



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY

MATERIALS MANAGEMENT DIVISION

Powai, Mumbai 400076.

Ref. PR No. 1000051476

RFx. No. 6100002543

Technical Description: Particle Size Analyser

Sr. No	Technical Specification	Technical Compliance (Yes / No)	Additional Information (if any)
A.	Particle size and shape analyser		
1	Particle size range: 0.01 μm – 2000/3000 μm		
2	Particle properties measurement: Size, shape, transparency, count (Dynamic analysis)		
3	Particle size parameters: Particle size for liquid and dry powder, PSD, Circle equivalent (CE) diameter, length, width, perimeter, area, maximum distance, sphere equivalent (SE) volume		
4	Particle shape parameters: Aspect ratio, circularity, convexity, elongation, high sensitivity (HS) circularity, solidity, straightness etc.		
5	Particle transparency parameters: Intensity mean, intensity standard deviation		
6	Accuracy: 0.1%		
7	Repeatability: better than 0.5%		
8	Reproducibility: better than 0.5%		
9	Precision: 0.6-1%		
10	Analysis Type: Both dry and wet		
11	Vacuum unit for dry dispersion wherever applicable		
12	Laser Diffraction: Laser diffraction with imaging capability for dry powder and liquid dispersions		
13	Compatible Dispersion Units: Dispersion using a liquid carrier, mixing, and ultrasonication		
14	Magnification: Minimum 2x		
15	Materials: All (Metals, Ceramics etc)		
16	Response: Quick exchange between accessories (10-30 sec)		
17	Compressed air supply and compressor capacity: Noiseless, 12 bar, 20L Capacity		

18	Water supply: Min 5 bar-max. 10 bar		
19	Compliance: ISO 13320:2020 Laser Diffraction		
20	ISO 13322-2 Dynamic Image Analysis		
21	Representation of results of particle size analysis (ISO 9276-6)		
22	Image Analysis: 5 Megapixel, 22 fps max resolution		
23	Vacuum: Vacuum must meet 85 m3/hr		
24	Power Requirement: 230V single phase, 25-50 W		
25	Data Volume, Number, Data distribution, percentile data, summary data		
26	Physical specification: Impact resistant case material, externally surface should be finished and corrosion resistance paint or plating		
27	Software: The system shall include compatible software that ensures complete data integrity, including secure data capture, storage, export in multiple formats, User authentication & role-based access and audit trails.		
28	Vendor must provide Installation & commissioning, User training (minimum two users),		
29	Particle size and shape analyser Warranty Service warranty for 05 years		
B.	Computer System (Workstation)		
1	Processor: Intel Core i7 Processor (10th Gen or higher)		
2	Graphic Card: NVIDIA RTX 4070 Ti/RTX 4080 (16GB GDDR6X)		
3	Memory: 16 GB RAM (Expandable to 128 GB)		
4	Hard Disk Storage: 1 TB NVMe SSD (Gen 4)		
5	Additional Storage Media: CD-ROM or DVD +/-RW drive.		
6	Display Resolution: 3840 x 2160 full HD screen resolution		
7	Connectivity: 4 free USB2.0 or USB3.0 higher ports, Dual LAN, Wi-Fi		
8	Operating System: Windows 10/11 (64 bit-Pro and Enterprise)		
9	UPS: 2 Hr backup		
10	Printer: Colour Printer, 1200x1200dpi resolution., Wireless (Wi-Fi direct), USB, Ethernet / High resolution		
11	Computer System warranty 05 years		
12	Furniture: System workstation Table & Chair		

13	Air conditioner: 1.5 Tons (5-star rating)		
14	Vendor should submit the list of the customers such as IITs, NITs, R and D organisation with names, email id and contact number for feedback with whom similar equipment's have been supplied.		
15	Vendor should quote for entire package as per the specification above.		
16	The Same test sample will be provided to each vendor to allow a fair comparative analysis and accuracy of the instrument and accessories quoted; this will be treated as qualification criterion.		