



### Super Galaxy

Automatic self-cleaning Arkal Spin Klin<sup>TM</sup> 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
2,200-22,000 gpm (500-50,000 m³/h)	20-400 micron	8"-12"	15 psi (1 bar)

### features:

- Arkal's proven Spin Klin<sup>™</sup> 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: Desalination, Tertiary (Wastewater) reatment, Potable Water treatment, Membrane protection and Industrial Process Water
- NSF Certified\*

<sup>\*</sup> Certification does not include valves, recommended valves are NSF certified independently.

### **How the Super Galaxy Works**

### General

The Super Galaxy filter is based on Arkal's Spin Klin™ disc filtration technology and is a modular, automatic, self cleaning filter designed for high flow rates which 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.



### The Filtration Process

A spring loaded piston and differential pressure compress the discs, ensuring accurate filtration degree with no possibility of breakthrough. 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.

### 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.





### Disc material type availability according to filtration degree:

Color Code	Gray	Purple	Green	Brown	Black	Red	Yellow	Blue
Micron	20	40	55	70	100	130	200	400
PP Disc PA (Nylon) Disc	PP, PA	PP						

### Super Galaxy Modules

Super Galaxy Spin Klin™ Filtration Systems are assembled from multiple filter modules. A filter module typically contains from one to four filters that operate as a single filter unit and may be installed either horizontally or vertically. Systems may be comprised from any number of module units, depending on the flow rate and micron degree, and are connected to the common inlet and outlet headers manifolds at the installation site. Each module has its own actuated butterfly valves.

### The Super Galaxy Kit

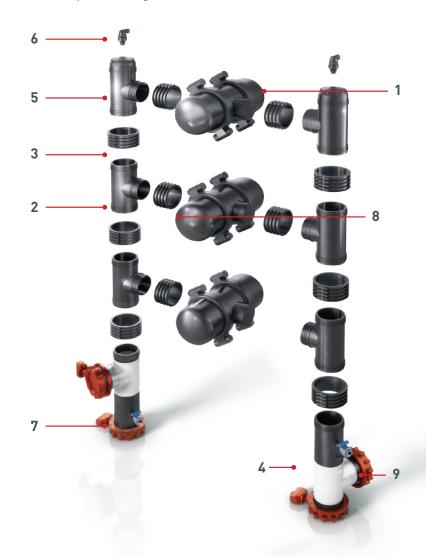
The modules are assembled from standard assembly kits of 9 components as shown below.

These standardized assembly kits can address any flow above 4402.8 gpm (1,000 m³/h), optimize cost savings, minimize footprint, lowers shipping volume, reduces inventory, and shortens leadtime.

The Super Galaxy Horizonal Kit is recommended for small and medium flows and is easy to install.

The Super Galaxy Vertical Kit offers the optimal solution in footprint for large flows.

Serial #	Part Description		
1	Super Galaxy Filter		
2	Injected Tee		
3	12" Coupling		
4	Tee for Outlet		
5	Inlet & Outlet Tee with Cap		
6	Air Release Valve		
7	Tee for Inlet		
8	10" Coupling		
9	Butterfly Valve w/actuator		



### Unique features and benefits of the Super Galaxy:

- Modules are asssembled from standard assembly kits of 9 components
- Same components for all flow rates
- Adaptable footprint, either vertical or horizontal installation

# Technical Specifications Super Galaxy - Horizontal Modules:

Fitter Type		i Module Offic	2 Module Offics	3 Module Offics	4 Module Offics
General Data					
Max. operating pres	sure <sup>1</sup>		90 psi	(6 bar)	
Max. water tempera	nture¹		150°F	(60°C)	
Min. backwash pres	sure**		36 psi (2	2.5 bar )	
	100µ	925 gpm (210 m³/h)	1,850 gpm (420 m³/h)	2,750 gpm (625 m³/h)	N/A
Max. recommended	55µ	705 gpm (160 m³/h)	1,410 gpm (320 m³/h)	2,115 gpm (480 m³/h)	2,815 gpm (640 m³/h)
flow rate***	40µ	565 gpm (130 m³/h)	1130 gpm (260 m³/h)	1,690 gpm (385 m³/h)	2,245 gpm (510 m³/h)
	20µ	350 gpm (80 m³/h)	700 gpm (160 m³/h)	1,060 gpm (240 m³/h)	1,410 gpm (320 m³/h)
Filtration surface area		2,182 in² (14,080 cm²)	4,365 in² (28,160 cm²)	6,547 in² (42,240 cm²)	8,729 in <sup>2</sup> (56,320 cm <sup>2</sup> )
Filtration volume		1,289 in <sup>3</sup> (21,120 cm <sup>3</sup> )	2,578 in <sup>3</sup> (42,240 cm <sup>3</sup> )	3,866 in <sup>3</sup> (63,360 cm <sup>3</sup> )	5,155 in <sup>3</sup> (84,480 cm <sup>3</sup> )
Inlet/outlet diameter		8" (200 mm)		12" (315 mm)	
Weight [empty] 695 lb (315 kg) 1,520 lb (690 kg) 1,940 lb (880 kg) 2,350		2,350 lb (1,065 kg)			

<sup>1</sup> Maximum operating pressure and temperature are interdependent parameters and are given for general reference only. Please consult your authorized Amiad representative for the application specific parameters.

<sup>\*\*\*</sup> Maximum recommended flow rate is for average water quality. Flow may vary as water quality changes.

Backwash Data Per Module				
Valves (inlet/outlet & drain)		Bray series 30/31 bu	utterfly valves 8"-12"	
Backwash cycle	15-20 sec			
Minimum flow for backwash	705 gpm (160 m³/h)	1,410 gpm (320 m³/h)	2,115 gpm (480 m³/h)	2,815 gpm (640 m³/h)
Backwash volume per backwash	176 gallons (667 liters)	352 gallons (1,334 liters)	529 gallons (2,001 liters)	705 gallons (2,667 liters)

Construction Materials	
Filter housing	Polypropylene
Filter body	Polypropylene
Grooved disc	Polypropylene or Nylon
Inlet/outlet & drain valves	Body-ductile iron; Seat-EPDM; Disc-nylon 11 coated

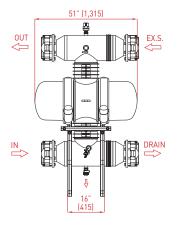
 $<sup>^2</sup>$  For higher flow rates at  $\rightarrow$  100 $\mu$  larger manifold sizes and configurations are available. Consult your authorized Amiad representative.

<sup>\*</sup> Minimum of 3 or 4 module units required for downstream flow during backwash – consult with your authorized Amiad representative.

<sup>\*\*</sup> For  $\rightarrow$ 100 $\mu$  - if inlet pressure is less than the stated minimal pressure, an external source or pressure aided backwash is required. For finer micron degrees consult your authorized Amiad representative.

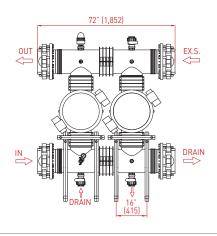
## Dimensional Drawings - **Horizontal Modules:** 1 Module Unit





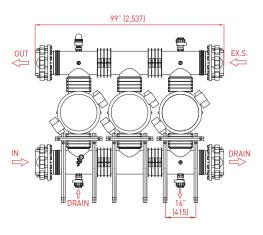
### 2 Module Unit



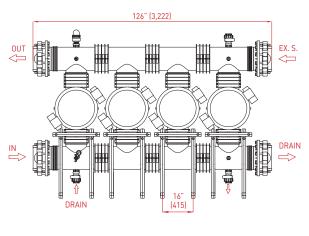


### 3 Module Unit



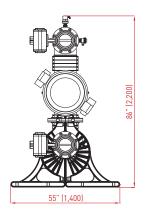






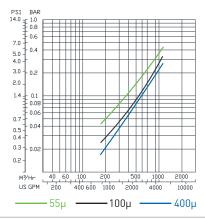
\*Dim. in inch (mm)

### 1 Module Unit

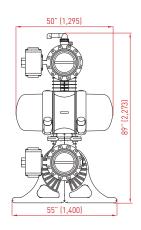


### Pressure Loss Graphs

in clean water

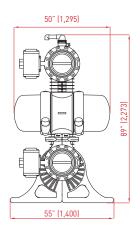


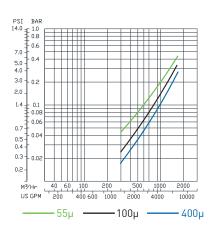
### 2 Module Unit

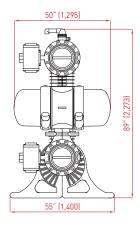


#### PSI BAR 14.0 1.0 0.8 0.6 7.0 -- 0.4 5.0 4.0 3.0 -2.0 1.4 0.06 0.04 0.5 0.4 0.3 0.02 0.2 40 60 100 200 200 400 600 1000 500 1000 2000 4000 US GPM -55µ — **—**100μ -**-** 400µ

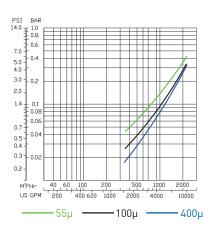
### 3 Module Unit







\*Dim. in inch (mm)



<sup>\*</sup>Head loss may change due to water quality and flow. Charts are for indication only.

### **Technical Specifications** Super Galaxy - Vertical Modules:

Filtration volume

Backwash flow rate

Inlet/outlet diameter

Weight [empty]

Filter Type		2 Module Units*	3 Module Units*	4 Module Units*
General Data				
Max. operating pre	essure <sup>1</sup>		90 psi (6 bar)	
Max. water temper	rature <sup>1</sup>		150°F (60°C)	
Min. backwash pre	essure**		36 psi (2.5 bar)	
	100µ	1,850 gpm (420 m³/h)	2,750 gpm (625 m³/h)	N/A
Max.	55µ	1,410 gpm (320 m³/h)	2,115 gpm (480 m³/h)	2,815 gpm (640 m³/h)
flow rate <sup>4</sup>	40µ	1,130 gpm (260 m³/h) 1,690 gpm (385 m³/h)		2,245 gpm (510 m³/h)
	20µ	700 gpm (160 m³/h) 1,060 gpm (240 m³/h)		1,410 gpm (320 m³/h)
Filtration surface a	area	4,365 in <sup>2</sup> (28,160 cm <sup>2</sup> )	6,547 in <sup>2</sup> (42,240 cm <sup>2</sup> )	8,729 in <sup>2</sup> (56,320 cm <sup>2</sup> )

63,360 cm<sup>3</sup> (3,866 in<sup>3</sup>)

2,115 gpm (480 m<sup>3</sup>/h)

12" (315 mm)

1,950 lb (885 kg)

5,155 in<sup>3</sup> (84,480 cm<sup>3</sup>) 2,815 gpm (640 m³/h)

2,270 lb (1,030 kg)

2,578 in<sup>3</sup> (42,240 cm<sup>3</sup>)

1,410 gpm (320 m<sup>3</sup>/h)

1,630 lb (740 kg)

Backwash Data Per Module				
Valves (inlet/outlet & drain)	Bray series 30/31 butterfly valves 8"-12"			
Backwash cycle	15-20 sec			
Minimum flow for backwash	705 gpm (160 m³/h)	1,410 gpm (320 m³/h)	2,115 gpm (480 m³/h)	2,815 gpm (640 m³/h)
Backwash volume per backwash	176 gallons (667 liters)	352 gallons (1,334 liters)	529 gallons (2,001 liters)	705 gallons (2,667 liters)

Construction Materials	
Filter housing	Polypropylene
Filter body	Polypropylene
Grooved disc	Polypropylene or Nylon
Inlet/outlet & drain valves	Body-ductile iron; Seat-EPDM; Disc-nylon 11 coated

<sup>&</sup>lt;sup>1</sup> Maximum operating pressure and temperature are interdependent and above values are for general reference only. Please consult your authorized Amiad representative for application specific parameters.

 $<sup>^2</sup>$  For higher flow rates at  $\rightarrow$  100 $\mu$  larger manifold sizes and configurations are available. Consult your authorized Amiad representative.

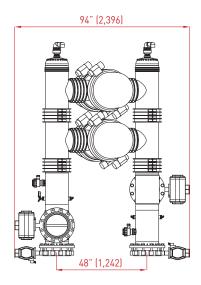
<sup>\*</sup> Minimum of 3 or 4 module units required for downstream flow during backwash – consult with your authorized Amiad representative.

<sup>\*\*</sup> For  $\rightarrow$ 100 $\mu$  - if inlet pressure is less than the stated minimal pressure, an external source or pressure aided backwash is required. For finer micron degrees consult your authorized Amiad representative.

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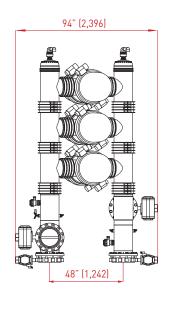
# Dimensional Drawings - **Vertical Modules: 2 Module Unit**



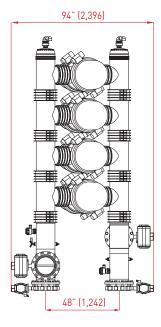


### 3 Module Unit



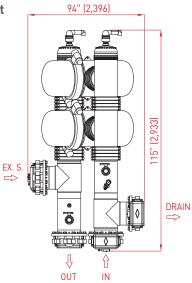




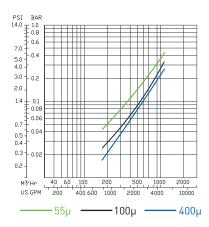


\*Dim. in inch (mm)

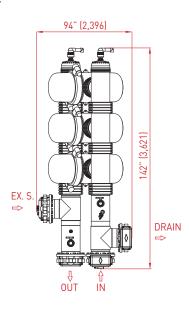
### 2 Module Unit

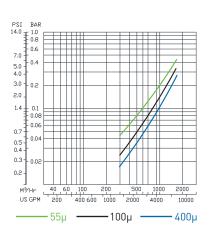


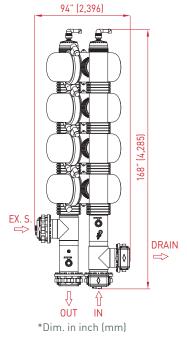
## Pressure Loss Graphs in clean water

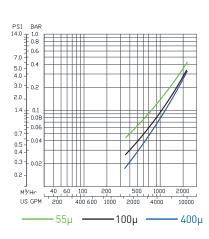


### 3 Module Unit









<sup>\*</sup>Head loss may change due to water quality and flow. Charts are for indication only.

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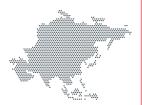
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