

AVI.400 /LP

THE MODULAR SYSTEM

Low Power Technology

ACTIVE ANTIVIBRATION SOLUTIONS



SCIENTIFIC INSTRUMENTS

Frequency	1.2 - 200 Hz (active)
Load capacity	0 - 400 kg (per module)
Dimensions (unit)	360/720/820 x 190/230 x 112.5 mm ³



The AVI series consists of different modules that can be configured for every individual setup. One AVI-400/LP unit can carry loads up to 400 kg. The minimum configuration consists of two units and can be expanded, allowing loads from few kg to more than 2 tons! Because of the small size it can easily be integrated into existing setups.

This moderately priced dynamic vibration isolation system achieves in a very small volume better isolation than is possible with the biggest and most expensive passive systems. Inertial feedback is used via force transducers to provide not only isolation from building vibrations, but also isolation from vibration sources placed on the system itself.

This means, e.g. that a delicate microscope isolated by the system will remain at rest despite forces being applied via the operator's hands.

The inherent stiffness of the system, typically 500 times greater than that of a 1Hz resonance passive isolator, imparts excellent directional and positional stability. The lack of any low frequency resonance, a resonance which plagues all passive systems, allows the systems to be stacked for super-isolation in severe environments.

Isolation of the standard AVI-400/LP system begins at 1.2Hz, increasing rapidly to at least 35dB beyond 10Hz. Paired with the LFS-3 the AVI-400/LP active vibration isolation units can go down to an isolation frequency of 0.7Hz.

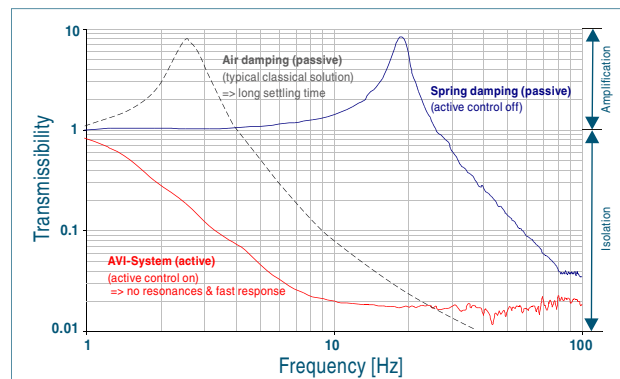
Unique features

- superior to any passive system
- lack of any low frequency resonance
- rapid recovery time from shock (<10 ms)
- feedback control (no calibration necessary)
- no air required
- no setup time
- small size
- modular expandable
- low power technology
 - ↳ no heating up
 - ↳ by strongly reduced power consumption
 - ↳ no electromagnetic disturbances
 - ↳ to upset delicate instruments
- fits to numerous instruments
 - ↳ small modular units

Key Applications

- Scanning Electron Microscopy (SEM & FIB)
- Transmission Electron Microscopy (TEM)
- Interferometry & Wafer Inspection Systems
- Stationary Roughness Measuring Systems
- Nanoengineering & Nanolithography
- Laser Scanning Microscopy
- Scanning Probe Microscopy (AFM, STM)
- Scanning Near-Field Optical Microscopy (SNOM)
- Micro & Nano Hardness Tester
- Cryogenics
- Quantum Technology Research and more!

Transmissibility



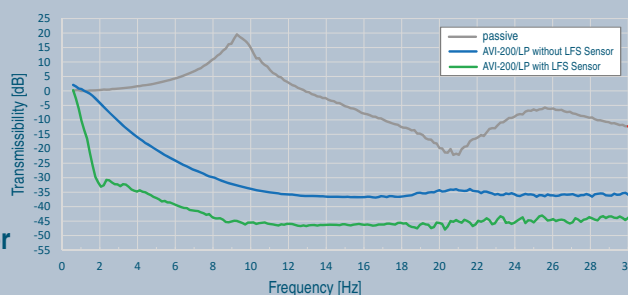
Technical Specifications	
Isolation	Dynamic 1.2 Hz to 200 Hz, mainly passive at higher frequencies, although for good stability the feedback is active to at least 2 kHz
Transmissibility	See transmission curves Above 10 Hz < 30-35 dB decreasing rapidly beyond 100 Hz, depending on load
Maximum load per AVI-400/LP unit	AVI-400/S/LP AVI-400/(E)M/LP AVI-400/XL/LP
	400 kg 400 kg * 400 kg *
Dimensions (d x w x h) per AVI-400/LP unit	360 x 190 x 112.5 mm ³ 720(750) x 190 x 112.5(118) mm ³ 820 x 230 x 112.5 mm ³
	* optional: load enhancement for M, EM and XL types (120 kg additionally per unit)
Electrical	Safety class 1
Power consumption (control unit)	Typically 18 W
Input voltage	90-125 V AC & 200-250 V AC, 50-60 Hz
Normal environmental conditions	Protection class IP20
Temperature range	5 °C - 40 °C, relative humidity 10-90 % (5-30 °C) / 10-60 % (30-40 °C)
Application	Indoor, altitude up to 2000 m (6500 ft)



Optical table actively isolated by AVI200S4/LP



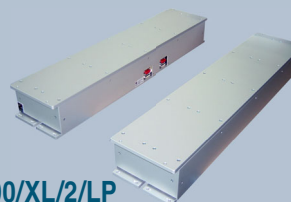
LFS-3 Low Frequency Sensor



AVI400/S/2/LP



AVI400/M/2/LP with controller



AVI400/XL/2/LP



SCIENTIFIC INSTRUMENTS