



Central Pollution Control Board

Regional Directorate (South), A Block, Nisarga Bhavan, I and II Floors
7th D cross, Thimmaiah Road, Shivanagar, Bengaluru - 560079
Tel: 080 -23233739, 23233827, Fax: 080-23234059
Email: cpcbszo@yahoo.com, zobangalore.cpcb@nic.in

Notice Inviting Tender Through Online: e-Portal

Ref: Tech-77/Stack/kit/RDS/ 2017-2018/

29th November 2017

Sub: Quotation for Supply of Stack Monitoring Kit along with all Accessories

Dear Sir/Madam,

1. Online bids are invited on single stage two bid system for Supplying of Stack Monitoring Kit along with all Accessories by Central Pollution Control Board (CPCB) Regional Directorate South, located at A Block, Nisarga Bhavan, I and II Floors, 7th D cross, Thimmaiah Road, Shivanagar, Bengaluru – 560079.
2. Bids shall be submitted through online only at CPPP website: <https://eprocure.gov.in/eprocure/app>. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document. One manufacturing unit having business relationship shall submit not more than one tender.
3. Tenderer could download the tender from the CPCB website www.cpcb.nic.in or Central Public Procurement Portal (CPPP) website <https://eprocure.gov.in/eprocure/app>, shall not tamper/modify the tender form including downloaded price bid template in any manner. In case if the same is found to be tampered/modified in any manner, tender will be completely rejected.
4. Intending Tenderers are advised to visit regularly on CPPP website <https://eprocure.gov.in/e-procure/app> till closing date of submission of tender for any corrigendum /addendum/ amendment.
5. Tender documents may be downloaded from CPCB website www.cpcb.nic.in or CPPP site <https://cprocure.gov.in/eprocure/app> as per the schedule as given in **Critical Date Sheet** as under.

Sl.No.	CDS- Details of Schedule	Day	MM	Year	Hr	Mins
1.	Published Date	30	11	2017	12	00
2.	Bid Documents Down Load Start Date	30	11	2017	14	00
3.	Bid Documents Submission Start Date	30	11	2017	14	00
4.	Bid Documents Submission End Date	29	12	2017	17	00

5.	Bid Opening Date	03	01	2018	11	00
6.	Bid Opening Address	Central Pollution Control Board Regional Directorate (South) Nisarga Bhavan, 7th D cross Thimmaiah Road, Shivanagar Bengaluru - 560079				

6. The tender shall be submitted in Two Parts, viz., Technical Bid and Price Bid. The detailed technical specification of Stack Monitoring Kit along with all Accessories are given in Annexure-I. Technical Bid is to be submitted as per Annexure –II and Financial Bid as per Annexure-III. All the pages of Technical Specifications, Supporting documents/ Brochures of bid submitted must be signed and sequentially numbered by the bidder irrespective of nature of content of the documents before uploading. The offers submitted by Telegram/Fax/email shall not be considered.
7. The Tenderer shall also submit same documents of hard copies of technical bid, which have been uploaded in the e-portal to this office before the last date of submission as mentioned in the schedule of Critical Date Sheet.
8. For any technical clarification Sh. K Karunagaran, STS (Mob: 09844030141) may be contacted for further information.

Yours Sincerely

एस. सुरेश
29/11/2017

(S.Suresh)

Regional Director

Encl: Annexure-1 Technical specifications, Annexure-II Technical Bid Form and Annexure-III Financial Bid Form (Page No 3 to 12)

Copy To:

1. Notice Board, CPCB, Bengaluru -560079
2. Incharge and AD, IT Division, CPCB, Delhi – with a kind request to upload the document in online e-portal and CPCB website, pl.



Central Pollution Control Board

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Scope of work: Supply of Stack Monitoring Kit along with Accessories

Specification for Stack Monitoring kit		
1.	Stack Monitoring Kit To collect Isokinetic sampling with reference to USEPA standard methods and traceable to NIST	1. Compact panel comprising of A. Digital Differential Pressure Sensor or Velocity meter for Pitot tube B. Rota Meters of low/high range C. Digital temperature sensors, indicators and thermocouple D. Digital Pressure indicators and sensors E. Digital Timer with indicator and F. Connectors for vacuum and velocity 2. Pitot Tube and its connecting tubes 3. Sampling probe, hoses, thimble holder with nozzles, 4. Sampling Vacuum Pump 5. Dry gas meter 6. Heated Filter and Sampling Box
1A	Digital Differential Pressure Sensor or Velocity meter having dual range using Pitot tube	In case of Differential pressure meter: Measuring range is 0-200mmHg and the read out supposed to have units like mm WC, mmHg, M/sec, M/hr, Ft/sec and Ft/hr In case of velocity meter: Low Range 0 to 10 m/sec and High range 0 to 30 m /sec Velocity meter should able to measure starting from 0.5 m/sec with the accuracy of $\pm 2\%$
1B	Rota Meters of Low and High range	a. Range: 0 to 60 lpm for particulate monitoring b. Range: 0 to 3 lpm for gaseous monitoring. The integrated scale on both the rota meters should able to read 0.5 lpm accurately and accordingly the scale should be marked on the rota meter
1C	Digital temperature sensors, indicators and thermocouple	a. Digital temperature sensor (K- type RTD) mounted in the flue gas stream inside the panel for measuring 0-60°C.

		<p>b. Thermocouple of K-type RTD capable to measure 0-600°C with the accuracy of $\pm 0.5^\circ\text{C}$</p> <p>Digital indicators for both sensors of the thermocouple should be operated by toggle switch so as to read the digital outputs of both sensors</p> <p>The length of Thermocouple 1.0 meter and 2.0 meter</p>
1D	Digital absolute pressure sensors and indicators	<p>a. Digital Absolute Pressure Sensor capable to measure 400-800mmHg mounted on the panel</p> <p>b. Digital Absolute Pressure Sensor capable to measure 0-200 mmWC and to show digital readout mounted on the panel box in the both gaseous and particulate gas stream</p>
1E	Digital Timer with indicator	<p>Displays countdown/ count-up time/ stopwatch time, alarm time and time of day and date. Nano Counter includes memory feature for repetitive use, large display. Time and stopwatch readings are traceable to NPL or NIST quality and accuracy. Whole assemble of timer should be fitted in the panel with Water and Shock-Resistant</p>
2.	Pitot Tube and its connecting tubes	<p>Pitot tube shall be of "S type" fabricated from SS 304 or equivalent grade. The construction feature should be as per United States Environmental Protection Agency (EPA) regulation, Method 2, The construction feature shall be such that the coefficient of the pitot tube is above 0.85. The total lengths of pitot tube are 1.2 and 2.5 meters.</p>
3.	Sampling probe, hoses, thimble holder with nozzles,	<p>Sampling probe (not less than 15 mm Internal diameter (ID) and nozzle of various sizes shall be fabricated from SS 304 tube</p> <p>Length of probe = 1.2 and 2.5 mtrs</p> <p>Length of Hoses = 2, 5, 15, 30 mtrs</p> <p>Size of Nozzles = 3, 6, 9, 12 mm</p> <p>Optional: Rates for Glass inner lined sampling probe may be quoted additionally</p>
4.	Sampling Vacuum Pump (High Rate Suction)	<p>Monoblock, Dry Rotary Type coupled with half H.P Motor operated with 230VAC, 50 HZ</p> <p>Free Flow > 100 lpm</p> <p>Load Flow at least not less than 60 lpm</p> <p>Maximum Vacuum > 600 mmHg</p> <p>Vacuum Pump should have water proof housing provided with ON/Off Switch and indicators</p> <p>Vacuum Pump should be handy type, light weight and easy to carry and facility to lift the pump assembly to the porthole for stack monitoring</p>
5.	Dry gas meter	<p>Measuring gas volume and flow rates Capacity to read up to 60 lpm 0.10 cu.ft. per revolution 0.001 cu. ft. resolution</p> <p>The sampling train shall have the facility for measuring</p>

		temperature and static pressure. Minimum readout is 0.001 cubic meters.
6.	Sampling Box	Sampling box shall be fabricated with aluminium/mild steel/fiber glass sheets with oven-baked stove–enamel finish. It should have suitable arrangement for housing Four number 100 ml capacity impingers Separate channel wall should be provided to keep ice at the bottom to cool down the impingers during sampling. Electrical operated peltium cooling is desirable.
7.	Accessories	All accessories, connectors, flanges, tube, peruls, screws and tools are to be supplied adequately All sampling tubes and its connectors are to be provided along with additional spares Electrical cables, Batteries and any other interfacing accessories required for conducting stack monitoring should be provided
8.	Portable Metal box	Portable Metal box of suitable size coated with epoxy paint as to equip thermocouple, pitot tube, sampling pipe, sample holders, nozzles and required sets of tools should able keep inside the box
9.	Train leakages	The sampling train shall be tested for leakage by plugging the inlet. The rotameter shall not give a reading beyond 5 lpm when the flow has been set at 100 lpm. The dry gas meter shall also give a reading of less than 5 percent of the air flow
10.	Suitability or Traceability	The complete set of equipment should meet the specifications and perform to the NIST or USEPA standard specified accuracy and quality

General Terms and Conditions

Sealed Quotation in two bid system are invited for the Supply of complete set of stack monitoring kit along with all accessories to carry out the emission monitoring in the stack and the same should reach this office on or before 29th December, 2017, 17 Hrs.

1. Supplier shall quote all the accessories required to carry out stack monitoring and it will be treated as one single package and shall quote rates separately.
2. Submission of bid is through online e-portal only. The offers submitted by email, fax, post or any other mode other than e-portal submission shall not be considered.
3. Supplies of items, commissioning and demonstration of the functions have to done at the office of Central Pollution Control Board, Regional Directorate South , Bengaluru.

4. Rates shall be quoted in Indian Rupees and applicable taxes and other charges shall be mentioned separately. No other charges will be accepted later other than the mentioned in the financial quote.
5. Specifications meeting the requirements shall be considered for technical comparison and preference will be given to the additional features and based on the product performance in the market/SPCBs/CPCB.
6. The warranty of each item should be clearly mentioned. The validity of bid is 120 days from the date of financial bid opened.
7. If any items found to be substandard or not meeting the specification mentioned in the quote during the supply of material, the supply order shall be cancelled without any prior notice.
8. In the event of any dispute, the decision of Chairman, Central Pollution Control Board will be the final and binding upon both the parties.

एस. सुरेश
29/11/2017

(S.Suresh)
Regional Director

Technical Bid Submission Form for Stack Monitoring Kit

Sl.No	Items	Specification/Description of items	Statement of Compliance
1.	<p>Stack Monitoring Kit</p> <p>To collect Isokinetic sampling with reference to USEPA standard methods and traceable to NIST</p>	<p>Compact panel comprising of</p> <ol style="list-style-type: none"> a. Digital Differential Pressure Sensor for calculating Velocity meter using Pitot tube Or Direct measurement of Velocity b. Rotameters of low 30 lpm/high range 60lpm with readability of 0.5 lpm scale c. Panel temperature sensors along with digital, indicators d. Digital or Analog Pressure gauges 0-200 mmWC and 400-800mmHg e. Digital Timer with indicator which displays countdown/ count-up time/ stopwatch time, alarm time and time of day and date f. Connectors for vacuum/sampling lines 	
2.	<p>Digital temperature sensors, indicators and thermocouple</p>	<ol style="list-style-type: none"> a. Digital temperature sensor (K- type RTD) mounted in the flue gas stream inside the panel for measuring 0-60°C. b. Thermocouple of K-type RTD capable to measure 0-600°C with the accuracy of $\pm 0.5^\circ\text{C}$ <p>Digital indicators for both sensors of the thermocouple should be operated by toggle switch so as to read the digital outputs of both sensors</p> <p>The length of Thermocouple 1.0 meter and 2.0 meter</p>	
3.	<p>Pitot Tube and its connecting tubes</p>	<p>Pitot tube (Extendable length) shall be of "S type" fabricated from SS 304 or equivalent grade. The construction feature should be as per United States Environmental Protection Agency (EPA) regulation, Method 2, The construction feature shall be such that the coefficient of the pitot tube is above 0.85. The total lengths of pitot tube are 1.2 and 2.5 meters.</p>	
4.	<p>Sampling probe, hoses, thimble holder with nozzles,</p>	<p>Sampling probe (not less than 15 mm Internal diameter (ID) and nozzle of various sizes shall be fabricated from SS 304 tube</p> <ol style="list-style-type: none"> a. Length of probe = 1.2 and 2.5 mtrs b. Length of Hoses = 2, 5, 15, 30 mtrs <p>Size of Nozzles = 3, 6, 9, 12 mm</p>	

		Optional: Rates for Glass inner lined sampling probe may be quoted additionally	
5.	Sampling Vacuum Pump (High Rate Suction)	Monoblock, Dry Rotary Type coupled with half H.P Motor operated with 230VAC, 50 HZ Free Flow > 100 lpm Load Flow at least not less than 60 lpm Maximum Vacuum > 600 mmHg Vacuum Pump should have water proof housing provided with ON/Off Switch and indicators Vacuum Pump should be handy type, light weight and easy to carry and facility to lift the pump assembly to the porthole for stack monitoring	
6.	Dry gas meter	Measuring gas volume and flow rates Capacity to read up to 60 lpm 0.10 cu.ft. per revolution 0.001 cu. ft. resolution The sampling train shall have the facility for measuring temperature and static pressure. Minimum readout is 0.001 cubic meters.	
7.	Sampling Box	Sampling box shall be fabricated with aluminium/mild steel/fiber glass sheets with oven-baked stove-enamel finish. It should have suitable arrangement for housing a. Four number 100 ml capacity impingers b. Separate channel wall should be provided to keep ice at the bottom to cool down the impingers during sampling. c. Electrical operated peltium cooling is desirable.	
8.	Portable Carrying case box	Portable carrying case/box of suitable size coated with epoxy paint as to equip thermocouple, pitot tube, sampling pipe, sample holders, nozzles and required sets of tools should able keep inside the box	
9.	Accessories	All accessories, connectors, flanges, tube, ferules, screws and tools are to be supplied adequately All sampling tubes and its connectors are to be provided along with additional spares Electrical cables, Batteries and any other interfacing accessories required for conducting stack monitoring should be provided	

Signature with date and stamp of the Bidder

Financial Bid Submission Form for Stack Monitoring Kit

SI.No	Items	Description of items	Quoted Unit Price Rs	Total Qty	Total cost	Other applicable Taxes
1.	Stack Monitoring Kit To collect Isokinetic sampling with reference to USEPA standard methods and traceable to NIST	a. Compact panel comprising of b. Digital Differential Pressure Sensor for calculating Velocity meter using Pitot tube Or Direct measurement of Velocity c. Rotameters of low 30lpm/high range 60lpm with readability of 0.5 lpm scale d. Panel temperature sensors along with digital, indicators e. Digital or Analog Pressure gauges 0-200 mmWC and 400-800mmHg f. Digital Timer with indicator which displays countdown/ count-up time/ stopwatch time, alarm time and time of day and date g. Connectors for vacuum/sampling lines				
2.	Digital temperature sensors, indicators and thermocouple	a. Digital temperature sensor (K- type RTD) mounted in the flue gas stream inside the panel for measuring 0-60°C. b. Thermocouple of K-				

		<p>type RTD capable to measure 0-600°C with the accuracy of $\pm 0.5^\circ\text{C}$</p> <p>Digital indicators for both sensors of the thermocouple should be operated by toggle switch so as to read the digital outputs of both sensors</p> <p>The length of Thermocouple 1.0 meter and 2.0 meter</p>				
3.	Pitot Tube and its connecting tubes	<p>Pitot tube (Extendable length) shall be of "S type" fabricated from SS 304 or equivalent grade. The construction feature should be as per United States Environmental Protection Agency (EPA) regulation, Method 2, The construction feature shall be such that the coefficient of the pitot tube is above 0.85. The total lengths of pitot tube are 1.2 and 2.5 meters.</p>				
4.	Sampling probe, hoses, thimble holder with nozzles,	<p>Sampling probe (not less than 15 mm Internal diameter (ID) and nozzle of various sizes shall be fabricated from SS 304 tube</p> <p>a. Length of probe = 1.2 and 2.5 mtrs</p> <p>b. Length of Hoses = 2, 5, 15, 30 mtrs</p> <p>Size of Nozzles = 3, 6, 9, 12 mm</p> <p>Optional: Rates for Glass inner lined sampling probe may</p>				

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6.	Dry gas meter	<p>Measuring gas volume and flow rates</p> <p>Capacity to read up to 60 lpm 0.10 cu.ft. per revolution 0.001 cu. ft. resolution</p> <p>The sampling train shall have the facility for measuring temperature and static pressure.</p> <p>Minimum readout is 0.001 cubic meters.</p>				
7.	Sampling Box	<p>Sampling box shall be fabricated with aluminium/mild steel/fiber glass sheets with oven-baked stove–enamel finish.</p> <p>It should have suitable arrangement for housing</p> <p>a. Four number 100 ml capacity impingers</p> <p>b. Separate channel wall should be</p>				

		<p>provided to keep ice at the bottom to cool down the impingers during sampling.</p> <p>d. Electrical operated peltium cooling is desirable.</p>				
8.	Portable Carrying case box	<p>Portable carrying case/box of suitable size coated with epoxy paint as to equip thermocouple, pitot tube, sampling pipe, sample holders, nozzles and required sets of tools should able keep inside the box</p>				
9.	Accessories	<p>All accessories, connectors, flanges, tube, peruls, screws and tools are to be supplied adequately</p> <p>All sampling tubes and its connectors are to be provided along with additional spares</p> <p>Electrical cables, Batteries and any other interfacing accessories required for conducting stack monitoring should be provided</p>				

Signature with date and stamp of the Bidder