



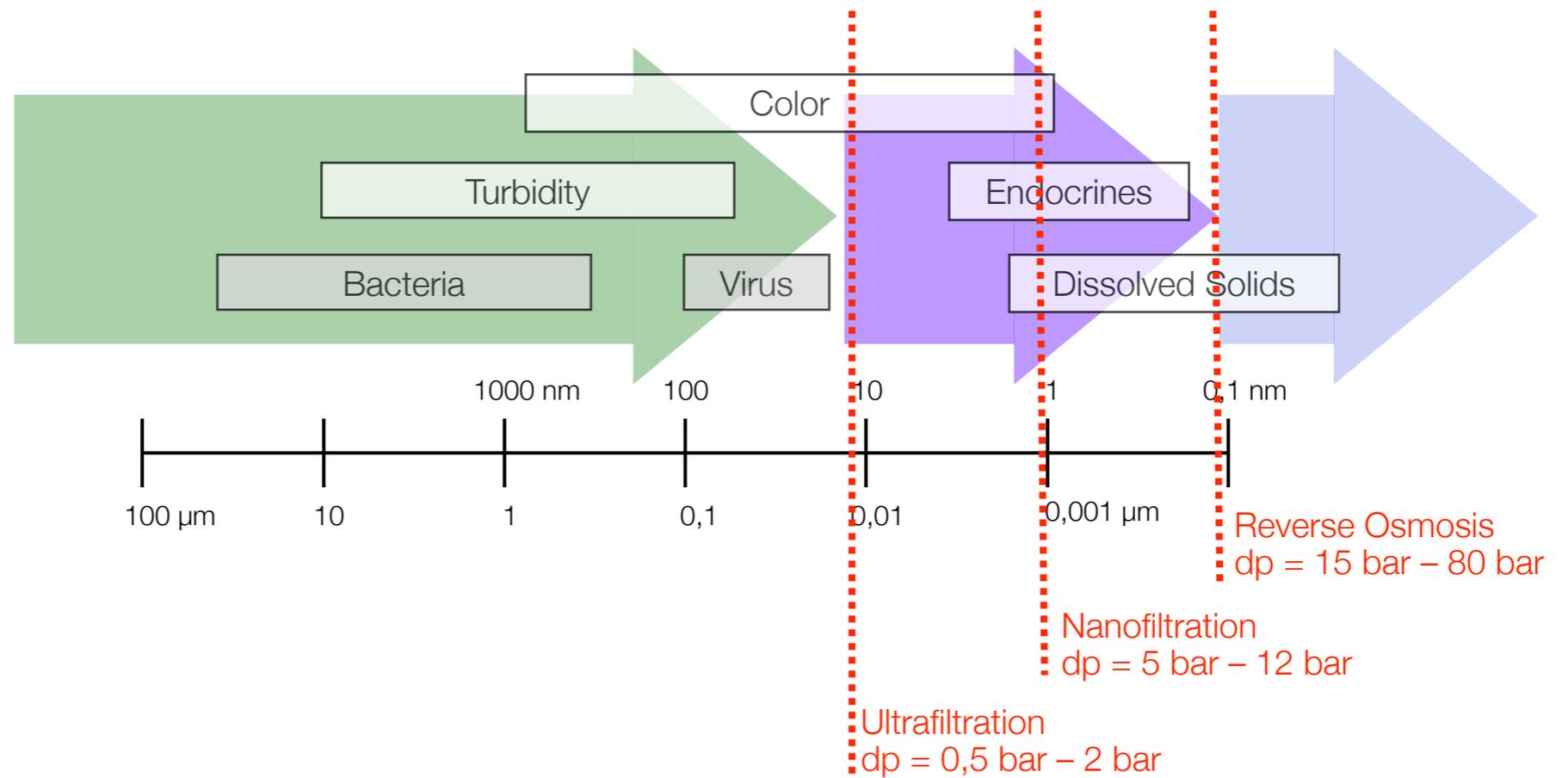
Seccua Product Presentation



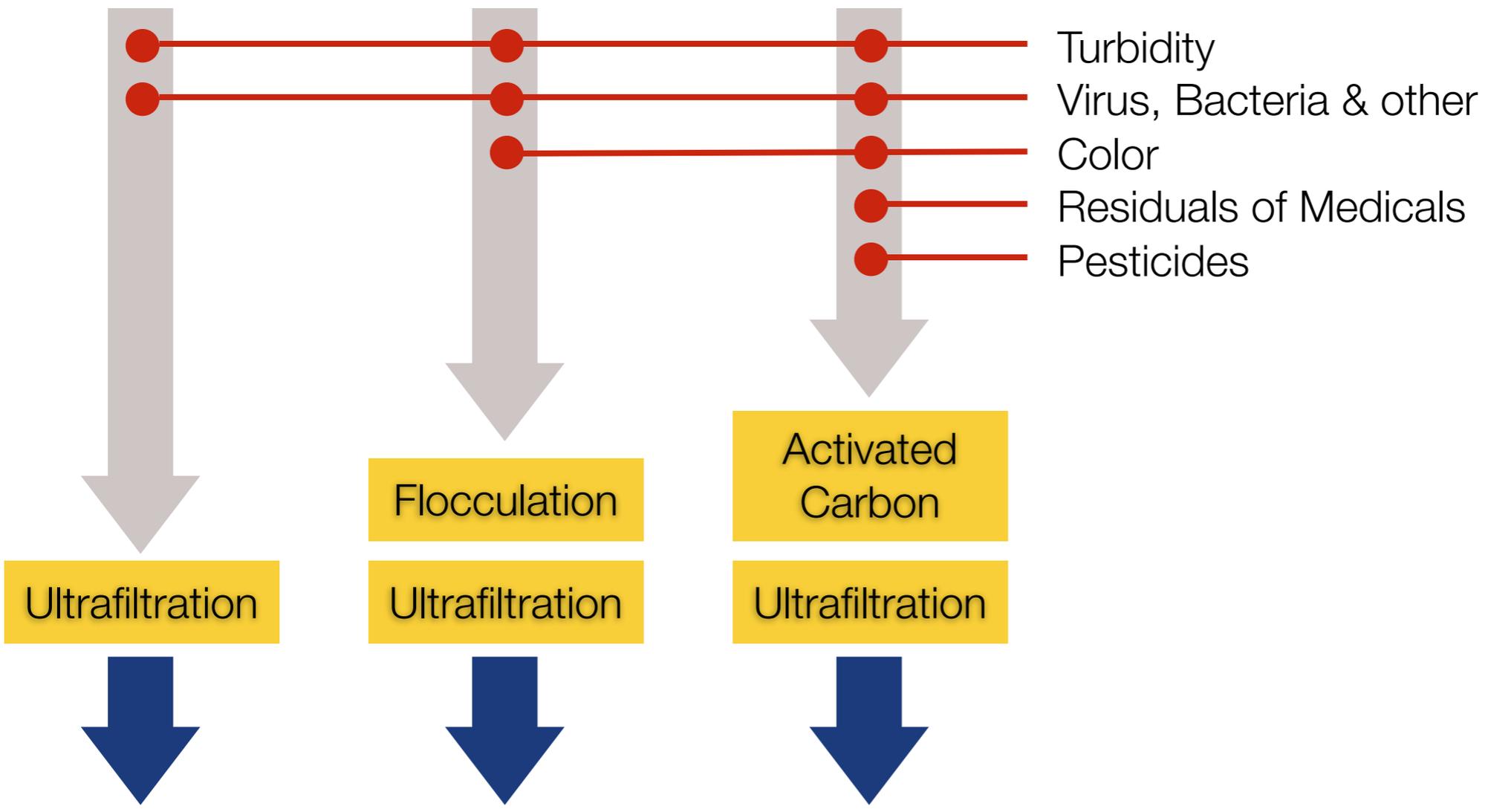


Technology

Membrane Technology



Raw Water



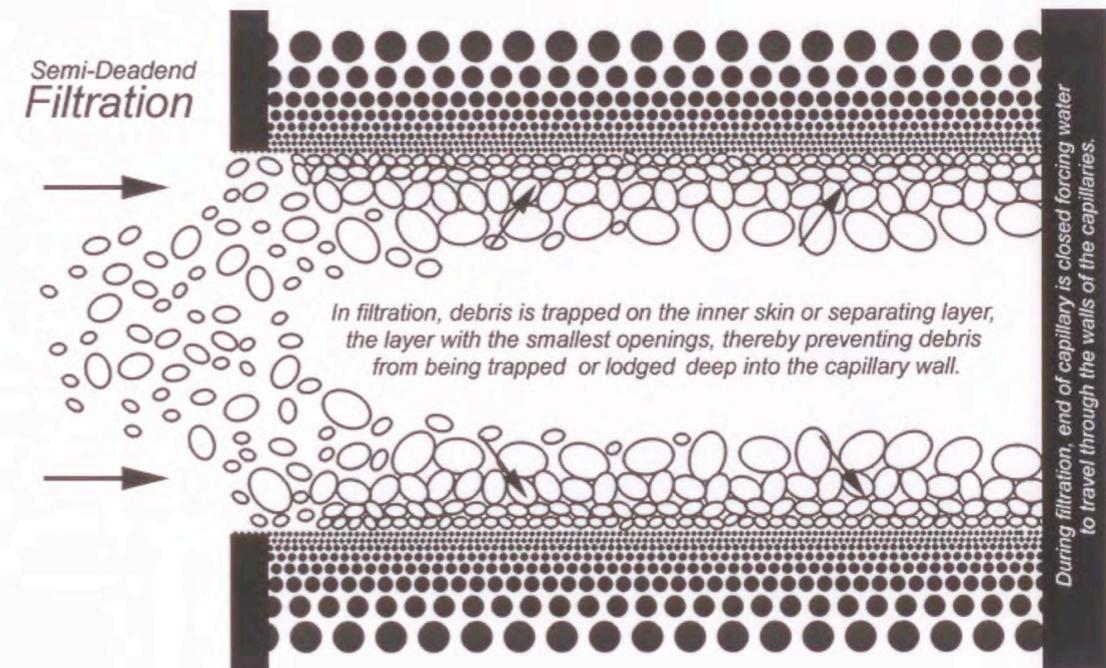
Drinking Water





Filtration

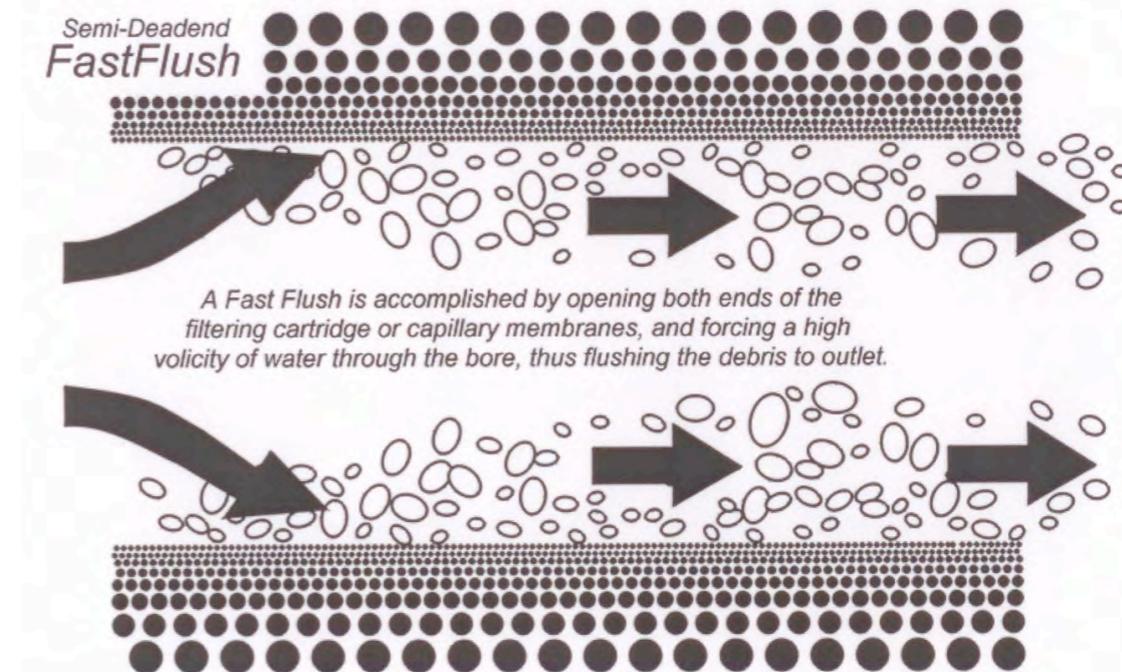
- Raw water flows into capillary and through the walls of the hollow fiber
- All particles, bacteria and virus are rejected by the membrane surface
- A fouling layer from rejected substances is building up on the membrane





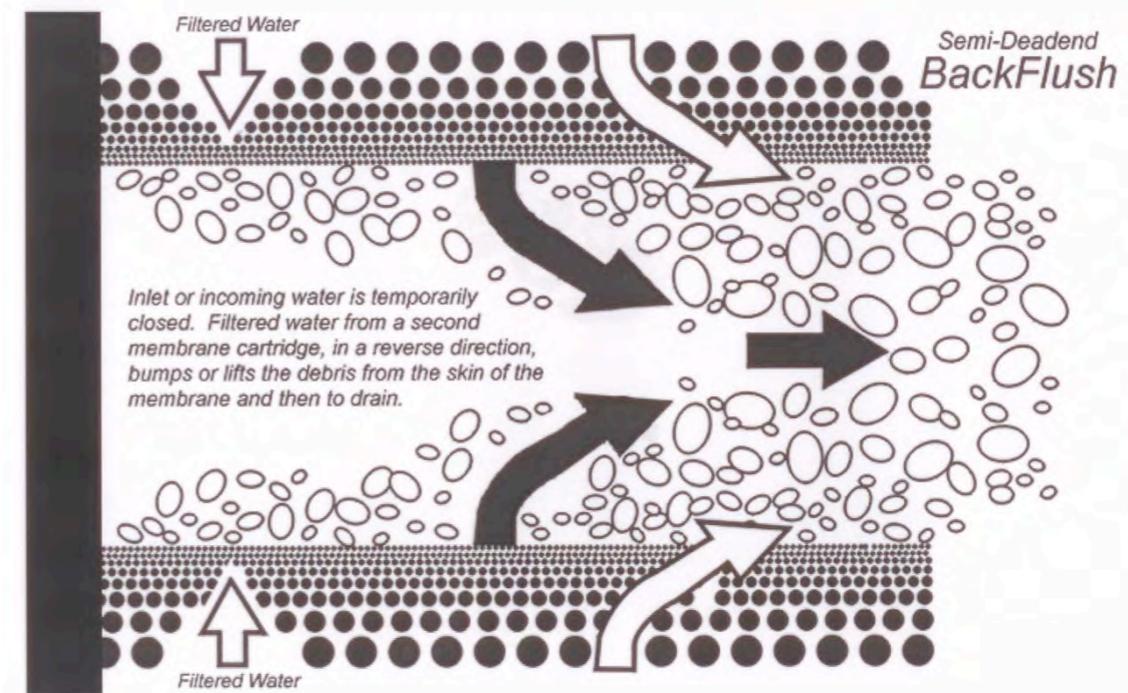
Forward Flush

- A rapid cross-flow flush using raw water cleans out the inside of the hollow-fibers.
- Non-compressed fouling layers are being removed.
- Sticky or compressed fouling layers remain on membrane.



Backwash

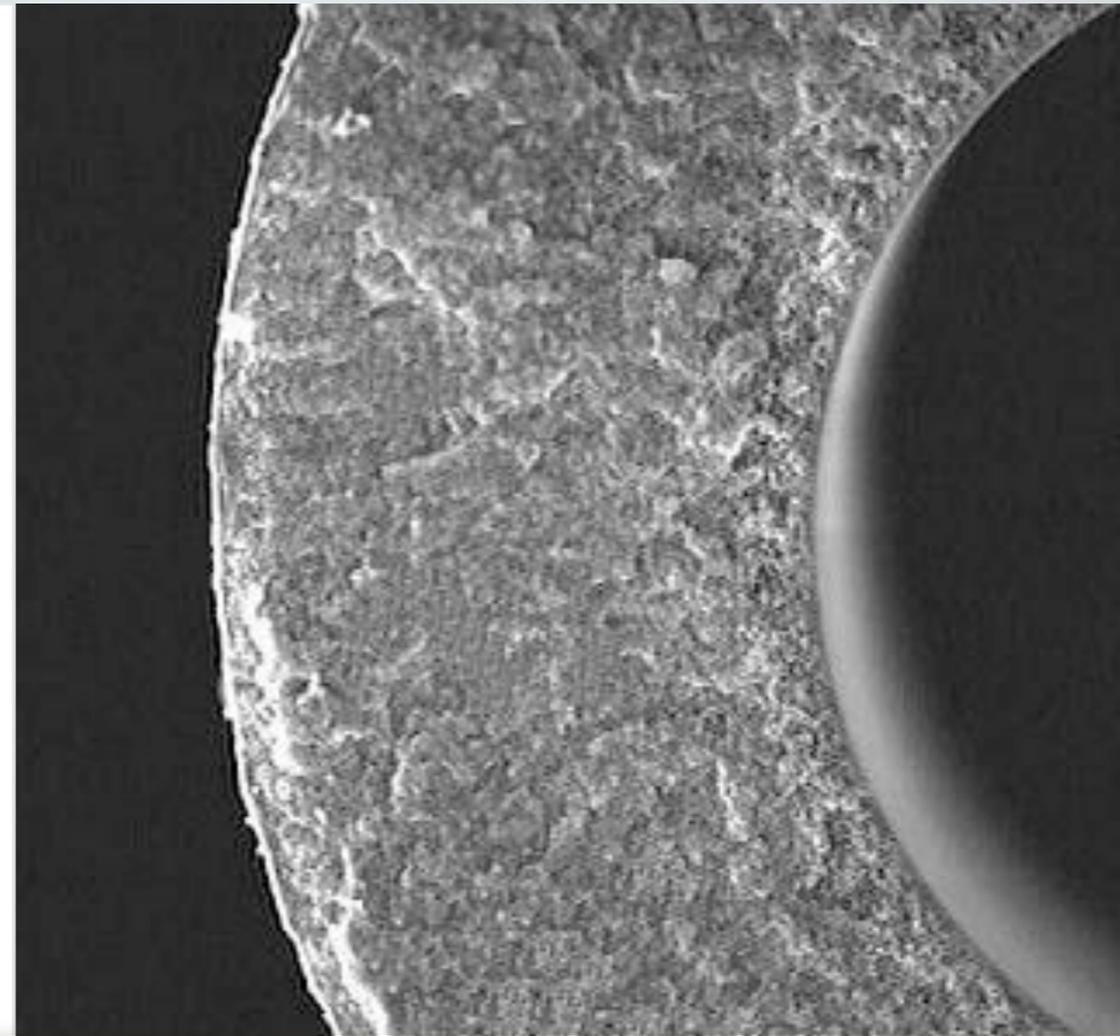
- Filtered water is flowing through the membrane in reverse filtration-direction.
- Compressed fouling layers are lifted off the membrane and flushed out.
- On industrial and municipal systems chemicals can be added to improve backwash-performance.





Low-Energy-Ultrafiltration

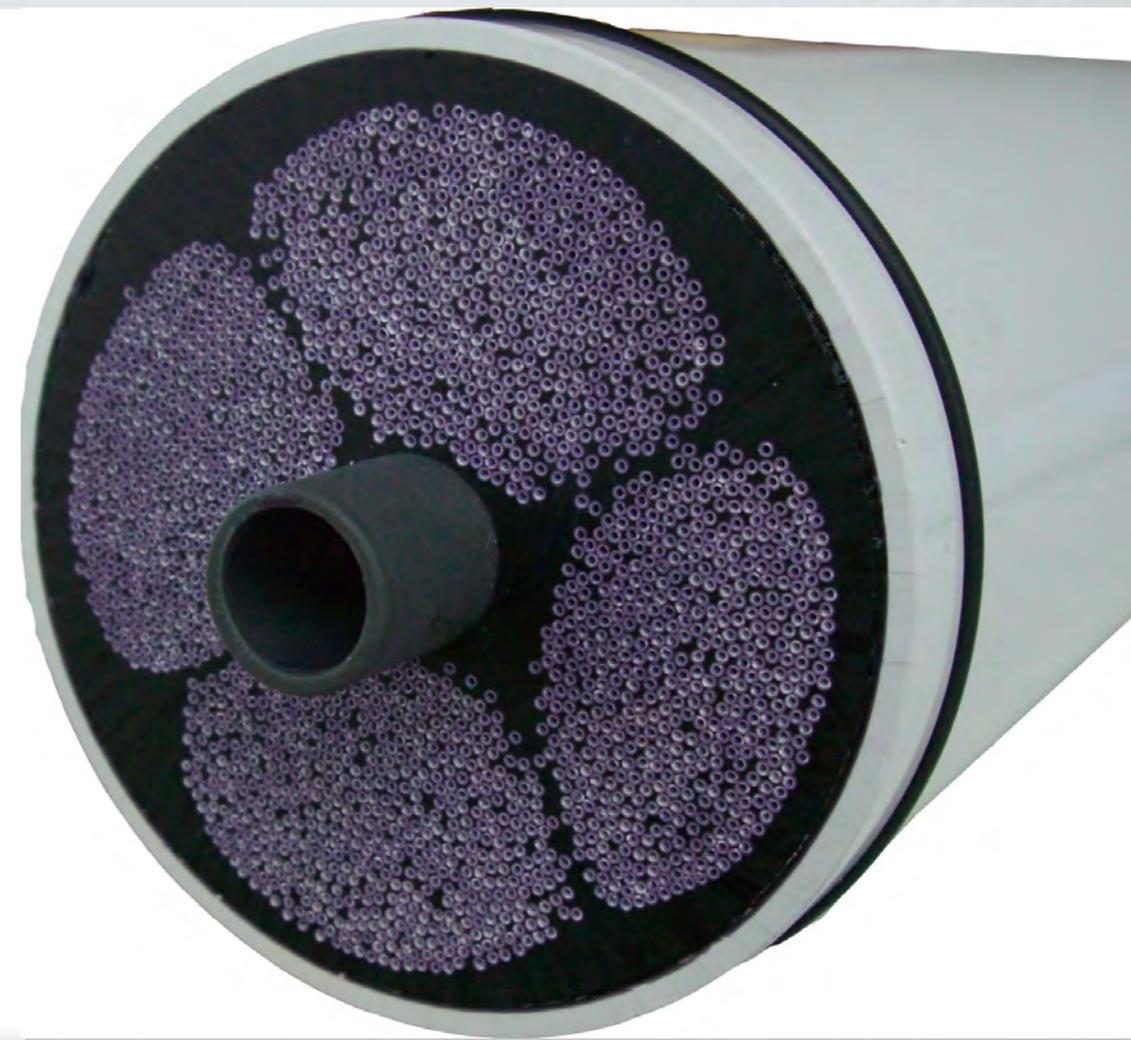
- High tolerance for suspended solids (> 20 FNU)
- Low-fouling, state-of-the-art polymer membrane
- Up to 50% lower pressure required than with conventional UF membranes.
- Uniform, strong fiber-walls reduce risk fiber damages





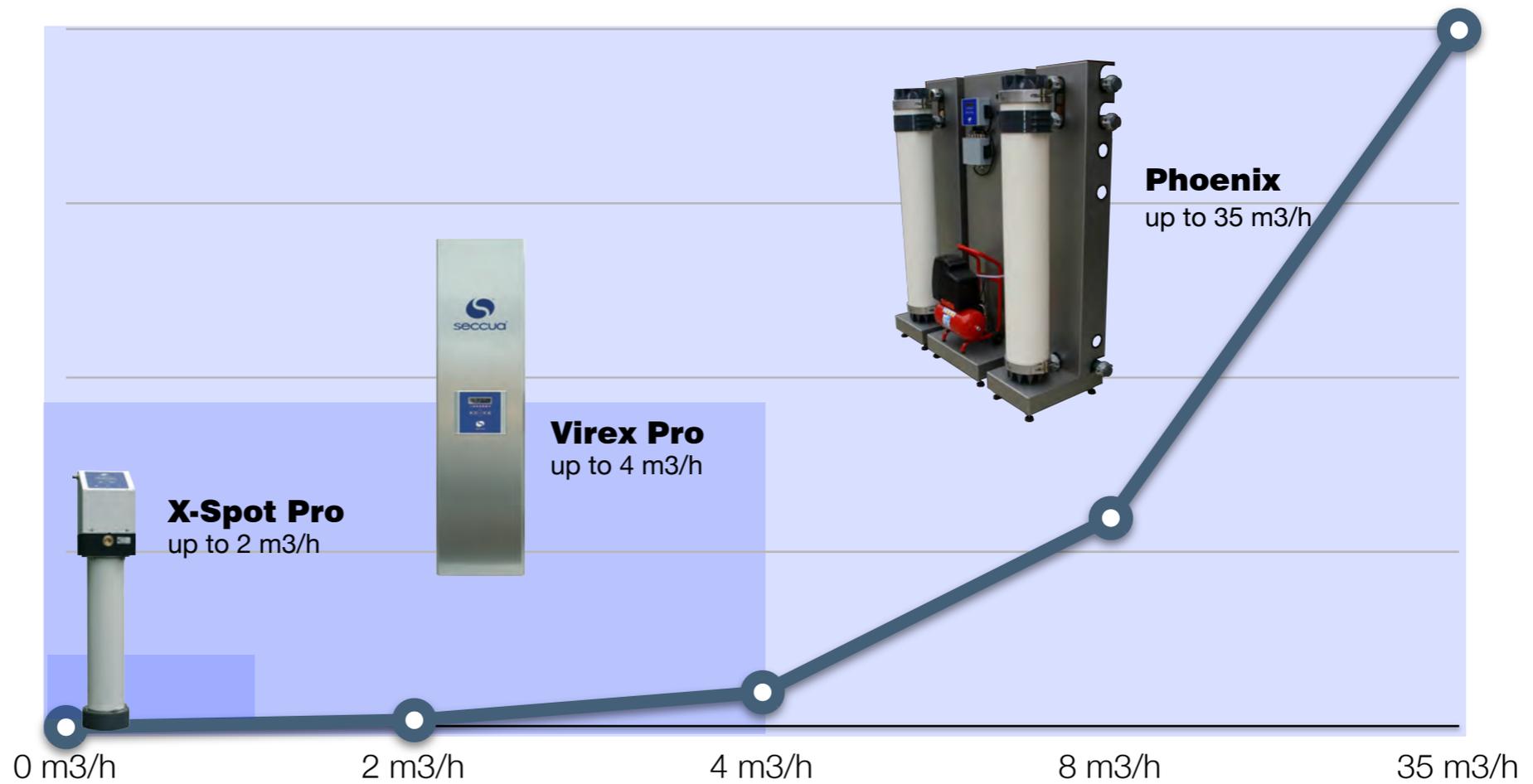
Ultrafiltration-Modules

- Surface Areas ranging from 2 to 50 m² (20 to 540 ft²)
- DVGW and NSF - approved
- ISO-conforming production
- Temperature resistant up to 60 °C (175 °F)
- Made in Germany





Products



Seccua UF Product Range

Point-of-Entry up to high-performance industrial, commercial and municipal



X-Spot Pro

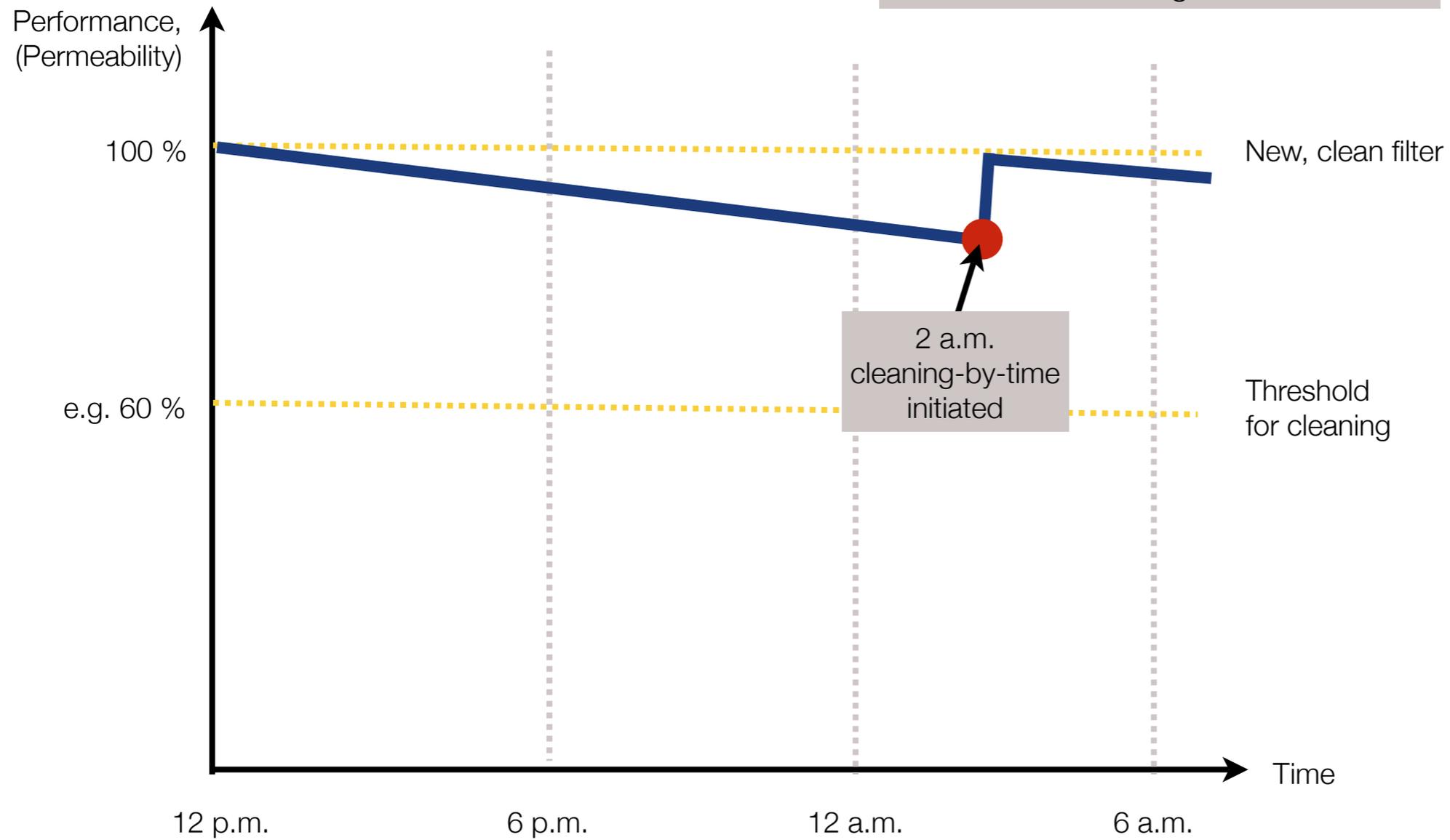
- Filtration capacity up to 15 gpm during peak loads
- Removes turbidity and pathogens, including Crypto, E-Coli and Virus
- Flushes only when fouled and required or at time-of-day
- Postpones flush when water-usage is detected.



Case A: Low turbidity

Settings:

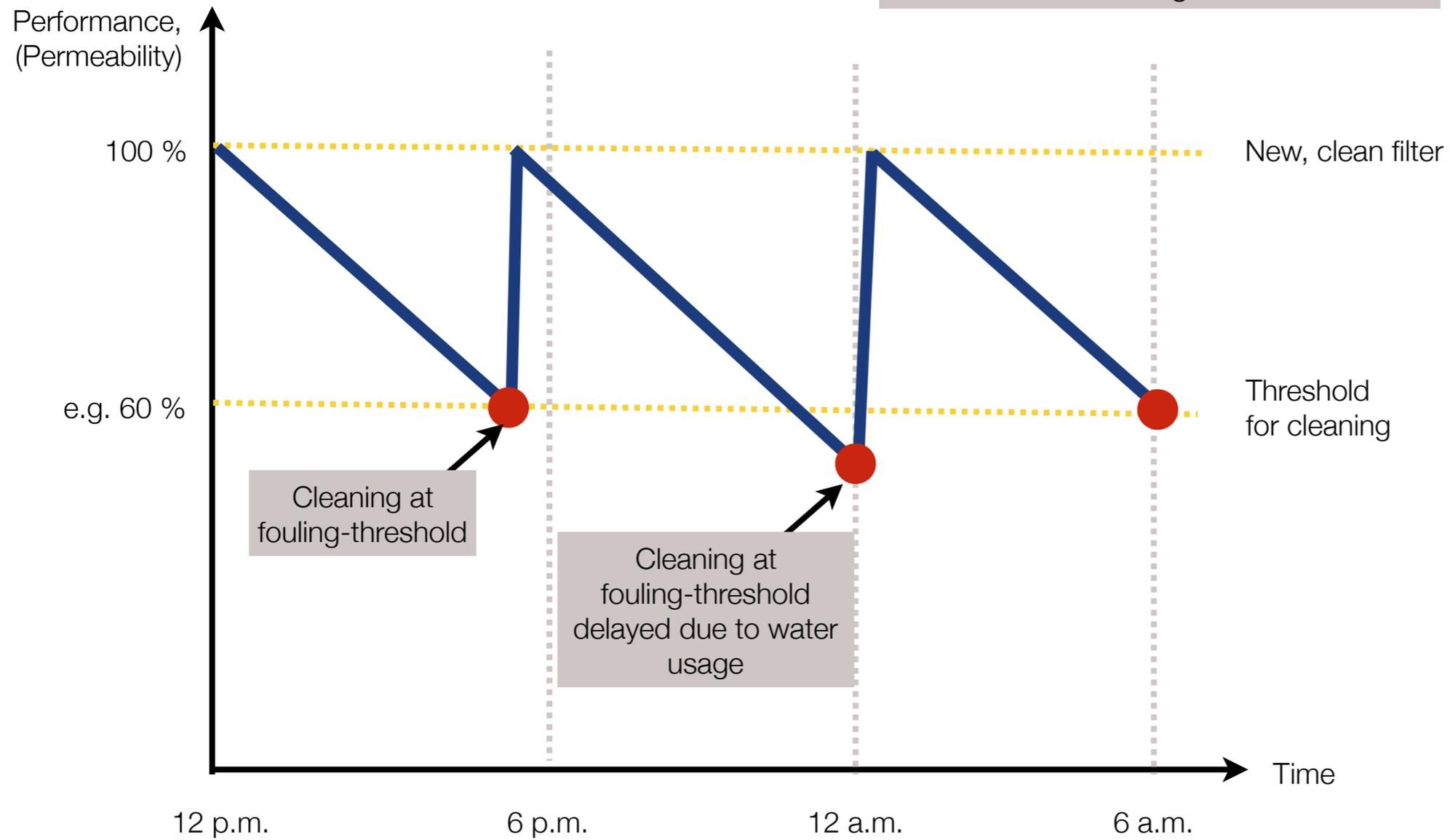
1. Minimum Filtration Duration: 4 hours
2. Cleaning at 60% of initial performance
3. Do not clean when water is used
4. Clean at 2 a.m. no matter if fouled
5. Duration of cleaning 20 seconds



Case B: High turbidity

Settings:

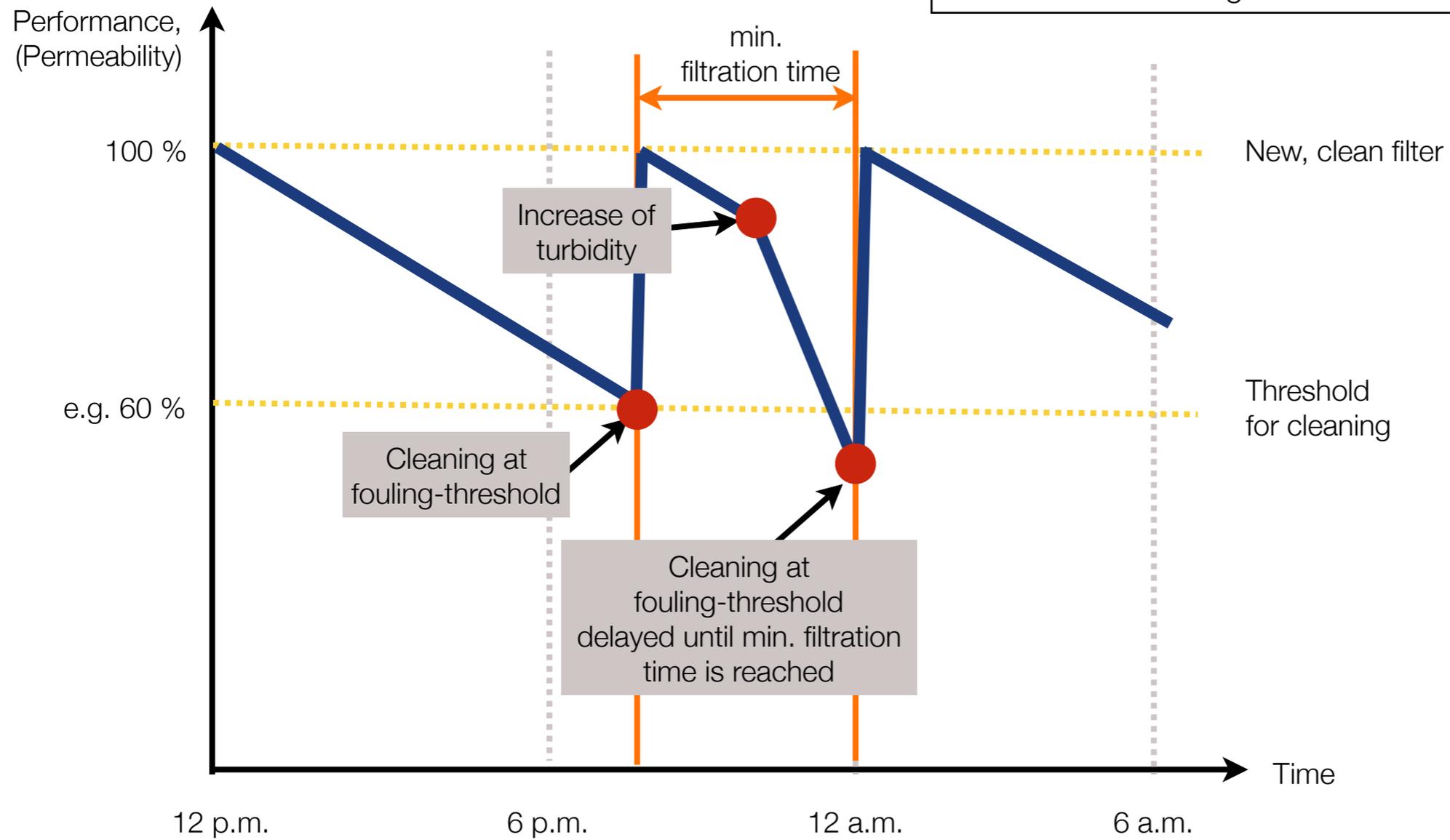
1. Minimum Filtration Duration: 4 hours
2. Cleaning at 60% of initial performance
3. Do not clean when water is used
4. Clean at 2 a.m. no matter if fouled
5. Duration of cleaning 20 seconds



Case C: High, varying turbidity

Settings:

1. Minimum Filtration Duration: 4 hours
2. Cleaning at 60% of initial performance
3. Do not clean when water is used
4. Clean at 2 a.m. no matter if fouled
5. Duration of cleaning 20 seconds

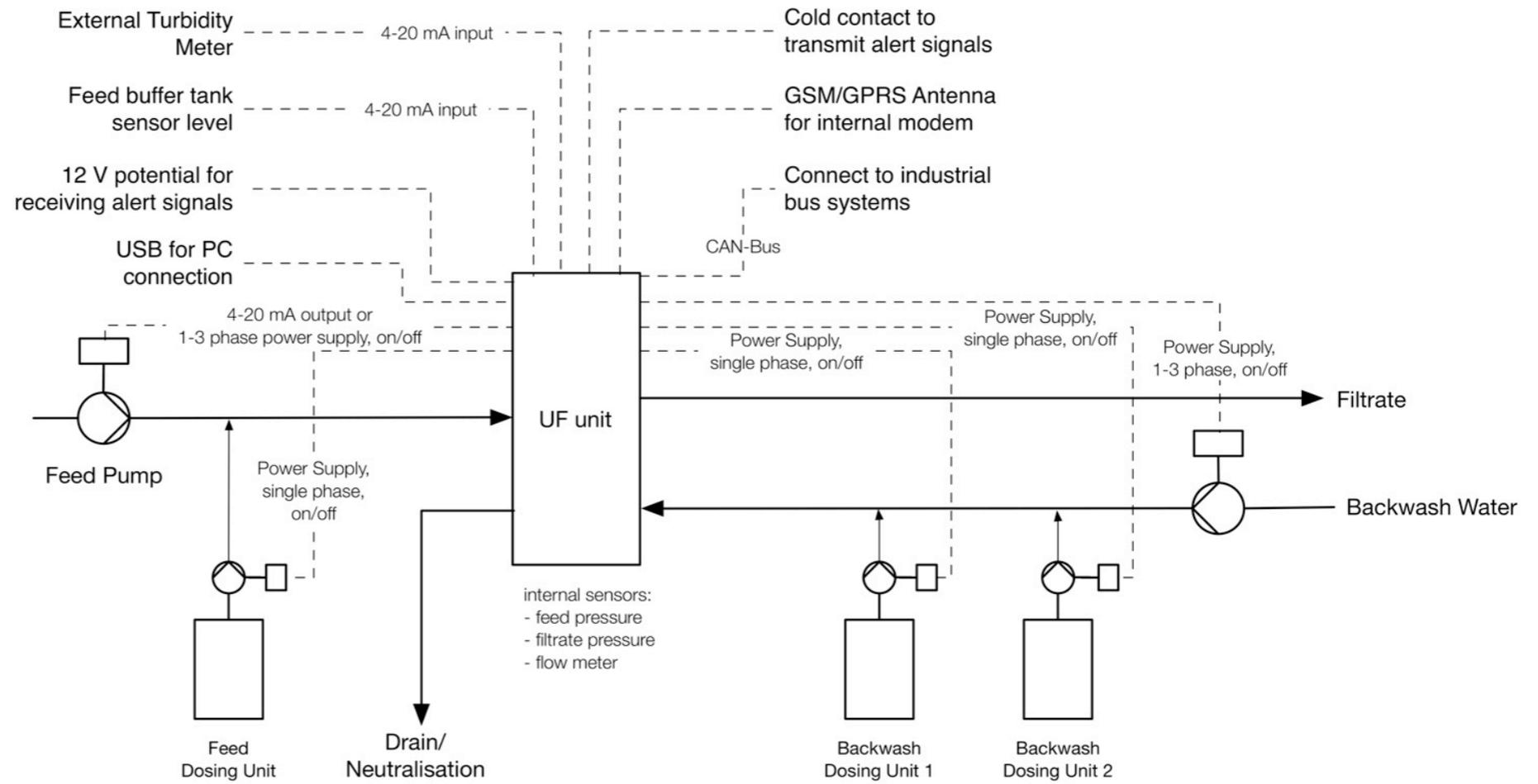




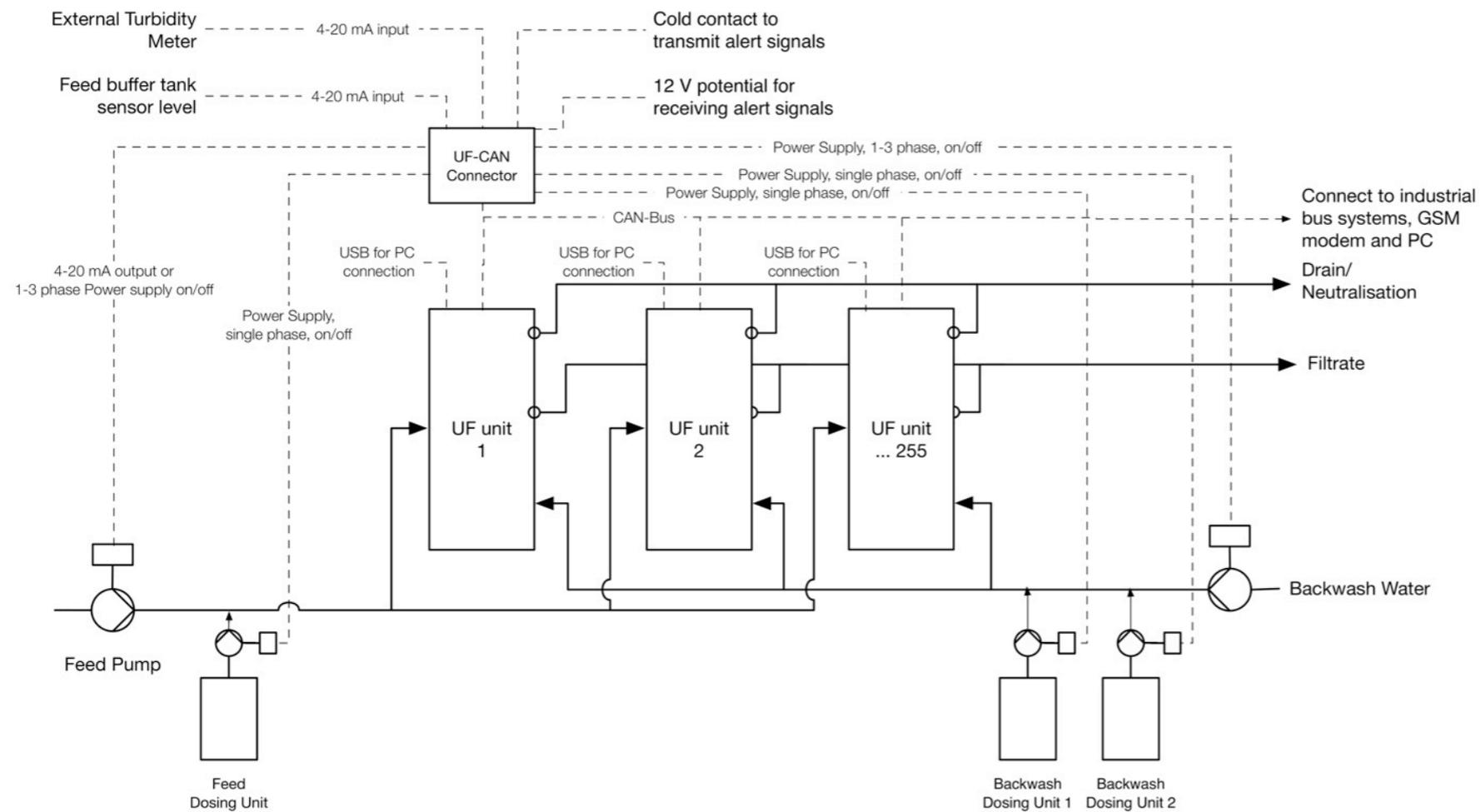
Virex Pro

- Filtration capacity up to 85 Liters per Minute
- Removes turbidity and pathogens, including Crypto, E-Coli and Virus
- Long-term safety through integrated, automatic membrane-integrity-testing
- Fully automated cleaning when membrane is fouled, if required chemically enhanced
- Controls feed-, backwash- and dosing-pumps
- SMS alert transmission and full remote control through PC software

Built in PLC



Scale up



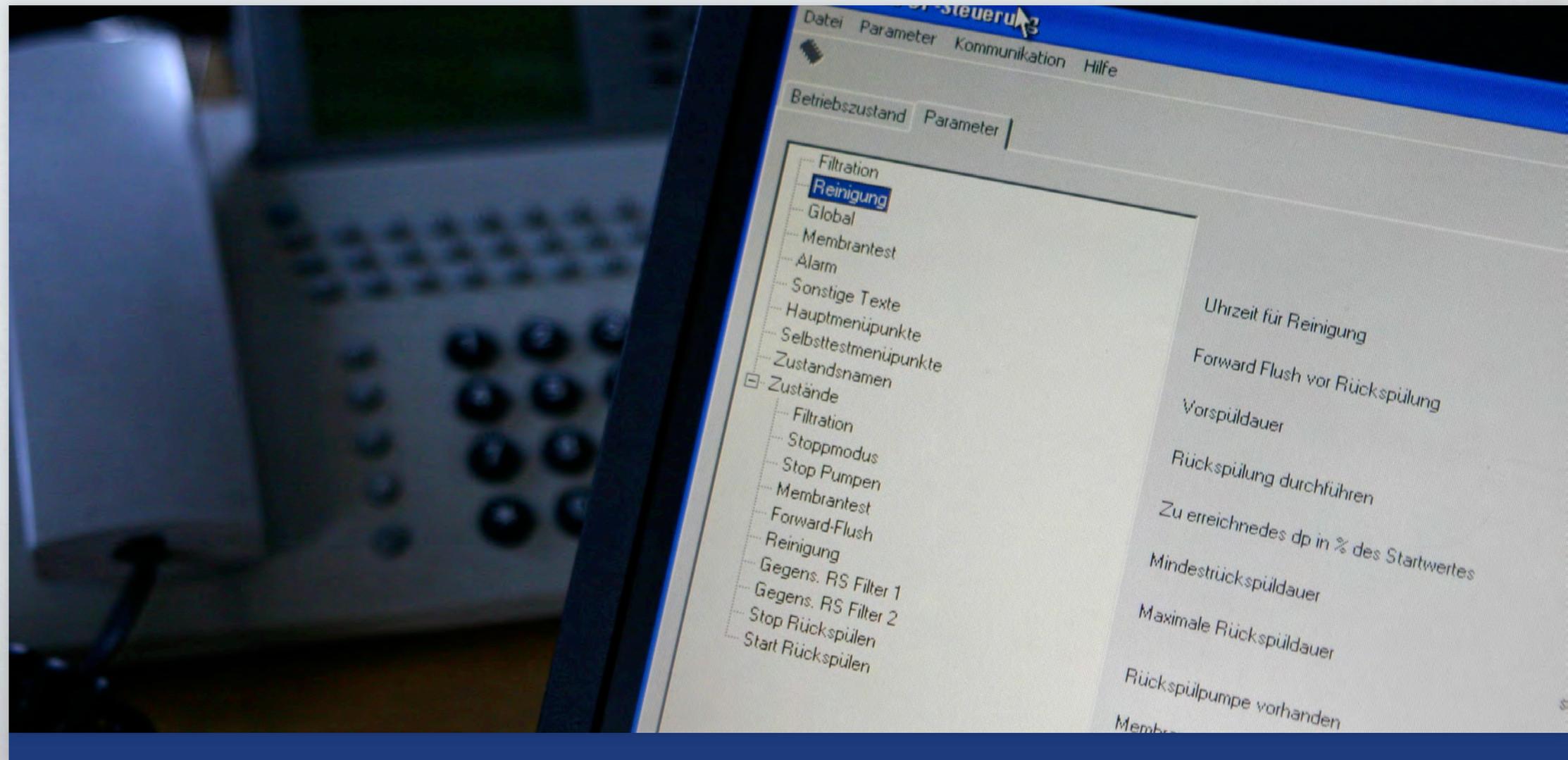


Phoenix

- Filtration capacity up to 35 m³/h
- Removes turbidity and pathogens, including Crypto, E-Coli and Virus
- Long-term safety through integrated, automatic membrane-integrity-testing
- Fully automated cleaning when membrane is fouled, if required chemically enhanced
- Controls feed-, backwash- and dosing-pumps
- SMS alert transmission and full remote control through PC software



Take full control



Unique propositions

- Certified virus removal, greater than 99,99%
- Certified bacteria and parasites removal, greater than 99,9999%
- Full removal of turbidity, independent of feed-water quality.
- Automatic adaption of cleaning-cycles to variations in feed-water-quality.
- System minimizes risk of membrane damage by too high differential pressure through smart control.
- Industrial material- and workmanship-quality for long life-time.

Unique propositions

- Integrated Membrane Integrity test grants long-term reliable removal of pathogens during operation (Virex Pro and Phoenix).
- Virex Pro and Phoenix - Series control all required peripherals, no further PLC necessary.
- Remote alert transmission and full remote access and control with Virex Pro and Phoenix controls, together with a GPRS modem.



Selected Applications





Selected Applications

- **Drinking water disinfection** in homes, commercial and industrial.
- Pathogens and algae removal in **mineral water bottling**.
- Removal of pathogens, micro-organisms and particles from **process- and ingredient-water in food-production**.
- Particle-removal and disinfection of circulating **swimming-pool water**.
- Swimming-pool **filter-backwash water treatment** for irrigation.
- **Legionella-removal** in wellness-areas, schools, hotel and industry.
- Treatment of **grey- and tertiary-wastewater**.



Benchmarking



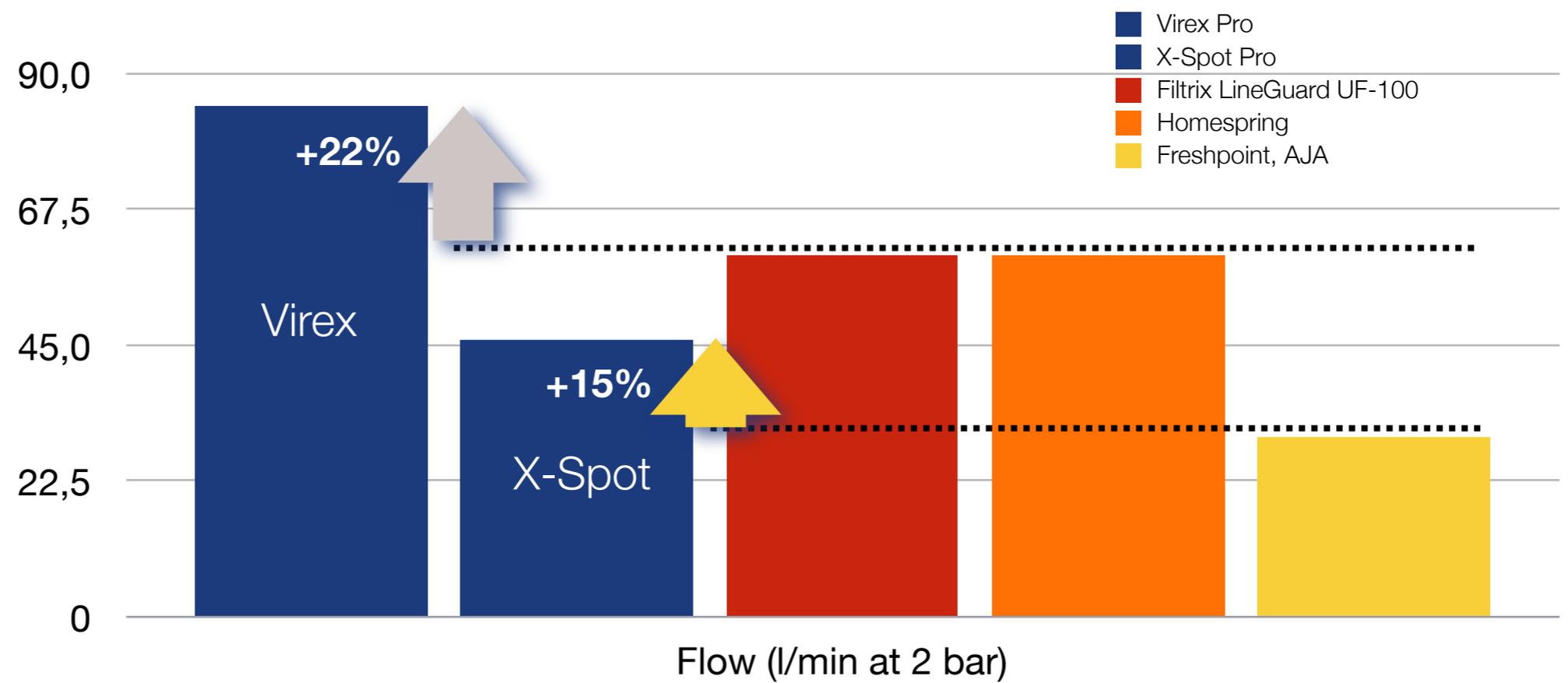


Benchmarking

	1	2	3	n.v.
Virus removal				
Fiber shock-protection				
Membrane-testing				
Comfortable automation				
Flush when fouled only				
Remote control and alert transmission				

-  Virex Pro
-  Virex Pro Phoenix
-  GE Homespring
Pentair Freshpoint
AJA UF/UFL TAP
-  Pall
-  Filtrix Lineguard

Filtrate performance





Removal performance

	Virus >25 nm	E-Coli
Seccua UF	>4 log	>6 log
AJA UF/UFL/TAP	>3,5 log	>6 log
Pentair Freshpoint	>3,5 log	>4 log

Removal rates (examples):

1.000 pathogens in Feed, rejection 4 log
= 0 pathogens in filtrate

10.000 pathogens in Feed, rejection 3 log
= 40 pathogens in filtrate

Germ in feed	1.000	10.000	100.000
2 log	10	100	1000
3 log	1	10	100
4 log	0	1	10



Cleaning and testing

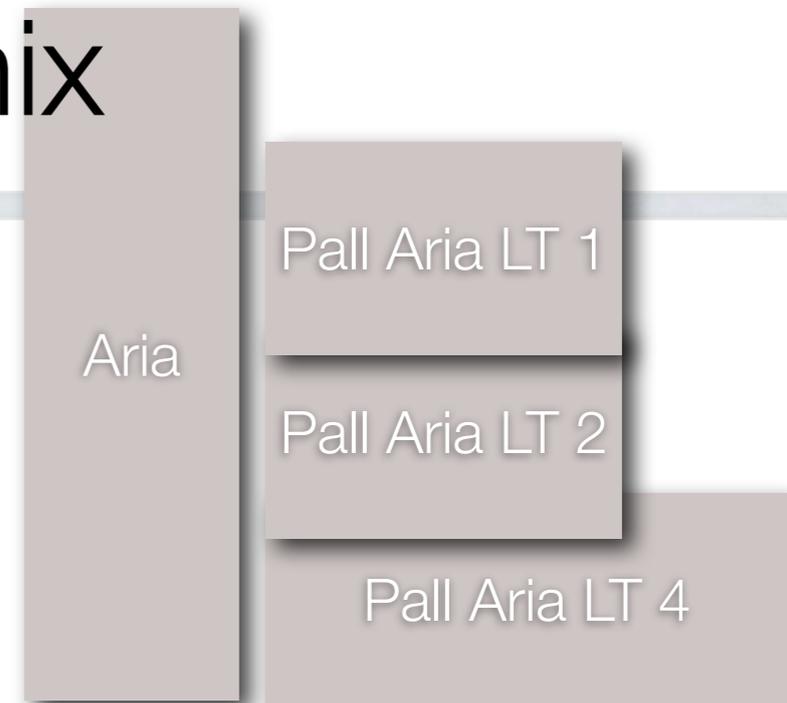
	Cleaning in place	Chemically enhanced cleaning	Membrane integrity-test
Virex Pro, Phoenix	fully automated	combined caustic/acid cleaning	fully automated and integrated
X-Spot Pro	adapting to feed-water-quality, no flush when water is used	n/v	n/v
AJA UF/UFL/TAP	fixed intervals (time or flow), frequency set to worst-case	n/v	n/v
GE Homespring	fixed intervals (time or flow), frequency set to worst-case	n/v	n/v
Freshpoint	fixed intervals (time or flow), frequency set to worst-case	n/v	n/v



Dimensions: Phoenix



Phoenix:
modular set-up, units smaller than
80x59x187 cm
**fits through every door,
can be set-up around a corner**



Pall Aria:
cannot be broken down,
133x80x260 cm
**Ceiling heights >260 cm
Doesn't fit through doors!**



Control technology

	Feed-pump	Chemical dosing	Backwash-pump	Feed-buffer-tank	Bus connection
Virex Pro	Digital or 4 - 20 mA	Feed and backwash	Digital	Feed	CAN-Bus to all standards
Phoenix	Digital or 4 - 20 mA	Feed and backwash	Digital	Feed	CAN-Bus to all standards
Pall Aria	Digital	--	Digital	--	--
Homespring	--	--	--	--	--



Monitoring and Alert-Transmission

	Alert transmission	Alarm-eingang	Remote Access	Telemetry	Data logging
Virex Pro	Cold Contact SMS	Cold Contact	Digital	via GPRS, USB, Bus	up to 90 days
Phoenix	Cold Contact SMS	Cold Contact	Digital	via GPRS, USB, Bus	up to 90 days
Pall Aria	Cold Contact	--	--	--	--
Homespring	--	--	--	--	--



Join us!