DURASENS

Jar FlocCAM®

Durasens, LLC
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About the Jar FlocCAM®

The Jar FlocCAM® is an instrument that monitors floc particle formation during a jar test. It provides real-time measures of over 15 parameters including average floc size, shape, volume, number of flocs and several parameters related to floc size distribution. All parameters are saved in an Excel-readable .csv file for further analysis and for comparison with past and future jar tests.

Rather than visual inspection and post-test data collection, the Jar FlocCAM® enables users to immediately quantify the effects of the unique conditions in each jar on floc particle formation. The ability to clearly identify the effects of the unique conditions in each jar gives the user an improved understanding of the progression present during operation of the full-scale treatment plant.

Improved detection of the effects of variables during jar tests empowers the user to:

- Optimize the use of coagulant and coagulant-aids
- Lengthen filter run times
- Reduce the plant's total operating costs
- Specifically tailor flocculation to raw water quality

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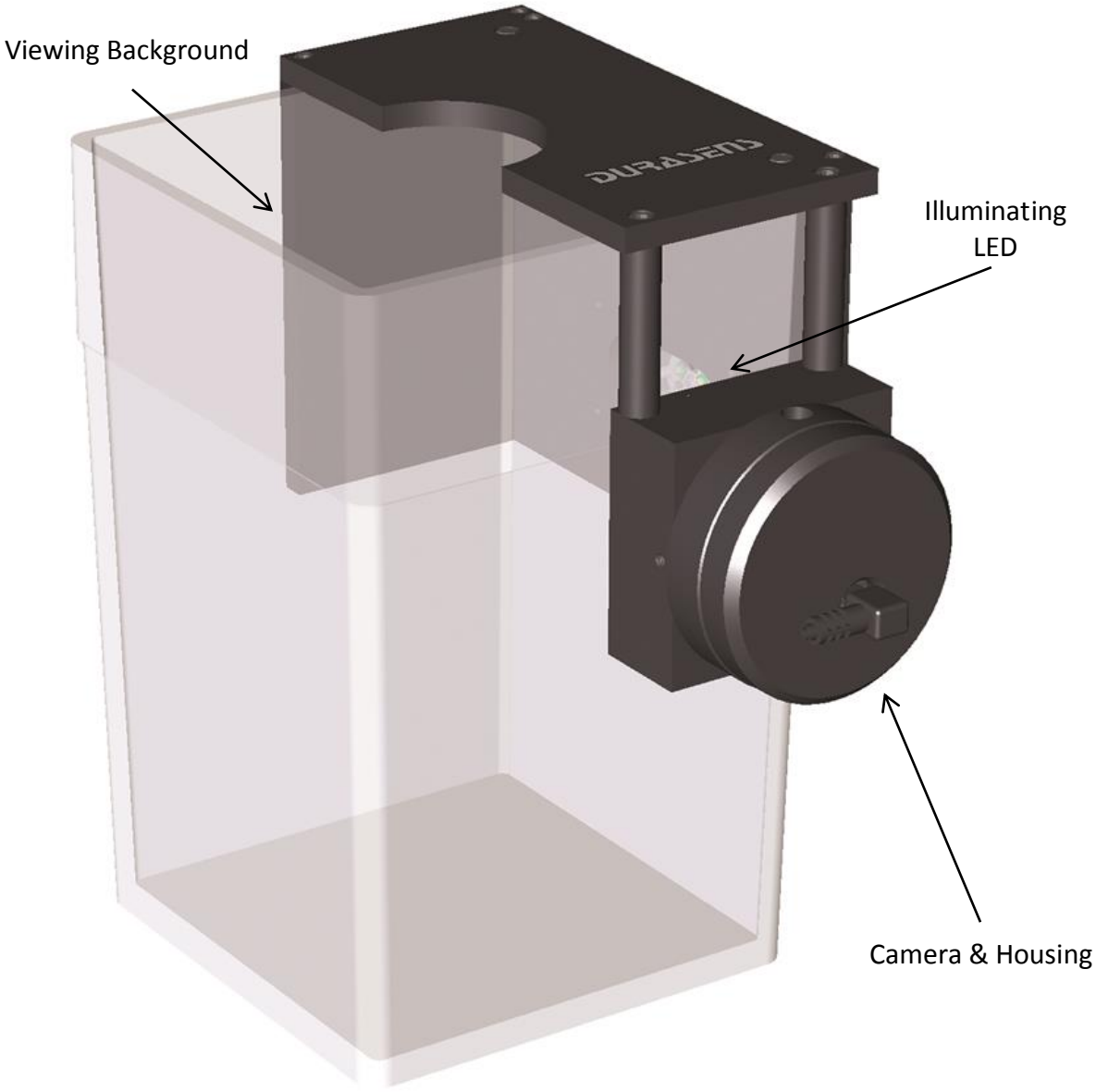
Installation

The Jar FlocCAM® is designed to fit a standard 2 litter rectangular jar.



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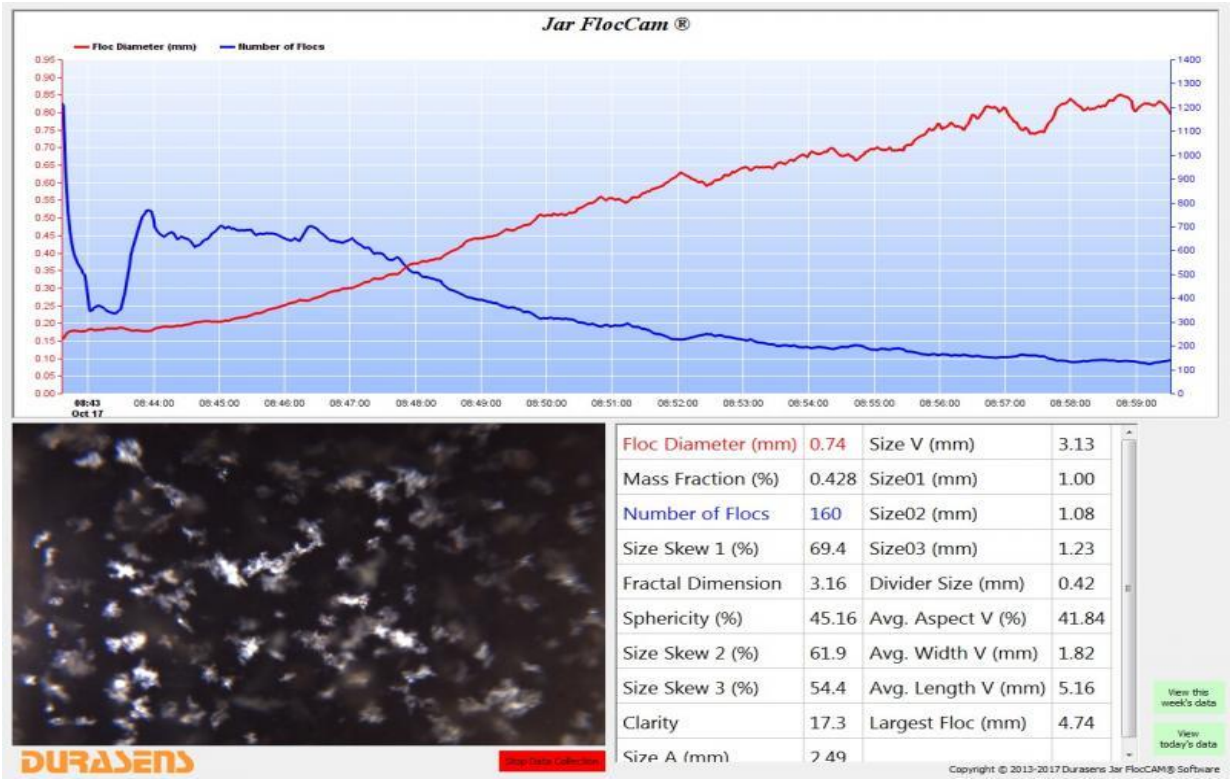
Using the Jar FlocCAM®

The Jar FlocCAM® is operated by a user-friendly software. It displays the real time values of all the parameters, graphs two selected parameters, and also shows a live video of the Jar FlocCAM's® view of flocculation.



Software User Interface

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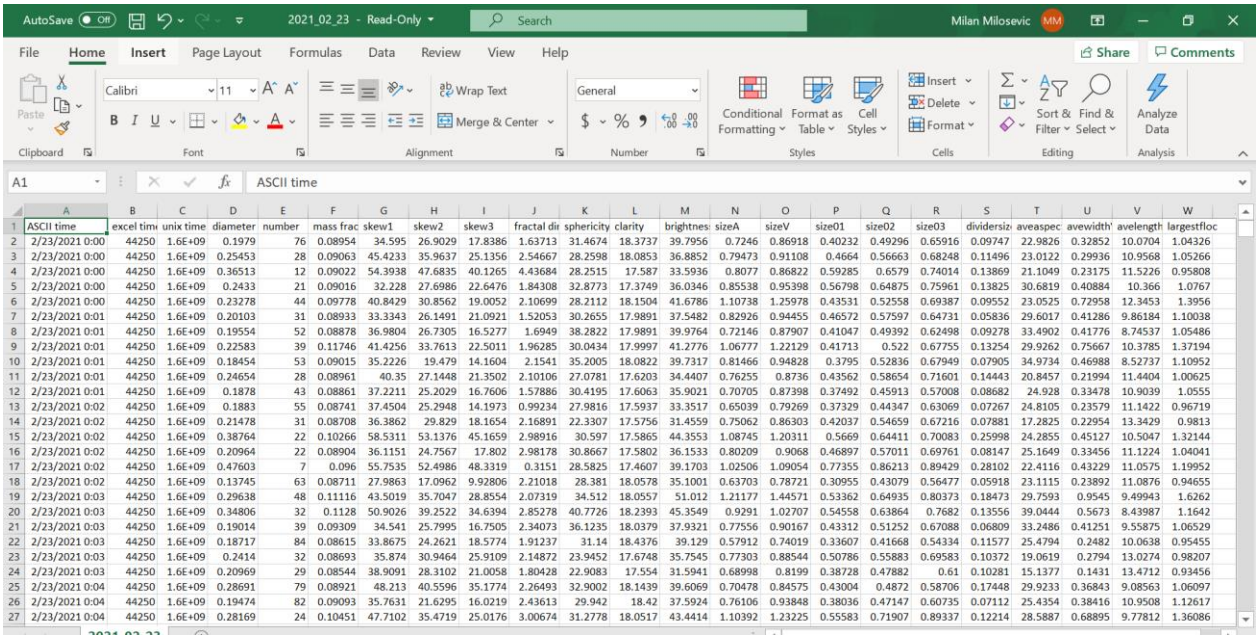
The parameters are stored in a csv file and can be graphed and further analyzed by Excel or equivalent.



ASCII time	excel time	unix time	diameter	number	mass frac	skew1	skew2	skew3	fractal dir	sphericity	clarity	brightnes	sizeA	sizeV	size01	size02	size03	dividersiz	aveaspec	avewidth'	avelength	largestfloc
2/23/2021 0:00	44250	1.6E+09	0.1979	76	0.08954	34.595	26.9029	17.8386	1.63713	31.4674	18.3737	39.7956	0.7246	0.86918	0.40232	0.49296	0.65916	0.09747	22.9826	0.32852	10.0704	1.04326
2/23/2021 0:00	44250	1.6E+09	0.25453	28	0.09063	45.4233	35.9637	25.1356	2.54667	28.2598	18.0853	36.8852	0.79473	0.91108	0.4664	0.56663	0.68248	0.11496	23.0122	0.29936	10.9568	1.05266
2/23/2021 0:00	44250	1.6E+09	0.36513	12	0.09022	54.3938	47.6835	40.1265	4.43684	28.2515	17.587	33.5936	0.8077	0.86822	0.59285	0.6579	0.74014	0.13869	21.1049	0.23175	11.5226	0.95808
2/23/2021 0:00	44250	1.6E+09	0.2433	21	0.09016	32.228	27.6986	22.6476	1.84308	32.8773	17.3749	36.0346	0.85538	0.95398	0.56798	0.64875	0.75961	0.13825	30.6819	0.40884	10.366	1.0767
2/23/2021 0:00	44250	1.6E+09	0.23278	44	0.09778	40.8429	30.8562	19.0052	2.10699	28.2112	18.1504	41.6786	1.10738	1.25978	0.43531	0.52558	0.69387	0.09552	23.0525	0.72958	12.3453	1.3956
2/23/2021 0:01	44250	1.6E+09	0.20103	31	0.08933	33.3343	26.1491	21.0921	1.52053	30.2655	17.9891	37.5482	0.82926	0.94455	0.46572	0.57597	0.64731	0.05836	29.6017	0.41286	9.86184	1.10038
2/23/2021 0:01	44250	1.6E+09	0.19554	52	0.08878	36.9804	26.7305	16.5277	1.6949	38.2822	17.9891	39.9764	0.72146	0.87907	0.41047	0.49392	0.62498	0.09278	33.4902	0.41776	8.74537	1.05486
2/23/2021 0:01	44250	1.6E+09	0.22583	39	0.11746	41.4256	33.7613	22.5011	1.96285	30.0434	17.9997	41.2776	1.06777	1.22129	0.41713	0.522	0.67755	0.13254	29.9262	0.75667	10.3785	1.37194
2/23/2021 0:01	44250	1.6E+09	0.18454	53	0.09015	35.2226	19.479	14.1604	2.1541	35.2005	18.0822	39.7317	0.81466	0.94828	0.3795	0.52836	0.67949	0.07905	34.9734	0.46988	8.52737	1.10952
2/23/2021 0:01	44250	1.6E+09	0.24654	28	0.08961	40.35	27.1448	21.3502	2.10106	27.0781	17.6203	34.4407	0.76255	0.8736	0.43562	0.58654	0.71601	0.14443	20.8457	0.21994	11.4404	1.00625
2/23/2021 0:01	44250	1.6E+09	0.1878	43	0.08861	37.2211	25.2029	16.7606	1.57886	30.4195	17.6063	35.9021	0.70705	0.87398	0.37492	0.45913	0.57008	0.08682	24.928	0.33478	10.9039	1.0555
2/23/2021 0:02	44250	1.6E+09	0.1883	55	0.08741	37.4504	25.2948	14.1973	0.99234	27.9816	17.5937	33.3517	0.65039	0.79269	0.37329	0.44347	0.63069	0.07267	24.8105	0.23579	11.1422	0.96719
2/23/2021 0:02	44250	1.6E+09	0.21478	31	0.08708	36.3862	29.829	18.1654	2.16891	22.3307	17.5756	31.4559	0.75062	0.86303	0.42037	0.54659	0.67216	0.07881	17.2825	0.22954	13.3429	0.9813
2/23/2021 0:02	44250	1.6E+09	0.38764	22	0.10266	58.5311	53.1376	45.1659	2.98916	30.597	17.5865	44.3553	1.08745	1.20311	0.5669	0.64411	0.70083	0.25998	24.2855	0.45127	10.5047	1.32144
2/23/2021 0:02	44250	1.6E+09	0.20964	22	0.08904	36.1151	24.7567	17.802	2.98178	30.8667	17.5802	36.1533	0.80209	0.9068	0.46897	0.57011	0.69761	0.08147	25.1649	0.33456	11.1224	1.04041
2/23/2021 0:02	44250	1.6E+09	0.47603	7	0.096	55.7535	52.4986	48.3319	0.3151	28.5825	17.4607	39.1703	1.02506	1.09054	0.77355	0.86213	0.89429	0.28102	22.4116	0.43229	11.0575	1.19952
2/23/2021 0:02	44250	1.6E+09	0.13745	63	0.08711	27.9863	17.0962	9.92806	2.21018	28.381	18.0578	35.1001	0.63703	0.78721	0.30955	0.43079	0.56477	0.05918	23.1115	0.23892	11.0876	0.94655
2/23/2021 0:03	44250	1.6E+09	0.29638	48	0.11116	43.5019	35.7047	28.8554	2.07319	34.512	18.0557	51.012	1.21177	1.44571	0.53362	0.64935	0.80373	0.18473	29.7593	0.9545	9.49943	1.6262
2/23/2021 0:03	44250	1.6E+09	0.34806	32	0.1128	50.9026	39.2522	34.6394	2.85278	40.7726	18.2393	45.3549	0.9291	1.02707	0.54558	0.63864	0.7682	0.13556	39.0444	0.5673	8.43987	1.1642
2/23/2021 0:03	44250	1.6E+09	0.19014	39	0.09309	34.541	25.7995	16.7505	2.34073	36.1235	18.0379	37.9321	0.77556	0.90167	0.43312	0.51252	0.67088	0.06809	33.2486	0.41251	9.55875	1.06529
2/23/2021 0:03	44250	1.6E+09	0.18717	84	0.08615	33.8675	24.2621	18.5774	1.91237	31.14	18.4376	39.129	0.57912	0.74019	0.33607	0.41668	0.54334	0.11577	25.4794	0.2482	10.0638	0.95455
2/23/2021 0:03	44250	1.6E+09	0.2414	32	0.08693	35.874	30.9464	25.9109	2.14872	23.9452	17.6748	35.7545	0.77303	0.88544	0.50786	0.55883	0.69583	0.10372	19.0619	0.2794	13.0274	0.98207
2/23/2021 0:03	44250	1.6E+09	0.20969	29	0.08544	38.9091	28.3102	21.0058	1.80428	22.9083	17.554	31.5941	0.68998	0.8199	0.38728	0.47882	0.61	0.10281	15.1377	0.1431	13.4712	0.93456
2/23/2021 0:04	44250	1.6E+09	0.28691	79	0.08921	48.213	40.5596	35.1774	2.26493	32.9002	18.1439	39.6069	0.70478	0.84575	0.43004	0.4872	0.58706	0.17448	29.9233	0.36843	9.08563	1.06097
2/23/2021 0:04	44250	1.6E+09	0.19474	82	0.09093	35.7631	21.6295	16.0219	2.43613	29.942	18.42	37.5924	0.76106	0.93848	0.38036	0.47147	0.60735	0.07112	25.4354	0.38416	10.9508	1.12617
2/23/2021 0:04	44250	1.6E+09	0.28169	24	0.10451	47.7102	35.4719	25.0176	3.00674	31.2778	18.0517	43.4414	1.10392	1.23225	0.55583	0.71907	0.89337	0.12214	28.5887	0.68895	9.77812	1.36086

.CSV File with All the Parameters

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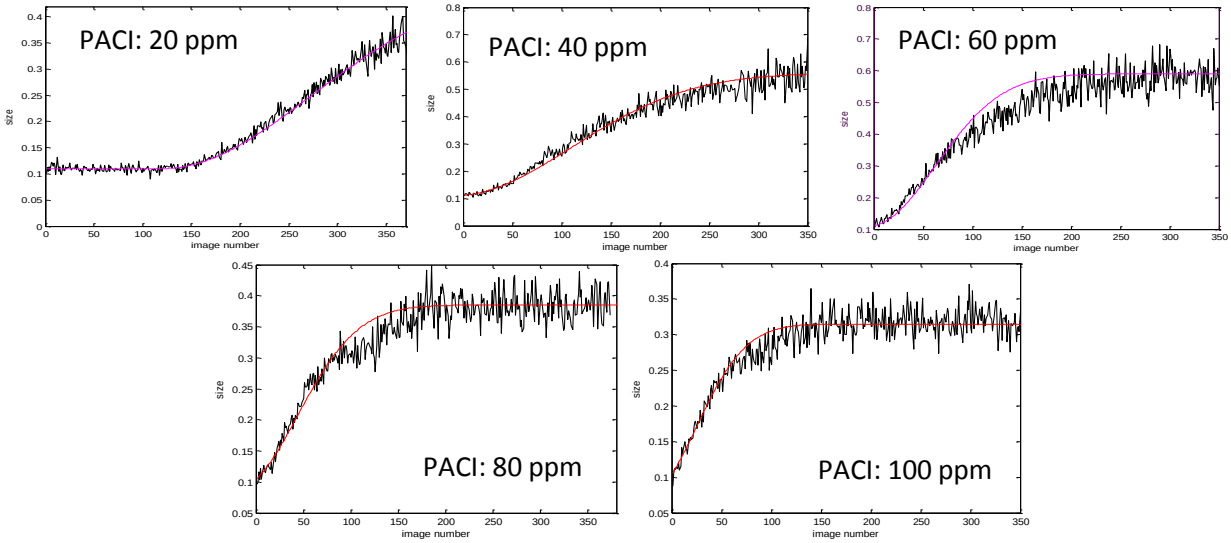
Graphs of Floc Size for Multiple Jar Tests Using Different Dosing of Chemicals



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