

Richmat	Application	RICHMAT WATERPROOF LED DRIVER		
	Product Line	HJ-W200-S/A-NA	REV	1.0

Qingdao Richmat Electronic Technology Co.,Ltd.

SPECIFICATION FOR APPROVAL

CUSTOMER:			
MODEL NO. :	HJ-W200-S/A-NA		
VERSION:	V1.0		
CUSTOMER			
TEST	CHECK	APPROVE	
CUSTOMER REMARKS			
Please return to us one copy of "SPECIFICATION FOR APPROVAL" with you approved signature.			
MANUFACTURE			
EDIT	CHECK	APPROVE	
<p>Qingdao Richmat Electronic Technology Co.,Ltd.</p> <p>Research And Development Address: 3rd Floor, Building 2, No.187 Jinshui Road, Licang District, Qingdao City, 266199 Shandong, P.R. China Postal Code: 266041</p> <p>Factory Address: No.53 Yanqing Road, Jimo District, Qingdao City, Shandong, P.R. China Postal Code: 266200</p> <p>TEL:0532-89066999 FAX:0532-88597298</p>			

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■ FEATURES

- ◇ Class I structure
- ◇ Input Voltage:100-277V ~ 50/60Hz
- ◇ Efficiency 91%
- ◇ Constant power drive, Constant current output control mode
- ◇ Metal clad construction, level of protection : IP67
- ◇ Lightning protection level : difference mode 6kV ,
common mode 15kV
- ◇ 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
flood lighting、landscape lighting、venue lighting



■ MODEL LIST

Model	AC Input	Output power	Output voltage	Output current	Efficiency	T.H.D	PF
HJ-W200-V38S-NA	100-277V	200W	20-38Vdc	6.0A	90%	<10%	>0.95
HJ-W200-V38A-NA	50/60Hz						
HJ-W200-V58S-NA	100-277V	200W	32-58Vdc	4.2A	91%	<10%	>0.95
HJ-W200-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 200W ; 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 _{in} <1.4A @180Vac full load
Inrush current (typ.)	Cold start (25°C) 95A @230Vac

◇ OUTPUT

Model	HJ-W200-V38S-NA HJ-W200-V38A-NA	HJ-W200-V58S-NA HJ-W200-V58A-NA
Rated current	5.3A	3.45A
Output current range	3.7-6.7A	2.4-4.8A
Output voltage range	20-38Vdc	32-58Vdc
Rated output power(100-180Vac)	100W±30%	100W±30%
Rated output power(200-277Vac)	200W	200W
No load voltage	55Vdc Max	80Vdc Max
Efficiency	90%@230Vac full load	91%@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

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

Low Voltage protection	When the input voltage is less than 180Vac, the output power is reduced by about half
Over Load protection	Protection mode: hiccup restart mode, automatic recovery after removal of abnormal load conditions
Short Circuit Protection	Doze mode, can automatically recover after abnormal conditions are removed
Over temperature Protection	When the Tc is over 90 °C , the output power is reduced by about half
Over Voltage protection	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

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

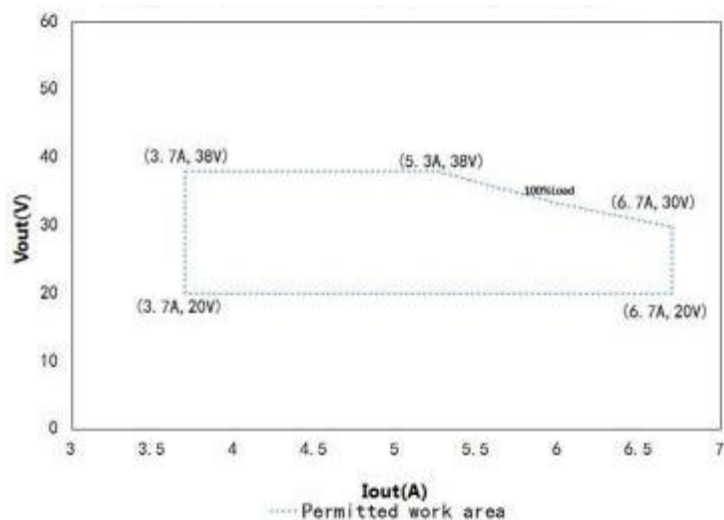
■ SAFETY & EMC

Safety	GB19510.1、GB19510.14、EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS61347.2.13;
EMC	EN 55015、EN 61000-3-2 、GB/T 17743、GB17625.1、 EN 61000-3-3
Surge level	difference mode L-N ± 4 KV (2 ohm), common mode L, N -PE ± 6 KV (12 ohm) 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:1.5KVAC
Insulation resistance	I/P-O/P:100M Ohms / 500VDC / 25°C/ 70% RH
Leakage current	<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.

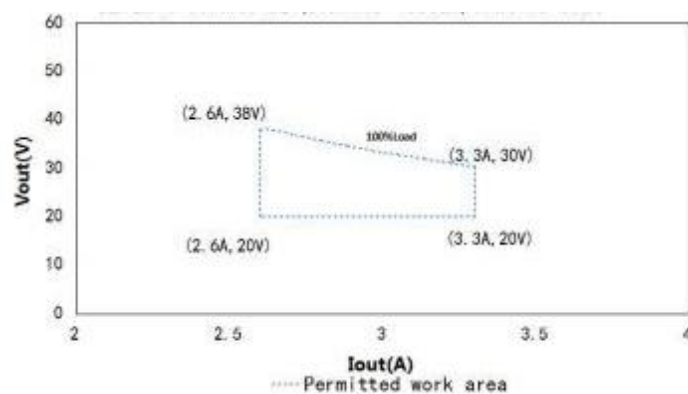
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■ I-V Working Area



HJ-W200-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	6.67A	6.67A	6.67A	6.67A	6.67A	6.25	5.88	5.56	5.26
Po_MAX	133.4W	146.7W	160.1W	180.1W	200W	200W	200W	200W	200W

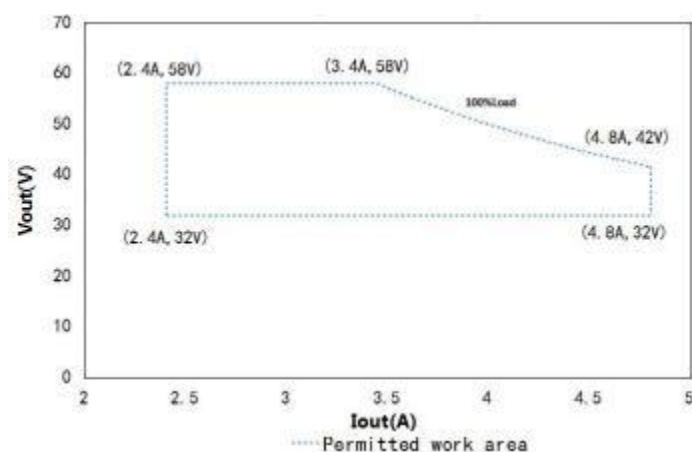


HJ-W200-V38S/38A-NA(100-180Vac, Rated output current and output power corresponding to different load voltages)

Load working Voltage	20V	22V	24V	26V	28V	30V	33V	36V	38V
Io_MAX	3.34A	3.34A	3.34A	3.34A	3.34A	3.13A	2.94A	2.78A	2.63A
Po_MAX	66.8W	73.5W	80.2W	90.2W	100W	100W	100W	100W	100W

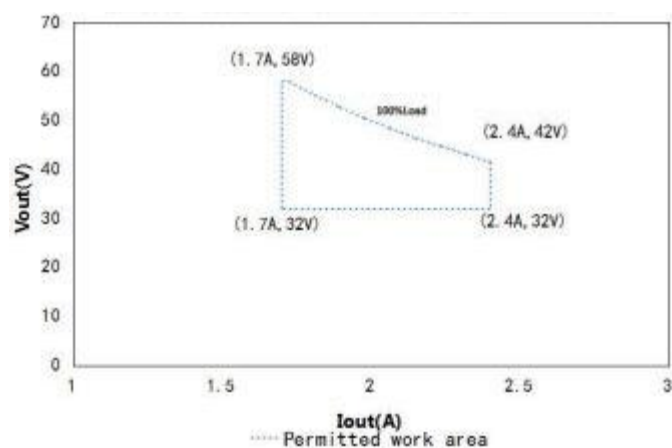
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■ I-V Working Area



HJ-W200-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	4.8A	4.8A	4.8A	4.8A	4.44A	4.17A	3.92A	3.70A	3.44A
Po_MAX	153.6W	168W	182.4W	200W	200W	200W	200W	200W	200W

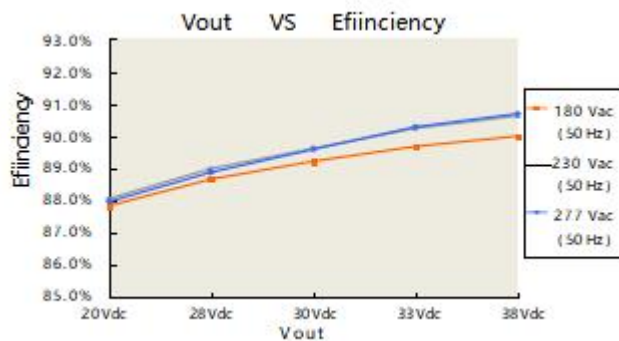


HJ-W200-V58S/58A-NA(100-180Vac, Rated output current and output power corresponding to different load voltages)

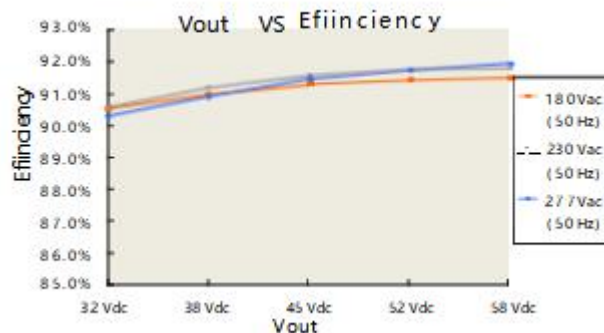
Load working Voltage	32V	35V	39V	42V	45V	48V	50V	55V	58V
Io_MAX	2.4A	2.4A	2.4A	2.4A	2.2A	2.1A	2.0A	1.9A	1.7A
Po_MAX	76.8W	84W	91.2W	100W	100W	100W	100W	100W	100W

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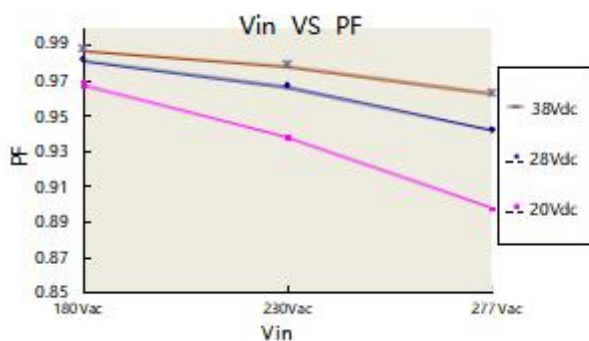
■ Vout VS Efficiency(HJ-W200-V38S-NA)



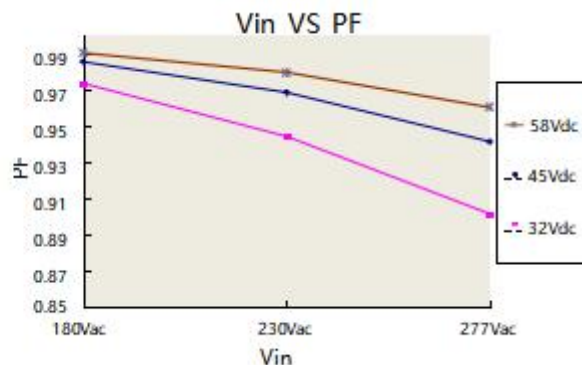
■ Vout VS Efficiency(HJ-W200-V58S-NA)



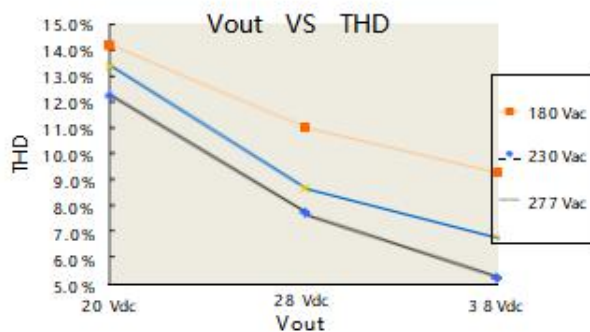
■ Vin VS PF(HJ-W200-V38S-NA)



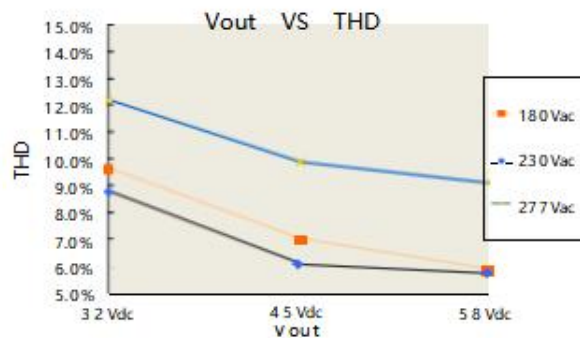
■ Vin VS PF(HJ-W200-V58S-NA)



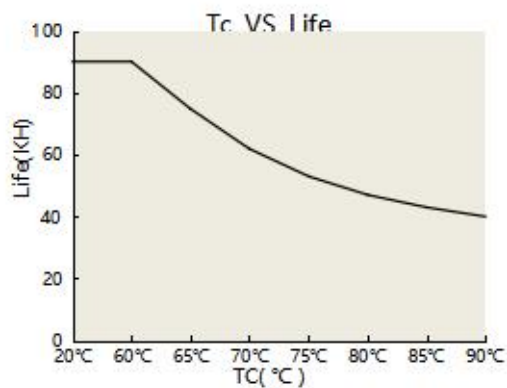
■ Vout VS THD(HJ-W200-V38S-NA)



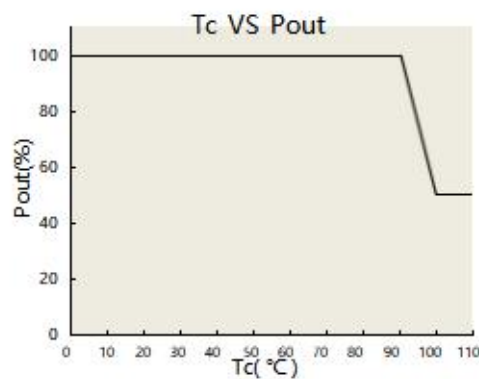
■ Vout VS THD(HJ-W200-V58S-NA)



■ Tc VS Life(HJ-W200-S/A-NA)

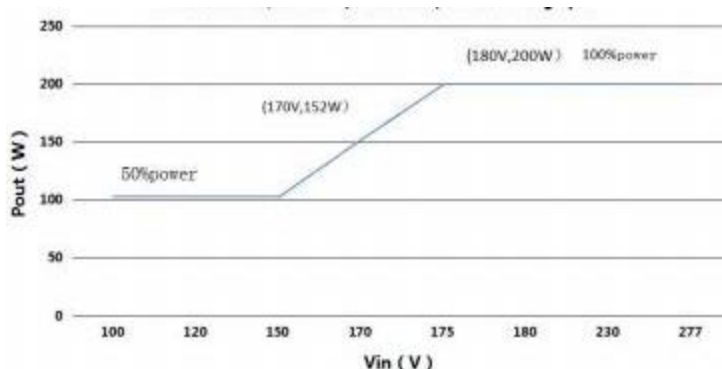


■ Pout VS Tc



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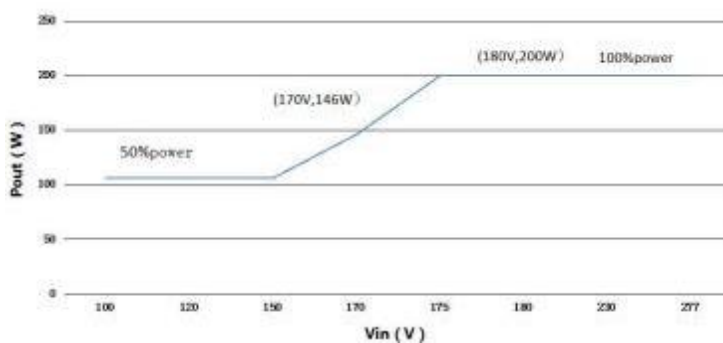
■ Pout VS Vin



HJ-W200-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	2.7A	2.7A	2.6A	4A	5.2A	5.2A	5.2A	5.2A
Po	103W	103W	103W	152W	200W	200W	200W	200W

■ Pout VS Vin



HJ-W200-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	1.8A	1.8A	1.8A	2.5A	3.4A	3.4A	3.4A	3.4A
Po	106W	106W	106W	146W	200W	200W	200W	200W

Remarks:

When the input voltage is lower than 180Vac±5Vac, the output power gradually decreases;

When the input voltage is 100V, the output power range is 100W ± 30%.

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■ DIMMING OPERATION

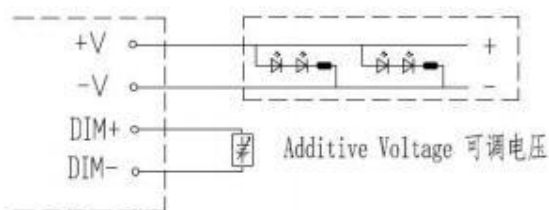
※ 3 in 1 dimming (For S Type)

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.

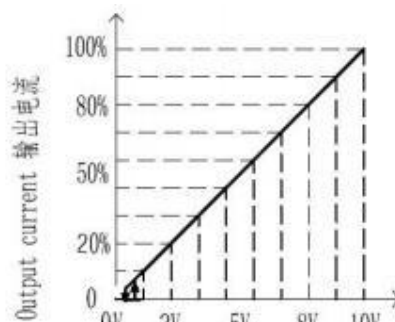
Direct connecting to LEDs is suggested. It is not suitable to be used with additional drivers.

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

◎ Applying additive 0-10Vdc:

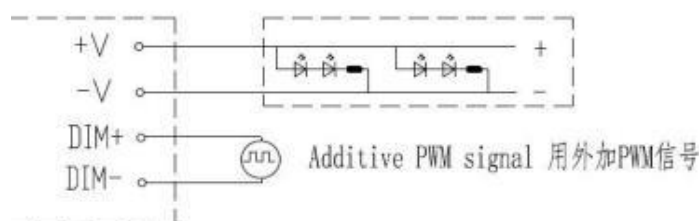


DO NOT connect "DIM- to -V" 请勿将DIM- 与-V相连

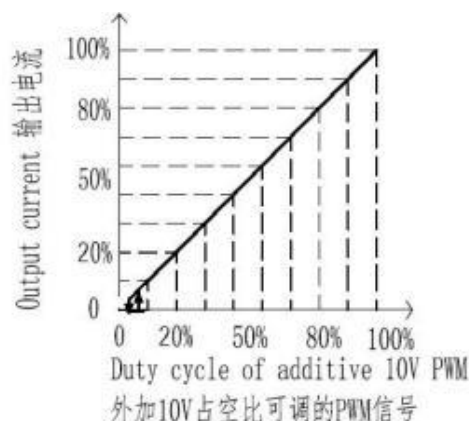


Dimming input: Additive voltage 调光输入: 外加电压

◎ Applying additive 10V PWM signal (Frequency range: 300Hz-2K Hz):

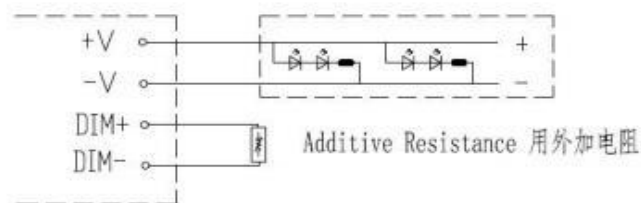


DO NOT connect "DIM- to -V" 请勿将DIM- 与-V相连

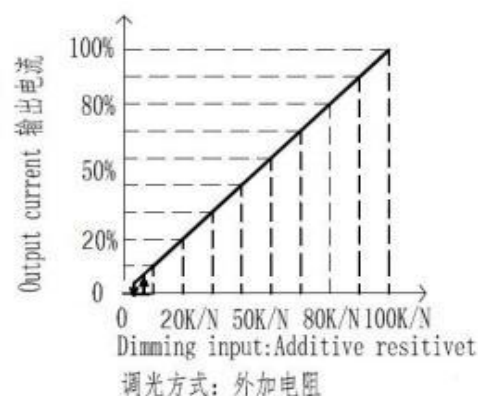


外加10V占空比可调的PWM信号

◎ Applying additive 0-100K resistance:



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



调光方式: 外加电阻

Remarks:

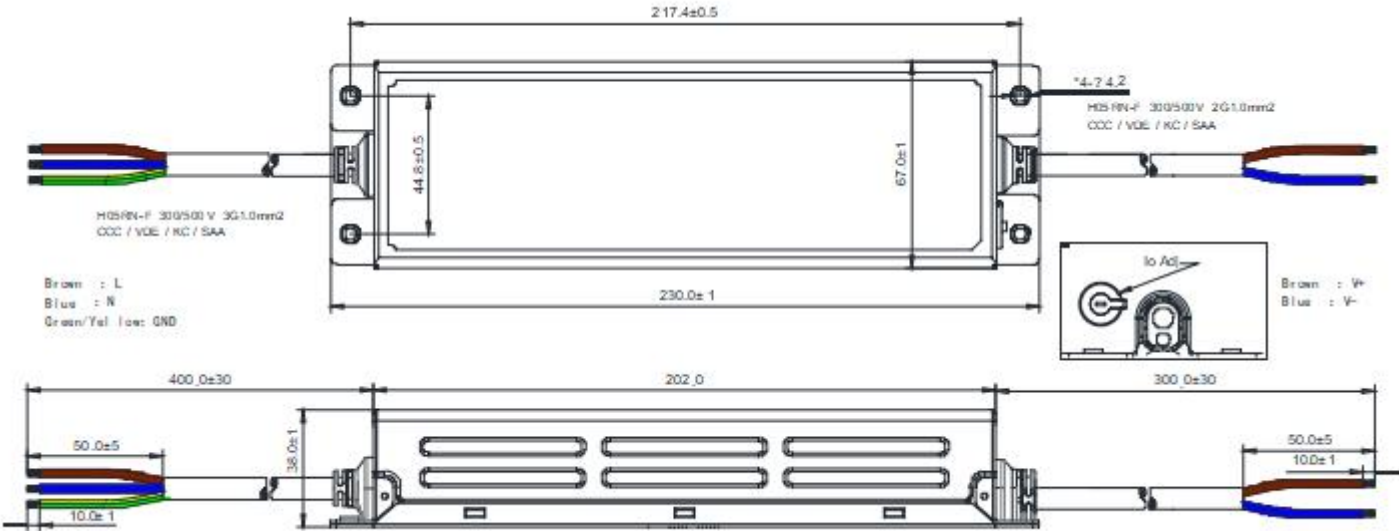
N is the number of synchronous dimming operation drivers; Example: If the number of synchronous dimming operation drivers is 1 and the output current is 20%, then the external resistance is $20K/1=20K$; The number of synchronous dimming operators is 2, the output current is 20%, and the external resistance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

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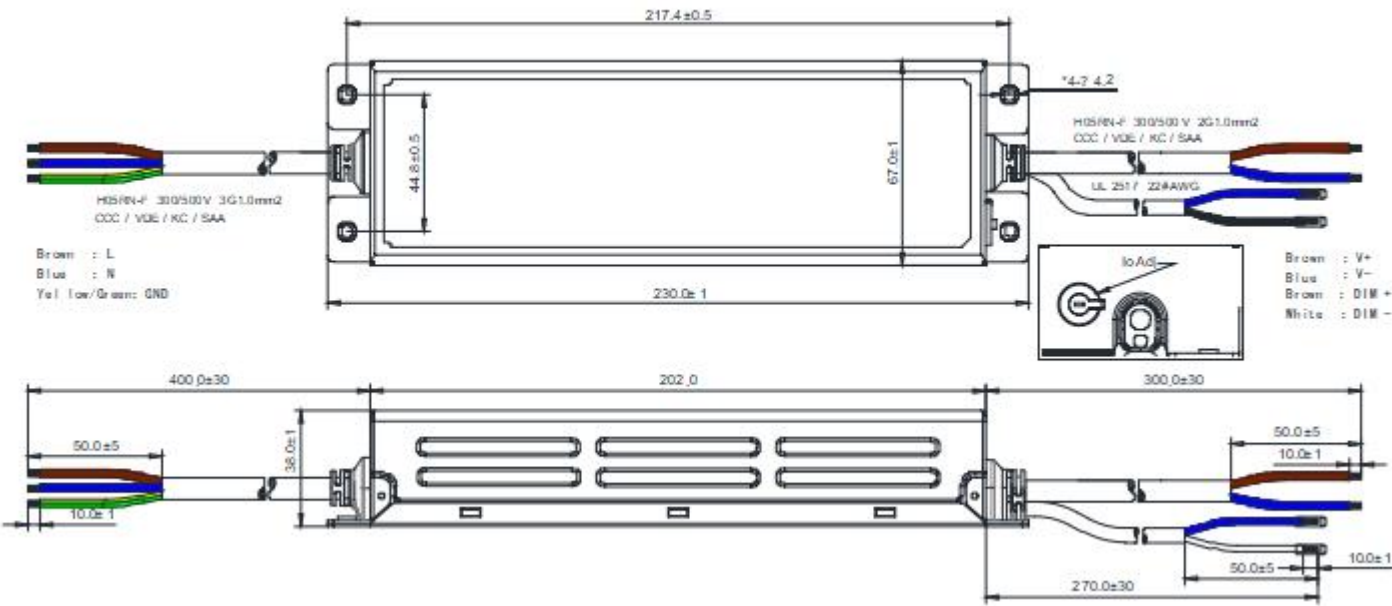
MACHINE SIZE MAP:

Sise(mm)	L230mm*W67mm*H38mm
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Case model : B200-008
 unit:mm
 (HJ-W200-V38A/58A-NA)



(HJ-W200-V38S/58S-N)



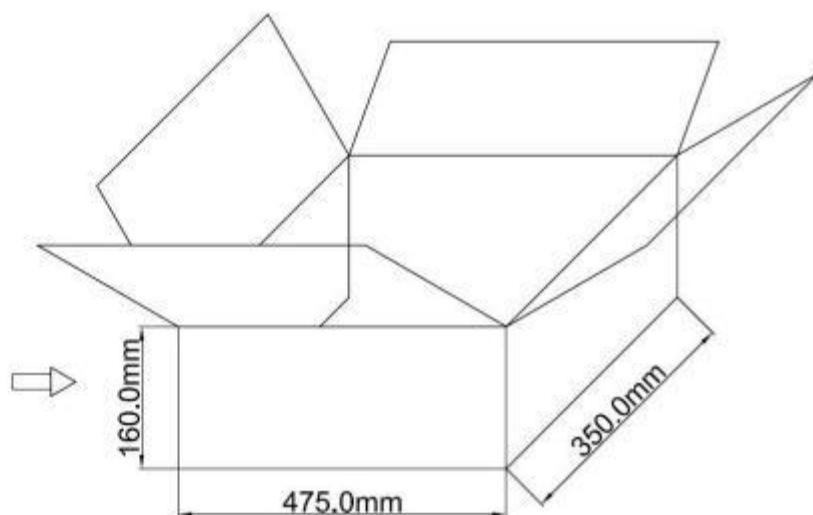
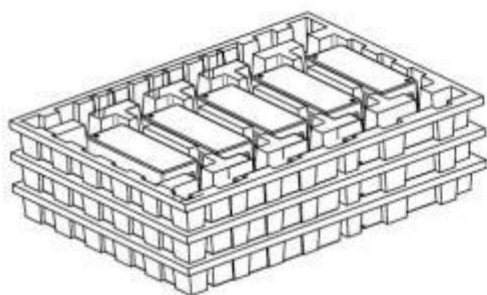
WEIGHT

Weight	1060g
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■ PACKAGING

Packaging(mm)	L475*W350*H160
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Remark: A case of 3 layers , Each layer of 5 PCS

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.