

BX-1 Low energy x-ray windows



BX-1

Applications

- EDS
- XRF
- XRD

Features	Benefits
High Transmission of low energy x-rays	Decreased counting times for light element identification
High temperature tolerance	Lithium identification possible
Corrosion resistant	Improved bakeout opportunity
Plasma resistant	

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.

Mounting and structure requirements

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

Availability

30 mm² open area windows are currently available for sampling with mount design consultation.

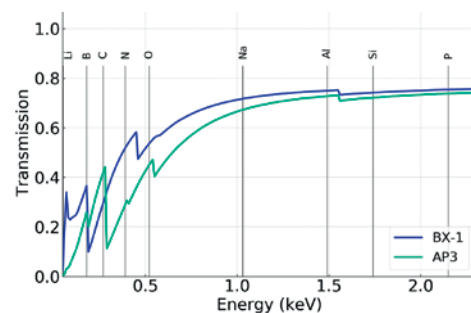
Light rejection and vacuum tightness	
Window Composition	Proprietary ultrathin film with aluminium light rejection layer
High temperature tolerance	Exceeds NASA criteria

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.

Window specifications	
Open area	77%
Helium leak rate	<1x10 ⁻¹⁰ mbar • L/s*
Max. temperature (1 atm Differential)	200 ° C
Max. temperature (zero 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

Elemental X-ray Transmission of AP3 Windows		
Atomic number	Element	B-X1 Transmission (K α) (% of maximum)
14	Si	74%
13	Al	75%
11	Na	71%
8	O	54%
7	N	53%
6	C	32%
5	B	37%



BX-1 transmission curve