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A cylindrical trigger hodoscope system for the COMET phase-I experiment

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The COMET experiment searches for a muon to an electron transition without neutrinos, whose branching fraction is significantly enhanced in many plausible new physics beyond the standard model. The experiment will be performed under an extremely high particle rate environment, hence, the pile-up separation is essential to suppress the background particles while keeping high acceptance for signal events. As for the main trigger and timing detector, we are developing the cylindrical trigger hodoscope (CTH), which consists of two layered concentric plastic scintillators divided into 64 segments each. The design of CTH has been completed and several test measurements including the one at the Australian Synchrotron have been performed. In this talk, we will present those test results.

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