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Compact differential pumping system for windowless in-air sample environments beamline

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In this contribution we present a compact differential pumping chamber with apertures $\geq 500 \mu\text{m}$. It allows windowless operation for in-air sample environments as well as to connect low-quality in-vacuum sample environments to the beamline UHV vacuum section. To simplify the design, it was decided not to integrate a positioning system and to rely on machining tolerances. In the end, the assembly consists of just 7 parts: 1 main aluminium body, 3 threaded cylinders with apertures and 3 covers with link to pumping units to be assembled with viton seals. The overall footprint is restricted to 368mm on the beam axis.

Footnotes

Funding Agency

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