



Microarray instruments

GeneChip System 3000

Combining advanced technology with user-friendly features for microarray scanning needs

The power of intuitive design and automation

Microarrays have been used to discover an impressive number of clinically informative genomic biomarkers. However, converting promising gene signatures into clinical diagnostic or prognostic tests can be an expensive endeavor. Our commitment to advancement in cytogenetics research continues with updates to the Applied Biosystems™ GeneChip™ System 3000, our high-performance microarray system for array processing. The refreshed microarray instrument system combines advanced design improvements with high-resolution scanning and automation to dramatically improve efficiency in gene expression and genetic analysis applications.

The latest GeneChip System 3000 updates include:

- A scanner that is preassembled with the autoloader for more efficient installation
- Easier and safer operation of the scanner lid with new grip and counterbalance
- Updated internal components to maximize longevity
- Modernized look and feel

The system includes the Applied Biosystems™ GeneChip™ Scanner 3000 preassembled with the AutoLoader and Applied Biosystems™ GeneChip™ Fluidics Station 450, which, when used together, enable complete walk-away freedom for scanning your arrays. The GeneChip System 3000 fits easily into a benchtop environment. Its solid-state laser eliminates the need for an external laser power supply or a special cooling system under the bench.

The outstanding performance and enhanced capabilities of the GeneChip System 3000 offer accurate gridding and consistent scanner-to-scanner performance, helping to improve data integrity and data sharing between clinical researchers.

Highlights include:

- Compact size for better space utilization
- High-resolution scanning from 0.51 to 2.5 μm pixelations, automatically selected by array type
- Optimal image uniformity and collection efficiency across the entire scan area with proprietary Applied Biosystems™ Flying Objective lens technology
- No laser drift and reduced scanner-to-scanner variability
- Automatic adjustment of residual arc correction and x-linearity
- Preassembled with the AutoLoader, the GeneChip Scanner 3000 enables complete walk-away scanning of up to 48 arrays at a time

The GeneChip System 3000 offers space savings and improved reliability



Reliability

- Includes a sample transport system that can operate in environments running 10,000 scans per year



Footprint






- Compact benchtop design for space utilization



The GeneChip System 3000 comes with newly launched Applied Biosystems™ GeneChip™ Data Collection Software and runs on Microsoft™ Windows™ 64-bit operating systems. Other new software enhancements include:

- An updated user interface with remote monitoring capability
- Simplified batch registration of arrays
- Easy management of the client operating system, applications, and security for IT departments
- Notifications for network path interruptions
- Supports 14+ languages

GeneChip System 3000, a microarray system for clinical research

Prepare sample	Hybridize	Wash and stain	Scan	Analyze
Applied Biosystems™ CytoScan™ array	Applied Biosystems™ GeneChip™ Hybridization Oven 645i	GeneChip Fluidics Station 450	GeneChip Scanner 3000 with AutoLoader	Workstation with GeneChip Data Collection Software
				
<ul style="list-style-type: none"> • Proven microarray technology, legacy data, and path to cost-effective custom design • CytoScan microarrays provide a robust workflow with reproducible and reliable results 	<ul style="list-style-type: none"> • Precise temperature and rotation control • Hybridize up to 64 Applied Biosystems™ GeneChip™ cartridge arrays in a single run • Ordered separately (not part of the GeneChip System 3000) 	<ul style="list-style-type: none"> • Walk-away automation of array wash and stain • Process up to four arrays on one fluidics station • Run up to 8 stations simultaneously for increased throughput 	<ul style="list-style-type: none"> • Precise scanning of all GeneChip cartridge arrays • Process up to 48 microarrays in a single run with the AutoLoader 	<ul style="list-style-type: none"> • Designed for running multiple chromosomal assays • Features internal tracking of all assay and system components and audit controls • Monitors fluidics and scanning • Connects up to 8 fluidics stations and 1 scanner

Specifications

Scan time	5–45 minutes per cartridge, depending on array type
Sensitivity	<0.5 chromophore equivalents/ μm^2 (CPSM) at a signal-to-noise ratio of 2:1 at wavelengths appropriate to R-phycoerythrin
Excitation	532 nm, 10 mW maximum
Emission filters	570 nm longpass; 565 nm, 605 nm, 655 nm, and 705 nm longpass; 20 nm wide bandpass
Detector	Meshless photomultiplier tube, red enhanced
Displayed and saved dynamic range	16-bit (65, 535:1)
Software	GeneChip Data Collection Software
Dimensions (W x D x H)	GeneChip Scanner 3000 with AutoLoader: 22.5 x 31 x 44.5 in. (57.2 x 78.7 x 113 cm) GeneChip Fluidic Station 450: 28 x 16.1 x 15.8 in. (71.1 x 41 x 40.2 cm)
Weight	GeneChip Scanner 3000 with AutoLoader: 105 lb (47.6 kg) GeneChip Fluidic Station 450: 80 lb (36.3 kg)
Power	Voltage: 100–240 V, current: 2–4 A, frequency: 50/60 Hz
PC provided with system	Dell™ OptiPlex™ XE4 Minitower Processor: Intel Core™ i9-12900k Processor Memory: 32 GB Hard drive: Dual 2 TB Operating system: Windows 10 IoT Enterprise LTSC 2021 DVD: 8x half-height DVD+/-RW drive
Warranty	One-year limited coverage

Ordering information

Product	Includes:	Cat. No.
GeneChip System 3000	GeneChip Scanner 3000 with AutoLoader GeneChip Fluidics Station 450 GeneChip Hybridization Oven 645i Workstation with GeneChip Data Collection Software	00-0218
GeneChip Fluidics Station 450	Single station available for purchase separately from the GeneChip System 3000	00-0079
GeneChip Hybridization Oven 645i	Single unit available for purchase separately from the GeneChip System 3000	00-0331

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