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## **Pumping station for UCV and UHV Components in the European XFEL cleanroom**

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The European XFEL (X-ray Free-Electron Laser) is a research facility that generates ultra-short X-ray flashes for scientific experiments across various fields. Operating at MHz repetition rates, it produces coherent femtosecond X-ray pulses with unprecedented brilliance in the energy range of 250 eV to 25 keV. The facility consists of a linear accelerator and three photon beamlines in underground tunnels. To protect the sensitive optical components, such as mirrors that guide the X-ray beam to the experimental stations, strict contamination control within the photon beamlines is essential. A cleanroom is therefore required to handle critical components, ensuring that all equipment near the mirrors remains particle-free. Many of these components must meet ultra-clean vacuum (UCV) and ultra-high vacuum (UHV) standards to prevent contamination. This poster presents a newly designed pumping station for cleanroom applications. It enables standard vacuum tests, including leak testing and residual gas analysis (RGA), while minimizing contamination risks. To maintain cleanroom integrity, the pumping station is housed in a separate technical room and features remote operation capabilities.

### **Footnotes**

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