DROP SAFE® FILTERS DS-G4-300 AND -600

APPLICATIONS

Filtrair Drop Safe (DS) rigid filters serve as efficient pre or final filters in air intake systems of Gas Turbines, in any environmental condition (including offshore, marine)and in any climate (including tropical). They efficiently remove airborne particulate matter but also snow, mist and fog, acting as a filter and a coalescer in one. DS rigid filters are specially designed for the elimination and drainage of free water and air borne salt crystals. Where subsequent final filters are placed, they protect them not only from coarse dust but also from running in wet conditions, thus significantly prolonging their life and increasing their operational safety.

FILTER MEDIA

Filtrair manufacturers its own thermally bonded synthetic media for DS rigid pocket filters. The depth loading media is of progressive structure for high dust holding capacity and contains an added hydrophobic treatment and tackifier throughout the medium depth to repel water and retain their operational safety.

WATER DROPLET SEPARATION TESTING

Filtrair tested its DS filters not only for particle separation (e.g. as per ISO16890 & ASHRAE 52.2) but also for water drop let separation. The latter is relevant when operating DS filters with air containing free water in droplet form (fog, mist, froth, salt water spray) to avoid that dissolved solids penetrating the filter in liquid form.

FEATURES AND BENEFITS

- Unique - combined coalescer and particle filter in one
- For extreme environments: high moisture and water mist content, high velocity, offshore, marine, ...
- Patented sealed boot pocket design - coalesces water inside the pockets and drains it out upstream of filter
- Self-supporting, leak-free welded pockets - stay rigid when wet and in turbulent air - eliminating shedding
- Aerodynamic wedge-shape, tubular pocket spacers - minimum flow resistance and maximum dust holding
- Pockets water tight integrated in injection molded, impact-proof PU header - burst strength of < 6000 Pa
- Unique, proprietary, progressive Filtrair filter media with special hydrophobic treatment
- Filter range tested as per ISO16890 and for fractional and gravimetric water droplet (fog) separation, see page 2
- Available in filter classes G4, M5, and M6 per EN 779:2012

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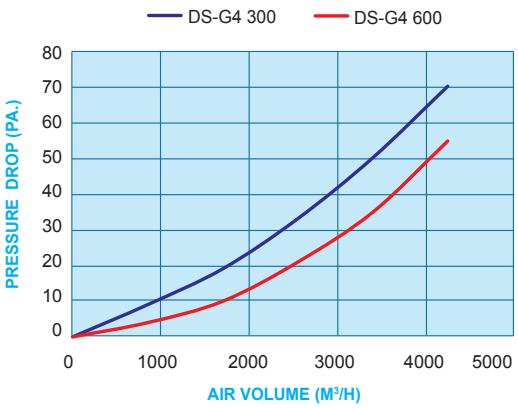
TECHNICAL DATA EN 779: 2012			
Filter type	**Unit**	**DS-G4-300**	**DS-G4-600**
Rated air flow (1/1 size)	m^3/h	3400	3400
Initial pressure drop at rated air flow (3400 m^3/h)	Pa	50	35
Initial pressure drop at rated air flow (4250 m^3/h)	Pa	70	55
Recommended final pressure drop	Pa	250	250
Filter class per EN779:2012	-	G4	G4
Dust holding capacity (Ashrae dust) 450 Pa	g/unit	440	850
Water Fog seperation test results (see testconditions below)			
Water Fog seperation efficiency @ 4250 m^3/h	%	99,7	99,7

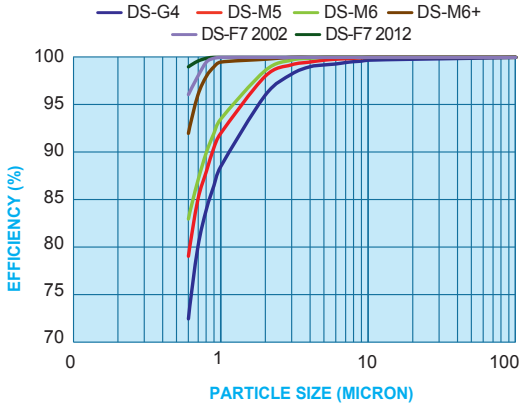
ISO 16890 TECHNICAL DATA			
Filter type	**Unit**	**DS-G4-300**	**DS-G4-600**
Class To ISO 16890		ISO coarse 65%	ISO coarse 85 %
Particulate matter efficiency ePM10	%	31	34
Initial gravimetric Arrestance	%	67	87
Cut off particle size	µm	>10	>10
Dust holding capacity (ISO 12103 A2 Fine)	g/unit	1660	3400

PRODUCT GEOMETRIES			
Filter dimensions	mm	595*595	595*595
Filter length	mm	330	620
Filter medium area	m^2	1,9	3,8
Nr. of pockets	-	6	6
Filter weight	kg	1,8	2,4
Package - nr of filters per box	unit	2	2
Suitable for standard mounting frame	mm	610*610	610*610
Maximum continious working temperature	°C	≤ 70	≤ 70
Admissible relative humidity	%	100	100
Maximum final operating pressure drop	Pa	600	600
Burst pressure drop	Pa	> 6000	> 6000
Options available on request	Gasket 6 mm on downstream, on upstream side or on both sides		

PRESSURE DROP vs AIR VOLUME



WATER DROPLET FOG SEPARATION EFFICIENCY



TEST CONDITIONS AND REMARKS

- Relative humidity of test air: ≥ 95 %
- Upstream water fog concentration* = 27 mg/m^3
- Upstream size range of fog: < 0.5 - 20 µm
- Upstream mass median droplet diameter: = 6.0 µm
- Downstream mass median dropl. diameter: appr. 0.6 µm (depending on filter type and efficiency)
- Measuring range of particle spectrometer: 0.5 - 42 µm
- Test filters new, conditioned with upstream fog for 140 h

* Representing a typical natural fine fog with a visibility of approx. 300 m, generated by injecting water with pressurised air nozzles into the test air flow and separation of coarse droplets by a demister.

All data are average indicative values with usual manufacturing and testing tolerances. We reserve the right to modify performance data without prior notice. Specific performance data will require our written confirmation. Filtrair® is the registered trade mark of Filtrair bv.

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