

Abstract Submitted
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Performance of a 2m prototype neutron detector for VANDLE¹

CASEY PANGAN, J.C. BLACKMON, L.E. LINHARDT, M.M. WHITE, Louisiana State University, J.A. CIZEWSKI, P. O'MALLEY, W.A. PETERS, Rutgers University, D.W. BARDAYAN, Oak Ridge National Lab, R. GRZYWACZ, M. MADURGA, S. PAULAUSKAS, University of Tennessee, C. MATEI, B.C. RASCO, Oak Ridge Associated Universities, F. RAIOLA, F. SARAZIN, Colorado School of Mines — VANDLE (Versatile Array for Neutron Detection at Low Energies) is an array of plastic scintillator detectors that is being developed for measurements with radioactive ion beams. The array will consist of over 200 scintillator elements in two different shapes that can be configured in a variety of geometries to achieve efficient neutron detection with good time-of-flight for different types of measurements. We have constructed a 2 meter long prototype detector element for VANDLE and characterized its performance through a variety of measurements using cosmic rays, neutron and gamma sources. The position resolution, time resolution, light output, efficiency, and neutron-gamma discrimination by time-of-flight have all been studied. Results from these tests will be presented. Plans for a test measurement of the (d,n) reaction using a number of these detector elements will also be discussed.

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