Slit Element Design

Element Options for the BDS8 Slit Assembly

Conservatively rated at 50W of continuous beam power, without requiring air or water cooling, these slit elements can safely radiate the heat generated by a directly incident 3mm diameter or larger ion beam. The standard slit elements for the BDS8 are available in three configurations.

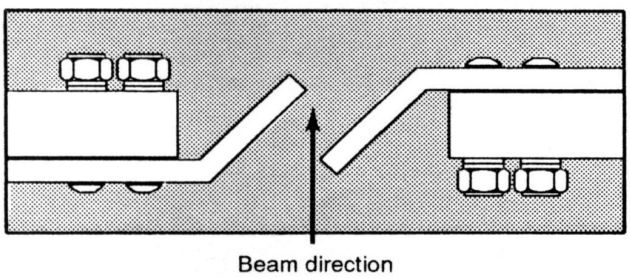
The beveled and square configurations place opposing elements in edge to edge orientation. This edge to edge relationship is important whenever current will be read from the slit elements so that current distortions from secondary ions and electrons are minimized and balanced. This is important for beam energy control.

NEC can design custom elements for special applications, with extra thickness and/or a modified edge. A higher power element rated at 100W is also available for the BDS8.

Furrowed Element (100W)

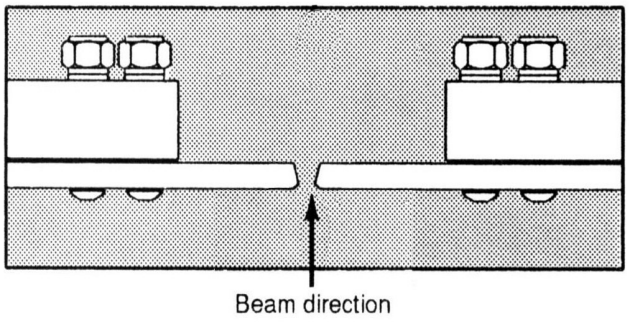
The furrowed element has furrows along the length of the element to increase the surface area of the element. This allows the element to radiate the heat generated by a directly incident 3mm diameter or larger ion beam up to 100W.

Folded Element



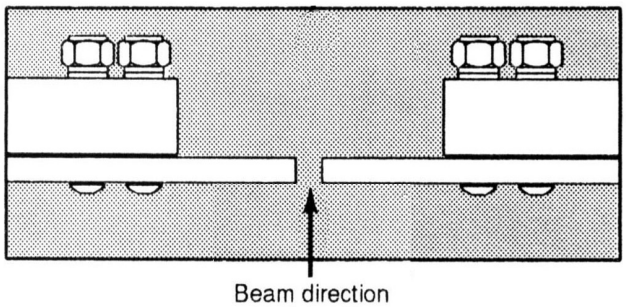
*The **folded element** is best suited for applications requiring complete closure. The angle elements can be overlapped or adjusted for an off-center aperture. The angled element also presents a larger area to the beam and can safely radiate more beam energy than "flat" configurations. Option 0.*

Beveled Edge Element (Standard)



*The **beveled edge element** is best suited to applications that require a well defined and clean beam, such as channeling. The bevel is designed to minimize slit edge scattering of the ion beam which makes this element configuration the best for beam energy control. Option 1.*

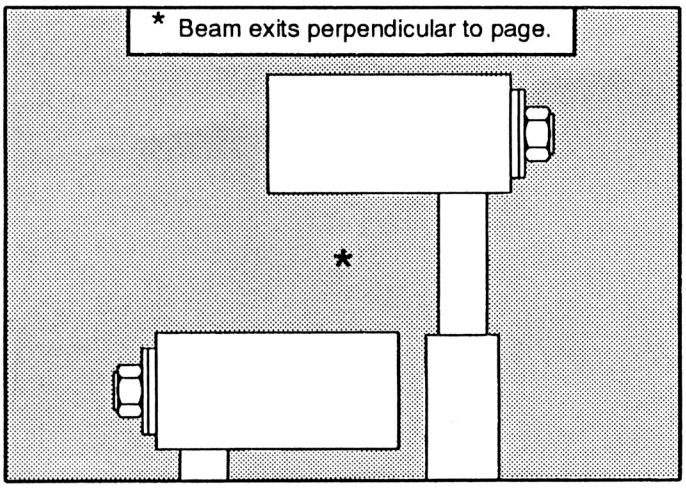
Square Edge Element



*The **square edge element** is most resistant to sputter erosion. Option 2.*

Slit Element Design

Element Design for the BDS6



The elements of the **BDS6** assemblies are cylindrical in cross section to provide maximum cooling for this high powered unit. A water cooled copper block is in direct contact with the molybdenum element material. The cylindrical surface maximizes beam contact area at the tangent point where the beam is defined allowing the element to dissipate a kW of power from a 3mm diameter beam on each element.

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