



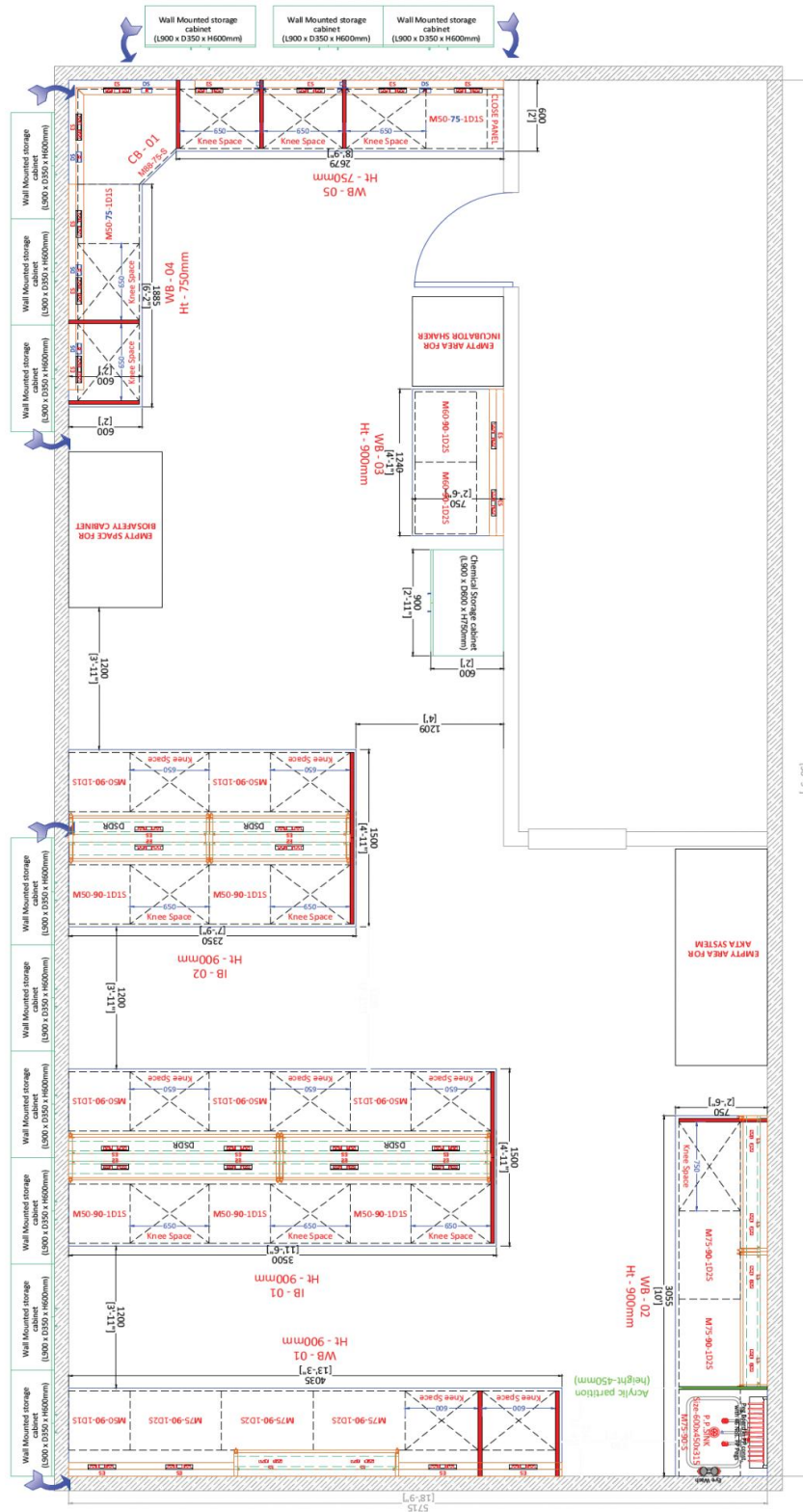
		2.00 Nos
3.	<p><b><u>ISLAND Bench (IB - 1) Size: L 3500 mm x W 1500 mm x H 900 mm</u></b></p> <ul style="list-style-type: none"> <li>- Work top in 18 ± 1 mm thick Black Granite construction</li> <li>- Approx. 500 mm wide storage module with one drawer one shutter</li> <li>- Leg space as shown in drawing</li> <li>- Double sided double tier reagent rack with electrical raceway</li> <li>- 6/16 Amp electrical sockets and 16 Amp one way switch</li> <li>- MS 25 X 25 X 1.2 mm Sq. Pipe for Granite Support</li> <li>- Vertical support for leg space</li> <li>- Base Moulding with Corner Clips</li> <li>- Filler Panel in G.I. Construction</li> </ul>	<p><b>1</b></p> <p>5.25 Sqm</p> <p>6 Nos.</p> <p>6 Nos.</p> <p>3.50 Rmt</p> <p>16 Nos.</p> <p>4 Nos.</p> <p>2 Nos.</p> <p>1 Lot</p> <p>2 Nos.</p>
4.	<p><b><u>ISLAND Bench (IB - 2) Size: L 2350 mm x W 1500 mm x H 900 mm</u></b></p> <ul style="list-style-type: none"> <li>- Work top in 18 ± 1 mm thick Black Granite construction</li> <li>- Approx 500 mm wide storage module with one drawer one shutter</li> <li>- Leg space</li> <li>- Double sided double tier reagent rack with electrical raceway</li> <li>- 6/16 Amp electrical sockets and 16 Amp one way switch</li> <li>- Vertical support for leg space</li> <li>- Base Moulding with Corner Clips</li> <li>- Filler Panel in G.I. Construction</li> </ul>	<p><b>1</b></p> <p>3.53 Sqm.</p> <p>4.00 Nos.</p> <p>4.00 Nos.</p> <p>2.35 Rmt.</p> <p>8 Nos.</p> <p>2 Nos.</p> <p>1 Lot.</p> <p>2 Nos.</p>
5.	<p><b><u>Wall Bench (WB - 3) Size: L 1240 mm x W 750 mm x H 900 mm</u></b></p> <ul style="list-style-type: none"> <li>- Work top in 18 ± 1 mm thick Black Granite construction</li> <li>- Approx 600 mm wide storage module with one drawer two shutters</li> <li>- Worktop mounted electrical raceway in GI powder coated construction</li> <li>- 6/16 Amp electrical sockets and 16 Amp one way switch</li> <li>- Base Moulding with Corner Clips</li> <li>- Filler Panel in G.I. Construction</li> </ul>	<p><b>1</b></p> <p>0.93 Sqm</p> <p>2 Nos</p> <p>1.24 Rmt</p> <p>4 Nos</p> <p>1 Lot</p> <p>2 Nos.</p>
6.	<p><b><u>Wall Bench (WB - 4) Size: L 1885 mm x W 600 mm x H 750 mm</u></b></p> <ul style="list-style-type: none"> <li>- Work top in 18 ± 1 mm thick Black Granite construction</li> <li>- Approx 500 mm wide storage module with one drawer one shutter</li> <li>- Leg space</li> </ul>	<p><b>1</b></p> <p>1.13 Sqm</p> <p>1 Nos.</p>

	<ul style="list-style-type: none"> <li>- Worktop mounted electrical raceway in GI powder coated construction</li> <li>- 6/16 Amp electrical sockets and 16 Amp one way switch</li> <li>- Data Socket</li> <li>- Vertical support for leg space</li> <li>- Close Panel in G.I. Construction</li> <li>- Base Moulding with Corner Clips</li> <li>- Filler Panel in G.I. Construction</li> </ul>	<p>2 Nos. 1.88 Rmt</p> <p>6 Nos.</p> <p>2 Nos. 2 Nos. 1 Nos. 1 Lot 2 Nos.</p>
<b>7.</b>	<p><b>Corner Bench (CB - 1) Size: L 880 mm x W 880 mm x H 750 mm</b></p> <ul style="list-style-type: none"> <li>- Work top in 18 ± 1 mm thick Black Granite construction</li> <li>- Corner storage module with one shutter</li> <li>- Worktop mounted electrical raceway in GI powder coated construction</li> <li>- 6/16 Amp electrical sockets and 16 Amp one way switch</li> <li>- Data Socket</li> <li>- Base Moulding with Corner Clips</li> <li>- Filler Panel in G.I. Construction</li> </ul>	<p><u>1</u></p> <p>0.77 Sqm</p> <p>1 Nos 1.7 Rmt</p> <p>4 Nos.</p> <p>2 Nos. 1 Lot 2 Nos.</p>
<b>8.</b>	<p><b>Wall Bench (WB - 5) Size: L 2679 mm x W 600 mm x H 750 mm</b></p> <ul style="list-style-type: none"> <li>- Work top in 18 ± 1 mm thick Black Granite construction</li> <li>- Approx 500 mm wide storage module with one drawer one shutter</li> <li>- Leg space</li> <li>- Worktop mounted electrical raceway in GI powder coated construction</li> <li>- 6/16 Amp electrical sockets and 16 Amp one way switch</li> <li>- Data Socket</li> <li>- Vertical support for leg space</li> <li>- Close Panel in G.I. Construction</li> <li>- Base Moulding with Corner Clips</li> <li>- Filler Panel in G.I. Construction</li> </ul>	<p><u>1</u></p> <p>1.60 Sqm</p> <p>1 Nos</p> <p>3 Nos 2.53 Rmt</p> <p>8 Nos.</p> <p>3 Nos 3 Nos. 1 Nos 1 Lot 2 Nos</p>
<b>9.</b>	<p><b>Wall Mounted Storage Cabinet Size: L 900 mm x W 350 mm x H 600 mm</b></p> <ul style="list-style-type: none"> <li>- Wall mounted cabinets in G.I. construction with epoxy powder coated one no. adjustable self with double skin Glass doors and Locks</li> </ul>	<p><u>13 Nos.</u></p>
<b>10.</b>	<p><b>Lab Stool</b></p> <p>-&gt; Load bearing capacity: 130kg or more</p>	<p><b>11</b></p>

	<ul style="list-style-type: none"> <li>-&gt; with footrest</li> <li>-&gt; foot type: black dual-wheel</li> <li>-&gt; self-braking, non-marring casters</li> <li>-&gt; Material: Vinyl or better, Adjustable (Height): 19-27"</li> <li>-&gt; Chrome Foot ring</li> </ul>	
<b>11.</b>	<b>Lab chair</b> <ul style="list-style-type: none"> <li>- Medium Back Mesh Chair</li> <li>-AC 60 Mesh</li> <li>-Single Lock Synchro Mechanism</li> <li>-Adjustable Lumbar Support</li> <li>-Two Way Adjustable Arms (Height)</li> <li>-Nylon Base</li> <li>-Fabric Upholstered Cushion Seat</li> </ul>	<b>7</b>
<b>12.</b>	<b>Glassware Storage Cabinet (GSC) Size: L 1000 x D 450 x H 1830mm</b> Storage Cabinet in GI Powder coated construction, cabinet will have 5 nos. adjustable shelves comparting 6 compartments, double skin Glass doors with SS Handles.	<u><b>2</b></u>
<b>13.</b>	<b>Storage Cabinet Size: L 900 x D 600 x H 750mm</b>	<b>1</b>

\*Please include the warranty for three years.

# Layout for Dr. Amar Deep's lab design



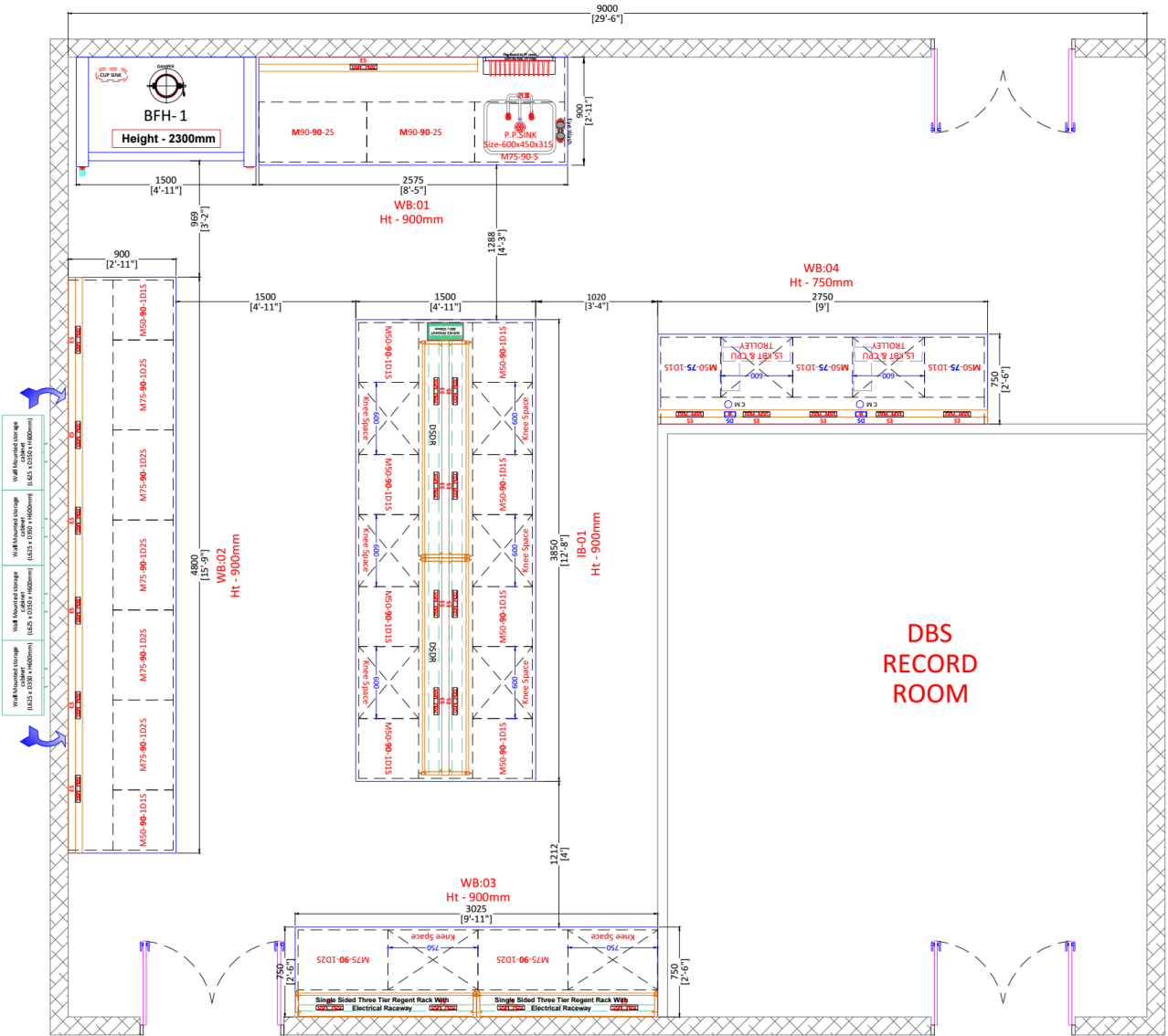
## Requirement of Laboratory Furniture in Dr. Ravi Devani's Lab in Plinth Mounted Design

Sr. No.	Description	Qty.	Unit
1	<p><b><u>Low Constant Volume (LCV) type Bench Fume Hood</u></b>  <b><u>(Size: L 1500 x D 915 x H 2300 mm) (For AC Lab)</u></b>                      Consisting of following: (As specified in Annexure - II)                      Fume Hood Superstructure                      Fume Hood Worktop                      Service Valves                      Electrical Fittings                      Controls                      Fume Hood Understructure                      Fume Hood Under-Cabinet (Chemical Storage Purpose)                      Accessories</p>	1	Nos.
2	<p><b><u>Exhaust Fan (315 mm Dia) - one fan for 1 Nos. 1500 mm wide Fume Hood</u></b>                      - Single piece molded UV treated chemical resistant SISW direct driven centrifugal fan in PP construction with suitable stand in MS powder coated construction, CFM 500 to 600                      - Corrosive resistant PP Impeller with extra strength, high efficiency, properties which produces lower noise and power consumption.                      - Drive - 1 HP, 1400 RPM, 415V, 50Hz., TEFC Class B insulation induction motor with IP55 enclosure, in Non- FLP const.                      - 16A, 3Ph MCB for Fan - Legrand or eq. Make                      - DOL Starter for Motor.</p>	1	Nos.
3	<p><b><u>Wall Bench (WB - 1) Size: L 2575 mm x W 900 mm x H 900 mm</u></b>                      - Work top in 18 ± 1 mm thick Black Granite construction                      - 900 mm wide storage module with two shutters                      - 750 mm wide storage module with two shutters                      - Single piece molded PP sink (L 600 x W 450 x D 315) 5 mm thick                      - Worktop mounted three-way water tap with swan neck spout                      - PP Adjustable Pegboard with 46 nos. PP Pegs. (Size: 600 x 600 mm)                      - Worktop mounted, double outlet eye wash with SS braided flexible hose                      - Worktop mounted electrical raceway in GI powder coated construction                      - 6/16 Amp electrical sockets and 16 Amp one way switch                      - MS 25 X 25 X 1.2 mm Sq. Pipe for Granite Support                      - Filler Panel in G.I. Construction</p>	1 2.32 2.00 1.00 1.00 1.00 1.00 1.00 1.83 2.00 2.00 2.00	Nos. Sqm Nos. Nos. Nos. Nos. Nos. Nos. Rmt. Nos. Nos. Nos.
4	<p><b><u>Wall Bench (WB - 2) Size: L 4800 mm x W 900 mm x H 900 mm</u></b>                      - Work top in 18 ± 1 mm thick Black Granite construction                      - 750 mm wide storage module with one drawer two shutters                      - 500 mm wide storage module with one drawer one shutter                      - Worktop mounted electrical raceway in GI powder coated construction                      - 6/16 Amp electrical sockets and 16 Amp one way switch                      - MS 25 X 25 X 1.2 mm Sq. Pipe for Granite Support                      - Filler Panel in G.I. Construction</p>	1.00 4.32 5.00 2.00 4.80 12.00 3.00 2.00	Nos. Sqm. Nos. Nos. Rmt. Nos. Nos. Nos.
5	<p><b><u>Wall Bench (WB - 3) Size: L 3025 mm x W 750 mm x H 900 mm</u></b>                      - Work top in 18 ± 1 mm thick Black Granite construction                      - 750 mm wide storage module with one drawer two shutters                      - Leg space                      - Single sided three tier reagent rack with electrical raceway                      - 6/16 Amp electrical sockets and 16 Amp one way switch                      - Vertical support for leg space                      - Filler Panel in G.I. Construction</p>	1.00 2.27 2.00 2.00 3.03 8.00 1.00 2.00	Nos. Sqm. Nos. Nos. Rmt. Nos. Nos. Nos.
6	<p><b><u>ISLAND Bench (IB - 1) Size: L 3850 mm x W 1500 mm x H 900 mm</u></b>                      - Work top in 18 ± 1 mm thick Black Granite construction</p>	1.00 5.78	Nos. Sqm.

	<ul style="list-style-type: none"> <li>- 750 mm wide storage module with one drawer two shutters</li> <li>- Leg space</li> <li>- Double sided double tier reagent rack with electrical raceway</li> <li>- 6/16 Amp electrical sockets and 16 Amp one way switch</li> <li>- Service Pendant</li> <li>- MS 25 X 25 X 1.2 mm Sq. Pipe for Granite Support</li> <li>- Filler Panel in G.I. Construction</li> </ul>	8.00 6.00 3.85 16.00 1.00 4.00 2.00	Nos. Nos. Rmt. Nos. Nos. Nos. Nos.
7	<p><b><u>Wall Bench (WB - 4) Size: L 2750 mm x W 750 mm x H 750 mm</u></b></p> <ul style="list-style-type: none"> <li>- Work top in 18 ± 1 mm thick Black Granite construction</li> <li>- 500 mm wide storage module with one drawer one shutter</li> <li>- Leg space with KBT, CPU Trolley and Cable Manager</li> <li>- Worktop mounted electrical raceway in GI powder coated construction</li> <li>- 6/16 Amp electrical sockets and 16 Amp one way switch</li> <li>- Data Socket</li> <li>- Filler Panel in G.I. Construction</li> </ul>	1.00 2.06 3.00 2.00 2.75 10.00 2.00 2.00	Nos. Sqm. Nos. Nos. Rmt. Nos. Nos. Nos.
8	<p><b><u>Wall Mounted Storage Cabinet Size: L 900 mm x W 350 mm x H 850 mm</u></b></p> <ul style="list-style-type: none"> <li>- Wall mounted cabinets in G.I. construction with epoxy powder coated one no. adjustable self with double skin Glass doors and Locks</li> </ul>	4.00	Nos.
9	<p><b><u>Glassware Storage Cabinet (GSC) Size: L 1000 x D 450 x H 1830mm</u></b></p> <ul style="list-style-type: none"> <li>- Storage Cabinet in GI Powder coated construction, cabinet will have 5 nos. adjustable shelves comparting 6 compartments, double skin Glass doors with SS Handles.</li> </ul>	3.00	Nos.
10	<p><b><u>Lab Stool</u></b></p> <ul style="list-style-type: none"> <li>- Load bearing capacity: 136kg or more</li> <li>- with footrest</li> <li>- foot type: black dual-wheel</li> <li>- self-braking, non-marring casters</li> <li>- Material: Vinyl or better, Adjustable (Height): 19 to 27 inches</li> <li>- Chrome Foot ring</li> </ul>	10.00	Nos.
11	<p><b><u>Lab chair</u></b></p> <p>ASTRO MBGS ADJ ARMS</p> <ul style="list-style-type: none"> <li>- Astro Medium Back Mesh Chair</li> <li>- AC 60 Mesh</li> <li>- Single Lock Synchro Mechanism</li> <li>- Adjustable Lumbar Support</li> <li>- Two Way Adjustable Arms (Height)</li> <li>- Nylon Base</li> <li>- Fabric Upholstered Cushion Seat</li> </ul>	4.00	Nos.
12	<p><b><u>Exhaust ducting in PP + FRP</u></b> (Round Shape) construction (3mm + 2mm) complete with necessary bends, reducers, T-connections, supports, flanges, gaskets, nutbolts etc.</p>	50	Sqmt r

\*Please include the warranty for three years.

# Layout for Dr. Ravi Devani's lab design



## **General specifications for Laboratory Furniture and Accessories**

- ❖ The laboratory furniture should be modular construction & design made of mainly Skin Passed/Zero Spangle G.I. (Galvanized Iron) duly coated with at least 50-60 micron Epoxy Powder coated in panel form and in CKD (Completely Knocked Down) construction so it could be erected at site as per attached layout. The design should have provision for reconfiguration for change in layout using simple tooling and should provide independent access to the utilities installed, electrical panel & instrumentation panel.
- ❖ All GI sheet components should be fabricated by precision shearing, levelling, notching, piercing, machines to achieve consolidated dimensions within close tolerances under the strict quality checks and assembled with the aid of fixtures. Exposed welding marks should be polished smooth to improve aesthetics. Corner intersections of vertical and horizontal members should be in the same plane with bolted joints and should be suitably aligned.

**Laboratory work tables with plinth design**, is where the worktop is mounted directly on a base of modular plinth mounted cabinets. This type of design provides flexibility in terms of easy change in the configuration of the work table in the future.

Laboratory work tables should be available in all of the following configurations. Work tables could be manufactured in 2 heights of 900 mm and 750 mm in metallic construction designed to have completely flexible modular system

### **Work Table Configurations:**

- a. Wall Benches (WB)
- b. Island Benches (IB)
- c. Peninsular Benches
- d. Corner Benches (CB)
- e. Sink Units

### ❖ **Under bench modules for Laboratory work tables:**

All modules manufactured from **IS 277 standards Zero Spangle Galvanized Iron sheets** in a **weldless construction**, to ensure excellent corrosion resistance of the base material itself.

Before assembly, each panel must be individually powder coated with 50 to 60 micron thickness using pure epoxy powder. The coating quality and strength needs to be ensured through a 1000-hours salt spray test and other physical tests conducted for each batch.

Fabrication of all panels must be carried out using CNC punching and folding machines to ensure perfect accuracy and precision which adds to the overall finish of lab furniture. All shutters and drawer fronts should be provided in a double skin construction with buffers to eliminate banging sound.

Furniture modules should be certified (see below the certificate list), which will be a proof of quality and rugged construction. The modules should be fabricated in standard and tailor-made designs to meet customer’s requirements of dimensions and configuration.

Necessary leg space should be provided between two cabinets wherever required (see the attached design) with additional accessories like foot rest, keyboard tray, CPU trolley etc. The rear portion of the leg space should be covered with the enclosure panel.

**Detailed specifications and thickness of Galvanized Iron items in each module:**


- Cabinet end panels; min. 1.0 mm thick Galvanized Iron Sheet
- Cabinet rear panel and top panel; min. 1.0 mm thick Galvanized Iron sheet
- Cabinet base skid; 1.0 mm thick Galvanized Iron Sheet
- Cabinet drawers; 1.0 mm thick Galvanized Iron Sheet
- Cabinet shutters & drawer front panels; double skin const, min 1 mm thick Galvanized Iron sheet
- Cabinet main frame structure and drawer slide rails, 1.6 mm thick Galvanized Iron Sheet - Each cabinet shall have self-standing type base skid plinth in Galvanized Iron const.

The following table provides general specifications and details related to modules for laboratory work tables.

	<b>Plinth Mounted Modules</b>
<b>MOC</b>	IS 277 standard, Zero Spangle GI
<b>Module sheet thickness</b>	1 to 1.6 mm
<b>Cabinet mounting</b>	Independently standing on plinth base skid

<b>Width/ Length</b>	500 mm, 750 mm and 1000 mm
<b>Height</b>	Varying from 732 mm to 882 mm depending upon table height
<b>Depth</b>	500 mm
<b>Hinges</b>	Knuckle-Barrel type hinges in SS construction for extra-ordinary strength & full 270 degree opening (exposed type)
<b>Drawer rails</b>	Telescopic channel; up to load bearing capacity 45 kg (100 lbs)
<b>Handles</b>	Aluminium flush handles; pure epoxy powder coated
<b>Locks</b>	Lock with two keys for drawers only OR Lock with two keys for drawers and shutters

❖ **Worktop options for work tables:**

	<b>Worktop</b>	<b>Colour</b>	<b>Thickness</b>	<b>Properties &amp; Application</b>
	Granite with chamfered edges and drip groove	Jet black or other colors of natural granite	18(±1mm) mm	Reasonably good chemical and stain resistance, good scratch resistance, flat but slightly porous surface, most economical; Natural marks and slight variation

				in thickness
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**Reagent Rack:**

- Single sided and Double sided reagent rack for wall benches and island benches, respectively
- Double or three tier racks depending on storage requirement.  
-Reagent racks should be mainly in two design:

:In epoxy coated galvanized iron construction with PP lined shelves

OR

:Special profile extruded Aluminium construction with hard anodized epoxy powder coated surface. Shelf tops should be provided in 6mm phenolic resin or wire reinforced glass construction. Shelf height shall be adjustable as per requirement.

**❖ Overhead Storage Cabinets:**

Overhead storage cabinets could be provided for file storage or general purpose storage in the island as well as wall benches. Overhead storage cabinets could be mounted on the wall where a solid brick concrete wall is available. However, in rooms with partition panels or hollow brick walls or island benches, overhead storage cabinets should be mounted on a frame structure constructed with the support of the bench structure itself.

**❖ Electrical Raceways:**

Electrical raceways should be in triangular or rectangular box type design in 1 mm thick GI construction finished with epoxy coating. Internal wiring is carried out using reliable copper conductors with FRLS insulation. Raceways should be mounted on vertical members of reagent racks or on the work surface of the table when not provided with reagent rack.

**❖ Vertical Service Pendants (Droppers):**

Various services such as gas or liquid lines, electrical or data cables should be laid through vertical service pendants when such services should be to be drawn from overhead lines. The pendants should be generally fabricated out of galvanized iron sheets and provided with service covers on one side to access service valves and other fittings. The size of the service droppers depends upon the number of services to be drawn through. Electrical Switches / Sockets - Legrand or Equivalent make.

**Other electrical accessories:**

- 6A/16A multi-plug sockets and switches
- 20A industrial sockets and MCBs
- Data points for network cabling
- Spark proof sockets and switches
- Other electrical accessories as required

❖ **Sink:**

In one piece, molded sink in Polypropylene (PP) construction. Sink outlet shall be provided with or without a large bottle trap in PP construction. The sink size should be equal to or more than L 600 mm x W 450 mm x H 315 mm.

❖ **Peg Board:**

Peg Board in PP / Phenolic Resin /SS construction with PP Pegs.

❖ **Emergency Shower and Eye Wash:**

Floor standing, overhead emergency shower with eyewash unit, main frame in S.S fabrication.

Worktop mounted, hand held type, single/double outlet eye wash with SS braided flexible hose.

❖ **Wall Mounted Storage Cabinet:**

**General Specifications:**

The cabinet should be suitable for mounting on the wall. The cabinet shall be fabricated out of galvanized iron sheets. The cabinet should be provided with 1 adjustable shelf. Proper design, stiffening / structural members should be provided for strength and rigidity. The front door of the cabinet shall be in twin door design having glass panel with metallic frame in galvanized iron construction. Dimension and constructional detail of the cabinet is furnished below.

**Overall Dimensions:** W – 600 mm x Depth – 350 mm x Height – 600 mm

(No. of Shelves: 1 fixed shelf; forming 2 compartments.)

**Construction Detail: -**

- End Panel, Top Panel & Bottom Panel: 1 mm thick Galvanized Iron sheet
- Rear panel: 1 mm Galvanized Iron sheet
- Front door: 5 mm thick glass with metallic frame in G.I.
- Shelf: 1 mm thick G.I. sheet
- Door supporting frames: 1.6 mm thick G.I. sheet
- Door Hinges: Knuckle and Barrel type SS hinges
- Door Handles: - SS 304 const.
- Lock: - With two keys for doors

## **Technical specifications for Fume Hood**

### **1. FUME HOOD SUPERSTRUCTURE:**

#### **A. DESIGN AND CONSTRUCTION DETAIL:**

**Type of Fume Hood:** Constant / LCV/ VAV type Bench / Low Bench/ Walk-In type Fume Hood.

**Hood Construction:** Structure bearing type, i.e. inner and outer panels fixed on rigid frame structure.

<b>Baffle Design</b>	3-point suction, fix type baffle arrangement for effective suction of light, medium and heavy fumes
<b>Sash Arrangement</b>	Vertical rising / Horizontal / Combination type
<b>Cup Sink</b>	Oval Shaped, size approx. 130x80mm – 1 No. per hood
<b>Service Valves</b>	Panel mounted valves with color coded as per DIN/ BS standard remote knobs fitted on front vertical post
<b>Valve Tubing</b>	Flexible tubes 1.5m long provided
<b>Front Vertical Post</b>	Aero Dynamic Design
<b>Air Foil</b>	Flip on Type Design

<b>Exhaust Outlet</b>	Streamlined exhaust outlet with suitable size Volume Control damper
<b>Electrical Panel Box</b>	Provided below the fume hood in GI construction

## **B. MATERIAL OF CONSTRUCTION / MAKE OF COMPONENT:**

**Fume Hood Inner Panels & Baffles:** 6mm thick panels made of laboratory grade Phenolic Resin / Compact Laminate to have property of excellent chemical & heat resistance and fire retardant.

These panels are in rigid construction with smooth finish and easy clean ability.

**Fume Hood External Panels:** Outer panels in 1.2mm thick front posts in durable, Zero Spangle / Skin Past Galvanized Iron steel, finished with epoxy powder coating of at least 50-60 micron thickness applied through the twin electrode method.

**Fume Hood Super Structure:** 2.0 mm thick Galvanized Iron (GI) powder coated construction.

**Fume Hood Work Surface:** 18 to 20 mm thick telephone black natural granite in standard offering with raised railing in same material on 4 sides for containment. The worktops can also be offered in Solid Epoxy/ Phenolic Resin/ Vitrified Ceramic etc. as per end user requirement on request.

**Cup Sink:** Oval shaped, Single piece molded polypropylene (PP) in standard offering. Solid Epoxy cup sinks can also be provided as per end user requirement on request.

**Air foil:** SS 316 L & in "Flip On" type in Aerodynamic design.

**Scaffolding (Lattice):** in vertical rod design, fabricated out of 12.0mm dia. Epoxy Rods, having 150mm pitch between two rods in standard offering. These can be offered in Stainless Steel as per end user requirement on request.

**Fume Hood Sash:** 5 mm thick toughened glass in frameless const. and vertical rising type and combination type arrangements. Fume Hood sash works with a pulley & counter weight mechanism with SS 316, multi wire flexible sash rope.

**Sash Pulleys:** Nylon pulleys with ball bearings.

**Service Valves:** Pre piped valves having body in forged brass construction, extended spindle in Aluminum construction, color coded knobs as per DIN/BS in plastic construction. Angular shaped serrated nozzles in epoxy coated forged brass construction with 1.5mtr. long flexible tubing with end fittings.

**Lighting:** Vapor proof light fitting with twin LED type light with fluorescent lamps.

**Duct Collar:** Molded Polypropylene (PP) construction.

**Damper:** Molded Polypropylene (PP) construction suitable for motorized operation.

**Fume Hood Plumbing Service Line:**

**For Air & Nitrogen Service:** 4mm Bore Polyurethane Tube

**For Vacuum Service:** SS Braided Teflon Hose

**For Water Service:** Nylon Braided PVC Hose

**For Chilled Water:** Duly Insulated Nylon Braided PVC Hose

**Electrical Fittings:** Legrand or Equivalent Make

**Cables/ Wires:** ICI / Finolex / Gloster / Anchor or Equivalent Make

**2. BASE CABINET:**

**Overall Dimension:** W 1500 / 1800 mm x H 730 mm x D 450 mm.

Twin cabinets in Zero Spangle / Skin Past Galvanized Iron steel, (GI) construction for apparatus storage cabinet. Cabinets are mounted on a common base frame with castor wheels. Each cabinet to have twin door in double skin construction. Each cabinet shall have one adjustable shelf & with detachable rear panels in segmented construction. Cabinet shall be provided with two numbers ports with the flexible ducts connected to the exhaust passage of the fume hood.

**Material of Construction:**

**Cabinet Body:** 1.0mm thick Galvanized Iron (GI) construction.

**Cabinet Shutter:** 0.8mm thick Galvanized Iron (GI) construction.

**Handles:** Flush type; Anodized Aluminum construction; duly powder coated.

**Hinges:** Heavy duty Knuckle-Barrel type special designed door hinges.

**Hardware:** SS 304 construction

**Cabinet Finish:** Inner and Outer surface of the cabinet, shelf and drawer type plate shall be coated with pure epoxy powder coating applied through twin electrode process.

**3. EXHAUST FAN:**

**Construction, Design and MOC detail:**

- Single piece molded UV treated chemical resistant SISW direct driven centrifugal fan in PP construction with suitable stand in MS powder coated construction.
- Corrosive resistant PP Impeller with extra strength, high efficiency properties which produces lower noise and power consumption.
- 415V, 50Hz. TEFC Class B insulation, in Non-FLP/FLP const. induction motor with IP55 enclosure
- 16A, 3Ph MCB for Fan - Legrand or eq. Make
- DOL starter for motor / Electrical panel with necessary internals and VFD for fan

#### **4. ACCESSORIES:**

**Airflow Monitor:** This Face Air Velocity monitor gives digital display of face velocity in m/sec or fpm with on screen display for Safe and Alarm conditions with audible alarm and LED indication. It has a feature of Push-button calibration and configuration; along with Plug-in connections for power supply and airflow sensor. It also has 3 programmable output relays, 3 configurable inputs; Com port for local or PC network connection. 3 configurable push buttons.

#### **5. IMPORTANT INSTRUCTIONS AND CERTIFICATE REQUIREMENTS:**

1) The firm should have a valid factory license.

2) Valid Solvency Certificate not older than 6 months.

3) The bidder should have successfully executed at least one laboratory furniture installation project in similar laboratories (installation of fume hood is a must) in reputed Government Institutes: IISERs, IITs, IISc, NISERs, NITs, AIIMS, CSIR-institutes, DBT-institutes within the last seven years amounting to rupees 15 lakhs. Copies of Purchase Orders alongwith Completion Certificates.

4. The Institute reserves the right to call for material and/or sample demonstrations at any stage from successful L-1 bidders. In case the vendor fails to deliver the sample within 10 days or the delivered sample does not meet the tendered specifications and quality, the order/contract shall be liable to be rejected, without any further correspondence.

5) Firms should submit the following documents as–

- (i) Valid ISO Certificates- ISO 9001:2015, 14001:2015, 45001:2018; ISO-50001:2018.
- (ii) Valid GREEN PRO / GREEN GUARD UL/ IGBC certification;
- (iii) MSME- Udyam Registration/NSIC registration certificate.