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The CMS Pixel Detector

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The Compact Muon Solenoid Experiment (CMS) will start taking data at the Large Hadron Collider (LHC) in 2007 with the largest silicon tracking detector ever built. As a key component of this tracker, the collaboration is building a silicon pixel detector consisting of two forward/backward disks on each side of the interaction region and three barrel layers. The pixel detector will be crucial to pattern recognition and track reconstruction in the hadronic collisions of CMS and will play a key role in the physics program of the LHC. During the 2007 pilot physics run of the LHC, CMS will run with a subset of the final detector to be installed in 2008. The construction, testing and qualification of the pixel detector is an important aspect of the project and will be described in a separate contribution. In this report, the final design and results from test beam runs and expected performance of the detector are given. The expected radiation tolerance and projected lifetime of the pixel detector will be discussed as well its impact on the physics program of CMS.

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