



# Benchtop Laser Diode Source System

## 940nm, 10 Watt Fiber-Coupled Output



### 940nm Fiber-Coupled Laser Diode Benchtop Turn-Key Source System

- o Includes Fiber-Coupled 940nm Laser Diode
- o Fully Adjustable Operating Parameters
- o CW Mode and Integrated Quasi-CW Pulse Generator; Wide Ranging Pulse Widths
- o User-Programmable Soft-Start Current Ramp to Laser Diode Current Setpoint
- o Comprehensive Safety Features to Protect the Laser Diode, Controller, and Operator
- o Also Available at 915nm and 975nm



**LASER  
DIODE  
SOURCES**



## LDX-940nm-10W Benchtop Laser Diode Source System

The LDX-940nm-10W fiber-coupled laser diode source is a preconfigured, plug-and-play benchtop light-source solution. The system includes the laser diode driver, the Peltier-based mount controller, the mount, interconnect cables, and the laser diode. The system is configured before shipping, with safety limits pre-set, to provide plug-and-play operation upon delivery.

### Modulation, Internal Function Generator, and QCW Pulse Modes

The source system operates in CW (continuous wave) mode, and also provides flexible modulation capabilities and a QCW mode. The controller has an internal function generator which can be used to drive quasi-CW pulses in continuous, single, and burst-mode. There is an input for analog or TTL digital modulation. In QCW mode, the user can also set pulses to trigger from a remote TTL signal source. The modulation bandwidth and pulse widths are based on the laser driver capabilities, defined in the specifications table.



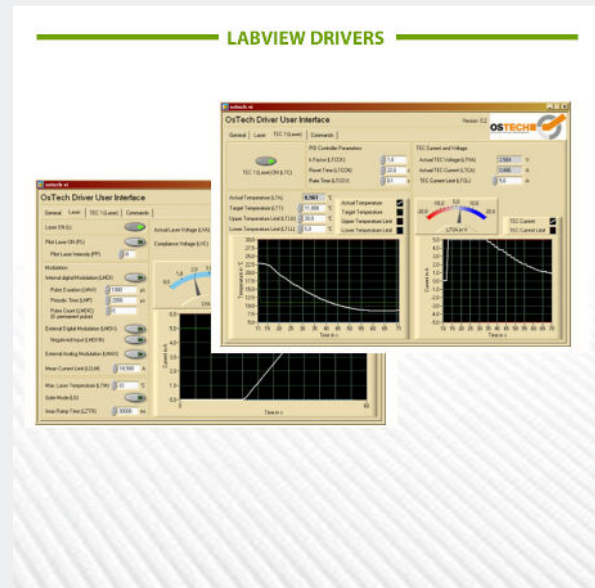


## Discrete System Components Deliver Application Flexibility

This benchtop source system delivers a compact and flexible solution for laboratory and R&D applications. The system is easily operated by the intuitive front-panel and keypad, and can be controlled remotely via RS232 or by the optional USB interface. The open mount and fully accessible laser diode provides added flexibility, and even allows for changing the source laser as application requirements change.

## Comprehensive Laser Diode Protection Features

These control systems provide a high degree of laser diode protection to ensure the laser is protected. Soft-start current, pre-programmed and adjustable current and temperature limits, and a fast and safe shut-down sequence keep the laser and the system protected at all times. Additionally, transient filters and AC line filters protect against damage from brown-out or black-out power conditions.





## LDX-940nm-10W Benchtop Laser Diode Source Specifications

### LUMENTUM L4 PACKAGED LASER DIODE SPECIFICATIONS

- Optical Output Power: 10 Watts
- Typical Mean Wavelength at 25 °C: 939 nm
- Spectral Width (FWHM): 3 nm
- Wavelength tuning vs. temperature ( $\Delta\lambda / \Delta T$ ): 0.35 nm / °C
- Wavelength tuning vs. output power ( $\Delta\lambda / \Delta P$ ): 1.0 nm / Watt
- Lumentum Laser Diode Model: L4-9894010-100M



### FIBER SPECIFICATIONS

- Fiber Core Diameter: 105  $\mu\text{m}$
- Numerical Aperture 0.22 NA
- Fiber Cladding: 125  $\mu\text{m}$
- Fiber Buffer: 250  $\mu\text{m}$
- Fiber Length: 1 meter
- Fiber Optic Connector: SMA905

### CONTROLLER - INTEGRATED LASER DIODE PROTECTION FEATURES

- User Programmable Soft-Start Current Ramp to Setpoint
- Soft-Start Current Ramp Default Set to 300 Milliseconds
- Current Limit Temperature Limits (Upper and Lower)
- Temperature Limits (Upper and Lower)
- Open Circuit Detection
- Short Circuit when Laser Diode Current Turned OFF
- ESD and Power Surge Clamp
- Reverse Voltage Transient Clamp
- Factory Pre-Set Default Upper Temperature Limit: 35°C
- AC Line Filter
- Rear Panel Keylock Switch and Interlock

### ORDERING INFORMATION - PART NUMBERS

- LDX-940NM-10W (940nm Center Wavelength)
- LDX-915NM-10W (915nm Center Wavelength)
- LDX-975NM-10W (975nm Center Wavelength)





## **LDX-940nm-10W Benchtop Laser Diode Source Specifications**

### **CONTROLLER - MODULATION & QCW PULSE MODE**

- Internal Pulse Generator QCW Pulse Width Rise Time: 20  $\mu$ sec to CW
- Pulse Time Base Accuracy:  $\pm$  1.0%
- QCW Mode 1: User Adjustable Pulse Width and Repetition Rate using Internal Pulse Generator
- QCW Mode 2: External Trigger to Internal Pulse Generator: Rising Edge Triggered QCW Pulse with Internally Adjusted Pulse Width
- QCW Pulse with Internally Adjusted Pulse Width
- Modulation Input (BNC): Digital (TTL) or Analog
- Modulation BNC Input Impedance: 10K ohm
- -----
- Modulation Input Voltage Range: 0 ~ 4 Volts (4V = Max Current)
- Analog Modulation Bandwidth: 1 Hz – 20 kHz

### **PELTIER COOLED MOUNTING PLATE, HEAT SINK & CABLES**

- Cooling Method: TEC / Peltier Cooled Mounting Plate
- Heat Sink Thermal Load Maximum: 38 Watts (@25°C)
- Fan Rated Input Voltage 24 VDC (supplied by controller)
- Mounting Plate Material: Anodized Aluminum
- Mounting Plate Area: 105 mm x 75mm
- Mounting Plate Hole Footprint: L4-9894010-100M
- System Includes 1 x 1.5 meter Current Interface Cable (50A rated)
- System Includes 1 x 1.5 meter TEC Control Interface Cable (20A rated)

### **USER INTERFACE**

- Front Panel LCD, Full Alphanumeric Display with Key Pad
- RS232 Standard, LabView Drivers Included
- USB Optional; Inquire
- GUI Control Software Included

### **CONTROLLER - POWER REQUIREMENT, WEIGHT AND DIMENSIONS**

- Power Input: Universal 98 ~ 230 VAC, 50/60 Hz
- Controller Weight (total): ~ 5 kg
- Controller Dimensions: 200mm x 105mm x 85mm



## Product Sales and Service

Orders for this product are fulfilled by LaserDiodeControl.com, part of the Laser Lab Source group. It is manufactured for Laser Lab Source by OsTech, GmbH.

## 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  
670 S. Ferguson St., Suite 3  
Bozeman, MT 59718 USA  
800-887-5065  
LaserLabSource.com

Ostech, GmbH  
Plauener Str. 163-165 • Haus i • 13053  
Berlin