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

Models
Single output

RoHS

Model	Max Output Power (W)	Output Voltage Range (V)	Output Current (mA)	Input Voltage (VAC/Hz)	Efficiency (%)	
					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	90/176 VAC, full load		0.35/0.18	Arms
	36W			0.45/0.23	
	40W			0.5/0.25	
	50W			0.6/0.3	
Inrush current		230 VAC, cold start, T<2mS at 50 I_{PEAK}		60	A
Leakage current		277VAC		0.75	mA
Input dissipation		Full Input Range, No Load		1.8	W
		Output Short		3	
Power Factor		115 VAC, full load, CV≧36V	0.99		
		230 VAC, full load, CV≧36V	0.97		
		277 VAC, full load, CV≧36V	0.92		
		347 VAC, full load, CV≧36V	0.89		
THD		115 VAC, full load, CV≧36V	10	15	%
		230 VAC, full load, CV≧36V	12	20	
		277 VAC, full load, CV≧36V	12	20	
		347 VAC, full load, CV≧36V	15	20	
Input Fuse		Recommended Slow Blow Type		2	A
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 Models Table Above			

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		MΩ

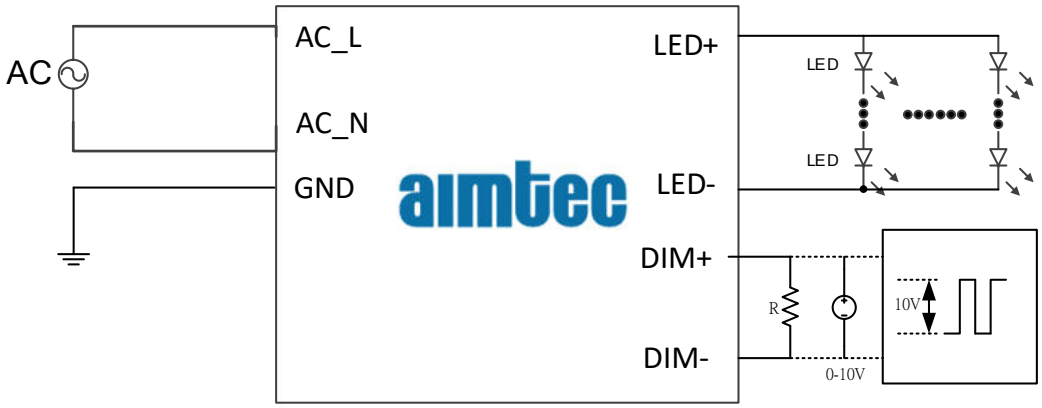
General Specifications

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	-40 to +50		ºC
Maximum case temperature	Maximum	80		ºC
	5 Years Warranty	60		
Storage temperature		-40 to +85		ºC
Temperature coefficient			0.05	% / ºC
Cooling	Free Air Convection			
Humidity			90	% RH
Case material	Metal			
IP Rating	IP20			
Weight	520			g
Dimensions (L X W X H)	6.30 x 1.73 x 1.61 inches 210.00 x 86.00 x 41.00 mm			
MTBF	>450,000 hrs (MIL-HDBK-217F at +25°C)			

Safety Specifications

Parameters		
Agency Approval	Design to meet UL Class II and Class P	
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 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

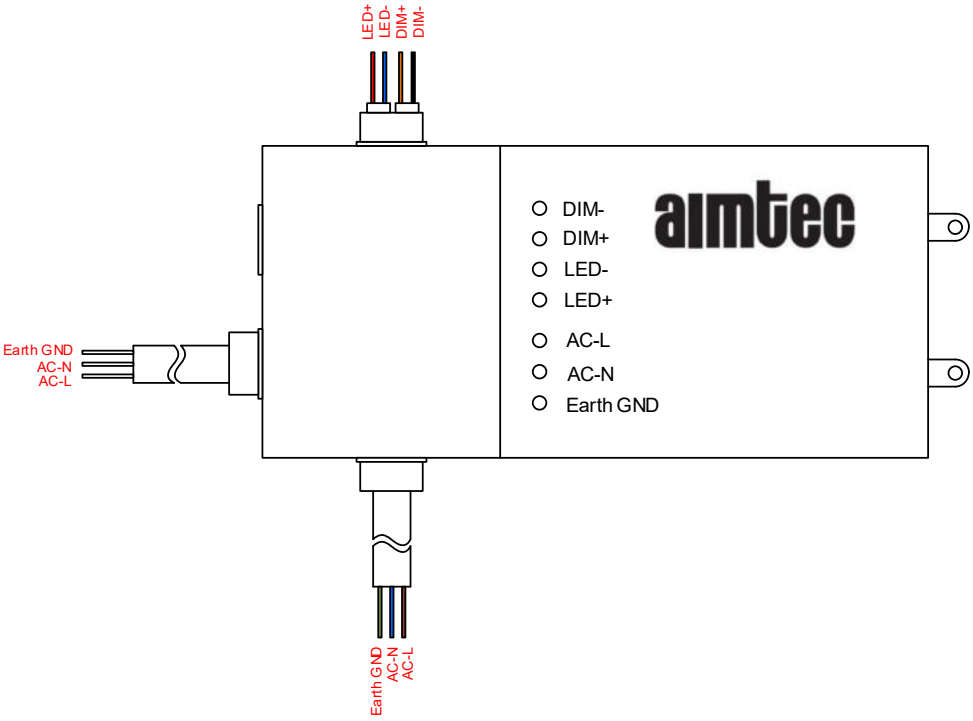
Typical Application diagram



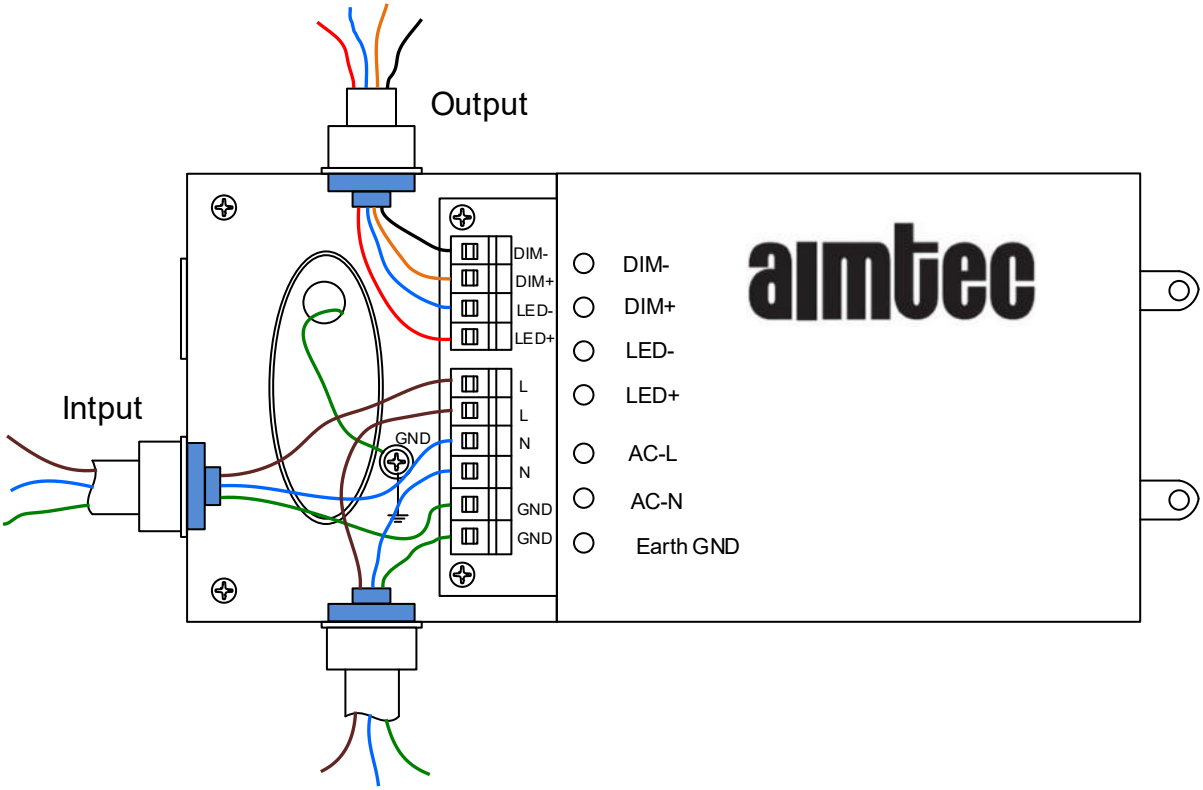
Pin Definition

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

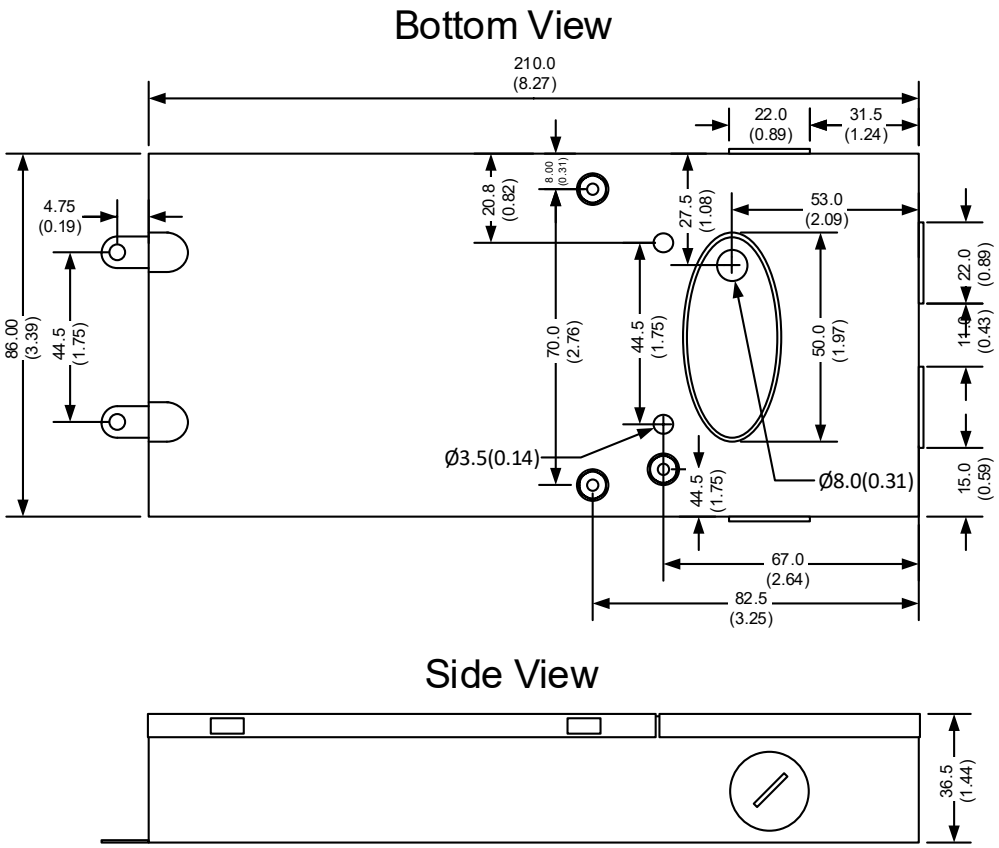
Reference Wiring Diagram



Wire Connection Diagram

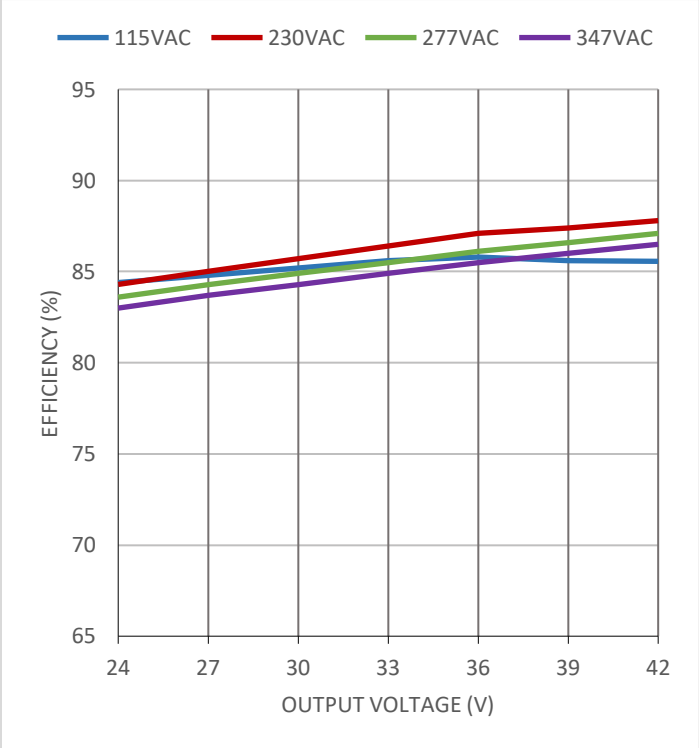


Dimensions

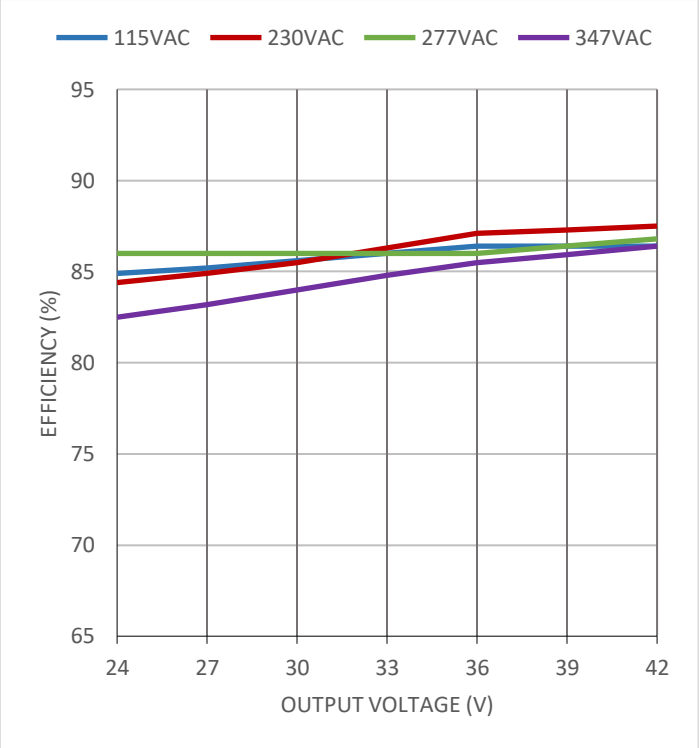


Efficiency Vs. Input Voltage & Output Load Voltage

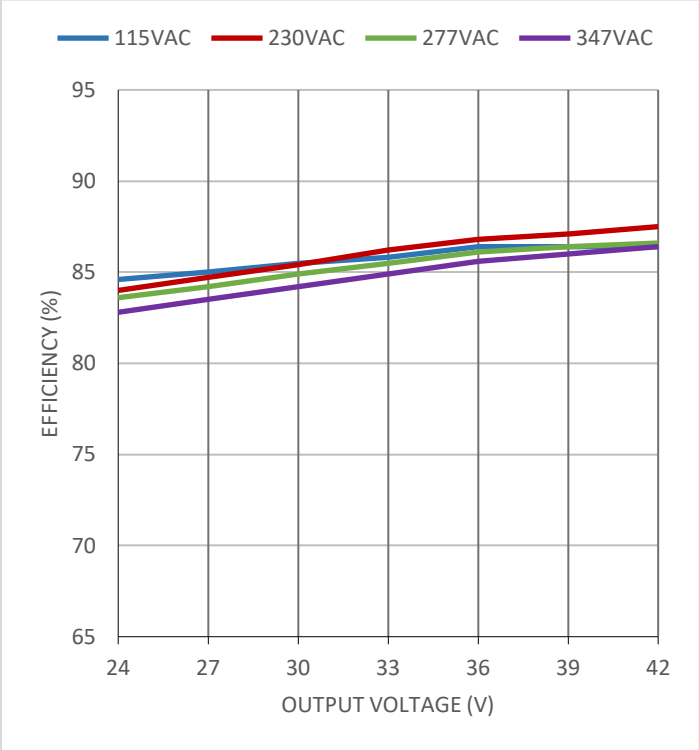
AMEHR50-4270Z



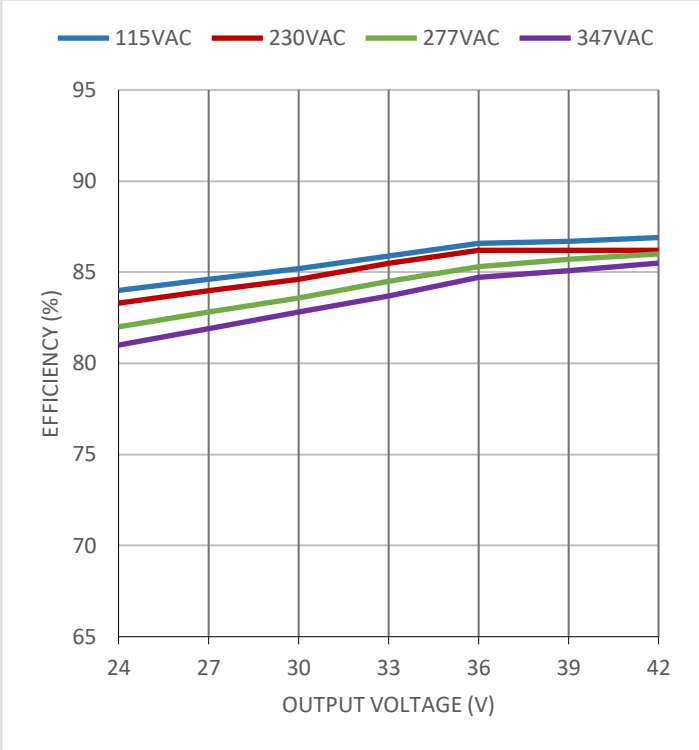
AMEHR50-4285Z



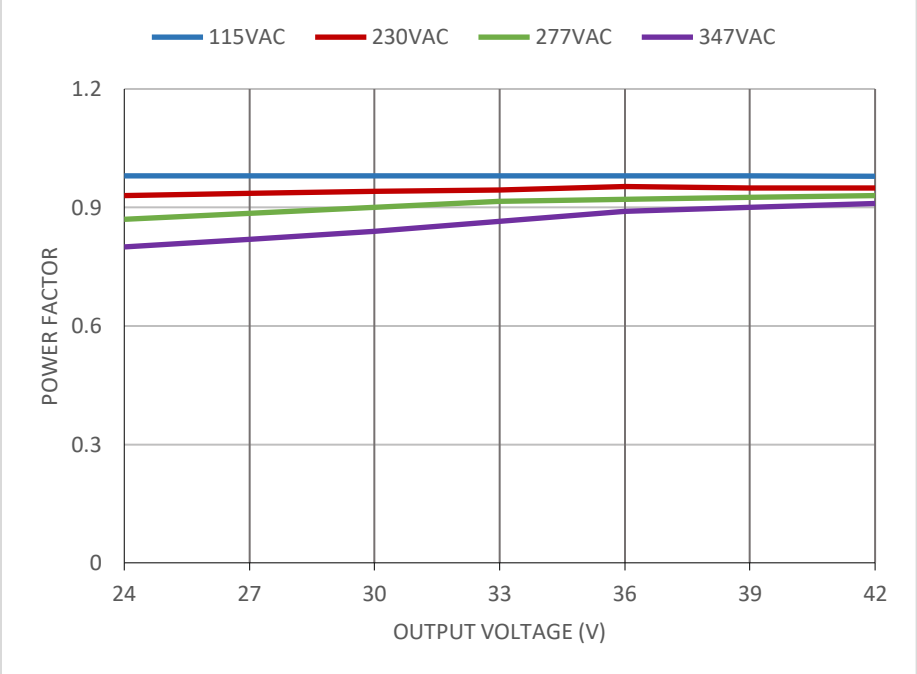
AMEHR50-42100Z



AMEHR50-42120Z

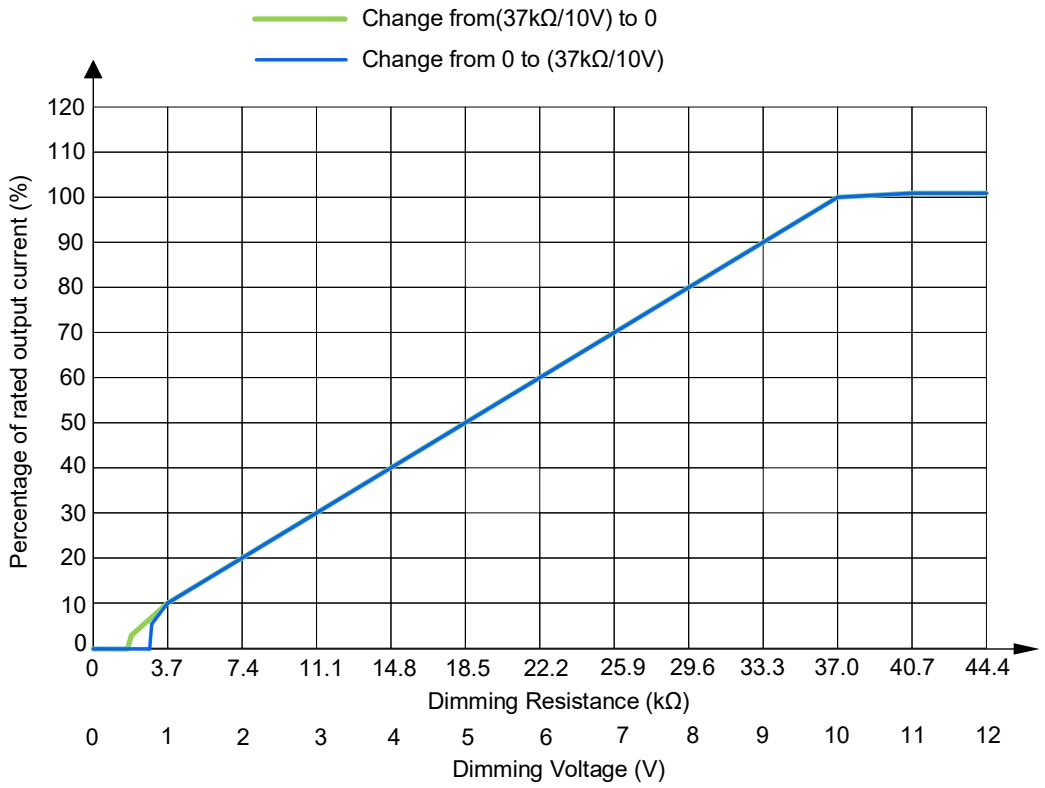


PF vs. Input Voltage & Output Load Voltage

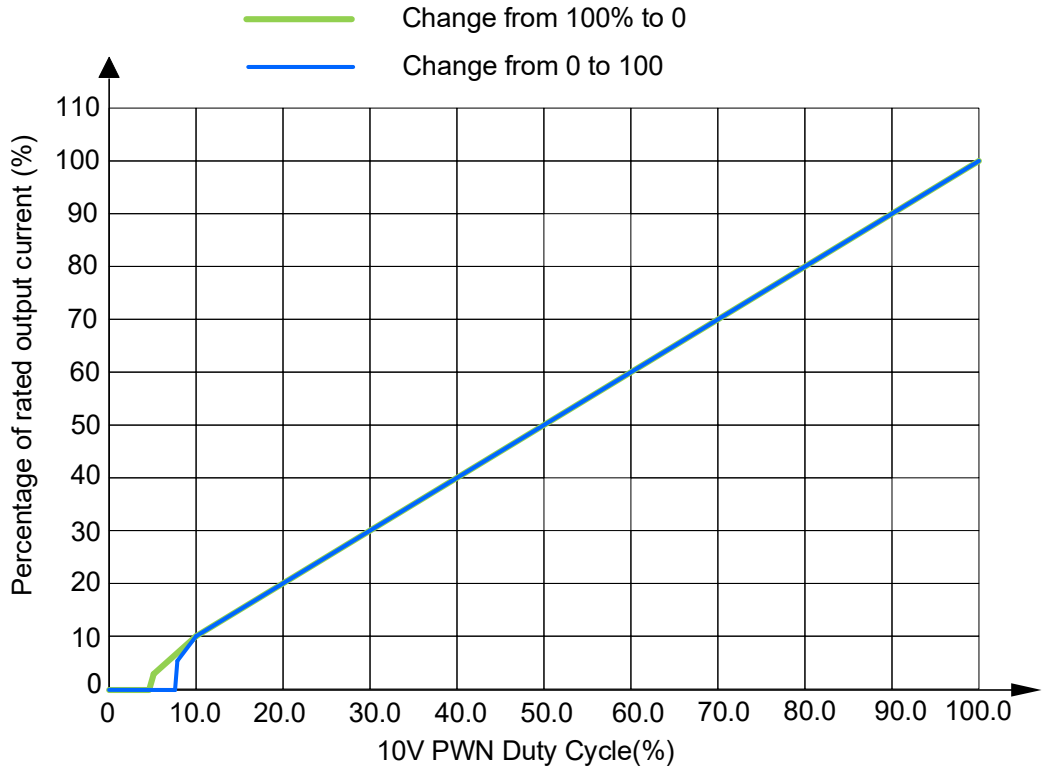


Dimming Graph

Dimming Resistance/Voltage vs Rated Output Current



Dimming PWM vs Rated Output Current



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

Voltage (V)	0	0.8	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