

Indian Institute of Technology, Kanpur
Centre for Environmental Science and Engineering

Tender Enquiry No.: CESE/PCI/2018/03

ITEM: Raman Spectroscopy Gas Cell

A) Technical Specifications

Gas cell specifications can be found in table 1. Specifications of Heating, cooling and other accessories are in table 2. Separate pricing for items should be provided so that items can be chosen appropriately.

Table 1) High temperature furnace

Specifications of the Raman Gas Cell	
Constructed Cell	Stainless Steel
Vacuum	$>10^{-3}$ Torr. The chamber should be isolated (sealed with valve) after creating vacuum in the chamber.
Windows	Raman Inactive (Sapphire/Quartz)
Window thickness	Compatible with the pressure, vacuum and temperature specified
Ending	Tubular or Septum Sealed Tubular
Pressure	50 bar. The chamber should be isolated (sealed with valve) after pressurization (connection with gas cylinder).
Ports & Valves	Separate ports and valves for gas inlet and vacuum connection. (With additional one or two ports).
Temperature	Should be able to operate in the temperature regime: -20°C to 200°C . <i>Cooling and heating facility need not be provided.</i>
Heating	Upto 400°C .
Gases	The atmosphere in the chamber can be any of the following gases: Ar, H ₂ , N ₂ , He, etc.
Facility for reactions	Heterogeneous catalysis, gas-solid interactions, photochemical reactions, and oxidation mechanism. Separate (from vacuum and gas ports) port for inlet of reactants.
Temperature measurement	Ability to measure sample temperature (with type K thermocouple or external optical pyrometer focused via a window in the cell)
Temperature control	Optional addition of temperature controller (separate pricing for this item)

Table 2) Accessories

Name	Specifications	Quantity
Window SiO ₂	13 x 2 mm	2
Window Al ₂ O ₃	13 x 2 mm	2
Screen Set	(pore size 0.104 mm)	1
Screen Set	(pore size 0.038 mm)	1
Kalrez O-Ring	0.504 OD (13mm), 0.364 ID	2
Kalrez O-Ring	0.379 OD, 0.239 ID	2
Viton O-Ring	0.379 OD, 0.239 ID	2
Viton O-Ring	1.191 OD, 1.051 ID	2
Heater Assembly for High Temp. Reaction Chambers	24 V input and heating upto 500°C	1
Cartridge Heater, 0.25" x 1.24", 24V/100W	24 V input and heating upto 500°C	1
Cooling Cartridge	Fluid circulation from -20°C to ambient	1

B) Terms and conditions

Warranty

Two year onsite comprehensive warranty required (from date of successful installation at IITK).

Installation

The price should be inclusive of installation on site with full functionality.

Delivery

- 10 weeks maximum from the date of purchase order. For any extension in the delivery date, permission should be sought with valid reasons.

Payment & Taxes: As per IIT Kanpur Norms.

Concessional rate of GST (@ 5%) will be applicable with reference to Notification No. 45/2017 Central Tax (Rate) dated 14/11/2017. IITK will provide relevant certificate for this purpose. On import items for research purpose presently the GST applicable is 0% (Zero percent). DSIR certificate along with CDEC will be provided by IITK to vendor for availing concession. *Vendor should use these GST rates in their quotation.*

Customs/Excise Duty

The institute is exempted partially from payment of customs duty (The rate applicable will be @ 5.50%). Under notification 51/96 and a road permit will be provided (wherever applicable). It is to be noted that the Concessional Form 'C/D' have been abolished w. e. f. Apr 01, 2007.

Spares

All required spares for operation for two years have to be provided.

Certificate of satisfactory performance

The company should provide certificate of satisfactory installation and performance from 3 (three) customers (the customers should be from I.I.T., BARC or CSIR labs), to whom a similar product has been supplied.

Details of Quotation

- Quotation should be valid for 90 days. All envelopes should be marked with enquiry number. All quotes should be in Indian Rupees (INR) with total cost (including taxes as applicable).
- The main envelope should clearly mention the Tender Number at the top.
- Quotation should carry proper certifications like proprietary certificate, authorization certificate from manufacturer, etc.
- Maximum educational discount should be offered wherever applicable (i.e. pricing should be for educational institute).
- The Quote should cover insurance and transport up to Kanpur.
- 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.
- **Quote: Quote should reach the address as below by 22 May 2018. Extended Date 2nd June 2018.**

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