Polaris MED
Efficient and Effective WFI Solutions
Quantity and quality of water
- Standard units are available from 50 - 15,000 l/hr
- Column geometry, design and efficient droplet separation gives the MED excellent decontamination performance
- Labyrinth baffles reduce steam velocity and optimize droplet separation
- Evaporator columns are dry running, avoiding the risk of bacterial contamination associated with static water
- High running pressures and ease of balancing offers excellent steam and water quality, with low industrial steam and cooling water consumption

Opex - Cost of ownership
- High efficiency, dry running, falling film evaporator columns
- 3-8 columns
- 10% blowdown offers a small water footprint
- Tall heat exchangers to optimize heat transfer performance
- Super fast startup, minimizing water losses
- Hot standby not required, saving energy, but maintaining fast startup times

Service and Support
- Local support & service from our global offices
- Yearly service and protection plans

Flexibility & Choice
- Combi units - producing steam and water from the same unit
- Uplift frames & raised cooler / condenser sub assemblies
- Siemens or Allen Bradley PLC, with large touchscreen panel, complete with SCADA option
FI Need... POLARIS Solution
Standard Features

**Mechanical**
- Sanitary WFI sample point
- Thermal insulation
- Stainless steel frame and control panel IP 54
- Surface finishing Ra<0.6 μm
- Feed water pump
- Drain Cooling System

**Functional**
- Operation in stop/start or proportional control
- Automatic blow down
- WFI quality switchover system

**Controls and Instrumentation**
- PLC control + HMI interface
- Non compensated conductivity meter
- Automatic pressure temperature and level controller

**Validation and Documentation**
- Operating manual in English, qualification documentation in English

Optional Features

**Mechanical**
- Electropolishing Ra<0.4 μm
- Feed water CO2 removal membrane
- Feed water tank
- WFI tank + pressurising transfer pump
- Nitrogen pressurising system

**Functional**
- Proportional Control – 50% to 100%
- WFI and Pure Steam available as alternative production
- WFI and Pure Steam available as simultaneous production
- Automatic steam sterilization

**Controls and Instrumentation**
- SCADA supervision system (2 month operating data recording) /HMI in 4 language + printer (only interface required)
- Automatic system drain-down

**Validation and Documentation**
- DQ, IQ, OQ, PQ protocols
- Operating manual in 4 languages

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POLARIS - Service & Support

All POLARIS solutions are designed in accordance with GAMP, cGMP, ISPE and FDA guidelines and will meet the product quality specifications of all of the world’s major pharmacopeia, including the USP and Ph Eur, giving you peace of mind and compliance assurance, wherever your facility is.

POLARIS systems are backed by a comprehensive range of service maintenance products. Standardised Performance Qualification Maintenance Contracts (PQMC) are tailored to your system and ensure continuing compliance.

Scheduling service on a pre-planned basis coupled with time-based replacement of specific parts and consumables, significantly reduces the risk of downtime. This approach enables us to guarantee the quality and value of your system for a lifetime.
**Polaris MED capability** (according to industrial steam pressure)

<table>
<thead>
<tr>
<th>Conductivity</th>
<th>&lt; 1.3 μS/cm @ 25° C</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOC</td>
<td>&lt; 500 ppb</td>
</tr>
<tr>
<td>Bacterial Endotoxins</td>
<td>&lt; 0.25 EU</td>
</tr>
<tr>
<td>Bacteria</td>
<td>&lt; 10 CFU / 100 ml</td>
</tr>
<tr>
<td>Nitrate</td>
<td>&lt; 0.2 ppm</td>
</tr>
<tr>
<td>Heavy Metals</td>
<td>&lt; 0.1 ppm</td>
</tr>
</tbody>
</table>

**Material Specification**

- Evaporating Columns: Inox 316L ASME BPE
- Heat Exchanger (Pre-heater): Inox 316L (EN 1.4435) ASME BPE
- Heat Exchanger (Condenser): Inox 316L ASME BPE
- Feed Pump: Inox 316
- Support Frame: Inox 304
- Pipeline and Fittings: Inox 316L ASME BPE
- Control Panel: Inox 304
- Valve: 316L/EPDM FDA approved
- Sealing and Gaskets: PTFE
- Pipe Welding: Orbital

**Feed Water Requirement (Minimum)**

- Potable Water: Total Hardness < 0.1° F (1 ppm as CaCO₃)
- Conductivity < 5 μS/cm
- Silica < 1 ppm

**Services Required**

- Feed Water Temperature: 15-25° C
- Feed Water Pressure: 1 < P < 6 bar
- Power Supply: 380/480 V; 3 Phase; 50/60 Hz
- Compressed Air: 6-8 bar
- Water Drainage: By gravity
- Cooling Water: 15° C (if necessary)