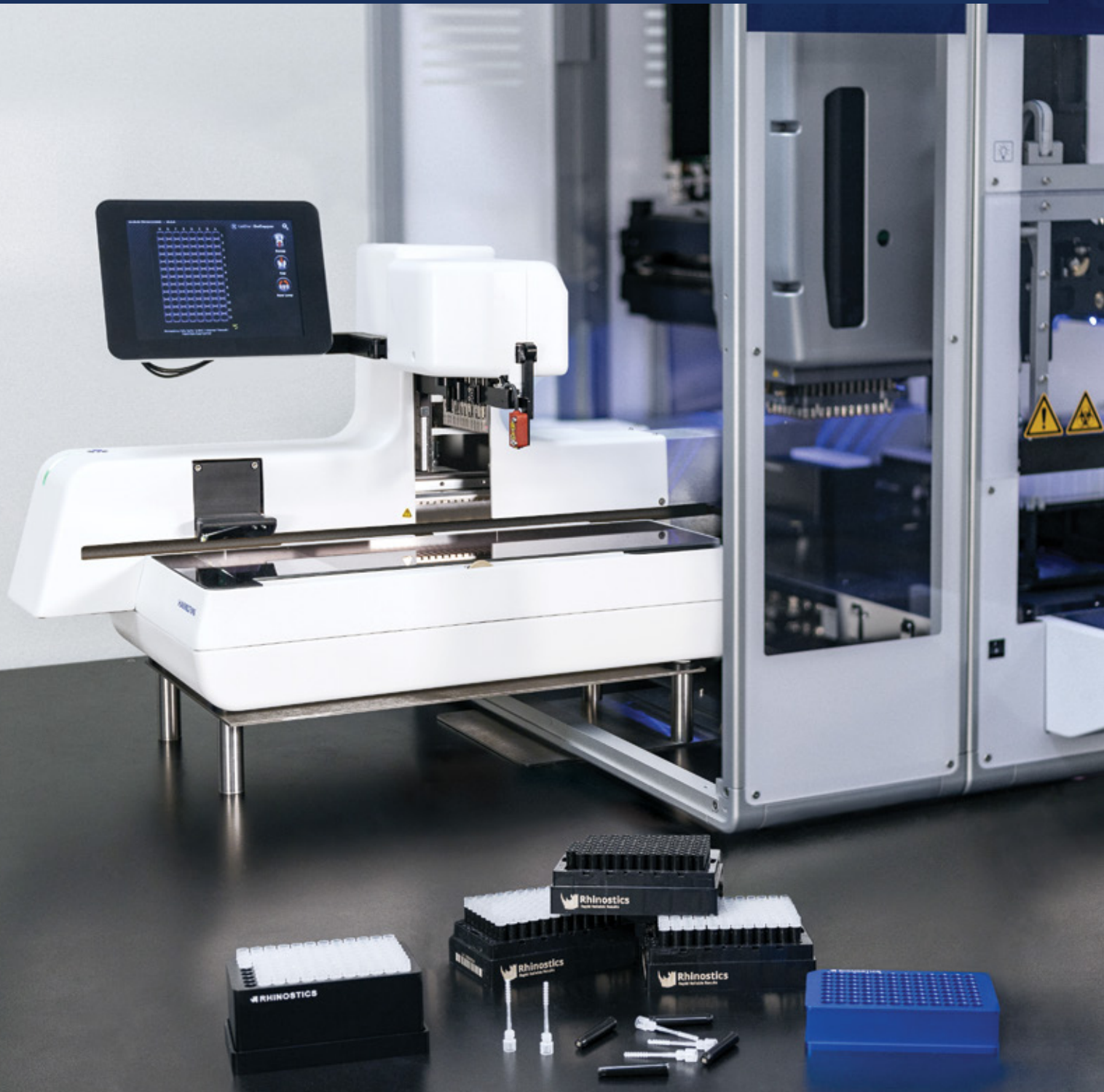


Automated Swab Processing Workflows

Featuring the RHINOstic® Automated Swab



It's Time to Eliminate Swab Processing Workflow Bottlenecks

Workflow



Accession



Decap/Elute/Recap



Heat Inactivate



PCR Setup

Benefits



Easy, Walkaway Operation

The benefits of automated microplate-based workflows are well documented, yet bottlenecks remain when manually accessioning and decapping swab tubes prior to transitioning into assay plates. Rhinostics and Hamilton Company have teamed up to automate swab processing steps so that labs can increase throughput, enhance consistency, and reduce biohazard exposure.

The automated swab processing workflow is ideal for a wide variety of nasal, buccal, vaginal, or STI sample testing needs, and consists of:

- RHINOstic® Automated Swab
- LabElite® I.D. Capper or LabElite® Integrated I.D. Capper
- Microlab® STAR, Microlab® VANTAGE, or Microlab® NIMBUS®



Instant Scalability to Meet Surging Demands



30x Sample Concentration and Complete Elution vs. Spun Fiber Swabs using VTM



Reduced Consumable and Reagent Costs



Increased Throughput



Decreased Time to Results



Decreased Biohazard Exposure



Fully Automated Workflow for Ultra-High Throughput

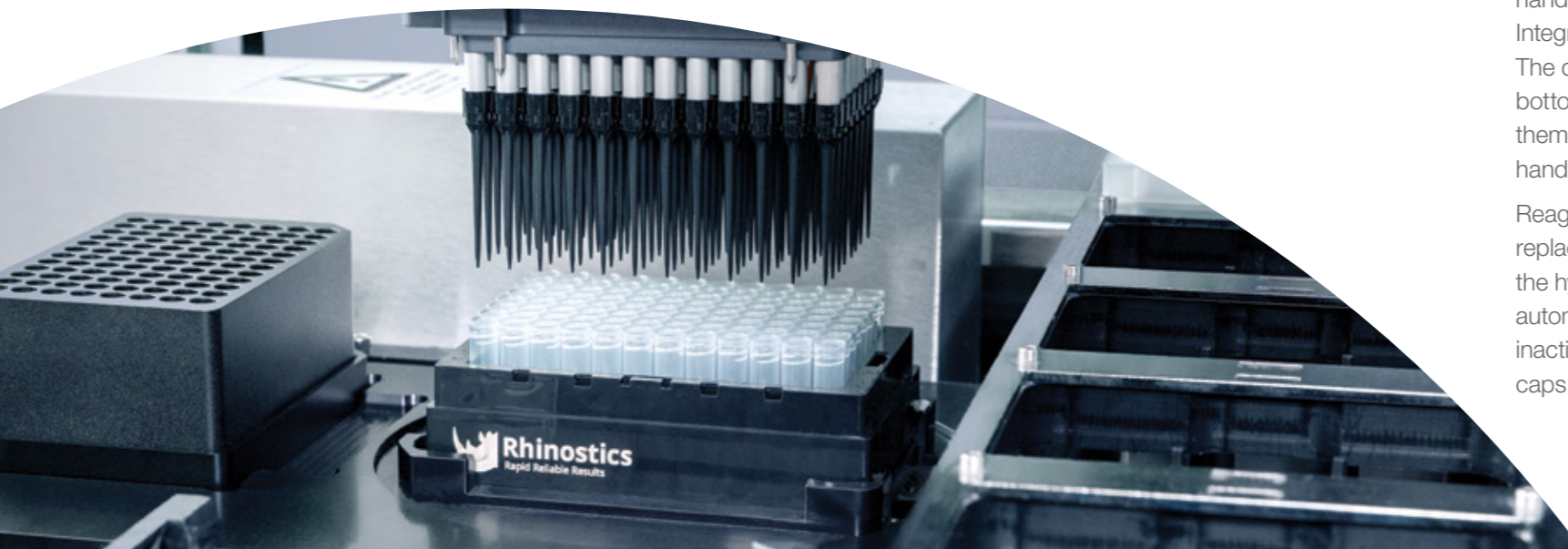
Place a RHINOstic™ containing up to 96 RHINOstic swabs and tubes onto a Hamilton automated liquid handler integrated with a LabElite I.D. Capper (or LabElite Integrated I.D. Capper), heating block, and plate sealer. The decapper scans 2D barcodes on the RHINOstic tube bottoms, removes the RHINOstic swab caps, and places them securely in the RHINOrest™ located on the liquid handler's deck.

Reagents are automatically added, the decapper replaces the swab caps, and particles fully elute from the hydrophobic swab head. The RHINOstic is then automatically moved to and from the heating block for heat inactivation. The decapper removes the RHINOstic swab caps again while the liquid handler transfers precise liquid

aliquots and reagents into assay plates. The liquid handler then automatically seals the assay plates and samples are ready for downstream PCR analysis.

A two-phase workflow option is also available for medium to high throughput sample processing. Here, decapping and elution steps are performed in a biosafety cabinet and the RHINOstic containing samples is manually placed in an incubator for heat inactivation.

The disposable RHINOstic Automated Swab is registered as a Class I exempt medical device with the U.S. FDA and may be used for clinical collection upon CLIA validation.



STAR Specifications

Technical Specifications

	STARlet	STAR
Instrument W x H x D	44.25 in (1124 mm, 1450 mm with multiprobe head) x 35.5 in (903 mm) x 31.3 in (795 mm) autoload: 39.6 in (1006 mm)	65.5 in (1664 mm, 1990 mm with multiprobe head) x 35.5 in (903 mm) x 31.3 in (795 mm) autoload: 39.6 in (1006 mm)
Work Area W x H x D	26.5 in (675 mm) x 7.6 in (195 mm) x 18.3 in (465 mm)	47.8 in (1215 mm) x 7.6 in (195 mm) x 18.3 in (465 mm)
Weight — 8 Channels	135 kg	145 kg
Weight — 96 Probe Head and 8 Individual Channels	150 kg	160 kg
Deck Capacity	30 tracks (T) / 25 SLAS ANSI positions	54 tracks (T) / 45 SLAS ANSI positions
Combinations Allowed	Maximum of 30 tube carriers (1 T) holding 24 or 32 tubes per carrier; maximum of 5 carriers (6 T) holding 5 tip racks or 5 plate positions per carrier	Maximum of 9 carriers (6 T) holding 5 plates or tip racks or per carrier; multiprobe head can beyond the deck (on the left side) reach up to 7 carriers on the deck and 65 mm
Positional	Accuracy X-Y-Z positional accuracy of 0.1 mm X-Y-Z positional accuracy of 0.1 mm X-Y-Z positional accuracy of 0.1 mm	Accuracy X-Y-Z positional accuracy of 0.1 mm X-Y-Z positional accuracy of 0.1 mm
Labware	All SLAS ANSI standard plate types up to 1536 wells and most commercially available tube types	
Carriers	For all standard labware formats and according to customer requirements	

Operating Data

Maximum Power Consumption	600 VA or 1000 VA (depending on configuration)		
Voltage	100 VAC (-15%) to 240 VAC (+10%)		
Frequency	50 / 60 Hz ± 5%		
Delayed Action Fuse	115 V-: 6.3 A, 230 V-: 3.15 A		
Operating Temperature Range	Operation +15 °C to +35 °C 15% to 85% (non-condensing)	Storage -25 °C to +70 °C 10% to 90% (non-condensing)	Transportation -25 °C to +70 °C 10% to 90% (non-condensing)

I.D. Capper Specifications

Technical Specifications

Dimensions (W x H x D)	23.6 in (600 mm) x 17.3 in (440 mm) x 15.0 in (380 mm)*
Supported 1D Barcodes	2/5 Industrial / Interleaved, Code 39, Code 128, Pharmacode, Codabar, EAN 13
Supported 2D Barcodes	Datamatrix ECC 200, PDF417, QR Code
Connection Interface	Ethernet for integration
"Recommended PC (I.D. Capper only)"	Windows 7 64-bit (Required), 2.8 GHz Core 2 Duo, 3GB RAM, 250GB HD, 16x DVD+/-RW
"Communication (I.D. Capper only)"	One USB 3.0 port for the camera connection

*Actual dimensions may vary based on head compatibility.

[†]Rhinostics Conversion Kit (HST44258) required for swabs.

RHINOstics Labware Specifications

Technical Specifications

Model	RH-S000001	LV-2D1D002	LV-2D1D003
Material	Medical grade quality polypropylene	Medical grade quality polypropylene	Medical grade quality polypropylene
Dimensions	Overall length: 1.92 in (48.7 mm) Collection zone diameter: 0.12 in (3.0 mm) Collection zone length: 0.61 in (15.4 mm) Cap diameter: 0.34 in (8.6 mm)	Overall length: 1.92 in (48.7 mm) Collection zone diameter: 0.12 in (3.0 mm) Collection zone length: 0.61 in (15.4 mm) Cap diameter: 0.34 in (8.6 mm)	Overall length: 1.92 in (48.7 mm) Collection zone diameter: 0.12 in (3.0 mm) Collection zone length: 0.61 in (15.4 mm) Cap diameter: 0.34 in (8.6 mm)
Available format	RHINOstic Automated Swab Device, Sterile, Clear, Unmarked Bulk Packaged Capped Tubes	RHINOstic Automated Swab Device, Sterile, Clear Uncapped 1D/2D/Visible Barcoded Tube	RHINOstic Automated Swab Device, Sterile, Black Uncapped 1D/2D/Visible Barcoded Tube

Swab Processing Accessory Specifications

Model	LV-RK96001 (96-Well Rack for tubes)	RR-100002 (RHINOstic 96 well block for tubes)	RRT-A00001 (RHINOrest 96 well block and base for swab caps)
Material	Plastic	Aluminum	Aluminum
Dimensions	3.2 in (85 mm) x 4.9 in (125 mm) x 2.2 in (54 mm)	3.2 in (85 mm) x 4.9 in (125 mm) x 1.1 in (29 mm)	3.2 in (85 mm) x 4.9 in (125 mm) x 1.1 in (29 mm)
Available format	96-well rack	96-well rack	96-well block and base

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HAMILTON

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