



# 4300 DNA Analysis System

*Genomic Research and Undergraduate Training Solutions*

For the professional, student, or faculty researcher, the 4300 DNA Analysis System from LI-COR will accelerate your research and improve the quality of your data. The 4300 System is a third generation instrument based on LI-COR's highly sensitive infrared fluorescence detection technology.

**High Sensitivity:** Infrared fluorescence detection is a key advantage due to low background at infrared wavelengths. Biological contaminants, gels, and glass plates have little infrared fluorescence. Low background and LI-COR's IRDye™ reagents result in a wide dynamic detection range and very high quality data. Unprocessed fluorescence data are captured in TIFF image format for highest fidelity.

## **Independent Detection**

**Channels:** The 4300 System features two independent detection

channels that use two separate lasers and detectors to eliminate errors due to fluorescence overlap. Fluorescence in each channel is separated by 100 nm.

## **Comprehensive Reagents:**

LI-COR's wide ranging IRDye™ reagent kits include everything from terminators for DNA sequencing, to kits for AFLP® expression analysis. All kits are optimized and quality controlled to get you started quickly and assure consistent results.

**Rugged and Reliable:** The 4300 System is designed for multipurpose operation. In addition to being an excellent research tool, the 4300 System is designed to meet demanding undergraduate training and research environments. Features such as diode lasers (similar to a CD player) make the instrument rugged and dramatically reduce maintenance and operation expenses.

The instrument can also operate on demand after periods of inactivity without any expensive start-up costs.

## **Powerful Server Software:**

The 4300 instrument is a server that can be operated either in a stand-alone configuration or connected to your network. An Internet browser or LI-COR Application Software can be used to start electrophoresis. The server software completely controls electrophoresis and stores two 16-bit TIFF images during a run. For DNA sequencing applications, the 4300 server software has basic sequencing software to analyze the TIFF images.

**Great Connectivity:** The 4300 System gives you maximum data access. Any computer can connect to the 4300 System via Internet browser or LI-COR Application Software. In a network environment, image data can be accessed from your office or over the Internet. Secure, password-protected server software assures that only members of your project have access to your data.

## **Easy, Powerful Analysis**

**Software:** The 4300 System features easy-to-use application software packages written specifically for DNA sequencing, micro-satellite analysis, AFLP® analysis, TILLING® and Ecotilling. Each of these application packages is designed to automatically retrieve and analyze image data from the 4300 System – all you do is start the run.

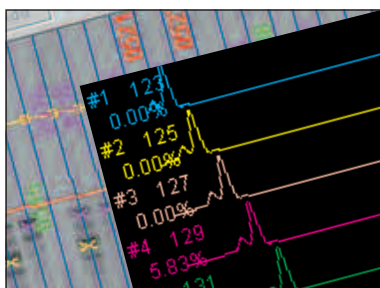


MODEL 4300L (LEFT)  
MODEL 4300S (BELOW)

# APPLICATIONS

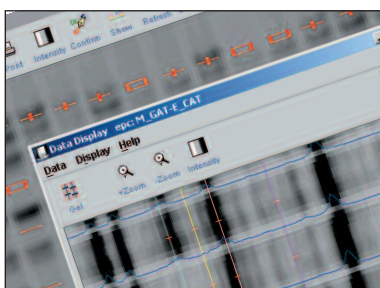
## Microsatellites

- Completely automated from electrophoresis through allele scoring.
- Unique allele “fingerprinting” software for highest scoring accuracy.
- Quality values for each allele, plus Mendelian error checking.
- Accurately analyzes di-nucleotide repeats.
- Saga<sup>GT</sup> software for automation, project management, allele scoring, and automatic data transfer to Oracle<sup>®</sup> database.
- High throughput on 96-lane reloadable (3x) gels.



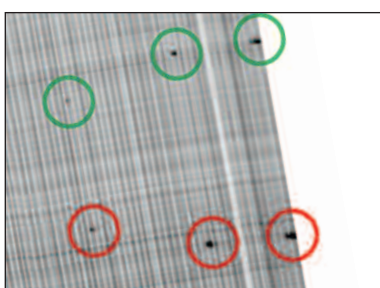
## AFLP<sup>®</sup> Analysis

- Comprehensive AFLP<sup>®</sup> solution.
- Optimized IRDye AFLP<sup>®</sup> and AFLP<sup>®</sup> expression kits.
- Automates electrophoresis, band scoring, and binning alleles.
- True gel images for accurate analysis and editing.
- 192 lanes per run on reloadable gels.
- Automatic data transfer to Oracle<sup>®</sup> database with flexible reporting.



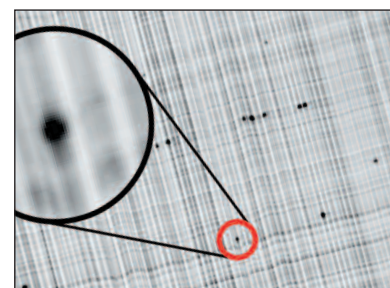
## Reverse Genetics – TILLING<sup>®</sup>

- Observe partial loss of gene function in addition to knockouts.
- High sensitivity and low background make it easy to detect mutation bands.
- True gel images.
- Two-color imaging eliminates false positive mutation identifications.
- Easy mutation localization.
- Screen up to 2 million bp per day.



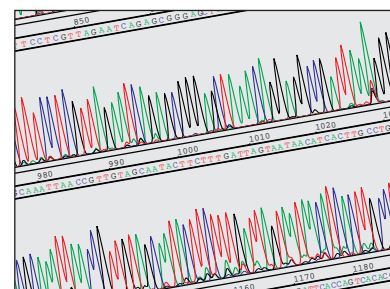
## SNP Discovery and Haplotyping – Ecotilling

- High throughput, low cost technique for rapid discovery of polymorphisms in natural populations.
- Screen up to 2300 samples or over 2 million base pairs per day.
- Applicable to any organism.
- Applications include mapping, association analysis, mutational profiling, and biodiversity.
- Two color imaging eliminates false positives.
- Costs a fraction of conventional resequencing approaches.
- Rapid haplotyping – SNP discovery and haplotyping in a single step.



## Long Read DNA Sequencing

- 1000-1200 bases per sample.
- 99% accuracy at 1000 bases.
- Affordable to purchase and operate.
- Accurate for research and rugged for classroom demands.
- Operates on demand without expensive start-up costs after inactivity.
- On-board starter software for DNA sequencing, or comprehensive e-Seq autosequencing software for Windows<sup>®</sup>.



Instrument specifications and additional application information, including links to recently published papers featuring 4300 System data are available at [www.licor.com/4300](http://www.licor.com/4300).



# LI-COR<sup>®</sup>

Biosciences

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