

SIELC



**ALLTESTA™
AUTOMATED SWAB
LOADING SYSTEM**

Precision You
Can Trust.
Performance
You Can Verify.

Alltesta™ Automated Swab Loading System

Introduction

The Alltesta™ Automated Swab System is a compact electromechanical instrument designed for precise and reproducible deposition of calibration solutions onto security swabs used in trace detection systems. The system prepares standardized swab samples under controlled conditions for calibration, sensitivity verification, performance validation, and routine monitoring of trace detection equipment.

By eliminating operator-dependent variability, the instrument ensures consistent dosing performance and stable analytical conditions across sites and operators, supporting harmonized screening procedures and reliable detector benchmarking.

Software options



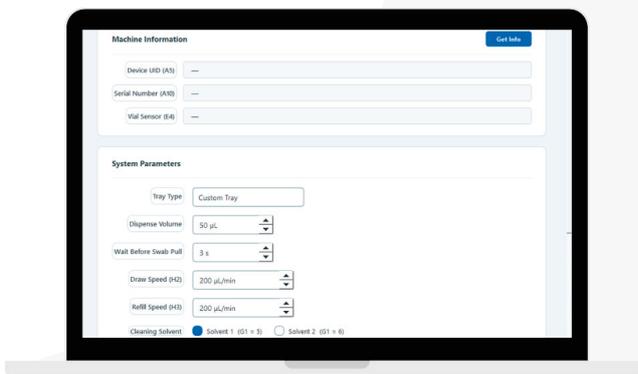
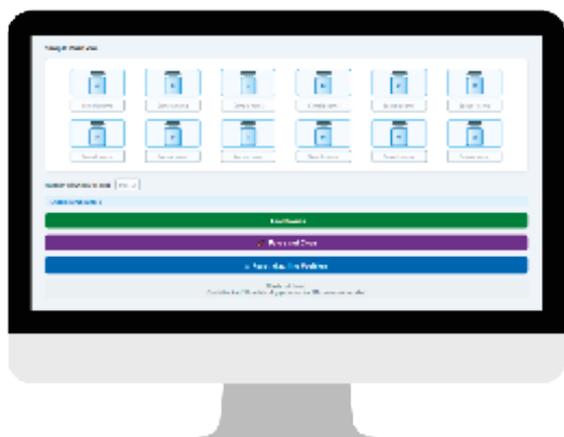
Dedicated Control Software

The Alltesta™ Automated Swab System includes a purpose-built Windows application that enables full configuration of deposition parameters, execution of automated cycles, system monitoring, and session logging. The intuitive interface supports secure user authentication, programmable dosing control, cleaning routines, and CSV-compatible data export for regulated environments.



Open Serial Command Protocol

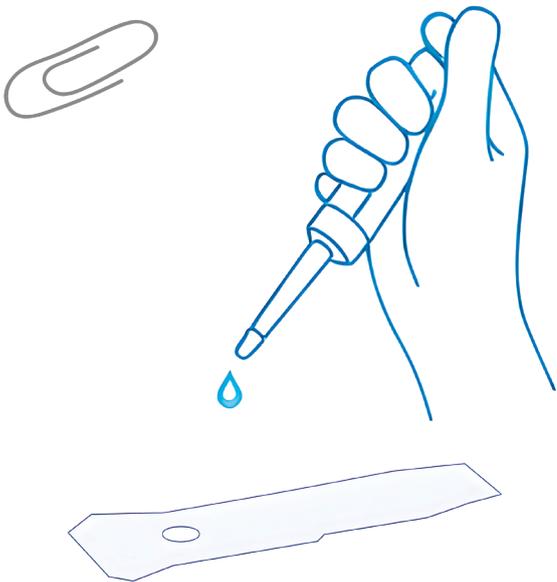
For custom software development, the system supports an open, fully documented serial command protocol via a USB virtual COM interface. This allows developers to implement direct control of dosing functions and service operations within their own software environment, ensuring seamless integration of the device into custom analytical, security, or OEM platforms.



Why Automated Swab Preparation Matters

Manual spiking of security swabs introduces variability in deposition volume, positioning, and solvent evaporation, which can significantly affect detector response and sensitivity assessment. Even minor deviations in applied volume or contact geometry may lead to inconsistent benchmarking results and unreliable performance comparisons.

MANUAL SPIKING



- ✓ Variable volume
- ✓ Inconsistent positioning
- ✓ Operator-dependent variability

AUTOMATED DEPOSITION



- ✓ Programmable volume
- ✓ Controlled positioning
- ✓ Repeatable results

Automated deposition ensures controlled dosing, defined positioning, and reproducible preparation conditions across repeated cycles. This is particularly critical when evaluating trace detection sensitivity, validating detection thresholds, or conducting long-term performance monitoring.

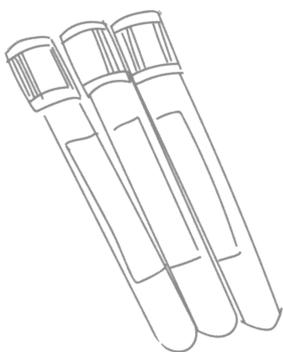
By standardizing the swab preparation process, the Alltesta™ Automated Swab System reduces uncertainty in calibration workflows and improves confidence in analytical performance verification.



Alltesta™ Automated Swab Loading System

Key Features

- **Precise Automated Deposition:** Programmable solution delivery from 1–120 μL with controlled positioning directly onto the swab surface.
- **High Reproducibility:** Eliminates operator-dependent variability, enabling consistent sensitivity verification and performance comparison.
- **Automated Swab Spiking:** Precise dosing removes variability associated with manual sample preparation.
- **Open Serial Protocol for Integration:** Fully documented command set enabling custom software development and OEM integration.
- **Minimized Human Factor Influence:** Improves reliability, consistency, and comparability of performance validation results.
- **Verified Dosing Accuracy:** $\pm 10\%$ at 1 μL and $\pm 2\%$ at 5 μL , ensuring stable and reproducible calibration performance.
- **Low-Volume Deposition Mode:** Total deposition volume below 10 μL (including dead volume) for trace-level sensitivity testing.
- **Compatibility with Standard Swabs:** Designed for use with commonly employed security screening swab formats.
- **Dedicated Windows Software:** Secure user authentication, programmable parameters, session logging, and CSV-compatible data export.
- **Compact and Robust Design:** Engineered for stable operation in demanding and high-throughput environments.



Technical Specifications

Alltesta™ Automated Swab System

| | |
|---|---|
| Dimensions (WHL) | 160 × 145 × 195 mm (6.3 × 5.71 × 7.68 in) |
| Weight | 3.55 kg / 7.8 lb |
| Plate Capacity | 12 vials (12 x 32 mm) with swabs dispensing device |
| Sample Traps | Sample Trap Part Number: M0001964 |
| Maximum Pressure | up to 300 psi (20 bar) |
| Syringe Capacity | 120 µL high-pressure |
| Valve Options | 7 × 6 |
| Needle Options | Short (36mm) Part number: A550-915 Manufacturer: SIELC Technologies, USA |
| Deposition accuracy | ±10% at 1 µL ±2% at 5 µL |
| Programmable Deposition Volume Range | 1–120 µL |
| Software | PC Software Interface Direct Serial Commands |
| Software Package | PC control software supplied with the instrument. |
| PC Software System Requirements | Operating System: Windows 7–10 (22H2) Memory (RAM): 2 GB or more Disk Space: 50 MB free |
| Power Requirements | Instrument: 24 V DC External adapter: 100–240V AC, 50–60Hz EU plug (Type C or E) version available. |
| Communication | UART via integrated FTDI USB driver. |

Alltesta™ Automated Swab Loading System

Applications

Our analyzers are changing labs worldwide:



Trace Detection Calibration:

Preparation of standardized reference swabs for sensitivity verification and detector performance validation.



Quality Control Procedures:

Routine verification of detector stability and long-term performance consistency.



Explosive Trace Detection (ETD):

Controlled solution deposition onto swabs for benchmarking and routine monitoring of security screening systems.



Method Development and Validation:

Optimization and validation of swab-based analytical protocols under controlled deposition conditions.



Equipment Qualification:

Reproducible sample preparation for qualification testing and comparative performance studies.



Sensitivity Testing:

Preparation of low-volume reference samples for limit-of-detection assessment.

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Call to Action

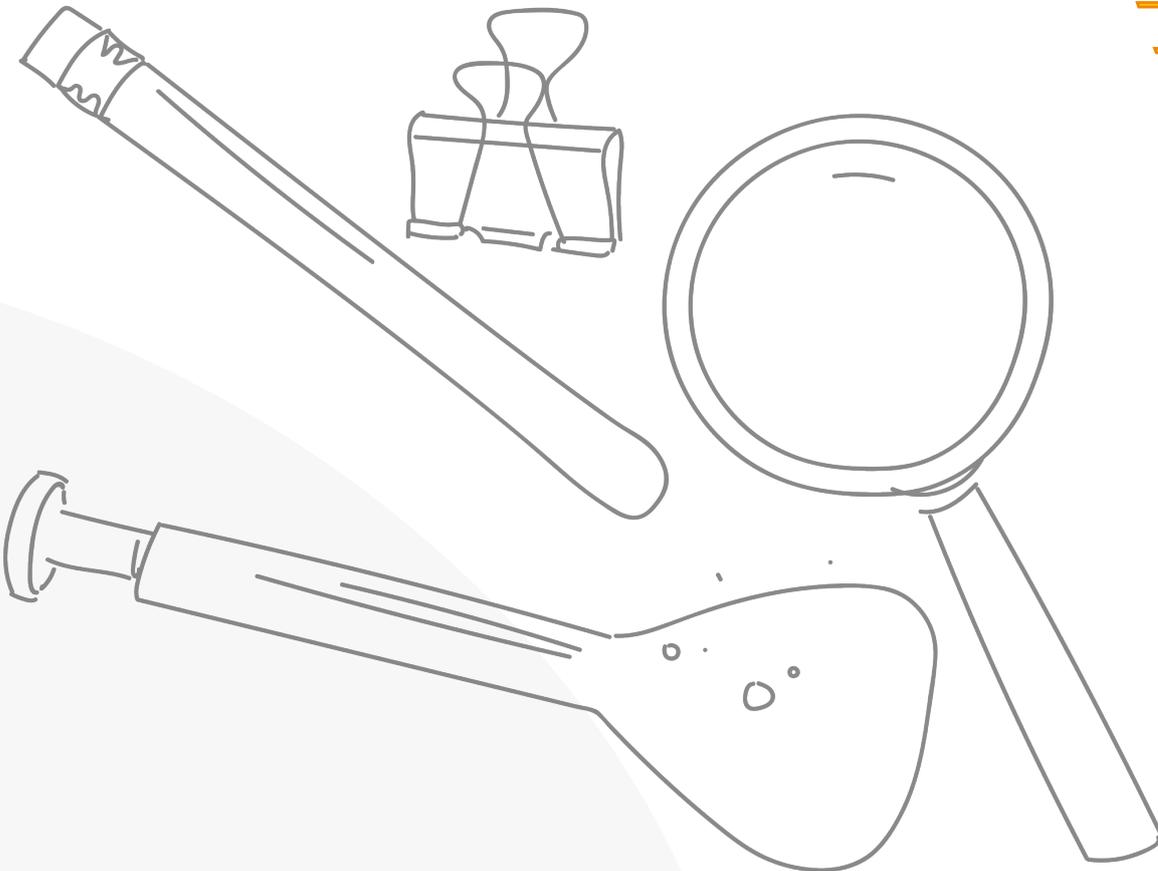
Explore the capabilities of the Alltesta™ Automated Swab System:

- Contact us to place an order or ask questions.
- Request a consultation regarding calibration workflows and deposition parameters.
- Schedule a demonstration to evaluate automated swab preparation performance.
- Visit our website or scan the QR code below for more details.

Conclusion

The Alltesta™ Automated Swab System provides precise, reproducible, and standardized deposition of calibration solutions onto security swabs. By minimizing human factor influence and ensuring controlled dosing accuracy, the system supports reliable sensitivity verification and performance validation of trace detection instruments.

Learn more on our website or contact us for consultations and demonstrations.





Contact Us

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