

Laser Source Control Unit

LPMS/LIQS Series User's Manual



Newport®
Experience | Solutions

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.

First printing 2004

© 2004 by Newport Corporation, Irvine, CA. All rights reserved. No part of this manual may be reproduced or copied without the prior written approval of Newport Corporation.

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. A

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”



Alain Danielo
VP and GM of PPT Division.
Zone Industrielle
45340 Beaune-la-Rolande, France



Dan Dunahay
Director of Quality Systems
1791 Deere Avenue
Irvine, Ca. USA

Technical Support Contacts

North America & Asia

Newport Corporation Service Dept.

1791 Deere Ave. Irvine, CA 92606

Telephone: (949) 253-1694

Telephone: (800) 222-6440 x31694

Europe

Newport/MICRO-CONTROLE S.A.

Zone Industrielle

45340 Beaune la Rolande, FRANCE

Telephone: (33) 02 38 40 51 56

Asia

Newport Opto-Electronics Technologies

253 Aidu Road, Bld #3, Flr 3, Sec C,
Shanghai 200131, China

Telephone: +86-21-5046 2300

Fax: +86-21-5046 2323

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?

Table of Contents

Warranty	i
Technical Support Contacts	iii
1 General Information	1
1.1 Introduction	1
1.2 Unpacking.....	1
1.3 Safety Features	2
2 System Operation	3
2.1 Installation	3
2.2 Operation	3
2.3 Laser Safety	4
2.4 Specifications	4
3 Free Service Information	5
3.1 Service Form	6

1 General Information

1.1 Introduction

The LPMS/LIQS is a turnkey power supply for lasers. The LPMS/LIQS 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/LIQS to meet U.S. government requirements for laser systems. Original equipment manufacturers are not required to purchase an LPMS/LIQS and are, therefore, responsible for integrating their own safety features to meet government standards.

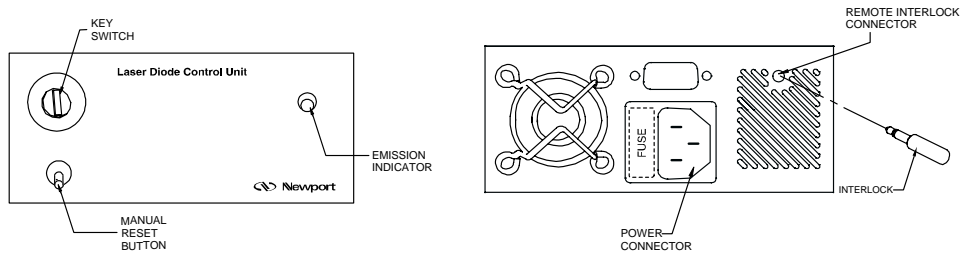
1.2 Unpacking

Each Newport LPMS/LIQS 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/LIQS incorporates the following safety features to comply with government regulations.

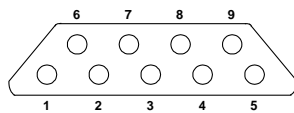
1. **Power on/off key switch**—Located on the front panel of the LPMS/LIQS , this switch enables users to power the unit on with the turn of a key. The LPMS/LIQS is inoperable when key is removed.
2. **Emission indicator**—This green LED, located to the upper right on the LPMS/LIQS front panel, lights up when the unit is on to warn of eminent laser emission.
3. **5-second activation delay**—The LPMS/LIQS 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/LIQS . 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.
6. **Beam blocker**—Located on the laser module, this cap prevents unwanted radiation emissions.



2 System Operation

2.1 Installation

Plug the LPMS/LIQS 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/LIQS 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/LIQS. A bare wire adapter is included with the LPMS/LIQS 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. All LQ series lasers attach to the 12V position on the bare wire adapter. All LPM modules attach to the 5V position. Users should position the equipment so that it is not difficult to disconnect the interlock.



Pin 1	ground
Pin 2	ground
Pin 3	+12VDC
Pin 4	+5VDC
Pin 5	+3.3VDC
Pin 6	ground
Pin 7	+12VDC
Pin 8	+5VDC
Pin 9	+3.3VDC

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/LIQS to promote adequate ventilation.

2.2 Operation

The LPMS/LIQS 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/LIQS 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/LIQS. 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	LIQS-12-110	LIQS-12-220
Input Voltage	110 VAC	100-240 VAC	110 VAC	100-240 VAC
Input Frequency	60 Hz	47-63 Hz	60 Hz	47-63 Hz
Output Voltage	5 VDC	5 VDC	12 VDC	12 VDC
Operating Temperature	5-40C	5-40C	5-40C	5-40C
Compatible Laser Series	LPM	LPM	LQA, LQC, LQD	LQA, LQC, LQD

3 Free Service Information

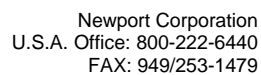
The Model LPMS/LIQS contains no user serviceable parts. To obtain information regarding factory service, contact Newport Corporation or your Newport representative. Please have the following information available:

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

Formatted: Bullets and Numbering

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.

[illegible]

Notes: _____

[illegible]

**Newport Corporation
Worldwide Headquarters**

1791 Deere Avenue
Irvine, CA 92606

(In U.S.): 800-222-6440
Tel: 949-863-3144
Fax: 949-253-1680

Internet: sales@newport.com



Newport
Experience | Solutions

Visit Newport Online at: www.newport.com



Newport Corporation, Irvine, California, has
been certified compliant with ISO 9001 by
the British Standards Institution.

Printed in the U.S.