

DATASHEET**Diode Lasers****FIBER-COUPLED TAILORED MINI-BARS**

Through the optimization of semiconductor chip structures and optical parameters, Coherent T-Bar architecture delivers high beam quality and high power using standard micro-optics, all assembled with automated processes. The tailored bar-based products are available at 6xx nm, 793 nm, and 9xx nm, with power levels from 40 W up to 2 kW.

**OPTIONAL ACCESSORIES**

- Integrated pointer laser and power meter
- Integrated NTC temperature sensor
- Fiber plug control
- Wavelength stabilization

FEATURES

- Conduction-cooled diode laser bars inside
- Single wavelength
- High coupling efficiency
- Scalable output power
- Industrial water cooling

**Coherent, Inc.**

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Parameter	MDL976FCTBAR500IS43.10Pigtail202VBG
Package	Fiber-Coupled Tailored Mini-Bars
OPTICAL PARAMETERS ¹	
Center Wavelength Range ³ (nm)	976
Center Wavelength Tolerance ³ (nm)	±0.6
Output Power ² (W)	500
Operating Condition	CW
Spectral Width (90% power content) (nm)	≤0.7
Slope Efficiency (W/A)	≥14
FIBER PARAMETERS	
Fiber Connector	Fixed Fiber
Fiber Core Diameter (μm)	202 ±2
Fiber Cladding Diameter (μm)	242 ±2 (Modestrip)
Fiber Coating Diameter (μm)	400 ± 25
Fiber Loose Tubing Diameter (mm)	3
Numerical Aperture (NA)	0.215 ±0.005
Fiber Length (m)	≥2
Fiber Termination	Pigtail
ELECTRICAL PARAMETERS ¹	
Power Conversion Efficiency (%)	≥42
Threshold Current (I _{TH}) (A)	≤4
Operating Current (I _{OP}) (A)	≤45
Operating Voltage (V _{OP}) (V)	≤30
THERMAL PARAMETERS	
Operating Temperature Range ^{2,3,4} (°C)	+20 to +25
Coolant Flow Rate ⁵ (l/h)	≥300
Purity	Tap Water
MECHANICAL PARAMETERS	
Size (mm ³) [W x D x H]	See Drawing
Weight (Without Water Manifold) (kg)	~ 4.4
Part Number	100406411

Notes:

1. Data at 25°C cooling water temperature.

2. Reduced lifetime if used above nominal operating conditions.

3. Others available upon request.

4. A non-condensing environment is required for storage and operation below the ambient dew point.

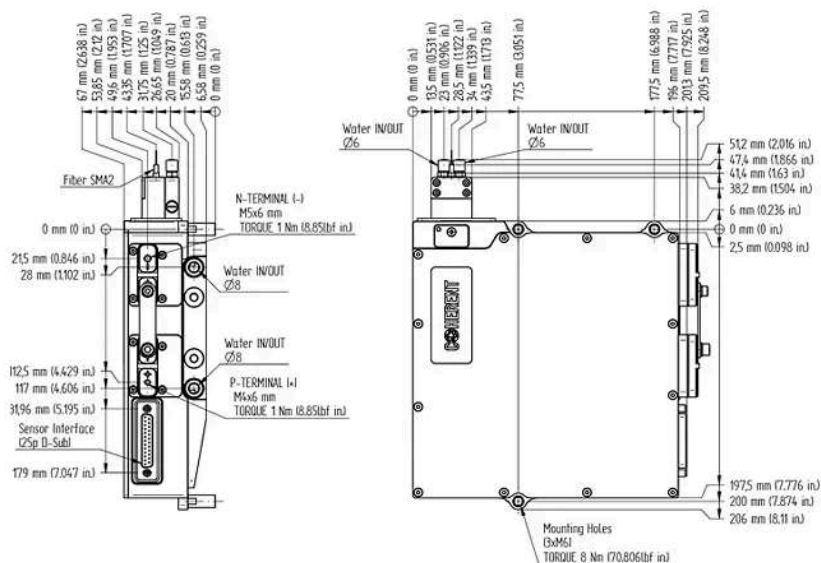
5. It is essential for the module to work correctly that the cooling water temperature and flow rate are monitored as an interlock for interrupting the laser when necessary if a value exceeds or falls below the given parameter.



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