



976nm Pre-Configured Fiber-Coupled Laser Diode Source 60W, Grating Stabilized Pump Laser



976LD-5-4-1 / LASER-DIODE

- o Center Wavelength 976nm \pm 0.5nm
- o 60 Watt Output Power
- o Spectral Width 0.5 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-5-4-1 / LASER-DIODE / CCM SPECIFICATIONS

Integrated Laser Diode Specifications	Center wavelength: 976 nm (± 0.5 nm) Spectral width (FWHM) (typical): 0.5 nm CW Output Power (min): 60 Watts Slope Efficiency (typical): 5.5 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 $^{\circ}$ C Temperature Control Stability (typ): < 0.05 $^{\circ}$ 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 60 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-5-0-0 / LASER-DIODE SPECIFICATIONS

Optical and Electrical Specifications	Wavelength: 976 nm (\pm 0.5 nm) CW Output Power: up to 60 Watts Emission Bandwidth: \sim 0.7 nm Wavelength Shift w Temperature: 0.02 nm / °C Wavelength shift w/ Current: 0.03 nm/A Feedback Isolation: > 30 dB (1020 nm to 1200 nm)
Electrical Specifications	Threshold Current: 0.9 Amps Forward Bias Drive Current: < 13 Amps * Forward Voltage: 12 Volts Slope Efficiency: 5.5 W/ A * For operating currents above 6 Amps, the electrical connections must be soldered. Narrow Spectral Emission range: 7 - 13 A Includes Integrated Thermistor
Fiber Specifications	Multimode 105 μ m Core Fiber, NA=0.22 Fiber Clad/Buffer/Tube Diameter: 125/250/900 μ m Fiber Termination: SMA905 ** Fiber Bend Radius: 50 mm (min) ** Fiber connector for handling and space- or collimator-coupling: not for SMA-SMA fiber-to-fiber connection
Package Specifications	Dimensions: 80 mm x 48 mm x 16 mm Operating Case Temperature Range: 20°C to 30°C Storage Temperature Range: -40°C to 70°C Soldering Temperature: 260 °C (max) Soldering Time: 10 Seconds (max)



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