

LENS - Electronics and Scintillation Lattice Testing Towards Benchmarking the Performance of LENS

The Low-Energy Neutrino Spectroscopy (LENS) experiment is designed to precisely measure the fluxes of low-energy solar neutrinos via charged-current reactions to achieve a precision test of solar physics and the MSW-LMA flavor-conversion model through the fundamental equality of the neutrino fluxes and the precisely known solar luminosity in photons. The LENS collaboration is currently developing a prototype, miniLENS, that will demonstrate the performance and selectivity of the LENS technology. Prototypes with the same length scale as miniLENS (but smaller volume) have been built and tested at Louisiana State University to study construction techniques, PMT performance, attenuation of channeled light, as well as to benchmark optical properties of the as-built instrument to serve as input parameters into Monte Carlo simulations. The LSU prototypes are also being used to develop the data acquisition (DAQ) system for miniLENS. Results from studies of these prototypes and the status of the DAQ development will be presented.

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