



Coulter Aperture Tubes for Multisizer 4e

Aperture (Nominal Diameter, μm)	Particle Diameter Range (μm)				Particle Volume Range (μm^3 or fL)				Part Number
	Total	Lower Limit	Upper Standard Limit	Upper Extended Limit	Total	Lower Limit	Upper Standard Limit	Upper Extended Limit	
10 [†]	0.2 - 8.0	0.2 μm	6.0 μm	8.0 μm	0.004 - 268 x 10 ³ μm^3	0.004 μm^3	113 μm^3	268 μm^3	B42812
20 [†]	0.4 - 16	0.4 μm	12 μm	16 μm	0.034 - 2.14 x 10 ³ μm^3	0.034 μm^3	905 μm^3	2,144 μm^3	A36390
30 [†]	0.6 - 24	0.6 μm	18 μm	24 μm	0.113 - 7.24 x 10 ³ μm^3	0.113 μm^3	3,053 μm^3	7,238 μm^3	A36391
50 ^{††}	1.0 - 40	1.0 μm	30 μm	40 μm	0.524 - 33.5 x 10 ³ μm^3	0.524 μm^3	14,137 μm^3	33,510 μm^3	A36392
70 ^{††}	1.4 - 56	1.4 μm	42 μm	56 μm	1.44 - 92.0 x 10 ³ μm^3	1.44 μm^3	38,792 μm^3	91,952 μm^3	A36393
100 ^{††}	2.0 - 80	2.0 μm	60 μm	80 μm	4.19 - 268 x 10 ³ μm^3	4.19 μm^3	113 x 10 ³ μm^3	268 x 10 ³ μm^3	A36394
140 ^{††}	2.8 - 112	2.8 μm	84 μm	112 μm	11.5 - 736 x 10 ³ μm^3	11.5 μm^3	310 x 10 ³ μm^3	736 x 10 ³ μm^3	A36395
200 ^{††}	4.0 - 160	4.0 μm	120 μm	160 μm	33.5 - 2.14 x 10 ⁶ μm^3	33.5 μm^3	905 x 10 ³ μm^3	2.14 x 10 ⁶ μm^3	A36396
280	5.6 - 224	5.6 μm	168 μm	224 μm	92.0 - 5.88 x 10 ⁶ μm^3	92.0 μm^3	2.48 x 10 ⁶ μm^3	5.88 x 10 ⁶ μm^3	A36397
400	8.0 - 320	8.0 μm	240 μm	320 μm	268 - 17.2 x 10 ⁶ μm^3	268 μm^3	7.24 x 10 ⁶ μm^3	17.2 x 10 ⁶ μm^3	A36398
560	11.2 - 448	11.2 μm	336 μm	448 μm	736 - 47.1 x 10 ⁶ μm^3	736 μm^3	19.9 x 10 ⁶ μm^3	47.1 x 10 ⁶ μm^3	A36399
800 ^{†††}	16 - 640	16 μm	480 μm	640 μm	2145 - 137 x 10 ⁶ μm^3	2145 μm^3	57.9 x 10 ⁶ μm^3	137 x 10 ⁶ μm^3	A40889
1000 ^{†††}	20 - 800	20 μm	600 μm	800 μm	4189 - 268 x 10 ⁶ μm^3	4189 μm^3	113 x 10 ⁶ μm^3	268 x 10 ⁶ μm^3	A36400
2000 ^{†††}	40-1600	40 μm	1200 μm	1600 μm	33,510-2140 x 10 ⁶ μm^3	33,510 μm^3	905 x 10 ⁶ μm^3	2140 x 10 ⁶ μm^3	A36401

High resolution tubes have an aperture thickness 120% greater than normal apertures thus, extending the time the particle takes to pass through the aperture, giving greater discrimination of particle size.

Hi-Res 50	1.0 - 40	1.0 μm	30 μm	40 μm	0.524 - 33.5 x 10 ³ μm^3	0.524 μm^3	14,137 μm^3	33,510 μm^3	A44581
Hi-Res 70	1.4 - 56	1.4 μm	42 μm	56 μm	1.44 - 92.0 x 10 ³ μm^3	1.44 μm^3	38,792 μm^3	91,952 μm^3	A44582
Hi-Res 100	2.0-80	2.0 μm	60 μm	80 μm	4.19 - 268 x 10 ³ μm^3	4.19 μm^3	113 x 10 ³ μm^3	268 x 10 ³ μm^3	A44583
Hi-Res 140	2.8 - 112	2.8 μm	84 μm	112 μm	11.5 - 736 x 10 ³ μm^3	11.5 μm^3	310 x 10 ³ μm^3	736 x 10 ³ μm^3	A44584
Hi-Res 200	4.0 - 160	4.0 μm	120 μm	160 μm	33.5 - 2.14 x 10 ⁶ μm^3	33.5 μm^3	905 x 10 ³ μm^3	2.14 x 10 ⁶ μm^3	A44585

Footnotes

[†] Range depends upon system cleanliness and environmental electromagnetic noise

^{††} Available in high resolution apertures

^{†††} Range depends upon sample density

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

Aperture Dynamic Range

Standard 1:30 (by diameter), Extended 1:40 (by diameter)

Standard 1:27,000 (by volume), Extended 1:64,000 (by volume)



Microsphere Calibration Standards for Coulter Instruments

Part Number	Name	Nominal Size	Primary Aperture(s) for calibration*	Other Apertures for verification**
6602792	STANDARD 2 µm, LATEX PARTICLE, NIST TRACEABLE	2 µm	10 µm	20 µm, 30 µm
6602793	STANDARD 3 µm, LATEX PARTICLE, NIST TRACEABLE	3 µm	20 µm	10 µm, 30 µm
6602794	STANDARD 5 µm, LATEX PARTICLE, NIST TRACEABLE	5 µm	30 µm	10 µm, 20 µm, 50 µm
6602796	STANDARD 10 µm, LATEX PARTICLE, NIST TRACEABLE	10 µm	50 µm, 70 µm	20 µm, 30 µm, 50 µm, 70 µm, 100 µm, 140 µm, 200 µm
6602797	STANDARD 15 µm, LATEX PARTICLE, NIST TRACEABLE	15 µm	70 µm	50 µm, 100 µm, 200 µm, 280 µm
6602798	STANDARD 20 µm, LATEX PARTICLE, NIST TRACEABLE	20 µm	100 µm, 140 µm	140 µm, 200 µm, 280 µm, 400 µm
6602799	STANDARD 30 µm, LATEX PARTICLE, NIST TRACEABLE	30 µm	200 µm	100 µm, 140 µm, 200 µm, 280 µm, 400 µm, 560 µm
6602800	STANDARD 43 µm, LATEX PARTICLE, NIST TRACEABLE	43 µm	280 µm	2800 µm, 400 µm 560 µm
6602802	STANDARD 90 µm, LATEX PARTICLE, NIST TRACEABLE	90 µm	400 µm, 560 µm	1000 µm, 2000 µm
8321515	STANDARD 200 µm, LATEX PARTICLE, NIST TRACEABLE	200 µm	1000 µm	560 µm, 2000 µm
383601	STANDARD 300 µm, LATEX PARTICLE, NIST TRACEABLE	300 µm	2000 µm	560 µm, 1000 µm

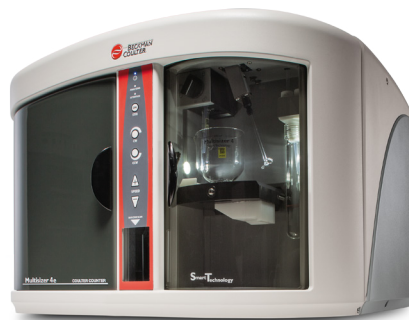
*Use recommended bead with primary aperture for Aperture Calibration.

**Additional sized beads can be used to verify the performance of the aperture after calibration.

It is recommended to calibrate the instrument using a bead that lies within 7-30% of the aperture size range.



Coulter Aperture Tube



Multisizer 4e Coulter Counter



Aperture Calibration Particles