WHITE KNIGHT®
engineer approved™

AQUARIUS DI WATER HEATERS

Ultrapure Deionized Water Heating Systems

Aquarius® water (DI water, DIW) heating systems are ideal for high-purity processes that require continuous flows of hot DIW with accurate and precise temperature control. They feature ultrapure Heateflex® heating coils, Power-to-Flow™ control systems, and operator safeties. Various output options help meet demanding flow and temperature requirements. Aquarius® provides an operational cost savings by reducing the need for multiple heaters.

Features & Benefits

- Ultrapure PVDF/PFA wetted surfaces
- High-resolution touch-screen
- User-friendly graphical user interface (GUI)
- Plug-and-play system with complete integration of controls
- No N2 purge required

Temperature Controls

- Excellent temperature stability
- Fast response to temperature and flow variations
- Eliminates excessive overshoots and drops in temperature
- Programmable logic controller (PLC) with Power-to-Flow™ control delivers constant, stable, and accurate temperature output
- Ethernet read/write connection enables rapid transfer of heater data to fab SECS/GEM systems (other communications available)

Safety Features

- Meets or exceeds stringent requirements for UL-499, SEMI S2, SEMI S3, and CE
- Short circuit current rating at 100 kA
- Ground fault circuit interrupter, sub-30 mA rating
- Redundant safety PLC monitoring for GFCI, thermal cut-off sensor, and hi-limit thermocouples
- Redundant safety monitoring relay for door interlock switch and EMO
- NIST-certified thermocouples
- Dual-pressure relief valves for both input and output flows ensure rapid pressure dissipation
- Ground options for electrical safety and DIW compatibility

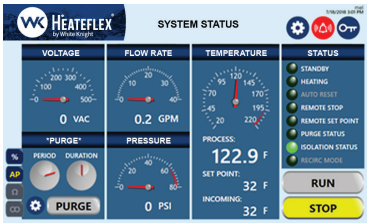
Options

- Fusible Disconnect with Lock-out/Tag-out
- Auto Purge (Pump Not Included)
- Resistivity Sensor
- Leak Alarms
- Discrete Interface
- Analog Interface
- Dry Contact Interface

Aquarius DIW Heater

Power-To-Flow™ Control

Power-to-Flow™ controls provide accurate temperature output in single-pass heating applications. It eliminates undesirable overshoots or drops in temperature. The sophisticated control systems feature multi-loop capability and feed-forward functions to moderate variations in the process flow rate. It measures flow and temperature at various stages, and adjusts the power applied to each heating zone accordingly. This advanced integrated system reacts quickly to flow variations to provide a steady stream of DIW at a stable temperature.



High Resolution LCD Touch Screen with GUI

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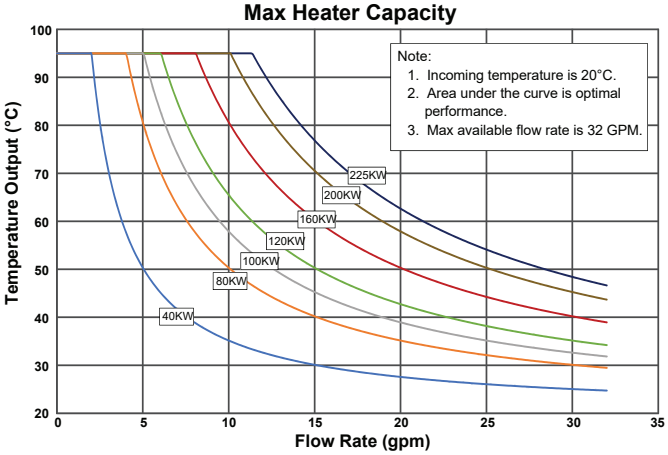
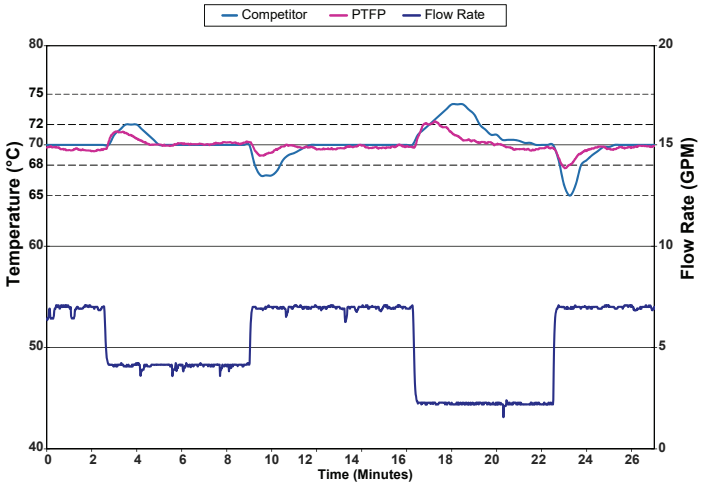
Performance

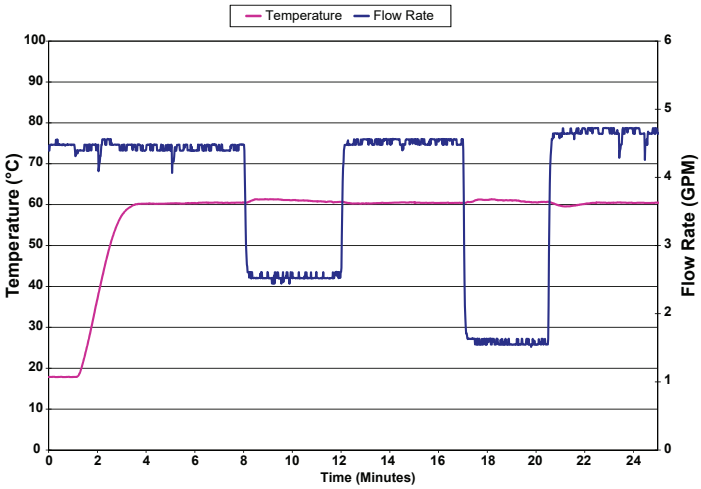
Max Heater Capacity

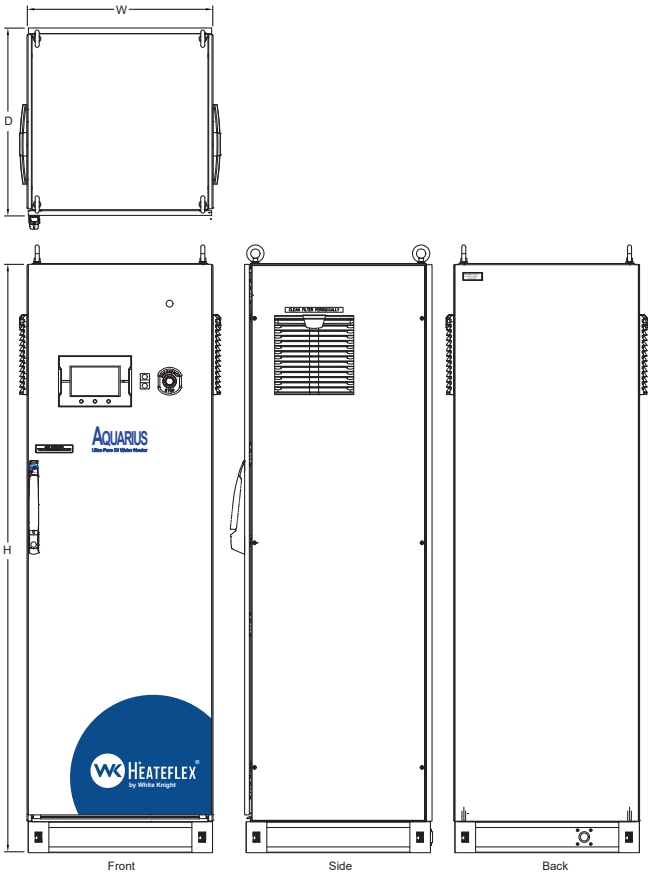


Power-to-Flow vs. Competitor L



Start-Up and Performance with Flow Rate Changes





Dimensions

Inches H x W x D

Model	kW	Low VAC	High VAC
DI-40	40	78 x 24 x 24	78 x 24 x 24
DI-80	80	78 x 32 x 24	78 x 24 x 24
DI-100	100	78 x 39 x 24	78 x 32 x 24
DI-120	120	78 x 39 x 24	78 x 32 x 24
DI-140	140	N/A	78 x 32 x 24
DI-160	160	N/A	78 x 32 x 24
DI-200	200	N/A	78 x 39 x 24
DI-225	225	N/A	78 x 39 x 24

**Low VAC: 200-240 VAC, 3-Phase*
**High VAC: 380-480 VAC, 3-Phase*

Specifications

Heater	Heateflex® Coil
Wetted Surfaces	PVDF/PFA
Wattages	40 kW to 225 kW
Voltages	200-480 VAC, 3-ph
Temperature	95° C (203° F)
Temperature Accuracy	+/- 0.1° C
Flow	0.5-32 GPM (1.9-122 LPM)
Pressure	60 PSIG @ 95°C
Efficiency	>99 %

**All specifications dependent on configuration and utilization*

Patent No.: 4756781, 4875957, 2685505 (Japan), 7,258,801, 8,349,122, 1859919 (EU), other Patents Pending

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