

# Summit 11000/12000 Probe Station

This guide defines the facility requirements for operation of your Summit 11000/12000 probe station. Facility requirements for thermal systems are listed separately. See the Facility Planning Guide specific to your thermal system for details.

## Probe Station Requirements

<b>Clean Dry Air (CDA)</b>	CDA requirements vary depending on the system configuration and the temperature range in which the system will operate. CDA for <a href="#">General use</a> purposes is always required, and is used for basic system functions like base table damping and platen cooling. CDA for the <a href="#">MicroChamber probing environment</a> (PURGE) is additionally required for all -M and -AP shielded systems in order to keep a clean, dry environment for high performance triaxial probing, and moisture and ice free probing at temperatures below ambient. CDA requirements for the thermal system (if applicable) are listed separately and are in addition to system requirements. See your thermal system Facility Planning Guide for details.	
	General use	<ul style="list-style-type: none"> <li>• ISO 8573.1 Class 1.4.1 (3°C dew point, oil less than 0.01 mg/m<sup>3</sup>)</li> <li>• 110 l/min (3.9 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage</li> <li>• 8 mm OD push-in tube connection (3 m max tube length)</li> </ul>
	MicroChamber probing environment	<ul style="list-style-type: none"> <li>• ISO 8573.1 Class 1.1.1 (-70°C dew point, oil less than 0.01 mg/m<sup>3</sup>)</li> <li>• Max flow: quick purge up to 280 l/min (9.9 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage</li> <li>• Continuous flow: 57-85 l/min (2-3 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage</li> <li>• 8 mm OD push-in tube connection (3 m max tube length)</li> <li>• Chamber atmospheric pressure dew point:                             <ul style="list-style-type: none"> <li>– Thermal system operated down to +20°C: ≤ -45°C at SATP* (-29°C at 5 bar [73 psi] gage)</li> <li>– Thermal system operated down to -40°C: ≤ -50°C at SATP* (-35°C at 5 bar [73 psi] gage)</li> <li>– Thermal system operated down to -60°C: ≤ -70°C at SATP* (-57°C at 5 bar [73 psi] gage)</li> </ul> </li> </ul>
	MicroChamber probing environment and general use CDA	<ul style="list-style-type: none"> <li>• ISO 8573.1 Class 1.1.1 (-70°C dew point, oil less than 0.01 mg/m<sup>3</sup>)</li> <li>• Max flow: quick purge and platen jets up to 330 l/min (11.7 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage</li> <li>• Continuous flow: 57-85 l/min (2-3 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage</li> <li>• 8 mm OD push-in tube connection (3 m max tube length)</li> <li>• See <a href="#">MicroChamber probing environment</a> for details on atmospheric pressure dewpoint.</li> </ul> <p>CDA for general use may be supplied by the MicroChamber supply for a single service supply.</p>
<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><b>NOTE</b></p>  <p><i>Note that the combined values for independent general use and MicroChamber purge flow are not equal to the value for simultaneous general use and MicroChamber purge flow.</i></p> <p><i>Modification of the manifold plumbing is required if you are using N<sub>2</sub>. See the Summit User Guide for details.</i></p>		
<b>Vacuum</b>	<ul style="list-style-type: none"> <li>• Wafer hold on chuck and positioners:                             <ul style="list-style-type: none"> <li>– Required: &lt; 500 mbar (14.8 inHg) absolute, -510 mbar (-15.0 inHg) gage, at up to 3.4 l/min (0.12 CFM) at SATP*</li> <li>– Recommended: &lt; 400 mbar (11.8 inHg) absolute, -610 mbar (-18.0 inHg) gage, at up to 5 l/min (0.18 CFM) at SATP*</li> <li>– 8 mm OD push-in tube connection (3 m max tube length)</li> </ul> </li> <li>• Wafer hold only (while under test to ensure measurement performance):</li> </ul> <p>Vacuum pressure stability: ± 10 mbar (0.3 inHg)</p>	

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<b>Power</b>	Probe station	<ul style="list-style-type: none"> <li>• Single phase: 100-127 VAC or 208-240 VAC 50/60 Hz</li> <li>• 460 VA</li> <li>• Source: <ul style="list-style-type: none"> <li>– North America: NEMA 5-20 for 100-127 VAC or NEMA L6-15 for 208-240 VAC</li> <li>– Europe: CEE VII (Schuko)</li> <li>– Other: consult factory</li> </ul> </li> <li>• Appropriate international power cables will be supplied.</li> <li>• A total current of 3.2/1.6 A, 115/230 VAC is required for both auxiliary and microscope outlets. The combined leakage current of accessories attached to these two outlets must be less than 3mA.</li> </ul>
	Transient overvoltage	<ul style="list-style-type: none"> <li>• Main supply voltage fluctuations not to exceed <math>\pm 10\%</math> of the nominal voltage</li> <li>• Overvoltage category II (IEC 60364-4-443)</li> </ul>
	Circuit breaker	Minimum rating: 10,000 AIC
	Accessories	<ul style="list-style-type: none"> <li>• Vacuum pump 1 A / 0.5 A</li> <li>• Air compressor 3 A / 1.5 A</li> <li>• Video camera 0.5 A / 0.25 A</li> <li>• Laser 6 A / 3 A</li> <li>• Laser illuminator 3 A / 1.5 A</li> <li>• Microscope illuminator 2.5 A / 1.25 A</li> <li>• Computer 1.5A / 0.75A typical</li> <li>• Computer monitor 1.5A / 0.75A typical</li> </ul>
<b>Thermal Systems</b>	Refer to the facility preparation guide for your thermal system.  <b>NOTE</b> <i>Optional seismic restraints are available for ATT thermal systems which include a chiller.</i>	
<b>Environmental Conditions</b>	Operating	<ul style="list-style-type: none"> <li>• Indoors only</li> <li>• Altitude up to 2000 m</li> </ul>
	Ambient temperature	<ul style="list-style-type: none"> <li>• +18°C to +28°C</li> </ul>
	Relative humidity	<ul style="list-style-type: none"> <li>• 20% to 60%</li> </ul>
	IP rating	<ul style="list-style-type: none"> <li>• X0</li> </ul>
	Pollution degree	<ul style="list-style-type: none"> <li>• 2</li> </ul>
	Ambient vibration (including floor)	<p>The probe station should be used with a Cascade Microtech recommended vibration isolation table. The vibration isolation table is intended for use in an environment having background vibrations at or below the ISO Operating Theatre level:</p> <ul style="list-style-type: none"> <li>• Maximum level 4000 micro-in./sec (72 dB), measured using the 1/3-octave-band velocity spectra method</li> </ul>
	Seismic restraints	Installation of seismic restraints is required to safely restrain the probe station during a seismic event and to meet the safety requirements as outlined by SEMI-S2.
<b>Additional Equipment</b>	Workbench	<ul style="list-style-type: none"> <li>• Size: minimum 1200 wide x 760 mm deep (47 x 30 in.)</li> <li>• Capacity: 230 kg (507 pounds) minimum</li> </ul>
	Flowmeter	<ul style="list-style-type: none"> <li>• 0-4 SCFM air flow with quick purge bypass (standard on Summit -AP and -M MicroChamber stations, optional and ordered separately for Summit -S stations)</li> <li>• The flowmeter is not required if an air dryer is included in the system configuration.</li> <li>• If a MicroChamber is included in the system configuration, a flowmeter is included for purge air control. Specifications for the flowmeter are 0-4 SCFM air flow with quick purge bypass.</li> </ul>

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<b>Dimensions</b>	Probe station	• See <a href="#">Dimensions</a> on page 4.
	Clearance	Front • 800 mm (32 in.) for operator/installation during installation or service
		Back • 1000 mm (39 in.) for service access • 800 mm (32 in.) when using optional holders for monitor, keyboard or test instrument
		Left/right • 200 mm (8 in.) for cables, maximum 450 mm (17.7 in.) for use of control console • 800 mm (32 in.) during installation or service, or permanently when using optional holders for monitor, keyboard or test instrument
		Top • 400 mm (16 in.)
	Additional clearance may be required for thermal system cooling units.	
<b>Weight</b>	Probe station	• ~182 kg (401 pounds)
	Lifting requirements	To avoid personal injury and/or damage to the station, a forklift (minimum 400-pound capacity) is required to move the unit, and a minimum of four to six people will be required to shift it onto the table. Note that the weight is not distributed evenly between all four corners of the station. The rear of the station is heavier than the front.
<b>Shipping Dimensions (WxDxH)</b>	Probe station crate (with table)	• 1050 x 1170 x 1010 mm (42 x 46 x 40 inches)
<b>Shipping Weight</b>	Probe station and crate	• ~272 kg (600 pounds)

\* Standard Ambient Temperature And Pressure (SATP)

# Summit 11000/12000 Probe Station

## Dimensions

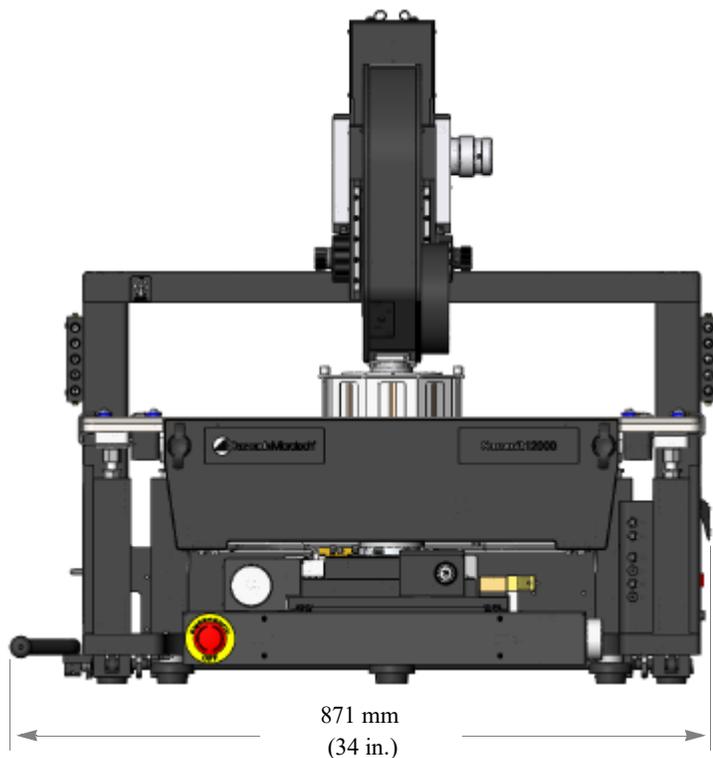


### NOTE

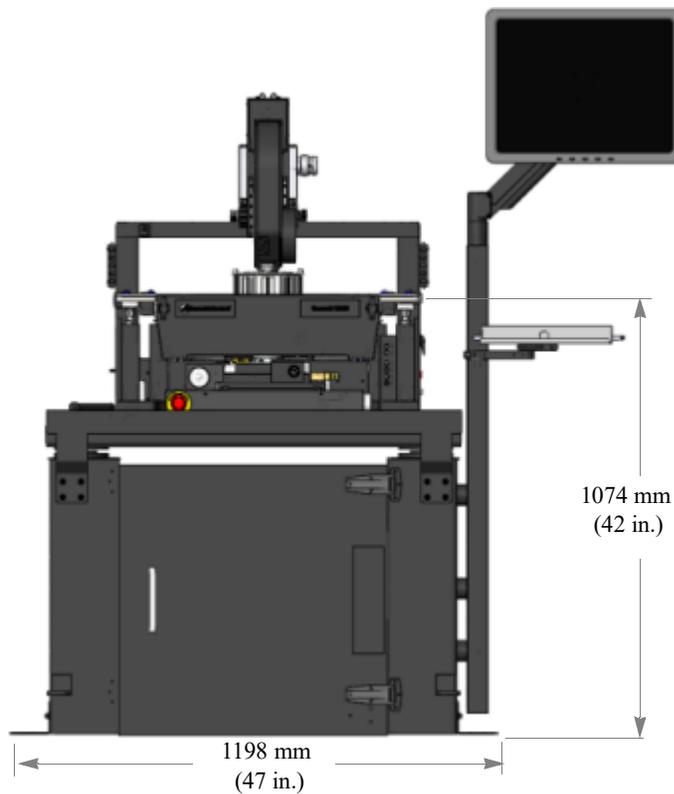
Refer to [Clearance](#) on page 3 for recommended working space around the station.

## Front View

Station

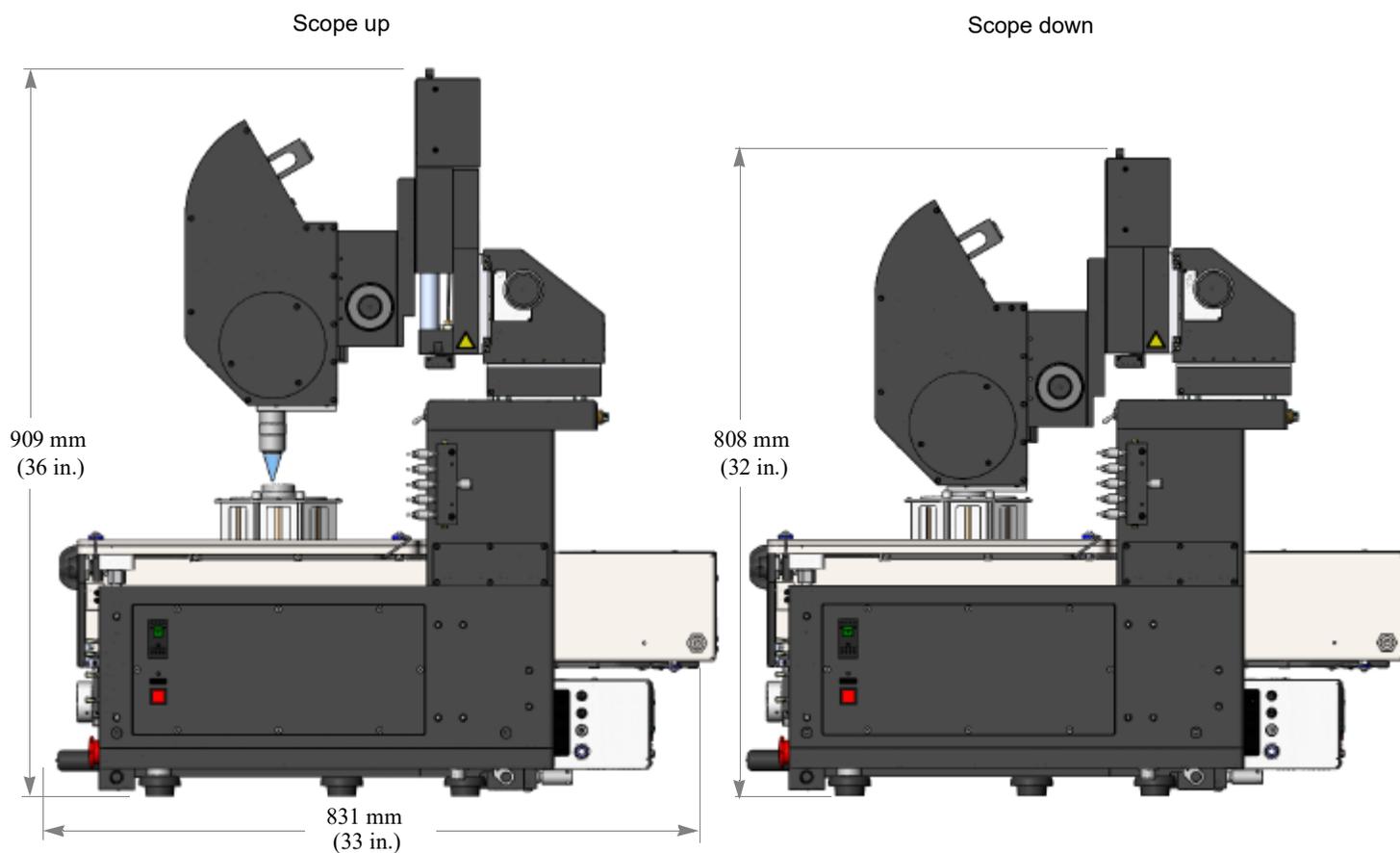


Station with monitor and vibration isolation table



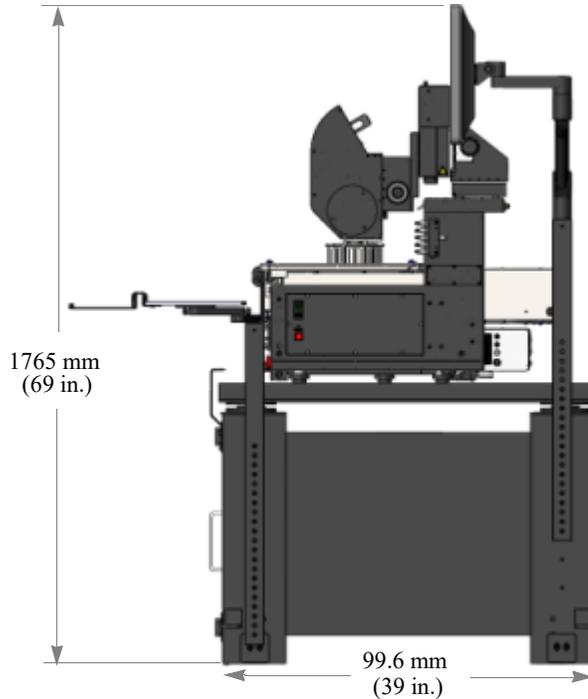
# Summit 11000/12000 Probe Station

## Side View



# Summit 11000/12000 Probe Station

Station with monitor and vibration isolation table



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