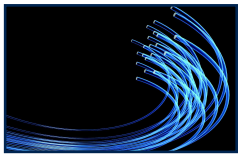
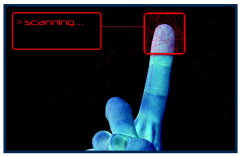
Lumics Member of scansonic Group





LU0980_1470D
Medical Diode Laser
Dual wavelength @ 980nm & 1470nm

Description:
The Lumics Medical Diode Laser series offers OEM integrators an excellent product to manufacture state-of-the-art end user laser systems. The easy integration and safe use of these medical laser components give the chance to be cost-efficient in development and manufacturing. Equipped with several accessories and features the Lumics diode lasers comply with CE & ROHS requirements. Lumics warranties highest reliability single emitter technology through careful design, extensive burn-in, long life-time & thermal testing.

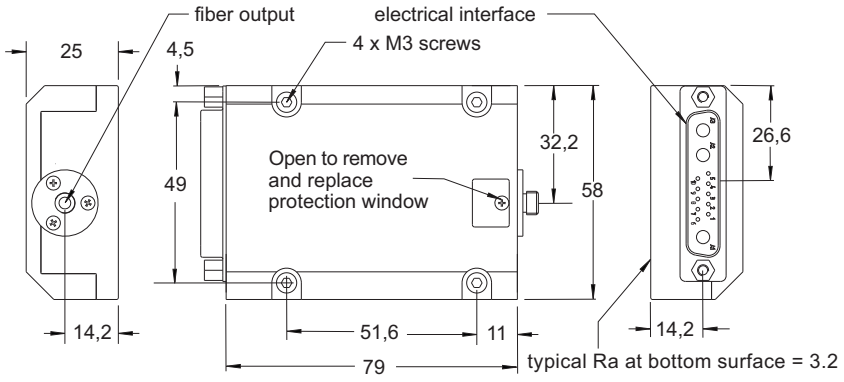
Features & Functions:
- 980nm & 1470nm
- 200µm or 400µm
- NA 0.22 fiber
- 3 single, burn-in tested laser diode emitters
- Temperature sensor

Options:
- Exchangeable window
- Red or green pilot laser
- Fiber sensor
- Monitor diode

Benefits:
- Ultra long lifetime
- Passive cooling
- Sealed housing
- Small foot print
- SMA connector

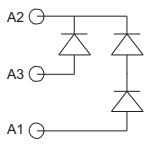
Applications:
- Dental
- Dermatology
- Therapeutic
- Veterinary

Module Drawing (Dimensions in mm)

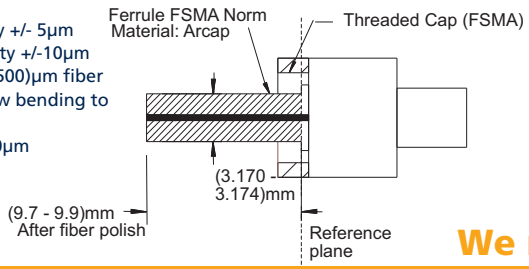


Pin Connections

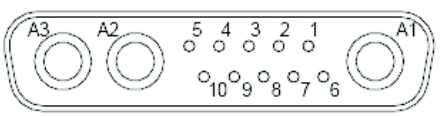
Pin	Configuration
1	Fiber sensor signal 1 *
2	Fiber sensor signal 2 *
3	Fiber sensor / monitor diode cathode 12V
4	Fiber sensor (GND1) LM35 (GND1) Monitor diode (GND1)
5	LM35 Signal or NTC or PT100/1000
6	Monitor diode signal 2 *
7	Monitor diode signal 1 *
8	Pilot laser (GND2)
9	LM35 5V or NTC or PT100/1000
10	Pilot laser 3.3V (red) * or <200mA (green) *
A1	1470nm Laser diode (+)
A2	Laser diode common cathode (-)
A3	980nm Laser diode (+)
* =	optional



Fiber Connector
Lumics laser diode fiber coupling technology ensures loss into the fiber cladding of <1.5% upon compliance with the following strict recommendations:
(1) Use a fiber microscope to check for dust free fiber end facet and fiber centricity.or with a quick check by turning the SMA fiber ferrule between 0°-180° at minmal possible output.
(2) Fiber connector to the Lumics laser module without mode stripper can sink a maximum of 4W (1.4% loss from 280W).
(3) Use transparent and high temperature fiber epoxy (e.g. Epotek ND353) to ensure that fiber is firmly fixed to the connector at 70°C
(4) 105µm fiber core max. fiber to connector excentricity +/- 5µm
>105µm fiber core max. fiber to connector excentricity +/-10µm
(5) Use large cladding diameter as (105/600)µm or (200/500)µm fiber for a free standing fiber to enhance stability and low bending to maintain centricity
(6) For </=105µm fiber core: a large cladding 105µm/600µm not free standing fiber can be used



Connector



We manufacture diode lasers.

Electrical and Optical Characteristics
Typical laser specifications at 25°C

Parameter	Conditions	12W @980nm & 7W @1470nm in 200µm	17W @980nm & 10.5W @1470nm in 400µm	Unit
980 nm & 1470 nm				
Output Power	P_{op} 980nm (c.w.)	12	17	W
	P_{op} 1470nm (c.w.)	7	10.5	W
Peak Wavelength (at P_{op})	λ_{peak} @ 980nm	980 ± 10	980 ± 10	nm
	λ_{peak} @ 1470nm	1470 ± 20	1470 ± 20	nm
Spectral Width (FWHM)	λ_{rms} @ 980nm	6	6	nm
	λ_{rms} @ 1470nm	10	10	nm
Forward Current / Voltage	I_{op} / V_{op} @ 980nm	16.0 / 1.7	24 / 1.6	A / V
	I_{op} / V_{op} @ 1470nm	13 / 3.0	21 / 2.5	A / V
Treshold Current	I_{th} @ 980nm	1.1	2.0	A
	I_{th} @ 1470nm	1.1	1.7	A
Other General Features				
Conversion Efficiency	@ 980nm	44	44	%
	@ 1470nm	18	20	%
Spectral Shift with Temp.	λ_{T_Shift} @ 980nm	0.3	0.3	nm / K
	λ_{T_Shift} @ 1470nm	0.6	0.7	nm / K
Fiber Core Diameter		200	400	µm
Fiber Centricity		<10	<10	µm
Numerical Aperture	NA	0.22	0.22	
Fiber Connector Type		SMA905	SMA905	
Pilot Beam (Option)		**Red Pilot Beam**		
Pilot Beam Output Power		1	1	mW
Pilot Beam Wavelength		635 ± 10	635 ± 10	nm
Pilot Beam Operating Voltage		3 ± 0.3	3 ± 0.3	V
Pilot Beam Operating Current		30 - 55	30 - 55	mA
		Green Pilot Beam		
Pilot Beam Output Power		>5	>5	mW
Pilot Beam Wavelength		520 ± 10	520 ± 10	nm
Pilot Beam Operating Voltage		7.0	7.0	V
Pilot Beam Operating Current		200	200	mA
Sensors				
Power Monitor Operating Voltage (Option)		12	12	V
Power Monitor Signal Voltage		0 - 4	0 - 4	V
Fiber Detection Sensor Operating Voltage (Option)		12	12	V
Fiber Detection Sensor Signal Voltage		12 / 0	12 / 0	V
Temperature Sensor		LM35, or NTC (10k), or PT100/1000		

Remarks:
(1) Proper function of fiber sensor requires FSMA ferrules made of steel oder ARCAP. Do not use copper made ferrules.
(2) Required flatness of customer heat sink 0.05mm over 200mm.

Important Note
Read and carefully follow operating manual instructions. Especially - whenever power supply is switched on or off, always disconnect from laser module. See manual for details. Uncontrolled on / off switching may cause spikes and result in fatal device damage.

General Parameters / Accessories

Parameter	Symbol	Min	Typ	Max	Unit
Storage Temperature	T_S	0		50	°C
Operation Temperature	T_{op}	15		35	°C
Humidity / Non-condensing Atmosphere				90	%
Recommended Thermal Heatsink Resistance				0.1	K / W
Weight			ca. 200		g
Compliance			CE, ROHS		
Standard Accessories					
Interface Connector			13W3 Female		
Mounting Screws / metric			4 x M3 x 10		
Further Options					
2nd Monitor Diode / 2nd Fiber Detection Sensor (Please ask for quotation if needed)					
Optical Fiber Patchcord with SMA Connectors					
Laser diode drivers for each individual wavelenth (on request)					

User Safety