

Detailed Specification

Enquiry:MM/172/G30262

Contact Details

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Please submit your offer for supply of the following items as per the instructions, technical specifications and other terms and conditions specified herein/ attached.

Note:


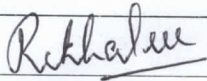
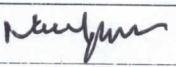

1. The delivery period mentioned in the BoQ is our indicative requirement. You may offer your earliest delivery period.

Please refer our above referred enquiry number in all correspondence.

SL No.	Material Code	Detailed Specification/s	Quantity	Unit of Measure
1	679810171	X-Ray Diffractometer As per the detailed Technical Procurement Specification for X-Ray Diffractometer (TPS-R&D-UC-001)	1	Number

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STATUS	ENQUIRY
P.O / W.O No.	
DEPARTMENT	RESEARCH & DEVELOPMENT
LOCATION	UDYOGAMANDAL
PURCHASER	FACT UDYOGAMANDAL
VENDOR	
ITEM	X-RAY DIFFRACTOMETER

0	06/05/2024	1 ST Issue			
Rev No	Date	Description	Prepared	Checked	Approved
Udyogamandal Complex : Research & Development Centre 					

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1.0 General

1.1 Scope of Supply

The scope includes supply of bench top X-Ray Diffractometer (XRD) with integrated touch panel capable of qualitative and quantitative phase determination. The system must combine high resolution horizontal sample mount X-ray Diffractometer with theta/theta goniometer having the capability of high resolution scanning mode with fully automatic and knowledge based control system. The system should be able to analyze a wide range of sample type including solid and powder samples. The software package should be user friendly and easy to imbibe, must have an interface that progress in step-by-step manner yet fast in performance and devoid of any lags, bugs.

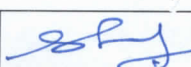
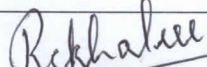
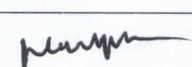
Technical Specification

2.0 X-Ray

- X-ray Tube: Copper
- X-ray tube shall have power capacity ranging from 2 kW or more.
- X-Ray Generator: 600W/40kV
- X-Ray generator should come with an X-Ray tube shield with the facility of radiation enclosure.
- Chiller: Internal chiller.

2.1 Goniometer

- Goniometer: Theta/Theta.
- Geometry: Vertical (keeps sample horizontal).
- Maximum scanning range -3 to 150° 2theta with minimum step size of 0.005° 2theta.
- Angular accuracy equal to or better than +/- 0.01° 2theta over full angular range.
- Minimum full width at half maximum (FWHM) better than 0.03° 2theta.

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2.3 Detector

- Silicon strip detector that can be operated in 0D/1D/2D measurement mode (Number of Channels: 160 up to 2400 sub-channels).
- Energy Resolution: < 1000eV (FWHM: 426eV at 8keV)
- Active Window: 12 x 16 mm², 2.5° coverage at 250 mm radius.
- Number of defective channels: <1%.
- Max. global count rate: 125,000,000 cps.
- Speed: 150x faster than conventional detector systems.
- Superb filtering of fluorescence.
- Large dynamic range, e.g. for 0D applications.
- Spatial resolution 75 µm.
- Wavelengths: Cr, Co, Cu, Mo and Ag. One detector for all wavelengths.
- Sensor thickness: 500 µm > 99% Cr, Co, Cu; 50% Mo; 30% Ag sensor efficiency.

2.4 Sample Rotation Stage

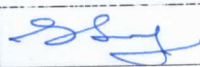
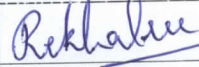
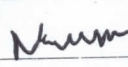

- Powder diffraction stage, single position with sample spinning. Stages can be mounted by the user on the goniometer's self-centering stage mounting interface.

2.5 Sample Holder

- 1 Set (10nos) of PMMA rings with height 8.5 mm, specimen well 25 mm.
- 1 no of Silicon crystal specimen holder for low background samples.

2.6 Optics

- Anti-scatter screen (1 & 3 mm opening) for 51.5 mm samples.
- Diffractometer system includes accessories with set of primary and secondary 2.5° Soller slits.
- Ni Filter for Cu-k β -radiation.

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2.7 Safety & Radiation enclosure


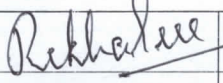
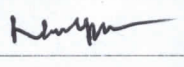
- The XRD system must be fully radiation protected as per the Indian and International radiation safety norms. The offered system must comply with the requirements of the Machinery Directive 2006/42/EC. In addition, it must comply with EC Directives 2014/35/EU on electrical equipment and 2014/30/EU on electromagnetic compatibility.
- The system shall comply with performance level E (EN ISO13849-1). The maximum radiation level outside the system shall be well below 1 micro-Sv/h.
- It shall be provided with X-ray Warning Light.

2.8 Software

- Supplier must offer licensed software with certificates along with media and exhaustive operating manual(s). Licenses for all the databases and computational software should be for minimum two years with updates. Periodic updates of all the software should be provided free of cost for a period of minimum two years.
- The software shall be capable of simultaneous diffractometer control, data collection and analysis, peak search and match, profile fitting and elaborate pattern treatment such as data smoothing, background subtraction, κ_2 stripping, etc. with minimum one user protected licenses.
- Software shall have facility for remote operation and diagnostics of the instrument.
- ICDD Database with minimum 5 years License shall be offered.

2.9 Warranty/ AMC

- Minimum two year on-site Warranty/Guarantee commencing from the date of complete and satisfactory installation of the equipment against the defect of any manufacturing, workmanship and poor quality of the components. The technical query shall be responded within 24 hours and on-site support shall be provided within 5 working days from the date of reporting of the technical failure for down time free operation of the instrument.
- AMC (annualized) for 60 months after completion of standard warranty period.

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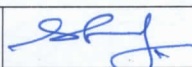
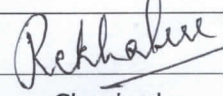
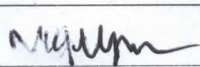

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2.10 Other essential items

- Suitable branded computer with latest WINDOWS, international version, English operating system with preloaded software(s) shall be offered. Physical disk(s) or media of all loaded software including Windows OS shall be supplied.
- Supply of spares for at least 10 years to be ensured.
- Interfaces 2x USB and 1 x LAN, RS232 connector for external X-ray warning light.
- Maintenance Kit.
- Training at site by dedicated factory certified engineers & application training by application scientist at site.

3.0 Other requirements

- Manuals (both soft and hard copy).
- Satisfactory free installation to the full specifications of the machine with all accessories on receipt of goods. Any additional equipment/accessory for the installation of the system should be quoted invariably. Organisation will provide only space and electrical connection.
- Free training to the operators.
- Consumables and other items/accessories required for smooth functioning of the machine must be quoted for enough quantity for uninterrupted operation of the machine for at least two years.
- List of organisations in India where the same equipment has been sold or is under operation shall be provided.
- NIST standard samples-for-calibrations and operation should be provided. Standard samples data should be measured before shipping from the manufacturing unit and the same/comparable data should be reproduced after installation.

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PRE-QUALIFICATION CRITERIA

TENDER No. MM/172/G30262 Dated 18-10-2024 for the procurement of X-Ray Diffractometer

Sl No	Pre-Qualification Criteria (PQC) Conditions	Documents to be submitted along with bid	Remarks	Bidders compliance
1	The Bidder shall be an Original Equipment Manufacturer (OEM) / Authorized distributor/dealer/channel partner of X-Ray Diffractometer.	Self-declaration in case of OEM shall be submitted. In case of Authorized distributor, copy of valid authorization certificate from OEM shall be submitted.	Relevant documents required	
2	The Bidder should have supplied minimum one number of X-Ray Diffractometer in India in the last 7 years as on date of NIT.	1. Copy/ Copies of the Purchase Order(s) in the name of the bidder or OEM clearly indicating the PO number with date and item description and quantity. 2. Invoice / delivery challan / performance certificate as proof of supply	Relevant documents required	
3	The instrument supplied vide PQC , clause 2 shall be in operation in India satisfactorily for a continuous period of minimum 2 years as on date of NIT in chemical industry / NABL accredited labs.	Performance Certificate / E-mail issued by the end user (detailed address & contact of end user to be provided) clearly indicating the make and shall reflect the period of performance.	Relevant documents required	
4	a) Average annual turnover of the bidder for the last three financial years ending on 31-03-2023 shall be at least Rs. 200/- Lakhs or above and b) Annual turnover for each year shall be at least Rs. 30 /- lakhs or above during the last three financial years ending on 31-03-2023	Self-attested copies of audited financial statements (Profit & Loss Account and Balance Sheet) for the last three financial years ending on 31-03-2023	Relevant documents required	

NOTE: -

- 1) All relevant documents for satisfying the pre – qualification criteria shall be enclosed in the techno- commercial bid, without which the offer is liable to be rejected.
- 2) FACT shall have liberty to verify the references submitted by the bidders with users and accept /reject the bids based on the feedback.
- 3) Offers from the bidders who do not meet the above PQ criteria will not be considered.
- 4) In case of FACT orders, Bidders need to mention only the PO number, submission of documents is not compulsory.
- 5) The Purchase Order date and corresponding delivery date shall be with in last seven years.
- 6) IMPORTANT: In case of ambiguity or incomplete or non submission of required relevant documents along with bid, FACT reserves the right, at its option, to reject the Bidders Bid without assigning any reason and without notice.



COMPLIANCE STATEMENT

Sl. No.	Terms	Bidder confirmation
1	Offer shall be strictly as per the TPS –R & D-UC-001 attached.	
2	Please mention shortest possible delivery period.	
3	Please confirm : Price Basis – FOR FACT Stores (as per Gem T & C)	
4	Please confirm : Taxes and Duties - The Price offered in GEM is all inclusive of TAX. (as per Gem T & C)	
5	Please confirm : Payment Terms : 100% payment will be released within 10 days of the issue of consignee receipt-cum-acceptance certificate (CRAC) and on-line submission of bills as per GEM terms and conditions. (as per Gem T & C)	
6	Please confirm : Liquidated Damages: As per GeM – “@ 0.5% of the contract value of delayed quantity per week or part of the week of delayed period as pre-estimated damages not exceeding 10% of the contract value of delayed quantity without any controversy/dispute of any sort whatsoever”(as per GeM T & C)	

Note : All the above columns shall be filled properly, without leaving blanks. Please upload / return this document duly filled-in, along with your bid.