

LQN Series



LQN 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 90 days 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.

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P/N 44630-01 Rev. A

Technical Support Contacts

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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

Newport's new **LQN Series Laser Diode (LD) Sources** are designed for use with standard Newport Laser Diode Instrumentation, giving the user the ability to precisely control the laser diode current and temperature. LD Sources can be connected to the Newport Model 8000 Modular Controller, Model 6000 Laser Diode Driver, or 500B Series LD Driver and Model 300B TEC Controller via a standard Y-Cable. Once connected, they can be operated in CW mode by selecting a laser drive current or modulated by using the modulation feature found in most Newport Laser Diode Drivers. The laser temperature can be fixed for precise wavelength stabilization, or varied for wavelength tuning of the laser diode.

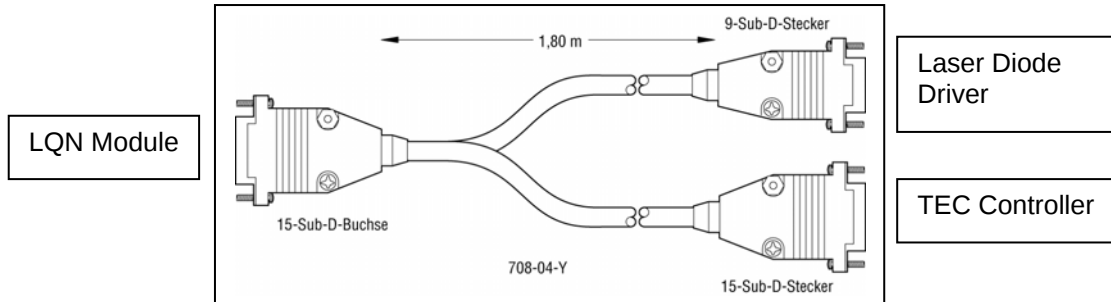
The fine current and temperature control enable the use of these laser diode sources in analytical, industrial and biomedical applications, such as spectroscopy, interferometry, machine vision, marking, flow cytometry and tissue fluorescence. LQN Series LD Sources are available at various wavelengths and output power levels, with the choice of either Elliptical (E versions) or Circular (C versions) output beam shape. Circular beams are generated using a micro lens.

1.2 Installation

Warning: Before operating LQN Series Laser Diode Sources, set the TEC and LD current limits to those shown in the specification. Operation above the specified maximum TEC and LD current can damage the laser and/or internal TEC of the LQN module. Maximum TEC current for LQN modules is 1.94A. Maximum Laser Drive current is module dependent. Please see newport.com or the Newport catalog for Maximum Laser Drive Current specification.

Do not mount the laser in a thermal insulating material, such as foam plastic. Heat can have adverse effects on laser diodes. Such effects include decreased output power and large shifts in wavelengths. Lasers below 5mW may not need a heat sink. For best heat dissipation use a metal mounting fixture. A heat sink is always recommended for operating temperatures above 25°C.

This laser module is connectorized for easy integration with Newport Laser Diode Drivers and TEC controllers. The LQN module has a male DB15 connector. Use the optional 708-04-Y cable to connect the LQN Series module to an individual Newport Laser Driver and TEC controller (See diagram below).



1.3 Operation

1.3.1 Operation and Control Procedure

Connect the LQN Series source module to a Newport Laser Diode Driver, and TEC controller using the P/N 708-04-Y adapter cable. Set the TEC current limit to 1.9A or less on the TEC controller. Set the LD current limit to the specified maximum forward current of the Laser Source Module. Set the temperature of the TEC controller to a value near room temperature (25C), and initiate temperature control of the diode. Once the temperature has stabilized, select a forward current setting on the Laser Diode Driver, and activate the Laser Diode Driver. A temperature conversion chart is shown below for the 10k thermister supplied with the LQN series module.

10K Thermister Resistance Values							
Temp. C	Rt	Temp. C	Rt	Temp. C	Rt	Temp. C	Rt
0	32650	13	17250	26	9573	39	5547
1	31030	14	16460	27	9167	40	5327
2	29500	15	15710	28	8777	41	5117
3	28050	16	15000	29	8407	42	4917
4	26690	17	14320	30	8057	43	4727
5	25390	18	13680	31	7723	44	4543
6	24170	19	13070	32	7403	45	4370
7	23010	20	12490	33	7097	46	4200
8	21920	21	11940	34	6807	47	4040
9	20880	22	11420	35	6530	48	3890
10	19900	23	10920	36	6267	49	3743
11	18970	24	10450	37	6017	50	3603
12	18090	25	10000	38	5777		

The user may adjust the focus or collimation of the output beam on E models by using the supplied spanner wrench to increase or decrease the distance between the diode and the optic. The C (microlens) series does not have adjustable optics.

1.3.2 Preventative Maintenance

This laser module contains no user serviceable parts. Occasionally the optics may need cleaning depending on environmental conditions. When cleaning is required, the use of clean, compressed air is recommended to blow the optics clean. If compressed air fails, clean lens carefully with alcohol and a lint free rag or Q-tip.

1.3.3 Laser Safety

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



CAUTION

Use of controls or adjustments 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. Do not shine laser in the direction of other people or at reflective surfaces that might cause exposure to the human eye. Do not mount the laser at eye level.

2 Factory Service Information

2.1 Service Form



Newport Corporation
U.S.A. Office: 800-222-6440
FAX: 949/253-1479

Name _____ Return Authorization # _____
(Please obtain RA# prior to return of item)

Company _____

Address _____ Date _____

Country _____ Phone Number _____

P.O. Number _____ FAX Number _____

Item(s) Being Returned:

Model # _____ Serial # _____

Description _____

Reason for return of goods (please list any specific problems):

This image shows a full page of blank, lined paper. It features approximately 20 evenly spaced horizontal grey lines across the entire width of the page, providing a guide for writing. The background is a solid off-white color. There are no margins, text, or other markings present.

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