



IP20 Class I & II (VI)

Product Features

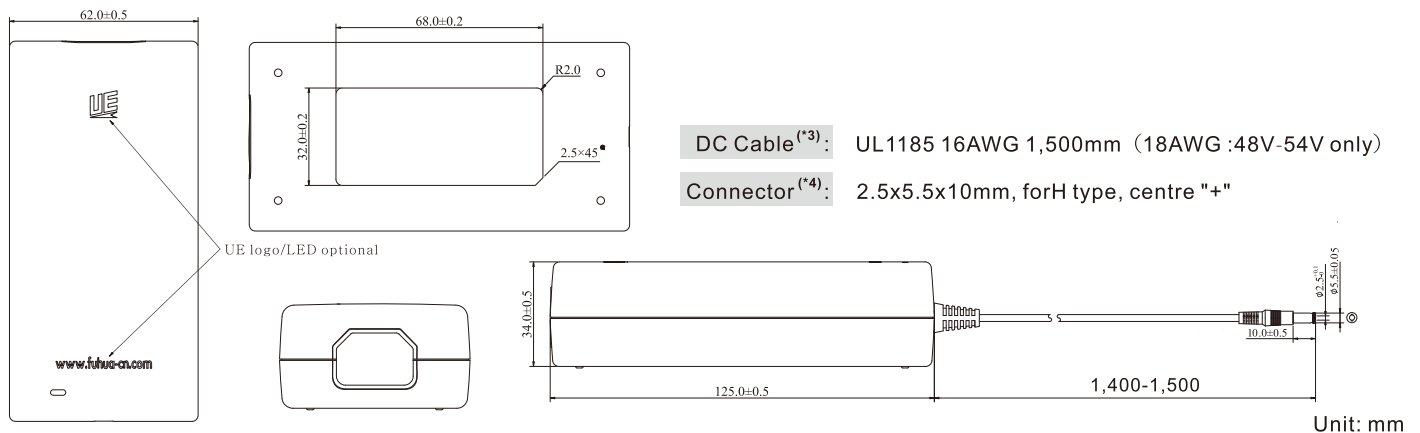
- Medical & ITE safety approvals
- 2 MOPP input to output isolation
- Suitable for medical equipment up to class BF^(*)
- Low leakage current $\leq 100\mu\text{A}$
- DOE efficiency level VI
- CoC V5 Tier 2(2016)
- $\leq 0.15\text{W}$ standby power
- 9V to 24V, 48V to 54V outputs, up to 65W
- Up to 5,000m operating altitude
- 4 types of AC inlet



Models & Ratings

Model Number	Voltage ^(*) (V)	Current (A)	Rated Power	Ripple & Noise (max)(^(*) 2)	Voltage Tolerance	Line & Load Regulation	Efficiency (Average)	Start Up Delay
UES65-XXXXYYSPA1/ SPA2/ SPA3/ SPA4 UES65-XXXXYYSPA1/ SPA2-OP	9.0-12.0	0.01-5.42	65W	200mVpk-pk	±5%	Line: ±1% Load: ±5%	89.00%	≤3s
	12.1-13.0	0.01-5.0	65W	200mVpk-pk	±5%		89.00%	≤3s
	13.1-14.0	0.01-4.64	65W	200mVpk-pk	±5%		89.00%	≤3s
	14.1-15.0	0.01-4.30	65W	200mVpk-pk	±5%		89.00%	≤3s
	15.1-16.0	0.01-4.06	65W	200mVpk-pk	±5%		89.00%	≤3s
	16.1-17.0	0.01-3.82	65W	200mVpk-pk	±5%		89.00%	≤3s
	17.1-18.0	0.01-3.60	65W	200mVpk-pk	±5%		89.00%	≤3s
	18.1-19.0	0.01-3.40	65W	200mVpk-pk	±5%		89.00%	≤3s
	19.1-20.0	0.01-3.24	65W	200mVpk-pk	±5%		89.00%	≤3s
	20.1-21.0	0.01-3.09	65W	200mVpk-pk	±5%		89.00%	≤3s
	21.1-22.0	0.01-2.95	65W	200mVpk-pk	±5%		89.00%	≤3s
	22.1-23.0	0.01-2.82	65W	200mVpk-pk	±5%		89.00%	≤3s
	23.1-24.0	0.01-2.70	65W	240mVpk-pk	±5%		89.00%	≤3s
	48.0-54.0	0.01-1.20	65W	300mVpk-pk	±5%		89.00%	≤3s

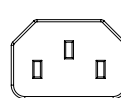
Mechanical Details



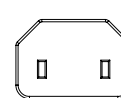
AC Inlet Options


C8 (SPA1) ^{(*)5}


C6 (SPA2)



C14 (SPA3)



C18 (SPA4)

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.

^(^) Power supplies are not medical equipment (applied parts), medical product manufacturers shall take responsibility for further evaluation of class B/BF/CF compliance of their end product.

Input

Input Voltage Range	90-264VAC
Frequency Range	47-63Hz
Input Current	2.0A at 90VAC
Inrush Current	120A max at 240VAC cold start
Touch Leakage Current ^(max)	≤ 100μA at 264VAC

Environmental

Operating Temperature	0°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	125(L)x62(W)x34(H)mm
Weight	200g
MTBF	>100,000hrs MIL-HDBK-217 at 25°C
Isolation	2,121VDC for Class I / 5,656VDC for Class II Input to Output 2,121VDC for Class I / 5,656VDC for Class II Input to case

Protection

Overload	120-200% rated output power, auto recovery
Over Voltage	120-200% rated output voltage input to reset
Short Circuit	Trip and restart (hiccup mode)

Safety Approvals

Safety Agency / Mark	Medical	ITE
CB	IEC60601-1	IEC60950-1 IEC62368-1
UL	ANSI/AAMI ES60601-1 CAN/CSA C22.2 NO. 60601-1	UL60950-1 UL62368-1
TUV	EN60601-1	EN60950-1 EN62368-1

EMC

Emissions	Medical	ITE
Conducted	IEC/EN 60601-1-2, CISPR 11	EN55022, CISPR 22
Radiated	IEC/EN 60601-1-2, CISPR 11	EN55022, CISPR 22
Harmonic Currents	EN61000-3-2, Class A	EN61000-3-2, Class A
Voltage Flicker	EN61000-3-3	EN61000-3-3
Immunity	IEC/EN 60601-1-2	EN55024, CISPR 24
ESD	EN61000-4-2	±15kV air, ±8kV contact
Radiated Immunity	EN61000-4-3	10V/m, 3V/m 80MHz-2.7GHz
EFT/Burst	EN61000-4-4	±2kV on AC port, ±1kV on signal ports
Surge	EN61000-4-5	±2KV 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	2,121VDC for Class I / 5,656VDC for Class II input to output
Insulation Resistance	100M Ohms, 500VDC input to output