

LuOcean Mini8

Factsheet

The Lumics LuOcean Mini8 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 laser components in combination with several accessories and features promotes cost efficiency in both development and manufacturing.

The Lumics LuOcean Mini8 modules are equipped with single emitters, which have a long service life. The modules can be passively cooled and are well protected from external influences by the housing. Users can connect SMA fibers to the modules and benefit from a small footprint.

Applications for the Mini8 laser modules can be found in numerous medical fields, such as the therapy sector, dentistry, dermatology, veterinary medicine and surgery, as well as in the industry for laser pumping.

FEATURES & FUNCTIONS

- 670 / 760 / 785 / 808 / 890 / 915 / 940 / 975 / 1064 / 1470 / 1940 nm as single and multi-wavelength module
- 105 / 200 / 400 / 600 μm NA 0.22 fiber
- Emitter electrically in series
- Temperature sensor

OPTIONS

- Power monitor (up to two)
- Fiber monitor
- User-exchangeable exit window
- Red or green pilot beam
- Controllable pilot intensity
- OEM LD driver & chiller
- Compatible fibers



Lumics

We manufacture diode lasers.

Optical and Electrical Characteristics for Single Wavelength Modules (Typical specification)

Wavelength [nm]	Module 1				Module 2				Module 3				Module 4			
	Fiber core diameter [μm]	Max Power [W]	I _{op} [A]	V _{op} [V]	Fiber core diameter [μm]	Max Power [W]	I _{op} [A]	V _{op} [V]	Fiber core diameter [μm]	Max Power [W]	I _{op} [A]	V _{op} [V]	Fiber core diameter [μm]	Max Power [W]	I _{op} [A]	V _{op} [V]
670					200	14	3.5	32	400	20	6	16	600	20	6	16
760													600	50	11	16
785					200	38	7	14	400	38	7	14	600	65	13	14
808					200	38	7	14	400	55	11	14	600	65	13	14
890					200	65	15	14	400	65	15	14	600	82	18	14
915									400	100	19	14				
940	105	33	9	11	200	80	13	14	400	130	25	13	600	160	26	15
975	105	33	9	11	200	80	13	14	400	130	25	13	600	160	26	15
1064					200	80	15	13	400	120	24	12	600	130	26	13
1470	105	14	8	9	200	34	12	9.7	400	45	21	9.7				
1940					200	10	7.5	8	400	14	11	8				

Optical Characteristics for Dual Wavelength Modules (Other Variants & Options available)

Fiber core diameter [μm]	Wavelength 1		Wavelength 2		Wavelength 1		Wavelength 2	
	Wavelength [nm]	Max Power [W]	Wavelength [nm]	Max Power [W]	Wavelength [nm]	Max Power [W]	Wavelength [nm]	Max Power [W]
100	670	3	808	4	670	1.5	808	9
200	670	10	808	9	670	3.5	808	28
400	670	16	808	14	670	5	808	42
200	670	10	1064	19	670	3.5	1064	58
400	670	16	1064	29	670	5	1064	87
600	670	16	1064	32	670	5	1064	97
600	760	37	1470	10	760	12	1470	32
200	808	28	975	19	808	9	975	57
400	808	42	975	34	808	14	975	102
600	808	49	975	38	808	16	975	116
200	808	28	1064	19	808	9	1064	58
400	808	42	1064	29	808	14	1064	87
200	808	28	1470	8	808	9	1470	24
400	808	42	1470	10	808	14	1470	32
200	975	57	1470	8	975	19	1470	24
400	915 / 975	102	1470	10	915 / 975	34	1470	32
200	975	57	1940	2	975	19	1940	7
400	915 / 975	102	1940	3.5	915 / 975	34	1940	10
200	1064	58	1470	8	1064	19	1470	24
400	1064	87	1940	3.5	1064	29	1940	10
200	1470	24	1940	2	1470	8	1940	7
400	1470	32	1940	3.5	1470	10	1940	10

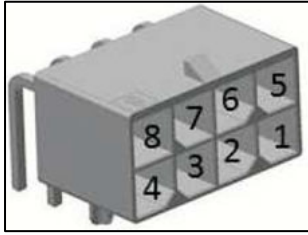
Optical Characteristics for Triple / Quadruple WL Modules (Other Variants & Options available)

Fiber core diameter [μm]	Wavelength 1 [nm]	Max Power Wavelength 1 [W]	Wavelength 2 [nm]	Max Power Wavelength 2 [W]	Wavelength 3 [nm]	Max Power Wavelength 3 [W]	Wavelength 4 [nm]	Max Power Wavelength 4 [W]
600	670	10	760	12	808	16		
400	670	10	808	14	915	24		
200	670	7	808	14	1064	9		
200	670	7	1064	14	1470	4		
400	808	28	915 / 975	34	1064	29		
600	808	32	915 / 975	38	1064	32		
200	808	14	975	11	1470	16		
400	808	21	915 / 975	17	1470	21		
200	808	6	975	11	1940	7		
400	808	9	915 / 975	17	1940	10		
400	808	21	1064	29	1470	16		
400	808	9	1064	14	1940	10		
400	975	34	1064	29	1940	7		
600	670	5	760	12	808	16	890	19
400	670	5	808	14	9xx	34	1064	29
600	670	5	808	16	9xx	38	1064	32
600	760	12	808	16	890	19	975	38
400	808	14	915	24	975	34	1064	29
200	808	9	975	19	1064	19	1470	8
400	808	14	975	17	1064	14	1940	7

General Parameters / Options / Accessories / Operating Conditions

Parameter	Symbol	Min	Typical	Max	Unit
Mechanical Characteristics					
Weight of Laser Module			300		g
Pilot Beam (optional, see notes)					
Pilot Beam Output Power (adjustable)	red / green	0	3 / 0.5	3 / 1	mW
Pilot Beam Wavelength	red / green		650 ± 10 / 520 ± 10		nm
Pilot Beam Operating Voltage	red / green	4.8 / 7	5 / 8	5.2 / 8	V
Pilot Beam Operating Current	red / green			≤ 35 / 125	mA
Pilot Beam Intensity Control Voltage	red / green	0 (max. Intensity)		5 (min. Intensity)	V
Sensors (optional)					
Power Monitor Supply Voltage		10	12	14	V
Power Monitor Signal Voltage		0	4 (at max. Power)		V
Fiber Detection Sensor Supply Voltage		10	12	14	V
Fiber Detection Sensor Signal Voltage		0	12	14	V
Temperature Sensor		Standard: NTC (10 k); Optional: PT100 or LM35			
Operating Conditions					
Storage Temperature	T _s	-10			°C
Internal Operating and (Ambient) Temperature, CW	T _{op c.w.}	10 (5)	25 (20)	35 (40)	°C
Humidity / Non-condensing Atmosphere				90	%
Thermal Heat Sink resistance				0.1	K/W
Maximum Fiber Flange Temperature				50	°C

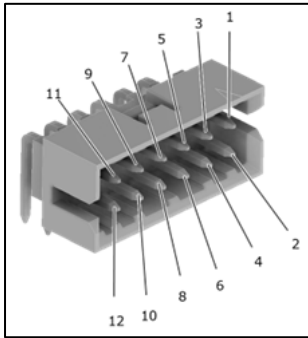
Connector



Connector - laser diode supply
Molex™ connector (Part No. 172064-0006). Pin connection dependent on the individual electro-optical configuration. Maximum current per pin is 26 A if total current to cathode exceeds 26 A two pins must be connected to the cathode of the driver board.

Counterparts for external cable
Molex Mega-Fit Receptacle Housing Part No. 171692-0106.
Molex Mega-Fit Female Crimp Terminal Part No. 76823-0322.

Pin configuration
Pin configuration depends on wavelength selection. Refer to specific Mini8 datasheets for details.

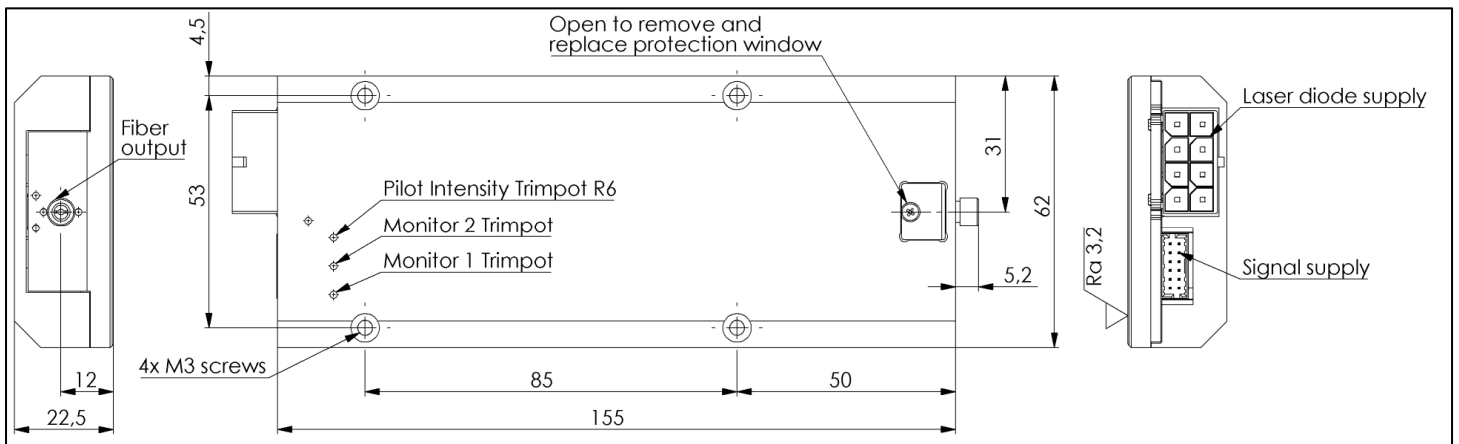


Connector - signals
Connector on laser module Part No. Molex 87833-1231

Counterpart for external cable
Molex Milli Grid Cable to Board Receptacle Part No. 87568-1273 with locking ramp. Flat ribbon cable with pitch of 1 mm and AWG28.

PIN	Configuration
1	Supply +12 V
2	Fiber Sensor 1 Out, 0-12 V, option
3	GND1
4	Fiber Sensor 2 Out 0-12 V, option
5	Monitor Photo Diode 1 Out, 0-4V (0.7V 1940nm), option
6	Pilot Supply, 5V red, 8V green, option
7	Monitor Photo Diode 2 Out, 0-4V (0.7V 1940nm), option
8	Pilot GND2, option
9	NTC / PT100 / LM35 Supply, 5V
10	Pilot intensity control In, 0-5V, option
11	NTC / PT100 / LM35 Signal
12	Not connected

Module Drawing (Dimensions in mm)



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