SPEED POST

SARDAR VALLABHBHAI NATIONAL INSTITUTE OF TECHNOLOGY, SURAT-395 007.
DEPARTMENT OF MECHANICAL ENGINEERING

No. DoME/RAC Lab/ 1166/706 /2025-26

Date: 15/07/2025

त्वरीत डाक
SPEED POST

16 JUL 2025

To,

Institute Website

SUB: - Enquiry for Vapour Compression Refrigeration Test Rig.

Dear Sir,

You are requested to quote your prices for supply of stores listed overleaf. The quotations may be sent to the undersigned in a sealed envelope and subscribed as: "Quotation with reference to Enquiry No. DoME/RAC Lab/ 1166 / /2025-26 dtd: /07/2025. Your quotation should reach the undersigned on or before **08/08/2025 at 5:00 pm.**

The quotations should be furnished with the following information.

1) The brand or make of each item should be specifically stated and wherever necessary, Complete set of specifications and dimensions should be given.
2) If asked, samples are accompany the quotations
3) Sales tax, General tax, Central Sales tax, Custom duty, Insurance charges, Packing and Forwarding charges, if not included in the prices quoted, should be clearly specified.
4) The period of validity of the quotation should be at least 45 Days. Offers subject to prior sale may please be avoided.
5) The delivery period is to be clearly mentioned in the quotation.
6) The mode of delivery of the stores may be mentioned. The delivery should be F.O.R. Surat or at the Institute.
7) All concessions available to an educational institution should be specified and also taken into account while quoting.
8) This Institute is located within the limits of S.M.C. & exempted from the paying of octroi duty on incoming goods from outside limits of S.M.C.
9) This Institute is registered with the dept. of scientific & industrial Research (DSIR) for the purpose of availing custom duty exemption & central excise duty exemption, and hence the certificate to this effect will be issued wherever it is necessary on demand.
10) Payment is normally made by cheque drawn on the S.V.N.I.T. Branch Office of State Bank of India, Surat-395007 within a period of thirty days from the date of receipt of stores.
11) Your specifications & terms- conditions should be as per the format attached, must be on your company letterhead & signed by an authorized person.
12) Offered quotation may be rejected if any ambiguity is found in offered specifications, terms & conditions supplied by party in specified tabular format.
13) The Director reserves the right to accept stores, which are not strictly in confirming with the specifications but otherwise, found suitable.

Yours faithfully,

15/07/2025

Head, Mech. Engg. Dept

Approved

Specifications

<table>
<tr><th>Sr. No.</th><th>Item Name</th></tr>
<tr><td>1.</td><td>
Vapour Compression Refrigeration Test Rig

To determine actual and theoretical COP, Compressor power and cooling capacity.

Technical Specification:
<table>
<tr><td>Compressor</td><td>Hermetically sealed compressor having cooling capacity of ¼ ton
Make: Emerson or Danfoss or Tachumesh Or Equivalent</td></tr>
<tr><td>Evaporator</td><td>Copper Coil immersed in insulated water tank (shell) of stainless-steel (316) water tank of 30 litre capacity. Electric heater immersion type is provided in the Evaporator Tank for balancing the Refrigerating Effect produced.
Heater control and digital wattmeter to measure heat input.
Stirrer to be provided in tank for Uniform thermal Distribution</td></tr>
<tr><td>Condenser</td><td>Air-cooled condenser with copper fins. It should be a tube type condenser equipped with FHP fan motor with fan blade.</td></tr>
<tr><td>Expansion Device</td><td>(a) Capillary Tube of suitable Diameter, Material: Copper
(b) Thermostatic Expansion Valve with adjustable evaporator load</td></tr>
<tr><td>Refrigerant</td><td>R-134a</td></tr>
<tr><td>Rotameter</td><td>Glass tube rotameter for measuring flow rate of liquid refrigerant of standard make. Capacity: 0 to 100 LPH.</td></tr>
<tr><td>Energy Meter</td><td>Digital Wattmeter to measure power consumption of compressor and heater in kW.</td></tr>
<tr><td>Dimmer stat</td><td>230V AC, Solid-state heater controls,Capacity: 4 Amp.</td></tr>
<tr><td>Pressure Gauge</td><td>Suction and discharge pressure should be measureable in bar or N/m²for R134a</td></tr>
<tr><td>Multipoint Digital Temperature Indicator</td><td>To measure temperatures at various salient points of the refrigeration cycle and water using Pt-100 temperature sensors</td></tr>
<tr><td>HP/LP cut-out</td><td>Make: Danfoss or equivalent</td></tr>
<tr><td>Solenoid Valve</td><td>For safety purpose against high and low pressure of system</td></tr>
<tr><td>Service valve with receiver</td><td>Brass type</td></tr>
<tr><td>Filter / Drier</td><td>Make: Danfoss or equivalent</td></tr>
<tr><td>Thermostat</td><td>Make: Ranco or equivalent.</td></tr>
<tr><td>Warranty</td><td>Three years</td></tr>
<tr><td colspan="2">1. Test rig should be provided with labelling to the various parts and castor wheel for easy transportation.
2. Test rig should be provided with instruction manual, experiment procedure, precautions, instruments/equipment make and range, standard sets of readings and calculations of actual and theoretical COP, Power consumption, and cooling capacity.</td></tr>
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