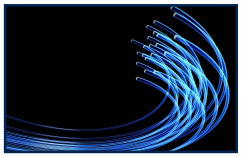
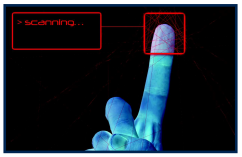




LU1064D
Diode Laser
Up to 16W, 32W or 50W output power at 1064nm

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.

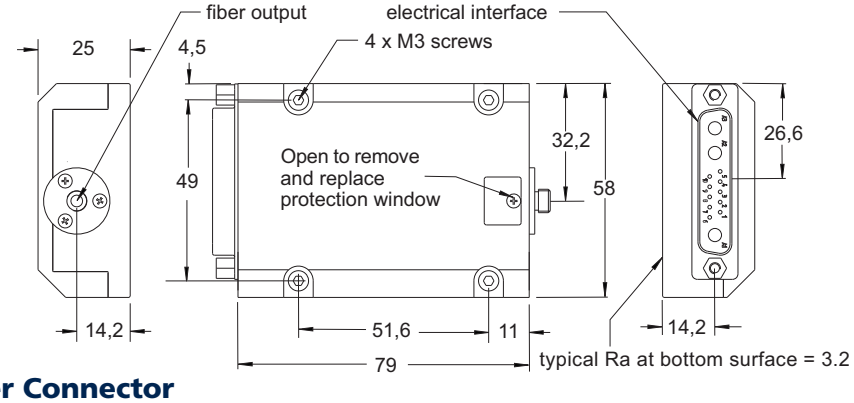
Features & Functions:
- 16W, 32W or 50W power
- 1064nm wavelength
- 600µm NA 0.22 fiber
- Temperature sensor

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

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

Applications:
- Dental
- Dermatology
- Therapeutic
- Veterinary

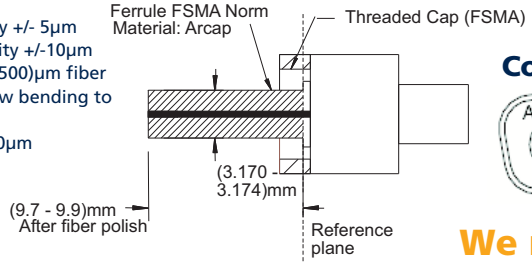
Module Drawing (Dimensions in mm)



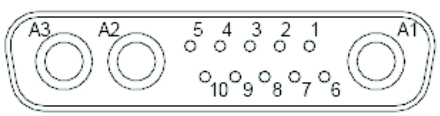
Pin Connections

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	Laser diode (+)
A2	Laser diode common cathode (-)
A3	N.C.
* =	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	Type / Conditions	Min	Typ	Max	Unit
Optical Characteristics					
Output power	LU1064D160-D / P_{op} (c.w.)		16		W
	LU1064D320-D / P_{op} (c.w.)		32		W
	LU1064D500-D / P_{op} (c.w.)		50		W
Peak wavelength (at P_{op})	λ_{peak}	1054	1064	1074	nm
Spectral width (FWHM)	λ_{FWHM}		6		nm
Conversion efficiency			35		%
Spectral shift with temp.	λ_{T_Shift}		0.3		nm / K
Fiber core diameter			600		µm
Fiber centricity			<10		µm
Numerical aperture	NA		0.22		
Fiber connector type			SMA905		
Electrical Characteristics					
Forward current at P_{op}	I_{op}		26.5		A
Forward voltage	LU1064D160-D / V_{op}		1.6		V
	LU1064D320-D / V_{op}		3.2		V
	LU1064D500-D / V_{op}		4.8		V
Treshold current	I_{th}		1.8		A
Red Pilot Beam (Option)					
Pilot beam output power			1		mW
Pilot beam wavelength			635 ± 10		nm
Pilot beam operating voltage			3 ± 0.3		V
Pilot beam operating current			30 - 55		mA
Green Pilot Beam (Option)					
Pilot beam output power			>5		mW
Pilot beam wavelength			520 ± 10		nm
Pilot beam operating voltage			7.0		V
Pilot beam operating current			200		mA
Sensors					
Power monitor operating voltage (Option)			12		V
Power monitor signal voltage			0 - 4		V
Fiber detection sensor operating voltage (Option)			12		V
Fiber detection sensor signal voltage			12 / 0		V
Temperature sensor			LM35 or NTC 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.

(3) VBG (Volume Bragg Grating) ensures that 95% of optical output power is within +/-0.5 nm of specified wavelength.

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 on request					

User Safety