50W Constant Power Mode with DALI-2 LED Driver XLG-50-DA2 series

User's Manual

(except for L type) DC Input: 176-280Vdc (except for L type) (Note14) Type HL (for XLG-50I-DA2 type only)

Features

- Constant Power mode output
- Metal housing design with functional Ground
- Built-in active PFC function
- Class 2 power unit(except for L type)
- Standby power consumption <0.5W
- IP67 rating for indoor or outdoor installations
- Surge protection with 6KV/4KV
- DALI-2 Dimming with minimum level 8%
- India (EESL) version with Input Over Voltage Protection can survive input voltage stress of 440Vac for 48 hours
- 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.

GTIN CODE

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

Description

XLG-50-DA2 series is a 50W AC/DC LED driver featuring the constant power mode output. XLG-50-DA2 operates from 90~305VAC. Thanks to the high efficiency up to 89%, the entire series is able to operate between -40℃~85℃ wide case temperature range with air convection. The design of metal housing and IP67 ingress protection level allows this series to fit both indoor and outdoor applications.
XLG-50-DA2 is equipped with various function options, such as dimming methodologies, so as to provide the optimal design flexibility for LED lighting system.XLG-50-DA2 series comply with the latest version of IEC61347/GB19510.1 and UL8750 international safety regulations. The output and dimming circuit are also completely in accordance with the new regulations with isolation to ensure the safety of both user and luminaire system during installation.

Model Encoding

XLG - 50 [I] - [L] - DA2

- DA2: DALI-2 dimming function
- L: Rated output voltage(L/H types)
- [I]: □:For standard version; I:For India version(by request with Input over voltage protection)
- 50: Rated wattage
- XLG: Series name

Type	Function	Note
DA2	DALI-2 control technology with Io adjustable via built-in potentiometer	In Stock

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SPECIFICATION

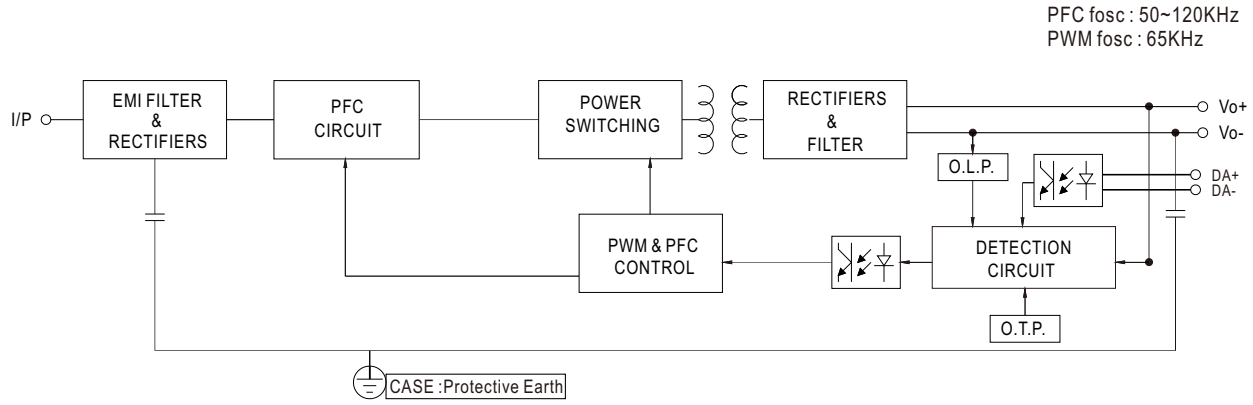
MODEL		XLG-50□-L-DA2	XLG-50□-H-DA2
OUTPUT	RATED CURRENT (Default)	700mA	1050mA
	RATED POWER	50W	50W
	CONSTANT CURRENT REGION Note.2	60 ~ 142V	27 ~ 56V
	FULL POWER CURRENT RANGE	350~700mA	900~1400mA
	OPEN CIRCUIT VOLTAGE (max.)	160V	60V
	CURRENT ADJ. RANGE	(Via the built-in potentiometer)	
		300~700mA	500~1400mA
	CURRENT RIPPLE	5.0%(@ full load)	
	CURRENT TOLERANCE	±5%	
	SET UP TIME	500ms/230VAC, 1200ms/115VAC	
INPUT	VOLTAGE RANGE Note.4	90 ~ 305VAC 127 ~ 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< 10%(@load≧50%/115VC,230VAC; @load≧75%/277VAC) (Please refer to "TOTAL HARMONIC DISTORTION(THD)" section)	
	EFFICIENCY (Typ.) Note.15	90%	89%
	AC CURRENT	0.57A / 115VAC 0.29A / 230VAC 0.24A/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	7 units (circuit breaker of type B) / 12 units (circuit breaker of type C) at 230VAC	
	LEAKAGE CURRENT	<0.75mA / 277VAC	
	STANDBY POWER CONSUMPTION	Standby power consumption <0.5W (Dimming OFF)(For standard version)	
PROTECTION	SHORT CIRCUIT	Hiccup mode or Constant current limiting, recovers automatically after fault condition is removed	
	OVER TEMPERATURE	Stage 1: Derating to 75% loading; stage 2: Derating to 50% loading. recovers automatically after fault condition is removed	
	INPUT OVER VOLTAGE Note.7	320 ~ 370VAC (Shut down output voltage when the input voltage exceeds protection voltage,recovers automatically after fault condition is removed)	
		Can survive input voltage stress of 440Vac for 48 hours	
ENVIRONMENT	WORKING TEMP.	Tcase=-40 ~ +85℃ (Please refer to " OUTPUT LOAD vs TEMPERATURE" section)	
	MAX. CASE TEMP.	Tcase=+85℃	
	WORKING HUMIDITY	20 ~ 95%	
	STORAGE TEMP.	-40 ~ +80℃	
	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 AS/NZS IEC BS EN/EN61347-1, BS EN/EN61347-2-13 (EL) appendix J suitable for emergency installations(DC Input: 176-280Vdc) independent, AS/NZS BS EN/EN61347-2-13 , BS EN/EN62384;IP67; IS 15885(Part2/Sec13)(for XLG-50I-DA2 only);GB19510.1, GB19510.14, EAC TP TC 004 approved	
	DALI STANDARDS	Comply with IEC62386-101, 102, 207, 251 for DA2 Type only, Device type 6(DT6)	
	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	**Parameter**	**Standard** / **Test Level/Note**
		Conducted	BS EN/EN55015(CISPR15) ,GB/T 17743 / -----
		Radiated	BS EN/EN55015(CISPR15) ,GB/T 17743 / -----
		Harmonic Current	BS EN/EN61000-3-2 ,GB17625.1 / Class C @load≧50%
		Voltage Flicker	BS EN/EN61000-3-3 / -----
	EMC IMMUNITY	BS EN/EN61547	
		Parameter	**Standard** / **Test Level/Note**
		ESD	BS EN/EN61000-4-2 / Level 3, 8KV air ; Level 2, 4KV contact
		Radiated	BS EN/EN61000-4-3 / Level 3
		EFT/Burst	BS EN/EN61000-4-4 / Level 3
		Surge	BS EN/EN61000-4-5 / 4KV/Line-Line 6KV/Line-Earth
		Conducted	BS EN/EN61000-4-6 / Level 3
		Magnetic Field	BS EN/EN61000-4-8 / Level 4
		Voltage Dips and Interruptions	BS EN/EN61000-4-11 / >95% dip 0.5 periods, 30% dip 25 periods, >95% interruptions 250 periods
OTHERS	MTBF	2352.4K hrs min. Telcordia SR-332 (Bellcore) 207.3K hrs min. MIL-HDBK-217F (25℃)	
	DIMENSION	105*63*30mm (L*W*H)	
	PACKING	0.42Kg;24pcs/ 11Kg/0.81CUFT	

NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25℃ of ambient temperature.
2. Please refer to "DRIVING METHODS OF LED MODULE".
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details.
5. 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.
6. Based on IEC 62386-101/102 DALI power on timing and interruption regulations,the set up time needs to test with a DALI controller which can support for DALI power on function, otherwise the set up time will be longer than 500ms.
7. Input over voltage only for XLG-50I series, and I series without UL/CSA certificate.
8. 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. (as available on https://www.meanwell.com//Upload/PDF/EMI_statement_en.pdf)
9. 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).
10. Please refer to the warranty statement on MEAN WELL's website at http://www.meanwell.com
11. 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.
12. Products sourced from the Americas regions may not have the CCC/PSE/BIS/KC logo. Please contact your MEAN WELL sales for more information.
13. For any application note and IP water proof function installation caution, please refer our user manual before using. https://www.meanwell.com/Upload/PDF/LED_EN.pdf
14. H type:RCM is on a voluntary basis. Non IC classification Independent LED control gear is not suitable for residential installations. L type:RCM is on a voluntary basis and meets relevant IEC or AS/NZS standards complying with AS/NZS 4417.1
15. The efficiency will drop 1% based on India version
16. 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.
17. This series need to consider build in using to comply with Type HL application.

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

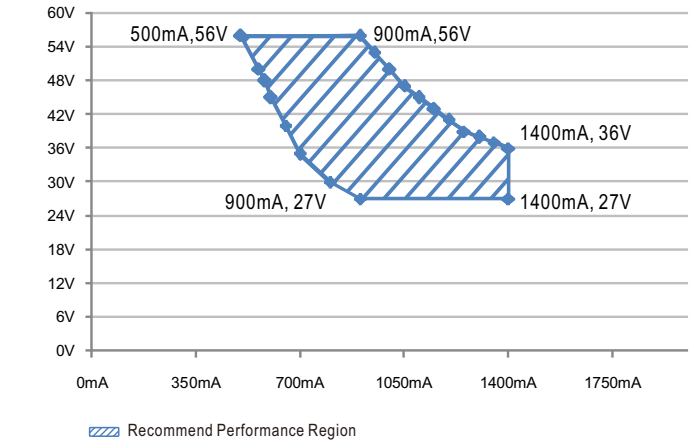
■ Block Diagram



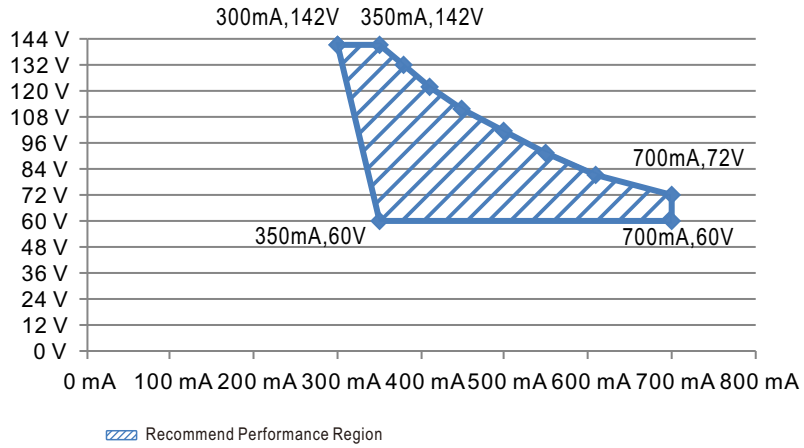
■ DRIVING METHODS OF LED MODULE

※I-V Operating Area

◎ XLG-50-H-DA2



◎ XLG-50-L-DA2

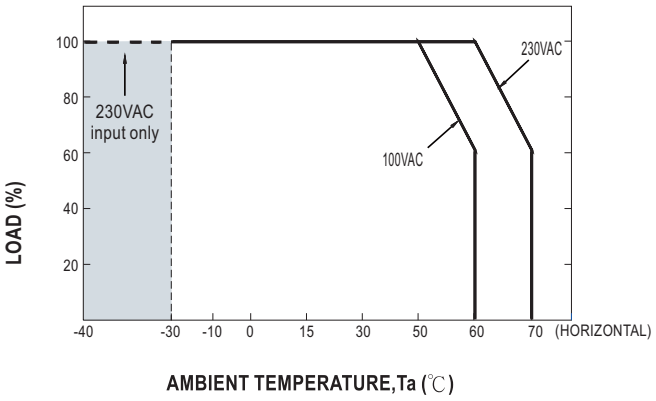


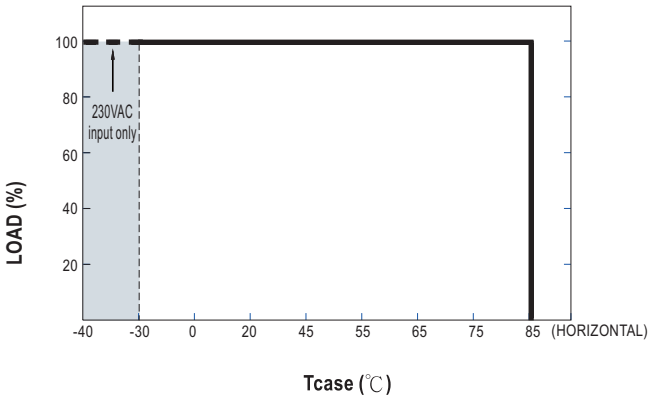
■ DIMMING OPERATION

※ **DALI Interface**

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

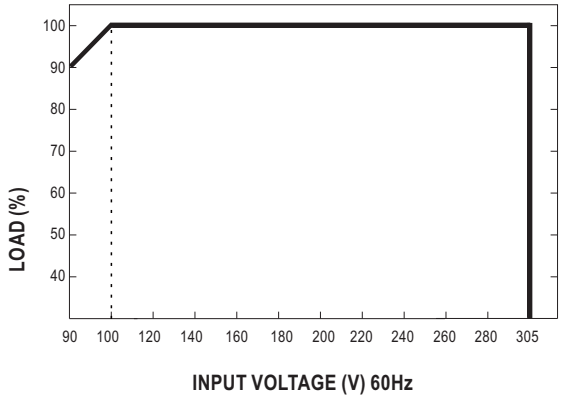
■ OUTPUT LOAD vs TEMPERATURE





Note:1.The output current must be derated at ultra-high ambient temperature.
2.Below 120VAC@-30℃ may has restart situation within 5s after power-on.

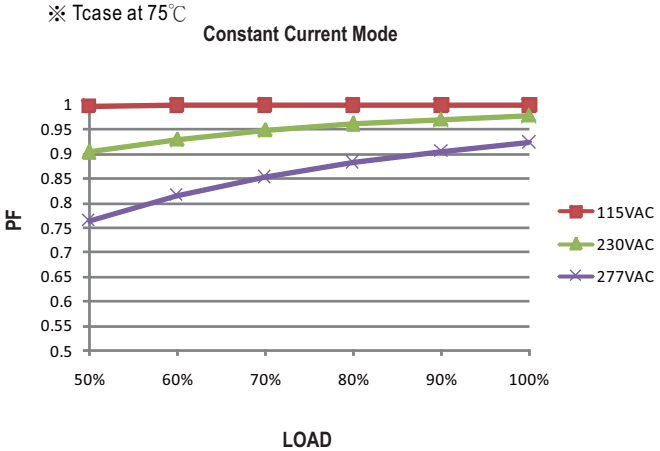
■ STATIC CHARACTERISTIC



※De-rating is needed under low input voltage.

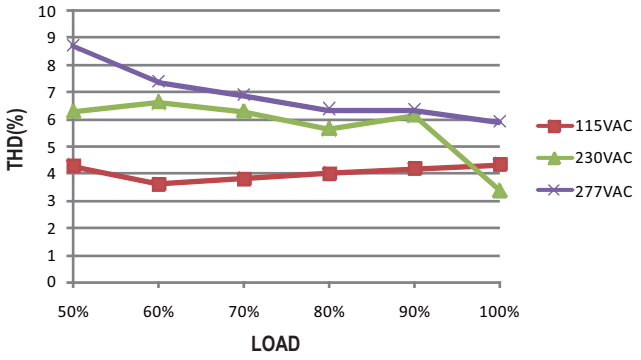
■ POWER FACTOR (PF) CHARACTERISTIC

※ Tcase at 75℃



■ TOTAL HARMONIC DISTORTION (THD)

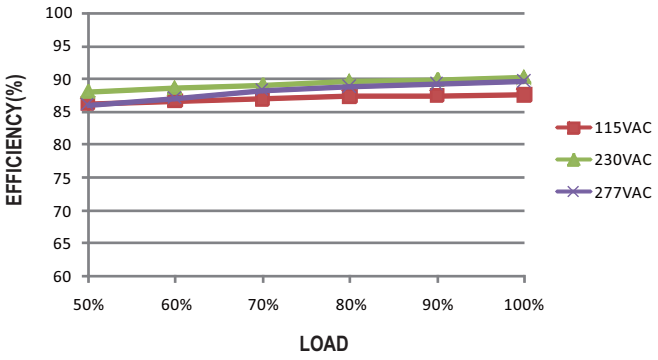
※ XLG-50-H-DA2 Model, Tcase at 75℃



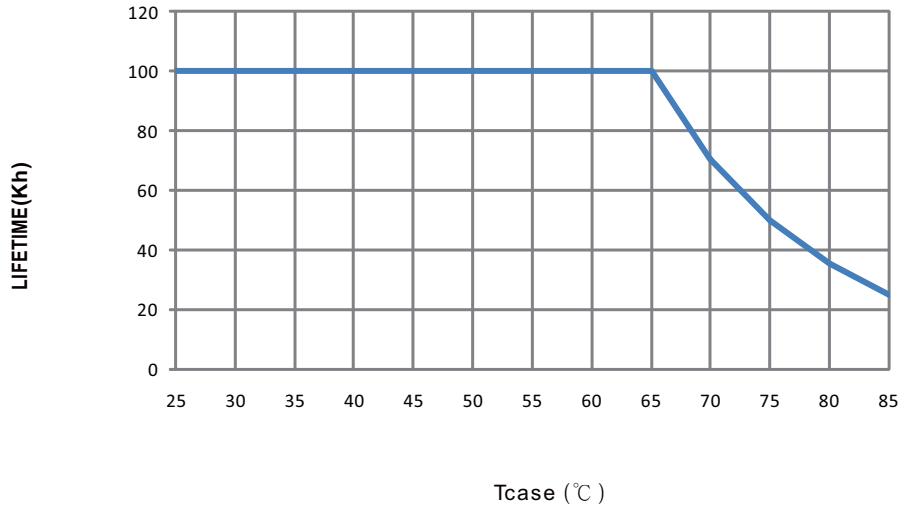
■ EFFICIENCY vs LOAD

XLG-50-DA2 series possess superior working efficiency that up to 89% can be reached in field applications.

※ XLG-50-H-DA2 Model, Tcase at 75℃



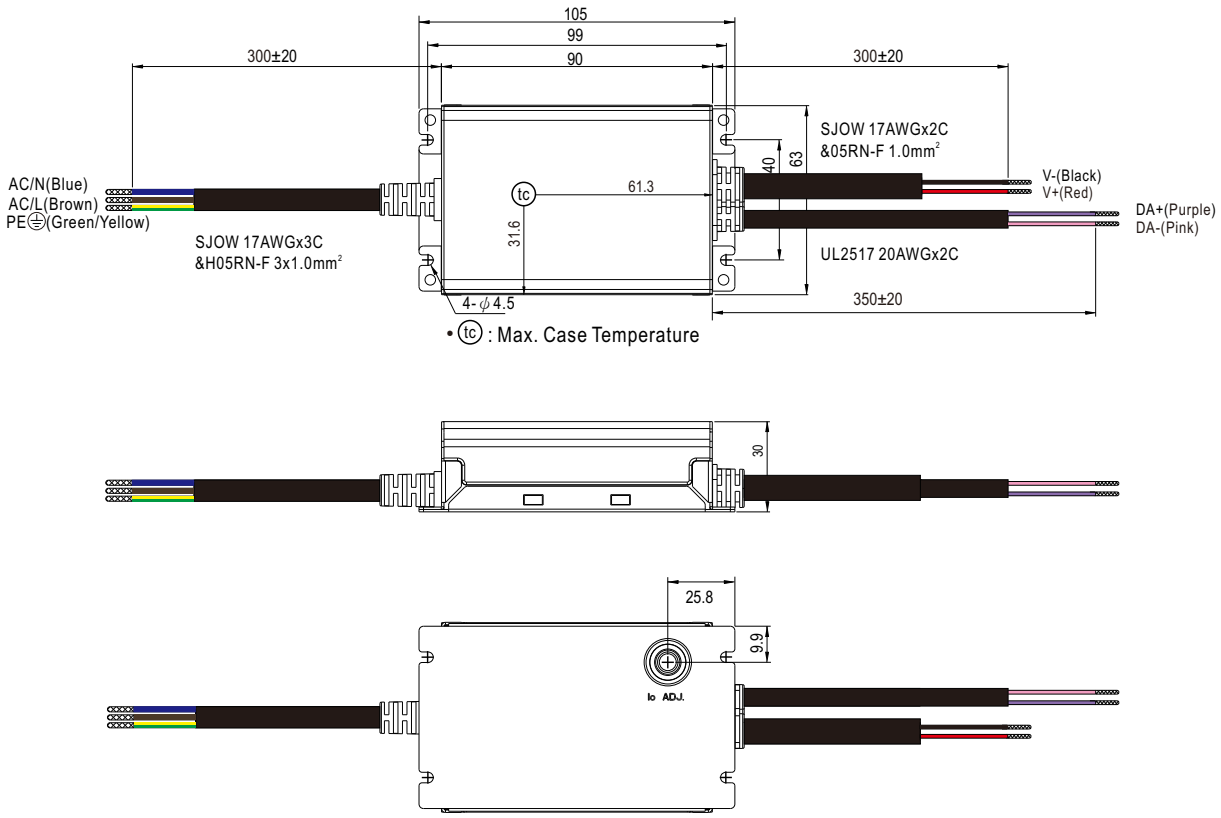
■ LIFE TIME



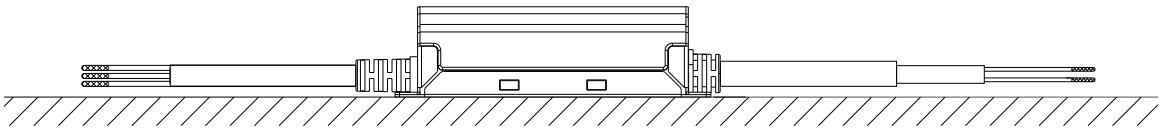
■ Mechanical Specification

※ DA2-Type

CASE NO.: 268A Unit:mm Tolerance:±1



■ Recommend Mounting Direction



■ INSTALLATION MANUAL

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