

Abstract Submitted
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The OLYMPUS Target System BRIAN HENDERSON, MIT, OLYMPUS COLLABORATION — The OLYMPUS experiment, ongoing at the DORIS ring at DESY in Hamburg, Germany, seeks to definitively determine the two-photon contribution to lepton-proton scattering through the measurement of the ratio of the cross-sections of electron and positron elastic scattering from a fixed hydrogen target. The experiment utilizes an unpolarized internal hydrogen gas target with an approximate thickness of $3 \cdot 10^{15}$ atoms \cdot cm $^{-2}$. The target chamber consists of a thin walled (100 μ m) aluminum storage cell within an aluminum chamber which is tapered to allow the detection of events at low scattering angles ($\sim 12^\circ$) for the purpose of luminosity monitoring. The gas feed and vacuum systems are designed so as to provide a roughly triangular target density distribution along the beamline with a flow rate into the target of $1.5 \cdot 10^{17}$ H $_2$ s $^{-1}$. Additionally, the system incorporates a tungsten collimator, wakefield suppressing elements, as well as adjustable beam scrapers for the protection of the target. The design and implementation of the target system and its performance during recent runs will be presented.

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