LED Driver

Constant voltage 100W / 80W / 60W Data Sheet

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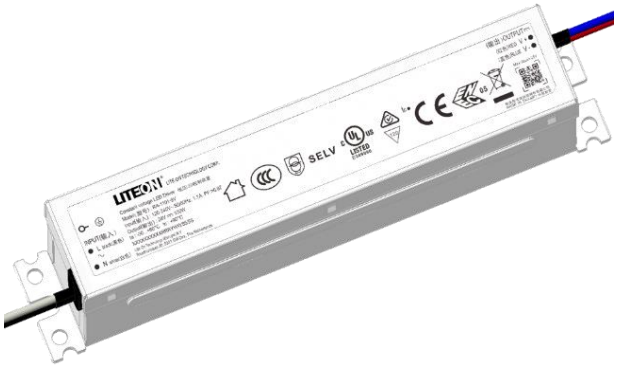
Description

The purpose of this document is to specify the functional and non-functional requirements of **100W / 80W / 60W indoor Power Supply Unit** (further called "**PSU**"). These PSU are global approbations and certifications: SELV 24V output, which ensures safety even if wiring or LED boards was damaged.

Features

* Constant voltage design
* Fully Protection with OVP, SCP, OTP, OPP
* High PF & Low THD Performances
* Up to 88% Efficiency for 100W and 80W
* Compliance with IEC61000-3-2 Ed5
* RoHS Compliant



Electrical Specification

Model Name	RA-1101-9V01	RA-1800-9V01	RA-1600-9V01
Output Characteristics			
Output power	2.4W~100W	2.4W~80W	2.4W~60W
Output voltage (note #2)	24Vdc		
Rated current	0.1A~4.16A	0.1A~3.3A	0.1A~2.5A
Line regulation	±1%		
Load regulation	±3%		
Output voltage ripple(note #6)	230 mVpp		
Turn on delay time (note #3)	≦0.7 s		
Output voltage rise time	≦50 ms		
Hold-up time	≧25 ms		
Input Characteristics			
Rated AC input voltage	120~240Vac		
AC input voltage	108~264Vac		
AC input Frequency	50 / 60Hz (47Hz~63Hz)		
AC input current (Max.)	≦1.1A @108Vac / ≦0.99A @120Vac / ≦0.6A @202Vac / ≦0.52A @240Vac	≦0.88A @108Vac / ≦0.79A @120Vac / ≦0.48A @202Vac / ≦0.42A @240Vac	≦0.68A @108Vac / ≦0.61A @120Vac / ≦0.37A @202Vac / ≦0.32A @240Vac
Power factor (@Max. load)	≧0.99 @ 120Vac /	≧0.99 @ 120Vac /	≧0.99 @ 120Vac /

	≧0.97 @ 230Vac	≧0.96 @ 230Vac	≧0.95 @ 230Vac
THD (@Max. load)	≦10% @ 120Vac / ≦11.5% @ 230Vac	≦10% @ 120Vac / ≦12.5% @ 230Vac	≦10% @ 120Vac / ≦20% @ 230Vac
Inrush current	< 50A / 400 uS @ 230Vac / 50Hz & max. output wattage		
Rated input power (Max.) (@120Vac & 240Vac)	116W	96W	76W
Efficiency (Min.) (note #4)	86% @ 120Vac / 88% @240Vac	86% @ 120Vac / 88% @240Vac	86% @ 120Vac / 87% @240Vac
Standby	< 0.5W @ 230Vac / 50Hz & 0A		
Protection Function			
Open load protection	Automatic recovering		
Short circuit protection	Automatic recovering		
Over power protection	Automatic recovering		
Over temperature protection	Automatic recovering		
IP rating	IP20		
Environment			
Operating temperature	-30~60℃ / 10~90% RH (non-condensing)		
Storage temperature	-30~85℃ / 5~90% RH (non-condensing)		
Lifetime (@Max. load) (note #5)	50,000 Hrs@120V &240V.		
CMTBF(@Max. load) (note #7)	500,000 Hrs@120V &240V.		
Cooling	Free air convection		
Tc-max	90℃	85℃	80℃
Tc-life	80℃	75℃	70℃
Maximum housing temperature	120℃		
Mechanical			
Dimension	242.0(L)*44.0(W)*31.5(H) (mm)		
Safety			
Standard	IEC/EN 61347-1, IEC61347-2-13, UL8750, CSA250.13, GB19510.1, GB19510.14, IEC/EN 60335-1, IEC/EN60335-2-24, IEC/EN 60335-2-89 (Compliant to the “Non-sparking ‘n’ electrical apparatus” of IEC / EN 60335-2-89, Annex BB and IEC / EN 60335-2-24, Annex CC)		
Approved mark (RA-1101-9V01)	*UL recognized US & Can / CSA / CE / Double-insulated / ENEC / RCM / SELV / VDE / VDE household / VDE-EMC / CCC*		
Approved mark (RA-1800-9V01 /RA-1600-9V01)	*UL recognized US & Can / CSA / CE / Double-insulated / ENEC / EAC / RCM / SELV / UA / UL Class2 / VDE / VDE household / VDE-EMC / CCC*		

Performance	IEC / EN 62384
EMC	
EMI	EN55015 (EU), FCC 47 CFR15 Class B
EN61000-3-2	Harmonic current Class C
EN61000-3-3	Voltage fluctuations and flicker
EN61000-4-2	Electrostatic discharges (ESD)
EN61000-4-3	Continuous Radiated disturbances (RS)
EN61000-4-4	Electrical Fast Transient/Burst (EFT)
EN61000-4-5	Differential mode: +-1.5KV; +-2.5KV acc. ANSI 100KHz ring wave 200A Common Mode: +-2KV; +-6KV acc. ANSI 100KHz ring wave 200A
EN61000-4-6	Continuous conducted disturbances (CS)
EN61000-4-8	Power-frequency magnetic fields (PFMF)
EN61000-4-11	Voltage dips and interruptions

Notes

#1: Above definition is based on 25℃ ambient if not specified.

#2: Output voltage range: ±3%.

#3: Read turn on delay time at 90% of max. output load.

#4: Measure efficiency after burn-in 30 minutes with max. output load.

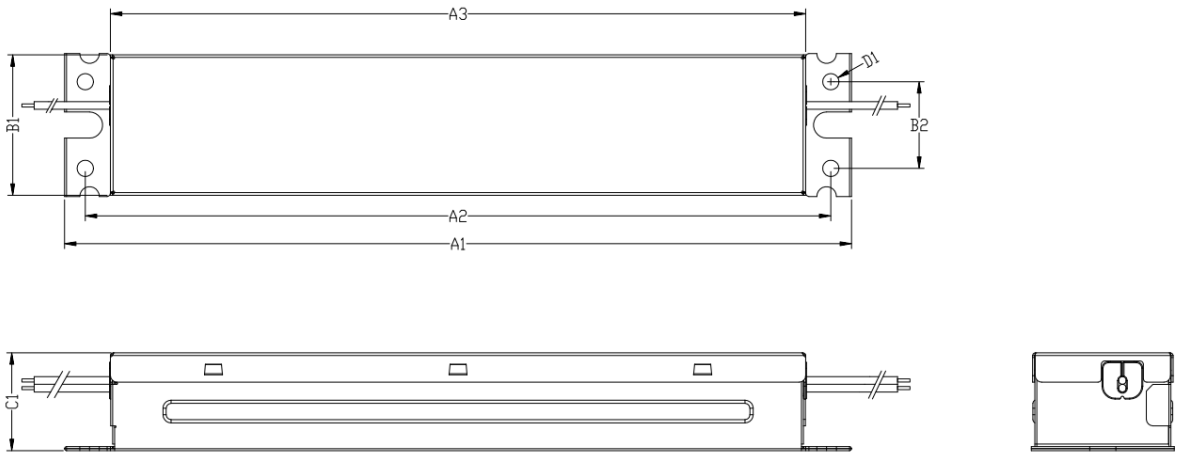
#5: Measured temperature at Tc-point is Tc-life.

#6: With 0.1uF ceramic and 10uF electrolytic capacitor are paralleled on the load. As short as possible to close to the end of output cable when measure output voltage.

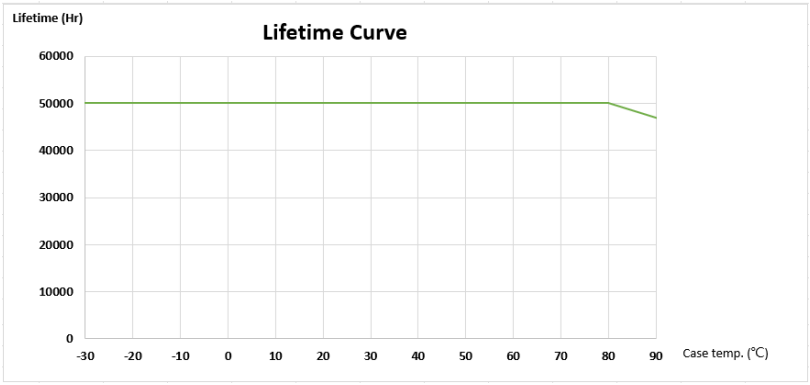
#7: Measured temperature at Tc-point is Tc-life. Maximum failures=10%.(Telcordia SR-332)

Mechanical Specification

Specification item	Value	Unit
Length (A1)	242.0(ref.)	mm
Mounting hole distance (A2)	228.6 (ref.)	mm
Length (A3)	218.4 (ref.)	mm
Width (B1)	44.0 (ref.)	mm
Width (B2)	26.6 (ref.)	mm
Height (C1)	31.5 (ref.)	mm
Mounting hole (D1)	6.4 (ref.)	mm
Weight	560 +-5% (ref.) for 80W &100W 470 +-5% (ref.) for 60W	gram
Input wire (solid wire)	#18/ 300mm (ref.)	AWG/mm
Output wire (solid wire)	#18/ 300mm (ref.)	AWG/mm

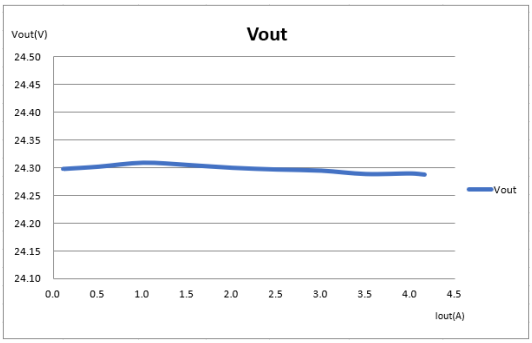


Driver lifetime

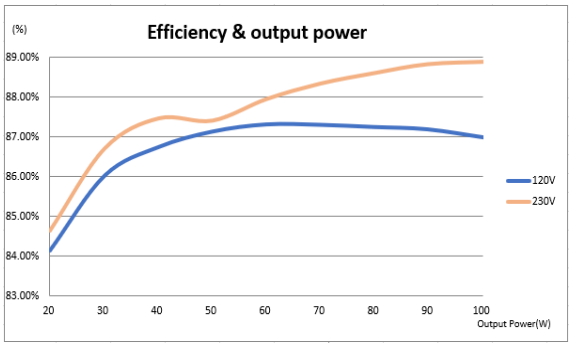


Performance Characteristics: RA-1101-9V01

Output voltage versus output current

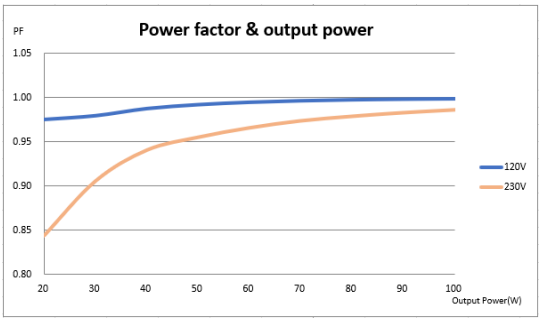


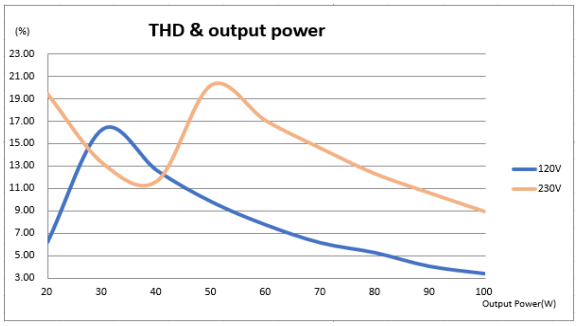
Efficiency (Eff. / Output Power)



Power Factor (PF / Output Power)

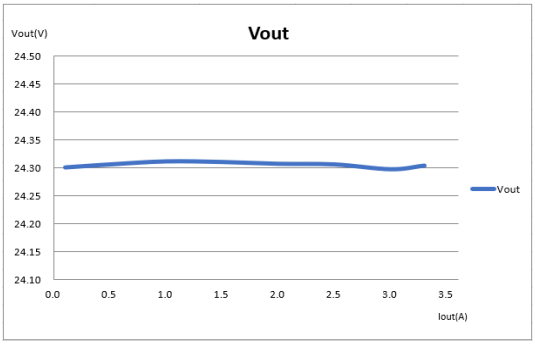
THD (THD / Output Power)



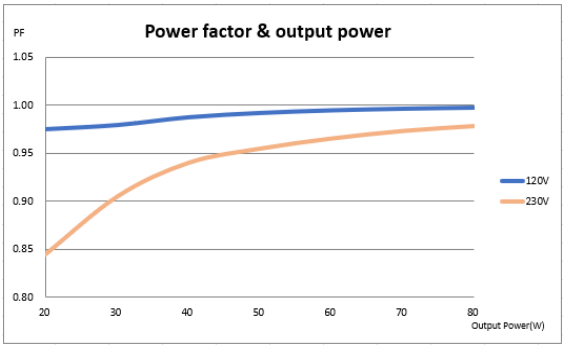


Performance Characteristics: RA-1800-9V01

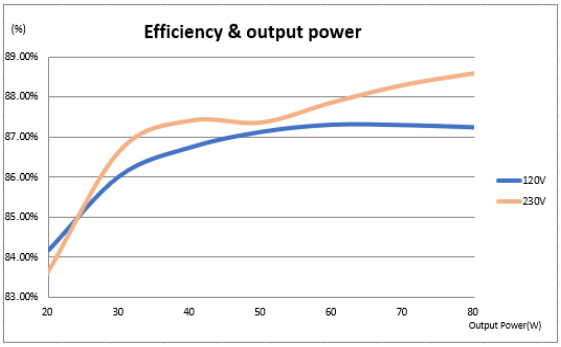
Output voltage versus output current



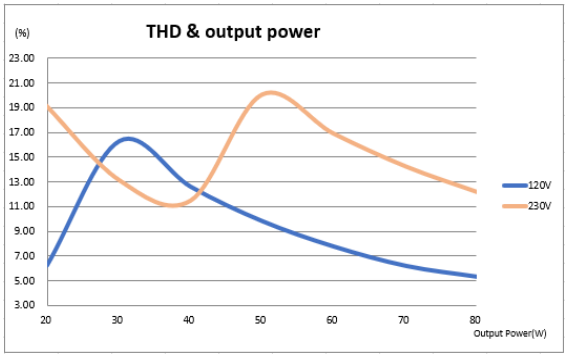
Power Factor (PF / Output Power)



Efficiency (Eff. / Output Power)

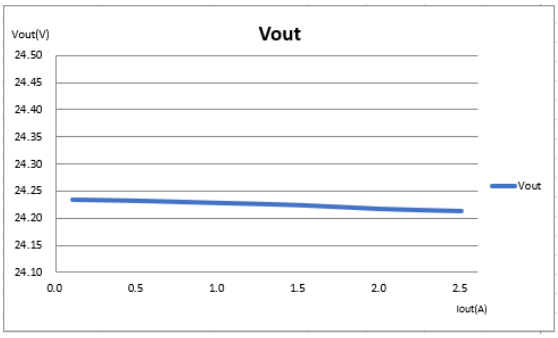


THD (THD / Output Power)



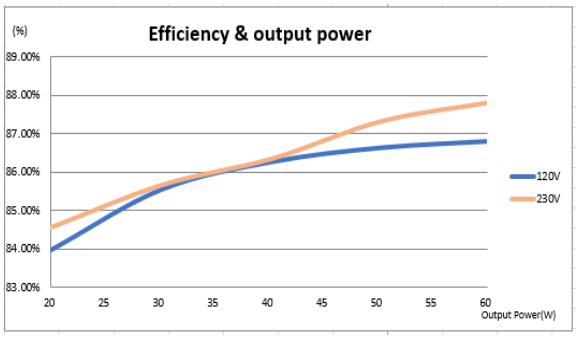
Performance Characteristics: RA-1600-9V01

Output voltage versus output current

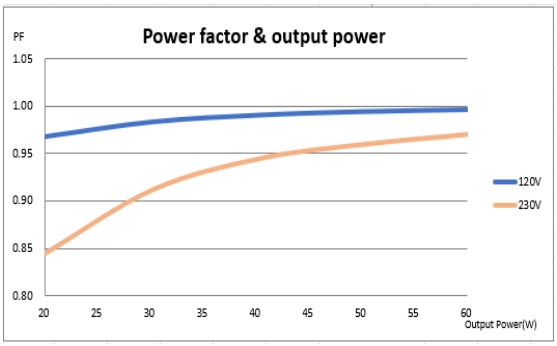


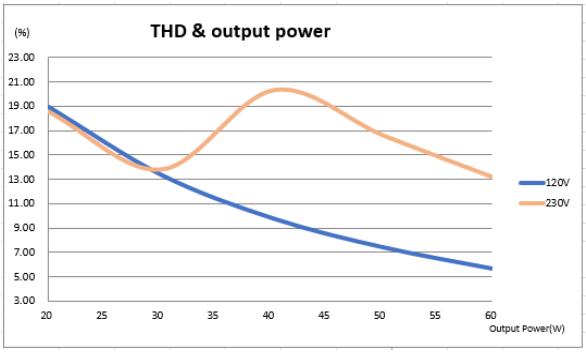
Power Factor (PF / Output Power)

Efficiency (Eff. / Output Power)



THD (THD / Output Power)


Power factor & output power
PF
1.05
1.00
0.95
0.90
0.85
0.80
20
25
30
35
40
45
50
55
60
Output Power(W)
120V
230V


THD & output power
(%)
23.00
21.00
19.00
17.00
15.00
13.00
11.00
9.00
7.00
5.00
3.00
20
25
30
35
40
45
50
55
60
Output Power(W)
120V
230V