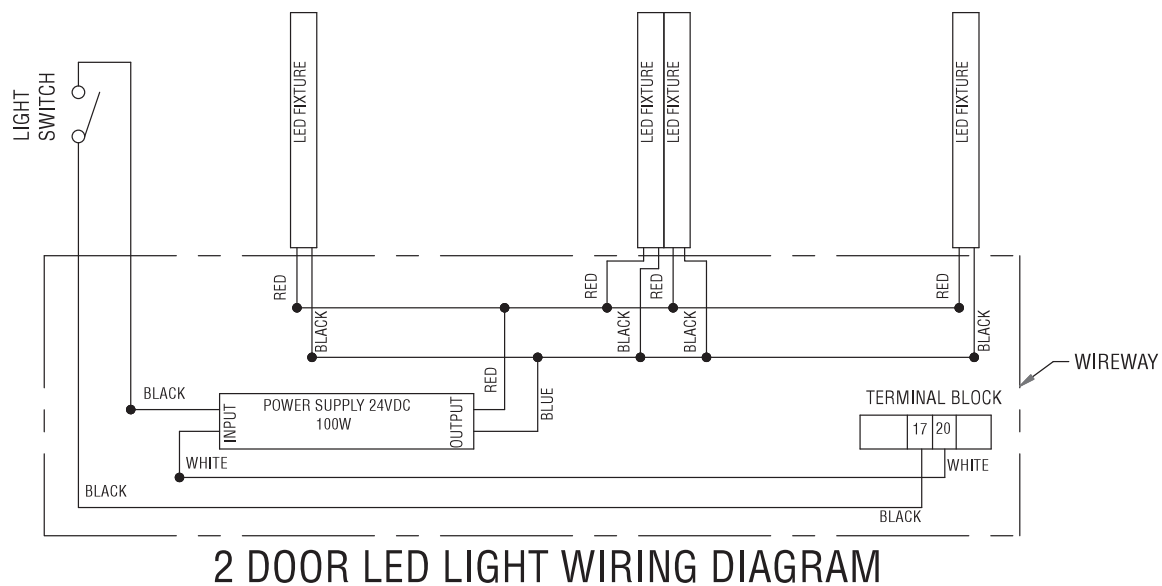


4 DOOR LED LIGHT WIRING DIAGRAM

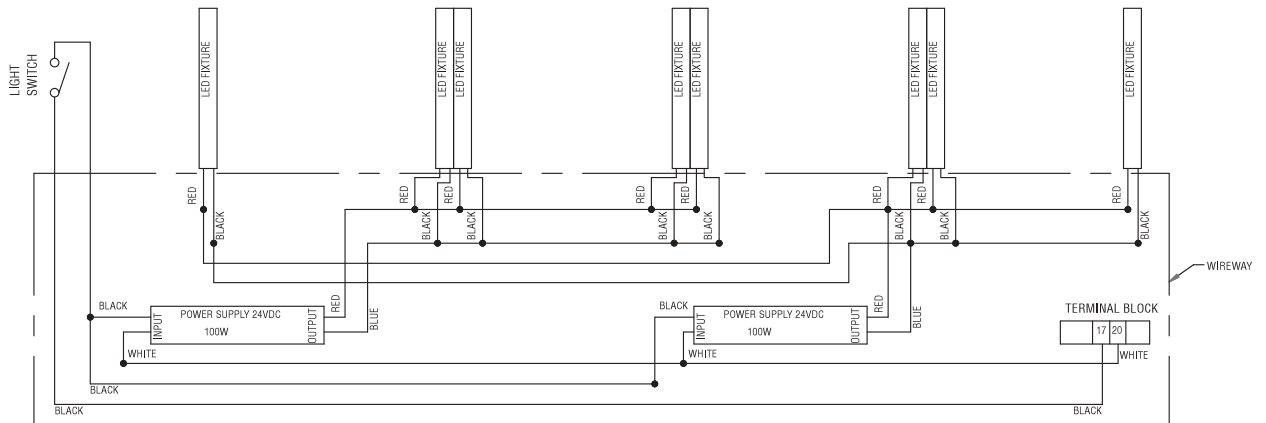


5 DOOR LED LIGHT WIRING DIAGRAM

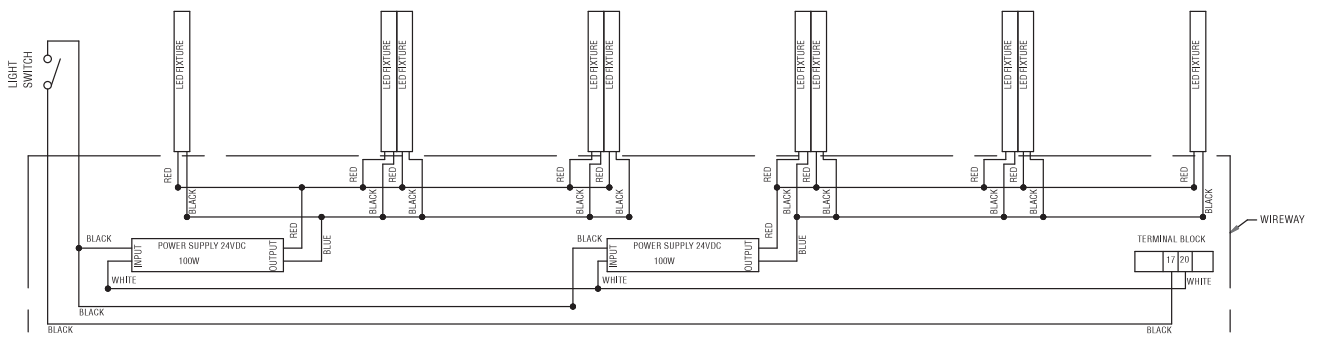
Wiring Diagrams for 2-door and 3-door 72 in. merchandisers are shown below.



Wiring Diagrams for 4-door and 5-door
RLNIE Island merchandisers are shown below.

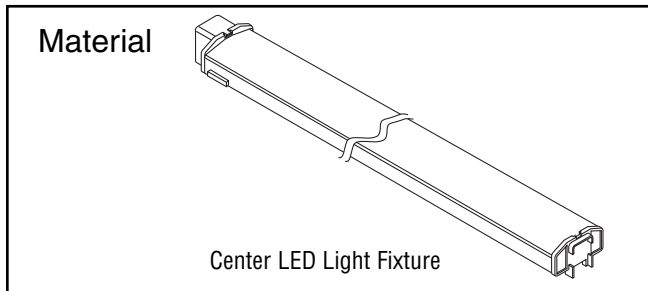


4 DOOR LED LIGHT WIRING DIAGRAM



5 DOOR LED LIGHT WIRING DIAGRAM

INSTALL CENTER LED LIGHT FIXTURE

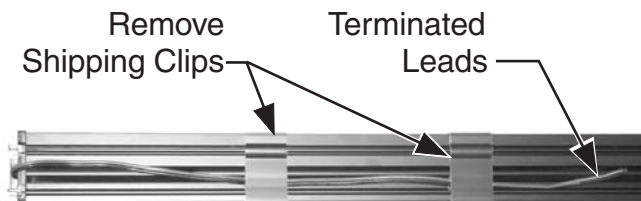


a. **Verify that lower electrical cutouts have been sealed.** If not, use an approved silicone sealant.

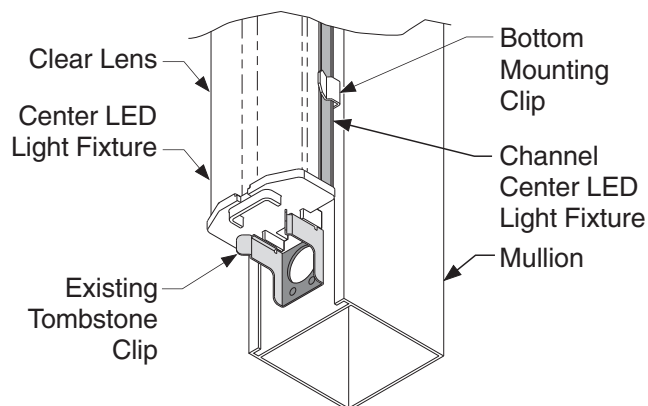
b. Remove stowed wiring from retaining clips used for shipping. Remove and discard clips.

c. Remove fixture cover temporarily.

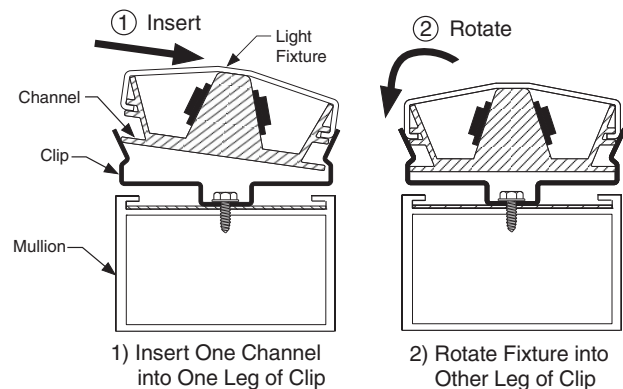
d. Position the center light fixture so the bottom rests on the tombstone clip prior to snapping it into the new mounting clips. Make sure the fixture is oriented with wires at top of the fixture.



Light Fixture Wires as Stowed



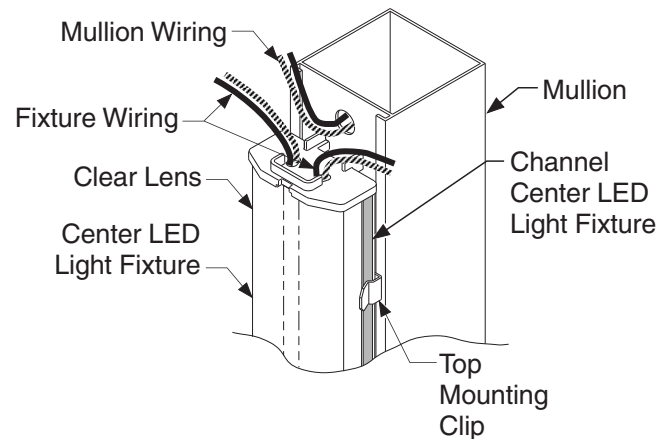
Center LED Light Fixture — Bottom



Installing Center Light Fixture into Clip

e. Snap the light fixture into the bottom mounting clip first, then the center mounting clip and finally the top mounting clip.

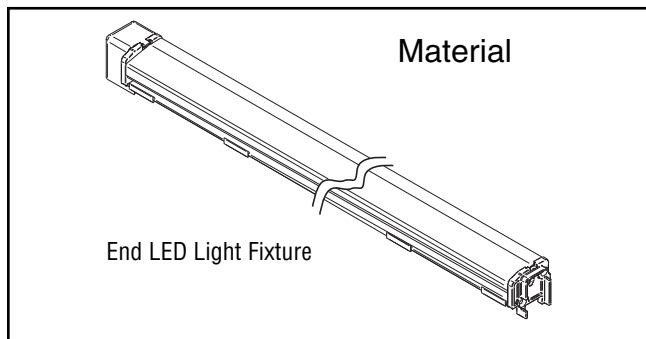
f. Make sure the indentation on each side of the mounting clip snaps into the channel of the light fixture.



Center LED Light Fixture — Top

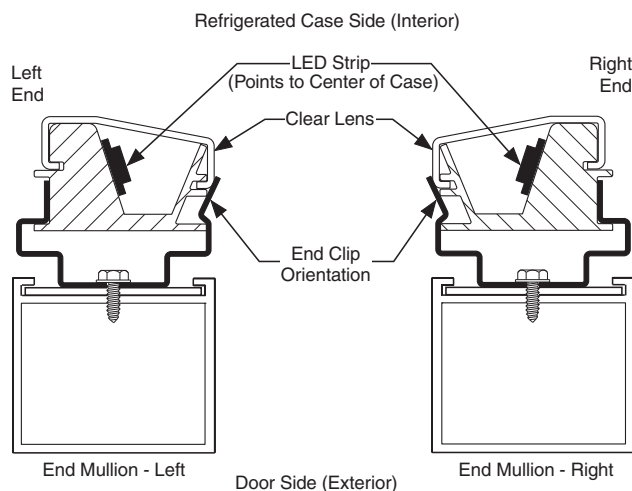
Refer to *Section 4 - Removing LED Fixture* to remove the light fixture from the mounting clips if repositioning is necessary.

INSTALL END LED LIGHT FIXTURE

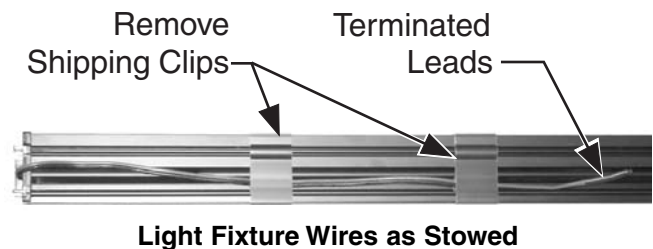


a. Verify that lower electrical cutouts have been sealed. If not, use an approved silicone sealant.

b. End light fixtures are equipped with wires on both ends to facilitate mounting on either end mullion. Position the light fixture so that the LED's point to the middle of the case. Refer to the illustration below.



**Proper Orientation of End LED Light Fixture
Left End Versus Right End**
(View looking down from the top of the mullion)

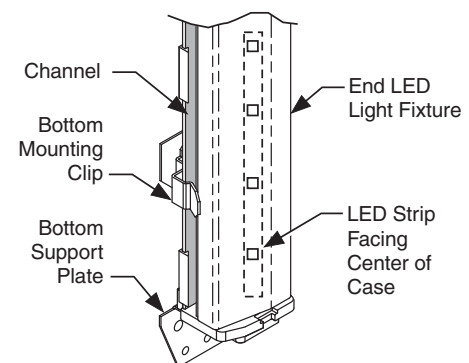


c. Expose the red and black wires on the top end of the light fixture. Pull the wires from behind the shipping clip before installing the fixture. Keep the bottom wires in the shipping clip.

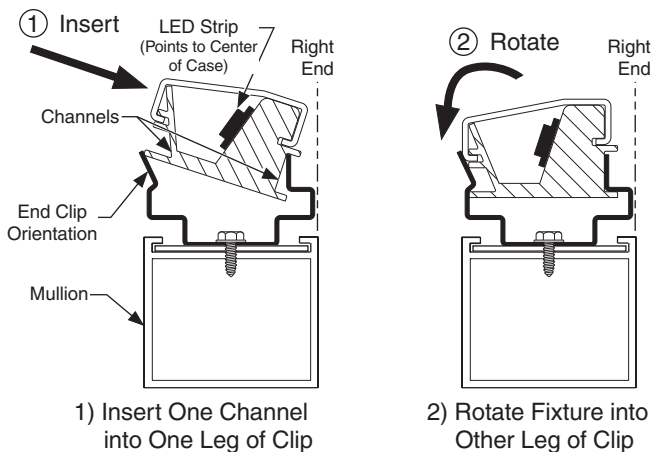
d. Remove the fixture cover temporarily.

e. Position the light fixture so it rests on the bottom support plate prior to snapping it into the new mounting clips.

f. Insert the light fixture channel as shown in the illustration, and then rotate until the bent tabbed end of the end mounting clip snaps into place. Snap the light fixture into the bottom mounting clip first, then the center mounting clip and finally the top mounting clip. Refer to illustration for proper end mounting clip orientation.



**Proper Orientation-
End LED Light Fixture**



Installing End Light Fixture into Clip (Right End shown, Left End mirror image)

g. Make sure the indentation on one side of the end mounting clip snaps into the first channel on the light fixture.

h. Repeat for the opposite end mullion making sure the orientation is correct. See the illustration for proper end mullion clip orientation.

Refer to *Section 4 - Removing LED Fixture* to remove the end light fixture from the end mounting clips if repositioning is necessary.



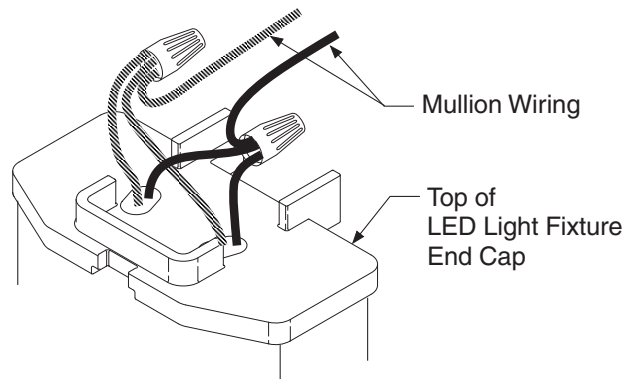
WARNING

— 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.

CONNECT WIRING TO LED LIGHT FIXTURE

a. Cut and strip the wires to proper length. The center light fixture has two black and two red wires. The end light fixture has one black and one red wire.



Connecting Fixture Wiring

(Center Fixture Shown, End Fixture Similar)

b. Connect the red wires from the LED fixture to the existing ballast wiring. Connect the black wires from the LED fixture to the remaining wire from the existing ballast wiring, and tuck connections behind LED. Verify circuit against appropriate wiring diagram. Use approved connector for low temperature usage and 18 AWG wire.

LED light fixtures are polarity sensitive. The power supply red wire (positive) must be electrically connected to the red wires of the light fixture. The power supply blue wire (negative) must be electrically connected to the black wires of the light fixture.

c. If not previously completed, seal off the LOWER cutouts in the mullion using approved silicone sealant. The center light fixture may need to be removed in order to gain access to the mullion cutouts.

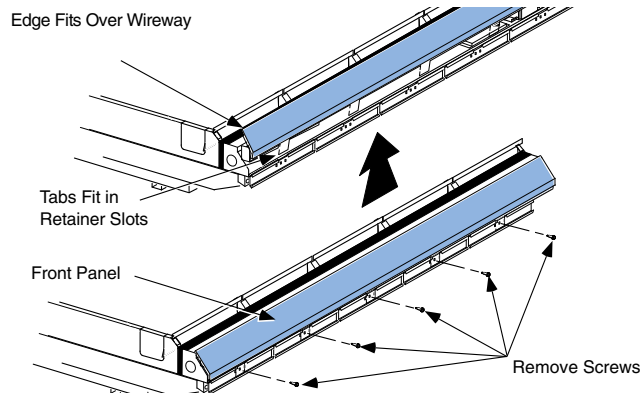
FINISHING THE INSTALLATION

- a. Replace wireway cover.
- b. Turn circuit breaker to ON.
- c. Remove protective film from lens.
- d. Turn light switch to ON.
- e. Check operation of LED light fixtures.
- f. Replace front panels and associated hardware and bumpers.
- g. Clean up work area.
- h. Replace bottom wire racks.
- i. Replace product in case.

ANTHONY DOOR LED FIXTURE INSTALLATION

PREPARATION

- a. Remove product from the case and store appropriately.
- b. Remove the wire racks from the case.
- c. Turn the light switch to off. The switch is located inside the case on the door mullion.
- d. **BEFORE SERVICING ANTHONY DOORS MAKE SURE ALL POWER TO CASE IS OFF.** Lock out and tag out the circuit breakers for the case where the LED light fixtures are being installed. Anthony ballast are inside the mullions.
- e. Remove appropriate front panels to access the electrical wireway, then remove wireway cover.



**Remove Panels to Locate Ballast
(Typical Installation)**

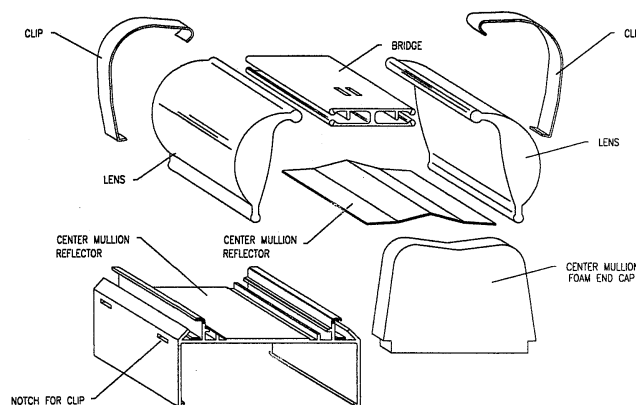
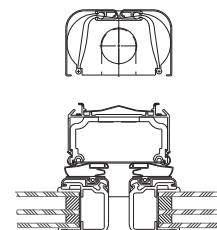
WARNING

— **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.

- f. Use a voltmeter to verify that there is no voltage to the case. Because Anthony ballast are inside the mullions, the entire case must be de-energized.

- g. **CENTER MULLIONS:**
Remove top and bottom clips. Remove both lenses and bridge covering the fluorescent tube.



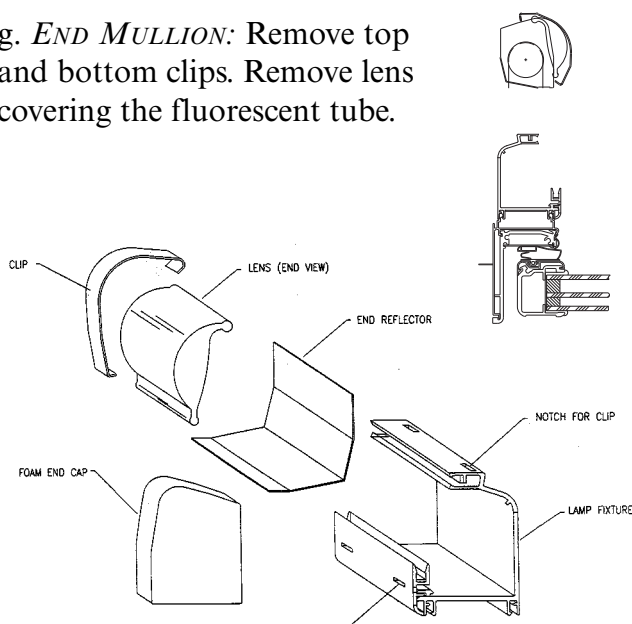
**Remove Anthony Center Mullion
Fluorescent Lamps**



CAUTION

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>

g. *END MULLION*: Remove top and bottom clips. Remove lens covering the fluorescent tube.



Remove Anthony End Mullion Fluorescent Lamps

- h. Remove the fluorescent lamps and insulator tubes.. Remove the end caps.
- i. Cut wires from the lamp-holder, leaving as much wire as possible. Remove End Lamp Fixture. Leave the bushing and existing fluorescent ballast wires protruding from the mullion for connecting light fixture.

k. Remove the lamp-holders from the LOWER mounting clips. Remove or 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.

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

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

n. Remove the LOWER lamp-holder clips from all END mullion. Use a $\frac{9}{64}$ -inch drill bit to remove rivets holding the lower lamp-holder mounting clip in place.

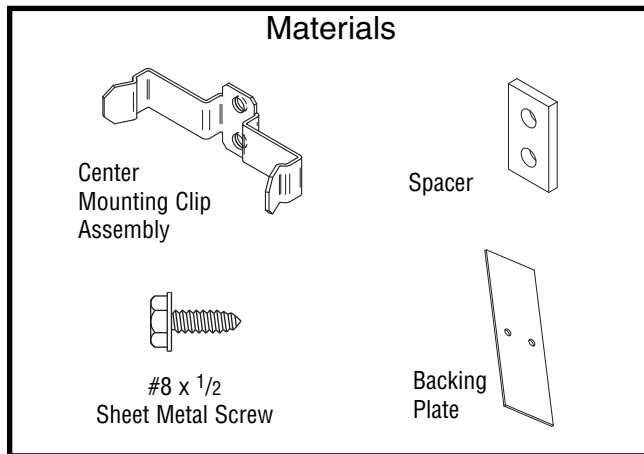
o. Carefully remove the light reflectors from the center and end mullion. The reflector is a stainless steel sheet metal part that runs the length of the mullion. It will interfere with the installation of the mounting clips. Wear gloves to prevent injury when handling the reflector. Use a flat bladed screwdriver to pry the reflector from its mounting.

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>

INSTALL CENTER MOUNTING CLIPS



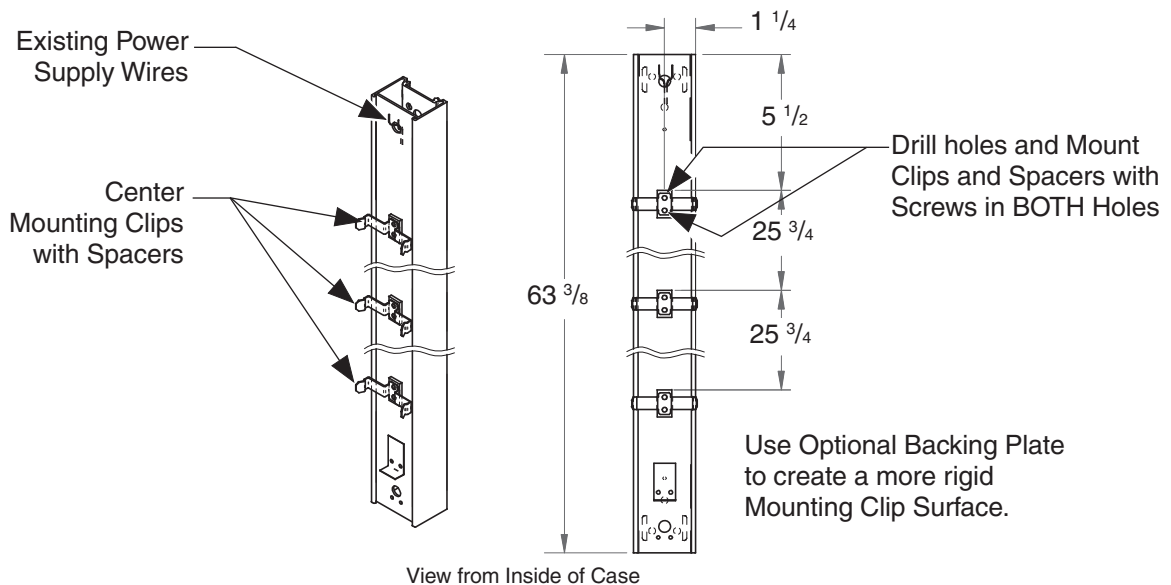
CAUTION

BEFORE DRILLING,
verify there are no electrical components
inside the mullion. Protect wiring.

NOTICE

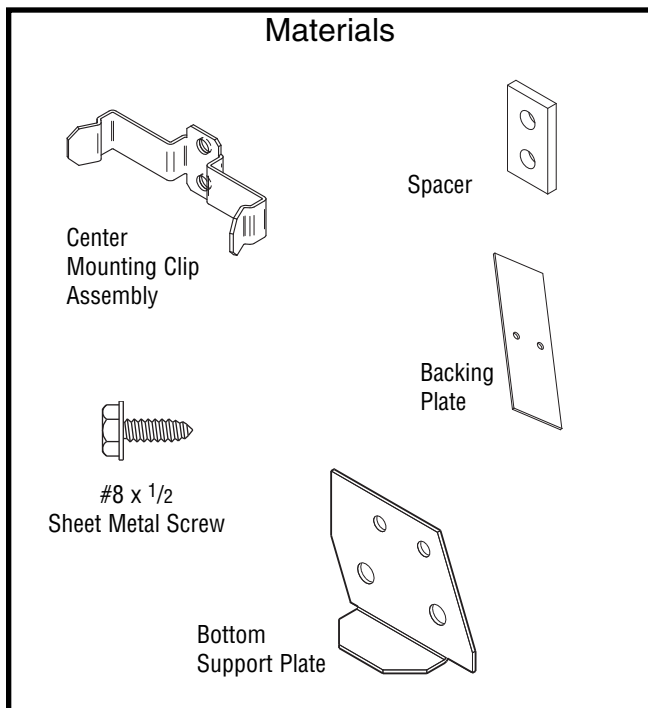
Do NOT use a self-drilling screw.
The composite mullion will be damaged and
the screw will not properly secure
the mounting clip assembly to the mullion.

- Carefully position the top clip in the proper location and orientation on the center mullion as shown in the figure below.
- Using the mounting clip as a template, mark and drill $\frac{7}{64}$ -inch diameter holes in the mullion for the mounting clip nearest the top of the mullion. Vertically align all of the holes to be drilled or the LED light fixture will NOT snap into the clips properly.
- Use two #8 sheet metal screws to fasten the mounting clip, optional backing plate and spacer in place. The spacer goes between the mullion and the mounting clip.
- Install a total of three mounting clips and spacers in each center mullion (two screws per clip). Make sure the mounting clips are vertically aligned.



Install Mounting Clips onto Center Mullion

INSTALL END MOUNTING CLIPS

**CAUTION**

BEFORE DRILLING,
verify there are no electrical components
inside the mullion. Protect wiring.

NOTICE

Do NOT use a self-drilling screw.
The composite mullion will be damaged and
the screw will not properly secure
the mounting clip assembly to the mullion.

- Install three mounting clips, three spacers and one bottom support on each end mullion.
- Mount the clips on the LH mullion. Take care to mount the clips in the location and orientation depicted in the illustration on the next page.
- Use the mounting clip as a template to mark and drill $\frac{7}{64}$ -inch diameter holes in the mullion. Vertically align all of the holes to be drilled or the LED Light Fixture will NOT snap into the clips properly.

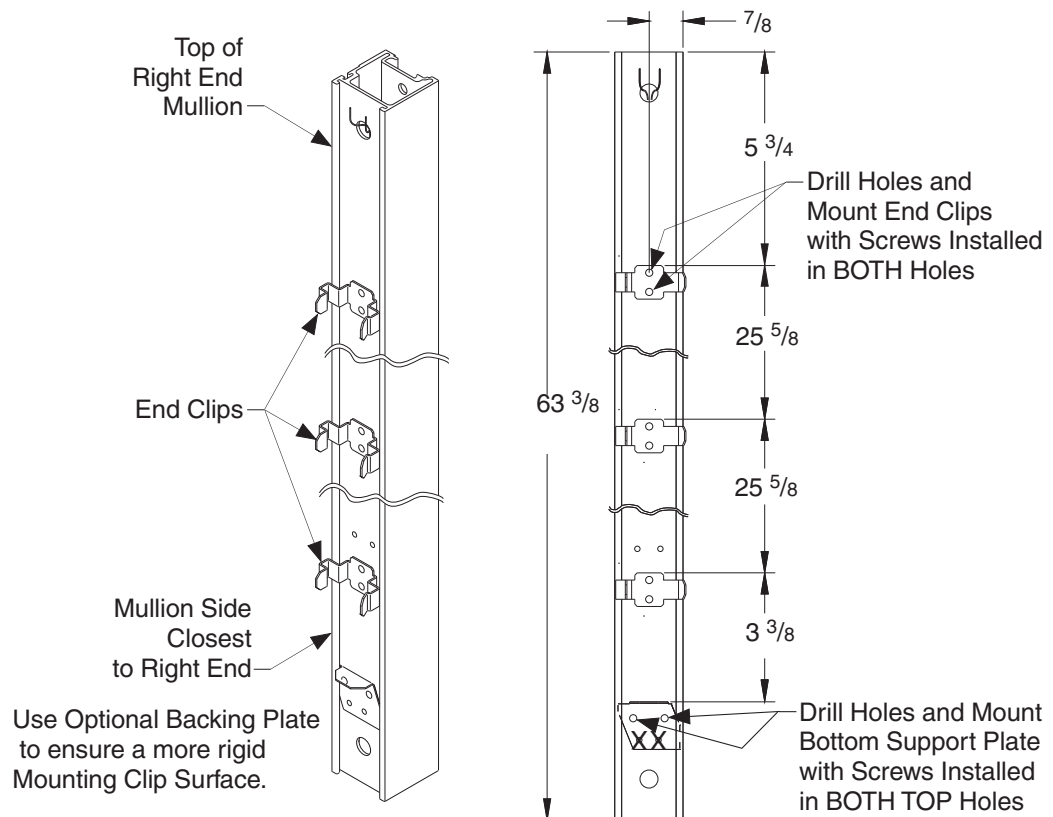
- Use two #8 sheet metal screws to fasten the mounting clip in place. Refer to the illustration on the next page for proper clip orientation. The end light fixture cannot be installed correctly if the mounting clip is not oriented as shown in the following illustrations. The clip is not symmetrical.

- Repeat for the other two end mounting clips. A total of (6) screws and (3) end mounting clips should be installed.

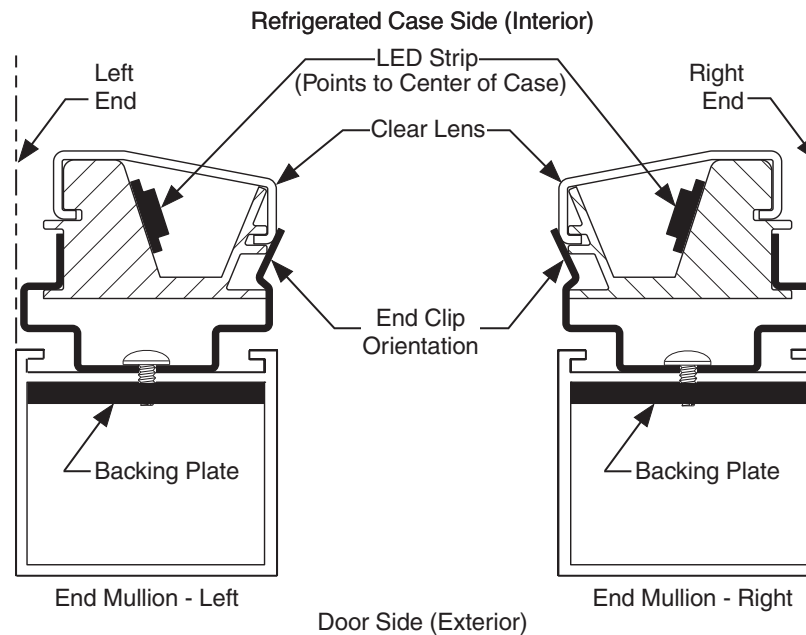
- Use the two TOP holes in the bottom support plate as a template to locate and drill two $\frac{7}{64}$ -inch diameter holes in the mullion.

- Install the bottom support plate at dimension shown. Use two #8 sheet metal screws in the two TOP holes to secure the support plate in place.

- Repeat for the RH end mullion making sure the orientation is correct. Refer to proper end clip orientation illustrations as shown on the following page.

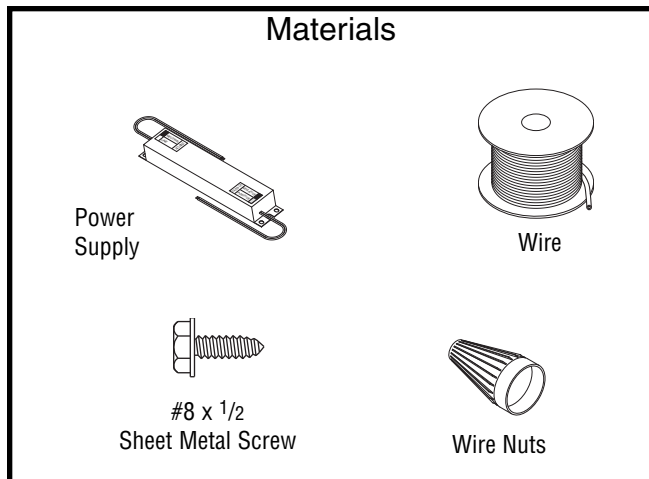


Install End Clips onto End Mullion
(Right End shown, Left End mirror image)



Proper End Clip Orientation - Left End Versus Right End
(View looking down from the top of the mullion)

CONNECT LED POWER SUPPLY



- Remove Ballast(s) from the mullion(s) or electrical wireway. Refer to manufacturer's case manual for removal instructions.
- Mount the LED power supply in the mullion or wireway near where the ballast was located to re-use wiring. If located inside the mullion, this is a tight fit. Trial fit the mullion cover before permanently mounting the power supply. Power supply has a 120V 50/60HZ input and a 24V DC output.
- Follow appropriate wiring diagram on the following pages, connect the original load and neutral wires to the LED power supply input wires (black and white wires) using wire nuts or other damp location approved connection method.
- Connect the LED power supply output wires (red and blue wires) to the wires that previously went to the upper fluorescent lamp-holders.

**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.

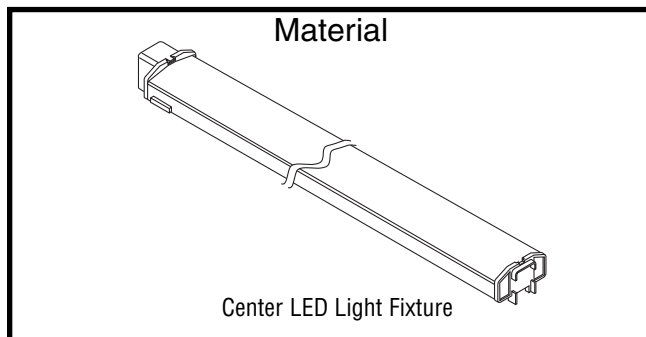
LED light fixtures are polarity sensitive. The power supply red wire (positive) must be electrically connected to the red wires of the light fixture. The power supply blue wire (negative) must be electrically connected to the black wires of the light fixture.

- Additional wiring may be needed to connect the power supply to the existing wiring in the wireway. Use conductors of proper size and rating.
- The power supply case is grounded. Attach power supply to a ground point in the refrigerated case either directly with a screw, or by using a green wire to attach to a remote ground point.

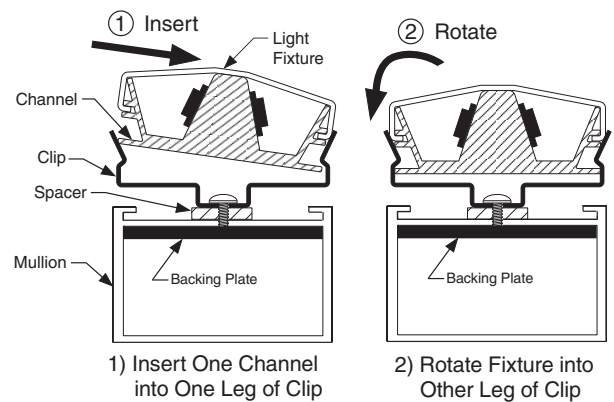
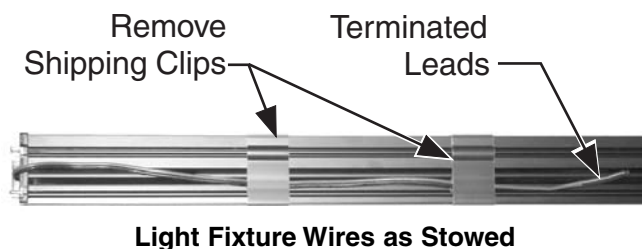
WIRING DIAGRAMS

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

INSTALL CENTER LED LIGHT FIXTURE

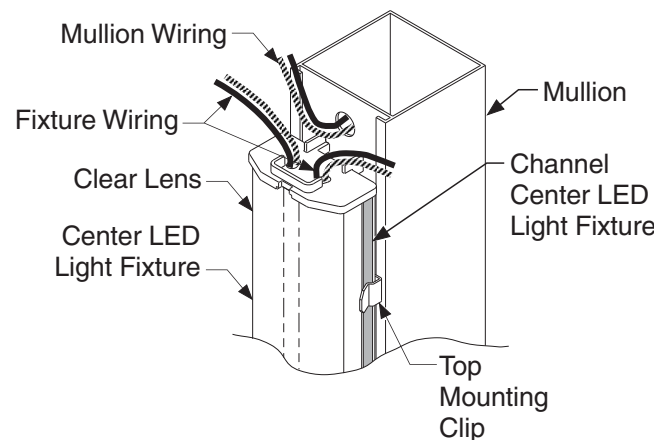


- **Verify that lower electrical cutouts have been sealed.** If not, use an approved silicone sealant.
- Remove stowed wiring from shipping retaining clips. Discard shipping clips.
- Place the center light fixture so the bottom rests on the lamp-holder clip. Make sure the fixture is orientated so that the wires are at the top of the fixture.



Installing Center Light Fixture into Clip

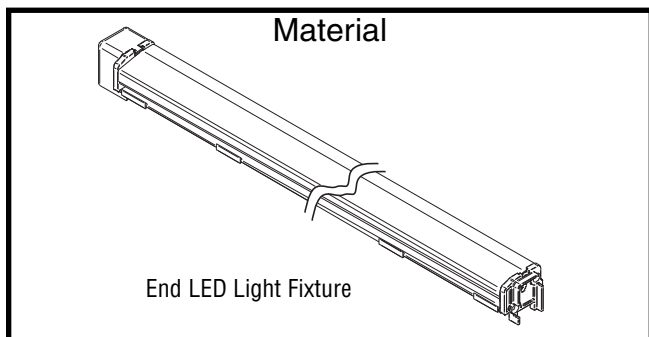
- Snap the center light fixture into the bottom mounting clip first, then the center mounting clip and finally the top mounting clip.
- Make sure the indentation on each side of the center mounting clip snaps into the channel on the center light fixture.



Top: Center LED Light Fixture Installation

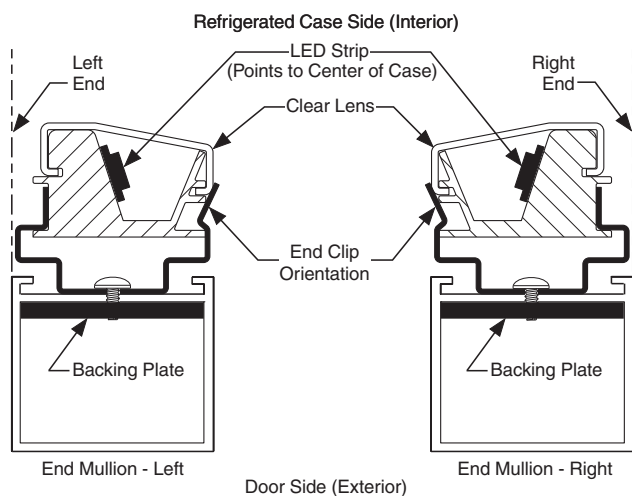
- Refer to *Section 4 - Removing LED Fixture* to remove the light fixture from the center mounting clips if repositioning is necessary.

INSTALL END LED LIGHT FIXTURE



• **Verify that lower electrical cutouts have been sealed.** If not, use an approved silicone sealant.

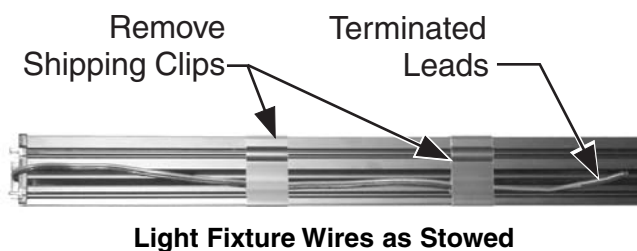
• End light fixtures are equipped with wires on both ends to allow mounting on either end mullion. Position the light fixture so that the LED strip points toward the center of the case.



Proper Orientation of End LED Light Fixture Left End Versus Right End

(View looking down from the top of the mullions)

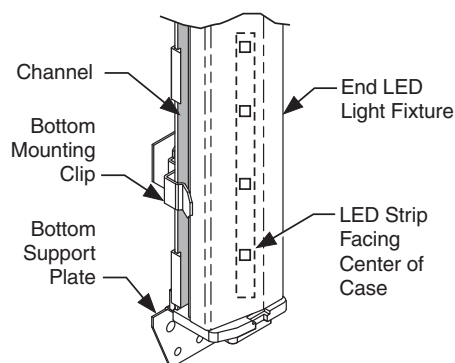
**Installing light fixture inverted
will result in very low light output
inside the refrigerated case.**



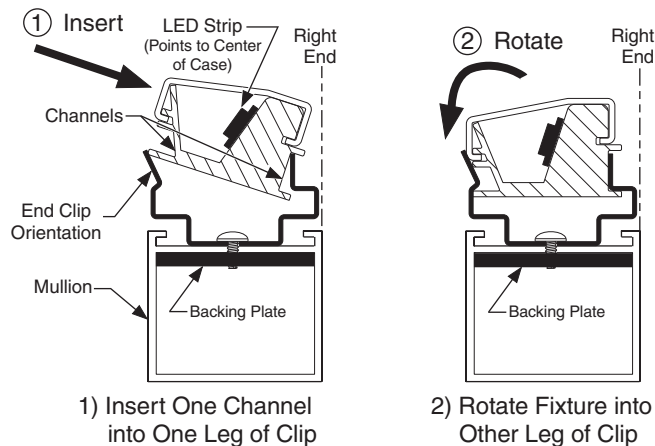
• Expose the red and black wires on the top end of the light fixture. Remove stowed wiring from shipping clips. Discard shipping clips. Keep bottom wires in the shipping clips.

• Place the end light fixture so it rests on the bottom support plate.

• Insert the end light fixture channel as shown in the illustration, and then rotate until the bent tabbed end of the end mounting clip snaps into place. Snap the end light fixture into the bottom mounting clip first, then the center mounting clip and finally the top mounting clip. Refer to illustration for proper end mounting clip orientation.



Proper Orientation- End LED Light Fixture

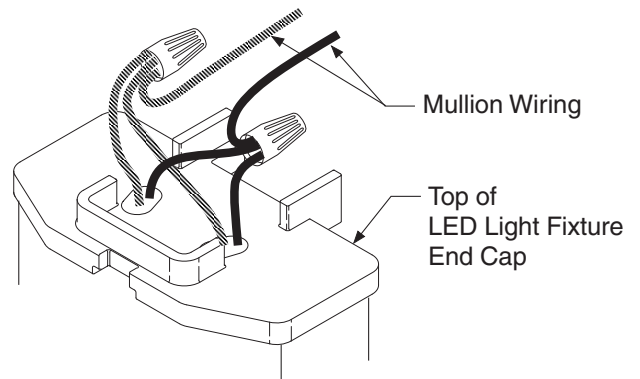


Installing Light Fixture into Clip
(Right End shown, Left End mirror image)

- Make sure the indentation on each side of the end mounting clip snaps into the first channel on the end light fixture.
- Repeat for the opposite end mullion making sure the orientation is correct. Refer to illustration for proper end mounting clip orientation.
- Refer to *Section 4 - Removing LED Fixture* to remove the end light fixture from the end mounting clips if repositioning is necessary.

CONNECT WIRING TO LED LIGHT FIXTURE

- Cut and strip the wires to proper length. The center light fixture has two black and two red wires. The end light fixture has one black and one red wire.
- Connect the red wires from the LED fixture to the existing ballast wiring. Connect the black wires from the LED fixture to the remaining wire from the existing ballast wiring, and tuck connections behind LED. Verify circuit against appropriate wiring diagram.



Connecting Fixture Wiring
(Center Fixture Shown, End Fixture Similar)

LED light fixtures are polarity sensitive. The power supply red wire (positive) must be electrically connected to the red wires of the light fixture. The power supply blue wire (negative) must be electrically connected to the black wires of the light fixture.

- Remove protective film from lens.

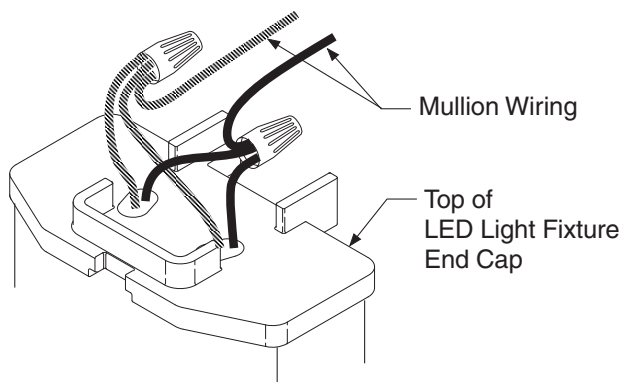
FINISHING THE INSTALLATION

- Replace wireway cover.
- Turn circuit breaker to ON.
- Turn light switch to ON.
- Check operation of LED light fixtures.
- Replace front panels and associated hardware.
- Replace wire racks.
- When case reaches operating temperature, restock case.

REMOVING LED FIXTURE

- Remove product from the case and store appropriately.
- Remove the wire racks from the case, taking care to store them out of the way of customers and store personnel.
- Turn the light switch to **OFF**. The switch is located inside the case on the door mullion.
- Lock out and tag out the circuit breaker for the lighting circuit of the case where the LED light fixtures are installed.
- Remove cover by releasing the snap legs.
- Disconnect fixture wiring at wire nuts. Tag case wiring with color of fixture wire color connected. LED lighting is polarity sensitive.

LED light fixtures are polarity sensitive. The power supply positive wire must be electrically connected to the red wires of the LED fixture. The power supply negative wire must be connected electrically to the black wires.



Connecting Fixture Wiring
(Center Fixture Shown, End Fixture Similar)



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.



CAUTION

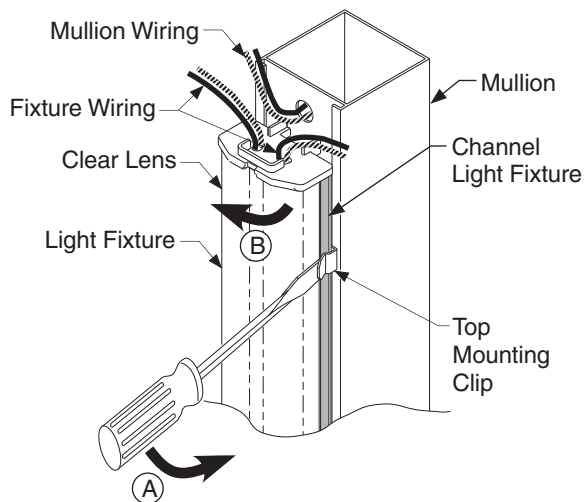
Fluorescent lamps contain mercury vapor. Mercury exposure at high levels can harm the brain, heart, kidneys, lungs, and immune system of people of all ages. Do not break or puncture fluorescent lamps. Dispose of, or store, all fluorescent lamps in accordance with Federal (40 CFR 273), State, and local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

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>

- Remove fixture:
 - With one hand, insert a flat blade screwdriver between the heat sink and the mounting clip, as shown below.
 - With free hand, grip the LED fixture.
 - (A) Push the screwdriver away from light fixture making sure the screwdriver does not hit or damage the clear polycarbonate lens.
 - (B) Twist the light fixture in the opposite direction until it pops off the mounting clip.
 - Continue to support the fixture while repeating the process for all remaining clips.
- If removing both end light fixtures, mark the back of each fixture to indicate from which side the fixture was removed. Inverting an end light fixture will result in very low light output inside the refrigerated case.
- Reassemble in the reverse order of disassembly. Make sure that light fixture is on bottom support or tombstone support.



Remove LED Fixture
(Center Fixture Shown, End Fixture Similar)

A decorative border made of a repeating blue geometric pattern, resembling interlocking squares or a stylized knot, surrounds the entire page content.

HUSSmann®

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

