

CLG-60 Series

60W IP67 LED Lighting Power Supplies



Features

- Universal AC input up to 295VAC
- High efficiency up to 89%
- IP67 level for indoor and outdoor applications
- Built in active PFC function
- Short circuit, over current, over voltage, over temperature protections
- Cooling by free air convection
- High reliability
- Compliance to worldwide safety regulations for lighting
- Suitable for dry, damp, wet locations



Specification

| | | | | | | | | |
|--------------------|-----------------------------------|---|------------------|------------------|------------------|------------------|------------------|------------------|
| INPUT | Voltage | 90V~295VAC or 127V~417VDC. | | | | | | |
| | Frequency | 47 ----- 63 Hz | | | | | | |
| | Current | 0.8A@115VAC, 0.4A@230VAC, 0.3A@277VAC | | | | | | |
| | Inrush Current | 40A@230VAC | | | | | | |
| | Leakage Current | <0.75mA@240VAC input | | | | | | |
| | Power Factor | PF>0.94/115VAC, PF>0.9/230VAC, PF>0.9/277VAC at full load (Please refer to Power Factor Characteristics curve) | | | | | | |
| OUTPUT | MODEL No. | CLG-60-12 | CLG-60-15 | CLG-60-20 | CLG-60-24 | CLG-60-27 | CLG-60-36 | CLG-60-48 |
| | Voltage | 12V | 15V | 20V | 24V | 27V | 36V | 48V |
| | Voltage Adj. Range | 11.5~13V | 14.5~16.2V | 19.5~22V | 24~26V | 25~30V | 32.5~39V | 43.6~51.8V |
| | | Fixed. Can be modified between the range above | | | | | | |
| | Constant Current Operation | 8.4~12V | 10.5~15V | 14 ~ 20V | 16.8~24V | 18.9~27V | 25.2~36V | 33.6~48V |
| | Rated Current | 5A | 4A | 3A | 2.5A | 2.3A | 1.7A | 1.3A |
| | Current Adj. Range | Fixed. Can be modified between 3%~25% rated output current | | | | | | |
| | Power | 60W | 60W | 60W | 60W | 62.1W | 61.2W | 62.4W |
| | Ripple & Noise | 2mV | 2.4mV | 1.8mV | 2.7mV | 2.7mV | 3.6mV | 4.6mV |
| | Efficiency (TYP.) | 85% | 86% | 87.5% | 87% | 88% | 89% | 89% |
| PROTECTION | Over Voltage | 13.8 ~ 16V | 17.5 ~ 21V | 23 ~ 28V | 28 ~ 32V | 31 ~ 35V | 41 ~ 46V | 54 ~ 60V |
| | | Shutdown and latch off output voltage, re-power on to recover | | | | | | |
| | Short Circuit | Hiccup mode, recovers automatically after fault condition is removed | | | | | | |
| | Over Temperature | 12V: 90°C ±10°C (TSW1)); detect on heatsink of power transistor; 15~48V: 85°C ±10°C (TSW1) detect on heatsink of power transistor | | | | | | |
| ELEC. CHAR. | | Shut down o/p voltage, recovers automatically after temperature goes down | | | | | | |
| | Over Current | 95~110%; constant current limiting, recovers automatically after fault condition is removed | | | | | | |
| | Voltage Tolerance | ±10% | | | | | | |
| | Line Regulation | ±3.0% | | | | | | |
| | Load Regulation | ±5.0% | | | | | | |
| | Setup, Rise Time | 3000ms, 230VAC 5000ms, 115VAC, full load | | | | | | |
| ENVIRONMENT | Temperature | Operating: -30~+70°C ; Storage: -40~ +80°C | | | | | | |
| | Humidity | Operating: 20%~95% RH; Storage: 10%~95% RH (non condensing) | | | | | | |
| | Temp. Coefficient | ±0.03%/°C (0~50°C) | | | | | | |
| SAFETY | Vibration | 10~500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes | | | | | | |
| | Withstand Voltage | I/P-O/P:3.75KVAC | I/P-FG:1.88KVAC | O/P-FG:0.5KVAC | | | | |
| | Isolation Resistance | I/P-O/P:>100M Ohms / 500VDC / 25°C/ 70% RH | | | | | | |
| EMC | Safety Standard | UL879, UL8750, UL1310, TUV, EN61347-1, EN61347-2-13, CAN/CSAC22.2 No. 223-M91(except for 48V) | | | | | | |
| | EMI | Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (>75% load) ; EN61000-3-3 | | | | | | |
| | EMS | Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, light industry level (surge 4KV), criteria A | | | | | | |
| OTHERS | M.T.B.F. | 495.7K hrs min. MIL-HDBK-217F (25°C) | | | | | | |
| | Packing | N.W.:0.86Kg / 1pc; 16pcs / 14.8Kgs; 0.54CUFT / 1 CTN | | | | | | |

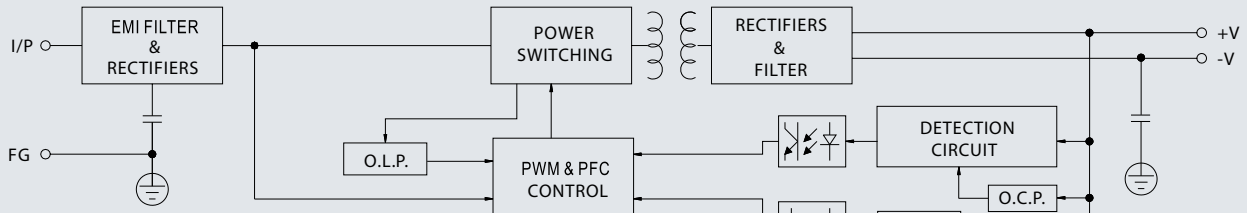
1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. Derating may be needed under low input voltage. Please check the static characteristics for more details.
5. Constant current operation region is within 65% ~ 100% rated output voltage. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for specific system design.
6. The power supply is considered a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation.
7. Direct connecting to LEDs is suggested, but is not suitable for using additional drivers

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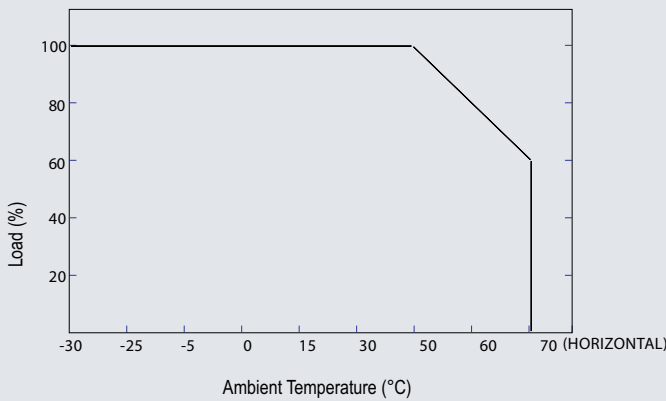
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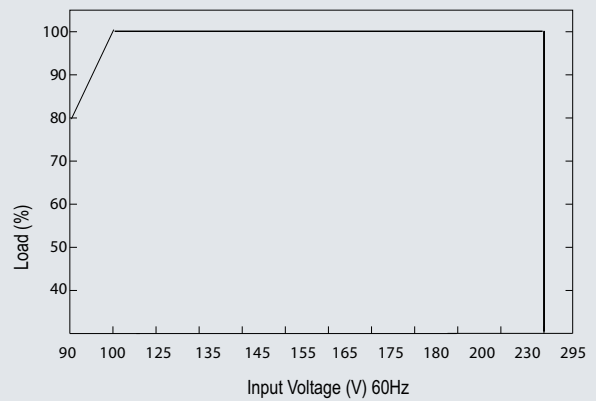
Block Diagram



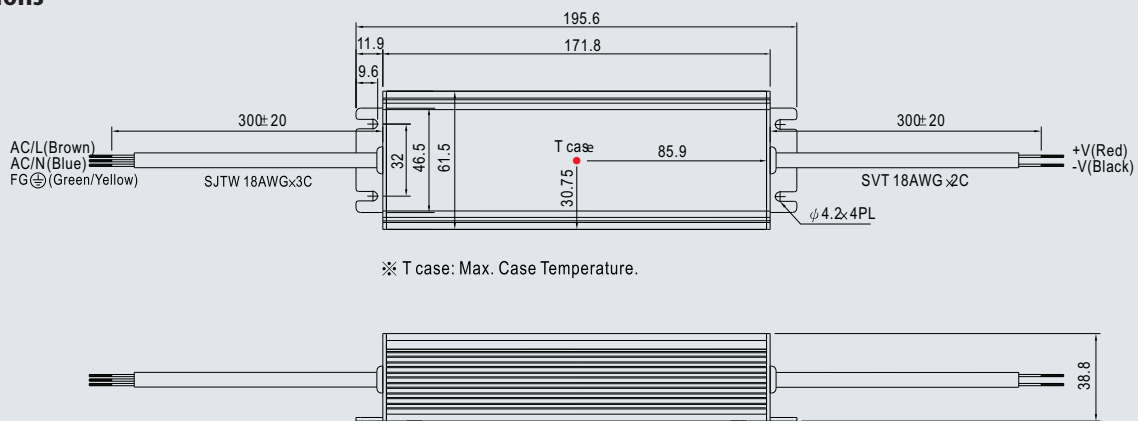
De-Rating Curve



Static Characteristics



Dimensions

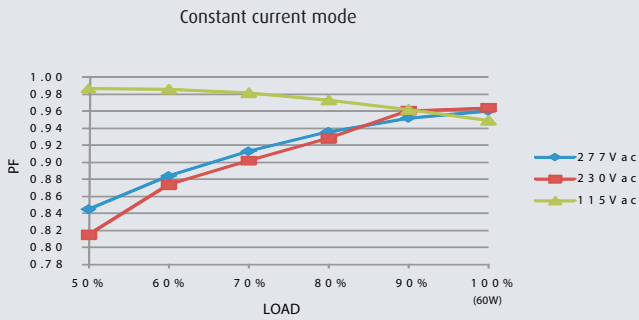


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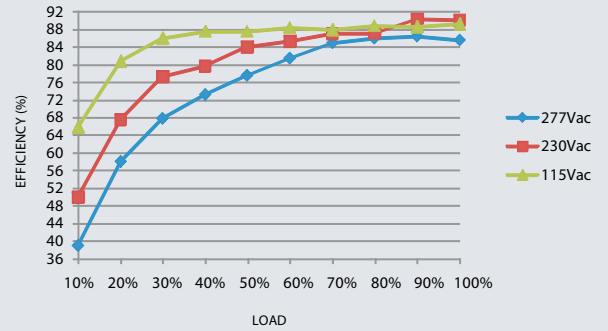
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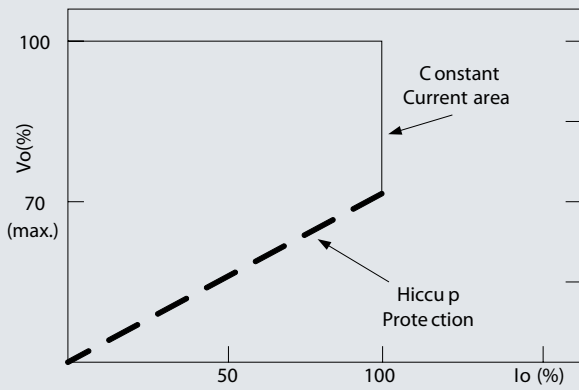
Power Factor Characteristics



Efficiency vs Load (48V Model)



Driving Method For LED Module



Typical LED power supply I-V curve

A typical LED power supply would work in constant voltage mode (CV) or constant current mode (CC) to drive LEDs.

These power supplies can be operated at CV mode (with LED driver at Constant Voltage area) and CC mode (direct drive, at Constant Current Area)