STEERING COMPONENTS
National Electrostatics Corp.

Electrostatic Ion Beam Steerer

APPLICATIONS

The NEC electrostatic ion beam steerer is ideal for applications which require deflection of ion beams independent of mass. The ion beam steerer has proven reliable after years of use in accelerator laboratories throughout the world. NEC has routinely supplied this ion beam steerer on our injection beamlines for both large and small tandem Pelletron® accelerator systems.

DESIGN

The NEC ion beam steerer is of all-metal and ceramic construction and ultra-high vacuum compatible. It is fully bakeable with no organic compounds in the vacuum volume. The steerer consists of two perpendicular pairs of electrostatic plates. The standard NEC beam steerer is designed for ±5kV.

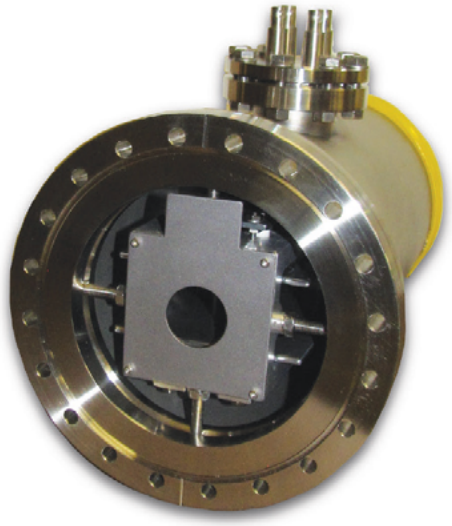
Each pair of plates has a separation of 3.8cm. These plates are attached to an inner support structure which allows removal of all four plates without affecting the position of any one plate relative to the other three. This design also makes it easy to house the NEC beam steerer in custom vacuum chambers. Using the voltages stated above, the deflection capability of the NEC beam steerer for a 1MeV proton beam after a 100cm drift is ±1.64cm. This is an angular deflection of 16.4 milliradians.

OPTIONS

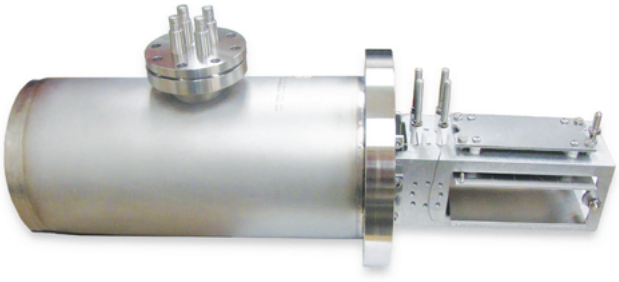
Various versions of the electrostatic steerer are available. Steerers designed for ±10kV and other customer requested voltage ratings are available. Contact NEC for further information.

ACCESSORIES

NEC also provides the necessary power supplies for standard beam deflection or raster scanning. Also, a wide variety of input controls are available for remote interfacing.



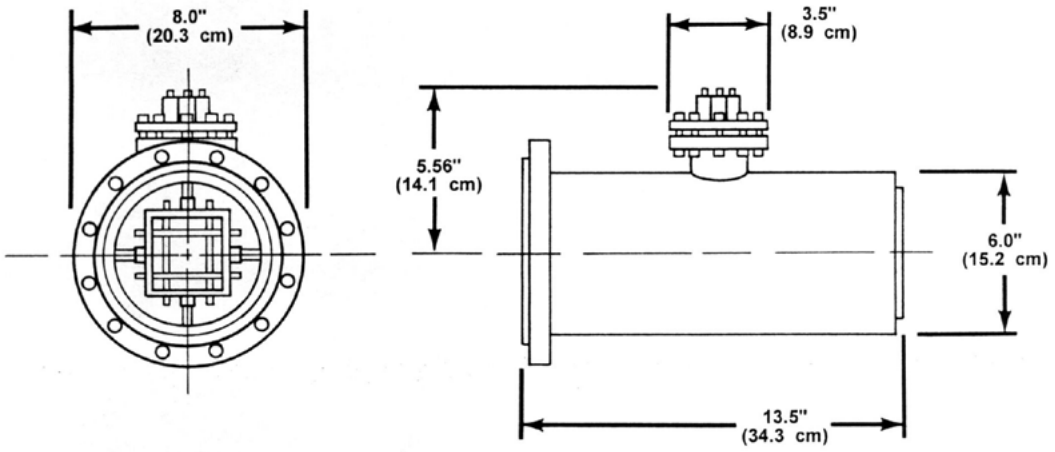
Electrostatic X-Y ion beam steerer with NEC flanges. Entrance aperture visible.



Inner assembly exposed. All plates assembled as one unit.

SPECIFICATIONS

Overall Length:	13.5” (34.29cm) gasket surface to gasket surface
Flanges:	8.0” O.D. and blind tapped 6.0” O.D flanges. CF or NEC flanges standard.
Length of Deflection Plate:	5.0” (12.7cm)
Separation of X Pair from Y Pair:	1.81” (4.6cm)
Plate Separation:	1.500 ± .003” (3.81cm)
Entrance Aperture:	1.25” (3.2cm) titanium (tantalum optional)
Deflection Capability for 1 MeV Protons per 100cm Drift:	± 1.64cm (16.4 milliradian)
Plate Voltage Rating:	± 5kV
Voltage Supply and Control:	Chosen to optimally meet customer’s application.
Feedthroughs:	MHV-qty. 4, labeled on outside for proper power supply connection.



Contact NEC

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