

GLOBAL TENDER NOTICE
Supply of Electron Multiplying CCD (EMCCD) Camera



DEPARTMENT OF ELECTRONICS SYSTEMS ENGINEERING
INDIAN INSTITUTE OF SCIENCE

JULY 15, 2025
QO&QI LAB, DESE
Bangalore 560012

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This is a global tender

Section 1 - Bid Schedule

1	Tender No	IISC/DESE/GT/QOQI/CMC/25-26-01
2	GTE Approved No	
3	Tender Date	15.07.2025
4	Item Description	Electron Multiplying CCD (EMCCD) Camera - 1 Quantity
5	Tender Type	Two bid system (i) Technical Bid (Part A) (ii) Commercial Bid (Part B)
6	Place of tender submission	Chairperson's Office, Ground Floor Dept. of Electronics Systems Engineering Indian Institute of Science, Bangalore 560012
7	Last Date & Time for submission of tender	05.08.2025
8	For further clarification	Prof. C. M. Chandrashekar, Department of Electronics Systems Engineering, Room No 323, 2 nd floor, Indian Institute of Science, Bengaluru 560012 Email : chandracm@iisc.ac.in Contact no: 9566000369

Section 2 – Eligibility Criteria

Prequalification criteria:

1. The bidder must have supplied similar systems to at least 10 educational institutes/universities and/or research organizations and at least five to the CFTI's in India along with contact details.
2. The bidder should sign and submit the declaration for Acceptance of Terms and Conditions as per -Annexure 4.
3. 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.
4. Original Invoice, Original Warranty Certificate, Original Test Reports should be produced for all imported items from OEM (Original Equipment Manufacturer) at the time of supply of the equipment's.
5. System Catalogue should be produced with the Technical Bid.
6. Manufacturers should have ISO or equivalent international standard certificate. Please attach the required certificate with the bid.
7. Supplier will support the user with all the spares for a minimum period of 5 years.
8. Details of experienced service engineering, including contact details, should be provided in the tender document.
9. Bidder shall have to submit audited accounts (Balance sheet profit and loss account) for financial year 2022-23, 2023-24 and 2024-25. Audited statement must be signed and stamped by qualified chartered accounts.
10. Bidder must submit Income Tax return for assessment year – 2022-23, 2023-24 and 2024-25.
11. The bidder must submit up to date sales tax or GST clearance certificate.
12. CE Certification must be provided for the proposed system. The CE certificate should be provided with the Unit.
13. The Bidder should have supplied similar equipment in Central Universities, preferably in centrally Funded Technical Institutes (IITs, IISC, IISER, NIT). Please provide the details and contact information.
14. Only the Original Equipment Manufacturer or their authorized representatives across the globe shall participate in the bid. “..
15. The order will be placed only on the bidder who participated in the bid.

Section 3 – Terms and Conditions

A) Submission of Tender:

1. All documentations in the tender should be in English.
2. Tender should be submitted in two envelopes (two bid systems).
 - a. Technical Bid (Part-A) – Technical bid consisting of all technical details and check list for conformance to technical specifications.

The technical proposal should contain a technical compliance table with 5 columns.

- i. The first column must list the technical requirements, in the order that they are given in the technical requirement below.
 - ii. The second column should provide specifications of the instrument against the requirement. Please provide quantitative responses wherever possible with technical details in annexure.
 - iii. The third column should describe your compliance with a “Yes” or “No” only. Ensure that the entries in column 2 and column 3 are consistent.
 - iv. The fourth column should state the reasons/explanations/context for deviations, if any.
 - v. The fifth column can contain additional remarks from the Global OEM. You can use this opportunity to highlight technical features, qualify response of previous columns, or provide additional details.
 - 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 tender**, and other commercial terms and conditions.
3. The technical bid and price bid should each be placed in separate sealed covers, superscripting on both the envelopes the tender no. and the due date. Both these sealed covers are to be placed in a bigger cover which should also be sealed and duly subscripted with the Tender No, Tender Description& Due Date.
4. The SEALED COVER superscripting tender number / due date & should reach Chairperson Office, Dept. of Electronics Systems Engineering, Indian Institute of Science, Bangalore – 560012, India on or before due date mentioned in the tender notice. In case the due date happens to be a holiday the tender will be accepted and opened on the next working day. If the quotation cover is not sealed, it will be rejected.
5. All queries are to be addressed to the person identified in “Section 1 – Bid Schedule” of the tender notice.
6. If price is not quoted in Commercial Bid as per the format provided in tender document the bid is liable to be rejected.

7. The Institute reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to the award of contract, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders.
8. Incomplete bids will be summarily rejected.

B) Cancellation of Tender:

Notwithstanding anything specified in this tender document, IISc Bangalore, in its sole discretion, unconditionally and without having to assign any reason, reserves the rights:

- a. To accept OR reject lowest tender or any other tender or all the tenders.
- b. To accept any tender in full or in part.
- c. To reject the tender, offer not confirming to the tender terms.

C) Validity of the Offer:

The offer shall be valid at least 90 Days from the date of opening of the commercial bid.

D) Evaluation of Offer:

1. The technical bid (Part A) will be opened first and evaluated.
2. Bidders meeting the required eligibility criteria as stated 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. Pre- qualification of the bidders shall not imply final acceptance of the Commercial Bid. The agency may be rejected at any point during technical evaluation or during commercial evaluation. The decision regarding acceptance and / or rejection of any offer in part or full shall be the sole discretion of IISc Bangalore, and the decision in this regard shall be binding on the bidders.
4. The award of contract 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 and 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 Bangalore shall consider that the BIDDER had accepted the clauses as of the tender and

no further claim will be entertained. Further, if the BIDDER is silent or does not give detailed justification of their claim regarding those mentioned in technical specifications, IISc Bangalore reserves the full right to reject the tender due to non-compliance without any further discussion.

7. No revision in the terms and conditions quoted in the offer will be entertained after the last date and time fixed for receipt of tenders.
8. Lowest bid will be calculated based on the total price of all items tendered for Basic equipment along with accessories selected for installation, operation, preprocessing and post processing, optional items, recommended spares, warranty, annual maintenance contract.

E) Pre-requisites:

The bidder will provide the prerequisite installation requirement of the equipment along with the technical bid.

F) Warranty:

The Item is to be under warranty period of minimum 1 year including free supply of consumables, spare parts and data analysis software from the date of functional installation. If the instrument is found to be defective, it has to be replaced or rectified at the cost of the bidder within 30 days from the date of receipt of written communications from IISc, Bangalore. If there is any delay in replacement or rectification, the warranty period should be correspondingly extended.

G) Purchase Order:

1. The order will be placed on 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 tender is only indicative. IISc, Bangalore reserves the right to increase /decrease the quantity of the items depending on the requirement.
3. If the quality of the product and service provided is not found satisfactory, IISc, Bangalore reserves the right to cancel or amend the contract.

H) Delivery, Installation and Training:

The bidder shall provide the lead time to delivery, installation and made functional at IISc, Bangalore from the date of receipt of purchase order. The system should be delivered, installed and made functional **within 180 days** from the date of receipt of purchase order. The supply of the items will be considered as effected only on satisfactory installation and inspection of the system and inspection of all the items and features/capabilities tested by the IISc, Bangalore. After successful installation and inspection, the date of taking over of the entire system by the IISc, Bangalore, shall be taken as the start of the warranty period. No partial shipment is allowed.

The bidder should also arrange for technical training to the local facility technologists and users.

I) Payment Terms:

The payment will be through a Letter of Credit and the milestone of the payment will be determined after mutual discussions with the successful bidder.

As per GFR no advance payment can be made to domestic vendors unless 110% of the bank guarantee is provided.

J) 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, Bangalore subject to the claim being supported by documentary evidence. However, if any decrease takes place the advantage will have to be passed onto IISc, Bangalore.

K) Disputes and Jurisdiction:

Any legal disputes arising out of any breach of contract pertaining to this tender's shall be settled in the court of competent jurisdiction located within the city of Bangalore, India.

L) General:

1. All amendments, time extension, clarifications etc., within the period of submission of the tender will be communicated electronically. No extension in the bid due date/time shall be considered on account of the delay in receipt of any document(s) by mail.
2. The bidder may furnish any additional information, which is necessary to establish capabilities to successfully complete the envisaged work. It is, however, advised not to furnish superfluous information.
3. The bidder may visit the installation site before submission of tender, with prior intimation.

4. Any information furnished by the bidder found to be incorrect, either immediately or later, would render the bidder liable to be debarred from tendering/taking up of work in IISc, Bangalore.

Section 4 – Technical Specifications

A. Technical Specifications of EMCCD Cameras

Sl. No	Description	Specification/Details	Essential/Non Essential
1	Sensor type	Back illuminated and standard AR coated	Essential
2	Quantum Efficiency	75% or more at 810nm, Peak value more than 95%	Essential
3	Number of Active Pixels (H × V)	512 x 512 or more	Essential
4	Pixel size	16 x 16 micrometer or smaller	Essential
5	Image area	8.2 x 8.2 mm or bigger with 100% fill factor	Essential
6	Pixel readout rates	10 MHz & 17 MHz	Essential
7	Deepest cooling	- 100 °C (without the use of liquid nitrogen)	Essential
8	Cooling option	Air-cooled option to add water to chiller	Essential
9	System window type	Back-illuminated, EX2 dual AR coated with fringe suppression	Essential
10	Triggering Options	Internal, External, External start, External Exposure, Software trigger	Essential
11	Blemish specification	Grade 1 sensor	Essential
12	Digitization	16-bit (at all speeds) or more	Essential
13	PC interface	USB (Preferably USB 3.0)	Essential
14	Lens mount type	C-Mount	Essential
15	Direct data access option	Must be possible with Camera Link 3-tap output	Essential
16	Dark current (electron/pixel/sec)	It must be below 0.00030, 0.00015 or less (at maximum cooling)	Essential
17	Spurious background (events/pixel) at 1000x gain	0.0018 or less	Essential
18	Active area pixel well depth	180000 electrons or more	Essential
19	Gain register pixel well depth	800000 electrons or more	Essential
20	Pixel readout rates	17 MHz with EM mode or faster	Essential
21	Linearity	Better than 99.9%	Essential
22	Frame rate	56 fps at full frame and more with smaller frame selection	Essential

23	Maximum read noise	Less than 1 with electron multiplication in EMCCD amplifier	Essential
24	Linear absolute Electron Multiplier gain	1 - 1000 times	Essential
25	Vertical clock speed	0.3 to 3.33 microseconds, User selectable	Essential
26	Time stamp accuracy	Around 10 ns	Essential
27	Calibration	Should be stable at all cooling temperatures (Temperature compensated EM gain)	Essential
28	Software	The latest 64- b i t compatible software must be included	Essential
29	Software to control and process data from the EMCCD	Must be included with capabilities for controlling, time-stamping, ROI selection, pixel- binning, histogram generation and programming	Essential
30	Performance Test Reports	Must be Included	Essential
31	Any cables, connectors or other accessories needed to connect the EMCCD to PC	Must be included	Essential
32	Compliance sheet	A compliance sheet as mentioned below must be provided with proper details and supporting documents. All technical documents pre- qualification details and supporting documents should be in the technical bid and not in finance.	Essential

B. Compliance sheet of EMCCD Cameras

Sl. No.	Description	Specification/Details	Essential/ non-essential	Yes/No (to be filled up by the vendor)
1	Sensor type	Back-illuminated and standard AR coated	Essential	
2	Quantum Efficiency	75% or more at 810nm, Peak value more than 95%	Essential	
3	Number of Active Pixels (H × V)	512 x 512 or more	Essential	
4	Pixel size	16 x 16 micro meter or smaller	Essential	
5	Image area	8.2 x 8.2 mm or bigger with 100% fill factor	Essential	
6	Pixel readout rates	10 MHz & 17 MHz	Essential	
7	Deepest cooling	- 100 °C (without the use of liquid nitrogen)	Essential	
8	Cooling option	Air-cooled with option to add water to chiller	Essential	
9	System window type	Back-illuminated, EX2 dual AR coated with fringe suppression	Essential	
10	Triggering Options	Internal, External, External start, External Exposure, Software trigger	Essential	
11	Blemish specification	Grade 1 sensor	Essential	
12	Digitization	16-bit (at all speeds) or more	Essential	
13	PC interface	USB (Preferably USB 3.0)	Essential	
14	Lens mount type	C-Mount	Essential	
15	Direct data access option	Must be possible with Camera Link 3-tap output	Essential	
16	Dark current (electron/pixel/sec)	Must be below 0.00030, 0.00015 or better (at maximum cooling)	Essential	
17	Spurious background (events/pixel) at 1000x gain	0.0018 or less	Essential	
18	Active area pixel well depth	180000 electrons or more	Essential	
19	Gain register pixel well depth	800000 electrons or more	Essential	
20	Pixel readout rates	17 MHz with EM mode or faster	Essential	
21	Linearity	Better than 99.9%	Essential	
22	Frame rate	56 fps at full frame and more with smaller frame selection	Essential	

23	Maximum read noise	Less than 1 with electron multiplication in EMCCD amplifier	Essential	
24	Linear absolute Electron Multiplier gain	1 - 1000 times	Essential	
25	Vertical clock speed	0.3 to 3.33 micro seconds, User selectable	Essential	
26	Time stamp accuracy	Around 10 ns	Essential	
27	Calibration	Should be stable at all cooling temperatures (Temperature compensated EM gain)	Essential	
28	Software	Latest 64 bit compatible software must be included	Essential	
29	Software to control and process data from the EMCCD	Must be included with capabilities for controlling, time-stamping, ROI selection, pixel-binning, histogram generation and programming	Essential	
30	Performance Test Reports	Should be Included	Essential	
31	Any cables, connectors or other accessories needed to connect the EMCCD to PC	Must be included	Essential	
32	Compliance sheet	A compliance sheet as mentioned below must be provided with proper details and supporting documents. All technical documents pre-qualification details and supporting documents should be in the technical bid and not in finance.	Essential	
33	Details of other purchase order of the same equipment with the same technical specifications. The bidder must have supplied similar systems to at least 5 educational institutes / universities and/or research organizations.		Essential (Please attach all the details)	
34	The Bidder should belong to either class 1 or class 2 supplier distinguished by their "local content" as defined by recent edits to GFR (please refer to annexure 1 attached). They should mention clearly which class they belong to in the cover letter.		Essential. (Please attach all the details.)	

	a) Class 1 supplier: Goods and services should have local content of equal to or more than 50%. Class 2 supplier: Goods and services should have local content of equal to or more than 20 % and less than 50%.			
35	The bidder should sign and submit the declaration for Acceptance of Terms and Conditions as per -Annexure 4.		Essential	
36	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.		Essential	

C. Training and demonstration

- a. Complete installation of the system needs to be provided.
 - b. Training for users by the company personnel present 'on site' immediately after the installation.
 - c. All pre-installation requirements to have the system installed in ideal room conditions should be included in the quote.

D. Others

- a. The system with similar specifications must submit references from previous installations.
 - b. The names and contact addresses of the referees must be submitted with the proposal, so the purchase committee can contact them independently.
- c. The system should require minimal maintenance.
 - d. Mention the recommended preventive maintenance schedule for the system. Any accessories needed for periodic preventive maintenance for 3 years should be mentioned in separately the itemized quote.
 - e. Can the preventive maintenance be done by a trained on-site engineer or requires a specialist from the OEM? If the latter, please provide cost of a 3-year AMC with required kit/consumables.
 - f. **CE Certification must be provided for the proposed system. The CE certificate should be provided with the Unit.**
- g. Operation Manual to be given after installation and acceptance of equipment
 - h. The system should be supported by a trained local representative (contact details must be shared) and should have a minimum of 72-hour window of response.

Section 5- Technical Bid

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

The Chairperson,
Attn: Prof. C.M. Chandrashekar
Dept of Electronics Systems Engineering,
Room No 323, 2nd floor,
Indian Institute of Science
Bangalore – 560012, India

Annexure-1:

Details of the Bidder

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

Details of the Bidder

Sl. No	Items	Details
1.	Name of the Bidder	
2.	Nature of Bidder (Attach attested copy of 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 Chairperson,
Department of Electronics Systems Engineering,
Room No 323, 2nd floor,
Indian Institute of Science,
Bangalore – 560012, India

Ref: Tender No: IISC/DESE/GT/QOQI/CMC/25-26-1

Dated: 15.07.2025

Supply of Electron Multiplying CCD (EMCCD) Cameras at Quantum Optics and Quantum Information (QOQI) Laboratory, DESE, IISC Bangalore.

Sir,

I've carefully gone through the Terms & Conditions contained in the above-referred tender. I hereby declare that my company/firm has ---- years of experience in supplying and installing Confocal systems

(Signature of the Bidder)

Printed Name

Designation, Seal Date:

Annexure-3:

Declaration regarding track record

To,

The Chairperson,
Department of Electronics Systems Engineering,
Indian Institute of Science,
Bangalore – 560012, India

Ref: Tender No: IISC/DESE/GT/QOQI/CMC/25-26-1

Dated: 15.07.2025

Supply of Electron Multiplying CCD (EMCCD) Cameras at Quantum Optics and Quantum Information (QOQI) Laboratory, DESE, IISC Bangalore.

Sir,

I've carefully gone through the Terms & Conditions contained 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'm a competent officer in my company / firm to make this declaration.

Or

I declare the following.

Sl. 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

(NOTE: In case the company / firm was blacklisted previously, please provide details regarding 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 Chairperson,
Department of Electronics Systems Engineering,
Room No 323, 2nd floor,
Indian Institute of Science,
Bangalore – 560012, India

Ref: Tender No: IISC/DESE/GT/QOQI/CMC/25-26-1

Dated: 15.07.2025

Supply of Electron Multiplying CCD (EMCCD) Cameras at Quantum Optics and Quantum Information (QOQI) Laboratory, DESE, IISC Bangalore.

Sir,

I've carefully gone through the Terms & Conditions as 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'm 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:

- a. Company Name
- b. Product Name
- c. Part / Catalogue number
- d. Product description / main features
- e. Detailed technical specifications
- f. Remarks

Instructions to bidders:

1. Bidder should provide technical specifications of the quoted product/s in detail.
2. Bidder should attach product brochures along with technical bid.
3. Bidders should clearly indicate compliance or non-compliance of the technical specifications provided in the tender document.

Section 6 – Commercial Bid

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

S. No	Description	Cat. Number	Quantity	Unit Price	Sub total
1.	Essential items noted in the technical specification				
1.a	... (details of essential items)				
1.b	...				
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 (1 year)				
6.	AMC 2 years beyond warranty				
7.	Cost of Insurance and Airfreight				
8.	CIP/CIF IISc, Bengaluru				

Any additional items

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

Addressed to

The Chairperson,
Attn: Prof. C.M. Chandrashekar,
Room No 323, 2nd floor,
Dept. of Electronics Systems Engineering,
Indian Institute of Science
Bangalore – 560012, India

Section 7 – Checklist

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

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

1. Sealed Envelope “A”: Technical Bid

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

2. Sealed Envelope “B”: Commercial Bid

Section 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 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.