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Title

Tools or Toys? Evaluating Five Inexpensive Consumer Geiger Counters

Abstract

An increase in public interest in radiation and radioactivity, combined with the ease of purchase from vendors who sell directly to consumers from overseas manufacturers has led to a growth in demand for inexpensive radiation detectors. These low-cost Geiger counters are often available for less than $100 CAD, and while there is some information about their quality on various discussion forums there is little to no published work that performs a comprehensive analysis of how accurate the dose rate readings from these devices are. This work will present measurements using a CNSC-approved detector calibration setup to evaluate the dose rate accuracy of five Geiger counters purchased as a result of searching for "Geiger counter" at shopping site Amazon.ca, along with notes on the overall user experience of each detector and comparisons to typical professional grade Geiger-mode detectors. The results of this study can help determine whether readings from enthusiasts who have purchased these inexpensive devices should be taken as accurate or not and provide insight into whether these devices are suitable for Radiation Protection Professionals.