Illumina Laboratory Information Management System (LIMS)

Completely integrated LIMS from Illumina delivers state-of-the-art management and tracking to ensure the highest quality data, efficient data acquisition, and significant savings in time and lab resources.

Highlights of Illumina Lims

- **Complete System Integration:**
  100% quality control from DNA input to data analysis
- **Maximum Quality, Minimum Resources:**
  Requeue samples using real-time quality metrics
- **100% Positive Sample Tracking:**
  Prevent sample mix-ups, minimize lab errors, increase confidence and efficiency
- **Rapid Scale-Up:**
  Increase sample throughput with minimal effort

Figure 1: The Lims Architecture

Illumina LIMS enables positive sample tracking, integrated project management, and complete system integration from DNA input to data output and analysis.

Introduction

The state-of-the-art Illumina Laboratory Information Management System (LIMS) provides 100% positive sample tracking, project and data management, lab workflow management, as well as reporting Infinium® whole-genome genotyping, Infinium iSelect®, GoldenGate® genotyping, and GoldenGate Indexing™ products. Using advanced automation and precise robotic control, the proven Illumina LIMS enforces all aspects of the microarray processing run, including component verification and accurate sample tracking throughout the run. By managing time-consuming and error-prone sample/data handling from end to end, this completely integrated solution ensures reliable, high-quality data output.

Accurate

Regardless of study size, as little as one user error can greatly reduce its power. By orchestrating the entire sample processing run—from input to analysis—Illumina LIMS greatly reduces hands-on steps, minimizing, and even eliminating, these errors, including incorrect sample transfer, accidental use of the wrong reagents, or protocol mistakes.

Scalable

Illumina LIMS is a highly scalable system designed to grow with your laboratory's needs. A normalized schema allows for query maintenance and insertion performance.

Using Java 2 Enterprise Edition and SQL Server 2008 background config, LIMS provides an optimal enterprise-level solution for tracking samples and reporting. Storage capacity is easily managed by allowing 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 analyses and reports files. Automatic project archiving saves time and avoids confusion.

Flexible

Illumina LIMS supports Infinium, GoldenGate, and GoldenGate Indexing 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 interal IT resources.

For data control, LIMS supports numerous user-defined parameters. Simply select the project and time frame of interest to be analyzed. The LIMS image server automatically loads image, decoding, intensity,

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cluster, and bead pool information into the GenomStudio® 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. Back up and archive directories are also fully configurable. Filename pointers to the raw analytical data are stored in the database, whereas the processed data are stored in GenomeStudio data analysis software workspaces and reports. Integration with user-defined downstream processes and databases is as simple as importing data from Illumina standard reports. Alternately, Illumina LIMS can generate custom reports.

Easy to Use

The Illumina LIMS interface allows Project Managers to easily enter experimental and control samples into the system using familiar sample sheet definitions. Once a project is defined, the assigned samples are automatically queued for processing in batches matching Illumina's reagent and BeadChip packages. This batching system automatically communicates to lab personnel that samples are ready for processing without additional intervention from the Project Manager.

Fully integrated data collection (BeadScan) and analysis (Genome-Studio) programs provide autocall functionality. First-run samples can be analyzed while the remainder of the samples are processed so there's no waiting for data.

Easy to Administration

Whether processing thousands or billions of genotypes, database administration can be challenging. To help meet this imposing need, 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 LIMS data repository also simplifies back up, recovery, and archiving processes.

Complete System

Illumina LIMS is a complete system that includes software, hardware, training, and continous support from Illumina's award-winning Customer Solutions team.

Additional Information

To learn more about Illumina LIMS, visit our website or contact us.

Ordering Information

PRODUCT	Assay(s) Supported	CATALOG NO.
Illumina LIMS Base Package	Infinium Whole-Genome Genotyping	SE-201-1004
Illumina LIMS Infinium Module	Infinium Whole-Genome Genotyping	SE-201-1005
Illumina LIMS GoldenGate Module	GoldenGate Genotyping	SE-201-1006
Illumina LIMS GoldenGate Indexing Module	GoldenGate Genotyping Indexing	SE-201-1007

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