



#### Features:

- · Universal AC input / Full range (up to 295VAC)
- Built-in active PFC function
- High efficiency 89%
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- IP67 design for indoor or outdoor installations
- UL1310 Class 2 power unit
- Pass LPS
- 100% full load burn-in test
- · High reliability
- Suitable for LED lighting and moving sign applications (Note.2)
- · Compliance to worldwide safety regulations for lighting
- Suitable for dry / damp / wet locations
- 3 years warranty













### **SPECIFICATION**

MODEL		CLG-60-12	CLG-60-15	CLG-60-20	CLG-60-24	CLG-60-27	CLG-60-36	CLG-60-48	
ОИТРИТ	DC VOLTAGE	12V	15V	20V	24V	27V	36V	48V	
	CONSTANT CURRENT REGION Note.5	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 RANGE	0 ~ 5A	0 ~ 4A	0 ~ 3A	0 ~ 2.5A	0 ~ 2.3A	0 ~ 1.7A	0 ~ 1.3A	
	RATED POWER	60W	60W	60W	60W	62.1W	61W	62.5W	
	RIPPLE & NOISE (max.) Note.2	2Vp-p	2.4Vp-p	1.8Vp-p	2.7Vp-p	2.7Vp-p	3.6Vp-p	4.6Vp-p	
	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							
	CURRENT ADJ. RANGE	Fixed. Can be modified between 3% ~ -25% rated output current							
	VOLTAGE TOLERANCE Note.3	±10%							
	LINE REGULATION	±3.0%							
	LOAD REGULATION	±5.0%							
	SETUP TIME	3000ms / 230VAC 5000ms / 115VAC at full load							
INPUT	VOLTAGE RANGE Note.4	90 ~ 295VAC 127 ~ 417VDC							
	FREQUENCY RANGE	47 ~ 63Hz							
	POWER FACTOR (Typ.)	PF>0.94/115VAC, PF>0.9/230VAC, PF>0.9/277VAC at full load (Please refer to "Power Factor Characteristic" curve)							
	EFFICIENCY (Typ.)	85%	86%	87.5%	87%	88%	89%	89%	
	AC CURRENT (Typ.)	0.8A/115VAC	0.4A/230VAC				·	·	
	INRUSH CURRENT(max.)	40A/230VAC							
	LEAKAGE CURRENT	<0.75mA / 240VAC							
PROTECTION	OVER CURRENT	95 ~ 110%							
		Protection type: Constant current limiting, recovers automatically after fault condition is removed							
	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed							
	OVER VOLTAGE	13.8 ~ 16V	17.5 ~ 21V	23 ~ 26V	28 ~ 32V	31 ~ 35V	41 ~ 46V	54 ~ 60V	
		Protection type : Shut down o/p voltage, re-power on to recover							
	OVER TEMPERATURE	12V: 90°C ±10°C (TSW1) detect on heatsink of power transistor							
		15V ~ 48V: 85 $^{\circ}$ C ±10 $^{\circ}$ C (TSW1) detect on heatsink of power transistor							
		Protection type: Shut down o/p voltage, recovers automatically after temperature goes down							
ENVIRONMENT	WORKING TEMP.	-30 ~ +70 °C (Refer to "Derating Curve")							
	WORKING HUMIDITY	20 ~ 95% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH							
	TEMP. COEFFICIENT	±0.03%/°C (0~50°C)							
	VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes							
SAFETY & EMC	SAFETY STANDARDS	UL879, UL8750, UL1310 Class 2, TUV EN61347-1, EN61347-2-13 independent, CAN/CSA C22.2 No. 223-M91(except for 48V);							
		J61347-1, J61347-2-13(20~27only), IP67 approved							
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC							
	ISOLATION RESISTANCE	I/P-O/P:100M O	I/P-O/P:100M Ohms / 500VDC / 25°C / 70% RH						
	EMC EMISSION	Compliance to E	Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (≥75% load); EN61000-3-3						
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61547, light industry level (surge 4KV), criteria A							
OTHERS	MTBF	495.7Khrs min.							
	DIMENSION	195.6*61.5*38.8	195.6*61.5*38.8mm (L*W*H)						
	PACKING	0.86Kg; 16pcs/1	4.8Kg/0.54CUFT						

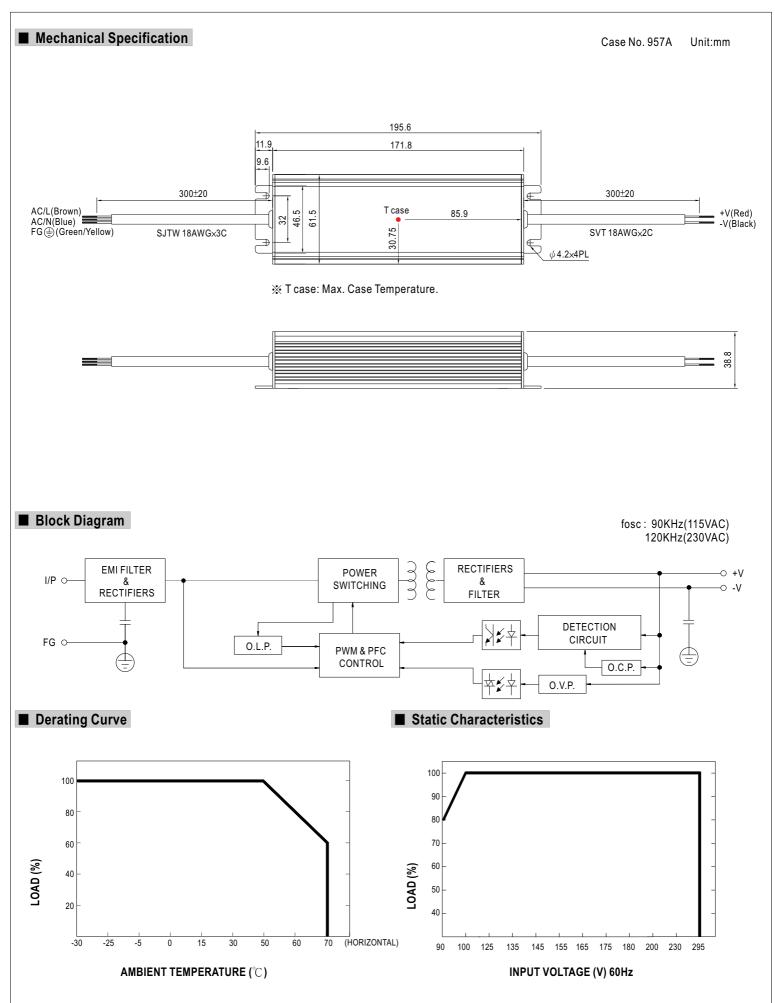
#### NOTE

- 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 70% ~100% rated output voltage. This is the suitable operation region for LED related applications, but please
- reconfirm special electrical requirements for some specific system design.

  6. The power supply is considered as 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 again.

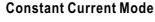
  7. Direct connecting to LEDs is suggested, but is not suitable for using additional drivers.

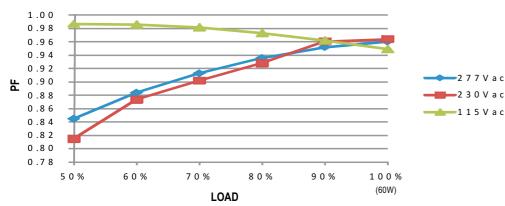






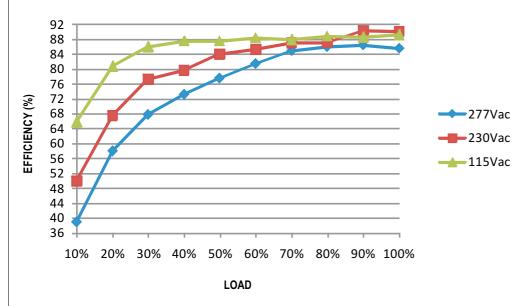
## **■** Power Factor Characteristic





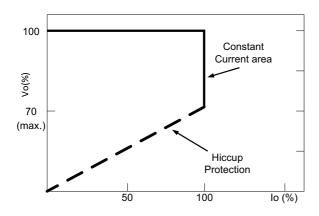
# **■** EFFICIENCY vs LOAD (48V Model)

CLG-60 series possess superior working efficiency that up to 89% can be reached in field applications.



# ■ DRIVING METHODS OF LED MODULE

This LED power supply is suggested to work in constant current mode area (CC) to drive the LEDs.



Typical LED power supply I-V curve