



E-Star Power Development Co., Ltd. (E-STAR)  
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**48~75W LED Driver power supply < ELG-75**



**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

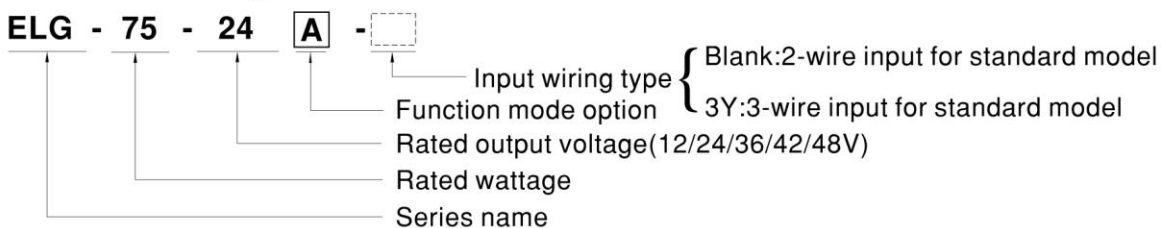
**Applications**

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

**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**



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
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



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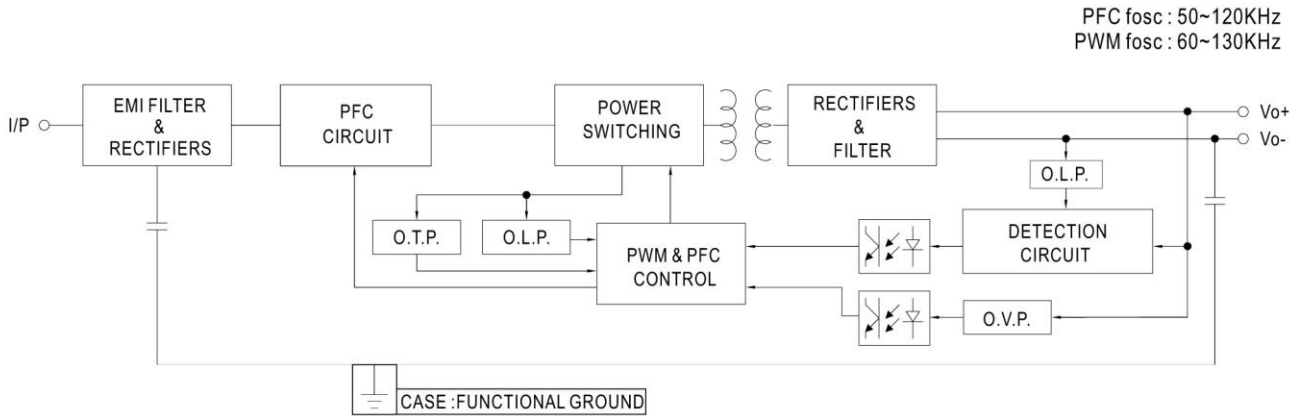
**SPECIFICATION**

MODEL		ELG-75-12 <input type="checkbox"/>	ELG-75-24 <input type="checkbox"/>	ELG-75-36 <input type="checkbox"/>	ELG-75-42 <input type="checkbox"/>	ELG-75-48 <input type="checkbox"/>	
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-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-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 (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 (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)					
	TOTAL HARMONIC DISTORTION	THD < 20%(@load ≥ 50%/115VAC, 230VAC; @load ≥ 75%/277VAC) (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 Standby power consumption <0.5W for B / DA-Type					
PROTECTION	OVER CURRENT	95 ~ 108% 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	
	OVER TEMPERATURE	Shut down output voltage, re-power on to recover					
ENVIRONMENT	WORKING TEMP.	Tcase=-40 ~ +85°C (Please refer to " OUTPUT LOAD vs TEMPERATURE" section)					
	MAX. CASE TEMP.	Tcase=+85°C					
	WORKING HUMIDITY	20 ~ 95% RH non-condensing					
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH					
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 60°C)					
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; ENEC EN61347-1, EN61347-2-13 independent, EN62384; IP65 or IP67; GB19510.1, GB19510.14 approved					
	DALI STANDARDS	Compliance to IEC62386-101, 102, 207 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°C / 70% RH					
	EMC EMISSION	Compliance to EN55015,EN61000-3-2 Class C (@load ≥ 50%); EN61000-3-3; GB17743, GB17625.1					
	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)					
OTHERS	MTBF	1172K hrs min. Telcordia SR-332 (Bellcore) 331Khrs min. MIL-HDBK-217F (25°C)					
	DIMENSION	180*63*35.5mm (L*W*H)					
	PACKING	0.8Kg;16pcs/13.4Kg/0.67CUFT					
NOTE	<ol style="list-style-type: none"> <li>All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25°C of ambient temperature.</li> <li>Please refer to "DRIVING METHODS OF LED MODULE".</li> <li>Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &amp; 47uf parallel capacitor.</li> <li>Tolerance : includes set up tolerance, line regulation and load regulation.</li> <li>De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details.</li> <li>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.</li> <li>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.</li> <li>This series meets the typical life expectancy of &gt;50,000 hours of operation when Tcase, particularly (Tc) point (or TMP, per DLC), is about 70°C or less.</li> </ol>						



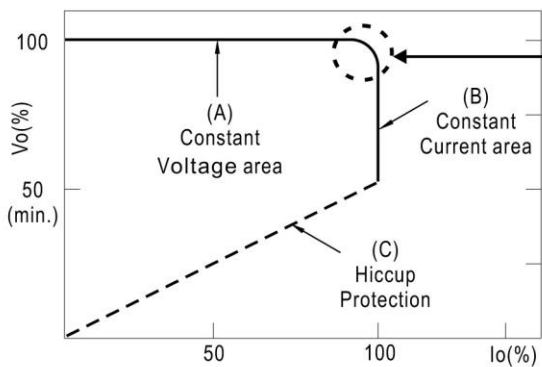
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**Block Diagram**



**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 (%)

In the constant current region, the highest voltage at the output of the driver depends on the configuration of the end systems.

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**DIMMING OPERATION**

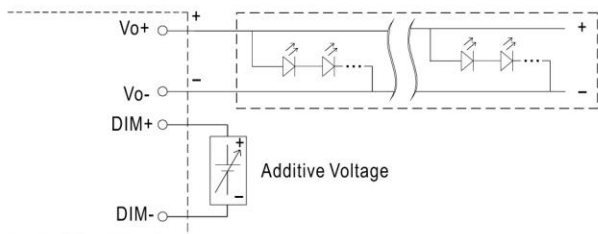


\* DIM+ for B-Type  
 DA+ for DA-Type  
 PROG+ for D2-Type  
 \*\*DIM- for B-Type  
 DA- for DA-Type  
 PROG- for D2-Type

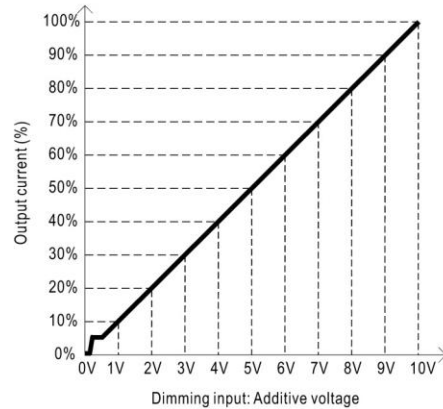
**※ 3 in 1 dimming function (for B-Type)**

- 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.)

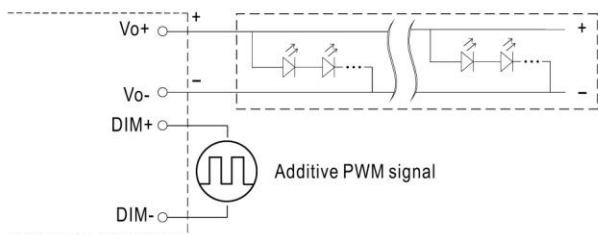
◎ Applying additive 0 ~ 10VDC



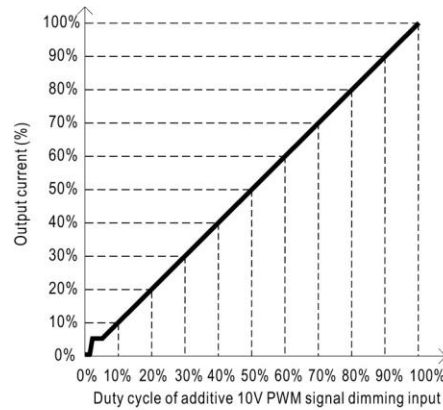
"DO NOT connect "DIM- to Vo-"



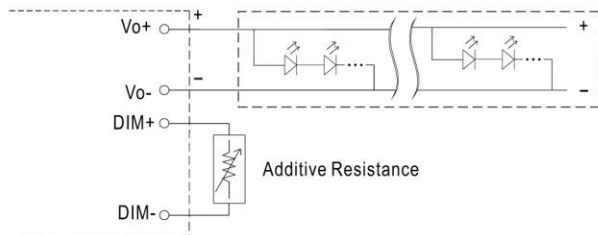
◎ Applying additive 10V PWM signal (frequency range 100Hz ~ 3KHz):



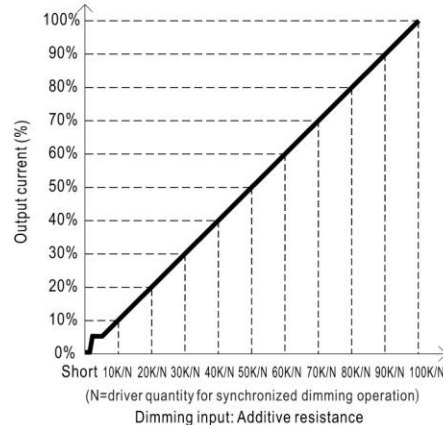
"DO NOT connect "DIM- to Vo-"



◎ Applying additive resistance:



"DO NOT connect "DIM- to Vo-"



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.



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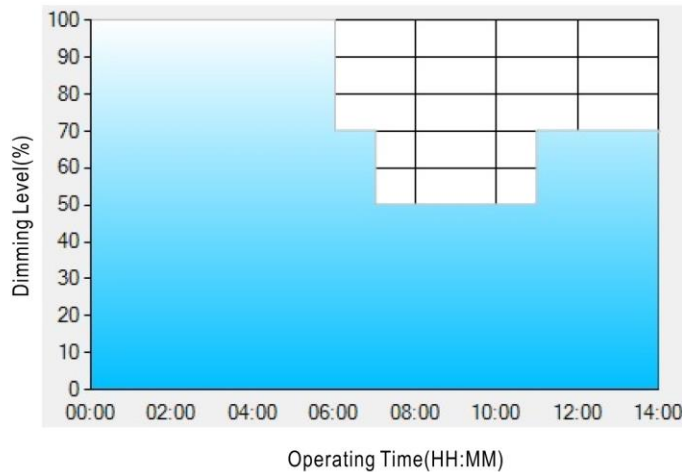
※ **DALI Interface (primary side; for DA-Type)**

- 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:

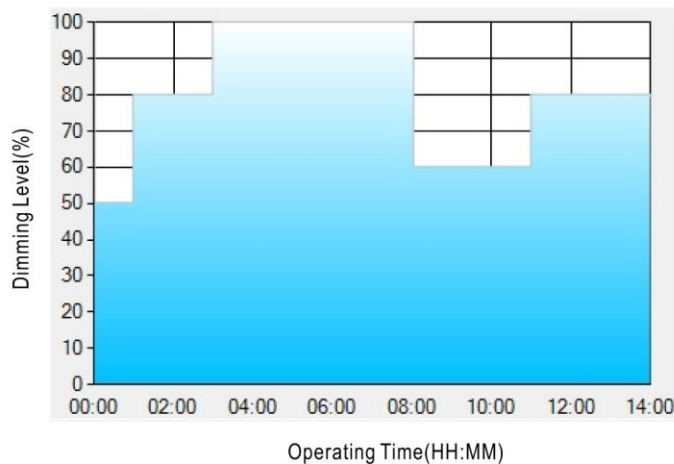
	T1	T2	T3	T4
TIME**	06:00	07:00	11:00	---
LEVEL**	100%	70%	50%	70%

\*\* : 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.



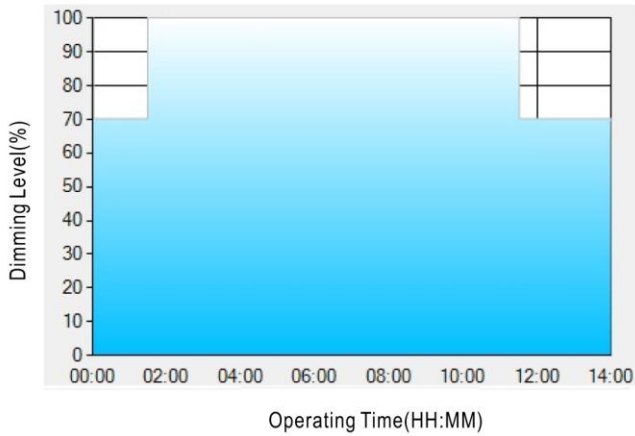
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Ex: © D03-Type: the profile recommended for tunnel lighting



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.

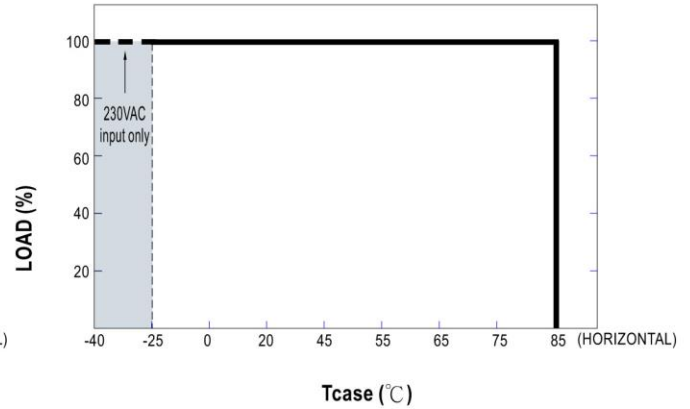
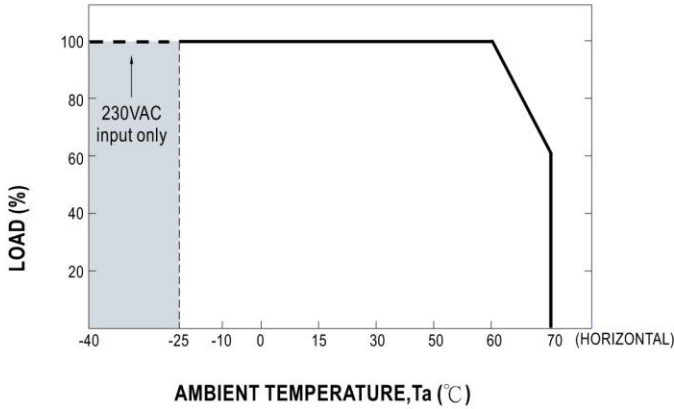
[3] The power supply will switch to the constant current level at 70% in turn, starting from 5:00am, which is 11:00 after the power supply turns on.

The constant current level remains till 6:30am, which is 14:00 after the power supply turns on.

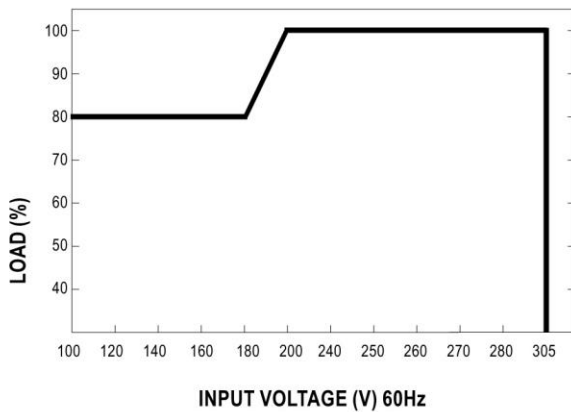


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**OUTPUT LOAD vs TEMPERATURE**



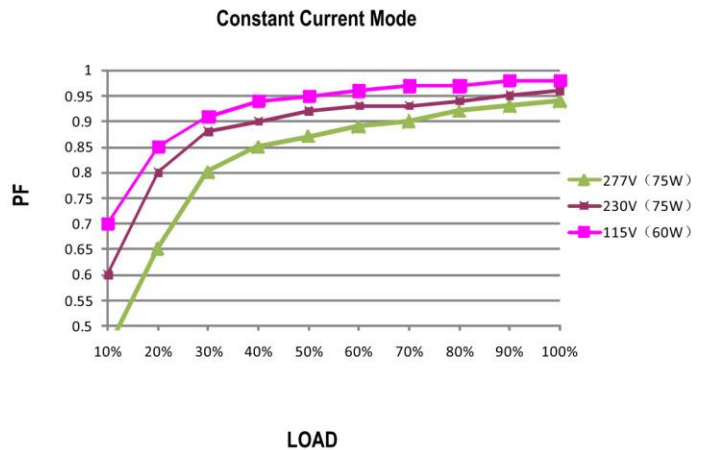
**STATIC CHARACTERISTIC**



※ De-rating is needed under low input voltage.

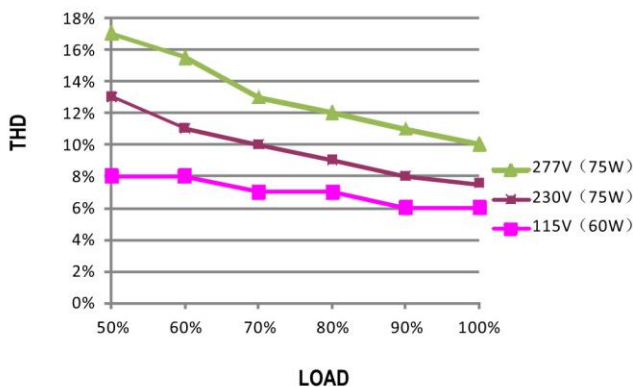
**POWER FACTOR (PF) CHARACTERISTIC**

※  $T_{case}$  at 75°C



**TOTAL HARMONIC DISTORTION (THD)**

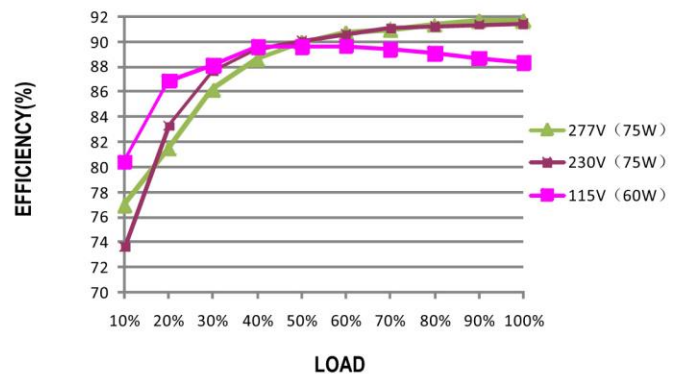
※ 48V Model,  $T_{case}$  at 75°C



**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





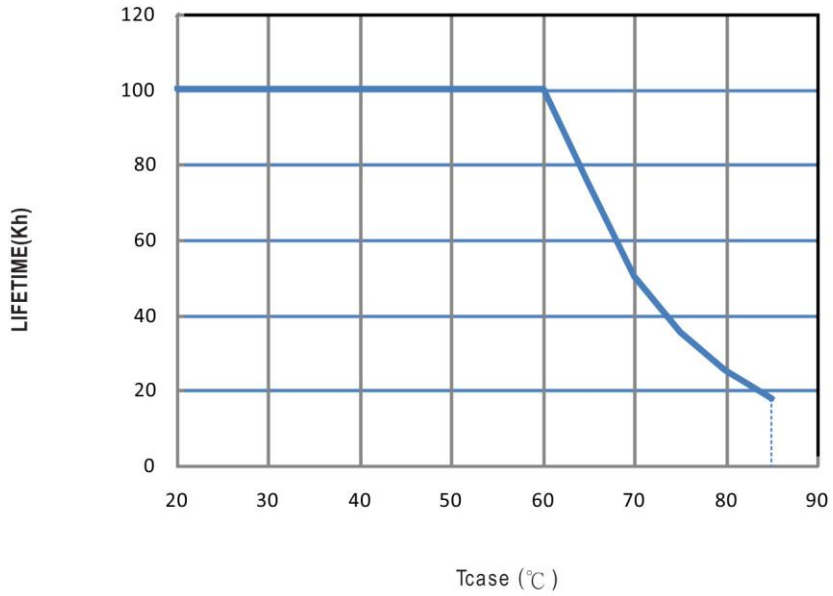
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■ LIFE TIME





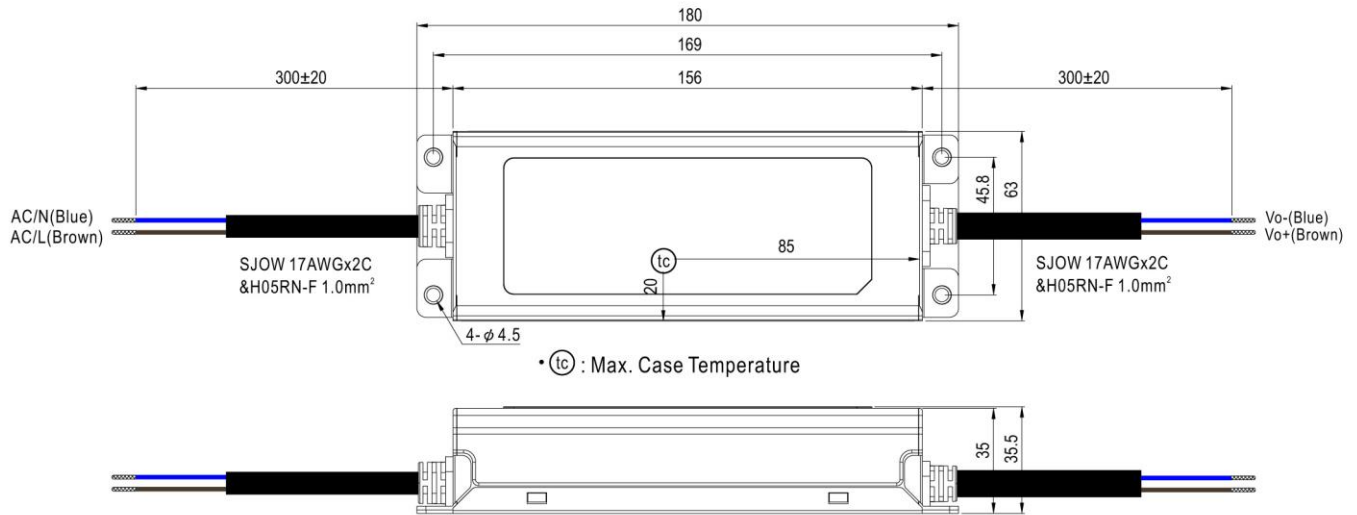


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■ Mechanical Specification

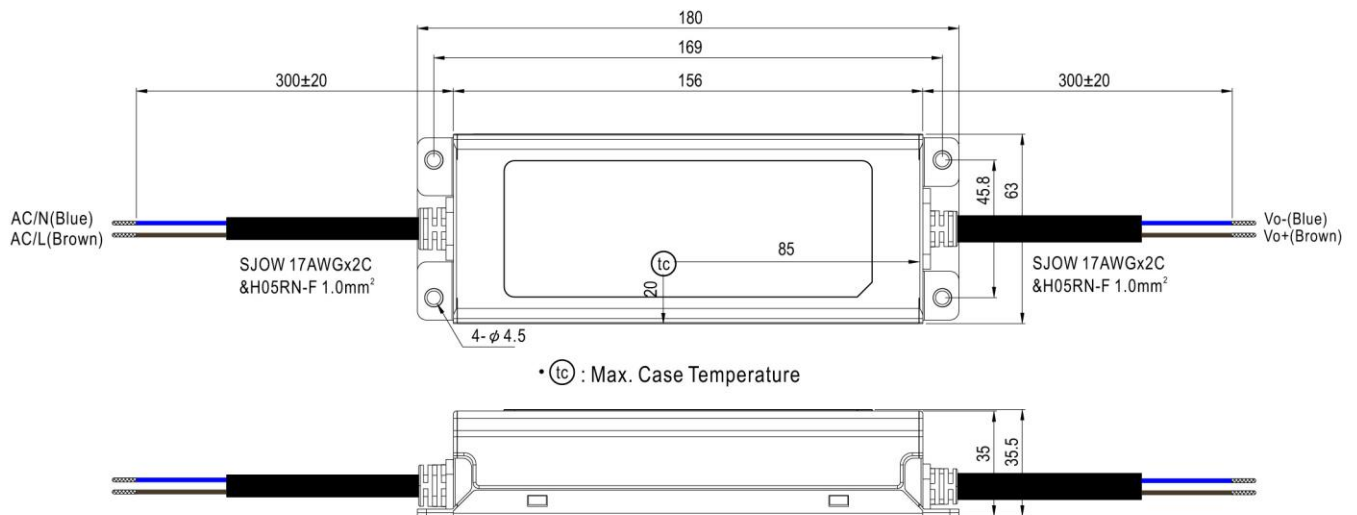
※ Blank-Type

CASE NO.: 243A Unit:mm

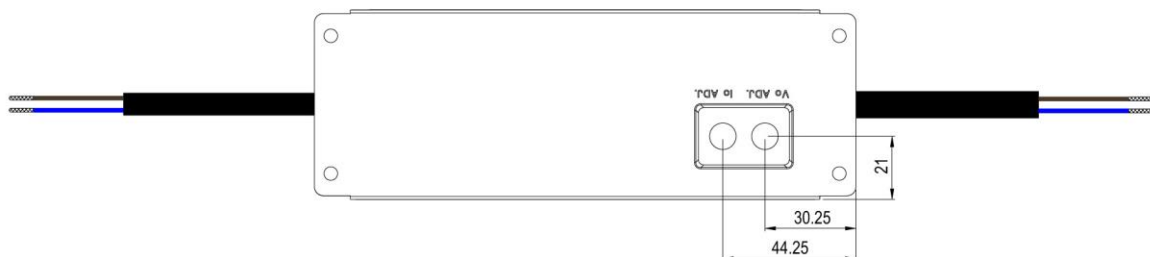


• (tc) : Max. Case Temperature

※ A-Type



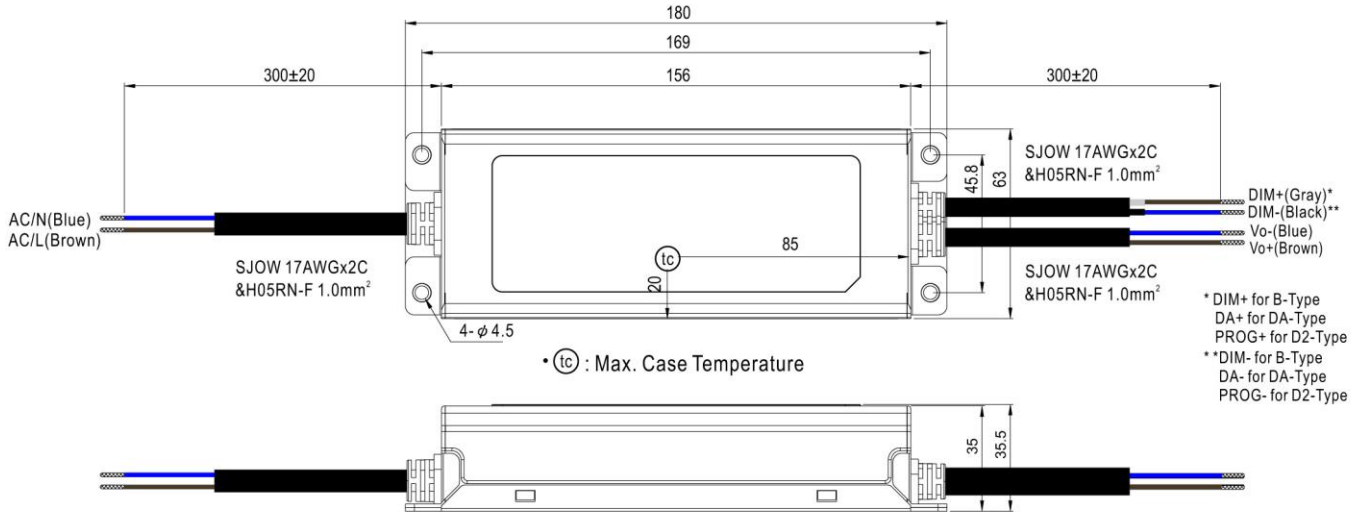
• (tc) : Max. Case Temperature



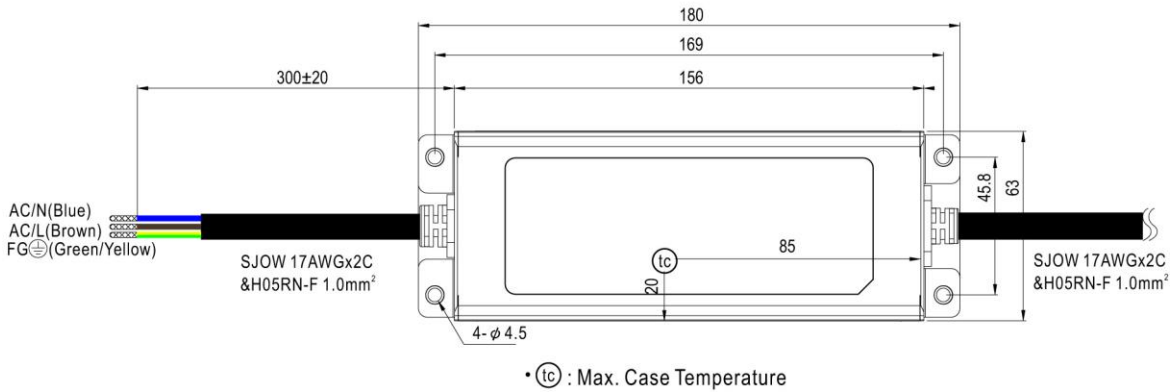


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※ B/DA/D2-Type



※ 3Y Model (3-wire input)



- Note1: Please connect the case to FG for the complete EMC deliverance.
- Note2: Please contact MEAN WELL for input wiring option with FG.