

SPECIFICATION

Product name : HBE-100D-150X

Release date : 2024/10/7

SUNCOM	Product Type	LED INTEGRATED SPECIAL DRIVER		
	Product Series	HBG-100D-150X Series	REV	V1.1

Features

- Class I type for insulation
- Input voltage range:320-480Vdc
- Efficiency 95% (Typ.)
- Constant current output ,with power limitation for control mode
- Metal material case, protection grade against water and dust: IP67
- 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)
- guaranteed Lifetime : 5 years

Applications

High-end shoebox light, wall light, floodlight flat mining light,
Street lights, tunnel lights

Model list

Model NO.	Rated Input voltage	Max Output power	Output voltage	The default current	Eff.
HBG-100D-150A HBG-100D-150P	320-480Vdc	100W	90-150Vdc Rated Power (100-150Vdc)	0.8A	≥95%

Note:

1. Test conditions: If not specified, all specification parameters are measured at 400Vdc input, rated load, and ambient temperature of 25 ° C.
2. When the input is lower than 300±20Vdc, the output power is halved, and when the input is higher than 320Vdc again, the work will resume; Special attention should be paid to the application, please refer to the input voltage VS output power diagram.

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Input characteristics

Parameter	Min	Typ.	Max	Remark
Rated input voltage	-	400Vdc	-	-
Input voltage range	320Vdc	-	480Vdc	-
Input current	-	-	0.708A	@320Vdc input ,with full load
Inrush current	-	-	100A	400Vdc input ,with full load (cold start)

Output characteristics

Parameter	Min	Typ.	Max	Remark
Rated current	-	0.8A	-	-
Output current range	0.5A	-	1A	-
Output voltage range	90Vdc	-	150Vdc	Constant power:100-150VDC
Rated power	-	100W	-	-
No-load voltage	-	-	169V	-
Efficiency@400Vdc	-	95.5%	-	full load
Current accuracy	-5%	-	+5%	full load
Line regulation	-5%	-	+5%	full load
Load regulation	-3%	-	+3%	full load
Starting time	-	-	500ms	Full load@400Vdc

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

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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).

Protections

Protection	description
under-voltage protection	When the input voltage is less than $300 \pm 20\text{Vdc}$, the output power is halved, and when the input is higher than 320Vdc again, the work resumes.
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	Could recover automatically; when the temperature of the case is greater than $90 \pm 5^\circ\text{C}$, the output power decreases to a half.
Output over-voltage protection	Protection mode:Hiccup or clamp at a certain output highest voltage state,when the fault is removed, the driver works normally

Note:

1. Unless otherwise specified, all parameters should be measured at the condition of 400Vdc input ,with rated load ,and ambient temperature of 25°C;
2. Including setting error, linear adjustment rate and load adjustment rate;

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Environmental characteristics

Environmental categories	Parameter
Working temperature	-40 ~ +55°C Vin@400Vdc((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, Vin@400Vdc, 80% load, shell temperature 75°C,.Refer to" Tcase VS Lifetime" curve for details.

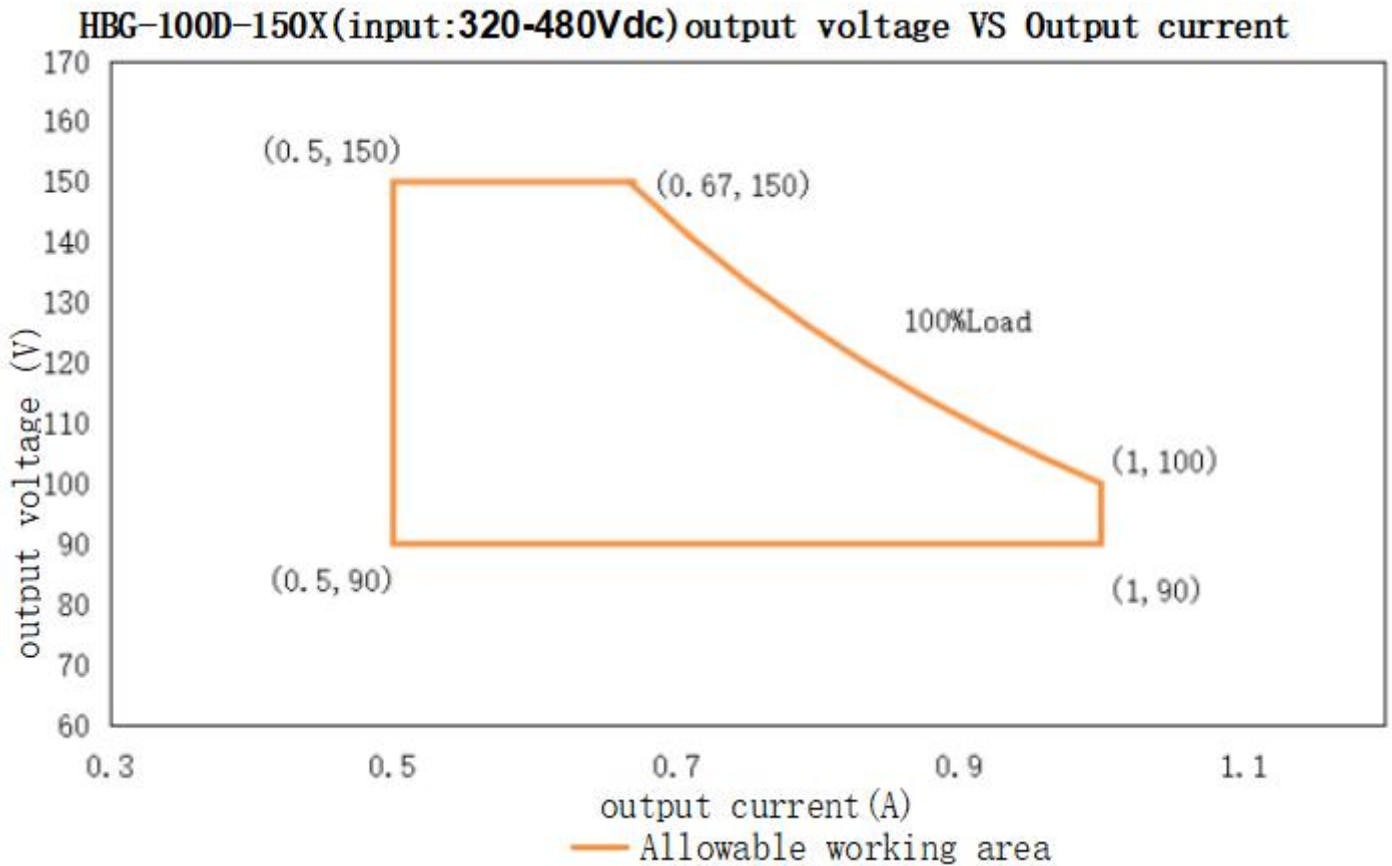
Safety and EMC

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 toIEC61000-4-5 2014
High-pot test	I/P-PE:1.5KVac O/P-PE : 0.5KVac I/P-DIM:3.75KVac
Insulation impedance	I/P-PG:100M Ohms/500Vdc
Leakage current	0.7mA@480Vdc

Note:

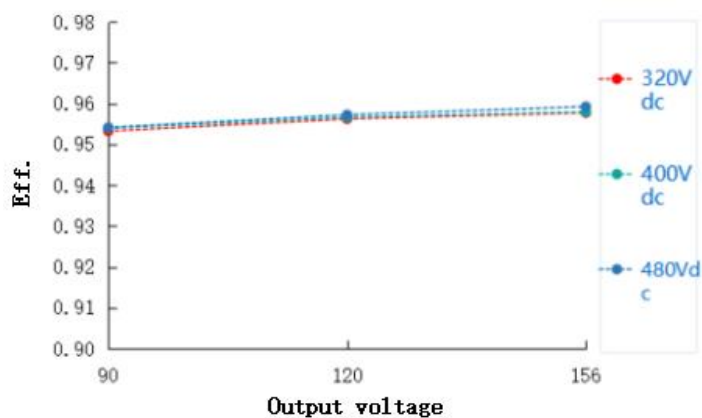
1.Attention! As a component of the whole, the EMC performance of the final product is not only decided by the driver, even if the driver is well-designed and fulfil all the required compliance. The final equipment manufacturers must re-qualify EMC Directive on the complete product.

I-V Working area

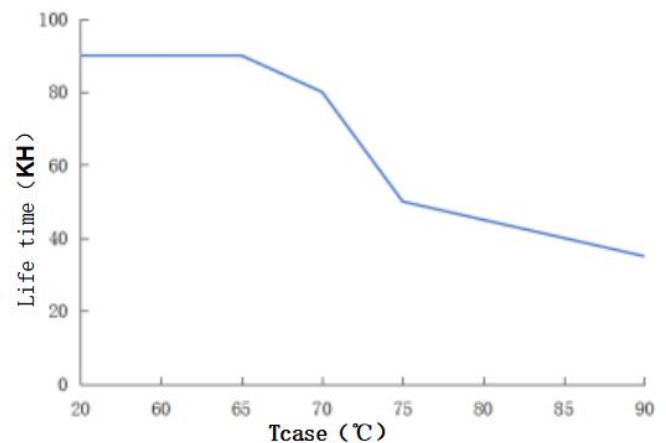


Load	Output					
Load working Voltage	100Vdc	110Vdc	120Vdc	130Vdc	140Vdc	150Vdc
Io_MAX	1A	0.909A	0.833A	0.769A	0.714A	0.67A
Po_MAX	100W	100W	100W	100W	100W	100W

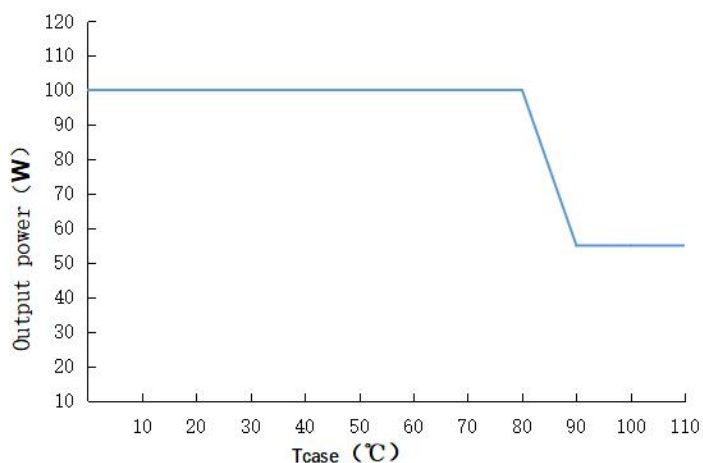
Eff. VS Output voltage



Tcase VS Life time

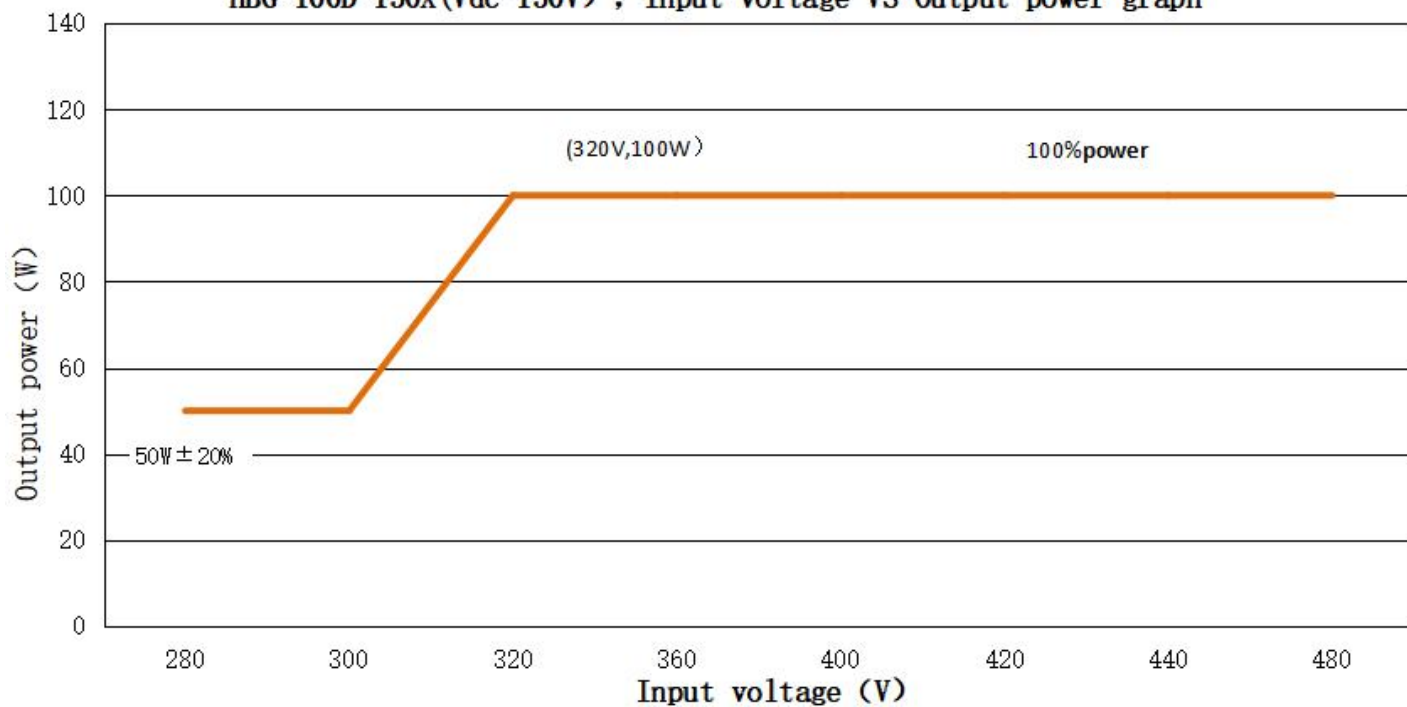


Output power VS Tcase



Output power VS Input voltage

HBG-100D-150X (Vdc=150V) , Input voltage VS Output power graph



HBG-60D-150X (Rated output current value and output power corresponding to different input voltages when the output voltage is 150Vdc)

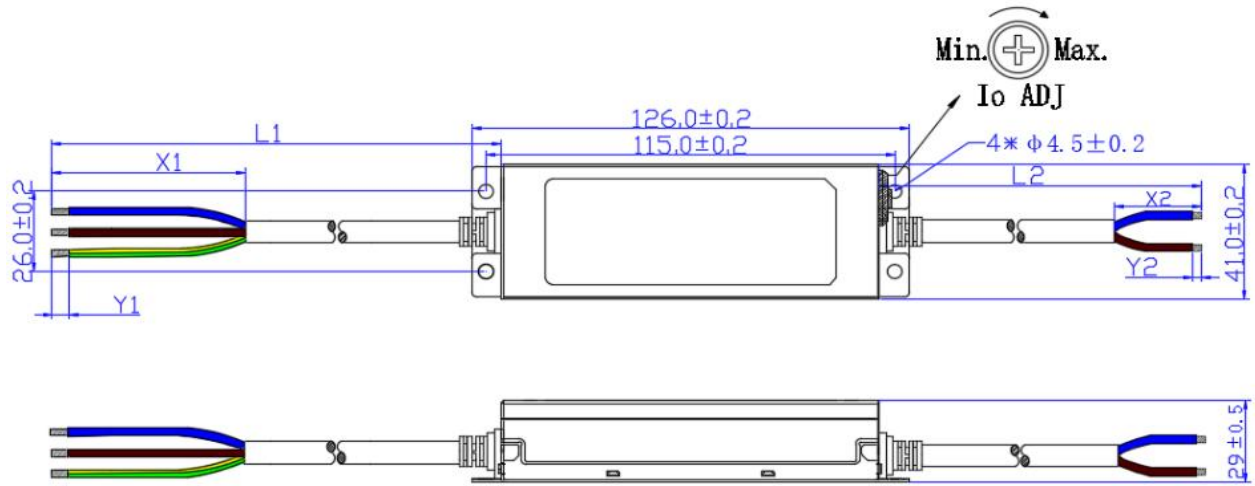
Input Voltage	300VDC	320VDC	340VDC	360VDC	380VDC	400VDC	440VDC	480VDC
Io	0.33A	0.67A	0.67A	0.67A	0.67A	0.67A	0.67A	0.67A
Po	50W	100W	100W	100W	100W	100W	100W	100W

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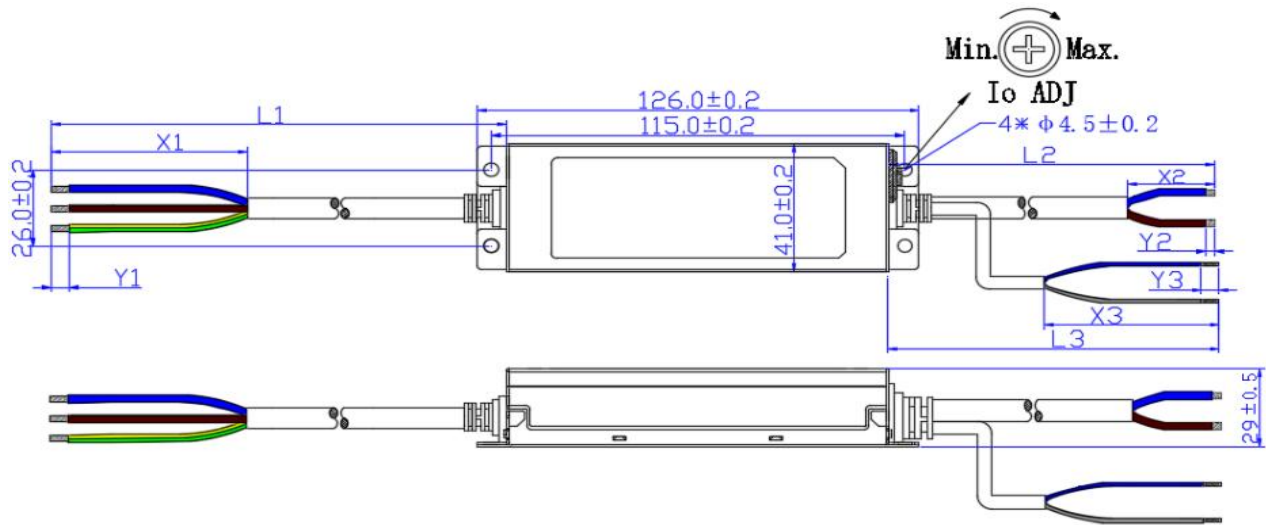
Mechanical specification

Size (mm)	L126mm*W41mm*H29mm
Weight (g)	305g
Packaging (mm)	

HBG-60D-150A



HBG-60D-150P



category	Input line specification	Output line specification	Dimming and auxiliary power cord specifications
specification	Rubber round wire HO5RN-F 3*1.0mm2 Outer diameter :7.2mm VDE/CCC/SAA	Rubber round wire HO5RN-F 2*1.0mm2 Outer diameter :6.8mm VDE/CCC/SAA	PVC sheath wire 22AWG 300V, 105°C Outer diameter :4.8mm
colour	AC-L brown; AC-N Blue PG Green/yellow-green	LED+ brown; LED- Blue	DIM+ purple; DIM-pink
exposure	440±10mm (L1)	290±10mm (L2)	290±10mm (L3)
peel off the skin	50±5mm (X1)	25±5mm (X2)	50±5mm (X3)
Wicking	10±1mm (Y1)	5±1mm (Y2)	10±1mm (Y3)

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Version

DATE	DESCRIPTION	REV.	CHECK
2024.9.26	Initial version.	V1.0	
2025.1.10	Update undervoltage point and surge rating requirements	V1.1	