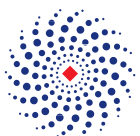




## **CapitalBio LuxScan™ HT24 High Throughput Microarray Scanner**

—Exploit the full capacity of your lab



**CapitalBio**

## Introduction

CapitalBio LuxScan™ HT24 is our latest high throughput microarray scanner in the LuxScan series. The LuxScan™ HT24 features an automatic batch scanning system, a new compact optical system and a high speed signal processing mechanism. LuxScan™ HT24 is a scalable detection platform for microarray based molecular diagnostics and life science research.



## Certifications



The CapitalBio LuxScan™ HT24 is CE, cTUVus and GS marked, in readiness for global markets.

\* An equivalent LuxScan™ Dx24 is SFDA certified for clinical use in China.

## Key features

CapitalBio LuxScan™ HT24 is an *able* machine:

### ● Automatable

- ★ Walkaway capacity for batch scanning of up to 24 slides
- ★ In-built barcode reader automatically acquires chip identifications or assay specifications
- ★ Auto channel balancing eliminates the trouble and variability of manual intervention

### ● Scalable

- ★ 20% increase in scan speed with the capacity for the most intense diagnostic use
- ★ Supports the use of multiple analysis protocols or assays within one batch
- ★ Supports direct scanning of gasketed slides with multiple samples

### ● Reliable

- ★ Qualified repeatability, uniformity & stability, sufficient for diagnostic accreditation\*
- ★ Fail-safe mechanisms to protect the assay from the effects of malfunctions and misoperations
- ★ The CalSlide III Nano-Fluorescence Calibration slide ensures optimal calibration of your instrument

### ● Compatible

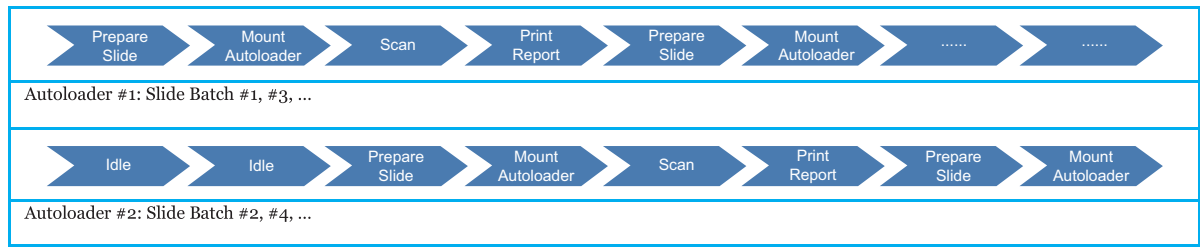
- ★ Modular software design supports integration of instrument control, image acquisition, data analysis, report filing and HIS/LIMS consolidation
- ★ Flexible and universal programming interface to support the assay specific software for protocol configuration, data analysis and discrimination, QC criteria and report

### ● CapMag™ Highlight

- ★ The CapitalBio Magazine (CapMag™) combines protective chip holders with a magazine autoloader capability
- ★ Robust: The combination of autoloader and chip holders minimizes slide jamming events
- ★ Accessories: A spare autoloader allows preparatory loading of a 2nd batch while the 1st batch is scanning
- ★ Simplified operation: The push-pull design provides a simple and reliable mechanism for insertion and ejection of your batch of slides
- ★ Single scan: Convenient loading of single slides (both US and European standards) and running single slide scans
- ★ Batch scan: The autoloader can accommodate 24 slides and even allows mixed US and European standard slides in one single batch scan

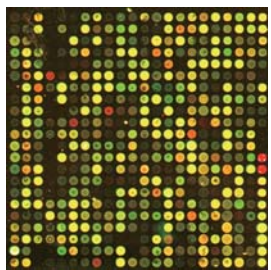
## Workflow

The workflow of LuxScan™ HT24 is optimized for high throughput and diagnostic environments. With the CapMag™ mountable autoloader design, diagnostic assay pipelines can be setup that arrange overlapping processing of multiple batches, reducing downtime and exploiting the scanner to 100% of its capacity.

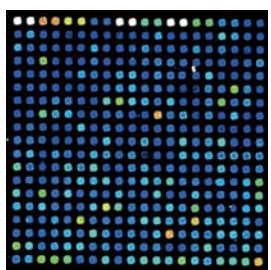


## Applications

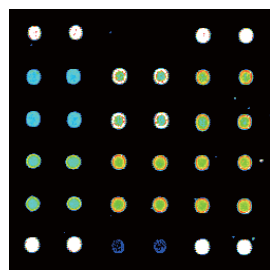
LuxScan™ HT24 microarray scanner is a high throughput tool for a variety of fluorescence applications including microarray based multiplex diagnostic assays for NAT (Nucleic Acid Test) and antibody/antigen arrays, as well as for DNA or protein microarrays for life science research.



Oligo array



cDNA array



Protein array

The LuxScan™ HT24 can accept a range of slides of different size and substrate, with or without gasket compartments. It is the ideal tool for your novel molecular diagnostic assay, both as a versatile platform for the pilot verification phase and as a reliable and efficient workhorse for busy diagnostic settings.

## Hardware Introduction

### Proprietary CapMag™ loading design

Reduces the frequency of slide jamming, automatically detects slide jams and autoloading irregularities.

### Autoloader

Supports walkaway 24-slide batch scanning.



### Chip holder

Protects slides from damage and ensures correct alignment.



### In-built barcode reader

Automatically retrieves key information from the slide. It is compatible with 21 types of barcode including Codabar, code 39, code 93 and code 128.



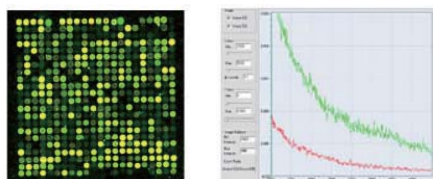
## Scanner Calibration

### LED indicators

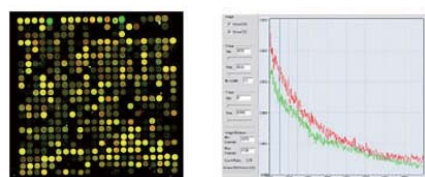
Identify the instrument status, i.e. ready, scanning and error.

### Dual laser channels and filters

Provides the user with access to a large range of microarray applications. Their functions are automatically finessed by a software auto-balancing module for better scan data.



Before auto-balance

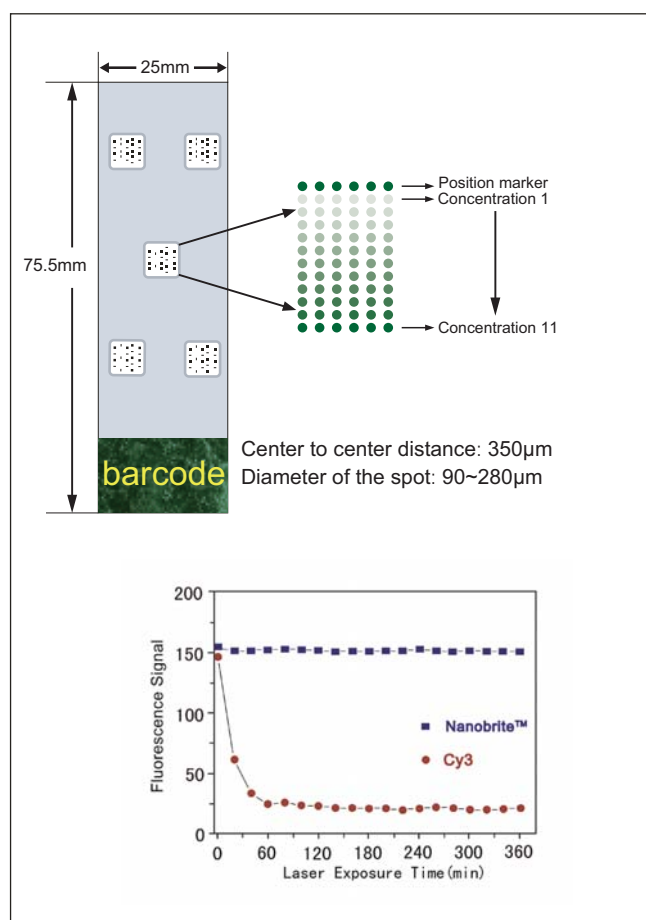


After auto-balance

### Loader shell

Serves as a convenient access for the autoloader without exposing the inner scanning chamber to the user or to the environment.

CapitalBio CalSlide™ Nano-Fluorescence Calibration slide can be used for the initial setup and for long term maintenance.



CalSlide™ III is the latest generation of photo-stable calibration slide.

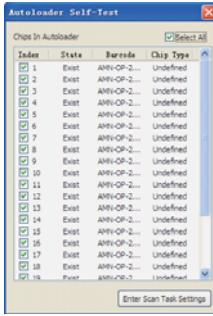
The usages\* include:

- ★ Focus position calibration. Try different focus positions and scan the slide repeatedly until the accurate focus is found.
- ★ Platform uniformity check. Scan the slide, rotate it by 180° and then scan it again, and compare the data to find out non-uniformity related to the platform.
- ★ Repeatability check. Scan the slide with the same settings repeatedly to measure the repeatability.
- ★ Comparison between scanners.

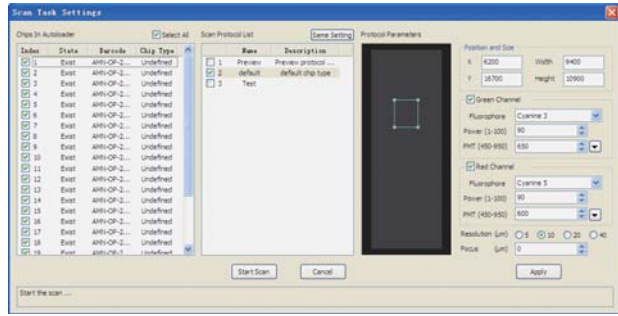
\* Please contact CapitalBio for more detail specifications of CalSlide™ III.

# Application Software

## Mouse click control



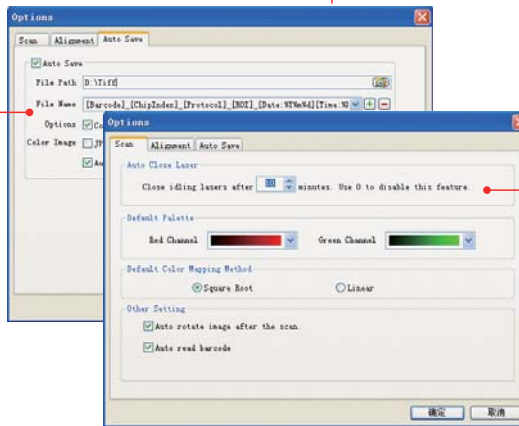
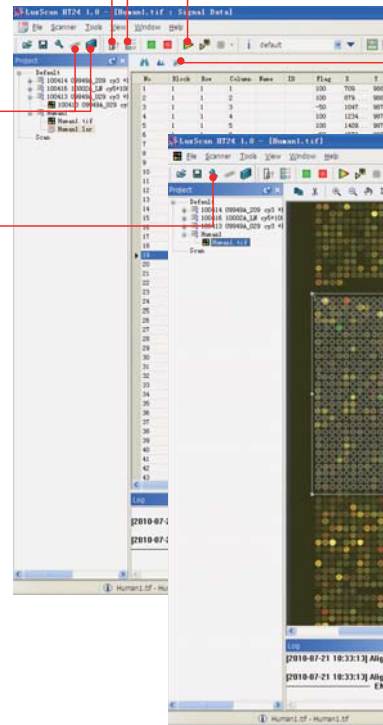
Autoloader self test:  
Confirms the readiness of slides and barcodes



Setup scan task: Flexible configuration, straight graphical demonstration and predefined protocol support

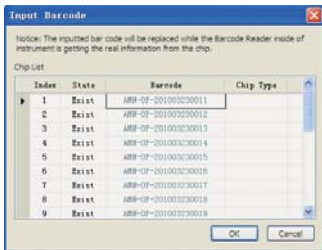
Load/Eject autoloader: Quickly replace the autoloader to make full use of scanning time

Quick switch between Batch Scan Mode and Single Scan Mode: Flexible and scalable workflows

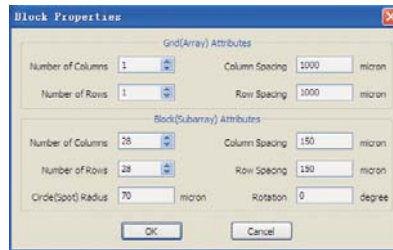


Automate the workflow: Conform to LIMS/HIS or other naming rules, set an auto save path and customize your file naming rule

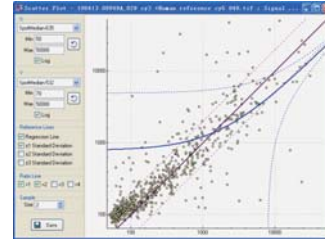
The auto switch-off of the lasers: Practical extension of the effective life of the instrument



Barcode Management: Review the barcode information and manually input any failed code reads



The manual gridding tool simplifies choosing block properties



Scatter plot analysis: Basic statistical function to assess the experimental data

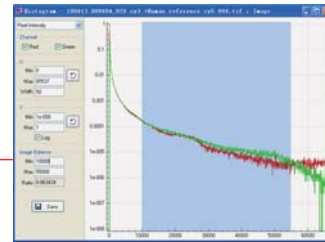
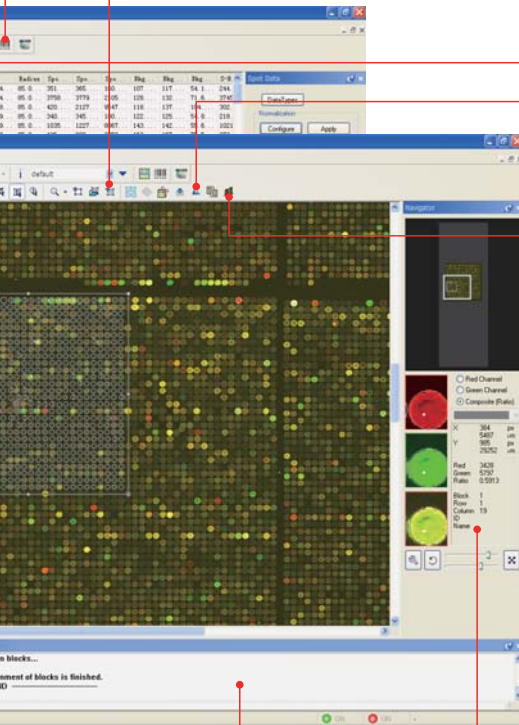
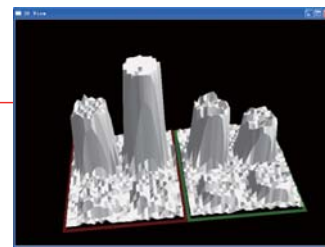


Image Histogram analysis: Vivid depiction for the channel balance of the particular scan image



Real-time access to individual spot data by mouse hovering: Convenient access to quantitative information



3D View: Informative visualization of spot details

Adjust the brightness, contrast and the color palette: Optimize the visual effect and facilitate your understanding and discovery

Record the user operations and system responses: Qualified logging functions compliant to GLP directives provide full process traceability

## Specifications

| Features              | Parameters                                |
|-----------------------|-------------------------------------------|
| Chip format           | 75 (±0.5) × 25 (±0.5) × 1.0 (±0.1) mm     |
| Maximum scan area     | 72mm × 22mm                               |
| Emission wavelength   | 532nm & 635nm                             |
| Excitation wavelength | 570±10nm, 675±10nm & 530±10nm (optional)  |
| Scan resolution       | User selectable: 5µm, 10µm, 20µm and 40µm |
| Sensitivity           | 0.1 fluo/µm <sup>2</sup> (cpsm) (Cy3)     |
| Scan speed (10µm)     | < 6 minutes/slide                         |
| Dynamic range         | 10 <sup>4</sup> (16-bit)                  |
| Repeatability         | 98%                                       |
| Uniformity            | 98%                                       |
| Laser Power           | 5~100% continuously adjustable            |
| PMT setting           | 450~950 continuously adjustable           |
| Focus                 | ±500µm                                    |
| Image file format     | TIFF, BMP, JPG, PNG                       |
| Dimensions (W×D×H)    | 380mm × 580mm × 500mm                     |
| Weight                | 40kg                                      |
| Autoloader            | 24 slides                                 |
| Barcode reader        | In-built                                  |

## Ordering Information

| Cat.No | Product Name                                | Product Description                              |
|--------|---------------------------------------------|--------------------------------------------------|
| 100060 | CapitalBio LuxScan™ HT24 Microarray Scanner | Dual-channel 532nm and 635nm excitation *        |
| 100066 | CapitalBio Autoloader for HT Scanner        | Spare autoloader to increase workflow efficiency |
| 100067 | CapitalBio Chipholder for HT Scanner        | Packs of 3, 6, 12 or 24 units                    |
| 410014 | CalSlide III                                | For calibration use                              |

\* Please consult CapitalBio for other laser excitation options.



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