

**BOSE INSTITUTE  
KOLKATA**

**BIDDING DOCUMENTS**

For Tender Notice No.

**BI/T/06/2015-16 dt. 01.9.2015**

To be addressed to:

**The Sr. Prof. & Incharge, Registrar's Office,  
Bose Institute, Centenary Building,  
P-1/12, CIT Scheme – VII -M  
Kolkata – 700054 (INDIA)**

**BOSE INSTITUTE**  
**Centenary Building,**  
**P-1/12, CIT Scheme – VII / M, Kankurgachi,**  
**Kolkata – 700054 (INDIA)**

**CHAPTER – I: INVITATION TO BIDS**

Director, Bose Institute, Kolkata, West Bengal, India invites *sealed* offers in **Single bid system** from **foreign/Indian manufacturers** or their Authorized Dealers for the supply, installation and commissioning of the following equipments:

Sl. No.	Name of the instrument	Unit	Bid security (EMD)
1.	CO <sub>2</sub> Incubator with single chamber with IR CO <sub>2</sub> sensor 230V 50/60Hz	1	INR 15,000.00
2.	Inverted phase contrast bright field Microscope with Photography attachment	1	INR 20,000.00
3.	Stackable Incubated and Refrigerated Shaker	1	INR 15,000.00

- Tender Notice No.** : BI/T/06/2015-16 dt. 01.9.2015
- Last date & Time for Submission** : 23<sup>rd</sup> September, 2015 upto 14:00 hours
- Date/Time for opening of bids** : 23<sup>rd</sup> September, 2015 at 15:00 hours
- Venue of Bid Opening** : **Centenary Building, Bose Institute, Seminar Room (Annexe Block), P-1/12, C.I.T. Scheme – VII / M, Kankurgachi, Kolkata – 700054**
- Submission of tender** : **Tender Box at Import Cell At 1<sup>st</sup> floor in Annexe Block Centenary Building, Bose Institute P-1/12, C.I.T. Scheme – VII / M**

**Serial no. and name of the instrument shall be mentioned on the envelope positively.**

The Techno-Commercial bids will be opened in the presence of representatives of tenderers who choose to attend. **If the date of opening happens to be a holiday, the bids shall be opened on the next working day at the same time.** Fax/email bids or Late/Delayed tenders shall not be considered. **Only the technically approved bidders will be informed of the date for opening their corresponding price bids.**

**Director, Bose Institute reserves the right to accept or reject any or all tenders either in part or in full. The reasons for rejecting the tender of a prospective bidder will be disclosed only when enquiries are made.**

**Sr. Prof. & Incharge, Registrar's Office**

### GENERAL INSTRUCTIONS

<ul style="list-style-type: none"><li>• Quotations received after due date &amp; time shall be summarily ignored.</li></ul>
<ul style="list-style-type: none"><li>• The bids would be opened in the presence of the bidders who wish to attend the Bid-opening. However, the representative should bring with them a letter of authority from the corresponding bidders, without which, they are not permitted to attend the bid opening.</li></ul>
<ul style="list-style-type: none"><li>• The acceptance of the quotation will rest with the competent authority of Bose Institute, Kolkata who does not bind himself to accept the lowest quotation and reserves the right to himself to reject, or partially accept any or all the quotations .</li></ul>
<ul style="list-style-type: none"><li>• The offer shall be valid for ninety days from the date of opening of the quotations. No revision in price will be allowed after opening the quotation.</li></ul>
<ul style="list-style-type: none"><li>• Unsolicited / conditional / in complete / unsigned tenders shall not be considered.</li></ul>
<ul style="list-style-type: none"><li>• Prices are required to be quoted in units. When quotations are given in terms of other units, relationship between two sets of units should be furnished. Quantity discounts, if any should also be indicated. The items should be quoted indicating the serial nos.</li></ul>
<ul style="list-style-type: none"><li>• To assess in the examination / evaluation, comparison and post qualification of the bids, purchaser may at its discretion, ask the bidder for a clarification of its bid. The request for clarification and the response shall be in writing and no change in the prices or substance of the bids shall be sought, offered or permitted. Any clarification submitted by the bidder in respect of its bid which is not in response to a request by the purchaser shall not be considered.</li></ul>
<ul style="list-style-type: none"><li>• Either the Indian Agent on behalf of the Foreign principal or the Foreign principal can bid directly in a tender but not both. However, the offer of the Indian Agent should also accompany the authorization letter from their principal. To maintain sanctity of tendering system, one Indian Agent can not represent two different Foreign principals in one tender.</li></ul>
<ul style="list-style-type: none"><li>• Please indicate the agents in India, their address, the details of service rendered by them &amp; the percentage of commission payable to them. In normal courses agency commission is not allowed.</li></ul>
<ul style="list-style-type: none"><li>• The Institute is registered with Department of Scientific &amp; Industrial Research, Govt. of India and thus is exempted from Customs/Central Excise duty vide notification no. 10/97 dated 01.3.1997 and 16/2007 dated 01.03.2007.</li></ul>
<ul style="list-style-type: none"><li>• The mode of dispatch of the items must be mentioned clearly in the quotation.</li></ul>
<ul style="list-style-type: none"><li>• In case the products are available on DGS&amp;D rate contract, please quote on DGS&amp;D rate contract rates enclosing a copy of the RATE CONTRACT.</li></ul>
<ul style="list-style-type: none"><li>• Samples, if called for, shall be submitted free of charge and on no obligation basis.</li></ul>
<ul style="list-style-type: none"><li>• The offered delivery period shall have to be strictly adhered to in case an order is placed.</li></ul>

## **CHAPTER – II: INSTRUCTION TO BIDDERS**

### **A. INTRODUCTION**

#### **1. Eligible Bidders**

- 1.1 This Invitation for Bids is open to all manufacturers or their dealers specifically authorised by the manufacturers to quote on their behalf for this tender as per Manufacturer's Authorisation form specified.

#### **2. Cost of Bidding**

- 2.1 The Bidder shall bear all costs associated with the preparation and submission of its bid, and "the Purchaser", will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

### **B. THE BIDDING DOCUMENTS**

#### **3. Cost of Bid Document**

Tender documents are available free of cost at Bose Institute website <http://www.jcbose.ac.in> Interested and eligible bidders may download the same directly from the website. No request for the tender document shall be entertained.

#### **4. Amendment To Bid Document**

- 4.1 At any time prior to the deadline for submission of bids, the Purchaser may, for any reason, make amendments, such amendments shall form an integral part of bid documents and it make to the bidding documents shall amount to an amendment of relevant clauses of the Bid Document.
- 4.2 Normally no interim queries will be entertained. However, for any specific **clarifications on any aspect of the tender, the prospective bidders may write to: The Convener, Tender Opening Committee ([bipurchase@jcbose.ac.in](mailto:bipurchase@jcbose.ac.in))**. Request for clarifications, if any, should reach at least **10 days before the bid opening date.**
- 4.3 **All prospective bidders are required to keep a watch on the Bose Institute website <http://www.jcbose.ac.in> about any amendment to the tender document or any clarification to the queries raised by the bidders.** The Purchaser reserves the right to reject the bids if the bids are submitted without taking into account these amendments/clarifications. In order to allow prospective bidders reasonable time to make the amendments taking into account in preparing their bids, the Purchaser, at its discretion, may extend the deadline for the submission of bids.

## C. PREPARATION OF BIDS

### 5. Language of Bid

The Bid prepared by the Bidder and all correspondence and documents relating to the bid exchanged by the bidder and the purchaser shall be written in English language,

5.1 Provided that any printed literature furnished by the bidder may be written in another language but it is to be accompanied by an English translation of its pertinent passage(s) duly signed and verified as true English translation. The responsibility for the correctness of the translation will be solely and completely on the bidder and the Purchaser will not be responsible for any loss/likely loss due to error in translation whatsoever. In such cases, for the purpose of interpretation of the bid, the English translation shall only prevail.

5.2 Techno-Commercial Bid shall also include the following :

- (i) Bid Security/ EMD as specified in the invitation to bids;
- (ii) Manufacturer's Authorization Form (Chapter III) ;
- (iii) The Comprehensive Annual Maintenance Contract (CAMC) terms & conditions detailing the exclusions, if any.

### 6. Bid Prices

6.1 **Bidders are requested to give their final and best offer. Techno-Commercial Discussions may be held with the Lowest Bidder only, if necessary.**

- (i) The price of the goods, quoted should be (ex-works, ex-factory, ex-showroom, ex-warehouse, or off-the-shelf, as applicable), inclusive of all duties and sales and other taxes already paid or payable. For foreign bidders who would quotes through their authorized Indian agents, prices should be quoted as CIF/CIP, Kolkata.
- (ii) **Taxes:** The amount payable on account of Excise Duty, Customs Duty and other applicable taxes (VAT/CST/Service) should be mentioned clearly. **If there is no explicit mention of taxes in your offer then quoted price will be deemed inclusive of such taxes. No other charges except those mentioned clearly in the quotation will be paid.**
- (iii) For indigenous bidders rates should be quoted FOR, Bose Institute, Kolkata inclusive of packing, forwarding, installation and commissioning charges documentation, freight and insurance charges etc. If ex-works prices are quoted then packing, forwarding, transportation, freight, insurance, documentation charges etc. must be clearly mentioned separately. Vague terms like "packing, forwarding, transportation, freight, insurance, documentation charges etc. extra" without mentioning the specific amount/percentage of these charges will NOT be accepted. Such offers shall be treated as incomplete and rejected. **Where there is no mention of packing, forwarding, freight, insurance charges, documentation, freight and insurance charges such offers shall be summarily rejected as incomplete.**

**7. Documents Establishing Goods' Eligibility and Conformity to Bid Document**

- 7.1** The documentary evidence of the goods and services eligibility shall consist of a statement of the country of origin of the goods and services offered which shall be confirmed by a certificate of origin at the time of shipment.
- 7.2** The bid security may be forfeited, if a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Bid Form.

**D. SUBMISSION OF BIDS**

**7.3 The inner and outer envelopes shall:**

Be addressed to the Purchaser at the following address:

**Sr. Prof. & Incharge, Registrar's Office,  
Bose Institute,  
Centenary Building,  
P-1/12, CIT Scheme-VII/M,  
Kankurgachi,  
Kolkata – 700054 (WB) INDIA**

- 7.4** If the outer envelope is not sealed and marked, the Purchaser will assume no responsibility for the bid's misplacement or premature opening.
- 7.5** Telex, Cable, Fax or e-mail bids will be rejected.
- 7.6** Envelopes containing the bids shall be dropped in the Tender Box earmarked for the relevant tender notification, envelopes dropped in places other than the Tender box will not be considered. It will be the sole responsibility of the bidder to ensure that the bids are dropped at the specified box only.
- 7.7** Name of the instrument with Sl. No. shall be mentioned in the envelop without fail.

**8. Deadline for Submission of Bids**

Bids must be received by the Purchaser at the address specified here not later than the time and date specified in the Invitation for Bids. In the event of the specified date for the submission of Bids being declared a holiday for the Purchaser, the Bids will be received upto the appointed time on the next working day or at any other date and time to be specified by the purchaser in it's website.

**9. Late Bids**

Any bid received by the Purchaser after the deadline for submission of bids prescribed by the Purchaser will be rejected.

## E. OPENING AND EVALUATION OF BIDS

### 10. Opening of Bids by the Purchaser

10.1 The Purchaser will open all Bids received within due date and time - as per the schedule given in invitation to bid.

10.2 The firm is at liberty to be present or authorise a representative to be present during opening of bid at the time and date as specified.

### 11. Warranty

11.1 The Supplier shall warrant that the Goods supplied under this Contract are new, unused, of the most recent or current models and that they incorporate all recent improvements in design and materials unless provided otherwise in the Contract. The Supplier shall further warrant that all Goods supplied under this Contract shall have no defect arising from design, materials or workmanship (except when the design and/or material is required by the Purchaser's Specifications) or from any act or omission of the Supplier, that may develop under normal use of the supplied Goods in the conditions prevailing in the country of final destination. The warranty should be comprehensive and on site.

11.2 This warranty shall remain valid for 12 months after the Goods or any portion thereof as the case may be, have been delivered to and accepted at the final destination and installed indicated in the Contract, or for 18 months after the date of shipment whichever period concludes earlier, unless specified otherwise.

### 12. Bid Security or Earnest money deposit (EMD)

12.1 The Bidder shall furnish, as part of its bid, a bid security for an amount as specified in the Invitation for Bids/NIT. The bid security is required to protect the Purchaser against the risk of Bidder's conduct, which would warrant the security's forfeiture.

12.2 The Bid Security shall be submitted in one of the following forms in the form provided in the Bid Document (Chapter IV) and valid for 45 days beyond the validity of the bid :

- (i) Pay order / demand draft on any nationalized bank ; **OR**
- (ii) **Indian manufacturers/suppliers or Authorized Indian Agents of the Foreign Principals** can submit the bid security on behalf of their foreign principals in the form of **Bank Guarantee** issued by a **Nationalized/Scheduled bank** located in India on the format provided in the bidding documents. **OR**
- (iii) **Foreign Principals** can submit bid security in the form of **Bank Guarantee** on the format provided in the bidding documents **from any bank but the same has to be certified by a scheduled bank having branch in Kolkata, India.**

12.3 Any bid not secured in accordance with Clauses 12.1 and 12.2 above will be rejected by the Purchaser as non-responsive.

12.4 ***Bid Security should be submitted in a separate envelope superscribed with 'Bid Security' for the Equipment -----' 'Tender Notice No. -----'***

12.5 Unsuccessful bidder's bid security will be discharged as promptly as possible but not later than 15 days after the expiration of the period of bid validity or placement of order which ever is later. **No interest shall be paid on the EMD.**

- 12.6 The successful Bidder's bid security will be discharged upon the Bidder furnishing the performance security in cases where it is mentioned in the purchase order.
- 12.7 The bid security may be forfeited :
- (i) If a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Bid Form; or
  - (ii) In case of a successful Bidder, if the Bidder fails to furnish order acceptance within 30 days of the order and/or fails to furnish Performance Security.
  - (iii) ***Bid Security should be submitted in favour of "Director, Bose Institute".***
- 13 **Payment**
- 13.1 The general conditions of payment for any indigenous items are 100% payment after successful installation & commissioning of the equipment. In case the equipment does not need any installation & commissioning the period shall be reckoned from the date of delivery & inspection.
- 13.2 The Supplier's request(s) for payment shall be made to the Purchaser in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and the Services performed, and by documents and upon fulfilment of other obligations stipulated in the contract.
- 13.3 Payments shall be made promptly by the Purchaser normally after submission of the invoice or claim by the Supplier.
- 13.4 Payment shall be made in currency as indicated in the order.
14. **Performance Security**
- 14.1 **Performance security amounting to 10% of the order value has to be submitted within 10 days of receipt of the notification of contract award/purchase order, in the form of Bank Guarantee issued by a Nationalized/Scheduled bank located in India on the format provided in the bidding documents. OR**
- (i) Indian manufacturers/suppliers or Authorized Indian Agents of the Foreign Principals can submit the performance security on behalf of their foreign principals in the form of Bank Guarantee
  - (ii) Foreign Principals can submit performance security directly in the form of bank guarantee on the format provided in the bidding documents from any bank but the same has to be certified by a scheduled bank having branch in Kolkata, India.
- 14.2 The performance security shall be valid for a period of 60 days following the date of completion of the Supplier's performance obligations. The performance Security shall be discharged by the Purchaser and returned to the Supplier on expiry.
15. **Period of Validity of Bids**
- 15.1 **Bids shall remain valid for 90 days after the date of bid opening prescribed by the Purchaser.** A bid valid for a shorter period may be rejected by the Purchaser as non-responsive.
- 16 **Order Acceptance**
- 16.1 The successful bidder should submit acceptance of the Purchase Order immediately but not later than 30 days in any case from the date of issue of the Purchase Order failing which it shall be presumed that the vendor is not interested and his bid security is liable to be forfeited.
- 17 **Delivery and Documents**
- 17.1 Delivery of the goods should be made within a maximum of **8 weeks from the date of placement of purchase order**. Within 24 hours of shipment, the supplier shall notify the purchaser and the insurance company by cable/telex/fax/e mail the full details of the shipment including contract number, railway receipt number/ AWB etc and date, description of goods, quantity, name of the consignee, invoice etc. The supplier shall mail the following documents to the purchaser with a copy to the insurance company:

- (i) 4 Copies of the Supplier invoice showing contract number, goods' description, quantity, unit price, total amount;
- (ii) Acknowledgment of receipt of goods from the consignee(s) by the transporter;
- (iii) Insurance Certificate if applicable;
- (iv) Manufacturer's/Supplier's warranty certificate;
- (v) Inspection Certificate issued by the nominated inspection agency, if any, and the Supplier's factory inspection report;
- (vi) Certificate of Origin; and
- (vii) Two copies of the packing list identifying the contents of each package.

17.2 The above documents should be received by the Purchaser before arrival of the Goods (except where the Goods have been delivered directly to the Consignee with all documents) and, if not received, the Supplier will be responsible for any consequent expenses.

18 **Insurance**

18.1 For delivery of goods at the purchaser's premises, the insurance shall be obtained by the Supplier for an amount equal to 110% of the value of the goods from "warehouse to warehouse" (final destinations) on "All Risks" basis including War Risks and Strikes. The insurance shall be valid for a period upto successful installation. However, in case of orders placed on FOB/FCA basis, the purchaser shall arrange Insurance.

**CHAPTER – III: MANUFACTURERS' AUTHORIZATION FORM**

No. \_\_\_\_\_

Dated \_\_\_\_\_

**The Director,  
Bose Institute,  
P-1/12, CIT Scheme-VII/M,  
Kolkata – 700054 (W.B.) India**

Dear Sir:

I/We \_\_\_\_\_ who are established and reputable manufacturers of 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 against your tender enquiry.

No company or firm or individual other than M/s. \_\_\_\_\_ is authorized to bid, and conclude the contract in regard to this business.

I/We hereby extend our full guarantee and warranty for the goods and services offered by the above firm.

Yours faithfully,

(Name)

(Name 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.

**CHAPTER – IV: BID SECURITY FORM**

(To be executed by a **nationalized scheduled Bank in India** on non-judicial stamp paper)

**To**  
**The Director,**  
**Bose Institute,**  
**P-1/12, CIT Scheme-VII/M,**  
**Kolkata – 700054 (W.B.) India**

Dear Sir,

Whereas ..... (*Name and address of Bidder*) (*hereinafter called “the Bidder”*) in response to your Tender Notification No. ----- dated ----- is submitting its 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 of bank*) (Hereinafter called “the Bank”), are bound unto **Director, Bose Institute, Kolkata, INDIA** (Hereinafter called “the Purchaser”) for the sum of ..... (Amount of the Guarantee in Words and Figures) 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:
  - (a) Fails or refuses to execute the Contract Form if required; or
  - (b) Fails or refuses to furnish the performance security, in accordance with the Instruction to Bidders.
3. This guarantee is valid upto ..... (six months from date).

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 will 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.

Date: \_\_\_\_\_ Signature.....

Place: \_\_\_\_\_ Seal of Bankers

(Complete Address/Contact Details with Tel./Fax/email etc)

Witness:

1. ....
2. ....

**CHAPTER – V: PERFORMANCE SECURITY FORM**

(To be executed by a scheduled Bank in India on non-judicial stamp paper)

To  
The Director,  
Bose Institute,  
P-1/12, CIT Scheme-VII/M,  
Kolkata – 700054 (W.B.) India

Dear Sir,

Sub: Your Contract No. -----dated -----for

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1. You have entered into a contract with reference no as given above with \_\_\_\_\_ (herein after referred to as the contractor) for the supply, installation, and commissioning of \_\_\_\_\_ (herein after referred to as stores) for the price and on the terms and conditions contained in the said contract.
2. In accordance with the terms of said contract, the contractor has undertaken to produce a bank guarantee for Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only) being 10 % of the total value of the said stores supplied to you, for the due fulfillment of its obligations to you for due performance as per the contract during warranty period.
3. In consideration thereof, we hereby expressly, irrevocably and unconditionally undertake and guarantee as principal obligator on behalf of the contractor that in the event you submit a written demand to us that the contractor has not performed according to the contractual obligations included in the said contract, we will pay you on written demand, without demur and without reference to the contractor any sum up to a maximum amount of Rs \_\_\_\_\_ (Rupees \_\_\_\_\_ only). Your demand shall be conclusive evidence to us that such payment is due under the terms of the said contract. Payment by us to you will be made within thirty (30) days from receipt of your request making reference to this guarantee and on demand.
4. This guarantee shall not be revoked without your express consent and shall not be affected by your granting any indulgence to the contractor, which shall include but not be limited to postponement from time to time of the exercise of any powers vested in you or any right which you may have against the contractor and to exercise the same in any manner at any time and either to forbear or to enforce any covenant contained or implied in the said contract or any other course or remedy or security available to you, and our Bank shall not be released from its obligations under this guarantee by your exercising any of your rights with reference to matters aforesaid or any of them or by reason of any other act or forbearance or other acts of omission or commission on your part or any other indulgence shown by you or by any other matter or thing whatsoever which under law would, but for this provision, have the effect of relieving our Bank from its obligation under this guarantee.
5. Notwithstanding anything herein contained, our liability under this guarantee is restricted to Rs \_\_\_\_\_ (Rupees \_\_\_\_\_ only) and the guarantee shall remain in

force up to and including the \_\_\_\_\_ day of being reported to us by you and returned to us duly discharged.

- 6. Unless a demand or claim under this guarantee is made on us in writing on or before the aforesaid expiry date as provided above or unless this guarantee is extended by us all your rights under this guarantee shall be proscribed and we shall be discharged from the liabilities hereunder.
- 7. This guarantee shall not be affected by any change in the constitution of our Bank or of the contractor or for any other reason whatsoever.

Date:

Signature.....

Place:

Seal of Bankers

(Complete Address/Contact Details with Tel./Fax/email etc)

Witness:

1. ....

2. ....

## **CHAPTER – VI : DETAILED TECHNICAL SPECIFICATIONS**

<b>1.</b>	<b>Specifications for CO<sub>2</sub> incubator with single chamber and IR CO<sub>2</sub> sensor, 230 V 50/60 Hz</b>
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### **Technical Specifications :**

1. 165 Liter chamber volume or more
2. Rapid Recovery of all critical parameters with fan assisted chamber air circulation recovery of all parameter within 10 min.  
Temperature recovery (5 min)  
%RH < 10 min  
% CO<sub>2</sub> with IR / TC Sensor < 6 min
3. HEPA air filtration design filters entire chamber volume every 60 seconds and achieves ISO class 5 chamber air quality in less than 5 min of door opening
4. 180 degree C (12 hours) High Temperature Sterilization
5. Silicon IR CO<sub>2</sub> Sensor sterilization
6. Chamber integrated water pan with inbuilt cold spot so that water is directly heated by chamber's bottom heater
7. Guided air circulation which passes the chamber air above the surface of water
8. Easy draining of reservoir water using front located drain valve.
9. Humidification of gases before they reach the cells / culture
10. Temperature probe and gas sensors are located in chamber to experience same conditions as cells.
11. Dual temperature probe for over temperature protection, provided by back up sensor just in case the primary sensor fails.
12. Technical specification :  
Interior chamber electro-polished stainless steel or 100% solid copper  
Exterior chamber 18 gauge, cold-rolled steel, powder coated  
Access port 42 mm diameter  
Data outputs remote alarm contacts, USB and optional 4-20 mA  
Internal dimensions (minimum)  
(w x h x d) 423 x 504 x 465 mm, 16.7 x 19.9 x 18.3 inches  
External dimensions (minimum)  
(w x h x d) 637 x 905 x 790 mm, 25.1 x 35.6 x 31.1 inches  
Dimensions of shelves (w x h) 423 x 465 mm (16.7 x 18.3 in) (minimum)  
Shelves number : standard / maximum 3/10  
Max. load per shelf / total load 10/30 kg (22/66 lbs)  
Construction perforated, adjustable  
Rated voltage 1/N/PE AC ( $\pm 10\%$ ), 230, 220V, 120V, 100V  
Rated frequency 50/60 Hz  
Heat emission to environment at 37 degree C more than 0.06 kWh/h
13. Warranty : Minimum 2 years of comprehensive warranty. The bidders having service centres in and around Kolkata would be preferred.

2.	<b>SPECIFICATIONS FOR AN INVERTED PHASE CONTRAST BRIGHT FIELD MICROSCOPE WITH PHOTOGRAPHY ATTACHMENT</b>
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**Technical Specifications :**

- 1. Microscope Frame:** Frame with high static rigidity, waterproof construction to help block penetration of water inside the frame. The frame should be compact making it easy to fit in any work environment. Frontal Controls for Light path selector **0:100/50:50/100:0**, Transmitted light Intensity control, and light ON/OFF switch. The frame should come with Sextuple Coded revolving nosepiece & focus adjustment.
- 2. Transmitted light : Illuminator** **100W transmitted light** illumination pillar having tilt Mechanism, condenser holder, adjustable field iris Diaphragm & with 4 filter holder.
- 3. Observation tube :** Binocular observation tube, having Diopter adjustment
- 4. Eyepiece :** 10X eyepiece having **F.N. 22** with Diopter Adjustment.
- 5. Mechanical Stage :** Attachable mechanical stage with flexible right-hand vertical low drive controls, including scales for 96 micro test plate, Terasaki-plate holder (72-well/60-well), Slide glass holder, Petri-dish holder (65mm dia. hole)
- 6. Condenser :** Long working distance condenser for phase contrast (N.A.0.55/W.D.27mm), Five position (three positions for optical element and one for bright field)
- 7. Objectives :** Plan achromat phase objective 10X, NA 0.25, WD 10, Long working distance achromat phase objective 20X/0.4, WD3.2, Long working distance plan semiapochromat phase objective 40X.

**PHOTOGRAPHY ATTACHMENT:**

**Colour Camera and software**

Equipped with 5 mega pixel(2560 X 1920) scientific grade Cooled CCD camera 12 bit and above with 25 fps live image display in screen or LCD, RGB, 30 bit Firewire connection, 2/3" CCD chip, Binning up to 4X4, Exposure 1.6 ms to 17.9 mins, C-mount adapter.

**Image analysis software Features: -**

Real time image preview and capture, independent control of preview and capture provides maximum flexibility, advanced color management; built-in ICC color profiling for cameras provides superior color imaging, color correction algorithms ensure accurate, true color imaging. Background and dark field correction, Time-lapse sequences, Auto exposure, auto white balance, auto contrast (dynamic and manual controls, RGB color filter support for monochrome cameras, External triggering, Exposure, gain, and EM gain controls, Image annotation.

**Measurement tools** (Calibrate your camera, Display calibration bar, Measurements: Line, Circle, Ellipse, Angle, Rectangle, Polygon, Freeform, Storage in separate layer (.xml-file), export to analysis software possible, works both in live & captured image.

**Gallery** (The captured images can be displayed in an image gallery, Select, delete; rename or replace the images according to your needs, Complete image sessions can be loaded into gallery.) Extended Image Display Functionality (Rotate/Mirror, ROI function in full pixel resolution, adjust RGB values in live image, perfect image quality with white and black balance (Fluorescence), Live gamma, contrast, brightness, saturation adjustments.

- At least two spare lamps for illumination
- Warranty : One year warranty with additional 2 years warranty may be quoted.

3.

### Technical Specifications for Stackable Incubated and Refrigerated Shaker

#### Specifications ::

Spacious chamber for holding four four-litre or two six-litre flasks.

Incubator should be stackable two high on the floor.

Two height-adjustable shelves for additional storage.

Large viewing window with internal light.

Temperature range: 15° C below ambient to 80°C;  $\pm 0.1^{\circ}\text{C}$  accuracy at 37°C inside flask.

Electrical outlet inside chamber providing power for operating shakers, stirrers etc.

Corrosion-resistant stainless-steel chamber.

Triple eccentric drive for uniform agitation and continuous 24 hour operation at high speed.

Speed range: 15 to 500 rpm  $\pm 1$  rpm

Three individual LED displays for viewing speed, temperature and time.

Continuous/timed operation from 0.1-999 hours or 0.1-999 minutes.

Visual/audible alarm alerts for  $\pm 1^{\circ}\text{C}$  temperature deviation from set temperature and  $\pm 10\%$  deviation from set speed with shut down of shaker for speed deviation.

User-adjustable speed calibration.

Unbalanced load sensor for stopping platform motion in case of excess vibration.

Preferred start feature for elimination of sudden starts and stops.

Safety interlock for stopping shaker when the door is open.

Retains parameters during power failure and restarts automatically after restoration of power.

Platform of dimensions range 18"x18" without clamps should be provided.

Max load in lb/kg: 50/22.7

Voltage: 240V, 50/60 Hz; Required Amps: 20A

Set of different flask clamps should be provided with incubator unit.

Warranty : One year warranty on parts and one year warranty on labour.