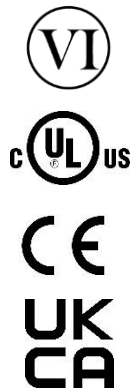




# 90W Desktop C14 Adapter Series



## Features

- DOE Level VI Efficiency Compliant
- ErP/Ecodesign Directive 2009/125/EC – Regulation EU 2019/1782 Compliant
- EU CoC Tier 2 Compliant
- Over Voltage, Short Circuit and Over Current Protection
- Non-Vented/Spill-Proof Case
- Class B EMI
- Isolated Output (Earth ground & DC Return Connect Through Isolation Capacitor).  
*Consult Phihong for Earth Ground tied to DC Return Version*

## Applications

- Networking
- Peripherals
- Consumer Electronics



# PPL90U Series Specifications<sup>1</sup>

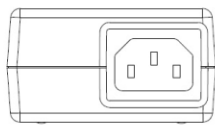
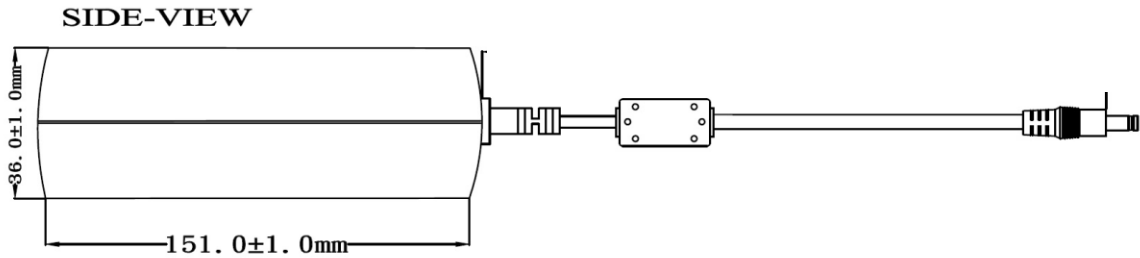
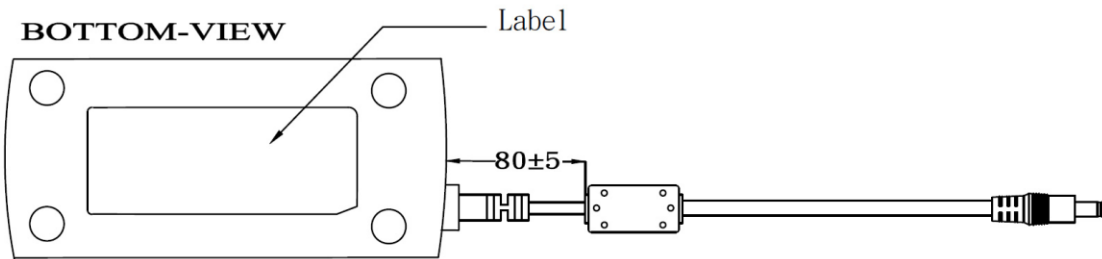
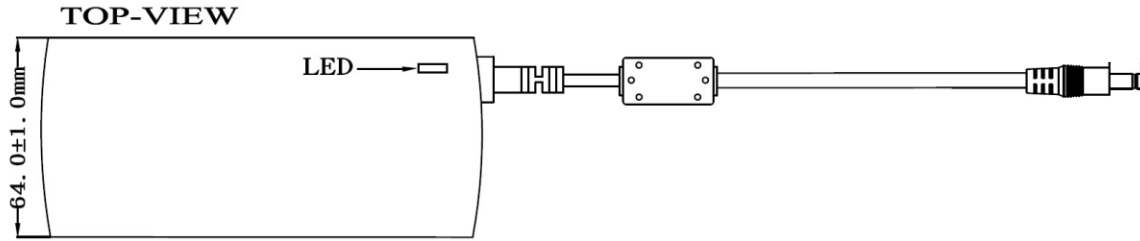
Model		PPL90U-120	PPL90U-150	PPL90U-160	PPL90U-180
Output	DC Output Voltage	12.0V	15.0V	16.0V	18.0V
	Max Current	7.0A	6.0A	5.63A	5.0A
	Output Power	84.0W	90.0W	90.1W	90.0W
	Regulation	± 5%	± 5%	± 5%	± 5%
	Ripple & Noise P-P(max) <sup>2</sup>	120mV	150mV	160mV	180mV
Input	AC Input Voltage Range	90 to 264VAC			
	AC Input Frequency	47 to 63Hz			
	Input Current	1.2A max			
	Inrush Current	80A max., 240VAC (Cold Start at ambient 25°C, full load)			
	No Load Power Consumption at 115VAC Input	0.066W	0.074W	0.08W	0.087W
	No Load Power Consumption at 230VAC Input	0.077W	0.08W	0.1W	0.096W
	115VAC Average Efficiency <sup>3</sup>	90.1%	89.7%	89.9%	90.0%
	230VAC Average Efficiency <sup>3</sup>	89.8%	89.6%	89.7%	89.5%
	230VAC 10% Load Efficiency <sup>3</sup>	87.0%	86.7%	86.4%	86.6%
	Leakage Current	<3.5mA			
Protection	Over-Voltage	150% max	150% max	150% max	150% max
	Short Circuit	Auto-recover after short-circuit fault is removed			
	Over-Current	170% max	170% max	170% max	170% max
Environmental	Operating Temperature	0°C to +40°C			
	Non-Operating Temperature	-20° to +80°C			
	Operating Humidity	20 to +80%			
Safety Approvals and EMC	Dielectric Withstand (HI-POT)	Primary to Secondary: 3000VAC for 1min, 10mA			
	Insulation Resistance	Primary to Secondary: 10M ohm for 500VDC			
	Standards	cULus 62368-1, IEC 62368-1			
	EMI Emissions	FCC Part 15 Class B, CAN ICES-003(B)/NMB-003(B), EN 55032/CISPR 32 Class B Conducted and Radiated			
	Harmonic Current Emissions	IEC 61000-3-2			
	Voltage Fluctuations & Flicker	IEC 61000-3-3			
	Immunity	EN 55024/CISPR 24: IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11			
Mechanical	Dimensions (L x W x H)	151mm (5.94in) x 64mm (2.52in) x 36mm (1.42in)			
	Weight	580g			
	Cable Length	1200mm	1500mm		
	DC Cable Type	14 AWG	16 AWG	16 AWG	18 AWG
	DC Output Connector	2.1mm x 5.5mm x 10.0mm			
	DC Plug Pin Assignment	Inner (V+) / Outer GND (V-)			
	Input Connector	IEC 60320 C14			

Model		PPL90U-190	PPL90U-200	PPL90U-240	PPL90U-300
Output	DC Output Voltage	19.0V	20.0V	24.0V	30.0V
	Max Current	4.74A	4.5A	3.75A	3.0A
	Output Power	90.1W	90.0W	90.0W	90.0W
	Regulation	± 5%	± 5%	± 5%	± 5%
	Ripple & Noise P-P(max) <sup>2</sup>	190mV	200mV	240mV	300mV
Input	AC Input Voltage Range	90 to 264VAC			
	AC Input Frequency	47 to 63Hz			
	Input Current	1.2A max			
	Inrush Current	80A max., 240VAC (Cold Start at ambient 25°C, full load)			
	No Load Power Consumption at 115VAC Input	0.085W	0.08W	0.075W	0.09W
	No Load Power Consumption at 230VAC Input	0.094W	0.11W	0.085W	0.12W
	115VAC Average Efficiency <sup>3</sup>	90.3%	89.5%	90.2%	90.1%
	230VAC Average Efficiency <sup>3</sup>	90.0%	89.2%	90.2%	89.9%
	230VAC 10% Load Efficiency <sup>3</sup>	86.2%	85.1%	87.2%	85.9%
	Leakage Current	<3.5mA			
Protection	Over-Voltage	150% max	150% max	150% max	150% max
	Short Circuit	Auto-recover after short-circuit fault is removed			
	Over-Current	170% max	170% max	170% max	170% max
Environmental	Operating Temperature	0°C to +40°C			
	Non-Operating Temperature	-20° to +80°C			
	Operating Humidity	20 to +80%			
Safety Approvals and EMC	Dielectric Withstand (HI-POT)	Primary to Secondary: 3000VAC for 1min, 10mA			
	Insulation Resistance	Primary to Secondary: 10M ohm for 500VDC			
	Standards	cULus 62368-1, IEC 62368-1			
	EMI Emissions	FCC Part 15 Class B, CAN ICES-003(B)/NMB-003(B), EN 55032/CISPR 32 Class B Conducted and Radiated			
	Harmonic Current Emissions	IEC 61000-3-2			
	Voltage Fluctuations & Flicker	IEC 61000-3-3			
	Immunity	EN 55024/CISPR 24: IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11			
Mechanical	Dimensions (L x W x H)	151mm (5.94in) x 64mm (2.52in) x 36mm (1.42in)			
	Weight	580g			
	Cable Length	1500mm			
	DC Cable Type	18 AWG	18 AWG	18 AWG	18 AWG
	DC Output Connector	2.1mm x 5.5mm x 10.0mm			
	DC Plug Pin Assignment	Inner (V+) / Outer GND (V-)			
	Input Connector	IEC 60320 C14			

Model		PPL90U-480	PPL90U-560
Output	DC Output Voltage	48.0V	56.0V
	Max Current	1.88A	1.6A
	Output Power	90.24W	89.6W
	Regulation	± 5%	± 5%
	Ripple & Noise P-P(max) <sup>2</sup>	480mV	560mV
Input	AC Input Voltage Range	90 to 264VAC	
	AC Input Frequency	47 to 63Hz	
	Input Current	1.2A max	
	Inrush Current	80A max., 240VAC (Cold Start at ambient 25°C, full load)	
	No Load Power Consumption at 115VAC Input	0.095W	0.114W
	No Load Power Consumption at 230VAC Input	0.107W	0.126W
	115VAC Average Efficiency <sup>3</sup>	91.1%	90.9%
	230VAC Average Efficiency <sup>3</sup>	90.9%	91.1%
	230VAC 10% Load Efficiency <sup>3</sup>	87.2%	86.7%
	Leakage Current	<0.25mA	
Protection	Over-Voltage	150% max	150% max
	Short Circuit	Auto-recover after short-circuit fault is removed	
	Over-Current	170% max	170% max
Environmental	Operating Temperature	0°C to +40°C	
	Non-Operating Temperature	-20° to +80°C	
	Operating Humidity	20 to +80%	
Safety Approvals and EMC	Dielectric Withstand (HI-POT)	Primary to Secondary: 3000VAC for 1min, 10mA	
	Insulation Resistance	Primary to Secondary: 10M ohm for 500VDC	
	Standards	cULus 62368-1, IEC 62368-1	
	EMI Emissions	FCC Part 15 Class B, CAN ICES-003(B)/NMB-003(B), EN 55032/CISPR 32 Class B Conducted and Radiated	
	Harmonic Current Emissions	IEC 61000-3-2	
	Voltage Fluctuations & Flicker	IEC 61000-3-3	
	Immunity	EN 55024/CISPR 24: IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11	
Mechanical	Dimensions (L x W x H)	151mm (5.94in) x 64mm (2.52in) x 36mm (1.42in)	
	Weight	580g	
	Cable Length	1500mm	
	DC Cable Type	18 AWG	18 AWG
	DC Output Connector	2.1mm x 5.5mm x 10.0mm	
	DC Plug Pin Assignment	Inner (V+) / Outer GND (V-)	
	Input Connector	IEC 60320 C14	
Notes	<ol style="list-style-type: none"> <li>The specifications defined are at ambient temperature of 25°C, unless otherwise specified.</li> <li>20MHz bandwidth frequency oscilloscope, add a 0.1µF multilayer Cap. and Low ESR Electrolytic Cap. (10µF) at output connector terminals (nominal line voltage, full load).</li> <li>Efficiency is measured after 30 minutes burn-in.</li> </ol>		



# PPL90U Outline Drawing



**FRONT-VIEW**

**Supplier's Declaration of Conformity  
47 CFR § 2.1077 Compliance Information**

**PPL90U-120  
PPL90U-150  
PPL90U-160  
PPL90U-180  
PPL90U-190  
PPL90U-200  
PPL90U-240  
PPL90U-300  
PPL90U-480  
PPL90U-560**

Phihong USA Corporation  
47800 Fremont Boulevard  
Fremont, CA 94538  
Telephone: (510) 445-0100  
[www.phihong.com](http://www.phihong.com)




NOTE: This model has/The models in this product series have been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications to equipment not expressly approved by PHIHONG could void the user's authority to operate the equipment.



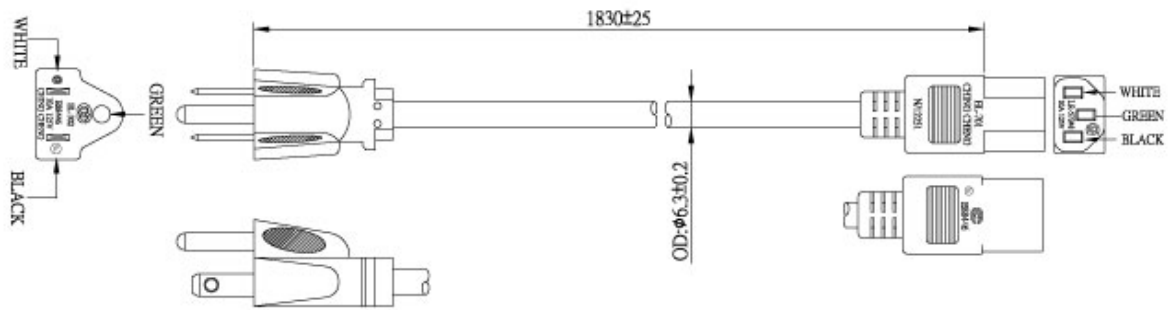
# PPL90U Line Cords Sold Separately

Model		AC30UNA-R	AC30UEU-R	AC30UUK-R
Specifications	Plug Type	North America NEMA 5-15P	Continental Europe CEE 7VIII	United Kingdom BS 1363
	Connector	IEC320 C13	IEC320 C13	IEC320 C13
	Wire Size	18 AWG	0.75mm	1.0mm
	Temperature	60°C	70°C	70 °C
	Amperage Rating	10A	6A	10A
	Voltage Rating	125V	250V	250V
	Cable Length	1830mm	1830mm	2500mm
Safety Approvals		CSA; UL	CEBEC; DEMKO; DVE; FIMKO; GOST; IMQ; KEMA; NEMKO; NF; OVE; SEMKO	BSI; Safety Mark
Photos				

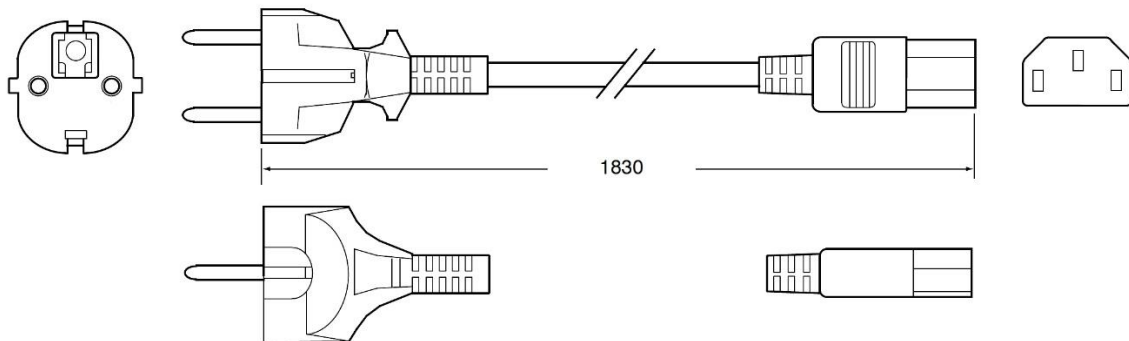


# PPL90U Line Cords Outline Drawings

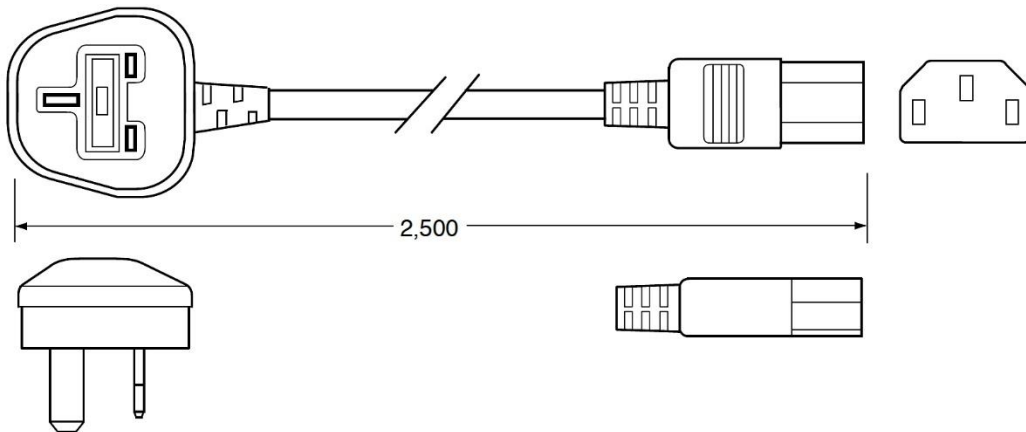
## AC30UNA-R



## AC30UEU-R



## AC30UUK-R





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