



**Model Pollution Control Units Grease Trapper ESP**

Product Specification Guide

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Provide Accurex Grease Trapper ESP electrostatic precipitator (ESP) pollution control unit that is sized to clean the airflow capacities as scheduled on the Contract Documents.

**CONSTRUCTION**

The system shall be furnished as a single, factory assembled unit, consisting of: impingement pre-filter, ionizer-collector cell(s), mist eliminator, odor control section, outlet transition and exhaust fan, all mounted on a 6" structural steel support base. The base shall have lifting lugs at the 4 corners. The unit shall be furnished in a side access housing, fabricated from 16 gauge 430 stainless steel, continuously welded to provide leak-proof construction. The access doors shall be on lift-off hinges, full perimeter high temperature gasketed and fasteners to secure the doors in place. The system shall be UL listed to the UL 1978 Standard for Grease Duct Construction and the UL 867 Standard for Electrostatic Air Cleaners. It shall conform to the NFPA 96 Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations. The unit shall be designed to be installed with a 12" clearance to combustibles from the top of the unit and a 6" clearance to combustibles on the sides and bottom of the unit.

The impingement filter section shall consist of a stainless steel filter designed to stop large grease particles and assist in evenly distributing the airflow into the ESP cells.

Ionizing-collecting cell(s) shall be of industrial design integrity and single unit construction. The cell(s) shall be all aluminum construction except the ionizing electrode shall be of the rigid stainless steel type. Repelling and collecting plates shall be positively retained in place using tie rod and tubular spacer design. High voltage insulators shall be molded from a thermoset plastic resin for a light weight design and provide increased durability; shall contain no appurtenances; shall be of radial and bilateral symmetry; and shall contain no high voltage penetrations. The cells shall operate at a minimum efficiency of 93.5% at 275 FPM when tested per EN 1822-5 testing standard. Cells shall all be of uniform size and shape. Units with cells that have different dimensions are not acceptable. When clean, cells shall weigh less than 38lbs and have easily accessible handles for ease of handling and transporting.



The mist eliminator filter shall consist of metal mesh filters and shall be installed in the last module of the ESP cells. The mist eliminator filters shall stop water particles from entering into the carbon filter section during the wash down cycle.

Detergent, wash and rinse water shall be applied by fixed copper manifolds containing brass spray nozzles, located on the entering air side of each cell tier. Complete, effective washing of all ionizing-collector cell surfaces and all appurtenances shall be provided. The unit shall be furnished with a sloped bottom drain pan for removal of waste water. Drain connections for the cell wash down wastewater shall be located on the same side as the access doors of the unit.

A detergent dispenser assembly shall be provided and shall consist of a 30 gallon anticorrosive reservoir, positive displacement pump, motor, and flow volume control valve. A 5-gallon container of ESP cell cleaning detergent shall be provided with unit. The detergent pump shall include a flow switch to protect the pump and motor from operation when detergent is not present. Solenoid valve, strainer, backflow preventer, ball valve and pressure gauge and shall be furnished by others.

The odor control section shall contain disposable bonded activated carbon filters, furnished in a self-supporting panel, utilizing high loft, non-woven polyester pre and post filter pads. The carbon shall be composed of virgin coconut shell granular activated carbon with a minimum carbon tetrachloride activity of 60% per ASTM D-3467. Bonded carbon shall have a minimum bulk density of 29 lbs./ft<sup>3</sup>. Outlet transition shall be factory installed, connecting the housing to the blower, fabricated from 16 gauge 430 stainless steel and finished to match the housing.

Fan assembly shall be the centrifugal utility set or tubular inline type, belt driven with backward inclined wheel and shall be UL 762 listed for Power Ventilators in Restaurant Service. A NEMA 3R ON-OFF disconnect switch shall be provided on the fan housing. The fan assembly shall be mounted on neoprene isolators.

Control panel shall be a NEMA 1 fully enclosed cabinet shipped loose from the unit (to be mounted indoors) constructed of stainless steel. Control panel shall be hinged, have tool-less access to the components inside, and include warning sticker(s)/marking(s) that clearly indicates the voltage presence. Control panel shall include programmable logic controller (PLC) wired to terminal blocks that provides sequencing control for normal unit operation as well as the washing of the cells. Control panel shall include a motor starter or VFD for motor control and protection, if the unit is provided with a fan. An LCD user interface shall be provided to allow access to system information consisting of, but not limited to run, wash, low detergent, and timer settings.

The unit shall be provided with an automatic cell discharge system that allows the cells to safely remove any residual charge from the ESP cells. Manual grounding of the cell plates is not an acceptable method. All access to ionizer collector cells and high voltage Power Pack shall contain electrical safety interlocks which de-energize the primary power circuit prior to accessing high voltage.

High voltage Power Pack, furnished in a NEMA 3R enclosure and mounted to the unit, shall be the high frequency, solid state type, supplying a dual voltage output specified by the unit manufacturer. Power Pack supply shall have a regulated input and output for line fluctuations of 10% and shall have a current limiting shutdown feature. System status lights shall be mounted on the unit terminal boxes for each ESP module and shall include a disconnect switch.



Fire system shall be Amerex or Ansul with factory installed pre-piped nozzles as standard. Detector and nozzle arrangement shall be according to the respective manufacturer's instructions. Optional fire system start-up, including field connection, tanks, controls, and commissioning of the fire system may be provided as an option from the factory. The local code authority may require other protection in order to comply with local codes. A water based fire suppression system is not acceptable.

Unit start-up shall be an available option and is to be provided by a factory authorized commissioning agent to ensure the proper installation of the unit. Start-up shall include verifying plumbing and wiring connections, setting up wash down system sequence and timers, verifying proper unit operation and training owner personnel on the unit.

Due to continuous research Accurex reserves the right to change specifications without notice.