

Table 5.18(m) Banded weather data: Southampton

Hour	Dry-bulb / °C	Incident solar irradiation / W·m ⁻²									
		Horizontal		N		NE		E		SE	
		Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse
May											
1	13.49	0	0	0	0	0	0	0	0	0	0
2	12.56	0	0	0	0	0	0	0	0	0	0
3	11.90	0	0	0	0	0	0	0	0	0	0
4	11.55	0	0	0	0	0	0	0	0	0	0
5	11.53	19	34	68	39	155	58	152	58	59	37
6	11.85	72	80	58	68	218	104	250	111	136	85
7	12.48	146	128	10	89	229	139	314	158	214	136
8	13.38	220	176	0	102	184	161	317	192	264	180
9	14.49	285	223	0	130	108	174	275	214	282	216
10	15.73	337	265	0	154	18	177	202	224	268	241
11	17.03	369	295	0	172	0	172	107	219	226	250
12	18.28	381	307	0	178	0	178	0	178	159	240
13	19.41	369	295	0	172	0	172	0	172	75	210
14	20.34	337	265	0	154	0	154	0	154	0	154
15	21.00	286	223	0	130	0	130	0	130	0	130
16	21.35	221	177	0	103	0	103	0	103	0	103
17	21.37	147	128	11	90	0	73	0	73	0	73
18	21.05	72	80	59	69	0	44	0	44	0	44
19	20.42	20	35	69	40	0	18	0	18	0	18
20	19.52	0	0	0	0	0	0	0	0	0	0
21	18.41	0	0	0	0	0	0	0	0	0	0
22	17.17	0	0	0	0	0	0	0	0	0	0
23	15.87	0	0	0	0	0	0	0	0	0	0
24	14.62	0	0	0	0	0	0	0	0	0	0

Hour	Dry-bulb / °C	Incident solar irradiation / W·m ⁻²								Altitude	Azimuth
		S		SW		W		NW			
		Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse		
1	13.49	0	0	0	0	0	0	0	0	0	14.76
2	12.56	0	0	0	0	0	0	0	0	0	28.93
3	11.90	0	0	0	0	0	0	0	0	0	42.14
4	11.55	0	0	0	0	0	0	0	0	0	54.36
5	11.53	0	17	0	17	0	17	0	17	6.64	65.82
6	11.85	0	44	0	44	0	44	0	44	15.6	76.88
7	12.48	0	73	0	73	0	73	0	73	24.97	88.09
8	13.38	57	131	0	102	0	102	0	102	34.4	100.14
9	14.49	123	177	0	130	0	130	0	130	43.43	114.04
10	15.73	177	218	0	154	0	154	0	154	51.41	131.26
11	17.03	213	247	75	210	0	172	0	172	57.22	153.37
12	18.28	225	258	159	240	0	197	0	178	59.43	180.00
13	19.41	212	247	226	250	107	219	0	172	57.24	206.64
14	20.34	177	218	268	241	202	224	18	177	51.44	228.77
15	21.00	123	177	281	216	275	215	108	174	43.47	246.00
16	21.35	56	131	264	180	317	192	184	161	34.45	259.92
17	21.37	0	73	214	136	314	158	230	139	25.03	271.97
18	21.05	0	44	136	86	251	111	219	104	15.68	283.18
19	20.42	0	18	59	37	152	58	156	59	6.74	294.25
20	19.52	0	0	0	0	0	0	0	0	0	305.71
21	18.41	0	0	0	0	0	0	0	0	0	317.93
22	17.17	0	0	0	0	0	0	0	0	0	331.13
23	15.87	0	0	0	0	0	0	0	0	0	345.27
24	14.62	0	0	0	0	0	0	0	0	0	360.00

Dirfac = 0.50; Diffac = 1.03; Maximum dry-bulb = 21.40 °C; Minimum dry-bulb = 11.50 °C; Adaptive comfort range = 22.3–26.3 °C

Table continues

Table 5.18(m) Banded weather data: Southampton — *continued*

Hour	Dry-bulb /°C	Incident solar irradiation / W·m ⁻²									
		Horizontal		N		NE		E		SE	
		Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse
June											
1	16.45	0	0	0	0	0	0	0	0	0	0
2	15.85	0	0	0	0	0	0	0	0	0	0
3	15.50	0	0	0	0	0	0	0	0	0	0
4	15.42	0	6	13	6	21	9	17	7	3	2
5	15.62	26	50	72	52	155	72	147	70	53	48
6	16.09	81	98	66	83	216	119	240	125	123	97
7	16.79	148	149	21	106	217	154	285	171	187	146
8	17.68	213	201	0	113	174	178	283	205	227	191
9	18.70	271	251	0	142	106	193	245	230	240	229
10	19.77	316	297	0	167	26	200	179	242	227	256
11	20.83	345	331	0	185	0	185	94	240	189	268
12	21.80	355	344	0	192	0	192	0	192	130	259
13	22.61	345	331	0	185	0	185	0	185	56	229
14	23.22	316	297	0	167	0	167	0	167	0	167
15	23.57	271	251	0	142	0	142	0	142	0	142
16	23.65	213	201	0	113	0	113	0	113	0	113
17	23.45	148	149	21	106	0	83	0	83	0	83
18	22.98	81	98	66	83	0	53	0	53	0	53
19	22.27	26	50	72	52	0	25	0	25	0	25
20	21.38	0	6	13	6	0	3	0	3	0	3
21	20.37	0	0	0	0	0	0	0	0	0	0
22	19.29	0	0	0	0	0	0	0	0	0	0
23	18.24	0	0	0	0	0	0	0	0	0	0
24	17.27	0	0	0	0	0	0	0	0	0	0

Hour	Dry-bulb /°C	Incident solar irradiation / W·m ⁻²								Altitude	Azimuth
		S		SW		W		NW			
		Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse		
1	16.45	0	0	0	0	0	0	0	0	0	14.20
2	15.85	0	0	0	0	0	0	0	0	0	27.87
3	15.50	0	0	0	0	0	0	0	0	0	40.70
4	15.42	0	3	0	3	0	3	0	3	1.11	52.63
5	15.62	0	25	0	25	0	25	0	25	9.14	63.85
6	16.09	0	53	0	53	0	53	0	53	17.98	74.71
7	16.79	0	83	0	83	0	83	0	83	27.29	85.70
8	17.68	37	143	0	113	0	113	0	113	36.73	97.54
9	18.70	95	190	0	142	0	142	0	142	45.88	111.28
10	19.77	143	232	0	167	0	167	0	167	54.07	128.57
11	20.83	174	263	56	229	0	185	0	185	60.18	151.48
12	21.80	184	275	130	259	0	192	0	192	62.54	180.00
13	22.61	174	263	189	268	94	240	0	185	60.18	208.52
14	23.22	143	232	227	256	179	242	26	200	54.07	231.43
15	23.57	95	190	240	229	245	230	106	193	45.87	248.72
16	23.65	37	143	227	191	283	205	174	178	36.73	262.46
17	23.45	0	83	187	146	285	171	217	154	27.28	274.29
18	22.98	0	53	123	97	240	125	216	119	17.98	285.29
19	22.27	0	25	53	48	147	70	155	72	9.14	296.15
20	21.38	0	3	3	2	16	7	21	9	1.11	307.37
21	20.37	0	0	0	0	0	0	0	0	0	319.30
22	19.29	0	0	0	0	0	0	0	0	0	332.13
23	18.24	0	0	0	0	0	0	0	0	0	345.80
24	17.27	0	0	0	0	0	0	0	0	0	360.00

Dirfac = 0.45; Diffac = 1.09; Maximum dry-bulb = 23.66 °C; Minimum dry-bulb = 15.41 °C; Adaptive comfort range = 23.3–27.3 °C

Table continues

Table 5.18(m) Banded weather data: Southampton — *continued*

Hour	Dry-bulb /°C	Incident solar irradiation / W·m ⁻²									
		Horizontal		N		NE		E		SE	
		Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse
July											
1	18.61	0	0	0	0	0	0	0	0	0	0
2	17.90	0	0	0	0	0	0	0	0	0	0
3	17.31	0	0	0	0	0	0	0	0	0	0
4	16.87	0	0	0	0	0	0	0	0	0	0
5	16.62	8	35	29	32	66	40	65	40	25	31
6	16.56	30	83	24	65	93	81	106	84	58	72
7	16.71	62	133	4	95	98	117	134	126	92	116
8	17.06	94	184	0	93	78	148	136	162	114	157
9	17.58	122	233	0	118	46	174	118	193	121	194
10	18.23	144	277	0	140	7	193	87	215	116	223
11	18.97	158	308	0	156	0	156	46	225	98	240
12	19.76	163	320	0	162	0	162	0	162	69	240
13	20.53	158	308	0	156	0	156	0	156	33	222
14	21.24	144	276	0	140	0	140	0	140	0	140
15	21.83	122	233	0	118	0	118	0	118	0	118
16	22.27	94	184	0	93	0	93	0	93	0	93
17	22.52	62	133	4	94	0	67	0	67	0	67
18	22.58	30	82	24	64	0	40	0	40	0	40
19	22.43	8	34	29	31	0	16	0	16	0	16
20	22.08	0	0	0	0	0	0	0	0	0	0
21	21.56	0	0	0	0	0	0	0	0	0	0
22	20.91	0	0	0	0	0	0	0	0	0	0
23	20.17	0	0	0	0	0	0	0	0	0	0
24	19.38	0	0	0	0	0	0	0	0	0	0

Hour	Dry-bulb /°C	Incident solar irradiation / W·m ⁻²								Altitude	Azimuth
		S		SW		W		NW			
		Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse		
1	18.61	0	0	0	0	0	0	0	0	0	14.80
2	17.90	0	0	0	0	0	0	0	0	0	29.01
3	17.31	0	0	0	0	0	0	0	0	0	42.25
4	16.87	0	0	0	0	0	0	0	0	0	54.51
5	16.62	0	17	0	17	0	17	0	17	6.43	65.99
6	16.56	0	41	0	41	0	41	0	41	15.38	77.08
7	16.71	0	67	0	67	0	67	0	67	24.74	88.32
8	17.06	25	135	0	93	0	93	0	93	34.15	100.40
9	17.58	53	176	0	118	0	118	0	118	43.16	114.33
10	18.23	77	212	0	140	0	140	0	140	51.09	131.55
11	18.97	92	238	33	222	0	156	0	156	56.86	153.58
12	19.76	98	248	69	240	0	221	0	162	59.03	180.00
13	20.53	92	238	98	240	46	225	0	156	56.84	206.42
14	21.24	77	212	116	222	87	215	7	193	51.06	228.42
15	21.83	54	176	122	193	118	193	46	174	43.12	245.62
16	22.27	25	135	114	157	136	162	78	148	34.1	259.55
17	22.52	0	67	92	116	134	126	98	117	24.68	271.62
18	22.58	0	40	58	72	106	83	92	80	15.3	282.85
19	22.43	0	16	25	30	64	40	66	40	6.33	293.94
20	22.08	0	0	0	0	0	0	0	0	0	305.42
21	21.56	0	0	0	0	0	0	0	0	0	317.68
22	20.91	0	0	0	0	0	0	0	0	0	330.94
23	20.17	0	0	0	0	0	0	0	0	0	345.16
24	19.38	0	0	0	0	0	0	0	0	0	360.00

Dirfac = 0.21; Diffac = 1.08; Maximum dry-bulb = 22.58 °C; Minimum dry-bulb = 16.56 °C; Adaptive comfort range = 23.2–27.2 °C

Table continues

Table 5.18(m) Banded weather data: Southampton — *continued*

Hour	Dry-bulb /°C	Incident solar irradiation / W·m ⁻²									
		Horizontal		N		NE		E		SE	
		Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse
August											
1	17.06	0	0	0	0	0	0	0	0	0	0
2	16.90	0	0	0	0	0	0	0	0	0	0
3	16.93	0	0	0	0	0	0	0	0	0	0
4	17.14	0	0	0	0	0	0	0	0	0	0
5	17.53	0	0	0	0	0	0	0	0	0	0
6	18.06	12	49	10	38	65	51	82	56	51	48
7	18.70	42	104	0	52	84	94	130	106	99	98
8	19.41	77	158	0	80	70	128	143	147	132	144
9	20.13	108	208	0	106	36	154	129	178	146	183
10	20.82	133	251	0	128	0	128	96	199	142	212
11	21.43	149	281	0	143	0	143	51	207	123	227
12	21.92	154	291	0	148	0	148	0	148	91	226
13	22.26	149	280	0	143	0	143	0	143	51	207
14	22.42	133	250	0	127	0	127	0	127	7	175
15	22.39	108	208	0	105	0	105	0	105	0	105
16	22.18	77	157	0	79	0	79	0	79	0	79
17	21.79	42	103	0	51	0	51	0	51	0	51
18	21.26	12	48	10	37	0	23	0	23	0	23
19	20.62	0	0	0	0	0	0	0	0	0	0
20	19.92	0	0	0	0	0	0	0	0	0	0
21	19.19	0	0	0	0	0	0	0	0	0	0
22	18.50	0	0	0	0	0	0	0	0	0	0
23	17.89	0	0	0	0	0	0	0	0	0	0
24	17.40	0	0	0	0	0	0	0	0	0	0

Hour	Dry-bulb /°C	Incident solar irradiation / W·m ⁻²								Altitude	Azimuth
		S		SW		W		NW			
		Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse		
1	17.06	0	0	0	0	0	0	0	0	0	16.52
2	16.90	0	0	0	0	0	0	0	0	0	32.17
3	16.93	0	0	0	0	0	0	0	0	0	46.49
4	17.14	0	0	0	0	0	0	0	0	0	59.48
5	17.53	0	0	0	0	0	0	0	0	0	71.50
6	18.06	0	24	0	24	0	24	0	24	8.48	83.04
7	18.70	11	76	0	52	0	52	0	52	17.91	94.67
8	19.41	44	121	0	80	0	80	0	80	27.18	107.09
9	20.13	78	165	0	106	0	106	0	106	35.79	121.14
10	20.82	105	202	7	175	0	128	0	128	43.08	137.76
11	21.43	123	227	51	207	0	143	0	143	48.14	157.61
12	21.92	129	237	91	226	0	200	0	148	49.97	180.00
13	22.26	123	227	123	227	51	207	0	143	48.11	202.38
14	22.42	105	202	142	212	96	199	0	127	43.03	222.21
15	22.39	78	165	146	183	129	178	36	153	35.72	238.81
16	22.18	44	121	133	144	143	147	70	128	27.09	252.83
17	21.79	11	75	99	98	129	105	84	94	17.8	265.23
18	21.26	0	23	51	47	82	55	65	51	8.35	276.85
19	20.62	0	0	0	0	0	0	0	0	0	288.37
20	19.92	0	0	0	0	0	0	0	0	0	300.39
21	19.19	0	0	0	0	0	0	0	0	0	313.39
22	18.50	0	0	0	0	0	0	0	0	0	327.72
23	17.89	0	0	0	0	0	0	0	0	0	343.41
24	17.40	0	0	0	0	0	0	0	0	0	360.00

Dirfac = 0.23; Diffac = 1.16; Maximum dry-bulb = 22.43 °C; Minimum dry-bulb = 16.89 °C; Adaptive comfort range = 23.1–27.1 °C

Table continues

Table 5.18(m) Banded weather data: Southampton — *continued*

Hour	Dry-bulb /°C	Incident solar irradiation / W·m ⁻²									
		Horizontal		N		NE		E		SE	
		Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse
September											
1	14.06	0	0	0	0	0	0	0	0	0	0
2	13.61	0	0	0	0	0	0	0	0	0	0
3	13.44	0	0	0	0	0	0	0	0	0	0
4	13.56	0	0	0	0	0	0	0	0	0	0
5	13.97	0	0	0	0	0	0	0	0	0	0
6	14.63	0	0	0	0	1	1	2	1	1	1
7	15.50	24	41	0	21	79	44	141	55	121	51
8	16.52	73	80	0	44	78	71	199	93	203	94
9	17.62	123	114	0	65	31	87	195	118	244	127
10	18.72	163	143	0	82	0	82	149	130	247	148
11	19.76	189	162	0	93	0	93	80	130	221	157
12	20.66	198	169	0	97	0	97	0	97	172	152
13	21.36	189	162	0	93	0	93	0	93	107	135
14	21.81	163	143	0	81	0	81	0	81	36	108
15	21.97	123	114	0	64	0	64	0	64	0	64
16	21.85	72	79	0	43	0	43	0	43	0	43
17	21.45	24	40	0	21	0	21	0	21	0	21
18	20.79	0	0	0	0	0	0	0	0	0	0
19	19.92	0	0	0	0	0	0	0	0	0	0
20	18.90	0	0	0	0	0	0	0	0	0	0
21	17.80	0	0	0	0	0	0	0	0	0	0
22	16.69	0	0	0	0	0	0	0	0	0	0
23	15.65	0	0	0	0	0	0	0	0	0	0
24	14.76	0	0	0	0	0	0	0	0	0	0

Hour	Dry-bulb /°C	Incident solar irradiation / W·m ⁻²								Altitude	Azimuth
		S		SW		W		NW			
		Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse		
1	14.06	0	0	0	0	0	0	0	0	0	18.99
2	13.61	0	0	0	0	0	0	0	0	0	36.55
3	13.44	0	0	0	0	0	0	0	0	0	52.08
4	13.56	0	0	0	0	0	0	0	0	0	65.76
5	13.97	0	0	0	0	0	0	0	0	0	78.15
6	14.63	0	0	0	0	0	0	0	0	0.12	89.91
7	15.50	29	35	0	21	0	21	0	21	9.5	101.66
8	16.52	89	73	0	44	0	44	0	44	18.48	114.06
9	17.62	151	109	0	65	0	65	0	65	26.57	127.76
10	18.72	200	139	36	108	0	82	0	82	33.18	143.31
11	19.76	232	159	107	135	0	93	0	93	37.6	160.93
12	20.66	243	166	172	152	0	118	0	97	39.15	180.00
13	21.36	232	159	221	157	80	129	0	93	37.56	199.06
14	21.81	200	139	247	148	149	129	0	81	33.12	216.66
15	21.97	151	109	244	127	194	117	31	87	26.49	232.19
16	21.85	89	73	203	94	198	93	77	71	18.37	245.86
17	21.45	29	34	120	51	140	55	79	43	9.37	258.23
18	20.79	0	0	0	0	0	0	0	0	0	269.97
19	19.92	0	0	0	0	0	0	0	0	0	281.71
20	18.90	0	0	0	0	0	0	0	0	0	294.09
21	17.80	0	0	0	0	0	0	0	0	0	307.76
22	16.69	0	0	0	0	0	0	0	0	0	323.30
23	15.65	0	0	0	0	0	0	0	0	0	340.92
24	14.76	0	0	0	0	0	0	0	0	0	360.00

Dirfac = 0.39; Diffac = 0.86; Maximum dry-bulb = 21.98 °C; Minimum dry-bulb = 13.44 °C; Adaptive comfort range = 22.6–26.6 °C