

HVC SERIES LED DRIVER

HVC-200W-56/286 SPEC V1.0



	Product Type	LED INTEGRATED SPECIAL DRIVER		
	Product Series	HVC-200W-56/286 Series	REV	V1.0

Features

- Class I type for insulation
- Input voltage range:100-277V ~ 50/60Hz
- Efficiency 93% (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
 - 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-200W-56A HVC-200W-56B HVC-200W-56C	100-277V 50/60Hz	200W	27-56Vdc Rated Power (36-56V)	3.57A	≥92.5%
HVC-200W-286A HVC-200W-286B HVC-200W-286C	100-277V 50/60Hz	200W	143-286Vdc Rated Power (190-286V)	0.7A	≥93.5%

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 ± 15 Vac, the output power gradually decreases to $100W \pm 20\%$, and it recoveries full power of 200W 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	-	-	@120-277Vac 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	-	-	2.5A	@120Vac input ,with full load
Inrush current	-	-	110A	230Vac, cold start (25°C)

Output characteristics

Parameter	Min	Typ.	Max	Remark
Rated current				
HVC-200W-56A/B/C	-	3.57A	-	Rated Load :56VDC
HVC-200W-286A/B/C	-	0.7A	-	Rated Load: 286VDC
Output current range				
HVC-200W-56A/B/C	2.6A	-	5.6A	-
HVC-200W-286A/B/C	0.5A	-	1.05A	-
Output voltage range				
HVC-200W-56A/B/C	27V	-	56V	Constant power output range:36-56VDC
HVC-200W-286A/B/C	143V	-	286V	Constant power output range:190-286VDC
Available power(90-108Vac)	-	100W	-	Decrease to a half once input voltage being less than 108 Vac
Rated power(120-277Vac)	-	200W	-	-
No-load voltage				
HVC-200W-56A/B/C	-	-	65V	-
HVC-200W-286A/B/C	-	-	300V	-

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Output characteristics

Parameter	Min	Typ.	Max	Remark
Efficiency@230Vac HVC-200W-56A/B/C HVC-200W-286A/B/C	-	92.5% 93.5%	-	@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.

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3.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 .

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°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.

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Safety and EMC

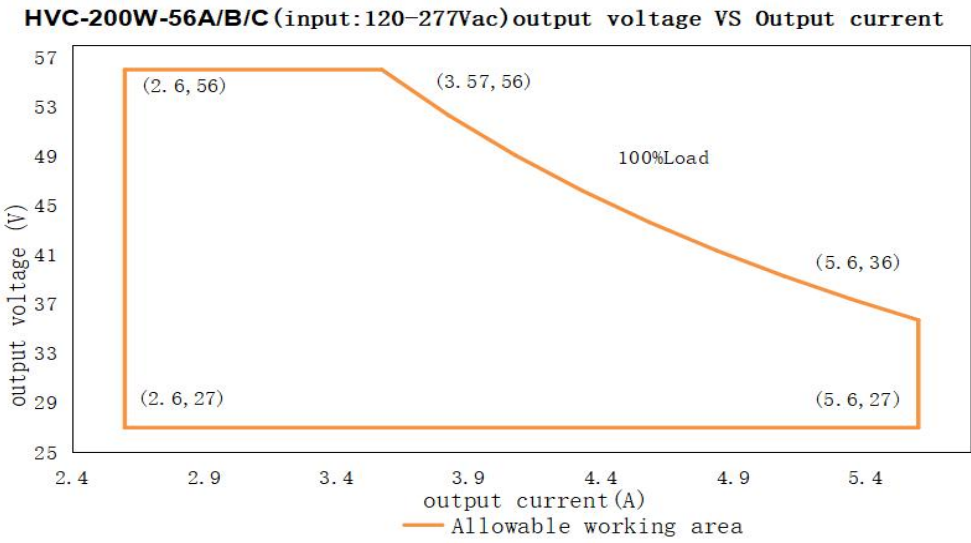
Safety categories	Standard
Safety	GB19510.1、GB19510.14、EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS61347.2.13、EN 62384;
EMC	EN 55015、EN 61547、EN 61000-3-2、GB/T 17743、GB17625.1、EN 61000-3-3
Surge level	Differential mode L-N $\pm 6\text{KV}(2\Omega)$, common mode L, N-PE $\pm (12\Omega)$ 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℃/ 70% RH
Leakage current	<0.7mA@277Vac

Note:

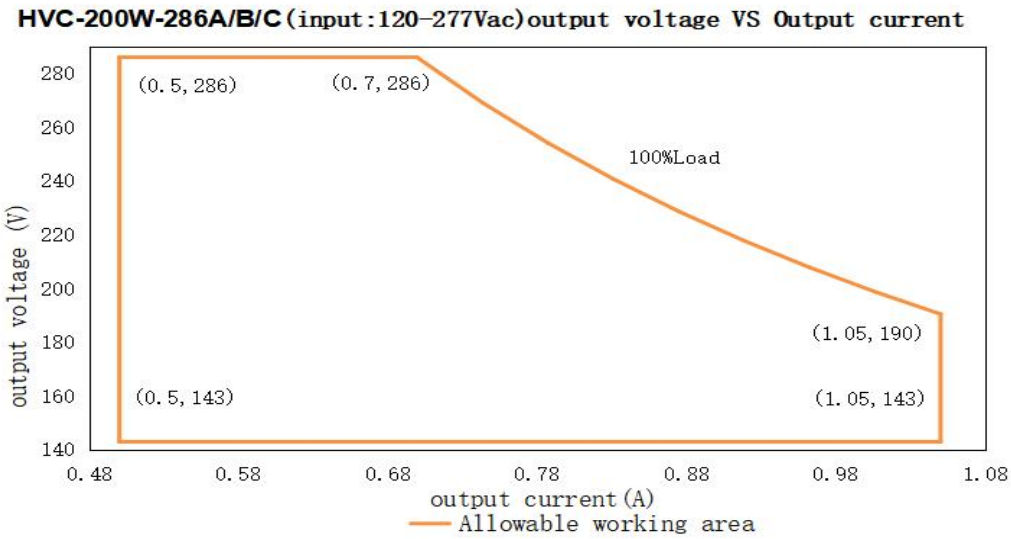
1.Attention! As a component of the whole, the EMC performance of the final product is not only decided by the driver, even if the driver is well-designed and fulfil all the required compliance. The final equipment manufacturers must re-qualify EMC Directive on the complete product.

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I-V Working area

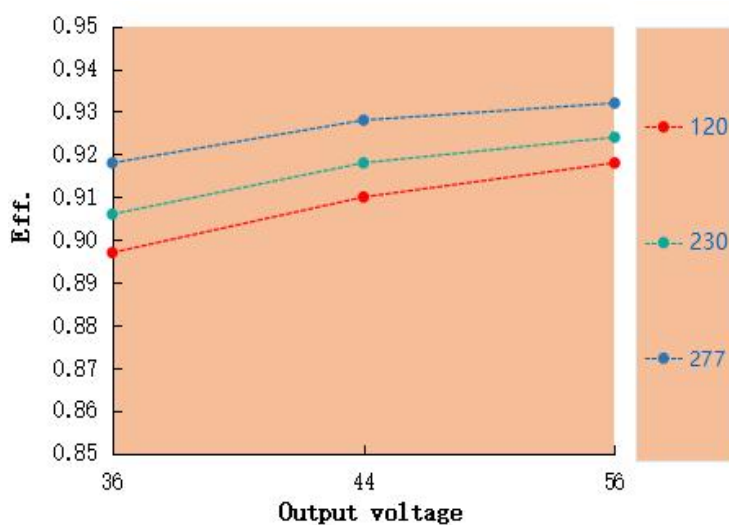


Load	Output								
Load working Voltage	28V	32V	36V	40V	44V	48V	50V	52V	56V
Io_MAX	5.56A	5.56A	5.56A	5.0A	4.55A	4.16A	4.0A	3.85A	3.57A
Po_MAX	155.7W	177.9W	200W	200W	200W	200W	200W	200W	200W

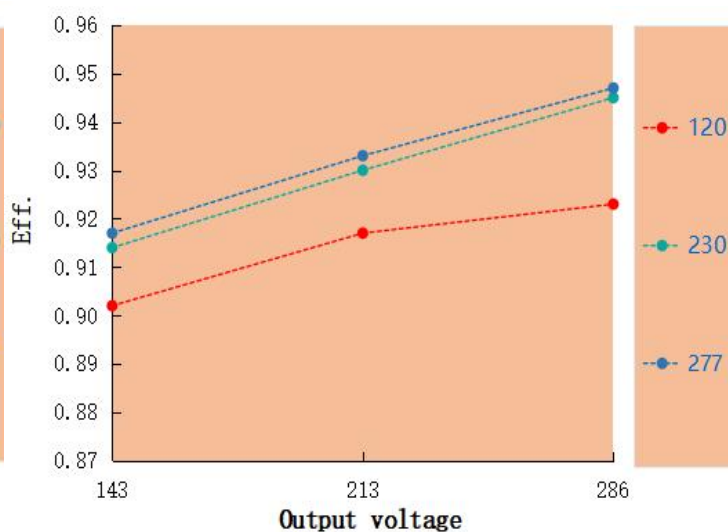


Load	Output								
Load working Voltage	143V	160V	170V	190V	200V	220V	240V	260V	286V
Io_MAX	1.05A	1.05A	1.05A	1.05A	1.0A	0.91A	0.83A	0.77A	0.7A
Po_MAX	150.2W	168W	178.5W	200W	200W	200W	200W	200W	200W

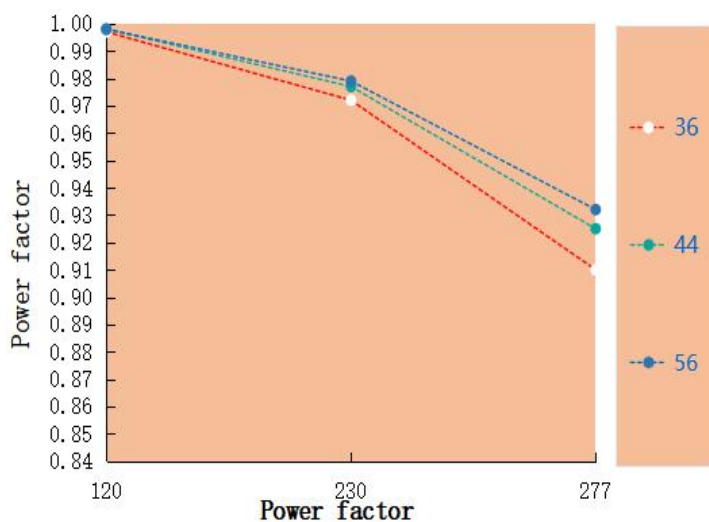
Eff. VS Output voltage HVC-200W-56A/B/C



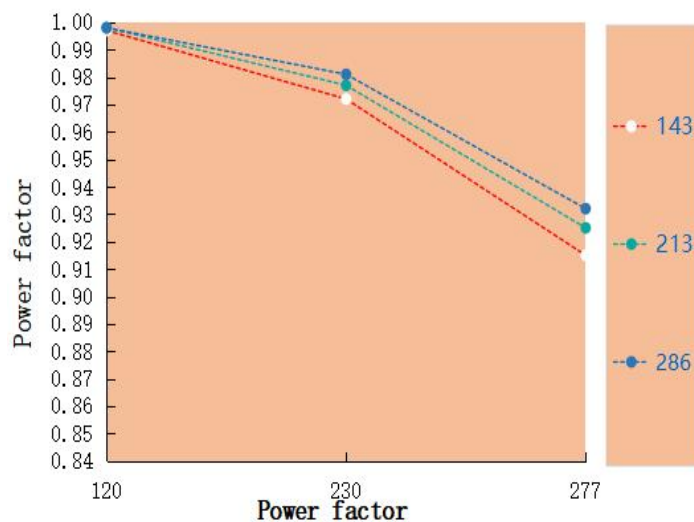
Eff. VS Output voltage HVC-200W-286A/B/C



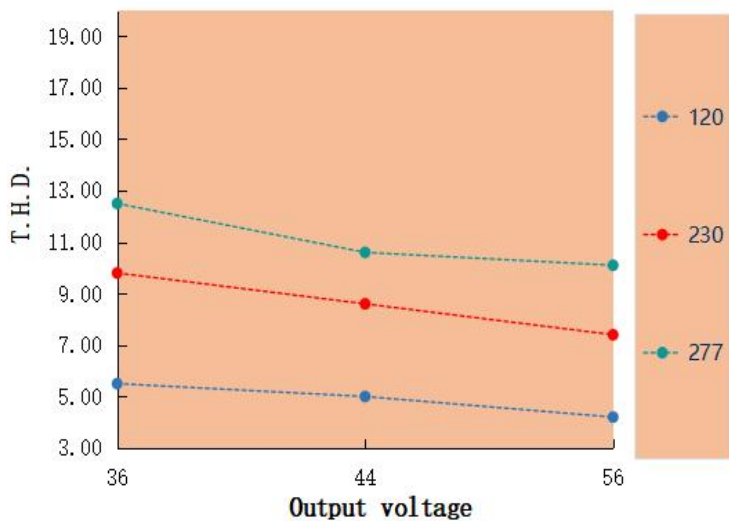
Power factor VS Input voltage HVC-200W-56A/B/C



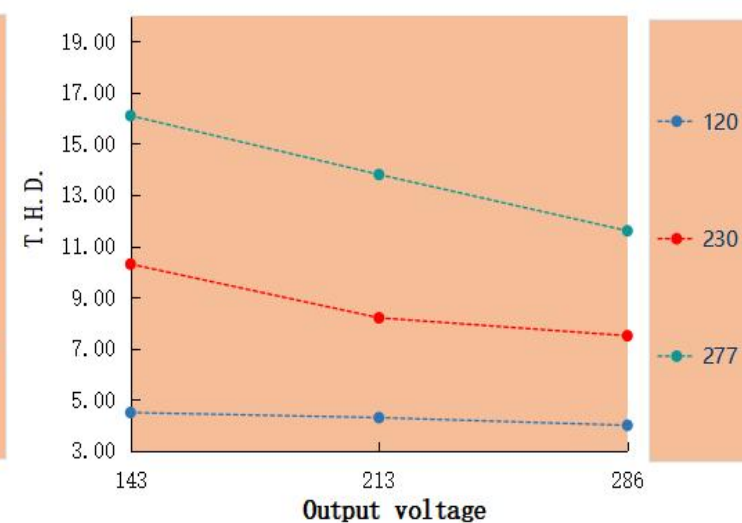
Power factor VS Input voltage HVC-200W-286A/B/C



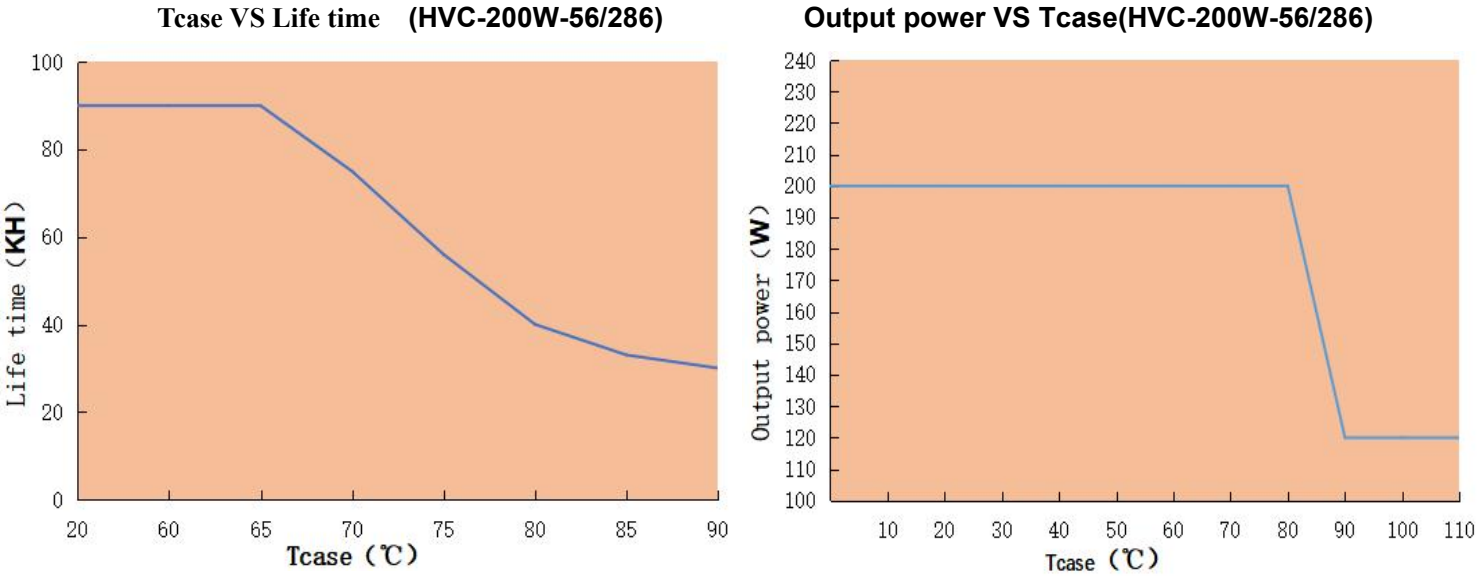
T.H.D. VS Output voltage HVC-200W-56A/B/C



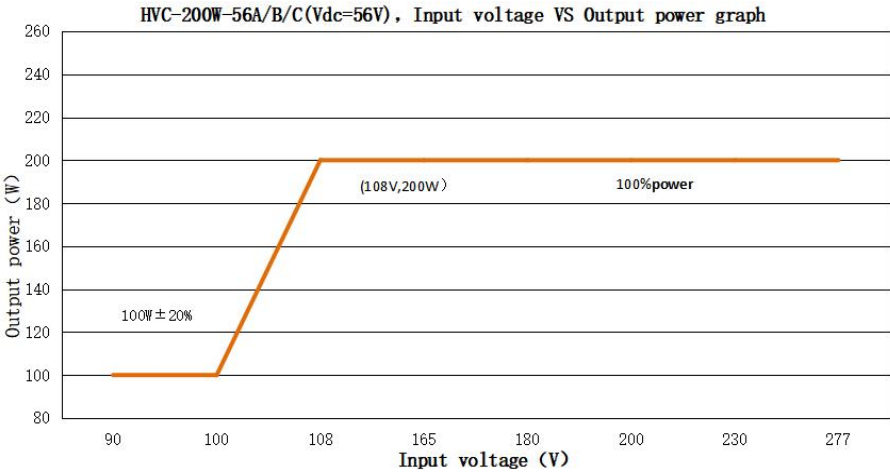
T.H.D. VS Output voltage HVC-200W-286A/B/C



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Output power VS Input voltage



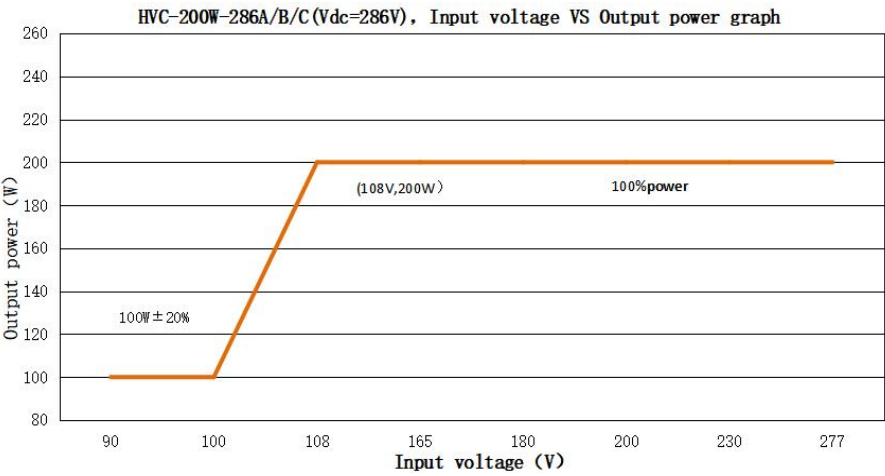
HVC-200W-56A/B/C (For output 56Vdc, the rated output current & power under different input voltage)								
Input Voltage	90Vac	100Vac	108Vac	120Vac	170Vac	200Vac	230Vac	277Vac
Io	1.785A	1.785A	3.57A	3.57A	3.57A	3.57A	3.57A	3.57A
Po	100W	100W	200W	200W	200W	200W	200W	200W

Note:

- When the input voltage is below 95±15Vac,the output power decreases to 100W±20%。

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Output power VS Input voltage



HVC-200W-286A/B/C(For output 286Vdc, the rated output current & power under different input voltage)								
Input Voltage	90Vac	100Vac	108Vac	120Vac	170Vac	200Vac	230Vac	277Vac
Io	0.35A	0.35A	0.7A	0.7A	0.7A	0.7A	0.7A	0.7A
Po	100W	100W	200W	200W	200W	200W	200W	200W

Note:

1.When the input voltage is below 95±15Vac,the output power decreases to 100W±20%.

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Dimming function

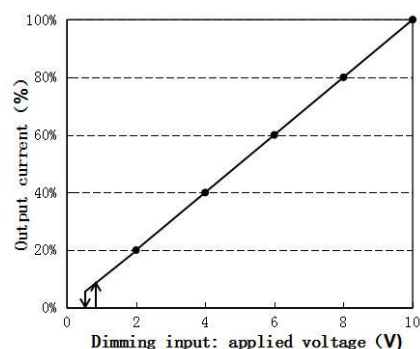
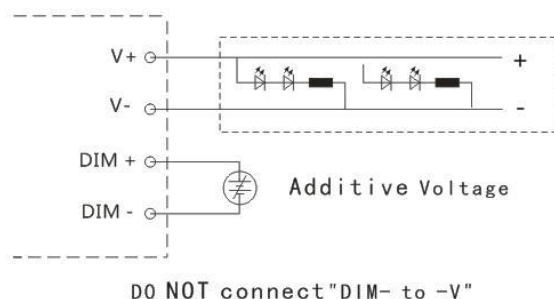
※Three-in-one dimming function and 12V auxiliary power:

A. To adjust the output current, applying one of the three methods between DIM+ and DIM- : a resistor of 10-100K, or any voltage of 1-10V , or a PWM signal.

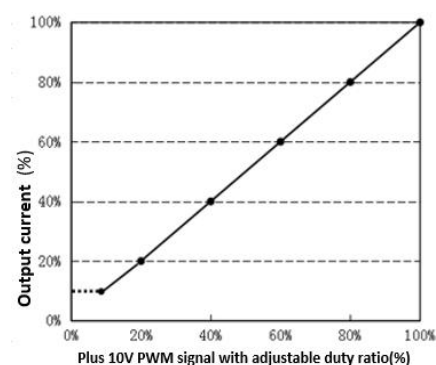
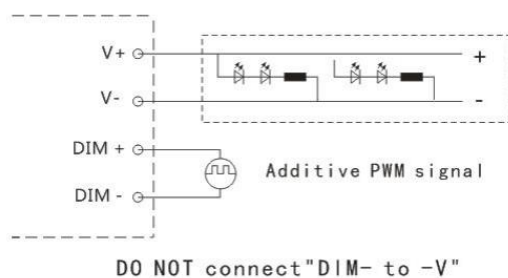
B. output current of dimming port: 100uA (typical value).

C. Aux power:12V/250mA(pink wire)

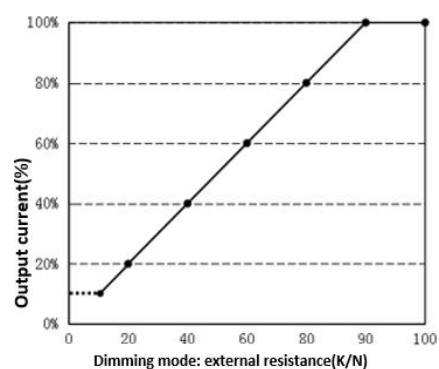
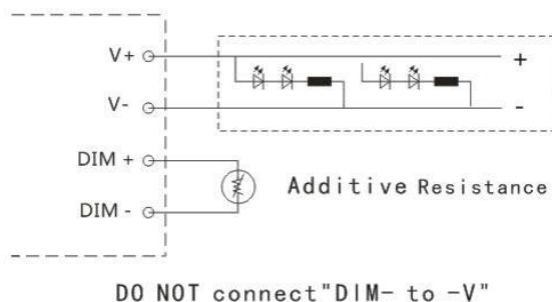
◎ With 1-10V(0-10V) dimming voltage:



◎ With 10V PWM signal (Frequency range: 300Hz-2KHz) :



◎ With an additional 10-100K resistor:



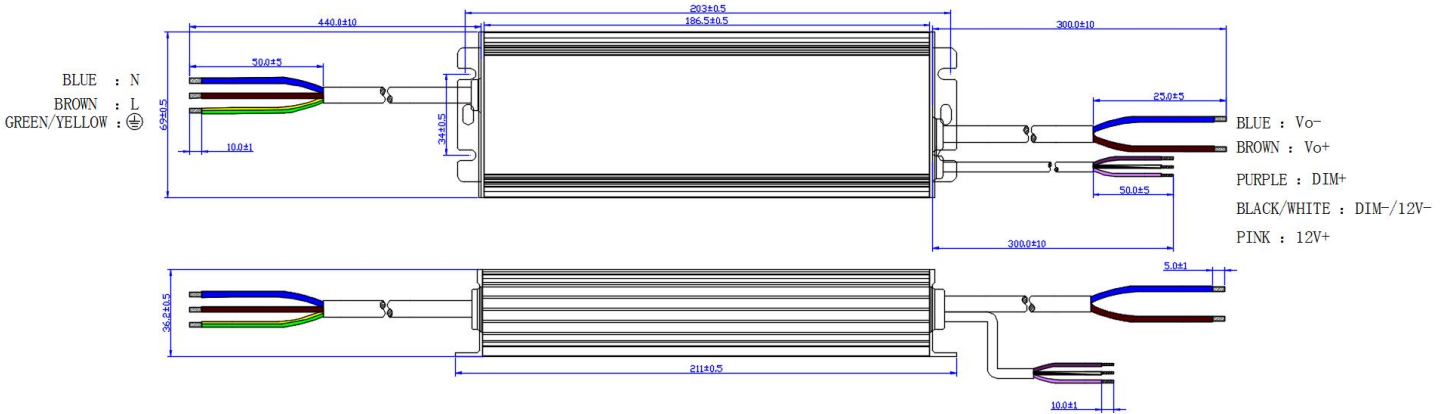
SUNCOM [®]	Product Type	LED INTEGRATED SPECIAL DRIVER		
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Mechanical specification

Size (mm)	L211mm*W69mm*H36.2mm
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HVC-200W-56C

HVC-200W-286C



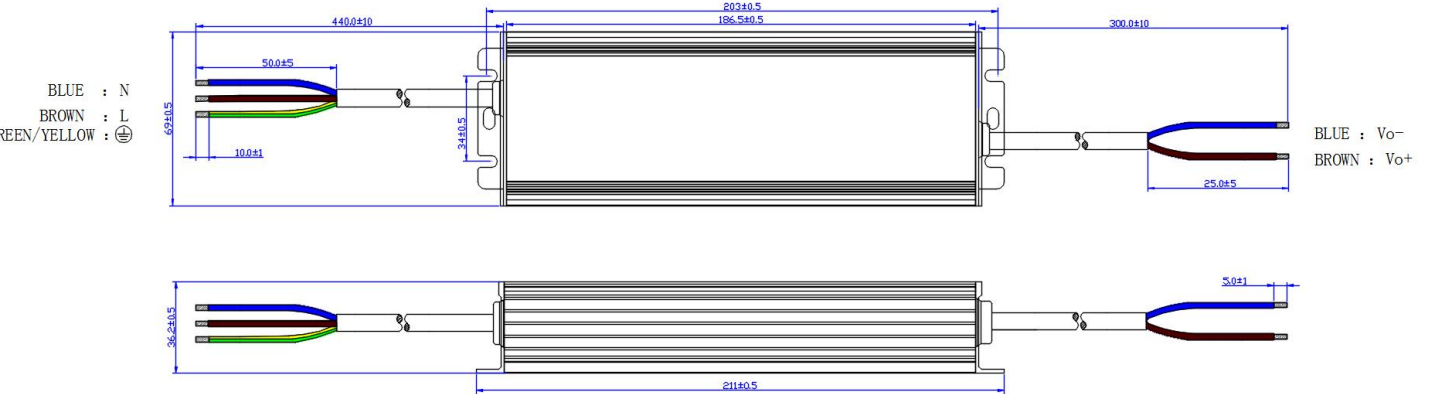
HVC-200W-56B

HVC-200W-286B



HVC-200W-56A

HVC-200W-286A



Weight

Weight	1070 g
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Version

DATE	DESCRIPTION	REV.	CHECK
2022.09.09	Initial version.	V1.0	

MANUFACTRUER		
EDIT	CHECK	APPROVE