

ACCURION

solutions for science

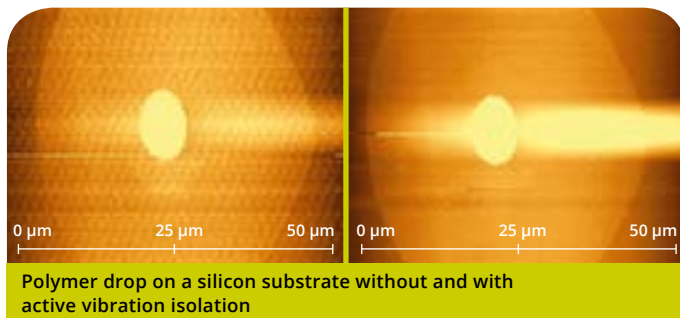
HALCYONICS_WORKSTATION

ACTIVE VIBRATION ISOLATION WORKSTATIONS



ACTIVE VIBRATION ISOLATION WORKSTATIONS: HALCYONICS_WORKSTATION

The ergonomically designed **halcyonics_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.



■ Workstation_Vario with Acoustic Enclosure

ACCESSORIES AND OPTIONS

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

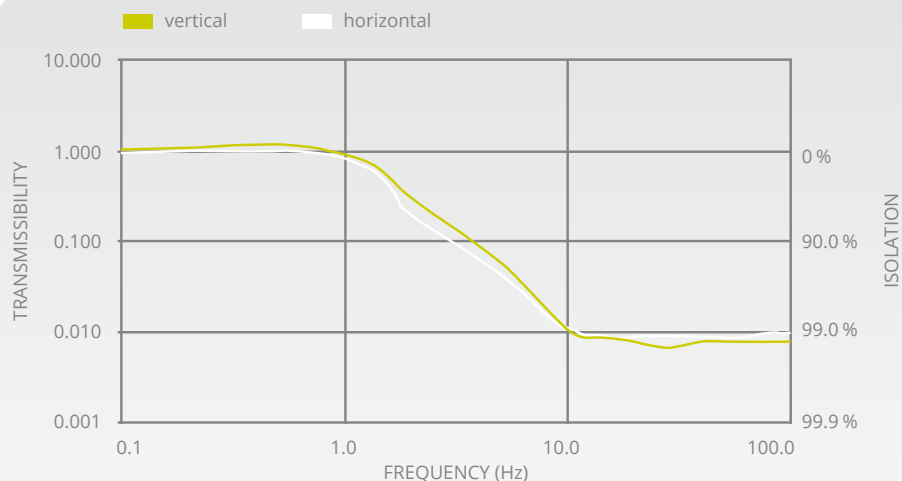
SELECTED EXAMPLES



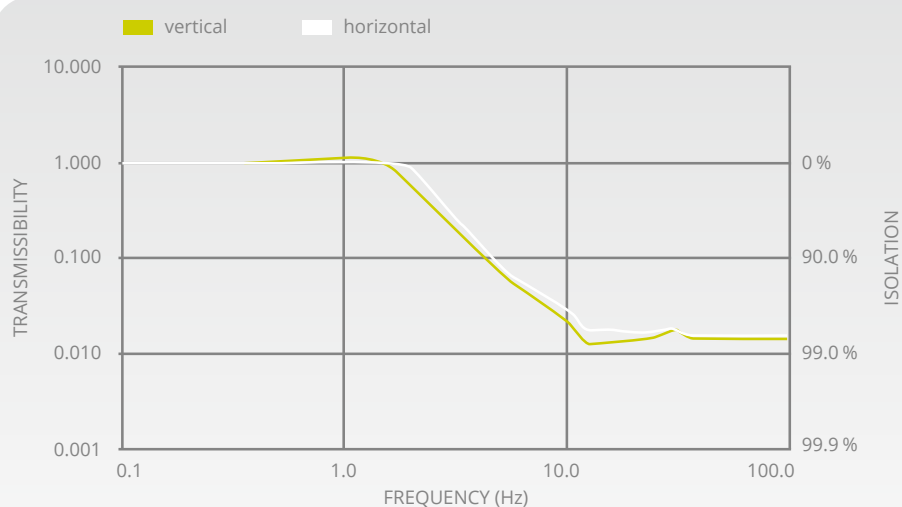
■ Workstation_Vario 780



■ Detail View Workstation_i4



Transmission graph of the **Workstation_i4** measured at a vibration velocity of 100 $\mu\text{m/s}$ with a payload of 20 kg (44 lbs).



Transmission graph of the **Workstation_Vario 780** measured at a vibration velocity of 100 $\mu\text{m/s}$ with a payload of 60 kg (132 lbs).

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.
- Torsion-resistant and rigid support structure due to welded steel frame.

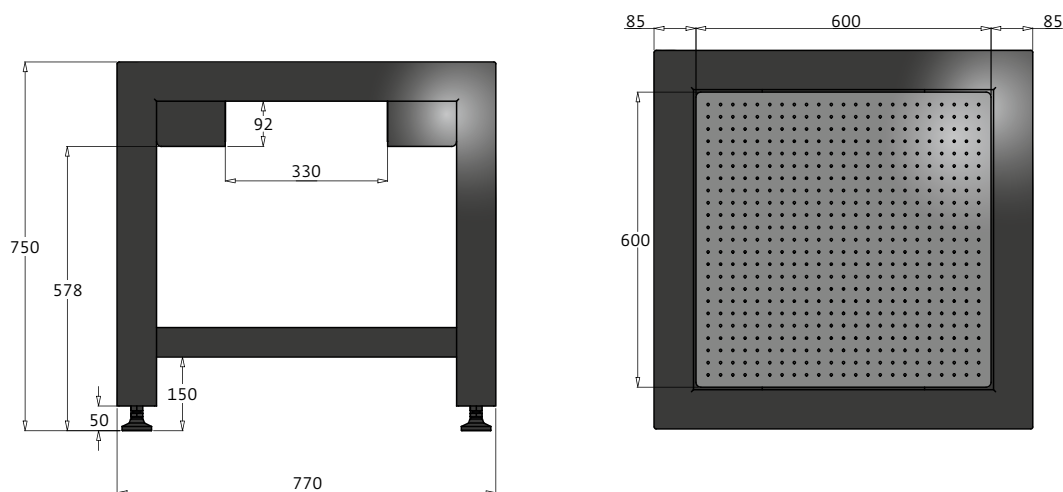


PLEASE CONTACT US FOR FURTHER INFORMATION!

WORKSTATION_VARIO 600

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

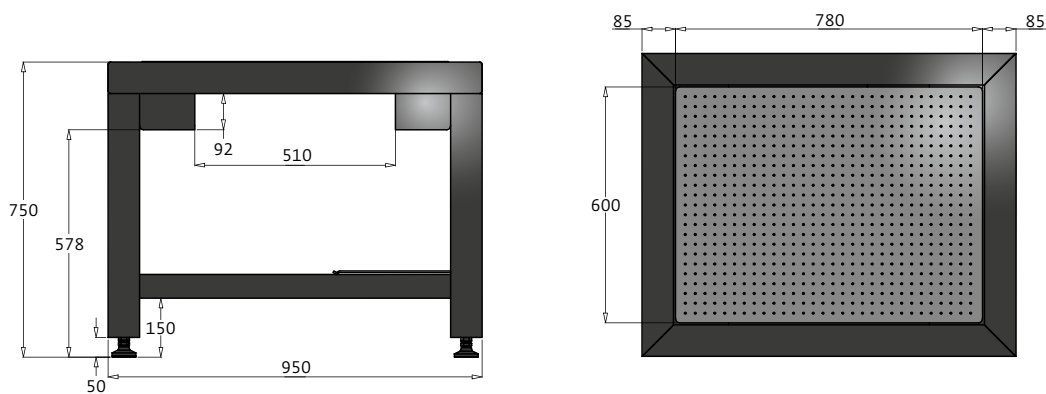
Overall dimensions: 770 × 770 × 750 mm / 30.3" × 30.3" × 29.5"



WORKSTATION_VARIO 780

Isolated surface: 780 × 600 mm / 30.7" × 23.6"

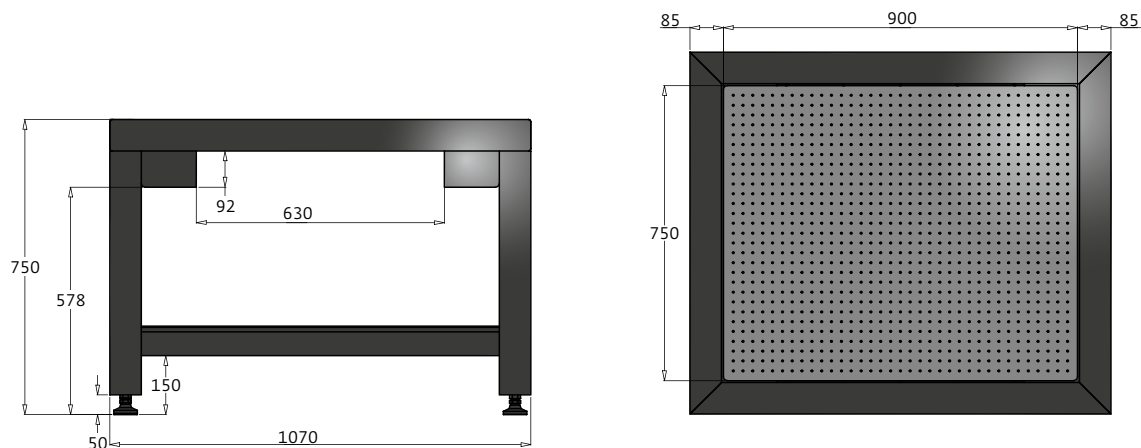
Overall dimensions: 950 × 770 × 750 mm / 37.4" × 30.3" × 29.5"



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 780	Workstation_Vario 900
Dimensions of isolated surface (L × W)	600 × 600 mm 23.6 × 23.6 inch	780 × 600 mm 30.7 × 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	950 × 770 × 750 mm 37.4 × 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 – 310 kg / 0 – 683 lbs	0 – 290 kg / 0 – 639 lbs
Weight	120 kg / 265 lbs	142 kg / 313 lbs	175 kg / 386 lbs
Isolation technology	Halcyonics 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		
EMC	CE certified according to directive 2004/108/EC		

*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.

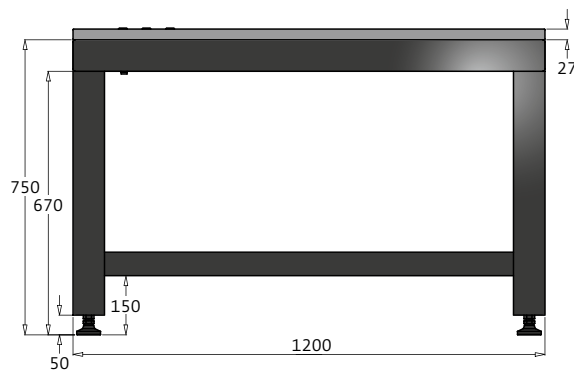
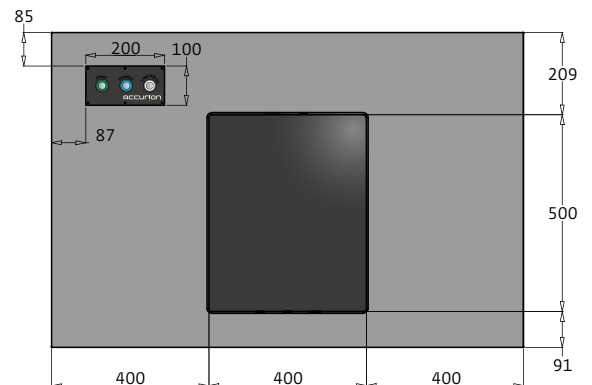
**The settling time and maximum compensation level depend on several conditions such as payload, vibration frequency and load distribution.
The mentioned settling time value is exemplary for a centric load of 80 kg. The settling time defines the time until an incoming vibration is compensated.

***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"

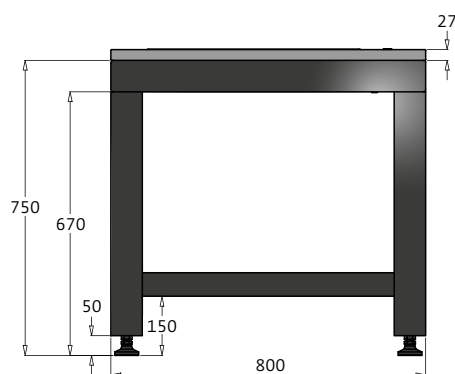
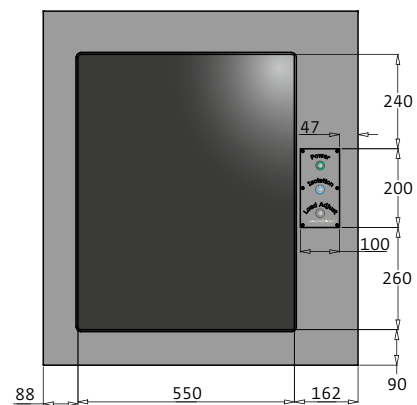
Overall dimensions: 1200 × 800 × 750 mm / 47.2" × 31.5" × 29.5"



WORKSTATION_i4LARGE

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_i4LARGE
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	Halcyonics 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: 100 – 240 V / 47 – 63 Hz Power consumption: Typically 40 – 45 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	
EMC	CE certified according to directive 2004/108/EC	

*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.

