

Establishing VRDL on turnkey basis at Government Institute of Medical Sciences, Greater Noida

Expression of Interest (EOI) for development (Equipment & infrastructure) Virus Research Diagnostic Laboratory (VRDL) at Government Institute of Medical Sciences, Greater Noida.

1. EOI is invited for development (Equipment & infrastructure) of VRDL that includes procurement of equipment, lab designing, concerned civil work, electrical work, furniture, wood work and partitioning etc for tissue culture laboratory.
2. EOI is invited for development infrastructure for genomic sequencing and molecular diagnostics facility under VRDL that includes lab designing, concerned civil work, electrical work, furniture, wood work and partitioning etc
3. Bidders are requested to quote for the equipment (List enclosed) in their proposal.
4. All interested vendors must provide the certificate of similar development of infrastructure designing of at least two VRDL laboratory at regional or state level on 30/11/2021.

Total Allotted area for state level VRDL : 300 Sq meter

TECHNICAL SPECIFICATIONS AND SCOPE OF WORK

Name of the work: Establishing VRDL on turnkey basis at GIMS. Hospital.

Quantity:- As per Schedule of Quantities.

1. **Period of contract:** - 03 months
2. **Work place:** - VRDL Lab 1st floor Hospital Building, GIMS.
3. **Scope of work:** The scope in detail includes following:
 - A. Development (Equipment & infrastructure) of VRDL that includes procurement of equipment, lab designing, concerned civil work, electrical work, furniture, wood work and partitioning etc for tissue culture laboratory.
 - B. Development infrastructure for genomic sequencing and molecular diagnostics facility under VRDL that includes lab designing, concerned civil work, electrical work, furniture, wood work and partitioning etc
 - C. To implement necessary fire safety measures.
 - D. Bidders are requested to quote for the equipment (List enclosed along with specifications) in their proposal.
 - E. Bidders are requested to visit laboratory area before submitting EOI (visiting dates 16th – 17th December. 9AM – 5 PM)

TECHNICAL SPECIFICATIONS OF TRUNKEY PROJECT FOR ESTABLISHING VIRAL RESEARCH & DIAGNOSTIC LABORATORY

A) TECHNICAL SPECIFICATIONS FOR LAB SET UP

1) Wall Partition 60 mm Qty: 210 Sq Mtrs (approximately)

- Supply of Panel should be in 60 mm thick Overall section of 0.6 mm thick. TGGIPP sheet should be on outer skin infill with PUF of 40Kg/m³ density.
- External facing should be bacteriostatic, dense and non-porous material. The panel should be made of a durable and uniform material that should be easy to clean and extremely hygienic.
- Should have Internal balancing core with suitable geometry to ensure the maximum rigidity.
- The Panels should be resistant to water, detergents & hydrogen peroxide disinfectant normally used. Reaction to fire class 1 norm.
- Panel should be produced in a single full height floor-to ceiling piece in order to create a smooth uninterrupted surface between adjacent panels.
- Wall Panels should comply with any one applicable international safety /Quality certification. Color & view of inner surface wall of LAB shall be finalized after approval of CLIENT.

2) Clean Room Doors Qty : 19 Nos (approximately)

- Clean room Solid Steel Doors should be made up of 0.8mm thick GI sheet, Door leaf should be 44mm thick, and door frame of 1.2mm thick G I sheet, with PUF insulation as infill material with PU Painted finish with Hardware as mentioned below, with vision glass and with installation.

Clean Room Doors 900 L

- Should be Single Leaf Door: 900 x 2200 mm Door

Hardware for Doors :

- Should be SSS Roll bearing Hinges,
- Should be SS D handle Back to back / SS D Handle one side and one side SS push Plate,
- Should be with Dead lock Both Side Key operation,
- Should be with SS Kick plate 0.8 mm thick up to 300 mm height,
- Should be provided with Concealed type Bottom Drop seal
- Should provide with Door closer TS 1000 C STD ARM, Door stopper, Double glazed view panel of 400*600 mm with 6 mm thick toughened glass, Door seal Groove Type

COUPLE Lock Door System

- Should be with Couple lock door systems for clean rooms, containment suites, laboratories - in fact any critical area that requires door access control with additional security.
- It should be USER PROGRAMMABLE,
- Should have Master-Slave Configuration and can be configured up to maximum 2 doors in loop.
- The unit should be flexible and can be configured on site by the user for required door locking logic

3) View Panels Qty : 20 Nos (approximately)

- Should be double glaze view panels for modular wall panels with 5 mm

- Toughened glass with all accessories like double adhesive tape , silicon sealant and silica gel with installation

4) Electrical Connections Qty : 1850 Sq ft L. S. (approximately)

- Should provide wiring for light point with 1.5 sq. mm FRLS PVC insulated copper conductor single core cable in surface / recessed concealed medium class PVC conduit
- Should be with modular switch, modular plate,
- Should provide suitable GI box and earthing the point with 1.5 sq. mm FRLS PVC insulated copper conductor single core cable etc. as required. (Avg Legth upto 9 mtr)
- Make: Legrand
- Should provide Power Point 15/16A for supplying and fixing suitable size box with Three modular plate and cover in front on surface or in recess concealed, including providing and fixing 6 pin 15/16 A modular socket outlet and 15/16 A modular switch, connections etc. as required.
- Should have wiring for circuit/ sub main wiring along with earth wire with the 2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire of FRLS PVC insulated copper conductor, single core cable in surface/ recessed concealed medium class PVC conduit as required for power point.
- Should provide supplying and fixing of 4 way single/ double door surface/ recess/concealed mounting, vertical type, 415 volts, TPN MCB distribution board of sheet steel, dust protected, duly powder painted, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator)
- Should provide supplying and fixing of 63 amps four pole, 415 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.
- Should provide supplying and fixing of following rating, 240/415 volts, “C” curve, miniature circuit breaker suitable for Laboratory Equipment load (inductive load) of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.

Telephone Point

- Should provide supplying and fixing 1or2 modular GI box along with telephone socket, modular plate & switch box including connections etc. as required.
- Should provide supplying and drawing 2 pair 0.5 mm dia FRLS PVC insulated annealed copper conductor, unarmored telephone cable in the surface/ recessed concealed PVC conduit as required.
- Dismantling the existing POP, Switches, sockets, fittings, piping, fan, fixtures etc and depositing the same at engineering dept should be done.
- Access Control System for main door should be provided for supply, installation, testing & commissioning of time attendance machine with access control, access through RFID card & pin, biometric/proximity type of reader and magnetic locks with min 10 Proximity cards, software, power supply etc for installation Complete Job.

NOTE : Client Need to Provide only a three Phase Copper wire of 25 Sq.mm upto LAB

5) Panel LED Light Qty : 23 Nos (approximately)

- Should be 2'x2' Sized Led Slim Recessed Panel Lights
- Should be environment friendly and retrofit solution
- Should be good colour
- Should be ceilings mounted Lights

- Should be fitted in any type of false ceiling.
- Make : SYSKA

6) Local Area Network (LAN) Qty : 10 Nos (approximately)

- Should provide connection of the computers and peripherals with each other on a
- Local Area Network for sharing the documents and data easily.

7) Intercom Qty : 10 Nos

- Should provide for communicating within the lab members in separate rooms

8) Computers Qty : 3 Nos

- Intel core i7 processor(quad core)
- 8 GB RAM
- Solid state hard drive with 2TB
- Keyboard, optical mouse
- 2 KVA offline UPS with 30 min backup

Operating System : Windows 10(64 bit encryption)

9) Printers Qty : 3 Nos

- Printer Type : Lazer
- Functionally – All inOne (Print, Scan, Copy)
- Scanner type flatbed
- Printer output : Color
- Connectivity – USB
- Pages per minute – 8 Pages(Black), 4 Pages(Color) As per Standard

10) Projector Screen Qty : 1 Nos

- Should be easy to use and low maintenance,
- Should be 6 Feet (Width) x 4 Feet (Height),
- Should be In 4:3 Format, 84 Inches/7 Feet Diagonal Length,
- Should be with 1080 P 3D and 4K Ready Technology

11) White Board Qty : 1 Nos

- Should be with Super White' Writing Grade Hard Melamine Surface (Marker Sheet) as per IS:2046/1997.
- Should not be Used For Sticking Magnets
- Board Size should be : 3X4 Feet (90x120 CM).
- Should works well with Any Whiteboard Marker

13) Ultraviolet Germicidal Irradiation Qty : 1 Nos

➤ Should be provided with UVGI which has been used to scrub carrying inside the CAFD System.

➤ Ultraviolet Germicidal Irradiation should be efficacious to varying degrees in controlling the circulation of airborne infectious particles.

➤ Ultraviolet Germicidal Irradiation should disinfects approximately 80% of the Air entering in the classified area.

- Should help to prevent the classification recommended in a Lab.

15) Static Passbox Qty : 4 Nos

- Should be SS 304 with Matte Finishing Double Skinned

- Should have precision designing and finish.
- Should be with high grade stainless steel construction.
- Provided with choice of mechanical or electrical interlocked.
- Should be provided with maximum chemical resistance construction.
- Should provide Indicating lamp to know the door lock-unlock condition.
- Doors should have interlock mechanism one Opening at one time.
- Should be provided with LED Light/UV Light.

16) LAB FUNITURE

Jet Black Granite Qty : 300 Sq ft (approximately)

- Should be with top 18 MM THICK with Zero water absorption, high temperature, chemical and stain resistance and can be repolished.
- Should have drawer units that are placed below the wall bench and should be removable.

Drawer Units Qty : 30 Nos (approximately)

- Should be (600 mm wide 2 Shutter 1 Drawer End Unit) 600 mm wide, 550 mm deep.
- Should be 850 mm height lab storage unit having drawer of 125 mm in height with two telescopic channels.
- Should provide below drawer with two shutters that are mounted with SS hinges and having one shelf in side.
- Should have 100mm toe space at bottom, complete unique.
- Should be with complete CRCA furniture is pretreated with 8 tank pickling process further chemoxy powder coated by maintaining 70 to 80 micron film thickness.

Cross Over Bench Qty : 1

- Should be provided with high end Stainless Steel 304/316
- Should be like movable table which is attractive to look and comes with durable services.
- Should be thin and movable and comprises of small rollers attached with the legs so that it can fit anywhere without creating any problem.
- Should be high tensile strength
- Should be robust structure
- Size should be: 350mm x 1200mm
- **Should Provide**
- **Office Table Qty : 02 Nos**
- **Office Chairs Qty : 25 Nos**
- **Laboratory Stools Qty : 19 Nos**
- **Racks Qty : 02 Nos**
- **Cupboards Qty : 09 Nos**
- **Dustbins Qty : 05 Nos**
- **Discard Trolley Qty : 01 Nos**
- **Shoe Rack Qty : 01 Nos**

POWER TRUNKS Qty : 39 R Mtrs (approximately)

- Should be with 1200 mm in length : 1200 mm wide, 120 mm deep, 120 mm Height table mounted Raceways.
- Should be with electrical Switch & Sockets Fitted (With Wiring).
- Should be with complete CRCA furniture which is pretreated with 8 tank pickling process and further provide with chemoxy powder coated by maintaining 70 to 80 micron film thickness.

- Should be provided with switch & sockets

SINK Unit Qty : 4 Nos

- Should be Stainless Steel 304.
- Should be Maximum Chemical Resistance.
- Should provide O3 Gasket / 'O' Ring Nitrail Rubber to Avoid Leakage.
- Should provide Outlet Connection: 1 1/2" B.S.P.
- Should have chemical resistant drain piping
- Should be with Standard Colour i.e., Black.
- Should be easy to Install & Easy to Clean.

Hand wash Sink Qty : 1 Nos

- Should be with Mirror and a shelf with compartment, hands free tap with eye wash station

FAUCET Qty : 4 Nos

1. Raw Material:

- Should be Brass as per IS: 319 (I) (Machining Grade).
- Should be Brass as per BS: 218 (M) (Forging Grade).
- Should provide Pipe as per IS: 407 (CuZn37).
- Should provide Nylon / ABS Knob.
- Should provide All Gasket / 'O' Ring Nitrile Rubber.
- Should provide Inlet Connection 1/2" B.S.P.

2. Testing:

- Pneumatic Test at 250 PSI.
- Hydraulic Test at 125 PSI.
- Bursting Test at 500 PSI.

3. Powder Coating:

- Should be Epoxy Fusion Bond.

17) Anti- Static Chemoxy Flooring Qty : 1100 Sq Ft. (approximately)

- Should be chemical resistance and remarkable toughness
- Should be designed to withstand high traffic conditions and the offered coatings
- should be developed from premium grade materials and to be accessed with varied pigments.
- Coving should be 50mm- 75 mm in height.
- Should avoid corner dust deposits.
- Flooring in each Classified rooms should be seamless with perfectly curved flashcovings, resistance to mechanical stress and dynamic load sand having ESD/EMI (conductive) protection characteristics, 2mm thick, washable.

- Should be provided with the copper strip of 2' x 2' grid to the nearby earthing .
- Should be self leveling compound with thickness ranging from 1mm to 3mm.

18) Air Curtains Qty : 2 Nos

- Should be high quality Air Curtains
- Should be made up of Galvanized Powder Coated Sheets,

- Should be provide with Hepa filter (0.3 micron) installed above the main Entrance/Door of the lab to restrain the outside air into the laboratory at the time of entry or exit.

19) PU paint Qty : 2500 Sq Ft (approximately)

- Should be optimum chemical resistance which is best suited for industrial and commercial Structures

20) Flooring Tiles Qty : 900 Sq Ft (approximately)

- Should be antiskid high quality Flooring Tiles

21) Aluminum Sliding Windows Qty : 10 Nos (approximately)

- Should be powder coated aluminum sliding windows with Clear Glass and accessories

22) Sign Board Qty : 01 Nos

- Should be Lab Sign Board outside the Lab.
- Should be 4 x 6 Ft On Commercial Ply Board Duly Painted

21) Safety Aspects :- Qty : 1 Package

Should provide Smoke Detectors & Fire Alarms

- Should sense smoke, typically as an indicator of fire.
- Should signal to a fire alarm control panel as part of a fire alarm system, while household smoke detectors, also known as smoke alarms, generally issue a local audible or visual alarm from the detector itself.

Should provide Fire Extinguishers:

- Should be standard dry powder extinguishers that are also called 'ABC' extinguishers because they tackle class A, B and C fires, however they are not recommended for use in enclosed spaces.
- Should provide ABC powder extinguishers that can also be used on some electrical fires. Specialist dry powder extinguishers are used for flammable metals.

Should provide PANIC BARS :- (DORMA 9000 Series)

- Should be anti Microbial protected Coating.
- Should be BHMA certified to ANSI. A156 .3 for Grade 1 exit devices.

22) 01 inverter+ UPS (20 KVA capacity each) 01 Nos

- Should have batteries, battery bank, battery racks

23) 200 KVA generator 01 Nos

24) CCTV system 01 Nos

- multiplexer cum DVD,
- 1 TB hard disk as required
- With high resolution cameras 09 Nos

LIST OF EQUIPMENT TO BE PROCURED UNDER VRDL

S. No	Name of Equipments	Preferred Make	Quantity required
1.	PCR Work station	Sigma Aldrich, Erlab, Fisher Scientific	02
2.	CO2 Incubator	NuAire Limited	01
3.	Inverted Microscope	Nikon Corporation, Olympus Corporation, Fisher Scientific	01
4.	Liquid Nitrogen Can – 47L capacity	Marshal Scientific, ThermoForma, Cryocan	01
5.	Liquid Nitrogen Can – 33L capacity	Marshal Scientific, ThermoForma, Cryocan	01
6.	Electronic pH Meter	Thermo Orion, Sartorius AG, Lab India Pvt. Ltd.	01
7.	Automated Cell Counter	Olympus	01
8.	Table top mini centrifuge/quick spin	Tarsons Products Pvt. Ltd., Axygen Scientific, Sartorius AG, Corning Technologies India Pvt. Ltd	02
9.	Refrigerated centrifuge	Hettich India Pvt. Ltd, Eppendorf AG, Sartorius AG, REMI LAB WORLD	01
10.	Refrigerated microfuge	Hettich India Pvt. Ltd, Eppendorf AG, NuWind,	01
11.	Freezer -20	Thermo Fisher Scientific, Crispcold, Blue Star	01
12.	Freezer -70	Thermo Fisher Scientific, Celfrost, Labocon Inc	01
13.	Adjustable Volume Single Channel Pipettes • 0.2 to 2µL • 1 to 10µL • 2 to 20µL • 20 to 200µL • 100 to 1000µL	Eppendorf AG, Gilson, Thermo Fisher Scientific, Sartorius AG	03 03 03 03 03
14.	Electronic Multichannel Pipette • 0.5 to 10 µl • 5 to 10µl • 50 to 1200µl	Eppendorf AG, Gilson, Thermo Fisher Scientific, Sartorius AG	03
15.	Adjustable Vol. Multi Channel Pipettes (digital) • 5 to 50µL • 30-300 µL	Eppendorf AG, Gilson, Thermo Fisher Scientific, Sartorius AG	02
16.	Under table deep freezer	Blue star	01
17.	Fine electronic balance	Mettler Pvt. Ltd., Sartorius AG, Contech India	01

18.	Millipore Positive Pressure Filtration/ Water Purification System	Merck Merck Millipore, Thermo Fisher Scientific, Sartorius AG	01
19.	Water bath	Grant, Corning Technologies India Pvt. Ltd., REMI LAB WORLD	01
20.	Label printer	Nuve, Thermo Fisher Scientific	01
21.	Magnetic strirrer	Tarsons Products Pvt. Ltd., Axygen Scientific, Eppendorf AG	01
22.	Elisa plate washer	Lisa Wash(Tulip Diagnostics Pvt. Ltd.), Biotek Instruments (I) Pvt Ltd., Titertek	01
23.	Elisa plate reader	Thermo Scientific, Biotek Instruments (I) Pvt Ltd., Bio-Rad Laboratories Inc., Tecan Inc	01
24.	Refrigerator	Samsung India, LG India, Whirlpool	01
25.	Microwave oven	Samsung India, LG India, IFB	01
26.	vortex mixer	Tarsons Products Pvt. Ltd., Axygen Scientific, Sartorius AG, Corning Technologies India Pvt. Ltd.	02
27.	Computer	As per specifications mentioned	03
28.	Printer	As per specifications mentioned	03
29.	Projector Screen	As per specifications mentioned	01
30.	White Board	As per specifications mentioned	01

TECHNICAL SPECIFICATIONS OF EQUIPMENTS FOR VRDL

SPECIFICATION FOR PCR WORKSTATION

1. More than 300L stainless steel work space & HEPA filters.
2. ISO Level-5 protection
3. Hood Width should be more than 35 inches
4. Lights: CFL & UV
5. Exterior Width: > 40 inches
6. Exterior Height: > 37 inches
7. Exterior Depth: > 24 inches
8. Power (VAC): 230
9. Power (Hz): 50
10. Exhaust volume (CFM): > 180
11. Should be supplied with
 - One 3 ft UV lamp
 - One Ergonomic Lab Chair
 - Offer Should include IQ, OQ, PQ Test

SPECIFICATION FOR AUTOMATED CELL COUNTER:

Automated cell counter system with EU Certification, below specification use in Research activity:

1. Cell counting time: less than 10 sec (manual focusing), less than 15 sec (auto focusing)
2. Cell concentration range: 5×10^4 - 1×10^7 Cells /mL
3. Cell diameter range: 3-60 μm (range 8-30 μm)
4. Focus mode: Manual focusing/ Automatic (Liquid lens technology / similar technology)
5. Adjustable parameter: size, shape, roundness, noise reduction, dilution factor, declustering
6. Output information: Total no. Live / Dead Cell Concentration; Concentration Live / Dead Cell Concentration; viability, average cell size.
7. Built-in Camera: Colour camera resolution 5 Megapixel
8. Image type: TIFF
9. Display: LCD Touchscreen display 7 inch (800X480)
10. Protocol storage: minimum capacity 300 protocol.
11. Count data storage: 1,000 counts
12. USB Port: minimum 03 Ports
13. Report format: PDF
14. Report Built-in Printer: Thermal printer
15. Slides: Disposable slides, polystyrene, two chamber of each slides, chamber volume 10 μL . 50 slides along with system.
16. Certificate: EMC directive, EU, RoHS directive certificate. International laboratory standard.
17. Application: Research application activity.
18. Consumables for at least 500 reactions

SPECIFICATION FOR INVERTED MICROSCOPE:

1. **Microscope body:** - Manual Research Inverted Microscope body along with Binocular tube with 10x eyepiece with F.O.V 22mm and camera port.
Microscope body should be upgradable to other Microscopy techniques/ attachment in future like motorized component, 6-8 turret position motorized fluorescence, motorized stage, live cell imaging system.
2. **Transmitted Light system:** White light LED Illumination with intensity control function.
Three ways light sharing between camera port and eye port (100:0, 20:80 / 50:50, 0:100).

3. **Condenser:** Universal turret Condenser suitable for Bright Field, Phase contrast, Differential interference contrast.
4. **Eyepiece:** 10X Eye piece with Field of View (FOV) of at-least 22mm (2 nos.) with Diopter adjustment.
5. **Nosepiece:** 6 position **Motorized nose-piece** with DIC slot.
6. **Stage:** Manual X-Y Stage with Sample Holder for Petridish, glass slide, Terasaki plates, etc.
7. **Objectives:** The following Long Working distance objectives to be quoted, Plan Achromat objectives should be suitable for Bright Field, Phase contrast.
 - a. Plan Achromat 4X/5X NA 0.10, Working distance (WD) 18-20mm
 - b. Plan Achromat 10X/NA 0.25, WD 10mm-11 mm for BF, Phase
 - c. Plan Achromat 20X/NA 0.4, WD 1-1.5mm for BF, Phase
 - d. Semi apochromat/ Neofluor/ Plan Fluor 40X/NA 0.6,WD 3.0 -4.20mm with correction ring for BF, Phase, fluorescence
8. **Camera: Scientific grade microscopic color camera:**
Digital Scientific grade, USB 3.0 or higher PC connectivity, High Resolution camera capable of Fluorescence, Phase contrast, DIC and Bright-field imaging having CMOS sensor chip, with sensor size 1 inch or better, global shutter. Resolution of at-least **8.5-12 MP** or higher with pixel size of at-least range of **(3.45 μm - 6.45 μm X 3.45 μm -6.45 μm)**, live display speed ≥ 30 FPS at 4K resolution and ≥ 60 FPS at HD resolution (1920X1080) or better. Microscope, Camera and software should be from same manufacturer/ make.
9. **Software:** Software to control the all functionality of microscope components. Licensed software should have feature snap and movie/ AVI acquisition, measurement, tile view of saved image. Microscope, camera and imaging software should be from same make/ manufacturer.
10. **Computer:** - Branded Computer, Intel Pentium i-5, 1TB HDD, 4 GB RAM, 24" High resolution TFT color monitor, Integrated 1 GB Graphic Card, Windows 10 Licensed Operating software (64 Bit), Key board, Optical Mouse, USB 3.0 port for Camera connectivity, 1 KVA Offline UPS with 20-30 minute backup is required. With standard manufacturer warranty.
11. **Certifications:** Company must have certification from ISO/USFDA/ CE (European Union). Should complies International laboratory quality standard certificate.
12. The Microscope, optics, Camera and Software must be of one brand and manufacture for better compatibility.
13. All bidders should mandatorily give the web-links of the manufacturer's website for quoted microscope, optics, camera and software for confirmation of compliance with tender specifications.

SPECIFICATION FOR ELISA Reader

1. Flexibility of monochromator based absorbance with high performance filter-based fluorescence /luminescence
2. 2 μL low volume nucleic acid quantification with Take3 and Take3 Trio plates
3. Cell friendly orbital shaking and advanced incubator design to 50 $^{\circ}\text{C}$ with top/bottom gradient minimizing plate lid condensation
4. Dual reagent injectors for inject/read applications, such as enzyme kinetics and Dual-Luciferase[®] Reporter
5. Modular and upgradable
6. Powerful Gen5 Software for reader control and all data reduction needs
7. Advanced shaking profiles including linear and orbital
8. Compatible with BioStack and 3rd party automation
9. **General Specifications:**
 - a. **Detection method:** Fluorescence, Time-Resolved Fluorescence (secondary mode), Luminescence, UV-Visible Absorbance

- b. **Read method:** End point, kinetic, spectral scanning, well-area scanning Microplate types: 6 to 384 wells PCR plates; Take3™ and Take3 Trio Micro-Volume Plates
- c. **Temperature control:** 4 °C above ambient to 50 °C; ±0.2 °C at 37 °C
- d. **Shaking:** Linear, orbital
- e. **Software:** Gen5™ Data Analysis Software
- f. **Automation:** Compatible with BioStack™ and 3rd party automation

10. Absorbance

- a. Light source: Xenon flash lamp
- b. Wavelength selection: Monochromator
- c. Wavelength range: 200 – 999 nm, 1 nm increments
- d. Bandpass: 2.4 nm
- e. Dynamic range: 0 – 4.0 OD
- f. Resolution: 0.0001 OD
- g. Pathlength correction: Yes Monochromator
- h. wavelength accuracy: ±2 nm
- i. Monochromator
- j. wavelength repeatability: ±0.2 nm
- k. OD accuracy: <1% at 2.0 OD
- l. OD repeatability: <0.5% at 2.0 OD
- m. Reading speed: 96 wells: 14 seconds; 384 wells: 26 seconds

11. **Fluorescence Intensity**

- a. Sensitivity: Top and Bottom: Fluorescein 5 pM (1 fmol/well 96-well plate)
- b. Light source: Tungsten halogen Xenon flash
- c. Wavelength selection: Deep blocking filters
- d. Wavelength range: 300 – 700 nm (200 – 850 nm option)
- e. Dynamic range: >6 decades
- f. Bandpass: Filter dependent
- g. Detection system: PMT

12. **Luminescence**

- a. Sensitivity: 10 amol ATP (flash) – Luminescence only model
30 amol ATP (flash) – Multi-mode models
- b. Wavelength range: 300 – 700 nm
- c. Dynamic range: >6 decades
- d. Detection system: Low noise PMT

13. **Reagent Dispensers**

- a. Number: 2 syringe pumps
- b. Dispense volume: 5 – 1000 µL in 1 µL increments
- c. Minimum prime volume: 1.1 mL, 100 µL with back flush

14. **Physical Characteristics**

- a. Connectivity: 1 USB, 1 RS232 for external PC control
- b. Power: 100 – 240 Volts AC 50/60 Hz
- c. Dimensions: 16”W x 15”D x 10”H (40.6 x 38 x 25.4 cm)
- d. Weight: 40 lbs (18 kg)

15. **Regulatory**

CE and TUV marked.

SPECIFICATION FOR ELISA Washer

1. Application versatility: ELISA, cell-based assays and bead-based assays
2. Color touchscreen makes programming quick and easy
3. Easy touch operation for washing full or partial plates
4. Reliable and safe: liquid level sensing
5. Automated switching of up to 3 buffers for even greater automation
6. Automated, built-in maintenance routines for continued reliable operation
7. Typical Applications: ELISA, Cell-based assays, Biomagnetic particle separation assays, Filtration-to-waste protocols

8. Technical Specifications:

- a. Microplate types: 24-, 96-, 384-well plates and microwell strips
- b. Shaking: Programmable in minutes and seconds up to 30 minutes 5 intensities from 15-19 Hz
- c. Soak time: Programmable in minutes and seconds up to 30 minutes
- d. Separation methods: Biomagnetic separation (“M” configurations); Vacuum filtration (“F” configurations)
- e. User interface: 4.3” color LCD touchscreen
- f. Onboard software: Up to 75 user-programmable protocols, Quick menu, Create or edit custom protocols, Run protocols created onboard or downloaded from LHC™ Software
- g. Software: Liquid Handling Control for PC wash protocol programming and execution (optional)

9. Washing

- a. Manifold types:
 - i. 96-well washing: 8-well (1x8) manifold, 2x8-well manifold, 12-well (1x12) manifold 8-well short tube (1x8) manifold
 - ii. 96-/384-well washing: Dual-Action 16-well manifold
 - iii. 24-well washing: 4-well manifold
- b. Volume Range: 25-3,000 µL well
- c. Fluid delivery: One positive displacement syringe drive
- d. Wash cycle: 1-10
- e. Buffer/ Reagent selection: Automated switching for up to 3 buffers

10. Wash Speed:

Plate	Manifold	Speed
96 well	2x8 well	<80s for 12 strips (3 cycles, 300 µL/well, no soak)
96 well	12 well	<90s for 8 strips (3 cycles, 300 µL/well, no soak)
96 well	8 and 8s well	<130s for 12 strips (3 cycles, 300 µL/well, no soak)
384 well	8, 16 well	<260s for 24 strips (3 cycles, 100 µL/well, no soak)
24 well	4 well	<60s for 24 wells (1 cycle, 1120 µL/well, no soak)

11. Dispense speed:

	Manifold	Performance
96-well	8 and 8s well	≤3.0% CV when measured over six 300 µL-per-well dispenses of deionized water with 0.1% Tween 20.
96-well	12 well	≤3.0% CV when measured over four 300 µL-per-well dispenses of deionized water with 0.1% Tween 20.
384-well	8,16 well	≤4.0% CV when measured over six 100 µL-per-well dispenses of deionized water with 0.1% Tween 20.
96-well	2x8 well	≤4.0% CV when measured over six 300 µL-per-well dispenses (whole plate) of deionized water with 0.1% Tween 20.

24-well	4 well	≤4.0% CV when measured over six 1120 μL-per-well dispenses of deionized water with 0.1% Tween 20.
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12. Residual Volume:

	Manifold	Performance
96-well	8 and 8s well	≤2.0 μL/ well after 3-cycle wash, 300 μL/well dispensed
96-well	12 well	≤2.0 μL/ well after 3-cycle wash, 300 μL/well dispensed
384-well	8,16 well	≤4.0 μL/ well after 1-cycle wash, 100 μL/ well dispensed
96-well	2x8 well	≤4.0 μL/ well after 3-cycle wash, 300 μL/well dispense
24-well	4 well	≤50 μL/ well after 1120 μL is dispensed per well
96-well	Vacuum filtration	Average increased weight of the plate is <1.2 grams after dispensing 300 μL of DI water per well

13. Physical Characteristics

- Connectivity: 1 USB port for computer control
- Power: External 24VDC power supply compatible with 100-240VAC @ 50-60 Hz.
- Power consumption: 40 Watts
- Dimensions: 15"W x 15"D x 8"H (35.6 x 40.6 x 16.5 cm)
- Weight: 22 lbs (9.8 kg)

14. Regulatory: CE and TUV marked

Specifications for Water Purification System

A compact water purification system with ISO 9001 certified designed to be fed directly by potable tap water visual display for quality parameter, filter condition etc. Reservoir capacity of approx. 30 ltr. Necessary pre- filters, cartridges and accessories to get ultra pure, laboratory grade water for molecular biology work.

Quality of ultra pure water provided by system should fulfill following criteria:–

Resistivity : Conductivity : Pyrogen level :

Microorganisms : TOC values : Final filtration : Volume of pure and ultrapure water/day : Power Supply : Warranty : CMC :

18 or more meg-ohms-cm

90 – 100 micro-ohms

To the levels 0.001 eu/ml with disposable / add on ultra filtration cartridge

<1 cfu/ml

<5 ppb

Through 0.22 micron filter

~2lit/hr

210-240V/50-60 Hz

5 years from till date of installation/supply
5 years from till date of installation Which includes cartridges

-20°C Vertical Deep Freezer Specifications

General Specifications:

Capacity: 600-700 litre

Inner shelf: 6-9

Refrigerant: CFC free

Temperature control: Micro-processor controlled, Digital display with temperature resolution of 0.1°C

Alarms: Low/high temperature, power failure

Door closing and locking adjustment: self closing door with key door lock, adjustable levelling feet standard (optional casters)

Power supply: 210-240V/50-60 Hz

-80°C Vertical Ultra low Freezer Specifications

600-700 litre

CFC free

Micro-processor controlled, Digital display with temperature resolution of 0.1°C

Low/high temperature, power failure self closing door with key door lock, adjustable leveling feet standard (optional casters)

210-240V/50-60 Hz

Technical:

Galvanized steel sheet body with epoxy paint and vacuumed polyurethane foam panels, outer double door with locking facility. Alarm for audible & visual fault acknowledgement, low & high temperature audio visual alarms, condenser fault alarm, remote contact alarm, open door alarm, clean filter Indicator and power failure alarm. Castor wheels & leveling adjustor should be provided for adjustment and installation.

Capacity : Refrigerant : Cooling system : Doors :

Inner Compartment : Temperature : Additional Accessories :
Power Supply :

Approximately 650– 700L

CFC &HCFC

Cascade cooling system

Triple silicon section seal, Fitted with decompression valve facility to lower air pressure inside the freezer for easy door opening.

Minimum 3 compartments with doors

Range-55 to-80°C, Stability+/-1°C, uniformity+/-3°C SS Racks and cardboard boxes

210-240V/50-60 Hz

Computers Qty : 3 Nos

- Intel core i7 processor(quad core)
- 8 GB RAM
- Solid state hard drive with 2TB
- Keyboard, optical mouse
- 2 KVA offline UPS with 30 min backup

Operating System : Windows 10(64 bit encryption)

Printers Qty : 3 Nos

- Printer Type : Lazer
- Functionally – All inOne (Print, Scan,Copy)
- Scanner type flatbed
- Printer output : Color
- Connectivity – USB
- Pages per minute – 8 Pages(Black), 4 Pages(Color) As per Standard

Projector Screen Qty : 1 Nos

- Should be easy to use and low maintenance,
- Should be 6 Feet (Width) x 4 Feet (Height),
- Should be In 4:3 Format, 84 Inches/7 Feet Diagonal Length,
- Should be with 1080 P 3D and 4K Ready Technology

White Board Qty : 1 Nos

- Should be with Super White' Writing Grade Hard Melamine Surface (Marker Sheet) as per IS:2046/1997.
- Should not be Used For Sticking Magnets
- Board Size should be : 3X4 Feet (90x120 CM).
- Should works well with Any Whiteboard Marker

Note: Warranty: CMC for all equipment is 5 years from till date of installation/supply

All the equipments must include:

- All the accessories/equipments should be provided for proper installation/ running and to check the quality control of equipment
- Free on site delivery, system installation and on-site, in-lab operator training performed by a vendor service engineer.
- Availability of local service engineers.
- Free 1 year extended warranty after completion of basic warranty of 5 years
- Availability of regional technical support/applications training.
- Technical phone support.
- Certified list of consumers should be provided.

- Supply of a comprehensive user's manual complete with a report documenting all test procedures along with the equipment.
- **Supply of Power backup/ stabilizes as per the need of the equipment should be supplied free of cost for smooth functioning. Stabilizers are must on all sensitive equipment.**