



## Accuheat® Quartz In-Line Heaters for High-Purity Chemicals

Accuheat® quartz in-line heaters feature ultrapure quartz tubes, wrapped in an Inconel® heater element for uniform conductive heat transfer to the process fluid. Semiconductor-grade quartz fluid path allows for high performance with almost any chemistry. Housings constructed of PTFE offer chemical resistance and low surface temperature. Alumina Silica insulation is tightly packed to minimize heat loss. Additional temperature sensors and leak detection devices ensure safe and efficient heating. All heaters include a well-mounted RTD, 2 J-type thermocouples, and a self-resetting thermostatic snap switch. They do not require cooling or purging that is typically needed for I/R lamp heaters. Imtec's conductivity strip is also included for early detection of internal leaks. The heaters may be mounted either horizontally or vertically.



12,000 Watt Dual-Tube Heater

### Features & Benefits

- Semiconductor-grade quartz fluid path
- Durable heavy gauge pre-formed Inconel® element to withstand high stress conditions
- Easy installation; reduce operation costs
- Minimize heat-up time and eliminate energy waste
- Redundant safety sensors protect heater and users
- Heater design eliminates dead zones
- PTFE housing for chemical resistance
- Self draining capabilities

### Zero Maintenance, Low Cost of Ownership

Many common chemistries do not readily absorb Infrared heat whereas conductive heaters allow for more uniform heating across all applications. Our conductive heater element reduces maintenance and overall cost of ownership for many common processes and chemistries.

- No lamp replacement required
- No calibration needed
- No reflectors to clean
- No leaks
- No N<sub>2</sub> purge or cooling required

### Single-Tube & Dual-Tube Heaters

All models can utilize 208-400 VAC heaters. Many models accommodate three-phase wiring and are available in many heater configurations to simplify integrations. Single-tube models are compact and are available from 3-13 kW. Dual-tube models allow for higher wattages and fit into a more rectangular space. They are available from 6-26 kW. Dual tube heaters have the inlet and outlet at opposite ends.

### Power Modulator

Accuheat® power modulator technology ensures minimal heat-up times and efficient use of energy for any application. During heat-up, the heat transfer rate gradually decreases until the power modulator turns off the heater. Heat built up in the quartz is then dispersed into the liquid. This conserves energy and minimizes stress on components caused by over-heating. Power Modulators must be used as part of the control system.



4.5 kW Single-Tube Heater



18 kW Dual-Tube Heater





# Quartz In-Line Ultrapure Chemical Heaters

## Applications

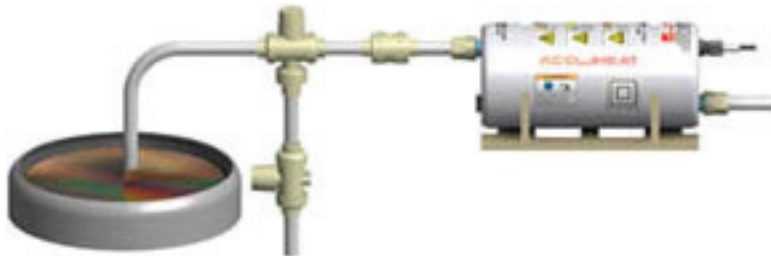
Accuheat® quartz in-line heaters are used in various applications requiring heating of high-purity process fluids including acids, solvents, and cleaning solutions. Common applications use the acid in-line heater as part of the recirculation loop where it serves as the sole heat source or in combination with a heated quartz tank for rapid heat up times and superior control. Typical installations include recirculating loop and single-pass point-of-use applications.

### Recirculating Loop



### Single Pass Point of Use

Accuheat® models can also be used in some single pass tools that process single substrates. Even some deionized water (DIW) heating requirements can be met with a compact in-line heater instead of a larger, more costly remote mounted DIW heater.



## Specifications

<b>Heater</b>	Accuheat® Quartz In-line Heater
<b>Process Chemistries</b>	Phosphoric acid, sulfuric acid, TMAH, SC1, SC2, and more
<b>Max Operating Temperature</b>	180°C
<b>Max Pressure</b>	40 psi at 180°C
<b>Wattages Single-Tube</b>	3-13 KW
<b>Wattages Dual-Tube</b>	6-26 KW
<b>Voltages</b>	208-400 VAC single or 3 phase, model dependent
<b>Sensors</b>	2 thermal couples, 1 over temp switch
<b>Mounting</b>	Horizontal or vertical
<b>Connections</b>	Fit-One standard, customer requested connections available
<b>Certifications</b>	UL Recognized
<b>Compliant to Requirements</b>	CE, Semi S2, Semi S3
<b>Warranty</b>	12 months

