

IP20 LED Power Supply



Features:

- . European input voltage 220-240VAC
- . Short circuit / over load / open circuit protection
- . Plastic case, potting inside
- . Compliance to worldwide safety regulations for lighting
- . Compliance to latest European standard
- . Suitable for dry indoor environment

Description:

SEA60-12VL/24VL is an indoor constant voltage LED driving power supply with an input voltage range of 220-240Vac, a conversion efficiency of up to 87%, operating in the ambient temperature range of - 20 ° C to +45 ° C, high power factor, low total harmonic distortion, low standby power consumption, and all-round protection functions, which not only greatly improve the reliability of the product, but also ensure the product life cycle. This series compliance to worldwide safety regulations, making sure the user and light fixture safety during the application.

Model

Model	Rated output voltage	Rated output current	Max. output power	Output voltage tolerance	Power factor (Typ.)	Efficiency (Typ.)
SEA60-12VL	12V	0-5A	60W	±5%	0.95	86%
SEA60-24VL	24V	0-2.5A	60W	±5%	0.95	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	220 Vac		240Vac	Derating curve is shown in figure
Input voltage	198 Vac		264Vac	
Input frequency	47Hz		63Hz	
Max. Input current			0.37A	198Vac , Full Load
Input inrush current			50A	230Vac/50Hz , Cold Start
Power factor	0.9	0.95		230Vac , Full Load
Total harmonic input		7%	10%	230Vac , Full Load
Leakage current			0.7mA	230Vac/50Hz , Full Load
Stand-by power		0.4W	0.5W	230Vac/50Hz , No Load

Output

Parameter	SEA60-12VL	SEA60-24VL	Note
Rated output voltage	12V	24V	Max. Output power should compliance to $P_o=V_o \cdot I_o = 60W$
Rated output current	5A	2.5 A	
Output current range	0-5A	0-2.5A	
Rated output power	60W	60W	
Rated output efficiency	87%	88%	230Vac
Output voltage accuracy	$\pm 5\%$		
Output voltage ripple (PK-PK)	$\pm 2\%$	$\pm 1\%$	Full load (Test under 20M bandwidth)
Output current ripple (PK-PK)	--		
Rise time	100mS		230Vac
Startup time	300mS		230Vac
Line regulation	$\pm 1\%$		Full load
Load regulation	$\pm 1\%$		

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Characteristic curve

Fig. 1 Output load-Temperature curve

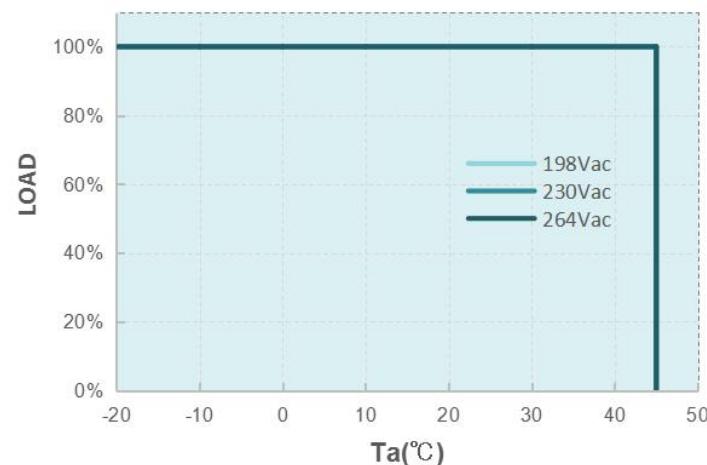


Fig. 2 Static characteristic curve

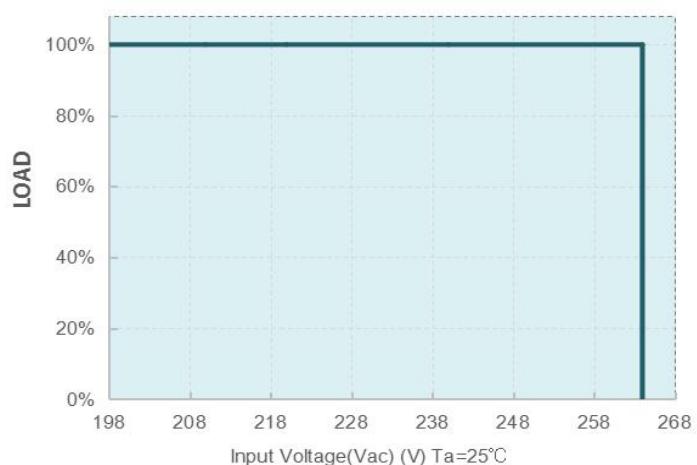
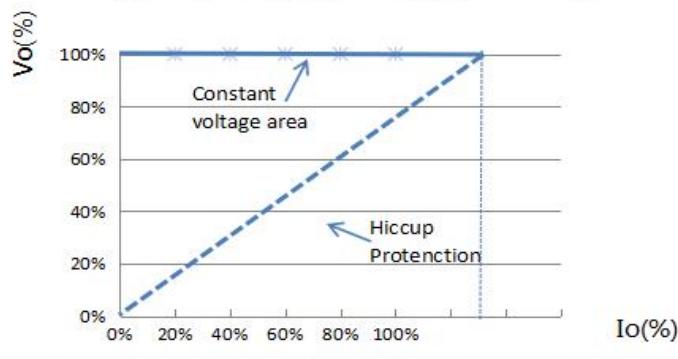


Fig. 3 I-V curve

Typical LED power supply I-V curve



Pic 4 Power factor characteristic curve

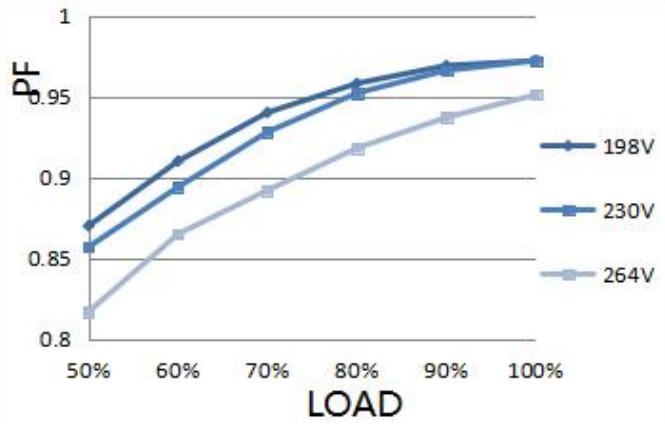


Fig.5 Total harmonic distortion curve (THD)

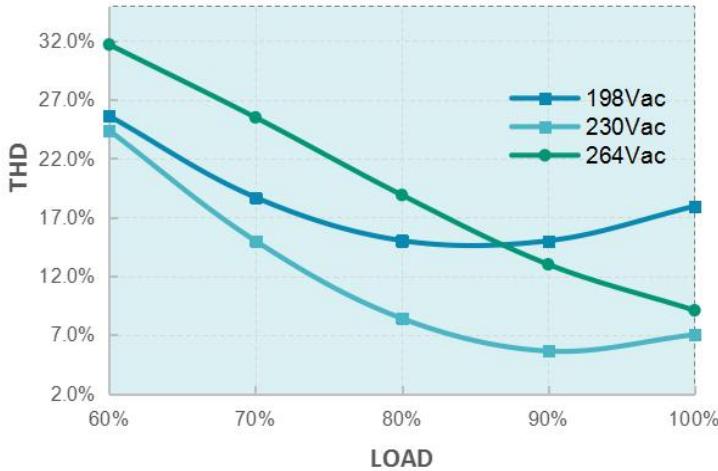
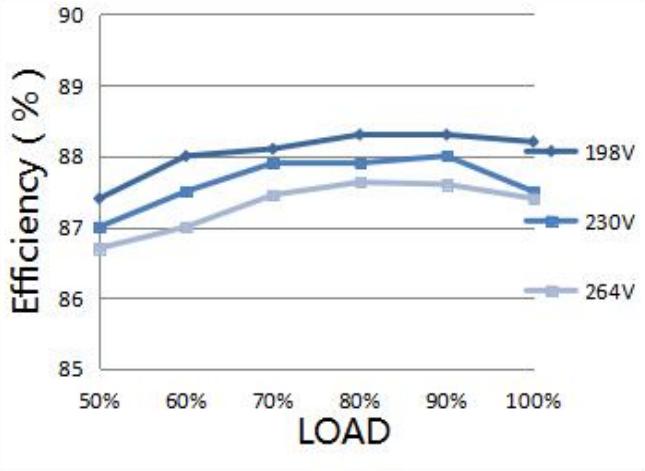


Fig.6 Efficiency-Load curve



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Protection

Parameter		Conditions	Note
Protection	Over load	1.2 times rated load	Auto-recovery after overload Removed.
	Short circuit	Short circuit power≤0.5W	Hiccup mode, auto-recovery after short circuit 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			IP20	
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

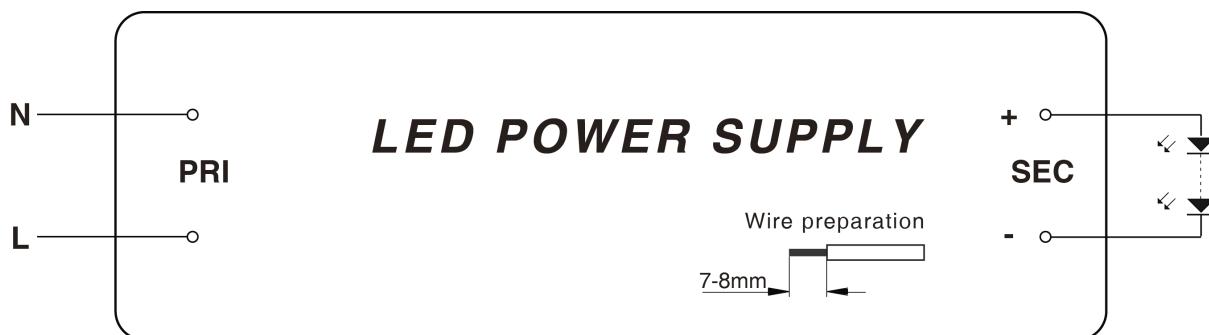
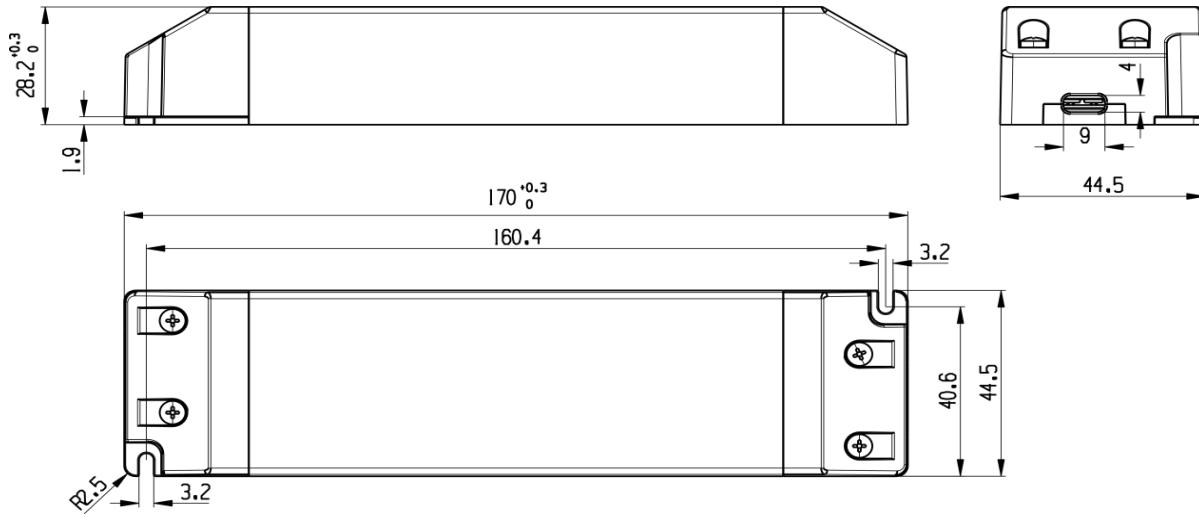
Certificate	Safety standards	Certification	Note
UL/CUL	---		
TUV	EN61347-1:2015 EN 61347-2-13:2014+A1 EN62493:2015	√	
SAA	AS/NZS 61347.2.13		
CCC	---		
CE	EN 61347-2-13:2014 +A1 EN61347-1:2015	√	
Safety test	Technical indexes	Note	
Dielectric strength	Input to output Primary to ground Secondary to ground	3750Vac/5mA Max/60s --- ---	Reinforced insulation, no breakdown, no flashover Basic insulation, no breakdown, no flashover Functional insulation, no breakdown, no flashover
Insulation resistance	Input to output	≥10MΩ	Test voltage : 500Vdc
Grounding resistance		---	25A/1min
Leakage current		≤0.75mA	264Vac
EMI/EMS	Standard	Note	
Conduction CE	EN55015		
Radiation RE	EN55015		
Harmonics	EN IEC 61000-3-2		Class C

Others

Parameters	Condition	Note
Lifetime	50,000hours	230Vac,Full load case temperature 75°C
MTBF	200,000hours	230Vac, Full load environment temperature Ta:25°C (MIL-HDBK-217F)
TC	90°C	
Warranty	5 years	
Weight	223g	
Dimensions	170*44.5*28.2 mm	L x W x H

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Mechanical Specification (Unit : mm)



Remark :

AC input cable	Terminal , H03VVH2-F 2×0.75mm ²
DC output cable	Terminal , H03VVH2-F 2×0.75mm ²