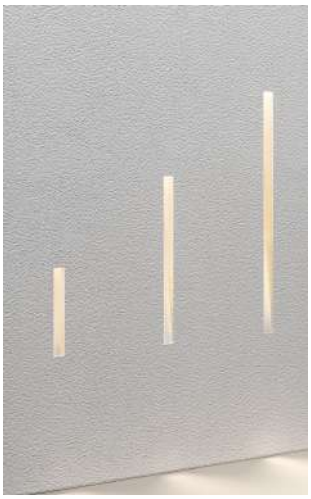
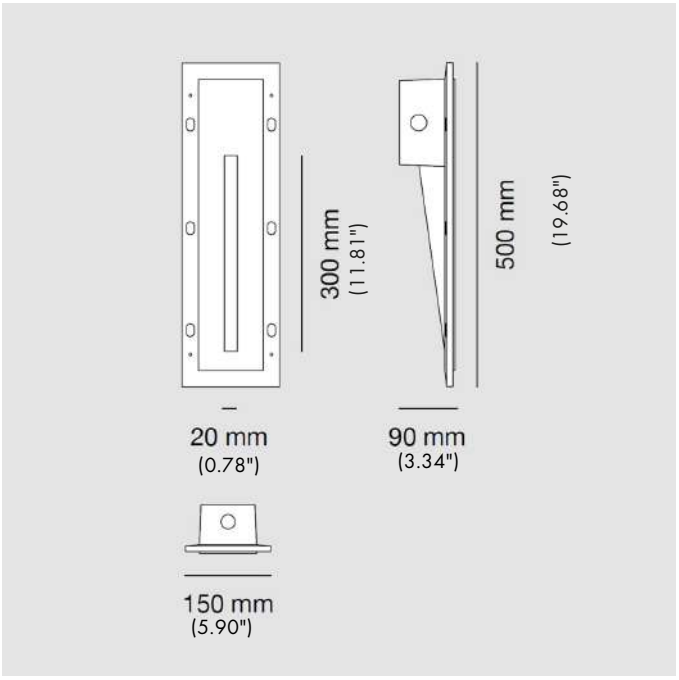
Designed by :
9010 it



handmade in Italy

IP65



HINT

RECESSED Pathmarkers / BETALY
Surface finish : BETALY

MODEL:

Code	1304B-392-30172
Product family	RECESSED LAMPS
Type	Pathmarkers

MATERIAL:

BETALY®

INSTALLATION:

Isolation Class:	II
IP:	IP65
Installation:	Recessed
Weight:	3,9 Kg

LIGHT SOURCE:

Light source	LED
Power :	4W
Tension:	24Vdc
Lumen:	400lm
Color temperature :	3000K
CRI:	80
Power supply :	Pckmrc Nmucp Qsnnjw &qcc n_ecq 0 rm 5'

FINISH OPTIONS:

392

On request available in white dyeable color

ACCESORIES:

/ . /, Non-dimmable
/ . 0, 0-10V dimmable
/ . 1, Triac dimmable
/ . 2, Mrfcp bgk kgle rwncq ml pcoscqr

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USA

Updated 04/21/23

BULLARD BOLLARDS

DRIVER SPEC SHEET - 40W PWM Output LED Driver 026.303

Features

- Constant Voltage PWM style output with frequency 1.47kHz
- Plastic housing with class II design
- Built-in active PFC function
- Class 2 power unit
- No load power consumption <0.5W
- Fully encapsulated with IP67 level
- Function: 3 in 1 dimming (dim-to-off)
- Typical lifetime>50000 hours

Applications

- LED strip lighting
- Indoor LED lighting
- LED decorative lighting
- LED architecture lighting
- Type “HL” for use in Class I, Division 2 hazardous (Classified) location.

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40W PWM Output LED Driver

026.303

SPECIFICATION

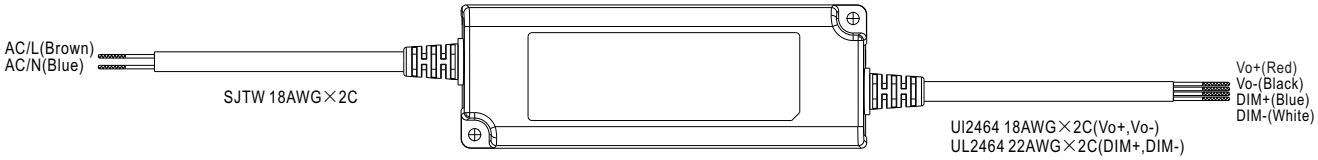
MODEL		026.303
OUTPUT	DC VOLTAGE	24V
	RATED CURRENT	1.67A
	RATED POWER	40.08W
	DIMMING RANGE	0 ~ 100%
	PWM FREQUENCY (Typ.)	1.47kHz
	SETUP, RISE TIME Note.2	500ms, 80ms 115VAC / 230VAC
	HOLD UP TIME (Typ.)	16ms/115VAC or 230VAC
INPUT	VOLTAGE RANGE Note.3	90 ~ 305VAC 127 ~ 431VDC (Please refer to "STATIC CHARACTERISTIC" section)
	FREQUENCY RANGE	47 ~ 63Hz
	POWER FACTOR (Typ.)	PF>0.97/115VAC, PF>0.95/230VAC, PF>0.92/277VAC @ full load (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)
	TOTAL HARMONIC DISTORTION	THD< 20%(@load≧60%/115VAC, 230VAC; @load≧75%/277VAC) (Please refer to "TOTAL HARMONIC DISTORTION" section)
	EFFICIENCY (Typ.)	89%
	AC CURRENT (Typ.)	0.6A / 115VAC 0.3A / 230VAC 0.25A / 277VAC
	INRUSH CURRENT (Typ.)	COLD START 50A(twidth=270μs measured at 50% Ipeak) at 230VAC; Per NEMA 410
	MAX. NO. of PSUs on 16A CIRCUIT BREAKER	9 units (circuit breaker of type B) / 16 units (circuit breaker of type C) at 230VAC
	LEAKAGE CURRENT	<0.25mA / 277VAC
	NO LOAD POWER CONSUMPTION	<0.5W
PROTECTION	OVERLOAD	108 ~ 130% rated output power
		Hiccup mode, recovers automatically after fault condition is removed
	SHORT CIRCUIT	Shut down o/p voltage, re-power on to recover
	OVER VOLTAGE	28 ~ 34V
		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 ~ +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 ~ 50℃)
	VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes
SAFETY & EMC	SAFETY STANDARDS Note.5	UL8750(type "HL"), UL879(for 12V,24V only), CSA C22.2 No. 250.13-12; ENEC EN61347-1, EN61347-2-13 independent, EN62384, IP67,BIS IS15885(for 12V,24V only), EAC TP TC 004,GB19510.1,GB19510.14 approved; Design refer to EN60335-1
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25℃/ 70% RH
	EMC EMISSION Note.6	Compliance to EN55015, EN61000-3-2 Class C (@load≧60%) ; EN61000-3-3,GB17743 and GB17625.1, EAC TP TC 020
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; EN61547, light industry level (surge immunity Line-Line 2KV),EAC TP TC 020
OTHERS	MTBF	995.5K hrs min. Telcordia SR-332 (Bellcore) ; 270.02K hrs min. MIL-HDBK-217F (25℃)
	DIMENSION	150*53*35mm (L*W*H)
	PACKING	0.49Kg;30pcs/15.7Kg/1.0CUFT

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. 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.
4. 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.
5. This series meets the typical life expectancy of >50,000 hours of operation when Tcase, particularly (tc) point (or TMP, per DLC), is about 75℃ or less.
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).
8. For any application note and IP water proof function installation caution, please refer our user manual before using.
   fdp.NE_DEL/FDP/daolpU/moc.llewnaem.www//:sptth

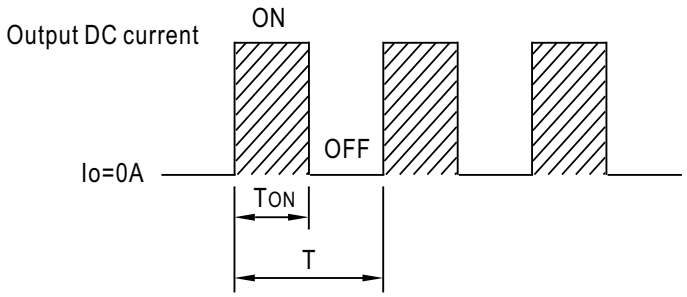
※ Product Liability Disclaimer：For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx

■ DIMMING OPERATION



※ Dimming principle for PWM style output

・Dimming is achieved by varying the duty cycle of the output current.



$$\text{Duty cycle}(\%) = \frac{T_{ON}}{T} \times 100\%$$

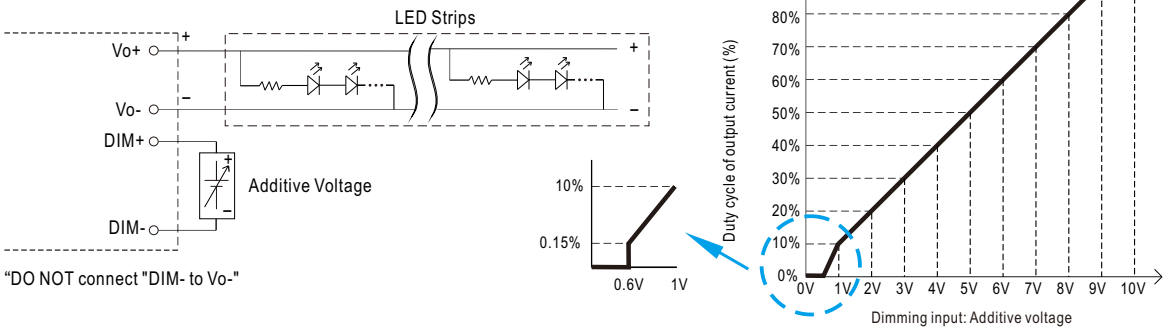
Output PWM frequency : 1.47kHz fixed (Typ.)

※ 3 in 1 dimming function (for Blank-Type)

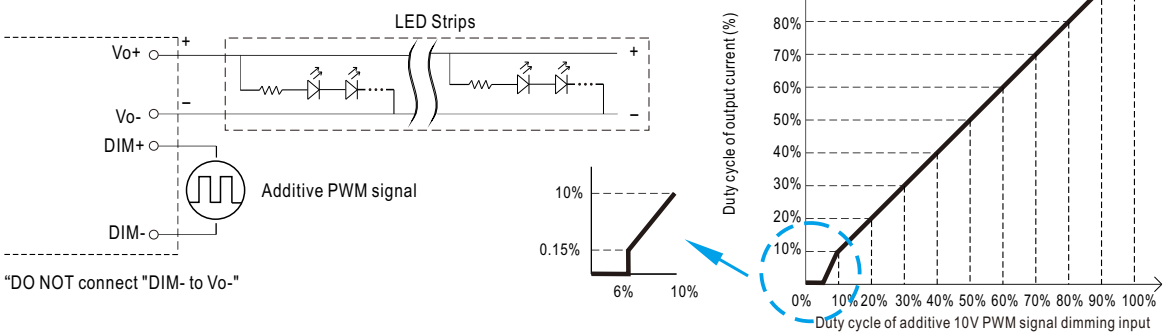
・Apply one of the three methodologies between DIM+ and DIM-: 0 ~ 10VDC, or 10V PWM signal or resistance.

・Dimming source current from power supply: 100μA (typ.)

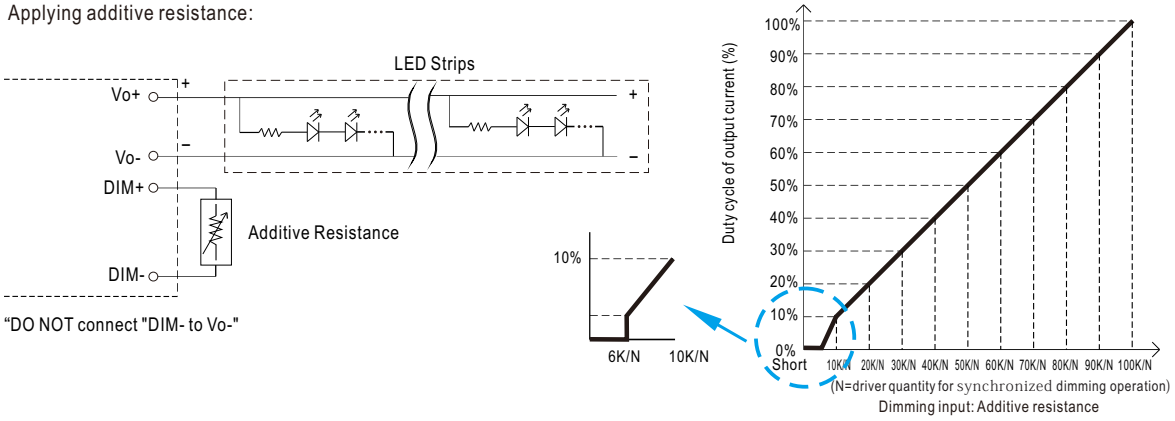
◎ Applying additive 0 ~ 10VDC



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

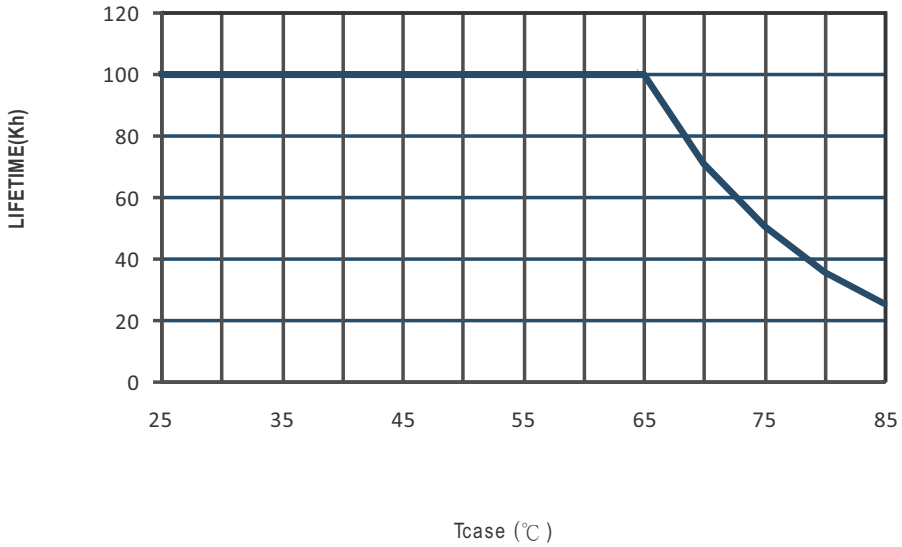


◎ Applying additive resistance:



Note : 1. Min. duty cycle of output current is about 6% and the output current is not defined when 0%< Iout<6%.
2. The duty cycle of output current could drop down to 0% when dimming input is about 0kΩ or 0Vdc, or 10V PWM signal with 0% duty cycle.

■ LIFE TIME



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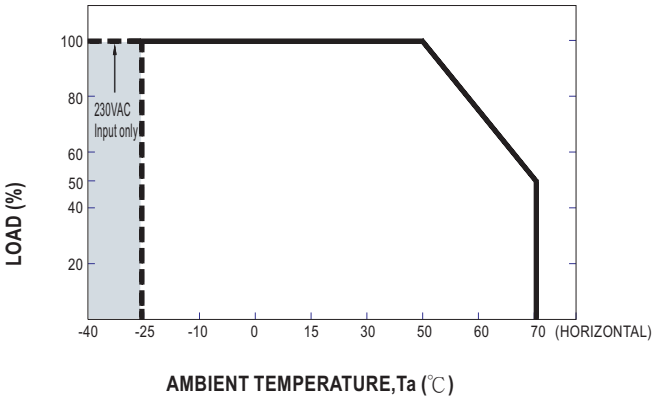
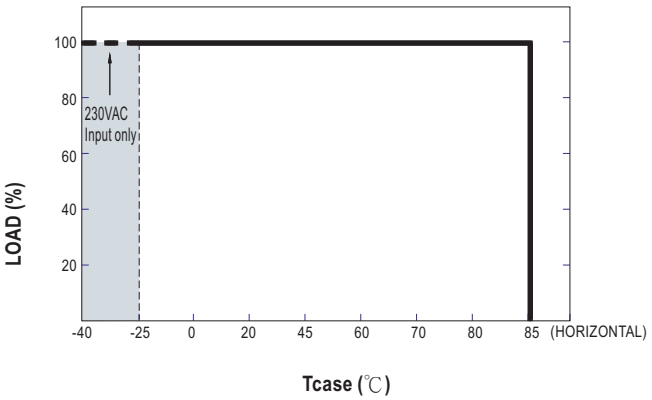
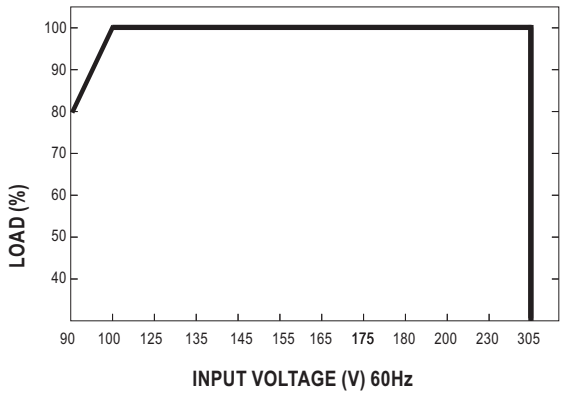
■ OUTPUT LOAD vs TEMPERATURE





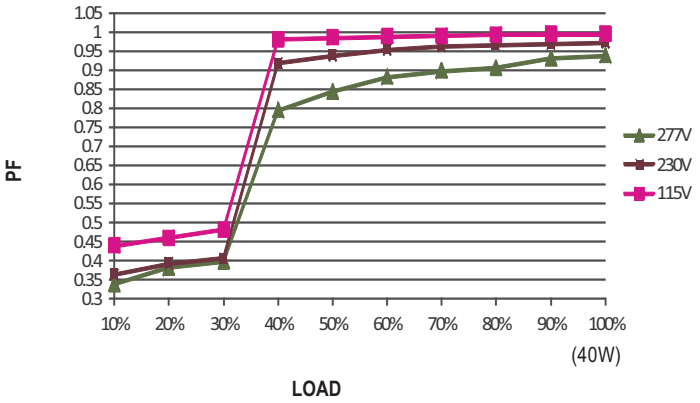
■ STATIC CHARACTERISTIC



※ De-rating is needed under low input voltage.

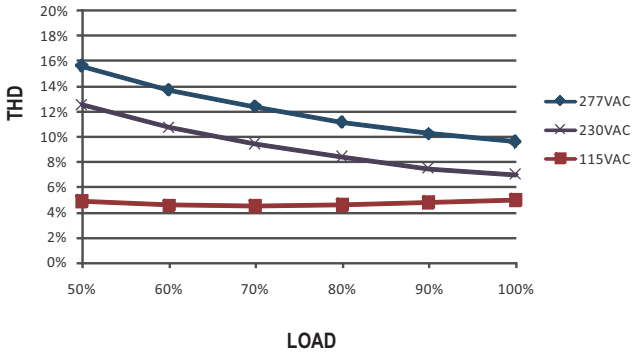
■ POWER FACTOR (PF) CHARACTERISTIC

※ 24V Model, Tcase at 75℃



■ TOTAL HARMONIC DISTORTION (THD)

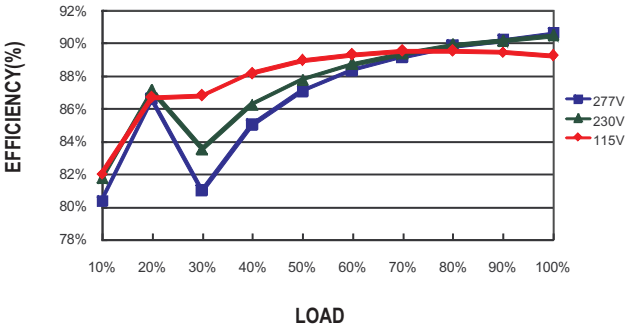
※ 48V Model, Tcase at 75℃



■ EFFICIENCY vs LOAD

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

※ 48V Model, Tcase at 75℃



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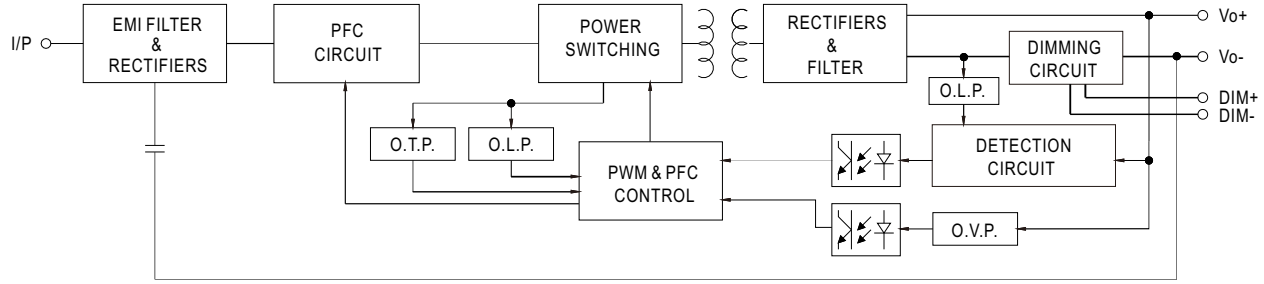
40W PWM Output LED Driver

026.303

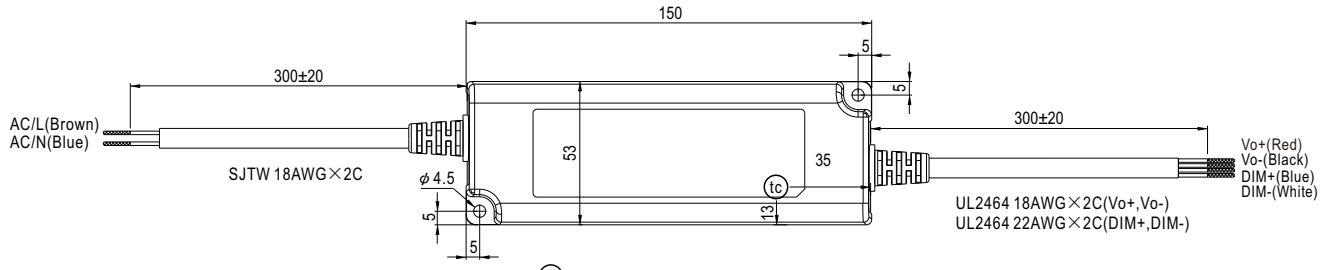
■ Block Diagram

PFC fosc : 50~120KHz
PWM fosc : 60~130KHz

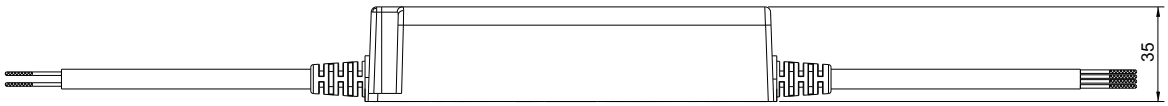


■ Mechanical Specification

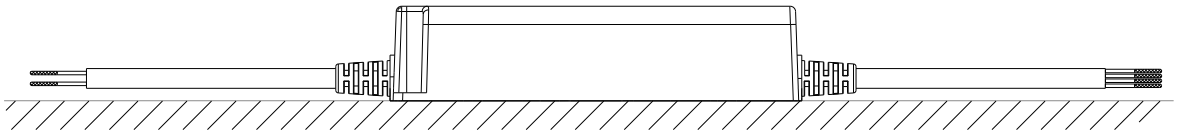
Case No. NPF-60A Unit:mm



• ⓣⓒ : Max. Case Temperature



■ Recommend Mounting Direction



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40W PWM Output LED Driver

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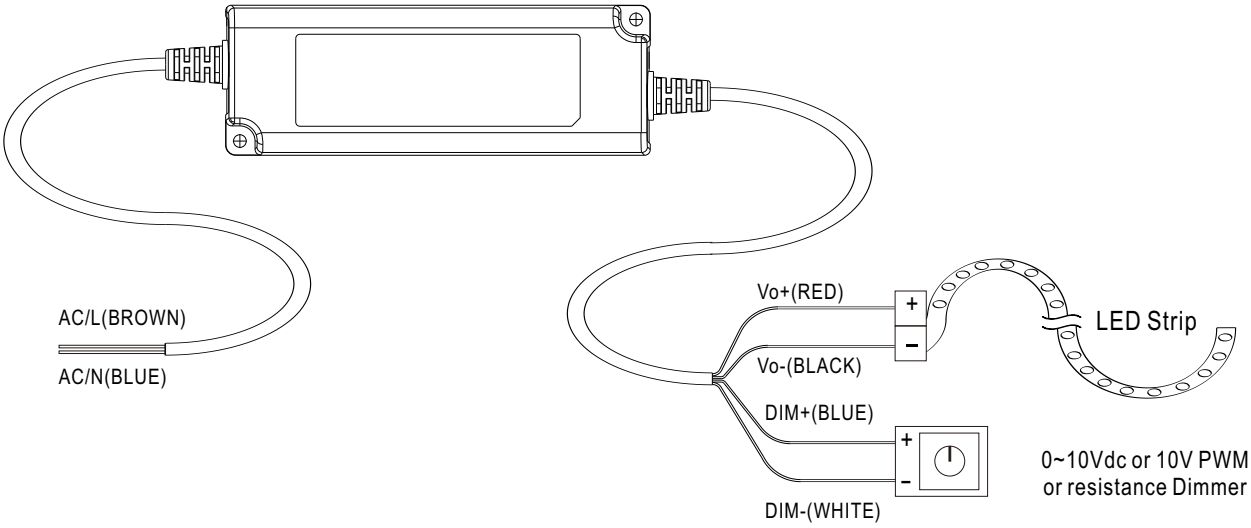
■ Installation Manual

◎Connection for Blank-type



◎Cautions

- Before commencing any installation or maintenance work, please disconnect the power supply from the utility. Ensure that it cannot be re-connected inadvertently!
- Keep proper ventilation around the unit and do not stack any object on it. Also a 10-15 cm clearance must be kept when the adjacent device is a heat source.
- Mounting orientations other than standard orientation or operate under high ambient temperature may increase the internal component temperature and will require a de-rating in output current.
- Current rating of an approved primary /secondary cable should be greater than or equal to that of the unit. Please refer to its specification.
- For LED drivers with waterproof connectors, verify that the linkage between the unit and the lighting fixture is tight so that water cannot intrude into the system.
- For dimmable LED drivers, make sure that your dimming controller is capable of driving these units.PWM series require 0.15mA each unit.
- Tc max. is identified on the product label. Please make sure that temperature of Tc point will not exceed limit.
- DO NOT connect "DIM- to Vo-".
- Suitable for indoor use or outdoor use without direct sunlight exposure. Please avoid immerse in the water over 30 minutes.
- 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.

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