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AMER60E-Z



Encapsulated, IP67

Aimtec's AMER60E-Z series is a 60W AC/DC LED driver featuring a constant current output mode and an always-on 12V auxiliary output, targeting LED lighting applications. The driver has an input voltage range from 90-305VAC and has an output voltage range of 5 to 55V at 1.1A.

Thanks to its high efficiency of 89% and its fan less design, the LED driver can operate safely at an ambient temperature range between -40 and +60 °C under free air convection.

Low output ripple & noise as well as continuous short circuit protection as well as the driver's IP67 metal housing makes this series great for both indoor and outdoor applications.

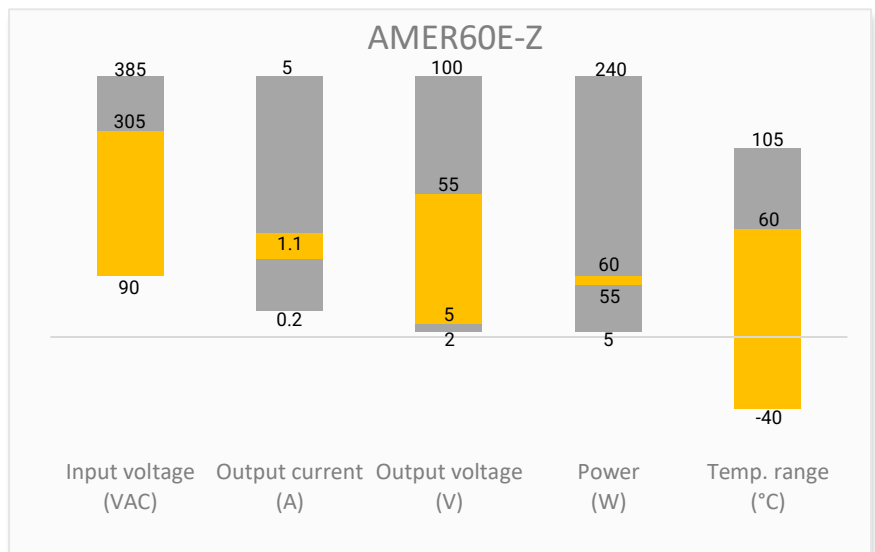
Features



- Accurate Constant Current Output $\pm 5\%$
- Active Power Factor Correction
- IP67 design for indoor/outdoor
- Short Circuit, Over Current, Over voltage, Over Temperature Protection
- High Efficiency: Up to 89%
- Always-on 12V auxiliary output



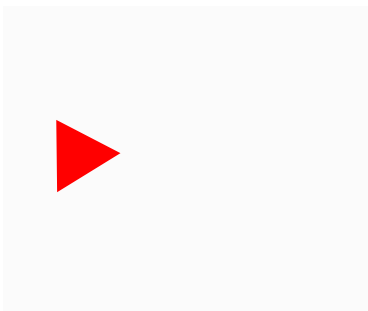
Summary



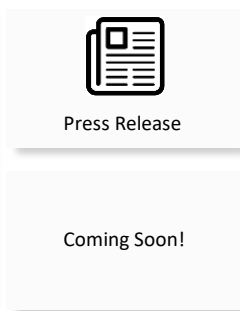
Training



Applications



Product Training Video
(click to open)



Application Notes



Lighting

Models & Specifications

Single Output									
Model	Input Voltage (VAC/Hz)	Input Voltage (VDC)	CC Output Voltage Range (V)	CC Output Current (A)	Auxiliary Output Voltage (V)	Auxiliary Output Current (A)	Efficiency 115/230/277VAC Vout @ 55V (%) typ.		
AMER60E-50110ZX12	90-305/47-63	127-431	5 - 50	1.1	12	0.2	88	88	88
AMER60E-55110ZX12	90-305/47-63	127-431	5 - 55	1.1	12	0.2	88	89	89

Add suffix "-NA" for AMER60E-55110ZX12 for North America input wire color option.
Default input wire color for AMER60E-50110ZX12 is North America wire color and EU wire color is not available.

Input Specification

Parameters	Conditions	Typical	Maximum	Units
Input current	90 VAC, full load, AMER60E-50110ZX12		0.82	A rms
	90 VAC, full load, AMER60E-55110ZX12		0.9	A rms
Leakage current			0.75	mA
Inrush current	230VAC, cold start,	60		A
Inrush current duration	10% of peak inrush current	300		μS
Power factor	115 VAC, full load	0.99		
	230 VAC, full load	0.95		
	277 VAC, full load	0.92		
THD	100/115VAC, ≥ 10% load		20	%
	200/230VAC, ≥ 20% load		20	%
	277VAC, ≥ 25% load		20	%
Rise time		50		mS
Start-up time	115 VAC, full load	1.5		Sec.
	230 VAC, full load	0.8		Sec.
Dimming on/off voltage	Off, 115/230 /277 V AC	0.8	0.9	V
	On	1.1	1.2	V
Dimming hysteresis		0.3		V
Dimming operating voltage	Between DIM+ and DIM-	0 - 10		V
Dimming maximum voltage	Between DIM+ and DIM-	-20 - 100		V
Dimming source current		100		μA

Output Specification

Parameters	Conditions	Typical	Maximum	Units
Current accuracy	CC output		±5	%
Line regulation	LL to HL		±2	%
Load regulation	Full load		±2	%
Ripple & noise	CC output	5	10	% of Iout max
	Auxiliary output*		200	mV p-p
Startup current overshoot	CC output		10	%
Auxiliary output voltage	Nominal 12V	≥ 11.4	12.6	V
Auxiliary output current			200	mA

Auxiliary output peak current	Maximum duration 300ms in a 2s period		400	mA
Startup voltage overshoot	Auxiliary output		10	%
Power consumption when off	115VAC	0.5		W
	230VAC	0.8		W
Output current when off			7	% of Iout max

*Measured with a 0.1μF ceramic capacitor and a 10μF electrolytic capacitor

Isolation Specification				
Parameters	Conditions	Typical	Maximum	Units
Isolation voltage	Input – CC, auxiliary, diming output	3750		VAC
	CC output – auxiliary, diming output	3750		VAC
	Input – Frame ground	2000		VAC
	Output – Frame ground	1500		VAC
Resistance	500Vdc 70%RH	>100		MOhm

General Specifications				
Parameters	Conditions	Typical	Maximum	Units
Over temperature protection	Auto Recovery	105		°C
	Hysteresis	10		°C
Short circuit protection	Hiccup, auto-recovery			
Output over voltage protection	No load, AMER60E-50110ZX12	≥54	59	V
	No load, AMER60E-55110ZX12	≥60	75	V
Operating temperature	Derating TBD	-40 to +60		°C
Storage temperature		-40 to +85		°C
Maximum case temperature			75	°C
Temperature coefficient			±0.03	% /°C
Protection Class*	Class II			
Cooling	Free Air Convection			
Humidity		≥10	90	% RH
IP Rating	IP67			
Weight		510		g
Dimensions (L X W X H)	7.44 x 1.91 x 1.32 inches (189.2 x 48.5 x 33.5 mm)			

* AMER60E-50110ZX12 only

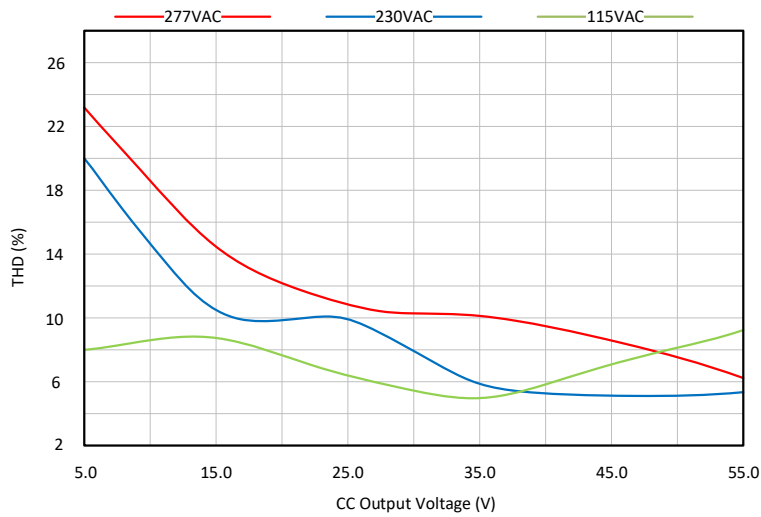
All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity <75%, nominal input voltage and at rated output load unless otherwise specified.

Safety Specifications		
Parameters		
Standards	Design to meet UL/TUV 60950-1, EN/AS/NZS 61347-1, EN/AS/NZ 61347-2-13 independent, J61347-1, J61347-2-13, GB1950.1, GB19510.14, UL8750, (UL 1310 for AMER60E-50110ZX12)	
	EMI – Conducted and radiated emission	EN55015, EN61000-3-2 class C (≥75% load), FCC Part 15
	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, L-N 4kV, L/N - 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

THD

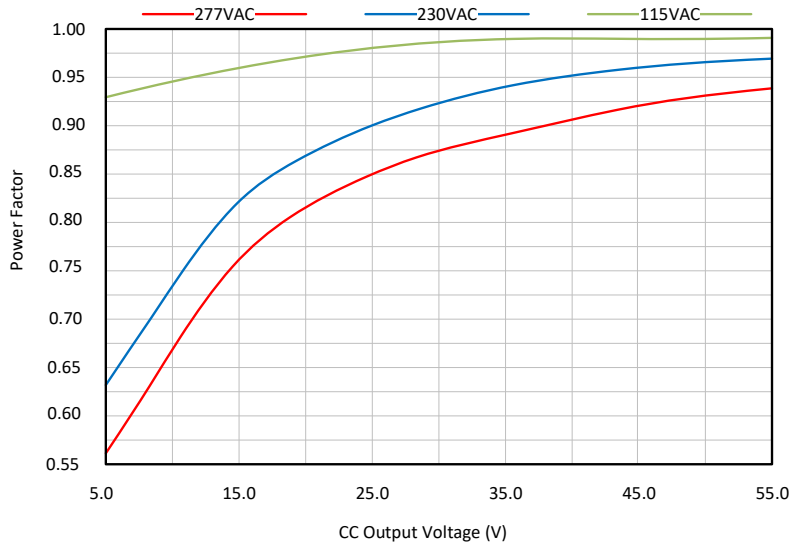
THD v.s. Output Voltage



* Auxiliary output at 100% load

Power Factor

Power Factor v.s. Output Voltage



* Auxiliary output at 100% load

Dimming



Reference resistance value for dimming function

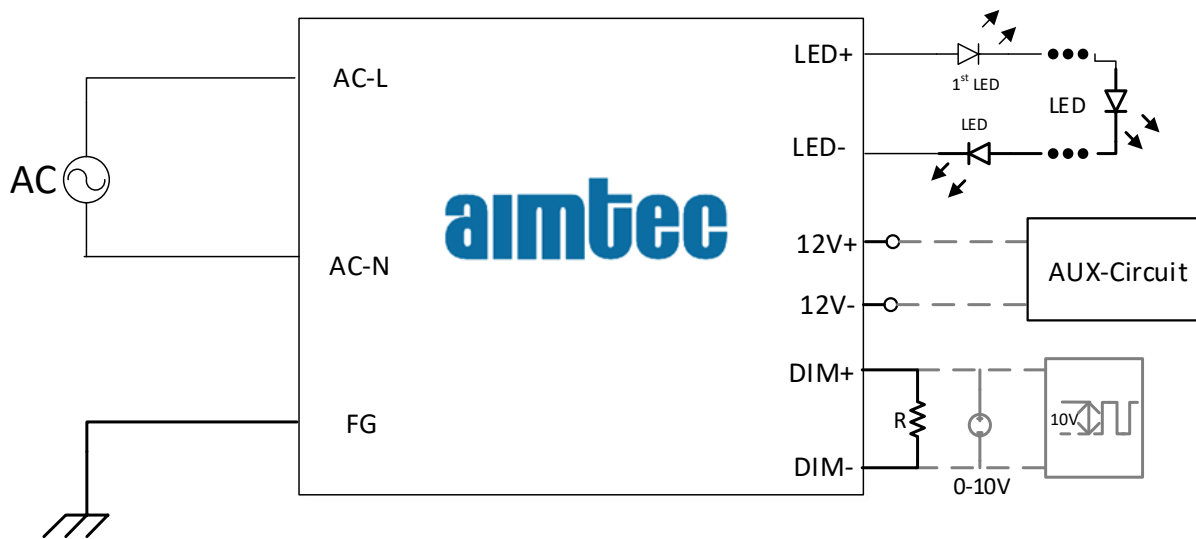
Resistance value (K Ω)	10	20	30	40	50	60	70	80	90	100	Open
Output current (%)	6	18	29	41	53	65	76	88	100	100	95-105

0-10V dimming function

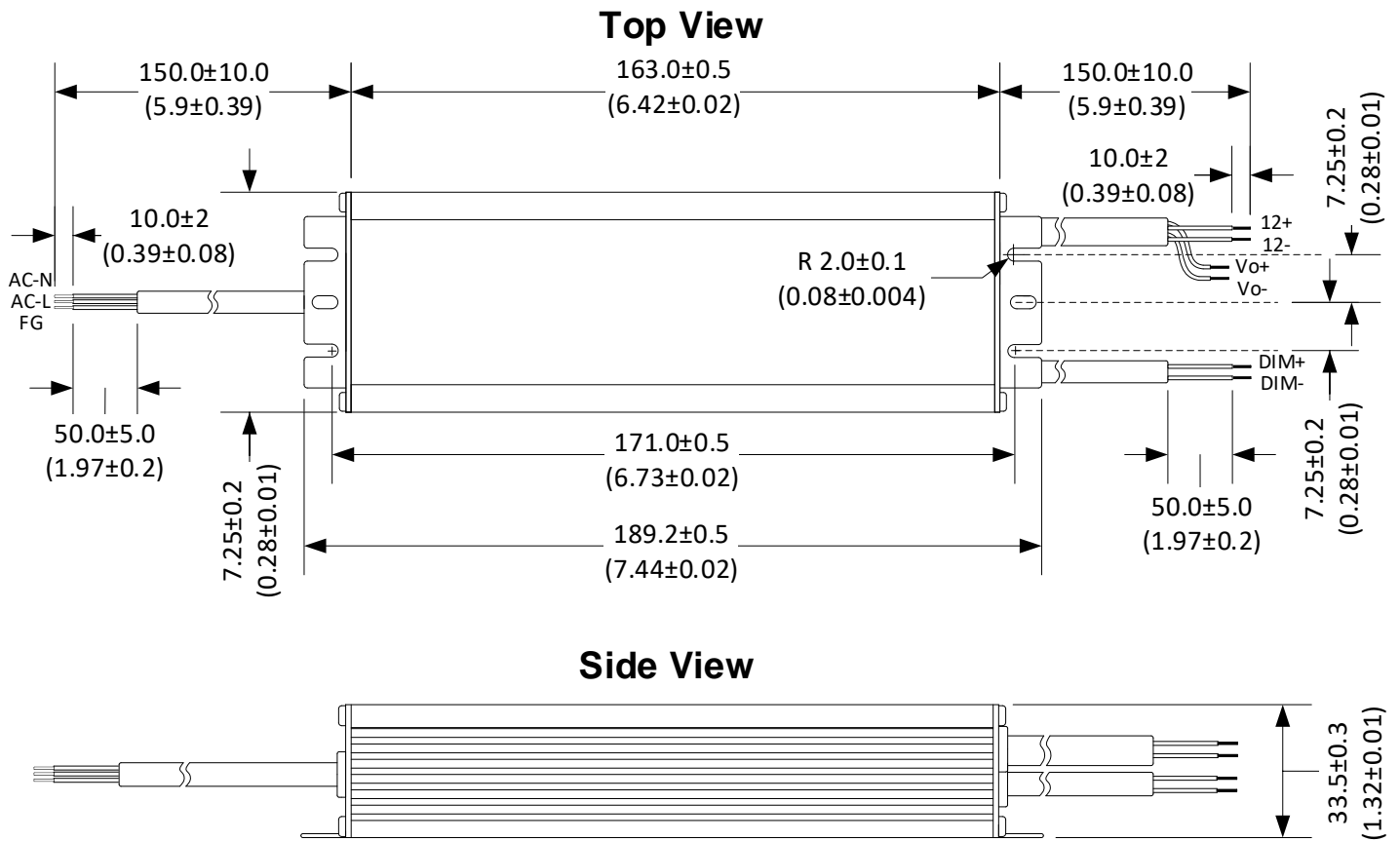
Voltage (V)	0.5	1	2	3	4	5	6	7	8	9	10	Open
Output current (%)	5	6	18	29	41	53	65	76	88	100	100	95-105

10V PWM signal (Frequency range: 400Hz-10kHz) for dimming function

Duty cycle (%)	10	20	30	40	50	60	70	80	90	100	Open
Output current (%)	6	18	29	41	53	65	76	88	100	100	95-105



Dimensions



Pin Out Specifications		
Pin	NA	EU
AC-N	White, Wire Gauge #18 *3C	Blue, H05RN-F 0.75 mm ² *3C
AC-L	Black, Wire Gauge #18 *3C	Brown, H05RN-F 1.0mm ² *3C
FG	Green, Wire Gauge #18 *3C	Green/Yellow, H05RN-F 1.0mm ² *3C
Vo+	Red, Wire Gauge #18 *2C	Red, H05RN-F 0.75 mm ² *2C
Vo-	Black, Wire Gauge #18 *2C	Black, H05RN-F 0.75 mm ² *2C
DIM+	Violet, Wire Gauge #20 *2C	Violet, H05RN-F 0.5 mm ² *2C
DIM-	Gray, Wire Gauge #20 *2C	Gray, H05RN-F 0.5 mm ² *2C
12V+	Brown, Wire Gauge #20 *2C	Brown, H05RN-F 0.5 mm ² *2C
12V-	Blue, Wire Gauge #20 *2C	Blue, H05RN-F 0.5 mm ² *2C

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