

SPECIFICATION

Product name : HAE-50W

Release date : 2024/08/22

	Product Type	LED INTEGRATED SPECIAL DRIVER		
	Product Series	HAE-50W Series	REV	V1.1

Features

- Class I type for insulation
- Input voltage range: 120-277V ~ 50/60Hz
- Efficiency 88% (Typ.)
- Constant current output ,with power limitation for control mode
- Metal material case, protection grade against water and dust: IP65
- Surge level:
 - differential mode : 4kV
 - common mode : 6kV
- Function available:
 - Output current is dimmed by external potentiometer (Only Type A)
- guaranteed Lifetime : 5 years
- It is recommended that this product be installed inside a lamp with waterproof function



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	Default current	Eff.
HAE-50W-86V	120-277V 50/60Hz (Power reduction when input is less than 120Vac)	50W	43V-86Vdc	0. 6A	≥89%
HAE-50W-72V			36V-72Vdc	0. 7A	≥90%
HAE-50W-56V			28V-56Vdc	0. 9A	≥89%
HAE-50W-48V			24V-48Vdc	1. 05A	
HAE-50W-42V			21V-42Vdc	1. 2A	
HAE-50W-38V			19V-38Vdc	1. 35A	≥88%
HAE-50W-36V			18V-36Vdc	1. 5A	

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 90Vac ± 15Vac, the output power gradually decreases to 25W ± 20%, and it recovers full power of 50W 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	100Vac	-	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%	@120-277Vac input ,with 70%-100%
Input current	-	-	0.51A	@120Vac input ,with full load
Inrush current	-	-	70A	230Vac, cold start (25°C)

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Output characteristics

Parameter	Min	Typ.	Max	Remark
Rated current				
HAE-50W-86V		0.6A		Rated Load: 86VDC
HAE-50W-72V	-	0.7A	-	Rated Load: 72VDC
HAE-50W-56V	-	0.9A	-	Rated Load: 56VDC
HAE-50W-48V	-	1.05A	-	Rated Load: 48VDC
HAE-50W-42V	-	1.2A	-	Rated Load: 42VDC
HAE-50W-38V		1.35A		Rated Load: 38VDC
HAE-50W-36V		1.5A		Rated Load: 36VDC
Output current range	-	-	-	-
Output voltage range		-		Constant power output range:32-38VDC
HAE-60W-38A	19V	-	38V	Constant power output range:42-56VDC
HAE-60W-56A	25V	-	56V	Constant power output range:57-86VDC
HAE-60W-86A	43V	-	86V	
Available power(60-90Vac)	-	25W	-	Decrease to a half once input voltage being less than 90 Vac
Rated power(100-277Vac)	-	50W	-	-
No-load voltage				
HAE-50W-36V/38V	-	-	50V	-
HAE-50W-42V	-	-	55V	-
HAE-50W-48V/56A	-	-	70V	-
HAE-50W-72V/86V			100V	
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 Note: 50W-86V $\pm 5\%$
Starting time	-	-	500ms	Full load@230Vac

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Protections

Protection	description
under-voltage protection	When the input voltage is less than $90 \pm 15\text{Vac}$, 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	$-40 \sim +55^{\circ}\text{C}$ @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_{case} VS Lifetime” curve for details.

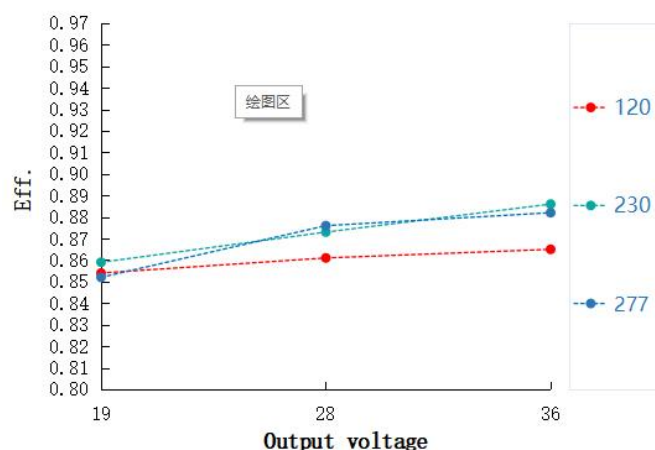
Safety and EMC

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	I/P-O/P: 3.75KVac I/P-PE : 1.5KVac O/P-PE : 0.5KVac
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

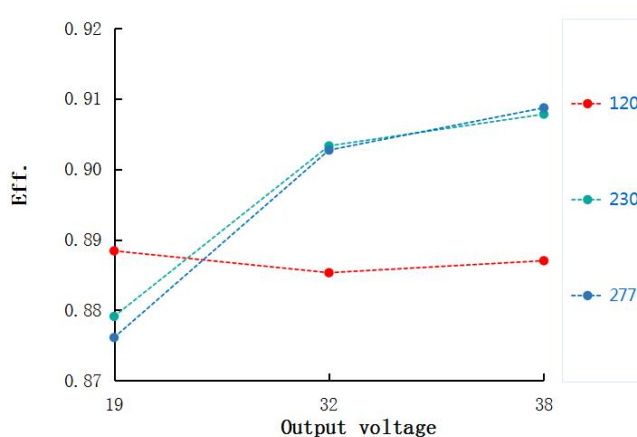
Note:

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 D
2. irective on the complete product.

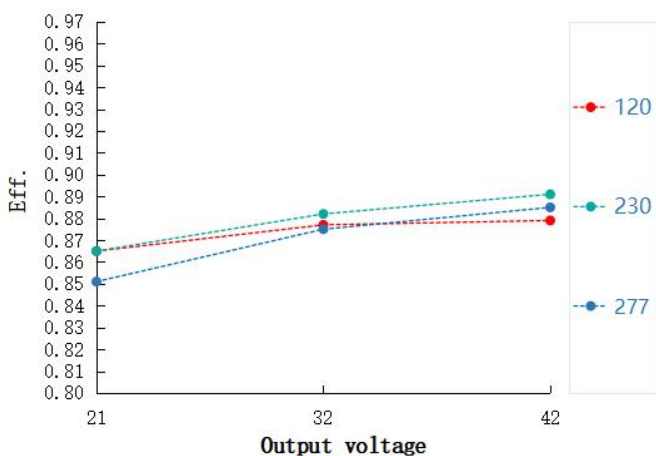
Eff. VS Output voltage HAE-50W-36V



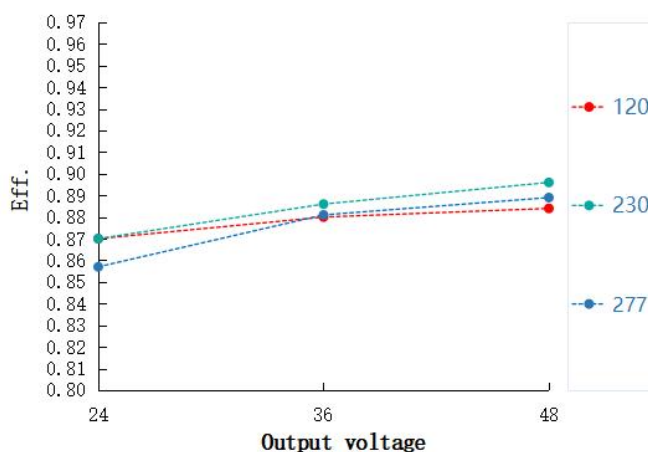
Eff. VS Output voltage HAE-50W-38V



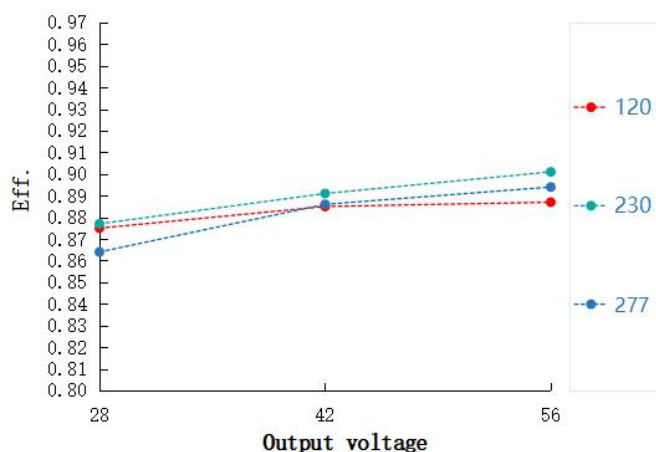
Eff. VS Output voltage HAE-50W-42V



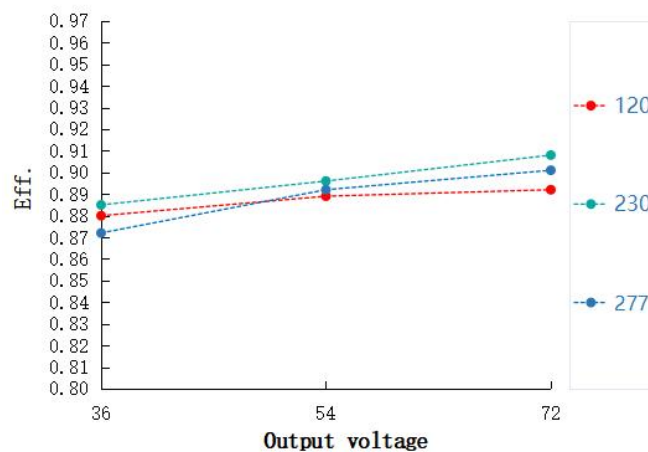
Eff. VS Output voltage HAE-50W-48V



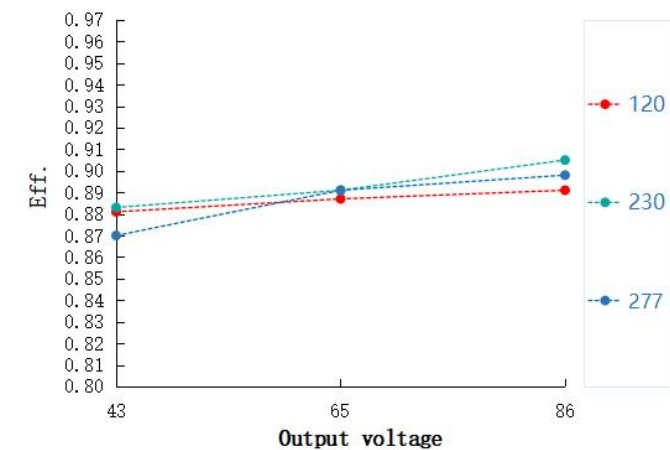
Eff. VS Output voltage HAE-50W-56V



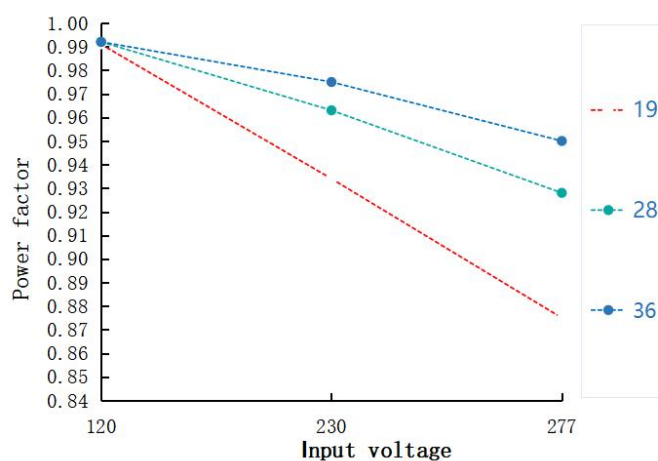
Eff. VS Output voltage HAE-50W-72V



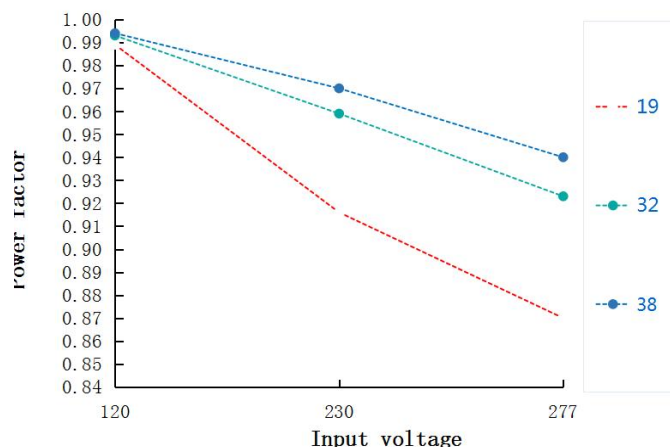
Eff. VS Output voltage HAE-50W-86V



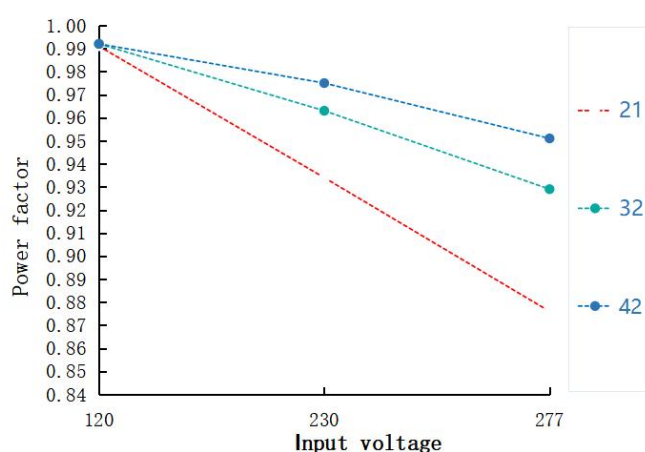
Power factor VS Input voltage HAE-50W-36V



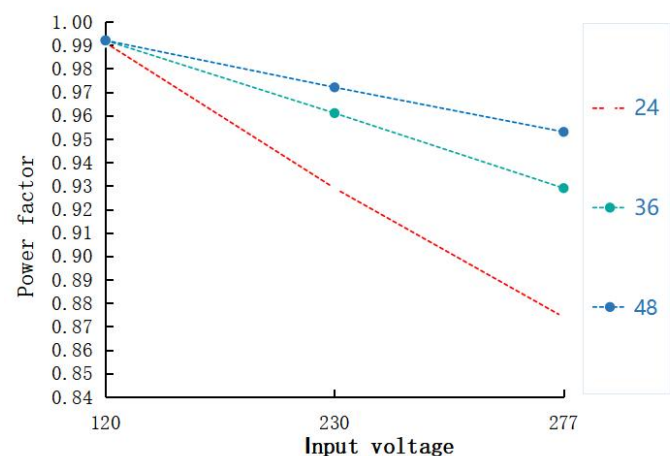
Power factor VS Input voltage HAE-50W-38V



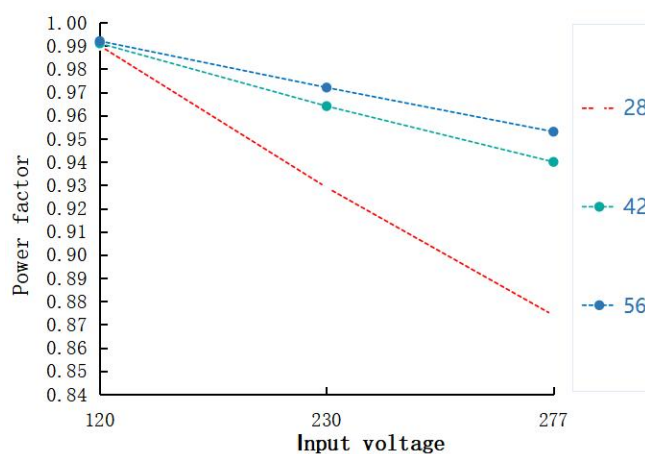
Power factor VS Input voltage HAE-50W-42V



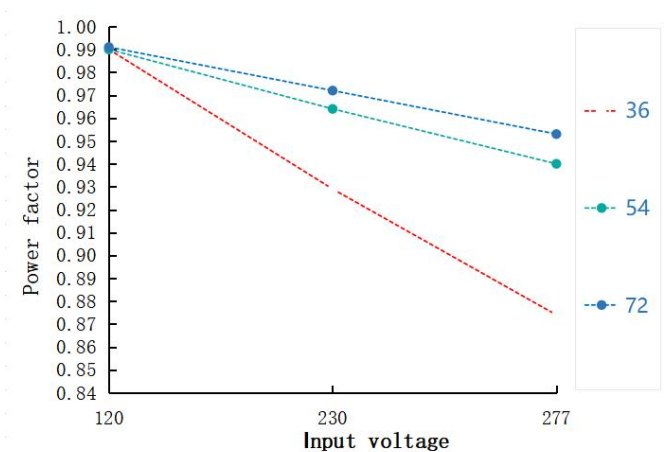
Power factor VS Input voltage HAE-50W-48V



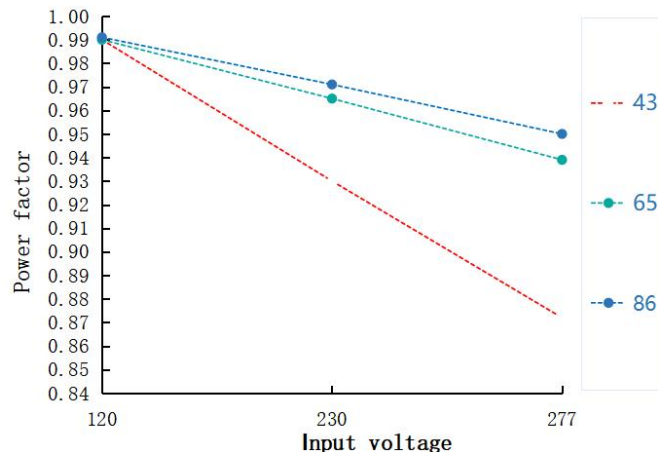
Power factor VS Input voltage HAE-50W-56V



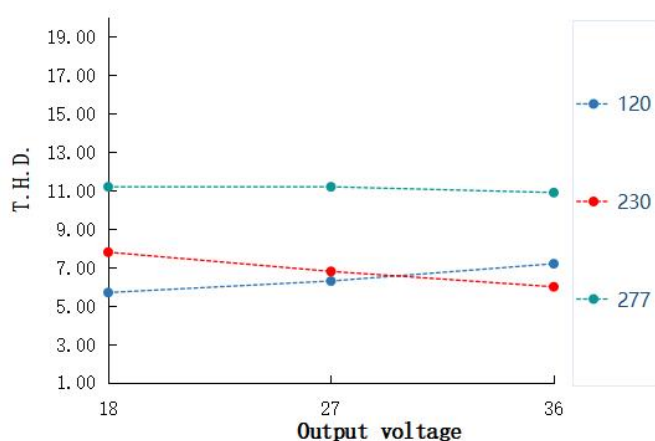
Power factor VS Input voltage HAE-50W-72V



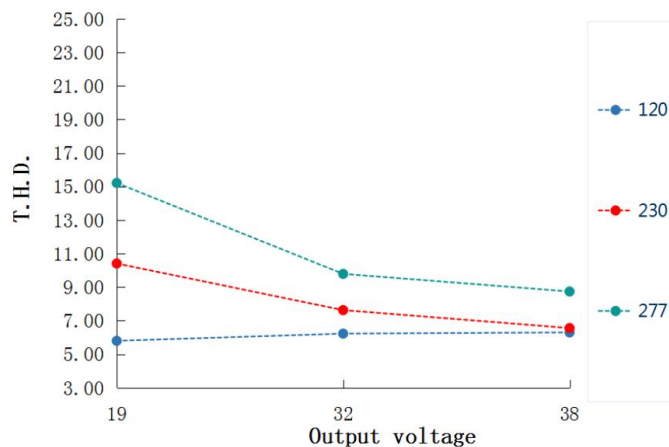
Power factor VS Input voltage HAE-50W-86V



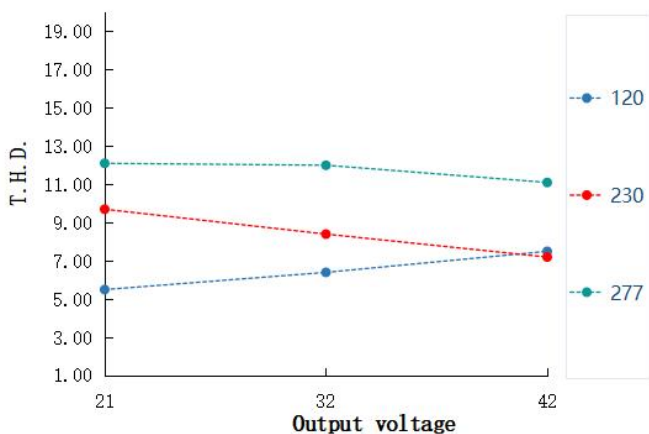
T.H.D. VS Output voltage HAE-50W-36V



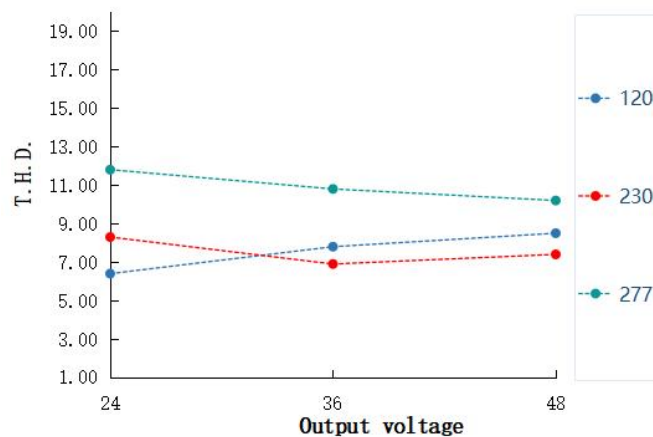
T.H.D. VS Output voltage HAE-50W-38V



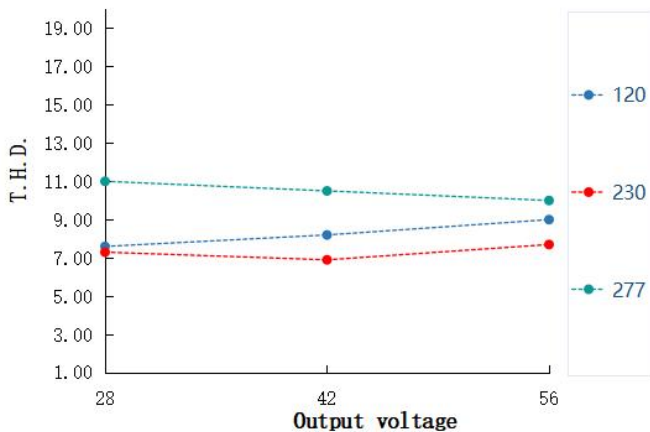
T.H.D. VS Output voltage HAE-50W-42V



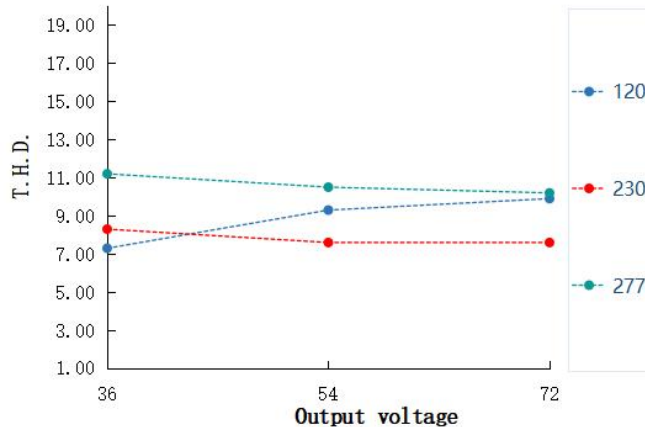
T.H.D. VS Output voltage HAE-50W-48V



T.H.D. VS Output voltage HAE-50W-56V

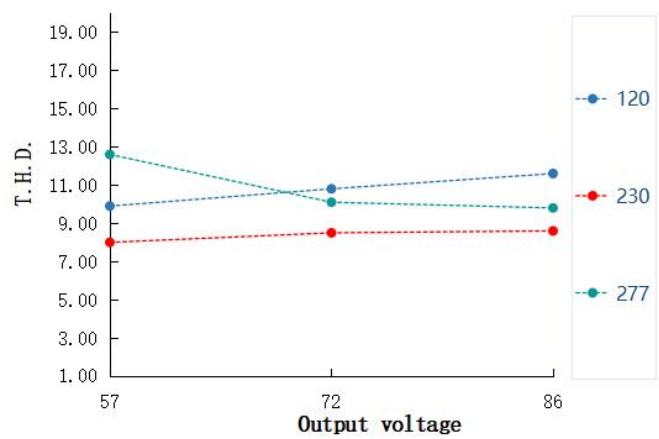


T.H.D. VS Output voltage HAE-50W-72V

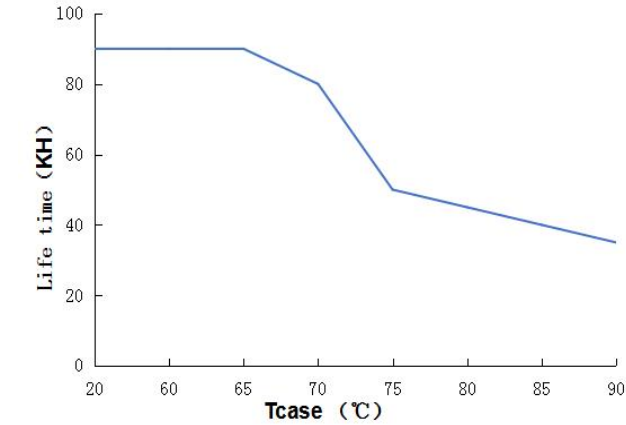


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	Product Series	HAE-50W Series	REV	V1.1

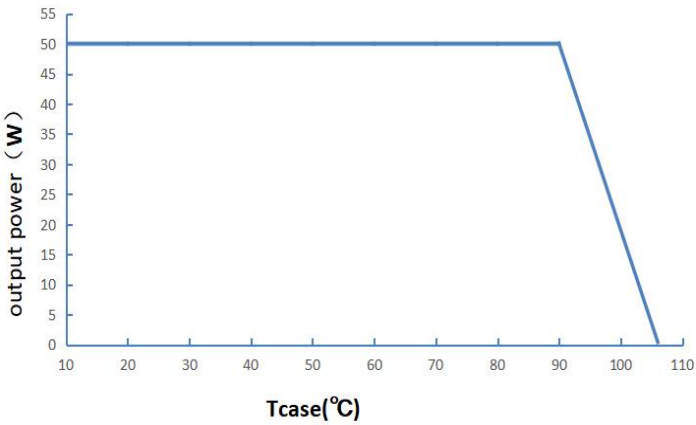
T.H.D. VS Output voltage HAE-50W-86V



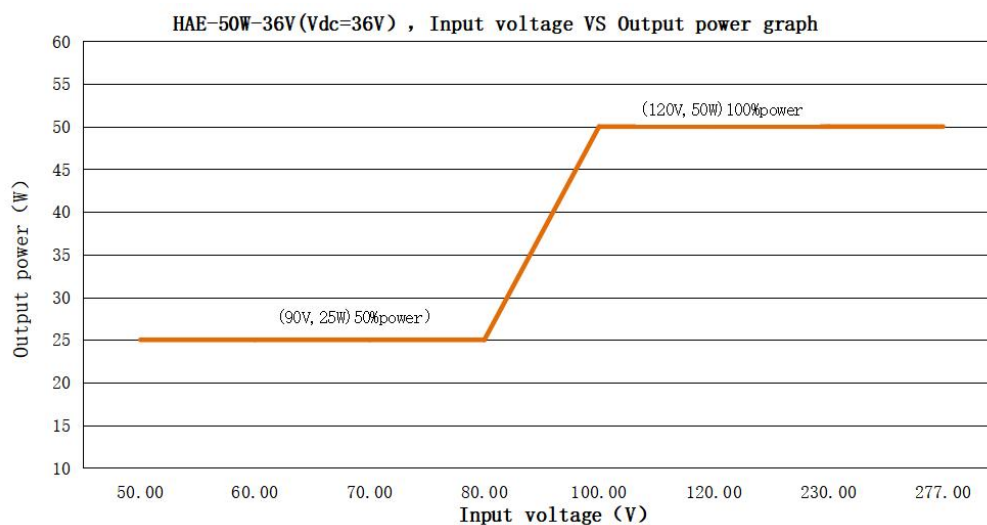
Tcase VS Life time (HAE-50W-X)



Output power VS Tcase(HAE-50W-X)

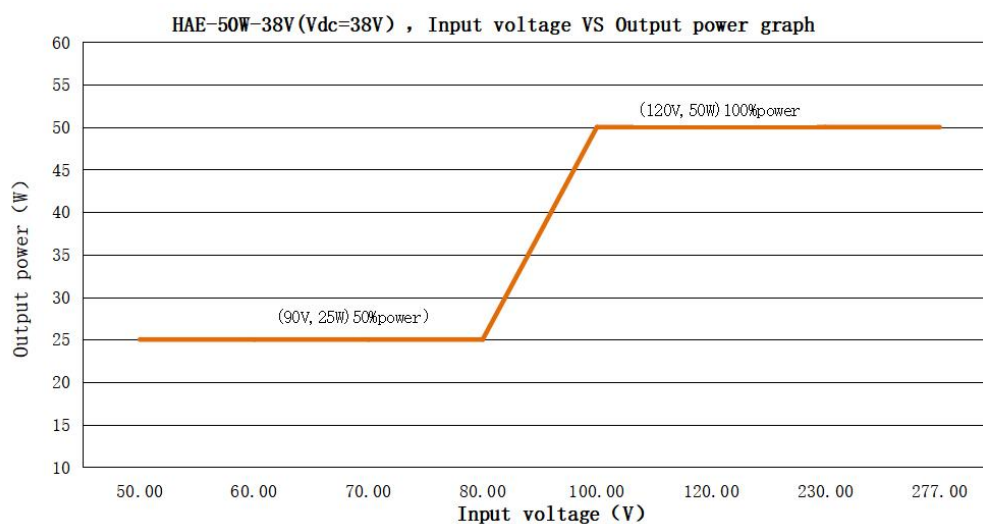


Output power VS Input voltage



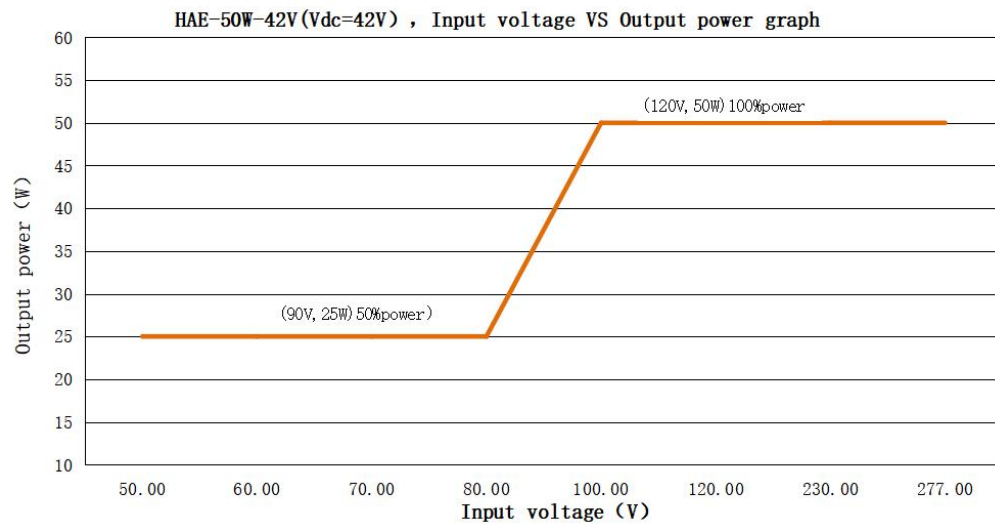
HAE-50W-36V (For output 36Vdc, the rated output current & power under different input voltage)

Input Voltage	60Vac	70Vac	80Vac	90Vac	100Vac	120Vac	230Vac	277Vac
Io	0.695A	0.695A	0.695A	0.695A	1.39A	1.39A	1.39A	1.39A
Po	25W	25W	25W	25W	50W	50W	50W	50W



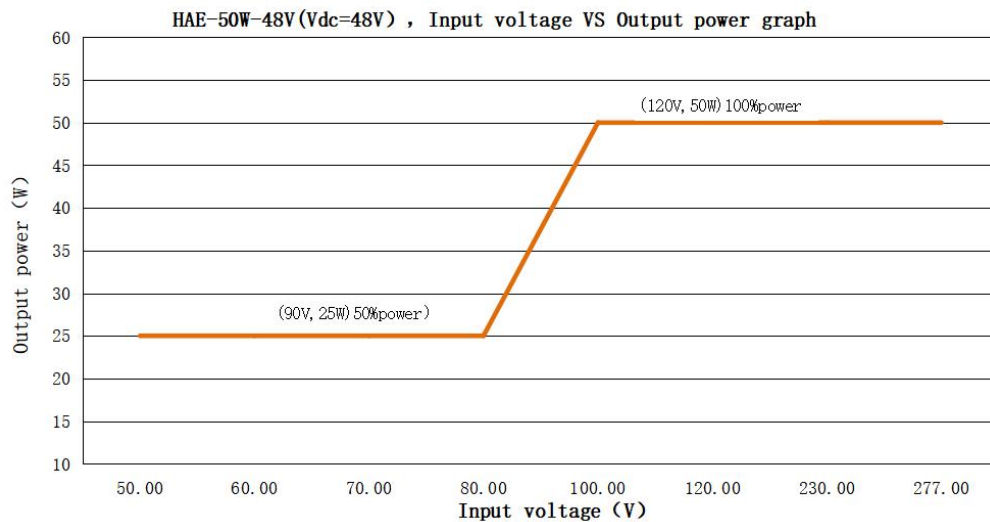
HAE-50W-38V (For output 38Vdc, the rated output current & power under different input voltage)

Input Voltage	60Vac	70Vac	80Vac	90Vac	100Vac	120Vac	230Vac	277Vac
Io	0.66A	0.66A	0.66A	0.66A	1.32A	1.32A	1.32A	1.32A
Po	25W	25W	25W	25W	50W	50W	50W	50W



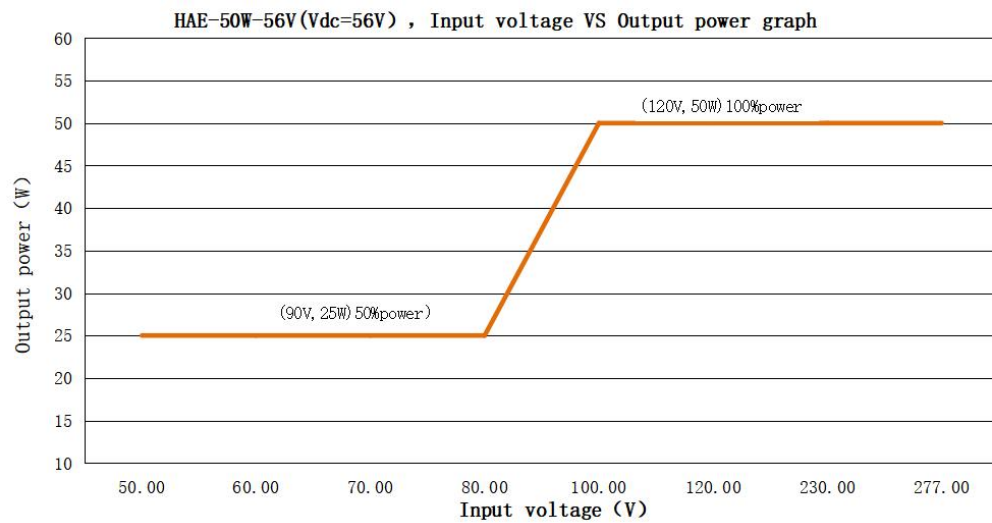
HAE-50W-42V (For output 42Vdc, the rated output current & power under different input voltage)

Input Voltage	60Vac	70Vac	80Vac	90Vac	100Vac	120Vac	230Vac	277Vac
Io	0.595A	0.595A	0.595A	0.595A	1.19A	1.19A	1.19A	1.19A
Po	25W	25W	25W	25W	50W	50W	50W	50W



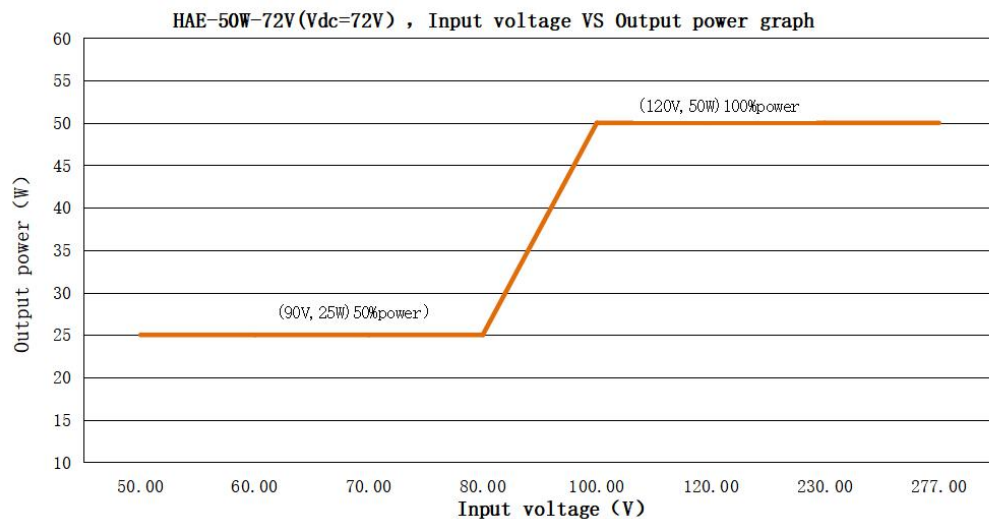
HAE-50W-48V (For output 48Vdc, the rated output current & power under different input voltage)

Input Voltage	60Vac	70Vac	80Vac	90Vac	100Vac	120Vac	230Vac	277Vac
Io	0.52A	0.52A	0.52A	0.52A	1.04A	1.04A	1.04A	1.04A
Po	25W	25W	25W	25W	50W	50W	50W	50W



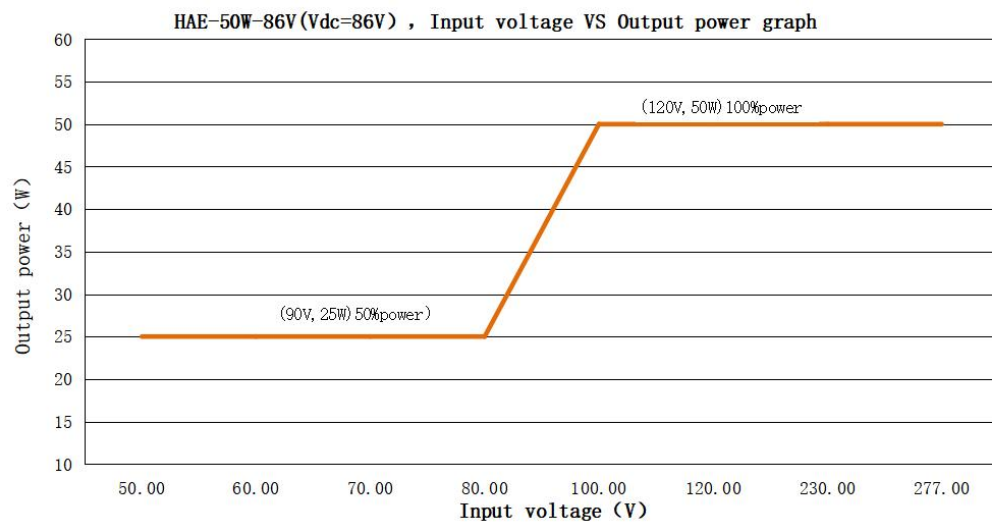
HAE-50W-56V (For output 56Vdc, the rated output current & power under different input voltage)

Input Voltage	60Vac	70Vac	80Vac	90Vac	100Vac	120Vac	230Vac	277Vac
Io	0.446A	0.446A	0.446A	0.446A	0.893A	0.893A	0.893A	0.893A
Po	25W	25W	25W	25W	50W	50W	50W	50W



HAE-50W-72V (For output 72Vdc, the rated output current & power under different input voltage)

Input Voltage	60Vac	70Vac	80Vac	90Vac	100Vac	120Vac	230Vac	277Vac
Io	0.347A	0.347A	0.347A	0.347A	0.694A	0.694A	0.694A	0.694A
Po	25W	25W	25W	25W	50W	50W	50W	50W



HAE-50W-86V (For output 86Vdc, the rated output current & power under different input voltage)

Input Voltage	60Vac	70Vac	80Vac	90Vac	100Vac	120Vac	230Vac	277Vac
Io	0.29A	0.29A	0.29A	0.29A	0.58A	0.58A	0.58A	0.58A
Po	25W	25W	25W	25W	50W	50W	50W	50W

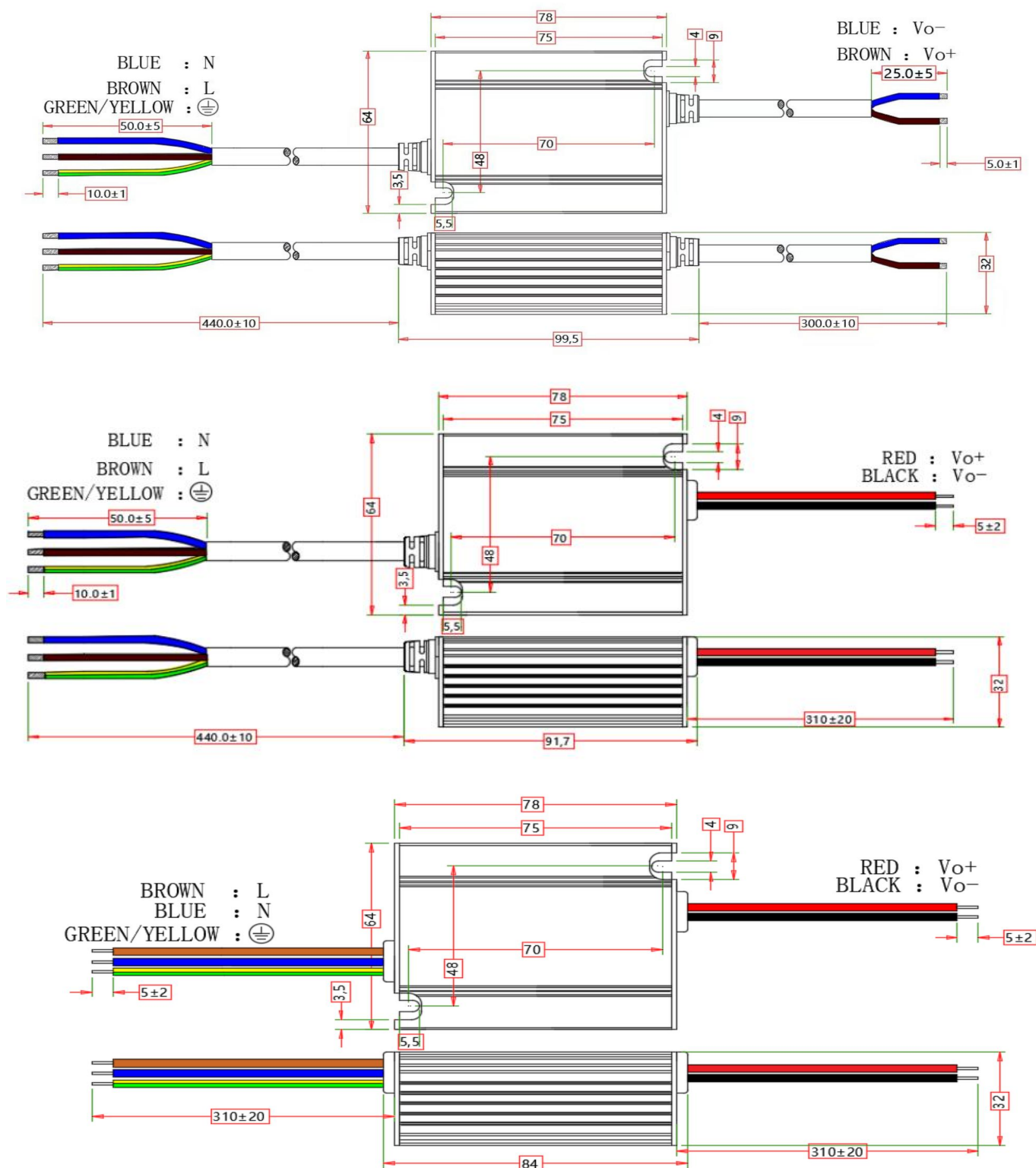
Note:

1. When the input voltage is below 90 ± 15 Vac, the output power decreases to $25W \pm 20\%$.

Mechanical specification

Size (mm)	L78mm*W64mm*H32mm
Weight (Kg)	329g
Packaging (mm)	

HAE-50W-36V/38V/42V/48V/56V/72V/86V



The input electronic line has not yet obtained the certificate yet

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	Product Series	HAE-50W Series	REV	V1.1

Version

DATE	DESCRIPTION	REV.	CHECK
2024.01.12	Initial version.	V1.0	
2024.08.22	Update the parameter graph	V1.1	