

96 Watt — LY96W Series Rev E/F

Flicker-Free, Isolated dimming

CONSTANT CURRENT & CONSTANT VOLTAGE LED DRIVER WITH 0-10V or PWM DIMMING

LY Series Driver is a high-performance LED driver that provides smooth, continuous <10% dimming for virtually any LED fixture, whether it requires constant current or constant voltage. It is the most versatile LED driver offered today due to its compatibility with a wide variety of LED arrays, multiple form factors, and numerous control options.

Key Features

- Drive Mode: Constant Current, Constant Voltage, Isolated dimming
- Technology: Active PFC Corrected 2-Stage Switch Mode.
- Input Voltage: 100 to 277 Vac (UL).
- Output Power: 96 Watt 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 (Isolated from AC & DC).
- Output Voltage: 8 Vdc to 274 Vdc.
- Output Current: 350 mA to 4000 mA.
- Efficiency: Up to 92%.
- Warranty: 5 years.

Special Features

- Continuous, dimming from 10% to 100%.
- 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.
- EMC: FCC 47CFR Part 15, Class B @120V & Class A @277V, EN55015.
- Inrush Current Limiting Circuitry: AC Power Line: line to line 4 kV, line to earth 6 kV, 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.
- 100% performance tested with CHROMA 8000 system at YG factory.
- 100% burned in with program-control test system at YG factory, @ 50 °C.

96W Constant Current Part List

No.	Part Number	US Class 2	CN Class 2	Output Voltage Range	Output Constant Current	Current Accuracy	Power Factor	Output Power	Max. Eff.	Env. Loc.	Class P	Type HL	UL	cUL	CE
1	LY96W-274-C0350-I	No	No	92~274 Vdc	350 mA	±5%	0.90	96W	92%	Damp, Wet	Yes	Yes	✓	✓	✓
2	LY96W-213-C0450-I	No	No	71~213 Vdc	450 mA	±5%	0.90	96W	92%	Damp, Wet	Yes	Yes	✓	✓	✓
3	LY96W-137-C0700-I	No	No	46~137 Vdc	700 mA	±5%	0.90	96W	92%	Damp, Wet	Yes	Yes	✓	✓	✓
4	LY96W-91-C1050-I	No	No	31~91 Vdc	1050 mA	±5%	0.90	96W	91%	Damp, Wet	Yes	Yes	✓	✓	✓
5	LY96W-68-C1400-I	No	No	23~68 Vdc	1400 mA	±5%	0.90	96W	91%	Damp, Wet	Yes	Yes	✓	✓	✓
6	LY96W-54-C1750-I	Yes	Yes	18~54 Vdc	1750 mA	±5%	0.90	96W	91%	Damp, Wet	Yes	Yes	✓	✓	✓
7	LY96W-48-C2000-I	Yes	Yes	16~48 Vdc	2000 mA	±5%	0.90	96W	90%	Damp, Wet	Yes	Yes	✓	✓	✓
8	LY96W-43-C2230-I	Yes	Yes	15~43 Vdc	2230 mA	±5%	0.90	96W	90%	Damp, Wet	Yes	Yes	✓	✓	✓
9	LY96W-39-C2450-I	Yes	Yes	14~39 Vdc	2450 mA	±5%	0.90	96W	90%	Damp, Wet	Yes	Yes	✓	✓	✓
10	LY96W-36-C2670-I	Yes	Yes	12~36 Vdc	2670 mA	±5%	0.90	96W	89%	Damp, Wet	Yes	Yes	✓	✓	✓
11	LY96W-34-C2800-I	Yes	Yes	12~34 Vdc	2800 mA	±5%	0.90	96W	89%	Damp, Wet	Yes	Yes	✓	✓	-
12	LY96W-30-C3150-I	Yes	Yes	10~30 Vdc	3150 mA	±5%	0.90	96W	88%	Damp, Wet	Yes	Yes	✓	✓	✓
13	LY96W-24-C4000-I	Yes	Yes	8~24 Vdc	4000 mA	±5%	0.90	96W	88%	Damp, Wet	Yes	Yes	✓	✓	✓

Enclosure



Notice of use:

1. The DIM+ line can't touch the DC+ line and AC line.
2. DC- cannot be shorted with the DIM-.

Size	Unit	Inch	Millimeter
Case Length		7.13	181.0
Case Width		2.40	61.0
Case Height		1.49	37.8
Mounting Length		6.50	165.0



96W 0-10V & PWM Dimming Part List

No.	Part Number	US Class 2	CN Class 2	Output Voltage Range	Output Current Range	Current Accuracy	Power Factor	Output Power	Max. Eff.	Env. Loc.	Class P	Type HL	UL	cUL	CE
1	LY96W-274-C0350-IYY	No	No	92~274 Vdc	35-350 mA	±5%	0.90	96W	92%	Damp, Wet	Yes	Yes	✓	✓	✓
2	LY96W-213-C0450-IYY	No	No	71~213 Vdc	45-450 mA	±5%	0.90	96W	92%	Damp, Wet	Yes	Yes	✓	✓	✓
3	LY96W-137-C0700-IYY	No	No	46~137 Vdc	70-700 mA	±5%	0.90	96W	92%	Damp, Wet	Yes	Yes	✓	✓	✓
4	LY96W-91-C1050-IYY	No	No	31~91 Vdc	105-1050 mA	±5%	0.90	96W	91%	Damp, Wet	Yes	Yes	✓	✓	✓
5	LY96W-68-C1400-IYY	No	No	23~68 Vdc	140-1400 mA	±5%	0.90	96W	91%	Damp, Wet	Yes	Yes	✓	✓	✓
6	LY96W-54-C1750-IYY	Yes	Yes	18~54 Vdc	175-1750 mA	±5%	0.90	96W	91%	Damp, Wet	Yes	Yes	✓	✓	✓
7	LY96W-48-C2000-IYY	Yes	Yes	16~48 Vdc	200-2000 mA	±5%	0.90	96W	90%	Damp, Wet	Yes	Yes	✓	✓	✓
8	LY96W-43-C2230-IYY	Yes	Yes	15~43 Vdc	223-2230 mA	±5%	0.90	96W	90%	Damp, Wet	Yes	Yes	✓	✓	✓
9	LY96W-39-C2450-IYY	Yes	Yes	14~39 Vdc	245-2450 mA	±5%	0.90	96W	90%	Damp, Wet	Yes	Yes	✓	✓	✓
10	LY96W-36-C2670-IYY	Yes	Yes	12~36 Vdc	267-2670 mA	±5%	0.90	96W	89%	Damp, Wet	Yes	Yes	✓	✓	✓
11	LY96W-34-C2800-IYY	Yes	Yes	12~34 Vdc	280-2800 mA	±5%	0.90	96W	89%	Damp, Wet	Yes	Yes	✓	✓	-
12	LY96W-30-C3150-IYY	Yes	Yes	10~30 Vdc	315-3150 mA	±5%	0.90	96W	88%	Damp, Wet	Yes	Yes	✓	✓	✓
13	LY96W-24-C4000-IYY	Yes	Yes	8~24 Vdc	400-4000 mA	±5%	0.90	96W	88%	Damp, Wet	Yes	Yes	✓	✓	✓

96W Constant Voltage Part List

No.	Part Number	US Class 2	CN Class 2	Output Voltage	Output Current Range	Voltage Accuracy	Power Factor	Output Power	Max. Eff.	Env. Loc.	Class P	Type HL	UL	cUL	CE
1	LY96W-48	Yes	Yes	48 Vdc	100-2000 mA	±5%	0.90	96W	90%	Damp, Wet	Yes	Yes	✓	✓	✓
2	LY96W-36	Yes	Yes	36 Vdc	120-2670 mA	±5%	0.90	96W	89%	Damp, Wet	Yes	Yes	✓	✓	✓
3	LY96W-24	Yes	Yes	24 Vdc	200-4000 mA	±5%	0.90	96W	88%	Damp, Wet	Yes	Yes	✓	✓	✓

Note:

- ◆ Product may be suffixed by "YY", where "YY" may be RD, DD, PD or blank, which mean different dimmer control function.
- ◆ Product may be suffixed by "-P", which means suitable for UL listed & class P use while models, without suffix "-P" are suitable UL component use only.
- ◆ Product may be suffixed by "-W", which means suitable for wet location use while models, without suffix "-W" are suitable dry/damp location use only.

Input Specifications

Parameter	Min.	Typ.	Max.	Notes / Conditions
Input Voltage	90 Vac	---	305 Vac	120, 230, 277 Vac Nominal Values
Input Frequency	47 Hz	50/60 Hz	63 Hz	50/60 Hz Nominal
Input AC Current	---	---	1.01 A	Measured at 120 Vac / 60Hz Input, Output Full Load.
	---	---	0.56 A	Measured at 230 Vac / 50Hz Input, Output Full Load.
	---	---	0.50 A	Measured at 277 Vac / 60Hz Input, Output Full Load.
Inrush Current (Peak)	---	45 A / 3uS	50 A / 5uS	Measured at 120 Vac / 60Hz Input, Output Full Load.
	---	80 A / 3uS	90 A / 5uS	Measured at 277 Vac / 60Hz Input, Output Full Load.
Leakage Current	---	---	400 μA	Measured at 120 Vac / 60Hz Input, Output Full Load.
	---	---	750 μA	Measured at 277 Vac / 60Hz Input, Output Full Load.
THD	---	---	20%	Measured at 120, 230, 277 Vac Input, Output ≥ 60% Load.
Power Factor (PF)	0.90	---	---	

Output Specifications

Parameter	Min.	Typ.	Max.	Notes / Conditions
DC Output Voltage	Per Table	Per Table	Per Table	Per Tables on Page 1
Output Constant Current	-5%	Per Table	+5%	Per Tables on Page 1
Output Power	---	---	Per Table	Per Tables on Page 1
Flickering Index (Vpk-pk)	---	---	5% Vo	Full Load. 20MHz BW, Full load output in parallel with 0.1uF & 10uF CAP. Flickering Index is defined as [(Ymax-Ymin)/(Ymax+Ymin)] * 100%. Y may be V or I
Flickering Index (Ipk-pk)	---	---	5% Io	
Line Regulation	-3%	---	+3%	Measured at 120, 230, 277 Vac / 60Hz Input, Output Full Load



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Load Regulation	-4%	---	+4%	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

Protection Specifications

Parameter	Min.	Typ.	Max.	Notes / Conditions
Output Short Circuit (SCP)	---	---	---	No Damage. Auto recovery after short is removed.
Output Over Current (OCP)	---	---	+10% Io	Constant Current Limiting circuit.
Output Over Voltage (OVP)	---	---	120% Vo	No Damage. Auto recovery after short is removed.

Dimming Specifications

Items	Parameter	Min.	Typ.	Max.	Notes / Conditions
0-10V Dimming	Input Absolute Voltage	-2.0 V	10 V	15 V	Purple Wire
	Output Source Current	0 mA	0.6 mA	1 mA	Purple Wire
	Output Current Range in 0-10V Dimming	10%	---	100%	CCR output
	Output Current in 0-10V Pin Open	---	Normal	---	It's a constant current output with active PFC.
	Output Current in 0-10V Pin Short Circuit	---	Min.	---	CCR output
PWM Dimming	Input Absolute Voltage	-2.0 V	10 V	15 V	
	Input Current on PWM pin	0 mA	1 mA	2 mA	
	PWM Frequency	200 Hz	1 KHz	1.5 KHz	
	PWM Duty	0 %	---	100%	
	Output Current Range in PWM Dimming	10%	---	100%	CCR output
	Output Current in PWM Pin Open	---	Normal	---	It's a constant current output with active PFC.
	Output Current in PWM Pin Short Circuit	---	Min.	---	CCR output

General Specifications

Parameter	Typ.	Notes / Conditions
Cooling	Convection	
MTBF	465,000 hours	Measured at 120 Vac input, 100% Load and Tc=80° C (MIL-HDBK-217F).
Life Time	50,000 hours	

Environmental Specifications

Parameter	Min.	Typ.	Max.	Notes / Conditions
Case Temperature (Tc)	-30 °C	---	+90 °C	Measured at location specified on case.
Operating Temperature (Ta)	-30 °C	---	+60 °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.

Safety Compliance

Safety Category	Standards / Notes
UL / cUL	UL8750, UL1310 Class 2, UL1012 Non Class 2, CSA-C22.2 No. 107.1
CE	EN 61347-1:2007+A1:2010+A2:2012, EN61347-2-13:2014
	EN 62493:15
Withstand Voltage	Input to Output: 2000 Vac (UL), 3750 Vac (CE, TUV, ENEC); Dim to Input: 2500Vac, Dim to Output: 2500Vac.
Isolation Resistance	Input to Output: >10MΩ, 500Vdc @ 25°C, 70% RH
Dimming	DIM+ (Purple) / DIM- (Grey) are Class 2 Isolated from AC Input and DC Output.

EMC Compliance

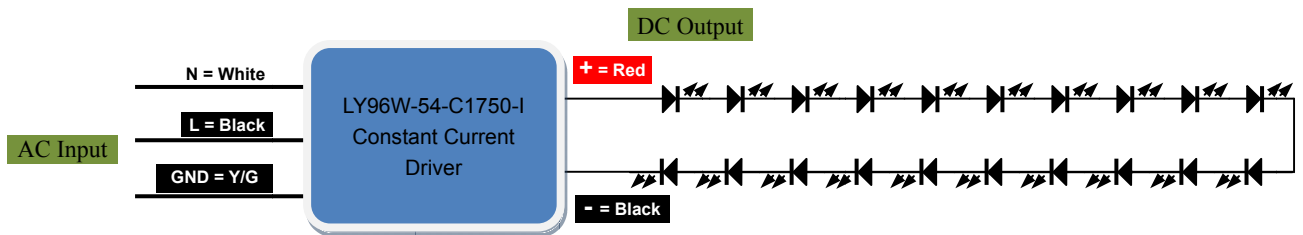
EMI Category	Standards
FCC	FCC 47CFR Part 15, ANSI C63.4: 2009
CE	EN55015:2013+A1:2015
	EN 61000-3-2:2014, EN 61000-3-3:2013
Energy Star	Energy Star transient protection: Ballast or driver shall comply with ANSI/IEEE C62.41.1-2002 and ANSI/IEEE C62.41.2-2002, Category A operation. The line transient shall consist of seven strikes of a 100KHZ ring wave, 2.5KV level, for both common mode and differential mode.
EMS Category	Notes
EN 61000-4-2	Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV 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 4 kV, line to earth 6 kV
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.

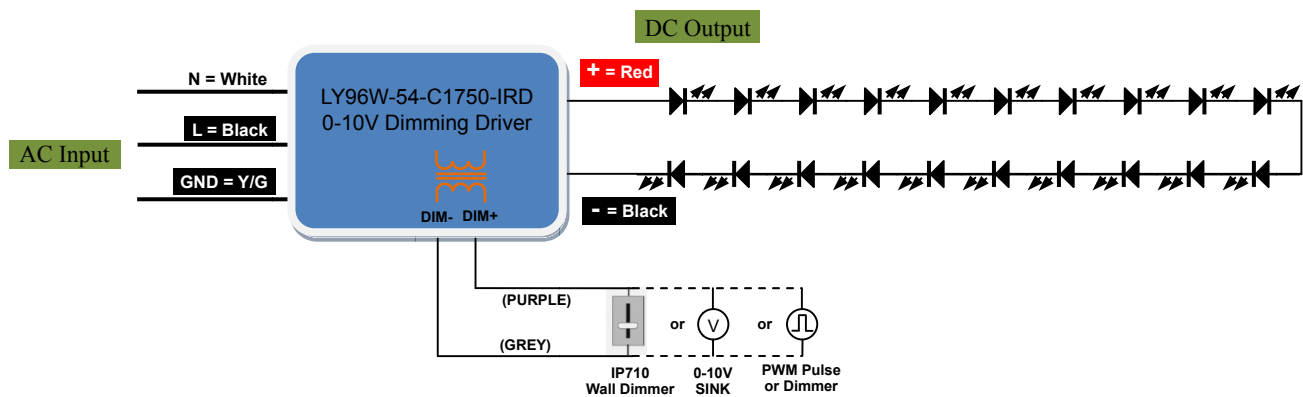
Typical Applications

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

■ Constant Current Driver



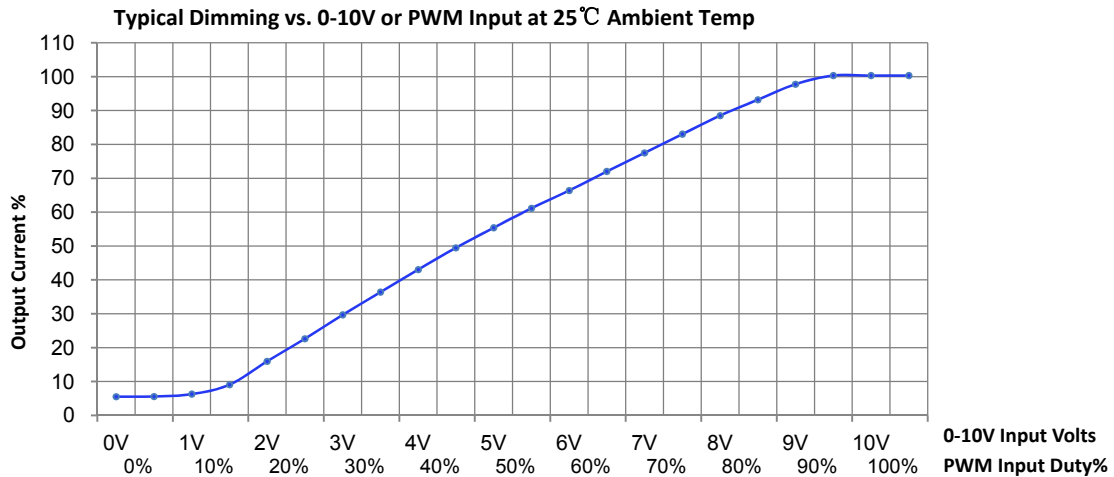
■ 0-10V or PWM Dimming Driver



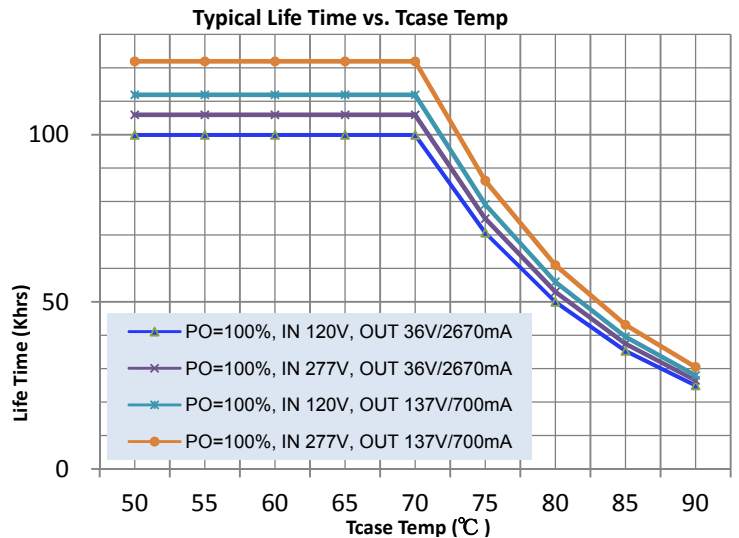
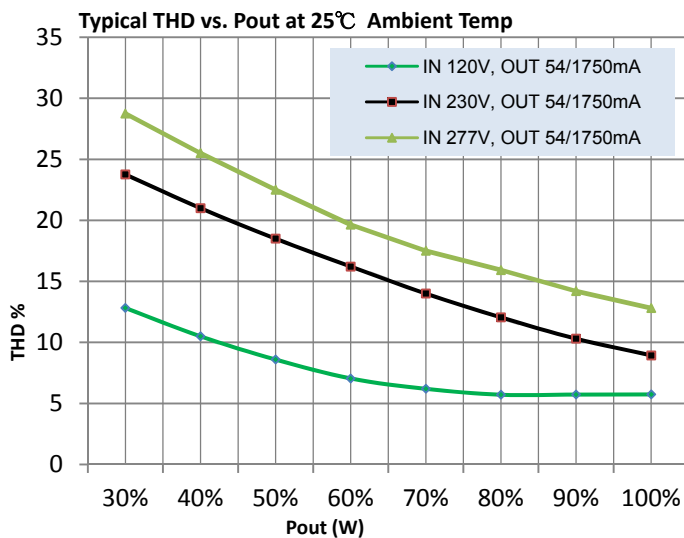
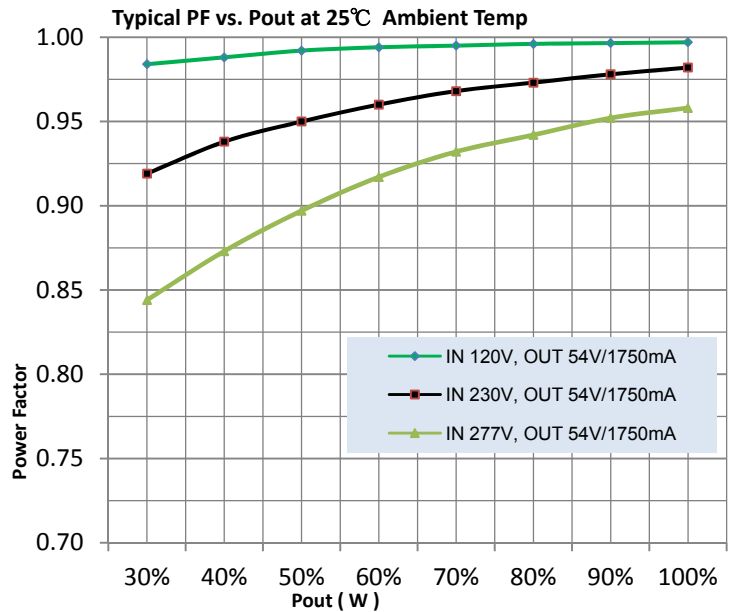
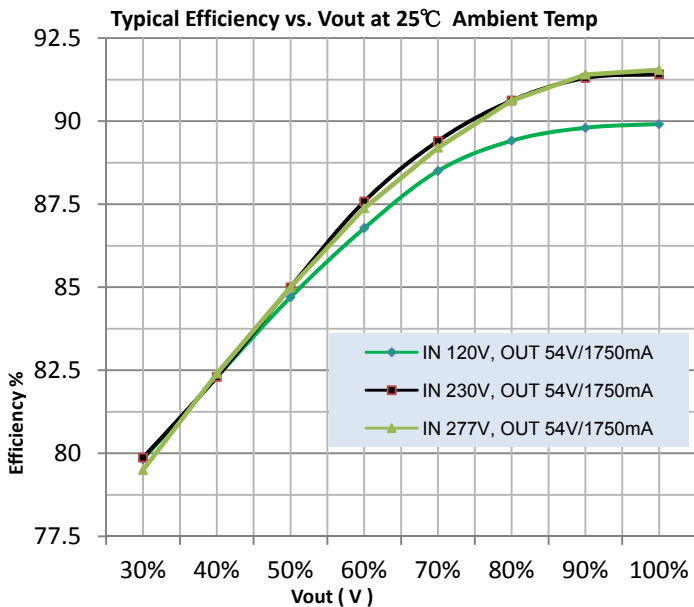


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Characteristic Curve



Installation**■ Cable used in Dry & Damp Location:**

AC input for connection the three cores ANSI/UL2733/AWG18 temperature 105 °C core copper wire.

Cable Length: 150mm, stripping on the tin: 10mm.

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

DC output for connection the two cores ANSI/UL2733/AWG18 temperature 105 °C core copper wire.

Cable Length: 150mm, stripping on the tin: 10mm.

Where: DC+ — Red, DC- — Black.

The dimmer control input is the two copper wires, ANSI/UL2733/AWG22 & temperature 105 °C.

Cable Length: 150mm, stripping on the tin: 10mm.

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

■ Cable used in Wet Location:

AC input for connection the three cores ANSI/SJTW(SJOW)/AWG18 temperature 105 °C core copper wire.

Cable Length: 150mm, stripping on the tin: 10mm.

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

DC output for connection the two cores ANSI/ SJTW(SJOW)/AWG18 temperature 105 °C core copper wire.

Cable Length: 150mm, stripping on the tin: 10mm.

Where: DC+ — Red, DC- — Black.

The dimmer control input is the two copper wires, ANSI/ SJTW(SJOW)/AWG18 & temperature 105 °C.

Cable Length: 150mm, stripping on the tin: 10mm.

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

■ See size chart for product installation.**Order ID**

P/N 1: LY96W-24

Description: 96W, 24 Vdc Constant voltage, Maximum current 4000 mA, Constant voltage mode.

P/N 2: LY96W-54-C1750 - I

Description: 96W, 54 Vdc Voltage maximum, Constant current 1750 mA, Constant current mode.

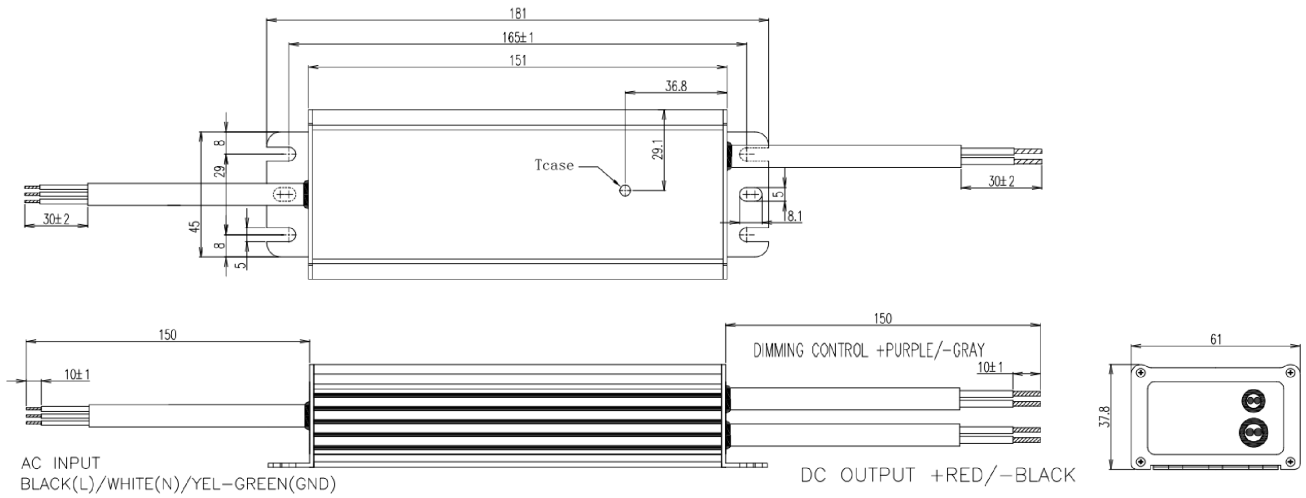
P/N 3: LY96W-54-C1750 - IRD

Description: 96W, 54 Vdc Voltage maximum, Maximum current 1750 mA, 0-10V dimming mode.

P/N 4: LY96W-54-C1750 - IPD

Description: 96W, 54 Vdc Voltage maximum, Maximum current 1750 mA, PWM dimming mode.

Product size



Note :

- The independent LED drive conforms to the EMC standard.
But it is not guaranteed to be qualified, when the drive is mounted in the LED lamp.
- Please forgive us for any discrepancy due to the update of the specifications or the upgrade of the product.
If you need the latest information, please contact our marketing department.