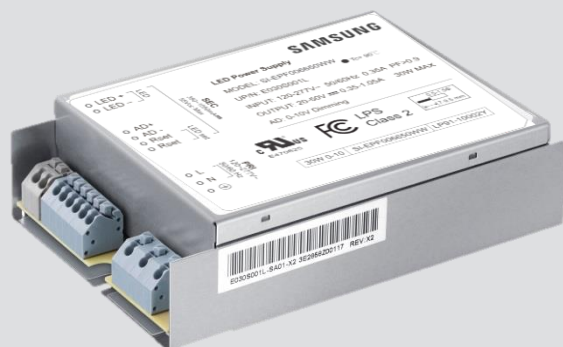


LED Driver

SI-EPF006650WW

Indoor 30W Dimmable Driver



Constant Current LED Driver Wide Operating Range up to 1.05A - Dimmable

Features & Benefits

- Output Current Range: 350~1050 mA (Adjustable through R-set)
- Output Voltage Range: Max 50 Vdc
- Output Power Range: Max 30 W
- Dimming Control: 0 - 10 Vdc
- Input Voltage: 120 ~ 277 Vac, 50 / 60 Hz
- Safety: UL / cUL (UL 60950, UL 8750)
- EMI: FCC Part 15 Class B
- Protections: Short Circuit, Open Load, AC Transient
- t_a Range: -20 ~ +50 °C
- Expected lifetime: 50,000 hours at $t_a < 50$ °C
- Long lasting & high reliability
- Small compact housing

Applications

- Downlights, Spotlights and other Indoor Lighting Applications



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1. Characteristics

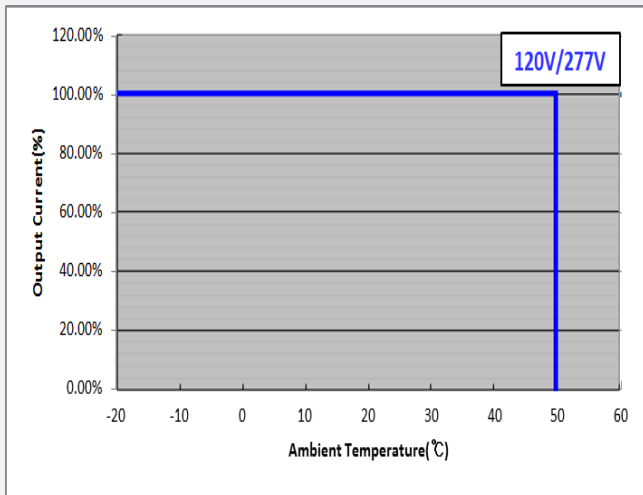
Article		Symbol	Specification			Unit	Note
			Min.	Typ.	Max.		
INPUT SPECIFICATIONS							
Nominal Input Voltage		Vin	120		277	Vac	
Voltage Range			108		305		
Nominal Frequency		fin	50 / 60			Hz	
Frequency Range			47		63		
Input Power	At 120 Vac	Pin	33	36	39	W	Vout=30Vdc, Iout=1.05A
	At 277 Vac		32	35	38		Vout=30Vdc, Iout=1.05A
Input Current	At 120 Vac	Iin			0.36	A	100% load
	At 277 Vac				0.15		100% load
Total Harmonic Distortion		THD			20	%	
Power Factor		PF	0.9			-	
Efficiency	At 120 Vac	η	83			%	
	At 277 Vac		85				
Standby Power		Pstd			1	W	Vin=120~277Vac, Vdim < 1Vdc.
In-rush Current					20	Apk	
OUTPUT SPECIFICATIONS							
Output Voltage		Vo	20		50	Vdc	
Max. Voltage		Vp			56	Vdc	No-load condition
Rated Current		Io	350		1050	mA	Tolerance ±5~10% ¹⁾
Output Ripple Current		Iripple	-20		+20	%	
Rated Power		Po	7.4		30	W	
Line Regulation			-5		+5	%	
Load Regulation			-5		+5	%	
Turn-on Delay Time		td			1	S	100% load

1) According to adjustment of output current through R-set, it will be variable from 5% to 10%. Refer to the page 7.

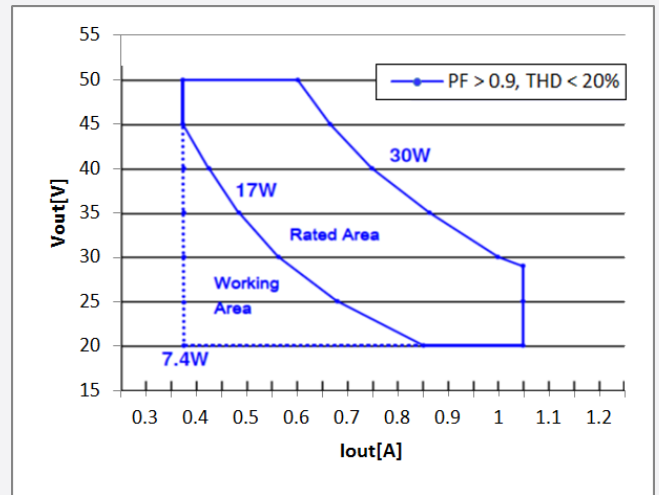
Article	Symbol	Specification			Unit	Note
		Min.	Typ.	Max.		
DIMMING SPECIFICATIONS						
Dimming Range		3		100	%	
Dimming Voltage Range		0		10	Vdc	
Dimming Voltage		1		8		
I _{SOURCE}				0.6	mA	
ENVIRONMENTAL SPECIFICATIONS						
Ambient Temperature	t _a	-20		50	°C	Refer to 'Derating Curve'
Case Temperature	t _c			90		Measured at tc point as indicated on the product label
Storage Temperature	t _s	-25		80		
Ambient Humidity		10		90	%	
IP Rating			20		-	Suitable for indoor environment
Expected Lifetime (e-cap)		50,000			h	
MTBF			100,000			
Dimensions	L x W x H	4.84 x 3.11 x 1.3			inch	
		123 x 79 x 33			mm	Tolerance : 0.5mm
Net Weight			0.24		Kg	±10%

2. Typical Characteristics Graphs

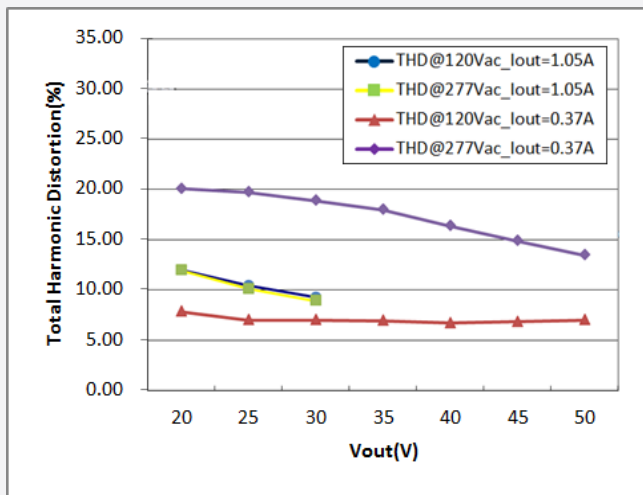
a) Derating Curve



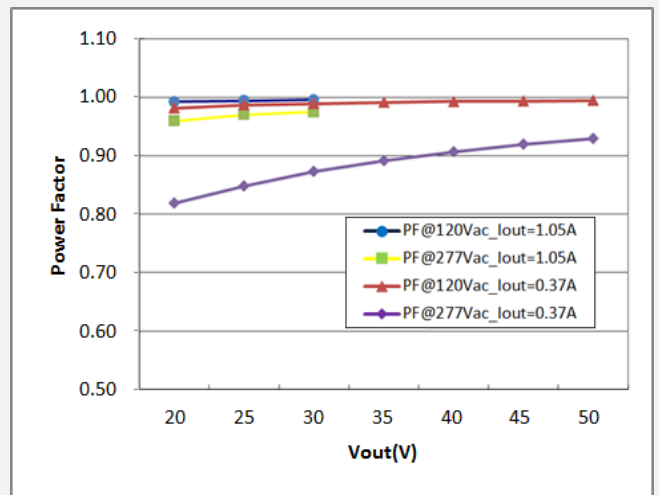
b) Operating Window



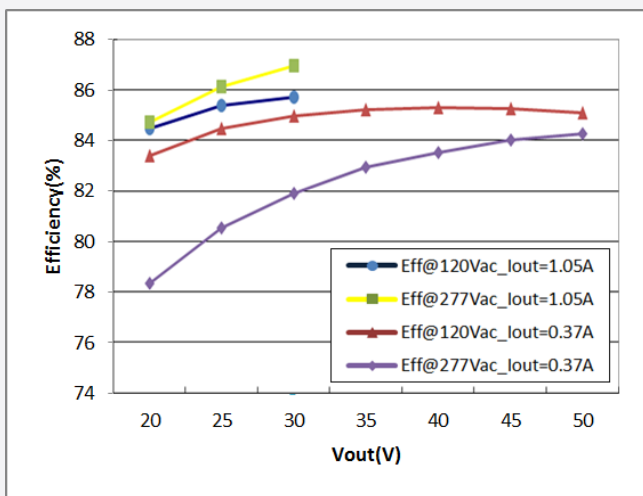
c) THD Curve



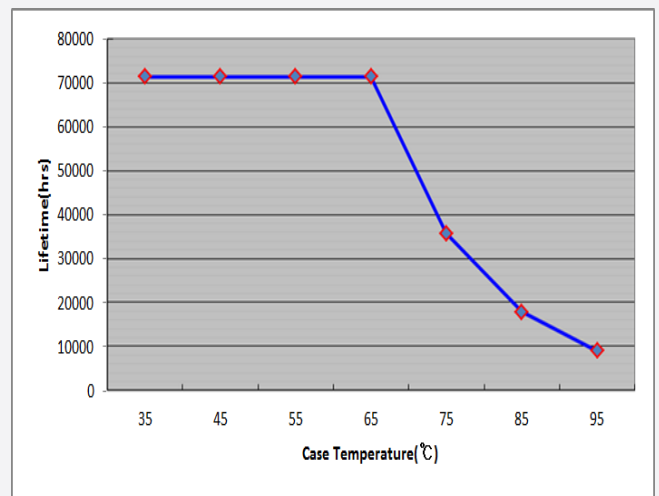
d) Power Factor vs Load Curve



e) Efficiency vs Load Curve



f) Lifetime vs. tc



g) Installation Instruction for R-set Setting

1. Power OFF the driver.
2. Choice a resistance from Rset table. Use lead type resistor for easy to connect(Recommend).
3. Forming the resistor.
4. Connection.

Step.1

Remove the cable from input side as below



Step.2

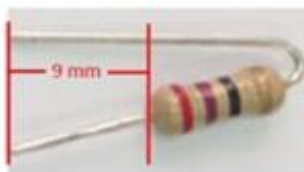
Recommended to use a resistor with lead wire



Step.3

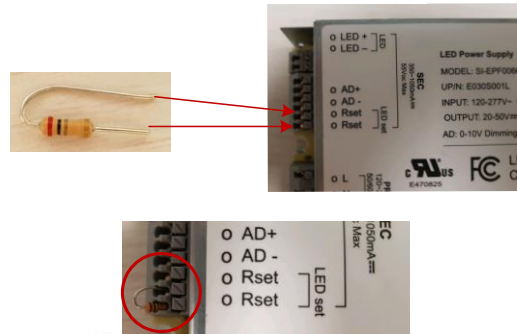
Bend a lead

Cut the wires as the length below



Step.4

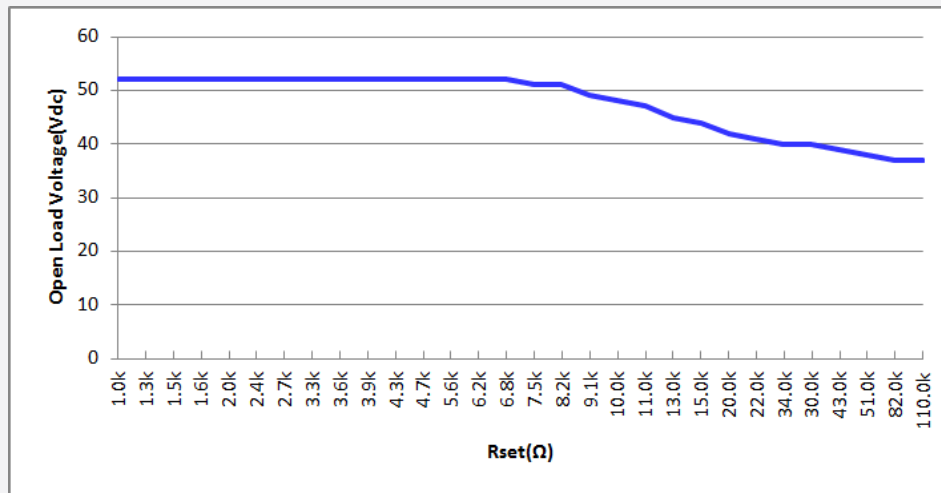
Insert the resistor to the Rset connector



※ Resistor wire should be the opposite side of driver metal case.

h) Installation Instruction for R-set Setting

Rset(k Ω)	Output Current(mA)	Current Tolerance(%)	Output Voltage(V)	Open Load Voltage(V)
1.0	350	± 10	20 ~ 50	52
1.3	390		20 ~ 50	52
1.5	410		20 ~ 50	52
1.6	420		20 ~ 50	52
2.0	480		20 ~ 50	52
2.4	520		20 ~ 50	52
2.7	550		20 ~ 50	52
3.3	590		20 ~ 50	52
3.6	600		20 ~ 50	52
3.9	630		20 ~ 48	52
4.3	660	± 7	20 ~ 46	52
4.7	680		20 ~ 45	52
5.6	720		20 ~ 42	52
6.2	740		20 ~ 41	52
6.8	770		20 ~ 40	52
7.5	790		20 ~ 39	51
8.2	800		20 ~ 38	51
9.1	830		20 ~ 37	49
10	840		20 ~ 37	48
11	860		20 ~ 36	47
13	890	± 5	20 ~ 35	45
15	900		20 ~ 34	44
20	940		20 ~ 33	42
22	960		20 ~ 32	41
24	980		20 ~ 32	40
30	990		20 ~ 31	40
43	1010		20 ~ 30	39
51	1030		20 ~ 29	38
82	1040		20 ~ 29	37
110	1050		20 ~ 29	37



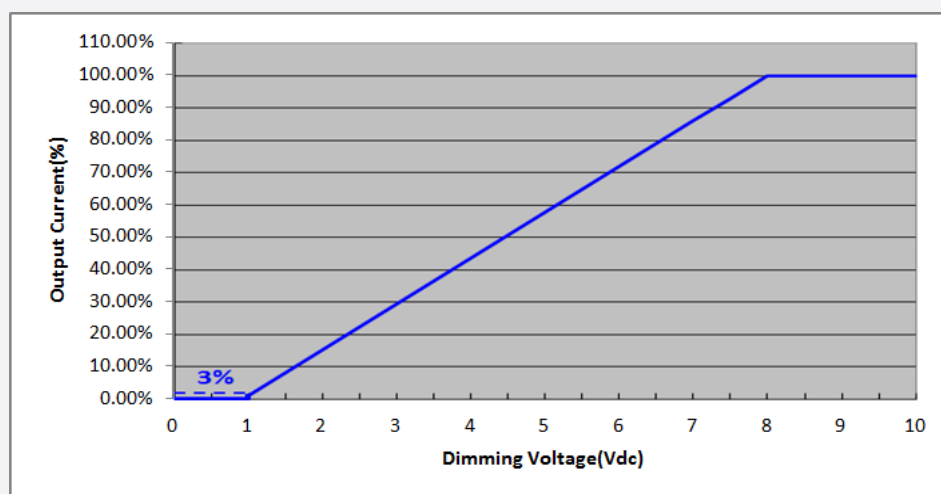
3. Protection

Protection Specification	Protection Mode	Condition
Output Short Protection	Auto-Recovery	(1) AC turn on then output short (2) Output short then AC turn on
Output Open Protection*	Clamp Open Load Voltage*	(1) AC turn on then output open (2) Output open then AC turn on
AC Transient Protection	Auto-Recovery	Vin = 120~277Vac range switching

* The open load voltage can be adjusted by output current value. Please refer to the below graph.

4. Dimming Specification

The unit has Analog Dimming(AD) function, using 1-10 Vdc. The typical dimming curve is shown below.



5. Reliability & Standards

Test Items and Conditions

Test Item		Specification	Condition
Leakage Current		< 0.7 mA	
Earth Continuity		< 0.5 Ω	
EFT/Burst*		± 2 kV, 5kHz, 1 mins above	
Hi-Pot	Input – Output	3750 Vac, 60 s, cut-off current 5 mA	3 seconds for mass production 100% tested in production line
Insulation Resistance	Input – Output	500 Vdc, 60 s, Insulation resistance > 4 M Ω	
	Input – F.G	500 Vdc, 60 s, Insulation resistance > 2 M Ω	
Surge*	L / N	± 1 kV	IEC/EN 61000-4-5
	LN / F.G	± 2 kV	
ESD*	Contact	± 4 kV	IEC/EN 61000-4-2
	Air	± 8 kV	

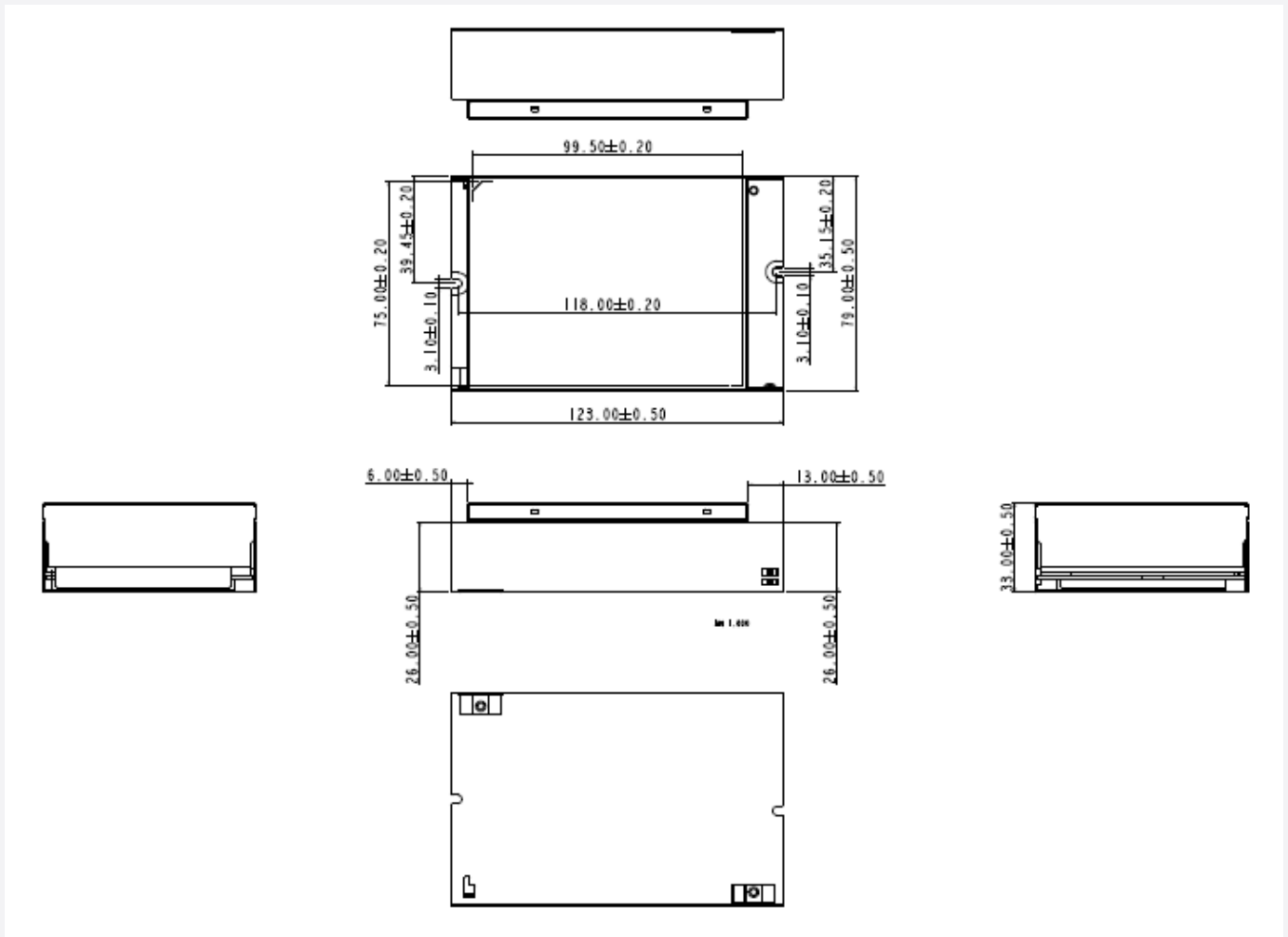
* The PSU should meets criteria B of that test.

International Standard

International Standard	Certification
UL Safety Standards (Class 2 Output)	UL 8750, UL 60950
Conducted and Radiated Emission Test	FCC Part 15 Subpart B Class B
Electrostatic Discharge (ESD): Contact ± 4 kV, Air ± 8 kV	IEC/EN 61000-4-2
Electrical Fast Transients (EFT)	IEC/EN 61000-4-4
Surge : Differential mode ± 1 kV, Common mode ± 2 kV	IEC/EN 61000-4-5

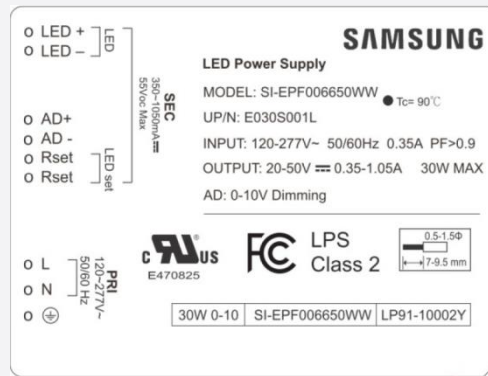
6. Outline Drawing & Dimension

a) Dimension(mm)



Housing material : SGCC

7. Label Structure



8. Packing Structure

Packing material	Driver Quantity (pcs)	Dimension (mm)		
		Length	Width	Height
Outer Box	20	483	385	108
Pallet	960 (48 outer boxes)	1200	1000	1009

9. Precautions in Handling & Use

- To prevent the LED Driver from any defect, please handle and store it with care
 - Do not drop or give shock
 - Do not store in very humid location or at extreme temperature
 - Do not open or disassemble the product
- Static electricity or surge voltage may damage the components inside LED Driver, as such please observe proper anti-electrostatic working process
 - People handling the Driver should be well grounded (e.g. using ESD wrist band) and wear anti-static working clothes and gloves
 - All related devices and instruments in the production line should be well grounded (e.g. working table, measuring equipment, assembly jigs)
- Observe the correct polarity of output terminal
- Avoid input voltage exceeds the maximum rating, which will cause damage to the circuit and result in malfunction
- Do not be more than output power 100W. This Driver is designed 100W which is maximum output power.
- Do not electric contact between output harness and dimming harness.
- Test and confirm dimmer compatibility. Performance may vary with various dimmers and controls.

Legal and additional information.

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