MPI TS3000-SiPH | 300 mm Automated Probe System

The Dedicated System for Silicon Photonics Device Characterization

FEATURES / BENEFITS

Dedicated for silicon photonics on-wafer test

- Including various options of high-precision fiber alignment systems for ultra-fast scanning routines
- Multiple measurement capabilities for O-O, O-E, E-O and E-E device configuration
- Integrated Z-sensing for detecting the fiber to wafer contact point
- Crash protection when using two optical fiber arms
- Recommended temperature range from -40 to 100 °C, system supports full range from -60°C to 300°C

Extended Flexibility

- MPI IceFreeEnvironment™ for using MicroPositioners and probe cards simultaneously, even at negative temperature
- Programmable microscope movements for more automation and ease of use
- The shortest cable interface to IC tester
- Minimize the platen-to-chuck distance for mmW & probing with active probes
- Supports film-frame probing

Ergonomic Design and Footprint

- Easy wafer or single DUT loading from the front
- Integrated active vibration isolation
- Completely integrated prober control for faster, safer and convenient system and test operation
- The Safety Test Management (STM™) with automated dew point control
- Reduced footprint due to smart chiller space arrangement
- Instrument shelf option for shorter cables and higher measurement dynamic

STAGE SPECIFICATIONS

Chuck XY Stage (Programmable)

Travel range	310 mm x 310 mm (12.2 x 12.2 in)
Resolution	0.5 µm
Accuracy	± 2.0 µm (0.08 mils)
XY stage drive	Closed-loop high precision stepper motors
Speed	5-Speed XY chuck stage speed movement
Max. movement speed	50 mm / sec

Chuck Z Stage (Programmable)

Travel range	30 mm (1.18 in)
Resolution	0.2 µm
Accuracy	± 2 µm
Repeatability	± 1 µm
Z stage drive	Closed-loop high precision stepper motor
Guider	Precision ball bearings

STAGE SPECIFICATIONS

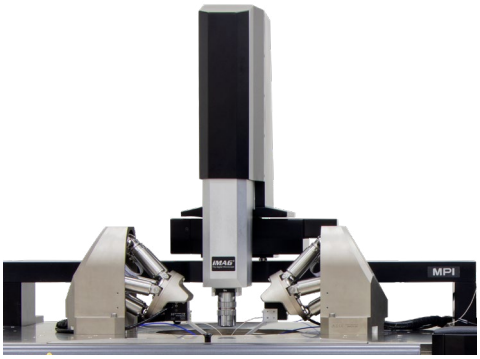
Chuck Theta Stage (Programmable)

Travel range	± 5.0°
Resolution	0.0001° (0.24 µm @ 300 mm edge)
Accuracy	< 2.0 µm (measured at the edge of the 300 mm chuck)
Repeatabilty	< 1.0 µm
Theta stage drive	High resolution stepper motor with linear encoder feedback system

MICROSCOPE MOVEMENT

XYZ Stage (Programmable)

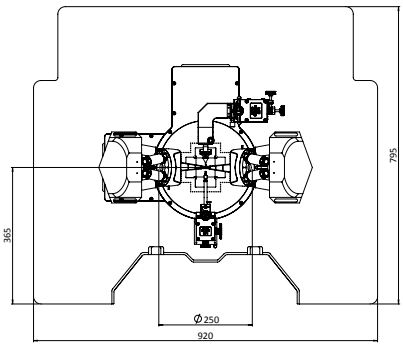
Travel range (X x Y x Z)	50 mm x 50 mm x 140 mm (2.0 in. x 2.0 in. x 5.5 in.)
Resolution, X-Y axis	1 µm (0.04 mils)
Repeatability, X-Y axis	≤ 2 µm (0.08mils)
Accuracy, X-Y axis	≤ 5 µm (0.2 mils)
Resolution, Z axis	0.05 µm (0.002 mils)
Repeatability, Z axis	≤ 2 µm (0.08mils)
Accuracy, Z axis	≤ 4 µm (0.016 mils)

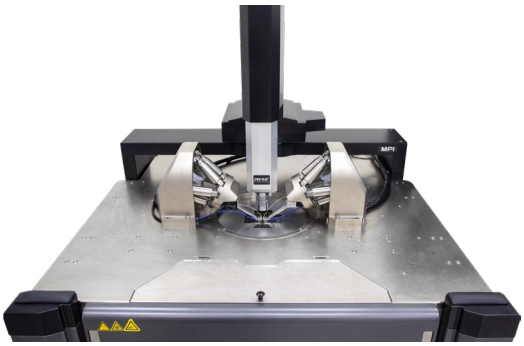


PROBE PLATEN

Specifications

Material	Nickel plated steel
Chuck top to platen top	Min. 28 mm
Platen cooling	Fully integrated CDA cooling, by using the chiller CDA
Configuration	Probe card holder 4.5 x 11” and/or MicroPositioners
Max. No. of MicroPositioners	10 DC MicroPositioners or 4 DC + 4 HF MicroPositioner Setup
RF MicroPositioner mounting	Magnetic with guided rail
DC MicroPositioner mounting	Magnetic

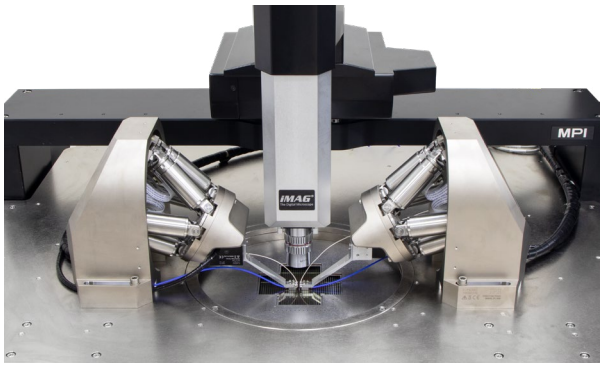


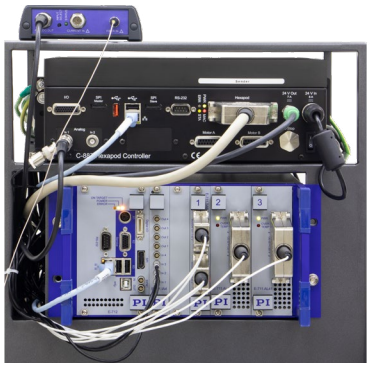


Large Probe Platen supporting up to 10x DC or 4x DC + 4x RF MicroPositioners or standard 4.5” probe card holder

IceFreeEnvironment™ & Fast Multichannel Photonic Alignment System

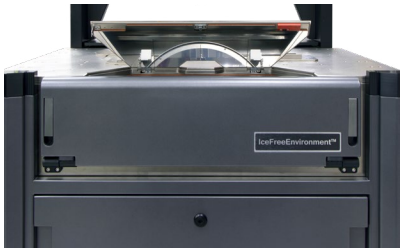
MPI IceFreeEnvironment™ provides unique capability to perform measurements with probe cards and MicroPositioners simultaneously, especially at negative temperatures down to -60°C.
The photonics alignment system is designed for single fiber and and multichannel arrays. Its modular design allows the use of up to 6-axis fiber positioning stages.
The optimized design with minimal tip drop for highest dynamic range and gamma of mmWave and Load Pull measurements make the system an ideal choice for RF/mmW applications on 300 mm wafers.

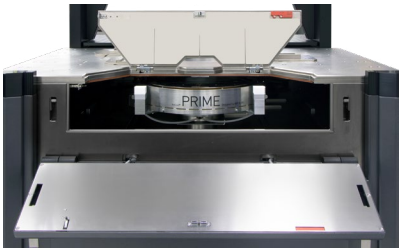




WAFER LOADING

Loading or unloading of 150, 200 or 300 mm wafers or substrates is straight forward and intuitive. Special designed chucks allowing easy single ICs or wafer fragments loading in the front. Furthermore MPI SmartVacuum™ technology allows automated wafer size or single Die recognition and protects the wafer in case of power interruptions or inexperience operators from releasing the vacuum inside the IceFreeEnvironment™.
No roll-out stage allows for a simple method of automation for RF calibration and probe card cleaning. Easy access to the AUX chucks for handling of calibration substrates, cleaning or contact check pads.



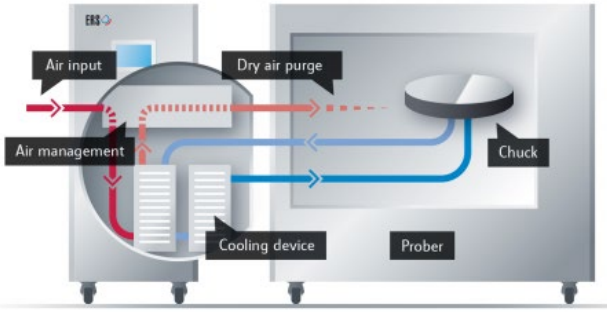


INTEGRATED CONTROLS

The thermal chuck can be operated by using the fully integrated touchscreen display, placed at convenient location in front of the operator for fast operation and immediate feedback.
The intelligent hardware control panel is completely integrated into the probe system and is designed to provide faster, safer and convenient system control and test operation.
The Keyboard and mouse are strategically located to control the software and it can also control the Windows® based instrumentation.
USB connection to the systems controller is located right in front for convenient data exchange.

THERMAL CHILLER INTEGRATION

Minimized CDA Consumption
With the ERS patented technology, using the chiller for purging the IceFreeEnvironment™, the CDA consumption is reduced by as much as 50%. Nitrogen purging is also possible by using separate, automated valve.
This “refurbished” CDA is used in addition for probe platen and probe card cooling.

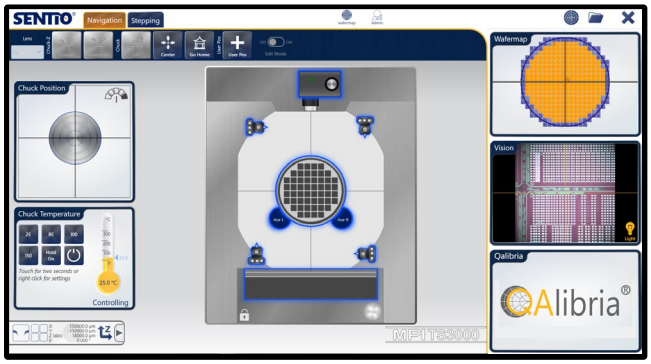


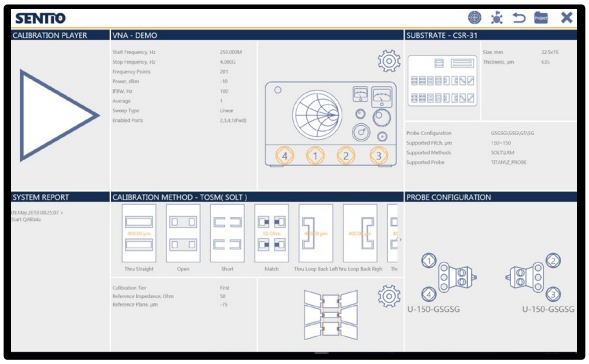
* Picture is courteously provided by ERS.

SOFTWARE SOLUTION

MPI automated engineering probe systems are controlled by a unique and revolutionary, multi-touch operation SENTIO® Software Suite – simple and intuitive operation saves significant training time, the Scroll, Zoom, and Move commands mimic modern smart mobile devices and allows everyone to become an expert in just minutes. Switching between the active application and the rest of the APPs is just a matter of a simple finger sweep.

By implementing intuitive multi-touch operation, QAlibria® provides crisp and clear guidance to the RF calibration process, minimizes configuration mistakes and helps to reach accurate calibration results in fastest time. QAlibria® offers industry standard and advanced calibration methods.
Additionally, QAlibria® is integrated with NIST Statistical calibration packages providing easy access to the NIST multiline TRL metrology-level calibration and uncertain analysis.





NON-THERMAL CHUCKS

Standard Wafer Chuck

Connectivity	Coax BNC (f)
Diameter	310 mm with 2 integrated AUX areas
Material	Nickel plated aluminum (flat with 0.5 mm holes)
Chuck surface	Planar with 0.5 mm diameter holes in centric sections
Vacuum grooves sections (diameter)	4, 24, 48, 72, 96, 120, 144, 168, 192, 216, 240, 264, 288 mm
SmartVacuum™ distribution	In front for single DUT 4x4 mm (4 holes) and 75 mm (3 in) In center for 150, 200, 300 mm (6, 8, 12 in)
Surface planarity	≤± 5 µm
Rigidity	< 15 µm / 10 N @edge

**Single DUT testing requires higher vacuum conditions dependent upon testing application.*

Triaxial Wafer Chuck

Connectivity	Kelvin Triax (f)
Diameter	310 mm
Material	Nickel plated aluminum (flat with 0.5 mm holes)
Chuck surface	Planar with 0.5 mm diameter holes in centric sections
Vacuum holes sections (diameter)	4, 24, 48, 72, 96, 120, 144, 168, 192, 216, 240, 264, 288 mm
SmartVacuum™ distribution	In front for single DUT 4x4 mm (4 holes) and 75 mm (3 in) In center for 150, 200, 300 mm (6, 8, 12 in)
Surface planarity	≤± 5 µm
Rigidity	< 15 µm / 10 N @edge

Triaxial RF Wafer Chuck

Connectivity	Kelvin Triax (f)
Diameter	310 mm with 2 integrated AUX chucks
Material	Nickel plated aluminum (flat with 0.5 mm holes)
Chuck surface	Planar with 0.5 mm diameter holes in centric sections
Vacuum holes sections (diameter)	4, 24, 48, 72, 96, 120, 144, 168, 192, 216, 240, 264, 288 mm
SmartVacuum™ distribution	In front for single DUT 4x4 mm (4 holes) and 75 mm (3 in) In center for 150, 200, 300 mm (6, 8, 12 in)
Surface planarity	≤± 5 µm
Rigidity	< 15 µm / 10 N @edge

**Single DUT testing requires higher vacuum conditions dependent upon testing application.*

Auxiliary Chuck

Quantity	2 AUX chucks
Position	Integrated to front side of main chuck
Substrate size (W x L)	Max. 25 x 25 mm (1 x 1 in)
Material	Ceramic, RF absorbing material for accurate calibration
Surface planarity	≤± 5 µm
Vacuum control	Controlled independently, separate from chucks

Electrical Specification (Coax)

Operation voltage	In accordance with EC 61010, certificates for higher voltages available upon request
Maximum voltage between chuck top and GND	500 V DC
Isolation	> 2 GΩ

Electrical Specification (Triax)

Chuck Isolation	At 10 V
Force-to-Guard	> 5 T Ohm
Guard-to-Shield	> 1 T Ohm
Force-to-Shield	> 5 T Ohm

THERMAL CHUCKS

Specifications of MPI ERS AirCool® PRIME Technology

	Ambient to 200/300 °C	20 °C to 200/300 °C	Ambient to 200/300 °C	20 °C to 200/300 °C
Chuck type	RF	RF	Ultra low noise	Ultra low noise
Connectivity	Kelvin Triax (f)	Kelvin Triax (f)	Kelvin Triax (f)	Kelvin Triax (f)
Temperature control method	Cooling air / Resistance heater	Cooling air / Resistance heater	Cooling air / Resistance heater	Cooling air / Resistance heater
Coolant	Air (user supplied)	Air (user supplied)	Air (user supplied)	Air (user supplied)
Smallest temperature selection step	0.1 °C	0.1 °C	0.1 °C	0.1 °C
Chuck temperature display resolution	0.01 °C	0.01 °C	0.01 °C	0.01 °C
External touchscreen display operation	Yes	Yes	Yes	Yes
Temperature stability	±0.5 °C	±0.05 °C	±0.05 °C	±0.05 °C
Temperature accuracy	±0.1 °C	0.1 °C	0.1 °C	0.1 °C
Control method	Low noise DC/PID	Low noise DC/PID	Low noise DC/PID	Low noise DC/PID
Chuck pinhole surface plating: 200°C / 300°C	Nickel / Gold	Nickel / Gold	Nickel / Gold	Nickel / Gold
SmartVacuum™ distribution	In front for single DUT 4x4 mm (4 holes) and 75 mm (3 in) In center for 150, 200, 300 mm (6, 8, 12 in)			
Temperature sensor	Pt100 1/3DIN, 4-line wired	Pt100 1/3DIN, 4-line wired	Pt100 1/3DIN, 4-line wired	Pt100 1/3DIN, 4-line wired
Temperature uniformity	< ±0.5 °C at ≤ 200 °C < ±1 °C at > 200 °C	< ±0.5 °C at ≤ 200 °C < ±1 °C at > 200 °C	< ±0.5 °C at ≤ 200 °C < ±1 °C at > 200 °C	< ±0.5 °C at ≤ 200 °C < ±1.0 °C at > 200 °C
Surface flatness and base parallelism	< ±12 µm	< ±12 µm	< ±12 µm	< ±12 µm
Max. Voltage between				
Force-to-GND	600 V DC	600 V DC	600 V DC	600 V DC
Force-to-Guard	100 V DC	100 V DC	600 V DC	600 V DC
Heating rates	35 to 200 °C < 15 min 35 to 300 °C < 25 min	20 to 200 °C < 18 min 20 to 300 °C < 28 min	35 to 200 °C < 18 min 35 to 300 °C < 28 min	20 to 200 °C < 20 min 20 to 300 °C < 30 min
Cooling rates*	200 to 35 °C < 28 min 300 to 35 °C < 35 min	200 to 20 °C < 30 min 300 to 20 °C < 38 min	200 to 35 °C < 30 min 300 to 35 °C < 38 min	200 to 20 °C < 33 min 300 to 20 °C < 40 min
Leakage @ 10 V	N/A	N/A	< 15 fA at 25 °C < 30 fA at 200 °C < 50 fA at 300 °C	< 15 fA at 25 °C < 30 fA at 200 °C < 50 fA at 300 °C
Electrical isolation	> 5 T Ω at 25 °C > 1 T Ω at 200 °C > 0.5 T Ω at 300 °C	> 5 T Ω at 25 °C > 1 T Ω at 200 °C > 0.5 T Ω at 300 °C	N/A	N/A
Capacitance				
Force-to-Guard	< 1600 pF	< 1600 pF	< 600 pF	< 600 pF
Guard-to-Shield	< 2000 pF	< 2000 pF	< 2000 pF	< 2000 pF

**All data are relevant for chucks in ECO mode.*

Specifications of MPI ERS AirCool® PRIME Technology

	-10 °C to 200/300 °C	-40 °C to 200/300 °C	-60 °C to 200/300 °C
Chuck type	RF	RF	RF
Connectivity	Kelvin Triax (f)	Kelvin Triax (f)	Kelvin Triax (f)
Temperature control method	Cooling air / Resistance heater	Cooling air / Resistance heater	Cooling air / Resistance heater
Coolant	Air (user supplied)	Air (user supplied)	Air (user supplied)
Smallest temperature selection step	0.1 °C	0.1 °C	0.1 °C
Chuck temperature display resolution	0.01 °C	0.01 °C	0.01 °C
External touchscreen display operation	Yes	Yes	Yes
Temperature stability	±0.08 °C	±0.08 °C	±0.08 °C
Temperature accuracy	0.1 °C	0.1 °C	0.1 °C
Control method	Low noise DC/PID	Low noise DC/PID	Low noise DC/PID
Interfaces	RS232C	RS232C	RS232C
Chuck pinhole surface plating: 200°C / 300°C	Nickel / Gold	Nickel / Gold	Nickel / Gold
SmartVacuum™ distribution	In front for single DUT 4x4 mm (4 holes) and 75 mm (3 in) In center for 150, 200, 300 mm (6, 8, 12 in)		
Temperature sensor	Pt100 1/3DIN, 4-line wired	Pt100 1/3DIN, 4-line wired	Pt100 1/3DIN, 4-line wired
Temperature uniformity	< ±0.5 °C at ≤ 200 °C < ±1 °C at > 200 °C	< ±0.5 °C at ≤ 200 °C < ±1 °C at > 200 °C	< ±0.5 °C at ≤ 200 °C < ±1.0 °C at > 200 °C
Surface flatness and base parallelism	< ±12 µm	< ±12 µm	< ±12 µm
Max. Voltage between			
Force-to-GND	600 V DC	600 V DC	600 V DC
Force-to-Guard	100 V DC	100 V DC	100 V DC
Heating rates			
25 °C	-10 to 25 °C < 8 min	-40 to 25 °C < 10 min	-60 to 25 °C < 12 min
200 °C		25 to 200 °C < 18 min	
300 °C		25 to 300 °C < 30 min	
Cooling rates*			
300 °C	300 to 25 °C < 35 min	300 to 25 °C < 32 min	
200 °C	200 to 25 °C < 28 min	200 to 25 °C < 22 min	
25 °C	25 to -10 °C < 28 min	25 to -40 °C < 55 min	25 to -60 °C < 40 min
Leakage @ 10 V	N/A	N/A	N/A
Electrical isolation		> 5 T Ω at 25 °C or below > 1 T Ω at 200 °C > 0.5 T Ω at 300 °C	
Capacitance			
Force-to-Guard	< 1600 pF	< 1600 pF	< 1600 pF
Guard-to-Shield	< 2000 pF	< 2000 pF	< 2000 pF

**All data are relevant for chucks in ECO mode.*

Specifications of MPI ERS AirCool® PRIME Technology

	-10 °C to 200/300 °C	-40 °C to 200/300 °C	-60 °C to 200/300 °C
Chuck type	Ultra low noise	Ultra low noise	Ultra low noise
Connectivity	Kelvin Triax (f)	Kelvin Triax (f)	Kelvin Triax (f)
Temperature control method	Cooling air / Resistance heater	Cooling air / Resistance heater	Cooling air / Resistance heater
Coolant	Air (user supplied)	Air (user supplied)	Air (user supplied)
Smallest temperature selection step	0.1 °C	0.1 °C	0.1 °C
Chuck temperature display resolution	0.01 °C	0.01 °C	0.01 °C
External touchscreen display operation	Yes	Yes	Yes
Temperature stability	±0.08 °C	±0.08 °C	±0.08 °C
Temperature accuracy	0.1 °C	0.1 °C	0.1 °C
Control method	Low noise DC/PID	Low noise DC/PID	Low noise DC/PID
Interfaces	RS232C	RS232C	RS232C
Chuck pinhole surface plating: 200°C / 300°C	Nickel / Gold	Nickel / Gold	Nickel / Gold
SmartVacuum™ distribution	In front for single DUT 4x4 mm (4 holes) and 75 mm (3 in) In center for 150, 200, 300 mm (6, 8, 12 in)		
Temperature sensor	Pt100 1/3DIN, 4-line wired	Pt100 1/3DIN, 4-line wired	Pt100 1/3DIN, 4-line wired
Temperature uniformity	< ±0.5 °C at ≤ 200 °C < ±1 °C at > 200 °C	< ±0.5 °C at ≤ 200 °C < ±1 °C at > 200 °C	< ±0.5 °C at ≤ 200 °C < ±1.0 °C at > 200 °C
Surface flatness and base parallelism	< ±12 µm	< ±12 µm	< ±12 µm
Max. Voltage between			
Force-to-GND	600 V DC	600 V DC	600 V DC
Force-to-Guard	600 V DC	600 V DC	600 V DC
Heating rates			
25 °C	-10 to 25 °C < 10 min	-40 to 25 °C < 12 min	-60 to 25 °C < 15 min
200 °C		25 to 200 °C < 20 min	
300 °C		25 to 300 °C < 35 min	
Cooling rates*			
300 °C	300 to 25 °C < 38 min	300 to 25 °C < 35 min	
200 °C	200 to 25 °C < 30 min	200 to 25 °C < 25 min	
25 °C	25 to -10 °C < 30 min	25 to -40 °C < 65 min	25 to -60 °C < 45 min
Leakage @ 10 V			
-10, -40 or -60 °C	< 30 fA	< 30 fA	< 30 fA
25 °C	< 15 fA	< 15 fA	< 15 fA
200 °C	< 30 fA	< 30 fA	< 30 fA
300 °C	< 50 fA	< 50 fA	< 50 fA
Capacitance			
Force-to-Guard	< 600 pF	< 600 pF	< 600 pF
Guard-to-Shield	< 2000 pF	< 2000 pF	< 2000 pF

**All data are relevant for chucks in ECO mode.*

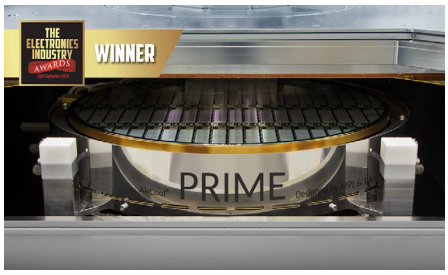
THERMAL CHUCKS DIMENSIONS

System Controller / Chiller Dimensions and Power / Air Consumption

System type	W x D x H (mm)	Weight (kg)	Power cons. (VA)	max. Air flow* (l/min)	CDA dew Point
Ambient	300 x 360 x 135	12	1000	300	≤ 0 °C
20°C, -10 °C to 200 / 300 °C	300 x 360 x 135	12	1000	450	≤ -30 °C
-40 to 200 / 300 °C	420 x 300 x 520	45	1000	450	≤ -40 °C
-60 to 200 / 300 °C	420 x 500 x 1020	140	1500	450	≤ -40 °C
Electrical primary connection	100 to 240 VAC auto switch				
Electrical frequency	50 Hz / 60 Hz				
Compressed air supply	6.0 bar (0.8 MPa, 87 psi)				

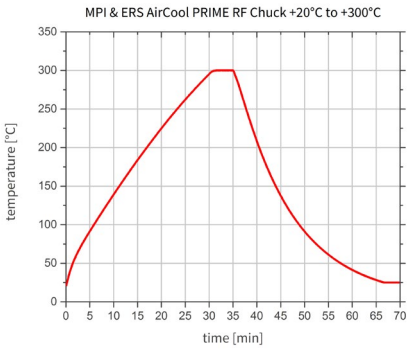
ERS AirCool® (patented) Controller Integrated Chiller -60°C

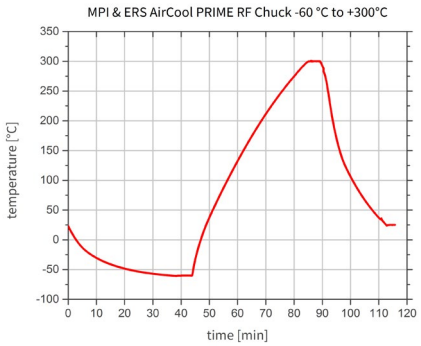
ERS AirCool® (patented) Controller Integrated Chiller -40°C

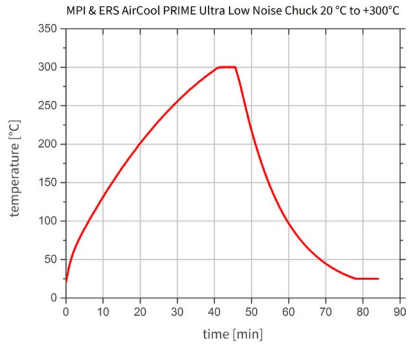


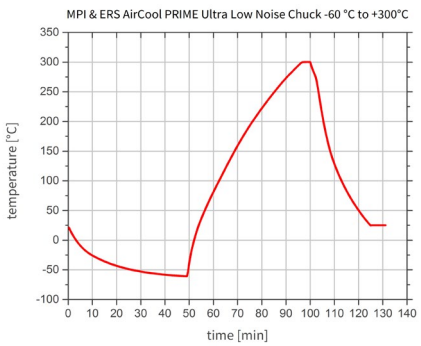
ERS and MPI's joint product AirCool® PRIME Chuck won "Electronics Industry Awards 2018" in the category, "Test, Measurement and Inspection Product of the year".

TYPICAL TRANSITION TIME





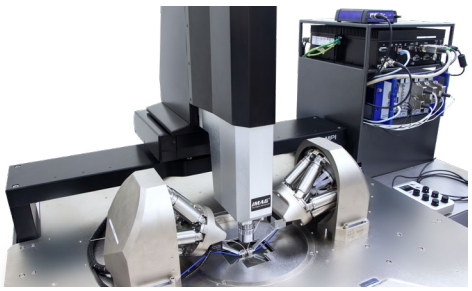




Fast Multichannel Photonic Alignment System[1]

System with 6 Degrees of Freedom for Ultra-Fast Scan Routines

- Integrated scan routines for fiber optic alignment
- Extensive software package
- Direct detection of the optical signal
- Position sensors for high accuracy and operational reliability
- Automatic alignment of several fibers in < 1 s
- Suitable for single fiber input-output and fiber arrays
- Simplified setup with 3-axis stage for single fiber applications



Specifications

Hexapod Single- or Double-Sided Positioning	
Active axes	X, Y, Z, ΘX, ΘY, ΘZ
Travel range in X, Y, Z	±6.5, ±16, ±8.5 mm*
Travel range in ΘX, ΘY, ΘZ	±14.5, ±10, ±10°*
Minimum incremental motion	0.1 µm
Max. velocity	10 mm/s
Sensor type	Rotary encoder
Drive type	Brushless DC motor
P-616 NanoCube® Nanopositioner	
Active axes	X, Y, Z
Closed-loop travel in X, Y, Z	100 µm
Min. incremental motion, open-loop	0.3 nm
Min. incremental motion, closed-loop	2.5 nm
Linearity error, for the entire travel range**	2 %
Repeatability (bidirectional) 10% travel range	2 nm
Sensor type	Incremental
Drive type	PICMA®
Alignment	
Alignment time area scan 100 µm x 100 µm (max. deviation of peak intensity 0.02 dB)***	<0.5 / <1 s
Alignment time gradient search, randomized with ±5 µm (repeatability < 0.01 dB)***	<0.5 / <1 s
Miscellaneous	
Operating temperature range, mechanics	0 to 50 °C
Operating temperature range, controller	5 to 40 °C
Cable length	2 m

Requirements for the photometer used

Output signal	Analog output, ideally converted from linear to logarithmic
Output voltage range, max.	-5 to 5 V
Bandwidth, min.	1 kHz
Noise level, max.	-60 dBm

** The travel ranges of the individual coordinates (X, Y, Z, ΘX, ΘY, ΘZ) are interdependent. The data for each axis in this table shows its maximum travel range, where all other axes and the pivot point are at the reference position.*
See the dimensional drawings for the default coordinate system and pivot point coordinates of the hexapod. Changing the pivot point will reduce the travel range in ΘX, ΘY, ΘZ. Changing the orientation of the coordinate system (e.g., when the optical axis is to be the Z axis), will change the travel range in X, Y, and Z.
*** without polynomial linearization*
**** reaching the global maximum after first light has been found*

[1]All these texts, images and drawings are courtesy of Physik Instrumente (PI) GmbH & Co. KG., © 2017

Digital Motion Controller

Modular control system for up to 6 axis for highest precision:

- Real-time operating system for excellent trajectory control
- Highly stable 20-bit D/A converter
- 20 kHz servo update rate
- Flexible interfaces: Ethernet TCP/IP, RS-232, USB
- Supports capacitance sensors or lensed fibers for automatic Z sensing

Specifications

Function	Modular digital controller for multi-axis piezo nanopositioning systems
Axes	6
Processor	PC-based, real-time operating system
Sampling rate, servo control	20 kHz
Sensor	
Servo characteristics	P-I, two notch filters
Sensor type	Capacitive
Sensor channels	6
Sensor resolution	18 bits
External synchronization	Yes
Amplifier	
Amplifier channels	8
Output voltage	–30 to 135 V
Peak output power per channel	25 W
Average output power per channel	8 W
Current limitation	Short-circuit-proof
Resolution DAC	20-bit
Overheat protection	Output voltage switch-off at 75 °C
Interfaces and operation	
Interface / communication	Ethernet, USB, RS-232, SPI
Piezo / sensor connection	Sub-D Mix 25W3
Analog inputs	LEMO: 4 × ±10 V differential; bandwidth: max. 25 kHz; resolution: 18 bit; max. impedance: 250 Ohm
Analog outputs	LEMO: 4 × ±10 V differential; bandwidth: max. 25 kHz; resolution: 16 bit
Digital input/output	MDR20: 8 × TTL
Command set	PI General Command Set (GCS)
User software	PIMikroMove
Application programming interfaces	API for C / C++ / C# / VB.NET / MATLAB / Python, drivers for NI LabVIEW
Supported functions	Wave generator, trigger I/O, macros
Indicators	LEDs for OnTarget, Error, Power, Over Temp
Linearization	4th order polynomials, DDL option (Dynamic Digital Linearization)
Miscellaneous	
Operating temperature range	5 to 40 °C
Mass	5.96 kg
Dimensions	9.5” chassis, 236 mm × 132 mm × 296 mm + handles (47 mm length)
Max. power consumption	225 W
Operating voltage	100 to 240 VAC, 50 to 60 Hz

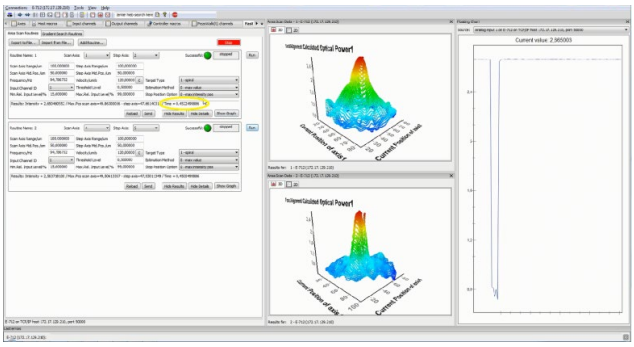
Comprehensive Software Package and Development Tool-Kits

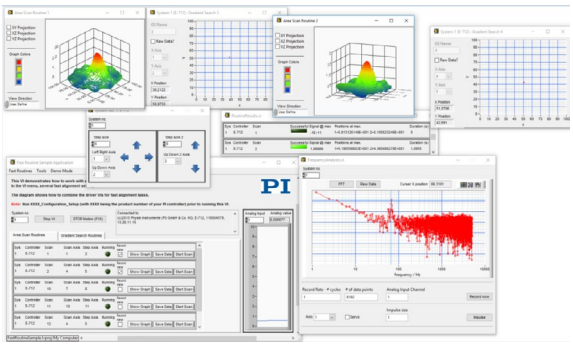
Software emulation allows application programs to be developed and pretested without having all components on site. Simulation tools also avoid collisions e.g., to prevent the moving platform from approaching positions where the platform or the mounted load would collide with the surroundings. The free choice of the pivot point and coordinate systems for definition of work- and tool-space can be done by a simple software command to enable scanning in inclined planes. Mobile apps allow wireless monitoring and control.

User-friendly application development libraries and sample applications for easy, fast, and flexible implementation

- Libraries for C++, C#, VB.net, etc.
- Python
- LabVIEW
- MatLab

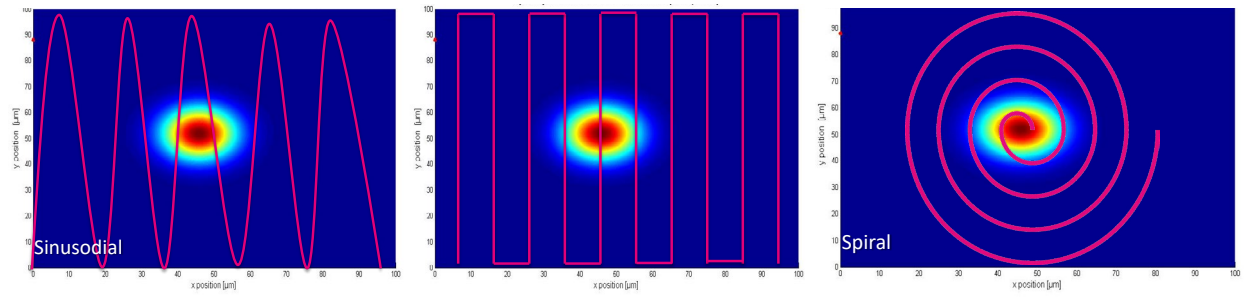
Available for Windows, Linux and OS X deployment. Universal Command Set (GCS) simplifies commissioning and programming. Supports PI controllers' built-in, ultrafast, and vibration-free scan/align algorithms. PIMikroMove® GUI for Windows provides quick access to motion and scanning across all PI products regardless of drive technology, controller type, number of axes etc. Includes softwarebased scan and align routines which work with all PI motion controllers.





Alignment Routines

- Gradient Search, define with FDG and start with one command FRS #
- Gradient of signal steers movement
- New approach with fastest results
- Run simultanously on any channels, in- and output as well
- Tracking functionality



Z Distance Sensing

For precise fiber positioning a distance sensor is integrated into the probe arm. The sensor supports an easy and safe setup when fiber and DUT are brought into close proximity.

Specifications

Sensor Type	Capacitive
Measurement range	200 µm
Resolution	4 nm
Interface	Ethernet for easy access via browser
Analog output	0 to 10 Volt for direct connection to alignment system and probe system hardware
Quantity	1 or 2, depending on configuration for single or dual setup

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FACILITY REQUIREMENTS

System Controller Specifications

CPU	Intel Core i5 4570s 2.9GHz
RAM	DDR3 1600 8GB
64 bit operating system	Windows 7 Professional or later
Power	460 W
Hard disk drive	1TB SATA3 x1
USB Ports	Internal (on PC) x3, external x1
External display card	x3
CD / DVD ROM	N/A
GPIB card	Optional

General Probe System

Power	100-240 V AC nominal ; 50/60 Hz
Vacuum	-0.9 bar
Compressed air	6.0 bar

Supported Software Platforms

Drivers	WaferPro / IC-CAP and EasyEXPERT from Keysight, NoisePro from Pro-Plus, ACS from Keithley
Emulation mode	Available for various prober control software*

** Please contact your local support for more details.*

REGULATORY COMPLIANCE

3rd party, TÜV tested according to

- IEC 61010-1: 2010 + A1:2016; EN 61010-1: 2010; IEC/EN 61010-2-010: 2014; IEC/EN 61010-2-081: 2015; EN ISO 12100: 2010; UL 61010-1: 2012/R: 2016-04; UL 61010-2-010: 2015; CAN/CSA-C22.2 No. 61010-1: 2012/U2: 2016-04; CAN/CSA-C22.2 No. 61010-2-010:2015

and certified for CE and US/Canada (NRTL), SEMI S2 and S8.
Copies of certificates are available on request

WARRANTY

- Warranty*: 12 months
- Extended service contract: contact MPI Corporation for more information

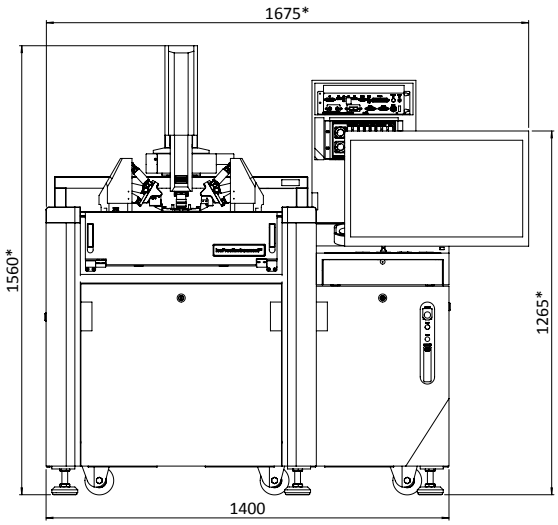
**See MPI Corporation's Terms and Conditions of Sale for more details.*

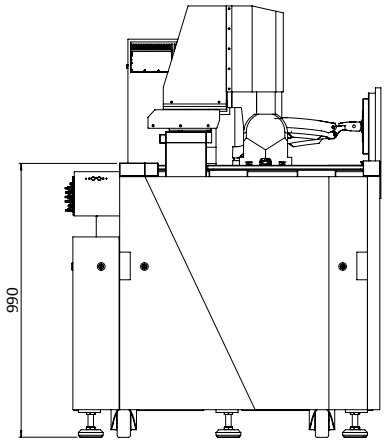
PHYSICAL DIMENSIONS

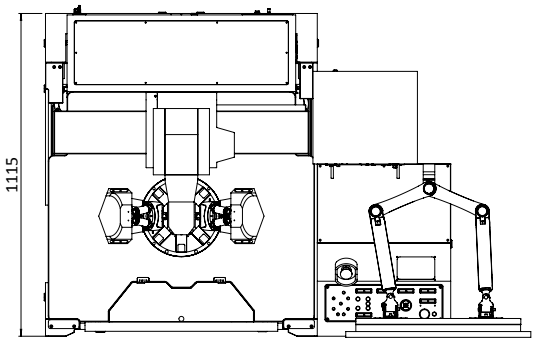
TS3000

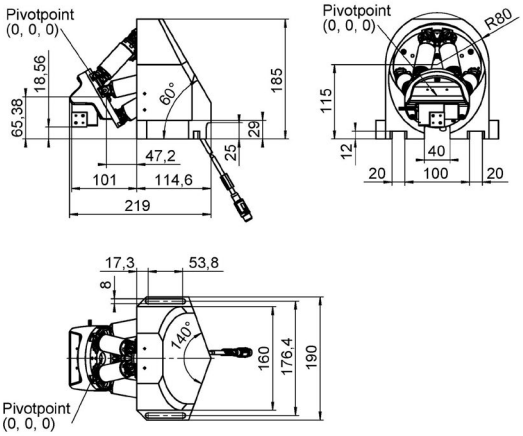
System dimensions (W x D x H)	1400 x 1115 x 1560 mm (55.1 x 43.9 x 61.4 in)
Weight	850 kg (includes system, accessories, and chiller)

**Can vary depends on monitor/chiller position.*









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