

Introduction

Inert and stable beryllium windows is a good choice for X-ray applications. Be window protects the detector from contamination and damage as well as minimizes any interference with the X-ray signal being detected. Insoptics® produces beryllium windows with high level of customization.

Window Dimensions

Different physical dimensions are available please contact sales@insoptics.com to get more information.

Compatibility table of the window size Thickness vs Diameter

Diameter/Thickness	12.5 μm	25 μm	50 μm	125 μm	250 μm
1-5 mm	✓	✓	✓	✓	✓
5-10 mm	✓	✓	✓	✓	✓
10-25 mm		✓	✓	✓	✓
25-50 mm			✓	✓	✓

Properties

High-quality beryllium with a low level of impurities and defects is essentially required for producing clear and accurate X-ray data.

Parameter	Value
Material	Beryllium
wt%	98.2%

Customization

Coatings

Polymer-base coatings can be applied to Be windows of X-ray detectors to enhance their durability and performance.

Housing

The choice of material for detector housing depends on the specific requirements of the application. Vacuum-compatible materials or non-magnetic materials may be used for housing. The following materials are available:

- Stainless Steel
- Stainless Steel + Plating
- Nickel

Bonding

Vacuum tight bonding can be applied for to prevent the absorption and scattering of X-rays by air molecules. The vacuum also prevents contamination of the X-ray detector by air-borne particles, which can interfere with the accuracy and sensitivity of the measurements.

Parameter	Value
Max. Temperature (Vac.)	165 °C
Max. Temperature (Atm.)	165 °C
Differential Pressure	1 bar
Max. Pressure (Front)	2 bar
Max. Pressure (Back)	1 bar
Helium Leak Rate	$<1 \times 10^{-10}$ mbar×L/s