

TECHNICAL SPECIFICATION

Camfil APC Camtain™ Gold Series Containment Dust Collector

Project:

Location:

Dust Type:

Process/Application:

CFM (Static Pressure):

Air to Cloth (media) Ratio:

Site Conditions:

1. The dust collector(s) shall be a vertical cartridge design, continuously operating, self-cleaning type. Construction shall be of 7 gauge steel frame and 10 gauge steel panels. Major sections shall be modular, bolted construction for maximum installation flexibility. The collector will consist of filter module section(s) and hopper section(s) with support legs. The design of these sections shall be as follows:
 - The filter module shall contain the vertical cartridge filter elements, reverse pulse cleaning system, clean air plenum and cartridge removal/replacement sealing hardware with support frame and side walls. The filter module shall have an inlet plenum box on the side. This inlet plenum box shall contain a staggered channel baffle for high entry, cross airflow design. The plenum box will be designed to provide low inlet velocities and thus maximum fall out of particles down into the hopper section as they strike the baffle. Design of the module(s) is such that there is maximum flexibility in placement of doors, inlet plenum(s), outlet panels or explosion vent panels (if required) to allow easy installation without special engineering or construction.
 - Cartridge filters shall be installed vertically, and be removed by sliding on tracks accessible by the doors. Cam-operated clamp bars provide easy filter clamping and sealing with no tools required.
 - Doors shall be heavy duty of formed 10 gauge design with mechanically attached seal. Doors are sealed by a heavy duty lift cam-bar mechanism. Door design is fully reversible in that the same door can be used at either side of the collector.
 - Design of the dust collector housing shall be rated at 6.5 psi for the PRED value.
2. **Bag In/Bag Out (BI/BO) Safe Change Door Option** – Doors shall be heavy duty of formed 10 gauge design, with mechanically attached seal. The door shall be attached to a davit swing-arm that allows for the door to easily swing out of the work area for cartridge access yet stay connected to the dust collector. Behind each door are polyurethane coated bagging rings with two pressed grooves for proper bag sealing. Attached to these rings are translucent PVC bags, 8 mils thick, with integrated nylon seal cords. The cords fit into the grooves and are secured with a ¾" polyester draw strap. When the dust collector is operating the bags are rolled and fit snugly against internal support panels that keep the bags from contacting the cartridges.

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3. **Cartridges** – Cartridges shall be self-positioning and an entire row shall be locked and sealed in place by means of tracks which include cam locking bars with handles at the door end to easily lock/unlock the cartridges into place. Cam bars are supported by heavy duty cast iron support clips.
 - Cartridges shall be Camfil APC HemiPleat™ and shall have a minimum of 325 ft² of media area each. The media shall be a PolyTech High Efficiency 85% -15% silicone treated cellulose/polyester blend with a micro-fiber synthetic melt blown surface laminate. This will yield the industry's best filtration efficiency at 99.99% at 0.5 microns and larger with a MERV rating of 15/16. Other media options can be provided as required by the operational parameters.
 - Cartridges shall have molded urethane round headers at the top and bottom. Attached to the top header plate shall be a rectangular stamped pan that can be easily slid in/out on the cam bar tracks. The rectangular pan shall have metal tabs so that cartridges cannot accidentally slide on top of each other. The pan shall have a pull handle integrated on the underside surface to assist in removing the cartridge. The pan edges shall be Teflon coated as needed.
 - Internal to the cartridge shall be a media cone, which provides additional media and enhances reverse pulse cleaning. This internal cone shall have a bottom opening in the bottom header which reduces area of the header, and reduces overall can velocity effect. The top of the internal media cone shall have an injection molded piece for structural support and reverse airflow cleaning enhancement.
 - The cartridge shall have twin (2) gaskets on top of the cartridge. The gaskets are continuous molded design, strip and glued gaskets are not acceptable.
 - There shall be a helical cord retainer on the outside of the cartridge to retain shape during back pulsing. This cord retains the cartridge shape and pleat spacing yet allows as much media to be open as possible. External metal screens and external perforated or expanded metal are not acceptable.
4. The pulse cleaning system shall include the blow pipes, internal piping, 6" compressed air header, solenoid valves, and diaphragm valves. Only one cartridge shall be cleaned per tube sheet opening. Compressed air will be supplied at 90-105 psig. Air shall be clean, dry and oil free.
5. The module(s) shall have capability for a top outlet designed for direct mounting a flanged, direct drive fan. The clean air plenum shall also have another outlet on the side for additional flexibility if a remote fan is used. Lifting lugs shall be provided.
6. Unit shall be available with a rupture style, NFPA conforming vent on the side of the collector should conditions require use of an explosion vent(s). An NFPA conforming plenum shall be available if the explosion vent is required to blast vertically. Vent outlets can be supplied with vent ducting (horizontal or vertical) and NFPA conforming weather covers. Adequate vent sizing shall be determined by the supplier to conform with current NFPA standards. Documentation shall be provided by the supplier on the vent sizing calculations.
7. An inlet isolation device shall be provided in accordance with current NFPA standards. Any passive isolation damper selected shall be tested per the guidelines found in NFPA 69, section 12.2.3.3. The isolation damper shall include a self-adjusting latching mechanism that engages when the valve closes and holds the valve shut during the deflagration. This mechanism will not engage during normal shutdown of the system fan. The

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isolation damper shall also include a composite replaceable blade, square blade shaft with no-slip locking collar, top access inspection door and optional activation sensor.

8. A chemical suppression system shall be available in lieu of explosion vents which includes detection devices, suppression canisters, control panel, and chemical or mechanical isolation (see separate specification).
9. The hopper section shall contain the hopper(s) and integral fabricated support legs. Hopper(s) shall be pyramid type design. Hopper wall angle shall be sufficient to prevent dust build up and bridging of dust. Hopper wall angle shall be normally 60 degrees but can be a minimum 50 degrees.
10. **Continuous Liner Discharge Assembly** – Pharmaceutical grade containment hopper discharge system that includes dual bubble tight butterfly valves (10”) with pneumatic actuators, visual indicator, level probe, storage hopper, vibrator, control panel with PLC controls, and drum system that allows for containment of hazardous dust removal without having to turn the fan off. 30 ft. of bag is supplied for continuous, link-type bag pull-down operation.
11. **Pharmaceutical Upgrade Package** – Includes deflectors added to eliminate all internal horizontal ledges, HEPA filter on the pressure taps for the pressure differential gauge, excess caulk and debris is removed from interior of collector.
12. Support legs shall be designed to accommodate required dust discharge devices. Design shall be in accordance with seismic zone 3 and 100 MPH wind load standard.
13. The unit parts shall be individually electrostatic powder painted both internally and externally. Baked on, durable DuPont® powder coat (Triglycidyl Isocyanurate polyester) paint shall be used. All carbon steel components shall be 5-stage acid washed prior to powder coating for maximum adhesion of the paint. Unless otherwise specified, internal frames will be black. Unit shall be powder painted inside and outside for weather/corrosion resistance, unless otherwise specified.
14. Electrical enclosures shall be NEMA 4 unless otherwise specified. Cleaning cycle controls shall be available in microprocessor design which provides optimum cleaning operation. Control panel shall be remote mounted as standard.
15. Should the application require the collecting/filtering of a hazardous/potent compound or recirculation of the discharge air is required, a secondary safety filter shall be provided. Safety filters shall be HEPA quality and meet all current filtration standards. The safety filter housing shall include (at a minimum) inlet/outlet transitions, bubble-tight dampers, DOP test ports, magnehelic gauges and the SafeScan™ manual test section. An integrated safety monitoring filter (iSMF) can be provided, mounted on top of the dust collector as determined by the project requirements.

Other Unit Requirements (similar test documents and sampling protocols to be submitted to buyer/end-user; test challenge material to be 100% milled lactose).

Containment Tested – The Gold Series Camtain™ contained dust collection system has been surrogate tested for validated performance verification. An independently contracted, AIHA accredited laboratory (Bureau Veritas) was used to perform the test and analyze the results. Using 100% milled lactose as the surrogate, we collected over 48 personal, area and surface samples for both the BI/BO cartridge filter change and continuous liner discharge operations. The

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Camfil APC GS Camtain™ can contain highly potent, toxic or allergenic compounds with an OEL ≥ 0.4 mcg/m³ for a time weighted average (TWA). Full test report data is available upon request.

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