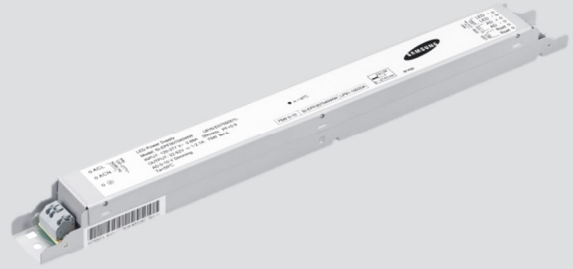


LED Driver

Indoor 75W Dimmable SI-EPF007040WW



Constant Current LED Driver Wide Operating Range up to 2.1 A – Dimmable

Features & Benefits

- Output Current Range: 1.0 ~ 2.1 A (adjustable via LEDset)
- Output Voltage Range: 22 ~ 52 Vdc
- Output Power Range: 22 ~ 75 W
- Dimming Control: 0-10 V
- Input Voltage: 120 ~ 277 Vac, 50/60 Hz
- Safety: UL / cUL (UL 60950 + UL 8750)
- EMI: FCC Part 15 Class B
- Protections: Overload, No Load, Short Circuit, Over Temperature, Over Voltage
- t_a Range: -20 ~ +50 °C
- Expected lifetime: 50,000 hours at $t_a = 50$ °C
- Long lasting & high reliability
- Slim metal housing

Applications

- Ambient Lighting (Linear and Area) and other Indoor Lighting Applications
- Office – Industry – Shop



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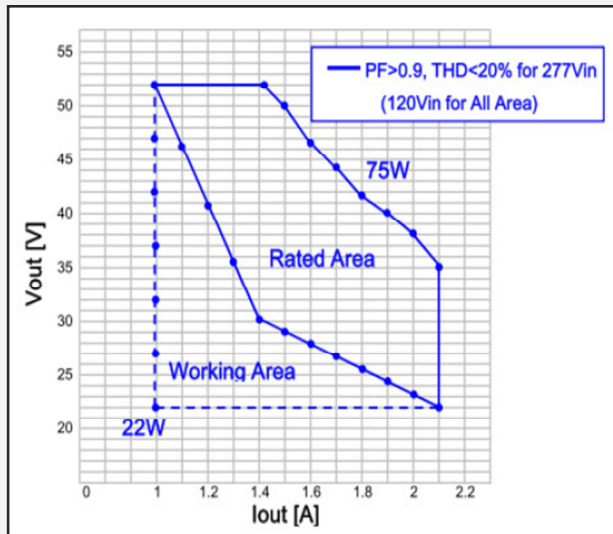
1. Characteristics

Article	Symbol	Specification			Unit	Note
		Min.	Typ.	Max.		
INPUT SPECIFICATIONS						
Nominal Voltage	V _{in}	120 ~ 277			Vac	Full input range, no range switching
Voltage Range		108		305	Vac	
Nominal Frequency	f _{in}	50 / 60			Hz	
Frequency Range		47		63	Hz	
Input Current	At 120 Vac	l _{in}		0.88	A	At full load
	At 277 Vac	l _{in}		0.44	A	At full load
Total Harmonic Distortion	THD			20	%	At 120-277 Vac
Power Factor	PF	0.9			-	At 120-277 Vac
Efficiency	η	83	88		%	At full load, 120 Vac, 60 Hz
Stand-by Power				1	W	At <1 V dimming voltage, 120-277 Vac
Protection Class			2		-	
In-rush Current				20	A _{pk}	Cold or hot start (t _{width} = 300 μs measured at 50 % I _{pk}) at 277 Vac
OUTPUT SPECIFICATIONS						
Nominal Voltage	V _o	22 ~ 52			Vdc	±2 %; at I _o = 1.0-2.1 A
Max. Voltage				56	Vdc	Open circuit, No-load protection
Nominal Current	I _o	1.0 ~ 2.1			A	±5 % (2.1 A), ±10 % (1.0 A)
Nominal Power	P _o	22 ~ 75	75		W	At I _o = 1.0-2.1 A, V _o = 22-52 V
Turn-on Delay Time	T _d			1	s	At full load, 108 Vac input

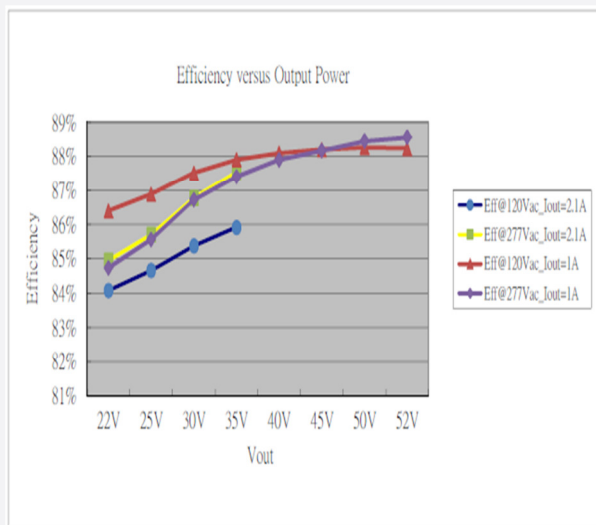
Article	Symbol	Specification			Unit	Note
		Min.	Typ.	Max.		
DIMMING SPECIFICATIONS						
Dimming Control		0-10 V				See Dimming Specification section
ENVIRONMENTAL SPECIFICATIONS						
Ambient Temperature	t_a	-20		50	°C	
Case Temperature	t_c			90	°C	Measured at t_c point as indicated on the product label
Storage Temperature	t_s	-25		80	°C	Cool down before operating
Relative Humidity		20		90	%	Not condensing
Surge Transient Protection	L / N			±1	kV	According to IEC/EN 61547
	LN / GND			±2	kV	
IP Rating		20			-	Suitable for indoor environment
Expected Lifetime (e-cap)		50,000			h	At $t_a = 50$ °C, full load, 120-277 Vac
MTBF		100,000			h	At $t_a = 25$ °C, full load, 230 Vac
Dimensions	L x W x H	14.1 x 1.2 x 1.0			inch	
		359 x 30 x 26.5			mm	
Net Weight		395			g	± 40 g

2. Typical Characteristics Graphs

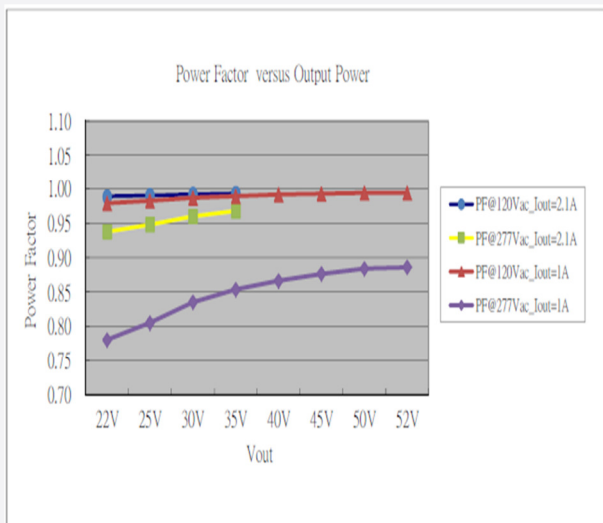
a) Operating Window



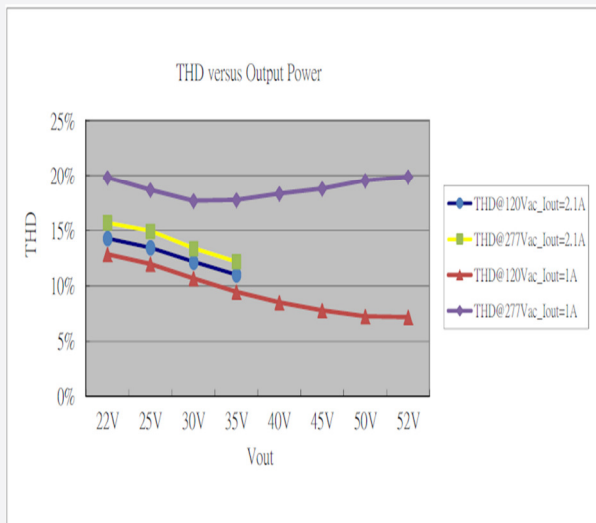
b) Efficiency vs. Load



c) Power Factor vs. Load



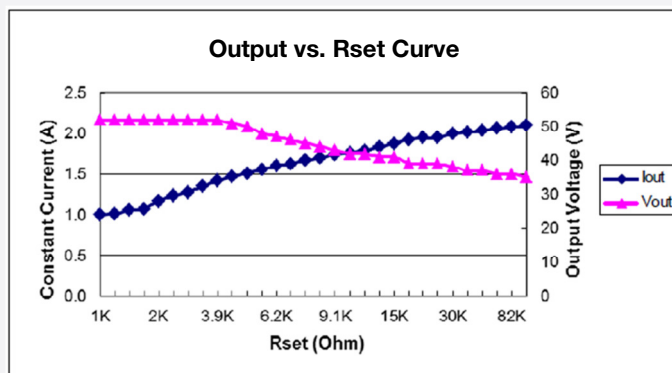
d) Total Harmonic Distortion vs. Load



e) Current Setting

The output current can be adjusted using Rset resistor:

- Disconnect Rset resistor to set full load at 2.1 A / 35 V condition
- Connect Rset resistor to set output current (see below table and curve); for Rset = 3.9 kOhm, the output is full load at 1.42 A / 52 V condition
- The unit has minimum output current at ... A when the Rset is less than ... kOhm
- The output voltage is limited by maximum output power (if the output current is set at 2.1 A, the maximum output voltage will be 35 V; if the output current is set at 1.42 A, the maximum output voltage will be 52 V)



Rset (ohm)	Output Current (A)	Output Voltage (V)	MAX Output Voltage (V)	OVP Voltage (V)
1K	1.0000	22~52	52	55.00
1.3K	1.0146	22~52	52	55.00
1.5K	1.0575	22~52	52	55.00
1.6K	1.0746	22~52	52	55.00
2K	1.1722	22~52	52	55.00
2.4K	1.2336	22~52	52	55.00
2.7K	1.2763	22~52	52	55.00
3.3K	1.3475	22~52	52	55.00
3.9K	1.4188	22~52	52	55.00
4.3K	1.4633	22~51	51	55.00
4.7K	1.5080	22~50	50	54.40
5.6K	1.5528	22~48	48	53.20
6.2K	1.5972	22~47	47	51.50
6.8K	1.6243	22~46	46	50.10
7.5K	1.6679	22~45	45	49.20
8.2K	1.6941	22~44	44	48.50
9.1K	1.7394	22~43	43	47.00
10K	1.7574	22~42	42	46.40
11K	1.7850	22~42	42	45.80
13K	1.8290	22~41	41	44.50
15K	1.8736	22~41	41	44.00
20K	1.9199	22~39	39	42.30
22K	1.9455	22~39	39	42.00
24K	1.9470	22~39	39	41.40
30K	1.9913	22~38	38	41.00
33K	2.0144	22~37	37	41.00
43K	2.0337	22~37	37	40.50
51K	2.0618	22~36	36	40.00
82K	2.0780	22~36	36	39.00
110K	2.1000	22~35	35	39.00

3. Protection

a) Output Short Circuit Protection

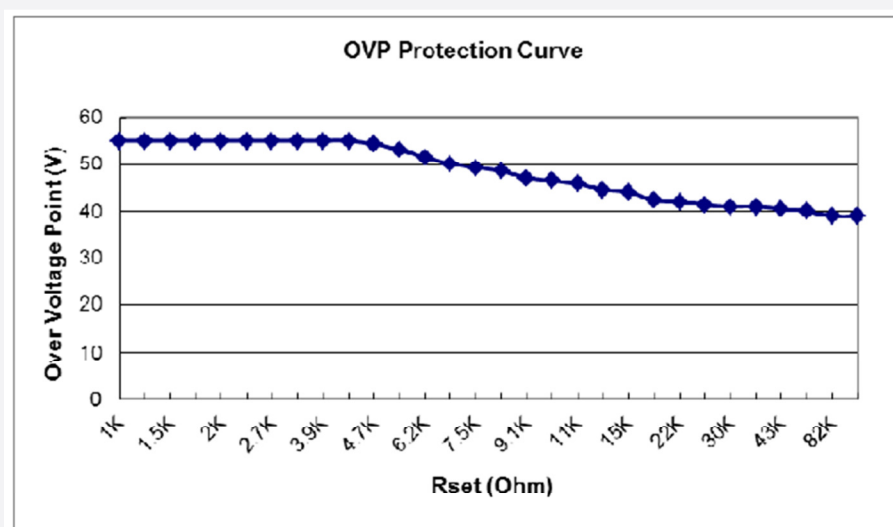
The unit is protected when output is short thus avoiding fire hazard, shock hazard and damage to the unit. After the short circuit fault condition is removed, the unit will be in auto recovery mode.

b) Output Over Voltage Protection

When no load condition occurs, the unit will clamp output voltage to the OVP Voltage avoiding damage to the unit. After the load is connected, the unit will be in auto recovery mode.

When load open condition occurs, the unit will be latch on.

The OVP Voltage varies according to the Rset resistor value (see below curve and table) and under 56 V.

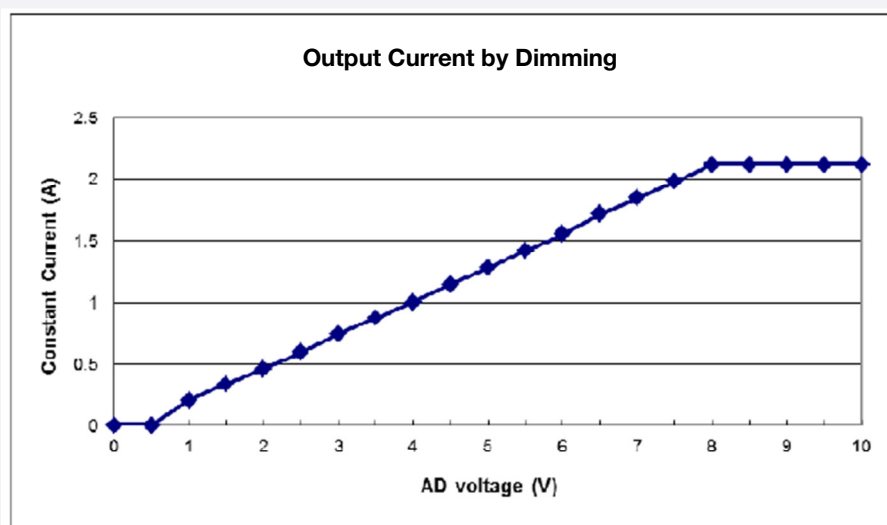


c) Over Temperature Protection

The unit is protected when IC is over temperature thus avoiding fire hazard and shock hazard. After the temperature is cooled down, the unit will be in auto recovery mode.

4. Dimming Specification

The unit has Analog Dimming (AD) function, using 0-10 Vdc. The typical dimming curve is shown below: (the current of LED module is 2.1 A at full load condition)



5. Reliability

Test Items and Conditions

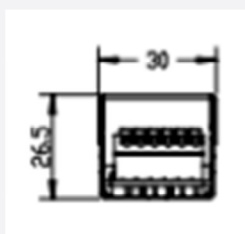
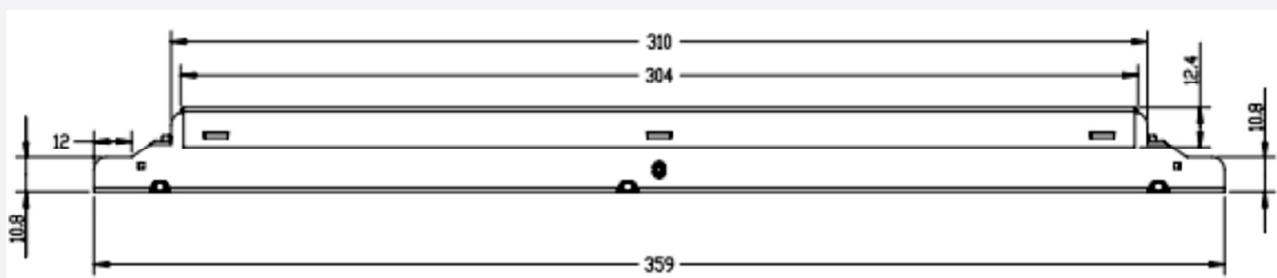
Test Item	Specification	Condition
Leakage Current	< 0.7 mA	According to IEC/EN 60950
Earth Continuity	< 0.5 Ω	According to IEC/EN 61347 100 % tested in production line
Hi-Pot	Input – Output	3000 Vac, 60 s, cut-off current 10 mA
	Input – Case	1500 Vac, 60 s, cut-off current 10 mA
Insulation Resistance	Input – Output	500 Vdc, 60 s, insulation resistance 4 MΩ
	Input – Case	500 Vdc, 60 s, insulation resistance 2 MΩ
Surge	L / N	±1 kV
	LN / GND	±2 kV
ESD	Contact	±4 kV
	Air	±8 kV

6. Outline Drawing & Dimension

Dimension (mm)



Top



Sides



Bottom

Housing material: SGCC

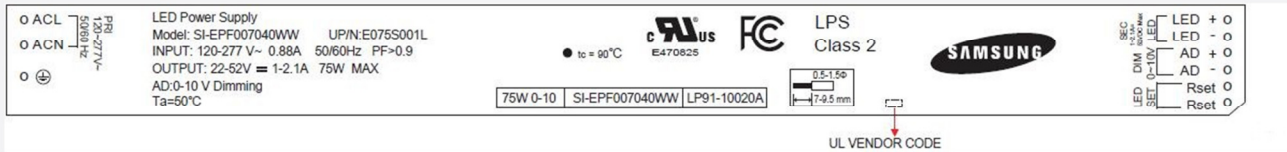
b) Wiring

Connectors type (input and output): DN250A or compatible

Wire cross-section: 0.5 - 1.5 mm²

Wire peeling length: 7 - 9.5 mm

7. Label Structure



8. Packing Structure

Packing material	Max. quantity (pcs)	Dimension (mm)		
		Length	Width	Height
Outer Box	32	483	385	148
Pallet	1152 (36 outer boxes)	1220	1020	120

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

Legal and additional information.

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