

IP44 LED Power Supply



Features

- . Compliance to EN IEC 61000-3-2 (<25W) standard
- . IP44
- . Protections: Short circuit / Overload / Over voltage
- . Compliance to worldwide safety regulations for lighting
- . Lifetime 30,000hrs

Description :

SE20-12 / 24VFP(new harmonic) is an indoor ultra-thin constant voltage LED power supply. Its input voltage range is 180-264vac, with a maximum conversion efficiency of 86%. It works in the ambient temperature range of - 20 ° C ~ + 45 ° C, has high power factor, low total harmonic distortion, can pass the en61000-3-2 harmonic standard, low standby power consumption and all-round protection function. It not only greatly improves the reliability of the product, but also ensures the product life cycle. This series of products are designed for LED lighting and can be applied to indoor bathroom mirror lamps.

Model

Model	Rated output voltage	Rated output current	Max. output power	Output voltage tolerance	Total harmonic distortion (Typ.)	Power factor (Typ.)	Efficiency (Typ.)
SE20-12VFP	12V	0-1.67A	20W	±5%	45%	0.84	85%
SE20-24VFP	24V	0-0.833A	20W	±5%	45%	0.84	86%

Remark: All parameters NOT specially mentioned are measured at 230VAC input, full load and 25 °C of ambient temperature.

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Input

Parameter	Min. value	Typical value	Max. value	Note
Rated input voltage	200 Vac		240Vac	The derating curve is shown in the figure
Input voltage	180 Vac		264Vac	
Input frequency	47Hz		63Hz	
Max. Input current			--	110Vac , Full Load
			0.16A	180Vac , Full Load
Input inrush current			60A	230Vac/50Hz , Cold Start
Power factor	0.80	0.84		230Vac , Full Load
Total harmonic input		45%	50%	230Vac , Full Load
Leakage current			0.7mA	230Vac/50Hz , Full Load
Stand-by power consumption		0.15W	0.5W	230Vac/50Hz , No Load

Output

Parameter	SE20-12VFP	SE20-24VFP	Note
Rated output voltage	12VDC	24VDC	Max. Output power should compliance to $P_o=V_o*I_o=20W$
The min. output voltage (CC mode)	--	--	
Rated output current	0-1.67A	0-0.833A	
Output current ADJ. range	--	--	
Rated output power	20W	20W	
Rated output efficiency	85%	86%	230Vac
Output current tolerance	--		
Output voltage ripple (PK-PK)	±2%		Full load (Test under 20M bandwidth)
Output current ripple (PK-PK)	--		
Rise time	100mS		230Vac
Startup time	400mS		230Vac
Line regulation	±1%		Full load
Load regulation	±2%		
PWM Dimming recommended frequency	> 1KHZ		The actual dimming effect is related to lamp beads, dimmers, etc. , the specific situation shall be subject to the customer's test.

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Characteristic curve

Fig. 1 Output load-Temperature curve

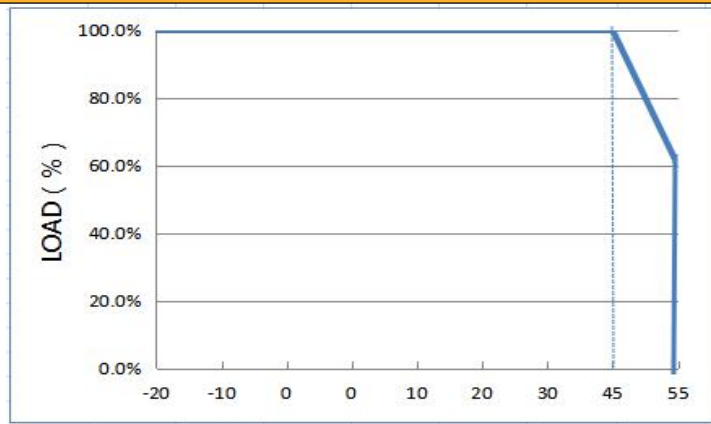


Fig. 2 Static characteristic curve

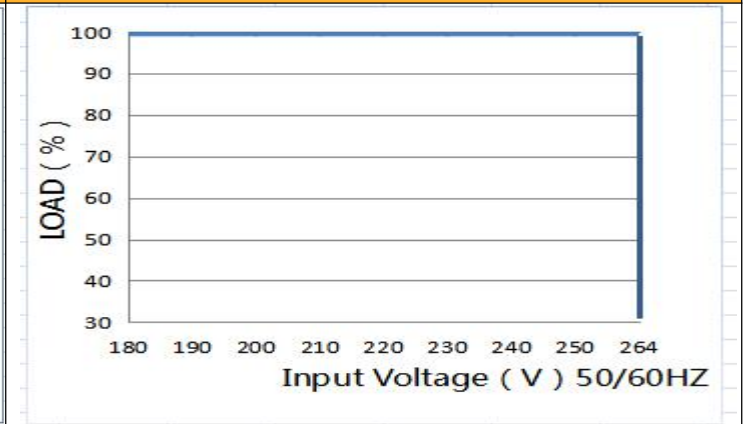


Fig. 3 I-V curve

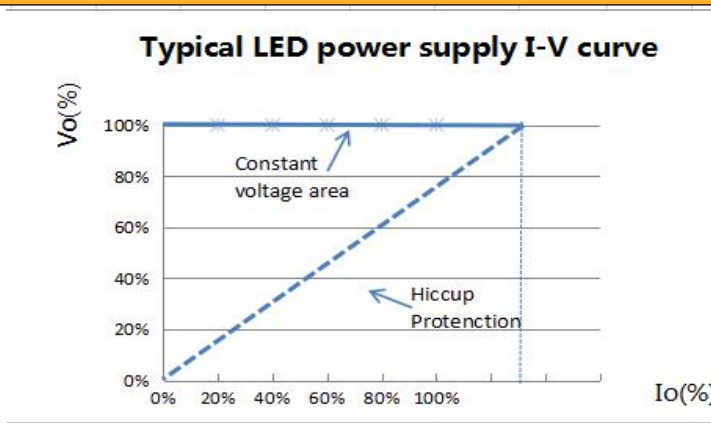


Fig. 4 Power factor characteristic curve

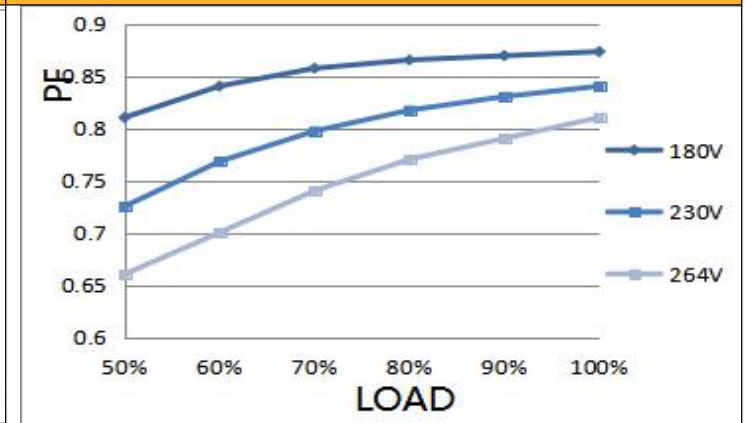


Fig.5 Total harmonic distortion curve (THD)

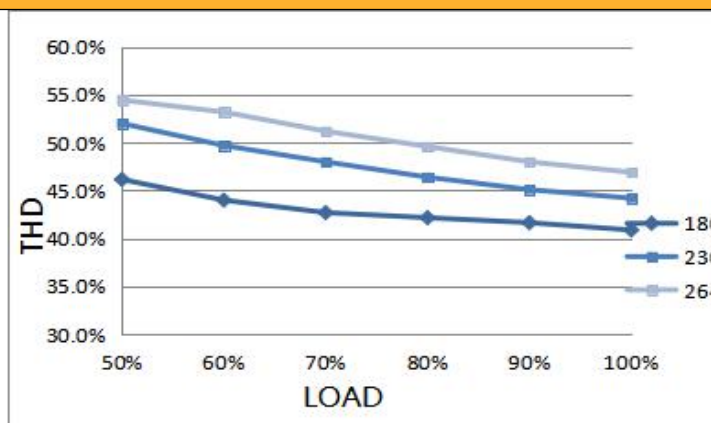
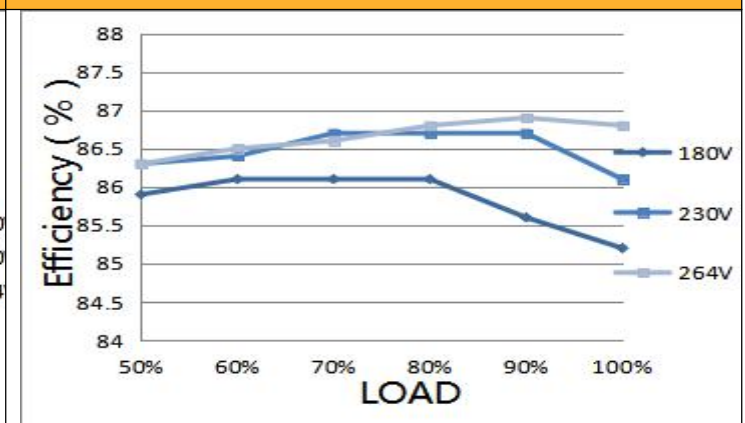


Fig.6 Efficiency-Load curve



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Protection

Parameter		Conditions	Note
Protection	Over load	1.4 times rated load	Recover automatically when cancel overload
	Short circuit	Short circuit power $\leq 0.6W$	Hiccup mode, auto-recovery after short circuit removed
	Over voltage	1.5 times of rated output voltage	auto-recovery after over voltage removed
	Over temperature	--	--

Environment Requirement

Parameter	Min.	Typ.	Max.	Note
Working temp.	-20°C	25°C	+45°C	See Fig.2
Storage temp.	-40°C	25°C	+85°C	
Working humidity	10%RH		90%RH	
Storage humidity	5%RH		95%RH	
IP grade		IP44	IP44	
Cooling mode	Natural cooling			

Remark: All parameters NOT specially mentioned are typical values measured at 25 °C of ambient temperature.

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Safety&EMC Standard

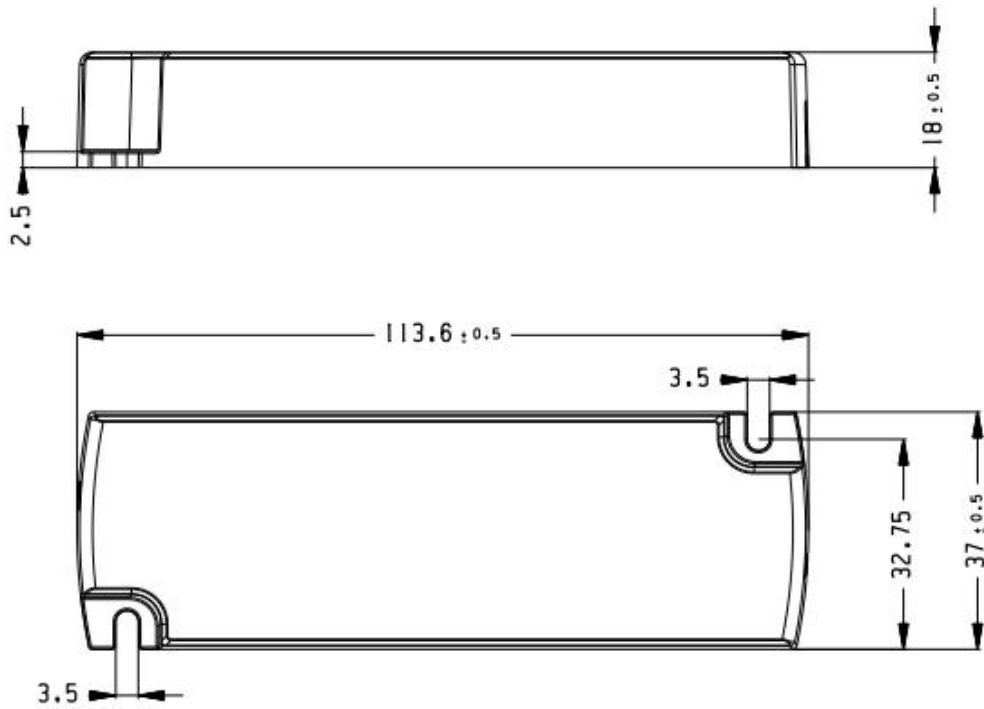
Certificate		Safety standards	Certification	Note
UL/CUL		UL8750		
TUV		EN61347-1:2015 EN 61347-2-13:2014+A1 EN62493:2015		
SAA		AS/NZS 61347.2.13		
CCC		GB 19510.14-2009		
CE		EN 61347-2-13:2014 +A1 EN61347-1:2015		
Safety test		Technical indexes	Note	
Dielectric strength	Input to output	3200Vac/5mA Max/60s	Reinforced insulation, no breakdown, no flashover	
	Primary to ground	1600Vac/5mA Max/60s	Basic insulation, no breakdown, no flashover	
	Secondary to ground	1000Vac/5mA Max/60s	Functional insulation, no breakdown, no flashover	
Insulation resistance	Input to output	$\geq 10M\Omega$	Test voltage : 500Vdc	
Grounding resistance		$\leq 0.1\Omega$	25A/1min	
Leakage current		$\leq 0.75mA$	277Vac	
EMI/EMS item		Standards	Basis	
Conduction CE		EN55015		
Radiation RE		EN55015		
Harmonics		EN IEC 61000-3-2	Class C	

Others

Parameters	Condition	Note
Lifetime	30,000hrs	230Vac , Full load, TC. 75°C
MTBF	200,000hours	230Vac , Full load, 25°C (MIL-HDBK-217F)
TC	85°C	
Warranty	3 years	TC : 75°C
Weight	50g	
Dimensions	113*37*18mm	L x W x H

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Mechanical Specification (Unit : mm)



Remark :

AC input cable	H05VVH2-F 2*1.0mm ²
DC output cable	H03VVH2-F 2*0.75mm ²