

Indian Institute of Technology Kanpur



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Subject: Quotation for supply of Laboratory Fume Hood & Laboratory Furnitures

Dear Sir/Madam:

Sealed quotes are invited for the supply of **Laboratory Fume Hood & Laboratory Furnitures**, as per the specifications given below.

The prospective suppliers are required to send quotation in sealed envelopes. The detailed technical specification, standard/special features of the product being offered should be clearly highlighted. The offered price include the detailed itemized price quotation clearly mentioning the cost of the equipment, applicable discount, taxes, installation and service charges if any, shipping and handling charges.

Technical Specifications for Laboratory Fume Hoods and Laboratory Furnitures:

The specification mentioned below is preferred. Any equivalent or better specifications shall be mentioned in detail.

The instrument required is Fume Hood for General Chemistry. The following specifications, features and criteria should be met:

Dimensions

Overall Dimensions with base cabinet:	1500 mm W X 900 mm D X 2400 mm H
Fume Hood dimensions:	1500 mm W X 900 mm D X 1600 mm H
Base Cabinet dimensions:	710 mm W X 600 mm D X 655 mm H with Castors-2 nos
Inside Fume Hood working volume:	1220 mm W X 650 mm D X 1180 mm H
Bed size:	1220 mm W X 650 mm D

Quantity: 3 nos.

Sr. No	Specification	Description
1	Model and usage	fume hood for Regular usage in Chemistry Laboratory
2	Design Basis	American Design Standard: ASHRAE110- 1995 All tests including "Tracer gas containment test" passed. European Design Standard: EN-14175- 2003 'Inner Plane Containment test' passed.
3	Design Structure	Aerodynamic, Floor mounted
4	Airflow Type	Low Constant Volume (for A.C. environment)
5	Color Combination	Grey & White
6	Powder coating	Pre-treated with 8 tank chemical processes and powder coated with highly chemical resistant epoxy Colors having dry film thickness of 70 to 80 microns. Passes all conformity performance tests as per IS standards.
7	Material of Construction of	Galvanized Iron (GI) as per IS 277: 2003 standard of

	superstructure	<ul style="list-style-type: none"> • 1.0 mm thickness for all sheet metal paneling • 1.2 mm for back pillars • 1.2 mm for front corner post
8	Front Top Panel	Easily openable hinged Top Panel for easy access to Flow Control Valve and Electrical Lighting fixtures for maintenance.
9	Corner Post	Triangular profiled Corner Post is placed on Left and Right Hand Side of the Fume hood and it houses the utility line fittings and electrical receptacles.
10	Construction (Interior)	Chemical & Heat Resistant, Fire Retardant, Smooth Finish, Easily Cleanable Panels Made out of durable PRL integral work walls (6 mm thick). ASTM flame spread index < 25.
11	Active Kinetics exhaust system	<u>Interstitial</u> 7-point active kinetics exhaust system (for light, normal & heavy fumes) with baffle to ensure rapid exhaust of fumes.
12	Airfoil	Aerodynamic Design, Horizontal fixed airfoil mounted on the worktop made of SS 304 (1.2mm).
13	Worktop	Chemical resistant splash & spillage proof dished ' Jet Black Granite ' worktop (18 ±1 mm thick). Skirting of 15 mm from all sides for no chemical spillage.
14	Sink, Water tap with drain arrangement	Worktop will have sink sealed with silicon sealant for drainage with water tap on left back side of worktop. Sink will have a trap for waste collection. <ul style="list-style-type: none"> • Oval shaped 100 mm X 200 mm sink
15	Sash (Shutter)	Vertical rising sash counter-balanced with pulley and counter-weight system. Toughened Float Glass sash (4 mm thick). Smooth and light sash operation. Clear openable height = 750 mm. Impact Resistance of the sash (Toughened Glass) is four times higher than other sash materials (like Safety Glass and Polycarbonate). Breaking Stress value for fully toughened glass (Tempered Glass) = 24,000 psi.
16	Wet & Dry Service valves	Remotely operated Color coded Brass Needle Valves for fine control over utilities (as per DIN 12920 norms) total 4 nos. service valves with PU plumbing with 6 mm internal dia, withstands up to 5 kgf pressure (2 LHS + 2 RHS) <ul style="list-style-type: none"> • 1 for Raw water (PU) • 1 for Nitrogen(PU) • 1 for Vacuum(Teflon) • 1 for Comp. Air (PU)
17	Maintenance ports	<ul style="list-style-type: none"> • Openable top panel for easy maintenance of tube light and flow control valve • Triangular service panel for maintenance of utility valves and tubing.
18	Internal nozzles	Brass powder coated fittings are staggered in the fume hood to avoid the intermingling of the flexible tubes. Also the taps are tapered in shape to use with flexible tubing of sizes from ¼” to ½” in dia, to provide greater flexibility to the user. Note: - Our Scope of supply for utility lines ends at 1/4 th BSP male adopter.
19	Lighting	Fluorescent light (40 watt, 2 Nos.) with vapour-proof fitting for proper illumination. Intensity approx 400 lux at worktop level.
20	Electrical Utilities	3 nos. electrical sockets 'North-West' make (230 V, 6/16 A, 50 Hz), 3 nos. 'North-West' make MCBs with blower NO/NC switch with built – in starter & light switch on front fascia. Cables & wires ' <u>Fire Retardant grade.</u> (All on RHS)
21	Built-in Starter	The electrical wiring will have built-in starter of “Telemechanique” make; suitable to blower motor capacity.

22	Cable entering port	For easy access of cables from fume hood to electrical sockets.
23	Chemical Storage Base Cabinet (Ventilated & on castors)	<p>Base cabinet will be ready to receive the fume hood at its top. It will have following features:</p> <ol style="list-style-type: none"> 1) Completely made from 1mm thick GI sheet with Highly corrosion resistant epoxy powder coating, 60-80 microns thickness. 2) Cabinet integral work walls will be Special chemical & heat resistant, smooth finish, easily cleanable panels made out of durable PRL sheets. 3) Two exhaust ports connected to the fume hood exhaust system internally. 4) One removable horizontal partition to store chemicals. 5) PP Trays for chemical storage. 6) Cabinets on castors. 7) Roller catch of "HAFELE" – Germany" Make for the Base Cabinet doors. 8) Polyamide Hinges from outside of Base Cabinet. <p>Overall Dimensions: 700mm (W) X 540mm (D) X 700mm (H) – 2nos.</p>
24	Apparatus Holding Grid (Lattice Assembly)	A grid made up of Duralumin Powder coated rod (Dia. 12.7 mm) to hold the apparatus. It will cover the entire length of the fume hood and will be built-in at fume hood backside. Installed at the distance of 150 mm from backside of fume hood.
25	Level adjusting screws	Made of SS Bolts to adjust the fume hood level by ± 10 mm.
26	Exhaust Port	Unique exhaust port design ensures that the fumes will be exhausted smoothly without any turbulence at the exhaust port. Also it ensures low noise level.
27	Flow control valve	To regulate airflow.
28	Noise Level	< 70db at 1 meter from fume hood.
29	Auto fire extinguisher	Fire extinguisher to take care of fire erupting within the fume hood. The sensing tube/ sensor will activate immediately after fire breaks out within the hood. Sensor threshold: 68 degree centigrade. Media: ABC Dry Powder

CENTRIFUGAL BLOWER: (For air suction in cluster of 3nos. Fume Hood) - 1Nos.

Silent PP + FRP high efficiency remote blower, consisting of continuous rating motor and chemical resistant impeller. It satisfies international safe velocity norms.

Sr. No	Specification	Description
1	Construction	SISW type, chemical & heat resistant PP + FRP blower with aerodynamically balanced PP impeller, with drain plug.
2	Air Suction Capacity	1200 CFM confirming to international face velocity norms and as per safe fume hood airflow pattern.
3	Motor	'Crompton/LHP/Other reputed' make, 3HP Motor 3 Phase TEFC, IP 55, Class F, continuous rating. As per IS 325.
4	Drive	Direct Drive

DUCTING:

Chemical resistant PP + FRP (**3mm + 2mm**) rigid & flexible ductwork from Fume hood to exhaust stack point with weatherproof canopy. Total ducting with horizontal, vertical members, flanges, bends, bracketed supports and gooseneck exhaust stack.

INSTALLATION:

It will be carried out by skilled team with ductwork design, fitting, fixing of blower, commissioning & testing of the same at a fixed extra cost.

TESTING:

All fume hoods are “factory tested” as per **ASHRAE110:1995** face velocity norms. Also, “Onsite Validation” should be carried out to ensure working of fume hood as per international norms. Provision for “tracer gas containment testing” at factory at extra cost.

WARRANTY:

12 months warranty against all manufacturing defects from the date of installation.

AFTER SALES SERVICE:

Annual Maintenance Contracts after completion of Warranty period.

Technical Specifications for Pedestal Laboratory Furnitures

WORK TOP:-

Made of (17 to 19mm) thick Jet Black Granite Top with chamfer moulding at the front & groove at the bottom to avoid chemical spillage on the modules. Worktop will be fixed with the module by foam tape, all joints are sealed thru Epoxy sealeant. Marine grade plywood bed would be charged seperately if needed

Material of Construction:-

Completely made of 1 mm GI sheets.

Module:-

Completely made of 1 mm GI sheets as per IS 277 standard. The sound deadning plastic bumpers to be used while closing the shutter. The entire module is made up of GI panels and are bolted/riveted for achiving maximum strength with high corrossion resistance. The shutters or doors are mounted to the modules by hinges which are openable to 95 degree. Drawers are mounted with the ball bearing based telescopic slides which are sturdy & able to take load upto 30kg. Provision of lock and key is optional.

Length : 450mm / 600mm / 750mm / 900mm L (As per layout)

Depth: 570mm D

Height: 775 mm H Standing Height- 'A' Series

Height : 625 mm H Sitting Height- 'B' Series

Module Bottom Frame:-

Made of E.R.W.M.S. square Tubes 30x30mm x 1.2mm thick & angles 25x25mm x 1.2mm thick welded & finished with epoxy powder coating. Level adjustment bolt will be fitted in all legs which have nylon coated head.

Knee Space area :-

Foot rest with openable back cover panel. It must be adjustable ± 100 mm. Instrumentation and Sitting area knee space need to be 600 or 750 mm.

Reagent Rack:-

Side Table: Reagent Rack will be of 150mmD X 600mmH Island Table: Reagent Rack will be of 300mmD X 600mmH Wiring will be electrical vendor scope.

Electrical Trunking:-

Wall Table: Triangular Electrical Trunking of 120mmD x 120mmH Wiring will be electrical vendor scope.

Switch & Sockets:-

North-West / Norisys make : Electrical Socket with Piano switch 5/15amp **with wiring** (Default specs)

LAN (Data) Points:-

North-West / Norisys make : RJ-45 type Data point fixed in electrical trunking.

Voice (Telephone) Points:-

North-West / Norisys make : RJ-11 type Telephone point fixed in electrical trunking.

Powder Coating:-

Complete module & frame work are processed with 8 tank pre- treatment and finished with highly corrosion resistant 'Akzonbel/PolyBond/Kansai Nerolac/Jotun/equiv' epoxy powder coating With 70 - 80 microns thickness. Our Automatic coating plant and fully conveyerised Ovan ensures that coating surface get appropriate temperature to bond with the surface. The paint surface was tested for quality and longivity out of which 1000 hours salt spray test is important factor.

HARDWARE FITTINGS: (As per attached layout)

Hinges :- 'Haffle/Ebco' Make CED coated.

Handle :- S.S. 304 matt finish.

Screw :- All S.S. 304 Visible Screws.

Lock :- 'Haffle/Ebco' Lock and a pair of keys.

Drawer Channel :- 'Haffle/Ebco' make common sleeve telescopic drawer slides - 45 Kgs

Utility Taps:- Epoxy powder coated brass taps with DIN 12920 colour coding.

Eye Wash:- Portable Eye Wash with Single eye wash (Indian make) (2 Bar Pressure required)..

Peg Board:- Acrylic support Peg Board 750mm x 750mm with 30 PP pegs with SS collection tray

Delivery Terms:

- Validity at least for 90 days. Delivery time 8-12 weeks from the technically correct PO.
- The quote should cover insurance and transport up to IIT Kanpur.
- Quotation should carry proper certifications like agency certificate, proprietary certificate, etc.
- Terms and conditions for the payment, including the banker's name of the principal and the account number, if any, for electronic transfer.

- Technical literature to support your product.
- **Installation Duration:** 2-3 weeks depending on the scope and site readiness. Installation includes the fume hood, lab furniture, blowers & ducting installation, testing & commissioning.
- **Documents:** IIT Kanpur will supply GST exemption certificate (@5%), their TIN, ECC no, all road permits, correct excise/octroi exemptions within 2 weeks of PO release.
- **GST:** Concessional rate of GST (@5%) will be applicable with reference to Notification No. 45/2017-Central Tax (Rate) dated 14/11/2017. We will provide relevant certificate for this purpose. On import items for research purpose presently the GST applicable is 0% (zero). DSIR certificate alongwith CDEC has to be submitted for availing concession. Vendor should use these GST rates in their quotation.
- **Warranty:** 12 months from the date of installation OR 18 months from the date of supply; whatever is earlier.

The quotation should reach the undersigned on or before **14th March, 2018**. The envelope should be marked as “**Quote for the supply of Laboratory Fume Hood & Laboratory Furnitures**”

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Annexure I:
Layout for
Laboratory
Furniture

