_active vibration isolation desktop unit
halcyonics_i4 series
Active Vibration Isolation Desktop Unit
halcyonics_i4 series

ABSTRACT

The halcyonics_i4 is a state-of-the-art active benchtop vibration isolation system from Accurion. Aside from its low-profile carbon design, the i4 has expanded application capability. Main features are the automated transport locking mode and fully automatic load adjustment which makes the handling extremely straightforward. It takes only a few seconds to start up the halcyonics_i4. No adjusting or tuning is required.

The control panel is self-explanatory and the entire system is controlled by only three buttons. This enables the user to completely concentrate on the application.

Because of its slim dimensions and broad load range, the halcyonics_i4 is a multifunctional active vibration isolation system for a variety of applications. This allows you flexibility for future applications with just one model – the halcyonics_i4.

APPLICATIONS

• Scanning probe microscopy (AFM, SNOM, STM, etc.)
• Inverse microscopy
• Confocal scanning microscopy
• Profilometers
• Nanoindentation
• Micromanipulation
• Ultramicrotomes
• Ultra-precise scales
• … and many more

FEATURES & BENEFITS

• Isolation in all six degrees of freedom
• Active vibration isolation starts at 0.6 Hz (passive isolation above 200 Hz)
• Exceptionally compact dimensions
• Compact and portable
• Automatic load adjustment and transportation lock
• Ideal for isolating high-resolution measurement equipment from building vibrations
• AC power from an electrical outlet is sufficient; no compressed air supply is needed
• Excellent position stability – inherent stiffness typically 20-30 times higher than that of a 1 Hz passive isolator
• Low voltage electromagnetic actuators
• No natural low frequency resonance and, as a result, excellent vibration characteristics also in frequency ranges below 5 Hz
• Settling time of only 0.3 s
• Two-year warranty
• Quality control procedures and long term tests
Technical Specifications: halcyonics_i4 series

AVAILABLE STANDARD VERSIONS
halcyonics_i4

PERFORMANCE SPECIFICATIONS

ISOLATION TECHNOLOGY: halcyonics control technology based on piezoelectric type acceleration pickup, fast signal processing and electrodynamic type force transducers

FORCE DIRECTIONS: Active compensation in all six degrees of freedom

ISOLATION PERFORMANCE: > 5 Hz = 25 dB (94.4 %), > 10 Hz = 40 dB (99.0 %)

ACTIVE BANDWIDTH: 0.6–200 Hz

STROKE OF THE ACTUATOR: 1,000 µm

SETTLING TIME: 300 ms

MAX. CORRECTION FORCES:
V. = Vertical V. ± 8 N
H. = Horizontal H. ± 4 N

LOAD CAPACITY: 0–120 kg | 0–265 lbs

OTHER SPECIFICATIONS

WEIGHT: 20 kg | 44 lbs

TABLE TOP MATERIAL: Powder coated aluminum

TOP PLATE SURFACE FLATNESS: ± 0.10 mm over complete surface

MAX. COMPENSATION LEVEL: 500 µm/s at 6 Hz and with a load of 60 kg | 132 lbs

REPEATABILITY OF LOAD ADJUSTMENT: 120 µm

D-SUB INTERFACE: Service interface, optional USB adapter
ENVIRONMENTAL AND OPERATIONAL REQUIREMENTS

ELECTRICAL VOLTAGE: 100–240 V~ / 47–63 Hz
POWER CONSUMPTION: Typically 40–45 W
OPERATING TEMPERATURE: 10–40 °C | 50–104 °F
OPERATING HUMIDITY: 0–60 %
OPERATING ALTITUDE: < 2,500 m | 8,100 ft

CERTIFICATION

ELECTRICAL SAFETY: CE certificated according to the directive 2006/95/EC
EMC: CE certificated according to the directive 2004/108/EC

* Floating table top is supported by steel springs; low-pass characteristics of spring-mass combination dominates the dynamic behaviour above 200 Hz.

** The settling time and maximum compensation level depend on several conditions, such as payload, frequency, load distribution and height of the payload. For that reason this value should be considered as an estimation.

A = 400 mm | 15.7"  
B = 500 mm | 19.7"  
C = 90 mm | 3.5"
Transmission graph of the halcyonics_i4 measured at a velocity of 100 µm/s with a payload of 20 kg (44 lbs).

ACCESSORIES AND OPTIONS

- Steel support frame
- Acoustic enclosure
- USB adapter
- Metric mounting holes in top plate (M6 tapped holes on 25 mm centers)
- Imperial mounting holes in top plate (1/4"-20 tapped holes on 1 inch centers)