



sartorius stedim
biotech

Sartoclear® Depth Filter Solutions

Maximize Product Recovery with
Ergonomic Single-use Clarification Filters



turning science into solutions



Sartoclear[®] Depth Filters

Sartoclear[®] filters are cellulose-based depth filters developed for clarification applications in the biotechnological and pharmaceutical industries. Cellulose based depth filters protect subsequent membrane filters from premature blockage by retaining particles and contaminants originating from the host organism.

Sartoclear[®] filters are available in various device formats serving you from the first steps, throughout clinical phases and up to large scale manufacturing while always keeping the same filter material.

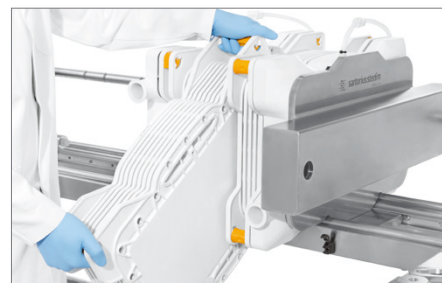
- Linear scalability from small to large processes:
 - Three types of cassettes with different filtration areas
 - Three different sizes of filter holders for up to 24 cassettes
- Single-use system:
 - No cleaning validation necessary
- Applications:
 - Mammalian cell culture harvests
 - Microbial lysates
 - Removal of precipitates from sera and plasma
 - Particle and colloid removal from process intermediates
 - Media Filtration





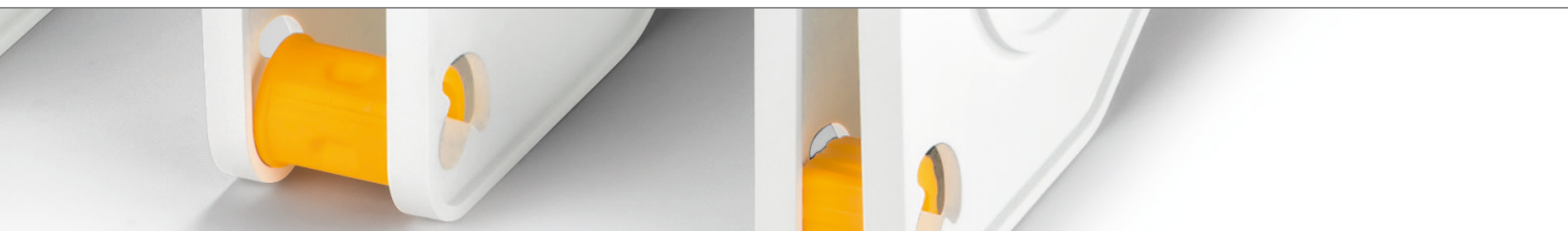
Practical Design for Easy Cassette Exchange

- Holding grooves allow the user to take each cassette out step-by-step
- The rounded bottom enables the user to take out used cassettes in an ergonomic way
- Handles enable comfortable carrying with both arms



Maximize Product Recovery

- Manifold set comes with pre-installed tubing on vents and drains
- Tubing with quick connectors at the end can be hooked up with pressurized air or bags
- Retained medium is recovered through controlled air pressure

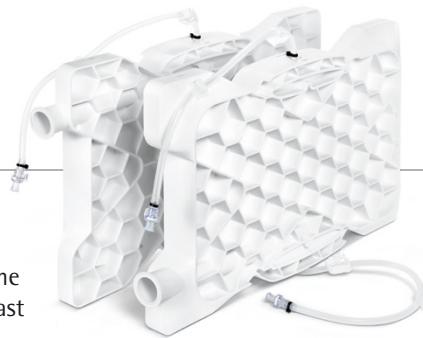


System Overview Sartoclear® Depth Filter



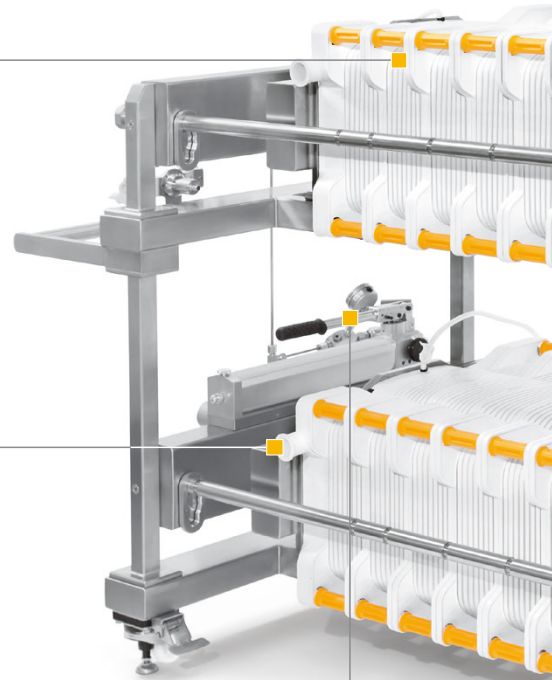
Depth Filter Cassettes

Three different sizes allow for a seamless adaptation to different process fluid volumes.



Manifold Set

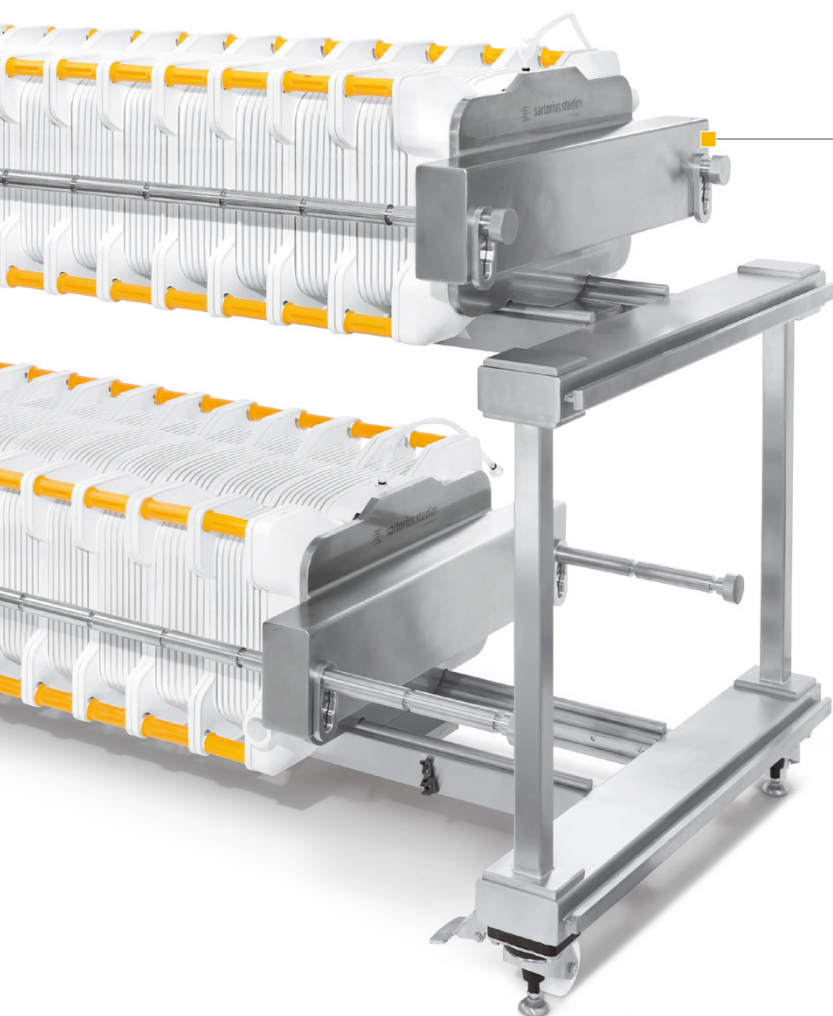
The manifold set contains the inlet and outlet plates for fast installation of the filtration set-up including pre-installed tubing for venting and draining of the system.



Pressure Device

An optional pressure safety device is available to avoid excess pressure during compressed air draining of the filters.

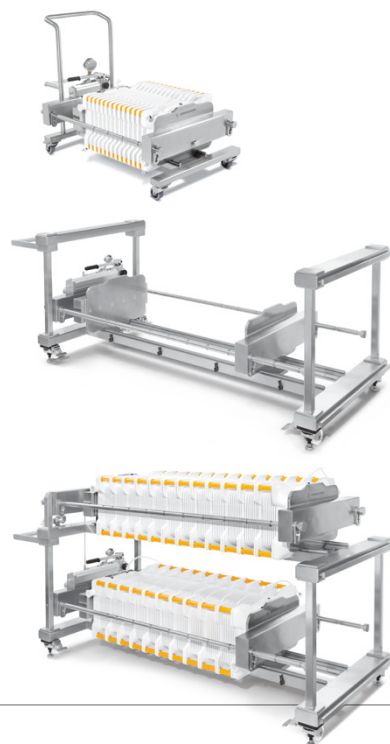




Filter Holders

Three standard formats of filter holders serve you from pilot scale up to commercial manufacturing.

Per process layer you can install between 1 and 12 Sartoclear® filters, enabling you to harvest bioreactors in the range between 50 and 2000 liters with one double process filter holder.

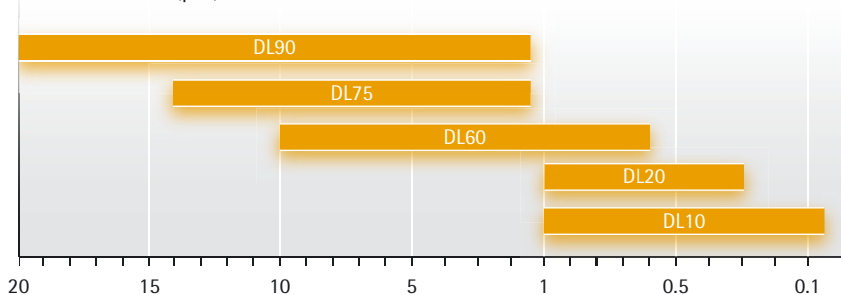




Sartoclear[®] Depth Filter Media

Find the optimal grade for your application

Retention Rate (µm)

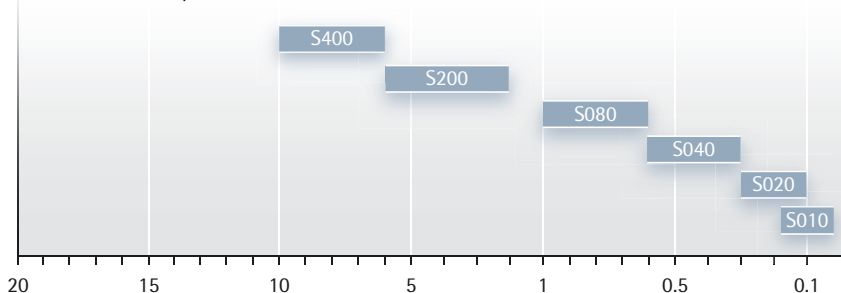


DL-Series

Sartoclear[®] DL-Series are high capacity depth filters made of two distinct filtration layers. The primary coarser layer is followed by a second finer layer which enables the removal of a broader spectrum of particles in a single step.

The Sartoclear[®] DL-Series are pre-selected and optimized to serve the most common biopharmaceutical applications.

Retention Rate (µm)



S-Series

Sartoclear[®] S-Series are single layer depth filter media grades for more specific applications such as vaccines and process intermediates with a lower or homogenous particle load.

The Sartoclear[®] S-Series are also available as filter sheets for plate and frame filtration systems which are often used in the plasma industries.



Sartoclear® Caps

Sartoclear® Caps are easy to use screening devices that help you to find the best grade for your application.



Grade Description of Sartoclear® DL-Series


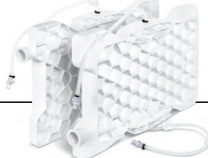
Grade	Primary Grade	Secondary Grade	Description	Application examples ¹
DL90	SX00	S200	Very coarse primary grade on top of a coarse secondary filter for filtrations with high solid concentrations	Primary clarification of mammalian cell cultures, insect cell cultures, microbial fermentations, vaccines
DL75	S600	S200	Pure cellulose pre-filter combined with a coarse secondary filter	Primary clarification of mammalian cell cultures, insect cell cultures, microbial fermentations, vaccines
DL60	S400	S080	Coarse primary grade with a secondary fine filtration grade for lower to moderate solid concentrations	Post-perfusion bioreactors, vaccines
DL20	S080	S040	Fine filtration grade combined with a standard bioburden reduction grade for the removal of particles	Post centrifuge mammalian cell cultures, post primary depth filtration, process precipitates
DL10	S080	S010	Fine filtration grade followed by very tight secondary filter for the removal of high concentrations of small particles	Post centrifuge microbial (e.g. <i>E. coli</i>) lysates, post primary depth filtration step, process precipitates

¹ The listed examples are indicative and need to be confirmed by small scale tests





Specifications

	 Sartoclear® Depth Filter	 Manifold Set
Dimensions H × W × D (mm)		
Filtration area		
0.2 m ²	387 × 634 × 36	387 × 634 × 58
0.4 m ²	387 × 634 × 59	
0.8 m ²	387 × 634 × 104	
1.0 m ²	387 × 634 × 104	
Connections		
Drain and vent		1/4" hose barb with pre-installed 1/4" × 3/8" silicone tubing incl. PinchClamp and MPC quick connector (1/4" female coupling + sealing plug)
In and outlet		1 1/2" Tri Clamp
Materials of Construction		
Housing	ABS Glass Fiber Reinforced	ABS Glass Fiber Reinforced
Filter	Cellulosic fibers with inorganic filter aids and wet strength agents	
Drains and vents		ABS + silicon tubing
Gaskets	Silicone	Silicone
Operating Conditions		
Temperature range	4°C – 40°C	4°C – 40°C
Maximum operation pressure	Liquid: 1.7 bar 21.8 PSI Gaseous: 0.5 bar 7.2 PSI	Liquid: 1.7 bar 21.8 PSI Gaseous: 0.5 bar 7.2 PSI
Maximum allowed back pressure	0.7 bar 10.2 PSI	0.7 bar 10.2 PSI
Safety (for all materials with direct fluid contact)		
Endotoxins	< 0.25 EU/mL	< 0.25 EU/mL
Biosafety	Passing of USP Plastic Class VI tests in accordance with the USP <88> for all component materials	Passing of USP Plastic Class VI tests in accordance with the USP <88> for all component materials
TSE/BSE	Complying with the EMA/410/01	Complying with the EMA/410/01
CE Pressure Equipment Directive	Designed according the requirements of the Pressure Equipment Directive 97/23/EC	Designed according the requirements of the Pressure Equipment Directive 97/23/EC



	Pilot Filter Holder	Process Filter Holder	Double Process Filter Holder
Layers	1	1	2
Capacity for 0.8m ² Sartoclear® Double Layer filters	1 – 6	1 – 12	1 – 24
Capacity for 1.0m ² Sartoclear® Single Layer filters	1 – 6	1 – 12	1 – 24
Dimensions H×W×D (cm)	96 × 133 × 79	91 × 230 × 93	122 × 230 × 93
Weight	160 kg	500 kg	950 kg
Max. total weight	290 kg	780 kg	1430 kg
Materials of Construction	Stainless Steel	Stainless Steel	Stainless Steel

Drip pan

Dimensions H×W×D (cm)	4 × 110 × 67	4 × 184 × 70	4 × 184 × 70
Materials of Construction	Stainless Steel	Stainless Steel	Stainless Steel





Ordering Information

Sartoclear® Depth Filters

Sartoclear® Double Layer Depth Filters

Surface Area	Grade	Qty.	Order No.
0.2 m ²	DL10	1	29XDL10-FCA
0.2 m ²	DL20	1	29XDL20-FCA
0.2 m ²	DL60	1	29XDL60-FCA
0.2 m ²	DL75	1	29XDL75-FCA
0.2 m ²	DL90	1	29XDL90-FCA
0.4 m ²	DL10	1	29XDL10-FCB
0.4 m ²	DL20	1	29XDL20-FCB
0.4 m ²	DL60	1	29XDL60-FCB
0.4 m ²	DL75	1	29XDL75-FCB
0.4 m ²	DL90	1	29XDL90-FCB
0.8 m ²	DL10	1	29XDL10-FCC
0.8 m ²	DL20	1	29XDL20-FCC
0.8 m ²	DL60	1	29XDL60-FCC
0.8 m ²	DL75	1	29XDL75-FCC
0.8 m ²	DL90	1	29XDL90-FCC

Sartoclear® Single Layer Depth Filters

Surface area	Grade	Qty.	Order No.
0.2 m ²	S010	1	29XS010-FCA
0.2 m ²	S020	1	29XS020-FCA
0.2 m ²	S040	1	29XS040-FCA
0.2 m ²	S080	1	29XS080-FCA
0.2 m ²	S200	1	29XS200-FCA
0.2 m ²	S400	1	29XS400-FCA
0.4 m ²	S010	1	29XS010-FCB
0.4 m ²	S020	1	29XS020-FCB
0.4 m ²	S040	1	29XS040-FCB
0.4 m ²	S080	1	29XS080-FCB
0.4 m ²	S200	1	29XS200-FCB
0.4 m ²	S400	1	29XS400-FCB
1.0 m ²	S010	1	29XS010-FCC
1.0 m ²	S020	1	29XS020-FCC
1.0 m ²	S040	1	29XS040-FCC
1.0 m ²	S080	1	29XS080-FCC
1.0 m ²	S200	1	29XS200-FCC
1.0 m ²	S400	1	29XS400-FCC

Manifold Set

Description	Qty.	Order No.
Inlet and outlet plate with pre-installed silicone tubing incl. pinch clamp and MPC quick connectors on the ventilation and drain ports.	1	29Z-S00001





Holders

	Description	Order No.
Pilot filter holder	For 1 – 6 Sartoclear® Depth Filters	2ZGL--0005
Process filter holder	For 1 – 12 Sartoclear® Depth Filters	2ZGL--0006
Double process filter holder	For 1 – 24 Sartoclear® Depth Filters	2ZGL--0007

Accessories

Drip pan	For pilot filter holder For easy cleaning of spilled fluids	2ZGL--0008
	For process filter holder and double process filter holder For easy cleaning of spilled fluids	2ZGL--0015
Separation Plate	For serial or parallel filtration on one layer	2ZGL--0013
Pressure Safety Device	Prevents excessive pressure during compressed air draining of the filter cassettes	2ZGL--0014



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