


SPECIFICATION

Product name : HVC-150W-56&214X

Release date : 2023/4/18

| | | | | |
|--|----------------|-------------------------------|-----|------|
|  | Product Type | LED INTEGRATED SPECIAL DRIVER | | |
| | Product Series | HVC-150W-56&214X Series | REV | V1.0 |

Features

- Class I type for insulation
- Input voltage range:100-277V ~ 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/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-150W-56A HVC-150W-56B HVC-150W-56C | 100-277V 50/60Hz | 150W | 27-56Vdc Rated Power (33-56V) | 4.2A | ≥91% |
| HVC-150W-214A HVC-150W-214B HVC-150W-214C | 100-277V 50/60Hz | 150W | 95-214Vdc Rated Power (143-214V) | 0.7A | ≥91% |

Note:

1. Test conditions: Ta=25℃, under 230Vac input,after running for 30 minutes with full load .
2. When the input is less than 100 ± 15 Vac, the output power gradually decreases to $75W \pm 10\%$, and it recovers full power of 150W when the input is above 100VAC 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 | 0.9 | - | - | @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 | - | - | 2A | @90Vac input ,with full load |
| Inrush current | - | - | 70A | 230Vac, cold start (25°C) |

Output characteristics

| Parameter | Min | Typ. | Max | Remark |
|----------------------------|-------|-------|-------|---|
| Rated current | | | | |
| HVC-150W-56A/B/C | - | 2.68A | - | Rated Load :56VDC |
| HVC-150W-214A/B/C | - | 0.70A | - | Rated Load :214VDC |
| Output current range | | | | |
| HVC-150W-56A/B/C | 1.8A | - | 4.5A | - |
| HVC-150W-214A/B/C | 0.50A | - | 1.05A | - |
| Output voltage range | | | | |
| HVC-150W-56A/B/C | 27V | - | 56V | Constant power output range:33-56VDC |
| HVC-150W-214A/B/C | 95V | - | 214V | Constant power output range:143-214VDC |
| Available power(90-100Vac) | - | 75W | - | Decrease to a half once input voltage being less than 100 Vac |
| Rated power(100-277Vac) | - | 150W | - | - |
| No-load voltage | | | | |
| HVC-150W-56A/B/C | - | - | 80V | - |
| HVC-150W-214A/B/C | - | - | 260V | - |

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Output characteristics

| Parameter | Min | Typ. | Max | Remark |
|--|-----|------------|-------|--|
| Efficiency@230Vac HVC-150W-56A/B/C HVC-150W-214A/B/C | - | 91% 92% | - | @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 | - | - | 600ms | 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 $100 \pm 15\text{Vac}$, 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. |

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Safety and EMC

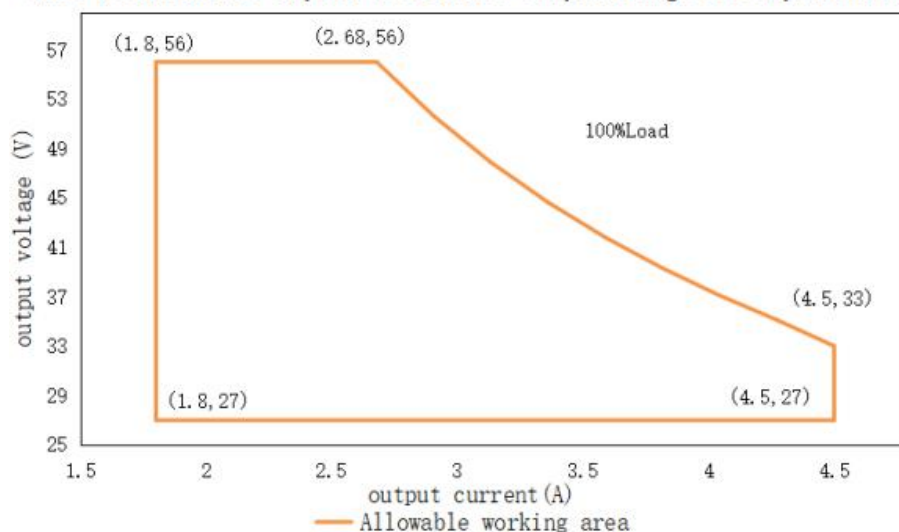
| Safety categories | Standard |
|----------------------|--|
| Safety | GB19510.1、GB19510.14、EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS61347.2.13、EN 62384; |
| EMC | EN 55015、EN 61547、EN 61000-3-2、GB/T 17743、GB17625.1、EN 61000-3-3 |
| Surge level | Differential mode L-N $\pm 6\text{KV}(2\Omega)$, 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 :1.75KVac 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 $^{\circ}\text{C}$ / 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.

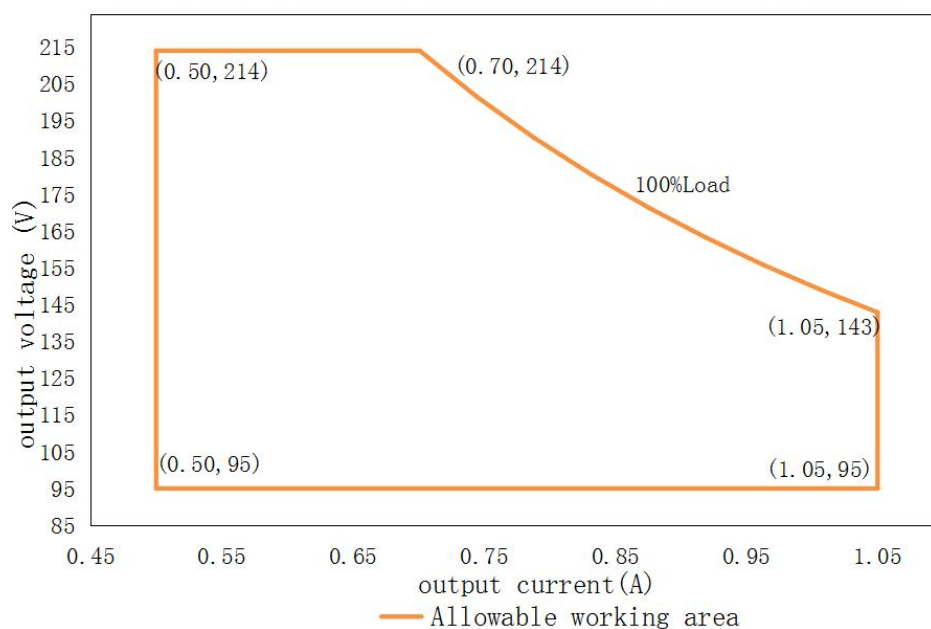
I-V Working area

HVC-150W-56A/B/C (input: 100-277Vac) output voltage VS Output current



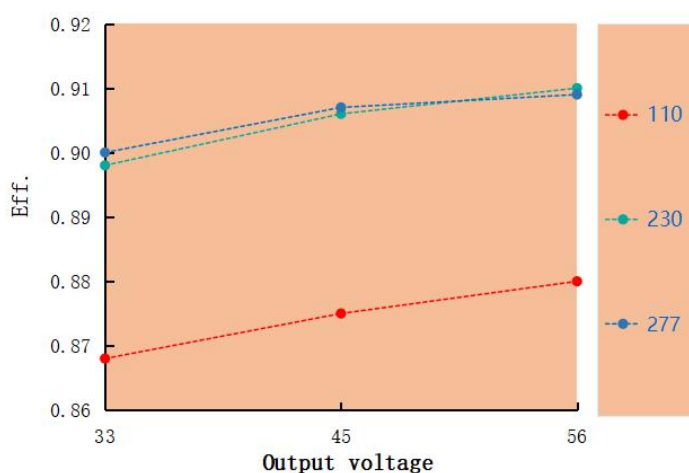
| Load | Output | | | | | | | | |
|----------------------|--------|------|--------|-------|-------|-------|-------|------|-------|
| Load working Voltage | 27V | 30V | 33V | 36V | 40V | 43V | 46V | 50V | 56V |
| Io_MAX | 4.5A | 4.5A | 4.5A | 4.16A | 3.75A | 3.48A | 3.26A | 3.0A | 2.68A |
| Po_MAX | 121.5W | 135W | 148.5W | 150W | 150W | 150W | 150W | 150W | 150W |

HVC-150W-214A/B/C(input:100-277Vac)output voltage VS Output

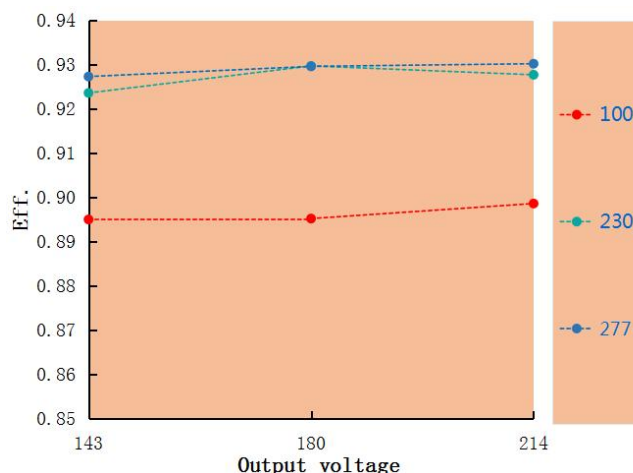


| Load | Output | | | | | | | | |
|----------------------|--------|--------|---------|-------|-------|-------|-------|-------|-------|
| Load working Voltage | 95V | 110V | 125V | 143V | 160V | 175V | 185V | 200V | 214V |
| Io_MAX | 1.05A | 1.05A | 1.05A | 1.05A | 0.94A | 0.86A | 0.81A | 0.75A | 0.70A |
| Po_MAX | 99.75W | 115.5W | 131.25W | 150W | 150W | 150W | 150W | 150W | 150W |

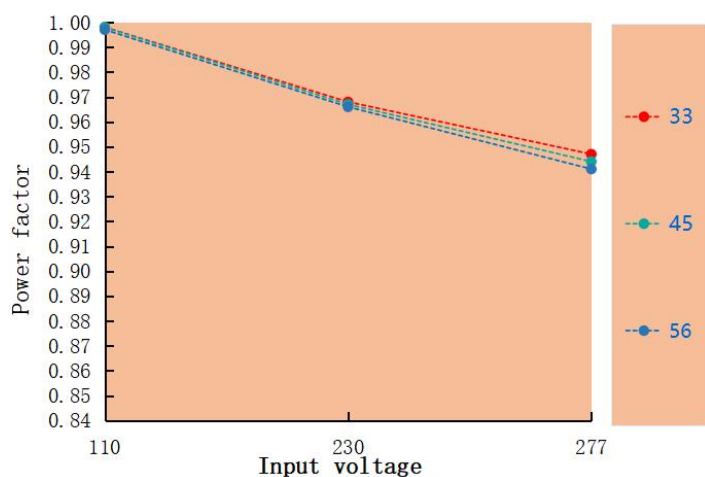
Eff. VS Output voltage HVC-150W-56A/B/C



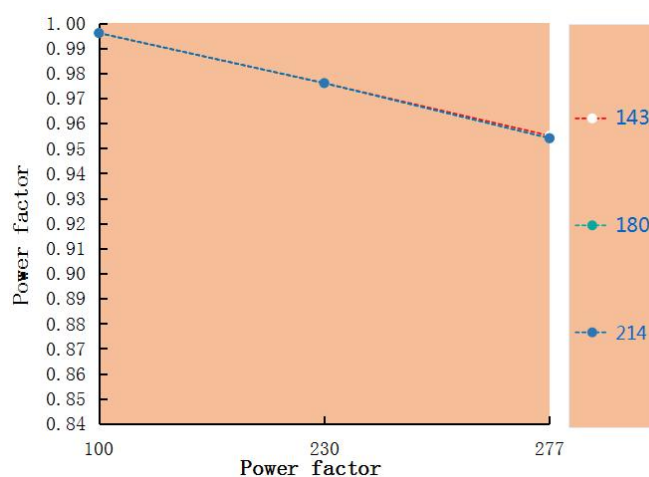
Eff. VS Output voltage HVC-150W-214A/B/C



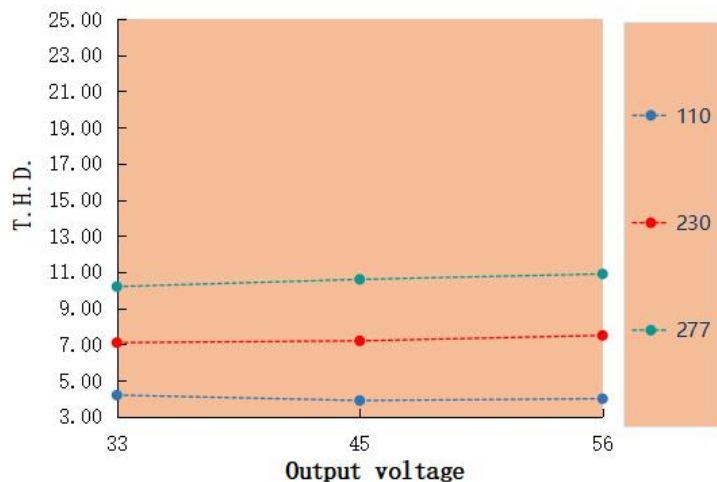
Power factor VS Input voltage HVC-150W-56A/B/C



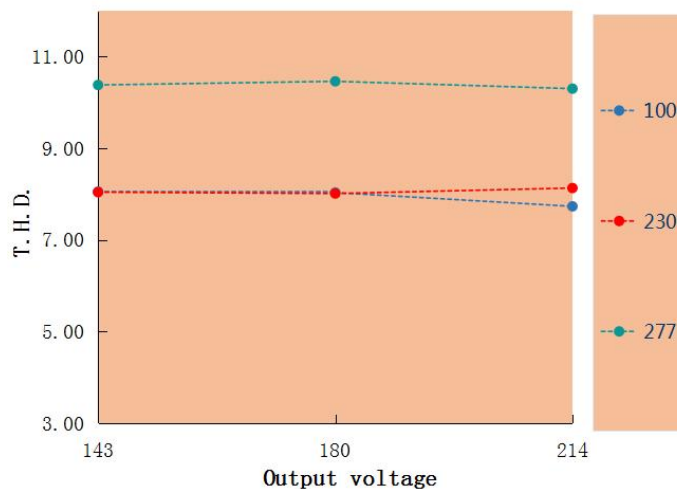
Power factor VS Input voltage HVC-150W-214A/B/C

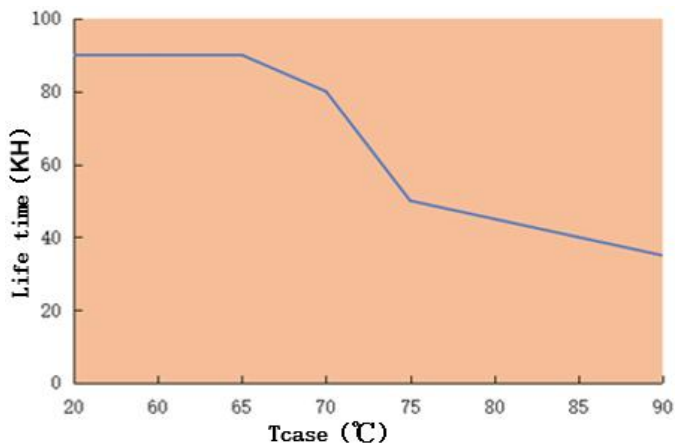
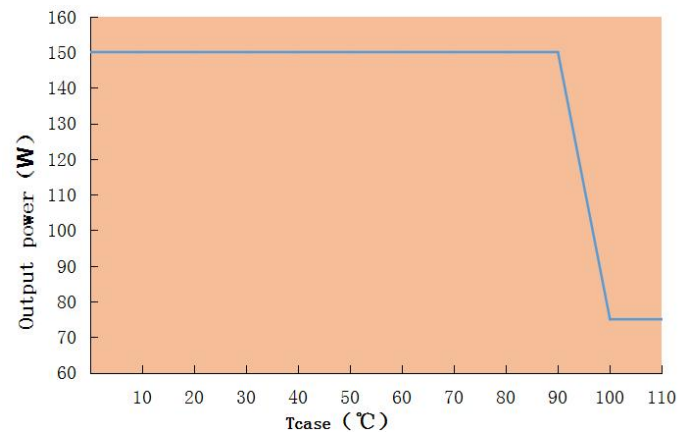
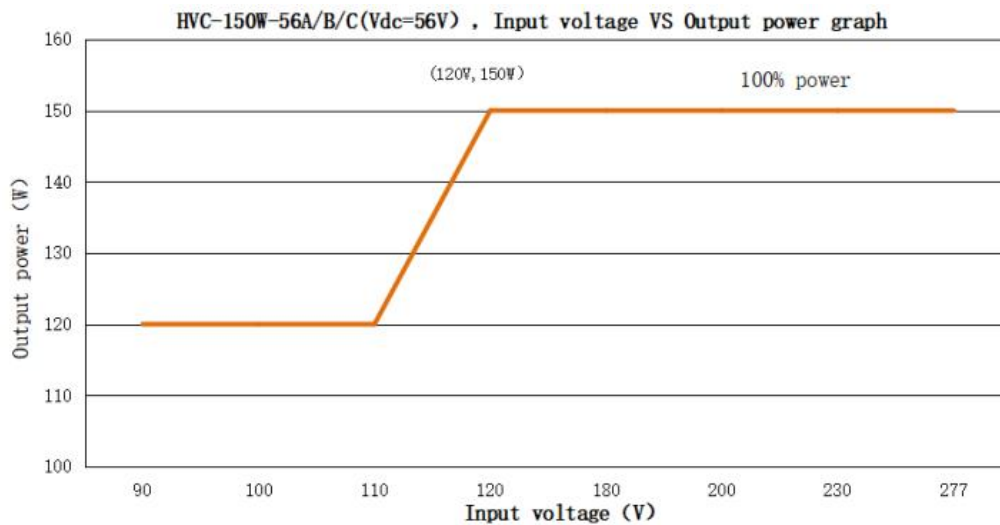


T.H.D. VS Output voltage HVC-150W-56A/B/C




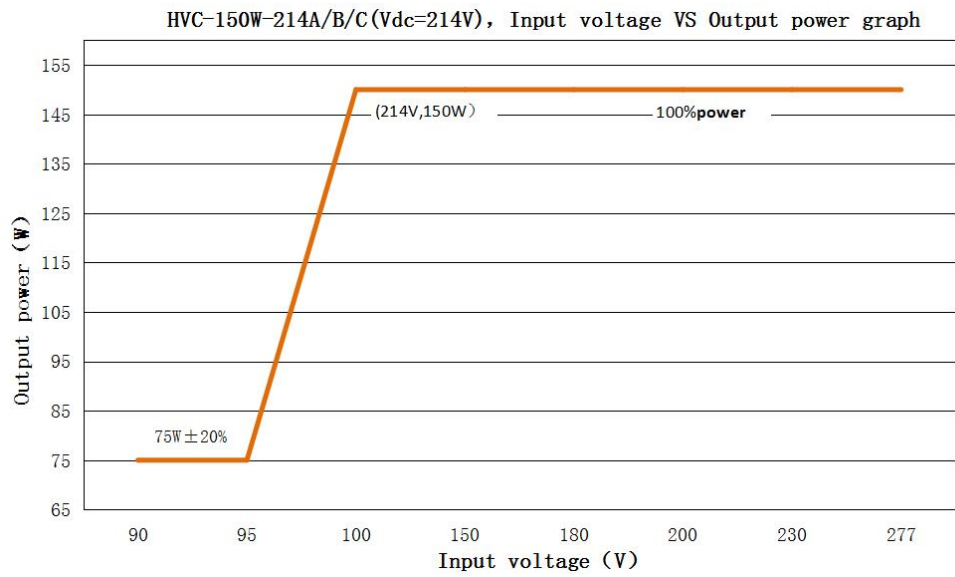
T.H.D. VS Output voltage HVC-150W-214A/B/C



Tcase VS Life time (HVC-150W-56 & 214A/B/C)

Output power VS Tcase(HVC-150W-56 & 214A/B/C)

Output power VS Input voltage

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

| Input Voltage | 100Vac | 110Vac | 120Vac | 150Vac | 180Vac | 200Vac | 230Vac | 277Vac |
|---------------|--------|--------|--------|--------|--------|--------|--------|--------|
| Io | 2.14A | 2.14A | 2.68A | 2.68A | 2.68A | 2.68A | 2.68A | 2.68A |
| Po | 75W | 75W | 150W | 150W | 150W | 150W | 150W | 150W |


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| HVC-150W-214A/B/C (For output 214Vdc, the rated output current & power under different input voltage) | | | | | | | | |
|---|-------|-------|--------|--------|--------|--------|--------|--------|
| Input Voltage | 90Vac | 95Vac | 100Vac | 150Vac | 180Vac | 200Vac | 230Vac | 277Vac |
| Io | 0.35A | 0.35A | 0.7A | 0.7A | 0.7A | 0.7A | 0.7A | 0.7A |
| Po | 75W | 75W | 150W | 150W | 150W | 150W | 150W | 150W |

Note:

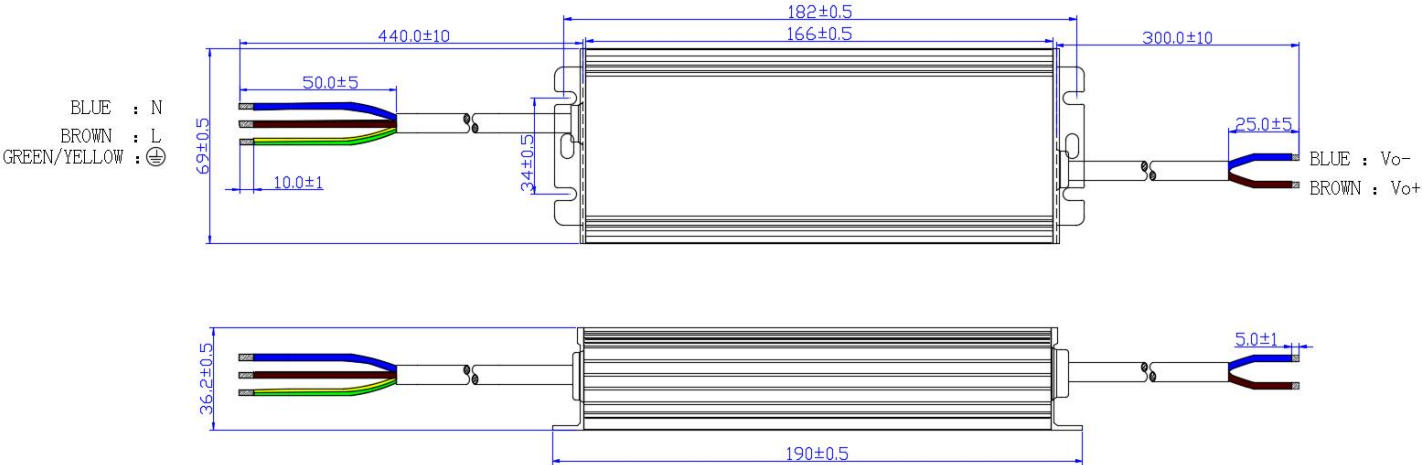
- When the input voltage is below 100±15Vac,the output power decreases to 75W±10%。

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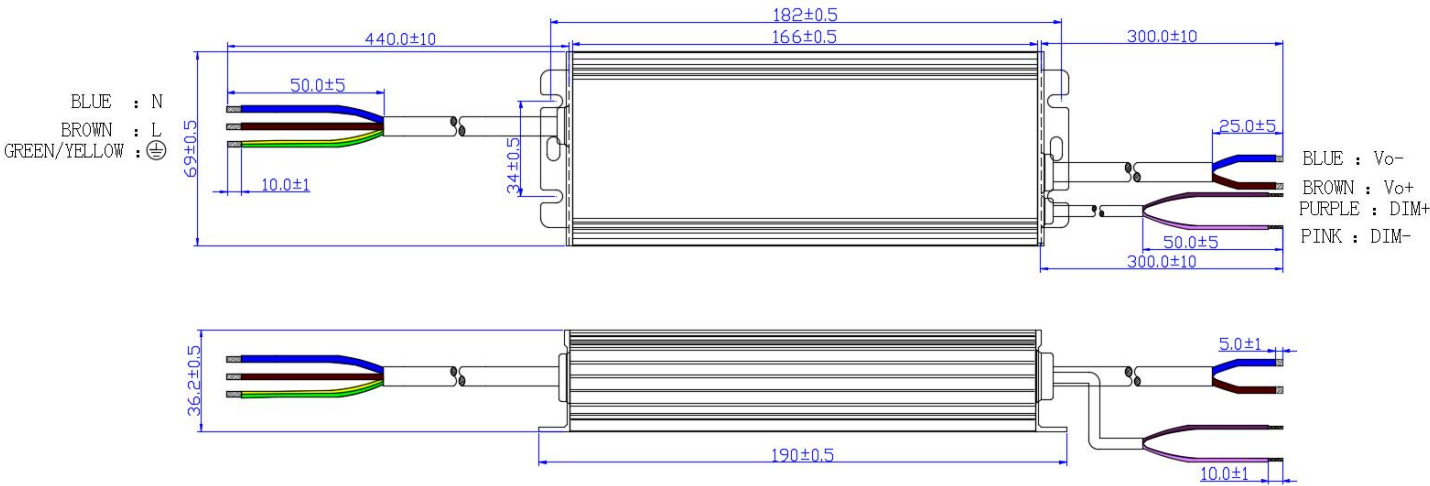
Mechanical specification

| | |
|----------------|-------------------|
| Size (mm) | L190m*W69mm*H36mm |
| Weight (Kg) | 0.85Kg |
| Packaging (mm) | |

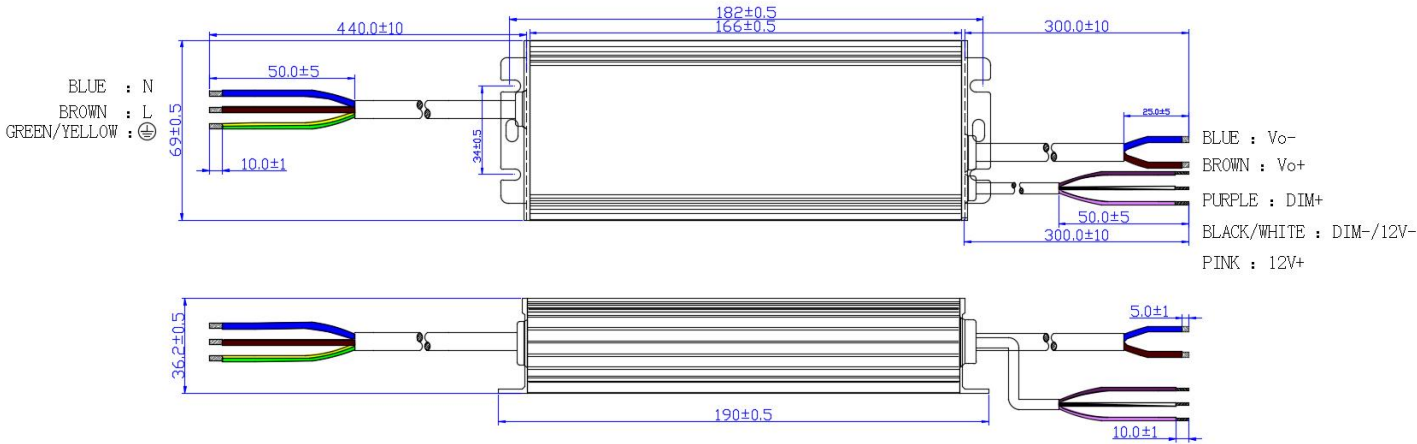
HVC-150W-56A




HVC-150W-56B



HVC-150W-56C



| | | | | |
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Version

| DATE | DESCRIPTION | REV. | CHECK |
|------------|------------------|------|-------|
| 2023.04.18 | Initial version. | V2.0 | |