Enabling Nanoscale Advances

Park SYSTEMS

Accurion Workstation

Active Vibration Isolation Workstations

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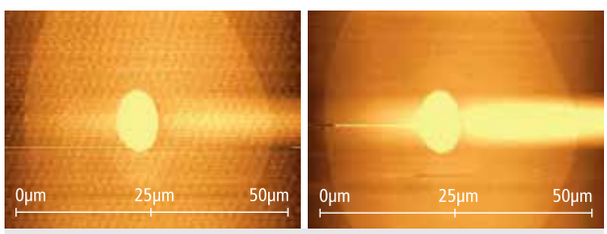
The ergonomically designed Accurion Workstations are a combination of an active vibration isolation system and a welded support frame perfectly matched to this system. To achieve the maximum isolation performance, it is essential to place the isolation system on a rigid and stiff surface. For this reason a solid steel frame construction is used to ensure optimal preconditions for the vibration isolation.



Polymer drop on a silicon substrate without and with active vibration isolation

There are two standard versions available: Workstation i4 and Workstation Vario. Besides standard versions, Accurion also manufactures customized versions.

The Workstation i4 is designed to be used in conjunction with optical microscopes or microscope/SPM combinations. The isolated surface is surrounded by a scratch-resistant MDF-plate, which can be used as an arm rest or storage area.

Workstation Vario systems come with a steel frame embedded optical breadboard as working surface. As an example, the surrounding frame can be used for the installation of acoustic enclosures. Compared to the Workstation i4, these versions are capable of supporting larger and heavier applications.

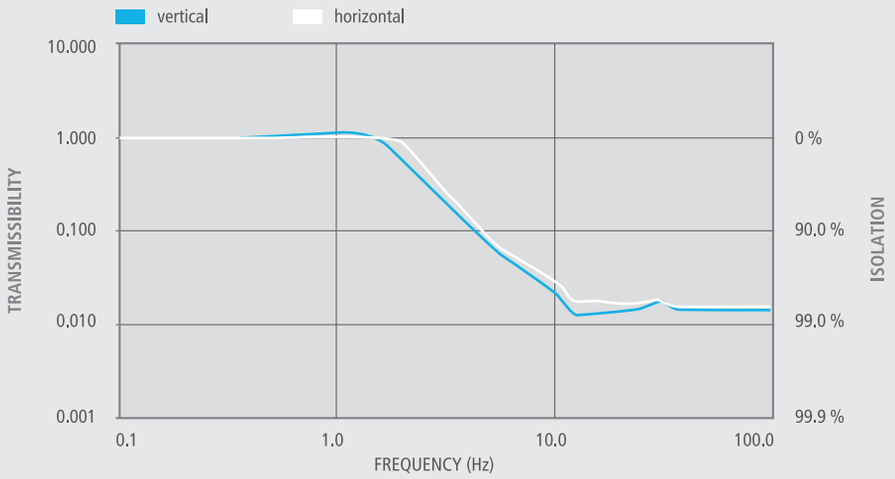
Accurion Workstation Vario with Acoustic Enclosure

Accessories and Options

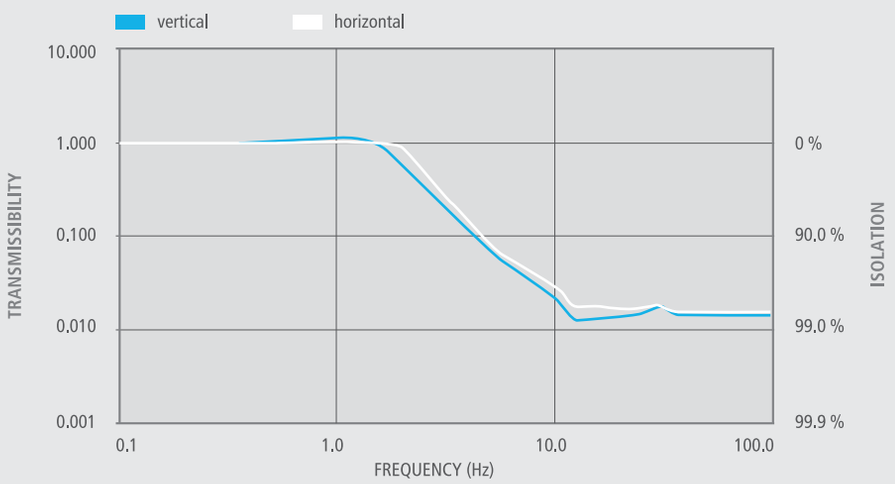
- Acoustic enclosures
- Customizations
- Rack mountable external control unit
- Castors for moveability
- Mounting holes in top plate (M6 tapped holes on 25 mm centers or ¼"-20 tapped holes on 1"centers)

Accurion Workstation Vario 900

Detail View of Accurion Workstation i4



Transmission graph of the Accurion Workstation i4 measured at a vibration velocity of 100 µm/s with a payload of 20 kg (44 lbs).



Transmission graph of the Accurion Workstation Vario 900 measured at avibration velocity of 100 µm/s with a payload of 60 kg (132 lbs).

- Accurion Workstation i4 Large with Leica SR GSD

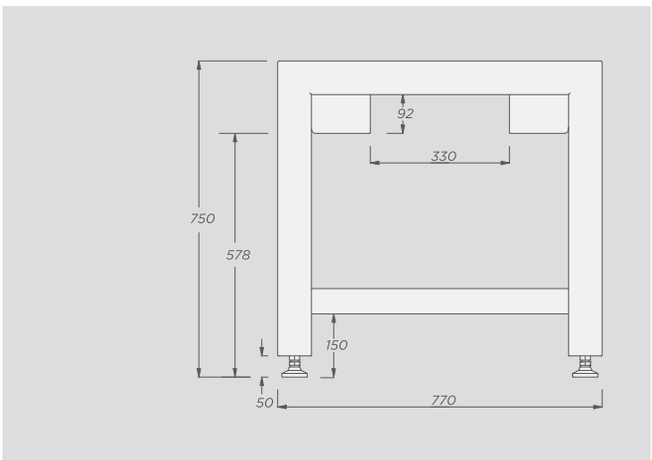
Key Features

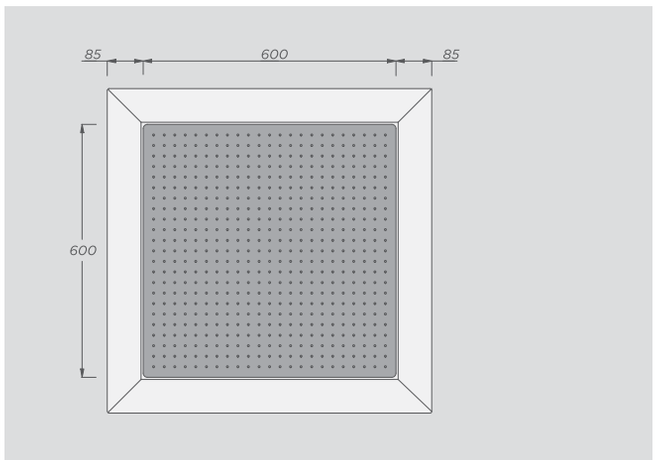
- Active vibration isolation starts at 0.6 Hz (passive isolation above 200 Hz).
- Isolation in all six degrees of freedom.
- Automatic load adjustment and transportation lock.
- No natural low frequency resonance and, as a result, excellent vibration characteristics also in frequency ranges below 5 Hz.
- No compressed air supply is needed, AC power from an electrical outlet is sufficient.
- Excellent position stability and stiffness.
- Allows ergonomic working conditions.
- Maintenance-free all-in-one solution.
- Castors for moveability
- Torsion-resistant and rigid support structure due to welded steel frame.

Workstation Vario 600

Isolated surface: 600 × 600 mm / 23.6" × 23.6"

Overall dimensions: 770 × 770 × 750 mm / 30.3" × 30.3" × 29.5"

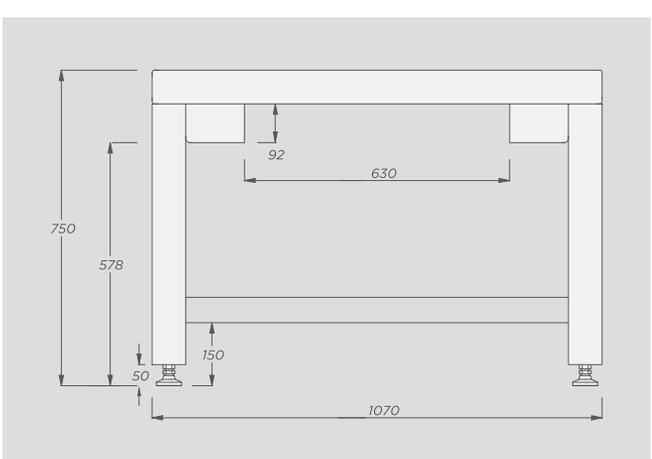


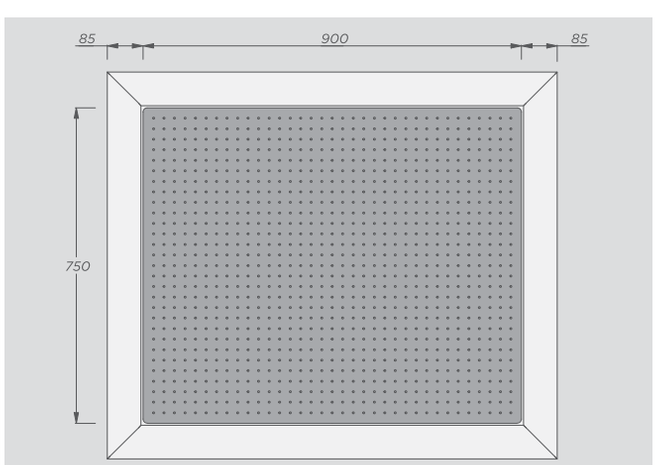


Workstation Vario 900

Isolated surface: 900 × 750 mm / 30.7" × 29.5"

Overall dimensions: 1070 × 920 × 750 mm / 42.1" × 36.2" × 29.5"





Specifications	Workstation Vario 600	Workstation Vario 900
Dimensions of isolated surface (L × W)	600 × 600 mm 23.6 × 23.6 inch	900 × 750 mm 35.4 × 29.5 inch
Overall dimensions (L × W × H)	770 × 770 × 750 mm 30.3 × 30.3 × 29.5 inch	1070 × 920 × 750 mm 42.1 × 36.2 × 29.5 inch
Load capacity	0 – 320 kg / 0 – 705 lbs	0 – 290 kg / 0 – 639 lbs
Weight	120 kg / 265 lbs	175 kg / 386 lbs
Isolation technology	Accurion control technology based on piezoelectric type acceleration pickup, fast signal processing and electro-dynamic force transducers.	
Control electronics	External control unit	
Force directions	Active compensation in all six degrees of freedom.	
Isolation performance	> 5 Hz = -25 dB (94.4 %) > 10 Hz = -35 dB (98.2 %)	
Active bandwidth	1 – 200 Hz* (passive isolation beyond 200 Hz)	
Settling time	300 ms**	
Response time	0.5 ms***	
Stroke of the actuator	1 mm	
Max. correction forces	Vertical ± 8 N Horizontal ± 4 N	
Max. compensation level	500 µm / sec. at 9 Hz and 160 kg / 353 lbs**	
Repeatability of load adjustment	60 µm	
Table top material	Honeycomb core breadboard – ferromagnetic stainless steel surface	
Top plate surface flatness	± 0.10 mm over 600 mm / ± 0.004 inch over 23.6 inch	
Environmental and operational requirements	Electrical voltage: 100 – 250 V / 47 – 63 Hz Power consumption: Typically 40 – 50 W Operating temperature: 15 – 40 °C / 59 – 104 °F Relative humidity: 0 – 60 % Operating altitude: < 2,500 m / 8,100 ft	
Electrical safety	CE certified according to directive 2006/95/EC	
Certified according to:	2014/35/EU 2014/30/EU FCC Regulations Part 15.107 & 15.109 SI 2016:1091	

*The low-pass characteristics of the spring-mass combination dominate the dynamic behavior of the isolation system above 200 Hz. The part of the active isolation decreases with increasing frequency.

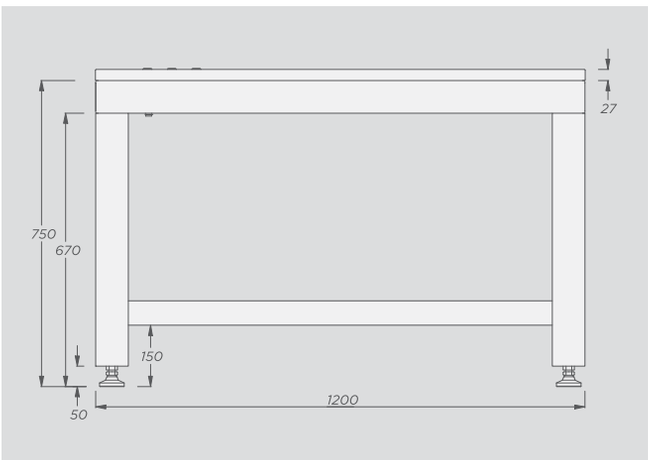
**The settling time and maximum compensation level depend on several conditions such as payload, vibration frequency and load distribution. The mentioned settling time value is exemplary for a centric load of 80 kg. The settling time defines the time until an incoming vibration is compensated.

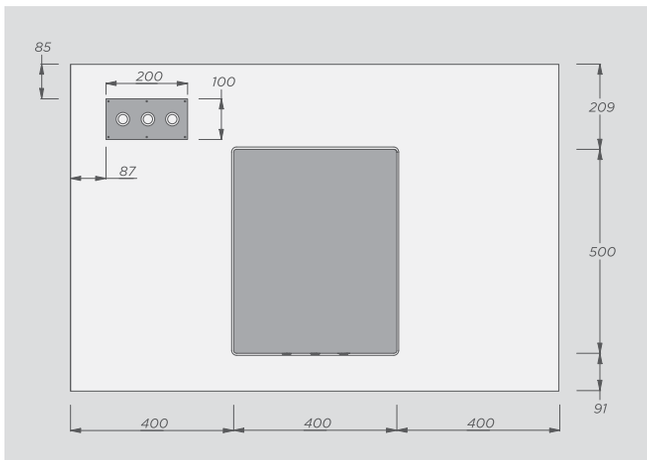
***The response time determines when the system starts to actively isolate an incoming vibration after detection by the sensors.

Workstation i4

Isolated surface: 400 × 500 mm / 15.7" × 19.7"

Overall dimensions: 1200 × 800 × 750 mm / 47.2" × 31.5" × 29.5"

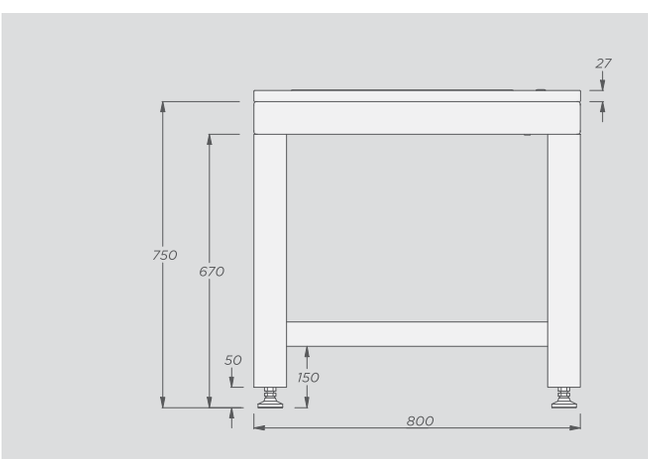


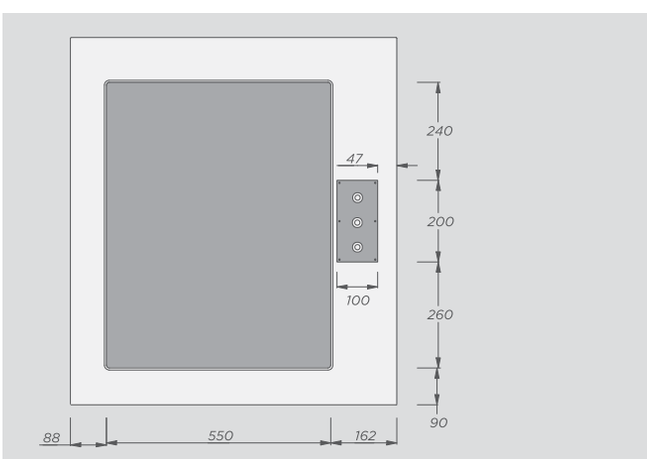


Workstation i4 Large

Isolated surface: 550 × 700 mm / 21.7" × 27.6"

Overall dimensions: 800 × 900 × 750 mm / 31.5" × 35.4" × 29.5"





Specifications	Workstation i4	Workstation i4 Large
Dimensions of isolated surface (L × W)	400 × 500 mm 15.7 × 19.7 inch	550 × 700 mm 21.7 × 27.6 inch
Overall dimensions (L × W × H)	1200 × 800 × 750 mm 47.2 × 31.5 × 29.5 inch	800 × 900 × 750 mm 31.5 × 35.4 × 29.5 inch
Load capacity	0 – 120 kg / 0 – 265 lbs	0 – 105 kg / 0 – 232 lbs or 40 – 150 kg / 88 – 331 lbs
Weight	120 kg / 265 lbs	142 kg / 313 lbs
Isolation technology	Accurion control technology based on piezoelectric type acceleration pickup, fast signal processing and electro-dynamic force transducers.	
Control electronics	Integrated control electronics	
Force directions	Active compensation in all six degrees of freedom.	
Isolation performance	> 5 Hz = -25 dB (94.4 %) > 10 Hz = -40 dB (99.0 %)	
Active bandwidth	0.6 – 200 Hz* (passive isolation beyond 200 Hz)	
Settling time	300 ms**	
Response time	0.5 ms***	
Stroke of the actuator	1 mm	
Max. correction forces	Vertical ± 8 N Horizontal ± 4 N	
Max. compensation level	500 µm / sec. at 6 Hz and 60 kg / 132 lbs**	
Repeatability of load adjustment	120 µm	
Table top material	Isolated surface: Powder-coated aluminum Non-isolated surface: Scratch-resistant MDF plate	
Top plate surface flatness	± 0.10 mm over complete surface	
Environmental and operational requirements	Electrical voltage: Input 100 – 240 V/50 – 60 Hz AC ; Output :+12V / 5.0 A – 60W DC Power consumption: Typically 40 – 50 W Operating temperature: 15 – 40 °C / 59 – 104 °F Relative humidity: 0 – 60 % Operating altitude: < 2,500 m / 8,100 ft	
Certified according to:	2014/35/EU 2014/30/EU FCC Regulations Part 15.107 & 15.109 SI 2016:1091	

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Park Systems Global

● Regional headquarters
● Distribution partners

Park Systems GmbH - Accurion

Park Systems GmbH previously known as Accurion GmbH is a leading provider of high-end, state of the art imaging ellipsometry and active vibration isolation products. Accurion was merged into Park Systems Corporation in 2022 to boost its R&D resources and expand its sales network to better serve its customers.
Park Systems is a world leading manufacturer of nano metrology-microscopy solutions including the atomic force microscopy (AFM), white light interferometry and infrared spectroscopy systems.
It provides complete range of nano metrology and microscopy products for researchers and engineers in the chemistry, materials, physics, life sciences, semiconductor, and data storage industries.

Prior to merger with Park Systems, Accurion was previously known as Nanofilm Technology GmbH, a spin-off from the Max Planck Institute for biophysical chemistry in Goettingen. In 1991, the company began designing the Brewster angle microscope for the characterization of ultrathin films. In 1996, the company's division of active vibration isolation was established. In 2009, Halcyonics GmbH, a specialist in active vibration isolation solutions, merged with Nanofilm Technology GmbH to form Accurion GmbH.

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