Agilent Bravo Automated Liquid Handling Platform

COMPACT MICROPLATE
LIQUID HANDLING MADE EASY

The Measure of Confidence

Agilent Technologies
BOOST PRODUCTIVITY AND INCREASE DATA REPRODUCIBILITY

The Agilent Bravo Platform is a reliable, compact, and versatile liquid handling system with a unique open deck design that facilitates workflow automation and integration. It aspirates and dispenses liquids with high accuracy and precision over a wide volume range from various single-well to full-plate configurations. With an expanding range of on-deck accessories, the Bravo Platform is also adaptable, increasing throughput and walkaway time for the full spectrum of laboratory applications.

Precise Pipetting

Achieve greater accuracy and reproducibility

- Single-well to full-plate transfers support automated hit-picking, row- or column-wise pipetting for serial dilutions, and more
- Expanded volume range simplifies automation across applications
- Swappable disposable-tip, fixed-tip, pin tool, and AssayMAP technology liquid handling heads deliver flexibility
- Optional plate gripper moves labware for increased efficiency

Innovative Design

Adaptable to all your applications

- 9 on-deck positions for plates, tips, accessories, and more
- Open design facilitates deck access, and integration with plate handlers and robots
- Hood-friendly size, with additional compact SRT-version for very restricted locations
- Labware standards compliant (meets the standards ANSI/SBS 1-2004 through ANSI/SBS 4-2004)

Robust, Feature-rich Software

Supports new and advanced users

- Drag and drop tasks for simplified protocol startup
- Form overlay enables the creation of an easy-to-use graphical interface for novice users
COMPLETE APPLICATION VERSATILITY

The Agilent Bravo Platform is a flexible liquid handling solution for the full range of life science applications. It easily automates new or existing workflows to increase throughput, walkaway time and data reproducibility.

Realize unparalleled flexibility by customizing a standard Bravo Platform with the right on-deck accessories for your application, or save time by choosing a standard application solution with key accessories already in place.

Standard application solutions:
- Next Gen Sequencing (NGS)
- Agilent AssayMAP technology for protein sample prep
- ULS
- CGH Enzymatic and CGH + SNP

• A proven standard for NGS sample prep
• qPCR/PCR preparation and purification
• CGH Enzymatic and CGH + SNP pre-configured standard application solutions
• Microarray setup

• Intelligent automation of biologics sample preparation
• Biomarker validation
• Peptide mapping
• N-glycan analysis sample preparation

• Small molecules and biologics
• High-throughput screening
• Compound library management
• ELISA and related immunoassays

• Cell-based assays
• Cytotoxicity testing
• Cell culture and hybridoma screening
• Cell culture maintenance

• Caco-2
• Cytochrome p450
A VARIETY OF LIQUID HANDLING TECHNOLOGIES TO MEET YOUR APPLICATION NEEDS

The Bravo Platform allows end-users to achieve high performance liquid handling precision with 7 easy-to-exchange liquid handling heads using 3 different liquid handling technologies.

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- **Air Displacement**
  - Two, 96-well models cover a range from 300 nL to 250 µL
    - 96LT 96-Well (250 µL) G5498B/G#042
    - 96ST 96-Well (70 µL) G5498BG/#041
  - 384-well model dispenses from 300 nL-70 µL
    - 384ST 384-Well (70 µL) 498B#043
  - Uses disposable tips to prevent carry over and contamination
  - Aspirates and dispenses to wells, rows, columns, arrays, and full plates

- **Hanging Drop**
  - 96 and 384-well models for transfer to 96, 384, and 1536-well plates
    - 96F50 96-Barrel (50 µL) G5498B/G#044
    - 384F50 384-Well (50 µL) G5498B/G#045
  - Volume range of 20 nL to 50 µL
  - Washable fixed stainless steel needles

- **Positive Displacement**
  - Custom-designed to your specifications
    - Custom Hardware G5420A
  - Choose 24, 48, 96, 384, and 1536-pin models
  - Deliver 3 nL to 5000 nL to all wells simultaneously
  - 96-well format with volume range of 2-250 µL
    - 96AM G5498B/G#046
  - Uses AssayMAP micro-chromatography cartridges for automated sample preparation of biologics for antibody purification, N-glycan sample prep and peptide sample prep for mass spec analysis.

More information on Agilent AssayMAP technology at: [www.agilent.com/lifesciences/assaymap](http://www.agilent.com/lifesciences/assaymap)

Precision and Accuracy

When used with Agilent-certified pipette tips, performance for the disposable tip head, over a volume range of 0.3-250 µL using multiple heads, is guaranteed to be 5% CV and 10% relative inaccuracy, using DMSO-based solutions. For more information about Agilent Certified Pipette Tips please visit: [www.agilent.com/lifesciences/pipettetips](http://www.agilent.com/lifesciences/pipettetips).

Microplate-centric Liquid Handling

Used with any of the disposable tip pipetting heads, the Set Head Mode feature of the VWorks Automation Control Software allows users to aspirate or dispense into one sample well, rows, columns, an array of wells or the full plate.
MORE THAN 60 ACCESSORIES ENABLE APPLICATIONS

The Bravo Platform features 9 on-deck plate positions that accommodate over 60 accessories. Details on all Bravo accessories, and where they may be located on the Bravo Platform deck, can be found in the Bravo Accessories Catalog, Agilent publication number 5991-0369EN.

Position 1
Vacuum Filtration Station

Position 2
Manual Fill Reservoir

Position 3
Weight Station plus Tip Wash Station

Position 4
Peltier Thermal Station with Custom Plate Nest (used with optional Bravo risers)

Position 5
Orbital Shaking Station

Position 6
Through hole for tip trash and through-deck accessories

Position 7
Magnetic Bead Accessory

Position 8
Empty platepad

Position 9
Thermal Station (used with recirculating chiller not shown)

Designed for Safety and Compliance
The Bravo Platform Light Curtain assures compliance with regional safety requirements. If an object disrupts the light beams across the front of the device, the safety interlock circuit disables the pipette head motors.
AN INTEGRATION-FRIENDLY DESIGN

The Bravo Platform’s small footprint and open access deck enables flexible options for automating all your applications. Agilent offers scalable solutions from the standalone Bravo Platform to integrated workstations, and sophisticated containment-based systems that can be customized to your specifications.

STANDALONE
Increase the automation of your existing application workflows by adding a standalone Bravo Platform for automated liquid handling.

WORKSTATIONS
Agilent offers application specific solutions that integrate liquid handling, robotics and plate management instruments.

SCALABLE

Agilent Bravo Automated Liquid Handling Platform (G5523A/G)

Agilent NGS Option B Workstation (G5522A) automates sample preparation for next-gen sequencing.
“It says a lot about the Bravo Platform that we could come in pretty green and get it working to our liking pretty quickly.”

KRISTI STEPHENSON, RESEARCH ASSOCIATE, TRANSLATIONAL GENOMICS RESEARCH INSTITUTE, PHOENIX, ARIZONA, U.S.A.

ENTERPRISE-LEVEL SOFTWARE

VWorks Automation Control Software integrates diverse devices (140+ driver library) into a cohesive, integrated system that ensures maximum throughput and optimal resource utilization.

Bravo applications can be simplified with a user-friendly interface which enables the novice user to operate it with ease. Custom forms simplify the execution of complex protocols and are ideal for multi-user environments.

Benefits of Agilent VWorks Software

An Intuitive Graphical User Interface—enables the novice user to operate it with ease.

Drag and Drop Tasks—graphical icons are selected and grouped to represent the sequence of tasks in your experiment.

Event Driven Automation Control—can run multiple experiments in parallel for maximum resource utilization and throughput.

Scalable—single application drives all levels of automation (standalone instruments, systems, 3rd party devices) with a consistent user interface that reduces training costs.