

**INDIAN INSTITUTE OF TECHNOLOGY KANPUR
DEPARTMENT OF CHEMISTRY**

Tender No.: IITK/CHM/VKS/16-17/2

Date: 21-04-2016

Requirement: Rotary Evaporator (1 nos.), Vacuum Pump (1 nos.) and Chiller (1 nos.) with Three Years Warranty

Quotations are requested from suppliers for the items given below. Please send your sealed quotations by **May 6, 2016 (5.00 pm)** to the undersigned in a sealed envelope.

Technical Specifications of 5 Ltrs Rotary Evaporator, Chemically Resistant Vacuum Pump and Chiller with Three years warranty.

A. Specifications of Rotary Evaporator:

Vertical condenser for all standard distillations for smallest space with motorized lift.

Auto Lift in case of power loss. Evaporating flasks and receiving flask 1000ml and vapour tubes should be supplied with standard ground join NS 29/32.

The coupling ring and the flange on the condenser side of the drive should be made of PPS (PolyPhenylene Sulfide), for robustness and with chemical resistance.

All glassware set should feature GL 10 thread **Should have long life graphite filled PTFE vacuum seal**

With non-sticking quick release vapour tube for easy cleaning, vapour tube should have large bore for fast distillation rates up to 1200 ml (H₂O)/hour

The operating panel should be detachable allowing users of highest level of convenience to control the parameter change outside the fume hood.

With convenient large dial controls for adjustments of rotation speed from 20 – 270 rpm

With microprocessor controlled heating bath temperature 20^o C – 210^o C with digital display of bath temperature with heating capacity of 1300 W

The heating bath should be adjusted horizontally up to 200mm and should offer efficient space to accommodate evaporating flasks from 50ml to 5000ml

Should have 4.3” LCD digital graphic display which should feature all parameters (rotation speed, vapour temperature, bath temperature, vacuum pressure both set and actual, temperature and pressure ramping), with integrated vacuum controller.

Should have USB Interface for data management with software Three In-Built Programming feature, SET pressure, AUTO easy, AUTO accurate for AUTO distillation.

AUTO easy Function should have capability to find boiling point and perform distillation automatically

Should be offered with Vapour Temperature Sensor for Auto distillation.

Should be able to set and program the 9 most common applications into memory

Should be able to program the required vacuum change in a ramp
Should have process timer which can allow unattended operations
Should have auto start and stop with just one press of a button

Heating bath should have non-slip safety handles for safe and easy transport of bath
Should have over heat cut-off protection at 220°C

Heating bath should be constructed of an insulated double wall for user protection against burns and scalding.

Material of construction of heating bath should 1.4404 / ASIS 316 L (L = Electro-polished)
Volume of Heating Bath: 4.5 Ltrs

Set bath temperature on display accuracy: +/- 1°C

Protection Class: IP 67

Condenser surface area: 1200 cm²

Dimensions: 393mm L x 411mm W

B. Specifications of Vacuum Pump:

Two –Stage diaphragm pump made from chemically resistant materials,

High Suction capacity 2.0 m³/h

The vacuum pump should achieve an ultimate vacuum of 7 mbar.

Suction capacity for upto 3 Rotary evaporators at the same time.

Vacuum can be controlled manually or via valve operated vacuum controllers

Can be combined with a condenser.

C. Specifications of Bench top Chiller:

Temperature range from -10 °C to +40 °C

Temperature control accuracy of ±1 °C

Digital display for temperature settings and reading out actual temperature

Cooling capacity at +20 °C: 580 W

Dimension: L360 / W310 / H520 mm

Note:

1. Since vacuum pump and chiller will be connected and used only for rotavapor, all three Items (rotavapor, chiller and vacuum pump) should be quoted by same vendor.
2. Prices could be quoted in Indian rupees/foreign currency and as much as possible should include the cost of shipping to IIT Kanpur.

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