LDM 4415

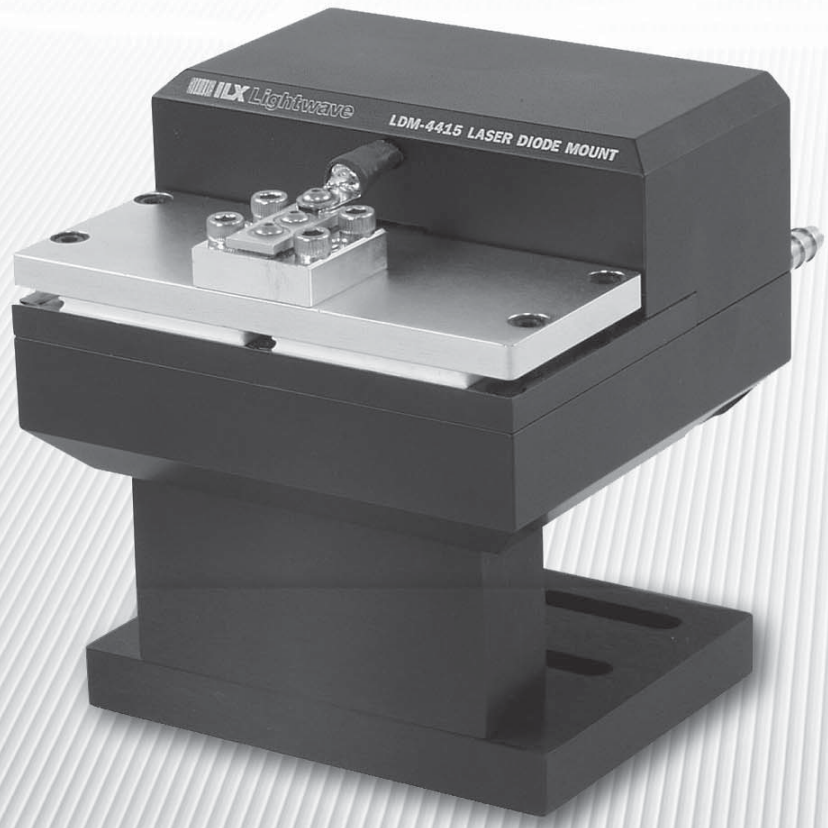
Temperature Controlled CS Bar Package Fixture

Product Features

- Up to 100W heat load
- Temperature control range from +20°C to 85°C at 100W heat load
- Temperature control range from +10°C to 85°C at 75W heat load
- Optical table mounting
- Unobstructed access to the front of the laser diode
- Compatible with ILX Lightwave current sources and temperature controllers

The LDM-4415 Laser Diode Mounting Fixture provides a compact, easy to use solution for mounting and temperature controlling CS packaged conductively cooled high power laser diodes. Heat sink technology developed at ILX Lightwave allows the 4415 to dissipate up to 100W of heat generated by the laser diode with an active temperature control range of +20°C to 85°C. Fixture design and precision machining result in repeatable thermal resistance between the CS packaged device and mounting block, minimizing the temperature difference between the laser and the fixture.

The LDM-4415 is compatible with ILX Lightwave high power current sources and temperature controllers through interconnect cabling allowing up to 120A of laser diode current for the highest power conductively cooled laser diode bars. Optical table mounting is made possible through standard 1" spaced mounting holes on the base of the mount.



ILX Lightwave®
A Newport Corporation Brand

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Active Temperature Control

For characterization over temperature of your CS packaged devices, the LDM-4415 comes with integrated thermoelectric modules and water cooled heat sink for a control range of +20°C to 85°C. Lower control temperatures can be reached with heat loads <100W (see Figure 1). The high power TEC's have the thermal performance to dissipate up to 100W head load from conductively cooled CS packaged devices. A hybrid D-sub temperature control connector is provided for compatibility with ILX Lightwave LDT-5900 Series Temperature Controllers.

Repeatable, Low Thermal Resistance

Careful attention to the LDM-4415's mechanical design results in a low thermal resistance between the CS package and the mounting block. Torquing the device to the recommended value provides constant and repeatable clamping pressure on the CS package ensuring best thermal performance and helps eliminate measurement inconsistencies.

Easy Connections for Quick Set-Up

The LDM-4415 is compatible with ILX's LDX-3600 Series High Power Drivers through interconnect cabling. Connections for laser drive current, forward voltage measurement, and temperature control are provided on the rear panel of the fixture. Auxilary anode and cathode connections are provided on the rear panel with #10-32 lugs for connection to other power supplies.

Optical Table Mounting

Optical table mounting is made possible through standard 1" spaced mounting holes on the base of the mount. Additionally, the LDM-4415 is designed for integration into optical test systems with unobstructed laser facet access at the front of the fixture.

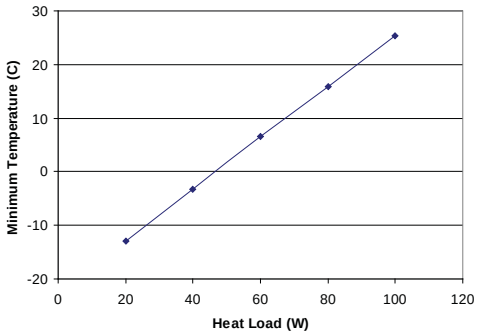

Figure 1: Minimum Control Temperature vs. Heat Load

Specifications

Laser Packages	
Diode Dimensions:	24.9 mm x 24.9 mm
Maximum Laser Current:	125A
Thermal Load:	100W
Laser Clamping:	#8-32 UNC
Torque:	15 in-lb.
Rear Connectors	
Laser Diode Current:	Dual crown clip socket #10-32; power lugs (anode and cathode)
Case Temperature:	Hybrid D-sub, male, 7W2
Ground:	Female banana jack
Forward Voltage:	Female banana jacks
Laser Diode Connections	
Anode:	Laser mounting plate
Cathode:	10 ga terminated wire
Temperature Control	Solid state
Range[1]:	+20°C to 85°C
Sensor Type:	10kΩ NTC thermistor
Chilled Water:	
Temperature:	≤15°C
Connectors:	1/8" NPT to 1/4" nipple, barbed
TE Module[2]:	Q_{max} = 252W I_{max} = 14.6A V_{max} = 28.8V DT_{max} = 67°C
Thermal Resistance[3]:	≤0.10°C/W
Repeatability:	≤0.01°C/W

GENERAL

Size (HxWxD):	114 mm x 108 mm x 127 mm (4.5" x 4.25" x 5")
Weight:	1.6 kg (3.6 lbs)
Regulatory Compliance:	RoHS

NOTES

1. Control range based on 100W heat load on hot plate. Tested with LDT-53540 with 12.4°C cooled water and 1.9 liter per minute flow rate. Lower control temperatures can be achieved with lower water temperatures for any given heat load.
2. Module ratings based on two thermoelectric modules wired in series at 25°C operating temperature.
3. Laser to mounting plate

ORDERING INFORMATION

LDM-4415	Temperature Controlled CS Bar Package Fixture
CC-390	120A Current Source/Laser Diode Mount Interconnect Cable
CC-596H	LDT-5900 Series Temperature Control Interconnect Cable
LDX-36000	High Power Laser Diode Current Sources
LDT-5948	60W Temperature Controller
LDT-5980	120W Temperature Controller
LDT-53520	200W Laser Diode Thermoelectric Chiller
LDT-53540	375W Laser Diode Thermoelectric Chiller

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REV04.050713