Lab Manager
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New Ultra-Thin, Low-Frequency Vibration Isolation Platform

The new model CT-10 passive isolator provides the industry's thinnest low-height, low-frequency isolator for Microscopy

New Negative-Stiffness CT-10 vibration isolator.

The new ultra-thin, low-height model CT-10 passive isolator—more compact than the CT-2 to fit in much smaller spaces at just over 12 ½ inches square. The completely passive tabletop unit is 2.7 inches in height, yet delivers 1/2 Hz vertical natural frequency, and ~1-1/2 Hz horizontal natural frequencies—considerably more low-frequency vibration isolation performance compared to air tables and active systems. The CT-10 utilizes Minus K's breakthrough patented technology that led to a Laser Focus World 2019 Innovation Award.

“Vibration isolators for small microscopes, especially AFM, have typically been much larger than needed. We have heard from users looking for an even more compact isolator that what we previously had. People just like small isolators. They want the performance our isolators offer, in as small a package as possible,” said Erik Runge, VP of Engineering. “With the CT-10, we offer the most compact 0.5 Hz isolator we have ever produced.”

Negative-Stiffness isolators employ a unique and completely mechanical concept in low-frequency vibration isolation. They do not require electricity or compressed air. There are no motors, pumps or chambers, and no maintenance because there is nothing to wear out. They operate purely in a passive mechanical mode. The Negative-Stiffness CT-10 isolator achieves a high level of isolation in multiple directions. It has the flexibility of custom tailoring resonant frequencies vertically.

The transmissibility of the CT-10 is substantially improved over air and active isolation systems. When adjusted to 1/2 Hz vertical natural frequency, the CT-10 Negative-Stiffness isolator achieves approximately 93 percent isolation efficiency at 2 Hz; 99 percent at 5 Hz; and 99.7 percent at 10 Hz.

“With new emerging technologies, vibration isolation is becoming even more important. Not all these technologies need, or even want, to use larger sized isolators,” added Runge. “The CT-10, with its patented technology, offers the signature 0.5 Hz vertical performance we have become known for, in a much smaller package. The CT-10 isolates low-frequency vibrations (vertically) as well as our largest isolators.”

Negative-Stiffness vibration isolation systems have become a growing choice for micro and nanotechnology microscopy applications. Not only are they a highly workable vibration solution, but they provide location flexibility and portability that other vibration isolation systems cannot.