Product Features

Supports C-Block, COC, or customer proprietary QCL packages

Compatible with the LDX-3232 CW QCL Driver

Active temperature control from -30°C to 30°C

Ports for vacuum evacuation or nitrogen purge

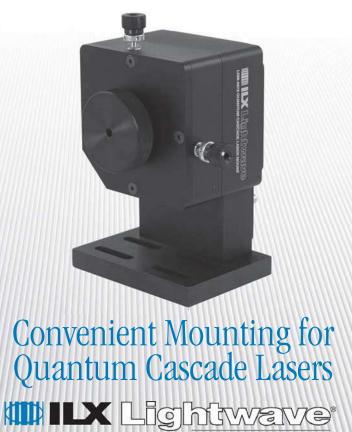
Optional XYZ stage with multiple ZnSe lens options

The LDM-4872 Series Quantum Cascade Laser Mounts provide convenient mounting for quantum cascade lasers in a vacuum or nitrogen purged environment. The 4872 Series mounts are offered with a standard mounting plate for C-Mount (C-Block) quantum cascade lasers, a standard mounting block for Alpes COC quantum cascade lasers or custom mounting blocks for customer proprietary QCL packages.

A wide temperature control range is accomplished by an integrated thermoelectric module and a high performance water-cooled cold plate which provides for an active control range of -30°C to 30°C with heat loads up to 10W.

Fixture design and precision machining result in low, repeatable thermal resistance between the QCL and LDM-4872 mounts minimizing the temperature difference between the laser and the fixture.

The LDM-4872 mounts are compatible with ILX Lightwave current sources and temperature controllers through interconnect cabling for quick setup. Optical table mounting is made possible through ANSI and metric spaced mounting holes on the base of the mount.



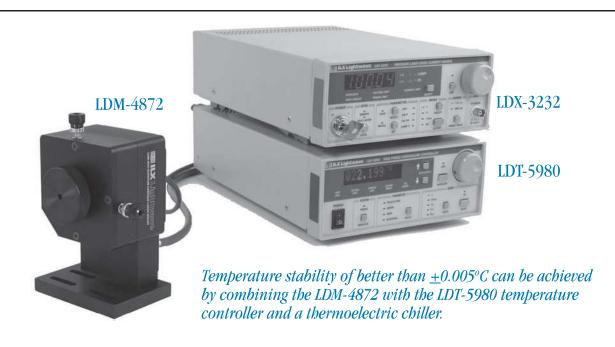
Newport Corporation Brand

LDM 4872 Series

Quantum Cascade Laser Mounts

LDM 4872 Series

Quantum
Cascade Laser
Mounts



CONVENIENT MOUNTING OF QCL

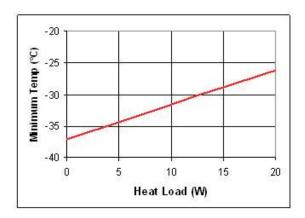
The LDM-4872 mounts are designed to support various QCL manufacturers' devices. The LDM-487201supports C-Mount (C-Block) and the LDM-487202 supports Alpes COC. ILX can fabricate custom mounting blocks for customer proprietary QCL packages. Careful attention to the design of the optional XYZ stage with MID-IR lens and optional MID-IR window allow the 4872 mounts to be operated in either a vacuum or nitrogen environment. Contact an ILX Lightwave sales engineer if you have any questions concerning mounting of your QCL package to a 4872 mount.



C-Block Mounting Block

ACTIVE TEMPERATURE CONTROL

The LDM-4872 mounts come with an integrated 120W TEC and water-cooled cold plate. The high power TEC has the thermal performance to dissipate the waste heat from inefficient quantum cascade lasers over a wide temperature range of -30°C to 30°C with thermal loads up to 10W.



REPEATABLE, LOW THERMAL RESISTANCE

Careful attention to the LDM-4872 mounts mechanical design results in a low thermal resistance between the quantum cascade laser and the mounting plate. Torquing the device to the recommended value provides constant and repeatable clamping pressure on the package. Low thermal resistance eliminates temperature measurement inconsistency which ensures the QCL is being operated at a safe temperature.

PRECISION XYZ STAGE AND MID-IR LENS OPTION

The optional XYZ stage with lens provides precise adjustment even when the LDM-4872 mounts are under vacuum. Precision differential adjustment screws for the X and Y axis provide 25µm/rev of fine adjustment. The knurled lens cartridge has 64 threads per inch for precise Z adjustment. For your specific wavelength we have four standard aspheric 6.5mm lens options to cover a wide MID-IR wavelength range. Please contact an ILX Lightwave sales engineer to discuss our lens options.

ZINC SELINDE WINDOW OPTION

For quantum cascade lasers not requiring collimation a MID-IR window is available. The QCL output is located 1.5 mm from the 12.7mm diameter ZnSe window.

EASY CONNECTIONS FOR QUICK SET UP

The LDM-4872 mounts are compatible with most ILX current sources including the LDX-3232 High Compliance Laser Diode Driver. Additionally, the LDX-4872 mounts are compatible with ILX temperature controllers. All connections including electrical, water, and vacuum/nitrogen purge are conveniently located on the back of LDM-4872 mounts.

Standard interconnect cables interface with connectors for laser current and case control on the mount.

OPTICAL TABLE MOUNTING

Optical table mounting is made possible through standard 1" spaced mounting holes on the base of the mount. Additionally, the LDM-4872 mounts are designed for integration into optical test systems with unobstructed access to the front of the quantum cascade laser mount.



XYZ Stage



Zinc Selinde Window

PUT OUR EXPERTISE TO WORK

ILX Lightwave is a recognized world leader in Laser Diode Instrumentation and Test Systems. Our products are not only renowned for their reliability, quality, and value; they're backed by industry-leading after sales support. For more information about the LDM-4872 Quantum Cascade Laser Mounts, and our complete family of Laser Diode Instrumentation and Test Systems, visit www.newport.com/ilxlightwave.

LDM 4872 Series

Quantum Cascade Laser Mounts

Quantum Cascade Laser **Mounts**

Specifications

CONNECTORS

CW Laser Diode Current DB9, female Case Temperature Control Hybrid D-sub, 7W2, male Vacuum/Nitrogen Purge

2 x 1/8" NPT female, supplied with compression fittings for 1/4" OD tubing

installed

Cooling Water Inlet and Outlet 1/4" barbed fittings

TEMPERATURE CONTROL

Temperature Control Solid State. Thermoelectric Sensor Type Calibrated 10 K Ω thermistor Maximum TEC Current 14.0A

Maximum TEC Voltage 14.0V Maximum Thermal Load 10W

-30°C to 30°C Temperature Range¹ 0.10°C-in2*W-1 Contact Thermal Resistance² Accuracy ±0.5°C Stability3 <0.005°C

CURRENT

Maximum Laser Current 2 0A

GENERAL

Size (L x W x H) 11.4 cm x 10.1 cm x 16.5 cm

4.5" x 4.0" x 5.75" Beam Height 101.6 mm (4.0") 1.7 kg (3.8 lb.) Regulatory Compliance RoHS, CE 10 PSI at 3.5 LMP Water Pressure Drop

LDM-48723X XYZ STAGE

Differential adjustment screw, locking XY Stage

Trave 3 0 mm

Sensitivity 318 µm/rev coarse, 25 µm/rev fine

Z Stage

Travel 5.0 mm Sensitivity 397 µm/rev

LDM-48723X LENS SPECIFICATIONS

Aspheric Lens Diameter 2.5 mm Working Distance 3.05 mm Outer Diameter 6.5 mm Numerical Aperture⁵ 0.56 Effective Focal Length 4.0 mm

Material Molded chalcogenide glass LDM-487230: uncoated Optional AR Coatings

LDM-487231: 1.75 - 3 μm LDM-487232: 2-6 μm LDM-487233: 7-14 μm

LDM-487212 WINDOW ASSEMBLY

Minimum Distance to Front Facet 5.8mm

Window

Dimensions 12,7 mm diameter, 3 mm thickness Zinc Selenide, IR coated Material



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Back View of LDM-4872

LDM-487201 C-MOUNT MOUNTING BLOCK

Laser Package C-Mount

Package Width: 6.35 +/- 1 mm Dimensions Flying Lead Length: 7.75 +/- 1 mm Package Depth: 2.18 mm - 3.16 mm

LDM-487202 ALPES MOUNTING BLOCK

Laser Package Alpes NS and ST Dimensions Package Width: 19 mm

Package Height: 2.5 mm Package Depth: 7 mm

NOTES

1. Minimum temperature at 10W, 10°C cooling water, 2 LPM flow rate

CTR = (Laser case temperature - mount temperature) / laser waste heat
 Stability measured at -25°C with a 5W load under 100 mTorr vacuum using

LDT-5980 temperature controller.

4. Weight with XYZ stage5. Based on calculation of index of refraction in air

ORDERING INFORMATION

QCL Mount, Water-Cooled Base, C-Block LDM-487201

LDM-487202 QCL Mount, Water-Cooled Base, Alpes Package

I DM-487212 Mid-IR Window

LDM-487230 XYZ Stage and 6.5mm diameter, 4.0mm FL Mid-IR Lens,

80% transmission

LDM-487231 XYZ Stage and 6.5mm diameter, 4.0mm FL Mid-IR Lens, AR Coating 1.75-3 µm, 95% transmission

LDM-487232 XYZ Stage and 6.5mm diameter, 4.0mm FL Mid-IR Lens,

AR Coating 2-6 µm, 95% transmission LDM-487233 XYZ Stage and 6.5mm diameter, 4.0mm FL Mid-IR Lens,

AR Coating 7-14 µm, 95% transmission

LDX-3232 High Compliance Current Source LDT-5545B 50W Thermoelectric Temperature Controller LDT-5940C 60W Thermoelectric Temperature Controller LDT-5948 60W Precision Temperature Controller

LDT-5980 120W Thermoelectric Temperature Controller CC-305S Current Source/Laser Diode Mount Interconnect Cable CC-501HT 6A TE Interconnect Cable, 15-Pin to 7W2 CC-596H 10A TEC Interconnect Cable, 25 pin d-sub to 7W2

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

For information call 1-800-459-9459



International Inquiries: 406-556-2481 email: sales@ilxlightwave.com