QUANTUM NXT

ULTRA-PURE WATER HEATER

True Eco-Innovation:

The Quantum NXT technology provides both energy and water savings without impacting the demanding requirements of the application.

Leading Edge Technology:

Patented thin-film on quartz electric resistance heating element provides exceptional temperature response and drastically improved reliability. Our proprietary thin-film on quartz has no metal exposure and eliminates contamination risk in the event of element failure. No external air or nitrogen purge is required with the Quantum NXT.

Versatile Control Options:

Multiple communication options are available to meet virtually all unique requirements and protocols. These heaters can be customized to communicate with any wet process tool in the semiconductor industry.

Compact & Convenient:

The modular element allows for very compact system design and can be changed out in less than 15 minutes when required. LCD color touch screen display provides easy user input and diagnostic feedback.

High Performance:

Efficient heat transfer and low resident fluid volume produce fast response to changes in flow or temperature set point using multi-loop PID control with zero crossfire SSRs

Ultra Clean Design:

High purity flow path of GE 214 semiconductor grade quartz, PTFE, and PFA with no elastomer o-rings and no NPT threads or dead-legs to create particle traps.

Dual Process Available:

Click here to see the most advanced heater to date, the Quantum NXT - D.

Formula to Calculate Required Heating Capacity

Required kW = 0.07(LPM Flow)(Temp. Delta °C)

Conversion Calculations

LPM = GPM*3.8 °C = 5/9(°F - 32)

Heater Sizing Formula Example

Ambient Water Temperature	**25°C**
Desired Process Temperature	**70°C**
Temperature Delta	**45°C**

Required kW = 0.07
(15 LPM) (45 °C) = 47.25 kW

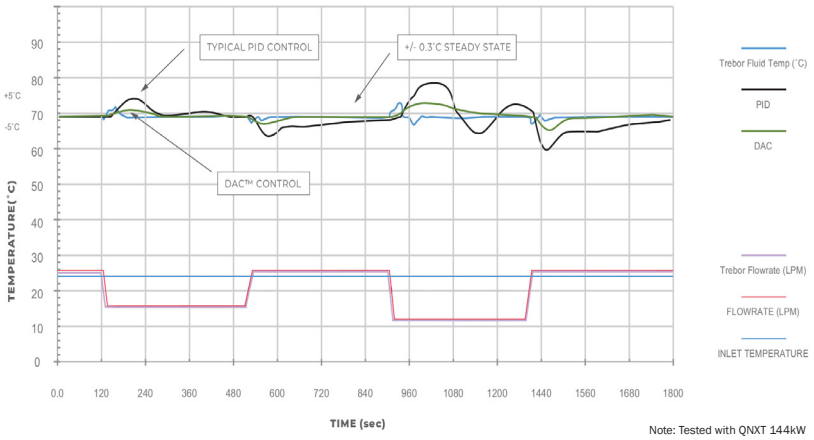
For optimal temperature response and to compensate for seasonal changes in ambient water temperature, we recommend adding 25% excess heating capacity.

47.25 kW(1.25) = 59 kW.
Recommend a 60kW heater for this application.

Power	Voltage			Current (Amps)	# of Heating Modules	Cabinet Size
20kW	208V			65A	2	Single
30kW		400V		45A	2	Single
30kW			480V	40A	2	Single
36kW			480V	45A	2	Single
40kW	208V			125A	4	Single
60kW		400V		95A	4	Single
60kW			480V	75A	4	Single
60kW	208V			185A	6	Single
72kW			480V	90A	4	Single
80kW	208V			245A	8	Single
90kW		400V		140A	6	Single
90kW			480V	110A	6	Single
108kW			480V	135A	6	Single
120kW		400V		185A	8	Single
120kW			480V	150A	8	Single
144kW			480V	180A	8	Single
Double Door Cabinet						
100kW	208V			305A	10	Double
120kW	208V			370A	12	Double
150kW		400V		225A	10	Double
180kW		400V		270A	12	Double
180kW			480V	225A	10	Double
210kW		400V		310A	14	Double
216kW			480V	270A	12	Double
240kW		400V		350A	16	Double
252kW			480V	310A	14	Double
288kW			480V	350A	16	Double

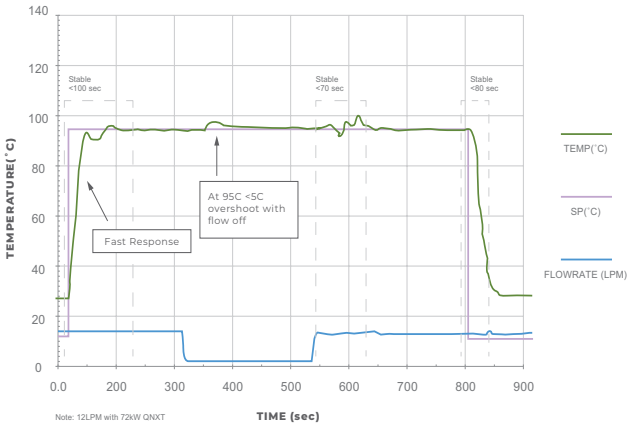
Dimensions			
Cabinet Size	(height)	(length)	(width)
Single	72 in (183 cm)	28 in (71 cm)	23 in (58 cm)
Double	72 in (183 cm)	56 in (142 cm)	23 in (58 cm)

Trebor Quantum NXT Performance

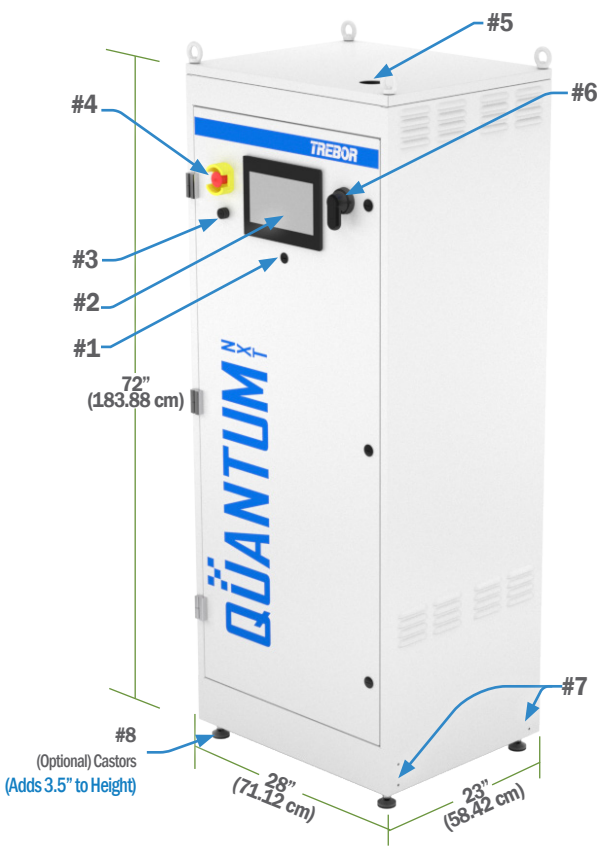


Note: Tested with QNXT 144kW

Temperature Response Curve



SINGLE DOOR CABINET



DOUBLE DOOR CABINET

#	External Feature
1	USB Port
2	Color Touch Screen
3	Reset Button
4	Emergency Off Button
5	2" Conduit Main Power Access
6	Main CB Disconnect
7	Anchor Location (Both Sides)
8	Leveling Feet (Adds 1.5" to Height)

FEATURES

Heater Type	Thin-film on quartz electric resistive heating
Voltages	208, 400, 480 Volt; 50/60 Hz
Temperature Limit	95°C
Temperature Control	± 0.3°C
Pressure Range	15 to 60 PSI Ultra-Pure Water Supply
Flow Rate	up to 77 LPM (up to 20 GPM); (Multiple output systems available) **Trebor heaters do not require a minimum flow rate**
Efficiency	>98%
Element Life	>44,000 Hours
Control System	Zero crossfire SSRs with PID Flow Control
Communication Options	Ethernet, Modbus/TCP. ***(Optional)*** *Dry Contact I/O; RS232, Modbus/RTU, RS485; Consult Factory for Other Options*
Wetted Surfaces	GE 214 Quartz, PTFE, & PFA
Safety Features	Door Interlocks Low liquid level detection Redundant over temperature protection Resettable overpressure relief valve Open thermocouple detection Liquid spill detection EMO GFI/Earth Leakage
Safety Compliant	SEMI S2 SEMI S8 CE
Warranty	**24 Months**

Recirculation (optional)	Optimized Throughput & Efficiency
Filtration (optional)	Defect Reduction
Branched Outlet (optional)	Space Savings & Cost Consolidation
Ground Bonding (optional)	Safety Feature
EMI Straps (optional)	Safety Feature

DUAL PROCESS WITH QUANTUM NXT-D

Trebor understands the value of our natural resources and the responsibility of both corporations and individuals to conserve those resources. Trebor is proud to help with the digital evolution by providing products to our semiconductor partners that can help promote water and energy sustainability. Our heaters use our patented thin-film on quartz technology, including newly made improvements with sustainability in mind and through eco-innovation. We present our most advanced heater to date, the Quantum NXT-D (QNXT-D).

The QNXT-D is the next evolution of the Quantum NXT. The QNXT-D is available with two different power options: 120kW at 400V and 144kW at 480V. Multiple processes can split into even and uneven operations. Such as a 90kW & 30kW setup for a 400V or a 72kW & 72 kW setup for a 480V heater.

The Quantum NXT - Dual Process heater is capable of:

- **Cost Savings:** Just one QNXT-D can provide heated DI water for two separate tools, lowering the over all integration cost.
- **Space Saving:** 2-1 ratio: eliminating space needed for a 2nd heater. The QNXT-D footprint is only 28”x23”x72” or 26.833 ft^3/ 0.759 m^3.
- **Electrical Savings:** A single heater can be used to support two seporate processes.
- **Water Savings:** Utilizing the Quantum NXT’s Stop-Flow-Technology™, allows near instant heated DI water with next to no waste.

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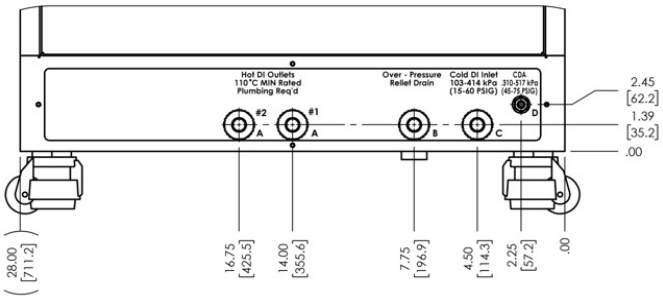
Fluid Ports



- A - 3/4" SUPER 300 PILLAR FITTING... HOT DI OUTLETS
  #1 = HEATER PROCESS 1
  #2 = HEATER PROCESS 2
- B - 3/4" SUPER 300 PILLAR FITTING... SELF-RESETTING PRESSURE RELIEF VALVE INSIDE CABINET
- C - 3/4" SUPER 300 PILLAR FITTING... COLD DI INLET
- D - 1/4" TUBE FITTING...CDA INLET (ACTUATION OF PNEUMATIC VALVE)

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