

# Multisizer 4e COULTER COUNTER for Research

High resolution sizing, counting and size distribution of cells, particles or sub-visible particles.

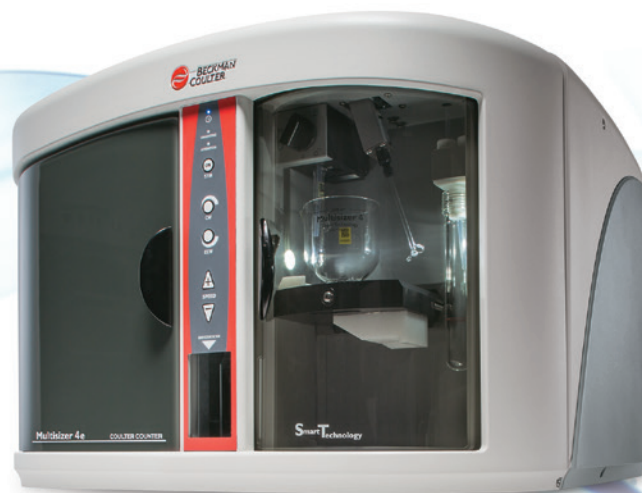
## Research-Friendly System

Change in cell volume is an important factor involved in many biological processes such as Cell Growth, Cell Cycles, Cell Death, Compensation for Osmotic Stress, Pathogenesis, and Phagocytosis. The Multisizer 4e COULTER COUNTER detects cell size and volume changes even if they happen over a few seconds or in a period of several hours.

The Multisizer 4e, with its advanced Digital Pulse Processor, provides ultra-high resolution, multi-channel analysis and performance advantages over other technologies. Here are just a few of the features that make the Multisizer 4e one of the most advanced cell and particle characterization instruments available today.

- Cell volume, size and concentration (counts) can be measured
- Accurate metering device determines cell concentration so you know the exact analyzed volume
- Only method that measures a particle "volumetrically" and gives a three-dimensional measure of particle size
- Measures one cell/particle at a time
- Overall sizing range of 0.2  $\mu\text{m}$  to 1600  $\mu\text{m}$
- Increased dynamic range and resolution

With the lower size limit of 0.2 microns (200 nm), the Multisizer 4e can be used to count, size and provide mass distribution for organelles such as mitochondria. The Multisizer 4e is an important tool in your cellular research.



## Key Features:

- Digital Pulse Processor (DPP)
- Dynamic size measurements
- Provides number, volume, mass and surface area size distributions in one measurement
- Overall sizing range of 0.2  $\mu\text{m}$  to 1600  $\mu\text{m}$
- Not affected by particle color
- Increased dynamic range
- Increased resolution
- Proven technology
- Quality assurance friendly

### Marine Biology

- ▶ Phytoplankton
  - Algae
  - Diatoms
  - Cyanobacteria
- ▶ Differentiation of triploid vs diploid
- ▶ Amoeba

### Cell Biology

- ▶ Stem cells
- ▶ Red blood cells
- ▶ White blood cells
- ▶ Adipose cells
- ▶ Mitochondria
- ▶ Plant cells

### Microbiology

- ▶ Bacteria
- ▶ Mold
- ▶ Spores
- ▶ Fungi
- ▶ Yeast
- ▶ Amoeba

Characterized  
*by ingenuity*

 **BECKMAN  
COULTER**

**Life Sciences**

## Multisizer 4e COULTER COUNTER Specifications

Overall Particle Size Range	0.2 µm to 1600 µm in diameter. 0.033 fL to 2.145 x 10 <sup>9</sup> fL or µm <sup>3</sup> in volume
Aperture Diameter	10 µm to 2000 µm apertures (nominal diameters)
Aperture Dynamic Range	Standard 1:30 (by diameter)      Total 1:40 (by diameter)      Standard 1:27,000 (by volume)      Total 1:64,000 (by volume)
Aperture Range	Total range: 2% to 80% of aperture diameter. Standard Range: 2% to 60% of aperture diameter. Extended Range: 60% to 80% of aperture diameter
Resolution	User selectable
Number of Channels	Pulse data is digitized and can be processed to achieve up to 400 size channels for a selected pulse range. Number of channels and range can be reprocessed as necessary
Electrolyte Solutions	All aqueous and non-aqueous electrolyte solutions recommended for use with aperture technology will be suitable for use with the Multisizer 4e. Electrolytes should be compatible with glass, fluoropolymers, fluoroelastomers and stainless steel
Digital Pulse Processor	Proprietary high-speed digitalization of the signal
Pulse Data	Time stamped pulses up to 525,000 per single analysis
Size Distribution Data	Size distribution by diameter, volume and area for number, number%, number/ml, volume, volume%, volume/ml, surface area, surface area% and surface area/ml
Pulse Distribution Data	Pulse distribution by time, sequence and width for pulse height diameter, pulse height volume, pulse height volt, pulse width, pulse area, average pulse height diameter, average pulse height volume and average pulse width. Number distribution by width
Linearity	± 1% for diameter      ± 3% for volume
Aperture Current Range	30 µA - 6000 µA in 0.2 µA steps
Aperture Current Accuracy	± 0.4% of setting
Polarity Error	Less than 0.5%
Time Mode	0.1 to 999 seconds, selectable in 10 ms increments. Typically, time analysis is 10 to 90 seconds
Total Count Mode	50 to 500,000 counts
Modal Count Mode	10 to 100,000 counts
Volumetric Mode	Continuously selectable from 50 µl to 2000 µl
Metering System	Mercury-free, wide range metering pump
Volumetric Pump Accuracy	Better than 99.5%
Regulatory Compliance	The software enables 21 CFR Part 11 compliance
Dimensions, Weight and Power (excluding computer)	Unpacked weight: 45 kg (99 lb)      Width: 64 cm (25 in)      Depth: 61 cm (24 in)      Height: 51 cm (20 in) Input voltage within set ranges: 100 - 120 VAC; 230 - 240 VAC ± 10%; single phase
Supply Frequency	47 to 63 Hz inclusive
Power	Less than 55 volt-amps (watts)
Fuse Types	250 V, IEC (5x20 mm), Time delay (TD), 2.0 A
Environmental Conditions	a) This instrument is safe for indoor use only.      b) Installation category: 11      c) Pollution degree: 1
Operating Temperature	5°C to 40°C
Relative Humidity	30% to 85% non-condensing
Altitude	Up to 2000 m (6560 ft)

## Ordering Information

Part Number	Description
B43095	Multisizer 4e COULTER COUNTER



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