

Optical Table Supports

1TS

- 1 Optical Tables
- 2 Brackets & Rails
- 3 Base Mounts & Accessories
- 4 Optical Mounts
- 5 Optical Positioners
- 6 Base Positioners
- 7 Translation & Rotation Stages
- 8 Motorised Positioners & Controllers
- 9 Fine Adjustment Screws
- 10 Opto-Mechanics & Sets
- 11 Light Test & Measurement Instruments
- 12 Lasers & Laser Accessories



1TS05-07-06-AP-500

- Convenient sizes
- Optimal height
- Multipurpose in use
- Handy assembling

Optionally you may order 2 to 3 extra cross-beams and/or casters

Table supports may be supplied with various leveling and vibration-isolation systems. This allows to meet various needs of our customers.

Optical Table Supports 1TS are primarily designed for the Honeycomb Table Tops **1HT**. Table Supports are produced from steel tubes of **100 mm** square section, in decorative black coating. 1TS is composed of two "T" type supports, bound by a cross-beam.

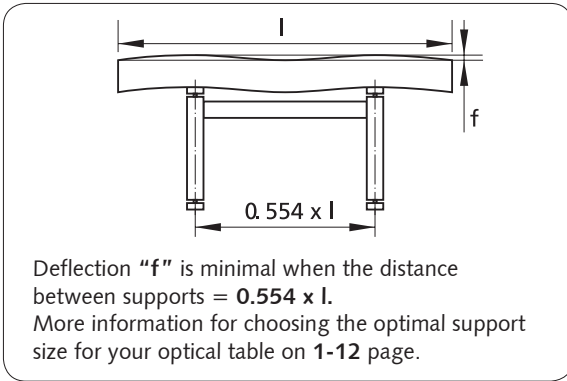
Optical Table Supports 1TS ideally suit other types of optical plates and other equipment, as well. This is possible because plates are not fastened – they are just laid on top of the supports.

On request we produce table supports of any size, design, and of greater sturdiness.



Optical Table Support 1TS with Honeycomb Table Tops 1HT

Standard models of 1TS table supports available for short delivery



If required, e.g. when used with a laser shelf **1LS52**, the table support may be assembled upside-down. This doesn't degrade its performance.

REINFORCED FRAME FOR LARGE AND HEAVY TABLETOPS!

Extra cross-bars

1TSXX-22-XX

For heavy tabletops longer than 3500 mm we provide reinforced table support structure by default. Extra cross-bars are added to three sides of the table support frame for increased stability and reliability. Standard length - 2200 mm between support leg centers.

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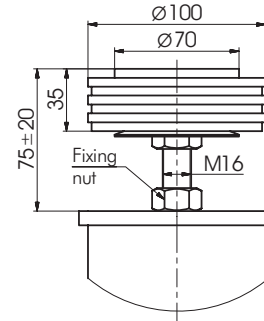


Rubber Leveling Element

1TS-AR

Rubber leveling element (1TS-AR) ensures sufficient vibration isolation.

Max. load per 4 isolators – 1500 kg
Natural frequency – 15-20 Hz

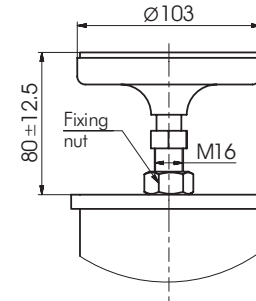


Solid Leveling Element

1TS-AS

Solid leveling element (1TS-AS) is used, when no damping is needed.

Max. load per 4 isolators – 3000 kg



Passive Air Leveling Vibration Isolator

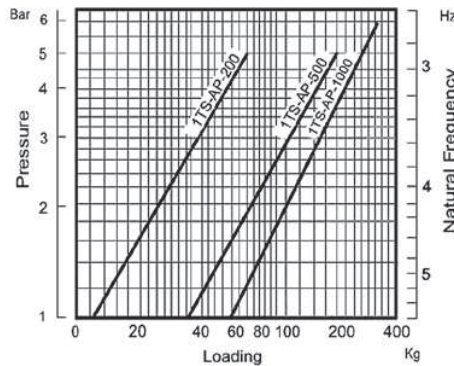
1TS-AP

Passive air leveling vibration isolator 1TS-AP is a low height, low stiffness air spring isolator mount suitable for both passive and dynamic applications where a support natural frequency as low as 3-5Hz is required.

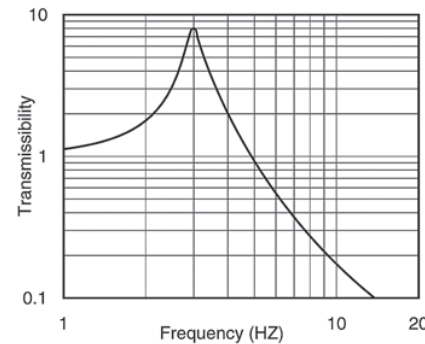
Typical passive applications include the protection of vibration sensitive equipment such as co-ordinate measuring machines, metrology inspection devices, isolation tables and electron microscopes.

The 1TS-AP isolator body is made of high elasticity, oil resistant and non-aging CR grade elastomer. Pressure and bottom plates made of galvanized steel.

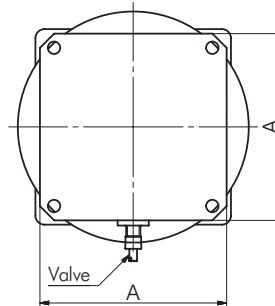
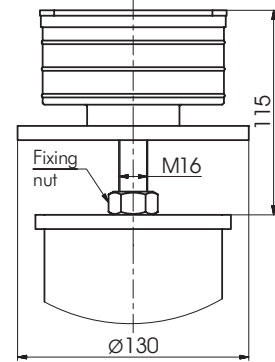
Inflation is either through the 'moulded in' standard tyre valve or by connection to a permanent air supply.



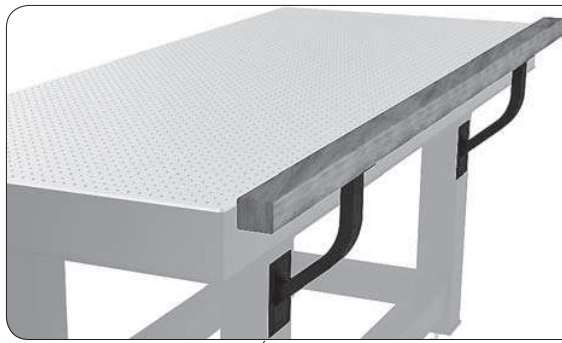
Load/Pressure diagram



Transmissibility Curve

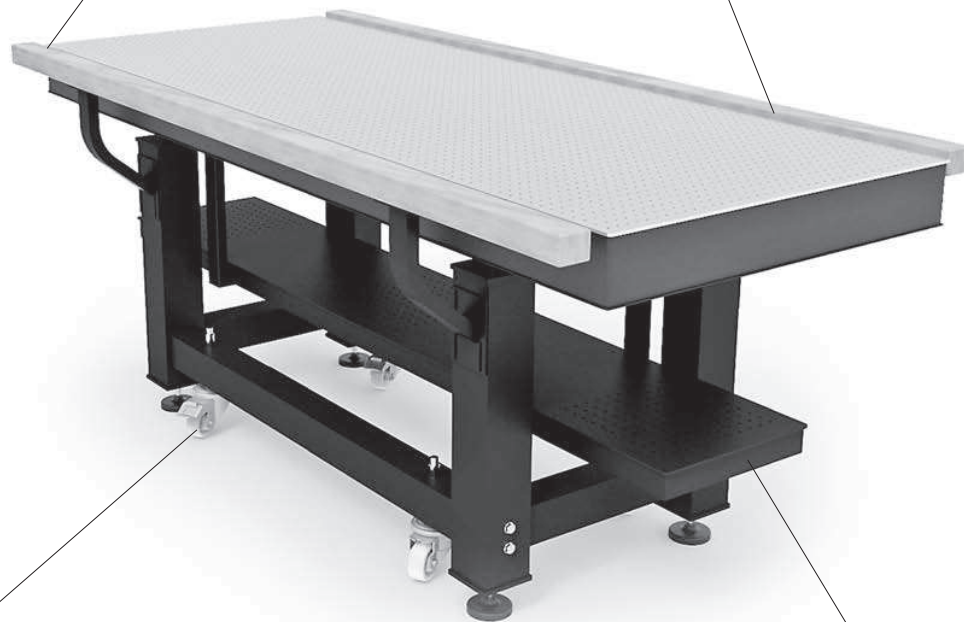


Model	Max. load, kg (for 4 isolators)	Max. pressure, bar	A, mm
1TS-AP-200	195	5	75
1TS-AP-500	540	5	105
1TS-AP-1000	840	6	130



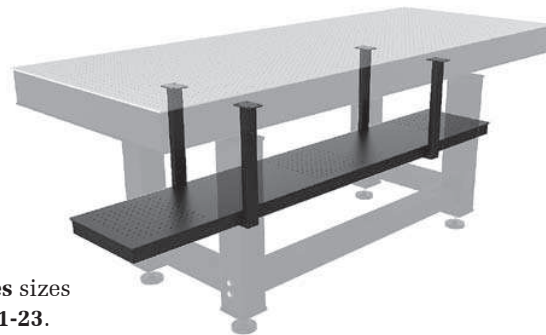
Armrest guards the honeycomb table from impacts of your body. This allows you to work at the table like at a conventional table, using microscope and other equipment.

Optionally you may order workstation with two **Armrests** on the opposite sides.



Casters – made of high-quality nylon, high abrasion resistant, low rolling resistant, smooth running performance on even floors, shock and impact-resistant, corrosion-resistant.

Laser shelves are optional breadboards. They save space when installing a laser and other equipment beneath the honeycomb table tops. A shelf stays mechanically coupled to the table top.



Laser shelves sizes are on **page 1-23**.

ORDERING EXAMPLE

1TS065-12-06-AR-CA

Table support sized **750×1300×760 mm** (Width×Length×Height);

4 pieces of **1TS-AR** leveling elements on top;

4 pieces of **1TS-AS** leveling element at the bottom;

CA – casters.

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Active Vibration Isolation System

1TS-140
1TS-140B
1TS-140B-AL



1TS-140

- The isolation of the 1TS-140 begins at 0,7 Hz, increasing rapidly to 40 dB beyond 10 Hz
- The lack of any low frequency resonance means much better performance than with common passive damping approaches
- The inherent stiffness of the 1TS-140 imparts excellent directional + positional stability
- The outstanding isolation performance of the 1TS-140 includes all six translational and rotational vibration modes

SPECIFICATIONS

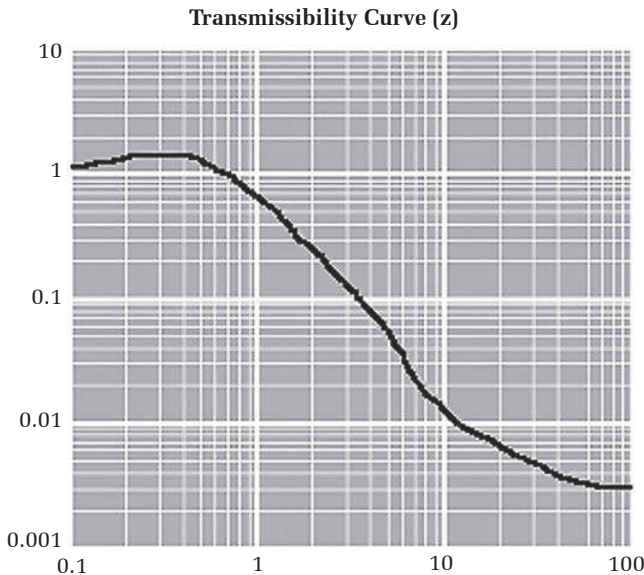
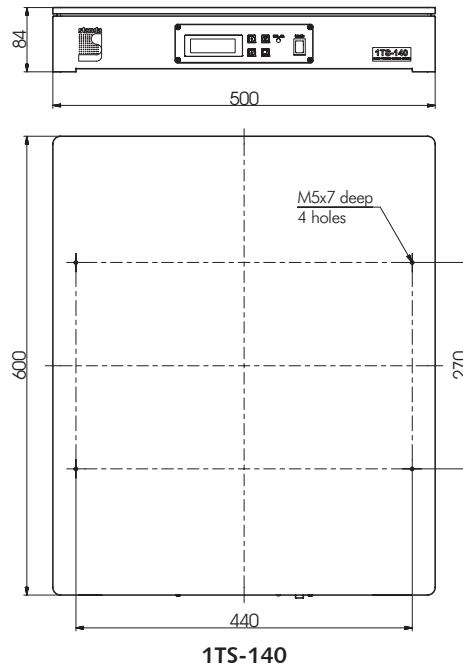
Isolation	dynamic 0.7 Hz to 200 Hz, mainly passive at higher frequencies, although for good stability the feedback is active to at least 2 KHz
Transmissibility	See attached curve. Above 10 Hz transmissibility <0.01 (-40dB)
Maximum load	140 kg
Dimensions	500x600x84 mm
Self - weight	23 kg

Electrical

Safety class	1
Power consumption	maximum 10 W when isolating, maximum 20W during load adjustment
Input voltage	90 – 120V AC, 47 – 63 Hzz 200 – 240V AC, 47 – 63 Hzz
Fuses	2x1.6A/250V slow, located in the power socket on the rear side of the unit

Normal Environmental Conditions

Protection class	IP 20
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 (6.500 ft)



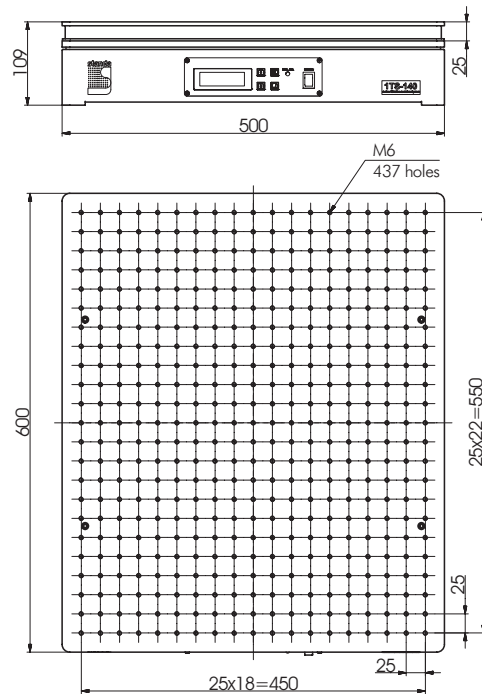
1TS-140 is compact dynamic anti-vibration system, which offers isolation against all six translational and rotational vibration modes. These moderately priced dynamic vibration isolation systems achieve in a very small volume better isolation than is possible with the biggest and most expensive passive systems. Inertial feedback using piezoelectric force motors provides not only isolation from building vibrations, but also isolation from vibration sources placed on the system itself. This means, for example, 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 systems, some 200 – 500 times greater than that of a 1 Hz resonance passive isolator, imparts excellent directional and positional stability.

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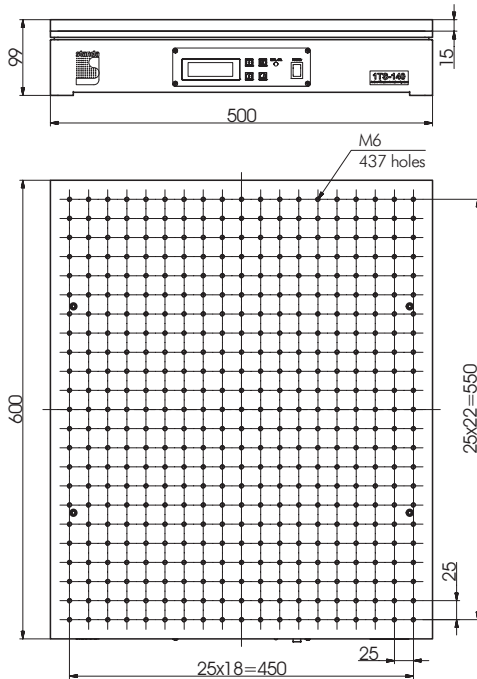
Active Vibration Isolation System
with Breadbord

1TS-140B



Active Vibration Isolation System
with Aluminium Breadbord

1TS-140B-AL



1TS-140
Example of use

ORDERING INFORMATION

- 1TS-140 – solid board without holes
- 1TS-140B – with breadbord 1HB05-06-025-001
- 1TS-140B-AL – with aluminium breadbord 1B-AL-50-60-015



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Active Vibration Isolation Workstation

1TS-140W
1TS-140WB
1TS-140WB-AL



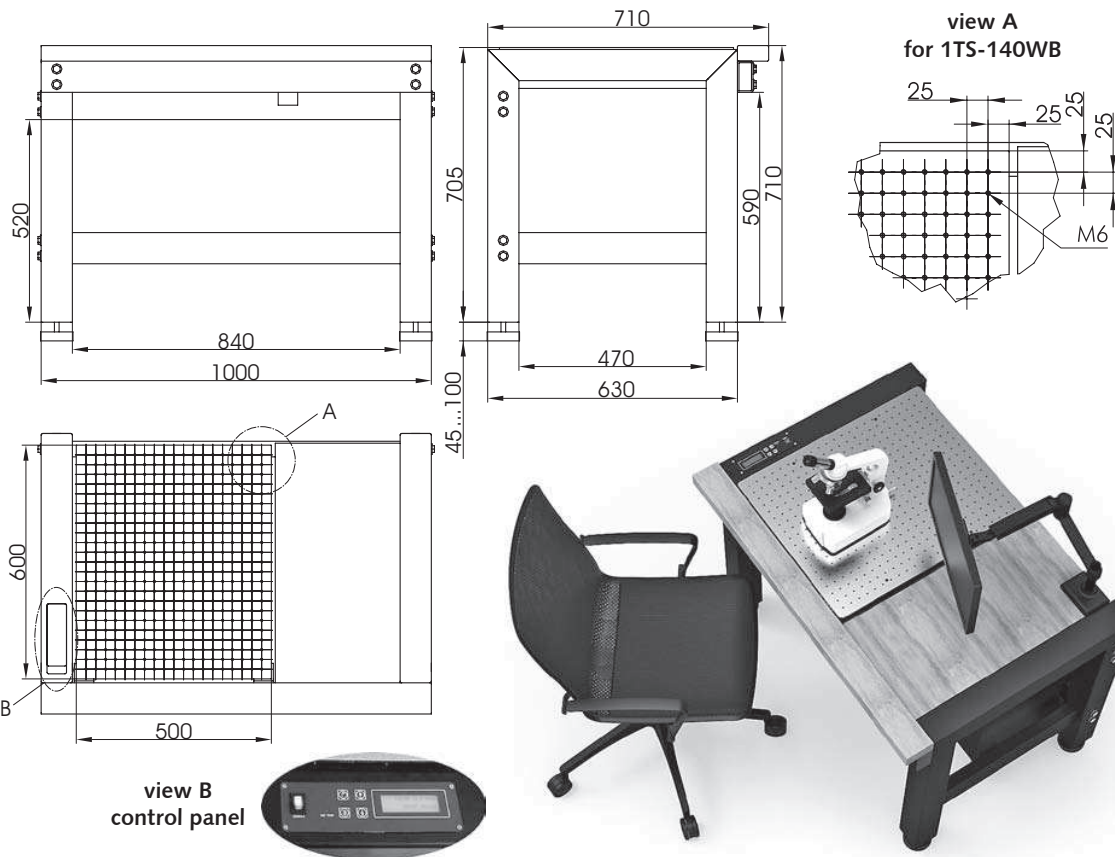
APPLICATIONS

- Scanning probe microscopy
- Scanning electron microscopy
- Scanning near-field optical microscopy / NSOM
- Control laser microscopy
- Interferometry
- Metrology / Profilometry
- Nano indentation
- Nano lithography
- Ultrathin film applications
- Analytical balances
- Bio-physical measurement
 - * Single molecule investigations
 - * Cell micro infection
 - * Patch clamp
- * Cell manipulation
- * IVF techniques

Active vibration isolation workstation comprises of ergonomic rigid frame, guarding armrest and supplied with three modifications of active vibration isolation system: 1TS-140 with solid surface, 1TS-140B with honeycomb breadbord 1HB05-06-025-001 and 1TS-140B-AL with aluminium breadbord 1B-AL-50-60-015. The control panel is built into the frame and allows comfortable work. This system is extremely convenient to use. Load compensation is performed automatically on switching on the power. If the load is changed whilst the system is isolating, it automatically readjusts and then returns

to the isolation mode. The workstation is design is optimized for such delicate instruments as AFM's, Laser Scanning Microscopes, SNOM's, profilometers, nanoindenters, etc.

Upon request we can make custom workstations with working surfaces 400 x 450 mm (maximum load 150 kg) and 600 x 800 mm (maximum load 120 kg).



ORDERING INFORMATION

- 1TS-140W** - with active system **1TS-140**
- 1TS-140WB** - with active system **1TS-140B**
- 1TS-140WB-AL** - with active system **1TS-140B-AL**

more info about Active System 1TS-140 on page 1-15.

Ideal for use with **interferometers, atomic force microscopes, scanning near field optical microscopes**, and other equipment sensitive to low frequency vibrations.

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Active Vibration Isolation System

1TS-AVI200LP



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, for example, 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 1 Hz 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.

1TS-AVI200LP, a compact modular dynamic antivibration system offering isolation against all six translational and rotational vibrations.

The system is ideal for supporting delicate Fabry-Perot interferometers and tunnel-microscopes, allowing the ultimate performance to be achieved from these and other high resolution instruments. The tables have also proved to be extremely successful for supporting sensitive experiments, such as the troughs for liquids used in measurements on Langmuir-Blodgett films.

1TS-AVI200LP is an adaptable system consisting of two modules. Each module by itself isolates against vertical and horizontal translations and against rotations about one horizontal axis. The combination of two modules isolates against all six possible translational and rotational vibrations. The modules cannot be used separately.

Isolation of the standard **1TS-AVI200LP** system begins at about 1 Hz, increasing rapidly to at least 35 dB beyond 10 Hz. This system offers excellent isolation in the typical laboratory environment.

SPECIFICATIONS	1TS-AVI200LPS-LP	1TS-AVI200LPM-LP
Isolation	dynamic 1.2 Hz to 200 Hz passive beyond 200 Hz	
Transmissibility	See transmission curve. Above 10 Hz transmissibility <0.017 (-35 dB)	
Correction forces	max. horizontal 4 N vertical 8 N	
Static Compliance	approx. 3,5 $\mu\text{m}/\text{N}$ vertical and 7 $\mu\text{m}/\text{N}$ horizontal	
Maximum Load	400 kg (single unit: 200 kg)	
Size (single unit)	350×90×115 mm	600×90×115 mm
Weight	10 kg – (single unit)	
Control Unit		
Safety class	1	
Power consumption	typically 9 W	
Input voltage	90–125 VAC / 200–250 VAC, +/- 10% , 50–60 Hz	
Fuses	2×1.6 A / 250 V slow, located in the power socket on the rear side of the unit	
Overload Indication	8 LEDs	
Monitor Signal	A multiplexed signal for display on oscilloscope shows vibration levels with and without isolation – for diagnostic purpose only	

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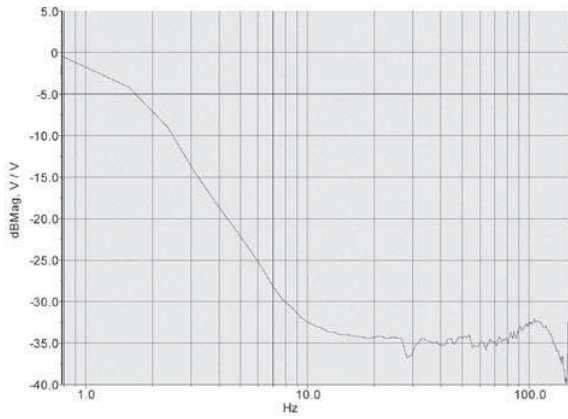
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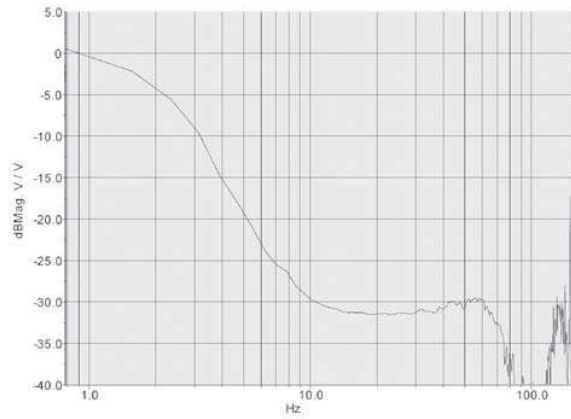
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TRANSMISSIBILITY



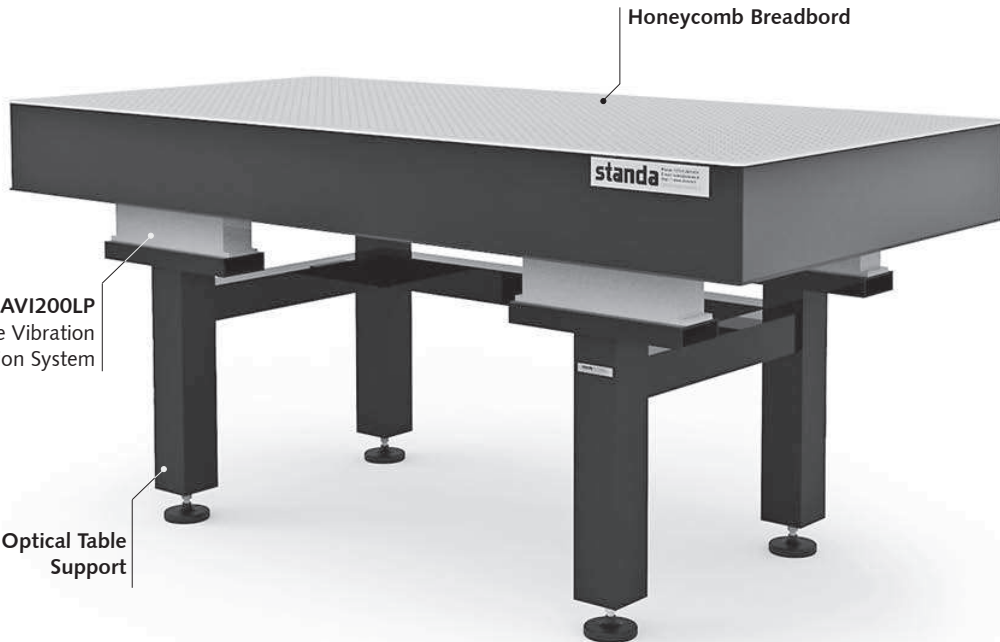
Vertical



Horizontal



1TS-AVI200LP with a standard honeycomb board for loads 0–400 kg.
(Loads up to 200 kg per unit)



1TS-AVI200LP with a standard **Honeycomb Breadbord** and with **1TS Table Support**

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