Nano positioning stages – Specifications

S.No	Specifications	Details
1.0	**Positioning parameters**	
1.1	Active axes	X, Y, Z, θ_X, θ_Y, θ_Z
1.2	Type of stage	Peizo-actuators (nano-positioning)
1.3	Integrated sensor	Capacitive (preferably)
1.4	Travel range	X,Y,Z : 2 mm or more
1.5	Tip/tilt angle	±0.5 mrad or better
1.6	Resolution in X, Y, Z	5 nm or better for piezo
1.7	Linearity error in X, Y, Z	< 0.01 %
1.8	Repeatability X, Y	±0.05 µm for nano positioning
2.0	**Controller**	
2.1	Control	Closed loop integrated
2.2	Multiple channel	6 axis or higher motion controller, Has to compatible with linear and rotary stages
2.3	Drive system	Must include relevant drive system & enclose full details
2.4	Encoder	Encoder details must be provided
3.0	**Load specification**	
3.1	Normal Load capacity	1 to 2 Kg or more
4.0	**Other requirements**	
4.1	Adapter Plates	Required
4.2	Cables	All suitable cables must be included
5.0	**Computer interface**	
5.1	System connection	The system shall be connected to external computer/laptop via USB or any advanced technology
6.0	**Application requirements**	
6.1	Must be capable to accommodate free form surfaces for laser machining applications	
6.2	Must support the machining of micro nano features in the range of 500 nm to 1 µm	

Other Requirements

1. Quotations with the complete solution for the above requirement will only be accepted.
2. I.I.T. Madras has the right to accept the whole or any part of the tender or portion of the quantity offered or reject it in full without assigning any reason (Quote items separately)
3. Quotations for a prototype machine will not be accepted.
4. Test certificates for all the stages confirming the specifications from OEM are required with shipping/freight documents.
5. Suppliers to provide training for programming, operation and maintenance at IIT Madras at free of cost.
6. All necessary safety regulations should be followed.
7. The complete system and its associated hardware/should have a standard warranty of 3 years from the date of installation, commissioning and acceptance of the system at IIT madras. Suppler modification (s)/software upgrades shall be intimated and the same will be made available free of cost during the warranty period.
8. All technical literature/catalogues and drawings of various systems should accompany the quotation. All the documents should be in English.
9. Installation and commissioning should be provided by the supplier. The Indian agent should have well proven service capability on similar systems with factory trained service engineers available in India. Details of their engineers expertise should be enclosed along with the offer and will be a key factor in the decision making.
10. The system should have compatibility with Indian environment conditions (for better power/energy stability)
11. Supply details of similar items to other IIT’s/NIT’s/ Universities need to be provided.