amiad® WATER SYSTEMS | ARKAL

NEW

Super Galaxy

Automatic self-cleaning Arkal Spin Klin™ disc filter, designed as a highly efficient solution for high flow rate applications and for all types of water, including seawater.

flow rates	filtration degrees	inlet/outlet diameter	minimum operating pressure
up to 3,500 m³/h (15,400 US gpm)	20-400 micron	12"-20"	2 bar (30 psi)

features:

- Arkal's proven Spin Klin™ disc, depth filtration and patented backwash technology
- New design containing 16 spines in one all polymeric body
- Reduced number of components and modular flexibility
- Corrosion Resistant Materials
- Minimal maintenance
- Applications: Tertiary (Wastewater) Treatment, Potable Water treatment, Membrane protection, Industrial Water and Irrigation

*** Patent pending, Design pending**

How the Super Galaxy Works

General

The Super Galaxy filter is based on Arkal's Spin Klin™ disc filtration technology which is a modular, automatic, self cleaning filter designed for high flow rates and may be installed either vertically or horizontally. With its unique grooved disc, depth filtration technology and patented self cleaning mechanism, Spin Klin™ filters cover a wide range of industrial, marine, municipal and agricultural applications from 400 to as fine as 20 micron filtration degrees.

Each filter contains multiple filtration spines on which the Spin Klin™ discs are stacked. These thin, color-coded polymeric discs are diagonally grooved in opposite directions on both sides to a specific micron size. When mounted on the spine, the discs' grooves form a matrix of consecutive stopping points letting the water pass through while stopping suspended solids. A tightening cylinder compresses the discs by a preloaded spring, piston and differential pressure, ensuring accurate filtration degree with no possibility of breakthrough.

The Filtration Process

During the filtration process, the filtration discs are tightly compressed together by the spring's power and the differential pressure, thus providing high filtration efficiency. Water percolates through the filter element from its outer to its inner diameter. Suspended solids are trapped on and between the discs while filtered water flows out through the filter's outlet port.

Unique accessories for the Super Galaxy:

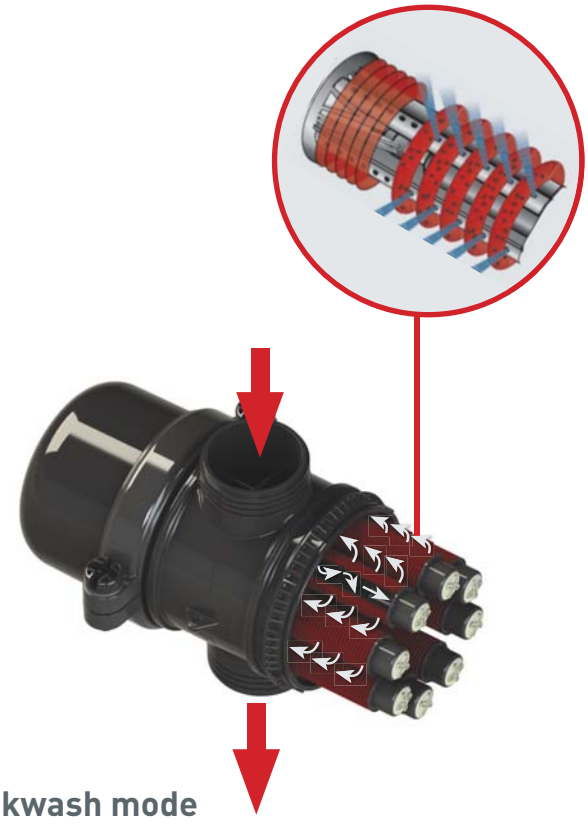
- New polymeric clamp for the filter housing, allows easy opening without any tools
- Newly designed polymeric connector between the filter pod and the manifold
- New and unique clamp for wafer butterfly valve connection for battery systems

The Self-Cleaning Process

The gradual build-up of particles on the discs causes a pressure differential to develop across the system. At a pre-set level a signal from the PD Switch starts the self-cleaning cycle. An electric command reverses the flow direction through the filter, the compression springs of the filter modules are released; the spine pistons rise up releasing the pressure on the discs.

High pressure tangential jets of filtered water are pumped at high velocity through the nozzles at the center of the spines causing the discs to spin free and clear. The retained and trapped solids are quickly and efficiently flushed out to the drain. On completion of its pre-programmed cleaning time (approximately 15 seconds) the filter returns to filtration mode. The system continues to filter until another backwash cycle is triggered by time-interval, PD switch or by a combination of the two.

Filtration mode



Backwash mode

- New supporting legs with clamps to secure the Super Galaxy on any given manifold pipe size
- Different options for standard installation of Modules / Batteries

Technical Specifications

Super Galaxy - Batteries:

Design: A Battery is a system of filters that are backwashed individually.
The number of filters in a battery is determined according to the system designed flow rate and may have between 3 to 6 filters, with 12"- 20" inlet / outlet diameters.

Capacity: 400 - 1440 m^3/h (1761 - 6340 gpm).

Filter Type		3 unit battery	4 unit battery	5 unit battery	6 unit battery
General Data					
Maximum working pressure		6 bar (88 psi)	6 bar (88 psi)	6 bar (88 psi)	6 bar (88 psi)
Minimum backwash pressure at 55 micron		4-5 bar (58-72 psi)	4-5 bar (58-72 psi)	4-5 bar (58-72 psi)	4-5 bar (58-72 psi)
Maximum recommended flow rate*	130-400µ	720 m^3/h (3,170 gpm)	960 m^3/h (4,226 gpm)	1200 m^3/h (5,283 gpm)	1440 m^3/h (6,340 gpm)
	100µ	576 m^3/h (2,536 gpm)	768 m^3/h (3,381 gpm)	960 m^3/h (4,226 gpm)	1152 m^3/h (5,072 gpm)
	55µ	400 m^3/h (1,761 gpm)	530 m^3/h (2,333 gpm)	664 m^3/h (2,923 gpm)	800 m^3/h (3,522 gpm)
Filtration area		42,240 cm^2 (6,547 in^2)	56,320 cm^2 (8,729 in^2)	70,400 cm^2 (10,912 in^2)	84,480 cm^2 (13,094 in^2)
Filtration volume		63,360 cm^3 (3,866 in^3)	84,480 cm^3 (5,155 in^3)	105,600 cm^3 (6,444 in^3)	126,720 cm^3 (7,733 in^3)
Inlet/Outlet diameter		12"- 20"	14" - 20"	14" - 20"	14"- 20"
Maximum working temperature		60°C (140°F)	60°C (140°F)	60°C (140°F)	60°C (140°F)
Weight [empty]		800 kg (1760 lb)	1030 kg (2266 lb)	1330 kg (2926 lb)	1560 kg (3432 lb)

* Maximum recommanded flow is for average water quality. Flow may vary as water quality changes.

Backwash Data Per Unit*	
Drain valve	4"
Backwash time	15-20 sec
Minimum flow for backwash	160 m^3/h (704 gpm)

* Each filter unit (pod) backwashes separately in sequence.

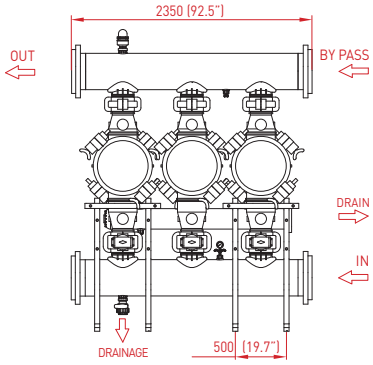
Construction Materials	
Filter Housing	Polypropylene
Filter Body	Polypropylene
Grooved Disc	Polypropylene or Nylon
Backwash mechanism	Backwash BF valves air or electrically activated, (main valve 8" & drain valve 4")
Backwash valve	Polypropylene, butterfly valve
Seals	EPDM. NBR
Control	PLC or customer specified

Standard Filtration Degrees

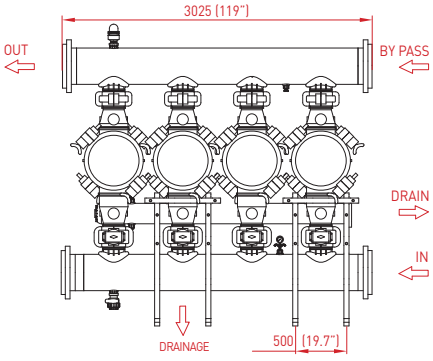
micron	400	200	130	100	70	55	40	20
mesh	40	80	120	140	200	300	350	625

Dimensional Drawings - Batteries:

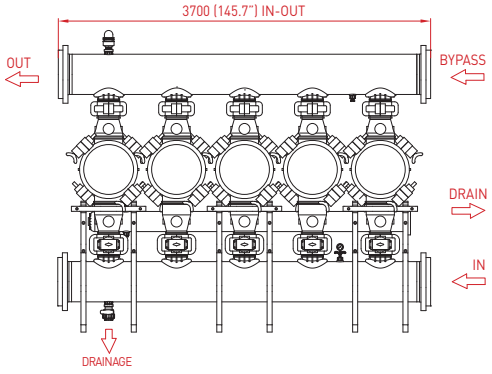
3 x 14” Battery



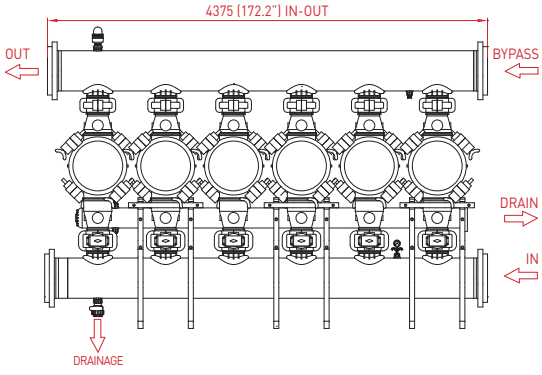
4 x 14” Battery



5 x 16” Battery

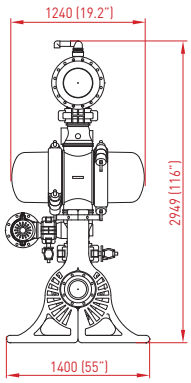


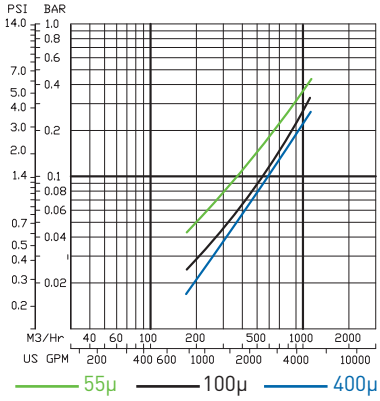
6 x 16” Battery

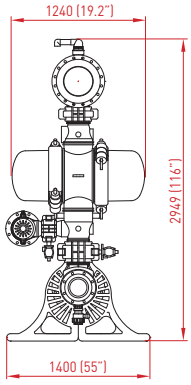


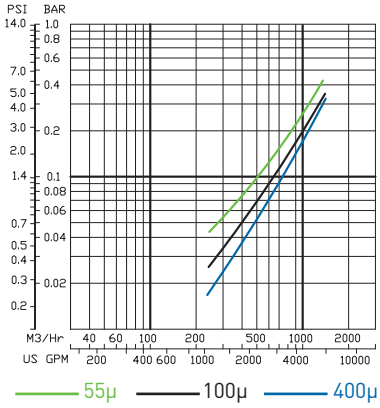
Dim: mm (inch)

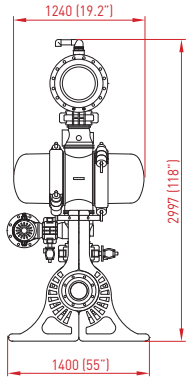
Pressure Loss Graphs
in clean water

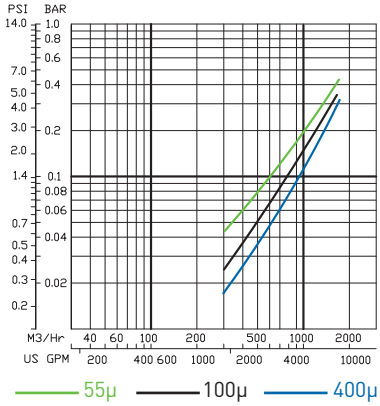


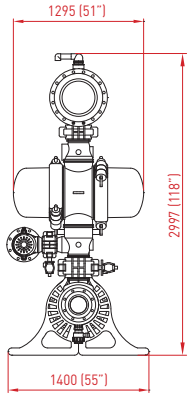


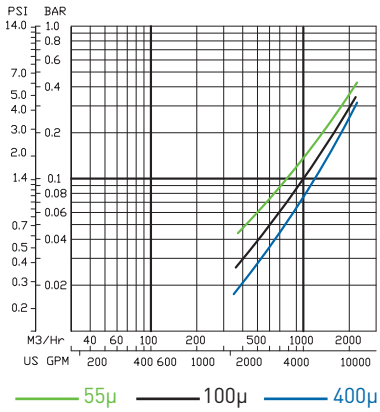












*Head loss may change due to water quality and flow.
Charts are for indication only.

Dim: mm (inch)

Technical Specifications

Super Galaxy - Modules:

Design: Spin Klin™ Modules are groups of filters that backwash together as a complete unit. The number of filters in each module of a specific system is determined by the system flow rate and water quality and may have between 2 - 6 filters with 12"-20" inlet / outlet pipe diameters.

Capacity: Very high flow rates: 720 - 15,000 m^3/h (3,170 - 66,000 gpm) and higher.

Filter Type		3 unit module	4 unit module	5 unit module	6 unit module
General Data					
Maximum working pressure		6 bar (88 psi)	6 bar (88 psi)	6 bar (88 psi)	6 bar (88 psi)
Minimum backwash pressure at 55 micron		4-5 bar (58-72 psi)	4-5 bar (58-72 psi)	4-5 bar (58-72 psi)	4-5 bar (58-72 psi)
Maximum recommended flow rate	130-400µ	720 m^3/h (3,170 gpm)	960 m^3/h (4,226 gpm)	1200 m^3/h (5,283 gpm)	1440 m^3/h (6,340 gpm)
	100µ	576 m^3/h (2,536 gpm)	768 m^3/h (3,381 gpm)	960 m^3/h (4,226 gpm)	1152 m^3/h (5,072 gpm)
	55µ	400 m^3/h (1,761 gpm)	530 m^3/h (2,333 gpm)	664 m^3/h (2,923 gpm)	800 m^3/h (3,522 gpm)
Filtration area		42,240 cm^2 (6,547 in^2)	56,320 cm^2 (8,729 in^2)	70,400 cm^2 (10,912 in^2)	84,480 cm^2 (13,094 in^2)
Filtration volume		63,360 cm^3 (3,866 in^3)	84,480 cm^3 (5,155 in^3)	105,600 cm^3 (6,444 in^3)	126,720 cm^3 (7,733 in^3)
Inlet/Outlet diameter		12" - 20"	14"- 20"	14" - 20"	14" - 20"
Maximum working temperature		60°C (140°F)	60°C (140°F)	60°C (140°F)	60°C (140°F)
Weight [empty]		647 kg (1423 lb)	827 kg (1820 lb)	1076 kg (2367 lb)	1266 kg (2785 lb)

* Maximum recommanded flow is for average water quality. Flow may vary as water quality changes.

Backwash Data Per Module				
Valves (inlet, outlet & drain, at customer's choice)	N\A	N\A	N\A	N\A
Backwash time	15-20 sec	15-20 sec	15-20 sec	15-20 sec
Minimum flow for backwash	480 m^3/h (2,113 gpm)	640 m^3/h (2,818 gpm)	800 m^3/h (3,522 gpm)	960 m^3/h (4,227 gpm)

Construction Materials	
Filter Housing	Polypropylene
Filter Body	Polypropylene
Grooved Disc	Polypropylene or Nylon
Backwash mechanism	Backwash BF valves air or electrically activated
Backwash valve	Polypropylene, butterfly valve
Seals	EPDM. NBR
Control	PLC or as customer specification

Standard Filtration Degrees

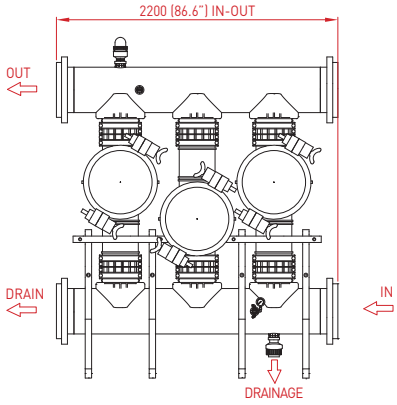
micron	400	200	130	100	70	55	40	20
mesh	40	80	120	140	200	300	350	625

External Source Backwash Module System:

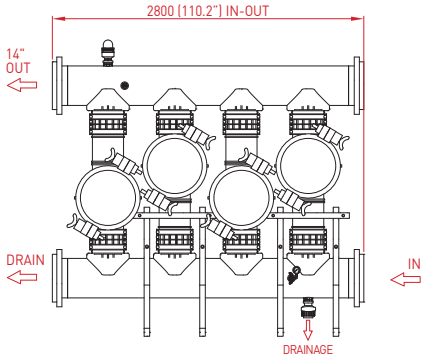
The system is designed to receive pressurized backwash water from an external source. Each module is equipped with 4 air activated butterfly valves: two inlet/outlet valves and two drain/external source valves.

Dimensional Drawings - Modules:

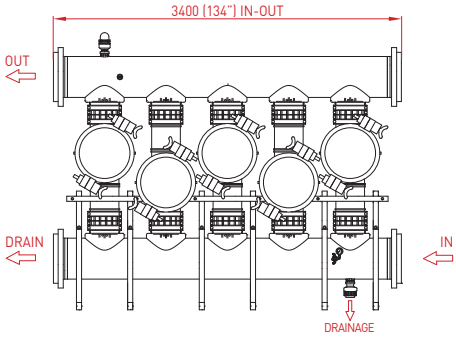
3 x 14” Module



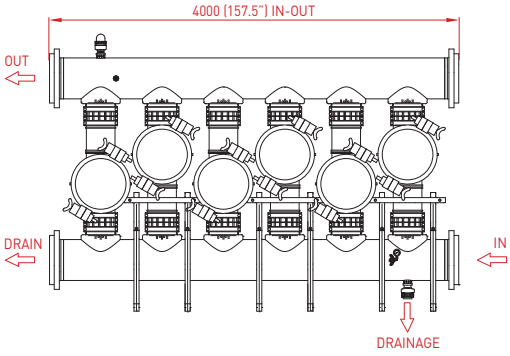
4 x 14” Module



5 x 16” Module

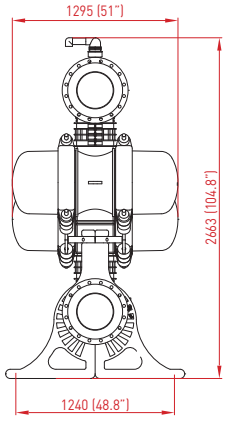


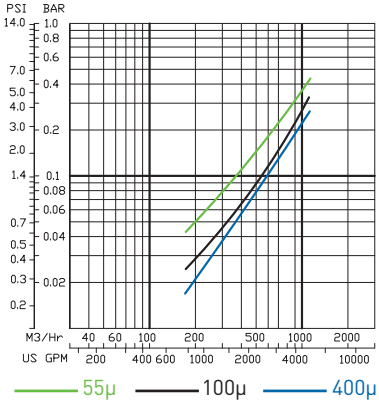
6 x 16” Module

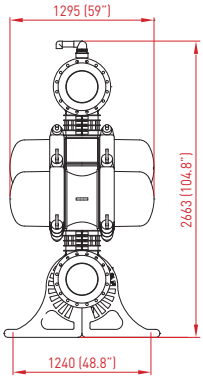


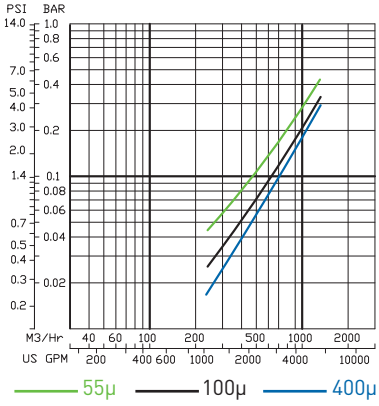
Dim: mm (inch)

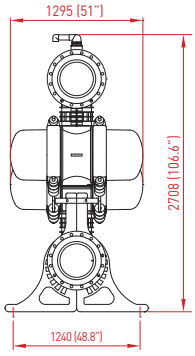
Pressure Loss Graphs
in clean water

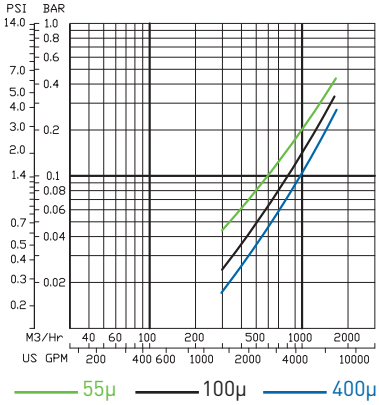


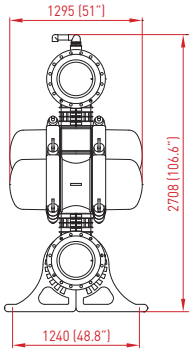


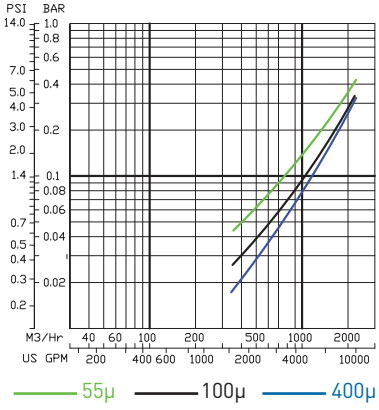












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Charts are for indication only.

Dim: mm (inch)

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910101-000401/09.2013