TENDER NOTIFICATION FOR PROCUREMENT

DEPARMENT OF MECHANICAL ENGINEERING,

INDIAN INSTITUTE OF SCIENCE BENGALURU - 560012

Quotations are invited to procure a **Multicomponent Dynamometer** on CIP Bengaluru Basis. The quotation should clearly indicate the terms and conditions of delivery, delivery schedule, entry tax, payment terms, warranty coverage etc.

The quotation should be submitted in two parts: Part I (Technical bid) and Part II (Commercial bid).

Important dates

Sl no	Description	Date
1.	Two bid tenders last date. The tenderer should submit **Technical** and **Financial** Bid separately in sealed envelope super scribing the envelope as 'Technical Bid' and 'Financial Bid'. Both these envelopes should again be put in a single envelope superscribed 'TENDER FOR DYNAMOMETER" should reach the Chair, Department of Mechanical Engineering, Indian Institute of Science, Bengaluru 560 012.	June 29, 2020
2.	Technical Bid opening date. The Financial bids of the short listed agencies, qualifying in the technical scrutiny of the Committee set up by the Institute, will be opened at a later date and will be intimated to qualifying bidders to attend the price bid opening.	Vendor(s) will be notified by email
3.	Validity of the quote	120 days

OUR REQUIREMENT

Multicomponent dynamometer for measuring the three components of the resultant force vector and the three components of the resultant moment vector.

TECHNICAL SPECIFICATION

Description	Technical Aspect		
Maximum permitted measuring range (force application point at cover plate surface)	F_X, F_Y, F_Z M_x, M_Y, M_Z	kN N-m	-10 … 10 -500 … 500
Calibrated measuring range 100%	F_X, F_Y, F_Z	kN	0 … 10
Overload	F_X, F_Y, F_Z	%	20
Threshold		N	< 0.01
Sensitivity (rated)	F_X F_Y F_Z	pc/N pc/N pc/N	≈–8 ≈–4 ≈–8
Linearity, all ranges	F_X, F_Y, F_Z	+/-%/FSO	≤±0.3
Hysteresis, all ranges	F_X, F_Y, F_Z	%/FSO	≤0.3
Crosstalk	$F_Z \rightarrow F_X$, F_Y $F_X \leftrightarrow F_Y$ F_X, $F_Y \rightarrow F_Z$	% % %	≤±2 ≤±2 ≤±2
Rigidity	C_X, C_Z C_Y	N/µm N/µm	Min 1 000 Min 3 000
Natural Frequency	$f_n(x)$ $f_n(y)$ $f_n(z)$	kHz kHz kHz	≈3.5 ≈4.5 ≈3.5
Operating temperature range		°C	0 – 60
Isolation resistance		Ω	$>10^{13}$
Ground Isolation		Ω	$>10^{8}$
Degree of Protection			IP67
Weight Dynamometer Cover Plate		Kg Kg	Atmost 3.5 Atmost 2.0
Mounting surface		mm	90x100

Additional component required: Charge amplifier and associated cabling

Description	Specification
Number of channels	8 (preferred, 6-component force and torque measurement)
Input connector type	Compatible with supplied dynamometer
Output connector type	BNC
Input charge measuring range (pC)	+-100 to 10^6
Frequency range	0-45 kHz (<195000 pC) and 0-15 kHz (otherwise)

Drift	Maximum of +- 0.05 pC/s
Linearity error	Maximum 0.01% FSO
Cross talk	-80 dB
Output voltage	+- 10V (analog)
Output impedence	10 Ohms
Zero error	max +- 2 mV

SPECIFIC TERMS AND CONDITIONS

The following requirements should be specifically adhered to by the vendor, and express indication should be given regarding adherence.

1. GUARANTEE PERIOD: The equipment should be guaranteed for a period of 12 months from the date of handing over the fully functional unit to the Institute, against manufacturing defects of material and workmanship.

2. CUSTOM CLEARANCE: The Institute will furnish the necessary papers for the import of items into India, necessary custom duty exemption certificate and other supporting documents to facilitate the import of the items. Note: Institute has got into an agreement with **M/S FEI Cargo for custom clearance** of all imported equipment to the Institute.

3. MODE OF SHIPMENT: The consignment must be air-lifted, insured and transported to the installation site by the supplier.

4. PAYMENT TERMS: As per Standard terms agreed.

5. COMPLIANCE CERTIFICATE: Enclose compliance certificate along with Technical Bid having details regarding Compliance, Non- compliance, Deviations if any and reasons for deviation in comparison with the Technical Specifications mentioned in this notification.

TERMS AND CONDITIONS FOR SUBMISSION OF BIDS

Both the Technical and Commercial bid should be put in separate sealed envelopes and both the envelopes should be put in another cover subscribing **" Multicomponent Dynamometer"** and should reach "The Chairman, Department of Mechanical Engineering, IISc, Bengaluru-560012" on or before **29.06.2020**.

The Technical bid must include all the details of technical specifications of the equipment, compliance certificate along with commercial terms and conditions, however, without the price component. The bill of materials printed technical brochure and any other documents to help the technical evaluation of the bid may be enclosed.

1. The commercial bid must include the price of the item(s) in Indian/Foreign currency indicating the breakup of

(a) For Goods manufactured within India

(i) The price of the goods quoted Ex-works including taxes already paid.

(ii) GST and other taxes like excise duty, entry tax and other applicable taxes which will be payable on the goods if the contract is awarded.

(iii) The charges for inland transportation, insurance and other local services required for delivering the goods to IISc, Bangalore.

(iv) The installation, commissioning and training charges including any incidental services, if any with applicable service taxes.

(b) For Goods manufactured abroad

(i) The price of the goods should be quoted on CIF/DAP Bangalore, India basis.

(ii) The charges for insurance and transportation of the goods by Air/Sea up to Bangalore, India.

(iii) The agency commission charges, if any.

(iv) The installation, commissioning and training charges including any incidental services, if any.

2. The invoice to be billed at applicable GST and for concessional GST rates, GST concession certificate(s) shall be provided.

3. Please indicate the import code of the items.

4. Goods found to be defective by the committee during installation and warranty have to be replaced / rectified. Items found not acceptable or missing have to be replaced / rectified. Replacement of parts to be at the cost of the supplier (including all incidental charges), within 15 days from the date of receipt of written communication from us. If there is any delay in replacement / rectification, the warranty period should be correspondingly extended.

5. The terms FOB, FCA, CIF, CIP, etc., shall be governed by the rules prescribed in the current edition of the Incoterms published by the International Chambers of Commerce, Paris.

6. The purchases made by the purchaser for scientific purpose are exempt from excise duty and Custom Duty at a concessional rate is leviable.

7. Conditional tenders shall not be accepted.

8. Bids shall remain valid for minimum of 120 days after the date of bid opening prescribed by the Purchaser.

9. The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or Bidders.

10. Onsite inspection of the machine will be done by IISc before the dispatch at IISc cost.

Other Terms

➢The cost of the Multicomponent Dynamometer and that of each equipment/accessory to be quoted separately.

➢ The vendor must submit a signed compliance document mentioning whether their equipment meets each and every specification detailed above.

➢ The award of the tender will be decided by the institute as per price of the complete system. All insurance charges shall be borne by the vendor.

➢ Technical and financial bids should be submitted separately.

➢ All prices of the Multicomponent Dynamometer and accessories should be quoted in currency of respective country of origin of the equipment.

➢ The specifications mentioned shall be understood to be the minimum required. Additional technical and research features suitable to our requirements shall be given due reference.

➢ Vendors that submit qualifying technical and financial bids are required to send competent representatives from the sales and technical divisions for further negotiations.

All Communications in this regard should be addressed to;

The Chair,
Department of Mechanical Engineering
Indian Institute of Science
Bengaluru 560012, India.
With attention to: Dr. Koushik Viswanathan
Email to: koushik@iisc.ac.in