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DC and pulsed electron beam test facility at CERN

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An electron beam test stand was designed and constructed at CERN, under the umbrella of the Hi-Lumi project, to test components for the Hollow Electron Lens (HEL), and in collaboration with the ARIES project for testing the Space Charge Compensation gun. The test facility features normal conductive magnets providing solenoid fields of the order of fractions of Tesla, beam diagnostics including screens (YAG, Cromox and OTR) for the full electron beam characterisation, a Faraday Cup collector to measure the total electron current, and a high voltage power supply up to 40 kV (with the possibility of biasing both gun and collector). It offers the possibility of testing high current and high perveance guns, different beam instrumentation (Beam Position Monitors and Beam Gas Curtain monitors are some examples), electron collectors, and beam pulse modulators. In this paper the facility is described and the first results validating the design of the HEL gun are presented.

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Footnotes

I have read and accept the Privacy Policy Statement

Yes

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