

# Series AMEHR50-Z up to 1200mA | AC-DC LED driver



#### **FEATURES:**

- Ultra-wide Input Range: 100~347 VAC
- High Efficiency: Up to 86%
- Active Power Factor Correction
- Short Circuit / Over Voltage Protection
- Design to meet UL Class 2 and Class P
- Long Life, High reliability
- Ultra-low ripple without flickering
- 5-year limited warranty





Model	Max Output	Output Voltage	Output Current	Input Voltage		iency %)
Model	Power (W)	Range (V)	(mA)	(VAC/Hz)	115VAC	230/277 VAC
AMEHR50-4270Z	30	24-42	700	90-385/47-63	87	86
AMEHR50-4285Z	36	24-42	850	90-385/47-63	86.5	86.5
AMEHR50-42100Z	40	24-42	1000	90-385/47-63	86	86.5
AMEHR50-42120Z	50	24-42	1200	90-385/47-63	85.5	87

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 30W 36W 40W 50W		90/176 VAC, full load		0.35/0.18 0.45/0.23 0.5/0.25 0.6/0.3	Arms
Inrush current		230 VAC, cold start, T<2mS at 50 IPEAK		60	Α
Leakage current		277VAC		0.75	mA
Input dissipation		Full Input Range, No Load		1.8	W
		Output Short		3	VV
		115 VAC, full load, CV≧36V	0.99		
Dower Footer		230 VAC, full load, CV≧36V	0.97		
Power Factor		277 VAC, full load, CV≧36V	0.92		
		347 VAC, full load, CV≧36V	0.89		
		115 VAC, full load, CV≧36V	10	15	
TUD		230 VAC, full load, CV≧36V	12	20	0/
THD		277 VAC, full load, CV≧36V	12	20	%
		347 VAC, full load, CV≧36V	15	20	
Input Fuse		Recommended Slow Blow Type		2	Α
Start-up Time		230 VAC, full load		1.3	Sec.

**Output Specifications** 

Parameters	Conditions	Typical	Maximum	Units
Current accuracy	Full Range	±5		%
Line regulation	LL to HL	±1		%
Load regulation	Full Input Voltage Range	±1		%
Ripple & Noise	Output voltage at 36V		360	mV p-p
Output Current Ripple	Full load		60	mA
Minimum Load Voltage	See M			

NOTE: Ripple and Noise are measured at 20MHz bandwidth & 230VAC by using a 0.1µF (M/C) and 10µF (E/C) parallel capacitor.

**Isolation Specifications** 

Parameters	Conditions	Typical	Rated	Units
Tested I/O voltage	<5mA, 60s		3750	VAC
Isolation Resistance	500Vdc	>100		$M\Omega$







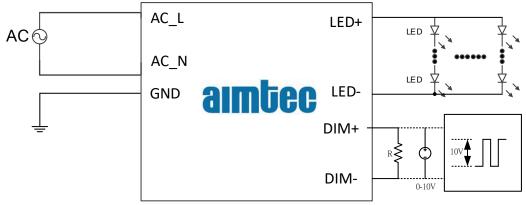
**General Specifications** 

Parameters	Conditions	Typical	Maximum	Units						
Switching frequency			150	KHz						
Over voltage protection		47.5	50	V						
Short circuit protection		Continuous, Hiccup Mode								
Short circuit restart		Auto Recovery								
Operating temperature	Without Derating	Without Derating -40 to +50								
Maximum agas tamparatura	Maximum		°C							
Maximum case temperature	5 Years Warranty	5 Years Warranty 60								
Storage temperature	-40 to +85									
Temperature coefficient			0.05	%/°C						
Cooling		Free Air Convection								
Humidity			90	% RH						
Case material		Metal								
IP Rating		IP20								
Weight		520								
Dimensions (L X W X H)	6.30	x 1.73 x 1.61 inches 210.00 x 86.00 x 41.00 m	m							
MTBF		>450,000 hrs (MIL-HDBK-217F at +25°C)								

**Safety Specifications** 

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Parameters		
Agency Approval	Design to meet UL Class II and Class P	
	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
Standards	Electrical Fast Transient / Burst Immunity	EN61000-4-4, Burst EFT Level 3, Criteria A
Statiuatus	Surge Immunity	EN61000-4-5, Line to Neutral 2kV, Neutral to FG 4kV
	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	EN61547-2000

# **Typical Application diagram**

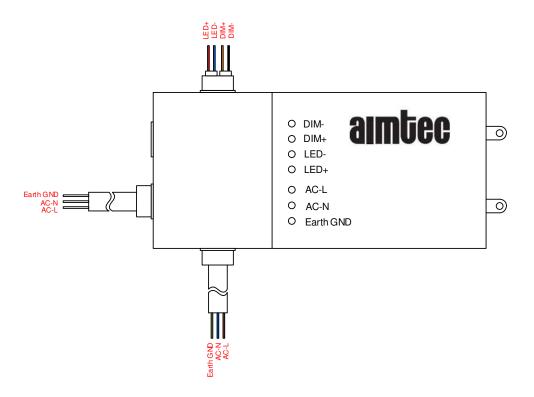


### **Pin Definition**

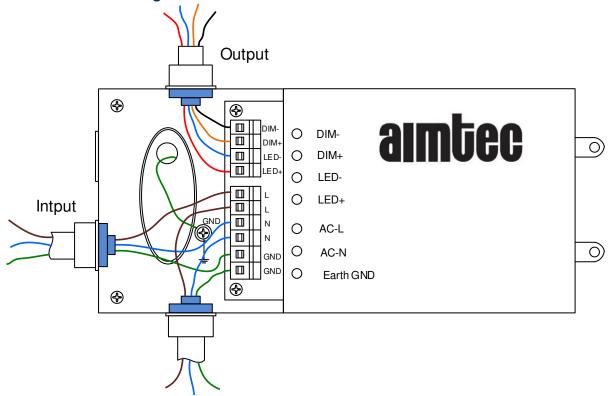
Terminal	Specification / Termination
AC-N	Input terminal, Connect to Neutral, Recommended Wire Gauge #20-24
AC-L	Input terminal, Connect to Line, Recommended Wire Gauge #20-24
GND	Input terminal, Connect to Earth Ground, Recommended Wire Gauge #20-24
LED+	Output terminal, Connect to positive pole of LEDs, Recommended Wire Gauge #14-26
LED-	Output terminal, Connect to negative pole of LEDs, Recommended Wire Gauge #14-26
DIM+	Input terminal, Connect to positive pole of Dimming, Recommended Wire Gauge #14-26
DIM-	Input terminal, Connect to negative pole of Dimming, Recommended Wire Gauge #14-26



### **Reference Wiring Diagram**

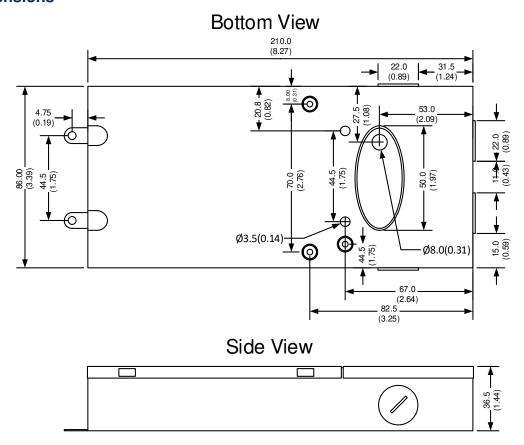


### **Wire Connection Diagram**

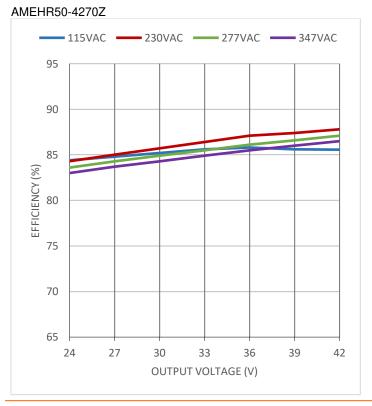


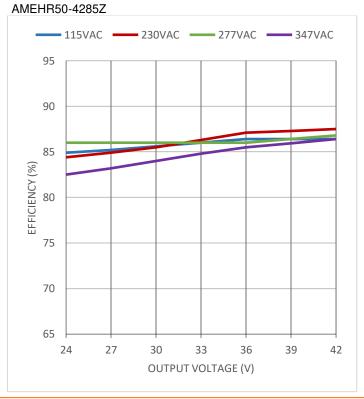


#### **Dimensions**



#### Efficiency Vs. Input Voltage & Output Load Voltage

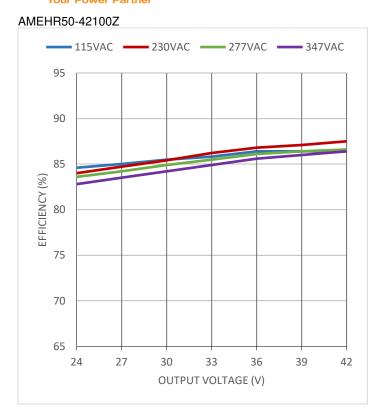


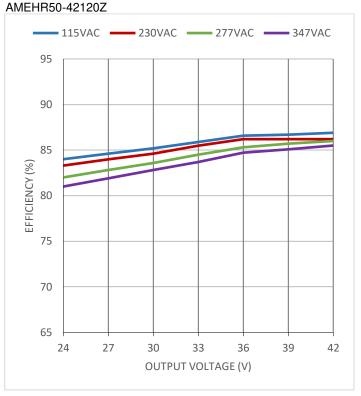




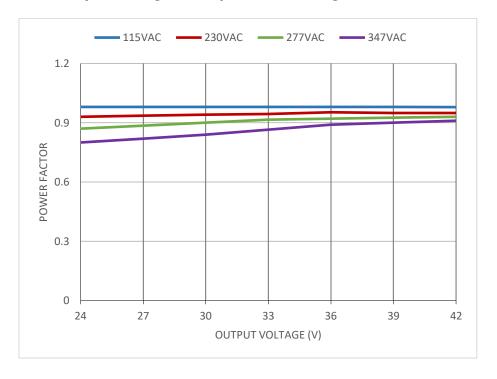
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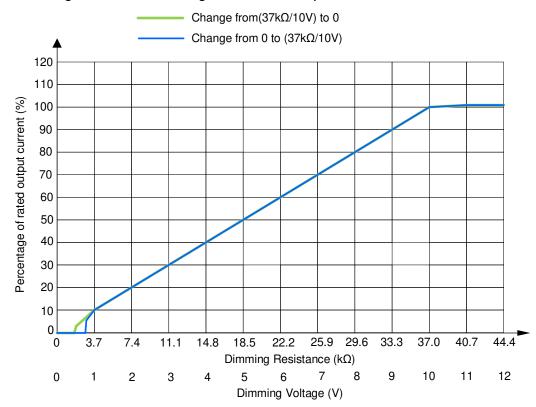
## PF vs. Input Voltage & Output Load Voltage



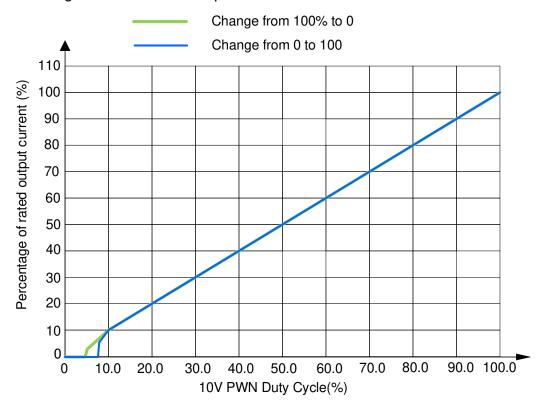


#### **Dimming Graph**

### Dimming Resistance/Voltage vs Rated Output Current



#### Dimming PWM vs Rated Output Current



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#### **Dimming Control Application**

Resistance reference table

Resistance Value (KΩ)	3.7	7.4	11.1	14.8	18.5	22.2	25.9	29.6	33.3	37.0	OPEN
Rated Current (%)	10	20	30	40	50	60	70	80	90	100	95~105

DC voltage reference table

DO Voltago	1010101	ioo tab											
Voltage (V)	0	8.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	OPEN
Rated Current (%)	0	9	10	20	30	40	50	60	70	80	90	100	95~105

#### PWM value reference table

Duty Cycle Ratio (%)	10	20	30	40	50	60	70	80	90	100	OPEN
Rated Current (%)	10	20	30	40	50	60	70	80	90	100	95~105

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