

240HBL Series Specification

240HBL系列规格书

V1.2

2024/3/19

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

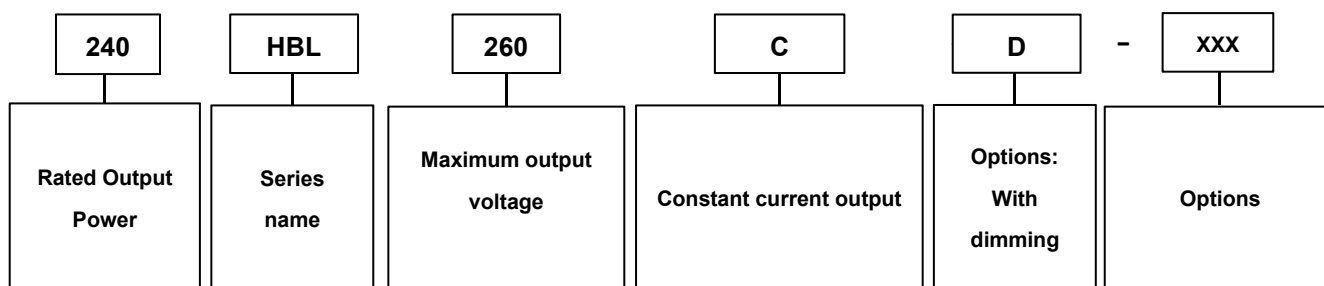
- Adjustable constant current output
- High efficiency: 96% typical @277Vac, full load
- High power factor: 0.97 typical. @ 230Vac, full load
- Isolated 0-10V/PWM Dimming optional
- Built-in potentiometer, support external potentiometer to adjust the output current
- With Lightning Protection & all-round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



Description

This specification describes the performance characteristics of a 240W/1.2A 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



Specifications

Part Number	Rated Input voltage	Max. Output Power	Output Current Range	Output Voltage Range	Efficiency @277Vac	Dimming	AUX power
240HBL260C	100-277Vac	240W	0.36-1.2A	180-260V	96%	/	/
240HBL260CD	100-277Vac	240W	0.36-1.2A	180-260V	96%	0-10V	12V 200mA

Note: Efficiency value is typical value.

Note1(240HBL260C): Configed by factory, non-adjustable by customer.

Note2(240HBL260CD): Programmable 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	-	-	2.13A	Measured at full load and 120 Vac input.
	-	-	1.12A	Measured at full load and 230 Vac input.

	-	-	0.93A	Measured at full load and 277 Vac input.
Inrush Current	-	-	95A	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%lo set	-	5%lo set	At 25°C and full load condition
Total Output Current Ripple (pk-pk)	-	-	10%lo max	At 25°C and full load condition, 20 MHz BW
Startup Overshoot Current	-	-	10%lo 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(240HBL260CD)	11V	12 V	15V	OVP voltage less than 20V
12V Auxiliary Output Source Current(240HBL260CD)	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)	5.77×2.22×1.41in			
Millimeters (L × W × H)	146.5×56.4×35.8mm			
Net Weight/pcs	-	300g	-	

0-10V and PWM Dimming Specifications(240HBL260CD)

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

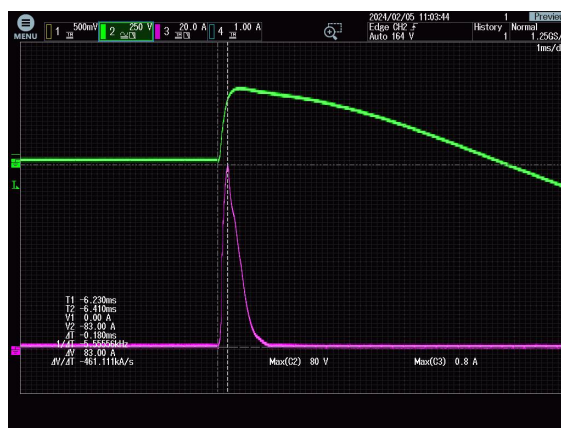
Safety Category	Standard
UL/CUL	UL8750,CAN/CSA-C22.2 No. 250.13-12
CE	EN61347-1
EMI Standards	Notes
EN55015	Class B
	This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept 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

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.

Isolation

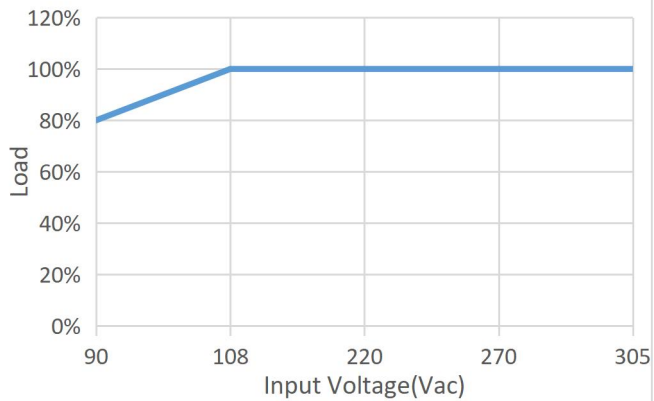
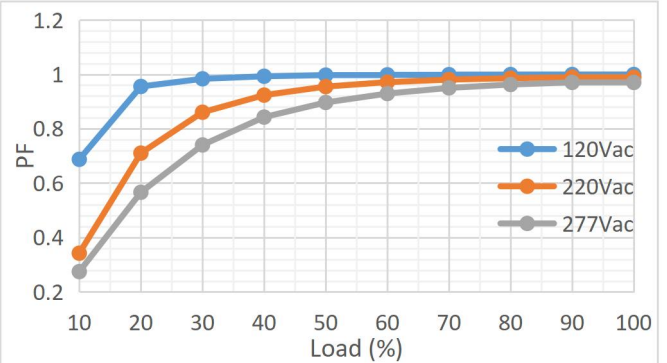
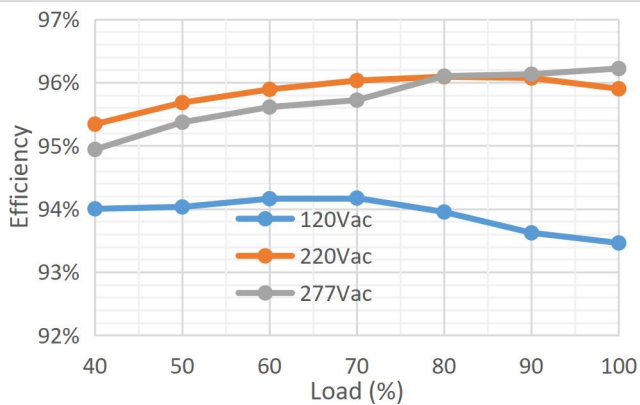
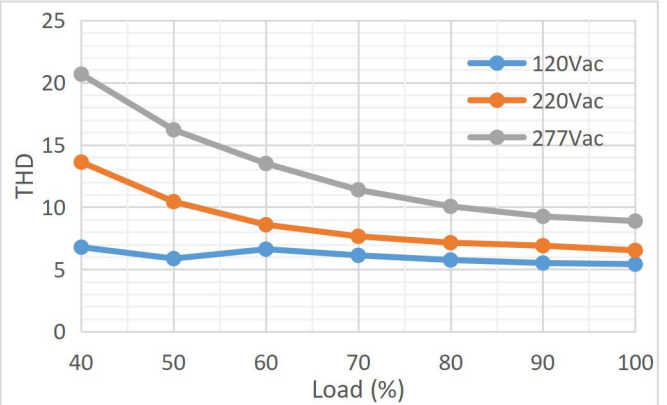
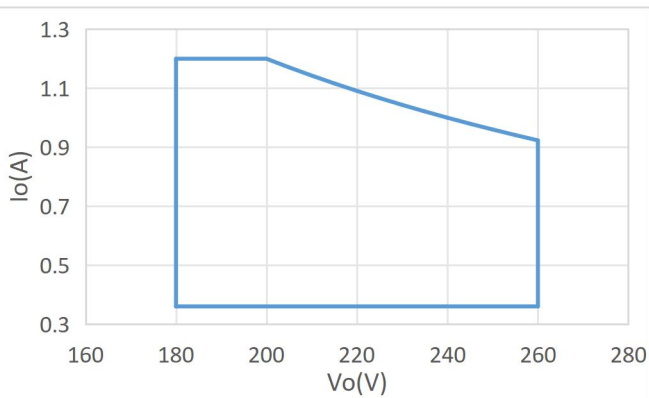
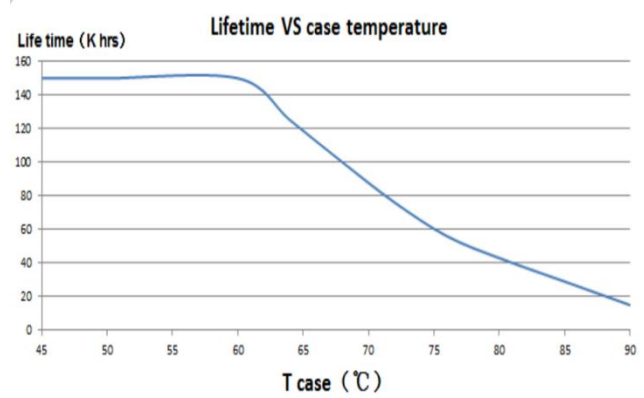
Isolation	AC Input	DC Output	Dimming (SELV)	Housing
AC Input	/	No isolation	Double isolation	Basic
DC Output	No isolation	/	Double isolation	Basic
Dimming (SELV)	Double isolation	Double isolation	/	Basic
Housing	Basic	Basic	Basic	/

Inrush Current (@Full load and cold start)

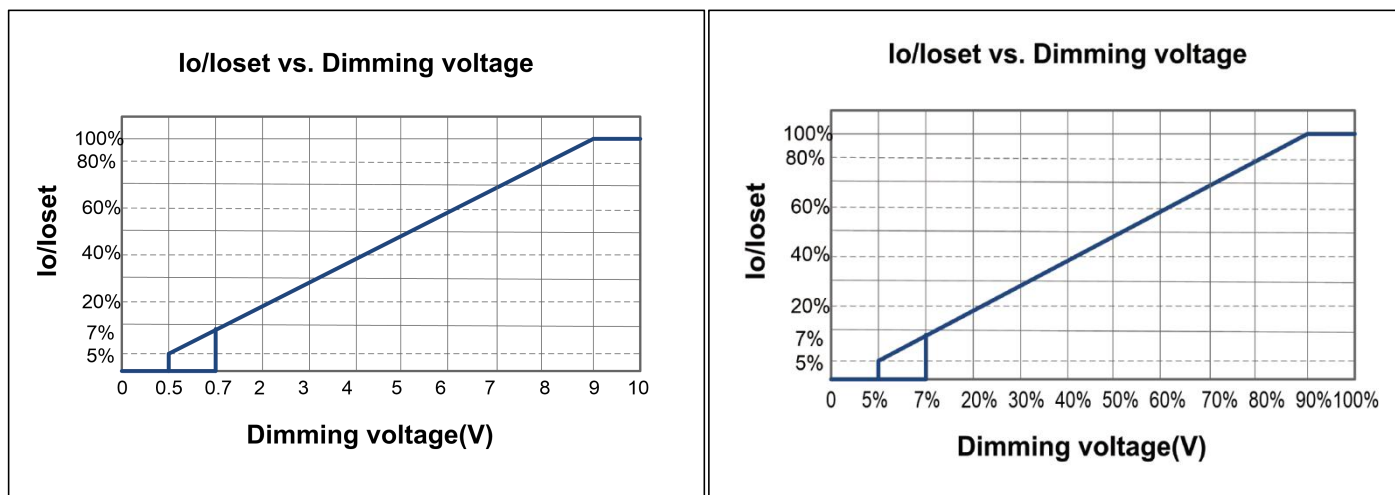


Vin(Vac)	Fin(Hz)	Spec(A)	Ipeak(A)	T duration(ms)
120	50	*	34.8	0.18
220	50	*	66	0.18
277	50	95	83	0.18

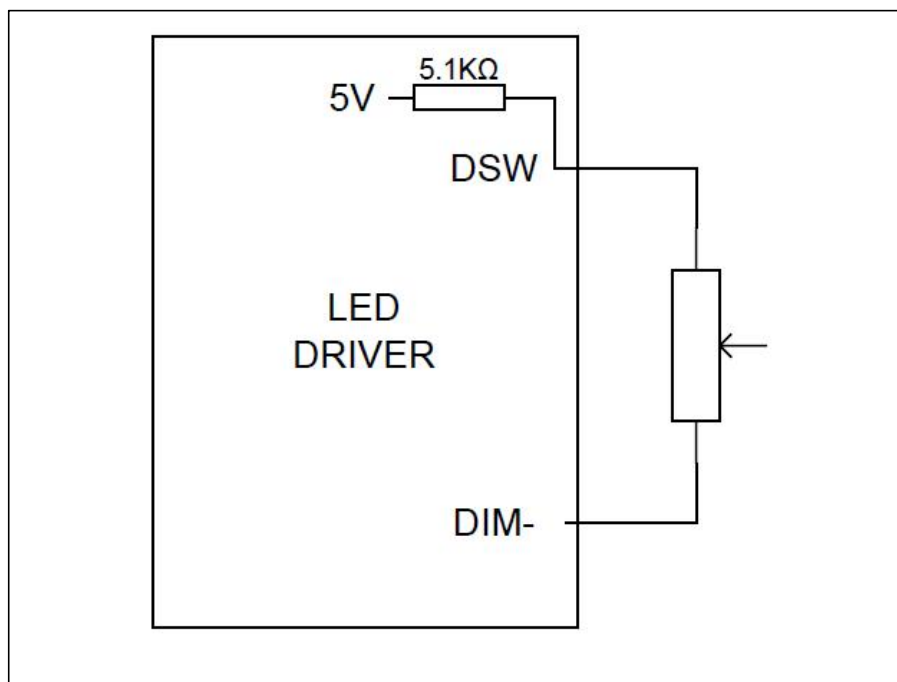
Performance Curve

Derating Curve

Power Factor Vs Different Loads (Vo=230V Io=1.05A)

Efficiency Vs Different Loads (Vo=230V Io=1.05A)

THD Vs Different Loads (Vo=230V Io=1.05A)

I/V Operating Area

Life Vs Case Temperature


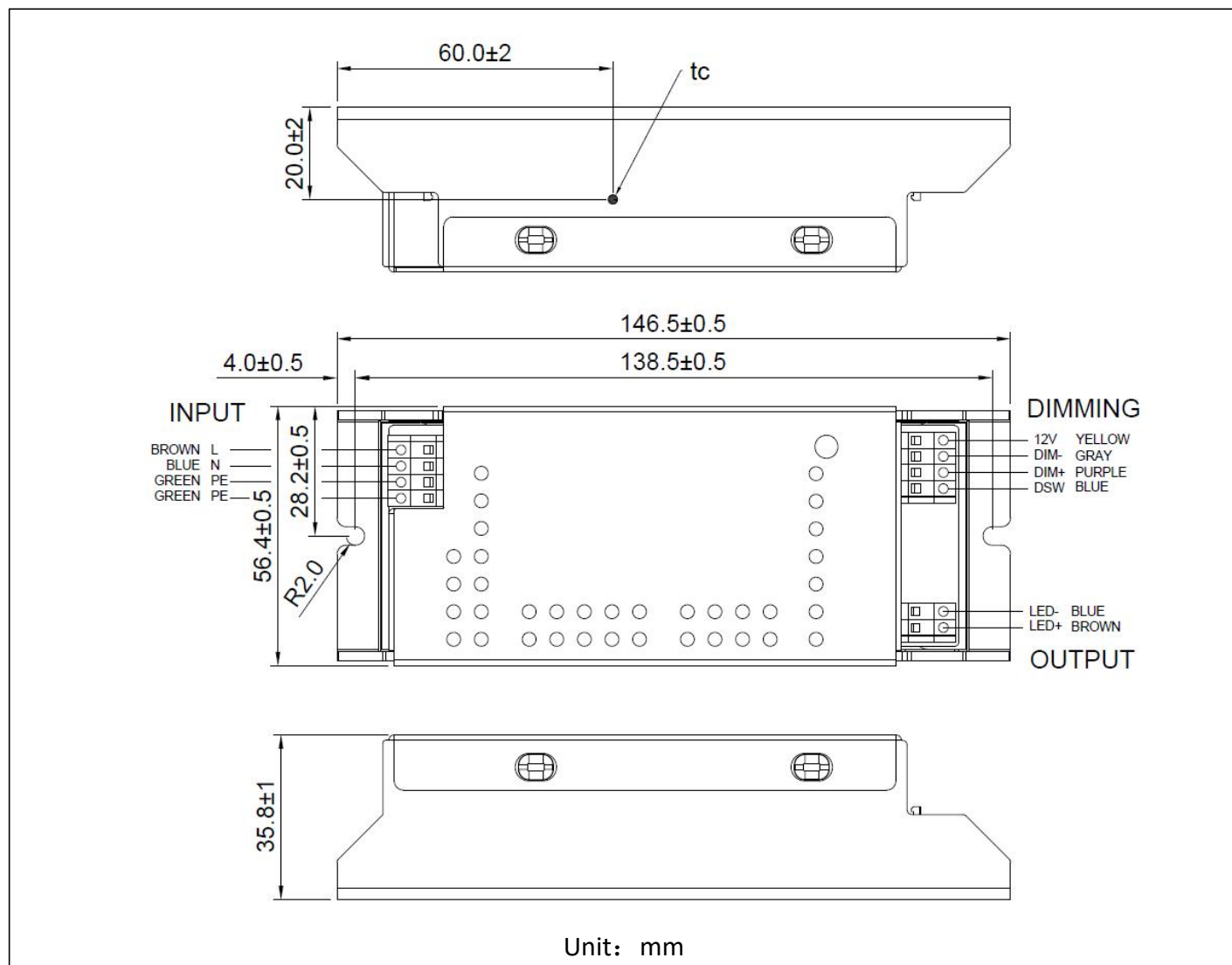
0-10V Analog Dimming & PWM Dimming(240HBL260CD)



Potentiometer Or Dip-switch Program Output Current(240HBL260CD)



Mechanical Drawing



Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2024/1/17	V1.0			
2024/2/4	V1.1	Add 240HBL260CD		
		Input Frequency	Max: 66V	Max: 63V
		Add Isolation		
		Add Inrush Current		
2024/3/19	V1.2	Update Mechanical Drawing		
		Input AC Current	Max:2.1A(120 Vac input)	Max: 2.13A(120 Vac input)
			Max:1.1A(230 Vac input)	Max: 1.12A(230 Vac input)
			Max:0.9A(277 Vac input)	Max: 0.93A(277 Vac input)
		Safety &EMC Compliance		Add note