

LIMO MB free beam Series

HIGH-POWER DIODE LASER



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

Optical data		
CW – nominal output power (W)	220	400
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)	$< 5 (<4)^2$	
Temperature drift of λ^3 (nm/K)	~0.3, ~0.35, ~0.4	
Beam data		
Beam size at output plane (FW 1/e ²) (mm)	< 12 x 12	
Divergence (FW 1/e ²) (mrad)	< 14 x 9	
Electrical data		
Typical operation current (start of lifetime) (A)	57	53
Max. Operation current (start of lifetime) (A)	60	60
Max. Operation current (end of lifetime) (A)	72	72
Typical threshold current (A)	5 - 8	
Typical efficiency (%)	45	45
Typical slope efficiency (W/A)	4.2	8.9
Operation voltage (V)	< 10	< 20
Reverse voltage	0	
Thermal conditions		
Diode operation temperature ⁴ (°C)	+15....30	
Storage temperature (°C)	-20....+60	
Recommended cooling capacity (W)	> 550	> 1000
Chiller flow capacity ⁵ (l/min)	5	
Water pressure ⁵ (bar)	4	
Water temperature ⁵ (°C)	20	
Other specifications		
Expected lifetime ⁵ (hours)	20,000	
RoHS 2002/95/EC and CE compliant	YES	
Dimensions of laser head (connectors not included) (mm)	225x110x63	225x175x65
Weight (kg)	4	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 at temperature measurement hole defined in drawing, ⁵According to ISO 17526:2003(E);

Optional accessories

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

Monitor diode

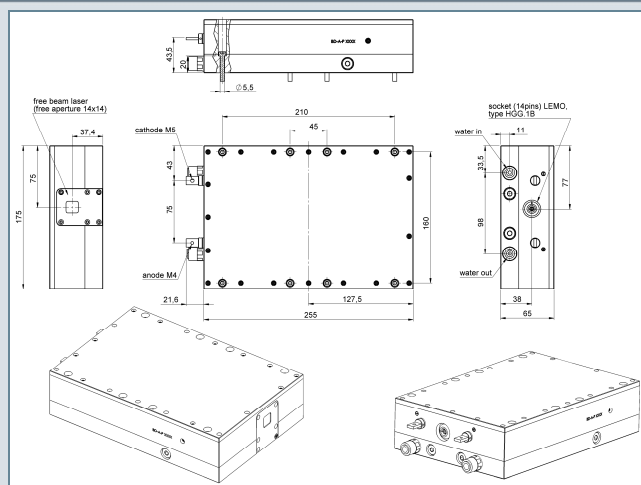
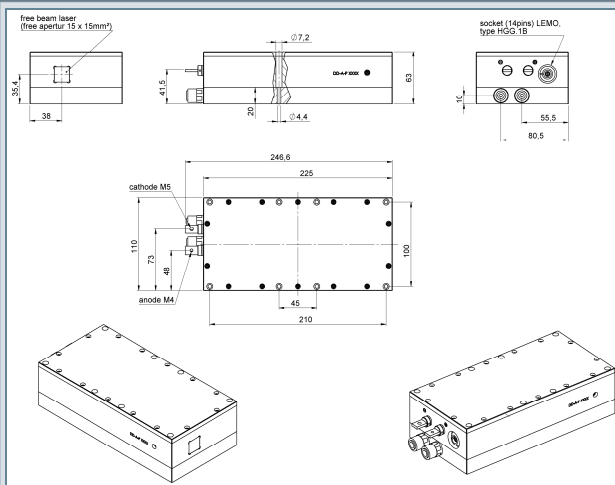
Operation voltage (V _{DC})	5
Monitor diode signal (V)	0-2

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HIGH-POWER DIODE LASER



Product name identification:

LIMO -C -DL -

Power	Beam size	Wavelength	Wavelength Tolerance	Feature monitor diode	Feature Pilot laser
220	12x12	790,791,792, 793,794,795	T0=±10nm	M0= no monitor diode	P0=no Pilot laser
400		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: LIMO220-C12x12-980-T3M3P0

Accessories

- Diode driver with water cooler
- Integrated Volume Holographic Grating for wavelength stabilization
- Different beam shaping optics (focussing, collimating) 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. 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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