

AAR100



Product Features

- Efficiency up to 90.5%, PF>0.95,THD<9%
- Constant Current output
- Constant current drive, output current manually adjustable
- Tri-mode dimming: 0-10V, PWM, resistance (S version)
- Enables accurate dimming cutoff with precision on/off control
- Lightning protection: 15kV common mode, 6kV differential mode
- Protection Rating: IP67
- Comprehensive Protection:Input undervoltage,Output overvoltage, Overtemperature, Short circuit, Dimming interface overvoltage
- Warranty: 5 years

CE

Technical data

Product model	Max. output Power (W)	Input Voltage (Vac)	Output current (mA)	Output Voltage (Vdc)	PF	Efficiency	size/mm
AAR100-56-C2800	100	120-277	650-2800	25-56	0.97	90.5%	160*56*27
AAR100-56-C2800-S	100	120-277	650-2800	25-56	0.97	90.5%	160*56*27

※ The model number does not have a tail vertebral letter to indicate the basic model
※ The 'S' Indicates with dimming function
※ Output Power Characteristics vs. Input Voltage:
 <180Vac: Output power decreases progressively
 ≤175Vac: 50W±20% output (derating mode)
 200-277Vac: 100W rated power (normal operation)
Important: Refer to the Output Power vs. Input Voltage curve for exact performance

Technical data

Electrical Specifications

category project		Technical Indicators	
Output parameters	Rated output current	650-1400mA @108V-179Vac 1300-2800mA @180V-277Vac	
	Adjustable current range	650-2800mA	@Reference AOC Curve
	Output voltage range	25-56Vdc	@At the rated output voltage, the maximum output power $P_o=V_o \times I_o=100W$
	Rated output voltage	36-56Vdc	
	Default factory output current	1.8A	
	Maximum no-load output voltage	70V	
	Efficiency	88.5% @Input 180Vac, Output 36V/2.8A 89.5% @Input 230Vac, Output 36V/2.8A 90.0% @Input 277Vac, Output 36V/2.8A 89.0% @Input 180Vac, Output 56V/1.8A 90.5% @Input 230Vac, Output 56V/1.8A 90.5% @Input 277Vac, Output 56V/1.8A	
	Current accuracy	±5%	@100% load Constant Power Range
	Output Current Ripple	10%	@ $\Delta I=I_{pk-pk}/2/I_o \times 100\%$ LED load
	Startup current overshoot	10%	@LED Load
	Startup time	500~1000ms	@100%Load@120-277Vac
	Linear regulation rate	±5%	@100%Load
	Load regulation rate	±5%	@100%Load
	Over temperature protection	90°C	@Casing temperature: Prolonged operation at the highest temperature will reduce the reliability of the power supply. Pay attention to heat dissipation when in use
	Short circuit protection	5W	@Not damaged by prolonged short circuits, automatic recovery upon fault resolution
	Input undervoltage protection	170-180V	@ Derated Output with Auto Recovery After Fault Clearance
	Input overvoltage protection	320Vac	

Remarks:

1. The dimming interface can withstand voltages within 277Vac for a short period of time (within 30 minutes) without damage, and returns to normal after the fault is resolved; when the dimming interface is connected to AC mains power, the output current drops to half of the set current value. Construction workers can quickly identify and resolve faults based on this phenomenon to avoid permanent damage to the interface;
2. All performance parameters are typical values measured at an ambient temperature of 25°C and using an LED load, unless otherwise specified;
3. When the dimming line is not in use, please seal the dimming line connector with an insulating sleeve to prevent interference signals from causing damage to the dimming line and affecting the normal operation of the power supply;

Technical data

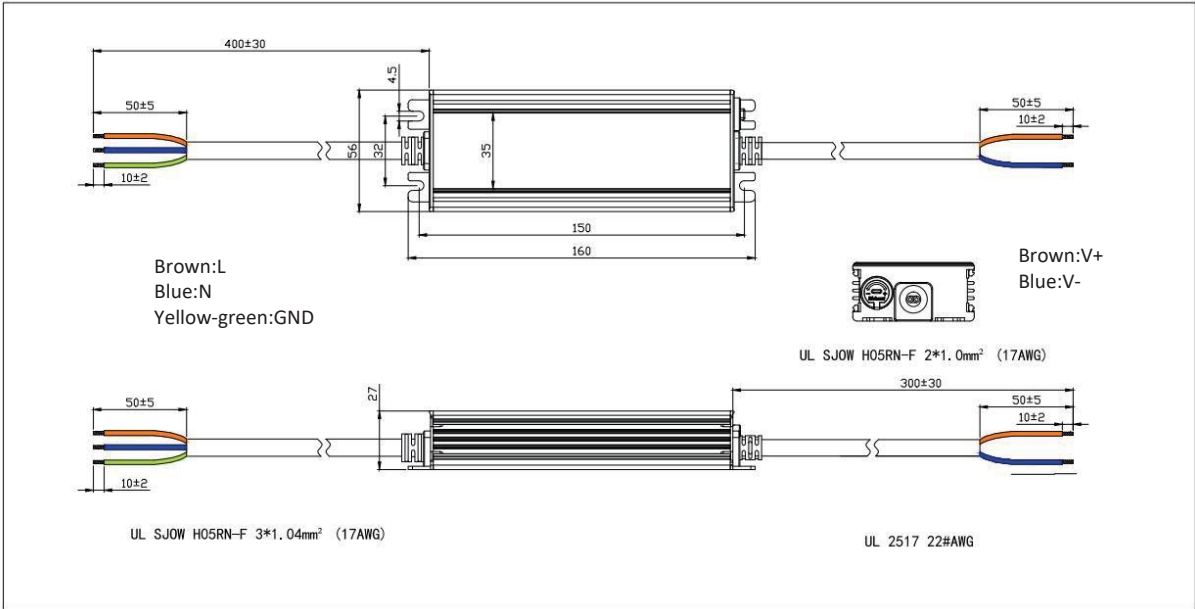
category project		Technical Indicators	
Input parameters	Rated input voltage	120-277VAC	
	Input voltage range	108-305VAC	@Below 180Vac: Gradual derating initiates At ≤175Vac: 50% of rated power output
	Input frequency range	47-63HZ	
	Input current	0.55A @120Vac, Half load 0.7A @180Vac, Full Load	
	Input power	60W @120Vac, Half load 116W @180Vac, Full Load	
	Input surge current peak value	55A @120Vac, Cold Start 85A @230Vac, Cold Start 100A @277Vac, Cold Start	
	Power factor	0.99 @120Vac, Half load 0.97 @230Vac, Full Load 0.95 @277Vac, Full Load 0.9 @180-277Vac 50/60Hz, 70-100% Load	
	Total harmonic distortion	5% @120Vac, Half load 7% @180Vac, Full load 9% @230Vac, Full Load 12% @277Vac, Full Load 15% @180-277Vac 50/60Hz, 70-100% Load	
	Standby power consumption	1W	
0-10V Dimming	External voltage range	0-12V @DIM+ output 100uA current	
	Recommended dimming voltage	1-10V	
	Dimming output range	10-100% @DIM+/DIM-reverse connection prohibited.	
	Dimming cutoff voltage	0.4-0.59V @typical 0.5V	
	Dimming start voltage	0.6-0.8V @typical 0.7V	
PWM Dimming	PWM High	9.8-10.2V @DIM+ output 100uA current	
	PWM Low	0-0.3V @DIM+/DIM-reverse connectionprohibited.	
	PWM Frequency	500-2000Hz	
	Recommended dimming duty cycle	10-100%	
	Dimming output range	10-100%	
	Dimming cutoff duty cycle	4.5-6.5% @Typical 5%	
	Dimming start duty cycle	6-8% @Typical 7%	
Resistor Dimming	External resistor	0-100KΩ @DIM+ output 100uA current	
	Dimming output range	10-100%	
	Dimming cutoff resistance	4-5.9KΩ @Typical 5KΩ	
	Dimming start resistance	6-8KΩ @Typical 7KΩ	
Interface protection	DIM/DIM-reversed	Main Output Shutdown	
	Interface over voltage protection	400Vdc or 277Vac @Interface not damaged within 30minutes	
Environment	Operating temperature	-40...90°C @Typical 60°C	
	Operating humidity	10-90%RH @No condensation	
	Storage temperature	-40...90°C @Typical 25°C	
	Storage humidity	10-90%RH @No condensation	

category	project	Technical Indicators
Safety and EMC	CCC	GB 19510.14-2009、 GB/T 17743-2021、 GB 17625.1-2022
	ENEC	EN 61347-1:2015 EN 61347-2-13:2014 EN 61347-2-13:2014/A1:2017
	CB	IEC 61347-1, IEC 61347-2-13-2016
	CE	EN 61347-2-13:2014 EN61347- 1:2008+A1:2011+A2:2013
	Conducted emission	EN 55015/GB 17743 @Conducted emission Test &Radiated emission Test
	Radiated emission	
	Harmonics Current	EN 61000-3-2 @Harmonic current emissions
	Voltage flicker	EN 61000-3-3 @Voltage Fluctuations & Flicker
	ESD	EN 61000-4-2 @Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV contact discharge
	Radiated Susceptibility	EN 61000-4-3 @Radio-Frequency Electromagnetic Field Susceptibility Test-RS
	Surge (transient)	EN 61000-4-5 @Surge Immunity Test:Differential Mode 6 kV, Common Mode 15 kV
	Conducted immunity	EN 61000-4-6 @Conducted Radio Frequency Disturbances Test-CS
	Power frequency magnetic field	EN 61000-4-8 @Power Frequency Magnetic Field Test
	Voltage dips and interruption	EN 61000-4-11 @Voltage Dips
	Immunity of lighting equipment	EN 61547 @Electromagnetic Immunity Requirements Applies To Lighting Equipment
	Oscillatory wave immunity	EN 61000-4-12 @Oscillatory Waves Immunity Test
	Insulation	I/P-O/P, I/P-FG, O/P-FG:100MΩ / 500VDC / 25°C/70% RH
	Dielectric strength	I/P-O/P:3.75kVac I/P-FG:1.5kVac O/P-FG:500Vac I/P-DIM&Vaux:3.75kVac O/P-DIM&Vaux:1.5kVac DIM&Vaux-FG:1.5kV
	Ground resistance	<0.1Ω, 25A/1min
	Leakage current	<0.75mA 277Vac
Other	Estimation of Mean Time Between Failures (MTBF)	210000 hours @230Vac, full load, ambient temperature 25°C
	Lifetime	50,000 hours @230Vac, full load, Tc=75°C
	International Protection	IP67 @Suitable for dry and humid environments, avoid prolonged exposure to rain
	Maximum casing temperature	90°C
	Warranty	5 Years @Casing temperature (Tc point) not exceeding 75°C
	Weight	450g @Net weight
	Dimension	160mm*56mm*27mm

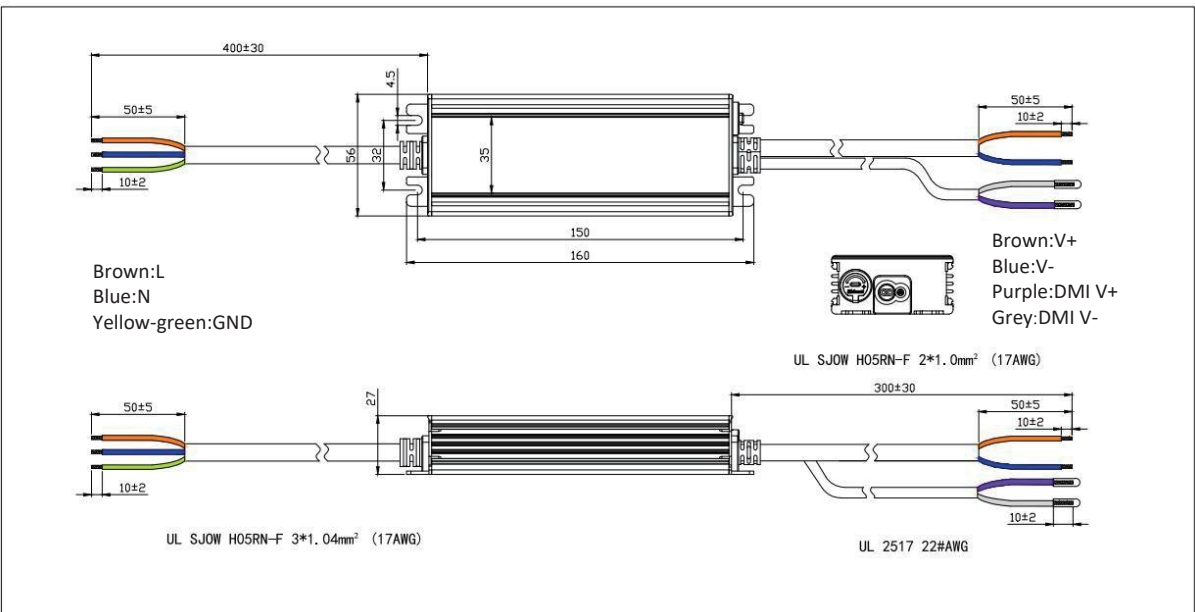
Product datasheet

Exterior dimensions (unit: mm)

Note: AAR100-56-C2800

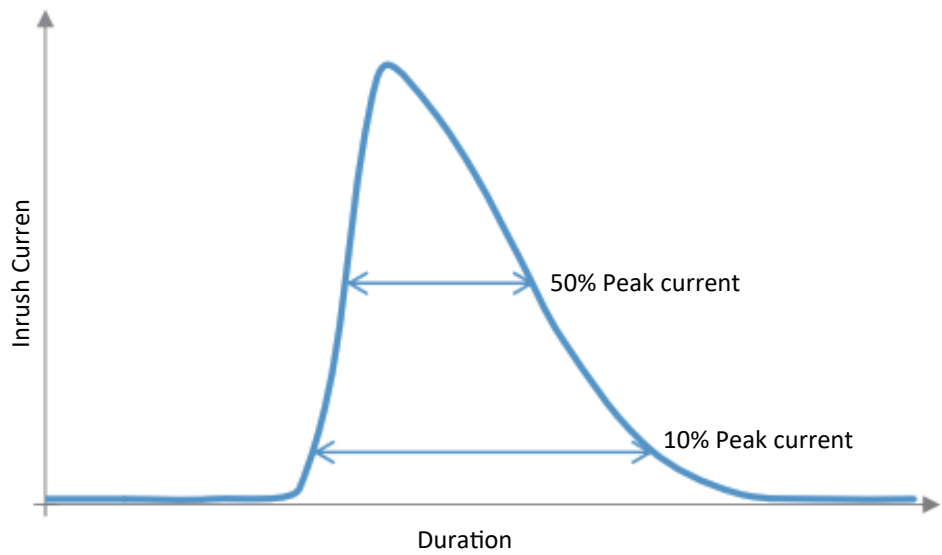


Note: AAR100-56-C2800-S

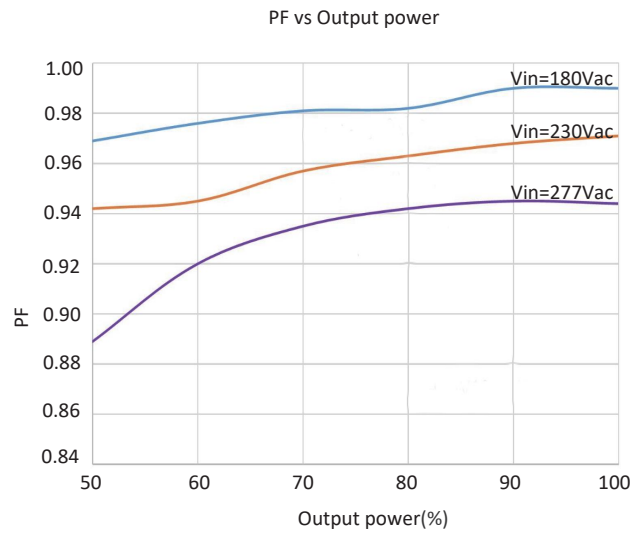
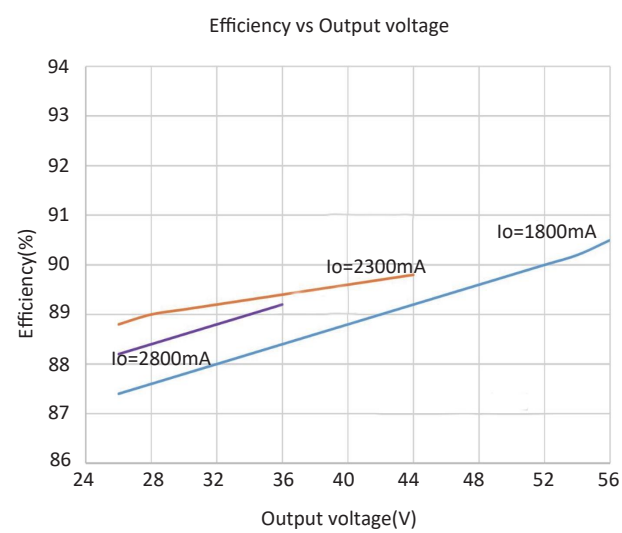


Characteristic curves

Vin	Peak current	Duration (@10% peak current)	Duration (@50% peak current)
120Vac	55A	326us	155us
230Vac	85A	332us	162us
277Vac	100A	315us	165us

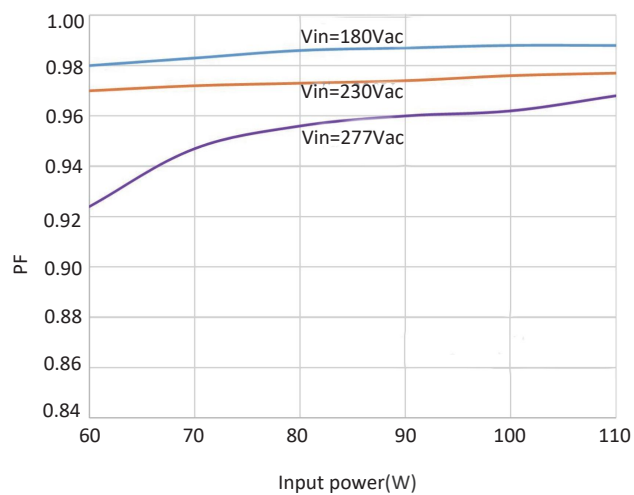


Characteristic curves

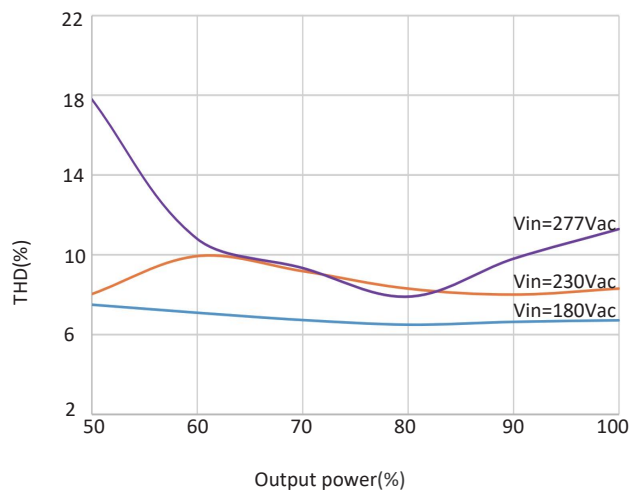


Characteristic curves

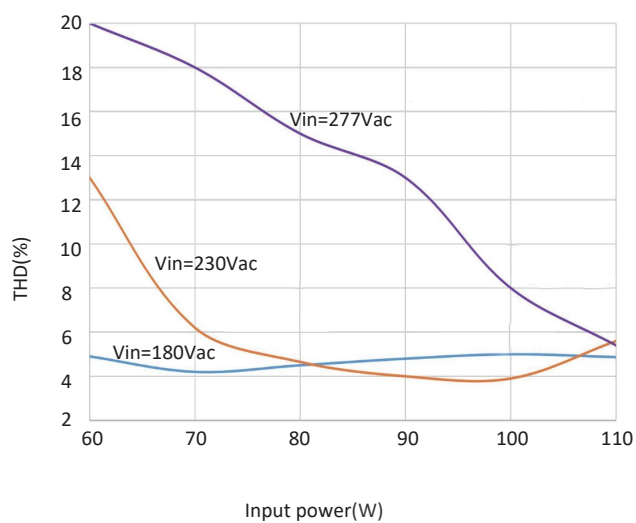
PF vs Input power



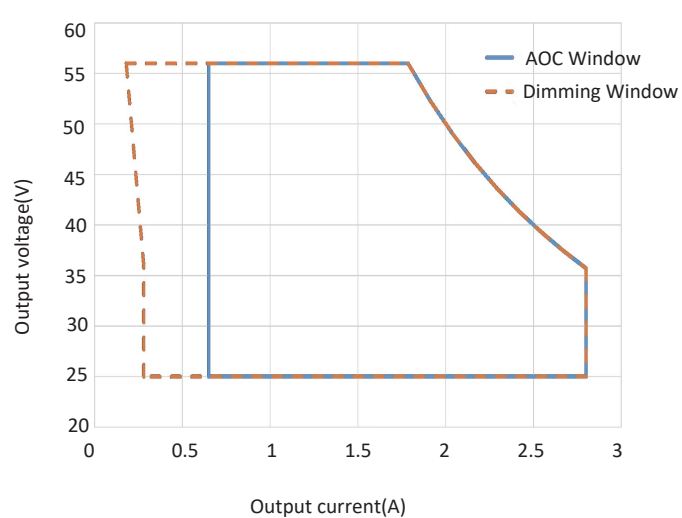
THD vs Output power



THD vs Input power

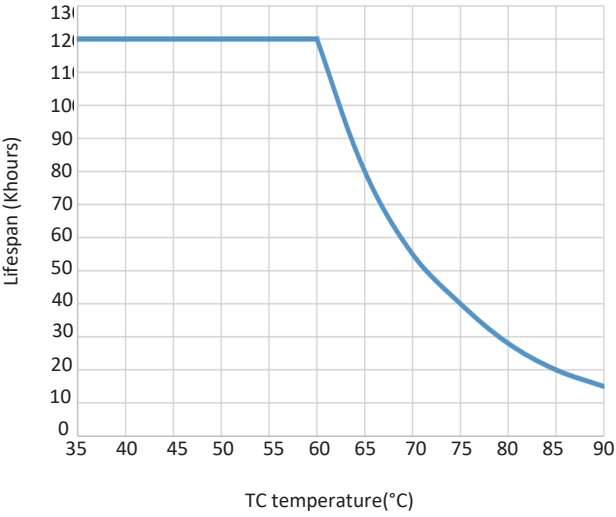


Output voltage vs Output current

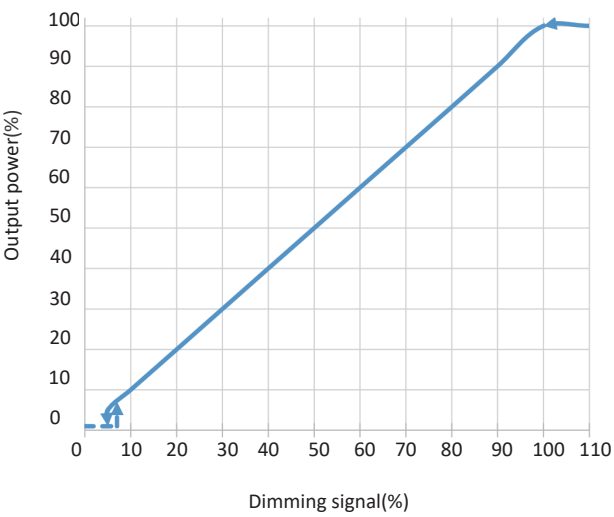


Life curve

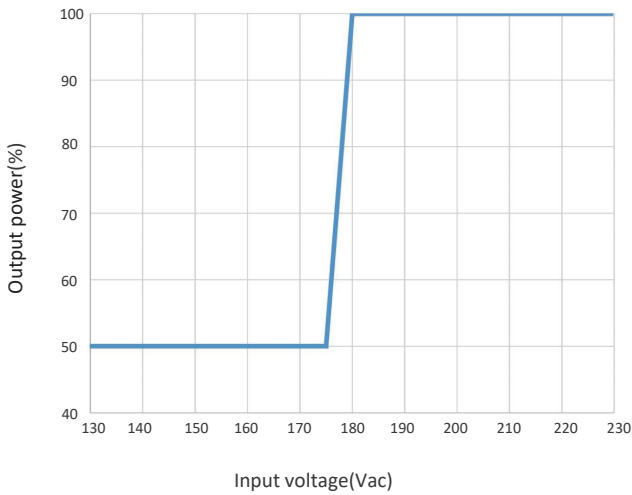
Lifespan vs TC temperature



Output power VS Dimming signal



Output power VS Input voltage



Output power vs TC temperature

