

Physical Cytometer System W8 | CellDynamics



PRODUCT OVERVIEW

The W8 physical cytometer is a fully based a automated instrument for the physical characterization of 3D spherelike biological samples. It covers minutes. the range from 50 μ m sized small clusters up to larger spheroids or organoids with 500 μ m in diameter. The combination of a microfluidic technology with bright-field image-

based analysis provides information about mass density, weight and size of the structure in just few minutes. In addition, sorting of a target sub-population can be operated based on pre-selected parameters and can be used for further analysis.

SMALL IN SIZE

- Fully automated system for determination of mass, size and density
- ✓ Label-free measurement
- Easy to use system through an intuitive user interface

- ✓ High precision and accuracy
- ✓ Reduced sherstress
- Repeated measurements = robust analysis





Overview



APPLICATION

An innovative Quality Control Assay for 3D cell models

The W8 physical cytometer provides a label-free, non-invasive method for monitoring and quantifying the physical properties of 3D cell cultures over time. Gathering precise information on their size, weight and mass density values is crucial to support decisions for protocols optimization and setting of the best culture conditions. For process scaling-up in cell factories, sample replicates can be analyzed at precise, regularly scheduled intervals over their growth kinetics.





Fig. 2. Measurement of mass density, weight and diameter of colorectal cancer (CRC) spheroids. (A) CRC spheroids were generated with HT-29, SW620, DLD-1, and HCT-15 CRC cell lines cultured in ultra-low attachment flat-bott momed microplates and analyzed on day 6 by inverted microscope. Scale bar: 100 μ m. (B) CRC spheroids were fixed with 4% PFA and analyzed with the W8 physical cytometer *p< 0.05 and **p< 0.001 vs HT-29. #p<0.05 vs DLD-1.

Physical Characterization of Colorectal Cancer Spheroids and Evaluation of NK Cell Infiltration Through a Flow-Based Analysis. Sargenti et al., (2020) Front. Immunol. 11:564887.

TECHNICAL DATA

FEATURES

OUTPUTS	Size (µm) Weight (ng)
	Mass Density (fg/µm3)
SORTING	Sample recovery with a threshold of 70%
PERFORMANCE	Precision: < 0.1 % ACCURACY: < 1.0 %
SAMPLE SIZE RANGE	50 - 500 μm
SAMPLE INPUT FORMAT	15 ml tubes (16 x 118,5 mm) V bottom 50 ml tubes (28,5 x 114,5 mm) V bottom
SOFTWARE	
LIBRA	The LIBRA software is for research use only
PC REQUIREMENTS	Processor: i7-9700 Octa Core 3 GHz RAM: 16 GB Hard disk: SSD 256 GB USB ports: 3.1 Super Speed Windows 10
INSTALLATION	
DIMENSIONS	35.7 cm x 28.6 cm x 18 cm (H x W x D)
POWER SPECIFICATIONS	110 - 230 V AC, 50/60 Hz
WEIGHT	10 kg
OPERATING TEMPERATURE	18 – 30 °C or 64,4 – 86 F





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