



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION
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Ref. PR No. 1000051054

Rfx. No. 6100002501

Technical Specifications for Custom Photonic Chip characterization

1: Tunable Laser Source

Sr. No.	Specification	Required / Offered Specification	Compliance (Yes/No)	Additional Information (if any)
1.	Tuning Range	1480 – 1640 nm		
2.	Wavelength Setting Resolution	0.1 pm		
3.	Wavelength Stability (typ.)	< ±5 pm		
4.	Absolute Wavelength Accuracy (Step Mode)	±15 pm		
5.	Wavelength Repeatability (typ.)	±5 pm (step) / ±6 pm (sweep)		
6.	Sweep Speed	1 – 200 nm/s		
7.	Fine-Tuning Scan Range	> 10 GHz		

8.	Output Power	> +10 dBm across full tuning range		
9.	Power Stability	±0.01 dB		
10.	Power Repeatability	±0.01 dB		
11.	Power Flatness vs Wavelength	±0.2 dB		
12.	Relative Intensity Noise (RIN)	-145 dB/Hz (1 MHz – 3 GHz)		
13.	Linewidth (typ.)	200 kHz		
14.	Side Mode Suppression Ratio (SMSR)	> 45 dB		
15.	Signal-to-Spontaneous Emission Ratio	> 80 dB/nm (typ. > 90 dB/0.1 nm)		
16.	Optical Output Fiber	Polarisation-Maintaining Fibre		
17.	Optical Connector Type	FC/APC		
18.	Communication Interfaces	USB, GPIB (IEEE 488.2), Ethernet		
19.	Operating Temperature Range	15 – 35 °C		
20.	Humidity (non-condensing)	< 80% RH		
21.	Power Supply	AC 100–240 V ±10%, 50/60 Hz		
22.	Power Consumption	≤ 100 VA		
23.	Physical Dimensions (W×D×H)	Approx. 220 × 385 × 130 mm		

24.	Weight	Approx. 7 kg		
25.	Intensity modulation	DC-400 Khz		
26.	27.	Laser Safety Classification	Class 1M (IEC 60825-1 compliant)	
28.	Warranty	1 year		

Item 2: Optical Switch (1×16 Configuration)

Sr. No.	Specification	Required / Offered Specification	Compliance (Yes/No)	Additional Information (if any)
1.	Configuration	1×16		
2.	Switching Type	Opto-mechanical		
3.	Fiber Type	Single-mode 9/125 μm		
4.	Wavelength Range	1250 – 1670 nm		
5.	Insertion Loss	≤ 0.5 dB		
6.	Back Reflection	≤ -60 dB		
7.	Polarization Dependent Loss (PDL)	≤ 0.05 dB		
8.	Repeatability	±0.005 dB		

9.	Crosstalk	< -80 dB		
10.	Maximum Input Power	23 dBm		
11.	Switching Time	300 ms		
12.	Switch Lifetime	$\geq 10^8$ cycles		
13.	Connector Type	FC/APC (front-panel bulkhead)		
14.	Control Interface	USB / Ethernet		
15.	Dimensions (W×H×D)	Approx. 22.5 × 9 × 32.5 cm		
16.	Weight	Approx. 8 kg		
17.	Input Voltage	100–240 V AC, 50–60 Hz		
18.	Power Consumption	≤ 80 VA		
19.	Operating Temperature Range	0 – 55 °C		
20.	Storage Temperature Range	-40 – 70 °C		
21.	Humidity (non-condensing)	$\leq 95\%$ RH (0–40 °C)		
22.	Warranty	1 year		