

# AA65x Series



## 65W Desktop Adapter Series



### Features

- US DoE Level VI Efficiency Compliance
- Ecodesign/ErP Lot 7 (EU) 2019/1782 Compliance
- EU CoC Ver 5 Tier 2 Compliance
- OVP, OCP, OTP, Short Circuit Protections
- Class B EMI
- Limited Power Source (LPS)
- Operating Altitude to 5,000 Meters

### Applications

- Networking Device
- Monitor
- Notebook
- Industrial

### Description

The Phihong AA65x 65-Watt Desktop Adapter Series is a highly efficient power solution designed for modern electronic devices. It complies not only with DoE Level VI and EU CoC Tier 2 standards but also DoE Level VII standards proposed in February 2023, ensuring reduced energy consumption and electricity cost savings. With a wide input voltage range of 90-264VAC and single multiple output voltage options from 18V to 48V, it is versatile for global use across applications such as networking, telecommunications, and industrial automation.

Safety is a key feature of the AA65x Series, incorporating over-voltage, over-current, and short-circuit to safeguard both the adapter and connected devices. Its compact and lightweight design allows easy integration into various setups, and compliance with international safety standards like UL, CE, FCC, and UKCA ensures reliable performance. The AA65x Series stands out as a dependable choice for efficient and safe power delivery.

# AA65x Series



## Specifications<sup>1</sup>

Model		AA65W-120A-R <sup>2</sup>	AA65U-120A-R	AA65M-120A-R <sup>2</sup>
Output	DC Output Voltage	12.0V		
	Max Current	5.41A		
	Output Power	64.92W		
	Regulation	± 5%		
	Ripple & Noise P-P(max) <sup>3</sup>	200mV		
Input	AC Input Voltage Range	90 to 264VAC		
	AC Input Frequency	47 to 63Hz		
	Input Current	1.4A (RMS) max at 120VAC; 1.0A (RMS) max at 240VAC		
	No Load Power Consumption at 115VAC Input	0.0621W max		
	No Load Power Consumption at 230VAC Input	0.0986W max		
	115VAC Average Efficiency <sup>4</sup>	90.12%		
	230VAC Average Efficiency <sup>4</sup>	90.62%		
	230VAC 10% Load Efficiency <sup>4</sup>	87.7%		
	Leakage Current	0.25mA MAX @254vac, 50Hz	3.5mA MAX @254vac, 50Hz	
Protection	Over-Voltage	16V max, auto-restart		
	Short Circuit	Output can be shorted permanently without damage.		
	Over-Current	7.5A max. Auto-restart		
Environmental	Operating Temperature <sup>5</sup>	-10°C to +50°C		
	Non-Operating Temperature	-20° to +75°C		
	Operating Humidity	5% to 90% RH max		
Safety Approvals and EMC	Dielectric Withstand (HI-POT)	Input to Output: 3000Vac or 4242 Vdc, 10mA for 1 minute	Input to Output: 3000Vac or 4242Vdc, 10mA, 1 minute Input to F.G.: 1500Vac or 2121Vdc, 10mA for 1 minute	
	Insulation Resistance	Input to Output: >7M ohm. 500VDC	Input to Output: >7M ohm. 500Vdc Input to F.G.: >7M ohm. 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 55035/CISPR 35: IEC 61000-4-2 (+/- 15kV air, +/- 8kV contact), IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5 (+/-1kV L-L, +/-2kV L-G), IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11		
Mechanical	Dimensions (L x W x H)	125.0mm (4.92in) x 50.0mm (1.97in) x 33.5mm (1.32in)		
	Weight	240g		
	Cable Length	1200mm		
	DC Output Connector	Barrel plug 5.5mm x 2.1mm x 9.5mm		
	Input Connector	IEC 60320 C8	IEC 60320 C14	IEC 60320 C6
MTBF	1,000,000 Hrs. Min. at full load 25 degrees C ambient temperature (Telcordia Issue 2 Method I case 1)			

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Model		AA65W-180A-R <sup>2</sup>	AA65U-180A-R	AA65M-180A-R <sup>2</sup>
Output	DC Output Voltage	18.0V		
	Max Current	3.61A		
	Output Power	64.98W		
	Regulation	± 5%		
	Ripple & Noise P-P(max) <sup>3</sup>	200mV		
Input	AC Input Voltage Range	90 to 264VAC		
	AC Input Frequency	47 to 63Hz		
	Input Current	1.4A (RMS) max at 120VAC; 1.0A (RMS) max at 240VAC		
	No Load Power Consumption at 115VAC Input	0.0683W max		
	No Load Power Consumption at 230VAC Input	0.0816W max		
	115VAC Average Efficiency <sup>4</sup>	89.1%		
	230VAC Average Efficiency <sup>4</sup>	90.09%		
	230VAC 10% Load Efficiency <sup>4</sup>	85.42%		
	Leakage Current	0.25mA MAX @254vac, 50Hz	3.5mA MAX @254vac, 50Hz	
Protection	Over-Voltage	25V max, auto-restart		
	Short Circuit	Output can be shorted permanently without damage.		
	Over-Current	5.0A max. Auto-restart		
Environmental	Operating Temperature <sup>5</sup>	-10°C to +50°C		
	Non-Operating Temperature	-20° to +75°C		
	Operating Humidity	5% to 90% RH max		
Safety Approvals and EMC	Dielectric Withstand (HI-POT)	Input to Output: 3000Vac or 4242 Vdc, 10mA for 1 minute	Input to Output: 3000Vac or 4242Vdc, 10mA, 1 minute Input to F.G.: 1500Vac or 2121Vdc, 10mA for 1 minute	
	Insulation Resistance	Input to Output: >7M ohm. 500VDC	Input to Output: >7M ohm. 500Vdc Input to F.G.: >7M ohm. 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 55035/CISPR 35: IEC 61000-4-2 (+/- 15kV air, +/- 8kV contact), IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5 (+/-1kV L-L, +/-2kV L-G), IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11		
Mechanical	Dimensions (L x W x H)	125.0mm (4.92in) x 50.0mm (1.97in) x 33.5mm (1.32in)		
	Weight	240g		
	Cable Length	1500mm		
	DC Output Connector	Barrel plug 5.5mm x 2.1mm x 9.5mm		
	Input Connector	IEC 60320 C8	IEC 60320 C14	IEC 60320 C6
MTBF	1,000,000 Hrs. Min. at full load 25 degrees C ambient temperature (Telcordia Issue 2 Method I case 1)			

Model		AA65W-190A-R <sup>2</sup>	AA65U-190A-R	AA65M-190A-R <sup>2</sup>
Output	DC Output Voltage	19.0V		
	Max Current	3.42A		
	Output Power	64.98W		
	Regulation	± 5%		
	Ripple & Noise P-P(max) <sup>3</sup>	200mV		
Input	AC Input Voltage Range	90 to 264VAC		
	AC Input Frequency	47 to 63Hz		
	Input Current	1.4A (RMS) max at 120VAC; 1.0A (RMS) max at 240VAC		
	No Load Power Consumption at 115VAC Input	0.0692W max		
	No Load Power Consumption at 230VAC Input	0.0822W max		
	115VAC Average Efficiency <sup>4</sup>	90.42%		
	230VAC Average Efficiency <sup>4</sup>	91.38%		
	230VAC 10% Load Efficiency <sup>4</sup>	85.27%		
	Leakage Current	0.25mA MAX @254vac, 50Hz	3.5mA MAX @254vac, 50Hz	
Protection	Over-Voltage	25V max, auto-restart		
	Short Circuit	Output can be shorted permanently without damage.		
	Over-Current	5.0A max. Auto-restart		
Environmental	Operating Temperature <sup>5</sup>	-10°C to +50°C		
	Non-Operating Temperature	-20° to +75°C		
	Operating Humidity	5% to 90% RH max		
Safety Approvals and EMC	Dielectric Withstand (HI-POT)	Input to Output: 3000Vac or 4242 Vdc, 10mA for 1 minute	Input to Output: 3000Vac or 4242Vdc, 10mA, 1 minute Input to F.G.: 1500Vac or 2121Vdc, 10mA for 1 minute	
	Insulation Resistance	Input to Output: >7M ohm. 500VDC	Input to Output: >7M ohm. 500Vdc Input to F.G.: >7M ohm. 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 55035/CISPR 35: IEC 61000-4-2 (+/- 15kV air, +/- 8kV contact), IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5 (+/-1kV L-L, +/-2kV L-G), IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11		
Mechanical	Dimensions (L x W x H)	125.0mm (4.92in) x 50.0mm (1.97in) x 33.5mm (1.32in)		
	Weight	240g		
	Cable Length	1500mm		
	DC Output Connector	Barrel plug 5.5mm x 2.1mm x 9.5mm		
	Input Connector	IEC 60320 C8	IEC 60320 C14	IEC 60320 C6
MTBF	1,000,000 Hrs. Min. at full load 25 degrees C ambient temperature (Telcordia Issue 2 Method I case 1)			

Model		AA65W-240A-R <sup>2</sup>	AA65U-240A-R	AA65M-240A-R <sup>2</sup>
Output	DC Output Voltage	24.0V		
	Max Current	2.7A		
	Output Power	64.8W		
	Regulation	± 5%		
	Ripple & Noise P-P(max) <sup>3</sup>	240mV		
Input	AC Input Voltage Range	90 to 264VAC		
	AC Input Frequency	47 to 63Hz		
	Input Current	1.4A (RMS) max at 120VAC; 0.8A (RMS) max at 240VAC		
	No Load Power Consumption at 115VAC Input	0.0551W max		
	No Load Power Consumption at 230VAC Input	0.1275W max		
	115VAC Average Efficiency <sup>4</sup>	91.03%		
	230VAC Average Efficiency <sup>4</sup>	91.55%		
	230VAC 10% Load Efficiency <sup>4</sup>	87.76%		
	Leakage Current	0.25mA max @254vac, 50Hz	3.5mA MAX @254vac, 50Hz	
Protection	Over-Voltage	35V max, auto-restart		
	Short Circuit	Output can be shorted permanently without damage.		
	Over-Current	3.8A max. Auto-restart		
Environmental	Operating Temperature <sup>5</sup>	-10°C to +50°C		
	Non-Operating Temperature	-20° to +75°C		
	Operating Humidity	5% to 90% RH max		
Safety Approvals and EMC	Dielectric Withstand (HI-POT)	Input to Output: 3000Vac or 4242 Vdc, 10mA for 1 minute	Input to Output: 3000Vac or 4242Vdc, 10mA, 1 minute Input to F.G.: 1500Vac or 2121Vdc, 10mA for 1 minute	
	Insulation Resistance	Input to Output: >7M ohm. 500VDC	Input to Output: >7M ohm. 500Vdc Input to F.G.: >7M ohm. 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 55035/CISPR 35: IEC 61000-4-2 (+/- 15kV air, +/- 8kV contact), IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5 (+/-1kV L-L, +/-2kV L-G), IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11		
Mechanical	Dimensions (L x W x H)	125.0mm (4.92in) x 50.0mm (1.97in) x 33.5mm (1.32in)		
	Weight	240g		
	Cable Length	1500mm		
	DC Output Connector	Barrel plug 5.5mm x 2.1mm x 9.5mm		
	Input Connector	IEC 60320 C8	IEC 60320 C14	IEC 60320 C6
MTBF	1,000,000 Hrs. Min. at full load 25 degrees C ambient temperature (Telcordia Issue 2 Method I case 1)			

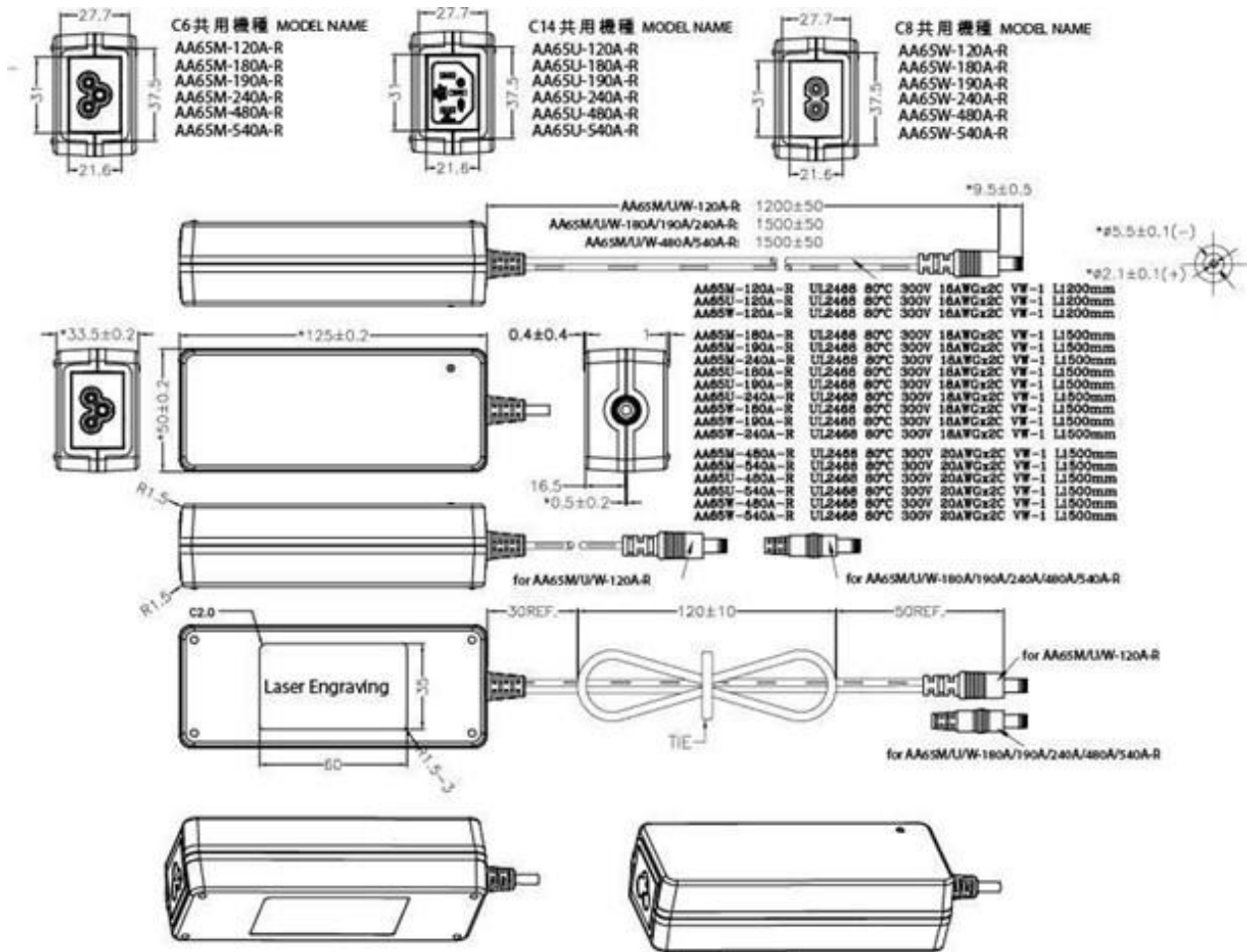
Model		AA65W-480A-R <sup>2</sup>	AA65U-480A-R	AA65M-480A-R <sup>2</sup>
Output	DC Output Voltage	48.0V		
	Max Current	1.35A		
	Output Power	64.8W		
	Regulation	± 5%		
	Ripple & Noise P-P(max) <sup>3</sup>	480mV		
Input	AC Input Voltage Range	90 to 264VAC		
	AC Input Frequency	47 to 63Hz		
	Input Current	1.4A (RMS) max at 120VAC; 1.0A (RMS) max at 240VAC		
	No Load Power Consumption at 115VAC Input	0.0909W max		
	No Load Power Consumption at 230VAC Input	0.1145W max		
	115VAC Average Efficiency <sup>4</sup>	91.18%		
	230VAC Average Efficiency <sup>4</sup>	91.52%		
	230VAC 10% Load Efficiency <sup>4</sup>	85.86%		
	Leakage Current	0.25mA max @254vac, 50Hz	3.5mA MAX @254vac, 50Hz	
Protection	Over-Voltage	60V max, auto-restart		
	Short Circuit	Output can be shorted permanently without damage.		
	Over-Current	2.0A max. Auto-restart		
Environmental	Operating Temperature <sup>4</sup>	-10°C to +50°C		
	Non-Operating Temperature	-20° to +75°C		
	Operating Humidity	5% to 90% RH max		
Safety Approvals and EMC	Dielectric Withstand (HI-POT)	Input to Output: 3000Vac or 4242 Vdc, 10mA for 1 minute	Input to Output: 3000Vac or 4242Vdc, 10mA, 1 minute Input to F.G.: 1500Vac or 2121Vdc, 10mA for 1 minute	
	Insulation Resistance	Input to Output: >7M ohm. 500VDC	Input to Output: >7M ohm. 500Vdc Input to F.G.: >7M ohm. 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 55035/CISPR 35: IEC 61000-4-2 (+/- 15kV air, +/- 8kV contact), IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5 (+/-1kV L-L, +/-2kV L-G), IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11		
Mechanical	Dimensions (L x W x H)	125.0mm (4.92in) x 50.0mm (1.97in) x 33.5mm (1.32in)		
	Weight	240g		
	Cable Length	1500mm		
	DC Output Connector	Barrel plug 5.5mm x 2.1mm x 9.5mm		
	Input Connector	IEC 60320 C8	IEC 60320 C14	IEC 60320 C6
MTBF	1,000,000 Hrs. Min. at full load 25 degrees C ambient temperature (Telcordia Issue 2 Method I case 1)			

Model		AA65W-540A-R <sup>2</sup>	AA65U-540A-R	AA65M-540A-R <sup>2</sup>
Output	DC Output Voltage	54.0V		
	Max Current	1.20A		
	Output Power	64.8W		
	Regulation	± 5%		
	Ripple & Noise P-P(max) <sup>3</sup>	540mV		
Input	AC Input Voltage Range	90 to 264VAC		
	AC Input Frequency	47 to 63Hz		
	Input Current	1.4A (RMS) max at 120VAC; 1.0A (RMS) max at 240VAC		
	No Load Power Consumption at 115VAC Input	0.1015W max		
	No Load Power Consumption at 230VAC Input	0.1162W max		
	115VAC Average Efficiency <sup>4</sup>	91.33%		
	230VAC Average Efficiency <sup>4</sup>	91.05%		
	230VAC 10% Load Efficiency <sup>4</sup>	84.14%		
	Leakage Current	0.25mA max @254vac, 50Hz	3.5mA MAX @254vac, 50Hz	
Protection	Over-Voltage	60V max, auto-restart		
	Short Circuit	Output can be shorted permanently without damage.		
	Over-Current	2.0A max. Auto-restart		
Environmental	Operating Temperature <sup>5</sup>	-10°C to +50°C		
	Non-Operating Temperature	-20° to +75°C		
	Operating Humidity	5% to 90% RH max		
Safety Approvals and EMC	Dielectric Withstand (HI-POT)	Input to Output: 3000Vac or 4242 Vdc, 10mA for 1 minute	Input to Output: 3000Vac or 4242Vdc, 10mA, 1 minute Input to F.G.: 1500Vac or 2121Vdc, 10mA for 1 minute	
	Insulation Resistance	Input to Output: >7M ohm. 500VDC	Input to Output: >7M ohm. 500Vdc Input to F.G.: >7M ohm. 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 55035/CISPR 35: IEC 61000-4-2 (+/- 15kV air, +/- 8kV contact), IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5 (+/-1kV L-L, +/-2kV L-G), IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11		
Mechanical	Dimensions (L x W x H)	125.0mm (4.92in) x 50.0mm (1.97in) x 33.5mm (1.32in)		
	Weight	240g		
	Cable Length	1500mm		
	DC Output Connector	Barrel plug 5.5mm x 2.1mm x 9.5mm		
	Input Connector	IEC 60320 C8	IEC 60320 C14	IEC 60320 C6
MTBF	1,000,000 Hrs. Min. at full load 25 degrees C ambient temperature (Telcordia Issue 2 Method I case 1)			
Notes	<ol style="list-style-type: none"> <li>The specifications defined are at ambient temperature of 25°C, unless otherwise specified.</li> <li>Special order MOQ.</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> <li>Refer to derating curve.</li> </ol>			

# AA65x Series



## Outline Drawing (mm)

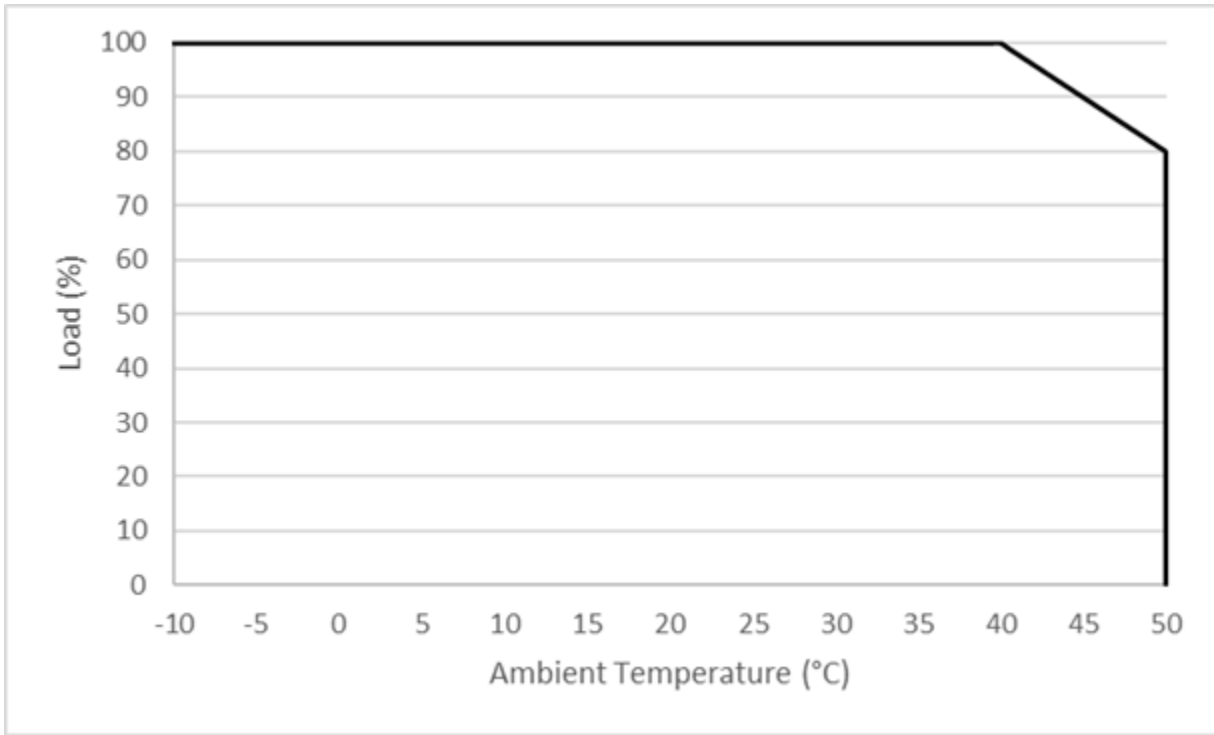




# AA65x Series



## Operating Temperature Curve





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

MODELS

AA65W-120A-R2, AA65U-120A-R, AA65M-120A-R2  
AA65W-180A-R2, AA65U-180A-R, AA65M-180A-R2  
AA65W-190A-R2, AA65U-190A-R, AA65M-190A-R2  
AA65W-240A-R2, AA65U-240A-R, AA65M-240A-R2  
AA65W-480A-R2, AA65U-480A-R, AA65M-480A-R2  
AA65W-540A-R2, AA65U-540A-R, AA65M-540A-R2

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*This device complies 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.*

# AA65x Series C8 Cords



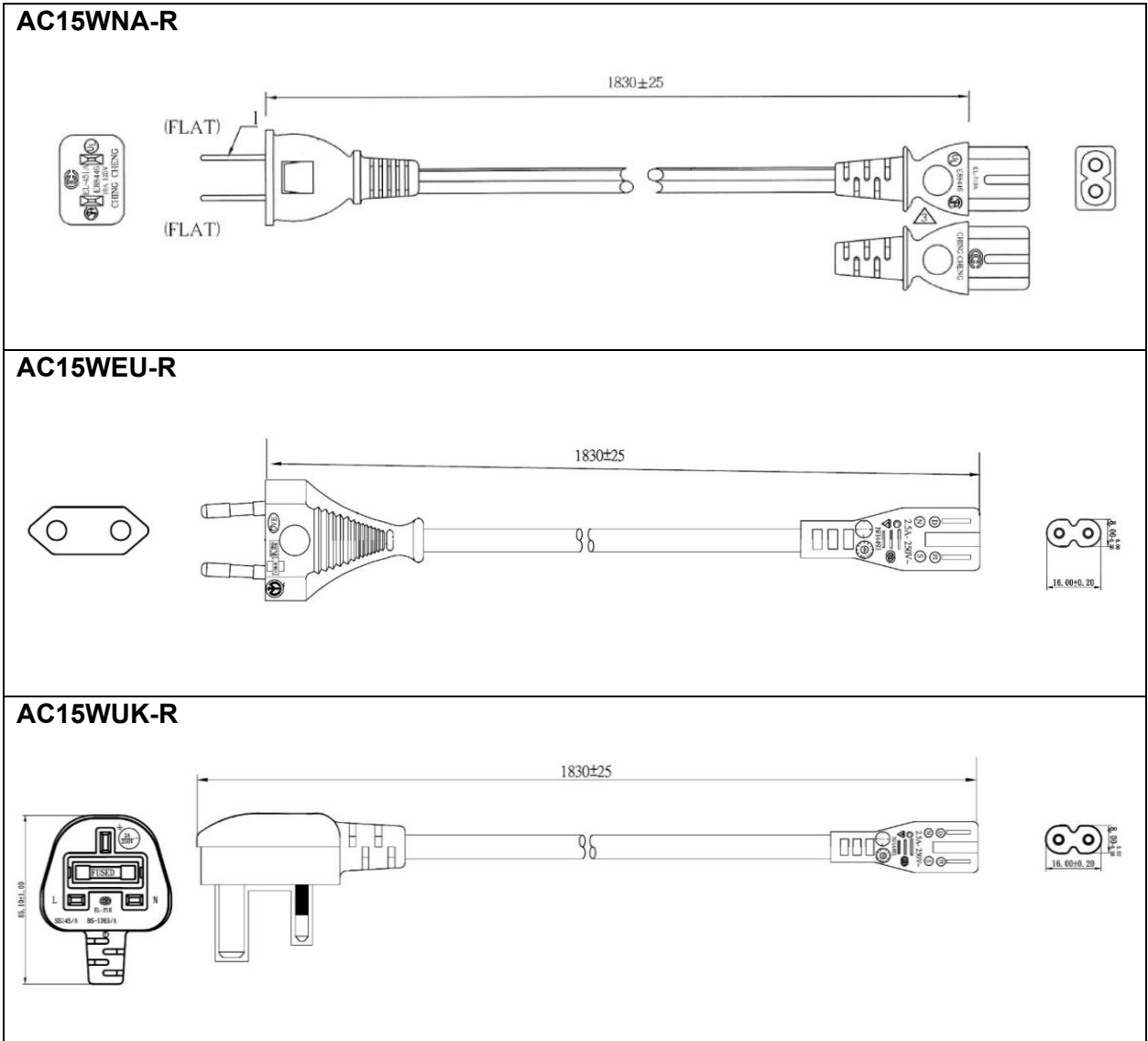
Sold Separately

Model		AC15WNA-R	AC15WEU-R	AC15WUK-R
Specifications	Plug Type	North America NEMA 1-15P	Continental Europe CEE 7XVI	United Kingdom BS 1363
	Connector	IEC320 C7	IEC320 C7	IEC320 C7
	Wire Size	18 AWG	0.75mm	0.75mm
	Temperature	60°C	60°C	60 °C
	Amperage Rating	7A	2.5A	2.5A
	Voltage Rating	125V	250V	250V
	Cable Length	1830mm	1830mm	1830mm
Safety Approvals		CSA; UL	CEBEC; DEMKO; DVE; FIMKO; GOST; IMQ; KEMA; NEMKO; NF; OVE; SEMKO; SEV	BSI; Safety Mark
Photos				

# AA65x Series C8 Cords






## Outline Drawing (mm)



# AA65x Series C14 Cords



Sold Separately

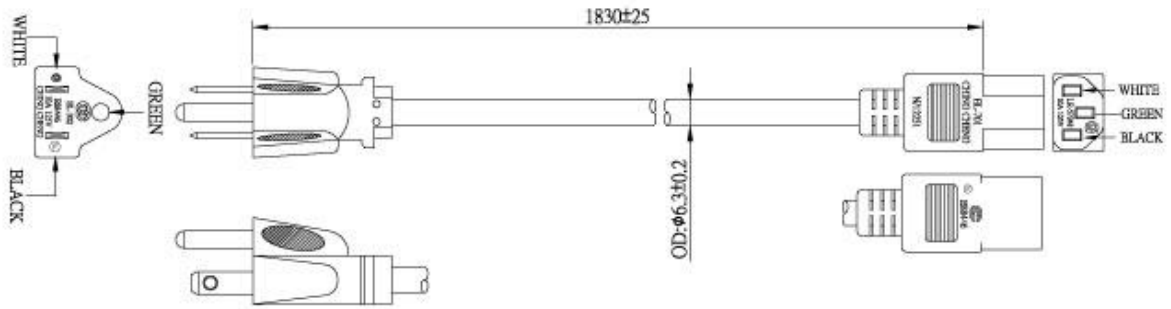
Model		AC30UNA-R	AC30UEU-R	AC30UUK-R
Specifications	Plug Type	North America NEMA 5-15P	Continental Europe CEE 7VIII	United Kingdom BS 1363
	Connector	IEC320 C13	IEC320 C13	IEC320 C13
	Wire Size	18 AWG	0.75mm	1.0mm
	Temperature	60°C	60°C	70 °C
	Amperage Rating	10A	6A	10A
	Voltage Rating	125V	250V	250V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

# AA65x Series C14 Cords

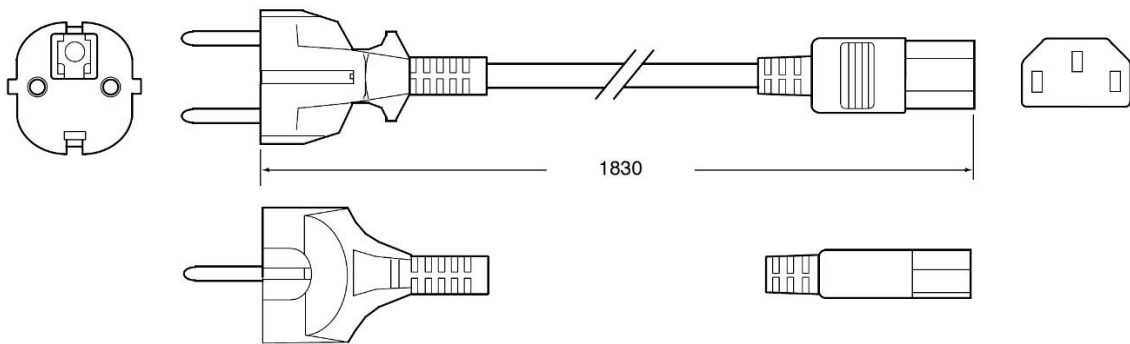


## Outline Drawing (mm)

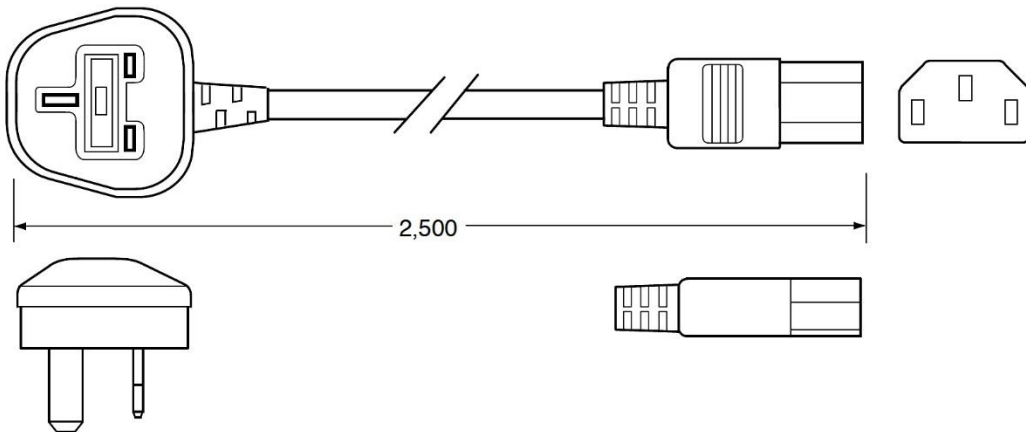
### AC30UNA-R



### AC30UEU-R



### AC30UUK-R



# AA65x Series C6 Cords



Sold Separately

<b>Model</b>		<b>AC30MNA-R</b>
<b>Specifications</b>	<b>Plug Type</b>	North America NEMA 5-15P
	<b>Connector</b>	IEC320 C6
	<b>Wire Size</b>	18 AWG
	<b>Temperature</b>	60°C
	<b>Amperage Rating</b>	7A
	<b>Voltage Rating</b>	125V
	<b>Cable Length</b>	1829mm
<b>Safety Approvals</b>		CSA; UL
<b>Photos</b>		

# AA65x Series C14 Cords



## Outline Drawing (mm)

