

FARADAY CUP

- HIGH-SENSITIVITY FARADAY CUP FOR LOW CURRENT MEASUREMENTS-



The Faraday Cup is a device for measuring charged particle beam currents and charges in real-time. The measurement electrode is electrically insulated inside the cup housing and has to be connected to an electrical vacuum feedthrough by a Kapton insulated wire. The cup housing itself can also be mounted onto an electrically insulating holder in case the current on the housing is supposed to be recorded. Furthermore, the cup setup includes a suppressor electrode to compensate secondary electron emission from the cup surfaces.

In addition to the Faraday Cup itself, the following equipment is available:

- linear vacuum feedthrough with manual or motor-driven positioning system
- · vacuum chamber
- electrical feedthroughs and connection of cup inside a vacuum chamber
- picoampere meter or electrometer for measurement of charged particle current or pulses
- · control and measurement software

Faraday Cup Parameters	
aperture diameter	$1~\mathrm{mm},2~\mathrm{mm},5~\mathrm{mm}$, or customer-specific
recommended suppressor voltage	$50\mathrm{V}$
max. beam power without additional cooling	$20\mathrm{mW}$
dimensions (length x width x height)	$34\mathrm{mm} \ge 34\mathrm{mm} \ge 55\mathrm{mm}$
bake-out temperature	$150^{\circ}\mathrm{C}$
vacuum conditions during operation	from $1 \cdot 10^{-10}$ mbar up to atmospheric pressure

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