The CamContain Ceil-X is a ceiling mounted, room side replaceable HEPA exhaust system featuring Camfil's SafeScan automated scanning technology (wall mount option available).

The Ceil-X HEPA exhaust filter housing is designed for use wherever testable HEPA filtered exhaust is desired and in the following applications:

- As an upgrade to BSL-3 laboratory retrofits.
- As a BSL-3 exhaust housing where there are physical limitations within the interstitial space.
- As a room side replaceable HEPA exhaust system for pharma manufacturing facilities.

The latest version of the Ceil-X includes some of the recent innovative features used in our Life Science products. The Ceil-X includes:

- A tool-free access face screen attachment featuring a magnetic closure system that is hinged on one end. A safety tether prevents the accidental release of the closure.
- An integrated damper located on the exhaust flange is used to isolate components during filter change or unit service.
- A welded stainless steel perimeter flange allows for flush mounting to a hard ceiling surface to prevents air bypass. The brush finish offers an aesthetically pleasing room side appearance.
- A magnetic coupling drive eliminates a dynamic pressure boundary which is a potential leak path.
- A new option; a manually driven scanning operator.
- Quick acting fasteners decrease service down time and allow toolless access to service filters.

A lightweight aluminum test shroud provides ergonomic ease of use while providing uniform aerosol and airflow uniformity in accordance with industry standards. It is secured in place with both magnetic latches and safety latches.

The CamContain Ceil-X meets the necessary performance requirements for Biosafety and Life Science applications at a cost-effective investment level.

Available with Integrated Camfil SafeScan

The Camfil SafeScan system is an automated and non-intrusive filter scanning system that is used throughout the Camfil CamContain product family. This patented technology is typically used in Life Science and Biosafety applications. Use of the SafeScan platform across Camfil products reduces downtime and the possibility of equipment or process errors. A common interface is used to drive the internal mechanism and sample collection. SafeScan is driven by the Camfil Motion Control module, Motion Control Lite, or the fully automated CamControl filter validation system.

> CamContain Ceil X exhaust system is available with SafeScan which enhances module performance and significantly reduces non-productive down time.

Flanged duct connection for containment safety (flexible duct connection available).

An integrated and reliable high-cycle bubble tight flat blade damper with silicone gasket, is the most frequently utilized bubble tight isolation damper in the industry. This damper allows for complete unit isolation during the module's service. It utilizes a silicone gasket for a reliable and repeatable seal over the life of the module. The damper can be operated with three different options: manual (room side operation), pneumatic, or electric (BMS capable control). The BTFB incorporates a bolting flange for ductwork connection or an optional bolt-on duct collar for flexible duct connections.

Hanging tabs have integrated geometry to allow threaded rod and clevis pin to facilitate easy installation.

Filter guides, integrated filter guides allow for quick alignment of filter with knife-edge in either standard ceiling mount or wall mount applications.

Differential pressure gauge, protected with Gage Guardian in-line filter, for monitoring filter pressure drop. Available with optional pressure transmitter for BMS monitoring integration. (not shown)

Flush room side finish that compliments any laboratory or cleanroom space. The module allows a seamless transition between the ceiling and the module, a continuous aesthetic appearance and a smooth surface for cleanability during maintenance.

Accessible control panel allows all testing and evaluation from the room side, and room side control of manually operated isolation damper. (not shown).

Room-side cosmetic trim incorporates a brushed stainless steel finish for an aesthetically pleasing smooth and cleanable surface. It is permanently attached and pressure boundary sealed to the module. This provides a unit with a factory sealed pressure boundary from the trim to the isolation damper to the filter knife-edge. All boundaries are pressure decay tested to 10" w.g. per ASME N-510. (not shown)

Perforated grill with 40% open area, features tool-free service, a concealed hinge for smooth room side finish, and finger pulls located in each corner for removal of grill from magnetic latches. Integrated solid border for aesthetically pleasing appearance and a view port for room side view of differential pressure gauge also provided.

316 stainless steel trim and grill material that, unlike 304 stainless, specifically resists chloride corrosion and can withstand harsh chemicals. 316 grade stainless steel is a better option to provide superior corrosion resistance.

Filter selection consists of Camfil's standard microglass media with acrylic resin binder or Camfil's new **EnerGuard™ media.**

Designed with a distinctive structure of multifunctional polymeric fibers, EnerGuard media provides micron, sub-micron, and nanoparticle filtration. Along with superior filtration efficiency, the filter delivers:

- lower energy costs
- a robust HEPA panel filter resistant to damage
- depth loading capacity for a longer service life

It is pleated using Camfil's Controlled Media Spacing technology which ensures optimized filter element depth and pleat spacing. This minimizes configuration losses and maintains low resistance to airflow.

EnerGuard media efficiency available in 99.99% @ 0.3 micron. Standard microglass media available in 99.99% vs MPPS.

Testing Shroud Information

Lightweight aluminum test shroud provides ergonomic ease of use while providing aerosol and airflow uniformity in accordance with industry standards.Secured in place with both magnetic latches and safety latches.

Pressure Decay Shroud Information

- Shroud is utilized primarily during the initial commissioning phase of module installation and anytime maintenance to a pressure boundary item is performed.
- Shroud is designed to allow inspection of all pressure boundary surfaces on the room side during pressure decay testing, including the filter sealing knife edge.
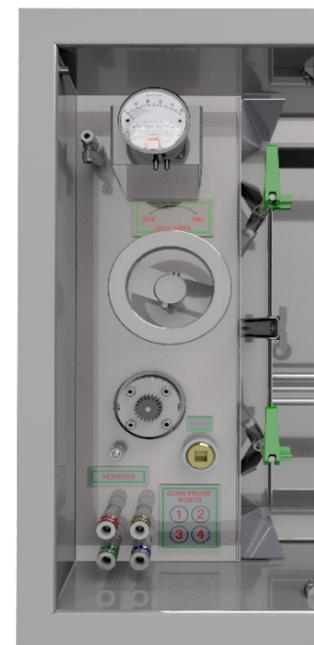- Secured in place using tool-free filter clamping mechanism.

CamContain Ceil-X Options

Field testing control selections

- Manual Control
- CamControl – fully automated testing system.
- CamControl Motion Module – requires photometer or particle counter and aerosol generator by others, fully upgradable to CamControl.
- Motion Control Lite – operates SafeScan assembly, requires photometer or particle counter and aerosol generator by others.

Housing options

- 304/304L or 316/216L housing material
- Foil backed or closed cell foam insulation
- Ducted or flanged connection
- Prefilter - Non-woven polyester pad.
- Manual, pneumatic or electric actuator
- A Stainless Removable Trim – available in 1", 2" or 3" 316 stainless steel.

- **Filter certification and control panel**

- SafeScan Interface compatible with all CamContain scan equipment.
- Decon port for downstream plenum decontamination.
- Room-side or remote filter status monitoring.
- Manual room-side operation of BTFB isolation damper..

Camfil SafeScan, incorporated only in exhaust versions scans the entire face and knife-edge seal of the HEPA filter for reliable, safe and accurate scan results. Internal scanning mechanism is magnetically coupled to the external interface to eliminate a rotating pressure boundary penetration. Process control is achieved through customized options.

- Manual operation delivers the most economical scanning option.
- A Camfil Motion Control Lite or Motion Control (upgradable) module.
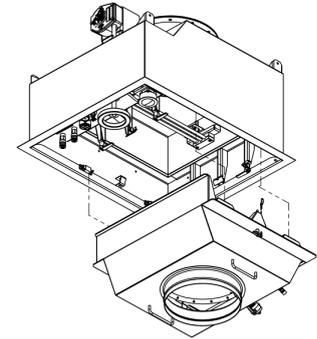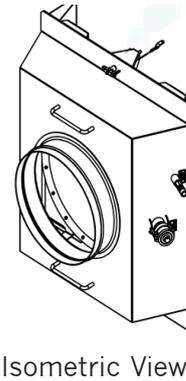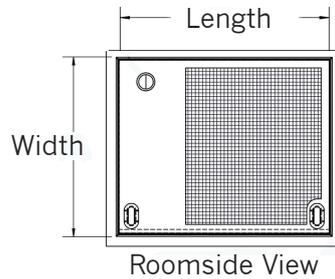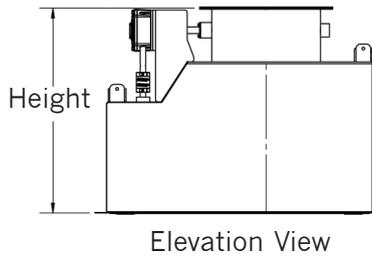- Fully automated CamControl scanning system.

PERFORMANCE DATA & FILTER SELECTION

Model Number	Nominal Dimensions			Rated Airflow (cfm)	Module Weight (lbs)
	Width (inches)	Length (inches)	Height (inches)		
Supply Units					
CX-S-2X1-F-M-0-M0H-304-S-15-0	24.25	18	23.125	104	105
CX-S-2X2-F-M-0-M0H-304-S-15-0	24.25	30	23.125	324	140
CX-S-2X4-F-M-0-M0H-304-S-15-0	24.25	54	23.125	764	185
Exhaust Units					
CX-E-2X1-F-M-0-M0H-304-S-15-0	24.25	18	23.125	104	110
CX-E-2X2-F-M-0-M0H-304-S-15-0	24.25	30	23.125	324	145
CX-E-2X4-F-M-0-M0H-304-S-15-0	24.25	54	23.125	764	190

Height

Elevation View

Length

Width

Roomside View

Isometric View

Installed View

(Exploded)

Common Filter Selections

Description	Size (inches)	Initial Resistance (inches of w.g.)	Rated CFM	Part Number
EnerGuard™ media 99.99% @ 0.3 μ				
N2121. 75-42. 75-9UV-FD-00-00-0	21.75 x 42.75	0.25" w.g.	764	85502F217
N2121. 75-18. 75-9UV-FD-00-00-0	21.75 x 18.75	0.25" w.g.	324	85502F219
N2121. 75-06. 75-9UV-FD-00-00-0	21..75 x 6.75	0.25" w.g.	104	85502F220
Micro-glass media 99.99% vs MPPS				
Q5-21. 75-42 75-B-UV-FD-00-00-0	21.75 x 42.75	0.38" w.g.	764	855026070
Q5-21. 75-18 75-B-UV-FD-00-00-0	21.75 x 18.75	0.38" w.g	324	85502A221
Q5-21. 75-06 75-B-UV-FD-00-00-0	21.75 x 6.75	0.38" w.g	104	85502B766

ISO 9001:2015 Certified Quality System

Detailed specifications for Camfil products are available at www.camfil.com web site. Camfil is committed to continuous research, development and product improvement. We reserve the right to change designs and specifications without notice.

U.S. GREEN BUILDING COUNCIL MEMBER

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