

# Transition Lens CF100, 20kV Insulation

921-S7-09-00024-A-01

Electrostatic lenses are ion-optical elements used to guide and focus charged particle beams.

One of the most prominent representative is an Einzel lens which consists of three cylindrical electrodes. Focusing of the beam is achieved by applying a high voltage to the central electrode. In contrast to a classical Einzel lens, where the first and the third electrode are on same potential, at a transition lense the potentials of the first and third electrode can be different. Hence transition lenses can be use to guide the charged particles over a potential step in the beam guiding system. The first element will be on beamline potential of the entrance beamline section and the third element will be on the potential of the exit beamline section. Charged particles passing the transition lens will change their kinetic energy by the amount of the potental step between the beamline section. The transition lens can be used in deceleration or acceleration stages.

Transition lenses can be used in broad pressure ranges, down to ultra-high vacuum conditions.



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### Special Features:

- asymmetrical design of entry and exit electrodes
- stainless steel housing
- DN100 CF beamline interface flanges
- 20 kV high voltage vacuum insulator DN100 CF
- 1st electrode grounded on entrance beamline section
- 3rd electrode grounded on exit beamline section
- DN16 CF 20 kV SHV feedthrough connected to electrode
- 40 mm electrode inner diameter
- Overall length 249 mm
- Flange to flange 198 mm

### Optional Supplementing Devices:

- power supply for the lens voltage
- high voltage cable with 20 kV SHV connector
- stainless steel beamline tube DN100 CF providing flush exit connection flange

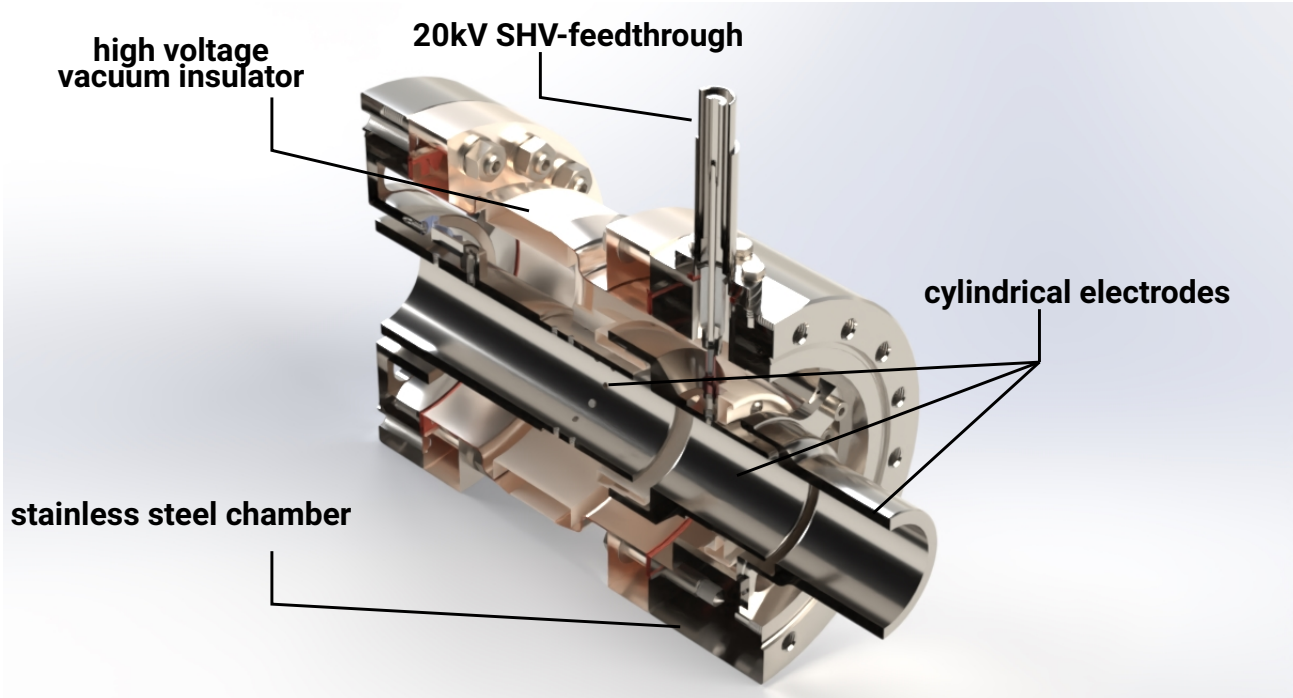
Please do not hesitate to contact us for additional support.

#### further reading:

- <https://dis-germany.com/product-categories/charged-particle-beam-optics/>

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Cross section of the Transition Lens CF100, 20kV Insulation

### TECHNICAL DATA

maximum applicable lens voltage	±20 kV
pressure operating range	down to $1 \times 10^{-10}$ mbar
beamline interface flange	2 x DN100 CF
high voltage feedthrough	DN16 CF
connectors	20 kV SHV connector
potential difference between 1st and 3rd electrode	20 kV
maximum beam width	40 mm
maximum bakeout temperature	120 °C
flange to flange distance	198 mm
length of lens system	240 mm to 248 mm; in 2 mm steps
approx. box size (length x width x height)	155 mm x 255 mm x 225 mm

document no. 921-S7-08-00004- B-01