

LIMO BD Series

HIGH-POWER DIODE LASER



- High brightness laser for medical, pump and material processing applications
- Hermetically sealed laser head in potential-free housing
- LD80 Plug & Play connector for optical fibres
- Compact dimensions
- 2 temperature sensors (NTC/PT100)

Optical data	
CW – nominal output power (W)	350
Centre wavelength λ (nm)	790-795, 805-810, 915, 940, 975-980 ¹
Tolerance of λ (nm)	$\pm 10 (\pm 3, \pm 2)$ ²
Spectral width (FWHM) (nm)	$< 8 (< 5)$ ²
Temperature drift of λ ³ (nm/K)	$\sim 0.3, \sim 0.35, \sim 0.4$
Fibre data	
Fibre core diameter (μm)	400
Numerical aperture	0.22
Fibre-optic connector	LD80
Electrical data	
Typical operation current (start of lifetime) (A)	53
Max. Operation current (start of lifetime) (A)	60
Max. Operation current (end of lifetime) (A)	72
Typical threshold current (A)	6 - 10
Typical efficiency (%)	37
Typical slope efficiency (W/A)	7.8
Operation voltage (V)	< 20
Reverse voltage	0
Thermal conditions	
Diode operation temperature ⁴ (°C)	+15...+30
Storage temperature (°C)	-20...+60
Recommended cooling capacity (W)	> 1000
Chiller flow capacity ⁵ (l/min)	5
Water pressure ⁵ (bar)	4
Water temperature ⁵ (°C)	20
Other specifications	
Expected lifetime ⁶ (hours)	20,000
RoHS 2002/95/EC and CE compliant	YES
Dimensions of laser head (mm)	225x175x65
Weight laser head (kg)	6.2
External radiation filter	typical attenuation @ 1030nm – 1050nm $> 70\%$ typical attenuation @ 1050nm – 1150nm $> 99\%$

¹Other wavelength on request, ²optional, ³Depending on wavelength, ⁴Measured by NTC/PT100 on LEMO connector, ⁵Water cooled module, ⁶According ISO 17526:2003(E);

Optional accessories

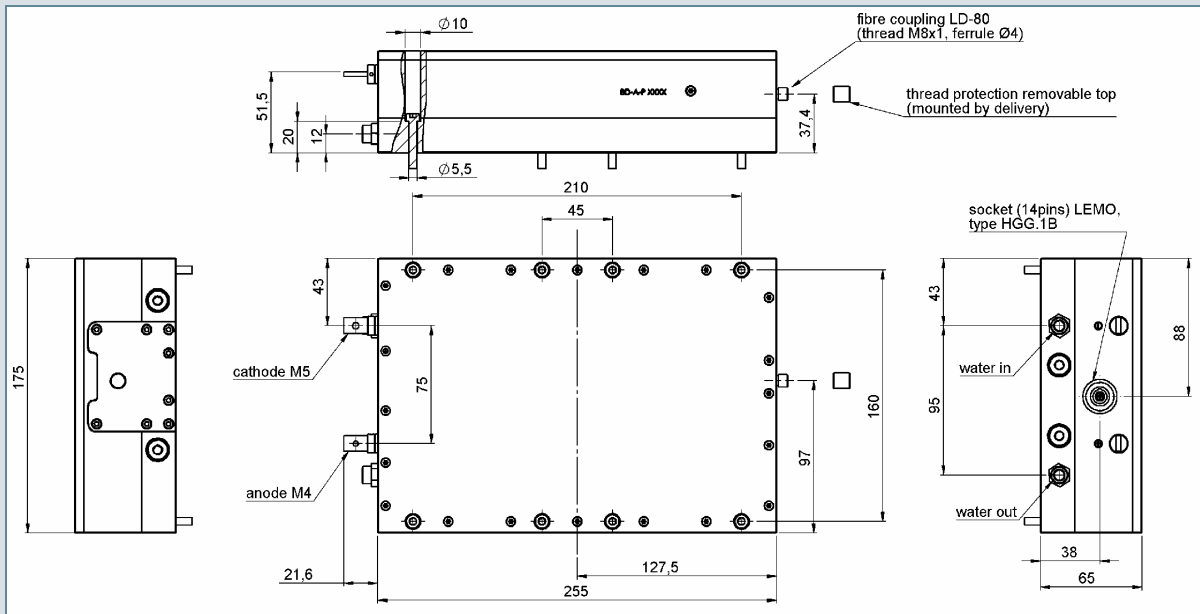
Pilot beam	
Pilot beam output power (mW)	> 1
Pilot beam wavelength (nm)	635 ± 5
Pilot beam voltage (V)	3-5
Pilot beam current (mA)	< 120
Monitor diode	
Operation voltage (V _{DC})	5
Monitor diode signal (V)	0-2

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LIMO BD Series

HIGH-POWER DIODE LASER



Module with macro channel water cooling

Product name identification:

LIMO -F -DL -

Power	Fiber core diameter	Wavelength	Wavelength Tolerance	Features Monitor diode	Feature Pilot laser
350	400	790,791,792, 793,794,795	T0=±10nm	M0= no monitor diode	P0= no pilot laser
		805,806,807, 808,809,810	T2=±2nm	M3= monitor diode	P2= pilot Laser
		915,940	T3=±3nm		
		975,976,977, 978,979,980			

Example: LIMO350-F400-DL806-T3M3P0

Accessories

- Fibre LIMO-LD80-F400, 1.5m or 3m
- Laser Diode Driver and Water 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 400/480 μ m, 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. June 2008

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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