320HBL Series Specification

320HBL系列规格书

V1.0

2024/2/21

Powerland Signatures					Customer Approval Signature
Prepared	Checked		Approved	Marketing	
	ME	研发经理			

Please return us one copy of the document with your approval signature.

请客户确认签字后回传我司此规格承认书。

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Features

- Adjustable constant current output
- High efficiency: 96% typical @277Vac, full load
- High power factor: 0.97 typical. @ 230Vac, full load
- Isolated 0-10V/PWM Dimming optional
- Built-in potentiometer, support external potentiometer to adjust the output current
- With Lightning Protection & all-round protections (OVP,OCP,SCP,OTP)
- 12V/200mA AUX Output
- UL/CE/CB/ENEC

Description

This specification describes the performance characteristics of a 320W/1.6A versatile power supply for LED Driver.

The output current of this series are adjustable, and designed for 0-10V/PWM dimming applications.

Model Name Definition

320	HBL	260	C	D	-	XXX
Rated Output Power	Series name	Maximum output voltage	Constant current output	Options: With dimming		Options

Specifications

Part Number	Rated Input voltage	Max. Output Power	Output Current Range	Output Voltage Range	Efficiency @277Vac	Dimming	AUX power
320HBL260C	100-277Vac	320W	0.48-1.6A	180-260V	96%	/	/
320HBL260CD	100-277Vac	320W	0.48-1.6A	180-260V	96%	0-10V	12V 200mA

Note: Efficiency value is typical value.

Note1(320HBL260C)：Output current is configured by factory, non-adjustable by customer.

Note2(320HBL260CD)：Programmable output current range by potentiometer or DSW pin.

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input AC Voltage	90 Vac	120/230/277 Vac	305Vac	
Input Frequency	47 Hz	50/60 Hz	63 Hz	
Leakage Current	-	-	0.75 mA	At 277Vac / 60Hz input , grounding effectively
Input AC Current	-	-	2.8A	Measured at full load and 120 Vac input.
	-	-	1.5A	Measured at full load and 230 Vac input.

	-	-	1.22A	Measured at full load and 277 Vac input.
Inrush Current	-	-	TBD	At 277Vac input, 25°C cold start.
PF	0.9	-	-	At 120-277Vac, 60%-100% load
THD	-	-	20%	At 120-277Vac, 60%-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)	-	-	10%Io max	At 25°C and full load condition, 20 MHz BW
Startup Overshoot Current	-	-	10%Io max	At 25°C and full load condition
Line Regulation	-	-	±3%	Measured at full load
Load Regulation	-	-	±3%	
Turn-on Delay Time	-	-	1s	Measured 277Vac input to 90% output current
Temperature Coefficient of Io set	-0.03%/°C	-	0.03%/°C	Case temperature = 0°C ~Tc max
OTP Tc	90°C	95°C	100°C	Output current will drop to 50% lowest
SCP				Shut down, recovers automatically after fault condition is removed
12V Auxiliary Output Voltage(320HBL260CD)	11V	12 V	15V	OVP voltage less than 20V
12V Auxiliary Output Source Current(320HBL260CD)	0 mA	-	200 mA	Return terminal is “Dim−“

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Standby power	-	-	0.5 W	Measured at 230Vac/50Hz; Dimming off
MTBF	234,000 Hours	-	-	Measured at 230Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	60000 Hours	-	-	Measured at 230Vac input, 80%Load and 60°C case temperature; See lifetime vs. Tc curve for the details
Operating Case Temperature Tc	-40°C	-	90°C	Recommended power supply bottom auxiliary heat dissipation
Storage Temperature	-40°C	-	+85°C	Humidity: 5%RH to 90%RH
Dimensions： Inches (L × W × H) Millimeters (L × W × H)	7.87×2.22×1.41in 200×56.4×35.8mm			

0-10V and PWM Dimming Specifications(320HBL260CD)

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	0 V	-	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%	8%	
PWM Dimming on	5%	7%	9%	

Safety &EMC Compliance

Safety Category	Standard
UL/CUL	UL8750,CAN/CSA-C22.2 No. 250.13-12
CE	EN61347-1
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 B
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 4 kV, line to earth 6 kV，criteria B
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS，criteria A
EN 61000-4-11	Voltage Dips，criteria B
EN 61547	Electromagnetic Immunity Requirements Applies To Lighting Equipment

Isolation

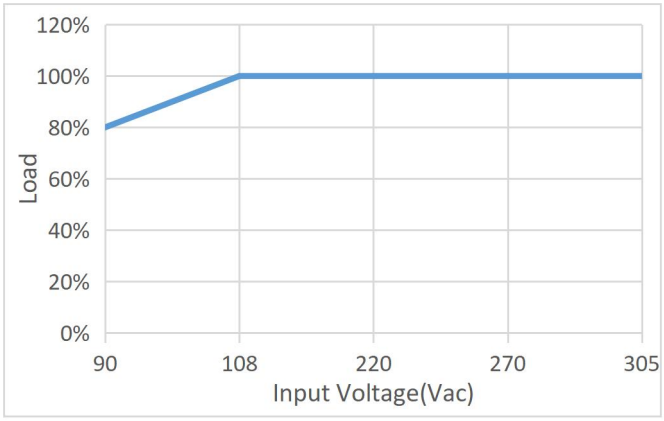
Isolation	AC Input	DC Output	Dimming (SELV)	Housing
AC Input	/	No isolation	Double isolation	Basic
DC Output	No isolation	/	Double isolation	Basic
Dimming (SELV)	Double isolation	Double isolation	/	Basic
Housing	Basic	Basic	Basic	/

Inrush Current（@Full load and cold start）

Vin(Vac)	Fin(Hz)	Spec(A)	Ipeak(A)	T duration(ms)
120	50			
220	50			
277	50			

Performance Curve

Derating Curve

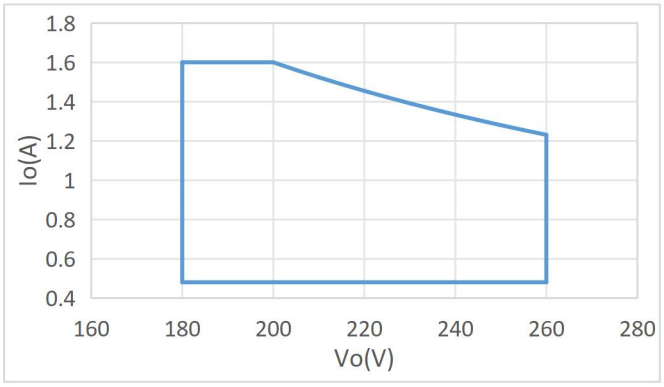


Power Factor Vs Different Loads(Vo= V Io= A)

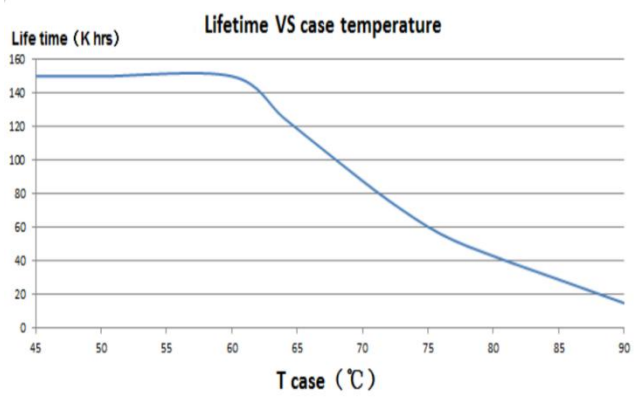
Efficiency Vs Different Loads(Vo= V Io= A)

THD Vs Different Loads(Vo= V Io= A)

I/V Operating Area

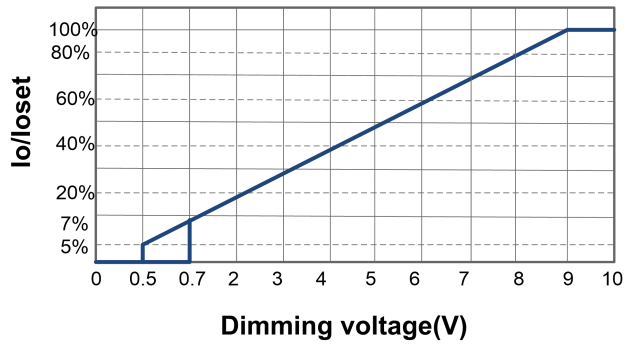


Life Vs Case Temperature

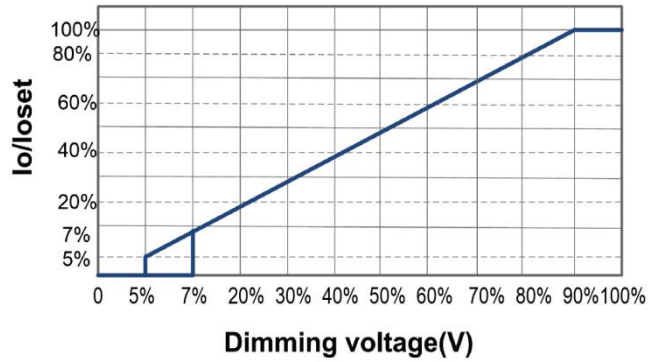


0-10V Analog Dimming &PWM Dimming(320HBL260CD)

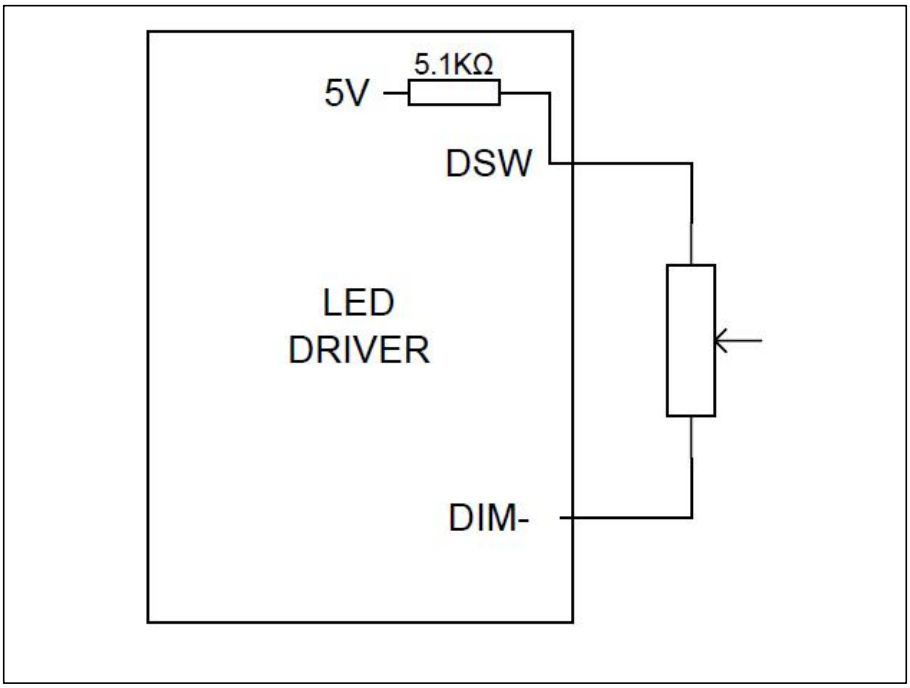
Io/Ioset vs. Dimming voltage



Io/Ioset vs. Dimming voltage



Potentiometer Or Dip-switch Program Output Current(320HBL260CD)



Mechanical Drawing

Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2024/2/21	V1.0			