

BioDot OEM Liquid Handling Solutions

Leading the Way in Precision Pump Technologies



From Picoliters to Microliters,
our Discrete Droplet Dispensing
is the Engine for Science



B I O D O T

AN **ATS** COMPANY

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Features That Set Us Apart

BioDot can help get your idea to market faster!

Contact us to learn more about BioDot's OEM offering
Visit www.biodot.com/service/oem-systems or
Connect with us @ www.biodot.com/contact-us



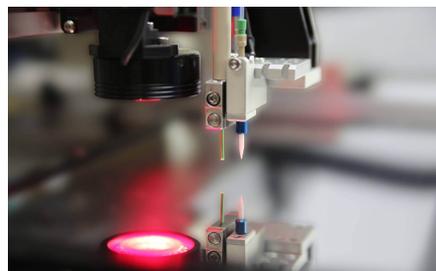
BioDot OEM Liquid Handling Solutions Partnership

Precision Partnerships, Pioneering Solutions



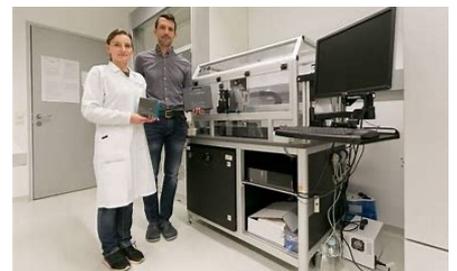
Continuous Support

Your Success, Our Commitment.



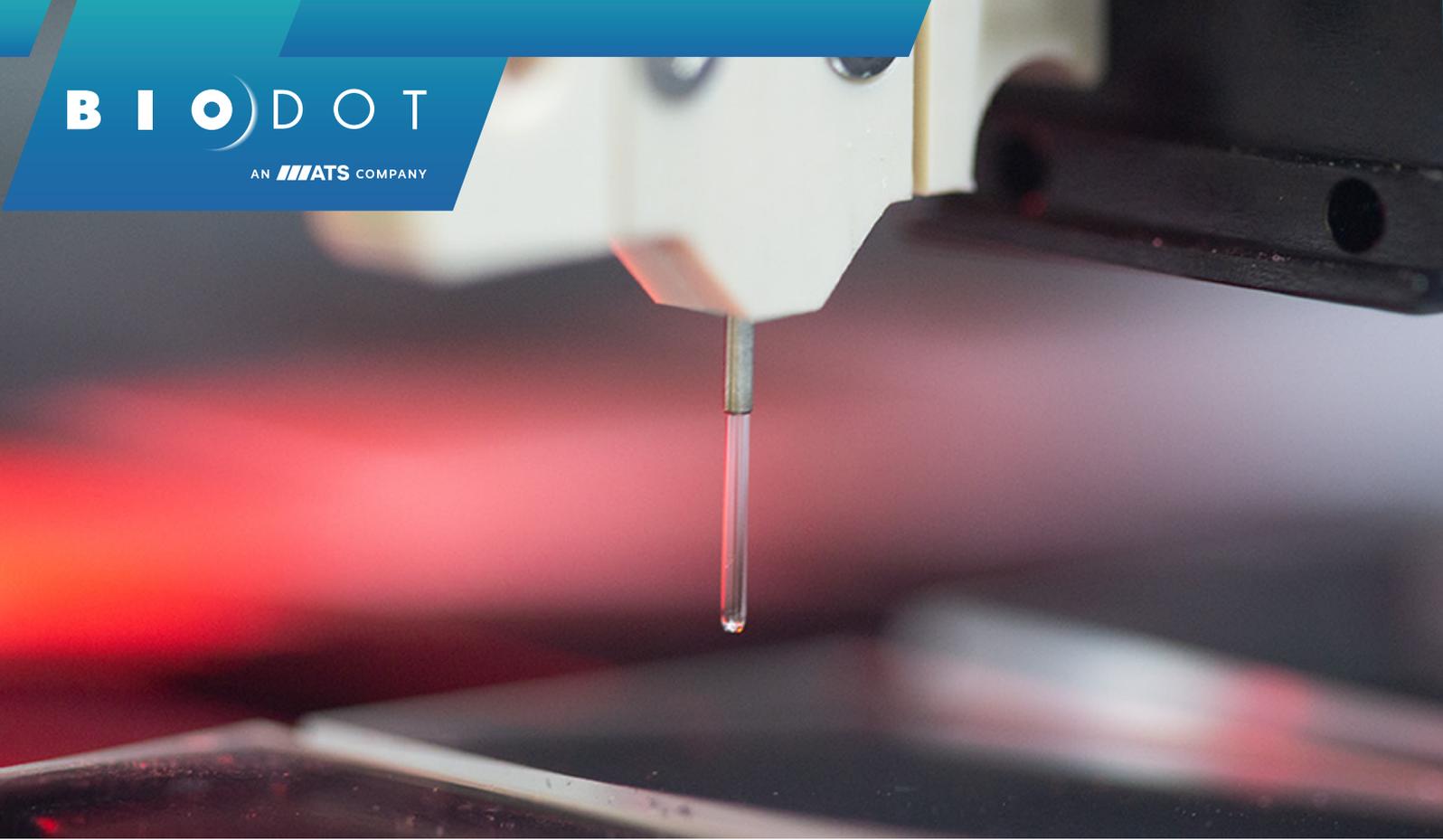
History in Low Volume

A Legacy of Precision; Crafting the Future; Let Our Technology be your Engine for Science.



Competence that Translates to Excellence

Our Dispensing Expertise supports your Scientific Breakthroughs.



Introduction to BioDot & Our Pioneering Legacy

For over three decades, BioDot has redefined the boundaries of liquid handling technologies.

Leading the way in transformative liquid handling technologies. We at BioDot, recognize that every droplet matters. Whether it's a critical reagent in a cutting-edge research experiment, a vital component in diagnostic testing, or a lifesaving drug in clinical applications, our technology ensures unparalleled precision at every step. Our commitment to innovation not only addresses the challenges of today but anticipates the needs of tomorrow.

BioDot's culture has a rich legacy of pushing boundaries and setting industry standards. Our team's dedication goes beyond equipment; it's about empowering the very core of life sciences, diagnostics, and clinical endeavors, ensuring that each drop delivers hope, answers, and solutions.

Join us as we continue our journey, shaping the future of liquid handling with passion, precision, and purpose. Welcome to BioDot – We empower science companies with scalable, robust solutions for miniaturized assays, aiding clinical results and scientific breakthroughs globally.



BioDot is an ATS Company

ATS Life Sciences is an industry-leading automated manufacturing solutions provider to many of the world's most successful life sciences companies.

- Clients in more than 62 Countries
- 70 years of combined automation experience
- The experience and capability to design, build and integrate systems with custom and standard elements that support long-standing relationships with a diverse, global blue-chip customer base built on precision products and quality service
- Supports the full product lifecycle from R&D to commercial production
- A suite of lyophilized beads creation and handling solutions for diagnostic and pharmaceutical applications
- Learn more at: <https://atslifesciencesgroup.com/>

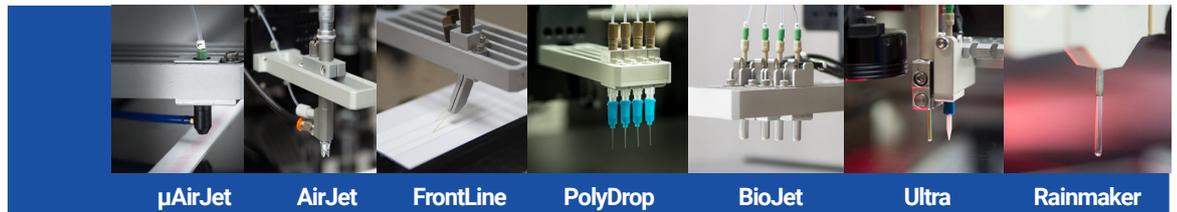
Our Portfolio of Pump Technologies

BioDot enables customers to do more with less. Since 1994, BioDot's patented technologies, combined with a total supply chain approach, have made it a trusted partner for more than 2,000 manufacturers and research organizations worldwide. We have helped customers overcome thousands of unique dispensing challenges while managing upstream and downstream supply chain partnerships. BioDot's standard and custom platforms continues to support world-class manufacturing operations starting with R&D and continuing throughout the commercialization journey to high-throughput manufacturing.

BioDot platforms can dispense in microliter, nanoliter and picoliter volumes, reliably, accurately, and quickly.

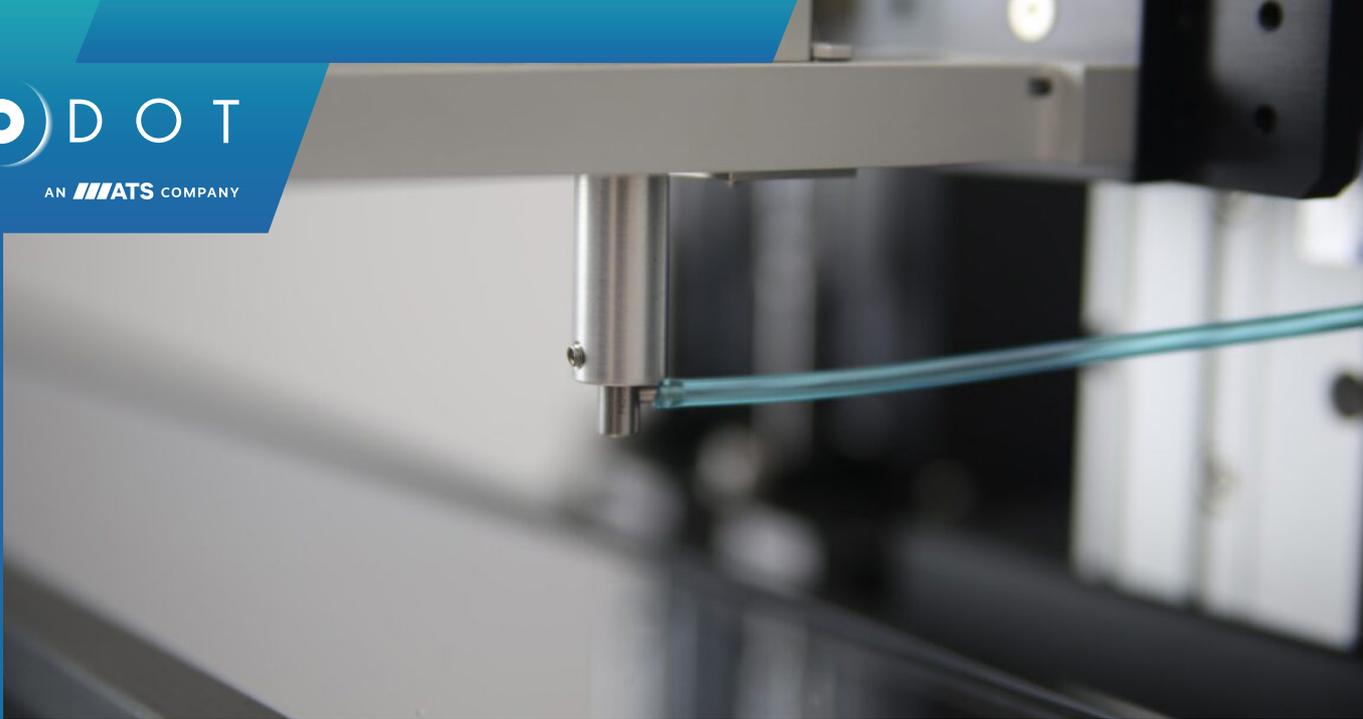


BioDot Partner OEM Dispensing Products



	µAirJet	AirJet	FrontLine	PolyDrop	BioJet	Ultra	Rainmaker
Dispensing Style	Aerosol	Aerosol	Contact tip	Near/non-Contact Drop on Demand	Non-Contact Solenoid	Non-Contact Piezoelectric PEEK Capillary	Non-Contact Piezoelectric Glass Capillary
Methods	Bulk Dispense	Bulk Dispense	Bulk Dispense	Bulk Dispense	Bulk Dispense Aspirate & Dispense	Bulk Dispense Aspirate & Dispense	Bulk Dispense Aspirate & Dispense
Print Modes	Lines	Lines	Lines	Step & Repeat	Lines Step & Repeat On-the-Fly	Lines Step & Repeat On-the-Fly	Lines Step & Repeat On-the-Fly Multi Tip-on-the-Fly
Line Volume	0.5 - 12 µl/cm	0.1 - 24 µl/cm	> 0.5 µL/cm	-	0.5 - 3.0 µL/cm	Material Dependent	Material Dependent
Line Width	0.5 to 6 mm	0.5 to 10 mm	0.25 to 2.5 mm	-	0.25 to 2.5 mm	Material Dependent	Material Dependent
Drop Volume	-	-	-	>25 nL	2.0 nL - 2 µL	100 pL to low nLs	25 pL - low nLs
Spot Size	-	-	-	>300 µm	>130 µm	130 - 900 µm	30 - 900 µm

* Typical application ranges. Reagent, materials and speed dependent



The μ AirJet™

The μ AirJet™ is an aerosol dispensing nozzle that uses pressurized air to atomize the fluid passing through the nozzle. The nozzle, coupled with a syringe pump, creates a quantitative spray format, generating a line.

Features

- Line Densities 0.5 - 12 μ l/cm
- Line Widths 0.5 - 6 mm
- Aerosol Dispensing
- Non-contact
- Programmable Volumes
- Direct Dispensing from Reservoir
- Easy to Use, Clean and Maintain
- Scalable from R&D to Production

BioDot Compatible Platforms

ZXLITE, ZX1010, XYZ3060, XYZ3210, RR120

Applications

- Lateral Flow - Conjugate Dispensing and Blocking
- Air slicing, coding, it can be used with aqueous and organic material (Line volume: 0.5 - 12 μ l/ cm)
- Discrete droplet continuous operation

Options

Fluid Path Kits

*Typical Application Ranges. System, Reagent, Materials and Speed Dependent



The AirJet™

BioDot's AirJet uses pressurized air to atomize reagent, creating a non-contact, quantitative aerosol spray as a dot or line. This proprietary technology couples the dispensing nozzle with a high-resolution syringe pump to dispense quantitative volumes.

Features

- Line Densities: 0.1 - 24 $\mu\text{l}/\text{cm}$
- Line Widths: 0.5 - 10 mm
- Aerosol and Syringe Pump Technology
- Adjustable Dispense Morphology
- Programmable Volumes
- Non-Contact Printing
- Bulk Dispensing from Reservoir
- Scalable from R&D to Production

BioDot Compatible Platforms

ZXLITE, ZX1010, XYZ3060, XYZ3210, RR120

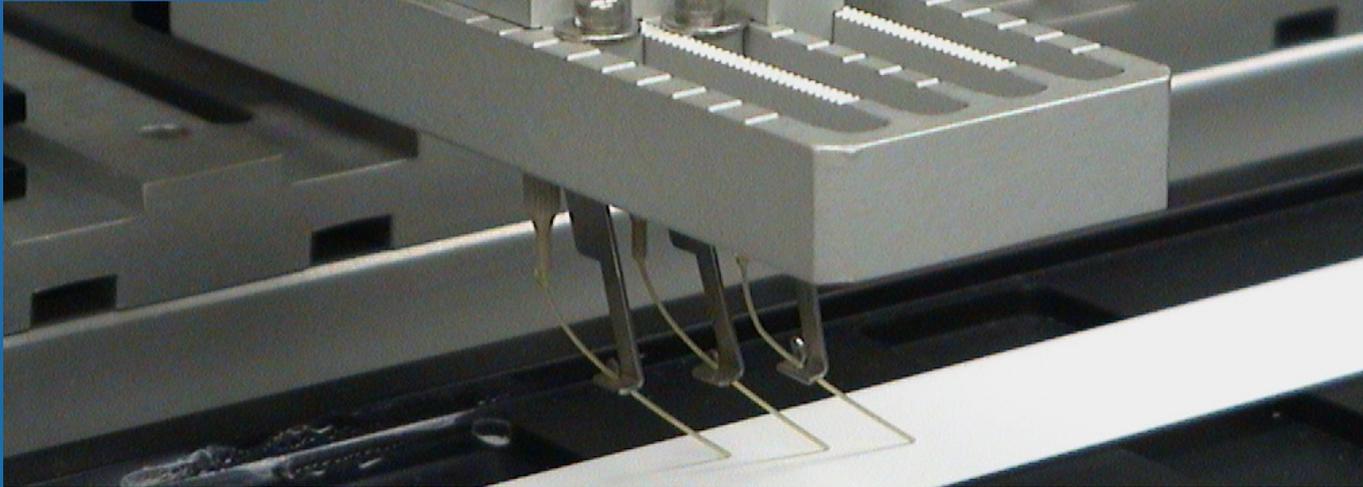
Applications

- Lateral Flow - Conjugate Dispensing and Blocking
- Custom Coating Applications
- Air slicing, coding, it can be used with aqueous and organic material (Line volume: 0.1 - 24 $\mu\text{l}/\text{cm}$)
- Discrete droplet continuous operation

Options

Fluid Path Kits

*Typical Application Ranges. System, Reagent, Materials and Speed Dependent



Frontline™

BioDot's FrontLine technology features a flexible tip that glides on the substrate surface while dispensing fluid. The fluid flow rate is synchronized with the system motion to dispense a quantitative volume-per-unit length of reagent on the substrate surface. FrontLine dispensing is ideal for printing lines on membranes and other substrates used in Lateral Flow and Immunoblot diagnostic tests.

Features

- Line Densities: >0.5 $\mu\text{L}/\text{cm}$
- Line Widths: 0.25 - 2.5 mm
- Contact Dispensing Technology
- Bulk Dispensing from Reservoir
- Programmable Line Volumes
- Precision Low Volume Drop Dispensing
- Scalable from R&D to Production

BioDot compatible liquid handler

ZXLITE, ZX1010, XYZ3060, XYZ3210, RR120

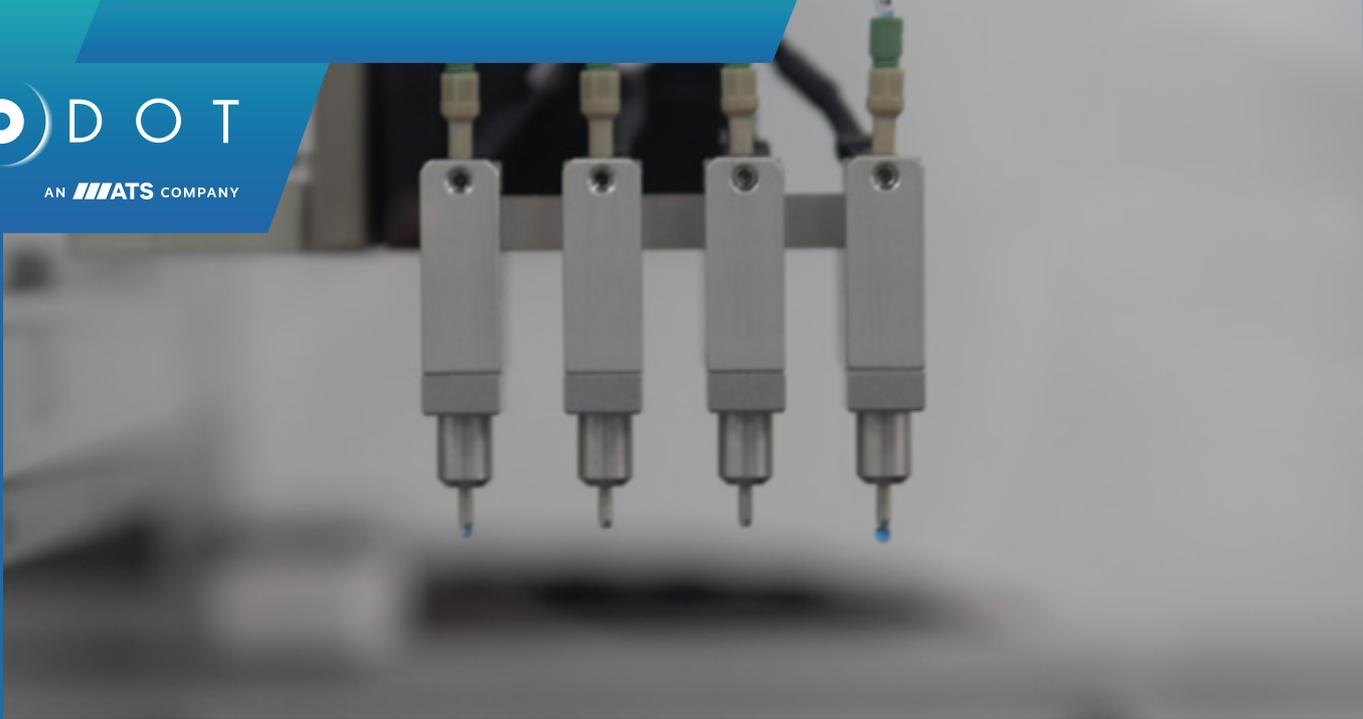
Applications

- Lateral Flow Tests
- Immunoblots

Options

Fluid Path Kits

*Typical Application Ranges. System, Reagent, Materials and Speed Dependent



Pneumatic BioJet™

Features

- Integrates easily into motion systems
- High speed and control
- High dispensing throughput
- Bulk-dispense
- Lower dead volumes
- Wide dynamic dispense range
- Faster response times and frequencies
- .1 PSI resolution
- Grid line, on-the-fly dispensing
- Dispense volume dynamic range 50 nL-30 µL
- CV < 5%
- Onboard drop optimization camera available

Applications

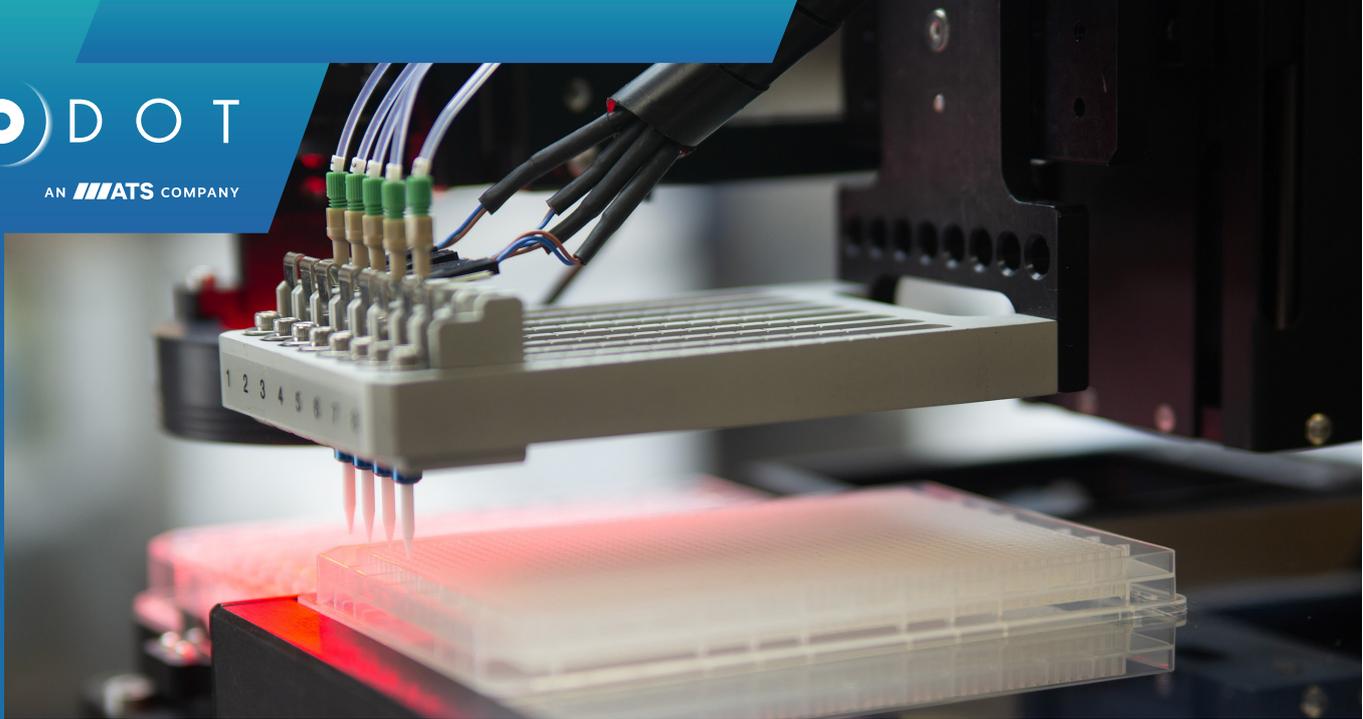
- Lyobead
- Lateral Flow Test
- Flow Through Test
- Microarrays
- DNA, Cell, Protein Dispensing
- Multiplex ELISAs
- Biosensor / Biochip
- Lab-on-a-Chip
- Microfluidic Devices
- Low Volume PCR
- FISH



Do You Know!

Our Lyobead Sphera™ Platform uses BioDot's Pneumatic Pump, learn more at www.biodot.com/sphera

*Typical Application Ranges. System, Reagent, Materials and Speed Dependent



BioJet™

This proprietary, quantitative, non-contact technology couples the BioJet “Drop-on-Demand” valve with a high-resolution syringe pump. The BioJet meters precise amounts of reagent, incorporating the benefits of non-contact dispensing and the ability to program exact drop volumes.

Features

- Drop Volumes: 2.0 nL to 2.0 µL
- Line Densities: 0.5 - 3.0 µl/cm
- Drop Sizes: >130 µm
- Line Widths: 0.25 - 2.55 mm
- Program Single Drops or Burst of Drops
- Non-Contact Printing
- Direct Dispense or Aspirate & Dispense
- Precision Low Volume Drop Dispensing
- Scalable from R&D to Production Environments
- Printing “Step-and-Repeat” and “On-the-Fly” modes
- System Availability

BioDot Compatible Liquid Handler

ZXLITE, ZX1010, XYZ3060, XYZ3210, RR120, AD1520, Omnia, AD3220, Glucodot, AD6020

Cytogenetics

CellWriter S, CellWriter 960

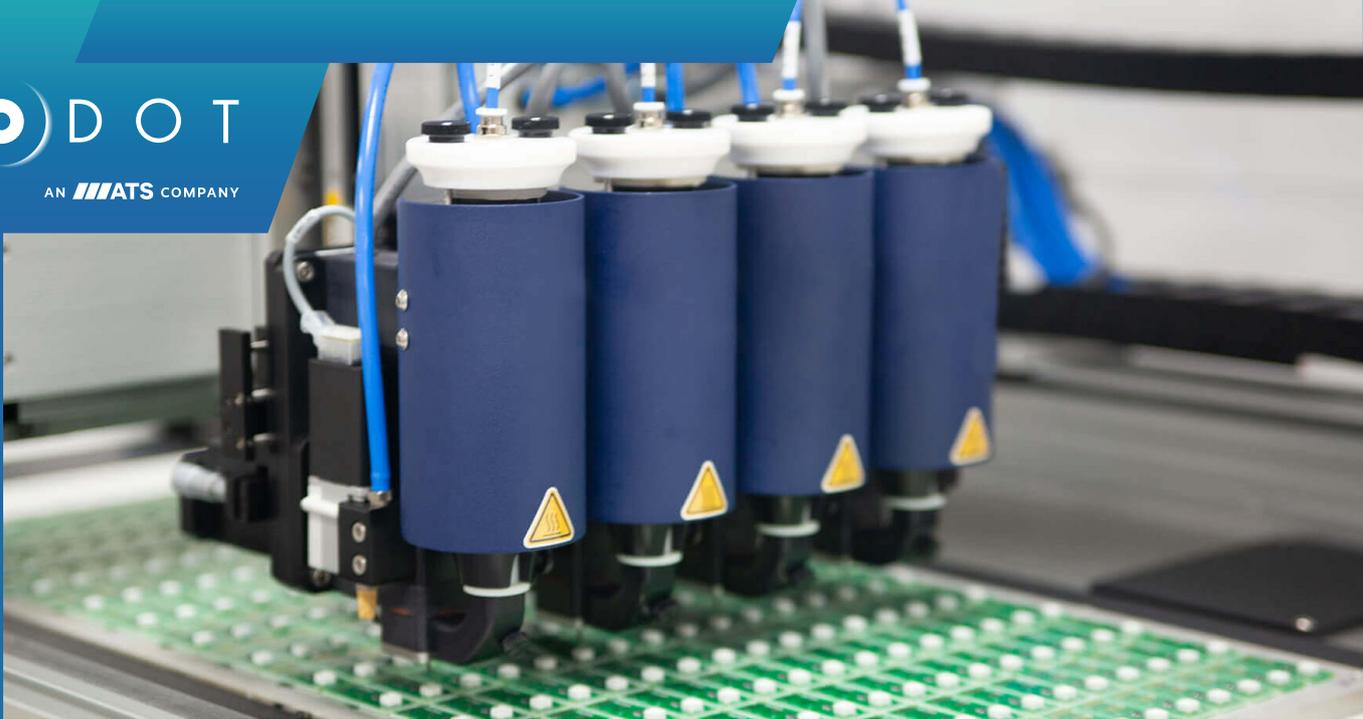
Applications

- Lateral Flow Test
- Flow Through Test
- Microarrays
- DNA, Cell, Protein Dispensing
- Multiplex ELISAs
- Biosensor / Biochip
- Lab-on-a-Chip
- Microfluidic Devices
- Low Volume PCR
- FISH

Options

- Custom Head Designs
- Extended Tubing (Aspirate & Dispense Systems)
- Tip ID (Aspirate & Dispense Systems)

*Typical Application Ranges. System, Reagent, Materials and Speed Dependent



PolyJet™

BioDot's PolyJet dispenses oils, adhesives and reagents with particles and other viscous fluids. PolyJet technology feeds liquid to a constant volume cavity, followed by pneumatic actuation of a diaphragm that ejects a drop through an orifice.

Features

- Drop Volumes: > 25 nL
- Drop Sizes: > 300 µm
- Pneumatic Diaphragm Technology
- Quantitative Dispensing of High Viscosity Fluids
- Viscosity up to 1,000 cp
- Viscosity up to 50,000 cp with Heating
- Non-Contact Printing
- Easy-to-Use Technology
- Scalable from R&D to Production

BioDot compatible liquid handler

ZXLITE, ZX1010, XYZ3060, XYZ3210, RR120

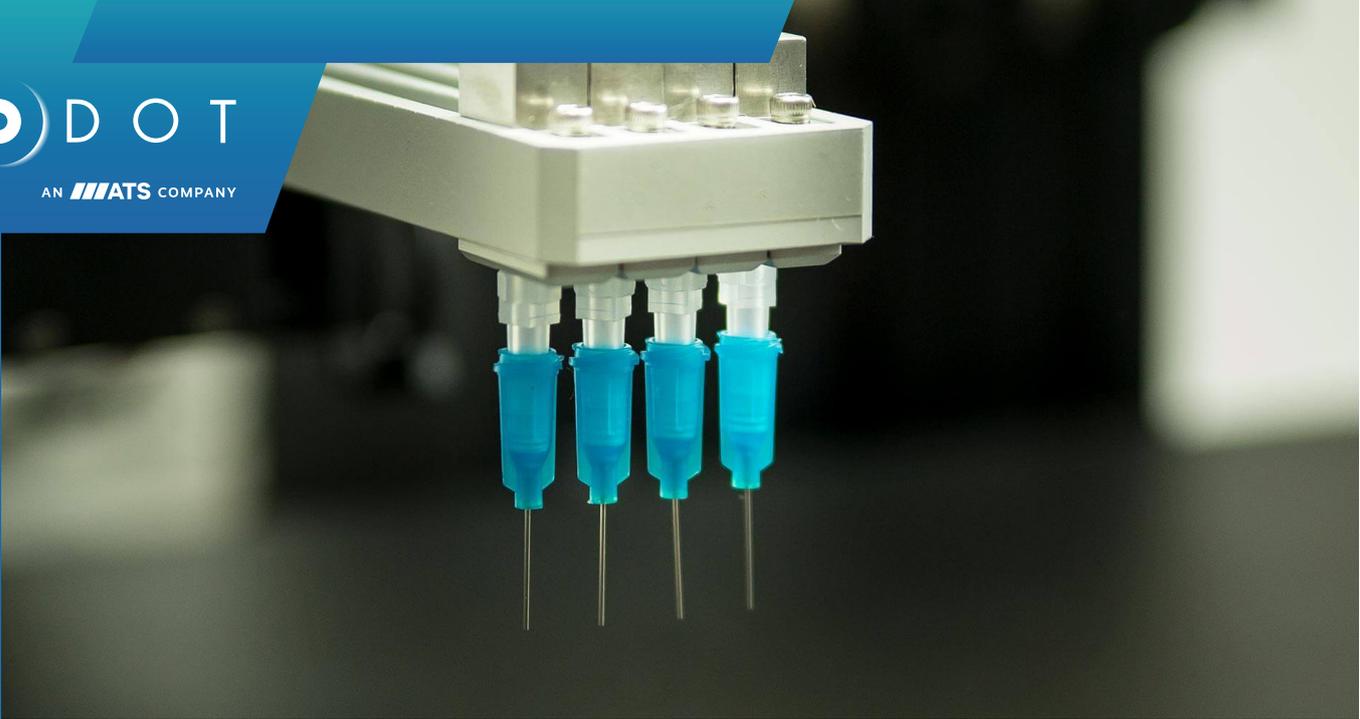
Applications

- Biosensors
- Reagents with particles
- Custom applications

Options

Heating module for viscous samples

*Typical Application Ranges. System, Reagent, Materials and Speed Dependent



PolyDrop™

The BioDot PolyDrop touch-off dispenser uses a high-resolution syringe pump to dispense a wide variety of reagents at low volumes. PolyDrop technology enables non-contact dispensing as well as near-contact dispensing, where the tip makes light contact with the surface and the droplet is deposited.

Features

- Drop Volumes: > 25 nL
- Spot Sizes > 300 µm
- Luer Tip with Syringe Pump Dispensing
- Non-Contact and Near-Contact Printing
- Precision Quantitative Drop Dispensing
- Easy to Use Technology
- Scalable from R&D to Production
- System Availability

Applications

- Biosensors
- Microwell Plate Filling
- Custom applications

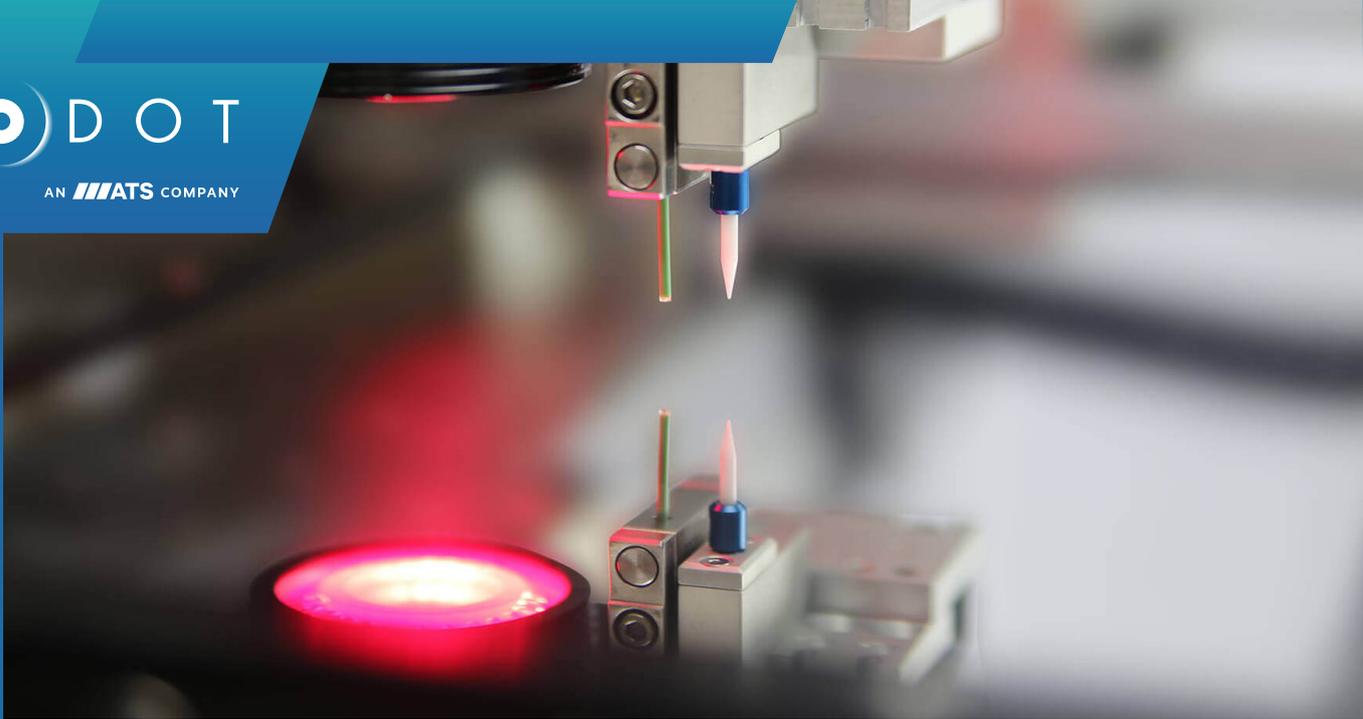
Options

- Luer Tip ID
- Custom Head Designs

BioDot Compatible Liquid Handler

ZXLITE, ZX1010, XYZ3060, XYZ3210, RR120, AD150, Omnia, AD3220, Glucodot, AD6020

*Typical Application Ranges. System, Reagent, Materials and Speed Dependent



Ultra™

BioDot's Ultra piezoelectric technology offers non-contact picoliter liquid handling and drop-on-demand capability. Each dispensing channel has a dynamic drop volume range of 100 pL to 1.0 nL. Unlike other traditional piezoelectric dispensers, the Ultra's piezoelectric actuator can be decoupled from the capillary, enabling the use of low-cost drop-in replacement capillaries.

Features

- Single-Drop Dynamic Range
100 pL to 1.0 nL
- Change Volume Ranges On-the-Fly
- CV's typically less than 5%
- Low-Cost PEEK Capillary System
- Compatible with a Wide Range of Reagent Types (including aqueous, organic and cells)
- High Dynamic Range of Viscosities without Additives (up to 400 cP)
- Drop size range of 10x for a single ultra capillary
- Available on systems with the BioJet dispensing technology
- System Availability
- Viscosity: 400 cP

BioDot Compatible Liquid Handler

Omnia, AD6020

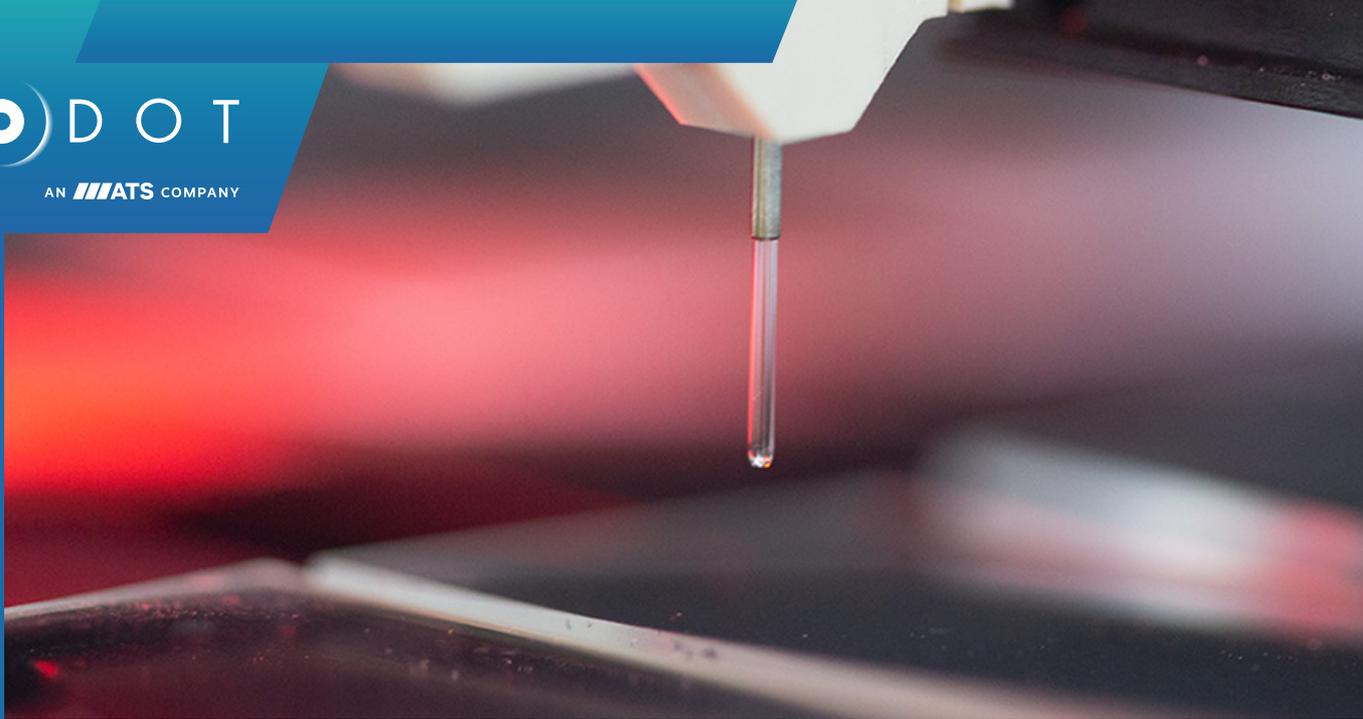
Applications

- Lateral Flow
- Microarrays
- DNA, cell, protein dispensing
- Multiplex ELISAs
- Biosensors/Biochips
- Lab-on-a-Chip
- Low Volume PCR
- Custom applications

Options

Various dispensing heads

*Typical Application Ranges. System, Reagent, Materials and Speed Dependent



Rainmaker™

The Rainmaker features BioDot's proprietary non-contact piezoelectric picoliter dispensing technology, allowing users to select a wide range of volumes as a single drop or high-frequency burst. Picoliters to nanoliters can be dispensed in On-the-Fly or in Step-and-Repeat modes. Rainmaker's On-the-Fly printing supports multiple tip dispensing for true high-speed arraying.

Features

- Drop Volumes: 25 pL to low nLs
- Drop Sizes: 30 - 900 µm
- Non-Contact Printing
- Direct Dispense or Aspirate & Dispense
- Program Single Drops or Burst of Drops
- Create High Density Microarrays
- Precision Low Volume Drop Dispensing
- Scalable from R&D to Production Environments
- Printing "Step-and-Repeat" and "On-the-Fly" modes
- System Availability
- Viscosity: 10 cP

BioDot Compatible Liquid Handler

ZXLITE, ZX1010, XYZ3060, XYZ3210, RR120, Omnia, AD6020, Omnia™, AD6020

Applications

- Lateral Flow
- Microarrays
- DNA, cell, protein dispensing
- Multiplex ELISAs
- Biosensors/Biochips
- Lab-on-a-Chip
- Low Volume PCR
- Custom applications

Options

Various dispensing heads

*Typical Application Ranges. System, Reagent, Materials and Speed Dependent



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