

### 15-80 Watts

- Energy Efficiency Level V
- CEC 2008 and EISA 2007 Compliant
- Limited Power Source Approval
- China Compulsory Certification (CCC) Qualified
- +60 °C Operating Temperature
- Compact Dimensions
- 3 Year Warranty



#### Dimensions:

- AEL15:** 3.58 x 1.50 x 1.42" (91.0 x 38.0 x 36.0 mm)
- AEL20:** 3.90 x 1.65 x 1.22" (99.0 x 42.0 x 31.0 mm)
- AEL40:** 4.65 x 2.05 x 1.36" (118.0 x 52.0 x 34.5 mm)
- AEL60:** 4.65 x 2.05 x 1.36" (118.0 x 52.0 x 34.5 mm)
- AEL80:** 5.75 x 1.69 x 2.99" (146.0 x 76.0 x 43.0 mm)

### Models & Ratings

Output Power	Output Voltage <sup>(3)</sup>	Output Current	Total Regulation <sup>(2)</sup>	Efficiency <sup>(5)</sup>	Model Number <sup>(1,6)</sup>
8 W	3.3 VDC	2.50 A	7%	68%	AEL15US03 <sup>(4)</sup>
	5.0 VDC	2.40 A	7%	78%	AEL15US05
12 W	8.0 VDC	1.50 A	5%	79%	AEL15US08
	9.0 VDC	1.66 A	5%	79%	AEL15US09
15 W	12.0 VDC	1.25 A	5%	80%	AEL15US12
	15.0 VDC	1.00 A	5%	81%	AEL15US15
	18.0 VDC	0.83 A	5%	82%	AEL15US18
	24.0 VDC	0.62 A	5%	78%	AEL15US24 <sup>(4)</sup>
	30.0 VDC	0.50 A	5%	77%	AEL15US30 <sup>(4)</sup>
	36.0 VDC	0.42 A	3%	75%	AEL15US36 <sup>(4)</sup>
	48.0 VDC	0.31 A	3%	81%	AEL15US48
	15 W	5.0 VDC	3.00 A	5%	79%
20 W	12.0 VDC	1.67 A	4%	86%	AEL20US12
	15.0 VDC	1.33 A	4%	85%	AEL20US15
	24.0 VDC	0.83 A	3%	87%	AEL20US24
	30.0 VDC	0.67 A	3%	86%	AEL20US30
	48.0 VDC	0.42 A	3%	87%	AEL20US48
25 W	5.0 VDC	5.00 A	7%	79%	AEL40US05 <sup>(4)</sup>
35 W	8.0 VDC	4.37 A	5%	82%	AEL40US08 <sup>(4)</sup>
	9.0 VDC	3.88 A	5%	83%	AEL40US09 <sup>(4)</sup>
40 W	12.0 VDC	3.33 A	5%	87%	AEL40US12
	15.0 VDC	2.67 A	5%	87%	AEL40US15
	18.0 VDC	2.22 A	5%	86%	AEL40US18
	24.0 VDC	1.67 A	3%	86%	AEL40US24
	36.0 VDC	1.11 A	3%	89%	AEL40US36
	48.0 VDC	0.83 A	3%	91%	AEL40US48
57 W	12.0 VDC	4.75 A	5%	87%	AEL60US12
63 W	15.0 VDC	4.20 A	5%	88%	AEL60US15
	18.0 VDC	3.50 A	5%	88%	AEL60US18
	24.0 VDC	2.63 A	5%	88%	AEL60US24
	30.0 VDC	2.15 A	5%	90%	AEL60US30
	36.0 VDC	1.75 A	3%	90%	AEL60US36
	48.0 VDC	1.31 A	3%	90%	AEL60US48
80 W	12.0 VDC	6.66 A	5%	85%	AEL80US12 <sup>(4)</sup>
	15.0 VDC	5.38 A	5%	87%	AEL80US15 <sup>(4)</sup>
	18.0 VDC	4.44 A	5%	88%	AEL80US18
	24.0 VDC	3.33 A	5%	87%	AEL80US24
	30.0 VDC	2.66 A	5%	87%	AEL80US30
	36.0 VDC	2.22 A	5%	88%	AEL80US36
	48.0 VDC	1.66 A	5%	88%	AEL80US48

#### Notes

- Standard input connector is IEC320-C14 Inlet. For optional IEC320-C6 Inlet, add suffix "C6" to model number e.g. AEL15US12C6.
- Total regulation includes line regulation and load regulation.
- Other output voltages available, contact sales for details.

- Energy Efficiency Level IV.
- Minimum average of efficiencies measured at 25%, 50%, 75% & 100% load.
- For output negative connected to ground add suffix G.

### Input

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Input Voltage	90		264	VAC	
Input Frequency	47		63	Hz	
Input Current			0.4	A	AEL15/20, Measured at 115/230 VAC
			1.0		AEL40, Measured at 115/230 VAC
			1.6		AEL60, Measured at 115/230 VAC
			1.1		AEL80, Measured at 115/230 VAC
Inrush Current			15/30	A	AEL15/20, Measured at 115/230 VAC
			25/50		AEL40, Measured at 115/230 VAC
			35/70		AEL60, Measured at 115/230 VAC
			45/92		AEL80, Measured at 115/230 VAC
Earth Leakage Current		0.75		mA	Measured at 240 VAC
Power Factor					EN61000-3-2 Class A
No Load Input Power			0.5	W	Model dependant
Input Protection	Internal fuse in both line, AEL15020: T1 A, 250 V, AEL40: T2 A, 250 V, AEL60/80: T3.15 A, 250 V				

### Output

Characteristic	Min.	Typ.	Max.	Units	Notes & Conditions
Output Voltage					See Models and Ratings table
Minimum Load					No minimum load required
Hold Up Time	5			s	Full load, 110 VAC
	12				
	16				
Start Up Delay			0.5	s	AEL20/40 at full load, 100 VAC
			2.0		AEL15/60/80 at full load, 100 VAC
Transient Response			2	%	Maximum deviation, recovering to less than 1% within 500 $\mu$ s for 50% step load
Ripple and Noise			1	% pk-pk	20 MHz bandwidth
Overvoltage Protection	112		132	%	AEL40/60/80 models only
Overload Protection	110		150	%	AEL20/40/60/80 models only
Short Circuit Protection	Trip and restart (hiccup)				
Temperature Coefficient		0.04		%/°C	

### Environmental

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Operating Temperature	-20		+60	°C	Derate from 100% load at 40 °C to 50% load at +60 °C
Cooling	Convection cooled				
Operating Humidity	5		95	%RH	Non-condensing
Storage Temperature	-40		+85	°C	
Operating Altitude			2000	m	
Shock	10 g, 10 ms on 3 axes				

### General

Characteristic	Minimum	Typical	Maximum	Units	Notes & Conditions
Efficiency				%	See Models and Ratings table
Energy Efficiency					Model dependent, see tables
Isolation: Input to Output Input to Ground Output to Ground			3000	VAC	*Not class 8 version All class I models available with output negative connected ground. See notes.
			1500	VAC*	
			500	VDC*	
Switching Frequency		63 KHz		kHz	
Mean Time Between Failure		>100		kHrs	MIL-HDBK-217F at 25 °C GB
Weight		0.36 (165)		lb (g)	AEL15
		0.37 (170)			AEL20
		0.64 (275)			AEL40
		0.79 (340)			AEL60
		1.5 (700)			AEL80

### EMC: Emissions

Phenomenon	Standard	Test Level	Notes & Conditions
Emissions	EN55022	Level B	Conducted & Radiated
Harmonic Current	EN61000-3-2	Class A	
Voltage Flicker	EN61000-3-3		

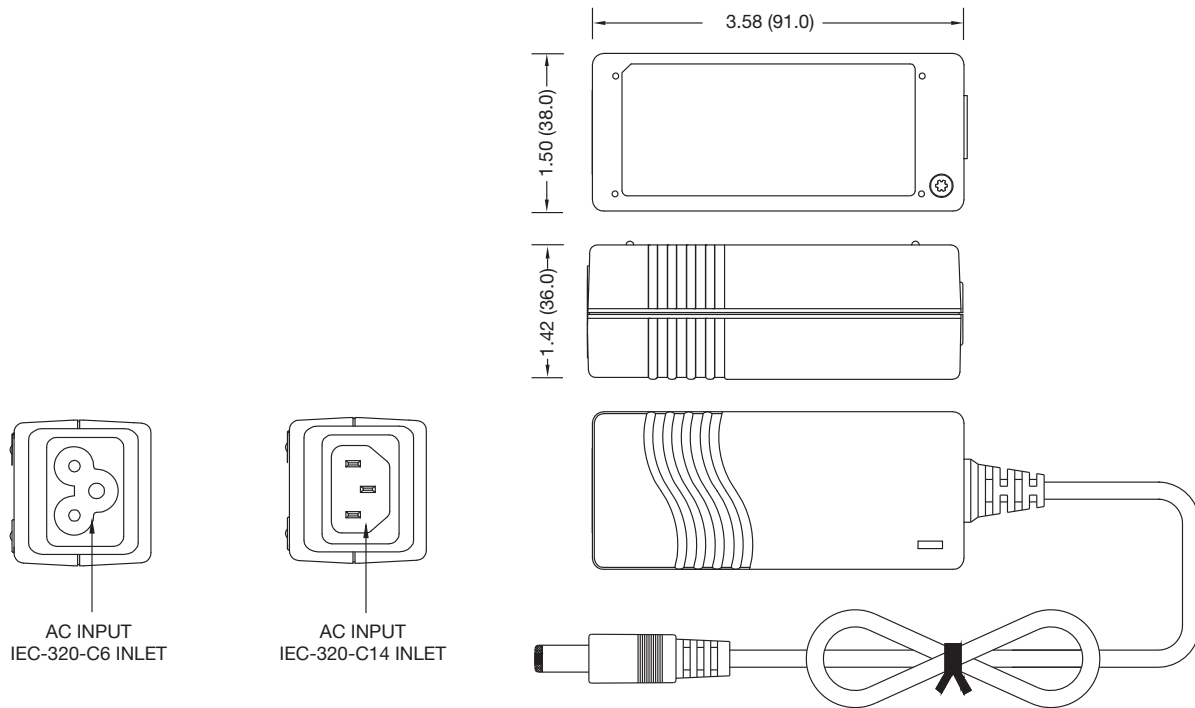
### EMC: Immunity

Phenomenon	Standard	Test Level	Criteria	Notes & Conditions
ESD	EN61000-4-2	2	A	
Radiated	EN61000-4-3	3 V/m	A	
EFT/Burst	EN61000-4-4	2	A	
Surge	EN61000-4-5	Installation Class 3	A	
Conducted	EN61000-4-6	2	A	
Magnetic Fields	EN61000-4-8	1 A/m	A	
Dips and Interruptions	EN61000-4-11	Dip: 30% 10 ms	A	
		Dip: 60% 100 ms	B	
		Dip: 100% 5000 ms	B	

### Safety Approvals

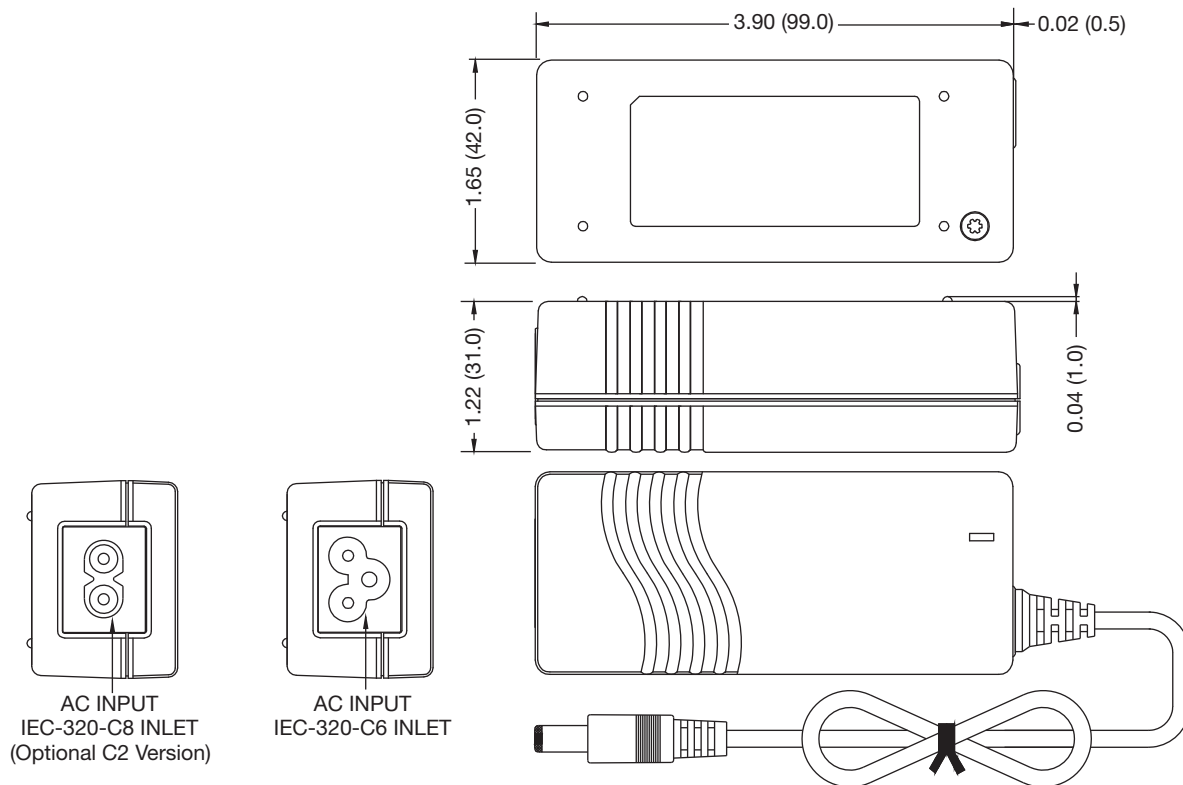
Safety Agency	Safety Standard	Notes & Conditions
EN	EN60950-1: UL/cUL60950-1, Approved as Limited Power Source (AEL15-60 only), China Compulsory Certification (CCC) qualified.	
CE	Meets all applicable directives	
UKCA	Meets all applicable legislation	

### Mechanical Details



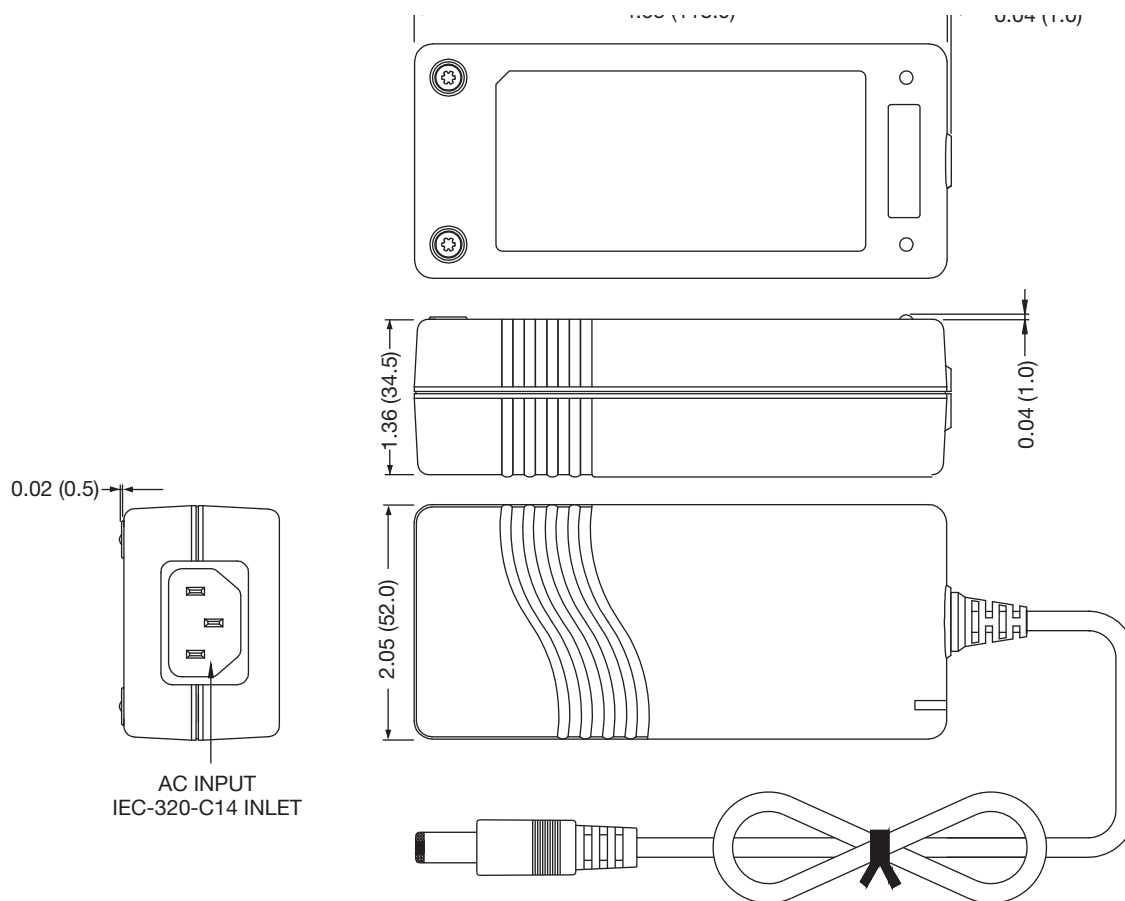
### Notes

1. All dimensions are shown in inches (mm). Tolerance  $\pm 0.04$  ( $\pm 1.0$ ) max.
2. Output connector: is 0.22 (5.5) outer diameter barrel, 0.10 (2.5) inner diameter barrel with centre positive (+) and outer shell negative (-). Length is 0.433 (11.0).
3. Output cable length is 48" (1220mm) approx.
4. Weight: 0.36 lbs (165 g)
5. For European mains lead order part: EU-MAINS-IEC or EU-MAINS-5 for C6 version.
6. For UK mains lead order part: UK-MAINS-IEC or UK-MAINS-5 for C6 version.
7. For US mains lead order part: US-MAINS-IEC or US-MAINS-5 for C6 version.
8. Mains lead length is 78" (2000 mm) approx



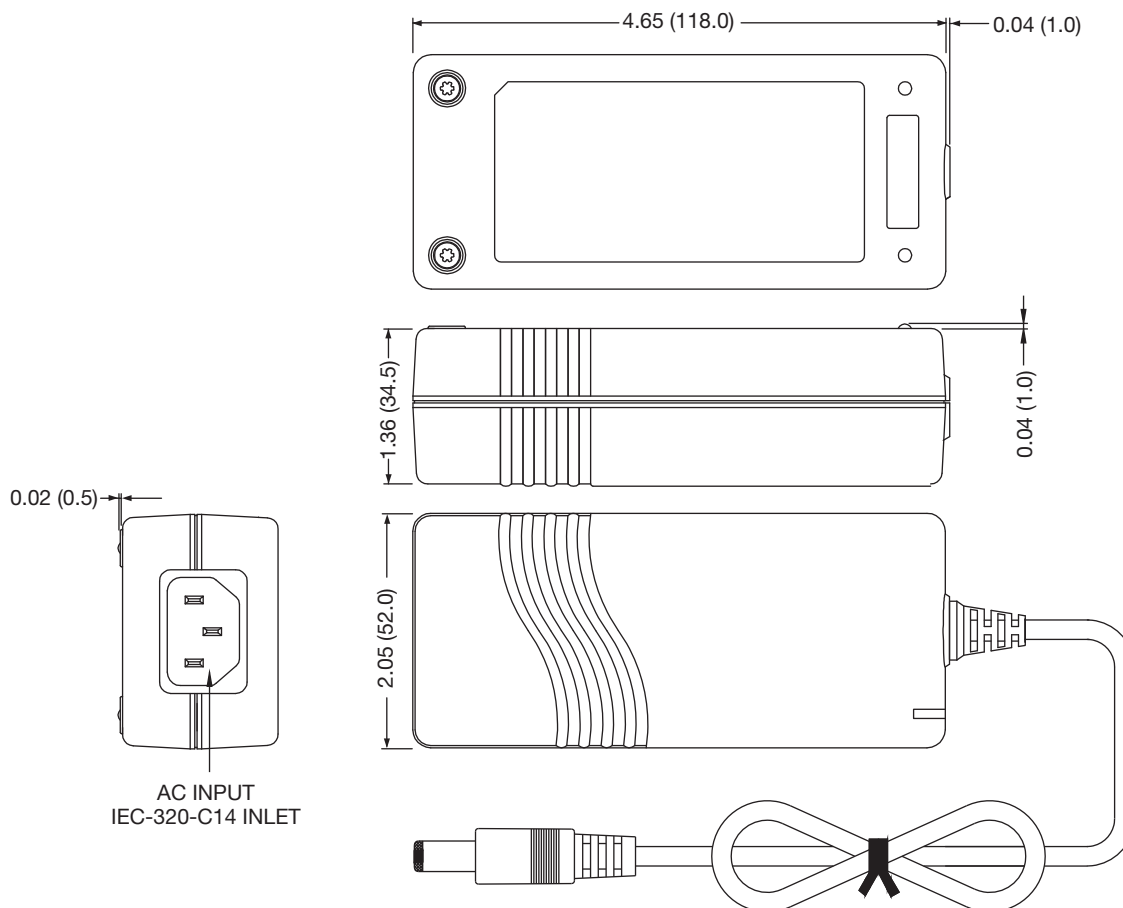
### Notes

1. All dimensions are shown in inches (mm). Tolerance  $\pm 0.04$  ( $\pm 1.0$ ) max.
2. Output connector: 0.22 (5.5) outer diameter barrel, 0.10 (2.5) inner diameter barrel with centre positive (+) and outer shell negative (-). Length is 0.433 (11.0).
3. Output cable length is 48" (1220mm) approx.
4. Weight: 0.37 lbs (170 g)
5. For European mains lead order part: EU-MAINS-C5 for AEL20, EU-MAINS-8 for AEL20 Class II.
6. For UK mains lead order part: UK-MAINS-5 for AEL20, UK-MAINS-8 for AEL20 Class II.
7. For US mains lead order part: US-MAINS-5 for AEL20, US-MAINS-8 for AEL20 Class II.
8. Mains lead length is 78" (2000 mm) approx



### Notes

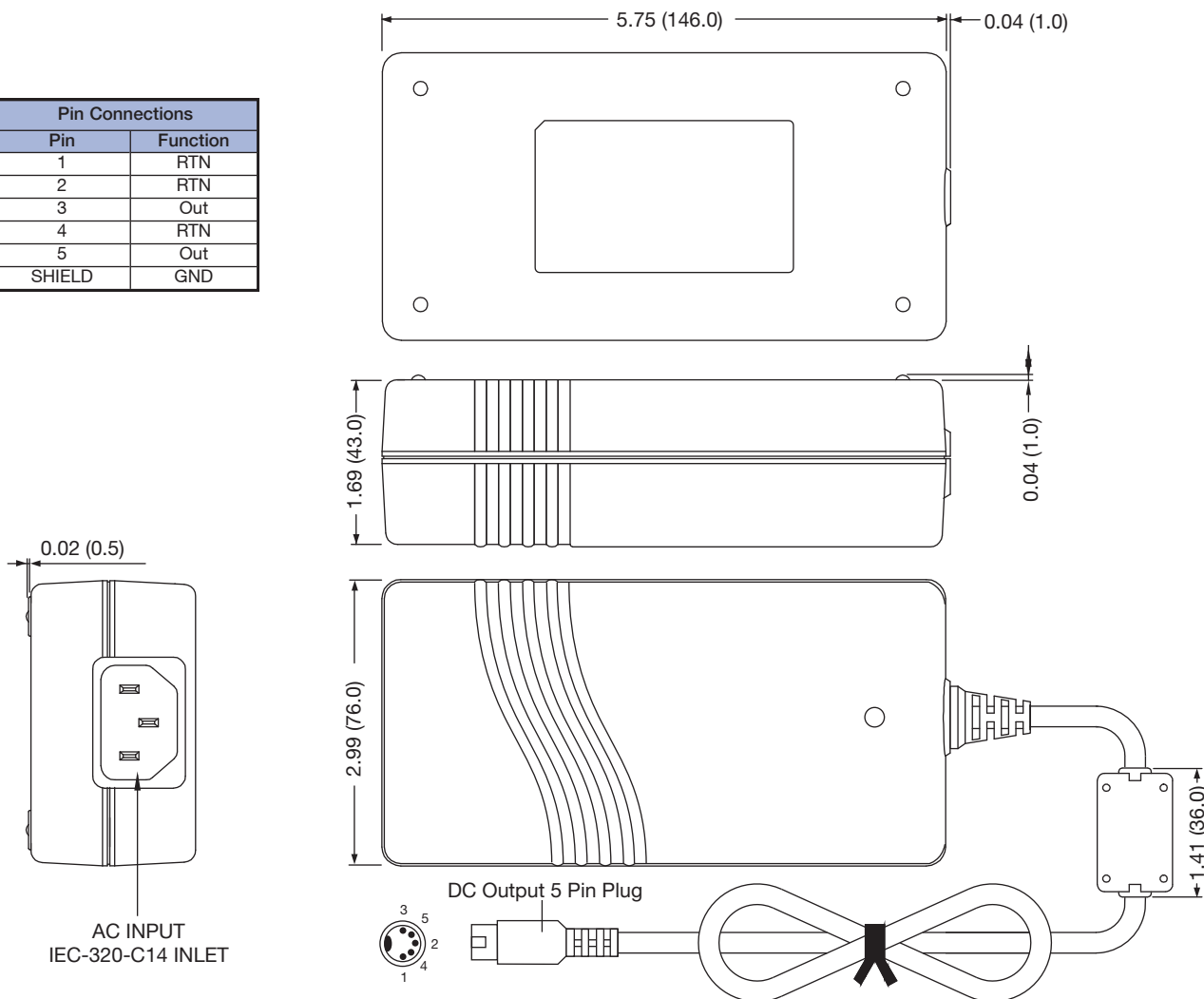
1. All dimensions are shown in inches (mm). Tolerance  $\pm 0.04$  ( $\pm 1.0$ ) max.
2. Output connector: 0.22 (5.5) outer diameter barrel, 0.10 (2.5) inner diameter barrel with centre positive (+) and outer shell negative (-). Length is 0.433 (11.0).
3. Output cable length is 48" (1220mm) approx.
4. Weight: 0.64 lbs (275 g).
5. For European mains lead order part: EU-MAINS-IEC.
6. For UK mains lead order part: UK-MAINS-IEC.
7. For US mains lead order part: US-MAINS-IEC.
8. Mains lead length is 78" (2000 mm) approx



### Notes

1. All dimensions are shown in inches (mm). Tolerance  $\pm 0.04$  ( $\pm 1.0$ ) max.
2. Output connector: 0.22 (5.5) outer diameter barrel, 0.10 (2.5) inner diameter barrel with centre positive (+) and outer shell negative (-). Length is 0.433 (11.0).
3. Output cable length is 48" (1220mm) approx.
4. Weight: 0.79 lbs (340 g).
5. For European mains lead order part: EU-MAINS-IEC.
6. For UK mains lead order part: UK-MAINS-IEC.
7. For US mains lead order part: US-MAINS-IEC.
8. Mains lead length is 78" (2000 mm) approx

Pin Connections	
Pin	Function
1	RTN
2	RTN
3	Out
4	RTN
5	Out
SHIELD	GND



### Notes

1. All dimensions are shown in inches (mm). Tolerance  $\pm 0.04$  ( $\pm 1.0$ ) max.
2. Output connector: 5 pin 180° DIN
3. Output cable length: 48" (1220mm) approx.
4. Weight: 1.5 lbs (700 g)
5. For European mains lead order part: EU-MAINS-IEC.
6. For UK mains lead order part: UK-MAINS-IEC.
7. For US mains lead order part: US-MAINS-IEC.
8. Mains lead length is 78" (2000 mm) approx



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