

**Indian Institute of Science (IISc), Bengaluru  
560012**

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NOTICE INVITING TENDER

under the two-cover bid format

*for*

Supply and Installation of

**SINGLE MODE WATER COOLED FIBER LASER**

*at*

Department of Aerospace Engineering,

Indian Institute of Science

Bengaluru 560012

***Tender No: AE/ENQ/TNDR/DRM/24-25/01***

***Date: 07/03/2025***

Email: [imemslab.aero@iisc.ac.in](mailto:imemslab.aero@iisc.ac.in)

This is a Request for Quote (RFQ) for domestic (India-based) vendors for the supply and installation of a SINGLE MODE WATER COOLED FIBER LASER at Department of Aerospace Engineering, IISc-Bengaluru.

## Section 1 - Bid Schedule

<b>1</b>	<b>Tender No</b>	<b><i>AE/ENQ/TNDR/DRM/24-25/01</i></b>
<b>2</b>	<b>Tender Date</b>	<b><i>07/03/2025</i></b>
<b>3</b>	<b>Item Description</b>	Supply and Installation of a SINGLE MODE WATER COOLED FIBER LASER at Department of Aerospace Engineering, IISc Bengaluru
<b>4</b>	<b>Tender Type</b>	Two bid system (i) Technical Bid (Part A) (ii) Commercial Bid (Part B)
<b>5</b>	<b>Place of tender submission</b>	The Chairman Office, Department of Aerospace Engineering, Indian Institute of Science, Bangalore 560012
<b>6</b>	<b>Last Date &amp; Time for submission of tender</b>	<b><i>31/03/2025</i></b> <b><i>05:00 PM</i></b>
<b>7</b>	<b>For further clarification</b>	Prof. D. Roy Mahapatra Department of Aerospace Engineering, Indian Institute of Science, Bangalore – 560012 Email: <a href="mailto:imemslab.aero@iisc.ac.in">imemslab.aero@iisc.ac.in</a> Phone: +91-80-2293 3131

## Section 2 – Eligibility Criteria

### Prequalification criteria:

1. The Bidder's firm should have existed for at least five years. Bidders should enclose the Company Registration Certificate.
2. Past Performance: The Bidder must provide the proof for the supplying a minimum 10 units of 2KW or higher Single Mode Fiber Laser with similar specifications with its successful installation reports issued by an Indian government organization within the past 5 years.
3. The Bidder should have well equipped Laser repair center, and qualified technical service personnel for the instrument(s) since last more than 10 years in India, preferably in Southern India. The service personnel should be regularly trained by the Laser source manufacturer/OEM.
4. The quote should come only from an Indian Original Equipment Manufacturer (OEM) or their Indian authorized distributor. In this regard, an appropriate letter should be provided on the company letterhead with the manufacturing facility detailed address, country, contact person mail-ID etc.
5. The Bidder should belong to either Class-1 or Class-2 suppliers distinguished by their "local content" as defined by recent edits to GFR. They should mention clearly which class they belong to in the cover letter.
  - a. Class-1 supplier: Goods and services should have local content equal to or more than 50%.
  - b. Class-2 supplier: Goods and services should have local content equal to or more than 20 % and less than 50%.
6. Bidders offering imported products will fall under the category of non-local suppliers. They cannot claim themselves as Class-1 local suppliers/Class-2 local suppliers by claiming services such as transportation, insurance, installation, commissioning, training, and other sales service support like AMC/CMC, etc., as local value addition.
7. Purchase preference, as defined by the recent edits to GFR (within the "margin of purchase preference"), will be given to the Class-1 supplier.
8. MSMEs can seek an exemption to some qualification criteria. IISc follows GFR2017 for such details.
9. The quotations should be on FOR-IISc Bengaluru basis in INR only.
10. The bidder should sign and submit the declaration for Acceptance of Terms and Conditions as per -Annexure 4.

11. The Bidder must not be blacklisted/banned/suspended or have a record of any service-related dispute with any organization in India or elsewhere. A declaration to this effect has to be given as per Annexure 3.
12. Any information furnished by the bidder found to be incorrect, immediately or later, would render the bidder liable to be debarred from tendering/taking up work in IISc, Bengaluru.

**Cancellation of Tender:**

1. Bids with inconsistencies with respect to this Section 3 Terms and Conditions and Section 4 Technical Specifications will be rejected.
2. Notwithstanding anything specified in this tender document, the IISc purchase committee, in its sole discretion, unconditionally and without having to assign any reason, reserves the rights:
  - a. To accept OR reject the lowest tender, any other tender, or all the tenders.
  - b. To accept any tender in whole or in part.
  - c. To reject the tender, offer not confirming the tender terms.

## Section 3 – Terms and Conditions

### Documents Required for Submission of Tender:

1. All documentation in the tender should be in English.
2. Tenders should be submitted in two envelopes (a two-bid system).
  - a. **Technical Bid (Part-A)** – A technical bid must be prepared consisting of Annexure 1-5. Additionally, in Annexure 5, additional remarks from the OEM may be provided to highlight technical features justifying qualification in terms of specifications, and provide any additional details, compare the solution with competitors.
  - b. **Commercial Bid (Part-B)** – Indicating item-wise price for the items mentioned in the technical bid, as per the format of quotation provided in the tender and other commercial terms and conditions.
3. The technical bid and the commercial bid should be placed in separate envelopes and sealed, superscribing the tender description, tender no., and the due date on both envelopes. Both these sealed envelopes are to be placed in a single bigger envelope, which should also be sealed and duly superscribed with the Tender No, Tender Description & Due Date.
4. The single bigger sealed envelope should reach the Office of Chairman, Department of Aerospace Engineering, Indian Institute of Science, Bengaluru – 560012, India, on or before the due date mentioned in the tender notice. If the due date is a holiday, the tender will be accepted on the next working day. If any of the envelopes are not sealed, the bid will be rejected.
5. All queries are to be addressed to the contact details as mentioned in Section 1 – Bid schedule, item no. 7 of this tender notice.
6. GST/other taxes, levies, etc., should be indicated separately. The Bidder should mention GST Registration no. and PAN in the tender document.
7. If the price is not quoted in the Commercial Bid as per the format provided in the tender document, the bid may be rejected.
8. The purchase committee reserves the right to accept or reject any bid, and annul the bidding process, and reject all bids at any time prior to the award of the contract without thereby incurring any liability to the affected bidder or bidders, or any obligation to inform the affected bidder or bidders about the same.
9. Leaflets and Descriptive Literature: Full descriptive particulars and drawings of the equipment offered should accompany the tender. Information regarding the country of

manufacture or origin of materials used in the manufacture of the articles should be furnished.

10. Incomplete bids will be summarily rejected.

### **Validity of the Offer:**

The offer shall be valid for 60 days from the commercial bid's opening date.

### **Evaluation of Offer:**

1. The technical bid (Part A) will be opened first and evaluated.
2. Bidders meeting the required eligibility criteria in Section 2 of this document shall only be considered for Commercial Bid (Part B) opening. Further, agencies not furnishing the documentary evidence as required will not be considered.
3. Prequalification of the bidders shall not imply final acceptance of the Commercial Bid. The bid may be rejected at any point during technical evaluation or commercial evaluation. The decision regarding acceptance and/or rejection of any offer in part or full shall be the sole discretion of IISc Bengaluru, and the decision in this regard shall be binding on the bidders.
4. The contract award will be subject to acceptance of the terms and conditions stated in this tender.
5. Any offer which deviates from the vital conditions (as illustrated below) of the tender is liable to be rejected:
  - a. Non-submission of complete offers.
  - b. Receipt of bids after the due date and time or by email/fax (unless specified otherwise).
  - c. Receipt of bids in open conditions.
6. In case any Bidder is silent on any clauses mentioned in these tender documents, IISc Bengaluru shall construe that the Bidder has accepted the clauses as of the tender, and no further claim will be entertained.
7. All amendments, time extensions, clarifications, etc., within the tender's submission period, will be communicated electronically. No extension of the bid due date/time shall be considered due to a delay in receipt of any document(s) by mail.
8. No revision of the terms and conditions quoted in the offer will be entertained after the last date and time fixed for receipt of tenders.
9. The lowest bid will be calculated based on the total price of all items tendered for the basic equipment, accessories selected for installation, operation, preprocessing and

post-processing, optional items, recommended spares, warranty, and annual maintenance contract. The purchase committee seeks the most cost-effective solution for obtaining a new product. A Bidder is encouraged to propose all avenues, including but not limited to buy back of the existing product, turnkey upgrade of existing product or purchase of new parts for the product.

10. The bidder may furnish any additional information necessary to establish capabilities to complete the envisaged work successfully. It is, however, advised not to furnish superfluous information.
11. With prior intimation and necessary approval, the bidder may visit the installation site before tender submission.

### **Pre-requisites:**

The bidder shall provide the pre-requisite installation requirement of the equipment along with the technical bid.

### **Spares:**

Bidders must provide a detailed list of spares and a user manual with a detailed Bill of Materials for all Parts. It should include the Spares Column with the Manufacturer part Number, Qty, and availability of stock till 5 Years, including spare collimators.

### **Warranty:**

The complete system must be under warranty for a minimum period of 3 years (year-wise breakup value should be shown in the commercial bid). The Bidder should include the cost of any spares needed during the warranty period, including electronics, subcomponents, and software. If the instrument is defective, it has to be replaced or rectified at the bidder's cost within 30 days from receipt of written communications from IISc, Bengaluru. If there is any delay in replacement or rectification, the warranty period should be extended.

### **Annual Maintenance Contract (AMC):**

1. An annual maintenance contract for at least three years post-warranty should be provided as an essential, optional item upon completion of the warranty period. Cost breaks up for this should be provided year-wise.
2. The AMC costs will not be considered for classifying the bidder's domestic nature (class

1 or class 2) (see eligibility criteria in section 2).

### **Delivery, Installation, Acceptance, Training, and Demonstration:**

1. **Delivery:** The bidder shall provide the lead time to delivery of the system at IISc, Bengaluru, from the date of receipt of the purchase order.
2. **Installation and Acceptance:** The bidder shall provide the lead time from the date of delivery to the completion of installation and testing toward acceptance of the system, within 2 weeks.

**Acceptance Criteria:** The following test reports are required to be submitted for acceptance of the system after installation. The acceptance criteria are as specified in the technical specifications or better specifications if specified by the bidder:

- (i) Laser beam power at the output of laser collimator at different input set point/voltage.
  - (ii) Collimated beam diameter measurement
  - (iii) Beam Quality measurement
  - (iv) Long duration stability
  - (v) Output spectrum including emission wavelength and linewidth
  - (vi) Power modulation rate
3. **Training and Installation:** After successful installation and inspection, the date of taking over the entire system by the IISc, Bengaluru, shall be taken as the start of the warranty period.
  4. No partial shipment is allowed.
  5. The bidder should also arrange testing and validation of performance as per specification, technical training, demonstration, and for the facility technologists of user facility with no additional cost.

### **Payment Terms:**

100% payments (except AMC) will be released after completion delivery, satisfactory installation, and qualification, subject to TDS as per rules. AMC cost (if ordered after completion of the warranty period) will be released on a half-yearly basis at the end of each six months, subject to satisfactory services. The price basis must be on FOR-IISc Bengaluru basis only. As per GFR, no advance payment can be made to domestic bidders unless an equal amount of bank guarantee is provided.



**Statutory Variation:**

Any statutory increase in the taxes and duties subsequent to the bidder's offer, if it takes place within the original contractual delivery date, will be borne by IISc, Bengaluru, subject to the claim supported by documentary evidence. However, if any decrease occurs, the advantage will have to be passed on to IISc, Bengaluru.

**Disputes and Jurisdiction:**

Any legal disputes arising from any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction in Bengaluru, India.

**Purchase Order:**

1. The order will be placed with the bidder whose bid is accepted by IISc based on the terms & conditions mentioned in the tender document.
2. The quantity of the items in the tender is only indicative. IISc, Bengaluru reserves the right to increase /decrease the quantity of the items depending on the requirement.
3. If the product and service quality is unsatisfactory, IISc, Bengaluru reserves the right to cancel or amend the contract.

## Section 4 – Technical Specifications

The following technical specifications have to be demonstrated during system installation and acceptance.

### Part 1: SINGLE MODE WATER COOLED FIBER LASER

#### 1. Optical Characteristics

- Operation Mode: CW / Modulated with random Polarization
- Nominal Output Power: 2000 W or higher
- Output Power Tunability: From 10% to 100%
- Wavelength: 1070 nm
- Wavelength Linewidth : max 6 nm
- Power Instability:  $\pm 1\%$  (short-term),  $\pm 3\%$  (long-term for at least 4 hours)
- Switching ON/OFF Time: 30–50  $\mu\text{s}$
- Modulation Rate: 20 kHz maximum
- Guide Laser Power for alignment: 0.1–1.0 mW and wavelength: 600-700 nm

#### 2. Optical Output

- Beam Quality:  $M^2$  between 1.0 - 1.2, single mode
- Beam Divergence at the end of the QBH connector (Full Angle, 86% level):  $\leq 110$  mrad
- Optical Fiber Bending Radius:  $\geq 80$  mm

#### 3. Compatible Connector

- Water cooled
- Delivery Fiber Length: 5 m minimum
- Termination connector type: QBH-compatible connector
- Length of termination connector: not exceeding 200mm

#### 4. General Characteristics

- Operating Temperature Range: 10–50 °C
- Relative Humidity Range: 10–95%
- Storage Temperature Range: -20 to +60 °C
- Dimensions: rack-mountable or portable rugged package
- Weight: Less than 40 Kg
- Dimensions (WxDxH): Not more than 500 x 600 x 100 mm
- Cold Start Temperature:  $\sim 20$  °C

#### 5. Electrical Characteristics

- Voltage: 200–240 VAC, 50/60 Hz
- Power Consumption: (5200–5600) W / (5700- 6100) VA
- Control Options: Analog Input (0-10V), RS-232, Ethernet and any additional types.
- Grounding (N-G):  $< 1\text{V}$  for all operational conditions for long duration of stability specified.

#### 6. Safety Compliance

- Laser Classification: Class 4 (High Power)
- Maximum Output Power: Minimum 2 kW (Continuous Wave)

- Wavelength Range: 900–1200 nm
- Compliance Standards: Should meet IEC 60825-1 safety requirements

## **Part 2: Chiller Compatible for 2 kW Single Mode Fiber Laser**

### **1. Functional Requirements**

- Cooling Method: Tap or DI-water
- Water Temperature: 21–25 °C (must stay above dew point)
- Temperature stability:  $\pm 1^\circ\text{C}$  when load is stable.
- Pressure: 2.5–5.5 bar
- Flow Rate: 10 liters per minute minimum
- Chiller Capacity: 3.6 kW minimum
- Operational distance: minimum 20 m

### **2. General Characteristics**

- Power source: 3 phases
- Operating Temperature Range: 10–40°C
- Refrigerant: R410A or better
- Filtration System: preferred

## **Part 3: Collimator compatible for 2 kW Single Mode Fiber Laser (2 nos.)**

### **1. Functional Requirements**

- Laser Power Handling: 10+ kW
- Focal Length (for collimator 1): 100 mm
- Focal Length (for collimator 2): 200 mm
- Collimation Accuracy:  $< \pm 10 \mu\text{m}$

### **2. General Characteristics**

- Protective Window: Yes
- Bayonet Types: Compatible with collimator
- Cooling: Water
- Weight: Less than 1.5 kg

## **Section 5- Technical Bid**

The technical bid should furnish all requirements of the tender along with all annexures in this section and be submitted to:

The Chairman

Department of Aerospace Engineering,

Indian Institute of Science Bengaluru – 560012, India

with mention of 'Kind attn. Prof. D Roy Mahapatra'

## Annexure-1:

### Details of the Bidder

The bidder must provide the following mandatory information & attach supporting documents wherever mentioned:

Sl. No	Items	Details
1.	Name of the Bidder	
2.	Nature of Bidder (Attach an attested copy of the Certificate of Incorporation/ Partnership Deed)	
3.	Registration No/Trade License (attach attested copy)	
4.	Registered Office Address	
5.	Address for communication	
6.	Contact Person: Name and Designation	
7.	Telephone No	
8.	Email ID:	
9.	Website	
10.	PAN No. (attach copy)	
11.	GST No. (attach copy)	

Signature of the Bidder

Name

Designation, Seal

Date:

## **Annexure-2:**

### **Declaration Regarding Experience**

To,  
The Chairman,  
Department of Aerospace Engineering,  
Indian Institute of Science,  
Bengaluru – 560012, India

**Ref: Tender No: AE/ENQ/TNDR/DRM/24-25/01**

**Dated: 31/03/2025**

**Subject:** Supply and installation of a **SINGLE MODE WATER COOLED FIBER LASER** at Department of Aerospace Engineering, IISc Bengaluru.

Respected Chair,

I have carefully reviewed the Terms & Conditions in the above-referred tender. I hereby declare that my company/firm has XXXXX years of experience in supplying and installing the proposed equipment.

(Signature of the Bidder)

Printed Name

Designation, Seal

Date:

## Annexure-3:

### Declaration regarding track record

To,  
The Chairman,  
Department of Aerospace Engineering,  
Indian Institute of Science,  
Bengaluru – 560012, India

**Ref: Tender No: AE/ENQ/TNDR/DRM/24-25/01**

**Dated: 31/03/2025**

Dear Sir/Madam

I have carefully reviewed the Terms & Conditions in the above-referred tender. I hereby declare that my company/ firm is not currently debarred/blacklisted by any Government / Semi-Government organizations/institutions in India or abroad. I further certify that I am a competent officer in my company/firm to make this declaration.

Or

I declare the following

S.No	Country in which the company is Debarred/blacklisted / case is Pending	Blacklisted/debarred by Government / Semi-Government/Organizations/ Institutions	Reason	Since when and for how long
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(NOTE: In case the company/firm was blacklisted previously, please provide the details regarding the period for which the company/firm was blacklisted and the reason/s for the same).

Yours faithfully

(Signature of the Bidder)

Name

Designation, Seal

Date:

## **Annexure – 4:**

### **Declaration for acceptance of terms and conditions**

To,  
The Chairman,  
Department of Aerospace Engineering,  
Indian Institute of Science,  
Bengaluru – 560012, India

**Ref: Tender No: AE/ENQ/TNDR/DRM/24-25/01**

**Dated: 31/03/2025**

Dear Sir/Madam

I have carefully reviewed the Terms & Conditions mentioned in the above-referred tender document. I declare that all the provisions of this tender document are acceptable to my company. I further certify that I am an authorized signatory of my company and am, therefore, competent to make this declaration.

Yours faithfully,

(Signature of the Bidder)

Name

Designation, Seal

Date:



## Annexure – 5:

Details of items quoted with technical specifications:

### 1. Technical Compliance Table

S.No.	Product Name	OEM Company Name	Part/Catalogue Number	Product Description	Detailed technical specifications (Use required number of sub-rows for each parameters)				Compliance "Yes/No"	Remarks
					Specification parameter	Unit	Desired value (as in Tender)	Proposed value		
1										
2										
3										
	Accessories (essential/optional)									
	Spares									

### 2. Product brochures and user manuals (add all relevant documents here).

## Annexure 6 – Commercial Bid

The commercial bid should be furnished with all requirements of the tender with supporting documents as mentioned:

To,  
The Chairman,  
Department of Aerospace Engineering,  
Indian Institute of Science,  
Bengaluru – 560012, India

Ref: Tender No AE/ENQ/TNDR/DRM/24-25/01 Dated: 31/03/2025

Dear Sir/Madam,

S.No	Description	Catalogue No.	Quantity	Unit Price	Sub Total
1.	Essential items noted in the technical specification				
1.a					
1.b					
1.c					
2.	Optional items noted in the technical specification				
2.a	... (details of essential items)				
2.b	...				
3.	Accessories for operation and installation				
4.	All consumables, spares and software to be supplied locally				
5.	Warranty (3 years)				
6.	AMC 3 years beyond warranty				
7.	Cost of Insurance and Airfreight				
8.	FOR IISc, Bengaluru				

Any additional items, such as Spares, Hardware/PCBs Likely to go obsolete after the next 3 Years

S.No	Description	Cat. Number	Quantity	Unit Price	Sub total

## Section 6 – Checklist

**(This should be enclosed with a technical bid- Part A)**

The following items must be checked before the Bid is submitted:

### **Sealed Envelope "A": Technical Bid**

Annexure 5- Technical Bid (each page signed by the authorized signatory and sealed) with the below annexures:

- a) Annexure 1: Bidders details
- b) Annexure 2: Declaration regarding experience
- c) Annexure 3: Declaration regarding clean track record
- d) Annexure 4: Declaration for acceptance of terms and conditions
- e) Annexure 5: Details of items quoted.

Copy of this tender document duly signed by the authorized signatory on every page and sealed.

### **Sealed Envelope "B": Commercial Bid**

Annexure 6: Commercial Bid

Your quotation must be submitted in two envelopes: **Technical Bid (Envelope A)** and **Commercial Bid (Envelope B)**, super scribing on both the envelopes with, Tender description, Tender No. and due date and both of these in sealed covers and put in a bigger cover which should also be sealed and duly super scribed with Tender No., Tender description & Due Date.