Certified pathogen-removal, fully automatic Direct Membrane Integrity Testing, data-logging and web-based remote access. The system’s enhanced PLC controls all required peripherals, in order to filter water from any source, from waste- to well-water to Point-of-Entry treatment in buildings. The perfect standardized solution for treating surface water of surface-influenced ground-water. Seccua Phoenix also removes legionella, rust and sludge from city-water at Point-of-Entry and such reduces legionella-contamination and bio-growth within the entire building’s water system.

**Ultimate Removal Performance**

The Nano-pores of the Seccua-Ultra filters provide removal characteristics that even exceed regulatory requirements for application of membrane filtration in drinking water treatment. The Phoenix has proven to fully remove virus, cyst and bacteria, tested against U.S. EPA and ASTM standards. It also reliably reduces turbidity to under detection levels as well as colour to up to 30% in combination with in-line coagulation.

**Integrated Direct Membrane Integrity Testing**

The Phoenix has a fully automated, integrated, state-of-the-art membrane integrity test. It detects membrane damages smaller than the size of pathogens. Together with its ability to monitor the signal of a turbidity meter in the filtrate line of the system (not included), it performs a continuous, indirect integrity test, triggering the integrated, direct membrane test.

**Treats difficult water**

As the only one of its kind, the Phoenix continuously measures the actual degree of fouling of the membrane - based on a function of flow and differential pressure. The Phoenix automatically reacts to varying feed water conditions and adjusts the frequency of its cleaning cycles accordingly. In addition to a feed-pump it also controls dosing equipment in the feed to be able to treat high colour-containing sources using an inline-flocculation-
process and achieve highest possible flow-rates at maximum rates of removal of colour and dissolved organics.

**Cleaning-In-Place capability**

Once the system detects a need for cleaning, it can apply different combinations of cleaning techniques, including pre- and post-flushing or backwash powered by an external pump, and it is even able to automatically perform chemically-enhanced Cleaning-In-Place (CIP).

**Remote monitoring- and alert-system**

As soon as the system detects an operating-error, including a failed membrane-integrity test, but also other differentiated messages, e.g. unsuccessful cleaning sequences, occurred water hammer, empty cleaning chemicals and other, it can send out an SMS message to up to ten cell-phones or report to an existing remote monitoring system. Once the unit is hooked up to an existing cellular network through its internal high-speed-modem (optional), latest web-based, remote-control solutions allow the user to access the unit over the internet, change operating parameters and read operating history from the data-logger.

**Highest Filtrate output**

The Phoenix now offers higher filtrate output than ever: due to optimized filter-module construction and more membrane area, depending on the water quality, the system achieves a continuous output of up to 1,280 liters per minute (0.5 MGD) and a short-term peak flow of up to 40 liters per second (634 gpm).

**Performance Data**

**Filtration Performance and system models**

<table>
<thead>
<tr>
<th>Phoenix Models</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Filter Area</strong></td>
</tr>
<tr>
<td>4 LT</td>
</tr>
<tr>
<td>60 m²</td>
</tr>
<tr>
<td>646 ft²</td>
</tr>
<tr>
<td>5 Ltr./s</td>
</tr>
<tr>
<td>300 Ltr./min</td>
</tr>
<tr>
<td>18000 Ltr/ Hr.</td>
</tr>
<tr>
<td>79 gpm</td>
</tr>
<tr>
<td>160 Ltr./min</td>
</tr>
<tr>
<td>9600 Ltr/ Hr.</td>
</tr>
<tr>
<td>42 gpm</td>
</tr>
<tr>
<td>Expand up-to</td>
</tr>
<tr>
<td>Maximum</td>
</tr>
<tr>
<td>Fully Automatic</td>
</tr>
</tbody>
</table>
Removal Performance

- **Virus**: > 5.7 log tested
- **Bacteria**: > 9.7 log tested
- **Parasites**: > 4 log tested
- **Turbidity and particles**: > To under detection limits

Operating conditions

- **Max. operating pressure**: 5 bar (72.5 psi)
- **Max. operating temperature**: 40 °C (104 °F)
- **Min. operating temperature**: 4°C (39 °F)
- **Chemical tolerances**: pH 1 to pH 13 (cleaning) free Chlorine 200.000 ppm*h (@ pH>9.5) and max. 200 mg/l, Peroxide max. 500 ppm

Filtration and Cleaning

- **Filtration**: Feed pump (I/O or 4-20 mA). Flocculation (feed) or chlorine dosing (filtrate) controllable
- **Cleaning**: Cleaning by time-interval, time-of-day or fouling-threshold. CIP and CEBW fully automatic.

Integrated Direct Membrane Integrity Test DIT

- **Test method**: Pressure hold test, meeting U.S. EPA Filtration Guidance Manual and DVGW W 213-5 standards
- **Resolution**: Adjustable (approx. 0.5-3 μm) Standard settings ca. 1.6 μm
- **Frequency**: Triggered by filtrate-turbidity and time-of-day

Data Logging

- **Logged data**: Date, real-time, feed- and filtrate pressure, turbidity, flow, tank level, alert messages, error codes as well as the results of the direct integrity tests
- **Recording interval**: At each event and upon time intervals.
- **Data capacity**: Approx. 4 month if data is logged every 15 minutes.
Approvals and Standards

✓ Material : All material in contact with water meet DVGW KTW and ANSI/NSF
✓ Electronics : The system’s controls and electrical wiring is made spray Water proof (IP 63) and can be installed in wet areas indoor.
✓ Removal capabilities removal. : Tested to U.S. EPA and ASTM standards for pathogen 

Power Supply

✓ Power Supply : 230 V or 110 V, 1-phase
✓ Power Consumption : Approx. 5 W during filtration

Output Interfaces

✓ Feed-pump : Power I/O, 1 or 3 phases and 4-20 mA (max. 200 Ω Imp.)
✓ Feed-dosing : Use 4-20 mA flow signal (max. 200 Ω Imp.)
✓ Backwash-pump : Power I/O, 1- or 3-phases
✓ Cleaning chemicals : Two dosing-pumps connectable, power I/O, each 1-phase.
✓ Flow signal : 4-20 mA (max. 200 Ω Imp.)
✓ Error signal : Cold contact and 12 V signal
✓ BUS-Interface : CAN BUS, Master & Slave

Input Interface

✓ Turbidity-meter : 4-20 mA
✓ Tank level : 4-20 mA (Filtrate- or feed)
✓ Error monitoring : 12 V Potential to monitor cold contact

Control Interfaces

✓ Mobile internet : Over GSM 3G through optionally available plug-in modem
✓ CAN BUS : Can be used to connect several Phoenix units in parallel (Easy unit to an connect Kit required), as well as to connect the Phoenix Bradley, Mod BUS or TCP/IP are available upon request

Error signal : Cold contact and 12 V signal

BUS-Interface : CAN BUS, Master & Slave
Water-Connections and Assembly

- Feed : 2” Victaulic compatible
- Filtrate : 2” Victaulic compatible
- Drain : 2” Victaulic compatible
- Backwash : 2” Victaulic compatible Not required, when installed as POE Filtration in building.
- Set-up : 2” Victaulic compatible Up-right, standing, self-supporting

Weights and Dimensions

<table>
<thead>
<tr>
<th>Phoenix Models</th>
<th>4 LT</th>
<th>4</th>
<th>7</th>
<th>10</th>
<th>20</th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>113 cm</td>
<td>113 cm</td>
<td>164 cm</td>
<td>264 cm</td>
<td>390 cm</td>
<td>476 cm</td>
</tr>
<tr>
<td></td>
<td>3.70 ft</td>
<td>3.70 ft</td>
<td>5.38 ft</td>
<td>8.66 ft</td>
<td>12.80 ft</td>
<td>15.62 ft</td>
</tr>
<tr>
<td>Depth</td>
<td></td>
<td></td>
<td>59 cm/1.94 ft</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heighth</td>
<td></td>
<td></td>
<td>190/6.23 ft</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight, dry</td>
<td>130 kg</td>
<td>130 kg</td>
<td>210 kg</td>
<td>370 kg</td>
<td>530 kg</td>
<td>790 kg</td>
</tr>
<tr>
<td></td>
<td>287 lbs</td>
<td>287 lbs</td>
<td>463 lbs</td>
<td>816 lbs</td>
<td>1.169 lbs</td>
<td>1.742 lbs</td>
</tr>
</tbody>
</table>