



# 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
500-50,000 m³/h (2,200-22,000 gpm)	20-400 micron	8"-12"	1 bar (15 psi)

# 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)
   Treatment, Potable Water treatment, Membrane
   protection and Industrial Process Water
- NSF Certified\*

\* 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<sup>™</sup> 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<sup>™</sup> 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

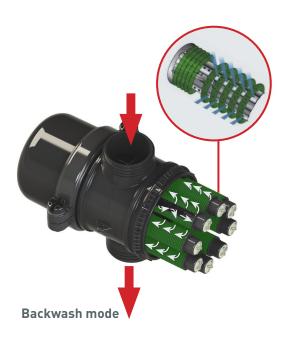
A spring loaded piston and differential pressure compress the discs, ensuring accurate filtration degree with no possibility of breakthrough. Water percolates through the filter element from its outer to its inner diameter. Suspended solids are trapped on and between the discs while filtered water flows 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

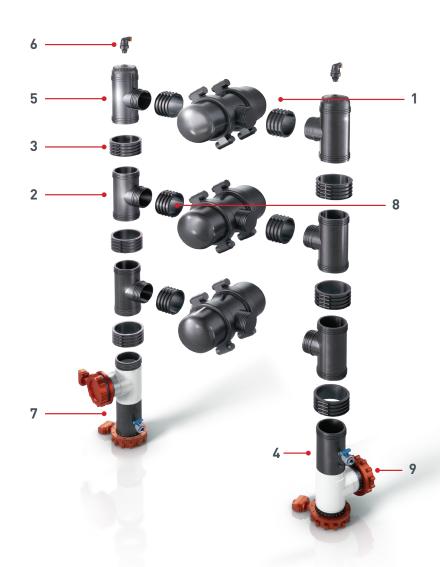
The modules are assembled from standard assembly kits of 9 components as shown below.

These standardized assembly kits can address any flow above 1,000 m<sup>3</sup>/h (4402.8 gpm), 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:

Filter Type		1 Module Unit*	2 Module Units*	3 Module Units*	4 Module Units*	
General Data						
Max. operating pressure <sup>1</sup>		6 bar (	6 bar (90 psi)			
Max. water temper	rature <sup>1</sup>		60°C (150°F)			
Min. backwash pressure**			2.8 bar (36 psi)			
	100µ	210 m³/h (925 gpm)	420 m³/h (1,850 gpm)	625 m³/h (2,750 gpm)	N/A	
Max.	55µ	160 m³/h (705 gpm)	320 m³/h (1,410 gpm)	480 m³/h (2,115 gpm)	640 m³/h (2,815 gpm)	
recommended flow rate***	40µ	130 m³/h (565 gpm)	260 m³/h (1130 gpm)	385 m³/h (1,690 gpm)	510 m³/h (2,245 gpm)	
	20μ	80 m³/h (350 gpm)	160 m³/h (700 gpm)	240 m³/h (1,060 gpm)	320 m³/h (1,410 gpm)	
Filtration surface a	area	14,080 cm² (2,182 in²)	28,160 cm² (4,365 in²)	42,240 cm² (6,547 in²)	56,320 cm² (8,729 in²)	
Filtration volume		12,368 cm³ (755 in³)	36,736 cm³ (2,245 in³)	55,104 cm³ (3,363 in³)	73,472 cm³ (4,483 in³)	
Inlet/outlet diameter		200 mm (8")		315 mm (12")		
Weight [empty]		315 kg (695 lb)	690 kg (1,520 lb)	880 kg (1,940 lb)	1,065 kg (2,350 lb)	

<sup>&</sup>lt;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 butterfly valves 8"-12"			
Backwash cycle	15-20 sec			
Minimum flow for backwash	160 m³/h (705 gpm)	320 m³/h (1,410 gpm)	480 m³/h (2,115 gpm)	640 m³/h (2,815 gpm)
Backwash volume per backwash	667 liters (176 gallons)	1,334 liters (352 gallons)	2,001 liters (529 gallons)	2,667 liters (705 gallons)

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.

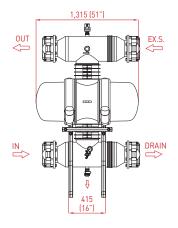
<sup>\*</sup> Minimum of 3 or 4 module units required for downstream flow during backwash – consult with your authorized Amiad representative.

<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:

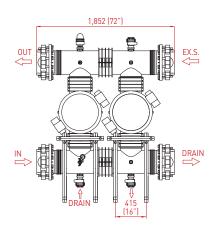
# 1 Module Unit





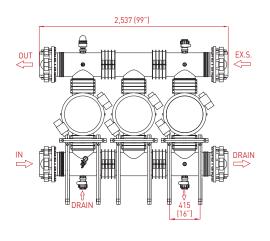
# 2 Module Unit





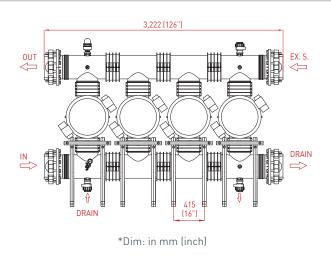
# 3 Module Unit



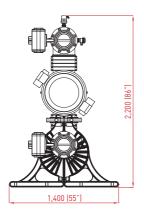


# 4 Module Unit



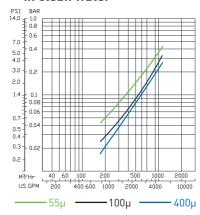


# 1 Module Unit

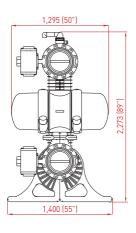


# **Pressure Loss Graphs**

# in clean water

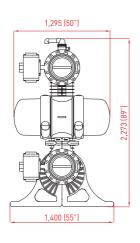


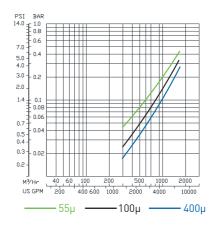
# 2 Module Unit



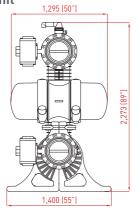
# PSI BAR 14.0 1 0.6 7.0 0.4 4.0 1 0.8 0.7 0.06 0.

# 3 Module Unit

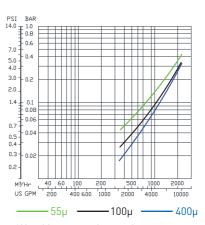




# **4 Module Unit**



\*Dim: in mm (inch)



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

# Technical Specifications Super Galaxy - Vertical Modules:

Filter Type		2 Module Units* 3 Module Units*		4 Module Units*
General Data				
Max. operating pre	ssure <sup>1</sup>	6 bar (90 psi)		
Max. water temper	rature <sup>1</sup>	60°C (150°F)		
Min. backwash pre	ssure**		2.5 bar (36 psi)	
	100µ	420 m³/h (1,850 gpm)	625 m³/h (2,750 gpm)	N/A
Max.	55µ	320 m³/h (1,410 gpm)	480 m³/h (2,115 gpm)	640 m³/h (2,815 gpm)
recommended flow rate <sup>4</sup>	40µ	260 m³/h (1,130 gpm)	385 m³/h (1,690 gpm)	510 m³/h (2,245 gpm)
	20μ	160 m³/h (700 gpm)	240 m³/h (1,060 gpm)	320 m³/h (1,410 gpm)
Filtration surface area 28		28,160 cm² (4,365 in²)	42,240 cm² (6,547 in²)	56,320 cm² (8,729 in²)
Filtration volume		42,240 cm³ (2,578 in³)	63,360 cm³ (3,866 in³)	84,480 cm <sup>3</sup> (5,155 in <sup>3</sup> )
Backwash flow rate		320 m³/h (1,410 gpm) 480 m³/h (2,115 gpm) 640 m³/h (2,815 gp		640 m³/h (2,815 gpm)
Inlet/outlet diamet	Inlet/outlet diameter		315 mm (12")	
Weight [empty]	740 kg (1,630 lb) 885 kg (1,950 lb) 1,030 kg (2,270		1,030 kg (2,270 lb)	

<sup>&</sup>lt;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 butterfly valves 8"-12"			
Backwash cycle	15-20 sec			
Minimum flow for backwash	160 m³/h (705 gpm)	320 m³/h (1,410 gpm)	480 m³/h (2,115 gpm)	640 m³/h (2,815 gpm)
Backwash volume per backwash	667 liters (176 gallons)	1,334 liters (352 gallons)	2,001 liters (529 gallons)	2,667 liters (705 gallons)

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  $\xrightarrow{}$  100  $\mu$  larger manifold sizes and configurations are available. Consult your authorized Amiad representative.

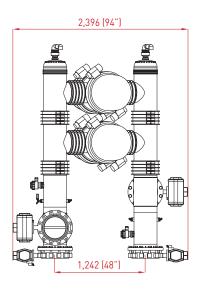
<sup>\*</sup> Minimum of 3 or 4 module units required for downstream flow during backwash – consult with your authorized Amiad representative.

<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 - Vertical Modules:

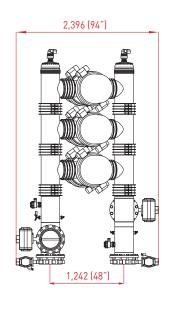
# 2 Module Unit





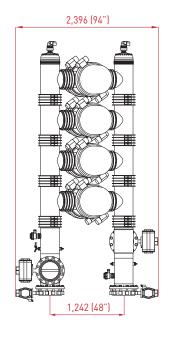
# 3 Module Unit





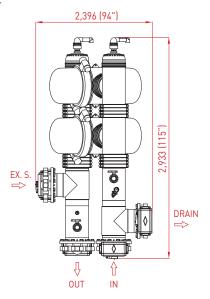
# 4 Module Unit



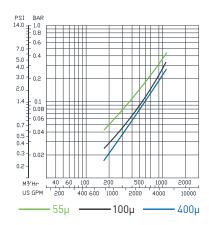


\*Dim: in mm (inch)

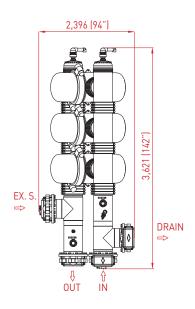
# 2 Module Unit

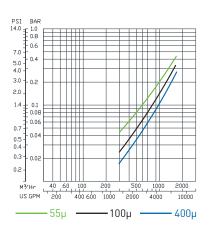


# Pressure Loss Graphs in clean water

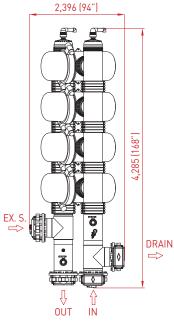


# 3 Module Unit

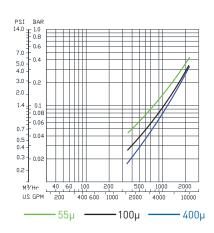




# **4 Module Unit**



\*Dim: in mm (inch)



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

# The Americas

# Amiad USA Inc.

Web: www.amiadusa.com | E-mail: infousa@amiad.com

# Amiad Sistemas de Água Ltda.

E-mail: infobrasil@amiad.com

# Mexico

# Amiad México SA DE CV,

Web: www.amiad.es | E-mail: infomexico@amiad.com Irrigation office: E-mail: infomexico-irr@amiad.com

# Asia



# India

## Amiad Filtration India Pvt Limited

Web: www.amiadindia.com | E-mail: info-india@amiad.com

# Amiad China (Yixing Taixing Environtec Co., Ltd.)

Web: www.amiad.com.cn | E-mail: infochina@amiad.com

# South-East Asia

# Filtration & Control Systems Pte. Ltd.

E-mail: info-singapore@amiad.com

# **Australia**



# Amiad Australia Pty Ltd.

Web: www.amiad.com.au | E-mail: sales@amiad.com

# Europe



# Amiad Water Systems Europe SAS

E-mail: industry-europe@amiad.com

# German branch office

E-mail: industry-de@amiad.com

# **United Kingdom**

# Amiad Water Systems UK Limited

E-mail: info-uk@amiad.com









www.amiad.com

910101-000401/07.2019