

National Institute of Immunology

New Delhi-110067, INDIA

Limited Tender Enquiry

Dated: 29.11.2024

Director, NII - NEW DELHI India invites *sealed tenders* in two bid system (**Technical Bid & Price Bid**) from reputed manufacturers and their authorized agents for the supply, installation & commissioning of the following item:

QTY	Name of the instrument	Enquiry Ref. No.	Last date of submission of quotations
1	Fume Extractor (specification attached in next page)	NII/EQP/LTE/PS/2024-25	13-12-2024 till 5:00 PM

Please note that the lowest one bidder (after qualifying technical ground) after award of contract has to submit 3% PBG of the order value for the period of 15 months in favour of "The Director NII"

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Store & Purchase Officer

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1. Scope of Work

Installation of a standalone unit of sample preparation table with sink, solvent storage cabinet for flammable solvent, and exhaust canopy hood.

- **Supply and Delivery:** The contractor/supplier shall provide all necessary components, including the canopy hood and sample preparation table, installation brackets and any other accessory required for a complete installation.
- **Installation:** Installation of the standalone system with canopy hood and sample preparation table with sink shall be done by the supplier/contractor. The acid cabinet and flammable solvent storage cabinets must be installed in accordance with SEFA, OSHA and NFPA (National Fire Protection Association) regulations.
- **Testing and Commissioning:** The assembly must be tested to ensure it is fully operational upon installation.
- **Warranty:** The supplier shall provide warranty for the entire setup for three years including all the accessory and spares. Preventive maintenance shall be performed every 6 months.

2. Technical Specifications

I. CANOPY HOOD

- a) The canopy hood shall be wall mounted with dimensions around 18"H x 28"D x 36"L, made of superior quality stainless steel (1.6 mm thickness) preferably 316L grade.
- b) Canopy hood shall have ceiling enclosure assembly with customized dimensions around 18"H x 16"D x 36"L, height until false ceiling. Material of construction shall be SS316L.
- c) Ducting shall be corrosion resistant and shall have (3+3) mm construction of polypropylene (PP) and resin lining.

II. SAMPLE TABLE

- a) The sample preparation table shall have jet black granite work top, as per existing (18/19 mm thickness) and shall have dimension of 289.6 L X 90.8H X 73.7D cm approx.
- b) The margin edge shall be of jet-black granite, as per existing (18/19 mm thickness).
- c) 4 inches of jet-black granite, as per existing skirting shall be provided.

III. TABLE CABINETS

The cabinet shall be in accordance with SEFA (The Scientific Equipment and Furniture Association), OSHA (Occupational Safety and Health Administration) and NFPA (National Fire Protection Association) regulations.

- a) The cabinet for storage of acids and alkalis shall be double door having dimension 35"H x 20"D x 30"L, with chemical resistant lining of polypropylene (PP) [one cabinet].
- b) The cabinet for flammable solvent storage shall be double door having dimension 35"H x 20"D x 30"L [Two cabinets]. Cabinets shall be inflammable for at least 10 min, resistant to wear and corrosion against chemicals/solvents and humidity.

IV. TABLE SINK

- a) The polypropylene (PP) sink provided shall be resistant to wide range of chemicals/solvents and shall withstand high temperatures at least up to 100°C. Sink size shall be 60.0 L x 45.0W x 31.5H (cm) and bowl size shall be 55L x 40 W x 31H (cm). Material of construction shall be polypropylene (PP).
- b) Waste of polypropylene (PP) sink shall be preferably 1.5" BSP x 7.6 cm and shall be resistant to chemicals/solvents and corrosion.
- c) Anti siphon bottle trap shall be provided.
- d) Sink support kit for 30" cabinet shall be provided.
- e) Base moulding of sink shall be 4 ft (four in numbers).
- f) Reducing coupler in PP 5.1 x 3.1cm and PP pipe of four feet length, diameter 3.8cm shall be provided.

- g) PP tray shall be provided for the double door cabinet below the sink, cabinet dimension 35"H x 22"D x 30"L.
- h) Bench mounted one-way water fitting tap shall be made up of powder coated brass. The tap must have 8" rigid/swing gooseneck with aerator for raw water shall be brass powder coated.
- i) 10 mm thick polypropylene (PP) splash guard with support size: 18"Hx 28"L shall be provided.

V. POLYPROPYLENE (PP) MOULDED EXHAUST BLOWER

The aerodynamic performance of the fan shall comply with ISO 5801 standards and sound level with ISO 5136.2.

- a) The exhaust fan shall be a low pressure direct driven centrifugal fan with diameter 16cm (speed 400-650cfm@ 30-80 mm static).
- b) The fan shall be centrifugal corrosion resistant, silent with minimal vibration and suitable for outdoor usage and S1 duty operation. Material of construction shall be polypropylene (PP) and it must be suitable for use against corrosive medium and maximum allowable operating temperature of 70°C.
- c) The fan shall not exceed 3000rpm and shall be of Colasit/ Premier Polymer/Euro-plast/ Plastifer make.

VI. MOTOR AND ACCESSORIES

- a) 1.1 KV TEFC motor shall be F/B motor (shall be with class 'F' insulation and class 'B' temperature rise) and compatible with VFD operations and operation with 415V/3PH/50 Hz electric supply. The motor shall have IP55 protection. Motor shall be flange mounted (B5) or foot mounted (B3) based on the fan configuration.
- b) An electro-galvanized stand to support fan and motor.
- c) Galvanized woven mesh or weld mesh bird screens in rigid galvanized iron frames shall be installed behind all external louvers and over all relief and exhaust air openings to the outside of the building.

VII. PP/FRP DUCTING AND ACCESSORIES

- a) PP means PPGL: One side smooth & glassy finish and other end is mat finish.
 - The smooth surface should be the inner surface of the duct.
 - On mat side, FRP lining to be done.
- b) FRP Lining shall be done on the outer surface of PPGL i.e. on mat side.
- c) One-layer FRP is one mm. The final layer shall be with fine mat to have smooth and good finish. While making the lining, there should not be any air pockets or any sort of uneven finish. There should be time gap between the FRP layers, allowing each layer to be got dried. Isothelic resin to be used.
- d) The flange thickness should be 1.5 times of the duct thickness up to 750 mm and 2 times above 750 mm ducting. All flanges should have fasteners at the 4 corners and are to be matched with M8, GI fasteners and flat washers on both the sides and shall be fixed at a pitch distance of between 125 mm to 150mm.
- e) 3 mm Thick Neoprene gasket shall be used between the flanges.
- f) Duct support distance should not be more than 2500 mm and any duct length should not be more than 3600 mm.
- g) All square / rectangular ducts with more than 1800 mm length should have a brazing frame at the centre on the external surface.
- h) Provide 40 x 40 flanges up 750 mm duct size and 50 x 50 above 750 mm.
- i) The finish paint should be admiral grey unless specified.

VIII. PVC FLEXIBLE HOSE

- a) Flexible duct connections shall be provided wherever ductwork connects to vibration isolated equipment and on all exhaust final connections to fume hoods, spot extractor and canopy.
- b) Flexible connections of PVC coated collapsible hose clipped into duct and equipment to make air-tight joint shall be constructed.
- c) Joint flexibility shall be adequate to allow for thermal, axial, transverse and torsional movement and capable of absorbing vibrations of connected equipment.
- d) All the flexible connections shall be fitted to isolate fans from equipment and/or ductwork and shall be air tight and resistant to water and fire.
- e) The connections shall be arranged in such a way that it permits the renewal of the connection without disturbing the duct work or the plan.

IX. DUCT SUPPORT SYSTEM

- a) Neoprene or equivalent material of suitable thickness shall be used between duct joints to provide the required brake effect.
- b) The supplier shall provide a complete supporting system consisting of fully threaded rods, double L bottom brackets nuts, washers, clamps for circular ducts and anchor bolt.

X. PP DAMPERS

- a) Dampers shall be double thickness heavier than the thickness of the large duct & shall be rigid in construction.
- b) The volume control dampers shall be of an approved type, lever operated & complete with locking devices which will permit the dampers to be adjusted & locked in any positions.
- c) Construct blades of 5 mm thick PP (Material of construction), provide heavy-duty moulded self-lubricating nylon bearings, 13mm (1/2") diameter Plastic axles spaced on 225mm (9") centers.
- d) Construct frame of 300 mm diameter outer with Flange for fitting minimum 6 bolts and nuts.

XI. CONTROL PANEL:

Supply, installation, testing and commissioning of DOL starter panel as per the site requirement with inbuilt power contactor, overload relay, transformer, LED indicator, start-stop button, control; wiring with 1.5sq.mm multistrand FRLS copper wire and power wiring as per motor design but not less than 4.00 sq.mm multistrand FRLS copper wire. However, from starter panel to the Motor power cable should be copper armored cable of suitable size but not less than the 4.00 sq.mm X 4 core with double earthing of 4.00 sq.mm each.

Note: The thickness of granite worktop should be 18/19mm.