



**NATIONAL CENTER FOR COMBUSTION RESEARCH
AND DEVELOPMENT (NCCRD)
INDIAN INSTITUTE OF TECHNOLOGY MADRAS
CHENNAI – 600036, INDIA**

Ref. No. ICS/11-12/013/DSTX/TSUN

Date: 6 June 2015

Due date: 27 June 2015

Item name: GAS ANALYZER

1. Quotations are invited in duplicate for the items shown overleaf (in Annexure I). The quotations duly sealed and superscribed on the envelope with reference no. and due date, should be addressed to the undersigned so as to reach on or before the due date mentioned above.
2. The quotations should be valid for sixty days from the due date and the period of delivery required should also be clearly indicated.
3. The total cost of the equipment in terms of CIP Chennai should be clearly mentioned.
4. Terms of warranty and guarantee should be explicitly mentioned.
5. Packing and delivery charges, customs and clearance duty should be clearly stated.
6. Goods shall not be supplied without an official supply order.
7. Local firms : Quotations should be for free delivery to this institute. If quotations for ex-godown delivery charges should be indicated separately.
8. Firms outside Chennai: Quotations should be for F.O.R. Chennai. If F.O.R. consignor station, freight charges by passenger train / lorry transport must be indicated. If ex-godown, packing, forwarding and freight charges must be indicated.
9. The rate of sales / general taxes and the percentage of such other taxes legally leviable and intended to be claimed should be distinctly shown along with the price quoted. Where this is not done, no claim for sales / general taxes will be admitted at any stage and on any ground whatsoever. The taxes leviable should take into consideration that we are entitled to have Concessional Sales Tax (CST) applicable to non-government educational institutions run with no profit motive for which a concession sales tax certificate will be issued at the time of final settlement of the bill.
10. Payment : Specify the mode of payment and if advanced payment has to be made. Every attempt will be made to make payment within 30 days from the date of receipt of bill / acceptance of goods, whichever is later.
11. IIT Madras is exempt from payment of excise duty and is eligible for concessional rate of customs duty. Necessary certificate will be issued on demand.
12. IIT Madras has the right to accept the whole or any part of the tender or portion of the quantity offered or reject it in full without assigning any reason.
13. In case of any technical queries/clarifications, please contact Ms. R.S. Preethi, Dept. of Mechanical Engineering, IIT Madras, Chennai, E-mail: preethiastro@gmail.com; Phone: +91-9566048114.
14. The sealed quotation may be sent to

Prof. S. R. Chakravarthy

NCCRD Office

No. 201, Rarefied Gas Dynamics Lab (Behind Aerospace Engineering Dept.)

Chennai – 600036

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Annexure I

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Date: 6 June 2015
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Gas analyser specifications

1. Specifications of Gas analyser for measuring NO_x (low) and CO (High)

Supply quantity required: 1 No.

Quantity to be measured	Measuring Range	Resolution
O ₂	0 to ≥ 20Vol %	≤ 0.1 Vol %
NO (Low)	0 to ≥ 300 ppm	≤ 0.1 ppm
NO ₂	0 to ≥ 300 ppm	≤ 0.1 ppm
CO (High)	0 to ≥ 10,000 ppm	≤ 1 ppm

1. Gas analyser should be capable of making measurements at temperature ≥ 1800°C
2. Power supply should be compatible with Indian standards.
3. The gas analyser should be portable
4. The gas analyser should have a display unit for the measured gases
5. It should be compatible for use with the fuels Methane/LPG
6. Suitable for operating at atmospheric pressure
7. Demonstration and training to be provided
8. Service capability should be available in India
9. Warranty: 1 Year
10. All quantities to be measured should be separate individual sensors and not calculated values.

Note:

- Clarify any technical details before quoting by contacting us
- Give a list of existing installations in India along with contact information of previous buyers

2. Specifications of Gas analyser to measure Hydrocarbons, CO, CO₂, NO (high)

Supply quantity required: 1 No.

Quantity to be measured	Measuring Range	Resolution
O ₂	0 to ≥ 20Vol %	≤ 0.1 Vol %
NO	0 to ≥ 2,000 ppm	≤ 1 ppm
CO	0 to ≥ 10% Vol	≤ 0.01% Vol
CO ₂	0 to ≥ 20 Vol %	≤ 0.01 Vol %
Hydrocarbons	0 to ≥ 10,000 ppm	≤ 1 ppm



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1. Gas analyser should be capable of making measurements at temperature $\geq 1500^{\circ}\text{C}$
2. Power supply should be compatible with Indian standards.
3. The gas analyser should be portable
4. The gas analyser should have a display unit for the measured gases
5. It should be compatible for use with the fuels Methane/LPG
6. Suitable for operating at atmospheric pressure
7. Demonstration and training to be provided
8. Service capability should be available in India
9. Warranty: 1 Year
10. All quantities to be measured should be separate individual sensors and not calculated values.

Note:

- Clarify any technical details before quoting by contacting us
- Give a list of existing installations in India along with contact information of previous buyers

For any technical details please contact

Preethi R S

Phone: +919566048114

Mail: preethiastro@gmail.com