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**LASER LAB SOURCE**

manufactured by **KVANT  
Scientific  
Lasers**

## 375nm, 70mW Output, Integrated Nichia Laser Diode Source



### **LDX-375NM-70MW Laser Diode Source**

- o Integrated Nichia NDU4116 Laser Diode
- o Single Mode, TEM00
- o Temperature-Regulated Laser Head
- o Turn-Key Operation
- o Preconfigured Controller Included
- o Optional Benchtop Controller with Output and Temperature Control Capability
- o Optional Fiber-Coupled Output



### **LDX-375NM-70MW SCIENTIFIC LASER DIODE SOURCE MODULE**

These scientific series lasers deliver up to 70 mW of output power at a center wavelength of 375 nm. Designed for high stability over long term use, the source is a Nichia NDU4116 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.

### **CAREFUL DESIGN AND FEATURES PROTECT NICHIA LASER DIODE SOURCE**

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 preset drive current range prevents the possibility of over-driving the laser diode, and the controller has an over-temperature shut down feature based on feedback from a sensor located against the laser package.

### **INCLUDED 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: 375 nm ( $\pm 5$  nm)
- User Adjustable Optical Output Power: 0 to 70 mW
- Spatial Mode: Single Mode, TEM<sub>00</sub>
- Power Stability (@ ambient  $\pm 2^{\circ}\text{C}$ ):  $< 0.5\%$  (8 hrs)
- Beam Diameter (@  $1/e^2$ ): 4 mm
- Beam Divergence (half angle, mrad): 0.2 mrad
- Polarization: Linear
- $M^2$ :  $\sim 1$
- Maximum Modulation Frequency (analog): 10 kHz
- RMS Noise (100 Hz to 10 MHz):  $< 0.3\%$
- Ambient Operating Temperature Range Minimum:  $10^{\circ}\text{C}$

### PACKAGING & POWER SUPPLY

- Packaging Dimensions (L x W x H ): 87 mm x 60 mm x 45 mm
- Includes Pre-Configured OEM Current and Temperature Control Unit and AC/DC Converter Power Supply
- Optional Bench-top Controller with Full Front Panel Display Available (request pricing)
- Computer Interface: None

### FIBER-COUPLED OUTPUT OPTION

- Fiber-Coupled Model: LDX-375NM-70MW-KVAFC
- Fiber Connector: FC/UPC (others on request)
- Default Beam Diameter Setting Ex-Collimator: 4mm (other on request)
- Includes front Panel Adapter Plate with FC/PC Connector



### 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  $\mu\text{m}$ , 105  $\mu\text{m}$ , or 200  $\mu\text{m}$  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  $\mu\text{m}$  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



Key switch power supply ON/OFF

Laser diode ON/OFF

### 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.



Laser Lab Source, a division of Research Lab Source Inc.  
670 S. Ferguson St., Suite 3  
Bozeman, MT 59718 USA

Phone: 406-219-1472

[www.LaserLabSource.com](http://www.LaserLabSource.com)

