

DATASHEET AND OPERATING GUIDE

PWRPAK <10 A Series

Power Supplies



FEATURES & BENEFITS

- Low Profile
- High Power Density
- Short Circuit Protection
- 1% Noise and Ripple
- 100-240 VAC, 50-60 Hz Input Voltage

GENERAL DESCRIPTION:

Wavelength Electronics provides a variety of low profile AC/DC power supplies in various output voltages to supply switched power for fast, reliable, off-the-shelf test and development.

In order to match the appropriate voltage and current requirements for a specific application, Wavelength offers four different PowerPak models.

USED WITH

- PLDEVAL Evaluation PCB for the PLD Series Laser Diode Drivers
- PIDEVAL Evaluation PCB for the PID1500 Temperature Controller
- HTCEVAL Evaluation PCB for the HTC Series Temperature Controllers
- WTC3293-14001 2 A Temperature Controller with Display
- LD2.5CHA & LD5CHA Laser Diode Drivers

CONTENTS

	PAGE
COMPATIBILITY GUIDE	2
PERFORMANCE SPECIFICATIONS	3
MECHANICAL SPECIFICATIONS	4
CERTIFICATION AND WARRANTY	5

ORDERING INFORMATION

PART NO	DESCRIPTION
PWRPAK-5V	5 V, 6 A Power Supply
PWRPAK-7V	7.2 V, 3 A Power Supply
PWRPAK-9V	9 V, 3 A Power Supply
PWRPAK-12V	12 V, 2.5 A Power Supply



COMPATIBILITY GUIDE



TO DETERMINE IF THE PWRPAK POWER SUPPLY IS APPROPRIATE FOR YOUR APPLICATION, IT IS IMPERATIVE THAT YOU VERIFY THE UNIT WILL BE OPERATING WITHIN THE INTERNAL HEAT DISSIPATION SAFE OPERATING AREA (SOA).

Visit the Wavelength Electronics website for the most accurate, up-to-date, and easy to use SOA calculator.

The SOA calculator for Laser Diode Drivers is at this page:
www.teamwavelength.com/support/design-tools/soa-ld-calculator/

The SOA calculator for Temperature Controllers:
www.teamwavelength.com/support/design-tools/soa-tc-calculator/

COMPONENT COMPATIBILITY

Several PWRPAK models are available. **Table 1** indicates the various compatibilities.

Table 1. PWRPAK MODEL COMPATIBILITY COMPARISON

WAVELENGTH PRODUCT	PWRPAK-5V	PWRPAK-7V	PWRPAK-9V	PWRPAK-12V	NOTES
LASER DIODE DRIVERS					
LD2.5CHA	X	X	X	X	The power supply leads need to be modified to power the LD2.5CHA and LD5CHA. Contact Tech Support for further details.
LD5CHA	X				
LASER DIODE DRIVER EVALUATION BOARDS					
PLDEVALPCB	X	X	X	X	For PLD200, PLD500, PLD1250, PLD5000, and PLD6500, note that control circuitry power input must be 5 V. Use external circuit to limit high voltage power supplies to the appropriate value. Reference the PLD datasheet.
TEMPERATURE CONTROLLER EVALUATION BOARDS					
HTCEVALPCB	X	X	X	X	
PIDEVALPCB	X	X	X	X	
WTC3293-14001		X	X	X	

PERFORMANCE SPECIFICATIONS

PARAMETER DESCRIPTION	PARAMETER VALUE			
	PWRPAK-5V	PWRPAK-7V	PWRPAK-9V	PWRPAK-12V
INPUT				
Input Voltage	80-264 VAC	90-264 VAC	90-264 VAC	90-264 VAC
Frequency	47-63 Hz	47-63 Hz	47-63 Hz	47-63 Hz
Input Current Maximum @ 115 / 230 VAC	1.5 A	1.0 A	1.0 A	1.0 A
Earth Leakage Current @ 115 VAC / 60 Hz	N/A	<0.25 mA	Class II	Class II
OUTPUT				
Output Power Maximum	30 W	21.6 W	27 W	30 W
Output Voltage	5.0 V	7.2 V	9.0 V	12.0 V
Output Current	6.0 A	3.0 A	3.0 A	2.5 A
Minimum Hold Up Time @ 115 VAC	8 ms	16 ms	8 ms	8 ms
Line Regulation	± 1%	± 0.5%	± 1%	± 1%
Load Regulation	± 6%		± 5%	± 5%
Ripple & Noise @ 20 MHz BW, > 3.3 V	1% peak-to-peak	80 mV peak-to-peak	1% peak-to-peak	1% peak-to-peak
Overvoltage Protection	129-143%	110-135%	125%	125%
Overload Protection, hiccup trip & auto restart	120-150%	90-110%	120-150%	120-150%
Short Circuit Protection	Continuous	Continuous	Continuous	Continuous
Temperature Coefficient	± 0.05% / °C	± 0.03% / °C	± 0.04% / °C	± 0.04% / °C
GENERAL				
Efficiency @ 230 VAC & 100% load	up to 85%	up to 74%	85%	85%
Isolation, Input to Output	4000 VAC	3000 VAC	3000 VAC	3000 VAC
Switching Frequency	100 kHz		60 ± 10 kHz	60 ± 10 kHz
Operating Temperature ⁽¹⁾	0 to 60°C	0 to 50°C	0 to 65°C	0 to 65°C
EMC				
Emissions, FCC 20780 EN55022 / CISPR22	EN55011 Level B	Level B to EN55014-1	Level B Level B	Level B Level B
ESD Immunity, EN61000-4-2 Performance Criteria	Level 3 Perf. Criteria A	Level 2 Perf. Criteria B	8 kV air 4 kV contact	8 kV air 4 kV contact
Radiated Immunity, EN61000-4-3 Performance Criteria	Level 2 Perf. Criteria A	Level 3 Perf. Criteria B	3 V / m	3 V / m
EFT/Burst, EN61000-4-4 Performance Criteria	Level 3 Perf. Criteria A	Level 2 Perf. Criteria B	Level 2	Level 2
Harmonic Currents, EN61000-3-2	Class A	Class A	N/A	N/A
Voltage Flicker,	EN61000-3-3	EN61000-3-2	N/A	N/A
Surge, EN61000-4-5 Performance Criteria	Level 3 Perf. Criteria A	Level 3 Perf. Criteria A	N/A	N/A
Conducted Immunity, EN61000-4-6 Performance Criteria	Level 3 Perf. Criteria A	N/A	N/A	N/A
Dip & Interruptions, EN61000-4-11 Performance Criteria	30% 10 ms A 60% 100 ms B 100% 5000 ms B	N/A	N/A	N/A
SAFETY				
UL Certificate Number	QQHM2.E321744	to 60950-1	E137895	E137895
TUV Certificate Number	TA 50225860	to 60950-1	S 50058531	S 50058531
CE Mark	2011/65/EU 2014/35/EU 2014/30/EU 2009/125/EC	to EN60950-1	2004/108/EEC 2006/95/EC 2011/65/EU	2004/108/EEC 2006/95/EC 2011/65/EU
CB	SI-2178	IEC60950-1:2001	IEC60950-1:2001	IEC60950-1:2001

⁽¹⁾ For PWRPAK-5V and PWRPAK-7V, derate linearly from full load at +40°C to half load at +70°C (+60°C for 5V supply). For PWRPAK-9V and PWRPAK-12V, derate linearly from 100% load at +40°C to 50% load at +55°C.

MECHANICAL SPECIFICATIONS

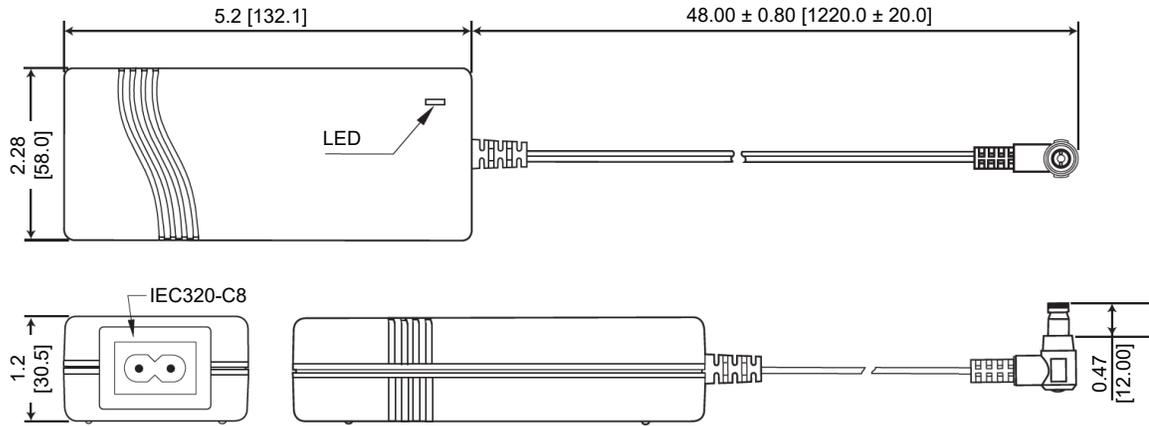


Figure 1. PWRPAK-5V

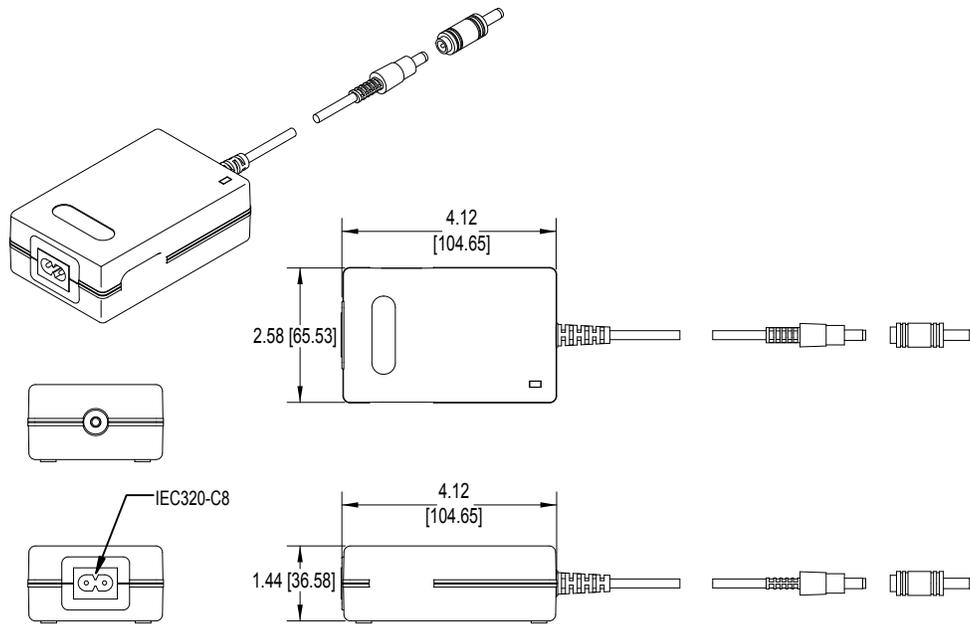


Figure 2. PWRPAK-7V

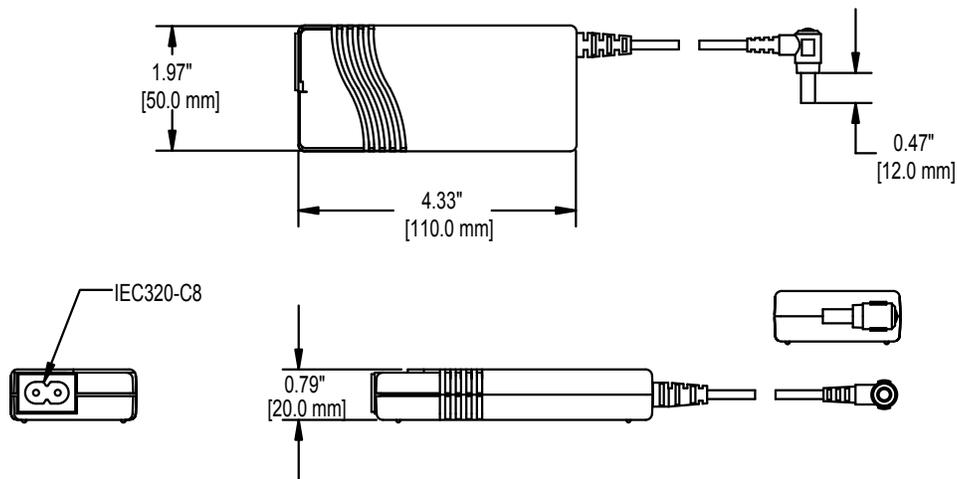


Figure 3. PWRPAK-9V & PWRPAK-12V

CERTIFICATION AND WARRANTY

CERTIFICATION

Wavelength Electronics, Inc. (Wavelength) certifies that this product met its published specifications at the time of shipment. Wavelength further certifies that its calibration measurements are traceable to the United States National Institute of Standards and Technology, to the extent allowed by that organization's calibration facilities, and to the calibration facilities of other International Standards Organization members.

WARRANTY

This Wavelength product is warranted against defects in materials and workmanship for a period of one (1) year from date of shipment. During the warranty period, Wavelength will, at its option, either repair or replace products which prove to be defective.

WARRANTY SERVICE

For warranty service or repair, this product must be returned to the factory. An RMA is required for products returned to Wavelength for warranty service. The Buyer shall prepay shipping charges to Wavelength and Wavelength shall pay shipping charges to return the product to the Buyer upon determination of defective materials or workmanship. However, the Buyer shall pay all shipping charges, duties, and taxes for products returned to Wavelength from another country.

LIMITATIONS OF WARRANTY

The warranty shall not apply to defects resulting from improper use or misuse of the product or operation outside published specifications. No other warranty is expressed or implied. Wavelength specifically disclaims the implied warranties of merchantability and fitness for a particular purpose.

EXCLUSIVE REMEDIES

The remedies provided herein are the Buyer's sole and exclusive remedies. Wavelength shall not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any other legal theory.

REVERSE ENGINEERING PROHIBITED

Buyer, End-User, or Third-Party Reseller are expressly prohibited from reverse engineering, decompiling, or disassembling this product.

NOTICE

The information contained in this document is subject to change without notice. Wavelength will not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material. No part of this document may be translated to another language without the prior written consent of Wavelength.

SAFETY

There are no other user-serviceable parts inside this product. Return the product to Wavelength for service and repair to ensure that safety features are maintained.

LIFE SUPPORT POLICY

This important safety information applies to all Wavelength electrical and electronic products and accessories:

As a general policy, Wavelength Electronics, Inc. does not recommend the use of any of its products in life support applications where the failure or malfunction of the Wavelength product can be reasonably expected to cause failure of the life support device or to significantly affect its safety or effectiveness. Wavelength will not knowingly sell its products for use in such applications unless it receives written assurances satisfactory to Wavelength that the risks of injury or damage have been minimized, the customer assumes all such risks, and there is no product liability for Wavelength. Examples of devices considered to be life support devices are neonatal oxygen analyzers, nerve stimulators (for any use), auto-transfusion devices, blood pumps, defibrillators, arrhythmia detectors and alarms, pacemakers, hemodialysis systems, peritoneal dialysis systems, ventilators of all types, and infusion pumps as well as other devices designated as "critical" by the FDA. The above are representative examples only and are not intended to be conclusive or exclusive of any other life support device.

REVISION HISTORY

DOCUMENT NUMBER: PWRPAK-00400

REV.	DATE	CHANGE
E	October 2013	Release in new format and extend warranty
F	December 2020	Added LD2.5CHA & LD5CHA
G	October 2021	Updated 5V Power Supply to 6A



**WAVELENGTH
ELECTRONICS**

51 Evergreen Drive
Bozeman, Montana 59715

406-587-4910 (tel)
406-587-4911 (fax)
Sales & Tech Support

sales@teamwavelength.com
techsupport@teamwavelength.com

