



DIRECCIÓN METEOROLÓGICA DE CHILE



INFORME
SOLARIMÉTRICO
II SEMESTRE 2011

CLIMATOLOGÍA Y METEOROLOGÍA APLICADA

DIRECCION METEOROLOGICA DE CHILE
SUBDIRECCION DE CLIMAT. Y MET. APLICADA
DEPTO. CLIMATOLOGIA

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

Month: JULY

Year: 2011

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	12.64	16.99	15.51	12.15
2	5.86	16.60	14.94	14.13
3	4.32	15.50	15.09	14.72
4	4.38	10.25	12.93	3.95
5	5.04	7.83	8.78	11.66
6	6.75	13.53	4.77	13.16
7	5.06	15.12	5.18	7.28
8	10.15	9.66	2.40	2.41
9	12.52	16.69	15.22	15.84
10	10.66	17.66	7.80	11.00
11	8.54	17.52	10.74	2.92
12	6.73	17.58	5.34	15.47
13	4.82	.	2.96	3.32
14	5.11	.	7.53	7.21
15	16.41	.	6.77	10.67
16	11.98	.	15.80	15.38
17	5.83	.	14.27	11.51
18	8.47	.	12.28	16.08
19	12.09	.	9.21	3.90
20	14.59	.	16.34	16.18
21	13.75	.	15.98	16.82
22	8.69	.	15.40	15.00
23	10.25	.	15.85	13.43
24	9.08	.	14.00	10.99
25	7.04	.	15.06	16.82
26	9.09	.	15.72	15.37
27	13.90	.	8.87	9.55
28	13.97	.	14.10	10.32
29	11.07	.	14.84	9.82
30	9.20	.	12.00	10.77
31	13.83	.	8.65	9.97
TT Monthly Totals	291.83	.	354.32	347.79
 Daily Means	9.41	.	11.43	11.22
SS Monthly Totals				
 Daily Means				
Types of	PYRANOMETER	PYRANOMETER	PYRANOMETER	PYRANOMETER
Instruments	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY

DIRECCION METEOROLOGICA DE CHILE
SUBDIRECCION DE CLIMAT. Y MET. APLICADA
DEPTO. CLIMATOLOGIA

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

Month: JULY

Year: 2011

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	QUINTA NORMAL	PUERTO MONTT	COYHAIQUE	PUNTA ARENAS
Date				
1	8.63	5.35	2.73	2.53
2	8.85	7.47	2.62	2.45
3	9.98	6.86	1.78	2.50
4	9.20	5.98	0.51	1.38
5	7.62	6.05	0.20	0.67
6	8.22	3.42	1.62	0.86
7	9.34	2.83	0.67	2.70
8	8.99	2.99	0.15	0.48
9	8.26	0.47	1.78	2.81
10	6.74	3.96	0.47	1.13
11	6.13	3.74	0.73	2.27
12	9.25	1.99	3.51	1.89
13	9.50	1.00	1.71	1.41
14	8.83	2.08	3.88	1.45
15	2.97	3.58	4.84	3.19
16	10.05	3.37	0.78	3.24
17	8.37	6.69	2.70	2.90
18	7.08	7.13	4.79	1.73
19	9.63	7.38	3.14	2.18
20	9.26	2.13	2.96	2.40
21	9.72	1.10	3.92	3.34
22	10.06	4.17	0.42	2.27
23	10.54	4.84	5.91	3.53
24	3.10	1.16	1.68	1.61
25	10.06	3.97	3.50	1.06
26	10.98	3.45	2.24	1.36
27	6.97	5.89	2.77	2.90
28	7.75	6.66	.	4.13
29	6.18	6.72	.	4.88
30	3.14	9.68	3.53	2.78
31	10.37	7.43	.	3.39
TT Monthly Totals	255.79	139.54	.	71.42
 Daily Means	8.25	4.50	2.34	2.30
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: 2011		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	13.19	.	17.98	18.45
2	14.36	.	17.90	18.67
3	16.92	.	16.82	18.80
4	17.13	.	17.49	16.06
5	16.90	.	14.59	14.15
6	9.61	.	15.18	15.24
7	12.70	.	17.38	13.19
8	15.05	.	17.57	16.92
9	10.51	.	13.10	17.88
10	11.81	.	14.28	15.33
11	10.99	.	13.46	4.91
12	13.86	.	17.75	15.36
13	13.94	.	16.63	11.36
14	8.23	.	5.94	5.06
15	18.68	.	7.10	9.33
16	13.24	.	18.85	19.45
17	6.01	.	18.49	19.78
18	11.06	.	19.25	19.29
19	6.72	.	16.81	18.43
20	7.77	.	17.14	20.14
21	6.30	.	14.90	7.32
22	8.41	.	20.88	18.20
23	15.27	.	13.51	14.74
24	13.27	.	19.22	16.99
25	16.79	.	17.66	21.12
26	17.35	.	17.63	6.97
27	13.79	.	20.84	20.97
28	11.32	.	12.57	20.76
29				
30				
31				
TT Monthly Totals	351.17	.	450.91	434.88
Daily Means	12.54	.	16.10	15.53
SS Monthly Totals				
Daily Means				
Types of	PYRANOMETER	PYRANOMETER	PYRANOMETER	PYRANOMETER
Instruments	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY

DIRECCION METEOROLOGICA DE CHILE
SUBDIRECCION DE CLIMAT. Y MET. APLICADA
DEPTO. CLIMATOLOGIA

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

Month: AUGUST

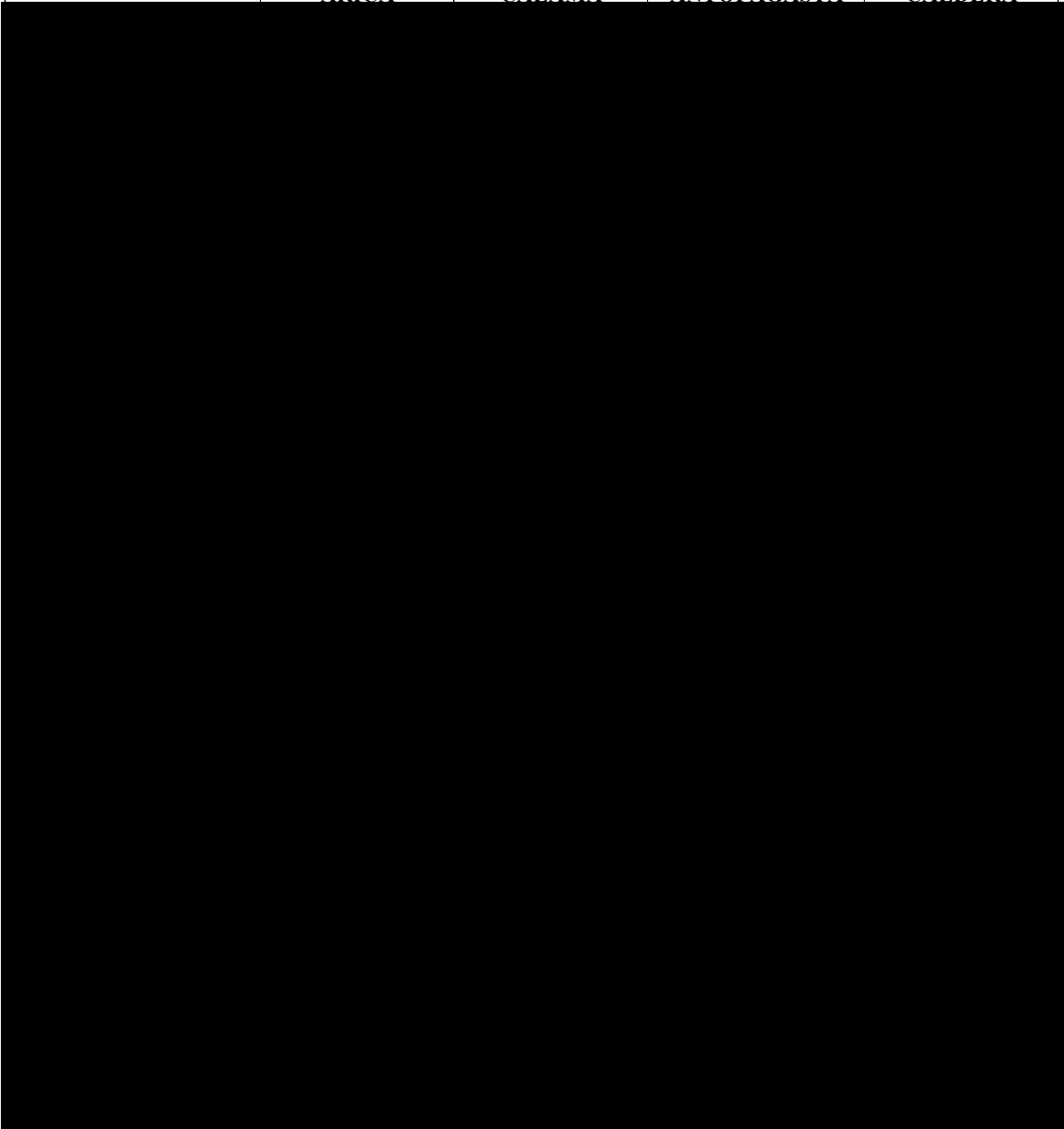
Year: 2011

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	QUINTA NORMAL	PUERTO MONTT	COYHAIQUE	PUNTA ARENAS
Date				
1	10.52	1.32	.	3.07
2	8.37	4.85	.	2.62
3	10.24	4.74	.	1.49
4	3.21	4.16	.	1.48
5	1.92	4.85	1.18	1.03
6	1.94	3.62	1.01	4.58
7	2.85	3.67	6.12	3.40
8	8.00	1.87	0.36	1.29
9	12.00	4.35	2.74	0.82
10	12.10	3.19	0.06	3.66
11	12.36	6.33	3.19	3.92
12	12.27	7.53	7.77	5.74
13	11.77	7.17	2.01	6.03
14	12.96	9.64	5.02	2.82
15	2.22	9.47	2.57	5.04
16	9.53	3.21	0.50	6.35
17	2.51	4.69	0.33	5.09
18	2.34	8.36	3.08	5.48
19	13.83	8.67	5.86	5.92
20	14.55	12.38	10.44	6.26
21	14.44	12.63	10.42	7.70
22	13.63	1.42	4.92	3.88
23	9.98	8.10	8.04	7.04
24	7.51	12.31	10.30	7.26
25	6.75	2.13	4.19	7.60
26	2.73	2.08	3.12	6.25
27	11.29	8.65	6.21	7.07
28	3.01	6.28	2.57	7.44
29				
30				
31				
TT Monthly Totals	234.83	167.65	.	130.32
 Daily Means	8.39	5.99	.	4.65
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: 2011		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



DIRECCION METEOROLOGICA DE CHILE
SUBDIRECCION DE CLIMAT. Y MET. APLICADA
DEPTO. CLIMATOLOGIA

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

Month: SEPTEMBER		Year: 2011		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	QUINTA NORMAL	PUERTO MONTT	COYHAIQUE	PUNTA ARENAS	
Date					
1	15.42	2.74	5.90	5.90	
2	15.08	3.56	4.55	4.55	
3	11.03	6.35	7.57	7.57	
4	16.03	6.56	4.90	4.90	
5	16.52	6.25	6.00	6.00	
6	16.14	8.07	5.36	5.36	
7	15.53	7.36	8.14	8.14	
8	10.63	5.34	10.69	10.69	
9	9.07	6.29	5.37	5.37	
10	15.11	8.17	7.08	7.08	
11	17.62	1.73	11.93	11.93	
12	17.20	10.31	6.54	6.54	
13	17.39	16.53	8.46	8.46	
14	16.24	10.56	7.13	7.13	
15	16.28	2.39	5.02	5.02	
16	12.35	14.08	2.94	2.94	
17	14.53	17.28	10.77	10.77	
18	19.28	13.29	9.31	9.31	
19	18.81	16.95	9.29	9.29	
20	19.58	8.28	4.26	4.26	
21	15.78	9.70	9.99	9.99	
22	16.57	11.57	16.18	16.18	
23	16.43	6.61	5.95	5.95	
24	19.08	11.29	11.86	11.86	
25	14.01	8.95	4.51	4.51	
26	14.60	10.20	5.73	5.73	
27	19.27	3.18	3.66	3.66	
28	20.07	12.70	7.35	7.35	
29	19.62	10.01	7.48	7.48	
30	19.64	8.13	9.04	9.04	
31					
TT Monthly Totals	484.89	264.42	222.98	222.98	
Daily Means	16.16	8.81	7.43	7.43	
SS Monthly Totals					
Daily Means					
Types of	PYRANOMETER	PYRANOMETER	PYRANOMETER	PYRANOMETER	
Instruments	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	

DIRECCION METEOROLOGICA DE CHILE
SUBDIRECCION DE CLIMAT. Y MET. APLICADA
DEPTO. CLIMATOLOGIA

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

Month: OCTOBER

Year: 2011

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	18.60	.	21.65	13.81
2	21.70	.	17.58	5.70
3	25.04	.	25.92	18.30
4	23.88	.	24.70	26.81
5	18.94	.	24.52	24.85
6	16.14	.	19.07	7.41
7	21.06	.	24.40	19.73
8	20.09	.	21.66	22.49
9	18.56	.	24.81	15.63
10	19.63	.	25.01	26.08
11	20.31	.	10.40	12.82
12	16.03	26.83	22.78	22.37
13	18.50	27.13	20.56	25.60
14	18.16	27.63	26.85	24.59
15	22.29	27.79	26.20	28.18
16	25.29	28.04	27.06	24.10
17	25.46	27.87	27.09	25.09
18	23.29	28.25	27.25	25.79
19	25.62	28.55	28.29	28.00
20	24.26	28.53	27.17	23.19
21	22.78	28.32	28.67	24.56
22	26.27	28.54	29.86	28.19
23	26.12	28.72	27.57	28.99
24	24.03	29.01	27.14	28.95
25	22.50	29.05	23.74	22.41
26	11.30	29.11	20.60	9.78
27	18.24	28.96	23.77	6.95
28	24.25	26.89	26.87	22.25
29	26.15	28.61	27.97	20.56
30	26.30	28.43	28.46	19.89
31	26.55	28.73	27.19	21.03
TT Monthly Totals	677.36	.	764.83	654.10
 Daily Means	21.85	.	24.67	21.10
SS Monthly Totals				
 Daily Means				
Types of	PYRANOMETER	PYRANOMETER	PYRANOMETER	PYRANOMETER
Instruments	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY

DIRECCION METEOROLOGICA DE CHILE
SUBDIRECCION DE CLIMAT. Y MET. APLICADA
DEPTO. CLIMATOLOGIA

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

Month: OCTOBER		Year: 2011		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	20.74	10.67	7.79	15.00	
2	21.35	20.53	14.22	12.20	
3	20.28	14.05	11.80	7.06	
4	17.20	3.97	6.08	6.70	
5	15.54	7.65	8.48	5.71	
6	.	8.82	6.88	3.11	
7	.	15.42	14.22	14.05	
8	.	12.40	18.87	10.25	
9	.	7.55	12.94	10.34	
10	.	15.18	13.66	16.50	
11	.	6.10	10.02	16.08	
12	.	9.81	19.65	14.53	
13	.	22.27	19.46	11.41	
14	.	6.80	17.10	18.05	
15	.	15.86	11.69	17.19	
16	.	10.46	18.86	12.68	
17	.	18.21	17.26	14.97	
18	.	20.03	12.65	4.09	
19	.	6.84	2.06	14.54	
20	.	9.95	21.47	19.12	
21	.	15.51	16.38	14.44	
22	.	24.17	20.15	17.67	
23	.	13.04	19.64	14.15	
24	.	13.35	23.44	15.77	
25	.	23.90	23.03	15.40	
26	.	19.89	23.26	8.45	
27	25.06	8.83	23.26	14.42	
28	24.81	9.98	21.06	21.81	
29	26.15	22.52	23.05	21.97	
30	26.23	21.85	22.73	23.98	
31	26.48	17.80	23.80	12.48	
TT Monthly Totals	.	433.43	504.93	424.10	
Daily Means	.	13.98	16.29	13.68	
SS Monthly Totals					
Daily Means					
Types of	PYRANOMETER	PYRANOMETER	PYRANOMETER	PYRANOMETER	
Instruments	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	

DIRECCION METEOROLOGICA DE CHILE
SUBDIRECCION DE CLIMAT. Y MET. APLICADA
DEPTO. CLIMATOLOGIA

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

Month: NOVEMBER		Year: 2011		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	26.62	28.75	28.59	25.69	
2	23.59	29.41	24.31	21.35	
3	24.02	29.72	22.07	9.92	
4	23.94	29.71	29.05	16.94	
5	22.46	29.75	28.42	18.35	
6	19.82	29.91	29.50	8.48	
7	18.40	29.92	28.51	8.59	
8	21.80	29.99	20.61	5.97	
9	21.87	29.90	29.76	30.14	
10	22.24	29.88	29.53	18.60	
11	26.18	29.42	29.59	19.34	
12	23.26	28.55	28.63	25.02	
13	23.73	29.50	30.91	25.80	
14	24.15	29.83	26.46	30.06	
15	23.32	29.99	31.37	24.04	
16	27.40	29.79	30.52	25.08	
17	22.78	29.55	30.00	29.29	
18	19.03	28.05	21.20	28.06	
19	23.21	28.41	28.21	25.46	
20	26.65	29.08	28.45	26.71	
21	25.52	29.95	29.90	32.25	
22	19.84	29.90	25.79	22.36	
23	19.92	30.26	30.65	17.64	
24	22.55	30.34	29.69	23.19	
25	24.35	30.14	24.75	10.94	
26	21.05	29.92	27.04	9.54	
27	26.79	29.49	30.66	18.86	
28	26.15	29.80	30.92	25.80	
29	26.49	29.10	28.28	8.36	
30	26.43	29.59	28.98	26.50	
31					
TT Monthly Totals	703.56	887.62	842.33	618.35	
Daily Means	23.45	29.59	28.08	20.61	
SS Monthly Totals					
Daily Means					
Types of	PYRANOMETER	PYRANOMETER	PYRANOMETER	PYRANOMETER	
Instruments	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	

DIRECCION METEOROLOGICA DE CHILE
SUBDIRECCION DE CLIMAT. Y MET. APLICADA
DEPTO. CLIMATOLOGIA

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

Month: NOVEMBER

Year: 2011

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	QUINTA NORMAL	PUERTO MONTT	COYHAIQUE	PUNTA ARENAS
Date				
1	17.93	6.27	15.28	13.83
2	25.92	9.77	15.75	21.48
3	25.67	25.96	22.13	15.76
4	25.93	12.83	18.21	16.62
5	26.09	24.89	19.96	15.42
6	26.73	13.55	9.70	22.48
7	15.90	10.35	23.12	15.63
8	8.70	9.72	15.25	14.58
9	26.03	16.52	21.71	21.43
10	27.48	9.94	14.63	21.91
11	27.15	24.15	11.31	14.38
12	27.76	20.36	22.93	18.64
13	19.21	11.23	6.18	23.00
14	27.77	22.60	14.97	23.68
15	27.56	22.29	26.03	26.34
16	24.87	23.05	26.10	14.39
17	24.99	7.29	19.65	14.13
18	18.76	17.64	15.35	23.21
19	24.18	15.11	19.59	7.93
20	27.45	8.84	15.91	18.30
21	28.23	3.39	17.15	13.73
22	28.00	7.21	9.13	9.57
23	28.28	10.44	15.06	7.70
24	27.96	11.06	7.53	20.63
25	27.83	19.52	25.24	17.31
26	26.03	27.33	19.39	9.46
27	28.47	5.76	25.49	15.05
28	28.31	18.75	17.53	21.89
29	28.33	24.82	27.52	9.60
30	28.58	30.14	27.01	25.87
31				
TT Monthly Totals	756.11	470.77	544.81	513.96
 Daily Means	25.20	15.69	18.16	17.13
SS Monthly Totals				
 Daily Means				
Types of	PYRANOMETER	PYRANOMETER	PYRANOMETER	PYRANOMETER
Instruments	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY

DIRECCION METEOROLOGICA DE CHILE
SUBDIRECCION DE CLIMAT. Y MET. APLICADA
DEPTO. CLIMATOLOGIA

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

Month: DECEMBER		Year: 2011		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	26.98	29.88	29.69	.	
2	27.12	29.91	30.97	19.42	
3	27.27	30.17	29.88	23.26	
4	23.41	30.35	28.91	26.25	
5	23.31	30.19	28.39	21.53	
6	23.21	29.83	31.63	22.71	
7	27.06	29.63	32.14	31.35	
8	25.24	30.03	32.01	27.68	
9	20.03	30.13	30.82	17.88	
10	25.12	30.09	29.36	8.20	
11	26.49	29.63	31.32	27.08	
12	20.24	29.54	31.75	29.08	
13	22.78	29.12	30.24	27.95	
14	26.03	29.25	30.97	20.76	
15	26.32	29.53	30.19	21.97	
16	26.01	29.48	31.99	24.66	
17	26.90	29.61	32.09	29.68	
18	26.05	29.55	31.78	25.15	
19	24.93	29.48	32.01	26.91	
20	22.00	29.35	28.48	25.84	
21	24.67	29.22	30.91	25.10	
22	18.89	28.86	29.27	27.33	
23	12.43	25.94	28.15	23.48	
24	23.01	24.24	29.95	29.29	
25	12.27	21.97	28.77	25.72	
26	22.80	27.90	25.27	31.43	
27	22.70	11.45	24.17	21.09	
28	20.98	26.52	32.01	24.48	
29	17.76	28.53	29.51	18.33	
30	24.92	29.43	32.31	23.84	
31	21.95	27.80	31.43	32.12	
TT Monthly Totals	718.90	876.61	936.39	.	
Daily Means	23.19	28.28	30.21	24.65	
SS Monthly Totals					
Daily Means					
Types of	PYRANOMETER	PYRANOMETER	PYRANOMETER	PYRANOMETER	
Instruments	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	PSP EPPLEY	

DIRECCION METEOROLOGICA DE CHILE
SUBDIRECCION DE CLIMAT. Y MET. APLICADA
DEPTO. CLIMATOLOGIA

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

Month: DECEMBER		Year: 2011		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	27.68	27.13	27.40	24.23	
2	24.92	15.76	26.40	26.25	
3	28.41	7.62	9.59	22.17	
4	28.70	12.77	14.51	21.58	
5	29.03	22.01	21.15	26.64	
6	26.07	29.55	25.20	13.50	
7	26.54	21.48	28.91	12.71	
8	28.13	29.62	25.60	17.49	
9	28.35	21.58	11.93	15.81	
10	28.51	15.68	16.29	23.06	
11	29.25	12.56	13.66	18.70	
12	29.03	30.25	28.66	25.18	
13	29.26	24.25	28.99	17.37	
14	28.56	26.30	28.48	12.36	
15	27.41	24.85	27.01	25.80	
16	26.19	29.85	27.11	15.09	
17	28.20	13.83	16.83	8.79	
18	28.53	20.56	27.32	18.87	
19	29.44	8.67	17.23	25.32	
20	29.28	16.64	19.38	19.79	
21	29.50	18.58	25.59	26.29	
22	29.68	21.61	23.13	15.82	
23	30.12	30.96	28.85	18.06	
24	30.06	30.73	28.28	30.42	
25	28.55	30.21	28.46	26.49	
26	24.06	26.34	28.56	21.83	
27	28.46	24.93	28.74	11.20	
28	28.52	30.16	29.06	29.35	
29	28.44	30.18	28.45	24.75	
30	28.62	28.79	16.70	27.38	
31	28.28	25.86	20.54	14.06	
TT Monthly Totals	875.77	709.30	728.00	636.34	
Daily Means	28.25	22.88	23.48	20.53	
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: 2011

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	5.7	6.5	10.2	9.2
2	0.9	1.5	9.6	8.6
3	0.0	1.0	9.3	8.3
4	0.0	0.0	3.9	6.8
5	0.0	0.0	2.3	2.0
6	0.0	0.0	7.1	0.0
7	0.4	0.0	7.8	0.4
8	1.9	0.0	5.8	0.0
9	4.9	4.3	9.5	8.3
10	3.8	0.0	10.3	1.3
11	0.9	0.0	10.0	5.0
12	0.0	0.0	10.1	0.0
13	0.0	0.0	10.0	0.0
14	0.0	0.0	10.3	0.0
15	7.6	3.7	10.2	1.1
16	3.9	7.9	10.1	7.2
17	0.0	4.8	10.1	3.0
18	3.0	6.2	10.2	2.8
19	4.1	0.0	9.2	1.6
20	6.0	5.6	10.1	8.6
21	5.8	1.7	10.1	6.6
22	0.0	1.9	10.1	7.7
23	2.7	5.4	10.1	7.4
24	0.1	2.3	10.2	5.2
25	0.2	2.2	10.4	5.7
26	0.9	0.0	10.3	6.4
27	5.0	0.0	10.2	0.7
28	5.3	4.3	10.3	4.6
29	4.0	1.5	10.3	5.5
30	2.5	0.0	9.7	3.2
31	3.8	3.0	9.8	1.8
TT Monthly Totals				
Daily Means				
SS Monthly Totals	73.4	63.8	287.6	129.0
Daily Means	2.4	2.1	9.3	4.2
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: JULY

Year: 2011

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	5.8	9.2	0.0	7.7
2	8.3	4.3	8.0	7.3
3	0.0	5.0	9.0	7.2
4	.	7.7	0.2	7.7
5	5.2	5.4	0.0	4.4
6	7.3	6.5	7.7	6.5
7	1.1	4.9	3.2	7.5
8	0.0	7.6	0.2	7.5
9	8.5	7.7	2.7	2.4
10	3.1	6.7	0.0	1.5
11	0.0	5.0	4.6	3.9
12	7.0	8.3	6.9	6.7
13	0.0	1.4	0.0	7.2
14	0.4	8.1	0.0	4.3
15	4.4	0.0	0.0	0.4
16	8.2	0.7	2.9	7.4
17	4.8	6.8	7.0	5.4
18	8.9	8.2	7.5	5.7
19	0.0	4.0	4.7	7.8
20	9.4	7.0	8.6	6.9
21	9.4	9.0	9.6	7.9
22	7.1	7.6	8.3	8.2
23	5.6	0.0	0.0	8.9
24	4.0	3.0	0.0	0.8
25	9.2	8.7	9.4	6.9
26	7.1	0.0	9.6	7.7
27	2.2	9.7	3.8	2.3
28	3.4	8.6	2.8	3.7
29	2.6	8.2	4.5	4.5
30	3.9	7.0	0.6	0.0
31	3.4	10.0	1.7	6.0
TT Monthly Totals				
Daily Means				
SS Monthly Totals	.	186.3	123.5	172.3
Daily Means	4.7	6.0	4.0	5.6
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: JULY

Year: 2011

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	7.0	2.9	8.6	6.3
2	6.9	2.4	8.1	6.1
3	7.3	5.5	8.1	6.1
4	7.5	0.3	3.9	6.7
5	5.5	0.1	7.8	6.5
6	5.8	2.6	7.7	0.0
7	7.4	5.7	8.0	3.7
8	6.9	1.1	5.0	1.5
9	4.9	0.4	0.0	1.4
10	3.8	0.9	3.6	3.1
11	4.5	4.7	1.2	3.2
12	6.8	3.4	9.4	8.8
13	7.0	0.7	2.2	6.1
14	4.6	5.4	1.9	0.0
15	0.0	5.5	5.9	3.1
16	7.1	4.8	8.8	4.3
17	5.3	3.1	9.4	7.8
18	4.7	1.7	8.7	3.3
19	7.5	4.3	7.7	4.1
20	6.7	5.7	8.4	7.9
21	7.6	1.9	9.0	8.4
22	7.9	0.6	9.5	5.5
23	7.7	0.2	8.1	3.5
24	0.0	3.4	0.0	0.0
25	6.9	5.2	6.7	5.0
26	8.6	1.7	9.2	5.1
27	1.8	2.6	5.3	4.6
28	4.3	5.2	0.0	0.5
29	2.5	2.8	6.9	1.3
30	0.0	5.1	4.2	1.0
31	7.7	2.1	8.4	6.5
TT Monthly Totals				
Daily Means				
SS Monthly Totals	172.2	92.0	191.7	131.4
Daily Means	5.6	3.0	6.2	4.2
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: JULY

Year: 2011

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	CHILLAN	CONCEPCION	TEMUCO	VALDIVIA
Date				
1	7.2	8.2	3.8	0.4
2	3.9	7.8	7.3	2.5
3	7.4	8.7	9.0	0.8
4	7.2	6.9	6.5	0.0
5	1.3	2.3	0.0	0.0
6	0.0	5.3	3.9	0.0
7	0.0	8.4	4.6	3.2
8	0.0	0.0	0.0	0.0
9	0.0	1.9	1.1	0.0
10	4.3	0.0	0.3	0.0
11	0.0	1.3	1.1	0.7
12	7.3	7.3	3.1	0.0
13	6.9	2.2	0.4	0.0
14	0.0	0.6	1.2	0.4
15	0.0	0.9	2.9	4.6
16	2.5	5.4	1.3	2.3
17	0.0	5.2	0.3	1.2
18	4.3	8.9	3.0	2.1
19	5.5	8.5	5.9	0.0
20	2.0	0.1	0.7	0.0
21	7.0	1.9	0.0	0.0
22	6.2	7.5	7.0	4.0
23	3.3	6.2	0.4	0.5
24	.	0.6	0.0	0.0
25	1.8	3.9	2.8	2.7
26	4.0	7.6	1.0	4.9
27	.	0.3	2.6	0.2
28	2.3	3.0	5.4	3.7
29	2.4	8.7	9.2	8.0
30	2.9	8.9	7.9	7.2
31	7.9	8.8	6.9	2.7
TT Monthly Totals				
Daily Means				
SS Monthly Totals	.	147.3	99.6	52.1
Daily Means	3.4	4.8	3.2	1.7
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: 2011

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	5.4	5.7	5.7	
2	6.1	0.0	5.4	
3	5.2	5.2	4.8	
4	5.0	0.0	0.6	
5	3.1	0.3	0.0	
6	0.0	1.4	0.0	
7	0.0	0.0	5.2	
8	0.0	0.0	0.0	
9	0.0	3.1	2.0	
10	0.5	0.0	0.0	
11	2.8	0.0	0.0	
12	0.0	3.3	0.3	
13	0.0	0.3	0.0	
14	0.1	2.6	1.0	
15	1.2	4.9	5.2	
16	1.4	0.0	5.9	
17	3.4	6.3	1.0	
18	3.8	5.3	0.3	
19	5.5	1.2	1.0	
20	0.0	0.2	2.2	
21	0.0	3.8	3.3	
22	0.4	0.0	3.9	
23	1.2	7.0	5.4	
24	0.0	0.0	0.0	
25	1.9	2.2	0.0	
26	0.9	0.0	0.0	
27	0.0	1.4	0.0	
28	3.6	0.0	5.8	
29	3.4	6.7	6.0	
30	7.5	5.4	0.0	
31	4.2	0.3	1.5	
TT Monthly Totals				
Daily Means				
SS Monthly Totals	66.6	66.6	66.5	
Daily Means	2.1	2.1	2.1	
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: AUGUST

Year: 2011

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	5.4	9.0	10.4	9.7
2	5.6	9.6	10.5	8.6
3	6.8	2.3	10.5	7.4
4	5.5	1.6	10.5	8.8
5	6.6	8.8	10.4	3.7
6	1.0	7.8	.	5.6
7	4.8	4.6	10.3	8.2
8	5.4	8.2	10.3	7.9
9	0.9	1.9	10.3	4.6
10	4.0	0.6	10.6	4.7
11	3.3	0.0	10.4	3.8
12	5.0	0.0	10.3	7.8
13	3.2	0.0	10.3	6.4
14	0.5	0.0	10.3	0.0
15	7.2	4.9	7.7	0.0
16	2.8	2.2	10.3	7.8
17	0.0	5.6	10.4	7.6
18	2.3	6.4	10.6	8.5
19	0.0	4.9	10.6	3.8
20	0.0	0.3	10.7	6.1
21	0.0	0.4	10.7	4.7
22	0.0	8.6	10.8	9.8
23	4.9	2.6	11.0	4.4
24	4.4	7.4	10.5	8.8
25	6.2	6.7	.	6.3
26	5.3	0.1	11.0	5.1
27	5.0	8.9	10.6	9.4
28	0.2	8.6	11.0	2.0
29	6.4	10.0	11.1	7.7
30	7.1	4.4	11.2	9.7
31	1.4	2.8	11.2	9.5
TT Monthly Totals				
Daily Means				
SS Monthly Totals	111.2	139.2	.	198.4
Daily Means	3.6	4.5	10.5	6.4
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: AUGUST

Year: 2011

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	3.4	0.0	9.3	5.2
2	10.0	10.5	9.1	5.1
3	9.7	9.1	9.9	6.6
4	.	5.7	7.6	0.0
5	6.2	0.5	9.0	0.0
6	5.8	4.4	1.8	0.0
7	3.7	3.6	0.0	0.7
8	7.1	7.8	3.3	3.0
9	7.7	3.6	7.0	8.0
10	0.0	1.7	7.2	8.6
11	0.0	9.9	1.1	8.1
12	6.1	8.4	6.1	7.8
13	2.5	7.8	9.3	7.6
14	0.0	6.3	0.0	7.9
15	1.3	3.3	0.4	0.0
16	10.0	4.4	9.9	5.1
17	10.0	2.3	10.0	0.0
18	9.0	6.2	2.8	0.7
19	8.8	9.9	10.2	8.8
20	9.9	8.9	10.2	9.1
21	0.6	9.4	0.0	9.2
22	7.6	3.8	7.5	8.5
23	5.2	6.8	4.3	2.5
24	6.7	5.3	6.6	0.6
25	10.6	7.0	7.5	0.0
26	0.5	10.0	0.0	0.0
27	10.6	7.7	10.1	5.4
28	8.8	8.7	5.5	0.0
29	10.7	4.5	10.1	7.3
30	11.1	8.3	10.5	9.2
31	8.6	7.8	10.4	10.3
TT Monthly Totals				
Daily Means				
SS Monthly Totals	.	193.6	196.7	145.3
Daily Means	6.4	6.2	6.3	4.7
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: AUGUST

Year: 2011

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	5.7	0.1	4.2	5.3
2	5.2	2.1	6.1	4.2
3	7.0	1.4	9.5	7.0
4	0.0	4.7	0.0	0.4
5	0.0	4.5	1.1	0.3
6	0.0	0.0	1.3	0.0
7	0.0	0.1	0.0	0.0
8	2.5	0.0	2.1	0.0
9	7.4	7.2	2.5	1.9
10	7.8	5.2	5.1	6.6
11	7.7	1.4	5.7	1.4
12	7.5	7.3	1.1	0.1
13	6.6	4.5	8.7	7.1
14	7.9	4.8	9.7	3.1
15	0.0	4.7	0.0	4.0
16	5.2	7.1	3.9	0.0
17	0.0	6.4	0.0	0.0
18	0.3	3.0	5.2	3.6
19	8.1	0.4	10.0	6.2
20	8.1	8.0	9.9	8.3
21	8.3	8.1	9.4	9.1
22	8.0	7.4	6.3	8.8
23	2.4	0.4	3.9	2.6
24	1.1	0.0	0.5	0.0
25	1.1	0.6	0.7	0.0
26	0.0	5.2	0.0	0.0
27	5.3	2.1	8.5	6.7
28	0.0	5.6	0.3	0.0
29	7.2	7.0	9.9	3.6
30	8.6	7.5	10.3	9.3
31	8.9	4.5	10.2	9.0
TT Monthly Totals				
Daily Means				
SS Monthly Totals	137.9	121.3	146.1	108.6
Daily Means	4.4	3.9	4.7	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: 2011

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	CHILLAN	CONCEPCION	TEMUCO	VALDIVIA
Date				
1	0.8	0.0	0.0	0.0
2	3.1	7.2	3.1	3.4
3	3.1	5.6	4.7	2.9
4	0.2	3.3	2.5	2.5
5	2.1	3.2	4.2	4.5
6	0.1	0.5	0.0	1.5
7	0.0	0.0	0.0	0.0
8	0.4	1.1	1.0	0.0
9	0.0	0.0	0.6	0.9
10	4.7	0.9	6.2	1.7
11	0.0	0.0	5.1	2.5
12	6.2	3.9	3.9	3.9
13	8.8	9.1	8.0	5.1
14	9.5	9.4	7.1	3.4
15	3.1	2.4	0.4	0.6
16	1.1	3.7	1.8	2.2
17	1.1	5.0	2.5	0.0
18	8.3	8.0	5.4	4.9
19	8.9	9.7	9.3	5.5
20	9.6	10.1	9.3	7.6
21	9.3	10.2	8.8	6.7
22	3.9	4.3	0.7	0.0
23	0.5	0.0	0.0	0.0
24	4.7	9.6	9.9	6.7
25	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0
27	4.1	5.7	5.9	3.9
28	1.9	5.2	2.0	2.4
29	2.7	7.8	4.5	3.1
30	9.5	9.7	9.4	5.8
31	9.3	11.3	9.2	8.3
TT Monthly Totals				
Daily Means				
SS Monthly Totals	117.0	146.9	125.5	90.0
Daily Means	3.8	4.7	4.0	2.9
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: AUGUST

Year: 2011

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	0.2	
2	5.7	4.2	0.6	
3	1.4	3.2	0.0	
4	1.7	0.6	0.0	
5	0.0	2.7	0.0	
6	0.0	6.7	3.4	
7	0.9	4.0	0.0	
8	0.0	0.0	0.0	
9	2.5	2.4	0.0	
10	1.9	0.0	2.7	
11	4.4	3.1	1.6	
12	5.0	6.8	8.0	
13	4.2	4.1	8.5	
14	7.5	7.0	0.0	
15	6.4	6.8	3.0	
16	1.0	0.0	6.8	
17	0.6	1.7	2.0	
18	5.4	6.3	7.9	
19	7.5	7.5	5.7	
20	8.5	7.5	5.0	
21	7.2	8.3	8.3	
22	0.0	1.9	1.3	
23	5.8	7.0	6.2	
24	8.7	9.0	7.2	
25	0.0	0.0	6.9	
26	0.0	0.0	5.5	
27	5.0	3.6	4.5	
28	0.0	0.0	6.0	
29	4.1	4.7	3.1	
30	7.0	7.2	9.1	
31	6.6	0.3	0.0	
TT Monthly Totals				
Daily Means				
SS Monthly Totals	109.0	116.6	113.5	
Daily Means	3.5	3.8	3.7	
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: 2011

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	7.6	3.7	10.9	9.9
2	2.6	0.0	10.8	6.7
3	1.7	1.0	10.8	1.3
4	0.0	0.0	10.7	3.8
5	0.7	0.0	10.8	3.8
6	1.7	4.0	10.8	9.0
7	1.7	4.0	10.7	5.9
8	0.8	8.2	10.3	10.1
9	4.4	0.7	10.8	7.7
10	9.7	10.1	10.8	8.0
11	7.7	7.2	10.8	.
12	5.5	9.0	10.8	9.9
13	2.1	6.1	10.7	8.5
14	5.8	8.2	10.7	6.2
15	6.6	9.5	10.8	8.8
16	4.4	8.1	10.9	7.1
17	2.5	5.1	10.7	7.4
18	5.0	6.2	10.9	7.7
19	5.2	9.0	10.9	4.6
20	7.1	0.0	10.9	0.9
21	6.3	5.6	10.8	1.0
22	4.0	8.1	10.8	7.2
23	6.0	9.4	11.0	8.2
24	5.1	1.8	10.7	8.4
25	7.3	7.4	10.6	5.0
26	7.0	6.5	10.8	7.8
27	7.7	4.4	10.7	9.1
28	6.5	8.4	10.8	9.4
29	6.3	7.3	10.8	7.0
30	7.7	7.7	10.9	6.4
31				
TT Monthly Totals				
Daily Means				
SS Monthly Totals	146.7	166.7	323.4	.
Daily Means	4.9	5.6	10.8	6.8
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

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DPTO. CLIMATOLOGIA

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

Month: SEPTEMBER		Year: 2011		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	1.8	6.7	0.5	10.0	
2	4.8	9.4	6.4	6.5	
3	9.2	10.2	9.7	5.3	
4	9.9	6.0	9.7	9.4	
5	10.0	9.3	10.4	9.8	
6	6.3	8.4	7.8	9.7	
7	3.7	8.3	5.7	9.8	
8	9.2	4.4	10.3	2.9	
9	8.6	8.4	9.1	3.1	
10	7.8	8.4	6.8	8.4	
11	7.3	4.7	10.7	10.1	
12					

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

Month: SEPTEMBER		Year: 2011		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	9.2	7.0	4.8	9.0
2	9.0	5.0	8.1	7.4
3	5.4	5.9	8.5	6.8
4	9.3	6.5	10.7	9.9
5	9.0	2.2	10.4	8.4
6	7.2	2.7	9.3	7.4
7	8.2	5.6	10.2	7.4
8	2.2	0.3	5.3	0.0
9	3.7	6.9	6.4	0.5
10	7.6	7.5	10.1	7.9
11	8.8	4.8	10.7	10.2
12	8.9	1.7	10.8	7.3
13	9.0	9.2	10.1	5.5
14	7.3	8.2	0.0	5.7
15	7.4	1.1	6.0	8.4
16	5.7	6.2	7.9	5.9
17	4.5	3.3	10.4	7.9
18	8.9	1.9	0.6	10.3
19	8.2	2.8	5.6	5.4
20	8.6	2.7	0.0	10.4
21	6.3	0.7	0.0	2.4
22	6.0	9.0	6.8	3.3
23	6.0	8.8	8.5	3.5
24	8.2	5.0	8.5	7.0
25	4.0	9.7	5.5	5.0
26	4.4	0.0	7.8	1.9
27	8.9	8.2	10.4	12.3
28	8.9	7.1	9.3	1.2
29	8.8	3.4	10.1	6.8
30	8.1	5.8	9.2	6.7
31				
TT Monthly Totals				
Daily Means				
SS Monthly Totals	217.7	149.2	222.0	191.8
Daily Means	7.3	5.0	7.4	6.4
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: 2011

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	CHILLAN	CONCEPCION	TEMUCO	VALDIVIA
Date				
1	9.5	5.8	3.0	0.0
2	0.6	0.0	1.8	0.0
3	7.7	9.3	4.7	2.7
4	2.8	7.4	4.8	4.3
5	8.8	8.7	2.2	4.1
6	9.2	10.3	6.4	5.8
7	9.9	10.3	8.0	2.4
8	0.0	0.0	0.0	0.0
9	1.3	1.5	1.8	1.7
10	9.6	9.4	4.6	5.3
11	9.2	9.4	0.0	0.0
12	10.0	10.2	7.7	7.8
13	10.0	10.3	9.2	9.5
14	9.6	1.9	7.2	5.5
15	6.2	2.4	0.0	0.0
16	8.2	8.4	7.9	9.7
17	10.7	10.8	8.2	7.2
18	10.3	10.7	9.1	9.7
19	7.4	9.8	5.0	7.7
20	7.9	6.3	5.7	9.5
21	5.7	3.5	2.0	2.1
22	3.1	5.3	5.8	5.8
23	6.0	6.5	2.3	2.3
24	6.3	4.4	0.0	4.8
25	8.2	9.2	7.6	8.0
26	4.1	6.6	2.7	3.2
27	6.0	5.6	0.6	0.0
28	0.6	7.5	6.9	5.1
29	10.7	11.2	5.2	6.4
30	8.6	9.3	6.3	2.4
31				
TT Monthly Totals				
Daily Means				
SS Monthly Totals	208.2	212.0	136.7	133.0
Daily Means	6.9	7.1	4.6	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: SEPTEMBER Year: 2011 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	1.1	4.5	
2	1.1	0.1	4.5	
3	0.8	4.2	5.1	
4	0.8	1.7	1.6	
5	0.5	5.6	9.5	
6	3.0	4.6	2.3	
7	2.3	4.1	8.0	
8	0.1	8.4	0.0	
9	2.3	2.0	0.9	
10	2.3	3.4	9.0	
11	0.0	7.4	4.8	
12	6.2	8.3	8.1	
13	8.6	7.3	2.7	
14	4.4	4.5	0.0	
15	0.0	0.9	0.4	
16	9.1	7.9	4.9	
17	9.9	6.9	4.0	
18	5.1	9.4	8.1	
19	9.2	2.9	9.9	
20	2.1	3.5	1.9	
21	1.6	5.6	8.2	
22	4.5	9.9	10.8	
23	2.4	0.6	1.4	
24	5.5	6.7	0.5	
25	1.8	4.4	4.1	
26	2.0	3.9	10.3	
27	0.0	0.0	2.8	
28	5.4	4.6	0.0	
29	3.3	4.4	0.3	
30	2.0	2.4	6.8	
31				
TT Monthly Totals				
Daily Means				
SS Monthly Totals	96.3	136.7	135.4	
Daily Means	3.2	4.6	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: OCTOBER

Year: 2011

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	6.0	7.3	10.9	7.3
2	7.6	5.7	11.1	3.8
3	10.1	10.6	10.9	10.5
4	10.0	9.7	11.0	8.3
5	5.6	5.3	11.1	8.3
6	4.5	5.6	11.1	5.8
7	5.7	7.3	11.0	8.8
8	6.4	9.0	11.1	6.8
9	4.4	5.1	10.7	8.1
10	5.3	8.8	11.0	8.2
11	4.1	1.5	9.3	2.6
12	5.1	5.3	11.0	7.3
13	6.0	7.7	11.0	5.0
14	5.5	6.6	10.9	10.4
15	7.1	.	11.2	10.8
16	9.9	11.1	11.4	10.1
17	11.1	11.0	11.5	10.9
18	8.1	11.1	11.3	10.0
19	10.4	10.9	11.6	11.4
20	8.4	11.2	11.5	9.5
21	7.6	9.0	11.6	9.9
22	10.2	9.8	11.7	11.3
23	10.8	10.9	11.7	8.3
24	6.3	10.8	11.7	8.8
25	7.5	10.7	11.5	5.9
26	0.6	0.8	11.5	5.3
27	5.5	8.5	11.7	7.2
28	10.6	10.9	10.5	8.7
29	10.9	9.9	11.5	9.0
30	11.3	11.1	11.5	9.0
31	0.0	11.3	11.7	8.7
TT Monthly Totals				
Daily Means				
SS Monthly Totals	222.6	.	347.2	256.0
Daily Means	7.2	8.5	11.2	8.3
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: OCTOBER

Year: 2011

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	4.0	4.0	7.2	10.8
2	0.0	0.0	8.9	10.9
3	6.7	6.7	0.0	9.7
4	11.0	11.0	10.0	7.1
5	8.7	8.7	8.1	7.8
6	9.0	9.0	4.3	2.2
7	5.5	5.5	4.4	5.7
8	7.2	7.2	11.2	10.1
9	3.9	3.9	10.9	10.2
10	8.5	8.5	9.5	9.9
11	2.4	2.4	2.9	7.1
12	5.9	5.9	8.4	9.0
13	7.8	7.8	3.1	6.5
14	7.9	7.9	4.4	8.2
15	10.9	10.9	12.1	10.9
16	6.9	6.9	7.8	7.9
17	8.2	8.2	2.8	4.7
18	9.5	9.5	7.0	11.4
19	9.9	9.9	6.4	11.5
20	7.4	7.4	6.4	11.4
21	7.8	7.8	0.0	11.5
22	10.3	10.3	6.9	9.4
23	11.2	11.2	7.9	11.3
24	11.7	11.7	10.9	7.4
25	7.1	7.1	11.4	11.6
26	0.4	0.4	2.8	12.1
27	0.0	0.0	3.8	11.0
28	6.7	6.7	6.8	11.9
29	6.3	6.3	11.9	12.0
30	6.0	6.0	8.2	12.1
31	6.7	6.7	0.0	11.7
TT Monthly Totals				
Daily Means				
SS Monthly Totals	215.5	215.5	206.4	295.0
Daily Means	7.0	7.0	6.7	9.5
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: 2011

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	QUINTA NORMAL	ROBINSON CRUSOE	SANTO DOMINGO	CURICO
Date				
1	9.8	10.0	11.0	10.4
2	9.9	5.3	11.3	9.5
3	9.8	4.2	2.2	4.4
4	7.0	3.9	9.0	1.5
5	5.9	3.3	9.4	3.5
6	0.6	8.7	3.6	1.9
7	2.1	7.7	9.6	5.8
8	10.5	8.1	11.1	10.6
9	10.5	6.9	11.4	11.5
10	8.3	7.8	9.9	7.7
11	6.1	7.5	2.6	2.0
12	8.4	1.6	5.6	10.2
13	7.4	6.2	6.4	7.4
14	8.6	6.9	9.4	7.0
15	10.4	5.4	12.0	10.9
16	6.3	3.2	12.0	5.1
17	4.9	1.7	5.8	3.5
18	10.6	8.6	11.1	12.2
19	10.5	5.4	11.5	12.3
20	10.7	6.4	8.2	12.3
21	11.1	3.6	7.6	4.4
22	10.4	1.6	11.8	12.1
23	11.2	0.0	7.5	11.9
24	8.0	0.0	11.5	8.9
25	10.7	9.9	11.6	9.2
26	11.2	7.9	7.1	12.0
27	10.4	7.6	8.2	10.3
28	11.2	5.7	12.2	11.7
29	11.2	5.3	11.8	11.7
30	11.2	8.3	4.5	12.3
31	11.0	0.2	0.0	11.9
TT Monthly Totals				
Daily Means				
SS Monthly Totals	275.9	168.9	266.9	266.1
Daily Means	8.9	5.4	8.6	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: 2011

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	CHILLAN	CONCEPCION	TEMUCO	VALDIVIA
Date				
1	11.0	11.0	8.3	5.9
2	10.7	11.7	8.9	6.9
3	8.8	0.2	4.7	5.3
4	0.3	0.1	0.0	0.9
5	6.6	6.4	3.7	0.6
6	1.7	7.7	4.8	3.2
7	7.8	11.6	8.7	10.0
8	9.9	10.9	8.7	8.1
9	8.4	10.4	0.0	1.7
10	6.4	9.2	7.5	9.1
11	1.6	6.9	3.4	1.6
12	5.4	1.4	0.0	0.7
13	10.4	10.5	10.8	10.6
14	10.3	10.7	1.4	1.0
15	5.7	4.2	1.6	4.3
16	5.2	8.2	8.3	4.3
17	2.0	0.0	0.5	7.0
18	10.0	12.1	9.1	8.2
19	11.3	19.4	7.0	7.0
20	10.7	10.9	7.8	4.5
21	11.4	9.7	10.2	9.7
22	12.0	12.2	9.7	10.3
23	10.3	9.5	8.7	4.9
24	9.9	11.2	9.5	8.8
25	12.2	12.4	10.1	9.5
26	11.7	9.0	10.5	11.8
27	6.6	10.6	4.2	5.6
28	12.8	12.9	7.7	6.2
29	10.5	12.4	9.9	9.8
30	12.0	12.0	10.3	8.2
31	11.9	0.0	10.1	11.3
TT Monthly Totals				
Daily Means				
SS Monthly Totals	265.5	275.4	206.1	197.0
Daily Means	8.6	8.9	6.6	6.4
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: OCTOBER

Year: 2011

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	4.2	4.3	9.3	
2	11.9	8.5	6.5	
3	4.4	4.1	0.4	
4	0.0	0.6	0.0	
5	0.7	2.3	0.0	
6	1.7	2.0	0.0	
7	7.6	9.1	5.9	
8	4.3	10.6	3.8	
9	1.2	4.2	3.7	
10	8.4	7.1	11.6	
11	0.3	3.3	8.7	
12	3.0	10.4	8.1	
13	11.5	10.5	4.8	
14	0.0	7.3	9.9	
15	5.1	6.4	7.7	
16	2.0	7.4	2.8	
17	8.4	9.1	4.7	
18	9.7	6.2	0.0	
19	0.1	0.0	5.5	
20	0.0	9.3	10.2	
21	7.4	6.7	5.8	
22	11.4	12.0	6.5	
23	2.9	10.4	5.4	
24	5.8	11.5	8.1	
25	10.9	12.0	5.6	
26	6.1	11.7	0.0	
27	2.1	12.1	4.9	
28	1.4	10.2	12.7	
29	9.7	11.7	11.6	
30	9.0	11.8	10.9	
31	6.6	11.5	0.0	
TT Monthly Totals				
Daily Means				
SS Monthly Totals	157.8	244.3	175.1	
Daily Means	5.1	7.9	5.6	
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: 2011

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	11.4	11.0	11.7	9.8
2	8.0	9.1	11.7	6.4
3	8.0	6.1	11.8	5.4
4	7.9	9.6	11.8	9.7
5	7.3	9.6	11.7	9.4
6	6.5	6.6	11.7	10.2
7	5.3	7.2	11.7	8.9
8	7.0	7.5	11.8	5.6
9	7.1	11.1	11.3	10.5
10	7.2	5.2	11.7	0.0
11	11.0	10.0	11.7	10.8
12	7.1	7.4	11.6	9.4
13	8.2	9.7	11.7	11.4
14	8.7	9.8	11.5	6.7
15	6.7	7.9	11.6	10.8
16	11.5	11.1	11.6	11.6
17	7.5	9.2	11.6	12.1
18	4.1	1.6	11.2	4.7
19	7.2	11.2	11.4	9.5
20	11.5	11.4	11.5	8.6
21	9.2	11.5	11.6	9.2
22	4.2	5.8	11.7	9.6
23	9.4	9.2	11.8	10.3
24	6.8	9.1	11.7	9.9
25	7.8	8.6	11.7	6.4
26	0.0	5.6	11.6	7.0
27	11.4	11.3	11.5	10.7
28	10.6	8.4	11.5	11.6
29	11.0	9.6	11.5	9.2
30	11.1	11.3	11.6	9.6
31				
TT Monthly Totals				
Daily Means				
SS Monthly Totals	240.7	262.7	348.5	265.0
Daily Means	8.0	8.8	11.6	8.8
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: NOVEMBER		Year: 2011		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	8.8	3.9	6.3	
2	5.9	5.9	11.5	11.5	
3	0.0	0.0	2.1	12.0	
4	3.7	3.7	0.5	11.5	
5	5.0	5.0	6.0	12.3	
6	0.0	0.0	1.3	11.1	
7	2.1	2.1	0.0	1.6	
8	0.0	0.0	5.2	3.1	
9	12.0	12.0	12.6	12.1	
10	5.0	5.0	11.4	12.5	
11	5.6	5.6	3.4	12.5	
12	6.2	6.2	0.0	11.9	
13	8.1	8.1	7.9	5.6	
14	10.2	10.2	10.1	12.4	
15	6.8	6.8	2.8	12.2	
16	8.0	8.0	4.0	8.8	
17	9.7	9.7	5.7	8.9	
18	8.4	8.4	6.0	4.6	
19	8.0	8.0	7.3	8.5	
20	9.4	9.4	11.0	11.0	
21	12.5	12.5	13.0	12.5	
22	5.2	5.2	10.3	12.6	
23	4.7	4.7	7.5	12.6	
24	5.7	5.7	12.6	12.6	
25	0.0	0.0	3.9	12.6	
26	0.0	0.0	0.0	11.0	
27	5.2	5.2	1.4	11.9	
28	8.0	8.0	12.8	12.5	
29	8.2	8.2	6.7	12.7	
30	8.4	8.4	3.6	12.6	
31					
TT Monthly Totals					
Daily Means					
SS Monthly Totals	180.8	180.8	184.5	314.0	
Daily Means	6.0	6.0	6.2	10.5	
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: 2011

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	6.2	4.0	6.6	4.0
2	10.7	10.8	11.9	10.8
3	11.1	7.1	11.9	12.5
4	11.1	11.6	11.6	12.2
5	11.1	11.3	11.2	12.8
6	10.7	11.1	10.1	10.2
7	3.2	9.7	2.4	1.7
8	2.6	9.1	4.6	2.7
9	11.2	5.3	12.2	11.4
10	11.4	9.2	13.1	11.0
11	11.5	0.9	12.1	13.3
12	11.3	1.0	0.0	12.9
13	5.9	0.3	4.6	2.7
14	11.1	4.2	8.5	9.9
15	10.9	8.9	0.0	12.8
16	8.8	5.7	0.0	7.8
17	8.8	5.7	9.3	8.7
18	6.3	4.9	5.6	1.3
19	8.6	3.4	11.1	10.1
20	10.7	7.2	12.1	9.8
21	11.2	5.7	12.3	13.3
22	11.6	.	12.4	13.3
23	11.6	5.6	12.5	12.9
24	11.3	8.2	10.9	.
25	11.5	.	12.6	10.5
26	10.7	1.7	3.6	13.4
27	11.5	2.8	8.7	12.3
28	11.7	8.8	12.5	13.3
29	11.8	10.2	12.4	13.1
30	11.7	11.4	12.5	13.6
31				
TT Monthly Totals				
Daily Means				
SS Monthly Totals	297.8	.	269.3	.
Daily Means	9.9	6.6	9.0	10.1
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: 2011

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	CHILLAN	CONCEPCION	TEMUCO	VALDIVIA
Date				
1	1.1	0.9	10.1	2.9
2	11.4	12.3	5.1	6.5
3	11.3	12.7	10.5	0.8
4	10.4	11.7	10.0	10.7
5	11.3	12.5	9.1	11.4
6	8.2	9.2	7.9	8.6
7	11.1	11.4	7.9	0.0
8	1.5	2.5	1.4	2.0
9	9.2	11.8	8.2	10.6
10	12.7	12.6	10.3	3.2
11	12.5	12.7	10.4	12.0
12	11.9	10.3	9.9	11.7
13	3.3	5.7	5.7	8.0
14	8.5	10.7	6.1	8.0
15	11.3	12.2	6.6	10.3
16	8.7	0.0	9.0	8.9
17	8.7	0.0	0.0	0.2
18	0.0	4.5	3.1	4.5
19	9.9	4.8	.	8.0
20	5.2	11.7	9.4	1.7
21	9.1	10.9	0.9	0.9
22	11.8	12.6	8.4	5.0
23	4.8	5.1	4.7	3.8
24	13.0	12.9	2.6	0.8
25	12.0	12.7	8.4	9.8
26	10.6	12.8	10.5	11.9
27	12.2	9.4	1.1	0.5
28	13.7	13.0	9.3	10.8
29	13.5	13.0	10.4	13.1
30	0.0	12.6	10.6	0.0
31				
TT Monthly Totals				
Daily Means				
SS Monthly Totals	268.9	285.2	.	186.6
Daily Means	9.0	9.5	7.2	6.2
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: NOVEMBER

Year: 2011

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	0.5	7.1	0.8	
2	2.3	7.4	9.7	
3	12.1	11.0	5.3	
4	6.4	5.8	2.3	
5	10.9	8.5	4.5	
6	3.2	1.2	12.5	
7	0.8	11.2	5.1	
8	1.9	5.9	4.7	
9	7.4	11.2	9.4	
10	2.2	3.3	10.1	
11	9.8	1.0	6.1	
12	8.9	7.8	7.1	
13	1.2	1.0	11.1	
14	8.2	5.1	12.0	
15	8.4	10.4	13.9	
16	6.5	12.3	1.8	
17	0.8	8.4	0.1	
18	7.2	6.7	12.1	
19	3.3	6.8	0.5	
20	1.2	5.3	5.7	
21	0.0	4.1	4.4	
22	0.0	0.9	1.1	
23	0.5	5.3	0.0	
24	2.0	0.3	5.6	
25	8.7	11.7	7.5	
26	10.5	7.5	3.1	
27	0.0	8.4	5.4	
28	10.3	6.1	10.0	
29	12.9	10.1	2.7	
30	13.1	12.4	9.6	
31				
TT Monthly Totals				
Daily Means				
SS Monthly Totals	161.2	204.2	184.2	
Daily Means	5.4	6.8	6.1	
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: 2011

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	11.5	11.4	11.6	10.1
2	11.5	11.7	11.6	10.4
3	11.7	11.6	11.8	9.0
4	7.4	11.4	11.8	8.5
5	7.4	7.3	11.7	9.2
6	7.5	11.3	11.6	11.6
7	11.6	11.1	11.6	12.0
8	8.5	11.5	11.8	12.1
9	4.3	9.6	11.8	11.8
10	7.6	11.0	11.6	9.9
11	9.8	10.7	11.6	10.8
12	4.0	9.6	11.5	11.9
13	7.5	11.0	11.2	9.7
14	10.0	11.6	11.6	10.5
15	10.6	11.4	11.6	10.6
16	10.9	11.2	11.5	11.6
17	11.5	11.3	11.4	12.0
18	10.9	11.1	11.6	11.6
19	8.4	11.1	11.7	12.1
20	6.7	10.6	11.7	10.2
21	8.6	10.1	11.7	10.3
22	4.4	8.5	10.9	8.4
23	1.9	3.2	9.0	8.2
24	6.4	5.1	7.2	9.8
25	1.1	0.4	5.9	9.2
26	6.0	4.2	9.8	6.7
27	7.7	9.6	1.3	5.3
28	5.2	5.9	9.7	11.7
29	3.1	8.3	10.0	9.1
30	8.7	8.3	13.9	9.1
31	6.5	9.3	10.2	11.8
TT Monthly Totals				
Daily Means				
SS Monthly Totals	238.9	290.4	331.9	315.2
Daily Means	7.7	9.4	10.7	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: 2011

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	8.2	8.2	11.1	12.5
2	8.3	8.3	0.1	9.1
3	7.8	7.8	8.8	12.0
4	8.0	8.0	12.2	12.3
5	4.8	4.8	3.0	12.6
6	6.6	6.6	2.5	10.1
7	14.1	14.1	12.9	9.5
8	9.3	9.3	4.8	12.2
9	3.4	3.4	0.0	12.4
10	0.0	0.0	0.0	12.7
11	8.4	8.4	6.4	12.8
12	8.6	8.6	9.5	12.7
13	8.2	8.2	5.2	12.7
14	5.8	5.8	5.0	12.4
15	6.0	6.0	4.9	11.4
16	7.2	7.2	4.7	8.1
17	10.3	10.3	13.1	12.2
18	7.6	7.6	8.9	12.3
19	8.2	8.2	6.5	12.8
20	8.2	8.2	10.0	12.7
21	7.9	7.9	11.9	12.7
22	8.3	8.3	12.2	12.8
23	5.9	5.9	7.7	12.6
24	10.5	10.5	11.8	12.7
25	5.6	5.6	10.1	12.6
26	11.9	11.9	12.7	9.9
27	6.6	6.6	1.3	12.5
28	7.1	7.1	4.4	12.4
29	4.6	4.6	0.0	12.3
30	7.3	7.3	0.5	12.5
31	12.6	12.6	5.7	12.2
TT Monthly Totals				
Daily Means				
SS Monthly Totals	237.3	237.3	207.9	370.7
Daily Means	7.7	7.7	6.7	12.0
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: 2011

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	11.6	11.5	2.2	13.5
2	9.3	9.7	6.2	10.3
3	10.7	7.5	11.6	10.5
4	11.5	5.3	11.4	12.7
5	11.8	5.0	10.5	13.5
6	9.7	8.6	3.7	13.1
7	9.5	5.2	6.8	9.0
8	11.8	11.4	0.7	13.2
9	12.0	8.6	0.1	13.2
10	11.9	6.9	9.5	13.3
11	12.0	0.3	12.6	13.6
12	12.0	0.9	12.5	13.6
13	11.9	6.5	0.3	13.6
14	11.8	5.2	0.0	13.5
15	11.2	9.7	0.0	7.1
16	9.2	8.8	0.0	3.8
17	11.7	11.1	1.9	10.6
18	11.8	5.6	6.9	13.3
19	12.0	11.3	12.9	13.6
20	11.9	7.0	12.8	13.6
21	11.9	4.4	12.7	13.6
22	12.0	0.4	12.5	13.6
23	12.0	7.5	12.6	13.7
24	12.0	8.3	12.6	13.6
25	11.1	7.4	8.3	13.1
26	8.7	4.9	7.4	11.9
27	11.8	10.2	5.8	13.6
28	11.8	11.5	0.0	13.4
29	11.8	10.8	4.0	13.3
30	11.9	10.6	5.8	13.6
31	11.8	11.7	4.8	13.1
TT Monthly Totals				
Daily Means				
SS Monthly Totals	352.1	233.8	209.1	385.1
Daily Means	11.4	7.5	6.7	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: 2011

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	CHILLAN	CONCEPCION	TEMUCO	VALDIVIA
Date				
1	12.1	0.2	10.4	11.6
2	7.7	8.7	5.3	2.6
3	12.6	4.7	6.6	2.5
4	12.3	12.8	8.5	10.3
5	12.2	12.7	7.9	8.5
6	12.5	12.7	10.3	11.8
7	13.3	12.8	10.1	11.6
8	13.4	12.9	8.7	12.3
9	13.3	12.9	8.8	12.1
10	13.8	13.2	5.8	9.3
11	12.9	13.3	9.0	6.3
12	13.3	12.9	11.2	10.7
13	13.4	11.4	9.5	12.7
14	13.2	0.9	9.9	12.8
15	10.5	1.7	8.4	11.6
16	7.9	4.8	6.5	12.8
17	13.8	12.1	8.6	9.2
18	13.8	13.1	10.2	12.1
19	13.3	12.8	8.4	2.1
20	12.9	11.7	1.3	4.0
21	11.1	13.1	4.9	6.7
22	9.9	13.8	10.0	11.7
23	13.8	13.2	10.4	13.1
24	13.6	13.0	10.7	13.6
25	13.5	12.5	10.5	13.6
26	13.6	9.8	10.5	10.6
27	13.3	8.4	10.2	13.1
28	13.0	6.8	10.6	13.1
29	13.5	12.2	10.2	13.6
30	13.4	12.2	10.1	13.4
31	13.0	7.5	10.2	13.3
TT Monthly Totals				
Daily Means				
SS Monthly Totals	389.9	320.8	273.7	322.7
Daily Means	12.6	10.3	8.8	10.4
Types of	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH	HELIOGRAPH
Instruments	CAMPBELL	CAMPBELL	CAMPBELL	CAMPBELL
	STOKES	STOKES	STOKES	STOKES

DIRECCION METEOROLOGICA DE CHILE
SUBDIRECCION DE CLIMAT. Y MET. APLICADA
DPTO. CLIMATOLOGIA

WMO