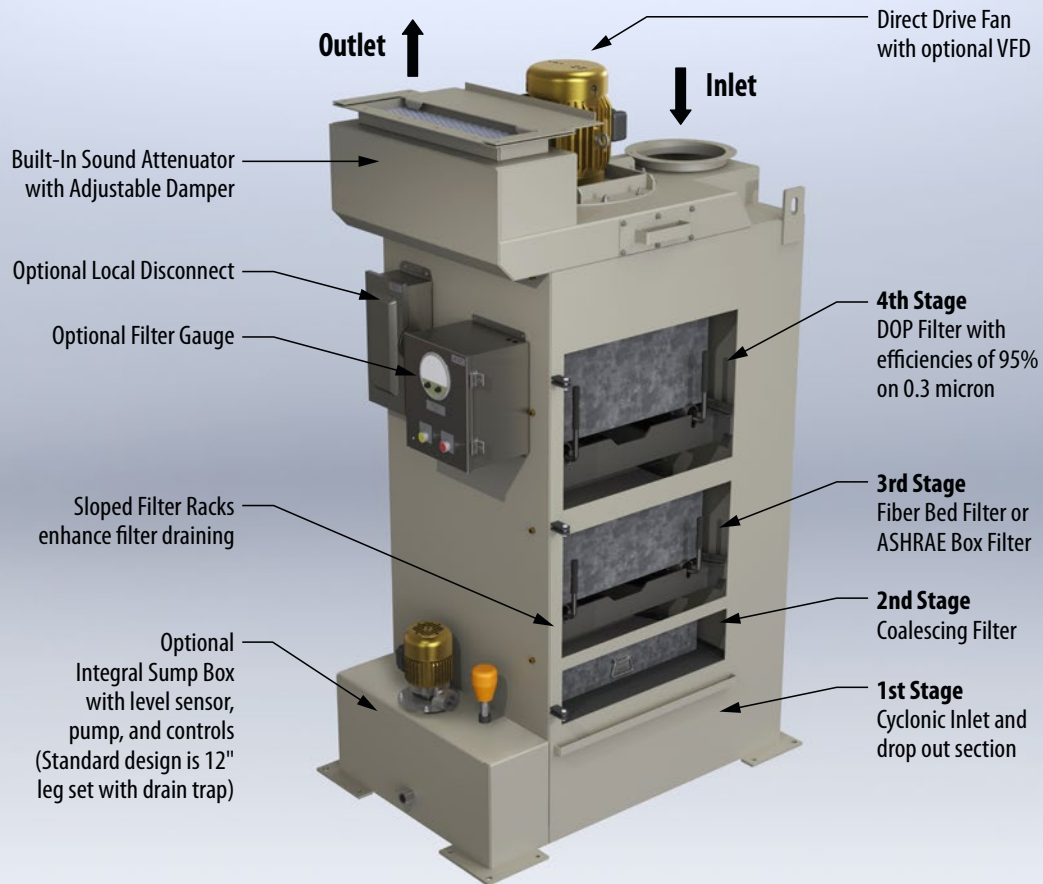


# COMPACT FIBER BED OIL MIST COLLECTORS



## New Low-Profile, Reduced Footprint Design

The Monroe Compact Fiber Bed Oil Mist Collector is the latest advancement in performance and design from **Monroe Environmental**® – the world-class leader in mist collection technologies. The Monroe Compact Fiber Bed Oil Mist Collector is a custom designed unit consisting of a continuous-duty, aerosol coalescing filter, fan assembly and, when needed, an optional pre-filter stage.

Mist is coalesced in a deep box filter consisting of micro-fine fibers. These long-life filters can provide years of service before replacement is necessary.

When the mist quantity is high and/or dust particles are present, pre-filtering is provided by separate filters. The Monroe Compact Fiber Bed Oil Mist Collector is available in capacities as low as 500 CFM in a single unit and may be integrated with existing duct work.

The Monroe Compact Fiber Bed Oil Mist Collector is well suited for many oil mist applications including asphalt fumes, sulfuric acid mist, and synthetic fiber processing.

### Features

- Fiber bed filtration
- Oil, mist, smoke and vapor
- Acid mist and fumes
- Efficiencies to 99.5% by weight for < 3 microns
- Efficient multi-stage design
- Low pressure drop and energy requirement
- Small footprint, low height requirement
- Continuous draining during operation
- Low maintenance
- Lightweight, easy to remove filters
- Machine mounting capabilities

Monroe is able to provide equipment and services to meet in-plant level criteria of 0.5mg/m<sup>3</sup> or less.

## High Performance

Many industrial and chemical applications generate submicron mists. The Monroe Compact Fiber Bed Oil Mist Collector is an ideal solution for these troublesome mists. Mist particles are efficiently removed through interception, inertial impact, diffusion (Brownian movement), and gravitational sedimentation.

The Monroe Compact Fiber Bed Oil Mist Collector removes particles as fine as 3 microns and below. While normal filters permit these particles to re-entrain into the outgoing clean air, Monroe's self draining filter is designed to prevent oil re-entrainment and recirculate clean air to the atmosphere.

Monroe carefully selects fiber bed filters to give constant efficiencies as high as 99.5% by weight for < 3 micron particles.

## Custom Built Units

For special applications, when mist is generated at high temperatures, Monroe provides custom designed condensing heat exchangers. Gas to air or gas to water heat exchangers are offered, depending upon the application. Optional HEPA filters can be added as a final stage for recirculating clean air back into the workplace.

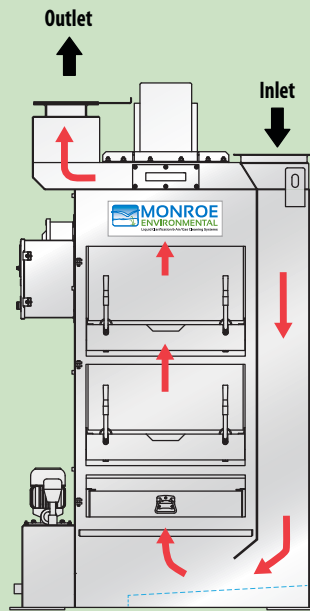
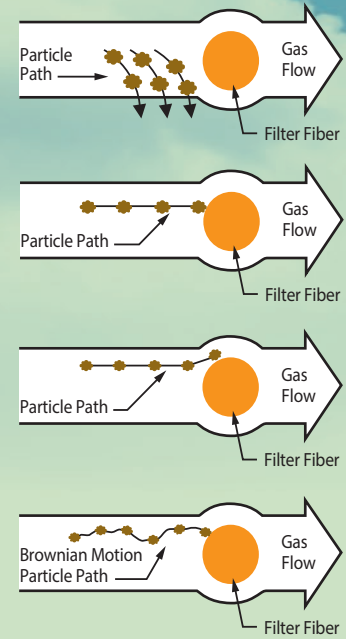
## Multi-Stage Filtration

For difficult applications where there is a high concentration of mist or the mist is dust laden, Monroe provides multistage filtration with various pre-filtering elements followed by the fiber bed filters.

## Filtration Efficiency

The mist particles in the Monroe Fiber Bed Collector are deposited on the filter in four ways:

1. **Gravitational sedimentation** occurs for heavier particles or droplets in the first stage and for coalesced droplets in the final stage.
2. **Inertial impaction.** Particles are unable to adjust quickly enough to the abruptly changing streamlines in the vicinity of fibers (>3 microns).
3. **Interception.** Particles follow a gas stream line that comes within one particle radius of the surface of the fiber (1 to 3 microns).
4. **Diffusion or Brownian movement** greatly enhances the submicron particles tendency to attach themselves to fibers due to their random movement (<1 micron).



## Compact Fiber Bed Oil Mist Collector Applications

- Asphalt fumes
- Machining operations
- Metal cutting
- Metal forming
- Steel and aluminum
- Rolling mills
- Tool and die
- Parts washer exhaust
- Synthetic fiber processing
- Food processing
- Sulfuric acid plants
- Produced oils and coolants
- And many others

## Special Features

**A wide range of construction materials.** Heavy gauge steel, stainless steel, and non-metallic units are available to meet specific needs.

**Large, easy to open access doors** with airtight seals for all serviceable areas.

**An AMCA rated fan** on the outlet side of the collector with either a direct coupled motor or a "V" belt drive.

**Quite operation.** Rubber isolation sleeves, vibration mountings, and sound attenuators are available for the fan assembly if needed.

**Optional differential pressure gauges** are available to indicate filter pressure drops.

**Complete electrical controls** are available to meet customer application requirements.



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