

**Phone:** 22541244 **Fax:** 25534043  
**Website:** www.iiap.res.in

**Email:** [purchase@iiap.res.in](mailto:purchase@iiap.res.in)



## INDIAN INSTITUTE OF ASTROPHYSICS

IIND BLOCK, SARJAPUR ROAD, KORAMANGALA,  
BENGALURU - 560 034

**Global Tender Notice No.** PUR/IMP/GCA/CCD-CAMERA/16-17

**Dated:** 17th May 2016

M/s.

Dear Sir/s,

The Director, Indian Institute of Astrophysics, Bangalore, invites Sealed Tenders Two bid system for **Supply, installation and commissioning of 4K X 4K detector, readout electronics, thermoelectric cooler and housing at IAO, Hanle 300 Km from Leh-Ladakh (As per detailed technical specification attached in the Annexure `A')** detailed in the Tender form hereto annexed. The terms and conditions may be noted carefully and if you are in a position to quote for the supply in accordance with the requirements, please submit your quotation. The Tender documents and other details are available on IIA web site [www.iiap.res.in/tenders.htm](http://www.iiap.res.in/tenders.htm)

**The Tender bids must be in foreign currency only.** Your completed Tender bids both Technical bid and commercial bid must reach our office on or before 17th June 2016 by 15 00 hrs. Both bids with sealed separate envelopes duly superscribed with the name of the supply and the Due Date must reach our office within the due Date and Time. The Technical bids will be opened in presence of the bidders or authorized representative of the company by **15.30 hrs on 17th June 2016.** The commercial bids will be opened only those are successful in the Technical bids. The date and time of commercial bids opening will be intimated later. Incomplete Bids are liable for rejection.

For any Technical clarification you may contact during office hours Dr.G.C.Anupama (Ph.No.22541258) and for any Commercial clarification can contact Stores & Purchase officer (Ph.No.22541244).

Thanking you,

Yours faithfully,

**Dr.P.Kumaresan**  
**Administrative Officer**

Phone: 22541244 Fax: 25534043  
Website: www.iiap.res.in

Email: [purchase@iiap.res.in](mailto:purchase@iiap.res.in)



**INDIAN INSTITUTE OF ASTROPHYSICS**  
IIND BLOCK, SARJAPUR ROAD, KORAMANGALA,  
BENGALURU - 560 034

**GLOBAL TENDER DOCUMENT No : PUR/IMP/GCA/CCD-CAMERA/16-17 Dated: 17th May 2016**

**TENDER FORM**

FROM:

TO

**THE DIRECTOR  
INDIAN INSTITUTE OF ASTROPHYSICS  
BENGALURU - 560 034.**

Sir,

I/We hereby offer to supply the Items/Equipment indicated below at the price hereunder quoted and agree to hold this office open till . I/We shall be bound to supply the items/Equipment hereby offered upon the issue of the Purchase Order communicating to the acceptance thereof on or before the expiry of the last mentioned date. You are at liberty to accept any one or more of the items such Items/Equipment. I/We not withstanding that the offer in this tender has not been accepted in whole, shall be bound to supply such items and such portion or portions of one or more of the items as may be specified in the said Purchase order communicating the acceptance.

---

Sl. No.	Description of the item(s)	Qty.	Unit	Rate	Dely. Period
01.	Supply, installation and Commissioning of 4K X 4K detector readout electronics, thermoelectric cooler and housing at IAO-Hanle 300Km from Leh-Ladakh (As per detailed technical specification attached in the Annexure `A') <b>(Tender bids should be in USD/EURO/GBP/JPY only )</b>		01 No.		

---

Place at which the Delivery is required : Indian Astronomical Observatory, Skara Village, Post Box No.100  
Leh-Hanle, Jammu and Kashmir

Date by which the supplies are required : Within 2 months from the date of receipt of Purchase order

2 I/We have understood the items of the tender annexed to the invitation to the Tender and have thoroughly examined the specifications/drawing and / or pattern quoted or referred to herein and / are fully aware of the nature of the items/ Equipment required and my / our offer is to supply the items/ Equipment strictly in accordance with the requirements subject to the terms and conditions contained in the Purchase order communicating the acceptance of this tender either in whole or in part.

**Date :**

**Signature and Seal of Supplier**

**Annexure - A**  
**Technical requirements for CCD camera**

We want a full package consisting of a 4K x 4K detector, readout electronics, thermoelectric cooler and housing. The requirements for each are:-

**A) Detector**

- 1) 4K x 4K CCD (S2V CCD230-84-1-145 or equivalent)
- 1) Grade 1 or higher
- 2) CCD active area: 61.4mm x 61.4mm
- 3) Pixel size: 15 $\mu$ m x 15 $\mu$ m
- 2) Extended dynamic range: 18 bit
- 3) Dark current at -SSC: 0.001 e<sup>-</sup>pixel/sec
- 4) Active area pixel well depth: 150,000 electrons
- 4) Readout rates: 100KHz, 1 MHz, 2M Hz, 4Ml-Iz
- 5) Read noise: minimum <5 electrons
- 1) Field replaceable shutter operable to -20C
- 5) Four outputs
- 6) Linearity: >99
- 7) Midband AR coating
- 2) Peak OE >95
- 8) Projected QE at Blue and Red wavelengths

350 nm >25

500-800 nm >85

900-1000 nm >35

**B) Cooling**

- 1) Temperature specification: cooling down to -55C at ambient of 20C
- 1) Method: Thermo-electric cooler with no water / liquid pumping

**C) Housing / mechanical details**

- 1) Back focal length < 10 cm (Mounting top to camera surface)
- 2) Weight < 10 kg
- 2) Electronic or Mechanical shutter with 0.1 see min exposure time

**D) Environmental conditions:**

- 1) Operating -30 to +10oC, RH 5 - 90
- 1) Storage -30 to +20 °C, RH 0-95
- 1) Altitude: 4500 m amsl

**E) CCD controller**

- 1) *IR1GB*, GPS time stamp on images
- 2) Linux compatible data acquisition software (source code required)
- 3) FITS f0TI1at output
- 4) CCD video processor for four channels
- 5) Selectable readout speeds
- 2) Fiber optic as well as USB 3.0 interface
- 2) Support for reading out sub-frame / region of interest
- 2) Integration

**F) Installation:**

- 1) Vendor must provide installation at site (TAO, Hanle)
- 1) A site engineer win be present during installation, and vendor should familiarize OUF engineer with the installation, testing and integration process, to aid long-term maintenance and troubleshooting.
- 2) Vendor must demonstrate compliance with technical specifications.

**G) Service, SUPPOI't and Maintenance:**

- 1) At least one year warranty.
- 2) Service and sUPPOt should be provided for at least 3 years (negotiable).
- 3) Spare parts should be available for purchase for at least 3 years,

**H) Technical Collaboration:**

The vendor needs to work in close collaboration with Indian Institute of Astrophysics (II A) in designing the entire CCO system.

## **INSTRUCTIONS TO SUPPLIERS**

1. Bids should be sent in sealed and superscribed envelopes with mention of Tender No. date and date of opening. Only one Tender should be sent in each envelope.
2. Late and Delayed tender will not considered at all.
3. Duties, Taxes where legally leviable and intended to be claimed should distinctly shown separately in the Tender.
4. a) Your quotation should be valid for 90-120 days from the date of opening of Tender.  
  
b) Prices are required to be quoted according to the units indicated in the annexed tender form. When quotations are given in terms of units other than those specified in the Tender form, relationship between the two sets of units must be furnished.
5. a) All available Technical Literature(s), Catalogue(s) and other data in support of the specifications and details of the item(s) should be furnished along with the offer.  
  
b) Approximate net and gross weight of the items offered shall be indicated in your offer. If dimensional details are available the same should indicated in your offer.  
  
c) Air freight/sea freight charges up to Bangalore Airport may be sent along with the offer.

### **d) Specifications:**

Items / Equipment offered should strictly conform to our specifications. Deviation, if any should be clearly indicated by the Supplier in their quotation. The supplier should also indicate the Make / type No. of the stores offered and provide catalogue(s), Technical literature(s) and sample(s), wherever necessary along with the quotations. Test certificates wherever necessary should be forwarded along with the supplies. Whenever options are called for in our specifications, the Supplier should address all such options. Wherever specifically mentioned by us, the Supplier could suggest changes to specifications with appropriate response for the same.

1. Corrections, if any, must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amounts quoted in words and figures, amount quoted in words shall prevail.
2. The supplier should supply along with the tender, the Banking information for payment or any other purpose.
3. A complete set of instruction and operation manual should be supplied.
4. Final performance should be guaranteed.

## **TERMS AND CONDITONS OF CONTRACT**

### **1. DEFINITIONS:**

- a) The terms 'Purchaser' shall mean the Director, Indian Institute of Astrophysics, Bangalore - 560 034.
- b) The term 'Supplier' shall mean, the person, firm or company with whom or with which the order for the supply of Items / Equipment is placed.
- c) The terms 'Purchase Order' shall mean the communication signed on behalf of the Purchaser by an officer duly authorized intimating the acceptance on behalf the Purchaser on the terms and conditions mentioned or referred to in the said communications accepting the tender or offer of the supplier for supply of Items/Equipment.

### **2. PRICES:**

The price may please be indicated on unit basis only.

#### **Duty Exemption:**

Please note that we may issue "Customs duty Exemption Certificate & Excise duty exemption certificate" under the Govt. of India notification No.51/96 & No.10/97 valid till 2016.

### **3. GUARANTEE AND REPLACEMENT:**

The Supplier shall guarantee that the Items/Equipment supplied shall comply fully with the specifications laid down, for material workmanship and performance. The Guarantee should be for a period of one year minimum from the date of supply.

### **4. PACKING, FORWARDING AND INSURANCE:**

The Contractor will be held responsible for the stores being sufficiently and properly packed for transport by air / Sea to withstand transit hazards ensure safe arrival at the destination. The packing and marking of packing shall be done by and at the expenses of the contractor. The Purchaser will not pay separately for transit insurance, all risks in transit being exclusively of the supplier and the Purchase shall pay only for such Items/Equipment as are actually received in good condition, in accordance with contract.

### **5. TEST CERTIFICATE:**

Wherever required Test Certificate should be sent before dispatch of the items.

**6. ACCEPTANCE OF ITEMS / EQUIPMENT:**

a)It is expressly agreed that the acceptance of Items/Equipment, is subject to final approval by the Purchase, whose decision shall be final.

**7. DELIVERY PERIOD:**

Delivery is the essence of the contract. The supplier should adhered to delivery schedule as indicated in the Purchase order.

**8. EXTENTION OF DELIVERY TIME:**

As soon as it is apparent that Supplier dates cannot be adhered to, an application shall be sent by the Supplier to the Purchaser. If failure, on the part of the Supplier to deliver the Items/Equipment in proper time shall have arisen from any cause which the Purchaser may admit as reasonable ground for an extension of the time ( and his decision shall be final he may allow such additional time as he considers it to be justified by the circumstances of the case). In case of Letter of Credit the banking charge for the LOC amendment will be on suppliers account.

**9. PAYMENT:**

Preference will be given to the supplier whose payment terms is on Letter of Credit / Site Draft or Credit basis.

**10. SECURITY FOR PAYMENT:**

Successful Supplier will have to furnish in the form of a Bank Guarantee or any other form as called for by the Purchase towards any payments before supply of items/equipment. In case of payment through Letter of Credit the Banking charges outside India and inside India will be on suppliers account.

**11.** IIA reserves the right to reject any or all the Tenders without assigning any reason.

**Dr.P.Kumaresan**  
**Administrative officer**