75W Constant Power Mode with DALI-2 LED Driver XLG-75-DA2 series

User's Manual
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(for XLG-75I-DA2 type only)

DC Input: 176-280Vdc

(Note14)

Features

- Wide input range 100~305V AC(Class Ⅰ)
- Full power output at 70~100% Constant power mode operation
- Metal case with IP67, suitable for outdoor application
- Class 2 power unit(except for L type)
- 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
- Protection functions: SCP/OTP
- Life time >50,000 hrs. and 5 years warranty

Applications

- Skyscraper lighting
- Street lighting
- Floodlight Lighting
- Stage lighting
- Fishing lighting
- Horticulture lighting
- Bay lighting
- Type HL for use in class Ⅰ, Division 2

GTIN CODE

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

Description

XLG-75-DA2 series is a 75W LED AC/DC driver featuring the constant power mode with DALI-2 dimming function. XLG-75-DA2 operates from 100~305VAC and offers models with different rated current ranging between 700mA and 2100mA. Thanks to the high efficiency up to 90%, with the fanless design, the entire series is able to operate for -40℃~+90℃ 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. XLG-75-DA2 series comply with the latest version of IEC61347/GB/T19510.1 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 - 75 [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)
- 75: 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-75□-L-DA2	XLG-75□-H-DA2
OUTPUT	RATED CURRENT(Default)	700mA	1400mA
	RATED POWER	74.9W	75.6W
	CONSTANT CURRENT REGION	53 ~ 107V	27 ~ 56V
	FULL POWER CURRENT RANGE	700~1050mA	1300~2100mA
	OPEN CIRCUIT VOLTAGE (max.)	115V	60V
	CURRENT ADJ. RANGE	(Via the built-in potentiometer)	
		350~1050mA	700~2100mA
	CURRENT RIPPLE	5.0%(@ full load)	
	CURRENT TOLERANCE	±5%	
	SET UP TIME	500ms/230VAC, 1200ms/115VAC	
INPUT	VOLTAGE RANGE Note.4	100 ~ 305VAC 142VDC ~ 431VDC (Please refer to "STATIC CHARACTERISTIC" and " 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.)	90%	90%
	AC CURRENT (Typ.)	1A / 115VAC 0.45A / 230VAC 0.38A / 277VAC	
	INRUSH CURRENT(Typ.)	COLD START 50A(t_{width}=360μs measured at 50% I_{peak}) at 230VAC; Per NEMA 410	
	MAX. NO. of PSUs on 16A CIRCUIT BREAKER	8 unit(circuit breaker of type B) / 14 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	
	INPUT OVER VOLTAGE Note.7	320 ~ 390VAC (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	
	OVER TEMPERATURE	Stage 1: Derating to 75% loading; Stage 2: Derating to 50% loading. recovers automatically after fault condition is removed	
ENVIRONMENT	WORKING TEMP.	Tcase=-40 ~ +90℃ (Please refer to "OUTPUT LOAD vs TEMPERATURE" section)	
	MAX. CASE TEMP.	Tcase=+90℃	
	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 BS EN/EN61347-1, BS EN/EN61347-2-13 (EL) appendix J suitable for emergency installations(DC Input: 176-280Vdc) independent, BS EN/EN62384; IS 15885(Part2/Sec13)(for XLG-75I-DA2 only); GB/T19510.1,GB/T19510.213; EAC TP TC 004; IP67 approved	
	DALI STANDARDS	Comply with IEC62386-101, 102, 207, 251, Device type 6(DT6)	
	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	**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	2489.3Khrs min. Telcordia SR-332 (Bellcore) ; 245.7Khrs min. MIL-HDBK-217F (25℃)	
	DIMENSION	140*63*32mm (L*W*H)	
	PACKING	0.58Kg;24pcs/15Kg/0.85CUFT	

NOTE

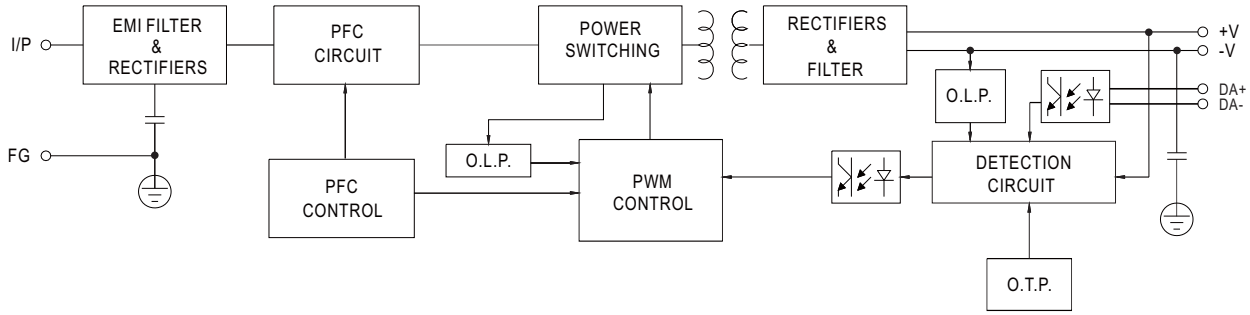
1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25℃ of ambient temperature.
2. Please refer to "DRIVING METHODS OF LED MODULE".
3. Tolerance : includes set up tolerance, line regulation and load regulation.
4. De-rating may be needed under low input voltages. 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-75 I 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. RCM is on a voluntary basis. Non IC classification Independent LED control gear is not suitable for residential installations;
15. 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.
16. 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

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■ BLOCK DIAGRAM

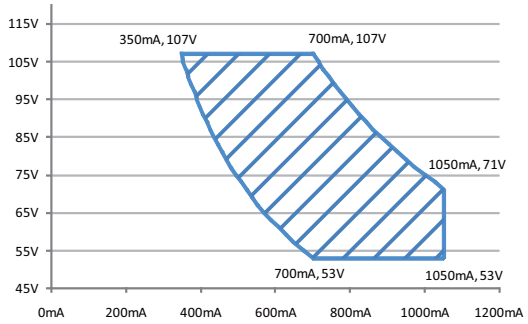
PFC fosc : 50~120KHz
PWM fosc : 65KHz



■ DRIVING METHODS OF LED MODULE

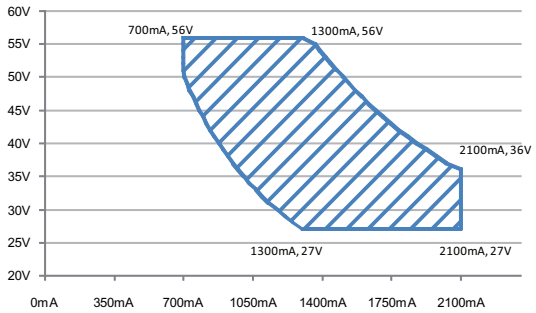
※ I-V Operating Area

◎ **XLG-75-L-DA2**



Recommend Performance Region

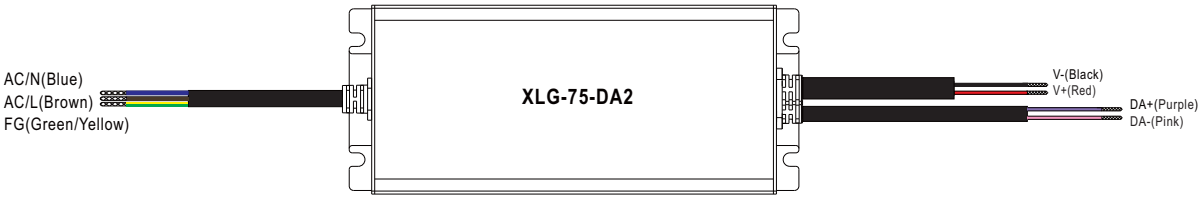
◎ **XLG-75-H-DA2**



Recommend Performance Region

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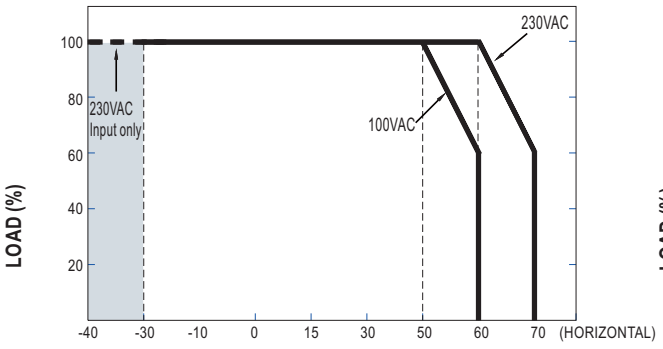
■ DIMMING OPERATION

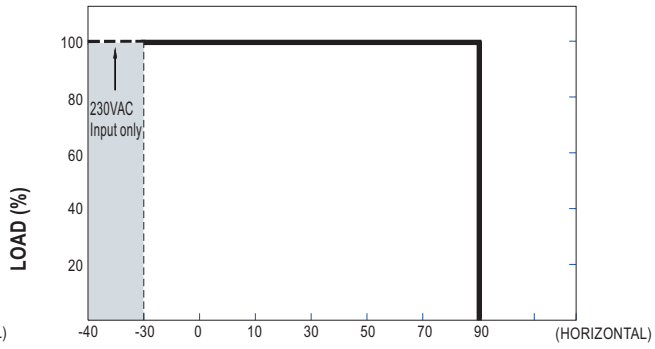


※ **DALI Interface**

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

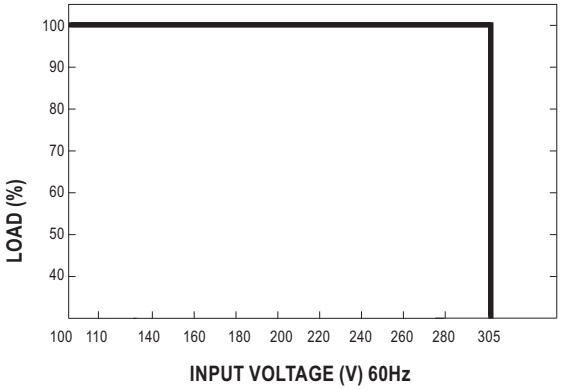
■ OUTPUT LOAD vs TEMPERATURE





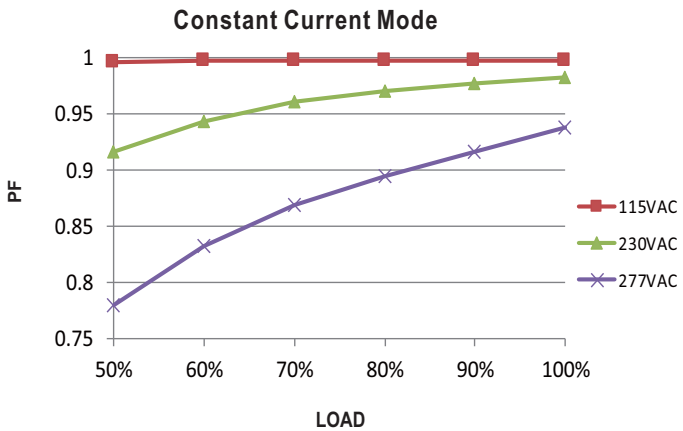
Note: 1.If XLG-75-DA2 operates in Constant Current mode with the rated current the maximum workable Ta is 60℃ (Typ. 230VAC) or 50℃ (Typ.100VAC)
2. Below 120VAC@ -30℃ may has restart situation within 5s after power-on

■ STATIC CHARACTERISTIC



■ POWER FACTOR (PF) CHARACTERISTIC

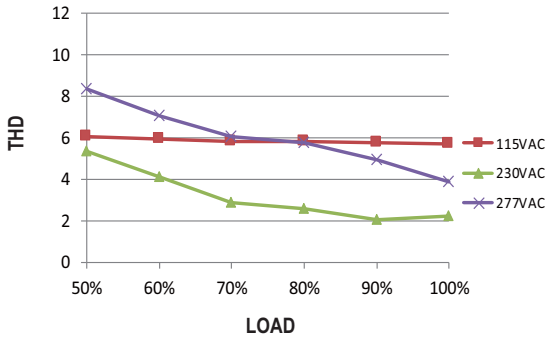
※ Tcase at 75℃



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■ TOTAL HARMONIC DISTORTION (THD)

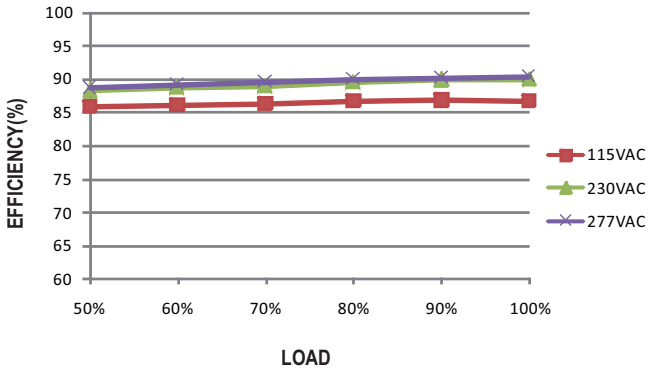
※ XLG-75-L-DA2 Model, Tcase at 75℃



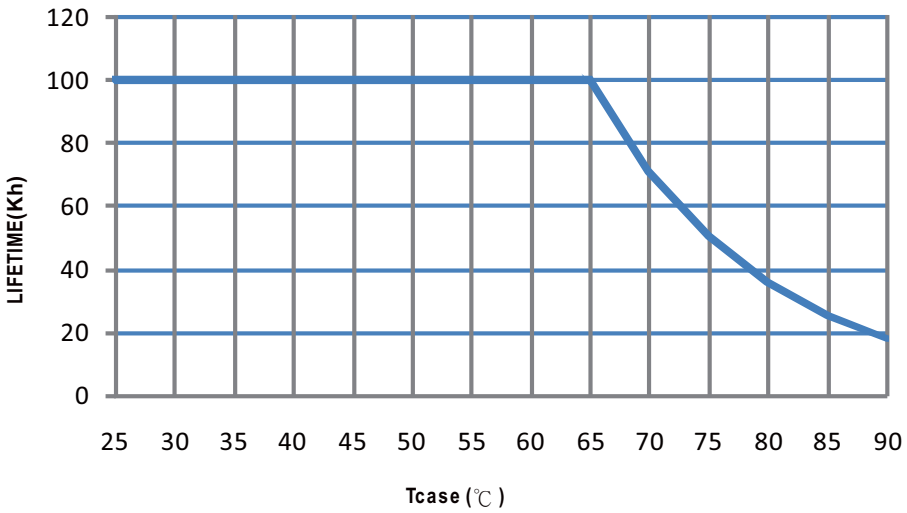
■ EFFICIENCY vs LOAD

XLG-75-DA2 series possess superior working efficiency that up to 90% can be reached in field applications.

※ XLG-75-L-DA2 Model, Tcase at 75℃



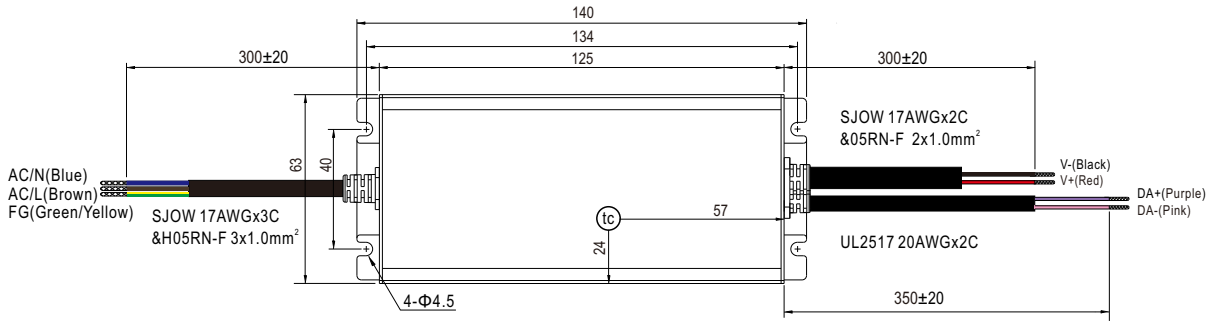
■ LIFE TIME



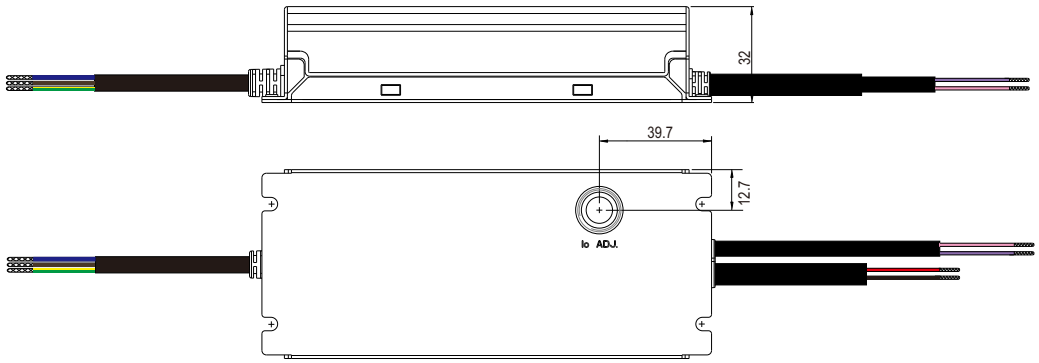
■ MECHANICAL SPECIFICATION

Case No.: 275A Unit:mm Tolerance:±1

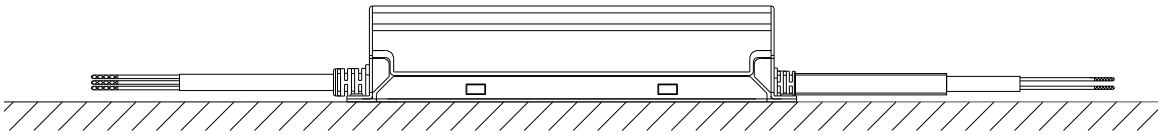
※ DA2-Type



• tc : Max. Case Temperature



■ Recommend Mounting Direction



■ INSTALLATION MANUAL

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

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