Summit

200 mm Semi-automatic Probe System

DATA SHEET

Summit™ series semi-automatic probe systems, 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 for accurate positioning with temperature compensation and automated XYZ and theta correction for enhanced positioning accuracy
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

CascadeMicrotech®

MECHANICAL PERFORMANCE

X-Y Stage (Summit 12000B Semi-automatic)	
Travel	203 mm x 203 mm (8 in. x 8 in.)
Resolution	± 1 µm (0.04 mils)
Repeatability	≤ 2 µm (0.08 mils)
Accuracy	≤ 2.5 µm (0.1 mils)
Speed	> 50 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	≤ 750 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	≤ 1 µm (0.04 mils)
Accuracy	≤ 2 µm (0.08 mils)
Probe-force capability	20 kg (44 lb.) maximum
Probe-force deflection	≤ 0.0015 µm/µm slope per 10 kg load

Theta Stage (Summit 12000B Semi-automatic)	
Travel	± 5.5°
Resolution	0.65 µm (0.03 mils)*
Repeatability	± 2 µm (0.08 mils)*
Accuracy	± 2 µm (0.08 mils)* standard moves, ± 3 µm (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	≤ 0.0015 µm/µm slope per 10 kg load

Theta Stage (Summit 11000B Manual)	
Travel	± 5.7°
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)	≤ 15 mVp-p (≤ 1 GHz)
	≤ 20 mVp-p (≤ 1 GHz) THERMAL	≤ 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
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	≤ 3 µm (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	≤ 35 µm (1.3 mils) @ 25°C
	≤ 35 µm (1.3 mils) @ -60°C (typical)
	≤ 35 µm (1.3 mils) @ 200°C (typical)
	≤ 50 µm (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	≤ 8 µm (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.

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
GPIB 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

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

FemtoGuard® Chuck Performance (150/200mm)

Breakdown voltage	Force-to-guard	≥ 500 V
	Guard-to-shield	≥ 500 V
	Force-to-shield	≥ 500 V
Resistance	Force-to-guard	≥ 1 x 10^{12} Ω
	Guard-to-shield	≥ 1 x 10^{11} Ω
	Force-to-shield	≥ 5 x 10^{12} Ω

Coaxial Chuck Performance (150/200mm)

Breakdown voltage	≥ 500 V
Isolation	≥ 1 x 10^{12} Ω

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 *	≤ 1 fA	≤ 1 fA	≤ 1 fA	≤ 20 pA
Chuck leakage *	≤ 1 fA	≤ 15 fA	≤ 600 fA	≤ 200 pA
Residual capacitance	≤ 0.4 pF	≤ 50 pF	N/A	N/A
Capacitance variation **	≤ 3 fF	≤ 75 fF	≤ 75 fF	≤ 75 fF
Settling time	≤ 50 fA @ 50 ms (typical)	50 fA @ 50 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 CMI program or equivalent; 4 ms sample rate, auto scale, 1 nA compliance, 1 NPLC integration
Settling time is measured with a 4156C SETLB.dat CMI 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).

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 (150/200mm)

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

Coaxial Chuck Performance (150/200mm)

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

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	≤ 1 fA	≤ 1 fA	≤ 1 fA	≤ 20 pA
	Thermal controller ON	≤ 5 fA	≤ 10 fA	≤ 10 fA	≤ 20 pA
Chuck leakage * (ERS)	Thermal controller OFF	≤ 2 fA	≤ 15 fA	25 pA	800 pA
	-60°C	≤ 6 fA	≤ 20 fA	25 pA	N/A
	25°C	≤ 3 fA	≤ 20 fA	25 pA	800 pA
	200°C	≤ 6 fA	≤ 20 fA	25 pA	800 pA
	300°C	≤ 6 fA	≤ 25 fA	220 pA	1000 pA
Chuck leakage * (ESPEC)	Thermal controller OFF	≤ 2 fA	≤ 15 fA	25 pA	
	-50°C	≤ 6 fA	≤ 20 fA	25 pA	800 pA
	25°C	≤ 3 fA	≤ 15 fA	25 pA	N/A
	200°C	≤ 6 fA	≤ 20 fA	25 pA	800 pA
Residual capacitance		≤ 2.5 pF	≤ 50 pF	N/A	N/A
Capacitance variation **		≤ 3 fF	≤ 75 fF	≤ 75 fF	≤ 75 fF
Settling time ***	All temperatures @ 10 V	≤ 50 fA @ 50 ms (typical)	≤ 50 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 CMI 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 CMI program or equivalent; 2 ms sampling rate, limited auto 1 nA, 1 µA compliance, 3 NPLC integration.

THERMAL OPTIONS AND PERFORMANCE

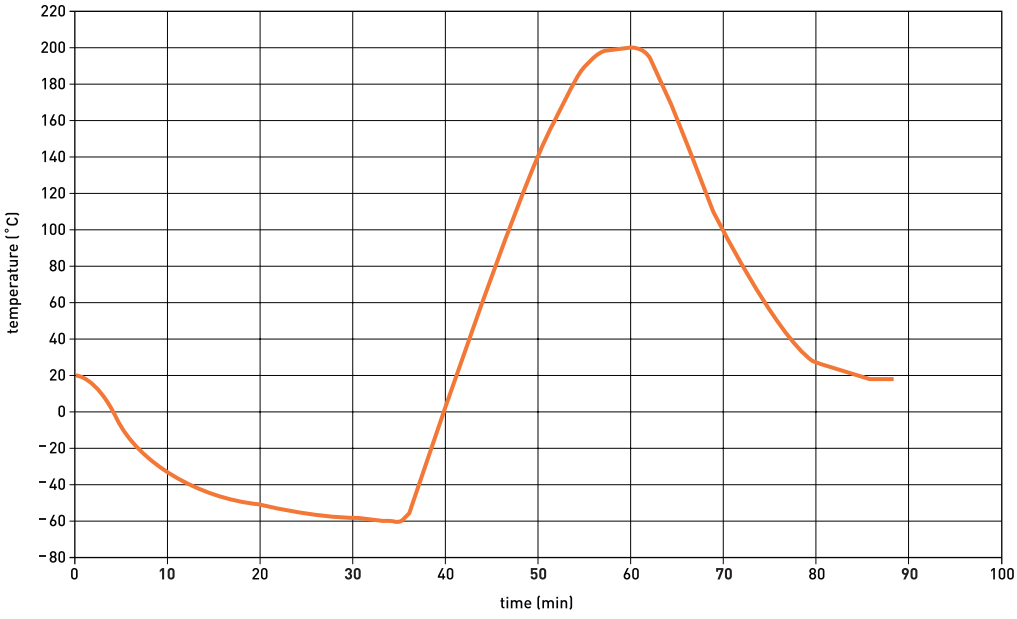
Standard Thermal Ranges (others available on request)	-60°C to 200°C, DirectCool ESPEC (200 mm)
	-60°C to 300°C, ERS AC3 (200 mm)
	+20°C to 300°C, ERS AC3 (200 mm and 150 mm)
	+30°C to 300°C, ERS AC3 (200 mm and 150 mm)

ESPEC Direct Cool Performance, 200mm (-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.



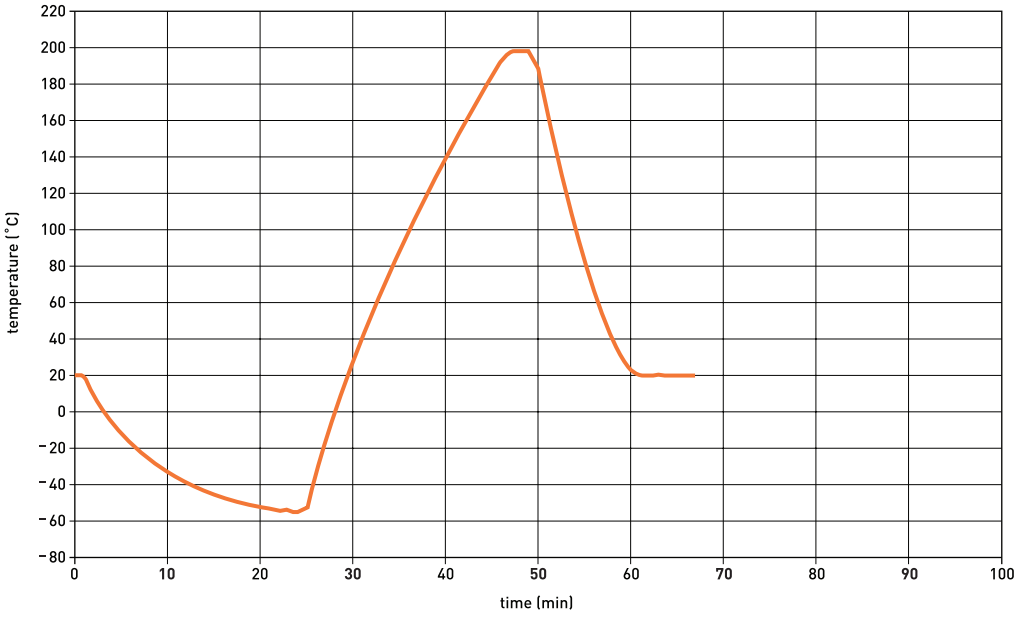
THERMAL OPTIONS AND PERFORMANCE

ERS AC3 Thermal System Specifications, 200mm (-60°C to 300°C)

Temperature range	-60°C to 300°C
Transition time – Heating (-60°C to 25°C)	6 min
Transition time – Heating (25°C to 300°C)	30 min
Transition time – Cooling (300°C to 25°C)	15 min
Transition time – Cooling (25°C to -60°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	420 mm (W) x 500 mm (D) x 1020 mm (H) (16.5 in. x 19.7 in. x 40.2 in.)
Weight	140 kg (309 lb.)

ERS AC3 Thermal Transition Time (-60°C to 300°C)

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

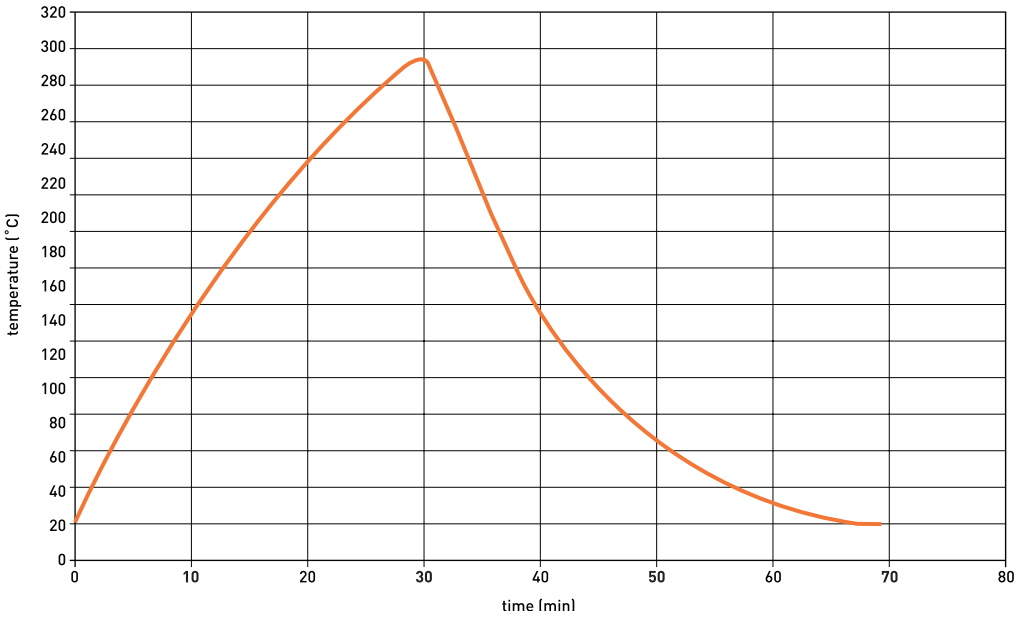


ERS AC3 Ambient Option Specifications, 200 mm/150 mm (+20°C to 300°C)

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	300 mm (W) x 360 mm (D) x 135 mm (H) (11.8 in. x 14.2 in. x 5.3 in.)
Weight	12 kg (26.5 lb.)

ERS AC3 Thermal Transition Time (+20°C to 300°C)

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



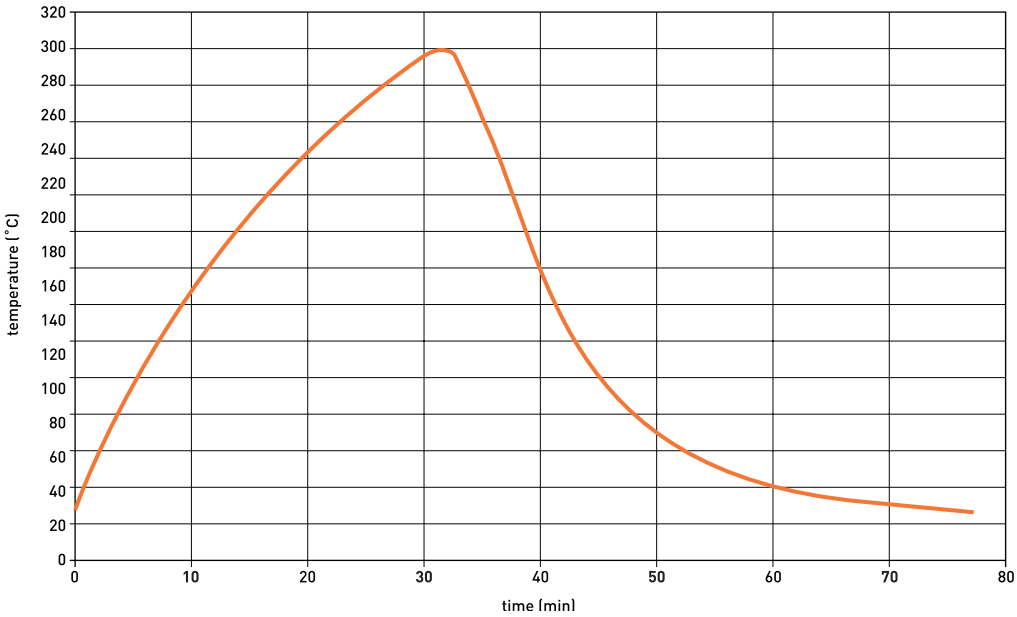
THERMAL OPTIONS AND PERFORMANCE

ERS AC3 Ambient Option Specifications, 200mm/150mm (+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	300 mm (W) x 360 mm (D) x 135 mm (H) (11.8 in. x 14.2 in. x 5.3 in.)
Weight	12 kg (26.5 lb.)

ERS AC3 Thermal Transition Time (+20°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 IV and CV 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 IV and CV 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

		Chuck Compatibility		
PART NUMBER	General Description	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

		Chuck Compatibility		
PART NUMBER	General Description	AP	M	S
TC-302-30x	FemtoGuard triaxial chuck, thermal, -60°C to 200°C (direct-cooled ESPEC), 200 mm (8 in.)	●	●	
TC-232-30x	FemtoGuard triaxial chuck, thermal, -60°C to 300°C (ERS AC3), 200 mm (8 in.)	●	●	
TC-302-10x	Coaxial chuck, thermal, -60°C to 200°C (direct-cooled ESPEC), 200 mm (8 in.)		●	●
TC-232-10x	Coaxial chuck, thermal, -60°C to 300°C (ERS AC3), 200 mm (8 in.)		●	●
TC-223-10x	Coaxial chuck, thermal, 20/30°C to 300°C (ERS AC3), 150 mm (6 in.)		●	●

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

ORDERING INFORMATION (CONTINUED)

Summit Thermal Systems (200mm)

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-232-05T	Thermal system for Summit, +20°C to 300°C, ERS AC3 (100-230 VAC 50/60 Hz)
TS-232-02T	Thermal system for Summit, +30°C to 300°C, ERS AC3 (100-230 VAC 50/60 Hz)

Note: Alternate thermal ranges available upon request.

Summit Thermal Systems (150mm)

PART NUMBER	General Description
TS-223-05T	Thermal system for Summit, +20°C to 300°C, ERS AC3 (100-230 VAC 50/60 Hz)
TS-223-02T	Thermal system for Summit, +30°C to 300°C, ERS AC3 (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 psoitioners
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.

SUMMIT-DS-0613

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