



976nm Pre-Configured Fiber-Coupled Laser Diode Source 140W, Grating Stabilized Pump Laser



976LD-7-4-1 / LASER-DIODE

- o Center Wavelength 976nm ± 0.5 nm
- o 140 Watt Output Power
- o Spectral Width 1 nm (typical)
- o Volume Bragg Grating Stabilized
- o Open-Frame Controller, Replaceable Laser
- o 105 μ m Core Fiber-Coupled, NA 0.22, SMA905 Terminated
- o USB-Connected Operation



LASER
DIODE
SOURCES



976LD-7-4-1 / LASER-DIODE / CCM SPECIFICATIONS

Integrated Laser Diode Specifications

Center wavelength: 976 nm (± 0.5 nm)
Spectral width (FWHM) (typical): 1 nm
CW Output Power (min): 140 Watts
Slope Efficiency (typical): 11 W/A
Wavelength Shift with Temperature (typical): 0.02nm/C

Laser Diode Module Mechanical & Fiber Specifications

Buffer diameter: 250 μ m
Cladding diameter: 125 μ m
Core diameter: 105 μ m
Numeric aperture: 0.22
Fiber length: 1 meters
Fiber Termination: SMA905

Laser Diode Current & Temperature Controller

Adjustable Current : 0.00 - 13.00 Amps
Compliance Voltage Range: up to 23 Volts
Current Stability < 0.05% full scale
Modulation Bandwidth: 500kHz
Laser Temperature Control Range (typ): 15 - 40 °C
Temperature Control Stability (typ): < 0.05 °C
Modulation Rise / Fall Time: < 10 μ s
Modulation Trigger: Internal or External
Photodiode Power Monitor: Included
Control Modes: ACC (Automatic Current Control) and APC (Automatic Power Control)

System User Interface and Power Requirements

Power Supply Input: 24 V (220/110V power supply not included)
USB/UART Interface with GUI ~ DLLs / Hexa / Labview / Python
Recommended Power Supply: EA-PS 2042-20B (from Newark)

Control Unit Dimensions

238mm x 119mm x 112mm

CW LASER SOURCE SYSTEM

This 140 Watt, 976nm, CW source system is built around a highly reliable fiber-coupled laser diode featuring a volume Bragg grating for exceptional wavelength stability and narrow line width. The system is preconfigured and pretested, and is delivered ready-to-run.

The CCM laser source system features open-case construction: the laser, heat-sink, and controller electronics are contained in an open case to provide access to the laser diode as application requirements evolve.. The source system is easily operated using the included GUI over USB interface, and multiple systems can be operated by the same computer.

**INTEGRATED
HIGH POWER
LASER DIODE**



Laser diode installed on TEC cooled mounting plate



PRE-CONFIGURED
control electronics
and mount system

EASY TO OPERATE
through USB with GUI
or control software



DIODE LASER-BASED SOURCE

The CW laser source system is based on a robust and reliable 976nm laser diode. The laser is designed to provide stable and worry-free output for long operating life times.

The Volume Bragg Grating (VBG) delivers narrow spectral line width, and provides stability against wavelength drift due to temperature or changing drive current levels. Due to the physics of Bragg gratings, narrow spectral line width is delivered over a portion of the output current / output power range; refer to the specifications for details.

976LD-7-0-0 / LASER-DIODE SPECIFICATIONS

Optical and Electrical Specifications	Wavelength: 976 nm (± 1 nm) Emission Bandwidth: 1.0 nm CW Output Power: 140 W Wavelength Shift w Temperature: 0.02 nm/ $^{\circ}$ C Wavelength Current w Temperature: 0.03 nm/A Slope Efficiency: 11 W / A Feedback Isolation: 30 dB from 1020 - 1200 nm
Electrical Specifications	Threshold Current: 0.9 A Typical Drive Current: 13 A * Typical Forward Voltage: 22.5 V * For operating currents above 6 Amps, the electrical connections must be soldered. Narrow Wavelength Current Range: 11 - 14 A
Fiber Specifications	Multimode 106 μ m NA=0.22 ** Fiber Termination: SMA-905 Connector *** Fiber Bend Radius: 60 mm (min) Fiber Clad Diameter: 125 μ m Fiber Buffer/Tube Diameter: 250 / 900 μ m ** Light NA within the fiber is typically much lower - contact us for lower NA fiber version (for example 130W-NA=0.15) *** Fiber connector for handling and space- or collimator-coupling: not for SMA-SMA fiber-to-fiber connection
Package Specifications	Package Dimensions: 80 mm x 80 mm x 25 mm Mounting Holes: \varnothing 3.3 mm / 74.4 mm x 38 mm Storage Temperature Range: -40 $^{\circ}$ C to 70 $^{\circ}$ C Operating Case temperature: 20 $^{\circ}$ C to 30 $^{\circ}$ C Soldering Temperature: 260 $^{\circ}$ C (max) Soldering Time: 10 Seconds (max)



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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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