



MATERION

PRODUCT BRIEF

MATERION BERYLLIUM BEAM PIPES

Materion Products, the leading supplier to linear accelerator and collider research centers since 1966—specializes in the design, fabrication, and testing of high performance beryllium beam pipe assemblies for applications demanding extreme vacuum integrity and repeated high temperature bakeouts.

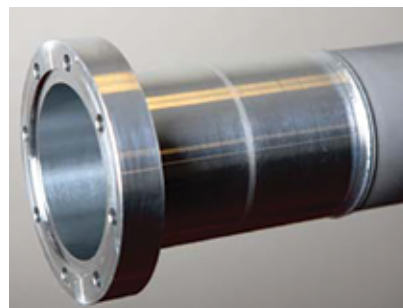
Our beam pipes features and benefits:

- Excellent X-Ray and Atomic Particle Transmissivity
- Simple Assembly / Disassembly
- Excellent Longitudinal & Transverse Stability
- Tight Tolerances on Roundness and Straightness
- Certified Vacuum Integrity
- Prototype Proven Solutions
- Bakeable to 300°C
- Actively Cooled Assemblies
- CAD/CAM—Manufacturable, Cost-Effective Solutions

Our beryllium beam pipes are routinely manufactured in lengths from 1 inch to over 26 feet (25mm – 8m) with outside diameters from 0.5 – 24 inches (12.5 – 600mm) and wall thicknesses ranging from 0.010 – 0.100 inches (0.25 – 2.5mm).



Beam pipes can be made from beryllium sheets that are hot-formed and seamed with a longitudinal splice or from sections of machined seamless Be tube, welded circumferentially to make longer pipes. Finished pipes can be tested with differential pressures while subjected to long term vacuum bakeouts. As for extremely specialized applications, we've designed beryllium beam pipes to withstand differential pressure as high as nine atmospheres. If required, our pipes can also be tested in compression or tensile loading conditions. Standard or customized pipe extensions and fittings made of aluminum, titanium or stainless steel can be epoxy-bonded, welded or brazed to the beryllium pipe. As a means of increasing electrical conductivity, the pipe inside diameter can also be lined with high-conductivity materials such as gold, nickel, silver and copper.



Materion beryllium beam pipes can sustain bakeout temperatures to 300°C and are guaranteed leak tight to a helium mass spectrometer sensitivity of 1×10^{-9} atm-cc/sec. Special testing at higher sensitivities is available on request and for an additional fee.

For more information on our beryllium products, visit our website.

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.

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44036 South Grimmer Boulevard Fremont, CA 94538-6346 +1 510.623.1500 electrofusion@materion.com www.materion.com/electrofusion

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