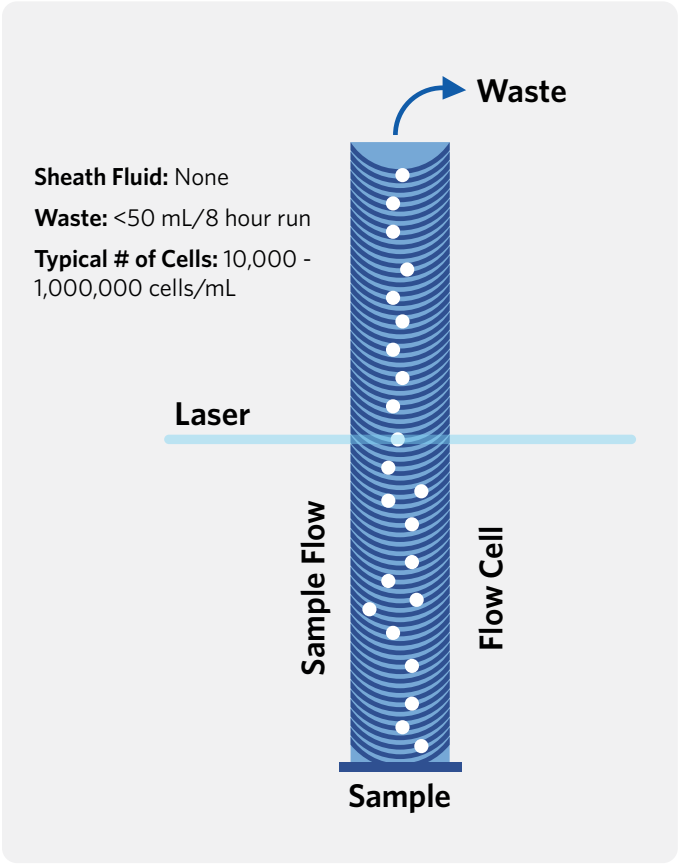
Luminex®

Guava® easyCyte™ Systems

Expanding the potential of flow cytometry for more than 20 years

20+ Years of Flow Cytometry Experience...Now Better Than Ever

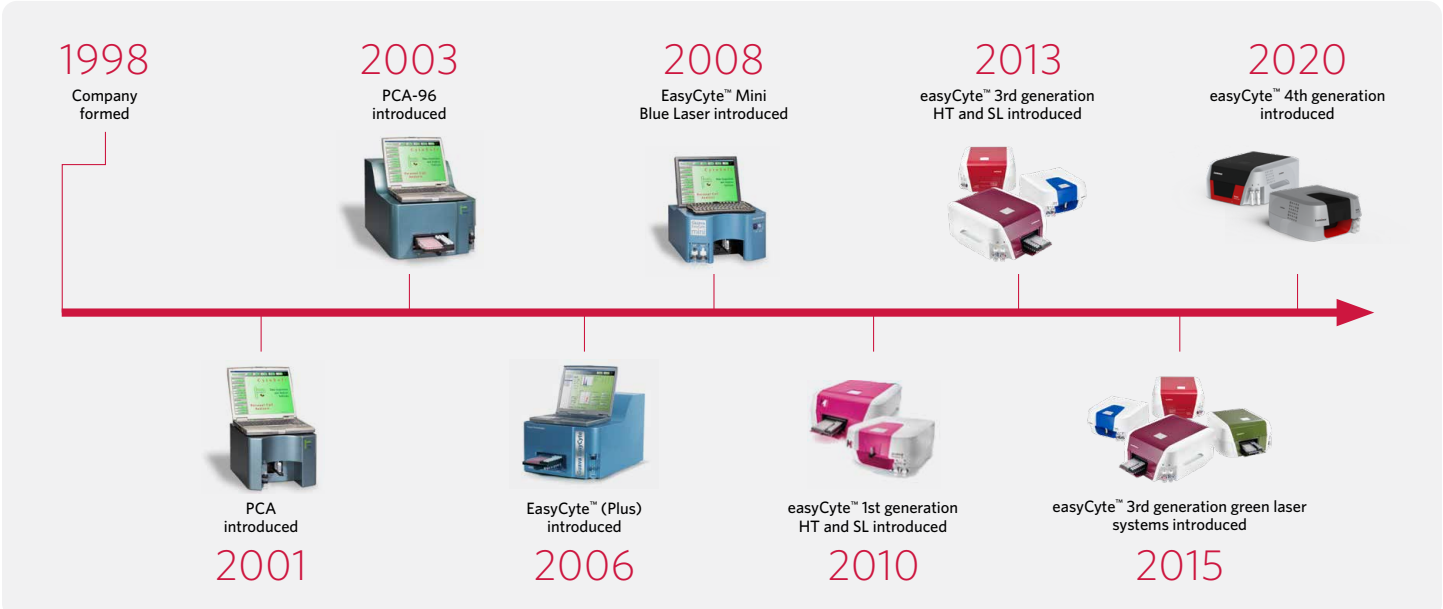


More than 20 years ago, Guava Technologies introduced the first compact benchtop flow cytometers. Today, the easyCyte™ line offers additional flexibility, greater sensitivity, and high-throughput capabilities. Powered by intuitive software, easyCyte flow cytometers are some of the most dynamic and flexible benchtop systems available.

The easyCyte line of flow cytometers offer:

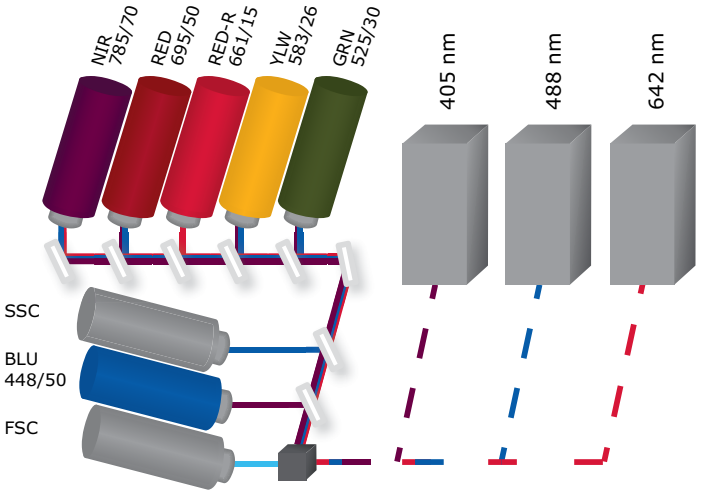
- Up to 3 lasers and 14 parameters on a benchtop instrument, allowing for a high degree of flexibility
- System upgradability, which enables future-proofing
- An innovative microcapillary fluidics design, eliminating sheath fluid and reducing waste stream
- The combination of microcapillary technology and a positive displacement syringe pump, which allows for direct absolute counting with industry-leading precision
- An intuitive software interface, enabling a simplified assessment of results, including cell-health assays
- Detection of particles as small as 0.2 and up to 60 µm, facilitating the evaluation of a broad variety of samples
- High-throughput options, which allow walkaway acquisition for up to 96 samples

First Benchtop Flow Cytometer



With more than 20 years of experience, the Guava® easyCyte™ Systems were the first benchtop cytometers to be introduced to the market. The platform is continually upgraded to meet the ever-evolving needs of our customers.

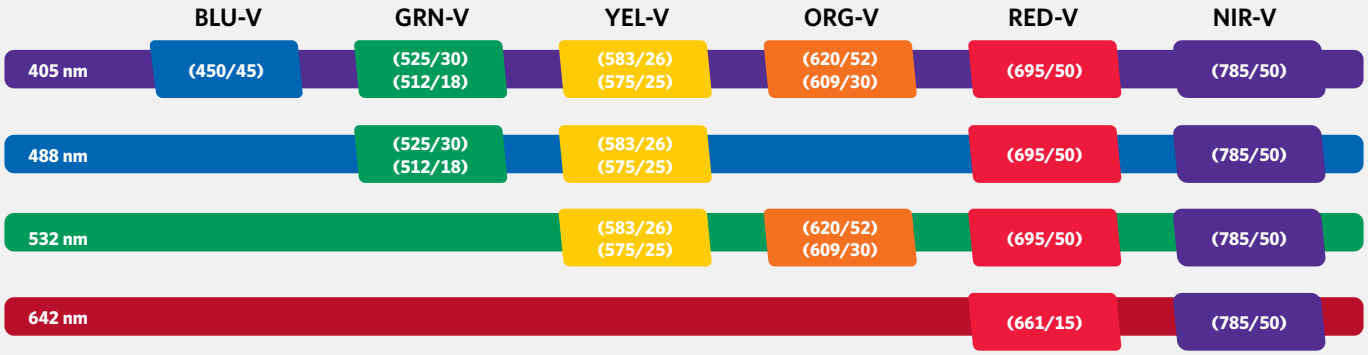
Inside the **Guava®** **easyCyte™** Systems



How They Work

The easyCyte Systems use patented microcapillary laser-based technology to detect mammalian and microbial cells, particles, and beads. First, a sample of fluorescently labeled cells is aspirated into the microcapillary flow cell. Then, forward and side scatter characteristics are detected by photodiodes. Lasers and PMTs are then modulated to minimize crosstalk and ensure fluorescent detection is accurate. Finally, fluorescence emission resulting from the excitation of fluorophores by the lasers is spectrally filtered and detected by several PMTs.

The easyCyte Systems can resolve the fluorescence from up to 12 fluorophores simultaneously.

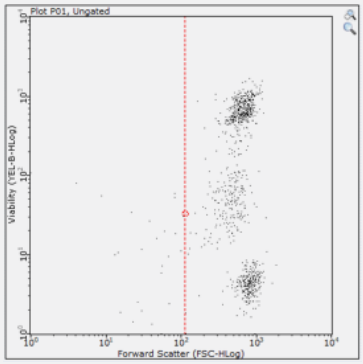


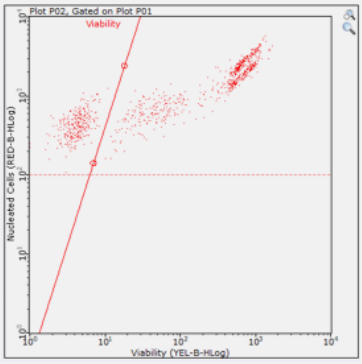
Precise and Accurate Absolute Counting

Guava® easyCyte™ Systems combine microcapillary flow with a precision pump to provide accurate and precise absolute counts—without the use of reference beads. Absolute counts can be done using cellular or bead samples.

Using the ViaCount™ Reagent and module allows for the determination of live, apoptotic, and dead cells. Linear and accurate results can be seen across the multiple concentrations and on a variety of cell and sample types.

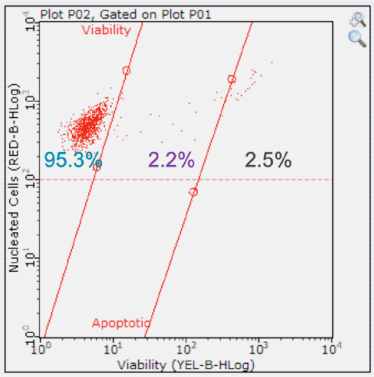
Example Results From ViaCount™



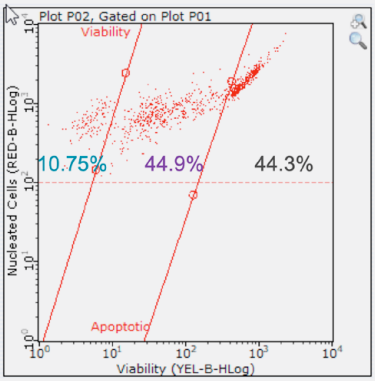


Viable Cells / mL	1.67e+06
Viability %	30.76%
Total Cells / mL	5.42e+06
Total Viable Cells in Original Sample	1.67e+07
Total Cells in Original Sample	5.42e+07

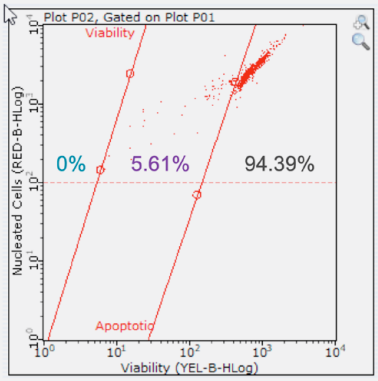
Healthy Culture



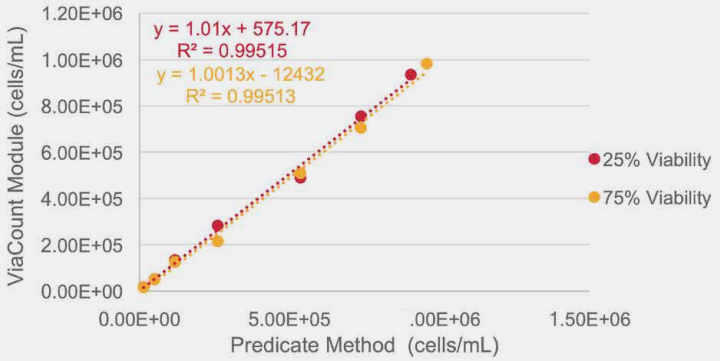
Overgrown Culture



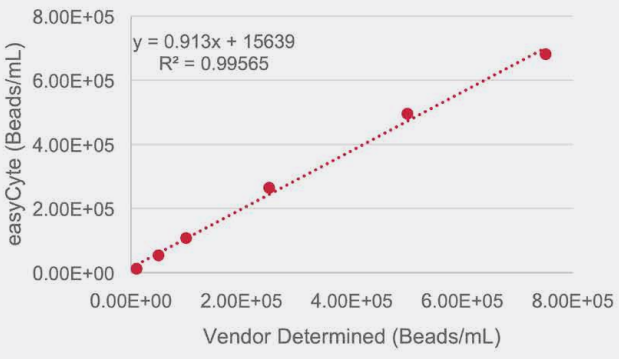
Heat-Killed Culture



Cell Concentration

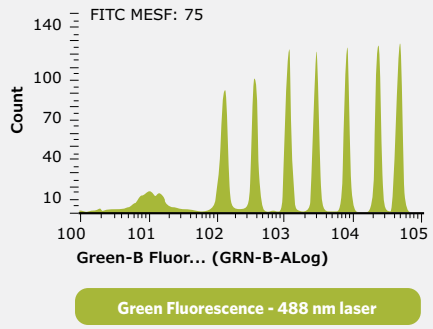


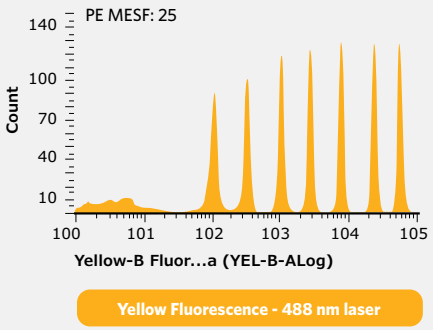
Bead Concentration

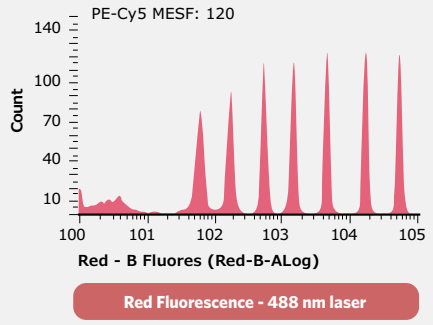


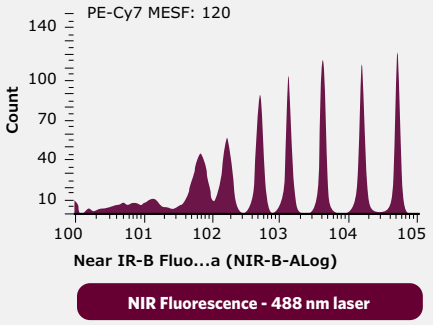
Sensitive and Specific

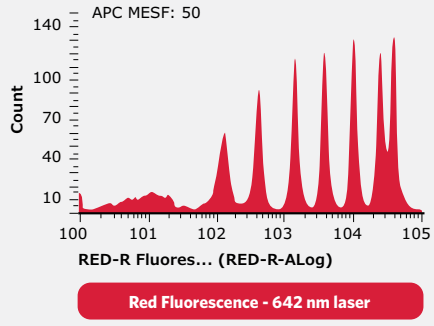
Spherotech® 8-color beads analyzed on the Guava easyCyte Systems demonstrate the instrument's proficiency for resolving adjacent fluorophores in multiple detection channels.

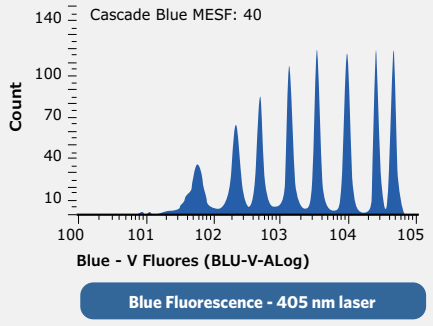






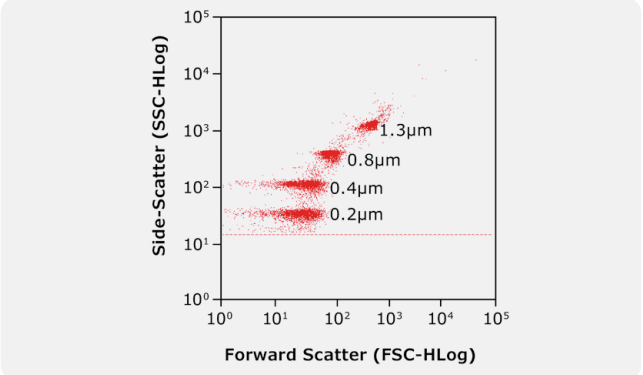






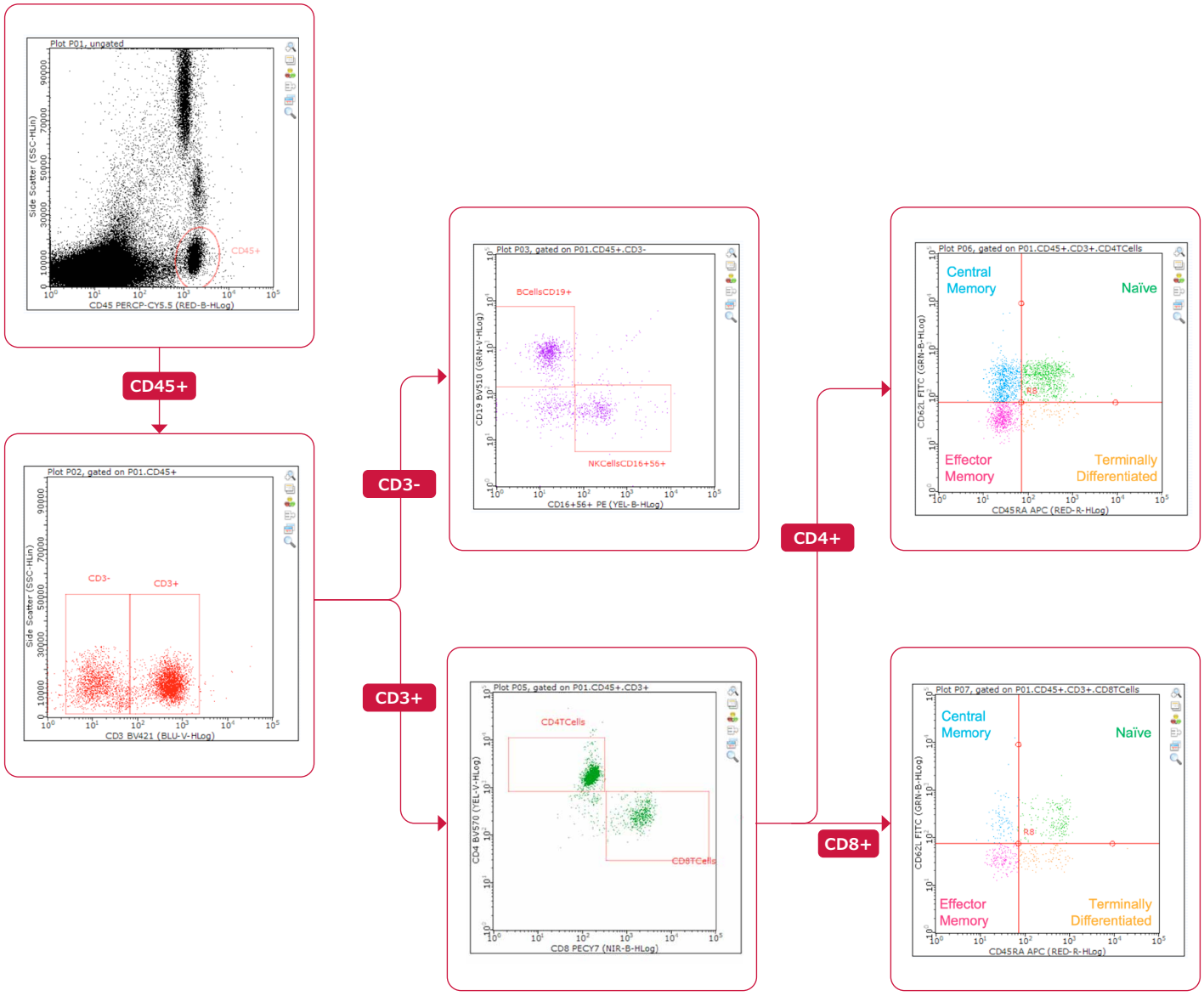
Small Particle Detection

The easyCyte™ Systems have been shown to detect particles as small as 0.2 µm—a significant improvement over typical flow cytometers. This increased resolution and sensitivity allows for better separation, making gating and identification of dim populations easier. These capabilities may prove particularly useful for researchers analyzing particulates, beads, bacteria, and algae. Acquisition of a mixture of beads of known size demonstrates the ability of easyCyte Instruments to detect and discriminate particles as small as 0.2 µm.



Immunological Phenotyping

10 µL of adult human blood was stained for 20 minutes at room temperature with a cocktail containing anti-CD45 PerCP-Cy5.5, anti-CD3 Brilliant Violet™ 421, anti-CD4 Brilliant Violet 570™, anti-CD8 APC-Cy7, anti-CD16+CD56 PE, anti-CD19 Brilliant Violet 510™ , anti-CD45 RA APC, and anti-CD62L FITC. After incubation, cells were lysed and fixed with 180 µL of Guava Lysing Solution for 15 minutes at room temperature. Samples were then acquired on the Guava easyCyte 12HT System. Lymphocytes identified as CD45+ were selected and subsequently gated into an SSC vs. CD3 plot. T cells (CD3+ and CD45+) were gated into a CD4 vs. CD8 plot. CD4+ and CD8+ T cells were subtyped by evaluating each population using CD45RA and CD62L to differentiate naive from memory cells, and to distinguish between natural killer (NK) and B cells, CD3-negative cells were gated into a plot comparing CD19 (B cells) and CD16+/CD56+ (NK cells).

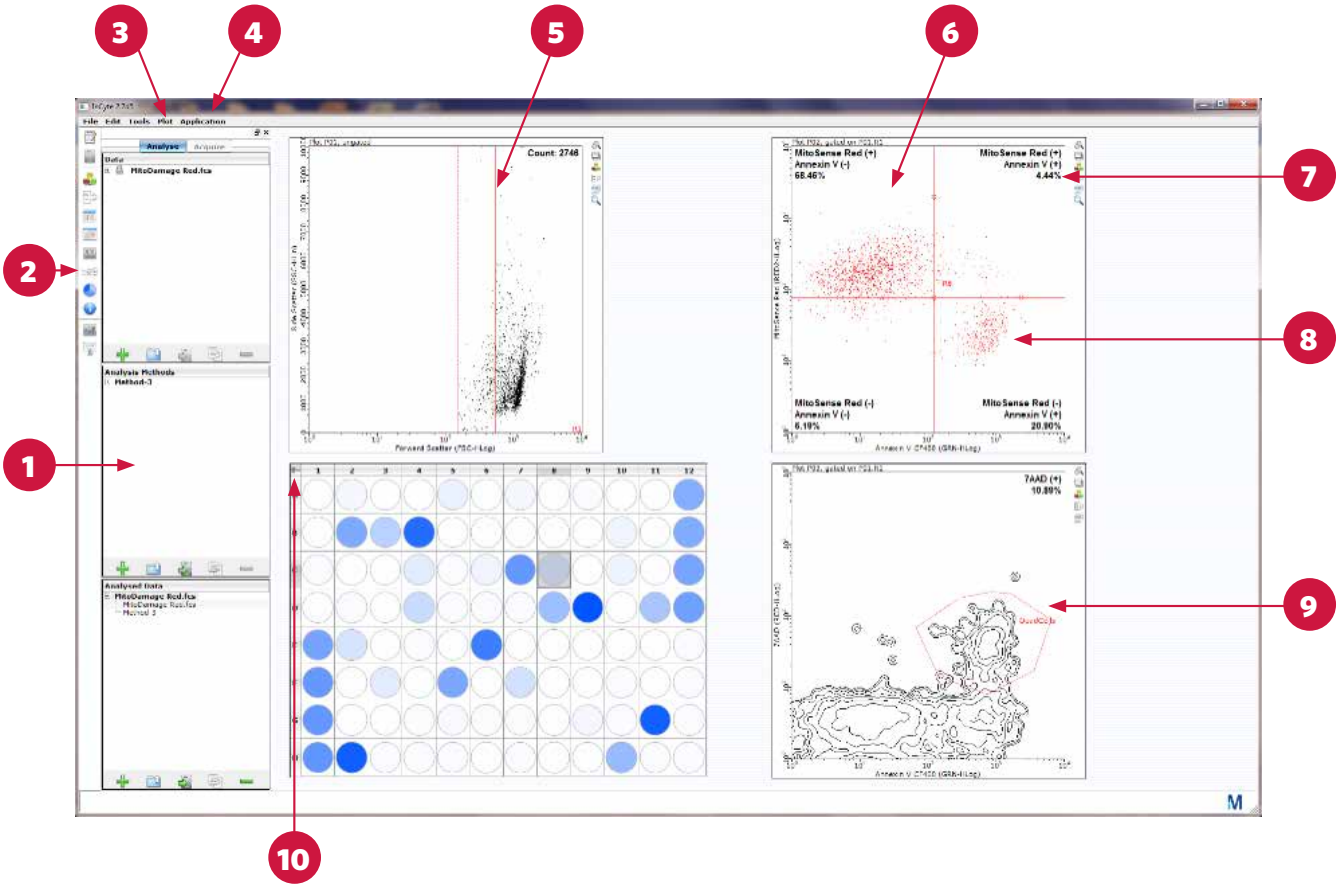


Software

GuavaSoft™ operating system software provides access to modules for acquisition and analysis, as well as instrument setup and maintenance. Modules can be used with a wide range of Luminex flow cytometry kits to simplify your flow cytometry workflows. Additionally, the GuavaSoft package includes InCyte™, an intuitive open software package for custom analysis. Results can be exported to spreadsheets or as industry-standard FCS 3.0 files for further analysis. GuavaSoft Software also provides 21 CFR Part 11-enabling features.

InCyte™ Software: Intuitive

InCyte Software has an intuitive, easy-to-use interface that enables you to focus on data at the sample or experimental level. The software simplifies setup and analysis of plots with drag-and-drop features, while automated compensation makes it easy to perform complex, multi-color assays. What's more, the Instant Update feature responds in real-time to changes in analysis conditions for viewing, and the multiparameter heat mapping function allows for analysis of entire plates of data in the time previously required to analyze a single sample. These features provide a simple and rapid way to attain a macroscopic view of experiment "hits," and easily compare different experiments in real-time. InCyte Software is especially useful for interpreting the results of high-throughput, cell-based assays.



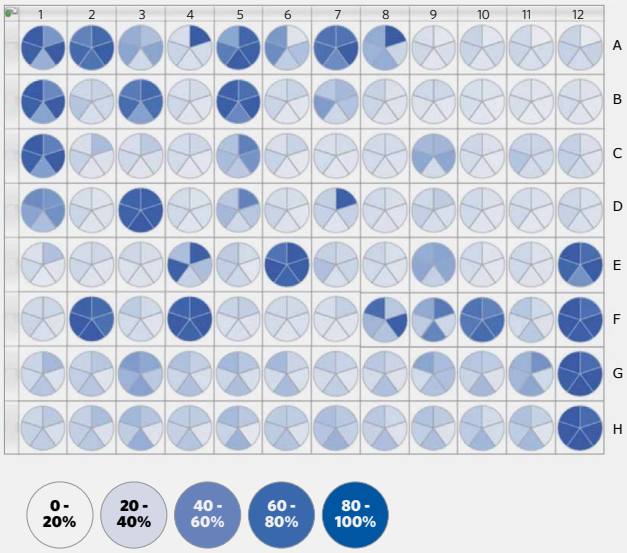
1. Create and apply analysis methods across multiple data sets.
2. Perform compensation during acquisition or analysis, or use automated compensation and gain-independent compensation features.
3. View up to 24 plots at once.
4. Flow detection on automated systems.
5. Drag-and-drop gating.
6. Refine gates in real-time.
7. Creation of statistics by default.
8. Multiple gating options.
9. Minimal gain adjustment needed when performing routine assays.
10. Analyzes both tubes and plates.

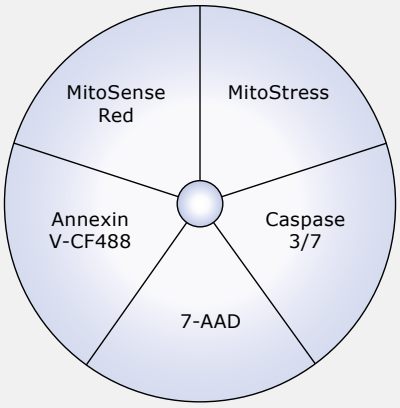
InCyte™ Software Advanced Features

Heat Mapping Allows for Simultaneous Evaluation of Up to 6 Parameters

InCyte's Heat Mapping feature allows the user to analyze data at the experiment level. Comparing population percentages, intensity values, or cell concentrations can give the user a quick, high-level view.

In the example below, HeLa cells in microtiter plates were treated with various cytotoxic compounds for 24 hours. Cells were stained using Luminex's MitoDamage and Caspase 3/7 kits, as well as a marker to evaluate mitochondrial stress. The InCyte Heat Map function facilitated the rapid identification of compounds that showed positive results by simultaneous comparison of all 5 parameters, as shown in the pie charts below. The data shows the results for cells treated with 80 different compounds in a single plate.



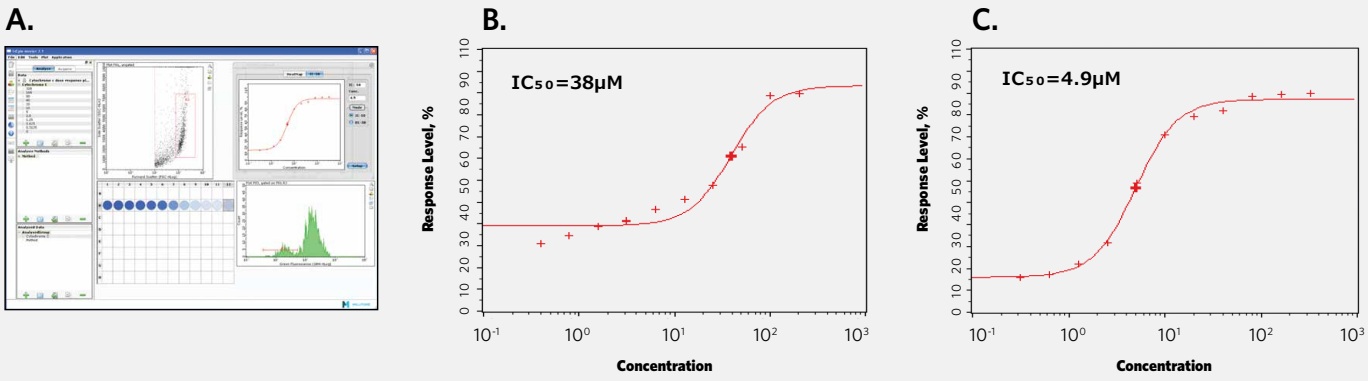


Heat map allows for combination of groups of data to construct comparisons

IC_{50} or EC_{50} Determination Within InCyte Software

IC_{50} and EC_{50} determinations prove critical in drug discovery, and often need advanced third party software for determination. InCyte includes these powerful features within the software.

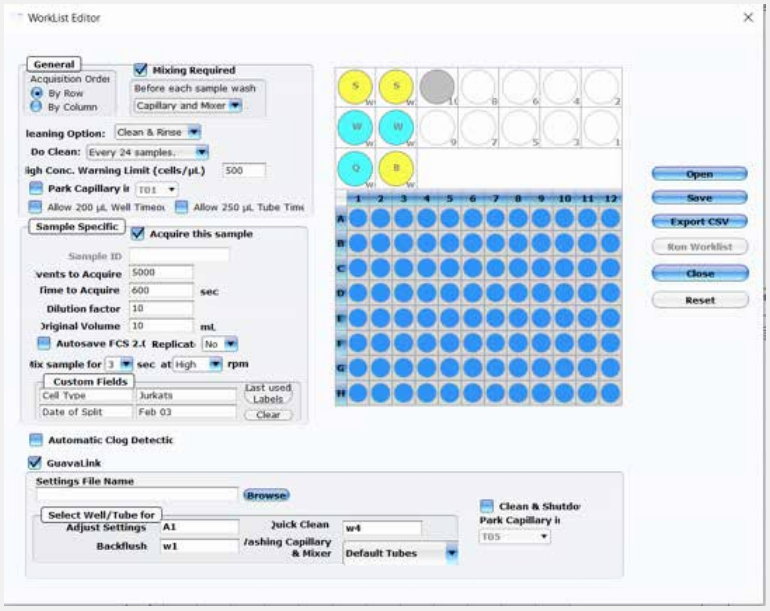
IC_{50} determination using the Guava® Cytochrome *c* Kit was analyzed with the built-in IC_{50}/EC_{50} curve-fitting feature of InCyte Software. Cells were acquired on the Guava easyCyte 8HT System. **Plot A** shows the drag-and-drop gating strategy used for the IC_{50} determination, **Plot B** shows the IC_{50} curve results for gambogic acid, and **Plot C** shows the IC_{50} for etoposide. The once complex task of generating the IC_{50} or EC_{50} curve for a given compound is automated by InCyte, based on quantitation of fluorescent signal.

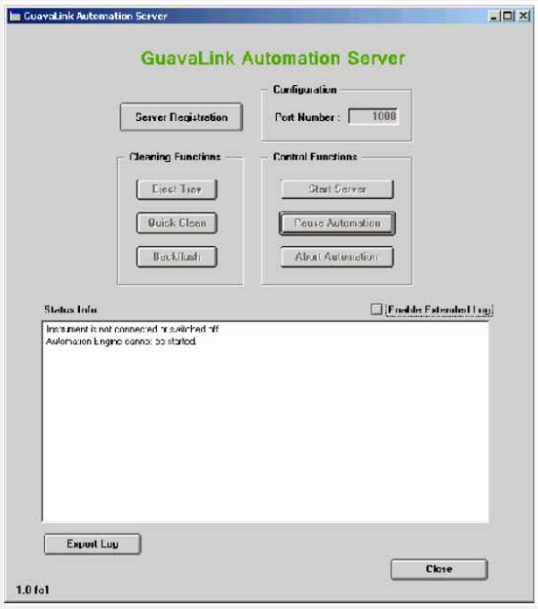


Robotic Integration

Integrate Your Guava® easyCyte™ with an External Robotic Arm or Liquid Handler

GuavaLink allows robot-scheduling software to control and integrate Guava easyCyte Systems with all physically compatible robotic arms and liquid-handling systems—resulting in streamlined workflows and enhanced productivity.





Guava® easyCyte™ SL Systems

Guava® easyCyte™ SL System	5	5 HPL	6-2L	8	BG	11	BGR	12	BGV
Part Number	0500-5005	0500-5009	0500-5007	0500-5008	0500-5015	0500-5020	0500-5025	0500-5012	0500-5030
Number of Channels	5	5	6	8	10	11	12	13	14
Violet (405 nm) Laser						x		x	x
Blue (488 nm) 50 mW Laser	x		x						
Blue (488 nm) 150 mW Laser		x		x	x	x	x	x	x
Green (532 nm) 100 mW Laser					x		x		x
Red (642 nm) 100 mW Laser			x	x			x	x	
FSC	x	x	x	x	x	x	x	x	x
SSC (488/16 nm)	x	x	x	x	x	x	x	x	x
Blue-V (450/45 nm)						x		x	x
Green-V (525/30 nm)						x		x	512/18
Yellow-V (583/26 nm)						x		x	575/25
Orange-V (620/52 nm)									x
Red-V (695/50 nm)						x		x	
NIR-V (785/70 nm)						x		x	
Green-B (525/30 nm)	x	x	x	x	512/18	x	512/18	x	512/18
Yellow-B (583/26 nm)	x	x	x	x	575/25	x	575/25	x	575/25
Red-B (695/50 nm)	x	x	x	x	x	x	x	x	x
NIR-B (785/70 nm)				x	x	x	x	x	x
Yellow-G (583/26 nm)					575/25		575/25		575/25
Orange-G (620/52 nm)					x		609/30		x
Red-G (695/50 nm)					x		x		x
NIR-G (785/70 nm)					x		x		x
Red-R (661/14 nm)				x			x	x	
NIR-R (785/70 nm)				x			x	x	
Microcapillary Fluidics	x	x	x	x	x	x	x	x	x
Direct, Absolute Cell Counts	x	x	x	x	x	x	x	x	x
Automation Plate and Tubes									
Mixing									
Dell® Laptop	x	x	x	x	x	x	x	x	x
InCyte™ Software	x	x	x	x	x	x	x	x	x
Digital Signal Processing	x	x	x	x	x	x	x	x	x

Guava® easyCyte™ HT Systems

Guava® easyCyte™ HT System	5HT	5HT HPL	6HT-2L	8HT	BG HT	11HT	BGR HT	12HT	BGV HT
Part Number	0500-4005	0500-4009	0500-4007	0500-4008	0500-4015	0500-4020	0500-4025	0500-4012	0500-4030
Number of Channels	5	5	6	8	10	11	12	13	14
Violet (405 nm) Laser						x		x	x
Blue (488 nm) 50 mW Laser	x		x						
Blue (488 nm) 150 mW Laser		x		x	x	x	x	x	x
Green (532 nm) 100 mW Laser					x		x		x
Red (642 nm) 100 mW Laser			x	x			x	x	
FSC	x	x	x	x	x	x	x	x	x
SSC (488/16 nm)	x	x	x	x	x	x	x	x	x
Blue-V (450/45 nm)						x		x	x
Green-V (525/30 nm)						x		x	512/18
Yellow-V (583/26 nm)						x		x	575/25
Orange-V (620/52 nm)									x
Red-V (695/50 nm)						x		x	
NIR-V (785/70 nm)						x		x	
Green-B (525/30 nm)	x	x	x	x	512/18	x	512/18	x	512/18
Yellow-B (583/26 nm)	x	x	x	x	575/25	x	575/25	x	575/25
Red-B (695/50 nm)	x	x	x	x	x	x	x	x	x
NIR-B (785/70 nm)				x	x	x	x	x	x
Yellow-G (583/26 nm)					575/25		575/25		575/25
Orange-G (620/52 nm)					x		609/30		x
Red-G (695/50 nm)					x		x		x
NIR-G (785/70 nm)					x		x		x
Red-R (661/14 nm)				x			x	x	
NIR-R (785/70 nm)				x			x	x	
Microcapillary Fluidics	x	x	x	x	x	x	x	x	x
Direct, Absolute Cell Counts	x	x	x	x	x	x	x	x	x
Automation Plate and Tubes	x	x	x	x	x	x	x	x	x
Mixing	x	x	x	x	x	x	x	x	x
Dell® Laptop	x	x	x	x	x	x	x	x	x
InCyte™ Software	x	x	x	x	x	x	x	x	x
Digital Signal Processing	x	x	x	x	x	x	x	x	x

Guava® easyCyte™ Maintenance and Repair Services

As part of Luminex's comprehensive flow cytometry solutions, our service packages offer post-warranty support, and allow you to select the level of hardware, application, and software support that best fits your needs. Please contact your local sales representative for more information about our service and support packages.

Advantages of Maintaining a Service Plan:

- Excellent service support, which maintains optimal performance and enables high-quality data.
- Regular maintenance reduces overall service costs, protects the instrument, and improves long-term operation.

Complete Service Plan

The Complete Service Plan provides a comprehensive service package designed to meet the special needs of customers who continuously operate their instrument and require proactive service with assurance of priority service scheduling. The Complete Service Plan provides optimal service support by covering the travel, labor, and component costs for any service needed during the service plan period. The Complete Service Plan also provides for all costs associated with the one Annual Preventative Maintenance Service Visit, and includes priority scheduling to ensure you receive timely service.

Intermediate Service Plan

The Intermediate Service Plan is specially designed for customers who regularly operate their instrument and require proactive service that fits their budgetary requirements. The Intermediate Service Plan provides one Annual Preventative Maintenance Service Visit to ensure your instrument is functioning as designed. In addition to the one Annual Preventative Maintenance Service Visit, you will have one Service Repair Visit to use at your discretion at any time during the Intermediate Service Plan duration. This one additional Service Repair Visit under the Intermediate Service Plan covers the travel, labor, and component costs. A 20% discount on repair parts for subsequent repair visits is also included with the Intermediate Service Plan.

Basic Service Plan

The Basic Service Plan provides one Annual Preventative Maintenance Service Visit for your instrument to ensure it is functioning as the system is designed. The Basic Service Plan does not address the costs of service repairs that are outside of the one Annual Preventative Maintenance Service Visit, but provides a 10% discount on repair parts. Additional service requests are billed separately.

The Annual Preventative Maintenance Service Visit Includes the Following Services:

- Replacement of worn parts
- System inspection and calibration
- Verification of performance

Guava® easyCyte™ Service Plans[1]

	One-Year Instrument Warranty	Complete Service Plan	Intermediate Service Plan	Basic Service Plan
Unlimited On-Site Service[2]	✓	✓		
Service Repair Visit[3]			✓	
Annual Preventative Maintenance Service Visit[4]		✓	✓	✓
Repair Parts	✓	✓	20% Discount[5]	10% Discount
Trained and Authorized Service Technicians	✓	✓	✓	✓
Technical Support - Telephone and Online	✓	✓	✓	✓
Priority Service Scheduling	✓	✓		
Firmware Updates	✓	✓	✓	

1. Not all service plans are available in all countries. For more information, please contact Service Sales at **servicesales@luminexcorp.com**. Standard Luminex policy requires instruments with a lapse in service coverage to be recertified by Luminex prior to commencing a service plan. The recertification fee includes travel and three hours of labor. Additional hours of labor and parts used during the recertification will be invoiced. Additional Services (described below) are not covered by any service plan.
2. Parts, labor, and travel are included for all service visits under the Complete Service Plan.
3. Parts, labor, and travel are included for the first Service Repair Visit in addition to the one Annual Preventative Maintenance Service Visit.
4. Parts, labor, and travel are included for the one (1) Annual Preventative Maintenance Service Visit.
5. Parts discount of 20% for subsequent repair visits. Labor and travel not included.

Flow Cytometry Reagents

Our diverse portfolio of reagents and assays facilitates fluorescence-based detection of proteins and nucleic acids, and have been validated for use on the easyCyte Instrument platform.

Guava Flow Cytometry Kits

Luminex's optimized, turnkey assay kits reduce sample preparation time, minimize assay development, and simplify data analysis. We offer Guava Kits optimized for key assays in cell health.

Guava® Flow Cytometry Kits

Product Name	Part Number
System Maintenance Kits	
Guava® Instrument Cleaning Fluid (ICF)	4200-0140
Guava® easyCheck Kit	4500-0025
Cell Health and Apoptosis Kits	
Guava® ViaCount™ Reagent (40 mL)	4000-0040
Guava® ViaCount™ Reagent (240 mL)	4000-0041
Guava® ViaCount™ Flex Reagent (100 tests)	4500-0110
Guava® ViaCount™ Flex Reagent (500 tests)	4700-0060
Guava® ViaCount™ Cell Dispersal Reagent	4700-0050
Guava Nexin® Kit (100 tests)	4500-0450
Guava Nexin® Kit (500 tests)	4500-0455
Guava® Cell Cycle Kit	4500-0220
Guava® TUNEL Kit	4500-0121
Guava® Express 7-AAD Reagent	4000-0061
Guava® MitoDamage Kit	FCCH100106
Guava® Annexin Red Kit	FCCH100108
Guava® Cytochrome c Kit	FCCH100110
Guava® Autophagy LC3 Antibody-Based Detection Kit	FCCH100171
Guava® DNA Damage Histone H2A.X Dual Detection Kit	FCCS025153
Guava® Histone H2A.X Dual Detection Kit	FCCS100182

Guava® easyCyte™ Accessories and Additional Services

Product Name	Part Number
Guava easyCyte SL Instrument Shipping Box, ECSL0110-6690	CN-0445-01
Flow Cell, Guava easyCyte HT Systems, ECHT0500-2260	CN-0448-01
Flow Cell, Guava easyCyte SL Systems, ECSL0500-2270	CN-0444-01
Guava easyCyte Waste Vial, SL, ECSL0110-8125	CN-0446-01
Guava easyCyte HT Instrument Shipping Box, ECHT0110-5690	CN-0449-01
Guava easyCyte Cleaning Solution Vial, HT, ECHT0110-5780	CN-0450-01
Guava easyCyte Waste Vial, HT, ECHT0110-5790	CN-0451-01
Guava easyCyte Cleaning Solution Vial, SL, ECSL0110-8120	CN-0447-01
Laptop Computer, Guava easyCyte, EC0110-8406	CN-0475-01
Fuse 110 V (2.5 A, 250 V), EC3000-0860	CN-0476-01
Fuse 220-240 V (1.6 A, 250 V) X2, EC3000-0990	CN-0477-01
Guava easyCyte Flow Cell Tightening Tool, EC6000-2410	CN-0478-01
Guava easyCyte Flow Cell Removal Tool, EC6000-3020	CN-0479-01
Introductory On-site Guava® easyCyte™ Training, Half-day (up to 3 trainees)	CN-0466-01
Advanced On-site Guava® easyCyte™ Training, Full-day (up to 3 trainees)	CN-0467-01
Advanced On-site Guava® easyCyte™ Training, Additional Trainee (beyond first three)	CN-0468-01
IQ-OQ Guava® easyCyte™ System, On-Site	8000-1998
Guava® easyCyte™ Product Relocation and Installation	CN-0469-01

Ordering Information

Product Name	Part Number
SL Instruments	
Guava® easyCyte™ 5 Base System	0500-5005
Guava® easyCyte™ 5HPL Base System	0500-5009
Guava® easyCyte™ 6-2L Base System	0500-5007
Guava® easyCyte™ 8 Base System	0500-5008
Guava® easyCyte™ BG Base System	0500-5015
Guava® easyCyte™ 11 Base System	0500-5020
Guava® easyCyte™ BGR Base System	0500-5025
Guava® easyCyte™ 12 Base System	0500-5012
Guava® easyCyte™ BGV Base System	0500-5030
HT Instruments	
Guava® easyCyte™ 5HT Base System	0500-4005
Guava® easyCyte™ 5HT HPL Base System	0500-4009
Guava® easyCyte™ 6HT-2L Base System	0500-4007
Guava® easyCyte™ 8HT Base System	0500-4008
Guava® easyCyte™ HT BG Base System	0500-4015
Guava® easyCyte™ 11HT Base System	0500-4020
Guava® easyCyte™ HT BGR Base System	0500-4025
Guava® easyCyte™ 12HT Base System	0500-4012
Guava® easyCyte™ HT BGV Base System	0500-4030

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