



BX-1

The BX-1 X-ray window is Moxtek's premier window and successor to the AP windows series. The BX-1 window is the ideal choice for applications requiring high transmission of low energy X-rays. BX-1 windows are constructed entirely out of low-Z materials and has improved helium permeability performance and temperature tolerance as compared to the AP3 window.

## Specifications

Open Area	77%
Helium Leak Rate	$< 1 \times 10^{-10}$ mbar • L/s *
Max Temperature (1 atm differential)	200° C
Max Temperature (No pressure differential)	200° C
Front Pressure Limit (Atmosphere side)	1.2 atm
Back Pressure Limit (Vacuum Side)	1.0 atm

\* The Helium leak rate is tested by exposing the parts to a minimum of 0.5 SCFH helium sprayed immediately above and around the window on a calibrated helium leak detector for a minimum of 30 seconds.

## Light Rejection and Vacuum Tightness

Window Composition	Proprietary ultrathin film with aluminium light rejection layer
High temperature tolerance	Exceeds NASA criteria

## Applications

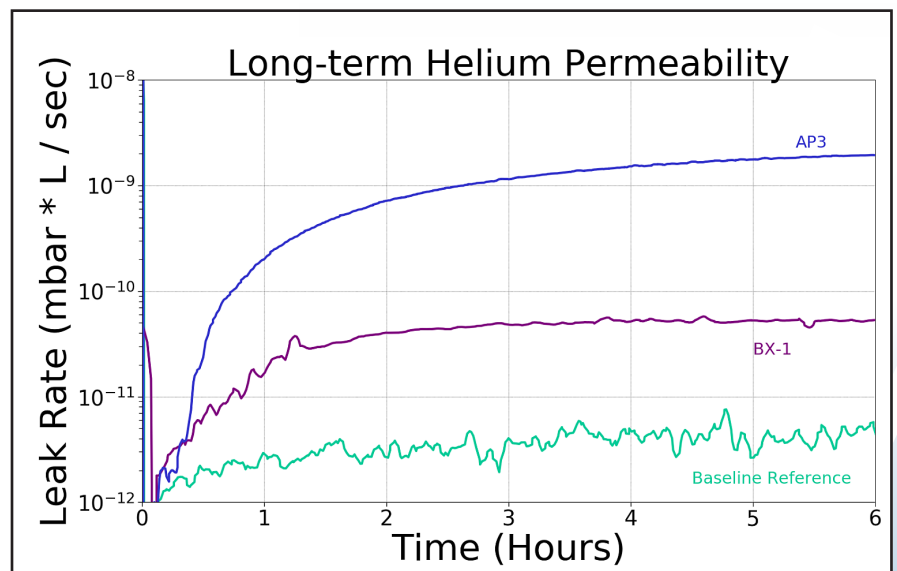
- EDS
- XRF
- XRD

## Features

High Transmission of low energy x-rays
High temperature tolerance
Corrosion resistant
Plasma resistant

## Benefits

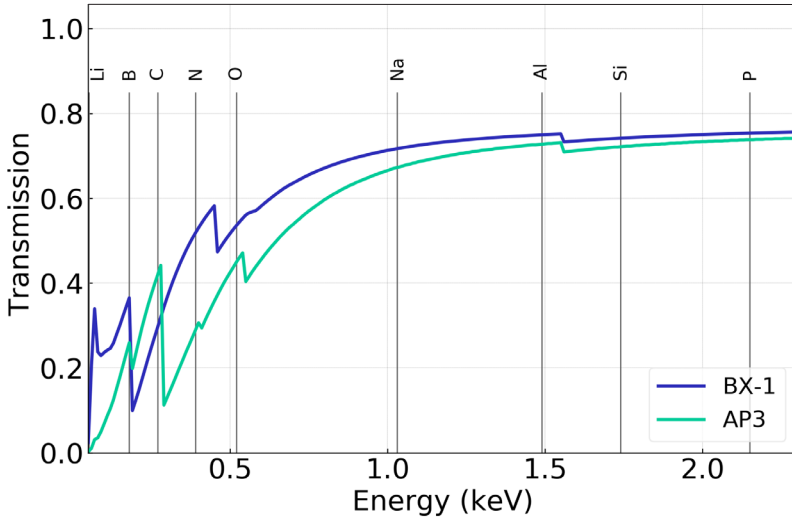
Decreased counting times for light element identification
Lithium identification possible
Improved bakeout opportunity



## Mechanical Strength and Handling

The BX-1 window has been tested and shown to withstand over 3000g of acceleration/deceleration. It has also passed over 10,000 cycles, between 0 and 1.2 atm of differential pressure. As with any light element x-ray window, the BX-1 window has ultra-thin membranes and must be handled carefully to avoid damaging the window.

## BX-1 Transmission Curve and Chart



Atomic Number	Element	BX-1 Transmission(K $\alpha$ ) (% of maximum)
14	Si	74%
13	Al	75%
11	Na	71%
8	O	54%
7	N	53%
6	C	32%
5	B	37%

## Mounting Structure Requirements

Moxtek has qualified Kovar as the required mount material for BX-1 windows.

## Availability

30mm<sup>2</sup> open area windows are currently available for sampling with mount design consultation.



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