

Laser Source Control Unit

LPMS Series User's Manual



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Warranty

Newport Corporation warrants that this product will be free from defects in material and workmanship and will comply with Newport's published specifications at the time of sale for a period of one year from date of shipment. If found to be defective during the warranty period, the product will either be repaired or replaced at Newport's option.

To exercise this warranty, write or call your local Newport office or representative, or contact Newport headquarters in Irvine, California. You will be given prompt assistance and return instructions. Send the product, freight prepaid, to the indicated service facility. Repairs will be made and the instrument returned freight prepaid. Repaired products are warranted for the remainder of the original warranty period or 90 days, whichever is longer.

Limitation of Warranty

The above warranties do not apply to products which have been repaired or modified without Newport's written approval, or products subjected to unusual physical, thermal or electrical stress, improper installation, misuse, abuse, accident or negligence in use, storage, transportation or handling. This warranty also does not apply to fuses, batteries, or damage from battery leakage.

THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE. NEWPORT CORPORATION SHALL NOT BE LIABLE FOR ANY INDIRECT, SPECIAL, OR CONSEQUENTIAL DAMAGES RESULTING FROM THE PURCHASE OR USE OF ITS PRODUCTS.

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This manual has been provided for information only and product specifications are subject to change without notice. Any change will be reflected in future printings.

Newport Corporation
1791 Deere Avenue
Irvine, CA, 92606 USA
P/N 41759-01 Rev. B

Declaration of Conformity

EU Declaration of Conformity

We declare that the accompanying product, identified with the **CE** mark, complies with requirements of the Electromagnetic Compatibility Directive, 89/336/EEC and the Low Voltage Directive 73/23/EEC.

Model Number: LPMS Laser Power Supply

Year **CE mark affixed:** 2005

Type of Equipment: Electrical equipment for measurement, control and laboratory use

Standards Applied:

Compliance was demonstrated to the following standards to the extent applicable:

BS EN61326-1: 1997+A1+A2 +A3 “Electrical equipment for measurement, control and laboratory use – EMC requirements”

This equipment meets the CISPR 11 Class A Group 1 radiated and conducted emission limits.

BS EN 61000-3-2:2001, Harmonic current emissions, Class A

BS EN 61000-3-3:2002, Voltage fluctuations and flicker

BS EN 61010-1:2001, 2nd Edition “Safety requirements for electrical equipment for measurement, control and laboratory use”



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Newport Corporation Calling Procedure

If there are any defects in material or workmanship or a failure to meet specifications, promptly notify Newport's Returns Department by calling 1-800-222-6440 or by visiting our website at www.newport.com/returns within the warranty period to obtain a **Return Material Authorization Number (RMA#)**. Return the product to Newport Corporation, freight prepaid, clearly marked with the RMA# and we will either repair or replace it at our discretion. Newport is not responsible for damage occurring in transit and is not obligated to accept products returned without an RMA#.

E-mail: rma.service@newport.com

When calling Newport Corporation, please provide the customer care representative with the following information:

- Your Contact Information
- Serial number or original order number
- Description of problem (i.e., hardware or software)

To help our Technical Support Representatives diagnose your problem, please note the following conditions:

- Is the system used for manufacturing or research and development?
- What was the state of the system right before the problem?
- Have you seen this problem before? If so, how often?
- Can the system continue to operate with this problem? Or is the system non-operational?
- Can you identify anything that was different before this problem occurred?

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1 General Information

1.1 Introduction

The LPMS Series is a turnkey power supply for lasers. The LPMS incorporates all safety features required by U.S. federal regulations. End users—those not directly integrating a laser into another product—must purchase an LPMS to meet U.S. government requirements for laser systems. Original equipment manufacturers are not required to purchase an LPMS and are, therefore, responsible for integrating their own safety features to meet government standards.

1.2 Unpacking

Each Newport LPMS is thoroughly tested prior to shipment. Visually inspect your unit after removing it from the shipping container. If you see any damage, retain all packaging materials and shipping receipts. Any damage claim should be made promptly to the transportation company. Notify the nearest Newport representative concerning the claim, so that any repair or replacement can be arranged as soon as possible.

1.3 Safety Features

The LPMS incorporates the following safety features to comply with government regulations.

1. **Power on/off key switch**—Located on the front panel of the LPMS , this switch enables users to power the unit on with the turn of a key. The LPMS is inoperable when key is removed.
2. **Emission indicator**—This LED, located to the upper right on the LPMS front panel, lights up when the unit is on to warn of eminent laser emission.
3. **5-second activation delay**—The LPMS does not power on until five seconds after a user has turned the key switch to the “on” position.
4. **Remote interlock & connector**—This feature is located on the rear panel of the LPMS . The unit will not operate without the interlock intact.
5. **Manual reset button**—Located on the front panel, this button requires that the user push it to begin lasing any time a remote interlock is used or there has been an interruption in power exceeding five seconds. Not available on all models.
6. **Beam blocker**—Located on the laser module, this cap prevents unwanted radiation emissions.

2 System Operation

2.1 Installation

Plug the LPMS into a grounded outlet. Ensure that the interlock on the back panel is intact and installed. The unit will not operate without the interlock installed.

Before users can operate the unit, they must connect the laser module to the LPMS power supply. Any extension to the laser module cable must be less than two meters in overall length to maintain CDRH/IEC laser certification. A DB-9 (9-pin) connector is located on the rear panel of the LPMS. A bare wire adapter is included with the LPMS should the laser module not have a DB-9 connector installed. In this case, attach the module's black wire to the properly-marked location (ground) on the bare wire adapter. Then attach the red wire to the proper location on the bare wire adapter. The products are shipped with a circuit board that is to be inserted into the DB9 connector on the back of the power supply. Connect your laser to the appropriate output voltage (see next page, Section 2.4 Specifications table for laser and power supply compatibility). Users should position the equipment so that it is not difficult to disconnect the interlock.

Do not mount the laser module in a thermal insulating material, such as foam plastic. For best heat dissipation, use a metal mounting fixture. The use of a heat sink is recommended. A heat sink is always recommended for operating temperatures above 25°C.

Users should leave a minimum of three inches of space to the rear of the LPMS to promote adequate ventilation.

2.2 Operation

The LPMS is equipped with a key switch located on the front panel. Customers use the key to activate and deactivate the laser. A 5-second delay will begin after the key switch is turned to the "on" position. The emissions indicator on the front panel will then light up to warn of eminent laser emission. The laser system will be "off" when the key is in the vertical position.

Caution: The LPMS is a certified laser system only when used with an appropriate laser module that has the appropriate labels. Do not operate laser without the LPMS. Use of controls or adjustment or performance of procedures other than

those specified herein may impair the protection provided by the equipment and result in hazardous radiation exposure.

Refer to the enclosed laser module operating instructions for specifics on how to operate the module.

2.3 Laser Safety

Class 3b and 4 lasers are not intended for use in surveying, leveling, alignment, or medical applications.

Caution: Use of controls or adjustment or performance of procedures other than those specified herein may result in hazardous radiation exposure.

Caution: The use of optical instruments with this product will increase eye hazard. Modifications that affect any aspect of the product's performance or intended functions will require re-certification and re-identification of the product in accordance with the provisions of 21 CFR 1010.2 and 1010.3.

2.4 Specifications

Specification	LPMS-5-110	LPMS-5-220	LPMS-8-110	LPMS-8-220
Input Voltage	110 VAC	100-250 VAC	110 VAC	100-250 VAC
Input Frequency	60 Hz	50-60 Hz	60 Hz	50-60 Hz
Output Voltage	5 VDC	5 VDC	8 VDC	8 VDC
Operating Temperature	0-50C	0-50C	0-50C	0-50C
Compatible Laser Series	LPM & LQx with $\lambda > 600$ nm		LPM & LQx with $\lambda < 600$ nm	

3 Service Information

The Model LPMS contains no user serviceable parts. To obtain information regarding factory service, contact Newport Corporation or your Newport representative. Please have the following information available:

1. Instrument model number
2. Description of the problem.

If the instrument is to be returned to Newport Corporation, you will be given a Return Number, which you should reference in your shipping documents. Please fill out a copy of the service form, located on the following page, and have the information ready when contacting Newport Corporation. Return the completed service form with the instrument.

To obtain warranty service, contact your nearest Newport agent or send the product, with a description of the problem, transportation and insurance prepaid, to the nearest Newport agent. Newport Corporation assumes no risk for the damage in transit. Newport Corporation will, at its option, repair or replace the defective product free of charge. However, if Newport Corporation determines that the failure is caused by misuse, alterations, accident or abnormal condition of operation or handling, you will be billed for the repair and the repaired product will be returned to you, transportation prepaid.

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Newport Corporation, Irvine, California; Evry and Beaune-La-Rolande, France have all been certified compliant with ISO 9001 by the British Standards Institution. Mountain View, California is DNV certified.