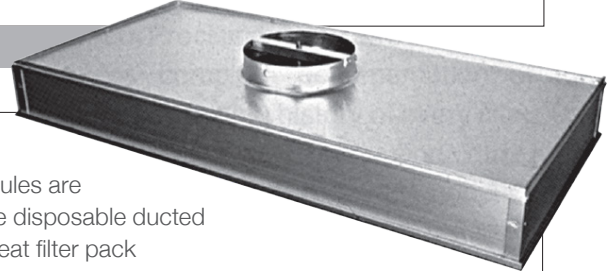


TH Series

SEPARATORLESS HEPA/ULPA FILTER MODULES



- Disposable HEPA module for a variety of cleanroom applications
- Low profile and lightweight for easy installation
- Available with up to a 4" media pack for maximum airflow
- Entire unit is factory sealed and individually scan tested to ensure leak-free performance
- HEPA, ULPA, and SULPA efficiencies available
- Can be supplied with DimplePleat® separatorless HEPA filters
- Wide range of additional options available including lighting, insulation, and many more

The AAF Flanders TH Series HEPA/ULPA filter modules are lightweight unitized low profile disposable ducted supply modules with a minipleat filter pack available in efficiencies from 99.99% on 0.30 micrometer size particles to 99.99999% on 0.12 micrometer size particles. These modules are available in a complete range of standard frame styles, 2", 3" and 4" pack depths and sizes to meet the needs of critical applications where HEPA/ULPA filtration is required. Individual testing under rigid quality control and modern assembly methods ensure conformance to specifications. TH Series HEPA/ULPA filter modules are used in a variety of cleanroom applications, including:

- Semiconductor fabrication
- Disc drive manufacturing
- Pharmaceutical production
- Biotechnology
- Aerospace
- Food processing

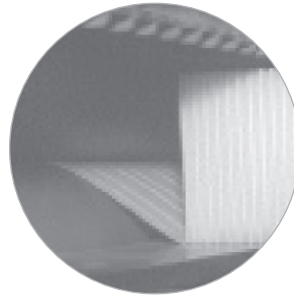
Application

TH Series HEPA/ULPA filter modules are used in ducted supply applications that require ultra-clean air. They typically operate at a velocity of 100 FPM, making them ideal for either unidirectional (laminar flow) or non-unidirectional (non-laminar flow) applications, in either a gasketed tee grid system or a gel grid ceiling system. Filters of standard construction may be operated at up to 150 FPM face velocity and to a final resistance of 2" w.g. As with all HEPA/ULPA filters, high efficiency ASHRAE-rated prefilters are recommended.

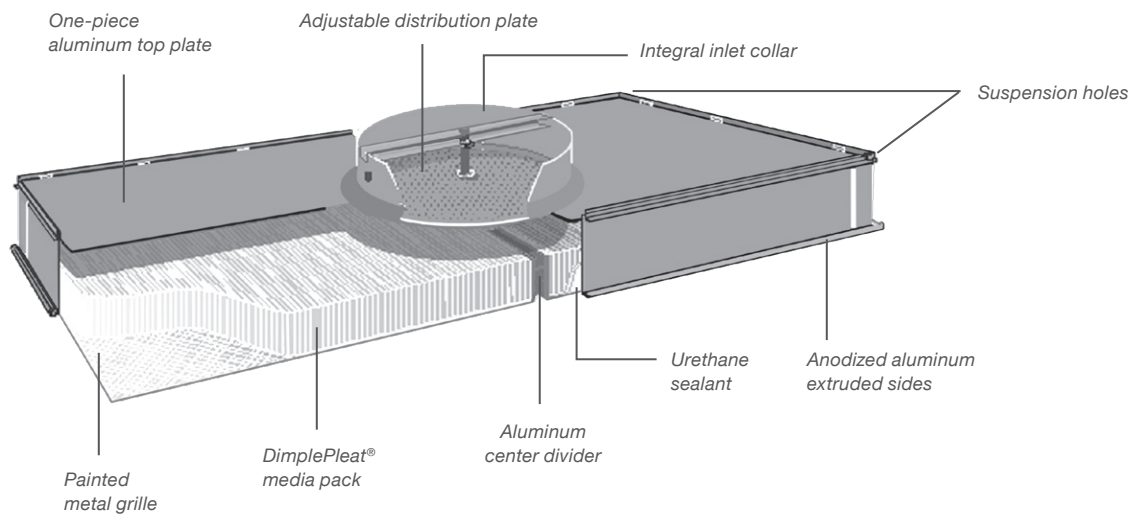
TH Series Filter Modules

Construction

The DimplePleat media pack is a completely separatorless media pack and is available in 2", 3", and 4" depths, depending on performance requirements. The media pack is sealed to the anodized extruded aluminum filter frame with a fire retardant solid urethane sealant. The filter frame may have either a flat flange to seal in a gasketed tee grid or a knife-edge to fit in a gel grid. A one-piece aluminum top with integral inlet collar is provided, and the inlet collar is dimpled to secure the flex duct retaining strap. The standard unit has an adjustable distribution plate for minor adjustments of roomside airflow. An anodized extruded aluminum center divider with access port provides access for adjustment of the distribution plate and measurement of the resistance and challenge aerosol. A painted expanded metal faceguard on the downstream side protects the media.



Separatorless DimplePleat® media is manufactured at AAF Flanders and has dimples formed in the media. The dimples function as typical separators by aligning against each other at adjacent folds of the pleats and give the media pack its shape and strength.



Module Efficiencies

Filter modules are available in three efficiencies:

- HEPA: 99.99% minimum removal efficiency on 0.3 micrometer particle size
- ULPA: 99.9995% minimum removal efficiency on 0.12 micrometer particle size
- SULPA: 99.99999% minimum removal efficiency on most penetrating particle size (MPPS)

ULPA Efficiency Testing

Each ULPA filter module is tested for efficiency and resistance by Dual Laser Spectrometer. The spectrometer samples simultaneously on the upstream and downstream sides of the filter to determine the percentage of penetration. AAF Flanders standard test challenge is an aerosol of PSL (polystyrene latex) spheres. The laser instrument detects the size of each penetrating sphere in seven particle size classes from 0.07 micrometers to 1.0 micrometers. Resistance readings are taken according to volumetric parameters (i.e., 100 CFM per square foot of media face area) and are expressed in inches of water gauge.

Standard Scan Testing of HEPA and ULPA Modules

Every module is scan tested per Section 6.2 of IEST-RP-CC034.1 for pinhole leaks in the media, edge sealant and frame. As the filter is challenged with PSL aerosol, the test operator scans the face and edge with a probe attached to a laser particle counter. Any reading greater than .01% of the upstream concentration is unacceptable, and the filter is rejected, or repaired and retested.

AutoScan Testing Option (ULPA Modules)

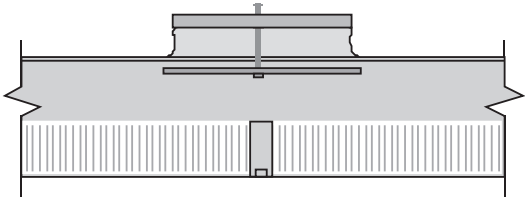
Manual scan testing is a reliable quality assurance tool, but the most sensitive applications may benefit from computer controlled automatic scan testing. Because the test operator is removed as a variable in the observation and evaluation of signals produced by the particle counter, the AutoScan is considered to be a more objective test process. It offers assurance that the speed of the probe is correct and consistent, that no area of the filter is left unscanned, and it provides the ability to detect leaks down to .001%. Complete documentation of the scan test data is stored in databases and is available upon request.



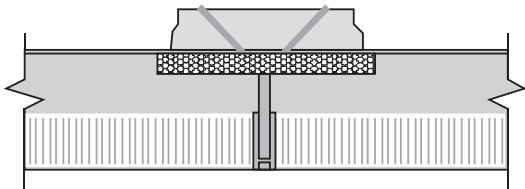
TH Series Filter Modules

Options

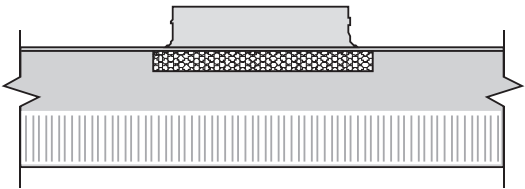
Inlet Sizes: TH Series Modules are available with a nominal 8", 10", 12", or 14" diameter inlet. Inlet collars are designed with a continuous rib to help retain the ductwork on the collar.



Adjustable Distribution Plate for fine tuning the airflow from roomside. Dampers in the HVAC system are recommended.



Butterfly Damper for wider adjustment of airflow from roomside. This option includes a fixed distribution plate and swaged inlet. Dampers in the HVAC system are recommended.



Fixed Distribution Plate for applications where no adjustment of the airflow is required from roomside and all dampers are in the HVAC system. The module is supplied with a perforated non-adjustable baffle to normalize inlet airflow velocities and maintain airflow uniformity.

DimplePleat® is a registered trademark of Flanders corporation in the U.S.

Lighting: Flow-through fluorescent light fixtures may be mounted beneath the module. Access to the lamps and to the ballast is from roomside through a hinged grille. Two, three, or four lamps per fixture and the desired voltage may be specified.

Insulation: Two-inch thick fiberglass with aluminum foil backing prevents moisture formation and heat loss. For modules installed side-by-side, the insulation covers only the top. If modules are to be installed separately, the insulation also covers the sides. The type of insulation coverage may be specified in the model number.

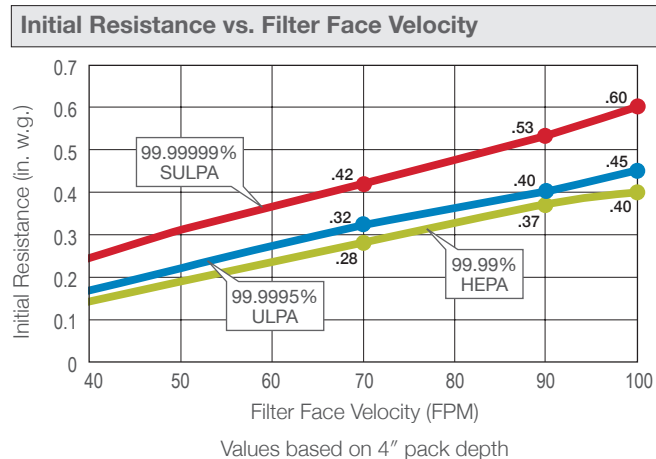
Protective Grilles: The standard grille is 65% open expanded metal painted white. Anodized aluminum and Type 304 stainless steel grilles with 40% open circular perforations are also available.

Sprinkler Pan: For tee grid applications requiring fire protection, an aluminum pan incorporating a pass-through for a sprinkler head and piping may be attached and sealed at one end of the module (modules must be undersized relative to grid size to allow room for the pan).

Reinforced (Walkable) Tops: The standard module top is .050 in. thick aluminum plate. A .125" thick top, designed to support the weight of installation and service personnel, is also available (this option must be specified in writing separately from the model number).

Gaskets: White or black 1/4" thick Ethylene Polypropylene Terpolymer (EPT) gasket material may be specified for modules to be installed in ungasketed tee grid installations.

Performance Data



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AAF Flanders has a policy of continuous product research and improvement and reserves the right to change design and specifications without notice.

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ISO Certified Firm

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