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Quality Assurance on Un-Doped CsI Crystals for the Mu2e Experiment

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The Mu2e experiment is constructing a calorimeter consisting of 1,348 un-doped CsI crystals in two disks. Each crystal has a dimension of 34x34x200 mm³, and is readout by a large area SiPM array. A series of technical specifications on mechanical and optical parameters was defined according to the calorimeter physics requirements. Pre-production CsI crystals were procured from three firms: Amcrys, St. Gobain and SICCAS. We report the quality assurance on crystal's scintillation properties and their radiation hardness against ionization dose and neutrons. The results confirm that the quality of mass produced un-doped CsI crystals in the market satisfies the Mu2e requirements.

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