



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION
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Ref No. (PR No. 1000040641)

(Rfx No. 6100001781)

Technical Requirements for the Repair of Tunable Diode Laser (Qty:- 01)

<u>Sr. No</u>	<u>Particular</u>	<u>Compliance (Yes/ No)</u>	<u>Additional Info if any</u>
	Repair of the Laser: Tunable diode laser, Velocity, 635-638 nm with following outputs		
1	Linewidth: <200 kHz (50 ms integration time)		
2	Wavelength stability 2pm (over 1 hour $\pm 2^{\circ}\text{C}$)		
3	Power Stability: <1% (over 1 hour $\pm 2^{\circ}\text{C}$)		
4	Wide Tuning Resolution: 10 pm		
5	Fine Tuning Resolution: 0.01% of full PZT tuning range		
6	Fine-Frequency Modulation Bandwidth: >100 Hz (100% amplitude) 2 kHz (20% amplitude)		
7	Current Modulation Bandwidth: DC-1 MHz (through controller) 50 kHz-100 MHz (directly to diode)		
8	Longitudinal Mode: Single		
9	Transverse Mode: TEM00		
10	Beam Pointing Stability: <50 μrad ($\pm 2^{\circ}\text{C}$) Beam Size, typical 1–2 mm		
11	Beam Ellipticity, typical: 1:1–2:1		
12	Polarization: Vertical		
13	Optical Output: Free-space, optically-isolated, fiber-coupled FC/APC		
14	User Interface: Controller front panel, USB		
15	Power Supply Requirement: 100–240 VAC (50-60 Hz), power consumption <170 W		
16	Environment Temperature: operating 15–30 $^{\circ}\text{C}$		
17	Environment Temperature: storage 0–50 $^{\circ}\text{C}$		
18	Environment Humidity: Non-condensing		