

**PROCESS
TECHNOLOGY**

QKV Series, QMax™ In-line Chemical Heater

The QKV Series in-line quartz heater is ruggedly designed for the most demanding chemical applications. The QKV Series heater is typically used in conjunction with a chemical bath and external pump/filter system. The heater provides high purity heated chemistry for the semiconductor, FPD, MEMS, and biomedical industries.

QKV Series Applications Include:

- SC1: Ammonium hydroxide (NH₄OH) and hydrogen peroxide (H₂O₂)
- SC2: Hydrochloric acid (HCl) and hydrogen peroxide
- Various acids such as:
 - Hydrochloric
 - Nitric (HNO₃)
 - Sulfuric (H₂SO₄)
- Sulfuric acid and hydrogen peroxide
- Sulfuric acid and ozone (O₃)
- DI water

SPECIFICATIONS:

Service: In-line chemical heater with high purity quartz and PVDF wetted surfaces for a number of common wet chemistry applications.

Heater Sizes (in watts): 1-16kW (see chart on reverse)

Temperature Range: Up to 120°C (248°F)

Maximum Pressure: 70 PSI at 120°C (248°F)

Voltages: 208 to 600 volts, single or three phase. Heaters larger than 9kW require three phase power.

Warranty: One year

Certifications: CE, UL and Semi S2

MTBF: In excess of four years (based on Semi E10-0600 standards)



Pictured with optional fluoropolymer coated outer housing.

Standard Features:

- Heater element: 2.7 micron wavelength resistive ribbon wire on quartz
- Patented dual flow path design
- Electrical connections: 78" (2m) multi-conductor cables
- Vertical installation only
- "K" type thermocouples for fluid and element over-temperature alarms
- Bimetal switch set at 105°C (221°F) for backup system over-temperature alarm
- Grounded construction
- More than 99% efficient
- +/- 0.5°C (1°F)
- Insulation: silicone closed cell foam

Fluid Connections:

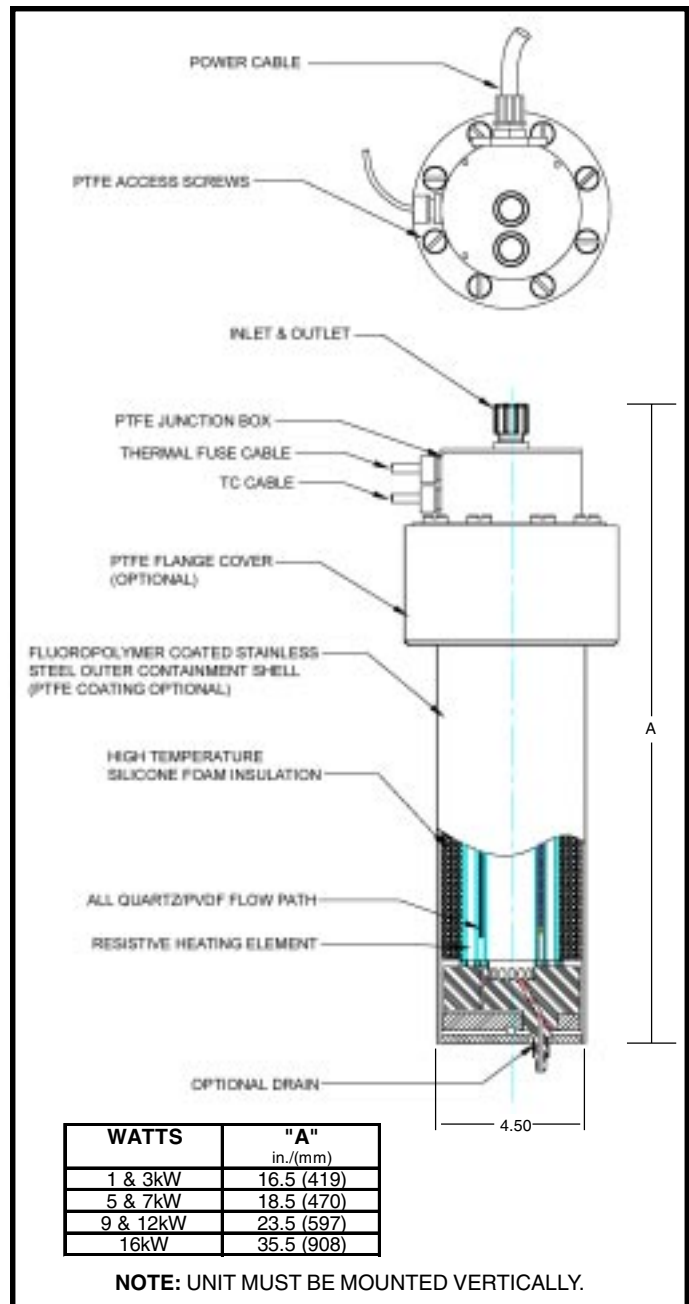
- 1/2-inch (12mm) Flaretek® connections standard
- Optional 3/8-inch (9mm) Flaretek®, 3/8-inch (9mm) or 1/2-inch (12mm) Super 300 Type Pillar® connections

FEATURES AND BENEFITS:

- **Faster heatup:** Single heater sizes up to 16 kW.
- **Exceptionally clean performance:** High purity quartz and PVDF construction. Cleanroom assembled and tested to the highest manufacturing standards.
- **Long heater life for reduced cost of ownership (COO):** Proven element design ensures exceptionally long heater life.
- **Excellent temperature stability:** Fast reacting element enables accurate control of the process temperature.

Options:

- Fluoropolymer coated outer housing
- Quartz turbulator for low flow, viscous, or temperature sensitive applications
- Capacitive style liquid level verification
- PID temperature control module
 - +/- .5°C (1°F) control steady state
 - Membrane style switch panel with count-down process timer.
 - Low voltage panel mount control with separate power module.
 - Safety device monitoring and alarm display. Monitors flow, process temperature, and over-temperature sensors.
- PLC temperature control
- Drain connection (1/4-inch (6mm) Flaretek® or Super 300 Type Pillar®)



QMax™ Model Number Description

QK	V	007	1	3	T	D
Series	Series	Wattage	Voltage	Phase	Inlet/Outlet Plumbing	Options
QMax	Vessel only	001 = 1000 003 = 3000 005 = 5000 007 = 7000 009 = 9000 012 = 12000 016 = 16000	1 = 208V 2 = 240V 3 = 380V 4 = 400V 5 = 415V 6 = 480V 7 = 440V	1 = Single phase 3 = Three phase	A = 1/2" Flaretek® S = 3/8" Flaretek® V = 1/2" Super 300 Pillar® T = 3/8" Super 300 Pillar®	Blank = No option D = Drain connection (1/4", same type as inlet/outlet specified) C = Coated option (fluoropolymer coating over stainless steel vessel) T = Turbulator (used for low flow applications, viscous chemistry, or temperature sensitive chemistry)

