

### 65W 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

\*NRCan approval for PPL65U-120, PPL65U-150, PPL65U-180, PPL65U-190, PPL65U-240, PPL65U-480, PPL65U-560 models only



# PPL65U Series Specifications<sup>1</sup>

|               | Model                                     | PPL65U-120*                                                                                                                 | PPL65U-135 | PPL65U-150* | PPL65U-160 |  |
|---------------|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------|-------------|------------|--|
| Output        | DC Output Voltage                         | 12.0V                                                                                                                       | 13.5V      | 15.0V       | 16.0V      |  |
|               | Max Current                               | 5.0A                                                                                                                        | 4.82A      | 4.34A       | 4.07A      |  |
|               | Output Power                              | 60.0W                                                                                                                       | 65.1W      | 65.1W       | 65.12W     |  |
|               | Regulation                                | ± 5%                                                                                                                        | ± 5%       | ± 5%        | ± 5%       |  |
|               | Ripple & Noise P-P(max) <sup>2</sup>      | 120mV                                                                                                                       | 135mV      | 150mV       | 160mV      |  |
|               | AC Input Voltage Range                    | 90 to 264VAC                                                                                                                |            |             |            |  |
|               | AC Input Frequency                        | 47 to 63Hz                                                                                                                  |            |             |            |  |
|               | Input Current                             | 1.4A max                                                                                                                    |            |             |            |  |
|               | Inrush Current                            | 80A max., 240VAC (Cold Start at ambient 25°C, full load)                                                                    |            |             |            |  |
| Input         | No Load Power Consumption at 115VAC Input | 0.031W                                                                                                                      | 0.04W      | 0.037W      | 0.05W      |  |
| Input         | No Load Power Consumption at 230VAC Input | 0.034W                                                                                                                      | 0.06W      | 0.031W      | 0.06W      |  |
|               | 115VAC Average Efficiency <sup>3</sup>    | 88.4%                                                                                                                       | 89.1%      | 89.5%       | 89.4%      |  |
|               | 230VAC Average Efficiency <sup>3</sup>    | 89.1%                                                                                                                       | 90.0%      | 90.3%       | 89.8%      |  |
|               | 230VAC 10% Load Efficiency <sup>3</sup>   | 87.4%                                                                                                                       | 86.6%      | 87.7%       | 86.8%      |  |
|               | Leakage Current                           |                                                                                                                             | <3.5       | mA          |            |  |
|               | Over-Voltage                              | 150% max                                                                                                                    | 150% max   | 150% max    | 150% max   |  |
| Protection    | Short Circuit                             | Auto-recover after short-circuit fault is removed                                                                           |            |             |            |  |
|               | Over-Current                              | 180% max                                                                                                                    | 180% max   | 180% max    | 180% max   |  |
|               | Operating Temperature                     | 0°C to +40°C                                                                                                                |            |             |            |  |
| Environmental | Non-Operating Temperature                 | -20° to +80°C                                                                                                               |            |             |            |  |
|               | Operating Humidity                        | 20 to +80%                                                                                                                  |            |             |            |  |
|               | Dielectric Withstand (HI-POT)             | Primary to Secondary: 3000VAC for 1min, 10mA                                                                                |            |             |            |  |
|               | Insulation Resistance                     | Primary to Secondary: 10M ohm for 500VDC                                                                                    |            |             |            |  |
| Safety        | Standards                                 | cULus 62368-1, IEC 62368-1                                                                                                  |            |             |            |  |
| Approvals and | EMI Emissions                             | FCC Part 15 Class B, CAN ICES-003(B)/NMB-003(B),<br>EN 55032/CISPR 32 Class B Conducted and Radiated                        |            |             |            |  |
| EMC           | Harmonic Current Emissions                | IEC 61000-3-2                                                                                                               |            |             |            |  |
|               | Voltage Fluctuations & Flicker            | IEC 61000-3-3                                                                                                               |            |             |            |  |
|               | Immunity                                  | EN 55035/CISPR 35: 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 |            |             |            |  |
|               | Dimensions (L x W x H)                    | 115mm (4.53in) x 53mm (2.09in) x 38mm (1.50in)                                                                              |            |             |            |  |
|               | Weight                                    | 310g                                                                                                                        |            |             |            |  |
| Mechanical    | Cable Length                              | 1500mm                                                                                                                      |            |             |            |  |
|               | DC Cable Type                             | 16 AWG                                                                                                                      | 16 AWG     | 16 AWG      | 16 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                                                                                                               |            |             |            |  |

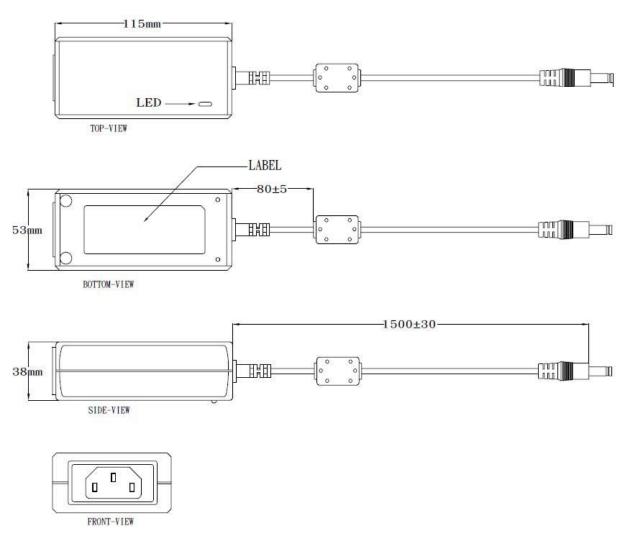
| Model                   |                                           | PPL65U-180 <sup>*</sup>                                                                                                     | PPL65U-190* | PPL65U-200 | PPL65U-240* |  |
|-------------------------|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|-------------|------------|-------------|--|
| Output                  | DC Output Voltage                         | 18.0V                                                                                                                       | 19.0V       | 20.0V      | 24.0V       |  |
|                         | Max Current                               | 3.62A                                                                                                                       | 3.43A       | 3.25A      | 2.71A       |  |
|                         | Output Power                              | 65.2W                                                                                                                       | 65.2W       | 65.0W      | 65.04W      |  |
|                         | Regulation                                | ± 5%                                                                                                                        | ± 5%        | ± 5%       | ± 5%        |  |
|                         | Ripple & Noise P-P(max) <sup>2</sup>      | 180mV                                                                                                                       | 190mV       | 200mV      | 240mV       |  |
|                         | AC Input Voltage Range                    | 90 to 264VAC                                                                                                                |             |            |             |  |
|                         | AC Input Frequency                        | 47 to 63Hz                                                                                                                  |             |            |             |  |
|                         | Input Current                             | 1.4A max                                                                                                                    |             |            |             |  |
|                         | Inrush Current                            | 80A max., 240VAC (Cold Start at ambient 25°C, full load)                                                                    |             |            |             |  |
|                         | No Load Power Consumption at 115VAC Input | 0.033W                                                                                                                      | 0.035W      | 0.05W      | 0.044W      |  |
| Input                   | No Load Power Consumption at 230VAC Input | 0.033W                                                                                                                      | 0.034W      | 0.07W      | 0.043W      |  |
|                         | 115VAC Average Efficiency <sup>3</sup>    | 88.7%                                                                                                                       | 88.5%       | 88.9%      | 89.7%       |  |
|                         | 230VAC Average Efficiency <sup>3</sup>    | 89.6%                                                                                                                       | 89.4%       | 89.4%      | 90.3%       |  |
|                         | 230VAC 10% Load Efficiency <sup>3</sup>   | 87.6%                                                                                                                       | 87.4%       | 87.4%      | 87.4%       |  |
|                         | Leakage Current                           |                                                                                                                             | <3.5        | 5mA        |             |  |
|                         | Over-Voltage                              | 150% max                                                                                                                    | 150% max    | 150% max   | 150% max    |  |
| Protection              | Short Circuit                             | Auto-recover after short-circuit fault is removed                                                                           |             |            |             |  |
|                         | Over-Current                              | 180% max                                                                                                                    | 180% max    | 180% max   | 180% max    |  |
|                         | Operating Temperature                     | 0°C to +40°C                                                                                                                |             |            |             |  |
| Environmental           | Non-Operating Temperature                 | -20° to +80°C                                                                                                               |             |            |             |  |
|                         | Operating Humidity                        | 20 to +80%                                                                                                                  |             |            |             |  |
|                         | Dielectric Withstand (HI-POT)             | Primary to Secondary: 3000VAC for 1min, 10mA                                                                                |             |            |             |  |
|                         | Insulation Resistance                     | Primary to Secondary: 10M ohm for 500VDC                                                                                    |             |            |             |  |
| Cafatu                  | Standards                                 | cULus 62368-1, IEC 62368-1                                                                                                  |             |            |             |  |
| Safety<br>Approvals and | EMI Emissions                             | FCC Part 15 Class B, CAN ICES-003(B)/NMB-003(B),<br>EN 55032/CISPR 32 Class B Conducted and Radiated                        |             |            |             |  |
| EMC                     | Harmonic Current Emissions                | IEC 61000-3-2                                                                                                               |             |            |             |  |
|                         | Voltage Fluctuations & Flicker            | IEC 61000-3-3                                                                                                               |             |            |             |  |
|                         | Immunity                                  | EN 55035/CISPR 35: 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 |             |            |             |  |
|                         | Dimensions (L x W x H)                    | 115mm (4.53in) x 53mm (2.09in) x 38mm (1.50in)                                                                              |             |            |             |  |
|                         | Weight                                    | 310g                                                                                                                        |             |            |             |  |
| Mechanical              | 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                                                                                                                                                                                                                                                                                                                                                      | PPL65U-300                                                                                                                  | PPL65U-320         | PPL65U-480*     | PPL65U-560* |  |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------|-------------|--|
| Output        | DC Output Voltage                                                                                                                                                                                                                                                                                                                                          | 30.0V                                                                                                                       | 32.0V              | 48.0V           | 56.0V       |  |
|               | Max Current                                                                                                                                                                                                                                                                                                                                                | 2.17A                                                                                                                       | 2.04A              | 1.36A           | 1.17A       |  |
|               | Output Power                                                                                                                                                                                                                                                                                                                                               | 65.1W                                                                                                                       | 65.3W              | 65.3W           | 65.5W       |  |
|               | Regulation                                                                                                                                                                                                                                                                                                                                                 | ± 5%                                                                                                                        | ± 5%               | ± 5%            | ± 5%        |  |
|               | Ripple & Noise P-P(max) <sup>2</sup>                                                                                                                                                                                                                                                                                                                       | 300mV                                                                                                                       | 320mV              | 480mV           | 560mV       |  |
|               | AC Input Voltage Range                                                                                                                                                                                                                                                                                                                                     | 90 to 264VAC                                                                                                                |                    |                 |             |  |
|               | AC Input Frequency                                                                                                                                                                                                                                                                                                                                         | 47 to 63Hz                                                                                                                  |                    |                 |             |  |
|               | Input Current                                                                                                                                                                                                                                                                                                                                              | 1.4A max                                                                                                                    |                    |                 |             |  |
|               | Inrush Current                                                                                                                                                                                                                                                                                                                                             | 80A max., 240VAC (Cold Start at ambient 25°C, full load)                                                                    |                    |                 |             |  |
|               | No Load Power Consumption at 115VAC Input                                                                                                                                                                                                                                                                                                                  | 0.07W                                                                                                                       | 0.07W              | 0.075W          | 0.091W      |  |
| Input         | No Load Power Consumption at 230VAC Input                                                                                                                                                                                                                                                                                                                  | 0.08W                                                                                                                       | 0.08W              | 0.071W          | 0.089W      |  |
|               | 115VAC Average Efficiency <sup>3</sup>                                                                                                                                                                                                                                                                                                                     | 88.9%                                                                                                                       | 89.2%              | 90.4%           | 90.7%       |  |
|               | 230VAC Average Efficiency <sup>3</sup>                                                                                                                                                                                                                                                                                                                     | 89.5%                                                                                                                       | 89.9%              | 91.1%           | 91.3%       |  |
|               | 230VAC 10% Load Efficiency <sup>3</sup>                                                                                                                                                                                                                                                                                                                    | 87.2%                                                                                                                       | 87.8%              | 87.4%           | 87.0%       |  |
|               | Leakage Current                                                                                                                                                                                                                                                                                                                                            |                                                                                                                             | <3.5               | 5mA             |             |  |
|               | Over-Voltage                                                                                                                                                                                                                                                                                                                                               | 150% max                                                                                                                    | 150% max           | 150% max        | 150% max    |  |
| Protection    | Short Circuit                                                                                                                                                                                                                                                                                                                                              | Auto-recover after short-circuit fault is removed                                                                           |                    |                 |             |  |
|               | Over-Current                                                                                                                                                                                                                                                                                                                                               | 180% max                                                                                                                    | 180% max           | 180% max        | 180% max    |  |
|               | Operating Temperature                                                                                                                                                                                                                                                                                                                                      | 0°C to +40°C                                                                                                                |                    |                 |             |  |
| Environmental | Non-Operating Temperature                                                                                                                                                                                                                                                                                                                                  | -20° to +80°C                                                                                                               |                    |                 |             |  |
|               | Operating Humidity                                                                                                                                                                                                                                                                                                                                         | 20 to +80%                                                                                                                  |                    |                 |             |  |
|               | Dielectric Withstand (HI-POT)                                                                                                                                                                                                                                                                                                                              | Primary to Secondary: 3000VAC for 1min, 10mA                                                                                |                    |                 |             |  |
|               | Insulation Resistance                                                                                                                                                                                                                                                                                                                                      | Prin                                                                                                                        | nary to Secondary: | 10M ohm for 500 | /DC         |  |
| Safetv        | Standards                                                                                                                                                                                                                                                                                                                                                  | cULus 62368-1, IEC 62368-1                                                                                                  |                    |                 |             |  |
| Approvals and | EMI Emissions                                                                                                                                                                                                                                                                                                                                              | FCC Part 15 Class B, CAN ICES-003(B)/NMB-003(B),<br>EN 55032/CISPR 32 Class B Conducted and Radiated                        |                    |                 |             |  |
| EMC           | Harmonic Current Emissions                                                                                                                                                                                                                                                                                                                                 | IEC 61000-3-2                                                                                                               |                    |                 |             |  |
|               | Voltage Fluctuations & Flicker                                                                                                                                                                                                                                                                                                                             | IEC 61000-3-3                                                                                                               |                    |                 |             |  |
|               | Immunity                                                                                                                                                                                                                                                                                                                                                   | EN 55035/CISPR 35: 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 |                    |                 |             |  |
|               | Dimensions (L x W x H)                                                                                                                                                                                                                                                                                                                                     | 115mm (4.53in) x 53mm (2.09in) x 38mm (1.50in)                                                                              |                    |                 |             |  |
|               | Weight                                                                                                                                                                                                                                                                                                                                                     | 310g                                                                                                                        |                    |                 |             |  |
|               | Cable Length                                                                                                                                                                                                                                                                                                                                               | 1500mm                                                                                                                      |                    |                 |             |  |
| Mechanical    | DC Cable Type                                                                                                                                                                                                                                                                                                                                              | 18 AWG                                                                                                                      | 18 AWG             | 22 AWG          | 22 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> <li>The specifications defined are at ambient temperature of 25C, 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> |                                                                                                                             |                    |                 |             |  |

<sup>\*</sup>NRCan approval for PPL65U-120, PPL65U-150, PPL65U-180, PPL65U-190, PPL65U-240, PPL65U-480, PPL65U-560 models only



### PPL65U Outline Drawing





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

Phihong USA Corporation 47800 Fremont Boulevard Fremont, CA 94538 Telephone: (510) 445-0100

www.phihong.com

This device complies with/The devices in this product series comply with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.



## PPL65U Line Cords Sold Separately

| Model            |                 | AC30UNA-R                   | AC30UEU-R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | AC30UUK-R                 |
|------------------|-----------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|
|                  | Plug Type       | North America<br>NEMA 5-15P | Continental Europe<br>CEE 7VIII                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | United Kingdom<br>BS 1363 |
|                  | Connector       | IEC320 C13                  | IEC320 C13                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | IEC320 C13                |
|                  | Wire Size       | 18 AWG                      | 0.75mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 1.0mm                     |
| Specifications   | 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;<br>DVE; FIMKO; GOST;<br>IMQ; KEMA;<br>NEMKO; NF; OVE;<br>SEMKO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | BSI; Safety Mark          |
| Photos           |                 |                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                           |
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## PPL65U Line Cords Outline Drawings

