

ECV300-(12/24/36/48)DC-UD-2G

Whole Family: ECVXXX-(12/24/36/48)DC (XXX= [30W 60W 80W 96W 100W 120W 150W 200W 300W]



ICES-005 Class P SELV RoHS



Dimming Mode



PWM Output



Voltage Reduce



Output Volt. Adjustment

Volt. Adj.

Features

Output:	Constant Voltage
Range:	110-277VAC
PFC design:	Built-in active PFC function
Efficiency:	Up to 93.5%
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: 12V: 0~12V 24V: 0~24V 36V: 0~36V 48V: 0~48V
Dimming depth:	PWM: 0.1% VR: 12V: 7V±0.5V 24V: 14V±0.5V 36V: 21V±1V 48V: 28V±1V
Application:	Suitable for the application of LED lighting
Warranty:	5 years warranty

Specification

Model		ECV300-12DC-UD-2G	ECV300-24DC-UD-2G	ECV300-36DC-UD-2G	ECV300-48DC-UD-2G
Certificate		UL / FCC / ICES-005 / Class P / SELV / ROHS / REACH			
Output	DC Voltage	12V	24V	36V	48V
	Voltage Tolerance	±4%	±2%	±2.8%	±2%
	Voltage Regulation	≤0.5%	≤0.5%	≤0.5%	≤0.5%
	Rated current	25A	12.5A	8.33A	6.25A
	Rated power	300W	300W	300W	300W
	Load Regulation	±2%	±2%	±2%	±2%
	Voltage Ripple	240mVp-p	400mVp-p	352mVp-p	330mVp-p
	Overshoot voltage	<1% (full load) <2% (no load)			
	Output volt Adjustment	12-13V 	24-25.5V 	36-38V 	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	110-277VAC			
	Frequency Range	50 / 60Hz			
	Power Factor @ full load	>0.95			
	THD(Typ.) @ full load	<15%@120VAC <15%@277VAC			
	Efficiency(Typ.) @ full load	89.5%@120VAC 92%@277VAC	91.0%@120VAC 93.5%@277VAC	90.0%@120VAC 92.5%@277VAC	90.0%@120VAC 92.5%@277VAC
	AC Current (Max.)	3.2A			
	Inrush Current (Typ.)	58.4A, 50%, 560us @120VAC 132A, 50% 180us @277VAC			
	Leakage current	<0.5mA			
Protection	Short Circuit	Hiccup mode, can be automatically restored after abnormal removal.			
	Over Load	105%~110% Hiccup mode,recovers automatically after fault condition is removed.			
	Over temperature	When the ambient temperature exceeds 45°C ±5°C, the output is turned off.			
Environment	Working TEMP. (Ta)	-40~+40°C (see below derating curve)			
	Case Temperature (Tc)	90°C			
	Working Humidity	20 - 95%RH non-condensing			
	Storage TEM.,Humidity	-40 - +80°C,10 - 95% RH non-condensing			
	TEMP.coefficient	±0.03%/°C(0 - 40°C)			
	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°C/ 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	1.43KG
	Dimension	232*116*40mm(L*W*H)
	Packing	300*246*257mm 10pcs/CTN
Notes	1. Unless otherwise specified, all specifications are measured at 120V input, rated load, and 25°C ambient temperature. 2. In the case of low input voltage, derated output should be used to ensure a long service life. 3. Default states: The output mode is PWM mode. The dimming curve is a gamma2.2 curve. 4. Regarding LED driver load types where the driver meets the harmonic emissions requirements of ANSI C82.77-10.	

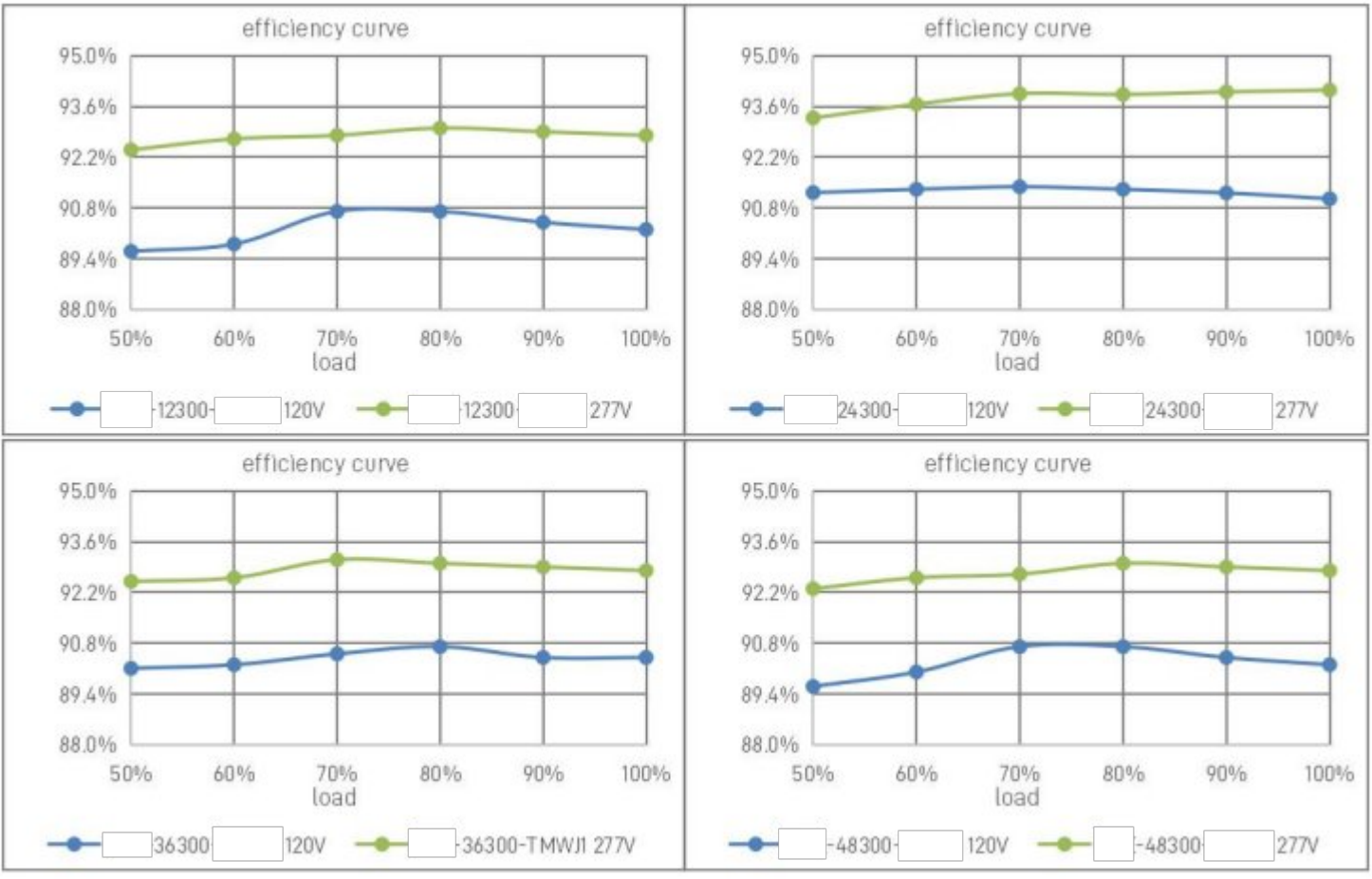
MCB recommendation

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	3
	13A	4
	16A	4
	20A	5
	25A	6
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	4
	13A	5
	16A	7
	20A	8
	25A	10

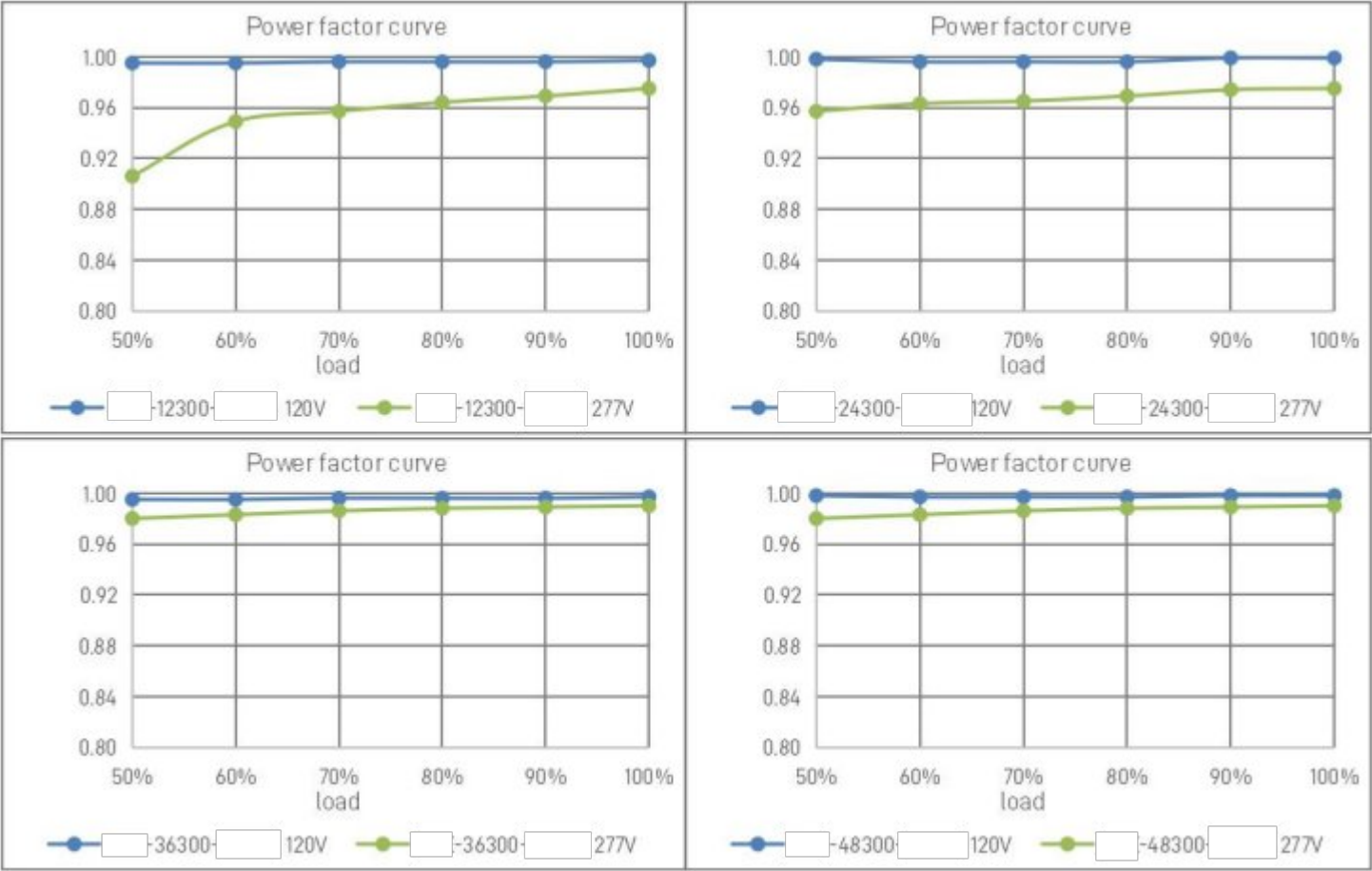
Note:

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.

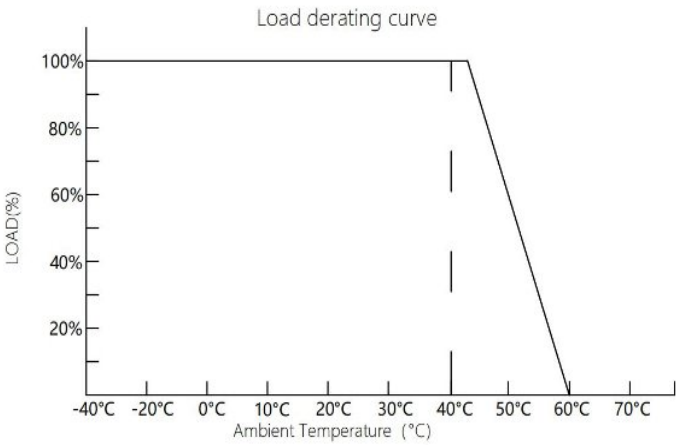
Efficiency Curve (efficiency vs output load)



Power Factor Curve (power factor vs output load)



Derating Curve (output load vs TEMP.)



To extend their life, please refer to the Derating Curve and derate according to the temperature.

Technical drawing of the JA100- terminal block assembly. The drawing includes a top view, a front view, a side view, a perspective view, and a detail view of the terminal block. Dimensions are provided in millimeters and inches.

Top View Dimensions:

- Overall Width: 232.0 mm [9.1339]
- Overall Height: 116.0 mm [4.5669]
- Terminal Spacing: 40.0 mm [1.5748]
- Terminal Diameter: 22.0 mm [0.8661]

Front View Dimensions:

- Overall Width: 215.5 mm [8.4843]
- Overall Height: 90.0 mm [3.5433]
- Terminal Spacing: 78.0 mm [3.0709]
- Terminal Diameter: 22.0 mm [0.8661]

Side View Dimensions:

- Overall Width: 209.0 mm [8.2283]
- Overall Height: 68.7 mm [2.7049]
- Terminal Spacing: 42.9 mm [1.6901]
- Terminal Diameter: 22.0 mm [0.8661]

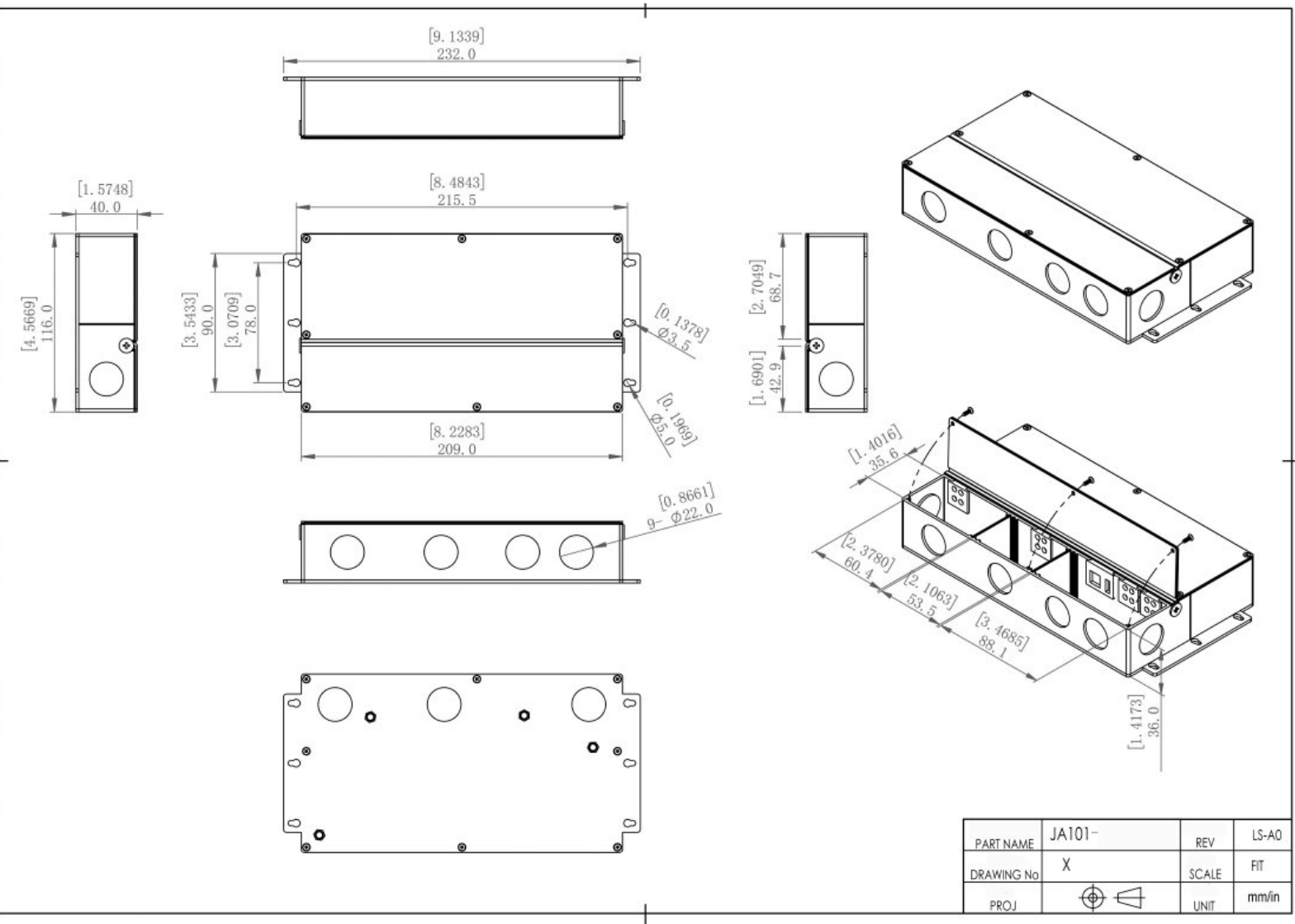
Perspective View Dimensions:

- Overall Width: 232.0 mm [9.1339]
- Overall Height: 116.0 mm [4.5669]
- Terminal Spacing: 40.0 mm [1.5748]
- Terminal Diameter: 22.0 mm [0.8661]

Detail View Dimensions:

- Terminal Spacing: 40.0 mm [1.5748]
- Terminal Diameter: 22.0 mm [0.8661]

Part Name	JA100-	Rev	LS-A0
Drawing No	X	Scale	Fit
Proj		Unit	mm/in

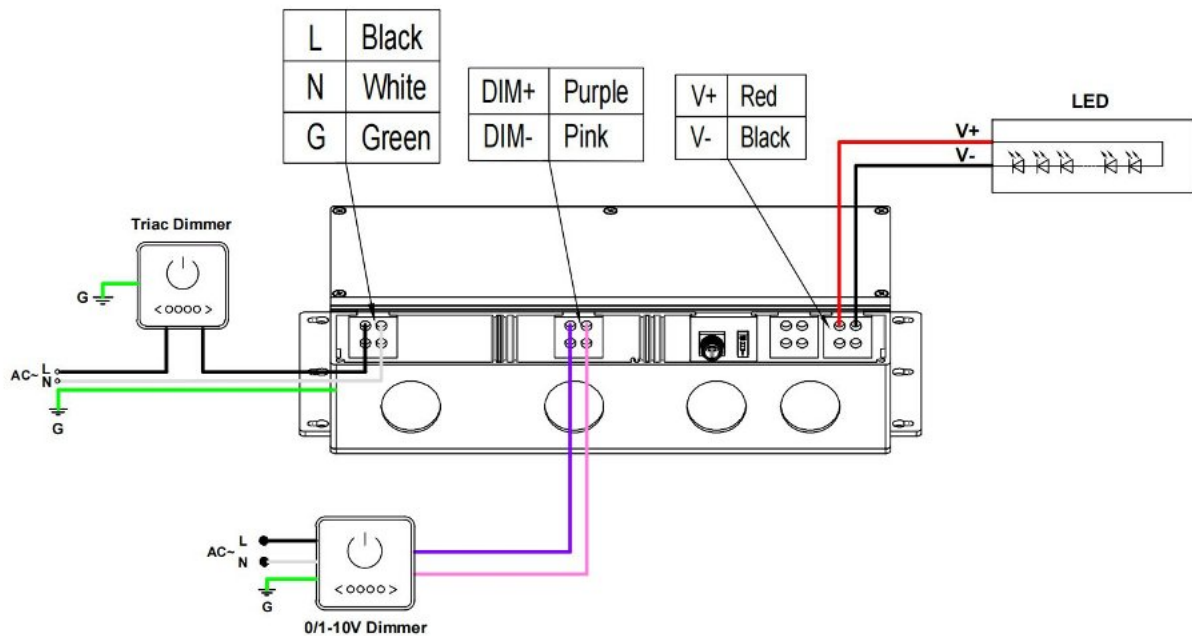


JA101 (Secured with screws on the side)

American wire gauge	
JA100/JA101	
Input wire	Black(L) White(N) Green(G) (3*18AWG)
Output wire	12V: Red(V+) Black(V-) (2*12AWG)
	24V: Red(V+) Black(V-) (2*14AWG)
	36V&48V: Red(V+) Black(V-) (2*16AWG)
Dimming wire	Purple(DIM+) Pink(DIM-) (2*18AWG)

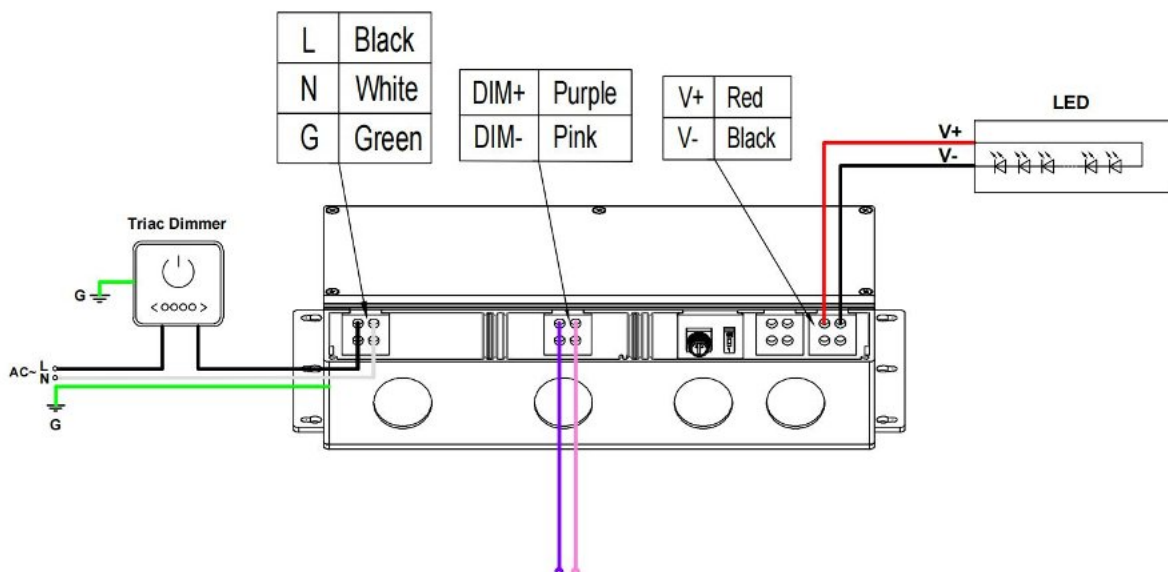
Dimming Operation and Connecting Diagram

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;

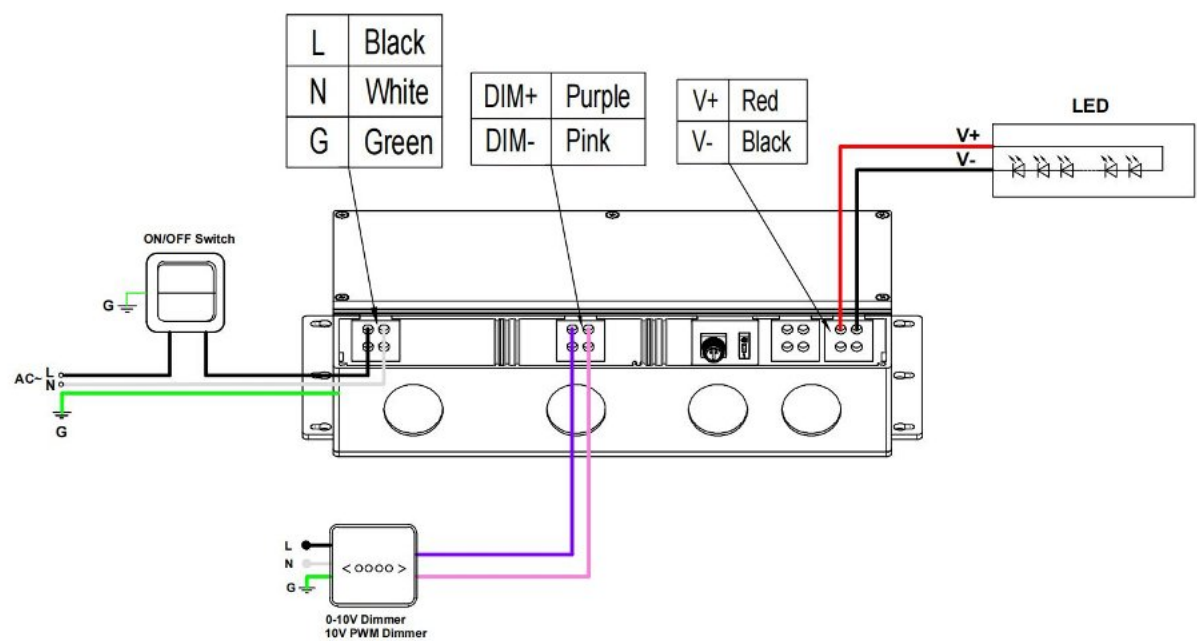
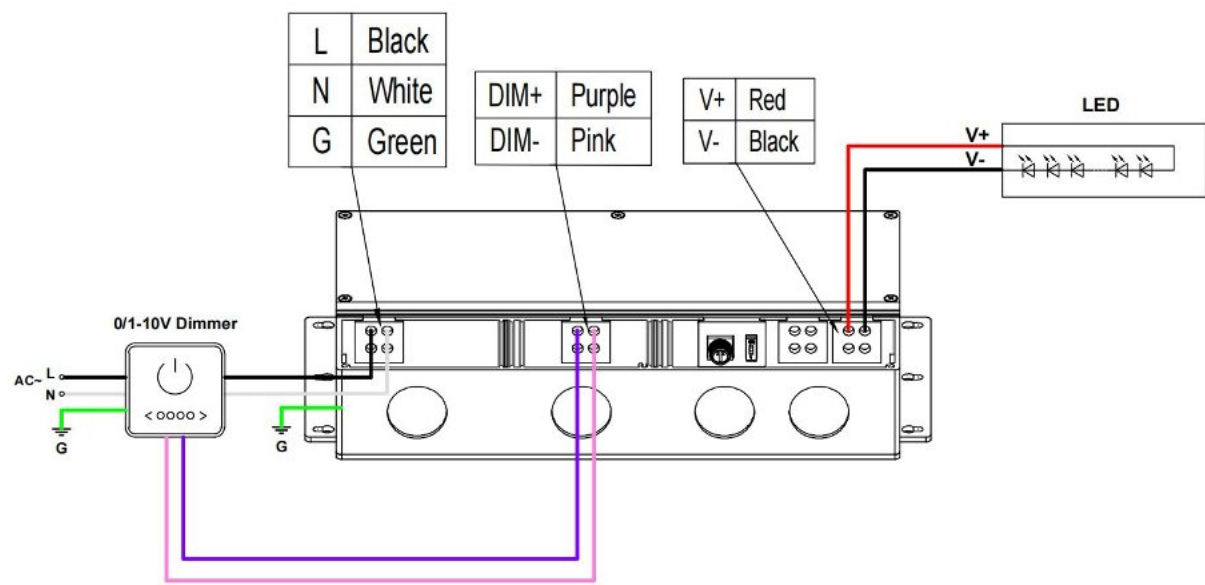


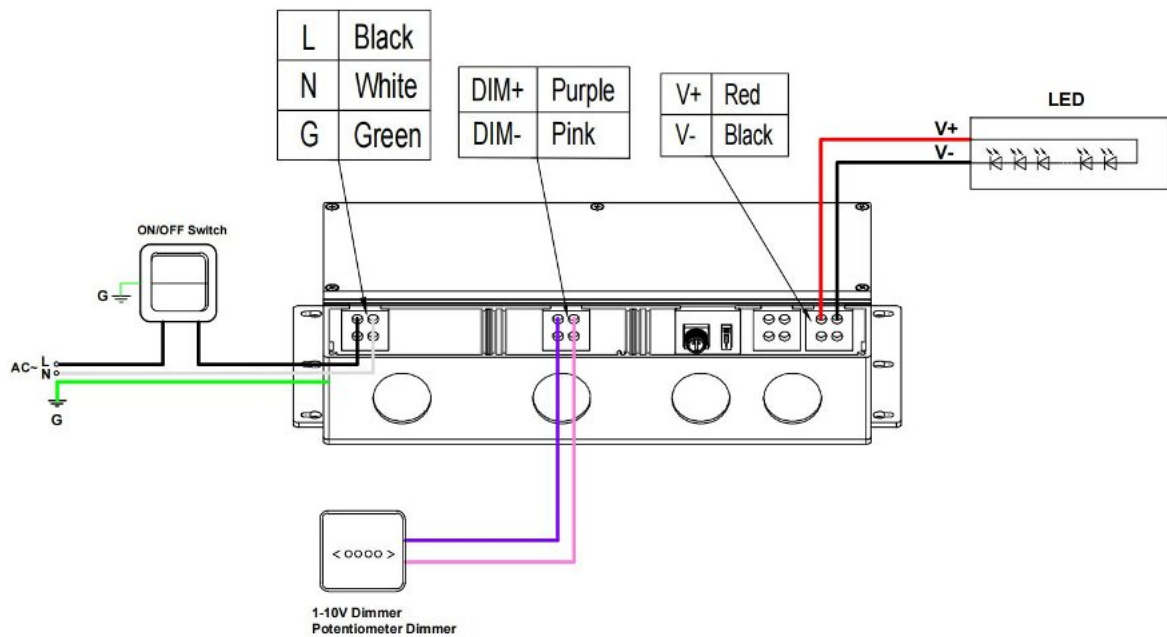
Using one dimming ---TRIAC/Phase cut dimming

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.



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





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 LTD

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