

AG Associates Heatpulse 8800 Specifications

SemiStar Corp – Your Trusted Partner for AG Associates Heatpulse RTP Systems

Looking for a reliable source for your aging AG Associates Heatpulse 4100, 4108, 8108, 8800, or 8800i Rapid Thermal Processors? SemiStar Corp is the go-to expert for refurbished equipment, genuine OEM spare parts, and professional-service.

We maintain extensive inventory of used RTP systems and original parts, and our engineers have over 25 years of hands-on experience servicing AG Associates Heatpulse tools. Still relying on non-specialized vendors? Frustrated by unstable equipment or inconsistent processes caused by second-source parts? Stop chasing problems on your own.

Contact us today at sales@semistarcorp.com and let us handle the issues for you—so you can focus on more important work... or simply enjoy your coffee.

8800.1 OPERATING SPECIFICATIONS

The following are the operating specifications for the Heatpulse® 8800 system.

- **Wafer handling:** automatic serial processing, using standard cassettes.
- **Throughput:** Process dependent, approximately 80 wafers per hour (in a null cycle) without flat-finder.
- **Wafer sizes:** 5 inches, 6 inches, and 8 inches (standard).
- **Ramp-up rate:** Programmable, up to 100°C per second with Ceramic Shield; up to 150°C per second without Ceramic Shield.
- **Steady-state duration:** 1 - 600 seconds per step.
- **Ramp-down rate:** Programmable, 1 - 250°C per second. Ramp-down rate is temperature and radiation dependent, maximum 150°C per second.
- **Recommended steady-state temperature range:** 400 - 1200°C.
- **ERP temperature accuracy:** $\pm 2.9^\circ\text{C}$, when calibrated against an instrumented thermocouple wafer (ITC).
- **Temperature repeatability:** $\pm 2.3^\circ\text{C}$ or better at 1150°C wafer to wafer. (Repetition specifications are based on a 100-wafer set.)
RTO = $\pm 0.75\%$, RTA = 0.75%, RTS = $\pm 0.75\%$, expressed in percentage deviations (Max.-Min)/2xMean
- **Temperature uniformity:** $\pm 3^\circ\text{C}$ across an 8-inch wafer at 1150°C. (This is a 1-sigma deviation from 100-angstrom oxide uniformity.) For a titanium silicidation process, no more than 1.5 percent increase to uniformity during the first anneal at 650 - 700°C.
RTO = $\pm 1.0\%$, RTA = 1.0%, RTS = $\pm 1.5\%$.

8800.2 PHYSICAL DIMENSIONS

• Width	40 in. (102 cm): Monitor-Fab-Wall Configuration 60 in. (102 cm): Monitor-Side-Panel Configuration
• Depth	42 in. (107 cm)
• Height	82 in. (208 cm)
• Weight	2035 lbs (923 kg): Monitor-Fab-Wall Configuration 2075 lbs (941 kg): Monitor-Side-Panel Configuration
• Shipping weight	2235 lbs (1123 kg): Monitor-Fab-Wall Configuration 2275 lbs (1141 kg): Monitor-Side-Panel Configuration

8800.3 UTILITY REQUIREMENTS

Utility requirements include:

• Power	Standard Domestic: 208 VAC, 60 Hz ± 3 Hz; 125 A maximum; 3-phase plus ground and neutral
	European: 400 VAC, 50 Hz ± 3 Hz; 90 A maximum; 3-phase plus ground and neutral
	Japanese: 200 VAC, 50/60 Hz ± 3 Hz, 125 A maximum; 3-phase plus ground
• Water Type	Refer to the 8800 facility manual(Recirculator)

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8800.4 FACILITY CONNECTIONS

The following table is a summary of the facility connections for the Heatpulse 8800 system:

Table A-1. Facility Connections

UTILITY	SERVICE SIZE	CONN. TYPE
Tube Cooling CDA or Utility N2 Valve Actuation CDA or Utility N2	1/2 inch 1/4 inch	Swagelok Swagelok
Cooling Water Supply Cooling Water Return	1/2 inch 1/2 inch	Swagelok Swagelok
Gas Box Exhaust	4-inch OD	Duct
Cooling Exhaust Scavenger Hood Exhaust Containment Exhaust (Optional)	2-inch OD 2-inch OD 2-inch OD	Duct Duct Duct
OR Exhaust Manifold Outlet	4-inch OD	Duct
Process Gas Exhaust (Scrubber)	3/8 inch	VCR, Male
Process Gas Supply Nitrogen Curtain Gas Supply	1/4 inch 1/4 inch	VCR, Female VCR, Female
Recirculator Water Supply Recirculator Water Return	1/2 inch 1/2 inch	Swagelok Swagelok

8800.5 UTILITY SPECIFICATIONS

The following table is a summary of the utility specifications for the Heatpulse 8800 system:

Table A-2. Utility Specifications

UTILITY	FLOW RATE			PRESSURE		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
CDA or Utility N2 (Cooling)	35 SCFM (990 SLM)	40 SCFM (1130 SLM)	60 SCFM (1700 SLM)	80 psig (5.6 kg/cm ²)	90 psig (6.3 kg/cm ²)	100 psig (7 kg/cm ²)
CDA or Utility N2 (Valve Act.)	<1 SCFM (<27 SLM)	<1 SCFM (<27 SLM)	<1 SCFM (<27 SLM)	80 psig (5.6 kg/cm ²)	90 psig (6.3 kg/cm ²)	100 psig (7 kg/cm ²)
Cooling Water Supply	3.0 GPM (11.6 SLM)	4.0 GPM (15.4 SLM)	5.5 GPM (21.2 SLM)	30 psig (2.1 kg/cm ²)	40 psig (2.8 kg/cm ²)	60 psig (4.2 kg/cm ²)
Cooling Water Return	3.0 GPM (11.6 SLM)	4.0 GPM (15.4 SLM)	5.5 GPM (21.2 SLM)	20 psig (1.4 kg/cm ²)	30 psig (2.1 kg/cm ²)	40 psig (2.8 kg/cm ²)
Gas Box Exhaust	0 SCFM (0 SLM)	100 SCFM (2825 SLM)	150 SCFM (4240 SLM)	.5" H ₂ O (12.7 mm)	.75" H ₂ O (19 mm)	-----
Cooling Exhaust	40 SCFM (1130 SLM)	44 SCFM (1250 SLM)	60 SCFM (1700 SLM)	1.5" H ₂ O (38.1 mm)	2" H ₂ O (50.8 mm)	3" H ₂ O (76.2 mm)
Scavenger Hood Exhaust	20 SCFM (540 SLM)	25 SCFM (675 SLM)	30 SCFM (810 SLM)	.75" H ₂ O (19 mm)	1.5" H ₂ O (38.1 mm)	1.5" H ₂ O (38.1 mm)
Containment Exhaust OR	0 SCFM (0 SLM)	0 SCFM (0 SLM)	2 SCFM (54 SLM)	.75" H ₂ O (19 mm)	1" H ₂ O (25.4 mm)	1.5" H ₂ O (38.1 mm)
Exhaust Manifold Outlet	60 SCFM (1700 SLM)	70 SCFM (2000 SLM)	92 SCFM (2600 SLM)	1.5" H ₂ O (38.1 mm)	2" H ₂ O (50.8 mm)	3" H ₂ O (76.2 mm)
Process Gas Exhaust (Scrubber)	-----	-----	-----	.75" H ₂ O (19 mm)	1.5" H ₂ O (38.1 mm)	2.5" H ₂ O (63.5 mm)
Process Gas Supply Nitrogen Curtain Gas Supply	-----	-----	-----	55 psig (3.9 kg/cm ²)	60 psig (4.2 kg/cm ²)	65 psig (4.6 kg/cm ²)
Recirculator Water Supply	7 GPM (27 SLM)	8 GPM (30.8 SLM)	9 GPM (34.65 SLM)	40 psig (2.8 kg/cm ²)	50 psig (3.5 kg/cm ²)	60 psig (4.2 kg/cm ²)