



കേരള സർവകലാശാല
(Re-accredited by NAAC with 'A' Grade)

UNIVERSITY OF KERALA
DEPARTMENT OF ZOOLOGY

Dr. Sreejith P. Ph.D. PGDSDC

Assistant Professor

Department of Zoology, University of Kerala
Karyavattom, Thiruvananthapuram-695581.
Kerala, India.



E: p.sreejith@gmail.com | psreejith@keralauniversity.ac.in
M: 919496793794 | P (O): 91-471-2308906

Date:

20/03/2018

To,
The Registrar
University of Kerala
Thiruvananthapuram, Kerala.

Respected Sir,

Sub: Technical Committee formation and Evaluation of technical specification for the purchase of CO₂ Incubator, PCR Thermocycler, Electrophoresis Systems (Horizontal, Vertical Electrophoresis, Blotting apparatus and Power Pack), and Fluorescence Up gradation of Leica DMIL Inverted Microscope

Ref: Pl.A1/4577/Zool/17 Dated 06/11/2017

I am here with submitting technical specification and technical committee minutes for the purchasing of CO₂ Incubator, PCR Thermocycler, Electrophoresis Systems (Horizontal, Vertical Electrophoresis, Blotting apparatus and Power Pack) and Fluorescence Up gradation of Leica DMIL Inverted Microscope. The technical committee thoroughly evaluated the technical specification and recommended to forward to the registrar for further action. With this aspects, I request you to kindly advertise the technical specification in the newspapers and invite tender for further action for purchasing the instruments mentioned above. Further, I request you to consider the last date for inviting tender from companies is on 11th April 2018, 5 pm. Looking forward to your most favourable response to this matter

Thanking you

Yours Faithfully

Sreejith.P

Forwarded by

CO2 incubator

Dimensions

Chamber capacity	150i: 150L (5.3 cu. ft.), 240i: 240L (8.4 cu. ft.)
Internal dimensions (w x h x d)	150i: 47 x 60.7 x 53 cm, (18.5 x 23.9 x 20.9 in) 240i: 60.7 x 67.0 x 58.3 cm (23.9 x 26.4 x 23 in)
External dimensions (w x h x d)	150i: 63.7 x 86.7 x 76.6 cm (25 x 34 x 30.2 in) 240i: 78.0 x 93.4 x 83.4 cm (30.7 x 36.8 x 32.8 in)
Weight	150i: 70 kg (154 lbs) 240i: 81 kg (178 lbs)

Shelves

Dimensions (w x h)	150i: 42.3 x 44.5 cm (16.7 x 17.5 in) 240i: 56 x 50 cm (22 x 19.7 in)
--------------------	--

Construction

Number shipped/maximum
150i: 3/10, 240i: 3/12

Temperature

Sensor accuracy	(+/-) 0.1° C
Range	3° C above ambient to 55° C
Readability and stability	0.1° C
Uniformity	(+/-) 0.5° C
Decon cycle temperature	90° C (moist heat)
Decon cycle length	25h for complete cycle (90° C hold for 9h)

Humidity

rH range	>90% @ 37° C
rH source	150i: 3 L (3.2 qt) pan-less reservoir 240i: 4.5 L (4.75 qt) pan-less reservoir

CO2

CO2 range	0–20%
Control (readability and setability)	0.10%
CO2 sensor type	TC / IR (optional)
Gas inlet pressure required (0.8-1bar)	150i: 12–15 PSIG (0.8–1 bar), 240i: 13–15 PSIG

O2

O2 control accuracy	(+/-) 0.2%
O2 range	1–21% or 5–90%
Readability and setability	0.10%
O2sensor type	Zirconium oxide
Gas inlet pressure required (0.8–1 bar)	150i: 12–5 PSIG (0.8–1 bar) 240i: 13–15 PSIG

Electrical

Voltage/frequency/current Hz, 5.6 A	150i: 120 V, 50/60 Hz, 5.2 A 240i: 120 V, 50/60
Alarm contacts	Standard
Data output	RS232, USB optional

PCR Thermal Cycler

- The system should be a 96 well Thermal Cycler
- Separate peltier blocks to provide independent temperature zones to run –with different assays with varying annealing temperatures at the same time.
- Peltier based Block for 96 x 0.2ml / 0.1ml PCR tubes, strip / 96 well plate along with Heated lid
- Block for 0.5ml tubes or 10-100µl sample Volume
- The system should provide for Standard and fast run modes in a single instrument
- Multi block (Optional)
- Temperature control range –Minimum 0 °C to Maximum 100°C
- Max Block Rate – 3.9-degree C/sec
- Max Sample Rate – 3.35-degree C/sec
- Gradient up to 12 Columns
- Gradient range of upto 30°C or better
- Accuracy $\pm 0.2^{\circ}\text{C}$ or better
- Uniformity $\pm 0.4^{\circ}\text{C}$ or better
- Maximum Ramp speed $4^{\circ}\text{C} / \text{s}$ or better
- Manual program and Automatic easy program generator without any additional software
- Programmable heat lid covers from 50 degrees to 105 degrees centigrade for efficient PCR optimization.
- Remote access without any additional software (Optional)
- Choice of saving the methods up to 700 or more to the instrument or unlimited to a USB memory stick.
- Touch screen and LED Display
- Scalability: capability to interlink up to 11 PCR systems via single Ethernet hub
- Security: The system should have the ability to store methods on a memory stick
- Portability: The system should have a USB port to transfer methods from one machine to another
- System should allow easy product updates via USB port.
- The machine should be duly certified / authorized for PCR process
- High Ramp Speed (Optional)
- Two years' warranty
- UPS backup for 1 hr

Electrophoresis Systems

Horizontal Electrophoresis Systems

Construction: Buffer tank is constructed of 3/8" thick, cast acrylic
Casting tray bottom is constructed of UV transmittance cast acrylic to allow viewing of the gel with a UV light source

Unit Dimensions:

Overall: 83 mm(H) x 267 mm(W) x 394 mm(L)

Gel Dimensions: 250 mm x 250 mm

The distance between the electrodes: 35cm

Maximum Sample Capacity: 300 samples (6 combs, 50 samples each)

Buffer Capacity: 1500ml

Vertical Electrophoresis Systems

Specifications

Construction: Inner Gel Support - Molded ABS

Clamp assemblies - Molded polycarbonate

Buffer chamber - 3/8" cast acrylic

Gaskets - Extruded silicone

Shipping weight: 7 lbs (3175 g)

Unit Dimensions:

Overall Size: 170 mm (L) x 170 mm (W) x 180 mm (H)

Gel Size: 80 mm (L) x 100 mm (W) in pre-cast

100 mm (L) x 100 mm (W) in hand cast

Buffer tank minimum capacity: 350ml

Maximum Sample Capacity: 300 samples (6 combs, 50 samples each)

Buffer tank maximum capacity:850ml

Blotting Unit:

- Transfer blot unit for mini/midi vertical electrophoresis including all accessories needed to make the unit fully functional.
- Transfer unit must be suitable for mini/midi electrophoresis also.
- Provision for cooling.

Semi-dry Blotting unit:

- Should use a minimal buffer to saturate blotting papers and membranes.
- The unit should accommodate mini/midi/maxi gels or multiple mini-gels side-by-side
- The system should have a built-in power supply with automatic stopping feature. When the buffer becomes depleted, the transfer should stop automatically, saving the transfer before overheating.
- Lightweight and easy to handle

Power Supply

Output Specification

500 V, 2.5 A, 500 W

Output range (programmable)	10–500 V, fully adjustable in 1 V steps 0.01–2.5 A, fully adjustable in 0.001 A steps 1–500 W, fully adjustable in 1 W steps
Type of output	Constant voltage, constant current, or constant power with automatic crossover
Output terminals	4 pair recessed banana jacks floating in parallel
Timer control	1 min–99 hr 59 min, fully adjustable
Volt-hour control	99,000 V-hr
Pause/resume function	Yes
Programmable methods	Stores 9 methods, each with up to 9 steps
Real-time clock	Yes
Automatic recovery after power failure	Yes
Display	Approximately or above 128 x 64 pixel, backlit graphics LCD or LED display (Touch Screen Optional)
Safety features	No-load detection, sudden load change detection, ground leak detection, overload/short circuit protection, overvoltage detection, input line protection, auto power-up after power failure
Input power (nominal)	100–120/220–240 VAC, 50/60 Hz, auto switching
Operating conditions	0–40°C, 0–90% humidity in the absence of condensation
Dimensions (W x L x H), cm/in	Compact Size

Fluorescence Up gradation of Leica DMIL Inverted Microscope

Lamp housing 106z for reflected light, with centrable lamp mount for Hg 50W, with focusable 4-lens collector and heat protection filter, w/o ignitor, mains cable 1.5m

Ultra-high-pressure Hg-lamp HG 50W

Power supply 90-250 V, for Hg 50 W

Filter system I3 (small) for blue excitation, excitation filter: BP 450/490, dichromatic mirror: 510, suppression filter: LP 515

Filter system N2.1 (small) for green excitation, excitation filter: BP 515- 01 10,
95,000.00 3 | P a g e 560, dichromatic mirror: 580, suppression filter: LP 590

Camera

Digital Color Camera with CMOS sensor (1/2")

Image format 2048x1536 pixel, 3.1Mpixels

Fast live image XGA 1024x768 with 30 fps

Pixel size 3.2 μ m x 3.2 μ m

Dynamic range 55dB / 600:1

Optimized Image Processing in HW (CIE-Lab)

Fast USB-3 connection, single cable with screw lock

Complete camera kit including Software for camera control, USB-3 cable 2.5m,