

SPECIFICATION

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

Release date : 2023/10/30

	Product Type	LED INTEGRATED SPECIAL DRIVER		
	Product Series	HVE-150H-38/56/214 Series	REV	V2.1

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			275V	

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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:

- 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 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°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	$-40 \sim +55^{\circ}\text{C}$ @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_{case} VS Lifetime” curve for details.

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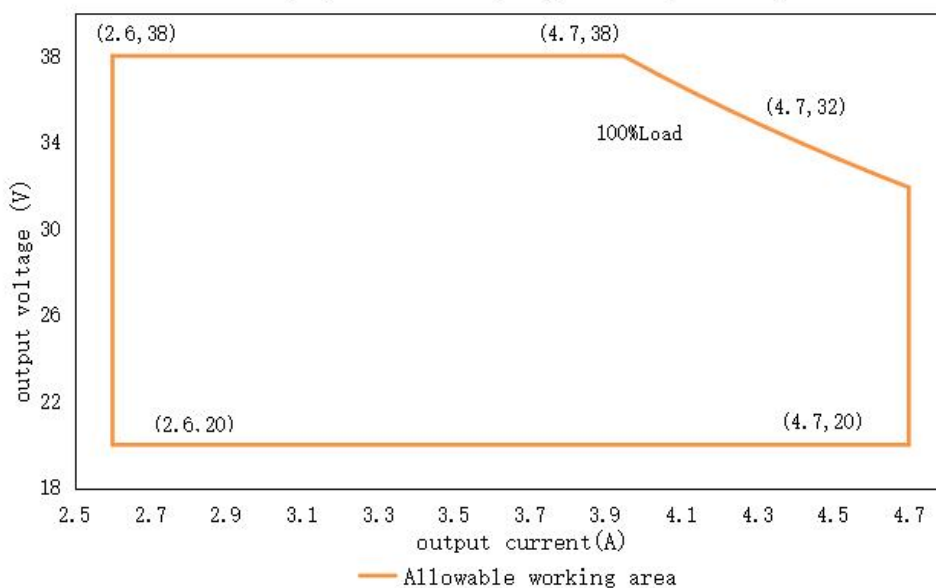
Safety and EMC

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 Ω / 500VDC; I/P-O/P:100M Ω / 500VDC / 25 $^{\circ}\text{C}$ / 70% RH
Leakage current	<0.7mA@277Vac

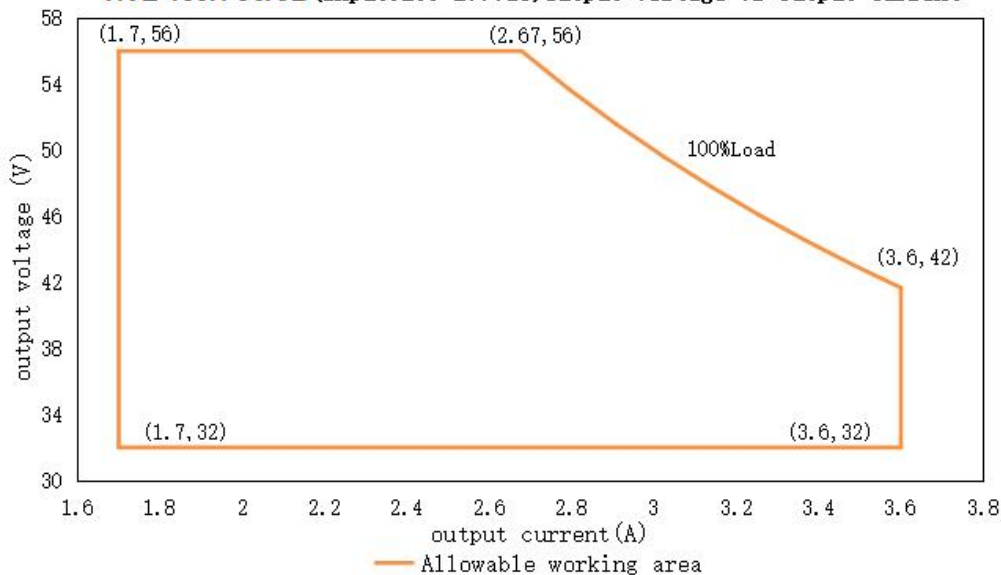
Note:

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

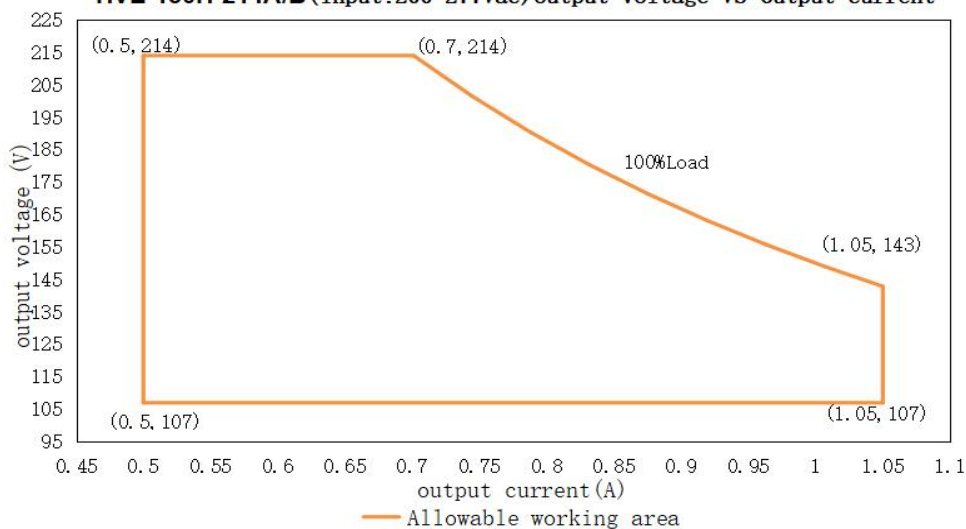
HVE-150H-38A/B(input:200-277Vac)output voltage VS Output current


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


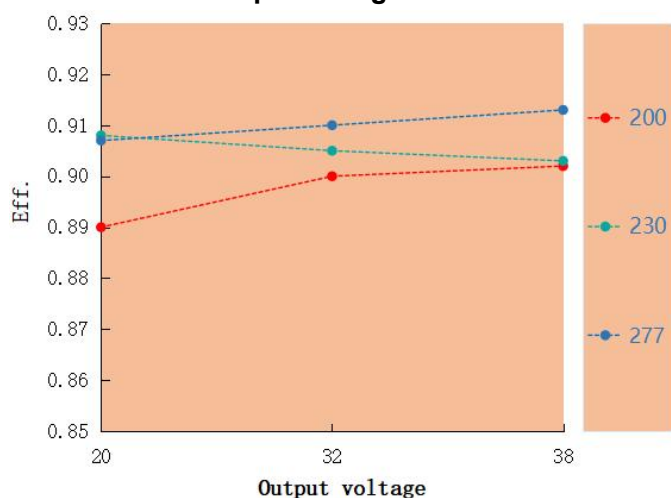
Load	Output								
Load working Voltage	32V	36V	42V	46V	48V	50V	52V	54V	56V
Io_MAX	3.6A	3.6A	3.57A	3.26A	3.13A	3A	2.88A	2.78A	2.68A
Po_MAX	115W	130W	150W	150W	150W	150W	150W	150W	150W

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

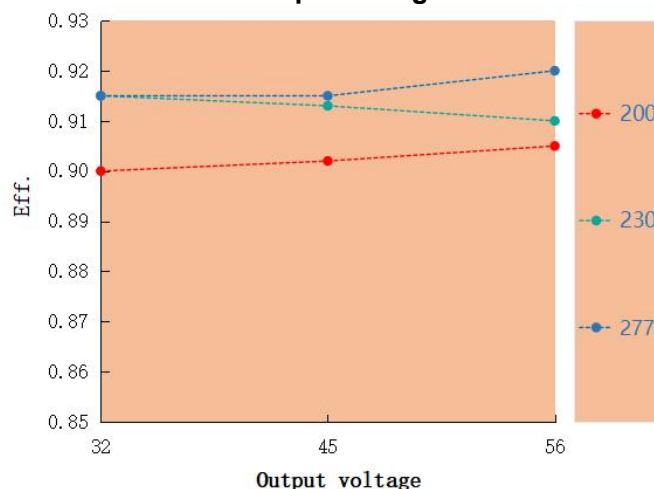


Load	Output								
Load working Voltage	107V	120V	130V	143V	150V	160V	180V	200V	214V
Io_MAX	1.05A	1.05A	1.05A	1.04A	1A	0.94A	0.83A	0.75A	0.7A
Po_MAX	112W	126W	136W	150W	150W	150W	150W	150W	150W

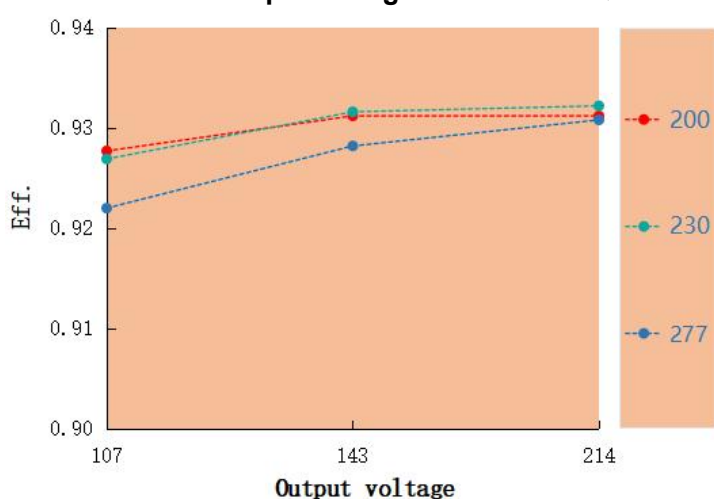
Eff. VS Output voltage HVE-150H-38A/B



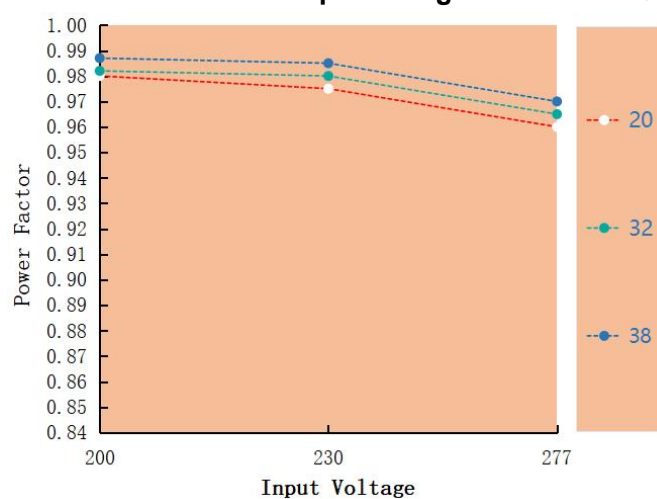
Eff. VS Output voltage HVE-150H-56A/B



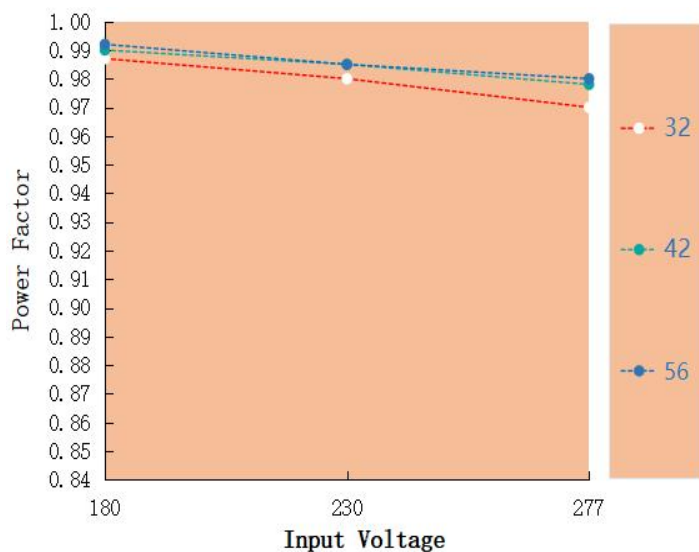
Eff. VS Output voltage HVE-150H-214A/B



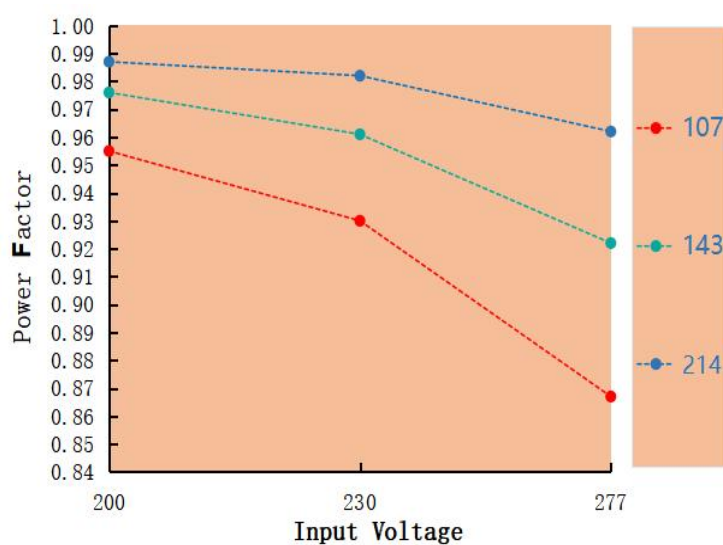
Power factor VS Input voltage HVE-150H-38A/B



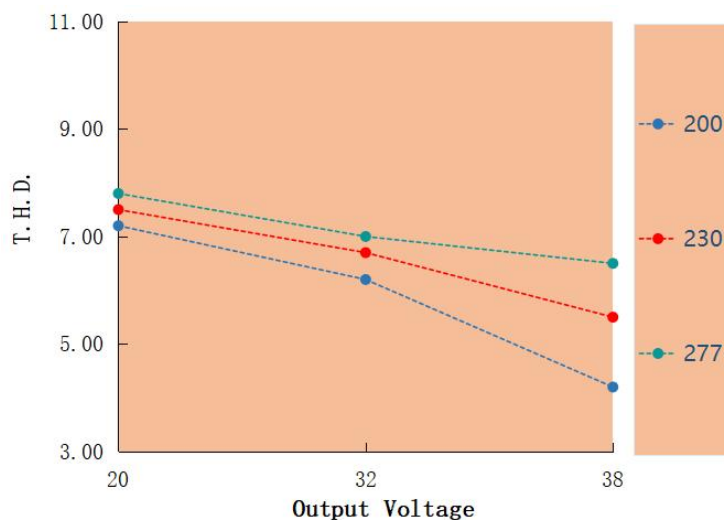
Power factor VS Input voltage HVE-150H-56A/B



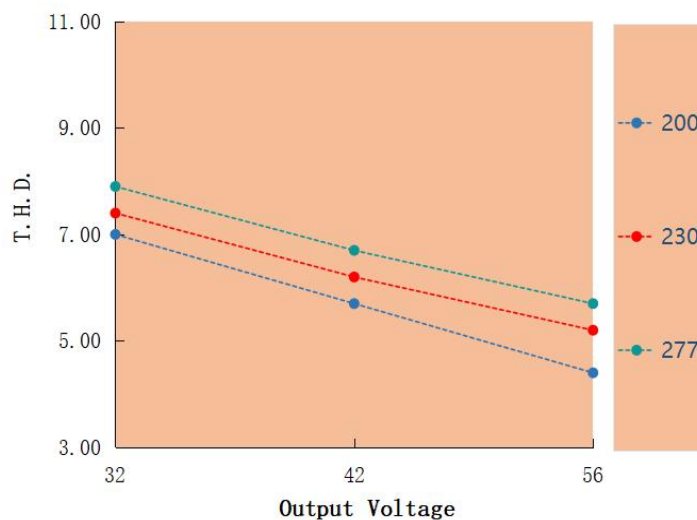
Power factor VS Input voltage HVE-150H-214A/B



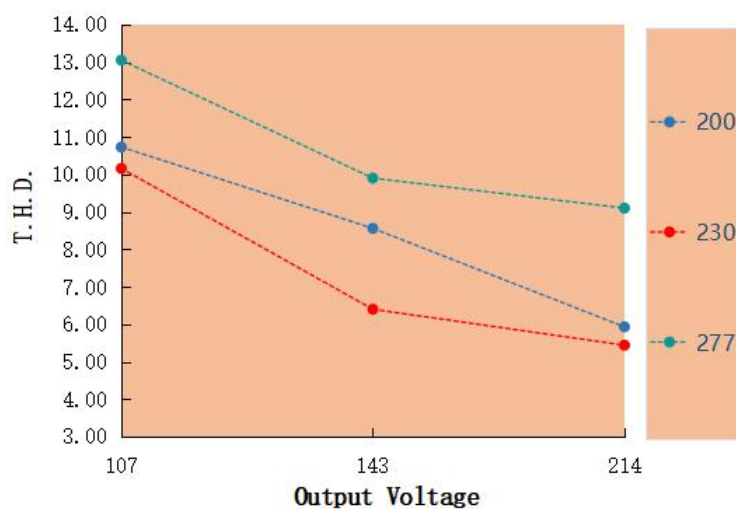
T.H.D. VS Output voltage HVE-150H-38A/B

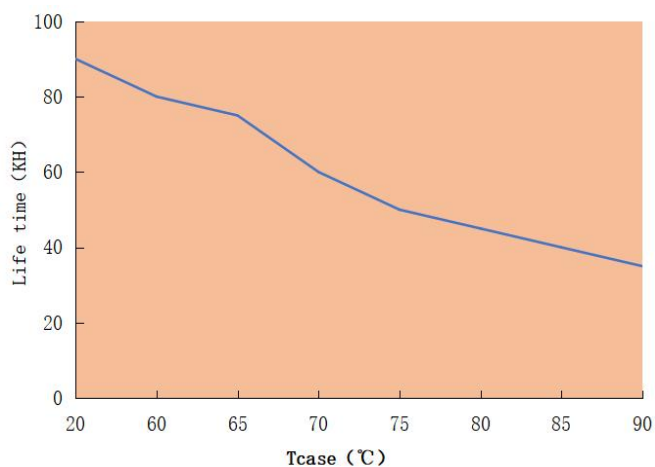
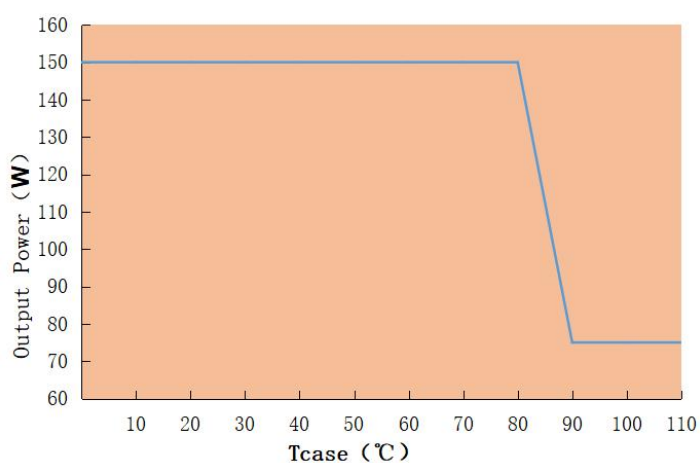
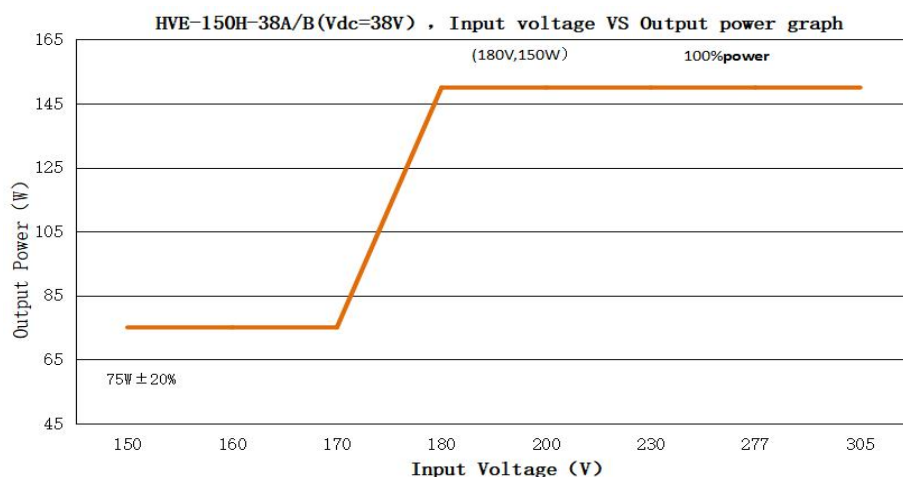


T.H.D. VS Output voltage HVE-150H-56A/B



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



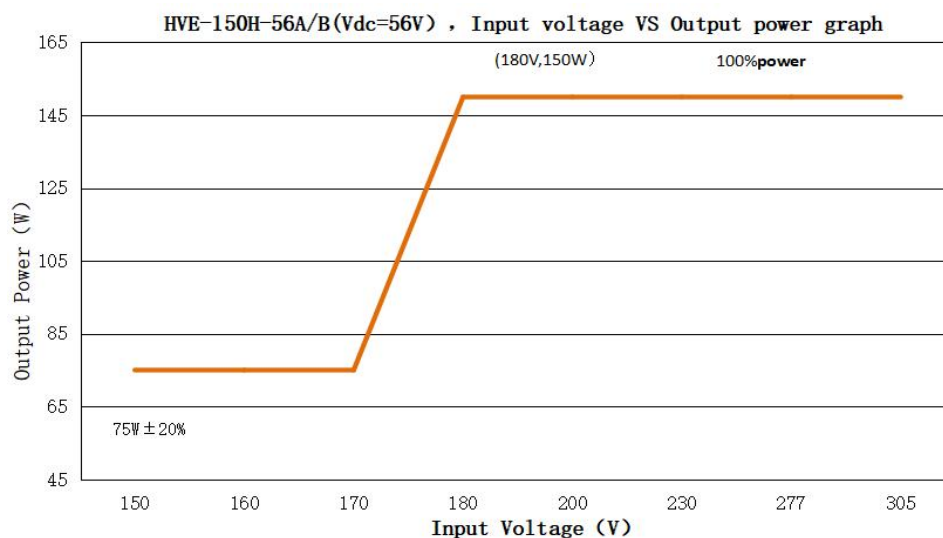
Tcase VS Life time (HVE-150H-A/B)

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

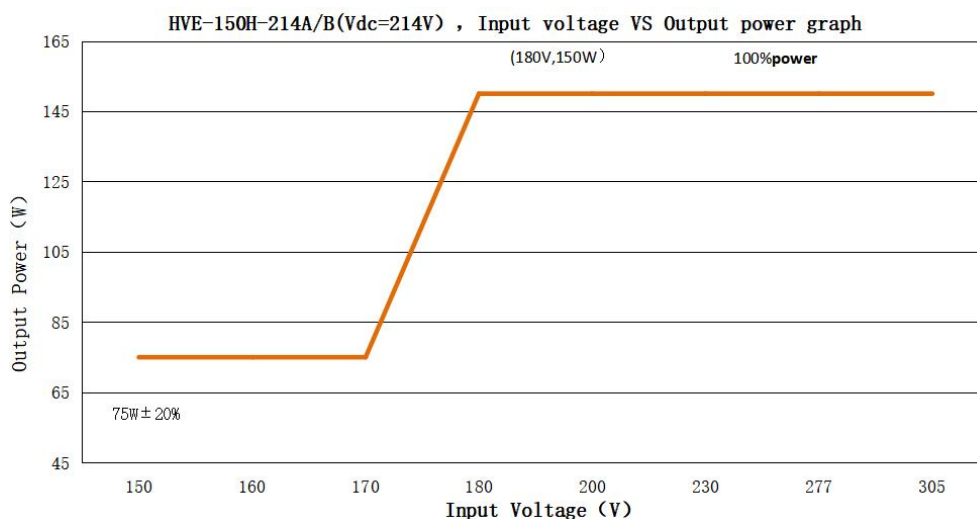


HVE-150H-56A/B(For output 56Vdc, the rated output current & power under different input voltage)

Input Voltage	150Vac	160Vac	170Vac	180Vac	200Vac	230Vac	277Vac	305Vac
I _o	1.27A	1.30A	1.34A	2.68A	2.68A	2.68A	2.68A	2.68A
P _o	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 _o	0.36A	0.38A	0.4A	0.7A	0.7A	0.7A	0.7A	0.7A
P _o	75W	75W	75W	150W	150W	150W	150W	150W

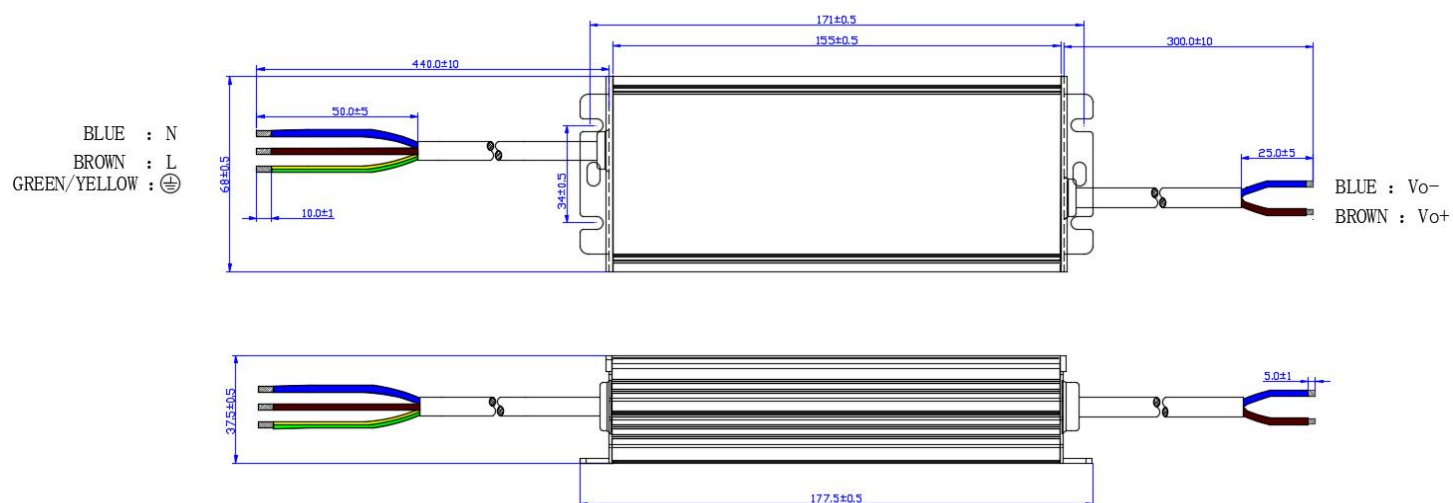
Mechanical specification

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

HVE-150H-38B

HVE-150H-56B

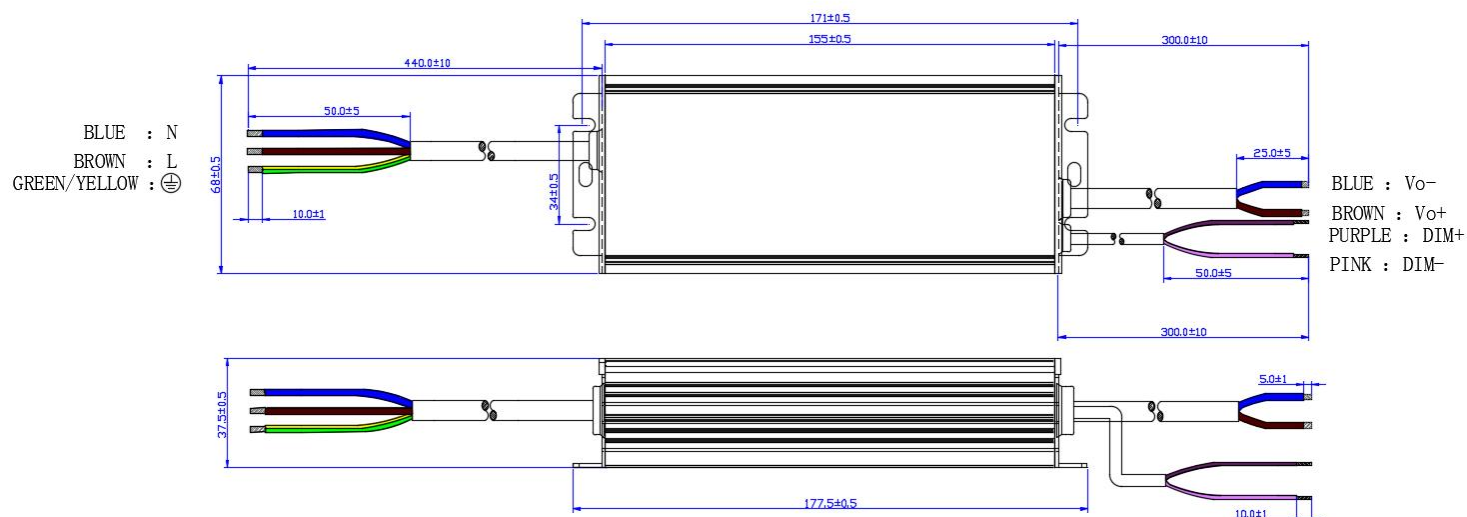
HVE-150H-214B



HVE-150H-38A

HVE-150H-58A

HVE-150H-214A



	Product Type	LED INTEGRATED SPECIAL DRIVER		
	Product Series	HVE-150H-38/56/214 Series	REV	V2.1

Version

DATE	DESCRIPTION	REV.	CHECK
2023.04.14	Initial version.	V1.0	
2023.10.17	Added High Voltage Version 214V	V2.0	
2024.11.30	The no-load voltage of the HVE-150H-214A/B version is adjusted to 275 volts.	V2.1	