

## **Final & Frozen Technical Specifications for 20 Ltrs. Rotary Evaporator**

### **Rotary Unit**

1. Double condensers (one ascending and one descending Condenser)
2. one expansion vessel for reflux and two receiving flasks (10L) as well as the option of having the joint for 10L, 6L and 20L evaporation flask with followings
3. Condenser glassware assembly system should be protected by plastic coating or with suitable safety enclosure
4. Safety sensor to stop rotation in case there is a blocked rotation or guard hood is opened accidentally (if any)
5. Easy access to all glass wares .
6. Touch screen control for easy operation.
7. emergency stop button which automatically lowers bath, Stops rotation, breaks vacuum and turns off the Bath heaters at any error
8. Integrated heating coils corrosion free bath with Temperature range from 20 - 180°C
9. flask support system required for one man operation.
10. Easy lock for flask attachment required for safe flask changing.
11. Built in Vacuum controller with Auto program which automates distillation of using a vapour temperature.
12. Self filling water bath to be provided out of running dry.
13. Unit should be power off completely in case of over temperature situation, over pressure and glassware breakage.
14. 1 No. 20 ltr. 1 No 10 L and 1 No 6 L Evaporating flask & 3 number of 10 L Receiving flask
15. Vacuum Valve, Vacuum sensor, Vacuum controller & Vapor temp. sensor
16. Temperature range from 20 - 180°C
17. Electronically controlled rotational at least 6-150 rpm or better
18. **Vacuum Setting Range from 0 - 1000 mbar or better**

### **Vacuum Pump with following**

1. secondary condenser and air intake separation vessel
2. excellent compatibility with chemicals and condensate
3. ultimate vacuum of 3 mbar or better
4. very quiet and very low vibration
5. very high suction capacity of 3.0 to 4m<sup>3</sup>/h
6. Dimensions 300-350 mm W x 250- 350 mm D x 285-500 mm H

### **Chiller**

1. Temperature range Should be from -10<sup>0</sup>C or better to ambient
2. Temp. stability should be ±0.05K
3. Storage Temp. range should be from -10<sup>0</sup>C or better to ambient
4. Should have large LED display
5. Cooling facility should be by Air cooled
6. Cooling capacity at +20°C or 15°C should be **2500 W** or better
7. Refrigerant should be CFC free
8. **Max. Flow rate should be min 14L or better**
9. **Max. Flow pressure should be 2-3 bar (H<sub>2</sub>O 20<sup>0</sup>C) or better**

**Rotary Evaporator with heating bath, Vacuum Pump, and Recirculating Chiller should be from the same manufacturer, and entire system should be in one movable trolley (with wheel).**

**Warranty: at least three years**

### **Optional:**

1. Should have Guard hood constructed of metal frame and safety glass covers the bath completely and provides excellent implosion protection
2. Two receiving flask (10L) and one evaporation flask for each capacity, 6L, 10L and 20 L
3. LAN and USB interface to save all process data in digital file.

**Firm will quote optional items separately in PDF Format. Optional items will not be taken into consideration for deciding the lowest suitable firm. CSIR-IICB reserves the right to procure the optional items and not to procure along with main equipment from the same manufacturer/supplier. Firm will provide rate of the main equipment except Optional Items in BOQ.**