150W Single Output Switching Power Supply

CLG-150 series

Features :

- Universal AC input / Full range (up to 295VAC)
- High efficiency 91%
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Built-in active PFC function
- Cooling by free air convection
- OCP point adjustable through output cable or internal potential meter
- Suitable for LED lighting and moving sign applications
- IP65 / IP67 design for indoor or outdoor installations
- Compliance to worldwide safety regulations for lighting
- 3 years warranty

SELV IP65 IP67 (for UL8750 48V only) (option)

CLG-150-12 [A] Blank : IP67 rated. Cable for I/O connection.

A : IP65 rated. Output voltage and constant current level can be adjusted through internal potential meter.

B : IP67 rated. Constant current level adjustable through output cable.

C : Terminal block for I/O connection. Output voltage and constant current level can be adjusted through internal potential meter.

SPECIFICATION

MODEL		CLG-150-12☐	CLG-150-15☐	CLG-150-20☐	CLG-150-24☐	CLG-150-30☐	CLG-150-36☐	CLG-150-48☐
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	30V	36V	48V
	CONSTANT CURRENT REGION Note.4	9 ~12V	11.25 ~ 15V	15 ~ 20V	18 ~ 24V	22.5 ~ 30V	27 ~ 36V	36 ~ 48V
	RATED CURRENT	11A	9.5A	7.5A	6.3A	5A	4.2A	3.2A
	RATED POWER	132W	142.5W	150W	151.2W	150W	151.2W	153.6W
	RIPPLE & NOISE (max.) Note.2	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	150mVp-p	200mVp-p
	VOLTAGE ADJ. RANGE Note.6	9 ~ 13V	13 ~ 17V	17 ~ 22V	22 ~ 27V	26 ~ 32V	31 ~ 41V	40 ~ 56V
	CURRENT ADJ. RANGE	Can be adjusted by internal potential meter or through output cable						
		5.5 ~ 11A	4.75 ~ 9.5A	3.75 ~ 7.5A	3.15 ~ 6.3A	2.5 ~ 5A	2.1 ~ 4.2A	1.6 ~ 3.2A
	VOLTAGE TOLERANCE Note.3	±2.0%	±2.0%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%
	SETUP, RISE TIME	3000ms, 80ms at full load 230VAC /115VAC						
	HOLD UP TIME (Typ.)	50ms / 230VAC 16ms / 115VAC at full load						
INPUT	VOLTAGE RANGE Note.5	90 ~ 295VAC 127 ~ 417VDC						
	FREQUENCY RANGE	47 ~ 63Hz						
	POWER FACTOR	PF≧0.95/230VAC PF≧0.98/115VAC at full load and rated output voltage PF≧0.9 at 75 ~ 100% load						
	EFFICIENCY (Typ.)	88%	88%	90%	90%	91%	91%	91%
	AC CURRENT	2A / 115VAC 1A / 230VAC						
	INRUSH CURRENT(max.)	COLD START 65A/230VAC						
	LEAKAGE CURRENT	<1mA / 240VAC						
PROTECTION	OVER CURRENT (Typ.) Note.4	95 ~ 108%						
		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	13.5 ~ 16V	18 ~ 20V	23 ~ 27V	28 ~ 34V	33 ~ 36V	42 ~ 48V	57 ~ 65V
		Protection type : Shut down and latch off o/p voltage, re-power on to recover						
	OVER TEMPERATURE	100℃ ±10℃ (RTH2)						
		Protection type : Shut down o/p voltage, re-power on to recover						
ENVIRONMENT	WORKING TEMP.	-30 ~ +70℃ (Refer to output load derating curve)						
	WORKING HUMIDITY	20 ~ 95% RH non-condensing						
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH						
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)						
	VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes						
SAFETY & EMC	SAFETY STANDARDS Note.7	UL8750, UL1012 ; EN61347-1, EN61347-2-13 independent (except for CLG-150 C type) ; UL60950-1, TUV EN60950-1 ; J61347-1(option, except for CLG-150 C type), J61347-2-13, IP65 or IP67 approved						
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:1.88KVAC O/P-FG:0.5KVAC						
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH						
	EMI CONDUCTION & RADIATION	Compliance to EN55015, EN55022 (CISPR22) Class B						
	HARMONIC CURRENT	Compliance to EN61000-3-2 Class C (≧75% load) ; EN61000-3-3						
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, EN61547, EN55024, light industry level (surge 4KV), criteria A						
OTHERS	MTBF	303.7Khrs min. MIL-HDBK-217F (25℃)						
	DIMENSION	222.2*68*38.8mm (L*W*H)(CLG-150-Blank/A/B) 229*68*38.8mm (L*W*H)(CLG-150-C)						
	PACKING	1.0Kg; 12pcs/13Kg/0.49CUFT(CLG-150-Blank/A/B) 1Kg; 12pcs/13Kg/0.96CUFT(CLG-150-C)						

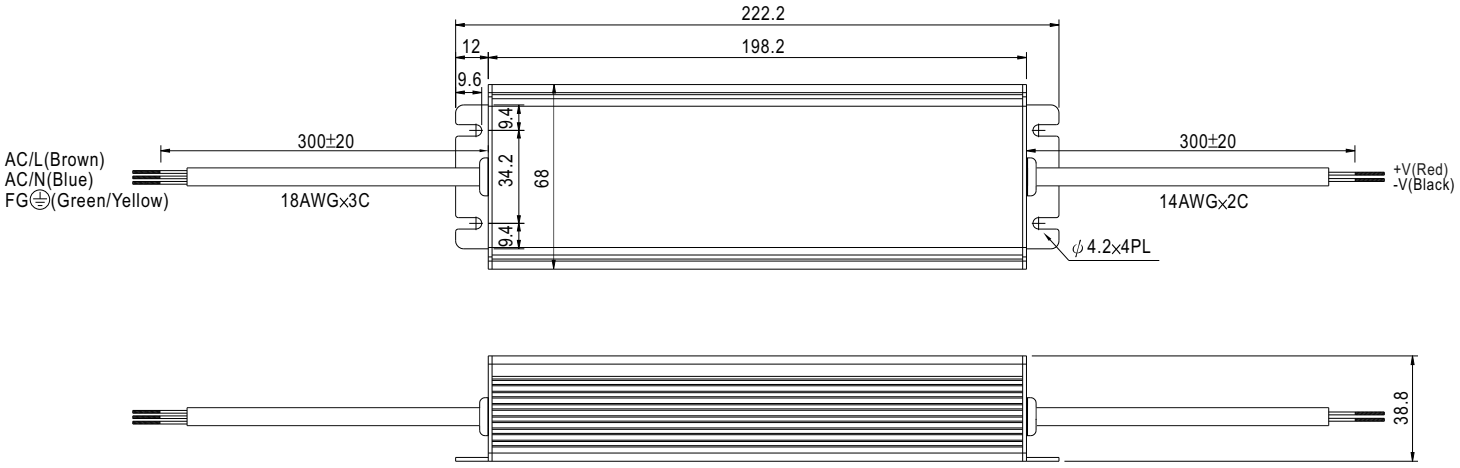
NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ 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. Constant current operation region is within 75% ~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.
5. Derating may be needed under low input voltages. Please check the static characteristics for more details.
6. Type A and type C only.
7. Safety and EMC design refer to EN60598-1, subject 8750(UL), CNS15233, GB7000.1, FCC part18.
8. 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.

■ Mechanical Specification

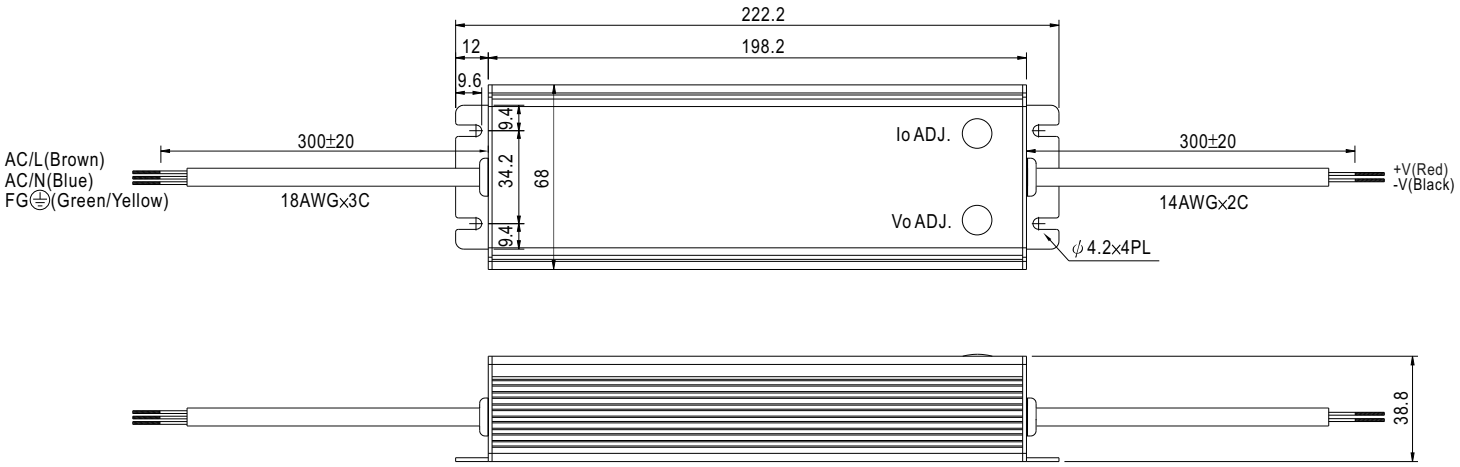
Case No. 954A Unit:mm

Blank:(CLG-150)



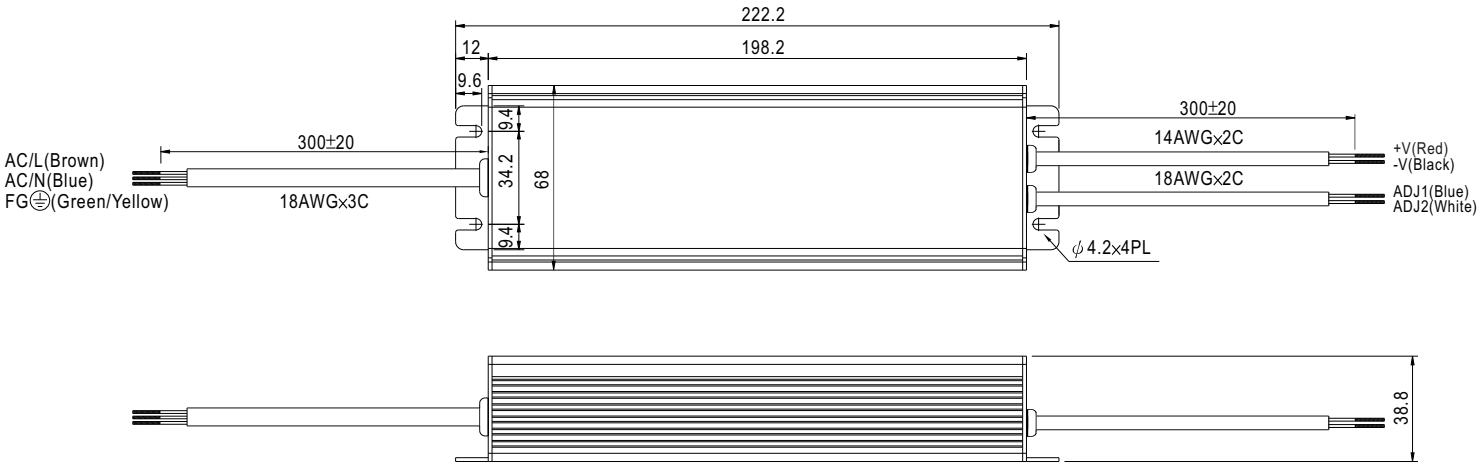
※IP67 rated. Cable for I/O connection.

A Type:(CLG-150-_A)



※ IP65 rated. Output voltage and constant current level can be adjusted through internal potential meter.
(Can access by removing the rubber stopper on the case.)

B Type:(CLG-150-_B)

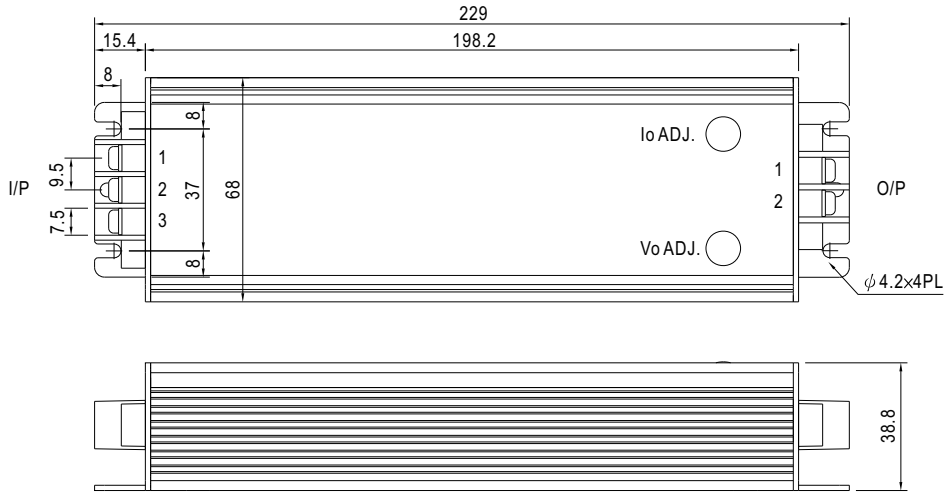


※ IP67 rated. Output constant current level can be adjusted through output cable by connecting a resistor between ADJ1 and ADJ2.

※ Reference resistance value for output current adjustment (Typical)

Resistance	Percentage of rated current
Open	Slightly > 100%
4.7KΩ	100%
620Ω	75%
82Ω	50%
Short	Slightly < 50%

C Type:(CLG-150-_C)



AC Input Terminal Pin No. Assignment

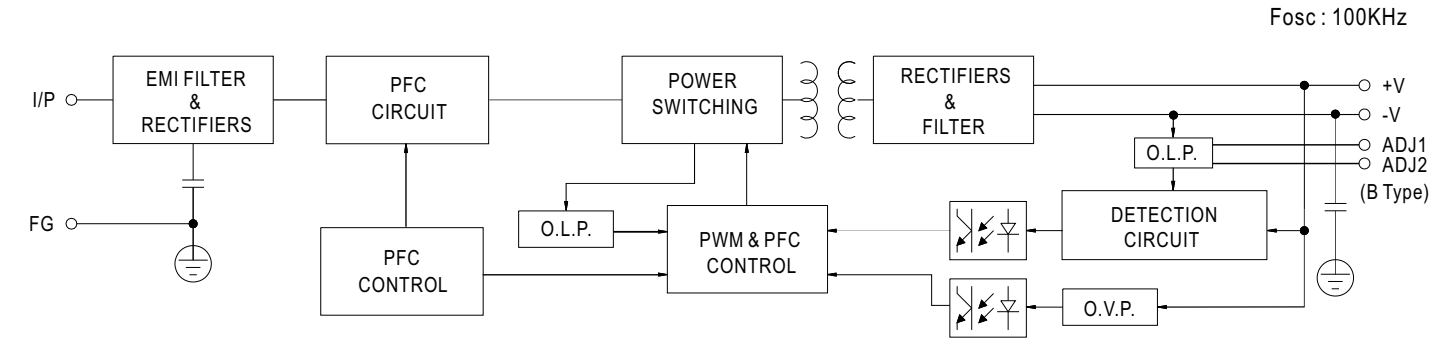
Pin No.	Assignment
1	FG ⏚
2	AC/N
3	AC/L

DC Output Terminal Pin No. Assignment

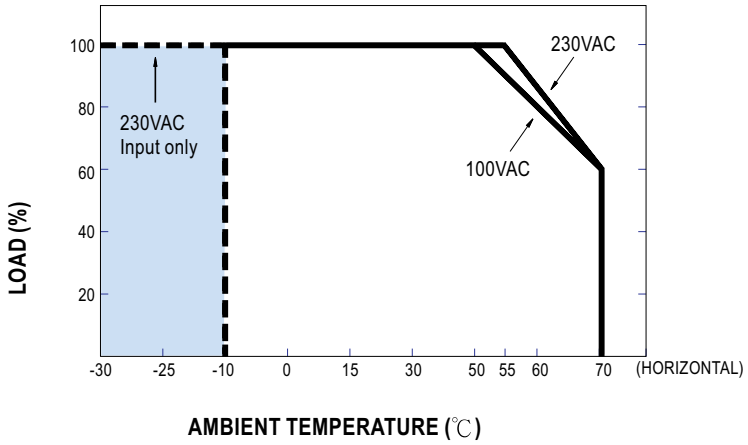
Pin No.	Assignment
1	+V
2	-V

※ Output voltage and constant current level can be adjusted through internal potential meter. (Can access by removing the rubber stopper on the case.)

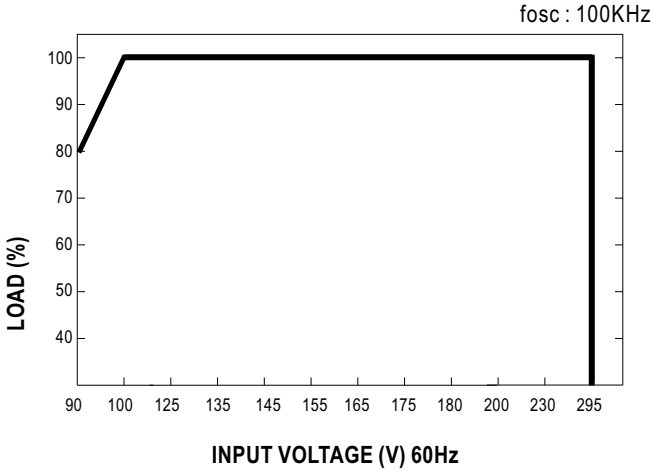
Block Diagram



Derating Curve

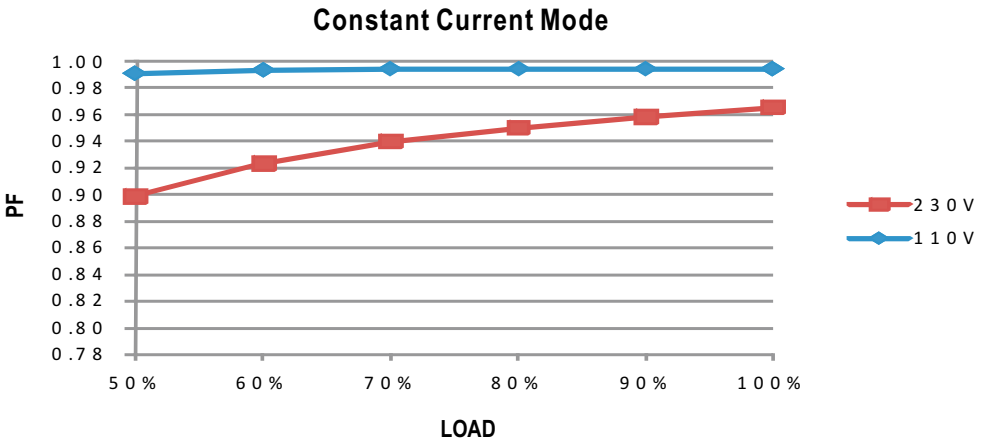


Static Characteristics



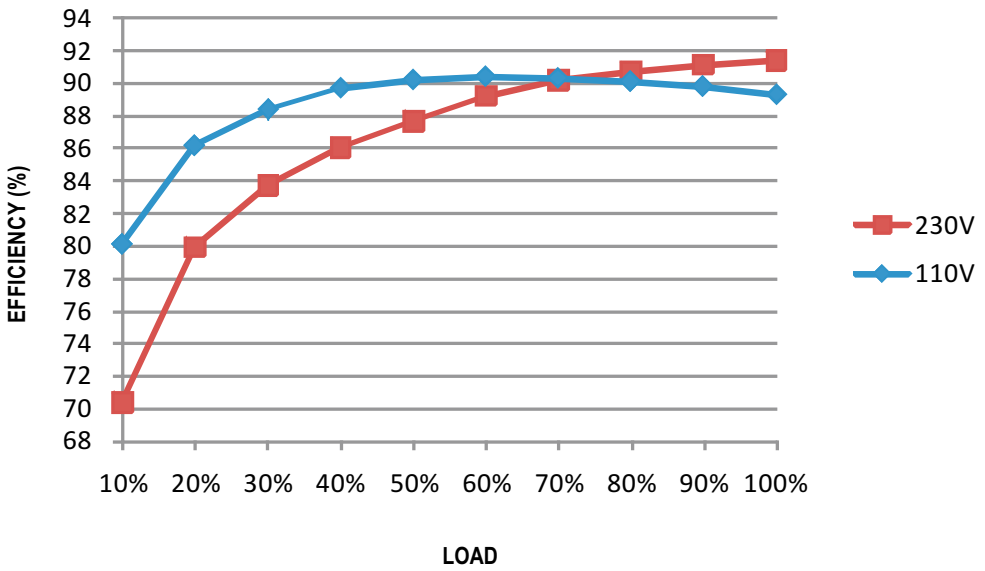
■ Power Factor Characteristic

Power factor will be higher than 0.9 when output loading is 75% or higher.



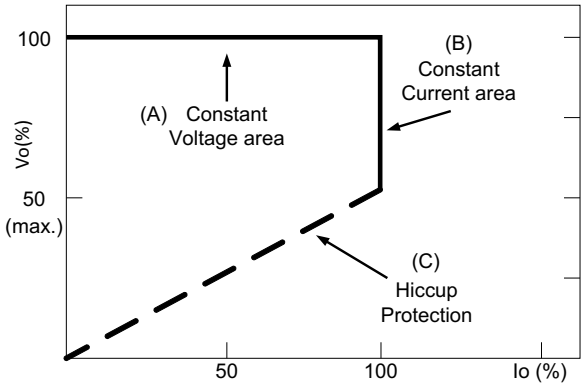
■ EFFICIENCY vs LOAD (48V Model)

CLG-150 series possess superior working efficiency that up to 91% can be reached in field applications.



■ DRIVING METHODS OF LED MODULE

There are two major kinds of LED drive method "direct drive" and "with LED driver".
A typical LED power supply may either work in "constant voltage mode (CV) or constant current mode (CC)" to drive the LEDs.
Mean Well's LED power supply with CV+ CC characteristic can be operated at both CV mode [with LED driver, at area (A)] and CC mode [direct drive, at area (B)].



Typical LED power supply I-V curve