Product Fact Sheet

CyFlow™ RI-300 Flow Cytometer / CyFlow™ AL-20 Autoloader

The RI-300 Analyzer
The new standard for State-of-the-Art Industrial Microbial Quality Control

Product picture

Product name

CyFlow™ RI-300 Flow Cytometer with
CyFlow™ AL-20 Autoloader

Manufacturer information

Sysmex Partec GmbH
Arndtstraße 11 a-b
02826 Görlitz
Germany

www.sysmex-partec.com

Sysmex Partec is an ISO 9001:2015 and EN ISO 13485:2016 certified company.

Summary

The CyFlow™ RI-300 Flow Cytometer is the dedicated Sysmex Partec flow cytometer for the industrial flow cytometry market with its various application. In combination with its associated CyFlow™ AL-20 Autoloader it is the standalone flow cytometric solution for the industrial microbiology QC, which addresses requirements such as traceability, automation, accuracy, sensitivity, standardization and, ease of use. The compact bench-top flow cytometer is made for microbial quality control of a wide range of matrices, whether from beverage, drinking water, wastewater, or aquaculture industries, or industries using water as process water to name only the most important. An appropriate sample preparation also allows the examination of solids or creams e.g., from the cosmetics industry. In combination with the high-speed autoloader AL-20 the RI-300 can be used to do the microbial QC analysis for small, midsized, and high throughput production sites. The CyFlow™ AL-20 Autoloader combines high-speed measurements and high sample throughput with an elevated level of precision. Samples can be presented in different well plate formats and sample tube racks. The customer friendly Windows-based software provides instrument control, data acquisition, data analysis with automatic reporting and additional functions like barcode reading and emergency sample measurements.

Productivity values

With the CyFlow™ RI-300 Flow Cytometer and the CyFlow™ AL-20 Autoloader in combination with dedicated reagents and QC procedures Sysmex Partec offers complete solutions out of one hand. Standardized workflows open for customization providing an ultimate degree of automatization are responding the needs for high sample throughput, consistent quality, reliability, and objective clear-cut results.

Main features of the CyFlow RI-300 Flow Cytometer

- Configuration with 5 optical parameters (3 colors)
- 488 nm blue laser
- Start-up time < 5min
- Standardized workflows and instrument DQC procedure
- Open for customization
- Guided procedures for system Prime / system QC / Shut-down
- Application specific QC procedures
- Levy-Jenning statistics
- LIMS connectivity

and the CyFlow AL-20 Autoloader

- High-speed sample feeding and analysis – one 96-well-plate < 30 min
- Protective, complete closed housing
- Start-up time < 5 min
- Adaptive cleaning: sample-depending automatic selection of cleaning intensity
- Interruption of routine operation for the analysis of urgent samples (emergency samples)
- Barcode reader for automatic rack ID registration

Article numbers

Article number	Item
AE538566	CyFlow™ RI-300 Flow Cytometer
CL539925	CyFlow™ AL-20 Autoloader

Specifications

Features	Description
Parameters	■ 5 optical parameters (3 colors + FSC & SSC) ■ Time parameter
Light source	■ Blue laser: 60 mW at 488 nm
Optics	■ Optical system with selected PMTs with integrated electronic preamplifier for FSC, SSC and FL1-FL3

Flow System	■ Quartz flow cuvette for laminar sample transport and hydro-dynamic focusing
	■ Completely closed fluidic system
	■ Dual-loop-system for high-speed measurements with CyFlow™ AL-20 Autoloader – parallel processing of two samples
	■ Sample port with biosafety cleaning system
	■ True Volumetric Absolute Counting based on direct volume measurement
	■ Sample volume:
	  ■ 10 µL to 1000 µL for the manual sample port
	  ■ 10 µL to 180 µl for measurements with the AL-20
	■ Minimum volume requirements:
	  ■ 780 µL with the manual sample port
	  ■ 60µL /well for acquired sample volumes of > 10µL with AL-20
	  ■ Sample volume plus additional 30µL sample volumes of > 50µL with AL-20
	■ Sample flow adjustable from 0.5µL/s to 5µl/s
	■ Easily accessible sheath fluid and waste reservoirs with fluid level sensors

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Arndtstraße 11 a-b, 02826 Görlitz, Germany · Phone +49 3581 8746-0 · info@sysmex-partec.com · **www.sysmex-partec.com**
You will find your local Sysmex representative's address under www.sysmex-partec.com

Microplates and sample tubes	■ 96-Well-Plate, V, U and flat-bottom type are ■ 96-Deep-Well plates ■ 48- Well plates ■ Plates meeting the Standards (ANIS/SLAS 1-2004 through 4-2004) ■ Up to 60 2 mL sample tubes
Speed	■ < 30min for measurement of one 96 well plate (10µl sample volume, 1µl/s)
System cleaning	■ Selection of 3 different cleaning options (no cleaning– standard cleaning– intense cleaning) ■ Adaptive cleaning – cleaning intensity depending on the particle density of the previous sample ■ Automatic wash steps between each sample with AL-20 measurements
Carry Over (AL-20)	■ < 0.1 % (with intensive sample-to-sample cleaning) ■ < 0.5% (with standard sample-to-sample cleaning) ■ < 0.75 % (without cleaning)
QC function	■ Control of instrument alignment and power (laser adjustment) with real-time user guidance and automatic reports (FCS Express, De Novo Software) ■ Application specific QC procedures with real time user guidance and automatic reports (FCS Express, De Novo Software) on request
Electronics	■ Digital electronic ■ Data resolution of 18bit ■ Acquisition rate of 15,000 events/s ■ Single and multiple triggers on any parameter or combination of parameters, selectable in software
	■ Individual threshold level settings
Computer	■ Microsoft Windows™ PC ■ CPU: Intel i5 (or higher), 4-core ■ Memory: 16 GB (or above) ■ Storage: 250 GB (or above) ■ Connections: min. 3x USB (min. USB 2.0), DisplayPort, LAN ■ Technical requirements for monitor: 22 inch (Full HD, DisplayPort or DVI) ■ Microsoft Windows™ 10 professional 64-bit operating system Ethernet connection
Dimensions (L x W x H)	■ RI-300: 399 mm x 426 mm x 395 mm (15.7 in x 16.7 in x 15.5 in) ■ AL-20: ■ 317mm x 390mm x 395mm (12.5 in x 15.3 in x 15.5 in)
Weight	■ ≤ 35 kg (77 lb) ■ AL-20: 13,1 kg (28.9 lb)
Interface	■ USB, LAN, video output
Operative temperature	■ 15 °C to 30 °C (59 °F to 86 °F)
Operative humidity	■ 20 % to 80 % relative, non-condensing
Noise	■ < 80 dBA
Overvoltage category	■ 2 / II
Power consumption	■ 100 V AC / 35 VA ■ 240 V AC / 50 VA
EMC class	■ Class A
Degree of protection	■ IP00
Software	■ CyView™ software for instrument control, data

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Software	acquisition and real-time data analysis ■ Guided prime and shutdown procedures ■ Easy experimental template set up ■ Flow cytometry standard file format for storage of original and evaluated data ■ Variable 1 parameter histograms and 2 parameter dot plots ■ Time parameter ■ Linear scale or 4-decade logarithmic scale ■ Software-based lin/log transformation ■ End of analysis pre-selectable on time, number of events or sample volume ■ Multi parameter online/offline crosstalk compensation ■ Multi parameter gating ■ User management ■ Panel and Worklist management ■ Data export management ■ FCS Express software for data analysis and reporting ■ LIMS connectivity ■ Levy-Jennings plots for QC

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