HEATEFLEX®
Ultra-Pure Heating Solutions

PVDF & PFA
Ultra-Pure In-Line Fluid Heaters

Patented Technology for Increased Efficiency and Reliability
Customized for Your Specific Application

www.heateflex.com

IL1000-1703

PVDF & PFA Ultra-Pure In-Line Fluid Heaters

Heateflex Corporation's series of Ultra-Pure In-Line Fluid Heaters are designed for use in industrial fluid heating applications such as those found in the semiconductor, solar, MEMS manufacturing and other industries which require the most exacting standards of purity. Constructed of the highest quality fluoropolymer materials, these heaters are custom designed and built for use with deionized water, acids, and other diverse process chemistries.

BENEFITS

Ultra-Pure Design

- All-Fluoropolymer Wetted Surfaces Available
- Effective Solution for DI Water and Aggressive Chemicals with Temperatures up to 180°C

Fast Response

- Low Watt Density Design; ≤ 4 watts/in.^{2}
- Superior Temperature Response to Process Demands with Patented Heating Element

Field Tested Reliability

- Low Watt Density Extends the Life of the Heater by Spreading Out the Wattage
- MTBF of >10 years, Proves Field Reliability

Heateflex® Heating Element

Compact Design

- Heating Element Technology Maximizes Power in the Smallest Possible Design
- Smaller Footprint Results in Less Space and Easy Integration into Current Systems
- Heaters are Typically 10" to 30" Tall and Range from 2" to 6" Diameter

Easily Integrated into Customers' Current System

Flexible Solutions

- Multiple Designs with Numerous Options, Voltages, and Power Outputs Available
- Standard Approach: Understand Customers' Application Needs, and Customize a Heating Solution for Their Specific Requirements

Reduced Cost of Operations

- PFA Extruded Over Heating Element Eliminates the Need for Nitrogen Purge; Thus Reducing Operation Cost

HEATEFLEX®
Ultra-Pure Heating Solutions

The Heateflex® series of In-Line Heaters are ideal for recirculation and point of use applications where maximum purity and compatibility are required. For ultra-pure applications that utilize deionized water or for applications where aggressive chemistries such as acids, solvents, or etchants may be used, we offer heaters that are compatible to the process. All of these heaters are available with a variety of connection and interfacing options to integrate with the customer's tooling and requirements. These series of heaters are available with a variety of control and safety devices that can be used to provide a complete heating solution for the customer.

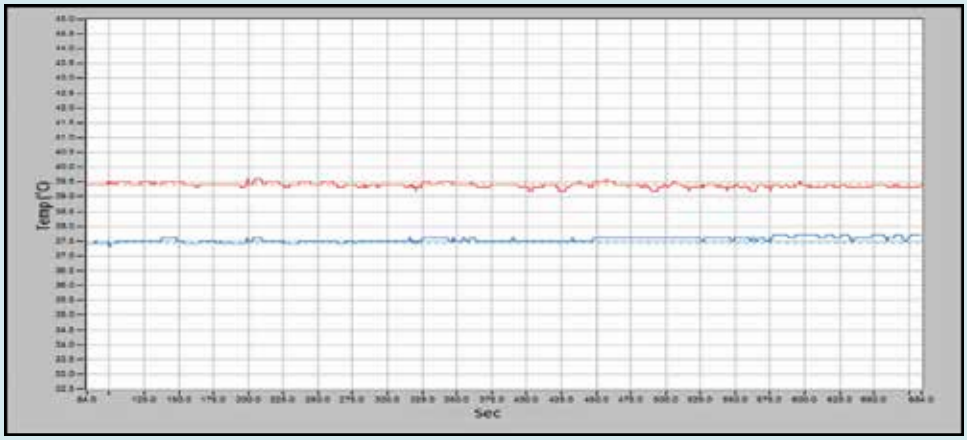
FEATURES

- All-Fluoropolymer Wetted Surfaces
- Microprocessor-Based Temperature Controller Available
- Heater Sizes Ranging from 1 to 30 Kilowatts
- Most Voltages Available

SAFETY INTERLOCKS

- Over-Temperature Protection to Maintain Safe Heater Temperatures
- Process Hi-Limit to Maintain Safe Fluid Temperatures
- Liquid Level Protection to Ensure Heating Element is Immersed in Process Fluid
- Ground Wire Protection to Meet Standards and Maintain Electrical Safety

Controls Available for a Complete Turnkey System



Fast Temperature Response

APPLICATION: DI WATER AND MILD CHEMICALS

Model	Material & Housing	Max Temp*	kW	Benefits
LH1	PVDF Pipe Style	95°C	1 - 15kW	Variable Height
LH7	PVDF Pipe Style	95°C	1 – 30kW	Higher Flow and kW

APPLICATION: AGGRESSIVE ACIDS AND CHEMICALS

Model	Material & Housing	Max Temp*	kW	Benefits
LHX	PTFE Molded Housing Style	100°C	1-7kW	Low Cost for Low Temp Applications
LHY	PTFE Molded Housing Style	100°C	10-12kW	Low Cost for Low Temp Applications
LHM	PFA Chemlock® Style	120°C	1-6kW	Compact Size: 20"
LHN	PFA Chemlock® Style	120°C	7-12kW	Compact Size: 30"
LHR	PFA Pipe Style	120°C	1-2kW	Smallest Footprint for Low Flow Applications
LHK	PFA Canister Style	160°C	1-10kW	Compatible for Higher Temp. Applications; Small Height: 16"
HC	PFA Pipe Style	160°C	1-10kW	Highest Temp. Series and Zero O-Rings; No Threads in Wetted Surface

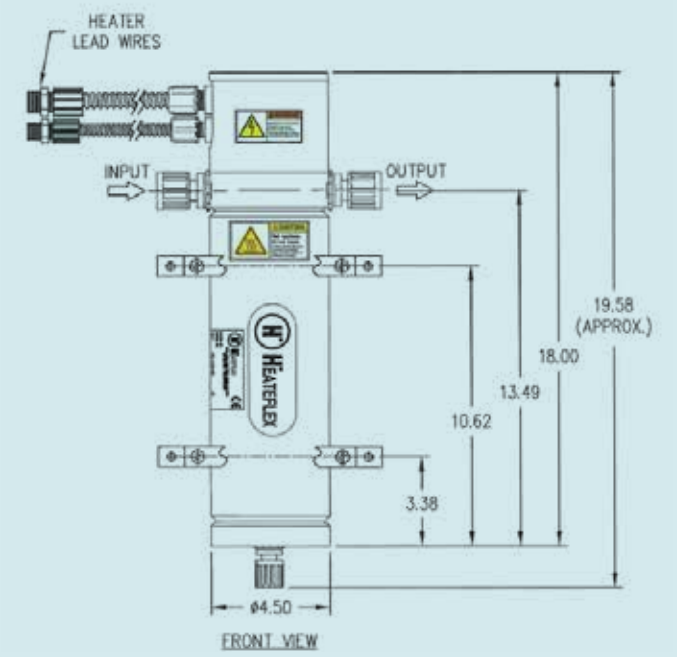
**Contingent on Properties of Process Fluid*

HC In-Line Fluid Heater

The Latest Innovation with Enhanced Purity *(Patent Pending)*

The new Heateflex® HC In-Line Fluid Heater is the result of innovative engineering and design. It provides next generation purity with special internal fittings that eliminate seals, wetted threads, and O-rings. The HC In-Line Fluid Heater provides enhanced cleanliness and reliability, and when matched with the dynamic response of the Heateflex® heating element, it is the clear choice for advanced process applications.

Available Voltages Single Phase	120	208	220	240	380	400	480	230	200
2 kW	√	√	√	√				√	
4 kW		√	√	√	√	√	√	√	√
6 kW		√	√	√	√	√	5 kW	5.5 kW	5 kW
10 kW		√	√	9 kW	√	√	√	√	



HC IN-LINE FACILITY DATA

- Power: 120 VAC - 480 VAC, 1-Phase
- Wattage: 2kW - 10kW (Depends on Voltage Being Used)
- Input/Output: 3/4" Flare or Pillar (Other Fittings Available)
- Drain: 1/2" Flare or Pillar
- Max Temperature: 180°C
- Pressure Rating: 60 psi at 120°C

BENEFITS

- Special Internal Fittings Eliminate the Need for O-Rings and Provide Next-Generation Purity and Cleanliness
- Meets All Relative UL 499 & SEMI S2 Standards
- Junction Box Designed to Isolate Heater and Sensor Lead Wires from Atmosphere
- Improved Sensor Reading Accuracy with Redesigned Liquid Level Bracket
- PFA Wetted Surfaces

SAFETY FEATURES

- Liquid Level Sensor and Unique Bracket
- Process Thermocouple
- Hi-Limit Thermocouple
- Thermal Cut-Off
- Platinum Tipped Ground Wires
- Separate Conduit Tubes for Heater Lead Wires and Sensor Wires
- Junction Box Isolates Heater and Sensor Wires from Harsh Enviroments

INTERNAL STATIC MIXER AVAILABLE AS AN OPTION

- Flexibility to Input Up to 3 Different Chemistries Simultaneously
- Ideal for Small Space Configurations
- 3 Input Manifold: 3/4", 1/2", and 1/4"

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Call today for prices and lead times, or visit us online at www.heateflex.com

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