



STFO Series High-power Diode Lasers



- High brightness laser for pump applications
- Hermetically sealed laser head in potential-free housing
- SMA905 Plug & Play connector for optical fibres
- Compact dimensions
- Dual temperature sensor (NTC/PT100)

Optical data ¹		
CW – nominal output power (W)	35	40
Centre wavelength λ (nm)	790-795, 805-810, 880, 888, 915, 940, 975-981 ⁴	
Tolerance of λ (nm)	± 3 (± 2) ⁵	
Spectral width (FWHM) (nm)	< 4	
Temperature drift of λ ⁴ (nm/K)	~0.3, ~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	50
Max. Operation current (start of lifetime) (A)	48	53
Max. Operation current (end of lifetime) (A)	58	64
Typical threshold current (A)	5 – 10	
Typical efficiency (%)	43	44
Typical slope efficiency (W/A)	0.7 - 1.0	
Operation voltage (V)	< 2	
Reverse voltage	0	
Thermal conditions		
Module base plate temperature ² ($^{\circ}\text{C}$)	+15...+25	
Storage temperature ($^{\circ}\text{C}$)	-20...+60	
Recommended heat sink capacity (W)	> 70	> 76
Recommended heat sink thermal resistance (K/W)	< 0.1	
Other specifications		
Expected lifetime ³ (hours)	20,000	
RoHS 2002/95/EC and CE compliant	YES	
Dimensions of laser head (connectors not included) (mm)	71x33x34	
Weight (g)	400	

¹Optical data @ 20°C module base plate temperature, ²Other wavelength on request, ³optional, ⁴Depending on wavelength, ⁵Measured by NTC/PT100 at temperature measurement hole defined in drawing, ⁶According ISO 17526:2003(E);

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! We provide

appropriate carbon foil.

All data provided are typically measured with a diode heat sink temperature of 25 °C. All measurements, except for CMF-laser, are made with a reference fibre 100/140, 200/280 µm or 400/480 µm, length 1.5 m, and non AR coated. Subject to change without notice.

Product name identification:

ST__-F____-DL____-_____(pump)

Power	Fibre core diameter	Wavelength	Wavelength tolerance
35	200	790,791,792, 793,794,795	T2=±2nm
40	400	805,806,807, 808,809,810 880,888 915,940 975,976,977, 978,979,980, 981	T3=±3nm

Example: ST40-F400-DL940-T3 (pump)

Accessories

- Fibre ST-SMA905-F, 1.5m or 3m
- LDD100-3 diode driver with TE-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

