

<b>Richmat</b>	Application	RICHMAT WATERPROOF LED DRIVER		
	Product Line	HJ-W150-S/A-NA	REV	1.1

Qingdao Richmat Electronic Technology Co.,Ltd.

SPECIFICATION FOR APPROVAL

CUSTOMER:			
MODEL NO. :	HJ-W150-S/A-NA		
VERSION:	V1.1		
CUSTOMER			
TEST	CHECK	APPROVE	
CUSTOMER REMARKS			
Please return to us one copy of "SPECIFICATION FOR APPROVAL" with you approved signature.			
MANUFACTRUE			
EDIT	CHECK	APPROVE	
<div>Qingdao Richmat Electronic Technology Co.,Ltd.</div> <div>Research And Development Address: 3rd Floor, Building 2, No.187 Jinshui Road, Licang District, Qingdao City, 266199 Shandong, P.R. China      Postal Code: 266041 Factory Address: No.53 Yanqing Road, Jimo District, Qingdao City, Shandong, P.R. China      Postal Code: 266200 TEL:0532-89066999      FAX:0532-88597298</div>			

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■ VERSION

DATE	CAUSES OF CHANGE	REV.	CHECK
2022.8.8	Initial Release	V1.0	
2022.2.23	Change the picture and size of the packaging mode	V1.1	

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## ■ FEATURES

- ◇ Class I structure
- ◇ Input Voltage:100-277V ~ 50/60Hz
- ◇ Efficiency 91.5%
- ◇ Constant power drive, Constant current output control mode
- ◇ Metal clad construction, level of protection : IP67
- ◇ Lightning protection level : difference module 6kV ,  
common mode 15 kV
- ◇ Long life design, 5 years warranty
- ◇ Output current can be adjusted Externally
- ◇ The dimming function: Three in one dimming  
(Only S series)



## ■ TYPICAL APPLICATIONS

Road lighting、Industrial lighting、The  
floodlighting、landscape lighting、venue lighting



## ■ MODEL LIST

Model	AC Input	Output power	Output voltage	Output current	Efficiency	T.H.D	PF
HJ-W150-V38S-NA	100-277V	150W	20-38Vdc	4.2A	90.5%	<10%	>0.95
HJ-W150-V38A-NA	50/60Hz						
HJ-W150-V58S-NA	100-277V	150W	32-58Vdc	3.3A	91.5%	<10%	>0.95
HJ-W150-V58A-NA	50/60Hz						

### Remarks :

1. Default tested at 230Vac,full load with 30 minutes,Ta:25℃ .
2. When the input voltage is lower than 180Vac±5%, the output power gradually decreases ;  
200-277Vac , P rated 150W ; Please refer to the input voltage VS output power curve for details.

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## ■ SPECIFICATION

### ◇ INPUT

Rated voltage	100 - 277Vac
Voltage Range	90-305Vac
Frequency	50/60Hz
Power factor(PF)	PF>0.95 @230Vac full load
Total harmonic distortion(THD)	THD<10% @230Vac full load
Input current	I <sub>in</sub> <1.0A @180Vac full load
Inrush current (typ.)	Cold start (25°C) 70A @230Vac

### ◇ OUTPUT

Model	HJ-W150-V38S-NA HJ-W150-V38A-NA	HJ-W150-V58S-NA HJ-W150-V58A-NA
Rated current	3.95A	2.6A
Output current range	2.8-5A	1.8-3.6A
Output voltage range	20-38Vdc	32-58Vdc
Rated output power(100-180Vac)	75W±20%	75W±20%
Rated output power(200-277Vac)	150W	150W
No load voltage	50Vdc Max	70Vdc Max
Efficiency	90.5%@230Vac full load	91.5%@230Vac full load
Accuracy off output current	±5%	
Line regulation	±5%	
Load regulation	±5%	
Setup time	<500ms @230Vac full load	

**Remarks** : the range of output current is limited by in-out voltage , For details, please refer to the I-V working are.

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◇ Others

<b>0 - 10 V Dimming( Optional)</b>	Safety Dimming Voltage Range	0V - 12V
	Dim Range	0 - 100%
	Rated Dim Range	0V - 10V
<b>PWM Dimming(Optional)</b>	PWM High	9.5V - 10.5V
	PWM Low	0V - 0.3V
	PWM Frequency	300Hz - 2000Hz
	PWM Duty	0 - 100%
<b>Resistor Dimming</b>	Resistance	0Kohm - 100Kohm
	Dim Range	0 - 100%

**Remarks:**

1. Output current of dimming port: 100uA (typical value);
2. The maximum withstand voltage of the dimming port is 12V. If the external power supply voltage exceeds 12V or the signal line is reversely connected, the power supply will be damaged.

◇ Protection

<b>Low Voltage protection</b>	When the input voltage is less than 180Vac, the output power is reduced by about half
<b>Over Load protection</b>	Protection mode: hiccup restart mode, automatic recovery after removal of abnormal load conditions
<b>Short Circuit Protection</b>	Doze mode, can automatically recover after abnormal conditions are removed
<b>Over temperature Protection</b>	When the Tc is over 90 °C , the output power is reduced by about half
<b>Over Voltage protection</b>	Protection mode: hiccuping or clamping in output maximum voltage , Production undamaged, When troubleshooting, Normal operation of power supply

**Remarks:**

1. All specifications are tested at 230Vac (50Hz) , rated load, and Ta:25°C .
2. Including setting error, linear adjustment rate and load adjustment rate.

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## ■ ENVIRONMENT

<b>Working temperature</b>	-40 ~ +60°C (Refer to "Derating Curve")
<b>Working humidity</b>	20 ~ 95% RH, non-condensing
<b>Storage temperature/ humidity</b>	-40~+80°C, 10 ~ 95% RH
<b>Resistant to vibration</b>	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes
<b>MTBF</b>	230K hrs min. MIL-HDBK-217F (Ta=25°C)

## ■ SAFETY & EMC

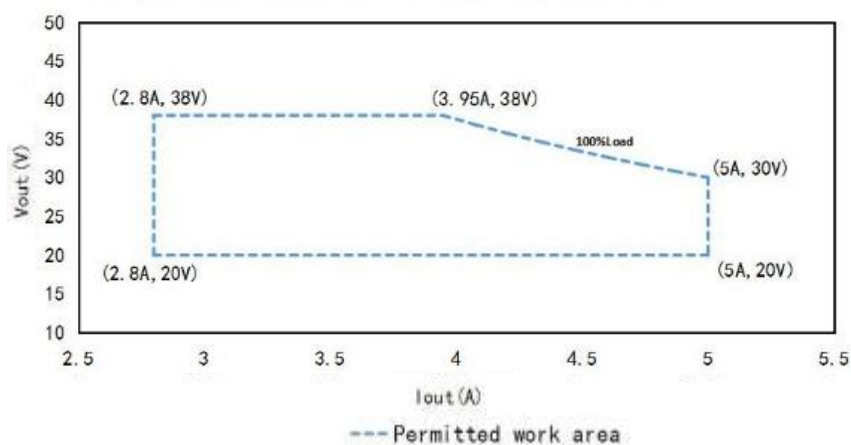
<b>Safety</b>	GB19510.1、GB19510.14、EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS61347.2.13;
<b>EMC</b>	EN 55015、EN 61000-3-2 、GB/T 17743、GB17625.1、 EN 61000-3-3
<b>Surge level</b>	difference mode L-N $\pm 4$ KV ( 2 ohm ), common mode L, N -PE $\pm 6$ KV ( 12 ohm ) Refer to IEC61000-4-5 2014
<b>High-pot test</b>	I/P-O/P:3.75KVAC      I/P-PE :1.5KVAC      O/P-PE : 0.5KVAC      I/P-DIM:1.5KVAC
<b>Insulation resistance</b>	I/P-O/P:100M Ohms / 500VDC / 25°C/ 70% RH
<b>Leakage current</b>	<0.7mA

### Remarks:

The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.

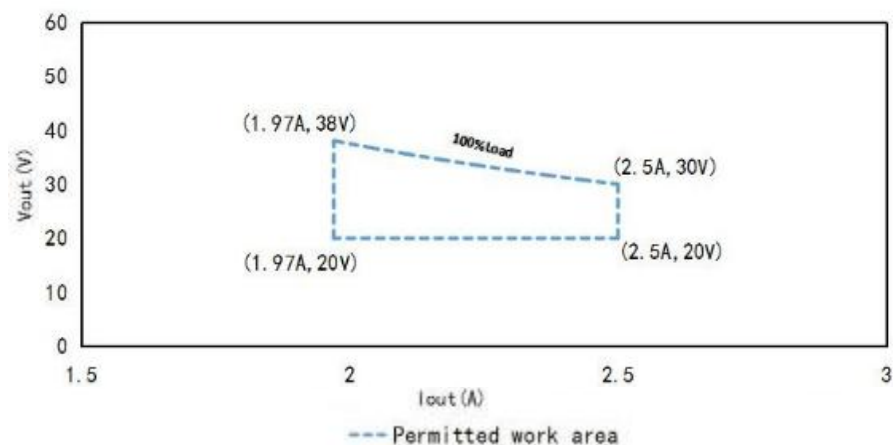
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## ■ I-V Working Area



**HJ-W150-V38S/38A-NA(200-277Vac, Rated output current and output power corresponding to different load voltages)**

Load working Voltage	20V	22V	24V	26V	28V	30V	33V	36V	38V
Io_MAX	5A	5A	5A	5A	5A	5A	4.54A	4.16A	3.95A
Po_MAX	100W	110W	120W	130W	140W	150W	150W	150W	150W

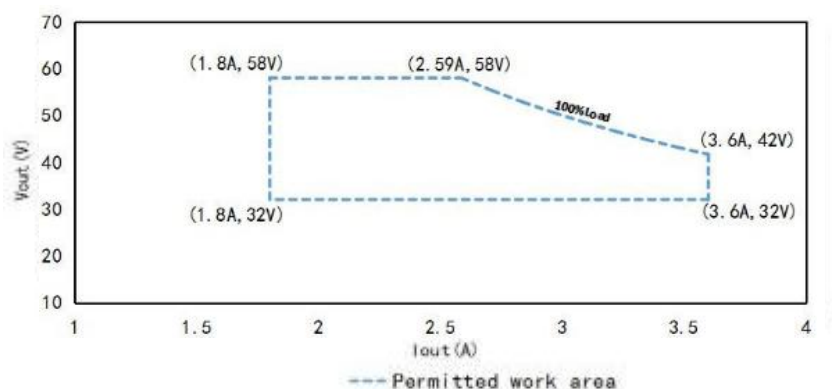


**HJ-W150-V38S/38A-NA(100-180Vac, Rated output current and output power corresponding to different load voltages)**

Load working Voltage	20V	22V	24V	26V	28V	30V	33V	36V	38V
Io_MAX	2.5A	2.5A	2.5A	2.5A	2.5A	2.5A	2.27A	2.08A	1.97A
Po_MAX	50W	55W	60W	65W	70W	75W	75W	75W	75W

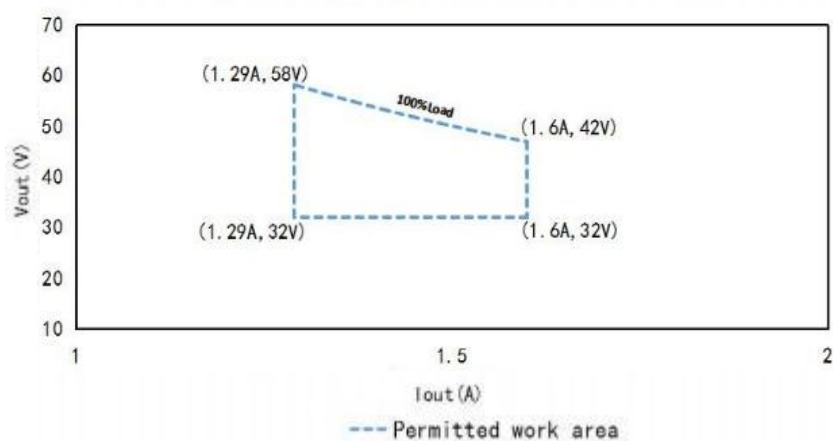
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## ■ I-V Working Area



**HJ-W150-V58S/58A-NA(200-277Vac, Rated output current and output power corresponding to different load voltages)**

Load working Voltage	32V	35V	39V	42V	45V	48V	50V	55V	58V
Io_MAX	3.6A	3.6A	3.6A	3.6A	3.33A	3.12A	3A	2.72A	2.58A
Po_MAX	115.2W	126W	140W	151.2W	150W	150W	150W	150W	150W

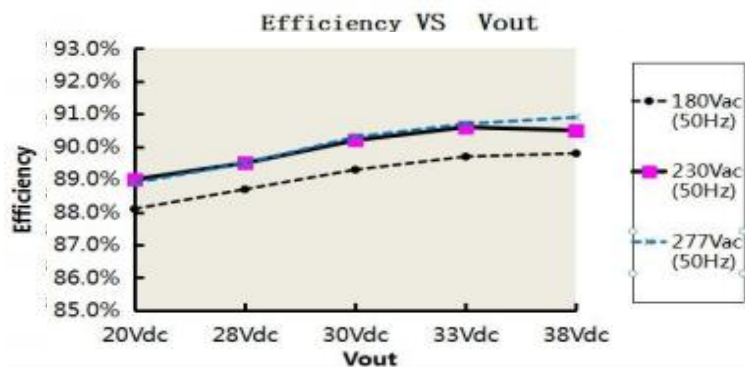


**HJ-W150-V58S/58A-NA(100-180Vac, Rated output current and output power corresponding to different load voltages)**

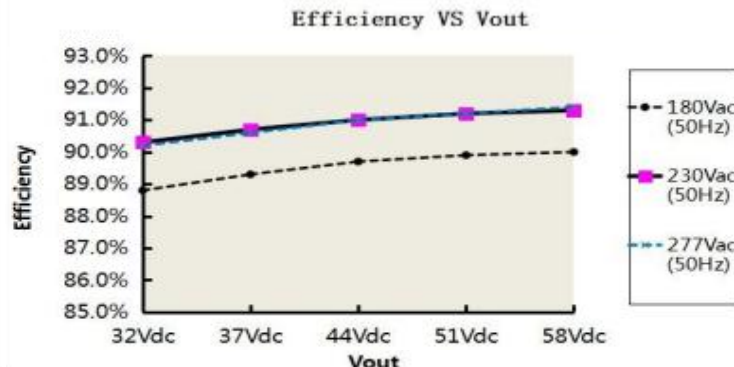
Load working Voltage	32V	35V	39V	42V	45V	48V	50V	55V	58V
Io_MAX	1.6A	1.6A	1.6A	1.6A	1.66A	1.56A	1.5A	1.36A	1.3A
Po_MAX	51.2W	56W	62.4W	67.2W	75W	75W	75W	75W	75W



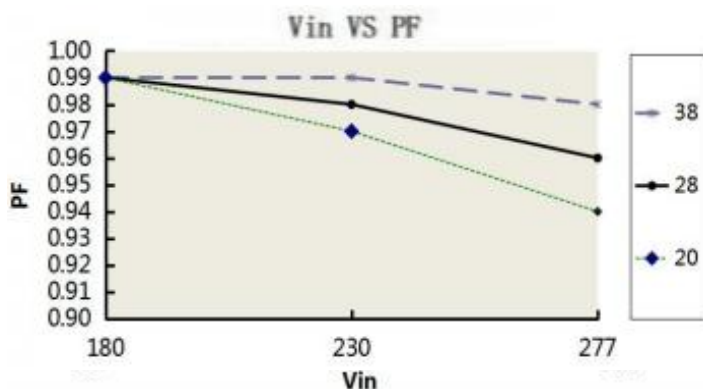
## Efficiency VS Vout(HJ-W150-V38S-NA)



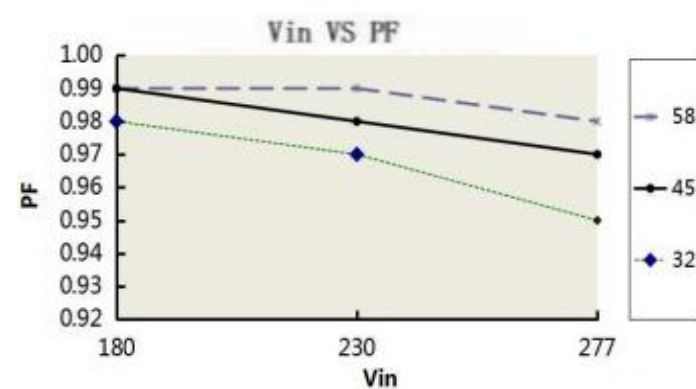
## Efficiency VS Vout(HJ-W150-V58S-NA)



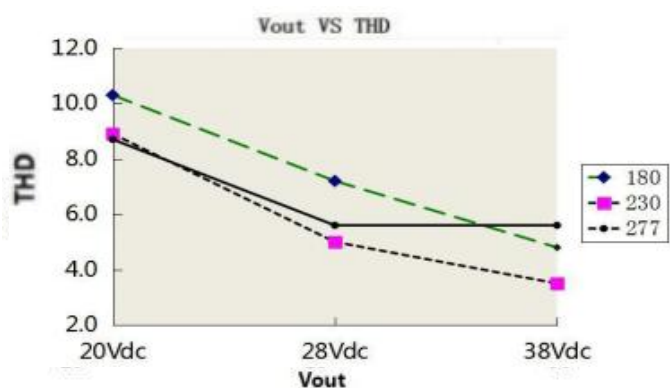
## Vin VS PF(HJ-W150-V38S-NA)



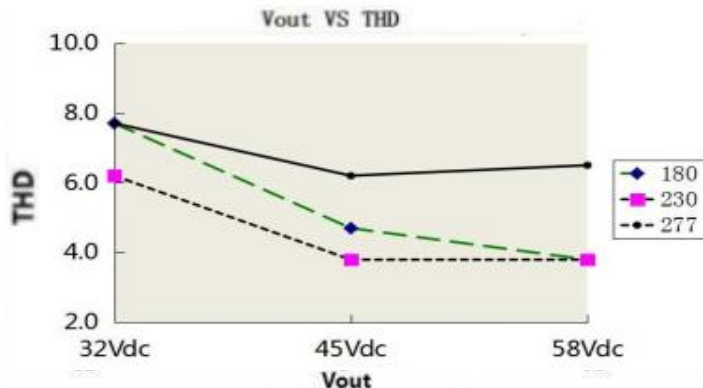
## Vin VS PF(HJ-W150-V58S-NA)



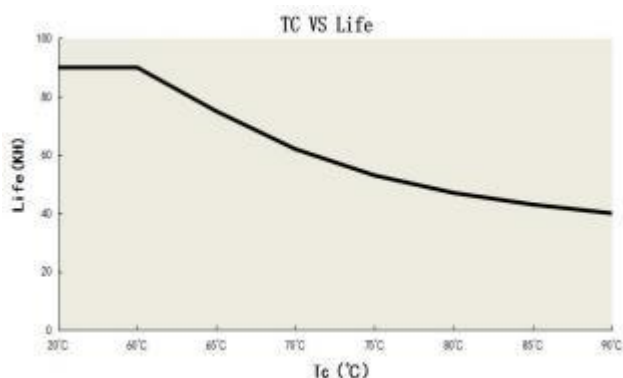
## Vout VS THD(HJ-W150-V38S-NA)



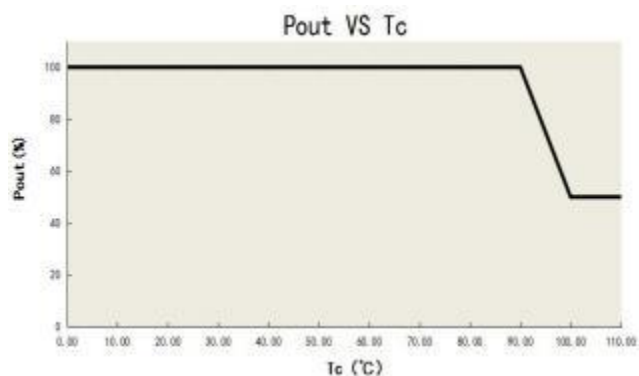
## Vout VS THD(HJ-W150-V58S-NA)



## Tc VS Life(HJ-W150-S/A-NA)

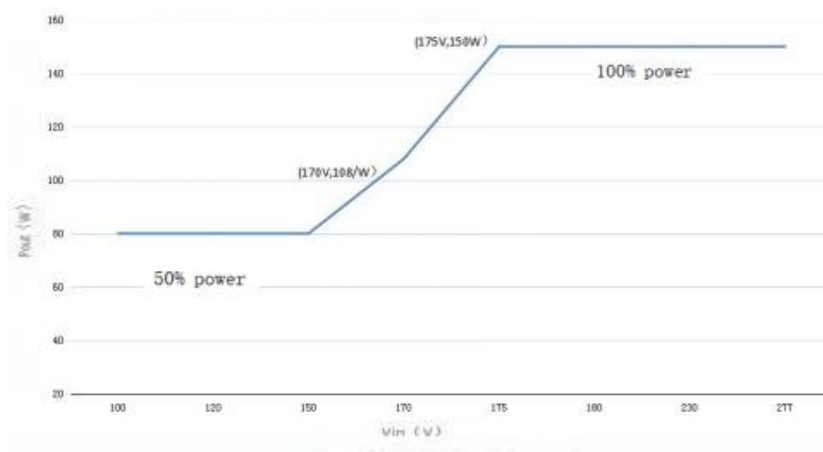


## Pout VS Tc



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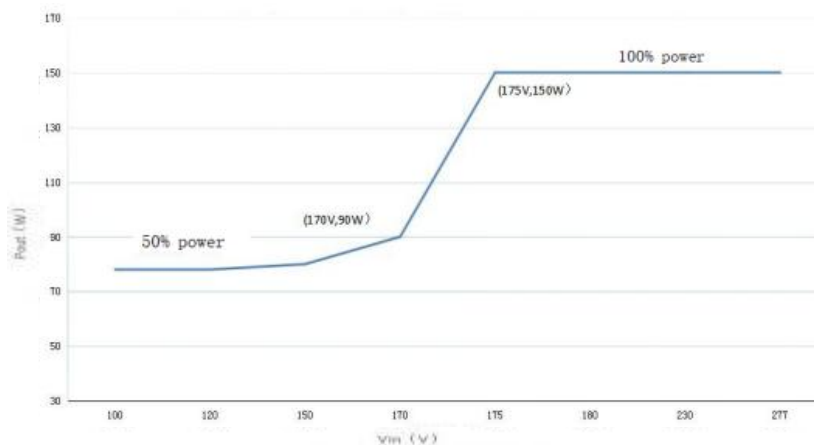
## ■ Pout VS Vin



**HJ-W150-V38S/A-NA(38Vdc, Rated output current and output power corresponding to different Input voltages)**

Input Voltage	100Vac	120Vac	150Vac	170Vac	175Vac	180Vac	230Vac	277Vac
Io	2.11A	2.11A	2.11A	2.84A	3.95A	3.95A	3.95A	3.95A
Po	80W	80W	80W	108W	150W	150W	150W	150W

## ■ Pout VS Vin



**HJ-W150-V58S/A-NA(58Vdc, Rated output current and output power corresponding to different Input voltages)**

Input Voltage	100Vac	120Vac	150Vac	170Vac	175Vac	180Vac	230Vac	277Vac
Io	1.34A	1.34A	1.34A	1.55A	2.59A	2.59A	2.59A	2.59A
Po	78W	78W	80W	90W	150W	150W	150W	150W

### Remarks:

1. When the input voltage is lower than 180Vac±5Vac, the output power decreases gradually. When the input voltage is 100Vac, the output power decreases to 75W± 20%.

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## ■ DIMMING OPERATION

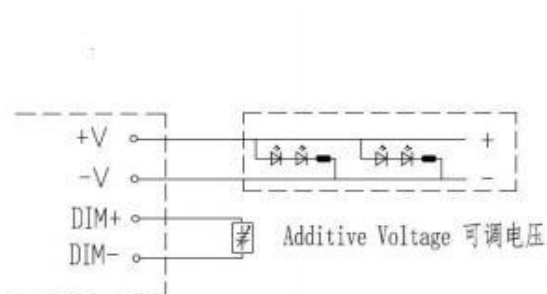
### ※ 3 in 1 dimming (For S Type)

1. Output constant current level can be adjusted by applying one of the three methodologies between DIM+ and DIM-: 0 ~ 10VDC, or 10V PWM signal or resistance.

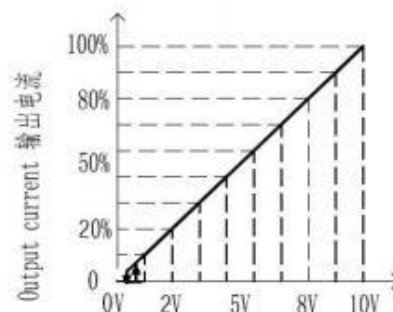
Direct connecting to LEDs is suggested. It is not suitable to be used with additional drivers.

Dimming source current from power supply: 100μA (typ.)

#### ◎ Applying additive 0-10Vdc:

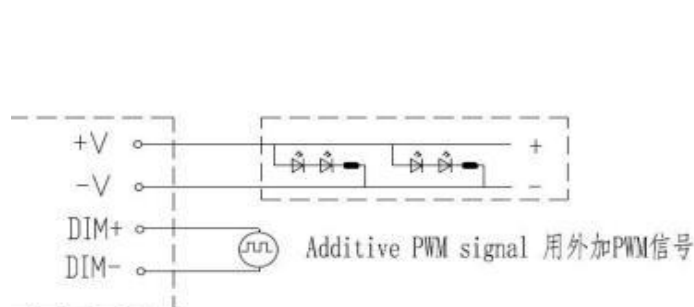


DO NOT connect "DIM- to -V" 请勿将DIM- 与-V相连

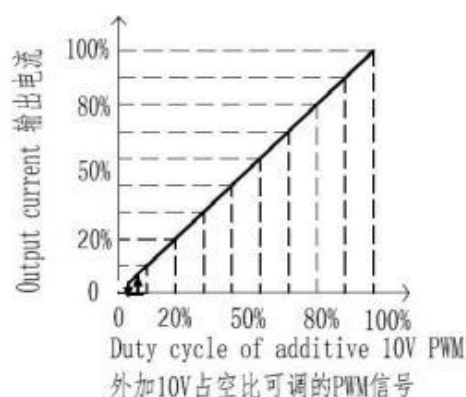


Dimming input: Additive voltage 调光输入: 外加电压

#### ◎ Applying additive 10V PWM signal (Frequency range: 100Hz-2K Hz):

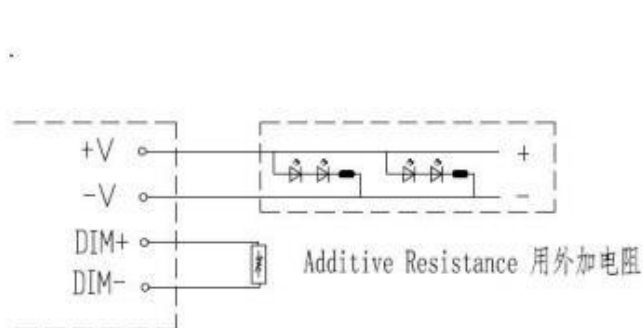


DO NOT connect "DIM- to -V" 请勿将DIM- 与-V相连

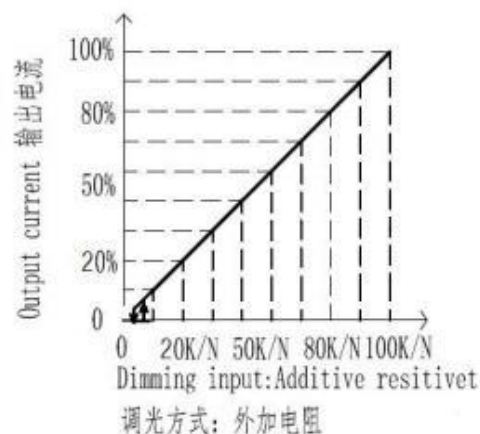


外加10V占空比可调的PWM信号

#### ◎ Applying additive 0-100K resistance:



DO NOT connect "DIM- to -V" 请勿将DIM- 与-V相连



Dimming input: Additive resistivet

调光方式: 外加电阻

#### Remarks:

N is the number of synchronous dimming operation drivers; Example: If the number of synchronous dimming operation drivers is 1 and the output current is 20%, then the external resistance is  $20K/1=20K$ ; The number of synchronous dimming operators is 2, the output current is 20%, and the external resistance is  $20K/2=10K$ , and so on.

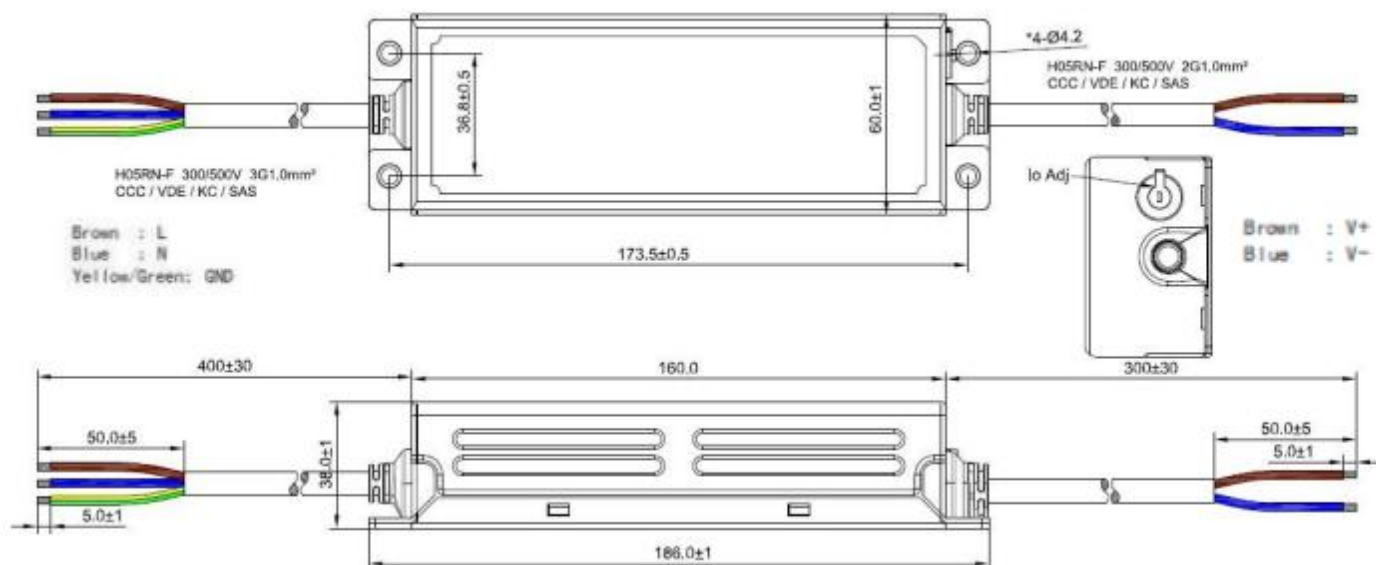
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## ■ MACHINE SIZE MAP:

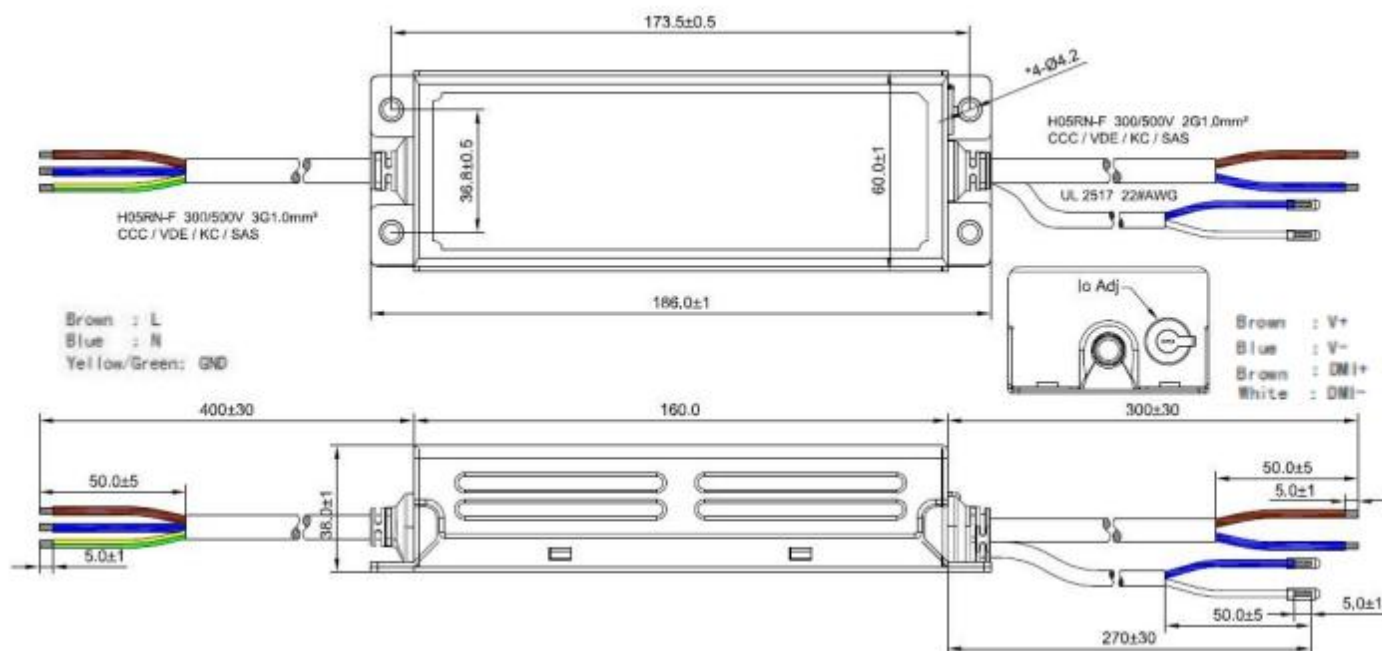
<b>Size(mm)</b>	L186mm*W60mm*H38mm
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Case model : B120-006-DB unit:mm

### HJ-W150-V38A/58A-NA



### HJ-W150-V38S/58S-NA



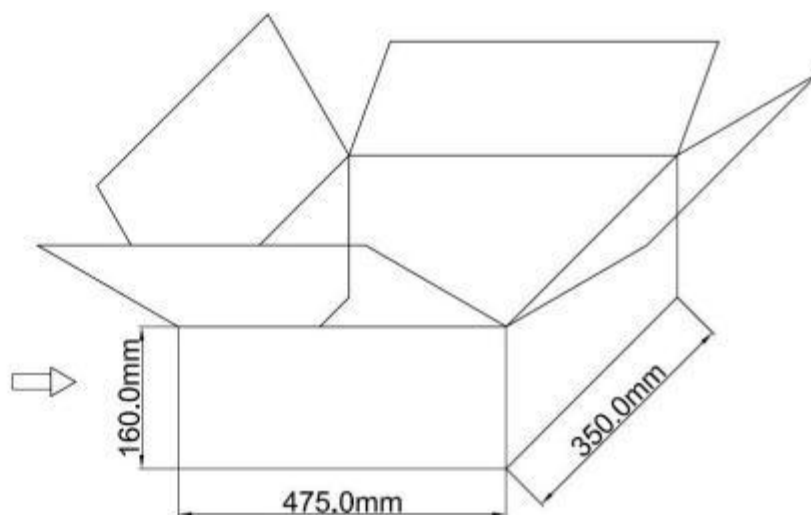
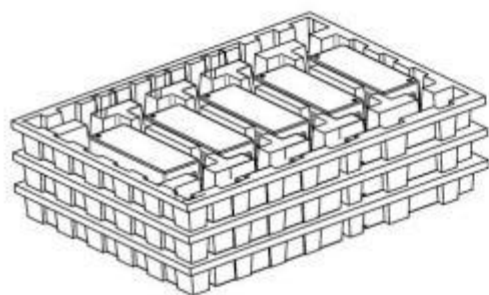
## ■ WEIGHT

<b>Weight</b>	780g
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## ■ PACKAGING

Packaging(mm)	L475*W350*H160
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**Remark:** 18 drivers in a packing case

## Warning:

1. According to the certificate of power supply The LED driver of English nameplate is suitable for sale to Europe, America and India;
2. LED drivers for Chinese nameplates are only available for lamps sold to China.