EMBASSY OF ITALY
NEW DELHI

New Delhi, 09.02.2017

The Embassy of Italy in New Delhi is going to install a Central Air Purifier System in the offices and in the residence of the diplomatic compound. The technical specifications of the requested plant are mentioned below :

Treated Fresh Air - Industrial Grade Air Purification System

The unit shall be standalone vertical/ floor mounted type, having adjustable flange type/ louvered grilles of suitable size on inlet at the lower end and discharge grilles at the upper side of the unit or vice versa based on the site requirement. The vendor shall indicate the technical know-how and manufacturing experience and presence in the market in the air purification business.

The unit shall be robust, fabricated out of the 14 gauge flat galvanized iron sheet with power coating. The unit's open-able sections should have heavy duty hinges and handles with gasket and should be designed for proper sealing within the unit's compartment, once the door is closed to prevent any bypass of the air.

The unit shall have pressurization port to add outdoor air, this port shall have a flange type damper that which can be closed when the port is not in use. The dampers/ flange type in the unit shall be of good quality with proper closing mechanism to prevent air leakage. The existing duct work as to be completely leak proof.

The entire frame work of the unit shall be mounted on a heavy duty base channel. The hinges shall be of cast aluminum or pressed steel. Handles shall be made of hard nylon and operational from both inside and outside of the unit.

All gaskets shall be EPDM Gaskets. Only Stainless Steel SCREWs will be used for fastening panels to the supporting frame to prevent corrosion. The inside of the unit shall have clear surfaces free from bolt & bolt-head projections.

Access door will be insulated on fan and filter sections. Access doors shall be single skin type and shall have same construction as the wall panels.

Special care has to be taken to ensure that doors, handles, hinges, etc. shall be robust enough to with stand heavy industrial usage and prevent any leakages of air from the system.

Fan section

The fan should be a direct driven EC fan that can maintain constant flow rate selected to operate at optimum capacity and be capable to deliver the required air flow regardless of the pressure drop generated by partly / heavily choked (40 -80 %) filters. The fan once fed with the required flow value, should maintain that flow rate by automatically varying it's RPM according to the change in the pressure drop across the filters.
The EC Fan will be procured from reputed manufacturers like EBM Papst or Ziehl Abegg or equivalent. Essentially for smaller capacity units of 1000 CFM, the motor shall operate at single phase 220V/50 Hz.

Standard electrical safety features shall be a part of the units.

Motor: The minimum efficiency class of the motor shall be IE3. The motor shall be permanent magnet external rotor motor with integrated electronics and suitable for continuous operation. The speed of the motor shall be variable depending on an external control signal. The fans shall be Modbus RTU compatible for communication with BMS (Building Management System). The fan in totality shall be of most efficient type so that the power consumption and noise level is minimal. The ECblue motor shall have a wide voltage input range: 240V/ 50 Hz.

The motor shall be minimum IP54 protection class, with Thermal class 155 (Insulation class F). The ECblue motor shall be provided with suitable protection from moisture & hot climate. The ball bearing shall be provided with long time lubrication for maintenance free operation.

Integrated Electronics: The device electronics shall be protected from overload by the Active Temperature Management, so that if the ambient operating temperature exceeds the design limit then the fan is not switched off immediately. In such a condition the fan should be operational at lower speeds, till the time the operating ambient temperature drops down.

The ECblue fan shall meet all necessary EMC (Electromagnetic Compatibility) directives. The ECblue fan should comply to applicable EMC standards: Interference Emission Standard EN 61000-6-3 / 2.

The ECblue Fan shall have the following protective features already integrated in the control:

- Overvoltage protection
- Short Circuit protection
- Under voltage/ Over voltage detection
- Locked rotor protection
- Line fault detection
- Active Temperature Management for thermal protection of motor and electronics
- Alarm relay 12/250V/2A
- Over temperature protection of electronic and motor

Filter Section

The unit shall comprise of the following filtration stages:

Stage 1. Pre Filter

EU 4 – 90 percent down to 10 microns;

Stage 2. Chemical Filter

100 percent adsorbent material, monolithic block structure with turbulent flow along with life testable capable to removing Sox, Nox, Ozone, Hydrocarbons, H2S

Stage 3. Fine Filter

EU-5 – 99 percent down to 5 microns

Stage 4. Semi Hepa (After fan section)

EU-9 – 95 percent down to 1 micron (Semi Hepa, Glass fiber media)

The system shall have Magnehelic gauges with large display to show the pressure drop against each filter. The limit / range of the maximum pressure drop across each filter shall be provided to ascertain the end of life consideration when the particulate filter will be due for replacement.

Stage 5

UV Lamps with PPC Sleeve (Photohydroionization Type)

The photo hydro ionization type UV lamp shall be placed in the air passage. It should be enclosed in a quad metallic coating along with PPC sleeve to prevent Mercury spillage into the system. The lamp shall have a working life of 22000-25000 hours. The lamp shall conform to UL 1598:2008 ,CAN/CSA and EN Standards.

All the companies who are interested in this enquiry can submit a quotation to the Administration Office, Embassy of Italy, 50 E, Chandragupta Marg, Chanakyapuri, New Delhi-110021 within 15 days from the date of publication of this enquiry i.e. up to 24.02.2017. The quotation should be submitted in a sealed envelope. The interested companies can fix up an appointment for site visit with the Administration Office by calling on Tel. 011-26114355. The Contractor will be chosen based on the experience in the field, quality of the product and best technical solutions with best prices.

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