


**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


CLG-150-12  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**

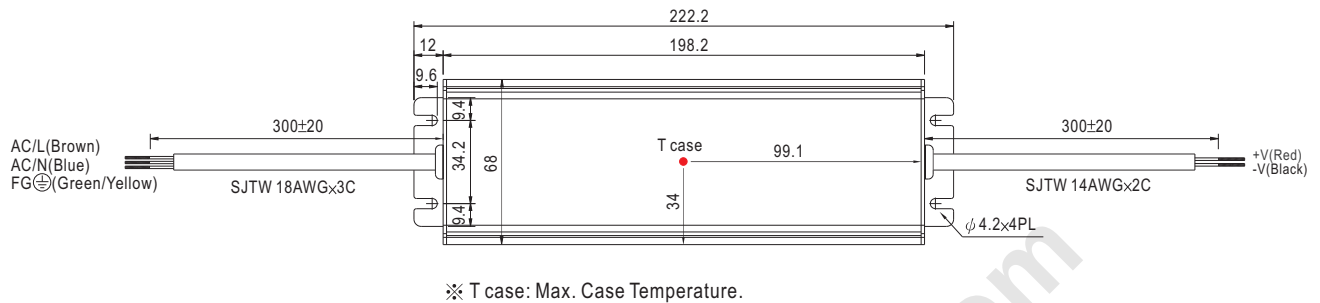
| MODEL               | CLG-150-12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 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 <small>Note.4</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 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.) <small>Note.2</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 150mVp-p                                                                                                                                                                                                                                       | 150mVp-p     | 150mVp-p       | 150mVp-p                            | 150mVp-p   | 150mVp-p   | 200mVp-p   |
|                     | VOLTAGE ADJ. RANGE <small>Note.6</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 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 <small>Note.3</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ±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 <small>Note.5</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 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)                                                                                                                              |              |                |                                     |            |            |            |
|                     | 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                                                                                                                                                                                   |              |                |                                     |            |            |            |
|                     | LEAKAGE CURRENT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <1mA / 240VAC                                                                                                                                                                                                                                  |              |                |                                     |            |            |            |
| PROTECTION          | OVER CURRENT (Typ.) <small>Note.4</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 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 ~ 38V   | 42 ~ 48V   | 59 ~ 70V   |
|                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 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 "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 <small>Note.7</small>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | UL8750, CSA C22.2 No. 250.0-08, UL1012, CAN/CSA-C22.2 No. 107.1-01, EN61347-1, EN61347-2-13 independent (except for CLG-150 C type), UL60950-1, TUV EN60950-1, IP65 or IP67, J61347-1(option, 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.<br>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.<br>3. Tolerance : includes set up tolerance, line regulation and load regulation.<br>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.<br>5. Derating may be needed under low input voltages. Please check the static characteristics for more details.<br>6. A type and C type only.<br>7. Safety and EMC design refer to EN60598-1, subject 8750(UL), CNS15233, GB7000.1, FCC part18.<br>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-quality EMC Directive on the complete installation again. |                                                                                                                                                                                                                                                |              |                |                                     |            |            |            |

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. 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. 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.

■ Mechanical Specification

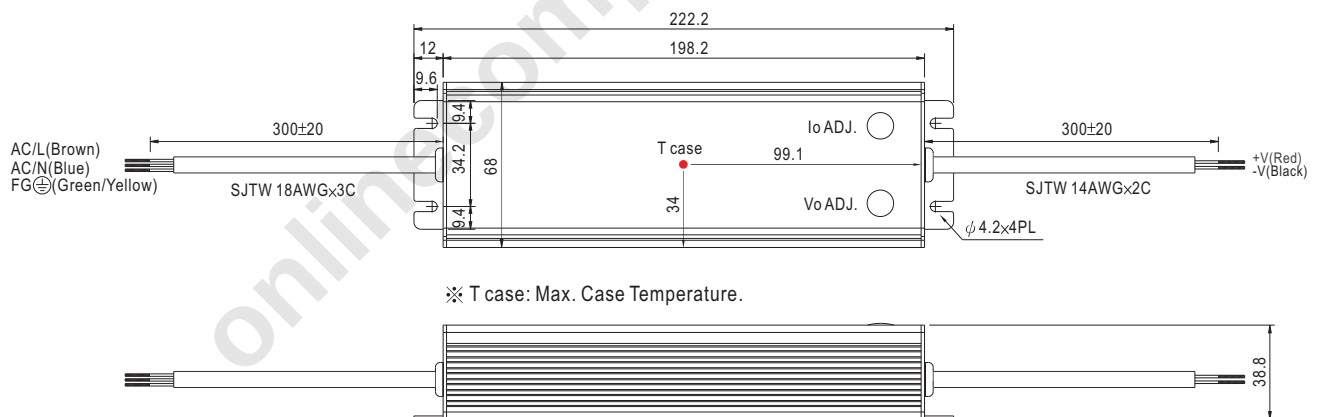
Case No. 954A Unit:mm

Blank:(CLG-150)



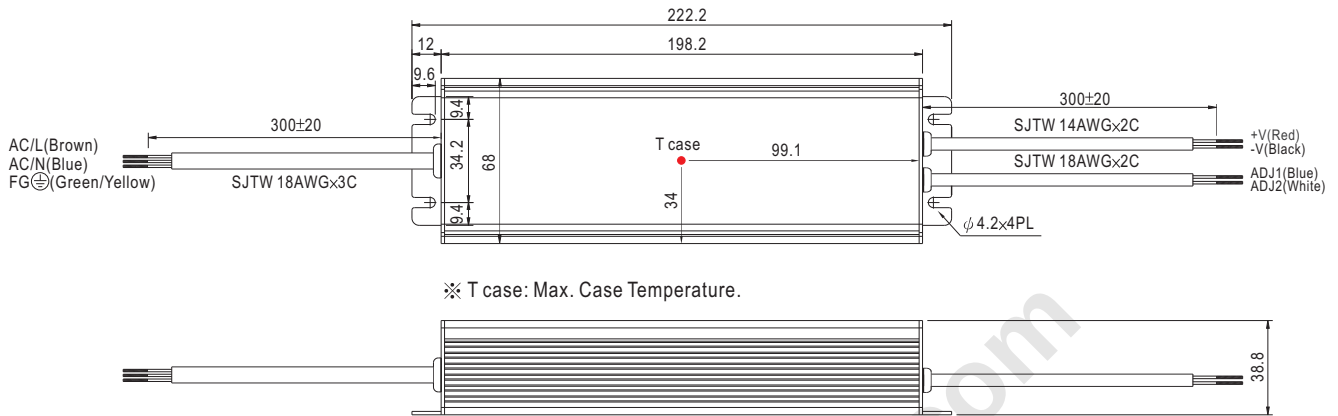
※IP67 rated. Cable for I/O connection.

A Type:(CLG-150- \_A)



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

**B Type:(CLG-150-\_B)**



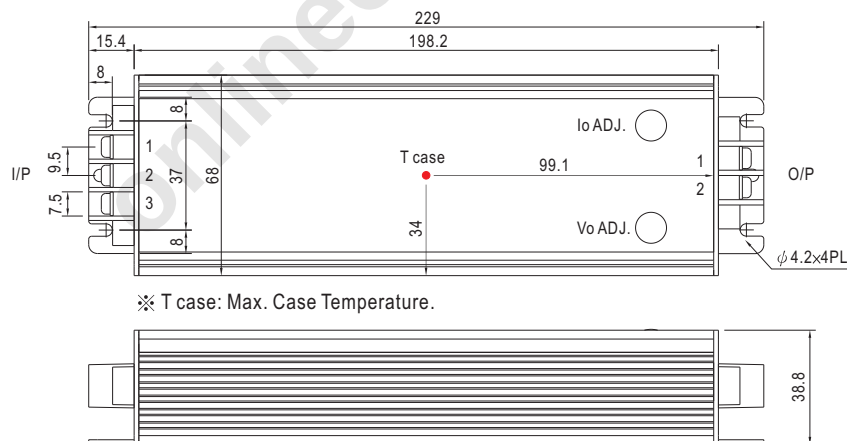
※ T case: Max. Case Temperature.

※ 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%             |
| 4.7K $\Omega$ | 100%                        |
| 620 $\Omega$  | 75%                         |
| 82 $\Omega$   | 50%                         |
| Short         | Slightly < 50%              |

**C Type:(CLG-150-\_C)**



※ T case: Max. Case Temperature.

**AC Input Terminal Pin No. Assignment**

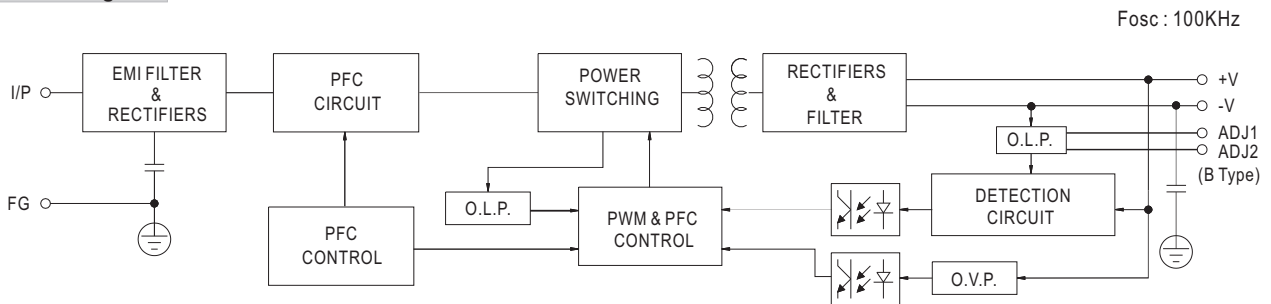
| Pin No. | Assignment |
|---------|------------|
| 1       | FG $\perp$ |
| 2       | AC/N       |
| 3       | AC/L       |

**DC Output Terminal Pin No. Assignment**

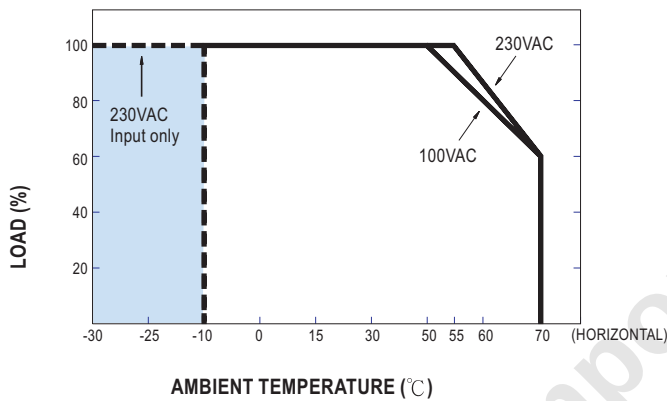
| Pin No. | Assignment |
|---------|------------|
| 1       | +V         |
| 2       | -V         |

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

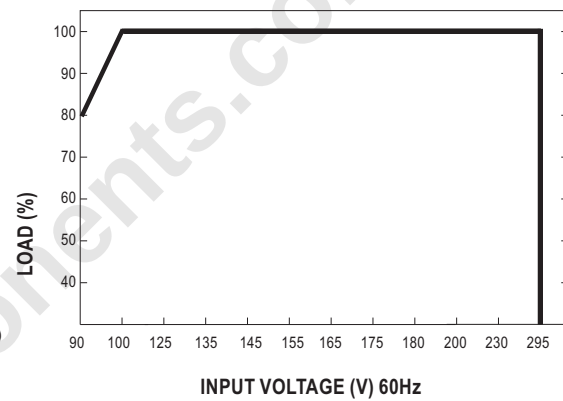
### ■ Block Diagram



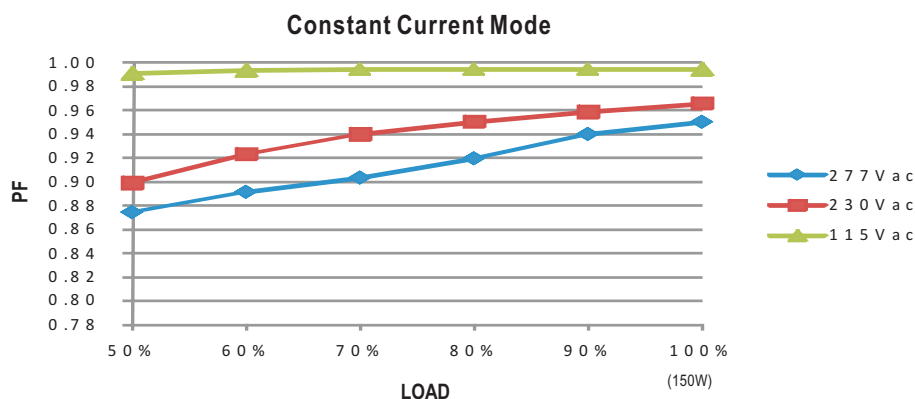
### ■ Derating Curve



### ■ Static Characteristics

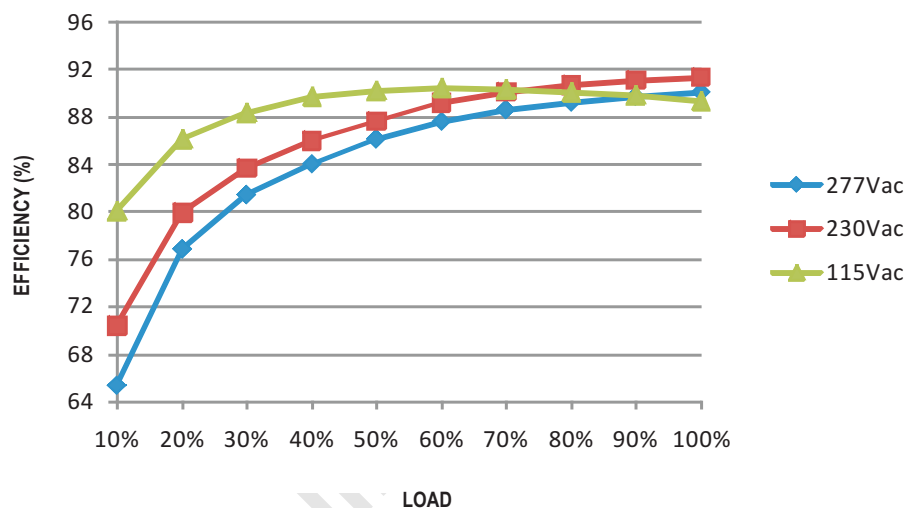


### Power Factor Characteristic



### EFFICIENCY vs LOAD (48V Model)

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

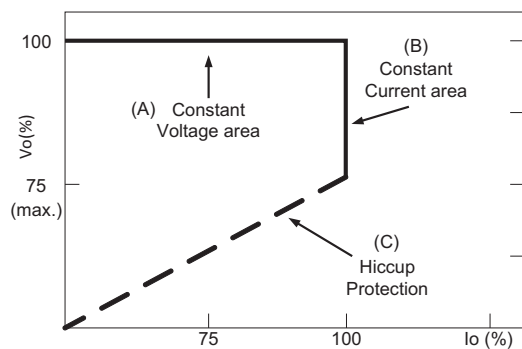


### DRIVING METHODS OF LED MODULE

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