

PUBLIC SAFETY ANALYSIS / DATA SHEET

SAR13-01

Handheld Drug & Toxicant Fluorescence Analyzer

Portable quantitative time-resolved fluorescence platform for rapid screening of drugs and toxicants in biological samples.

Overview

- SAR13-01 combines quantitative fluorescence test cards with an integrated data-management workflow for rapid drug and toxicant screening.
- Time-resolved fluorescent nanoparticles provide the signal while target-specific antibodies provide recognition.
- The analyzer reads fluorescence from the quantitative test card and uses a concentration-response standard curve for quantitative determination.



Typical Test Time ~5 min	Sensitivity ppt level	Precision CV ≤2%	Connectivity Wi-Fi
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Sensitivity shown as the source specification: down to ppt level.

Key Advantages

- Wide linear range, high sensitivity and good repeatability.
- Rapid quantitative testing; source material states completion in about 5 minutes.
- Barcode scanning enables automatic identification of the test item.
- ID cards can configure and store standard calibration curves.

Application Scenarios

- Criminal investigation.
- Traffic enforcement.
- Narcotics control.
- Forensic identification.

MEASUREMENT PRINCIPLE

Technical Principle

Signal generation

- Time-resolved fluorescent nanoparticles act as labeling and signal-output elements.
- Specific drug / toxicant antibodies act as recognition elements.
- The fluorescence signal on the quantitative test card changes with target concentration.

Quantitative determination

- The analyzer reads the fluorescence response from the quantitative test card.
- A stored standard curve relates signal variation to target concentration.
- The result is reported as a quantitative determination for the selected test item.

Technical Specifications

Item	Specification
Detection principle	Time-resolved fluorescence immunoassay using quantitative test cards
Typical detection time	Approx. 5 minutes
Sensitivity	Down to ppt level (source specification)
Precision	CV $\leq$ 2%
Quantitation	Fluorescence signal converted to concentration using a stored standard curve
Supported sample types	Blood, hair, urine, saliva, sweat/tissue and other biological samples
Automatic identification	Barcode scanning for automatic test-item recognition
Calibration / standard curve	ID card can configure and store standard curves
Connectivity	Network and Wi-Fi; external PC connection supported
Software functions	Data analysis and quality control
Data management	Real-time acquisition, aggregation, analysis, storage and automatic backup
Portable design	Compact handheld form factor for field use

OPERATION

Typical Workflow

Step	Description
1. Sample Preparation	Prepare the biological sample and the appropriate quantitative test card according to the test procedure.
2. Test Identification	Use barcode / ID-card information to identify the test item and load the relevant standard curve.
3. Fluorescence Reading	Insert or read the quantitative card with the handheld fluorescence analyzer.
4. Quantitative Calculation	Convert the fluorescence response to concentration using the stored calibration curve.
5. Record & Backup	Save the result and synchronize or back up the data through the configured software / network workflow.

OUTPUT & COMMUNICATION

Data and System Integration

Function	Source-supported capability
Connectivity	Network and Wi-Fi connectivity
External PC	External PC connection supported
Software	Data analysis and quality-control workflows

Function	Source-supported capability
Data workflow	Real-time acquisition, aggregation, analysis, storage and automatic backup
Identification	Barcode scanning and ID-card information for automatic test-item recognition
Standard curve	ID card can configure and store the relevant standard curve

FIELD USE

Sample & Application Scope

Scope	Source-supported content
Biological samples	Blood, hair, urine, saliva, sweat/tissue and other biological specimens
Criminal investigation	Rapid quantitative screening during investigative workflows
Traffic enforcement	On-site screening support for traffic-police and road-safety enforcement
Narcotics control	Field screening for drug-control and anti-narcotics operations
Forensic identification	Quantitative testing support for judicial and forensic identification departments

PRODUCT SELECTION

Configuration Information

Item	Configuration
Model	SAR13-01
Product	Handheld Drug & Toxicant Fluorescence Analyzer
Test consumable	Quantitative test cards
Identification	Barcode / ID-card information
Connectivity	Network and Wi-Fi; external PC connection supported
Data management	Real-time acquisition, aggregation, analysis, storage and automatic backup

CONTACT / SUPPORT

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