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TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

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with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
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- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

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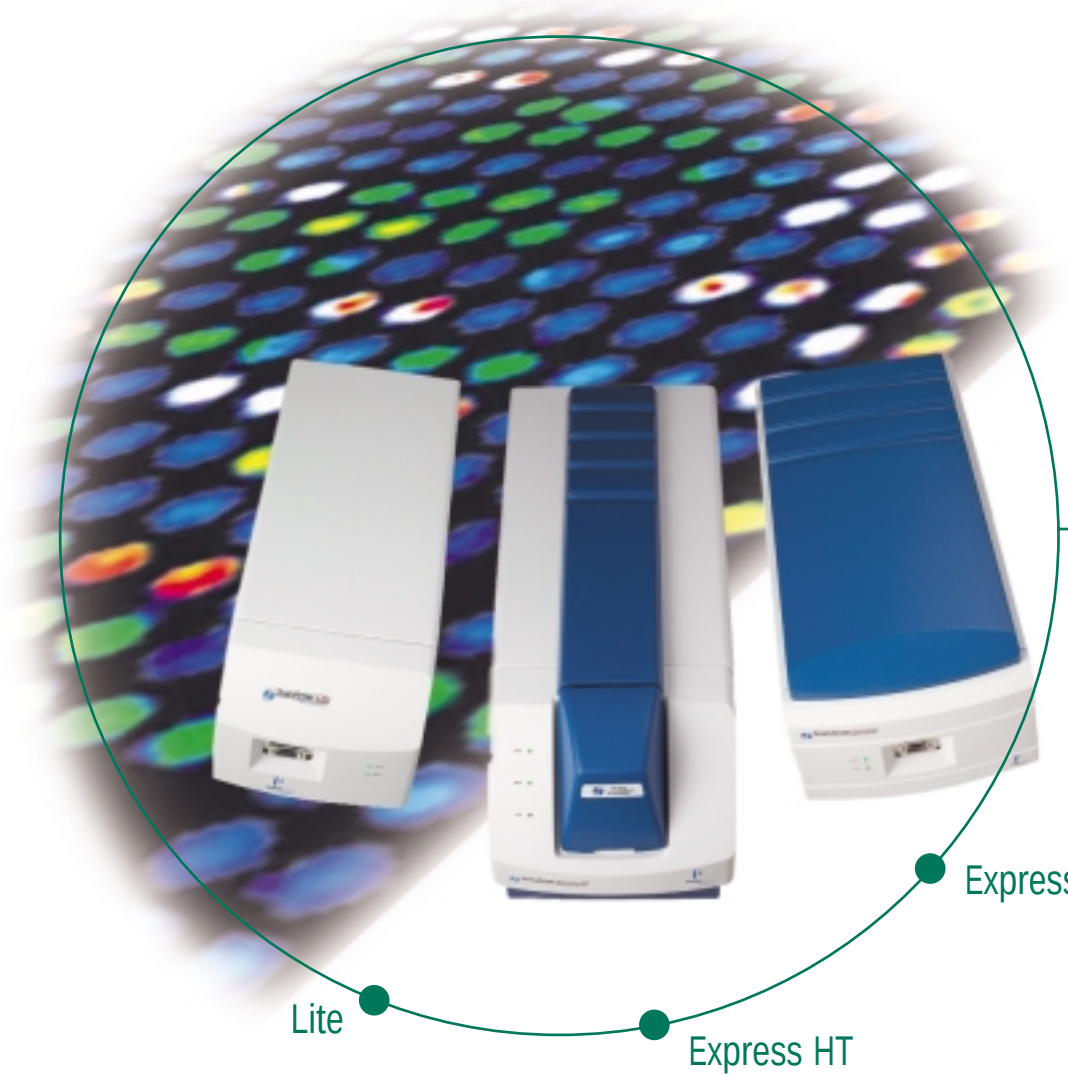
Find the *GSI Lumonics ScanArray 4000* at our website: ***Click HERE***

Drug Discovery | Research | Clinical Screening

Microarrays

ScanArray® Express

Microarray Scanner



ScanArray Express Line of Microarray Scanners

Products You Trust

NEN

wallac

Packard BioScience

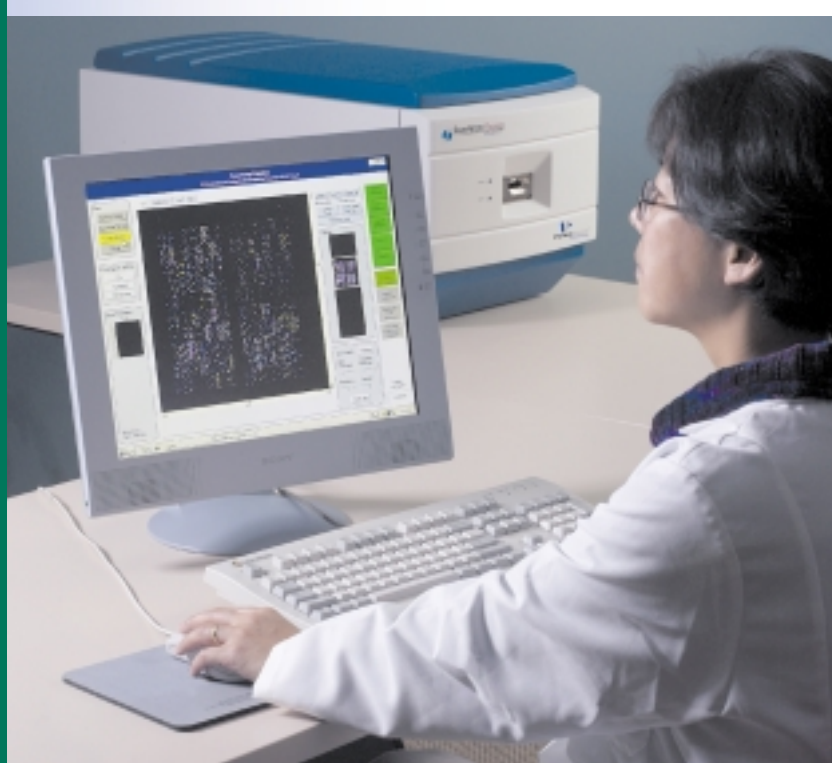
PerkinElmer™ life sciences.

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Introducing...

The Packard™ *ScanArray*® *Express* Line of Microarray Scanners from PerkinElmer Life Sciences — Easy-to-Use Software, Breakthrough Technology and Uncompromising Data Quality.

With the introduction of the first commercial microarray scanner, originally by GSI Lumonics, the *ScanArray* line offered the only upgradeable 2-wavelength scanner, the only scanning instrument to have patents that covered acquisition, barcoding and automation, and today is the brand most often found in microarray labs worldwide.



PerkinElmer proudly unveils the next step in the evolution:

- Easy to acquire and analyze data with **Easy Scan** and **Quantitate** buttons
- Easy to integrate data — offers both GPR and CSV files
- Exclusive ability to check arrays for spot presence and immobilized DNA before hybridization
- Powerful spot finding integrating .GAL files or user-defined templates
- Optimized data at acquisition with continuous laser power and PMT controls
- Excellent reproducibility: <5% CV for static and dynamic repeatability
- Upgradeable with wavelengths to currently support almost 70 alternate dyes
- Simultaneous use of up to 5 different dyes in one experiment
- True 5 micrometer diameter resolution scanning with 5 micrometer laser beam
- 20-slide autoloader option with e-mail notification for high-throughput applications
- Patented automated barcode processing to define scanning parameters and track data
- Warranty and post-warranty service provided by over 85 offices serving more than 60 countries



#1 Installed Base Worldwide

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A Microarray Scanner to Meet Every Need



ScanArray® *Lite*



ScanArray® *Express*



ScanArray® *Express HT*

Features

Number of Wavelengths	2	Up to 5	Up to 5
Wavelength Choices (nm)	Green 543 Red 633	488, 514, 543, 594, 612, 633	488, 514, 543, 594, 612, 633
Slide Capacity	1	1	Up to 20

Options

Barcode Reader	Yes	Yes	Yes
20-Slide Autoloader with E-Mail notification	—	Yes	Included



Walk-away automation using 20 slide autoloader



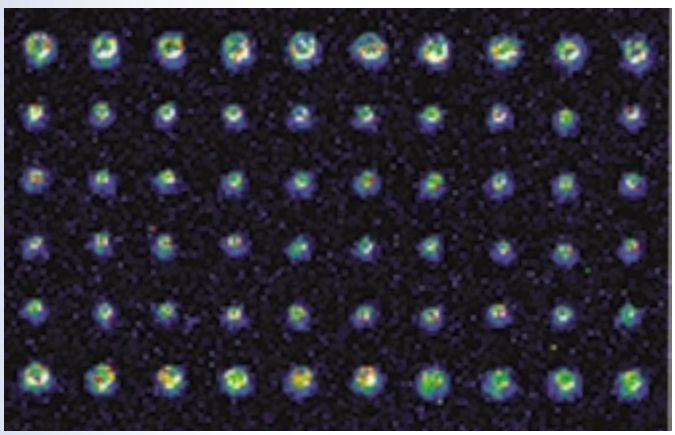
Patented automated barcode process with up to 2 lines of code to define scanning parameters, track data and name files

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Array Quality Control...

These are two exclusive *ScanArray* features that check arrays for spot presence and confirm immobilized DNA before hybridization. Save time and effort by hybridizing only arrays that meet your quality standards. Use these features to quality check pre-printed arrays and, if making your own chips, to trouble-shoot arraying performance. Missing spots may mean, for example, that a printing pin was blocked or that there were missing samples in wells. Researchers concerned about wasting irreplaceable tissue samples will find these features especially valuable.

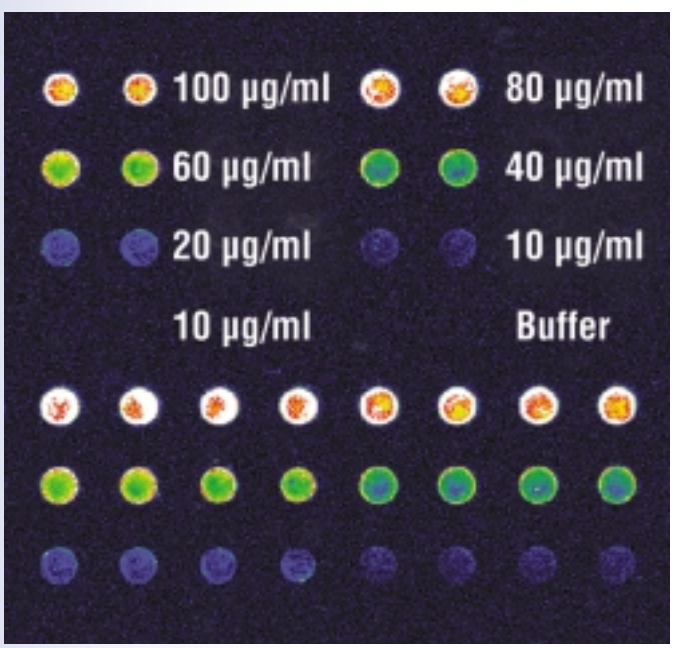
These two simple checks are non-destructive and preserve the array for their intended experimental use.



ScanArray Express ***reflection image of cDNA spotted with 3x SSC buffer***

Spot Presence

Only the *ScanArray* family can visualize the spotting process on each array before hybridization. Without the use of special reagents or any change to your protocol, if salts are used in the spotting buffer, the user simply scans the array using the red laser and a unique PerkinElmer standard equipment filter.



ScanArray Express ***fluorescence image of EtBr stained cDNA microarray. DNA was spotted in 8 dilutions as shown***

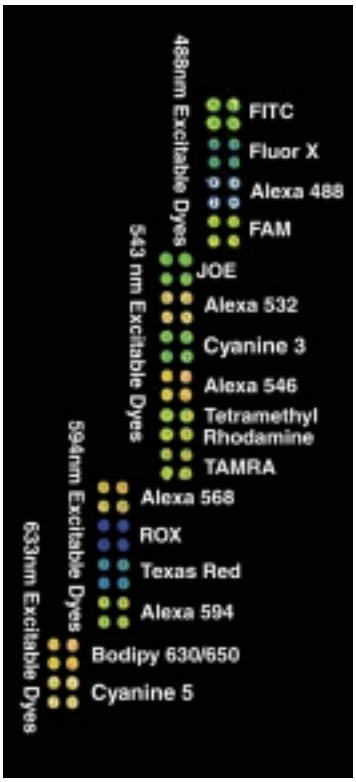
Immobilized DNA Verification

ScanArray Express and *Express HT* scanners equipped with PerkinElmer's blue laser readily display immobilized DNA on microarrays. Using ethidium bromide, which is easily washed off, there is no fluorophore cross-talk or interference with hybridization.

For more information on these Array Quality Control methods, request Technical Note 600.

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and *ScanArray* Flexibility...



Upgradeability

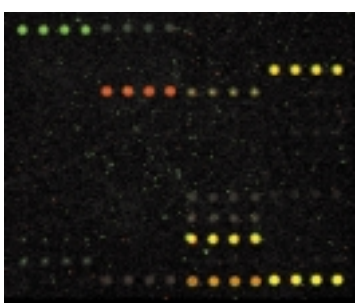
Fluorescent dye incorporation efficiency, brightness (quantum efficiency), stability and cost vary by manufacturer. *ScanArray Express* wavelength options give researchers dye choices and the ability to use the scanner to simultaneously detect 2, 3, 4 or 5 different fluorescent dyes in one experiment. Except for the non-upgradeable Lite, the *ScanArray Express* line offers a total of 5 out of 6 wavelength choices to currently support almost 70 fluorescent dyes. If the original configuration is less than 5 wavelengths, additional wavelengths can be added with the same choice of high quality gas and optically pumped lasers. For more information, request Application Note PBT-001.

For GLP data tracking and to automatically define scanning parameters, a patented optional barcode process capable of reading two barcode lines is available. For more information, request Technical Note 300. The *ScanArray Express HT* can automatically scan up to 20 slides in a cassette and can provide e-mail notification upon batch completion. The *ScanArray Express* can also be upgraded to accommodate this cassette.

Enables Application Flexibility

Protein Arrays

To determine protein-protein interactions or to use as micro ELISA platforms, protein array matrices are deposited onto 3-dimensional substrates (e.g. PerkinElmer's HydroGel™ coated slides) and reacted with fluorescently labeled antibodies. For more information, request Application Note BCT-008.



43 cytokine antibody chip used to screen human ER-negative breast cancer cells MDA-MB-231, 2-color experiment screened for location of cytokines — inside cell (red) or outside cell (green).



Living Arrays

Cells are grown on a spotted DNA slide. Gene expression at the protein level is measured using GFP/dsRed emissions.

Ziauddin & Sabatini. 2001. *Nature 411*: 107-110.

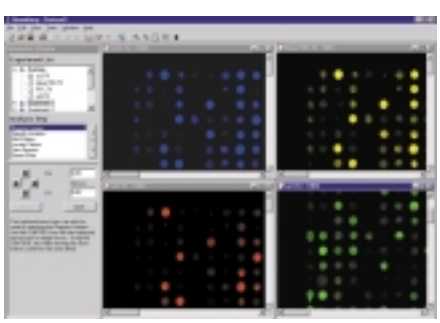
Tissue Scanning

Labeled monoclonal antibodies are reacted with arrays of thin sectioned tissue and scanned to detect expressed protein (e.g. tumor specific antigens).

Kallioniemi et al. 2001. *Human Mol. Gen.* 10: 657-662.

SNP Analysis

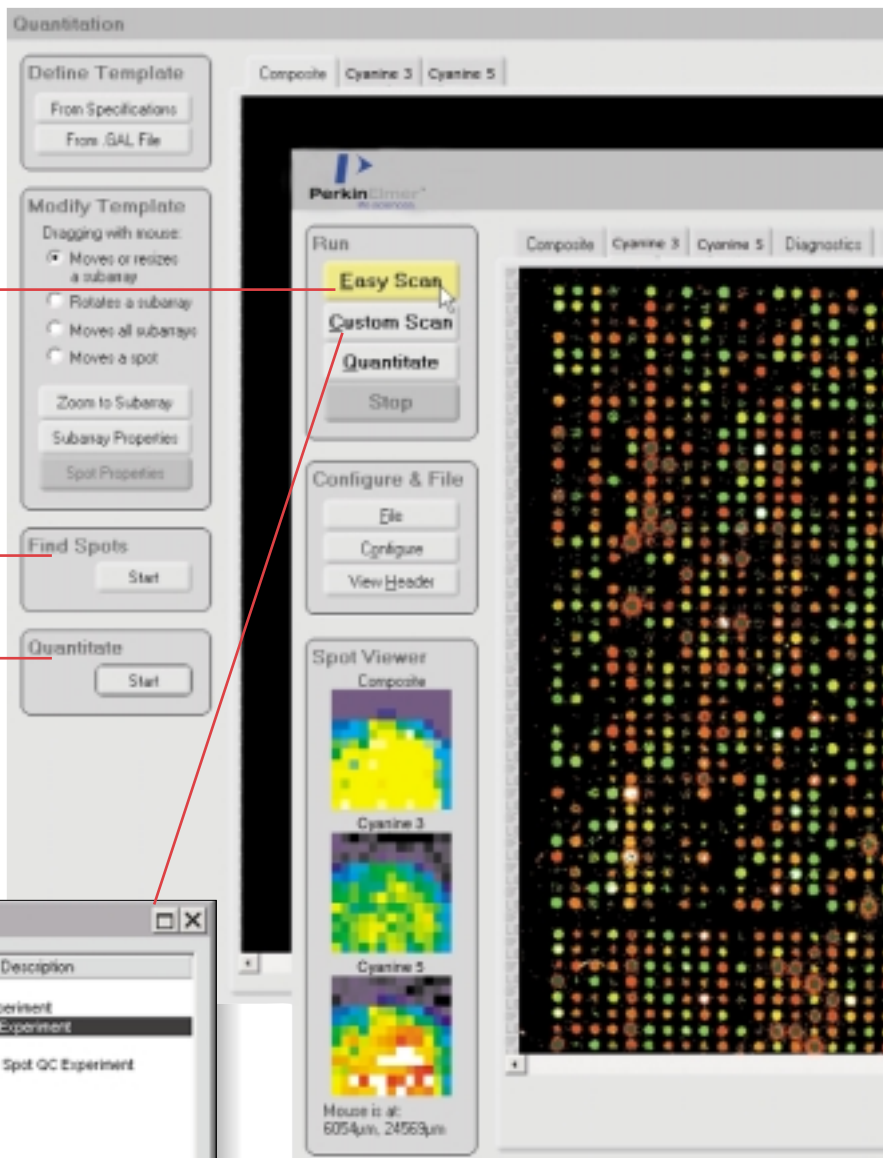
Using various fluorescent dyes (e.g. TAMARA, ROX, Bodipy and FITC), dideoxynucleotide analogs are labeled and used to detect genetic variations at the single nucleotide level. For more information, request Application Note PBT-002.



Multicolor SNP Analysis

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Scanning as Simple as 1, 2, 3...



1 Easy Scan

Simple Data Acquisition

2 Find Spots

Powerful Spot Finding

3 Quantitate

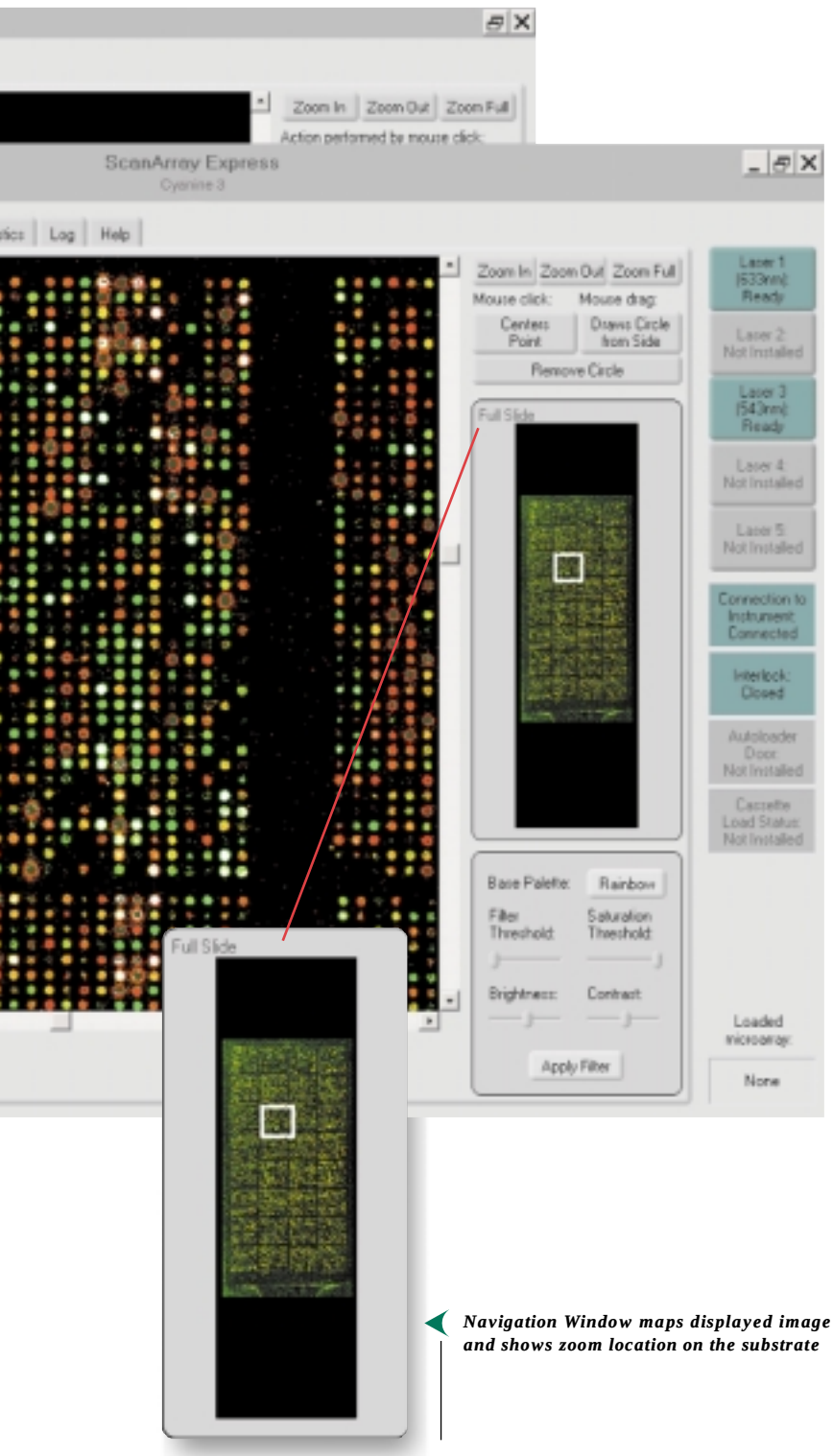
Easy quantitation with instant normalization



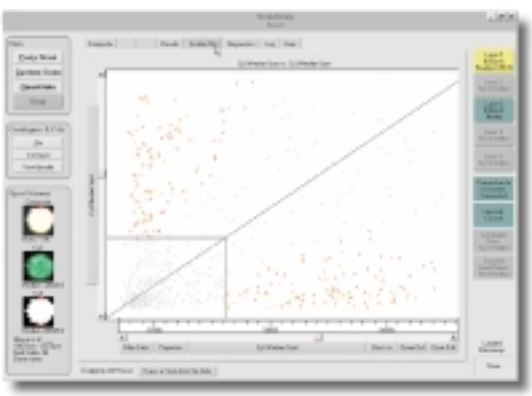
Simplify scanning by saving a Scan Protocol for each experiment to provide the same scanner settings for each array of the experiment

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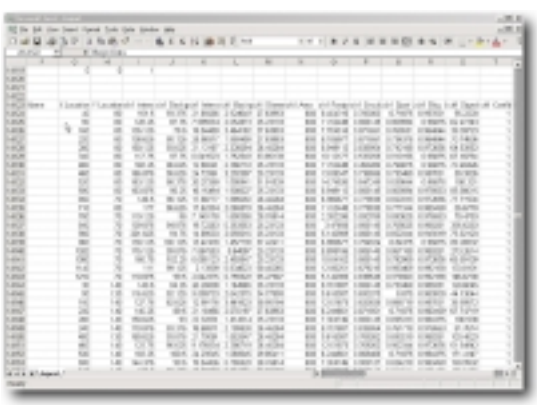
For Easier Results



Navigation Window maps displayed image and shows zoom location on the substrate



Scatter plot to visualize ratio results



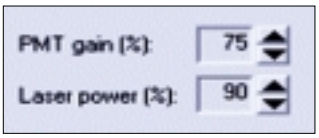
Spreadsheet to flag, organize and analyze results. GPR and CSV results files for easy informatics integration. With one click, results are put into a Microsoft® Excel file

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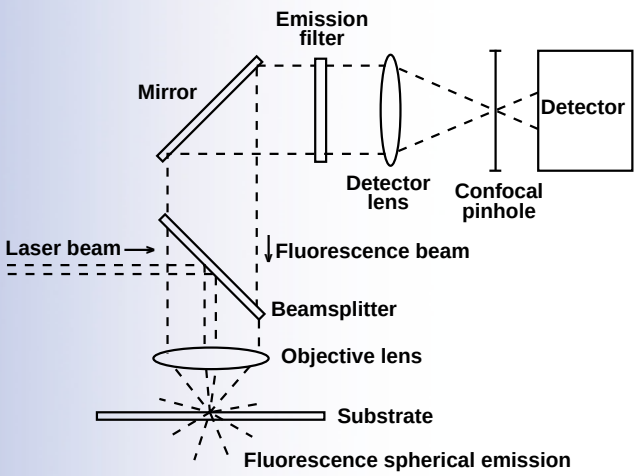
The Best Performance...

Excellent Sensitivity
Wide Dynamic Range

- ✔ **Continuously adjustable laser power and PMT**
- ✔ **Linear over four orders of magnitude**



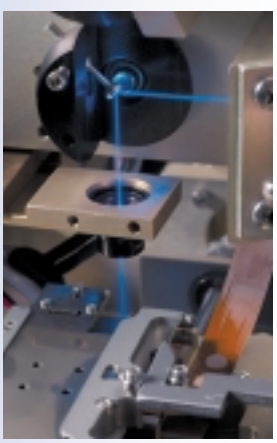
Bright spots in the presence of these brightest spots is the most easy to detect. It is the detection of weak spots that are challenging and could lead to research breakthroughs. Continuous control of both laser power and PMT voltage provides wide dynamic range for optimal results.



Optimized Confocal Optics

- ✔ **Confocal optics combined with stationary laser sources offer the best artifact rejection and highest quality image**

The idea of collecting all the emission signal from the sample and decanting background fluorescence is a proven technique long used in microscopy to increase signal-to-noise ratio. This confocal technique is simple: only the emission signals that are in the objective lens' depth of focus are collected through a pinhole and processed while all other signals are blocked by the solid mass that surrounds the pinhole. The depth of focus of the *ScanArray* scanner is up to four times the total flatness variation found in standard microarray slides so there is ample headroom to allow for spot thickness and for substrate flatness variation. For more information, request Technical Note 100.



Patented Beamsplitter

- ✔ **20% greater transmission efficiency**
- ✔ **Blocks unwanted reflected light**

In order to increase sensitivity, *ScanArray* scanners are equipped with a patented geometric beamsplitter. Emission light collection efficiency is increased by 20% compared to off-the-shelf beamsplitters because emitted light travels around the beamsplitter. Additionally, this ingenious device minimizes background noise by effectively blocking powerful reflected excitation laser light from following the optical emission path. For more information, request Technical Note 500.

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Produces the Best Results!

Excellent Reproducibility

To ensure confidence in results, each *ScanArray* scanner must meet a benchmark for static and dynamic repeatability, and rotational uniformity of < ±5% CV. *Static repeatability* – scanning a substrate multiple times without removing it from the sample holder. *Dynamic repeatability* – scanning repeatedly but removing and replacing the substrate each time. *Rotational uniformity* – scanning the substrate, removing it and rotating it 180˚, then scanning the same spots in their new location. This challenging test of repeatability is not provided by any other scanner manufacturer. For more information, request Technical Note 700.

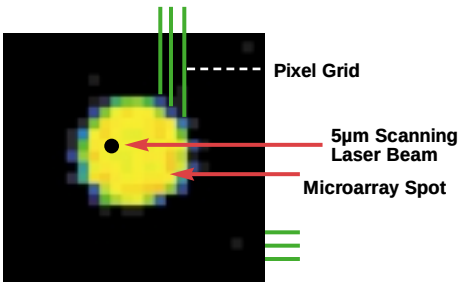
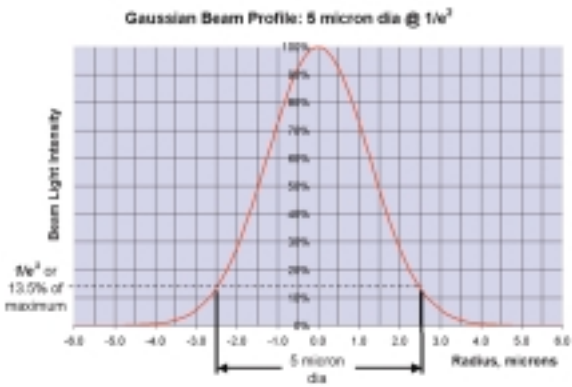


Image of 100 µm diameter microarray spot scanned on a PerkinElmer* ScanArray *at 5 µm pixel resolution

Resolution

Five user selectable scanning resolutions means being able to match the right resolution to the feature size to be scanned. Our highest resolution setting offers true 5 micrometer resolution scanning. It employs a precise 5 micrometer excitation beam to generate fluorescence from discrete 5 micrometer pixels which produces an accurate map of fluorescent intensity at that location. Other scanners which use a larger beam diameter and claim a 5 micrometer or smaller resolution have to average adjacent pixel values. This results in a nominal but not real 5 micrometer resolution. For more information, request Technical Note 400.



ScanArray *beam intensity profile*

and Better Performance than Today's CCD Systems



Laser wavelengths that are centered on the peak of a fluorophore's excitation spectrum will generate more photons in the same time than broad-band white light excitation. In addition, simultaneous light collection by CCD systems means they cannot discriminate between light from adjacent points. These and other CCD limitations indicate that the *ScanArray* line saves time and produces a better image with superior sensitivity.

ScanArray *sensitivity: serial dilution detection better than 0.05 fluorescent molecules/µm2*

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The Total Solution...

Integrating Sample Prep to Analysis



Sample Prep

MultiPROBE® II HT EX

- ✔ Robotic Liquid Handling System for accurate, reliable DNA plate preparation

DNATrak™

- ✔ Automated DNA Purification System for HT applications

GeneTAC™ G³ Workstation

- ✔ Library generation, management and colony picking



Substrate Selection

HydroGel™ Coated Slides

- ✔ Low inherent fluorescent background and assay-dependent background
- ✔ 3-Dimensional matrix
- ✔ High loading capacity
- ✔ Protein-friendly environment maintaining protein functionality



Microarray Production and Processing

***SpotArray*™ Product Family**

- ✔ State-of-the-art printhead and pins for high quality direct genomic array printing
- ✔ Piezo non-contact printing for protein and custom array research
- ✔ Bench-top and production models provide application flexibility

GeneTAC™ Hybridization Station

- ✔ Automated 12-slide processing system



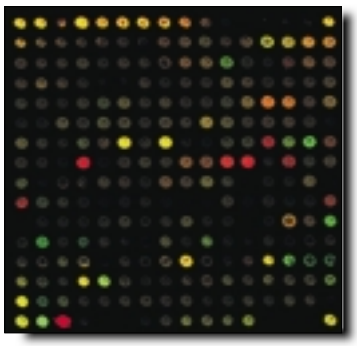
Microarray Reagents

MICROMAX™ Microarray Kits

- ✔ cDNA labeling kits – Direct and Indirect with TSA™ Signal Amplification
- ✔ Screening and Focused glass microarrays
- ✔ Cyanine- and Biotin-labeled Nucleotide Analogs

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for Your Microarray Process





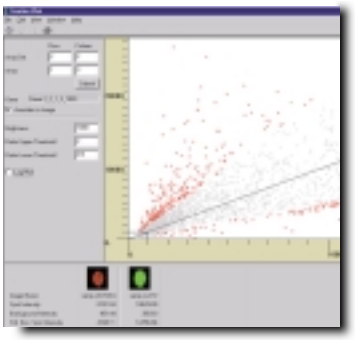
Microarray Scanning/Imaging

ScanArray® Express

- ✔ Flexibility of laser options for applications using alternative fluorescent dyes, as well as Cyanine 3 and Cyanine 5
- ✔ Upgradeable systems to follow growth in microarray applications
- ✔ Easily attainable uniformity and repeatability with CV less than 5%

Cyclone®

- ✔ Cyclone Gene Array System is the high performance alternative for quantitative imaging of radiolabeled DNA micro and macroarrays



Microarray Analysis

QuantArray®

- ✔ Analysis of any standard TIFF image file, choice of three quantitation methods, and simultaneous analysis of up to 4 images provide needed flexibility for microarrays
- ✔ Easy integration of data files from pre-printed slides for error-free gene name assignment to spots



ArrayInformatics®

- ✔ Relational Database and Visualization tools for storage, organization and evaluation of gene expression data
- ✔ Easy-to-use and simple multi-user access from networked work stations
- ✔ Process and data transformation maps keep microarray data organized

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Specifications

	ScanArray® Lite	ScanArray® Express	ScanArray® Express HT
			
Slide Capacity	Single slide	Single slide	Up to 20 slides
Laser Excitation Wavelengths	543nm and 633nm	Up to 5 of: 488nm, 514nm, 543nm, 594nm, 612nm and 633nm	Up to 5 of: 488nm, 514nm, 543nm, 594nm, 612nm and 633nm
Emission Filter Wavelengths	570nm and 670nm	508nm, 522nm, 530nm, 549nm, 570nm, 578nm, 592nm, 614nm, 660nm, 670nm and 694nm	508nm, 522nm, 530nm, 549nm, 570nm, 578nm, 592nm, 614nm, 660nm, 670nm and 694nm
Dimensions	30"L x 12.6"W x 14"H (75.5cm x 32cm x 36cm)	30"L x 16"W x 16"H (76cm x 41cm x 41cm) External Laser: 29"L x 13"W x 12"H (74cm x 33cm x 30cm)	30"L x 16"W x 16"H (76cm x 41cm x 41cm) External Laser: 29"L x 13"W x 12"H (74cm x 33cm x 30cm)
Weight	70 lbs (32kg)	82 lbs (37kg), External Laser: 55 lbs (25kg)	108 lbs (50kg), External Laser: 55 lbs (25kg)

Standard Specifications for the *ScanArray Express* Family

Sample/Substrate Dimension	Length 75.0mm - 76.2mm (2.95" - 3.0") Width 24.6mm - 25.5mm (0.97" - 1.02") Thickness 0.93mm - 1.29mm (0.037" - 0.051") Meets ISO slide standard
Scanning Field	22mm x 73mm
Pixel Resolution	User selectable scanning resolutions: 5, 10, 20, 30 and 50 µm
Scan Speed	20 scan lines/second <2.5 minutes for a 20mm x 30mm area at 10 µm with 2-second slide ejection/retraction
Dynamic Range	16-bit dynamic range linear over 4 orders of magnitude
Repeatability and Uniformity	Both less than 5% CV
Sensitivity	0.05 fluorescent molecules μm^2
Image File Formats	TIFF, BMP, JPEG or Raw
Palette Selections	8 user selectable: rainbow, gray, red, orange, yellow, green, blue and purple
Electrical Requirements	Autoselecting from 100-240V, 3.5A, 50/60 Hz
Computer Recommendations	Pentium® III 1GHz processor, 512 MB RAM • 40 GB hard drive, CD-RW • 19" color monitor, Resolution 1024 x 768 x 65K colors • Two 10/100 Mbs Ethernet network interface card (NIC) • Microsoft® Windows® 2000 SP1, Microsoft® Internet Explorer 5.0 or later
Safety Agency Approvals	Electrical and Safety Standards: UL Listed: UL 3101-1; TUV certified EN 61010-1/A2; CE Marked • Laser Safety CRDH Class I laser Product; EN 60825-1 Class I Laser Product • Electromagnetic Emissions FCC Part 15 Class A, EN55011: Class A; ICES-003, Class A • Electromagnetic Immunity: EN50082-1 (EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6, EN61000-4-11)

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Switzerland: Tel: 0800 55 50 27 • **Italy:** Tel: 800 79 03 10 • **Sweden:** Tel: 020 79 07 35 • **Norway:** Tel: 800 11 947 • **Denmark:** Tel: 80 88 3477 • **Spain:** Tel: 900 973 255

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Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

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