

Summit

200 mm Semi-automatic Probe System



DATA SHEET

Summit™ series measurement platforms, with PureLine™ and AttoGuard® technology, allow you to access the full range of your test instruments for 200 mm and 150 mm wafers. Whatever your application: RF/Microwave, device characterization, wafer-level reliability, e-test, modeling, or yield enhancement, Summit series platforms lead the industry in on-wafer measurements. Summit series probe stations are easy to configure with your choice of measurement performance, chuck size, thermal range and microscope options. All platforms are -60°C to 300°C compatible to ensure an upgrade path to meet your future needs. Cascade Microtech provides many accessories for the Summit platform for a wide range of applications to suit your unique test needs.

FEATURES / BENEFITS

Measurement accuracy	Best solution for low-noise and 1/f measurements with advanced PureLine, AutoGuard and MicroChamber® technologies Minimize AC and spectral noise with effective shielding capability
Positioning accuracy	Precision linear-motor/ air-bearing stage for accurate positioning with temperature compensation Precision sub-micron stepping with auto XYZ and theta correction
Productivity	Unattended testing over multiple temperatures with VueTrack™ technology and High-Temperature Stability (HTS) enhancement eVue™ digital imaging system with enhanced optical visualization, fast set-up, and in-die and wafer navigation Powerful automation tools, such as automatic die-size measurements and wafer alignment
Flexibility and application-tailored solutions	RF/microwave device characterization, 1/f, WLR, FA and design debug Complete solution for small- and large-area multi-site probe cards
Ease of use	“Hands-free” microscope remote control, arm rest, and quick-access control panel Quick and comfortable wafer access via locking roll-out stage

MECHANICAL PERFORMANCE

X-Y Stage (Summit 12000B Semi-automatic)

Travel	203 mm x 203 mm (8 in. x 8 in.)
Resolution	$\pm 1 \mu\text{m}$ (0.04 mils)
Repeatability	$\leq 2 \mu\text{m}$ (0.08 mils)
Accuracy	$\leq 2.5 \mu\text{m}$ (0.1 mils)
Speed	$> 50 \text{ mm/sec}$ (2 in./sec)
Bearings	Precision linear cross-roller
Motor-drive system	5-phase stepper motor
Feedback system	1 μm resolution closed-loop optical linear encoder
Move time	$\leq 750 \text{ ms}$ (200 μm Z down – 1000 μm XY – 200 μm Z up)

Z Stage (Summit 12000B Semi-automatic)

Travel	5 mm (0.19 in.)
Resolution	1 μm (0.04 mils)
Repeatability	$\leq 1 \mu\text{m}$ (0.04 mils)
Accuracy	$\leq 2 \mu\text{m}$ (0.08 mils)
Probe-force capability	20 kg (44 lb.) maximum
Probe-force deflection	$\leq 0.0015 \mu\text{m}/\mu\text{m}$ slope per 10 kg load

Theta Stage (Summit 12000B Semi-automatic)

Travel	$\pm 5.5^\circ$
Resolution	0.65 μm (0.03 mils)*
Repeatability	$\pm 2 \mu\text{m}$ (0.08 mils)*
Accuracy	$\pm 2 \mu\text{m}$ (0.08 mils)* standard moves, $\pm 3 \mu\text{m}$ (0.12 mils)* large moves

* Measured at edge of 200mm chuck

X-Y Stage (Summit 11000B Manual)

Travel	203 mm x 203 mm (8 in. x 8 in.)
Resolution	5 mm / turn
Bearings	Precision cross-roller

Z Stage (Summit 11000B Manual)

Type	Fixed Z mount
Probe-force deflection	$\leq 0.0015 \mu\text{m}/\mu\text{m}$ slope per 10 kg load

Theta Stage (Summit 11000B Manual)

Travel	$\pm 5.7^\circ$
Resolution	0.8° / turn

PHYSICAL DIMENSIONS

Station Platform

Station dimensions	76 cm (W) x 68 cm (D) x 45 (H) (30 in. x 27 in. x 18 in.)
Typical height to eyepieces	58 cm (23 in.)
Net weight	165 kg (364 lb.)

MICROCHAMBER

Electrical (Semi-automatic)

	Summit 12000B-AP	Summit 12000B-M
EMI shielding	≥ 20 dB 0.5-3 GHz, ≥ 30 dB 3-20 GHz (typical)	≥ 20 dB 0.5-20 GHz (typical)
Spectral noise floor*	≤ -150 dBVrms/rtHz (≤ 50 kHz)	≤ -150 dBVrms/rtHz (≤ 50 kHz)
System AC noise **	≤ 10 mVp-p (≤ 1 GHz) ≤ 20 mVp-p (≤ 1 GHz) THERMAL	≤ 15 mVp-p (≤ 1 GHz) ≤ 20 mVp-p (≤ 1 GHz) THERMAL

* Typical results. Actual values depends on probe / test setup. Test setup uses triaxial thermal chuck, 50 Ω termination, high quality LNA, and DSA/DSO instrument.

** Test setup: Station power ON, Thermal system ON (40°C), MicroChamber closed, guard to shield shorted with triax adapter on chuck. Instrument setup: Time domain digital scope (DC to 1 GHz), 50 Ω input impedance, cable to chuck BNC connector. Measurement: Peak-Peak Noise Voltage (acquire 1000 data points, and calculate mean of Vp-p data).

Light Shielding

Type	Complete dark enclosure around chuck
Wafer access	Front access door with rollout stage for easy wafer loading
Probe compatibility	Standard MicroChamber TopHat™ allows access for up to eight probes (16 with optional large TopHat)
Light attenuation	≥ 120 dB

Purge and Condensation Control

Test environment	Low volume for fast purge, external positioning and cable access to maintain sealed environment
Dew point capability	> -70°C for frost-free measurements*
Purge gas	Dry air or nitrogen
Purge control / flow rate	Manual control, variable 0 to 4.3 liters/sec (9 SCFM)
Purge time	< 15 min for measurements @ -55°C (typical)
Condensation control	Integrated laminar flow air distribution internal to MicroChamber and above platen to eliminate condensation

* Please see the facilities guide for air requirements to enable optimum dew point for low temperature measurements using a thermal chuck inside the MicroChamber.

PLATEN SYSTEM

Platen

Material	Steel for magnetic positioners
Dimensions	74.5 cm (W) x 59.5 cm (D) x 20 mm (T) (29.3 in. x 23.4 in. x 0.78 in.)
Mounting system	Kinematic 4 point
Platen to chuck height	14 ± 0.5 mm (0.55 ± 0.02 in.)
Accessory compatibility	Minimum of 8 DC or 4 RF positioners allowed, compatible simultaneous probe card holder use
Thermal management	Integrated laminar-flow air-cooling for thermal expansion control

PLATEN SYSTEM (CONTINUED)

Platen Ring Insert

Material	Steel for magnetic positioners
Weight	4.5 kg (9.9 lb.)
Standard interface	For MicroChamber, TopHat, probe card holders and custom adapters

Platen Lift

Type	Precision 4-point linear lift
Range	5.0 mm (0.20 in.)
Repeatability	$\leq 3 \mu\text{m}$ (0.12 mils)
Lift control	Ergonomic handle with 90° stroke. Optional micrometer control for fine adjustment of probe card contact.

WAFER AND AUX CHUCK DESIGN*

Diameter	150 mm (6 in.) and 200 mm (8 in.)
Material	Nickel- or gold-plated aluminum
DUT sizes supported	Shards or wafers 50mm (2 in.) through 200 mm (8 in.) Optional single-die accessory available.
Vacuum interface	Micro-hole patterns for compatibility with RF devices and thin wafers
Vacuum zones	Hole patterns arranged in approximately 10, 50, 130, 190 mm diameters (0.5, 2, 5, 7 in.)
Vacuum actuation	Multi-zone vacuum control (Summit 11000B) Multi-zone vacuum control and software control (Summit 12000B)
System planarity	$\leq 35 \mu\text{m}$ (1.3 mils) @ 25°C $\leq 35 \mu\text{m}$ (1.3 mils) @ -60°C (typical) $\leq 35 \mu\text{m}$ (1.3 mils) @ 200°C (typical) $\leq 50 \mu\text{m}$ (2.0 mils) @ 300°C (typical)

Auxiliary Chuck *

Quantity	Two, integrated with wafer chuck assembly
Substrate size (maximum)	15.2 mm x 22.1 mm (0.59 in. x 0.87 in.) ISS substrate 19 mm x 19 mm (0.75 in. x 0.75 in.) substrate
Material	Steel (Magnetically loaded, RF absorbing Eccosorb available)
Thermal isolation	Ensures negligible load drift on ISS
Flatness	$\leq 8 \mu\text{m}$ (0.3 mils)
Vacuum actuation	Independently controlled apart from wafer vacuum zones

* These specifications are for the modular wafer/aux chucks that are configured with a Summit station platform. See the wafer/aux chucks ordering information below.

Nucleus™ Prober Control Software

Motion control	Wafer stage, microscope transport and positioners are easily accessed through the user interface
Vision	Uses feedback from eVue and other microscopes for alignment and compensation
Alignment	Automatic capability for wafer loading
Compensation	Automatic adjustment capability for wafer variability and thermal changes to maintain consistent probe contact
Wafer map	Real-time test monitoring, user defined binning, pass/fail status, offline definition of die and subsite location through graphical interface
Remote operation	A full command set is available for control through industry standard serial interfaces. The remote window allows single command entry and loading of prepared scripts

Communication Ports

Type	Qty	Location	Note
USB 2.0	4	Station controller - Rear	For security keys and USB instrument control
RS232	1	Station controller - Rear	For instrument control (thermal, LASER, microscope, etc) USB adapter
GPIO IEEE 488.2	1	Station controller - Rear	For test instrument control USB adapter

Accessory Interface Ports

Type	Qty	Location	Note
Edge-sense	1	Station interconnect panel	Probe card contact sense
VNA-CAL	1	Station interconnect panel	Control for switched GPIB (remote/local software control)
INKER	1	Station interconnect panel	Control for die inker

Switched AC Power

Type	Qty	Location	Note
IEC (f) microscope	1	Station interconnect panel	Software ON/OFF control for microscope light
IEC (f) aux	1	Station interconnect panel	Software ON/OFF control for auxiliary power

NON-THERMAL MODULAR CHUCKS

Note: Results measured with non-thermal chuck at standard probing height (5,000 μm) with chuck in a dry environment. Moisture in the chuck may degrade performance.

FemtoGuard® Chuck Performance (200 mm)

Breakdown voltage	Force-to-guard	$\geq 500 \text{ V}$
	Guard-to-shield	$\geq 500 \text{ V}$
	Force-to-shield	$\geq 500 \text{ V}$
Resistance	Force-to-guard	$\geq 1 \times 10^{12} \Omega$
	Guard-to-shield	$\geq 1 \times 10^{11} \Omega$
	Force-to-shield	$\geq 5 \times 10^{12} \Omega$

Coaxial Chuck Performance (200 mm)

Breakdown voltage	$\geq 500 \text{ V}$
Isolation	$\geq 1 \times 10^{12} \Omega$

System Electrical Performance (w/ non-thermal chuck)

	Summit 12000B-AP FemtoGuard Chuck	SUMMIT 12000B-M FemtoGuard Chuck	Summit 12000B-M Coax Chuck	Summit 12000B-S Coax Chuck
Probe leakage *	$\leq 1 \text{ fA}$	$\leq 1 \text{ fA}$	$\leq 1 \text{ fA}$	$\leq 20 \text{ pA}$
Chuck leakage *	$\leq 1 \text{ fA}$	$\leq 15 \text{ fA}$	$\leq 600 \text{ fA}$	$\leq 200 \text{ pA}$
Residual capacitance	$\leq 0.4 \text{ pF}$	$\leq 50 \text{ pF}$	N/A	N/A
Capacitance variation **	$\leq 3 \text{ fF}$	$\leq 75 \text{ fF}$	$\leq 75 \text{ fF}$	$\leq 75 \text{ fF}$
Settling time	$\leq 50 \text{ fA @ } 50 \text{ ms (typical)}$	$50 \text{ fA @ } 50 \text{ ms (typical)}$	N/A	N/A

*Overall leakage current is comprised of two distinctly separate components: 1) offset, and 2) noise. Offset is the DC value of current due to instrument voltage offset driving through isolation resistance. Noise is low frequency ripple superimposed on top of offset and is due to disturbances in the probe station environment.

Noise and leakage are measured with a 4156C NOISE.dat Cascade Microtech program or equivalent; 4 ms sample rate, auto scale, 1 nA compliance, 1 NPLC integration. Settling time is measured with a 4156C SETLB.dat Cascade Microtech program or equivalent; 2 ms sampling rate, limited auto 1 nA, 1 μA compliance, 3 NPLC integration.

** This is chuck capacitance variation based upon chuck position anywhere in the 200 mm area, as measured by a stationary dc probe. Test conditions: Agilent 4284A LCR meter (Cp-d, 1 Mhz, 4 Average, 0 Power), DCP-150, 75 μm above chuck surface, 4-wire connection (HiZ/Hipot to chuck, LoZ/Lopot to Probe).

THERMAL MODULAR CHUCKS

Note: Results measured with thermal chuck at standard probing height (5000 μm) with chuck in a dry environment. Moisture in the chuck may degrade performance. 6-inch coaxial chuck capacitance is 25% less, dominated by the cabling. All other specifications are identical. 6-inch triaxial is not available.

FemtoGuard Chuck Performance (150/200 mm)

		Thermal Chuck @ -60/-55°C	Thermal Chuck @ 25°C	Thermal Chuck @ 200°C	Thermal Chuck @ 300°C
Breakdown voltage	Force-to-guard	$\geq 500 \text{ V}$	$\geq 500 \text{ V}$	$\geq 500 \text{ V}$	$\geq 500 \text{ V}$
	Guard-to-shield	$\geq 500 \text{ V}$	$\geq 500 \text{ V}$	$\geq 500 \text{ V}$	$\geq 500 \text{ V}$
	Force-to-shield	$\geq 500 \text{ V}$	$\geq 500 \text{ V}$	$\geq 500 \text{ V}$	$\geq 500 \text{ V}$
Resistance	Force-to-guard	$\geq 1 \times 10^{12} \Omega$	$\geq 1 \times 10^{12} \Omega$	$\geq 5 \times 10^{11} \Omega$	$\geq 1 \times 10^{11} \Omega$
	Guard-to-shield	$\geq 1 \times 10^{11} \Omega$	$\geq 1 \times 10^{11} \Omega$	$\geq 1 \times 10^{10} \Omega$	$\geq 1 \times 10^9 \Omega$
	Force-to-shield	$\geq 5 \times 10^{12} \Omega$	$\geq 5 \times 10^{12} \Omega$	$\geq 5 \times 10^{11} \Omega$	$\geq 1 \times 10^{11} \Omega$

Coaxial Chuck Performance (150/200 mm)

	Thermal Chuck @ -60/-55°C	Thermal Chuck @ 25°C	Thermal Chuck @ 200°C	Thermal Chuck @ 300°C
Breakdown voltage	$\geq 500 \text{ V}$	$\geq 500 \text{ V}$	$\geq 500 \text{ V}$	$\geq 500 \text{ V}$
Resistance	$\geq 1 \times 10^{11} \Omega$	$\geq 1 \times 10^{11} \Omega$	$\geq 1 \times 10^{10} \Omega$	$\geq 1 \times 10^9 \Omega$

System Electrical Performance (w/ thermal chuck)

		Summit 12000B-AP FemtoGuard Chuck	Summit 12000B-M FemtoGuard Chuck	Summit 12000B-M Coax Chuck	Summit 12000B-S Coax Chuck
Probe leakage *	Thermal controller OFF	$\leq 1 \text{ fA}$	$\leq 1 \text{ fA}$	$\leq 1 \text{ fA}$	$\leq 20 \text{ pA}$
	Thermal controller ON	$\leq 5 \text{ fA}$	$\leq 10 \text{ fA}$	$\leq 10 \text{ fA}$	$\leq 20 \text{ pA}$
Chuck leakage * [ERS]	Thermal controller OFF	$\leq 2 \text{ fA}$	$\leq 15 \text{ fA}$	25 pA	800 pA
	-60°C	$\leq 6 \text{ fA}$	$\leq 20 \text{ fA}$	25 pA	N/A
	25°C	$\leq 3 \text{ fA}$	$\leq 20 \text{ fA}$	25 pA	800 pA
	200°C	$\leq 6 \text{ fA}$	$\leq 20 \text{ fA}$	25 pA	800 pA
	300°C	$\leq 6 \text{ fA}$	$\leq 25 \text{ fA}$	220 pA	1000 pA
Chuck leakage * [ESPEC]	Thermal controller OFF	$\leq 2 \text{ fA}$	$\leq 15 \text{ fA}$	25 pA	
	-50°C	$\leq 6 \text{ fA}$	$\leq 20 \text{ fA}$	25 pA	800 pA
	25°C	$\leq 3 \text{ fA}$	$\leq 15 \text{ fA}$	25 pA	N/A
	200°C	$\leq 6 \text{ fA}$	$\leq 20 \text{ fA}$	25 pA	800 pA
Residual capacitance		$\leq 2.5 \text{ pF}$	$\leq 50 \text{ pF}$	N/A	N/A
Capacitance variation **		$\leq 3 \text{ fF}$	$\leq 75 \text{ fF}$	$\leq 75 \text{ fF}$	$\leq 75 \text{ fF}$
Settling time ***	All temperatures @ 10 V	$\leq 50 \text{ fA @ 50 ms (typical)}$	$\leq 50 \text{ fA @ 50 ms (typical)}$	N/A	N/A

* Overall leakage current is comprised of two separate components: 1) offset, and 2) noise. Offset is the DC value of current due to instrument voltage offset driving through isolation resistance. Noise is low frequency ripple superimposed on top of offset and is due to disturbances in the probe station environment.

Noise and leakage are measured with a 4156C NOISE.dat Cascade Microtech program or equivalent; 4ms sample rate, auto scale, 1nA compliance, 1 NPLC integration.

** This is chuck capacitance variation based upon chuck position anywhere in the 200 mm area, as measured by a stationary dc probe. Test conditions: Agilent 4284A LCR meter (Cp-d, 1 Mhz, 4 Ave, 0 Power), DCP-150, 75 μm above chuck surface, 4-wire connection (HiZ/Hipot to chuck, Loz/Lopot to Probe), 25°C.

*** Settling time is measured with a 4156C SETLB.dat Cascade Microtech program or equivalent; 2 ms sampling rate, limited auto 1 nA, 1 μA compliance, 3 NPLC integration.

THERMAL OPTIONS AND PERFORMANCE

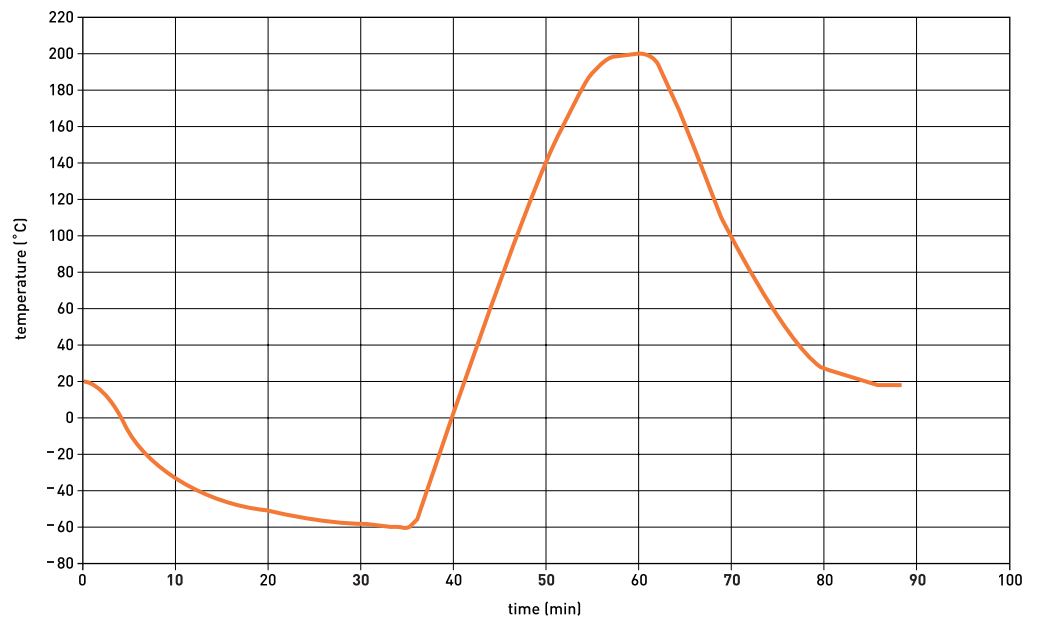
Standard Thermal Ranges (others available on request)	-60°C to 200°C, DirectCool ESPEC (200 mm)
	-55°C to 200°C, AlrCool ERS (200 mm)
	+20°C to 300°C, AlrCool ERS (200 mm and 150 mm)
	+30°C to 300°C, AlrCool ERS (200 mm and 150 mm)

ESPEC Direct Cool Performance, 200 mm (-60°C to 200°C)

Temperature range	-60°C to 200°C
Transition time – Heating (-60°C to 25°C)	7 min
Transition time – Heating (25°C to 200°C)	24 min
Transition time – Cooling (200°C to 25°C)	30 min
Transition time – Cooling (25°C to -60°C)	35 min
Temperature uniformity	≤ 0.5°C @ 25°C, ≤ 2°C @ -60°C, ≤ 2°C @ 200°C
Temperature accuracy	0.1°C
Temperature resolution	± 0.3°C (with calibrated controller)
Chuck flatness	≤ 30 μm (0.12 mils) @ -65°C to 200°C
Audible noise	< 60 dB
Cooling method	Closed loop, direct cooling (refrigerant)
Power consumption	2000 W
Supply voltage	200/230 VAC 50/60 Hz
Dimensions - Controller	150 mm (W) x 687 mm (D) x 244 mm (H) (5.9 in. x 27.0 in. x 9.6 in.)
Dimensions - Chiller	430 mm (W) x 660 mm (D) x 680 mm (H) (16.9 in. x 25.9 in. x 26.8 in.)
Weight - Controller	35 kg (77 lb.)
Weight - Chiller	100 kg (220 lb.)

ESPEC Thermal Transition Time (-60°C to 200°C)

Typical times using Summit-AP with FemtoGuard Chuck; 10-15% faster with coaxial chuck.



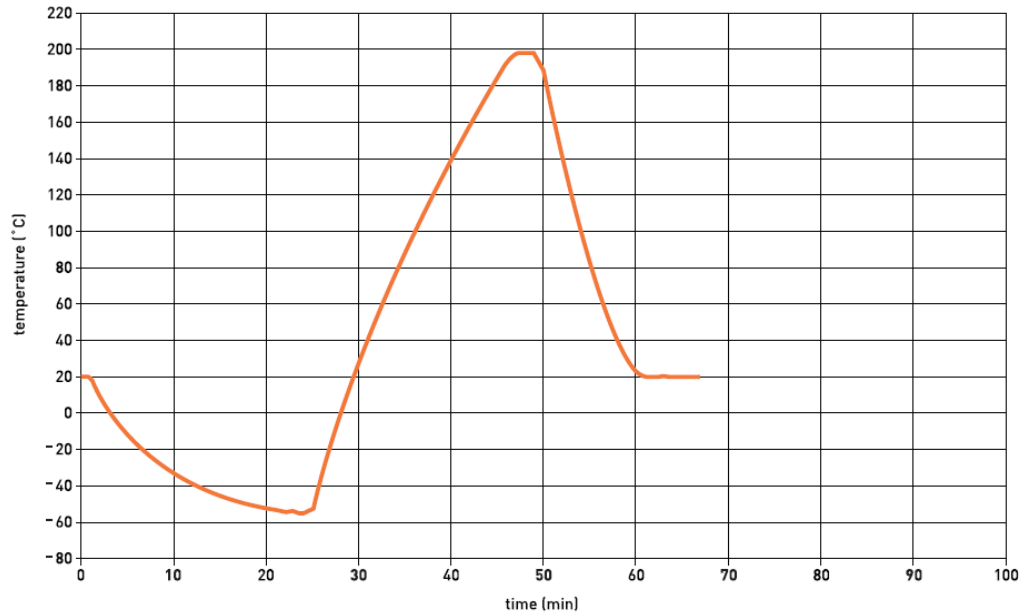
THERMAL OPTIONS AND PERFORMANCE

ERS AC3 Thermal System Specifications, 200 mm (-55°C to 200°C)

Temperature range	-55°C to 200°C
Transition time – Heating (-55°C to 25°C)	6 min
Transition time – Heating (25°C to 200°C)	18 min
Transition time – Cooling (200°C to 25°C)	11 min
Transition time – Cooling (25°C to -55°C)	23 min
Temperature uniformity	≤ 0.5°C @ 25°C, ≤ 2.0°C @ -55°C, ≤ 2.0°C @ 200°C
Temperature accuracy	± 0.1° C (with calibrated controller)
Temperature resolution	0.1° C
Chuck flatness	≤ 30 µm (0.12 mils) @ -55° C to 200°C
Audible noise	< 58 dB
Supply air	350 liters/min (12.3 SCFM), -45°C dew point
Supply voltage	200/230 VAC 50/60 Hz
Power consumption - Controller	530 VA
Power consumption - Chiller	2300 VA
Dimensions - Controller	483 mm (W) x 376 mm (D) x 144 mm (H) (19.0 inc. x 14.8 in. x 5.7 in.)
Dimensions - Chiller	42 mm (W) x 500 mm (D) x 1030 mm (H) (1.6 in. x 19.7 in. 40.5 in.)
Weight - Controller	10 kg (22 lb.)
Weight - Chiller	150 kg (110 lb.)

ERS AirCool Plus Thermal Transition Time (-55°C to 200°C)

Typical times using Summit-AP with FemtoGuard Chuck; 10-15% faster with coaxial chuck.



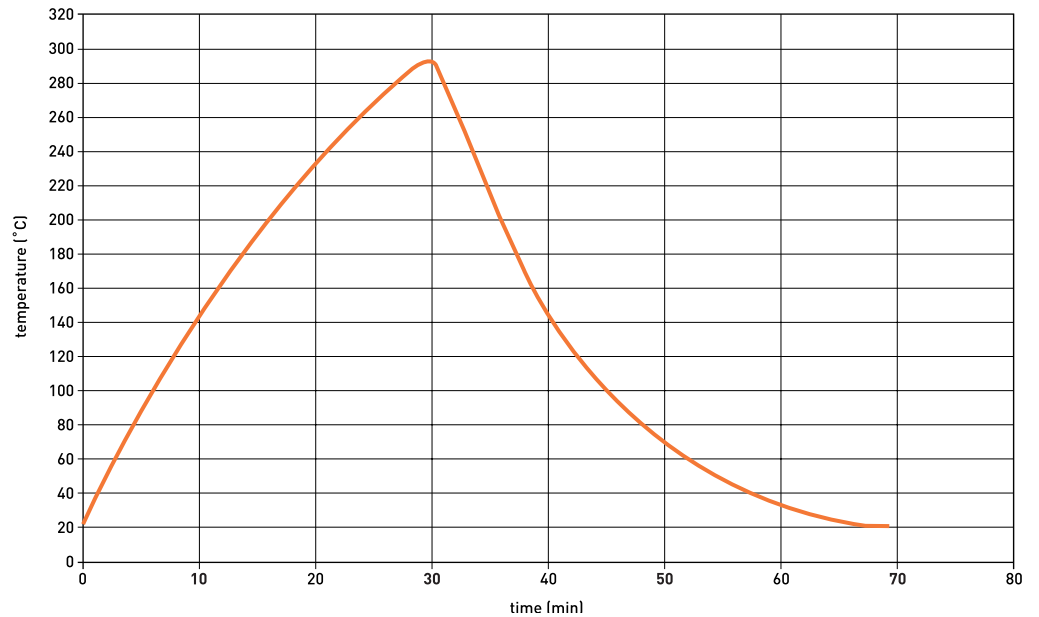
THERMAL OPTIONS AND PERFORMANCE

ERS Air Cool Plus Ambient Option Specifications, 150/200 mm (+20°C to 300°C)

Temperature range	+ 20°C to 300°C
Transition time - Heating	30 min 200 mm (8 in.) / 20 min 150 mm (6 in.)
Transition time - Cooling	35 min 200 mm (8 in.) / 20 min 150 mm (6 in.)
Temperature accuracy	± 0.1°C (with calibrated controller)
Temperature resolution	0.1°C
Temperature uniformity	≤ 0.5°C @ 30°C, ≤ 3.0°C @ 300°C
Chuck flatness	≤ 30 μm (0.12 mils) @ +20 to 300°C
Audible noise	< 58 dB
Supply voltage	100/230 VAC 50/60 Hz
Supply air	350 liters/min (12.4 SCFM) -45°C dew point
Power consumption	530 VA
Dimensions	483 mm (W) x 376 mm (D) x 144 mm (H) (19.0 in. x 14.8 in. 5.7 in.)
Weight	10 kg (22 lb.)

ERS AirCool Thermal Transition Time (+20°C to 300°C)

Typical times using Summit-AP with FemtoGuard Chuck; 10-15% faster with coaxial chuck.



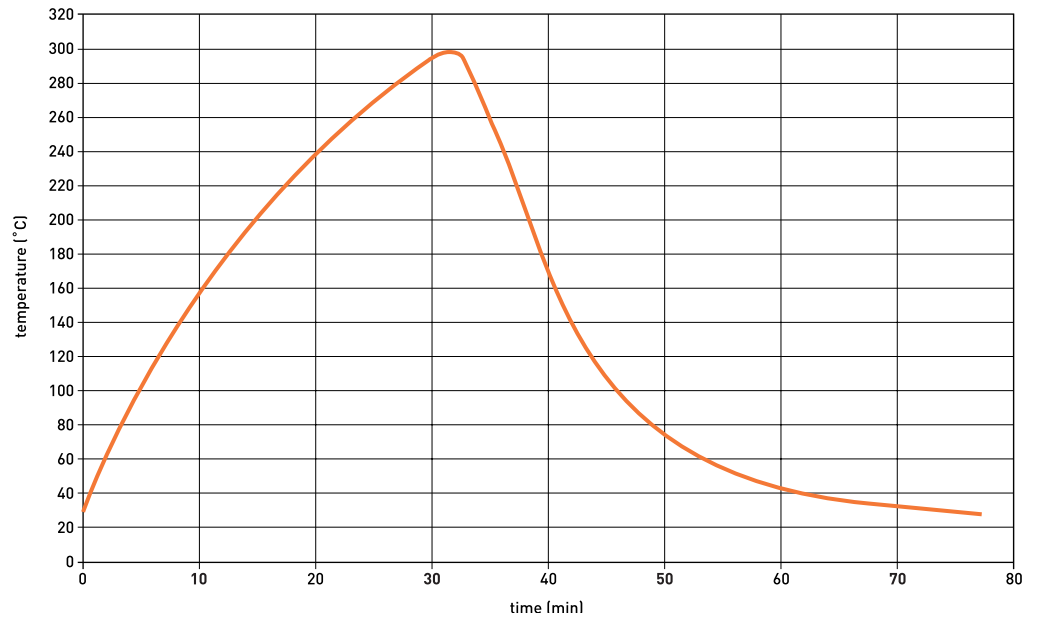
THERMAL OPTIONS AND PERFORMANCE

ERS Air Cool Ambient Option Specifications, 150/200 mm (+30°C to 300°C)

Temperature range	+ 30 to 300°C
Transition time - Heating	30 min 200 mm (8 in.) / 20 min 150 mm (6 in.)
Transition time - Cooling	40 min 200 mm (8 in.) / 25 min 150 mm (6 in.)
Temperature accuracy	± 0.1°C (with calibrated controller)
Temperature resolution	0.1°C
Temperature uniformity	≤ 0.5°C @ 30°C, ≤ 3.0°C @ 300°C
Chuck flatness	≤ 30 µm (0.12 mils) @ +30°C to 300°C
Audible noise	< 58 dB
Supply voltage	100/230 VAC 50/60 Hz
Supply air	350 liters/min (12.4 SCFM) -45°C dew point
Power consumption	530 VA
Dimensions	483 mm (W) x 276 mm (D) x 144 mm (H) (19.0 in. 14.8 in. 5.7 in.)
Weight	10 kg (22 lb.)

ERS Air Cool Thermal Transition Time (+30°C to 300°C)

Typical times using Summit-AP with FemtoGuard Chuck; 10-15% faster with coaxial chuck.



FACILITY REQUIREMENTS

Note: These are for the Summit station only. Thermal system not included, see the Stations Facility Guide for complete information.

Vacuum	3.4 liter/minute (0.12 SCFM) @ 400 mm Hg (15.7 in.Hg)
Dry-air purge	4.3 liters/sec (9 SCFM)
Compressed air	0.1 liters/sec (0.2 SCFM) @ 380 kPa (55 psi) minimum
Background vibrations	“Operating Theatre” level (as specified by ISO) on Cascade Microtech approved vibration tables
Power	100/115 V @ 2 A, 200/230 V @ 1 A

AVAILABLE STATION MODELS

Summit 12000B-AP – Probe station platform, semi-automatic with MicroChamber, AttoGuard and PureLine technology

Configuration includes

MicroChamber for dark, dry and enhanced EMI-shielding enclosure

PureLine technology for premium signal path fidelity

AttoGuard for enhanced I-V and C-V testing

Roll-out wafer stage for safe and easy wafer loading

High-stability platen with linear lift

4-axis precision motorized stage

User guides, tools, and accessories

Universal power cord kit

Nucleus prober control software

Complete automation tools - AutoAlign, AutoDie, AutoXYZT Correction

Thermal control, video window, wafermap, remote access

Summit 12000B-M – Probe station platform, semi-automatic with MicroChamber

Configuration includes

MicroChamber for dark, dry and enhanced EMI-shielding enclosure

Roll-out wafer stage for safe and easy wafer loading

High-stability platen with linear lift

4-axis precision motorized stage

User guides, tools and accessories

Universal power cord kit

Nucleus prober control software

Complete automation tools - AutoAlign, AutoDie, AutoXYZT correction

Thermal control, video window, wafer map, remote access

Summit 12000B-S – Probe station platform, semi-automatic, standard

Configuration includes

Integrated safety enclosure for wafer protection and door access

Roll-out wafer stage for safe and easy wafer loading

High-stability platen with linear lift

4-axis precision motorized stage

User guides, tools and accessories

Universal power cord kit

Nucleus prober control software

Complete automation tools - AutoAlign, AutoDie, AutoXYZT correction

Thermal control, video window, wafer map, remote access

AVAILABLE STATION MODELS

Summit 11000B-AP – Probe station platform, manual with MicroChamber, AttoGuard and PureLine technology

Configuration includes

MicroChamber for dark, dry and enhanced EMI-shielding enclosure

PureLine technology for premium signal path fidelity

AttoGuard for enhanced I-V and C-V testing

Roll-out wafer stage for safe and easy wafer loading

High-stability platen with linear lift

Precision manual X-Y stage

User guides, tools and accessories

Summit 11000B-M – Probe station platform, manual with MicroChamber

Configuration includes

High-stability platen with linear lift

Precision manual X-Y stage

User guides, tools and accessories

Summit 11000B-S – Probe station platform, manual, standard

Configuration includes

Integrated safety enclosure for wafer protection and door access

Roll-out wafer stage for safe and easy wafer loading

High-stability platen with linear lift

Precision manual X-Y stage

User guides, tools and accessories

Note: To complete the Summit station platform configuration:

1. Select a modular chuck from the following non-thermal or thermal list
2. Select a matching thermal system if a thermal chuck is desired

Summit Non-Thermal Chucks

PART NUMBER	General Description	Chuck Compatibility		
		AP	M	S
TC-002-30x	FemtoGuard triaxial chuck, non-thermal, 200 mm (8 in.)	●	●	
TC-002-10x	Coaxial chuck, non-thermal, 200 mm (8 in.)		●	●
TC-002-10x-6	Coaxial chuck, non-thermal, 150 mm (6 in.)		●	●

Summit Thermal Chucks

PART NUMBER	General Description	Chuck Compatibility		
		AP	M	S
TC-302-30x	FemtoGuard triaxial chuck, thermal, -60°C to 200°C (direct-cooled ESPEC), 200 mm (8 in.)	●	●	
TC-212-30x	FemtoGuard triaxial chuck, thermal, -55°C to 200°C (air-cooled ERS), 200 mm (8 in.)	●	●	
TC-202-30x	FemtoGuard triaxial chuck, thermal, 20/30°C to 300°C (air-cooled ERS), 200 mm (8 in.)	●	●	
TC-302-10x	Coaxial chuck, thermal, -60°C to 200°C (direct-cooled ESPEC), 200 mm (8 in.)		●	●
TC-212-10x	Coaxial chuck, thermal, -55°C to 200°C (air-cooled ERS), 200 mm (8 in.)		●	●
TC-202-10x	Coaxial chuck, thermal, 20/30°C to 300°C (air-cooled ERS), 200 mm (8 in.)		●	●
TC-203-10x	Coaxial chuck, thermal, 20/30°C to 300°C (air-cooled ERS), 150 mm (6 in.)		●	●

Note: x = 1 for nickel, x = 2 for gold

ORDERING INFORMATION (CONTINUED)

Summit Thermal Systems (200 mm)

PART NUMBER	General Description
TS-302-07P	Thermal system for Summit, -60°C to 200°C, direct-cooled ESPEC (200/230 VAC 50/60 Hz)
TS-212-07P	Thermal system for Summit, -55°C to 200°C, air-cooled ERS (200/230 VAC 50/60 Hz)
TS-202-05T	Thermal system for Summit, +20°C to 300°C, air-cooled ERS (100-230 VAC 50/60 Hz)
TS-202-02T	Thermal system for Summit, +30°C to 300°C, air-cooled ERS (100-230 VAC 50/60 Hz)

Note: Alternate thermal ranges available upon request.

Summit Thermal Systems (150 mm)

PART NUMBER	General Description
TS-203-05T	Thermal system for Summit, +20°C to 300°C, air-cooled ERS (100-230 VAC 50/60 Hz)
TS-203-02T	Thermal system for Summit, +30°C to 300°C, air-cooled ERS (100-230 VAC 50/60 Hz)

Note: Thermal systems must match the thermal chuck selected, i.e. TS-302-xxx thermal systems are compatible only with TC-302-xxx chucks.

STANDARD OPTIONS FOR MICROSCOPE MOUNTS

High Stability Bridge/Transport (programmable)	Part Number 123-224
Travel X-Y	50 mm x 50 mm (2 in. x 2 in.)
Travel X-Y in TopHat	13 mm x 13 mm (0.5 in. x 0.5 in.)
Type	Stepper motor with closed loop encoder system
Resolution X-Y	0.4 µm (0.016 mils)
Repeatability X-Y	≤ 2 µm (0.08 mils)
Accuracy X-Y	≤ 5 µm (0.2 mils)
Speed X-Y	5 mm (0.2 in.) /sec
Planarity	10 µm (0.4 mils) over full travel with 5 kg (11 lb.) load
Z gross lift	Tilt-back, pneumatic with up/down, for easy probe access
Z gross repeatability	1 µm (0.04 mils)
Z focus	Coarse/fine focus uses microscope system, programmable focus available
LASER compatible	Yes

High Stability Bridge/Transport (manual)	Part Number 114-739
Travel X-Y	25 mm x 25 mm (1 in. x 1 in.)
Travel X-Y in TopHat	13 mm x 13 mm (0.5 in. x 0.5 in.)
Resolution X-Y	5 mm (0.2 in.) / turn, coaxial XY control
Planarity	10 µm (0.4 mils) over full travel with 5 kg (11 lb.) load
Z gross lift	Tilt-back, pneumatic with up/down, for easy probe access
Z gross repeatability	1 µm (0.04 mils)
Z focus	Coarse/fine focus uses microscope system
LASER compatible	Yes

Large Area Bridge / Transport	Part Number 114-468
XY travel	200 mm x 125 mm (7.8 in. x 4.9 in.)
XY travel in TopHat	13 mm x 13 mm (0.5 in. x 0.5 in.)
Resolution X-Y	5 mm (0.2 in.) / turn
Planarity	75 µm (3 mils) over full travel with 5 kg (11 lb.) load
Z gross lift	150 mm (6 in.) manual linear lift with counterbalance
Z gross repeatability	5 µm (0.2 mils)
Z focus	Coarse/fine focus uses microscope system
LASER compatible	No

SUMMIT STATION ACCESSORIES

Microscope / video system

Vibration isolation table

Probe card holders

RF and DC probes, needles and probe cards

RF and DC cables and adapters

RF and DC probe positioners

Calibration software and standards

Vacuum pump, air compressor

REGULATORY COMPLIANCE

Certification TÜV compliance tested for CE and CB, certified for US and Canada, SEMI S2 and S8

WARRANTY*

Warranty Fifteen months from date of delivery or twelve months from date of installation

Service contracts Single and multi-year programs available to suit your needs

*See Cascade Microtech's Terms and Conditions for Sale for more details.

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