

S Series Intelligent Driver



0.1%(0.02%) Deep Dimming
DALI/PWM dimmable
Human Centric Lighting

Flicker Free

Meet :

CEC title 24 JA8 & JA10
IEEE PAR 1789-2015

■ 12W S Series-1 Channels Driver-PU012S070AQI350

MOONS' 12W S Series 1 Channels LED Drivers are designed for DALI/PWM dimming application. It is a wireless programmable LED driver with an isolated DALI/PWM interface to all inputs and outputs.

■ Main Characteristics

- 1Channel, constant current and constant voltage modes are configurable
- Programmable operation window
- Low inrush current
- Standby power < 0.5W
- 0.1% Dimming (0.02% dimming configurable) & 65536 Dimming Steps
- DALI/PWM dimming
- Isolated DALI/PWM dimming circuit
- 2 types of dimming curve (logarithm, linear)
- Maximum output power 12W
- Flicker free for whole operation range

■ Benefits

- Application-oriented operating window for maximum compatibility
- Excellent dynamic response performance
- Exceptionally smooth fades
- DALI/PWM dimming configurable

■ Applications

- Architecture, Art and Museum, Entertainment, Hospitality, Healthcare, Urban landscape

Certification

- DALI Certified
- Comply with IEC62386-101, 102, 207
- Comply with UL Class2
- Comply with Energy Star 2.0



Electrical Specifications

Input	Efficiency (230Vac)		83% (Typical)
	Voltage Range (Vac)		90~305
	Rated Input Voltage (Vac)		100~277
	Frequency Range (Hz)		50/60
	Power Factor		>0.9 at 100~277Vac 50/60Hz input, with 60%~100% load conditions
	THD		<20% at 100~277Vac 50/60Hz input, with 60%~100% load conditions
	AC Current (Typical)		0.1A MAX. @230Vac, 0.2A MAX. @100Vac
	Inrush Current (Typical)		<10A at 100~277Vac input 25℃ cold start at 100% condition
	Input Power (W)		16(MAX.)
	Standby Power (W)		<0.5W @277Vac
	Leakage Current (MAX.)		0.70mA MAX. @277Vac
Output	Constant Current Mode (Default)	Output Voltage Range (VDC)	8~50
		Output Current Range (mA)	150~700(programmable)
	Constant Voltage Mode	Output Voltage Range (VDC)	12~48(programmable)
		Rated Power (W)	12(MAX.)
	Output Channel Number		1
	Ripple Current		<15% at max. lout (ripple=(pk-avg)/avg) Low frequency (<120 Hz) content <1%
	Current Tolerance		±5% at output current range
	Line Regulation		±1%
	Load Regulation		±3%
	Startup Time		540mS≤T≤660mS@100V/230V/277V input voltage, comply with IEC62386-102(2.0)
Dimming Port	DALI/PWM Dimming		a. Range: 0.1% ~ 100%(Comply with IEC62386-102), 0.02% ~ 100%(optional) b. Dimming Curve: logarithmic(default)/linear c. Soft-on, Fade-to-Black d. JA10 Flicker Compliant (IEEE 1789 Recommendation) e. Protected from miswires of input power to DALI control inputs up to 277 Vac.
Protection	Open Circuit Protection (V)		59
	Short Circuit		Output current of power supply equals set current
	Overload protection		Automatic recovery
Environment	Operating Temperature		-25~+50℃
	Operating Humidity		20~95%RH, non-condensing
	Storage Temperature		-40~+85℃
	Storage Humidity		10~95%RH
	Vibration		10~500Hz, 5G 12min/cycle, period for 72min each along X、Y、Z axis
	Drop test		i. Pass functional test at 4 ft drop test. ii. Fail safe up to 12 ft drop test or is visibly destroyed
	Sound rated		Class A inaudible in 24 dBA ambient
	Ingress Protection Rating		IP20
Safety&EMC	Safety Standard		UL8750, UL1310 Class 2, CAN/CSA-C22.2 No.223-M91, EN61347-1, EN61347-2-13
	EMC Emission		EN55015, EN61000-3-2 Class C, EN61000-3-3
	EMC Immunity		EN61000-4-2,3,4,5,6,8,11, EN61547(Surge L-N 1KV), EN61000-4-2(ESD 6KV CON, 8KV AIR)
Others	Lifetime		>50000 hours @Tc =85℃ at 100% load conditions
	MTBF		500,000 hours, measured at full load, 25℃ ambient temperature SR-332 Issue 3
	Dimension		LxWxH: 150X30X21 (mm)
	Weight		80g

■ Dimming Performance

▪ Flicker Free

- Meet : Title 24 & Title 24 JA8, JA10 Flicker Compliant (IEEE 1789 Recommendation)
- The product utilize driver and LED load 1 is compliant with CEC title 24 JA8 and IEEE PAR 1789-2015 Recommended Practice 1 in the dimming range from 5mA to 150mA.

▪ Dimming Method

In the range of 250~1050mA, the current operates in continuous mode;
In the range of 0~250mA, the current operates in PWM dimming mode, and the PWM frequency 7.2KHZ.

■ Programmable Performance

▪ Touch Setting

Program driver's parameters without cable.

[Download Software](#)

▪ 1mA Current Programmable Step

▪ Default Factory Setting

The screenshot shows a software interface for programming the LED driver. At the top, there are icons for Load, Save, Read, Write, and Setting. Below these, the 'Current' section shows a slider for 'Channel 1' set to 350 mA. The 'General Setting' section includes dropdown menus for 'Dimming Curve' (Logarithmic), 'Minimum Dimming Level' (0.1%), 'NTC' (85), 'AUX Power' (Enable), 'CV Mode Enable' (Disable), 'CV Voltage' (24 V), and 'Logarithm' (MinLevel=0.1%). The 'Other Information' section is collapsed.

! GTIN-13 Code: 6971481490649

■ Inrush Current

▪ Ipeak & Time

Input Voltage	Inrush Current Ipeak	Inrush Current Time, measured 50% of Ipeak
100 Vac	1.5A	30us
220 Vac	3.4A	35us
277 Vac	4.3A	35us

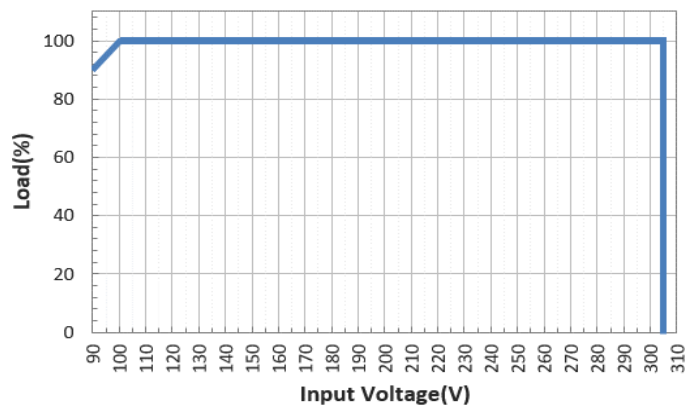


▪ Automaitc Circuit Breakers

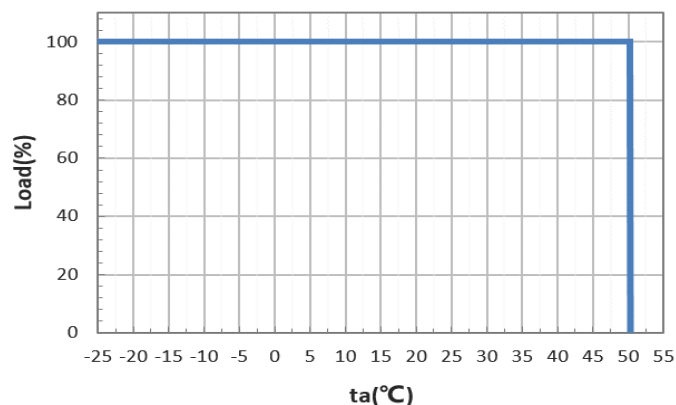
ACB Type	B10	B13	B16	B20	C10	C13	C16	C20
Number of LED Drivers @100Vac	26	34	42	52	39	51	63	78
Number of LED Drivers @220Vac	57	74	91	114	86	111	137	171
Number of LED Drivers @277Vac	69	90	111	139	104	135	166	208

■ Curve

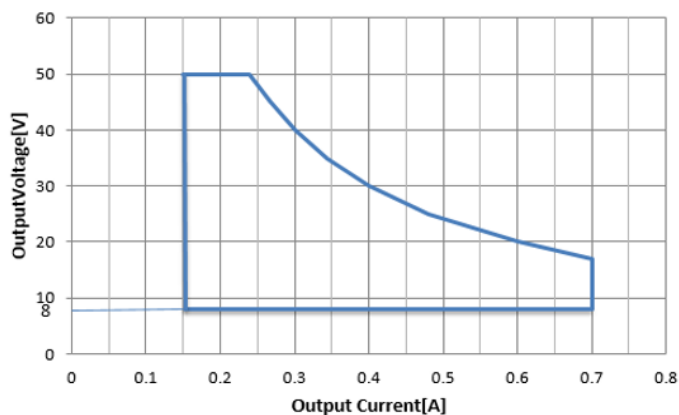
▪ Derating Curve



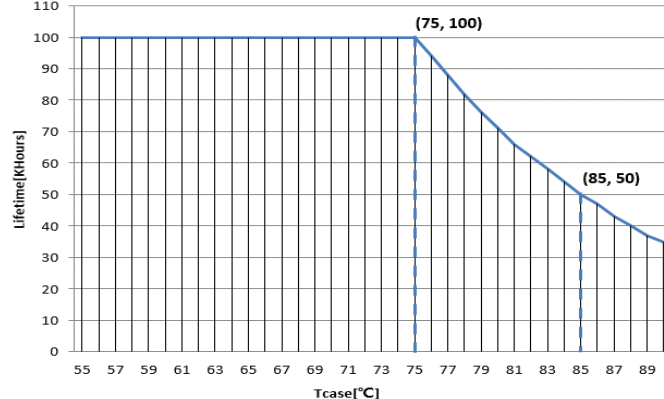
▪ Derating Curve



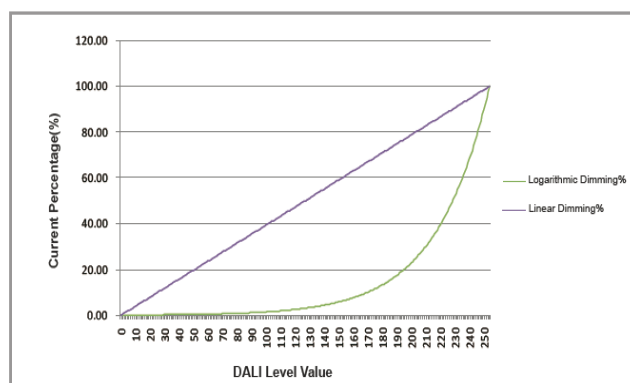
▪ V/I Curve



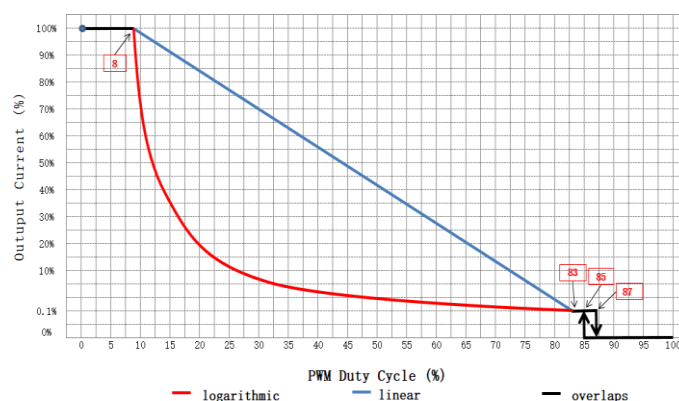
▪ Lifetime Vs Tc



▪ DALI Dimming Curve

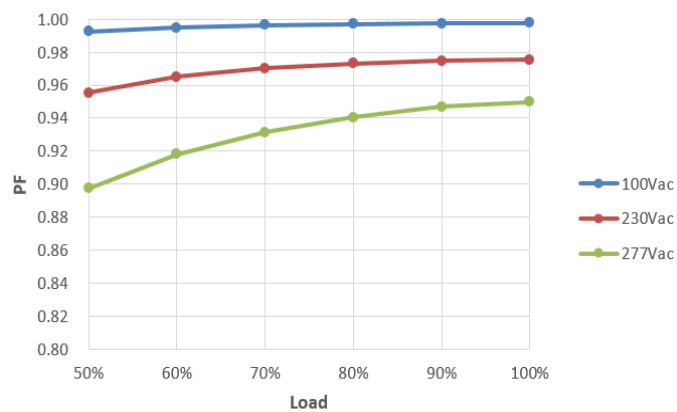


▪ PWM Dimming Curve

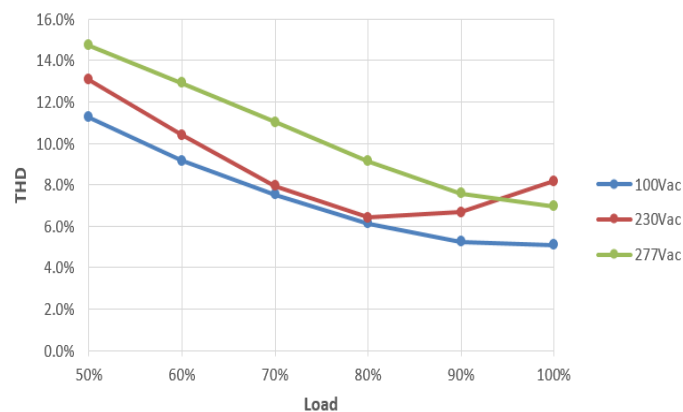


■ Curve

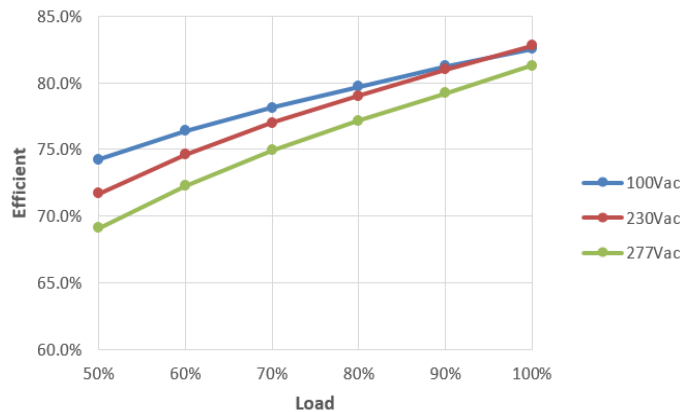
■ PF VS Load Curve



■ THD VS Load Curve

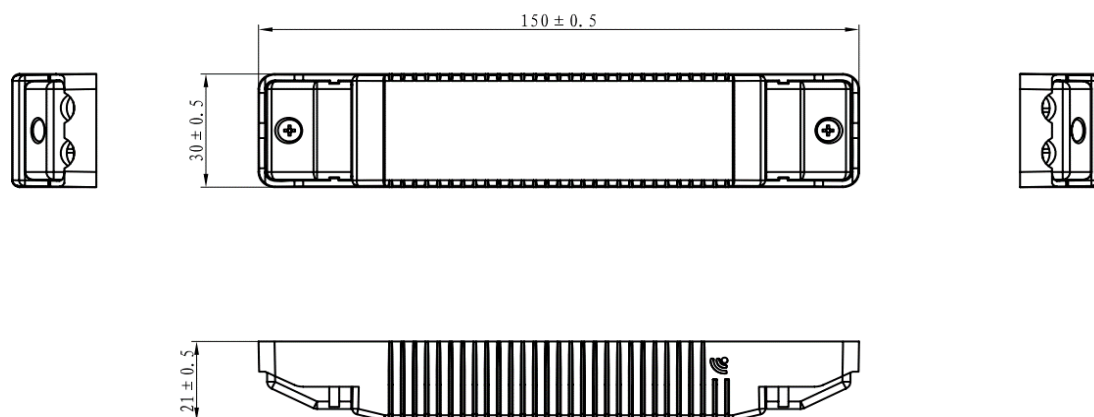


■ Efficiency VS Load Curve

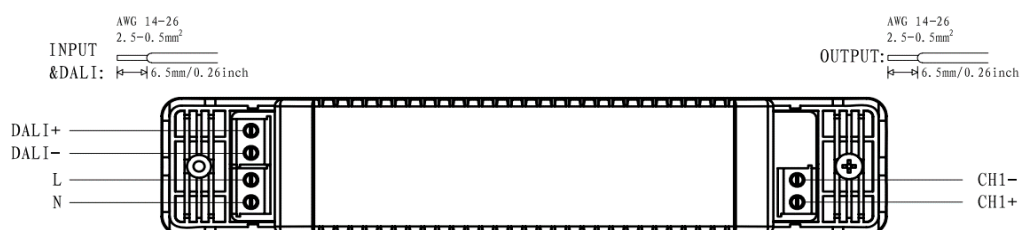


■ Mechanical Specification

▪ Dimensions (Unit: mm)



▪ Ports



! These terminals are intended for both solid and stranded wire.

! To remove wire, let the screw loose using the screwdriver.

RoHS Compliance:

Our products comply with the European Directive 2011/65/EU, calling for the elimination of lead and other hazardous substances from electronic products.

Date of release: 2022-03-29 Version A5

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