Abstract Submitted
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Assembling, Characterizing, and Measuring the Efficiency of VANDLE[1] RAN IKEYAMA, S.R. LESHER, UW-La Crosse, W.A. PETERS, ORAU, J.A. CIZEWSKI, M.E. HOWARD, Rutgers, D.W. BARDAYAN, ORNL, RAN GRZYWACZ, M. MADURGA, S.V. PAULUSKAS, UTK, Z.J. BERGSTROM, TTU — The Versatile Array of Neutron Detectors at Low Energy (VANDLE) has been developed to study (d, n) transfer reactions and beta delayed neutron spectroscopy using unstable isotope beams. These experiments are important for our understanding of nuclear structure and stellar nucleosynthesis. VANDLE is a modular array composed of two different size plastic scintillator bars coupled with PMTs at each end and designed to detect neutrons with energies in the range between 100 keV and 20 MeV. This allows VANDLE to be mounted in a variety of geometries to achieve high detection efficiency for particular experimental requirements. The light response from cosmic-ray muons and gamma-ray sources was used to measure the resolution and gain match the VANDLE modules. The intrinsic efficiency of VANDLE was determined, using a ^{252}Cf source, for various thresholds. Details of the assembly of large VANDLE modules, possible experimental configurations, and the measured intrinsic efficiency will be presented.

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