Cold Deck FIT
Canopy and Shelf Lights and Retrofit Kit

Installation Guide for 701940

General Information

• Cold Deck FIT LED lighting systems are intended for use inside of commercial refrigerated display merchandisers for food zone, splash zone, and non-food zones only.
• Cold Deck FIT LED lighting systems are Class 2 low voltage luminaires intended to replace standard fluorescent fixtures in refrigerated multi-deck merchandisers after electronic ballasts have been replaced by SloanLED 24 VDC power supplies.
• WARNING – Risk of Fire or Electric Shock. Not for direct replacement of Fluorescent Lamps. Use only with SloanLED Power Supply (P/N 701936, or 701895-24W, or 701895-24C or 410175).
• Use only a damp cloth and mild cleaning agent to clean Cold Deck FIT luminaires.
• Cold Deck FIT Retrofit Kit (retrofit kit), in the context of this guide, is all of the component parts needed, including these installation instructions, for a retrofit luminaire conversion.
• Retrofit luminaire conversion is the act of modifying, with the parts provided in the retrofit kit, a luminaire already manufactured and in service in order to convert the luminaire to a LED light source from its original light source. The refrigerated display merchandiser is considered the luminaire in this context, and the complete retrofit kit is assembled during the audit of each merchandiser, on site, prior to installation.

Tools and Accessories Recommended

Do not remove existing primary merchandiser wiring.
Tools and connections shown are for primary connections: Gloves, safety glasses, flat and Phillips head screwdrivers, screws, standard drill, measuring tape, electrical tape, wire strippers, twist-on or push-in UL Listed wire connectors, tie-wraps, and UL Listed 18 gauge wires (multiple colors such as white, black, blue, and red are useful to avoid confusion, but not required).

Items Purchased for Installation

Check to ensure correct count of bill of materials prior to removing installed lamps and ballasts.

NOTE: Cold Deck FIT Canopy Lights are intended to be used in canopy of multi-deck merchandisers only. Any attempt to install these luminaires into trough or under shelving may cause damage to merchandiser and/or performance may not match literature specifications. Cold Deck FIT Shelf Lights may be installed under shelving.
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Luminaire Directivity

Cold Deck FIT Canopy Light  Cold Deck FIT Shelf Light

Luminaire Placement

For Your Safety

• Read and understand all instructions in this installation guide prior to retrofitting any refrigerated display merchandiser.
• Read and observe all NOTES, CAUTIONS, and WARNINGS shown throughout these instructions.
• Installation must be performed by trained service personnel only.
• Cold Deck FIT Retrofit Kit (retrofit kit) is UL Classified; luminaires are UL Listed for dry, damp, and wet locations, as well as food zone, splash zone, and non-food zones in commercial refrigerated display merchandisers.
• Gloves and safety glasses should be worn at all times during installation. Safety goggles are recommended during power supply installation.
• Retrofit kit electrical input specifications: Up to 1.4 A Max, 100-240 VAC.
• Retrofit kit electrical output specifications: Up to 3.7 A, 100 W, 24 VDC, Class 2 circuit.
• Retrofit kit is accepted as a component of a luminaire where suitability of combination shall be determined by CSA or authorities having jurisdiction (Canada only).
• Do not make or alter any open holes in an enclosure of wiring or electrical components during installation.
• Only open holes indicated in photographs and/or drawings may be made or altered as a result of retrofit kit installation. Do not leave any other open holes in an enclosure of wiring or electrical 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 electrical shock. Luminaire wiring, LED Driver, or other electrical parts may be damaged when drilling for installation of retrofit kit. Inspect wiring and components for damage.
• WARNING – Risk of fire or electrical shock. Install this retrofit kit only in luminaires that have constructional features and dimensions shown in photographs and/or drawings.
• WARNING – Risk of fire or electrical shock. Install this retrofit kit only in luminaires used in refrigerated display merchandisers that have constructional features and dimensions shown in photographs and/or drawings.
• INSTALLATION OF THIS RETROFIT ASSEMBLY REQUIRES A PERSON FAMILIAR WITH CONSTRUCTION AND OPERATION OF FLUORESCENT LIGHTING LUMINAIRE ELECTRICAL SYSTEMS AND HAZARD INVOLVED.
• WARNING – Risk of fire or electrical shock. Retrofit kit installation requires knowledge of fluorescent lighting luminaire electrical systems. If not qualified, do not attempt installation. Contact a qualified electrician.
• Install to NEC, state, and local regulations.
• Once conversion is complete, adhere sticker provided that says “This luminaire has been modified and can no longer operate originally intended lamp” near lamp on/off switch located in refrigerated display merchandiser.
**Preparation for Installation**

1. **Warning: Risk of electrical shock.** Locate main circuit breaker panel, de-energize, and perform lockout/tagout prior to retrofitting merchandiser. All primary wiring must be done by a licensed electrician.

2. Prior to beginning work, perform an audit and visual inspection of refrigerated display case to be retrofitted. Locate and note original equipment manufacturer's (OEM) part number and serial number. If possible, obtain and review OEM’s set up and installation manual, specifically sections that relate to location of power switch, number and location of all fluorescent lamp holders and ballasts, and wiring diagram.

If no OEM documentation can be obtained, case must be visually inspected prior to installation. Locate all pairs of fluorescent lamp holders and note number and locations. Lamp holders are normally in canopy, under shelves, and in front rail. A typical 12’ (3600 mm) merchandiser will have between 15 and 27 pairs of lamp holders, and will have five (5) to nine (9) ballasts to power them (in a ratio of 3:1).

**CAUTION:** All ballasts must be located and removed during retrofit procedure. If all ballasts cannot be located, stop retrofitting procedure and contact OEM for assistance.

3. As required, remove fluorescent bulbs and reflectors (if present) from canopy, under shelves, and inside front rail. Dispose of bulbs per local, state, or federal regulations. Refer to [http://lamprecycle.org](http://lamprecycle.org) for guidance.

4. Determine angle of light channel. Using a plumb-bob or other method, determine angle of inclination and record. Check for features on light channel which may cause an obstruction of light pattern from luminaire. If an obstruction is present, measure height and note. Ensure that luminaire can be installed at this height while remaining behind canopy fascia after installation.

**NOTE:** If light channel is angled, a pilot hole should be marked and drilled prior to drilling screws in. Canopy Lights may have pilot holes drilled prior to closing light channel if required.

5. Determine proper configuration of angled Stand-off Clips needed for given merchandiser construction. Each angled Stand-off Clip imparts a 5° angle on Canopy Lights. If clips are stacked facing same way, angle progressively increases with each clip in 5° increments. If clips are stacked in an alternating orientation (front to back), total angle that canopy is held at zero and clips become a 0.5” (12.7 mm) stand-off. **NOTE: Configurations are additive.**

<table>
<thead>
<tr>
<th># of alternating Stand-off Clips</th>
<th># of inclining progressive Stand-off Clips</th>
<th>Angle measured, θ</th>
<th>Stand-off height, y</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>5°</td>
<td>0.25”</td>
</tr>
<tr>
<td>0</td>
<td>2</td>
<td>10°</td>
<td>0.50”</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0°</td>
<td>0.50”</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0°</td>
<td>1.00”</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>10°</td>
<td>1.00”</td>
</tr>
</tbody>
</table>

Create 3 sets of clips per canopy light.

6. Remove electrical raceway cover. With some merchandisers, raceway cover may be entire canopy panel. Refer to OEM’s manual for instructions on how to access existing ballasts for canopy and shelf lights.

**CAUTION:** Weight of canopy panel and bundled wiring may cause panel to swing down upon removal of final screw. Dust and debris may have accumulated on panel since original installation. Safety goggles are recommended.
Remove Ballasts and Install Power Supply

7. Cutting primary and secondary wires at ballast, remove installed ballasts and install appropriate number of power supplies based on respective number of Canopy and Shelf Lights.

Typical wiring diagram for a 12' (3600 mm) multi-deck merchandiser before retrofit conversion, with three (3) rows of canopy lamps and lamp holders along with four (4) rows of three (3) shelves.

NOTE: Only one (1) Canopy Light is required to replace up to three (3) fluorescent lamps in canopy.

CAUTION: Power supplies should not be mounted near any other heat generating element.

Table 1– Cold Deck FIT maximum lights per power supply

<table>
<thead>
<tr>
<th>Series</th>
<th>Canopy</th>
<th>Shelf</th>
</tr>
</thead>
<tbody>
<tr>
<td>701895/701936</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>4' (1200 mm)</td>
<td>4</td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Series</th>
<th>Canopy</th>
<th>Shelf</th>
</tr>
</thead>
<tbody>
<tr>
<td>4' (1200 mm)</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>3' (910 mm)</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

NOTE: Any combination of lights may be used up to a total of 90 W on a 701895-24C, 701895-24W, or 701936 power supply, or 36 W on a 410175 power supply.

NOTE: PRIMARY WIRING CONNECTIONS: AC Neutral to Power Supply White; AC Line to Power Supply Black; Earth Ground to Power Supply Green.

8. Connect primary power to power supply (refer to wire description on power supply label). Use UL Listed twist-on or push-in connectors for connections. Follow connector manufacturer's instructions.
Remove Ballasts and Install Power Supplies (cont.)

9. Optional - Install Dimming Controller and Motion Sensor:  
   Connect Dimming Controller to secondary side of power supply.  
   Use Cat 5 cable to connect Motion Sensor to Dimming Controller.

CAUTION:  
Primary and secondary wiring needs to be physically separated inside of raceway.

NOTE: One (1) Dimming Controller required per power supply.

10. Attach secondary wiring to power supply: Connect all RED wires from removed ballasts to RED output wire on power supply (or DC) and all BLUE wires from removed ballasts to BLACK output wire on power supply secondary. Use Terminal blocks for easier power supply connections.

NOTE: All tombstones should be connected to secondary of power supply.

11. Energize system and test lamp holders for electrical shock hazard.  
   Ensure that no unused wires are exposed after installing power supply.  
   Re-energize system via power switch. Using a voltmeter or multimeter, check for voltage, both AC and DC, between fluorescent lamp holders for all shelf and canopy lights. Measurements should read 24 VDC ± 0.25 V and there should be 0 VAC ± 1 VAC.

    Cut tombstones off secondary wiring.

13. Attach Stand-off Clips as shown in diagram. Use appropriate length (based on number of Stand-off Clips required from Step 5), self-drilling/self-tapping, #8 or #10, pan or hex head screws.

NOTE: If AC voltage measured, line voltage is present on low voltage side of system. De-energize system and troubleshoot accordingly.

21. If case was left re-energized from previous step, de-energize case again, performing lockout/ tag out as required.

22. Locate all pairs of tombstones in shelving, and corresponding raceways that support tombstones.

23. Remove electrical raceway that houses incumbent lamp holder. Cut wires from base of lamp holder/tombstone, remove lamp holder.

24. Place Shelf Lights. Shelf Lights initial method of attachment is via magnets, with primary method of securement via screws through end caps. Place Shelf Lights on flat surface that fully engages as many magnets as possible. Shelf Lights can be placed up to 12" (300 mm) away from fluorescent lamp holders. Mechanically fasten luminaires into place by screwing through holes in end caps using an appropriate fastener and if necessary, slide silicone grommet onto luminaire cable. NOTE: Do not install lights in such a way that raceway becomes inaccessible in following steps.

25. Connect appropriate wires to flying lead from LED luminaire using twist-on or push in UL listed wire connectors. Connections should be RED-to-RED and BLACK-to-BLUE. Replace raceway in its original location. NOTE: Make all secondary connections inside of raceway.

26. Close holes created in shelving, if any. Push silicone tombstone retrofit grommets into place in raceways as needed. Ensure that no new holes were created during retrofit.

27. Replace electrical raceway. Ensure all wires are clear of pinching. Use tie-wraps to help organize and secure wires, if necessary.

This completes installation of Canopy only lights. If this completes your retrofit, permanently re-energize circuit breaker. If Open Deck Merchandiser also has shelf lights to retrofit, proceed to following section.
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Dimming Controller Settings
Factory setting is 100% Brightness, 0% Dimming.

<table>
<thead>
<tr>
<th>SW 1</th>
<th>SW 2</th>
<th>SW 3</th>
<th>SW 4</th>
<th>Brightness level</th>
</tr>
</thead>
<tbody>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>X</td>
<td>X</td>
<td>100% – No dimming mode</td>
</tr>
<tr>
<td>ON</td>
<td>OFF</td>
<td>X</td>
<td>X</td>
<td>50%</td>
</tr>
<tr>
<td>OFF</td>
<td>ON</td>
<td>X</td>
<td>X</td>
<td>75%</td>
</tr>
<tr>
<td>ON</td>
<td>ON</td>
<td>X</td>
<td>X</td>
<td>100%</td>
</tr>
</tbody>
</table>

Removal Instructions

1. De-energize system as outlined in Preparation for Install section on Page 3 of this installation manual and undo electrical connections to LED lights.

2. Grab light with a free hand.

3. For Canopy Lights: Using wrench provided, disengage center mounting clip. Using appropriate sized screwdriver or nut driver, remove mounting hardware and remove luminaire from merchandiser.

   For Shelf Lights: Remove mounting hardware. Disengage mounting magnets from under-shelf and remove luminaire from merchandiser.

4. Repeat process for remaining lights. Make sure to continually support LED lights with a free hand during removal.

5. Open electrical raceway cover and remove power supplies.

6. Cap or remove all primary wires.

Optional Dimming Control

<table>
<thead>
<tr>
<th>Part Number</th>
</tr>
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<tbody>
<tr>
<td>701890-PWR</td>
</tr>
<tr>
<td>400661</td>
</tr>
<tr>
<td>400964</td>
</tr>
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</table>

See datasheet for further details. Datasheet available at SloanLED.com.

Cold Deck FIT is covered by US and foreign patents pending.

UL Retrofit file number: E365292
UL Low Voltage Luminaires and Fittings file number: E329727
UL NSF/ANSI 2 file number: SA33165

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