

Maulana Azad

National Institute of Technology Bhopal- 462 003

(An Institution of National Importance under MoE, Govt. of India)



**LIMITED TENDER ENQUIRY
FOR**

Supply of Jominy End Quench Tester and Auto Polisher.

Website: www.manit.ac.in
Email Address: info@manit.ac.in

Fax No: 0755-2670562
Telephone No: 0755-4051000, 0755-4052000

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Maulana Azad
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(An Institution of National Importance under MoE, Govt. of India)

No. MANIT/S&P/MME/2022/18

Date:19/09/2022

NOTICE INVITING TENDERS

Sub: Supply of Jominy End Quench Tester and Auto Polisher.

Tenders are invited for Supply of Jominy End Quench Tester and Auto Polisher. Interested Manufacturers/Authorized Partner/Agencies may log on Institute website www.manit.ac.in and CPPP website www.eprocure.gov.in/epublish/app for further details. Tender Document can be downloaded and the duly completed be submitted to the Assistant Registrar, Stores & Purchase, Maulana Azad National Institute of Technology- Bhopal- 462 003.

Last date of receipt of complete tender document is 10/10/2022 up to 12.00 hours. The Director of the Institute reserves the right to accept or reject any or the entire tender in full or in part without assigning any reason whatsoever.

Registrar

Maulana Azad

National Institute of Technology Bhopal- 462 003

| IMPORTANT INFORMATION AT A GLANCE | | |
|--|--|--------------------------------------|
| Tender No & Date: | No. MANIT/ S&P/ MME/ 2022/18 | |
| | Date: 19/09/2022 | |
| SCOPE OF TENDER | | |
| Brief Description of Goods/Items | Quantity | Remarks |
| 1. Jominy End Quench Tester | 01 | Detailed Specification at Annexure-I |
| 2. Auto Polisher | 01 | |
| Estimated cost of Tender | Rs. 4,50,000.00 | |
| Location of Supply & Installation | MME Department, MANIT Bhopal | |
| TENDER DOCUMENT | | |
| Tender Document can be downloaded free of cost from Institute website www.manit.ac.in and CPPP website www.eprocure.gov.in/epublish/app | | |
| Last Date & Time of Submission of Tender | 10/10/2022 up to 12:00 hours | |
| Date & Time of Opening of Bids | 12/10/2022 at 15:00 hours | |
| Tender Validity period | 60 days from the date of opening of the Technical Bid | |
| Delivery/ Supply period | 04 to 06 weeks from the date of issue of Supply Order | |
| Warranty Period | 01 year (s) from the date of successful Installation & Commissioning of equipments/ items | |
| Bid Security/ EMD | NIL | |
| Performance Security | 3% on total Value of PO | |
| Details of Contact Persons for Query if any | | |
| Name : Rakesh Singh Designation : Junior Assistant Tel No: 07554051808 Email: | Name Dr. C. Sasikumar Designation : Assistant Professor Tel No: 8989005394 Email: csasimv@gmail.com | |

| INSTRUCTIONS TO BIDDERS | |
|--------------------------------|---|
| 1 | Scope of Supplies & Work: |
| a | The Goods/ Items shall be supplied as per the Bill of Quantity and Specifications mentioned in ANNEXURE-I . However higher specification of equipment may be considered subject to their cost economics competitiveness. |
| b | Bidder should supply illustrated leaflet giving technical details of Goods/ Item and attach the same with the tender to facilitate evaluation. |
| c | Bidder should quote the price of only one best & appropriate model of Goods/Item available with them. |
| d | Bidder should quote preferably make-in-India items as mentioned in the Bill of Quantity. Bidder may be asked to supply sample of offered product/item before supply in bulk quantities. |
| e | Where ISI certification marked goods are available in market, procurement should generally be limited to goods with those or equivalent marking only. The warranty/AMC required must be specified |
| f | After the supply of Goods/ Items & Accessories as mentioned in the ANNEXURE-I , the bidder has to execute its installation at the designated location(s).No extra cost shall be paid for this reason. |
| 2 | Delivery of Supplies & Installation: |
| a | The purchaser interested for complete delivery of equipments along with Installation, Testing and Commissioning within the period as mentioned at IMPORTANT INFORMATION AT GLANCE sheet. However, the bidder has an option to submit the best delivery with installation time. |
| b | The material shall be inspected on receipt at site and bidder shall be responsible for any damage during the transit of Goods/Items. |
| c | The insurance cover including insuring the goods against the loss or damage incidental to manufacture or acquisition, transportation, storage and delivery/ installation shall be obtained by bidder in his own name and not in the name of purchases. |
| 3 | Warranty & After Sales Services: |
| a | The bidder shall offer on-site comprehensive warranty of equipments as mentioned at IMPORTANT INFORMATION AT GLANCE sheet at the designated location & shall cover each and every part of the equipments including parts having limited life etc. The purchaser is not liable to pay any extra charges on any account during warranty period. |
| b | The bidder shall ensure to render after sales services during the warranty period to the satisfaction of purchaser. |
| c | The performance security as per rate mentioned at IMPORTANT INFORMATION AT GLANCE sheet on the total value is required in favour of Institute for the warrantee period plus sixty days extra. |
| 4 | Eligibility Criteria: |
| a | Bidder should be a Company/Partnership firm/ Proprietary firm/ Agency and operational from at last year as on close date of tender. Copy of registration shall be attached. |
| b | The Bidder must have supplied similar equipment in last years to Central/State |

| | | |
|---|--------------------------------------|---|
| | | government/ Quasi-Government organization/ Public listed companies (IITs/NITs) in India. Copies of Purchase Order (PO) of similar equipment shall be attached along with price and performance certificates. |
| | c | Bidder should have minimum annual turnover (Double value of estimated cost of tender) in last year. CA certification in this regard is to be submitted. |
| | d | Bidder should have GST Number & Income PAN both. |
| | e | OEM Authorization Letter |
| | f | All items should be quoted by the bidder, otherwise, bid will be rejected. |
| | g | OEM ISO Certificate should be attached along with the Tender Document. |
| 5 | Amendment of Tender Document: | |
| | a | At any time prior to the date submission of bids, the purchaser, may, for any reason, whether at its own initiative or in response to a clarification sought by a prospective bidder, amend bid document by issuing corrigendum. The corrigendum will be notified/ published in e-tendering website www.eprocure.gov.in/epublish/app and Institute website only. |
| 6 | Price Bid | |
| | a | The Prices should be quoted in Indian Rupees only. |
| | b | Purchaser (being a research Institution) is registered with the Department of Scientific & Industrial Research (DSIR) for the purpose of availing custom duty exemption in terms of GoI Notification No. 51/96-Customs dated 23 July 1996. The bidder should quote their prices considering the exemption certificate. If any certification needed by bidder, may be given to avail this benefit. |
| | c | Bidder shall take into account all costs including unloading at the location of purchaser, cartage etc. for giving delivery of material at site(s) before quoting the rates. In this regard no claim what so ever shall be entertained. |
| | d | The bidders are advised not to indicate any separate discount. Discount, if any, should be merged with the quoted unit prices. |
| | e | The price quoted in price bid shall be firm but subject to change in rate of applicable taxes if any. |
| | f | The Bidder should avoid the use of vague term such as “Extra as applicable”. Such offers shall be treated as non-responsive. |
| | g | No extra payment shall be paid on account of any discrepancy in nomenclature of items. The bidder shall seek clarifications if any before submitting the tender. |
| 7 | Bid Submission: | |
| | | The tender must be placed in a properly sealed envelope super-scribed “ <i>Tender for the Supply of Goods.</i> ” with tender inquiry number and its due date addressed to The Director, Maulana Azad National Institute of Technology- Bhopal- 462003 and must reach the office of The Assistant Registrar- Stores & Purchase, Maulana Azad National Institute of Technology, Bhopal on or before as mentioned at IMPORTANT INFORMATION AT GLANCE sheet. The sealed Envelop should be consisting of followings: |
| | a | Copy of Certificate of Registration of firm, GST Number and Income Tax PAN. |
| | b | Certificate mentioning of Turnover for the last year and OEM authorization letter. |
| | c | BOQ Annexure-I and Price Bid Annexure-II duly filled and signed. |
| 8 | Evaluation of Bids: | |

| | |
|----|---|
| | The Institute may evaluate all the required goods/items in this tender together or independent depending upon nature of items & compatibility and compare the quotations determined to be substantially responsive i.e. which |
| a | are properly signed; |
| b | Confirm to the eligibility criteria of the vendor; and |
| c | Confirm to the terms & conditions, and technical specifications. |
| d | In case, required goods/items in this tender are independent and complete in nature. Institute may evaluate independently as far as price is concerned for placing order(s). |
| 9 | Validity of Tender: |
| a | The tender shall be valid as mentioned at IMPORTANT INFORMATION AT GLANCE sheet. Terms and financial details submitted in the bid shall be treated as firm during the validity period. |
| b | In exceptional circumstances, prior to the expiry of the bid validity period, the purchaser may request bidders to extend the period of validity of their bids. The request and the responses shall be made in writing. |
| 10 | Notification of Award: |
| a | Prior to the expiry of the period of bid validity, the purchaser shall notify the successful bidder, in writing, that its bid has been accepted. The notification letter shall specify the sum that the purchaser will pay to the bidder in consideration of the Supply of Goods/ Items with the details of selected location. |
| b | Purchase/ Contract order shall preferably be issued in favour of bidder. Bidder may request in advance for issuance of Purchase/ Contract order in favour of OEM of product. In this case billing and payment shall be made to OEM only. |
| 11 | Penalty Clause: |
| a | The bidder shall indicate the period within which the ordered quantity will be supplied along with Installation & Commissioning of Goods/ Items. The bidder shall note that in case bidder fails to do so within the period of delivery indicated by the bidder in price bid of this tender, penalty @ 0.50 % on total value of the PO per week of delay would be levied subject to maximum 20 weeks. It means, the bidder shall have the liability of delayed supply to the maximum of 20 weeks after expiry of scheduled delivery date. |
| 12 | Terms of Payment: |
| a | The Payment shall be made within 30 days by purchaser after supply and installation of Goods/ Items. |
| 13 | Jurisdiction: |
| a | In the event of any dispute the legal matter shall be subjected to the jurisdiction of Bhopal court only. |

Maulana Azad

National Institute of Technology Bhopal- 462 003

BILL OF QUANTITY

| S N | Technical Specification | Quan tity | Rem arks |
|--------|--|--------------|-------------|
| 1 | <p>Item Name: Jominy End Quench Test Apparatus Application /requirements: This equipment is used to find out the hardenability of steel by quenching from the end. This equipment should have the following items/parts</p> <p>A. Jominy End Quench Test Apparatus B. Muffle Furnace 1200 °C top and bottom gates C. Jominy Test Fixture for Hardness</p> <p>A. Technical Details of Quench Test Apparatus The design of end quench apparatus should strictly follow the specifications of <i>IS 3448-1966 and ASTM A-255</i>. It should have quenching fixtures, motorized water circulation through water pump with storage and test tank.</p> <ol style="list-style-type: none"> The design should ensure quick transfer of specimen from the furnace to the quenching fixture. The fixture must be strictly as per the specifications. It requires to fix the standard test specimen having the dimensions : Dia 25 ± 0.5 x length 100 ± 0.5 mm. The fixture must be designed with a corrosion resistant material (stainless steel or equivalent material). The joints/welds should also be appropriate and corrosion resistant. When the specimen is placed on the holder it should have automatic centre with respect to water jet. Motorized water jet must be provided. The specifications of the water jet should be strictly as per the specifications. i.e. Inside dia of verified water supply pipe 12.5 ± 0.5 mm, Height of the free water jet (without test piece in position) 65 ± 10 mm, Distance from tip of Nozzle to the bottom of test piece 12.5 ± 0.5 mm Quick action valve should be provided. Water jet should need to impinge specimen end (as per the standard) during the quench action, cover made of glass or transparent material must be provided to view the sample. The storage tank can be circular or rectangular. The capacity of storage tank can be decided by the supplier. However, it should hold appropriate quantity of water/quenchants for quenching action (e.g. 50 Litres or more). It should be made of a stainless steel or equivalent corrosion resistant material. The specifications of motorized water pumps should meet the requirements of specifications. | 1 | |

B. Muffle Furnace 1200 °C top and bottom gates

a. General

- i. DoubleShellcase.
- ii. HighPurityinsulationmaterialwithefficientlowthermalInsulation.
- iii. Benchtopmodel
- iv. Slide typeDoor withLock&keywith top and bottom gates

b. Inside Chamber Size : 400-450 mmX100-150mmX100-150 mm(HXW XD)

c. External dimension: 600-700mmX200-250mmX200-250mm(H XWXD)

d. Maximum temperature: 1200°C

e. Temperature Accuracy and uniformity: $\pm 1^\circ\text{C}$ and $\pm 2.0^\circ\text{C}$

f. Standard continuous temperature: 1100°C

g. Technical Specification:

1. Controller: Should be microprocessor based with necessary safety features. Programmable Temperature (PID Controller) controller with heating rate control from 10°C/minto100°C/min. (Fast heatingrate would be Preferable).
2. Heating element: Super Kanthal A1 and backed by high temperature ceramic insulation
3. Safety: Over Temperature protection& over load protection (Safety Controller)should provided.Doorsafetyswitchmustbeprovidedsot hatitdisconnectspowersuppl ytoheatingelementwhen dooropens.
4. Should be equipped with digital over temperature protection circuit to fail safe in the eventof a controller malfunction
5. Critical electronics component and heating elements protected by a 35A circuit breaker.
6. Weight:lessthan100 kg
7. Two set of operation and maintenance Manual should provided.
8. Provision for gas flow to maintain atmosphere.
9. K type thermocouple with high accuracy.

• Note:

1. Dust should not emanate from insulation material.
2. Thermo couple and controller calibration certificate
3. Shouldprovideeasyaccesstoelements&controlsformaintenance&servicingf romfront side

C. Jominy Test Fixture for Hardness

1. The fixture must be strictly as per the specifications. It requires to fix the standard test specimen having the dimensions : Dia 25 ± 0.5 x length 100 ± 0.5 mm. The fixture must me designed with a corrosion resistant material (stainless steel or equivalent material). The joints/welds should also

| | be appropriate and corrosion resistant. | | | | | | | | | | | | | | | | | |
|--------|---|---|---------|---------------|---|-------|---|---|-------------------------|---|---|-------------------|------------------|---|----------|-------------|---|--|
| 2 | <p>Item Name: Auto Polisher</p> <p>Application /requirements: This equipment is used to polish metallurgical samples automatically without human intervention. This equipment should have the following items/parts</p> <p>D. Polishing setup E. Thermal camera</p> <p>A. Polishing Setup –</p> <ol style="list-style-type: none"> 0.5 HP high torque AC motor single phase input 220v/50Hz or 110v/60Hz Imported AC Drive 10" or 12" dia options 50 to 1000 RPM or 50 to 600 RPM Machine size : roughly around 710 X 660 X 310 mm Auto polishing attachment to hold at least 3 samples without any vibrations for smooth operation. <p>Note-</p> <p>Fully moulded FRP cover. Quick change disc design enables discs with different grits / polish cloth to be used in desired steps.</p> <p>B. Thermal camera-</p> <table border="1"> <thead> <tr> <th>Sr No.</th> <th>Feature</th> <th>Specification</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Scope</td> <td>Specification covers Supply, commissioning & Training of Thermal Imaging Camera for predictive Maintenance of electrical equipments, installation, electrical panels and mechanical machineries and components for thermal inspections.</td> </tr> <tr> <td>2</td> <td>Technical Specification</td> <td>Thermal Imaging Camera should include with minimum of the following specifications,</td> </tr> <tr> <td>3</td> <td>Temperature range</td> <td>-20 °C to 280 °C</td> </tr> <tr> <td>4</td> <td>Accuracy</td> <td>±2 °C or 2%</td> </tr> </tbody> </table> | Sr No. | Feature | Specification | 1 | Scope | Specification covers Supply, commissioning & Training of Thermal Imaging Camera for predictive Maintenance of electrical equipments, installation, electrical panels and mechanical machineries and components for thermal inspections. | 2 | Technical Specification | Thermal Imaging Camera should include with minimum of the following specifications, | 3 | Temperature range | -20 °C to 280 °C | 4 | Accuracy | ±2 °C or 2% | 1 | |
| Sr No. | Feature | Specification | | | | | | | | | | | | | | | | |
| 1 | Scope | Specification covers Supply, commissioning & Training of Thermal Imaging Camera for predictive Maintenance of electrical equipments, installation, electrical panels and mechanical machineries and components for thermal inspections. | | | | | | | | | | | | | | | | |
| 2 | Technical Specification | Thermal Imaging Camera should include with minimum of the following specifications, | | | | | | | | | | | | | | | | |
| 3 | Temperature range | -20 °C to 280 °C | | | | | | | | | | | | | | | | |
| 4 | Accuracy | ±2 °C or 2% | | | | | | | | | | | | | | | | |

| | | |
|----|----------------------------|---|
| 5 | Focus | Auto |
| 6 | Measurement modes | 1> Center point measurement, 2> Hot and cold-spot automatic recognition, 3> Differential temp. (Delta T), 4> Area measurement (with min-max-avg on area) |
| 7 | Emissivity correction | 0.01 to 1.0 (0.01 increments) |
| 8 | Spectral band | 7.5 µm to 14 µm |
| 9 | Detector Type | Focal Plane Array, Uncooled micro-bolometer |
| 10 | IR resolution | 160 x 120 pixels or better IR resolution enhancement to 320 x 240 pixels or better |
| 11 | Digital display | Min. 3.5" color screen |
| 12 | Palettes | Minimum 4 color pellets |
| 13 | Thermal sensitivity (NETD) | 100mK or better at 30 Deg.C. |
| 14 | Visual light Camera | Min. 3.1 MP Built-in visual camera required. |
| 15 | Battery | 4 hrs. backup, lithium iron fast charging battery |
| 16 | Memory storage | 2.8 GB internal memory should have the capability to store minimum 800 -1000 Images. |
| 17 | Image storage format | Images must be stored in both the formats i.e., std. JPEG with original measurement data. |
| 18 | LENS | Field of view (FOV): 31° *23° Spatial resolution (IFOV): 3.4 mrad or less |
| 19 | Data interfaces | WLAN Connectivity to Mobile/Tablet apps. for on-site image analysis and report generation USB 2.0 connectivity to local computer for data transfer It shall be capable of streaming the video on tablet/mobile through WLAN connectivity |
| 20 | Analysis Software | Full analysis and reporting software to be included. Software shall be license free. The Software shall have minimum of the following features - a) Complete Analysis of the Thermal Imager b) Capability to add comments & remarks in the Image c) Add visual images in the Reports d) Overlay Thermal Imager over Visual Image e) Set the transparency level to regulate the intensity of the infrared or the real image |

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| | | <p>component in the overlay.</p> <p>f) Mark Critical temperature ranges by inserting infrared limits to directly emphasize problems in the visual image</p> <p>g) Generate comprehensive Reports automatically</p> <p>h) Date/time, temperature range, Emissivity</p> | | |
| 21 | Set-up controls | Visualization of Battery status, user settable target emissivity & Date & Time. | | |
| 22 | On-screen setting/view | Internal rechargeable Li Ion Battery | | |
| 23 | Battery type | Should be easy to Replace on site | | |
| 24 | Battery Charging | AC Adapter with 230 volts, AC,50Hz input to be provided. Should also be possible to externally charge the batteries. | | |
| 25 | Operating temperature | -15 °C to +50 °C | | |
| 26 | Storage Temperature | -30°C to + 60°C | | |
| 27 | Relative humidity | 10% to 90%, non-condensing | | |
| 28 | Weight | Should be less than 700 gms. | | |
| 29 | Type Testing Reports | <p>In addition to CE certificates, following type test certificates should be provided as per below details. The type must be carried out from NABL accredited laboratory in India.</p> <ol style="list-style-type: none"> 1. IP54 - Test report as per IEC 60529-2013 2. EMC Type test report as per IEC 61000-4-8:2009 3. Vibration: - 2G (IEC 60068-2-6) | | |
| 30 | Accessories to be included | <p>Minimum following accessories to be included</p> <ol style="list-style-type: none"> 1. Carrying Case for Thermal Imager 2. Data cable, instruction manual, Software CD/software on USB etc. | | |
| 31 | Warranty | The equipment shall be guaranteed for trouble free performance and warranted against any defects in material; workmanship; design and for any abnormal behavior for period of not less than 24 months from the date of supply. | | |
| 32 | Training | The successful tenderer shall carry out the training demonstration of the equipment in the premises of consignee. Also, the tenderer shall impart the training to the staff on the equipment regarding operation and maintenance. | | |

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|---|----|--------------------------------|---|-------------------------------------|--|
| | 33 | Service & Calibration Facility | Bidder / OEM should have own service facility in India and own NABL accredited calibration lab / instruments for thermal imager calibrations. | | |
| We confirm with our acceptance to the technical specification as given above. | | | | | |
| Date: | | | | BIDDER'S NAME & SIGNATURE WITH SEAL | |

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| | | ANNEXURE- II |
| FORMAT FOR SUBMISSION OF BID PRICE | | |
| To, The Director MANIT- Bhopal- 462 003 | | |

| | |
|-------------|---|
| Sub: | Price Bid with reference to Tender Document No: _____ dated _____ |
|-------------|---|

| SN | Product Description with make & Model | Discounted unit price | Qty | Qty Price | GST | Total Price |
|----|---|-----------------------|-----|-----------|-----|-------------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7(5+6) |
| 1 | Jominy End Quench Tester (as mentioned in BOQ) | | 01 | | | |
| 2 | Auto polisher (as mentioned in BOQ) | | 01 | | | |

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|---------------------|--|--|--|--|--|--|
| Total offered Price | | | | | | |
|---------------------|--|--|--|--|--|--|

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|--------------------|
| Total (In Words): |
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|---------------------------|
| Delivery Period required: |
|---------------------------|

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| The followings things are confirmed and undertake by us that: |
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|---|--|
| a | The price quoted above are inclusive of basic price, statutory levies and taxes, duties, Transportation, Incidental services (including Insurance, Loading/ unloading, Packing & Forwarding charges, Installation etc.) at site. |
| b | Taxes are subject to change/ revision. |
| c | We agree with the terms and conditions specified in "Instructions to Bidders" and if selected, the execution of supplies would be made in compliance. |

| | |
|-------|--|
| | |
| Date: | Signature of Authorized Bidder with proper rubber stamp |
| | Name: |
| | Designation: |
| | Mobile No: |