


# 976nm Laser Module Stabilized with Narrow-Bandwidth Grating

LC95A76ULR-20R



The Oclaro LC95A76ULR-20R single-mode laser module with narrow-bandwidth grating has been designed to provide the stringent noise and bandwidth performance required for second harmonic generation and frequency mixing applications. The laser with narrow-band grating allows high output powers that are very stable with both time and temperature while providing enhanced wavelength and power stability performance. The narrow-bandwidth grating is located in the polarization maintaining fiber pigtail.

## Features:

- >250mW output power
- Polarization maintaining single-mode optical fiber
- Internal thermoelectric heatpump and monitor photodiode
- Hermetically sealed 14-pin butterfly package
- Spectral width smaller than 100pm
- RoHS compliant 

## Applications

- Blue light second-harmonic generation
- Frequency mixing

**Characteristics**

Conditions unless otherwise stated:

Case temperature -20 to +75°C  
 Submount temperature 25°C  
 Monitor diode bias -5 V  
 CW operation

Parameter	Min	Typ	Max	Unit
Threshold Current		35	50	mA
Operating Drive Current			700	mA
Operating Power	250	300		mW
Forward Voltage		1.9	2.5	V
Peak Wavelength	975.5	976.0	976.5	nm
Spectral Width (FWHM)		35	100	pm
Temperature Dependence of Peak Wavelength		7	20	pm/K
Monitor Detector Responsivity	0.3			μA/mW
Monitor Dark Current			100	nA
Thermistor Resistance (at 25°C)	9.5	10	10.5	kΩ
Intended Laser Submount Operating Temperature	24	25	26	°C
Power Stability (RMS, 100-250mW, 25°C, 20Hz-2MHz)			0.25	%
Heatpump Current ( $\Delta T = 50^\circ\text{C}$ , $I_f = 700\text{mA}$ )			1.85	A
Heatpump Voltage ( $\Delta T = 50^\circ\text{C}$ , $I_f = 700\text{mA}$ )			3	V
Polarization Extinction Ratio	13	17		dB

**Absolute Maximum Ratings**

Parameter	Min	Max	Unit
Operating Temperature	-20	75	°C
Storage Temperature	-40	80	°C
Laser Forward Current		800	mA
Laser Reverse Voltage		2	V
Heatpump Current		2.5	A
Heatpump Voltage		3	V
Lead Soldering Temperature (10s max)		350	°C
Fiber Bend Radius	30		mm

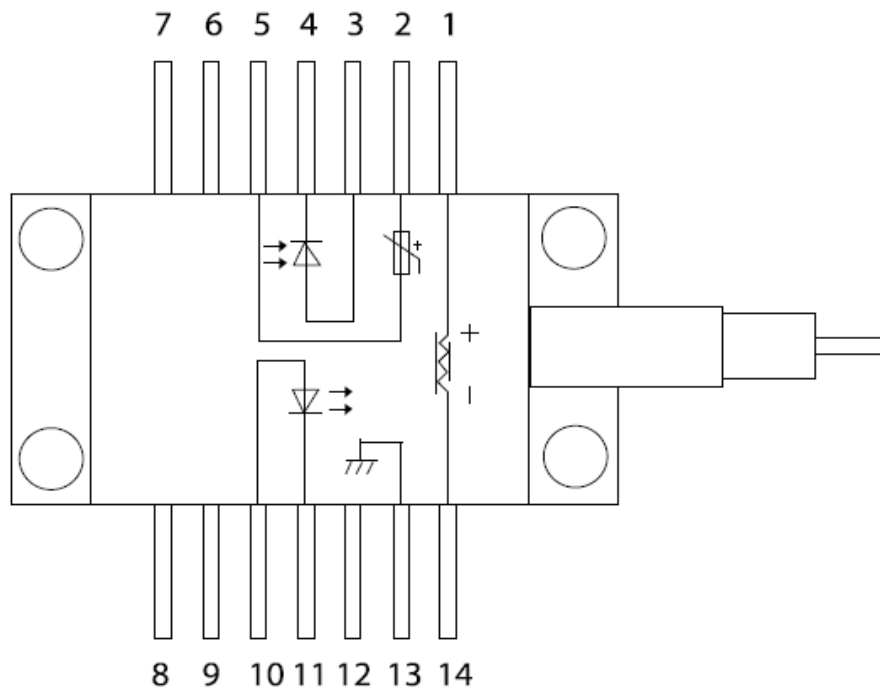
**Fiber Specification**

Nufern PM980-HP or equivalent 250µm primary coated fiber

Parameter	Min	Typ	Max	Unit
Fiber type: Polarization maintaining Nufern PM980-HP or equivalent (e.g. Fujikura SM98)				
Mode field diameter	5.6	6.6	7.6	um
Buffer diameter	230	245	260	um
Module to FBG length (frontside case to FBG center)	1.4	1.5	1.6	m
Pigtail length after FBG	0.7			m
Pristine fiber proof test level	200			psi

Connections

Pin #	Description	Pin#	Description
1	Peltier cooler (+)	8	Not connected
2	Thermistor	9	Not connected
3	Monitor anode (-)	10	Laser anode (+)
4	Monitor cathode (+)	11	Laser cathode (-)
5	Thermistor	12	Not connected
6	Not connected	13	Case ground
7	Not connected	14	Peltier cooler (-)



RoHS Compliance



Oclaro is fully committed to environment protection and sustainable development and has set in place a comprehensive program for removing polluting and hazardous substances from all of its products. The relevant evidence of RoHS compliance is held as part of our controlled documentation for each of our compliant products. RoHS compliance parts are available to order, please refer to the ordering information section for further details.

Ordering Information

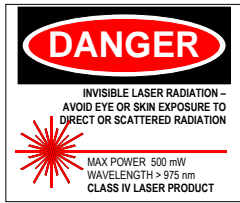
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Contact Information

[www.oclaro.com](http://www.oclaro.com)

Important Notice

Performance figures, data and any illustrative material provided in this data sheet are typical and must be specifically confirmed in writing by Oclaro before they become applicable to any particular order or contract. In accordance with the Oclaro policy of continuous improvement specifications may change without notice. Further details are available from any Oclaro sales representative.



Caution - use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

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