EverSale CLG-150-48A

MEAN WELL CLG-150-48A 150W AC/DC Switching Power Supply User Manual

1. Introduction

The MEAN WELL CLG-150-48A is a high-performance 150W single output AC/DC switching power supply. It is engineered for reliability and efficiency, making it suitable for various applications, particularly in LED lighting and other industrial uses requiring a stable 48V DC output. This power supply features a robust, waterproof design and incorporates essential protection mechanisms to ensure safe and consistent operation.

Key Features:

- Output Current: 3.2A
- Output Voltage Range: 36V to 48V
- Suitable for street lamp and LED lighting applications
- Waterproof design (IP67 rated)
- Short Circuit Protection

2. Safety Information

Please read and understand all safety instructions before installing or operating this device. Failure to follow these instructions may result in electric shock, fire, or other hazards.

- **Professional Installation:** Installation should only be performed by qualified personnel in accordance with all applicable local and national electrical codes.
- **Power Disconnection:** Always disconnect the AC input power before performing any installation, wiring, or maintenance.
- **Proper Grounding:** Ensure the power supply is properly grounded to prevent electric shock.
- **Ventilation:** Ensure adequate ventilation around the unit to prevent overheating. Do not cover the power supply.
- **Environmental Conditions:** This unit is IP67 rated, suitable for dry, damp, and wet locations. However, avoid exposing it to extreme temperatures or corrosive environments beyond its specified operating range.
- **Output Overload:** Do not exceed the maximum rated output power of 150W. Overloading can damage the unit and pose a fire hazard.

3. Product Overview

The CLG-150-48A power supply features clearly labeled input and output terminals for straightforward connection. The unit's robust casing provides protection against environmental factors.

Image 3.1: Front view of the MEAN WELL CLG-150-48A power supply, showing the input (AC/L, AC/N, FG) and output (+V, -V) terminals, along with the voltage adjustment (Vo ADJ) potentiometer.

Key Components:

- **INPUT Terminals:** Connect to the AC mains power. Typically labeled AC/L (Brown), AC/N (Blue), and FG (Green/Yellow for Ground).
- **OUTPUT Terminals:** Provide the DC power to the load. Labeled +V (Brown) and -V (Blue).
- **Vo ADJ:** A potentiometer for fine-tuning the output voltage.
- **Model Label:** Displays model number, input/output specifications, and certifications.

4. Setup and Installation

Proper installation is crucial for the safe and efficient operation of the CLG-150-48A power supply. Refer to the mechanical specifications for mounting dimensions and wiring configurations.

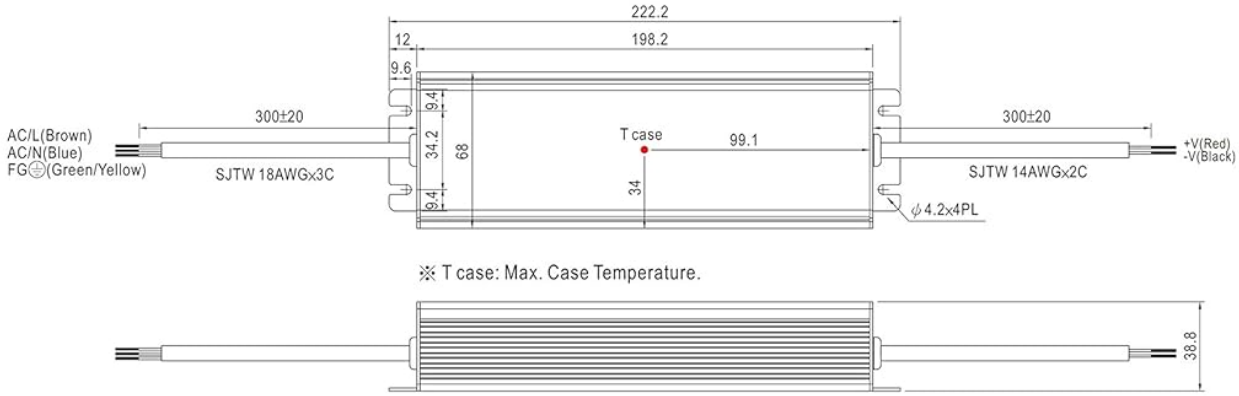
4.1 Mechanical Specifications and Wiring

The CLG-150 series offers different types (A, B, C) with varying adjustment methods and wiring configurations. Ensure you identify your specific unit type for correct installation.

■ Mechanical Specification

Case No. 954A Unit:mm

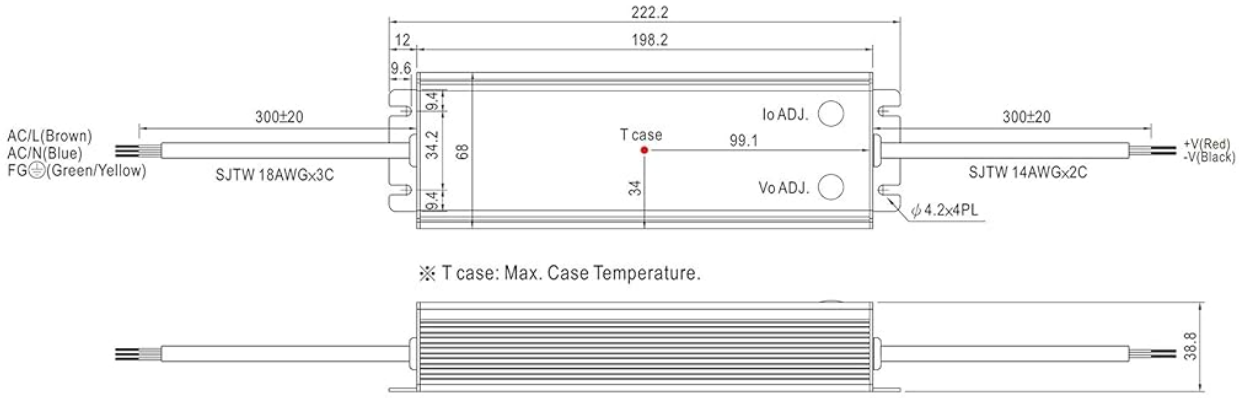
Blank:(CLG-150)



※ T case: Max. Case Temperature.

※IP67 rated. Cable for I/O connection.

A Type:(CLG-150-_A)

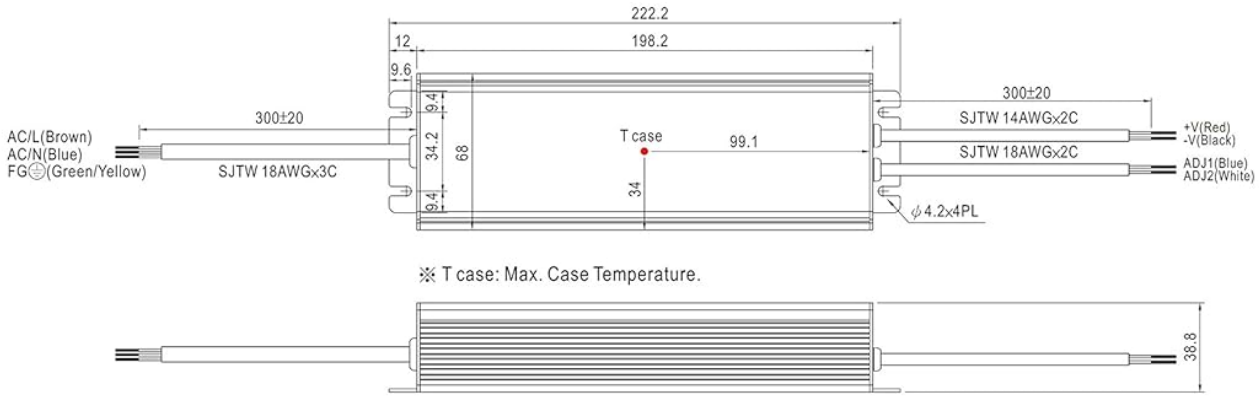


※ T case: Max. Case Temperature.

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

Image 4.1: Mechanical Specification for CLG-150-A type, featuring an internal potentiometer for output voltage/current adjustment.

B Type:(CLG-150-_B)

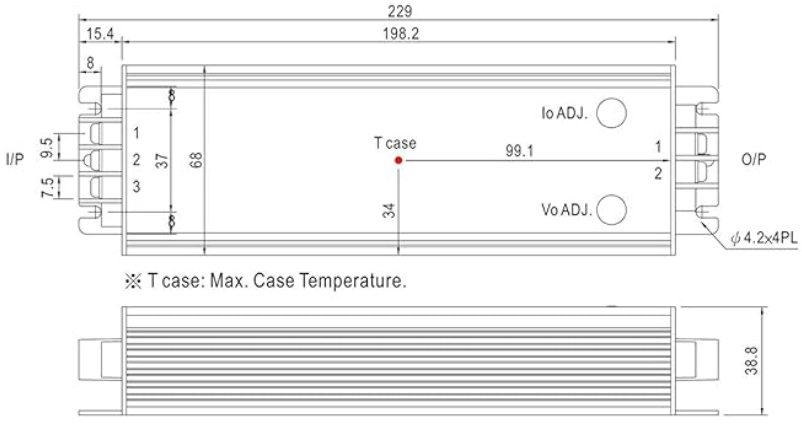


※ IP67 rated. Output constant current level can be adjusted through output cable by connecting a resistor between ADJ1 and ADJ2.

※ 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)



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

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

Image 4.2: Mechanical Specification for CLG-150-B type, allowing output current adjustment via an external resistor connected to ADJ1 and ADJ2.

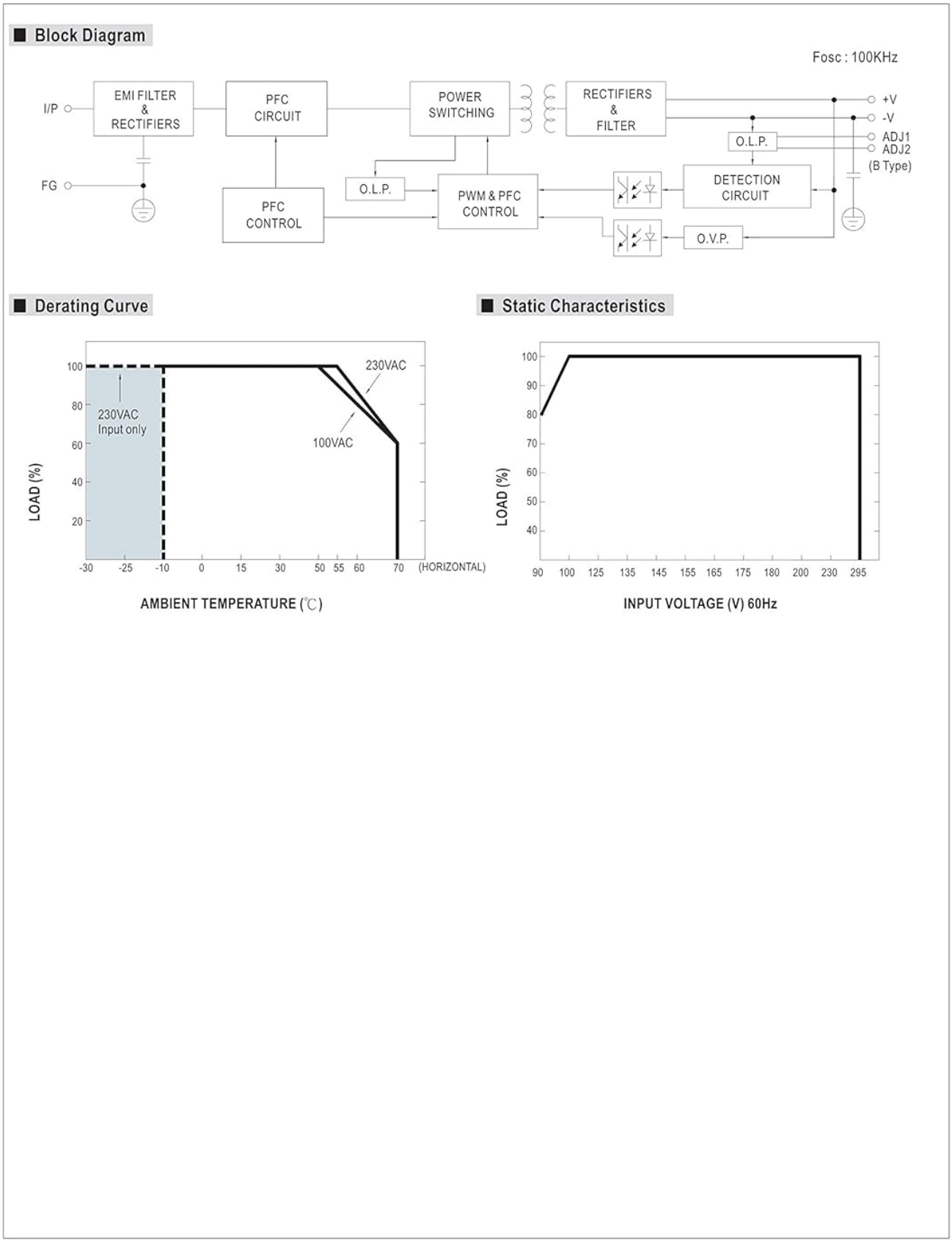


Image 4.3: Mechanical Specification for CLG-150-C type, with terminal block connections for input and output, and internal potentiometer for adjustment.

General Wiring Steps:

1. **Disconnect Power:** Ensure the main power source is OFF before beginning any wiring.

2. **AC Input Connection:** Connect the AC Live (L), Neutral (N), and Ground (FG) wires to the corresponding input terminals on the power supply. Use appropriate wire gauges for the current rating.
3. **DC Output Connection:** Connect the positive (+V) and negative (-V) output wires to your load (e.g., LED fixture). Observe correct polarity.
4. **Mounting:** Securely mount the power supply in a location that allows for adequate airflow and is protected from physical damage. Refer to the mechanical drawings for mounting hole dimensions.
5. **Adjustment (if applicable):** If your model has a voltage/current adjustment feature (Vo ADJ), make any necessary adjustments before applying full power. For Type A and C, this is an internal potentiometer. For Type B, an external resistor is used for current adjustment.
6. **Verify Connections:** Double-check all wiring connections for tightness and correct polarity before restoring power.

5. Operating Instructions

Once installed and wired correctly, operating the CLG-150-48A is straightforward.

1. **Initial Power-Up:** After verifying all connections, switch on the AC input power. The power supply should begin to deliver the specified DC output.
2. **Output Adjustment:** If your application requires a specific output voltage or current within the adjustable range, use the 'Vo ADJ' potentiometer (for Type A and C) or the external resistor (for Type B current adjustment) to fine-tune the output. Use a multimeter to monitor the output during adjustment.
3. **Monitoring:** Periodically check the power supply for any signs of abnormal operation, such as excessive heat or unusual noises.

6. Maintenance

The CLG-150-48A is designed for long-term, reliable operation with minimal maintenance. However, periodic checks can help ensure optimal performance.

- **Cleaning:** Keep the exterior of the power supply clean and free from dust and debris. Use a soft, dry cloth for cleaning. Do not use liquid cleaners or solvents.
- **Connection Checks:** Periodically inspect all input and output wiring connections to ensure they remain secure and free from corrosion.
- **Environmental Check:** Ensure the operating environment remains within the specified temperature and humidity ranges.
- **No User-Serviceable Parts:** Do not attempt to open or repair the power supply. There are no user-serviceable parts inside. Refer all servicing to qualified service personnel.

7. Troubleshooting

If you encounter issues with your CLG-150-48A power supply, refer to the following troubleshooting guide:

- **No Output Power:**
  - Check if the AC input power is connected and active.
  - Verify all input and output wiring connections are correct and secure.
  - Ensure the load is not short-circuited or drawing excessive current, which might trigger the overcurrent protection.
  - Check for any tripped circuit breakers or blown fuses in the AC input line.
- **Incorrect Output Voltage/Current:**
  - If your model has an adjustment feature (Vo ADJ), verify it is set correctly.

- Ensure the load is within the specified operating range of the power supply.
- Measure the output voltage with a multimeter to confirm the reading.

- **Overheating:**
  - Ensure the power supply has adequate ventilation and is not covered.
  - Reduce the load if it is close to or exceeding the maximum rated power.
  - Verify the ambient temperature is within the specified operating range.

If the problem persists after following these steps, discontinue use and contact technical support.

8. Specifications

Detailed technical specifications for the MEAN WELL CLG-150-48A power supply are provided below. For comprehensive data, refer to the official specification sheet.

MEAN WELL

150W Single Output Switching Power Supply **CLG-150 series**

■ Features :

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

SELV IP65 IP67 CB CE

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 potentiometer.
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 potentiometer.

SPECIFICATION

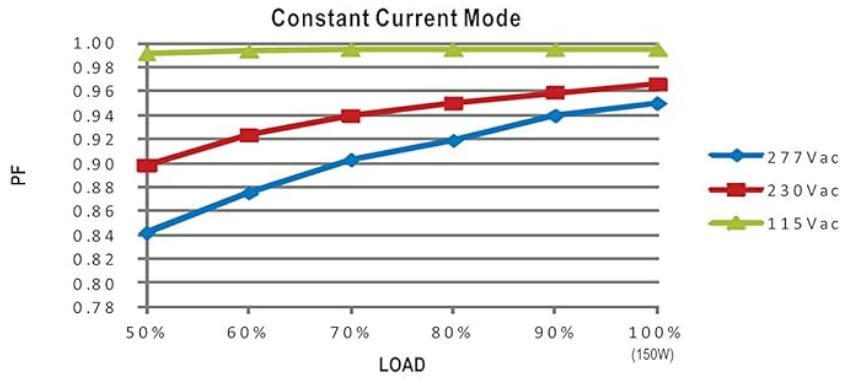
MODEL		CLG-150-12☐	CLG-150-15☐	CLG-150-20☐	CLG-150-24☐	CLG-150-30☐	CLG-150-36☐	CLG-150-48☐
OUTPUT	DC VOLTAGE	12V	15V	20V	24V	30V	36V	48V
	CONSTANT CURRENT REGION Note.4	9 ~12V	11.25 ~ 15V	15 ~ 20V	18 ~ 24V	22.5 ~ 30V	27 ~ 36V	36 ~ 48V
	RATED CURRENT	11A	9.5A	7.5A	6.3A	5A	4.2A	3.2A
	RATED POWER	132W	142.5W	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 potentiometer A type and C type only						
		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/115VAC 500ms, 80ms/230VAC at full load						
	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 (Typ.)	PF>0.98/115VAC, PF>0.95/230VAC, PF>0.93/277VAC at full load (Please refer to "Power Factor Characteristic" curve)						
	TOTAL HARMONIC DISTORTION	THD< 20% when output loading≧75% at 115VAC/230VAC input and output loading≧75% at 277VAC input						
	EFFICIENCY (Typ.)	88%	88%	90%	90%	91%	91%	91%
	AC CURRENT (Typ.)	2A / 115VAC 1A / 230VAC 0.68A / 277VAC						
	INRUSH CURRENT(max.)	COLD START 65A(twidth=595μs measured at 50% Ipeak) at 230VAC						
	MAX. No. of PSUs on 16A CIRCUIT BREAKER	3 units (circuit breaker of type B) / 5 units (circuit breaker of type C) at 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 ~ 17V | 18 ~ 23V | 23 ~ 28V | 28 ~ 34V | 33 ~ 39V | 42 ~ 50V | 59 ~ 70V
		Protection type : Shut down and latch off o/p voltage, re-power on to recover
	OVER TEMPERATURE	Shut down o/p voltage, re-power on to recover
ENVIRONMENT	WORKING TEMP.	-30 ~ +70℃ (Refer to "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, CSA C22.2 No. 250.0-08, UL1012, CAN/CSA-C22.2 No. 107.1-01, UL879, CSA C22.2 No.207-M89, EN61347-1, EN61347-2-13 independent (except for CLG-150 C type), UL60950-1, TUV EN60950-1,IP65 or IP67, J61347-1(except for CLG-150 C type), J61347-2-13 approved
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH
	EMC EMISSION	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, EN61547, EN55024, light industry level (surge 4KV), criteria A
OTHERS	MTBF	303.7K hrs 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/0.58CUFT(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. Please refer to "DRIVING METHODS OF LED MODULE". 5. Derating may be needed under low input voltages. Please check the static characteristics for more details. 6. A type and C type 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. 9. To fulfill requirements of the latest ErP regulation for lighting fixtures, this LED power supply can only be used behind a switch without permanently connected to the mains.	

File Name:CLG-150-SPEC 2015-05-28

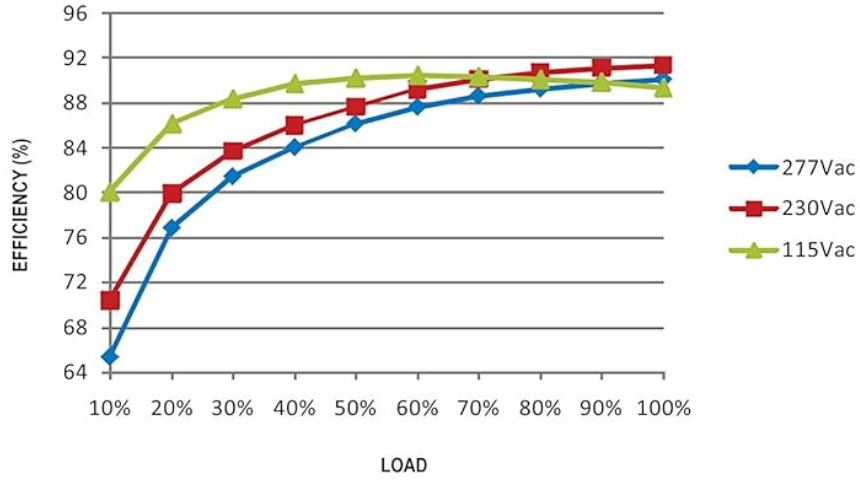
Image 8.1: Excerpt from the MEAN WELL CLG-150 series specification sheet, detailing electrical characteristics and protection features.

Power Factor Characteristic



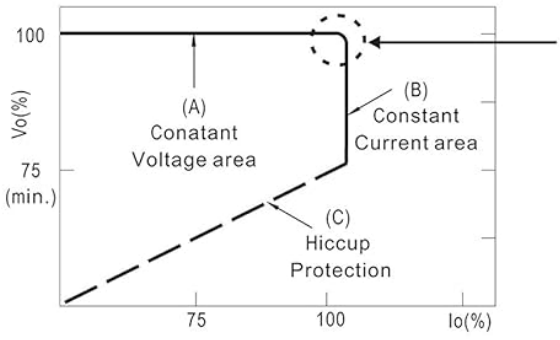
EFFICIENCY vs LOAD (48V Model)

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

In the constant current region, the highest voltage at the output of the driver depends on the configuration of the end systems.
Should there be any compatibility issues, please contact MEAN WELL.

Image 8.2: Block diagram, derating curve, and static characteristics for the CLG-150 series, illustrating internal design and performance under varying conditions.

CLG-150-48A Key Specifications

Parameter	Value
Model Number	CLG-150-48A
Output Wattage	150 Watts
Output Voltage	48 Volts DC (Adjustable 36V ~ 48V)
Output Current	3.2 Amps
Input Voltage Range	100-240V AC (Universal Input)
Current Rating	3.13 Amps (AC)
Cooling Method	Air
Protection Features	Short Circuit, Overload, Over Voltage, Over Temperature
IP Rating	IP67 (Suitable for dry, damp, and wet locations)
Item Weight	2.29 Pounds
Manufacturer	MEAN WELL

9. Warranty and Support

For warranty information, technical assistance, or any product-related inquiries, please contact the manufacturer, MEAN WELL, or your product vendor, EverSale. Refer to your purchase documentation for specific warranty terms and contact details.
Manufacturer: MEAN WELL
Vendor: EverSale