

## Product Features

Accommodates 2-pin, 6-pin, 8-pin and 14-pin packages

Temperature control range from 15°C to 85°C

Up to 60W total heat dissipation

Configurable for any butterfly module pin-out

Compatible with ILX current sources and temperature controllers

Case temperature control models

Optical table mounting

The LDM-49800 Series Laser Diode Mounts provide a compact, easy-to-use solution for testing high power fiber coupled packaged laser diodes. The series provides convenient mounting for 2-pin modules and 6-pin, 8-pin, and 14-pin butterfly devices with or without an internal TE module. A case temperature control model is available for temperature controlling uncooled lasers over a temperature range of 15°C to 85°C. A water cooled heat sink allows the 49800 series to dissipate up to 60W.

Fixture design and precision machining result in low, repeatable thermal resistance between the fiber-coupled module and 49800 minimizing the temperature difference between the laser and the fixture.

The LDM-49800 mounts are compatible with ILX Lightwave current sources and temperature controllers through interconnect cabling for quick setup in R&D or manufacturing environments. Optical table positional mounting is made possible through ANSI and metric spaced mounting holes on the base of the mount.

# LDM 49800 Series

High Power  
Fiber Coupled  
Laser Diode  
Mount



## Versatile High Power Laser Diode Mounting Fixture for Fiber Coupled Modules

 **ILX Lightwave**  
Laser Diode Instrumentation & Test Systems

# LDM 49800 Series

High Power  
Fiber Coupled  
Laser Diode  
Mount



The LDM-49800 Series is compatible with ILX Lightwave laser diode drivers, temperature controllers, thermoelectric chillers, and laser diode controllers through the use of standard interconnect cables.

## REPEATABLE, LOW THERMAL RESISTANCE

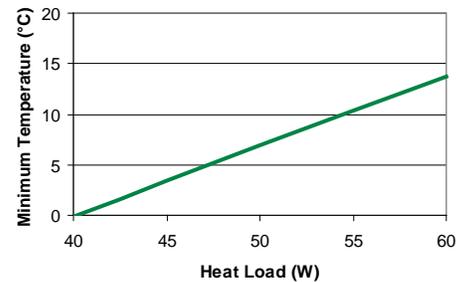
Careful attention to the LDM-49800 mechanical design results in a low thermal resistance between the laser module and the mounting block. Torquing the device to the recommended value provides constant and repeatable clamping pressure on the laser optimizing the thermal resistance between the laser module and the mounting plate.

## EASY CONNECTIONS FOR QUICK SET-UP

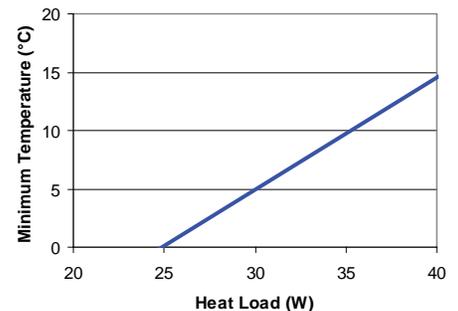
The LDM-49800 is compatible with most ILX current sources including the LDX-36000 series high power laser diode drivers and the new LDX-32420 20A laser diode driver. Additionally the mounts are compatible with ILX temperature controllers. Standard interconnect cables interface with connectors for laser current, internal TE and case control on the mount.

## CASE TEMPERATURE CONTROL

The LDM-49800 series case temperature control option is available on all LDM-49800 laser diode mounts. The case temperature control has an integrated high power TEC module to provide control of uncooled laser diode modules with a wide temperature control range of 15°C to 85°C. The high power TEC removes up to 60W of waste heat.



Case temperature control range  
of the LDM-49840T



Case temperature control range  
of the LDM-49860T

# LDM 49800 Series

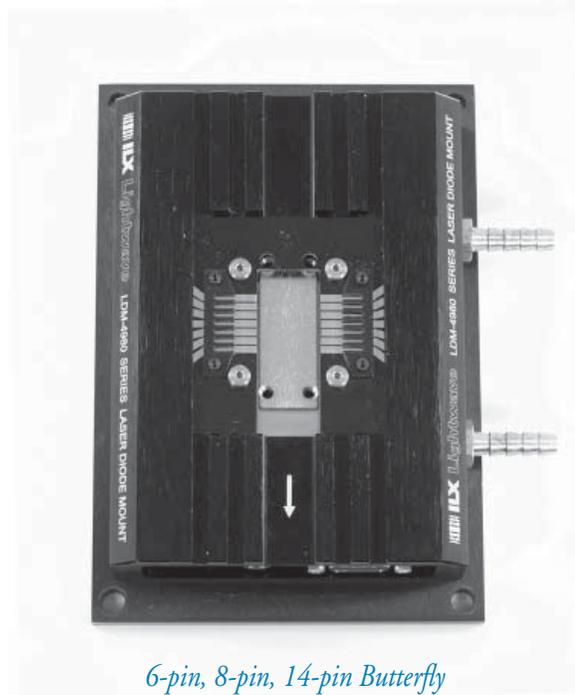
High Power  
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Laser Diode  
Mount

## LDM-49840 HIGH POWER BUTTERFLY LASER DIODE MOUNT

The LDM-49840 is designed to accommodate various 6-pin, 8-pin, and 14-pin packages. The unique clamping and spring-loaded circuit board arrangement accommodate butterfly modules with different pin heights thus preventing pin damage due to overbending. Terminal blocks accessible from the bottom side allow configuration of the 49840 for any butterfly module pin-out.

### ORDERING INFORMATION

LDM-49840	High Power Butterfly Mount
LDM-49840T	High Power Butterfly Mount with Case Control
LDM-49806	49840 6-Pin Clamp
LDM-49808	49840 8-Pin Clamp
LDM-49814	49840 14-Pin Clamp
LFS-498	Laser Fiber Spool



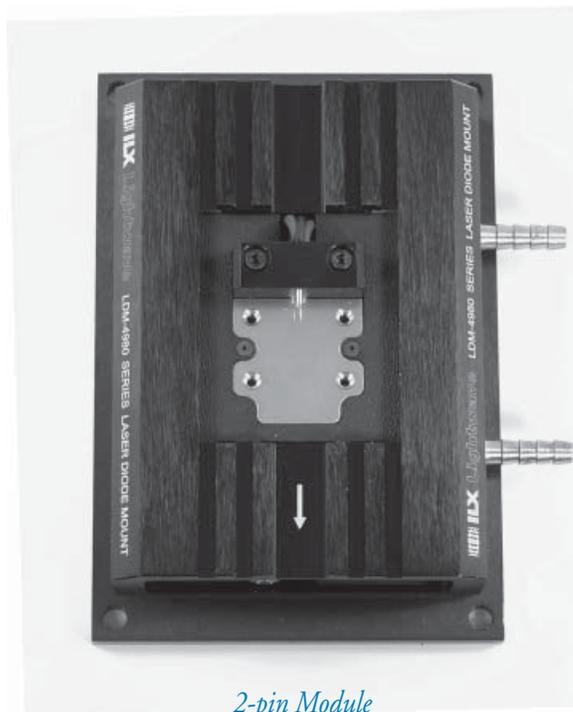
*6-pin, 8-pin, 14-pin Butterfly*

## LDM-49860 HIGH POWER 2-PIN MODULE MOUNT

The LDM-49860 is designed to support various manufacturers' high power 2-pin modules. The laser clamp provides alignment and excellent clamping pressure even when the 2-pin module does not include mounting flanges. The LDM-49860 is designed to fit 2-pin lasers from JDS Uniphase, Bookham, Lumics, and EM4. Please contact an ILX Lightwave sales engineer if you have any questions concerning fixturing your 2-pin laser diode package to the 49860.

### ORDERING INFORMATION

LDM-49860	High Power 2-Pin Module Mount
LDM-49860T	High Power 2-Pin Module Mount with Case Control
LDM-4986001	49860 Terminal Block for JDS Uniphase Devices
LDM-4986002	49860 Terminal Block for Bookham and EM4 Devices
LDM-4986003	49860 Terminal Block for Lumics Devices
LFS-498	Laser Fiber Spool



*2-pin Module*

# LDM 49800 Series

High Power  
Fiber Coupled  
Laser Diode  
Mount

## Specifications

Laser Packages: 2-pin modules and 6-pin, 8-pin, 14-pin fiber coupled butterfly packages

49840 Laser Dimensions:  
6-pin: 19mm x 15mm  
8-pin: 12.7mm x 21.84mm  
14-pin: 12.7mm x 30mm  
49840 Maximum Pin Width: 1.25mm

49860 2-pin Module Compatibility: JDS Uniphase, Lumics, Bookham, EM4

Maximum Laser Current:  
49840: 12A  
49860: 20A

Maximum Thermal Load:  
49840: 60W  
49860: 40W

Laser Clamping: #6-32 UNC, slotted thumbscrew

Laser to Hotplate  
Contact Thermal Resistance<sup>1</sup>:  $\leq 0.10^{\circ}\text{Cin}^2\text{W}^{-1}$   
Repeatability<sup>1</sup>:  $\pm 0.01^{\circ}\text{Cin}^2\text{W}^{-1}$

Connectors  
Laser Diode Current: Hybrid D-sub, female, 7W2  
Internal TEC: 9-pin, D-sub, male  
(49840/49840T only)  
Case Temperature Control: Hybrid D-sub, male, 7W2  
Internal Thermistor: 15-pin D-sub, male  
(w/o case temperature control)  
Ground: Female banana jack  
Water Connectors: 1/8" NPT to 1/4" nipple, barbed for 1/4" tubing  
Water Pressure Drop: 5 psi at 1.0 GPM  
Temperature Sensor: 10k $\Omega$  NTC thermistor

Cold Plate Thermal Resistance<sup>2</sup>: 0.25 $^{\circ}\text{C/W}$  @ 1.0 GPM

49840T Case Control: Solid State, Thermoelectric  
Thermal Load: 60W  
Temperature Control Range<sup>3</sup>: 15 $^{\circ}\text{C}$  to 85 $^{\circ}\text{C}$   
TE Module<sup>4</sup>:  
 $I_{\text{max}}$ : 14.6A  
 $V_{\text{max}}$ : 15.4V

49860T Case Control: Solid State, Thermoelectric  
Thermal Load: 40W  
Temperature Control Range<sup>3</sup>: 15 $^{\circ}\text{C}$  to 85 $^{\circ}\text{C}$   
TE Module<sup>4</sup>:  
 $I_{\text{max}}$ : 8.5A  
 $V_{\text{max}}$ : 15.4V

## GENERAL

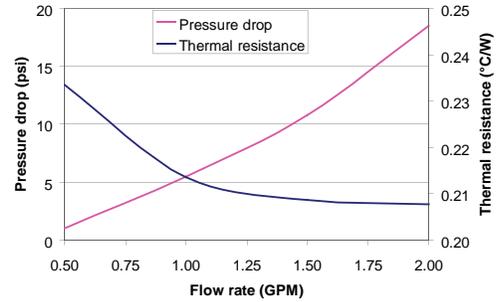
Size (H x W x D): 31.8mm x 102mm x 140mm  
Weight:  
LDM-49840: 2.05 lbs (0.93 kg)  
LDM-49840T: 2.05 lbs (0.93 kg)  
LDM-49860: 2.12 lbs (0.96 kg)  
LDM-49860T: 2.12 lbs (0.96 kg)

Regulatory Compliance: RoHS

 **ILX Lightwave**  
Laser Diode Instrumentation & Test Systems

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Pressure Drop and Thermal Resistance vs. Flow Rate in the LDM-49800 Series

## NOTES

- Clamp screws tightened to 2 in\*lbs torque. To find thermal resistance in  $^{\circ}\text{C/W}$ , multiply by surface area of laser diode package base.
- LDM-49860 only, defined as (hotplate temperature - inlet water temperature)/thermal load.
- Control range at maximum thermal load. Mount can control down to 0 $^{\circ}\text{C}$  at lower heat loads. See tech note "LDM-49800T Temperature Control". Assumes 20 $^{\circ}\text{C}$  water temperature and 1.0 gpm (3.79 liter/min). Lower control temperatures can be achieved with lower water temperatures for any given heat load.
- Module ratings based on a single TE module at 25 $^{\circ}\text{C}$  operating temperature. For optimizing TEC current limits on a temperature controller, see application note #14: "Optimizing TEC Drive Current".

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LDM-49814*	49840 14-Pin Clamp
LDM-49860	High Power 2-Pin Module Mount
LDM-49860T	High Power 2-Pin Module Mount with Case Control
LDM-4986001	49860 Terminal Block for JDS Uniphase Devices
LDM-4986002	49860 Terminal Block for Bookham and EM4 Devices
LDM-4986003	49860 Terminal Block for Lumics Devices

CC-305H	6A CS Interconnect Cable, 9-pin to 7W2
CC-308H	20A CS Interconnect Cable, 13W3 to 7W2
CC-306HT	6A CS Interconnect Cable, 13W3 to 7W2
CC-320	20A Interconnect Cable, 9W4 to 7W2
CC-501HT	6A TE Interconnect Cable, 15-pin D-sub to 7W2
CC-505S	6A TE Interconnect Cable, shielded
CC-596H	10A TE Interconnect Cable, 25-pin D-sub to 7W2

LDX-32420	10/20A Precision High Power Laser Diode Driver
LDX-36000 Series	High Power Laser Diode Drivers
LDT-53520	250W Laser Diode Thermoelectric Chiller
LDT-53540	400W Laser Diode Thermoelectric Chiller

\* one clamp kit is shipped with the LDM-49840 at no charge

In keeping with our commitment to continuing improvement, ILX Lightwave reserves the right to change specifications without notice or liability for such changes.

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