

AIRCLEAN

YOUR AIR FILTER MANUFACTURER

P.O. BOX 147,
MAIDSTONE, ME14 2LA.

TEL:01622 832777
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sales@airclean.co.uk www.airclean.co.uk

Absolute (HEPA) Filters

Applications

Absolute (HEPA) filters are used in a wide range of applications such as clean rooms, operating theatres, research facilities, the electronic and micro-electronic industries, nuclear and pharmaceutical industries and high speed turbines.

Clean Rooms tend to employ the narrower 146mm deep filter and utilise a lower face velocity in accordance with the relevant Clean Room Standard Requirements, thus providing a laminar air flow either across the work area or across the complete room depending upon the application.

Construction

The filtration medium is provided by microfine glass fibres formed into a paper-like surface, supplied in various grades depending upon filtration efficiency required. The filter paper is formed into a close pleated package to provide a large surface area. Corrugated spacers of either kraft paper or aluminium are inserted between each pleat to provide support for the pleat and also ensure that the entire surface of the filtering medium is used.



Technical (Absolute Filters)

These can be provided to efficiencies and performance as shown below:

GRADE	Overall Efficiency	Local Value Efficiency	Suggested for ISO 14644 : 1999
H11	95%	-	
H12	99.5%	-	ISO Class 8
H13	99.95%	99.75%	ISO Class 6
H14	99.995%	99.975%	ISO Class 5
U15	99.9995%	99.9975%	ISO Class 4

AIRFLOW CAPACITIES for Grade H11 to EN1822 STANDARD AND HIGH CAPACITY

SIZE			STANDARD Rated Airflow		HIGH CAPACITY Rated Airflow	
H mm	W mm	D mm	Flow m ³ /s	Press Pa	Flow m ³ /s	Pressure Pa
305	305	146	0.06	150	-	-
508	508	146	0.16	150	-	-
609	609	146	0.24	150	-	-
609	609	292	0.47	150	0.80	200
450	600	292	0.22	150	0.41	200
305	609	292	0.23		0.40	200
593	593	292	0.45		0.75	200
288	593	292	0.21		0.37	200

Code AC5/1a Ref 05/06

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AIRFLOW CAPACITIES Standard Flow Grade H12-H14 to EN1822

SIZE			Flow	Press
H mm	W mm	D mm	m ³ /s	Pa
508	508	75	0.12	200
609	609	75	0.17	200
609	762	75	0.21	200
609	918	75	0.25	200
609	1220	75	0.34	200
609	1524	75	0.42	200
609	1828	75	0.51	200
762	762	75	0.27	200
762	918	75	0.32	200
762	1220	75	0.42	200
762	1524	75	0.53	200
762	1828	75	0.64	200
305	305	146	0.06	250
457	457	146	0.10	250
508	508	146	0.16	250
609	609	146	0.24	250
609	762	146	0.30	250
609	918	146	0.35	250
609	1220	146	0.47	250
609	1524	146	0.59	250
609	1828	146	0.71	250
762	762	146	0.37	250
762	918	146	0.44	250
762	1220	146	0.59	250
762	1524	146	0.74	250
762	1828	146	0.89	250
918	918	146	0.53	250
918	1220	146	0.71	250
918	1524	146	0.89	250
918	1828	146	1.06	250
305	305	292	0.12	250
457	457	292	0.27	250
508	508	292	0.31	250
609	609	292	0.47	250
609	762	292	0.59	250
609	918	292	0.71	250
609	1220	292	0.94	250

AIRFLOW CAPACITIES High Capacity Grade H12 to H14 to EN1822

SIZE			Flow	Press
H mm	W mm	D mm	m ³ /s	Pa
305	305	146	0.10	280
457	457	146	0.23	280
508	508	146	0.28	280
609	609	146	0.40	280
609	762	146	0.50	280
609	918	146	0.60	280
609	1220	146	0.80	280
609	1524	146	1.00	280
609	1828	146	1.20	280
762	762	146	0.63	280
762	918	146	0.75	280
762	1220	146	1.00	280
762	1524	146	1.25	280
762	1828	146	1.50	280
918	918	146	0.90	280
918	1220	146	1.20	280
918	1524	146	1.50	280
918	1828	146	1.80	280
305	305	292	0.20	280
457	457	292	0.45	280
508	508	292	0.56	280
609	609	292	0.80	280
609	762	292	1.00	280
609	918	292	1.20	280
609	1220	292	1.61	280

NOTES:

75mm deep filters are fitted with 1x6mm gasket on clean face, giving an 81mm deep filter

146mm deep filters are fitted with 1x6mm gasket on clean face, giving an 152mm deep filter

292mm deep filters are fitted with 1x6mm gasket on clean face, giving an 298mm deep filter

Non Standard sizes are available

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Selection of Filter Construction:

Spacers:

For temperatures in excess of 120°C and RH above 80% use aluminium spacers (up to 250°C and 100% RH for aluminium spacers).

Casings:

For temperatures up to 120°C wood cased or aluminium cased filters can be used.
For temperatures above 120°C use galvanised or zintec steel casings (up to 250°C).

Sealants:

Standard Urethane Sealant is suitable for temperatures up to 120°C.
For temperatures above 80C and up to 250C use cases as above and silicone sealant (2 part-pink)

Gaskets:

Filter gaskets are closed cellular polyethylene with sealed butt joints at the corners usually 20mm x 6mm:

Suffix B - fitted both sides
Suffix C - fitted clean side
Suffix D - fitted dirty side

For temperatures above 80C and up to 250C use cases as detailed above and silicone gasket

Grilles:

Grilles are available in either :

12 x 12 x 1.6mm Galv mesh for 292mm deep filters
white epoxy coated steel for 75mm and 146mm filters in cleanrooms.

Filter Paper:

Filter paper used is water repellent (i.e. suitable for 100% RH but no free moisture).

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Absolute Filter Requirements

(for clean room applications) *Only ISO14644 is current*

Federal Standard 209E	Maximum Particle Count (ft ³)	Suggested Filter
10	10 greater than 0.5µm	Grade U16 to EN1822
100	100 greater than 0.5µm	Grade U15 to EN1822
10,000	10,000 greater than 0.5µm 70 greater than 5µm	Grade H14 to EN1822
100,000	100,000 greater than 0.5µm 700 greater than 5µm	Grade H11 to EN1822

BS 5295: 1989	ISO 14644:1999	Maximum Particle Count (m ³)	Suggested Filter
Class D	ISO Class 4	350 greater than 0.5 µm Zero Particle Size 5µm and greater	U16 to EN1822
Class E	ISO Class 5	3500 greater than 0.5 µm Zero Particle Size 5µm and greater	U15 to EN1822
Class H	ISO Class 6	35,000 greater than 0.5 µm 200 greater than 5µm Zero greater than 10µm	H14 to EN1822
Class J	ISO Class 8	350,000 greater than 0.5 µm 2,000 greater than 5µm 450 greater than 10µm	H11 to EN1822

The company reserves the right to change specifications without notice. E&OE