

# Product Document

# Optical Readout for Lateral Flow Tests

ams.com



## Optical Reference Design for Digital 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 solution
- Cost-effective
- The ams solution can be integrated into a disposable device or a handheld reader

Sensing  
is life.

## Introduction

The widespread use of Lateral Flow Tests (LFTs) is based on the simple design, which allows these tests to be produced in a cost-effective way at high volumes. LFTs are compact, portable and easy to use. Drawbacks are limitations in sensitivity, and the 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 brings innovation to this market by introducing a proprietary small and cost-effective spectral-sensors that improves the performance of LFTs. This is achieved by increasing the optical sensitivity, allowing multi-analyte detection and enable different optical measurement methodologies such as reflection and fluorescence measurements. Being capable of measuring for example antibody build-up of different virus types at high accuracy (Influenza, Covid-19, etc.). The goal: minimizing the amount false negative detections.

## The ams optical solution integrated in a digital Lateral Flow demonstrator

Leading manufacturers rely on ams' sensing expertise for **advanced optical sensor designs**. ams 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 reference solution allows the measurement of different colors and intensities; enabling multi-analyte and fluorescence measurements. The ams reference solution 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 provides a disposable reader reference design with multiple communication methods available. It includes system-specific features such as a USB-chargeable battery, Bluetooth or cabled communication to connect to a smartphone. Additionally ams provides an Eval Kit solution which implements an Android and IOS App, allowing early adaptors to measure and visualize the data

### Applications of Optical Module

- Clinical, home and veterinary testing (viruses, pregnancy, disease, etc.)
- Reflection or fluorescence
- Multi-spectral (color)
- Disposable tests or handheld reader

### Features & Benefits

- Superior compared to standard visual interpretation
- Similar sensitivity as professional, expensive benchtop readers
- Enables sensitive fluorescence measurements
- Up to 3 analytes can be measured simultaneously on one strip

### ams Eval Kit



### Interested? We are looking for partner relations

- Are you a LTF strip and/or reader manufacturer?
- Are you part of the LTF and medical diagnostics ecosystem?
- We have reference solutions to talk about



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