

THERMORACK 1201

The Ultimate Rack Mount Chiller for Plasma Etch



Optimized for Plasma Etch Control:

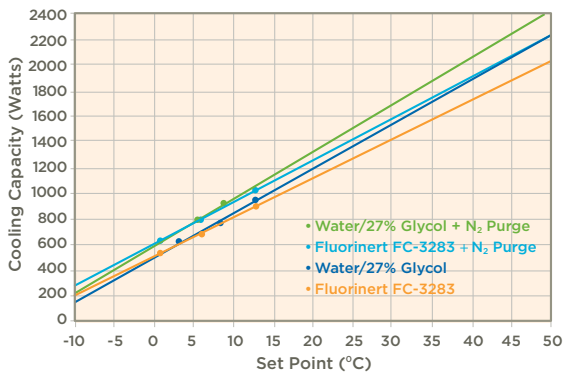
- Up to 1340 Watts of cooling capacity
- -10°C to 80°C operating range
- $\pm 0.05^\circ\text{C}$ Stability at constant load
- 80% less power consumption than compressor-based chillers
- Compact size: Up to 6 TR1201 systems fit in the space of 1 compressor chiller
- Improves wafer to wafer repeatability
- Lam, AMAT CHX or TEL Unity interfaces

The Right Temperature Without Fail

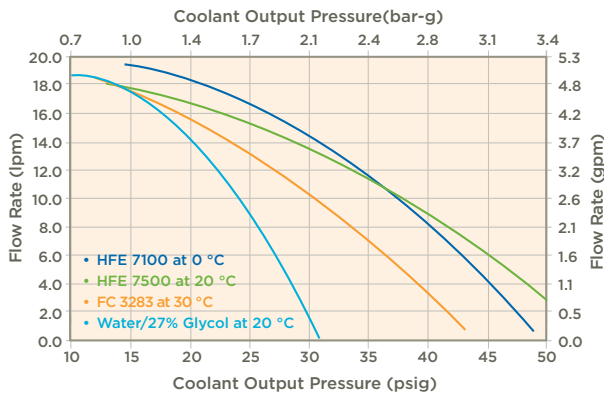
Solid State Cooling Systems



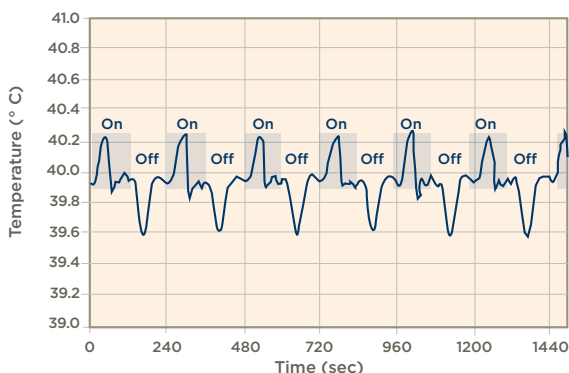
THERMORACK 1201 COOLING CURVES
20°C AMBIENT, 20°C FACILITY WATER @ 2 GPM



THERMORACK 1201 PUMP CURVES



THERMORACK 1201 CONTROL W/CYCLING LOAD
1000 WATT PLASMA LOAD (2 MIN ON / 2 MIN OFF)



Precise, Reliable Temperature Control

Providing up to 1340 Watts of cooling capacity with $\pm 0.05^\circ\text{C}$ stability at constant load, ThermoRack 1201 provides precise temperature control with 80% less power. With only two moving parts and no compressor, this thermoelectric-based chiller is known for high reliability and long life. The ThermoRack 1201 reduces environmental impacts by consuming less power, using 60% less facility water, reducing air conditioning load by 85% and not requiring any Freon or other chemical refrigerants.

SPECIFICATIONS

Operating Range	5 °C to 80 °C (-10°C to 80°C with N2 option)
Ambient Temperature	10 °C to 40 °C
Repeatability	± 0.05 °C
Cooling Capacity	Up to 1340 watts @ 20 °C with 20 °C facility water
Coolant/Process Fluid	Glycol/water mix, Fluorinert/Galden or HFE
Process Fluid Fittings	1/2" Swagelok
Pump	Brushless DC magnetically driven centrifugal
Tank Volume	5.7 liter (1.5 gal) w/ 2 level sensors
Facility Cooling Water	4-19 lpm (1-5 gpm) @ 10-35°C filtered, treated recirculating facility cooling water, pH 6.5 to 8.2
Facility Fittings	1/2" Swagelok
N₂/CDA purge (optional)	500 sccm -30 °C dew point or lower CDA or N ₂ , 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	70 lbs (31 kg) dry
Power Input	200-240 VAC, 1 phase, 50/60 Hz, 10 amps max
Communications	Lam analog, AMAT CHX and TEL Unity
Standards	Semi S2-0200, F47 compliant, CE, TUV listed to UL, CAN/CSA and EN 61010-1
Warranty	2 years

Cooling capacity varies with configuration, fluid type, facility water temperature and flow rates.

Heating capacity is very limited at 80°C (Contact SSCS to discuss our Auxiliary Heater)

SOLID STATE COOLING SYSTEMS