

CST HEPA MODULE

Room Side Replaceable HEPA/ULPA Module

Description

The Ceiling Suspension Type (CST) room-side replaceable HEPA module is an ideal terminal filter hood for pharmaceutical and biotech cleanrooms, or wherever hoods are regularly validated for performance and leak-free operation. The CST module is available in HEPA (99.99% to 0.3 μm) and ULPA (99.9995% to 0.12 μm) grade efficiencies.

They may be installed in a variety of ceiling types, including tee-bar ceilings and plaster ceilings. Well suited for Class 100 "spot" applications, they may also be used to create Class 10,000 to Class 100,000 areas by locating the appropriate number of units in the ceiling. Units may also be installed for 100% ceiling coverage to achieve cleanliness levels to Class 10.

The CST features a gel-seal design offering superior protection against bypass leakage. The gel-seal interface assures a positive seal between the replaceable HEPA/ULPA filter and the hood. Its effectiveness has been proved in thousands of applications.

The CST design allows access to the filters from room-side, without disturbance to the installed housing. Bottom-loading filters along with the unique tool-less installation procedure helps make room-side filter change-out quick and easy.

Construction

CST housings and HEPA filter casings are manufactured from extruded anodised aluminium. The HEPA and ULPA Filter media are manufactured from moisture resistant non-woven glass micro fibres, and are produced with a wet laid process similar to those used for the production of paper. The HEPA media is then formed into closely-spaced pleats held firmly in place with polyurethane sealant bead separators.

Features

- Minipleat separatorless filter pack
- Thin, light-weighted design
- Unique tool-less design allows quick and easy change of filter
- Gel-seal HEPA/ULPA filters help eliminate filter gasket bypass
- Optional Perforated stainless steel screens
- Optional DOP and static pressure ports
- Optional 12mm PE Insulation material on outer casing
- Available in non-standard sizes

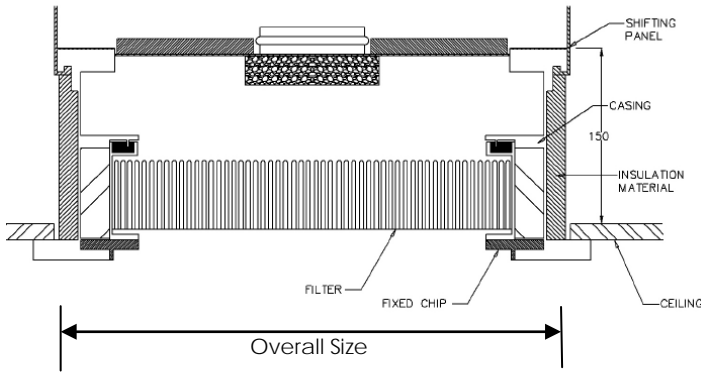


CST HEPA MODULE
Front View of Filter and Screen

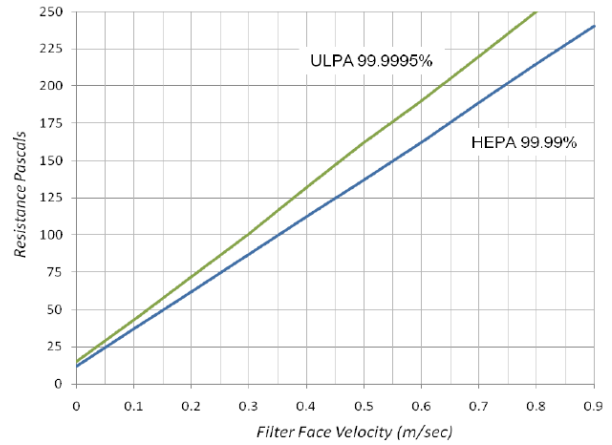


CST HEPA MODULE
Internal View of Box

Design



Pressure Drop vs. Filter Face Velocity



CST HEPA MODULE PRODUCT INFORMATION						
Model No.	Overall Size (mm)	Capacity l/sec ¹	Mini-Pleat Pack Depth	Particle Size Efficiency	AirePanel Mini Pleat Filter Model No.	Resistance (Pa)
CST-101	350 x 350	40	50mm	99.99% @ 0.30 micron	CST493121200	153
				99.9995% @ 0.12 micron	CST693121200	185
CST-102	350 x 650	85	50mm	99.99% @ 0.30 micron	CST493122400	153
				99.9995% @ 0.12 micron	CST693122400	185
CST-202	650 x 650	190	50mm	99.99% @ 0.30 micron	CST493242400	153
				99.9995% @ 0.12 micron	CST693242400	185
CST-203	650 x 955	290	50mm	99.99% @ 0.30 micron	CST493243600	153
				99.9995% @ 0.12 micron	CST693243600	185
CST-204	650 x 1258	390	50mm	99.99% @ 0.30 micron	CST493244800	153
				99.9995% @ 0.12 micron	CST693244800	185

Note:1 L/sec based on a maximum face velocity of 0.6m/sec as per AS1386.3-1989. Cleanrooms & Clean Workstations Part:3 – Non Laminar Flow Cleanrooms – Class 350 & Cleaner.

HEPA Filter Coverage Required to Achieve Various Cleanroom Levels			
AS 1386 Cleanroom Cleanliness Level	ISO 14644-1* Cleanroom Cleanliness Level	Coverage Required in Ceiling	Number of Air Changes per Hour
3.5	ISO-5 (0.5µm)	100% HEPA Filters	635
35	ISO-6 (0.5 µm)	20-60% HEPA Filters	125-380
350	ISO-7 (0.5 µm)	5-40% HEPA Filters	30-60
3,500	ISO-8 (0.5 µm)	5% in AHU Filter Bank	30

*ISO 14644-1, Cleanrooms and associated controlled environments—Part 1: Classification of air cleanliness was the first ISO 14644 International Standard prepared by ISO Technical Committee 209 (ISO/TC 209). The document was submitted as an American National Standard and has been adopted as ANSI/IES/ISO 14644-1:1999 in the United States following the cancellation of FED-STD-209E. Many factors besides airborne particulate cleanliness must be considered in the design, specifications, operations and control of cleanrooms and other controlled environments. These are covered in some detail in other parts of the International Standards prepared by ISO/TC 209. ISO 14644-1 covers the classification of air cleanliness in cleanrooms and associated controlled environments. Classification in accordance with this standard is specified and accomplished exclusively in terms of concentration of airborne particles.

The table above is intended as a general guide only and is based on a ceiling height of 2.60 metres. Levels of cleanliness are also dependent upon variables other than HEPA filter coverage, such as airflow velocity, internal particle generating activity, HEPA filter distribution, turbulent areas, and dead spots caused by lighting, sprinkler systems, filter modules and other obstacles.

Filter Replacement

Airepure recommend replacing gel seal HEPA filters when contaminated or the loaded pressure is reached, but no longer than 5 years from manufacture date due to possible degradation of the gel. Refer to <https://www.airepure.com.au/issues-affecting-gel-seal-hepa-filters/>