SCIENION
BY BICO

FROM CONCEPT VALIDATION TO HIGH-THROUGHPUT MANUFACTURING

# Precision Microdispensing, engineered to scale

## SCI**FLEXARRAYER**® DISPENSING PLATFORM

S3 | S12 | SX | S100
One platform. Four scalable systems.

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# Precision matters. At every stage.

In diagnostic manufacturing, multiplex assay development and drug delivery device production, precision microdispensing defines performance. Whether exploring new biological formats or scaling toward production, precision, reproducibility and process control become critical.

### FOR RESEARCH & EARLY-STAGE TEAMS

- Fast concept validation
- Reproducible, precise dispensing
- Easy target handling / management
- Rapid and flexible assay iteration
- Reliable, low-risk operation
- Upgrade pathway as project scales

### FOR SCALE-UP & MANUFACTURING

- High-volume batch capacity
- 24/7 automated operation
- Batch-to-batch reproducibility
- Precision at production speed
- Minimal downtime and preventive maintenance
- ISO-compliant and quality-managed production

## THE SCIFLEXARRAYER® PLATFORM

Built on over 25 years of dispensing expertise, the sciFLEXARRAYER® platform combines picoliter to nanoliter precision with scalable system architecture, enabling teams to validate, optimize and scale diagnostic and drug delivery applications without changing technological foundation.

10 pL to 5,000 nL droplets, with high speed and precision

Trusted by leading IVD and life science manufacturers

Demonstrated positional accuracy and reproducibility

Scalable architecture and workflows, from S3 to S100

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# More than an instrument: a complete ecosystem.

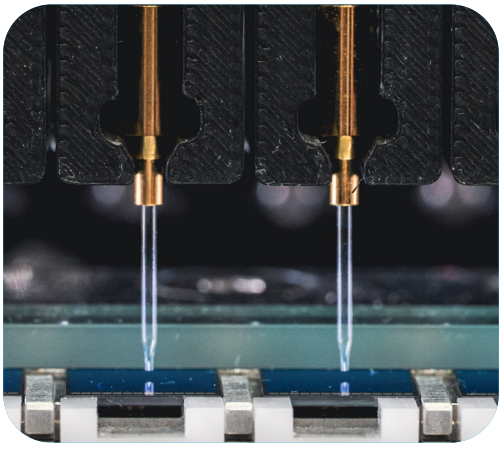
The sciFLEXARRAYER® platform is embedded within an industry proven broader precision microdispensing ecosystem, enabling long-term performance and investment protection.

## PROVEN TECHNOLOGY

- Non-contact precision microdispensing based on piezo-driven acoustic waves (sciDROP® PICO) and electromagnetic valve systems (sciDROP® NANO).
- Controlled drop-on-demand dispensing of biomolecules, solvents and viscous liquids across multiple substrates, through inert glass capillaries.
- Engineered and manufactured in Germany.

## SUPPORT & LIFECYCLE

- Installation and onboarding.
- Preventive maintenance.
- Uptime-focused technical support.
- Global service network.



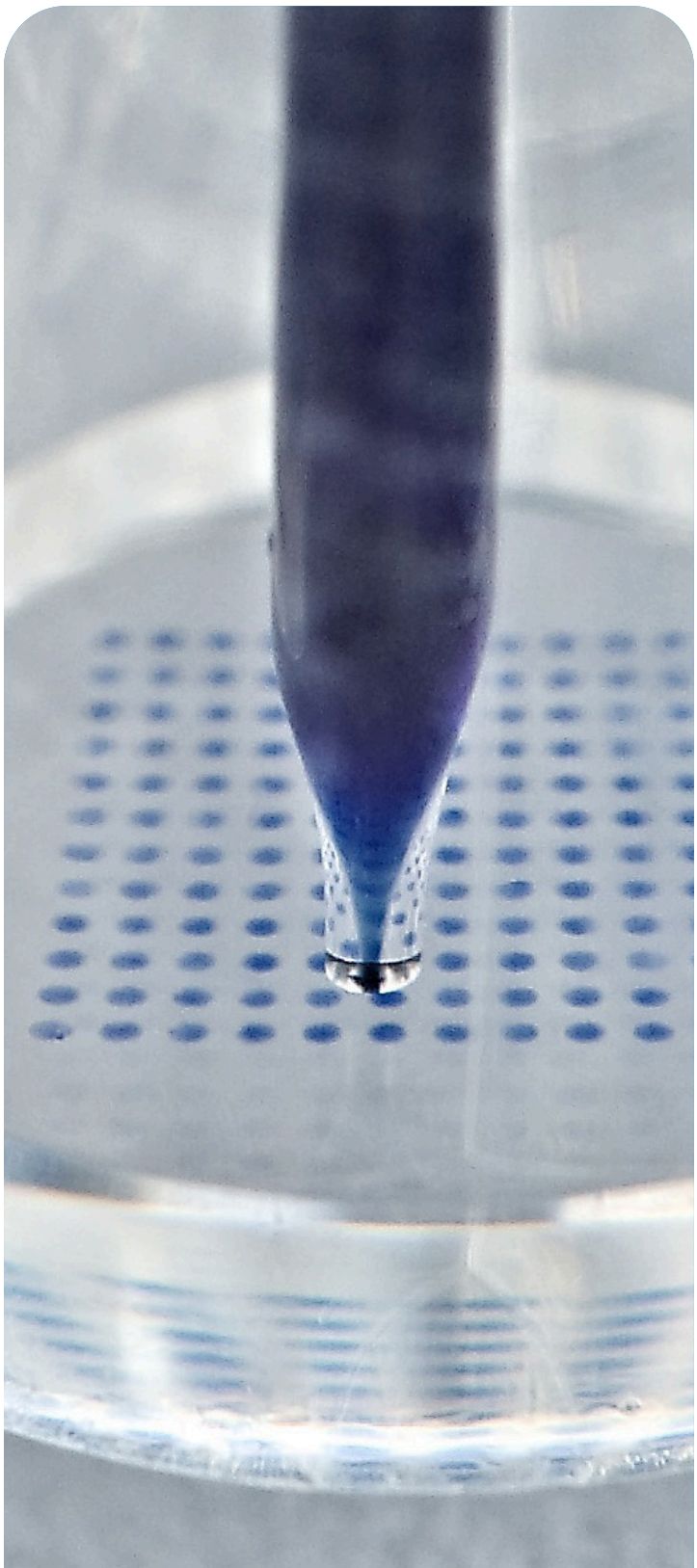
## CONTRACT SERVICES

- Assay optimization and validation.
- Feasibility and process development.
- Pilot and pre-production runs.
- Manufacturing and production services.

## CUSTOM SOLUTIONS & SCALE-UP EXPERTISE

- System customization and configuration.
- Material and substrate qualification.
- Quality-managed workflow design.
- Scale-up and validation planning.

# Focused expertise across critical life science applications.

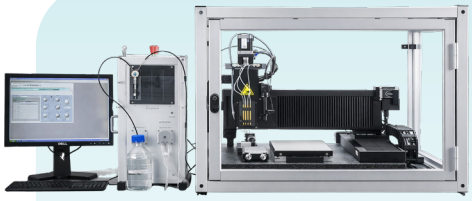


Our primary focus is precision microdispensing for diagnostics, drug delivery and biosensor development and manufacturing. Supported by decades of expertise and a multidisciplinary R&D team, we extend this know-how to enable customized solutions across emerging and specialized applications.

## MULTIPLEXING ASSAYS

- Biochips
- Drug Delivery
- Point-of-Care Testing
- Biosensors & Wearables
- Lateral Flow
- Microfluidics

# Enabling scientific innovation at every scale.



## FUNDAMENTAL DISCOVERY

*Published in Science: Microfluidic innovation enabled by picolitre precision*
Using the S3, researchers achieved controlled picolitre dispensing on complex microfluidic devices, enabling high-resolution experimental design and reproducible biological interrogation. It enabled them to generate a landscape view of catalytic activity for 200 orthologs of a model enzyme.

READ FULL ARTICLE

https://www.science.org/doi/abs/10.1126/science.adu1058

## ADVANCED BIOSENSOR DEVELOPMENT

READ FULL ARTICLE

*High-Density Multiplexing at Harvard Medical School*
The sciFLEXARRAYER SX enabled high-density printing of custom glycan multiplexed microarrays displaying defined blood group antigens. This supported targeted antibody enrichment and high-throughput screening using intact red blood cells.


https://pubmed.ncbi.nlm.nih.gov/40796252/

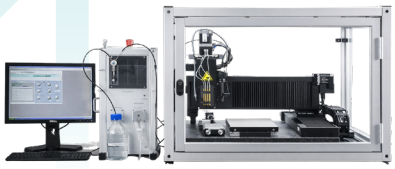
## INDUSTRIAL DEPLOYMENT

*Custom Precision System for Scalable Manufacturing*
For a leading IVD manufacturer, SCIENION engineered a fully integrated platform combining precision dispensing, automation and workflow control to enable validated, high-throughput production environments. A custom solution designed for operational stability, traceability and future expansion.

WATCH THE VIDEO

https://youtu.be/Z2_t43OLtdQ

# One platform, four scalable systems.



## S3 | Compact precision for early-stage innovation

- Fast concept validation, low cost of failure
- Reproducible picoliter or nanoliter dispensing
- Flexible configuration for experimental freedom
- Upgrade path within the sciFLEXARRAYER platform


## S12 | Reliable batches for structured development

- Medium-scale capacity with stable performance
- Enhanced motion control for improved positional accuracy and consistency
- Designed for process optimization and validation
- Seamless transition toward higher throughput


## SX | Operational batch manufacturing with control

- High-throughput capacity with validated batch-to-batch reproducibility
- Precision at production speed, reduced variability
- Integration- and regulation-ready architecture
- Built to prevent capacity bottlenecks

## S100 | In-line dispensing for industrial output

- Ultra-high throughput with portal-based modular architecture
- 24/7 automation capability with uptime-focused system design
- Fully integration-ready for continuous production
- Engineered for long-term operational stability and low total cost of ownership

### SOFTWARE OPTIONS

- Spot-on-the-Fly mode to speed up array printing
- Full online QC
- Fiducial recognition & target alignment

### HARDWARE OPTIONS

- 3D drop, live-stream and head cameras
- sciPULSE shaper for dispensing of volumes under 50 pL & high viscosities
- Temperature, humidity and dew point control
- Custom holders for non-standard targets
- Cooling/heating unit for source plate and/or slide holder
- Anti-static bar

# Technical Specifications

| sciFLEXARRAYER® |  S3 |  S12 |  SX |  S100 |
|---|---|---|---|---|
| **APPLICATIONS** | All microdispensing applications | | | |
| **DEVELOPMENT STAGE** | Early stages, prototyping | Medium-scale batch printing | High-throughput batch printing | Ultra high-throughput manufacturing, integration to continuous production lines |
| **FULLY CUSTOMIZABLE** | Yes | Yes | Yes | Yes |
| **INTEGRATION-READY** | - | - | Yes | Yes |
| **No. OF DISPENSING CHANNELS** | Up to 8 | Up to 8 | Up to 8 | Up to 12 per portal |
| SCI**DROP® PICO TECHNOLOGY AVAILABLE AS STANDARD (10 pL - 800 pL PER DROP)** | Yes | Yes | Yes | Yes |
| SCI**DROP® NANO TECHNOLOGY AVAILABLE AS STANDARD (25 nL - 1 nL PER DROP)** | Yes | No, but available as custom solution | No, but available as custom solution | No, but available as custom solution |
| **SPOTTABLE AREA DIMENSIONS (X, Y in mm)** | 227 x 276 | 380 x 370 | 803 x 870 | Custom |
| **FITS** | 4 MTPs* | 12 MTPs* | 27 MTPs* | Custom |
| **OR** | 32 microscope slides* | 70 microscope slides | 140 microscope slides | Custom |
| **AXES** | X-Y-Z Spindle drive | X-Y High-speed linear magnetic drive, Z spindle drive | X-Y High-speed linear magnetic drive, Z spindle drive | X-Y High-speed linear magnetic drive, Z spindle drive |
| **SIZE (L x W x H, in cm)** | 76 x 85 x 65 (benchtop) | 130 x 80 x 120 | 167 x 85 x 176 | 130 x 80 x 120 per S100 portal |
| **WEIGHT** | 130 | 420 | 450 | 420 per portal |

* Up to 36 microscope slides with S3 XL

# SCIFLEXARRAYER® DISPENSING PLATFORM

DISPENSE WITH CONFIDENCE.
ACCELERATE DEPLOYMENT.
GROW WITH THE RIGHT PARTNER.

## SCHEDULE A FEASIBILITY DISCUSSION

## CONTACT US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