

Illumina Microarray LIMS

Exceptional management and tracking to ensure efficient, high-quality data acquisition

- Integrated system provides quality control from DNA input to data analysis
- Positive sample tracking minimizes sample mix-ups, reduces lab errors, and increases confidence
- Designed scalability enables rapid increases in sample throughput with minimal effort

Introduction

Illumina Laboratory Information Management System (LIMS) for microarray processing (Illumina Microarray LIMS) provides positive sample tracking, project and data management, lab workflow management, and reporting for Infinium™, Infinium iSelect™, and Infinium XT genotyping products. Using advanced automation and precise robotic control, Illumina Microarray LIMS enforces all aspects of microarray processing, including component verification and accurate sample tracking throughout the run (Figure 1). By managing time-consuming and error-prone sample and data handling, this integrated solution ensures reliable, high-quality data output.

Automation improves accuracy

Regardless of study size, one user error can significantly impact accuracy. By orchestrating the sample processing run from input to analysis, Illumina Microarray LIMS greatly reduces hands-on steps, minimizing and possibly eliminating user errors, including incorrect sample transfer, accidental use of the wrong reagents, or protocol mistakes.

Scalability by design

Illumina Microarray LIMS is a highly scalable system designed to accommodate needs as a laboratory grows. A normalized schema enables query maintenance and insertion performance. Illumina Microarray LIMS provides an optimal enterprise-level solution for tracking samples and reporting. Storage capacity is easily managed by enabling system administrators to define locations for new file repositories while the system maintains links to existing files. Backups are facilitated by separating write-once files from frequently changing analysis and report files. Automatic project archiving saves time and avoids confusion.

Flexibility

Illumina Microarray LIMS supports Infinium assays and can easily be switched to control runs from any application. Modules supporting future applications will be made readily available, making it easy to continue with automation and minimizing the need for internal IT resources.

For data control, Illumina Microarray LIMS supports numerous user-defined parameters. Users simply select the project and timeframe of interest to be analyzed. The Illumina Microarray LIMS image server automatically loads image, decoding, intensity, cluster, and bead pool information into GenomeStudio™ Software, ensuring that all samples are accounted for during analysis.

Configuration changes via the administrator's interface provide support for other network- or direct-attached file systems. Backup and archive directories are also fully configurable. File name pointers to the raw analytical data are stored in the database, while processed data are stored in GenomeStudio Software workspaces and reports. User-defined downstream processes and databases are integrated instantly upon importing data from Illumina standard reports. Alternately, Illumina Microarray LIMS can generate custom reports.

Ease of use

The Illumina Microarray LIMS interface enables project managers to enter experimental and control samples into the system easily using familiar sample sheet definitions. After a project is defined, the assigned samples are automatically queued for processing in batches matching Illumina reagent and BeadChip packages. This batching system automatically communicates that samples are ready for processing without additional intervention from the project manager. Integrated data collection (BeadScan) and analysis (GenomeStudio Software) programs provide autocal functionality. First-run samples can be analyzed while the remainder of the samples are processed to decrease the time to data analysis.

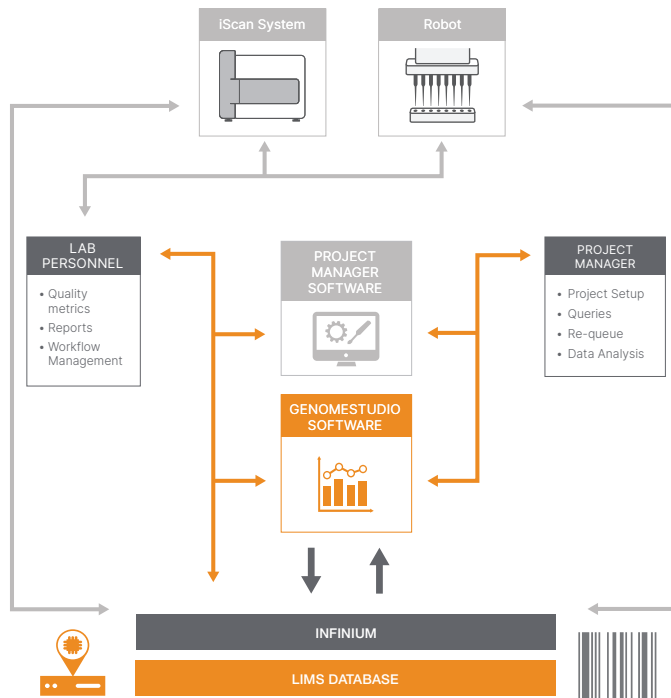


Figure 1: Illumina microarray LIMS architecture—Illumina Microarray LIMS enables positive sample tracking, integrated project management, and complete system integration from DNA input to data output and analysis.

Ease of administration

Whether processing thousands or billions of genotypes, database administration can be challenging. To help overcome this challenge, Illumina Microarray LIMS configures data storage using a standard file system that can track data locations in the database. This reduces the need for additional database administration overhead and supports easier integration of genotype data with user-defined downstream processes and databases. The Illumina Microarray LIMS data repository also simplifies back up, recovery, and archiving processes.

Learn more

Illumina Microarray LIMS, illumina.com/techniques/microarrays/array-data-analysis-experimental-design/lims

Ordering information

Product	Catalog no.
Illumina LIMS Annual Subscription	20073865
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