Summit

200 mm Manual and Semi-automated Probe Systems

DATA SHEET

Summit™ series manual and semi-automated 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, manual or semi-automated operation, 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.

The powerful Velox™ probe station control software features easy on-screen navigation, wafer mapping, automation and seamless integration with analyzers and measurement software. It enables simple operation of motorized positioners and thermal systems. For a wide range of applications, the Summit probe station powered by Velox software achieves high test efficiency.

FEATURES / BENEFITS

Measurement accuracy	Best solution for low-noise and 1/f measurements with advanced PureLine, AttoGuard and MicroChamber® technologies Minimize AC and spectral noise with effective shielding capability
Positioning accuracy	Precision 4-axis semi-automatic stage for accurate positioning with temperature compensation and automated XYZ and theta correction for enhanced positioning accuracy Manual 3-axis stage enables fast, accurate "hands on" wafer positioning with ergonomic controls
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 CellView enables fast sub-die navigation
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 Seamless integration between Velox and analyzers/measurement software
Ease of use	Quick, safe, and comfortable wafer access via locking roll-out stage "Hands-free" microscope remote control Intuitive ergonomic controls, enable fast setup and test data gathering Easy on-screen navigation, wafer mapping and operation of motorized positioners and thermal systems with Velox

CascadeMicrotech®

Note: For physical dimensions and facility requirements, refer to the Summit Facility Planning Guide.

MECHANICAL PERFORMANCE

X-Y Stage	Semi-automated	Manual
Travel	203 mm x 203 mm (8 in. x 8 in.)	203 mm x 203 mm (8 in. x 8 in.)
Motion control	5 phase stepper motors and manual controls	Manual controls (X-Y direct rotary knobs)
Resolution	1 µm (0.04 mils)	5 mm / turn
Repeatability	≤ 2 µm (0.08 mils)	
Accuracy	≤ 2.5 µm (0.1 mils)	
Speed	> 50 mm/sec (2 in./sec)	
Feedback system	1 µm resolution closed loop optical linear encoder	

Z Stage	Semi-automated	Manual
Travel	5 mm (0.19 in.)	Fixed Z mount
Resolution	1 µm (0.04 mils)	
Repeatability	≤ 1 µm (0.04 mils)	
Accuracy	≤ 2 µm (0.08 mils)	

Theta Stage	Semi-automated	Manual
Travel	± 5.5°	± 5.7°
Resolution	0.65 µm (0.03 mils)*	0.8° / turn
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 200 mm chuck

System	
Move time (semi-automated)	≤ 750 ms (200 µm Z down – 1000 µm XY – 200 µm Z up)
Probe-force capability	20 kg (44 lb.) maximum
Probe-force deflection	≤ 0.0015 µm/µm slope per 10 kg load
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)

MICROCHAMBER

Electrical (Semi-automated)	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*	≤ -170 dBVrms/rtHz (≤ 1 MHz) Non thermal	≤ -150 dBVrms/rtHz (≤ 1 MHz) Non thermal
	≤ -170 dBVrms/rtHz (≤ 1 MHz) Thermal ATT	≤ -150 dBVrms/rtHz (≤ 1 MHz) Thermal ATT
System AC noise **	≤ 5 mVp-p (≤ 1 GHz) Non thermal	≤ 15 mVp-p (≤ 1 GHz) Non thermal
	≤ 5 mVp-p (≤ 1 GHz) Thermal ATT	≤ 15 mVp-p (≤ 1 GHz) Thermal ATT

* 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 and high-voltage measurements*
Purge gas	Dry air or nitrogen
Purge flow rate	Standard purge - manual controls, variable 0 to 110 l/min (4 CFM) at SATP**
	Quick purge - manual controls, standard purge rate or maximum > 110 l/min (4 CFM) at SATP**
Purge time	< 15 min for measurements @ -55°C (typical)
External condensation control	Integrated laminar-flow air distribution on external MicroChamber surfaces to eliminate condensation Controls for ON/OFF and flow rate for both top and bottom surfaces

* 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 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

Wafer Chuck

	FemtoGuard	MicroVac™	Hi-ISO	Basic
Type	Triax	Coax (high isolation)	Coax (high isolation)	Coax
Material *	Ni or Au	Au	Ni	Ni
Vacuum interface	Standard (35 holes)	MicroVac ** (495 Micro-holes, best for thin wafers)	Standard (35 holes)	Rings
Diameter				
Thermal 200 mm (8 in.)	●	●	●	●
Non-Thermal 200 mm (8 in.)	●	●	●	
Non-Thermal 150mm (6 in.)			●	
AUX chucks (integrated)	2	2	2	Optional
DUT sizes supported	Shards or wafers 50 mm (2 in.) through 200 mm (8 in.) Optional single-die accessory available.			
Vacuum zones	4	5	4	3
Vacuum diameters ***	10, 70, 141, 180 mm (0.4, 2.8, 5.5, 7 in.)	10, 70, 93, 144, 178 mm (0.4, 2.8, 3.6, 5.6, 7 in.)	10, 70, 141, 180 mm (0.4, 2.8, 5.5, 7 in.)	16, 130, 190 mm (0.6, 5, 7 in.)
Vacuum actuation	Easy access multi-zone manual vacuum controls, and software control (semi-automated)			

* Nickel (Ni) plated aluminum or Gold (Au) plated aluminum

** Patented MicroVac technology using 495 micro-hole pattern for uniform vacuum hold down of thin, warped and partial wafers, and uniform temperature conductivity.

*** Diameter of arranged vacuum hole patterns (or vacuum rings) into individual zones

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

GENERAL SYSTEM SPECIFICATIONS

Note: For physical dimensions and facility requirements, refer to the Summit Facility Planning Guide.

Velox Probe Station Control Software

The semi-automated Summit probe station is equipped with Velox probe station control software. The Velox software provides all features and benefits required for semi-automated operation of the probe system, such as:

- WaferMap with Z-profiling, sub-die stepping, binning and other useful features
- Integrated thermal control
- CellView using stitched image of the full device to enable on-screen navigation within the die layout when using eVue
- Configurable user interface and programmable buttons

Communication Ports

Type	Qty	Location	Note
USB 2.0	6	Station Controller - Rear	For security keys and USB instrument control
USB 2.0	2	Station Controller - Front	
USB 3.0	4	Station Controller - Rear	
LAN GbE	2	Station Controller - Rear	
RS-232	1	Station Controller - Rear	For instrument control (thermal, LASER, microscope, etc). Additional RS-232 ports supplied with USB adapter for test instrument control.
GPIB IEEE 488.2	As Needed	Station Controller - Rear	Supplied with USB adapter for test instrument control

GENERAL SYSTEM SPECIFICATIONS (CONTINUED)

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

FemtoGuard® Chuck Performance (150/200 mm)

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^{12} Ω
	Force-to-shield	≥ 5 x 10^{12} Ω

MicroVac / Hi-ISO Coaxial Chuck Performance (150/200 mm)

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

System Electrical Performance

Station with chuck (non-thermal)	Summit AP FemtoGuard	Summit M FemtoGuard	Summit M MicroVac / Hi-ISO	Summit S MicroVac / Hi-ISO
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

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.

* 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).

FemtoGuard Chuck Performance (200 mm)

		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 x 10^{12} Ω	≥ 1 x 10^{12} Ω	≥ 5 x 10^{11} Ω	≥ 1 x 10^{11} Ω
	Guard-to-shield	≥ 1 x 10^{12} Ω	≥ 1 x 10^{12} Ω	≥ 5 x 10^{11} Ω	≥ 1 x 10^{11} Ω
	Force-to-shield	≥ 5 x 10^{12} Ω	≥ 5 x 10^{12} Ω	≥ 5 x 10^{11} Ω	≥ 1 x 10^{11} Ω

Coaxial Chuck Performance (200 mm)

	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 (MicroVac / Hi-ISO)	≥ 1 x 10^{12} Ω	≥ 1 x 10^{12} Ω	≥ 5 x 10^{11} Ω	≥ 1 x 10^{11} Ω
Resistance (Basic)	≥ 1 x 10^{11} Ω	≥ 1 x 10^{11} Ω	≥ 1 x 10^{10} Ω	≥ 1 x 10^{9} Ω

System Electrical Performance

Station with chuck (thermal)		**Summit AP FemtoGuard**	**Summit M FemtoGuard**	**Summit M MicroVac / Hi-ISO**	**Summit S MicroVac / Hi-ISO**	**Summit M&S Basic**
Probe leakage *	Thermal controller OFF	≤ 1 fA	≤ 1 fA	≤ 1 fA	≤ 20 pA	N/A
	Thermal controller ON	≤ 5 fA	≤ 10 fA	≤ 10 fA	≤ 20 pA	N/A
Chuck leakage * (ATT)	Thermal controller OFF	≤ 2 fA	≤ 15 fA	25 pA	800 pA	N/A
	-60/-55°C	≤ 6 fA	≤ 20 fA	25 pA	N/A	N/A
	25°C	≤ 3 fA	≤ 20 fA	25 pA	800 pA	N/A
	200°C	≤ 6 fA	≤ 20 fA	25 pA	800 pA	N/A
	300°C	≤ 6 fA	≤ 25 fA	220 pA	1000 pA	N/A
Residual capacitance		≤ 2.5 pF	≤ 50 pF	N/A	N/A	N/A
Capacitance variation **		≤ 3 fF	≤ 75 fF	≤ 75 fF	≤ 75 fF	N/A
Settling time ***	All temperatures @ 10 V	≤ 50 fA @ 50 ms (typical)	≤ 50 fA @ 50 ms (typical)	N/A	N/A	N/A

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.

* 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 SYSTEM PERFORMANCE

Thermal System Overview

Temperature ranges	-55°C to 200°C, ATT, liquid cool (200 mm)	
	-60°C to 300°C, ATT, air cool (200 mm)	
	+20°C to 300°C, ATT, air cool (200 mm)	
	+30°C to 300°C, ATT, air cool (200 mm)	
Wafer temperature accuracy	Standard [1, 2]	± 2.5°C at 100°C
	High Accuracy [3]	± 0.05°C (0 to 250°C)
Thermal uniformity	FemtoGuard, MicroVac, Hi-Iso[4]	≤ ± 0.5C° @ 25°C, ≤ ± 1.5°C @ -60°C, ≤ ± 0.85°C @ 200°C, ≤ ± 1.5°C @ 300°C
	Basic Chuck [4]	≤ ± 0.5°C or ± 0.5% of measurement temp up to 200°C, (whichever is greater)

1. As measured with an Anritsu WE-11K-TSI-ANP or WE-12K-GW1-ANP type K thermocouple surface temperature measurement probe with offset calibration procedure. Conditions: closed chamber with minimum recommended purge air, probe centered on a blank silicon wafer, chuck at center of travel and standard probe height. Typical type K thermocouple probe tolerances are ±2.2°C or ±0.75% of the measured temperature in °C (whichever is greater).

2. The test setup can change the wafer temperature accuracy from the calibration by ±5°C (typical). Test setup attributes include open or closed chamber, probe or probe card construction and number of contacts, purge air flow rate, and lab environmental conditions.

3. Special high accuracy calibration using KLA Sense array wafer (Consult factory for pricing and availability)

4. As measured at DUT (device under test) probing location.

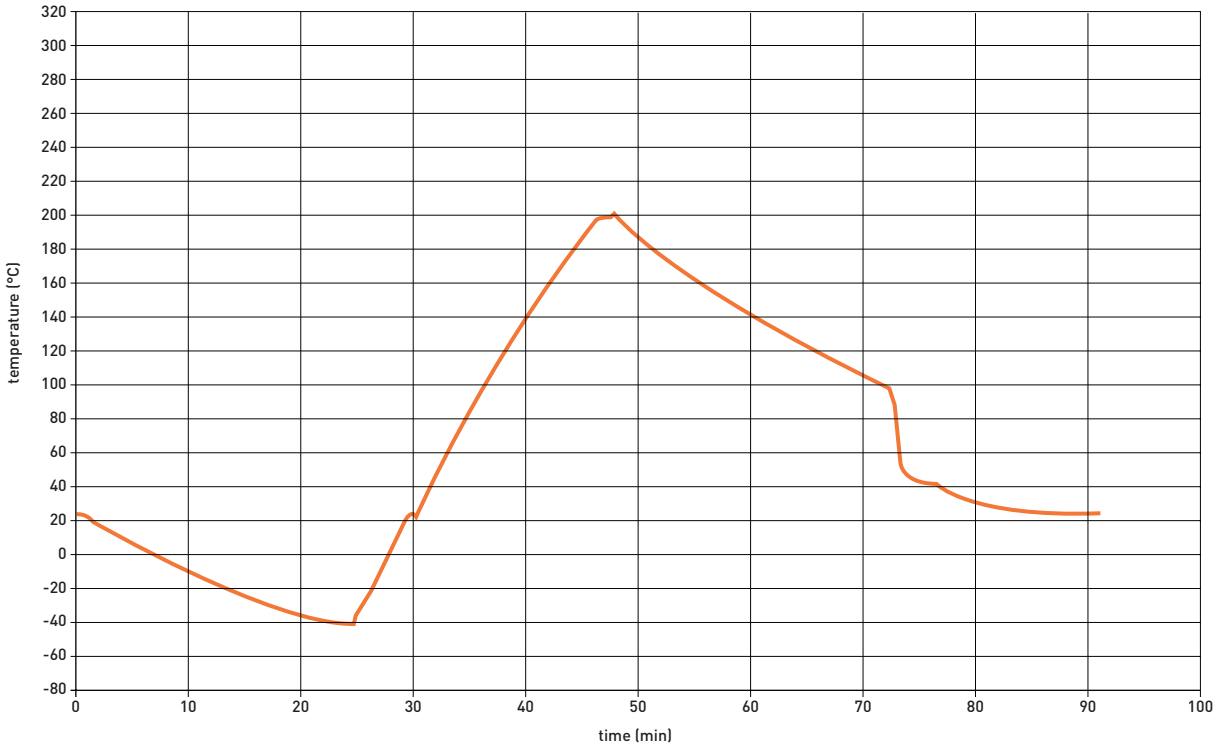
Note: For physical dimensions and facility requirements, refer to the Summit Facility Planning Guide.

ATT Thermal System Specifications, 200 mm (liquid cool, -55°C to 200°C)

Temperature range	-55°C to 200°C
Transition time – Heating (-55°C to 25°C)	5 min (typical)
Transition time – Heating (25°C to 200°C)	14 min (typical)
Transition time – Cooling (200°C to 25°C)	34 min (typical)
Transition time – Cooling (25°C to -55°C)	20 min (typical)
Temperature resolution	0.1° C
Audible noise	< 60 dB (A)

ATT Thermal Transition Time (-55°C to 200°C)

Typical times using Summit-AP with FemtoGuard Chuck.

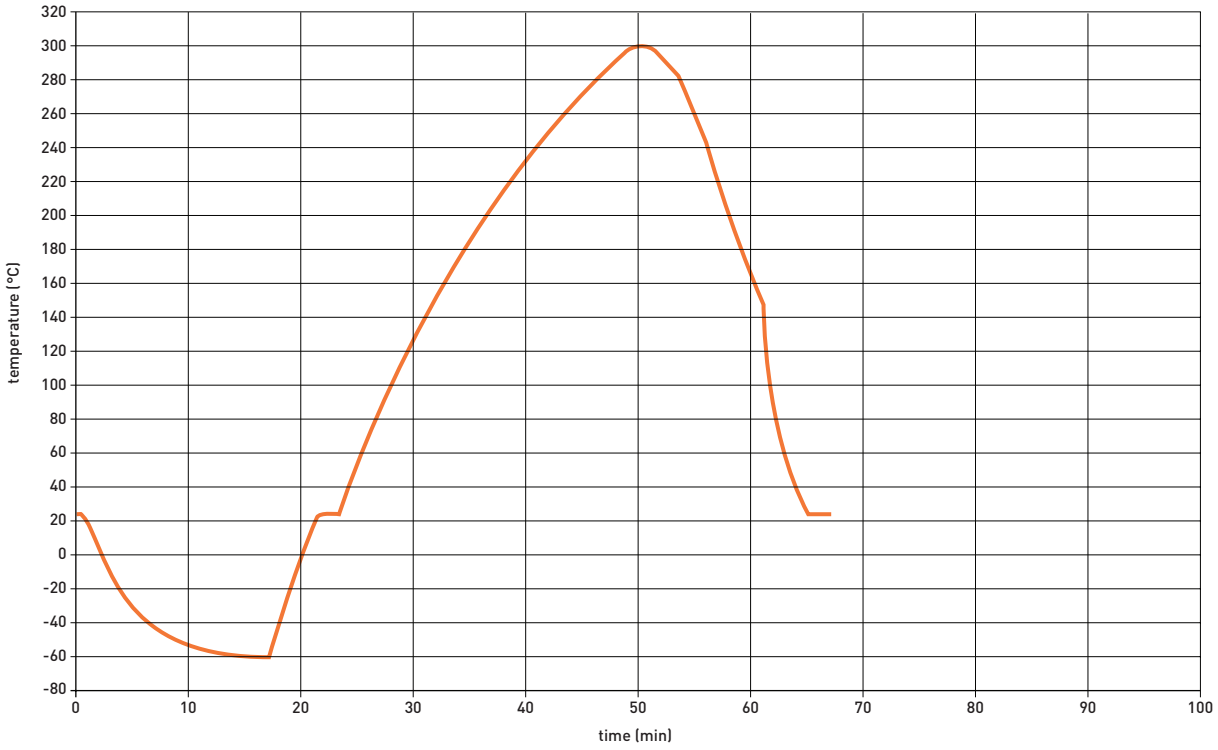


ATT Thermal System Specifications, 200 mm (air cool, -60°C to 300°C)

Temperature range	-60°C to 300°C
Transition time – Heating (-60°C to 25°C)	5 min (typical)
Transition time – Heating (25°C to 300°C)	27 min (typical)
Transition time – Cooling (300°C to 25°C)	15 min (typical)
Transition time – Cooling (25°C to -60°C)	15 min (typical)
Temperature resolution	0.1°C
Audible noise	< 60 dB (A)

ATT Thermal Transition Time (-60°C to 300°C)

Typical times using Summit-AP with FemtoGuard Chuck.



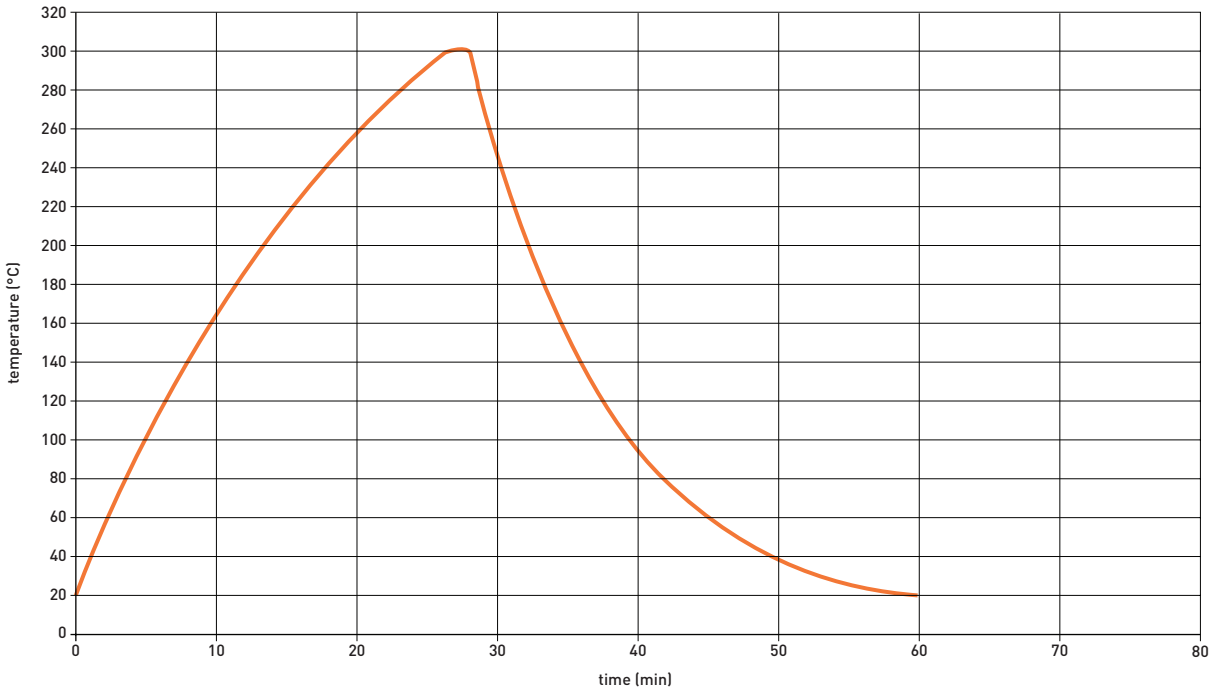
THERMAL OPTIONS AND PERFORMANCE

ATT Ambient Option Specifications, 200 mm (air cool, + 20°C to 300°C)

Temperature range	+ 20°C to 300°C
Transition time - Heating	27 min 200 mm (typical)
Transition time - Cooling	31 min 200 mm (typical)
Temperature resolution	0.1°C
Audible noise	< 60 dB (A)

ATT Thermal Transition Time (+20°C to 300°C)

Typical times using Summit-AP with FemtoGuard Chuck.



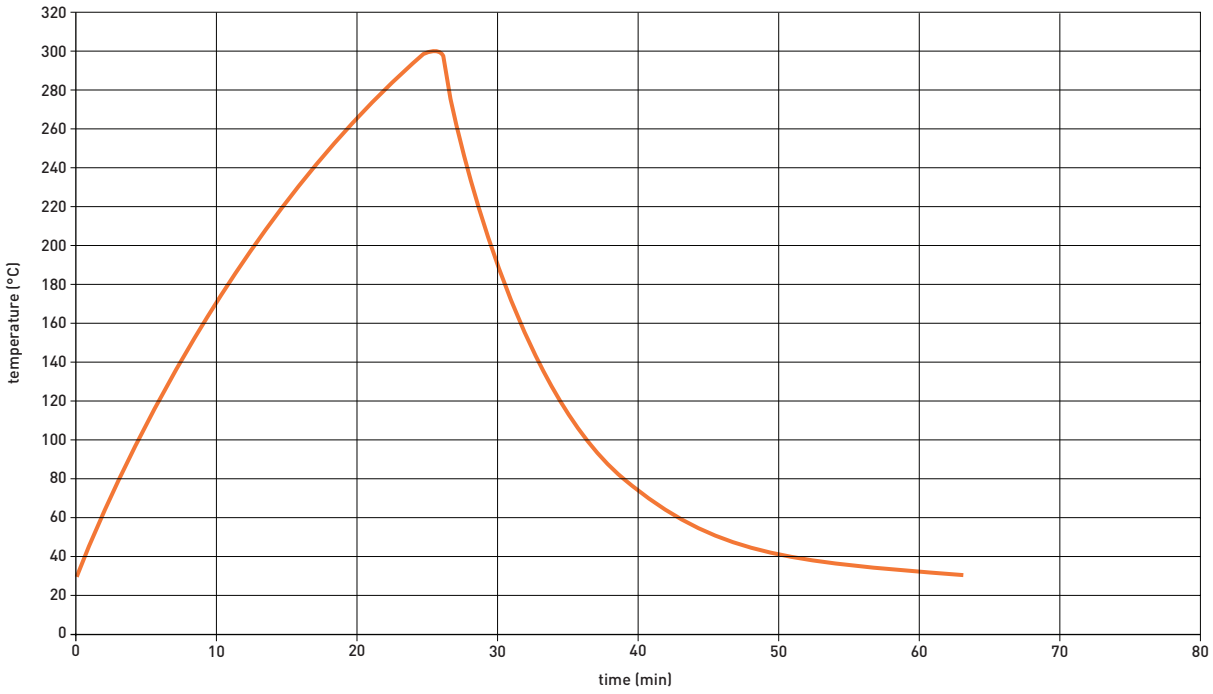
THERMAL OPTIONS AND PERFORMANCE

ATT Ambient Option Specifications, 200 mm (air cool, +30°C to 300°C)

Temperature range	+ 30 to 300°C
Transition time - Heating	25 min (typical)
Transition time - Cooling	36 min (typical)
Temperature resolution	0.1°C
Audible noise	< 60 dB (A)

ATT Thermal Transition Time (+30°C to 300°C)

Typical times using Summit-AP with FemtoGuard Chuck.



STATION CONTROLLER

System controller with Nucleus™ / Windows XP	P/N 125-014
System controller with Velox / Windows 7	P/N 158-270

AVAILABLE MODELS

Summit 12000B-AP – Probe station platform, semi-automated 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
Velox probe station control software
Complete automation tools - AutoAlign, AutoDie, AutoXYZT Correction
Thermal control, video window, wafermap, remote access

Summit 12000B-M – Probe station platform, semi-automated 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
Velox probe station control software
Complete automation tools - AutoAlign, AutoDie, AutoXYZT correction
Thermal control, video window, wafer map, remote access

Summit 12000B-S – Probe station platform, semi-automated, 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
Velox probe station control software
Complete automation tools - AutoAlign, AutoDie, AutoXYZT correction
Thermal control, video window, wafer map, remote access

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:

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
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")	●	◐	
TC-002-104	MicroVac coaxial Chuck, high isolation, non-thermal, 200 mm (8")		●	●
TC-002-101	Hi-ISO coaxial chuck, non-thermal, 200 mm (8")		●	●
TC-002-10x-6	Hi-ISO coaxial chuck, non-thermal, 150 mm (6")		◐	●

Summit Thermal Chucks		**Cooling**	**Chuck Compatibility**		
Part Number	**General Description**		**AP**	**M**	**S**
TC-412-30x	FemtoGuard triaxial chuck, thermal, -60°C to 300°C , 200 mm (8"), Ni/Au	Air	●	◐	
TC-412-104	MicroVac coaxial chuck, high isolation, thermal, -60°C to 300°C, 200 mm (8"), Au	Air		●	●
TC-412-101	Hi-ISO coaxial chuck, thermal, -60°C to 300°C, 200 mm (8"), Ni	Air		●	●
TC-412-001	Basic chuck, coaxial, thermal, -60°C to 300°C, 200 mm (8"), Ni	Air		◐	●
TC-402-30x	FemtoGuard triaxial chuck, thermal, -55°C to 200°C, 200 mm (8"), Ni/Au	Liquid	●	◐	
TC-402-104	MicroVac coaxial chuck, high isolation, thermal, -55°C to 200°C, 200 mm (8"), Au	Liquid		●	●
TC-402-101	Hi-ISO coaxial chuck, thermal, -55°C to 200°C, 200 mm (8"), Ni	Liquid		●	●
TC-402-001	Basic chuck, coaxial, thermal, -55°C to 200°C, 200 mm (8"), Ni	Liquid		◐	●

AVAILABLE MODELS (CONTINUED)

Summit Thermal Systems (200 mm)

PART NUMBER	General Description
TS-412-02T	Thermal system for Summit, +30°C to 300°C, ATT, air cool (100-230 VAC 50/60 Hz)
TS-412-05T	Thermal system for Summit, +20°C to 300°C, ATT, air cool (100-230 VAC 50/60 Hz)
TS-412-14P	Thermal system for Summit, -60°C to 300°C, ATT, air cool (200-240 VAC 50/60 Hz)
TS-402-07R	Thermal system for Summit, -55°C to 200°C, ATT, liquid cool (208 VAC 60Hz)
TS-402-07E	Thermal system for Summit, -55°C to 200°C, ATT, liquid cool (230 VAC 50Hz)

Note: Thermal systems must match the thermal chuck selected, i.e. TS-412-xxx thermal systems are compatible only with TC-412-xxx chucks.

STANDARD OPTIONS FOR MICROSCOPE MOUNTS

High Stability Bridge/Transport (programmable)	**Part Number 162-165**
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	4" vertical lift, 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 162-160**
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.)
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	4" vertical lift, 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

STANDARD OPTIONS FOR MICROSCOPE MOUNTS (CONTINUED)

Large Area Bridge / Transport	Part Number 158-073
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

SUMMIT UPGRADE OPTIONS

VueTrack Technology

The VueTrack technology provides a novel method to track probe tips and correct for drift, allowing a customer to run a probe station unattended at multiple temperatures with no operator intervention. The VueTrack technology significantly increases test productivity and test cell efficiency by eliminating the idle time between temperature transitions and automatically generating parametric and reliability data.

HTS Enhancements

High Thermal Stability (HTS) enhancements minimize the thermal drift of the probe supporting components. They are made of high temperature stable materials such as Invar. Using HTS enhancements, transition and die soak time can be minimized to optimize the probe station's productivity.

Available Items*

Part Number	Description
151-242	VueTrack bundle, includes VueTrack, eVue-III 40X Pro, and software upgrade
151-243	VueTrack 30 day demo license**
151-293	HTS Probe Card Holder, 40 mm, universal
151-337	HTS platen upgrade
151-359	VueTrack onsite PTPA option**
153-577	VueTrack upgrade bundle, includes VueTrack, HTS platen, eVue-III 40X Pro, FB and software upgrade

* See Cascade Microtech's Station Accessory Guide for other available items, such as HTS probe arms and probes tips.

** Nucleus 4.1 or Velox 2.0 or later and eVue PRO model required. Contact Cascade Microtech for Nucleus and/or Velox upgrade and/or eVue PRO upgrade.

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-0817

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