



INDIAN INSTITUTE OF TECHNOLOGY MAORAS  
Chennai 600 036

Telephone: [044] 2257 9798/9761 FAX: [044] 22570545/8366  
E-mail: arpp@iitm.ac.in



V.Sathyanarayanan  
Senior Manager (Project Purchase)

Ref: MEE/DHIM/059/2017  
Date: 15<sup>th</sup> Mar, 2018

Open Tender for supply of "**HIGH SPEED CAMERA** "

Tender No: MEE/DHIM/059/2017

**Due Date: 06.04.2018, 2:30pm**

Technical Bid opening on 06.04.2018 at 3.30pm

Dear Sir/Madam,

On behalf of the Indian Institute of Technology Madras, tenders are invited for the supply of "**HIGH SPEED CAMERA**. (MEE/DHIM/059/2017)" conforming to the specifications given in Annexure.

Instructions to the Bidder

**i Preparation of Bids:** - The tenders should be submitted under two-bid system (i.e.) Technical bid and Financial bid.

**ii. Delivery of the tender:** - The tender shall be sent to the below-mentioned address either by post or by courier so as to reach the following address before the due date and time specified in the Schedule: **Senior Manager, Project Purchase, 2nd floor, IC & SR Building, I.I.T. Madras -600 036.**

**iii. Opening of the tender:** - The offer/Bids will be opened by a committee duly constituted for this purpose. The technical bids will be opened first and it will be examined by a technical committee which will decide the suitability of the bid as per our specifications and requirements. The bidders will be invited for opening of Technical bids. In respect of opening of financial bid, those bidders who are technically qualified only will be called for.

iv. **Prices:** - The price should be quoted in nett per unit (after breakup) and must include all packing and delivery charges to various Departments/Centres/Institutions. The offer/bid should be exclusive of taxes and duties. The percentage of tax & duties should be clearly indicated separately. IIT Madras is eligible for concessional GST (not exceeding 5%) and relevant certificate will be issued.

In case of Imports, the price should be quoted without custom duty. I.I.T. Madras is exempted from levy of IGST on Imports and eligible for concessional custom duty (not exceeding 5%) and the price should be quoted on **EX-WORXS** and **CIP** basis indicating the mode of shipment.

v **Agency Commission:** - Agency commission, if any, will be paid to the Indian agents in Rupees on receipt of the equipment and after satisfactory installation. Agency Commission will not be paid in foreign currency under any circumstances. The details should be shown in Tender even in the case of 'Nil' commission. The tenderer should indicate the percentage of agency commission to be paid to the Indian agent. The foreign Principal should indicate about the percentage of payment and it should be included in the originally quoted basic price, if any.

vi **Terms of Delivery** - The item should be supplied to our various Departments/Institutions as per Purchase Order. In case of import supply, the item should be delivered at the cost of the supplier to our Institution. The Installation/Commissioning should be completed as specified in our important conditions.

vii **Technical Bid Opening:** The technical bid will be opened on **06/04/2018** between 3.30 pm to 4.00 pm In Department of Mechanical Engineering, IIT Madras and the financial bids of those tenders who are technically qualified will be opened at a later date under intimation to them.

viii. **IIT Madras reserves the full right to accept / reject any tender at any stage without assigning any reason.**

Yours sincerely,



वि. सत्यनारायणन  
V. SATHYANARAYANAN  
वरिष्ठ प्रबन्धक (परियोजना क्रय)  
SENIOR MANAGER (PROJECT PURCHASE)  
आईसी एवं एसआर केन्द्र / Centre for IC & SR  
आईआईटी मद्रास / I.I.T. MADRAS-600036

Senior Manager (Project Purchase)  
IC&SR, I.I.T. Madras

## **SCHEDULE**

### **Important Conditions of the tender**

The due date for the submission of the tender is **06.04.2018, 2:30 pm**. The offers / bids should be submitted in two bids system (i.e.) Technical bid and Financial bid. The Technical bid should consist of all technical details / specifications only. The Financial bid should indicate item-wise price for each item and it should contain all Commercial Terms and Conditions including Taxes, transportation, packing & forwarding, installation, guarantee, payment terms, pricing terms etc. The Technical bid and Financial bid should be put in separate covers and sealed. Both the sealed covers should be put in a bigger cover. The Tender for supply of "**HIGH SPEED CAMERA Tender no: MEE/DHIM/059/2017**" should be written on the left side of the Outer bigger cover and sealed.

**2.EMD: The EMD in the form of account payee DD for 2% value of the item in favor of Registrar IIT Madras Which should be enclosed in the cover containing financial Bid.** Any offer not accompanied with the EMD shall be rejected summarily as non-responsive. EMD should remain valid for a period of 45 days beyond the final bid validity period.

The EMD of the unsuccessful bidders shall be returned within 30 days of the end of the bid validity period. The same shall be forfeited, if the tenderers withdraw their offer after the opening during the bid validity period. The Institute shall not be liable for payment of any interest on EMD.

EMD is exempted for Micro and Small Enterprises (MSEs) as defined in MSE Procurement Policy issued by Department of Micro, Small and Medium Enterprises (MSME) or registered with the Central Purchase Organisation or with IITMadras as on the date of submission of bids..

**3. Performance Security:-** The successful bidder should submit Performance Security for an amount of 5% of the value of the contract/supply within 21 days from the date of issue of work/purchase order. The Performance Security should be furnished in the form of an Account Payee DD / FD Receipt from the commercial bank (or) Bank Guarantee from any nationalized bank in India.

**Performance Security in the form of Bank Guarantee:-** Incase the successful bidder wishes to submit Performance Security in the form of Bank Guarantee, the Bank Guarantee should be routed through the Beneficiary Bank to the end user bank. Otherwise, the Indian Agent of the foreign vendor has to submit a Bank Guarantee from a Nationalized Bank of India.

The Bank Guarantee should remain valid for a period of sixty days beyond the date of completion of all contractual obligations of the supplier including the warranty obligations.

**4. Indian agent:-** If an Indian agent is involved, the following documents must be enclosed: Foreign principal's proforma invoice indicating the commission payable to the Indian Agent and nature of after-sales service to be rendered by the Indian Agent.

Copy of the agency agreement with the foreign principal and the precise relationship between them and their mutual interest in the business.

The enlistment of the Indian agent with Director General of Supplies & Disposals under the Compulsory Registration Scheme of Ministry of Finance.

5.The offer/bids should be sent only for a machine that is available in the market and supplied to a number of customers. A list of customers in India and abroad with details must accompany the quotations. Quotations for a prototype machine will not be accepted.

6.**Original catalogue** (not any photocopy) of the quoted model duly signed by the principals must accompany the quotation in the Technical bid. No prices should ever be included in the Technical bid.

7.Documentary proof for the claimed position and repetition accuracies must be obtained from the principals and submitted along with the relevant pages of the standards.

8.Compliance or Confirmation report with reference to the specifications and other terms & conditions should also be obtained from the principal.

**9.Validity:** Validity of Quotation not less than 90 days from the due date of tender.

**10.Delivery Schedule:-** The tenderer should indicate clearly the time required for delivery of the item. In case there is any deviation in the delivery schedule, liquidated damages clause will be enforced or penalty for the delayed supply period will be levied.

Normally the delivery should be in 8 weeks from date of PO. If there is delay, the penalty will be @1 % per week of delay subject to a max of 10% of the value of purchase order and if the delay is more than 10 weeks, the PO would be cancelled and liquidated damages will be enforced.

**11.Risk Purchase Clause:-** In the event of failure of supply of the item/equipment within the stipulated delivery schedule, the purchaser has all the right to purchase the item/equipment from other sources on the total risk of the supplier under risk purchase clause.

**12.Payment:-** No Advance payment will be made for Indigenous purchase. However 90% Payment against Delivery and 10% after installation are agreed to wherever the installation is involved. In case of import supplies the payment will be made only through 100% Letter of Credit i.e. (90% payment will be released against shipping documents and 10% after successful installation wherever the installation is being done).

**13.Advance Payment:-** No advance payment is generally admissible. In case of specific percentage of advance payment is required, the Foreign Vendor has to submit a Bank Guarantee equal to the amount of advance payment and it should be routed through the Beneficiary Bank to the end user Bank. Otherwise, the Indian Agent of the foreign vendor has to submit a Bank Guarantee through a Nationalized Bank of India.

**14.On-site Installation:** - The equipment or machinery has to be installed or commissioned by the successful bidder within 15 to 20 days from the date of receipt of the item at site of IIT Madras.

**15.Warranty/Guarantee:** - The offer should clearly specify the warranty or guarantee period for the machinery/equipment. The warranty should be for three years from the date of commissioning of the equipment.

**16.Late offer:** - The offers received after the due date and time will not be considered. The Institute shall not be responsible for the late receipt of Tender on account of Postal, Courier or any other delay.

**17.Acceptance and Rejection:** - I.I.T. Madras has the right to accept the whole or any part of the Tender or portion of the quantity offered or reject it in full without assigning any reason.

**18.Do not quote the optional items or additional items unless otherwise mentioned in the Tender documents / Specifications.**

**19.Disputes and Jurisdiction:** -

**Settlement of Disputes:** Any dispute, controversy or claim arising out of or in connection with this PO including any question regarding its existence, validity, breach or termination, shall in the first instance be attempted to be resolved amicably by both the Parties. If attempts for such amicable resolution fails or no decision is reached within 30 days whichever is earlier, then such disputes shall be settled by arbitration in accordance with the Arbitration and Conciliation Act, 1996. Unless the Parties agree on a sole arbitrator, within 30 days from the receipt of a written request by one Party from the other Party to so agree, the arbitral panel shall comprise of three arbitrators. In that event, the supplier will nominate one arbitrator and the Project Coordinator of IITM shall nominate one arbitrator. The Dean IC&SR will nominate the Presiding Arbitrator of the arbitral tribunal. The arbitration proceedings shall be carried out in English language. The cost of arbitration and fees of the arbitrator(s) shall be shared equally by the Parties. The seat of arbitration shall be at IC&SR IIT Madras, Chennai..

- a. **The Applicable Law:** This Purchase Order shall be construed, interpreted and governed by the Laws of India, Court at Chennai shall have exclusive jurisdiction subject to the arbitration clause.
- b. Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within the city of Chennai in Tamil Nadu.

**20. All Amendments, time extension, clarifications etc., will be uploaded on the website only.** Bidders should regularly visit the above website to keep themselves updated. No extension in the bid due date/ time shall be considered on account of delay in receipt of any document by mail.

**Acknowledgement:-** It is hereby acknowledged that the tenderer has gone through all the conditions mentioned above and agrees to abide by them.

**SIGNATURE OF TENDERER  
ALONG WITH SEAL OF THE  
COMPANY WITH DATE**

## Annexure

### SPECIFICATION

#### Technical Specifications for High speed camera

1.	Application	Capture motion of bubbles
2.	Frame rate	At least 6,000 frames/sec at 1 megapixel resolution. Higher resolution (> 1 megapixel) at lower frame rates (1000-6000 frames/sec), if available, will be preferred.
3.	Memory	At least 8 GB, with a provision for extendable memory
4.	Sensor	12 bit CMOS Monochrome
5.	Pixel size	10 – 20 $\mu\text{m}$
6.	Light Sensitivity	Minimum of ISO 5000 Monochrome
7.	Operating temperatures	Up to 40° C
8.	Shutter	Global electronic shutter with variable shutter time, minimum being 1 $\mu\text{s}$
9.	Lens Mount	Interchangeable C-mount and F-mount with adapter
10.	Recording	Manual and external trigger
11.	Dual speed recording	Capability to change the recording speed up or down by a factor of 2, 4 and 8 during recording
12.	Recording Modes	Start, End, Center, Manual and random recording
13.	Control software	Software to be compatible with Windows 7/8/8.1/10
14.	I/O	Input: Trigger (TTL/Switch), Sync, Ready, Event, IRIG Output: Trigger, Sync, Ready, Rec, Expose
15.	Video	Ability to zoom, pan and scroll within image via keypad. Live video during recording.
16.	Saved image formats	BMP, TIFF, FTIF, RAW, JPEG, PNG, AVI, MOV. Images can be saved with or without image or comment data.
17.	Timing	Internal clock and external source
18.	Power	Compatible with 220 V AC power supply
19.	Cooling	Cooling provision to maintain the camera within the operating temperature range
20.	Camera Control	High Speed Gigabit Ethernet
21.	Data display	Frame rate, Shutter speed, Trigger Mode, Date or time, status, real time, frame count and resolution
22.	Segmented Memory	At least 16 segmented memory segments for multiple recordings in memory
23.	Warranty	Minimum of 1 year and extendable warranty for 2 and 3 years. Additionally, the cost of 3 years onsite support may be mentioned.
24.	Programmable delay on selected input and output triggers	
25.	Phase locking capability to be precisely synchronized to an external source	
26.	Strobe output for synchronizing other events with the camera	

27.	Provision for user entered event markers
28.	Technical datasheet of camera and accessories should be enclosed with the quotation

**Accessories:**

Accessories should include details and pricing information of the following items:

- ➔ Lens with variable focal length and variable aperture.
  - Focal length range: 70 – 200 mm
  - Maximum Aperture: f/ 2.8
  - Minimum Aperture: f/ 22
  - Mount type: C or F mount
- ➔ Heavy-duty tripod for the camera
- ➔ Transit/ Storage case for the camera
- ➔ Optional battery backup for the camera to protect data in the event of unexpected power loss.