

Environmental MEMS Chamber

For Static & Dynamic MEMS Testing

The Environmental MEMS Chamber is the most comprehensive option for MEMS characterization, specifically designed to give full control of environmental conditions while performing stroboscopic interferometric microscopy. Users have the ability to perform electrical and mechanical testing as a function of environmental parameters, such as temperature (-25°C to +65°C), varying gases or vacuum

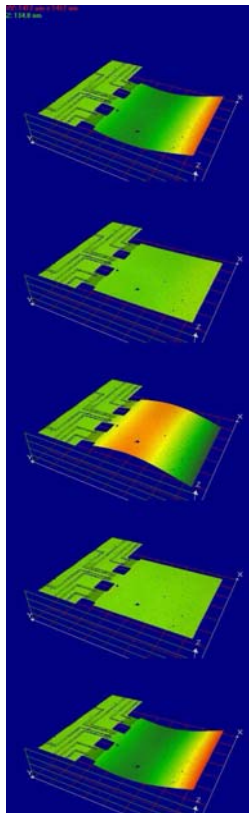


A full range of MEMS studies can be performed in electro-static, piezo or thermal actuation including: Stroboscopic deformation shape measuring tool, real-time mode, selection of vibration studies, amplitude vs. frequency or amplitude vs. time measurements, static and dynamic device deflection (quality, rising/falling time), study mode shapes, resonant frequencies and analyze quality factors. The unique ability to

perform in-plane measurements presents multiple options for analysis including: real-time video of measurement, real-time vector analysis and average displacement over the entire area or defined areas of study. Studies are performed.

down to 10^{-6} millibars. A specific glass-compensated, long-working distance, interferometric 50X objective is used to obtain 3D mode shape measurement across the vacuum box glass plate.

Available on the Zoomsurf 3D and Photomap 3D Instruments, the Environmental MEMS Chamber is an additional option to the Dynamic Characterization Module which allows in-plane and out-of-plane real-time vibration studies from 100Hz to 2MHz.



Out-of-plane MEMS measurement.



ZOOMSURF 3D

PHOTOMAP 3D

**Call us today for a demonstration
1-866-333-4MPI**

Environmental MEMS Chamber SPECIFICATIONS

Sample stage

- Translation stage
- X,Y: +/- 12.5mm, Z :12mm
- Max sample temperature -25°C to +65°C (peltier)
- Max overall temperature: 100°C
- Temperature resolution: 0,1°C
- Accuracy 0,3°C

Connections

- 3 input/output user configure ports diam. 40mm

To be selected in the following list:

- 1 closing plate (no connector), or
- 1 DB 9 Connector
- 2 BNC connectors, or
- 1 hyper-frequency connector

One input/output port will be used for heating and temperatures measurement connections.

Vacuum Box

- Max internal pressure: 1,1 bar
- Min pressure: 1×10^{-8} mbar
- Min pressure under normal operation:
1x10-6 mbar
- Material: Stainless Steel
- Internal diam: 213mm
(219mm external)
- Internal height: 160mm
- Glass diam. 35mm e=1.75mm

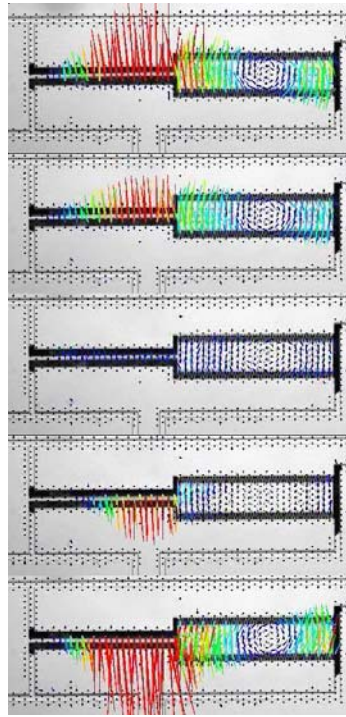
MEMS Software Specifications

Light Source:

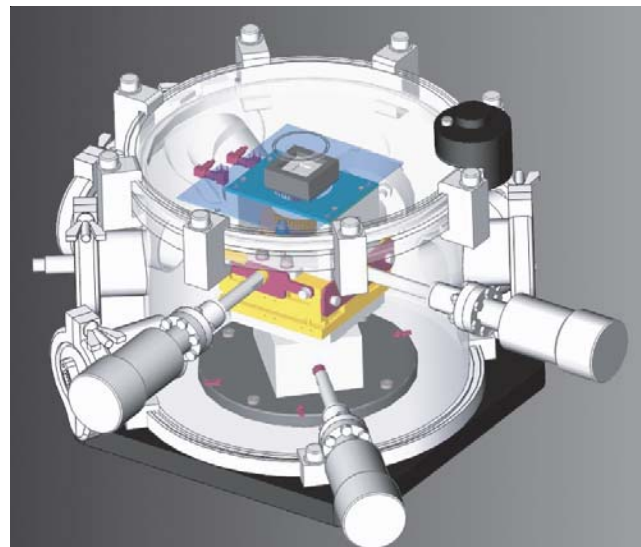
- Software Controlled
- White Light & quasi-monochromatic
- Automatic power adjustment
- Stroboscopic mode: 2% -20% light pulse duty cycle
- Up to 2 MHz bandwidth
- Controlled light pulse phase, auto phase sweep function
- Internal or external synchronization input

Sample Excitation Signal:

- Software Controlled
- Frequency 100Hz to 2MHz, res. 10-6
- Amplitude 10mV to 10V
- Offset 10mV to 10V
- 1% resolution
- Sinusoidal and square signal
- Power 1W, current output maximum 100mA
- High voltage option:
· Amplitude up to 200V, offset up to 200V, 1% resolution, sinusoidal and square signal
- Power 20W, current output max. 100mA



In-plane MEMS measurement



Micro Photonics Inc.
21 Morgan Ste. 100
Irvine, CA 92619
949-461-9292 ph 949-461-9232 fax
1-866-333-4MPI tollfree
e-mail InfoCA@microphotonics.com
www.microphotonics.com