



Offered by
LASER LAB SOURCE

manufactured by **KVANT
Scientific
Lasers**

405nm, 200mW Output, Integrated NICHIA Laser Diode Source



LDX-405NM-200MW Turn-Key Laser Diode Source

- o Integrated NICHIA NDV4542 Laser Diode
- o Linear Polarization
- o Turn-Key Operation
- o Preconfigured Controller Included
- o Optional Benchtop Controller with Output Current and Temperature Control Capability
- o Optional Fiber-Coupled Output



LDX-405NM-200MW SCIENTIFIC LASER DIODE SOURCE MODULE

These scientific series lasers offer up to 200 mW of output power at a center wavelength of 405 nm. Designed for high stability over long term use, the source laser diode is an ultraviolet TO-can Nichia NDV4542 laser diode integrated into a high performance thermal housing. These units are shipped fully calibrated & pre-tested with the matching current source and temperature controller as well as the required interface cables.

BUILT IN LASER DIODE PROTECTION

These units offer multiple layers of protection for the internal Nichia laser source: an integrated LASORB diode on the current supply board offers a fail-safe clamp of the current / voltage to the integrated laser diode; pre-set current and temperature limits. The LASORB was designed to eliminate the possibility of power surges and ESD damaging the laser.

The bias current range is preset to prevent the possibility of over driving the laser source, and the unit has an over-temperature shut down feature based on feedback from a sensor located against the laser package header.

LASER DIODE CONTROL UNIT

The scientific laser source module includes a precision laser diode current and temperature controller unit. This controller is programmed with preset current and temperature limits to protect the laser diode. A front-panel adjustment knob on the front panel provides control of the laser output power level.

LIST PRICE INCLUDES LASER DIODE CURRENT / TEMPERATURE CONTROLLER UNIT

User adjustable current & laser output power controller with amplitude adjustment knob on front panel



Pre-set current limit & temperature limits keep laser diode in safe operating range; ESD & surge clamps protect laser diode from all power surges



OPTICAL SPECIFICATIONS

- Center Wavelength: 405nm
- Center Wavelength Tolerance: ± 5 nm
- User Adjustable Output Power: 0 - 200mW
- Beam Structure: Single Mode, TEM00
- Power Stability (@ambient ± 2 °C): < 0.5 % (8hrs)
- Beam Diameter (@ $1/e^2$): 4mm (2.7mm on request)
- Beam Divergence (half angle, mrad): 0.2mrad
- Polarization: Linear
- Mode Quality Factor: M^2 : ~ 1.1
- Maximum modulation frequency: 10 kHz
- RMS noise (100 Hz to 10 MHz): <0.3%
- Minimum Operating Temperature: 10°C
- Maximum Operating Temperature: 40°C
- Spectral Linewidth: ~ 0.5 nm

PACKAGING & POWER SUPPLY

- Packaging Dimensions (LxWxH in mm): 92mm x 61mm x 46mm
- Current and Temperature Control Unit: Included in List Price
- Computer Interface: None

OPTIONS AND ACCESSORIES

- Fiber-Coupled Model Number: LDX-405NM-200MW-KVAFC
- Collimating Lens Adapter: Included
- Default Beam Diameter Setting Ex-Collimator: 4mm (other on request)
- Includes front Panel Adapter Plate with FC/UPC Connector
- Optional Benchtopy Laser Diode Controller (\$1,695.00 Model LDC-405)

FIBER COUPLED OUTPUT OPTION - KVAFC The scientific laser module can be ordered with option KVAFC, a precision adapter that enables connection of an output fiber.

The source can be ordered with the KVAFC option, with Low-OH fiber with 50 μm , 105 μm , or 200 μm core diameter. The fiber connector is FC/UPC; other connectors may be available on request.

* Power Loss Associated with Fiber-Coupled Output: Note that when a free-space laser diode is coupled to fiber there is approximately 15% - 20% loss associated with fiber fixturing and the collimating optics. The power loss can be reduced to about 10% by removing the collimating optics mounted in the laser head.

FIBER COUPLED OUTPUT OPTION - MODEL KVAFC

- 1 meter multimode fiber patch cable
- Customer specified 50, 105 or 200 μm core "low OH" fiber pigtail
- FC/UPC connector with detachable collimator
- 4 mm ex-collimator beam diameter (other diameters available on request)



OPTIONAL BENCHTOP CURRENT / TEMPERATURE CONTROLLER

Temperature controller to fine-tune wavelength Current controller to adjust laser diode power



BENCHTOP CONTROLLER LDC-405

The optional LDC-405 Benchtop Controller provides control of the laser drive current in order to adjust the laser output power. The temperature of the integrated laser diode can also be adjusted in order to fine-tune the laser output wavelength.

The benchtop controller hosts a modulation input, allowing the laser output to be modulated up to 10 kHz.

PRODUCT SALES AND SERVICE:

Orders for this product are fulfilled by Laser Lab Source in North America and select international regions. It is manufactured by KVANT.

PRODUCT WARRANTY:

This product is sold with a full one-year warranty. It is warranted to be free from defects in material and/or workmanship for a period of one year from the date of shipment.



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