



LU1064C180-B Fiber coupled Diode Laser Up to 180W out of 600µm NA 0.22 Fiber



Description:

The Lumics LU1064C180-B series offers an optical output power of up to 180W in c.w. operation from a 600µm NA 0.22 fiber or from a 31 fold fiber bundle. The device consists of multiple hermetically sealed single emitter laser modules in a rugged industrial package. For applications requiring higher powers, multiple bundles can be combined to achieve the desired configuration for your system. Long lifetime is ensured due to extensive screening of the individual single emitter laser modules. The performance makes it a valuable tool for the highly efficient pumping of high power fiber amplifiers and solid state lasers for material processing with exceptional power densities.

Features & Functions:

- 600µm NA 0.22 Fiber
- Water-cooled
- Safety Features
- Temperature Control
- Output Power Control
- Hermetically sealed and tested Single Emitters
- D80 Connector
- Red Pilot

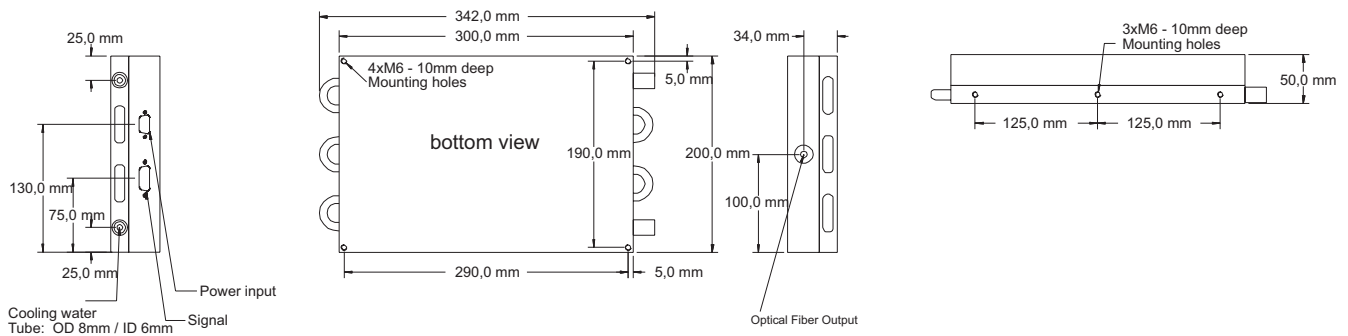
Benefits:

- Compact design
- Very high Lifetime
- Cost-effective
- All-in-Fiber

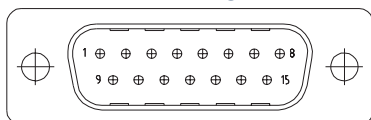
Applications:

- Solid State Laser Pumping
- Material Processing
- Medical Laser Treatment
- Illumination
- Marking

Module Drawing (dimensions in mm)



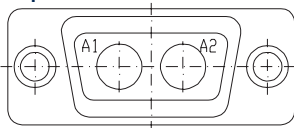
D-Sub 15-pole Signal Connector



Pin	Function	Pin	Function
5	Pilot Laser +*	10	Photo Diode 2 +*
6	Pilot Laser -*	11	Photo Diode Gnd
7 / 8	Temp. Sensor 1 for Diode Laser*	12 / 13	Temp. Sensor 1 for Fiber Connector*
9	Photo Diode 1 +	14 / 15	Temp. Sensor 2 for Diode Laser*

* = Option

2-pole Pin Connector



Pin	Function
A1	LD Anode (+)
A2	LD Cathode (-)

Your ideas are welcome.

Electrical and Optical Characteristics (Laser specifications at 25°C):

Parameter	Conditions	Symbol	Min	Typ	Max	Unit
C.W. Output Power		Pop		180		W
Operating Current		I _{op}		9	10	A
Peak Wavelength		λ	1054	1064	1074	nm
Spectral Width (FWHM)		Δλ		5	7	nm
Threshold Current		I _{th}		700	900	mA
Operating Voltage		V _f		52		V
Wavelength Tuning vs. Temperature		Δλ / T		0.35		nm/K
Wavelength Tuning vs. Operating Current		Δλ / I		1		nm/A
Monitor Diode				0.5 - 20		μA/W
Temperature Sensor		NTC		10		kOhm
Water Cooling Plate						
Water Temperature		T	15	20	35	°C
Water Flux (1)			2			l/min
Output Fiber Options						
<i>Standard - Bundle of 31 fibers</i>						
Length of Fiber Bundle				2		m
Core Diameter of Fiber Bundle 31 x 105 / 125 μm				800		μm
Numerical Aperture		NA		0.15 or 0.22		
D80 Connector on Fiber end						
<i>Option 1 - D80 Connector on Case</i>						
Fiber Core Diameter				600		μm
Numerical Aperture		NA		0.22		
Other Options						
<i>Option 2 - Red Pilot Beam</i>						
C.W. Output Power (2)		at 5V		2.0		mW
Peak Wavelength		as specified	625	635	660	nm
Spectral Width (FWHM)				1	2	nm
Operating Voltage				5		V

Remark:

(1) Industrial Water, no DI-water, filtered particle size <0.1mm

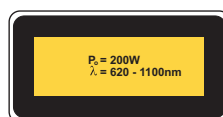
Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Storage Temp. (without water)	T _{max}	-20	60	°C
Operating Case Temp.	T _{op, case}	10	40	°C
LD Forward Current	I _{op, max}		11	A
LD Reverse Voltage	V _{R, max}		2	V
Maximum Power Red Pilot Beam	P _{max, red LD}		1.5	mW

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.

User Safety



Your ideas are welcome.