

Empty filter based on the MultiFunctionFilter MF₂



www.aquacare.de
AquaCare GmbH & Co. KG
www.aquacare-shop.de
www.aquacare.de • info@aquacare.de



The MF₂-50 MultiFunctionFilter

The MF₂ multifunctional filter can also be used as an empty filter for any filter material. The scope of delivery consists of the actual filter made of high-quality acrylic glass, matching connections and accessories for the operating modes: up-stream, downstream, fluid bed and circulation filter.

The MF₂ filters are available in different diameters - special lengths are also possible.

And if you no longer need the MF₂ fluidized bed filter, you can convert the filter for other applications with just a few additional parts! The complete possibilities of the MF₂ filter can be found at <http://aquacare-shop.de/MF2-EN>

Technical data of the MF₂ Filter:

Type	MF ₂ 50	MF ₂ 70
Order number	MF2-050-x	MF2-070-x
Diameter in mm	50	70
maximum flow in l/h*	90	180
Height in cm**	40 (70; 100)	45 (70; 100)
Necessary height in cm		+5
Usable volume in litres	0.5 (1.0; 1.5)	1.2 (2.0; 3.1)
Footprint width × depth in cm	14 × 10	16 × 12
Empty weight in kg	0,7	
Erectoin	External, in the filter sump, with Hang-On bracket to the aquarium or filter basin, with wall brackets to a wall	
Temperature range	-2...80°C	
Materials	PMMA (acrylic glass), NBR, silikon, PVC	
Connectors	8 mm	10 mm
Drain valve	can be installed: G1/4" female thread	

* extremely dependent on the filter material used

** special heights are possible

Empty filter for different filter materials



AquaCare GmbH & Co. KG
www.aquacare-shop.de
www.aquacare.de • info@aquacare.de



PMMA d100 in different heights and PMMA150

Empty filters are an important component for creating an individual filter system. AquaCare offers a range of empty filters suitable for a wide variety of substrates. Special heights can be manufactured by AquaCare at any time.

The advantages of the AquaCare empty filters:

- screens at the bottom and at the top
- different screens are possible
- upflow, downflow, moving bed and trickling filter are possible
- rigid construction
- auxiliary connections are possible
- probe connectors are possible

Technical data of the AquaCare empty filters: d70 ... d100

Size	Filter 70	Filter 100
Order number	PMMA-70-45 PMMA-70-70 PMMA-70-100	PMMA-100-50 PMMA-100-70 PMMA-100-100
Flow in l/h*	300	700
Diameter in mm	75	100
Useful volume in litre	1.1 1.8 2.7	2.5 3.8 5.8
Placement	External, in the filter sump, hang-on or wall brackets	
Total height in cm** (without venting valve)	45 70 100	50 70 100
Necessary height in cm**	+ 5 cm	
Foot print size wide × depths in mm	180 × 140	210 × 160
Size of screen	option: 15, 8, 4, 2 mm or 200, 150, 100, 50, 25, 15, 6 µm oder moving bed screen FBF, ozone reactor screen OZR	
Materials	PMMA, PVC, ABS, PA, silicone, NBR	
Connectors	d20 or nozzle 12	d20 or nozzle 16
Drain	Non (can be retrofitted)	valve 6/4
Total weight in kg	1,2 1,5 1,7	1.7 1.9 2.3
Possible substrates	all granular materials are possible	

* depending on filter material and screen, ** special heights are possible

Technical data of the AquaCare empty filters: d150 ... d300

Size	Filter 150	Filter 250	Filter 300
Order number	PMMA150-50 PMMA150-70 PMMA150-100	370-250	PMMA300-50 PMMA300-100 PMMA300-150
Flow in l/h*	1600	4500	6600
Diameter in mm	150	250	300
Useful volume in litre	5.5 8.7 13.4	40	19.1 52.1 85.1
Max. operation pressure (at upper edge of filter)	0,1 bar (1 m WS)		
Placement	External or in the filter sump (Hang-On and wall bracket only for filter 150)		
Total height in cm** (without venting valve)	50 70 100	100	50 100 150
Necessary height in cm**	+ 5 cm		
Foot print size wide × depths in mm	310 × 220	370 × 300	515 × 400
Size of screen	selectable: 15, 8, 4, 2 mm or 200, 150, 100, 50, 25, 15, 6 µm or moving bed screen		
Materials	PVC/PMMA, silikone, NBR		
Connectors (PVC unions)	d25	d32	d50
Drain	valve 6/4	valve d20	valve 16
Total weight in kg	3.9 4.2 4.7	20	13 16 19
Possible substrates	all granular materials are possible		

* depending on filter material and screen, ** special heights are possible



For larger systems AquaCare manufactures filters with diameter up to 2400 mm.

Reactors with recirculation



AquaCare GmbH & Co. KG
www.aquacare-shop.de
www.aquacare.de • info@aquacare.de



PMMA 100 in reactor version
with internal circulation pump

The fluidized bed process is the **most effective** filter system when it comes to biological or adsorption processes. Reasons for this are:

- Very fine and ultra-fine filter materials can be used to create maximum reaction surface area.
- Sticking or caking of the material granules by biomass or dirt is not possible, because the particles are constantly kept in motion and excess bacteria are continuously rubbed off. The filter bed always has the optimum flow. Channel formation is prevented and thus unwanted reactions, e.g. hydrogen sulfide formation or fermentation. Precious adsorbent materials are optimally utilized.
- The reaction surface of the material granules remains free and is constantly available for the desired reaction.

However, several conditions must be met in order to establish a fluidized bed:

- The filter material must be suitable for the fluidized bed process. Soft materials such as activated carbon, zeolites and standard phosphate adsorbers are pulverized - the residues are distributed in the aquarium.
- The water inflow is precisely defined. It depends on the filter material used (specific gravity) and the diameter of the filter. For a biofilter, for example, high water flow rates are ideal. For other applications, just this point can cause negative effects. For example, if the filter gets a new phosphate adsorber filling, the phosphate level in the aquarium may just crash and cause coral

damage. The way out is an internal filter circuit that maintains the fluidized bed. The inflow can be regulated from drop by drop to maximum flow.

Important! Please order the matching lower filter iscrees as well.

We recommend the following lower screen for our filter media:

Quartz sand: Fluid bed screen

Phosphate-X-Globuli: fluidized bed screen screen

POC+Globuli: fluid bed screen or 4 mm screen

Calcium reactor / Magnesium reactor: 4 mm screen

Technical data of the AquaCare reaktors: d70 ... d100

Size	Reaktor 70	100
Order number	reactor-70-45 reactor-70-70 reactor-70-100	reactor-100-50 reactor-100-70 reactor-100-100
Diameter in mm	70	100
Maximum usable volume in l*	1.1 / 1.8 / 2.7	2.5 / 3.8 / 5.8
Reactor height in cm	45 / 70 / 100	50 / 70 / 100
Foot print in mm × mm	160 × 160	210 × 180
Built-in circulation pump	UP300 / UP500 / UP500	UP1000/ UP1000 / UP2000
Materials	PMMA (acrylic glass), NBR, silikon, PA	
Weight in kg	2.1 / 2.3 / 2.5	2.2 / 2.9 / 3.3
Water inlet	PA nozzle 4 mm (others possible)	
Water outlet	PA nozzle 8 mm	PA nozzle 10 mm
Connection drain	1/4" female thread suitable for 6 mm valve	
Electrode connection	retrofittable	

* the useful volume for fluidized bed operation is approx. 60-70%, depending on the filter material.

Technical data of the AquaCare reaktors: d150 ... 300

Size	Reaktor 150	Reaktor 300
Order number	reactor-150-50 reactor-150-70 reactor-150-100	reactor-300-50 reactor-300-100 reactor-300-150
Diameter in mm	150	300
Maximum usable volume in l*	5.5 / 8.5 / 13.4	19 / 52 / 85
Reactor height in cm	50 / 70 / 100	50 / 100 / 150
Foot print in mm × mm	310 × 270	515 × 400
Built-in circulation pump	UP2000 / UP2000/1 / UP2000/1	UP11000e
Materials	PMMA (acrylic glass), NBR, silikon, PA	
Weight in kg	6 / 7 / 8	18 / 21 / 24
Water inlet	PA nozzle 4 mm (others possible)	
Water outlet	1/2" resp. PA nozzle 12 mm	1/2" resp. PA nozzle 16 mm
Connection drain	1/4" female thread suitable for 6 mm valve	
Electrode connection	retrofittable	

* the useful volume for fluidized bed operation is approx. 60-70%, depending on the filter material.

Further empty filters with internal recirculation on request