TRIAC & 0-10V Dimmable LED Driver - Constant Voltage Output - ECV-UD-2G Series 96W

P/N ECV96-(XY)=24/48DC-UD-2G

Whole Family: ECVXXX-(XYZA)=12/24/48VDC-UD-2G XXX=[30W 60W 80W 96W 100W 120W 150W 200W 300W]

c UL us LISTED E495946 FC ICES-005 Class P Class 2 SELV RoHS Reach





Features

Output:	Constant Voltage
Range:	100-277VAC
PFC design:	Built-in active PFC function
Efficiency:	Up to 91%
Protections:	Short circuit / Over load / Over temperature
Heat dissipation:	Cooling by free air convection
Waterproof performance:	Driver built in junction box, for dry, damp & wet locations.
Design features:	Output mode selection: Pulse-Width Modulation (PWM) & Voltage Reduce (VR) mode can be switched.
Dimming function:	Phase dimming: work with Forward phase, MLV and Reverse phase, ELV, TRIAC dimmers. 0-10V dimming: 0-10V/1-10V/Potentiometer/10V PWM 4 in 1.
Min load	Min load is 20%
Dimming range:	PWM: 0-100% VR: 24V: 0~24V 48V: 0~48V
Dimming depth:	PWM: 0.1% VR: 24V: 14V±0.5V 48V: 28V±1V
Application:	Suitable for the application of LED lighting
Warranty:	5 years warranty



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Specification

Model		ECV96-24DC-UD-2G	ECV96-48DC-UD-2G
Certificate		UL / FCC / ICES-005 / Class P / Class 2 / SELV / ROHS / REACH	
Output	DC Voltage	24V	48V
	Voltage Tolerance	±2%	±2%
	Voltage Regulation	≤0.5%	≤0.5%
	Load Regulation	≤0.5%	≤0.5%
	Rated current	4A	2A
	Rated power	96W	
	Voltage Ripple	296mVp-p	176mVp-p
	Overshoot voltage	<3%(full load)	<3%(full load)
	Fine-tune Voltage	24-26V 	48-50V 
	Output mode selection	The DIP switch at the "ON" position represents the PWM (Pulse - Width Modulation) mode, and at the "1" position represents the VR (Modulation of DC Voltage) mode. 	
		Switching the output mode requires the power to be cut off for 3 seconds and then powered on again for the mode switching to take effect.	
Input	Voltage Range	100-277VAC	
	Frequency Range	50 / 60Hz	
	Power Factor @ full load	>0.95	
	THD(Typ.) @ full load	<15%@120VAC <15%@277VAC	
	Efficiency(Typ.) @ full load	≥87%@120VAC ≥91%@277VAC	≥87%@120VAC ≥91%@277VAC
	AC Current (Max.)	1.1A	
	Inrush Current (Typ.)	51A,208us@50%Ipeak 120VAC 118A,452us@50%Ipeak 277VAC	
	Leakage current	<0.5mA	
Protection	Short Circuit	Hiccup mode, can be automatically restored after abnormal removal.	
	Over Load	105%~120% Constant - Current Mode, automatic recovery after exception.	
	Over temperature	When the ambient temperature exceeds 55℃ ±5℃, the output is turned off.	
Environment	Working TEMP. (Ta)	-40~+40℃ (see below derating curve)	
	Case Temperature (Tc)	75℃	
	Working Humidity	20 - 95%RH non-condensing	
	Storage TEM.,Humidity	-40 - +80℃,10 - 95% RH non-condensing	
	TEMP.coefficient	±0.03%/℃(0 - 50℃)	
	Vibration	10 ~ 500Hz, 5G 12 minutes/cycle, X Y Z axis 72 minutes each	
Safety & EMC	Safety standards	UL8750; CAN/CSA-C22.2 No.250.13	
	Withstand voltage	I/P-O/P: 1.88KVac I/P-FG: 1.88KVac O/P-FG: 0.5KVac	
	Isolation resistance	I/P-O/P:100MΩ / 500VDC / 25℃ / 70% RH	

	Surge Immunity Test	AC Power Line:Differential Mode 2KV,Common Mode 4KV
	EMC Immunity	FCC/ICES do not request this test.
	EMC Emission	FCC Part 15 Subpart B; ANSI C63.4a-2017; ICES-005 Issue 5
Others	Net Weight	1.0KG
	Dimension	196.5*103.4*40mm(L*W*H)
	Packing	540*235*235mm 20pcs/CTN
Notes	1. All parameters NOT specially mentioned are measured at 120VAC input, rated load and 25℃of ambient temperature. 2. Tolerance: includes set up tolerance and load regulation . 3. 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 manufactures must be-qualify EMC Directive on the complete installation again. 4. Default states: The output mode is PWM mode. The dimming curve is a gamma2.2 curve. 5. Regarding LED driver load types where the driver meets the harmonic emissions requirements of ANSI C82.77-10.	

MCB recommendation

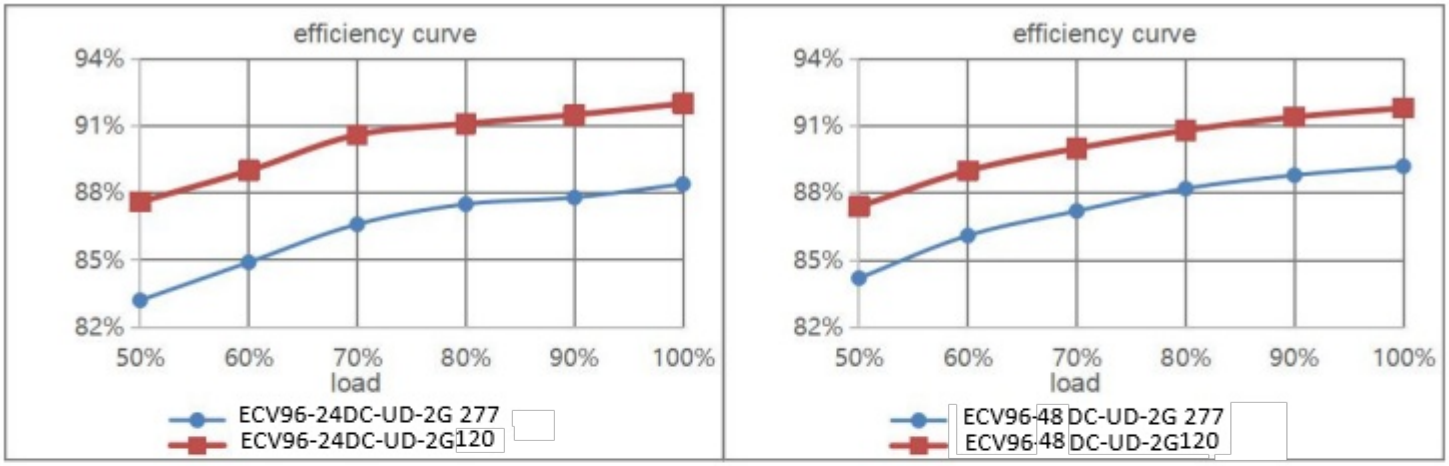
When the input voltage is 120Vac, the number of LED Driver matched by circuit breakers is as follows:		
MCB Type	Level	The number of LED Driver
C type	10A	7
	13A	9
	16A	12
	20A	15
	25A	18
When the input voltage is 277Vac, the number of LED Driver matched by circuit breakers is as follows:		
MCB Type	Level	The number of LED Driver
C type	10A	2
	13A	3
	16A	3
	20A	4
	25A	5

Note:

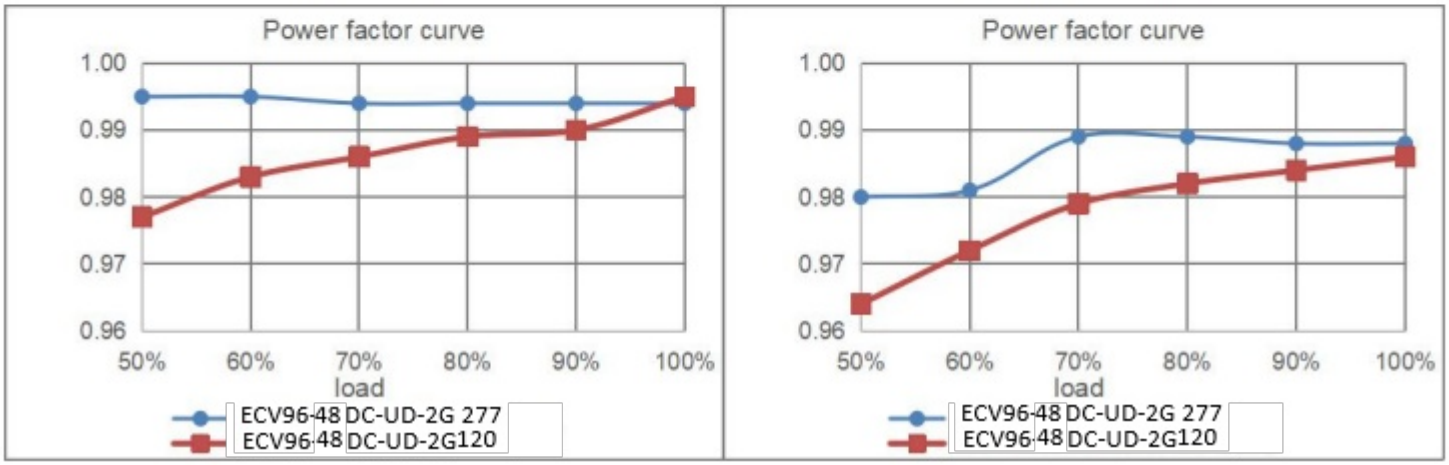
1. The above quantities of the led drivers connected on the Type C is recommended base on the maximum ambient temperature is 50 °C.
2. The breaker should be selected according to the input rated voltage, input rated current, ambient temperature, and trip characteristic curve.

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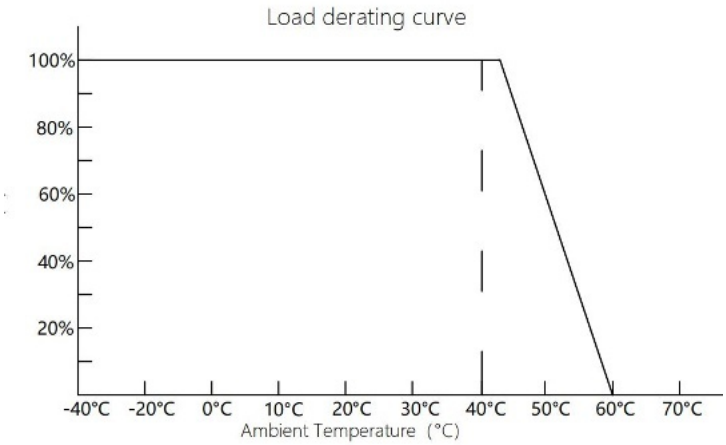
Efficiency Curve (efficiency vs output load)



Power Factor Curve (power factor vs output load)



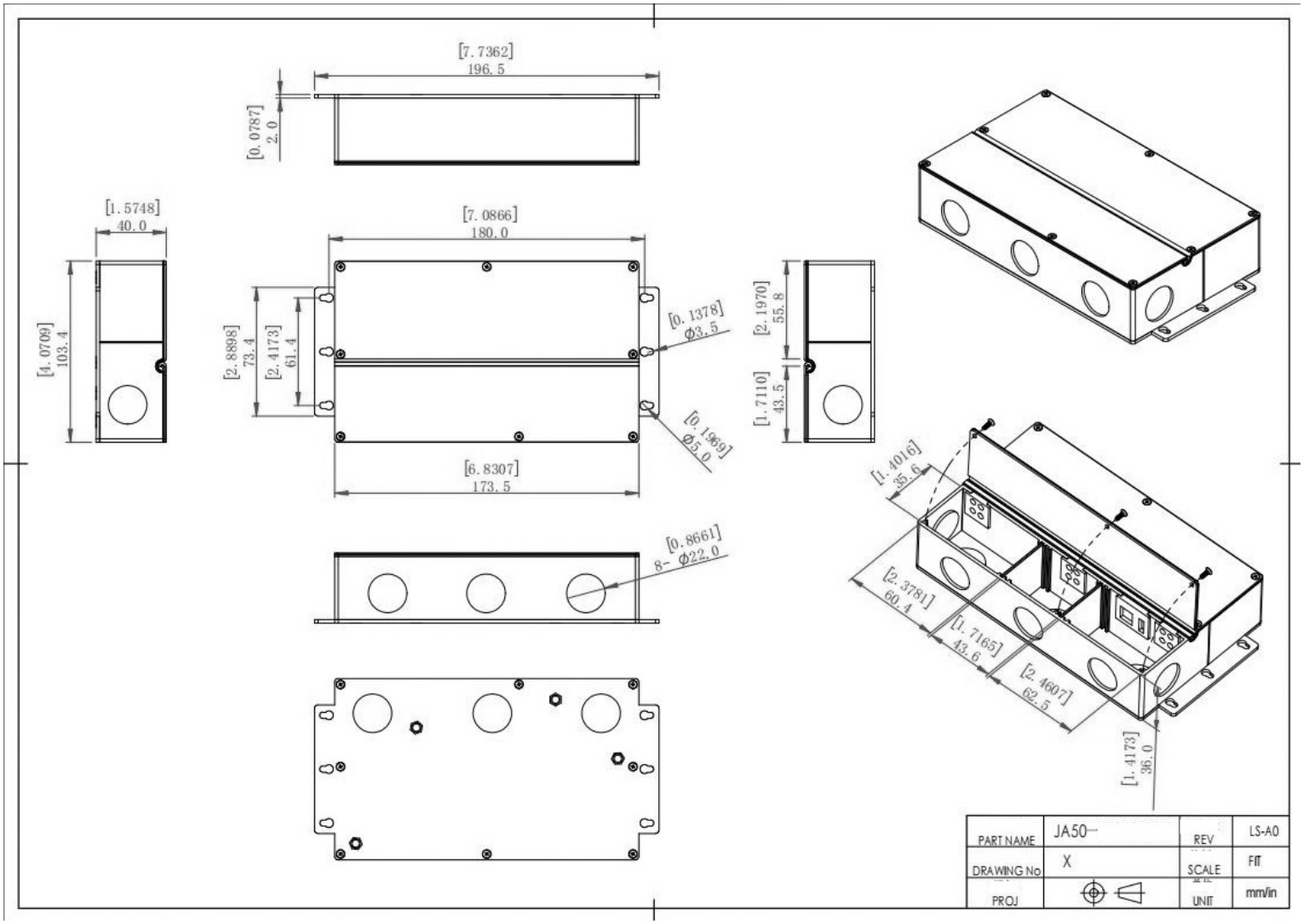
Derating Curve (output load vs TEMP.)



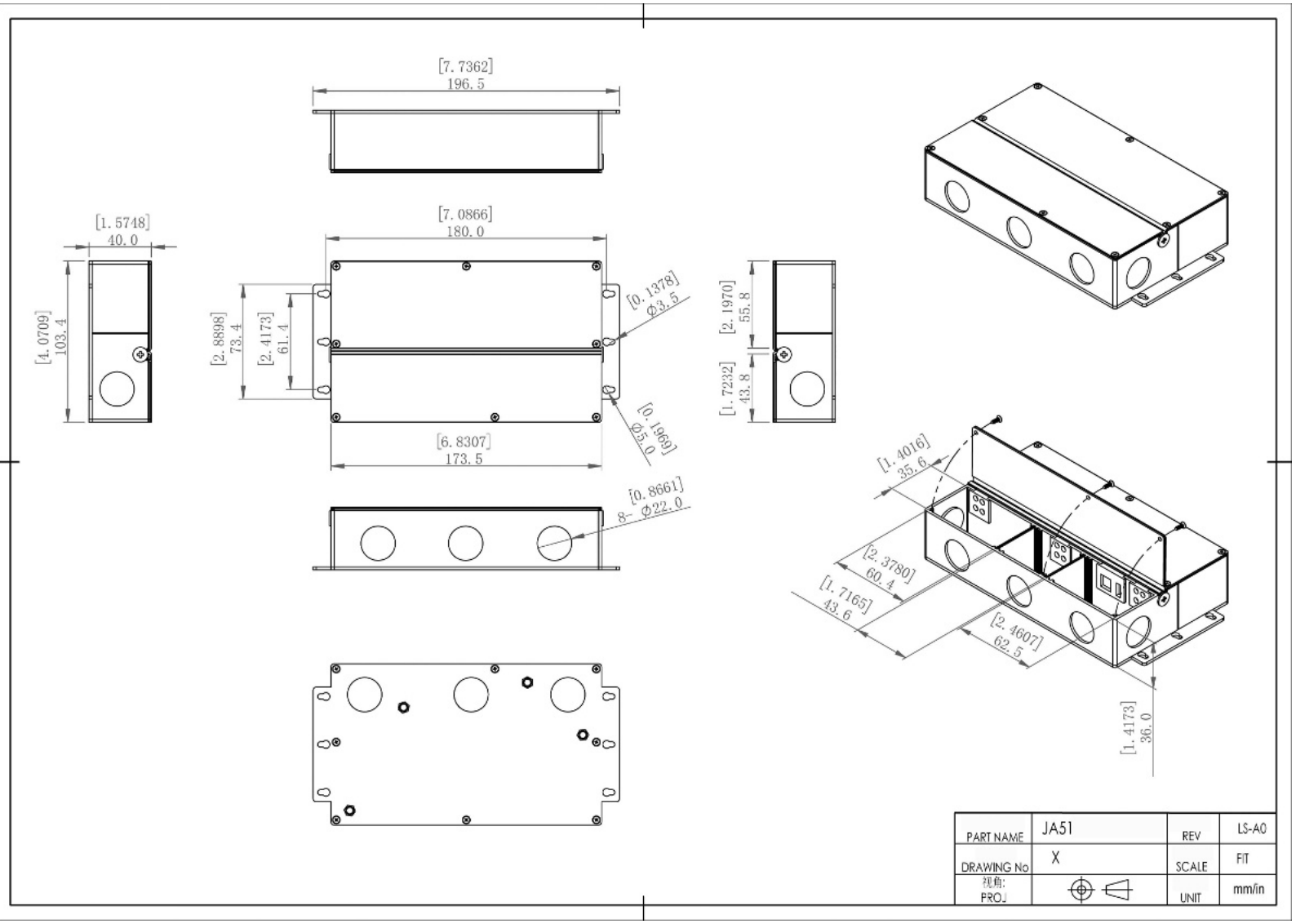
1. To extend their life, please refer to the Derating Curve and derate according to the temperature.
2. The output current of the LED driver should be selected according to the rated current of the lamp and the ambient temperature. Normally, we recommend the power supply to reserve a certain amount of load to extend LED driver's life.

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Mechanical Specification



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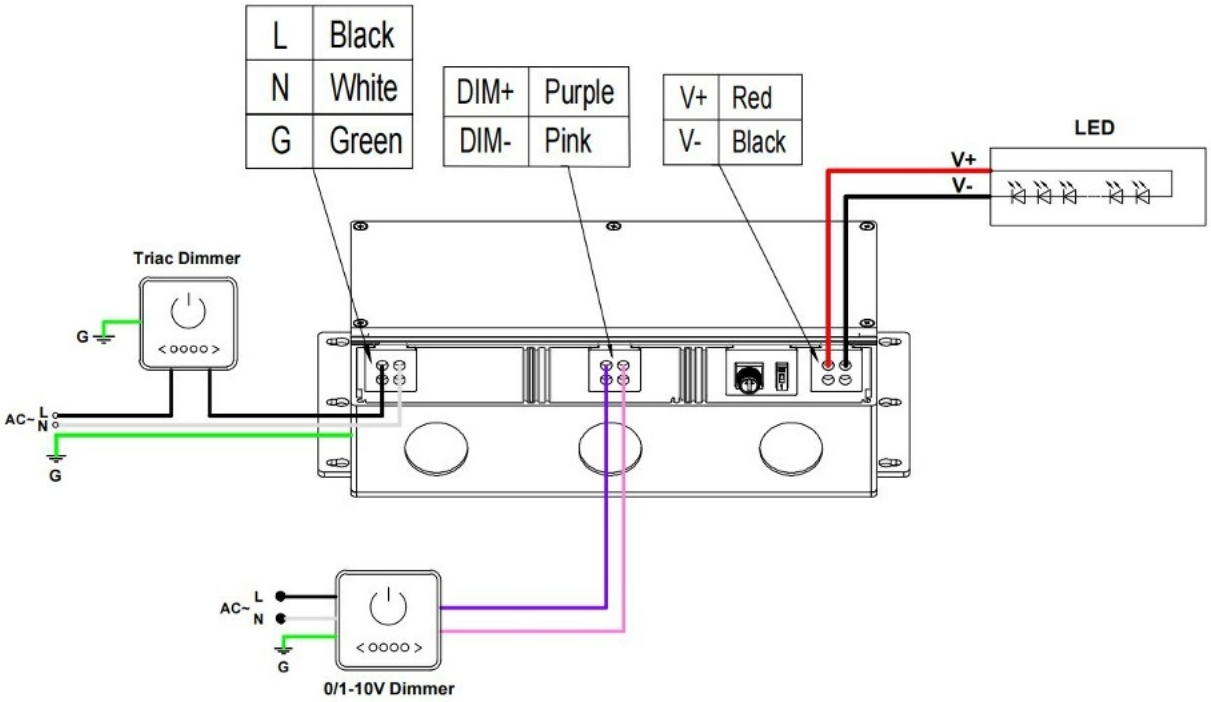
JA51 (Secured with screws on the side)

American wire gauge	
JA50/JA51	
Input wire	Black(L) White(N) Green(G) (3*18AWG)
Output wire	Red(V+) Black(V-) (2*18AWG)
Dimming wire	Purple(DIM+) Pink(DIM-) (2*18AWG)

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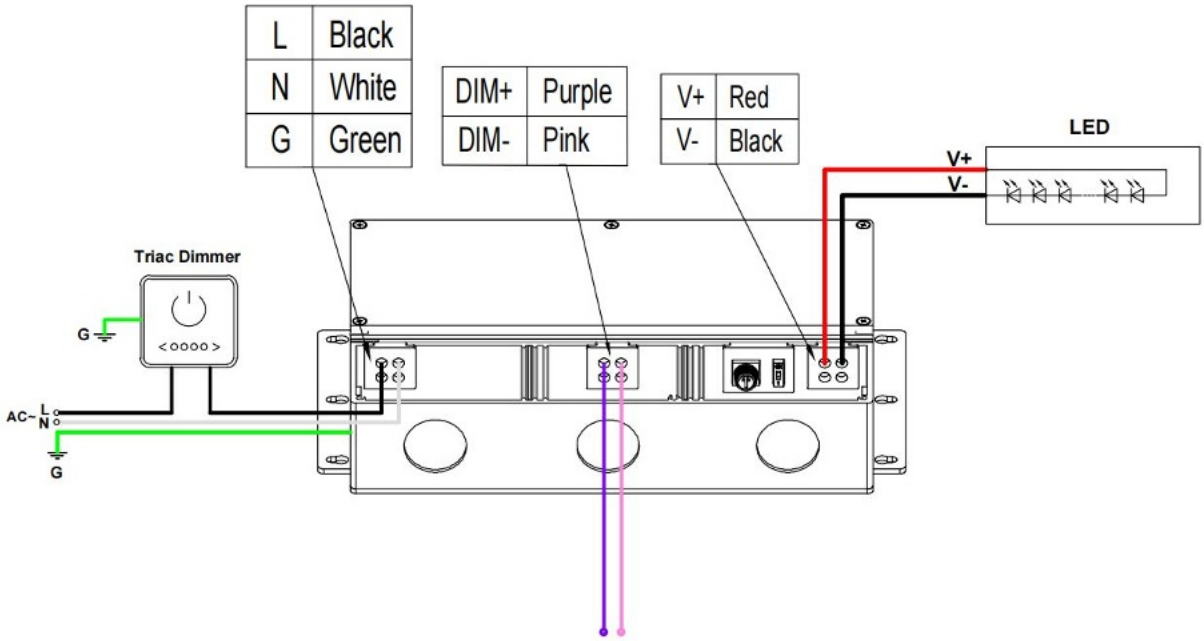
Dimming Operation and Connecting Diagram

Using two ways of dimming at the same time, you must be assured that LED lighting is up to the max. Brightness then you could operate with the other dimming;



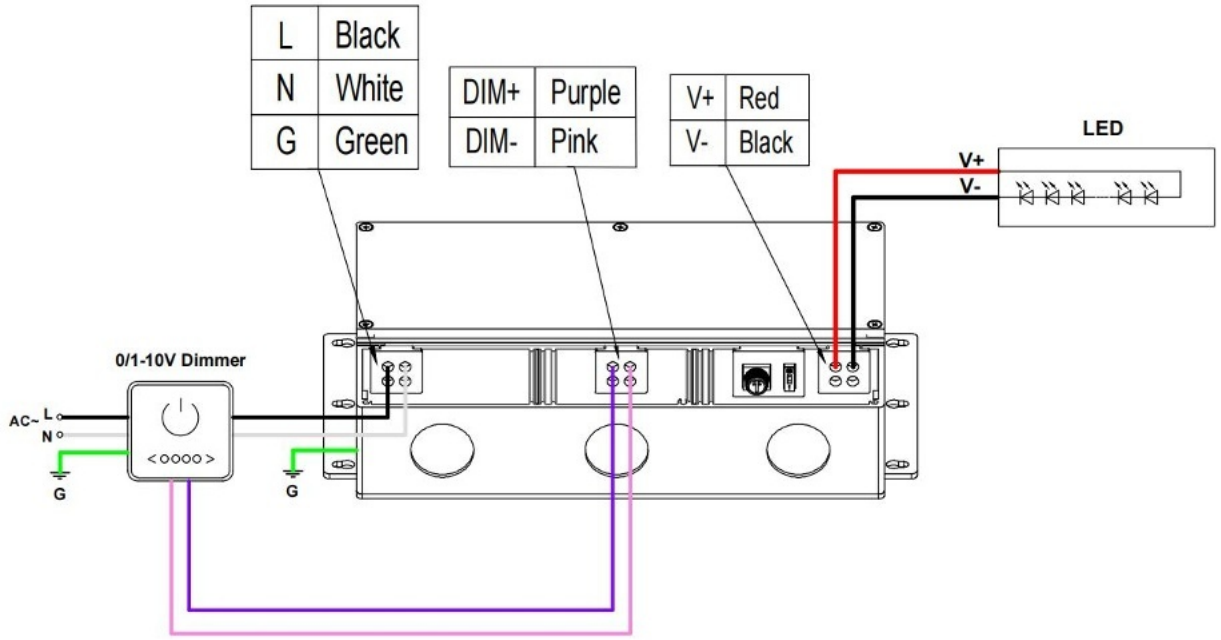
Using one dimming ---TRIAC/Phase cut dimming

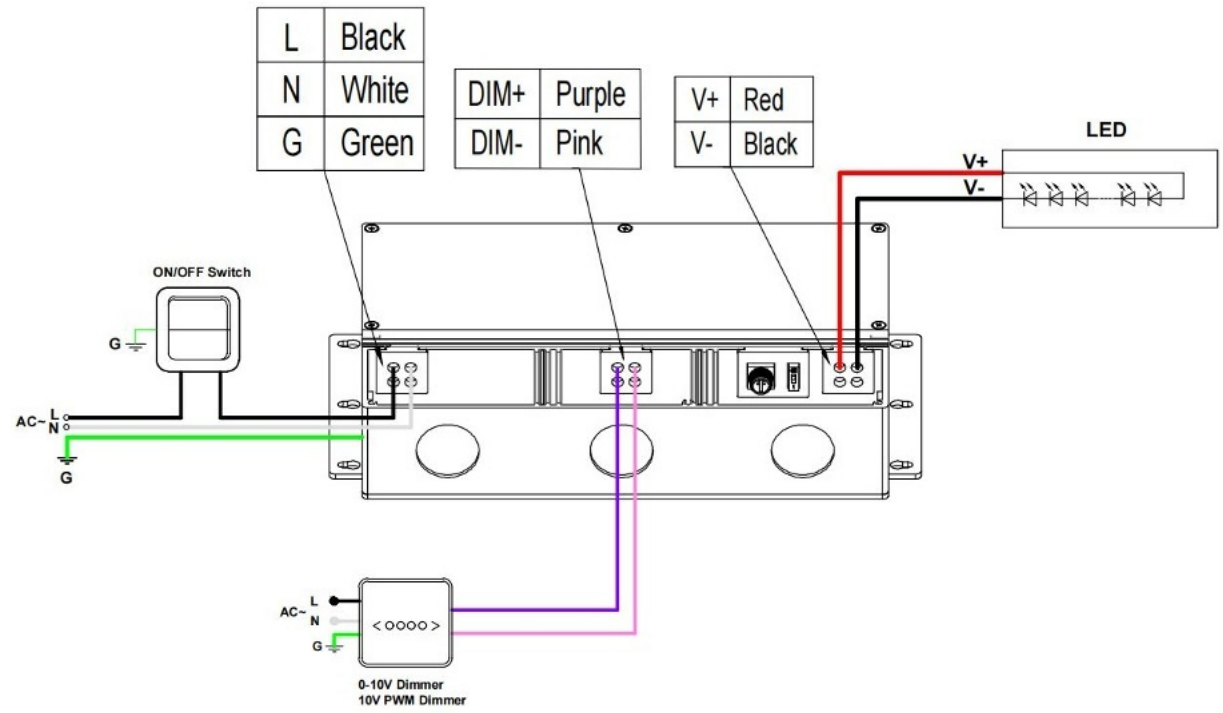
1. The Pulse-Width Modulation (PWM) of output voltage can be adjusted through input terminal of the AC phase line(L) by connection a phase /Triac dimmer or lighting system.
2. Working with forward phase /leading edge, MLV and Reverse phase /trailing edge, ELV, TRIAC dimmers or light system.
3. Min. loading is about 20%.
4. Please try to use dimmers with power at least 1.5 times as the output power of the driver.



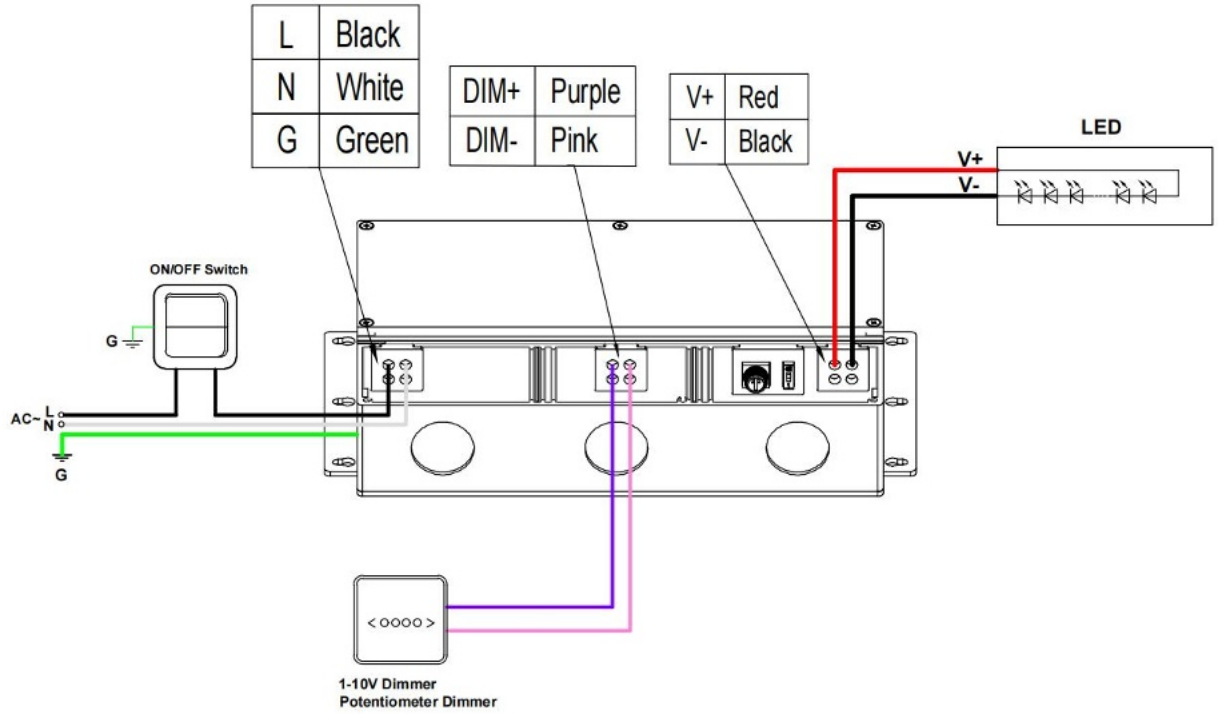
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Using one dimming ---0-10/ 1-10V/ 10V PWM/ Potentiometer dimming





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Instructions

1. This driver should be installed by qualified and professional person.
2. Please make sure the driver is installed with adequate ventilation around it to allow for heat dissipation.
3. Ensure that wiring is correct before test in order to avoid light and power supply damage.
4. If driver cannot work normally, don't maintain by yourself.

Have any questions, please contact EMCOD.COM
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