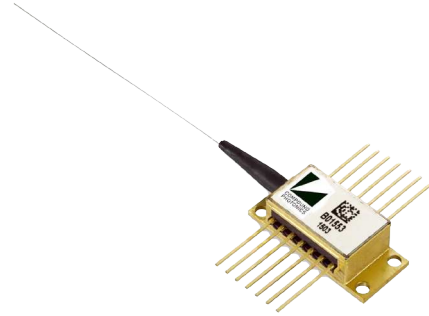


976 nm 14-Pin Cooled Laser

Compound Photonics' GR-468-CORE-qualified 976 nm high-power multi-mode diode lasers are ideal for highly reliable cladding-pumped EDFAs and CATV amplifiers. The hermetically-sealed, epoxy-free 14-pin package with integrated thermoelectric cooler allows ease of use through user-controlled temperature tuning.



Key Characteristics

- Qualified to GR-468-CORE standards
- Hermetically-sealed package with thermoelectric cooler
- Integrated monitor photodiode
- Up to 4 watts output power

Device Parameters*

Electro-Optical	Symbol	AM4-976D-10-253			AM4-976D-10-403			Units
		Min	Typ	Max	Min	Typ	Max	
Center wavelength	λ_c	976 ± 3			976 ± 3			nm
Output power	P_o	2.5			4.0			W
Operating current	I_o	3.5	3.8		5.4			A
Forward voltage	V_f	1.5	1.6		1.6			V
Threshold current	I_{th}	0.35			0.35			A
Spectral width, FWHM	$\Delta\lambda$	2.2			2.2			nm

Monitor Photodiode

Detector responsivity	dI_{pd}/dP_o	125	625	1400	125	625	1400	$\mu A/W$
Detector reverse bias	V_r	0		5	0		5	V
Detector dark current	I_{dc}		0.1	50		0.1	50	nA

Thermo-Electric Cooler

Thermistor value at 25°C	R_{th}	9.5	10	10.5	9.5	10	10.5	k Ω
Thermistor constant, 0 - 50°C	β	3892			3892			K
Spectral shift with submount temperature		0.35			0.35			nm/°C
TEC drive current, $\Delta T = 45^\circ C$	I_{TEC}		2.7	3.5				A
TEC drive voltage, $\Delta T = 45^\circ C$	V_{TEC}		3.0	3.3				V
Heating/cooling capacity	ΔT	-65		45	-65		45	°C

Mechanical

Case operating temperature		-40		70	-40		70	°C
Case storage temperature		-40		85	-40		85	°C
Fiber core diameter			105			105		μm
Fiber numerical aperture	NA		0.15			0.15		
Fiber length			1.5			1.5		m
Fiber pull strength			1.0			1.0		kg-f

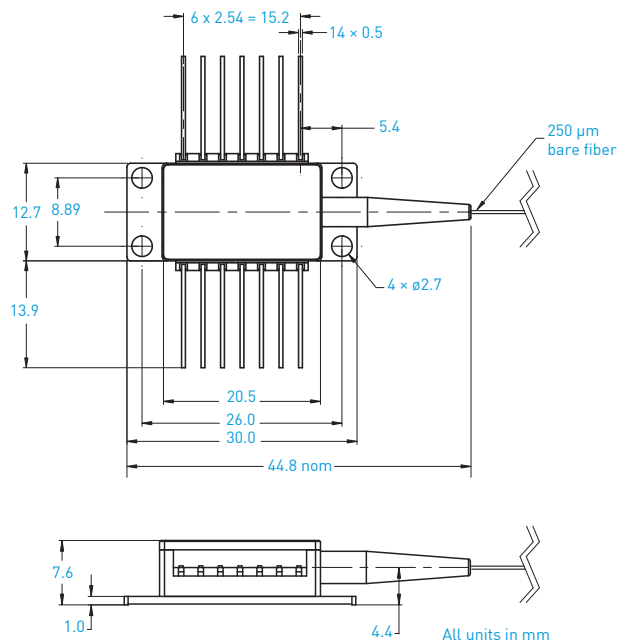
*All conditions at 25°C case temperature and nominal output power unless otherwise noted.

Absolute Maximum Ratings*	Min	Max	Units
Soldering temperature **		260	°C
Soldering duration**		10	s
Mounting torque		10	in-oz
Long term fiber bend radius	25		mm
LD reverse current		10	mA
LD current transient max		t = 100 ns 1000 mA	
LD ESD damage C=100 pF, R=1.5 kW		HBM > 1000 V	
MPD ESD damage C=100 pF, R=1.5 kW		HBM 500 V	
Detector reverse voltage		15	V
Detector forward current		100	mA
Thermistor voltage		5	V
Thermistor current		2	mA
Thermoelectric cooler current		4	A
Thermoelectric cooler voltage		4.5	V

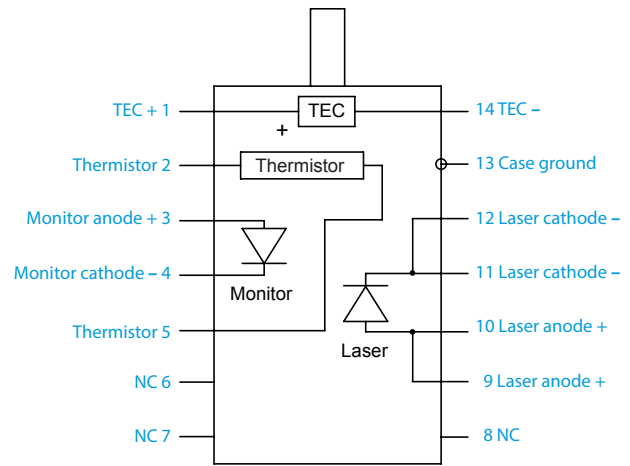
* These are safe short-term exposure limits, non-operating. Prolonged exposure to conditions at the absolute maximum ratings will have a deleterious effect on reliability and could shorten diode lifetime.

** No point on the package (other than the leads) should exceed the maximum case storage temperature during soldering.

Package Dimensions



Package Pinout



Note: Pin pairs 9 & 10 and 11 & 12 must be connected for lowest operating voltage and power dissipation.

For more information, ordering, and support.

www.compoundphotonics.com