



IP20 Class I & II (VI)

**Product Features**

- Lamp safety approvals, Medical & ITE safety meet
- 2 MOPP input to output isolation
- DOE Efficiency Level VI
- European CoC V5 Tier 2
- PF>0.95@230Vac full load
- Leakage current ≤ 100µA
- ≤ 0.15W standby power
- 11V to 48V outputs, up to 200W
- Up to 5,000m operating altitude
- 4 types of AC inlet
- Meet 4KV surge immunity IEC61000-4-5



**Models & Ratings**

Model Number	Voltage <sup>(*1)</sup>	Current	Rated Power	Ripple & Noise (max)(*2)	Voltage Tolerance	Line & Load Efficiency Regulation (Full load)	Start Up Delay
	11.0-12.0	0.01-15.0	180W	150mVpk-pk	±5%		89.0% ≤3s
	12.1-13.0	0.01-14.0	182W	150mVpk-pk	±5%		89.0% ≤3s
	13.1-14.0	0.01-13.5	190W	150mVpk-pk	±5%		89.0% ≤3s
	14.1-15.0	0.01-13.3	200W	150mVpk-pk	±5%		89.0% ≤3s
	15.1-16.0	0.01-12.5	200W	180mVpk-pk	±5%		89.0% ≤3s
	16.1-17.0	0.01-11.7	200W	180mVpk-pk	±5%		89.0% ≤3s
	17.1-18.0	0.01-11.1	200W	180mVpk-pk	±5%		89.0% ≤3s
	18.1-19.0	0.01-10.5	200W	180mVpk-pk	±5%		89.0% ≤3s
	19.1-20.0	0.01-10.0	200W	200mVpk-pk	±5%		89.0% ≤3s
	20.1-21.0	0.01-9.52	200W	200mVpk-pk	±5%		89.0% ≤3s
	21.1-22.0	0.01-9.09	200W	200mVpk-pk	±5%		89.0% ≤3s
	22.1-23.0	0.01-8.69	200W	200mVpk-pk	±5%		89.0% ≤3s
	23.1-24.0	0.01-8.33	200W	240mVpk-pk	±5%		89.0% ≤3s
	24.1-25.0	0.01-8.00	200W	240mVpk-pk	±5%		89.0% ≤3s
	25.1-26.0	0.01-7.69	200W	240mVpk-pk	±5%		89.0% ≤3s
	26.1-27.0	0.01-7.40	200W	240mVpk-pk	±5%		89.0% ≤3s
	27.1-28.0	0.01-7.14	200W	300mVpk-pk	±5%		89.0% ≤3s
UES200-XXXXYYSPA1/ SPA2/ SPA3/ SPA4	28.1-29.0	0.01-6.89	200W	300mVpk-pk	±5%	Line: ±1% Load: ±5%	89.0% ≤3s
	29.1-30.0	0.01-6.66	200W	300mVpk-pk	±5%		89.0% ≤3s
	30.1-31.0	0.01-6.45	200W	300mVpk-pk	±5%		89.0% ≤3s
	31.1-32.0	0.01-6.25	200W	300mVpk-pk	±5%		89.0% ≤3s
	32.1-33.0	0.01-6.06	200W	360mVpk-pk	±5%		89.0% ≤3s
	33.1-34.0	0.01-5.88	200W	360mVpk-pk	±5%		89.0% ≤3s
	34.1-35.0	0.01-5.71	200W	360mVpk-pk	±5%		89.0% ≤3s
	35.1-36.0	0.01-5.55	200W	360mVpk-pk	±5%		89.0% ≤3s
	36.1-37.0	0.01-5.40	200W	360mVpk-pk	±5%		89.0% ≤3s
	37.1-38.0	0.01-5.26	200W	360mVpk-pk	±5%		89.0% ≤3s
	38.1-39.0	0.01-5.12	200W	360mVpk-pk	±5%		89.0% ≤3s
	39.1-40.0	0.01-5.00	200W	360mVpk-pk	±5%		89.0% ≤3s
	40.1-41.0	0.01-4.87	200W	480mVpk-pk	±5%		89.0% ≤3s
	41.1-42.0	0.01-4.76	200W	480mVpk-pk	±5%		89.0% ≤3s
	42.1-43.0	0.01-4.65	200W	480mVpk-pk	±5%		89.0% ≤3s
	43.1-44.0	0.01-4.54	200W	480mVpk-pk	±5%		89.0% ≤3s
	44.1-45.0	0.01-4.44	200W	480mVpk-pk	±5%		89.0% ≤3s
	45.1-46.0	0.01-4.34	200W	480mVpk-pk	±5%		89.0% ≤3s
	46.1-47.0	0.01-4.25	200W	480mVpk-pk	±5%		89.0% ≤3s
	47.1-48.0	0.01-4.16	200W	480mVpk-pk	±5%		89.0% ≤3s

Notes

(\*1, 3, 4) Other options are available, please contact our sales representative for details.

(\*2) Measured at output connector with 20MHz bandwidth and 0.1uF ceramic in parallel with 10uF electrolytic capacitors.

(\*5) Polarized C8 is available.

**Input**

Input Voltage Range	90-264VAC
Frequency Range	47-63Hz
Input Current	2.5A at 90VAC
Inrush Current	120A max at 240VAC cold start
Touch Leakage Current <sup>(max)</sup>	Class I & Class II ≤ 100µA at 264VAC

**Environmental**

Operating Temperature	-20°C to 40°C
Storage Temperature	-20°C to 60°C
Operating Humidity	10% to 90% RH, non-condensing
Storage Humidity	5% to 90% RH
Operating Altitude	5,000m

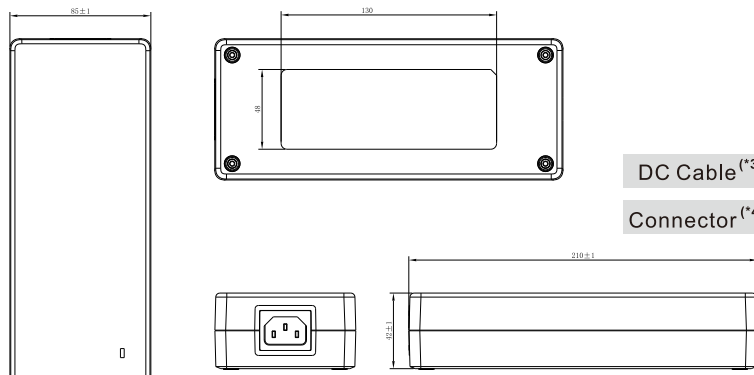
**General**

Dimensions	210(L)x85(W)x42(H)mm
Weight	950g
MTBF	>100,000hrs MIL-HDBK-217 at 25°C
Isolation	5,656VDC Input to Output 2,121VDC Input to Ground (Class I version only)





**Protection**

Overload	120-170% rated output power, auto recovery
Over Voltage	120-150% rated output voltage input to reset
Short Circuit	Trip and restart (hiccup mode)

**Mechanical Details**



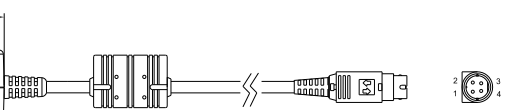
**Interchangeable AC Plug Options**

C8 (SPA1)<sup>(\*)5</sup>   C6 (SPA2)   C14 (SPA3)   C18 (SPA4)

**DC Cable <sup>(\*)3</sup>:** UL 2464 16AWG\*4C 1200mm with ferrite for 12- 18V  
UL 2464 18AWG\*4C 1200mm with ferrite for 18- 48V

**Connector <sup>(\*)4</sup>:** 31\*10mm, 1&4"+", 2&3"-"



Unit: mm

**Safety Approvals**

Safety Agency / Mark	Lamp	Medical(Meet)
CB	IEC61347	IEC60601-1
UL	UL 8750	ANSI/AAMI ES60601-1
TüV-SUD/Mark	EN 61347	CAN/CSA-C22.2 NO. 60601-1
CE	EN61347	EN60601-1
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**EMC**

Emissions	Lamp	Medical
Conducted	EN 55015, CISPR 15	IEC/EN 60601-1-2, CISPR 11
Radiated	EN 55015, CISPR 15	IEC/EN 60601-1-2, CISPR 11
Harmonic Currents	EN61000-3-2, Class C	EN61000-3-2, Class A
Voltage Flicker	EN61000-3-3	EN61000-3-3
Immunity	Lamp	Medical
ESD	EN61000-4-2	±15kV air, ±8kV contact
Radiated Immunity	EN61000-4-3	10V/m, 3V/m 80MHz - 2.7GMHz
EFT/Burst	EN61000-4-4	±2kV on AC port, ±1kV on signal ports
Surge	EN61000-4-5	±4KV line to line (diff mode)
Conducted Immunity	EN61000-4-6	3Vrms, 6Vrms (0.15MHz-80MHz)
Magnetic Field	EN61000-4-8	30 A/m
Dips & Interruptions	EN61000-4-11	0%, 70%, 0% of UT

**Others**

Dielectric Withstand Voltage	5,656VDC for Class I & Class II input to output
Insulation Resistance	10M Ohms, 500VDC input to output