

Nautilus number	Jet mode (1 or 2)	Swim	Date	Jet period start frame	Jet period end frame	Total frames	Jet period (s)	Cycle frequency (Hz)	Frame rate (fps)	Mantle Length (cm)	Max Jet orifice area est. (cm ²)	Max refill orifice area est. (cm ²)	Jet angle (degrees)	Swim distance over 1 jet (cm)	Jet Length (cm) (vorticity profile)	Jet Diameter (cm) (vorticity profile)	Jet Length (cm) (mean)	Jet Diameter (cm) (mean)	Peak Jet Vorticity 1/s	Mean peak jet vorticity 1/s	Time averaged Peak jet velocity (cm/s)	Time averaged peak refill (cm/s)	Jet Area est. (cm ²)	Jet Length/diameter	Average Thrust (N)
1	1	1	05/08/2015	144	295	151	0.604	1.655629	500	7.7063	0.93	2.704	19.213	4.0128	4.1218	2.013	5.4942	2.5457	5.2026	3.082	7.0533	5.456496	5.090502	2.047591	0.000475
1	1	9	13/05/2015	85	301	216	0.864	1.157407	500	8.2057	0.93	2.704	9.593	6.4788	2.7397	1.6756	5.8542	3.0912	6.962	2.186	7.7707	6.012213	7.505859	1.635056	0.000577
1	1	3	05/06/2015	181	314	133	0.532	1.879699	500	7.7063	0.93	2.704	11.998	5.97621	1.6214	1.6338	4.5554	3.622	12.3162	5.034	12.002	9.234486	10.30488	0.99241	0.001376
1	1	2	05/08/2015	81	221	140	0.56	1.785714	500	7.7063	0.93	2.704	13.736	3.903	1.3652	1.11379	6.2876	2.5353	11.1402	5.662	12.0615	9.333352	5.048995	1.225725	0.001389
1	1	3	05/08/2015	71	222	151	0.604	1.655629	500	7.7063	0.93	2.704	9.359	6.4131	1.5697	1.3344	5.8893	2.537	11.078	4.252	8.8468	6.845992	5.055768	1.176334	0.000748
1	1	1	13/05/2015	69	287	218	0.872	1.146789	500	8.2057	0.93	2.704	10.8	6.2856	3.7545	1.7399	9.7841	3.0729	9.94	3.161	10.6301	8.225655	7.417252	2.157883	0.001079
1	1	2	13/05/2015	52	193	141	0.564	1.77305	500	8.2057	0.93	2.704	9.223	6.6529	1.3821	1.7416	4.2831	2.5454	11.7175	3.296	8.0665	6.242148	5.089303	0.793581	0.000621
1	1	4	13/05/2015	48	197	149	0.596	1.677852	500	8.2057	0.93	2.704	1.5482	4.7271	2.7405	1.6892	8.0585	2.7711	10.7031	3.604	8.9301	6.908895	6.031851	1.622366	0.000762
1	1	10	13/05/2015	44	210	166	0.664	1.506024	500	8.2057	0.93	2.704	7.918	3.2452	2.3107	2.4087	7.1936	2.4379	6.256	2.33	7.1757	5.542947	4.668506	0.959314	0.000492
1	1	10	13/05/2015	331	489	158	0.632	1.582278	500	8.2057	0.93	2.704	30.324	5.196	1.7347	1.4305	6.6109	2.2236	7.3303	3.124	9.5438	7.383872	3.883824	1.212653	0.00087
2	1	1	20/5/2015	202	345	143	0.572	1.748252	500	10.97	1.389	5.54	25.145	9.4564	3.0321	2.9914	4.8093	2.516	13.1507	9.991	10.234	5.772742	4.972416	1.013606	0.001494
2	1	3	20/5/2015	101	300	199	0.796	1.256281	500	10.97	1.389	5.54	15.426	4.311	2.2277	1.7445	4.2256	2.066	11.05	2.334	5.1102	2.882266	3.352794	1.276985	0.000373
2	1	4	27/05/2015	51	229	178	0.712	1.404494	500	10.97	1.389	5.54	8.6634	8.5184	3.2613	3.8	8.567	2.917	17.1759	4.545	11.645	6.568648	6.683732	1.16475	0.001934
2	1	5	27/05/2015	28	205	177	0.708	1.412429	500	10.97	1.389	5.54	26.395	7.0241	5.0371	2.465	11.152	3.159	26.4	5.451	11.012	6.20492	7.838725	1.453709	0.00173
2	1	2	28/05/2015	54	225	171	0.684	1.461988	500	10.97	1.389	5.54	14.029	6.4091	1.9628	2.0968	4.2961	2.3717	12.224	3.879	8.5714	4.833478	4.418407	0.936093	0.001048
2	1	5	28/05/2015	105	295	190	0.76	1.315789	500	10.97	1.389	5.54	24.326	3.9132	2.2367	1.9134	5.8941	2.6648	13.2053	5.658	10.7644	6.056577	5.57796	1.168966	0.001653
2	1	5	28/05/2015	296	479	183	0.732	1.36612	500	10.97	1.389	5.54	25.168	4.0362	2.9577	2.4616	6.2139	2.5938	11.2707	5.239	6.8031	3.8345	5.284686	1.201536	0.00066
2	1	5	19/5/2015	67	237	170	0.68	1.470588	500	10.97	1.389	5.54	4.7117	4.473	1.4342	1.7729	3.6021	2.5475	12.2172	3.868	6.4957	5.097704	6.808957	0.000602	0.000602
4	1	5	20/5/2015	27	214	187	0.748	1.336898	500	10.97	1.389	5.54	20.8127	6.522	1.7273	1.527	5.4462	2.4855	13.35	4.297	10.7831	6.081761	4.852591	1.131172	0.001659
4	1	4	19/5/2015	33	216	183	0.732	1.36612	500	9.2129	0.75	3.718	33.69	6.1357	1.6077	1.6558	2.5758	2.0176	9.166	2.998	4.4132	2.000345	3.197543	0.970951	0.00015
4	1	4	19/5/2015	217	378	161	0.644	1.552795	500	9.2129	0.75	3.718	8.983	6.7195	2.746	1.4792	5.1745	2.8789	11.3389	3.251	8.67	9.333986	6.510275	1.856409	0.000579
4	1	5	20/5/2015	17	160	143	0.572	1.748252	500	9.2129	0.75	3.718	27.527	5.7311	2.4157	2.1333	5.4967	3.7212	19.6285	6.221	12.4117	5.632219	10.87708	1.132377	0.001187
4	1	5	20/5/2015	161	299	138	0.552	1.811594	500	9.2129	0.75	3.718	21.161	7.0168	3.24	1.8342	5.8191	2.2993	14.7915	5.299	16.7161	7.586583	4.152766	1.766438	0.002152
4	1	4	27/5/2016	12	178	166	0.664	1.506024	500	9.2129	0.96	3.718	29.94	8.1167	2.4087	1.6258	5.3411	2.22305	16.5832	3.249	7.9203	4.600438	3.881903	1.481548	0.000618
4	1	4	28/5/2015	227	411	184	0.736	1.358696	500	9.2129	0.96	3.718	2.045	5.993	2.6068	2.155	7.5176	2.23484	14.83	2.899	8.6853	5.04497	3.923187	1.209652	0.000744
5	1	5	06/12/2015	66	250	184	0.736	1.358696	500	8.7516	0.97	3.051	7.386	2.6719	2.3527	1.9814	5.5763	2.384	7.5327	2.655	3.68947	2.636692	4.464355	1.187393	0.000136
5	2	1	06/12/2015	30	221	191	0.764	1.308901	500	8.7516	0.97	3.051	14.336	3.0769	7.784	2.386	5.8689	2.4877	4.8401	2.422	12.5972	9.010273	4.861186	3.262364	0.001581
5	2	2	06/12/2015	108	287	179	0.716	1.396648	500	8.7516	0.97	3.051	17.8019	2.2187	5.5212	1.7104	7.2909	2.6511	6.6682	1.998	6.22085	4.449956	5.520754	3.228017	0.000386
1	2	3	13/05/2015	251	403	152	0.608	1.644737	500	8.2057	0.93	2.704	1.125	7.6476	7.4741	2.0413	5.1356	2.338	14.0345	4.214	9.6564	7.470855	4.293735	3.661441	0.000891
1	2	5	05/06/2015	60	175	115	0.46	2.173913	500	7.7063	0.93	2.704	27.029	4.09628	5.9372	1.2692	6.9412	2.5053	13.4818	4.016	16.24545	12.4323	4.930213	4.677907	0.002521
1	2	5	13/05/2015	29	179	150	0.6	1.666667	500	8.2057	0.93	2.704	25.4337	4.0158	4.5651	1.4451	10.838	3.3412	20.8014	3.432	13.20735	10.21191	8.769021	3.15902	0.001666
1	2	7	13/05/2015	212	380	168	0.672	1.488095	500	8.2057	0.93	2.704	11.461	8.1445	8.055	1.7013	7.9899	2.8473	12.2921	4.224	13.62075	10.53841	6.368141	4.734615	0.001772
1	2	8	13/05/2015	200	336	136	0.544	1.838235	500	8.2057	0.93	2.704	19.599	4.19511	6.68942	1.9681	6.3802	3.2596	4.0881	1.781	7.0551	5.459315	8.345931	3.398923	0.000475
2	2	2	19/5/2015	98	293	195	0.78	1.282051	500	10.97	1.389	5.54	10.4579	8.2271	8.014	1.5084	7.4137	2.001	24.9929	4.5	9.3912	5.297556	3.145143	5.312914	0.001258
2	2	1	20/5/2015	56	201	145	0.58	1.724138	500	10.97	1.389	5.54	28.87	8.0503	5.55815	1.5857	11.144	2.6063	20.9786	5.823	15.3525	8.659051	5.335744	3.505171	0.003362
2	2	4	20/5/2015	48	209	161	0.644	1.552795	500	10.97	1.389	5.54	25.0675	6.4019	8.9714	2.5683	9.0537	3.664	27.555	4.877	13.6115	7.656052	10.54526	3.493128	0.002643
2	2	2	27/05/2015	86	271	185	0.74	1.351351	500	10.97	1.389	5.54	6.202	6.5969	7.2014	1.868	7.6216	2.2057	14.319	4.073	11.77215	6.640174	3.821546	3.855139	0.001977
2	2	3	27/05/2015	16	179	163	0.652	1.533742	500	10.97	1.389	5.54	14.065	5.0258	7.0632	1.8439	7.1957	2.7366	12.69	4.315	11.427	6.445815	5.882593	3.830576	0.001863
2	2	1	28/05/2015	54	216	162	0.648	1.54321	500	10.97	1.389	5.54	10.144	8.5215	5.2753	1.6094	10.772	2.5907	26.126	6.959	10.7985	6.091464	5.272061	3.277805	0.001663
2	2	3	28/05/2015	324	488	164	0.656	1.52439	500	10.97	1.389	5.54	21.038	8.2951	8.3897	2.3682	6.352	2.7632	19.4542	7.955	17.65725	9.960847	5.997508	3.542648	0.004448
4	2	2	19/5/2015	248	464	216	0.664	1.157407	500	9.2129	0.75	3.718	32.001	8.8645	6.7824	1.5747	4.0141	2.8865	12.2327	3.373	8.86665	4.021538	6.544694	4.307106	0.000606
4	2	1	19/5/2015	113	279	166	0.664	1.506024	500	9.2129	0.75	3.718	18.444	8.5264	8.3897	1.843	5.4735	2.5271	22.0556	4.031	12.92655	5.866414	5.016387	4.552198	0.001287
4	2	4	20/5/2015	84	251	167	0.668	1.497006	500	9.2129	0.75	3.718	5.4284	7.6172	5.0101	1.4013	8.2981	2.3142	22.23	6.143	17.0235	7.714046	4.206762	3.157523	0.002232
4	2	1	27/5/2016	51	191	140	0.56	1.785714	500	9.2129	0.96	3.718	2.949	6.4316	5.1611	1.5202	3.6881	2.2962	10.1108	2.62	10.52805	6.097743	4.141576	3.395014	0.001093
4	2	1	27/5/2016	344	502	158	0.632	1.582278																	

Average Thrust (mN)	Formation number	Time averaged body velocity (cm/s)	Time averaged body velocity (BL/s)	Whole cycle efficiency	Slip	Re	Drag	Duty cycle	Jet period start frame	Jet period end frame	Total frames	Jet period (s)	Swim distance during contraction (cm)	Time averaged body velocity (cm/s)	Time averaged body velocity (BL/s)	Jet period start frame	Jet period end frame	Total frames	Jet period (s)	Swim distance during expansion (cm)	Time averaged body velocity (cm/s)	Distance during shortening	Duty cycle %
0.475158	2.047591	6.643709	0.862114	0.368009	1.002519	4563.337	0.668403	0.473333	144	215	71	0.284	2.314	8.147887	1.057302	216	295	79	0.316	1.6988	5.375949	42.33453	47.33333
0.576732	1.635056	7.498611	0.91383	0.769131	1.021794	5484.316	0.855358	0.52093	85	197	112	0.448	3.4367	7.671205	0.934863	198	301	103	0.412	3.0421	7.383738	46.95468	52.09302
1.375817	0.99241	11.23348	1.457701	0.836034	1.045074	7715.892	1.130165	0.613636	181	262	81	0.324	3.7409	11.54599	1.498253	263	314	51	0.204	2.23531	10.9574	37.40347	61.36364
1.389492	1.225725	6.969643	0.904408	0.742288	1.681082	4787.21	0.701194	0.489209	81	149	68	0.272	1.9226	7.068382	0.917221	150	221	71	0.284	1.9804	6.973239	50.74046	48.92086
0.747525	1.176334	10.61772	1.377797	0.781376	0.82212	7292.946	1.068215	0.506667	71	147	76	0.304	3.2611	10.7273	1.392017	148	222	74	0.296	3.152	10.64865	49.1494	50.66667
1.079265	2.157883	7.208257	0.878445	0.771982	1.44859	5271.958	0.822238	0.511521	69	180	111	0.444	3.2877	7.40473	0.902389	181	287	106	0.424	2.9979	7.070519	47.69473	51.15207
0.621475	0.793581	11.79592	1.437528	0.73441	0.674997	8627.273	1.345548	0.492857	52	121	69	0.276	3.207	11.61957	1.416036	122	193	71	0.284	3.4459	12.13345	51.79546	49.28571
0.761669	1.622366	7.931376	0.966569	0.788838	1.12551	5800.831	0.904723	0.52349	48	126	78	0.312	2.4877	7.973397	0.97169	126	197	71	0.284	2.2394	7.885211	47.37365	52.34899
0.491793	0.959314	4.887349	0.595604	0.714781	1.454221	3574.498	0.557494	0.436364	44	116	72	0.288	1.6267	5.648264	0.688334	117	210	93	0.372	1.6185	4.350806	49.87366	43.63636
0.869954	1.212653	8.221519	1.001928	0.796796	1.002012	6013.035	0.93782	0.477707	331	406	75	0.3	2.5853	8.617667	1.050205	407	489	82	0.328	2.6107	7.959451	50.24442	47.7707
1.494044	1.013606	16.53217	1.507034	0.743681	0.560373	16164.51	3.370381	0.485915	202	271	69	0.276	4.6964	17.01594	1.551134	272	345	73	0.292	4.76	16.30137	50.33628	48.59155
0.372519	1.276985	5.415829	0.493695	0.686263	0.909575	5295.386	1.104115	0.479798	101	196	95	0.38	2.1278	10.07316	0.918246	197	300	103	0.412	2.1832	9.425243	50.35923	47.9798
1.934424	1.16475	11.96404	1.090615	0.833164	0.962228	11697.97	2.439087	0.514124	51	142	91	0.364	4.2234	11.60275	1.05768	143	229	86	0.344	4.295	12.48547	50.42027	51.41243
1.729837	1.453709	9.921045	0.90438	0.821817	0.994251	9700.41	2.022584	0.448864	28	107	79	0.316	3.1906	10.09684	0.920404	108	205	97	0.388	3.8335	9.880155	54.57639	44.88636
1.048036	0.936093	9.370029	0.85415	0.783992	0.887483	9161.648	1.91025	0.529412	54	144	90	0.36	3.2155	8.931944	0.814216	145	225	80	0.32	3.1936	9.98	49.82915	52.94118
1.652922	1.168966	5.148947	0.469366	0.666357	1.904991	5034.439	1.049706	0.57672	105	214	109	0.436	2.4277	5.568119	0.507577	215	295	80	0.32	1.4855	4.642188	37.96126	57.67196
0.660217	1.201536	5.513934	0.502638	0.732983	1.11667	5391.309	1.124115	0.543956	296	395	99	0.396	2.2105	5.582071	0.508849	396	479	83	0.332	1.8257	5.499096	45.23314	54.3956
0.6019	0.808957	6.577941	0.59963	0.736156	0.98416	6431.653	1.341032	0.497041	67	151	84	0.336	2.1615	10.89732	0.993375	152	237	85	0.34	2.3115	12.68088	54.07626	49.70414
1.65867	1.131172	8.719251	0.794827	0.807424	1.156002	8525.343	1.775777	0.478495	27	116	89	0.356	3.4257	9.622753	0.87188	117	214	97	0.388	3.0963	10.55747	54.45759	47.84946
0.150016	0.970951	8.382104	0.909823	0.574604	0.438077	6882.963	1.205263	0.445055	33	114	81	0.324	2.4267	7.489815	0.81297	115	216	101	0.404	3.709	9.180693	60.4495	44.50549
0.578988	1.856409	10.43401	1.043014	0.777808	0.820745	8567.882	1.500306	0.475	217	293	76	0.304	3.4211	11.25362	1.221507	294	378	84	0.336	3.2984	9.816667	49.08699	47.5
1.186572	1.132377	10.01941	1.087541	0.826076	1.098529	8227.433	1.44069	0.478873	17	85	68	0.272	2.8915	10.63051	1.153873	86	160	74	0.296	2.8396	9.593243	49.54721	47.88732
2.152294	1.766438	12.71159	1.37976	0.849635	1.226355	10438.12	1.8278	0.510949	161	231	70	0.28	3.6438	13.01357	1.412538	232	299	67	0.268	3.373	12.58582	48.07035	51.09489
0.618479	1.481548	12.23295	1.326829	0.719669	0.561466	10037.69	1.757681	0.521212	12	98	86	0.344	4.1982	12.20407	1.324672	99	178	79	0.316	3.9185	12.40032	48.27701	52.12121
0.743723	1.209652	8.142663	0.883833	0.787356	1.065962	6686.346	1.170833	0.480874	227	315	88	0.352	2.8719	3.3098	0.359257	316	411	95	0.38	3.1211	8.213421	52.07909	48.08743
0.135603	1.187393	3.630299	0.414815	0.613119	1.007867	2831.756	0.471035	0.453552	66	149	83	0.332	1.1794	3.55241	0.405915	150	250	100	0.4	1.4925	3.73125	55.85913	45.35519
1.580848	3.262364	4.027356	0.460185	0.523951	3.030506	3141.474	0.522554	0.484211	30	122	92	0.368	1.6467	4.474728	0.511304	123	221	98	0.392	1.4302	3.648469	46.48185	48.42105
0.385515	3.228017	3.098743	0.354077	0.614632	1.911417	2417.125	0.402065	0.494382	108	196	88	0.352	1.0745	3.052557	0.3488	197	287	90	0.36	1.1442	3.178333	51.57074	49.4382
0.890602	3.661441	12.57829	1.532872	0.783585	0.767556	9199.479	1.434791	0.523179	251	330	79	0.316	4.0502	12.81709	1.561974	331	403	72	0.288	3.5974	12.49097	47.03959	52.31788
2.520675	4.677907	8.904957	1.155542	0.752157	1.625058	6116.511	0.8959	0.657895	60	135	75	0.3	2.9791	9.930333	1.288599	136	175	39	0.156	1.11718	7.16141	27.27304	65.78947
1.666037	3.15902	6.693	0.815653	0.70608	1.782061	4895.11	0.763463	0.543624	29	110	81	0.324	2.3421	7.228704	0.880937	111	179	68	0.272	1.6737	6.153309	41.67787	54.36242
1.771966	4.734615	12.11979	1.476997	0.849106	1.101434	8864.144	1.382491	0.479042	212	292	80	0.32	3.959	12.37188	1.507717	293	380	87	0.348	4.1855	12.0273	51.39051	47.90419
0.475401	3.398923	7.711599	0.939786	0.749694	0.861864	5640.091	0.879654	0.488889	200	266	66	0.264	2.02121	7.656098	0.933022	267	336	69	0.276	2.1739	7.876449	51.81986	48.88889
1.258099	5.312914	10.54756	0.961492	0.797068	0.875576	10313	2.150311	0.489691	98	193	95	0.38	4.1665	10.96447	0.999496	194	293	99	0.396	4.0606	10.25404	49.3564	48.96907
3.362257	3.505171	13.87983	1.265253	0.864529	0.968633	13571.15	2.829653	0.479167	56	125	69	0.276	4.1363	14.98659	1.366144	126	201	75	0.3	3.914	13.04667	48.61931	47.91667
2.642924	3.493128	9.940839	0.906184	0.819142	1.24028	9719.763	2.026619	0.58125	48	141	93	0.372	3.91	10.51075	0.958136	142	209	67	0.268	2.4919	9.298134	38.92438	58.125
1.976898	3.855139	8.91473	0.812646	0.808656	1.312799	8716.474	1.817429	0.516304	86	181	95	0.38	3.4494	9.077368	0.827472	182	271	89	0.356	3.1475	8.841292	47.7118	51.63043
1.862675	3.830576	7.708282	0.702669	0.779915	1.437989	7536.857	1.571473	0.487654	16	95	79	0.316	2.5519	8.075633	0.736156	96	179	83	0.332	2.4739	7.451506	49.224	48.76543
1.663411	3.277805	13.15046	1.198766	0.8097	0.808314	12858.01	2.680959	0.509317	54	136	82	0.328	4.0839	12.45091	1.134997	137	216	79	0.316	4.4376	14.04304	52.07534	50.93168
4.447529	3.542648	12.64497	1.152686	0.841694	1.303306	12363.76	2.577905	0.496933	324	405	81	0.324	4.2912	13.24444	1.207333	406	488	82	0.328	4.0039	12.20701	48.26825	49.69325
0.605551	4.307106	9.415394	1.021979	0.790943	0.798614	7731.448	1.353839	0.539535	248	364	116	0.464	4.1927	9.035991	0.980798	365	464	99	0.396	3.9422	9.955051	48.46034	53.95349
1.287055	4.552198	12.84096	1.393803	0.847397	0.954956	10544.35	1.846402	0.515152	113	198	85	0.34	4.6048	13.54353	1.470061	199	279	80	0.32	3.9216	12.255	45.99362	51.51515
2.232181	3.575323	11.40299	1.23772	0.820953	1.486202	9363.566	1.639636	0.560241	84	177	93	0.372	4.0814	10.97151	1.190885	178	251	73	0.292	3.5358	12.1089	46.41863	56.0241
1.092792	3.395014	11.4895	1.246622	0.816412	0.915464	9430.905	1.651428	0.471266	51	109	58	0.232	2.6826	11.56293	1.25508	110	191	81	0.324	3.749	11.57099	58.29032	41.72662
2.592002	4.906037	14.72775	1.598601	0.870945	1.062241	12093.69	2.117703	0.509554	344	42													