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Production and Testing of the Large-Area Photon Detector ArCLight

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Compact large-area dielectric photon detectors ensure modular noble liquid detectors can sense scintillation light signals for triggering and reconstruction purposes with minimal decreases to the overall target volume of the module. ArCLight is a small volume, sizeable sensitive area detector that consists of a light trap covered in a thin layer of TPB that can be placed along a time projection chamber's electric field. These sensors are planned for the Deep Underground Neutrino Experiment Near Detector liquid argon (DUNE ND-LAr) modules. They are constructed and tested at the University of Bern and will be used for the prototype experiment, DUNE ND-LAr 2x2. The talk will discuss the details of assembling ArCLights, the quality control methods developed, and the test studies done with LEDs to assess their performance.

Primary author: KUNZMANN, Jan

Presenter: KUNZMANN, Jan

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