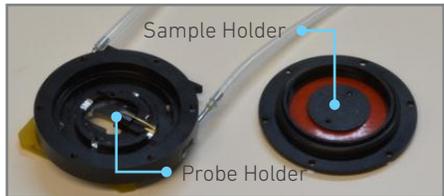


## Environmental Cell

Model# LI - 2011

▶ **A**



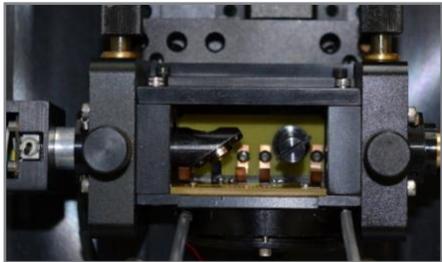
Cell open with probe holder and sample holder facing up.

▶ **B**



Cell closed, sealed and ready to insert into the TT-AFM light lever.

▶ **C**



View of environmental cell after insertion into the light lever. Plastic tubes are used for inlet and outlet ports.

Included with the environmental cell:

- » Cell top
- » Cell bottom
- » Probe holder
- » Scanner adapter
- » Plastic tubing
- » Syringe
- » Tools
- » Precision tweezers

The environmental cell is used for scanning samples in a controlled environment such as a liquid or inert gas. The cell is designed so that the AFM probe and the sample are held in a sealed chamber. Gases or liquids are introduced into the chamber through inlet and outlet ports. In use, the environmental cell replaces the probe holder in the TT-AFM light lever.

The environmental cell for the TT-AFM requires the user to have advanced understanding of AFM operation. Operators attempting to use the environmental cell without considerable practical AFM operational knowledge will have limited success. We recommend at least one full week of time for producing the first images with the environmental cell.

Standard AFM probes are directly held in the environmental cell probe holder. A special tool is provided for extracting the probe holder from the environmental cell. Changing probes requires precision tweezers, also included with the cell.

At the tip of the cell is a glass window that the laser light passes through before and after the light reflects off the cantilever. The body of the cell is made from aluminum with an anodized finish. A seal between the cell top and cell bottom is made with a viton o-ring. At the bottom of the cell, a rubber disk is used to seal the sample holder in place. Silicon sealant is used to hold the window and the rubber disk in place.

The procedure for using the cell is as follows:

- 1) Screw scanner adapter on top of scanner
- 2) Prepare specimen
- 3) Clip specimen on sample holder
- 4) Put probe in probe holder
- 5) Insert probe holder in top of cell
- 6) Close cell, screw top and bottom together
- 7) Insert cell into light lever
- 8) Pump liquid or gas into cell
- 9) Lower light lever until scanner adapter engages bottom ring
- 10) Align laser, photodetector
- 11) Do tip approach
- 12) Scan sample