320PHH Series Specification

320PHH系列规格书

V1.1

2025/12/18

Powerland Signatures						
Prepared	Checked			Approved	Marketing	CPO
	Mechanical Engineer	Safety Engineer	R&D Manager			

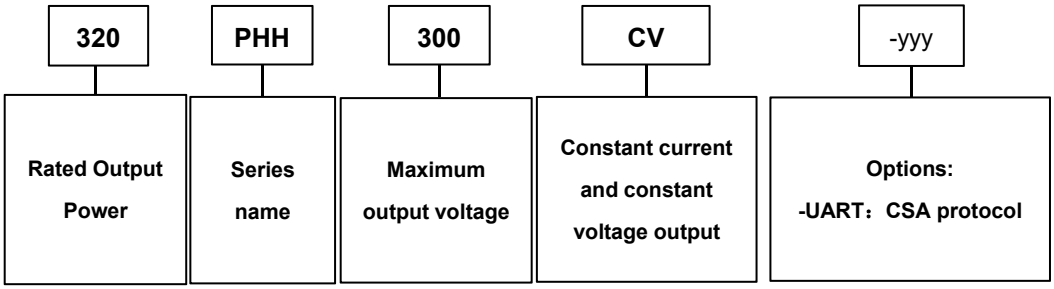
Features

- Programmable constant current and voltage output
- High power factor: 0.98 typical. @ 480Vac, full load
- Isolated 0-10V/PWM/ Resistor Dimming/Digital Dimming(UART Based Communication Protocol) optional
- With Lightning Protection & all-round protections

Description

This specification describes the performance characteristics of a 320W versatile power supply for LED Driver. The output current of this series are programmable, and designed for 0-10V/PWM/Resistor Dimming/Digital Dimming(UART Based Communication Protocol) optional applications.

Model Name Definition



Specifications

Part Number	Max. Output Power	Programmable Current Range	Output Voltage Range	Efficiency typical@480VAC
320PHH300CV	320W	0.64-1.6A	150-300V	94%
320PHH180CV	320W	1-2.5A	60-180V	93.5%

Note：These protocols of different communication interfaces can be obtained from sales.

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Rated Input AC Voltage	208 Vac	-	480 Vac	The upper limit voltage of CE certification：400Vac
Limit Input AC Voltage	187Vac	-	528Vac	
Input Frequency	47 Hz	50/60 Hz	63 Hz	
Leakage Current	-	-	0.75 mA	At 480Vac / 60Hz input , grounding effectively
Input AC Current	-	-	1.1A	Measured at 25°C, full load and 347 Vac input.
Inrush Peak Current	-	-	35A	At 480Vac input, 25°C cold start.
PF	0.9	-	-	At 208-480Vac, 80%-100% load, 25°C and 50Hz
THD	-	-	20%	At 208-480Vac, 80%-100% load, 25°C and 50Hz
Efficiency	93%	94%	-	Measured at 480Vac input、100% load and steady-state temperature in 25°C ambient (320PHH300CV)
	92.5%	93.5%	-	Measured at 480Vac input、100% load and steady-state temperature in 25°C ambient (320PHH180CV)

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)	-	-	10%Io max	At 25°C and full load condition, 8kHz BW
Startup Overshoot Current	-	-	20%Io max	At 25°C and full load condition, 8kHz BW
No Load Output Voltage	-	315V	360V	320PHH300CV
	-	-	200V	320PHH180CV
Line Regulation	-	-	±3%	Measured at 25°C and full load
Load Regulation	-	-	±3%	At 25°C condition
Turn-on Delay Time	-	-	2.0 s	Measured at 25°C and 480Vac input.
Temperature Coefficient of Io set	-0.03%/°C	-	0.03%/°C	Case temperature = 0°C ~Tc max
12V Auxiliary Output Voltage	11V	12 V	15 V	
12V Auxiliary Output Current	0 mA	-	200 mA	Return terminal is “Dim−“
OTP Tc	85°C	90°C	95°C	Output current will drop or shut down.
SCP				Hiccup mode, Auto recover
OCP				Auto recover

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Standby power	-	-	2W	Measured at 480Vac/60Hz; Dimming off
MTBF	234,000 Hours	-	-	Measured at 480Vac input, 80%load and 25 ° C ambient temperature (MIL-HDBK-217F)
Lifetime	50,000 Hours	-	-	Measured at 480Vac input, 100%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
IP Grade	IP65			
Dimensions Inches (L × W × H) Millimeters (L × W × H)	8.96×2.52×1.67in 227.6×63.9×42.5mm			
Net Weight/pcs	-	TBD	-	

Dimming Specifications

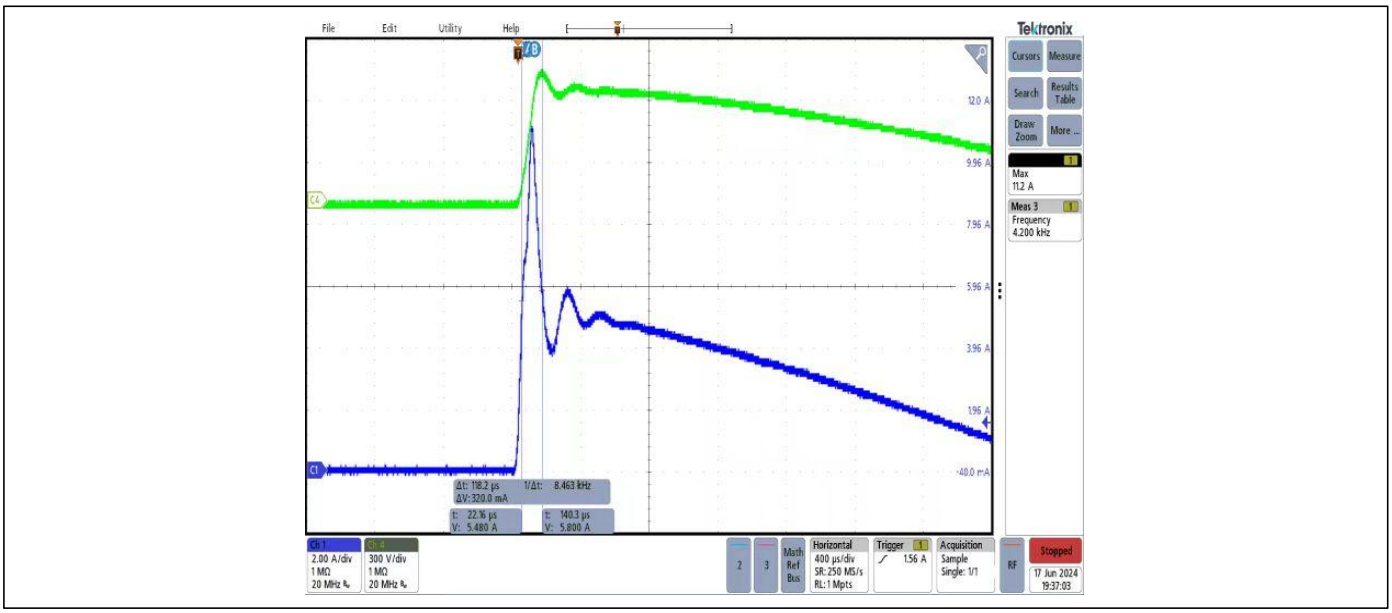
Parameter	Min.	Typ.	Max.	Notes
Absolute Maximum Voltage on the Vdim (+) Pin	-1 V	-	12 V	
Source Current on Vdim (+)Pin	90uA	100uA	110uA	
Dimming Output Range	-	10%Io set	Io set	80%Io max ≤ Io set ≤ 100%Io max
	-	8%Io max	Io set	Io set ＜80%Io max
Recommended Dimming Input Range	0V	-	10 V	Default 0-10V dimming mode.The required shutdown point can be set by the programmer
Dim off Voltage	0.4V	0.7V	0.9V	
Dim on Voltage	0.7V	0.9V	1.1V	
Dim off Resistance	5kΩ	8kΩ	10kΩ	
Dim on Resistance	7kΩ	10kΩ	12kΩ	
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	4%	7%	9%	
PWM Dimming on	7%	9%	11%	

Safety &EMC Compliance

Safety Category	Standard
Dielectric Strength(Hi-pot)	Primary to Secondary: 3600Vac 10mA max.
	Primary to Earth: 1960Vac 10mA max.
	Secondary to Earth: 1720Vac 10mA max.(320PHH300CV) 1400Vac 10mA max.(320PHH180CV)
	Dimming to Output: 1720Vac 10mA max.(320PHH300CV) 1400Vac 10mA max.(320PHH180CV)
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, Criteria A
EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS, Criteria A
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 4kV, line to earth 6kV, Criteria B
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS, Criteria A
EN 61000-4-8	Power Frequency Magnetic Field Test, Criteria A
EN 61000-4-11	Voltage Dips Criteria B
EN 61547	Electromagnetic Immunity Requirements Applies To Lighting Equipment

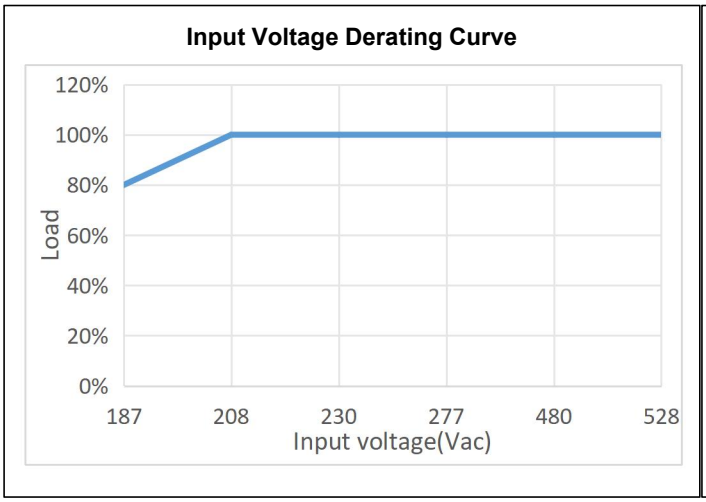
Note：This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

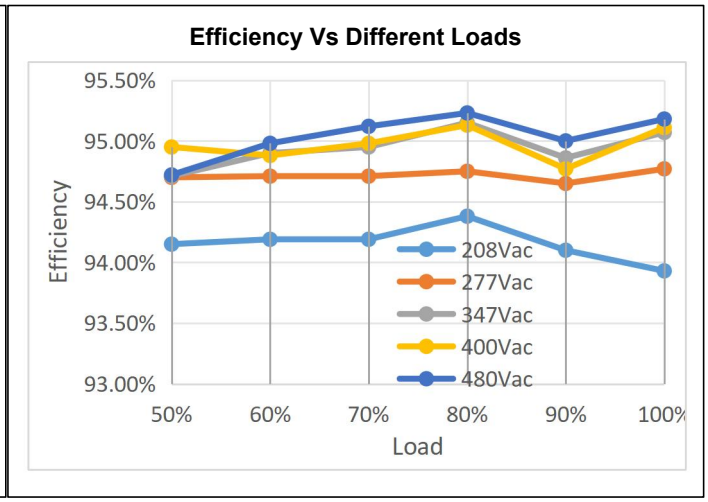
Inrush Current（@Full load and cold start）

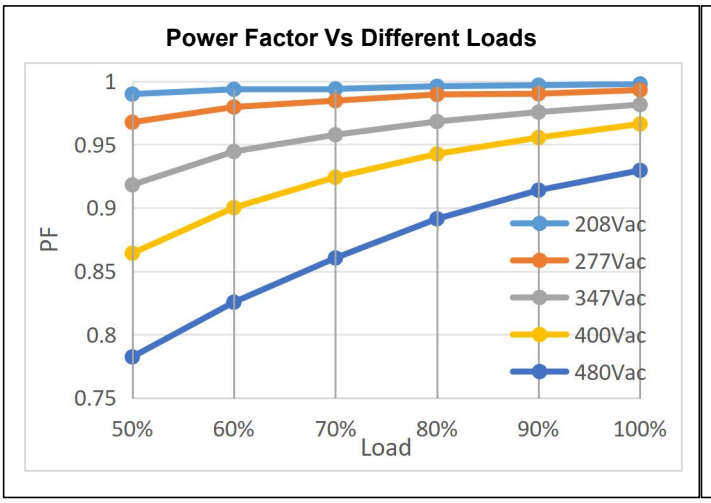


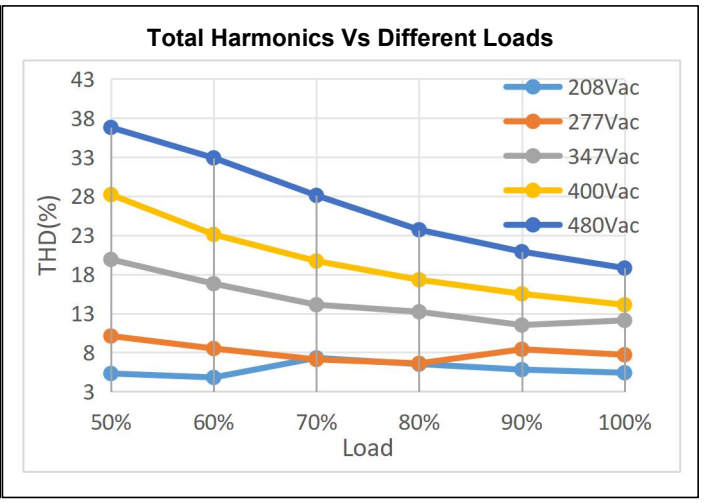
Vin(Vac)	Fin(Hz)	Ipeak(A)	T duration(us)
400	50	11.2	118.2
440	63	13.7	102

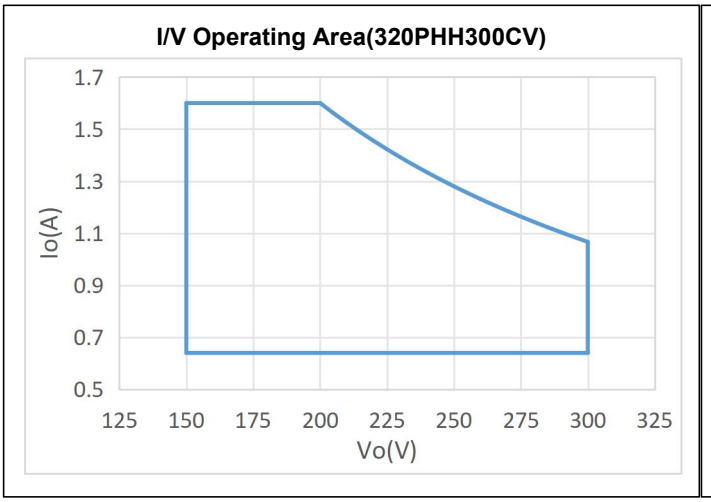
Performance Curve

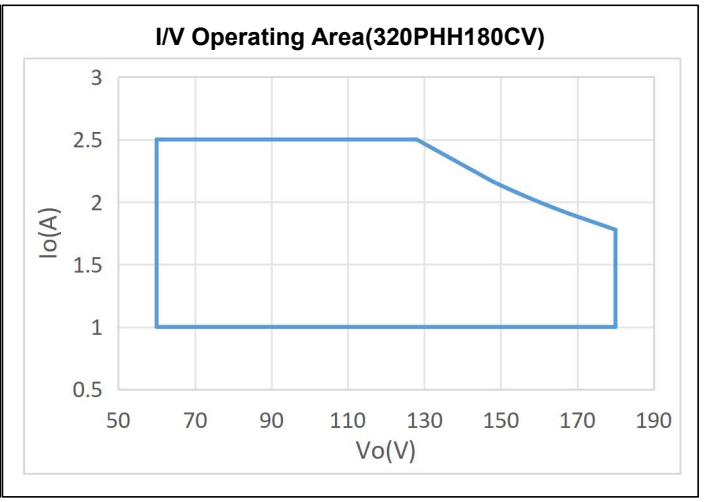




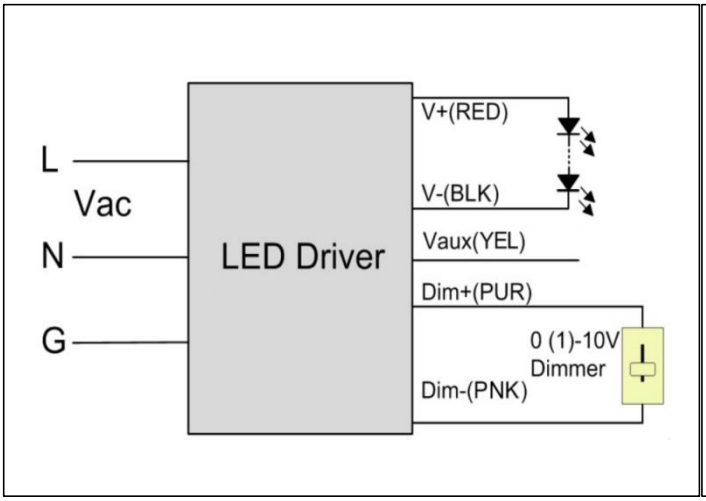


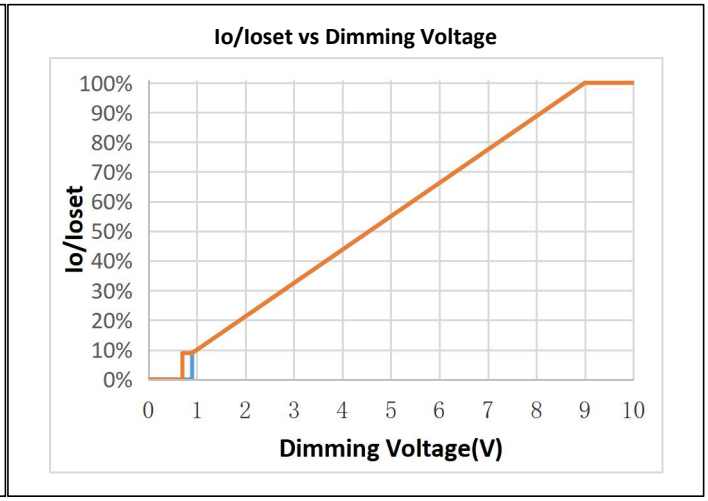


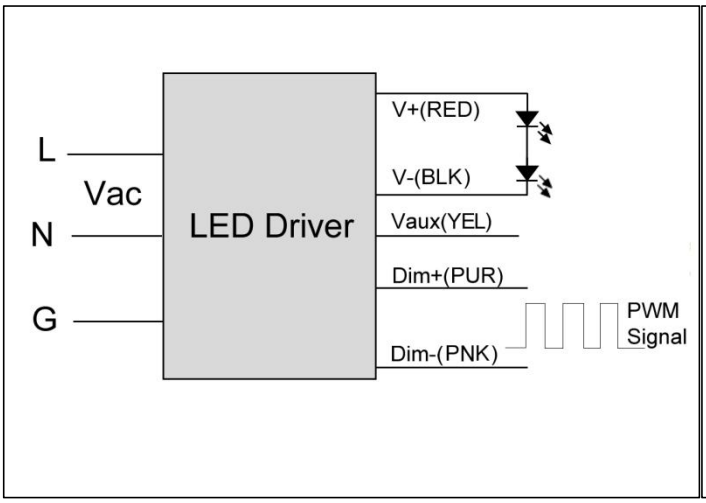


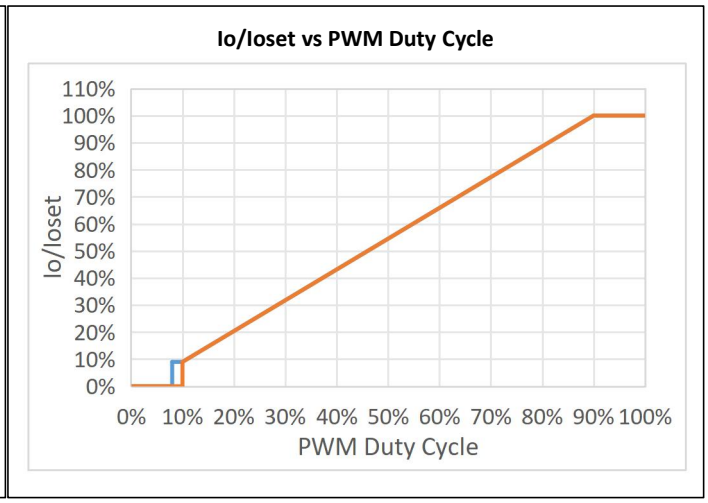


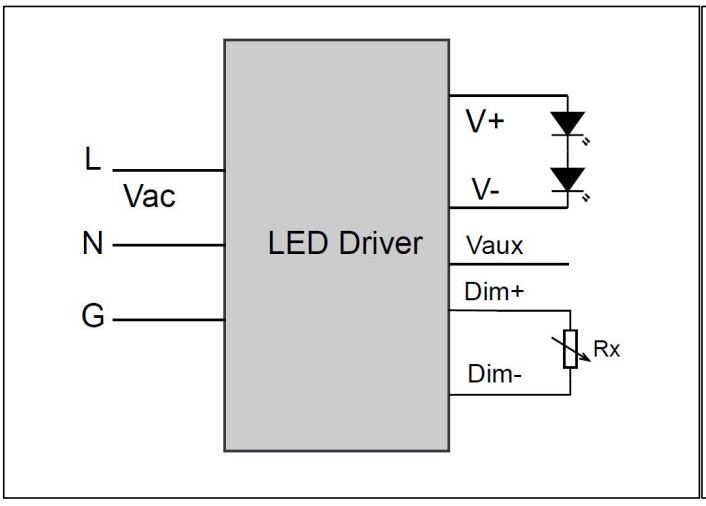
Dimming Curve

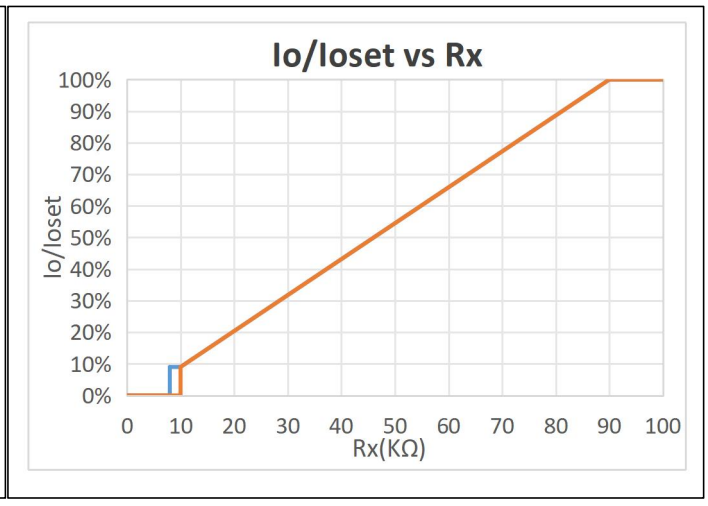




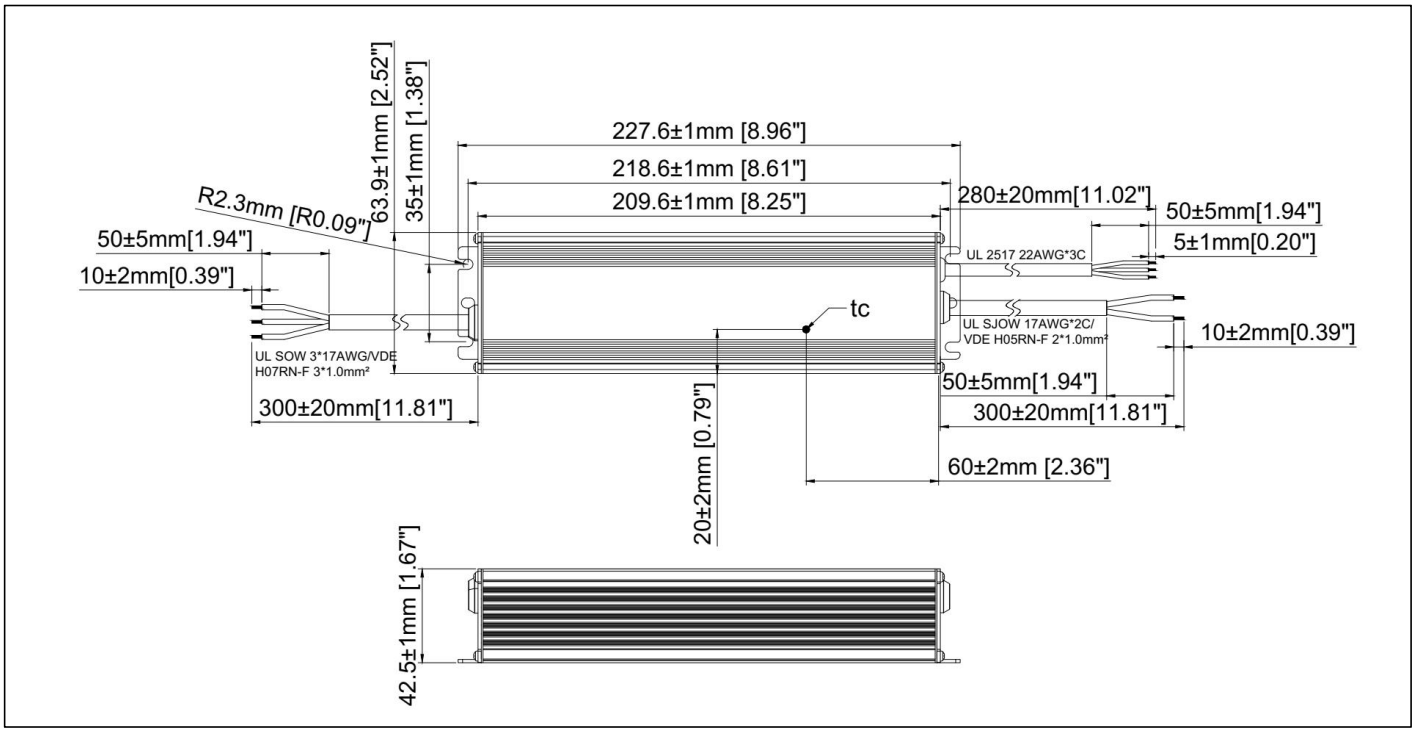








Mechanical Drawing



Ordering information

Part Number	Rated Input AC Voltage	Channels output	Output whether with FG line	Dimming
320PHH300CV	208-480Vac	1	Without	0-10V/PWM/Rset
320PHH300CV-UART	208-480Vac	1	Without	UART
320PHH180CV	208-480Vac	1	Without	0-10V/PWM/Rset
320PHH180CV-UART	208-480Vac	1	Without	UART

Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2025/6/18	V1.0			
2025/10/31	V1.1	Rated Input AC Voltage		Add Notes：The upper limit voltage of CE certification：400Vac
		No Load Output Voltage	Max:330V	Max:360V
		IP Grade	IP67	IP65
		Dimming Specifications	Notes:Default 0-10V dimming mode	Notes:Default 0-10V dimming mode. The required shutdown point can be set by the programmer

		Dielectric Strength(Hi-pot)	Primary to Secondary: 3920Vac 10mA max Secondary to Earth: 1660Vac 10mA max. Dimming to Output: 1660Vac 10mA max.	Primary to Secondary: 3600Vac 10mA max Secondary to Earth: 1720Vac 10mA max. Dimming to Output: 1720Vac 10mA max.
		Inrush Peak Current	Max:65A	Max:35A
		Performance Curve		Mod:I/V Operating Area
		Add Digital Dimming(UART Based Communication Protocol) optional		
		Performance Curve		Efficiency Vs Different Loads & Power Factor Vs Different Loads & Total Harmonics Vs Different Loads
		Add Ordering information		
2025/12/18	V1.1	Mod:Cover model	320PHH300CV	320PHH Series Specification
		Part Number		Add：320PHH180CV
		Efficiency		Add： Min：92.5%，Typ：93.5% [Measured at 480Vac input、100% load and steady-state temperature in 25°C ambient(320PHH180CV)]
		No Load Output Voltage		Add： Max：200V(320PHH180CV)
		Absolute Maximum Voltage on the Vdim (+) Pin	Max:15V	Max:12V
		Dielectric Strength(Hi-pot)		Add： Secondary to Earth:1400Vac 10mA max.(320PHH180CV) Dimming to Output: 1400Vac 10mA max.(320PHH180CV)
		Performance Curve		Add： I/V Operating Area(320PHH180CV)
		Ordering information		Add： 320PHH180CV&320PHH180CV-UART