


## SPECIFICATION

**Product name : HVE-150H-38/56/214**

**Release date : 2023/10/17**

	Product Type	LED INTEGRATED SPECIAL DRIVER		
	Product Series	HVE-150H-38/56/214 Series	REV	V2.0

## Features

- Class I type for insulation
- Input voltage range:200-277V ~ 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 : 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)
- 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.
HVE-150H-38A HVE-150H-38B	200-277V 50/60Hz	150W	20-38Vdc Rated Power (32-38V)	4.2A	≥90%
HVE-150H-56A HVE-150H-56B	200-277V 50/60Hz	150W	32-56Vdc Rated Power (42-56V)	3.3A	≥91%
HVE-150H-214A HVE-150H-214B	200-277V 50/60Hz	150W	107-214Vdc Rated Power (143-214V)	0.75A	≥92%

### Note:

1. Test conditions: Ta=25°C, under 230Vac input,after running for 30 minutes with full load .
2. When the input is less than 165±15VAC, the output power gradually decreases to 75W±20%, and it recoveries full power of 150W when the input is above 165VAC 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	200Vac	230Vac	277Vac	-
Input voltage range	180Vac	-	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%	@200-277Vac input ,with 70%-100%
Input current	-	-	0.85A	@200Vac input ,with full load
Inrush current	-	-	80A	230Vac, cold start (25°C)

## Output characteristics

Parameter	Min	Typ.	Max	Remark
Rated current				
HVE-150H-38A/B	-	4.2A	-	Rated Load :38VDC
HVE-150H-56A/B	-	3.3A	-	Rated Load: 56VDC
HVE-150H-214A/B		0.75A		Rated Load: 214VDC
Output current range				
HVE-150H-38A/B	2.6A	-	4.7A	
HVE-150H-56A/B	1.7A		3.6A	-
HVE-150H-214A/B	0.47A		1.1A	
Output voltage range				
HVE-150H-38A/B	20V	-	38V	Constant power output range:32-38VDC
HVE-150H-56A/B	30V		56V	Constant power output range:42-56VDC
HVE-150H-214A/B	107V		214V	Constant power output range:143-214VDC
Available power(90-180Vac)	-	75W	-	Decrease to a half once input voltage beingless than 180 Vac
Rated power(200-277Vac)	-	150W	-	-
No-load voltage				
HVE-150H-38A/B	-	-	55V	
HVE-150H-56A/B			70V	-
HVE-150H-214A/B			250V	

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## Output characteristics

Parameter	Min	Typ.	Max	Remark
Efficiency@230Vac HVE-150H-38A/B HVE-150H-56A/B HVE-150H-214A/B	-	90% 91% 92%	-	@230Vac input ,with full load
Accuracy of output current	-5%	-	+5%	For constant-power range , with full load
Line regulation	-5%	-	+5%	full load
Load regulation	-5%	-	+5%	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 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 $165 \pm 15\text{Vac}$ , 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	$-40 \sim +55^{\circ}\text{C}$ @200-277Vac((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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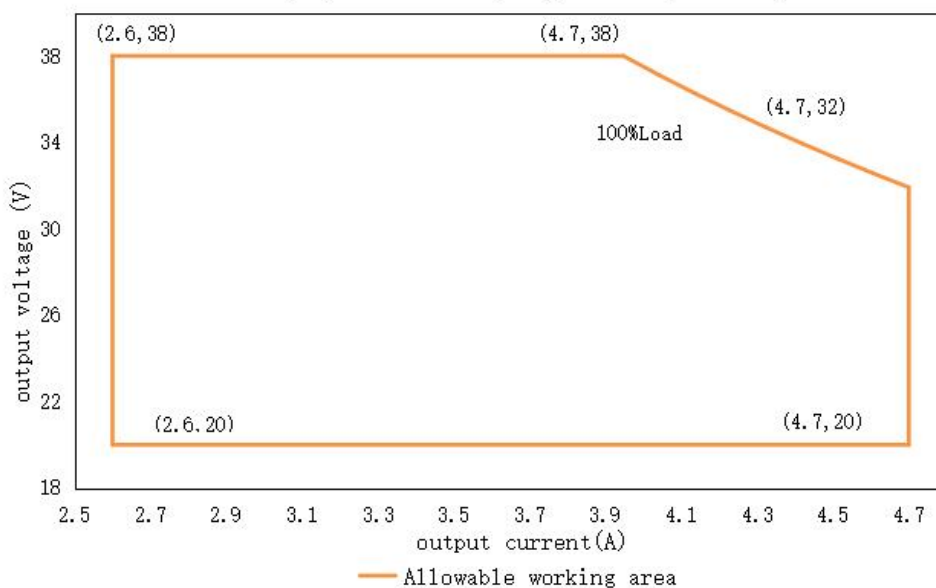
## Safety and EMC

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 $\pm 6\text{KV}(2\Omega)$ , common mode L, N-PE $\pm 10\text{KV}(12\Omega)$ 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 $^{\circ}\text{C}$ / 70% RH
Leakage current	<0.7mA@277Vac

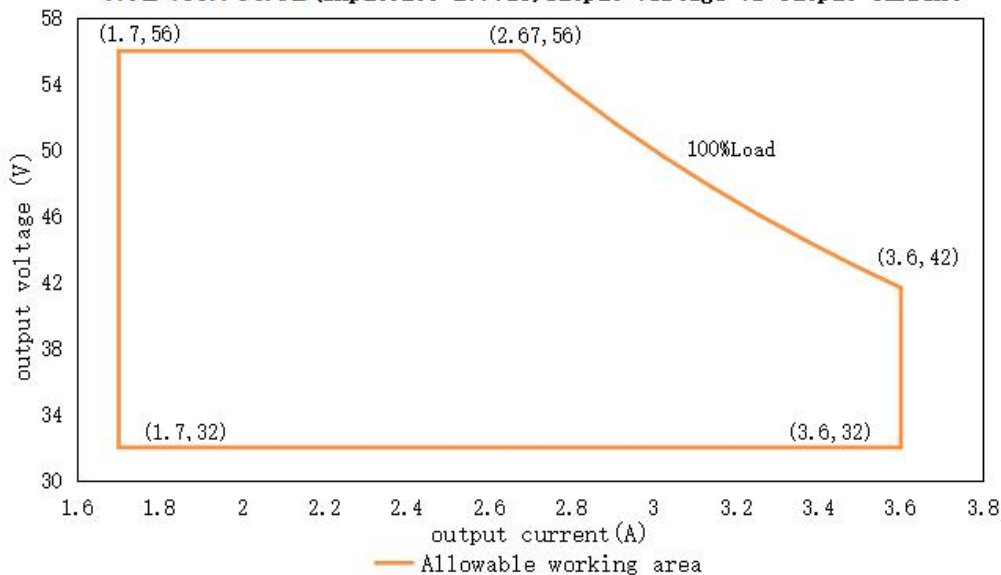
### Note:

**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

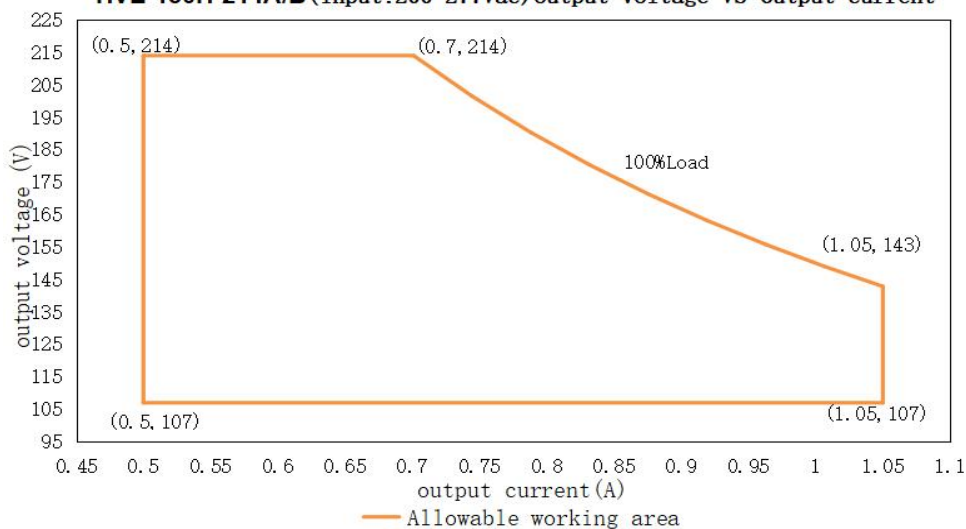
**HVE-150H-38A/B(input:200-277Vac)output voltage VS Output current**


Load	Output								
Load working Voltage	20V	23V	25V	28V	30V	32V	34V	36V	38V
Io_MAX	4.7A	4.7A	4.7A	4.7A	4.7A	4.7A	4.4A	4.2A	3.9A
Po_MAX	94W	108.1W	117.5W	131.6W	141W	150W	150W	150W	150W

**HVE-150H-56A/B(input:200-277Vac)output voltage VS Output current**


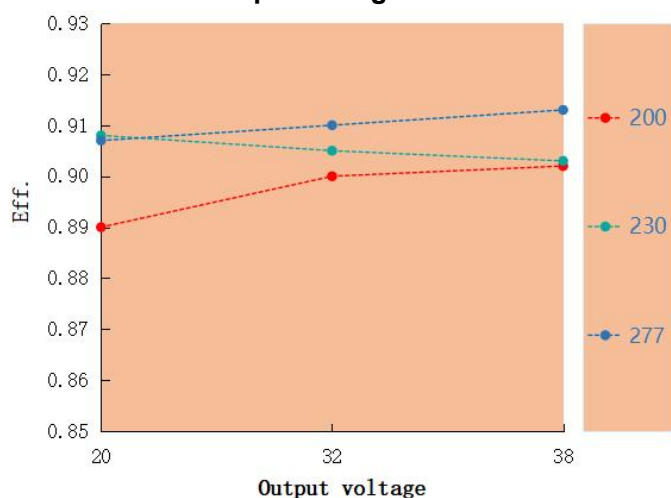
Load	Output								
Load working Voltage	32V	36V	42V	46V	48V	50V	52V	54V	56V
Io_MAX	3.6A	3.6A	3.57A	3.26A	3.13A	3A	2.88A	2.78A	2.68A
Po_MAX	115W	130W	150W	150W	150W	150W	150W	150W	150W

HVE-150H-214A/B(input:200-277Vac) output voltage VS Output current

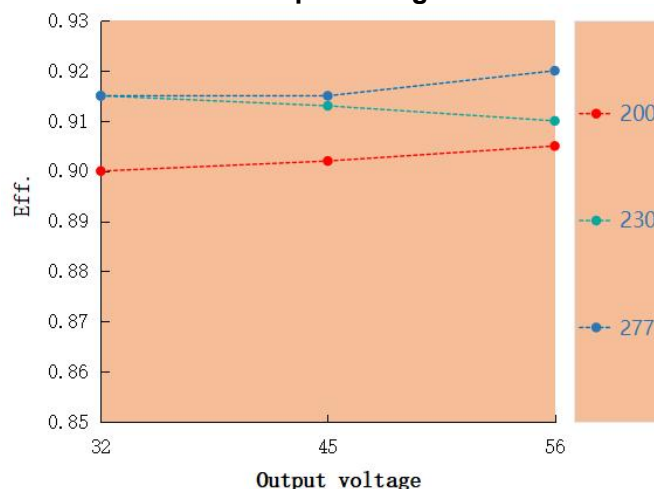


Load	Output								
Load working Voltage	107V	120V	130V	143V	150V	160V	180V	200V	214V
Io_MAX	1.05A	1.05A	1.05A	1.04A	1A	0.94A	0.83A	0.75A	0.7A
Po_MAX	112W	126W	136W	150W	150W	150W	150W	150W	150W

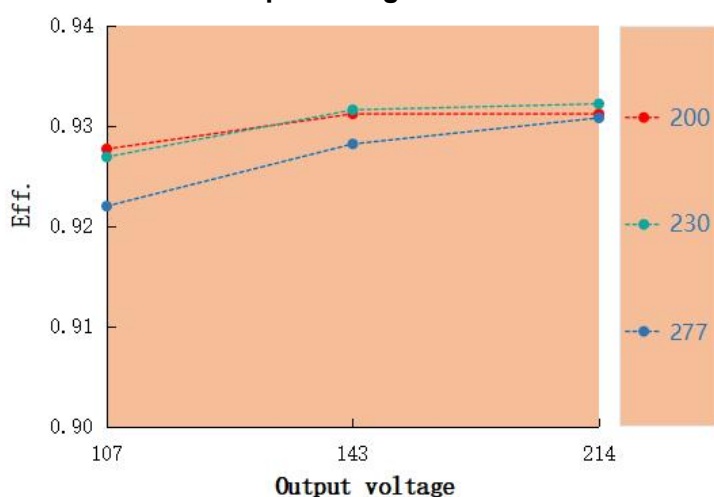
Eff. VS Output voltage HVE-150H-38A/B



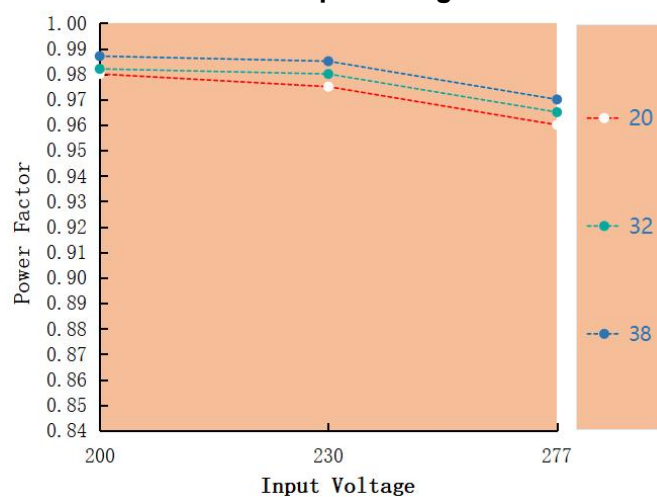
Eff. VS Output voltage HVE-150H-56A/B



Eff. VS Output voltage HVE-150H-214A/B

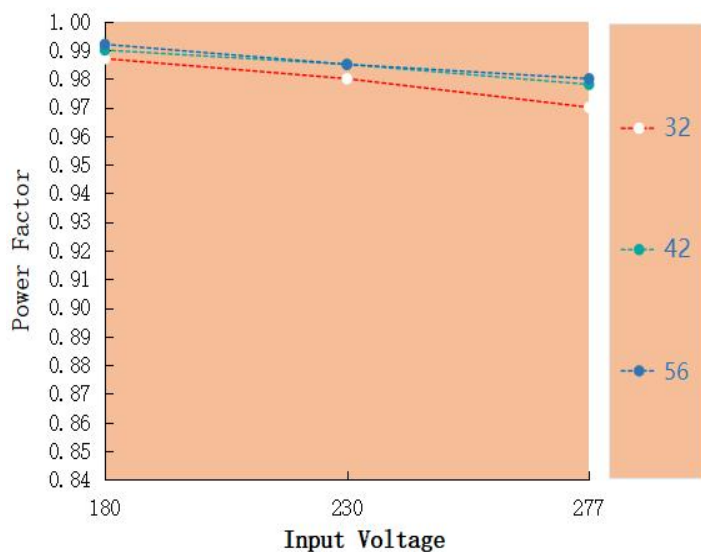


Power factor VS Input voltage HVE-150H-38A/B

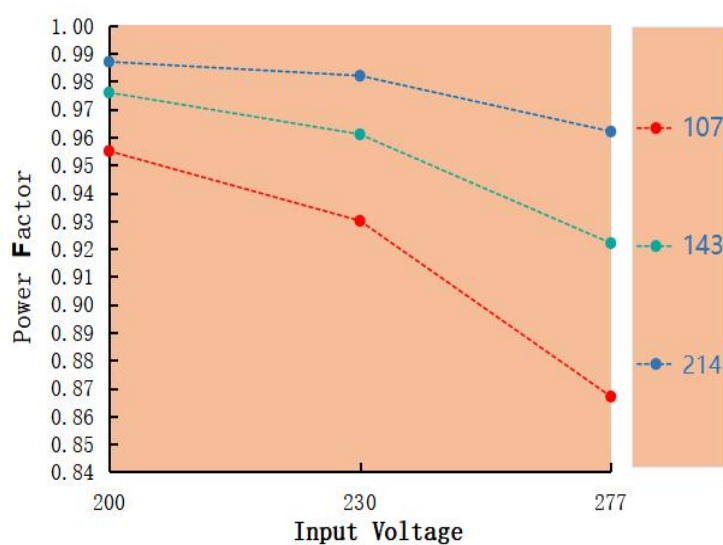




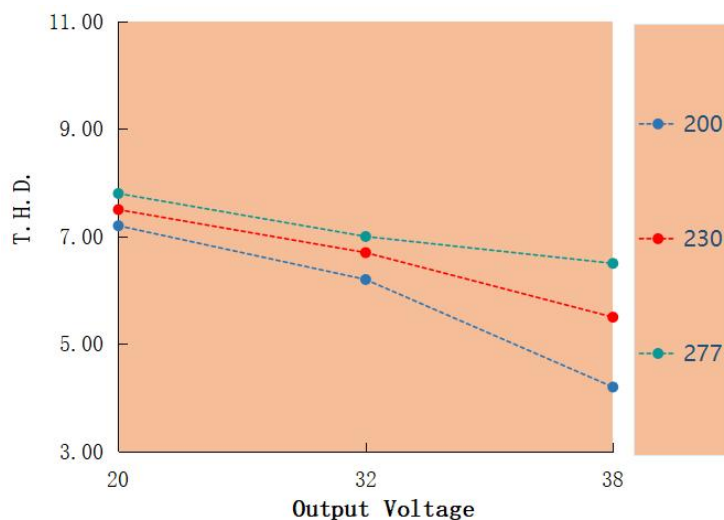
**Power factor VS Input voltage HVE-150H-56A/B**



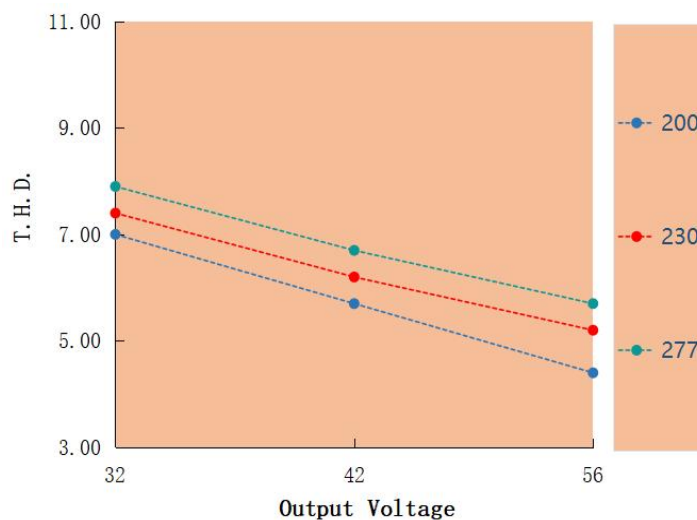
**Power factor VS Input voltage HVE-150H-214A/B**



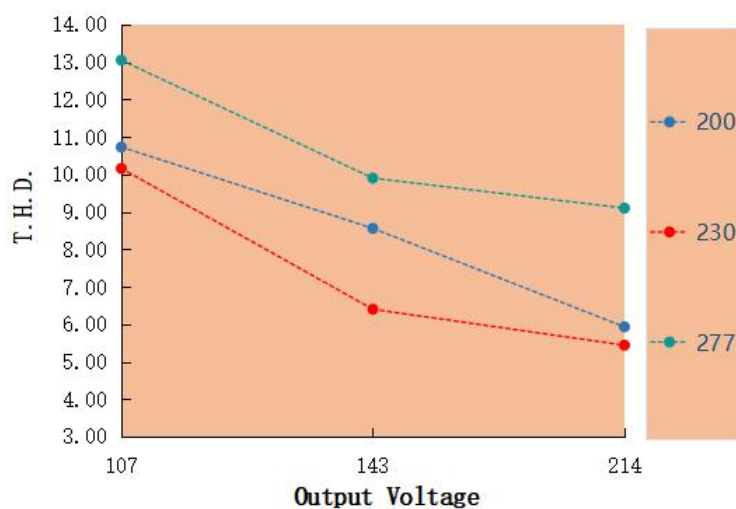
**T.H.D. VS Output voltage HVE-150H-38A/B**

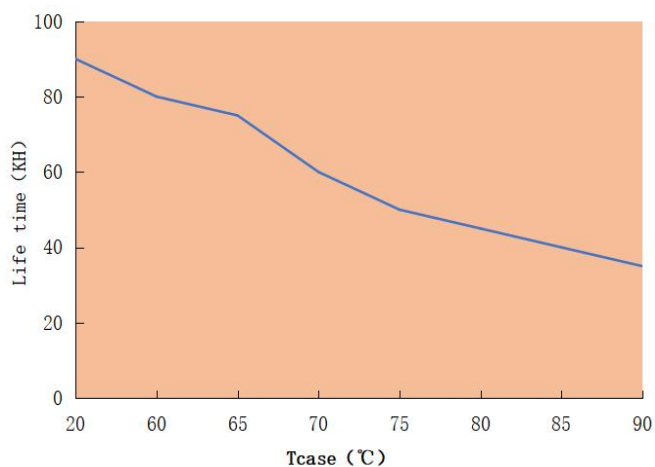
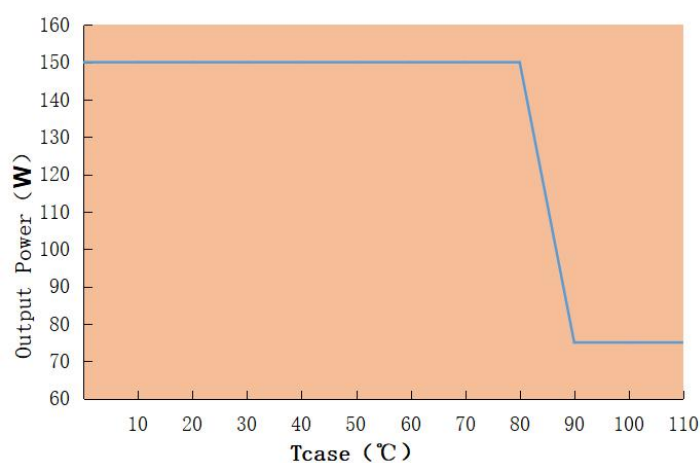
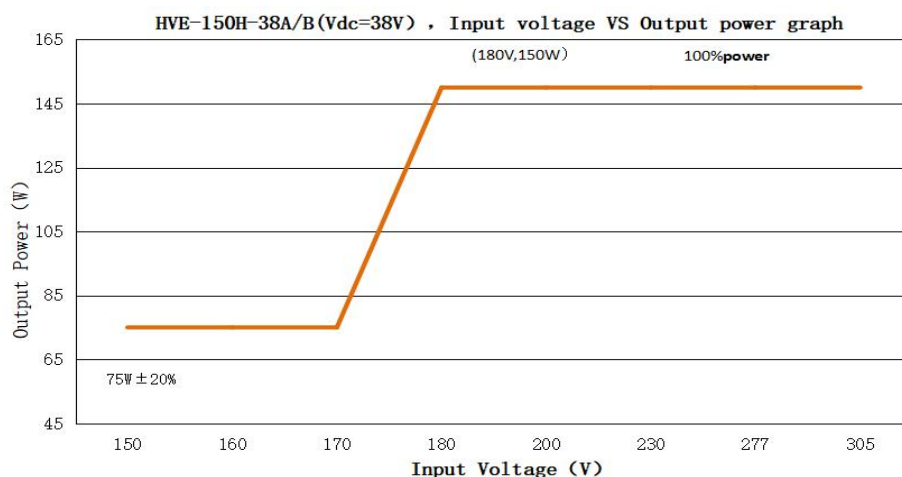


**T.H.D. VS Output voltage HVE-150H-56A/B**



**T.H.D. VS Output voltage HVE-150H-214A/B**



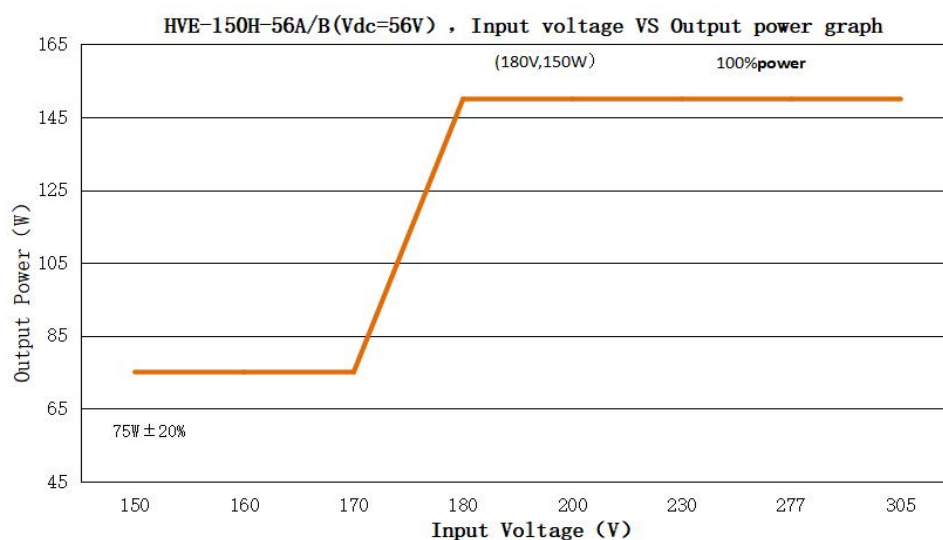
**Tcase VS Life time (HVE-150H-A/B)**

**Output power VS Tcase(HVE-150H-A/B)**

**Output power VS Input voltage**

**HVE-150H-38A/B (For output 38Vdc, the rated output current & power under different input voltage)**

Input Voltage	150Vac	160Vac	170Vac	180Vac	200Vac	230Vac	277Vac	305Vac
Io	1.9A	1.94A	1.97A	3.95A	3.95A	3.95A	3.95A	3.95A
Po	75W	75W	75W	150W	150W	150W	150W	150W

**Note:**

- When the input voltage is below 165±15Vac, the output power decreases to 75W±20%.

## Output power VS Input voltage

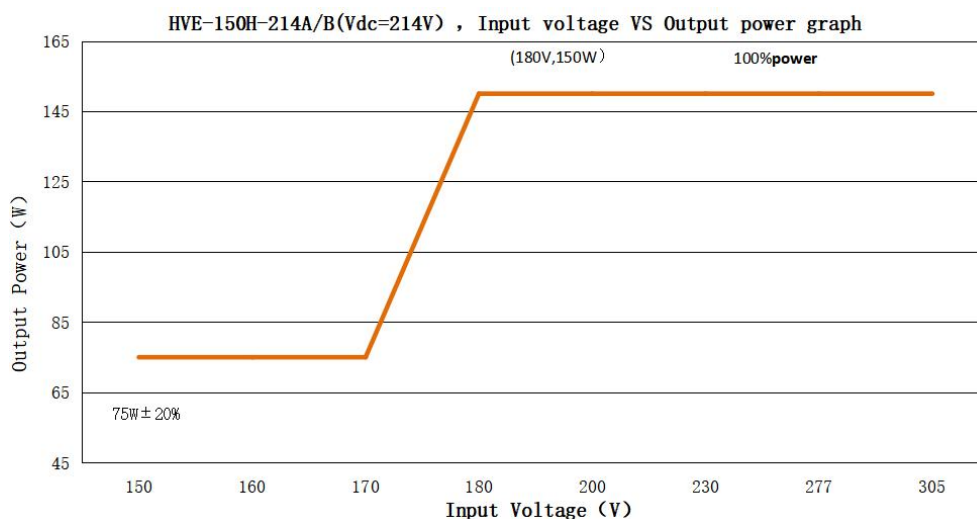


HVE-150H-56A/B(For output 56Vdc, the rated output current & power under different input voltage)

Input Voltage	150Vac	160Vac	170Vac	180Vac	200Vac	230Vac	277Vac	305Vac
I <sub>o</sub>	1.27A	1.30A	1.34A	2.68A	2.68A	2.68A	2.68A	2.68A
P <sub>o</sub>	75W	75W	75W	150W	150W	150W	150W	150W


### Note:

1. When the input voltage is below 165±15Vac, the output power decreases to 75W±20%.



HVE-150H-214A/B(For output 214Vdc, the rated output current & power under different input voltage)

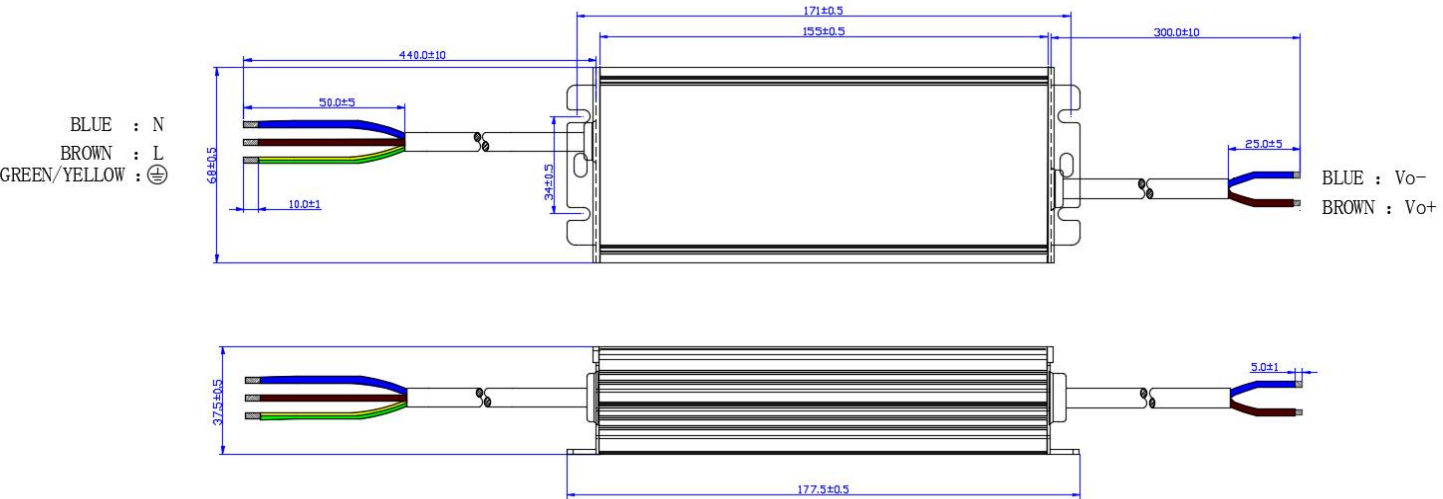
Input Voltage	150Vac	160Vac	170Vac	180Vac	200Vac	230Vac	277Vac	305Vac
I <sub>o</sub>	0.36A	0.38A	0.4A	0.7A	0.7A	0.7A	0.7A	0.7A
P <sub>o</sub>	75W	75W	75W	150W	150W	150W	150W	150W

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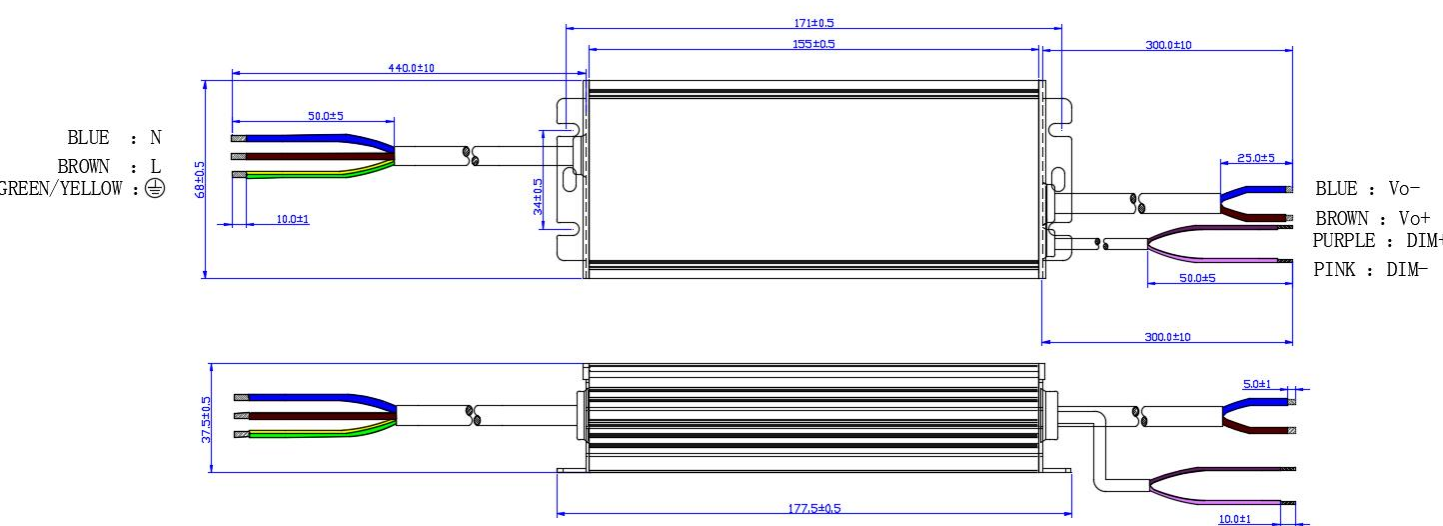
Mechanical specification


Size (mm)	177.5*69*36mm(L*W*H)
Weight (Kg)	773g
Packaging (mm)	

HVE-150H-38B  
 HVE-150H-56B  
 HVE-150H-214B



HVE-150H-38A  
 HVE-150H-58A  
 HVE-150H-214A



	Product Type	LED INTEGRATED SPECIAL DRIVER		
	Product Series	HVE-150H-38/56/214 Series	REV	V2.0

Version

DATE	DESCRIPTION	REV.	CHECK
2023.04.14	Initial version.	V1.0	
2023.10.17	Added High Voltage Version 214V	V2.0	