**PUR-X 1000 Circulation Heater**

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

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**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)

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**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
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, 8.8Amps
- 12 = 415V, 3-phase wye circuit 4.1kW, 5.8Amps
- 13 = 400V, 3-phase wye circuit 3.8kW, 5.6Amps
- 14 = 380V, 3-phase wye circuit 3.5kW, 5.3Amps
- 15 = 200V, 1-phase, 2.9kW, 14.6Amps
- 16 = 208V, 1-phase, 3.1kW, 15.2Amps
- 17 = 220V, 1-phase, 3.5kW, 16.0Amps
- 18 = 230V, 1-phase, 3.8kW, 16.8Amps
- 19 = 240V, 1-phase, 4.2kW, 17.5Amps
- 20 = 208V, 3-phase wye circuit 4.5kW, 12.5Amps
- 21 = 120V, 1-phase, 1.5kW, 12.5Amps
- 22 = 120V, 1-phase, 3.0kW, 25Amps

**TUBE MATERIAL**
- 00 = Standard PFA tubing 3/8” O.D., 0.031” wall thickness
- 01 = High Purity PFA tubing 3/8” O.D., 0.031” wall (SEMI F57 compliant)

**SENSOR**
- J = J type thermocouples
- K = K type thermocouples

**ACCESSORIES** (ordered separately, loose packed)
- 274-131-1-3 (PFA fitting 3/8” Straight Union, SEMI F57 compliant) 2 pieces
- 307-018-1 (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

**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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**WIRING DIAGRAMS**

**3-PHASE DELTA CIRCUIT**

**3-PHASE WYE CIRCUIT**

**1-PHASE CIRCUIT**
### COMPETITOR COMPARISON

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