

Facility Planning Guide

This guide contains information to help prepare your facility for the arrival of your Tesla system. Tesla systems include:


- Tesla Complete Measurement System with -55°C to 200°C thermal chuck and chiller system (T200-SYS-FR)
- Tesla Complete Measurement System with 20°C to 200°C thermal chuck and vortex system (T200-SYS-FA)



DANGER

Cascade Microtech 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.

Probe Station Requirements

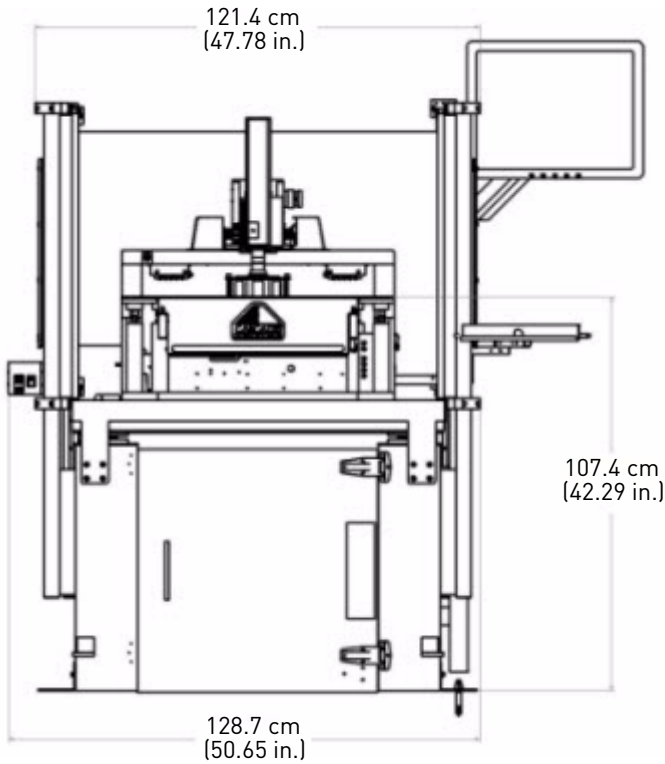
Air and Vacuum	Vacuum	<ul style="list-style-type: none"> • 400mm (15 inches) of Hg minimum • Minimum vacuum required: 3.4 liters/minute (0.12 SCFM)
	Vacuum connection	<ul style="list-style-type: none"> • 8 mm (0.315 in.) O.D. polyurethane tubing • 2.4 m (8 feet) provided
	Compressed air for High Stability Tilt-back Bridge	<ul style="list-style-type: none"> • 0.55-0.86 Mpa (80 - 125 psi) input
MicroChamber Purge	Available Flow	<ul style="list-style-type: none"> • 170 liters/minute (6 SCFM) maximum; 113 liters/minute (4 SCFM) if using nitrogen for "quickpurge" <div style="text-align: center;">  <p>WARNING</p> <p><i>Cascade Microtech does not endorse or recommend using nitrogen instead of CDA, except for MicroChamber purge, with any Cascade Microtech 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> </div> <ul style="list-style-type: none"> • Continuous operation requires less air; 57-85 liters/minute (2-3 SCFM)
	Purge Connection	<ul style="list-style-type: none"> • 12.7 mm (0.50-inch) O.D. polyurethane tubing (PN 112-405) 3 m (10 feet) is provided in the accessories kit
	Dew Point (Dry Air or Nitrogen)	<ul style="list-style-type: none"> • < -70°C
Environmental Conditions	Operating	<ul style="list-style-type: none"> • Indoors only • Altitude up to 1000 m • Main supply voltage fluctuations not to exceed $\pm 10\%$ 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	<ul style="list-style-type: none"> • 23°C \pm 3°C
	Humidity	<ul style="list-style-type: none"> • 40% \pm 20%
	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.

Tesla Power Device Characterization System

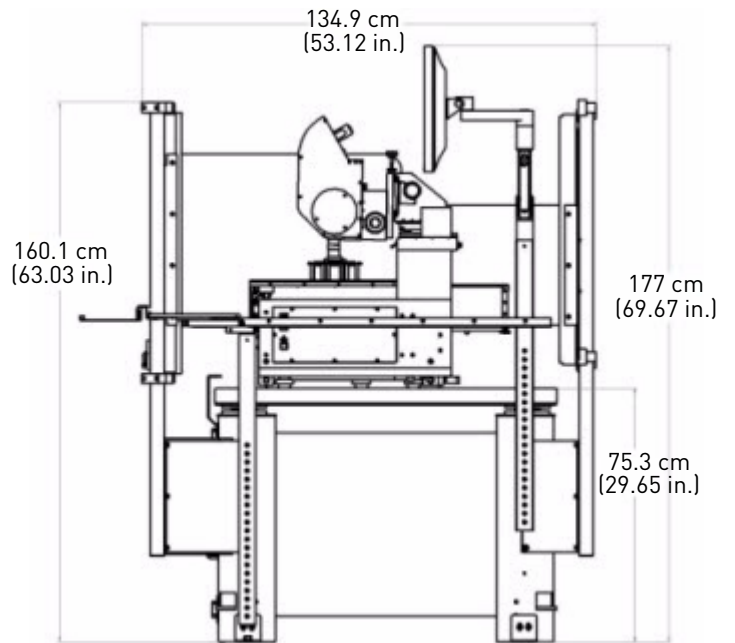
Power	Power outlet strip	<ul style="list-style-type: none"> • 115/230 VAC 10A rated
	Station	<ul style="list-style-type: none"> • 115 VAC @ 4A or 230 VAC @ 2A • 50/60 Hz
	Safety Interlock	<ul style="list-style-type: none"> • 100 VAC 50/60 Hz @ 0.6A • 240 VAC 50/60 Hz @ 0.4A <p>The Light Curtain Safety Interlock system receives power from the probe station power strip.</p>
	Cable	For international shipments, the probe station will be supplied with appropriate power cables.
Accessories	Power requirements for accessories <i>(amperage listed is for 115/230 VAC)</i>	<ul style="list-style-type: none"> • Vacuum pump 1 A / 0.5 A • Air compressor (high stability bridge) 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	-55° to 200° C	• Full range thermal system—high performance thermal controller and chiller system for temperature ranges between -55° to 200°C.
	20° to 300°C	• Ambient to hot thermal system—high performance thermal controller and vortex system for temperature ranges between 20° to 300°C.
	-55°C to 300°C	• Full range thermal system—high performance thermal controller and chiller system for temperature ranges between -55° to 300°C.
Additional Equipment	Workbench	<ul style="list-style-type: none"> • Size: 1.2 m (4 feet) wide x 0.76 m (2.5 feet) deep minimum • Capacity: 230 kg (507-pound) minimum
	Flowmeter	<ul style="list-style-type: none"> • Omega Model # FL 4513-V (or equivalent), 0-8 SCFM air flow (standard on MicroChamber stations). • The flowmeter is not required if an air dryer is included in the system configuration. • A flowmeter is included for purge air control. Specifications for the flowmeter are 0 to 8 SCFM.
Dimensions	Station	• 128 cm/50.4 in. (W) x 135 cm/53.1 in. (D) x 177 cm/69.7 in., with monitor (H)
Weight	Probe station	• 182 kg (400 pounds)
	Lifting requirements	To avoid personal injury and/or damage to the station, a forklift (minimum 500 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 and Weight	Station and vibration isolation table	<ul style="list-style-type: none"> • 90.2 cm/35.5 in. (W) x 106.7 cm/42 in. (D) x 90.4 cm/35.6 in. (H) • Weight: approx 545 kg (1200 pounds)
	Accessories	• Weight: approx. 225 kg (500 pounds)

Tesla Power Device Characterization System

Front view



Side view



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