



जवाहरलाल नेहरु उन्नत वैज्ञानिक अनुसंधान केन्द्र

(मान्यता प्राप्त विश्वविद्यालय)

JAWAHARLAL NEHRU CENTRE FOR ADVANCED SCIENTIFIC RESEARCH

(A Deemed University)

जक्कूर, बेंगलूर - 560 064, भारत / Jakkur P.O., Bangalore - 560 064. INDIA

विज्ञान और प्रौद्योगिकी विभाग, भारत सरकार / Department of Science & Technology, Government of India


JNC/PUR/CPMU/EM/66/16-17/F

February 14, 2017

TENDER NOTICE

Jawaharlal Nehru Centre for Advanced Scientific Research, Jakkur, Bangalore 560064 invites sealed tenders in 2 bid systems from reputed and experienced Vendors for the supply, installation and commissioning of Laboratory Furniture, Fume Hood, Chemical Storage etc. as per the specifications enclosed. The terms and conditions are mentioned below :

1. Vendors are requested to submit **Technical** and **Commercial** Bids separately.
2. The Vendor should have experience in the Laboratory Furniture supply.
3. The tender should be valid for 60 days from the date of quotation.
4. Quote should include taxes / duties and show separately. JNCASR is eligible for the exemption of Excise Duty under Government Notification No.10/97 & Customs Duty under Notification No. 51/96. These certificates would be issued if the vendors extend the benefit of price against such exemptions.
5. 100% payment will be made within 30 days from the date of supply, installation, testing, commissioning of the equipment and acceptance by the end user.
6. The delivery and installation of the items should be completed within 45 days from the date of award of the contract.
7. Delayed supplies will attract liquidated damages @ 0.5% for the value of work order per week for the items not delivered upto a maximum of 10%.
8. The Tenderers are requested to inspect the Laboratory before submitting the tender for better understanding of the requirement.
9. The sealed Tenders superscribed with "Tender for Fume Hoods and Chemical Storage" should addressed to Sr. Stores & Purchase Officer, Jawaharlal Nehru Centre for Advanced Scientific Research, Jakkur Post, Bangalore 560 064.


16/2/17
Contd....2



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10. You are required to quote for Ex-works / FCA / CIP value if Import. If indigenous, the delivery of the items should be at JNCASR.
11. The price should be inclusive of freight, supply, installation, commission and warranty for a period of TWO years.
12. You are required to submit all the technical information and support the same with the Brouchers / Categories / Published data etc.
13. The President, JNCASR reserves the right to reject any or all the Tenders, if felt necessary, for the unforeseen reasons.

Important details :

Last date for submitting Tender is **before 3.00 P.M. on 28.02.2017.**

Date of opening of Technical Tenders is **3.30 P.M. on 28.02.2017.**

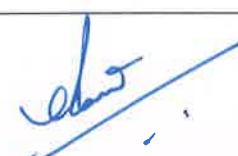
You may contact Prof. M. Eswaramoorthy for any technical clarifications on 22082870/ 2871 or e-mail : eswar@jncasr.ac.in on all working days.


Sr. Stores & Purchase Officer

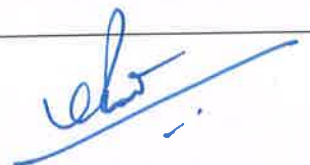
Sub: Technical specification of Fume Hood

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: 1400 mm W X 540 mm D X 700 mm H
 Inside Fume Hood working volume: 1220 mm W X 650 mm D X 1155 mm H
 Bed size: 1220 mm W X 650 mm D
Quantity: 1no.

Sr. No	Specification	Description
1	Usage	fume hood for Regular usage
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 superstructure	Galvanized Iron (GI) as per IS 277: 2003 standard of <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)
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"> • Open-able 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 1/4" to 1/2" 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</u> ' grade. (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)	Base cabinet will be ready to receive the fume hood at its top. It will have following features: <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.



		<p>3) Two exhaust ports connected to the fume hood exhaust system internally.</p> <p>4) One removable horizontal partition to store chemicals.</p> <p>5) PP Trays for chemical storage.</p> <p>6) Cabinets on castors.</p> <p>7) Roller catch of "HAFELE"- Germany" Make for the Base Cabinet doors.</p> <p>8) Polyamide Hinges from outside of Base Cabinet.</p> <p>Overall Dimensions: 700mm (W) X 540mm (D) X 700mm (H) – 2nos.</p>
24	Apparatus Holding Grid (Lattice Assembly) (Optional - To be ordered separately if required)	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	Air Flow Monitor AFA 1000/1 (Optional - To be ordered separately if required)	<p>Model AFA 1000/1'. 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.</p> <ul style="list-style-type: none"> • Digital display of face velocity in m/sec or fpm • On screen display for Safe and Alarm conditions with • Audible alarm and LED indication. • Push button calibration and configuration • Plug-in connections for power supply and airflow sensor • 3 programmable output relays • 3 configurable inputs • Com port for local or PC network connection
25	Air Flow Monitor AFA 1000/1 (Optional - To be ordered separately if required)	<p>Model AFA 1000/1'. 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.</p> <ul style="list-style-type: none"> • Digital display of face velocity in m/sec or fpm • On screen display for Safe and Alarm conditions with • Audible alarm and LED indication. • Push button calibration and configuration • Plug-in connections for power supply and airflow sensor • 3 programmable output relays • 3 configurable inputs • Com port for local or PC network connection
26	Level adjusting screws	Made of SS Bolts to adjust the fume hood level by ± 10 mm.
27	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.
28	Flow control valve	To regulate airflow.
29	Noise Level	< 70db at 1 meter from fume hood.

CENTRIFUGAL BLOWER: (For air suction in 1no. of 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	600 CFM confirming to international face velocity norms and as per safe fume hood airflow pattern.
3	Motor	' Crompton / LHP/Other Reputed ' make, 1HP 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.

Sub: Technical specification for Lab Furniture

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.

Material of Construction:-

Completely made of **1 mm GI** sheets.

Module:-

Completely made of 1 mm GI sheets as per IS 277 standard. Galvanized metal is far more corrosion resistant than C because of the cathodic protection from the zinc. The shutter & drawer front should be of sandwich construction. Foaming sheet filled in shutter gaps is not allowed. The sound deadening plastic bumpers to be used to minimize banging noise while closing the shutter. The entire module is made up of GI panels and are bolted for high corrosion resistance. Weibull of modules is not acceptable. The shutters are mounted to the modules by hinges which are openable to 95 degree & closing on return. Lockable roller bearing must be used so that the drawer will not fall. The telescopic drawer slides which should be very sturdy & able to take load upto 30kg. All modules to have lock and dual key arrangement. The lock ring should be plastic & not metal.

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

Depth : 570mm D

Height : 675 mm H Standing Height

Height : 525 mm H Sitting Height-

Frame construction:-

Entire structure should be "C" frame type. 60 X 30 X 2 mm pipe is used for main frame structure. 30 X 30 X 1.5 mm pipe should be used for bottom support. CO2 welded & finished with highly chemical resistant epoxy powder coating.

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:-

Two tier:

Island Table: Two tier adjustable reagent shelf. Top & Bottom rack 300 mm Clear space and outer 380 mm

Wiring will be electrical vendor scope.

Electrical Trunking:-

Island Table: Triangular Electrical Trunking of 200mmD x 120mmH

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 without wiring (Default specs)

LAN (Data) Points:-

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

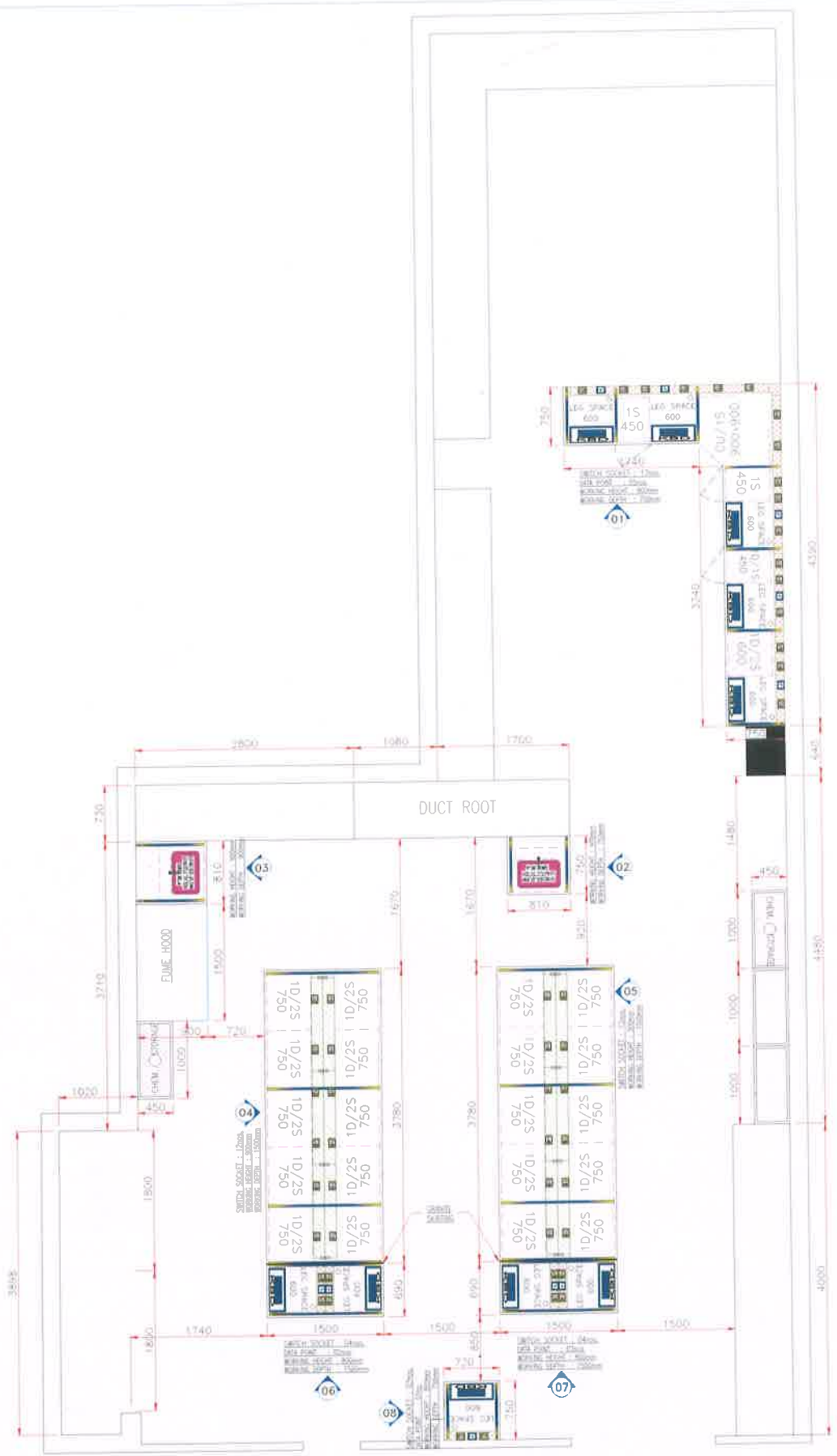
Powder Coating:-

Complete module & frame work are processed with 8 tank pre- treatment and finished with highly corrosion resistant 'Akzonbel/PolyBond' epoxy powder coating With 70 - 80 microns thickness and 1000 hours salt spray test pass

HARDWARE FITTINGS:

- A) Hinges :- 'Hafele' Make CED coated self closing.
- B) Handle :- S.S. 304 matt finish.
- C) Screw :- All S.S. 304 Visible Screws.
- D) Lock :- 'Hafele' Lock with plastic ring and a pair of keys.
- E) Utility Taps:- Epoxy powder coated brass taps with DIN 12920 colour coding.





WORKTOP - Granite worktop (17 to 10 mm)

LEGEND	
	PP Sink 22" x 14" Block(S/06)
	REAGENT RACK
	ELECTRICAL TRUNKING
	SOCKET WITH PIANO SWITCH
	DATA POINT
	ST STANDARD FUME HOOD
	1 SHUTTER MODULE
	1 DRAWER / 2 SHUTTER MODULE
	2 SHUTTER MODULE
	1 SHUTTER CORNER UNIT
	2 SHUTTER / SINK UNIT

NOTE-ALL LAB FURNITURE ON "C"FRAME.

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