

Materion Electrofusion Flange Mounted Window Assemblies

Looking for a reliable and trusted source of UHV grade beryllium windows? Look no further—Materion Electrofusion, the premier source of flange mounted diffusion bonded beryllium windows for 35 years, offers standard and custom beryllium x-ray window solutions to satisfy the most demanding industrial and scientific research applications.

Why choose windows produced using diffusion bonding over brazing technology? The answer is simple—the high temperature required for liquidus brazing, used by other beryllium window manufacturers, introduces structurally weakening grain growth in the beryllium window material. Materion Electrofusion’s diffusion bonding is performed at temperatures well below the melting point of braze alloys, thus attaining high temperature performance without compromising beryllium strength. Strict control of bonding temperature and pressure also controls braze alloy flow—effectively eliminating high-absorption alloy contamination of the window’s effective aperture.

Whether you’re looking for standard or custom window solutions we guarantee fast deliveries. Fast turnaround is possible because of our extensive flange and beryllium foil inventory. To order a window, simply choose your required beryllium grade and thickness. The “Standard UHV Window Assemblies” table (at right) lists the flange sizes available with corresponding apertures and minimum foil thicknesses required to support a differential pressure of one atmosphere. Beryllium foil is available in IF-1®, PF-60® and PS-200® grades. If your application allows, selecting thicker window material will reduce cost and increase pressure differential ratings. In addition to our standard sizes, custom size windows with round, square and other uniquely shaped apertures are routinely built to customer specifications.

Standard beryllium windows are typically delivered four (4) weeks after receipt of an order (ARO). All products produced and sold by Materion Electrofusion carry an industry-leading lifetime warranty covering any defects in material and workmanship. Normal wear and tear or corrosion from operational use is excluded from this warranty.

Materion Electrofusion diffusion bonded UHV beryllium windows can sustain bakeout temperatures to 450°C and are guaranteed leak tight to a helium mass spectrometer leak-rate of 1×10^{-9} atm-cc/sec.

Cutaway of Standard UHV Be Window Assembly



Part No.	Flange Dia. Inch / mm	Aperture Dia. Inch / mm	Foil Thickness (Minimum) Inch / mm
DB133053	1.33 / 34	0.53 / 13	0.002 / 0.05
DB275153	2.75 / 70	1.53 / 39	0.005 / 0.13
DB338200	3.38 / 86	2.00 / 51	0.007 / 0.18
DB450277	4.50 / 114	2.77 / 70	0.010 / 0.25
DB600427	6.00 / 152	4.27 / 108	0.015 / 0.38
DB800560	8.00 / 203	5.60 / 142	0.020 / 0.50

To order—specify part number, foil grade and foil thickness (foil thickness is minimum allowed for aperture).

Health & Safety Note:

Handling solid beryllium material poses no significant health risks. However, as with many other industrial materials—materials containing beryllium may pose a health risk, if and when recommended safe handling practices are not followed and adhered to. Inhalation of airborne beryllium may cause a serious lung disorder in susceptible individuals. The Occupational Safety and Health Administration (OSHA) have set mandatory limits on occupational respiratory exposures. Read and follow the guidance set forth in the Material Safety Data Sheet (MSDS) before working with beryllium. For additional information on safe handling practices or technical data on beryllium, contact Materion Electrofusion.