

# PUR-X 1000

## Circulation Heater

The CAS PUR-X replaceable tube circulation heater provides contamination-free heating of liquids and gases.



### TARGET MARKETS

- Semiconductor solvent heating
- High-purity liquid heating

### SPECIFICATIONS

- **PUR-X 1000:** 1.5kW – 4.5kW, 120V, 200V, 208V, 220V, 230V, 240V, 380V, 400V, 415V
  - Explosion resistant (NEMA 7) electrical enclosure
  - Tubing, .375" (3/8") O.D. x .031" wall, field replaceable
    - Standard PFA
    - High purity PFA, compliant with SEMI F57
    - 190" Long (15.8ft or 4.8m)
    - Tube size & length are the same for both standard PFA & high purity PFA
  - Body: Aluminum 319, Teflon®- coated
  - Maximum operating temperature: 200°C (392°F)
  - Two sensors, for process control and process high-limit, choice of J or K type thermocouples
  - Third sensor ( J or K type, matching the selected process sensors) for casting & tube protection. Requires independent high limit control loop set no higher than 235°C (455°F)
  - Optional insulation jacket
  - Optional fittings, PFA 3/8" Straight Union, SEMI F57 compliant
  - 70 psi max (480 kPa)
- Size and Weight:**
- PUR-X 1000: 4.3" O.D. (10.9cm) x 16.5" (41.9cm) tall, 22 lbs (9.9Kg) (includes housing)

### APPLICATIONS

- Semiconductor wet process systems
- Wafer cleaning equipment (wet bench systems)
- Heating of photo-resist removal solvents
- DI water heating for wafer rinsing
- Air and Nitrogen heating for wafer drying
- Acid heating

### FEATURES/BENEFITS

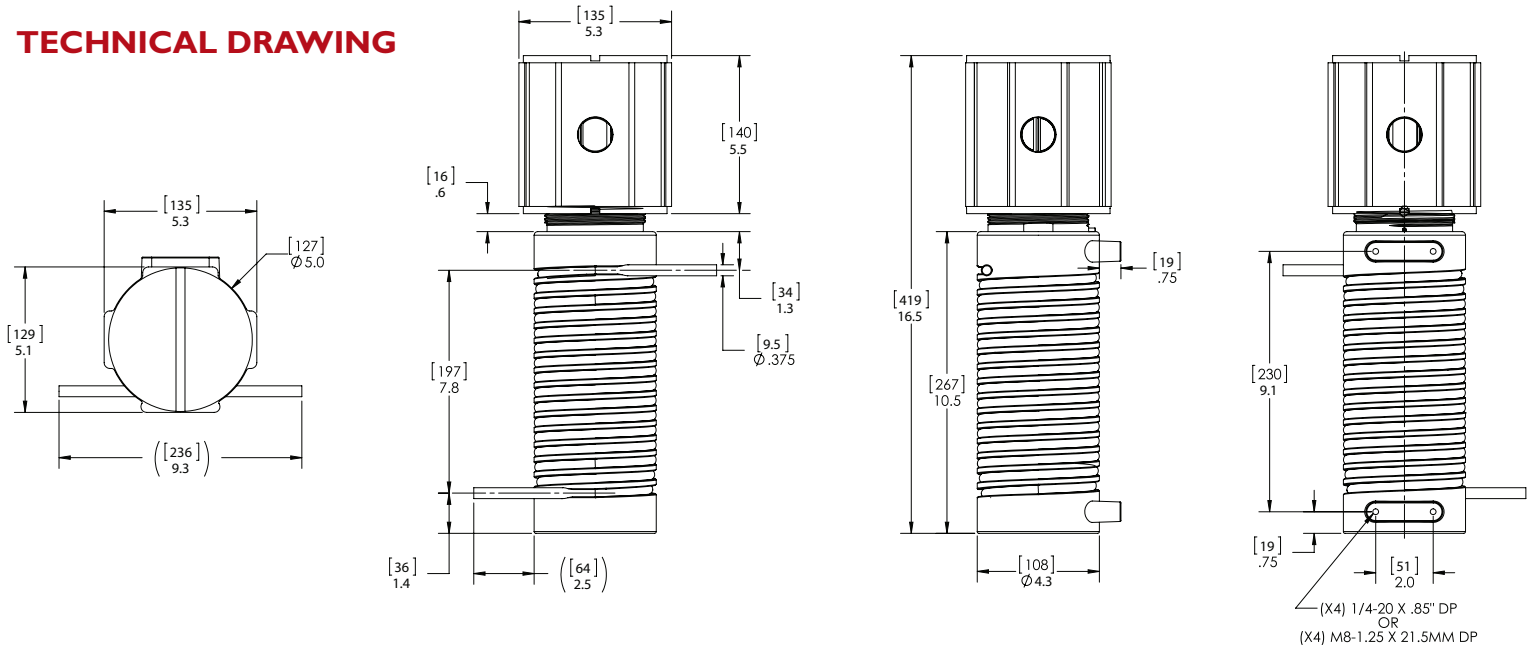
- Heating elements cast in aluminum
- Low maintenance
- Teflon®- coated for easy cleaning
- High purity heating
- Fluid path independent of heater sheath
- Non-welded construction
- Self-draining
- Replaceable tubing



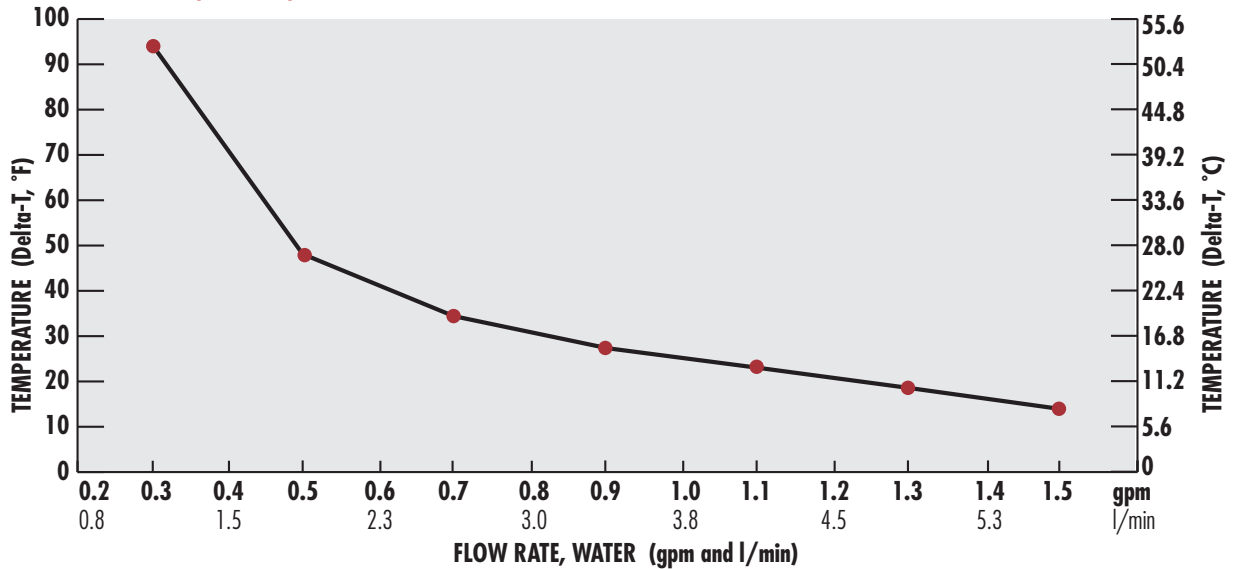
# PUR-X 1000

## Circulation Heater

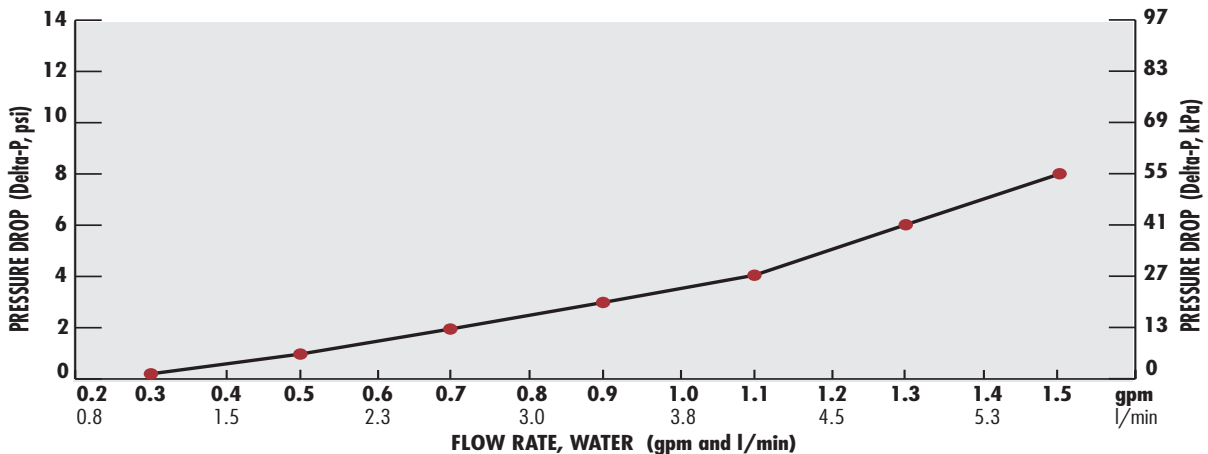
### TECHNICAL DRAWING



### HEATING PROFILE (water) Inlet water 15°C (59°F) at 200°C (392°F) set point with insulation jacket.



### PRESSURE DROP PROFILE (water)



## ORDERING INFORMATION

BASE CIRCULATION HEATER		
NEMA 7 ENCLOSURE		
<b>HEATER WATTAGE</b>		
10 = 240V, 3-phase delta circuit 4.2kW 10.1 Amps	Choose One	
11 = 208V, 3-phase delta circuit 3.1kW 8.8 Amps		
12 = 415V, 3-phase wye circuit 4.1kW 5.8 Amps		
13 = 400V, 3-phase wye circuit 3.8kW 5.6 Amps		
14 = 380V, 3-phase wye circuit 3.5kW 5.3 Amps		
15 = 200V, 1-phase, 2.9kW 14.6 Amps		
16 = 208V, 1-phase, 3.1kW 15.2 Amps		
17 = 220V, 1-phase, 3.5kW 16.0 Amps		
18 = 230V, 1-phase, 3.8kW 16.8 Amps		
19 = 240V, 1-Phase, 4.2kW 17.5 Amps		
20 = 208V, 3-phase wye circuit 4.5kW 12.5 Amps		
21 = 120V, 1-phase 1.5kW 12.5 Amps		
22 = 120V, 1-phase 3.0kW 25 Amps		
<b>TUBE MATERIAL</b>		
00 = Standard PFA tubing 3/8" O.D., .031" wall thickness		
01 = High Purity PFA tubing 3/8" O.D., .031" wall (SEMI F57 compliant)		
<b>SENSOR</b>		
JJ = J type thermocouples		
KK = K type thermocouples		
<b>ACCESSORIES</b> (ordered separately, loose packed)		
274-131-1-3 (PFA fitting 3/8" Straight Union, SEMI F57 compliant) 2 pieces		
307-0-18-1 (Insulation Jacket) 1/2" fiberglass insulation, Teflon®- coated fiberglass outer cover (rated to 550°F/288°C), Red silicone impregnated fiberglass inner liner, velcro flap fastening, H.T. construction.		
515-68-1-5 replacement PFA tube		
515-68-1-7 replacement HP PFA tube		

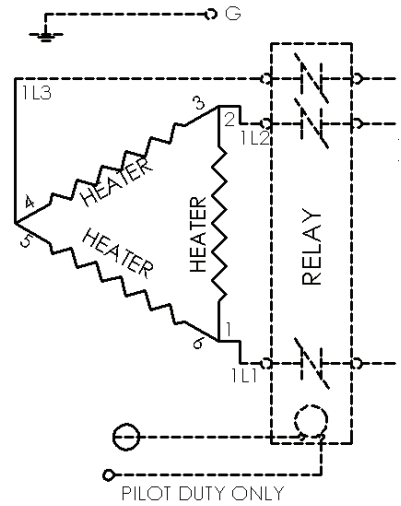
PX10-



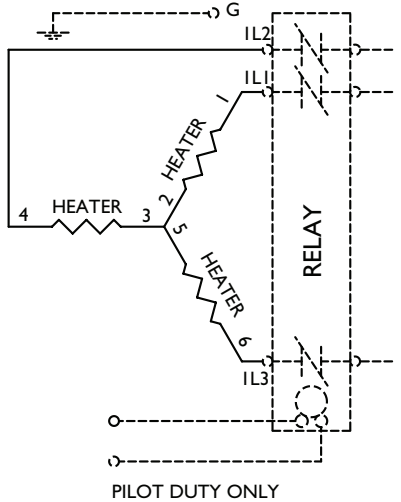
**PUR-X 1000**  
with insulation jacket

## WIRING DIAGRAMS

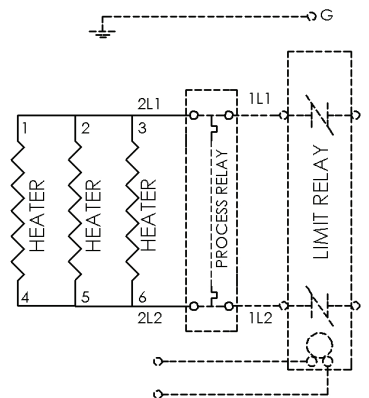
### 3-PHASE DELTA CIRCUIT



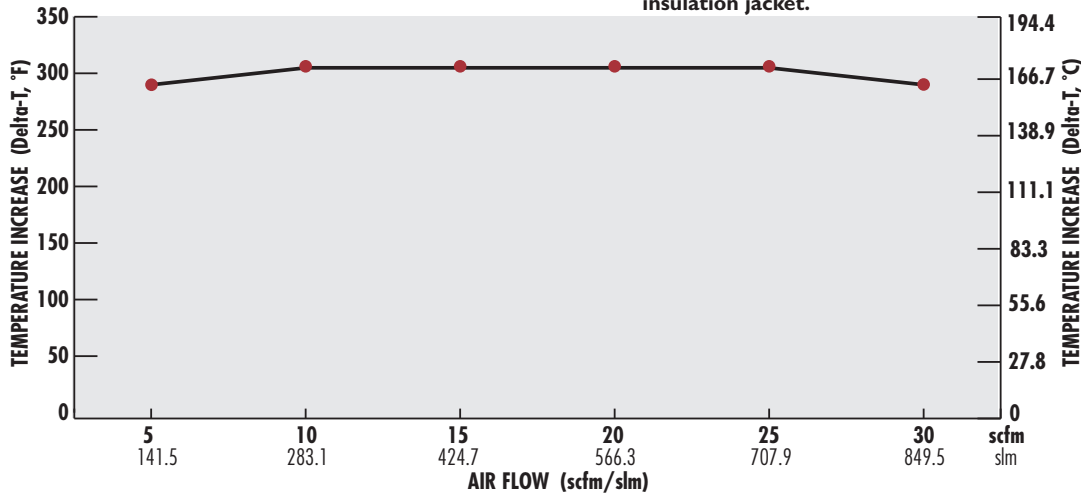
### 3-PHASE WYE CIRCUIT



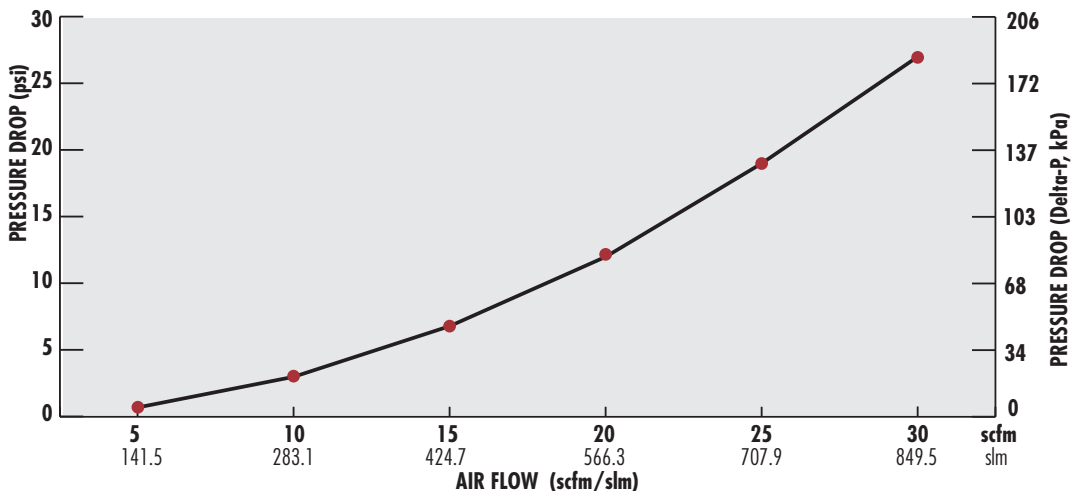
### 1-PHASE CIRCUIT



### HEATING PROFILE (air) Inlet air at 21°C (70°F) and 70psi; 200°C (392°F) set point with insulation jacket.



### PRESSURE DROP PROFILE (air)



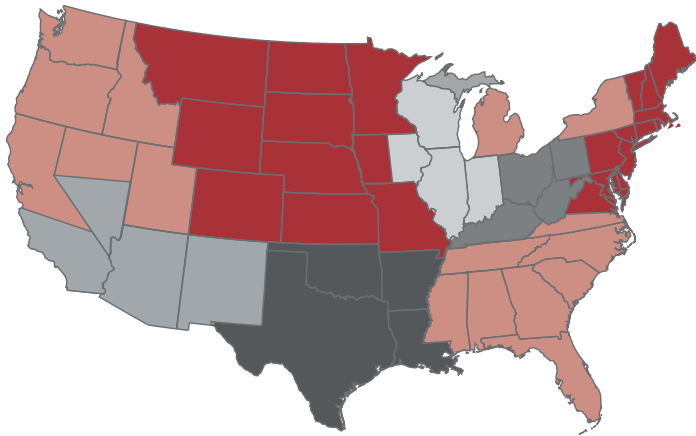
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## Circulation Heater

### COMPETITOR COMPARISON

ATTRIBUTE	PUR-X	COMPETITIVE PRODUCT
Enclosure	Explosion resistant (NEMA 7) electrical enclosure	Requires inert gas purging
Max temperature	200°C (392°F)	180°C (356°F)
Heater element/ construction	Tubular heating element, cast into aluminum 319. No contact with fluid.	PTFE-sheathed element, in contact with fluid.
Insulation jacket	Optional	Not available
Fluid path	Field-replaceable PFA tubing	Not an isolated fluid path - Body and heater element are in contact with fluid

### U.S.A. SALES REPRESENTATIVES



San Francisco  
tel: 408-754-3370

Los Angeles  
tel: 714-935-2999

Texas  
tel: 972-620-6030

**MIDWEST &  
WEST CENTRAL CANADA**  
tel: 952-892-9222

Chicago  
tel: 847-458-1500

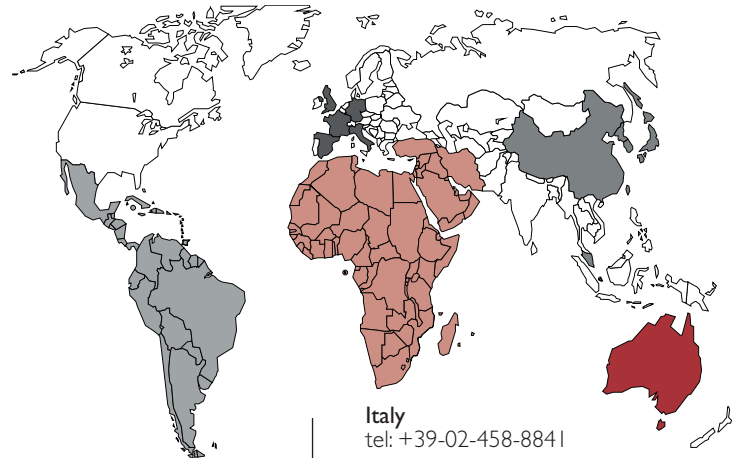
**GREAT LAKES,  
EASTERN &  
CENTRAL CANADA**  
tel: 248-651-0500

**NORTHEAST**  
tel: 215-345-8130

**SOUTHEAST**  
tel: 573-754-4806

**OHIO VALLEY**  
tel: 513-398-5500

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