LIMO LM Medical Series

Version March 01, 2010

HIGH-POWER DIODE LASER

- **SMA905 Plug & Play connector for optical fibres**
- **Compact dimensions**
- **Passively cooled**
- **2 temperature sensors (NTC/PT100)**

Optical data[1]		
CW – nominal output power (W)	15	20
Centre wavelength λ (nm)	805-810	915, 940, 975-980
Tolerance of λ (nm)	± 10 (± 3)[3]	
Spectral width (FWHM) (nm)	< 5 (<4)[3]	
Temperature drift of λ[4] (nm/K)	~0.3 - ~0.4	
Fibre data		
Fibre core diameter (µm)	200	
Numerical aperture	0.22	
Fibre-optic connector	SMA905	
Electrical data		
Typical operation current (start of lifetime) (A)	22.5	27.5
Max. Operation current (start of lifetime) (A)	25	30
Max. Operation current (end of lifetime) (A)	30	36
Typical threshold current (A)	7	4 – 5
Typical efficiency (%)	35	42
Typical slope efficiency (W/A)	1.0	0.9
Operation voltage (V)	< 1.9	> 1.7
Reverse voltage	0	
Thermal conditions		
Diode operation temperature[5] (° C)	+15….30	
Storage temperature (°C)	-20….+60	
Other specifications		
Expected lifetime[6] (hours)	20,000	
RoHS 2002/95/EC and CE compliant	YES	
Dimensions of laser head (connectors not included) (mm)	109 x 25 x 37	
Weight (g)	300	

[1]Optical data @ 25°C diode heat sink temperature, [2]Other wavelength on request, [3]optional, [4]Depending on wavelength,
[5]Measured by NTC/PT100 at temperature measurement hole defined in drawing, [6]According ISO 17526:2003(E);

Optional accessories

Pilot beam	
Pilot beam output power (mW)	> 0.7
Pilot beam wavelength (nm)	635
Pilot beam voltage (V)	4-5
Pilot beam current (mA)	< 120
Monitor diode	
Operation voltage (V_{DC})	5
Monitor diode signal (V)	0-2
Fibre detection sensor	
Fibre detection sensor 1 voltage (V)	12
Fibre detection sensor 1 current (mA)	< 100
Fibre detection sensor 1 type	PNP

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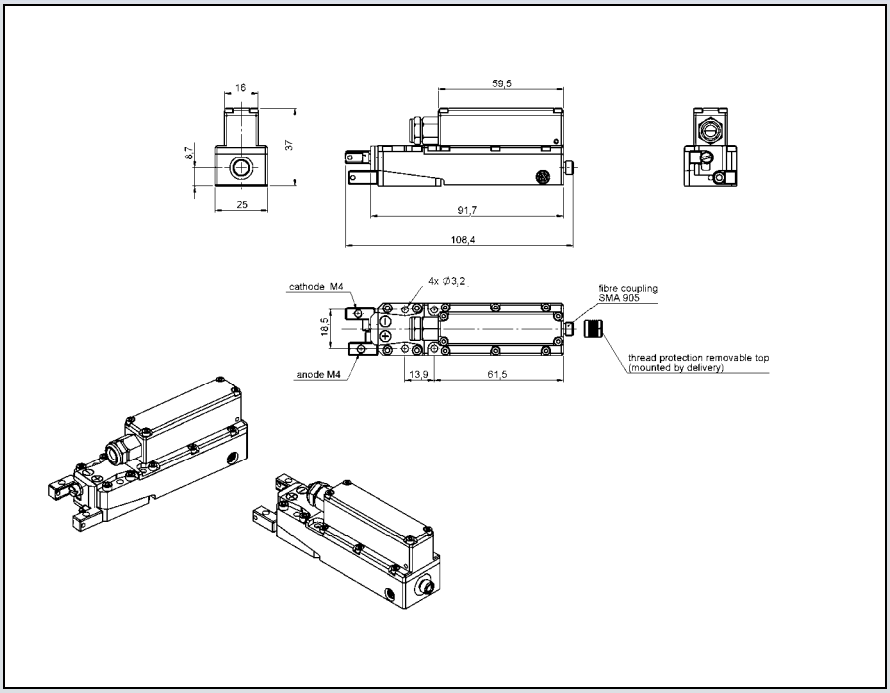

Product name identification:

LIMO__.F_____-DL_____-_____

Power	Fibre core diameter	Wavelength	Wavelength Tolerance	Feature monitor diode	Feature Pilot laser	Feature Fibre detection sensor
15	200	808	T0=±10nm	M0= no monitor diode	P0=no Pilot laser	FKS0= no Fibre detection sensor
20	200	975,976,977, 978,979,980		M3= monitor diode	P2 = Pilot laser	FKS1= fibre detection sensor

Example: LIMO20-F200-DL980-T0M3P0FKS0

Accessories

- Fibre LIMO-SMA905-F, 1.5m or 3m
- Laser Diode Driver and TEC-cooler
- 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.

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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