

FARADAY CUP, CF63, motor-retractable, water cooled

931-S7-09-00015-B-01

Faraday cups are used for measuring electrical currents of charged particle beams in real time in broad pressure ranges, down to ultra-high vacuum conditions.

The Faraday cup is equipped with an exchangeable aperture, a suppressor electrode for compensation of secondary electron emission, and a measurement electrode.

It can be used for currents of fA up to mA at beam power loads of several Watts delivered depending on the chosen cooling solution.



Faraday cup with fixed perpendicular mounting and water cooling.

further reading:

- <https://www.dis-eng.de/products/charged-particle-beam-diagnostics/faraday-cups/>

Special Features:

- linear feedthrough
- CF63 base flange
- aperture with a diameter of 25 mm
- designed for beam scanning application of ion beams
- also applicable for an electron beam energy of up to 8 MeV
- water cooling for thermal power loads up to 200 W ($10 \frac{W}{cm^2}$)
- retractable/positionable via linear feedthrough (motorized) with 250 mm stroke

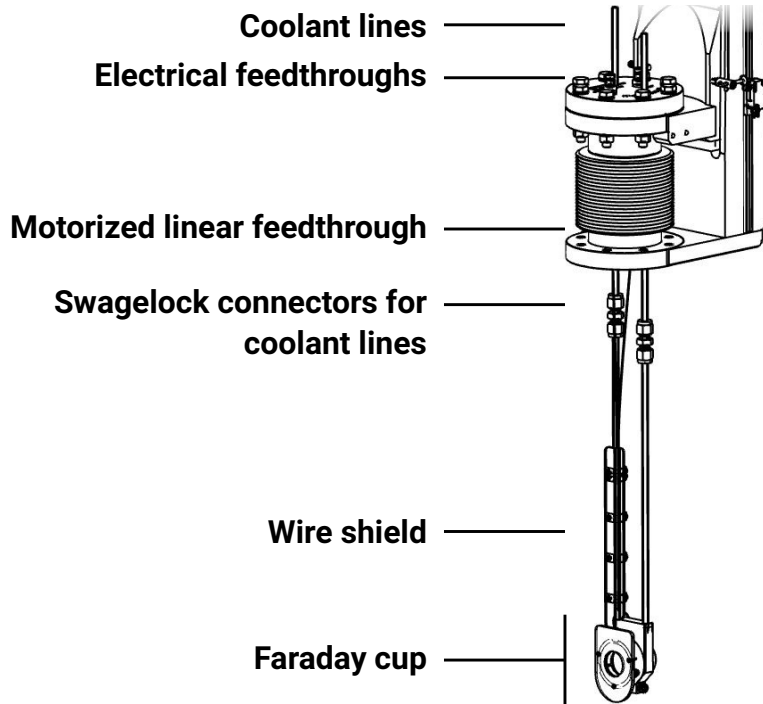
Optional Supplementing Devices:

- power supply for the suppressor voltage
- current measurement device for beam currents of fA up to mA
- control device for motorized cup positioning
- additional apertures

Please do not hesitate to contact us for additional support.

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Sketch of the Faraday cup with labeled components.

TECHNICAL DATA

| | |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| mounting flange | DN63 CF |
| mounting style | perpendicular, retractable |
| thermal power load | up to 200 W ($10 \frac{W}{cm^2}$) |
| current measurement range | fA up to mA |
| aperture dimensions | 25 mm |
| electrical connectors | BNC connectors |
| coolant interface | stainless steel tube (OD x WT) 6 x 1 mm |
| vacuum pressure operating range | down to 1×10^{-10} mbar |
| maximum bakeout temperature | 150 °C |
| approx. box size (length x width x height) | 143 mm x 255 mm x 720 mm |
| Use case | power load in Faraday cup system: 200 W ($10 \frac{W}{cm^2}$) coolant inlet pressure: 4 bar coolant outlet pressure: 0 bar coolant temperature: 15 °C resulting Faraday cup temperature: ~200 °C |

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