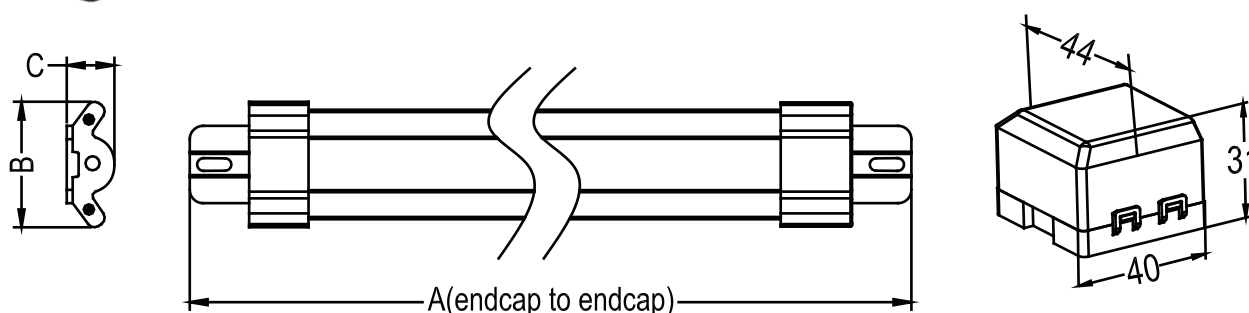


LED Modules FI  
for Refrigerated Display Cases



Length	4FT	5FT	6FT
A(mm)	1195	1500	1795
B(mm)	42.3±0.1		
C(mm)	16.1±0.1		

## Specifications:

Model	Power	Maximum no. of interconnections	Input Voltage	CRI	IP Rating	Color Temperature
FDK-F1-FSL-048-192-XXK-D-C80	19.2W	3	DC24V	≥80	IP65	2700-6500K HSP
FDK-F1-FSL-060-192-XXK-D-C80	22.4W	2				
FDK-F1-FSL-072-240-XXK-D-C80	28.8W	2				

Where “XXK” could be 27K,30K,35K,40K,45K,50K, 60K or 65K, which denotes for color temperature 2700K,3000K, 3500K,4000K,4500K,5000K,6000K or 6500K and it also can be replaced by “HS” or “HSP” that denotes color-temperature of Hi-spectrum.

## Application

- Vertical coolers
- Walk-in cooler
- Refrigerated display

## LED Modules FI for Refrigerated Display Cases

### Installation Guide

#### End Mullion Lights for Vertical Cases



### BEFORE YOU BEGIN

Read these instructions completely and carefully.

#### FOR YOUR SAFETY

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

- Installation to be performed by factory trained service personnel only.
- For use inside a commercial refrigeration case with packaged foods only.
- Use this unit only in the manner intended by the manufacturer. If you have any questions, contact the manufacturer.
- Before installing, servicing, or cleaning unit, switch off power at the service panel and follow appropriate lock out/tag out safety procedures.

## Prepare Electrical Wiring

#### Electrical Requirements



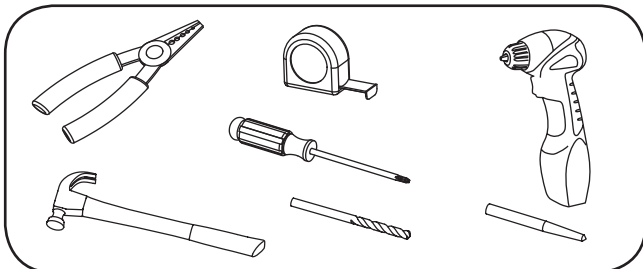
- The power supply must be supplied with 120-277 VAC, 50/60 Hz, and connected to an individual properly grounded branch circuit, protected by a 15 or 20 ampere circuit breaker or time delay fuse.
- Wiring must be 2 wire with ground and rated for 75°C (167°F).
- Do not overload driver.
- Ensure that all connection points are sealed for damp location using the appropriate method per the NEC or local electrical code.

#### Led Driver Compatibility

This system is compatible with FSL-LD1-10024V/FSL-LD2-10024V LED Drivers

Please refer to the separate LED driver installation guide for appropriate wiring connections.

## Tools Required



Wire stripper/cutter

Tape measure

Screwdriver

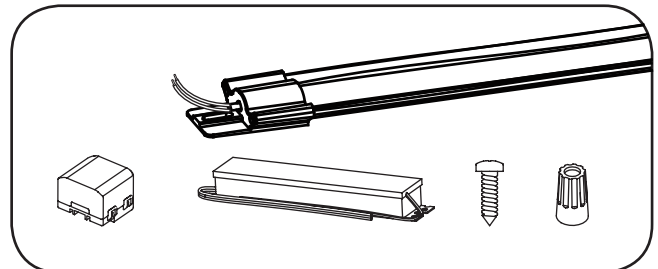
Cordless drill

Hammer

7/64-inch (2.8mm) drill bit

Center punch

## Components Required



LED light

Wire cover

24-volt/100-watt

6-32 screws

UL certified 22-14 AWG  
(0.33-2.08 mm<sup>2</sup>) wire  
connectors

## 1 - Remove Existing Lighting Components

### ▲ CAUTION/ATTENTION

**Risk of injury.** While performing installations described, gloves, safety glasses or goggles should be worn. /  
des installations décrites, des gants, des lunettes de sécurité ou des lunettes de protection doivent être portées.

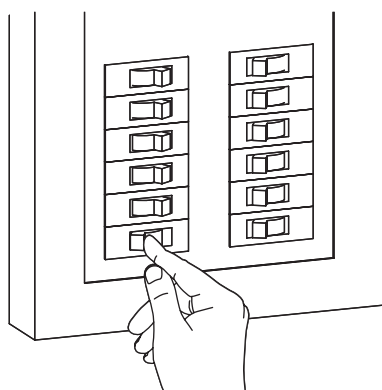
Risque de blessure. Lors de l'exécution

### ▲ WARNING/AVERTISSEMENT

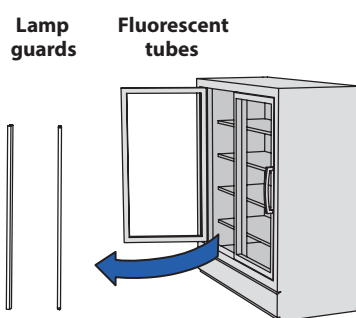
**Risk of electrical shock.** Disconnect power before servicing or installing product. LED Retrofit Kit Installation requires knowledge of luminaires electrical systems. If not qualified, do not attempt installation. Contact a qualified electrician. Install this kit only in the luminaires that have the construction features and dimensions shown in the photographs and/or drawings. / **Risque de choc électrique.** Couper le courant avant de réparer ou installer le produit. LED Retrofit Kit d'installation nécessite la connaissance des systèmes luminaires électriques. Si vous n'êtes pas qualifié, ne tentez pas l'installation. Contactez un électricien qualifié. Installez ce kit seulement dans les luminaires qui ont les caractéristiques de construction et les dimensions figurant sur les photographies et / ou des dessins.

1.91" (48.6mm)

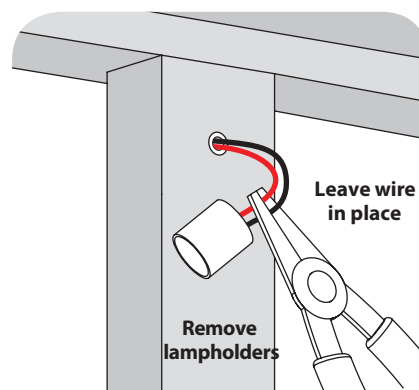
- Refer to manufacturing manual for refrigeration case to identify lighting control circuits. Ensure that power is switched off at the service panel for the lighting circuit. If a lighting power switch is not provided in the refrigeration case, power removal can be performed at the main breaker panel.
- Please refer to refrigeration manual for any questions dealing with component locations.



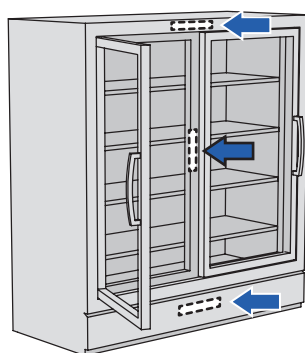
Turn off power to the refrigeration case.



Remove all lamp guards and fluorescent tubes from inside the case.



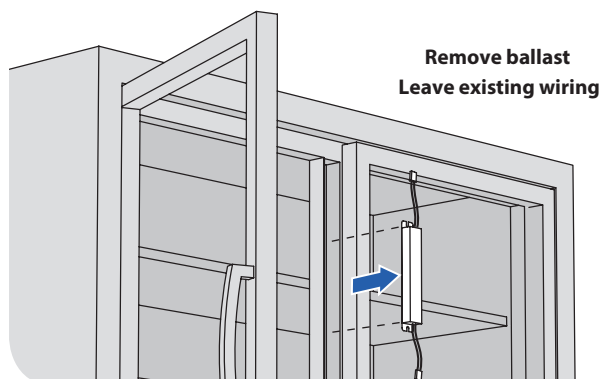
Inside the case, cut wires as close as possible to lampholders and remove them.



Possible ballast locations:  
- Over door frame  
- Inside mullion  
- Behind raceway

Locate ballast and remove access cover.

**NOTE:** Refer to the refrigeration manual for specific ballast location.



Disconnect wires to ballast and remove from case. Leave the existing ballast input and output wires for reconnection in a later step.

2 - Install End LED Lights

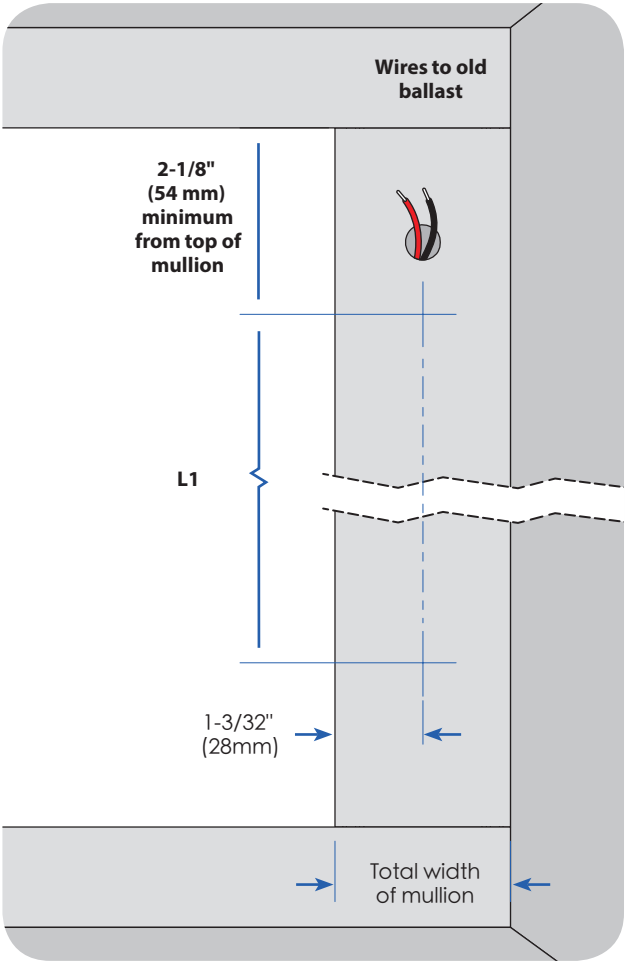
▲ WARNING/AVERTISSEMENT

**Risk of fire or electric shock.** Luminaire wiring and electrical parts may be damaged when drilling for installation of LED retrofit kit. Check for enclosed wiring and components. / **Risque de feu ou électrocution.** Les pièces et câbles électriques risquent d'être endommagés lors du perçage des trous pour l'installation du luminaire à DEL. Veuillez vérifier si des câbles et composants se trouvent derrière la paroi avant de percer.

To prevent wiring damage or abrasion, do not expose wiring to edges of sheet metal or other sharp objects. / Pour éviter l'endommagement de câblage ou l'abrasion, ne pas exposer le câblage aux bords de feuilles de métal ou d'autres objets tranchants.

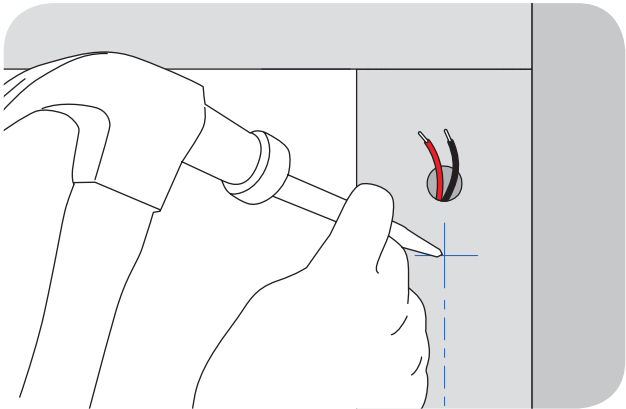
▲ WARNING/AVERTISSEMENT

**Risk of electrical shock.** 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 electric components / **Risque de choc électrique.** Seuls les trous ouverts indiqués dans les photos et / ou les dessins peuvent être faites ou modifiés à la suite du montage du kit. Ne pas laisser autres trous ouverts dans l'enceinte du câblage électrique ou composants.

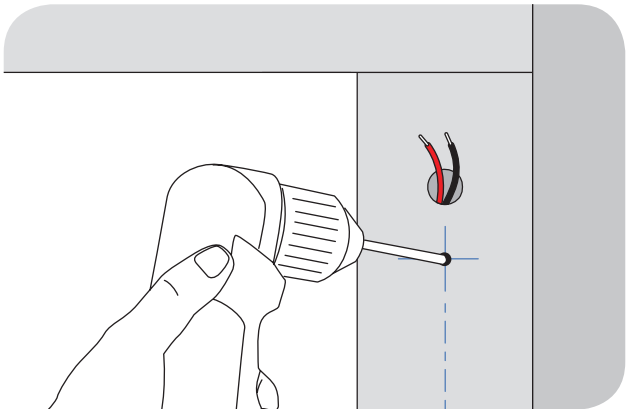


Mark two hole locations on mullion.

LED Light Length	L1
47"	46.39"
59"	58.40"
71"	70.02"

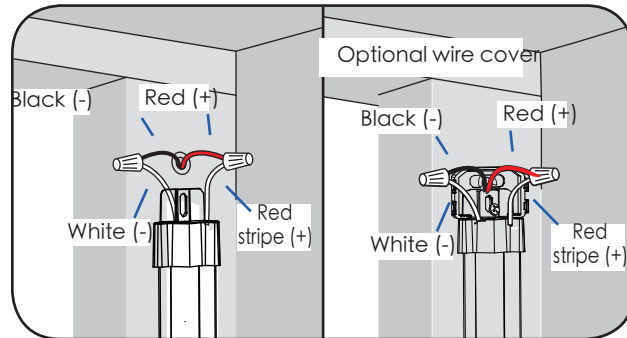
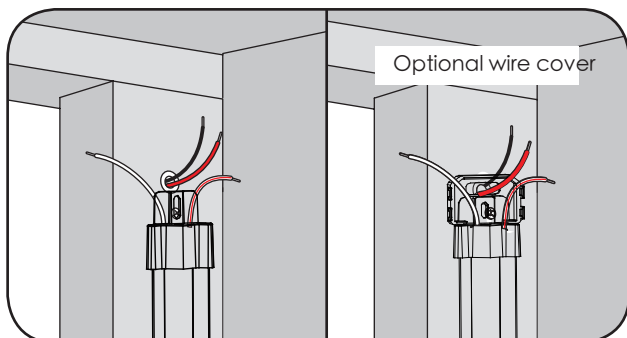
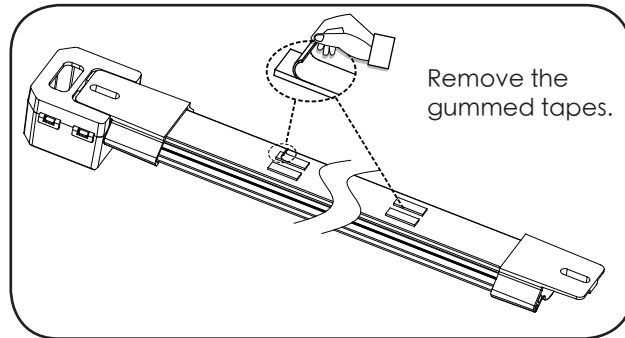
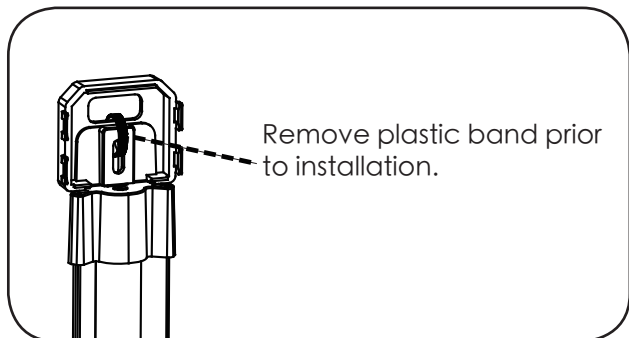


Use center punch and hammer to create a dimple over the two marked locations.



Use a 7/64" (2.8 mm) bit to drill mounting holes through the two marked locations.

NOTE: Refer to the manufacturing manual for door frame to ensure there are no components contained inside the mullion that could be drilled through.



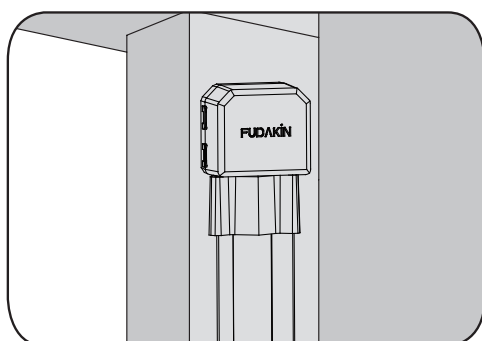
Secure the top and bottom of the LED light to the mullion using a #6 x 1/2" (self-threading) or x 3/4" (self-drilling) sheet metal screws. If using the optional wire cover, install the cover base as well and a 3/4" (self-threading) or x 1" (self-drilling) long screw will be required.

OPTIONAL: Additional screws can be used in the holes along the length of the bar if desired. Refer to the manufacturer manual for door frame to ensure there are no components contained inside the mullion that could be drilled through.

NOTE: Over-sized screws may cause damage to the LED light.

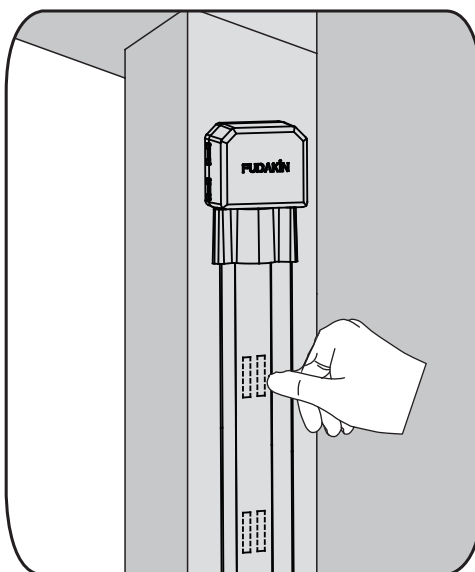
Refer to wiring diagram on page 7. Connect the red stripe wire (+) of the LED light to the red wire (+) of the power supply, and connect the white wire (-) of the LED light to the black wire (-) of the power supply using wire connectors or other connection method suitable for low temperature usage and stranded cable.

NOTE: If connections are made in an area with excessive moisture or ice, electrical connections should be sealed with electrical grade silicone (examples: Momentive RTV 6700 Series, Momentive White Blanc RTV 162, Dow Corning 3140, Dow Corning 3145, or Dow Corning RTV 748)

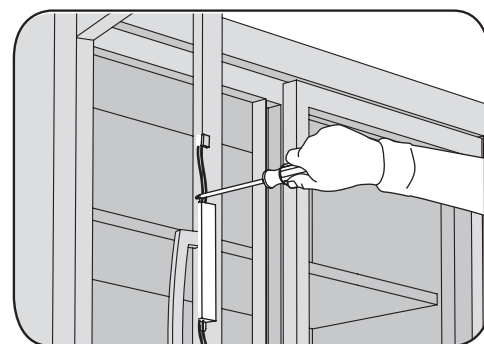


If using the optional wire cover, tuck wires inside and snap the cover top over the cover base. Repeat steps 1-6 for the other side of the case.

Proceed to section 4-Electrical Connections to complete wiring connections.



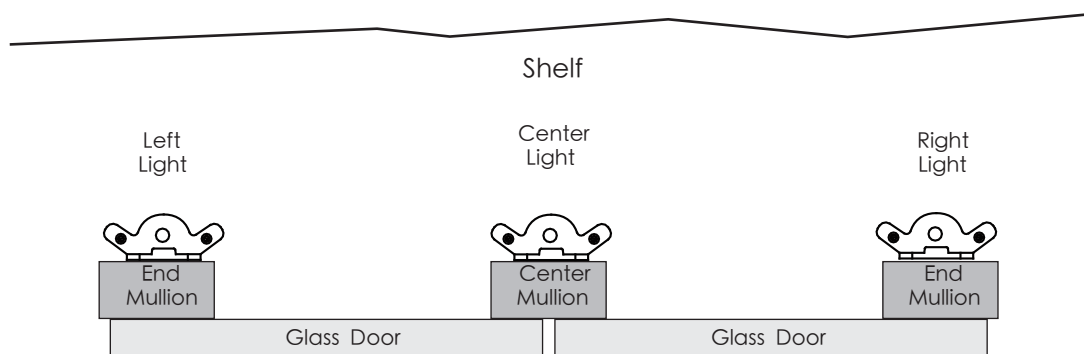
Stick F1 strip light and press it tightly.



Mount the LED driver in the same location where the ballast was formerly installed.

NOTE: Refer to the "Parts Needed Per Case" table on page 2 to determine the proper number of LED drivers to install.

Top view of refrigeration case



## Electrical Connection Configurations

Multiple LED light's electrical input should be in parallel connection to an LED driver's output as shown by the example wiring diagram.

NOTE: LED lights are polarity insensitive.

One End Set (Right and Left) and One Center LED Light

