TMD - Tuned Mass Damper

CSA Engineering, Inc.

SPECIFICATIONS

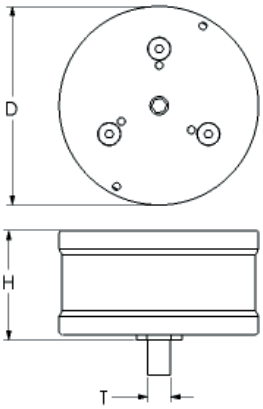
	TMD05	TMD1	TMD2
Mass, moving	0.50 lb (227 g)	0.98 lb (445 g)	2.13 lb (970 g)
Mass, total	0.53 lb (240 g)	1.07 lb (485 g)	2.31 lb (1050 g)
Diameter	44.5 mm (1.75 in)	62.0 mm (2.44 in)	82.6 mm (3.25 in)
Height, installed[1]	36.6 mm (1.40 in)	35.0 mm (1.38 in)	45.3 mm (1.98 in)
Frequency range	30-250 Hz[2,3]		
Damping, percent critical	8-12%[4]		
Maximum input level	0.5 mm zero peak, typical		
Temperature range	15-30° C[5]		

[1] Height for 100 Hz unit; may vary by up to 1 mm for other units.
[2] Individual units have adjustment range of about 2.5:1.
[3] Special low and high frequency models can be built with 25 Hz or 300 Hz limits.
[4] Can be altered in special cases
[5] Wider ranges possible; device properties do vary slightly with temperature.

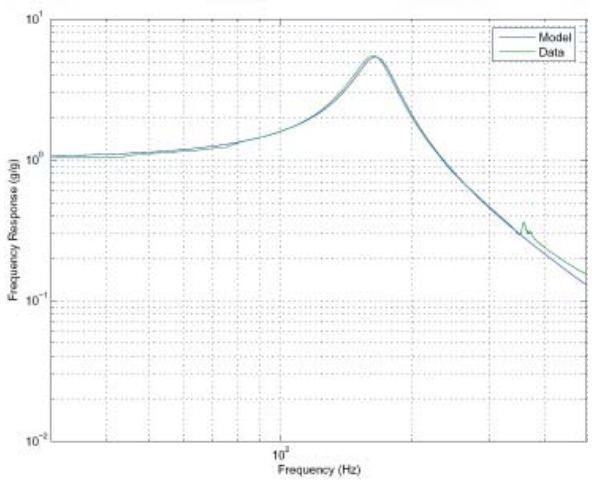
Tuned mass dampers, or TMDs, are resonant devices used to suppress or absorb vibration. When installed properly on a machine or structure, they draw away vibrational energy from the structure or machine and dissipate it internally, reducing the motion of the machine. The TMD05, TMD1 and TMD2 are the standard models in CSA's line of tuned mass dampers. Each unit is used to suppress vibration in the direction along the axis of the main cylindrical section. The passive devices require no external electrical power. The operating frequency of an individual unit can be adjusted and set before installation over a frequency range of about 2.5-to-1. This feature is particularly useful during initial testing. The products are specified by the nominal primary resonance frequency. For example, TMD1-150 is a 150 Hz unit with approximately one pound moving mass. The broader frequency range for each model (greater than 8-to-1) is achieved during assembly and results in small variations in the installed height and mass.

Each TMD model has a standard mechanical interface via a single threaded rod or bolt. Metric threads are also available. Frequency adjustment is performed by CSA prior to delivery, but with a simple kit and instructions, the user can make adjustments if desired. A cleanroom-compatible version is available. For more information on the standard models, or to discuss application-specific details, email tmds@csaengineering.com.

MECHANICAL PACKAGE



	D	H	T
TMD05	1.750 in	1.400 in	10-32 UNF-2A
TMD1	2.441 in	1.378 in	1/4-28 UNF-2A
TMD2	3.250 in	1.783 in	3/8-16 UNC-2A



Typical frequency response for a TMD

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