

SPECIFICATION

Product name : HVC-100W-56&143X (RT)

Release date : 2025/4/2

Features

- Class I type for insulation
- Input voltage range:100-277V ~ 50/60Hz (input 330-380Vac overvoltage protection for option, no damage after 8 hours of power-on)
- 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/C)
 - AUX Power: 12V/0.25A (Only Type C)
- 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-100W-56A HVC-100W-56B HVC-100W-56C	100-277V 50/60Hz	100W	27-56Vdc Rated Power (33-56V)	2.4A	≥91%
HVC-100W-143A HVC-100W-143B HVC-100W-143C	100-277V 50/60Hz	100W	71-143Vdc Rated Power (95-143V)	1.05A	≥91%

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 100 ± 15Vac, the output power gradually decreases to 50W ± 20%, and it recoveries full power of 100W when the input is above 100VAC again. Please refer to “THE OUTPUT POWER VS INPUT VOLTAGE” curve chart for details.

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	0.9	-	-	@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	-	-	1.35A	@90Vac input ,with full load
Inrush current	-	-	70A	230Vac, cold start (25°C)

Output characteristics

Parameter	Min	Typ.	Max	Remark
Rated current				
HVC-100W-56A/B/C	-	1.78A	-	Rated Load :56VDC
HVC-100W-143A/B/C	-	0.70A	-	Rated Load :143VDC
Output current range				
HVC-100W-56A/B/C	1.3A	-	3.0A	-
HVC-100W-143A/B/C	0.5A	-	1.05A	-
Output voltage range				
HVC-100W-56A/B/C	27V	-	56V	Constant power output range:33-56VDC
HVC-100W-143A/B/C	71V	-	143V	Constant power output range:95-143VDC
Available power(90-100Vac)	-	50W	-	Decrease to a half once input voltage being less than 100 Vac
Rated power(100-277Vac)	-	100W	-	-
No-load voltage				
HVC-100W-56A/B/C	-	-	80V	-
HVC-100W-143A/B/C	-	-	190V	-

Output characteristics

Parameter	Min	Typ.	Max	Remark
Efficiency@230Vac HVC-100W-56A/B/C HVC-100W-143A/B/C	-	91% 91%	-	@230Vac input ,with full load
Accuracy of output current	-5%	-	+5%	For constant-power range , with full load
Ripple current		±3%	<±5%	
Line regulation	-3%	-	+3%	full load
Load regulation	-3%	-	+3%	full load
Starting time	-	-	800ms	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.
- For B version, 0-10V dimming function, the standby power is >0.5W. If requiring the standby power <0.5W, please choose C version. C version, the standby power is <0.5W.

Protections

Protection	description
under-voltage protection	When the input voltage is less than $100 \pm 15\text{Vac}$, 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	$-40 \sim +55^{\circ}\text{C}@100\text{-}277\text{Vac}$ ((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.

Safety and EMC

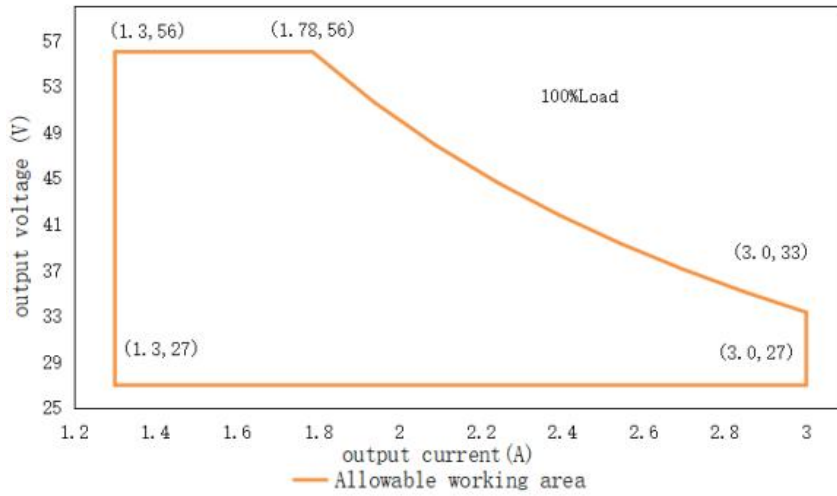
Safety categories	Standard
Safety	GB19510.1、GB19510.14、EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS61347.2.13、EN 62384;
EMC	EN 55015、EN 61547、EN 61000-3-2、GB/T 17743、GB17625.1、EN 61000-3-3
Surge level	Differential mode L-N $\pm 6KV(2\Omega)$, common mode L, N-PE $\pm 10KV(12\Omega)$ Refer to IEC61000-4-5 2014
High-pot test	I/P-O/P:3.75KVac I/P-PE :1.75KVac I/P-DIM:3.75KVac O/P-DIM:0.5KVac
Insulation impedance	I/P-PE:100M Ω / 500VDC; I/P-O/P:100M Ω / 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.

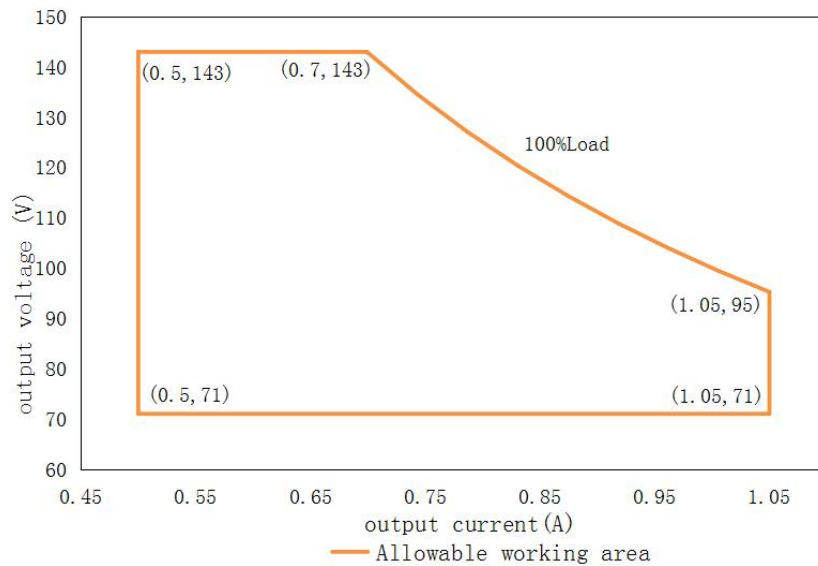
I-V Working area

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



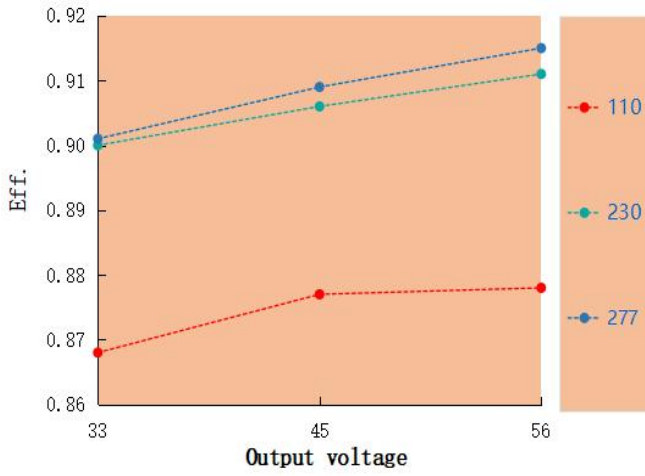
Load	Output								
Load working Voltage	27V	30V	33V	36V	40V	43V	46V	50V	56V
Io_MAX	3A	3A	3A	2.77A	2.5A	2.3A	2.17A	2.0A	1.78A
Po_MAX	81W	90W	99W	100W	100W	100W	100W	100W	100W

HVC-100W-143A/B/C(input:100-277Vac)output voltage VS Output current

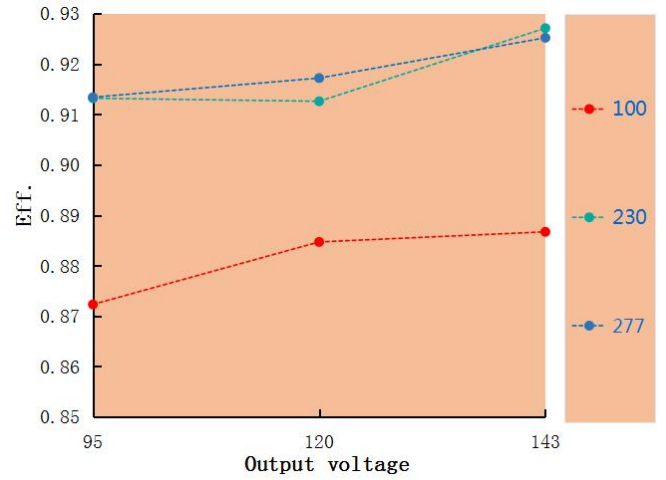


Load	Output								
Load working Voltage	71V	85V	90V	95V	100V	110V	120V	130V	143V
Io_MAX	1.05A	1.05A	1.05A	1.05A	1.00A	0.91A	0.84A	0.77A	0.70A
Po_MAX	74.55W	89.25W	94.5W	100W	100W	100W	100W	100W	100W

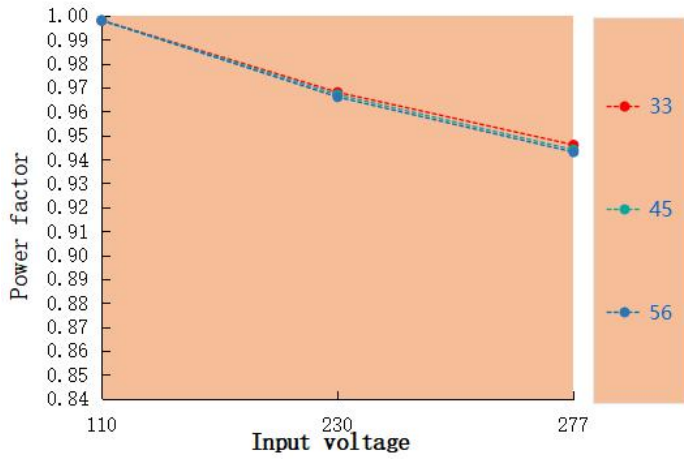
Eff. VS Output voltage HVC-100W-56A/B/C



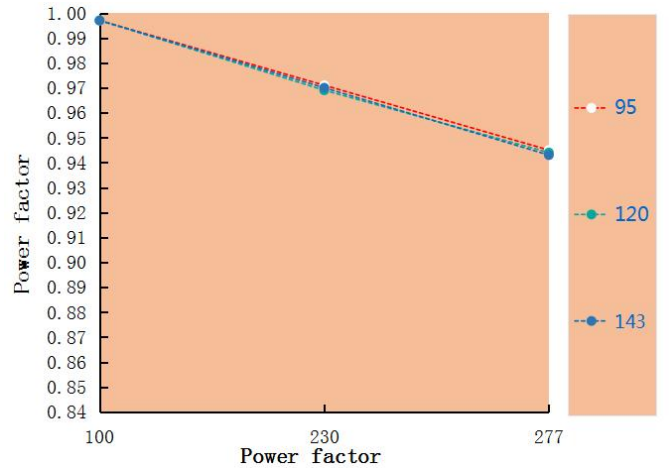
Eff. VS Output voltage HVC-100W-143A/B/C



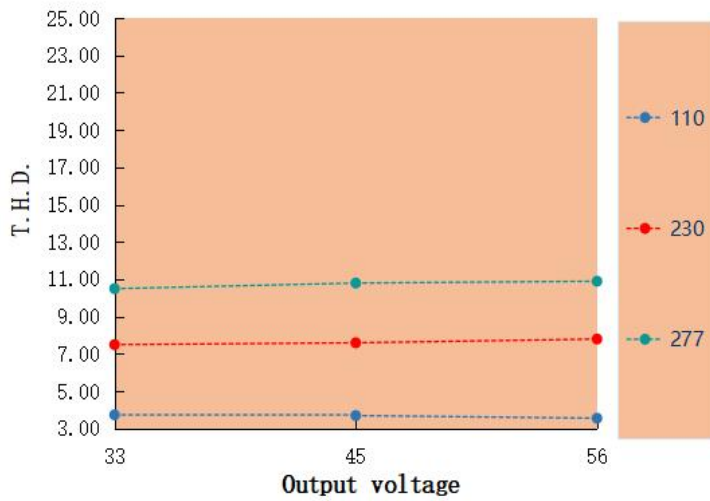
Power factor VS Input voltage HVC-100W-56A/B/C



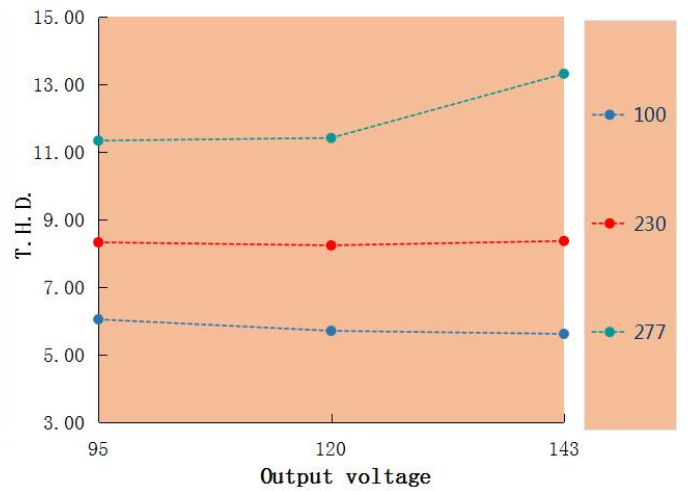
Power factor VS Input voltage HVC-100W-143A/B/C



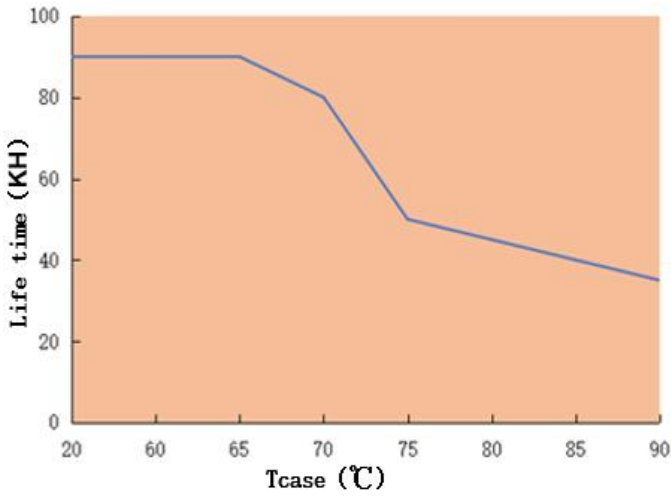
T.H.D. VS Output voltage HVC-100W-56A/B/C



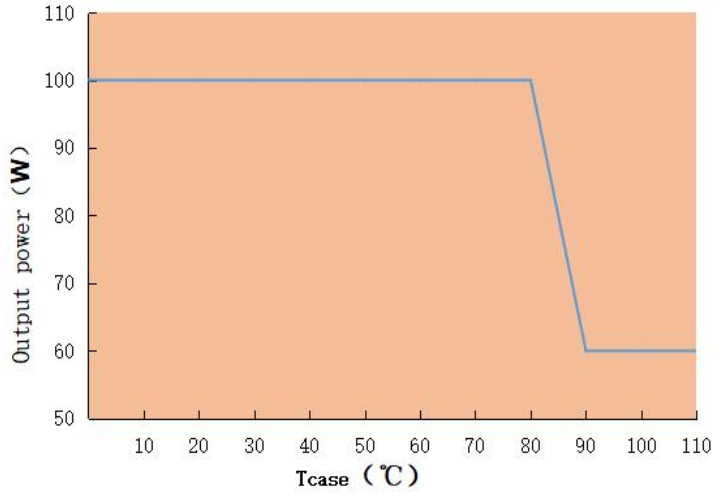
T.H.D. VS Output voltage-HVC-100W-143A/B/C



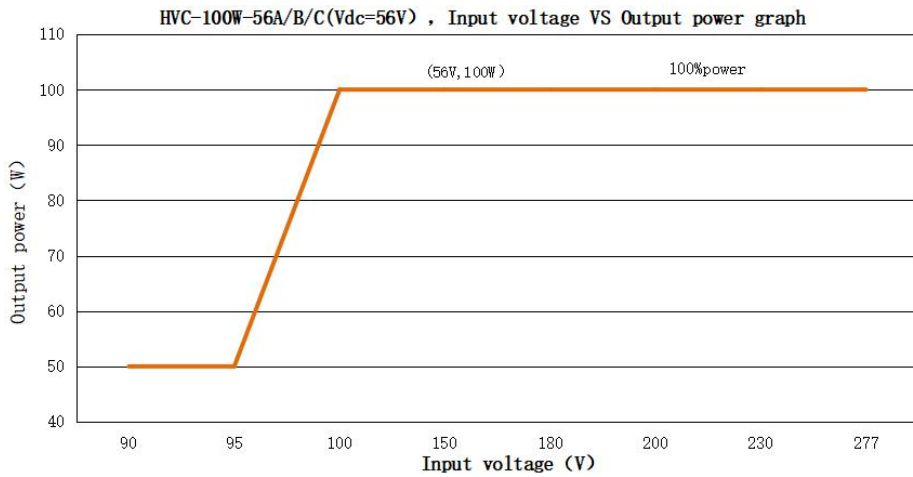
Tcase VS Life time(HVC-100W-56&143A/B/C)



Output power VS Tcase(HVC-100W-56&143A/B/C)

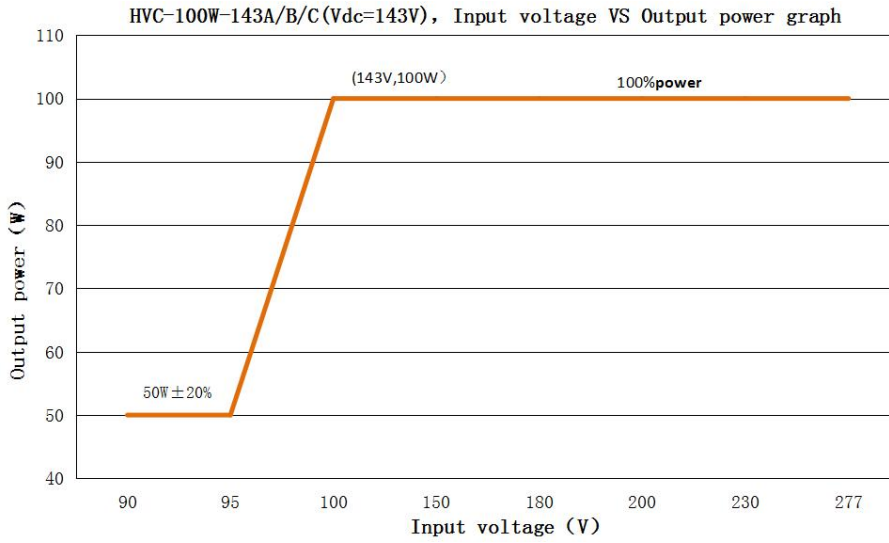


Output power VS Input voltage



HVC-100W-56A/B/C (For output 56Vdc, the rated output current & power under different input voltage)

Input Voltage	90Vac	95Vac	100Vac	120Vac	180Vac	200Vac	230Vac	277Vac
Io	0.9A	0.9A	1.78A	1.78A	1.78A	1.78A	1.78A	1.78A
Po	50W	50W	100W	100W	100W	100W	100W	100W



HVC-100W-143A/B/C (For output 143Vdc, the rated output current & power under different input voltage)

Input Voltage	90Vac	95Vac	100Vac	120Vac	180Vac	200Vac	230Vac	277Vac
Io	1.42A	1.42A	1.78A	1.78A	1.78A	1.78A	1.78A	1.78A
Po	50W	50W	100W	100W	100W	100W	100W	100W

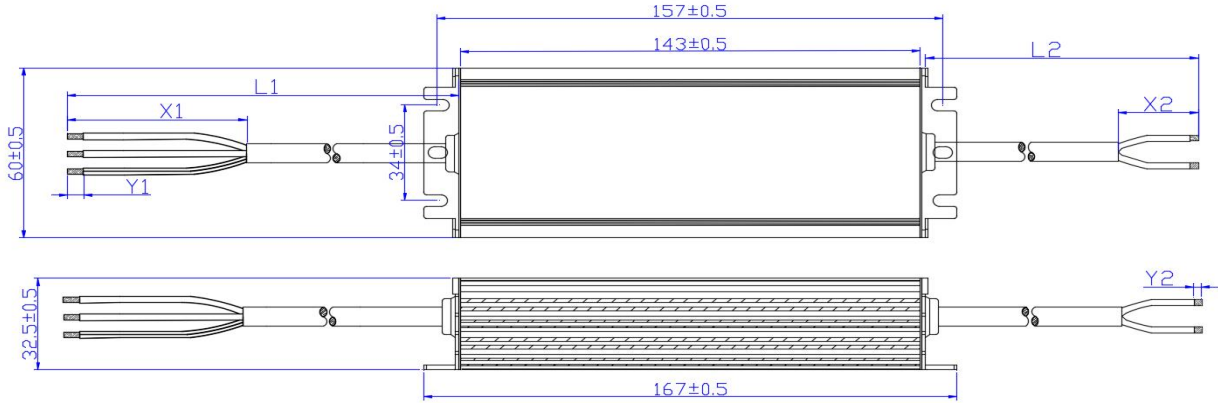
Note:

1. When the input voltage is below 100±15Vac, the output power decreases to 50W±20%.

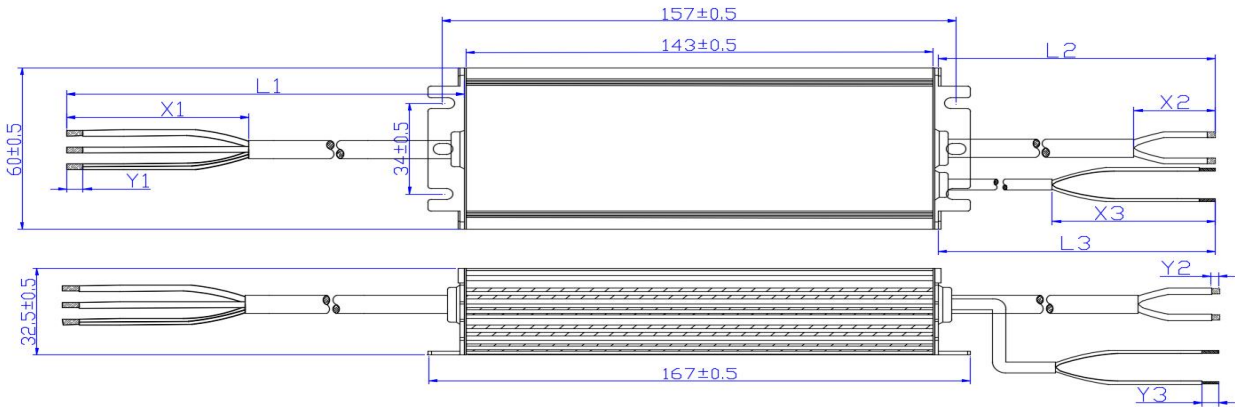
Mechanical specification

Size (mm)	L167mm*W60mm*H32.5mm
Weight (Kg)	0.575Kg
Packaging (mm)	

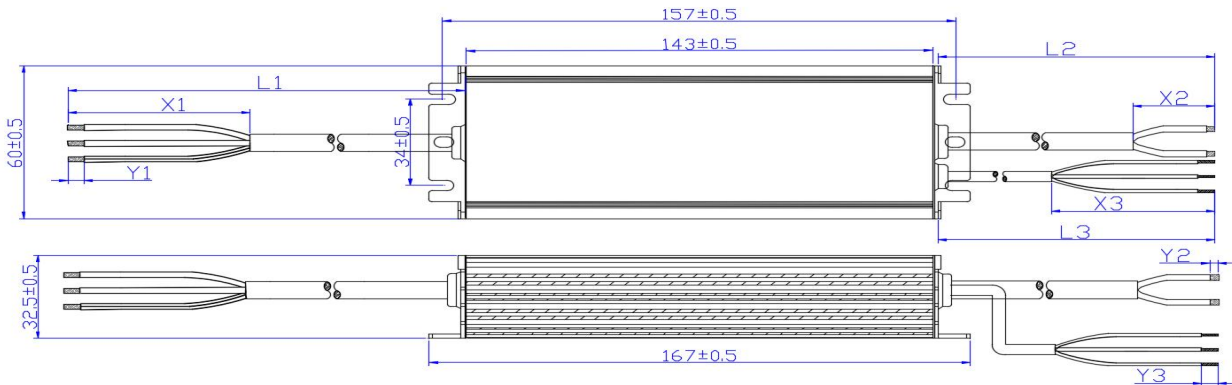
HVC-100W-56A/143A



HVC-100W-56B/143B



HVC-100W-56C/143C



Type	Input Wire	Output Wire	Dimming Wire & AUX Output Wire
Specifications	H05RN-F 3*1.0mm ² OD:7.2mm 300V/500V VDE/CCC/SAA	H05RN-F 2*1.0mm ² OD:6.8mm 300/500V VDE/CCC/SAA	PVC 22AWG 300V 105°C OD : 4.8mm
Color	AC-L(Brown); AC-N(Blue) PG(Yellow/Green)	LED+(Brown);LED-(Blue)	DIM+(Purple);DIM-(Pink)
Length	440±10mm (L1)	300±10mm (L2)	300±10mm (L3)
Peeled	50±5mm(X1)	25±5mm(X2)	50±5mm(X3)
Tinned	10±1mm (Y1)	5±1mm (Y2)	10±1mm (Y3)



Product Type

LED INTEGRATED SPECIAL DRIVER

Product Series

HVC-100W-56&143X Series (RT)

REV

V1.2

Version

DATE	DESCRIPTION	REV.	CHECK
2024.07.19	Initial version.	V1.0	
2024.08.01	Typical values for update efficiency	V1.1	
2025.4.2	1、 Updated the standby power consumption description; 2、 Update the authentication identifier	V1.2	