MEAN WELL

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Komponenten für Steuerungsbau und Industrieelektronik

SELV **IP67** (for H/M Type)   **CB**

■ Features

· Full power at 65~100% max current (Constant Power)
· Built-in active PFC function
· IP67 design for indoor or outdoor installations
· Function options: output adjustable via potentiometer;
  3 in 1 dimming (dim-to-off) ; DALI dimming
· Typical lifetime>50000 hours
· 5 years warranty

■ Applications

· LED bay lighting
· LED stage lighting
· LED spot lighting
· LED fishing lighting
· LED horticulture lighting
· Stadium lighting

■ Description

ELGC-300 series is a 300W LED AC/DC driver featuring the constant power mode and high voltage output. ELGC-300 operates from 100~305VAC and offers models with different rated current ranging between 1300mA and 8000mA. Thanks to the high efficiency up to 94.5%, with the fanless design, the entire series is able to operate for -40℃~+85℃ case temperature under free air convection. The design of metal housing and IP67 ingress protection level allows this series to fit both indoor and outdoor applications. Moreover the innovative environment-adaptive capability allows this series to reliably light on the LEDs for all kinds of application environments in almost any spots that may install LED luminaires in the world. ELGC-300 is equipped with various function options, such as dimming methodologies, so as to provide the optimal design flexibility for LED lighting system.

■ Model Encoding

ELGC - 300 - L - A

Function options
Rated output current(1400/2800/5600mA)
Rated wattage
Series name
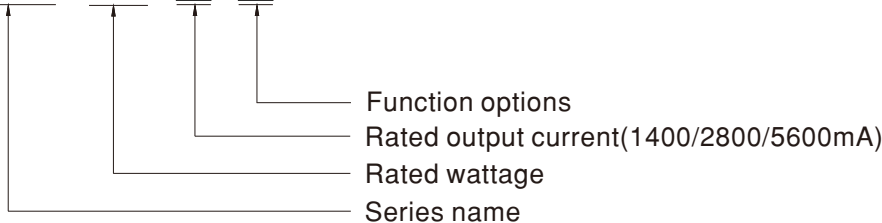
Type	IP Level	Function	Note
A	IP67	output constant power adjustable via built-in potentiometer	In Stock
AB	IP67	output constant power adjustable via built-in potentiometer + 3 in 1 dimming function (0~10Vdc, 10V PWM signal and resistance)	In Stock
DA	IP67	DALI control technology.	In Stock
D2	IP67	Built-in Smart timer dimming and programmable function.	By request

SPECIFICATION

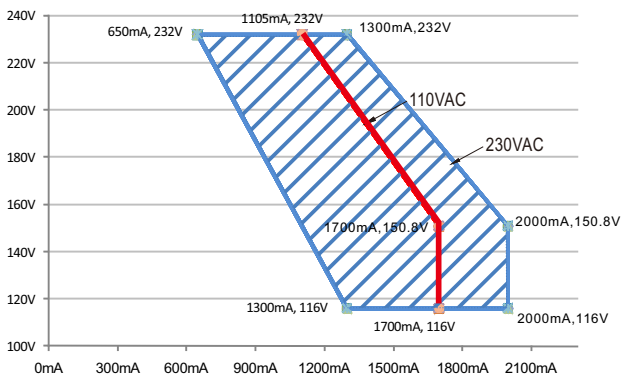| MODEL			ELGC-300-L-☐	ELGC-300-M-☐	ELGC-300-H-☐
OUTPUT	**DEFAULT CURRENT**		1400mA	2800mA	5600mA
	RATED POWER	**(200 ~ 305VAC)**	301.6W	301.6W	301.6W
		(100 ~ 180VAC)	256.36W	256.36W	256.36W
	CONSTANT CURRENT REGION		116 ~232V	58 ~ 116V	29 ~ 58V
	FULL POWER CURRENT RANGE		1300~2000mA	2600~4000mA	5200~8000mA
	OPEN CIRCUIT VOLTAGE (max.)		240V	120V	62V
	CURRENT ADJ. RANGE	**(200 ~ 305VAC)**	650~2000mA	1300~4000mA	2600~8000mA
		(100 ~ 180VAC)	650~1700mA	1300~3400mA	2600~6800mA
	CURRENT RIPPLE		5.0% max. @rated current		
	CURRENT TOLERANCE		±5%		
	SET UP TIME		500ms/230VAC, 500ms/115VAC		
INPUT	**VOLTAGE RANGE** Note.2		100 ~ 305VAC 142VDC ~ 431VDC (Please refer to "STATIC CHARACTERISTIC" ang " DRIVING METHODS OF LED MODULE"section)		
	FREQUENCY RANGE		47 ~ 63Hz		
	POWER FACTOR (Typ.)		PF≧0.97 / 115VAC, PF≧0.95 / 230VAC, PF≧0.92 / 277VAC at full load (Please refer to "Power Factor Characteristic" section)		
	TOTAL HARMONIC DISTORTION		THD< 10% (@ load≧50% at 115VAC/230VAC ,@load≧75% at 277VAC) Please refer to "TOTAL HARMONIC DISTORTION (THD)" section		
	EFFICIENCY (Typ.)		94.5%	93.5%	92.5%
	AC CURRENT (Typ.)		3A / 115VAC 1.6A / 230VAC 1.3A / 277VAC		
	INRUSH CURRENT(Typ.)		COLD START 45A(twidth=1200μs measured at 50% Ipeak) at 230VAC; Per NEMA 410		
	MAX. NO. of PSUs on 16A CIRCUIT BREAKER		2 unit(circuit breaker of type B) / 4 units(circuit breaker of type C) at 230VAC		
	LEAKAGE CURRENT		<0.75mA / 277VAC		
	STANDBY POWER CONSUMPTION Note.5		Standby power consumption <0.5W for AB / DA-Type(Dimming OFF)		
PROTECTION	**SHORT CIRCUIT**		Constant current limiting, recovers automatically after fault condition is removed		
	OVER VOLTAGE		241 ~ 275V	121 ~ 145V	61 ~ 78V
			Shut down output voltage, re-power on to recovery		
	OVER TEMPERATURE		Tcase>85℃ ±5℃,derate power automatically by 6%/℃ max		
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 non-condensing		
	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; ENEC EN61347-1, EN61347-2-13 independent, EN62384; EAC TP TC 004;GB19510.1 , GB19510.14; IP67 approved		
	WITHSTAND VOLTAGE		I/P-O/P:3.75KVAC I/P-FG:2KVAC 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		
	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**		565K hrs min. Telcordia SR-332(Bellcore) ; 166 K hrs min. MIL-HDBK-217F (25℃)		
	LIFETIME Note.4		50000 hrs min.		
	DIMENSION		246*77*39.5mm (L*W*H)		
	PACKING		1.45Kg;9pcs/14Kg/0.76CUFT		
NOTE			1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25℃ of ambient temperature. 2. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details. 3. 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. 4. This series meets the typical life expectancy >50,000 hours of operation when Tcase, particularly tc point (or TMP, per DLC), is 70℃ or less. 5. To fulfill requirements of the latest ErP regulation for lighting fixture, this LED driver can only be used behind a switch without permanently connected to the mains. 6. Please refer to the warranty statement on MEAN WELL's website at http://www.meanwell.com 7.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).		

■ BLOCK DIAGRAM
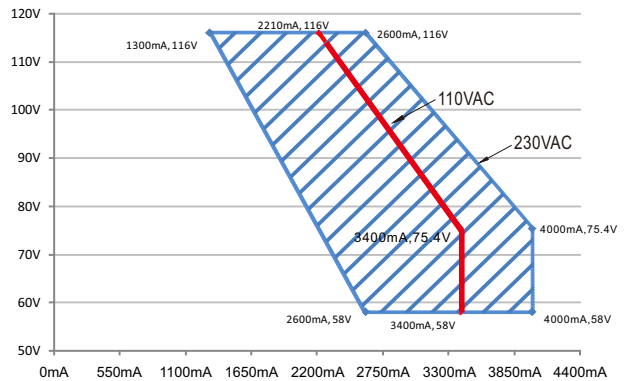
PFC fosc : 45KHz
PWM fosc : 100KHz
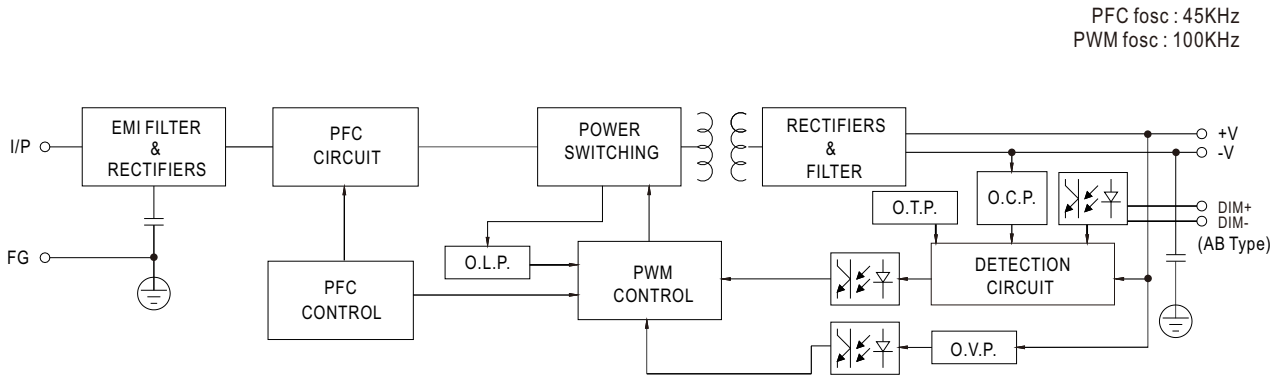
■ DRIVING METHODS OF LED MODULE

※ I−V Operating Area

◎ ELGC-300-L

◎ ELGC-300-M

◎ ELGC-300-H

■ DIMMING OPERATION

AC/N(Blue)
AC/L(Brown)
FG⏚(Green/Yellow)

ELGC-300

DIM+(Blue)*
DIM-(white)**
Vo-(Black)
Vo+(Red)

* DIM+ for AB Type
  DA+ for DA Type
  PROG+ for D2 Type
**DIM- for AB Type
  DA- for DA Type
  PROG- for D2 Type
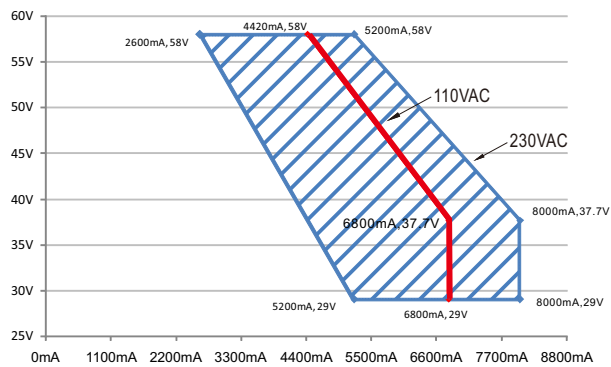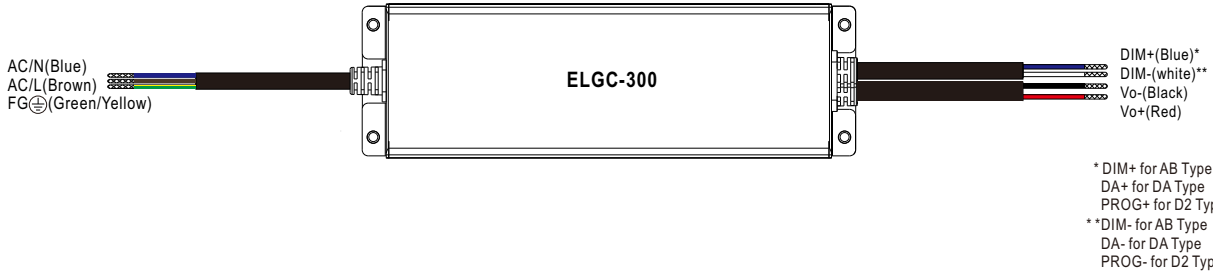
※ **3 in 1 dimming function (for AB-Type)**

· 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 μ A (typ.)

◎ Applying additive 0 ~ 10VDC

Additive Voltage

"DO NOT connect "DIM- to Vo-"

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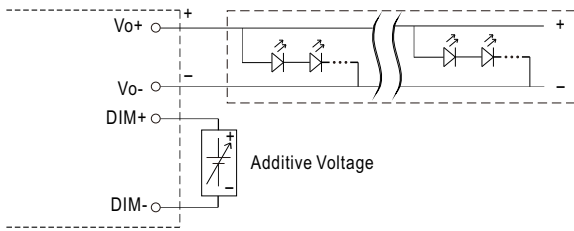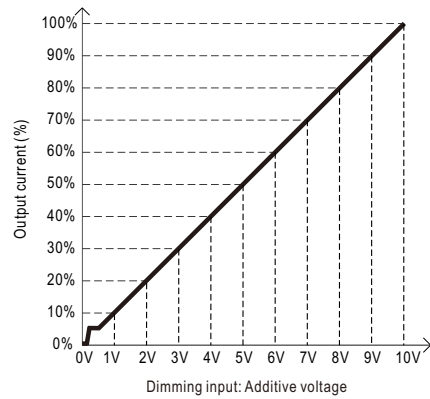
◎ Applying additive 10V PWM signal (frequency range 100Hz ~ 3KHz):

Additive PWM signal

"DO NOT connect "DIM- to Vo-"

Duty cycle of additive 10V PWM signal dimming input
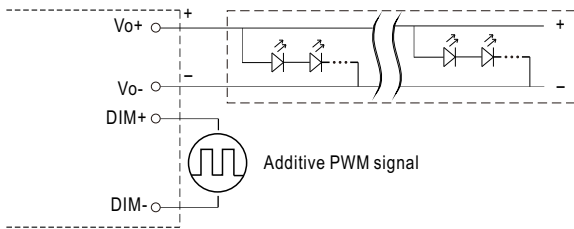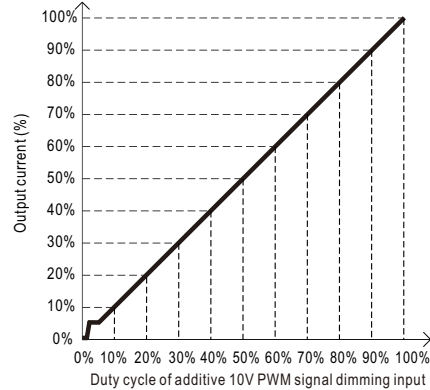
◎ Applying additive resistance:

Additive Resistance

"DO NOT connect "DIM- to Vo-"

(N=driver quantity for synchronized dimming operation)
Dimming input: Additive resistance
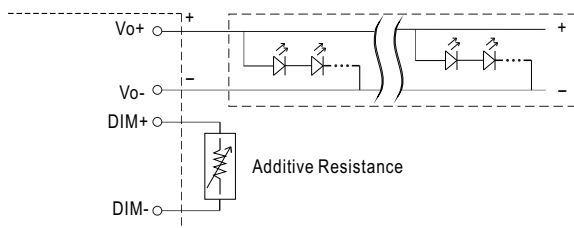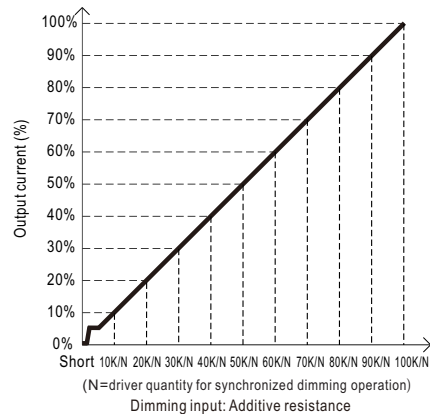
Note : 1. Min. dimming level is about 8% and the output current is not defined when 0%< Iout<8%.
      2. The output current could drop down to 0% when dimming input is about 0 Ω or 0Vdc, or 10V PWM signal with 0% duty cycle.

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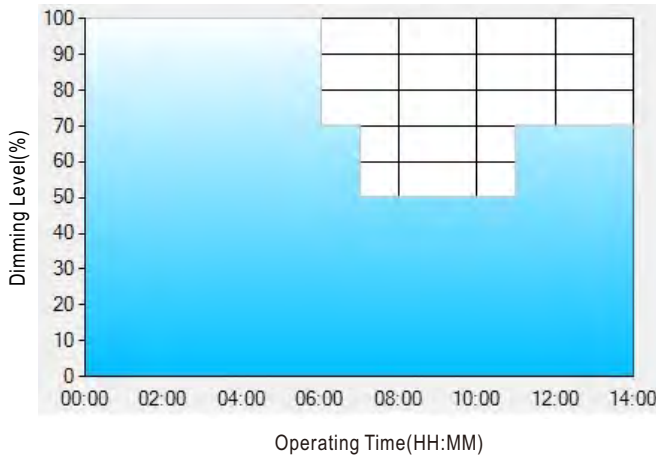
Set up for D01-Type in Smart timer dimming software program:

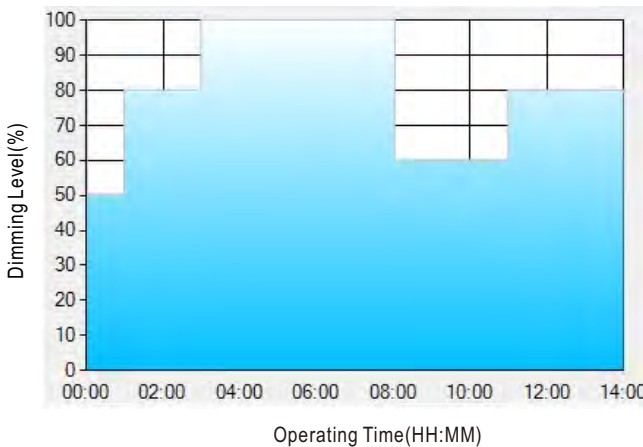|	T1	T2	T3	T4
TIME**	06:00	07:00	11:00	---
LEVEL**	100%	70%	50%	70%

**: 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

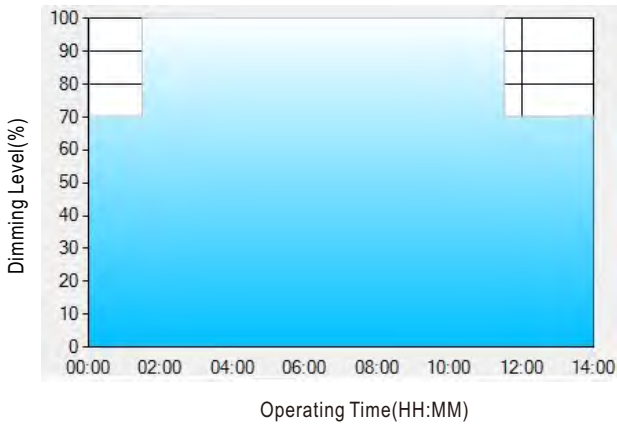Set up for D02-Type in Smart timer dimming software program:

	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

Dimming Level(%)

Operating Time(HH:MM)

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.
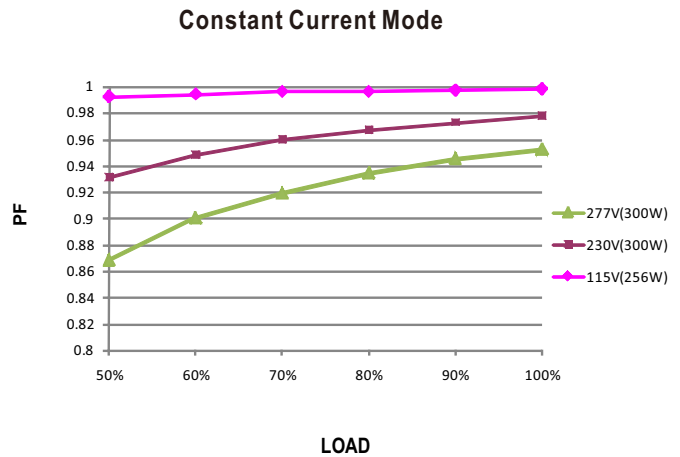
■ OUTPUT LOAD vs TEMPERATURE

AMBIENT TEMPERATURE,Ta (℃)
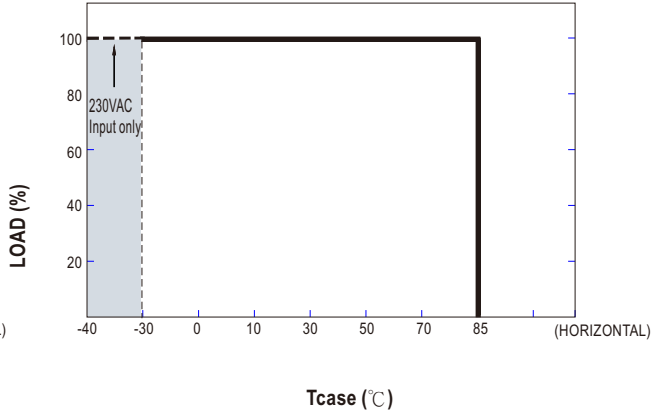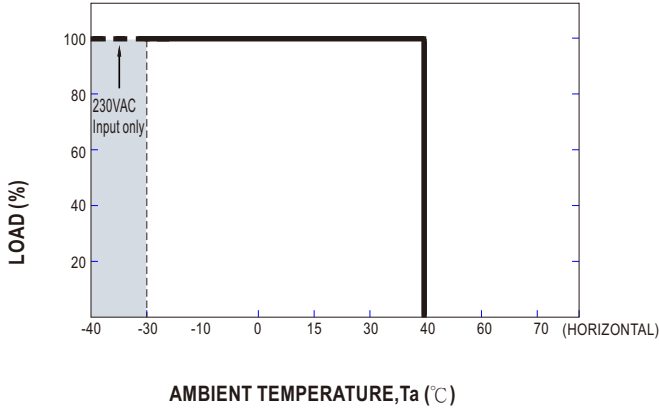
Tcase (℃)

◎ Tcase>85℃ ±5℃ derate power automatically

■ STATIC CHARACTERISTIC

INPUT VOLTAGE (V) 60Hz
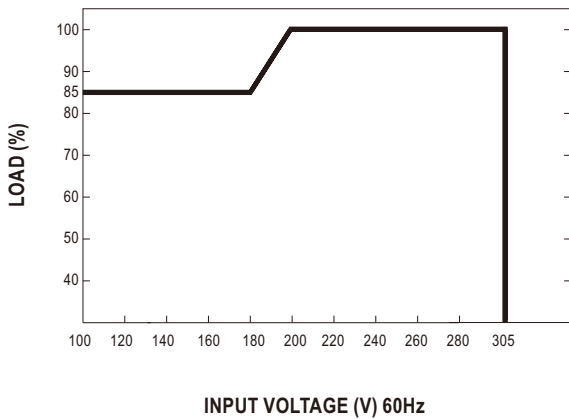
■ POWER FACTOR (PF) CHARACTERISTIC

※ Tcase at 75℃

Constant Current Mode
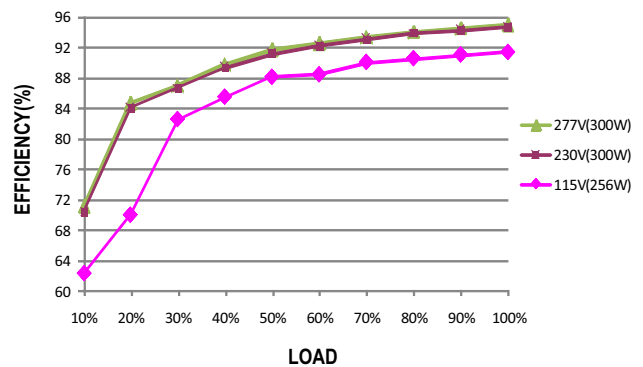

LOAD

■ TOTAL HARMONIC DISTORTION (THD)

※ ELGC-300-L Model, Tcase at 75℃
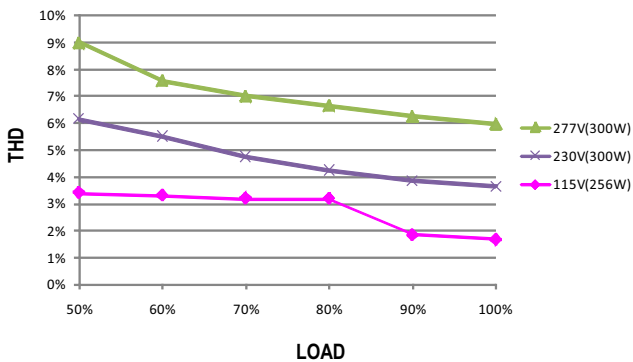
LOAD

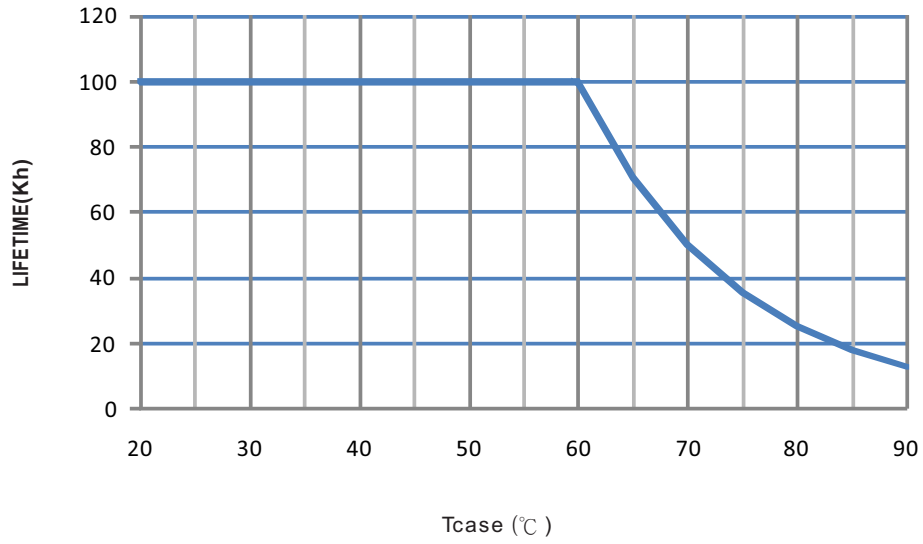## ■ EFFICIENCY vs LOAD

ELGC-300 series possess superior working efficiency that up to 94.5% can be reached in field applications.
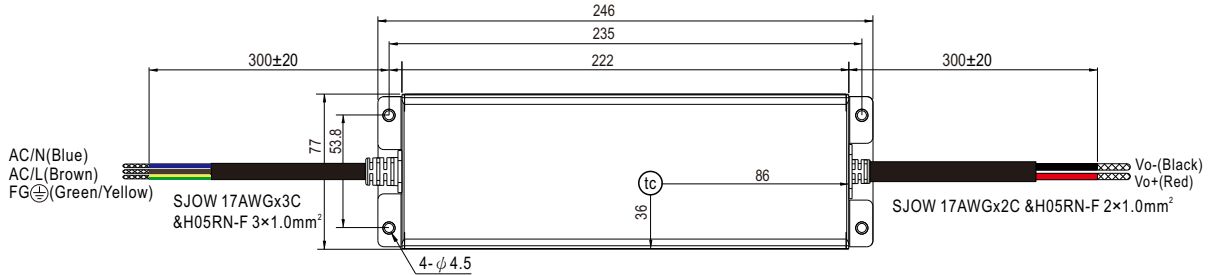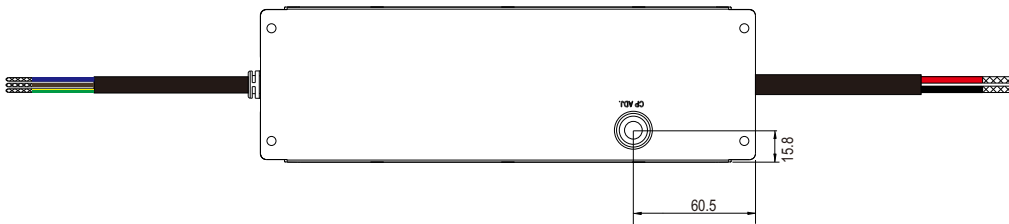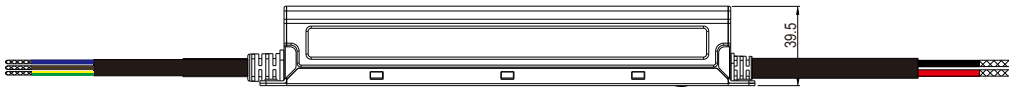
※ ELGC-300-L Model, Tcase at 75℃

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■ **LIFE TIME**
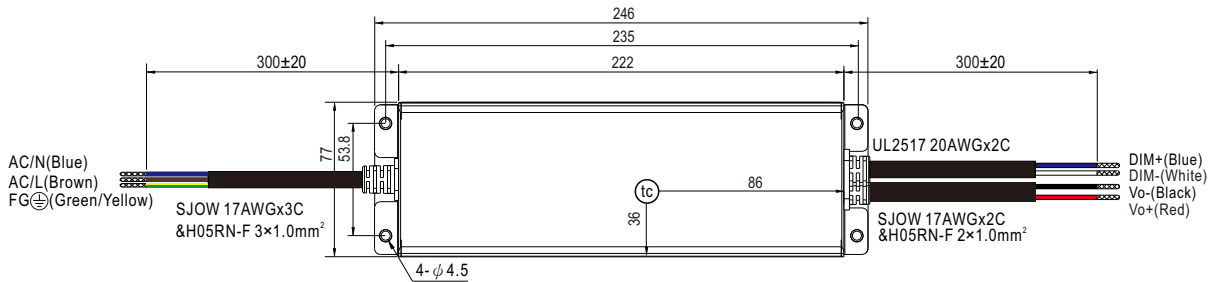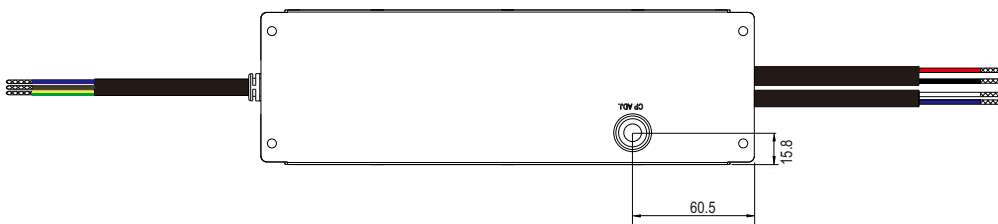
■ **MECHANICAL SPECIFICATION**

Case No.:266A   Unit:mm

※ **A-Type**

246
235
300±20
222
300±20

77
53.8

AC/N(Blue)
AC/L(Brown)
FG⏚(Green/Yellow)

SJOW 17AWGx3C
&H05RN-F 3×1.0mm²

tc

86

36

Vo-(Black)
Vo+(Red)

SJOW 17AWGx2C &H05RN-F 2×1.0mm²

4-φ4.5

• tc : Max. Case Temperature

39.5

CP ADJ.

15.8

60.5

※ **AB-Type**

246
235
300±20
222
300±20

77
53.8

AC/N(Blue)
AC/L(Brown)
FG⏚(Green/Yellow)

SJOW 17AWGx3C
&H05RN-F 3×1.0mm²

tc

86

36

UL2517 20AWGx2C

DIM+(Blue)
DIM-(White)
Vo-(Black)
Vo+(Red)

SJOW 17AWGx2C
&H05RN-F 2×1.0mm²

4-φ4.5

• tc : Max. Case Temperature

39.5

CP ADJ.

15.8

60.5

※ **DA/D2-Type**

246
235
222

300±20
300±20

77
53.8

AC/N(Blue)
AC/L(Brown)
FG⏚(Green/Yellow)
SJOW 17AWGx3C
&H05RN-F 3×1.0mm²

4-φ4.5

36
86

tc

UL2517 20AWG*2C

SJOW 17AWGx2C
&H05RN-F 2×1.0mm²

DA+/PROG+(Blue)*
DA-/PROG-(White)**
Vo-(Black)
Vo+(Red)

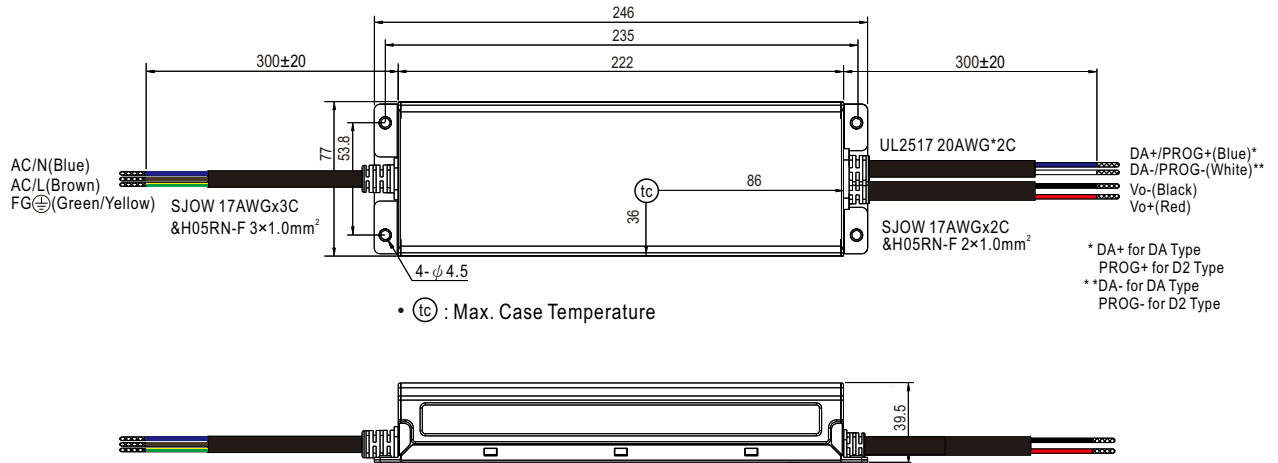* DA+ for DA Type
PROG+ for D2 Type
* *DA- for DA Type
PROG- for D2 Type

• tc : Max. Case Temperature

39.5

■ INSTALLATION MANUAL

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