



Dirección Meteorológica de Chile
Subdepartamento de Climatología y Meteorología Aplicada



Informe Solarimétrico II Semestre 2013



11 ó más	8 - 10	6 - 7	3 - 5	1 - 5
Extremo	Muy Alto	Alto	Moderado	Bajo

Chile

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: JULY		Year: 2013		Country: CHILE
Daily Totals				
Latitude	18°21' S	22°29' S	23°26' S	27°15'S
Longitude	70°19'W	68°54' W	70°26' W	70°46'W
Elevation	58 m	2270 m	135 m	204 m
Station	ARICA	CALAMA	ANTOFAGASTA	CALDERA
Date				
1	10.89	16.67	.	.
2	11.08	16.72	13.58	.
3	12.45	16.74	15.19	.
4	12.62	16.41	13.48	.
5	12.73	15.31	15.48	.
6	11.01	16.42	15.59	.
7	10.65	14.36	13.99	.
8	8.62	15.80	12.15	.
9	12.84	16.09	14.84	.
10	4.20	16.23	9.91	.
11	6.82	16.35	13.78	.
12	6.91	16.64	12.71	.
13	9.30	16.94	14.02	.
14	10.38	17.15	14.74	.
15	12.31	17.21	16.33	.
16	12.15	17.10	15.19	.
17	10.23	16.86	15.30	.
18	12.79	16.56	14.20	.
19	6.36	8.78	10.72	.
20	12.05	16.10	16.57	.
21	4.41	16.47	17.08	.
22	5.79	16.73	17.66	.
23	7.99	17.53	17.69	.
24	10.20	17.31	16.87	.
25	13.77	17.24	15.03	.
26	15.95	7.51	12.48	.
27	11.48	16.65	15.74	.
28	13.66	17.15	11.67	.
29	9.13	17.10	8.26	.
30	5.98	16.93	13.92	.
31	5.90	17.42	11.16	.
TT Monthly Totals	310.63	498.46	.	.
Daily Means	10.02	16.08	14.18	.
SS Monthly Totals				
Daily Means				
Types of	PYRANOMETER	PYRANOMETER	PYRANOMETER	PYRANOMETER
Instruments	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: JULY		Year: 2013		Country: CHILE	
Daily Totals					
Latitude	33°27' S	41°25' S	45°35' S	53°00' S	
Longitude	70°42' W	73°05' W	72°07' W	70°51' W	
Elevation	520 m	85 m	310 m	37 m	
Station					
Date	QUINTA NORMAL	PUERTO MONTT	COYHAIQUE	PUNTA ARENAS	
1	9.04	0.78	0.22	1.05	
2	4.70	1.67	2.85	2.21	
3	1.48	5.49	1.44	1.93	
4	3.72	5.10	3.51	2.23	
5	2.08	6.84	2.32	2.76	
6	2.69	4.19	1.54	1.75	
7	5.58	7.21	2.15	2.11	
8	4.91	3.53	1.88	2.56	
9	5.95	0.76	2.69	0.93	
10	3.29	1.75	2.19	1.95	
11	8.94	4.41	3.40	2.14	
12	9.36	1.13	0.56	2.40	
13	9.30	5.39	4.66	2.91	
14	9.36	2.13	3.41	1.93	
15	9.72	1.20	2.67	3.10	
16	9.92	1.36	2.22	3.24	
17	9.79	5.96	1.74	2.65	
18	5.71	5.78	5.52	3.43	
19	2.91	4.44	4.98	2.89	
20	3.08	7.58	4.83	3.43	
21	7.70	8.63	7.17	1.35	
22	10.89	2.37	2.43	3.73	
23	10.20	2.82	5.79	0.79	
24	10.82	3.61	3.95	3.81	
25	10.10	4.14	4.09	3.42	
26	4.01	6.27	6.12	2.80	
27	9.14	8.38	4.94	3.70	
28	7.10	2.85	5.94	2.49	
29	1.92	8.62	1.97	4.03	
30	6.92	3.59	3.16	3.76	
31	10.56	6.56	3.10	2.90	
TT Monthly Totals	210.87	134.51	103.46	80.36	
Daily Means	6.80	4.34	3.34	2.59	
SS Monthly Totals					
Daily Means					
Types of	PYRANOMETER	PYRANOMETER	PYRANOMETER	PYRANOMETER	
Instruments	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: AUGUST		Year: 2013		Country: CHILE	
Daily Totals					
Latitude	18°21' S	22°29' S	23°26' S	27°15'S	
Longitude	70°19'W	68°54' W	70°26' W	70°46'W	
Elevation	58 m	2270 m	135 m	204 m	
Station	ARICA	CALAMA	ANTOFAGASTA	CALDERA	
Date					
1	8.73	17.72	15.20	.	
2	7.38	17.79	16.69	.	
3	11.31	18.13	18.64	.	
4	6.58	18.60	16.73	.	
5	11.35	18.92	15.75	.	
6	13.90	18.87	16.90	.	
7	13.80	18.71	17.02	.	
8	9.52	19.06	16.47	.	
9	10.99	18.74	16.12	.	
10	0.00	19.29	18.14	.	
11	0.00	19.48	16.42	.	
12	0.00	19.60	16.52	.	
13	0.00	19.72	17.91	.	
14	0.00	20.01	17.79	.	
15	0.00	20.08	18.78	.	
16	0.00	20.42	18.12	.	
17	0.00	20.27	14.61	.	
18	0.00	20.13	17.96	.	
19	0.00	20.17	19.47	.	
20	0.00	20.05	18.76	.	
21	0.00	20.42	18.08	.	
22	0.00	19.29	14.39	.	
23	0.00	20.00	9.75	.	
24	0.00	7.12	5.31	.	
25	0.00	14.81	19.08	.	
26	0.00	22.24	20.22	.	
27	0.00	22.54	20.23	.	
28	0.00	17.90	19.85	.	
29	0.00	19.60	16.24	.	
30	0.00	22.07	20.60	.	
31	0.00	22.46	16.43	.	
TT Monthly Totals	93.54	594.19	524.15	.	
Daily Means	3.02	19.17	16.91	.	
SS Monthly Totals					
Daily Means					
Types of	PYRANOMETER	PYRANOMETER	PYRANOMETER	PYRANOMETER	
Instruments	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: AUGUST		Year: 2013		Country: CHILE	
Daily Totals					
Latitude	33°27' S	41°25' S	45°35' S	53°00' S	
Longitude	70°42' W	73°05' W	72°07' W	70°51' W	
Elevation	520 m	85 m	310 m	37 m	
Station					
Date	QUINTA NORMAL	PUERTO MONTT	COYHAIQUE	PUNTA ARENAS	
1	9.02	5.20	6.53	1.20	
2	11.12	2.55	3.61	2.09	
3	6.10	4.74	3.05	1.65	
4	7.40	2.21	0.82	3.67	
5	10.80	2.10	5.16	2.23	
6	2.08	1.73	2.81	3.70	
7	1.66	7.98	6.16	4.57	
8	7.63	6.47	7.56	4.84	
9	12.32	5.22	3.76	1.25	
10	11.61	3.12	6.15	5.78	
11	2.07	5.23	8.08	4.31	
12	6.28	8.01	5.99	5.53	
13	12.54	9.81	5.07	5.26	
14	12.75	3.44	2.24	3.93	
15	12.91	9.41	2.27	2.92	
16	12.94	8.07	4.18	4.18	
17	13.45	8.39	4.93	5.92	
18	13.43	2.33	0.76	1.06	
19	8.76	7.75	2.00	3.46	
20	13.02	3.66	4.65	4.26	
21	12.20	6.69	8.22	6.87	
22	11.63	11.74	6.05	6.22	
23	7.99	13.59	9.80	7.80	
24	12.24	13.19	11.93	8.24	
25	8.07	13.00	6.72	6.58	
26	13.88	2.78	3.89	1.18	
27	14.28	3.47	8.40	6.15	
28	14.74	5.09	2.84	7.79	
29	8.58	5.88	1.40	9.20	
30	2.09	3.39	5.09	9.67	
31	11.23	3.80	5.09	9.49	
TT Monthly Totals	304.84	190.01	155.21	151.01	
Daily Means	9.83	6.13	5.01	4.87	
SS Monthly Totals					
Daily Means					
Types of	PYRANOMETER	PYRANOMETER	PYRANOMETER	PYRANOMETER	
Instruments	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: SEPTEMBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	18°21' S	22°29' S	23°26' S	27°15'S
Longitude	70°19'W	68°54' W	70°26' W	70°46'W
Elevation	58 m	2270 m	135 m	204 m
Station	ARICA	CALAMA	ANTOFAGASTA	CALDERA
Date				
1	.	22.52	20.32	.
2	.	23.06	20.01	.
3	.	22.97	21.10	.
4	.	23.32	14.18	.
5	.	23.43	22.47	.
6	.	23.03	19.61	.
7	.	22.54	20.76	.
8	.	23.27	19.65	.
9	.	22.96	21.11	.
10	.	22.74	21.97	.
11	.	23.11	9.22	.
12	.	23.54	9.40	.
13	.	23.88	11.80	.
14	.	24.34	19.69	.
15	.	22.68	19.14	.
16	.	24.26	24.80	.
17	.	24.90	25.33	.
18	.	25.45	24.29	.
19	.	24.62	24.55	.
20	.	25.42	23.58	.
21	.	25.16	17.91	.
22	.	25.56	22.30	.
23	.	25.74	22.95	.
24	.	25.92	25.18	.
25	.	25.66	22.63	.
26	.	25.29	22.17	.
27	.	24.97	17.56	.
28	.	26.07	23.88	.
29	.	26.25	24.97	.
30	.	26.39	25.45	.
31				
TT Monthly Totals	.	729.04	617.95	.
Daily Means	.	24.30	20.60	.
SS Monthly Totals				
Daily Means				
Types of	PYRANOMETER	PYRANOMETER	PYRANOMETER	PYRANOMETER
Instruments	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: SEPTEMBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	33°27' S	41°25' S	45°35' S	53°00' S
Longitude	70°42' W	73°05' W	72°07' W	70°51' W
Elevation	520 m	85 m	310 m	37 m
Station				
Date	QUINTA NORMAL	PUERTO MONTT	COYHAIQUE	PUNTA ARENAS
1	6.17	7.47	6.27	9.63
2	3.21	10.87	8.31	8.71
3	14.24	4.84	5.42	9.47
4	4.57	1.45	2.70	4.55
5	11.50	3.64	4.05	2.46
6	4.02	2.99	4.76	8.32
7	9.67	8.07	7.82	3.90
8	14.54	3.77	5.28	3.52
9	11.08	3.90	2.56	6.59
10	14.27	8.69	10.34	11.25
11	10.06	11.96	10.03	5.44
12	8.26	10.17	12.56	6.31
13	8.36	16.81	14.59	11.86
14	11.94	15.75	13.69	5.61
15	17.57	11.98	15.34	12.72
16	14.08	17.92	14.33	12.63
17	18.57	9.32	8.47	12.27
18	18.85	9.18	7.28	7.49
19	12.62	12.28	13.62	12.42
20	14.81	6.19	10.76	11.76
21	11.01	10.79	15.69	11.85
22	20.69	19.02	15.45	8.77
23	20.80	18.83	16.38	11.36
24	20.75	19.08	17.09	8.65
25	20.68	10.70	16.50	3.84
26	20.00	14.56	10.39	14.42
27	18.11	19.95	17.86	14.80
28	21.53	19.88	10.12	12.47
29	18.85	20.26	16.60	15.01
30	14.41	12.42	11.56	9.26
31				
TT Monthly Totals	415.21	342.74	325.82	277.36
Daily Means	13.84	11.42	10.86	9.25
SS Monthly Totals				
Daily Means				
Types of	PYRANOMETER	PYRANOMETER	PYRANOMETER	PYRANOMETER
Instruments	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: OCTOBER		Year: 2013		Country: CHILE	
Daily Totals					
Latitude	18°21' S	22°29' S	23°26' S	27°15'S	
Longitude	70°19'W	68°54' W	70°26' W	70°46'W	
Elevation	58 m	2270 m	135 m	204 m	
Station	ARICA	CALAMA	ANTOFAGASTA	CALDERA	
Date					
1	.	26.40	24.37	.	
2	.	26.56	23.96	.	
3	.	26.76	24.54	.	
4	.	27.11	25.52	.	
5	.	25.95	26.05	.	
6	.	27.25	26.48	.	
7	.	27.19	25.48	.	
8	.	27.44	22.09	.	
9	.	27.70	21.42	.	
10	.	27.91	25.22	.	
11	.	27.74	25.31	.	
12	.	28.23	25.52	.	
13	.	28.30	23.81	.	
14	.	23.86	28.53	.	
15	.	27.70	27.61	.	
16	.	27.87	24.87	.	
17	.	27.87	26.38	.	
18	.	28.66	26.01	.	
19	.	28.67	25.64	.	
20	.	28.68	23.27	.	
21	.	28.81	26.31	.	
22	.	27.54	25.63	.	
23	.	28.28	27.82	.	
24	.	26.98	29.08	.	
25	.	27.53	28.13	.	
26	.	28.65	24.51	.	
27	.	28.43	25.98	.	
28	.	28.49	15.87	.	
29	.	28.97	21.74	.	
30	.	28.98	24.70	.	
31	.	27.42	24.66	.	
TT Monthly Totals	.	857.92	776.51	.	
Daily Means	.	27.67	25.05	.	
SS Monthly Totals					
Daily Means					
Types of	PYRANOMETER	PYRANOMETER	PYRANOMETER	PYRANOMETER	
Instruments	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: OCTOBER		Year: 2013		Country: CHILE	
Daily Totals					
Latitude	33°27' S	41°25' S	45°35' S	53°00' S	
Longitude	70°42' W	73°05' W	72°07' W	70°51' W	
Elevation	520 m	85 m	310 m	37 m	
Station					
Date	QUINTA NORMAL	PUERTO MONTT	COYHAIQUE	PUNTA ARENAS	
1	18.38	11.64	12.51	9.26	
2	19.47	7.19	16.64	15.53	
3	21.12	7.09	16.25	15.53	
4	21.65	6.59	10.42	11.45	
5	21.44	19.36	12.70	13.60	
6	21.24	21.17	12.26	17.76	
7	21.06	18.22	17.73	17.76	
8	14.19	6.44	15.36	9.05	
9	21.46	9.52	8.08	9.05	
10	21.83	9.13	20.25	13.22	
11	21.41	19.91	20.49	13.24	
12	22.17	20.91	19.00	11.96	
13	23.03	9.23	9.67	13.72	
14	22.97	6.88	6.62	15.36	
15	22.82	8.64	5.41	15.38	
16	23.21	16.89	20.61	.	
17	23.32	18.66	20.57	.	
18	14.18	14.96	21.17	.	
19	22.36	5.98	15.38	.	
20	21.55	9.21	21.66	.	
21	22.03	12.47	13.32	.	
22	16.07	9.34	20.82	.	
23	17.57	11.49	21.60	.	
24	11.80	25.17	22.54	.	
25	21.11	8.85	22.60	.	
26	24.37	14.95	15.66	.	
27	22.26	24.76	23.82	.	
28	20.60	17.09	23.14	.	
29	21.38	18.06	22.83	.	
30	8.85	18.38	14.31	.	
31	5.96	7.21	12.97	.	
TT Monthly Totals	610.86	415.40	516.37	.	
Daily Means	19.71	13.40	16.66	.	
SS Monthly Totals					
Daily Means					
Types of	PYRANOMETER	PYRANOMETER	PYRANOMETER	PYRANOMETER	
Instruments	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: NOVEMBER		Year: 2013		Country: CHILE	
Daily Totals					
Latitude	18°21' S	22°29' S	23°26' S	27°15'S	
Longitude	70°19'W	68°54' W	70°26' W	70°46'W	
Elevation	58 m	2270 m	135 m	204 m	
Station	ARICA	CALAMA	ANTOFAGASTA	CALDERA	
Date					
1	.	29.31	29.03	.	
2	.	29.29	30.14	.	
3	.	29.48	26.01	.	
4	.	29.49	30.19	.	
5	.	29.01	28.39	.	
6	.	28.73	22.81	.	
7	.	29.03	21.00	.	
8	.	29.35	20.44	.	
9	.	29.35	23.46	.	
10	.	29.73	27.40	.	
11	.	30.19	29.35	.	
12	.	30.44	28.39	.	
13	.	29.91	28.94	.	
14	.	28.78	28.86	.	
15	.	30.46	28.44	.	
16	.	30.19	25.06	.	
17	.	29.98	29.12	.	
18	.	30.07	24.27	.	
19	.	29.65	31.19	.	
20	.	29.90	31.41	.	
21	.	29.36	31.39	.	
22	.	30.02	29.78	.	
23	.	29.91	29.20	.	
24	.	29.68	22.68	.	
25	.	30.05	28.25	.	
26	.	30.05	26.23	.	
27	.	30.01	31.13	.	
28	.	29.82	31.30	.	
29	.	30.26	27.26	.	
30	.	30.42	31.53	.	
31					
TT Monthly Totals	.	891.93	832.66	.	
Daily Means	.	29.73	27.76	.	
SS Monthly Totals					
Daily Means					
Types of	PYRANOMETER	PYRANOMETER	PYRANOMETER	PYRANOMETER	
Instruments	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: NOVEMBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	33°27' S	41°25' S	45°35' S	53°00' S
Longitude	70°42' W	73°05' W	72°07' W	70°51' W
Elevation	520 m	85 m	310 m	37 m
Station				
Date	QUINTA NORMAL	PUERTO MONTT	COYHAIQUE	PUNTA ARENAS
1	21.20	22.72	26.69	.
2	26.13	11.25	9.35	.
3	26.01	14.23	11.35	.
4	25.92	22.40	24.37	.
5	26.09	20.65	16.84	.
6	21.40	8.13	12.43	.
7	26.10	10.37	17.51	.
8	26.26	6.84	17.73	.
9	23.08	27.78	24.71	.
10	17.56	13.73	14.75	.
11	26.33	16.13	9.36	.
12	26.76	14.08	12.57	.
13	27.37	5.06	2.96	.
14	28.05	11.67	23.00	.
15	27.74	19.11	23.04	.
16	27.85	24.59	24.55	.
17	18.34	10.87	8.72	.
18	22.57	16.00	21.02	.
19	20.56	22.47	21.14	.
20	27.25	22.69	17.75	.
21	27.38	21.67	15.97	.
22	26.70	13.45	16.08	.
23	19.50	12.50	17.56	.
24	25.77	15.85	25.90	.
25	27.47	28.93	26.89	.
26	28.32	29.20	27.73	.
27	28.92	21.73	18.76	.
28	29.08	12.88	20.78	.
29	28.75	16.30	20.90	.
30	28.87	22.41	26.64	.
31				
TT Monthly Totals	763.36	515.69	557.04	.
Daily Means	25.45	17.19	18.57	.
SS Monthly Totals				
Daily Means				
Types of	PYRANOMETER	PYRANOMETER	PYRANOMETER	PYRANOMETER
Instruments	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: DECEMBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	18°21' S	22°29' S	23°26' S	27°15'S
Longitude	70°19'W	68°54' W	70°26' W	70°46'W
Elevation	58 m	2270 m	135 m	204 m
Station	ARICA	CALAMA	ANTOFAGASTA	CALDERA
Date				
1	22.73	30.61	26.40	.
2	25.95	30.28	29.43	.
3	20.89	29.20	31.17	.
4	25.06	28.67	30.47	.
5	27.10	28.44	26.98	.
6	25.85	29.09	30.94	.
7	22.33	28.93	30.37	.
8	25.61	28.95	31.21	.
9	24.84	29.46	29.69	.
10	21.82	30.07	31.17	.
11	26.27	29.88	29.89	.
12	25.57	30.05	29.78	.
13	24.71	29.99	30.10	.
14	22.19	29.87	30.21	.
15	26.04	27.69	30.95	.
16	23.85	29.32	30.81	.
17	23.42	29.45	27.05	.
18	21.57	29.53	29.95	.
19	24.82	30.19	26.92	.
20	25.06	30.05	30.64	.
21	26.84	29.99	31.20	.
22	27.20	29.62	31.08	.
23	27.03	29.37	30.91	.
24	25.46	29.54	30.25	.
25	26.31	29.44	28.68	.
26	27.17	29.33	30.68	.
27	26.63	29.50	31.01	.
28	26.58	28.93	30.32	.
29	26.98	29.26	27.44	.
30	26.17	27.34	28.63	.
31	19.42	28.58	27.31	.
TT Monthly Totals	771.49	910.64	921.67	.
Daily Means	24.89	29.38	29.73	.
SS Monthly Totals				
Daily Means				
Types of	PYRANOMETER	PYRANOMETER	PYRANOMETER	PYRANOMETER
Instruments	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: DECEMBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	33°27' S	41°25' S	45°35' S	53°00' S
Longitude	70°42' W	73°05' W	72°07' W	70°51' W
Elevation	520 m	85 m	310 m	37 m
Station				
Date	QUINTA NORMAL	PUERTO MONTT	COYHAIQUE	PUNTA ARENAS
1	28.96	22.72	20.86	.
2	27.36	20.29	20.89	.
3	26.75	14.35	19.92	.
4	28.37	7.14	22.09	.
5	23.17	15.91	27.69	.
6	28.38	21.73	27.76	.
7	28.60	22.88	27.76	.
8	24.15	28.85	24.23	.
9	28.79	29.09	24.47	.
10	28.56	29.06	24.60	.
11	26.37	29.43	26.62	.
12	28.07	24.42	26.73	.
13	27.80	27.77	28.24	.
14	27.87	29.41	28.37	.
15	28.09	29.76	25.81	.
16	28.24	29.41	27.96	.
17	28.42	29.81	28.07	.
18	27.45	29.70	27.03	.
19	27.94	29.86	19.92	.
20	28.80	26.68	28.54	.
21	28.93	30.49	28.62	.
22	28.85	30.96	28.31	.
23	28.12	31.00	24.19	19.96
24	27.76	30.05	28.58	12.62
25	20.02	30.49	28.73	26.71
26	28.84	20.41	20.22	8.69
27	29.13	27.59	20.40	27.82
28	29.13	28.05	10.89	17.38
29	29.44	16.10	17.28	15.21
30	28.74	17.54	20.21	20.33
31	28.71	17.65	20.38	12.34
TT Monthly Totals	859.78	778.61	755.38	.
Daily Means	27.73	25.12	24.37	.
SS Monthly Totals				
Daily Means				
Types of	PYRANOMETER	PYRANOMETER	PYRANOMETER	PYRANOMETER
Instruments	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: JULY		Year: 2013		Country: CHILE
Daily Totals				
Latitude	18°21' S	20°32' S	22°28' S	23°26' S
Longitude	70°19'W	72°10' W	68°55' W	70°26' W
Elevation	58 m	52 m	270 m	135 m
Station	ARICA	IQUIQUE	CALAMA	ANTOFAGASTA
Date				
1	5.2	5.7	10.6	7.6
2	5.6	4.9	10.6	7.2
3	6.5	4.6	10.6	8.1
4	7.8	1.9	10.3	6.3
5	7.7	5.2	9.0	8.3
6	4.2	4.9	10.5	8.0
7	3.9	2.4	8.1	6.0
8	4.0	0.0	9.5	4.2
9	8.2	6.7	10.4	7.3
10	0.0	4.0	10.3	1.9
11	2.4	2.6	10.4	6.1
12	3.0	0.0	10.3	6.2
13	4.7	0.0	10.5	6.4
14	5.0	4.5	10.4	7.2
15	7.7	3.8	10.3	9.0
16	6.0	1.7	10.5	6.9
17	5.7	4.0	10.6	7.5
18	8.7	8.3	9.8	6.5
19	0.5	1.6	1.9	3.1
20	5.6	7.2	9.4	8.6
21	0.0	5.5	10.3	9.0
22	0.3	7.1	10.3	9.6
23	3.0	1.7	10.4	9.6
24	4.8	7.1	10.5	8.3
25	5.0	3.7	10.1	5.5
26	9.2	8.2	1.6	5.5
27	1.7	5.6	10.5	6.9
28	5.8	7.3	10.5	2.2
29	0.2	0.0	10.5	0.0
30	0.0	1.0	10.5	5.5
31	0.0	0.0	10.2	2.3
TT Monthly Totals				
Daily Means				
SS Monthly Totals	132.4	121.2	299.4	196.8
Daily Means	4.3	3.9	9.7	6.3
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: JULY		Year: 2013		Country: CHILE
Daily Totals				
Latitude	27°15'S	27°10' S	29°57' S	33°23' S
Longitude	70°46'W	109°26' W	71°22' W	70°47' W
Elevation	204 m	47 m	25 m	474 m
Station	CALDERA	ISLA DE PASCUA	LA SERENA	PUDAHUEL
Date				
1	7.4	7.1	9.2	7.6
2	4.0	9.0	7.0	3.1
3	6.4	7.9	5.7	0.0
4	5.2	6.4	6.6	0.0
5	6.6	7.8	2.3	0.0
6	9.4	6.3	9.1	0.0
7	5.1	6.6	0.3	0.2
8	1.0	3.3	2.6	0.0
9	8.6	1.1	6.9	1.7
10	8.8	6.2	8.0	0.0
11	8.6	9.4	8.4	7.0
12	4.3	10.0	8.9	7.0
13	4.6	9.0	6.1	7.5
14	4.5	7.2	8.4	8.6
15	4.8	7.0	0.0	8.2
16	3.5	0.0	0.0	8.2
17	4.2	8.3	2.7	7.9
18	0.0	8.0	0.1	1.9
19	1.2	8.2	0.9	0.6
20	8.7	6.6	8.1	2.2
21	3.7	7.9	8.5	7.7
22	8.8	5.2	9.5	7.5
23	9.6	7.3	9.7	8.8
24	7.3	4.2	8.9	8.8
25	4.5	4.5	0.0	7.8
26	4.4	5.4	5.4	2.5
27	8.5	0.7	9.2	4.4
28	4.2	1.2	1.5	3.7
29	4.7	6.8	0.0	0.0
30	7.8	1.1	7.4	4.1
31	8.9	6.3	7.7	7.9
TT Monthly Totals				
Daily Means				
SS Monthly Totals	179.3	186.0	169.1	134.9
Daily Means	5.8	6.0	5.5	4.4
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: JULY		Year: 2013		Country: CHILE
Daily Totals				
Latitude	33°27' S	33°37' S	33°39' S	34°58' S
Longitude	70°42' W	78°50' W	71°36' W	71°12' W
Elevation	520 m	30 m	74 m	225 m
Station				
Date	QUINTA NORMAL	ROBINSON CRUSOE	SANTO DOMINGO	CURICO
1	6.6	0.7	8.2	0.4
2	2.4	0.0	2.9	0.6
3	0.0	5.0	0.0	0.0
4	0.0	5.3	0.0	0.0
5	0.0	6.6	0.0	0.0
6	0.0	0.2	2.6	0.0
7	0.0	1.1	0.0	1.0
8	2.0	0.0	5.7	4.6
9	1.8	2.1	0.9	0.7
10	0.0	5.0	0.1	0.8
11	6.6	2.5	5.4	5.8
12	6.5	2.7	7.8	0.8
13	6.7	2.5	8.6	0.0
14	7.4	5.5	9.4	4.6
15	7.7	7.4	9.5	3.5
16	7.4	7.2	9.4	5.2
17	7.6	2.0	6.8	3.6
18	1.5	2.1	6.6	0.0
19	0.3	5.2	0.9	3.7
20	0.1	1.8	6.5	4.5
21	5.6	5.8	8.2	7.4
22	8.6	0.8	9.5	7.7
23	7.8	4.0	9.5	5.8
24	8.0	6.1	9.5	5.1
25	6.4	5.4	0.2	5.5
26	1.9	0.0	2.2	0.0
27	5.1	0.5	3.9	1.8
28	2.9	1.4	2.5	0.0
29	0.0	3.0	0.0	0.0
30	3.9	3.8	5.6	4.4
31	8.3	4.1	9.6	5.1
TT Monthly Totals				
Daily Means				
SS Monthly Totals	123.1	99.8	152.0	82.6
Daily Means	4.0	3.2	4.9	2.7
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: JULY		Year: 2013		Country: CHILE
Daily Totals				
Latitude	36°36' S	36°46' S	38°45' S	39°41' S
Longitude	72°26' W	73°03' W	72°38' W	73°04' W
Elevation	124 m	12 m	114 m	19 m
Station				
Date	CHILLAN	CONCEPCION	TEMUCO	VALDIVIA
1	0.2	2.1	0.0	0.0
2	0.0	0.0	0.0	0.0
3	0.0	5.0	3.9	1.5
4	0.0	0.0	1.1	3.7
5	0.0	0.0	0.7	3.7
6	5.5	7.6	3.0	0.0
7	0.0	6.4	8.0	7.1
8	1.1	0.2	0.9	1.8
9	0.0	0.0	0.0	0.0
10	0.1	0.9	0.0	0.0
11	4.7	3.0	2.6	2.4
12	1.7	2.7	1.7	0.5
13	0.0	0.0	2.6	3.3
14	1.1	0.7	0.0	1.9
15	6.8	9.4	1.8	0.3
16	8.6	8.5	0.3	2.7
17	4.0	5.6	0.0	1.9
18	3.5	8.3	8.4	7.1
19	4.1	8.3	9.1	7.1
20	3.7	5.8	6.9	8.8
21	7.4	9.2	8.9	6.8
22	7.2	8.7	6.1	2.0
23	8.8	8.5	5.5	3.9
24	8.4	9.2	5.1	7.2
25	3.8	8.1	6.5	8.3
26	0.0	0.0	0.0	0.2
27	0.3	2.2	1.0	0.0
28	0.0	4.4	2.1	0.1
29	0.0	0.0	0.4	2.8
30	2.5	1.1	0.6	1.3
31	4.6	1.7	7.7	1.3
TT Monthly Totals				
Daily Means				
SS Monthly Totals	88.1	127.6	94.9	87.7
Daily Means	2.8	4.1	3.1	2.8
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: JULY

Year: 2013

Country: CHILE

Daily Totals				
Latitude	41°26' S	45°35' S	53°08' S	
Longitude	73°07' W	72°07' W	70°58' W	
Elevation	81 m	310 m	37 m	
Station				
Date	PUERTO MONTT	COYHAIQUE	PUNTA ARENAS	
1	0.0	0.0	1.2	
2	0.9	1.3	2.3	
3	3.6	0.0	3.3	
4	3.9	2.4	2.4	
5	5.8	1.5	6.4	
6	2.7	0.0	2.4	
7	7.8	0.0	2.2	
8	1.8	0.0	4.9	
9	0.0	0.0	0.0	
10	0.0	0.0	0.9	
11	3.5	3.5	3.0	
12	0.0	0.0	4.1	
13	3.5	4.4	4.0	
14	0.0	2.9	2.4	
15	0.0	0.9	8.2	
16	0.0	0.0	6.5	
17	4.5	2.4	5.4	
18	4.8	4.7	5.7	
19	3.2	6.2	4.4	
20	7.7	4.1	7.0	
21	6.4	6.5	0.0	
22	0.0	0.3	6.7	
23	0.1	4.9	0.0	
24	1.1	3.6	7.3	
25	1.5	4.3	4.0	
26	2.2	6.8	2.1	
27	6.1	5.1	5.4	
28	0.0	6.7	2.4	
29	8.4	0.0	5.3	
30	0.9	0.0	5.3	
31	3.1	0.3	1.8	
TT Monthly Totals				
Daily Means				
SS Monthly Totals	83.5	72.8	117.0	
Daily Means	2.7	2.3	3.8	
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	
	STOKES	STOKES	STOKES	

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: AUGUST		Year: 2013		Country: CHILE	
Daily Totals					
Latitude	18°21' S	20°32' S	22°28' S	23°26' S	
Longitude	70°19'W	72°10' W	68°55' W	70°26' W	
Elevation	58 m	52 m	270 m	135 m	
Station	ARICA	IQUIQUE	CALAMA	ANTOFAGASTA	
Date					
1	0.2	1.1	10.4	6.6	
2	0.0	1.8	10.6	8.9	
3	2.2	7.4	10.6	9.4	
4	0.0	0.0	10.7	7.8	
5	3.8	0.0	10.5	6.8	
6	5.6	2.1	10.6	7.5	
7	4.3	7.4	10.6	7.1	
8	0.0	4.2	10.7	6.6	
9	4.0	4.4	10.7	6.2	
10	4.6	0.5	10.7	8.0	
11	4.5	5.4	10.7	6.4	
12	2.0	1.4	10.7	6.8	
13	3.1	2.4	10.8	7.4	
14	7.8	7.8	10.7	8.0	
15	8.9	7.6	10.7	7.6	
16	6.8	7.5	10.8	7.2	
17	1.1	0.0	10.9	4.8	
18	5.4	7.7	10.9	6.9	
19	7.8	9.7	10.8	9.5	
20	5.6	9.8	10.8	8.4	
21	3.1	4.5	10.6	7.3	
22	3.5	3.1	9.2	4.1	
23	4.4	0.0	10.2	1.9	
24	0.0	0.3	1.2	0.0	
25	6.0	7.9	6.5	8.0	
26	8.5	10.4	11.2	9.0	
27	6.0	3.0	11.2	9.0	
28	0.0	0.2	6.6	8.8	
29	9.6	7.7	10.0	7.1	
30	6.0	8.8	11.1	9.7	
31	8.3	8.2	11.3	6.0	
TT Monthly Totals					
Daily Means					
SS Monthly Totals	133.1	142.3	313.0	218.8	
Daily Means	4.3	4.6	10.1	7.1	
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL	
	STOKES	STOKES	STOKES	STOKES	

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: AUGUST		Year: 2013		Country: CHILE
Daily Totals				
Latitude	27°15'S	27°10' S	29°57' S	33°23' S
Longitude	70°46'W	109°26' W	71°22' W	70°47' W
Elevation	204 m	47 m	25 m	474 m
Station	CALDERA	ISLA DE PASCUA	LA SERENA	PUDAHUEL
Date				
1	5.3	6.7	8.4	4.9
2	9.9	6.7	8.4	6.6
3	9.0	1.7	8.2	1.3
4	9.9	7.5	9.5	4.1
5	7.0	3.6	9.9	8.3
6	1.6	3.8	8.7	0.0
7	6.7	1.2	0.0	0.0
8	0.7	10.3	3.5	3.3
9	9.5	9.1	9.6	8.4
10	9.6	3.9	9.9	6.1
11	5.9	8.1	8.6	0.0
12	5.1	6.0	8.9	4.8
13	9.5	10.2	9.6	8.2
14	5.4	8.2	9.5	9.4
15	6.3	7.8	2.4	9.3
16	6.5	8.3	7.2	11.4
17	5.2	1.7	2.2	9.3
18	2.7	5.0	1.8	9.4
19	0.0	4.0	6.6	3.9
20	6.6	8.3	3.8	8.4
21	5.4	9.8	4.1	6.7
22	1.1	10.4	3.6	5.1
23	0.0	5.6	0.0	2.0
24	7.7	8.2	0.1	8.5
25	2.7	7.4	3.5	2.2
26	10.2	4.1	10.2	8.2
27	10.6	0.0	10.4	9.6
28	6.5	4.2	5.1	11.3
29	5.8	7.6	6.5	4.7
30	7.0	2.6	5.0	0.0
31	10.3	5.0	8.8	4.3
TT Monthly Totals				
Daily Means				
SS Monthly Totals	189.7	187.0	194.0	179.7
Daily Means	6.1	6.0	6.3	5.8
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: AUGUST		Year: 2013		Country: CHILE
Daily Totals				
Latitude	33°27' S	33°37' S	33°39' S	34°58' S
Longitude	70°42' W	78°50' W	71°36' W	71°12' W
Elevation	520 m	30 m	74 m	225 m
Station				
Date	QUINTA NORMAL	ROBINSON CRUSOE	SANTO DOMINGO	CURICO
1	5.3	3.8	0.0	5.5
2	7.1	0.1	0.0	0.0
3	0.4	5.0	0.0	0.2
4	2.7	1.8	5.4	0.0
5	6.9	6.7	9.4	8.1
6	0.0	0.7	0.9	0.0
7	0.0	5.1	1.9	2.9
8	1.9	5.3	6.7	5.2
9	7.9	7.2	0.0	6.9
10	6.2	1.3	7.5	7.5
11	0.0	2.0	0.9	0.0
12	4.2	2.8	8.9	6.8
13	7.8	6.2	9.3	5.7
14	8.4	8.2	9.9	8.0
15	8.2	4.0	8.8	9.1
16	8.0	8.2	10.2	7.0
17	8.1	8.3	10.1	7.7
18	8.1	4.7	0.0	9.2
19	3.6	4.1	7.5	7.2
20	7.8	1.3	7.6	4.4
21	6.9	0.4	8.2	6.1
22	4.5	4.4	6.3	5.2
23	1.3	1.1	2.7	0.4
24	7.4	7.9	9.1	9.6
25	1.0	5.7	1.6	1.7
26	7.4	4.1	9.6	1.7
27	8.2	8.7	10.2	9.3
28	8.8	8.7	10.6	7.4
29	4.2	0.0	0.0	0.0
30	0.0	0.0	0.0	0.0
31	5.0	6.6	3.9	5.2
TT Monthly Totals				
Daily Means				
SS Monthly Totals	157.3	134.4	167.2	148.0
Daily Means	5.1	4.3	5.4	4.8
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: AUGUST		Year: 2013		Country: CHILE
Daily Totals				
Latitude	36°36' S	36°46' S	38°45' S	39°41' S
Longitude	72°26' W	73°03' W	72°38' W	73°04' W
Elevation	124 m	12 m	114 m	19 m
Station				
Date	CHILLAN	CONCEPCION	TEMUCO	VALDIVIA
1	2.9	1.0	1.3	0.0
2	2.3	3.9	4.0	0.6
3	0.0	0.0	2.8	2.0
4	0.0	0.0	0.3	0.4
5	7.3	6.5	1.0	0.0
6	0.0	0.0	0.0	0.0
7	7.4	7.3	5.0	6.4
8	8.6	9.6	2.9	6.2
9	9.3	9.2	5.4	0.2
10	4.6	0.0	0.0	0.0
11	2.9	1.5	2.1	1.9
12	7.4	8.8	8.3	8.8
13	9.6	9.4	8.3	6.0
14	9.5	9.7	8.3	2.7
15	1.2	3.7	5.7	7.1
16	10.0	9.9	7.2	4.1
17	7.7	9.5	5.6	4.5
18	9.4	0.0	6.3	1.6
19	5.4	9.2	7.5	8.1
20	7.3	8.9	2.4	0.9
21	3.6	6.7	8.7	8.4
22	9.8	9.5	7.6	7.3
23	.	8.2	9.2	9.5
24	.	10.2	9.4	9.2
25	5.9	7.6	9.3	9.2
26	2.4	2.7	0.1	0.0
27	7.2	4.4	0.1	1.0
28	9.3	9.8	5.5	1.5
29	0.0	0.0	0.3	0.3
30	0.0	0.0	5.4	0.0
31	.	0.0	0.0	0.0
TT Monthly Totals				
Daily Means				
SS Monthly Totals	.	167.2	140.0	107.9
Daily Means	5.4	5.4	4.5	3.5
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: AUGUST

Year: 2013

Country: CHILE

Daily Totals				
Latitude	41°26' S	45°35' S	53°08' S	
Longitude	73°07' W	72°07' W	70°58' W	
Elevation	81 m	310 m	37 m	
Station				
Date	PUERTO MONTT	COYHAIQUE	PUNTA ARENAS	
1	1.4	6.1	0.0	
2	0.0	0.7	0.0	
3	3.8	0.2	0.6	
4	0.1	0.0	3.2	
5	0.0	4.2	0.1	
6	0.1	0.0	1.3	
7	6.5	4.2	5.0	
8	5.7	7.1	6.5	
9	1.2	0.8	1.0	
10	1.2	4.2	7.8	
11	3.7	5.9	3.8	
12	6.7	5.8	5.8	
13	7.4	2.8	4.9	
14	0.8	0.0	3.5	
15	7.6	0.2	1.2	
16	4.9	2.8	0.0	
17	5.8	2.3	6.5	
18	0.0	0.0	6.5	
19	6.4	0.0	2.7	
20	0.0	1.0	0.1	
21	5.9	5.3	8.4	
22	8.4	3.2	6.6	
23	8.2	5.9	8.9	
24	9.7	7.4	8.2	
25	8.2	2.4	5.1	
26	0.0	0.0	5.1	
27	0.0	6.8	6.0	
28	0.5	0.0	6.5	
29	1.0	0.0	8.7	
30	0.0	2.0	9.3	
31	0.1	0.5	7.4	
TT Monthly Totals				
Daily Means				
SS Monthly Totals	105.3	81.8	140.7	
Daily Means	3.4	2.6	4.5	
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	
	STOKES	STOKES	STOKES	

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: SEPTEMBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	18°21' S	20°32' S	22°28' S	23°26' S
Longitude	70°19'W	72°10' W	68°55' W	70°26' W
Elevation	58 m	52 m	270 m	135 m
Station	ARICA	IQUIQUE	CALAMA	ANTOFAGASTA
Date				
1	6.6	9.6	11.2	8.4
2	6.1	1.5	11.1	7.7
3	5.2	2.3	10.9	9.8
4	9.7	7.4	10.9	4.4
5	6.5	10.2	12.1	10.0
6	4.2	8.5	11.1	6.3
7	4.6	0.8	11.1	7.0
8	3.3	0.1	11.2	7.0
9	7.5	7.3	10.9	7.9
10	4.6	5.2	10.8	9.8
11	5.7	8.2	10.8	0.0
12	0.0	0.0	10.7	0.0
13	6.8	1.0	11.1	0.9
14	6.5	6.2	11.2	6.8
15	3.6	6.9	10.9	6.0
16	4.5	8.4	10.1	10.1
17	5.3	9.2	10.8	10.7
18	6.0	7.0	11.4	8.9
19	9.7	10.4	11.2	9.5
20	7.2	6.9	11.3	8.7
21	0.0	0.0	11.4	4.5
22	2.8	0.0	11.4	7.2
23	0.3	3.8	11.3	7.6
24	3.3	7.3	11.4	9.5
25	5.4	1.1	11.3	7.9
26	7.3	6.9	10.9	6.9
27	3.0	6.8	10.9	4.8
28	4.1	3.5	11.3	7.2
29	0.4	5.5	11.3	8.5
30	1.0	9.9	11.3	9.3
31				
TT Monthly Totals				
Daily Means				
SS Monthly Totals	141.2	161.9	333.3	213.3
Daily Means	4.7	5.4	11.1	7.1
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: SEPTEMBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	27°15'S	27°10' S	29°57' S	33°23' S
Longitude	70°46'W	109°26' W	71°22' W	70°47' W
Elevation	204 m	47 m	25 m	474 m
Station	CALDERA	ISLA DE PASCUA	LA SERENA	PUDAHUEL
Date				
1	7.0	1.3	8.8	1.6
2	9.0	6.6	9.8	0.0
3	7.4	9.3	9.8	7.1
4	2.4	0.0	0.5	0.0
5	6.7	5.9	4.0	4.4
6	6.5	0.4	2.9	0.4
7	10.3	0.2	9.9	2.4
8	7.1	9.5	9.7	8.2
9	0.1	10.3	5.8	4.8
10	9.8	8.3	8.1	7.4
11	4.6	0.8	3.7	2.4
12	8.4	7.1	8.2	7.9
13	1.9	6.2	8.0	1.2
14	0.8	0.0	1.0	6.6
15	9.2	5.1	10.6	9.2
16	10.4	9.7	10.8	9.2
17	9.8	5.3	7.8	10.2
18	10.5	4.9	10.1	10.1
19	8.4	7.2	5.1	6.2
20	8.1	6.7	8.2	6.3
21	6.8	6.2	10.2	4.3
22	10.7	9.4	10.7	10.6
23	8.2	9.7	10.9	10.7
24	5.4	7.5	5.7	10.8
25	2.2	10.2	1.3	10.3
26	3.4	4.6	4.5	8.5
27	6.5	10.2	6.4	9.3
28	8.3	7.2	8.7	10.9
29	6.5	11.1	9.5	10.1
30	7.6	11.1	8.5	5.2
31				
TT Monthly Totals				
Daily Means				
SS Monthly Totals	204.0	192.0	219.2	196.3
Daily Means	6.8	6.4	7.3	6.5
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: SEPTEMBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	33°27' S	33°37' S	33°39' S	34°58' S
Longitude	70°42' W	78°50' W	71°36' W	71°12' W
Elevation	520 m	30 m	74 m	225 m
Station				
Date	QUINTA NORMAL	ROBINSON CRUSOE	SANTO DOMINGO	CURICO
1	1.2	3.4	2.5	.
2	0.0	2.7	0.0	0.0
3	6.8	0.6	7.2	4.5
4	0.0	3.4	0.9	0.0
5	5.2	0.3	4.0	0.7
6	0.0	0.5	0.0	0.0
7	2.4	1.0	4.3	4.3
8	6.2	2.7	6.4	5.3
9	4.1	0.0	0.3	2.3
10	7.5	8.5	3.5	0.0
11	3.6	4.5	4.0	5.3
12	2.4	5.5	7.5	5.3
13	0.1	3.0	2.6	0.0
14	3.8	7.4	10.0	8.7
15	8.8	6.9	10.3	8.5
16	5.5	6.6	10.1	6.1
17	8.9	6.7	10.7	9.7
18	8.7	8.0	10.2	9.6
19	4.2	1.3	0.9	0.6
20	5.2	4.5	5.1	0.8
21	4.0	5.4	9.9	8.7
22	8.9	0.8	10.6	6.9
23	8.9	9.9	11.0	10.8
24	9.0	9.0	4.4	11.1
25	8.8	0.7	6.3	6.0
26	8.4	1.6	0.0	2.9
27	7.3	6.2	11.2	8.4
28	9.1	9.5	11.2	10.1
29	8.7	9.8	11.3	9.8
30	4.0	6.9	6.6	5.7
31				
TT Monthly Totals				
Daily Means				
SS Monthly Totals	161.7	137.3	183.0	.
Daily Means	5.4	4.6	6.1	5.2
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: SEPTEMBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	36°36' S	36°46' S	38°45' S	39°41' S
Longitude	72°26' W	73°03' W	72°38' W	73°04' W
Elevation	124 m	12 m	114 m	19 m
Station				
Date	CHILLAN	CONCEPCION	TEMUCO	VALDIVIA
1	0.1	3.6	0.8	0.1
2	0.0	0.0	7.0	5.8
3	1.5	3.0	0.1	0.0
4	0.0	0.0	.	0.0
5	0.0	0.0	1.3	0.0
6	2.6	0.0	0.0	0.0
7	0.0	0.4	6.3	2.3
8	5.4	0.0	0.6	0.0
9	1.2	0.3	0.0	0.0
10	0.0	6.4	5.1	0.0
11	0.0	0.0	0.3	4.9
12	10.4	9.8	9.2	5.8
13	8.1	9.2	9.2	8.3
14	8.4	7.3	9.3	8.0
15	4.2	6.7	4.8	6.6
16	8.1	9.9	6.6	9.5
17	10.3	10.0	5.5	9.7
18	10.4	9.9	8.9	1.8
19	0.2	0.0	1.8	6.1
20	1.2	2.0	4.7	6.4
21	10.2	10.1	6.0	5.3
22	10.4	10.5	9.4	11.3
23	11.3	11.2	9.6	10.6
24	10.3	11.0	9.6	10.7
25	5.8	0.8	2.3	2.8
26	11.0	10.6	10.4	9.4
27	10.5	9.8	7.7	10.6
28	10.6	11.6	9.8	10.3
29	11.3	11.6	10.0	10.8
30	6.3	0.3	4.7	5.3
31				
TT Monthly Totals				
Daily Means				
SS Monthly Totals	169.8	166.0	.	162.4
Daily Means	5.7	5.5	5.6	5.4
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: SEPTEMBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	41°26' S	45°35' S	53°08' S	
Longitude	73°07' W	72°07' W	70°58' W	
Elevation	81 m	310 m	37 m	
Station				
Date	PUERTO MONTT	COYHAIQUE	PUNTA ARENAS	
1	2.7	2.3	9.7	
2	7.5	4.4	7.0	
3	0.3	1.0	8.8	
4	0.0	0.0	0.3	
5	1.5	0.8	0.0	
6	0.0	0.0	5.9	
7	4.0	5.8	0.4	
8	0.0	1.6	0.6	
9	2.0	0.8	1.3	
10	3.9	5.9	8.9	
11	7.7	4.6	2.5	
12	5.5	7.3	4.9	
13	9.6	7.9	8.5	
14	8.3	7.0	0.8	
15	4.8	8.3	9.5	
16	10.1	8.1	9.6	
17	4.7	2.7	8.4	
18	3.1	0.6	3.1	
19	7.2	7.6	8.4	
20	3.0	4.2	8.9	
21	5.8	8.2	9.1	
22	10.7	9.1	5.2	
23	10.2	9.3	6.3	
24	11.0	9.1	1.9	
25	2.3	9.8	0.0	
26	9.1	2.9	9.1	
27	10.3	8.4	11.3	
28	10.5	2.5	8.2	
29	10.6	8.5	11.1	
30	3.8	3.3	3.8	
31				
TT Monthly Totals				
Daily Means				
SS Monthly Totals	170.2	152.0	173.5	
Daily Means	5.7	5.1	5.8	
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	
	STOKES	STOKES	STOKES	

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: OCTOBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	18°21' S	20°32' S	22°28' S	23°26' S
Longitude	70°19'W	72°10' W	68°55' W	70°26' W
Elevation	58 m	52 m	270 m	135 m
Station	ARICA	IQUIQUE	CALAMA	ANTOFAGASTA
Date				
1	3.0	8.6	11.3	7.6
2	3.4	8.6	11.3	8.3
3	4.3	10.1	11.3	7.9
4	5.8	3.6	11.7	9.0
5	6.6	1.6	11.5	8.8
6	7.5	7.3	11.6	10.2
7	10.3	9.2	11.6	9.8
8	5.2	4.2	11.4	5.9
9	4.5	8.9	11.5	5.0
10	3.0	0.7	11.5	7.4
11	5.9	9.6	11.5	7.4
12	7.2	9.4	11.4	7.9
13	6.6	7.3	11.6	7.0
14	1.4	8.9	8.4	10.6
15	9.2	10.5	11.2	10.0
16	9.3	14.2	11.4	7.7
17	6.4	8.5	11.2	8.4
18	5.2	8.3	11.6	7.3
19	4.7	6.4	11.6	6.6
20	5.5	7.0	11.6	7.7
21	6.5	6.9	11.4	8.7
22	8.0	11.2	11.4	8.0
23	10.9	11.1	11.5	9.1
24	5.2	8.6	10.1	9.8
25	8.1	11.0	10.0	9.4
26	5.5	8.9	11.5	6.4
27	4.9	7.5	11.2	7.0
28	4.9	9.0	11.1	0.1
29	6.9	9.6	11.1	5.1
30	5.3	4.6	10.9	6.4
31	4.7	7.1	9.9	5.3
TT Monthly Totals				
Daily Means				
SS Monthly Totals	185.9	248.4	346.3	235.8
Daily Means	6.0	8.0	11.2	7.6
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: OCTOBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	27°15'S	27°10' S	29°57' S	33°23' S
Longitude	70°46'W	109°26' W	71°22' W	70°47' W
Elevation	204 m	47 m	25 m	474 m
Station	CALDERA	ISLA DE PASCUA	LA SERENA	PUDAHUEL
Date				
1	8.8	6.1	9.8	8.5
2	9.0	2.9	8.2	8.4
3	11.0	9.2	11.1	10.5
4	1.8	11.3	11.4	11.2
5	7.8	2.6	10.7	11.1
6	5.0	5.0	3.7	11.4
7	7.1	3.1	11.2	8.9
8	5.4	6.6	5.2	6.0
9	5.2	8.9	8.0	10.5
10	1.0	9.7	5.5	11.3
11	4.0	10.5	4.6	11.5
12	2.2	7.2	0.0	10.7
13	2.0	6.7	0.0	11.1
14	6.5	1.9	4.4	11.4
15	7.4	0.8	2.1	11.5
16	8.4	7.1	2.9	11.8
17	8.2	5.0	6.7	11.3
18	9.8	10.4	5.1	2.3
19	2.6	0.0	0.0	9.5
20	3.0	10.1	9.7	8.7
21	9.3	11.6	9.9	8.5
22	5.3	9.5	0.0	4.3
23	7.0	8.5	3.5	6.0
24	6.8	1.5	8.0	3.3
25	8.7	6.3	5.2	9.2
26	11.7	4.6	12.3	11.2
27	4.4	7.0	4.1	8.4
28	6.4	2.2	0.6	8.6
29	7.4	10.9	9.5	8.1
30	0.8	10.7	0.0	1.1
31	5.0	0.7	0.0	1.1
TT Monthly Totals				
Daily Means				
SS Monthly Totals	189.0	198.6	173.4	267.4
Daily Means	6.1	6.4	5.6	8.6
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: OCTOBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	33°27' S	33°37' S	33°39' S	34°58' S
Longitude	70°42' W	78°50' W	71°36' W	71°12' W
Elevation	520 m	30 m	74 m	225 m
Station				
Date	QUINTA NORMAL	ROBINSON CRUSOE	SANTO DOMINGO	CURICO
1	7.2	1.1	9.1	6.8
2	7.6	5.1	3.5	4.4
3	8.9	1.1	10.8	11.0
4	9.8	8.6	11.7	11.0
5	10.3	9.2	11.6	8.9
6	10.0	6.8	0.0	11.7
7	9.6	0.4	.	6.1
8	5.1	8.1	.	3.9
9	10.1	6.7	8.7	8.2
10	10.6	4.4	11.4	10.7
11	10.4	2.3	9.1	10.9
12	10.5	3.0	0.1	7.8
13	9.2	4.9	6.6	11.6
14	10.4	9.8	9.9	12.0
15	10.7	6.7	0.0	9.2
16	10.5	9.2	0.0	11.0
17	10.3	5.1	0.0	11.2
18	1.7	2.5	0.0	2.3
19	8.9	2.5	3.0	1.8
20	9.9	2.5	4.2	2.0
21	8.2	1.7	10.8	7.9
22	3.8	3.3	6.9	7.6
23	5.8	4.3	12.5	11.7
24	0.4	3.1	1.9	4.7
25	9.4	0.8	10.5	12.0
26	10.3	2.8	11.5	8.6
27	9.5	6.5	5.5	5.8
28	7.9	0.5	5.2	2.7
29	7.6	6.2	3.7	6.0
30	0.0	2.8	0.0	3.6
31	0.0	5.6	0.1	0.6
TT Monthly Totals				
Daily Means				
SS Monthly Totals	244.6	137.6	.	233.7
Daily Means	7.9	4.4	5.8	7.5
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: OCTOBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	36°36' S	36°46' S	38°45' S	39°41' S
Longitude	72°26' W	73°03' W	72°38' W	73°04' W
Elevation	124 m	12 m	114 m	19 m
Station				
Date	CHILLAN	CONCEPCION	TEMUCO	VALDIVIA
1	4.9	7.9	6.9	10.3
2	5.3	9.1	8.9	3.7
3	9.3	10.4	0.3	1.1
4	11.0	11.0	2.9	3.7
5	10.4	11.2	9.2	9.2
6	10.7	10.9	10.1	11.2
7	6.4	3.5	6.4	8.8
8	5.2	1.8	1.8	2.4
9	11.5	11.0	7.4	6.0
10	11.4	10.7	7.4	0.9
11	8.9	6.2	6.2	11.8
12	7.0	0.0	10.1	10.8
13	8.5	11.0	4.3	7.0
14	11.8	11.5	8.7	2.4
15	9.0	7.0	8.5	7.6
16	9.7	8.6	5.3	9.3
17	8.9	7.1	6.4	6.6
18	3.0	0.0	8.7	10.7
19	0.2	0.0	0.0	0.1
20	0.3	5.4	2.9	8.5
21	6.9	9.6	4.1	8.8
22	9.0	10.5	3.7	4.5
23	11.9	12.0	6.3	9.6
24	11.5	12.2	11.6	11.5
25	11.7	6.7	9.1	5.7
26	7.9	11.4	6.9	10.9
27	9.1	9.9	9.7	11.4
28	7.2	3.7	7.3	10.8
29	9.6	3.9	9.3	9.3
30	0.4	4.6	6.2	3.7
31	1.1	5.3	7.7	6.4
TT Monthly Totals				
Daily Means				
SS Monthly Totals	239.7	234.1	204.3	224.7
Daily Means	7.7	7.6	6.6	7.2
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: OCTOBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	41°26' S	45°35' S	53°08' S	
Longitude	73°07' W	72°07' W	70°58' W	
Elevation	81 m	310 m	37 m	
Station				
Date	PUERTO MONTT	COYHAIQUE	PUNTA ARENAS	
1	4.7	8.1	0.8	
2	0.9	9.4	8.8	
3	0.8	7.6	5.7	
4	0.8	1.2	0.8	
5	7.6	6.6	8.2	
6	10.1	5.6	12.3	
7	5.3	10.1	0.0	
8	1.1	7.1	3.0	
9	2.5	3.5	0.3	
10	2.3	11.4	6.8	
11	8.2	11.1	2.0	
12	10.4	10.3	4.9	
13	2.3	3.2	7.3	
14	1.1	3.8	7.3	
15	0.4	0.1	7.5	
16	6.7	10.5	7.0	
17	6.9	11.2	2.4	
18	5.3	11.2	5.5	
19	0.6	7.5	10.1	
20	2.4	11.5	11.5	
21	5.9	2.8	0.1	
22	3.1	10.5	8.0	
23	4.5	10.7	9.8	
24	11.0	11.4	3.5	
25	0.5	10.8	5.4	
26	6.6	10.3	10.5	
27	12.0	12.5	5.6	
28	5.8	11.7	10.1	
29	8.6	11.5	11.4	
30	7.5	4.1	12.1	
31	1.5	4.7	11.3	
TT Monthly Totals				
Daily Means				
SS Monthly Totals	147.4	252.0	200.0	
Daily Means	4.8	8.1	6.5	
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	
	STOKES	STOKES	STOKES	

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: NOVEMBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	18°21' S	20°32' S	22°28' S	23°26' S
Longitude	70°19'W	72°10' W	68°55' W	70°26' W
Elevation	58 m	52 m	270 m	135 m
Station	ARICA	IQUIQUE	CALAMA	ANTOFAGASTA
Date				
1	6.8	9.4	11.1	9.1
2	7.2	7.8	11.2	9.8
3	7.7	7.7	11.1	7.8
4	11.5	11.1	11.1	11.0
5	9.1	10.2	11.8	8.3
6	6.8	0.0	11.6	5.3
7	7.4	4.4	11.5	4.8
8	5.6	1.6	11.4	3.1
9	6.9	0.5	11.4	5.8
10	6.0	7.8	11.7	9.8
11	8.8	11.4	11.8	11.1
12	7.8	11.2	11.8	10.5
13	6.7	7.0	11.3	11.1
14	7.9	10.5	11.1	10.3
15	7.3	9.3	11.5	10.3
16	7.1	9.8	11.6	7.1
17	6.9	9.4	11.5	10.0
18	10.4	11.1	11.0	7.5
19	8.1	10.5	11.2	11.8
20	11.4	11.6	11.2	12.2
21	9.6	10.5	9.5	11.3
22	6.7	10.5	11.1	10.0
23	8.1	9.6	11.0	9.7
24	5.6	8.6	11.0	4.5
25	9.0	11.7	10.9	8.7
26	11.5	11.5	11.1	6.8
27	10.7	8.6	11.0	10.5
28	9.0	11.4	11.0	11.1
29	7.6	11.5	10.9	7.9
30	11.1	11.4	10.9	10.9
31				
TT Monthly Totals				
Daily Means				
SS Monthly Totals	246.3	267.6	336.3	268.1
Daily Means	8.2	8.9	11.2	8.9
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: NOVEMBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	27°15'S	27°10' S	29°57' S	33°23' S
Longitude	70°46'W	109°26' W	71°22' W	70°47' W
Elevation	204 m	47 m	25 m	474 m
Station	CALDERA	ISLA DE PASCUA	LA SERENA	PUDAHUEL
Date				
1	10.2	9.1	10.8	7.6
2	11.4	10.4	12.2	11.8
3	6.6	6.5	4.2	13.4
4	7.6	1.8	0.5	12.1
5	8.7	2.8	8.1	11.5
6	8.2	7.9	6.7	7.7
7	7.4	11.3	12.5	0.0
8	7.3	11.6	9.2	12.5
9	0.4	10.0	3.9	8.3
10	10.5	4.2	3.8	0.0
11	12.4	5.4	12.7	12.6
12	10.1	4.6	12.6	12.6
13	8.3	9.8	0.0	12.6
14	6.9	11.2	6.8	12.6
15	8.9	6.6	12.5	12.6
16	5.7	0.0	6.1	12.6
17	0.0	2.8	0.8	4.9
18	2.4	10.6	1.1	8.0
19	9.3	4.9	8.0	7.7
20	12.6	1.5	12.8	12.2
21	8.7	0.1	6.5	12.6
22	9.9	6.5	2.2	11.3
23	8.1	11.9	2.6	6.6
24	7.1	11.5	3.7	10.2
25	5.7	9.8	5.1	12.5
26	7.5	8.1	6.8	12.5
27	8.8	10.2	12.7	12.0
28	6.6	9.7	8.6	12.8
29	5.3	10.3	9.7	12.3
30	3.9	12.0	2.3	12.6
31				
TT Monthly Totals				
Daily Means				
SS Monthly Totals	226.5	223.1	205.5	308.7
Daily Means	7.6	7.4	6.9	10.3
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: NOVEMBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	33°27' S	33°37' S	33°39' S	34°58' S
Longitude	70°42' W	78°50' W	71°36' W	71°12' W
Elevation	520 m	30 m	74 m	225 m
Station				
Date	QUINTA NORMAL	ROBINSON CRUSOE	SANTO DOMINGO	CURICO
1	6.9	8.8	10.3	9.6
2	10.8	5.2	12.3	12.0
3	11.1	10.8	12.4	12.1
4	11.1	9.9	0.0	13.1
5	10.5	4.2	0.0	11.5
6	8.1	6.5	10.5	8.3
7	10.9	4.4	12.8	9.9
8	11.1	4.7	12.9	12.4
9	7.8	7.0	5.5	4.2
10	5.8	6.9	12.9	11.6
11	11.1	5.1	12.7	10.0
12	11.5	4.2	13.0	10.4
13	11.0	3.1	12.5	13.2
14	11.2	8.6	8.9	9.9
15	0.0	4.9	13.2	11.4
16	11.3	7.9	9.4	13.1
17	5.2	12.4	1.0	13.0
18	8.4	10.4	2.6	5.6
19	7.0	8.1	7.5	13.1
20	11.3	7.9	8.7	13.1
21	11.3	7.4	10.8	13.2
22	10.5	6.8	2.3	9.8
23	4.3	6.3	0.2	7.4
24	9.6	5.2	8.7	5.7
25	11.5	4.1	11.1	12.3
26	11.9	2.2	6.1	13.2
27	11.2	6.0	13.2	12.5
28	11.8	2.4	13.3	13.2
29	11.8	2.7	12.0	13.4
30	12.2	3.8	0.4	13.4
31				
TT Monthly Totals				
Daily Means				
SS Monthly Totals	288.2	187.9	257.2	331.6
Daily Means	9.6	6.3	8.6	11.1
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: NOVEMBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	36°36' S	36°46' S	38°45' S	39°41' S
Longitude	72°26' W	73°03' W	72°38' W	73°04' W
Elevation	124 m	12 m	114 m	19 m
Station				
Date	CHILLAN	CONCEPCION	TEMUCO	VALDIVIA
1	11.1	11.5	8.8	8.2
2	12.4	11.7	9.5	5.6
3	12.3	11.7	9.1	8.4
4	11.3	9.2	4.8	8.8
5	8.8	8.0	7.1	7.5
6	5.8	3.9	3.8	4.4
7	9.9	12.4	6.5	5.0
8	8.0	3.8	0.4	0.3
9	0.7	7.5	8.9	12.1
10	7.9	8.1	5.6	5.6
11	9.4	7.8	1.0	0.0
12	10.6	12.5	8.6	5.6
13	12.6	9.9	9.2	2.2
14	10.4	8.7	2.3	4.6
15	12.8	12.7	9.1	8.8
16	12.8	12.7	11.3	12.7
17	12.4	11.2	9.7	11.8
18	10.8	12.5	10.4	13.1
19	13.4	12.7	11.6	13.1
20	12.5	12.7	6.6	8.0
21	11.6	11.7	8.6	9.9
22	9.3	2.7	3.0	2.9
23	5.6	1.5	2.0	0.9
24	6.0	11.2	5.8	11.0
25	13.4	12.7	11.6	12.3
26	12.3	8.8	10.4	7.6
27	9.9	7.8	0.7	4.9
28	11.6	12.8	7.9	9.1
29	12.0	12.9	10.2	11.1
30	13.5	13.0	8.1	9.3
31				
TT Monthly Totals				
Daily Means				
SS Monthly Totals	311.1	296.3	212.6	224.8
Daily Means	10.4	9.9	7.1	7.5
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: NOVEMBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	41°26' S	45°35' S	53°08' S	
Longitude	73°07' W	72°07' W	70°58' W	
Elevation	81 m	310 m	37 m	
Station				
Date	PUERTO MONTT	COYHAIQUE	PUNTA ARENAS	
1	0.6	10.5	2.2	
2	2.2	4.6	9.7	
3	3.4	2.4	10.0	
4	8.7	11.5	2.2	
5	7.3	7.1	3.3	
6	2.4	3.0	8.0	
7	2.6	7.9	12.8	
8	0.0	7.0	10.6	
9	13.3	11.3	2.2	
10	1.5	6.9	8.9	
11	6.1	2.4	11.0	
12	3.9	4.0	7.6	
13	0.0	0.0	9.5	
14	4.6	9.9	4.8	
15	6.6	6.3	9.6	
16	9.5	10.4	9.5	
17	2.0	2.3	4.1	
18	9.4	8.7	10.7	
19	11.6	7.5	5.1	
20	7.2	7.2	12.0	
21	8.1	2.2	3.2	
22	4.0	5.9	6.5	
23	1.9	5.7	1.7	
24	7.0	11.4	7.4	
25	11.5	12.2	8.3	
26	7.0	12.0	4.1	
27	3.4	4.3	7.8	
28	3.3	8.8	13.4	
29	4.9	0.8	2.6	
30	8.2	12.3	3.9	
31				
TT Monthly Totals				
Daily Means				
SS Monthly Totals	162.2	206.5	212.7	
Daily Means	5.4	6.9	7.1	
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	
	STOKES	STOKES	STOKES	

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: DECEMBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	18°21' S	20°32' S	22°28' S	23°26' S
Longitude	70°19'W	72°10' W	68°55' W	70°26' W
Elevation	58 m	52 m	270 m	135 m
Station	ARICA	IQUIQUE	CALAMA	ANTOFAGASTA
Date				
1	6.5	7.2	10.6	8.0
2	10.9	6.9	10.9	9.4
3	5.4	9.3	10.5	10.2
4	8.7	10.7	9.9	11.5
5	11.4	16.8	11.3	8.7
6	9.8	10.9	11.3	11.5
7	4.8	9.8	10.5	10.5
8	9.0	11.1	11.0	11.8
9	8.2	10.9	11.5	9.8
10	7.3	9.8	11.2	12.1
11	10.3	10.9	11.5	9.7
12	7.8	9.5	11.3	9.5
13	8.5	10.0	11.4	11.5
14	6.5	11.0	11.3	9.5
15	10.3	7.8	8.7	11.9
16	8.4	9.9	10.9	10.8
17	7.1	11.3	10.9	7.9
18	6.6	9.4	11.0	9.6
19	9.6	11.2	11.1	6.3
20	8.7	8.9	10.9	9.0
21	11.1	11.3	11.5	12.2
22	12.0	11.5	11.6	12.3
23	11.2	11.4	11.6	11.8
24	9.3	11.5	11.7	11.0
25	9.2	11.4	11.4	9.1
26	9.9	11.3	11.1	12.0
27	11.6	11.3	11.3	11.9
28	11.3	11.2	10.7	10.8
29	9.9	9.5	11.2	9.1
30	10.8	9.5	9.3	8.8
31	5.5	10.0	11.4	8.3
TT Monthly Totals				
Daily Means				
SS Monthly Totals	277.6	323.2	340.5	316.5
Daily Means	9.0	10.4	11.0	10.2
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: DECEMBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	27°15'S	27°10' S	29°57' S	33°23' S
Longitude	70°46'W	109°26' W	71°22' W	70°47' W
Elevation	204 m	47 m	25 m	474 m
Station	CALDERA	ISLA DE PASCUA	LA SERENA	PUDAHUEL
Date				
1	3.1	10.4	4.6	12.7
2	2.4	11.5	5.4	22.3
3	5.5	11.0	5.5	11.9
4	0.9	10.8	5.3	12.8
5	12.3	11.7	12.9	9.5
6	12.4	10.0	7.9	12.7
7	7.2	9.4	5.3	12.7
8	11.8	7.9	3.6	11.2
9	12.4	2.2	13.0	12.3
10	5.3	2.8	9.8	12.6
11	4.2	7.9	4.7	12.0
12	5.3	9.0	4.3	12.6
13	8.7	5.7	6.6	12.8
14	9.9	3.4	6.4	12.7
15	9.0	0.1	12.4	12.6
16	11.8	7.8	10.9	12.7
17	8.4	11.6	5.2	12.8
18	8.1	6.3	6.3	10.9
19	9.3	9.1	5.5	10.1
20	6.0	10.5	0.5	10.4
21	7.6	0.0	4.0	11.6
22	7.9	8.1	0.7	12.6
23	6.5	5.0	6.8	12.7
24	8.3	5.0	0.0	12.3
25	6.4	8.9	4.1	6.9
26	12.6	8.2	12.4	12.3
27	9.1	6.0	12.5	12.9
28	7.8	11.7	6.3	12.5
29	5.4	11.6	11.8	13.0
30	6.2	12.2	10.4	12.5
31	7.4	12.5	12.0	12.8
TT Monthly Totals				
Daily Means				
SS Monthly Totals	239.2	248.3	217.1	382.4
Daily Means	7.7	8.0	7.0	12.3
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: DECEMBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	33°27' S	33°37' S	33°39' S	34°58' S
Longitude	70°42' W	78°50' W	71°36' W	71°12' W
Elevation	520 m	30 m	74 m	225 m
Station				
Date	QUINTA NORMAL	ROBINSON CRUSOE	SANTO DOMINGO	CURICO
1	11.7	2.5	2.6	13.3
2	11.5	6.1	12.4	11.8
3	11.4	9.7	13.0	13.5
4	12.0	0.3	12.8	13.6
5	9.9	2.6	6.4	12.6
6	11.7	1.0	10.5	13.0
7	12.4	0.7	8.0	13.5
8	8.8	5.3	6.0	6.6
9	11.3	2.3	13.2	13.5
10	12.0	10.5	12.0	13.6
11	10.3	10.4	0.0	13.2
12	11.9	5.8	0.0	13.6
13	12.5	2.7	0.4	13.5
14	12.2	10.2	0.0	13.2
15	12.3	11.3	2.7	13.4
16	12.2	7.1	0.0	13.0
17	12.5	6.7	0.0	13.1
18	11.1	8.2	0.0	8.1
19	10.6	11.5	0.0	8.5
20	10.9	8.1	0.0	11.2
21	11.2	7.4	1.7	12.6
22	12.2	11.2	4.6	13.2
23	12.2	11.7	0.0	13.2
24	11.7	11.6	0.3	12.1
25	6.7	11.7	0.8	6.0
26	11.8	11.1	13.0	13.4
27	12.5	10.4	13.3	13.6
28	12.4	9.3	13.1	13.6
29	12.4	11.0	12.9	13.6
30	12.4	7.6	12.9	13.6
31	12.4	9.6	13.0	13.6
TT Monthly Totals				
Daily Means				
SS Monthly Totals	357.1	235.6	185.6	384.3
Daily Means	11.5	7.6	6.0	12.4
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: DECEMBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	36°36' S	36°46' S	38°45' S	39°41' S
Longitude	72°26' W	73°03' W	72°38' W	73°04' W
Elevation	124 m	12 m	114 m	19 m
Station				
Date	CHILLAN	CONCEPCION	TEMUCO	VALDIVIA
1	12.8	11.8	6.8	12.0
2	11.5	13.1	7.1	11.1
3	13.4	13.1	10.7	12.7
4	13.6	13.1	5.1	2.6
5	12.2	13.0	8.8	11.2
6	12.6	13.1	8.8	12.8
7	12.9	6.1	9.7	11.9
8	3.2	0.3	5.0	11.9
9	13.3	12.6	10.2	13.1
10	13.5	12.6	10.8	12.3
11	13.4	13.4	7.4	11.4
12	13.4	13.0	10.6	12.4
13	13.5	14.3	7.0	12.8
14	12.9	13.1	10.7	13.7
15	13.4	12.5	10.4	13.4
16	13.4	0.0	10.9	13.5
17	10.8	8.3	9.2	13.6
18	12.1	0.2	10.1	13.6
19	12.7	10.7	10.6	13.0
20	13.1	12.8	9.0	13.4
21	13.6	12.9	10.7	13.6
22	13.1	13.1	10.6	13.7
23	10.5	13.0	10.7	13.6
24	13.0	13.1	10.7	12.9
25	11.2	12.9	10.8	11.6
26	13.1	13.1	8.7	9.8
27	13.0	12.9	10.6	13.2
28	13.3	13.2	10.8	11.8
29	13.6	13.1	6.1	6.4
30	13.3	11.0	7.7	7.3
31	13.3	13.4	3.3	2.6
TT Monthly Totals				
Daily Means				
SS Monthly Totals	388.7	348.8	279.6	358.9
Daily Means	12.5	11.3	9.0	11.6
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

WMO
Total radiation (sun and sky) T,MJ/m2
Duration of sunshine ss, hours

Month: DECEMBER		Year: 2013		Country: CHILE
Daily Totals				
Latitude	41°26' S	45°35' S	53°08' S	
Longitude	73°07' W	72°07' W	70°58' W	
Elevation	81 m	310 m	37 m	
Station				
Date	PUERTO MONTT	COYHAIQUE	PUNTA ARENAS	
1	6.5	9.5	10.9	
2	5.4	7.7	5.6	
3	1.6	3.1	11.4	
4	0.7	9.1	7.2	
5	4.3	13.3	4.9	
6	8.2	13.2	10.5	
7	7.8	10.9	0.0	
8	10.7	9.0	4.0	
9	7.0	9.8	4.1	
10	13.6	6.9	12.4	
11	9.4	10.4	4.7	
12	9.1	8.3	10.7	
13	11.3	12.6	7.5	
14	13.3	3.9	2.5	
15	10.2	11.7	4.5	
16	13.8	12.1	7.2	
17	3.6	11.6	12.5	
18	12.5	6.3	7.4	
19	9.1	6.5	11.6	
20	7.1	12.3	11.5	
21	13.4	13.0	10.1	
22	13.6	12.6	10.9	
23	13.7	7.8	11.0	
24	12.7	12.3	2.1	
25	7.7	10.7	12.0	
26	9.8	10.2	11.9	
27	10.8	3.3	14.7	
28	2.8	2.5	2.6	
29	5.5	5.5	2.6	
30	7.5	7.3	5.7	
31	3.2	3.4	1.5	
TT Monthly Totals				
Daily Means				
SS Monthly Totals	265.9	276.8	236.2	
Daily Means	8.6	8.9	7.6	
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	
	STOKES	STOKES	STOKES	