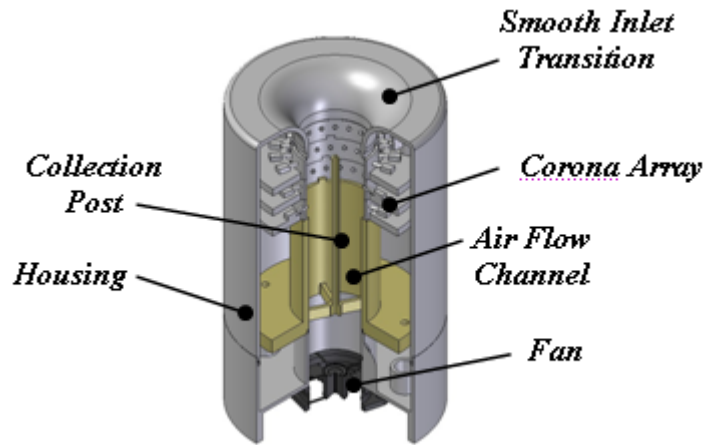


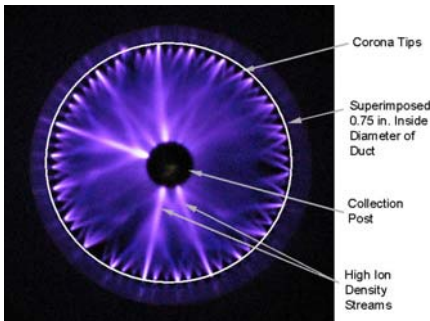


The E-Stat collection technology employs electrostatic precipitation to collect and concentrate solid, biological, and chemical particulate from the air as well as liquid aerosols. The advantages of this electrostatic precipitation are high collection capabilities for very low power input. Additionally electrostatic precipitation can enable sampler configurations that permit a wide range of benefits depending on the target application. An example of a E-Stat configuration is shown below, where particles are designed to be collected on a centralized collection post.

The electrostatic precipitator operates by drawing air into the system through a smooth inlet transition. The air and suspended particles pass a corona array and become charged as they pass through the sampler corona. The charged particles are then attracted to the oppositely charged collection zone and collect onto a focused centrally located surface as in the example shown on the left.



The sample air, less collected particulates, finally exits through the bottom of the system driven by a low power system fan.



The charging mechanism used in the Evogen E-Stat technology is a current controlled corona charging system as opposed to the more traditional voltage controlled systems. The current control provides a uniform charging zone, which insures complete and efficient charging of all the particles in the aerosol stream regardless of changes in the ambient air such as humidity and temperature.

The flow rate of an E-Stat system can be varied in order to tailor the system to a given application. The main driver behind the flowrate capability for the system is the desired size of the system, and the concentration rate target.

For any given size system, reducing the flow rate allows an increase in collection efficiency; however, total particle collection at high flow rates can result in an overall greater effectiveness in collecting the particles of interest in the 1 to 10 micron range due to more particulates being drawn into the system.

For the majority of E-Stat systems produced by Evogen, such as in our chemical particulate to vapor conversion systems, and our wetted biological capture systems, a solid radial collection surface is used. The photo at the right shows a UV illuminated picture of the collection surface from these systems after having collected fluorescent polystyrene particles.

