

SPECIFICATION

Product name : HVS-50W-150X(RT)

Release date : 2023/10/24

	Product Type	LED INTEGRATED SPECIAL DRIVER		
	Product Series	HVS-50W-150X Series (RT)	REV	V1.0

Features

- Class I type for insulation
- Input voltage range:100-277V ~ 50/60Hz
- Efficiency 91% (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
 - Output current is dimmed by Isolated 3 in 1 dimmer
- Guaranteed Lifetime : 5 years



Applications

Street lighting、Industrial lighting、Stadium lighting
Floodlight lighting、Landscape lighting 、Plant lighting



Model list

Model NO.	Rated Input voltage	Max Output power	Output voltage	The default current	Eff.
HVS-50W-150A HVS-50W-150B HVS-50W-150XP	120-277V 50/60Hz	50W	90-150Vdc Rated Power (100-150V)	0.333A	≥91%

Note:

1. Test conditions: Ta=25°C, under 230Vac input,after running for 30 minutes with full load .
 2. When the input is less than120Vac, the output power gradually decreases to 40W, and it recoveries full power of 50W when the input is above 120VAC again.
 - 3.100-120Vac can work at rated power, but it is recommended that 100-120Vac work at 80% power to meet harmonic standards.
- 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	100Vac	-	277Vac	-
Rated frequency range	47Hz	50/60Hz	63Hz	-
Power factor	0.95	-	-	@230Vac input ,with full load
Power factor	0.9	-	-	@200-277Vac input ,with 70%-100%
T.H.D.	-	-	10%	@230Vac input ,with full load
T.H.D.	-	-	35%	@200-277Vac input ,with 70%-100%
Input current	-	-	0.30A	@200Vac input ,with full load
Inrush current	-	-	60A	230Vac, cold start (25°C)

Output characteristics

Parameter	Min	Typ.	Max	Remark
Rated current	-	0.333A	-	Rated Load :150VDC
Output current range	0.25A	-	0.50A	-
Output voltage range	90V	-	150V	Constant power output range:100-150VDC
Available power(90-120Vac)	-	40W	-	Decrease to a half once input voltage being less than 120Vac
Rated power(120-277Vac)	-	50W	-	-
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	-5%	-	+5%	For constant-power range , with full load
Line regulation	-3%	-	+3%	full load
Load regulation	-5%	-	+5%	full load
Output current ripple(PK-AV)	-	5%	15%	@20MHz BW,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.This product has 0-10V dimming function, standby power consumption >0.5W (C version only) when 0V dim-off, 1-10V dimming is recommended at the terminal use .

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Protections

Protection	description
under-voltage protection	When the input voltage is less than 75Vac, 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	Could recover automatically; when the temperature of the case is greater than 90°C, the output power decreases to a half.
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@120-277Vac((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

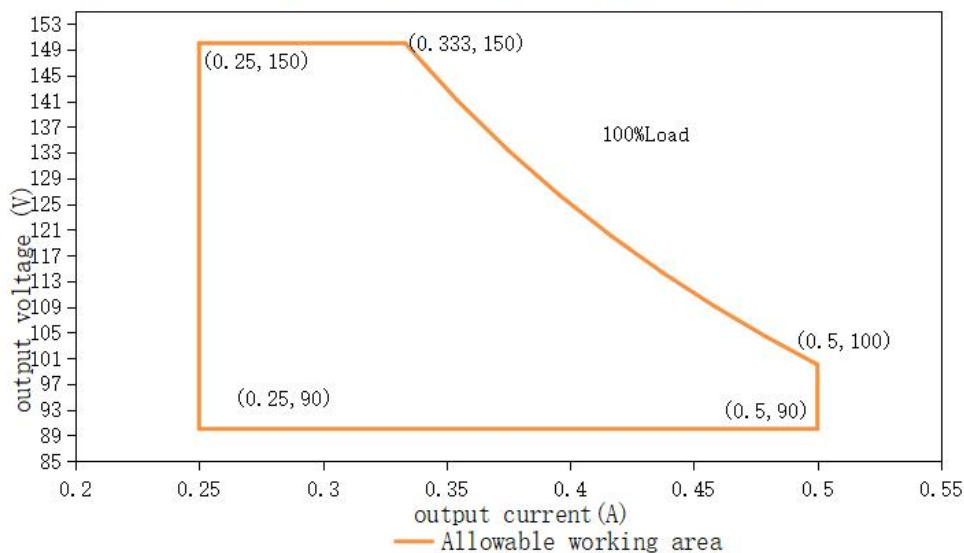
Safety categories	Standard
Safety	GB19510.1、GB19510.14、EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS61347.2.13、EN 62384;
EMC	EN 55015、EN 61547、EN 61000-3-2、GB/T 17743、GB17625.1、EN 61000-3-3
Surge level	Differential mode L-N $\pm 4\text{KV}(2\Omega)$, common mode L, N-PE $\pm 6\text{KV}(12\Omega)$ Refer to IEC61000-4-5 2014
High-pot test	IP-FG:1.5KVac
Insulation impedance	I/P-O/P:100M Ω / 500VDC
Leakage current	<0.7mA@277Vac

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.

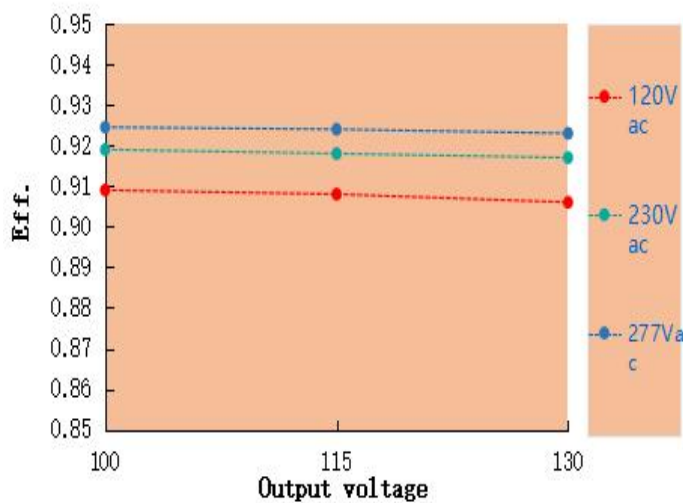
I-V Working area

HVS-50W-150X(input:100-277Vac)output voltage VS Output current

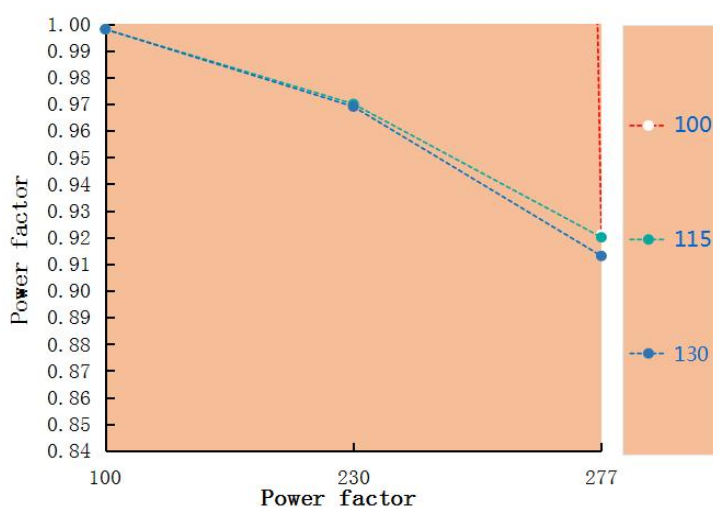


Load	Output								
Load working Voltage	90V	92V	95V	98V	100V	110V	120V	130V	150V
Io_MAX	0.50A	0.50A	0.50A	0.5A	0.5A	0.455A	0.417A	0.385A	0.334A
Po_MAX	45W	46W	47.5W	49W	50W	50W	50W	50W	50W

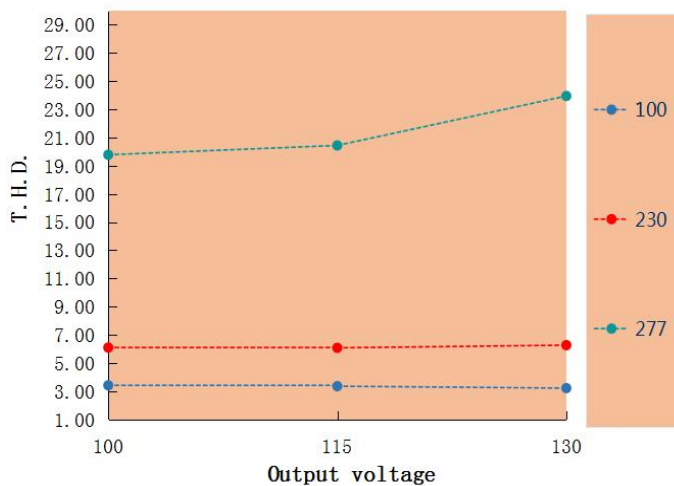
Eff. VS Output voltage



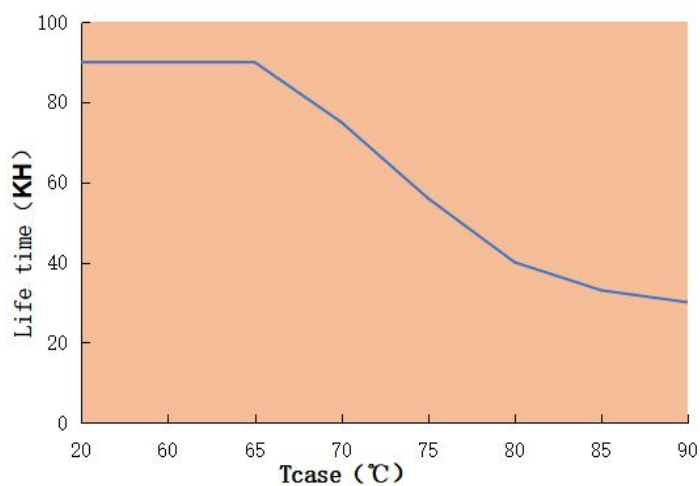
Power factor VS Input voltage



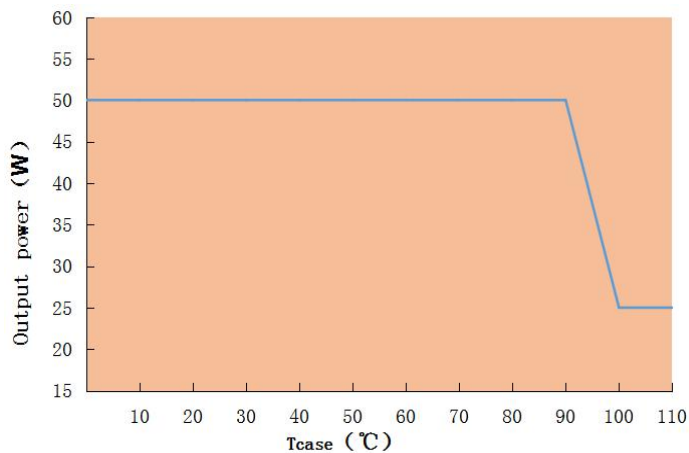
T.H.D. VS Output voltage



Tcase VS Life time

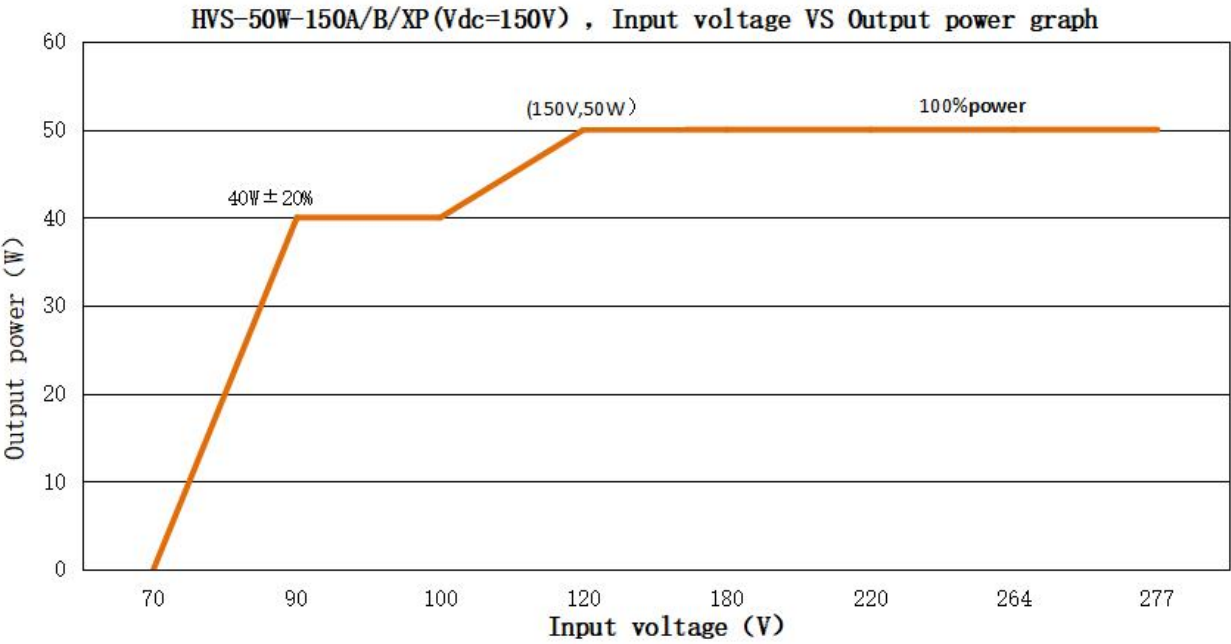


Output power VS Tcase



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Output power VS Input voltage



HVS-50W-150A/B/XP (For output 150Vdc, the rated output current & power under different input voltage)								
Input Voltage	70Vac	90Vac	100Vac	120Vac	180Vac	200Vac	230Vac	277Vac
Io	0A	0.308A	0.267A	0.333A	0.333A	0.333A	0.333A	0.333A
Po	0W	40W	40W	50W	50W	50W	50W	50W

Note:

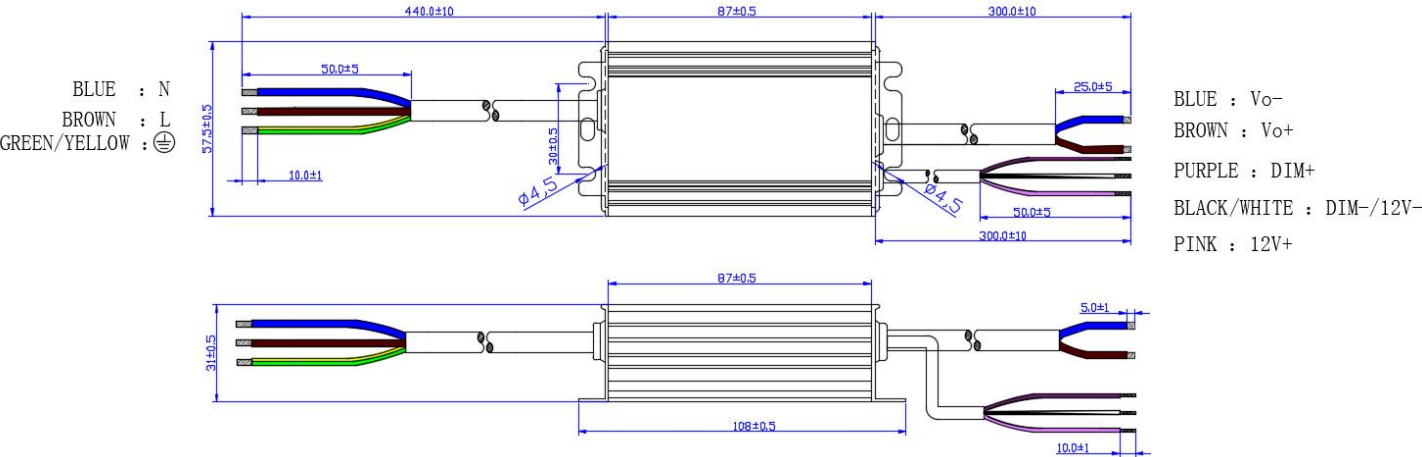
- When the input voltage is below 120±15Vac,the output power decreases to40W±20%。

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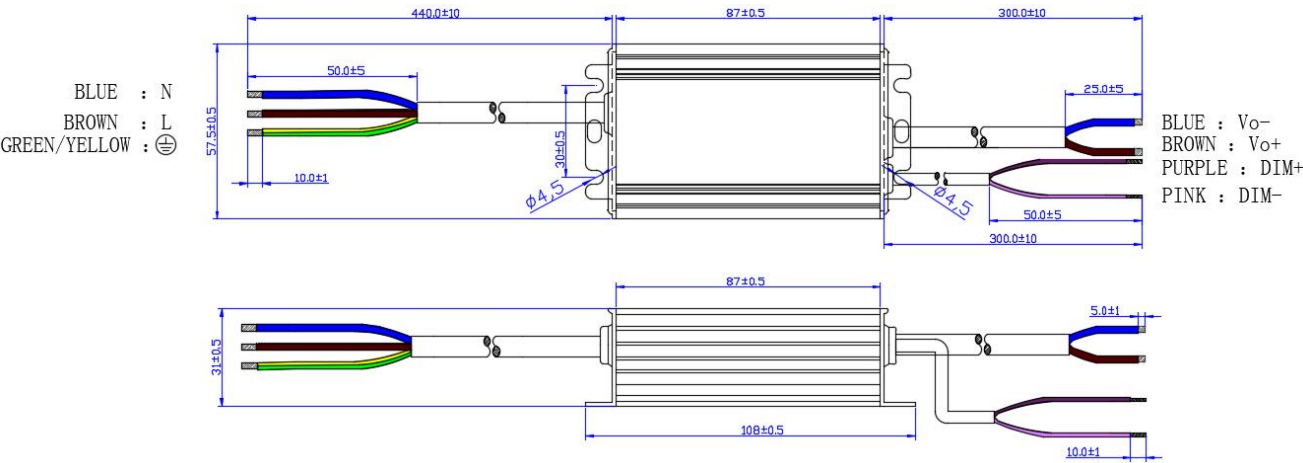
Mechanical specification

Size (mm)	L108mm*W57.5mm*H31mm
Weight (Kg)	355g
Packaging (mm)	

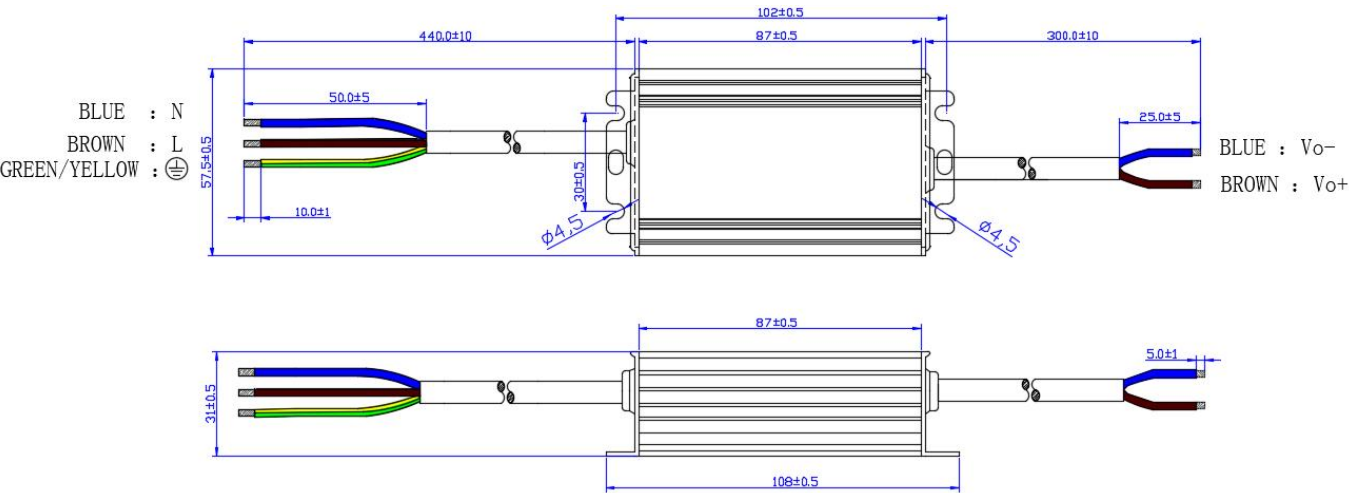
HVS-50W-150XP



HVS-50W-150B



HVS-50W-150A



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Version

DATE	DESCRIPTION	REV.	CHECK
2023.10.24	Initial version.	V1.0	