

MPI MicroPositioner

MPI offers a huge variety of backlash-free MicroPositioners to address every operational and measurement condition, varying from small footprint to micrometer driven high-resolution positioners for RF and mmW applications.

Unified Z-direction, ergonomic operation, and a strong magnetic base enable fine probe placement for high contact quality, producing unsurpassed measurement results. MPI MicroPositioners are designed with universal interface compatible to all probe arms for ease of application specific adaptations.

Design varieties allow operators to choose MicroPositioners which fit their operational familiarity, thus providing immediate proficiency.

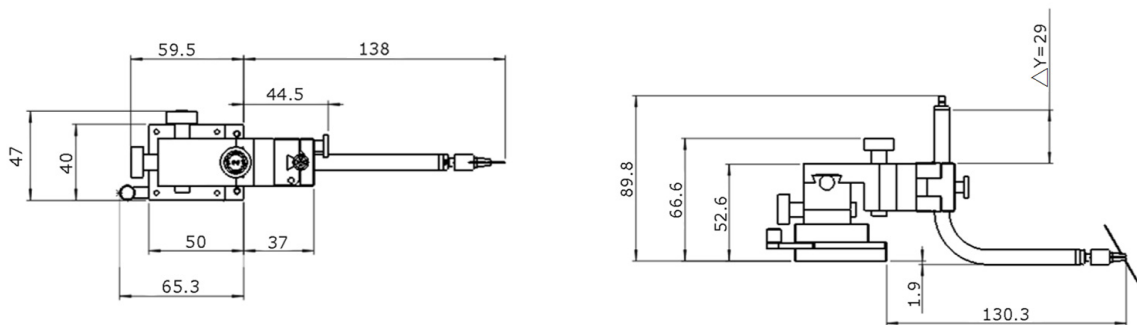
The MPI self-developed MicroPositioners are designed without compromise. The full carbon-steel structure enables stable contact over long periods of time and superior positioning accuracy.

MP25 MicroPositioner: The Small One

Feature resolution:	< 4 μm
Travel range (X/Y/Z):	10 / 10 / 10 mm
Screw resolution (X/Y/Z):	500 / 500 / 500 μm
Mounting:	Magnetic
Base stage size:	25 mm
Footprint:	55 mm x 40 mm
Versions:	Right or left
Application:	IV/CV coaxial and ultra-low current triaxial measurements



Dimensions - DC arm and tip



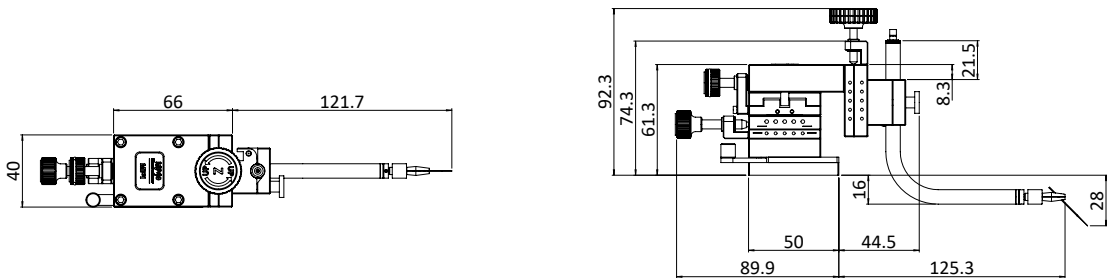
unit: mm

MP40 MicroPositioner: The Universal One

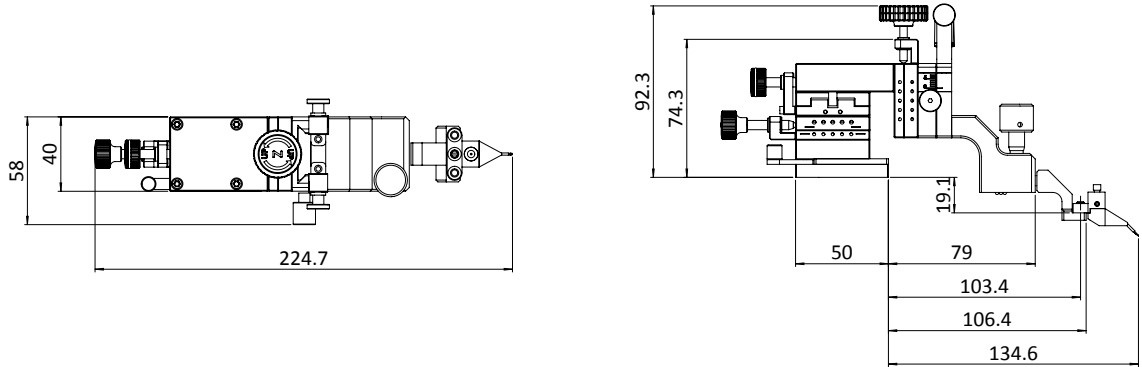
Feature resolution:	< 3 μm
Travel range (X/Y/Z):	13 / 13 / 13 mm
Screw resolution (X/Y/Z):	300 / 300 / 300 μm
Mounting:	Magnetic
Base stage size:	40 mm
Footprint:	65 x 40 mm
Versions:	Unidirectional
Application:	Accurate IV/CV coaxial, ultra-low current triaxial and RF measurements



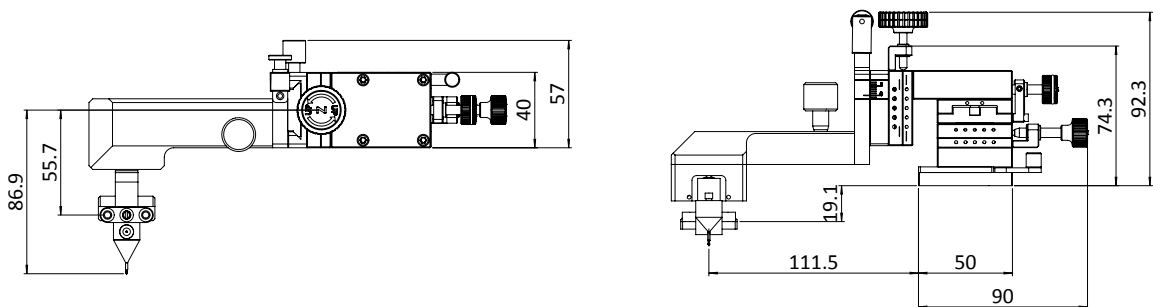
Dimensions - DC arm and tip



Dimensions - RF arm (E/W) and TITAN™ probe



Dimensions - RF arm (N/S) and TITAN™ probe



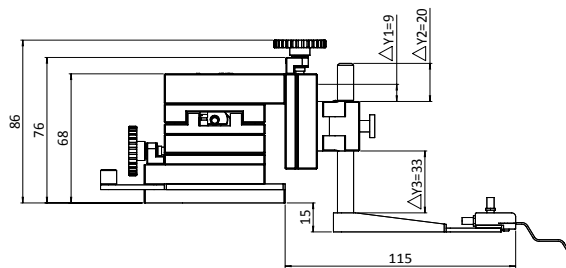
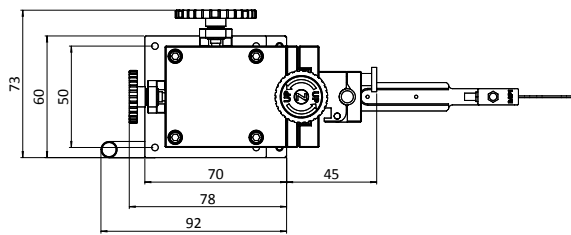
unit: mm

MP50 MicroPositioner: The Kelvin One

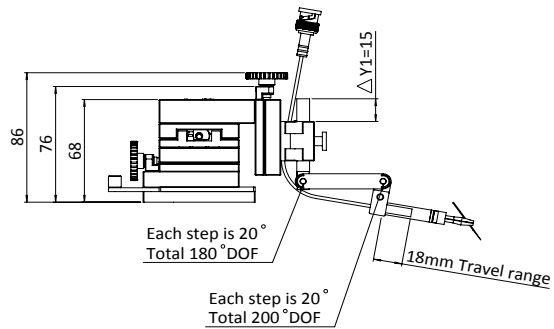
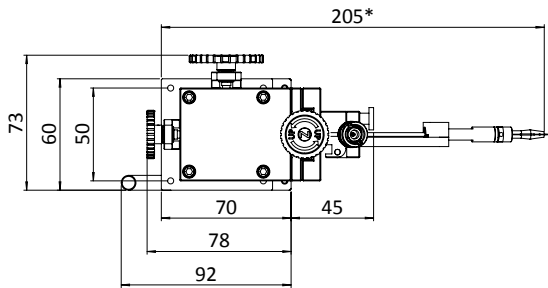
Feature resolution:	< 2 μm
Travel range (X/Y/Z):	13 / 13 / 13 mm
Screw resolution (X/Y/Z):	250 / 250 / 250 μm or 500 / 500 / 500 μm
Mounting:	Magnetic
Base stage size:	50 mm
Footprint:	86 x 60 mm
Versions:	Right and left
Application:	Extreme accurate IV/CV coaxial, ultra-low current triaxial measurements, internal node probing



Dimensions - DC arm and tip



Dimensions - Flex arm and tip



*Can vary depends on adjusted positions

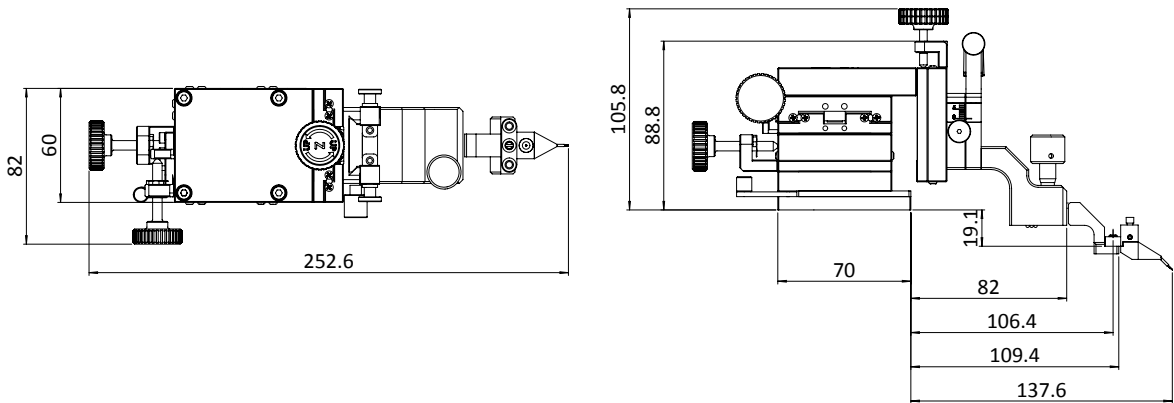
unit: mm

MP60 MicroPositioner: The RF One

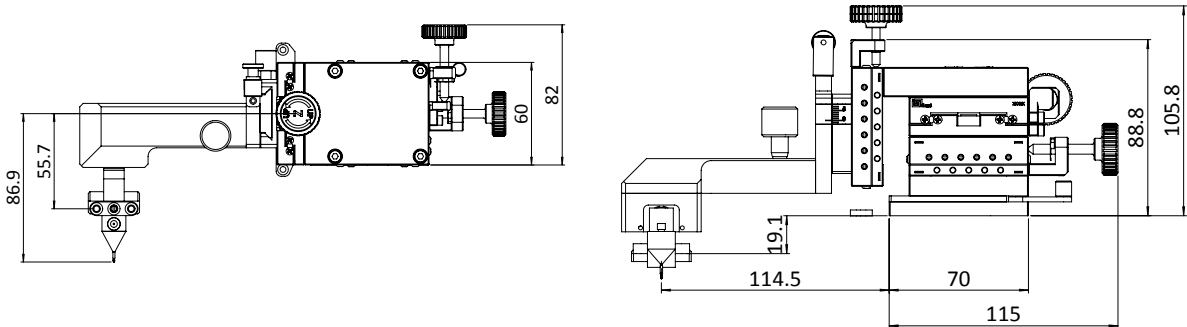
Feature resolution:	< 2 μm
Travel range (X/Y/Z):	20 / 20 / 13 mm
Screw resolution (X/Y/Z):	250 / 250 / 300 μm or 500 / 500 / 300 μm
Mounting:	Magnetic
Base stage size:	60 mm
Footprint:	89 x 60 mm
Versions:	Right and left
Application:	Accurate and stable RF measurements



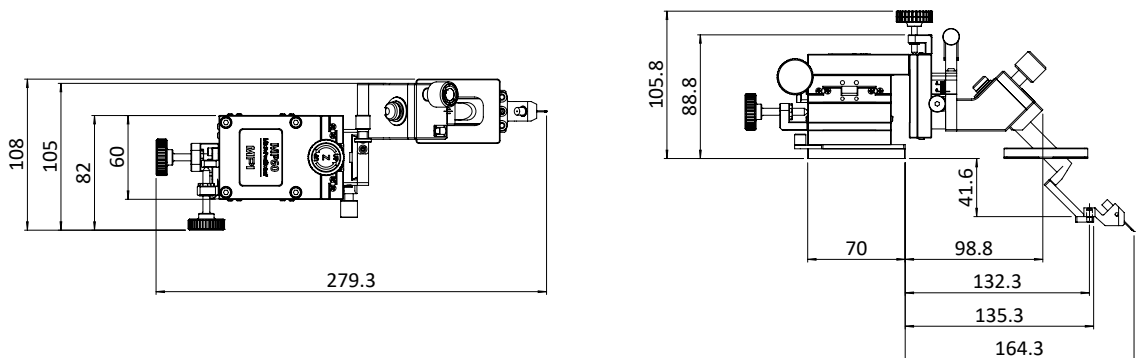
Dimensions - E/W arms and TITAN™ probe



Dimensions - N/S arms



Dimensions – RF arm* for ShieldEnvironment™, E/W, STD or LTM version and TITAN™ probe



*The arms are compatible with all MP60 versions and MP50 MicroPositioner

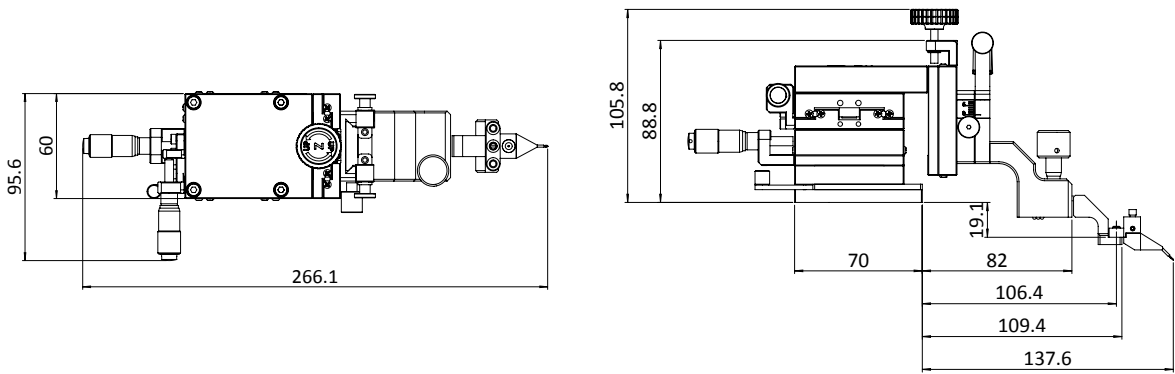
unit: mm

MP60-MR MicroPositioner: The Micrometer One

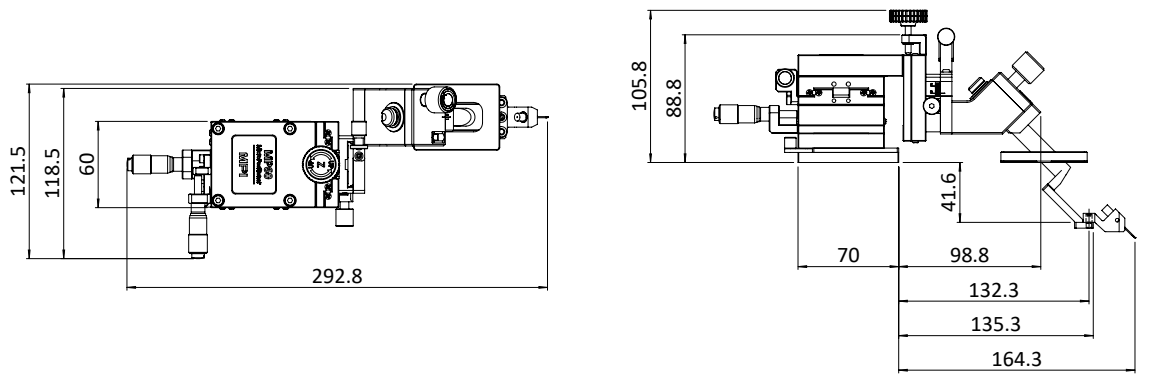
Feature resolution:	< 2 μm
Travel range (X/Y/Z):	20 / 20 / 13 mm
Screw resolution (X/Y/Z):	500 / 500 / 300 μm
Mounting:	Magnetic
Base stage size:	60 mm
Footprint:	89 x 60 mm
Versions:	Right and left
Application:	Accurate and stable RF measurements



Dimensions - E/W arms and TITAN™ probe



Dimensions - RF arm* for ShieldEnvironment™, E/W, STD or LTM version and TITAN™ probe



*The arms are compatible with all MP60 versions and MP50 MicroPositioner

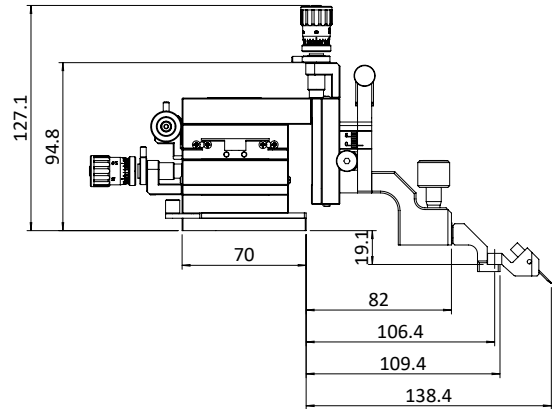
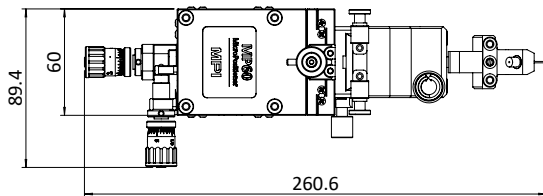
unit: mm

MP60-DM MicroPositioner: The Most Accurate One

Feature resolution:	< 1 μm
Travel range (X/Y/Z):	12.5 / 12.5 / 12.5 mm
Screw resolution (X/Y/Z):	25 / 25 / 25 μm
Mounting:	Magnetic
Base stage size:	60 mm
Footprint:	89 x 60 mm
Versions:	Right and left
Application:	Accurate and stable RF measurements

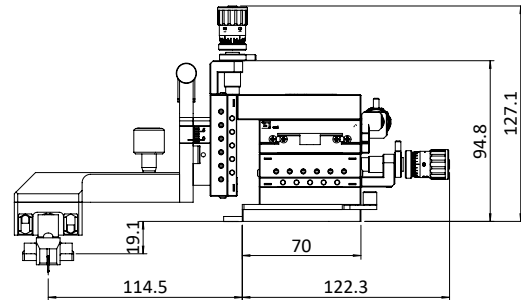
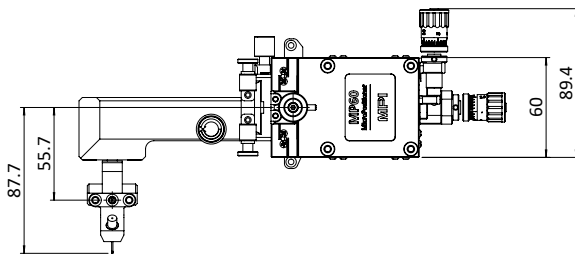


Dimensions - E/W arms and TITAN™ probe



unit: mm

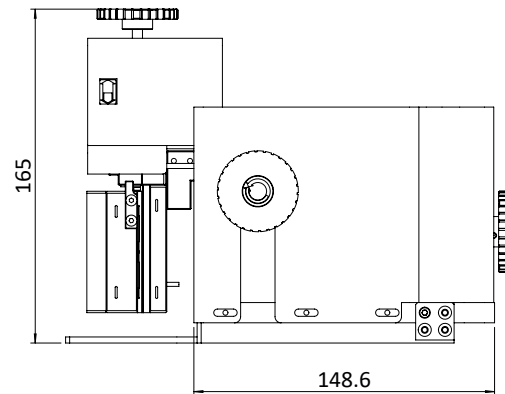
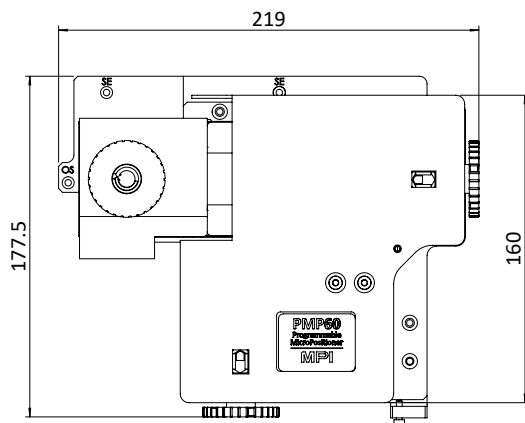
Dimensions - N/S arms



unit: mm

PMP60 MicroPositioner: The RF Programmable One

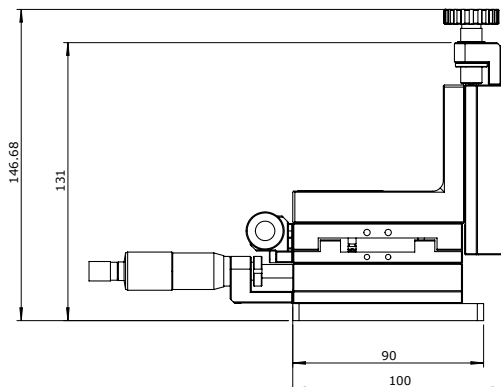
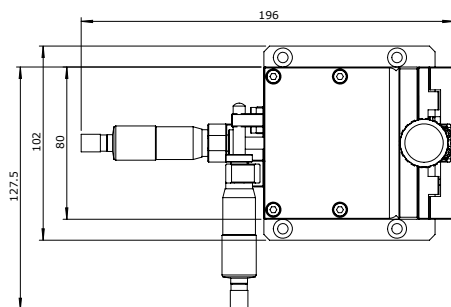
Feature resolution:	< 2 µm
Travel range (X/Y/Z):	13 / 13 / 13 mm
Resolution (X/Y/Z):	0.015 / 0.015 / 0.015 µm
Screw resolution (X/Y/Z):	300 / 300 / 300 µm
Mounting:	Bolt-down
Base stage size:	60 mm
Footprint:	160 x 149 mm
Versions:	Up to four E / W / N / S, depends on system and arm configuration
Application:	Accurate and stable RF measurements



unit: mm

MP80 MicroPositioner: The mmW One

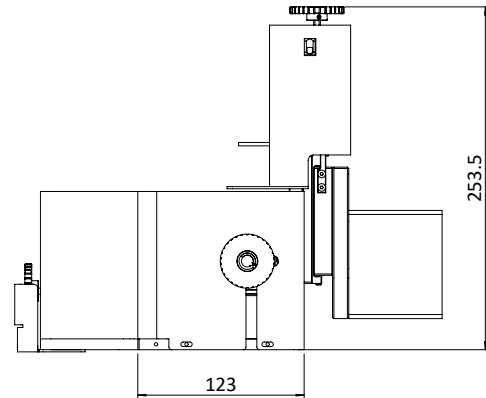
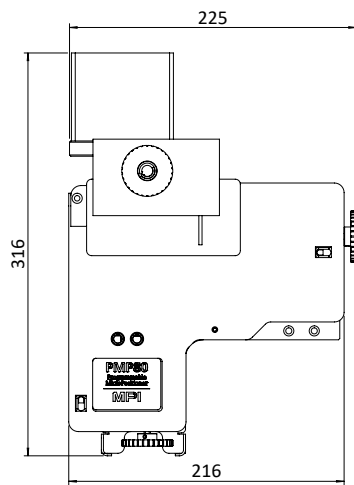
Feature resolution:	< 2 µm
Travel range (X/Y/Z):	25 / 25 / 15 mm
Screw resolution (X/Y/Z):	500 / 500 / 500 µm
Mounting:	Bolt-down
Base stage size:	80 mm
Footprint:	100 x 80 mm
Versions:	Right and left
Application:	Accurate and stable RF measurements, broadband and mmW measurements



unit: mm

MMP80 MicroPositioner: The mmW Programmable One

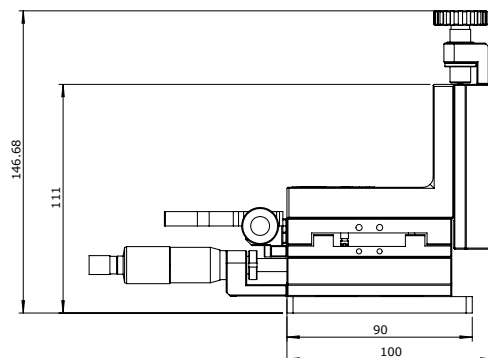
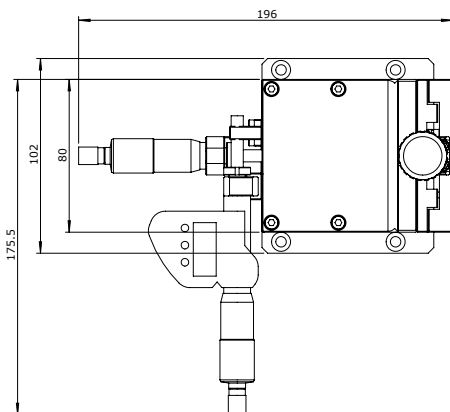
Feature resolution:	< 2 μm
Travel range (X/Y/Z):	25 / 25 / 10 mm
Resolution (X/Y/Z):	0.025 / 0.025 / 0.025 μm
Screw resolution (X/Y/Z):	500 / 500 / 500 μm
Mounting:	Bolt-down
Base stage size:	80 mm
Footprint:	216 x 193 mm
Versions:	E/W or R/L, depends on system and arm configuration
Application:	Accurate and stable broadband and mmW measurements



unit: mm

MP80-DX MicroPositioner: The multi-line TRL

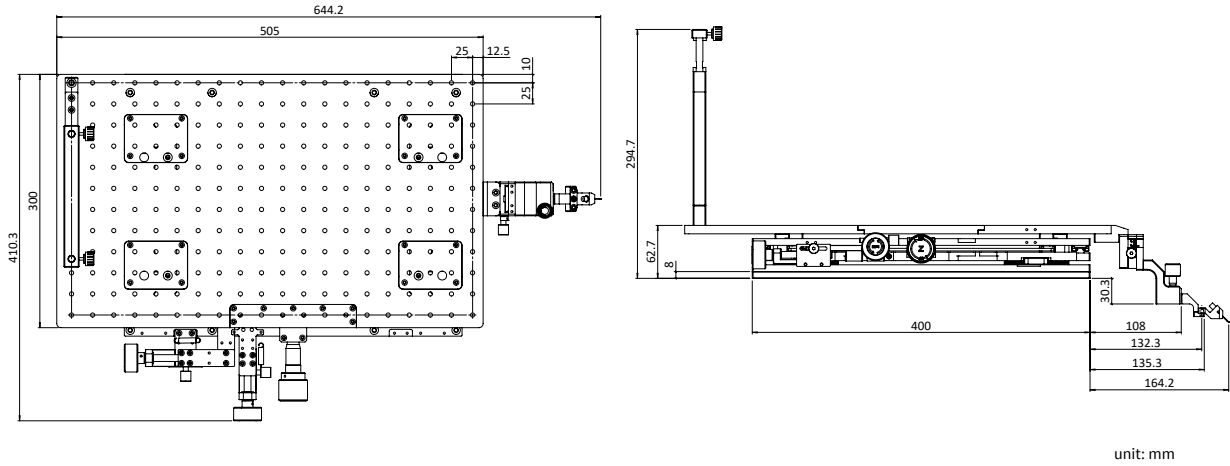
Feature resolution:	< 2 μm
Travel range (X/Y/Z):	25 / 25 / 15 mm
Screw resolution (X/Y/Z):	500 / 500 / 500 μm
Mounting:	Bolt-down
Base stage size:	80 mm
Footprint:	100 x 80 mm
Versions:	Right and left
Application:	Accurate and stable RF, broadband and mmW measurements. Ideal for multi-line TRL calibration



unit: mm

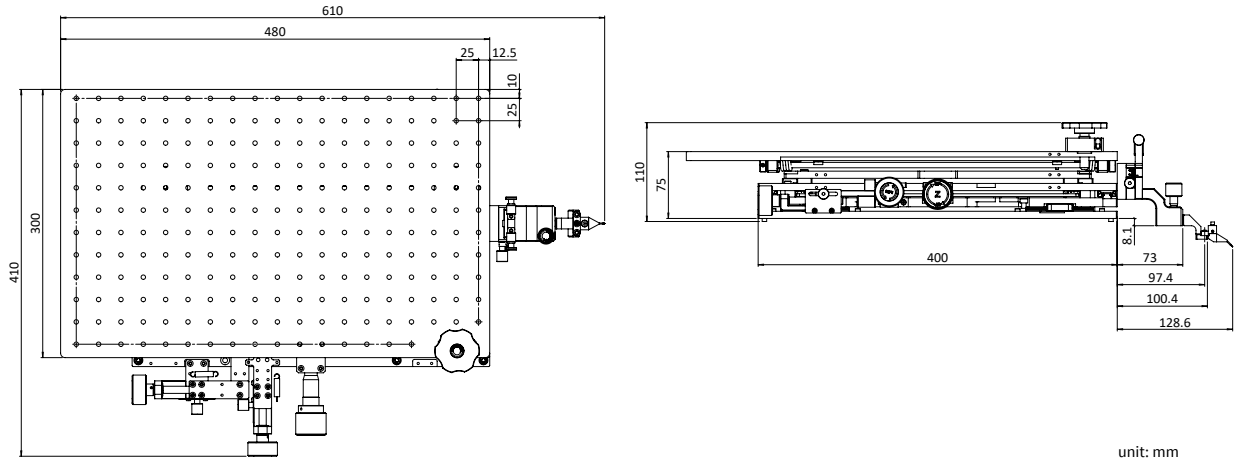
MP3X MicroPositioner: The Large One

Feature resolution:	< 2 μm
Travel range (X/Y/Z):	25 / 25 / 5 mm
Screw resolution (X/Y/Z):	500 / 500 / 167 μm
Mounting:	Bolt-down
Mounting platform:	505 x 300 mm, M6 screw holes in 25 mm pitch
Versions:	Right and left
Application:	Accurate noise figure and load pull measurements



MP4X MicroPositioner: The Large One with Planarization

Feature resolution:	< 2 μm
Travel range (X/Y/Z):	25 / 25 / 5 mm
Travel range (T):	Total 6 degree
Resolution (X/Y/Z):	0.05 / 0.05 / 0.0083 μm
Screw resolution (X/Y/Z):	500 / 500 / 167 μm
Screw resolution (T):	0.16 degree/rev.
Mounting:	Bolt-down
Mounting platform:	480 x 300 mm, M6 screw holes in 25 mm pitch
Versions:	Right and left
Application:	Vector load pull with tuners and direct mounted RF probes



MicroPositioner – Application Matrix

Application / Positioners	Stage (mm)	TPI	IV / CV Coax	Low-level, IV, Triax	IV/CV/PIV Kelvin	RF	Broadband mmW	High Power HC / HV
MP25	25	50	●	●	-	-	-	- / ○
MP40	40	85	●	●	●	●	-	● / ●
MP50 MP50-HR	50	50 100	●	●	●	●	-	- / ○
MP60 MP60-HR	60	50 100	○	○	-	●	-	● / ●
MP60-MR	60	50	○	○	-	●	-	○ / ●
MP60-DM	60	1000	○	○	○	●	-	○ / ○
MP80 MP80-DX	80	50	-	-	-	○	●	-
PMP60	60	-	-	-	○	●	-	-
PMP80	80	-	-	-	-	-	●	-
MP3X	400x300	50/150	-	-	-	○	●	-
MP4X	400x300	50/150	-	-	-	○	●	-

* ● = recommended ○ = available

MicroPositioner – Probe System Platform Matrix

Platform / Positioners	TS50	TS150	TS150-THZ TS200-THZ	TS200 TS300	TS200-SE TS300-SE	TS2000-D TS2000-DP
MP25	●	●	●	●	-	●
MP40	●	●	●	●	●	●
MP50 MP50-HR	○	●	●	●	●	●
MP60 MP60-HR	○	●	●	●	●	●
MP60-MR	○	●	●	●	●	●
MP60-DM	○	●	●	●	●	●
MP80 MP80-DX	-	○	●	●	●	●
PMP60	-	-	-	-	-	○
PMP80	-	-	-	-	-	○
MP3X	-	-	○	●	●	-
MP4X	-	-	○	●	●	-

* ● = recommended ○ = available

Platform / Positioners	TS2000-IFE	TS2000-SE TS2000-HP	TS3000 TS3500	TS3000-SE/HP TS3500-SE/HP	TS2500-DP TS2500-RF	TS2500-SE
MP25	○	-	○	-	○	-
MP40	○	●	○	○	●	●
MP50 MP50-HR	●	●	●	●	●	●
MP60 MP60-HR	●	●	●	●	●	●
MP60-MR	●	●	●	●	●	●
MP60-DM	●	●	●	●	●	●
MP80 MP80-DX	●	●	●	●	○	○
PMP60	●	●	●	●	○	○
PMP80	●	●	●	●	-	-
MP3X	●	○	●	●	-	-
MP4X	●	○	●	●	-	-

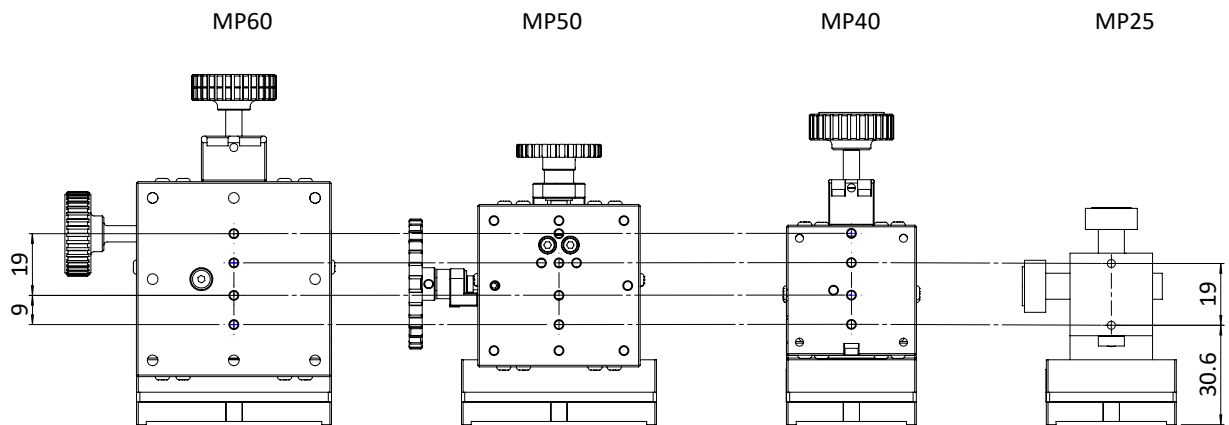
* ● = recommended ○ = available

Probe Arms – MicroPositioner Matrix

Probe Arms/ MicroPositioners	Coax	Coax 10kV	Triax	Triax 3kV	Kelvin	RF	HC	Dedicated mmW
MP25	●	-	○	○	-	-	-	⊙
MP40	●	●	●	●	●	●	●	⊙
MP50	●	●	●	●	●	●	○	⊙
MP50-HR								
MP60	○	○	○	○	-	●	●	⊙
MP60-HR								
MP60-MR	○	○	○	○	-	●	●	⊙
MP60-DM	○	○	○	○	-	●	●	⊙
PMP60	-	-	-	-	○	●	-	⊙
MP80 / PMP80	-	-	-	-	-	○	-	●
MP80-DX								
MP3X	-	-	-	-	-	○	-	●
MP4X	-	-	-	-	-	○	-	●

* ● = recommended ○ = available ⊙ = DC biasing

Mounting Position for DC Probe Arms on MP25 to MP60*



*Probe arms are mounted by two screws M3 x 6 mm

MPI Accessories

MPI offers a complete portfolio of accessories including coaxial, triaxial, RF probe arms, high-temperature Kelvin and high-current probes up to 400 A.

Kelvin Arms

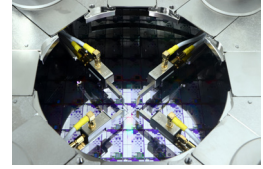
MPI is offering a wide range of Kelvin Probe arms.

The standard Kelvin holder has a unique vertical self-leveling probe tip which is isolated as close as possible to the DUT. Dedicated designs for ESD and sensitive noise measurements are optional available as well.

They are the new benchmark for accurate ultra-low noise, impedance or pulsed-IV measurements.

Making a novice user able to perform fast and accurate ultra-low impedance measurements, Kelvin probes provide easy reconfiguration for 4TP-connection or/and splitting the ground for pulsed-IV tests.

The HT-Kelvin probes in addition are offering unsurpassed capability for high temperature measurements up to 300 °C. The LTM-Kelvin version, is dedicated design for Long-Term Measurements and enable Automated Test over Multiple Temperatures ATMT™



Flex Arms

MPI Flexible probe arms are designed explicitly to address the specific requirements of Product Engineering, Failure Analysis and Design Validation applications. Simultaneously probing with probe cards, even at negative temperature are supported by free adjustable angles and lengths of the arm. In parallel the design provides maximum on stability in order to perform measurements on small features. Non-50 Ohm cable-end option offers easy connection with oscilloscopes as example!



RF Arms

RF probe arms enable easy and very convenient probe planarization having a large cap on top of the high-end Mitutoyo micrometer and dedicated labeling for the proper direction. The fast and tool-less vertical height adjustments with built-in mm-scale is a small example of great usability by working with different RF probe technologies. Every arm comes in standard configuration with two cable strength-relieves, which guide the cables even in case of dual RF probes safety and tender without crushing the cables.



Accessories

Extensive selection and dedicated design of vibration isolation platforms, tables with integrated racks for computer, keyboard tray, a dual monitor stand, EMI-shielded DarkBoxes, probe cards and PCB test holders, vacuum pumps and air compressors are a few examples for the variety of accessories completing the common MPI Test Solution Systems.

Direct contact:
 Asia region: ast-asia@mpi-corporation.com
 EMEA region: ast-europe@mpi-corporation.com
 America region: ast-americas@mpi-corporation.com

MPI global presence: for your local support, please find the right contact here:
www.mpi-corporation.com/ast/support/local-support-worldwide

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MPI Global Presence

