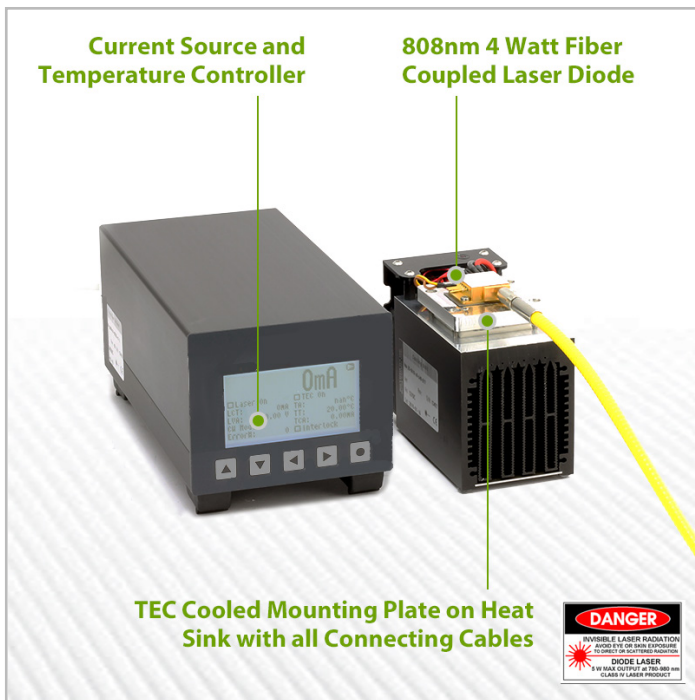




# Benchtop Laser Diode Source System

## 808nm, 4 Watt Fiber-Coupled Output



### 808nm Fiber-Coupled Laser Diode Discrete Turn-Key Source System

- o Fully Adjustable Operating Parameters
- o Includes Fiber-Coupled 808nm Laser Diode
- o CW Mode and Integrated Quasi-CW Pulse Generator; Pulse Widths from 20 $\mu$ s to CW
- o User-Programmable Soft-Start Current Ramp to Laser Diode Current Setpoint
- o Comprehensive Safety Features to Protect the Laser Diode and Controller



**LASER  
DIODE  
SOURCES**

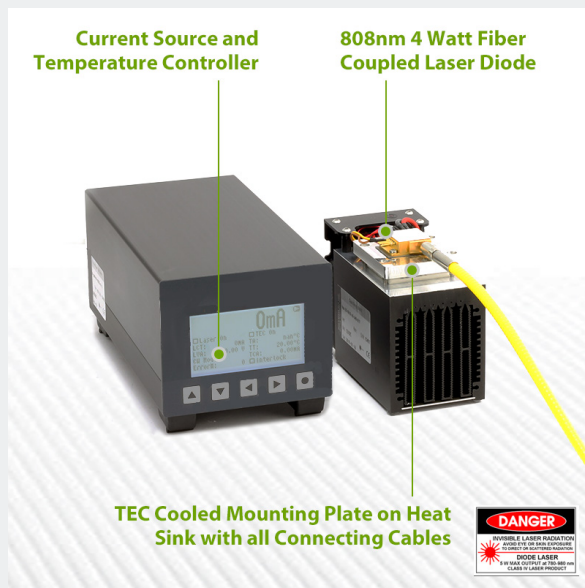


## LDX-808nm-4W Laser Diode Source System

The LDX-808nm-4W fiber-coupled laser diode source is a preconfigured, plug-and-play 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 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. On the backpanel is a BNC input for an 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 source system is comprised of discrete components, delivering a compact and flexible solution for laboratory and R&D applications. The front-panel keypad control can be used to access all the operating parameters of the laser diode and temperature-controlled mount, and the system can be controlled remotely via RS232 (or 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.

## Extensive Laser Diode Protection Features

These control systems provide a high degree of laser diode protection to ensure that your laser is protected at all times. 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.

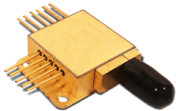
The back-panel safety interlock connector and safety key-switch ensure that the laser diode current is not switched on until the user has determined it is safe to do so.

### INTEGRATED LASER DIODE

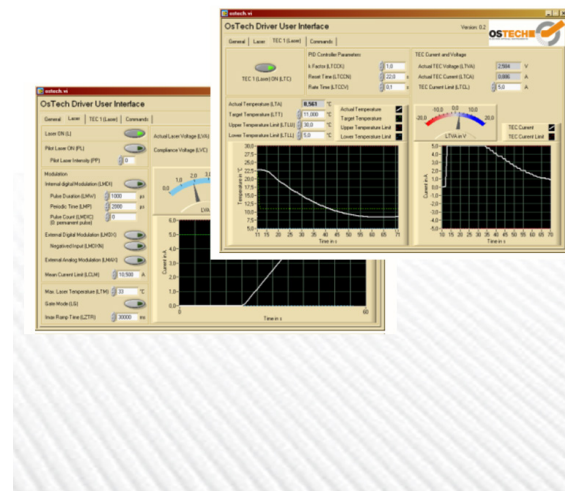
Standard Product Includes 11 Pin, Fiber Coupled Laser Diode with Detachable Fiber, SMA905 Connector

*Available with other Laser Diode Sources on Request*

Laser Diode Pin Configuration			
1	Laser (+)	7	Thermistor
2	Laser (-)	8	Thermistor
3	PD (N)	9	Fiber detector PD (P)
4	PD (P)	10	Fiber detector LED (-)
5	Aiming beam (-)	11	Fiber detector LED (+)
6	Aiming beam (+)		Fiber detector PD (N)



### LABVIEW DRIVERS





## **LDX-808nm-4W High Power Laser Diode Source Specifications**

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

- Output Power, CW (minimum): 4 Watts
- Center Wavelength: 808 nm ( $\pm 10$  nm)
- Spectral width, FWHM:  $< 5$  nm
- Wavelength Tuning with Temperature  $\Delta\lambda/\Delta T$  (typical): 0.3 nm/°C
- Internal Red Pilot Laser: 650 nm ( $\pm 10$  nm)
- Estimated Life Time (MTTF): 10,000 hours

### **LASER DIODE FIBER OUTPUT SPECIFICATIONS**

- Core Diameter: 200  $\mu\text{m}$  (62.5  $\mu\text{m}$  or 105  $\mu\text{m}$  on request)
- NA: 0.22
- Fiber Connector: SMA905

### **CONTROL UNIT LASER DIODE PROTECTION FEATURES**

- Adjustable Pre-Set Maximum Current Limit
- Adjustable Pre-Set 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

### **PELTIER COOLED MOUNT AND CABLE FEATURES**

- Laser Mounting Area (total): 105mm x 75mm
- Laser Mounting Plate Footprint: Machined for Included Laser Diode
- Includes 1.5 meter Current Interface Cable (20 Amp rated)
- Includes 1.5 meter TEC Controller Interface Cable
- Waste Heat Removed by Fan Embedded in Heat Sink Block
- Heat Sink Fan Driven by Temperature Controller Unit



## LDX-808nm-4W High Power 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 MODULATION AND SLOW PULSE (QCW) SPECIFICATIONS

- Modulation Bandwidth: DC ~ 25 kHz
- Modulation Signal: Accepts External Digital (TTL) or Analog
- Modulation Input Connector: BNC, Input Impedance 10 k $\Omega$
- QCW Pulse Rise and Fall Time: < 20  $\mu$ s to CW (< 10  $\mu$ s on request)
- QCW Trigger: Internal Function Generator or External Trigger
- QCW Pulse Time Base Accuracy:  $\pm$  1.0%
- -----
- Modulation Input Voltage Range: 0 ~ 4 Volts (4V = Max Current)
- Analog Modulation Bandwidth: 1 Hz – 20 kHz

### CONTROL UNIT DIMENSIONS AND POWER REQUIREMENT

- Power Input: Universal 100 ~ 230 VAC, 50/60 Hz
- Control Unit 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.



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