



Request for quote (RFQ) for procurement of Closed Cycle Cryostat

REF: PH/AKD/95/2018-19

Date: June 8th, 2018

To Whom It May Concern

Dear Sir,

Kindly send your lowest quotation for **Closed Cycle Cryostat**. Your quotation should clearly indicate the terms of delivery, delivery schedule, E.D., G.S.T., Octroi payable, Transportation charges, if any, payment terms etc. Your quotations must be duly signed (on your company letterhead) and should be sent by post (**one for technical specification and other one for price quotation**) in the sealed envelope on or before June 18th, 2018 (The address is mentioned in the end). Please **mention the enquiry number** (top left REF) on the quotation. The specifications of different parameters required, are mentioned below:

Parameters	Specification
Temperature variations:	4K to 300K
Temperature stability:	Better than ± 500 mK
Temperature accuracy:	Better than 50mK
Vacuum inside the cryostat:	around 10^{-5} mbar
No of windows accessible:	4 (Reflection and Transmission geometry experiments are performed)
Type of window:	Transmission should be more than 90% for Wavelength, $\lambda=800$ nm, 400nm and $\lambda=10\mu$ m to 500 μ m.
Working Beam direction:	Horizontal
Thickness of window:	Approx. 1mm (thickness that allows more than 90% transmission for above wavelength should be quoted). This should necessarily withstand with the vacuum mentioned above
Window diameter:	25.4 mm to 42 mm
Windows Sustainability:	Damage threshold for laser beam of fluence more than 10 mJ/cm ² with the spot 100 microns, should sustain vacuum of 10^{-6} mbar
Vibration of the cryostat:	Better than 25 microns
Cold head cooling power	More than 0.1 watt @ 4K
Cold head type	Scotch Yoke design (without displacer seal)
Cold head position:	should be on the top of the cryostat.
Space of the system:	should not occupy more than 30cm x30cm, preferred to have less space occupied
Weight:	should not exceed 25kg.
Time to reach base temperature from ambient temperature:	As small as possible preferred less than 3hrs.
Height of cryostat window center:	from the table top, it should be around 15.5 cm, z-axis motion is preferable.
Temperature Sensor:	It should be within few milli meters from sample holding position, Extra temperature sensor very close to sample will be preferable.



Professor A. K. Sood
FRS
DST Year of Science Professor

**DEPARTMENT OF PHYSICS
INDIAN INSTITUTE OF SCIENCE
BANGALORE – 560 012 INDIA**

Associated accessories required:

1. Helium compressor charged with Helium gas, water cooled
2. Turbo Pump (Pumping rate min 45 litre/second) with all accessories)
3. Water chiller to cool the compressor (Min. Cooling power 1.5 times power of compressor quoted)
4. Temperature controller
5. Flexible Helium flow bellow pipe
6. Necessary cables, tubes and pipes to run the system properly at 220V, 50Hz
7. Thermal grease for sample mounting.
8. Two-two spare windows required with the same specifications mentioned above. (Should be compatible to replace in the cryostat). Two for Wavelength $\lambda=800\text{nm}$, 400nm and another two for $\lambda=10\mu\text{m}$ to $500\mu\text{m}$

- Notes:
1. Installation of the system at our lab to be carried out to our full satisfaction and training should be given to students.
 2. For Helium compressor and turbo pump running noise should be very low.
 3. Manual change of windows would be preferable.

This quote with sealed envelope should be addressed to:

The Chairman,
Department of Physics
IISc, Bangalore-560012
India

with Kind Attention: Prof. A. K. Sood, FRS