

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

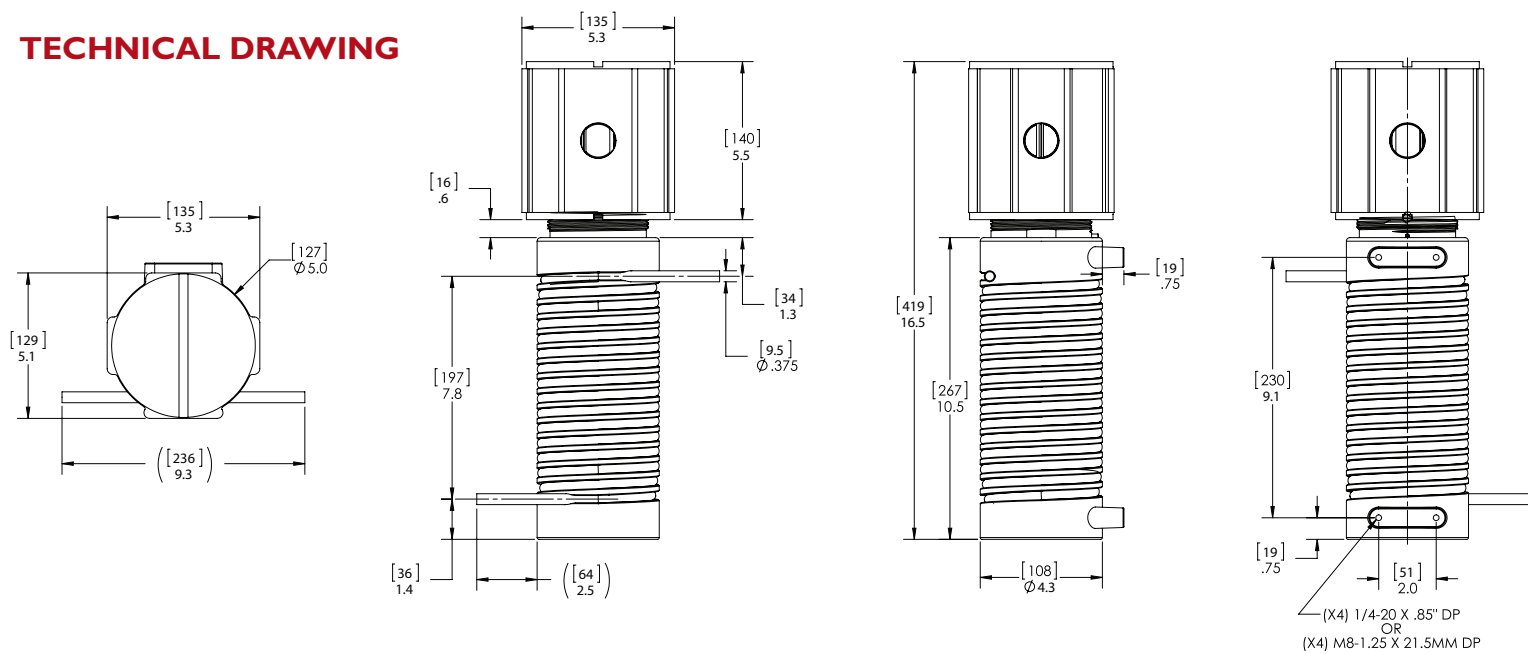
FEATURES/BENEFITS

- 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

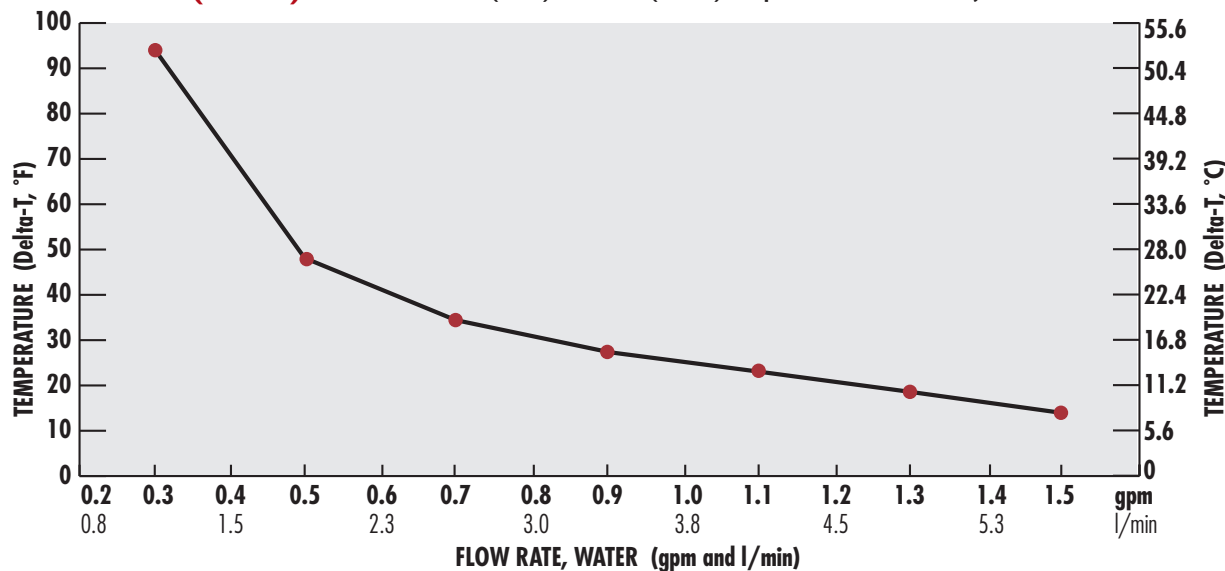
PUR-X 1000

Circulation Heater

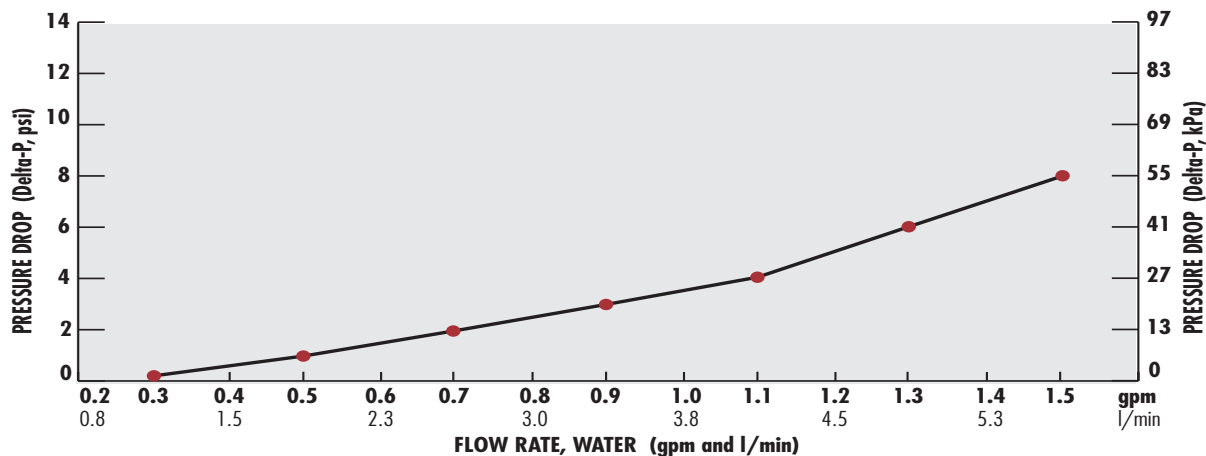
TECHNICAL DRAWING



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

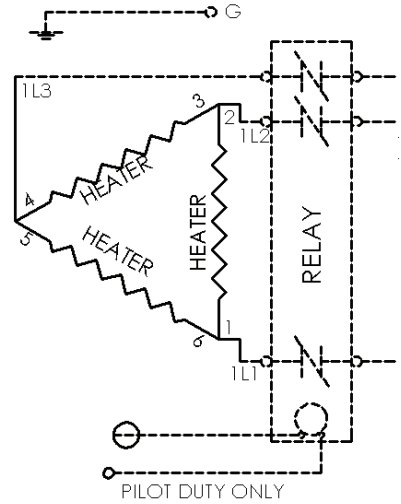
BASE CIRCULATION HEATER	
NEMA 7 ENCLOSURE	
HEATER WATTAGE	
10 = 240V, 3-phase delta circuit 4.2kW 10.1Amps	Choose One
11 = 208V, 3-phase delta circuit 3.1kW 8.8Amps	
12 = 415V, 3-phase wye circuit 4.1kW 5.8Amps	
13 = 400V, 3-phase wye circuit 3.8kW 5.6Amps	
14 = 380V, 3-phase wye circuit 3.5kW 5.3Amps	
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	PX
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., .031" wall thickness	Choose One
01 = High Purity PFA tubing 3/8" O.D., .031" wall (SEMI F57 compliant)	
SENSOR	
JJ = J type thermocouples	Choose One
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	



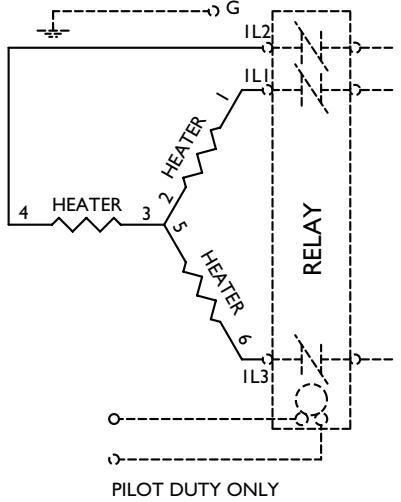
PUR-X 1000
with insulation jacket

WIRING DIAGRAMS

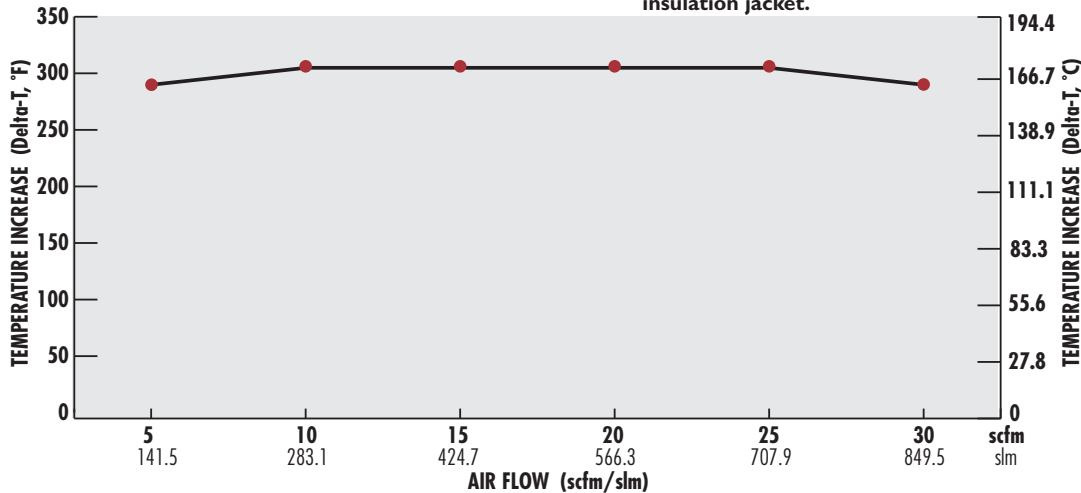
3-PHASE DELTA CIRCUIT



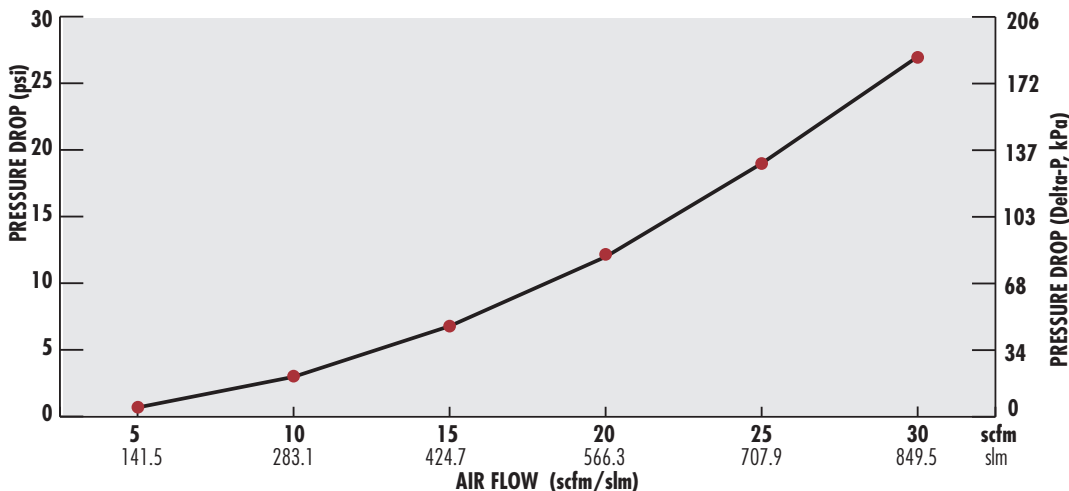
3-PHASE WYE CIRCUIT



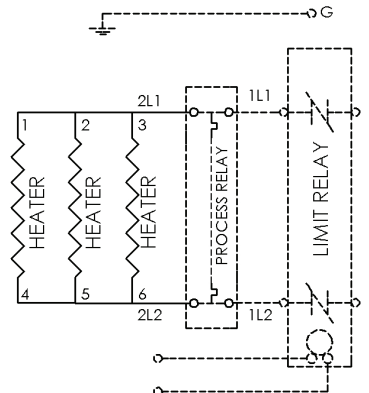
HEATING PROFILE (air) Inlet air at 21°C (70°F) and 70psi; 200°C (392°F) set point with insulation jacket.



PRESSURE DROP PROFILE (air)



1-PHASE CIRCUIT



PUR-X 1000

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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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