



# ERS AirCool3 Thermal System

Temperature Range: +20 to +300°C, +30 to +300°C



This guide contains information to help prepare your facility for the arrival of your AirCool thermal system. The thermal system discussed here is compatible with 150 mm, 200 mm and 300 mm systems.

## Thermal System Requirements

<b>Environmental Conditions</b>	Site Requirements	<ul style="list-style-type: none"> <li>• A flat, level floor which is strong enough to bear the weight of the equipment</li> <li>• Minimal mechanical vibrations</li> <li>• Well-ventilated and without exposure to direct sunlight</li> <li>• Dry room (for indoor use only)</li> <li>• Near power facilities</li> <li>• Not exposed to combustible or corrosive gases</li> <li>• The thermal system should be positioned on the left side of the station due to the length of the thermal hose and cable connection length. Longer thermal hose and cables are available, but may affect performance.</li> </ul>
	Temperature	Ambient temperature: +18°C to +28°C
	Humidity	Relative humidity: 20% to 60%
<b>Air</b>	Compressed air requirements	<ul style="list-style-type: none"> <li>• Volume:                             <ul style="list-style-type: none"> <li>– +30°C system (150 mm, 200 mm and 300 mm): max. 160 liters/minute (5.7 SCFM) required, at standard atmospheric pressure and temperature.</li> <li>– +20°C system (150 mm and 200 mm): max. 350 liters/minute (12.4 SCFM) required, at standard atmospheric pressure and temperature.</li> <li>– +20°C system (300 mm): max. 480 liters/minute (17 SCFM) required, at standard atmospheric pressure and temperature.</li> </ul> </li> </ul> <p><b>NOTE</b></p> <p> <i>Indicated pressure and volume are required to meet full system specifications. Lower pressure or flow will increase transition times and may affect the minimum temperature.</i></p> <ul style="list-style-type: none"> <li>• Pressure: operation 6.0 bar (0.6 MPa, 87 psi), maximum 8.0 bar (0.8 MPa, 116 psi)</li> <li>• Dew point:                             <ul style="list-style-type: none"> <li>– Microchamber stations: ≤ -45°C</li> <li>– Non-MicroChamber stations: 0°C, dry, clean, oil free (coalescing filter required)</li> </ul> </li> <li>• Temperature: ≤ +26°C</li> <li>• Purity: 99.9%, 3 µm filtered</li> <li>• Residual oil volume: 0.01 mg/m<sup>3</sup> @ 20°C and 0.7 MPa</li> </ul> <p><b>WARNING</b></p> <p> <i>FormFactor does not endorse or recommend using nitrogen instead of CDA for thermal system operation with any FormFactor system due to the risk of oxygen depletion in the working environment.</i></p> <p><i>If your testing configuration requires the use of nitrogen instead of CDA for MicroChamber purge, time in Quick Purge mode should be controlled. Discuss your setup with your safety and facilities departments to ensure that the oxygen flow in your working environment is adequate to dissipate any nitrogen build up. The use of oxygen sensor alarms is also recommended.</i></p> <p><i>For MicroChamber purge requirements, refer to your probe station Facility Planning Guide.</i></p>

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<b>Power</b>	Controller	<ul style="list-style-type: none"> <li>• 100/110/200/208/230 VAC, 50/60 Hz (auto switching)</li> <li>• 1000 VA</li> </ul>
	North American style plugs (contact a FormFactor representative for details on what type of plug is appropriate for your facility configuration.)	<ul style="list-style-type: none"> <li>• 200-220V</li> <li>• 100-115V</li> </ul> <div style="text-align: center;">  <p><b>NEMA L6-15</b></p>  <p><b>NEMA 5-20</b></p> </div>
<b>Communications</b>	RS-232 or IEEE 488	
<b>Dimensions and Weight</b>	Controller	<ul style="list-style-type: none"> <li>• 300 mm/11.8 in. (W) x 360 mm/14.2 in. (D) x 140 mm/5.5 in. (H)</li> <li>• 12 kg (26.5 pound)</li> </ul>
	Valve box	<ul style="list-style-type: none"> <li>• 140 mm/5.5 in. (W) x 145 mm/5.7 in. (D) x 100 mm/4.0 in. (H)</li> <li>• 1.5 kg (3.3 pound)</li> </ul>
	<p><b>NOTE</b></p> <p><i>A vortex cooler is included with the 20°C to 300°C ERS thermal systems. It is mounted to the chamber exit panel on the rear of the probe station in a manner that requires no additional footprint. The vortex cooler is a passive device that operates off the supplied volume of CDA and consumes no electrical power.</i></p>	
<b>Shipping Dimensions and Weight</b>	Controller	<ul style="list-style-type: none"> <li>• 53 cm/21 in. (W) x 63 cm/25 in. (D) x 60 cm/24 in. (H)</li> <li>• Weight: 50 kg (110 pounds)</li> </ul>

SP110 controller

PV110 valve box



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Vortex cooler  
(150mm, 200 mm)



Vortex cooler  
(300 mm)



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## Corporate Headquarters

7005 Southfront Road  
Livermore, CA 94551  
Phone: 925-290-4000  
[www.formfactor.com](http://www.formfactor.com)

