

Active Vibration Isolation Workstations
halcyonics_workstation_vario
halcyonics_workstation_micro



Active Vibration Isolation Workstations

halcyonics_workstation series

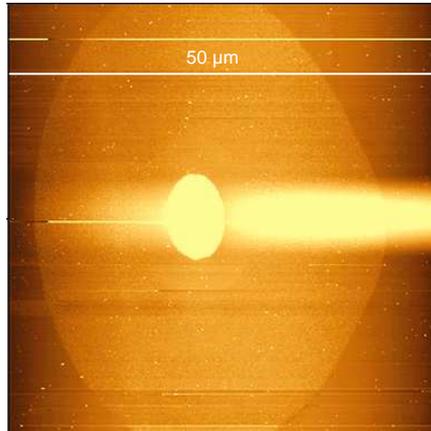
ABSTRACT

The ergonomically designed workstations are a combination of an active vibration isolation system and a welded support frame perfectly matched to this system. There are two versions available: Workstation_Micro and Workstation_Vario. Besides standard versions, Accurion also manufactures customized versions.

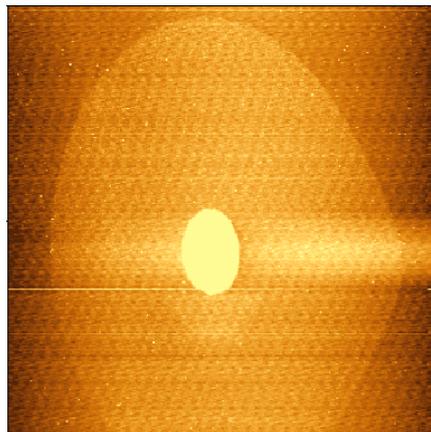
To achieve the maximum isolation performance, it is essential to place the isolation system on a rigid and stiff surface. The best location for any kind of vibration isolation would be the floor, but this is not practically in most cases. For this reason a solid steel frame construction is used to ensure optimal pre-conditions for the vibration isolation.

The Workstation_Micro is designed for the use 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 place.

Workstation_Vario systems come with a steel frame embedded optical breadboard as working surface. The surrounded frame can be used for the installation of Acoustic enclosures for example. Such workstations are capable of supporting larger and heavier applications.



AFM image of a spreading polymer drop on a silicon substrate with active vibration isolation



AFM image of a spreading polymer drop on a silicon substrate – AFM placed on the floor

APPLICATIONS

- Optical microscope/SPM combination
- Patch-Clamp applications
- Confocal laser scanning microscopy
- Scanning probe microscopy
- Laser set-ups
- Optical profilers
- Nanoindenter
- Ultramicrotomes
- ... and many more

FEATURES & BENEFITS

- All-in-one solution
- Allows ergonomic working conditions
- Active vibration isolation starts at 0.6 respectively 1 Hz (passive isolation above 200 Hz)
- Isolation in all six degrees of freedom
- Wide range of customizations available
- Automatic load adjustment and transportation lock
- Warp resistant and rigid support structure due to welded steel frame
- No compressed air supply is needed, AC power from an electrical outlet is sufficient
- Straightforward installation
- No maintenance required
- No natural low frequency resonance and, as a result, excellent vibration characteristics also in frequency ranges below 5 Hz
- Excellent position stability and stiffness
- Low voltage electromagnetic actuators
- Two-year warranty
- Long term tests and quality control procedures



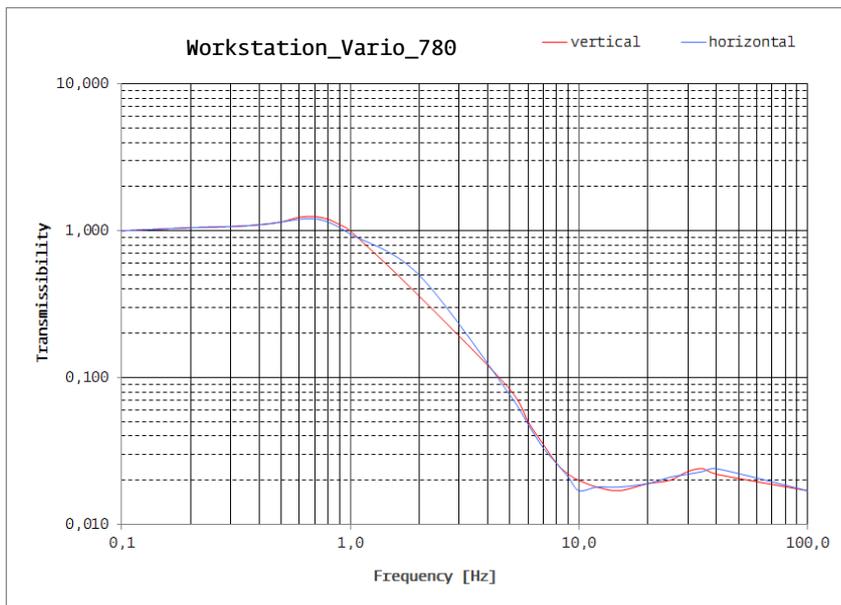
Nanosurf Nanite AFM on WS_Micro_780



JPK BioScience AFM on WS_Micro_1000 with acoustic enclosure



Patch-Clamp set-up on WS_Vario_900



Transmission graph of the halcyonics_workstation_vario780 measured at a velocity of 100 $\mu\text{m/s}$ with a payload of 60 kg (132 lbs)



WS_Vario_780 with acoustic enclosure

ACCESSORIES AND OPTIONS

- Acoustic enclosures
- Top plate with mounting holes (M6/25 or 1/4-20")
- Rack mountable external control unit
- Custom versions available

Technical Specifications

halcyonics_workstation_vario/micro

AVAILABLE STANDARD VERSIONS	HALCYONICS_WORKSTATION_VARIO	HALCYONICS_WORKSTATION_MICRO
	WS_Vario_600	WS_Micro_780
	WS_Vario_780	WS_Micro_1000
	WS_Vario_900	
PERFORMANCE SPECIFICATIONS		
ISOLATION TECHNOLOGY:	halcyonics_active vibration isolation technology based on piezo-electric type acceleration pickup, fast signal processing and electro-dynamic force transducers.	
CONTROL ELECTRONICS:	Easy-to-navigate menu for all settings, second graphics display for vibration level sensor	
FORCE DIRECTIONS:	Active compensation in all six degrees of freedom	
ISOLATION PERFORMANCE:	>5 Hz = 25 dB (94.4%) >10 Hz = 35 dB (98.2%)	>5 Hz = 25 dB (94.4%) >10 Hz = 40 dB (99.0%)
ACTIVE BANDWIDTH:	1.0 - 200 Hz*	0.6 - 200 Hz*
SETTLING TIME:	300 ms**	300 ms**
STROKE OF THE ACTUATOR:	1 mm	1 mm
MAXIMUM CORRECTION FORCES: (V = Vertical, H = Horizontal)	V ± 8 N H ± 4 N	V ± 8 N H ± 4 N
MAXIMUM COMPENSATION LEVEL:	550 µm/s at 9 Hz and 160 kg (352 lbs)**	500 µm/s at 6 Hz and 60 kg (132 lbs)**
LOAD CAPACITY:	WS_Vario_600: 0 - 320 kg (0 - 700 lbs) WS_Vario_780: 0 - 310 kg (0 - 680 lbs) WS_Vario_900: 0 - 290 kg (0 - 630 lbs)	0 - 100 kg (0 - 220 lbs)
REPEATABILITY OF LOAD ADJUSTMENT:	60 µm	120 µm
OTHER SPECIFICATIONS		
TOP PLATE MATERIAL:	Honeycomb breadboard – magnetic stainless steel	Powder coated aluminum
TOP PLATE SURFACE FLATNESS:	± 0.13 mm (0.006”) over any 0.3 m ² (3.2 ft ²) area	± 0.1 mm (0.004”) over complete surface

Technical Specifications

halcyonics_workstation_vario/micro

OTHER SPECIFICATIONS

INTERFACE:	USB service interface	
WEIGHT:	WS_Vario_600: 120 kg (265 lbs)	WS_Micro_780 : 122 kg (269 lbs)
	WS_Vario_780: 142 kg (315 lbs)	WS_Micro_1000: 165 kg (364 lbs)
	Ws_Vario_900: 175 kg (385 lbs)	

ENVIRONMENTAL AND OPERATIONAL REQUIREMENTS

ELECTRICAL VOLTAGE:	100 - 250 V / 47 - 63 Hz
POWER CONSUMPTION:	Typically 40 - 50 W
OPERATING TEMPERATURE:	10 - 40°C / 50 - 104 °F
RELATIVE HUMIDITY:	0 - 60 %
OPERATING ALTITUDE:	< 2500 m / 8100 ft

CERTIFICATION

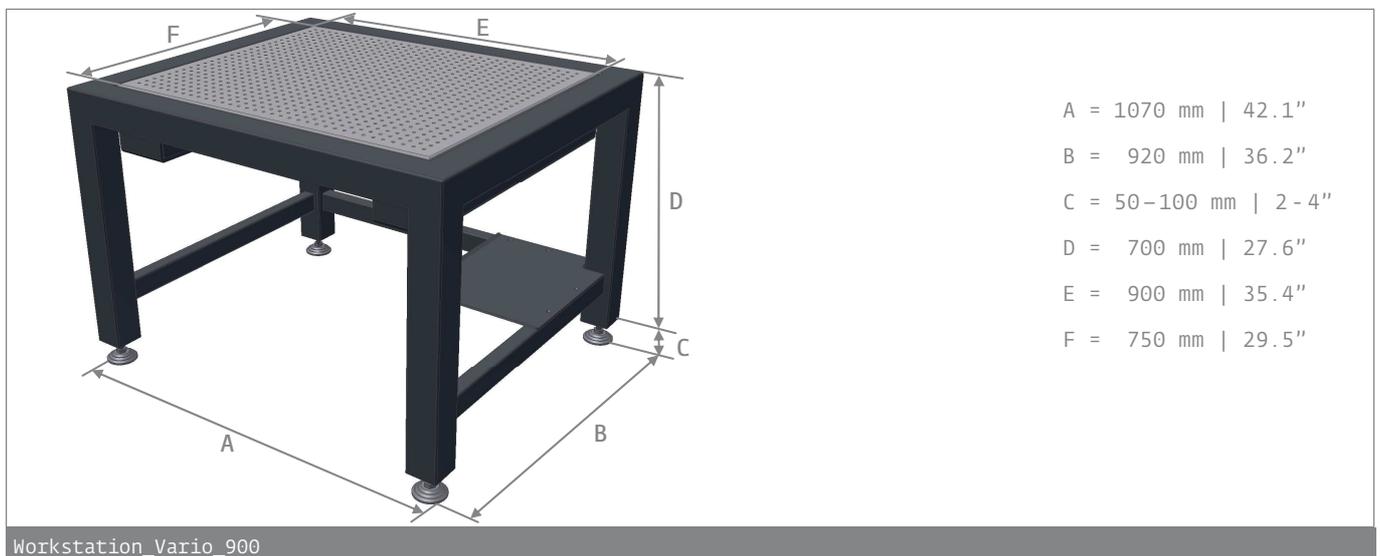
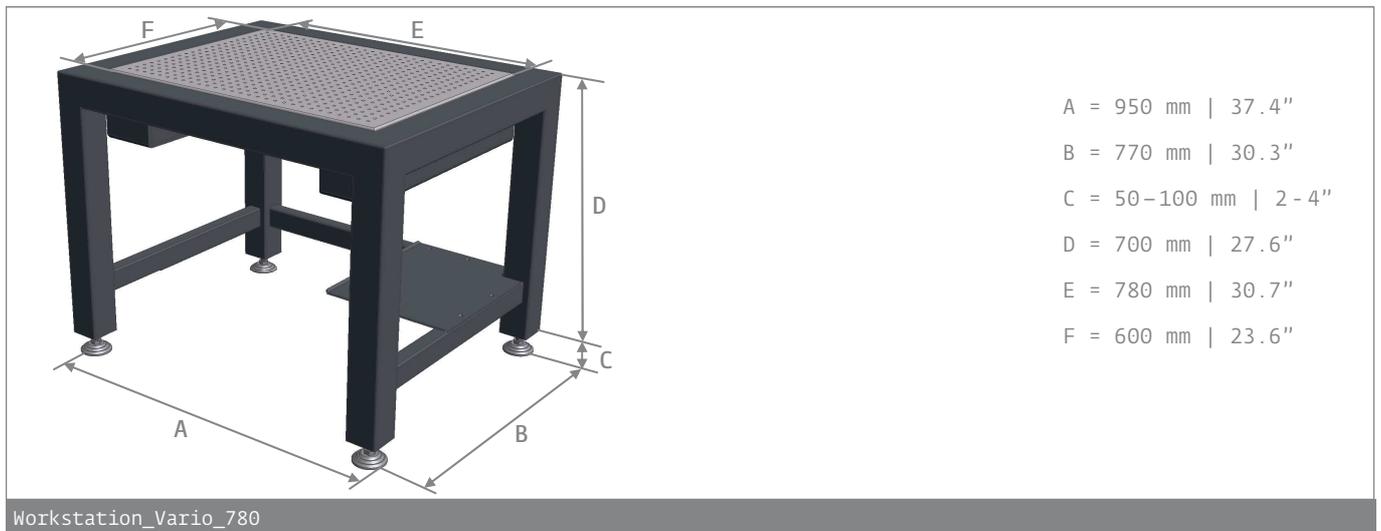
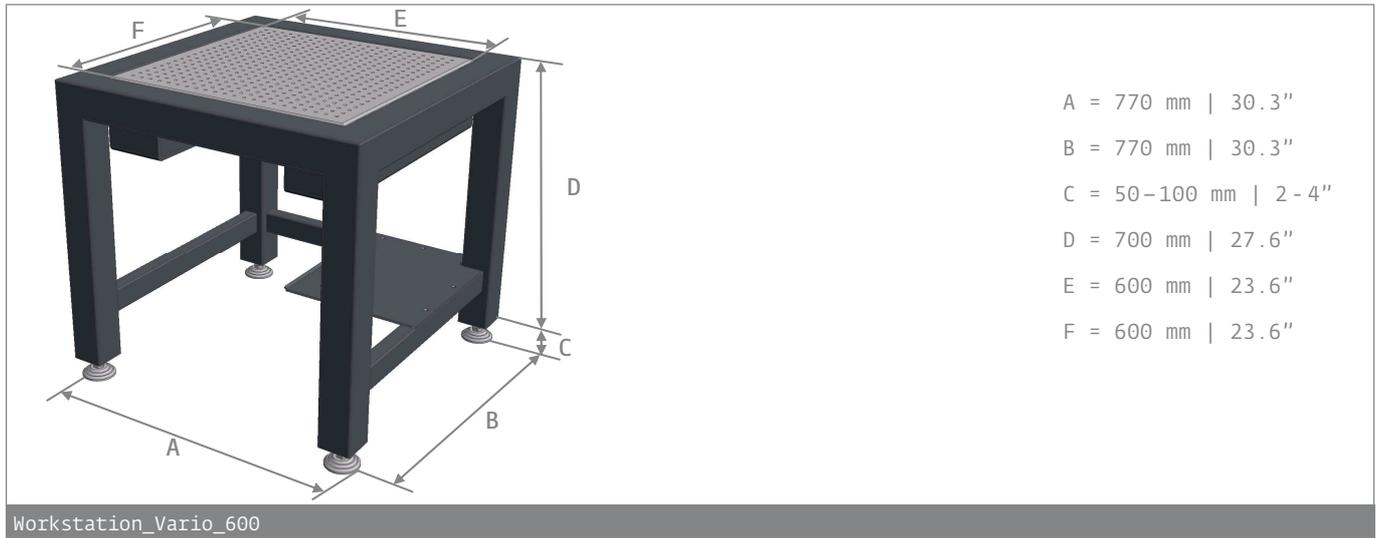
ELECTRICAL SAFETY:	CE certified according to directive 2006/95/EC
EMC:	CE certified according to directive 2004/108/EC

* Floating table top is supported by steel springs; low-pass characteristics of spring-mass combination dominates the dynamic behavior above 200 Hz.

** The settling time and maximum compensation level depend on several conditions, such as payload, frequency, load distribution and height of the payload. For that reason this value should be considered as an estimation.

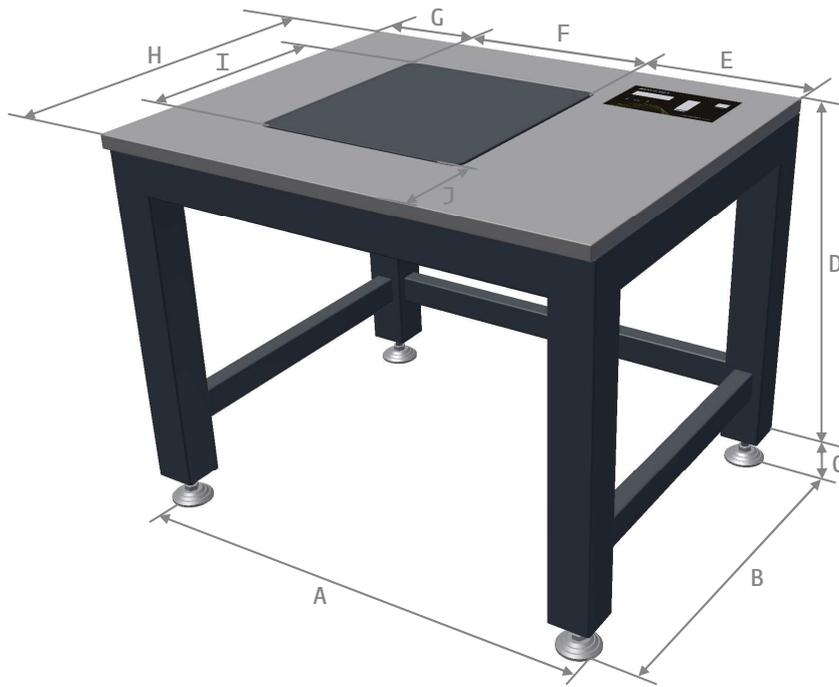
Technical Dimensions

halcyonics_workstation_vario



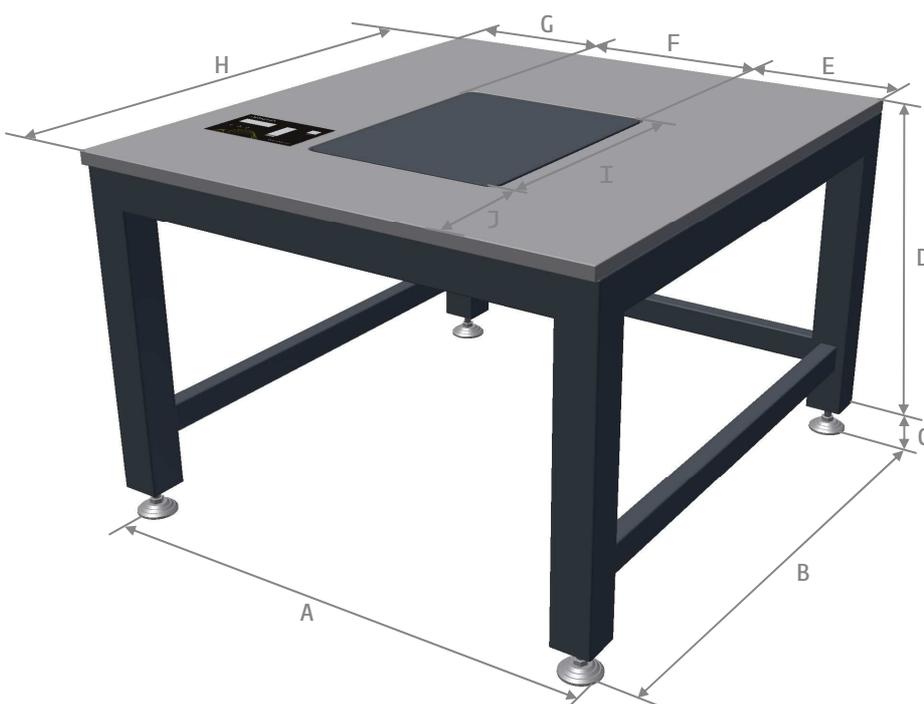
Technical Dimensions

halcyonics_workstation_micro



A = 950 mm 37.4"
B = 770 mm 30.3"
C = 50-100 mm 2-4"
D = 700 mm 27.6"
E = 338 mm 13.3"
F = 406 mm 16"
G = 206 mm 8.1"
H = 784 mm 30.9"
I = 446 mm 17.6"
J = 176 mm 6.9"

Workstation_Micro_780



A = 1070 mm 42.1"
B = 1170 mm 46.1"
C = 50-100 mm 2-4"
D = 700 mm 27.6"
E = 332 mm 13.1"
F = 406 mm 16"
G = 332 mm 13.1"
H = 1184 mm 46.6"
I = 520 mm 20.5"
J = 234 mm 9.2"

Workstation_Micro_1000

