



LUOcean P2

LU1064Cyyy Diode Laser Up to 180W c.w. Operating Power @ 1064nm



Description:

The LU1064Cyyy **LUOcean P2** series offers an optical output power of 85, 110 or 180W in c.w. operation from a 200µm, 300µm or 600µm core diameter, NA 0.22 fiber, respectively. The device consists of multiple single emitter laser diodes in a rugged industrial package. Long lifetime is ensured due to laser diode facet passivation, extensive burn-in testing and screening of the individual single emitters. The performance makes it a valuable tool for various applications.

Features & Functions:

- Wavelength 1064nm
- Burn-in tested single emitters
- Fiber: 200, 300 or 600µm NA 0.22
- SMA905 connector
- Sealed housing
- Temperature sensor

Options:

- Power monitor
- Fiber sensor
- Red pilot laser
- Water cooling plate
- VBG

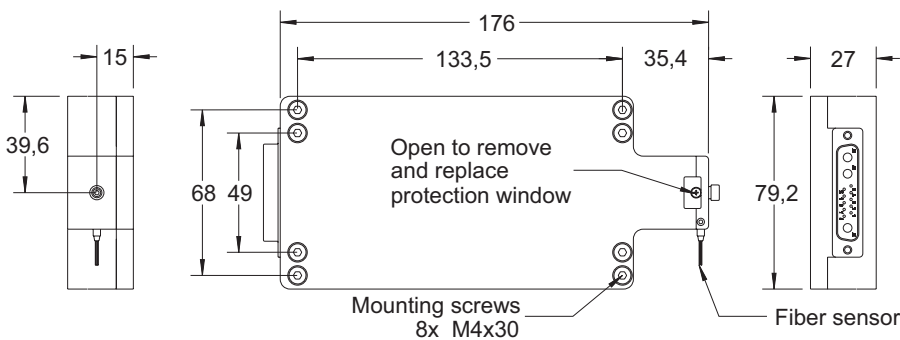
Benefits:

- Ultra long lifetime
- Cost effective
- High efficiency

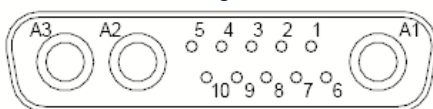
Applications:

- Pumping
- Illumination
- Medical treatment

Module Drawing (Dimensions in mm)



13w3 male Power and Signal Connector

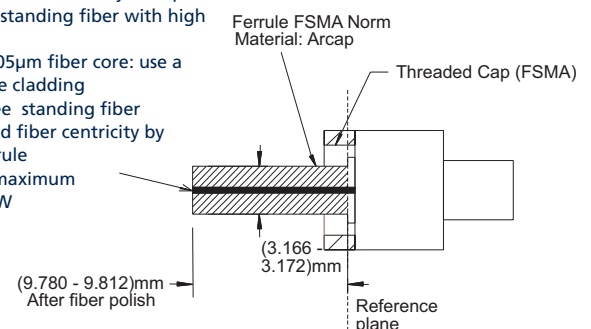


Pin	Configuration
1	N.C.
2	N.C.
3	Monitor Diode Cathode 5-12V *
4	LM35 (GND1) Monitor Diode (GND1)
5	LM35 Signal or NTC or PT100/1000 *
6	N.C.
7	Monitor Diode Signal *
8	Pilot Laser (GND2)
9	LM35 5V or NTC or PT100/1000
10	Pilot Laser 3V *
A1	Laser Diode (+)
A2	Laser Diode common cathode (-)
A3	N.C.
* Optional	

F-SMA Connector

Strict Recommendations

- (1) Use transparent and high temperature fiber epoxy (e.g. Epotek ND353)
- (2) 105µm fiber core max. excentricity +/- 5µm
>105µm fiber core max. excentricity +/-10µm
- (3) Above 60W: use free standing fiber with high power connector
- (4) Below 60W and <=105µm fiber core: use a free standing or large cladding
105µm/600µm not free standing fiber
- (5) Check always for good fiber centricity by turning the fiber ferrule between 0°-180° to maximum output power at < 5W



Your ideas are welcome.

Electrical and Optical Characteristics Typical Laser specifications at 25°C

Parameter	Conditions	Symbol	LU1064C085	LU1064C110	LU1064C180	Unit
LU1064Cyyy						
Output power (1)	c.w.	P_{op}	85	110	180	W
Operating current	c.w.	I_{op}	11	14.2	25	A
Absolut maximum forward current	c.w.	I_{max}	12	17	27	A
Peak wavelength		λ	1064+/-10	1064+/-10	1064+/-10	nm
Spectral width (FWHM)		$\Delta\lambda$	4	4	4	nm
Maximum spectral width (FWHM)		$\Delta\lambda_{max}$	8	8	8	nm
Threshold current		I_{th}	0.5	0.9	1.7	A
Operating voltage		V_f	22.5	21.5	21.5	V
Conversion efficiency			40	40	40	%
Wavelength tuning vs. temperature		λ / T	0.35	0.35	0.35	nm / K
Wavelength tuning vs. operating current		λ / I	1	1	1	nm / A
Weight		m	850	850	850	g
Output fiber (SMA905 connector on module)						
Core diameter of output fiber		d_{core}	200	300	600	μm
Fiber centricity			10	10	10	μm
Numerical aperture		NA	0.22	0.22	0.22	
Temperature sensor (10 kOhm)	LM35, NTC (10k) or PT100/1000 (please specify)					
Options						
Option 1: Red pilot laser (2)						
C.w. output power			1	1	1	mW
Peak wavelength			635+/-10	635+/-10	635+/-10	nm
Operating voltage			5	5	5	V
Option 2: Water cooling base plate						
Water temperature		T	+10 to +35	+10 to +35	+10 to +35	°C
Water quality	Industrial Water, no DI-water, filtered particle size <0.1mm					
Minimum water flux			0.3	0.5	0.7	l/min

Remarks:

- (1) Max. pulse time <300µsec, duty cycle <2%
- (2) With the red pilot option the c.w. and pulsed maximum optical output power (and consequently the operating voltage) is reduced by 10%
- (3) Back reflection is considered as 10ns pulse with 5% d.c. max. Back reflection filter which provides higher max. back reflection energy of 2mJ is offered on request
- (4) Required flatness of customer heat sink 0.05mm over 200mm

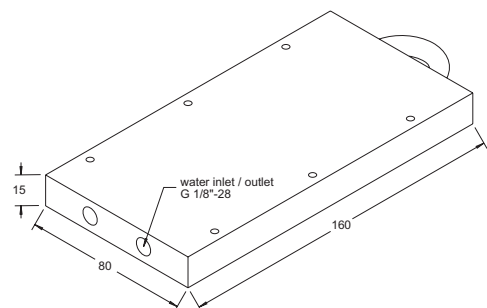
Important Note

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..

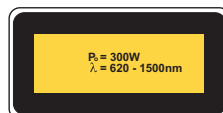
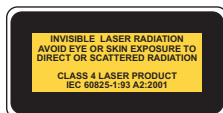
Absolute Maximum Ratings / General Informations

Parameter	Symbol	Min	Max	Unit
Storage Temperature	T_{max}	-15	+55	°C
Operating Temp. c.w.-operation	$T_{op\ c.w.}$	+5	+30	°C
pulsed operation (1) $T_{op\ pulse}$		+5	+40	°C
Humidity / non Condensing Atmosphere			90	%
Recommended Thermal Heatsink Resistance			0.03	K/W
LD Reverse Voltage	$V_{R, max}$		10	V
Mounting Screws / metric		8 x M4 x 12		mm
Max. back reflection of intrinsic pump wavelength output power			20	%
Max. back reflection, any other than λ of this diode laser (3)			10	μJ

Option 2 water cooling base plate:



User Safety



Your ideas are welcome.