

Analysis, accelerated.



BeadStation 500
INTEGRATED SOLUTIONS FOR GENETIC ANALYSIS



Microarrays: a better way

Illumina BeadArray™ technology delivers industry-leading quality and performance.



- **Industry's only 100% array QC.** Every feature of every array is functionally QC'd as part of the manufacturing process.
- **High feature redundancy.** An average 20–30 fold redundancy provides industry-leading data quality and reproducibility.
- **Full length oligos.** A world-class manufacturing process, plus quality controls at every step prior to bead coupling, ensure high specificity and high-data quality.
- **Flexible bead design.** Deploying new content is as simple as synthesizing new oligos and making a new bead pool, making BeadArray technology ideal for a broad range of applications in genetic analysis.
- **Multi-sample array formats.** Array content can be deployed on a variety of multi-sample array formats, from single sample whole-genome analysis to 96 focused content samples on an Array Matrix.



Understanding, enabled.

The Illumina BeadStation 500 began as a question: What should the ideal bench-top solution for genetic analysis be able to do? For starters, we thought it should enable a wide range of applications and sample throughput. Next, it should allow for both manual and automated processing. It should support future as well as current applications. And it should make it easier for researchers to manage projects and get the results they want.

The Illumina BeadStation 500 offers:

Performance

- Powerful assay technologies
- Leading-edge scanner technology
- High-quality data and reliable results

Scalability

- Modular add-on applications, automation, and LIMS options
- Standard and custom panels for RNA and DNA analysis applications
- Solutions from whole-genome to focused targets

Sensitivity

- Reduced sample input and reagent requirements
- Industry-leading data quality and range of detection
- Superb reproducibility

Ease of use

- Intuitive, user-friendly workflow
- Manual or automated protocols
- Streamlined data management

Intelligence

- Scalable system designed to fit any throughput needs
- Bench top convenience with production lab power
- Integrated automated solutions for walk-away convenience

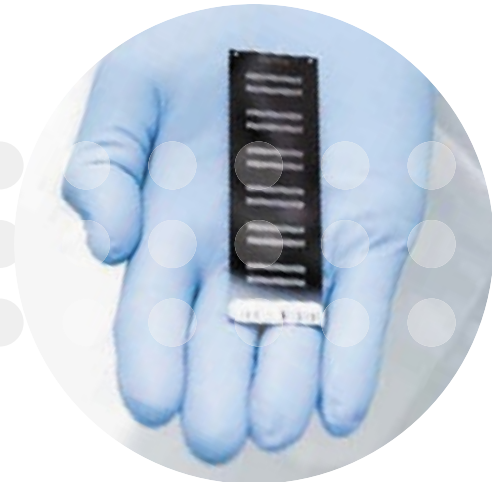
Expanded science. Enhanced results.

The BeadStation 500 supports an expanding portfolio of DNA- and RNA-based applications for disease discovery and drug development. With Illumina's flexible Option Packages, you can choose new applications or functionality at any time. From whole-genome analysis to more focused approaches, and from hundreds to thousands of samples, the BeadStation 500 grows with your needs. Add groundbreaking new capabilities as they become available—and count on Illumina experts to provide comprehensive training with each new expansion.



Genotyping leadership

- Multi-sample formats enable up to 10 million genotypes per day.
- Average call rates in excess of 99%.
- Infinite multiplexing, unrestricted genome-wide SNP selection, and data quality with the Infinium™ Assay.
- Proven genotyping power and flexibility with the Illumina GoldenGate® Assay, which has generated hundreds of millions of genotypes to date, including over 60% of the Phase 1 International HapMap Project.
- Flexible Option Packages include pre-and post-amplification automation and LIMS.
- Tools for copy number and LOH analysis.



Gene expression excellence

- Less than half the cost of other solutions (labeling reagents included).
- Lower sample input requirements—just 50–100ng total RNA versus 1–10ug for the leading alternative.
- Solutions for partially-degraded RNA (such as those found in FFPE samples) using the DASL® Assay.
- High feature redundancy (average 30-fold) provides robust data quality.
- Whole-genome solutions for human, mouse, and rat.
- Focused Array solutions with standard and custom content options.
- Multi-sample formats for increased sample throughput with minimal effort.

SOLUTION = SYSTEM + SOFTWARE + SUPPORT

SNP Genotyping			
Standard Panels	Standard GoldenGate Genotyping	Standard Infinium Genotyping	Infinium Whole-Genome Genotyping
Custom Panels	Custom GoldenGate Genotyping	iSelect™ Custom Infinium Genotyping	
# of SNPs	Up to 5K	7K–60K	100K+ Whole Genome

Gene Expression			
Human	Standard & Custom DASL* Panels Custom Focused Arrays		Whole-Genome Expression
Mouse	Custom Focused Arrays		Whole-Genome Expression
Rat	Custom Focused Arrays		Whole-Genome Expression
Other Species	Custom Focused Arrays		n/a
# of Probes	Up to 6K		24K+ Whole Genome

*For partially-degraded RNAs.

BeadStation 500 Applications				
	GoldenGate Genotyping	Infinium Genotyping	Direct Hybridization Gene Expression	DASL Gene Expression
BeadStation 500G	●	● [†]		
BeadStation 500X			●	
BeadStation 500GX	●	● [†]	●	● [†]
Assay Automation Option Packages	●	●		●
Autoloader Option Packages	● ^{**}	●	●	● ^{**}
LIMS Option Packages	●	●		

†Requires addition of an Option Package to system listed.

**Requires processing on 16-sample BeadChip format.

Integrated system. Powerful solution.

From automated assay processing to data analysis and more, the BeadStation 500 delivers an integrated, end-to-end research solution. Software flows seamlessly from start to finish, and is fully integrated with LIMS options. Comprehensive service and support includes ongoing training to make future expansion easy.



Assay automation

Automation Option Packages & LIMS-Ready Automation

- Streamlined workflow and minimal sample handling errors.
- Automation Option packages for optimized protocols.
- Reduced hands-on time, increased accuracy and precision.
- Illumina Robot Control software to manage assay workflow.



Automated sample loading options

Illumina AutoLoader

- Unattended loading and automation for one or two BeadArray Readers.
- 32 BeadChips per BeadArray Reader per 24-hour period.
- Integrated AutoLoader controls within BeadScan data acquisition software.



Advanced scanner technology

BeadArray Reader

- Sub-micron resolution, dual laser scanning.
- Broad dynamic range, high sensitivity and low limit of detection.
- Integration between BeadScan, LIMS and AutoLoader software to provide seamless data output to BeadStudio.



Application-specific data analysis software

BeadStudio Data Analysis Software Suite

- Cutting-edge analytical and visualization tools.
- Compatible with other commercially available data analysis packages.
- Modular format for easy application expansion.



Service and support

Installation and On-Site Training & Extended Warranty Options

- Complete installation, on-site training, and ongoing support.
- Comprehensive 12-month warranty.
- Flexible extended warranty options.



Laboratory Information Management

Illumina Laboratory Information Management System (LIMS)

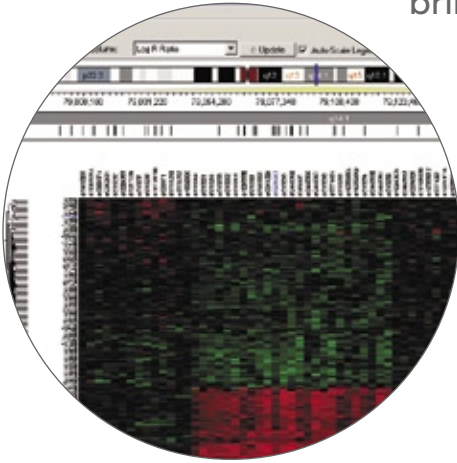
- Optional, state-of-the-art LIMS system with easy-to-use custom interface and project management tools.
- Positive sample tracking (posID), workflow, reporting, and project management.
- Currently available for GoldenGate and Infinium genotyping applications.

Intuitive software. Advanced analysis.

BeadStudio software, Illumina's modular tool for data analysis, comes with your BeadStation purchase. An integral part of the Illumina solution, BeadStudio is designed to be modular, flexible, and easy to use with other data analysis software packages. With it, we can rapidly deliver tools for new applications by releasing add-on software modules in line with our Option Packages for the Illumina BeadStation 500.

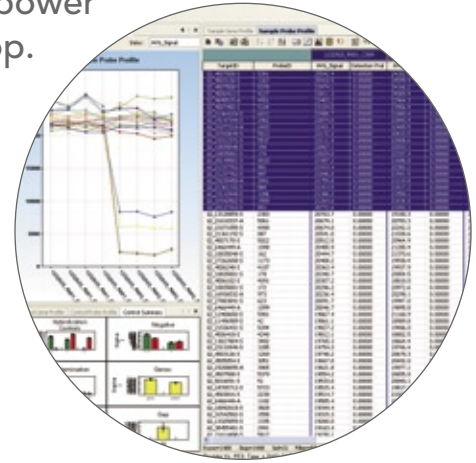
BeadStudio Module Features			
	Genotyping	LOH Plus	Gene Expression
Scatter Plot	●	●	●
Heat Map	●	●	●
Line Plot	●	●	●
Reports	●	●	●
Histogram	●	●	●
Column Chooser	●	●	●
Advanced Filter	●	●	●
Subcolumn Calculation	●	●	●
Import/Export	●	●	●
Bookmarking	●	●	
Chromosome Viewer	●	●	
Genome Browser	●	●	

The Illumina BeadStation 500 brings a new level of analytical power and versatility to the desktop.



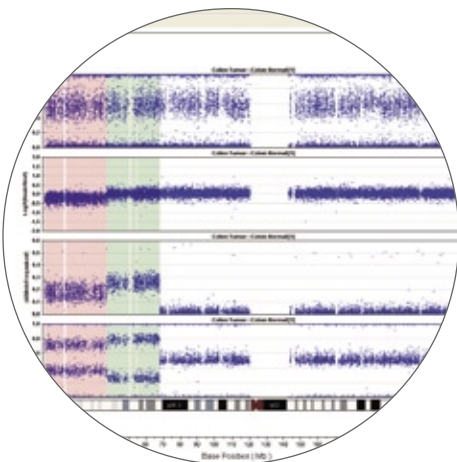
Heatmap with Clustering Capability

View vast amounts of data and information at a glance.



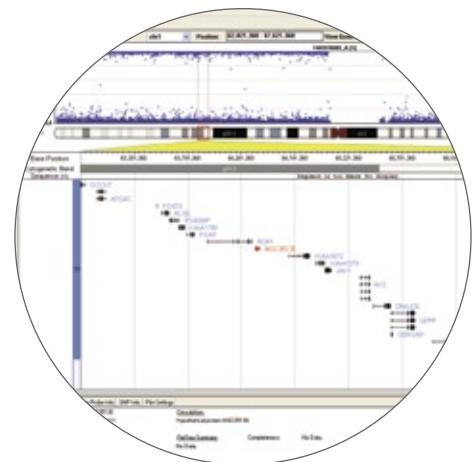
Line Plot

View expression level of multiple probes/genes in real time.



Auto Bookmarking

Use advanced bioinformatics algorithm to categorize chromosomal aberrations.



Chromosome Viewer

Visualize SNPs, NCBI data, and scatter plot from the same window.

Our service, your success.

Comprehensive care. Dedicated installation, training, and support are an integral part of your BeadStation 500 System. Illumina specialists work with you to ensure that you are consistently able to generate high-quality data using BeadStation 500 tools and protocols.



On-site involvement.

With your purchase, Illumina Field Service Engineers and Field Application Scientists travel on-site to certify that each BeadStation 500 system is installed, qualified, and validated by processing actual samples using your chosen assays. Next, an Illumina Field Applications Scientist conducts a three-day on-site training for each application. This ensures that lab personnel responsible for running the system are comfortable with routine operations.

Unlimited training and support by phone.

Do you have questions about a particular feature, application, or technique? Our Technical Support group can help you free of charge. One call puts you in touch with a team of Ph.D. scientists who are experts in Illumina systems, assays, and software. Our Technical Support Scientists can be reached from 7 a.m. to 5 p.m. (Pacific time).

Comprehensive 12-month warranty.

The Standard BeadStation 500 Warranty covers the BeadArray Reader and all hardware and accessories provided with each installed Option Package. This includes:

- Unlimited emergency on-site service calls during normal business hours (Monday to Friday, 8 a.m. to 5 p.m. local time).
- Guaranteed three-day average response time.
- One on-site preventive maintenance service visit.
- All applicable hardware and software upgrades for purchased applications.
- Parts, labor, and consumables for any system repairs or maintenance.
- Unlimited phone support and assistance.



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