



FHSCP-UNV-6W-L-SD



# Important Safety Instructions

When using electrical equipment and this lighting device basic safety precaution should be followed at all times including but not limited to the following:

## PLEASE READ CAREFULLY AND FOLLOW ALL INSTRUCTIONS FOR YOUR OWN SAFETY

**Important:** An un-switched AC power source of 120VAC to 277VAC is required.

**Important:** Double insulation used between the supply and battery circuit.

**Important:** Intermittent re-charging circuit.

**Important:** The recharging device remains safe after abnormal operating condition.

**Caution:** For use with a metal enclosed wiring system.

**Caution:** Do not let power supply cords touch hot surfaces.

**Caution:** Do not mount near gas or electric heaters.

**Caution:** Do not use outdoors.

**Caution:** Battery is rechargeable Ternary Lithium type and must be recycled or disposed of properly.

Do not use this emergency driver with accessory equipment other than recommended by manufacturer; failure to follow this may cause an unsafe condition. Servicing should only be performed by qualified service personnel.

Do not use this emergency driver for other than intended use.

Equipment should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.

**Important:** Indicator (LED light) illuminated indicates battery in charge mode when AC power is applied.

It is recommended and required by applicable code to test emergency function to ensure proper operation of the system; push the test switch for thirty (30) seconds every 30 days to ensure the emergency driver is functioning as by illuminating the LED light source. Conduct a ninety minute (90) discharge test one time (1) per year; LED light source should be illuminated for a minimum of ninety minutes (90).

**ASSEMBLY and FIELD INSTALLATION WIRING: WARNING:** AC power must be off before proceeding with assembly or installation of emergency driver.

**TESTING SYSTEM:** The emergency battery requires a charge minimum of one (1) hour before testing the circuit. A full charge requires twelve (12) hours.

**IMPORTANT:** In order to maintain proper operation and warranty coverage, the battery must be recharged once per year prior to installation.

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Manufacturer:  
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## SAVE THESE INSTRUCTIONS

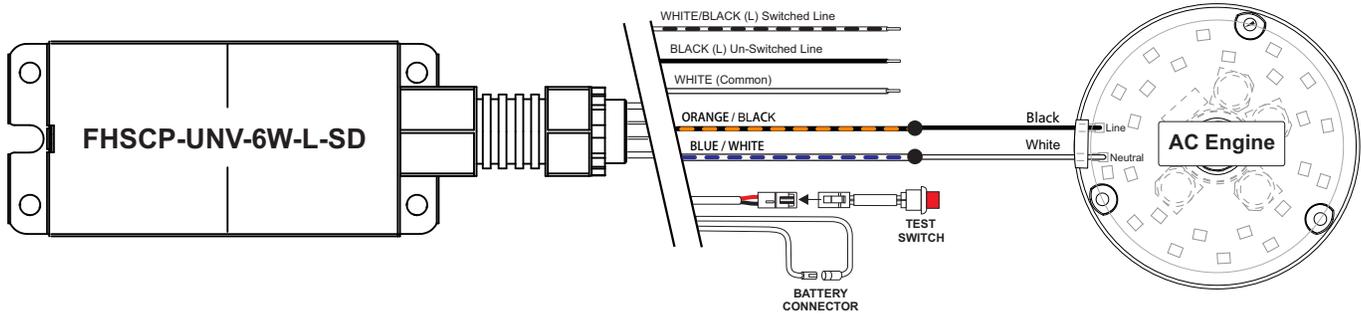


# FHSCP-UNV-6W-L-SD



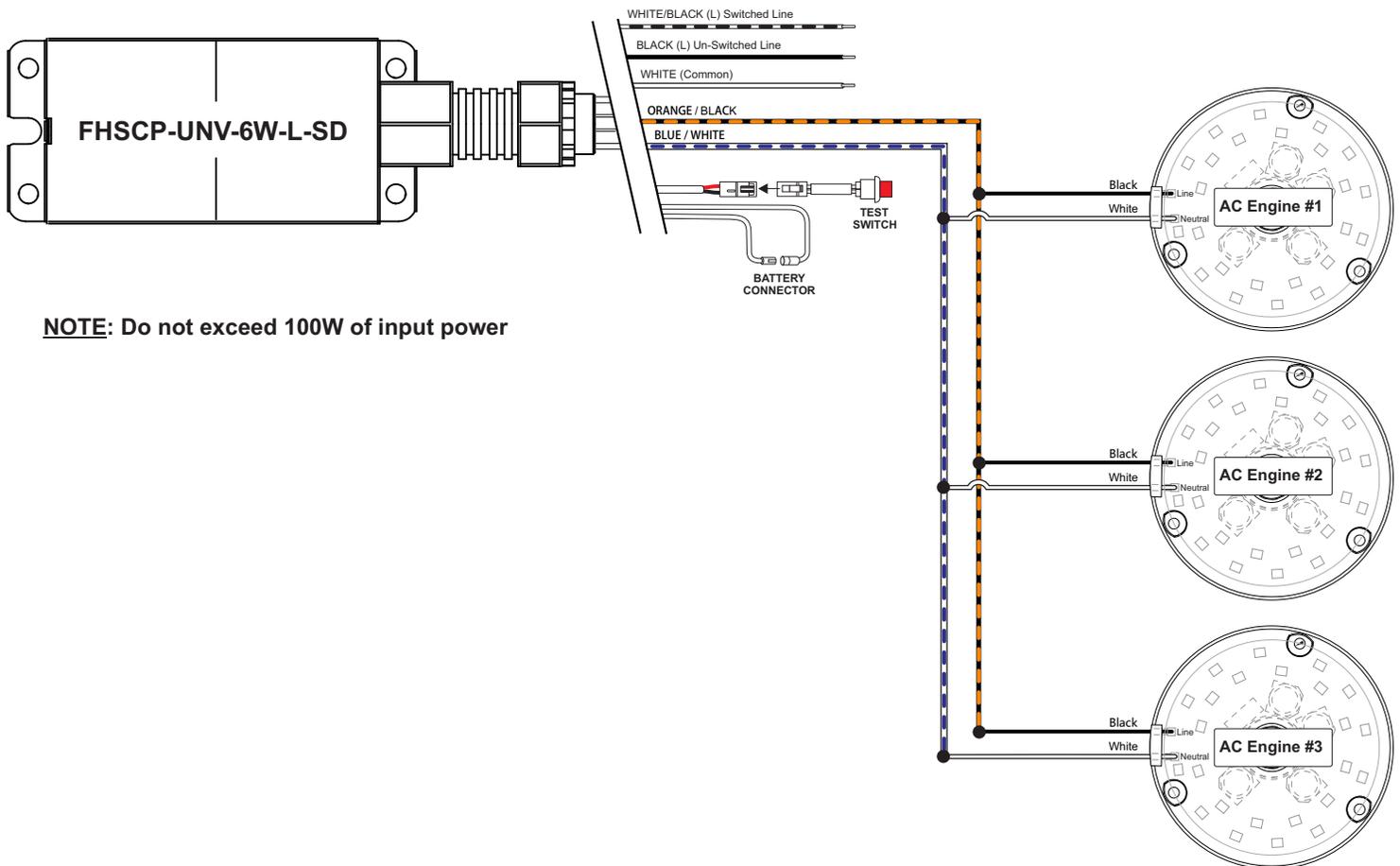
## Wiring Diagram #1

Single Luminaire



## Wiring Diagram #2

Multiple Luminaires



**NOTE:** Do not exceed 100W of input power



# FHSCP-UNV-6W-L-SD



## Guideline on calculating emergency illumination level

The purpose of this guideline is to identify the illumination level of the LED luminaire when used with Fulham's FHSCP-UNV-6W-L-SD LED emergency driver. The path of egress illumination level during emergency operation is determined by types of luminaires, Luminaire Efficacy, Luminaire Mounting Height, Emergency Power and some other effects in real application.

Step 1: Select an LED Luminaire, and make sure the LED light source is electrically compatible with Fulham's LED emergency driver. Get the Light Distribution data (usually an .ies file) and Rated Efficacy data (lumen per watt) from luminaire supplier.

If the luminaire is DesignLights Consortium™ (DLC) compliant, you can also get the efficacy information from DLC website.

- Open DLC Qualified Product List(QPL) database search page: <https://www.designlights.org/search/>
- Searching keywords by model, brand name or manufacturer for the luminaire used.
- Find the "Efficacy" data listed on website or calculated by dividing "Light output" by "Wattage", the efficacy value should be shown in lumen per watt (lm/W).

If the luminaire is ENERGYSTAR compliant, you can also get the luminaire efficacy information from ENERGY STAR website.

- Open ENERGYSTAR certified Light Fixtures database search page: <https://www.energystar.gov/productfinder/product/certified-light-fixtures/results>
- Searching keywords by model, brand name or manufacturer for the luminaire used.
- Find the "Energy Efficiency" data listed on website. If it is showed as "Measured at the Source", please contact with luminaire supplier for additional light loss for this light source inside the fixture. The value should be shown in lumen per watt (lm/W).

Step 2: Determine the Emergency Power and calculate the Emergency Light Output.

FHSCP-UNV-6W-L-SD is programmable output; setting a proper Emergency Power is vital to achieve desired illumination.

Emergency Light Output is equal to the Emergency Power multiply by luminaire efficacy. For example, if the luminaire is 120lm/W and in 3W emergency operation, the total Emergency Light Output is 120lm/W 3W = 360lm.

Step 3: Use industry lighting design software to calculate the illumination level according to the luminaire layout in room, luminaire mounting height, the original .ies file and Emergency Light Output calculated above. If the illumination level cannot meet life safety codes, go back to Step 2 to use a higher Emergency Power or go back to Step 1 to select a higher efficacy luminaire or use more luminaires in the room.

Fulham's FHSCP-UNV-6W-L-SD LED emergency driver is compliant with UL924 standard, according to UL test data, Table 1 and Table 2 below give basic indication to determine the min. Emergency Power and Luminaire Max. Mounting Height for 1 foot-candle illumination based on a single luminaire with typical Lambertian distribution. It is the light designer/ construction contractor's responsibility to validate the real illumination level on site, to assure the emergency light illumination level is in accordance with the requirement of Federal, state and local municipal codes. It may differ from the theoretical calculation or simulation on computer.

Table 1. Min. EM Power for 1fc @ 10ft vs. Luminaire Efficacy

Luminaire Efficacy (lm/W)	Min. EM Power to achieve 1fc @ 10ft Mounting Height
100	3.9W
120	3.3W
140	2.8W
160	2.5W
180	2.2W

Table 2. Max. Mounting Height vs. Luminaire Efficacy

Luminaire Efficacy (lm/W)	Max. Mounting Height for 1fc			
	EM3W	EM4W	EM5W	EM6W
100	8.9ft	10.1ft	11.2ft	12.1ft
120	9.6ft	10.9ft	12.1ft	13.2ft
140	10.3ft	11.7ft	13.0ft	14.2ft
160	10.9ft	12.5ft	13.9ft	15.1ft
180	11.5ft	13.2ft	14.6ft	16.0ft



## BATTERY REPLACEMENT/SERVICING INSTRUCTIONS

**Warning: Disconnect power when servicing fixture.**



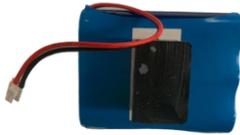
Unscrew the nut



Remove battery cover and pull out wiring



Disconnect the connector



Take out a new battery



Re-connect the battery connector and place all wires back into the battery cover



Completed Assembly

### SAVE THESE INSTRUCTIONS



# FHSCP-UNV-6W-L-SD



## TEST SWITCH INDICATOR STATUS

Indicators Type	LED Indicators Status	EM Driver Status / Mode
Bi-ColorIndicator	● Solid Green	System OK / AC OK( Self-diagnostic Enabled or Disabled).
Bi-ColorIndicator	● None. Both LEDs Off	Normal working in EM mode.
Bi-ColorIndicator	● Slow Flashing Red, 4s On / 1s Off	Battery notdetected,check battery switch or connection.
Bi-ColorIndicator	● Flashing Red, 1s On / 1s Off	Replace battery.
Bi-ColorIndicator	● Flashing Green, 1s On / 1s Off	Self-Diagnostictest underway.
Bi-ColorIndicator	● Fast Flashing Red, 0.1s On / 0.1s Off	Abnormal driver performance,replace driver.
Bi-ColorIndicator	● Very Slow Flashing Red, 1s On / 7s Off	Over temperature.
Bi-ColorIndicator	● Very Slow Flashing Red, 4s On / 4s Off	1. LED output load is short / Over Current/Over Voltage/Open load / OCP in EM Mode. 2. Output circuit failure in EM mode.

## TEST SWITCH OPERATIONS

### EM Test:

Press and hold the test button (>1s) to enter EM mode in normal AC powered.

### Manual Self-Diagnostic:

After charging twelve (12) hours or battery fully charged, quickly press the test button three (3) times within two (2) seconds to force the controller to enter Self-Diagnostic cycle. To quit the Self-Diagnostic cycle after engaged, press and hold the test button for ten (10) seconds.

### Enable/Disable Self-Diagnostic Status:

Fast click 2 times within 2s to query the Self-Diagnostic Enabled/Disabled status. The indicator would blink for current status for 3 cycles. 2.5s ON/0.5s OFF stands for Enabled. 0.5s ON/2.5s OFF stands for Disabled.

### Load Test:

When the test button is flashing red 4s ON/4s OFF, press and hold the test switch for 10s, the unit will enter Self -Diagnostic mode.



### Programming:

Unless otherwise programmed the output will self-program to the maximum rating of the battery. This EM driver can be programmed using the Fulham SmartSet TPSB-100(E). Programming features include the following:

- \* Output EM power can be set: 3W, 4W, 5W, 6W
- \* Enable / Disable Self-Diagnostic

