# 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, SEMI F57 compliant
  - 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

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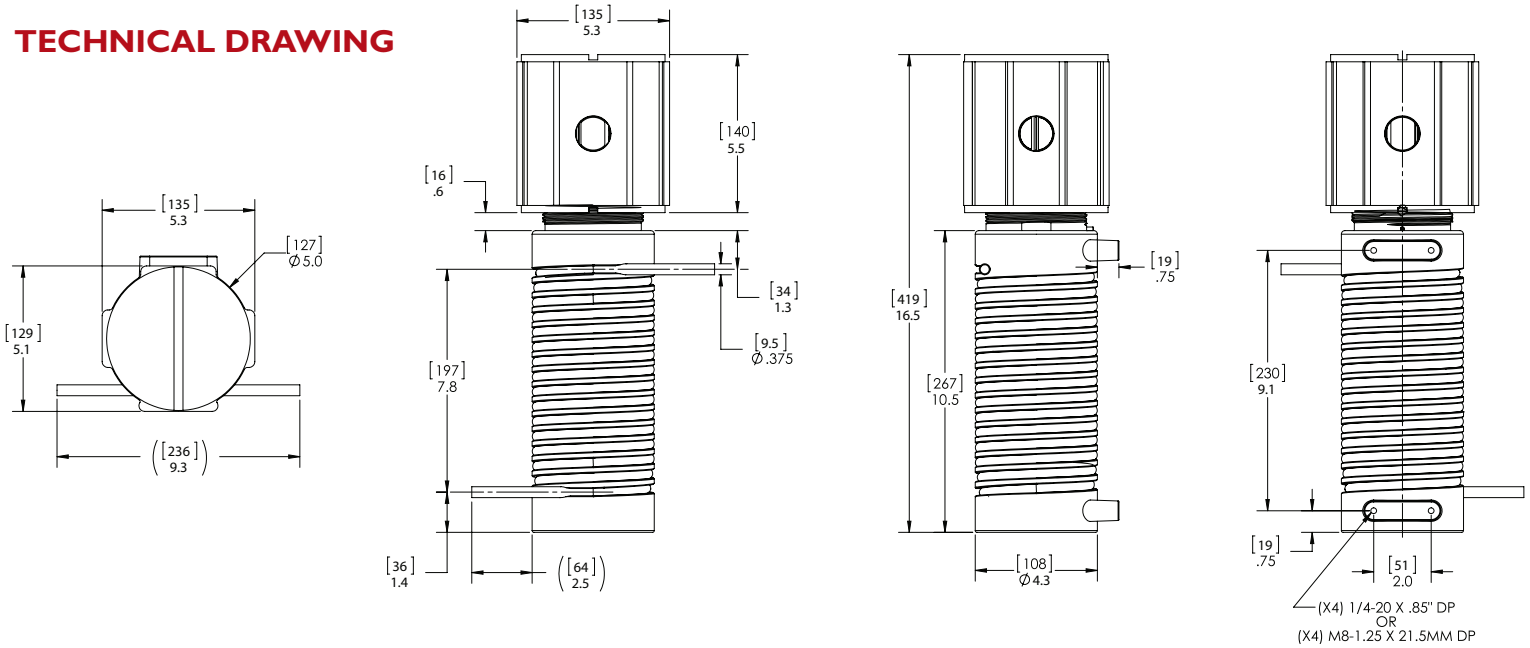
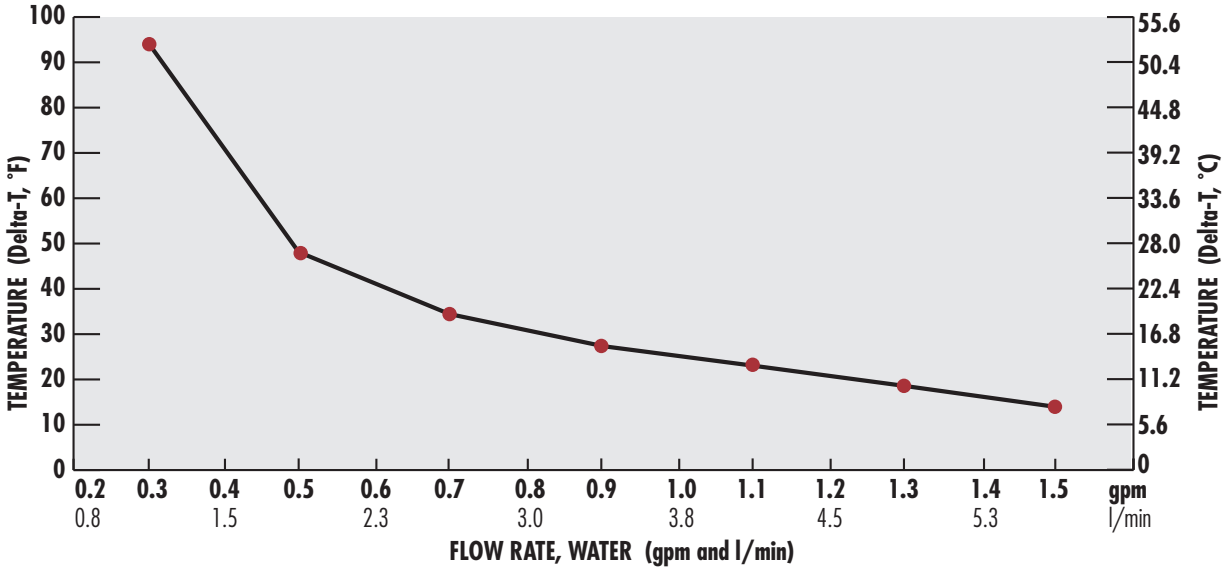
## TECHNICAL DRAWING

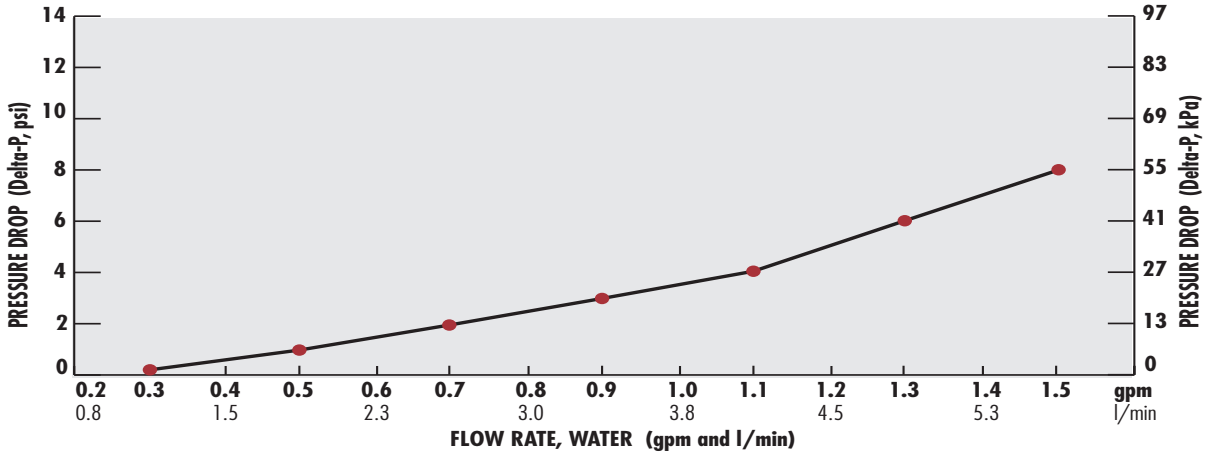



## HEATING PROFILE (water)

**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 |
| **HEATER WATTAGE** |
| 10 = 240V, 3-phase delta circuit 4.2kW 10.1Amps |
| 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 |
| **TUBE MATERIAL** |
| 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) |
| **SENSOR** |
| JJ = J type thermocouples |
| KK = K type thermocouples |
| **ACCESSORIES** (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 |

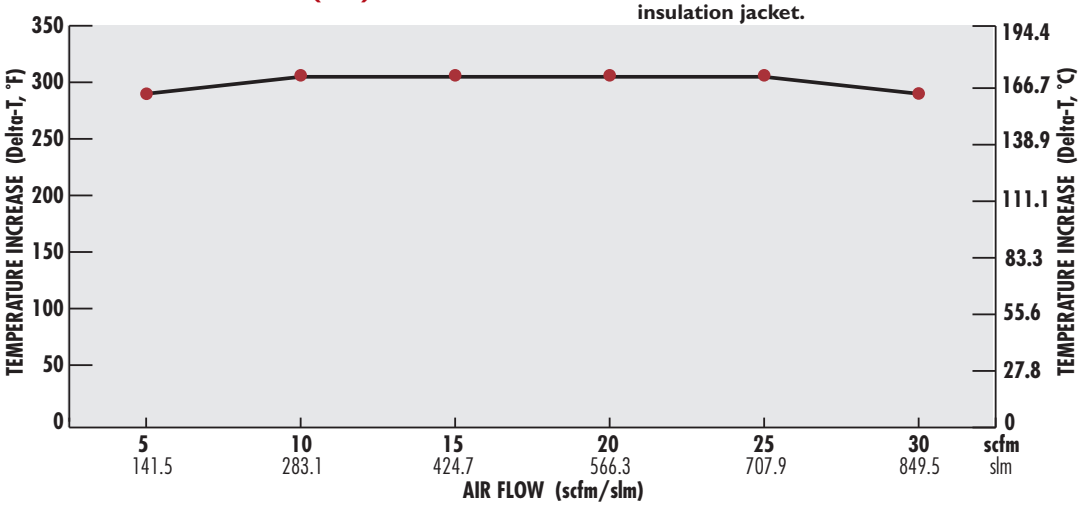
Choose One

PX10-

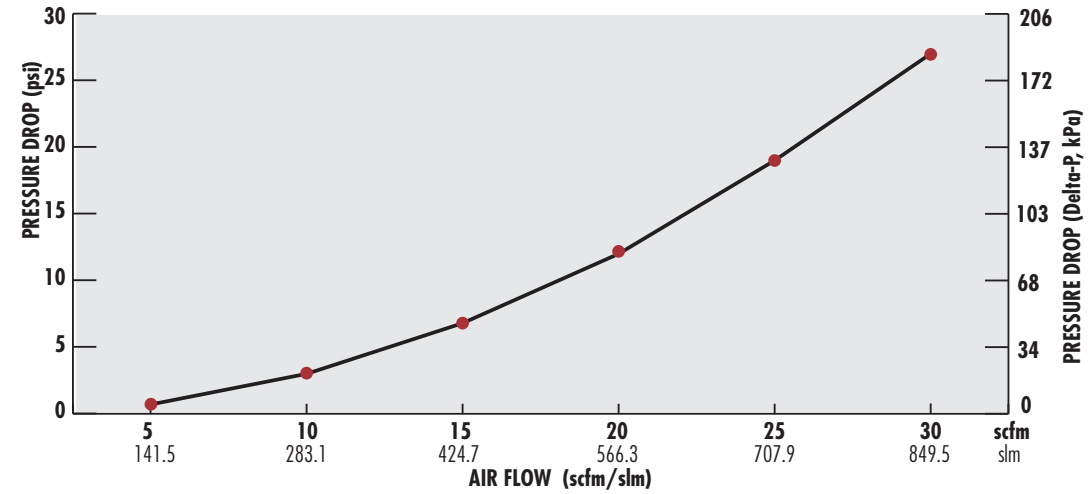
**PUR-X 1000 with insulation jacket**

# HEATING PROFILE (air)

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

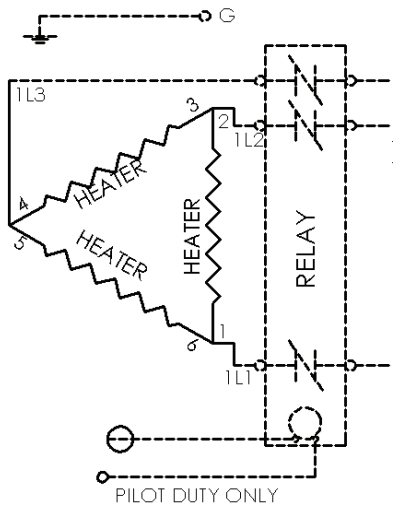



# PRESSURE DROP PROFILE (air)

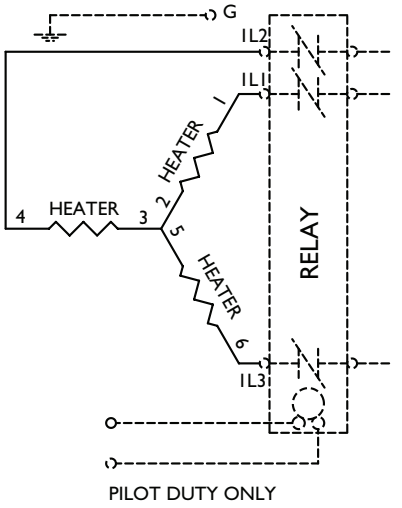



# WIRING DIAGRAMS

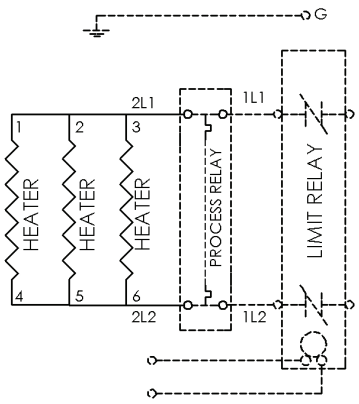
## 3-PHASE DELTA CIRCUIT




## 3-PHASE WYE CIRCUIT




## 1-PHASE CIRCUIT



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## 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 |

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