THE FUTURE BELONGS TO THOSE WHO ENVISION IT.

Microbiologists today face tough challenges. Increased workloads, labor shortages and the impending retirement boom of Medical Technologists and laboratory professionals have compelled laboratories to look for more efficient, cost-effective ways to process the influx of samples.

With relentless innovation and unsurpassed collaboration, COPAN is facing those challenges head on. From the first automated specimen processor prototype to more than 500 instruments later, COPAN has solicited input from the Microbiology community. As a result, COPAN’s WASP®DT, WASP®Lab™, WASP®FLO™ systems, and new modules are designed as open, modular, and forward compatible, to meet the needs of each unique laboratory.

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WASP® DT is an open platform, modular instrument, which fully automates all aspects of upfront Microbiology specimen processing: planting and streaking, Gram slide preparation, disk application and enrichment broth inoculation.

WASP® DT GIVES LABS THE FREEDOM TO WALK AWAY FROM SPECIMEN SET-UP AND FOCUS ON HIGH LEVEL TASKS

OVERVIEW OF WASP® DT COMPONENTS

1. Sample Entry Conveyor
   Continuous Load with No Need to Pause Instrument or Batch Samples

2. Robot 1 “Tarzan”
   Responsible for Specimen Handling

3. Robot 2 “Jane”
   Responsible for Specimen Processing

4. Spinner and Vortex
   Ensures Homogeneous Sample

5. Media Carousel
   Holds Up to 370 Plates, 9 Different Media Silos. Uses Any Manufacturer’s Plated Media

6. Warehouse Carousel (optional)
   Houses Enrichment Broths and ID and Susceptibility Disk Dispensers

7. Printer
   Labels are Automatically Printed and Applied to Plates, Tubes, and Gram Slides

8. Rejection Bin
   System Segregates Rejected Samples so that Users Can Easily Find Unprocessed Samples

9. Sample Exit Conveyors
   Place Where Processed Samples and Plates are Unloaded

10. Gram SlidePrep™ (optional)
    Automatically Prints Labels to Gram Slides
UPFRONT SPECIMEN PROCESSING

Automate Manual Tasks:
• Planting and Streaking
• Gram Slide Preparation
• Enrichment Broth Inoculation
• Subculture Preparation
• Kirby-Bauer and ID Disk Application

Accuracy, Reproducibility & Quality
• Individualized Specimen Management, Containment and Confinement Measures Ensure Clean Work Environment
• Versatile Protocol Options Drive Culture Quality, and Improve Sensitivity & Cost Efficiency
• Image Analysis Verification System Ensures Accuracy and Integrity of Loop and Presence of Inoculum
• Touch Screen Monitors and Easy to Use Software Interface for an Intuitive, User-Friendly Experience

WASP® DT Image Analysis
Checks for the Presence of Inoculum and Correct Loop Size

User-Friendly Experience
• Touch Screen Monitors and Easy to Use Software Interface

Improve Patient Traceability and Eliminate Barcode Rejections
• Smart 360° Scan Technology Reads Specimen Barcode Labels Regardless of Position
• Labels on Completed Plates, Gram Slides and Inoculation Tubes are Reconciled to Patient Specimen Barcode for Traceability

No Need to Batch
• Universal Decapper Automatically Opens and Recaps Sample Containers
• No Need to Batch or Stop Instrument to Reload
Library of Classic or Customizable Streak Patterns for Whole Plates and Bi-Plates to Ensure Optimal Isolation

Reusable Metal Loops Range from 1μL, 10μL & 30μL to Provide the Precise Volumes Necessary for Quantitative Analysis

Reusable Metal Loops Keep Operational Costs Low and Allow Users the Option to Change Loop Between Quadrants for Optimal Colony Isolation Necessary for High Load Specimens

- Other Automated Systems Use Disposable Pipet Tips and Streaking Beads, which Increase the Cost of Consumables
- Pipets Cannot Transfer Volumes Less than 10μl

Dual Streaker Option for Streaking Bi-Plates for Fastest Throughput and Maximum Productivity

- Dual Streaking with 1μL Reusable Loop

Optional Gram SlidePrep™ Module or Automatic Enrichment Broth & ID Disk Dispensing Module Increase Instrument Usability

Modular Configuration Allows for Scalability and Flexibility to Adjust Equipment to the Changing Needs of the Lab

Planting & Streaking Whole & Bi-Plates!

- Library of Classic or Customizable Streak Patterns for Whole Plates and Bi-Plates to Ensure Optimal Isolation
- Reusable Metal Loops Range from 1μL, 10μL & 30μL to Provide the Precise Volumes Necessary for Quantitative Analysis
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- Dual Streaker Option for Streaking Bi-Plates for Fastest Throughput and Maximum Productivity

LIQUID BASED MICROBIOLOGY

Liquid Based Microbiology (LBM™) Makes the Most Challenging Samples Easy to Automate

PRIOR TO AUTOMATION, COPAN recommends transitioning to Liquid Based Microbiology. LBM™ products allow for the highest utilization of WASP®DT by liquefying and standardizing sputum, feces, urine and swab samples.

Solid samples, such as tissues, or traditional swabs can also be processed on WASP®DT using the “Streak Only” mode.

ESWAB™ CAN BE USED FOR MULTIPLE TESTS

ESWab™ elutes the entire sample into the Liquid Amies providing up to 10 identical aliquots of liquid sample suspension to perform multiple tests from the same specimen. A recent study used the same ESwab™ sample for 8 different investigations.


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**WASPlab™** is a sophisticated barcode driven Microbiology specimen processor and work-up system, which connects to WASP®DT using a customizable conveyor track. Samples move from front-end processing to full specimen management or **TOTAL LAB AUTOMATION** including:

- Automated Incubation
- Digital Microbiology
- and Artificial Intelligence

**IMPROVE QUALITY AND PATIENT CARE**

**WITH WASPLab™**

WASPlab™ is the continuation of automated specimen workup for Microbiology. WASPlab™ sets itself apart from other automated systems with its forward compatible and customizable track, incubators and imaging system.

**OVERVIEW OF WASPLAB™ COMPONENTS**

1. **WASP®DT**
   Automatic Specimen Processing including: Planting & Streaking, Gram Slide Preparation & Enrichment Broth Incubation

2. **Conveyor Track**
   Transports WASP®DT Incubated Plates or Manually Incubated Plates to WASPlab™

3. **Canister System**
   Technologists Confirm Growth on a Computer Screen and Plates are Grouped by Growth or Bench Type and Sent to Canisters for Work-up

4. **Loading Carousel**
   Place Manually Incubated Plates into the Loading Carousel to be Transferred to WASPlab™

5. **Smart Incubators**
   Incubators Create Homogeneous Atmospheric Conditions for Excellent Thermal Conductivity and Faster Colonial Growth as Reported and Validated by WASPlab™ Users

6. **Image Acquisition**
   Telecentric Linear Camera takes a **TIME ZERO** Image of the Plate, then Based on User Defined Protocols, at Subsequent Specified Time Intervals Thereafter

7. **Reading Workstation**
   Read, Interpret, and Segregate Bacterial Cultures at the Workstation Quickly using Artificial intelligence and Digital Microbiology

**SMALL FOOTPRINT • HIGH EFFICIENCY • MODULAR • SCALABLE**

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**WASPLab™ Components are Modular and Scalable**

The System’s Small Footprint and High Efficiency, Leaves Room for Growth Within the Laboratory as Additional Workbenches are Added

**Shorten Turnaround Time with WASPLab™ Smart Incubators**

Improve Turnaround Time

Consistent Incubation Environment and Earlier Plate Reading can Result in Improved Turnaround Time* and Delivering Actionable Results within the Therapeutic Window Faster

**Homogeneous Environment and Thermal Conductivity**

Incubators Bring Plates to Appropriate Temperature Quickly to Speed Up Bacterial Growth

- Each Plate Has a Unique Location for Rapid Retrieval
- Automatic Plate Inversion Based on Protocol to Prevent any Condensation on the Plate Lid Dropping onto the Agar Surface
- Easy to Clean with Removeable and Autoclavable Shelves
- High Capacity
  - Single: 795 Plates
  - Double: 1590 Plates

**Boost Speed and Efficiency with Dual Robot System**

WASPLab™ Smart Incubators House Two Robots for Fast Culture Plate Retrieval

1. **Handling Robot**
   - Moves the Plates
   - From Entrance to Shelf
   - Back to Exit When Imaging or Picking is Required

2. **Concierge Robot**
   - Performs Intermediate Tasks
   - Receiving Plates from Imaging
   - Receiving New Plates for Incubation
   - Holding Plates to Allow the Handling Robot to Prioritize Exit of Plates for Picking

* Based on current user experiences. Varies based on validation and user preference.

**Work-Up Canister System**

Plates that Need Work-Up are Sent to Canisters for Easy Plate Retrieval

**Conveyor Track**

Customizable Conveyor Track Transports WASP®DT Inoculated Plates or Manually Inoculated Plates to WASPLab™

Two-Way, Track-to-Bench Solutions are Available Upon Request

**Manual & Re-Loading Carousel**

Place Manually Inoculated Plates, such as Blood Cultures, and Tissues, or Plates that Require Re-Incubation, into the Manual & Re-Loading Carousel to be Transferred to WASPLab™ via Conveyor Track, Ensuring Traceability

**WASPLab™**

Grow Your Lab with the Freedom and Reliability of WASPLab™ Track, Carousel and Canister Systems

**Improving Turnaround Time**

Consistent Incubation Environment and Earlier Plate Reading can Result in Improved Turnaround Time* and Delivering Actionable Results within the Therapeutic Window Faster

* Based on current user experiences. Varies based on validation and user preference.
WASPLab™ IMAGE ACQUISITION TECHNOLOGY allows labs to make the most accurate work-up decisions by using a highly sophisticated lighting and camera system so that each plate image is clear and focused.

Upon entering the incubator, the Telecentric Linear Camera takes a critical TIME ZERO image of the plate for comparative differential image analysis - a fundamental step for the PhenoMATRIX™ algorithms. Then based on user defined software, it will continue to image the plates at their programmed intervals.

WASPLAB™ DIGITAL MICROBIOLOGY SOFTWARE INTEGRATES WITH THE LIS TO PROVIDE PATIENT DETAILS FOR BETTER CARE

- Comprehensive Snapshot of the Patient’s Demographics to Guide Most Effective Treatment
- Images are Stored in the Software to be Used for Training or Traceability
- Monitor Growth in Real Time and Read Plates When They are Ready to be Read, Improving Turnaround Time
- Never Touch a Negative Plate with Built-in Segregation Software for Batch Resulting of No-Growth Samples

Stop Eye Straining and Enjoy the Sharpest Images in the Industry with WASPLab™ Telecentric Linear Camera Optics

- Unique 27 MegaPixels for Larger than Life Images
- Enormous 9mm Depth of Field to Focus on Colonies Both Large and High or Small (as 0.1mm) and Low to Ensure No Growth is Missed
- Three Different Lighting Systems to Choose from to Capture Optimal Plate Images
- Constant Magnification, Eliminating Perspective Angle Error so Images are Undistorted for Precise Colony Location and Picking
**DIGITAL MICROBIOLOGY: WASP Lab™ TOTAL LABORATORY AUTOMATION INCLUDES IMAGE ANALYSIS SOFTWARE, MOVING MICROBIOLOGY TO THE DIGITAL AGE**

**SCREEN, READ, PICK AND REPORT IN AN INSTANT**

1. **SCREENING – Discard Negatives Quickly**
   - All Plate Images are Presented to the User for Review
   - PhenoMATRIX™ Software Algorithms Group Images of Plates Based on User Selected Colony Counts
   - Users Send Plates Requiring Further Investigation to Reading and Rapidly Results and Discards Negatives

   Using differential image analysis, WASP Lab™ uses a preliminary colony count to group plates by CFU/L which are then presented to the reader for verification.

   Plates are grouped and presented for review. Cultures with no significant growth or skin contaminants can be rapidly resulted, in the screening process. OR PhenoMATRIX™ will automatically sort out the “no growths” and can result up to 30 negative samples at once.

2. **READING – Focus on Plates that Require Investigation and Expertise**
   - Plates Requiring Further Investigation are Displayed in the Reading Area
   - Users Can Zoom and Tag Colonies with Presumptive Identifications
   - Work-Up Tickets are Created (MALDI-TOF, AST, Subculture, etc.)

   Example of WASP Lab™ user defined drop-down menu which allows users to select from a list of reporting descriptions which can match LIS reporting criteria.

3. **PICKING – Users Obtain Presumptive Positive Plates from Canisters and Bring Them to the Bench for Work-Up**
   - After Scanning the Plate, Images are Displayed with Digitally Tagged Colonies and Work-Up Instructions
   - Upon Completion of the Tasks, the User Acknowledges the Conclusion in the Software and Closes Out the Ticket Before Moving to the Next Sample

4. **REPORTING - WASP Lab™ Software Sends the Results to the LIS and Archives the Results**

   Digital Microbiology Allows Laboratory Professionals to Quickly and Accurately Read and Share Information with Healthcare Providers, Bringing Microbiology Back to the Patient Bedside.

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PhenoMATRIX™ AND DIGITAL MICROBIOLOGY

NEVER TOUCH A NEGATIVE PLATE AGAIN AND SPEED TIME TO RESULTING WITH PHENOMATRIX™

UNPARALLELED IN THE INDUSTRY, WASPLAB’S PHENOMATRIX™ offers users an exclusive selection of highly sophisticated algorithms. Through advanced Artificial Intelligence (AI), the software automatically recognizes organisms allowing microbiology labs to read, interpret, and segregate bacterial cultures with the click of a button with 100% sensitivity!

PHENOMATRIX™ ALGORITHM SUITE INCLUDES:

Urine Culture Segregation Based on Colony Counts with Growth/No Growth Discrimination

Customizable User Defined Thresholds for Growth/No Growth Counts Colonies for Faster Urine Culture Reading

Chromogenic Detection of any Organism of Interest (MRSA, VRE, ESBL, GBS)

Accurately Detects and Differentiates Organisms on Any Manufacturer’s Chromogenic Agar for Fast Results

Application of User-Defined Expert Rules to Filter Outputs and Reporting

Applies Each Laboratory’s Personalized Rules Combined with Demographic Information from a Patient’s LIS Record for a Higher Level of Culture Segregation, Providing an Additional Filter for Standard Report Outputs

PhenoMATRIX™ Algorithms are Optional Additions to the WASPLab™ Software and can be Purchased Individually.

Sources:

To Learn More or for a Full List of Available Algorithms, Contact Your Local WASPLab™ Representative Today!
AUTOMATION IN MICROBIOLOGY is not simply bringing a plate to a workbench via track. Instead, it’s about maximizing efficiencies anywhere possible, so that Microbiology labs can positively impact patient care. That’s why COPAN OFFERS EXCLUSIVE ADDITIONS THAT ENHANCE YOUR LAB’S CAPABILITIES TO EMPLOY A COMPREHENSIVE COLLECTION OF MODULES FOR TOTAL LABORATORY AUTOMATION.

DIGITAL MICROBIOLOGY AND WORK-UP STATIONS

These Ergonomic Stations Afford Labs the Freedom to Grow and Move, while Performing the Important Tasks of Reading, Screening, Picking and Resulting at their Bench

- Ergonomically Designed Interpretation Workbenches for Maximum Comfort
- Advanced Smart Zoom Technology for Users to Pinpoint Colonies that Could be Missed by the Human Eye
- At the Picking Station, Technologists Scan the Plates’ Barcode to Retrieve Images and the Worksheet with the Pre-Selected Colonies Tagged with Presumptive ID’s
- Archive Images for Quality Assurance and Teaching Purposes to Create a Unique Library for Unique Organisms
WASP-FLO™ STREAMLINE SAMPLE LOADING

LABORATORIES WITH MULTIPLE WASPLAB™ LINES benefit from WASP-FLO™ for streamlining sample loading. WASP-FLO™ bulk loader automatically sorts samples and directs them to the appropriate WASP® DT. By utilizing a barcode reader, WASP-FLO™ automatically places the sample in the corresponding pallet, to be processed on WASP® DT, once the pallet is full.

Load Samples Indiscriminately and Eliminate Batch Processing
• Randomly Load Samples into WASP-FLO™
• Automatic Sorting and Routing of Samples Increases Efficiency & Throughput

WASP-FLO™ Productivity is Equivalent to at least 2 FTE’s

COLLABORATIVE ROBOT MANAGES MANUAL PROCESSES AUTOMATICALLY

COPAN’s Exciting New Collaborative Robot Can Automate Many Processes that were Previously Done Manually, Such as Processing Positive Blood Culture Bottles, Tissues, Wound Aspirates, Sterile Body Fluids or Traditional Swab Samples. Users simply scan the specimen barcode and the robot will present the precise sequence of pre-labeled plates or tubes. After the plates are manually seeded, the Collaborative Robot streaks the plates and places them on the conveyor track to the WASPLab™ incubators.

Collaborative Robot Capabilities:
• Eliminates Transcription and Transposition Errors from Manual Processes
• Presents the Precise Sequence of Plates and Materials for Any Task or Any Specimen Setup
• All Tasks are Performed within HEPA Filtered Environment
• Allows Automation of Many Tasks and Procedures Previously Done Manually
• Modular Work-Pods Expand the Robotic Capabilities to Include Automated AST and ID setup

WASP® DT
Dimensions: 3.625 feet wide x 6.79 feet long x 6.33 feet high
Weight: Approximately 1,300 lbs
Input Voltage: 220V, 20Amps
Peripheral Interfaces: Touch Screen Monitor, External Barcode Reader, Label Printer
Certifications: CE, UL, CSA
Electrical Receptacle Plug: HBL2320 250V / 20A (for USA and Canada)

INCUBATORS
Dimensions Single: 3.8 feet wide x 2.8 feet long x 76 feet high
Capacity Single: 854 plates
Operating Conditions:
Height: Up to 2000 m
Humidity: From 0 to 95%
Temperature Range: From 5˚C to 40˚C

WASP-FLO™
Dimensions: WASP-FLO™ Hopper Module: 3.4 feet x 4.5 feet x 6.6 feet
WASP-FLO™ Loading Module: 3.4 feet x 3.2 feet x 5.8 feet
Weight: WASP-FLO™ Hopper Module: 270 kg
Weight variable according to layout, approx. 100 kg/m per single conveyor
Electrical Specifications: 208-240 VAC, 50/60 Hz, 2000 W max
(800 W WASP-FLO™ Loading Module + 1200 W WASP-FLO™ Conveyor)

WASP-FLO™ Dimensions: WASP-FLO™ Hopper Module: 3.4 feet x 4.5 feet x 6.6 feet
WASP-FLO™ Loading Module: 3.4 feet x 3.2 feet x 5.8 feet
Weight: WASP-FLO™ Hopper Module: 270 kg
Weight variable according to layout, approx. 100 kg/m per single conveyor
Electrical Specifications: 208-240 VAC, 50/60 Hz, 2000 W max
(800 W WASP-FLO™ Loading Module + 1200 W WASP-FLO™ Conveyor)

WASP-FLO™ Conveyor: According to specific layout
Weight variable according to layout, approx. 100 kg/m per single conveyor

GRAM SLIDEPREP™
Dimensions: 2.3 feet wide x 1.9 feet long x 4.1 feet high
Weight: Approximately 221 lbs

WASPLAB 0819