

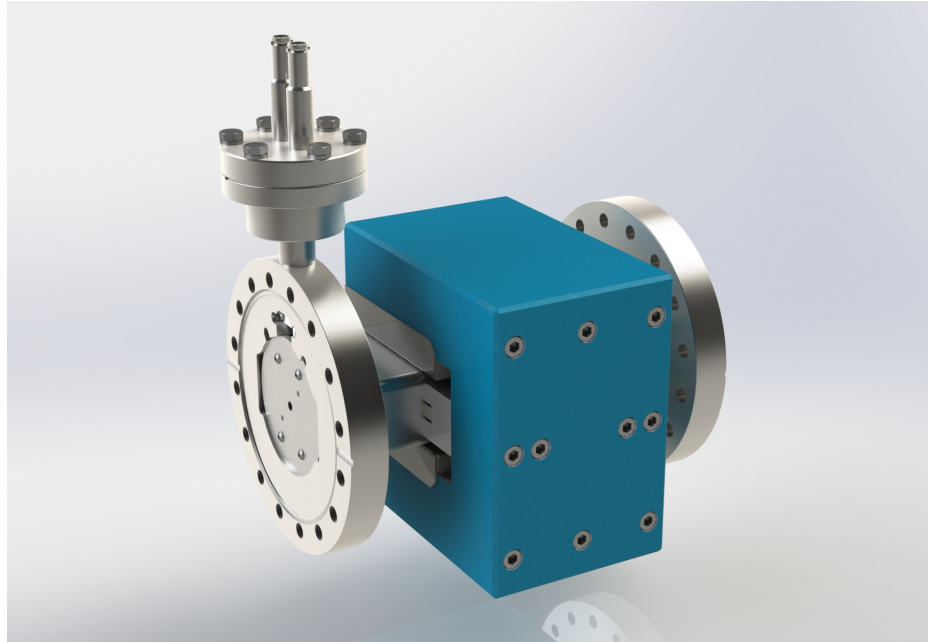
WIEN FILTER

933-S7-09-00004-B-01

Generally, Wien filters are used for separating charged particle beams by velocity using orthogonally superimposed magnetic and electric fields.

The Wien filter features different entry and exit apertures for defining mass and charge state resolution and for collimating the beam.

It can be used for beam power loads of up to 30 W in broad pressure ranges, down to ultrahigh vacuum conditions.



Exemplary view of the Wien filter.

Further reading and related products:

M. Schmidt, H. Peng, G. Zschornack, and S. Sykora, „A compact electron beam ion source with integrated wien filter providing mass and charge state separated beams of highly charged ions“, *Review of Scientific Instruments*, vol. 80, no. 6, p. 063301, 2009

Special Features:

- design suitable for operation with hydrogen and helium ions in the energy range 5...30 keV
- 15 mm diameter entry and exit apertures
- beam-stressed parts (e.g. electrodes, collimator, apertures) are made of sputter resistant materials
- electrodes, magnetic yoke and magnetic flux are optimized to fit customer needs regarding beam energy and beam diameter
- SHV 5 kV electrical feedthrough on single DN40 CF flange

Optional Supplementing Devices:

- additional entry apertures (1 mm to 15 mm)
(electrode spacing can be varied accordingly)
- additional exit apertures (1 mm to 15 mm)
- high voltage power supply for electrodes, high voltage cable

Please do not hesitate to contact us for additional support.

Address

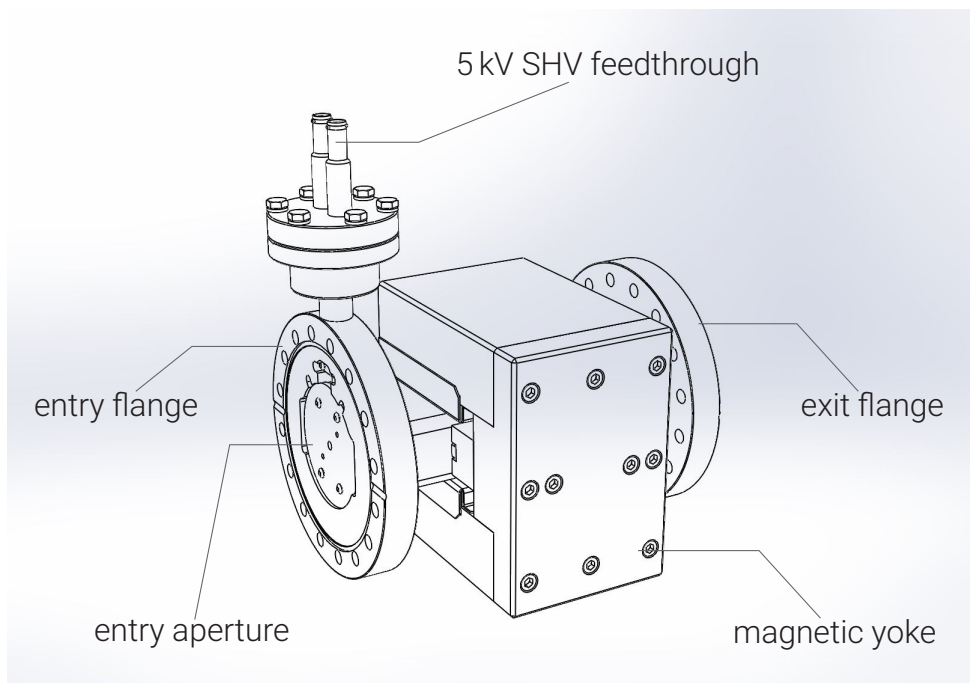
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Sketch of the Wien filter, its components and interfaces, please refer to the manual for more details.

TECHNICAL DATA	
maximum beam power	30 W with passive cooling
applicable beam current	up to 1 mA at 30 keV
entry and exit mounting flange	DN100 CF
electrical connections	SHV 5 kV on DN40 CF flange
peak magnetic field along beam axis	≈250 mT
effective filter length	110 mm
electrode distance	16 mm
collimator diameter	15 mm
aperture diameter	4 mm
maximum voltage per electrode	±5000 V
maximum bakeout temperature	120 °C
weight	25 kg
box size (length x width x height)	250 mm x 180 mm x 260 mm