AnCam® 6100

Multi-Analyte Test Reader

RESEARCH INTERNATIONAL

Machine vision accuracy for lateral flow assay test evaluation

Features

- Reads most single and multi-target assay tickets
- Machine vision minimizes human error
- Archives results, time, and GPS location
- Transmits data and images via local cellular network
- 24-hour continuous assays
- Provides early warning in the event of a strong positive
- Warns user of defective assay tickets
- Water resistant, durable case
- Compact design

Application Areas

- Field detection of bioterrorism threat agents
- Medical pathogens
- Drugs of abuse
- Food safety
- Veterinary testing
- Environmental testing

The AnCam™ 6100 is a versatile and portable multi-analyte test reader and communication device usable with virtually any single or multi-target lateral flow immunoassay test (LFA). These tests are in wide use to detect and identify bioterrorism threat agents, medical pathogens, drugs of abuse, environmental toxins, food-borne pathogens, and animal disease.

The machine vision advantage LFA tests are designed with the assumption that the results will be determined by visual inspection. However, humans are subject to a variety of visual frailties, particularly in situations of high stress or low light. Simple visual examination methods may fail to recognize manufacturing defects, out-of-date reagents, or errors in procedure. The AnCam 6100 replaces the human eye with an independent evaluation of the entire test protocol, producing consistently accurate results. Human error and lighting variables are removed.

Smart phone technology The AnCam 6100 uses a modified smart phone to provide an integrated solution combining machine vision, proprietary signal processing algorithms, GPS-based locating capabilities, data storage, and data transmission in one compact package, along with all the standard smart phone communication capabilities – texting, email, and Bluetooth® capability.

Sensitivity & reliability The proprietary machine vision algorithms provide unprecedented sensitivity and reliability. By using signal-to-noise criteria to detect the presence of a pathogen, the AnCam can detect signals not easily visible to the eye. It provides preliminary estimates as the test progresses, analyzing the flow of the fluid sample to verify that incubation is proceeding normally. With calibration, quantitative measurements can be obtained instead of the typical Yes/No result.

Early warning Many LFA tests specify a 15-minute incubation period before reading the result. But if any

lateral flow channels pass the signal-to-noise criteria indicating that the targeted material is present, the AnCam 6100 will notify the user immediately. This may occur long before the standard incubation period has ended, sometimes as early as five minutes after sample introduction.

The AnCam 6100 can also be used to analyze coupons that have been previously incubated, delivering results in seconds.

Store and send results Upon completion, results can be transmitted as a text message or email using the local cellular network. All images and assay calculations involving the assay are stored in the AnCam 6100's internal memory for later examination, and optionally on its SD card.

U.S. Patent Nos.: 10192144, 10318845, 11023773.

AnCam 6100 Functional Specifications

Lateral flow cassette compatibility	Most commercially available tests including 1, 5, and 8 analyte coupons.
Image recognition/processing	Proprietary high resolution algorithms.
Types of analysis	Single measurement or tracked incubation; qualitative or quantitative results.
Protocol Identification	Recognition of visual coupon features.
Camera and machine vision engine	Customized embedded cellular phone provides GPS/map functions.
Processing time	• With previously incubated coupon: Results within seconds. • From fluid sample introduction to final result: Varies according to coupon manufacturer's recommended incubation time (usually 15 minutes). • In the event of a strong positive, an alarm may issue as early as 5 minutes.
Archival capabilities	Date and time; user ID; coupon information; GPS latitude/longitude; one or more coupon photographs saved for later analysis.
Communication	WiFi and cellular network; send assay result message to selected cell phone numbers or email addresses.
Hardcopy output	Via Bluetooth® printer or Wi-Fi® printer.

Physical Specifications

Size	205 x 121 x 109mm
Weight	1280 grams
Temperature range	0° to 50°C
Power	Internal lithium-ion battery
Standby operating time	5-10 days

Software & Accessories

Software	Pre-loaded AnCam software & Adobe Reader installed.
Included accessories	Durable carry case; wall plug transformer & USB cable; SD card; operating manual.

Research International reserves the right to change specifications without prior notice.

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