Tesla 200 mm Probe System

This guide contains information to help prepare your facility for the arrival of your Tesla 200 mm system.

DANGER

FormFactor requires that the light curtain safety interlock is installed prior to use of this equipment. The interlock must be active whenever high voltage is present. Customers are responsible for ensuring proper connection and that the safety interlock is active before use.

NOTE

Facility requirements for thermal systems are listed separately. See the Facility Planning Guide specific to your thermal system for details.

Probe Station Requirements

Clean Dry Air (CDA)	General use	• ISO 8573.1 Class 1.4.1 (3°C dew point, oil less than 0.01 mg/m^3) • 110 l/min (3.9 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage • 8 mm OD push-in tube connection (3 m max tube length)
	MicroChamber probing environment	• ISO 8573.1 Class 1.1.1 (-70°C dew point, oil less than 0.01 mg/m^3) • Max flow: quick purge up to 280 l/min (9.9 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage • Continuous flow: 57-85 l/min (2-3 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage • 10 mm OD push-in tube connection (3 m max tube length)
	MicroChamber probing environment and general use CDA	• ISO 8573.1 Class 1.1.1 (-70°C dew point, oil less than 0.01 mg/m^3) • 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 • Continuous flow: 57-85 l/min (2-3 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage • 10mm OD push-in tube connection (3 m max tube length) • Chamber atmospheric pressure dew point: – Thermal system operated down to +20°C: ≤ -45°C at SATP* (-29°C at 5 bar [73 psi] gage) – Thermal system operated down to -40°C: ≤ -50°C at SATP* (-35°C at 5 bar [73 psi] gage) – Thermal system operated down to -60°C: ≤ -70°C at SATP* (-57°C at 5 bar [73 psi] gage) CDA for general use may be supplied by the MicroChamber supply for a single service supply.
		WARNING *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.* *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.* **NOTE** *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.* *Modification of the manifold plumbing is required if you are using N_2. See the Summit User Guide for details.*

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Vacuum	• Wafer hold on chuck and positioners: – Required: < 500 mbar (14.8 inHg) absolute, -510 mbar (-15.0 inHg) gage, at up to 3.4 l/min (0.12 CFM) at SATP* – Recommended: < 400 mbar (11.8 inHg) absolute, -610 mbar (-18.0 inHg) gage, at up to 5 l/min (0.18 CFM) at SATP* – 8 mm OD push-in tube connection (3 m max tube length) • Wafer hold only (while under test to ensure measurement performance): Vacuum pressure stability: ± 10 mbar (0.3 inHg)	
Power	Station	• Single phase: 100-120 VAC or 200-240 VAC, 10 A, 50/60 Hz • Source (plugs): – North America: NEMA 5-20 for 100-127 VAC or NEMA L6-15 for 208-240 VAC – Europe: CEE VII (Schuko) – Other: consult factory • Appropriate international power cables will be supplied.
	Circuit breaker	• Minimum rating: 10,000 AIC
	Accessories	• Vacuum pump 1 A / 0.5 A • Air compressor 3 A / 1.5 A • Video camera 0.5 A / 0.25 A • Laser 6 A / 3 A • Laser illuminator 3 A / 1.5 A • Microscope illuminator 2.5 A / 1.25 A • Computer 1.5A / 0.75A typical • Computer monitor 1.5A / 0.75A typical
Thermal Systems	Refer to the facility preparation guide for your thermal system. Note that the standard low temperature range is adjusted to -55°C due to complexity of the high voltage chuck.	
Environmental Conditions	Operating	• Indoors only • Altitude up to 1000 m • Main supply voltage fluctuations not to exceed ± 10% of the nominal voltage • A total current of 3.2/1.6 A, 115/230 VAC is required for both auxiliary and microscope outlets. The combined leakage current to ground of accessories attached to these two outlets must be less than 3 mA.
	Temperature	• +17°C to +23°C
	Relative humidity	• 20% to 60%
	Ambient vibration (including floor)	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: • Maximum level 4000 micro-in./sec (72 dB), measured using the 1/3-octave-band velocity spectra method
	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.
Additional Equipment	Workbench	• Size: minimum 1200 wide x 760 mm deep (47 x 30 in.) • Capacity: 230 kg (507 pounds) minimum
	Flowmeter	• 0-4 SCFM air flow with quick purge bypass (standard on T200-AP and T200-M MicroChamber stations)

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Dimensions	Station	• See Dimensions (in mm) 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 (18 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.	
Weight	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.	
Shipping Dimensions (WxDxH)	Station and vibration isolation table	• 900 x 1070 x 900 mm (35 x 42 x 36 in.)	
Shipping Weight	Probe station crate (with vibration isolation table)	• ~545 kg (1200 pounds)	
	Accessories box	• ~225 kg (500 pounds)	

* Standard Ambient Temperature And Pressure (SATP)

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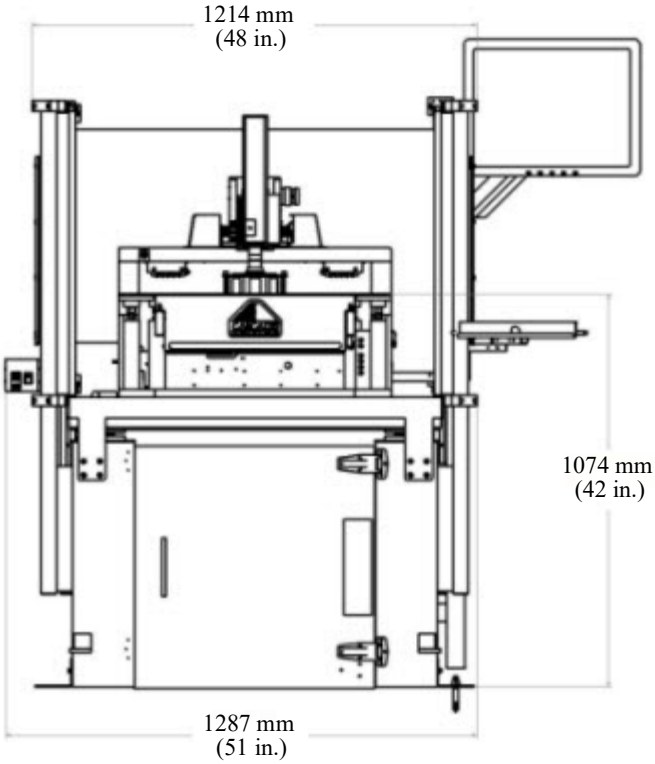
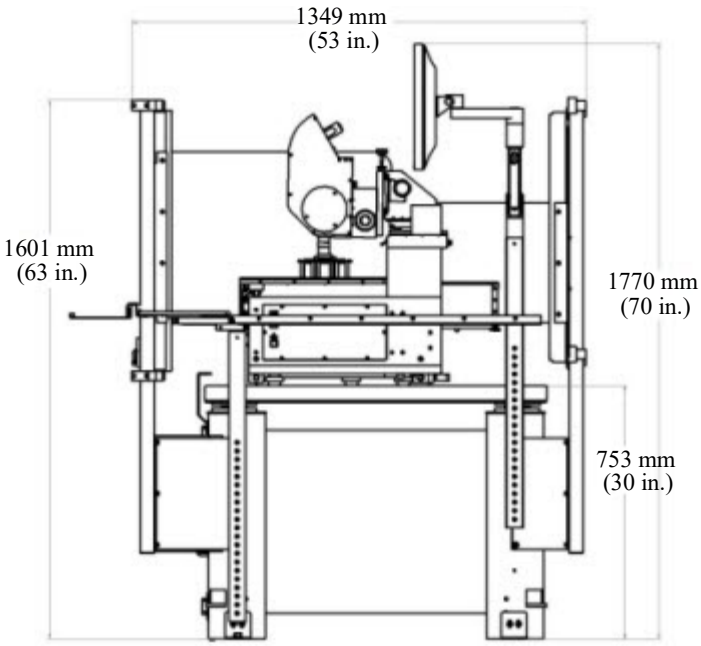
Dimensions (in mm)

Front view



Side view



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