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# High Counting Rate Transition Radiation Detector

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A new Transition Radiation Detector (TRD) prototype with a high granularity for a high counting rate environment, required by the CBM experiment, at the future experimental facility FAIR - GSI Darmstadt, was designed and built. A solution for such a detector is a multiwire proportional chamber with a minimized drift region, reduced to a cathode - readout pad plane distance of 6 mm and a multiwire anode plane in the middle. Results of the 55Fe source tests and of the in-beam investigations of the rate capability in terms of signal deterioration and position resolution degradation with the increase of the counting rate, for different gas mixtures, applied voltages and anode configurations are presented. Based on the measured deposited energy spectra, the discrimination between electrons and pions as a function of number of layers was estimated by Monte Carlo simulations.

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