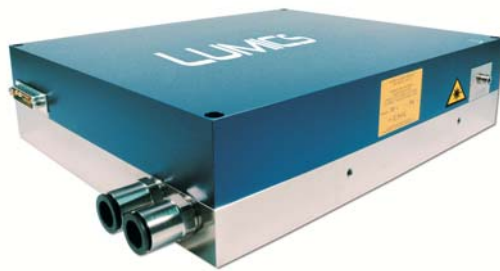




LuOcean M2

LUxxxxA750-J Diode Laser
Up to 750W c.w. Operating Power



Description:

The LUxxxxA750-J **LuOcean M2** series offers an optical output power of up to 750W with different wavelength. 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 915, 940 or 976nm
- Burn-in tested single emitters
- D80 connector
- Sealed housing
- Internal Cooling
- Temperature sensor
- Power monitor

Options:

- Fiber sensor
- Red pilot laser
- Backreflection filter
- Replaceable protection window

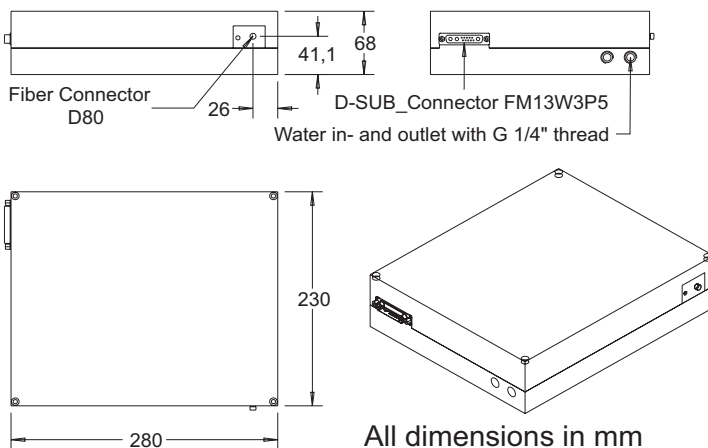
Benefits:

- Small foot print
- Ultra long lifetime
- No DI Water required
- Low Current

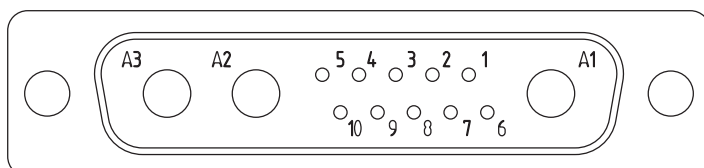
Applications:

- Material Processing
- Pumping
- Illumination
- Medical treatment

Module Drawing (Dimensions in mm)



Connector



Pin Connections

| | |
|--------------|---------------------------------------------------------|
| 1 | Fiber Sensor Signal 1 * |
| 2 | N. C. |
| 3 | Fiber Sensor / Monitor Diode (Vs) 12V |
| 4 | Fiber Sensor (GND) LM35 (GND) Monitor Diode (GND) |
| 5 | LM35 Signal or NTC or PT100/1000 |
| 6 | Monitor Diode Signal 2 * |
| 7 | Monitor Diode Signal 1 |
| 8 | Pilot Laser (GND) |
| 9 | LM35 5V or NTC or PT100/1000 |
| 10 | Pilot Laser (3-5V) * |
| A1 | 980nm Laser Diode (+) |
| A2 | Laser Diode GND (-) |
| A3 | N. C. |
| * = optional | |

Your ideas are welcome.

Electrical and Optical Characteristics Typical laser specifications at 25°C

| Parameter | Conditions | Symbol | LU09xxA500 | LU09xxA400 | LU09xxA700 | LU09xxA750 | Unit |
|-----------------------------------------------------------------------------------|------------------------------------------------|------------------------|------------|------------|------------|------------|---------|
| Output Power (1) | c.w. | P_{op} | 500 | 400 | 700 | 750 | W |
| Operating current | c.w. | I_{op} | 18 | 27 | 27 | 27 | A |
| Absolut maximum forward current c.w. | | I_{max} | 19 | 29 | 29 | 29 | A |
| Peak Wavelength (2) | LU0915Ayyy | | | 915+/-10 | 915+/-10 | | nm |
| | LU0940Ayyy | | | 940+/-10 | 940+/-10 | 940+/-10 | nm |
| | LU0975Ayyy | | 976+/-10 | 976+/-10 | 976+/-10 | 976+/-10 | nm |
| Spectral width (FWHM) | | $\Delta\lambda$ | 6 | 6 | 6 | 6 | nm |
| Spectral width (90%) | | $\Delta\lambda_{90\%}$ | 9 | 9 | 9 | 9 | nm |
| Threshold current | | I_{th} | <1 | <2.5 | <2.5 | <2.5 | A |
| Operating voltage | | V_f | 81 | 41 | 81 | 81 | V |
| Conversion efficiency | | | 35 | 40 | 35 | 35 | % |
| Wavelength tuning vs. temperature | | λ / T | 0.3 | 0.3 | 0.3 | 0.3 | nm/K |
| Wavelength tuning vs. operating current | | λ / I | 0.4 | 0.4 | 0.4 | 0.4 | nm/A |
| Weight | | m | 6800 | 6800 | 6800 | 6800 | g |
| Output fiber (D80 connector on module) | | | | | | | |
| Core diameter of output fiber | | d_{core} | 300 | 400 | 400 | 600 | μm |
| Fiber centricity | | | 10 | 10 | 10 | 10 | μm |
| Numerical aperture | | NA | 0.22 | 0.22 | 0.22 | 0.22 | |
| Power monitor | | PD | 10-30 | 10-30 | 10-30 | 10-30 | mV/W |
| Temperature sensor | LM35, NTC (10k) or PT100/1000 (please specify) | | | | | | |
| Max internal operating tempaure | | | 25 | 25 | 25 | 25 | °C |
| Options | | | | | | | |
| Option 1: Red pilot laser | | | | | | | |
| C.w. output power | | | 1-3 | 1-3 | 1-3 | 1-3 | mW |
| Peak wavelength | | | 650+/-15 | 650+/-15 | 650+/-15 | 650 +/-15 | nm |
| Operating voltage | | | 3-5 | 3-5 | 3-5 | 3-5 | V |
| Water temperature | | T | <18° | <18° | <18° | <18° | °C |
| Minimum water flux (industrial water, no DI-water) | | | 3 | 2.5 | 5 | 5 | l/min |
| Option 2: 1064nm backreflection filter (35dB on request) (3) | | | | | | | |
| | | | 18 | 18 | 18 | 18 | dB |
| Option 3: Wavelength stabilization with VBG (4) | | | | | | | |
| Spectral width (FWHM) | | $\Delta\lambda$ | 1 | 1 | 1 | 1 | nm |
| Peak wavelength (please specify) | | λ | 9xx+/-1 | 9xx+/-1 | 9xx+/-1 | 9xx+/-1 | nm |
| Option 4: Fiber sensor signal | | | | | | | |
| | | | 12 | 12 | 12 | 12 | V |
| Fiber sensor type PNP IFRM03P1503/Q (normally open) or with open collector output | | | | | | | |

Remarks:

- (1) Power is measured ex fiber according to given fiber specifications including precision and measures of fiber and ferrules for uncoated fiber facets
- (2) narrower wavelength (+/- 4nm) on request
- (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. Back reflection reduces power by 4% (18db), 8% (35db)
- (4) with Option 3 (VBG) the c.w. and pulsed max. optical output power is reduced by 10%

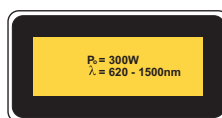
Important Note

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.

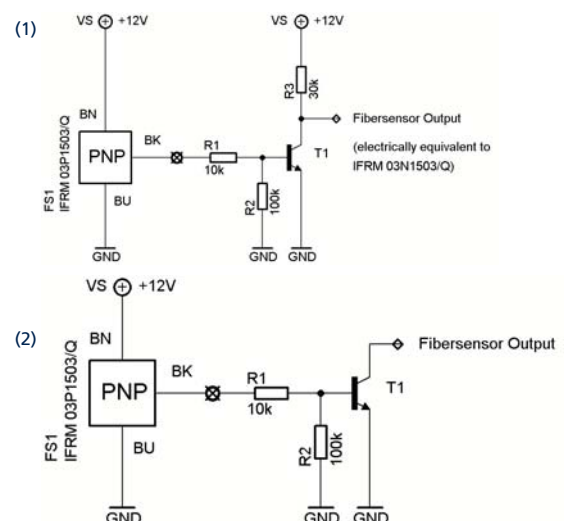
Absolute Maximum Ratings / General Informations

| 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 (4) $T_{op\ pulse}$ | +5 | +40 | °C |
| Humidity / non condensing atmosphere | | | 90 | % |
| LD reverse voltage | $V_{R, max}$ | | 10 | V |
| Max fiber flange temperature | | | 45 | °C |
| Mounting screws / metric | | | 8 x M4 | |
| Max. back reflection of intrinsic pump wavelength output power | | | 10 | % |
| Max. back reflection, any other than λ of this diode laser (10ns pulse) | | | 20 | μJ |

User Safety



Option 4 fiber sensor:



Your ideas are welcome.