


## SPECIFICATION

Product name : HVC-50W-56/72X

Release date : 2023/04/13

	Product Type	LED INTEGRATED SPECIAL DRIVER		
	Product Series	HVC-50W-56/72X Series	REV	V1.0

## Features

- Class I type for insulation
- Input voltage range:100-277V ~ 50/60Hz
- Efficiency 90% (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.
HVC-50W-56A HVC-50W-56B	100-277V 50/60Hz	50W	27-56Vdc Rated Power (33-56V)	0.893A	≥88%
HVC-50W-72A HVC-50W-72B	100-277V 50/60Hz	50W	36-72Vdc Rated Power (48-72V)	0.695A	≥89%

### Note:

1. Test conditions: Ta=25℃, under 230Vac input,after running for 30 minutes with full load .
2. When the input is less than  $95 \pm 15$ Vac, the output power gradually decreases to  $25W \pm 20\%$ , and it recovers full power of 50W when the input is above 95VAC 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	100Vac	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	0.91	-	-	@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	-	-	0.60A	@100Vac input ,with full load
Inrush current	-	-	70A	230Vac, cold start (25°C)

## Output characteristics

Parameter	Min	Typ.	Max	Remark
Rated current HVC-50W-56A/B HVC-50W-72A/B	-	0.893A 0.695A	-	Rated Load :56VDC Rated Load :72VDC
Output current range HVC-50W-56A/B HVC-50W-72A/B	0.6A 0.5A	-	1.50A 1.05A	-
Output voltage range HVC-50W-56A/B HVC-50W-72A/B	27V 36V	-	56V 72V	Constant power output range:33-56VDC Constant power output range:48-72VDC
Available power(90-100Vac)	-	25W	-	Decrease to a half once input voltage being less than 100Vac
Rated power(100-277Vac)	-	50W	-	-
No-load voltage HVC-50W-56A/B HVC-50W-72A/B	-	-	80V 95V	-

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## Output characteristics

Parameter	Min	Typ.	Max	Remark
Efficiency@230Vac HVC-50W-56A/B HVC-50W-72A/B	-	89% 90%	-	@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	-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:**

- 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.
- 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 $95 \pm 15\text{Vac}$ , 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	Could recover automatically; when the temperature of the case is greater than $90^{\circ}\text{C}$ , the output power decreases to a half.
Output over-voltage protection	Protection mode:Hiccup or clamp at a certain output highest voltage state, 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  $25^{\circ}\text{C}$ ;
2. Including setting error, linear adjustment rate and load adjustment rate;

## Environmental characteristics

Environmental categories	Parameter
Working temperature	$-40 \sim +55^{\circ}\text{C}$ @120-277Vac((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” $T_{\text{case}}$ VS Lifetime” curve for details.

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## Safety and EMC

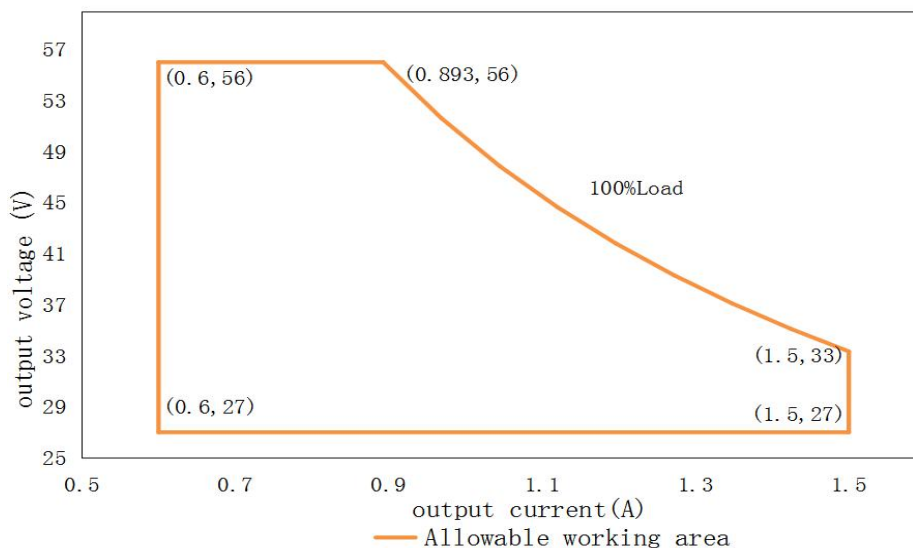
Safety categories	Standard
Safety	GB19510.1、GB19510.14、EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS61347.2.13、EN 62384;
EMC	EN 55015、EN 61547、EN 61000-3-2、GB/T 17743、GB17625.1、EN 61000-3-3
Surge level	Differential mode L-N $\pm 4\text{KV}(2\Omega)$ , common mode L, N-PE $\pm 6\text{KV}(12\Omega)$ Refer to IEC61000-4-5 2014
High-pot test	I/P-O/P:3.75KVac I/P-PE :1.5KVac O/P-PE : 0.5KVac I/P-DIM:3.75KVac O/P-DIM:1.5KVac
Insulation impedance	I/P-PE:100M $\Omega$ / 500VDC; I/P-O/P:100M $\Omega$ / 500VDC / 25°C/ 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.**

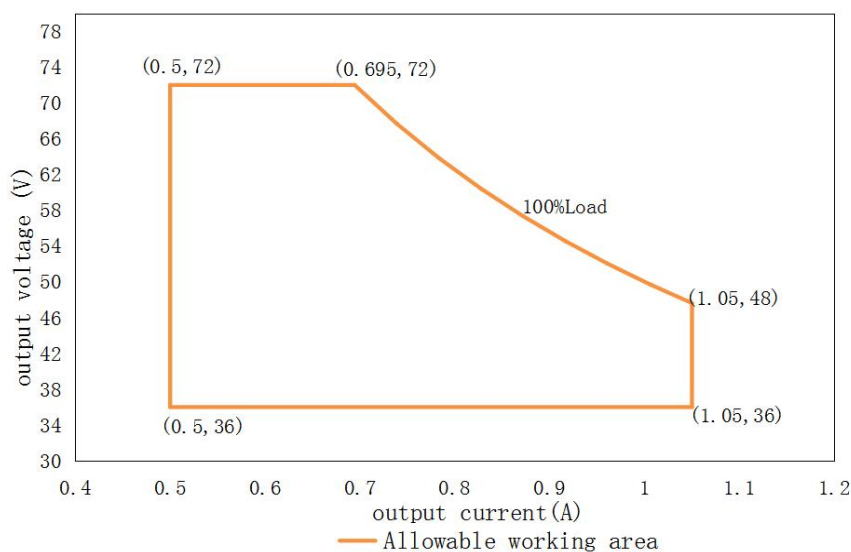
## I-V Working area

HVC-50W-56A/B(input:100-277Vac)output voltage VS Output current



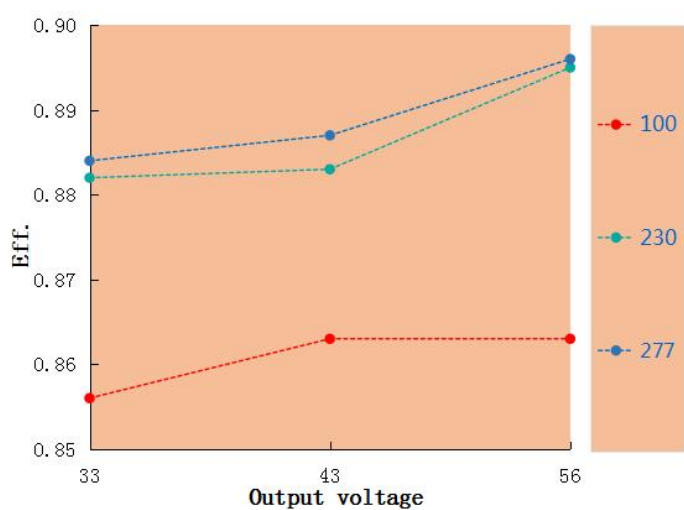
Load	Output								
Load working Voltage	27V	29V	33V	36V	40V	44V	48V	52V	56V
Io_MAX	1.50A	1.50A	1.50A	1.39A	1.25A	1.14A	1.04A	0.962A	0.893A
Po_MAX	40.5W	43.5W	50W	50W	50W	50W	50W	50W	50W

HVC-50W-72A/B(input:100-277Vac)output voltage VS Output current

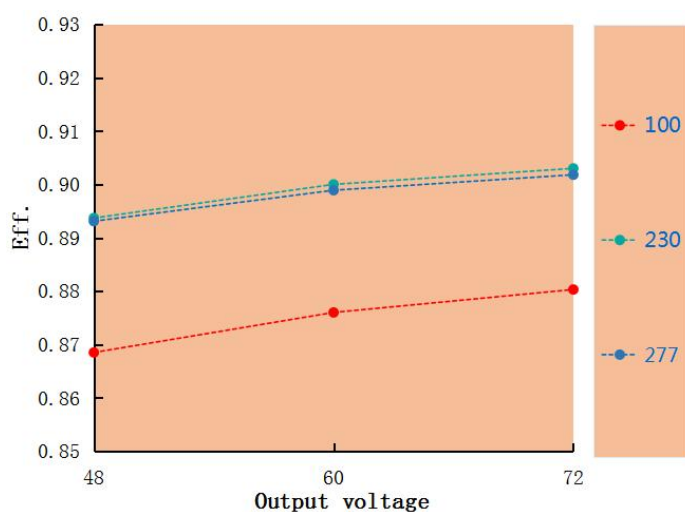


Load	Output								
Load working Voltage	36V	40V	44V	48V	56V	60V	64V	68V	72V
Io_MAX	1.05A	1.05A	1.05A	1.05A	0.893A	0.834A	0.781A	0.735A	0.695A
Po_MAX	37.8W	42W	46.2W	50.4W	50W	50W	50W	50W	50W

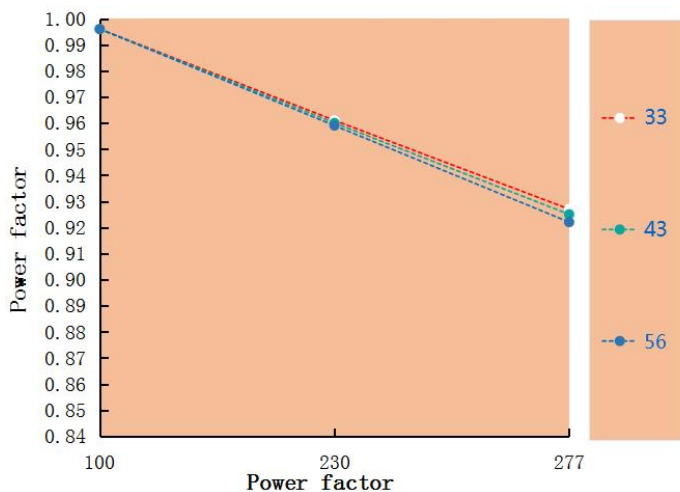
Eff. VS Output voltage HVC-50W-56A/B



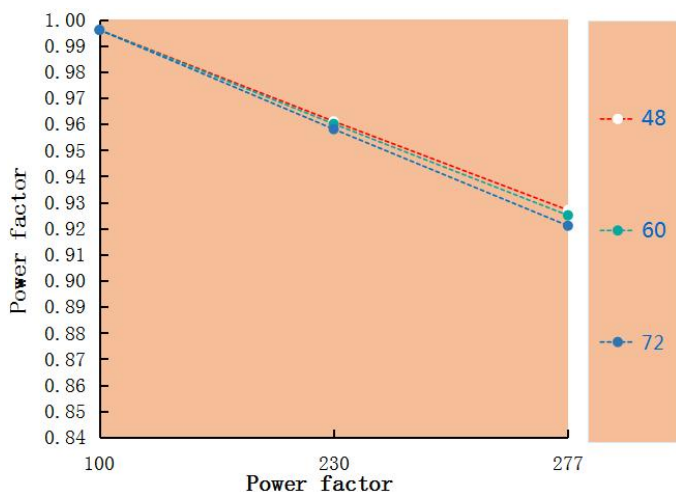
Eff. VS Output voltage HVC-50W-72A/B



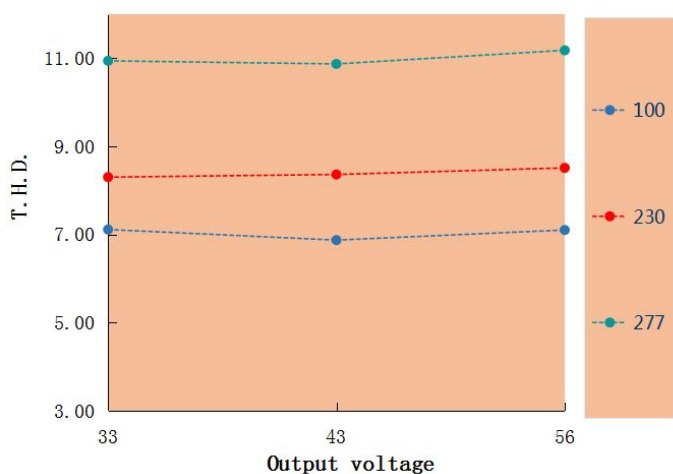
Power factor VS Input voltage HVC-50W-56A/B



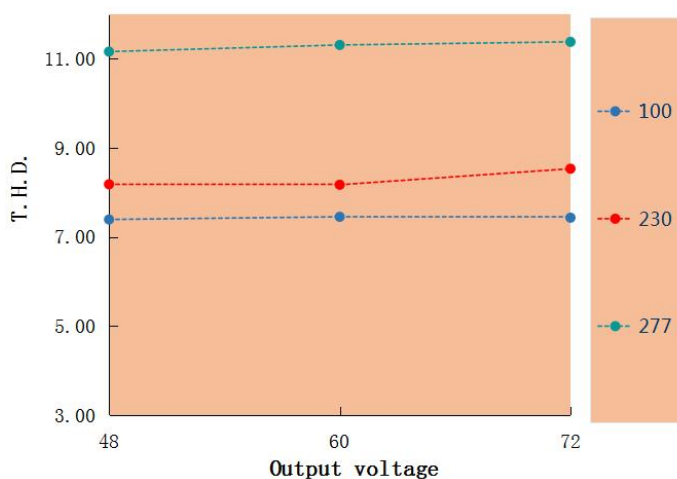
Power factor VS Input voltage HVC-50W-72A/B



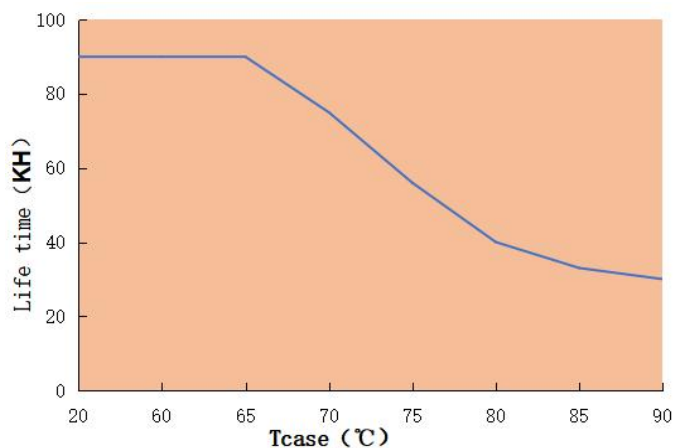
T.H.D. VS Output voltage HVC-50W-56A/B



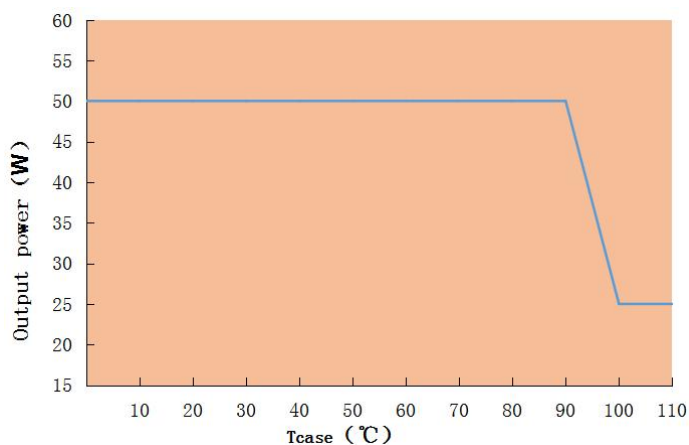
T.H.D. VS Output voltage HVC-50W-72A/B



Tcase VS Life time (HVC-50W-56A/B)

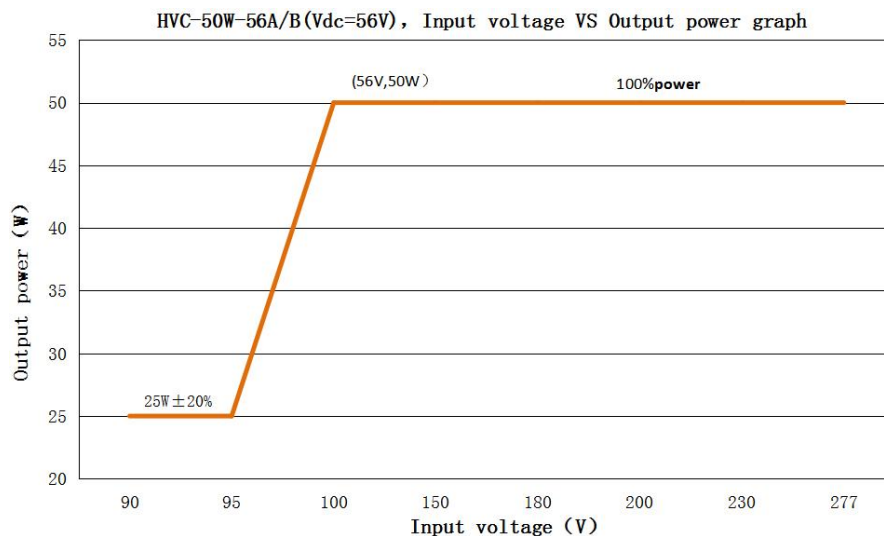


Output power VS Tcase(HVC-50W-72A/B)



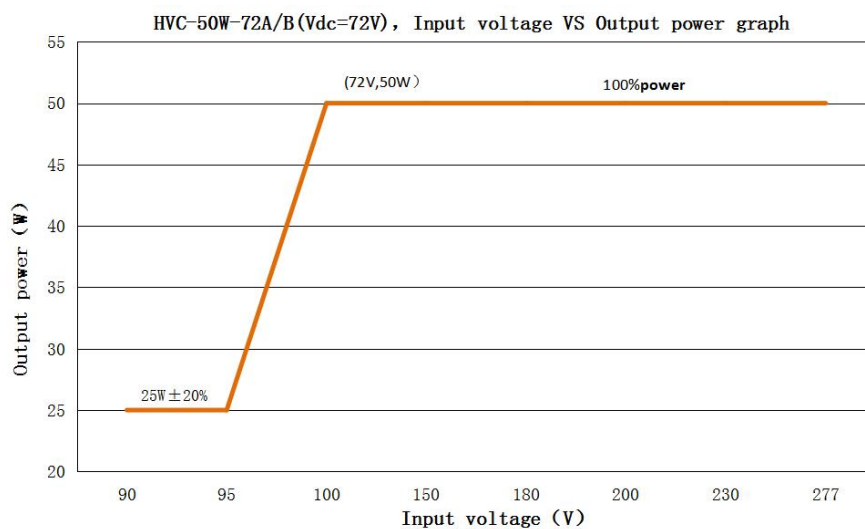


## Output power VS Input voltage



HVC-50W-56A/B (For output 56Vdc, the rated output current & power under different input voltage)

Input Voltage	90Vac	95Vac	100Vac	120Vac	170Vac	200Vac	230Vac	277Vac
I <sub>o</sub>	0.447A	0.447A	0.893A	0.893A	0.893A	0.893A	0.893A	0.893A
P <sub>o</sub>	25W	25W	50W	50W	50W	50W	50W	50W




HVC-50W-72A/B (For output 72Vdc, the rated output current & power under different input voltage)

Input Voltage	90Vac	95Vac	100Vac	120Vac	170Vac	200Vac	230Vac	277Vac
I <sub>o</sub>	0.347A	0.347A	0.695A	0.695A	0.695A	0.695A	0.695A	0.695A
P <sub>o</sub>	25W	25W	50W	50W	50W	50W	50W	50W

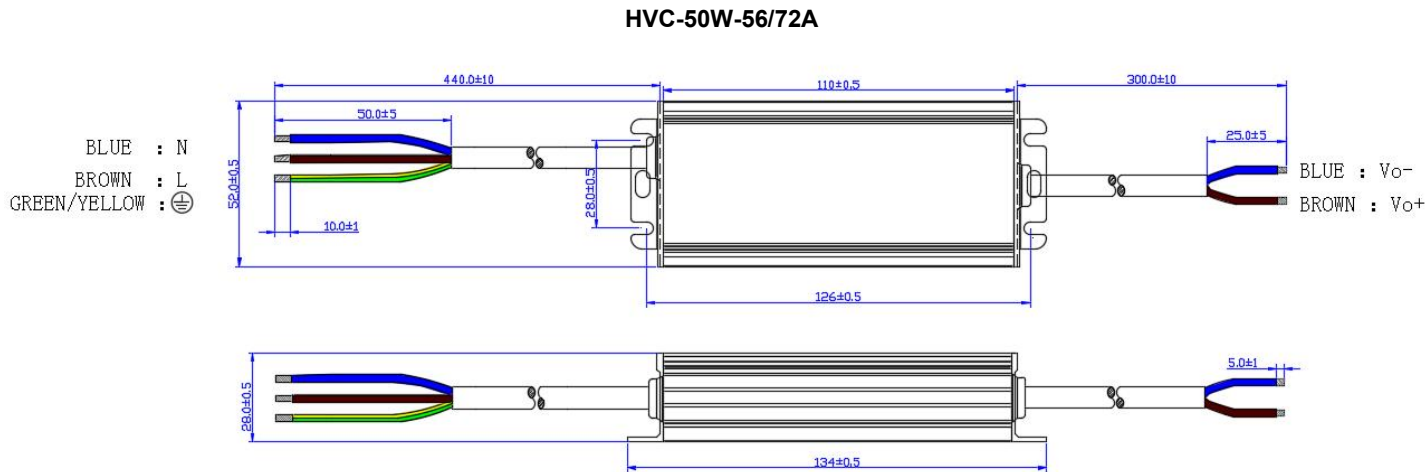
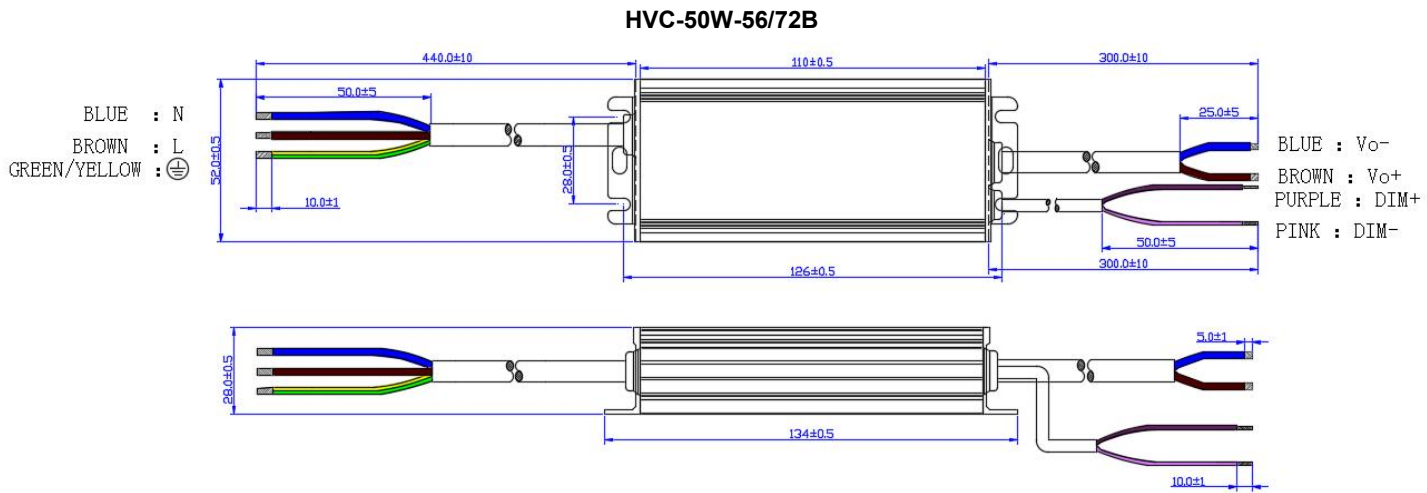
### Note:


- When the input voltage is below 95±15Vac, the output power decreases to 25W±20%.

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Mechanical specification

Size (mm)	L134mm*W52mm*H28mm
Weight (Kg)	440g
Packaging (mm)	



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Version

DATE	DESCRIPTION	REV.	CHECK
2023.04.13	Initial version.	V1.0	