



FHSAC1-230-45CED

Programmable Constant Current LED Driver

- Emergency LED Driver
- Universal Voltage: 220-240VAC
- Output Voltage Range: 11-50VDC
- Output Current: 250-1400mA
- Output Wattage: 45W
- Dimming Type: DALI V1.0 and I2C/Bluetooth
- Dimming Range: 1%-100% @ AC mode

General Specifications

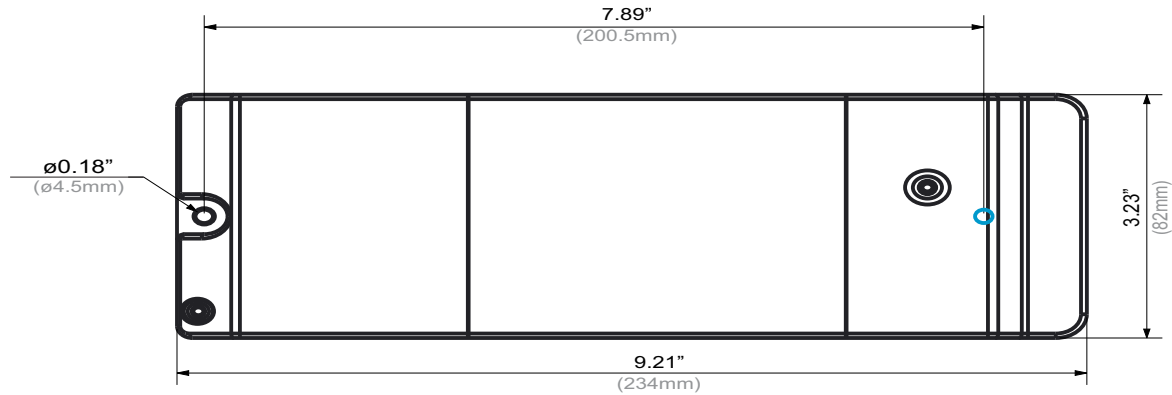
Input Voltage / Frequency	220-240VAC , 47-63Hz
Input Current	0.27A@220V
Input Power	58W
Standby Power	<0.5W
Power Factor	>0.9@half load
THD	<20%@half load
Output Type	Constant Current
Current Rated	250-1400mA, (R-set 250-1400) ±5% When output type is CC
Output Voltage Range	11-50VDC
Output Power	45W Normal Mode / 3W 180 min or 7W 90 min EM
Output Class	SELV
Dimming Controller Type	DALI V1.0 and I2C/Bluetooth
Dimming Range(%)	1% to 100% @ AC mode
Number of Output Channels	1 Channel
Input Surge Protection	Line-Neutral 2kV, Line & Neutral-Ground 2.5kV
Protections	Input Under Voltage Protection Overload Protection Input Short Circuit Protection Battery Deep Discharge Protection Over Temperature Protection
RFI/EMI	EN55015
Ambient Operating Temperature Range	0°C To 40°C (32°F To 104°F)
Sound Rating	A
Battery Type	LiFePO4
Battery Voltage	9.6V
Battery Capacity	1.5Ah
Battery Charge Current	200mA
Battery Recharge Time	12 Hours
Battery Discharge Time	0°C - 40°C
IP Rating	IP20
Service Life	50,000 hours
Warranty	5 years
Safety Standards	IEC/EN61347-1, IEC/EN61347-2-7, IEC/EN 61347-2-13, IEC/EN60598-1 IEC/EN 60598-2-22, IEC 62384, EN 62493, IEC / EN 62034 EN 61547, EN 55015 , EN 61000-3-2 , EN 61000-3-2, EN 61000-4-2, EN61000-4-3 EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-8, EN61000-4-11, EN61000-4-29



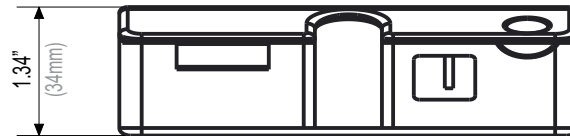
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Mechanical Data



TOP VIEW



SIDE VIEW

Tolerance= $\pm 0.02''$ [05mm]



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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 220VAC to 240VAC 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: 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 LiFePO4 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.

Figure 1

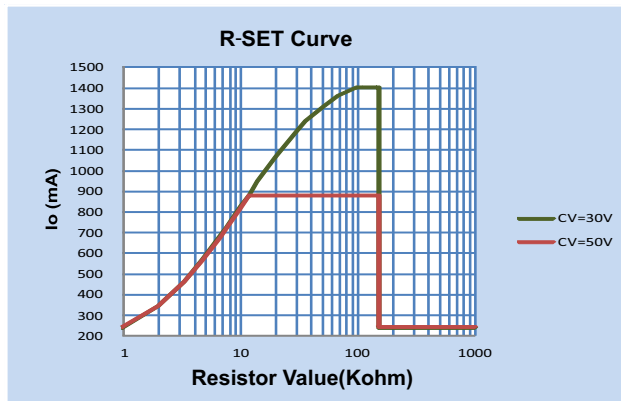
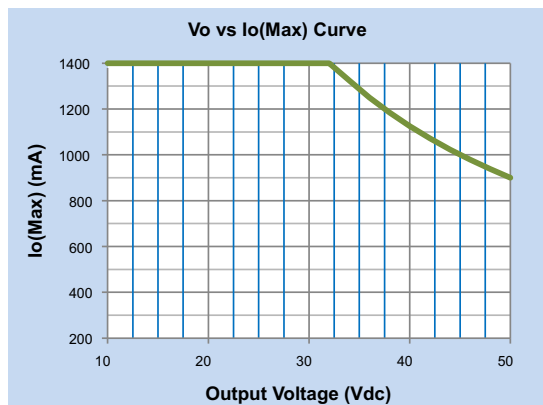


Figure 2





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Figure 3

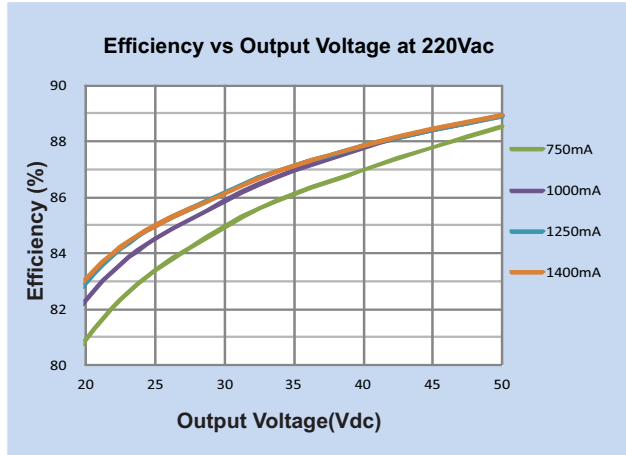


Figure 4

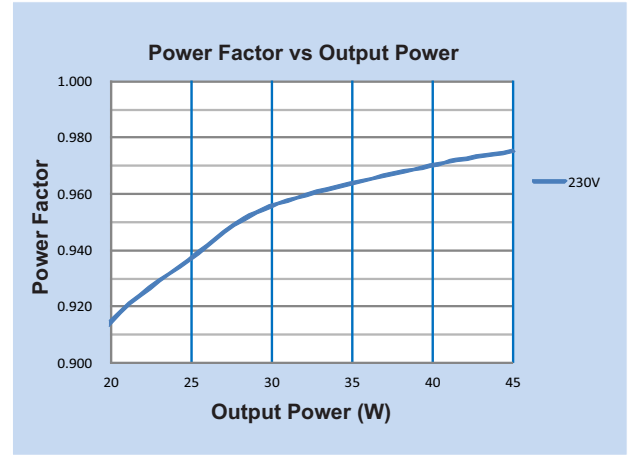


Figure 5

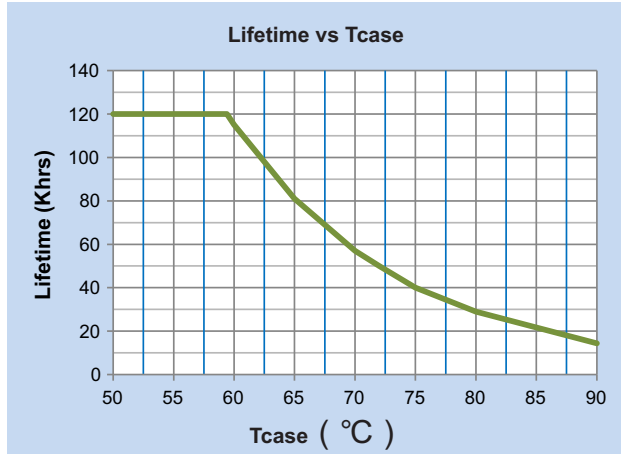


Figure 6

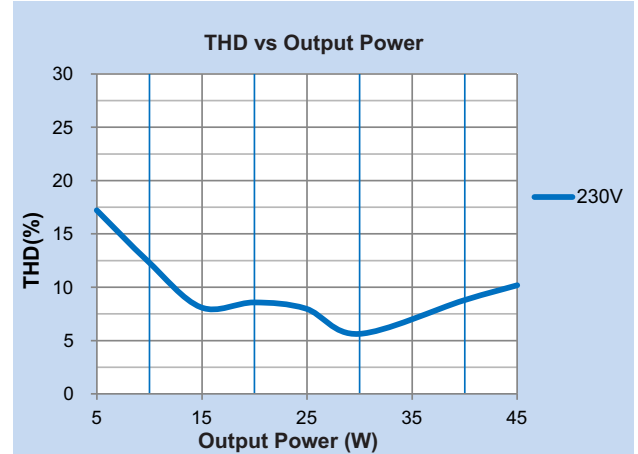


Figure 7

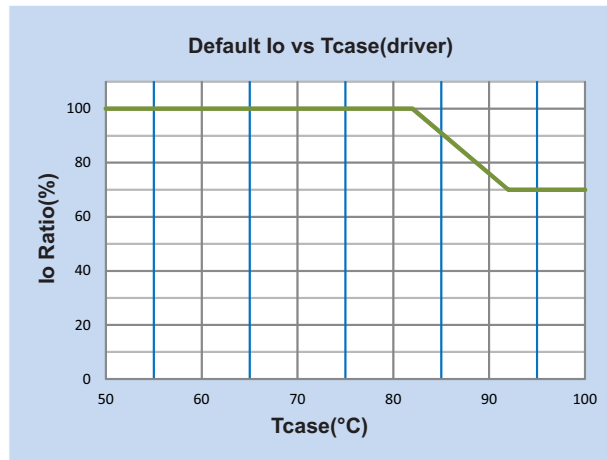
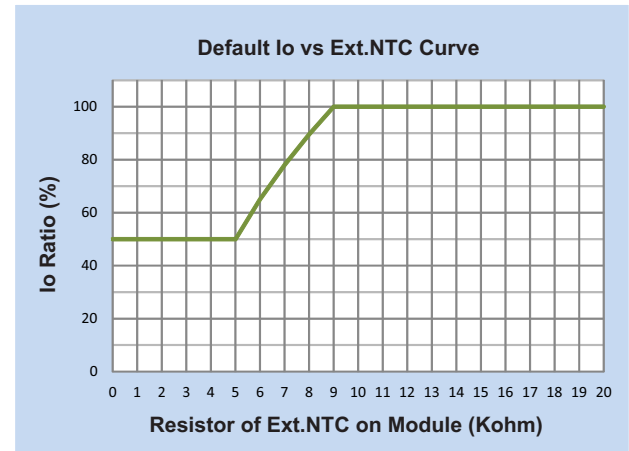
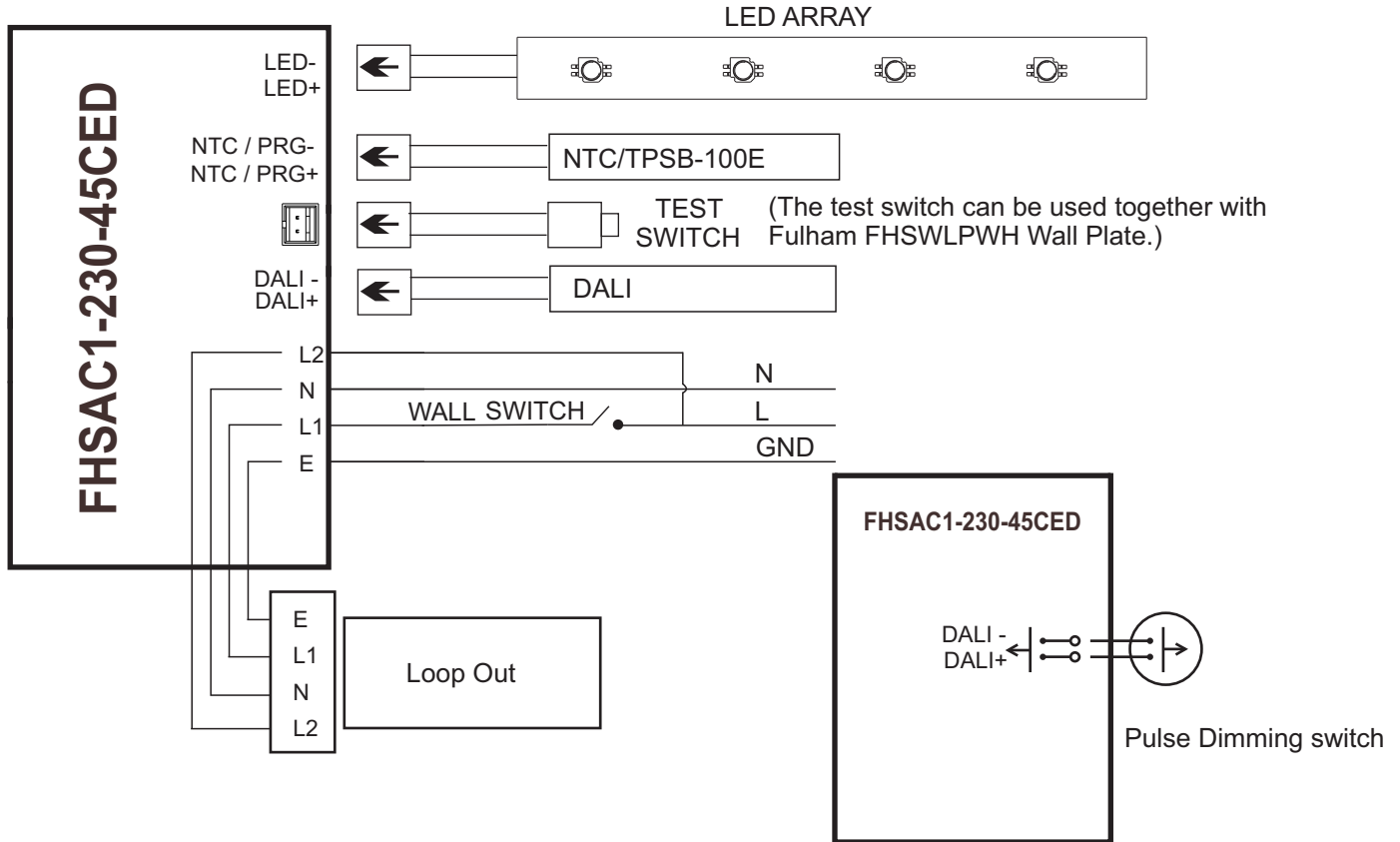


Figure 8





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Description: The Fulham FHSWLPWH Wall Plate can be used when remote mounting the Lighted Push Button Test Switch (LPBTS) next to the fixture, on the wall or in any location within the maximum remote mounting distance (15 meters) of the Lighted Push Button Test Switch (LPBTS).



Wall plate and screw color:
white with black lettering



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Self-Diagnostic tests to insure the unit is properly functional . It will test the following parameters:

- *Battery-Checks to insure battery is properly connected and has sufficient capacity for 180 minutes when set to 3W or 90 minutes when set to 7W
- *LED load-Insures LED load is connected properly and functional.
- *Charging circuit-Insures unit charging circuit is functioning properly.

Any errors will be shown via the indicator light as per the table below:

LED indicators on TEST SW	System Status
Permanent green	System OK
Slow flashing green (1 sec on – 1 sec off)	Self-Diagnostic process underway
Flashing Red (4 sec on – 1 sec off)	Battery not connected, check BAT pack
Solid Red	Load failure, check EM LED load.
Slow flashing red (1 sec on – 1 sec off)	Battery failure, replace BAT pack.
Fast flashing red (0,5 sec on – 0,5 sec off)	Charge circuit error, replace EM Driver.
Both Green & Red off	EM Mode

TEST SWITCH OPERATIONS:

Emergency Test Mode

1. Press and Hold Test Button to test Emergency Mode.
This can be done in all normal AC powered situations including dimmed to off and switched off.

Manual Self-Diagnostic

1. Quickly Press Test Button 3 times within 3 seconds to manually activate Self-Diagnostic cycle.
This will test the unit for 180 minutes when EM power set for 3W or for 90 minutes when EM power is set for 7W.
2. To Exit the Self-Diagnostic cycle, Press and Hold Test Button for 5 seconds

Enable / Disable Auto Self-Diagnostic

1. Press and Hold Test Button for 3 seconds
2. Release and Quickly Press Test Button 2 times
3. Press and Hold Test Button again for 3 seconds
4. Green Indicator on Test Button will flash for 5 seconds indicating the Enabled or Disabled Status :
Short off/ Long on = Enabled
Long off/ short on = Disabled



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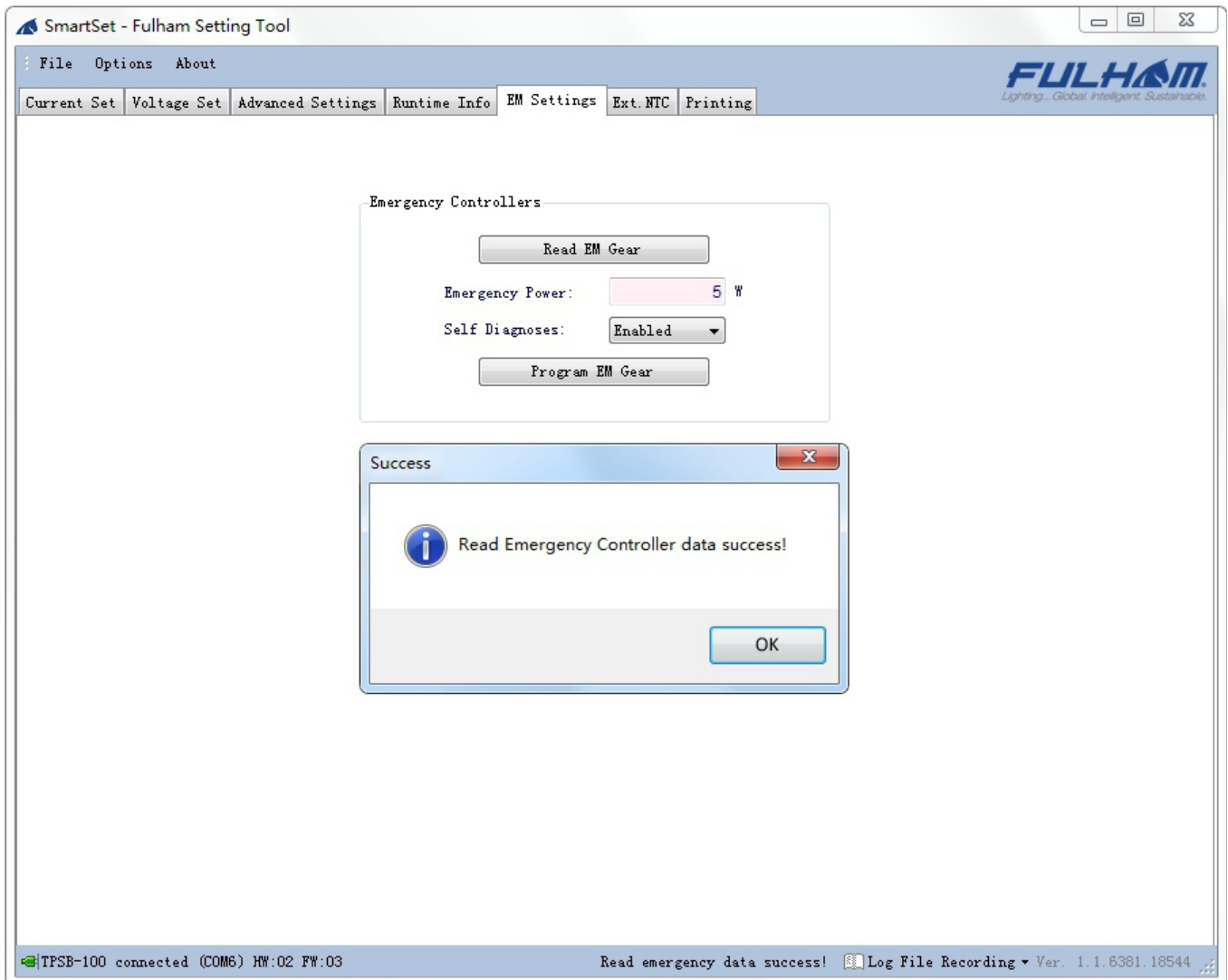
PROGRAMMING:

The following features can be programmed on this driver using the Fulham SmartSet TPSB-100E Handset:

- * Output Current - 250mA to 1400mA
- * Output EM power - 3W factory default
- * Enable / Disable Auto Self-Diagnostic Function
- * Dimming :DALI

In order to configure the last 3 items, the TPSB-100E must be in FULL FEATURE mode.

The Output Current, EM Power, Dimming Profile and Auto Self-Diagnostic Status can also be configured by using the Fulham SmartSet PC software.



*For more detailed programming instructions please see our Programming Instructions and Design Guide found on our website.

- <https://www.fulham.com/PDFs/SpecSheets/Fulham-Design-Guide-Programmable-Drivers.pdf>



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Guidelines

Grounding

- Driver must be grounded by means of the Driver case.

Over temperature protection

- The Fulham Hotspot Plus LED drivers are protected against thermal overload. If the temperature limit is exceeded, the output current is reduced.

LED load

- Fulham Hotspot Plus LED drivers are designed to drive passive LEDs, -COB's and -LED assemblies Proper function is not guaranteed when (LED) loads with active components are used.

Mounting / Cooling

- Above an output power of 20W, the driver needs to be mounted on a heat conductive surface of at least 200cm². Always test if the surface is sufficient enough before installing the driver.

Short-circuit protection

- In case of a short circuit the LED driver switches to protection mode. After the removal of the short-circuit the LED driver will recover automatically.

No-load Operation

- In no-load operation the output voltage will not exceed the specified open circuit output voltage.

Hot Swapping

- This driver does not support hot swapping of the LEDs

Remote Mounting

- Up to 15ft with 18AWG. Contact Fulham for higher remote distance.

Battery Maintenance

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

Warranty

- Reference Fulham's limited Warranty: <https://cdn.fulham.com/PDFs/Limited-Warranty.pdf>



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Part Number Matrix

FHS	AC	1	230	45	C	E	D
LED Driver	AC LED Driver	LED Driver Number	Input Voltage	Power	Case Type	Standard	Special Features
FHS = Fire Horse EM Driver	AC= AC LED Driver	1 = Programmable Output	230 = 220V-240V	45 = 45W	C= Cube or Compact	E= IEC	D= DALI

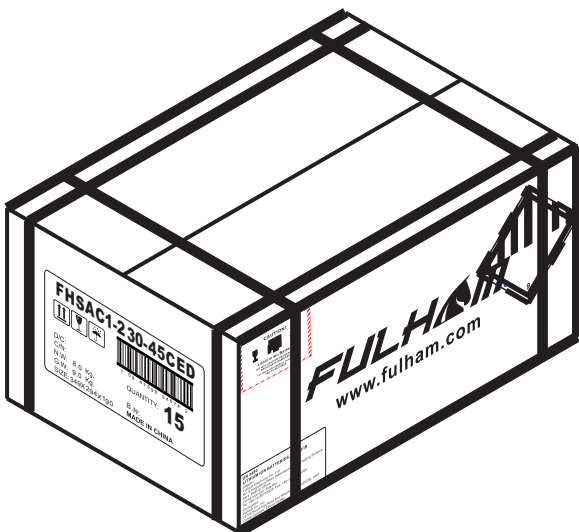
Product Image: LED Driver

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Packaging

Master Carton



OUTER DIMENSION		
L	W	H
1.145" (349mm)	0.965" (294mm)	0.623" (190mm)
Net Weight	Gross Weight	QUANTITY
00.00lbs. (8kg.)	00.00lbs. (9kg)	15pcs.