

100 Watt — PYG100W Series V3.0

Constant current&constant voltage LED driver with 0-10V or PWM dimming

Product family features



- Drive Mode: Constant Current, Constant Voltage, Dimming
- Technology: Active PFC Corrected 2-Stage Switch Mode
- Input Voltage: 100 to 277Vac (UL). 100 to 240Vac (ENEC)
- Output Power: 100Watt Max
- Dimming: Smooth & Continuous Dimming from 10% to 100%. LEDs turn on to any dimmed level without going to full brightness.
- Constant Current Reduction (CCR) dimming methods.
- 0-10V: 2-wire Analog / PWM Control Dimming
- Efficiency: Up to 92%
- Warranty: 5 years
- Continuous, dimming from 10% to 100%. Set maximum output current Set minimum dim
- The programming cable and the dimming cable are combined to simplify the user's operation
- Safety isolation between primary and secondary. Dimming control is isolated from AC input and DC output
- A rated lifetime of 50,000 hours @ Tc = 80°C
- Safety: UL8750, UL1310 Class 2, CSA22.2, EN61347, GB19510
- EMC: FCC 47CFR Part 15, Class B @120V & Class A @277V, EN55015, GB17625
- Inrush Current Limiting Circuitry: AC Power Line: line to line 6KV, line to earth 10KV eliminates circuit breaker tripping, switch arcing and relay failure
- Metal shell, Used with silicone potting. Meet the RoHS directive
- IP67, NEMA4 compliant for Dry, Damp, Wet Locations. Type HL



Technical data

Electrical data

100W 0-10V & PWM Dimming or Constant Current Part List

Product Model	US & CN Class 2	Output Voltage Range(Vdc)	Programmable Current Range (mA)	Programmable Current Range at Full Power Output (mA)	Output Power max (W)	Efficiency% @ Max Load				Uout max (V)
						Vout(V)	@120V	@230	@277	
PYG100W-56-C2670-RP-P-W	Yes	28-56	350-2670	1700 - 2670	96	36	89.4	91.6	91.7	59
PYG100W-107-C1400-RP-P-W	No	53-107	350-1400	900 - 1400	96	68	89.3	91.3	91.4	115
PYG100W-192-C0690-RP-P-W	No	96-192	300-690	500 - 690	96	140	89.6	91.7	92.1	210
PYG100W-56-C2670-RP-P	Yes	28-56	350-2670	1700 - 2670	96	36	89.4	91.6	91.7	59
PYG100W-107-C1400-RP-P	No	53-107	350-1400	900 - 1400	96	68	89.3	91.3	91.4	115
PYG100W-192-C0690-RP-P	No	96-192	300-690	500 - 690	96	140	89.6	91.7	92.1	210

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100W Constant Voltage Part List

Product Model	US & CN Class 2	Output Voltage (Vdc)	Output Current Range(mA)	Voltage Accuracy	Power Output max(W)	Efficiency% @ Max Load		
						@120V	@230	@277
PYG100W-24-P-W	Yes	24	4000	±5%	96	88.6	90.7	91.2
PYG100W-48-P-W	Yes	48	2000	±5%	96	89.8	92.0	92.3
PYG100W-24-P	Yes	24	4000	±5%	96	88.6	90.7	91.2
PYG100W-48-P	Yes	48	2000	±5%	96	89.8	92.0	92.3

Note: Maximum efficiency measured at 230VAC input
Product may be suffixed by “-P”, which means suitable for UL listed & class P models, without suffix “-P” are suitable UL component use only
Product may be suffixed by “-W”, which means suitable for EU or UL wet location use models, without suffix “-W” are suitable dry/damp location use only

Electrical Specifications

	Parameter	Min	Typ	Max	Notes / Conditions
Input	Input Voltage	90V		305V	
	Input Frequency	47Hz	50/60Hz	63Hz	
	Input AC Current			1.2A	Measured at 120 Vac / 60Hz Input, Output Full Load
				0.56A	Measured at 230 Vac / 50Hz Input, Output Full Load
				0.50A	Measured at 277 Vac / 60Hz Input, Output Full Load
	Inrush Current (Peak)			50A	Measured at 120 Vac / 60Hz Input, Output Full Load
				95A	Measured at 277 Vac / 60Hz Input, Output Full Load
	No-load Power			5.0W	No-load
	Leakage Current			400μA	Measured at 120 Vac / 60Hz Input, Output Full Load
			750μA	Measured at 277 Vac / 60Hz Input, Output Full Load	
THD			20%	Measured at 120, 230, 277 Vac Input, Output ≥ 60% Load (Output >45W)	
	Power Factor (PF)	0.90			
Output	DC Output Voltage	Per Table	Per Table	Per Table	Per Tables on Page 1,2
	Output Constant Current	-5%	Per Table	+5%	Per Tables on Page 1,2
	Output Power			Per Table	Per Tables on Page 1,2
	Output LF Current Ripple(<120Hz)		5%	10%	20MHz BW, Full load output Ripple Index is defined as $\frac{[(Y_{max}-Y_{min})/(Y_{max}+Y_{min})]}{1} * 100\%$. Y may be V or I
	Line Regulation	-2%		+2%	Measured at 120, 230, 277 Vac / 60Hz Input, Output Full Load
	Load Regulation	-5%		+5%	Measured at 120, 230, 277 Vac / 60Hz Input
	Start-up Time			500ms	Measured at 120, 230 Vac / 60Hz Input, Output Full Load
				450ms	Measured at 277 Vac / 50Hz Input, Output Full Load
	Output Overshoot	-2%		+10%	Measured at 120, 230, 277 Vac Input, When power on or off
	Hold-up Time		10ms		Typical @ 277 Vac Input, Output Full Load

Product datasheet

Technical data

Electrical Specifications

Protection	Output Short Circuit (SCP)		No Damage
	Output Over Current (OCP)	+10% Io	Constant Current Limiting circuit
	Output Over Voltage (OVP)		No Damage
General	Cooling	Convection	
	MTBF	480,000 hours	Measured at 230 Vac input, 100% Load and Tc=25°C
	Life Time	50,000 hours	@ Tc = 80°C
Environmental	Case Temperature (Tc)	-30 °C +90 °C	Measured at location specified on case
	Operating Temperature (Ta)	-40 °C +55 °C	This is a reference range. Tc controls temperature range
	Storage Temperature (Ts)	-40°C +85 °C	Non operating temperature range
	Operating Humidity	5% RH 95% RH	Relative Humidity. Non-condensing
	Vibration	5 Hz 55 Hz	2G, 10 minutes / 1 cycle, period 30 minutes, each along X, Y, Z axis

	Parameter	Min	Typ	Max	Notes / Conditions	
Dimming	0-10V Dimming	Input Absolute Voltage	-2.0V	10V	15V	Purple Wire
		Output Source Current	200uA	300uA	450uA	Purple Wire
		Output Current Range in 0-10V Dimming	10%		100%	CCR output
		Output Current in 0-10V Pin Open		Normal	15V	
		Output Current in 0-10V Pin Short Circuit		Min		CCR output
	PWM Dimming	Input Absolute Voltage	-2.0V	10V	15V	
		Input Current on PWM pin	200uA	300uA	450uA	
		PWM Frequency	200Hz	1KHz	1.5KHz	
		PWM Duty	0%		100%	
		Output Current Range in PWM Dimming	10%		100%	CCR output
		Output Current in PWM Pin Open		Normal	15V	
		Output Current in PWM Pin Short Circuit		Min	1000uA	
	Dimming output range	PYG100W-56-C2670-YY-P-W	10%loset		loset	1700 mA ≤ loiset ≤ 2670 mA
		PYG100W-107-C1400-YY-P-W	10%loset		loset	900 mA ≤ loiset ≤ 1400mA
		PYG100W-192-C0690-P-W	10%loset		loset	500 mA ≤ loiset ≤ 690mA
		PYG100W-56-C2670-YY-P-W	170mA		loset	170mA ≤ loiset ≤ 1700mA
		PYG100W-107-C1400-YY-P-W	90mA		loset	90 mA ≤ loiset ≤ 900mA
		PYG100W-192-C0690-P-W	50mA		loset	50mA ≤ loiset ≤ 500mA

Product datasheet

Technical data

Electrical Specifications

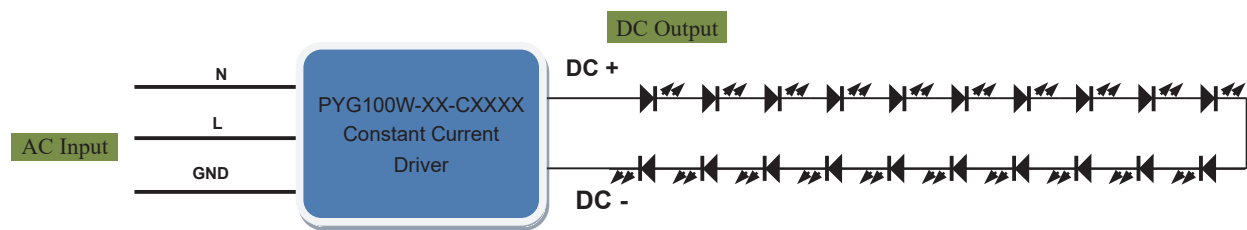
	Category	Standards / Notes
Safety Compliance	UL / cUL	UL8750, CSA-C22.2 No.250.13
	CCC	GB19510.14, GB19510.1
	ENEC & CE	EN 61347-1, EN61347-2-13 EN 62384
	Withstand Voltage	Input to Output: 2000 Vac (UL), 3750 Vac (CE, TUV, ENEC); PE to Input:1500 Vac; Dim to Input: 2500 Vac, Dim to Output: 2500 Vac
	Isolation Resistance	Input to Output: >10MΩ, 500Vdc @ 25°C, 70% RH
	Dimming	DIM+ (Purple) / DIM- (Pink) are Class 2 Isolated from AC Input and DC Output
EMC Compliance	FCC	FCC 47CFR Part 15, ANSI C63.4
	CCC	GB17743, GB17625.1
	EMI	CE
		EN55015 EN 61000-3-2, EN 61000-3-3
	Energy Star	
	Energy Star transient protection: Ballast or driver shall comply with ANSI/IEEE C62.41.1-2002 and ANSI/IEEE C62.41.2-2002, Category A operation. The line transient shall consist of seven strikes of a 100KHZ ring wave,2.5KV level, for both common mode and differential mode	
	EMS	EN 61000-4-2
		Electrostatic Discharge (ESD): 8KV air discharge, 4KV contact discharge
		EN 61000-4-3
		Radio-Frequency Electromagnetic Field Susceptibility Test-RS
		EN 61000-4-4
		Electrical Fast Transient / Burst-EFT
		EN 61000-4-5
		Surge Immunity Test: AC Power Line: line to line 6KV, line to earth 10KV
		EN 61000-4-6
		Conducted Radio Frequency Disturbances Test-CS
	EN 61547	Electromagnetic Immunity Requirements Applies To Lighting Equipment

Note: The above test data are in the condition of 25 °C ambient temperature, except for the marked temperature

Typical Applications

LED Forward voltage: VF = 3.0V~3.5V

Constant Current Driver

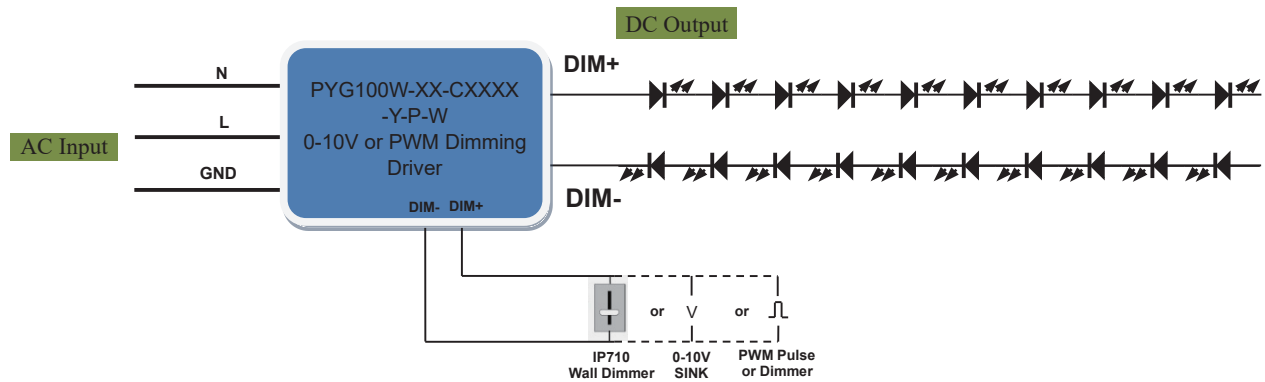


Product datasheet

Typical Applications

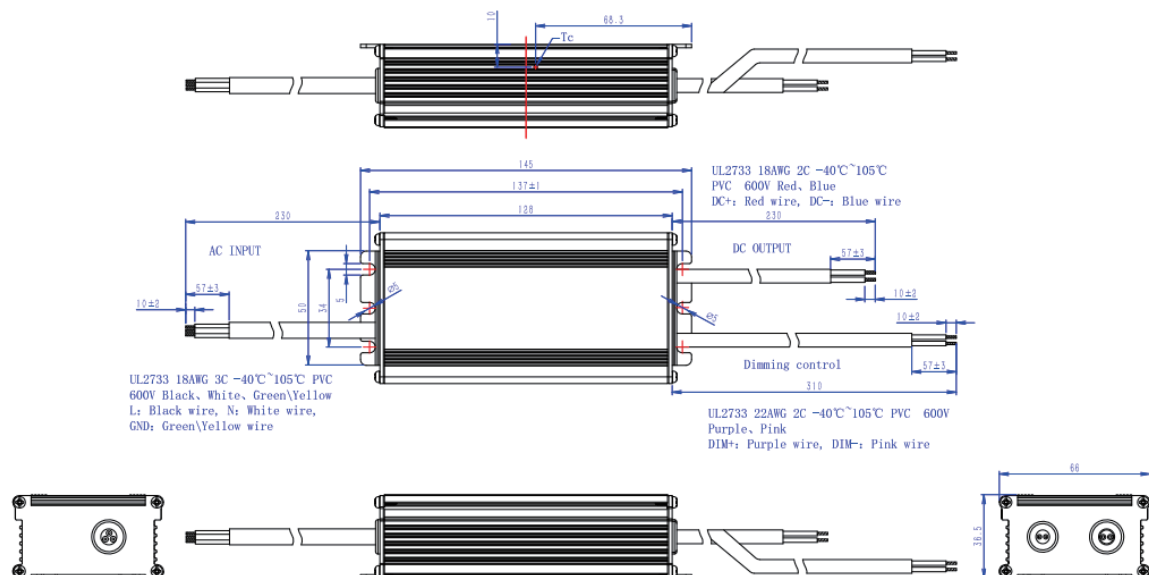
LED Forward voltage: $V_F = 3.0V \sim 3.5V$

0-10V or PWM Dimming Driver



Appearance information

Product Size

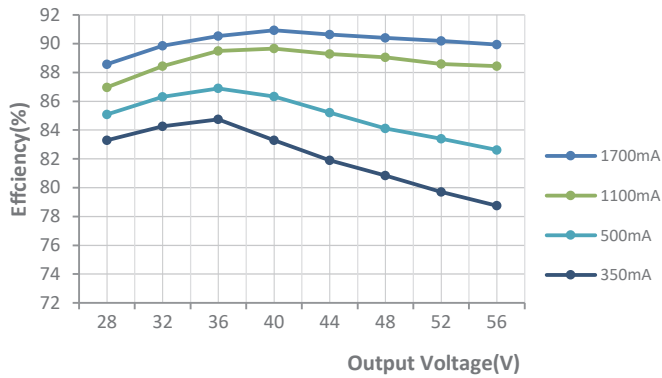


Note: The above is the UL size drawing

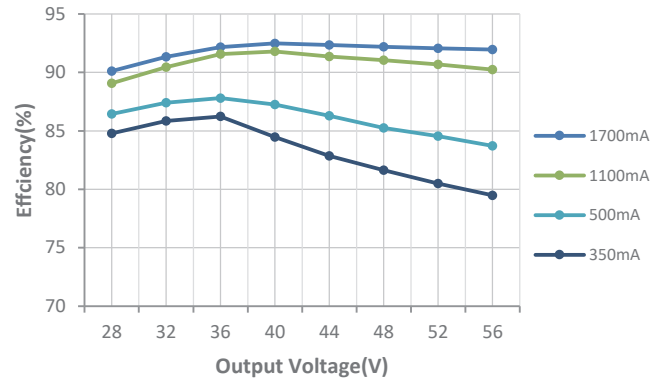
Product datasheet

Characteristic Curve

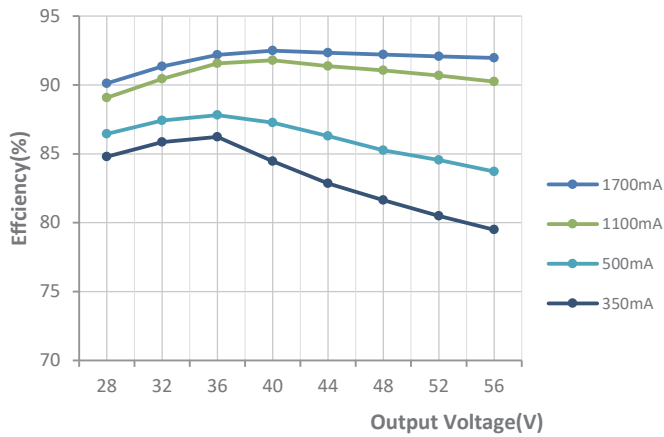
Efficiency vs Output Voltage at 120Vac



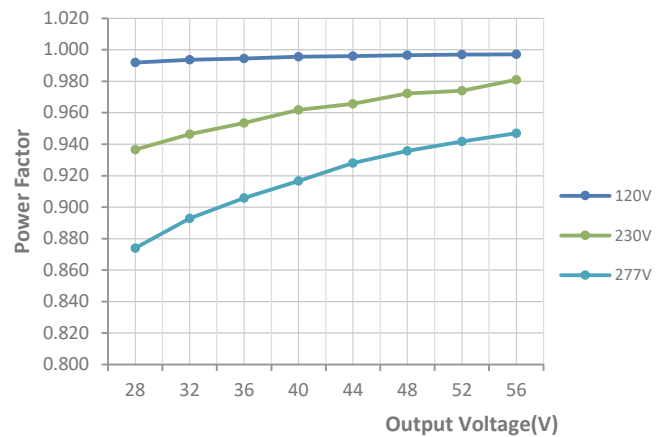
Efficiency vs Output Voltage at 230Vac



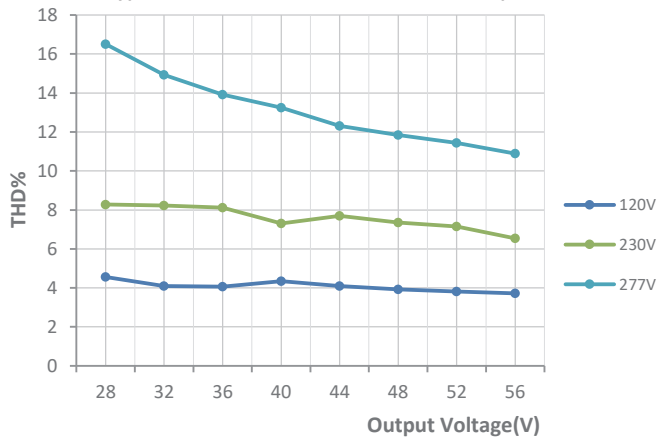
Efficiency vs Output Voltage at 277Vac



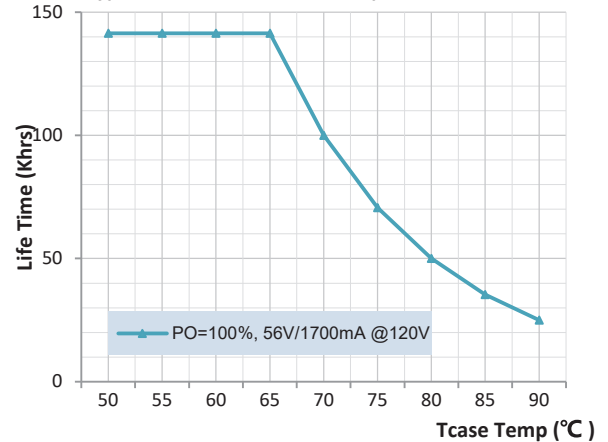
Power Factor vs Output Power



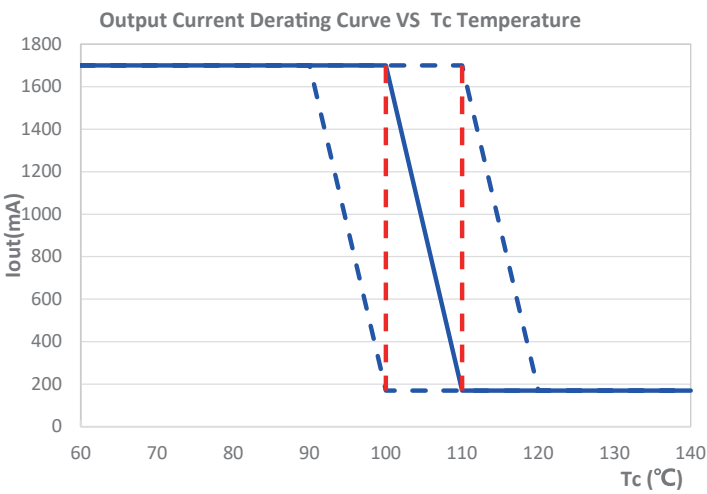
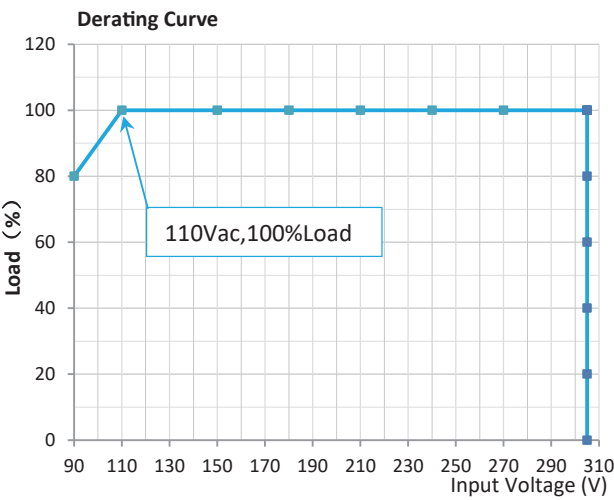
Typical THD vs Pout at 25°C Ambient Temp



Typical Life Time vs Tcase Temp

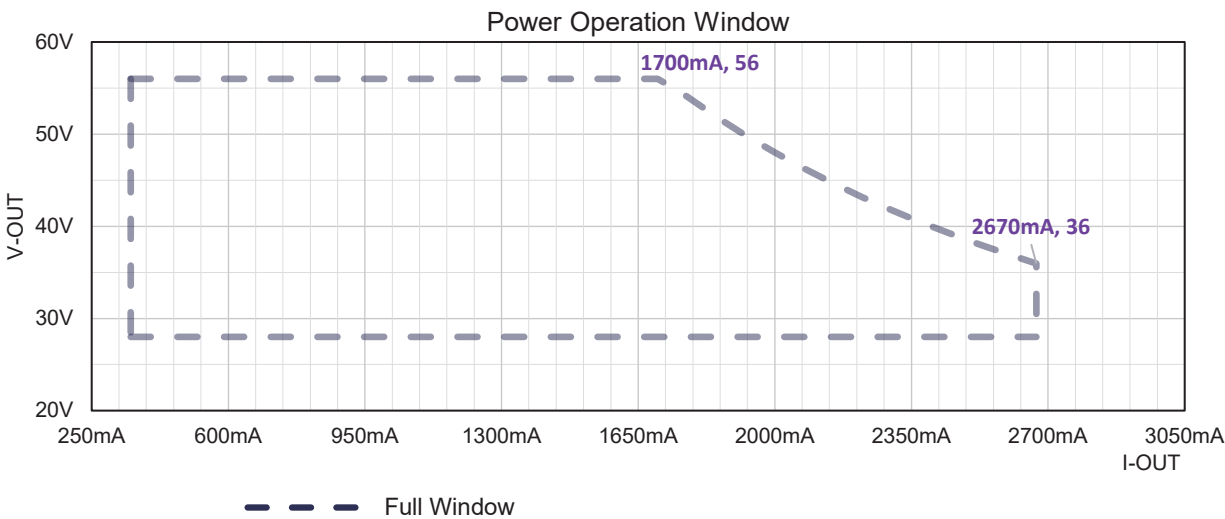


Characteristic Curve

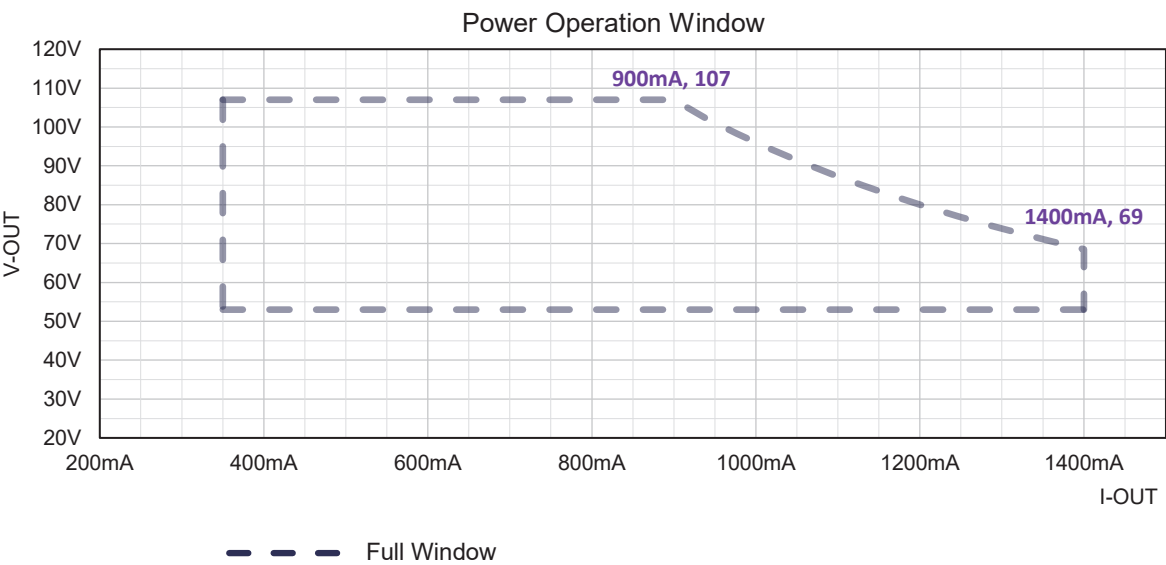


Note: Affected by the internal temperature distribution of the shell, the test temperature has a large error corresponding to the TC temperature

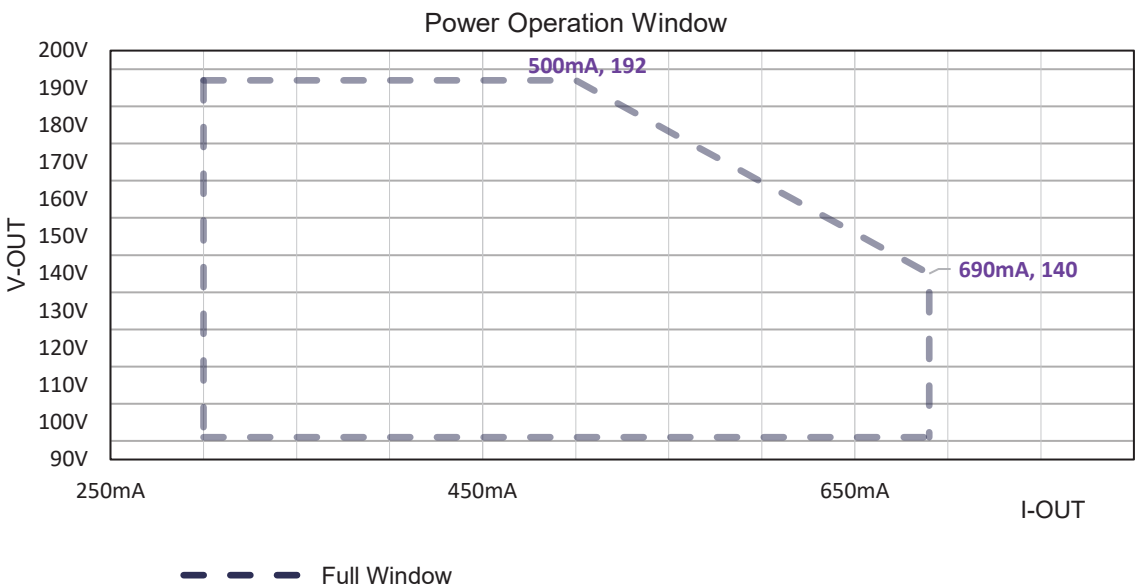
Operating Window (PYG100W-56-C2670)



Operating Window (PYG100W-107-C1400)



Operating Window PYG100W-192-C0690)



Product datasheet

Installation

UL Cable used in Dry & Damp Location:

AC input cable, the three cores, ANSI/UL2733 18AWG 3C -40°C ~105°C PVC 600V Black、 White、 Green\Yellow

Cable Length: 230mm, External stripping 57mm, Stripping on the tin: 10mm.

Where: L — Black wire, N — White wire, GND — Green\Yellow wire

DC output cable, the two cores, ANSI/UL2733 18AWG 2C -40°C ~105°C PVC 600V Red、 Blue

Cable Length: 230mm, External stripping 57mm, Stripping on the tin: 10mm.

Where: DC+ — Red wire, DC- — Blue wire

Dimming control cable, the two cores, ANSI/UL2733 22AWG 2C -40°C ~105°C PVC 600V Purple、 Pink

Cable Length: 310mm, External stripping 57mm, Stripping on the tin: 10mm.

Where: DIM+ (0-10V or PWM) input — Purple wire, DIM- — Pink wire

UL & CE, CCC, ENEC Standard used in Wet Location:

AC input for connection the three cores copper wire connection.

Outdoor Type: IEC 60245 /VDE 0282-4 / H05RN-F (SJOW) 17AWG 3x1.0mm² -40°C~105°C Rubber 300V Brown、 Blue、 Green\Yellow

Cable Length: 230mm, stripping on the tin: 10mm.

Where: L — Brown wire, N — Blue wire, GND — Yellow/Green wire

DC output for connection the two core copper wire.

Outdoor Type: IEC 60245 /VDE 0282-4 / H05RN-F (SJOW) 17AWG 2x1.0mm² -40°C~105 °C Rubber 300V Brown、 Blue

Cable Length: 230mm, stripping on the tin: 10mm.

Where: DC+ — Brown wire, DC- — Blue wire

The dimmer control input is the two copper wires. ANSI/UL21996 22AWG 2C -40°C ~105°C PVC 300V Purple、 Pink

Cable Length: 310mm, stripping on the tin: 10mm.

Where: DIM+ (0-10V or PWM) input — Purple wire, DIM- — Pink wire