

NanoArray Assay System

A fully integrated, nanoscale protein assay and analysis solution

Coupling powerful nanoscale array deposition techniques with the latest generation of fluorescent detection technologies, the NanoArray Assay System is the new paradigm for protein analysis and discovery. It is a user friendly, affordable desktop unit that can quickly and cost-effectively integrate into any proteomic lab. The platform is based on NanoInk's patented, tip-based Dip Pen Nanolithography® (DPN®) technology, which can create highly reproducible protein arrays over millimeter areas with nanometer precision and then fluorescently image these nanoarrays with 0.5µm resolution. When combined with NanoInk's line of fully automatable proteomic assays that require as little as 2µl of sample, the NanoArray Assay System is a complete solution for the detection, identification, and quantitation of clinically and biologically relevant, low abundance proteins from a wide variety of sample types.

*Think big.
Work nanoscale.*

User friendly deposition and analysis

Ultrasensitive detection

2µl sample volume

*Nanoscale precision
and reproducibility*

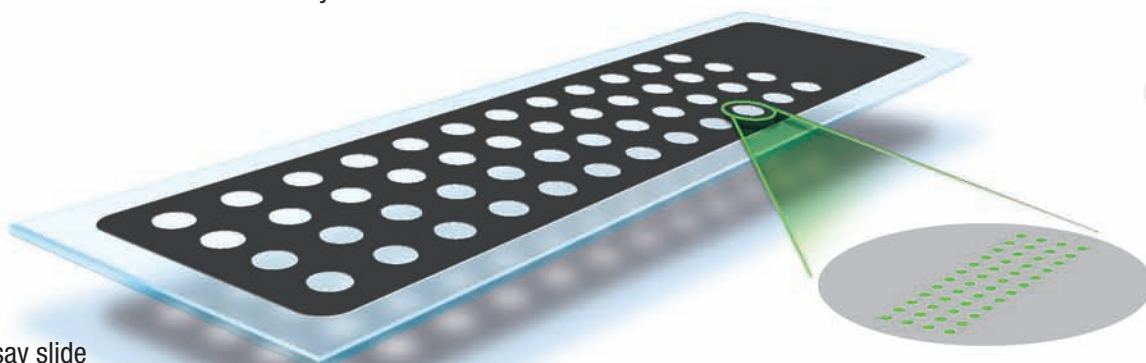


The NanoArray Assay System includes the NanoScan 900 and the NanoArrayer 3000

A Fully Integrated System

NanoArrayer 3000

The NanoArrayer 3000 is capable of depositing thousands of uniform, < 6µm wide protein features in the area occupied by just one spot on a conventional protein microarray. This miniaturization and precision enables high throughput protein analysis on a single slide. And NanoArray 3000 arrays are completely customizable. Thousands of features can be patterned into each sub-array, and modified glass assay slides are available in 18, 48, and 96 sub-array formats.



48 sub-array assay slide with 48 features per sub-array

Nanoscale Assay

Many types of proteins (including antibodies, protein lysates, and purified proteins) can be patterned into nanoarrays and subsequently analyzed using a wide variety of assay formats. Customers have the choice of developing their own assays, using pre-configured NanoInk assay kits, or contracting assays out to NanoInk's protein analysis experts.

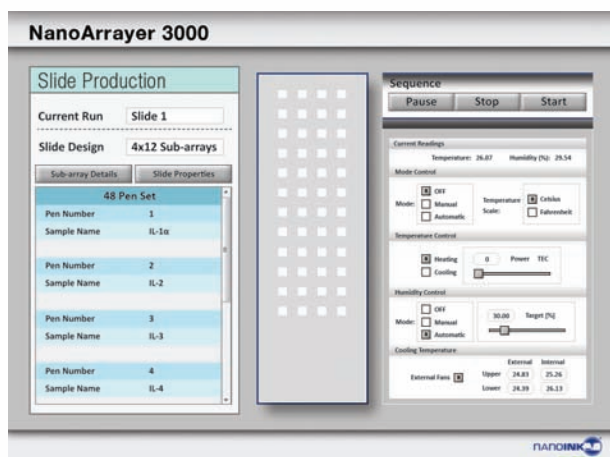
NanoScan 900

A confocal scanner incorporating two extremely sensitive photomultipliers, the NanoScan 900 detects fluorescence uniformly across the entire arrayed surface and delivers exceptional sensitivity and signal-to-noise ratios. With a real-time auto-focusing system, the NanoScan 900 can simultaneously scan two colors on an entire slide in just 3.5 minutes with 0.5µm resolution.

The base model analyzes one slide at a time and the high-throughput NanoScan 900AL includes a 24-slide autoloader.

Software

An easy-to-use, menu-driven interface on the NanoArrayer 3000 facilitates flexible and precise array patterning. The NanoScan 900 runs on intuitive and user-friendly software. Users can conduct data acquisition and image analysis and then easily export data into standard analytical software packages. Users can easily define scanning and analysis parameters for an individual nanoarray slide or for an entire group of slides.



More Data with Less Sample

Other protein analysis platforms require large amounts of sample material and reagents. Nanolnk assays generate more data with less starting material so that even low-abundance biomarker studies on rare and hard-to-collect samples (like rodent serum, spinal fluid, tissue extracts, tears and dried blood spots) are possible. And with femtofluidic liquid handling, the NanoArray Assay System delivers rapid reaction kinetics and lowers reagent volumes, reducing assay costs.

Ultraminiaturized and Ultrasensitive

The nanoarray advantage of small sample size does not come at the cost of sensitivity. Nanolnk's miniaturized and multiplexed assays can achieve femtograms/ml sensitivity with 2 μ l of sample, comparable to or better than the sensitivities of ELISA and bead-based assays that consume 50 μ l or more of sample.

Fully Automatable Assays

Nanolnk's revolutionary new assay platform can simultaneously analyze multiple protein biomarkers with high-throughput precision and speed. Automated Nanolnk assays include all protocols, arrays, reagents, and SBS compliant consumables needed to conduct nanoarray studies on the most popular commercially available lab automation systems.



System Specifications

NanoArayer 3000

Stage controls:	5 high speed nanopositioning stages
Feature size:	500nm – 10µm
Pattern area:	18, 48, or 96 sub-arrays in 20mm x 55mm area
Deposition time:	48 features in quadruplicate in less than 2 seconds
Feature CV%:	Intra-well < 5%; Inter-well < 8%
Optics:	< 1µm resolution
Software:	Automated custom array designs
Temperature control:	Ambient + 20°C to Ambient – 2°C
Humidity control:	10 – 90% relative humidity
Power:	Internal AC adaptor from 100 – 220V
Dimensions:	30"W x 22"D x 32.5"H (762mm x 559mm x 825mm)
Weight:	140lbs. (63.5Kgs.)

NanoScan 900

Capacity:	NanoScan 900 – 1 slide; NanoScan 900AL – 24 slides
Excitation wavelengths:	532nm and 635nm
Emission filters:	570nm and 670nm
Focusing:	Motorized focus adjustment
Barcode reader:	Included
Scanning field:	0.86" x 2.9" (22mm X 74mm)
Resolution:	0.5µm – 40µm
Scanning speed:	10 – 35 lines/sec
Scanning time per slide at 1µ resolution:	<ul style="list-style-type: none"> ■ 15 minutes for 48 features in 18 sub-arrays ■ 30 minutes for 48 features in 48 sub-arrays
Dynamic range:	16-bit; linear over 4 decades
Image file format:	TIFF; single or multi images per file
Optical gain adjustment for each PMT:	Fully linear from 0 – 100%
Barcode identification:	128 barcodes and/or 2D barcodes
Slide barcode reader:	128 barcodes
PC connection:	Ethernet interface
Software:	Automated image finding, image capture, quantization and export
Power:	Internal AC adaptor; auto-selecting from 100V – 240V
Dimensions:	15"W x 17.5"D x 25.5"H (380mm x 440mm x 640mm)
Weight:	NanoScan 900 – 37lbs. (17Kgs.); NanoScan 900AL – 66lbs. (30Kgs.)

Experience nanoscale now.

Find out more at www.nanoink.net/nanobio or 847-679-3432.

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