



ecostar 

ESRP-3

REFRIGERATOR LIGHTING

INSTALLATION GUIDE

10" Lens Projection Depth
for Deep Refrigeration Cases

**UNIQUE
LIGHTING
SOLUTIONS**

USLED™
Always the Right Choice!

WARNING



- The retrofit installation must only be performed by a licensed electrician.
- To prevent death, injury or damage to property this product must be installed in accordance to National Electric Code (NFPA 70) in the US or Canadian Electrical Code (CSA22.1) in Canada.
- Disconnect power before installing the product or servicing it.

MODEL NUMBERS

This installation instructions covers the following products:

Power Supplies

1. 100W Power Unit: PSA-24-100-LE

Luminaires

1. ESRP-3 Series Luminaires

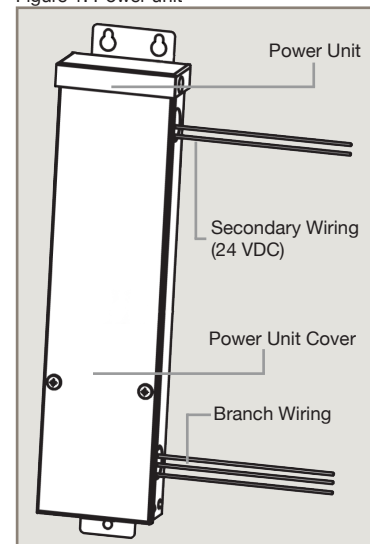
Dimming Control Components (optional)

1. Dimmer Control Unit (DCU): ESDC-3-1
2. Passive Infrared Sensor: FS-705
3. Cable: FS-C1

POWER UNIT INSTALLATION

1. Secure power unit (Figure 1) in suitable location.
2. Remove cover from power unit.
3. Connect secondary wiring (24 VDC) per local code according to supplied wiring diagram. Recommended cable is solid 18AWG NEC Class 2 cable.
4. Connect branch wiring per local code according to supplied wiring diagram.
5. Power unit must be grounded using the green wire located in the primary wire cavity of the power unit.
6. Install power unit cover.

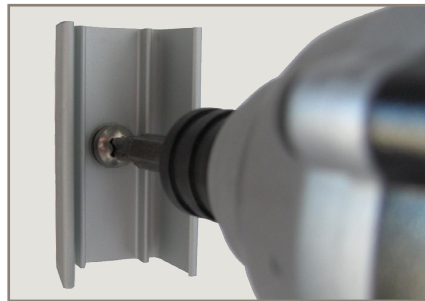
Figure 1: Power unit



LUMINAIRE INSTALLATION INSTRUCTIONS

1. Determine the vertical position of the EcoStar unit on the mullion to best illuminate the product.
2. EcoStar requires two mounting brackets per unit. Mark the position of the mounting brackets on the mullion that positions the mounting brackets near the ends of the EcoStar extrusion.
3. Fasten the mounting brackets to the mullion (Figure 2) where previously marked. In the event that the product shelving interferes with the mounting of the bracket, slightly move the bracket down and fasten to the mullion.

Figure 2: Mounting Bracket



4. Place one side of the EcoStar unit extrusion into the mounting bracket (Figure 3) at a slight angle and rotate to snap into the mounting bracket.
5. Remove the plug from the connector located on one of the end caps of the EcoStar unit. The plug has four wire-traps. Use the 2 left wire traps to wire the +24V (red) and 0V (blue) wires respective as shown in Figure 4 and plug into its receptacle. Recommended cable is solid 18AWG NEC Class 2 cable or a cable required by local code. Note that the plug is keyed and can be plugged only one way into the receptacle. The red and blue wires must align with the "24" and "0" on the end-cap as shown in Figure 4. Also see the wiring diagram on page 6 for wiring of the overall EcoStar system.

Figure 3: EcoStar in Mounting Clip

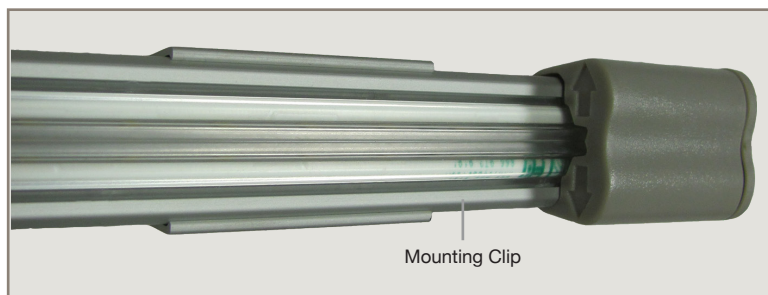
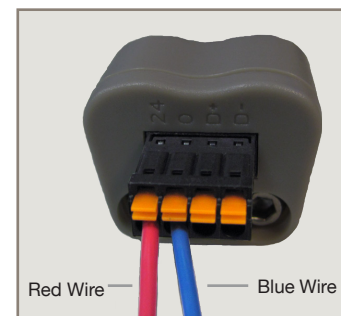
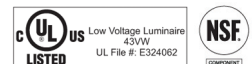


Figure 4: EcoStar Wire Traps



6. Secure cable to the mullion and cooler walls.
7. Repeat all steps for each EcoStar unit.
8. Energize.



DIMMING CONTROL INSTALLATION INSTRUCTIONS (OPTIONAL)

To conserve energy, EcoStar3 has the capability to dim down to 30% of full brightness. A Passive Infrared (PIR) sensor wired to the EcoStar3 system detects motion and puts EcoStar3 in low brightness mode in the absence of motion. If motion is detected it immediately returns to full brightness. A programmable delay to switch full brightness to low brightness mode can be programmed to be 30 seconds, 5 minutes, 10 minutes or 20 minutes. The PIR sensor can also be set in minimum or maximum sensitivity mode. Minimum sensitivity covers an area of roughly 24 feet (aisle length) by 12 feet (aisle width) while Maximum sensitivity mode covers an area of roughly 30 feet (aisle length) by 15 feet (aisle width). See the FS-705 PIR sensor's installation instructions for details about setting the time delay and sensitivity.

Install the EcoStar Dimming Control Components as follows:

1. Determine the location of each FS-705 PIR sensor based on detection location and coverage.
2. Place the front edge of the FS-705 PIR sensor at the front edge of the cabinet (see Figure 4).
3. Secure the FS-705 PIR sensors to the top of the cabinets.
4. Each FS-705 sensor must be connected to a ESDC-3-1 Dimmer Controller Unit (DCU). Find a suitable location for each ESDC-3-1 DCU. The DCUs should be at a convenient location to run a 10-foot cable from the DCU to its respective FS-705 PIR sensor. Also keep in mind that each DCU must be wired to the EcoStar units it is to control as well as branch power.
5. Secure the ESDC-3-1 DCU to the cabinet.
6. Run cable FS-C1 between the FS-705 PIR sensor and ESDC-3-1 DCU by connect to their respective RJ-45 connectors.
7. Wire the ESDC-3-1 DCU to all EcoStar units to be controlled by the DCU. Run a 2 conductor cable from the ESDC-3-1 DCU to each EcoStar unit as shown in Figure 5. Recommended cable is solid 20AWG NEC Class 2 cable or a cable required by local electrical code. Up to 24 EcoStar units can be wired to a single ESDC-3-1 DCU. Wire the D+ wire trap of each EcoStar unit to any of the wire traps located on the D+ terminal blocks of the DCU. Wire the D- wire trap of each EcoStar unit to any of the wire traps located on the D- terminal blocks of the DCU. Repeat until all EcoStar units are wired to their respective DCUs.
8. Open the main power wiring compartment of the ESDC-3-1 DCU by removing the screw that secures its cover.
9. Wire 120V or 277V AC to the DCU's internal branch wires.
10. Secure the wiring compartment's cover.
11. Repeat steps 8 to 10 for all DCUs.
12. Energize the DCUs.



(cont'd) DIMMING CONTROL INSTALLATION INSTRUCTIONS (OPTIONAL)

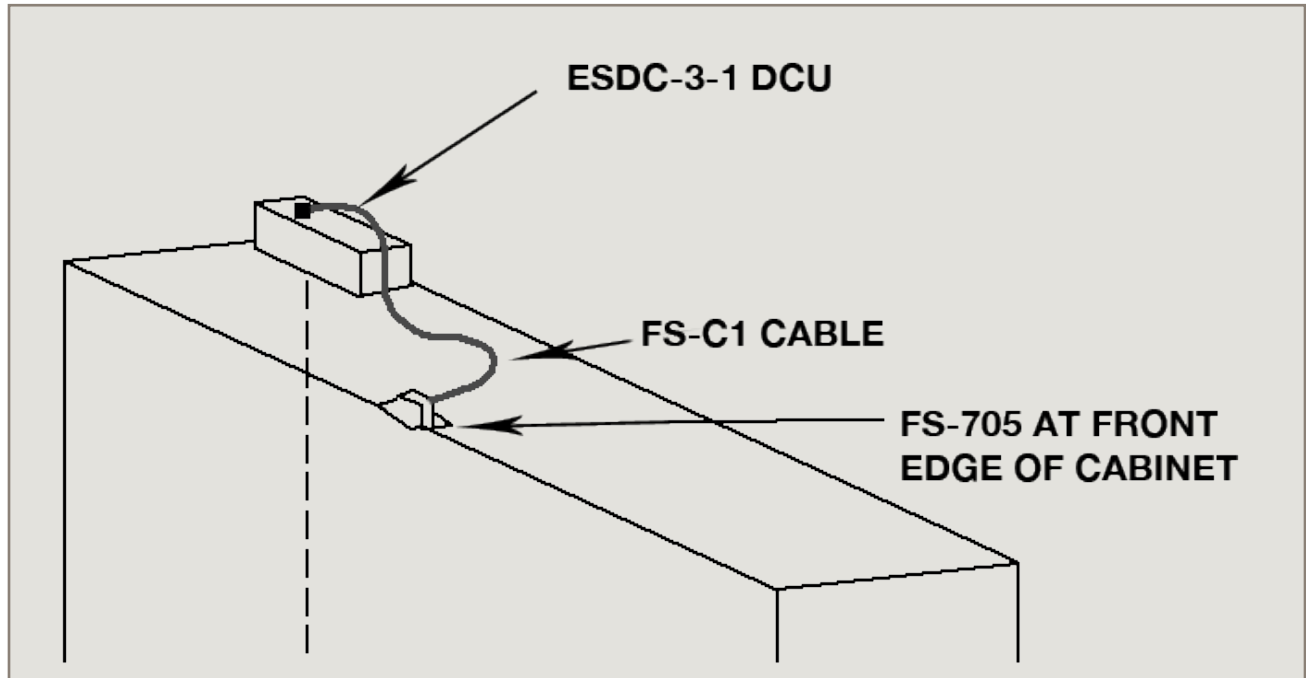


Figure 4: Mounting of the ESDC-3-1 DCU and FS-705 PIR sensor

(cont'd) DIMMING CONTROL INSTALLATION INSTRUCTIONS (OPTIONAL)

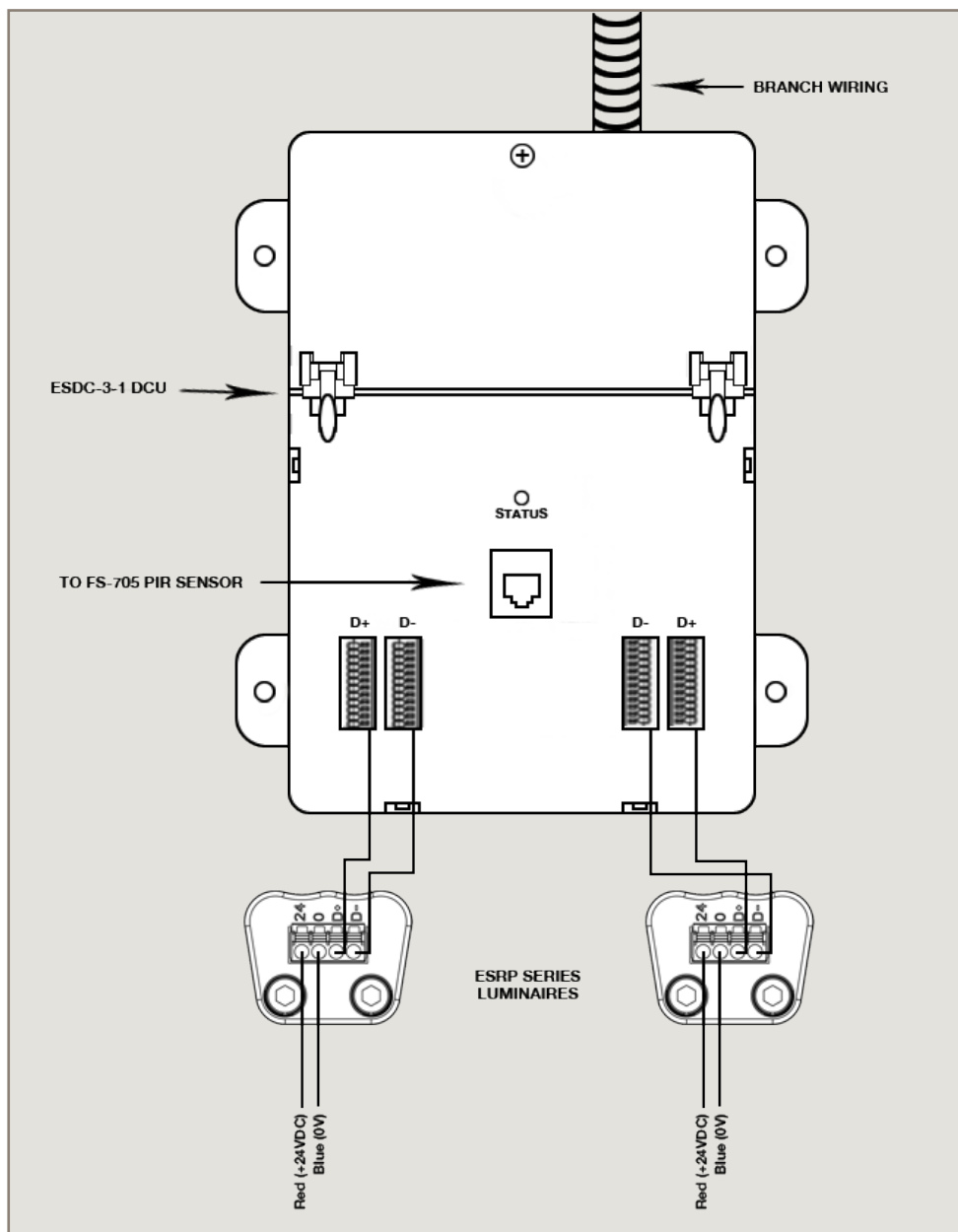


Figure 5: Wiring of ESDC-3-1 DCU

NOTE: Up to 24 luminaires can be wired to the ESDC-3-1 DCU



POWER SUPPLY CONFIGURATION

1. Determine how many power supplies are needed.

Unit Type	Power Calculation (Watts)	Total Watts	Power Supply Quantity
Center	4.46 x door height x unit quantity	Sum of Centers, Lefts & Rights	Divide Total Watts by 100, round up to nearest whole number
Left end	3.0 x door height x unit quantity		
Right End	3.0 x door height x unit quantity		

2. Wire appropriate number of EcoStar units to each power supply.

Unit Type	Power Calculation (Watts)	Power Supply Loading
Center	4.46 x door height	Wire as many Centers, Lefts and Rights to single power supply as long as total Watts is less than 100
Left end	3.0 x door height	
Right End	3.0 x door height	

Example Calculation: 5-door, 6-foot case

Unit Type	Watts/Foot	Unit Quantity	Door Height	Total Watts
Center	4.46	4	6	107.04
Left end	3.0	1	6	18.0
Right End	3.0	1	6	18.0

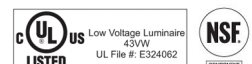
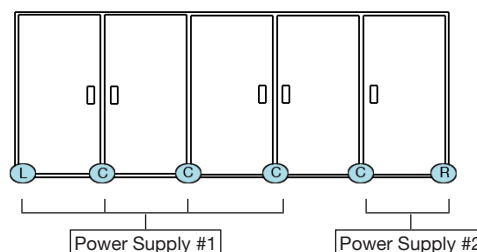
$$143.04 / 100 = 1.43 \text{ (round up to 2)}$$

Unit Type	Watts/Foot	Door Height	Total Watts	Power Supply Loading
Center	4.46	6	26.76	(1) Left and (3) Centers on power supply #1; (1) Center and (1) Right on power supply #2
Left end	3.0	6	18	
Right End	3.0	6	18	

Example Door Setup: 5-door, 6-foot case

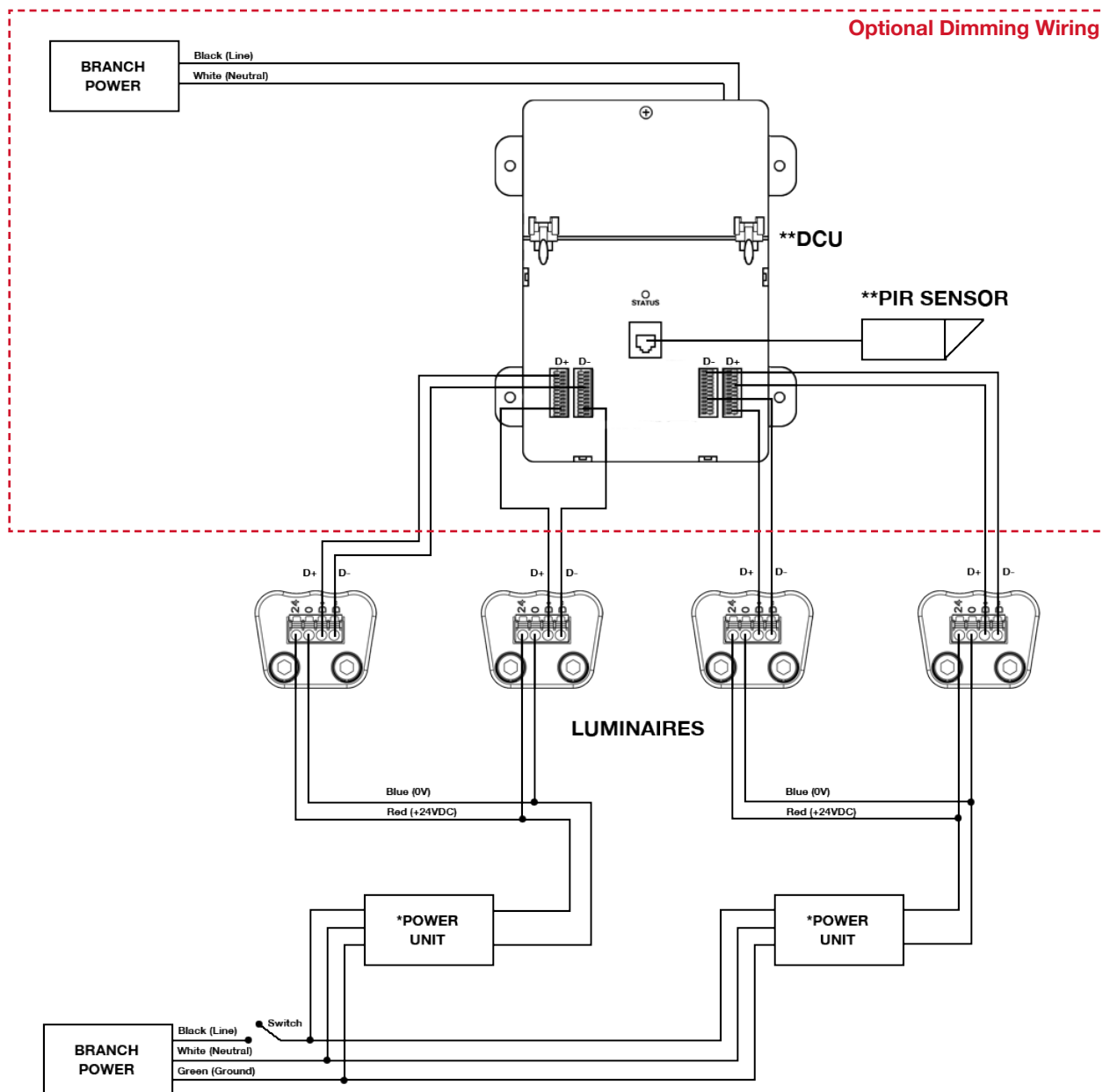
5-Door

- 4 x EcoStar Center Unit
- 1 x EcoStar Left Unit
- 1 x EcoStar Right Unit
- 1 x Power Supply #1
- 1 x Power Supply #2



WIRING DIAGRAM

This example illustrates the wiring of four luminaires, two power supplies and optional dimming components.



* Use EcoStar only with Listed Max 24 VDC, Class 2 power unit

** Optional Dimming Components

