Government of India
Bhabha Atomic Research Centre
Beam Technology Development Group
Laser and Plasma Technology Division

Trombay
Mumbai - 400 085.

Ref: BTDG/LPTD/WORKS/PKM/2020/MF/ 75824 21 August, 2020

To,

To whom it may concern

Sub: Fabrication and supply of water chillers
Invitation of Quotations

DUE DATE: September 4, 2020

Dear Sirs,
Quotations are invited for the fabrication job as per the enclosed job details.
1. The quotations must reach, Associate Director, Beam Technology Development Group by September 4, 2020 and must be sent in a sealed envelope superscribed with the above reference number, subject and due date given above.
2. The address on the envelope should read (By E-MAIL)
   (Attn. Pijush Kanti Mandal)
   To,
   Associate Director,
   Beam Technology Development Group
   BARC, Trombay, Mumbai - 400 085.
3. The bidder may contact on Telephone Nos. +91-22-2559 0215 or by email at pkmandal@barc.gov.in for any clarifications in the enquiry.
4. The Quotations should be submitted only through e-mail btdg@barc.gov.in. Offers sent by telegram, telex, courier, fax will not be considered.

Associate Director, Beam Technology Development Group BARC reserves the right to accept or reject any or all quotations without assigning any reason.

Yours faithfully,

[Signature]

Associate Director,
BTDG

Encl: One (Job details)
C.C.: AAO, (WORKS) CC, BARC
Job specification

Fabrication of Chiller units

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<thead>
<tr>
<th>S.No.</th>
<th>Items</th>
<th>Quantity</th>
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<tr>
<td>1.</td>
<td>Water chiller units of cooling capacity 3.5 kW</td>
<td>2 Nos.</td>
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Scope of Work
This job specification concerns the fabrication, testing and supply of water chiller units. The chiller units will be used to remove heat from the primary cooling loop (closed) of laser power supply. The equipment takes chilled water to stabilize the water temperature in the primary cooling loop as and when required.

Technical Specifications

Detailed specifications of the chiller units

General specifications
- Cooling capacity: 3.5 kW
- Water temperature at the outlet of the chiller: Shall be adjustable in the range of 10 - 20 0C
- Maximum flow rate ~ 10 lit/minute
- Pressure difference between inlet and outlet: Adjustable in the range of 0 to 3 bar using a bypass line. **By-pass line has to be provided with valve & pressure gauge.**
- Cooling media: Soft water
- Operating ambient temperature: 20 to 300 c
- Sound level ~ 60 dB.
- **All water contact parts must be off non corrosive material for keeping water quality clean during circulation.**

Specifications related to mechanical and construction
- Compressor: Hermetically Sealed type Reciprocating/Scroll type Compressor with built in motor & internal overload protection.
- Condenser: Air cooled
- Evaporator: Tank with evaporator for better cooling
- Refrigerant Piping, Piping (Water): Non corrosive piping and must be insulated.
- Pressure gauge for displaying refrigerant gas pressure.
- Pump material: non corrosive
- Insulation: Thermal Insulation to tank & suction line
• Controls (Water Line): Ball valve (Stainless Steel/Brass) has to be provided at outlet.
• Body Construction: Complete SS-304 – structure with sheet metal canopy.
• Approximate size (LxWxH) of the chiller unit: 60 cm x 60 cm x 60 cm
• Storage tank Capacity: ~20 Ltrs, Material: Stainless Steel (SS-304).
• Nozzles for water connections (inlet and outlet): Two inlet and two outlet nozzles (1/2" diameter) along with ball valves to be provided.
• Arrangements for filling and draining of the storage tank to be made externally. Storage tank water level to be displayed externally.
• Chiller unit must have wheels with locking arrangements.

Electrical Specifications
• Power Supply: 230 V, Single phase, 50 Hz, AC.
• Electric Penal Board: Should have MCB's, Switches & light indicator.
• Temperature Controller: Settable microprocessor based controller with digital display of set and actual temperature (resolution: 1°C). Controller must have over temperature & under temperature alarm & protection.
• Temperature Stability: ±1°C.