



# Polaris VCD

Efficient and Effective WFI Solutions

**WATER TECHNOLOGIES**



# Your WFI Need... The POLARIS Solution

## Quantity and quality of water

- Standard units available between 50-15,000l/hr
- High decontamination efficiency
- 3 stage NCG removal (feedwater, condenser & degassing tank)
- Low velocity solution for optimizing impurity separation
- Dry running FDA approved compressor seal

## Opex - Cost of ownership

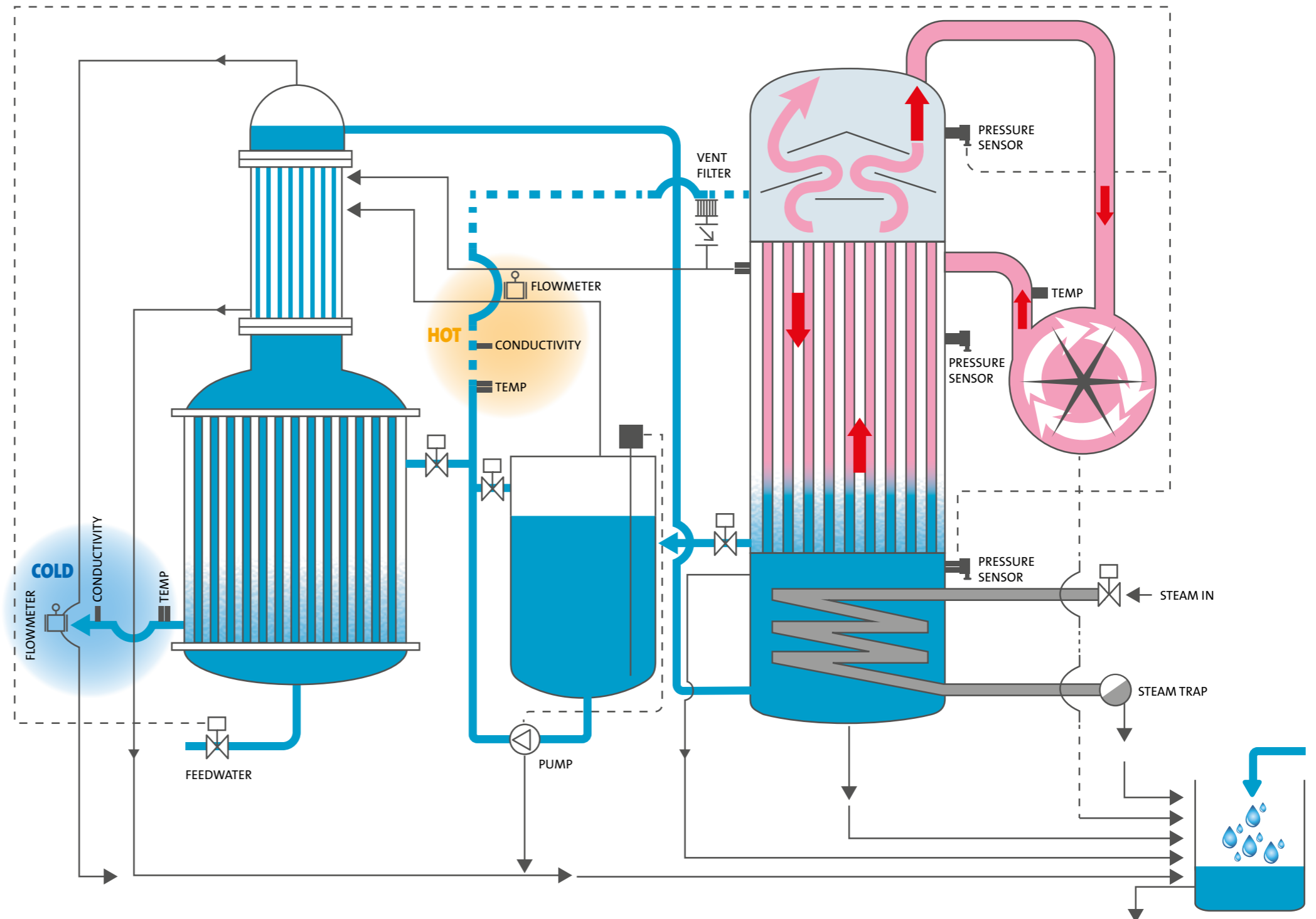
- Low steam consumption
- High efficiency, low power consumption, multi stage blowers
- High thermal efficiency
- NCG used for pre heating
- No cooling water system required

## Service and Support

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

## Flexibility & Choice

- Hot & cold water production (25-95°C)
- Low pressure steam supply (3barg)
- Integrated pre treatment, dosing & RO
- Steam production through integrated steam generator
- Siemens or Allen Bradley PLC, with large touch screen panel complete with SCADA option
- Pressurized water discharge



## Standard Features

### Mechanical

- > ASME BPE piping
- > Sanitary WFI sample point
- > Thermal insulation
- > Stainless steel frame and control panel IP 54
- > Surface finishing Ra<0.6 μm
- > Non-condensable gas removal system
- > Sight glass inspection point
- > Drain cooling system

### Functional

- > Softened feed water
- > Operation in stop/start or proportional control
- > Automatic blow down
- > WFI quality switchover system

### Controls and Instrumentation

- > PLC Control complete with 15" panel PC or HMI option
- > 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
- > Industrial steam pressure reducing valve
- > Electrical heating
- > Combined electrical/steam heating

### Functional

- > Modulated production – 0% to 100%
- > WFI temperature production to all temperature from 95 to 20°C
- > Automatic steam sanitization

### Controls and Instrumentation

- > SCADA supervision system (2 month operating data recording) /HMI in 4 languages + printer (interface only required)

### Validation and Documentation

- > DQ, IQ, OQ, protocols
- > Operating manual in 4 languages



## 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.

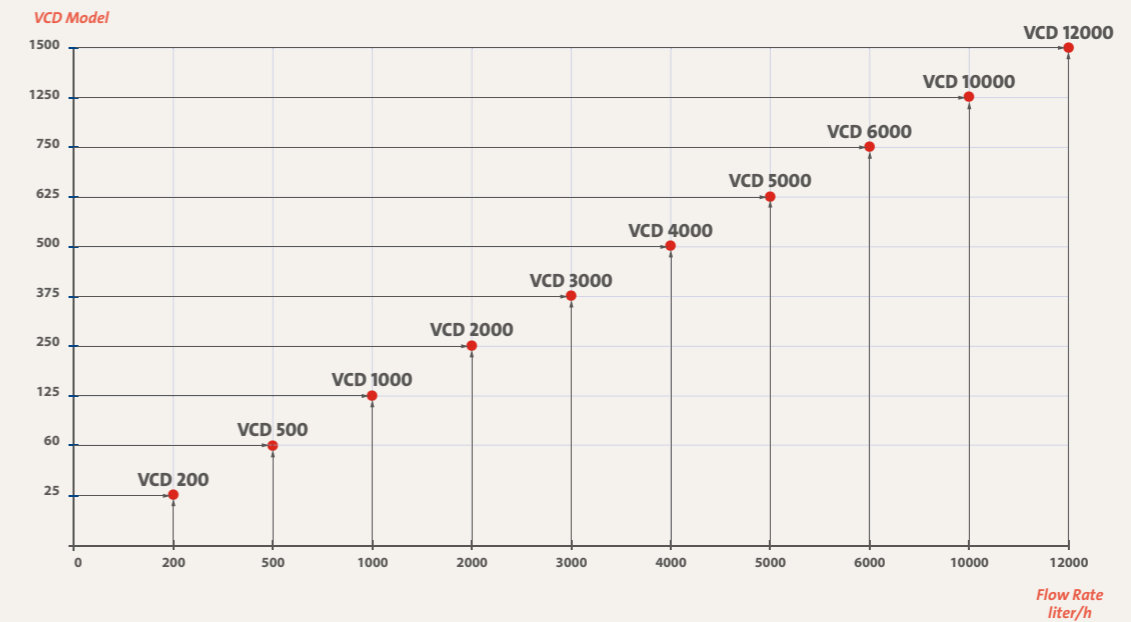
POLARIS systems are backed by a comprehensive range of service maintenance products.

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 VCD capability (according to industrial steam pressure)



### POLARIS VCD Treated Water Quality

Conductivity	< 1.3 μS/cm @ 25° C
TOC	< 500 ppb
Bacterial Endotoxins	< 0.25 EU
Bacteria	< 10 CFU / 100 ml
Nitrate	< 0.2 ppm
Heavy Metals	< 0.1 ppm

### Services Required

Feed Water Temperature	15-25° C
Feed Water Pressure 1	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)

### Feed Water Requirement (Minimum)

Potable Water	Chlorine Free
Total Hardness	< 0.1° F (1 ppm as CaCO <sub>3</sub> )

### 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
Compressor Body and Impeller	Inox 304
Compressor Seals	Inox 316L ASME BPE
Compressor Impeller's Shaft	Inox 304
Support Frame	316L/EPDM FDA approved
Pipeline and Fittings	Inox 316L (EN 1.4435) ASME BPE
Control Panel	Inox 304
Valve	3 16L/EPDM FDA approved
Sealing and Gaskets	PTFE
Pipe Welding	Orbital

