



Indian Institute of Technology Kanpur Samtel Centre for Display Technologies

Enquiry No.: SCDT/FlexE/2016-17/28

Opening Date: 07/02/2017

Closing Date: 17/02/2017

Subject: Purchase of GAS SENSING SETUP

Quotations from prospective vendors are invited by Samtel Center for Display Technologies, IIT Kanpur for “**GAS SENSING SETUP**” with following specifications.

Note- All vendors are requested to submit “**technical and financial bids**” together in separately sealed envelopes.

Technical requirements: Suitable Vapor generators are required which can generate accurate, precise and repeatable calibration gases for sensor testing and calibration. Vapor generator is needed for generating calibration gases of desired concentration from different permeation tubes. Gas shall be mixed together with desired concentration of humidity using humidity generator.

Specifications for GAS SENSING SETUP

- 1 The vapor Generator must be capable of generating a broad range of stimulant vapor for safe and accurate testing.
- 2 The system must have multiple chambers with independent digital control of gas flow and temperature for each chamber.
- 3 The system must be capable of split flow that allows concentration to vary while maintaining constant flow to the instrument.
- 4 The system must have adjustable concentration levels from ppm to ppb.
- 5 The system must be able to be programmed /controlled using PC interface.
- 6 Software must be able to monitor flow and temperature and calculate concentration to determine operating calibration points.
- 7 The systems must be easily transportable.
- 8 The system technology must have permeation tubes.
- 9 The system Inlet must have ¼” Swagelok quick connector.
- 10 The system outlet must be 1/8” Swagelok compression fittings.
- 11 The system output concentration range must be ppb-ppm.
- 12 The system Instrument Air: Regulated Air/Nitrogen at 40 Psi Free from impurities , -35 deg C DEW POINT
- 13 Sample flow must be 5-250 ml/min or more
- 14 The split flow must be 0-1000 ml/min or more
- 15 Oven Warm up: 15min to 100 deg C (Stable+/- 0.1 Deg C)
- 16 Permeation Oven Temp: 35 deg C – 100 deg C
- 17 Permeation Oven Diameter: upto 10mm

- 18 Permeation Oven Length: upto 180mm
- 19 Weight less than 10 kgs
- 20 Communication Interface: standard RS 485

The system humidity generator –parameters and operating range must have the following specification:

- 1 Gas: Air /Nitrogen
- 2 Inlet Pressure: 40 Psi
- 3 Inlet fitting: ¼” Swagelok compression
- 4 Sample outlet pressure: 10Psi or more
- 5 Outlet Connection: 1/8” Swagelok compression
- 6 Humidity range: 5% to 90% RH or more
- 7 Wet gas outlet flow: 500ml/min to 3000ml/min at 1 ml/min increments or more

The System mass flow controller unit- parameters and operating range must have the following specifications:

- 1 Gas: Air / nitrogen
- 2 Inlet pressure: 40psi
- 3 Inlet fitting: ¼” Swagelok quick connect
- 4 Sample outlet pressure: 10psi or more
- 5 Outlet connection: 1/8” Swagelok compression
- 6 Flow range: 500ml/min to 3000ml/min at 1 ml/min increments or more

The System Specifications of Permeation tube and Manufacturing Kit

SN	Item Name	Description	Qty (No.)
1.	Permeation Tubes for chemicals: Isopropanol Acetone Isoprene Methanol Butane Toluene Dimethyl sulfide 1-propanol Dimethyl formamide	a) Material: PTFE b) OD ≈ ¼” c) Wall thickness ≈ 1 mm d) Length: 120 mm -130 mm e) Chemical amount: 2 ml to 3 ml f) Sealed at both ends. g) Capable to diffuse analytes at a controlled rate to generate ppm to ppb level concentration when heated. Above description is applicable to each of the permeation tube.	20

	Propanal Acetaldehyde Pentane Nitric Oxide Ethane Ethanol Ammonia NO ₂ Formaldehyde Hydrogen sulfide Methane		
2.	Permeation tube manufacturing Kit	Permeation tube manufacturing kit should contain the following materials required for making at least 10 permeation tubes: <ol style="list-style-type: none"> a) PTFE tubing of OD: ¼” and Wall thickness: 1mm b) PTFE end caps: ≈ 5mm c) Custom crimping tool d) Crimping vice e) Spatula f) 10x pipettes g) Tube cutter h) 20x mild steel end crimps i) Manufacturing Processing Instructions (MPI). 	1
3.	Documents <ol style="list-style-type: none"> a) Permeation tubes should be gravimetrically calibrated. b) Calibrated permeation rate should be certified and traceable to primary standards. c) Calibration certificate for permeation tube of each of the chemical should be provided. 		

Terms and Conditions:

1. Evaluation will be done on the basis of technical specifications as per our tender notice.
2. Financial bids will be open only for those, who meets all technical specification.
3. All specification required for the gas sensing setup must be submitted by a bidder alone.
4. Please do mention tender number clearly on envelop.
5. Please send the name and contact details of the person to whom company had supplied a similar systems. Committee may ask for the feedback.
6. The supplier must have supplied systems to institutions of national and/or international repute.
7. Quotation must indicate FCA or FOB prices.
8. Payment terms & condition is 70% against delivery, 20% after installation and 10% after successful running of equipment for 3 months & approval.
9. Warranty/Guarantee should be clearly mentioned. The Warranty must start from the date of installation at IITK.
10. Installation, demonstration, and training-sessions at IIT Kanpur will have to be provided by the manufacturer or the vendor for the quoted system.
11. Quotation should carry proper certifications like proprietary certificate, authorization certificate from manufacturer, etc.
12. Validity of quotation should be at least for 60 days.
13. Maximum educational discounts should be applied.

14. Institute is exempted for partial custom duty (CD applicable to IIT Kanpur is 5.15%).
15. Institute is exempted from payment of Excise Duty under notification No. 10/97.
16. The delivery period should be specifically stated. Earlier delivery may be preferred.
17. The indenter reserves the right to withhold placement of final order. The right to reject all or any of the quotations and to split up the requirements or relax any or all of the above conditions without assigning any reason is reserved.

Kindly send the quotation in sealed envelope latest by dated 17/02/2017 to the following address;

To,
Prof Siddhartha Panda,
Room No.310,
Samtel Centre for Display Technologies (SCDT),
Indian Institute of Technology Kanpur,
Kanpur – 208016, Uttar Pradesh, India