

LIMO Compact Series

Version 2.1
HIGH-POWER DIODE LASER

LIMO
Lissotschenko Mikrooptik



- High brightness laser for medical, pump and material processing applications
- Hermetically sealed laser head in potential-free housing
- Compact dimensions
- Exchangeable protection window at the SMA905 connector
- 2 temperature sensors (NTC/PT100)

Optical data ¹		
CW – nominal output power (W)	30	32
Centre wavelength λ (nm)	805-810, 915, 940, 975-980 ²	
Tolerance of λ (nm)	$\pm 10 (\pm 3, \pm 2)$ ³	
Spectral width (FWHM) (nm)	< 5 (<4) ³	
Temperature drift of λ ⁴ (nm/K)	~0.3, ~0.35, ~0.35, ~0.4	
Fibre data		
Fibre core diameter (μm)	200	400
Numerical aperture	0.22	
Fibre-optic connector	SMA905	
Electrical data		
Typical operation current (start of lifetime) (A)	45	43
Max. Operation current (start of lifetime) (A)	50	50
Max. Operation current (end of lifetime) (A)	60	60
Typical threshold current (A)	5 - 8	
Typical efficiency (%)	36	40
Typical slope efficiency (W/A)	0.7 - 0.9	
Operation voltage (V)	< 2	
Reverse voltage	0	
Thermal conditions		
Diode operation temperature ⁵ ($^{\circ}\text{C}$)	+15...30	
Storage temperature ($^{\circ}\text{C}$)	-20...+60	
Recommended heat sink capacity (W)	> 80	
Recommended heat sink thermal resistance (K/W)	< 0.1	
Other specifications		
Expected lifetime ⁶ (hours)	20,000	
RoHS 2002/95/EC and CE compliant	YES	
Dimensions of laser head (connectors not included) (mm)	85x54x35	
Weight (g)	600	

¹Other wavelength on request, ²optional, ³Depending on wavelength, ⁴Measured by NTC/PT100 on PIN 8 & 9 / 10 & 11 on LEMO connector, ⁵According to ISO 17526:2003(E);

Optional accessories (MED635) ready for medical application

Pilot beam		
Pilot beam output power (mW)	> 1	
Pilot beam wavelength (nm)	635 \pm 5	
Pilot beam voltage (V)	3-5	
Pilot beam current (mA)	< 120	
2 Monitor diodes		
Operation voltage (V_{DC})	5	
Monitor diode signals (1 & 2) (V)	0-2	
2 Optional Fibre detection sensor		
Fibre detection sensor 1 & 2 voltage (V)	12	
Fibre detection sensor 1 & 2 current (mA)	< 100 each	
Fibre detection sensor 1 & 2 type	PNP	

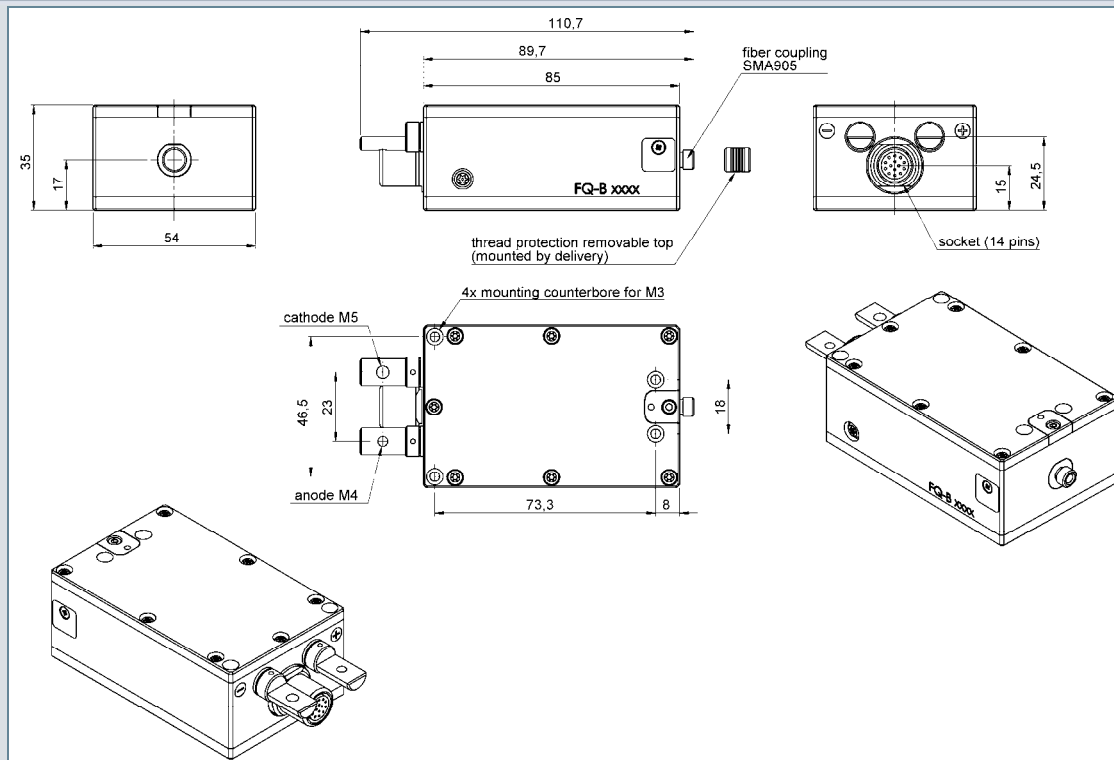
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LIMO FQ- Serie

Product name identification:

LIMO -F -DL ()-

Power	Fiber core diameter	Wavelength	Features	Wavelength Tolerance
30	200	805,806,807, 808,809,810	BASIC	T0=±10nm
32	400	915,940 975,976,977, 978,979,980	MED635	T2=±2nm T3=±3nm
1060				

Example: LIMO30-F200-DL806(BASIC)-T3

Accessories

- Fibre LIMO-SMA905-F, 1.5m or 3m
- Laser Diode Driver and TEC-cooler
- Integrated Volume Holographic Grating for wavelength stabilization
- Different beam shaping optics (focussing, collimating, fibre-fibre) available
- Installation service and personal introduction on request
- Turn-key systems available
- Customized laser modules and fibres on request

Considerations in Safety and Operation

This is a laser class IV product regarding CDRH regulations and a Laserklasse 4 product regarding DIN:EN60825-1. The laser light emitted from this laser diode is invisible and/or visible and may be harmful to the human eye. Avoid looking directly into the laser diode, into the collimated beam along its optical axis, or directly into the fibre when the device is in operation.

ESD PROTECTION – Electrostatic discharge is the primary cause of unexpected laser diode failure. Take extreme precaution to prevent ESD. Use wrist straps, grounded work surfaces and rigorous antistatic techniques when handling laser diodes.

All data provided are typically measured with a diode heat sink temperature of 25 °C. All measurements are made with a LIMO reference fibre 200/280 µm or 400/480 µm, length 1.5 m, and non AR coated. Copyright © 2008 LIMO GmbH. All rights reserved. All LIMO products are patent pending. Subject to change without notice. August 2009

Operating the laser diode outside of its maximum ratings may cause device failure or a safety hazard. Power supplies used with the component must be employed such that the maximum peak optical power cannot be exceeded.

Output powers in excess of specification will accelerate device aging.

Operation at higher temperatures will accelerate device aging.

Do not use thermal contact paste! LIMO provides appropriate carbon foil

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