



48~75W Constant Voltage + Constant Current LED Driver

**ELG-75 series**



## Features

- Constant Voltage + Constant Current mode output
- Metal housing design with functional Ground
- Built-in active PFC function
- Class 2 power unit
- No load / Standby power consumption <0.5W
- IP67 / IP65 rating for indoor or outdoor installations
- Function options: output adjustable via potentiometer;  
3 in 1 dimming (dim-to-off); Smart timer dimming; DALI
- Typical lifetime>50000 hours
- 5 years warranty

## Applications

- LED street lighting
- LED architectural lighting
- LED bay lighting
- LED floodlighting
- Type "HL" for use in Class I, Division 2 hazardous (Classified) location.

## Description

ELG-75 series is a 75W AC/DC LED driver featuring the dual mode constant voltage and constant current output. ELG-75 operates from 100~305VAC and offers models with different rated voltage ranging between 12V and 48V. Thanks to the high efficiency up to 90%, with the fanless design, the entire series is able to operate for -40°C ~ +85°C case temperature under free air convection. The design of metal housing and IP67/IP65 ingress protection level allows this series to fit both indoor and outdoor applications. ELG-75 is equipped with various function options, such as dimming methodologies, so as to provide the optimal design flexibility for LED lighting system

## Model Encoding

ELG - 75 - 24 A -

- Input wiring type { Blank:2-wire input for standard model  
3Y:3-wire input for standard model
- Function mode option
- Rated output voltage(12/24/36/42/48V)
- Rated wattage
- Series name

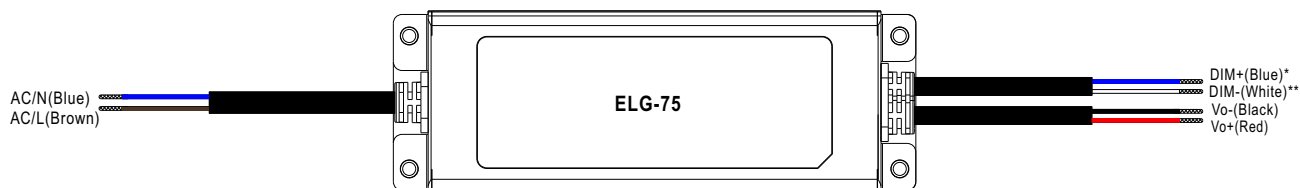
| Type  | IP Level | Function   | Note       |
|-------|----------|--|------------|
| Blank | IP67     | Io and Vo fixed.   | In Stock   |
| A     | IP65     | Io and Vo adjustable through built-in potentiometer.   | In Stock   |
| B     | IP67     | 3 in 1 dimming function (0~10Vdc, 10V PWM signal and resistance)   | In Stock   |
| AB    | IP65     | Io and Vo 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-75-12 □   | ELG-75-24 □   | ELG-75-36 □  | ELG-75-42 □  | ELG-75-48 □  |  |
|--|---|---|---|--------------|--------------|--------------|--|
| OUTPUT                                 | DC VOLTAGE  | 12V   | 24V   | 36V          | 42V          | 48V          |  |
|  | CONSTANT CURRENT REGION <small>Note.2</small>   | 6 ~ 12V   | 12 ~ 24V  | 18 ~ 36V     | 21 ~ 42V     | 24 ~ 48V     |  |
|  | RATED CURRENT   | 5A  | 3.15A   | 2.1A         | 1.8A         | 1.6A         |  |
|  | RATED POWER <small>Note.5</small>   | 200VAC ~ 305VAC   |   |              |              |              |  |
|  |   | 60W   | 75.6W   | 75.6W        | 75.6W        | 76.8W        |  |
|  |   | 100VAC ~ 180VAC   |   |              |              |              |  |
|  |   | 48W   | 60W   | 60W          | 60W          | 60W          |  |
|  | RIPPLE & NOISE (max.) <small>Note.3</small>   | 150mVp-p  | 200mVp-p  | 250mVp-p     | 250mVp-p     | 250mVp-p     |  |
|  | VOLTAGE ADJ. RANGE  | Adjustable for A/AB-Type only (via built-in potentiometer)  |   |              |              |              |  |
|  |   | 10.8 ~ 13.2V  | 21.6 ~ 26.4V  | 32.4 ~ 39.6V | 37.8 ~ 46.2V | 43.2 ~ 52.8V |  |
|  | CURRENT ADJ. RANGE  | Adjustable for A/AB-Type only (via built-in potentiometer)  |   |              |              |              |  |
|  |   | 2.5 ~ 5A  | 1.57 ~ 3.15A  | 1.05 ~ 2.1A  | 0.9 ~ 1.8A   | 0.8 ~ 1.6A   |  |
|  | VOLTAGE TOLERANCE <small>Note.4</small>   | ±3.0%   | ±3.0%   | ±2.5%        | ±2.5%        | ±2.0%        |  |
| LINE REGULATION                        | ±0.5%   | ±0.5%   | ±0.5%   | ±0.5%        | ±0.5%        |              |  |
| LOAD REGULATION                        | ±2.0%   | ±1.0%   | ±1.0%   | ±0.5%        | ±0.5%        |              |  |
| SETUP, RISE TIME <small>Note.6</small> | 500ms, 100ms/115VAC, 230VAC   |   |   |              |              |              |  |
| HOLD UP TIME (Typ.)                    | 10ms/ 230VAC 10ms/ 115VAC(at full load)   |   |   |              |              |              |  |
| INPUT                                  | VOLTAGE RANGE <small>Note.5</small>   | 100 ~ 305VAC 142 ~ 431VDC<br>(Please refer to "STATIC CHARACTERISTIC" section)  |   |              |              |              |  |
|  | FREQUENCY RANGE   | 47 ~ 63Hz   |   |              |              |              |  |
|  | POWER FACTOR  | 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%(@load≥50%/115VC, 230VAC; @load≥75%/277VAC)<br>(Please refer to "TOTAL HARMONIC DISTORTION(THD)" section)   |   |              |              |              |  |
|  | EFFICIENCY (Typ.)   | 85%   | 88%   | 89%          | 90%          | 90%          |  |
|  | AC CURRENT  | 0.7A / 115VAC 0.45A / 230VAC 0.38A/277VAC   |   |              |              |              |  |
|  | INRUSH CURRENT(Typ.)  | COLD START 50A(twidth=350μs measured at 50% Ipeak) at 230VAC; Per NEMA 410  |   |              |              |              |  |
|  | MAX. No. of PSUs on 16A CIRCUIT BREAKER   | 5 units (circuit breaker of type B) / 8 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  |   |              |              |              |  |
|  | PROTECTION  | OVER CURRENT  | 95 ~ 108%<br>Constant current limiting, recovers automatically after fault condition is removed |              |              |              |  |
| SHORT CIRCUIT                          |   | Hiccup mode, recovers automatically after fault condition is removed  |   |              |              |              |  |
| OVER VOLTAGE                           |   | 14 ~ 18V  | 28 ~ 34V  | 41 ~ 48V     | 47 ~ 54V     | 54 ~ 62V     |  |
|  |   | Shut down output voltage, re-power on to recover  |   |              |              |              |  |
| OVER TEMPERATURE                       |   | Shut down output voltage, re-power on to recover  |   |              |              |              |  |
| ENVIRONMENT                            | WORKING TEMP.   | Tcase=-40 ~ +85℃ (Please refer to " OUTPUT LOAD vs TEMPERATURE" section)  |   |              |              |              |  |
|  | MAX. CASE TEMP.   | Tcase=+85℃  |   |              |              |              |  |
|  | 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; IEC/EN/AS/NZS 61347-1, IEC/EN/AS/NZS 61347-2-13 independent, EN62384; EAC TP TC 004;BIS IS15885(for 12B/24B/36A/42A/48A only);IP65 or IP67; GB19510.1, GB19510.14; 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 EN55015,EN61000-3-2 Class C (@load ≥ 50%) ; EN61000-3-3; GB17743, GB17625.1;EAC TP TC 020; KC KN15,KN61547  |   |              |              |              |  |
|  | EMC IMMUNITY  | Compliance to EN61000-4-2,3,4,5,6,8,11; EN61547, light industry level (surge immunity Line-Earth 6KV, Line-Line 4KV);EAC TP TC 020; KC KN15 ,KN61547  |   |              |              |              |  |
| OTHERS                                 | MTBF  | 1172K hrs min. Telcordia SR-332 (Bellcore) 331Khrs min. MIL-HDBK-217F (25℃)   |   |              |              |              |  |
|  | DIMENSION   | 180*63*35.5mm (L*W*H)   |   |              |              |              |  |
|  | PACKING   | 0.8Kg;16pcs/13.4Kg/0.67CUFT   |   |              |              |              |  |
| 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".<br>3. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.<br>4. Tolerance : includes set up tolerance, line regulation and load regulation.<br>5. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details.<br>6. 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>7. 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>8. This series meets the typical life expectancy of >50,000 hours of operation when Tcase, particularly (Tc point (or TMP, per DLC), is about 70℃ or less.<br>9. Please refer to the warranty statement on MEAN WELL's website at <a href="http://www.meanwell.com">http://www.meanwell.com</a><br>10.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>11.For any application note and IP water proof function installation caution, please refer our user manual before using.<br><a href="https://www.meanwell.com/Upload/PDF/LED_EN.pdf">https://www.meanwell.com/Upload/PDF/LED_EN.pdf</a> |   |   |              |              |              |  |

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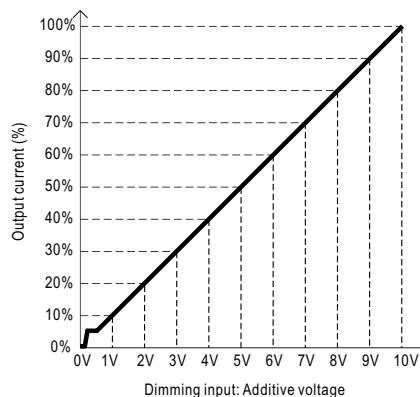
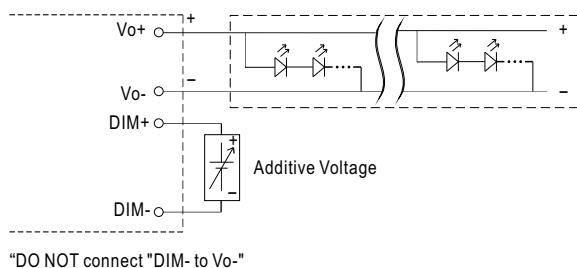
## DIMMING OPERATION



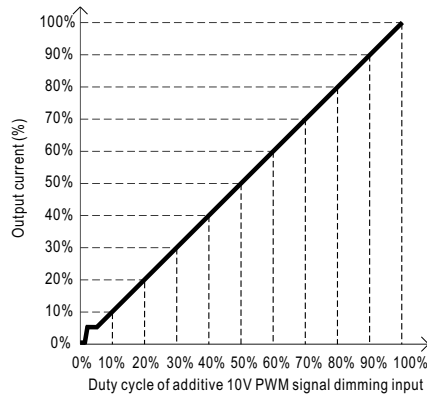
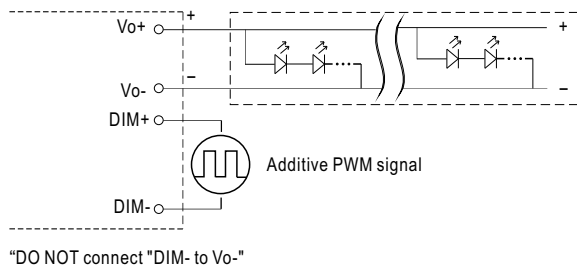
### ※ 3 in 1 dimming function (for B/AB-Type)

- 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: 100 $\mu$ A (typ.)

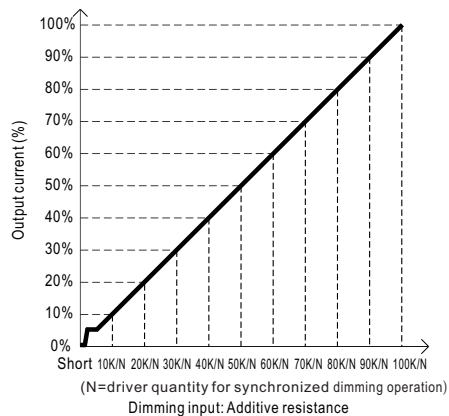
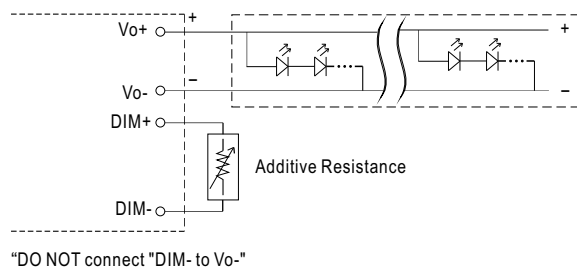
#### ◎ Applying additive 0 ~ 10VDC



#### ◎ Applying additive 10V PWM signal (frequency range 100Hz ~ 3KHz):



#### ◎ Applying additive resistance:



Note : 1. Min. dimming level is about 8% and the output current is not defined when 0% < I<sub>out</sub> < 8%.

2. The output current could drop down to 0% when dimming input is about 0k $\Omega$  or 0Vdc, or 10V PWM signal with 0% duty cycle.

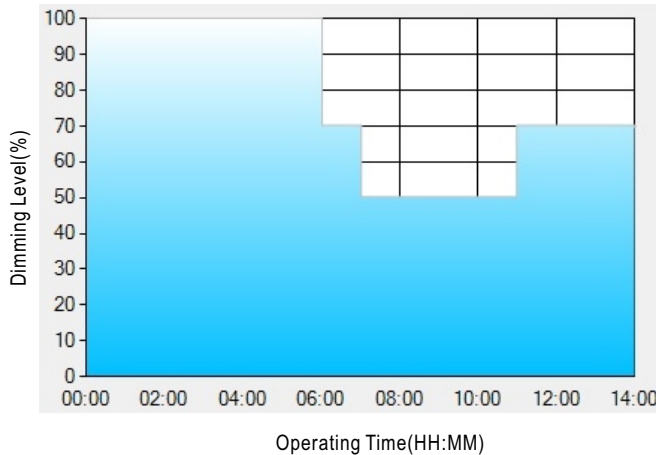
### ※ DALI Interface (primary side; for DA-Type)

- 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% |

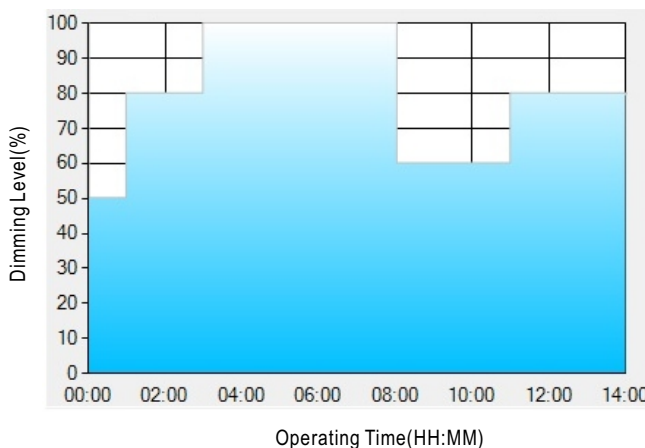
\*\* : TIME matches Operating Time in the diagram whereas LEVEL matches Dimming Level.

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:

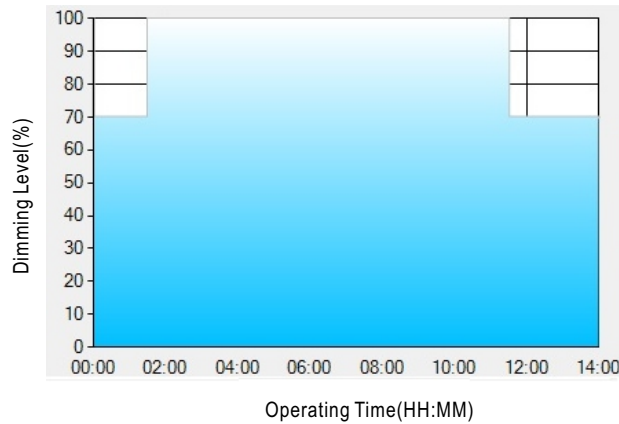
|         | T1    | T2    | T3   | T4    | T5  |
|---------|-------|-------|------|-------|-----|
| TIME**  | 01:00 | 03:00 | 8:00 | 11:00 | --- |
| LEVEL** | 50%   | 80%   | 100% | 60%   | 80% |

\*\* : 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:

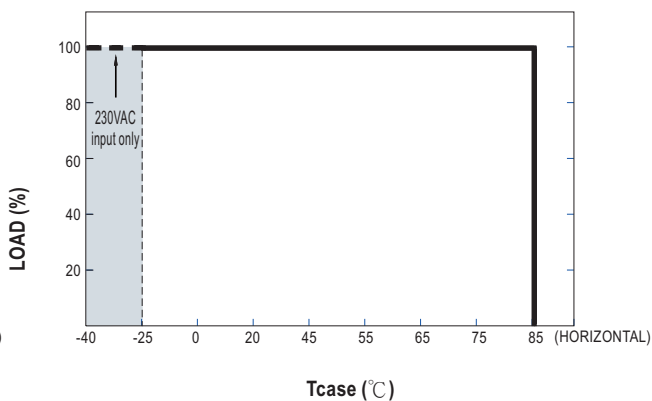
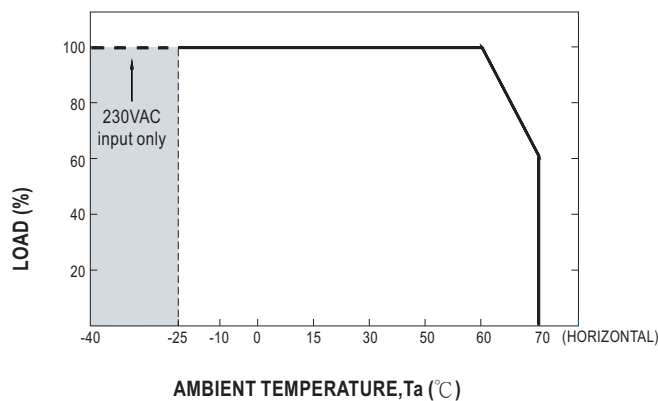
[1] The power supply will switch to the constant current level at 70% starting from 4:30pm.

[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.

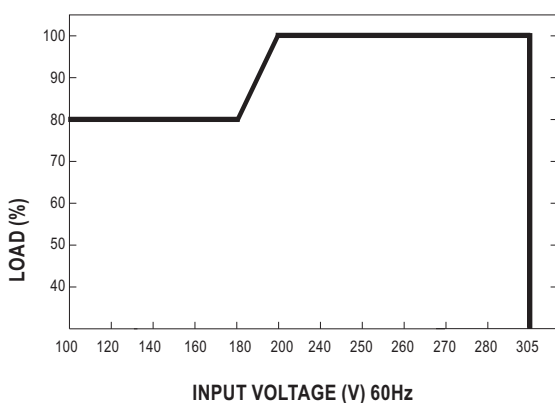
[3] The power supply will switch to the constant current level at 70% in turn, starting from 5:00am, which is 11:00 after the power supply turns on.

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

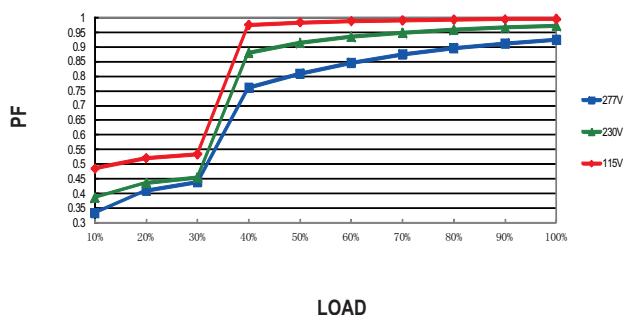


※ De-rating is needed under low input voltage.

### ■ POWER FACTOR (PF) CHARACTERISTIC

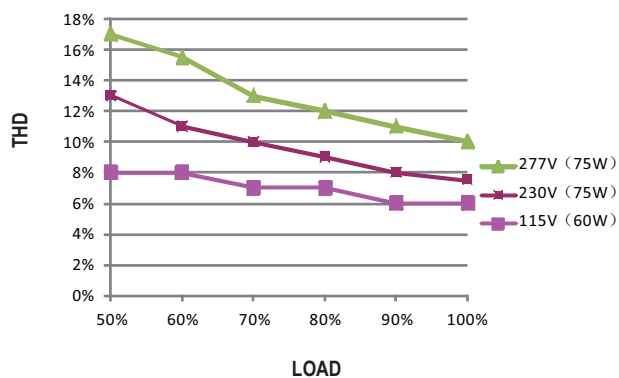
※  $T_{case}$  at 75°C

Constant Current Mode



### ■ TOTAL HARMONIC DISTORTION (THD)

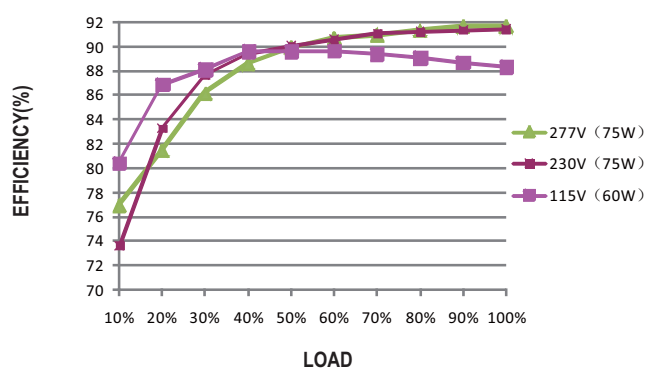
※ 48V Model,  $T_{case}$  at 75°C



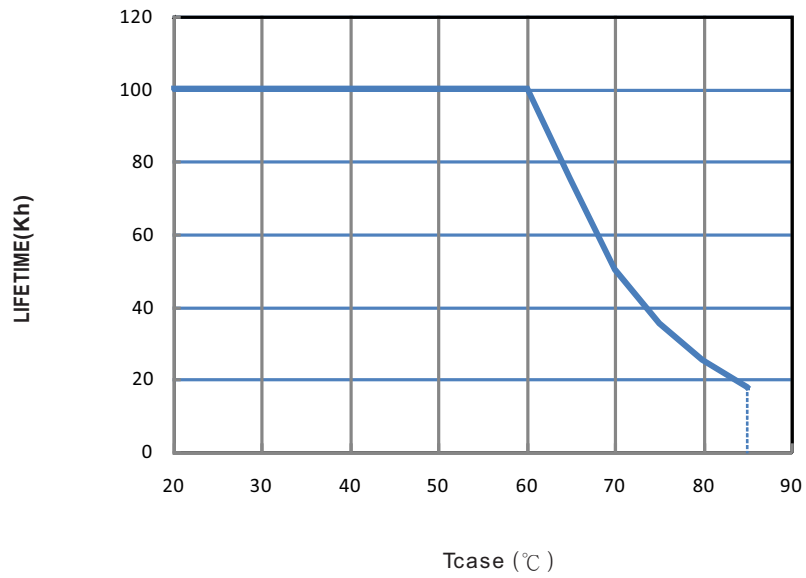
### ■ EFFICIENCY vs LOAD

ELG-75 series possess superior working efficiency that up to 90% can be reached in field applications.

※ 48V Model,  $T_{case}$  at 75°C



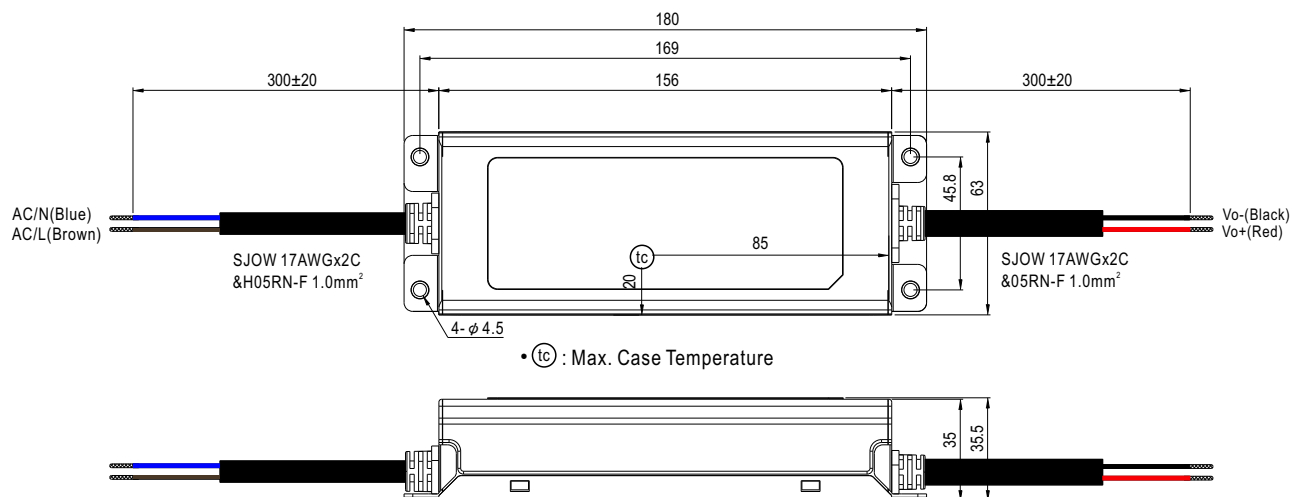
■ LIFE TIME



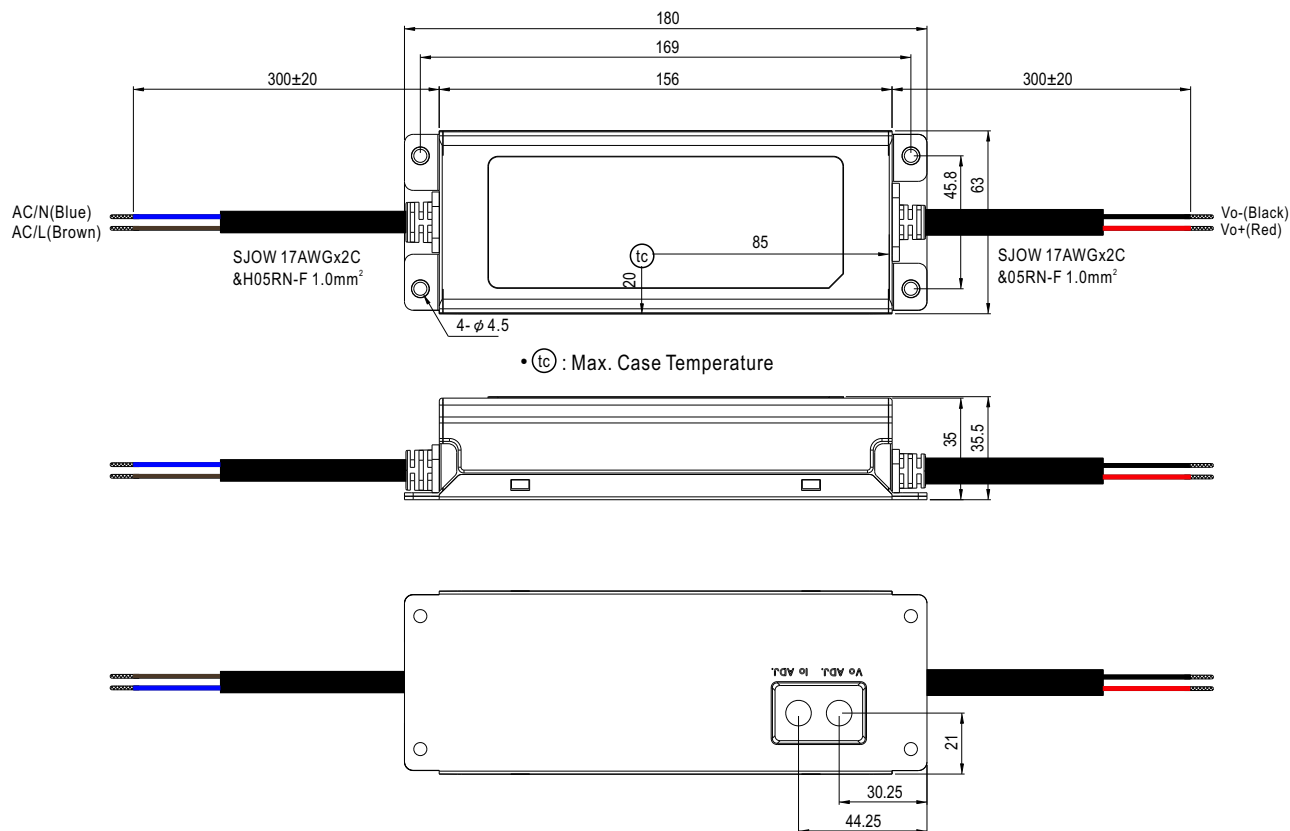
## Mechanical Specification

※ Blank-Type

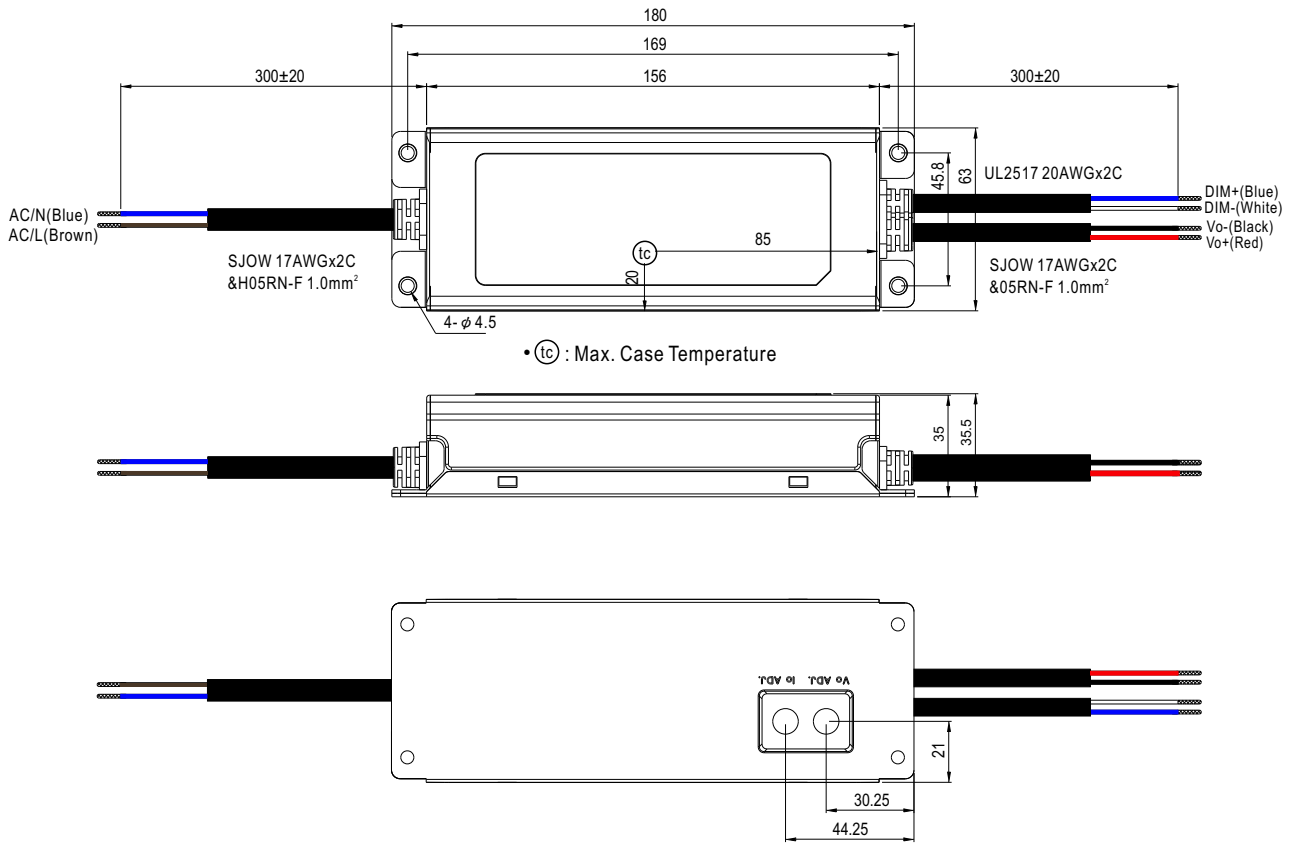
CASE NO.: 243A Unit:mm



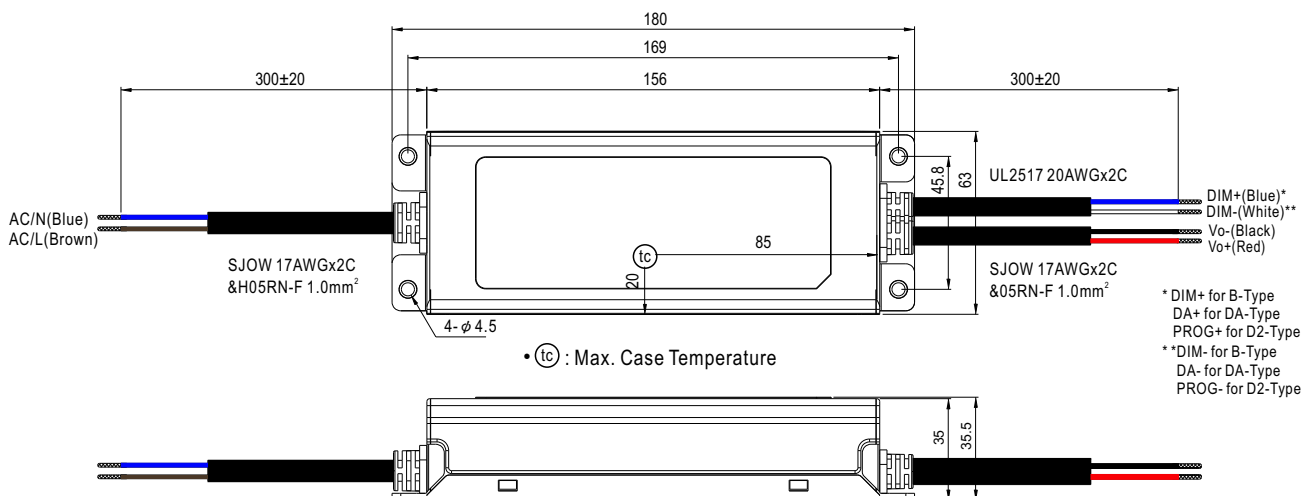
※ A-Type



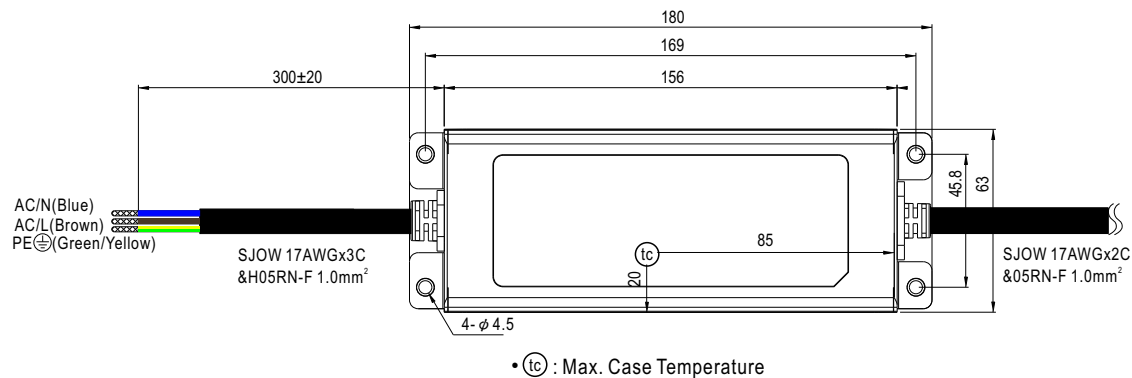
※ AB-Type



※ B/DA/D2-Type



※ 3Y Model (3-wire input)



◎ Note1: Please connect the case to PE for the complete EMC deliverance and safety use.

◎ Note2: Please contact MEAN WELL for input wiring option with PE.

■ Installation Manual

Please refer to : <http://www.meanwell.com/manual.html>