

# Compact LumiCal prototype tests for future e+e-collider

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The FCAL collaboration is preparing large-scale prototypes of special calorimeters to be used in the very forward region at a future electron-positron collider for a precise and fast luminosity measurement and beam-tuning. The LumiCal is designed as a silicon-tungsten sandwich calorimeter with very thin sensor planes to keep the Moliere radius small, facilitating the measurement of electron showers in the presence of background. Dedicated FE electronics has been developed to match the timing and dynamic range requirements. In the recent beam tests, a multi-plane compact prototype equipped with thin detector planes fully assembled with readout electronics were installed in 1 mm gaps between tungsten plates of one radiation length thickness. High statistics data were used to perform sensor alignment, and to measure the longitudinal and transversal shower development in the sandwich. In addition, Geant4 MC simulations were done and compared to the data.

## TIPP2020 abstract resubmission?

Yes, this would have been presented at TIPP2020.

## Funding information

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