

Technical Requirements of Precision Optomechanical Components for Building Fiber Pigtailling Setup

S.No	Description/Parameters	Requirements
<u>A.</u>	6-Axis NanoMax Stage with Stepper Motor Actuators	(Qty:1)
A.1	<i>Stepper Motor Actuators</i>	
1	Travel Mechanism	Parallel Flexure
2	Travel Range : X, Y, Z	3 - 4 mm
3	Travel Range: $\theta_x, \theta_y, \theta_z$	6°
4	Velocity	≤ 5 mm/s
5	Acceleration	5 mm/s ²
6	Load Capacity	upto1 kg
7	Deck Height	100 - 120 mm
A.2	<i>Closed-loop piezoelectric actuators</i>	
1	Drive Voltage	Should be Specified in the Compliance
2	Travel Range: X, Y, Z	25 - 30 μ m
3	Travel Range: $\theta_x, \theta_y, \theta_z$	0.5 - 0.6 mrad
4	Resolution of X, Y Travel	At least 1.5 nm
	Resolution of Z Travel	At least 1 nm
5	Resolution: $\theta_x, \theta_y, \theta_z$	0.02 - 0.025 μ rad
<u>B.</u>	Two Channel Auto-Alignment Module (Qty:3)	
1	PIN Photodiode optical connector	FC/PC Fiber Input
2	PIN Mechanical Connectors	SMB Male
3	Photocurrent Range	upto 10 mA
4	Optical Detector	InGaAs detector
5	Detector Range	950 - 1600nm
6	Piezo Drive connector	SMC Male
7	Drive cables	2 per channel used to drive 75 V piezoelectric actuators

8	Circle Scanning Frequency	upto 300Hz
9	Drive channel Voltage Output	0 to 75 V (V_{DC} /Channel)
10	Drive channel Output Current	0 to 500mA /Channel
<u>C.</u>	Control System (Qty:1)	
1	<p>The system should be Modular and rack mountable.</p> <p>Rack assembly should hold at least 3 Modules with Protection Covers</p> <p>USB 'Plug-and-Play' PC-controlled operation</p> <p>Full Software GUI Control Suite along with PC (optional)</p> <p>Voltage: 230-250 VAC & Frequency 50-60 Hz</p>	
<u>D.</u>	Optical Table Workstation (1000 mm × 2000 mm × 200 mm) with with 700 mm Tall Active Isolator Legs (Qty:1)	
	<i>Table Top and Leg Support:</i>	
1	Core Construction	High Quality Steel Honeycomb structure
2	Flatness of Top Skin	±0.1 mm
3	Top and Bottom Plates	> 5 mm Thick Stainless Steel
4	Threads and Spacing	M6 Tapped Holes on 25 mm Centers
5	Distance from Edge to First Holes	12.5 mm from Table Edge on all Sides
6	Maximum Screw Depth	23.5 mm for Outer Border Holes (Standard)
7	Vertical Resonant Frequency	1.3 Hz
8	Horizontal Resonant Frequency	1.0 Hz
9	Height Adjustment Range	At least - 13 mm to +5 mm
10	Self Leveling Repeatability	0.5 mm
11	Air Pressure	upto 80 psi with Auto Cut - off facility
<u>E.</u>	Accessories for Optical Table Workstation:	
	Suitable Air compressor with Auto Cut - off facility, Air Filter / Regulator to Removes Moisture and Particles Down to 5 µm	
<u>E.</u>	Additional Accessories:	
	Free Standing Optical Table Shelf with length and Frame height of (2m × 2m)	
	LED Light Strip with 4m Extension and power supply	

	<p>Power Strip with Electrically Grounded >20 outlets</p> <p>Optional Recommended Accessories if any.</p>
<u>G.</u>	Optional Accessories for Multi-Axis Flexure Stage:
	<p>Should Include all the accessories in the quote.</p> <ul style="list-style-type: none"> ● Connectorized-Fiber Holders ● Quick-Release, Adjustable Fiber Clamp ● V-Groove Fiber Holder ● Simplified Fiber Clamp ● Fiber Array Holder ● Accessory Lockdown Clamps ● High Precision Bare Fiber Rotator ● Vacuum Waveguide Mount ● Adjustable Waveguide Mount ● Fiber Chucks and Mounts <p>● Optional Recommended Accessories if any.</p>
<u>H.</u>	Power requirement: As per Indian electrical standards (230V AC, 50 Hz)
<u>I.</u>	Warranty: Comprehensive warranty for 1 year from the date of installation.
<u>J.</u>	Standard configurations will be required. NO CUSTOM BUILT SYSTEMS WILL BE ENTERTAINED.
	Suppliers should provide technical compliance including explanations without fail against each point given in the technical specifications for consideration of the offer.

(Note: It is mandatory for the bidders to provide the compliance statement in tabular column format along with catalogue page number (comply/not comply) for the Above points with document proof as required. Failing which bidders will be technically disqualified)