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# Planacon XP85002/FIT-Q MCP-PMTs for the ALICE FIT detector

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The new Fast Interaction Trigger (FIT) detector, composed of Cherenkov and scintillation subsystems, will serve as the main luminometer and trigger detector of the upgraded ALICE experiment at CERN during the LHC Run 3 and 4. It will also measure the precise collision time, multiplicity, centrality and reaction plane. FIT Cherenkov subsystem, intended mainly for the precise timing measurements, consists of two arrays of Cherenkov counters with quartz radiators readout by 52 (+10 spare) customized Planacon MCP-PMT photosensors. The entire production consignment of 62 units of XP85002/FIT-Q MCP-PMTs was thoroughly characterized, including amongst others measurements of gain as a function of the bias voltage and the heat-up time, load capacity in terms of the average anode current and level of afterpulsing. Selected characteristics, such as load capacity and gain, were remeasured in a magnetic field up to 0.5 T reproducing the conditions inside of the ALICE L3 magnet. This presentation will summarize the results and highlight some of the performance issues we have encountered during the tests. Since our data sample is extensive and covers relatively scarcely documented properties of these sensors, this compilation may be of interest to other groups building PID detectors for accelerator-based experiments.

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