

Optical Readout for Lateral Flow Tests

ams.com



Optical Readout Module for Lateral Flow Testing

- Sensitive readout for reflection and fluorescence mode measurements
- Multi-spectral readout allowing multi-color or multi-analyte detection
- Ultra-small form factor optical module: a few mm³
- Cost-effective
- The ams module can be integrated into a disposable device or a handheld reader

**Sensing
is life.**

Introduction

The widespread use of Lateral Flow Tests (LFTs) is mainly attributed to its simplicity of design, which allows these tests to be produced in a cost-effective way at high volumes. LFTs are compact, portable and easy to use. Their drawbacks are its limitation in sensitivity, difficulty of signal quantification and multi-analyte detection. In the recent years, several technologies tried to overcome some of these drawbacks using a digital readout. Others introduced (benchtop) reader systems, sometimes in combination with other readout methodologies such as fluorescence measurements. ams has the ambition to innovate this market by introducing a proprietary small and cost-effective optical module that could improve the performance of LFTs. This can be done by increasing the optical sensitivity, allowing multi-analyte detection and accommodating different optical measurement methodologies such as reflection and fluorescence measurements.

The ams optical module integrated in an ams demonstrator

Leading manufacturers around the globe rely on ams' sensing expertise for advanced optical sensor designs. Our products drive applications requiring small form factor, low power, highest sensitivity and multi-sensor integration. Building on this expertise in design and manufacturing of advanced optical sensor solutions, ams' realized its first small optical readout module consisting of LEDs and optical photodiodes with spectral sensing capabilities. This module allows the measurement of different colors, hence enables multi-analyte and fluorescence measurements. The optical module is cost-effective and can be used in disposable LFTs but also in handheld readers. This proprietary technology will enable our customers to make superior products, with only minor adaptations to current way of manufacturing. ams realized a first demonstrator to showcase the performance of the optical module. This prototype consist of a LFT mounted in a slim plastic holder that can be inserted in a small reader (7 x 4.5 x 2.5 cm). The reader contains ams' optical module, combined with other system specific features such as a USB-chargeable battery and Bluetooth communication to connect to a smartphone. The demonstrator has an Android and IOS App, which allows early adaptors to measure and visualize the data.

Applications of Optical Module

- Clinical, home and veterinary testing
- Reflection or fluorescence
- Multi-colour
- Disposable tests or handheld readers

Features & Benefits

- Sensitive
- Miniaturized
- Multi-analyte detection
- Cost-effective

ams Demonstrator

Next Steps

- Further evaluation of demonstrator
- Industrialization of ams'optical module
- Engage with lead customers on specific use cases
- How can we support your lateral flow test business?

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