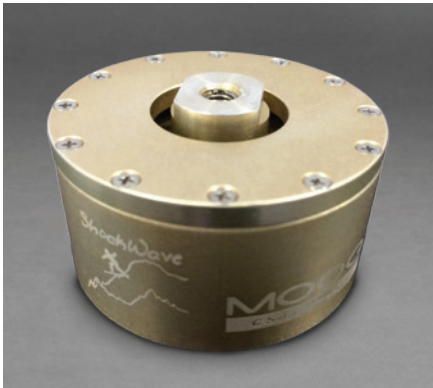


SHOCKWAVE ISOLATOR



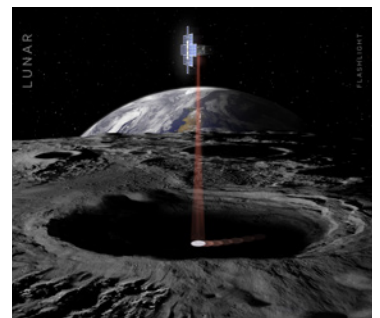
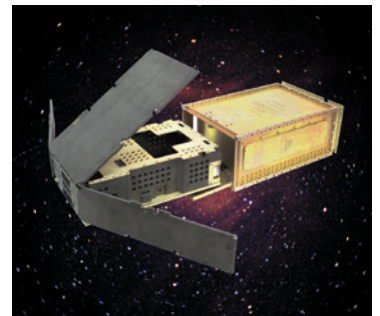
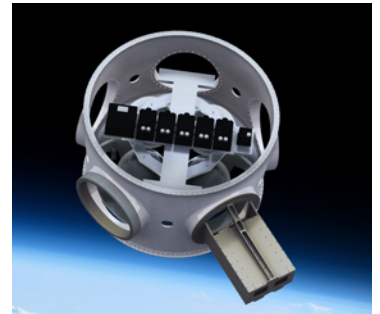
Moog's patent pending ShockWave isolator product family is the perfect solution for small payload and CubeSat launch isolation. ShockWave leverages over two decades of spaceflight hardware heritage and packages launch worthy technology into a reliable, predictable system at a price point that is comparable to non-aerospace worthy, elastomeric isolation mounts.

KEY FEATURES

- Low-mass, low-profile isolation mounts
- Suitable for shock and random vibration load attenuation
- Configurable with metric and standard interfaces
- Predictable attenuation through an all metallic load path
- Robust performance over the launch operational environment
- Provides greater than 20% of critical damping

PROVIDES VIBRATION ISOLATION FOR THE APPLICATIONS

- CubeSat Dispensers
- Optical Mounts
- Machine Tools
- Electronics Components
- Directed Energy Systems



SHOCKWAVE ISOLATOR

The following table provides measured stiffness values for the ShockWave part number SW-150-1000-190 across a broad frequency range.

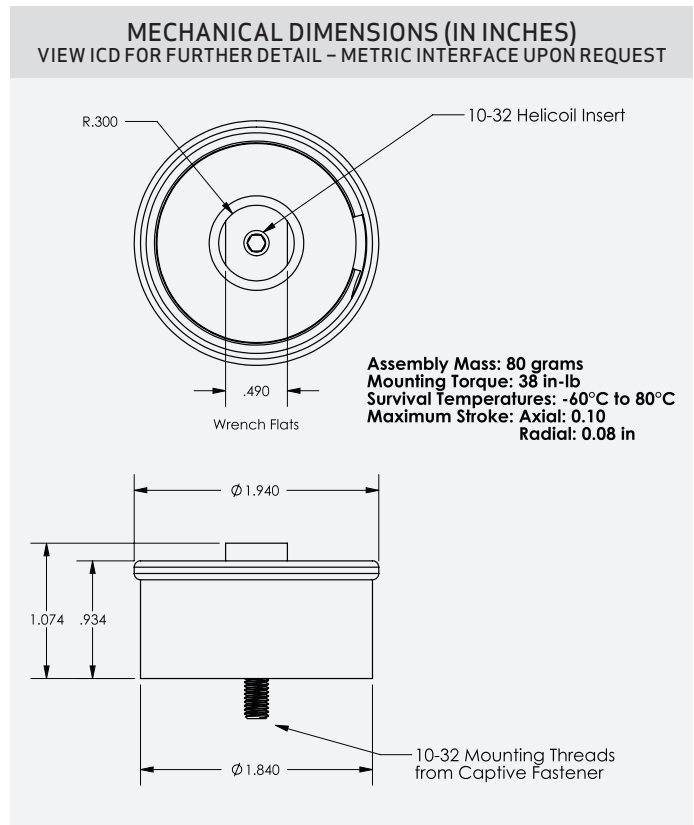
| NOMINAL STIFFNESS (SW-150-1000-190) | | | |
|-------------------------------------|-------|-------|--------|
| Description | 20 Hz | 50 Hz | 100 Hz |
| Axial (lbf/in) | 2,300 | 2,700 | 3,200 |
| Lateral (lbf/in) | 4,400 | 5,800 | 7,900 |

ShockWave was designed with the CubeSat community in mind. The ShockWave isolator is modular and configurable. It will accommodate a wide variety of spacecraft configurations. The following tables provide predicted frequencies for 3U, 6U, and 12U spacecraft with varying mass. These tables are a guide for specifying quantity and configuration of ShockWave.

| 3U | | | | | |
|------------------|----------------|-------------------|----------------|-------------------|----------------|
| 4kg, 4 Isolators | | 6 kg, 6 Isolators | | 8 kg, 6 Isolators | |
| Mode No. | Frequency (Hz) | Mode No. | Frequency (Hz) | Mode No. | Frequency (Hz) |
| 1 | 53 | 1 | 53 | 1 | 46 |
| 2 | 64 | 2 | 67 | 2 | 58 |
| 3 | 96 | 3 | 96 | 3 | 84 |

| 6U | | | | | |
|------------------|----------------|--------------------|----------------|--------------------|----------------|
| 8kg, 6 Isolators | | 12 kg, 8 Isolators | | 16 kg, 8 Isolators | |
| Mode No. | Frequency (Hz) | Mode No. | Frequency (Hz) | Mode No. | Frequency (Hz) |
| 1 | 58 | 1 | 55 | 1 | 48 |
| 2 | 73 | 2 | 68 | 2 | 59 |
| 3 | 84 | 3 | 80 | 3 | 69 |

| 12U | | | | | |
|--------------------|----------------|---------------------|----------------|---------------------|----------------|
| 16kg, 12 Isolators | | 24 kg, 12 Isolators | | 32 kg, 12 Isolators | |
| Mode No. | Frequency (Hz) | Mode No. | Frequency (Hz) | Mode No. | Frequency (Hz) |
| 1 | 41 | 1 | 34 | 1 | 29 |
| 2 | 54 | 2 | 44 | 2 | 38 |
| 3 | 84 | 3 | 69 | 3 | 60 |



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