

# THERMORACK 1801

The Ultimate Rack Mount Chiller for Plasma Etch  
With even more cooling capacity



## Optimized for Plasma Etch Control

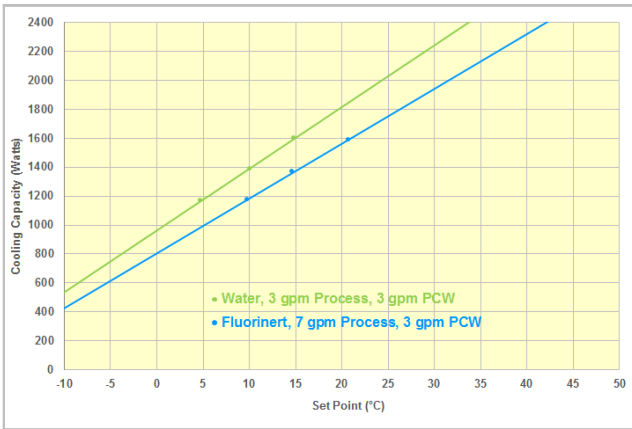
- Up to 1800 Watts of cooling capacity
- -10°C to 80°C operating range
- $\pm 0.05^\circ\text{C}$  repeatability
- 80% less power consumption than compressor based chillers
- Improves wafer to wafer repeatability
- Multiple interfaces for Lam, AMAT and Tel tools

# The Right Temperature Without Fail

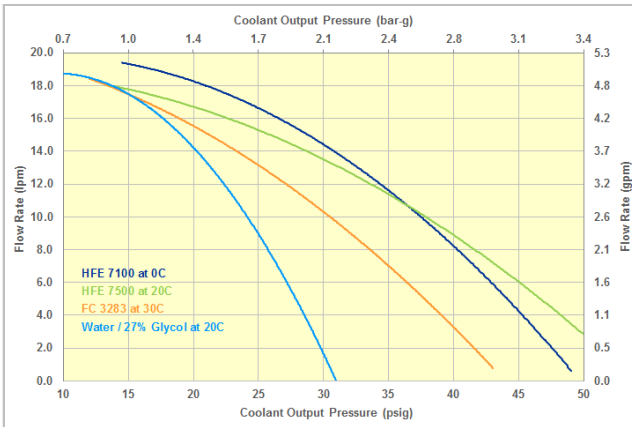
## ThermoRack 1801



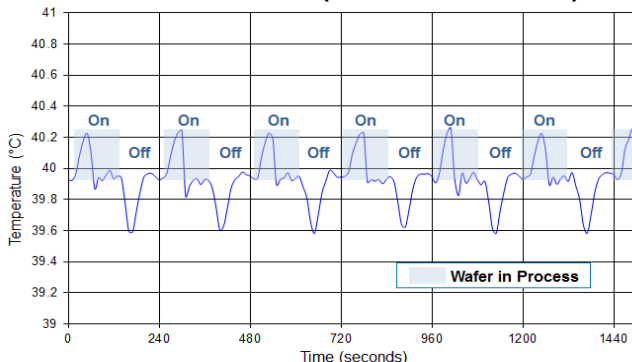
### ThermoRack 1801 Cooling Curves



### ThermoRack 1201/1801 Pump Curves



### ThermoRack 1201/1801 Control with cycling load 1000 Watt Plasma Load (2 min on / 2 min off)



## Precise, Reliable Temperature Control

Providing up to 1800 Watts of cooling capacity with  $\pm 0.05^{\circ}\text{C}$  stability at constant load, ThermoRack 1801 uses as much as 80% less power than compressor chillers. Built upon the foundation of our ThermoRack 1201 system, this new unit provides 50% more capacity in the same 5U rack space. With only two moving parts and no compressor, this thermoelectric chiller is known for high reliability and long life. The ThermoRack 1801 reduces environmental impacts by consuming less power, using 60% less facility water and not requiring any Freon or other chemical refrigerants.

### SPECIFICATIONS

Operating Range	5°C to 80°C (-10°C to 80°C with N <sub>2</sub> )
Ambient Temperature	10°C to 40°C non-condensing
Repeatability	$\pm 0.05^{\circ}\text{C}$ at constant load
Cooling Capacity (Typical)	Up to 1800 Watts @ 20°C with 20°C facility water (See graph)
Coolant / Process Fluid	Glycol/water, Fluorinert/Galden, HFE
Process Fluid Fittings	1/2" Swagelok
Pump	Brushless DC magnetically driven centrifugal pump (same as TR1201)
Tank Volume	5.7 liter (1.5 gal) w/ 2 level sensors
Facility Cooling Water	4-11 lpm (1-3 gpm) @ 10-35°C filtered, treated recirculating facility water. pH 6.5 to 8.2
Facility Fittings	1/2" Swagelok
N <sub>2</sub> /CDA purge (required)	500 sccm -30°C dew point or lower CDA or N <sub>2</sub> , 30-60 psig (2-4 bar) for low temperature operation
Wetted Materials	Process: Al, SS and polymers Facility: Teflon impregnated anodized AL and SS
Size (W x D x H)	19" x 24" x 8.7" 5U (48 x 61 x 22 cm)
Weight	75 lbs (34 kg) dry
Power Input	200-240 VAC, 1 phase, 50/60 Hz, 11 Amps max
Communications	Lam analog, AMAT CHX, AMAT analog, TEL Unity
Standards	Semi S2-0200, F47 compliant, CE
Warranty	2 years

## Solid State Cooling Systems