



Technical Note

Guidelines for Handling AP3 X-Ray Windows

The MOXTEK AP3 window is the highest performing window available for the detection of x-rays. It is composed of a tough, ultrathin membrane supported by a sturdy, micromachined silicon grid. The window is very durable when handled properly but can be easily damaged by improper treatment. The guidelines below should be strictly followed in order to protect the window and maintain the warranty.

Contact

Do NOT touch the window surface with anything, including a cotton swab or soft brush. Physical abrasion can easily damage the membrane or the silicon support grid. It is also important to protect the window as much as possible from dust and other particulate contamination, which under certain circumstances can induce window failure.

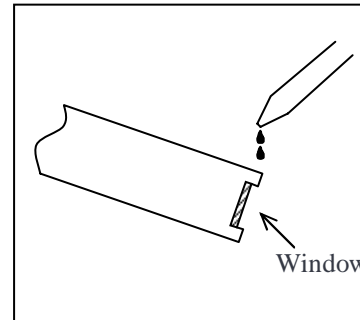
Cleaning

Only clean the window if absolutely necessary. Pressurized spray-can dusters should not be used near the window. Plasma cleaners are not endorsed by MOXTEK.

Do NOT use any cleaning agent that may attack the aluminum overcoat or the epoxy seal (e.g., acids, bases, detergents, or even water). Appropriate cleaning solvents include methanol and isopropanol. Use only very clean solvents that are free of particulates and other contaminants that could damage the window membrane or leave behind unacceptable residues.

To clean the window, orient it so that the solvent can run downward across the FRONT (reflective side) surface of the window and drip off without accumulating on the window. Apply a gentle stream of solvent to the metal flange ABOVE the window, as shown below, and allow it to stream across the surface of the window until the window is clean. **NEVER squirt or spray the solvent directly onto the window surface, and NEVER allow any solvent to get onto the**

backside (grid side) of the window! Allow the window to air dry.



Mounting

The window must be mounted with the FRONT side (the reflective side) facing the high-pressure side of the instrument. Never allow the window to experience more than **2 atm** of differential pressure in the forward direction or **1 atm** in the reverse direction (back pressure).

Temperature

Never subject the window to temperatures higher than **40°C** with a differential pressure or **70°C** without differential pressure.

Shock

Avoid any physical shock to the window, such as bumping or jarring of the detector after the window has been installed.

Venting

When evacuating the detector on which the window is mounted, be sure to pump down slowly to reduce the pressure shock on the window.

When venting a microscope system on which the detector is mounted, you should ALWAYS retract the detector first, and then vent slowly to prevent any flying particles from hitting and damaging the window.

If you have any questions about the proper handling of AP3 windows, please contact MOXTEK.

For more information please contact:

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