INSTRUMENTS REQUIRED FOR CENTYRE FOR VIROLOGY, SIST

SPECIFICATION OF DOUBLE BEAM UV-VIS SPECTROPHOTOMETER

Wavelength Range:	190-1100nm
Spectral Bandwidth:	1nm
Optical system:	Double Beam, Blazed Holographic grating (1200 lines/mm)
Wavelength Accuracy:	±0.5nm
Wavelength Repeatability:	≤0.2nm
Wavelength setting:	Auto, Resolution 0.1nm
Photometric Range:	0-200%T
Photometric Accuracy:	± 0.002 A(0-0.5A)
Photometric Repeatability:	≤ 0.001 A(0-0.5A)
Stray Light:	≤0.05%T(220/360nm)
Scan Speed:	High, Medium, Low. Max.2000nm/minute
Sample Compartment:	10mm Pathlength Cuvette
Detector:	Silicon Photodiode
Lamps:	Tungsten Lamp & Deuterium Lamp (Pre-aligned)
Display:	Graphic LCD (320*240 Dots)
Output Port:	USB Port
PC Software:	PC Scanning Software
Power Requirements:	AC 90-250V, 50/60Hz
Dimension:	635x515x255mm
Holder:	8 cell holder

SPECIFICATIONS OF DIGITAL WATER BATH:

- Chamber material Stainless steel 104 quality and epoxy powder-coated
- Controller type digital
- Should have two-color LCD display with dual window.
- Discription 10L General purpose Water bath
- Should have Clear polycarbonate Gable Cover and rubber duck
- Should have temperature display accuracy 0.1°C .
- Should have temperature alarm system.

- Temp. Range: Ambient +5 to 100 ºC
- Temp. volatility: ±0.05 - ±0.2
- Tank size (mm): 390X380X230 mm
- Electrical requirement 120V/230V/50/60 Hz
- Pump Flow: 10-15

SPECIFICATION OF MICROWAVE OVEN:

- The outer body should be made of PCRC sheet duly powder coated.
- The inner chamber and perforated trays should be made of Stainless Steel (SS-304).
- The space between inner chamber and outer wall should be filled with high grade mineral wool for minimal heat dissipation.
- The internal dimensions (W×D×H) mm should be 450×450×450
- Should have 95ltrs capacity.
- The heat load be 1.5 KW.
- Should have at least two shelves.
- Should have temperature range 50ºC-200 ºC+1 ºC
- Should have Forced Convection System
- Should have microprocessor based PID digital temp. indicator cum controller with LED display

SPECIFICATION OF DRY HEAT BATH:

The Instrument should have the following features:

Should have LCD displays.

- Should have automatic fault detection and buzzer alarm function
- Should have temperature calibration function.
- Should have built-in over temperature protection.
- Should have safety protection .
- Should hav CE standard.
- Should have temp setting range: 0℃~100℃
- Should have temp range : RT ~100℃

- Should have temp accuracy: ≤±0.3℃*
- Should have temp uniformity: ≤±0.3℃*
- Should have eating time range: 10-12min （From RT℃to100℃）*
- Should have Auto heating function
- Should be compatible with AC220V/50-60HZ power supply
- Should have blocks for 35×1.5ml Centrifuge Tube

SPECIFICATION OF SHAKER INCUBATOR

The instrument should have following Features:

- Should be Integrated incubator and shaker.
- Should have good temperature uniformity.
- Should cause low noise.
- should have Micro-processor based temperature controls and shaking speed.
- Should have built in timing functions.
- Should have Built-in cover switch.
- Should have Independent temperature alarm system.
- Speed Range: 50rpm ~300rpm
- Temp. Control Range: R.T.+5 ~60℃
- Temp. Setting Range: 5 ~60℃
- Temp. Stability@37℃: ≤±0.3℃
- Temp. DisplayAccuracy: 0.1℃
- Voltage AC: 220V / AC 110V, 50/60Hz
- Power: 400W
- Dimension (WxDxH) : 360 x 435 x 320mm
- Optional Platform: Universal Platform with Springs

SPECIFICATION OF -20 DEGREE FRIDGE

Model Specification	
Capacity	150 – 200 L
Temperature range	-17 to -22 Degree Celsius
Cooling ability	Fast

Display and alarm	Digital and LCD display, should be enabled with alarm
Dimension	22×28×52
Wheels	yes
Lock	yes
Defrost	Auto/Manual
Load	1100 W
No of Baskets	5- 10

SPECIFICATION Of -4 DEGREE FRIDGE

Capacity	200 + L
Dimensions	75×34×34
Door	Double
Wheels	yes
Lock	yes
Power	230 – 470 W
No Of Baskets	5- 10

SPECIFICATION FOR ANALYTICAL BALANCE (220 G X 0.1 mg)

Following specifications are required for balance

Balance Type	**Analytical balance**
Legal verification	**Factory verification (India)**
Draft shield	**Manual**
Leveling	**Manual**
Display	**Colored Touchscreen**
Adjustment	**Internal automatic (isoCAL)**
Minimum sample weight acc. to USP (typical)	**82 mg**
Weighing capacity	**220 g**
Line voltage	**100 – 240 V, 50 – 60 Hz**

Repeatability	**0.1 mg**
Readability	**0.1 mg**

Standard laboratory applications	• Weighing • Density • Percentage • Check Weighing • Peak Hold • Counting • Unstable Conditions • Animal Weighing
Special laboratory applications	• Mixing • Components • Statistics • Conversion
Chemical resistance	**Yes**
Calibration history	**Yes**
Weighing units	**g, ct, mom, kg, lb, oz, ozt, tlh, tls, tlt, GN, dwt, mg, parts | lb, tlc, Kt, tol, bat, MS, N**
Languages	**English, French, German, Hungarian, Italian, Polish, Portuguese, Russian, Spanish, Turkish, Chinese, Japanese, Korean**
Housing protection	**Acetone cleanable housing, Glass parts of the draft shield are coated to reduce electrostatic influences, In-use cover, Dust cover for balances with draft shield**
Underfloor weighing	**Yes**
Tamper protection	**Supervisor lock**
Password protection	**No**
Application	• Education • Research and development • General Laboratory • Pharmacies
Connectivity	• PC-direct data transfer • Plug&Play to Sartorius printer
Data transfer	• Direct transfer to Windows® applications • Programmable interval for data output

	• **Data transfer protocols SBI - table format - text format**
Interface	• **mini USB**

SPECIFICATIONS OF COMPOUND MICROSCOPE

Body- Well designed heavy & sturdy die casted monocular body inclinable to 90 to meet the needs of college and schools.

Main features required of the microscope are:

Tube with mechanical tube length 160mm with triple revolving nose piece.

Separate coarse and fine adjustment. Square stage with clips for holding the slide.

Double lens bright field ABBE is diaphragm and swing out filter holder.

Illumination by Plano cancave mirror and LED lamp.

Optical Combination: Antifungal Objectives: 4x, 40x, 100x

Eye piece: 10x, 15x (Huygenian)

Electrically Operated Microscope

Centrifuge specification

1. Maximum RPM: 5250, Microprocessor based square MS body duly powder coated.
2. Double walled light weight ABS lid.
3. Fitted with microprocessor based 4 lines 16 characters LCD panel for 0-59 minutes countdown timer, digital rpm meter and programmable speed controller.
4. It is also featured with dynamic brake, Electronic lid lock, imbalance detector.
5. 10 programme memory, 3 accelerations and 3 decelerations. (without Rotor Head)
6. Optional Accessories
    - 12 x 15 ml Angle Head
    - 6 x 50 ml Angle Head

SPECIFICATIONS OF ELECTROPHORETIC UNIT (Horizontal, vertical and powerpack together)

Specifications for Horizontal Electrophoresis

- Single molded Horizontal Electrophoresis with sample volume not less than 44.
- It should allow to cast 3 different size of gels 200×200mm; 200×150mm; 200×100mm.
- Combs to accommodate sample volume 17, 22, 36, 44 in one run
- It should not use more buffer than 1800ml
- Combs for 1.5mm, 1.0mm should come with the system
- Buffer volume should guarantees cooling effects, but also keeps the pH Value stable during the whole experiment process.
- Detachable and Unfolded electrodes for easy repair and parts replacement easy and quick cleaning.
- It should have compact special gel casting to preventing the gel leakage, operation is simple and convenient.
- It should have transparent top lid effectively prevents liquid in the cell from volatilizing and avoids electricity leakage.
- It should Auto-switch-off when the lid is removed.
- Light weight not more than 3.0 kg
- Dimension of the unit should be approx. 397×230×93 mm（L×W×H）
- Warranty-1 year from the date of installation

Specifications for Vertical Gel Electrophoresis (4 Gel) and Power supply

Vertical Electrophoresis 4 gels
Performance Parameters - Dimensions of Glass Plates in cm x cm: 10.1 x 8.2 cm
Dimensions of Gel in cm x cm: 8.3 x 7.3 cm
Thickness of comb (mm): 1.5 and 1 mm should come together
Thickness of spacers (mm): 1.5 and 1 mm should come together
Construction of Unit (Molded)
Upgradable Option: Yes
Casting Module Included: Yes
Mini gel Specification- for 8.3 X 7.3 cm gels High throughput- Capable of running up to 4 mini gel (8 X 7 Cm) simultaneously. Should be supplied with the capability of running two gels. Flexible- Capable of running hand cast as well as precast gel. Running and casting module should be different Interchangeable module- Should be capable of using blotting module to

do western blotting. Leak proof, tape free and easy assembly. Patented Flap wing for leak proof assembly. Permanently bonded spacer plates for leak proof, without agarose sealing & taping casting of gels.
Casting frame with simple cam closure mechanism that gives precision alignment on any flat surface.
Side by side casting stands that allow access to both gels simultaneously. Patented colored sample loading guides to prevent the skipping or repeated loading lanes. Modular design can be used do western blotting by using the blotting module only.
Should able to run gels in 35–45 min (at 200 V constant).
Should use buffer volume less then 1,000 ml
Should come with buffer dam.
Warranty-1 year from the date of installation

Specifications for Mini Transfer Blot Cell

- The Mini TBC cell provides rapid, high-quality blotting of mini gels.
- The Mini TBC cell accommodates two gel holder cassettes for electrophoretic transfer of mini format gels (Mini P-4 gels) run in the Mini P-4 cell.

Features of the Mini TBC cell include:

- Transfers two 10 x 7.5 cm gels in just 1 hour; low-intensity, overnight transfers also possible.
- Wire electrodes are placed 4 cm apart for strong electrical fields and efficient protein transfer.
- Color-coded cassettes and electrodes ensure proper orientation of the gel during transfer.
- New Blue-Ice cooling unit, completely contained within the Mini TBC cell, absorbs heat generated during rapid transfers
- Available either as a complete stand-alone apparatus or as a module compatible with the buffer tank and lid of the Mini P-4 cell

Specifications

- Maximum gel size (W x L)-10 x 7.5 cm
- Buffer requirement-450 ml
- Gel capacity 2 Mini P-4 gels 2 Ready Gel precast gels
- Dimensions (W x L x H) -12 x 16 x 18 cm
- Warranty-1 year from the date of installation

Specifications for of electrophoresis power supply

- Electrophoresis power supplies constructed with microprocessor controller.
- 4 pairs of outlet terminals which cover the broadest range of application in general laboratory.
- The microprocessor control can perform either continuous or timed output, and user is able to pause and resume anytime without resetting the timer.
- Power Supply is power enough to perform horizontal and protein electrophoresis as well as two dimensional electrophoresis SDS PAGE applications.

- It can operate with a fully programmable mode and offer up to 6 multi-step setting conditions.
- The 2.4” TFT-LCD colour screen also allows you to see all the running/setting conditions while operating.

features to ensure safety of the lab and experiment.

- Four pairs of output terminals
- Timer with alarm function
- Compact size with stackable case
- Constant voltage/ current/ power operation mode
- Typical Running condition helps electrophoresis beginner
- Wide application for DNA, RNA and protein electrophoresis and blotting
- Advanced safety device design
- Output Voltage / Inc-5 - 300V / 1V
- Output Current / Inc-1 - 700mA / 1mA
- Power- Input:200W; Output: 150W
- Rated Voltage-100-240V~; 47-60Hz
- Voltage or Current with automatic crossover
- When target constant mode is set, system automatically adjusts the two other
- parameter to maximum to allow constant run (later could be changed by user)
- Program Storage-30 programmed files
- Program Multi-Step- Up to 6 steps
- Editable Program Function-Typical running conditions program, Manual editable program
- Safety Device- No Load detect, Over temperature protection, Leakage detect, Over load detection, Sudden load change detection(could be enabled by proper setting), Shrouded plugs and sockets.
- Timer- Constant: 9999 (min) with alarm/ Continuous, Program: 999 (min) with alarm/ Continuous
- Crossover, Stackable, Automatic Recovery After Power Failure.
- Operating Temperature-4℃~ 40℃
- Material- PC housing and flame retardant ABS faceplate
- Dimension- Approx. 8.5"x13.2"x4.1" (215 x 335 x 104 mm)

Multichannel pipettes specification

Compatible Tip	Clip Tip
Description	E1- Clip Tip Equalizer
Adjustable Tip Spacing	9.0 To 14.2 Mm
For Use With	Clip Tip 200
Number Of Channels	8
Programmability	Yes
Volume (Metric)	2 To 125 µl
Increments	0.1 µl