

# HEPA Aluminium Separator

Final or HEPA Filters H11 95%@0.3um H13 99.99%@0.3um H14 99.999%@0.3um

## General Characteristics

High Efficiency Particulate Air (HEPA) Aluminium Separator (Al-Sep) filters, also known as Absolute Filters for efficiencies more than 99.97%@0.3um. The traditional HEPA Aluminium Separator construction filters are used as final filters to collect most penetrating particles sizes in the air filtration systems, air handling units of non-directional cleanrooms and final filters to protect the terminal modules in directional cleanrooms. They are used extensively in industries such as pharmaceutical production, electronics, hospitals, clean rooms, laboratories, exhaust systems, nuclear establishments, injectable production, film production, and fall-out shelters.

- + HEPA Filtration 99.99%@0.3um, 99.999@0.3um efficiencies, SemiHEPA with 95%@0.3um,
- + Micro Fibreglass with Aluminium Separators
- + Aluminium, Particle Board Wood or Stainless Steel Frame (HT models)
- + Extended Surface Media Area
- + Rubber gaskets at downstream of filters
- + HT model of high temperature up to 250°C

## Construction

### Filter Media

The filter media is micro fibreglass paper which is water repellent, fire retardant and anti-fungicide. The media will have thickness of 0.305-0.457mm and minimum tensile strength of 0.60 kg/cm. The filter is able to withstand pressure drop of 2500Pa.

High Capacity (HC) rated packed with more media area is highly recommended for lower pressure drop, lower energy cost and longer filter lifespan.

### Separators

The fibreglass paper is deep pleated with aluminum crimped spacers acting as separators. They are suitable for 100% RH.

### Enclosing Frame

The filter media pack is enclosed with aluminium, galvanised steel or particle wood board frame. High temperature models are enclosed with stainless steel frame. The standard frame option is double-turned flange (DTF) or box C-styled (NH).

### Sealant

Polyurethane, Hotmelt or equivalent adhesive is applied to the filter pack to the enclosing frame. Each filter is fitted with a one-jointed synthetic neoprene rubber seal downstream of filters.

High Temperature Silicone is used as sealant and gasket for high temperature (HT) models up to 250 degrees celsius.

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## Specifications

Model	ICH		H4BA	
Description	HEPA AI-Sep		HEPA AI-Sep	
Efficiency at 0.3um	95.0%@0.3um		99.99% / 99.999% @0.3um	
Standard Capacity (SC) High Capacity (HC)	SC	HC	SC	HC
Rated Airflow cmh 610x610x292mm Standard cap at 1.4m/s * Rated Airflow at 2.5m/s	3400*	3400*	1890	3400* (2500 or 1.85m/s)
Initial Pressure Drop Pa for Depth 292mm	250	200	250	333 (250)
Rated Airflow cmh 610x610x150mm Standard cap at 1.4m/s High Capacity at 1.25m/s	1700	1700	1000	1620
Initial Pressure Drop Pa for Depth 150mm	250	200	250	250
Filter Class to EN1822	E10 to E11		H13 / H14	
EN1822.5 MPPS Global/ Integral Efficiency	≥95.0%		≥99.95% / ≥ 99.995%	
IEST-RP-CC001 HEPA & ULPA Filters	N.A		Type C / D	
IEST-RP-CC034 PAO/DOP**/PSL @ 0.3um	≥97.0%		≥99.99% / ≥99.999%	

Performance data is based on IEST-RP-CC-001.6 and EN1822. Test methods include IEST-RP-CC034.4 HEPA & ULPA Filter leak tests, IEST-RP-CC006 Airflow, NSF49 Biosafety Cabinetry are used in conjunction. Only Quality Conformed and test report results of HEPA will be affixed with label on HEPA Filter. MPPS: Most Penetrating Particle Size at 0.1-0.2um or 0.2-0.3um, mean mass particle of 0.3um Gasket of 5mm thickness are provided downstream of filters. Optional both sides gaskets can be requested. Filter can be installed any direction depending on site, direction on label for reference

\*\*Traditional DOP has been replaced using with other non-toxic suitable aerosols challenge like PAO/Emery Oil/PSL.

## Technical Data

### Filter Media

Water-Repellant Micro Fibreglass Paper  
Thickness: 0.305-0.407mm  
Min Tensile Strength >0.60kg/cm

### Enclosing Frame

Aluminium (Al)  
Option: Galvanised Steel (Gi), MDF (Wood),  
Stainless Steel 304 (SS304)

### Separator

Aluminium

### Sealant

Polyurethane / Hotmelt  
Option: High Temperature Silicone

### Gasket

Rubber Nitrile  
Options: High Temperature Silicone Seal 250°C  
Gel Silicone Channel Seal for Knife Edge frames

Continuous Operating Temperature 80°C  
Relative Humidity 90%  
Recommended Final Pressure Drop 500 Pa  
Maximum Final Pressure Drop 650 Pa  
Burst Pressure Drop 2500 Pa



High Temperature (HT) models up to 250°C can be requested. The filter comes with Stainless Steel 304 Frame with High Temperature Silicone as sealant and gaskets

## Dimensions

Actual Size L x W x D  in mm	Rated Air Flow m <sup>3</sup> /h		Media Area m <sup>2</sup>		Nett Weight kg	Packing per carton
	Standard Cap 0.78 m/s	High Cap 1.25 m/s	Standard Cap 0.78 m	High Cap 1.25 m/s		
305 x 305 x 150	250	405	2.1	3.2	4.6	8
305 x 610 x 150	500	810	4.3	6.5	8.2	4
610 x 610 x 150	1000	1620	8.6	13.1	9.3	2
1220 x 610 x 150	2000	3240	17.2	26.2	12.3	1

  

Actual Size	Standard Cap 1.4 m/s	High Cap 2.5 m/s	Standard Cap 1.4 m	High Cap 2.5 m/s	Nett Weight	Per carton
305 x 305 x 292	470	850	4.2	6.5	4.6	4
305 x 610 x 292	945	1700	8.5	13.0	8.2	2
610 x 610 x 292	1890	3400	17.0	26.1	9.3	1

Other sizes can be customised, rated airflow in proportional to face area of 610x610.

### Standards for Reference

IEST-RP-CC-001.6, IEST-RP-CC034.4 PAO/P.S.L Overall Testing 99.97-99.999% at 0.3um

- EN1822-5 for Classes H12, H13 and H14
- IEST-RP-CC-007 Type H/I/J/K
- IEST-RP-CC-001, for TYPE A/B/C/D

Each single filter media roll used in production is systematically tested in accordance with standard EN 1822-3.

In accordance to Recommended Practice, IEST-RP-CC-001 w CC034/ EN1822-4 & 5, at the end of the production, individual filter element is locally scanned tested for leaks/penetration by using non-toxic suitable aerosol of PAO/Emery Oil/ polystyrene latex spheres (PSL) challenge by using aerosol photometer or particle counter and determining filter efficiencies. Global efficiency can also be determined measuring upstream and downstream concentration. For IEST-RP-CC-007/ EN1822-4 & 5, MPPS is determined and for rating above H12, individual filter is locally scanned tested for leaks/penetration using particle counter to determine the global efficiency. The pressure loss is also determined. The filter test results are recorded on labels and affixed onto the HEPA filter.

