



Particle Technology Labs

The Particle Experts

Report of Analysis

PTL Project 67182-88

Prepared for: Jeff Stanley

P.O.#:

Credit Card

Company: CRW ENGINEERING GROUP

Sample(s) Received: 2025-07-21

PARTICLE SIZE AND CONCENTRATION SUMMARY

SAMPLE(S) SUBMITTED
Groundwater from Drinking Water Well#3
PTU-1-Well #3

Analytical information, results, and any further commentary are detailed on the following page(s).

Technical Review:

Kayla Duerr
Particle Characterization Chemist III

Date

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**Groundwater from Drinking Water Well#3
PARTICLE SIZE AND CONCENTRATION SUMMARY**

INSTRUMENT	ACCESSORY	TECHNIQUE
Accusizer A7000AD	Gravity Drain	Single Particle Optical Sensing (SPOS)
REFERENCE(S)		
PTL Test Method:	N/A	
Client Method:	N/A	

PARTICLE SIZE DATA SUMMARY

SAMPLE ID	CUMULATIVE NUMBER % LESS THAN INDICATED SIZE (µm)			NUMBER WEIGHTED MEAN (µm)
	10 th Percentile	50 th Percentile	90 th Percentile	
Groundwater from Drinking Water Well#3				
PTU-1-Well #3	0.51	0.57	0.83	0.68

SAMPLE ID	CUMULATIVE VOLUME % LESS THAN INDICATED SIZE (µm)			VOLUME WEIGHTED MEAN (µm)
	10 th Percentile	50 th Percentile	90 th Percentile	
Groundwater from Drinking Water Well#3				
PTU-1-Well #3	7.53	19.03	26.75	18.27

PARTICLE CONCENTRATION DATA SUMMARY

SAMPLE ID	STOCK CONCENTRATION NUMBER OF PARTICLES/mL ≥ 0.50 µm
Groundwater from Drinking Water Well#3	
PTU-1-Well #3	1.10 x 10 ⁴

Attachment(s):

- An explanation page titled *Interpreting Your Single Particle Optical Sensing Analysis*.
- Original result page(s).

Comment(s):

The lower size limit of this analysis was set at 0.50 µm.



INTERPRETING YOUR SINGLE PARTICLE OPTICAL SENSING ANALYSIS

Introduction

Your samples have been analyzed on a Particle Sizing Systems AccuSizer 770, 780, or A7000 System, a particle counter capable of determining both particle size and concentration of suspensions. The AccuSizer utilizes Single Particle Optical Sensing (SPOS) technology (also referred to as the photozone technique) to provide excellent resolution, wide dynamic range, and high accuracy.

SPOS utilizes two physical principles of detection; light extinction (also known as light obscuration) for particles larger than approximately 1.5 μm and light scattering for particles smaller than 1.5 μm . During analysis, a dilute suspension of particles is passed through a region of uniform illumination produced by a laser diode. Particles greater than approximately 1.5 μm are detected by the amount of light they obscure to the extinction detector, while smaller particles are detected by the intensity of light scattered at a range of angles towards a separate detector. The particle size is then determined by comparing the pulse heights to a calibration curve generated with standard reference materials of known size. The data are presented on the basis of **CIRCULAR EQUIVALENT DIAMETER**. This analytical technique is summarized under ISO 21501-2:2007 *Determination of particle size distribution – Single particle light interaction methods – Part 2: Light scattering liquid-borne particle counter* and ISO 21501-3:2007 *Determination of particle size distribution – Single particle light interaction methods – Part 3: Light extinction liquid-borne particle counter*.

All AccuSizer systems consist of a pulse height analyzer, fluidics module, and sensor.

Pulse Height Analyzer Commonly referred to as the "counter box," the pulse height analyzer converts pulses from the sensor into particle size. AccuSizer pulse height analyzers are multichannel and can report results in up to 1024 size channels, providing excellent resolution.

Fluidics Module The fluidics module determines how sample is transported through the sensor. Multiple fluidics configurations are available at PTL: including auto-dilution, metered drain, and syringe injection. The most appropriate for your sample was selected depending on the particle concentration and other sample characteristics.

Sensor Particles flowing through the sensor scatter and obscure laser light, creating pulses proportional to the particle size. Particles must pass the sensing zone one at a time to prevent what are known as coincidence errors. Hence, dilution in a clean, chemically compatible fluid is often required. While multiple sensor models are available for the AccuSizer, the most commonly used model at PTL is the LE400 sensor with a nominal range of 0.5 μm to 400 μm .

Since SPOS analyzers are true particle **COUNTERS**, data can be reported in two formats – **NUMBER** (count or frequency) and **VOLUME**. For your reference, the data have been reported using both of these formats. The 10th, 50th, and 90th percentiles on both the **NUMBER** and **VOLUME** basis are also summarized. These percentiles will indicate the particle size where the percentage of the distribution lies below. For example, a 90th percentile value of 10 μm indicates that 90% of the distribution lies below 10 μm .

Number (Count or Frequency) Data

Your data will include a **NUMBER WEIGHTED DIFFERENTIAL FREQUENCY** histogram, which plots the percentage of particles detected *versus* the size of the particles detected, on a log scale. The particle size distribution (PSD) is constructed particle by particle meaning each particle has equal weighting. For instance, a 1 μm particle will have just as much impact on the distribution as a 100 μm particle. The number data are the primary output of the AccuSizer and are used to generate all other outputs.

Since the instrument counts individual particles and a known volume of sample is analyzed, an accurate concentration value in units of particles/mL can be generated.

Volume Data

Your data will also include a **DIFFERENTIAL VOLUME PERCENTAGE** graph, which plots the volume-weighted percentage of particles detected *versus* the size of the particles detected, on a log scale. The volume data are generated by assuming each particle is spherical, converting the diameter into a spherical volume to give each particle a weighting relative to its volume. Since the volume of a particle increases proportionally to the diameter cubed (D^3), the volume data are inherently weighted towards the larger particles and better represent where the bulk or mass of the system lies. For example, a spherical 1 μm particle will have a volume of 0.52 μm^3 while a 100 μm spherical particle will have a volume of approximately 523,599 μm^3 . One would have to count roughly one million, 1 μm particles in order to contribute the same volume percentage as one, 100 μm particle. The volume distribution can be considered interchangeable with a mass distribution if all the particles can be assumed to have equivalent density.

Channel Data

Channel data are also provided, which present the data within each channel or bin in a tabular format. The diameter in micrometers, the number of particles detected of that size, the cumulative number of particles, number and volume percentages, and absolute volume values can be found in this section.

For additional questions specific to your analysis results, please contact us directly.

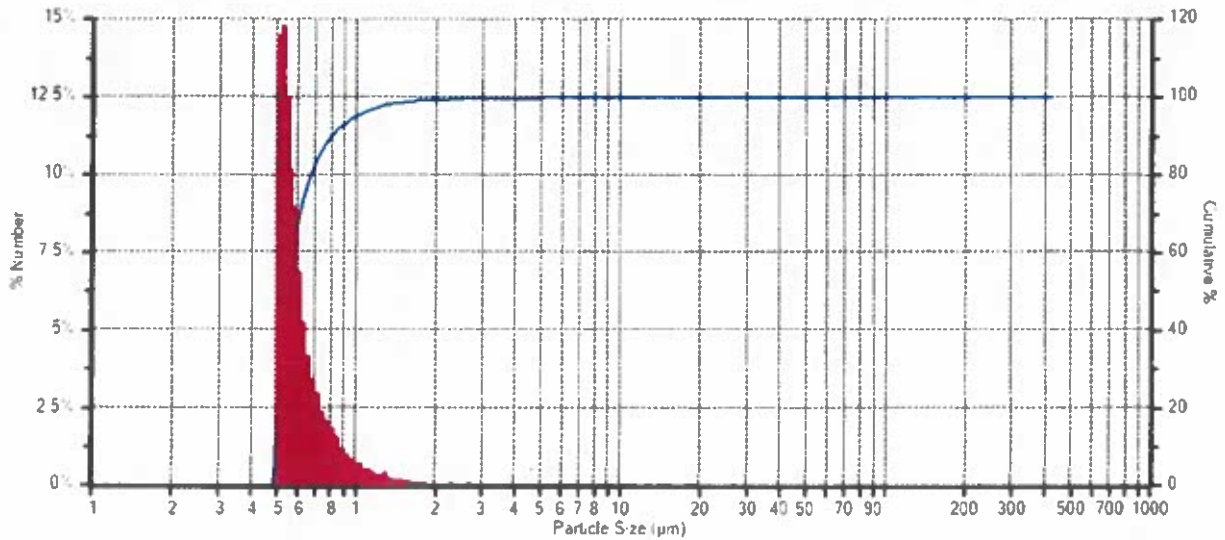


User: Emily Hernandez
Protocol: General Analysis - Summation
Run Date/Time: 07/31/2025 11:32
Report Date/Time: 07/31/2025, 15:16

Model number: LE400
Sensor S/N: B603199
Calibration date: 05-30-25
Sensor mode: Summation
Calibration Filename: B603199-PTL (05-30-25)
Comment: CRW ENGINEERING GROUP, Groundwater from Drinking Water Well #3; EH 560685-88

Mean: 0.676 μm	Skewness: 22.0 μm	Range: 0.5 - 400 μm	Dilution Factor: 1.703
Mode: 0.532 μm	Kurtosis: 641.4 μm	Threshold: 0.5 μm	Pre DF: 1.00
Median: 0.570 μm	Fluid Volume: 60.0 ml	Channels: 196	Background: 20.0 #/ml
Standard Deviation: 0.645 μm	Sample Time: 60 sec	Total Counts: 55236	Counts/mL: 11047 #/mL

PTU-1-Well #3



MDA 2025-08-01 EH 2025-07-31

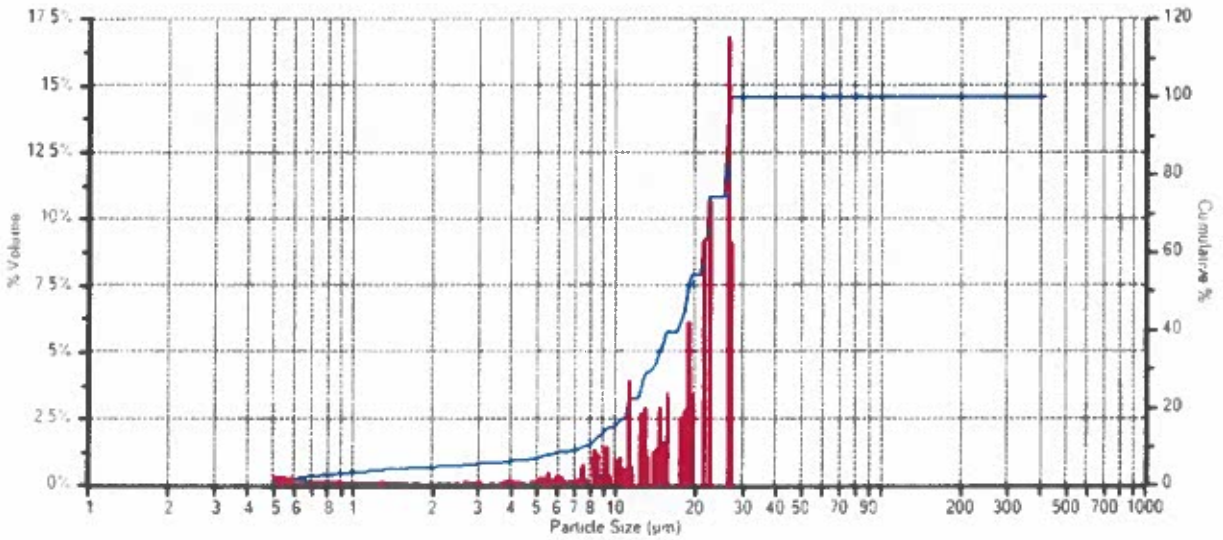


User: Emily Hernandez
Protocol: General Analysis - Summation
Run Date/Time: 07/31/2025 11:32
Report Date/Time: 07/31/2025, 15:17

Model number: LE400
Sensor S/N: B603199
Calibration date: 05-30-25
Sensor mode: Summation
Calibration Filename: B603199-PTL (05-30-25)
Comment: CRW ENGINEERING GROUP, Groundwater from Drinking Water Well #3; EH 550685-88

Mean: 18.273 μm	Skewness: -0.6 μm	Range: 0.5 - 400 μm	Dilution Factor: 1.703
Mode: 26.786 μm	Kurtosis: -0.6 μm	Threshold: 0.5 μm	Pre DF: 1.00
Median: 19.125 μm	Fluid Volume: 60.0 ml	Channels: 196	Background: 20.0 #/ml
Standard Deviation: 7.632 μm	Sample Time: 60 sec	Total Counts: 55236	Counts/ml: 11047 #/mL

PTU-1 Well #3





Protocol: General Analysis - Summation
Project: 67182-88

Operator: Emily Hernandez
Data collection date/time: 11:32 07/31/2025
Report Date/Time: 11:33 07/31/2025
Target concentration: 7500

Model #: LE400
Sensor S/N: B603199
Sensor mode: Summation
Calibration file: B603199-PTL (06-30-25)
Calibration date/time: 05-30-25
Sample Introduction: Manual
Volume sampled: 60.0 mL

Sample: PTU-1-Well #3
Comment: CRW ENGINEERING GROUP, Groundwater (Drinking Water Well #3; EH, 550685-88)
Counts measured: 32444
Total counts (≥ 0.5 µm): 55236
Total counts/mL (≥ 0.5 µm): 11047 /mL
Pre DF: 1.00
Background concentration: 20.0 /mL
Summation voltage: 11.4 V
Extinction voltage: 10.7 V

	DN	DA	DV
10	0.510	0.536	7.528
50	0.566	2.118	19.028
90	0.827	22.677	26.747

Channel	Diameter (µm)	Counts (#)	Cumulative (# ≤ Dia.)	Number (%)	Area (%)	Volume (%)	Number (% ≤ Dia.)	Volume (% ≤ Dia.)	Abs. Volume (µm ³)
59	0.515	7980	7980	14.4	4.4	0.3	14.4	0.3	569.7
60	0.532	8164	16143	14.8	4.8	0.3	29.2	0.6	644.5
61	0.551	6888	23032	12.5	4.3	0.3	41.7	0.9	601.9
62	0.570	5610	28641	10.2	3.8	0.3	51.9	1.2	543.3
63	0.590	4937	33579	8.9	3.6	0.3	60.8	1.4	532.1
64	0.613	3783	37362	6.8	2.9	0.2	67.6	1.6	455.7
65	0.637	2886	40247	5.2	2.4	0.2	72.9	1.8	390.1
66	0.662	2285	42532	4.1	2.1	0.2	77.0	2.0	347.6
67	0.689	1881	44413	3.4	1.9	0.2	80.4	2.2	322.7
68	0.718	1638	46051	3.0	1.8	0.2	83.4	2.3	317.8
69	0.749	1297	47348	2.3	1.5	0.1	85.7	2.5	286.0
70	0.783	1147	48496	2.1	1.5	0.1	87.8	2.6	288.1
71	0.818	996	49492	1.8	1.4	0.1	89.6	2.7	285.1
72	0.854	858	50350	1.6	1.3	0.1	91.2	2.9	280.2
73	0.893	650	51000	1.2	1.1	0.1	92.3	3.0	242.2
74	0.932	540	51540	1.0	1.0	0.1	93.3	3.1	228.9
75	0.972	460	52000	0.8	0.9	0.1	94.1	3.2	221.2
76	1.012	385	52384	0.7	0.8	0.1	94.8	3.3	209.0
77	1.053	375	52759	0.7	0.9	0.1	95.5	3.4	228.7
78	1.093	278	53037	0.5	0.7	0.1	96.0	3.5	190.0
79	1.135	262	53299	0.5	0.7	0.1	96.5	3.6	200.7
80	1.177	225	53523	0.4	0.6	0.1	96.9	3.7	191.9
81	1.220	177	53701	0.3	0.5	0.1	97.2	3.8	168.3
82	1.264	170	53871	0.3	0.6	0.1	97.5	3.9	179.8
83	1.308	213	54084	0.4	0.8	0.1	97.9	4.0	249.4
84	1.354	114	54198	0.2	0.4	0.1	98.1	4.1	148.2
85	1.401	95	54293	0.2	0.4	0.1	98.3	4.1	137.3
86	1.449	85	54378	0.2	0.4	0.1	98.4	4.2	135.7
87	1.499	80	54458	0.1	0.4	0.1	98.6	4.3	141.2
88	1.551	73	54531	0.1	0.4	0.1	98.7	4.3	143.0
89	1.605	61	54593	0.1	0.3	0.1	98.8	4.4	132.7
90	1.661	44	54637	0.1	0.3	0.1	98.9	4.5	106.2
91	1.720	49	54686	0.1	0.3	0.1	99.0	4.5	131.5
92	1.782	41	54727	0.1	0.3	0.1	99.1	4.6	121.1

Channel	Diameter (µm)	Counts (#)	Cumulative (#≤Dia.)	Number (%)	Area (%)	Volume (%)	Number (%≤Dia.)	Volume (%≤Dia.)	Abs. Volume (µm ³)
93	1.848	31	54758	0.1	0.2	0.0	99.1	4.6	101.2
94	1.917	15	54773	0.0	0.1	0.0	99.2	4.7	56.5
95	1.991	26	54799	0.0	0.2	0.1	99.2	4.7	105.6
96	2.070	22	54821	0.0	0.2	0.1	99.2	4.8	102.7
97	2.152	22	54843	0.0	0.2	0.1	99.3	4.8	115.4
98	2.237	17	54860	0.0	0.2	0.0	99.3	4.9	99.8
99	2.326	29	54889	0.1	0.3	0.1	99.4	5.0	190.6
100	2.418	10	54899	0.0	0.1	0.0	99.4	5.0	75.6
101	2.515	24	54923	0.0	0.3	0.1	99.4	5.1	198.4
102	2.615	10	54933	0.0	0.1	0.0	99.5	5.1	95.6
103	2.719	27	54960	0.0	0.4	0.1	99.5	5.3	286.7
104	2.827	19	54979	0.0	0.3	0.1	99.5	5.4	221.6
105	2.940	15	54994	0.0	0.3	0.1	99.6	5.5	203.9
106	3.057	19	55013	0.0	0.4	0.1	99.6	5.6	280.2
107	3.179	5	55018	0.0	0.1	0.0	99.6	5.7	85.9
108	3.305	5	55023	0.0	0.1	0.0	99.6	5.7	96.5
109	3.436	7	55030	0.0	0.2	0.1	99.6	5.8	144.6
110	3.572	3	55034	0.0	0.1	0.0	99.6	5.8	81.2
111	3.713	9	55042	0.0	0.2	0.1	99.6	5.9	228.1
112	3.858	10	55052	0.0	0.3	0.2	99.7	6.1	307.2
113	4.009	10	55063	0.0	0.3	0.2	99.7	6.3	344.6
114	4.165	7	55069	0.0	0.2	0.1	99.7	6.4	257.6
115	4.326	7	55076	0.0	0.3	0.1	99.7	6.5	288.6
116	4.492	3	55080	0.0	0.1	0.1	99.7	6.6	161.6
117	4.663	2	55081	0.0	0.1	0.0	99.7	6.7	90.4
118	4.839	5	55086	0.0	0.2	0.1	99.7	6.8	303.1
119	5.021	5	55091	0.0	0.3	0.2	99.7	7.0	338.5
120	5.209	7	55098	0.0	0.4	0.2	99.8	7.2	504.1
121	5.406	7	55105	0.0	0.4	0.3	99.8	7.5	563.3
122	5.610	10	55115	0.0	0.7	0.5	99.8	8.0	944.5
123	5.824	3	55119	0.0	0.2	0.2	99.8	8.1	352.1
124	6.045	5	55124	0.0	0.4	0.3	99.8	8.4	590.9
125	6.276	5	55129	0.0	0.4	0.3	99.8	8.7	661.0
126	6.515	2	55131	0.0	0.1	0.1	99.8	8.9	246.5
127	6.761	2	55132	0.0	0.2	0.1	99.8	9.0	275.6
128	7.017	2	55134	0.0	0.2	0.2	99.8	9.1	308.0
129	7.280	2	55136	0.0	0.2	0.2	99.8	9.3	343.9
130	7.551	7	55143	0.0	0.8	0.8	99.8	10.1	1534.9
131	7.828	2	55144	0.0	0.2	0.2	99.8	10.3	427.7
132	8.113	0	55144	0.0	0.0	0.0	99.8	10.3	0.0
133	8.403	9	55153	0.0	1.2	1.3	99.8	11.6	2645.0
134	8.699	7	55160	0.0	1.1	1.1	99.9	12.7	2347.2
135	8.998	2	55161	0.0	0.3	0.3	99.9	13.0	649.5
136	9.301	7	55168	0.0	1.2	1.4	99.9	14.4	2868.7
137	9.605	2	55170	0.0	0.3	0.4	99.9	14.8	789.8
138	9.908	0	55170	0.0	0.0	0.0	99.9	14.8	0.0
139	10.211	3	55173	0.0	0.7	0.9	99.9	15.8	1898.2
140	10.513	3	55177	0.0	0.8	1.0	99.9	16.8	2071.8
141	10.816	2	55178	0.0	0.4	0.6	99.9	17.3	1127.9
142	11.119	2	55180	0.0	0.4	0.6	99.9	17.9	1225.5
143	11.424	10	55190	0.0	2.8	3.9	99.9	21.8	7975.3
144	11.732	2	55192	0.0	0.5	0.7	99.9	22.5	1439.5
145	12.043	0	55192	0.0	0.0	0.0	99.9	22.5	0.0
146	12.360	0	55192	0.0	0.0	0.0	99.9	22.5	0.0
147	12.683	5	55197	0.0	1.7	2.7	99.9	25.2	5456.4
148	13.016	5	55202	0.0	1.8	2.9	99.9	28.1	5896.5
149	13.359	2	55204	0.0	0.6	1.0	99.9	29.1	2125.3
150	13.717	0	55204	0.0	0.0	0.0	99.9	29.1	0.0
151	14.092	2	55206	0.0	0.7	1.2	99.9	30.3	2494.4
152	14.487	2	55207	0.0	0.7	1.3	99.9	31.7	2710.5
153	14.908	3	55211	0.0	1.6	2.9	100.0	34.6	5907.5

Channel	Diameter (µm)	Counts (#)	Cumulative (# ≤ Dia.)	Number (%)	Area (%)	Volume (%)	Number (% ≤ Dia.)	Volume (% ≤ Dia.)	Abs. Volume (µm ³)
154	15.358	2	55212	0.0	0.8	1.6	100.0	36.1	3229.0
155	15.836	3	55216	0.0	1.8	3.5	100.0	39.6	7080.2
156	16.341	0	55216	0.0	0.0	0.0	100.0	39.6	0.0
157	16.868	0	55216	0.0	0.0	0.0	100.0	39.6	0.0
158	17.416	0	55216	0.0	0.0	0.0	100.0	39.6	0.0
159	17.978	2	55217	0.0	1.1	2.5	100.0	42.1	5180.2
160	18.550	2	55219	0.0	1.2	2.8	100.0	44.9	5690.5
161	19.125	3	55223	0.0	2.6	6.1	100.0	51.0	12471.6
162	19.694	2	55224	0.0	1.4	3.3	100.0	54.4	6809.6
163	20.254	0	55224	0.0	0.0	0.0	100.0	54.4	0.0
164	20.805	0	55224	0.0	0.0	0.0	100.0	54.4	0.0
165	21.355	0	55224	0.0	0.0	0.0	100.0	54.4	0.0
166	21.904	3	55228	0.0	3.4	9.2	100.0	63.5	18737.2
167	22.457	0	55228	0.0	0.0	0.0	100.0	63.5	0.0
168	23.018	3	55231	0.0	3.7	10.6	100.0	74.2	21742.3
169	23.591	0	55231	0.0	0.0	0.0	100.0	74.2	0.0
170	24.182	0	55231	0.0	0.0	0.0	100.0	74.2	0.0
171	24.797	0	55231	0.0	0.0	0.0	100.0	74.2	0.0
172	25.440	0	55231	0.0	0.0	0.0	100.0	74.2	0.0
173	26.104	0	55231	0.0	0.0	0.0	100.0	74.2	0.0
174	26.786	3	55234	0.0	5.1	16.8	100.0	90.9	34262.9
175	27.486	2	55236	0.0	2.7	9.1	100.0	100.0	18511.3
176	28.206	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
177	28.946	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
178	29.707	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
179	30.489	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
180	31.294	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
181	32.122	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
182	32.974	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
183	33.851	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
184	34.755	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
185	35.685	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
186	36.645	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
187	37.635	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
188	38.657	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
189	39.712	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
190	40.802	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
191	41.929	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
192	43.096	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
193	44.304	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
194	45.556	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
195	46.855	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
196	48.205	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
197	49.607	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
198	51.063	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
199	52.567	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
200	54.122	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
201	55.728	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
202	57.387	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
203	59.101	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
204	60.872	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
205	62.703	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
206	64.595	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
207	66.550	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
208	68.572	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
209	70.662	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
210	72.823	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
211	75.058	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
212	77.369	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
213	79.760	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
214	82.233	0	55236	0.0	0.0	0.0	100.0	100.0	0.0

Channel	Diameter (µm)	Counts (#)	Cumulative (# ≤ Dia.)	Number (%)	Area (%)	Volume (%)	Number (% ≤ Dia.)	Volume (% ≤ Dia.)	Abs. Volume (µm³)
215	84.792	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
216	87.440	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
217	90.180	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
218	93.016	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
219	95.952	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
220	98.992	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
221	102.161	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
222	105.489	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
223	108.990	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
224	112.664	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
225	116.512	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
226	120.532	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
227	124.722	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
228	129.077	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
229	133.591	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
230	138.256	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
231	143.062	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
232	147.995	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
233	153.038	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
234	158.173	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
235	163.374	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
236	168.613	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
237	173.857	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
238	179.067	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
239	184.197	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
240	189.194	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
241	193.998	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
242	198.413	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
243	202.117	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
244	205.091	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
245	207.654	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
246	210.195	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
247	213.182	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
248	217.167	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
249	222.803	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
250	230.849	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
251	242.194	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
252	257.860	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
253	279.502	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
254	318.867	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
255	383.790	0	55236	0.0	0.0	0.0	100.0	100.0	0.0
256	460.970	0	55236	0.0	0.0	0.0	100.0	100.0	0.0