

**FEATURES:**



- Constant Current LED Driver
- High Efficiency: Up to 90%
- Active Power Factor Correction
- UVLO, Short Circuit, Open Circuit, Over Temperature Protection
- IP67 design for indoor/outdoor
- Long Life, High reliability
- Meet UL, CE Safety Requirement
- 5 Year Warranty

**Models**  
**Single output**



Model	Max Output Power (W)	Output Voltage Range (V)	Output Current (A)	Input Voltage (VAC/Hz)	Efficiency (%)
AMER90-42200Z*	84.0	24-42	2	90-305/47-63	90
AMER90-56160Z	89.6	40-56	1.6	90-305/47-63	90

NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity <75%, nominal input voltage and at rated output load unless otherwise specified.

**Input Specifications**

Parameters	Conditions	Typical	Maximum	Units
Input Current	90 VAC, full load		1.3	A rms
Inrush current <2ms	115 VAC, cold start		40	A
	305 VAC, cold start		65	
Leakage current			0.75	mA
Input dissipation	No Load		1.5	W
	Output Short		2.5	W
Power Factor	115 VAC, full load		0.98	
	230 VAC, full load		0.95	
	277 VAC, full load		0.92	
Input Fuse	3.15A / 300V			
Start-up Time	115 VAC, full load		1.5	Sec.
	277 VAC, full load		1.0	Sec.

**Output Specifications**

Parameters	Conditions	Typical	Maximum	Units
Current accuracy		±5		%
Line regulation	LL to HL	±3		%
Load regulation	Full Output Voltage Range	±5		%
Ripple & Noise			8	% of Vout
Output Current Ripple	Full load, 16.7-20ms duration		1	A p-p
Current Overshoot	LL to HL, full load at cold start, % of rated output current		10	%
Hold-up time (min.)			0.5	ms
Minimum Load Voltage	See Models Table Above			

**Isolation Specifications**

Parameters	Conditions	Typical	Rated	Units
Tested I/O Voltage	I/P – O/P		3750	VAC
	I/P – FG		2000	VAC
	O/P – FG		500	VAC
Isolation Resistance	I/P – O/P, 500VDC	>100MΩ		VAC
Isolation Capacitance			3800	pF

## General Specifications

Parameters	Conditions	Typical	Maximum	Units
Switching frequency			130	KHz
Over voltage protection	AMER90-42200Z		50	V
	AMER90-56160Z		63	V
Short circuit protection		Continuous, Current limiting		
Short circuit restart		Auto Recovery		
Open circuit protection		Continuous, Hiccup mode		
Over Temperature Protection	Threshold – Shutdown Output	+100		°C
	Hysteresis – Auto Recovery	+85		°C
Operating temperature	Without Derating	-40 to +60		°C
Maximum case temperature		+95		°C
Storage temperature		-40 to +85		°C
Temperature coefficient			0.03	% / °C
Cooling		Free Air Convection		
Humidity			90	% RH
Case material		Metal (Aluminum)		
IP Rating		IP67		
Weight		850		g
Dimensions (L X W X H)		6.93 x 2.70 x 1.65 inches	176.0 x 68.7 x 42.0 mm	
MTBF		400,000 hrs (MIL-HDBK-217F at +25°C)		

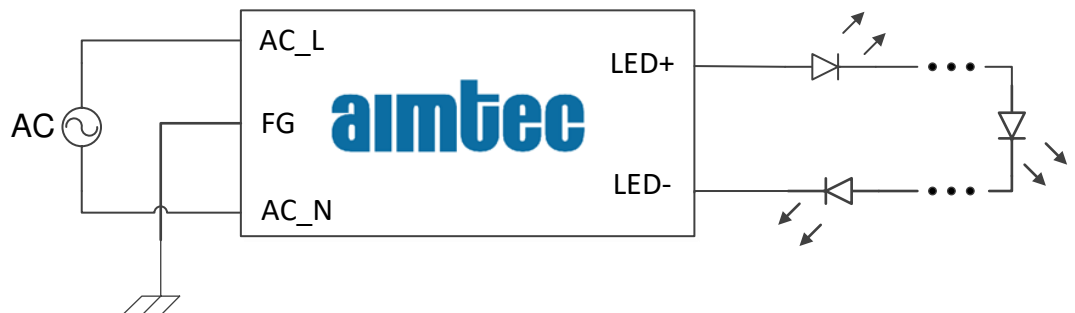
## Safety Specifications

Parameters		
Agency Approvals	NOM (for all part numbers with *)	
Standards	Electromagnetic Interference	EN55015 / FCC Part 15, Class B
	Harmonic Current Emissions	EN61000-3-2, Class B
	Voltage fluctuations and flicker	EN61000-3-3
	Electrostatic Discharge Immunity	EN61000-4-2, 8kV Air, 4kV Contact, Level 3, Criteria A
	RF, Electromagnetic Field Immunity	EN61000-4-3, Test-RS Level 3, Criteria A
	Electrical Fast Transient / Burst Immunity	EN61000-4-4, Burst EFT Level 3, Criteria A
	Surge Immunity	EN61000-4-5, Line to Neutral 4kV, Line/Neutral to FG 6kV
	RF, Conducted Disturbance Immunity	EN61000-4-6. Test-CS Level 3, Criteria A
	Power frequency Magnetic Field Immunity	EN61000-4-8, Test 3A/m, Criteria A
	Voltage dips, Short Interruptions Immunity	EN61000-4-11, Criteria B
	Electromagnetic Immunity Requirements Applies to Lighting Equipment	EN61547

## Pin Definition

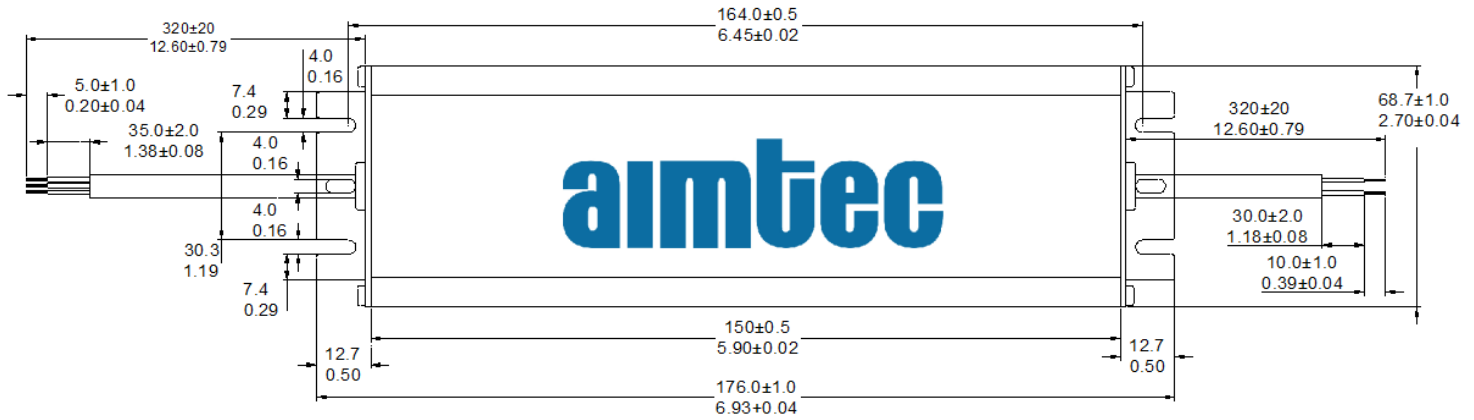
Wire	Connection
Brown	AC L
Blue	AC N
Yellow/Green	FG
Red	+V Output
Black	-V Output

## Block diagram

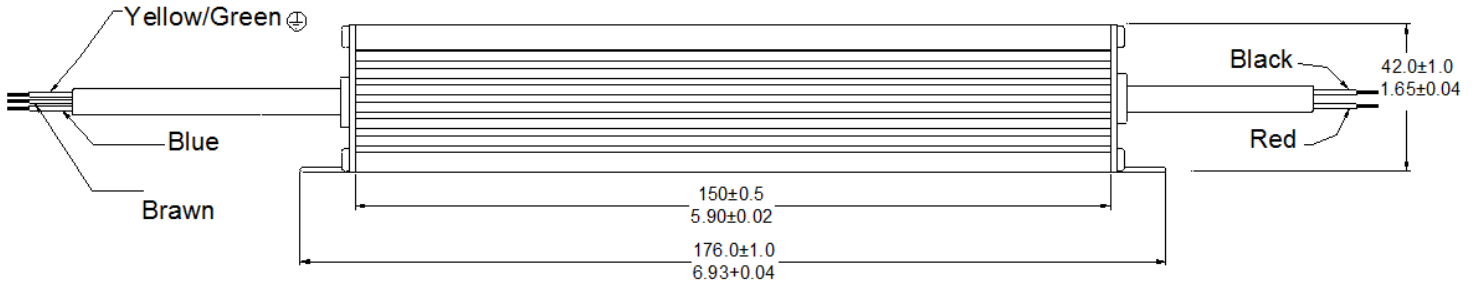


**Dimensions**

**Top View**

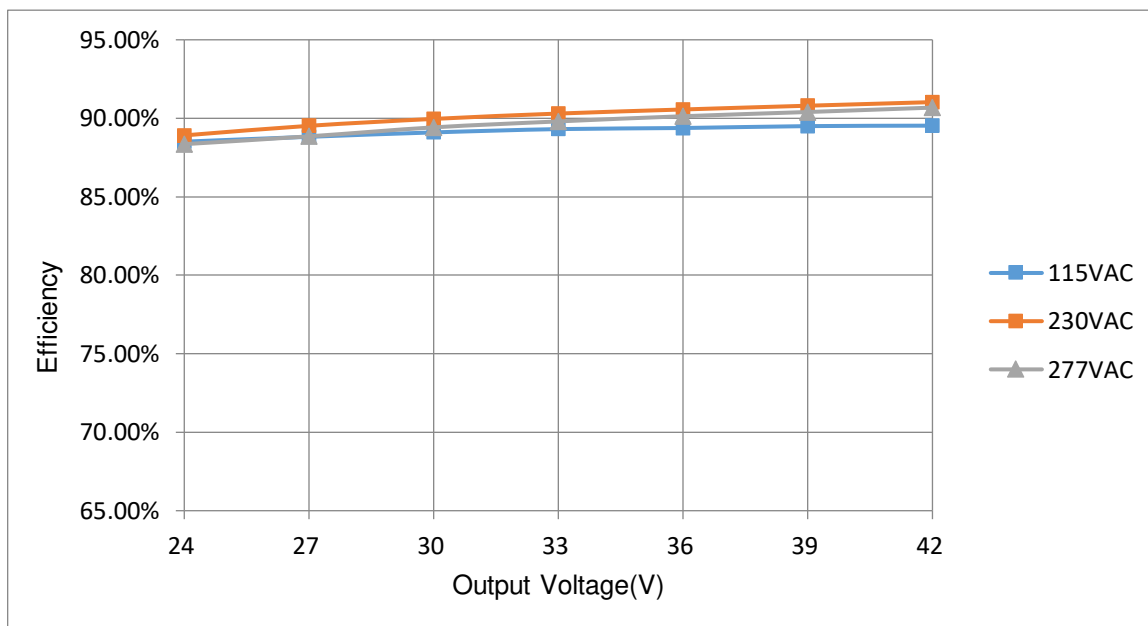


**Side View**

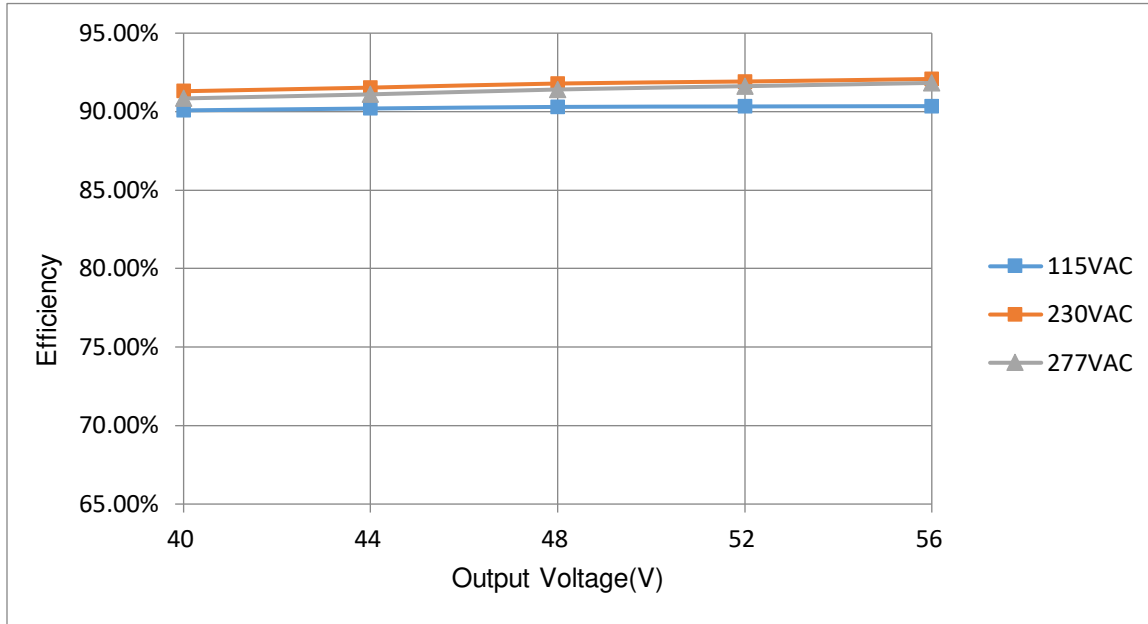


**Efficiency Vs. Input Voltage & Output Voltage (Constant current load)**

AMER90-42200Z

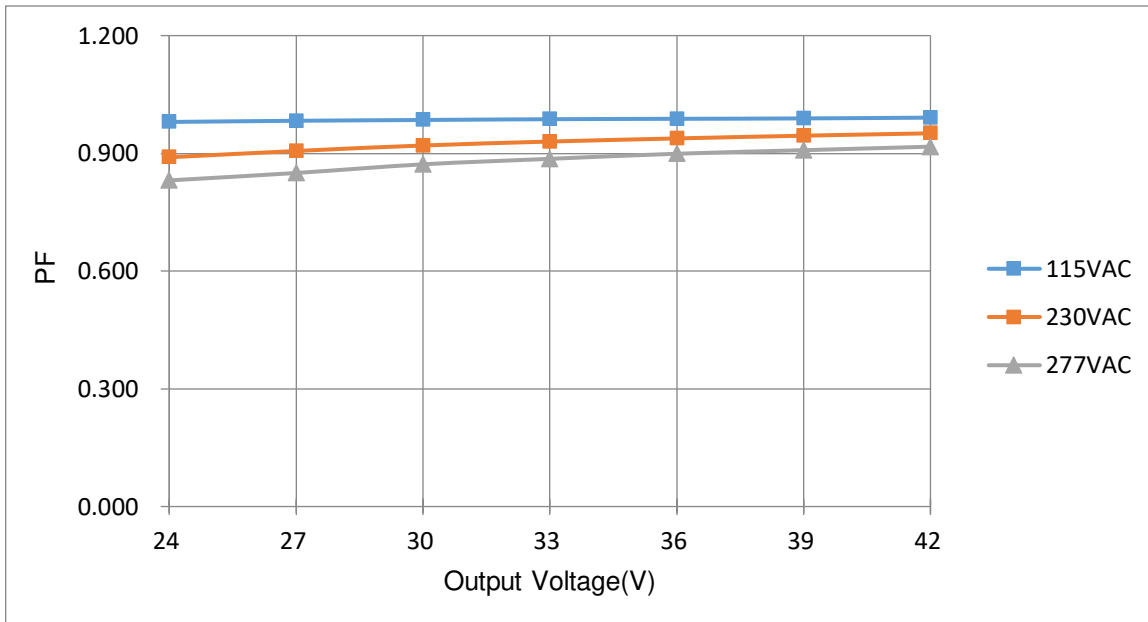


AMER90-56160Z

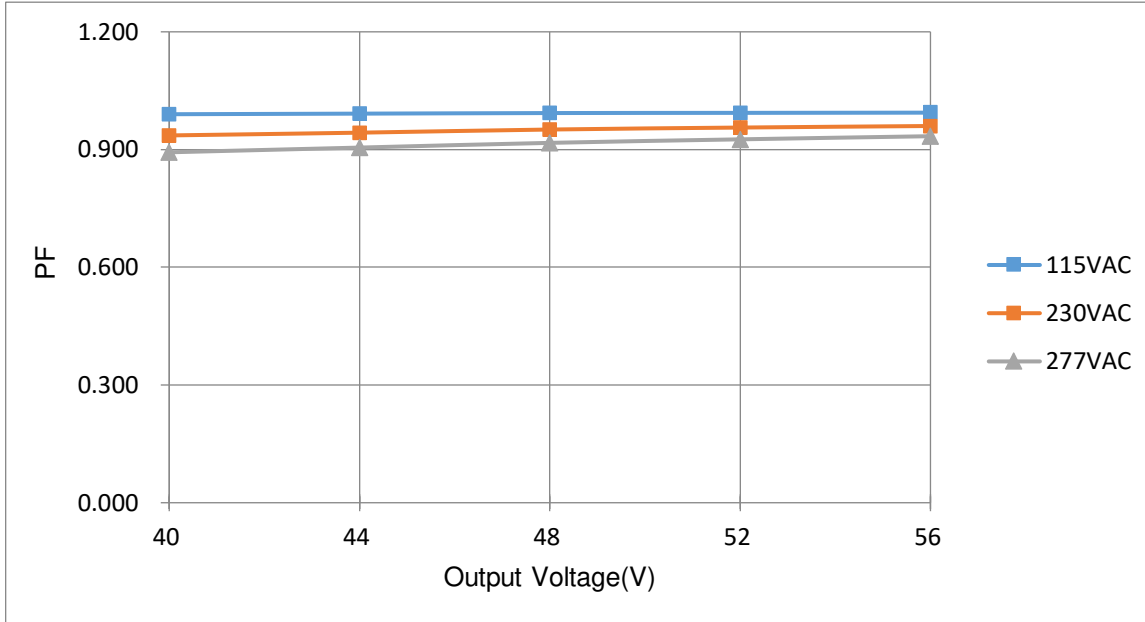


**PF vs. Input Voltage & Output Voltage (CC mode)**

AMER90-42200Z



AMER90-56160Z



### THD vs. Input Voltage & Output Voltage (CC mode)

AMER90-56160Z

Vin (Vac)	Iin (mA)	PF	THD	Vout (Vdc)	Iout (A)	Pin (W)	Pout (W)	efficiency
90	811.6	0.994	8.60%	40.25	1.607	72.73	64.66	88.91%
	966.8	0.996	7.20%	48.26	1.599	86.72	77.18	89.00%
	1121	0.997	6.00%	56.24	1.591	100.7	89.49	88.86%
115	629.8	0.99	10.80%	40.25	1.607	71.8	64.68	90.08%
	747.4	0.993	9.20%	48.23	1.599	85.42	77.14	90.30%
	865.4	0.994	7.90%	56.24	1.592	99.1	89.54	90.35%
230	329.2	0.936	15.60%	40.25	1.610	70.98	64.81	91.30%
	385	0.951	14.40%	48.23	1.605	84.33	77.40	91.79%
	441.3	0.96	13.40%	56.24	1.598	97.6	89.87	92.08%
270	288.6	0.893	15.80%	40.25	1.611	71.4	64.86	90.84%
	333.1	0.917	14.70%	48.23	1.606	84.76	77.48	91.41%
	378	0.934	13.40%	56.24	1.599	97.91	89.91	91.83%
300	275.9	0.865	17.60%	40.25	1.612	71.69	64.88	90.50%
	316.2	0.895	15.60%	48.23	1.607	85.04	77.49	91.13%
	356.7	0.917	13.60%	56.24	1.599	98.2	89.96	91.60%

**NOTE:** 1. Datasheets are updated as needed and as such, specifications are subject to change without notice. Once printed or downloaded, datasheets are no longer controlled by Aimtec; refer to [www.aimtec.com](http://www.aimtec.com) for the most current product specifications. 2. Product labels shown, including safety agency certifications on labels, may vary based on the date manufactured. 3. Mechanical drawings and specifications are for reference only. 4. All specifications are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified. 5. Aimtec may not have conducted destructive testing or chemical analysis on all internal components and chemicals at the time of publishing this document. CAS numbers and other limited information are considered proprietary and may not be available for release. 6. This product is not designed for use in critical life support systems, equipment used in hazardous environments, nuclear control systems or other such applications which necessitate specific safety and regulatory standards other the ones listed in this datasheet. 7. Warranty is in accordance with Aimtec's standard Terms of Sale available at [www.aimtec.com](http://www.aimtec.com).