

SPECIFICATION

Product name : HVS-100W-150X(RT)

Release date : 2023/10/24

	Product Type	LED INTEGRATED SPECIAL DRIVER		
	Product Series	HVS-100W-150X Series(RT)	REV	V1.0

Features.

- Class I type for insulation
- Input voltage range:100-277V ~ 50/60Hz
- Efficiency 93% (Typ.)
- Constant current output ,with power limitation for control mode
- Metal material case, protection grade against water and dust: IP67
- Surge level:

differential mode : 6kV

common mode :10kV

- Function available:

Output current is dimmed by external potentiometer (Only Type A)

Output current is dimmed by Isolated 3 in 1 dimmer (Only Type B)

Output current dimmed by isolated 3-in-1 dimmer +12V auxiliary power output (Only Type C) No Afterglow

Output current dimmed by isolated 3-in-1 dimmer +12V auxiliary power output (Only Type XP) Afterglow

- 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-100W-150A HVS-100W-150B HVS-100W-150C HVS-100W-150XP	120-277V 50/60Hz (Power reduction when the input is less than 120Vac)	100W	90-150Vdc Rated Power (100-150V)	0.67A	≥93%

Note:

1. Test conditions: Ta=25℃, under 230Vac input,after running for 30 minutes with full load .
2. When the input is less than 90±10Vac, the output power gradually decreases to 50W,and it recovers full power of 100W when the input is above 90VAC 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	-	-	@200-277Vac 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	-	-	0.5A	@230Vac input ,with full load
Inrush current	-	-	81A	230Vac, cold start (25℃)

Output characteristics

Parameter	Min	Typ.	Max	Remark
Rated current	-	0.67A	-	Rated Load :150VDC
Output current range	0.5A	-	1.0A	-
Output voltage range	90V	-	150V	Constant power output range:100-150VDC
Available power(75-90Vac)	-	50W	-	When the input voltage is less than 80Vac, the output is turned off and the power gradually derates to 0W
Rated power(100-277Vac)	-	100W	-	-
No-load voltage	-	-	180V	-

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Output characteristics

Parameter	Min	Typ.	Max	Remark
Efficiency@230Vac	-	93%	-	@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 90-130Vdc
Load regulation	-5%	-	+5%	full load 90-150Vdc
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:

- Output current of dimming port: 100uA (typical value).
- 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.
- 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 $90 \pm 10\text{Vac}$, 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°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	$-40 \sim +55^{\circ}\text{C}@100\text{-}277\text{Vac}$ ((Refer to "Service Life Curve"))
Safety case temperature	$-40 \sim 90^{\circ}\text{C}$
Working humidity	20 ~ 95% RH,non-condensing
Storage temperature、humidity	$-40\sim+80^{\circ}\text{C}$, 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 ($T_a=25^{\circ}\text{C}$)
Lifetime	50000 hours @230Vac,80% load, $T_{\text{case}}=75^{\circ}\text{C}$.,Refer to” T_{case} VS Lifetime” curve for details.

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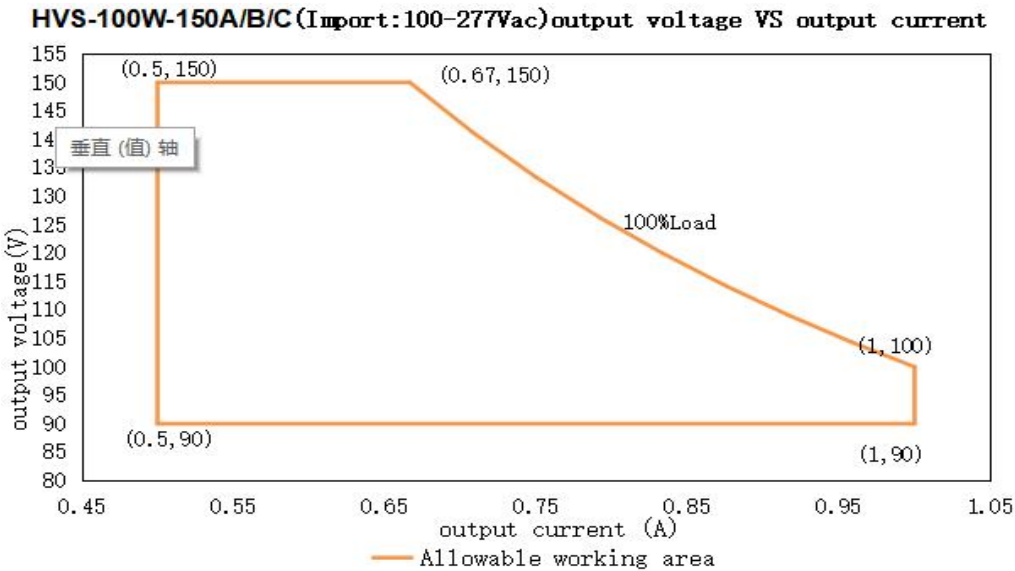
Safety and EMC

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 ±6KV(2Ω),common mode L, N-PE±10KV (12Ω) Refer toIEC61000-4-5 2014
High-pot test	I/P-PE:1.5KVac I/P-DIM:3.75KVac
Insulation impedance	I/P-PE:10MΩ / 500VDC; I/P-O/P:10MΩ / 500VDC / 25℃/ 70% RH
Leakage current	<0.7mA@277Vac

Note:

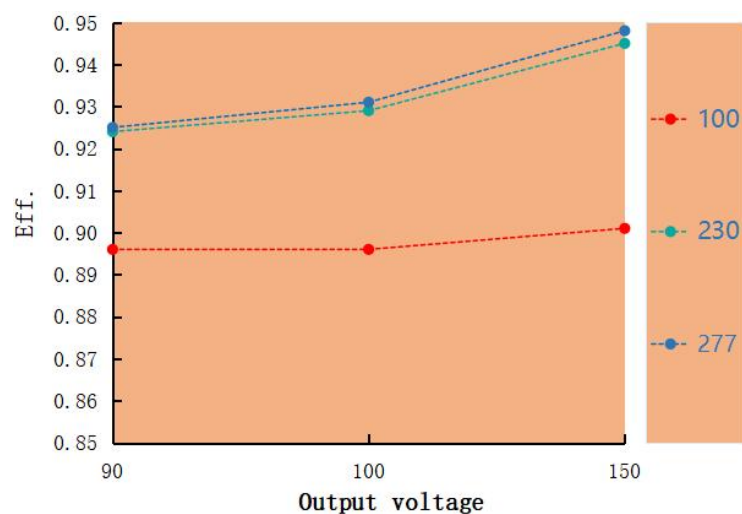
1.Attention! As a component of the whole, the EMC performance of the final product is not only decided by the driver, even if the driver is well-designed and fulfil all the required compliance. The final equipment manufacturers must re-qualify EMC Directive on the complete product.

I-V Working area

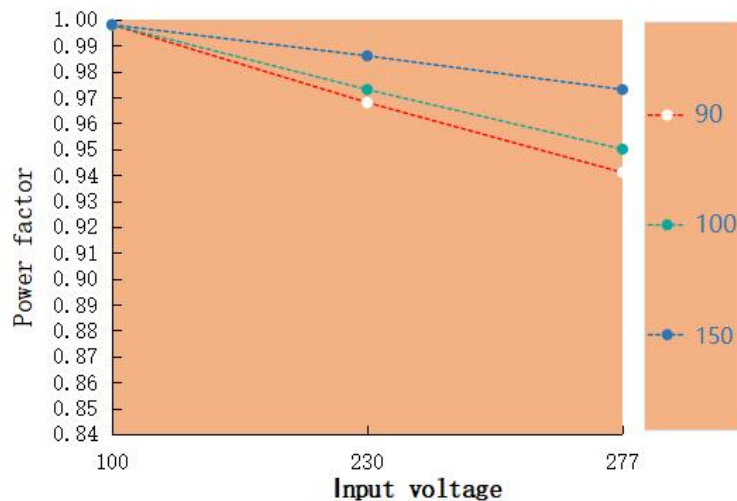


Load	Output							
Load working Voltage	90V	100V	108V	110V	120V	130V	140V	150V
Io_MAX	1A	1A	0.92A	0.91A	0.83A	0.76A	0.71A	0.67A
Po_MAX	90W	100W	100W	100W	100W	100W	100W	100W

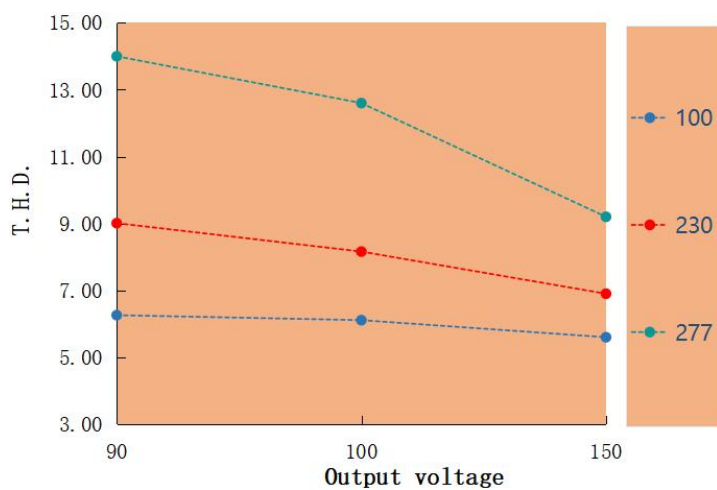
Eff. VS Output voltage



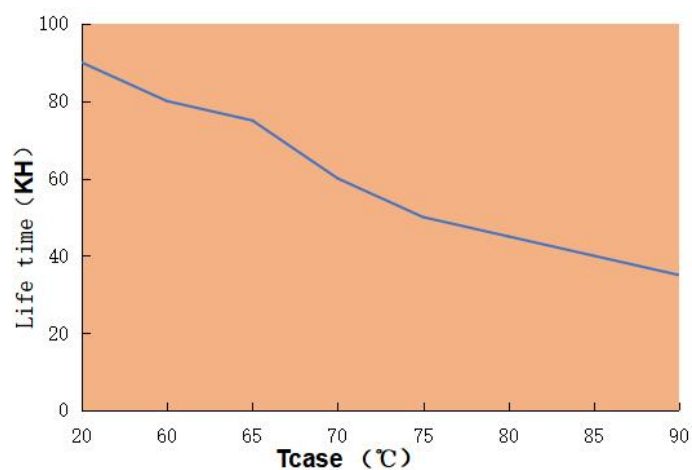
Power factor VS Input voltage



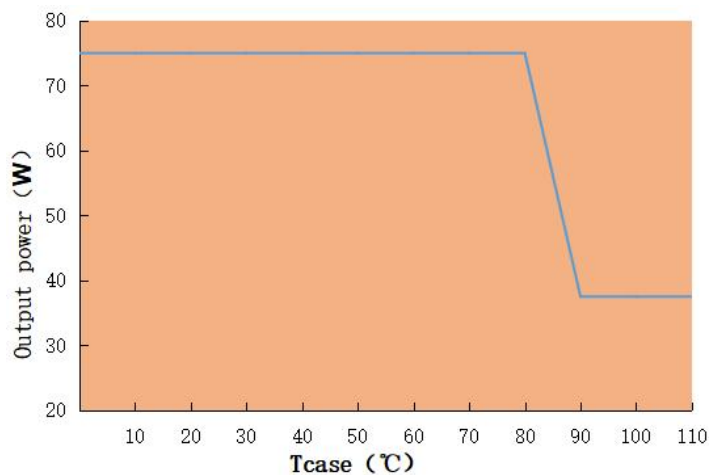
T.H.D. VS Output voltage



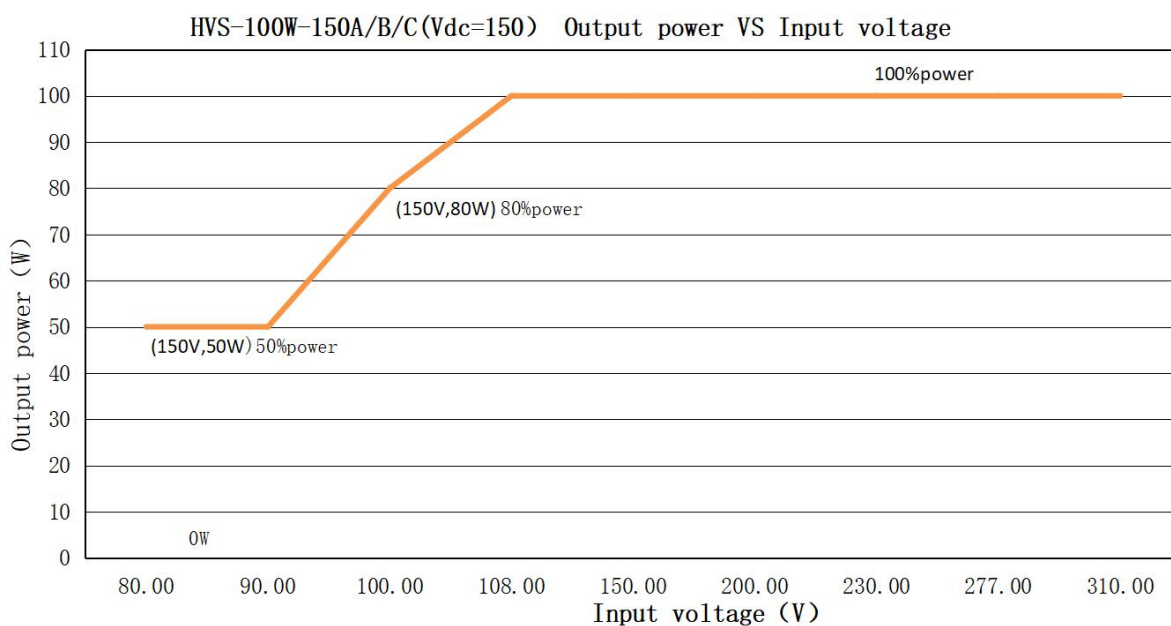
Tcase VS Life time



Output power VS Tcase



Output power VS Input voltage



HVS-100W-150A/B/C/XP (For output 150Vdc, the rated output current & power under different input voltage)

Input Voltage	80Vac	90Vac	100Vac	108Vac	150Vac	200Vac	230Vac	277Vac
I _o	0.33A	0.33A	0.53A	0.67A	0.67A	0.67A	0.67A	0.67A
P _o	50W	50W	80W	100W	100W	100W	100W	100W

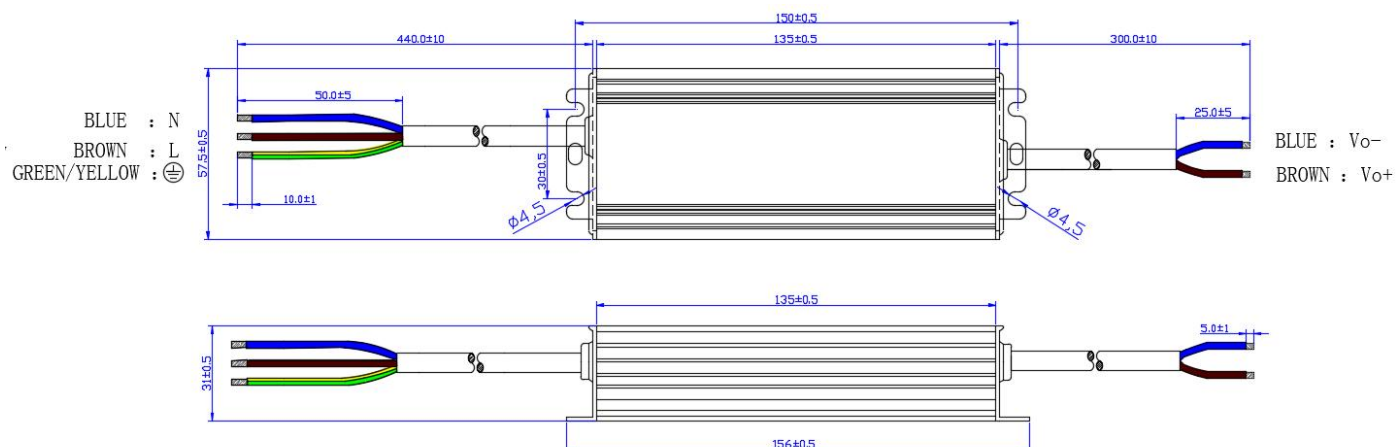
Note:

1. If the input voltage is lower than 90±10Vac, turn off the output, and the power gradually derates to 50W.
2. If the input voltage is lower than 108Vac, adjust the potentiometer to derate 80% power. If the input voltage is higher than 108VAC, adjust the potentiometer to restore the full power of 100W.

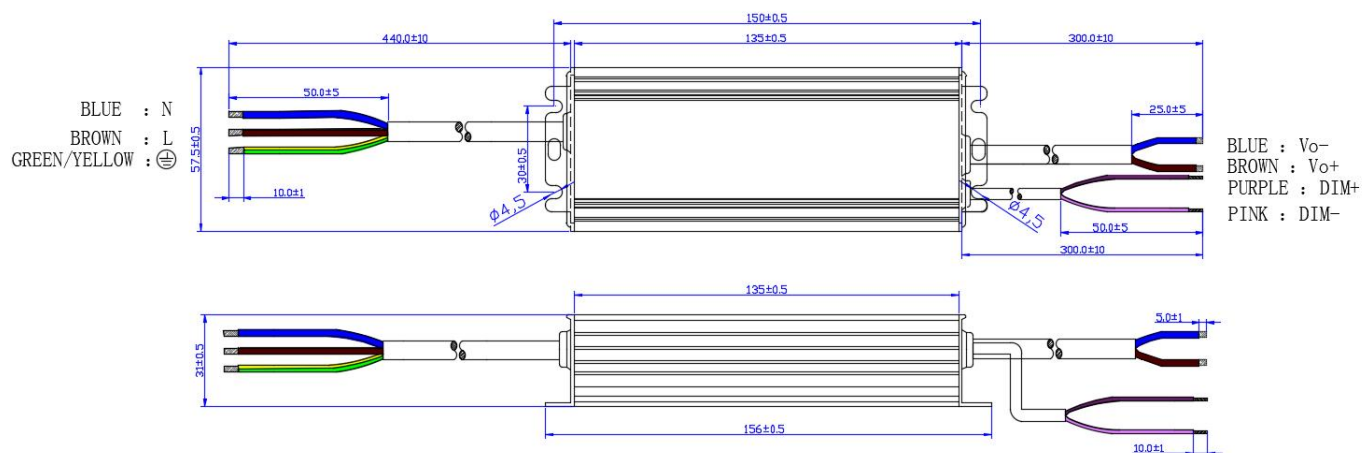
Mechanical specification

Size (mm)	156*57.5*31mm(L*W*H)
Weight (Kg)	500g
Packaging (mm)	L475*W350*H205

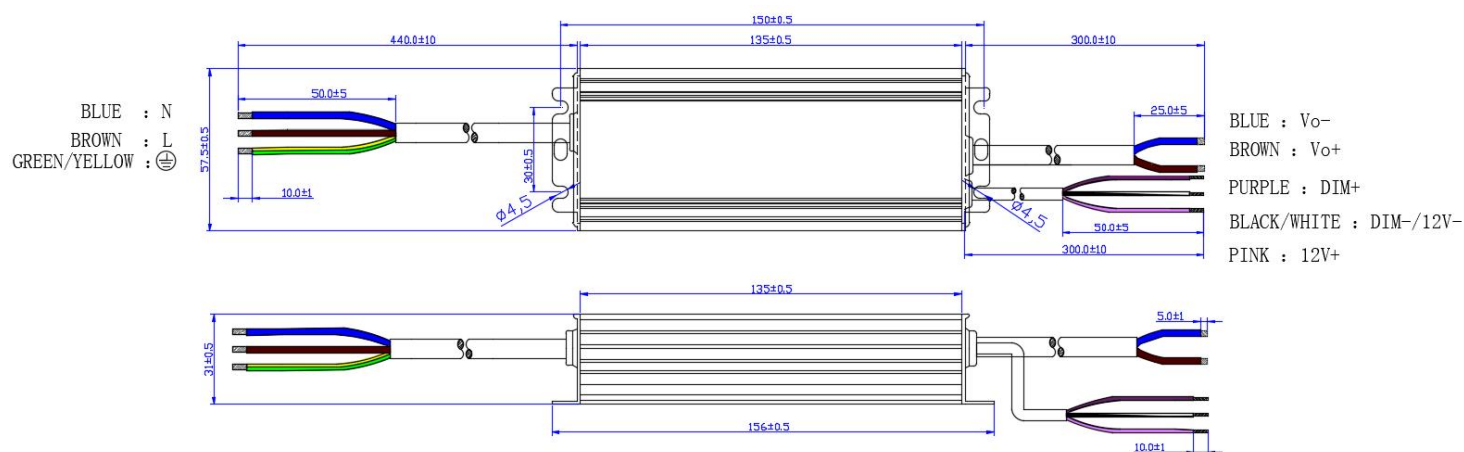
HVS-100W-150A



HVS-100W-150B



HVS-100W-150C/HVS-100W-150XP



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Version

DATE	DESCRIPTION	REV.	CHECK
2023.10.14	Initial version.	V1.0	