



Indian Institute of Technology Madras
I.I.T.P.O., MADRAS-600 036
DEPARTMENT OF CIVIL ENGINEERING

SPEED POST

Form for Inviting Quotations

Ref.No. CIE/LIGY/2018/Gas Chromatography

Date: 04/10 /2018

DUE DATE: 18.10.2018

To

Dear Sirs,

Quotations are invited for the supply of a "Gas Chromatography" conforming to the specifications given in the enclosed list.

1. The quotation should be submitted under the two-bid system (i.e.) Technical Bid and Financial Bid in two separate envelopes should be enclosed in a single envelop sealed and superscribed on the envelope with the reference No. and due date, should be addressed to the **undersigned so as to reach on or before the due date stipulated above.**
2. The Quotations should be valid for (90) **Ninety days from the due date and the period of delivery** required should also be clearly indicated.
3. If the item is under DGS&D Rate contract No. and the price must be mentioned. It may also please be indicated whether the supply can be made direct to us at the Rate contract price (Please note that we are not Direct Demanding Officers). If so please send copy of the RC.
4. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the Quotations, wherever applicable. Samples if called for, should be submitted free of charges, and collected back at the supplier's expenses.
5. Local Firms : Quotations should be for free delivery to this Institute. If Quotations for Ex-Godown delivery charges should be indicated separately.
6. Firms Outside Madras : Quotations should be for F.O.R. Madras. 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.
7. 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 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.
8. Goods should be supplied carriage paid and insured.
9. Goods shall not be supplied without an official supply order.
10. Payment : Every attempt will be made to make payment within 30 days from the date of receipt of bill / acceptance of goods, whichever is later

Details as per enclosed list.

Yours faithfully


(Dr. LIGY PHILIP)

Note: (i) Quotation should be sent by SPEED POST only or to be delivered directly concerned
(ii) Firms are requested to submit the specifications of their product along with supporting technical Documentation/brochure instead of reproducing the specifications sent by us.

Specification for Gas Chromatography

System should be designed and manufactured under ISO-9001 and should comply with most of international regulatory, safety and electromagnetic compatibility requirement. The chromatography data system should be based on Microsoft Windows operating system for instrument control, data acquisition and data analysis.

General Features of GC

- Instrument should be compatible to computer and software should be Window 8 or latest.
- Basic system with EPC/AFC/PPC control for all gases carrier/detector zone gases
- EPC/ PPC/AFC should provide optimum performance with all types of columns and detectors
- All parameters should be stored as a part of method for better analysis and reproducibility.
- System must have touch screen user interface for easy instrument operation

Gas Flow control

- Must come standard with programmable pneumatic control.
- Pneumatic program rates 0 – 100 psi or better with 0.1 psi increment.
- Pressure set point and control precision must be ± 0.001 psi or better for low pressure.

GC Oven Characteristics

- All temperature and time functions should be micro-processor controlled and displayed on the screen, column over-heat protection, should be settable up to 450°C or better, set point resolution must be at least 1°C or better and cool down time from 250°C to 50°C is less than 5 min or better
- Maximum achievable temperature ramp rate should be 45°C/min or more
- Time settings: It should be 0.1 min increments for values 0 to 999 minutes or wider
- Temperature range: 10°C above ambient to 450°C
- Automatic leak testing with PPC

Inlet configuration and usability: Programmable split/splitless capillary injector- 1 No

- Temperature-programmable inlet
- Operating temperature range 50°C to 500°C in 1°C increments or better
- Heating rate of 1°C/min to 200°C/min or ballistic
- Minimum Three ramps or better
- Large-volume injection of up to 150 μ L or better
- PPC pneumatics for automatic control of split vent. PPC/EPC/AFC must have the feature of programmed flow, programmed pressure, programmed velocity or constant flow.

Detector: Flame Ionization Detector- 1 No

- Operating temperature: 100°C to 450°C in 1°C increments or better

- Minimum detectable quantity: $< 3 \times 10^{-12}$ g C/sec Octane (1.4 pico gram carbon/sec) or mention the respective compound used for the minimum detectable quantity.
- Linearity: $> 10^7$
- FID with minimum gas consumption or no makeup gas preferred.
- Flame out warning and ready interlock

Auto Sampler:

- Must be quoted built-in syringe auto sampler for maximum sampling capabilities with minimum 100 or more vials.
- Auto sampler must have the capability to inject both injectors without dismantling or removing the auto sampler. Vendors must quote suitable auto sampler to inject the sample to both injector as a future upgradation on detector/injector.

Columns and Consumables:

- DB-5 and DB-624 or equivalent, 30 meter x 0.32 x 0.53 mm or equivalent -1 No each.
- Syringe 5 and 50 μ L
- Gas tight syringe 1 mL
- Septa – 100 nos.
- 100 GC vials 2 mL capacity

Warranty

Minimum 2 years warranty with 1 or 2 year free service will be preferred

Accessories quoted optionally

- A suitable PC compatible for the above instrument control should be supplied along with the instruments. The PC should meet the minimum requirements such as desktop with i-5 Processor, 8 GB RAM, 1 TB, Windows 8 or better, 24" or more LED monitor and colour printer.
- A service center must be available in Chennai for service engineers to attend to the instrument for maintenance or troubleshooting. \
- Required gas cylinder, purification panel and regulators to be quoted
- On-site training for the operation of the hardware and software systems should be included.

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