

Fields of use

Biochemistry
Chemistry
Pharmaceuticals
Molecular biology
Microbiology
Analytical methods
Clinicals
Electronics
Optics
Semiconductor
Education

Pure water

Reverse osmosis water

Series euRO

Purity, that pays for itself



Always one step ahead.



euRO basic:

Feed for laboratory ultrapure water systems, general chemistry, laboratory washing machines, water for autoclaves and environmental chambers, buffer preparation

euRO basic DI:

Feed for laboratory ultrapure water systems, general chemistry, laboratory washing machines including final rinse, water for autoclaves and environmental chambers, buffer preparation, photometry, spectrophotometry, general chemical analysis, media preparation

Robust and multi-talented

euRO basic and euRO basic DI: low budget – high result

This small and powerful system can operate directly on tap feed water. The unit proves that a reverse osmosis system doesn't have to be expensive. An optional deionization module is available to produce water with a conductivity of <math>< 0.1 \mu\text{S/cm}</math>. The purified water is suitable for most analytical laboratory work. RO product water is stored in special pressure tanks. These storage tanks provide a secure supply of water under limited high-demand requirements. The system can operate with no inlet water pressure. There is also no need for a product water delivery pump. The integrated reverse osmosis pump provides pressure for the reverse osmosis process and the distribution of the purified water. The storage tanks instantly provide water at high volume and pressure for lab glassware washers and other requirements.

The clear advantage at a glance:

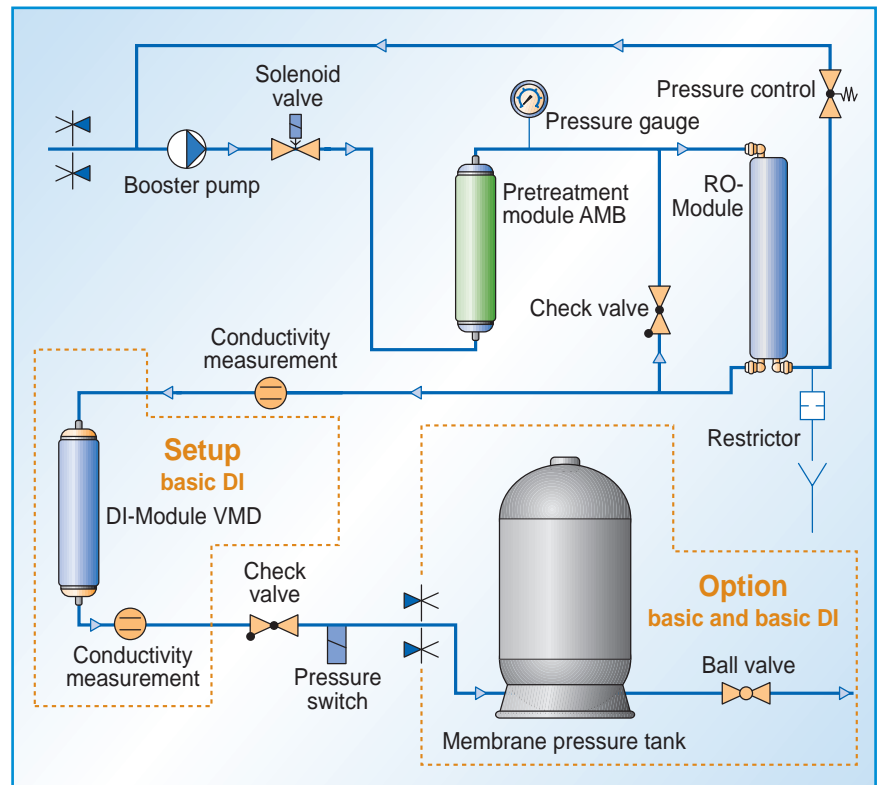
- Robust
- Space-saving



Type euRO		basic	basic DI
Product water performance			
Production rate at 15°C	LPH	7	7
Rejection rate	%	95 – 98	95 – 98
Conductivity at 25°C	$\mu\text{S/cm}$	–	< 0.1
Feed water specification			
Feed water pressure	bar	0 – 5	0 – 5
Feed conductivity	$\mu\text{S/cm}$	< 1400	< 1400
Colloid Index	SDI	< 3	< 3
Free Chlorine and Fe	mg/l	< 0.5	< 0.5
Shipping weight	kg	20	21
Power supply	V/Hz	110 – 230 / 50 – 60	
Power consumption	kWh	0.05	0.05
Dimensions: H/W/D	mm	530 / 340 / 320	
Catalogue Number		3000-3	3000-4

- Ease of use
- Large pre purification module
- Digital control unit
- All euRO...DI units include a polishing module
- Plug and play operation
- Long membrane life through optimized membrane flushing
- No inlet pressure required
- Quality control of permeate in all euRO systems
- RO membranes provide a bacteria and particle removal of > 99 %

Flowsheet euRO basic / DI



Consumables euRO basic / euRO basic DI

Item	Change frequency	Cat. No.
DI Module VMD (euRO basic DI)	3-monthly*	2050
Pretreatment Module AMB	6-monthly*	2057
RO-Module	2-3 years	03303

* Cartridge exchange may be more frequent. Subject to feed water quality and consumption.

Permeate pressure tanks:

- Food safe membrane made of PE, double-welded
- Permeate pressure up to 3 bar
- Volumes from 30 l up to 70 l.
- Security base for sturdy footing
- Permeate pump not required

Storage tank type		15	60
Usable volume at 1 – 3 bar	<i>l</i>	10	30
Pressure	<i>bar</i>	0 – 5	0 – 6
Connection	<i>inch</i>	1/4	3/4
Shipping weight	<i>kg</i>	4	7
Diameter / height	<i>mm</i>	270 / 410	410 / 680
Catalogue Number		3332	3333

All types:

Feed for laboratory ultrapure water systems, general chemistry, laboratory washing machines, feed for autoclaves and climate chambers, buffer preparation

Economical and environmentally friendly

All needs in one size.

You create your own system.

The euRO series produces high quality water with very low energy consumption.

The use of „low energy“ membranes provide very efficient and economical operation.

High quality material standards guarantee long service life.

SG's little „muscle man“ utilizes the newest pump technology, which runs without the traditional e-motor, and operates nearly noiseless (euRO 20–100). Due to an integrated automatic membrane rinse cycle, in many cases, the systems can operate on untreated city water. Recovery rates up to 75 % are possible with optional water softening. Product water recovery is set to an astounding 50 % from the factory, therefore, euRO systems also conserve water.

Most systems on the market have less than 20 % recovery.

Automatic, user-friendly maintenance alerts notify the operator when system service is required.



Type euRO...		10	20	40	60	80	100	200	350
Product water performance									
Production rate at 15°C	<i>LPH</i>	10	20	40	60	80	100	200	350
Rejection rate	%	98–99	98–99	98–99	98–99	98–99	98–99	98–99	98–99
Rejection rate for bacteria	%	>99	>99	>99	>99	>99	>99	>99	>99
Rejection rate for particles	%	>99	>99	>99	>99	>99	>99	>99	>99
Feed water specification									
Feed water pressure	<i>bar</i>	0–5	2–6	2–6	2–6	2–6	2–6	2–6	2–6
Feed conductivity	<i>µS/cm</i>	< 1400	< 1400	< 1400	< 1400	< 1400	< 1400	< 1400	< 1400
Colloid Index	<i>SDI</i>	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Free Chlorine and Fe	<i>mg/l</i>	< 0.5	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Shipping weight	<i>kg</i>	22	25	27	29	31	33	67	75
Power consumption	<i>kWh</i>	0.05	0.2	0.2	0.2	0.2	0.2	0.55	0.55
Power supply	<i>V/Hz</i>	110–230/50–60							
Dimensions: H/W/D	<i>mm</i>	530/340/320			535/340/420			1320/340/420	
Catalogue Number		3000	3001	3002	3003	3004	3005	3006	3007

Storage tanks are recommended for the RO systems to provide additional water volume during times of high demand. The storage tank can also be used to supply water for other lab equipment. The storage tank allows higher volumes of water to be used for short periods that would otherwise be limited to the RO system production rate.

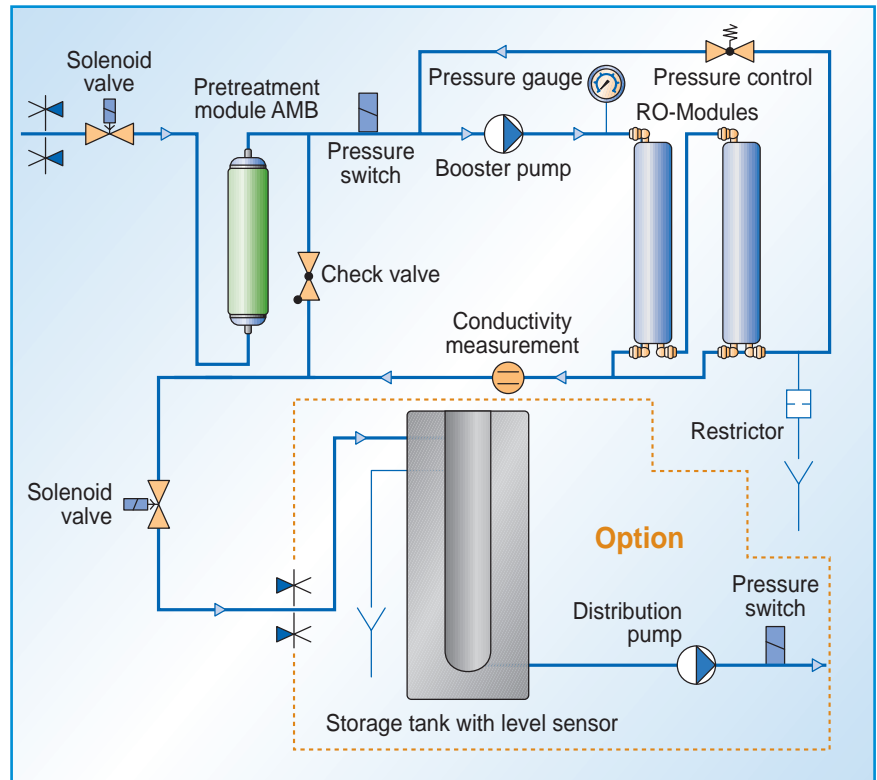
A storage tank basically guarantees that water is available when needed.

The proper storage tank size and system configuration will be recommended by SG based on application and water volume requirements to ensure optimum service from the equipment.

Standard tanks are available in 30, 60 and 80 liter sizes. Optional tanks of up to 3,000 liters are also available.

Detailed information about the standard tanks is available in the tank section of this brochure.

Flowsheet euRO



Consumables euRO

Item	Change frequency	Cat. No.
Pretreatment Module AMB*	6-monthly**	2057
RO-Module for euRO 10, 1 x	2 – 3 years	2083
RO-Module for euRO 20 ... 100***	2 – 3 years	31019
RO-Module for euRO 200, 1 x	3 – 5 years	2076
RO-Module for euRO 350, 2 x	3 – 5 years	2076

* euRO 200 and 350: 2 Pretreatment Modules AMB per unit required.

** Cartridge exchange may be more frequent. Subject to feed water quality and consumption.

*** Number is depending on system size.

Accessories for tanks
please see page 17



euRO with 80 l tank.



euRO with 30 l tank.



euRO with 60 l tank.

All types:

Feed for laboratory ultrapure water systems, general chemistry, laboratory washing machines including final rinse, feed for autoclaves and climate chambers, buffer preparation, photometry, spectrophotometry, media preparation

euRO...DI – final ion exchange polishing

Type II water – you select the system size.

High quality – low price.

The euRO system delivers permeate water with a salt reduction of approximately 98 %.

The euRO...DI unit will polish the RO permeate to a quality of <0.1 µS/cm. At a 98 % rejection rate, the RO permeate water that originated from a 400 µS/cm feed water source would still have a conductivity of about 8 µS/cm. The euRO...DI system polishes this water to <0.1 µS/cm.

The deionization module is delivered with the euRO...DI unit. These modules are directional and will require replacing at a frequency dependant of feed water quality and water consumption. A changing interval of about 3 months is typical. The DI modules are a lower cost

alternative to the electro-deionization systems – our EI-Ion® product family.

The high quality resin used in our DI module combines mechanical stability



euRO DI with 30 l tank.



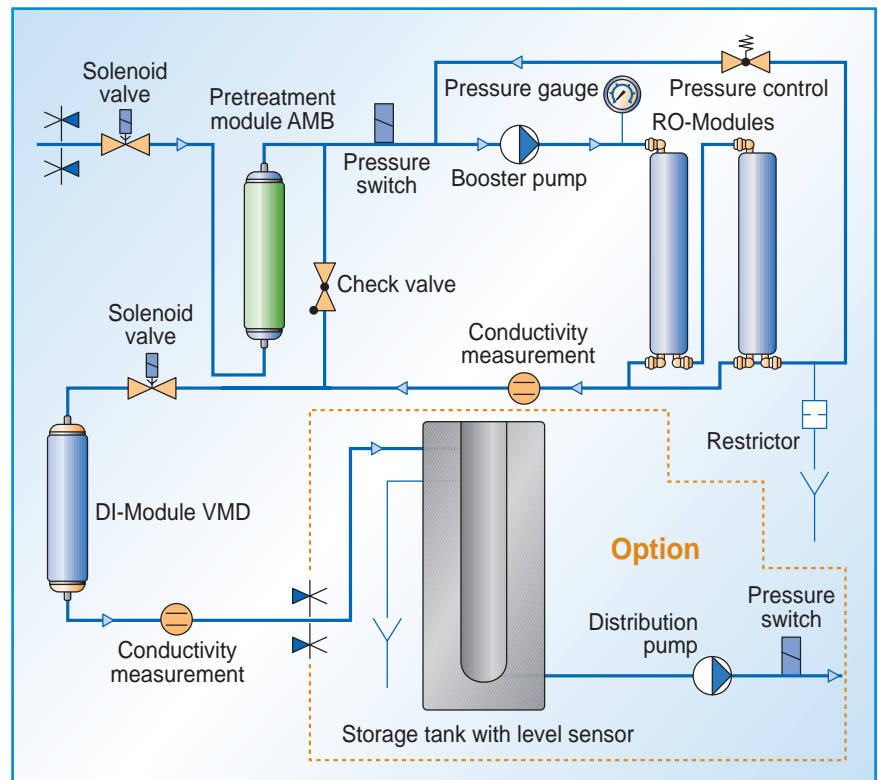
euRO DI with 60 l tank.

Typ euRO...DI		10	20	40
Product water performance				
Production rate at 15°C	LPH	10	20	40
Rejection rate (RO)	%	98 – 99	98 – 99	98 – 99
Conductivity at 25°C	µS/cm	< 0.1	< 0.1	< 0.1
Rejection rate for bacteria	%	> 99	> 99	> 99
Rejection rate for particles	%	> 99	> 99	> 99
Feed water specification				
Feed water pressure	bar	0 – 5	2 – 6	2 – 6
Feed conductivity	µS/cm	< 1400	< 1400	< 1400
Colloid Index	SDI	< 3	< 3	< 3
Free Chlorine and Fe	mg/l	< 0.5	< 0.1	< 0.1
Shipping weight	kg	23	26	28
Power consumption	kWh	0.05	0.2	0.2
Power supply	V/Hz	110 – 230/50 – 60		
Dimensions H/W/D	mm	530/340/320	535/340/420	
Catalogue Number		3000-DI	3001-DI	3002-DI

and a low TOC content for low organic applications.

A euRO system with DI module delivers water with a quality which fulfills the needs of most laboratory requirements.

Flowsheet euRO DI



Consumables euRO DI

Item	Change frequency	Cat. No.
Pretreatment Module AMB	6-monthly*	2057
RO-Module for euRO 10 DI, 1 x	2 – 3 years	2083
RO-Module for euRO 20 DI, 40 DI**	2 – 3 years	31019
DI Module VMD	3-monthly*	2050

* Cartridge exchange may be more frequent. Subject to feed water quality and consumption.

** Number is depending on system size.



Deionization module VMD.

Accessories for tanks please see page 17

All types

Feed for laboratory ultrapure water systems, general chemistry, laboratory washing machines including final rinse, feed for autoclaves and environmental chambers, buffer preparation, photometry, spectrophotometry, general chemical analysis, media preparation, protein electrophoreses, microbiological media preparation, cytology and histology work, electrophoreses

Huge advantage with a small system!

High water quality on a constant level.

No DI cartridge change, no chemicals used.

The successful euRO...plus series combines leading edge technology and modern design. The „plus“ stands for the high quality purified water produced by the El-Ion® cells combined with proven reverse osmosis technology.

The euRO...plus is characterized by low energy consumption, high-product water yield, and economical operation.

The latest pump technology with an almost silent motor, is another highlight of our euRO...plus systems. As pioneers in the electro-deionization field, we can make your decisions easy.

El-Ion® cells do not require regeneration chemicals as do mixed bed ion exchangers. The SG El-Ion systems use less rinse water than competitive systems. The results are impressive. Con-

ductivity down to < 0.060 µS/cm, TOC values down to < 10 ppb and significant bacteria reduction, set new standards for electro-deionization.

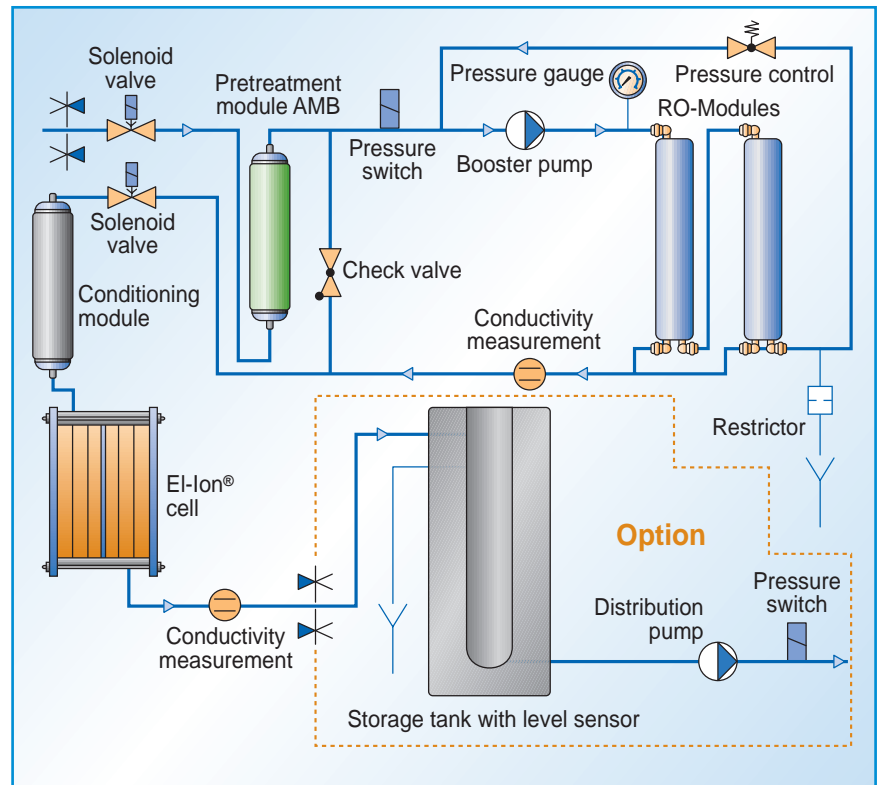


Type euRO...plus		5	10	20	40	55	75
Product water performance							
Production rate at 15°C	LPH	5	10	20	40	55	75
Conductivity at 25°C	µS/cm	0.06 – 0.2	0.06 – 0.2	0.06 – 0.2	0.06 – 0.2	0.06 – 0.2	0.06 – 0.2
Resistivity at 25°C	MΩ-cm	5 – 17	5 – 17	5 – 17	5 – 17	5 – 17	5 – 17
TOC	ppb	5 – 20	5 – 20	5 – 20	5 – 20	5 – 20	5 – 20
Feed water specification							
Feed water pressure	bar	0 – 5	0 – 5	2 – 6	2 – 6	2 – 6	2 – 6
Feed conductivity	µS/cm	< 1400	< 1400	< 1400	< 1400	< 1400	< 1400
Hardness	°dH	< 20	< 20	0	0	0	0
Colloid Index	SDI	< 3	< 3	< 3	< 3	< 3	< 3
Free Chlorine and Fe	mg/l	< 0.5	< 0.5	< 0.1	< 0.1	< 0.1	< 0.1
CO ₂ max.	mg/l	< 20	< 20	< 20	< 20	< 20	< 20
Shipping weight	kg	39	40	41	45	46	47
Power consumption	kWh	0.1	0.1	0.25	0.25	0.3	0.3
Power supply	V/Hz	110 – 230/50 – 60					
Dimensions: H/W/D	mm	530/340/320			538/340/420		
Catalogue Number		3401	3402	3403	3404	3406	3408

Flowsheet euRO plus



euRO plus with 80 l tank.



Consumables euRO plus

Item	Change frequency	Cat. No.
Pretreatment Module AMB	6-monthly*	2057
Conditioning Module	Change frequency depends on water hardness and amount of used water. If the hardness in front of the RO-Module is 20° dH the average amount is 7,000 l before the conditioning module has to be changed.	2062
RO-Module for euRO 5 ... 10 plus, 1x	2-3 years	2083
RO-Module for euRO 20 ... 75 plus**	2-3 years	31019

* Cartridge exchange may be more frequent. Subject to feed water quality and consumption.

** Number is depending on system size.

Accessories for tanks please see page 17



Changing of cartridges is very easy.



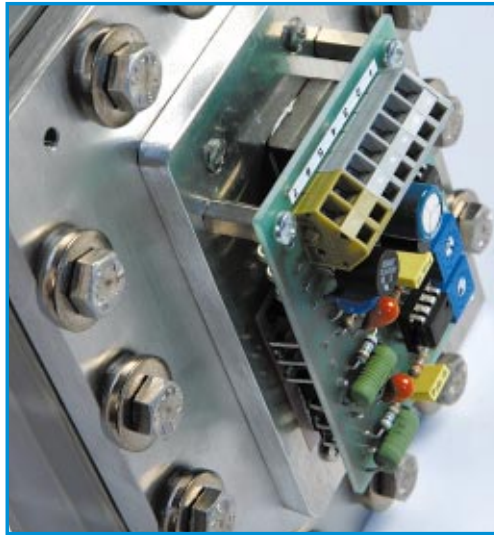
Conditioning module.

Leading technology everywhere you look

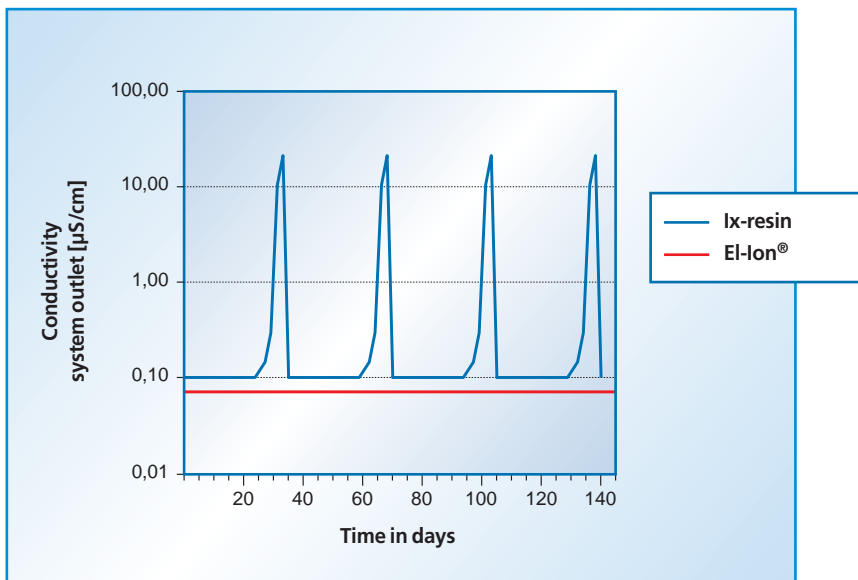
Constant water quality, no DI cartridge change.

Low TOC levels directly from El-Ion® technology.

This electro-deionization process, which makes it possible to greatly improve the quality of the reverse osmosis permeate, was invented and patented at the Jülich research center. As licensees of this technology, at SG, we have developed the process to the highest industry standards. Since 1994, the technology has been identified under our brand name El-Ion®. This unique technology has the ability to reduce bacteria, oxidize TOC, and handle higher than normal CO₂ levels. There is no other product as capable and compact as the euRO...plus.



Comparison Ix-Resin / Electro-deionization



Comparison: Ion exchange and electro-deionization El-Ion®

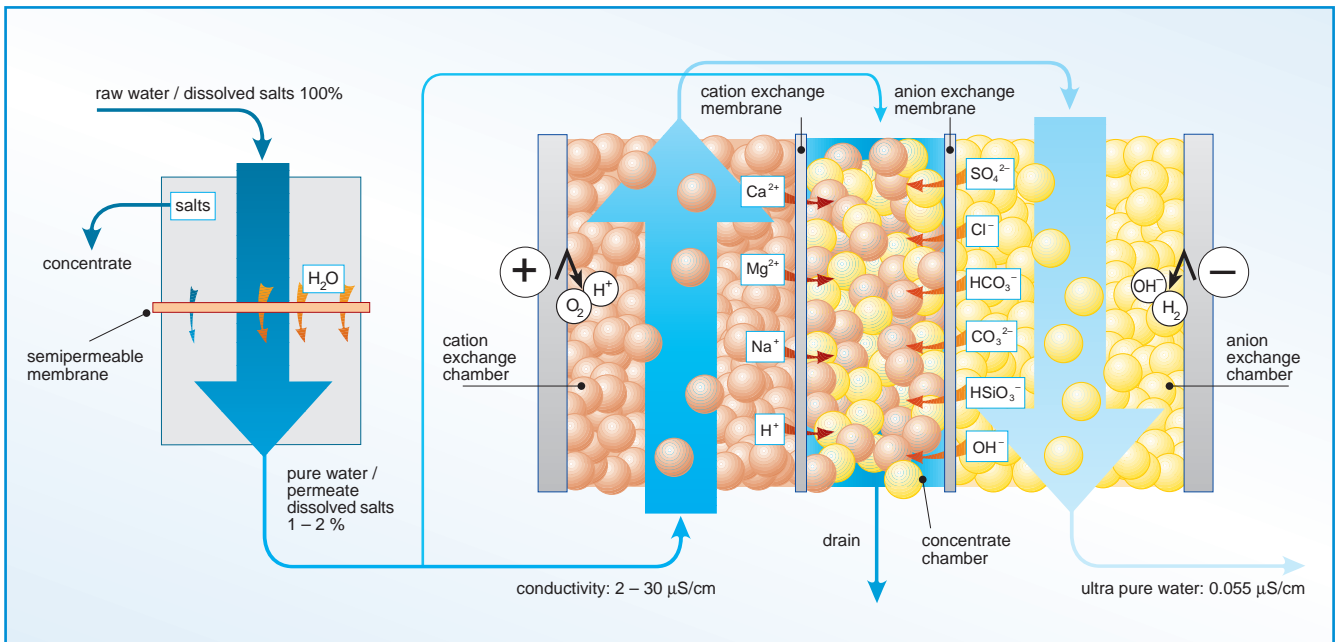
This diagram shows clearly what modern technology can do.

When a mixed bed polishing module is used, the conductivity of the product water increases during normal operation and exhaustion. The resin has to be changed or regenerated if the maximum acceptable conductivity is reached.

If using El-Ion® electro-deionization, the product water quality is constantly at the highest level.

No regeneration, no quality variation. Simply high quality water at any time.

The principle of the EI-Ion[®] cell



EI-Ion[®]

Our electro-deionization process utilizes resin chambers in a single bed configuration to further deionize the water. Microbiological analysis has proven a remarkable reduction in the number of bacteria with high CFU counts in the feed water. The electrodes that contact the resin create an electric potential in the water that is unsuitable for bacteria to live in. The intermediate pH shift in the cells creates a positive effect for the removal of SiO₂ and CO₂.

An added advantage of electro-deionization is continuous operation. The resin is continually regenerated without the use of any acids or alkali. The energy consumption of this process is very low and serves as an advantage for the environment. No chemicals and low power consumption.



EI-Ion[®], pure water output 5 l/h.



EI-Ion[®], pure water output 10 l/h.



EI-Ion[®], pure water output 40 to 75 l/h.

Feed for auto analyzers including products from: Abbott, Boehringer, Coulter-Beckman, Hitachi, Olympus, Roche and others.

The specialist when it comes to purified water!

Water purification systems for clinical analyzers

Clinical Analyzers can only perform precise and repeatable tests if the feed water supplied to them is of the highest quality. Tap water contains different impurities like salt, organics, particles, silica and bacteria that can interfere with the analyzer test results. This is why an ANALYZER FEED UNIT is so important for tap water purification.

The AFU unit from SG utilizes multiple technologies to produce consistently pure water at flow rates of 10 and 20 LPH.

All systems combine a pre-purification module, RO membranes, a polishing mixed bed cartridge, a sterile filter and a UV disinfection chamber. A pump maintains proper circulation of the wa-

ter to ensure the highest quality water is available for the analyzer.

The units are available with 30 and 60 liter tanks constructed of virgin

Analyzer Feed Units



Type euRO...AFU		10 / 30l	10 / 60l	10 / 80l	20 / 30l	20 / 60l	20 / 80l
Product water performance							
Production rate at 15°C	LPH	10	10	10	20	20	20
Pump performance	l/min	0.5	0.5	0.5	0.5	0.5	0.5
with counter pressure	bar/PSI	2.5/40	2.5/40	2.5/40	2.5/40	2.5/40	2.5/40
Conductivity at 25°C	µS/cm	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Resistivity at 25°C	MΩ-cm	> 10	> 10	> 10	> 10	> 10	> 10
Typical TOC-level	ppb	< 30	< 30	< 30	< 30	< 30	< 30
Bacteria	CFU/ml	< 1	< 1	< 1	< 1	< 1	< 1
Particles > 0.2 µm	per ml	< 1	< 1	< 1	< 1	< 1	< 1
Feed water specification							
Feed water pressure	bar	0-5	0-5	0-5	0-5	0-5	0-5
Feed conductivity	µS/cm	< 1400	< 1400	< 1400	< 1400	< 1400	< 1400
Colloid Index	SDI	< 3	< 3	< 3	< 3	< 3	< 3
Free Chlorine and Fe	mg/l	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
Shipping weight	kg	34	38	50	35	39	51
Power consumption	kWh	0.08	0.08	0.08	0.08	0.08	0.08
Power supply	V/Hz	110 - 230/50 - 60					
Dimensions: H/W/D	mm	530/640/320	530/900/320	1340/340/515	530/640/320	530/900/320	1340/340/515
Catalogue Number		3101	3100	3100/80	3103	3102	3102/80

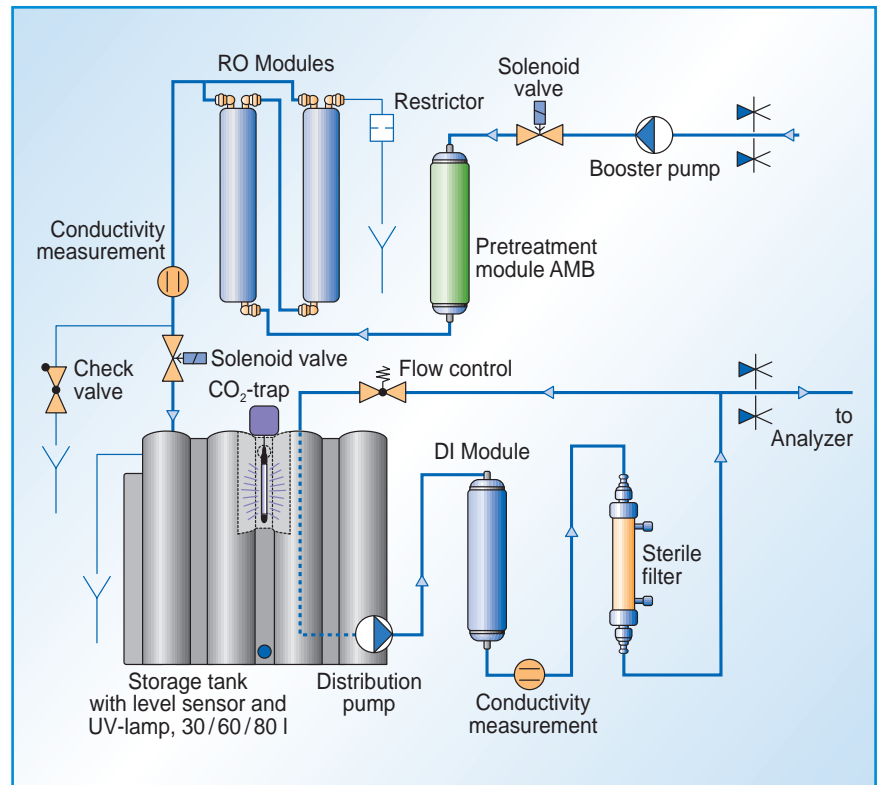
polypropylene. All parts which are in contact with the pure water are made of inert materials to secure the highest water quality.

Water quality meets or exceeds standards set by the, NCCLS Type I and ISO 3696. The product water pressure is 2 bar (29.4 psig). All systems include an RS 232 interface.



euRO AFU with larger output available on request.

Flowsheet euRO AFU



Consumables euRO AFU

Item	Change frequency	Cat. No.
Pretreatment Module AMB	6-monthly*	2057
DI Module VMD	3-monthly*	2050
0,2 µm inline filter 1860 cm ²	6 monthly	2052
Vent Filter VF 1, replacement cartridge	yearly	80823
CO ₂ Trap CT1, replacement cartridge	yearly	3502
UV-Replacement bulb (115 V / 60 Hz)	yearly	07447-1
UV-Replacement bulb (230 V / 50 Hz)	yearly	2593-1
RO-membrane**	2 – 3 years	2083

* Cartridge exchange may be more frequent. Subject to feed water quality and consumption.

** 2 pieces in euRO 20 AFU.

Accessories

Item	Cat. No.
Vent Filter VF 1 (2") to eliminate airborne contamination. Complete installation kit for use in 30 and 60 liter tanks only.	3510
CO ₂ Trap CT 1 (2") to eliminate airborne contamination including CO ₂ from the incoming air. Complete installation kit for use in 30 and 60 liter tanks only.	3501



Vent filter.



CO₂ trap.

Accessories for tanks please see page 17

All Types:
Feed for clinical
Autoanalyzers*

Also for: buffer preparation,
photometry, media preparation,
cytology and histology work,
elektrophoresis,
general chemistry

*including products from:
Abbot, Boehringer, Coulter-
Beckman, Hitachi, Olympus,
Tecan, Roche and others

From tap water to the highest pure water quality for clinical analyzers

Low running cost – constant water quality

In order to ensure precise and accurate data from a Clinical Analyzer, it is essential to have a constant supply of high quality purified water for the instrument. The SG Analyzer Feed Units (AFU) have been conceptually designed to deliver purified water for years. You should expect a conductivity range of 0.06–0.2 $\mu\text{S}/\text{cm}$ without the extreme fluctuations in quality typically observed with deionizer cartridges. The Analyzer Feed Units are capable of producing purified water with a TOC value < 30 ppb for the most demanding clinical applications.

To assure continuous water quality, all main purifying components and parts

that are in direct contact with the product water are made of high quality plastic, Teflon and SS. This reduces or elim-



Analyzer Feed Units



euRO AFU / El-Ion® with 80 l tank.

Type euRO... AFU / El-Ion®		10	20
Product water performance			
Output at 15°C	LPH	10	20
Product water	l/min	0,5	0,5
Conductivity at 25°C	$\mu\text{S}/\text{cm}$	0.06 – 0.2	0.06 – 0.2
Resistivity at 25°C	$M\Omega\text{-cm}$	5 – 16.7	5 – 16.7
Typical TOC-level	ppb	< 30	< 30
Bacteria	CfU/ml	< 1	< 1
Particle > 0,2 μm	per ml	< 1	< 1
Feed water specification			
Feed water pressure	bar	0.1 – 5	0.1 – 5
Feed conductivity	$\mu\text{S}/\text{cm}$	< 1400	< 1400
Colloid Index	SDI	< 3	< 3
Free Chlorine and Fe	mg/l	< 0.2	< 0.2
Shipping weight 30 l / 60 l / 80 l kg			
		34 / 38 / 50	35 / 39 / 51
Power supply	V/Hz	100 – 240 / 50 – 60	
Dimensions: H/W/D 30 l tank	mm	530 / 640 / 320	
Dimensions: H/W/D 60 l tank	mm	530 / 900 / 320	
Dimensions: H/W/D 80 l tank	mm	1340 / 340 / 515	
Catalogue No. 30 l tank		3101-E	3103-E
Catalogue No. 60 l tank		3100-E	3102-E
Catalogue No. 80 l tank		3100-E/80	3102-E/80

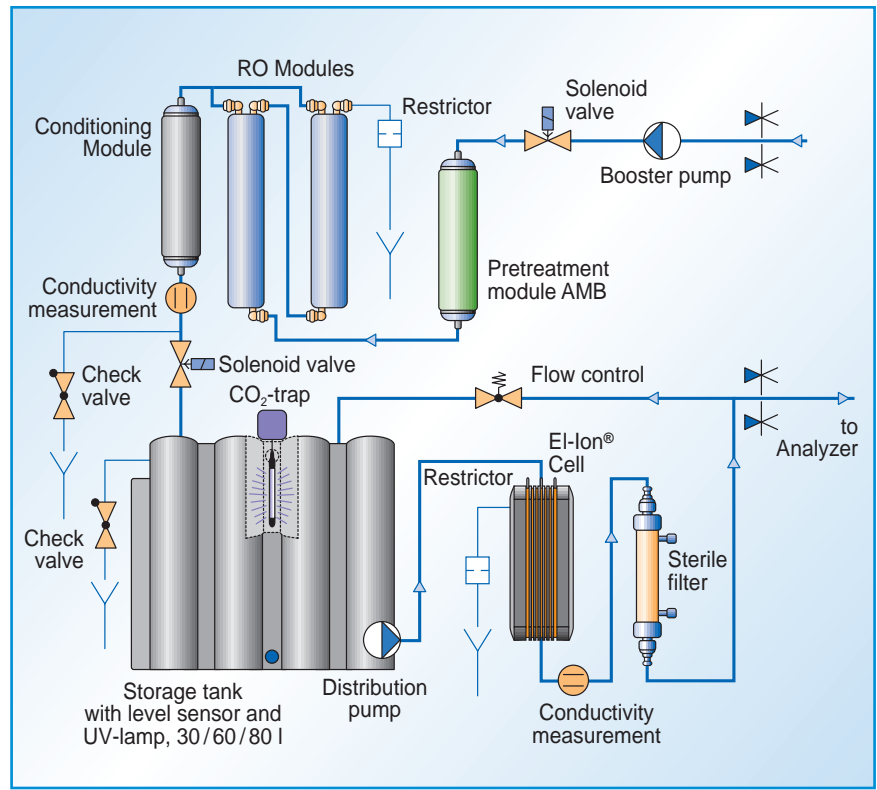
inates the potential for contaminants to leach into the water stream from the plumbing. Water is continuously re-circulated within the system to maintain the highest quality on demand. The integrated booster pump provides up to 2 bar (30-psi) of water delivery pressure. The pure water quality exceeds the NCCLS Type 1, ISO 3696 Grade 1, ASTM D1193 Type III standards.

The „Analyzer-Feed-Units“ come with storage tanks of 30, 60 or 80 l capacity and can be directly connected to tap water. The reverse osmosis systems produce 10 or 20 l/h. Product water flow rate is 0.5 l/min. All storage tanks are made of FDA grade polyethylene.

A CO₂-trap, sterile filter, UV-disinfecter and germ barrier for the overflow are included.

These units can either be bench or wall mounted. Optionally, a wall assembling set for the 30 and 60 l storage tank can be delivered.

Flowsheet euRO AFU / EI-Ion®



Consumables euRO AFU / EI-Ion®

Item	Change frequency	Cat. No.
Pretreatment Module AMB	6-monthly*	2057
Conditioning Module	Change frequency depends on water hardness and amount of used water. If the hardness in front of the RO-Module is 20° dH the average amount is 7,000 l before the conditioning module has to be changed.	2062
0,2 µm inline filter 1860 cm ²	6 monthly	08715
CO ₂ Trap CT1, replacement cartridge	yearly	3502
UV-Replacement bulb (115 V / 60 Hz)	yearly	07447-1
UV-Replacement bulb (230 V / 50 Hz)	yearly	2593-1
RO-membrane**	2 – 3 years	2083
EI-Ion®	3 – 5 years	1809

* Cartridge exchange may be more frequent. Subject to feed water quality and consumption.
 ** 2 pieces in euRO 20 AFU.



EI-Ion® pure water cells .



Pretreatment module AMB.

Accessories for tanks please see page 17

Storage tanks for the euRO series

Tanks are 100 % drainable, distribution pumps available

All PE tanks are 100 % drainable. Accessories like UV lamp, CO₂ traps, sterile filter and TOC reduction pads protecting your water. Distribution pumps available.



Storage tank – 80 liter.

Storage tank – 80 liter

The euRO storage tank is designed in harmony with the euRO system. Both components present an aesthetic and functional unit. Technically, the tanks leave nothing to be desired:

- A high grade steel pump with sufficient performance to provide automatic laboratory rinse units.
- Independent pressure control and protection against dry running of the pump.
- A level sensor provides a continuous display of the tank fill level in percent.
- Sterile air filter for the tank and CO₂ traps are available as options.
- Tank material is purified water resistant polyethylene.
- 100 % drainable.

Storage tanks – 30 liter and 60 liter

These purified water resistant polyethylene tanks match the design of our euRO reverse osmosis systems.

They can operate on a lab bench or can be mounted on a wall.

Connections are available for filling an automatic laboratory washing machine. A faucet can be placed at the bottom or middle of the tank for convenient use. The middle position allows a reserve of water for an automatic laboratory washing machine.

Level control is included with two switch points for automatic on / off of the euRO.

A tank level sensor is also available. The tank level is indicated by continuous display on the RO panel.

The tanks can be equipped with additional accessories including sterile filter or CO₂ traps as shown in the tables.

Tanks are 100 % drainable.



Storage tank – 30 l.



Storage tank – 60 l.

Type		30 l	30 l	60 l	60 l	80 l	80 l
Tank volume	<i>l</i>	app. 30	app. 30	app. 60	app. 60	app. 80	app. 80
Power supply	<i>V/Hz/kW</i>	–	–	–	–	230/50/0.55	230/50/0.55
Pump performance	<i>l/min</i>	–	–	–	–	8	1.2
with counter pressure	<i>bar</i>	–	–	–	–	2	2
Float Switch		yes	no	yes	no	no	no
Level Sensor	<i>mA</i>	no	4–20	no	4–20	4–20	4–20
Height	<i>mm</i>	555	555	555	555	810	810
Width	<i>mm</i>	300	300	560	560	340	340
Depth	<i>mm</i>	300	300	300	300	515	515
Shipping weight	<i>kg</i>	9	9	10	10	15	15
Catalogue Number		3314-1	3315-01	3310-1	3311-01	3301-01	3301-03

Accessories for the euRO-tanks (initial equipment)

Item	Cat. No.
Vent Filter VF 1 (2") to eliminate airborne contamination. Complete installation kit for use in 30 and 60 liter tanks only.	3510
Vent Filter VF 2 (4") to eliminate airborne contamination. Complete installation kit for use in 80 liter tank only.	3511
CO₂ Trap CT 1 (2") to eliminate airborne contamination including CO ₂ from the incoming air. Complete installation kit for use in 30 and 60 liter tanks only.	3501
CO₂ Trap CT 2 (4") to eliminate airborne contamination including CO ₂ from the incoming air. Complete installation kit for use in 80 liter tank only.	3503
Distribution and Circulation Pump CP1 , 1.2 l/min (0.32 gpm) 0.8 bar (12 psi), including transformer, silent operation < 40 dba. With this pump, the tap on the 30 and 60 liter tanks can be used on the top outlet. Must be specified when ordered.	3358-1
Float Switch FLS , to protect the distribution pump in the event there is not enough water in the tank (low water cutoff).	08630
UV-Submersible Lamp to minimize the bacterial growth. The UV system is combined with a timer to avoid high temperature. Only for use in 30 and 60 liter tanks – for 230 V – for 115 V	2590 2591
UV-Submersible Lamp to minimize the bacterial growth. The UV system is combined with a timer to avoid high temperature. Only for use in 80 liter tank – for 230 V – for 115 V	2592 2593
Bracket ET30 for 30 l tank, including screws and plugs.	3317
Bracket ET60 for 60 l tank, including screws and plugs.	3318

Consumable for the euRO-tanks

Item	Cat. No.
Vent Filter VF 1, Replacement Cartridge 2"	80823
Vent Filter VF 2, Replacement Cartridge 4"	80354
CO ₂ Trap CT1, Replacement Cartridge 2"	3502
CO ₂ Trap CT2, Replacement Cartridge 4"	3504
UV-Replacement Bulb (115 V /60 Hz)	07447-1
UV-Replacement Bulb (230 V / 50 Hz)	2593-1

System Components

Raw water, its contaminants and the embedded components of the SG-units

Potable water or water that is considered safe to drink contains many dissolved or suspended materials that could interfere with laboratory test methods. For reagent grade or ultrapure water, all of these materials would be considered contaminants. These contaminants include: Total dissolved solids or ions, particles, colloids, organic material, gases and microorganisms. Potable water systems should not contain viable or pathogenic microorganisms. However, due to the ubiquitous nature of microorganisms, there is potential for small amounts of bacteria, viruses, algae, protozoa or fungi to be present. Remnant body parts or large biochemical components of destroyed bacteria or other microorganisms may also be present in the form of endotoxins, DNA, RNase and RNase. Microorganism contamination may also pose a problem for stored water from pretreatment systems.

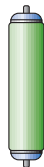
All this impurities are removed by a combination of different purification technologies.

Only new, specially selected and certified materials are used for the treatment steps in the SG water systems.

Resins and treatment media go through a rigorous R&D stage before approval for use to ensure high quality and zero leachable material that could interfere with water quality.

Carefully selected activated carbon is used in the systems to produce pure water with extremely low organic contaminants. The second application is the removal of free chlorine to protect RO membranes.

All wetted parts within the SG Water systems are specially selected and tested to ensure purity.



Pretreatment module AMB

Catalogue No.: 2057

Activated carbon / pre-filter combination to protect RO membranes. Granulated carbon and a 1 µm filter.



Conditioning module

Catalogue No.: 2062

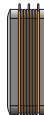
Module used for the removal of residual hardness. The special cation deionizer resin prevents „Scaling“ in the El-Ion cell.



Deionization module

Catalogue No.: 2050

Mixed bed resin module utilized for a reduction of the inlet conductivity. Used for inorganic applications.



El-Ion® cell

Electro-deionization process module for pure water production < 0.2 µS/cm. No chemicals in use. Constant water quality.



Reverse-Osmosis module

Catalogue No.: 2083

High performance TFC (thin-film-composite) membrane with a salt retention rate of up to 98 %. Retention rate for dissolved organic compounds, particles and colloids and bacteria can exceed 99 %.



UV-disinfection

Catalogue No.: 2590/2592

The 254 nm wavelengths range is used to destroy bacteria that may enter the system. The radiation produced in the 254 to 260 nm range is very effective at destroying bacteria and other microorganisms. The nucleic acids are disrupted resulting in the death of the organism. A properly sized high output UV system will substantially limit the bacterial growth in the system.



UV-replacement bulb

Catalogue No.: 2593-1

The purification modules are accurately designed to ensure complete wetting of the activated carbon to remove entrained air and purge the systems.

The storage of modules is limited and items should be used within one year. Modules should be stored in a cool, dry location (< 20 °C) away from light.

Freshly produced replacement modules can always be obtained from SG.

Hint: It is best to rotate stock based on a first in first out method to ensure older stock is used first.



High grade materials are a vital aspect for highest quality. From left to right: Activated carbon, anions-, mixed bed- and cationexchange resins.

Pure water

1. High quality pure water can only be maintained if the produced water is constantly being re-circulated via different purification stages including the sterile filter.
2. A tank for storing pure water should always be equipped with a sterile vent filter, activated carbon unit, a CO₂ trap and a submersible UV-lamp. A constant high water quality level can only be maintained by implementation of these components.
3. A regular disinfection procedure diminishes the formation of Bio-films. The SG-disinfection should be done on a regular basis.
4. To prevent the growth of algae: Tanks used for storing water should be made of opaque material or be placed in a cabinet to prevent exposure to light. Avoid direct sun light.
5. Purifying modules should be replaced on a regular basis in order to maintain high quality water and to

minimize possible contamination of bacteria.

6. In order to guarantee best water quality and operation of the SG-Water systems, the systems should undergo a regularly scheduled preventative maintenance and service procedure. An agreement for this service can be arranged with SG Water.
7. Drainage tubing from any water treatment device should contain an air gap to prevent contamination. Maintain at least a 5-cm gap between the end of the tube and the drain.



Pre-purification modules AMB and VMD and conditioning module.

Information about reverse osmosis

A natural phenomenon is used for water purification

The natural osmosis process can be reversed and used as an environmentally friendly and safe form of water purification.

How does reverse osmosis work?

A solution with a high salt concentration is separated by a semi permeable membrane from a solution with a low salt concentration. In normal osmosis, the water from the side with less salt will begin permeating the membrane into the more concentrated solution.

In reverse osmosis, pressure is supplied which exceeds the osmotic pressure of the higher concentrated solution to force water in the reverse direction.

Clean water starts to permeate through the membrane.

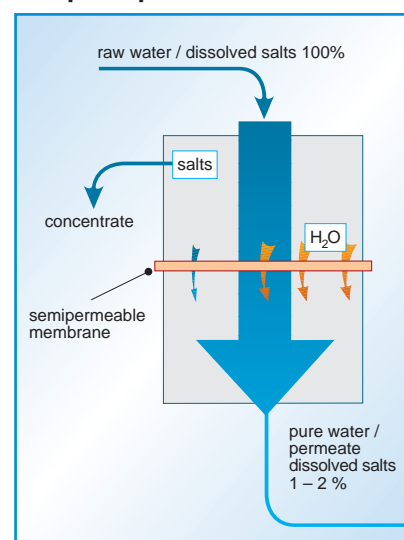
This water contains approximately 98 % less salt than the inlet water.

This technology will also remove >99 % of particles and bacteria. The production rate of an RO system depends on the water temperature. SG specifications are given at a water temperature of 15 °C.

Each °C of temperature variation creates a water production shift of 3 % !

Most manufacturers use 25 °C to rate their performance, however, with SG, you can be assured that your water production is in the right range even if the temperature falls below 25 °C.

The principle of reverse osmosis



SG – worldwide

Our partners in:

Algeria · Argentina · Australia · Austria · Bahrain · Bangladesh
Belgium · Brazil · Bulgaria · Canada · Chile · China · Colombia
Croatia · Cyprus · Czech Republic · Denmark · Dominican
Republic · Ecuador · Egypt · England · Estonia · Finland · France
Ghana · Germany · Greece · Hong Kong · Hungary · Iceland
India · Indonesia · Iran · Iraq · Ireland · Italy · Japan · Jordan
Kazakhstan · Korea · Kosovo · Kuwait · Latvia · Lebanon · Libya
Lithuania · Luxembourg · Malaysia · Marocco · Mexico
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