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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.

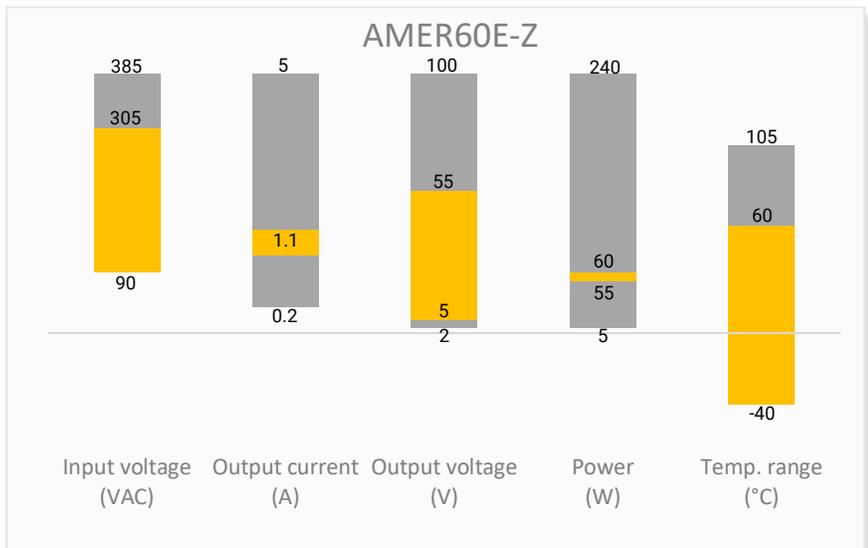
Low output ripple & noise as well as continuous short circuit protection as well as the driver's IP67 metal housing makes this series great for both indoor and outdoor applications.

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

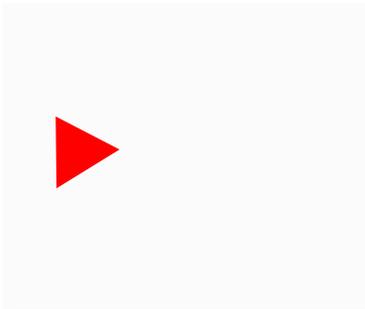
Summary



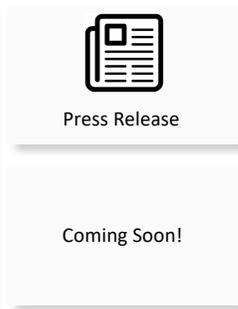
Training



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 I _{out 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

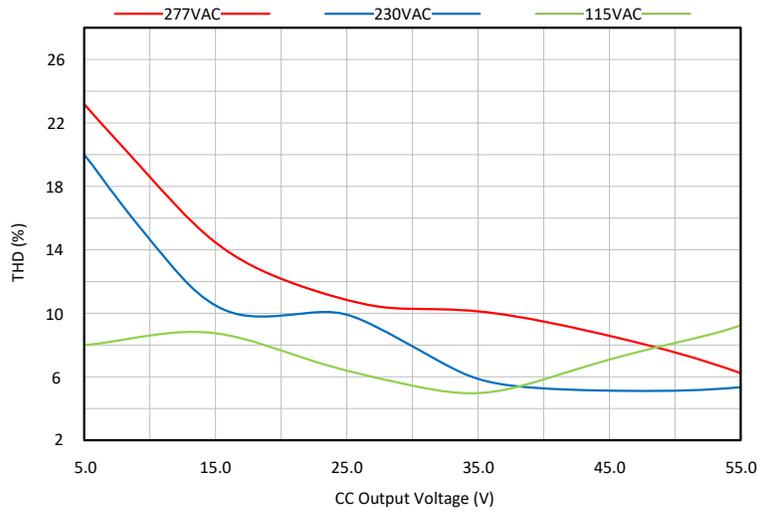
All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity <75%, nominal input voltage and at rated output load unless otherwise specified.

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

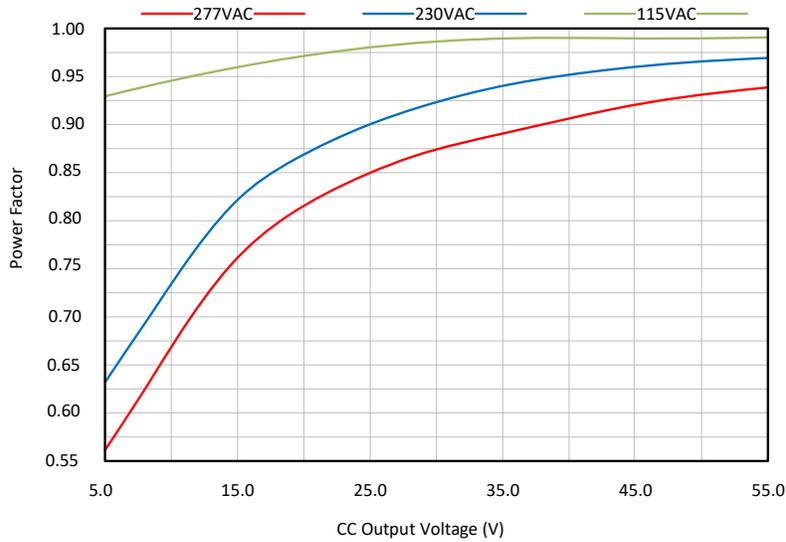
THD v.s. Output Voltage



* 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

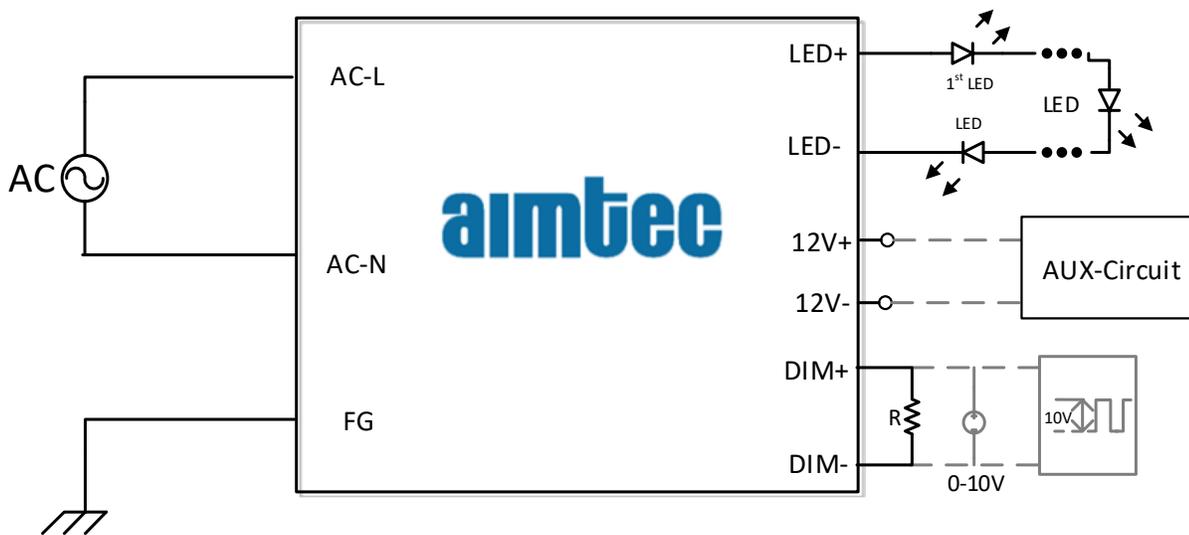
Resistance value (K Ω)	10	20	30	40	50	60	70	80	90	100	Open
Output current (%)	6	18	29	41	53	65	76	88	100	100	95-105

0-10V dimming function

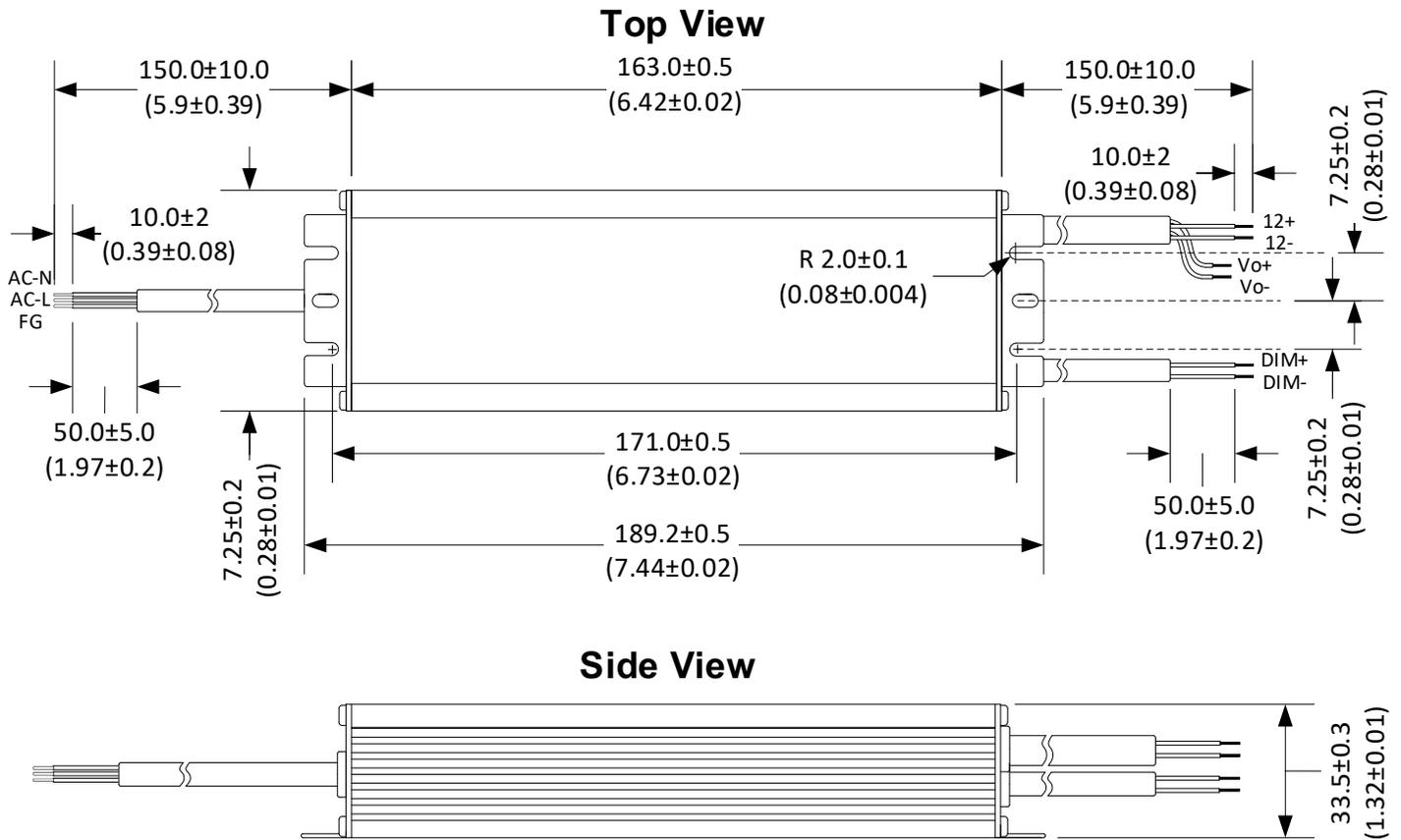
Voltage (V)	0.5	1	2	3	4	5	6	7	8	9	10	Open
Output current (%)	5	6	18	29	41	53	65	76	88	100	100	95-105

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

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 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.