

Maulana Azad
National Institute of Technology Bhopal- 462 003

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



E-TENDER DOCUMENT
FOR
Supply, Installation, Testing and Commissioning of Particle Image
Velocimetry(PIV)

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No. MANIT/CRF/2025:02

Date:11/12/2025

NOTICE INVITING E-TENDER

Sub: Supply, Installation, Testing and Commissioning of Particle Image Velocimetry (PIV)

Maulana Azad National Institute of Technology (MANIT) is one of the leading institutions of national importance in the area of technical education, established with the objective of developing a “Centre of Excellence” in the central region. Its aim at becoming a multi-disciplinary Centre for technical education by strengthening both teaching and research activities besides contributing to the needs of rural community, society and industry at large.

Institute is fully funded by Ministry of Education, Government of India and is governed as per provisions made under the National Institute of Technology, Science Education and Research Act 2007. (NITSER Act 2007).E-Tenders in (two bid system) are invited for Supply, Installation, Testing and Commissioning of Particle Image Velocimetry (PIV). Interested Manufacturers/Authorized Partner/Agencies may log on Institute website www.manit.ac.in for further details. Tender Document can be downloaded after registration of bidder on the website <https://eprocure.gov.in/eprocure/app>.

Last date of receipt of complete tender document is 12/01/2026 **up to 17.00** 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		
Scope of Tender	Supply, Installation, Testing and Commissioning of Particle Image Velocimetry (PIV)	
Access of Tender Document	Tender document can be obtained free of cost after registration of bidder on the website: https://eprocure.gov.in/eprocure/app	
Cost of Tender (Approximately)	Rs. 1,82,90,000.00 including GST	
Date & Time of Pre-bid Meeting	29/12/2025 at 14:30 hours Institute Committee Room	
Earnest Money Deposit (EMD)	Rs. 3,65,800.00 (Three lakh sixty five Thousand eight hundred only) by way of RTGS/NEFT or bank deposition only	
Last Date & Time of Submission of Tender	12/01/2026 up to 17:00 hours	
Date & Time of Opening of Techno-commercial Bids	15/01/2026 at 14:00 hours	
Date & Time of Opening of Price Bids	Shall be informed after evaluation of Techno-commercial bid through website https://eprocure.gov.in/eprocure/app	
Tender Validity Period	120 days	
Delivery/ Supply period	120 days	
Warranty Period	Two years	
Performance Security	5% of order value.	
Details of Contact Persons for Technical Query		
Dr. Lal Singh Asstt Professor Mechanical Engg 0755-4051601 lalsingh@manit.ac.in	Dr. Kanchapogu Suresh Asstt Professor Chemical Engg 0755-4051807 ksuresh@manit.ac.in	Dr. Kuldeep Singh Yadav Asstt Professor Department of Mathematics 07554051530 kuldeep@manit.ac.in
Details of Contact Person for Commercial Query	Central Store & Purchase Asstt. Registrar (S&P) 0755- 4051040 anil.mistri@manit.ac.in	Shri Prashast Manglik Tech Officer-CRF 0755-4051006 prashast@manit.ac.in

		CHAPTER-I	
INSTRUCTIONS TO BIDDERS			
1	Location of Supply & Installation:		
	a	MANIT- Bhopal & its premises.	
	b	Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their tenders as to the nature of the ground and sub-soil (So far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their tender. A bidder shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charges consequent on any misunderstanding or otherwise shall be allowed.	
2	Scope of Supplies & Work:		
	a	The equipments & its accessories shall be supplied as per the Bill of Quantity and Technical Specifications mentioned in ANNEXURE-3 .	
	b	The specifications of the equipment mentioned in the Bill of Quantity are the requirement of tender, however, higher specifications of equipment may be considered subject to their cost economics, competitiveness in the financial terms.	
	c	Bidder should offer only one best & appropriate model of equipment available with them along with its brochure, data sheet, pre-installation advice and power requirement. Bid offering multiple models shall liable to be rejected.	
	d	After the supply of equipments & accessories as mentioned in the Bill of Quantity, the bidder has to execute its installation, testing and commissioning at the designated location(s).	
	e	Any accessories/ manuals that are required to make the equipment (s) operational but not mentioned in the document, are required to be supplied by the bidder as to make the equipment (s) fully & systematically operational.	
	f	All the pre – installation requirements if any, such as earthing at the site, power requirement, Dehumidifier, Dark/dust free room (if required) etc. along with the suitable platform/table to place the equipment should be provided by the OEM/Bidder and any other requirements for installation as well as smooth functioning of the equipment must be taken care by the OEM/Bidder.	
	g	Manufacturer shall provide comprehensive trainings to Faculty and Technicians of Institute by application expert for operation of instrument. Training shall be in three phases. First phase training shall be provided at the time of Installation, Second & Third training shall be provided within six months or as mutually agreed upon. No extra cost shall be paid for such trainings including cost of material etc.	
	h	No bidder is allowed to sub-contract any part of the work to any firm/party.	

3	Pre-bid Information
	Bidders may attend the pre-bid meeting scheduled as mentioned at IMPORTANT INFORMATION AT GLANCE sheet. Techno-commercial queries may also be submitted through mail only on or before pre-bid meeting for consideration. No query will be entertained after pre-bid meeting.
4	Delivery of Supplies & Installation:
	<p>a The purchaser interested for complete delivery of equipments along with Installation, Testing and Commissioning by bidder as mentioned at IMPORTANT INFORMATION AT GLANCE sheet. Delivery period shall start from issuance of order or the date of opening Foreign Letter of Credit (FLC) whichever is later. However, the bidder has an option to submit the best delivery with installation time, but in any case that should not be beyond delivery period + 30 days from the date of issue of supply of order by purchaser.</p> <p>b The material shall be inspected on receipt at site and bidder/OEM shall be responsible for any damage during the transit of equipments.</p> <p>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 purchaser. The purchaser will as soon as possible but not later than 45 days (forty five) from the date of arrival of goods at destination shall notify the bidder of any loss or damage to the goods.</p>
5	Warranty & After Sales Services:
	<p>a The bidder shall offer on-site comprehensive warranty of equipments as mentioned at IMPORTANT INFORMATION AT GLANCE sheet. Warranty shall cover each and every part of the equipments including parts having limited life etc. Warranty period shall start from the date of successful Installation & Commissioning of equipments. The purchaser is not liable to pay any extra charges on any account during warranty period.</p> <p>b The bidder shall provide lifetime support & updation of software provided with the machine.</p> <p>c The bidder shall provide service support within a week time. The breakdown period shall not be counted under warranty and shall be extended further.</p> <p>d The bidder shall pay to the purchaser such compensations that may arise by reasons of the warranty there in contained but not attended by the bidder.</p> <p>e Any part or parts fail or proved defective within the on-site warranty period specified above, owing to defect in design, material or workmanship, the bidder shall have to replace them at the place of installation without asking for any charges.</p> <p>f During the warranty period, expert(s) shall be deputed at site by the bidder within seven working days from the date of request from purchaser, to rectify and fix the defects of equipment (s) at the location where equipment (s) is installed. The cost of deputation of expert(s) and any other associated expenditure shall be borne by the bidder.</p>

	g	During the warranty period, the bidder shall provide at least two preventive maintenance visits per year. The cost of deputation of expert(s) and any other associated expenditure shall be borne by the bidder.
	h	The OEM should have authorized service centre in India and shall ensure to render after sales services during the warranty period to the satisfaction of purchaser.
	i	The bidder should ensure to extend service & spare support at least triple of the warranty period, after the specified warranty period at separate commercial terms mutually agreed upon.
6	Tender & its Clarification:	
	a	The tender document can be downloaded free of cost after registration of bidder on website: https://eprocure.gov.in/eprocure/app between start date and end date of tender.
	b	A prospective bidder requiring clarification on the tender document may notify to the contact Person (s) as mentioned at IMPORTANT INFORMATION AT GLANCE sheet in writing, well before the date of pre-bid meeting, and a response will be sent in writing to the clarifications sought prior to the date of opening of the tenders.
7	Amendment & Corrigendum:	
	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 tender document and specification by issuing corrigendum.
	b	The corrigendum will be notified/ published in e-tendering website https://eprocure.gov.in/eprocure/app & Institute website only. Any corrigendum, addendum etc issued shall be part of this tender document and shall be made available on this e-tendering portal.
	c	In order to facilitate prospective bidders, reasonable time may be provided to take the amendment into account in preparing their bids, the purchaser may, at its discretion, extend the last date for the receipt of bids if required.
8	Integrity Pact:	
	a	Government of India, Ministry of Education through its OM No: C-34014/03/2021-Vig. Dated 03/01/2022 has decided the threshold limit i.e. 1.00 Crore for major procurement activities includes Works, Goods and Services. In compliance of said OM Integrity Pact as per ANNEXURE-6 shall be signed between the prospective Vendors/ Bidders and buyer committing the persons/ officials of both sides, not to resort to any corrupt practices in any aspect/ stage of contract. Appointment of Independent External Monitors (IEM) under process and as soon as it is completed, shall be uploaded on Institute website.

9	Earnest Money Deposit: <p>a The EMD amount as mentioned at IMPORTANT INFORMATION AT GLANCE sheet, shall be remitted through RTGS/NEFT/ Bank deposition into Institute bank account as under:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">Account Name</td><td style="width: 25%;">Bank Name</td><td style="width: 25%;">Bank A/c No.</td><td style="width: 25%;">Bank IFS Code</td></tr> <tr> <td>Director MANIT Bhopal</td><td>State Bank of India</td><td>10020150107</td><td>SBIN0001608</td></tr> </table> <p>The bidder is instructed to submit the RTGS/ NEFT/ Bank deposition slip in along with Techno-commercial Bid to prove the transfer of payment to the purchaser's Account. The offers without EMD from the bidders shall be rejected.</p> <p>b The Purchaser shall not be liable for payment of any interest on EMD.</p> <p>c Any request by the bidders to consider their EMD already furnished by them to any of the other office of the purchaser, for any other contract/ tender will not be considered as EMD for this tender.</p> <p>d The EMD will be returned to the unsuccessful bidders soon after the orders are placed on the successful bidder.</p> <p>e The EMD will be returned to the successful bidder soon after supply of material at Institute.</p> <p>f The bidder seeking EMD exemption, must submit the valid supporting document for the relevant category. Manufacturers for goods and service providers for services are eligible for exemption from EMD under MSME Category. Traders are excluded from the purview of this policy.</p>				Account Name	Bank Name	Bank A/c No.	Bank IFS Code	Director MANIT Bhopal	State Bank of India	10020150107	SBIN0001608
Account Name	Bank Name	Bank A/c No.	Bank IFS Code									
Director MANIT Bhopal	State Bank of India	10020150107	SBIN0001608									
10	Submission of Tender : <p>a The person signing the tender form or any other documents on behalf of the bidder shall be deemed to warrant that he has authority to bind the bidder. If it subsequently comes to light that the person so signed had no authority to do so, the purchaser may without prejudice to any other civil & criminal remedies cancel the tender and hold the bidder liable for all costs, charges and damages.</p> <p>b The bidder is expected to examine all Instructions, Forms, Terms & Conditions and Specifications in the tender document and to furnish with its bid all documents or information as required in tender document through e-tendering website i.e. https://eprocure.gov.in/eprocure/app . No documents shall be submitted in hard copy (s).</p> <p>c The bidder is instructed to give their online offer through two bid system for this tender. i.e. Techno-commercial Bid and Price Bid.</p> <p>d The Techno-commercial bid cover shall include all technical details & technical specifications, offered Product & itsmake and also the commercial documents as mentioned in tender document for the supplies to be made and the services to be rendered EXCLUDING ANY PRICE DETAILS THEREOF.</p> <p>e The Price bid cover shall contain only prices of the equipments offered for supply and the charges for the services to be rendered.</p> <p>f Tenders received in open covers/ letters/ fax/ email will not be considered.</p> <p>g Complete & concise bids (Techno-commercial & Price) must be uploaded on the website https://eprocure.gov.in/eprocure/app within the stipulated time</p>											

		frame of the tender.
	h	The Institute may, at its discretion, extend the deadline for the submission of bids by amending the tender documents, in that case, all rights and obligations of the Institute and bidders previously subject to the deadline shall thereafter be subject to the deadline as extended. The prospective bidders are advised to remain in touch with website for any update in respect of their tender.
11	Techno-commercial Bid Submission:	
	Bidder or OEM should submit following documents sequentially duly signed along with techno-commercial bid:	
	a	ANNEXURE-1, 2, 3, 4, 5 and 6 duly filled, signed and accepted.
	b	Copy of other documents as mentioned in Chapter-II “ ELIGIBILITY & QUALIFICATION CRITERIA ”
12	Price Bid Submission:	
	a	The Prices should be quoted in the ANNEXURE-7 preferably in Indian Rupees. In case of foreign OEM, prices may be quoted either in its currency or US Dollar. Indian bidder shall quote the price considering F.O.R. Institute Bhopal and foreign bidder shall quote the price considering Delivered Duty Paid (DDP as defined in the current edition of INCOTERMS) at Institute, Bhopal. Institute will provide necessary documents upon request of bidder in advance.
	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 is needed by bidder, may be given to avail this benefit.
	c	The 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. Discount of any type, indicated separately, will not be taken into account for evaluation purpose. However, in the event of such an offer, without considering discount, if it is found to be the lowest, the purchaser shall avail such discount at the time of award of contract.
	e	The price quoted in price bid shall be firm but subject to change in rate of applicable taxes if any.
	f	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.
	g	No representation for the enhancement of the prices of the accepted tender or alteration of the terms and conditions will be entertained till supplies are completed to the designated location.
	h	Bidder shall prepare price bid as per the ANNEXURE in .xls format and upload the same in CPPP. In case of any difficulty is found, may contact on

		toll free numbers available on Central Public Procurement Portal.
	i	The bidder would have to quote the prices for the total scope of work in the ANNEXURE . Partial quote are liable to be rejected.
13	Opening of Techno-commercial & Price Bid	
	a	The Techno-commercial Bid of tenders will be opened as per schedule mentioned at Important Information at a glance sheet.
	b	The Price bid of only technically qualified bidders will be opened on the stipulated due date. The date & time for opening of Price Bid shall be intimated to the technically qualified bidders through website https://eprocure.gov.in/eprocure/app or telephonically or email, after the evaluation of Techno-commercial Bid.
14	Withdrawal & re-submission:	
	a	The bidder, after submitting the tender, is permitted to withdraw and re-submission as per laid down in the procedure available on Government CPPP up to the date and time of the tender through on-line only. Any such request received after prescribed date and time of receipt of tender will not be considered. No bid shall be withdrawn in the interval between the deadline for submission of bids and expiration of the period of bid validity. Withdrawal of bid during this period will result in forfeiture of the bidder's EMD and imposition of other sanctions.
15	Evaluation of Bids:	
	a	Price bid shall be submitted preferably in Indian Rupees. In case of foreign OEM, foreign currency conversion rate shall be taken into consideration on the date of opening of Price bid.
	b	If there is a discrepancy between the unit price and the line item total that is obtained by multiplying the unit price by the quantity, the unit price shall prevail and the line item total shall be corrected, unless in the opinion of the purchaser if there is an obvious misplacement of the decimal point in the unit price, in such case the line item total as quoted shall govern and the unit price shall be corrected.
	c	If there is an error in a total corresponding to the addition or subtraction of sub totals, the subtotals shall prevail and the total shall be corrected.
	d	If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.
	e	To assist in the examination, evaluation, comparison of the bids and qualification of the bidders, the purchaser may, at its discretion, ask any Bidder for a clarification of its bid. Any clarification submitted by a bidder in respect to its Bid that is not in response to a request by the purchaser shall not be considered. The purchaser's request for clarification and the response shall be in writing only.
	f	If a Bidder or OEM does not provide clarifications of its bid by the date and time set in the purchaser's request for clarification, its bid may be rejected.

	g	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 supply order, without thereby incurring any liability to Bidder or OEM In case of annulment, all bids submitted and specifically bid document, EMD deposits shall be promptly returned to the bidders.
	h	The purchaser shall compare the evaluated prices of all substantially responsive bids to determine the lowest evaluated bid for a particular location. The comparison shall be on the basis of landed cost at individual destination.
	i	At the time the contract is awarded, the purchaser may increase the quantity of equipments without any change in the unit prices or other terms & conditions of the bid and the bidding documents subject to the acceptance of bidder in writing for the same.
	j	The purchaser have right to verify the particulars furnished by the bidder independently.
16	Validity of Tender:	
	a	The tender shall be valid as mentioned at IMPORTANT INFORMATION AT GLANCE sheet. Validity days shall be calculated from the date of opening of the Techno-commercial bid. 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.
17	Causes of rejection of Tender:	
	a	The bidder must be a single company, partnership firm, or proprietary entity. Consortium will not be allowed.
	b	While submitting the tender, if any of the prescribed conditions are not fulfilled or are incomplete in any form, the tender is liable to be rejected.
	c	If any bidder stipulates any condition of his own, such conditional tender is liable to be rejected.
18	Forfeit of Earnest Money Deposit:	
	a	If any bidder withdraws his tender before the period of 180 days from the date opening of Techno-commercial Bid or makes any modifications in the terms and the conditions of the tender which are not acceptable to the purchaser, then the purchaser shall, without prejudice to any other rights or remedy, be at liberty to forfeit the EMD.
	b	The EMD will also be forfeited in following cases: <ol style="list-style-type: none"> If the bidder fails to accept the order based on his offer (bid) and within the prescribed time. If the bidder fails to supply the equipments with specifications as mentioned in ANNEXURE. If the bidder delays supply beyond a reasonable time resulting in disruption of project. Bidder for any reasons whatsoever withdraws the tender after it is accepted or becomes unable or fails to execute the orders within

		stipulated delivery period. v. Submission of misleading/contradictory/false statement or information and fabricated/invalid documents is detected before or after the issue of order to execute the supplies.
19	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 or OEM in consideration of the supply of equipments, installation, testing & commissioning.
	b	Purchaser may issue purchase order in the name of OEM on the request of bidder with a copy to bidder.
	c	The successful Bidder shall, within a week from the date of receipt of communication of acceptance of quotes from purchaser shall intimate his acceptance of the order.
20	Performance Security Deposit:	
	a	The bidder has to deposit performance security for warranty period plus two months as mentioned at IMPORTANT INFORMATION AT GLANCE sheet through BG/ FDR/DD along with submission of invoice.
	b	In case of breach of contract, performance security shall be forfeited and the bidder shall be blacklisted for such period as decided by the competent authority in addition to cancellation of order.
	c	Performance Security shall be returned to the bidder without any interest, whatsoever, after completion of warranty period as specified in the tender.
21	Packing of Equipments:	
	a	The bidder shall provide packing of the equipments, as is required to prevent their damages or deterioration during the transit to their final destination. The packing shall be sufficient to withstand, without limitation, rough handling during transit. In case the consignment received with damaged packaging, the purchaser would not accept the delivery.
	b	The equipments shall be securely boxed, crated and protected from mechanical damage, moisture etc. suitable for both storage and transit according to the nature of the material and mode of transport. The bidder shall be responsible for any loss/ damage to material during transportation to the designated location.
22	Time Limit for Supply of Equipments, Installation, & Commissioning:	

	a	The bidder shall indicate the period within which the ordered quantity will be supplied along with Installation & Commissioning of equipments. The Bidder or OEM shall note that in case Bidder or OEM fails to do so within the period of delivery indicated by the bidder in Techno-commercial Bid of this tender, penalty @ 0.50% on total value of the order per week of delay would be levied subject to maximum 20 weeks. It means, the Bidder or OEM shall have the liability of delayed supply to the maximum of 20 weeks after expiry of scheduled delivery date. Afterwards, it shall be sole discretion of the purchaser whether to accept the material with penalty or cancel the supply order, forfeit the EMD and debar from participation in any future tenders.
23	Terms of Payment:	
	a	In case of price quoted in Indian currency, the 100% payment of total bill will be made by purchaser after supply installation, commissioning, testing and training upon submission of inspection report duly signed by Committee and Performance Security.
	b	In case of price quoted in foreign currency, LC shall be opened for entire quote value. 80% payment of total bill will be made by purchaser after delivery of material at Institute. Remaining 20% payment will be made after installation, commissioning, testing & training upon submission of inspection report duly signed by Committee and Performance Security.
	c	Bidder has to provide necessary documents like Commercial Invoice, Certificate of origin, Packing list, Wood packing certificate, Bill of lading Insurance cover and Custom clearance document as the case may be.
	d	All the payment to bidder shall be made by crossed account payee Cheque/ RTGS/ NEFT/FLC for which the bidder shall send bills in duplicate (Original + copy) giving the reference number of the purchase order along with copies of delivery note & satisfactory report on the Installation of Equipments, from committee of the Institute. The details about the authorized person to take the delivery of equipments shall be informed to the successful bidder through the supply order placed for the supply of equipments.
24	Claims:	
	a	If the specification of supplied equipments are found to be lower than those stipulated in the accepted offer, the purchaser shall have right to totally reject the supplied equipments to claim for compensation from bidder. The bidder shall reimburse the claim to purchaser, lodged in writing within 15 (fifteen) days of its demand. The bidder shall also compensate for losses, if any, sustained by purchaser due to defective packaging and/or wrong marking of the equipments.
	b	The bidder shall be responsible for arranging the rejected equipments to be removed at his cost from purchaser's premises.

CHAPTER-II		
ELIGIBILITY & QUALIFICATION CRITERIA		
1	Bidder should be a Company/Partnership firm/ Proprietary firm/ Agency with registered office in India and operational from at least 03 years (Three) as on close date of tender. Copy of registration shall be attached.	
2	Bidder or Original Equipment Manufacturers (OEM) must have ISO certification for their establishment. The copy of the valid ISO Certificate shall be attached with the Techno-commercial Bid.	
3	The Bidder/OEM must have at least three installation of same product/equipment in last five years to Central/State government Organizations, PSU's, Government research Institute or other government organization in India. Copies of Purchase Order (PO) as a documentary evidence for the same shall be furnished with installation reports and customer details. Following information should be provided as a proof (i) three PO copies without erasing consideration price (ii) Installation reports with customer names, contact details such as phone number, email-id.	
4	The bidder & OEM must have average financial turnover i.e. 50% of tender value excluding GST & 400% of the tender value excluding GST during the last three years respectively i.e. Relevant supporting document like Profit & Loss Account/ CA certification shall be submitted.	
5	Bidder shall submit brochure, complete Data sheet of offered equipment along with pre-installation advice & power requirement. The same should also reflect on bidder/ OEM website.	
6	Bidder shall remit The EMD through RTGS/NEFT/ Bank deposition into Institute bank account as mentioned at IMPORTANT INFORMATION AT GLANCE sheet.	
7	The Bidder/OEM must have Income Tax PAN and GST Number. Copy of the same shall be attached.	
8	The bidder should be OEM or Authorized Dealer/Distributor/System Integrator of the OEM of the offered product. Authorization Letter from OEM specific to this tender need to be submitted.	
9	The Bidder/ OEM must have its own service/ support centre in India preferably in MP for attending complaints / suggestions.	
10	The Bidder/OEM should have a clean Track record, i.e. The Bidder/OEM should not have been black listed by any Govt. or Quasi- Govt/ Govt. under taking companies in India at any point of time.	
11	The Bidder/OEM who has refused to execute any work order issued by MANIT in the past is disqualified from participating in this tender.	

CHAPTER-III		
GENERAL CONDITIONS OF CONTRACT		
1	Abbreviations & Acronyms:	
	a	Abbreviations & Acronyms and Definitions used in this tender document shall be in accordance with GFR 2017 and Manual for procurement of Goods second edition 2024.
2	Language of Bids:	
	a	The bids prepared by the bidder and documents relating to the bids exchanged by the bidder and the Purchaser, shall be written in the English language only. Moreover, the printed literature/Technical details may be furnished in English/ Hindi.
3	Standards of Performance:	
	a	The bidder shall perform the services and carry out its obligations under the contract with due diligence, efficiency and economy, in accordance with generally accepted techniques and practices used in the industry and with professional engineering and consulting standards recognized by international professional bodies and shall observe sound management, engineering practices. It shall employ prudent technical and engineering practices. It shall employ advanced technology, safe and effective equipment, machinery, material and methods. The bidder shall always act, in respect of any matter relating to this contract, as faithful advisors to the client and shall, at all times, support and safeguard the client's legitimate interests in any dealings with third Parties.
4	Force Majeure:	
	a	In the event of any unforeseen circumstances directly interfering with the supply of goods/work/service arising during the execution of order such as war, hostilities, acts of the public enemy, civil commotion, sabotage, fires, floods, earthquakes, explosions, epidemics, quarantine restrictions, strikes, lockouts, or acts of God, the bidder shall, within a week from the commencement thereof, notify the same in writing to the Purchaser with reasonable evidence thereof. Either party shall have the option to terminate the contract on expiry of 90 days of commencement of such force majeure by giving 14 days "notice to the other party in writing. In case of such termination, no damages shall be claimed by either party against the other.
5	Code of Ethics:	
	a	The purchaser as well as the Bidder shall observe the highest standard of ethics including laws against fraud and corruption in force in India namely "Prevention of Corruption Act 1988", during the Supply & Installation or execution of such contracts. If the bidders are found in bid pooling or against law against fraud and corruption then their firms may be blacklisted.
6	Address for communication:	
	a	All the communication with respect to the tender shall be addressed to: The Coordinator Central Research Facility, New Teaching Block Maulana Azad National Institute of Technology- Bhopal- 462 003
7	Jurisdiction:	
	a	In the event of any dispute the legal matter shall be subjected to the jurisdiction of Bhopal court only.

ANNEXURE-1**BIDDER INFORMATION
FORM**

Name of Agency→	
Registered Complete Address→	
Year of Establishment→	
Type of Agency→ Company / Partnership Firm/ /Proprietary Firm/	
Name of Owner / Authorized Person→	
Contact No with e-mail ID→	

Details of Statutory compliances and its valid Numbers:

SN	Particular	Number	Remarks if any
1.	Bidder's Registration Gumasta License →		
2.	Income Tax PAN→		
3.	GST Number→		
4.			

Details of Bank Account :

Beneficiary Name			
Bank Name		Branch	
Account Number		IFSC	

DECLARATION

It is certified that the information furnished in this form is complete and correct to the best of our knowledge & belief.

Signature of authorized Person and Seal

				ANNEXURE- 2	
PRIMARY COMMERCIAL COMPLIANCE STATEMENT					
Ref:	Tender No. MANIT/CRF/2025: 002 Dated:				
SN	Institute Requirement as per tender document			Compliance	Deviation if any
				Yes/ No	
1	Copy of Certificate of Registration of Company/ Firm/ Agency				
2	Copy of valid PAN and GST No				
4	Copy valid ISO certificate OEM or Bidder				
5	Undertaking for participation ANNEXURE-4				
6	Authorization Certificate from Original Equipment Manufacturer for components ANNEXURE-5				
7	Duly signed Integrity Pact				
8	Details of Service/ Support Centre				
Details of EMD & its Exemption					
Amount in Rs.		Mode of Deposition	Date of Deposition	Reference No	
Basis of EMD Exemption					
Details of all ongoing & completed supplies during the last five years as per eligibility & qualification criteria in Chapter-II. (Copies of Purchase order / Work Completion Certificate must be attached)					
SN	Name of the organization with address	Period of Contract		Nature of Work	Value of Contract
		From	To		
1					
2					
3					
4					
5					
Details of financial Turnover during last three year i.e. 50% of Value of Tender for bidder & 400% of the tender value excluding GST for OEM.					
(Please attach copy of P&L Accounts/ CA Certificate)					
Financial Year		Amount (in Lakhs)		Remarks, if any	

Seal & Signature of Bidder

			ANNEXURE-3
Bill of Quantity & Specification		Quantity	
Supply, Installation, Testing and Commissioning of Particle Image Velocimetry (PIV)		01 No (One)	
S.No.	Name of the component	Specifications	Quantity
1.	Illumination Source (Laser)	<p>Laser Type: Dual Cavity Nd:YAG PIV Laser</p> <p>Wavelength: $532 \text{ nm} \pm 1 \text{ nm}$</p> <p>Pulse Energy: $2 \times 200 \text{ mJ}$ per pulse (400 mJ total), above</p> <p>Repetition Rate: 10 Hz – 15 Hz (max)</p> <p>Pulse Width: 5 – 10 ns (typical)</p> <p>Triggering Options: External TTL Trigger (5 V logic) and Software Trigger</p> <p>Beam Diameter at Exit: $\sim 7 \pm 1 \text{ mm}$</p> <p>Cooling Type: Internal Water–Air Cooling</p> <p>Cooling Fluid: De-ionized (DI) Water, 2–3 L/min flow rate</p> <p>Chiller Requirement: External chiller (if internal cooling insufficient)</p> <p>Operational Environment: Temperature: $18 \text{ }^{\circ}\text{C} – 28 \text{ }^{\circ}\text{C}$, Humidity: $< 60 \text{ % RH}$</p>	1

2.	<p>Light Sheet Module with Required Optics, Modules and Mounts for the Laser Coupling.</p>	<p>Laser Compatibility: Optimized for 532 nm (± 2 nm) wavelength</p> <p>Light Sheet Thickness: 1 mm – 2.0 mm (adjustable)</p> <p>Sheet Width (at working distance): 40 mm – 200 mm (variable)</p> <p>Light Guide Arms (Fiber Optic / Mirror-based): - Short Arm: 0.5 m – 1.0 m - Long Arm: 1.0 m – 2.0 m</p> <p>Base Module for Dual Power Operation: Compatible with dual-cavity lasers up to 2×200 mJ pulse energy, above</p> <p>Beam Waist Adjuster Range: ± 5 mm – ± 20 mm</p> <p>Variable / Focus / Angle Module Adjustability: - Focus adjustment: 0° – 10° tilt range - Angle adjustment: $\pm 15^\circ$ – $\pm 30^\circ$</p> <p>Mounting Bench Dimensions: 600 mm – 1000 mm length, aluminium optical rail with anti-vibration supports</p> <p>Material of Optical Components: Fused silica or BK7 lenses, dielectric mirrors (HR @ 532 nm)</p>	<p>Matches the Nd:YAG PIV laser output</p> <p>Determined by cylindrical optics and focusing module; thinner sheet for high-resolution 2D/Stereo imaging</p> <p>Adjustable using lens combination and beam expander</p> <p>Allows flexible positioning of laser for different experimental setups</p> <p>Designed for beam combination or switching</p> <p>Enables fine tuning of focal plane for sheet sharpness and uniformity</p> <p>Used to control sheet orientation and alignment across flow test section</p> <p>Provides stable mechanical coupling for optics and laser modules</p> <p>Ensures high transmission (>99%) and damage threshold for high-energy beams</p>	1
3.	<p>High speed Camera with</p>	<p>Sensor Resolution:</p>	<p>Supports high spatial resolution for detailed velocity field</p>	2

	Frame Grabber, Lens,	5 Megapixels – 12 Megapixels	mapping	
	Mounts and Mounting Bench.	Tripods: 2qty , Heavy-duty laboratory tripod / optical tripod / industrial camera mount tripod,	3-axis adjustable head / Pan-tilt head / Ball head,	
		Height Adjustment Range 600 mm – 2000 mm (2 ft – 6.5 ft), 5 kg – 25 kg	Base Spread 800 mm – 1500 mm. Compatible with cameras, sensors, and laser mounts	
		Frame Rate (at Full Resolution): 100 – 150 frames per second (fps)	124 fps typical for 2448×2048 resolution; can increase with reduced ROI (Region of Interest)	
		Pixel Size: $3.5 \mu\text{m} – 6.5 \mu\text{m}$	Larger pixels improve light sensitivity; smaller pixels enhance spatial resolution	
		Sensor Type: CMOS (Global Shutter)	Ensures distortion-free capture of fast-moving particles	
		Image Resolution (Active Area): 5MPx or better , 2448×2048 pixels (typical) and above	Enables high-fidelity vector field reconstruction	
		Dynamic Range: 10-bit – 12-bit	Allows high grayscale depth for improved image contrast in low-light conditions	
		Exposure Time Range: 6 μs – 1 s (variable) Interframing time: 500ns or better	Suitable for both high-speed flashes and static exposures	
		Mount Type: C-Mount / C F Mount (interchangeable adapters)	Provides compatibility with standard PIV and industrial lenses	
		Supported Lens Focal Lengths: 35 mm, 50 mm,	Covers wide to narrow field-of-view imaging; typical for flow	

		100 mm (F-mount / C-mount lenses)	regions from 100 mm to 500 mm span	
		Frame Grabber Interface: CoaXPress / CameraLink / GigE (as applicable)	Ensures high-bandwidth data transfer for real-time image acquisition	
		High-Speed Mode (FCX Option): Capable of burst recording up to 500 fps at reduced resolution	Provides stable positioning for camera-laser alignment	
		Mounting Bench: 600 mm – 1000 mm optical rail with vibration damping supports	Provides stable positioning for camera-laser alignment	
		Note: The cameras should be compatible with other optical and imaging systems, not limited to use with PIV setups. They must support integration with various experimental and data acquisition platforms for broader research applications. Compatable with DAQ.		
4.	3D PIV calibration Target	Target Type: Single-sided or dual-sided planar calibration plate	Used for camera calibration in 2D/3D or stereo-PIV setups	1
		Target Dimensions: set of various calibration plates to cover the FOV from 100 mm ² to 300mm ² ,	Standard size range; 200 × 200 mm is optimal for most field-of-view applications	
		Material: Optical-grade glass, aluminum, ACP or acrylic	Ensures dimensional stability and minimal warping	
		Pattern Type: Dot grid or checkerboard pattern (high-contrast, laser-etched or printed)	Provides accurate feature detection for calibration algorithms	
		Dot Diameter / Grid Spacing: Dot diameter: 1–3 mm, Grid spacing: 5–10 mm	Chosen based on imaging scale and camera resolution	
		Flatness Tolerance: ≤	Ensures accurate 3D	

		<p>± 0.05 mm</p> <p>Surface Finish: Matte or anti-reflective coating</p> <p>Mounting Mechanism: Adjustable holder or kinematic base ($\pm 15^\circ$ tilt)</p> <p>Measurement Accuracy: Better than ± 0.01 mm (typical)</p>	<p>reconstruction and calibration precision</p> <p>Prevents glare and reflection from laser illumination</p> <p>Facilitates fine alignment during calibration</p> <p>Required for sub-pixel calibration accuracy in PIV systems</p>	
5.	Synchronizer	Time Resolution: ≤ 5 ns – 10 ns	Determines precision of trigger timing between laser, camera, and other instruments; 8 ns typical for research-grade synchronizers	1
		Minimum Pulse Width: 30 ns – 50 ns	Adjustable depending on trigger duration required for external devices	
		Number of Sync Outputs: 16 – 32 channels (TTL or LVTTL)	Allows multiple device control such as dual lasers, cameras, and seeding systems	
		Number of Sync Inputs: 2 – 4 inputs	Accepts trigger signals from external sources like software or laser firing units	
		Analog Outputs: 4 – 8 channels, ± 10 V range	For analog control signals (e.g., intensity modulation, seeding control)	
		Analog Inputs: 4 – 8 channels, ± 10 V range	Enables monitoring of analog parameters during experiments	
		Trigger Compatibility: External TTL (5 V logic) and software trigger options	Provides flexible synchronization with both manual and automated control systems	
		Jitter (Timing Stability): < 2 ns RMS	Ensures highly stable timing for accurate phase locking in PIV systems	

		Communication Interfaces: USB 3.0 / Ethernet (TCP/IP)	Supports high-speed data transfer and remote configuration	
		Safety Circuit: Integrated interlock and emergency stop compatibility	Ensures laser safety compliance (IEC 60825-1)	
		External Trigger Input: 1 – 2 dedicated ports	For initiating synchronization externally from a control computer or experimental software	
		Power Supply: 110–230 V AC, 50/60 Hz	Standard un	
6.	Software	Software Type: 2D and Stereo PIV Image Acquisition & Processing Suite	Must support both planar and stereoscopic (multi-camera) configurations	1
		Licensing: Perpetual or annual license (USB dongle-based).	1 license for hardware control and network analysis software license for 2 number of users	
		Supported Data Formats : TIFF, BMP, JPEG, RAW, HDF5, AVI	Compatible with various camera and storage formats	
		Acquisition Features: Automatic camera detection, real-time preview, cyclic imaging, and synchronization	Enables direct control of high-speed cameras and laser triggering	
		Image Preprocessing Tools: Background subtraction, intensity normalization, image stitching, and calibration mapping	Enhances image clarity and accuracy for particle detection	
		Cross-Correlation Algorithms: FFT-based and Multi-pass correlation	Provides high accuracy in vector field computation	

	(interrogation area 8×8 to 64×64 pixels)		
	Vector Calculation and Filtering: Vector validation, adaptive window shifting, and smoothing filters	Removes spurious vectors and ensures consistent data	
	3D Reconstruction Support: Stereo calibration, disparity correction, and volume reconstruction (for Tomo-PIV)	Converts multi-camera images into 3D vector fields	
	MATLAB Integration: Native MATLAB API and export compatibility (.mat, .csv)	Allows customized data analysis and post-processing in MATLAB	
	Flow Visualization Outputs: Velocity vectors, vorticity maps, streamline plots, and contour visualizations	Supports data interpretation and publication-quality graphics	
	Data Export Formats: CSV, TXT, HDF5, MATLAB (.mat), Tecplot, Paraview	Enables cross-platform data analysis and CFD validation	
	System Compatibility: Windows 10/11 (64-bit), optional Linux compatibility	For lab and research workstation integration	
	Processor / Memory Requirement: Minimum: 16 GB RAM, Recommended: 32–64 GB RAM, i7 or Xeon CPU	Ensures efficient real-time image computation	
	Networking Capability: Multi-user access with client-server architecture	Allows distributed control and simultaneous data analysis	

7. Seeding Generator with Consumables.	<p>Seeding Type: Liquid or Fog-Based Seeding System</p> <p>Particle Generation Rate: $10^{12} - 10^{14}$ particles per second</p> <p>Operating Pressure Range: 2 bar – 4 bar (max.)</p> <p>Back Pressure: 2.5 – 3.5 bar (typical)</p> <p>Particle Size Range: 0.5 μm – 5 μm (adjustable)</p> <p>Seeding Medium: Vegetable oil, glycol, DEHS (Di-Ethyl-Hexyl-Sebacate), or fogging liquids</p> <p>Flow Control: Manual and automatic control via synchronizer</p> <p>Reservoir Capacity: 10 – 15 liters</p> <p>Nozzle Configuration: Single or multi-jet atomizer with fine control</p> <p>Particle Velocity (Exit Jet): 10 – 25 m/s (adjustable)</p> <p>Power Supply: 230 V AC, 50/60 Hz</p> <p>Mounting and Mobility: Bench-top or portable frame with hose</p>	<p>Generates uniform micron-sized tracer particles for flow illumination</p> <p>Ensures adequate seeding density for accurate velocity field capture</p> <p>Stable atomization for fine and consistent particle generation</p> <p>Maintains uniform output flow and droplet size</p> <p>Optimal for PIV and LDV applications ensuring light scattering without inertia effects</p> <p>Chosen for low volatility, non-toxicity, and optical visibility</p> <p>Synchronization allows seeding pulses to match laser firing cycles</p> <p>Supports long-duration experiments without frequent refilling</p> <p>Provides homogeneous particle dispersion across flow section</p> <p>Suitable for steady flow and wind tunnel environments</p> <p>Standard lab-compatible power input</p> <p>Easy to integrate with experimental test sections</p>	1
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		connection (2–5 m length)		
8.	Compressor	Motor Power: 4-5 HP (3.7 kW)	Ensures clean, dry air supply suitable for laboratory and seeding applications	1
		Maximum Pressure: 8 – 10 bar (116 – 145 psi)	Provides sufficient pressure and flow rate for continuous fog or liquid seeding	
		Free Air Delivery (FAD): 400 – 600 L/min (14 – 21 CFM)	Supports stable atomization and delivery to the seeding generator	
		Tank Capacity: 150 – 250 liters	Ensures consistent air supply for dense and uniform particle generation	
		Air Outlet Size: ¼" to ½" BSP	Allows continuous operation with minimal cycling	
		Cooling System: Air-cooled (preferred) or Water-cooled	Compatible with seeding generator inlet hose	
		Power Supply: 230V / 415V AC, 50 Hz (single/three-phase)	Maintains stable temperature during long experimental runs	
		Noise Level: ≤ 70 dB(A)	Standard electrical configuration for laboratory setups	
		Filtration Unit: Integrated air dryer and particulate filter (≤ 5 µm)	Suitable for indoor lab environments with minimal disturbance	
		Duty Cycle: Continuous (100%)	Prevents contamination and moisture in seeding flow	
9.	Mounting optical table	Portability: Mounted on wheels or fixed base	Ensures reliable operation during prolonged experiments	1
			Provides flexibility in positioning near test setup	
9.	Mounting optical table	Tabletop Dimensions: 4 ft × 6 ft (1200 mm × 1800 mm)	Standard optical table size suitable for medium-scale experimental setups	1

		Material: Top surface: Stainless steel (Grade SS304 or equivalent)	Provides high stiffness and corrosion resistance	
		Core Construction: Honeycomb or composite core with high damping coefficient	Minimizes vibration transmission and improves optical stability	
		Table Thickness: 100 – 300 mm (8" – 12")	Ensures rigidity and flatness over the working area	
		Flatness Tolerance: ±0.1 mm over the full surface	Suitable for precision optical alignment and laser experiments	
		Leg Support Type: Pneumatic vibration isolation legs with auto-leveling	Damps building vibrations and external disturbances	
		Isolation Performance: Natural frequency < 2 Hz (vertical), < 3 Hz (horizontal)	Maintains laser beam alignment stability	
		Load Capacity: 400 – 800 kg uniformly distributed load (UDL)	Capable of supporting heavy laser, camera, and optical equipment	
		Height Adjustment Range: 600 – 900 mm (auto-adjustable)	Facilitates ergonomic setup and alignment flexibility	
		Surface Finish: Matte black or stainless steel anti-reflective surface	Reduces stray reflections during optical measurements	
		Hole Pattern: M6 tapped holes on 25 mm or 1-inch grid	Standard for mounting optical components and fixtures	
		Edge Protection: Beveled or sealed edges with vibration-damping gaskets	Prevents damage and enhances durability	
10.	Optical table mounts	Optical Breadboards: Sizes: 2 ft × 2 ft and 4 ft ×	For modular optical setup and subsystem mounting	1

	4 ft		
	Thickness: 2 mm – 6 mm (stainless steel or aluminium alloy)	Provides sufficient stiffness with lightweight handling	
	Material: Anodized aluminium / stainless steel (SS304)	Ensures rigidity, corrosion resistance, and low reflectivity	
	Surface Flatness: $\leq \pm 0.1$ mm	Allows precise optical alignment and measurement accuracy	
	Hole Pattern: M6 tapped holes on 25 mm or 1-inch grid spacing	Standard layout for optical components and fixtures	
	Tool Posts / Mounting Rods: Diameter: 12 – 25 mm; Height: 50 – 300 mm (adjustable) -5 quantity each	Used to hold mirrors, lenses, and beam splitters at desired heights	
	Post Holders: Clamping range: 12 – 25 mm; Height adjustment: up to 100 mm, 10 quantities	Enables secure and flexible optical alignment	
	Grabbers / Clamps: Stainless steel or aluminium precision clamps	Provides rigid and vibration-free mounting of optics	
	Base Plates: Threaded or slotted aluminium plates, 3–6 mm thick	Used for securing heavy optical components	
	Accessories Included: Mirror mounts, lens mounts, translation stages, and beam alignment tools	Supports full optical path assembly and calibration	
	Finish: Matte black anodized or brushed steel	Minimizes stray reflections and glare during laser alignment	
11.	Workstation	64GB RAM, 4-5 TB, SSD storage, Suitable for Recording	1

12.	Traverse system	Type: Motorized 2-axis or 3-axis traverse system (X-Y-Z)	Enables precise positioning of laser sheet, probe, or camera
		Travel Range (per axis): X: 300–1000 mm, Y: 300–600 mm, Z: 150–400 mm	Adjustable depending on test section or optical setup
		Positioning Accuracy: ± 0.01 mm to ± 0.05 mm	Ensures repeatable measurement positioning for PIV calibration and scanning
		Resolution: ≤ 5 μm (0.005 mm)	Suitable for fine laser or probe movement in high-precision experiments
		Drive Mechanism: Stepper / Servo motor-driven with ball screw or linear guideways	Provides smooth, backlash-free motion control
		Control Interface: PC-based / Remote controller with USB or Ethernet communication	Allows automated scanning and programmable path control
		Speed Range: 0.1 – 50 mm/s (adjustable)	Supports both slow scanning and fast repositioning
		Load Capacity: 10 – 25 kg per axis	Suitable for mounting optical heads, probes, or cameras
		Repeatability: $\leq \pm 0.01$ mm	Critical for multi-frame and time-resolved PIV measurements
		Material: Aluminium alloy or stainless steel frame	Ensures rigidity, lightweight handling, and corrosion resistance
		Mounting: Compatible with optical table / breadboard (M6 hole pattern)	Ensures stable and aligned integration with experimental setup
		Limit Switches: Electronic and mechanical limit	Protects from over-travel and

		sensors on all axes Power Supply: 230V AC / 50 Hz or 24V DC (depending on model) Software Support: LabVIEW / MATLAB / Vendor-provided GUI for motion sequencing	mechanical damage Suitable for lab environments with standard electrical configuration Enables automated scanning synchronized with PIV system	
13.	Seeding oils	Seeding Medium: Vegetable oil, glycol, DEHS (Di-Ethyl-Hexyl-Sebacate), or fogging liquids: Chosen for low volatility, non-toxicity, and optical visibility, each 1 quantity.		1
14.	Aluminium rails	2" x 2", 4" x 4", 4" x6", rails, 2qty each of 12' length. Connectors: T, L C type.50qty each. (For joining the rails).	Its connectors for each size, perpendicular, T, L C type. 20 each quantity.	1
15.	Acrylic Sheets	Material: Cast or Extruded Acrylic (Polymethyl Methacrylate – PMMA) Sheet Size: 6 ft × 6 ft (approx. 1830 mm × 1830 mm), Thickness Range: 2 mm, 4 mm, 6 mm, 8 mm, 12 mm, each 4 quantity Transparency (Light Transmission): > 92% (optical grade clarity) Density: 1.18 – 1.20 g/cm³ Tensile Strength: ≥ 70 MPa Flexural Strength: ≥ 100 MPa	Transparent, rigid thermoplastic ideal for optical clarity and structural applications Standard laboratory panel size suitable for making test sections or flow ducts Different thicknesses for varying pressure and load requirements Ensures clear visibility for flow visualization and PIV applications Provides structural rigidity while remaining lightweight High mechanical strength suitable for load-bearing transparent structures Maintains shape under bending loads in duct or chamber	1

			construction	
	Impact Resistance: 5-10 times stronger than glass of same thickness		Ensures durability under mechanical vibration and pressure variations	
	Thermal Resistance: Maximum service temperature: 80–90°C		Suitable for low to moderate temperature testing environments	
	Surface Finish: Glossy / Smooth both sides (optional: one side matte)		Optical quality finish to reduce flow distortion in visual tests	
	Cutting and Fabrication: Laser cut / CNC routed / Machined edges		Allows precise custom fabrication for test section geometry	
	Joining Method: Acrylic solvent bonding / Silicone sealing / Mechanical fastening		Leak-proof assembly for experimental test sections	
	Color: Transparent (clear)		Optional: tinted or UV-protective coating available	
	Edge Protection: Deburred, polished edges with protective film		Prevents scratches and ensures safe handling	
16.	Oscilloscope	Bandwidth: 1000Hz – 500 MHz	For precise waveform capture, triggering, and data storage	1
		Sampling Rate: 1 GSa/s – 5 GSa/s (real-time)	Suitable for high-speed signal monitoring in PIV and sensor calibration setups	
		Channels: 4 to 8 Analog Channels	Ensures accurate signal reconstruction for transient phenomena	
		Vertical Sensitivity: 1 mV/div to 10 V/div	Allows simultaneous monitoring of multiple input signals (e.g., laser trigger, camera sync)	
		Time Base Range: 1 ns/div to 50 s/div	Covers a wide dynamic range for low and high signal amplitudes	

		Memory Depth: ≥ 10 Mpts per channel	Supports both fast and slow transient signal analysis	
		Triggering Modes: Edge, Pulse Width, Video, Logic, and External.	Enables long-duration signal capture without data loss	
		Display: 12"–18" Color TFT LCD, 800×480 resolution or higher	Facilitates synchronized measurement with laser or seeding systems	
		Connectivity: USB (Host/Device), LAN, HDMI (optional)	Provides clear waveform visualization and measurement indicators	
		Math Functions: FFT, Addition, Subtraction, Multiplication, Division, Filtering	For data export, control, and integration with computer systems	
		Automatic Measurements: Voltage (Vpp, RMS), Frequency, Rise/Fall Time, Phase, etc.	Useful for frequency-domain and signal correlation analysis	
		Probes: At least 2 passive probes (10:1, 200 MHz or higher)	Supports comprehensive signal diagnostics	
		Power Supply: 100–240 V AC, 50/60 Hz	For accurate measurement with minimal signal distortion	
		Safety Compliance: CE, ISO, and BIS certified	Suitable for laboratory and field environments	
17.	Data Acquisition System (DAQ)	Number of Channels: 8 to 32 Analog Inputs (expandable)	For capturing analog and digital signals from sensors and instruments	1
		Sampling Rate (per channel): 100 kS/s – 1 MS/s (minimum)	Supports simultaneous acquisition from multiple sensors or instruments	
		Resolution (ADC): 16-bit or 24-bit	Suitable for dynamic measurements in fluid mechanics and thermal systems	
		Input Voltage Range: ± 10	Ensures high precision in voltage	

	V or configurable ± 1 V to ± 20 V	and signal measurement	
	Input Type: Differential / Single-Ended Configurable	Compatible with a variety of transducers and instrumentation outputs	
	Analog Output Channels: 2 to 4 Channels (optional)	For noise rejection and flexible connectivity	
	Digital I/O Channels: 8 to 16 (TTL-compatible)	For control signal generation or closed-loop testing	
	Communication Interface: USB 4.0 / Ethernet / Wi-Fi / PCIe (optional)	Used for triggering cameras, lasers, or synchronizers in PIV systems	
	Synchronization Support: External Trigger / Clock I/O	Enables high-speed data transfer and remote operation	
	Software Compatibility: LabVIEW, MATLAB, Python.	Allows precise time alignment with oscilloscopes, lasers, or PIV cameras	
	Signal Conditioning Modules: Available for voltage, current, temperature, and strain	Supports scripting, control, and data visualization	
	Data Logging Capability: Real-time streaming and onboard storage (≥ 32 GB optional)	Enhances accuracy and sensor compatibility	
	Operating Temperature: 0°C to +50°C	Ensures lossless acquisition during long-duration tests	
	Power Supply: USB-powered / 230 V AC external adapter	Suitable for laboratory and field testing environments	
	Calibration: Factory calibrated; field calibration support	Flexibility for portable or fixed setups	
	Safety & Certification:	Ensures long-term accuracy and	

		CE, ISO, and BIS certified	traceability	
18.	Electrodynamic shaker	Force Rating (Sine Peak): 100 N – 3000 N (10 kgf – 300 kgf)		
		Frequency Range: 5 Hz – 5 kHz (minimum)		
		Maximum Displacement (p-p): 5 mm – 25 mm		
		Maximum Velocity: 1 m/s – 1.5 m/s		
		Maximum Acceleration: 5 g – 70 g (depending on payload)		
		Load Capacity (Payload): 5 kg – 100 kg (depending on model)		
		Armature Diameter: 100 mm – 200 mm		1
		Cooling System: Forced Air / Water-cooled (for high-force systems)		
		Power Amplifier: Compatible Linear Power Amplifier (10 kVA – 50 kVA)		
		Control Interface: PC- based Digital Vibration Controller (USB/Ethernet)		
		Measurement Capability: Acceleration, Velocity, Displacement (using Feedback Sensors)		
		Feedback Sensors: Integrated accelerometer / velocity pickup		

		Mounting Platform: Isolated base with pneumatic suspension		
		Safety Interlocks: Over-travel, over-temperature, and over-current protection		
		Software Compatibility: LabVIEW, MATLAB and Python		
19.	Demonstration and training	All the installation requirements (earthing, light, fitting and others) shall be included in the bid prices.		Ensures electrical and operational safety

ANNEXURE- 4		
	(Undertaking from Bidder on their official stationery)	
To,		
The Director		
Maulana Azad National Institute of Technology		
Bhopal- 462 003		

Sub:	Undertaking for the participation in the Tender No. MANIT/CRF/2025: 02 Dated:
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Dear Sir,

HAVING EXAMINED AND PERUSED THE FOLLOWING DOCUMENTS	
1	Complete Tender Document
2	Bidder information Form (Annexure- 1)
3	Primary Commercial Compliance Statement (Annexure- 2)
4	Bill of Quantity and Technical Specifications (Annexure-3)
5	Integrity Pact (Annexure- 6)
6	Price Bid (Annexure- 7)

I/Wedo hereby submit the above tender in prescribed formats duly completed in all respects in accordance with the conditions applicable. If this tender is accepted, I/We agree to abide by and fulfill all the terms and conditions in the tender documents.

I/We hereby distinctly and expressly declare and acknowledge that before the submission of this tender, I/We have carefully followed the instructions and I/We have understood the existing system of supply at the location of purchaser including the scope and nature of duties expected from the bidder.

I/We distinctly agree that I/We would hereafter make no claim or demand upon the purchaser based upon or arising out of any alleged misunderstanding or misconceptions or mistake on my/our part of the said stipulations, restrictions and conditions.

I/ We declare that our unit has never made any default in supplying the Equipments / equipment to Government / Semi Government/ Central or State Public Sector Enterprise(s) in terms of quality and financial agreed supply conditions.

I/We fully understand the terms and conditions in the tender documents.

I/We understood that the purchaser is not bound to accept any proposal that it may receive without assigning any reason.

Date:	Authorized Signatory
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		ANNEXURE- 5
	AUTHORIZATION LETTER FROM ORIGINAL EQUIPMENT MANUFACTURER	
No:	Date:	
To,		

Ref: Tender No. MANIT/CRF/2025: 002 Dated: 11/12/2025.

____ who are established and reputable manufacturers of (*name and description of goods*) at _____ (*address of factory*) do hereby-authorized M/s _____ (*Name and address of Agent*) to submit a bid, and sign the contract with you for the goods. We tender and they are in the supply and maintenance of our products since _____ years.

ee and warranty as per terms & Conditions of Contract for the goods and services offered for is Tender.

Yours Faithfully,

(Name of the manufacturer)

Note: This letter of authority should be on the letterhead of the manufacturer and should be signed by a person competent and having the power of attorney to legally bind the manufacturer.

Modifying this format suitably in case where manufacturer's warranty and guarantee are not applicable for the items for which bids are invited.

ANNEXURE-6

INTEGRITY PACT

By and Between

The REGISTRAR Maulana Azad National Institute of Technology having its office located at Main Road No-3 Mata Mandir Bhopal 462 003 (hereinafter referred to as "The Principal" which terms or expression shall, unless excluded by or repugnant to the subject or context, mean and include its successor-in-office, administrators or permitted assignees) of the First Part;

AND

M/s a entity incorporated under the relevant Act,.....through its representative/authorized signatory..... (Insert name and designation of the officer) vide resolution dated..... passed by the Board of Directors, having its office at, (hereinafter referred to as "The Bidder/Contractor" which term or expression shall, unless excluded by or repugnant to the subject or context, mean and include its successor-in-office, administrators or permitted assignees) of the Second Part.

PREAMBLE

The Principal intends to award, under laid down organizational procedures, contracts for The Principal values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/transparency in its relations with its Bidder(s) and / or Contractor(s).

In order to achieve these goals, the Principal will appoint Independent External Monitors (IEMs) who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section-1 Commitments of the Principal

1	The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:	
	a	No employees of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
	b	The principal will, during the tender process treat all Bidders(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/ additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
	c	The principal will exclude from the process all known prejudiced persons.
2	If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC/PC Act, or if there be a substantive suspicion in this regard, the principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions.	

Section-2 Commitments of the Bidder(s)/Contractor(s)

1	The Bidder(s)/Contractor(s) commit themselves to take all measures necessary to prevent corruption. The Bidder(s)/ Contractor(s) commit themselves to observe the following principles during participation in the tender process and during the contract execution.	
	a	The Bidder(s)/Contractor(s) will not, directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
b		The Bidder(s)/ Contractor(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
c		The Bidder(s) / Contactor(s) will not commit any offence under the relevant IPC/PC Act; further the Bidder(s)/ Contractor(s) will not use improperly, for purposes of completion or personal gain, or pass on to other, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
d		The Bidder(s)/Contractor(s) of foreign origin shall disclose the name and address of the Agents/representatives in India, if any. Similarly the Bidder(s) /Contractor(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any. Further details as mentioned in the "Guidelines on Indian Agents of Foreign Suppliers" shall be disclosed by the Bidder(s)/Contractor(s). Further, as mentioned in the Guidelines all the payments made to the Indian agent/representative have to be in Indian Rupees only. Copy of the "Guidelines on Indian Agents of Foreign Suppliers" is placed at (page no. 6).
e		The Bidder(s)/Contractor(s) will, when presenting their bid, disclose any and all payments made, are committed to or intend to make to agents, brokers or any other intermediaries in connection with the award of the contract.
f		Bidder(s)/Contractor(s) who have signed the Integrity Pact shall not approach the Courts while representing the matter to IEMs and shall wait for their decision in the matter.
2	The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.	

Section-3 Disqualification from tender process and exclusion from future contracts

If the Bidder(s)/Contractor(s), before award or during execution has committed a transgression through a violation of section-2, above or in any other form such as to put their reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/Contractor(s) from the tender process or take action as per the procedure mentioned

in the “Guidelines on Banning of business dealings”. Copy of the “Guidelines on Banning of business dealings” is placed at (page nos. 7-13)

Section-4 Compensation for Damages

1	If the Principal has disqualified the Bidder(s) from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security.
2	If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages of the Contract value or the amount equivalent to Performance Bank Guarantee.

Section- 5 Previous transgression

1	The Bidder declares that no previous transgression occurred in the last three years with any other Company in any country conforming to the anti-corruption approach or with any Public Sector Enterprise in India that could justify his exclusion from the tender process.
2	If the Bidder makes incorrect statement on his subject, he can be disqualified from the tender process or action can be taken as per the procedure mentioned in “Guidelines on Banning of Business dealings”.

Section-6 Equal treatment of all Bidders / Contractors / Subcontractors

1	In case of Sub-contracting, the Principal Contractor shall take the responsibility of the adoption of Integrity Pact by the Sub-contractor.
2	The Principal will enter into agreement with identical condition as this one with all Bidders and contractors.
3	The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate this provision

Section-7 Criminal charges against violating Bidder(s) / Contractor(s) / Subcontractor(s)

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive in this regard the Principal will inform the same to the Chief Vigilance Officer.

Section-8 Independent External Monitor

1	The Principal appoints competent and credible Independent External Monitor for this Pact after approval by Central Vigilance Commission. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.
2	The Monitor is not subject to instructions by the representative of the parties and performs his/her functions neutrally and independently. The Monitor would have access to all Contract documents, whenever required. It will be obligatory for him / her to treat the information and documents of the Bidders/Contractors as confidential. He / She reports to Director- MANIT.
3	The Bidder(s)/Contractor(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the

	Contractor. The Contractor will also grant the Monitor, upon his / her request and demonstration of a valid interest, unrestricted and unconditional access to their project documentation. The same is applicable to Sub-contractor.
4	The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/Contractor(s)/Sub-contractor(s) with confidentiality. The Monitor has also signed declarations on 'Non-Disclosure of Confidential Information' and of 'Absence of Conflict of Interest'. In case of any conflict of interest arising at a later date. The IEM shall inform The Director- MANIT.
5	The Principal will provide to the Monitor sufficient information about all meeting among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.
6	As soon as the Monitor notices, or believes to notice, a violation of this agreement, he/she will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.
7	The Monitor will submit a written report to the Director, Maulana Azad National Institute of Technology Bhopal within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situation.
8	If the Monitor has reported to the Director- MANIT a substantiated suspicion of an offence under relevant IPC/PC Act, the Director- MANIT has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.
9	The word 'Monitor' would include both singular and plural.

Section-9 Pact Duration

This Pact begins when both parties have legally signed it. It expires for the Contractor 12 months after the last payment under the contract, and for all other Bidders 6 months after the contract has been awarded. Any violation of the same would entail disqualification of the bidders and exclusion from future business dealing.

Section- 10 Other provisions

1	This agreement is subject to Indian Law. Place of performance and jurisdiction is the Office of the Principal, i.e. Bhopal.
2	Changes and supplements as well as termination notices need to be made in writing. Slide agreements have not been made.
3	If the Contractor is a partnership or a consortium, this agreement must be signed by all partner or consortium members.
4	Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact remains valid. In this case, the parties will strive to come to an agreement to their original intention.
5	Issues like Warrant / Guarantees etc. shall be outside the purview of IEMs.

6	In the event of any contradiction between the Integrity Pact and its Annexure, the Clause in the Integrity Pact will prevail.
7	The action stipulated in this Integrity Pact are without prejudice to any other legal action(s) that may follow in accordance with the provision of the extant law in force relating to any civil or criminal proceedings.

IN WITNESS WHEREOF, The parties hereunto set their hands and seals and executed this INTEGRITY PACT as of the day/month/year first above written:

For and on behalf of Maulana Azad National Institute of Technology- Bhopal (First Party) SIGNED,SEALED AND DELIVERED by		For and on behalf of M/s..... (Second Party) SINGED,SEALED AND DELIVERED by	
Signature		Signature	
Name		Name	
Designation	Registrar	Designation	

In the presence of Witness:			Signature
1	Name		
2	Name		

ANNEXURE- 7

FORMAT FOR SUBMISSION OF PRICE BID								
From,			To,					
			The Director					
			MANIT- Bhopal- 462 003					
Sub:	Price Bid with reference to Tender No: MANIT/CRF/2025:02 Dated:							
SN	Description of Material	Make & Product No	Discounted Unit Price	Quantity In Nos	Basic Price	Custom Duty	GST as applicable	Total Price
1	2	3	4	5	6 (4*5)	7	8	9(6+7+8)
1	Particle Image Velocimetry (PIV)			01				
Gross Total →Net offered Price→								
Net offered Price (In Words)								
The followings things are confirmed and undertake by us that:								
a	The total price quoted above are inclusive of basic price, statutory duty & taxes, Transportation, Incidental services (including Insurance, Loading/ unloading, Packing & Forwarding charges, Installation etc.) at site.							
b	We agree with the terms and conditions specified in tender document 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:				