# MEAN WELL ELG-100-C Series Constant Current Mode LED Driver User Guide



**70~100W Constant Voltage + Constant Current LED Driver ELG-100 series**


IS 15885(Part 2/Sec13)

R-41027766

(Please refer safety description)

SELV IP65 IP67

User's Manual

http://www.meanwell.com.cn/Upload/PDF/LED_EN.pdf

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## Features

- Constant Current mode output
- Metal housing design with functional Ground
- Built-in active PFC function
- Noload/ Standby power consumption <0.5W + IP67 /IP65 rating for indoor or outdoor installations
- Function options: output adjustable via potentiometer; 3in 1 dimming (dim-to-off); Smart timer dimming; DALI
- Typical lifetime>50000 hours
- 5years warranty

## Applications

- LED street lighting
- LED architectural lighting
- LED bay lighting
- LED floodlighting

- Type “HL” for use in Class |, Division 2 hazardous (Classified) location.

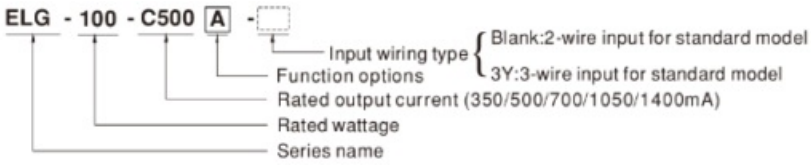
## GTIN CODE

MW Search: **https://www.meanwell.com/serviceGTIN.aspx**

## Description

ELG-100 seriesisa 100W AC/DC LED driver featuring the dual mode constant voltage and constant current output. ELG-100 operates from 100~360VAC and offers models with different rated voltage ranging between 24V and 54V. Thanks to the high efficiency up to 91%, with the fanless design, the entire series is able to operate for -40ºC ~ +90°C case temperature under free air convection. The design of metal housing and IP67/IP65 ingress protection level allows this series to fitboth indoor and outdoor applications. ELG-100 is equipped with various function options, such as dimming methodologies, so as to provide the optimal design flexibility for LED lighting system

## Model Encoding




| Type | IP Level | Function | Note |
|---|---|---|---|
| Blank | IP67 | Io fixed. | In Stock |
| A | IP65 | Io adjustable through built-in potentiometer. | In Stock |
| B | IP67 | 3 in 1 dimming function (0~10Vdc, 10V PWM signal and resistance) | In Stock |
| AB | IP65 | Io adjustable through built-in potentiometer & 3 in 1 dimming function ( 0~10Vdc, 10V PWM signal and resistance) | In Stock |
| DA | IP67 | DALI control technology. | In Stock |
| Dx | IP67 | Built-in Smart timer dimming function by user request. | By request |
| D2 | IP67 | Built-in Smart timer dimming and programmable function. | In Stock |

## SPECIFICATION

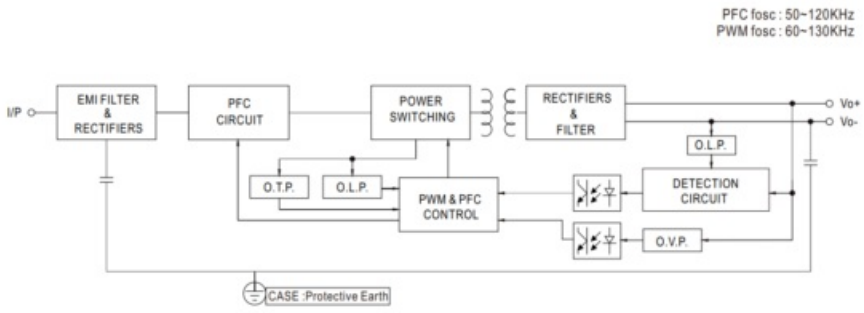
| MODEL | | ELG-100-C350□ | ELG-100-C500□ | ELG-100-C700□ | ELG-100-C1050□ | ELG-100-C1400□ |
|---|---|---|---|---|---|---|
| | RATED CURRENT | 350mA | 500mA | 700mA | 1050mA | 1400mA |
| | RATED POWER | 200VAC ~ 305VAC | | | | |
| | | 100.1W | 100W | 100.1W | 99.75W | 100.8W |
| | | 100VAC ~ 180VAC | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| OUTPUT | | 70W | 70W | 70W | 70.35W | 70W |
| | CONSTANT CURRENT REGION Note.2 | 143 ~ 286V | 100 ~ 200V | 71 ~ 143V | 48 ~ 95V | 35 ~ 72V |
| | OPEN CIRCUIT VOLTAGE(max.) | 297V | 210V | 149V | 105V | 75V |
| | CURRENT ADJ. RANGE | Adjustable for A/AB-Type only (via built-in potentiometer) | | | | |
| | | 175 ~ 350mA | 250 ~ 500mA | 350 ~ 700mA | 525 ~ 1050mA | 700 ~ 1400mA |
| | CURRENT RIPPLE | 5.0% max. @rated current | | | | |
| | CURRENT TOLERANCE | ±5.0% | | | | |
| | SET UP TIME Note.4 | 1000ms/115VAC 500ms/230VAC | | | | |
| INPUT | VOLTAGE RANGE Note.3 | 100 ~ 305VAC 142 ~ 431VDC continue,320VAC for 24Hrs; 360VAC for 1Hr (Please refer to “STATIC CHARACTERISTIC” section) | | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | | |
| | POWER FACTOR (Typ.) | PF≧0.97/115VAC, PF≧0.95/230VAC, PF≧0.92/277VAC@full load<br>(Please refer to “POWER FACTOR (PF) CHARACTERISTIC” section) | | | | |
| | TOTAL HARMONIC DISTORTION | THD< 20%(@load¾50%/115VC; @load¾60%/230VAC; @load¾75%/277VAC) ( Please refer to “TOTAL HARMONIC DISTORTION(THD)” section) | | | | |
| | EFFICIENCY (Typ.) | 92% | 91% | 91% | 90% | 90% |
| | AC CURRENT (Typ.) | 1.1A / 115VAC 0.6A / 230VAC 0.5A/277VAC | | | | |
| | INRUSH CURRENT(Typ.) | COLD START 40A(twidth=760μs measured at 50% Ipeak)/230VAC; Per NEMA 410 | | | | |
| | MAX. No. of PSUs on 16A CIRCUIT BREAKER | 3 units (circuit breaker of type B) / 6 units (circuit breaker of type C) at 230VAC | | | | |
| | LEAKAGE CURRENT | <0.75mA / 277VAC | | | | |
| | NO LOAD / STANDBY POWER CONSUMPTION | No load power consumption <0.5W for Blank / A / Dx / D2-Type<br>Standby power consumption <0.5W for B / AB / DA-Type | | | | |
| PROT | SHORT CIRCUIT | Hiccup mode, recovers automatically after fault condition is removed | | | | |
| | | 305 ~ 333V | 222 ~ 242V | 154 ~ 174V | 110 ~ 130V | 79 ~ 95V |

| | | |
|---|---|---|
| ECTION | OVER VOLTAGE | Shut down o/p voltage, re-power on to recover |
| | OVER TEMPERATURE | Shut down o/p voltage, re-power on to recover |
| ENVIRONMENT | WORKING TEMP. | Tcase=-40 ~ +90℃ (Please refer to " OUTPUT LOAD vs TEMPERATURE" section ) |
| | MAX. CASE TEMP. | Tcase=+90℃ |
| | WORKING HUMIDITY | 20 ~ 95% RH non-condensing |
| | STORAGE TEMP., HUMIDITY | -40 ~ +80℃, 10 ~ 95% RH |
| | TEMP. COEFFICIENT | ±0.03%/℃ (0 ~ 60℃) |
| | VIBRATION | 10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes |
| SAFETY & EMC | SAFETY STANDARDS | UL8750(type"HL"), CSA C22.2 No. 250.13-12;BS EN/EN/AS/NZS 61347-1, BS EN/EN/AS/NZS 61347-2-13 independent,<br>BS EN/EN62384; EAC TP TC 004;BIS IS15885(for 700A,1050A only);GB19510.1, GB19510.14; IP65 or IP67; KC61347-1,KC61347-2-13 approved |
| | DALI STANDARDS | Compliance to IEC62386-101,102,(207 by request) for DA Type only |
| | WITHSTAND VOLTAGE | I/P-O/P:3.75KVAC I/P-FG:2.0KVAC O/P-FG:1.5KVAC |
| | ISOLATION RESISTANCE | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25℃/ 70% RH |
| | EMC EMISSION | Compliance to BS EN/EN55015,BS EN/EN61000-3-2 Class C (@ load≧60%) ; BS EN/EN61000-3-3; GB/T 17743, GB17625.1; EAC TP TC 020; KC KN15,KN61547 |
| | EMC IMMUNITY | Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11; BS EN/EN61547, light industry level (surge immunity Line-Earth 6KV, Line-Line 4KV); EAC TP TC 020; KC KN15,KN61547 |
| OTHERS | MTBF | 3070.8K hrs min. Telcordia SR-332 (Bellcore) 300.7Khrs min. MIL-HDBK-217F (25℃) |
| | DIMENSION | 199*63*35.5 mm (L*W*H) |
| | PACKING | 0.85kg; 16pcs/14.2kg/0.72CUFT |

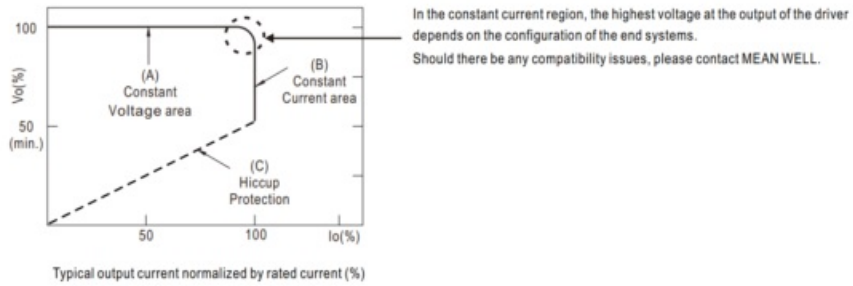
| | |
|---|---|
| NOTE | 1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25℃ of ambient temperature.<br>2. Please refer to “DRIVING METHODS OF LED MODULE”. For DA-Type, Constant Current region is 60%~100% of maximum voltage under rated power delivery.<br>3. De-rating may be needed under low input voltages. Please refer to “STATIC CHARACTERISTIC” se ctions for details.<br>4. Length of set up time is measured at first cold start. Turning ON/OFF the driver may lead to increase of the set up time.<br>5. The driver 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.<br>(as available on **https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf**)<br>6. This series meets the typical life expectancy of >50,000 hours of operation when Tcase, particularly tc point (or TMP, per DLC), is about 80℃ or less.<br>7. Please refer to the warranty statement on MEAN WELL’s website at **http://www.meanwell.com**<br>8. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft).<br>9. For any application note and IP water proof function installation caution, please refer our user manu al before using. **https://www.meanwell.com/Upload/PDF/LED_EN.pdf**<br>10. D2 models need to be programmed in the state of loading.<br>11. To fulfill requirements of the latest ErP regulation for lighting fixtures, this LED power supply can on ly be used behind a switch without permanently connected to the mains.<br>※ Product Liability Disclaimer: For detailed information, please refer to **https://www.meanwell.com/se rviceDisclaimer.aspx** *File Name:ELG-100-C-SPEC 2024-01-08* |

## Block Diagram




## DRIVING METHODS OF LED MODULE

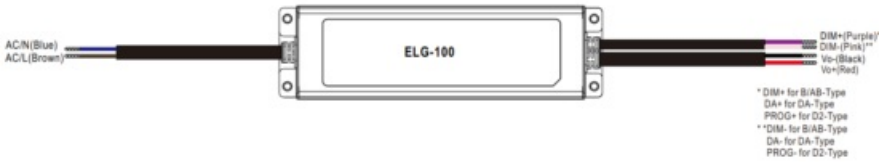
※ This series is able to work in either Constant Current mode (a direct drive way) or Constant Voltage mode (usually through additional DC/DC driver) to drive the LEDs




Typical output current normalized by rated current (%)

◎ This character istic app lies to Blank/A/B/AB/DX/D2-Type, For DA-Type, the Constant Current area is 60%~100% Vo.

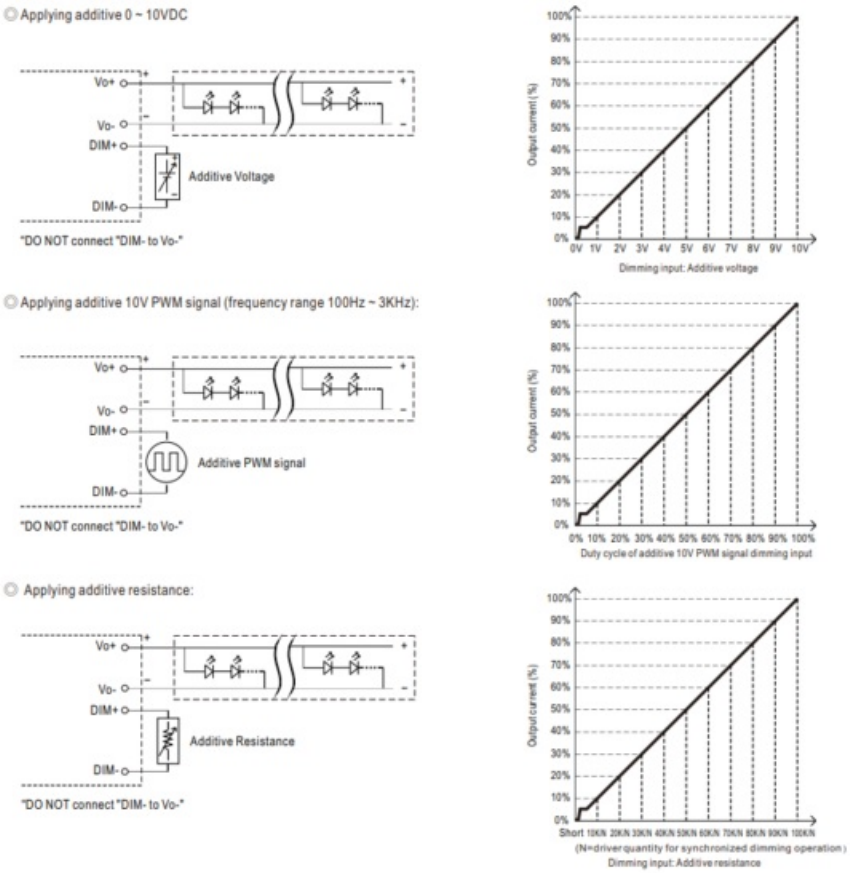
## DIMMING OPERATION




* 3 in 1 dimming function (for B/AB-Type)

- Output constant current level can be adjusted by applying one of the three methodologies between DIM+ and DIM-: 0~10VDC, or 10V PWM signal or resistance.
- Direct connecting to LEDs is suggested. It is not suitable to be used with additional drivers.
- Dimming source current from power supply: 100μA (typ.)

◎ Applying additive 0~10VDC




Note:

1. Min. dimming level is about 8% and the output current is not defined when 0%< Iout<8%.
2. The output current could drop down to 0% when dimming input is about 0k or 0Vdc, or 10V PWM signal with 0% duty cycle.

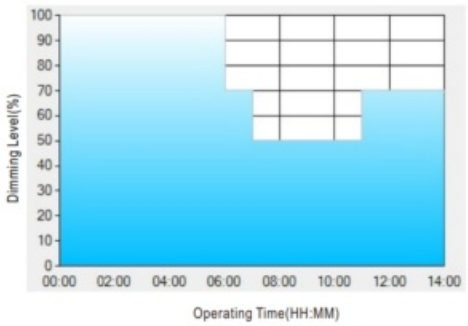
※ DALI Interface (primary side; for DA-Type)

- Apply DALI signal between DA+ and DA-.
- DALI protocol comprises 16 groups and 64 addresses.
- First step is fixed at 8% of output.

**※ Smart timer dimming function (for Dxx-Type by User definition)**

MEAN WELL Smart timer dimming primarily provides the adaptive proportion dimming profile for the output constant current level to perform up to 14 consecutive hours. 3 dimming profiles hereunder are defined accounting for the most frequently seen applications. If other options may be needed, please contact MEAN WELL for details.

Ex : ◎ D01-Type: the profile recommended for residential lighting




Set up for D01-Type in Smart timer dimming software program:

| | T1 | T2 | T3 | T4 |
|---|---|---|---|---|
| TIME** | 06:00 | 07:00 | 11:00 | --- |
| LEVEL** | 100% | 70% | 50% | 70% |

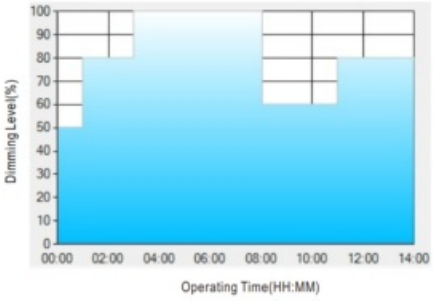
**: TIME matches Operating Time in the diagram whereas LEVEL matches Dimming Level.

Example: If a residential lighting application adopts D01-Type, when turning on the power supply at 6:00pm, for instance:

1. The power supply will switch to the constant current level at 100% starting from 6:00pm.
2. The power supply will switch to the constant current level at 70% in turn, starting from 0:00am, which is 06:00 after the power supply turns on.
3. The power supply will switch to the constant current level at 50% in turn, starting from 1:00am, which is 07:00 after the power supply turns on.
4. The power supply will switch to the constant current level at 70% in turn, starting from 5:00am, which is 11:00 after the power supply turns on.

   The constant current level remains till 8:00am, which is 14:00 after the power supply turns on.

   Ex: ◎ D02-Type: the profile recommended for street lighting




Set up for D02-Type in Smart timer dimming software program:

| | T1 | T2 | T3 | T4 | T5 |
|---|---|---|---|---|---|
| TIME** | 01:00 | 03:00 | 8:00 | 11:00 | --- |
| LEVEL** | 50% | 80% | 100% | 60% | 80% |

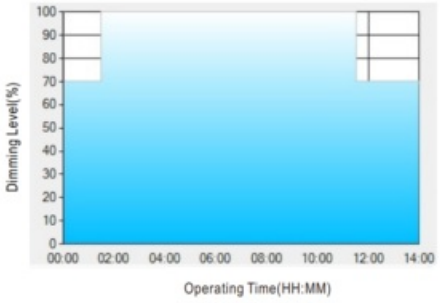
**: TIME matches Operating Time in the diagram whereas LEVEL matches Dimming Level.

Example: If a street lighting application adopts D02-Type, when turning on the power supply at 5:00pm, for instance:

1. The power supply will switch to the constant current level at 50% starting from 5:00pm.
2. The power supply will switch to the constant current level at 80% in turn, starting from 6:00pm, which is 01:00 after the power supply turns on.
3. The power supply will switch to the constant current level at 100% in turn, starting from 8:00pm, which is 03:00 after the power supply turns on.
4. The power supply will switch to the constant current level at 60% in turn, starting from 1:00am, which is 08:00 after the power supply turns on.

5. The power supply will switch to the constant current level at 80% in turn, starting from 4:00am, which is 11:00 after the power supply turns on. The constant current level remains till 6:30am, which is 14:00 after the power supply turns on.

Ex: ◎ D03-Type: the profile recommended for tunnel lighting




Set up for D03-Type in Smart timer dimming software program:

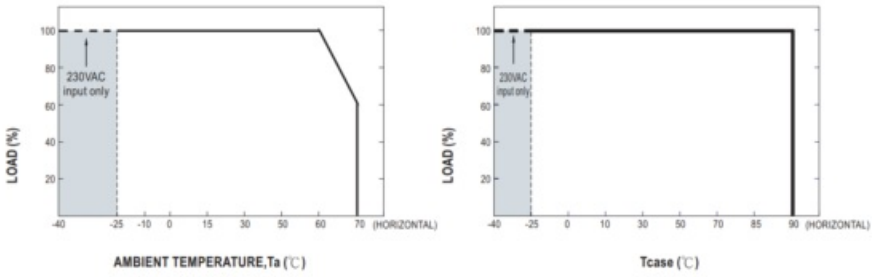
| | T1 | T2 | T3 |
|---|---|---|---|
| TIME** | 01:30 | 11:00 | --- |
| LEVEL** | 70% | 100% | 70% |

**: TIME matches Operating Time in the diagram whereas LEVEL matches Dimming Level.

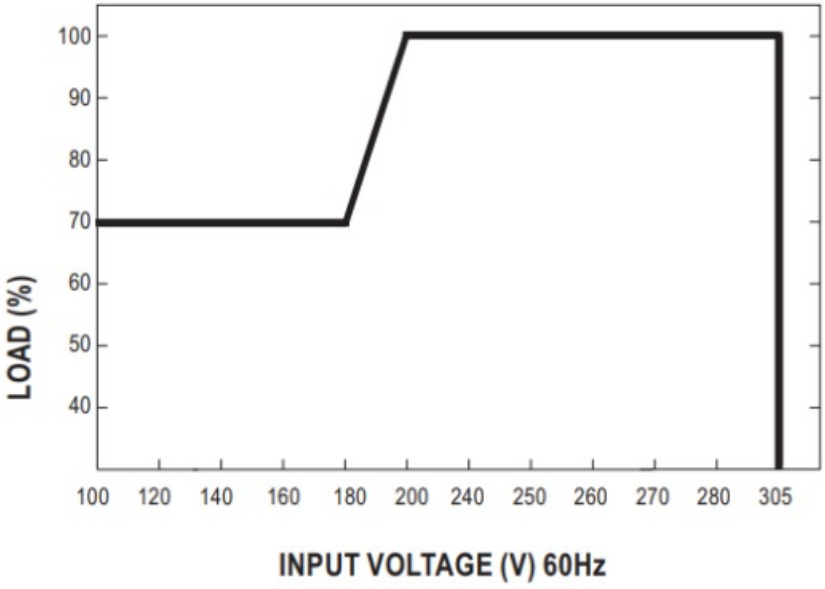
**Example:** If a tunnel lighting application adopts D03-Type, when turning on the power supply at 4:30pm, for instance:

1. The power supply will switch to the constant current level at 70% starting from 4:30pm.
2. The power supply will switch to the constant current level at 100% in turn, starting from 6:00pm, which is 01:30 after the power supply turns on.
3. The power supply will switch to the constant current level at 70% in turn, starting from 5:00am, which is 11:00 after the power supply turns on.
   The constant current level remains till 6:30am, which is 14:00 after the power supply turns on.

## OUTPUT LOAD vs TEMPERATURE(Note.9)

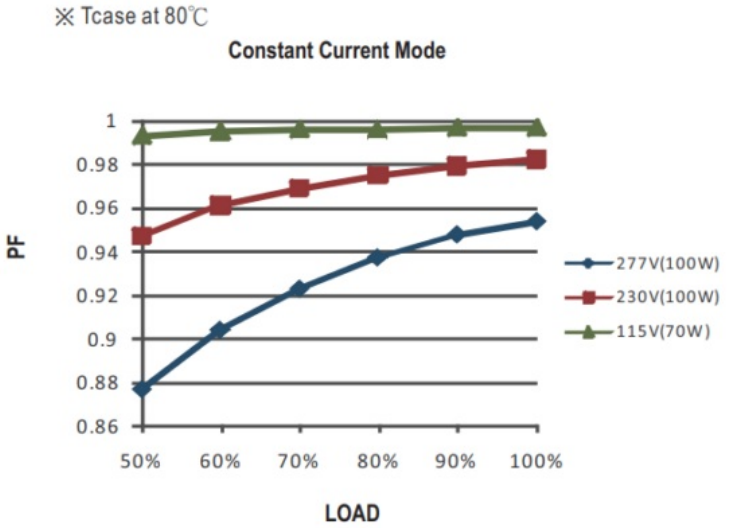



## STATIC CHARACTERISTIC

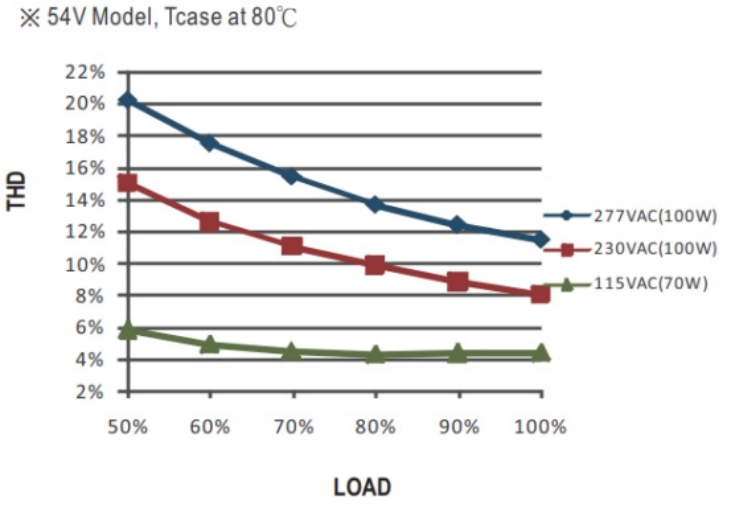



※ De-rating is needed under low input voltage.

## POWER FACTOR (PF) CHARACTERISTIC

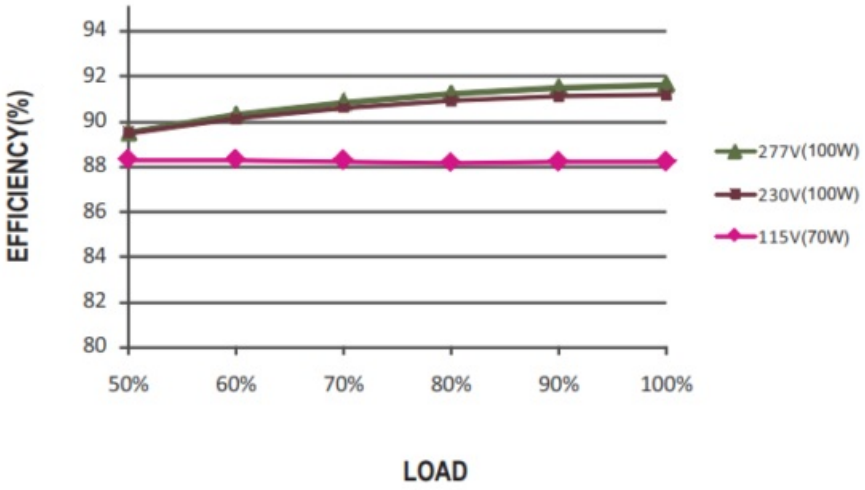



## TOTAL HARMONIC DISTORTION (THD)

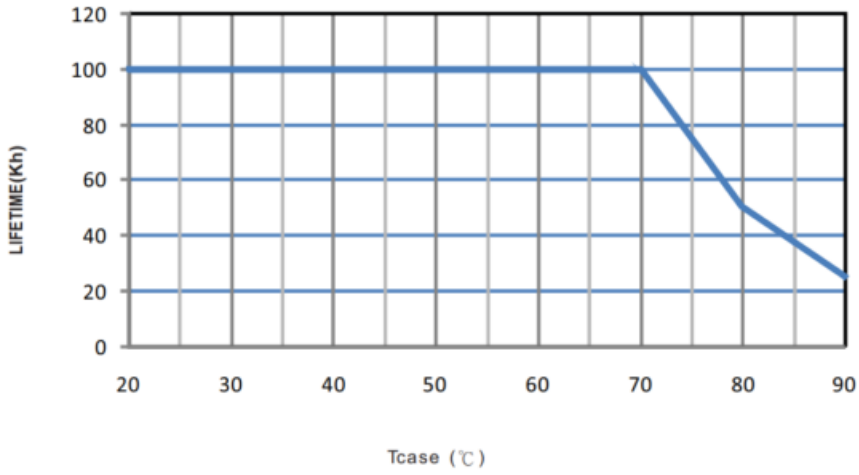


## EFFICIENCY vs LOAD

ELG-100 series possess superior working efficiency that up to 91% can be reached in field applications.
※ 54V Model, Tcase at 80℃

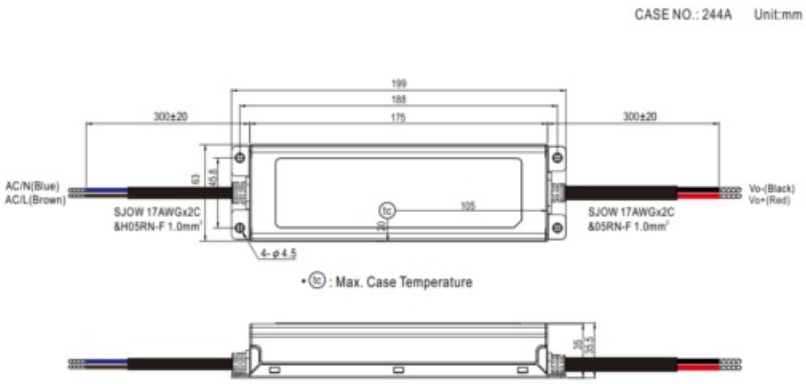



## LIFE TIME

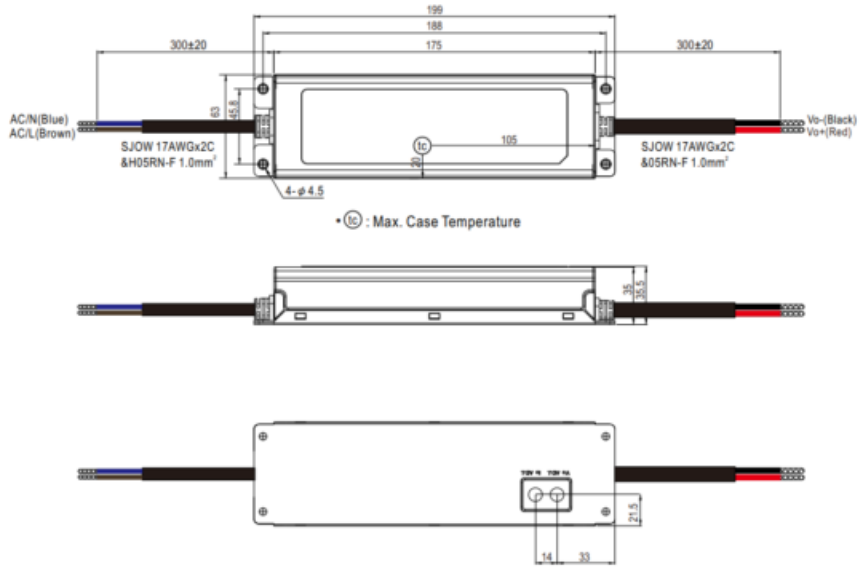



## Mechanical Specification

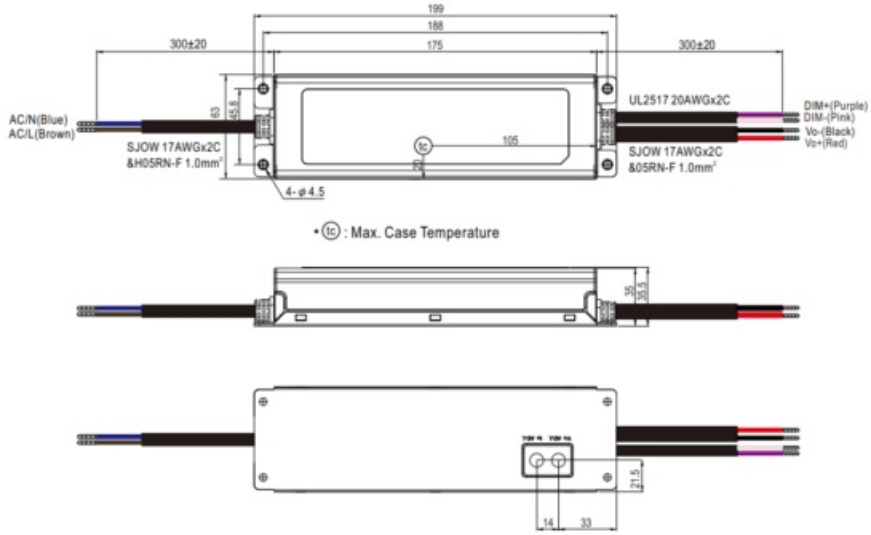
### ※ Blank-Type



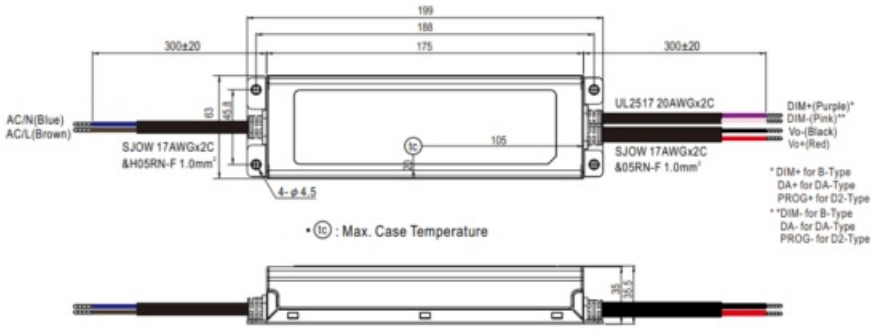

### ※ A-Type



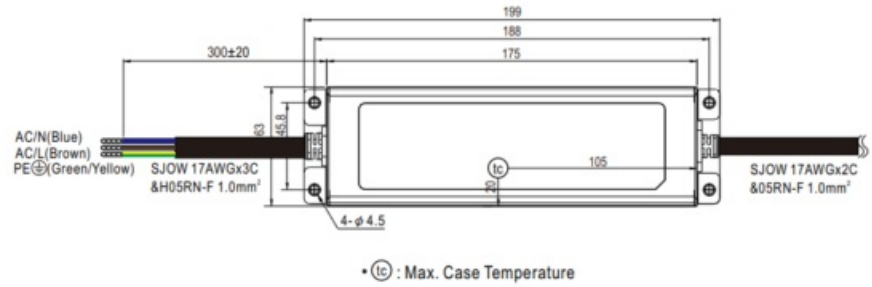

**❊ AB-Type**




**❊ B/DA/D2-Type**

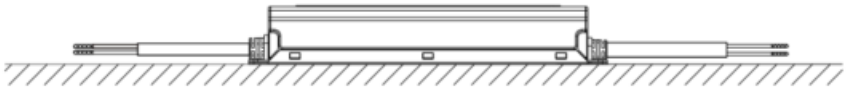



**❊ 3Y Model (3-wire input)**



◎ Note1: Pl ease connect the case to PE for the complete EMC deliverance and safety use.
◎ Note2: Pl ease contact MEAN WELL for input wiring option with PE.

## Recommend Mounting Direction



## INSTALLATION MANUAL

Pl ease refer to: **http://www.meanwell.com/manual.html**

## Documents / Resources

| | |
|---|---|
|  | **MEAN WELL ELG-100-C Series Constant Current Mode LED Driver** [pdf] User Guide<br>ELG-100-C Series Constant Current Mode LED Driver, ELG-100-C Series, Constant Current Mode LED Driver, Current Mode LED Driver, Mode LED Driver, LED Driver, Driver |

## References

- **User Manual**