# Cascade SUMMIT200 Probe System

This guide contains information to help prepare your facility for the arrival of your probe station.

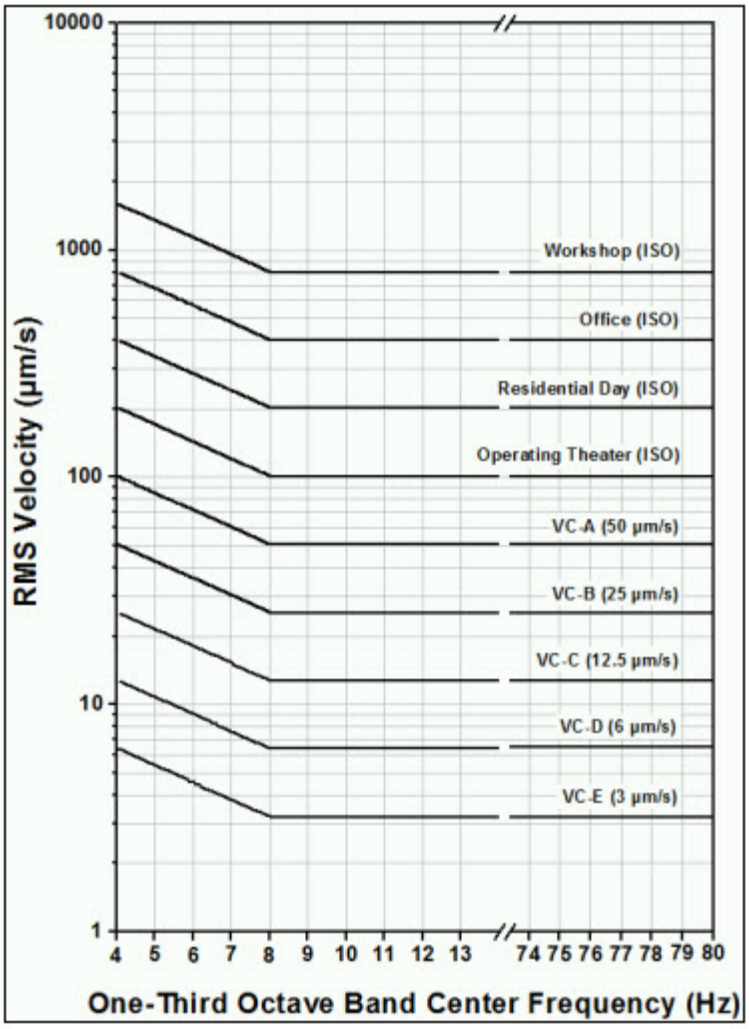
**NOTE**

*Facility requirements for thermal systems are listed separately. See the Facility Planning Guide specific to your thermal system for details.*
*Specifications apply to both semi-automated and fully-automated systems where not specifically differentiated.*

## 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$^3$)<br>• 110 l/min (3.9 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage<br>• 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$^3$)<br>• Max flow: quick purge up to 280 l/min (9.9 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage<br>• Continuous flow: 57-85 l/min (2-3 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage<br>• 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$^3$)<br>• 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<br>• Continuous flow: 57-85 l/min (2-3 CFM) at SATP* supplied at 6-8 bar (87 - 116 psi) gage<br>• 10mm OD push-in tube connection (3 m max tube length)<br>• Chamber atmospheric pressure dew point:<br>– Thermal system operated down to +20°C: ≤ -45°C at SATP* (-29°C at 5 bar [73 psi] gage)<br>– Thermal system operated down to -40°C: ≤ -50°C at SATP* (-35°C at 5 bar [73 psi] gage)<br>– Thermal system operated down to -60°C: ≤ -70°C at SATP* (-57°C at 5 bar [73 psi] gage)<br>CDA for general use may be supplied by the MicroChamber supply for a single service supply. |
| | | **WARNING**<br>*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.*<br>*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.*<br>**NOTE**<br>*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.*<br>*Modification of the manifold plumbing is required if you are using N2. See the Summit User Guide for details.* |
| **Vacuum** | | • Wafer hold on chuck and positioners:<br>– 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*<br>– Recommended: < 400 mbar (11.8 inHg) absolute, -610 mbar (-18.0 inHg) gage, at up to 5 l/min (0.18 CFM) at SATP*<br>– 8 mm OD push-in tube connection (3 m max tube length)<br>• Wafer hold only (while under test to ensure measurement performance):<br>– Vacuum pressure stability: ± 10 mbar (0.3 inHg) |

| | | |
|---|---|---|
| **Power** | Fully-automated probe station | (Includes station controller, monitors, eVue microscope, wafer handler, 2 load ports)<br>• Single phase: 100-240 VAC, 50/60 Hz<br>• Maximum 500 VA<br>• Main connector:<br>– Grounded IEC appliance inlet C14, according to IEC 60320,UL 498, CSA C22.2 no. 42 (for cold conditions) pin-temperature 70°C, 10 A, protection class I. A region dependent power cord connects IEC C14 to common local power plug (1 phase, grounded).<br>• Facility power line fuse:<br>– Minimum 15A |
| | Semi-automated probe station | (Includes station controller, monitors, eVue microscope)<br>• Single phase: 100-240 VAC, 50/60 Hz<br>• Maximum 500 VA<br>• Main connector:<br>– Grounded IEC appliance inlet C14, according to IEC 60320,UL 498, CSA C22.2 no. 42 (for cold conditions) pin-temperature 70°C, 10 A, protection class I. A region dependent power cord connects IEC C14 to common local power plug (1 phase, grounded).<br>• Facility power line fuse:<br>– Minimum 15A |
| | Protection class | • I (IEC 61140) |
| | Transient overvoltage | • Overvoltage category II (IEC 60364-4-443) |
| | Circuit breaker | • Minimum rating: 10,000 AIC |
| | For information on other optional components, refer to the data sheet for the particular item. | |
| **Thermal Systems** | Refer to the facility preparation guide for your thermal system. | |

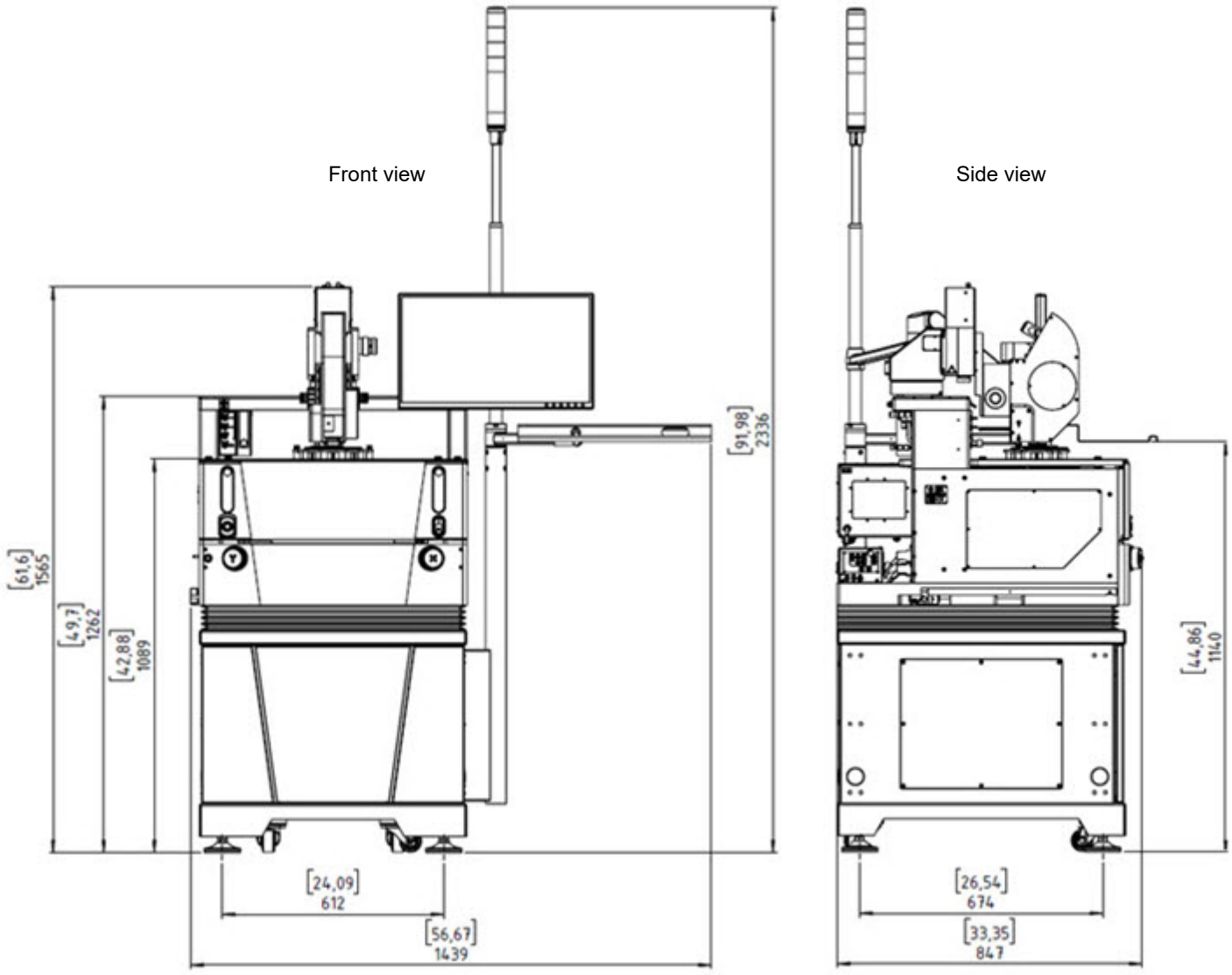
| | | |
|---|---|---|
| **Environmental Conditions** | Operating | • Indoors only<br>• Altitude up to 2000 m<br>• Main supply voltage fluctuations not to exceed ± 10% of the nominal voltage |
| | Ambient temperature | • +18ºC to +28ºC |
| | Relative humidity | • 20% to 60% |
| | Ambient vibration (including floor) | The vibration isolation table is intended for use in an environment having background vibrations at or below the ISO Operating Theatre level:<br>• Maximum level 4000 micro-in./sec (72 dB), measured using the 1/3-octave-band velocity spectra method<br>  |
| | 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** | Flowmeter | • 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)<br>• The flowmeter is not required if an air dryer is included in the system configuration.<br>• 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. |

| | | | |
|---|---|---|---|
| **Dimensions** | Probe station | • See Dimensions (in mm [in.]) on page 5. | |
| | Clearance | Front | • 900 mm (36 in.) during installation or service |
| | | Back | • 800 mm (32 in.) during installation or service |
| | | Left/right | • 800 mm (32 in.) during installation or service |
| | | Top | • 400 mm (16 in.) |
| | | Additional clearance may be required for thermal system cooling units. | |
| **Weight** | Probe station | • Fully automated: ~530 kg (1168 pounds)<br>• Semi-automated: ~310 kg (683 pounds) | |
| | Lifting requirements | To avoid personal injury and/or damage to the station, a sufficiently rated forklift (minimum 2000-pound capacity) is required to move the unit if lifting is required. The crate is equipped with a ramp for unloading. A minimum of two persons are required to roll the unit into place. | |
| **Shipping Dimensions (WxDxH)** | Probe station crate (with table) | • 1163 x 1722 x 1540 mm (46 x 68 x 61in.) | |
| **Shipping Weight** | Probe station and crate | • Fully automated: ~770 kg (1698 pounds)<br>• Semi-automated: ~530 kg (1168 pounds) | |

* Standard Ambient Temperature And Pressure (SATP)

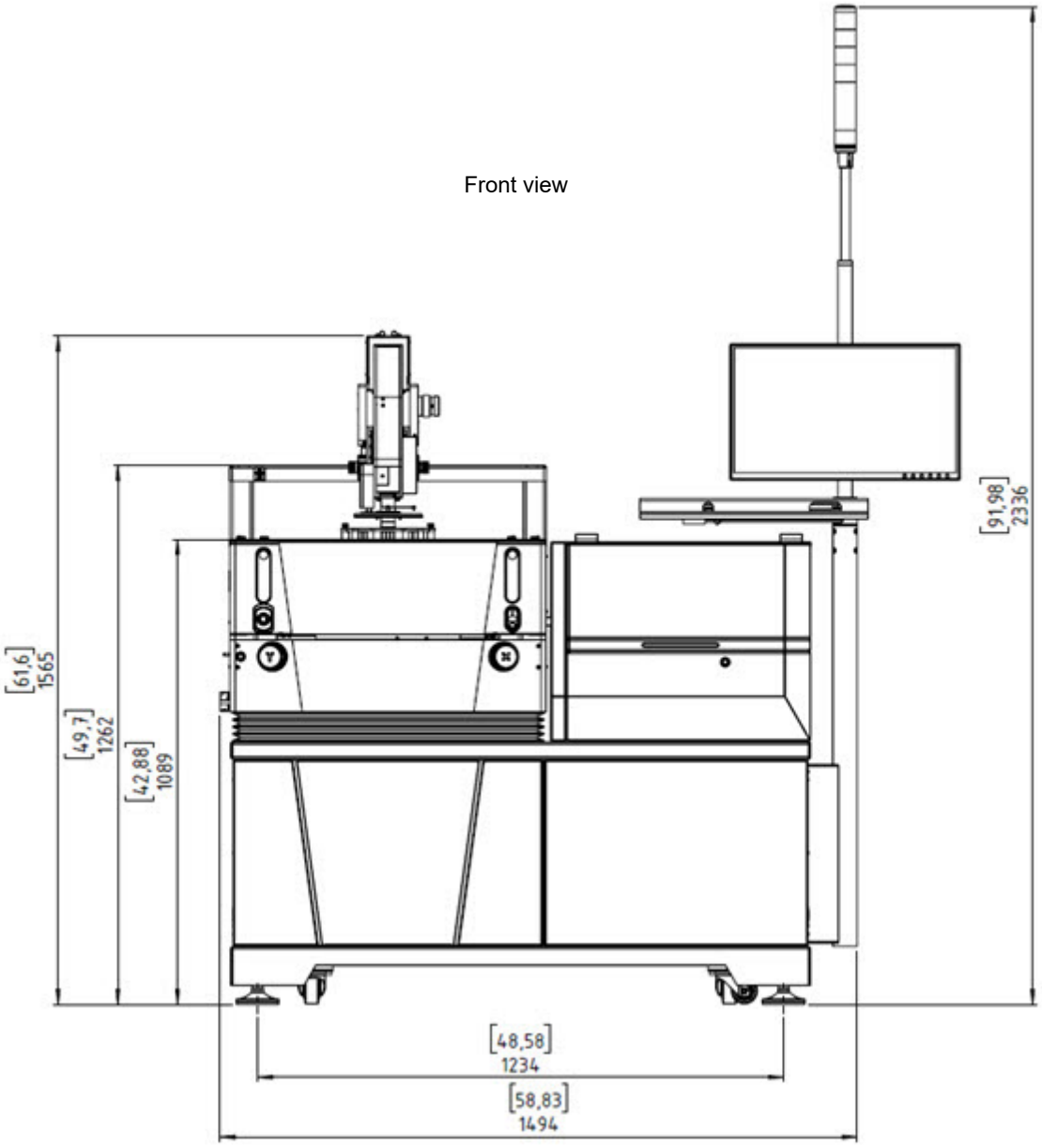
## Dimensions (in mm [in.])

### Semi-automated System



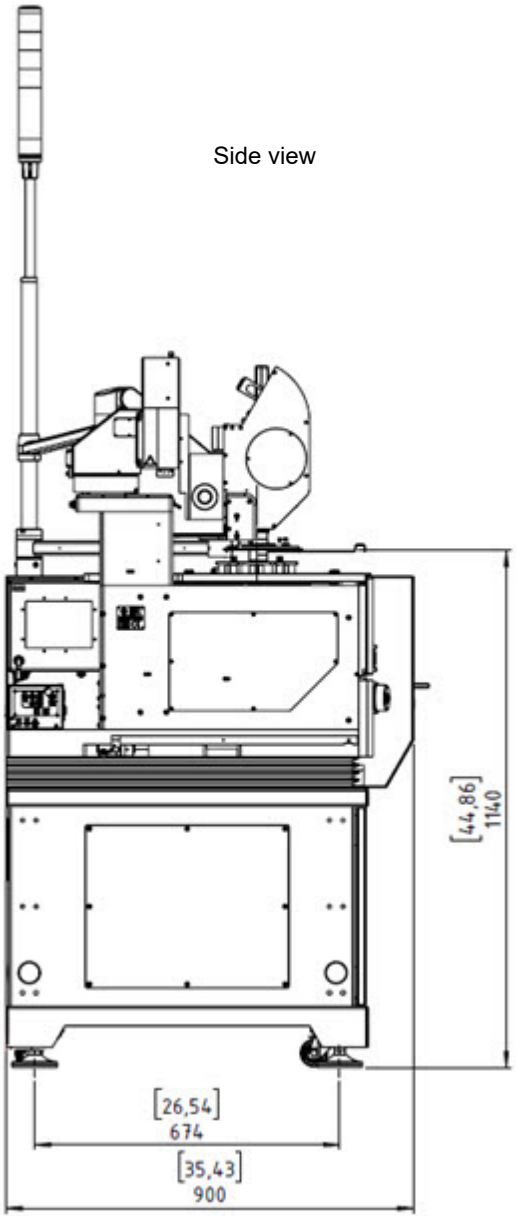
# Cascade SUMMIT200 Probe System

## Fully-automated System



# Cascade SUMMIT200 Probe System

Side view



# Cascade SUMMIT200 Probe System



**Important Notice**

While the information contained herein is believed to be accurate as of the date hereof, no express or implied representations or warranties are made with respect to its accuracy or completeness. FormFactor, Inc., and its subsidiaries disclaim liability for any inaccuracies or omissions. All information is subject to change without notice.

Users are required to read and follow carefully all safety, compliance and use instructions. Users assume all loss and liability arising from the use of products in any manner not expressly authorized. The conditions and methods of use of products and information referred to herein are the entire responsibility of the user and, to the maximum extent permitted by applicable law, FormFactor, Inc., and its subsidiaries shall not be liable for any damages, losses, costs or expenses arising out of, or related to, the use thereof.

No license, express or implied, by estoppel or otherwise, under any intellectual property right is granted in connection herewith. Users shall take all actions required to avoid intellectual property infringement.

**Corporate Headquarters**
7005 Southfront Road
Livermore, CA 94551
Phone: 925-290-4000
www.formfactor.com