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Depletion voltage measurements of the iThemba LABS segmented clover detector.

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Abstract content
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The measured depletion voltages of the four crystals of the iThemba LAB segmented clover detector was compared to the manufacturer specifications. We measured the depletion voltage by measuring the peak centroids and peak areas as a function of applied voltage. We had used three sources namely 137Cs, 60Co and 241Am. A reduced chi squared analysis was then used to infer depletion voltages. It was found that the depletion voltage was higher than the manufacturer specifications for all four crystals. The depletion voltages depend on the amount of the impurities in each crystal, which are very important for simulating correctly the gamma-ray interaction points inside the detector.

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