

Table 5.18(j) Banded weather data: Norwich

Hour	Dry-bulb / °C	Incident solar irradiation / W·m <sup>-2</sup>									
		Horizontal		N		NE		E		SE	
		Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse
<b>May</b>											
1	10.13	0	0	0	0	0	0	0	0	0	0
2	9.44	0	0	0	0	0	0	0	0	0	0
3	9.09	0	0	0	0	0	0	0	0	0	0
4	9.10	0	0	0	0	0	0	0	0	0	0
5	9.48	25	35	79	41	181	62	177	62	70	39
6	10.19	85	76	65	67	251	105	290	113	159	86
7	11.19	167	120	7	83	258	136	358	157	249	134
8	12.42	248	163	0	99	203	154	360	188	306	176
9	13.78	320	205	0	125	115	161	313	206	327	209
10	15.19	375	241	0	147	11	160	229	211	313	231
11	16.54	411	267	0	163	0	163	121	202	266	237
12	17.76	423	277	0	169	0	169	0	169	190	225
13	18.74	411	267	0	163	0	163	0	163	94	196
14	19.43	376	241	0	147	0	147	0	147	0	147
15	19.79	320	205	0	125	0	125	0	125	0	125
16	19.77	249	163	0	99	0	99	0	99	0	99
17	19.40	168	120	7	83	0	71	0	71	0	71
18	18.68	86	77	65	67	0	44	0	44	0	44
19	17.68	26	36	79	42	0	19	0	19	0	19
20	16.46	0	0	0	0	0	0	0	0	0	0
21	15.09	0	0	0	0	0	0	0	0	0	0
22	13.69	0	0	0	0	0	0	0	0	0	0
23	12.33	0	0	0	0	0	0	0	0	0	0
24	11.12	0	0	0	0	0	0	0	0	0	0

Hour	Dry-bulb / °C	Incident solar irradiation / W·m <sup>-2</sup>								Altitude	Azimuth
		S		SW		W		NW			
		Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse		
1	10.13	0	0	0	0	0	0	0	0	0	14.62
2	9.44	0	0	0	0	0	0	0	0	0	28.72
3	9.09	0	0	0	0	0	0	0	0	0	41.97
4	9.10	0	0	0	0	0	0	0	0	0	54.34
5	9.48	0	19	0	19	0	19	0	19	7.4	66.03
6	10.19	0	43	0	43	0	43	0	43	16.02	77.40
7	11.19	0	71	0	71	0	71	0	71	25.02	88.95
8	12.42	72	125	0	99	0	99	0	99	34.05	101.38
9	13.78	150	169	0	125	0	125	0	125	42.65	115.62
10	15.19	213	208	0	147	0	147	0	147	50.16	132.95
11	16.54	255	235	95	196	0	163	0	163	55.55	154.59
12	17.76	269	245	190	225	0	179	0	169	57.57	180.00
13	18.74	255	235	266	237	121	202	0	163	55.56	205.41
14	19.43	213	208	313	231	229	212	11	160	50.19	227.07
15	19.79	150	169	327	210	313	206	115	162	42.69	244.42
16	19.77	72	125	306	176	360	188	204	154	34.1	258.67
17	19.40	0	71	249	134	358	158	258	136	25.08	271.10
18	18.68	0	44	159	86	291	114	252	106	16.09	282.67
19	17.68	0	19	70	40	178	62	182	63	7.5	294.04
20	16.46	0	0	0	0	0	0	0	0	0	305.73
21	15.09	0	0	0	0	0	0	0	0	0	318.10
22	13.69	0	0	0	0	0	0	0	0	0	331.34
23	12.33	0	0	0	0	0	0	0	0	0	345.41
24	11.12	0	0	0	0	0	0	0	0	0	360.00

Dirfac = 0.57; Diffac = 0.96; Maximum dry-bulb = 19.83 °C; Minimum dry-bulb = 9.05 °C; Adaptive comfort range = 21.7–25.7 °C

Table continues

**Table 5.18(j)** Banded weather data: Norwich — *continued*

Hour	Dry-bulb /°C	Incident solar irradiation / W·m <sup>-2</sup>									
		Horizontal		N		NE		E		SE	
		Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse
<b>June</b>											
1	14.69	0	0	0	0	0	0	0	0	0	0
2	14.04	0	0	0	0	0	0	0	0	0	0
3	13.64	0	0	0	0	0	0	0	0	0	0
4	13.50	1	13	9	12	15	18	12	15	2	4
5	13.64	11	56	28	47	60	55	57	55	21	46
6	14.04	31	104	24	80	81	94	91	97	47	86
7	14.69	55	155	6	111	80	130	106	137	71	128
8	15.53	79	207	0	102	63	162	105	173	86	168
9	16.50	99	257	0	127	37	190	91	204	91	205
10	17.55	115	301	0	149	7	212	66	229	87	235
11	18.60	125	334	0	165	0	165	35	242	73	254
12	19.58	129	346	0	171	0	171	0	171	51	256
13	20.41	125	334	0	165	0	165	0	165	24	239
14	21.06	115	301	0	149	0	149	0	149	0	149
15	21.46	99	257	0	127	0	127	0	127	0	127
16	21.60	79	207	0	102	0	102	0	102	0	102
17	21.46	55	155	6	111	0	76	0	76	0	76
18	21.06	31	104	24	80	0	51	0	51	0	51
19	20.41	11	56	28	47	0	27	0	27	0	27
20	19.57	1	13	9	12	0	6	0	6	0	6
21	18.60	0	0	0	0	0	0	0	0	0	0
22	17.55	0	0	0	0	0	0	0	0	0	0
23	16.50	0	0	0	0	0	0	0	0	0	0
24	15.52	0	0	0	0	0	0	0	0	0	0

Hour	Dry-bulb /°C	Incident solar irradiation / W·m <sup>-2</sup>								Altitude	Azimuth
		S		SW		W		NW			
		Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse		
1	14.69	0	0	0	0	0	0	0	0	0	14.09
2	14.04	0	0	0	0	0	0	0	0	0	27.71
3	13.64	0	0	0	0	0	0	0	0	0	40.59
4	13.50	0	6	0	6	0	6	0	6	2.24	52.67
5	13.64	0	27	0	27	0	27	0	27	9.96	64.13
6	14.04	0	51	0	51	0	51	0	51	18.46	75.30
7	14.69	0	76	0	76	0	76	0	76	27.41	86.66
8	15.53	16	150	0	102	0	102	0	102	36.46	98.91
9	16.50	39	190	0	127	0	127	0	127	45.17	113.03
10	17.55	57	226	0	149	0	149	0	149	52.89	130.50
11	18.60	68	252	24	239	0	165	0	165	58.53	152.94
12	19.58	72	262	51	256	0	171	0	171	60.68	180.00
13	20.41	68	252	73	254	35	242	0	165	58.53	207.06
14	21.06	57	226	87	235	66	229	7	212	52.89	229.49
15	21.46	39	190	91	205	91	204	37	190	45.17	246.97
16	21.60	16	150	86	168	105	173	63	162	36.46	261.09
17	21.46	0	76	71	128	106	137	80	130	27.41	273.33
18	21.06	0	51	47	86	91	97	81	94	18.46	284.70
19	20.41	0	27	21	46	57	55	60	55	9.96	295.87
20	19.57	0	6	2	4	12	15	15	18	2.24	307.33
21	18.60	0	0	0	0	0	0	0	0	0	319.41
22	17.55	0	0	0	0	0	0	0	0	0	332.29
23	16.50	0	0	0	0	0	0	0	0	0	345.91
24	15.52	0	0	0	0	0	0	0	0	0	360.00

Dirfac = 0.17; Diffac = 1.13; Maximum dry-bulb = 21.60 °C; Minimum dry-bulb = 13.50 °C; Adaptive comfort range = 22.6–26.6 °C

*Table continues*

**Table 5.18(j)** Banded weather data: Norwich — *continued*

Hour	Dry-bulb /°C	Incident solar irradiation / W·m <sup>-2</sup>									
		Horizontal		N		NE		E		SE	
		Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse
<b>July</b>											
1	14.08	0	0	0	0	0	0	0	0	0	0
2	13.63	0	0	0	0	0	0	0	0	0	0
3	13.50	0	0	0	0	0	0	0	0	0	0
4	13.71	0	0	0	0	0	0	0	0	0	0
5	14.23	19	38	60	41	138	59	136	59	54	40
6	15.04	64	84	49	70	191	103	221	110	122	87
7	16.08	127	132	4	91	197	137	275	156	191	136
8	17.28	189	181	0	101	155	160	277	189	236	179
9	18.55	244	227	0	128	88	173	241	212	253	215
10	19.81	287	268	0	151	8	178	176	223	242	240
11	20.98	314	297	0	167	0	167	93	219	206	250
12	21.97	324	308	0	173	0	173	0	173	148	241
13	22.71	314	297	0	167	0	167	0	167	74	214
14	23.16	287	267	0	151	0	151	0	151	0	151
15	23.29	244	227	0	128	0	128	0	128	0	128
16	23.08	189	181	0	101	0	101	0	101	0	101
17	22.56	126	132	4	91	0	73	0	73	0	73
18	21.75	64	84	48	69	0	45	0	45	0	45
19	20.71	18	38	59	41	0	19	0	19	0	19
20	19.51	0	0	0	0	0	0	0	0	0	0
21	18.24	0	0	0	0	0	0	0	0	0	0
22	16.98	0	0	0	0	0	0	0	0	0	0
23	15.82	0	0	0	0	0	0	0	0	0	0
24	14.83	0	0	0	0	0	0	0	0	0	0

Hour	Dry-bulb /°C	Incident solar irradiation / W·m <sup>-2</sup>								Altitude	Azimuth
		S		SW		W		NW			
		Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse		
1	13.59	0	0	0	0	0	0	0	0	0	14.66
2	13.52	0	0	0	0	0	0	0	0	0	28.79
3	13.75	0	0	0	0	0	0	0	0	0	42.07
4	14.25	0	0	0	0	0	0	0	0	0	54.47
5	14.98	0	19	0	19	0	19	0	19	7.18	66.19
6	15.89	0	45	0	45	0	45	0	45	15.79	77.59
7	16.95	0	73	0	73	0	73	0	73	24.78	89.18
8	18.09	57	135	0	101	0	101	0	101	33.79	101.63
9	19.25	117	180	0	128	0	128	0	128	42.37	115.89
10	20.36	166	220	0	151	0	151	0	151	49.84	133.22
11	21.36	198	248	74	214	0	167	0	167	55.18	154.78
12	22.19	209	258	148	241	0	200	0	173	57.17	180.00
13	22.81	198	247	206	250	93	219	0	167	55.17	205.21
14	23.19	166	220	242	240	176	222	7	178	49.81	226.76
15	23.29	117	180	253	215	241	212	87	173	42.33	244.07
16	23.03	57	135	236	179	277	189	155	159	33.74	258.32
17	22.38	0	73	192	135	275	155	197	137	24.71	270.76
18	21.40	0	45	122	87	221	110	190	103	15.71	282.34
19	20.16	0	19	54	39	135	58	138	59	7.08	293.74
20	18.77	0	0	0	0	0	0	0	0	0	305.45
21	17.35	0	0	0	0	0	0	0	0	0	317.86
22	16.01	0	0	0	0	0	0	0	0	0	331.16
23	14.88	0	0	0	0	0	0	0	0	0	345.31
24	14.05	0	0	0	0	0	0	0	0	0	360.00

Dirfac = 0.44; Diffac = 1.07; Maximum dry-bulb = 23.29 °C; Minimum dry-bulb = 13.5 °C; Adaptive comfort range = 22.9–26.9 °C

*Table continues*

Table 5.18(j) Banded weather data: Norwich — *continued*

Hour	Dry-bulb / °C	Incident solar irradiation / W·m <sup>-2</sup>									
		Horizontal		N		NE		E		SE	
		Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse
<b>August</b>											
1	16.37	0	0	0	0	0	0	0	0	0	0
2	16.16	0	0	0	0	0	0	0	0	0	0
3	16.15	0	0	0	0	0	0	0	0	0	0
4	16.36	0	0	0	0	0	0	0	0	0	0
5	16.78	0	0	0	0	0	0	0	0	0	0
6	17.37	16	47	12	37	84	53	106	58	66	49
7	18.09	53	96	0	49	105	92	164	106	127	97
8	18.89	95	144	0	75	86	121	181	144	169	141
9	19.72	134	189	0	100	42	141	162	171	187	177
10	20.53	164	227	0	120	0	120	121	186	183	202
11	21.25	183	253	0	134	0	134	64	189	160	214
12	21.84	189	262	0	139	0	139	0	139	120	210
13	22.26	183	253	0	134	0	134	0	134	69	190
14	22.48	163	227	0	120	0	120	0	120	13	158
15	22.48	133	189	0	99	0	99	0	99	0	99
16	22.27	95	144	0	75	0	75	0	75	0	75
17	21.86	52	96	0	49	0	49	0	49	0	49
18	21.27	16	47	12	36	0	23	0	23	0	23
19	20.55	0	0	0	0	0	0	0	0	0	0
20	19.75	0	0	0	0	0	0	0	0	0	0
21	18.91	0	0	0	0	0	0	0	0	0	0
22	18.11	0	0	0	0	0	0	0	0	0	0
23	17.38	0	0	0	0	0	0	0	0	0	0
24	16.79	0	0	0	0	0	0	0	0	0	0

  

Hour	Dry-bulb / °C	Incident solar irradiation / W·m <sup>-2</sup>								Altitude	Azimuth
		S		SW		W		NW			
		Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse		
1	16.37	0	0	0	0	0	0	0	0	0	16.27
2	16.16	0	0	0	0	0	0	0	0	0	31.77
3	16.15	0	0	0	0	0	0	0	0	0	46.10
4	16.36	0	0	0	0	0	0	0	0	0	59.24
5	16.78	0	0	0	0	0	0	0	0	0	71.49
6	17.37	0	23	0	23	0	23	0	23	8.7	83.32
7	18.09	15	71	0	49	0	49	0	49	17.75	95.27
8	18.89	59	114	0	75	0	75	0	75	26.62	107.99
9	19.72	103	156	0	100	0	100	0	100	34.81	122.26
10	20.53	138	191	12	159	0	120	0	120	41.69	138.89
11	21.25	162	215	69	190	0	134	0	134	46.41	158.37
12	21.84	170	223	120	210	0	179	0	139	48.11	180.00
13	22.26	162	215	160	214	64	189	0	134	46.39	201.62
14	22.48	138	191	183	202	121	186	0	120	41.64	221.08
15	22.48	103	155	187	177	162	170	42	140	34.74	237.69
16	22.27	59	114	169	141	181	143	86	121	26.52	251.93
17	21.86	15	71	127	97	164	106	105	92	17.64	264.64
18	21.27	0	23	66	49	106	58	83	53	8.57	276.58
19	20.55	0	0	0	0	0	0	0	0	0	288.39
20	19.75	0	0	0	0	0	0	0	0	0	300.64
21	18.91	0	0	0	0	0	0	0	0	0	313.78
22	18.11	0	0	0	0	0	0	0	0	0	328.13
23	17.38	0	0	0	0	0	0	0	0	0	343.67
24	16.79	0	0	0	0	0	0	0	0	0	360.00

Dirfac = 0.30; Diffac = 1.09; Maximum dry-bulb = 22.51 °C; Minimum dry-bulb = 16.13 °C; Adaptive comfort range = 23.2–27.2 °C

*Table continues*

Table 5.18(j) Banded weather data: Norwich — *continued*

Hour	Dry-bulb /°C	Incident solar irradiation / W·m <sup>-2</sup>									
		Horizontal		N		NE		E		SE	
		Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse
<b>September</b>											
1	12.17	0	0	0	0	0	0	0	0	0	0
2	12.00	0	0	0	0	0	0	0	0	0	0
3	12.17	0	0	0	0	0	0	0	0	0	0
4	12.68	0	0	0	0	0	0	0	0	0	0
5	13.49	0	0	0	0	0	0	0	0	0	0
6	14.55	0	1	0	0	2	1	2	1	2	1
7	15.78	26	50	0	26	88	56	158	73	136	67
8	17.10	78	98	0	52	85	88	222	120	229	122
9	18.42	133	141	0	77	32	103	219	148	278	163
10	19.65	177	175	0	98	0	98	168	160	283	188
11	20.71	205	199	0	111	0	111	91	156	254	196
12	21.52	214	207	0	116	0	116	0	116	199	188
13	22.03	205	198	0	111	0	111	0	111	126	164
14	22.20	176	175	0	98	0	98	0	98	45	129
15	22.03	132	140	0	77	0	77	0	77	0	77
16	21.52	77	97	0	52	0	52	0	52	0	52
17	20.71	25	50	0	25	0	25	0	25	0	25
18	19.65	0	0	0	0	0	0	0	0	0	0
19	18.42	0	0	0	0	0	0	0	0	0	0
20	17.10	0	0	0	0	0	0	0	0	0	0
21	15.78	0	0	0	0	0	0	0	0	0	0
22	14.55	0	0	0	0	0	0	0	0	0	0
23	13.49	0	0	0	0	0	0	0	0	0	0
24	12.68	0	0	0	0	0	0	0	0	0	0

  

Hour	Dry-bulb /°C	Incident solar irradiation / W·m <sup>-2</sup>								Altitude	Azimuth
		S		SW		W		NW			
		Direct	Diffuse	Direct	Diffuse	Direct	Diffuse	Direct	Diffuse		
1	12.17	0	0	0	0	0	0	0	0	0	18.55
2	12.00	0	0	0	0	0	0	0	0	0	35.86
3	12.17	0	0	0	0	0	0	0	0	0	51.37
4	12.68	0	0	0	0	0	0	0	0	0	65.21
5	13.49	0	0	0	0	0	0	0	0	0	77.86
6	14.55	0	0	0	0	0	0	0	0	0.12	89.91
7	15.78	34	43	0	26	0	26	0	26	9.12	101.96
8	17.10	102	92	0	52	0	52	0	52	17.71	114.62
9	18.42	174	137	0	77	0	77	0	77	25.42	128.47
10	19.65	232	175	45	129	0	98	0	98	31.68	144.01
11	20.71	269	200	126	164	0	111	0	111	35.84	161.38
12	21.52	282	209	199	188	0	138	0	116	37.29	180.00
13	22.03	269	200	254	196	91	155	0	111	35.8	198.61
14	22.20	232	175	283	187	168	159	0	98	31.62	215.96
15	22.03	174	137	277	162	218	148	32	103	25.34	231.48
16	21.52	102	91	228	121	221	119	85	87	17.6	245.31
17	20.71	34	43	135	67	157	72	87	56	8.99	257.94
18	19.65	0	0	0	0	0	0	0	0	0	269.97
19	18.42	0	0	0	0	0	0	0	0	0	282.00
20	17.10	0	0	0	0	0	0	0	0	0	294.64
21	15.78	0	0	0	0	0	0	0	0	0	308.47
22	14.55	0	0	0	0	0	0	0	0	0	324.00
23	13.49	0	0	0	0	0	0	0	0	0	341.37
24	12.68	0	0	0	0	0	0	0	0	0	360.00

Dirfac = 0.44; Diffac = 1.11; Maximum dry-bulb = 22.20 °C; Minimum dry-bulb = 12.00 °C; Adaptive comfort range = 22.4–26.4 °C