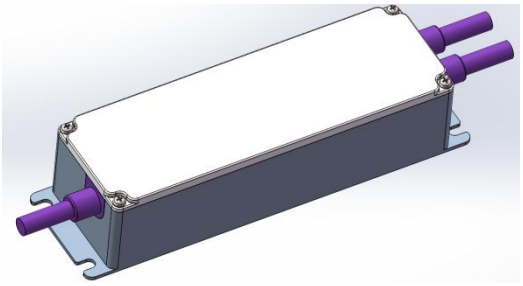
Features

- Programmable constant current and voltage output
- High efficiency: 94% typical @220Vac, full load
- High power factor: 0.98 typical. @ 220Vac, full load
- Isolated 0-10V/PWM/ Resistor Dimming
- With Lightning Protection & all-round protections
- 6kV/10kV surge capability



Description

This specification describes the performance characteristics of a 240W versatile power supply for LED Driver.
The output current of this series are programmable, and designed for 0-10V/PWM/Resistor dimming applications.

Model Name Definition

240	PHL	300	CV	-	XXX
Rated Output Power	Series name	Maximum output voltage	Constant current and constant voltage output		D0:0-10V Dimming D1：1-10V Dimming DA：DALI&D4i

Specifications

Part Number	Max. Output Power	Programmable Current Range	Output Voltage Range	Efficiency @220VAC	Dimming	AUX power
240PHL60CV-D0	240W	2.86-5.71A	30-60V	94%	0-10V	12V 240mA
240PHL60CV-D1	240W	2.86-5.71A	30-60V	94%	1-10V	/
240PHL60CV-DA	240W	2.86-5.71A	30-60V	94%	DALI	24V 125mA
240PHL300CV-D0	240W	0.46-1.14A	150-300V	94%	0-10V	12V 240mA
240PHL300CV-D1	240W	0.46-1.14A	150-300V	94%	1-10V	/
240PHL300CV-DA	240W	0.46-1.14A	150-300V	94%	DALI	24V 125mA

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Rated Input AC Voltage	100 Vac	-	277Vac	
Limit Input AC Voltage	90Vac	-	305Vac	
Input Frequency	45 Hz	50/60 Hz	63 Hz	
Leakage Current	-	-	0.75 mA	At 220Vac / 50Hz input , grounding effectively
Input AC Current	-	-	1.2A	Measured at full load and 220 Vac input.
Inrush Current	-	-	125A	At 220Vac input, 25°C cold start.

PF	0.95	-	-	At 220Vac, 80%-100% Load
THD	-	-	15%	At 220Vac, 80%-100% Load

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%Io set	-	5%Io set	At 25°C and full load condition
Total Output Current Ripple (pk-pk)	-	-	15%Io max	At full load condition, 20 MHz BW
Startup Overshoot Current	-	-	10%Io max	At full load condition
No Load Output Voltage	-	-	66V	Only for 240PHL60CV
Line Regulation	-	-	±3%	Measured at full load
Load Regulation	-	-	±3%	
Turn-on Delay Time	-	-	2.0 s	Measured at 220Vac input.
Temperature Coefficient of Io set	-0.05%/°C	-	0.05%/°C	Case temperature = 0°C ~Tc max
12V Auxiliary Output Voltage	11V	12 V	15 V	
12V Auxiliary Output Source Current	0 mA	-	240 mA	Return terminal is “Dim−“
24V Auxiliary Output Voltage (240PHL60CV-DA/240PHL300CV-DA)	21.6V	24V	26.4V	
24V Auxiliary Output Source Current (240PHL60CV-DA/240PHL300CV-DA)	0 mA	-	125mA	Return terminal is “Dim−”
OTP Tc	85°C	90°C	95°C	Output current will drop to 50% lowest, or shut down.
SCP				Hiccup mode, Auto recover
OPP				Auto recover
OCP				Auto recover

General Specifications

Parameter	Min.	Typ.	Max.	Notes
MTBF	234,000 Hours	-	-	Measured at 220Vac input, 80%Load and 25 ° C ambient temperature (MIL-HDBK- 217F)
Lifetime	50,000 Hours	-	-	Measured at 220Vac input, 80%Load and 75°C case temperature; See lifetime vs. Tc curve for the details
Operating Case Temperature for Safety Tc_s	-40°C	-	+90°C	
Operating Case Temperature for Warranty Tc_w	-40°C	-	+80°C	
Operating Ambient Temperature Ta	-40°C	-	50°C	
Storage Temperature	-40°C	-	+85°C	Humidity: 5%RH to 90%RH
Dimensions Inches (L × W × H) Millimeters (L × W × H)	6.69×2.66×1.40 in 170×67.5×35.5mm			

Dimming Specifications

1. 0-10V Dimming(240PHL60CV-D0/240PHL300CV-D0)

Parameter	Min.	Typ.	Max.	Notes
Absolute Maximum Voltage on the Vdim (+) Pin	-1 V	-	15 V	
Source Current on Vdim (+)Pin	90uA	100uA	110uA	
Dimming Output Range	10%Io set	-	Io set	80%Io max ≤ Io set ≤ 100%Io max
	8%Io max	-	Io set	Io set ＜80%Io max
Recommended Dimming Input Range	0V	-	10 V	Default 0-10V dimming mode.
Dim off Voltage	0.3 V	0.5 V	0.8V	
Dim on Voltage	0.5V	0.7 V	1 V	
Hysteresis	-	0.2 V	-	
PWM_in High Level	9.5 V	10V	10.5 V	
PWM_in Low Level	-0.3 V	-	0.6 V	
PWM_in Frequency Range	500 Hz	-	3 KHz	
PWM_in Duty Cycle	1%	-	98%	
PWM Dimming off	3%	5%	7%	
PWM Dimming on	5%	7%	9%	

2. 1-10V Dimming(240PHL60CV-D1/240PHL300CV-D1)

Parameter	Min.	Typ.	Max.	Notes
Absolute Maximum Voltage on the Vdim (+) Pin	-1 V	-	15 V	
Source Current on Vdim (+)Pin	90uA	100uA	110uA	
Dimming Output Range	10%Io set	-	Io set	80%Io max ≤ Io set ≤ 100%Io max
	8%Io max	-	Io set	Io set ＜80%Io max
Recommended Dimming Input Range	1V	-	10 V	Default 1-10V dimming mode.
PWM_in High Level	9.5 V	10V	10.5 V	
PWM_in Low Level	-0.3 V	-	0.6 V	
PWM_in Frequency Range	500 Hz	-	3 KHz	
PWM_in Duty Cycle	1%	-	98%	

3. DALI Dimming(240PHL60CV-DA/240PHL300CV-DA)

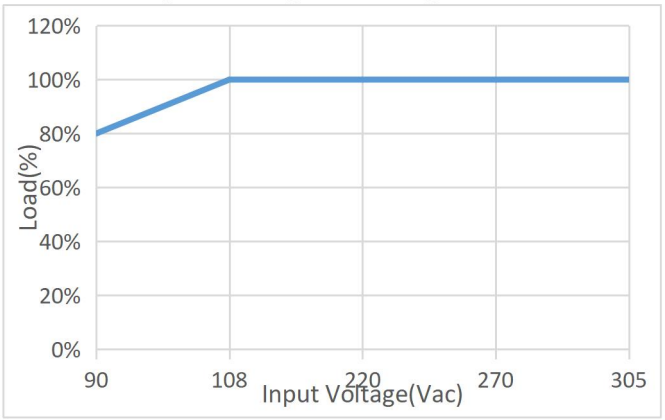
Parameter	Min.	Typ.	Max.	Notes
DA+, DA- High Level	9.5V	16V	22.5V	
DA+, DA- Low Level	-6.5V	0V	6.5V	
DA+, DA- Current	0mA	-	2mA	
Dimming Output Range 10%-100%	10%Io set	-	Io set	

Safety &EMC Compliance

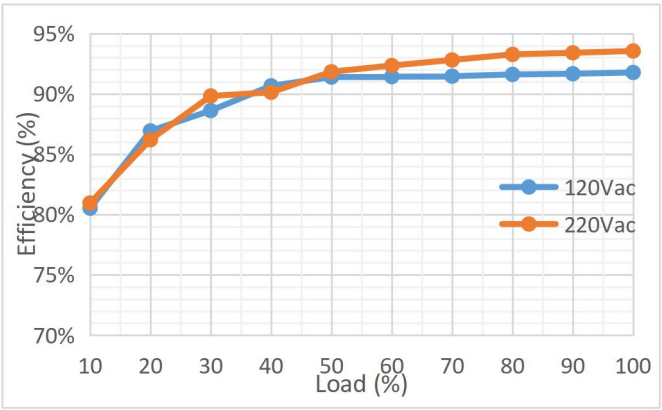
Safety Category	Standard
UL/CUL	UL8750,CAN/CSA-C22.2 No. 250.13-12
Dielectric Strength(Hi-pot)	Primary to Secondary:3000Vac / 10mAMax
	Primary to Earth: 2400Vac 10mA max.
	Secondary to Earth: 500Vac 10mA max.
	Dimming to Secondary: 2400Vac 10mA max.
Insulation Resistance	50Mohm min.@ primary to secondary add 500Vdc test voltage
Grounded Resistance	0.1Ω max. @ 25A, 1 minute
EMI Standards	**Notes**
EN55015	Class B
	This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired Operation.
EMS Standards	**Notes**
EN 61000-4-2	Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV contact discharge
EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
EN 61000-4-4	Electrical Fast Transient / Burst-EFT: level 3, criteria B
EN 61000-4-5	Surge Immunity Test: AC Power Line: line to line 6kV, line to earth 10kV
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips
EN 61547	Electromagnetic Immunity Requirements Applies To Lighting Equipment

Performance Curve

Input Voltage Derating Curve



240PHL300CV Efficiency Vs Different Loads

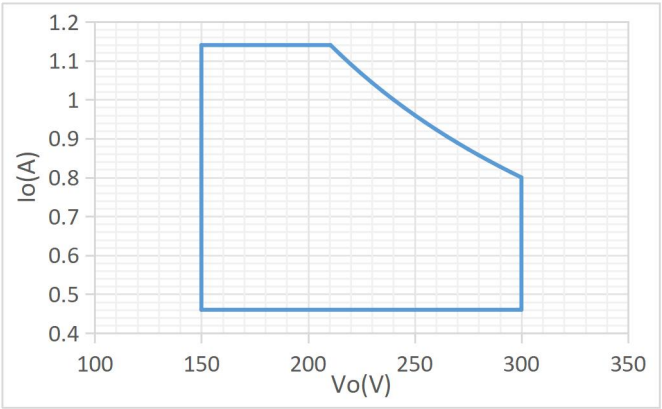


240PHL300CV Power Factor Vs Different Loads

240PHL300CV Total Harmonics Vs Different Loads

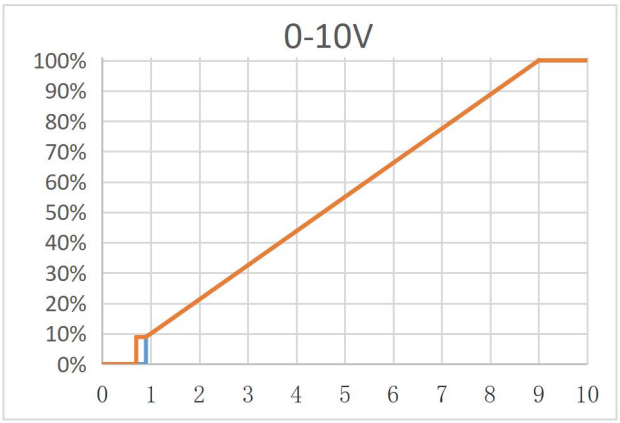
240PHL60CV I/V Operating Area

240PHL300CV I/V Operating Area

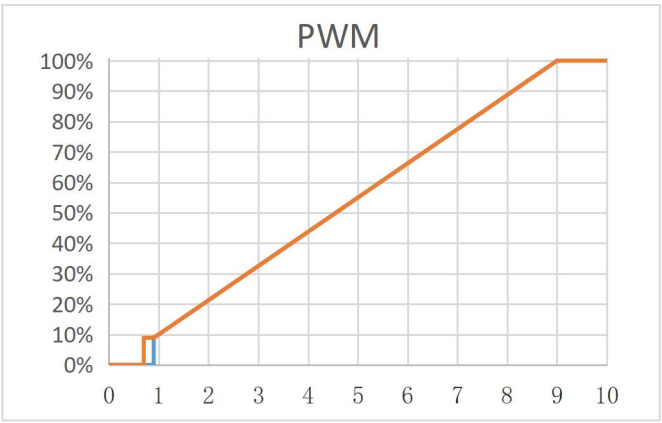


Dimming Curve

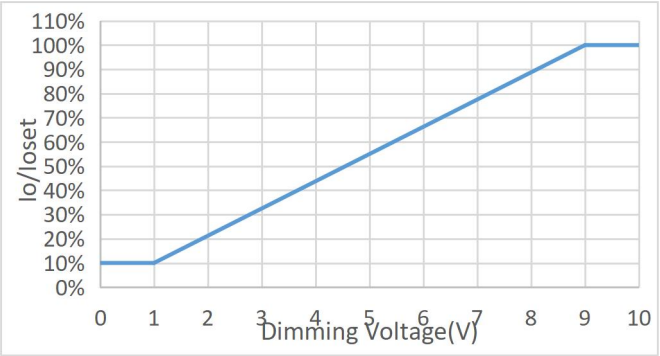
240PHL60CV-D0/240PHL300CV-D0 Io/Ir vs Vdim



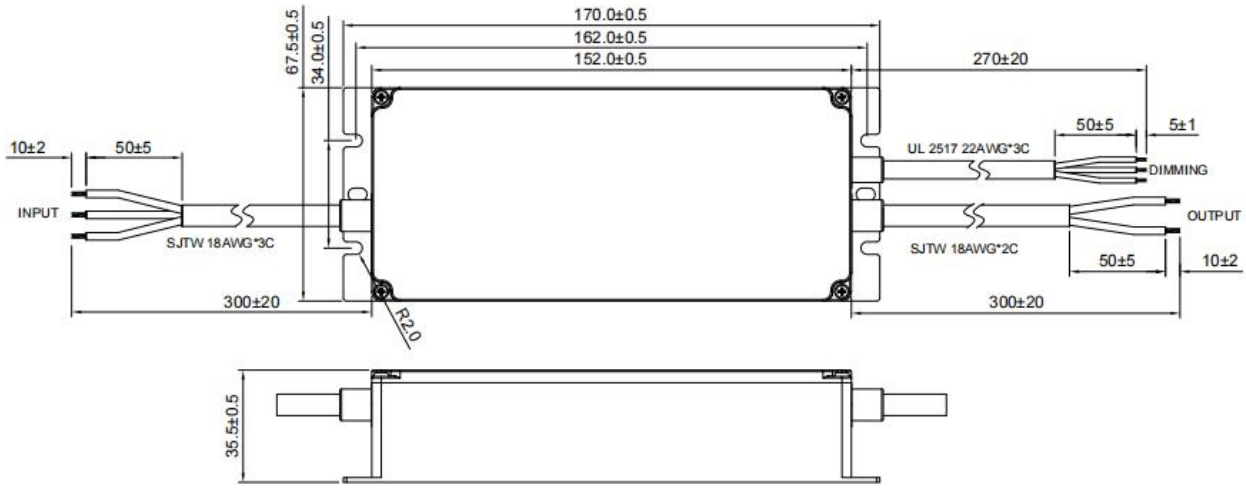
240PHL60CV-D0/240PHL300CV-D0 Io/Ir vs Vdim



240PHL60CV-D1/240PHL300CV-D1 Io/Ioset vs Dimming Voltage



Mechanical Drawing



Unit : mm

Revision History

Change Date	Rev.	Description of Change		
		Item	From	To