

AstroCel[®] | HTD

HEPA FILTER FOR HIGH TEMPERATURE DYNAMIC CONDITIONS



Features and Benefits

- Suitable for air temperatures up to 500 °C
- Made up of specially selected, heat resistant components
- Tested at U.K. Research Laboratory of Atomic Energy Authority Technology

Application

The AstroCel I HTD filter is a High Efficiency Particulate Air (HEPA) filter specially designed to remove airborne contaminants in critical areas, where high efficiency filter for fine particulate matter is required, and hot air is used during the production process. These filters are used in a broad range of industries, from photography and films to food processing.

Components used for the assembly of this filter were specially selected for their heat resistance.

To have the concept tested and tried under hot dynamic conditions, the AstroCel I HTD filter was presented to the independent U.K. Research Laboratory of Atomic Energy Authority Technology. The conclusion after testing was that the filters performed very satisfactorily and well within the criteria specified.

Cell Sides

The cell sides are made of special hot dipped aluminized steel. This material has excellent characteristics at high temperatures and will easily regain its original dimensions after sudden temperature variations. The cell sides are mechanically put together with stainless steel pop rivets to ensure a permanent close fit.

Separators

Heat resistant corrugated aluminium separators keep the pleats of the filter media apart. The uniform spacing between the pleats allows optimal air flow into and through the filter.

Expansion Layer

High temperatures have an influence on the filter media, sealant and cell sides, since they do not expand equally due to their different coefficients. By designing a filter with a unique expansion layer, which is mounted with a special glue to the cell sides, the difference in expansion is absorbed, thus preventing tears in the filter media and cracks in the sealant. In addition, the use of an expansion layer ensures that during cooling down, the filter cell sides and the media will regain their original dimensions.

Bond

The media pack is thoroughly sealed to an expansion layer with a special heat resistant sealant. The bond totally encapsulates the media edges and separators, preventing bypass leakages. The sealant consists of ceramic based components.

AstroCel® I HTD Filter

Minimum Efficiency

Every AstroCel I HTD filter is individually tested to guarantee the minimum overall efficiency of class E12, as stated on the filter. Testing is performed with PSL, using the EN1822:2009 method.

Gasket

An airtight seal between filters and frame is ensured by applying a special, high temperature resistant gasket to the face of the cell sides.

Technical Data

Size ¹			Nominal Airflow ²⁾	
H	W	D	m ³ /h	m ³ /s
610	610	149	1000	0,28
610	305	292	1000	0,28
610	610	292	2000	0,56
610	762	292	2500	0,70

1) The 'H' (Height) dimension indicates the vertical direction of the separators, AstroCel HTD filters must always be installed with the separators in a vertical position. Only indicated sizes are available.

2) Initial resistance at nominal airflow is ≤ 320 Pa.

Test results from the U.K. Laboratory of Atomic Energy Authority Technology

Temperature	Actual overall Efficiency %
°C	0,2 µm PSL spheres
Ambient	> 99,99
250	> 99,95
360	> 99,90
500	1)

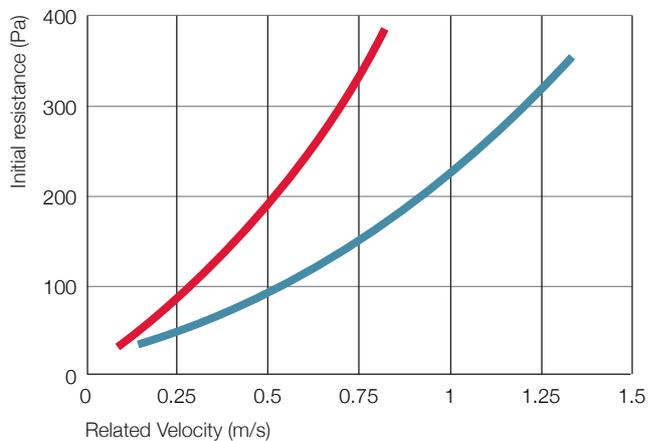
Operating Temperature

AstroCel I HTD air filters are designed for applications with peak temperatures up to 500 °C. The recommended continuous operating temperature is between 250 °C and 380 °C. See also instruction leaflet RA-3-200 for start-up operations.

Final Resistance

The final recommended resistance is dependent upon static pressure characteristics of the fan. AstroCel I HTD filters are fabricated to withstand a pressure of 1.000 Pa.

Operating Data



149 mm deep
292 mm deep

AstroCel® is a registered trademark of AAF International in the US and other countries.



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