150 Watt — LY150W Series Rev E/F

Flicker-Free, Isolated dimming

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

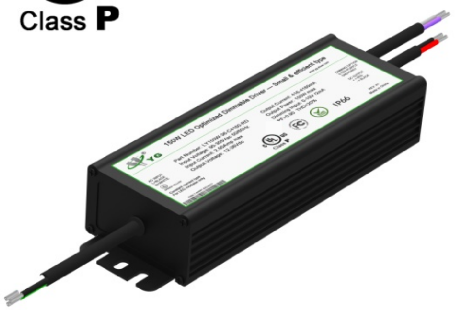
LY Series Driver is a high-performance LED driver that provides smooth, continuous <10% dimming for virtually any LED fixture, whether it requires constant current. It is the most versatile LED driver offered today due to its compatibility with a wide variety of LED arrays, multiple form factors, and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

Key Features

- Drive Mode: Constant Current, Dimming
- Technology: Active PFC Corrected 2-Stage Switch Mode.
- Input Voltage: 100 to 277 Vac (UL).
- Output Power: 150 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 433 Vdc.
- Output Current: 350 mA to 5000 mA.
- Efficiency: Up to 93%.
- Warranty: 5 years.

Enclosure

c UL us Class P c UL us



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	7.78	200.0
Case Width	2.40	61.0
Case Height	1.49	37.8
Mounting Length	7.24	184.0

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.

150W 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	LY150W-433-C0350-I	No	No	144~433 Vdc	350 mA	±5%	0.90	150W	93%	Damp, Wet	Yes	Yes	√	√	√
2	LY150W-333-C0450-I	No	No	110~333 Vdc	450 mA	±5%	0.90	150W	93%	Damp, Wet	Yes	Yes	√	√	√
3	LY150W-283-C0530-I	No	No	95~283 Vdc	530 mA	±5%	0.90	150W	93%	Damp, Wet	Yes	Yes	√	√	√
4	LY150W-214-C0700-I	No	No	70~214 Vdc	700 mA	±5%	0.90	150W	92%	Damp, Wet	Yes	Yes	√	√	√
5	LY150W-142-C1050-I	No	No	47~142 Vdc	1050 mA	±5%	0.90	150W	92%	Damp, Wet	Yes	Yes	√	√	√
6	LY150W-107-C1400-I	No	No	36~107 Vdc	1400 mA	±5%	0.90	150W	92%	Damp, Wet	Yes	Yes	√	√	√
7	LY150W-85-C1750-I	No	No	28~85 Vdc	1750 mA	±5%	0.90	150W	92%	Damp, Wet	Yes	Yes	√	√	√
8	LY150W-71-C2100-I	No	No	24~71 Vdc	2100 mA	±5%	0.90	150W	92%	Damp, Wet	Yes	Yes	√	√	√
9	LY150W-61-C2450-I	No	No	20~61 Vdc	2450 mA	±5%	0.90	150W	91%	Damp, Wet	Yes	Yes	√	√	√
10	LY150W-53-C2800-I	No	No	18~53 Vdc	2800 mA	±5%	0.90	150W	91%	Damp, Wet	Yes	Yes	√	√	√
11	LY150W-48-C3150-I	No	No	16~48 Vdc	3150 mA	±5%	0.90	150W	91%	Damp, Wet	Yes	Yes	√	√	√
12	LY150W-42-C3500-I	No	No	14~42 Vdc	3500 mA	±5%	0.90	150W	90%	Damp, Wet	Yes	Yes	√	√	√

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Product Release Date: 2014.06
Product Updates Date: 2020.02.25

13	LY150W-35-C4200-I	No	No	12~35 Vdc	4200 mA	±5%	0.90	150W	90%	Damp, Wet	Yes	Yes	√	√	√
14	LY150W-30-C4900-I	No	No	10~30 Vdc	4900 mA	±5%	0.90	150W	89%	Damp, Wet	Yes	Yes	√	√	√
15	LY150W-25-C5950-I	No	No	8~25 Vdc	5950 mA	±5%	0.90	150W	88%	Damp, Wet	Yes	Yes	√	√	√

150W 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	LY150W-433-C0350-IYY	No	No	144~433 Vdc	35-350 mA	±5%	0.90	150W	93%	Damp, Wet	Yes	Yes	√	√	√
2	LY150W-333-C0450-IYY	No	No	110~333 Vdc	45-450 mA	±5%	0.90	150W	93%	Damp, Wet	Yes	Yes	√	√	√
3	LY150W-283-C0530-IYY	No	No	95~283 Vdc	53-530 mA	±5%	0.90	150W	93%	Damp, Wet	Yes	Yes	√	√	√
4	LY150W-214-C0700-IYY	No	No	70~214 Vdc	70-700 mA	±5%	0.90	150W	92%	Damp, Wet	Yes	Yes	√	√	√
5	LY150W-142-C1050-IYY	No	No	47~142 Vdc	105-1050 mA	±5%	0.90	150W	92%	Damp, Wet	Yes	Yes	√	√	√
6	LY150W-107-C1400-IYY	No	No	36~107 Vdc	140-1400 mA	±5%	0.90	150W	92%	Damp, Wet	Yes	Yes	√	√	√
7	LY150W-85-C1750-IYY	No	No	28~85 Vdc	175-1750 mA	±5%	0.90	150W	92%	Damp, Wet	Yes	Yes	√	√	√
8	LY150W-71-C2100-IYY	No	No	24~71 Vdc	210-2100 mA	±5%	0.90	150W	92%	Damp, Wet	Yes	Yes	√	√	√
9	LY150W-61-C2450-IYY	No	No	20~61 Vdc	245-2450 mA	±5%	0.90	150W	91%	Damp, Wet	Yes	Yes	√	√	√
10	LY150W-53-C2800-IYY	No	No	18~53 Vdc	280-2800 mA	±5%	0.90	150W	91%	Damp, Wet	Yes	Yes	√	√	√
11	LY150W-48-C3150-IYY	No	No	16~48 Vdc	315-3150 mA	±5%	0.90	150W	91%	Damp, Wet	Yes	Yes	√	√	√
12	LY150W-42-C3500-IYY	No	No	14~42 Vdc	350-3500 mA	±5%	0.90	150W	90%	Damp, Wet	Yes	Yes	√	√	√
13	LY150W-35-C4200-IYY	No	No	12~35 Vdc	420-4200 mA	±5%	0.90	150W	90%	Damp, Wet	Yes	Yes	√	√	√
14	LY150W-30-C4900-IYY	No	No	10~30 Vdc	490-4900 mA	±5%	0.90	150W	89%	Damp, Wet	Yes	Yes	√	√	√
15	LY150W-25-C5950-IYY	No	No	8~25 Vdc	595-5950 mA	±5%	0.90	150W	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	---	---	1.60 A	Measured at 120 Vac / 60Hz Input, Output Full Load.
	---	---	0.84 A	Measured at 230 Vac / 50Hz Input, Output Full Load.
	---	---	0.74 A	Measured at 277 Vac / 60Hz Input, Output Full Load.
Inrush Current (Peak)	---	50 A / 3uS	55 A / 3.5uS	Measured at 120 Vac / 60Hz Input, Output Full Load.
	---	90 A / 3uS	95 A / 4.0uS	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

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	1 mA	2 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	335,000 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

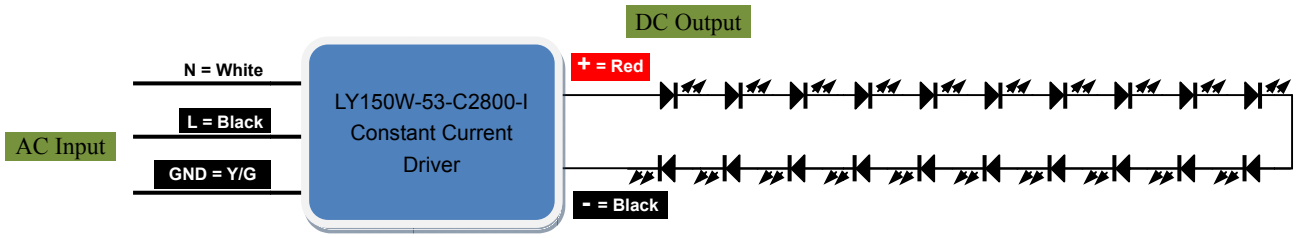
EMI Category	Standards
FCC	FCC 47CFR Part 15, ANSI C63.4: 2009
CE	EN55015:2013+A1:2015
	EN 61000-3-2:2014, EN 61000-3-3:2013
Energy Star	Energy Star transient protection: Ballast or driver shall comply with ANSI/IEEE C62.41.1-2002 and ANSI/IEEE C62.41.2-2002, Category A operation. The line transient 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.

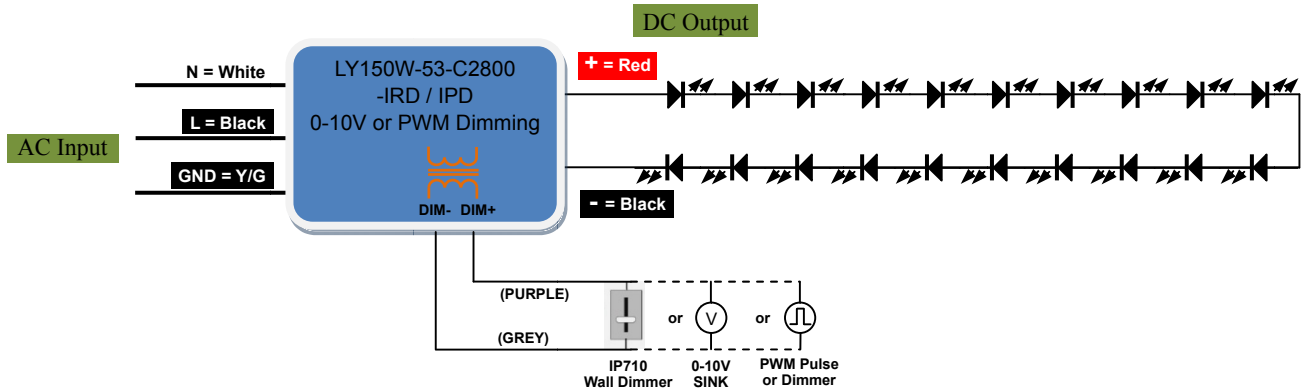
Typical Applications

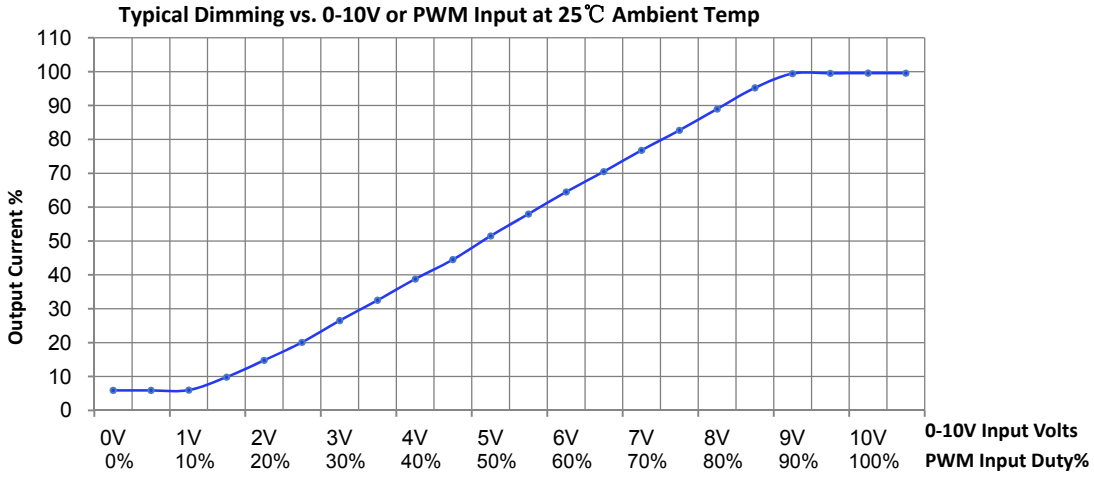
LED Forward voltage: V_F = 3.0V~3.5V

■. Constant Current Driver

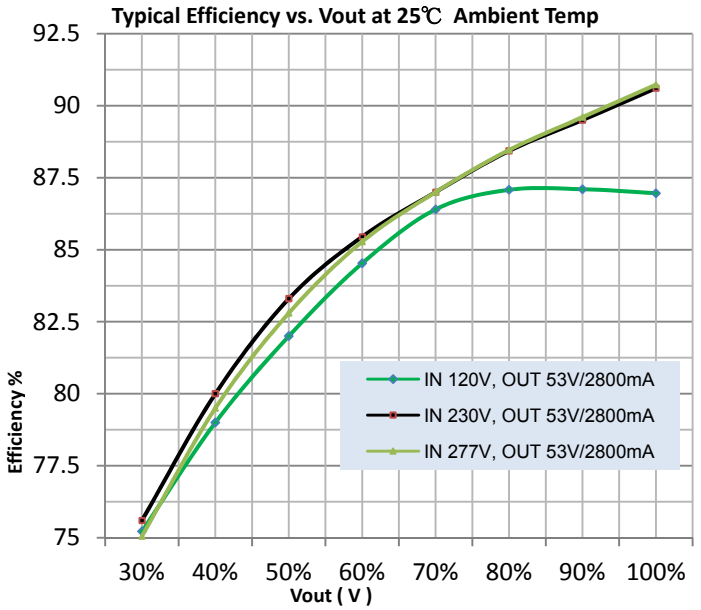


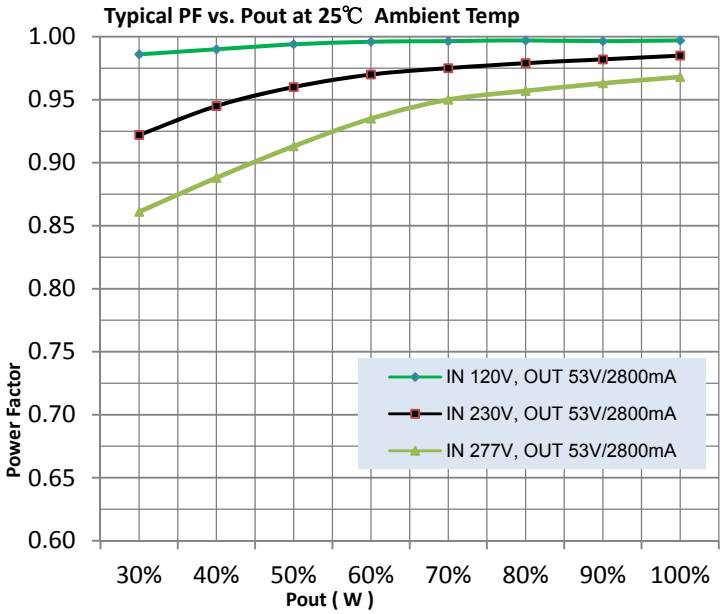
■. 0-10V or PWM Dimming Driver

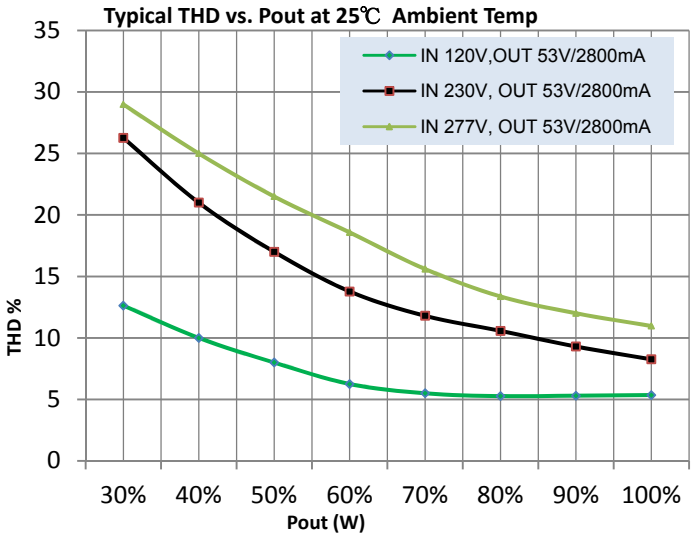


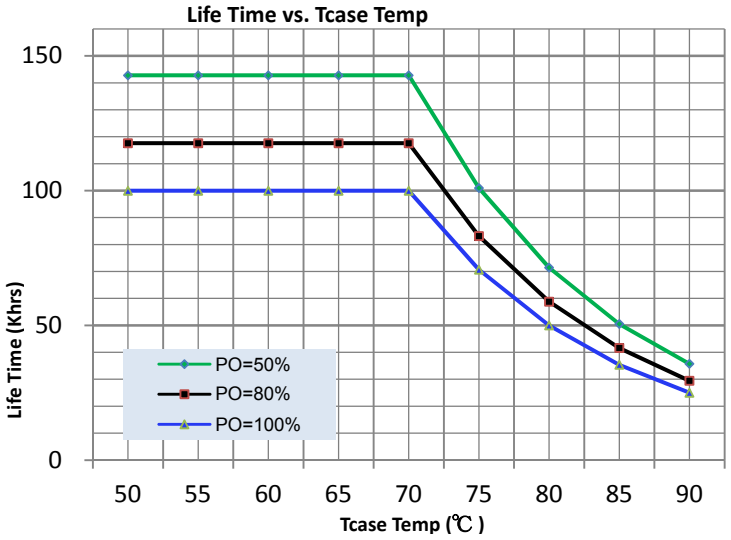


Characteristic Curve









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Email: wgm@yg-driver.com Skype: yg-wgm Web: www.yg-driver.com
Product Release Date: 2014.06
Product Updates Date: 2020.02.25

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.

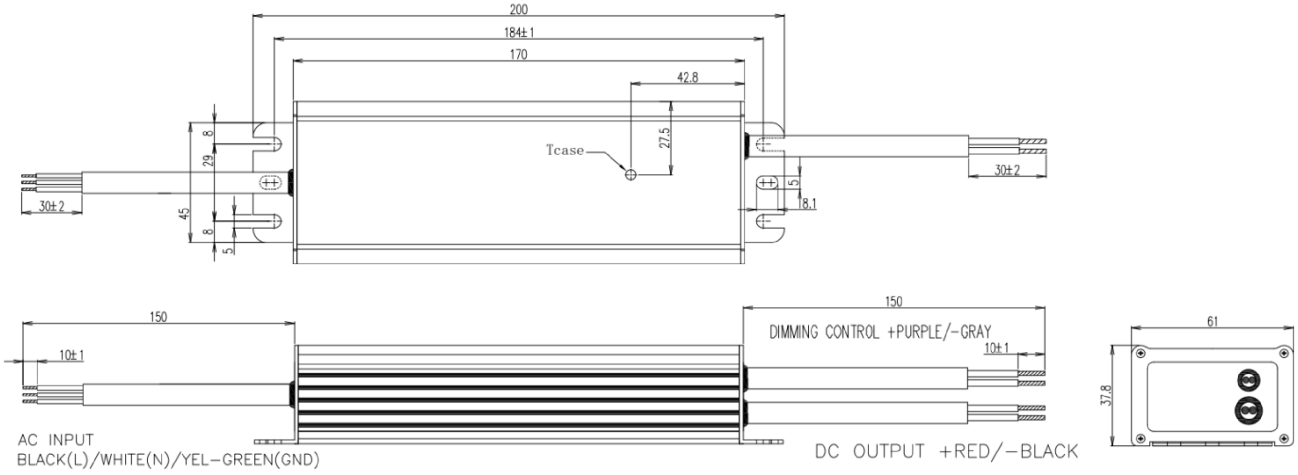
Order ID

P/N 1: LY150W-53-C2800 - I
Description: 150W, 53 Vdc Voltage maximum, Constant current 2800 mA, Constant current mode.

P/N 2: LY150W-53-C2800 -IRD
Description: 150W, 53 Vdc Voltage maximum, Maximum current 2800 mA, 0-10V dimming mode.

P/N 3: LY150W-53-C2800 - IPD
Description: 150W, 53 Vdc Voltage maximum, Maximum current 2800 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.