Sigma Pro Series

Multi-screen, polymeric, self-cleaning filter combining Amiad's suction-scanning technology with a unique mechanism and innovative design

	4"	6"	8"
flow rates	40-120 m³/h (132-528 gpm)	50-180 m³/h (220-792 gpm)	50-280 m³/h (220-1,233 gpm)
inlet/outlet diameter	4" (100 mm)	6" (150 mm)	8" (200 mm)
filtration degrees	80-500 micron		
min. operating pressure during flush cycle	1.5 bar (22 psi) - electronic controller 2.5 bar (36 psi) - hydraulic controller		
max. operating pressure	10 bar (145 psi)		

features:

- Reliable and durable
- Proprietary suction-scanning cleaning technology
- Large filtration area
- Polymeric housing - corrosion free
- Low water and energy consumption
- Compact design and small footprint
- Easy installation and low maintenance
- Ideal for open-field irrigation, landscaping, greenhouse and aquaculture applications
- Amiad's innovative ADI-P controller (optional)

Patent pending

How the Sigma Pro Filter Works

General

Amiad's Sigma Pro is a multi-screen, polymeric filter that combines Amiad's unique suction-scanning screen technology with a compact design and an innovative self-cleaning mechanism. The filter capacity range is up to 280 m^3/h (1,233 gpm), with filtration degrees from 80-500 micron. Inlet/outlet connections are available in 100 mm (4"), 150 mm (6") and 200 mm (8") diameter. Filters include a 50 mm (2") exhaust valve.

The Filtration Process

Raw water enters through the filter inlet and passes through the multiple screens. Clean water flows through the filter outlet. The gradual dirt buildup on the screens' inner surface causes a filter cake to develop, which creates an increase in the pressure differential across the filter system. A differential pressure (DP) switch (hydraulic or electronic) senses the pressure differential and when it reaches a pre-set value, the self-cleaning process begins.

The Control System - Amiad's NEW ADI-P Controller

Amiad's ADI-P controller offers one-of-a-kind monitoring and control functionality. The controller interacts with Amiad's advanced, user-friendly app that provides detailed filtration performance data on your mobile phone device. The self-cleaning mechanism is controlled and monitored by the ADI-P controller. The self-cleaning cycle is triggered by an integrated DP switch.

The electronic controller also provides:

- Flush cycle counter
- Alerts – low battery, DP cycle

Hydraulic rinse controller is available upon request.

The Self-Cleaning Process

The self-cleaning cycle begins under any one of the following conditions:

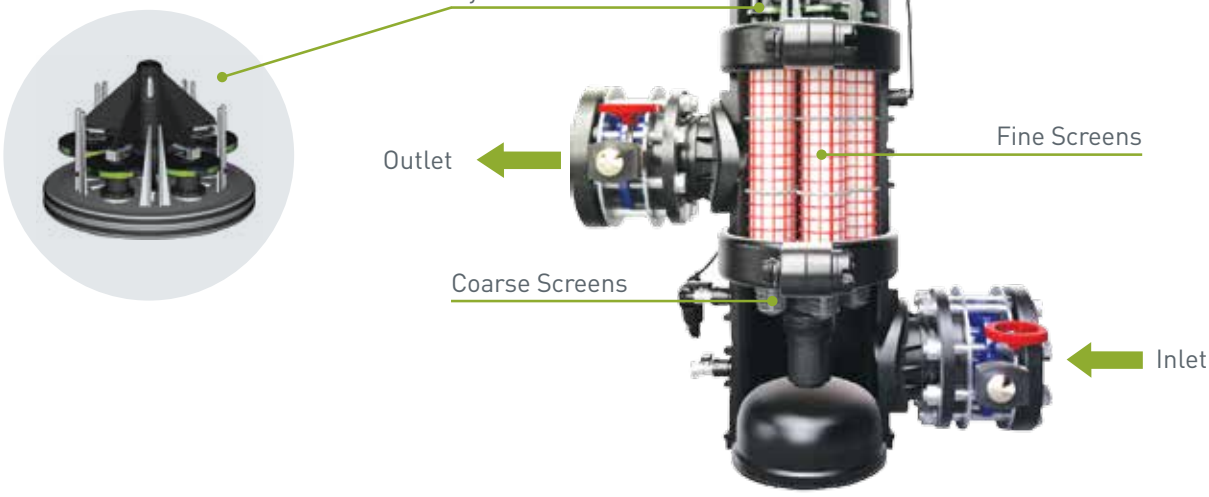
1. Receiving a signal from the DP switch, pre-set at 0.5 bar (7 psi)
2. Time interval parameter set at the controller
3. Manual start, triggered by 3-way ball valve or via electronic controller keypad

The flush water flows through the hydraulic turbines, causing the suction-scanners to spin. The drop in pressure forces the suction-scanners into an axial movement upward, ensuring that the nozzles sweep and clean the entire inner side of the fine screens.

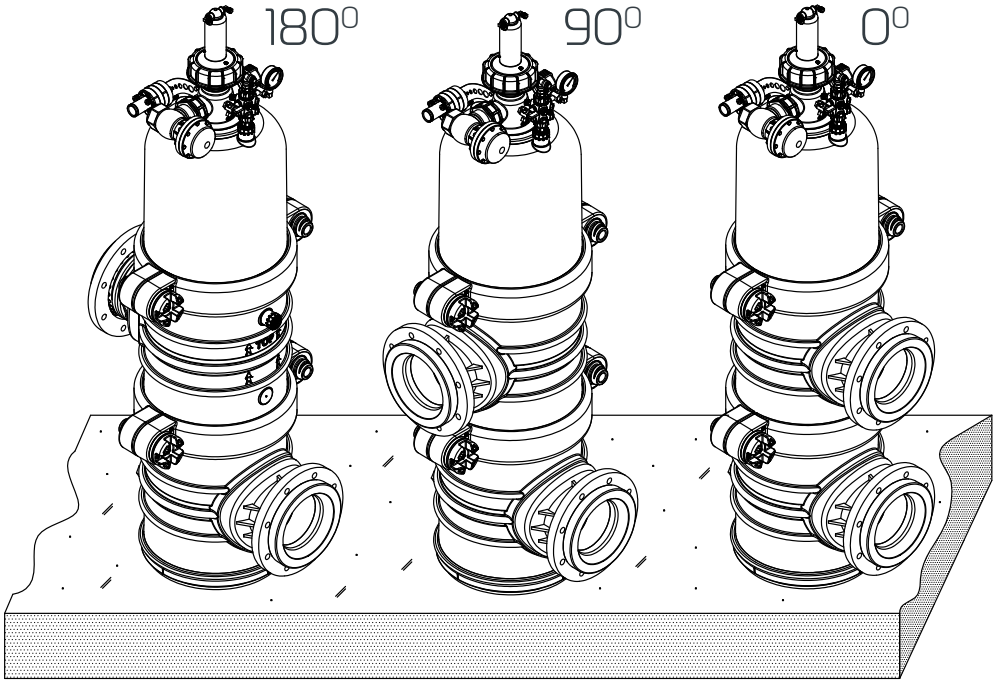
Sigma Pro Models

Amiad's Sigma Pro series consists of the following models:

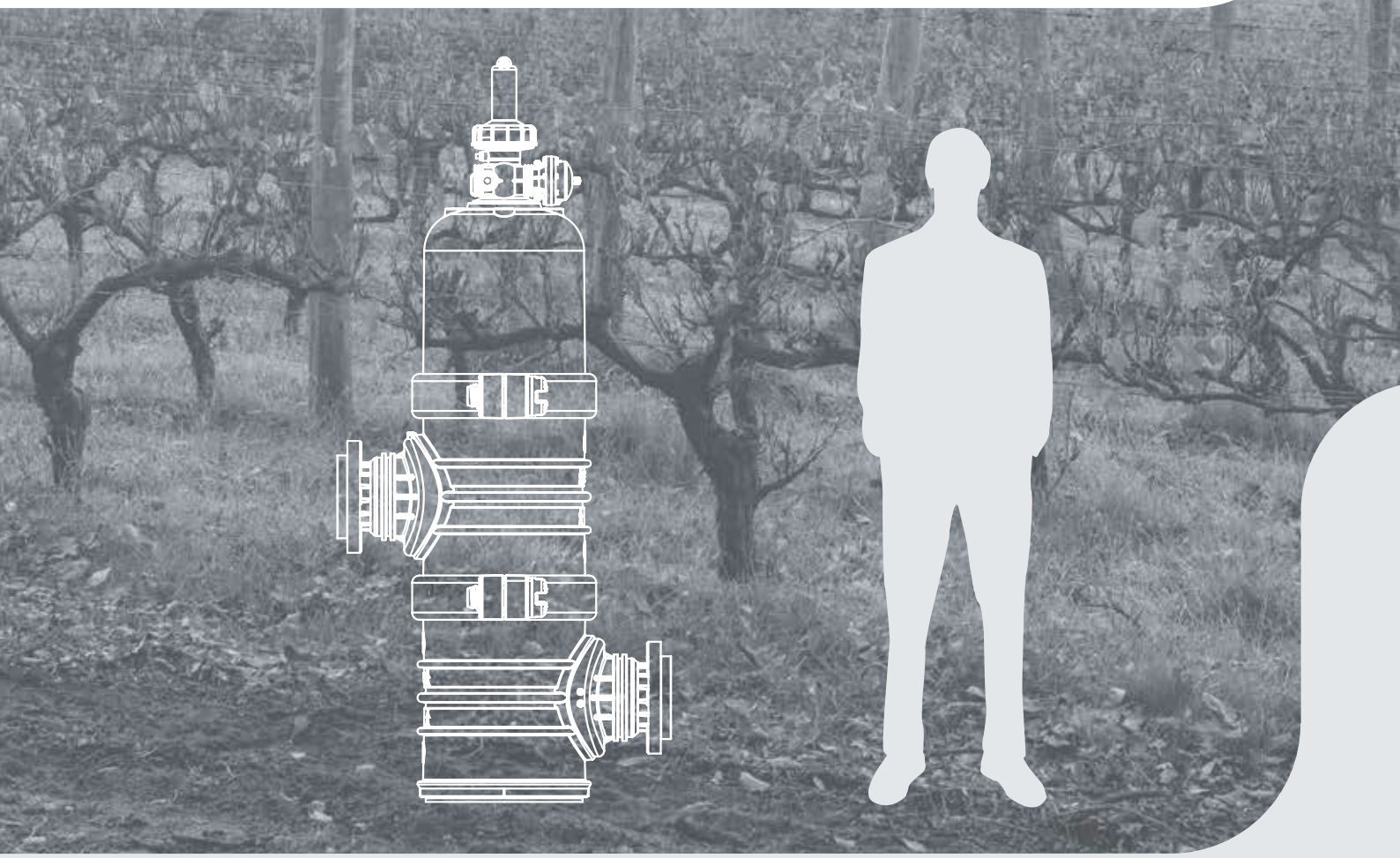
- 4" Sigma Pro for up to 120 m^3/h (528 gpm)
- 6" Sigma Pro for up to 180 m^3/h (792 gpm)
- 8" Sigma Pro for up to 280 m^3/h (1,233 gpm)



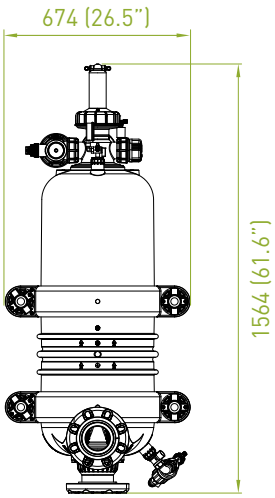
Various Inlet/Outlet Configurations



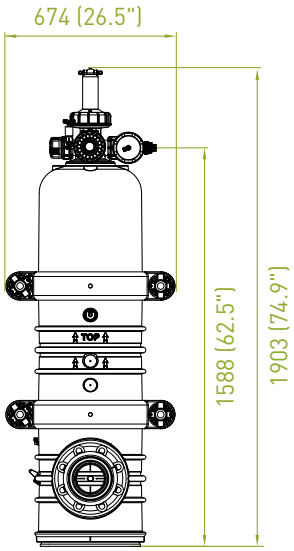
Sigma Pro 6” and 8” filters are to be installed on a flat surface only



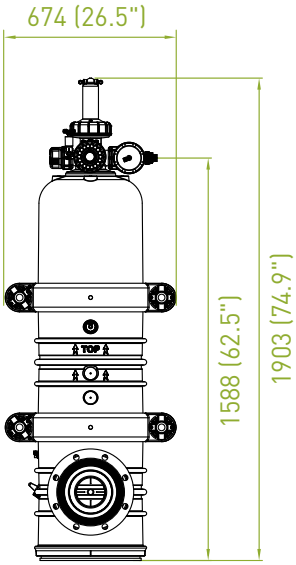
4” Sigma Pro



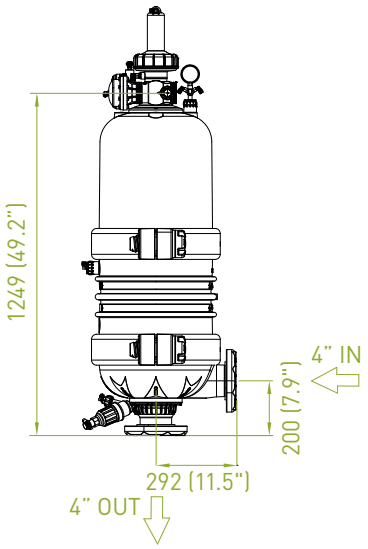
6” Sigma Pro



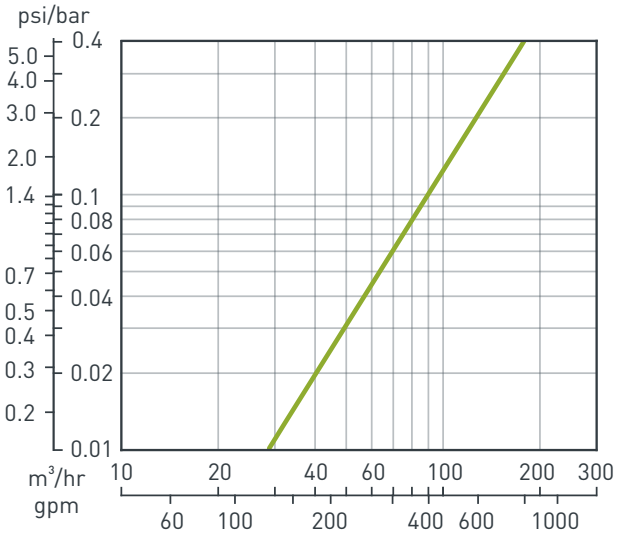
8” Sigma Pro

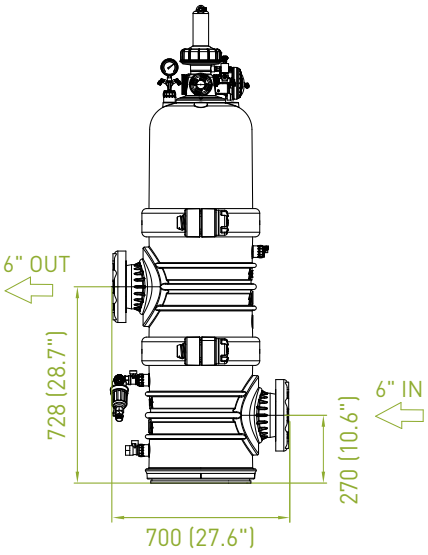


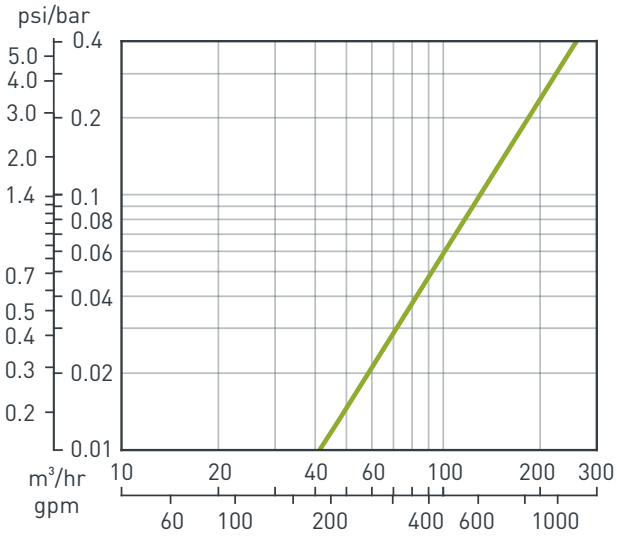
Dim: mm (inch)

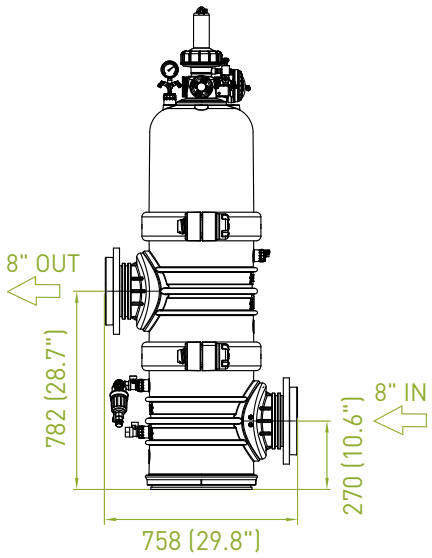


Pressure Loss Graph
(in clean water)

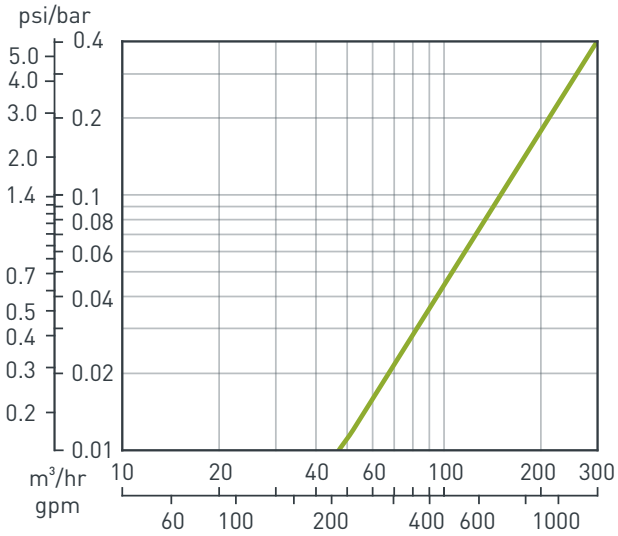




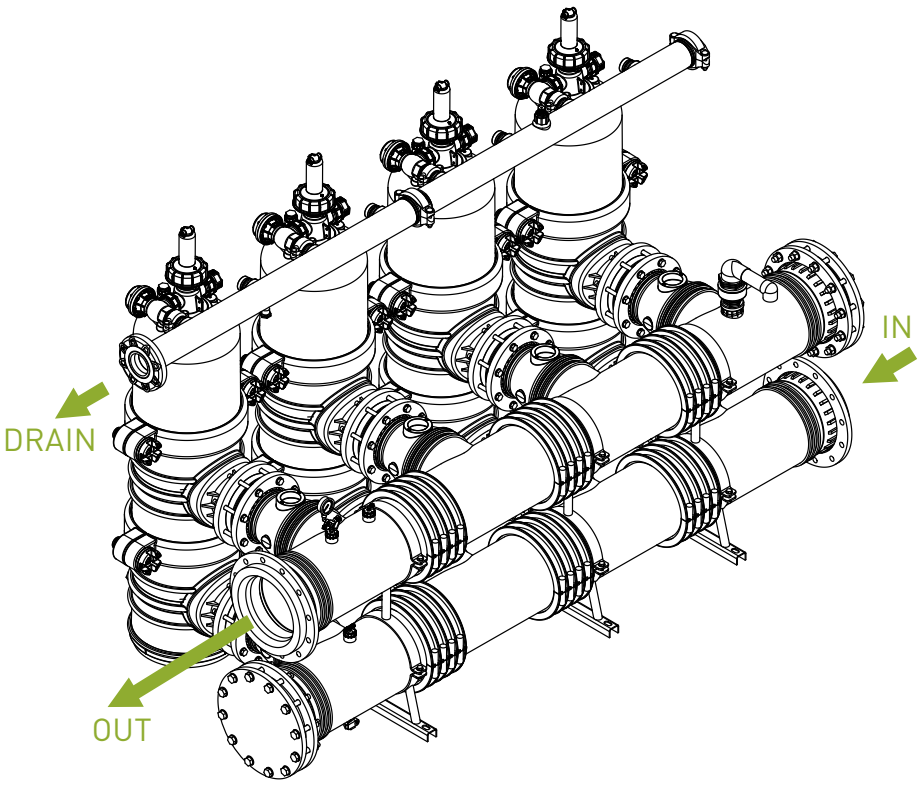




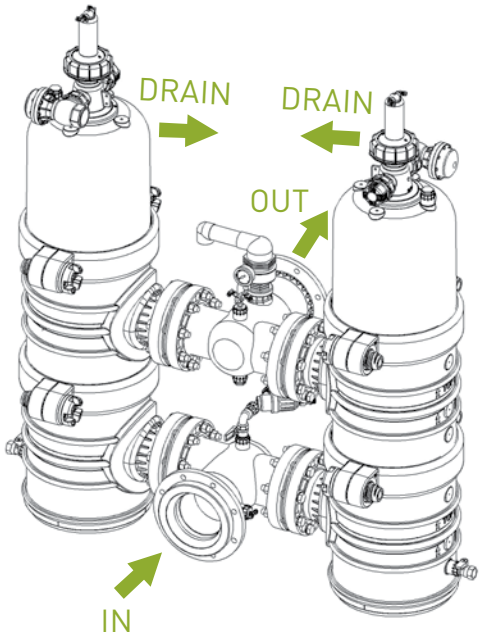
Dim: mm (inch)



Sigma Pro 8” installation of 4 units with manifold, for flow rates up to 1,120 m³/h (4,932 gpm)



Sigma Pro 6” installation of 2 units with manifold, for flow rates up to 360 m³/h (1,584 gpm)



Technical Specifications

Filter Type	4" Sigma Pro	6" Sigma Pro	8" Sigma Pro
General data			
Max. flow rate* (130µ) in average water quality	120 m^3/h (528 gpm)	180 m^3/h (792 gpm)	280 m^3/h (1,233 gpm)
Min. operating pressure when cleaning	1.5 bar (22 psi) - electronic controller 2.5 bar (36 psi) - hydraulic controller		
Max. operating pressure	10 bar (145 psi)		
Max. operating temperature	60°C (140°F)		
Filtration area	6,000 cm^2 (930 in^2)	8,000 cm^2 (1,240 in^2)	
Inlet/Outlet diameter	4" (100 mm) Flange & Victaulic	6" (150 mm) Flange	8" (200 mm) Flange
Weight	Empty: 75 kg (165 lbs) Full: 145 kg (320 lbs)	Empty: 110 kg (243 lbs) Full: 225 kg (496 lbs)	Empty: 120 kg (264 lbs) Full: 235 kg (518 lbs)

* Maximum flow rates depends on water quality and micron size.

Hydraulic controller	
Rinse controller	PP (Polypropylene), PA (Polyamide)
DP switch	Built-in rinse controller set at 0.5 bar (7 psi)
Operation mode	3-way ball valve, indicate: automatic or manual

Electronic controller	
Control power supply	4 x AA type 1.5V batteries / External 7-14V DC
Solenoid operation data	9-12V DC latching solenoid
DP switch	Integrated sensors

Flushing data		
Exhaust valve	2" (50 mm)	
Flushing time	10 seconds	
Reject water volume per flush cycle	75 liters (20 gallons)	90 liters (24 gallons)
Min. flow for flushing (at 1.5 bar/22 psi)	34 m^3/h (150 gpm)	36 m^3/h (158 gpm)

Construction materials	
Filter housing and lid	RPP (reinforced polypropylene) RPA (reinforced polyamide)
Screens	Molded weavewire, stainless steel 316L
Cleaning mechanism	PBT (polybutylene)
Exhaust valve	Polymeric
Seals	EPDM
Control command tubing	PE (polyethylene)

Standard Filtration Degrees						
micron	500	300	200	130	100	80
mm	0.5	0.3	0.2	0.13	0.1	0.08