



# Benchtop Laser Diode Source System

## 1940nm, 10 Watt Multi-Emitter Laser Diode



### 1940nm Multi-Emitter Laser Diode Benchtop Turn-Key Source System

- o Includes Fiber-Coupled 1940nm 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



**LASER  
DIODE  
SOURCES**

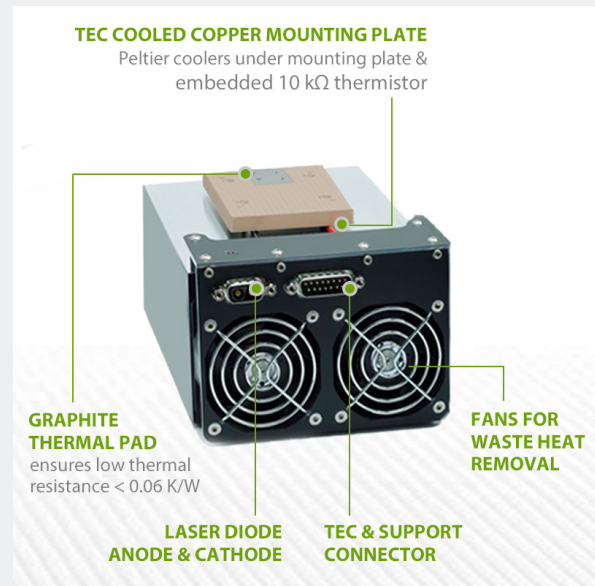


## LDX-1940nm-10W Benchtop Laser Diode Source System

The LDX-1940nm-10W Benchtop 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 19-emitter laser diode bar. The system is configured before delivery, 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 Provide 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.

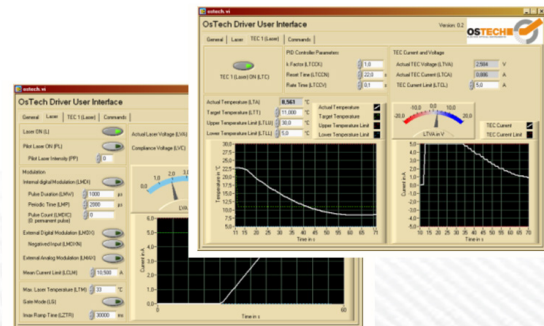
**COMPLETE LASER DIODE PROTECTION**  
programmable soft-start current ramp  
I & T limits, ESD & power surge clamps

**CW & QCW MODES**  
qcw pulses 25µs - CW



**INTUITIVE FRONT PANEL CONTROLS**  
set/monitor functions from RS232, USB or main menu

### LABVIEW DRIVERS





## LDX-1940nm-10W Benchtop Laser Diode Source Specifications

### LASER DIODE SPECIFICATIONS (TYPICAL @ 25°C)

- Maximum Optical Output Power: 10 Watts
- Center Wavelength: 1940 nm ( $\pm 20$  nm)
- Spectral Width (FWHM): 15 nm
- Emitter Width: 100 ( $\mu\text{m}$ )
- Fill Factor: 20%
- Fast-Axis Divergence (90%):  $\sim 44$  degrees
- Wavelength Temp. Coefficient:  $1.20 \text{ nm}/^\circ\text{C}$
- Number of Emitters: 19
- Slope Efficiency:  $> 0.28 \text{ W/A}$
- Standard Product: Unlensed (request price for fast axis lens option)
- COHERENT/DILAS Laser Diode Model Number: M3-1940



### CONTROL UNIT - LASER DIODE PROTECTION FEATURES

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

### MOUNTING PLATE, HEAT SINK & CABLES

- Cooling Method: TEC-Peltier Coolers, Dual Fans for Waste Heat Removal
- Heat Sink Thermal Load Maximum: 100 Watts (@ 25°C)
- Heat Sink Fan Rated Input Voltage 24 VDC (supplied by controller)
- Laser Mounting Plate Area: 105 mm x 75 mm
- Laser Mounting Plate Hole Footprint: Coherent/Dilas M3-1940
- Includes Thermal Pad / Phase Change Material Cut to Laser Diode Footprint



## LDX-1940nm-10W Benchtop Laser Diode Source Specifications

### USER INTERFACE

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

### CONTROL UNIT - QCW AND MODULATION SPECIFICATIONS

- QCW Pulse Width: 25  $\mu$ s 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
- Modulation Input (BNC): Digital (TTL) or Analog Modulation
- Modulation BNC Input Impedance: 10K ohm
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- Modulation Input Voltage Range: 0 ~ 4 Volts (4V = Max Current)
- Analog Modulation Bandwidth: 1 Hz – 20 kHz

### POWER SUPPLY, WEIGHT AND DIMENSIONS

- Power Input: Universal 100 ~ 230 VAC, 50/60 Hz
- System Weight (total): ~ 10 kg
- Controller Dimensions: 275mm x 200mm x 127mm





## 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