



STAV10 Series High-power Diode Lasers



- High brightness laser for pump applications
- Hermetically sealed laser head in potential-free housing
- LD80 Plug & Play connector for optical fibres
- Compact dimensions
- Dual temperature sensor (NTC/PT100)

Optical data¹			
CW – nominal output power (W)	200	300(CMF)	350
Centre wavelength λ (nm)	915, 940, 975-981 ⁴	790-795, 805-810, 880, 888, 915, 940, 975-981 ⁴	
Tolerance of λ (nm)		± 3 (± 2) ²	
Spectral width (FWHM) (nm)		< 5	
Temperature drift of λ^4 (nm/K)		~0.3, ~0.35, ~0.4	
Fibre data			
Fibre core diameter (μm)	200	400	400
Numerical aperture		0.22	
Fibre-optic connector		LD80	
Cladding moden	< 4%	< 1%	< 8%
Electrical data			
Typical operation current (start of lifetime) (A)	60	58	54
Max. Operation current (start of lifetime) (A)	63	61	57
Max. Operation current (end of lifetime) (A)	76	74	69
Typical threshold current (A)		5 - 10	
Typical efficiency (%)	31	36	36
Typical slope efficiency (W/A)		4 - 7	
Operation voltage (V)	< 12	< 16	< 20
Reverse voltage		0	
Thermal conditions			
Diode heat sink temperature ³ ($^{\circ}\text{C}$)		+15...30	
Storage temperature ($^{\circ}\text{C}$)		-20...+60	
Recommended cooling capacity (W)	> 625	> 770	> 895
Chiller flow capacity ⁵ (l/min)		5	
Water pressure ⁶ (bar)		4	
Water temperature ⁶ ($^{\circ}\text{C}$)		20	
Other specifications			
Expected lifetime ⁷ (hours)		20,000	
RoHS 2002/95/EC and CE compliant		YES	
Dimensions of laser head (mm)		290x220x70	
Weight laser head (kg)		< 8	
External radiation filter		Filter 1600.014, HR @ 1050-1130nm >99.0% (s+p pol.) or Filter 1600.036, HR @ 1025-1080nm >99.0% (s+p pol.) Other filters on request	
The 300W 400 μm module is a Cladding Mode Free fibre coupled diode laser. The CMF laser module is prepared to connect a water cooled fibre. >99% power out of the CMF-fibre core; the laser module has to be used in combination with a ST-CMF-fibre.			

¹Optical data @ 25 $^{\circ}\text{C}$ diode heat sink temperature ²Other wavelength on request, ³optional, ⁴Depending on wavelength, ⁵Measured by NTC/PT100 on LEMO connector, ⁶Water cooled module, ⁷According ISO 17526:2003(E);

Optional

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

Product name identification:

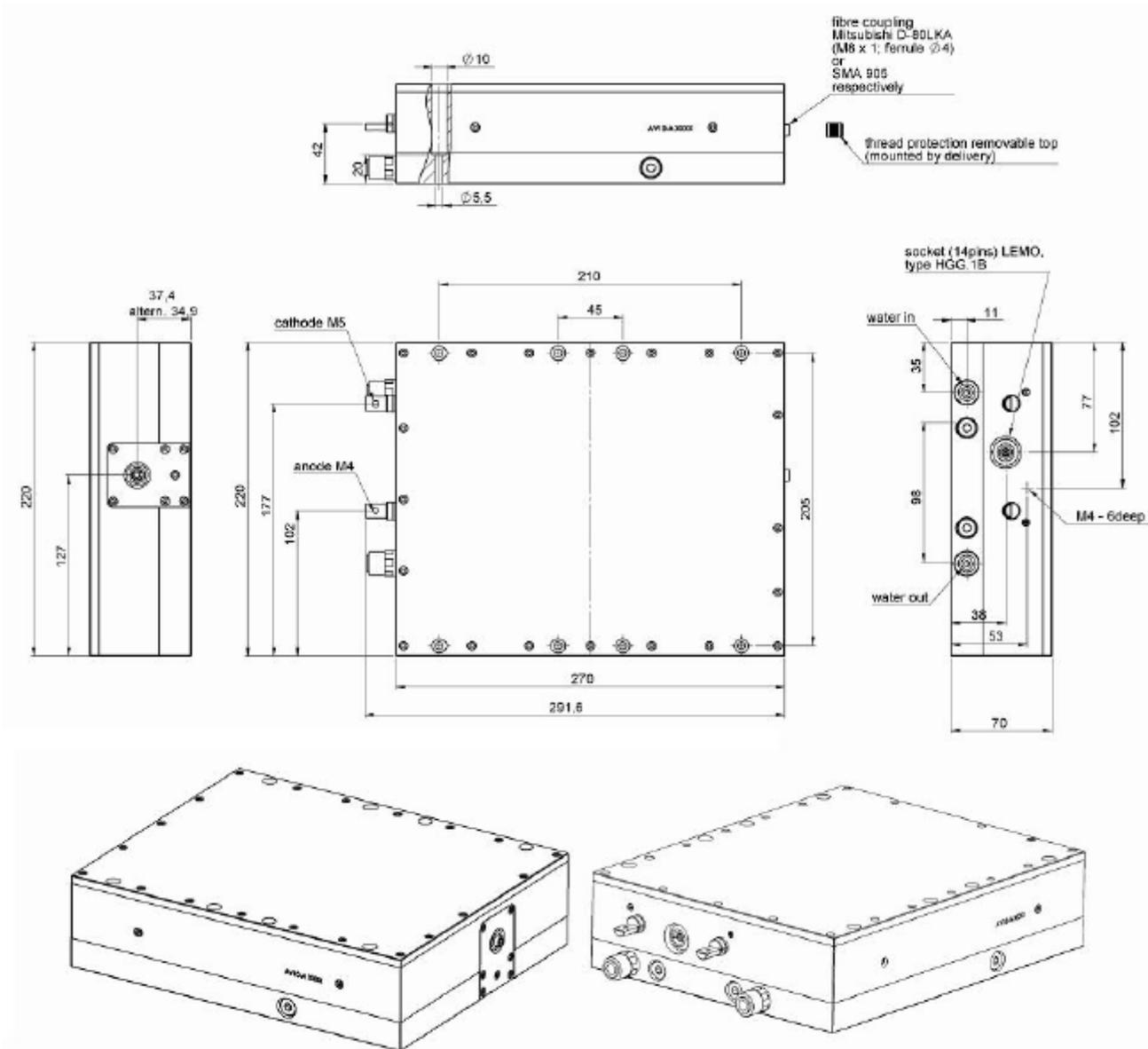
ST _ **F** _ **-DL** _ **-** _ (pump)

Power	Fiber core diameter	Wavelength	Wavelength tolerance	Feature monitor diode	Feature pilot laser	Feature filter
200	200	790,791,792, 793,794,795	T2=±2nm	M0= no monitor diode	P0= no pilot laser	F0 = no filter
300(CMF)	400	805,806,807, 808,809,810	T3=±3nm	M3= monitor diode	P2= pilot Laser	F14 = filter 1600.014
350		880,888				F36 = filter 1600.036
		915,940				
		975,976,977, 978,979,980, 981				

Example: ST350-F400-DL806-T3M3P0F36 (pump)

Accessories

- Fibre ST-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.

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.