The higher resolution

for particle sizing and counting

Multisizer™ 4 COULTER COUNTER®

Particle Characterization
Proteomics
Genomics
Cell Analysis
Centrifugation
Lab Tools
Bioseparation
Lab Automation

The Multisizer 4 is the newest member of the COULTER COUNTER® product family and the latest advancement in a long line of particle counting and sizing instruments. Since 1956, when the first COULTER COUNTER Model A was released, there have been 52 years of successful innovation using the Coulter Principle, making Beckman Coulter one of the leading companies in particle characterization today.

The Multisizer 4 features the latest advances in digital technology and user-friendly software controlled by an external PC using Microsoft Windows*-based software. High-speed digitalization of the signal allows the use of various pulse parameters for more accurate particle characterization. Its unique digital pulse processing provides dynamic size measurements in real time. The data can be stored for additional analyses and reporting at a later time with no need to analyze the sample again.

The users of the Multisizer 4 will enjoy a higher resolution technology for sizing and counting particles and cells. The use of Smart Technology for sample management of the Multisizer 4 ensures reproducibility, while EZAccess, a new reagent management system, provides easy handling of reagents and waste. The software enables compliance with 21 CFR Part 11.

All these features combined make the Multisizer 4 one of the most reliable, accurate and user-friendly instruments available on the market and a valuable tool in Quality Control and R&D for both industrial and life science applications.

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 0.4 µm to 1600 µm
- Increased dynamic range
- Increased resolution
- Proven technology
- Superior instrument design
- Quality assurance friendly

* All trademarks are the property of their respective owners.

Multisizer™ 4 COULTER COUNTER® Specifications

Overall Particle Size Range

0.4 µm to 1600 µm in diameter. 0.033 fL to 2.145 x 10^9 fL or μm^3 in volume

Aperture (Nominal Diameter, µm)	Range (µm)			Range (μm^3 or fL)		
	Total	Standard	Extended	Total	Standard	Extended
20†	0.4-16	0.4-12	12-16	0.034 – 2.14 x 10^3	0.034 – 905	905 – 2.14 x 10^3
30†	0.6-24	0.6-18	18-24	0.113 – 7.24 x 10^3	0.113 – 3.05 x 10^3	3.05 x 10^3 – 7.24 x 10^3
50††	1-40	1-30	30-40	0.524 – 33.5 x 10^3	0.524 – 14.1 x 10^3	14.1 x 10^3 – 33.5 x 10^3
70††	1.4-56	1.4-42	42-56	1.44 – 92.0 x 10^3	1.44 – 38.8 x 10^3	38.8 x 10^3 – 92.0 x 10^3
100††	2-80	2-60	60-80	4.19 – 268 x 10^3	4.19 – 113 x 10^3	113 x 10^3 – 268 x 10^3
140††	2.8-112	2.8-84	84-112	11.5 – 736 x 10^3	11.5 – 310 x 10^3	310 x 10^3 – 736 x 10^3
200††	4-160	4-120	120-160	33.5 – 2.14 x 10^6	33.5 – 905 x 10^3	905 x 10^3 – 2.14 x 10^6
280	5.6-224	5.6-168	168-224	92.0 – 5.88 x 10^6	92.0 – 2.48 x 10^6	2.48 x 10^6 – 5.88 x 10^6
400	8-320	8-240	240-320	268 – 17.2 x 10^6	268 – 7.24 x 10^6	7.24 x 10^6 – 17.2 x 10^6
560	11.2-448	11.2-336	336-448	736 – 47.1 x 10^6	736 – 19.9 x 10^6	19.9 x 10^6 – 47.1 x 10^6
1000†††	20-800	20-600	600-800	4189 – 268 x 10^6	4189 – 113 x 10^6	113.1 x 10^6 – 268 x 10^6
2000†††	200-1600	200-1200	1200-1600	4.19 x 10^6 – 2.14 x 10^9	4.19 x 10^6 – 905 x 10^6	905 x 10^6 – 2.14 x 10^9

† Range depends upon system cleanliness and environmental electromagnetic noise †† Available in high resolution apertures ††† Range depends upon sample density

Aperture Diameter
20 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 4. 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 and Weight
Weight, dimensions 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
10% to 80% without condensation

Altitude
Up to 2000 m (6560 ft)

For more information on our Particle Characterization products, please visit us at www.CoulterCounter.com

Visit our online store at:
www.beckmancoulter.com/eStore

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