

No. /Air Lab. Tender

**TENDER NOTICE**

No.C-48021/01-03/2013-14/Air.Lab Tender/Mat.

Dated: 28.10.2013

**CENTRAL POLLUTION CONTROL BOARD  
'PARIVESH BHAWAN'  
C.B.D. CUM OFFICE COMPLEX  
EAST ARJUN NAGAR  
DELHI - 110 032.**

## INDEX

S. No.	Contents	Page No.
01.	Schedule of Tender	(i)
02.	Details of Tender Notice	(ii)
03.	General Terms & Conditions	1-2
04.	Submission of Bid	3-9
05.	Payment Conditions	9
06.	Settlement of Dispute	10
07.	Force Majeure	10
08.	Application Form	11
09.	Bid Form	12
10.	Undertaking	13
11.	Schedule of Earnest Money	14
12.	Location of delivery and installation	15
13.	Pre contract Integrity form	16-21
14.	Specification of instruments/equipment	22-46
15.	Check list	47



Central Pollution Control Board  
(Ministry of Environment & Forests)  
"Parivesh Bhawan" East Arjun Nagar.  
Delhi – 110032. India  
Tel. Nos. 22308202, 43102030 – Extn.243 & 244

**TENDER NOTICE**

No.C-48011/01-03/2013-14/Air Lab. Tender/Materials. Dated. 28.10.2013

Sealed tenders are invited on behalf of the Member Secretary, Central Pollution Control Board from the manufacturer/supplier for the supply "Stack Monitor Kit, Hardware & Software for Data Acquisition Handling and Air Quality Monitoring Station Container including Metrological system, Sampling System with accessories".

02. The Tender Document along with detailed specifications of the instruments Can be obtained from the office of Administrative Officer (Material), Central Pollution Control Board.

03. The request for tender documents sent by post will be accepted up to 12.11.2013.

Sale of Tender Document - From 30.10.2013 to 21.11.2013 on all working days between 11.00 AM to 5.00 PM

Cost of Tender Document - By hand ₹ 800.00  
By post ₹ 1000.00 Tender fee only through pay order/Demand Draft

Last date & time for submission - 22.11.2013 up to 10.00 AM

Opening date of Technical bids - 22.11.2013 at 11.00 AM

Bidder using downloaded tender forms must submit separate tender fee by Demand Draft along with technical bid drawn in favour of Central Pollution Control Board, Delhi. Details of tender document, terms & conditions and Technical Specification may kindly be seen at our website [www.cpcb.nic.in](http://www.cpcb.nic.in).

Administrative Officer  
(Material)

CENTRAL POLLUTION CONTROL BOARD  
(Ministry of Environment and Forests)  
"Parivesh Bhavan" East Arjun Nagar,  
Delhi – 110 032, INDIA

DETAILS OF TENDER NOTICE

NO.C-47011/ 01-03/2013-14/Air Lab. Tender/MATERIALS:

Dated: 28.10.2013

Sealed Tenders are invited on behalf of the Member Secretary, Central Pollution Control Board from Manufacturer/Suppliers for the supply of "Stack Monitor Kit, Hardware & Software for Data Acquisition Handling and Air Quality Monitoring Station Container including Metrological system, Sampling System with accessories".

02. The Tender Documents along with detailed specifications of the instruments can be obtained in person on Production of authority letter of the Firm or by post from the office of the Administrative Officer (Material), Central Pollution Control Board or by the authorized representative with prescribed tender fee in the form of DD/Payorder drawn in favour of Central Pollution Control Board, Delhi

03. The Bid must be submitted in English, by the principal / their authorized suppliers.

04. The Earnest Money as indicated in Bid document must be submitted by the Bidder along with the Tender in the form of Demand Draft only drawn in favour of "CENTRAL POLLUTION CONTROL BOARD" payable at Delhi (India). It should be either in Indian Rupees or in bid currency (equivalent amount as per the exchange rate prevailing). The Indian agent/ representative should furnish an authorization letter from their foreign Principal supplier authorizing to deposit the EMD on their behalf.

05. The request for Competitive Bidding Documents sent by post will be accepted strictly Up to 12.11.2013. CPCB will not be responsible for any delay in receipt of tender document sent by post. Request received by post after above mentioned date will not be entertained at any cost. Other details are as follows:

Sale of tender document	-	From 30.10.2013 to 21.11.2013 on all working days between 11.00 am to 5.00 pm.
Cost of tender document	-	By hand ₹ 800.00 By post ₹ 1000.00
Earnest Money along with Tender	-	As indicated in the Tender Document
Last date & time for submission	-	Up to 10.00 AM on 22.11.2013
Date of opening of tender	-	At 11.00 A.m. on 22.11.2013

06. Bidders using downloaded tender forms must submit separate tender fee by Demand Draft along with technical bid drawn in favour of Central Pollution Control Board, Delhi.

Administrative Officer  
(Material)

## **1.0 GENERAL TERMS AND CONDITIONS**

1.1 This document contains the following:

- i) Copy of the Local Competitive Bidding Notice
- ii) General Terms and Conditions of Bid
- iii) Terms and Conditions for Submission of Bid
- iv) Payment Terms
- v) Settlement of Dispute
- vi) Application Form
- vii) Undertaking
- viii) Bid Form
- ix) Schedule of Earnest Money to be deposited alongwith Tender
- x) Quantity of Instruments and Locations of delivery and installation.
- xi) Pre-contract Integrating pact form
- xii) Detailed specification of the instruments.
- xiii) Check List.

1.2 The Tender Document is not transferable by the purchaser. The bid form in the bid form at Annexure-II may be used for bidding. Documents/forms down loaded from the net can also be used.. However, the additional sheets containing the same proforma may be used for each item. Each sheet including that provided by the Board with this document must be signed by the bidder. The price bid must be in the form provided herewith at Annexure-II.

1.3 The tender will not be accepted from the firm to whom the document is not issued by the Board. The bid downloaded form without tender fee will not be accepted

1.4 The Board takes no responsibility for delay or non receipt of Tender Document sent by post either way and also reserves the right to accept; or reject any or all the tenders in part or full without assigning any reason thereof.

1.5 No bid document will be sold after the last date of sale of Tender Document or between the extended period of opening date, if any.

1.6 The bidder is expected to examine all instructions, forms, terms and conditions and specifications mentioned in the bidding document. Failure to furnish all information required by the bidding documents or submission of a bid not substantially irresponsive to the bidding document in every respect will be at the bidder's risk and may result in the rejection of it's bid.

1.7 This call of tenders does not bind the Central Board to place order. The Tenders submitted in response to this invitation can be rejected without assigning any reason.

1.8 The bidder should be a manufacturer. This tender notice, tender forms, schedule of requirements, specification etc are also available on CPCB's Website [www.cpcb.nic.in](http://www.cpcb.nic.in). Bidders using down loaded tender form must submit a separate tender fee by Demand Draft/pay order along with the technical part of the bid. The tender without requisite tender fee will be rejected.

- 1.9 The Board at its discretion may extend the last date of submission of tender and opening of tenders. The final authority for acceptance of a Tender will rest with the Chairman, Central Pollution Control Board who does not bind himself to accept the lowest tender and is vested with the authority to reject any or all of the tenders received without assigning any reason.
- 1.10 Documents, literature, diagrams/leaflets, samples etc., enclosed in the tender shall become the property of the Central Board without any payment.
- 1.11 The warranty period for item will be for thirty six months starting from the date of successful commissioning of the instrument. Under this warranty upon the receipt of such notice supplier/agent shall within the period specified, repair/replaced the defective instrument or spare parts thereof at the ultimate destination. The supplier/agent shall take over the replaced parts/goods, in the event of any correction of defects or replacement of defective material. In such cases, the warranty for the corrected/replaced materials shall be extended till the left over period of warranty.
- 1.12 The Tender would be regarded as turned down, if no award of contract has been obtained till the expiry of the Tender validity. No separate communication will be made in this regard.
- 1.13 The items have to be supplied in standard packaging.
- 1.14 If the last date for sale, submission and opening of Tenders falls on any Government declared holidays, the next working day at the same time will be considered last dates of the same.
- 1.15 The bid shall contain no interlineations, erasures or overwriting words except as necessary to correct errors made by the bidder, in that case such correction shall be initialed by the person or persons signing the bid.
- 1.16 Late and delayed tenders will not be considered and shall be returned unopened to the Bidder.
- 1.17 It is advised that the outside suppliers should send the Tender through Registered Post/Speed post/Courier. However, the local supplier may drop their Tenders in Tender Box kept in Central Board for the purpose. In no case Tender should be handed over to any employee of the Board.
- 1.18 Canvassing in any form will disqualify the Bid.
- 1.19 Request for the Tender Document for bidding through e-mail, Telephone, Fax, E-Mail and Tele fax, money order shall not be entertained.
- 1.20 The Tender Notice No.C-48021/01-03/2013-14/Air Lab. Tender/Materials dated. 28.10.2103 (The item code number is given in the specification sheet against each item must be invariably be quoted in the bid and for further correspondence in this regard will be entertained.

1.21 All the Tenders should be addressed to:  
THE ADMINISTRATIVE OFFICER (M)  
CENTRAL POLLUTION CONTROL BOARD  
'PARIVESH BHAWAN'  
EAST ARJUN NAGAR, Shahdara, DELHI - 110 032, INDIA

## **2.0 SUBMISSION OF BID**

- 2.1 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, provided that any printed literature furnished by the Bidder may be written in another language so long as accompanied by English translation of its pertinent passages in such case, for the purpose of interpretation of the bid, English translation shall govern.
- 2.2 The bid must accompany Annexure-I with Techno Commercial part of Bid tender fee incase of downloaded and Annexure-II & III along with 'Price' part of the Bid duly filled in and signed by the Bidder along with the seal of the Firm.
- 2.3 The Bidders are requested to quote excise duty excluded price in item-wise and total price of each instrument separately indicating the Govt. levies, freight, insurance, installation charges and other expenditure item-wise CIF/F.O.R. CPCB/Locations as indicated in the Annexure – V of this document. No C/D form will be issued against VAT. Necessary excise duty exemption certificate as applicable will be supplied. The bidder is expected to examine the bidding documents carefully and are deemed to have received and read all documents. It shall be the responsibility of the bidder to request the copies of any missing documents. Failure to do so will be at bidders risks.
- 2.4 It may be noted that mere quoting lowest rates will not entitle any firm to get the order. The quality of the item being offered, the past performance supply etc will also be taken in to consideration. Prior to award of purchase order the buyer can call any details, explanation, regarding technical & financial aspect.

### **IMPORTANT**

BIDDER CAN QUOTE THE RATES FOR ALL THE INSTRUMENTS OR SOME OF THE INSTRUMENTS AGAINST ONE TENDER DOCUMENT. HOWEVER, SEPARATE PRICE BID AND TECHNICAL BID SHOULD BE SUBMITTED FOR EACH ITEM CLEARLY MENTIONING THE ITEM CODE NUMBER, ITEM NAME ON THE TOP OF THE ENVELOPES WITH SENDERS NAME AND ADDRESS. THE CENTRAL POLLUTION CONTROL BOARD RESERVES THE RIGHT TO ACCEPT THE TENDER IN FULL OR IN PART. THE BID FOR EACH ITEM SHOULD BE IN SEPARATE SHEETS/PAGES AND FOR THE SAKE OF IDENTITY, COMPILATION, INSTRUMENT/ITEM CODE NUMBER AND DESCRIPTION OF ITEM SHOULD BE WRITTEN ON THE TOP OF EACH BID.EMD SHOULD BE SUBMITTED SEPARATELY AGAINST EACH ITEM. CONTAINING TECHNICAL, PRICE BID AND ITEM WISE EMD; ITEMS-WISE TECHNICAL SPECIFICATION AND PRICE SHOULD BE IN SEPARATE SHEETS i.e. THERE SHOULD BE SEPARATE ENVELOPE FOR EACH ITEMS. CONTAINING TECHNICAL, PRICE BID AND ITEM WISE EMD; INCASE BIDDERS DESIRES TO QUOTE MORE THAN ONE ITEM. THOSE TENDERS DO NOT COMPLY THE ABOVE INSTRUCTION WILL NOT BE CONSIDERED. PLEASE DO NOT ENCLOSE THE EMD ALONGWITH THE ENVELOPS FOR PRICE BID. THE EMD ALONGWITH THE COMBINED BID WILL NOT BE CONSIDERED.



- 2.5 The Tender is to be submitted "single, stage- three envelopes system" i.e. the second sealed envelope will contain the Earnest Money Deposit full information required to judge pre-qualification, earnest money, complete details and specification of the instruments offered including the leaflets and catalogues, list of credentials with documentary evidence i.e., purchase/work order etc., Income Tax Clearance Certificate, PAN No., Vat/Sales Tax Registration No., Affidavit for not being black listed, Commercial Terms & Conditions etc. It shall be marked "Pre-qualifications, technical and commercial Bid **No.C-48021/01-03/2013-14/Air Lab.Tender/Mat. dated. 28.10.2013** due on 22.11.2013 for supply of instruments & equipments". The Third envelope will contain only price quoted by the bidder in the form given at Annexure -II of this document and shall be clearly marked "Price Bid **No.C-48021/01-03/ 2013-14/Air Lab.Tender/Mat. dated 28.10.2013** for instruments & equipment" . Both the above envelopes must be separately sealed and shall be kept in one envelope bearing the address of Central Pollution Control Board and superscribed with bold letter "TENDER FOR Stack Monitoring Kit, Hardware-software & Container - NOT TO OPEN BEFORE 22.11.2013 AT 11.00 A.M. The senders address should be mentioned in all envelopes.  
Item Code number(s) should be mentioned invariably on all envelopes. Separate bids for separate item should be submitted. The combined bid will not be considered.
- 2.6 Technical & Commercial part of the tender will be opened on due date i.e. at 11.00 A.M. on 22.11.2013 in the office of the Central Board in presence of the Representative of the Tenders who would like to present Sealed Price part of Technically and Commercially acceptable tenders will be opened on a later date which will be communicated by the Board on the same day or on a later date.
- 2.7. The bidder shall furnish, as part of its bid, bid security for each instrument/equipment separately for the amount mentioned in scheduled IV requirements.
- 2.8. The bid security shall be in the form of Demand Draft/Pay order only in favour of "CENTRAL POLLUTION CONTROL BOARD" payable at DELHI. No Earnest Money shall be accepted in any form. The Earnest Money shall be forefeited if a bidder withdraws or amends the tender in any respect within the period of validity of this tender or fails to supply the instruments within the specified period in the tender document. Tender shall not entertained where a Tenderer has not furnished adequate earnest money in the Prescribed and acceptable form. In case the instrument supplied is found defective and not attended by the supplier, the Earnest Money deposited by the supplier will also be forfeited.
- 2.9 The Firm who seek exemption from depositing earnest money being small scale industry or being registered with NSIC , DGS&D and other Government agencies which entitles them for exemption must submit the valid Registration Certificate cover the instrument offered by them along with the permissible value. The copy of Government Notification granting exemption from deposit of EMD must be submitted along with the techno- commercial part of tender along with the bid. (EMD Exemption will be granted only to those items specified in the certificate of Registration).
- 2.10 Unsuccessful bidders bid security will be discharged/ returned without any interest in the same form after the concerned purchase is finalized or within three months whichever is earlier and that of successful bidders will be discharged without interest within one month of the successful installation and commissioning of the instrument.

- 2.11 The validity of Tender would be for a minimum period of 180 days from the date of opening of Tenders. A Bid valid for a shorter period may be rejected by the Board as non responsive. In case, the validity is to be extended, the Board may solicit the Bidder's consent to an extension on the period of validity and the bid shall remain valid for the extended period mutually agreed for.
- 2.12 The rates should be quoted both in words and figures.
- 2.13 Arithmetical error will be rectified on the following basis:- If there is discrepancy between the unit price and total price that is obtained by multiplying the Unit Price and quantity, the unit price shall prevail and the total price shall be corrected. If there is discrepancy between words and figures, the amount mentioned in words will prevail.
- 2.14 Tenders not in proper sealed cover or received through/E-mail/Fax/telefax will not be entertained.
- 2.15 Conditional Tenders will be rejected without assigning any reason.
- 2.16 The Bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person duly authorized to the Contract. The letter of authorization should bear the signatures of only the authorized person of the firm. All pages of the Bid, except for un-amended printed literature shall be initial by the person or persons signing the bid.
- 2.17 To assist in the examination, evaluation and comparison of bids the buyer may, at its discretion, ask the Bidder for a clarification of its bid. However, no change in the price or substance of the bid shall be sought, offered, re-permitted.
- 2.18. Eventual suggestions for modification or subsidiary Tenders are principally not admissible.
- 2.19 The specifications are clearly mentioned in the document and the Bidder are requested to submit Bid only if their offer strictly complies to these specifications. Please note that no deviation in the required specification will be permitted. The bidding for the instruments having different specifications will be on Bidder's risk as the Board will not entertain such Bids. BIDS CARRYING THE STATEMENT LIKE "SPECIFICATION AS PER TENDER DOCUMENT" SHALL NOT BE ENTERTAINED. THE PRODUCT SPECIFICATIONS SUPPORTED BY TECHNICAL LITERATURE AND LIST OF USERS, MUST BE ENCLOSED.
- 2.20 The placement of work order/purchase order will be according to technical evaluation of the Tender and after consideration of its price worthiness.
- 2.21 The price to be given in the Tender are fixed prices, irrespective of rise in Materials prices and increase in taxes etc., till complete the delivery of items. No request in regard to increase in the price of instruments or in taxes etc., will be entertained after the submission of the tender.
- 2.22 **The supplier should attach a blank copy of financial bid (without cost/price figures) along with the technical bid to assess the items included/components quoted in the bid.**

- 2.23 The nomenclature of the instruments/items will be invariably same in Proforma Invoice, Invoice, Packing list and in other relevant papers incase the Bidder is asked to supply the instruments against its offer.
- 2.24 With the submission of the Tender, the Bidder accepts the conditions of the Tender.
- 2.25 The installation of the instruments is the entire responsibility of the supplier. It must be done either by the principal/supplier or their authorized agents within one month of the receipt of the instruments by the Board. The supplier or Agent should be in touch with the Materials Section of the Board to know the exact day of receipt of stores supplied/discharged by them.
- 2.26 If the instrument supplied is not in conformity with the specification other than asked for, it will have to be replaced at the risk and cost of the supplier. No freight and other charges will be paid by the Board.
- 2.27 The list of instruments/equipment, their approximate quantity and point of delivery is given at Annexure-V and the detailed specification of the items are given in the tender document ( **pages 22-46** ) . The quantity mentioned in the tender document may be increased /decreased at the discretion of the Competent Authority in the Central Board without assigning any reason.
- 2.28 Each and every folio of the Tender must be signed by the Bidder.
- 2.29 The Bid shall be considered only for those instruments for which the rates have been specifically quoted. The Board further reserves the right to accept the Tender for all the items or some of the items for which the bidder has quoted the Bid. The bidder should attach a separate list for the consumable/spares required for smooth operation of the instrument at least for three years( as optional items) and two copies of trouble shooting manuals, electric circuits etc. along with the bids.**
- 2.30 The bidder should provide a complete list of spares and consumables required for operation and maintenance of the instruments along with the price list.
- 2.31. Annual maintenance contract:**  
The bidder should quote the charges for annual maintenance contract after the warranty period for the instrument/items listed in annexure IV of this tender.
- 2.32. The items for which Tenders are invited will have to be supplied within 45 days from the date of issue of purchase order for the Indian Supplier and 90 days for the foreign suppliers. in the case of non-observance of the delivery period , the order will be cancelled.
- 2.33 The after sales service is most important to be considered for comparison bids .The firms who do not have local Agents to provide after sales and service during warranty period will not be considered.

- 2.34 In the case of proprietary item, the proprietary certificate issued by the principal/manufacture should be attach along with the technical bid. In that case, the bid of the sole distributor will only be considered. A copy of the latest supply order (showing details of price) executed to any other Departments under Govt of India should be attached along with the price bid.
- 2.35. If the instrument supplied is found defective/unsatisfactory condition/short supply/other than specifications in the Purchase Orders, the same will have to be replaced at the suppliers risk and cost. No freight and other charges for replacement will be paid by the Board.
- 2.36 At any time prior to the deadline for submission of bids the buyer may for any reason whether at it's own initiative or in response to a clarification requested by a prospective Bidder, modify the bidding documents by an amendment.
- 2.37 The Amendment if any, will be brought to the notice in writing or by fax or mail to all concerned Bidders who have purchased the bidding documents and will be binding on them.
- 2.38 In order to afford prospective Bidder reasonable time in which to take the Amendment into account in preparing their bids, the purchaser may at its discretion, extend the deadline for the submission of bids.
- 2.39. The prices must be quoted item-wise i.e. basic price, taxes, packing forwarding, handling and installation charges etc. The charges must be quoted clearly and not in vague terms like "As Actual" "Approx" etc.
- 2.40 If according to the Bidder, the Tendered Documents contain unclear points which could influence price calculations, the bidder has to inform the authority who is issuing the call of Tenders before submission of his Tender, either in writing or by fax even if he has pointed out this earlier in any other form/reference.
- 2.41 The Packing, Forwarding, Insurance, Transportation & Installation including training charges if any must be quoted separately for each item according to the place of delivery as mentioned in the schedule at Annexure-V. The supplier will be held liable for any damage, theft or loss during transit. The instruments are to be dispatched to the respective places directly and to be installed there by the supplier under intimation to the, CPCB Office at Parivesh Bhawan, Delhi-32. The prices should be quoted FOR CPCB/designated location mentioned in annexure-V.
- 2.42. The warranty/guarantee of the instrument/equipment should be clearly mentioned in the Bid.
- 2.43. Prior to placing purchase order, in case the buyer desires to inspect the stores/instrument equipment including demonstration should be arranged by the supplier in the premises of the Central Board on free of charges.

**2.44. MOST IMPORTANT**

**PLEASE NOTE THAT ANNEXURE-I OF THIS DOCUMENT MUST BE ENCLOSED WITH THE FIRST PART OF BID i.e. "TECHNICAL/COMMERCIAL BID AND TENDER FEE (IN THE CASE OF DOWNLOADED DOCUMENT" AND ANNEXURE-II, III WILL BE KEPT IN THE SECOND PART OF BID i.e. PRICE BID.**

**2.45. PLEASE NOTE THAT THERE IS NO NEED TO ENCLOSE THE ENTIRE TENDER DOCUMENT (SUPPLIED BY THE BOARD) WITH YOUR BID. ONLY ANNEXURE-I,II AND III NEED TO BE ENCLOSED AS PER INSTRUCTION STIPULATED IN PARA 2.44, 2.5 AND OTHER RELEVANT PARAGRAPHS OF THIS BID.**

2.46. The firm whosoever getting the award/purchase order should sign and submit a Pre-integrity pact with the buyer as per the format attached as Annexure – VI of this tender documents.

2.47. The authorized Indian agent/Representative/Indian supplier should have minimum two years continuous agency/ partnership/joint venture/participation or collaboration with their principal foreign supplier(except Hardware-software items). The documentary proof of such agency ship/authorization/MOU should submit alongwith the technical part. The bid of the firm does not contain the proof of such nomination/ authorization as Indian agent will be rejected.

**2.48 Important:- The foreign bidders should quote the price in foreign currencies. The price quoted should be on CIF/FOR Destination basis. The Indian agent/their authorized representative should arrange the custom clearance from the customs. The Board will provide the concessional custom duty exemption certificate and other required documents.**

**The incidental expenses towards sending the instruments to the designated locations mentioned in Annexure-V such as arranging transport, insurance, labor, including charges to the custom clearing agent etc. to be borne by the supplier/their authorized Indian representative. The Indian agent/ their representatives should be responsible for the safety of the instruments during the transit from airports to the designated locations.**

**The agency commission will be paid in Indian Rupees. The charges on account of agency commission should be mentioned clearly in the bid Indian suppliers, the price should be quoted in Indian Rupees.**

2.49 The foreign bidders must indicate the following information in their Performa invoice alongwith the Price Bid separately for each instrument/equipment.

- a) Country of Origin.
- b) Port of Shipment.
- c) Name & Address of beneficiaries Bank, Branch name with Account No., IBAN No. & SWIFT Code.
- d) Minimum delivery period.
- e) Whether transshipment/partner shipment is required or not.
- f) Agency commission, if any payable to the Indian Agent, their Complete address, telephone & fax number.

- 2.37 The items have to be supplied in standard packing. The foreign supplier should use the minimum possible packets and should reduce the size of the packing in volume to avoid extra demurrage in the bonded warehouse in India, if any.

**Important - Bank charges: Three months time for shipment and further 21 days for negotiation will be given. All Bank charges inside the country (in India) will be buyers account and all Bank charges outside the country should be borne by the supplier / beneficiary's. The bidders may note this and quote the price of the instrument/ equipment accordingly. In the case of Foreign Suppliers, they will have to ensure shipment of the consignment as per the validity of the letter of credit established in this regard. In case of extension of supply date is sought, the bank charges should be borne by the Supplier/their authorized Indian representatives.**

### **3.0. PAYMENT CONDITIONS**

- 3.1 For Foreign Bidders:- The foreign bidders should quote the price in foreign currency. Incase, they have components and services of Indian Origin/agent, the same may be quoted in Indian Rupees.

100% payment will be released through irrevocable Letter of Credit in the name of foreign bidders for stores of foreign origin in the following manner. 80% payment will be made on shipment of the instrument/Equipments 20% will be released on satisfactory commissioning of Instrument and on furnishing Performance Bank Guarantee for 10% of the purchase order, valid for a period of 60 days beyond the warranty period.

For Indian bidders 100% payment will be released on delivery, installation and successful commissioning of the instruments/equipment ( to be certified by concerned Scientist/Incharge of the Division, and on submission of bills in duplicate and on furnishing performance Bank Guarantee for 10% of the purchase order valid for a period of 60 days beyond the warranty period. No advance payment will be made in any case and no proposal for documents through Bank will be considered. Hence, no preference will be given for such advance payment proposal. The defective, substandard and contrary to the specifications instruments supplied have to be replaced by the supplier at their cost and responsibility.

The Performance Security/Bank Guarantee be furnished by the principal supplier or their authorized Indian agent from any Nationalized Bank. No Proposal for advance payment will be allowed in any case. In the case of Indian suppliers advance payment , document and payment through Bank will not be considered.

The defective, substandard and contrary to the specification of instruments/equipment supplied have to be replaced by the supplier at their cost and responsibility. Incase of indigenous instrument/equipment quoted by Indian firms/representative/ Indian agents of foreign supplier/ manufacturers in rupee term, the payment will be made in Indian rupees directly after supply and satisfactory installation of instrument.

In case several bills are presented, against one order, the reference of supply order and other details should be mentioned in each and every bill.

#### **4.0 SETTLEMENT OF DISPUTE, ARBITRATION**

- 4.1 All disputes or difference arising out of or in connection with the contract and supply of any item/equipment assigned under the same (whether during the progress of the works or after their completion, determination, abandonment or breach of the contract) shall be settled in accordance with the Arbitration and Conciliation Act, 1996. The Arbitral Tribunal shall consists of three (3) arbitrators appointed by the Chairman, Central Pollution Control Board. The arbitrators shall elect an umpire among them. In case of failure of the two arbitrator appointed, to reach upon a consensus, the decision of the umpire shall be final and binding. It will not be an objection to any such appointment that the arbitrators are the Government Servants and had any interest in the Board or the contract entered into directly or indirectly. In all cases, the arbitrator shall state their reasons, award/decision in writing of an amount of claim in dispute is Rs.50,000/- and above, subject as aforesaid the provision of the Arbitration and Conciliation Act 1996 or any statutory modification or re-enactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceedings under this clause. Arbitration proceeding shall be held at Delhi/New Delhi, India. The Cost and expenses of Arbitration proceedings shall be borne by the party invoking the Arbitration clause.
- 4.2 It is a term of the contract that the party invoking the arbitration shall specify the dispute for disputes to be referred to the arbitration under this clause together with the amount or amount claimed in respect of each such dispute.
- 4.3 It is also a term of the contract that if the supplier (s) do not make any demand for arbitration in respect of any claim (s) or dispute in writing within 90 days of submission of the final bill for payment, the claim of the supplier will be deemed to have been waived and absolutely barred and the Board will be discharged and released of all liabilities under the contract in respect of these claims.
- 4.4 The courts at Delhi shall have exclusive jurisdiction to entertain and try all matters arising out of this contract.

#### **5.0 FORCE MAJEURE**

Vendor shall not be considered in default if delay in delivery occurs due to causes beyond his control such as acts of God, natural calamities, civil, wars, strikes, fire frost, floods, riots and acts of usurped power. Only those causes which have a duration of more than 7 calendar days shall be considered cause of force majeure. A notification to this effect duly certified by the Local Chamber of Commerce/Statutory Authorities shall be given by the Vendor to the owner by registered letter. In the event of delay due to such cases a length of time equal to the period of force majeure or at the option of the owner the order may be cancelled. Such cancellation would be without any liability whatsoever on the part of owner. In the event of such cancellation the vendor shall refund any amount advanced or period to the vendor by the Purchaser and delivery back any material issued to him by the Purchaser and release facilities, if any, provided by the Purchaser.

Annexure-I

S.No. /Air Lab Tender

**APPLICATION FORM**

(To be filled by the bidder)

1.	Name and full address of the Bidder including Telegraphic Address/Telex No. and Fax No.	:	
2.	Name and Designation of the Head of the Firm/supplier and his Telephone No	:	
3.	i) In case the supplier is located out of Delhi; specify the Address/Authorized Distributor's or Agent's Address in Delhi, if any.  ii) Name, Designation, Address Telephone & Fax Numbers of the Authorized Person who may be contacted during the process of the purchase concerned under this document (Applicable for all the suppliers)	:	
4.	Item Code Number(s) & description of item quoted for	:	
5.	Whether Earnest Money Deposited (Amount: Rs.	:	
6.	If yes, Demand Draft No, Date and Name of issuing Bank.	:	
7.	Tender fee Demand Draft No; Date and Name of issuing Bank	:	
8.	Validity of Tender	:	
9.	If the tender documents are accepted in full (Yes or No)	:	
10.	Income Tax Clearance Certificate attached (Latest) (Yes or No) with PAN Number.	:	
Place Date			
Legally Binding Signature with stamp			



**BID FORM**

**ANNEXURE - II**

**No. /Air Lab.Tender**

Details showing quantity, specification and other details of the instruments offered (to be filled by the bidder and must be kept in "Price Bid" part of the Tender)

Sl. No and Item code Number of instruments as per our tender Document	Name of Instrument	The Specification offered by the Bidder	Difference in Specifications of tender document and that of Bid, if any	Quantity	Unit Price (in Rupees excluding rates at col. no. 7)	Taxes and other expenditures (Sales Tax/VAT, C.S.T, freight, cost of installation & training (in case of indigenous items)etc.	Total Amount in Rupees for indigenous items	Total Amount CIF/FOR Destination for imported items
1	2	3	4	5	6	7	8	9

NOTE:- If this sheet is not sufficient to accommodate the bid the additional sheets containing the same proforma but all such sheets including this one must be signed by the Bidder along with the seal. This Annexure must enclose in the Proforma Invoice price bid for item wise. Separate Bid form should be attached against each item, quoted for. Administrative Officer (Material)

**Signature with date & stamp of the bidder**

**UNDERTAKING**

DATE \_\_\_\_\_  
TENDER NOTICE NO \_\_\_\_\_

TO

THE CHAIRMAN  
CENTRAL POLLUTION CONTROL BOARD  
(MINISTRY OF ENVIRONMENT & FORESTS GOVERNMENT OF INDIA)  
C.B.D. CUM OFFICE COMPLEX  
EAST ARJUN NAGAR DELHI - 110 032.

Sir,

Having examined the conditions of Tender Document and specifications of the instruments, the receipt of which is hereby acknowledged. We, the undersigned, offer to supply, delivery and install the following:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 8.
- 9.
- 10.
- 11.
- 12.
- 13

(Please add additional pages, if required)The above supply, installation shall be in conformity with the specifications and conditions of supply .

We undertake if our bid is accepted to deliver the instruments quoted by us, we shall deliver and install within the period indicated by us in our offer.

We agree to abide by this bid for a period of 180 days from the date fixed for Bid opening and it shall remain binding upon us and may be accepted at any time before expiration of that period.

We are submitting a Demand Draft/Pay order for Rs.....in favour of "Central Pollution Control Board", Delhi towards the Earnest Money.

This Bid, together with your written acceptance thereof in your notification of award shall constitute a bidding contract between us.

We understood that you are not bound to accept the lowest or any bid you may receive.

Dated this.....day of.....2013

Signature of authorized Person, Name with Stamp & full Address.

**Annexure-IV****SCHEDULE OF EARNEST MONEY**

<b>Item Code</b>	<b>Instrument / Equipment</b>	<b>Quantity Requirement</b>	<b>EMD</b>
<b>01</b>	Stack Monitoring Kit	08 (Eight)	48,000/-
<b>02</b>	Hardware & Software for Data Acquisition and Handing	04(Four)	1,20,000/-
<b>03</b>	Air Quality Monitoring Station Container including Metrological system, Sampling System with accessories	02 (Two)	90,000/-

**Annexure-V**

**LOCATION OF DELIVERY AND INSTALLATION OF INSTRUMENTS/EQUIPMENT**

<b>Item Code</b>	<b>Instrument / Equipment</b>	<b>Quantity Requirement</b>	<b>Location</b>
<b>01</b>	Stack Monitoring Kit	08 (Eight)	02-CPCB, Delhi 02-Tamilnadu Pollution Control Board 02-Gujarat Pollution Control Board, 02- Maharashtra Pollution Control Board
<b>02</b>	Hardware & Software for Data Acquisition and Handing	04(Four)	01- CPCB, Delhi 01-Tamilnadu Pollution Control Board 01-Gujarat Pollution Control Board, 01-Maharashtra Pollution Control Board &
<b>03</b>	Air Quality Monitoring Station Container including Metrological system, Sampling System with accessories.	02 (Two)	Delhi (D.C.E. & Siri Fort)

**PRE CONTRACT INTEGRITY PACT****General**

This pre-bid pre-contract Agreement (hereinafter called the Integrity Pact) is made on .....day of the month of .....2013, between, CPCB, An autonomous body acting through Shri ....., (Designation of the officer, Ministry/Department, Government of India) hereinafter called the “BUYER”, which expression shall mean and include, unless the context otherwise requires, his successors in office and assigns of the First Part and M/s..... represented by Shri....., Chief Executive Officer (hereinafter called the “BIDDER / SELLER” which expression shall mean and include, unless the context otherwise requires, his successors and permitted assigns) of the Second Part.

WHEREAS the BUYER proposes to procure (Name of the Stores/Equipment/Item) and the BIDDER/Seller is willing to offer/has offered the stores and

WHEREAS the BIDDER is a private company/public company/Government undertaking/partnership/registered export agency, constituted in accordance with the relevant law in the matter and the BUYER CPCB work under the aegis of Environment & Forests, performing its functions as per the provisions of Water Act 1974, Air Act ,1981 and EPA Act, 1986.

NOW, THEREFORE,

To avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the currency of the contract to be entered into with a view to :-

Enabling the BUYER to obtain the desired said stores/equipment at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and

Enabling BIDDERS to abstain from bribing or indulging in any corrupt practice in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing and other corrupt practices and the BUYER will commit to prevent corruption, in any form, by its officials by following transparent procedures.

The parties hereto hereby agree to enter into this Integrity Pact and agree as follows:

**Commitments of the BUYER**

- 1.1 The BUYER undertakes that no official of the BUYER, connected directly or indirectly with the contract, will demand, take a promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BIDDER, either for themselves or for any person, organization or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.
- 1.2 The BUYER will, during the pre-contract stage, treat all BIDDERS alike, and will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to other BIDDERS.
- 1.3 All the officials of the BUYER will report to the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.

In case any such preceding misconduct on the part of such official(s) is reported by the BIDDER to the BUYER with full and verifiable facts and the same is prima facie found to be correct by the BUYER, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the BUYER and such a person shall be debarred from further dealings related to the contract process. In such a case while an inquiry is being conducted by the BUYER the proceedings under the contract would not be stalled.

**Commitments of BIDDERS**

2. The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following:-
  - 3.1 The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.
  - 3.2 The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER or otherwise in procuring the Contract or forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the Government for showing or forbearing to show favour or disfavour to any person in relation to the contract or any other contract with the Government.
  - 3.3\* BIDDERS shall disclose the name and address of agents and representatives and Indian BIDDERS shall disclose their foreign principals or associates.
  - 3.4\* BIDDERS shall disclose the payments to be made by them to agents/brokers or any other intermediary, in connection with this bid/contract.
  - 3.5\* The BIDDER further confirms and declares to the BUYER that the BIDDER is the original manufacturer/integrator/authorized government sponsored export entity of the defence stores and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the BUYER or any of its functionaries, whether officially or unofficially to the award of the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.
  - 3.6 The BIDDER, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payments he has made, is committed to or intends to make to officials of the BUYER or their family members, agents,

brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.

- 3.7 The BIDDER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.
- 3.8 The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.
- 3.9 The BIDDER shall not use improperly, for purposes of competition or personal gain, or pass on to others, any information provided by the BUYER as part of the business relationship, regarding plans, technical proposals and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.
- 3.10 The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.
- 3.11 The BIDDER shall not instigate or cause to instigate any third person to commit any of the actions mentioned above.
- 3.12 If the BIDDER or any employee of the BIDDER or any person action on behalf of the BIDDER, either directly or indirectly, is a relative of any of the officers of the BUYER, or alternatively, if any relative of an officer of the BUYER has financial interest/stake in the BIDDER's firm, the same shall be disclosed by the BIDDER at the time of filling of tender.
- 3.13 The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the BUYER.

## **2. Previous Transgression**

- 4.1 The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact, with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify BIDDER's exclusion from the tender process.
- 4.2 The BIDDER agrees that if it makes incorrect statement on this subject, BIDDER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

### **3. Sanctions for Violations**

- 5.1 Any breach of the aforesaid provisions by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitle the BUYER to take all or any one of the following actions, wherever required:-
- (i) To immediately call off the pre-contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDER (s) would continue.
  - (ii) The Earnest Money Deposit (in pre-contract stage) and/or Security Deposit/Performance Bond (after the contract is signed) shall stand forfeited either fully or partially, as decided by the BUYER and the BUYER shall not be required to assign any reason therefore.
  - (iii) To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.
  - (iv) To recover all sums already paid by the BUYER, and in case of an Indian BIDDER with interest thereon at 2% higher than the prevailing Prime Lending Rate of State Bank of India, while in case of a BIDDER from a country other than India with interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the BIDDER from the BUYER in connection with any other contract for any other stores, such outstanding payment could also be utilized to recover the aforesaid sum and interest.
  - (v) To encase the advance bank guarantee and performance bond/warranty bond, if furnished by the BIDDER, in order to recover the payments, already made by the BUYER, along with interest.
  - (vi) To cancel all or any other Contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to the BUYER resulting from such cancellation/rescission and the BUYER shall be entitled to deduct the amount so payable from the money (s) due to the BIDDER.
  - (vii) To debar the BIDDER from participating in future bidding processes of the Government of India for a minimum period of five years, which may be further extended at the discretion of the BUYER.
  - (viii) To recover all sums paid in violation of this Pact by BIDDER (s) to any middleman or agent or broker with a view to securing the contract.
  - (ix) In cases where irrevocable Letters of Credit have been received in respect of any contract signed by the BUYER with the BIDDER, the same shall not be opened.
  - (x) Forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.



- 5.2 The BUYER will be entitled to take all or any of the actions mentioned at para 6.1 (i) to (x) of this Pact also on the Commission by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER), of an offence as defined in Chapter IX of the Indian Penal code, 1860 or Prevention of Corruption Act, 1988 or any other statute enacted for prevention of corruption.
- 5.3 The decision of the BUYER to the effect that a breach of the provisions of this Pact has been committed by the BIDDER shall be final and conclusive on the BIDDER. However, the BIDDER can approach the Independent Monitor (s) appointed for the purposes of this Pact.

6. **Fall Clause**

- 6.1 The BIDDER undertakes that it has not supplied/is not supplying similar product/systems or subsystems at a price lower than that offered in the present bid in respect of any other Ministry/Department of the Government of India or PSU and if it is found at any stage that similar product/systems or sub systems was supplied by the BIDDER to any other Ministry/Department of the Government of India or a PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the BUYER, if the contract has already been concluded.

7. **Independent Monitors**

- 7.1 The BUYER has appointed Independent Monitors (hereinafter referred to as Monitors) for this Pact in consultation with the Central Vigilance Commission (Names and Addresses of the Monitors to be given).
- 7.2 The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.
- 7.3 The Monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.
- 7.4 Both the parties accept that the Monitors have the right to access all the documents relating to the project/procurement, including minutes of meetings.
- 7.5 As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the BUYER.
- 7.6 The BIDDER(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the BUYER including that provided by the BIDDER. The BIDDER will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor shall be under contractual obligation to treat the information and documents of the BIDDER/Subcontractor(s) with confidentiality.

7.7 The BUYER will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the parties. The parties will offer to the Monitor the option to participate in such meetings.

7.8 The Monitor will submit a written report to the designated Authority of BUYER/Secretary in the Department/ within 8 to 10 weeks from the date of reference or intimation to him by the BUYER / BIDDER and, should the occasion arise, submit proposals for correcting problematic situations.

8. **Facilitation of Investigation**  
In case of any allegation of violation of any provisions of this Pact or payment of Commission, the BUYER or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information and documents in English and shall extend all possible help for the purpose of such examination.

9. **Law and Place of Jurisdiction**  
This Pact is subject to Indian Law. The place of performance and jurisdiction is the seat/place of the BUYER.

10. **Other Legal Actions**  
The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the extant law in force relating to any civil or criminal proceedings.

11. **Validity**  
11.1 The validity of this Integrity Pact shall be from date of its signing and extend upto 5 years or the complete execution of the contract to the satisfaction of both the BUYER and the BIDDER/Seller, including warranty period, whichever is later. In case BIDDER is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract.

11.2 Should one or several provisions of this Pact turn out to be invalid; the remainder of this Pact shall remain valid. In this case, the parties will strive to come to an agreement to their original intentions.

12. The parties hereby sign the Integrity Pact at .....  
on.....

BUYER  
  
Name of the Officer.  
Designation  
Deptt./ MINISTRY/PSU

BIDDER  
  
CHIEF EXECUTIVE OFFICER

Witness  
1.....  
2.....

Witness  
1.....  
2.....

## **SPECIFICATION OF STACK MONITORING KIT**

### **General**

The In-Stack monitoring Kit (USEPA Method 17) should be Portable, Compact, Light Weight and User Friendly. Control Module, with Multi-Function Electronic Unit, Digital Electronic Manometer, Programmable Start and Stop facility for Sampling Pump, Digital Display for stack Gas & Dry Gas Meter Temperatures, Light-Weight Sampling Pump and Impinger Module Design Complies with Specifications, recommended by US EPA. The facility for mounting of thermocouple, pitot tube and probe together to keep all the components functional during the period of sampling is mandatory.

Stack Velocity Range : 3 to 30 m/sec

Stack Temperature Range : 0 to 600° C and 500° C to 1000° C  
(shall be quoted separately)

Particulate Sampling : At 6 to 60 lpm

Gaseous sampling : At 0.6 to 6 lpm collection on a set of impingers, containing selective reagents

### **Pitot Tube**

Modified S-type Pitot tube shall be fabricated from SS 304 or equivalent. The construction features should be as per USEPA method 1 to 4 & 17 (or) CPCB Doc. No. Emission Regulation (Dec. 1985) Part III.

### **Sampling Probe**

Fabricated from SS 304 tube of suitable diameter (not less than 15 mm ID).

The lengths of the Pitot tube and the sampling probes shall be decided by the user. The suppliers have to quote separately for all sizes available.

### **Nozzles**

A set of nozzles (minimum 04 nos.) fabricated from SS 304 or equivalent material with internal diameters suitable to cover the full range of stack velocities. The leading edge of the nozzle should be sharp and tapered. The minimum internal diameter of the nozzle should not be less than 4 mm.

### **Thimble Holder**

Filter holders fabricated from SS 304 suitable to hold cellulose / glass fiber or other thimbles.

### **Thermocouple**

- i) Thermocouple sensor with digital display capable of measuring temperature from 0 to 600 ° C covered with acid resistant proper casing and appropriate length (same as length of the pitot tube).
- ii) A separate suitable thermocouple with digital display capable of measuring temperature from 500° C to 1000° C covered with acid resistant proper casings and appropriate length (same as length of the pitot tube).

### **Stack gas sampling module**

The stack sampling console shall contain the following:

- i) Timer (Stop Watch)  
Range 0 to 60 minutes  
Minimum resolution – one second,  
Residual battery backup facility
- ii) Temperature sensor at metering point (0 – 50 °C)
- iii) Temperature display with select toggle switches for display of ambient, Stack (Flue gas) and temperature at metering point
- iv) Rotameter (separate for Particulate and Gas)
  - a) 6 to 60 lpm for particulate monitoring and
  - b) 0.6 to 6 lpm for gaseous monitoring
- v) Vacuum gauge Digital or Analog, Dual Scale, Range 0 - 30 psi & 0 -1552 mmHg
- vi) Dry gas meter should be inbuilt  
The minimum resolution of digital Dry Gas Meter should be 1 L.

- vii) A cold box with a capacity to hold at least 6-8 impingers shall be provided with glass impingers.
- viii) Control panel (Console) shall have the facility for leak check with orifice or other type of control knobs

### **Stack gas velocity module**

For velocity measurements the module should have provision for housing of:

- i) Digital manometer (capable to measure in the range 0-1300 mm of H<sub>2</sub>O)
- ii) Digital pyrometer suitable for measuring ranges (0 to 600 ° C and 500 to 1000 ° C)

### **Vacuum Pump:**

Compatible, portable, light weight, heavy duty pump capable to ensure 60 LPM effective gas flow with single phase motor, 220 ± 10 V AC; 50 Hz ± 3%.

### **Sample collection tubes (Hose)**

All the sample collection hose / conduits should have push fit system to prevent leakages. The hoses should be flexible and protected from outer shocks and aberrations. The length of the hoses is user selectable. Two separate sizes (10 m and 30 m) shall be quoted.

### **Calibration Certificates:**

Third party (any Nationally or Internationally Accredited Calibration Laboratory) Calibration certificates for Manometer, Rotameter, Pitot tube, Nozzles, Thermocouple and Dry Gas Meter etc. with a validity of at least one year should be provided along with the supply.

### **Impingers:**

Four numbers of 120 ml and two numbers of 250 ml capacity Borosilicate glass impingers. Facility should be there for keeping ice at the bottom of impinger box.

## **Tools**

A kit containing the essential tools required for connecting various components and routine maintenance shall be provided with the equipment

## **Spares and consumable**

The supply shall include spares and consumables for at least three years trouble free operation

## **Warranty**

All the components and the whole kit will be under warranty for three years

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**CENTRAL POLLUTION CONTROL BOARD**

**Delhi**

**Development of DAHC (Data Acquisition and Handling Center) in  
Three SPCBs (Gujarat, Maharashtra and Tamil Nadu) and in CPCB, Delhi**

Item No.	Item Description	Quantity Requested by PCBs				
		CPCB	GPCB	MPCB	TNPCB	Total
ETS- 1.	Rack Server	1	1	1	1	4
ETS- 2.	19" Industrial Rack, 42U , Color Black	1	1	0	1	3
ETS- 3.	USB 2 TB External Hard Disk	2	2	2	2	8
ETS- 4.	Windows Server 2012	1	1	1	1	4
ETS- 5.	Database	1	1	1	1	4
ETS- 6.	Online 2KVA UPS for Server	1	1	0	1	3
ETS- 7.	Desktop	2	2	2	2	8
ETS- 8.	Online 1KVA UPS for Desktops	2	2	2	2	8
ETS- 9.	Professional LED Monitor	2	1	1	1	5
ETS- 10.	Air Conditioner	2	3	1	3	9
ETS- 11.	Stabilizer for 2 ton Air Conditioner	2	3	1	3	9
ETS- 12.	Firewall	1	1	1	1	4
ETS- 13.	Unmanaged switch	1	1	1	1	4

**ITEM WISE SPECIFICATIONS**

**Item No.: ETS - 1**

***Technical Specification RACK SERVER***

Sr.No	Specifications	
1	<b>Brands</b>	<b>IBM/HP/Dell</b>
2	<b>CPU</b>	Single Intel Xeon Quad Core or higher 5600 series 2.40 GHz or higher, 12MB L3 Cache per socket, 1333 MHz/1600 FSB.The Mother Board shall support Dual Sockets. Dual CPU each quad core
3	<b>Memory</b>	32 GB (16 GB for each CPU) DDR-III, 1066MHz, ECC Memory, upgradable to 32 GB
4	<b>Chipset</b>	Intel 5520 or Equivalent
5	<b>HDD</b>	2 TB – 3 nos.
6	<b>Drive Bays</b>	Up to eight 3.5" drives or up to sixteen 2.5" drives
7	<b>Ethernet Port</b>	2 *Dual port Gigabit NIC Cards with autosensing and on copper (total 4 ports). All four ports supporting iSCSI protocol to connect to iSCSI based SAN storage
	<b>PCI Slots</b>	Provision for 2 *PCI express, 2 *PCIe X4 or PCIe X8, Slots to accommodate additional FC / Gigabit Cards Graphics Adaptors
8	<b>CTD</b>	Internal / external 2 TB
9	<b>Optical Drive</b>	DVD R/W 16X Drive, internal
10	<b>Form Factor</b>	2U rack model with rail kit
11	<b>Key board</b>	Standard Keyboard same as OEM
12	<b>Mouse</b>	Standard Optical Mouse same as OEM
13	<b>I/O ports</b>	2 *USB front, 2 *USB rear, 1 VGA Port, 1 external SAS, 1* Serial, 1 *DVI,1 * Memory Card Reader
14	<b>Monitor</b>	21" Wide LCD TFT Color monitor
15	<b>RAID Controller</b>	RAID 5
16	<b>Wireless adapter</b>	USB Wireless adapter x 2 nos.
16	<b>Antivirus</b>	Standard Antivirus (McAfee / Norton / Trend Micro) for duration of 3 years
17	<b>Redundant Power Supply &amp; Fans</b>	Redundant Power Supply 1+1, Redundant Fans
18	<b>Warranty</b>	Warranty is comprehensive 24x7 on site including spares for 3 / 3 / 3 years with 4 hours support



**Item No.: ETS - 2**

**Technical Specifications: 42U Industrial Rack**

Sr.No	Specifications	QTY / site
1.	<b>19" Industrial Rack, 42U , Color Black Consisting of:-</b>	<b>1</b>
2	Steel Enclosure, 9 Folded profile of dimensions 800 mm width * 1000 mm Depth * 42 U height, supporting 1000 Kgs load. Bottom cover with knock out holes for cable entry to be provided. Three pairs of horizontal support shall be fitted on both right and left sides.	1
3	Front & Rear Door shall be of 100% perforated with three point locking system. Provision for mounting fans on Rear door with concealed AC wiring.	2
4	Fan 230V, 90 CFM to be mounted on Rear Door.	10
5	AC Main Channel vertical, 12x 5/15 Amps Sockets Make: Anchor with 32 Amps MCB make : Northwest	2
6	Horizontal Cable Manager	2
7	Vertical Cable Manager	2
8	Copper based Electrical Grounding / Earthing Strip . Provision for Fifteen (15) points.	1 Set
9	Each set of:	1 Set
	a) Castor with Brake -- 2 Nos.	
	b) Castor without Brake -- 2 Nos.	
	c) Adjustable screw legs --4 Nos.	
	<b>OR</b>	
	Base frame -- 1 NO.	
10	Light provision activation in the rack up on opening of the front/rear door.	1
11	H/W Packet of 20 Sets.	2
12	Grounding Nuts.	1
13	Eye bolts on the top for lifting the rack	4
	<b>Optional items:</b>	
14	Equipment support angles two pairs	1 set
15	Ventilated shelf two nos.	1 Set
16	1U dummy panels 2 Nos.	1 Set
17	2U dummy panels 2 Nos.	1 Set
18	3U dummy panels 2 Nos.	1 Set

**Item No.: ETS - 3**

***Technical Specifications: USB 2 TB External Hard Disk***

USB 3.0 compliant 2 (Two) TB External Expansion Hard Disk - Seagate

**Capacity :** 2 TB  
**Connectivity :** USB 3.0  
**Form Factor :** Desktop  
**OS Supported :** Windows 7 and Above  
**External Power Required :** No  
**Warranty :** 3 Years Warranty

**Item No.: ETS - 4**

***Technical Specifications: Windows Server 2012***

**Windows Server 2012**

Microsoft Windows Server 2012 (Professional)

**Item No.: ETS - 5**

**Technical Specifications: Database Software**

**Database Software\***

The Database software should be compatible for the Windows Server 2012

1. MS SQL Server for 2 CPU, 4 core each (latest version) with 1 client license

**Or**

2. **Oracle** for 2 CPU, 4 core each (**latest version**) with 1 client license

*\*to be decided by the software developer, however, the vendor can quote the rates as per the specification above, with the validity of the quotes*

**Item No.: ETS - 6**

**Technical Specification: Standalone 2KVA Online UPS (1 hour battery backup)**

Sr.No	Specifications	
1	<b>Brand</b>	APC / Emerson / Uniline
2	<b>Capacity</b>	2 KVA for 1 hour battery backup (Surge Protection)
3	<b>Input Frequency</b>	50 Hz $\pm$ 6%
4	<b>Input Voltage range</b>	160 – 280 V
5	<b>Output Voltage Tolerance</b>	< $\pm$ 5%
6	<b>Output Voltage</b>	230 V
7	<b>Protection</b>	Short Circuit, Overload, Low Battery etc.
8	<b>Output Waveform</b>	True Sine Wave
9	<b>Bypass</b>	Built-in Bypass (Automatic and Manual)
10	<b>Battery</b>	Sealed maintenance free batteries
11	<b>Cabinet</b>	Battery bank in covered cabinet of MS Powder Coated
12	<b>Warranty</b>	3 years Comprehensive onsite including spares

**Item No.: ETS - 7**

***Technical Specification: Desktop Computer System***

<b>Sr.No</b>	<b>Specifications</b>	
1	<b>Brands</b>	<b>HP/Lenovo/Dell</b>
2	<b>CPU</b>	Intel® Core i7 (3 GHz, 8 MB cache, 4 cores) or higher
3	<b>Memory</b>	4 GB DDR-III, 1066MHz, Expandable to 8 GB
4	<b>Ethernet ports</b>	Dual Gigabit Ethernet ports with autosensing bidder can provide 2nd NIC card on PCI , Autosensing is to cater to 100/1000 Mbps speeds automatically and not a boot ROM
5	<b>PCI Slots</b>	Provision for additional cards, 2PCI, PCIe1, PCIe16 ( Total 4 slots)
6	<b>Optical Drive</b>	DVD R/W 16X Drive, Internal
7	<b>HDD's</b>	3.5" 500 GB, SATA drives
8	<b>Power Supply</b>	Standard suitable power supply
9	<b>Key board</b>	Optical Keyboard same as OEM
10	<b>Mouse</b>	Standard Optical Mouse same as OEM
11	<b>I/O ports</b>	4*USB,
12	<b>Monitor</b>	21" Wide LCD TFT Color monitor
13	<b>Wireless adapter</b>	USB Wireless adapter x 1 no.
14	<b>OS support</b>	Microsoft Windows 7 Professional
15	<b>Antivirus</b>	Standard Antivirus for duration of 3 years (from same manufacturer as server antivirus)
16	<b>Warranty</b>	Warranty is comprehensive on site including spares for 3 / 3 / 3 years

**Item No.: ETS - 8**

***Technical Specification: Standalone Online UPS 1 KVA (30 Minutes Backup)***

<b>Sr. No</b>	<b>Specifications</b>	
1	<b>Brand</b>	APC / Emerson / Uniline
2	<b>Capacity</b>	1 KVA for 30 minutes battery backup (Surge Protection)
3	<b>Input Frequency</b>	50Hz $\pm$ 6%
4	<b>Input Voltage range</b>	160 – 280 V
5	<b>Output Voltage Tolerance</b>	< $\pm$ 5%
6	<b>Output Voltage</b>	230 V
7	<b>Protection</b>	Short Circuit, Overload, Low Battery etc.
8	<b>Output Waveform</b>	True Sine Wave
9	<b>Bypass</b>	Built-in Bypass (Automatic and Manual)
10	<b>Battery</b>	Sealed maintenance free batteries
11	<b>Cabinet</b>	Battery bank in covered cabinet of MS Powder Coated
12	<b>Warranty</b>	3 years Comprehensive onsite including spares

**Item No.: ETS - 9**

***Technical Specification: Professional LED Monitors***

1. Display : In between 39 to 42 inch screen size
2. Technology : 60Hz (Backlight) Panel Technology
4. Resolution : 1920x1080
5. Brightness : 250 cd/m2 or better
8. Contrast Ratio : 4000:1 (Typical) or better
9. Response Time : 10ms or better
10. Connectivity
  - Composite, Stereo Mini Jack, USB, TV-In
  - Stereo Mini Jack
  - External control : RS232C (In/Out), RJ45 (built in LAN card)
  - Should control display with both Ethernet /RS 232 remote control simultaneously
11. Power
  - Power Supply: AC 100 - 240 V~ (+/- 10 %), 50/60 Hz
  - Power Consumption (Typical/Max): 100 W / 150 W
  - Power Consumption (Standby) : Less than 5 W
12. Environmental Conditions
  - Operating Temperature: 32~104°F
  - Operating Humidity: 10~80%
13. Features
  - Built-In Speakers (10W + 10W) or better , USB port (Plug and Play), PIP/PBP
  - Built-in Tuner
  - Embedded Linux OS, 4 GB FDM
  - VESA Wall Mount
  - Embedded Media Player : should enable unit as a standalone unit without the need of additional players.
14. Bezel Width : .75" (Bottom .100") or less
15. Weight : Product Weight: not more than 25 lb.
16. Warranty : 3 yrs Onsite includes Parts/Labor
17. Accessories
  - Quick Setup Guide, Warranty Card, Application CD, D-Sub Cable, Power Cord, Remote Controller, Batteries
  - Wall Mount and Table stand both
18. Standards : Green Management standards compliant
  - Energy Star 5.0 Compliant
  - RoHS Compliant
  - Emission Standard: EMC

**Item No.: ETS - 10**

***Technical Specification: Air Conditioner (2 Ton Capacity)***

<b>Sr.No</b>	<b>Specifications</b>	
1	<b>Type</b>	Split
2	<b>BEE Star Rating</b>	3 or more star rating
3	<b>Capacity (Ton)</b>	2
4	<b>Compressor</b>	High EER Rotary
5	<b>Operation</b>	LCD Remote
6	<b>Warranty</b>	3 Year Comprehensive Warranty including spares 5 years warranty on compressor (minimum)
7	<b>With installations and commissioning.</b>	

**Item No.: ETS - 11**

***Technical Specification: Stabilizer for 2 ton Air Conditioner: 5 KVA***

**Stabilizer for 2 ton Air Conditioner: 5 KVA**

**Application :** 2 TON AC

**Rating :** 5 KVA

**Input voltage(volts) :** 110-280

**Output voltage (volts) :** 220-240

**Time delay(Min) :** 10-15secs

**High vol.c/o(volts) :** 270

**Low vol.c/o(volts) :** 110

**Cabinet housing :** M.S | **Packing inner :** Blister

**Warranty :** 3 Year Comprehensive Onsite Warranty (minimum)

**Item No.: ETS - 12**

***Technical Specification: Firewall***

<b>Sr.No</b>	<b>Specifications</b>	
1	<b>Brand</b>	Cisco/ Sonic Wall / Forti Gate
2	<b>Firewall throughput</b>	Up to 750 mbps or higher
3	<b>Concurrent sessions</b>	10,000
4	<b>Ports</b>	5 fast Ethernet upgradeable to gigabit
5	<b>Security</b>	3DES/AES
6	<b>Additional features</b>	Content, URL filtering, SPAM filtering, VPN etc.
7.	<b>Warranty</b>	3 years Comprehensive onsite warranty (minimum)

**Item No.: ETS - 13**

***Technical Specification: Unmanaged switch***

Minimum 8 port unmanaged fast / gigabit Ethernet Switch



# TECHNICAL SPECIFICATIONS

## 1.0 AIR QUALITY MONITORINGS STATION CONTAINER

**1.1 Monitoring Station:** is designed for housing the ambient air quality monitoring instruments to protect them from dust and heat. Temperature and Humidity sensors shall be installed in the housing for checking the humidity and temperature inside the station. Three Nos. 19" racks shall be installed inside the station so that the analysers are easily accessible from front & back for calibration and maintenance.

**1.2 Dimensions:** Inside length: Approx. 4200 mm  
Inside width: Approx. 3500 mm  
Inside height: Approx. 2500 mm

**1.3 Frame:** All the material used for the construction of the floor, frame, roof frame etc, the 4 corner posts and 8 integrated, reinforced container corners should be of metal. The exterior panel of the container shall be made of pre-coated MS Sheet of approved colour shade. All other steel parts should be hot dipped galvanized having minimum rate of galvanisation of 275 gram per square meter. All joints of like metal such as steel-to-steel or aluminium-to-aluminium shall be protected against corrosion by liberal application of joining compound. All joints of dissimilar metals such as steel to aluminium shall be protected against corrosion due to galvanic action by liberal application of dielectric compound as well as jointing compound on both mating surfaces. For lifting / fixing the container, International Standard eyebolts should be provided at the corners.

**1.4 Paneling:** The outer paneling will be of 1.2 mm of Pre-coated MS sheet to withstand external impacts and abrasions. Outer side of the MS Sheet i.e. exposed face of the sheet, shall be permanently colour coated with silicon modified polyester coating of dry film thickness (DFT) 20 micron (min.) of approved colour shade over primer. Inner face of the sheet shall be provided with suitable pre-coating of minimum 7 micron off-white colour. The inner paneling will be of PVC coated 2 mm thick aluminium sheet, fixed over an inlay of 4 mm marine plywood. 100 mm thick polyurethane insulation will be used between the outer and inner walls (Pre-coated MS sheet and Marine plywood) as insulating material. Z spacers if required shall be made out of at least 2 mm thick galvanized steel sheet of grade 275 as per IS:277

**1.5 Floor:** The floor will be laid in frame of 600 x 600 mm centre to centre with 50 x50 x 6 mm MS angle. The floor surface will be of 19 mm marine plywood covered with robust quality Vinyl flooring, 2 mm thick of approved colour. The floor should be of acid and alkaline resistant, waterproof, easily cleanable / washable. Bottom plate of thickness 2 mm hot dipped galvanized MS Plate shall be provided.

**1.6 Outer Door:** One door of size approx. 2000 x 900 mm will be provided at the front side (L = 4200 mm) of the station with isolated 3 – point locking & door handle flush fitted.

35

**1.7 Electric Power Supply Box:** Three - phase (3 Ø) electrical wiring will be laid in ducts. Copper wiring of appropriate gauge will be used. The terminal board should be mounted in a central power distribution box. Over voltage protection for each phase shall be provided along with the lightning arrestor. 2 Nos. Emergency cut off switch & Thermostat switch (35<sup>0</sup> C) for power disconnection, 6 free sockets and 3 fluorescent lamps for lighting will be provided.

The station shall be properly grounded with chemical earthing or as per BIS Standards with proper plate and only copper strip at-least on 2 corners (diametrically opposite). One three phase energy meter (Digital Type) shall be installed. Weatherproof cubicles / enclosure for housing of MCB / TP & N Switch of main power termination (outside shelter) and weatherproof telephone junction box for terminations of telephone line are to be provided. Proper earthing for telescopic mast of meteorological system shall be provided. There should be conduction between the telescopic mast of the meteorological system and the station. The guy ropes or wires shall be provided for supporting the mast.

**List of Consumables:**

All Fuses	:	02 set
Lightning arrestor	:	02 set
Emergency Switch	:	02 pcs
Thermostat	:	01 pc

**1.8 The housing** will be partitioned as per drawing to create space for storing of gas cylinders, Meteorological mast & UPS. The size will be 2000 x 1400 x 2300 mm. A lockable door of size 900 x 2000 mm along-with 3 – Point locking system shall be provided on the outer wall of the housing. A 300 mm, single-phase (230 volts ± 10 volts AC and 50 Hz ± 3%) exhaust fan with safety grills will be provided. Mounting brackets in 2 levels for fixing of at-least 06 (six) gas bottles should be provided. The internal lights of the housing should be **sensor based**.

Air conditioners shall be mounted on proper rust proof supporting structures with rubber blocks to avoid vibration of structures. Proper caging / grill should also be provided for the safety of ACs. Sun shades for external AC units shall be provided with fabricated pre-coated MS sheet (same as monitoring station) with supporting arrangements. AC unit’s external piping shall be placed in GI trays. Cable trays fixed on exterior wall shall be covered with pre-coated MS sheet, of same colour shade of monitoring station. Roof top sheet to be levelled and sloped properly. Rain water spout shall be fixed at top with rain water down pipe at two corners. The external lights of the station should be **Solar operated**.

**1.9 Station Furnishing:**

- (i) 19" racks – 3 Nos.
- (ii) Fire extinguishers – 2 Nos.
- (iii) Furniture:
  - a) Material - Furniture made of water resistant laminated board
  - b) Cupboard – As per drawing
  - c) Working table – Powdered coated MS frame size 1400 x 900 x 750 mm (w x d x h) and top 19 mm thickness Board
  - d) Revolving tilting chair – 2 Nos.
- (iv) Miscellaneous
  - a) The exhaust gases from the analyser should be collected and discharged by a common exhaust pipe and vented.

- b) Folding aluminium ladder for roof access
- c) Thermostat for measuring the temperature of the station
- d) Hygro Meter for measurement of Humidity inside the station
- e) Mounting bracket for the ladder
- f) No smoking stickers
- g) Vacuum cleaner of reputed make with minimum 100 watt power
- h) Tool Kit having following tools:
  - 1. One screw driver set
  - 2. One multi-meter (Philips, Mico make)
  - 3. One box spanner set
  - 4. One D spanner set
  - 5. One watch maker set
  - 6. One Hammer set
  - 7. One precision screw driver set
  - 8. One pliers set
  - 9. One Tong tester
- i) One Emergency LED Cluster light
- j) Sign boards along-with logo of Central Pollution Control Board, Delhi / State Pollution Control Board, to be embedded with size 1500 x 900 mm on the front of the container and on the two side of the container, The name of the Station i.e. Continuous Ambient Air Quality Monitoring Station, ( Location) both in English and Hindi or local language to be inscribed. The Signs boards to be mounted on the station with proper spacers.

#### 1.9.1 Security Cabin (Optional)

A 4 feet x 4 feet wooden / Paneled security cabin with chair and small folding table for security guard with covered over head selves to be provided separately with the station container.

#### 1.9.2 Container Foundation (RCC)

L X W 6000 x 6000 mm

Height 300 mm from ground

**Pillars:** Nine concrete pillars of 300 mm above the ground level and below the ground level with 200 x 200 mm beam and between pillar bricks to be used for filling the space. Outer wall of the foundation to be plastered with 1:4, Cement : Sand ratio and same has to be painted with weather proof coat.

**Top of the platform:** RCC 150 mm with concrete ratio of 1:1:2 and to plastered and painted with weather proof paint.

**Staircase:** Staircase to approach the main door of the container and the UPS / Gas room door in the side to be provided and each step should not be more than 150 mm

## **2.0 AIR CONDITIONER**

- 2.1 Type: 3 Nos. split type, roof mounted of 5 star rating with an automatic timer. Separate Voltage stabilizer will be provided with each unit.
- 2.2 Capacity: 2.0 Ton (2 Nos.) and 1Ton (1 No.). The indoor units should be running alternately at an interval of four hours with timer control and the temperature inside the station should be maintained at 25<sup>0</sup> C inside during peak summer months.
- 2.3 Nominal Cooling: Btu /hr – 24000, Kcal / hr: 6000
- 2.4 Fan type: Propeller Fan
- 2.5 Fan Motor type: Permanent Split Capacitor, 1/8 Horse power
- 2.6 Control Type: Remote
- 2.7 Compressor: Reciprocating
- 2.8 Refrigerant: Eco Friendly
- 2.9 Power supply: 230 volts  $\pm$  10 volts AC and 50 Hz  $\pm$  3%.

## **3.0 ON LINE UNINTERRUPTED POWER SUPPLY (UPS)**

**3.1** Single phase 10 kVA UPS along with Automatic Delayed Restoration Device (ADRD) with 1 hour backup in full capacity should be provided for the smooth operation of one 2 Ton capacity split AC at the station.

<u>3.1.1</u>	<u>Capacity</u>		<u>:</u>	<u>10.0 Kva</u>
<u>3.1.2</u>	<u>Technology</u>		<u>:</u>	<u>PWM using IGBT / MOSFETS</u>
<u>3.1.3</u>	<u>Crest Factor</u>		<u>:</u>	<u>More than 3: 1</u>
<u>3.1.4</u>	<u>Input</u>	<u>Voltage</u>	<u>:</u>	<u>230 V AC</u>
		<u>Voltage Range</u>	<u>:</u>	<u><math>\pm</math> 25%</u>
		<u>Frequency</u>	<u>:</u>	<u>50 Hz <math>\pm</math> 3%</u>
<u>3.1.5</u>	<u>Output</u>	<u>Voltage</u>	<u>:</u>	<u>230 V AC</u>
		<u>Voltage regulation</u>	<u>:</u>	<u><math>\pm</math> 1%</u>
		<u>Frequency</u>	<u>:</u>	<u>50 Hz</u>
		<u>Frequency regulation</u>	<u>:</u>	<u><math>\pm</math> 0.01%</u>
		<u>Waveform</u>	<u>:</u>	<u>Pure sine wave</u>

3.1.6	Battery	Battery type	:	<u>Sealed maintenance free</u>
		Back up time	:	<u>1 Hour at full load</u>
		Battery Capacity	:	<u>For required backup time</u>
		Recharge time	:	<u>5 hrs to 90% after complete discharge</u>
3.1.7	Distortion		:	<u>Less than 1% on linear load</u>
3.1.8	Power factor		:	<u>0.9 to 1</u>
3.1.9	Indicator		:	<u>L.E.D. – Battery Charge, Load level, on Line, over load, on battery, replace battery</u>
3.1.10	Alarm		:	<u>Audible alarm for battery backup, battery low, and fault</u>
3.1.11	Protections	Surge	:	<u>Surge suppression meets BIS or International standard</u>
		Overload	:	<u>Fuse &amp; current limited</u>
		Short circuit	:	<u>Fuse &amp; current limited &amp; cut – off</u>
		Battery low cut – off	:	<u>No battery drain after cut - off</u>
3.1.12	Overload Capacity		:	<u>110% for continuous load</u>
3.1.13	Efficiency		:	<u>More than 90%</u>
3.1.14	Environment	Operating Temperature	:	<u>0 – 50<sup>0</sup> C</u>
		Operating Humidity	:	<u>10% to 95% (Non condensing)</u>
		Audible Noise	:	<u>Less than 45 db (at 1 meter)</u>

**3.2** Single phase 5 KVA UPS along with Automatic Delayed Restoration Device (ADRD) with 2 hours backup in full capacity should be provided for the smooth operation of Analyzers and peripherals at the station:

3.2.1	Capacity		:	<u>5.0 kVA</u>
3.2.2	Technology		:	<u>PWM using IGBT / MOSFETS</u>
3.2.3	Crest Factor		:	<u>More than 3: 1</u>
3.2.4	Input	Voltage	:	<u>230 V AC</u>
		Voltage Range	:	<u>± 25%</u>
		Frequency	:	<u>50 Hz ± 3%</u>
3.2.5	Output	Voltage	:	<u>230 V AC</u>
		Voltage regulation	:	<u>± 1%</u>
		Frequency	:	<u>50 Hz</u>
		Frequency regulation	:	<u>± 0.01%</u>
		Waveform	:	<u>Pure sine wave</u>
3.2.6	Battery	Battery type	:	<u>Sealed maintenance free</u>
		Back up time	:	<u>2 Hours at full load</u>
		Battery Capacity	:	<u>For required backup time</u>
		Recharge time	:	<u>5 hrs to 90% after complete discharge</u>
3.2.7	Distortion		:	<u>Less than 1% on linear load</u>
3.2.8	Power factor		:	<u>0.9 to 1</u>
3.2.9	Indicator		:	<u>L.E.D. – Battery Charge, Load level, on Line, over load, on battery, replace battery</u>
3.2.10	Alarm		:	<u>Audible alarm for battery backup, battery low and fault</u>

<u>3.2.11</u>	<u>Protections</u>	<u>Surge</u>	:	<u>Surge suppression meets BIS or International standard</u>
		<u>Overload</u>	:	<u>Fuse &amp; current limited</u>
		<u>Short circuit</u>	:	<u>Fuse &amp; current limited &amp; cut – off</u>
		<u>Battery low cut – off</u>	:	<u>No battery drain after cut - off</u>
<u>3.2.12</u>	<u>Overload Capacity</u>		:	<u>110% for continuous load</u>
<u>3.2.13</u>	<u>Efficiency</u>		:	<u>More than 90%</u>
<u>3.2.14</u>	<u>Environment</u>	<u>Operating Temperature</u>	:	<u>0 – 50<sup>0</sup> C</u>
		<u>Operating Humidity</u>	:	<u>10% to 95% (Non condensing)</u>
		<u>Audible Noise</u>	:	<u>Less than 45 db (at 1 meter)</u>

#### 4.0 SPECIFICATIONS OF SAMPLING SYSTEM

A suitable sampling system as specified by USEPA having 10 ports manifold and fitted with a suction pump to draw ambient air. System duly equipped with moisture removal systems should be provided for sampling of ambient air separately for gaseous and dust measurement.

Gases sampling system:

- |     |                                |   |
|-----|--------------------------------|---|
| 4.1 | Height of the sampling system: | Approx. 1.0 meter above the roof            |
| 4.2 | Roof entry cut out:            | Stainless Steel                             |
| 4.3 | Conduit:                       | Stainless Steel                             |
| 4.4 | Inner sampling system:         | Borosilicate glass                          |
| 4.5 | Sampling head:                 | Stainless Steel                             |
| 4.6 | Manifold:                      | 10 port for tubes 6 x 1 mm, self-tightening |

#### 5.0 SPECIFICATIONS OF 19" RACK

Suitable 19" Rack cabinet to accommodate all analyzers, calibrators, Zero air generators, data logger etc. The dimension of the rack without doors, with aluminum section and rear of 2 mm steel sheet, one removable roof plate, fitted with 4 filling eyebolts. Four roof fixing screws included in package to replace the lifting eyebolts. One gland plate three part, one pair of 475 mm (19") mounting angles depth adjustable in 25 mm pitch pattern fitted on two fixing angles approximately 150 mm unit from the front standard. To accommodate panel width of 19" size: width = 600 mm, Height = 1400 mm and Depth = 800 mm. The 19" racks should be screwed to the floor of the station with anti-vibration pads. All nuts and bolts shall be cadmium coated.

## 6.0 METEOROLOGICAL MONITORING SYSTEM

The meteorological instrumentation should be interfaced directly with the Data Acquisition System after passing through a lightning protection isolation box. A crank - up telescopic 10 meters tower should be erected for mounting of meteorological sensors. The relative humidity and solar radiation sensors should be mounted on the tower. All sensors should be NIST (National Institute for Standards and Technology, USA) traceable. The specifications are follows:

### (a) WIND SPEED

Range (Operation)	:	0 – 60 m/s or better
Sustainability	:	Up-to 75 m/sec
Accuracy	:	± 0.5 m/sec or better
Resolution	:	0.1 m/sec
Sensor Type	:	Ultrasonic
Threshold	:	0.5 m/sec or less
Response time	:	10 sec or better

### (b) WIND DIRECTION

Range	:	0 – 359 degree
Accuracy	:	± 5 degree or better
Resolution	:	1 degree
Sensor type	:	Ultrasonic
Threshold	:	0.5 m/sec or less
Response time	:	10 sec or better

### (c) AMBIENT TEMPERATURE

Range	:	-10 ° C to 60 ° C
Accuracy	:	± 0.2 ° C or better (with radiation shield)
Response	:	10 seconds in still air
Sensor type	:	Resistance type
Response time	:	10 sec or better

### (d) RELATIVE HUMIDITY

Range	:	0 to 100% RH
Accuracy	:	± 3.0 % or better
Resolution	:	1%
Sensor type	:	Capacitive / Solid State
Response Time	:	10 sec or better

### (e) SOLAR RADIATION

Range	:	0 to 1500 W/m <sup>2</sup> or better
Accuracy	:	± 5.0 % or better
Resolution	:	5W/m <sup>2</sup>



**(f) RAINFALL**

Range	:	0.2 mm to 100 mm /hr
Accuracy	:	± 5% or better
Resolution	:	0.2 mm
Sensor type	:	Tipping bucket rain gauge or any other suitable sensor
Response Time	:	10 sec or better

**(g) TELESCOPIC CRANK – UP METEOROLOGICAL TOWER**

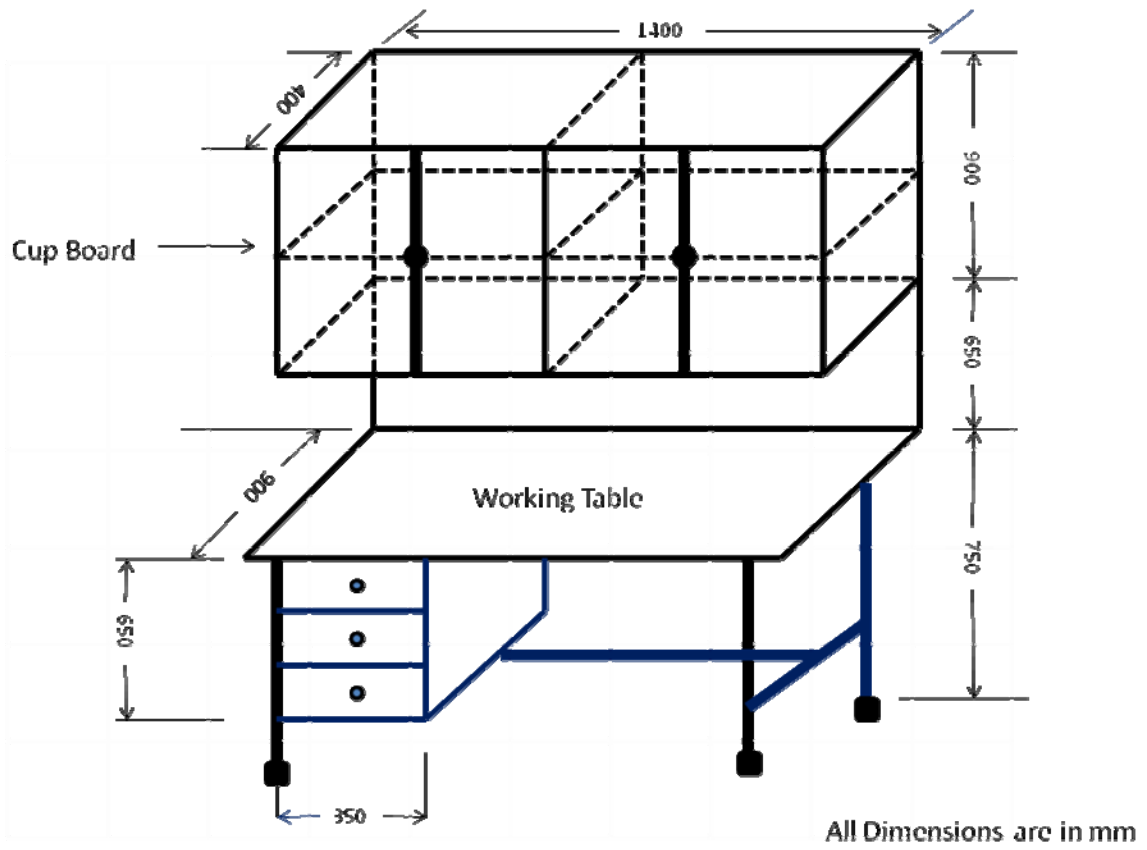
The wind speed, wind direction, temperature, relative humidity and solar radiation sensors are to be mounted on the Meteorological Tower. The tower is to be a free standing four section telescopic tower provided with a hand crank to raise and lower the instruments mounted on the tower. Specifications are as follows:

Extended Height	:	10 meters
Retracted Height	:	2 metres
Wind load Limit	:	0.7896 sq. m. (8.5 sq. ft) at 50 mph
Number of Sections	:	4
Construction material	:	Galvanised steel or aluminium

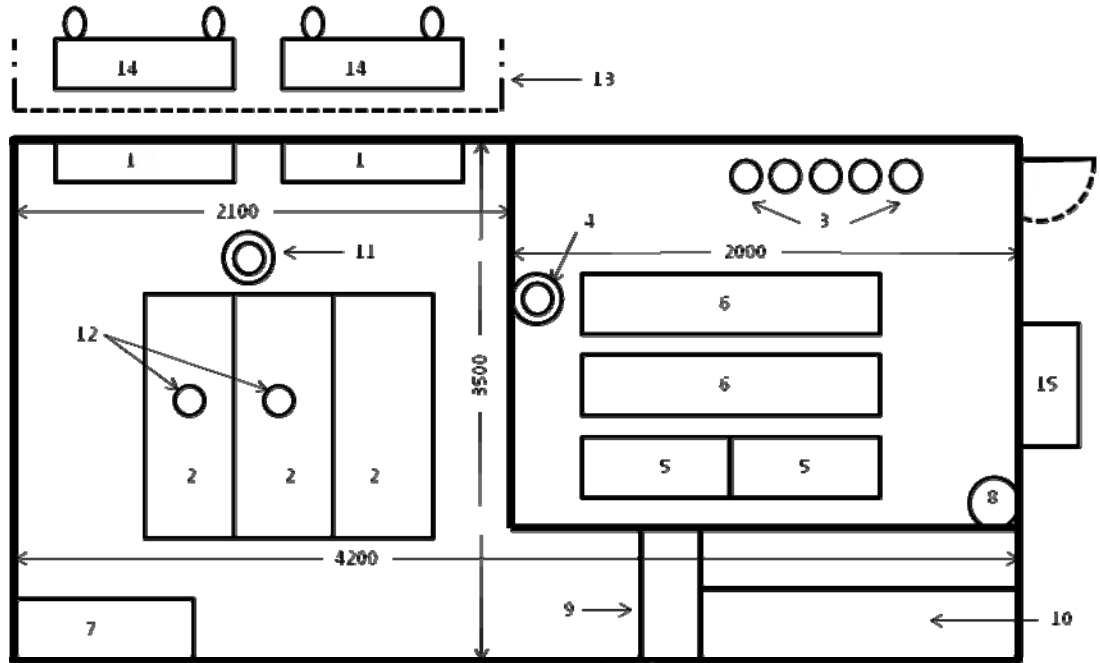
Note: Humidity and temperature sensors are to be supplied with weather and thermal radiation shield made of anodized aluminium and sensor should be supplied with all necessary cables, connector and mounting arrangements as required.

**(h) SPECIFICATIONS OF DATA LOGGER**

Data logger with 8 analog, 24 digital inputs and 18 bit resolution. Ability to log channels at different intervals and should have capability of averaging and displaying real time data and averaged data over a period of 1 min, 10 min, ½ hr, 1 hr, 4 hrs, 8 hrs, 24 hrs, 1 month and year. Communication between data logger and computer using standard multi drop RS 232 Connector. The data logger should have internal battery with charger. The data logger should support PSTN line or Internal GSM modem for data transfer.



**Drawing of Cup Board and Working Table**



- |                                    |  |
|------------------------------------|--|
| 1. Roof Mounted Split AC           | 9. Working Table   |
| 2. 19" Rack                        | 10. Racks for spare parts  |
| 3. Gas Bottles                     | 11. Ambient Air Sampling System                                  |
| 4. Mast for Meteorological Sensors | 12. Dust Sampling System (PM <sub>2.5</sub> & PM <sub>10</sub> ) |
| 5. Battery Box for UPS             | 13. Sun Shed   |
| 6. UPS Unit (5 and 10 kVA)         | 14. Air Conditioning unit  |
| 7. Electric supply Box             | 15. UPS Room AC (1 Ton Capacity)                                 |
| 8. Exhaust fan                     |  |

All Dimensions are in mm

**Drawing of Continuous Ambient Air Quality Monitoring Station**

## CHECK LIST FOR THE BIDDER

1. Bid on original Tender form only.
2. Separate EMD against each item.
3. Earnest money or necessary documentary proof for exemption of earnest money with the part 1 of the bid.
4. Price bid must be Part II of the bid in the form provided at Annexure II of the tender document.
5. The Basic Price, Taxes, Packing, Forwarding, Handling, Transportation Insurance, Installation charges etc. must be quoted clearly. Do not use vague terms like "As Actual, Approximately etc".
6. Do not use the terms As per Specification of Tender Documents' in respect of instruments. There should be proper write up of production quoted for supported with printed leaflets literature.
7. In case of bidders desirous to quote more than one item, separate envelop should be submitted (technical & price bid) for individual item superscribing item code number and name.
8. **With technical bid, the bidder should provide a copy of the price bid format (giving details of the items, accessories, spares etc.) without specifying the price other than one mentioned in annexure-II of this tender document.**