SPECIFICATION

SS-240C Series LED Driver

Model: SS-240C-XX

Description: 240W LED DRIVER

Rev.: V04

Release Date: 2018-06-25

Lighting and Power Technologies
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REVISION HISTORY

Rev.	Description of Change	Changed Date	Remarks
V00	Original release	2016/08/20	
V01	Safety update	2016/11/10	
V02	Template update	2017/08/31	
V03	Update notes	2018/03/12	
V04	Update start-up time	2018/06/25	

C Series, 240W Round LED Driver, V04

Features

- Efficiency up to 93.5%
- Optional dimming function: 0-10V, PWM, Resistor; Timing
- Optional aux: 16V/0.35A, 12V/0.4A, 5V/0.45A
- IP65 rated; Suitable for Dry, Damp and Wet Locations
- Protections: SCP, OTP, OVP
- Metal case with full potted for hazardous scenarios
- Surge Protection: L/N-PE: 4kV, L-N: 4kV
- 5 years warranty

Description

SS-240C series are constant current LED driver with input voltage 90-305Vac and high power factor. They are specifically designed for LED high bay luminaries, with low standby power, high efficiency, compact housing and good thermal management, which greatly enhance the reliability and lifespan. Comprehensive protections, including Over Voltage Protection, Short Circuit Protection and Over Temperature Protection, ensure proper functioning.

Model List

Model	O/P Voltage	O/P Current	Max. O/P Power	O/P Current Tolerance	THD (Typ.)	PF (Typ.)	Efficiency (Typ.)
SS-240C-38*	24-38V	4.4-7.5A	240W	±5%	10%	0.98	92%
SS-240C-54*	27-54V	3.0-5.7A	240W	±5%	10%	0.98	93%
SS-240C-68*	40-68V	2.5-4.2A	240W	±5%	10%	0.98	93.5%

Note:

1. Default Tested at 230Vac, full load, Ta 25℃.

2. Optional B, T, H or space in the place of * means additional function.

Space is the base model without any optional function;

- Suffix B for model with 3-in-1 dimming (0-10V, PWM, Resistor);

- Suffix T for model with timing control.

- Suffix H for model with 3-in-1 dimming with Aux.

Input Characteristics

Parameter	Min	Typ.	Max	Remarks
Rated AC input range	100 Vac		277 Vac	
AC input range	90 Vac		305 Vac	
Input frequency range	47Hz		63Hz	
Max input current			3.1A	90Vac, full load
Inrush current			60A	Cold start, 230Vac/50Hz , Twidth=650us measured at 50% Ipeak
No load power		1.9W	2W	277Vac/50Hz, no load
Power factor	0.96	0.98		230Vac/50Hz, full load
	0.9			100-277Vac/50Hz, 70-100% Load
THD		8%	10%	230Vac/50Hz, full load
			15%	100-277Vac/50Hz, 70-100% Load

Output Characteristics

Parameter		Min	Typ.	Max	Remarks
Output voltage range	SS-240C-38*	24V		38V	Power derated @ 24-32Vdc, see Fig. 1
	SS-240C-54*	27V		54V	Power derated @ 27-42Vdc, see Fig. 1
	SS-240C-68*	40V		68V	Power derated @ 40-56Vdc, see Fig. 1
Rated output voltage	SS-240C-38*	32V		38V	Po=Vo*Io=240W, full load, see Fig. 1
	SS-240C-54*	42V		54V	
	SS-240C-68*	56V		68V	
Rated output current	SS-240C-38*	6.3A		7.5A	7.5A for 32V, 6.3A for 38V
	SS-240C-54*	4.45A		5.72A	5.72A for 42V, 4.45A for 54V
	SS-240C-68*	3.55A		4.2A	4.2A for 56V, 3.55A for 68V
Current adjustable range	SS-240C-38*	4.4A		7.5A	Rated Io 70%-100% adjustable
	SS-240C-54*	3.0A		5.72A	
	SS-240C-68*	2.5A		4.2A	
No load voltage	SS-240C-38*	38.5V	39.5V	40V	
	SS-240C-54*	54.5V	55.5V	56V	
	SS-240C-68*	68.5V	69.5V	70V	
Efficiency @230Vac	SS-240C-38*	90.0%	92%		Output 38V/6.3A, see Fig. 5
	SS-240C-54*	91.0%	93.0%		Output 54V/4.45A, see Fig. 5
	SS-240C-68*	91.5%	93.5%		Output 68V/3.55A, see Fig. 5
Output current tolerance		-5%		+5%	
Output voltage ripple (PK-PK)			1%	2%	Full load
Output current ripple (PK-PK)			5%	10%	Full load
Start-up current overshoot				10%	
Start-up time			1.3S	2S	115Vac
			1.15S	2S	230Vac
Line Regulation		-1%		+1%	Full load
Load Regulation		-2%		+2%	

Other Characteristics

Parameter		Min	Typ.	Max	Remarks
Aux Levels (Optional)	5V	4.9V	5V	5.1V	Aux level optional; Aux should share same ground as DIM-.
	5V	0mA		450mA	
	12V	11.76V	12V	12.24V	
	12V	0mA		400mA	
	16V	15.68V	16V	16.32V	
	16V	0mA		350mA	
0-10V Dimming (Optional)	Dim Vmax	0V		14V	3 in 1 Dimming; 0-5V Dimming Optional; Negative Logic Dim Optional; Dim-off(Optional, contact SOSEN for more details)
	Dim Range	10%Iomax		100%Ioset	
	Voltage	1V		10V	
PWM Dimming (Optional)	High	5V		10V	
	Low	-0.3V		-0.6V	
	Frequency	200Hz		2KHz	
	PWM Duty	1%		99%	
Resistor Dimming (Optional)	Resistance	10K ohm		100K ohm	
	Dimming	10%Iomax		100%Ioset	
Timing Curve (Optional)	IC Control	By programming			Typically 3-4 sections
	Timing	5H/6H/7H/8H per section			Default Mode: 24Hour/Circle with 50% load
Protection	OTP	90℃	100℃	110℃	Tc, Self-recovery
	Short Circuit Protection	Driver will not damaged with short-circuit power <10W			Hiccup mode
Life time			55,000hrs		230Vac, full load, Tc 75℃, See Fig. 6
MTBF			200,000hrs		230Vac, full load, Ta= 25℃, (MIL-HDBK-217F)
Temperature Coefficient		-0.03%/℃		+0.03%/℃	Tc: 0℃～90℃
Tc				85℃	
Warranty			5 years		Tc: 75℃
Net Weight			1950g		
Dimension		Φ182mm*71mm			D x H

NOTE: All the parameters above are tested Ta 25℃, unless specified.

Environmental Requirements

Parameter	Min	Typ.	Max	Remarks
Operating Temperature	-40℃	25°C	+60℃	See Fig. 2
Storage Temperature	-40℃	25°C	+85℃	
Operation Humidity	10%RH		90%RH	
Storage Humidity	5%RH		95%RH	
Altitude	-65m		4,000m	
Cooling Method	Air Cooling			

Safety and EMI/EMS Standards

Certification	Standard	Status	Remark
UL/CUL	UL8750	√	
TUV	EN 61347-2-13:2014 EN61347-1:2008+A1:2011+A2:2013 EN62493:2015	√	
SAA	AS/NZS61347.2.13	√	
CCC	GB 19510.14-2009	√	
BIS	IS15885:2012 Part 2 Sec 13	√	ONLY for –B models
CE	EN 61347-2-13:2014 EN61347-1:2008+A1:2011+A2:2013	√	

Item		Standard	Remark
Insulation strength	Input-output	3200Vac/5mA Max/60s	Reinforced insulation
	Primary-Earth	1600Vac/5mA Max/60s	Basic insulation
	Sec.- Earth	1000Vac/5mA Max/60s	Function insulation
Insulation resistance	Input-output	≥10MΩ	Testing Voltage: 500Vdc
Ground resistor		≤0.1Ω	25A/1min
Leakage current		≤0.75mA	277Vac

Item	Criterion	Remark
Conduction Emission	EN55015:2013+A1:2015	
Radiation Emission	EN55015:2013+A1:2015	
Harmonic Current Emissions	IEC/EN 61000-3-2	Class C
Surge	IEC/EN61000-4-5	Difference mode 4kV, Common mode 4kV Criterion B

NOTE: SOSEN warrants the LED Driver itself complys with EMC standard. However, LED Driver's EMC should be re-checked when integrated into lighting systems due to unexpected interference as component.

Performance Curves

Fig. 1 O/P Voltage VS Output Current

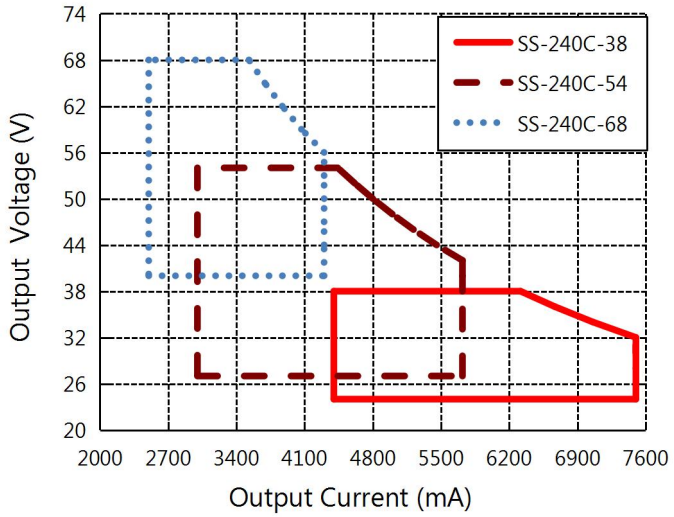


Fig. 2 O/P Power VS Ambient Temperature

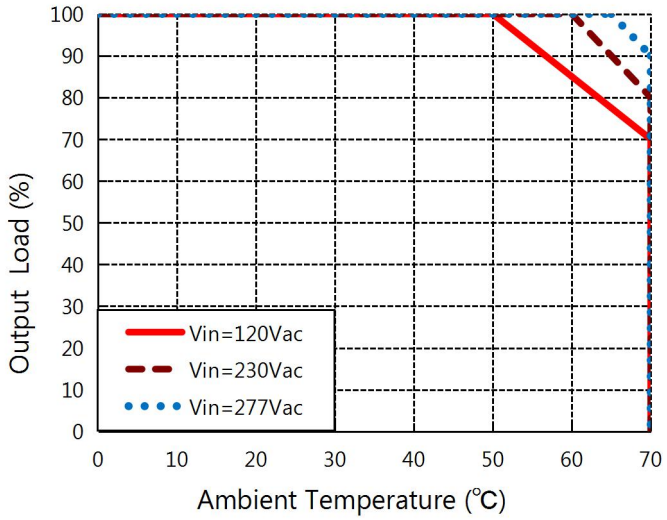


Fig. 3 Power Factor VS Output Power

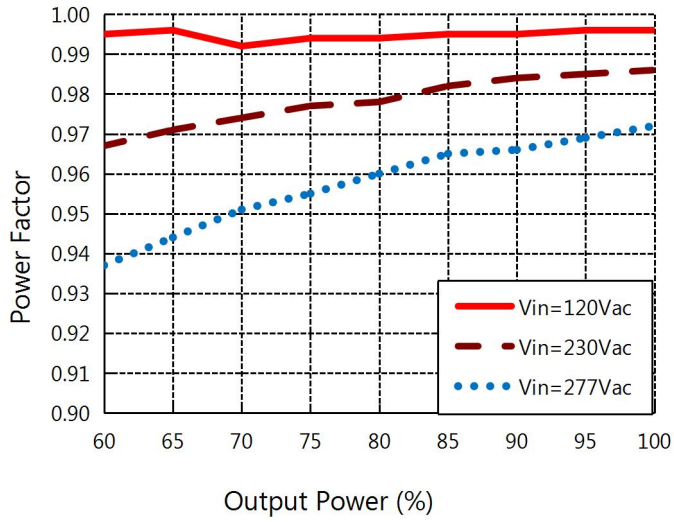


Fig. 4 THD VS Output Power

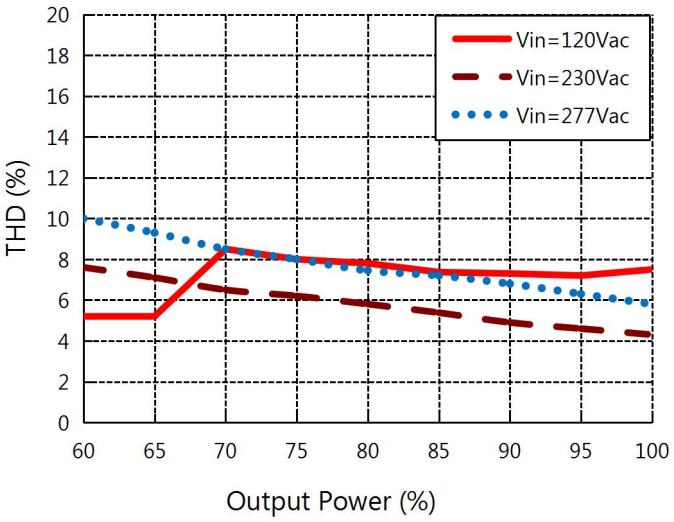


Fig. 5 Efficiency VS Output Power

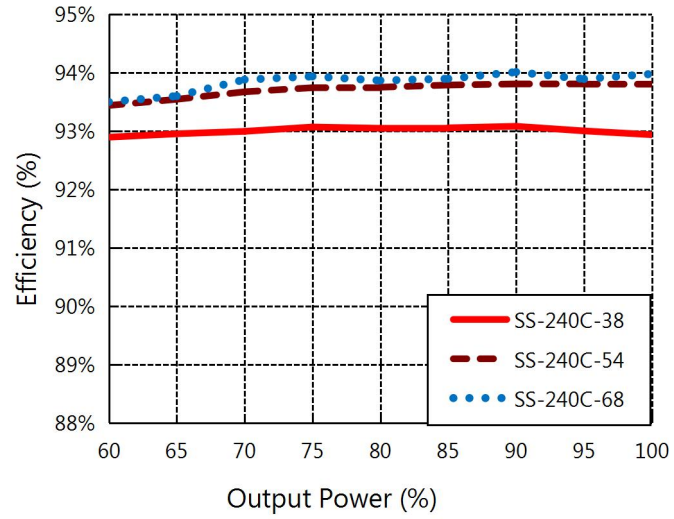


Fig. 6 Lifespan VS Case Temperature

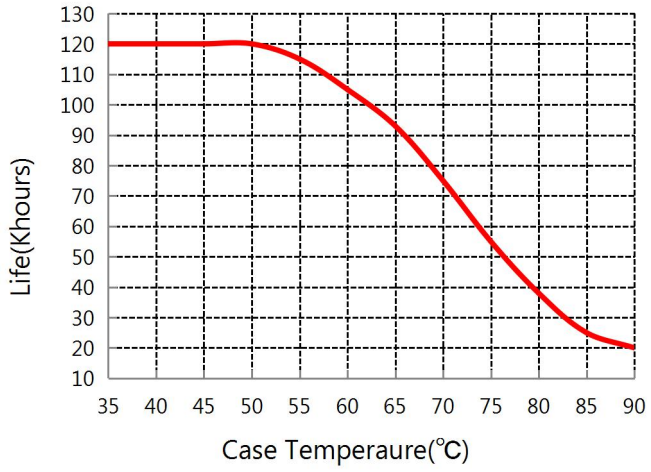
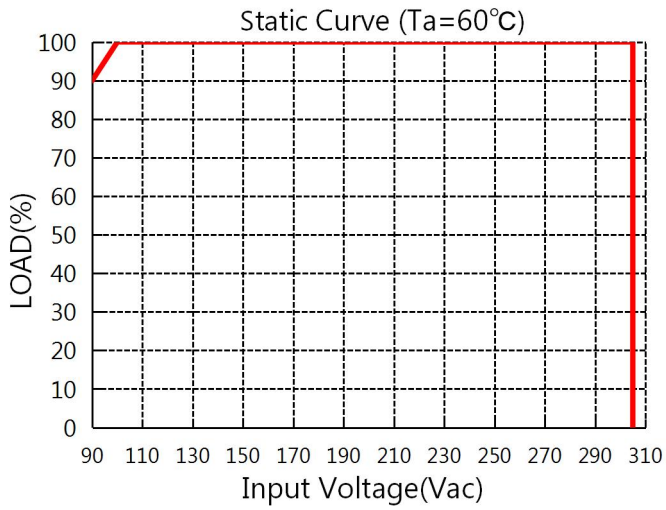
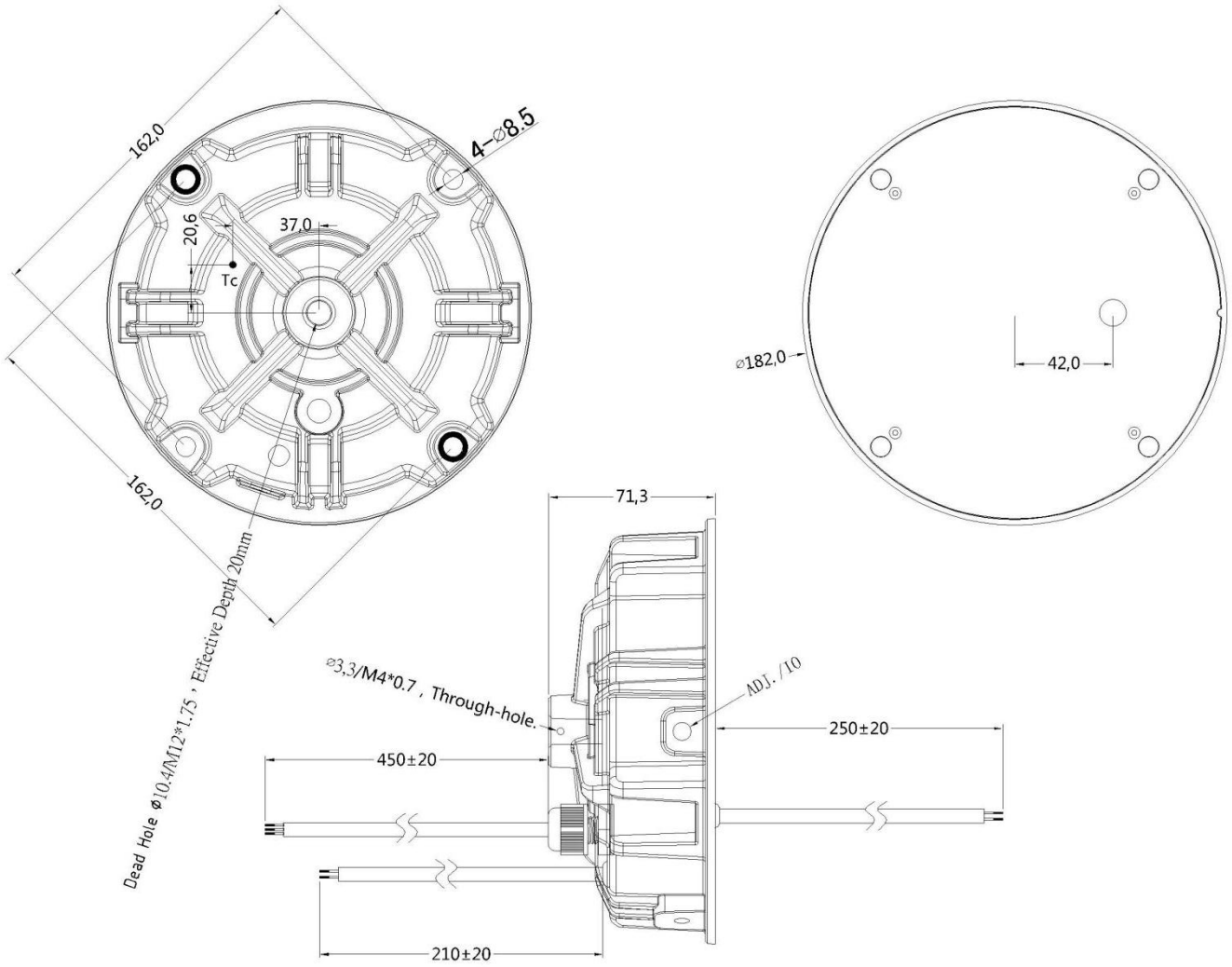


Fig. 7 Output Power VS Input Voltage



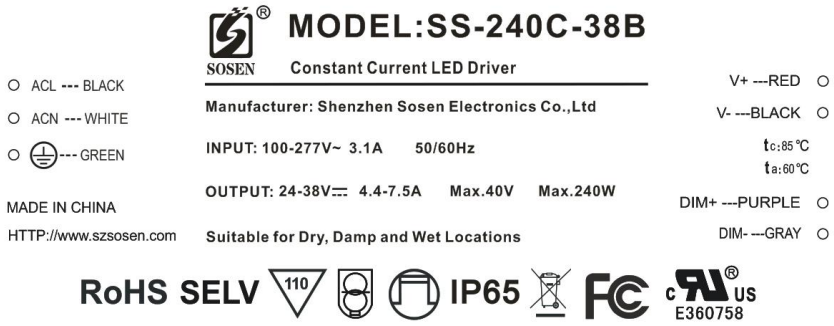
Mechanical Characteristics (Unit: mm)



NOTE:	
Input Wire	UL model: UL SJTW #18AWG 3*0.824 mm^2, O.D: 7.8mm, GREEN: PE, BLACK: L, WHITE: N Euro model: VDE H05RN-F 3*1.0 mm^2, O.D: 7.4mm, BROWN: L, BLUE: N, YELLOW/GREEN: PE
Output Wire	UL model: UL SJTW #14AWG 2*2.08 mm^2, O.D: 9mm, RED: V+, BLACK: V- Euro model: VDE H05RN-F 2*1.5 mm^2, O.D: 9mm, BROWN: V+, BLUE: V-
Suffix B DIM	STYLE 2733 #22AWG O.D: 5.8mm, PURPLE: DIM+, GRAY: DIM-
Suffix H AUX+DIM	STYLE 2733 #22AWG O.D: 6.0mm, PURPLE: DIM+, GRAY: DIM-, RED: VCC

Labels

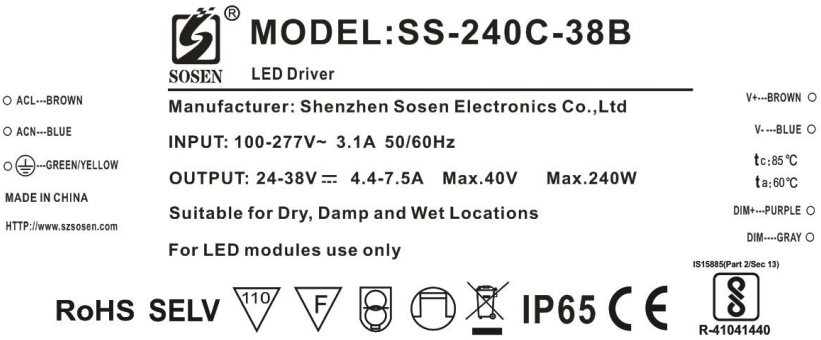
UL



TUV/SAA/CE

CCC

BIS



Dimming Diagram

- Output current could be adjusted by connecting 0-10V or PWM signal between DIM+ and DIM-
- DO **NOT** connect DIM- and V- to avoid abnormal output

0-10V Dimming(Typ.), See Fig. 8

Voltage Range	1V	2V	3V	4V	5V	6V	7V	8V	9V	10V	OPEN
Rated current percentage	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%-108%

10V PWM frequency range (Typ.): 200Hz-2KHz, See Fig. 9

PWM duty	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	OPEN
Rated current percentage	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%-108%

Resistor (Typ.), N represents the number of power supplies

Resistor	10KΩ /N	20KΩ /N	30KΩ /N	40KΩ /N	50KΩ /N	60KΩ /N	70KΩ /N	80KΩ /N	90KΩ /N	100KΩ /N	OPEN
Rated current percentage	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	95%-108%

Fig. 8 0-10V Dimming Curve

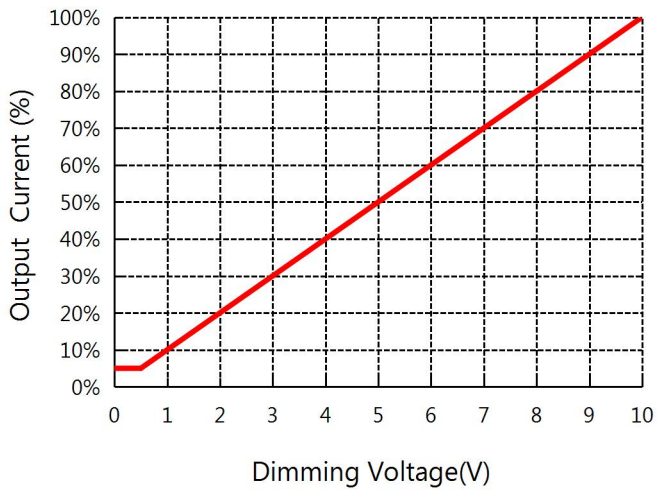
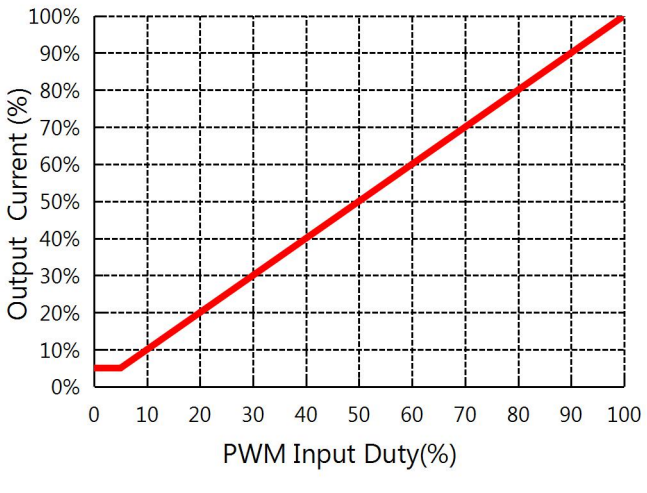


Fig. 9 PWM Dimming Curve



Installation Tips

1. Highly recommended to seal the adjustable hole with silicon glue (#704 preferred) after adjusting the driver's output current. Torsion with proper strength to avoid permanent damage to the potentiometer inside.
2. Before installation, please kindly check the integrity of the packaging and the appearance of product since no crack is allowed.
3. The screw thread need to meet the length of 15-22mm and integrate to the thread hole of the driver tightly and firmly and make sure all the screws and ring are locked firmly.
4. Whole luminaire's wight should be less than 16kg with the driver(1.95kg).
5. Dimming leads should be capped if not in use to avoid dimming circuit damage caused by external signals.

Package, Transportation & Storage

1. Package

- Outside carton dimension: L×W×H =580mm×433mm×217mm;
- 8PCS/Carton;
- Net weight/PC: 1.95kg;
- Gross weight/Carton: 17kg.

2. Transportation

Packaging is designed suitable for transportation by trucks, vessels and flights. The products should be shielded from direct sunshine, loaded/unloaded with caution.

3. Storage

The product storage meets the standard of the GB 3873—83.

Products should be rechecked if stock for over 1 year before installation.