

A new radiation effects facility beam line

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A new Radiation Effects Facility beam line has been developed for the K150 Cyclotron. The anticipated primary use for the beam line will be for space electronics and materials testing with proton beams, although heavy ion beams will also be available. While the beam line has initially been installed in the K150 vault (see Fig. 1), it has been designed such that it can be relocated to other experimental areas within the building as needed. The new beam line has all of the features of the existing K500 Radiation Effects beam line with the exceptions of a vacuum chamber and a beam energy degrader system. Unique to the new beam line is an actuated aluminum shield to protect the scintillator detectors during high intensity proton exposures. As much as possible, hardware and electronics have been duplicated with equipment currently used with the existing K500 Radiation Effects Facility beam line. Beam uniformity of >90% has been achieved using 12 MeV/u ^{16}O . A first external customer has been scheduled to test on the new beam line in June 2015 using 40 MeV protons.



FIG. 1. New Radiation Effects Facility beam line developed for use with the K150 Cyclotron.