# Multisizer 4e COULTER COUNTER for Research

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

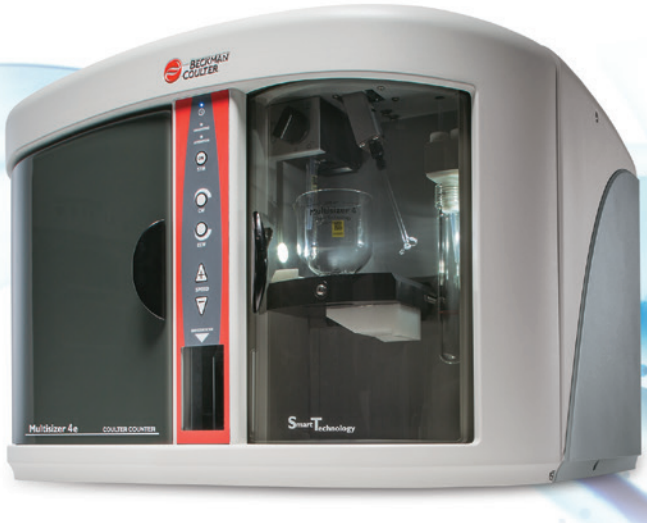
## Research-Friendly System

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 µm to 1600 µm
- 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.




### 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

## 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 µm to 1600 µm
- Not affected by particle color
- Increased dynamic range
- Increased resolution
- Proven technology
- Quality assurance friendly

Characterized *by ingenuity*

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## Multisizer 4e COULTER COUNTER Specifications

| | |
|---|---|
| **Overall Particle Size Range** | 0.2 µm to 1600 µm in diameter. 0.033 fL to 2.145 x $10^9$ fL or $µm^3$ 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: II 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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