



Mixed bed cartridge desaliQ:BA

Intended use

The desaliQ:BA mixed bed cartridges are designed to produce ultra-pure water and can be used in the following sectors:

- Full demineralisation of raw water of drinking water quality
- Residual demineralisation of partially demineralised permeate originating from reverse osmosis systems

The desaliQ mixed bed cartridges **cannot** be used in the following sectors:

- Treatment of raw water to be used as drinking water
- Operation with gas cushions

Function

Physical

Via an internal distribution system, a mixed bed resin is steadily flown through from top to bottom.

The fully demineralised water, the so-called demi water, is directed to the tank outlet via a collecting element at the tank bottom and a riser pipe.

Chemical

Mixed bed resins consist to one part of a highly acid cation exchanger resin and to the other part of a highly alkaline anion exchanger resin. In the mixed bed cartridges, these two components are completely mixed already.

The cation exchanger resin removes all positively charged ions, the so-called cations, from the raw water. All cations contained in the raw water such as calcium, magnesium and sodium are exchanged for H^+ ions.

The anion exchanger resin is used in full demineralisation to filter off the negatively charged ions, the so-called anions. All anions such as nitrate, phosphate, sulphate, chloride and hydrogen carbonate contained in the raw water are exchanged for OH^- ions.

Full demineralisation removes almost all undesired components from the inlet water. Thanks to the highly alkaline anion exchanger resin, silicic acid and carbon dioxide are also filtered off. The H^+ and OH^- ions generated during the exchange process combine to H_2O . The result of the full demineralisation principle is pure water.

Demineralisation of raw water

The desaliQ mixed bed cartridge is mainly used for the full demineralisation of raw water. The raw water is directed to the inlet of the mixed bed cartridge via an optional system separator and a fine filter.

Secondary treatment of permeate

The residual demineralisation of permeate originating from reverse osmosis systems represents an additional application. In this case, the mixed bed cartridge is installed downstream of the reverse osmosis system. Due to the residual demineralisation now taking place, the permeate conductivity may be further reduced.

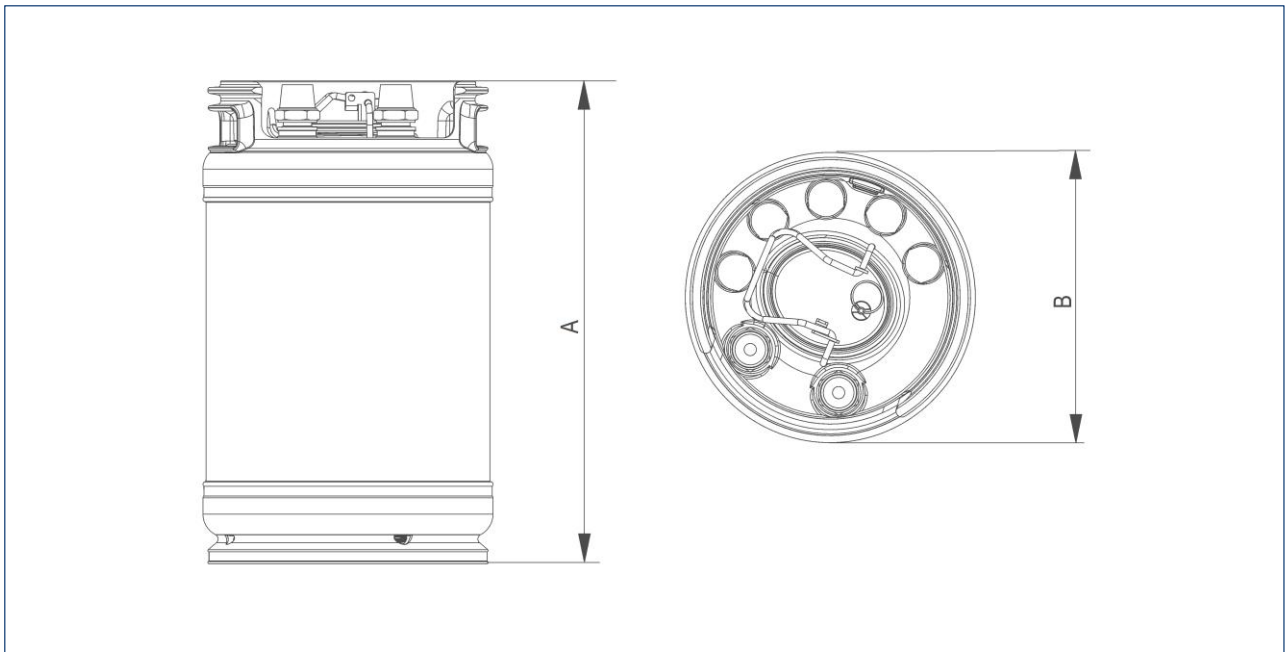
Design

- Stainless steel tank, filled with mixed bed resin
- Raw water connection with internal distribution system
- Pure water connection with internal riser pipe to the collecting element at the bottom of the tank
- Deaeration
- Plastic ring with carrying handles
- Plastic foot

Scope of supply

- Mixed bed cartridge
- Operation manual
- Mixed bed resin, can be regenerated

Technical specifications I



Mixed bed cartridge desaliQ:BA	6	12	13	16	20
Order no.:	707 450	707 460	707 470	707 480	707 490

Dimensions and weights						
Volume of cartridge	[l]	13.5	28.5	58.7	85	115
Filling volume of mixed bed resin	[l]	12.5	25	50	75	100
A Height	[mm]	400	755	605	820	1065
B Diameter	[mm]	240	240	410	410	410
Weight on delivery	[kg]	12	23	48	68	89

Technical specifications II

Mixed bed cartridge desaliQ:BA	6	12	13	16	20
Order no.:	707 450	707 460	707 470	707 480	707 490

Connection data					
Nominal connection diameter	3/4"	3/4"	3/4"	3/4"	3/4"

Performance data						
Nominal pressure				PN 10		
Flow at Δp 1 bar	[l/h]	480	850	1050	1080	1200
Capacity at a desired residual conductivity of < 10 $\mu\text{S/cm}$	[l]	215	460	1040	1560	2080
Capacity at a desired residual conductivity of < 50 $\mu\text{S/cm}$	[l]	340	800	1650	2475	3300
Nominal flow	[m ³ /h]	0.6	1.2	1.3	1.6	2.0

General					
Max. water temperature ^{a)}	[°C]			80	
Max. ambient temperature	[°C]			40	

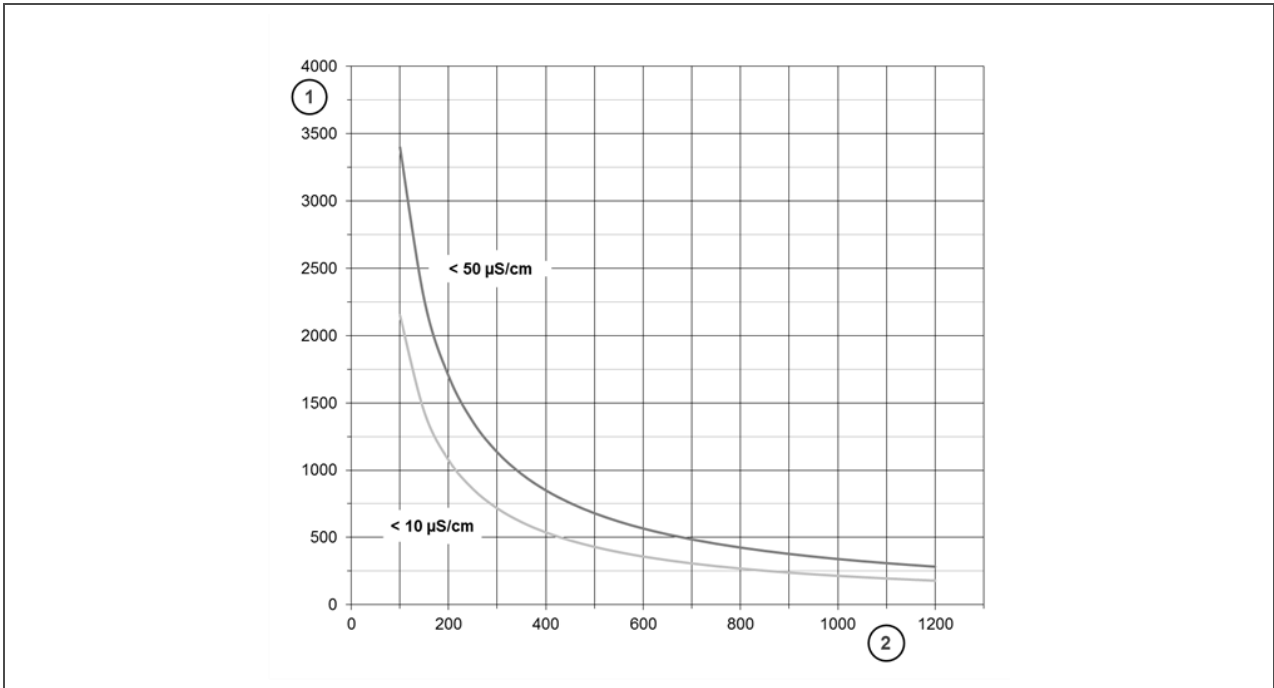
^{a)} Prolonged periods of use with water temperatures exceeding 60 °C may damage the resin. A regeneration is no longer possible then.

Sample calculation:

- Conductivity of filling water: 500 $\mu\text{S/cm}$
- Cartridge used: desaliQ:BA 6
- $215/500 = 0.43 \text{ m}^3$ (corresponds to 430 litres at 10 $\mu\text{S/cm}$)
- $340/500 = 0.68 \text{ m}^3$ (corresponds to 680 litres at 50 $\mu\text{S/cm}$)

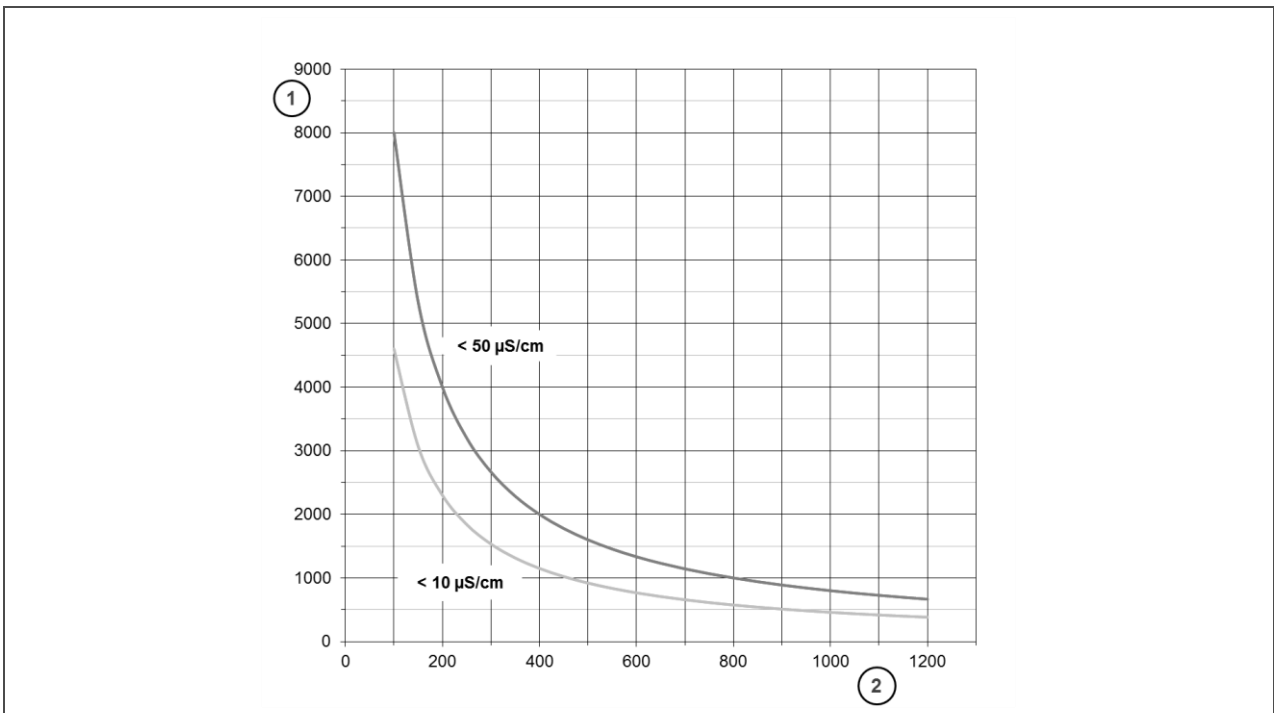
Technical specifications III

Capacity curves of mixed bed cartridge desaliQ:BA 6



Item	Designation	Item	Designation
1	Volume of demineralised water in l	2	Conductivity of raw water in µS/cm

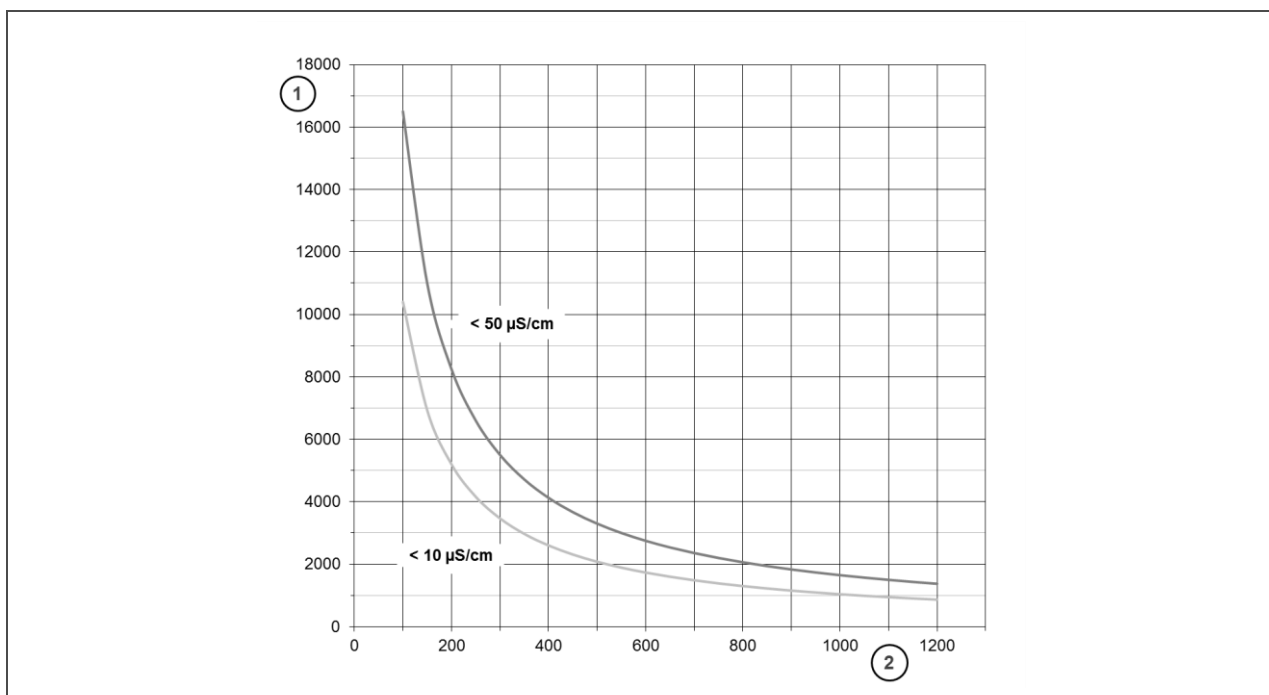
Capacity curves of mixed bed cartridge desaliQ:BA 12



Item	Designation	Item	Designation
1	Volume of demineralised water in l	2	Conductivity of raw water in µS/cm

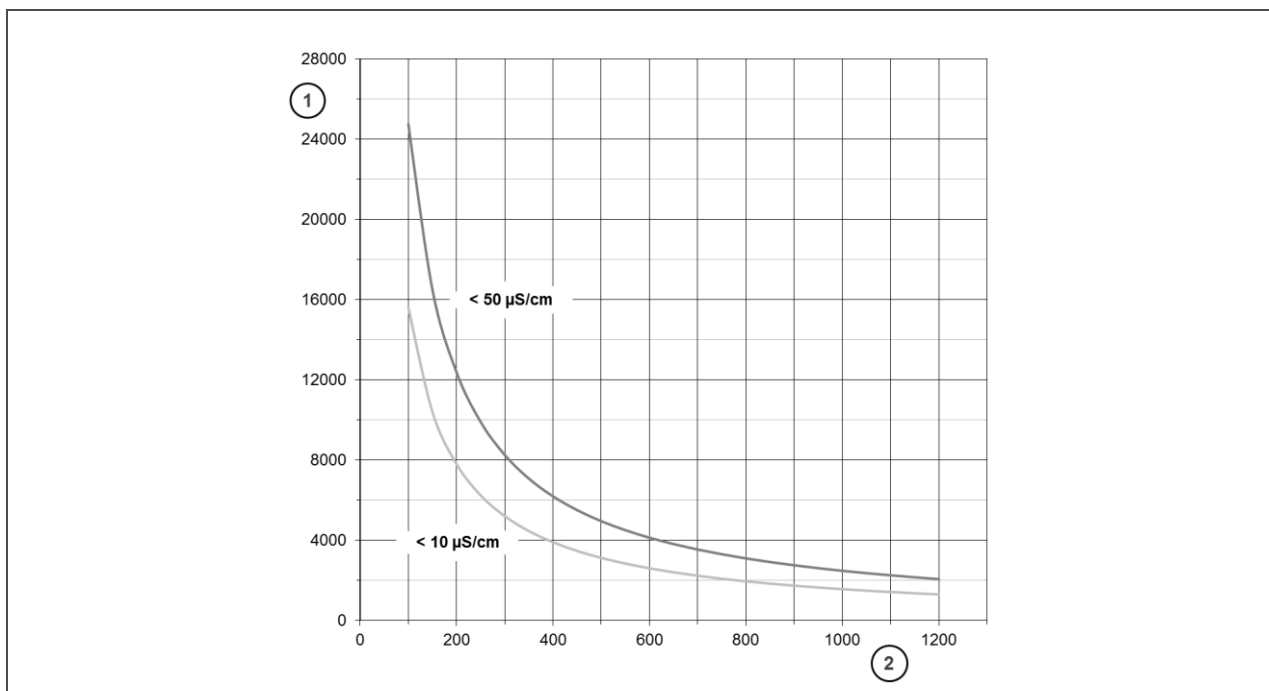
Technical specifications IV

Capacity curves of mixed bed cartridge desaliQ:BA 13



Item	Designation	Item	Designation
1	Volume of demineralised water in l	2	Conductivity of raw water in µS/cm

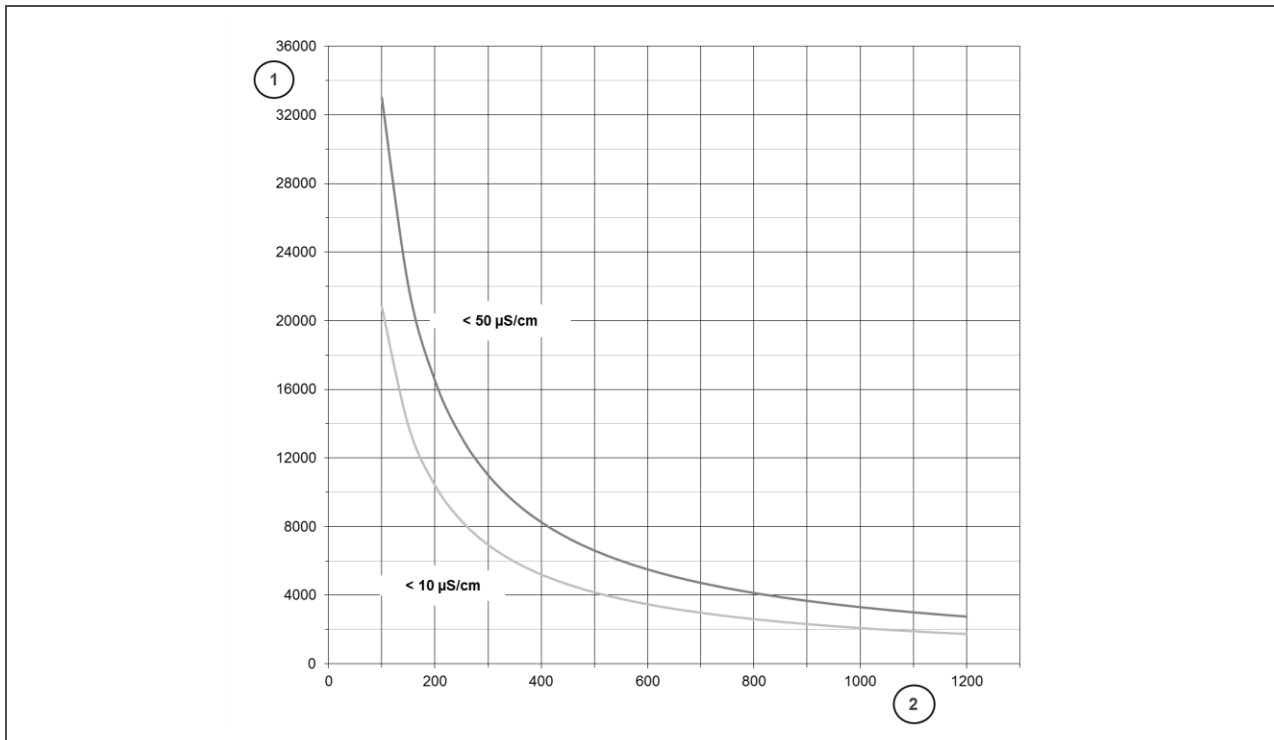
Capacity curves of mixed bed cartridge desaliQ:BA 16



Item	Designation	Item	Designation
1	Volume of demineralised water in l	2	Conductivity of raw water in µS/cm

Technical specifications V

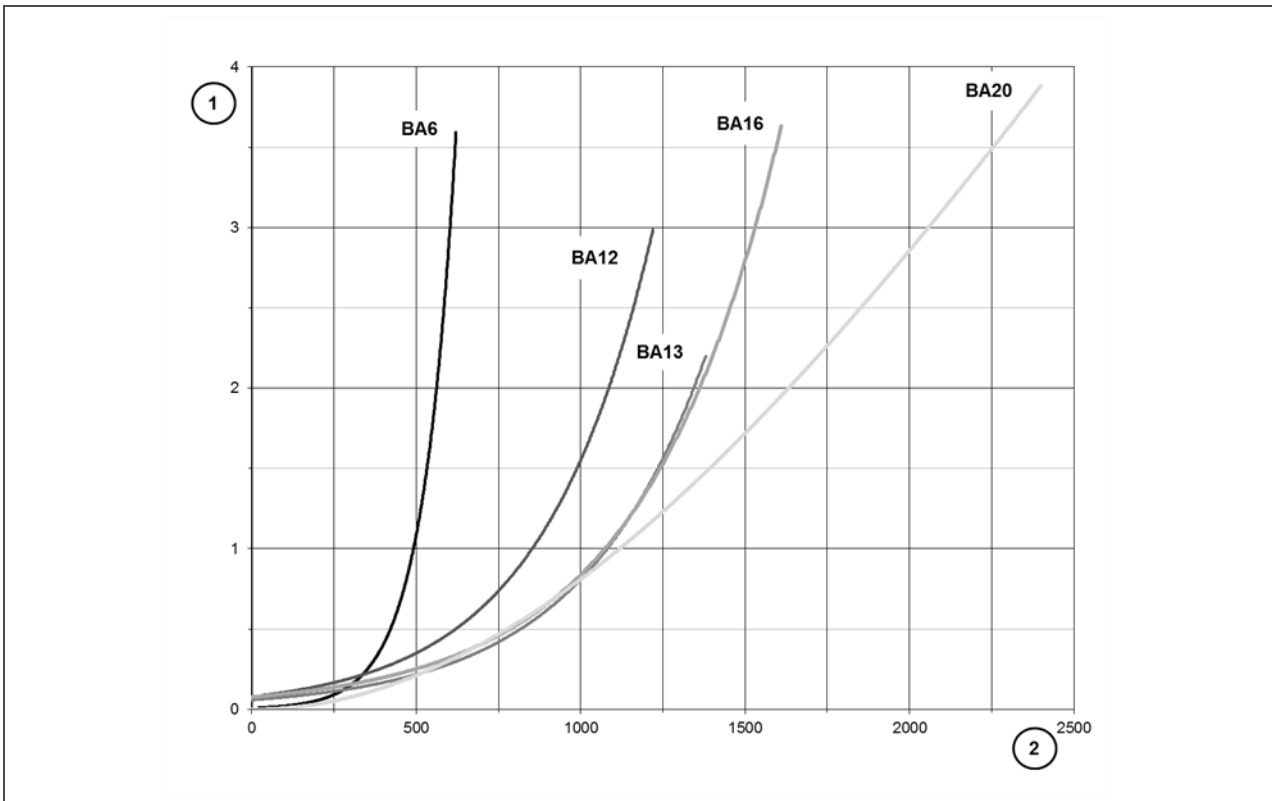
Capacity curves of mixed bed cartridge desaliQ:BA 20



Item	Designation	Item	Designation
1	Volume of demineralised water in l	2	Conductivity of raw water in µS/cm

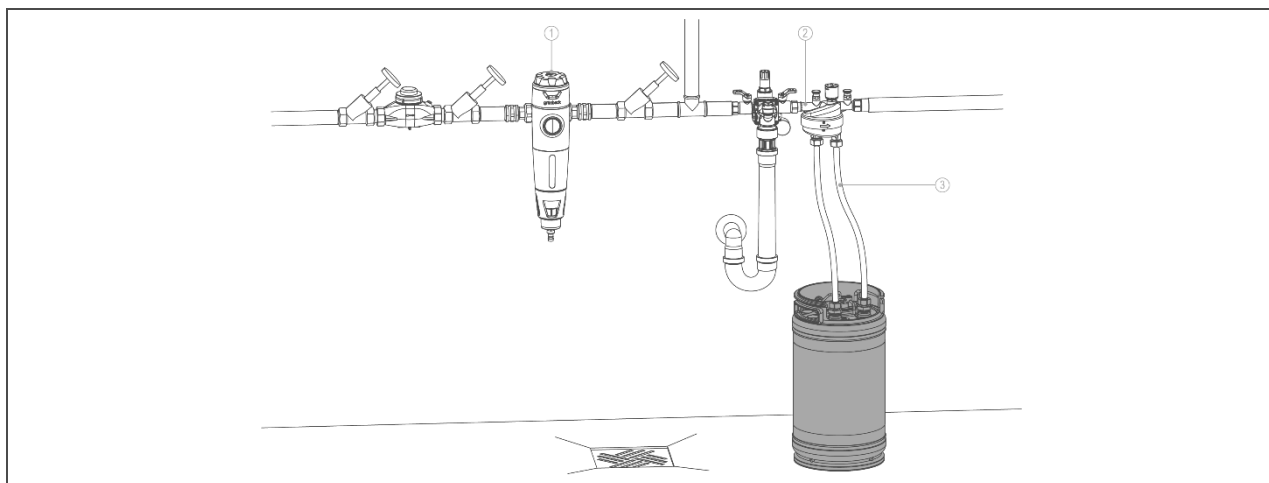
Technical specifications IV

Pressure loss curves of mixed bed cartridges desaliQ:BA



Item	Designation	Item	Designation
1	Pressure loss in bar	2	Flow in l/h

Installation example for residential applications



Item	Designation	Item	Designation
1	pureliQ fine filter	3	Filling section thermalIQ:FB2 with desaliQ connection adapter
2	Pure water connection		

Requirements with regard to the installation site

Observe local installation directives, general guidelines and technical specifications.

Install the product free from:

- Strong heat
- Frost
- Direct sunlight
- Chemicals, dyes, solvents and their vapours

Accessories for heating water

desaliQ hose kit
Order no.: 707 850

Filling section thermalIQ:FB2
Order no.: 707 760
With built-in system separator, amongst others

Filling section thermalIQ:FB13i
Order no.: 707 770

desaliQ connection adapter
Order no.: 707 276

GENO-Multi-LF
Order no.: 702 842
Conductivity meter

thermalIQ solenoid valve, complete
Order no.: 707 055

thermalIQ conductivity measuring cell II with adapter
Order no.: 707 015
Conductivity measuring cell

Water meter with connection material
Order no.: 702 845

Euro system separator GENO-DK 2-Mini
Order no.: 133 100

Safety device protectliQ:A20
Order no.: 126 400
Product for protection against water damage in one- and two-family homes.
For additional sizes, please inquire.

GENO-therm case Basic
Order no.: 707 160

GENO-therm case Premium
Order no.: 707 170

Accessories for membrane technology

desaliQ connection kit
Order no.: 703 575

Conductivity meter D 100 LED (0 - 100 µS/cm)
Order no.: 703 530

Conductivity meter D 10 AN (0 - 10 µS/cm)
Order no.: 703 545

Conductivity meter D 100 AN (0 - 100 µS/cm)
Order no.: 703 535

Conductivity meter D 10 ANR (0 - 10 µS/cm)
Order no.: 703 555

Conductivity meter D 100 ANR (0 - 100 µS/cm)
Order no.: 703 540

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