Luminex. xMAP® Technology

FLEXMAP 3D®

Multiplexed Genomic and Proteomic Biomarker Analysis

FLEXMAP3D
THE NEXT DIMENSION IN MULTIPLEXING

THE POWER INSIDE Luminex | XMAP TECHNOLOGY
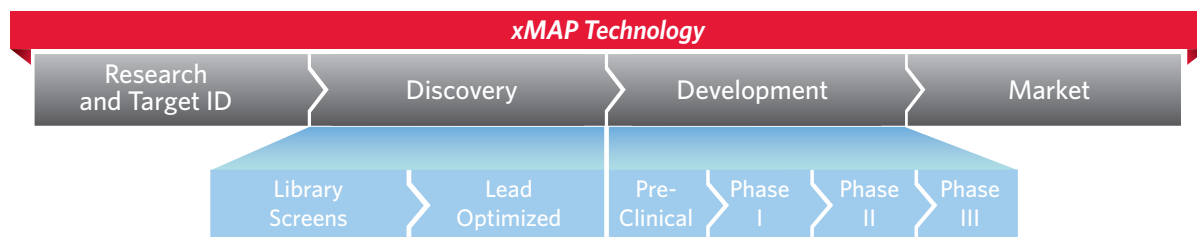
Bridging the Proteome and the Genome

The FLEXMAP 3D® design builds on ten years of experience to deliver the most advanced liquid bead array system in the market. Based on Luminex xMAP® Technology, this flexible and adaptable platform is capable of simultaneously multiplexing up to 500 unique assays within a single sample, both rapidly and precisely. And, while other platforms are limited to either nucleic acid or protein analysis, FLEXMAP 3D can perform bioassays in several different applications, including DNA, RNA, antigen-antibody binding, as well as enzyme assays, receptor-ligand and other protein interactions.

Whether you are measuring cytokines in serum samples, transcription factors in cell lysates, or detecting SNPs in your knock-out model, FLEXMAP 3D helps you meet the ever increasing demands for high quality data.

Accelerate the discovery and development process

The combination of high throughput capabilities, high dynamic range, and flexibility to create custom applications make the FLEXMAP 3D the ideal platform for biomarker validation

From early discovery to routine biomarker detection and monitoring applications, xMAP Technology offers the optimal balance between performance, flexibility, and ease of use.
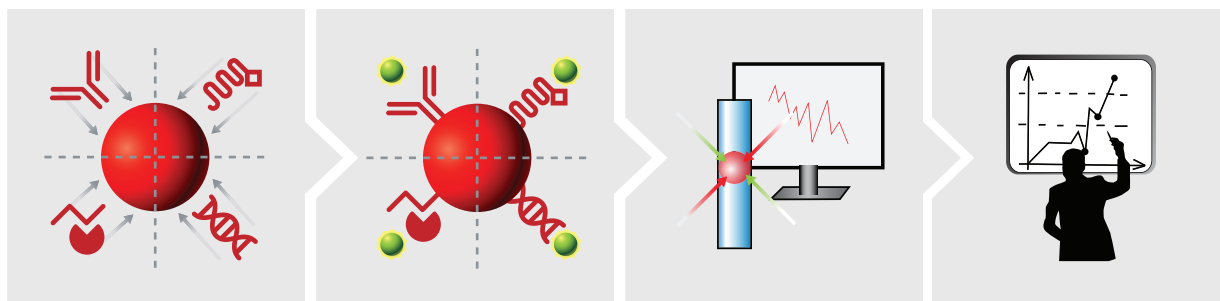

The versatility, flexibility, accuracy and reproducibility of xMAP Technology, and speed and multiplexing capabilities of FLEXMAP 3D make it the ideal platform for early discovery and preclinical testing.

High Throughput Applications

The FLEXMAP 3D system delivers high throughput without compromising flexibility or performance. To optimize workflow the system automates routine tasks, integrates to front-end sample preparation platforms, and provides more answers per test than ever before. The system features many enhancements that significantly reduce assay hands-on-time and maximize data output:

• Dual sample fluidic paths and increased sample injection rate

• Optimized Digital Signal Processing (DSP) algorithms to handle high rates of real time data

• Compatibility with 96 and 384 well plate formats

• Ability to interface with front-end automation and LIS

• Automated maintenance routines

A simple workflow combined with the speed and high multiplexing capability of the FLEXMAP 3D allows you to collect more high quality data than ever before.

Step 1.
Coat microspheres with reagents specific to a particular bio-assay. 500 colors means 500 tests at once...

Step 2.
Add test samples to the coated microsphere mixtures...

Step 3.
Read samples on the FLEXMAP 3D system to observe if biomarkers are present

Step 4.
Report results to scientist for analysis.

Test (50 µl well volume, 2500 beads per region, per well)	Read Time*	Tests/hour
96 well (100 plex)	18 min	32,000
384 well (100 plex)	1 hour 15 min	30,700
96 well (500 plex)	45 min	64,000
384 well (500 plex)	2 hour 15 min	85,000

Read times measured across 4 instruments. Actual results may vary.

High Density Screening

The FLEXMAP 3D system combines differentially-dyed fluorescent microsphere sets with state-of-the-art optics to enable multiplexing of up to 500 unique assays within a single sample, both rapidly and precisely.

All current Luminex microsphere products are compatible with the FLEXMAP 3D.

Reagent	Available Regions	Applications
MagPlex® Microspheres	1 – 500	Superparamagnetic microspheres for use in both nucleic acid and protein based assays. Ideal for automated applications.
MicroPlex® Microspheres	1 – 100	Standard non-magnetic microspheres for use in both nucleic acid and protein based assays.
SeroMAP™ Microspheres	1 – 100	Non-magnetic microspheres specially formulated to reduce non-specific binding in serological-based assays.
MagPlex®-TAG™ Microspheres	1 – 150	Magnetic microspheres pre-coupled with oligonucleotide sequences. Designed specifically for gene expression and genotyping assays.
LumAvidin® Microspheres	1 - 100	Non-magnetic microspheres that contain a surface layer of Avidin for near covalent bonding of biotin and biotinylated ligands; optimal for small molecule assays (e.g. peptides).

xPONENT® Software Solutions

The Luminex xPONENT software offers a NIST-certified analysis module for quantitative analysis, allelic ratio analysis for genotyping and qualitative algorithms for serology assays as well as data visualization tools. The software also includes an option to automatically launch third party assay analysis software for advanced statistical processing.

xPONENT's intuitive graphical user interface and simplified workflow allows novice and advanced users alike to set up and run assays in a minimum amount of time.

Optional software modules

Security
Offers multilevel user management capabilities for improved data security

21 CFR Part 11
Offers multilevel user management, full audit trail, electronic records and electronic signatures.

Automation Connectivity
Along with a device driver enables communication between the reader and third party front end automation platforms.

LIS Connectivity
Enables the export of sample result data and the import of sample specific information.

System Specifications

Performance	
Multiplexing capability	Up to 500 individual analytes
Dynamic Range	≥4.5 logs

General	
Physical Dimensions	23"Wx25.7"Dx18"H (58.4cmWx65.3cmDx54.7cmH)
Weight	No more than 200 lbs (91 Kg)
Plate Heater Operating Range	35 - 60°C (95 - 131°F)
System Warm Up	30 minutes
Microplate Compatibility	96 well and 384 well

Fluidics	
Sheath Fluid Pressure	8 – 13 psi
Sample Injection Rate	2 µL/second
Sample Uptake Volume	10 – 200 µL

Optics	
Classification Laser	638 nm
Reporter Laser	532 nm
Reporter Detector	565 – 585nm

The FLEXMAP 3D is a class 1(I) laser product.

Luminex Instrumentation: Solutions you can rely on

Luminex offers a full family of instruments designed to meet all your multiplexing needs. Whether it's the efficient MAGPIX® system, the proven Luminex® 100/200™ system or the powerful FLEXMAP 3D® system, there is sure to be a solution that will help you optimize your research capabilities. Learn more about our suite of enabling multiplexing solutions.

ORDERING INFORMATION

FLEXMAP 3D is distributed through the Luminex partner network. For more information on how to place an order please contact Luminex Support.

EMAIL info@luminexcorp.com

Training Courses

For more information or to schedule training courses, please contact Luminex Services & Training Sales.
training@luminexcorp.com

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