

SPECIFICATION

Product name : LBS-60W-150X

Release date : 2024/06/24

	Product Type	LED INTEGRATED SPECIAL DRIVER		
	Product Series	LBS-60W-150X Series	REV	V1.0

Features

- Class I type for insulation
- Input voltage range:120-277V ~ 50/60Hz
- Efficiency 92% (Typ.)
- Constant current output ,with power limitation for control mode
- Metal material case, protection grade against water and dust: IP42
- Surge level:
 - differential mode : 4kV
 - common mode :6kV
- Function available:
 - Output current is dimmed by external potentiometer (Only Type A)
 - Output current is dimmed by Isolated 3 in 1 dimmer (Only Type P)
 - Output current is dimmed by light intensity (Only Type L)
- guaranteed Lifetime : 5 years



Applications

Middle and high-end shoebox light, wall light, floodlight flat mining light, three anti light, plant light

Model list

Model NO.	Rated Input voltage	Max Output power	Output voltage	The default current	Eff.
LBS-60W-150A LBS-60W-150P LBS-60W-150L	120-277V 50/60Hz (Power reduction when the input is less than 120Vac)	60W	80-150Vdc Rated Power (100-150V)	0.35A	≥92%

Note:

1. Test conditions: Ta=25℃, under 230Vac input,after running for 30 minutes with full load .
2. When the input is less than 95±5Vac, the output power gradually decreases,and it recovers full power of 60W when the input is above 100VAC again. Please refer to “THE OUTPUT POWER VS INPUT VOLTAGE” curve chart for details.

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Input characteristics

Parameter	Min	Typ.	Max	Remark
Rated input voltage	120Vac	230Vac	277Vac	-
Input voltage range	90Vac	-	305Vac	-
Rated frequency range	47Hz	50/60Hz	63Hz	-
Power factor	0.95	-	-	@230Vac input ,with full load
Power factor	0.9	-	-	@100-277Vac input ,with 70%-100%
T.H.D.	-	-	10%	@230Vac input ,with full load
T.H.D.	-	-	20%	@100-277Vac input ,with 70%-100%
Input current	-	-	0.75A	@90Vac input ,with full load
Inrush current	-	-	70A	230Vac, cold start (25℃)

Output characteristics

Parameter	Min	Typ.	Max	Remark
Rated current	-	0.35A	-	-
Output current range	0.25A	-	0.5A	-
Output voltage range	80V		150V	Constant power output range:100-150Vdc
Available power(100-120Vac)	-	48W	-	When the input voltage is less than 120Vac, the derating is 20%
Rated power(120-277Vac)	-	60W	-	-
No-load voltage	-	-	180V	-

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Output characteristics

Parameter	Min	Typ.	Max	Remark
Efficiency@230Vac	-	92%	-	@230Vac input ,with full load
Accuracy of output current	-3%	-	+3%	For constant-power range , with full load
Output current ripple (PK-AV)		5%	10%	100% load, 20 MHz BW
Line regulation	-3%	-	+3%	full load
Load regulation	-3%	-	+3%	full load
Starting time	-	-	500ms	Full load@230Vac

Note: 1.The output current is limited by the input and output voltage, please refer to “I-V WORKING AREA” for details;

Dimming characteristics

Dimming function		Min	Typ.	Max	Instructions
1-10V Dimming (Optional)	Safe operation voltage range	1V	-	12V	Beyond the range may lead to a failure of the driver.
	Dimming output range	10%	-	100%	-
	Rated operation voltage range	1V	-	10V	-
PWM Dimming (Optional)	PWM high level	9.5V	-	10.5V	-
	PWM low level	0V	-	0.3V	-
	Rated dimming frequency	300Hz	-	2000Hz	-
	PWM duty cycle	10%	-	99%	full power output at 99%duty cycle
Resistor Dimming (Optional)	Rated external resistance value	10KΩ	-	100KΩ	-
	Dimming output range	10%	-	100%	-

Note:

- 1.Output current of dimming port: 100uA (typical value).
- 2.The maximum operation voltage for the dimming port is 12V. Wrong voltage beyond the range or a reverse connection may lead to a critical failure of the driver.
- 3.1-10V dimming, when the dimming signal is 0V, Vout drops to 40% of the rated voltage, the lamp board discharges through the Y capacitor, and there is a slight bright phenomenon (afterglow).

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Protections

Protection	description
under-voltage protection	When the input voltage is less than $95 \pm 5V_{ac}$, the output power decreases.Refer to derating curve for details
Output overload protection	Protection mode:hiccup mode,and recovers automatically when the fault condition is removed.
Output short circuit protection	Hiccup mode,and recovery automatically when the fault condition is removed.
Over temperature protection	Self-recoverable type; When the casing temperature is greater than $90 \pm 5^{\circ}C$, the output power decreases as the casing temperature increases
Output over-voltage protection	Protection mode:Hiccup or clamp at a certain output highest voltage state, the product will not be damaged, when the fault is removed, the driver works normally

Note:

1. Unless otherwise specified, all parameters should be measured at the condition of 230Vac (50Hz) input ,with rated load ,and ambient temperature of 25°C;
2. Including setting error, linear adjustment rate and load adjustment rate;

Environmental characteristics

Environmental categories	Parameter
Working temperature	-40 ~ +55°C@100-277Vac((Refer to "Service Life Curve"))
Safety case temperature	-40 ~ 90°C
Working humidity	20 ~ 95% RH,non-condensing
Storage temperature、humidity	-40~+80°C, 10 ~ 95% RH
Resistant to vibration	10 ~ 500Hz, 5G 12 min/cycle, X, Y, Z axis 72 min each
MTBF	230Khrs min. MIL-HDBK-217F (Ta=25°C)
Lifetime	50000 hours @230Vac,80% load, Tcase=75°C,.Refer to” Tcase VS Lifetime” curve for details.

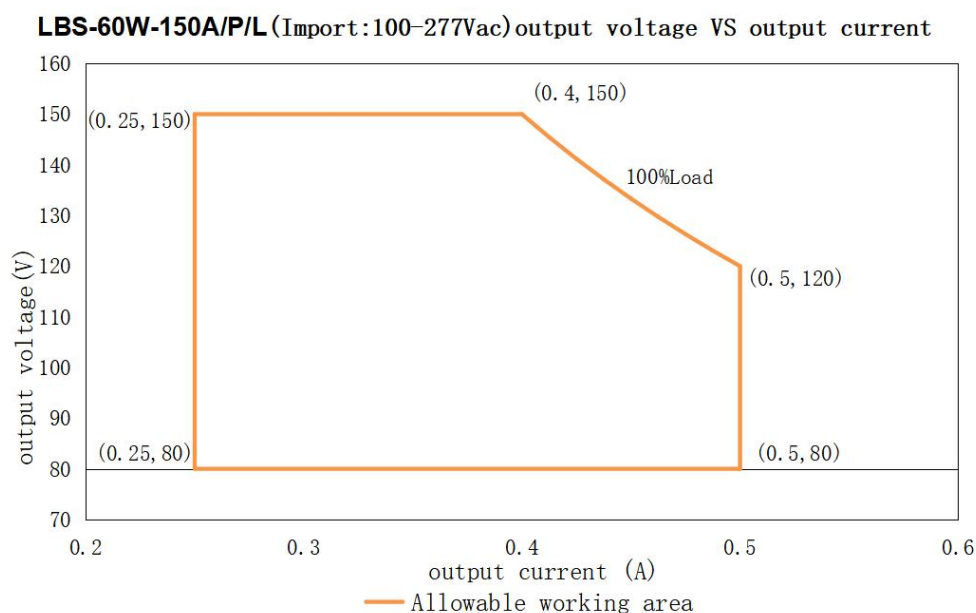
Safety and EMC

Safety categories	Standard
Safety	GB19510.1、GB19510.14、EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS61347.2.13、EN 62384;
EMC	EN 55015、EN 61547、EN 61000-3-2、GB/T 17743、GB17625.1、EN 61000-3-3
Surge level	Differential mode L-N $\pm 4\text{KV}(2\Omega)$, common mode L, N-PE $\pm 6\text{KV}(12\Omega)$ Refer to IEC61000-4-5 2014
High-pot test	I/P-PE: 1.5KVac I/P-DIM: 3.75KVac
Insulation impedance	I/P-PE: $10\text{M}\Omega / 500\text{VDC}$; I/P-O/P: $10\text{M}\Omega / 500\text{VDC} / 25^\circ\text{C} / 70\% \text{RH}$
Leakage current	$<0.7\text{mA}@277\text{Vac}$

Note:

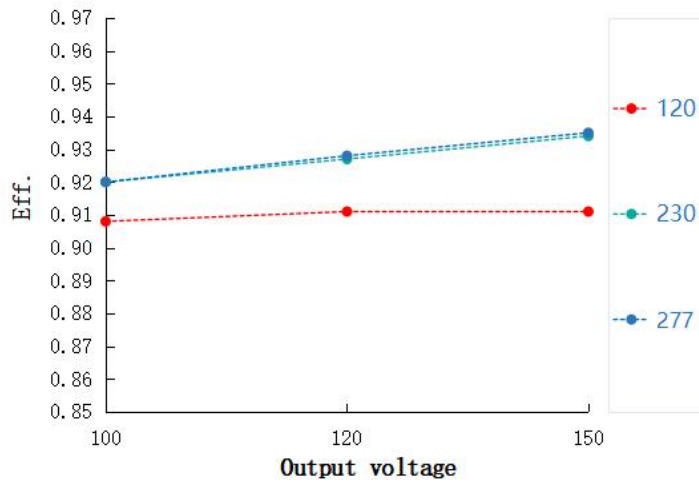
1.Attention! As a component of the whole, the EMC performance of the final product is not only decided by the driver, even if the driver is well-designed and fulfil all the required compliance. The final equipment manufacturers must re-qualify EMC Directive on the complete product.

I-V Working area

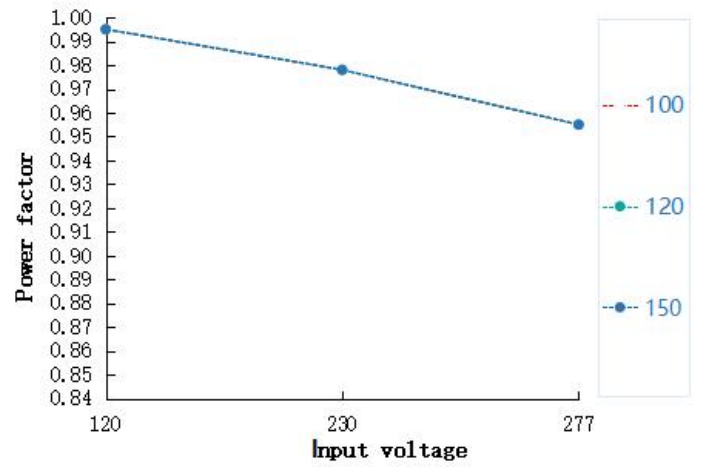


Load	Output								
Load working Voltage	80V	90V	100V	110V	120V	130V	140V	150V	
Io_MAX	0.5A	0.5A	0.5A	0.5A	0.5A	0.461A	0.428A	0.4A	
Po_MAX	40W	45W	60W	60W	60W	60W	60W	60W	

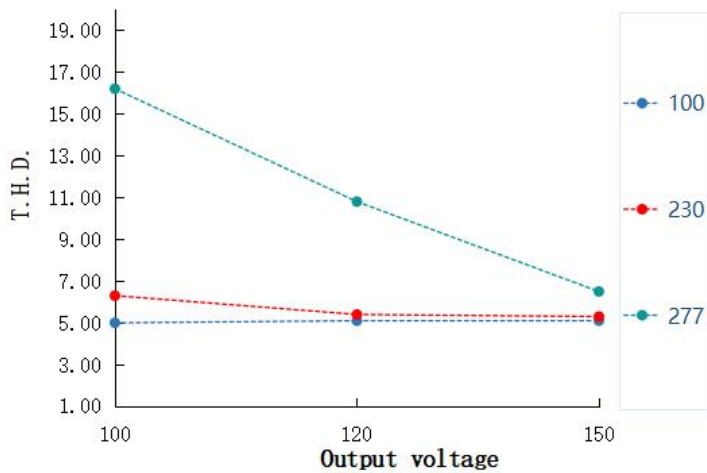
Eff. VS Output voltage



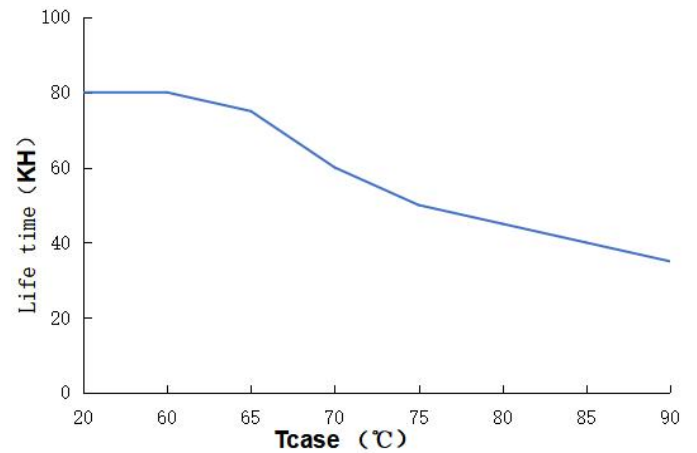
Power factor VS Input voltage



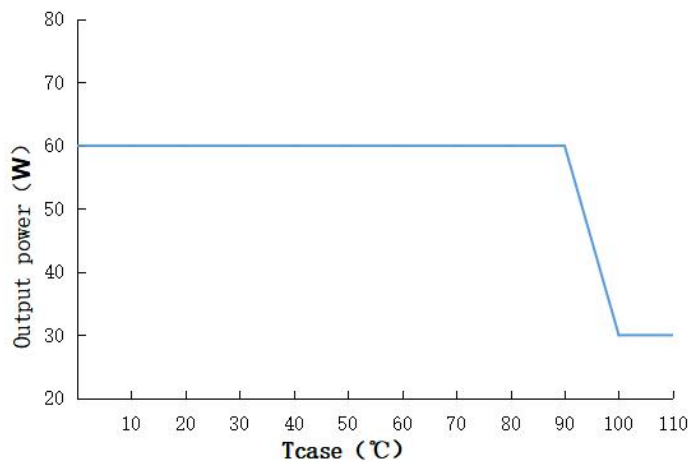
T.H.D. VS Output voltage



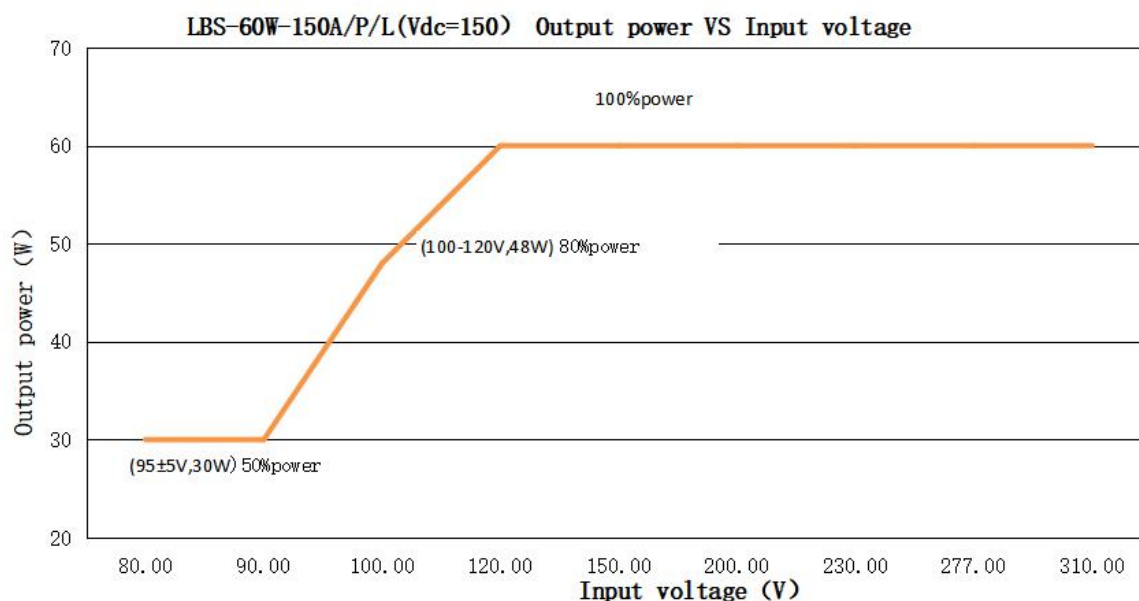
Tcase VS Life time



Output power VS Tcase



Output power VS Input voltage



LBS-60W-150X(For output 150Vdc, the rated output current & power under different input voltage)

Input Voltage	90Vac	100Vac	108Vac	120Vac	180Vac	230Vac	277Vac	305Vac
Io	0. 2A	0. 32A	0. 32A	0. 4A	0. 4A	0. 4A	0. 4A	0. 4A
Po	30W	48W	48W	60W	60W	60W	60W	60W

Note:

1. If the input voltage is lower than 120Vac, adjust the potentiometer to derate 80% power. If the input voltage is higher than 120VAC, adjust the potentiometer to restore the full power of 60W.

Light illuminance value standard (LUX)

testing environment	Start illumination value(LUX)	Turn off the illumination value (LUX)
natural light	≤70	≥140

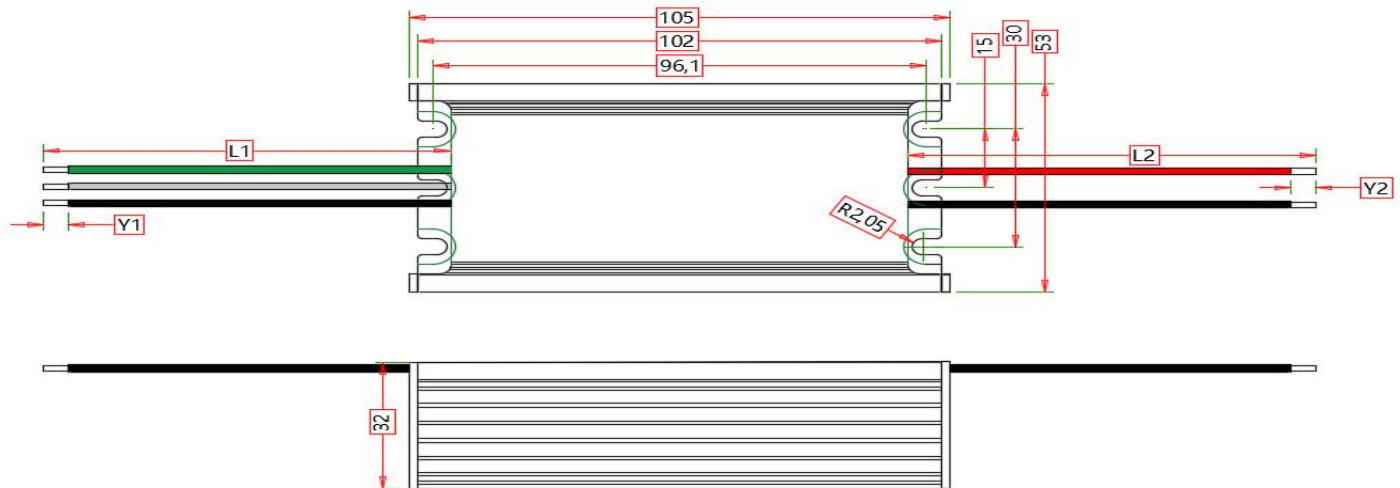
Note:

1.This value is the test data in the open air with the optical sensor head facing 90° up. This test value standard is for reference only

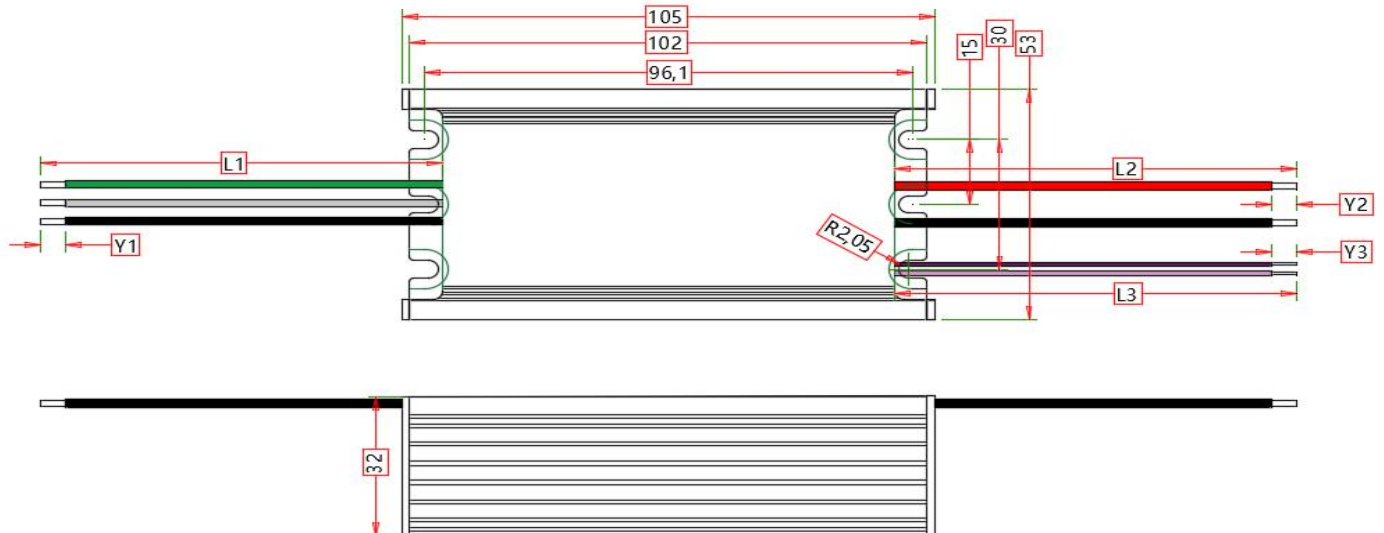
Mechanical specification

Size (mm)	L105mm*W53mm*H32mm
Weight (Kg)	0.248KG
Packaging (mm)	

LBS-40W-150A



LBS-40W-150P



Type	Input Wire	Output Wire	Dimming Wire & AUX Output Wire
Specifications	PVC Electronic UL1015 18AWGPVC 300V,105°C OD:2.8mm	Electronic UL1015 18AWGPVC 300V,105°C OD:2.8mm	ElectronicUL1569 22AWG 300V,105C OD:1.6mm
Color	AC-L(Black); AC-N(White) PG(Green/Yellow Green)	LED+(Red);LED-(Black)	DIM+(Purple);DIM-(Pink)
Length	300±10mm (L1)	300±10mm (L2)	300±10mm (L3)
Tinned	5±1mm (Y1)	5±1mm (Y2)	5±1mm (Y3)

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Version

DATE	DESCRIPTION	REV.	CHECK
2024.06.24	Initial version.	V1.0	