



**Indian Cardamom Research Institute  
SPICES BOARD**

(Government of India)  
(Ministry of Commerce and Industry)  
Myladumpara  
Kailasanadu P.O.,  
Idukki District - 685 553  
Kerala

भारतीय इलायची अनुसंधान संस्थान  
स्पाइसेस बोर्ड  
(भारत सरकार)  
(वाणिज्य एवं उद्योग मंत्रालय)  
मैलाडुंपारा,  
कैलासनाड पी.ओ.  
इडुक्की जिला - 685 553  
केरल

No.ICRI/ADMN/A/BCPU/1/08-09/  
Dated: 17<sup>th</sup> December, 2009

**QUOTATION NOTICE**

Sub : Purchase of lab equipments for laboratory use-reg.

Sealed quotations are invited from the suppliers of reputed brands of the following Lab Equipments required in the Indian Cardamom Research Institute, Myladumpara, Idukki - 685 553. The rate for the equipment with all necessary accessories and spares as detailed in the specification list shall be given break up of cost, excise duty/ sales tax/ VAT Packing & forwarding charges, insurance, freight and any other charges should also be quoted. This office is eligible for Duty exemption certificate under DSIR. The rate for import also be quoted.

Sl.No.	Equipments	
1	Autoclave (Horizontal)	Annexure I
2	Distilled water unit	Annexure II
3	Centrifuge	Annexure III
4	Colony counter	Annexure IV
5	Shaker incubator	Annexure V
6	Micropipettes	Annexure VI
7	Vortex mixture	Annexure VII
8	Water bath	Annexure VIII
9	Magnetic stirrer	Annexure IX
10	BOD incubator	Annexure X
11	Deep freezer	Annexure XI
12	Refrigerator	Annexure XII

Quotation should give detailed specifications of equipments on offer, brand name, terms & conditions of supply, guarantee period, after sales service details, delivery period, customer list including name of contact persons with telephone no./E-Mail ID etc. A statement of compliance with specifications should also accompany the quotation. Onsite training of personnel is to be conducted immediately after the installation of the equipment.

Spares and consumables required for the trouble free operations of the equipments for a period of two years after warranty are also needed to be quoted separately. Clarification if any, can be had from the office.

Cover containing the quotation should be superscribed as 'Quotation for lab equipments' and shall be sent to the Director (Res), Spices Board, Indian Cardamom Research Institute, Kailasanadu P.O, Myladumpara, Idukki - 685 553 on or before 08.01.2010. Late quotation will not be accepted.

The Director (Res) reserves the right to accept the quotation in full or in part or to reject the same without assigning any reason thereof.

Director (Res.)

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## Annexure I

### Specifications for Autoclave (Horizontal)

1. Capacity : 100 lit/500lit
2. Working Pressure : 1.26 Kg
3. Working Temperature : 121°C Hyd. Tested at : A) - Chamber - One and Half Time working pressure.
4. Mode of Heating : Electricity heated on 440 V, 3 Phase AC Supply 50 C/s.
5. Sterilization Period : 20 to 25 Minutes
6. Steam Exhaust : 5 to 7 Minutes
7. Material of construction : A. Chamber, Back Plate and Door : S.S.316 Q,  
Jacket : Mild Steel.  
B. Outer Cover, Pipeline, & S.S.304 Q Connection.  
C. Insulation: Fibre Glasswool.  
D. Door Gasket: Sullicon Rubber Gasket.
8. Detail Control And Fitting : A. Multiport Valve: To carry out all function of sterilization cycle at one point i.e. Stem to jacket, Stem to Chamber, Fast/Slow Exhaust and Vacuum/Drying.  
B. Door shall be pressed by SS.Radial Arms, Door shall be fitted with Automatic shelf pressure locking device by a special clutch to prevent it from being open while under pressure. This will open only when chamber pressure comes to zero.  
C. And fitted with quick drying apparatus, acciential vacuum breaker valve, safety valve, air valve, plug screen, chamber condensate line steam trap,dial thermometer, Pressure and compound gauge.

## Annexure II

### Specifications for Distilled water unit

UV (3Ltrs/hr) Water Purification System, 230V/50Hz. 5 micron and 1 micron cartridges in a polypropylene housing with pressure gauges, Diaphragm pump, to boost line water pressure from 0 bar to 2 bars. The pump to operate at low noise levels (<68 decibels) with wall mountable type and compact size. Pretreatment system with antiscaling compound and silver impregnated carbon for Bacteriostatic effect. 3 micron and 1-micron filter. Coaxial resistivity cell with a cell constant of  $0.01\text{cm}^{-1}$ , to ensure the system measures and displays both compensated and non-compensated temperature accurate within  $\pm 0.1^\circ\text{C}$ . High flux Thin film composite polyamide RO membrane with 94-99% rejection, The Electrode ionization Module with mixed bed nuclear grade ion exchange resin beads, self regeneration mechanism and carbon beads at cathode to prevent scaling of the module. Constant Voltage supply to the module to produce uniform product water with TOC < 30 ppb., Microprocessor chip to store one years system operating parameters data, Conductivity meter before and after RO to measure the performance of the system. Permeate divert valve which will divert low quality water to the drain, Pump with unique temperature feed back mechanism to ensure that a constant product flow rate is always maintained, Unique explore data software with RS 232 port to enable printout and documentation of data, Optional On-site Validation Services with complete IQ, OQ, PQ & MQ Protocols. Sensor rod float switch, programmed to have high and low level cutoff based on water level in the tank. The tank should fill from the bottom. Should possess a tank vent filter made of soda lime, activated carbon and 0.65 micron hydrophobic membrane to trap contaminants present in atmospheric air. 30 Ltrs Pe Reservoir.

## **Annexure III**

### **Specifications for Centrifuge**

Multipurpose laboratory centrifuge with selected from the bottom table microprocessor based memory and digital timer and digital RPM with LCD indicator. Capacity 8 X 15ml, 4 X 50 ml.

## **Annexure IV**

### **Specifications for Colony counter**

Digital display, Dish Size- Up to 90mm, Magnification- 1.5-2.0 times. 110 mm Dia Magnifying Glass, Audible Confirmation of Each Count, Uniform Glare Free Illumination, Digital Readout from 0-9999, Auto Marker Pen, Focusing Facility. Weight, 3Kg.(Approx) 230V  $\pm$  10% AC, 50Hz, 40W.

## **Annexure V**

### **Specifications for Shaker incubator**

1. Speed range: at least 50 to 400rpm, +/-2 rpm with 2.54 cm diameter orbit.
2. Universal platform which can hold minimum 20±2 flasks of 250 ml capacity.
3. Programmable: Shaking period from 0.1 hrs to 99.9 hrs.
4. Temperature Range: At least 15°C below ambient to 60°C( Minimum set point is 4 °C) with +/- 0.1°C at 37 °C.
5. Drive: Uni Eccentric counterbalanced drive with permanently lubricating ball
6. bearings/Magnetic system
7. Motor : Variable speed
8. Temperature and speed should be calibrated via keypad.
9. Alarms: Visible warning signal when speed deviates more than 5 rpm and
10. temperature more than 1°C from set points and when timer has expired.
11. LED Display indicates speed, running time, alarm, condition and Temperature.
12. Clamps 250ml,500ml,1Lit, 2Lit... 5nos. each must be supplied
13. Compatible voltage Stabilizer
14. Chamber : Stainless steel.
15. Adjustable shelf for simultaneous incubation with and without shaking

## **Annexure VI**

### **Specifications for Micropipettes**

Fixed volume pipettes Autoclaves (lower part) TUV-tested user friendless, IvD-Conformity, two button operation, chemical resistant user friendly calibration technique 20 $\mu$ l, 100 $\mu$ l, 200 $\mu$ l, 250 $\mu$ l, 1000 $\mu$ l Adjustable volume 0.1 – 2.5 $\mu$ l, 0.2-2 $\mu$ l,05.-10 $\mu$ l,10-100 $\mu$ l.

## **Annexure VII**

### **Specifications for Vortex mixture**

1. Speed : 100- 3200rpm
2. Operation : Touch/Continuous
3. Working condition : 4 to 60°C ambient
4. Body : MS with powder coated
5. Input Voltage : 230V,50Hz,A.C.Supply

## Annexure VIII

### Specifications for Water bath

1. Construction : Double walled, outer body made of M.S sheet, duly power coated, inner chamber made of S.S 304 quality sheet.
2. Insulation : Glass wool
3. Temperature controller : Fitted with 30<sup>o</sup>C to 110<sup>o</sup>C hydraulic Digital Temperature controller.
4. Motor speed : motor having variable speed control up to 180 strokes/minutes.
5. Power supply : 220 V AC supply
6. Other features : Provided with touched glass window in the front, supplied with S.S tray with lotus clamps..35 cm X 30 cm X 17.5 cm. Outer body with stainless steel 304 quality sheet fabricated on extra cost.

## **Annexure IX**

### **Specifications for Magnetic stirrer**

Magnetic stirrer with electronic speed regulator and hot plate with energy regulator.

## **Annexure X**

### **Specifications for BOD incubator**

1. Capacity : 280 lit
2. Construction : Double walled, outer body made of G.I Sheet, properly powder coated and inside chamber made of stainless steel sheet.
3. Temperature range : 5<sup>o</sup>C to 60<sup>o</sup>C
4. Other features : Digital display temp: Indicator cum controller with built in on delay, accuracy +/-0.5<sup>o</sup>C, air circulation fan in the cabinet, plexi glass door inside, adjustable shelves, equipped with C.F.C free compressor and refrigerant, provided with door operated light in the chamber, outer body with stainless steel 304 quality sheet, 2 K V A stabilizer.

## **Annexure XI**

### **Specifications for Deep Freezer**

Horizontal, capacity 280liter, double walled construction, outer body made of G.I Sheet, properly powder coated, inner chamber made of stainless steel, insulation PUF, temp. range -20 fitted with digital temp: controller cum indicator with in built on delay. Equipped with C.F.C free compressor and refrigerant. 2 K V A stabilizer. Outer body with stainless steel 304 quality sheet.

## **Annexure XII**

### **Specifications for Refrigerator**

300 litres capacity double door frost free refrigerator