



**INSTITUTE OF MINERALS & MATERIALS
TECHNOLOGY**
(COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH)
BHUBANESWAR – 751 013
TEL.: (0674) 2581 635, EX. 513/393
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Tender No. 8/2009-10

Date: 11.02.2010

OPEN TENDER NOTICE

Sealed tenders are invited (under two bid system) from reputed manufacturers and their accredited/sole selling agents for “Supply, Installation and Commissioning” of the following equipments:

1. **MULTICHANNEL SPECTROGRAPH USING CZERNY TURNER SPECTROGRAPH AND ICCD CAMERA.**
2. **ECHELLE SPECTROGRAPH AND ICCD CAMERA SYSTEM.**

The detailed Tender Notice, Specifications and Terms & Conditions can be seen/ downloaded from our web site: <http://www.immt.res.in> **16.02.2010** onwards. The last date for receipt of quotations is **09.03.2010 up to 5.00 P.M.** and **date of opening is 10.03.2010 at 03.00 P.M.** Director, IMMT, Bhubaneswar reserves the right to accept or reject any tender in part / full without assigning any reason thereof.

Stores & Purchase Officer



INSTITUTE OF MINERALS & MATERIALS TECHNOLOGY
(Council of Scientific & Industrial Research)
Bhubaneswar –751 013

Phone : 0674 – 2584091-94, 2581635-39, Extn.513, 393, Fax : 0674 – 2587846

Advt. No. 8/2009-10

Date: 11.02.2010

OPEN TENDER NOTICE

Director, IMMT, Bhubaneswar invites Sealed Tenders in TWO BID system from reputed manufacturers and their accredited/sole selling agents for “Supply, Installation & Commissioning” of following equipments:

Sl. No.	Ref. No.	Description of Item	EMD (Rs.)
1.	PI/47/09	MULTICHANNEL SPECTROGRAPH USING CZERNY TURNER SPECTROGRAPH AND ICCD CAMERA	1,20,000.00
2.	PI/48/09	ECHELLE SPECTROGRAPH AND ICCD CAMERA SYSTEM	1,30,000.00

Terms & Conditions:

- A. Tender documents comprising of detailed Terms & Conditions can be downloaded from our website <http://www.immt.res.in> **FREE OF COST**. The bidders are to submit EMD along with technical bid.
- B. The tender documents can also be obtained from the office of Stores and Purchase Officer, IMMT, Bhubaneswar on a written request on payment of non refundable and non transferable tender document fee of Rs.300/- by way of crossed demand draft issued by Nationalized / Scheduled Bank drawn in favour of “Director, IMMT, Bhubaneswar” payable at “Bhubaneswar” from **17.02.2010 to 08.03.2010** on all working days from 9.00 A.M to 5.00 PM.
- C. Tender complete in all respects along with EMD should reach us on or before **09.03.2010 till 5.00 P.M** and the bid shall be opened on **10.03.2010 at 03.00 AM** in the Purchase Section/Meeting Hall of IMMT, Bhubaneswar. Director, IMMT, Bhubaneswar reserves the right to accept or reject any tender in part / full without assigning any reason thereof.

Stores & Purchase Officer

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CHAPTER – II TO TENDER DOCUMENT

TERMS & CONDITIONS

1. Tender documents with detailed specification and terms & conditions can be down loaded from our Website <http://www.immt.res.in> (**FREE OF COST**). The bidders are to submit EMD along with Technical Bid.
2. The tender documents can also be obtained by post or by hand from the office of Stores and Purchase Officer, IMMT, Bhubaneswar on a written request on payment of non refundable and non transferable tender document fee of Rs.300/- by way of crossed demand draft issued by Nationalized / Scheduled Bank drawn in favour of Director, IMMT, Bhubaneswar payable at Bhubaneswar from **17.02.2010** to **08.03.2010** on all working days from 9.00 AM to 5.00 PM.
3. The detailed technical specifications of the materials offered should be given. Relevant printed technical literature and descriptive catalogue/pamphlet should also be attached.
4. Cost Ex-Works/FOB Price to be indicated. Other charges like Packing, Forwarding, etc., applicable to be indicated separately.
5. **FREIGHT**–Please indicate approximate Air Freight Charges for Kolkata Air Port, India.

If there is no mention of 4 and 5 above, such offers will be rejected being incomplete.

6. **PAYMENT TERMS:** Payment will be made in Two Parts, through Irrevocable Letter of Credit in case of imported equipments.

Towards Part-I: 90% value of goods will be paid on submission of shipping documents.

Towards Part II: 10% balance value of goods will be paid within 30 days, from the date of installation and commissioning and acceptance of the goods by IMMT and on submission of Performance Bank Guarantee for equivalent value through a International/National Bank valid till 60 days after the warranty period.

Please note that payment will be arranged through our bankers State Bank of India, International Banking Division, Commercial Branch, BHUBANESWAR – 751 009, Orissa.

7. **INDIAN AGENT’S COMMISSION,** if any: If you have any Agent(s) in India, please show specifically whether the amount of commission payable to them is included in the FOB Price. Please note that under the Government of India regulations, Commission to Indian Agent is payable only in Indian Currency. The role played by the Indian Agent(s) in rendering assistance to your customers like installation, commissioning, troubleshooting and AMC etc may also be specified.

8. **DELIVERY SCHEDULE:** Delivery of the item is required within 2 months from the date of receipt of order. If the supplier fails to deliver the goods within the time to be agreed upon, a sum equivalent to 1 (one) percent of the order value for each week of delay or part thereof until actual delivery, will be deducted from the order value, as liquidated damages, subject to maximum deduction of 10 percent of the order value. Once the maximum is reached, termination of the order may be considered by us.
9. **RISK PURCHASE CLAUSE:** If the Supplier fails to deliver the goods within the maximum delivery period specified in the order, the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Services similar to those undelivered and the Supplier be liable to the Purchaser for any excess costs for such similar Goods or Services.
10. **COMMISSIONING:** has to be completed immediately after receipt of goods at IMMT, Bhubaneswar, Orissa.
11. **WARRANTY:** Please also indicate the Guarantee / Warranty period. The supplier warrants that the goods are new on used and all recent improvements in design, material incorporated. The supplier further have to warrant the goods are free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in India. Unless otherwise specified it will be taken as 12 months from the date of installation.
12. **COUNTRY OF ORIGIN:** Please specify Place / Country of Origin and the Place / Country from which goods will be finally shipped. These particulars are very important for establishment of L/C, arranging insurance and customs clearance etc.
13. **VALIDITY PERIOD:** Your Offer should be valid for at least 120 days from the date of opening of quotations.
14. **PLEASE ALSO INDICATE NAME AND ADDRESS OF SOME OF THE INDIAN ORGANISATIONS / CSIR LABS/ INSTITUTIONS TO WHOM YOU HAVE SUPPLIED MATERIAL UNDER REFERENCE, IF ANY. THE DETAILS OF SUCH SUPPLIERS FOR THE PRECEDING THREE YEARS SHALL BE GIVEN TOGETHER WITH THE PRICES EVENTUALLY OR FINALLY PAID ALONG WITH COPY OF THE ORDER (S) RECEIVED.**
15. **The quotations should be sealed and addressed to “Director, Institute of Minerals & Materials Technology, Bhubaneswar – 751 013, Orissa” with attention Stores & Purchase Officer. Each quotation sent by post is to be closed in double cover. The cover should be sealed with wax and superscribed as per subject and tender number mentioned in the first page of tender document with date of opening. Quotation delivered personally should be delivered to Receipt and Dispatch Section of Institute of Minerals & Materials Technology, Bhubaneswar. Offers sent through Fax will NOT be accepted. Institute of Minerals & Materials**

Technology, Bhubaneswar will not be responsible for non-receipt of Tender Documents due to postal delay/loss in transit.

The Offer should be submitted in two – bids system i.e. Part-I TECHNICAL BID AND PART-II COMMERCIAL BID SHOULD BE KEPT IN SEPARATE SEALED COVERS, SUPERSCRIBED AND PROPERLY IDENTIFIED; THEN BOTH THE COVERS SHOULD BE KEPT IN A SINGLE COVER AND FORWARDED TO US COMPLYING WITH AFORESAID INSTRUCITONS.

16. Technical bid (Part-I) should accompany the **EMD** by way of Crossed Demand Draft, bankers Cheque/Bank Guarantee (valid for 180 days) drawn on any scheduled / Nationalised Bank / Foreign Bank (in case of Foreign suppliers who quote directly) favouring **Director, IMMT** and **payable at Bhubaneswar**, failing which your quotation will be summarily rejected. The EMD will be returned to unsuccessful bidders within 15 days of the award of purchase order. The Manufacturers registered with DGS &D, NSIC & Government/Public undertakings are exempted form payment of EMD. This Exemption of EMD is only applicable to Manufacturers and not for dealers / distributors.
17. **FORFEITURE OF EMD:** EMD will be forfeited if the bidder withdraws/amends, impairs or derogates from the tender in any respect within the period of validity of his tender or if the successful bidder fails to submit the required Performance Security.
18. **Performance Security:**

Within 21 days of receipt of the notification of award/PO, the Supplier shall furnish performance security 10% of order value valid till 60 days after the warranty period.

The proceeds of the performance security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

The order confirmation and submission of Performance Security (PS). Even after extension of time, if the order confirmation / PS are not received, the contract shall be cancelled and limited tenders irrespective of the value would be invited from the responding firms after forfeiting the bid security of the defaulting firm, where applicable provided there is no change in specifications. In such cases the defaulting firm would not be considered again for re-tendering in the particular case

19. Inspections and Tests

The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/ or inspections of the Goods and Related Services as are specified in the see or as discussed and agreed to during the course of finalization of contract.

The Purchaser or its representative shall have the right to inspect and/ or to test the Goods to confirm their conformity to the Contract specifications at no extra cost to the Purchaser. It should be specified what inspections and tests the Purchaser requires and where they are to be conducted. The Purchaser shall notify the Supplier in writing in a timely manner of the identity of any representatives retained for these purposes.

The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at the point of delivery and/ or at the Goods final destination. If conducted on the premises of the Supplier or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data - shall be furnished to the inspectors at no charge to the Purchaser.

Should any inspected or tested Goods fail to conform to the specifications, the Purchaser may reject the goods and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.

The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival at final destination shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representative prior to the Goods shipment.

The Supplier shall provide the Purchaser with a report of the results of any such test and/ or inspection.

With a view to ensure that claims on insurance companies, if any, are lodged in time, the bidders and / or the Indian agent shall be responsible for follow up with their principals for ascertaining the dispatch details and informing the same to the Purchaser and he shall also liaise with the Purchaser to ascertain the arrival of the consignment after clearance so that immediately thereafter in his presence the consignment could be opened and the insurance claim be lodged, if required, without any loss of time. Any delay on the part of the bidder/ Indian Agent would be viewed seriously and he shall be directly responsible for any loss sustained by the purchaser on the event of the delay.

20. Packing

The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.

The packing, marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be provided for in the Contract including additional requirements, if any, specified in SCC and in any subsequent instructions ordered by the Purchaser.

21. Delivery and Documents

Delivery of the Goods and completion and related services shall be made by the Supplier in accordance with the terms specified by the Purchaser in the contract. The details of shipping and/ or other documents to be furnished by the supplier are specified .

The terms FOB, FCA, CIF, CIP etc shall be governed by the rules prescribed in the current edition of the INCOTERMS published by the International Chambers of Commerce, Paris.

22 Annual Maintenance Contract (AMC): The bidder is to quote compulsorily for Annual Maintenance Contract (AMC) whenever bidding for an equipment. Price of AMC can be quoted in terms of percentage of the quoted price of the equipment or absolute value. AMC is to be quoted in INR. Awarding of AMC on completion of warranty period is not bound on IMMT.

23. Insurance

Should the purchaser elect to buy on CIF/CIP basis, the Goods supplied under the Contract shall be fully insured in Indian Rupees against any loss or damage incidental to manufacture or acquisition, transportation, storage and delivery.

Where delivery of the goods is required by the purchaser on CIF or CIP basis the supplier shall arrange and pay for Cargo Insurance, naming the purchaser as beneficiary and initiate & pursue claims till settlement, on the event of any loss or damage.

Where delivery is on FOB or FCA basis, insurance would be the responsibility of the purchaser.

With a view to ensure that claims on insurance companies, if any, are lodged in time, the bidders and / or the Indian agent shall be responsible for follow up with their principals for ascertaining the dispatch details and informing the same to the Purchaser and he shall also liaise with the Purchaser to ascertain the arrival of the consignment after clearance so that immediately thereafter in his presence the consignment could be opened and the insurance claim be lodged, if required, without any loss of time. Any delay on the part of the bidder/Indian Agent would be viewed seriously and he shall be directly responsible for any loss sustained by the purchaser on the event of the delay.

24. Transportation

Where the Supplier is required under the Contract to deliver the Goods FOB, transport of the Goods, up to and including the point of putting the Goods on board the vessel at the specified port of loading, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract price. Where the Supplier is required under the Contract to deliver the Goods FCA, transport of the Goods and delivery into the custody of the carrier at the place named by the Purchaser or other agreed point shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract price.

Where the Supplier is required under the Contract to deliver the Goods CIF or CIP, transport of the Goods to the port of destination or such other named place of destination in the Purchaser's country, as shall be specified in the Contract, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price.

In the case of supplies from within India, where the Supplier is required under the Contract to transport the Goods to a specified destination in India, defined as the Final Destination, transport to such destination, including insurance and storage, as specified in the Contract, shall be arranged by the Supplier, and the related costs shall be included in the Contract Price.

25. The acceptance of the quotation will finally rest with the Director, IMMT, Bhubaneswar who does not bind himself to accept the lowest quotation and reserves the right to himself to reject or accept partially the quotations received, without assigning any reason.
26. The quotations are liable to be rejected if the above conditions are not complied with.
27. The bid should be complete in all respects and should be duly signed. Incomplete and unsigned bids will not be considered at all.
28. This Institute is exempted from payment of Excise Duty as per Notification No. 10/97-Central Excise, dated 01.03.1997 and Customs Duty vide Notification No. 51/96-Customs. However, from 01.03.2002, the Government of India has imposed an ad velourum Customs Duty of 5% vide notification No. 24/2002-Customs, on all imports covered under Exemption No. 51/96-Customs.
29. . The Manufacturer/ supplier may also indicate the minimum consumables/spares required to operate the equipment over 01-02 years period with cost(s), if any, separately under optional item.

Stores & Purchase Officer

COST AND OTHER DETAILS OF THE SYSTEM OFFERED**(TO BE SUBMITTED ALONG WITH PRICE BID.)**

	COMPONENT	COMPONENT F.C.	RUPEE
1,	Total cost of the System/Equipment		
	(a) FOB Prices (in case of imports)		
	(b) EXW Prices (in case of indigenous Offers)		
2.	Cost of spares, tools and test equipments		
3.	(a) Estimated cost of air freight, insurance, transportation etc. upto Kolkata Airport.		
	(b) Cost of forwarding, inland Transportation, packing, insurance etc. (in case of indigenous offers)		
4	(a) Training Cost, (in India) if any, (b) Training Cost (in foreign) if any: <i>(please indicate place, duration and number of persons included)</i>		
5.	Payment terms:		
6.	Delivery Period :		
7.	Country of origin:		
8.	Port of shipment:		

Signature and Stamp of the Tenderer

Place:

Date:

BID SECURITY FORM

WHEREAS¹
(hereinafter called “the Bidder”) has submitted its bid dated
..... (date of submission of bid) for the supply of
..... (name and/or description of the goods) (hereinafter
called “the Bid”).

KNOW ALL PEOPLE by these presents that WE
(name of bank) of (name of country), having our
registered office at (address & phone & fax no. of bank) (hereinafter called
“the Bank”), are bound unto (name of Purchaser)
(hereinafter called “the Purchaser”) in the sum of _____ for
which payment well and truly to be made to the said purchaser, the Bank binds
itself, its successors, and assigns by these presents, Sealed with the common
Seal of the said Bank this _____ day of _____ 200_____.
THE CONDITIONS of this obligation are :

- 1. If the Bidder withdraws its Bid during the period of bid validity specified by the Bidder on the Bid Form; or
- 2. If the Bidder, having been notified of the acceptance of its bid by the Purchaser during the period of bid validity :
 - b) fails or refuses to execute the Contract From if required; or
 - c) Fails or refuses to furnish the performance security, in accordance with Instruction to Bidders.

We undertake to pay the purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee shall remain in force up to and including forty five (45) days after the period of the bid validity, and any demand in respect thereof should reach the Bank not later than the above date.

.....
**Signature of the Bank with seal and full
address and phone & Fax No.**

¹ Name of the Bidder

PERFORMANCE SECURITY FORM

To

(Name of the purchaser) _____

WHEREAS (Name of Supplier)

hereinafter called "the Supplier" has undertaken, in pursuance of Contract no dated 20... to supply.....

..... (Description of Goods and Services) hereinafter called "the Contract".

AND WHEREAS it has been stipulated by you in the said order that the Supplier shall furnish you with a Bank Guarantee by a recognized bank for the sum specified therein as security for compliance with the Supplier's performance obligations in accordance with the order.

AND WHEREAS we have agreed to give the Supplier a Guarantee:

THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the Supplier, up to a total of..... (Amount of the Guarantee in Words and Figures) and we undertake to pay you, upon your first written demand declaring the Supplier to be in default under the order and without cavil or argument any sum or sums within the limit of (Amount of Guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until the Day of 20.....

Signature and Seal of Guarantors

Date : _____ 20____
Address : _____

Phone. No. :
Fax. No. :

All correspondence with reference to this guarantee shall be made at the following address: **The Director, Institute of Minerals & Materials Technology, Bhubaneswar – 751 013**

MANUFACTURERS' AUTHORIZATION FORMAT

No. :

Date :

Dear Sir:

We _____ who are established and reputed manufacturers having factories at (*address of factory*) do hereby authorize _____ M/s

(*Name and address of agent*) to submit a bid, negotiate and receive the order from you. No company or firm or individual other than M/s _____ is authorized to bid, and conclude the contract in regard to this business.

We hereby extend our full guarantee and warranty as per Clause 14 of the General Conditions of Contract and relevant Clause of the Special Conditions of Contract for the goods and services offered by the above firm.

Yours faithfully

(Authorised Signatory)
(Name & Seal of manufacturers)

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 bind the manufacturer. It should be included by the Bidder in its bid.*

WARRANTY CERTIFICATE

We Warrant that everything to be supplied by us hereunder shall be brand new, free from all defects and faults in materials, workmanship and manufacture and shall be of the highest grade and quality and consistent with the established and generally accepted standards for material of the type ;ordered shall be in full conformity with the specification, drawing, or samples, and operate properly. We shall be fully responsible for its efficient operation. This Warranty shall survive inspection of any payment or and acceptance of the goods but shall expire after (except in respect of complaints of which the contractor has been notified prior to such date) 12 months after their successful installation, commissioning and acceptance by the Council/IIP.

The obligations under the Warranty expressed above shall include all costs relating to labour, spares, maintenance (preventive and unscheduled) and transport charges from site to the manufacturers work and back and free repair/adjustment or replacement at site or any parts of the equipment which under normal and proper use and maintenance proves defective in design, material or workmanship or fails to conform to the specifications previously given by the Council/IIP to the contractor.

Signature and Stamp
of the Tenderer

Date:
Place:

CHAPTER – VII

CHAPTER – VII : BIDDER'S PERFORMANCE STATEMENT FORM
(For A Period of Last 3 Years & For similar equipment)

Name of the Firm.....

Order placed by (full address of purchaser)	Order No. and date	Description and quantity of ordered similar equipment	Price	Date of completion of delivery as per Contract/Actual	Remarks indicating reasons for late delivery, if any	Has the equipment been installed satisfactory? (Attach a certificate from the purchaser/Consignee)	Contact Person alongwith Tel. NO., Fax No. & e-mail address

Signature
Rubber stamp

Place :
Date :

Ref. No.PI/47/09

Details specification of : **Multichannel Spectrograph using CZERNY TURNER spectrograph and ICCD camera.**

Detailed Specifications :

1. Wavelength coverage: 200nm to 940nm
2. Focal length: 700 - 800mm
3. Aperture F/# no.: < 10
4. Gratings: 2400l/mm, 1800l/mm and 600l/mm,
5. Should be suitable for multichannel spectroscopy, 10 channels of 600um core diameter
6. Spectrograph Resolution: $\leq 0.03\text{nm}$ with 1200l/mm grating and 10um slit
7. ICCD interfaced with the spectrographs:
8. Detector: Intensified CCD
9. Intensifier: Gen III intensifier, ~18 mm diameter
10. CCD: Scientific grade
11. Active pixels: 1024x1024, 12-13 μm (size),
12. Phosphor: P43
13. Minimum optical Gate width: < 3 ns
14. Total insertion delay: < 40 ns
15. Detector Peak Q. E $\geq 20\%$ at 630 nm
16. Detector Read Noise (e^- typical): < 10 electrons @ 1MHz or < 20 electrons @ 4MHz
17. Typical maximum intensifier gain (counts/photoe $^-$): ~200
18. Typical Detector EBI (phot/pix/s): ~0.05
19. Read out noise:
minimum of 10 electrons @ <1MHz or 20 electrons @ < 4MHz
20. Selectable readout rates: Define possible read rates
21. Cooling with water down to -35°C
22. Input Power: 230 V (AC) 50 Hz
23. Spectrographs and ICCD should be well integrated with spectrograph.
24. Supplier should provide user references for similar system in INDIA
25. Service/ support In India
26. Kindly quote for other accessories including all intensifier models.
27. Test reports regarding readout noise of the CCD, Q. E. of the intensifier should be provided.

Additional supply:

1. Compatible Uninterrupted Power Supply (UPS) for spectrograph, ICCD and the computer: **One**
(In India Power supply is 230V/50Hz)
2. Computer System with Laser Printer: **One Set**
(Latest Spec. at least Core2Duo processor, 4GB RAM, minimum 17" TFT monitor, Windows XP or Vista Operating System compatible with the system software)
3. Annual Maintenance Contract for Three Years after warranty.
4. Spares and consumables if any for two years

XXXXXXXX

Ref.No.PI/48/09

Details specification of : **Echelle Spectrograph and ICCD Camera system**

Specifications :

1. Wavelength range in one acquisition on a single frame: 250nm to 900nm system coverage with ICCD (Complete wavelength range to be covered on one single frame of ICCD without requiring any realignment or change of optics)
2. Typical Spectral resolution: > 4500 with ICCD and 10um slit
3. Wavelength accuracy: $\pm 0.05\text{ nm}$
4. Focal Length: < 200 mm
5. Aperture: F/6-F/8
6. Slits : 10 x 50um; 50 x 50um
7. Temperature compensation for calibration: Automatic temperature compensation by software
8. Entrance aperture adaptor: SMA
9. Stray light: 10^{-3} (typical at 630 nm)
10. Typical optical adjacent cross talk: 10^{-2}
11. Fibreoptic : UV/VIS, 200 or 600 um core (Collimating lens and fiber arrangement : for signal collection and coupling into fiber)
12. Calibration sources: for both spectral and quantitative calibration, should be handled completely by the software
13. Detector: Intensified CCD
14. Intensifier: Gen III intensifier, ~18 mm diameter
15. CCD: Scientific grade
16. Phosphor: P43
17. Active pixels: 1024x1024, 12-13 μm (size),
18. Total insertion delay: < 40 ns
19. Minimum optical Gate width: < 3 ns
20. Detector Read Noise (e^- typical): $10@ 1\text{ MHz}$
21. Detector Peak Q. E $\geq 20\%$ at 630 nm
22. Typical maximum intensifier gain (counts/photon): ~200
23. Typical Detector EBI (phot/pix/s): ~0.05
24. Selectable readout rates : 1MHz, 500KHz, 62KHz, 31KHz
25. Read out noise: minimum of 4 electrons
26. Cooling with water down to -35°C
27. Input Power: 230 V (AC) 50 Hz
28. Spectrographs and ICCD should be well integrated with spectrograph.
29. Supplier should provide user references for similar system in INDIA
30. Service/ support In India
31. Kindly quote for other accessories including all intensifier models.
32. Test reports regarding readout noise of the CCD, Q. E. of the intensifier should be provided.

Additional supply:

- d) Compatible Uninterrupted Power Supply (UPS): One
(In India Power supply is 230V/50Hz)
- e) Computer System with Laser Printer: One Set
(Latest Spec. at least Core2Duo processor, 4GB RAM, minimum 17" TFT monitor, Windows XP or Vista Operating System compatible with the system software)
- f) Annual Maintenance Contract for Three Years after warranty.
- g) Spares and consumables if any for two years

XXXXXXX