APPENDIX

x/M	$\overline{u^2}$	$\overline{w^2}$	ε	L_f	L_g	L_u	η
	($\times 10^{-3}$ m^2/s^2)		(m^2/s^3)	(mm)	(mm)	(mm)	(mm)
16.5	23.1	19.8	0.331	10.2	3.93	10.6	0.324
36.5	7.72	6.06	0.0521	14.8	6.14	13.0	0.514
76.5	2.89	2.33	0.00931	18.2	7.97	16.7	0.791
116.5	1.69	1.37	0.00350	22.3	9.78	19.9	1.01
156.5	1.16	0.926	0.00176	24.5	10.9	22.4	1.20
196.5	0.873	0.654	0.00104	28.7	11.3	24.8	1.37
236.5	0.682	0.549	0.000673	31.8	12.1	26.5	1.52
276.5	0.581	0.437	0.000468	33.3	12.4	29.9	1.67

Table A.1 $Fr_M = \infty$. U = 3.5 m/s, Re_M = 5,780, β = 0°C/m, $\nu = 1.54 \times 10^{-5}$ (m^2/s)

x/M	Nt	$\overline{u^2}$	$\overline{w^2}$	$\overline{\theta^2}$	$\rho_{w\theta}$	ε	ε_θ
		($\times 10^{-3}$ m^2/s^2)		(°C^2)		(m^2/s^3)	(°C^2/s)
16.5	0.0104	23.7	18.4	0.00430	-0.643	0.325	0.0315
36.5	0.0229	7.76	5.93	0.00697	-0.695	0.0482	0.0214
76.5	0.0481	2.91	2.28	0.0132	-0.722	0.00953	0.0193
116.5	0.0732	1.66	1.28	0.0159	-0.719	0.00348	0.0143
156.5	0.0983	1.18	0.890	0.0195	-0.721	0.00201	0.0130
196.5	0.113	0.825	0.570	0.0228	-0.690	0.00113	0.00844
216.5	0.136	0.753	0.486	0.0240	-0.670	0.000937	0.00831
236.5	0.149	0.666	0.416	0.0259	-0.659	0.000742	0.00786
256.5	0.161	0.606	0.377	0.0268	-0.650	0.000625	0.00660
276.5	0.174	0.576	0.339	0.0296	-0.635	0.000537	0.00624
296.5	0.186	0.510	0.309	0.0311	-0.649	0.000464	0.00516

x/M	L_f	L_g	L_T	L_b	L_θ	L_u	L_{DO}	η	Fr_t
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(L_b/L_u)
16.5	10.8	4.40	8.96	249.0	7.29	11.2	1420.	0.330	22.2
36.5	13.7	5.69	11.2	142.0	9.28	14.2	547.	0.532	10.0
76.5	18.3	7.07	14.6	87.7	12.8	16.5	243.	0.798	5.32
116.5	21.8	8.02	17.3	68.5	14.0	19.4	147.	1.03	3.53
156.5	22.9	9.43	18.8	54.8	15.5	20.2	112.	1.18	2.71
196.5	27.8	9.76	19.4	43.9	16.8	20.9	83.9	1.36	2.10
216.5	25.7	10.5	21.6	40.4	17.2	22.1	76.3	1.42	1.83
236.5	25.2	11.6	22.0	37.5	17.9	23.2	67.9	1.51	1.62
256.5	26.5	12.1	22.9	35.7	18.2	23.9	62.3	1.58	1.49
276.5	29.3	12.8	22.8	33.8	18.8	25.7	57.8	1.64	1.32
296.5	27.7	14.8	22.7	32.4	19.6	24.8	53.7	1.70	1.31

Table A.2 $Fr_M = 253$. $U = 3.5$ m/s, $Re_M = 5670$, $\beta = 9$°C/m ($N = 0.544$ s^{-1}),

$\alpha = 2.22 \times 10^{-5}$ (m^2/s), $\nu = 1.57 \times 10^{-5}$ (m^2/s), $Pr \equiv \nu/\alpha = 7.08$.

x/M	Nt	$\overline{u^2}$	$\overline{w^2}$	$\overline{\theta^2}$	$\rho_{w\theta}$	ε	ε_θ
		($\times 10^{-3} m^2/s^2$)		($°C^2$)		(m^2/s^3)	($°C^2/s$)
36.5	0.046	12.0	8.36	0.370	-0.530	0.0777	0.990
76.5	0.096	5.03	3.01	0.468	-0.563	0.0161	0.630
116.5	0.147	3.22	1.63	0.574	-0.511	0.00700	0.520
156.5	0.197	1.97	0.991	0.638	-0.431	0.00314	0.427
196.5	0.248	1.52	0.702	0.714	-0.281	0.00189	0.379
216.5	0.273	1.45	0.656	0.794	-0.132	0.00165	0.377
236.5	0.298	1.22	0.617	0.642	-0.122	0.00124	0.287
256.5	0.324	1.14	0.601	0.596	-0.0439	0.00116	0.250
276.5	0.349	1.02	0.578	0.508	-0.0753	0.000850	0.210
296.5	0.374	0.924	0.563	0.471	-0.144	0.000732	0.181
316.5	0.399	0.893	0.559	0.462	-0.0905	0.000632	0.164
336.5	0.424	0.854	0.542	0.469	-0.184	0.000498	0.148

x/M	L_f	L_g	L_T	L_b	L_θ	L_u	L_o	η	Fr_t
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(L_b/L_u)
36.5	22.6	7.47	13.7	70.2	11.1	16.9	187.7	0.514	4.153
76.5	27.4	11.4	18.1	42.1	12.4	22.2	85.3	0.762	1.897
116.5	35.7	12.9	21.3	31.0	13.8	26.1	56.3	0.938	1.188
156.5	43.7	16.5	28.5	24.2	14.5	27.8	37.7	1.15	0.869
196.5	51.4	17.4	31.5	20.3	15.4	31.4	29.3	1.30	0.649
216.5	48.4	17.6	33.5	19.7	16.2	33.5	27.3	1.35	0.587
236.5	52.3	18.1	36.4	19.1	14.6	34.4	23.7	1.45	0.555
256.5	53.4	17.9	42.6	18.8	14.0	33.3	22.9	1.47	0.565
276.5	59.9	20.7	41.8	18.5	13.0	38.3	19.6	1.59	0.482
296.5	55.2	22.7	41.2	18.2	12.5	38.4	18.2	1.65	0.475
316.5	50.1	24.8	41.2	18.2	12.4	42.2	16.9	1.71	0.430
336.5	56.6	26.4	42.1	17.9	12.5	50.1	15.0	1.82	0.357

Table A.3 $Fr_M = 127.0$. $U = 4.2 m/s$, $Re_M = 6070$, $\beta = 55°C/m$ ($N = 1.302\ s^{-1}$),

$\alpha = 2.501 \times 10^{-5}\ (m^2/s)$, $\nu = 1.7570 \times 10^{-5}\ (m^2/s)$, $Pr = 7.03$

x/M	Nt	$\overline{u^2}$	$\overline{w^2}$	$\overline{\theta^2}$	$\rho_{w\theta}$	ε	ε_θ
		($\times 10^{-3}$ m^2/s^2)		(°C^2)		(m^2/s^3)	(°C^2/s)
16.5	0.024	26.1	18.8	0.143	-0.601	0.297	0.664
36.5	0.052	8.83	5.74	0.228	-0.641	0.0531	0.551
76.5	0.110	3.51	1.92	0.357	-0.630	0.00975	0.400
116.5	0.167	2.08	1.00	0.460	-0.556	0.00363	0.336
156.5	0.224	1.45	0.586	0.538	-0.399	0.00163	0.272
196.5	0.281	1.17	0.423	0.456	-0.159	0.000920	0.186
216.5	0.310	0.998	0.398	0.416	-0.152	0.000760	0.159
236.5	0.339	0.933	0.378	0.410	-0.0703	0.000632	0.141
256.5	0.367	0.894	0.343	0.341	-0.0600	0.000502	0.111
276.5	0.396	0.820	0.336	0.358	-0.0978	0.000431	0.114
296.5	0.425	0.741	0.329	0.364	-0.0476	0.000382	0.106
316.5	0.453	0.706	0.323	0.315	-0.110	0.000333	0.0837
336.5	0.482	0.657	0.315	0.312	-0.0513	0.000284	0.0811

x/M	L_f	L_g	L_T	L_b	L_θ	L_u	L_{DO}	η	Fr_t
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(L_b/L_u)
16.5	16.4	6.22	9.5	110.6	7.56	14.2	394.0	0.373	7.78
36.5	21.5	7.42	13.7	61.1	9.54	15.6	167.0	0.574	3.91
76.5	28.5	11.7	17.5	35.3	11.9	21.3	71.5	0.877	1.66
116.5	33.5	14.5	21.7	25.5	13.6	26.0	43.7	1.12	0.979
156.5	38.2	14.3	23.6	19.5	14.7	34.0	29.2	1.37	0.575
196.5	42.3	16.0	28.4	16.6	13.5	43.5	22.0	1.58	0.381
216.5	48.1	16.0	31.5	16.1	12.9	41.5	20.0	1.66	0.388
236.5	43.2	16.3	34.0	15.7	12.8	45.1	18.2	1.74	0.348
256.5	53.6	17.8	34.7	14.9	11.7	53.2	16.2	1.84	0.281
276.5	46.7	18.8	36.6	14.8	12.0	54.5	15.0	1.91	0.271
296.5	46.3	24.8	36.0	14.6	12.1	52.8	14.2	1.97	0.277
316.5	53.4	22.7	36.9	14.5	11.2	56.4	13.2	2.04	0.257
336.5	56.4	24.6	36.5	14.3	11.2	59.4	12.2	2.12	0.241

Table A.4 $Fr_M = 114.3$. $U = 3.6$ m/s, $Re_M = 5100$, $\beta = 50$°C/m ($N = 1.240$ s^{-1}),

$\alpha = 2.555 \times 10^{-5}$ (m^2/s), $\nu = 1.7925 \times 10^{-5}$ (m^2/s), $Pr = 7.02$

x/M	Nt	$\overline{u^2}$	$\overline{w^2}$	$\overline{\theta^2}$	$\rho_{w\theta}$	ε	ε_θ
		($\times 10^{-3} m^2/s^2$)		($°C^2$)		(m^2/s^3)	($°C^2/s$)
36.5	0.065	4.11	2.91	0.281	-0.672	0.0172	0.491
76.5	0.137	1.50	0.814	0.316	-0.601	0.00285	0.272
116.5	0.209	0.929	0.373	0.357	-0.389	0.00112	0.209
156.5	0.280	0.630	0.291	0.346	-0.032	0.000579	0.160
196.5	0.352	0.558	0.391	0.296	0.203	0.000452	0.117
216.5	0.388	0.530	0.473	0.239	0.211	0.000406	0.0951
236.5	0.423	0.524	0.489	0.230	0.124	0.000353	0.0835
256.5	0.459	0.513	0.486	0.183	-0.0145	0.000303	0.0663
276.5	0.495	0.496	0.430	0.169	-0.0525	0.000241	0.0567
296.5	0.531	0.457	0.416	0.199	-0.263	0.000185	0.0521
316.5	0.567	0.428	0.364	0.174	-0.223	0.000184	0.0451

x/M	L_f	L_g	L_T	L_b	L_θ	L_u	L_o	η	Fr_t
	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(L_b/L)
36.5	18.8	7.46	15.1	41.4	9.62	15.4	101.2	0.75	2.70
76.5	23.4	11.7	20.1	21.9	10.2	20.4	35.9	1.18	1.07
116.5	27.8	14.4	23.3	14.8	10.9	25.2	22.6	1.48	0.589
156.5	29.2	16.8	26.3	13.1	10.7	27.3	16.2	1.75	0.480
196.5	29.8	14.5	30.2	15.2	9.89	29.2	14.3	1.86	0.521
216.5	29.7	13.4	29.6	16.7	8.89	30.1	13.6	1.91	0.555
236.5	32.0	13.2	33.6	17.0	8.73	34.0	12.6	1.98	0.500
256.5	31.1	14.4	30.6	16.9	7.78	38.3	11.7	2.06	0.442
276.5	31.8	16.3	29.1	15.9	7.47	45.8	10.5	2.18	0.348
296.5	39.2	14.7	29.3	15.7	8.11	52.8	9.2	2.32	0.296
316.5	38.4	14.8	28.4	14.7	7.58	48.0	9.1	2.33	0.305

Table A.5 $Fr_M = 84.8$. $U = 2.8$ m/s, $Re_M = 4050$, $\beta = 55°C/m$ ($N = 1.302\ s^{-1}$),

$\alpha = 2.501 \times 10^{-5}\ (m^2/s)$, $\nu = 1.7570 \times 10^{-5}\ (m^2/s)$, $Pr = 7.03$