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Semiconductor devices - Part 14-12: Semiconductor sensors - Performance test methods for CMOS imager-based gas sensors

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Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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INTRODUCTION

Gas sensors play a crucial role in various areas, including environmental monitoring, healthcare monitoring, leakage and exposure detection, and so on. In the era of intelligence, gas sensors are evolving towards miniaturization, low power consumption, multiplexing, and smart features. CMOS imager-based gas sensors are at the forefront of this trend, enabling high-density integration and parallel reading of sensing units. This makes them easily integratable and suitable for intelligent applications, aligning with the future development direction. These sensors can be applied to environmental monitoring, breath analysis, food detection, and other fields.

The key parameters of a gas sensor can reflect its performance, such as sensitivity, limit of detection, and so on. Standards are crucial to specify the test methods of sensor performance and regulate the procedure and data analysis during the development, productions and delivery acceptance.

IEC 60747-14-12 specifies the performance test methods of CMOS imager-based gas sensors, which includes the test methods of sensitivity, limit of detection, selectivity, response time, repeatability, and stability.

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