



BEAM HANDLING COMPONENTS

National Electrostatics Corp.

Electrostatic Neutral Beam Trap Deflector

APPLICATIONS

The electrostatic neutral beam trap deflector was originally designed for use with the NEC production MeV ion implantation system to prevent neutrals from reaching the target area. The deflector provides a 3° bend for a maximum ion beam energy of 2MeV for singly charged ions.

DESIGN

This electrostatic deflector is designed for $\pm 25\text{kV}$ potential for a potential difference between deflection plates of 50kV. The plates are tilted with a minimum beam clearance of 2.0" at the beam entrance and 2.75" at the beam exit. This allows the passage of a scanned beam without loss of particle transmission. The overall plate length is 12.0".

The assembly consists of two vertical plates to induce a 3° bend in the horizontal plane. The design criterion is for 2MeV singly charged ions.

As with most NEC components, there are no organic compounds in the vacuum volume and it is ultra-high vacuum compatible. The stainless steel housing is equipped with 10.0" O.D. blind tapped flanges on each end. The flanges are set at 1.5° with respect to the housing axis. The overall length of this assembly is 15.5" on center.

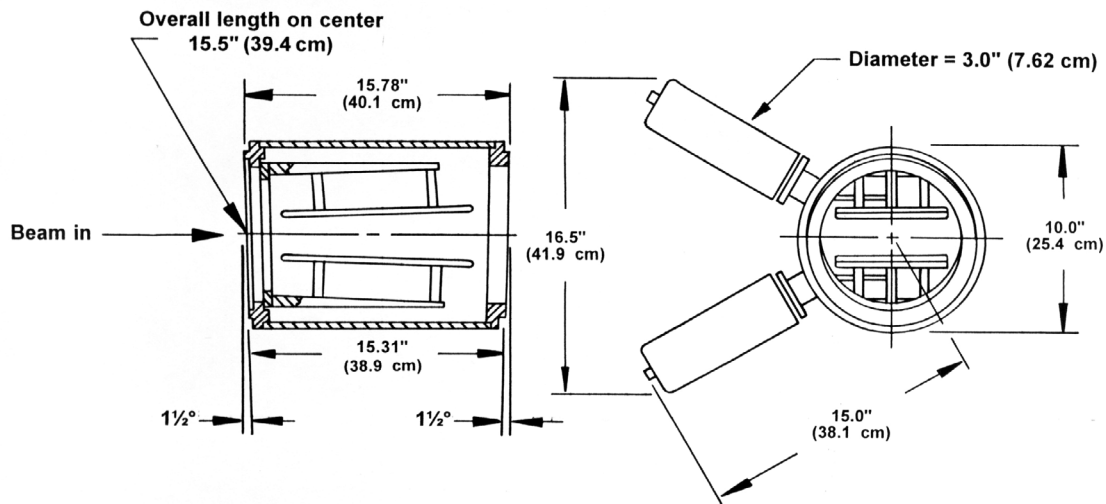


Electrostatic neutral beam trap deflector with 10.0" O.D. blind tapped CF flanges on each end.

The power supply unit and controller for this deflector are also available from NEC. The power supply unit consists of two DC power supplies, -25kV and +25kV with a 3mA output. The power supplies are regulated to 0.005% from 10% to full load. The controller is supplied with a voltage control knob and a voltage readout meter. A safety interlock to a customer supplied contact closure is also included.

SPECIFICATIONS

Overall Length:	15.5" (39.4cm) on center
Flanges:	10.0" (25.4cm) O.D. blind tapped flanges Flanges are set at $\pm 1.5^\circ$ ref. to housing axis NEC or CF flanges standard
Length of Deflection Plates:	12.0" (30.48cm)
Deflection Angle:	3° for 2 MeV singly charged ions
Plate Separation:	2.0" (5.08cm) at beam entrance 2.75" (6.98cm) at beam exit
Plate Voltage Rating:	± 25 kV
Feedthroughs:	30kV DC rating-quantity 2
Recommended Voltage Supply and Control:	-25kV and +25kV, 3mA regulated to 0.005% from 10% to full load



ORDERING INFORMATION

Catalog No.: 2EA021180 (10.0" O.D. NEC flanges)

2EA021200 (10.0" O.D. CF Flanges)

Contact NEC

www.pelletron.com

+1 (608) 831-7600

nec@pelletron.com

7540 Graber Rd, Middleton, WI 53562-0310 USA