

Tuned Mass Dampers

Bridges, Floors, Stairs, Stadiums & Roofs



motioneering

Easy Integration

Motioneering TMDs are easy to incorporate into a structure. Connection details are standardized. Designs are modular, so TMDs arrive on site in one piece. Simply lift, set, level, and bolt-in-place. A range of styles are available.

Proven Performance

Motioneering has over 25 years of experience designing and building tuned mass dampers. Our solutions are always performance tested and proven to perform in the as-built structure with 100% reliability.



motioneering.ca

Low Profile Configuration

Horizontal Orientation



Suitable for under-slab mounting, or for longitudinal mounting between girders.

Low Frequency Upright Configuration

Horizontal Orientation



Suitable for beam web-mounting, or for flange-mounting.

Upright Configuration

Vertical Orientation



Suitable for beam web-mounting, or for flange-mounting.

Sample Applications

Bridges, Floors, Stairs, Stadiums & Roofs



Juno Beach Memorial Bridge

Ottawa, ON, Canada



Motioneering TMDs are mounted on the girder webs of this bridge spanning the Ottawa Airport Expressway, to control vertical vibrations from walking and running activities. The TMDs are concealed from view within a weatherproof enclosure.

Madison Square Garden

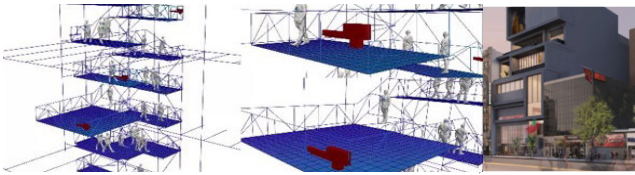
New York City, NY, USA



Motioneering TMDs are used to control vertical floor vibrations in the upper seating areas of the arena to ensure occupant comfort due to lively crowds during concerts and sporting events. A total of ten TMDs are installed within the structure under these floors.

Studio Museum Feature Staircase

Harlem, NY, USA



Motioneering TMDs are used for vertical vibrations on five landings of the staircase. The TMDs are concealed within the balustrades.

Vanguard Group Office Building

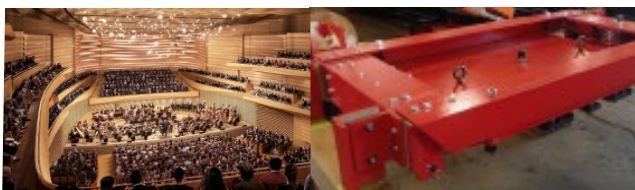
Malvern, PA, USA



Motioneering floor TMDs are installed at the mid-span of the floor beams in this open plan office space. Four TMDs are used to control vertical vibrations from walking activities.

Lincoln Center Concert Hall Reno

New York City, NY, USA



As part of a major renovation to David Geffen Hall, two Motioneering floor TMDs are used for controlling vibrations in the suspended first tier overlook floors above the grand promenade.

Retail Electronics Showcase Store

Vancouver, BC, Canada



Motioneering TMDs are used to control vertical floor vibrations in the demonstration area of this special electronics retail space. Three TMDs are integrated into the floor system.

Technical Specifications

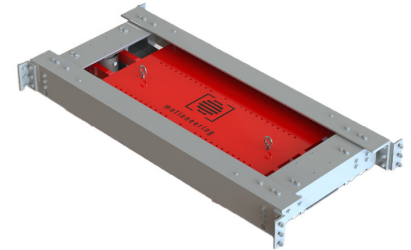
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Low Profile Configuration

Flat Orientation

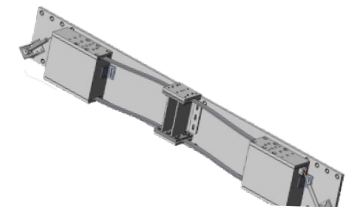
Dynamic Mass ¹	Dead Mass ²	Tuning Range		Dimensions inc Dynamic Motion Envelope			Internal Damping Range
		Low	High	Length	Width	Height	
(kg)	(kg)	(hz)	(hz)	(mm)	(mm)	(mm)	(%)
350	750	3.0	13.0	1845	1030	285	1 to 20
550	950	3.0	9.4	1930	1030	285	1 to 20
700	1100	3.0	11.2	2085	1030	285	1 to 20
900	1350	3.0	10.5	2265	1245	285	1 to 20
1400	1900	3.0	10.1	2325	1245	285	1 to 20



Low Frequency Upright Configuration

Vertical Orientation

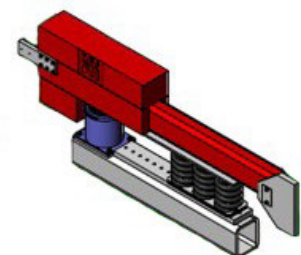
Dynamic Mass ¹	Dead Mass ²	Tuning Range		Dimensions inc Dynamic Motion Envelope			Internal Damping Range
		Low	High	Length	Width	Height	
(kg)	(kg)	(hz)	(hz)	(mm)	(mm)	(mm)	(%)
1500	2650	1.5	3.4	4500	305	700	1 to 20
750	1320	1.5	3.4	4500	305	700	1 to 20



Upright Configuration

Vertical Orientation

Dynamic Mass ¹	Dead Mass ²	Tuning Range		Dimensions inc Dynamic Motion Envelope			Internal Damping Range
		Low	High	Length	Width	Height	
(kg)	(kg)	(hz)	(hz)	(mm)	(mm)	(mm)	(%)
2000	2200	2.5	6.5	4705	250	800	1 to 20
200	310	3.4	9.5	1540	155	820	1 to 20
750	900	3.1	8.6	2510	190	820	1 to 20



Notes:

1. Do not include TMD active mass in the structure when determining target frequencies.
2. Dead mass accounts for mounting materials and rigid framing requirements which varies based on TMD configuration. Site-specific needs may require some changes of the dead mass for supporting the TMD. Consult with us for further details.
3. Low Frequency Upright TMD includes reinforced spine to facilitate easy installation.
4. Custom Configurations also available.