

Indian Institute of Technology Kanpur

Department of Chemical Engineering

Enquiry No: CHE/SCDT- 5/2012

Date: 27/11/2012

Sealed quotations are invited from clean room standard **Fume Hoods** Godrej / Kewaunee / Kotterman / Lab Guard / Waldner makes as per layout manufacturer /distributors on or before 10th December, 2012 with all technical specifications for the supply with installation of items.

Fume Hoods Specification is as under:

S/N	DESCRIPTION FOR Fume Hoods	QTY.
01	<p>Fume Hood :</p> <p>Type: Low Constant Volume; Standard Size: 5 feet with nitrogen valve of ferule fitting / push fitting, PRL-Rack 2'x2' with Chemical Storage Base Cabinet (Full Storage) + Filter Housing complete 1 set for 2FH</p> <p>1.Sink, Water tap with drain arrangement- • NOT REQUIRED</p> <p>2. Wet & Dry Service valves/ Maintenance ports</p> <p>1. Remotely operated Color coded Brass Needle Valves for fine control over utilities (as per DIN 12920 norms) service valves with PU plumbing with 6 mm internal dia, withstands up to 15 kgf pressure(Qty-2.Nos)</p> <p>a) Nitrogen Inlet (Ferule Fitting-Push Fit)</p> <p>b) 1 for Vacuum (Teflon) – Extra.</p> <p>c) Open-able top panel for easy maintenance of tube light and flow control valve</p> <p>d) Triangular service panel for maintenance of utility valves and tubing</p> <p>3. Worktop:</p> <p>a) 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.</p> <p>4.CENTRIFUGAL BLOWER: (For air suction in Fume Hood) - 1No</p> <p>a) Silent PP + FRP high efficiency remote blower, consisting of continuous rating motor and chemical resistant impeller. It satisfies international safe velocity norms.</p> <p>b) SISW type, chemical & heat resistant PP + FRP blower with aerodynamically balanced PP impeller, with drain plug.</p> <p>c) Air Suction Capacity (480 CFM each fume hood) confirming to international face velocity norms and as per safe fume hood airflow pattern.</p> <p>d) Crompton / LHP/Other Reputed' make, 3 HP Motor 3 Phase TEFC, IP 55, Class F, continuous rating. As per IS 325./ Direct Drive</p>	2.00
02	<p>Fume Hood - Type: Low Constant Volume; Standard Size: 5 feet with nitrogen valve of ferule fitting / push fitting, PRL-Rack 2'x2', 6"x12" inch sink with 1 way tap. PP worktop required. + Chemical Storage Base Cabinet (one side full and one side as per size available) + Filter Housing complete 1 set for 2FH</p> <p>1.Sink, Water tap with drain arrangement-</p>	2.00

	<p>a) 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. 6' x 12' on LHS (Front Side with one way water tap) ink, Water tap with drain arrangement</p> <p>2. Wet & Dry Service valves/ Maintenance ports</p> <p>1. Remotely operated Color coded Brass Needle Valves for fine control over utilities (as per DIN 12920 norms) service valves with PU plumbing with 6 mm internal dia, withstands up to 15 kgf pressure (Qty-2.Nos)</p> <p>a) Nitrogen with ferule fitting/push fitting b) 1 for Vacuum (Teflon) – Extra. c) 1 for regular tap (1- way tap) d) 1 for DI water (PU)</p> <p>3 .Worktop:</p> <p>a. Chemical resistant splash & spillage proof dished 'Jet Black Granite with PP Sheet' worktop (18 +1 mm thick). Skirting of 15 mm from all sides for no chemical spillage.</p> <p>4 . CENTRIFUGAL BLOWER: (For air suction in Fume Hood) - 1No</p> <p>a) Silent PP + FRP high efficiency remote blower, consisting of continuous rating motor and chemical resistant impeller. It satisfies international safe velocity norms.</p> <p>b) SISW type, chemical & heat resistant PP + FRP blower with aerodynamically balanced PP impeller, with drain plug.</p> <p>c) Air Suction Capacity (480 CFM each fume hood) confirming to international face velocity norms and as per safe fume hood airflow pattern.</p> <p>d) Crompton / LHP/Other Reputed' make, 3 HP Motor 3 Phase TEFC, IP 55, Class F, continuous rating. As per IS 325./ Direct Drive</p>	
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	<p>(18 +1 mm thick). Skirting of 15 mm from all sides for no chemical spillage.</p> <p>4.CENTRIFUGAL BLOWER: (For air suction in Fume Hood) - 1No</p> <p>a) Silent PP + FRP high efficiency remote blower, consisting of continuous rating motor and chemical resistant impeller. It satisfies international safe velocity norms.</p> <p>b) SISW type, chemical & heat resistant PP + FRP blower with aerodynamically balanced PP impeller, with drain plug.</p> <p>c) Air Suction Capacity (480 CFM each fume hood) confirming to international face velocity norms and as per safe fume hood airflow pattern.</p> <p>d) Crompton / LHP/Other Reputed make, 3 HP Motor 3 Phase TEFC, a. IP 55, Class F, continuous rating. As per IS 325./ Direct Drive</p>	
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Common features: Fume Hood specification is as under

1. Dimensions

- a) Overall Dimensions with base cabinet: 1500 mm W X 1000 mm D X 2400 mm H
- b) Fume Hood dimensions : 1500 mm W X 1000 mm D X 1600 mm H
- c) Base Cabinet dimensions : 1400 mm W X 640 mm D X 700 mm H
- d) Inside Fume Hood working volume : 1220 mm W X 750 mm D X 1155 mm H
- e) Bed size : 1220 mm W X 750 mm D

2. Fume Hood Color combination :

- a) **Combination Grey & White**

3. Power 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.

4. Material of Construction of superstructure;

Galvanized Iron (GI) as per IS 277: 2003 standard of

- a) 1.0mm thickness for all sheet metal paneling
- b) 1.5 mm for corner post
- c) 1.2 mm for back pillars

5. Front Top Panel:

Easily openable hinged Top Panel for easy access to Flow Control Valve and Electrical Lighting fixtures for maintenance.

6. 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. **Acid Resistant InnerLiner. SHELF INSIDE THE FUME HOOD (On the RHS of the side liner)**

7. Active Kinetics exhaust system:

Interstitial 7-point active kinetics exhausts system (for light, normal & heavy fumes) with baffle to ensure rapid exhaust of fumes.

- a. Airfoil Aerodynamic Design, Horizontal fixed airfoil mounted on the worktop made of SS 304 (1.2mm).

8. Internal nozzles:

- a) **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.**

9. Electrical Utilities:

- a) Electrical international Universal type sockets 'NorthWest'/Legaurd make (220 V, 6/16 A, 50 Hz), (Qty-4Nos)

- b) MCBs with blower NO/NC switch (with built in starter) & light switch on front fascia. Cables & wires NorthWest/ Legrand make '**Fire Retardant' grade (2L+2R)** (Qty-4Nos)
- c) **Lighting** Fluorescent light (40 watt, 2 Nos.) with vapour-proof fitting for proper illumination. Intensity approx 400 lux at worktop level.
- d) **Built-in Starter:** The electrical wiring will have built-in starter of "Telemechanique" make; suitable to blower motor capacity.
- e) Cable entering port for easy access of cables from fume hood to electrical sockets

10. Chemical Storage Base Cabinet (Ventilated & on castors):

Base cabinet will be ready to receive the fume hood at its top. It will have following features:

- a) Internal special chemical resistant material lining to the cabinet walls
- b) Two exhaust ports connected to the fume hood exhaust system internally.
- c) Complete chemical resistant, **fire proof pre-lam/MDF** cabinet Construction.
- d) One removable horizontal partition to store chemicals.
- e) PP Trays for chemical storage.
- f) Cabinets on castors.
- g) Locking System for the Base Cabinet doors
- h) Overall Dimensions: 700mm (W) X 640mm (D) X 700mm (H) – 2nos.

11. Air Flow Monitor AFA 1000 (Optional - To be ordered separately if required)

1. Model AFA 1000'. This device is an accessory for Fume hood to indicate the approximate face velocity of airflow with primary purpose of warning when a low flow condition occurs. Red & green LEDs correspond to low & normal flow rates. When flow decreases from Normal to Low, an audible alarm will also actuate requiring manual acknowledgement for silence.

- a) Digital display of face velocity in m/sec or fpm
- b) On screen display for Safe and Alarm conditions with
- c) Audible alarm and LED indication.
- d) Push button calibration and configuration
- e) Plug-in connections for power supply and airflow sensor
- f) 3 programmable output relays
- g) 3 configurable inputs
- h) Com port for local or PC network connection

12. Level adjusting screws:

Made of SS Bolts to adjust the fume hood level by + 10 mm.

13 Exhaust Port/Noise Level/Flow control valve

- a) Unique exhaust port design ensures that the fumes will be exhausted
- b) smoothly without any turbulence at the exhaust port. Also it ensures
- c) low noise level. Dia. 250 mm
- d) < 70db at 1 meter from fume hood.
- e) To regulate airflow.

14. DUCTING:

1. Chemical resistant PP + FRP (**3mm + 2mm**) rigid & flexible ductwork from Fume hood to exhaust stack
2. Point with weatherproof canopy. Total ducting with horizontal, vertical members, flanges, bends,
3. Bracketed supports and gooseneck exhaust stack. Duct dia. 250 mm.

Note: Fume Hood must be clean room compatible. Wood/ ply or any material that release particulates must not be used in manufacturing any of the above units. There must not be any free hanging part that will allow dust to settle.

Terms & conditions for supply of above mentioned articles

1. The quotations should be submitted in the properly sealed envelope, addressed to the undersigned.
2. The enquiry no. and date should invariably be quoted on the top of the envelope.
3. The time allowed for carrying out the above note work is 7 days.
4. The rate quoted should be inclusive of sales tax and other taxes including freight charges (if any).
4. Quotations should have a validity of a minimum of 60/90 days.
5. The Institute reserves the right of accepting or rejecting any quotations without assigning any reason thereof.

6. Maximum educational discount, if any applicable, should be clearly mentioned
7. The terms of Warranty should be clearly mentioned.
8. Prices should be on CIF basis, IIT-Kanpur.
9. The quote should cover insurance and transport up to Kanpur.

10. Indian agency commission if applicable (should be certified by the principal if no agency Commission is applicable).
11. Authorization certificate from the principal(if you are an Indian agent).
12. Terms and conditions for the payment, including the banker's name of the principal and the account number, if any, for electronic transfer .
13. Include proprietary item certificate if applicable.
14. Technical literature to support your product.
15. User's list with contact address..
- 16. Only those supplying All of the items shall be considered**

Kindly send your quotation before respected date in the following address:

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