



IP22 Class I & II (VI)

Product Features

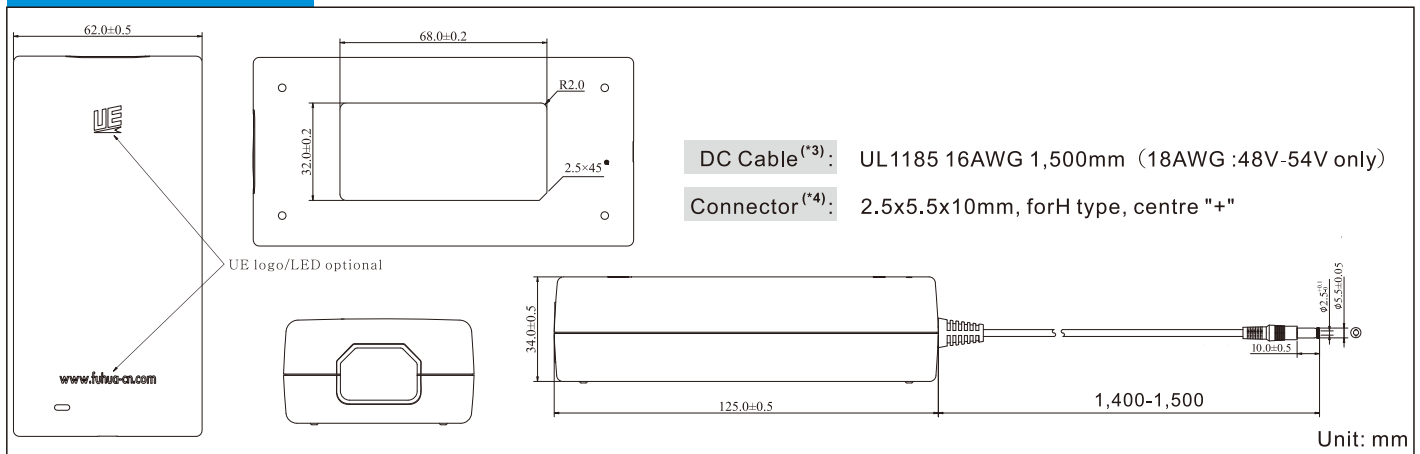
- Medical & ITE safety approvals
- 2 MOPP input to output isolation
- Low leakage current $\leq 100\mu A$
- DOE efficiency level VI
- CoC V5 Tier 2(2016)
- $\leq 0.15W$ standby power
- 9V to 24V, 48V to 54V outputs, up to 65W
- Up to 5,000m operating altitude
- 4 types of AC inlet



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	$\pm 5\%$	Line: $\pm 1\%$ Load: $\pm 5\%$	89.00%	$\leq 3s$
	12.1-13.0	0.01-5.0	65W	200mVpk-pk	$\pm 5\%$		89.00%	$\leq 3s$
	13.1-14.0	0.01-4.64	65W	200mVpk-pk	$\pm 5\%$		89.00%	$\leq 3s$
	14.1-15.0	0.01-4.30	65W	200mVpk-pk	$\pm 5\%$		89.00%	$\leq 3s$
	15.1-16.0	0.01-4.06	65W	200mVpk-pk	$\pm 5\%$		89.00%	$\leq 3s$
	16.1-17.0	0.01-3.82	65W	200mVpk-pk	$\pm 5\%$		89.00%	$\leq 3s$
	17.1-18.0	0.01-3.60	65W	200mVpk-pk	$\pm 5\%$		89.00%	$\leq 3s$
	18.1-19.0	0.01-3.40	65W	200mVpk-pk	$\pm 5\%$		89.00%	$\leq 3s$
	19.1-20.0	0.01-3.24	65W	200mVpk-pk	$\pm 5\%$		89.00%	$\leq 3s$
	20.1-21.0	0.01-3.09	65W	200mVpk-pk	$\pm 5\%$		89.00%	$\leq 3s$
	21.1-22.0	0.01-2.95	65W	200mVpk-pk	$\pm 5\%$		89.00%	$\leq 3s$
	22.1-23.0	0.01-2.82	65W	200mVpk-pk	$\pm 5\%$		89.00%	$\leq 3s$
	23.1-24.0	0.01-2.70	65W	240mVpk-pk	$\pm 5\%$		89.00%	$\leq 3s$
	48.0-54.0	0.01-1.20	65W	300mVpk-pk	$\pm 5\%$		89.00%	$\leq 3s$

Mechanical Details



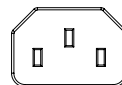
AC Inlet Options



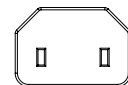
C8 (SPA1) ^{(*)5}



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.

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 IEC60601-1-11	IEC60950-1 IEC62368-1
UL	ANSI/AAMI ES60601-1 CAN/CSA C22.2 NO. 60601-1	UL60950-1 UL62368-1
TüV Rheinland/Mark	EN60601-1 EN60601-1-11	-
TüV Rheinland/GS	-	EN60950-1 EN62368-1
CCC	-	GB4943.1
CE	-	EN62368
FCC	-	FCC PART 15
PSE	-	J60950

EMC

Emissions	Medical	ITE
Conducted	IEC/EN 60601-1-2, CISPR 11	EN55032, CISPR 32
Radiated	IEC/EN 60601-1-2, CISPR 11	EN55032, CISPR 32
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 (015MHz-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