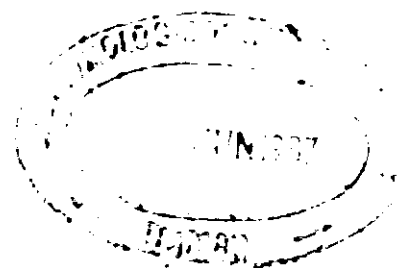


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METEOROLOGICAL SERVICE



**SOLAR RADIATION OBSERVATIONS**  
**1985**



DUBLIN  
1987

U.D.C  
551.506.3  
551.521.12(419.6)

Price: £1.40

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## Introduction

Solar radiation observations by the Irish Meteorological Service commenced in 1954 when the first pyranometer was installed at Valentia Observatory. At present, global and diffuse radiation instruments are installed at Valentia Observatory, Kilkenny, Birr, Dublin Airport, Clones and Malin Head. Global radiation only is measured at Belmullet. Diffuse radiation is measured using a pyranometer and shade ring to screen the pyranometer from the direct sun; correction factors are applied to allow for the portion of the sky obscured by the ring. Kipp and Zonen CM6 pyranometers are used throughout the network. Data are recorded by strip chart recorders and, for all global and some diffuse installations, by electronic integrators.

In addition to the global and diffuse instruments Valentia Observatory is also equipped with the following:-

Eppley Normal Incidence Pyrheliometer and a solar tracker for the measurement of Direct Sun radiation.

Eppley Precision Radiometer (Pyrgeometer) for the measurement of Terrestrial Downward Infra Red radiation.

Funk net pyrrometer for the measurement of Net Radiation Balance.

Kipp and Zonen Linke-Feussner Actinometer No. 93 with OG<sub>1</sub>, RG<sub>2</sub> and RG<sub>3</sub> filters for the measurement of Atmospheric Turbidity.

Volz sun photometer for the measurement of Atmospheric Turbidity.

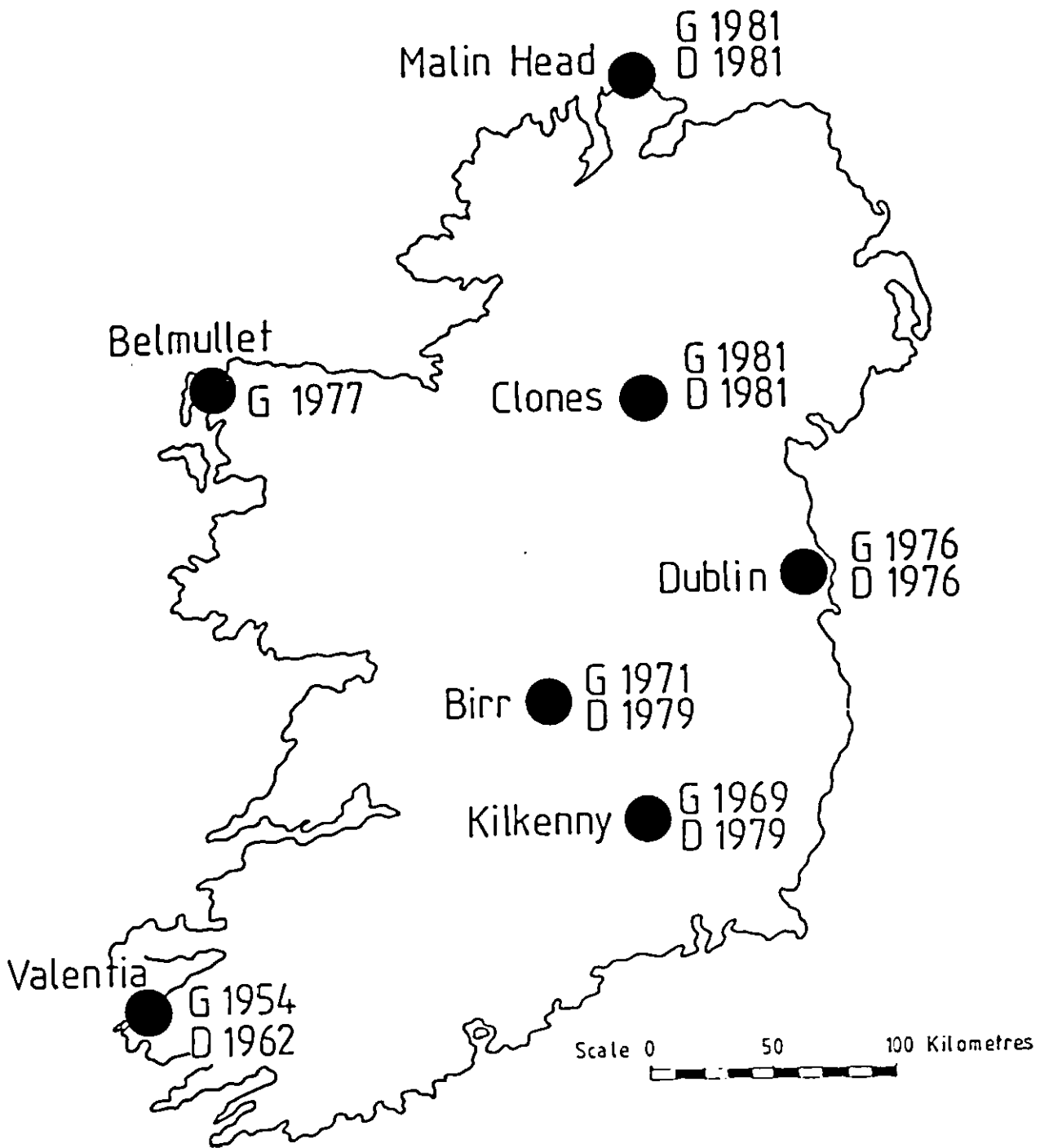
An Angstrom Compensation Pyrheliometer, No. 548, is maintained as a national reference instrument and is regularly calibrated against the World Radiometric Reference standard at World Meteorological Organisation international comparisons. All the network pyranometers and pyrheliometers are calibrated using the Angstrom Pyrheliometer as a standard reference.

A complete list of instruments in use is contained in Page 3. A detailed description of each site, including obstruction diagrams, will be found in [1]. Further information on solar radiation measurements and the Irish network is available in [2].

Only daily totals are published, apart from spot values of direct sun at normal incidence (Table 4). Hourly values may be had, on request, from The Director, Irish Meteorological Service, Glasnevin Hill, Dublin 9.

References [1] "Solar Radiation Observations 1983 and 1984" (Meteorological Service 1981).

[2] "An Introduction to the Nature and Measurement of Solar Radiation" by K.G. Commins (Meteorological Service Internal Memorandum 110/86).



IRISH METEOROLOGICAL SERVICE  
SOLAR RADIATION STATION NETWORK

Table of Instruments in use - 1985

Valentia

Global	CM6-916094	BD40 846096	Lintronic 717A	-	-
Diffuse	CM6-838785	No. 29	Lintronic 484B	48 mm	308 mm
Balance	Funk 695	Honeywell 68B/2124	-	-	-
Infra-Red	Eppley 17154F3	-	Eppley 411-5879	-	-
Direct-Sun	Eppley 17247E6	-	Eppley 411-5880	-	-

Kilkenny

Global	CM6-818048 (1/1-26/7)	XR4 550106	Lintronic 2122 (1/1-26/7)	-	-
	CM6-849332 (27/7-31/12)	-	Lintronic 2374 (27/7-31/12)	-	-
Diffuse	CM6-785154	BD8-774733 (1/1-15/2)	-	51 mm	305 mm
		BD8-806752 (16/2-26/7)	-	-	-
		BD8-774733 (27/7-13/11)	-	-	-
		BD8-806861 (14/11-31/12)	-	-	-

Birr

Global	CM6-690246 (1/1-2/10)	XR4 188730-13 (1/1-9/6)	CC2 750308	-	-
	CM6-849324 (3/10-31/12)	BD40 84-6097 (3/10-31/12)	-	-	-
Diffuse	CM6-690224	BD8-785761	-	51 mm	305 mm

Dublin Airport

Global	CM6-773731	-	CC2 750338	-	-
Diffuse	CM6-752732	Philips 8056	CC2 750262	52 mm	315 mm

Malin Head

Global	CM6-807223	BD8-806738	Eppley 411-7092	-	-
Diffuse	CM6-807230	BD8-806748	-	51 mm	304 mm

Clones

Global	CM6-807237 (1/1-20/10)	BD8-806742 (1/1-6/9)	Eppley 411-7093 (1/1 -10/7, 7/10-31/12)	-	-
	CM6-838911 (20/10-31/12)	BD8-806739 (7/9-31/12)	Eppley 411-7094 (11/7-6/10)	-	-
Diffuse	CM6-807231	BD8-816861 (1/1-6/9)	-	51 mm	304 mm
		BD8-806742 (7/9-31/12)	-	-	-

Belmullet

Global	CM6-683279	BD8-785742	CC1 680082 (1/1-29/10)	-	-
			CC1 680076 (30/10-31/12)	-	-

NOTE: All instruments are Kipp and Zonen unless other wise stated.

Table 1      Valentia Observatory      Daily Totals of Global Solar Radiation (J/cm )      1985

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Day 1	162	370	228	635	1095	2894	1168	633	1655	453	692	189
2	201	225	692	329	889	2795	1683	1819	1224	1055	757	101
3	370	251	199	944	2251	2616	882	1867	1637	577	457	214
4	279	439	1092	715	874	1206	1354	1240	620	1032	395	223
5	322	130	251	1419	598	713	1993	1742	1845	346	505	262
6	241	128	526	1547	1999	1930	2732	1026	1810	824	391	232
7	364	470	1202	1135	2000	1640	2402	1788	652	594	366	305
8	96	264	699	1912	1704	1141	2213	1418	590	340	271	252
9	407	684	339	1579	2044	1118	1336	1899	1593	545	328	281
10	293	172	1259	1137	2420	1375	1079	1437	1876	162	418	340
11	340	410	1371	1442	2177	409	358	2015	1100	929	475	147
12	186	166	696	1032	2688	1684	725	1631	1586	406	529	41
13	110	575	1010	1026	1389	2486	935	1141	1244	490	326	114
14	430	153	1006	973	2160	2762	2255	1257	743	1039	473	69
15	370	126	868	1059	2354	2280	547	546	971	1063	238	105
16	413	150	925	668	1423	2150	861	2233	299	867	389	121
17	370	519	441	2139	2422	1815	1170	613	806	246	159	78
18	257	606	398	2230	2526	2157	2021	570	188	322	218	250
19	166	154	476	1546	618	2491	2465	1052	1219	338	479	102
20	180	690	428	1912	1188	621	2236	1541	463	302	367	39
21	103	449	777	637	688	497	784	868	509	624	228	94
22	308	363	984	2051	2199	1571	1347	1335	614	794	483	211
23	448	324	1140	2133	1571	1078	652	308	741	244	468	252
24	316	476	1318	2419	1656	2397	963	1865	1025	228	448	172
25	47	719	1300	1505	347	1704	1565	1276	282	737	440	110
26	525	805	1569	2164	591	1560	1151	875	530	541	443	268
27	76	863	1480	1851	2631	1028	2125	339	1206	157	265	238
28	119	197	887	694	2532	426	1249	1390	1257	781	238	365
29	336		340	1638	2707	1468	415	485	627	747	299	234
30	246		1173	1388	2687	1465	704	1343	238	670	46	31
31	172		664		2809		1302	1667		771		251
Total	8253	10878	25738	41859	55237	49477	42672	39219	29150	18224	11591	5691
Mean	266.2	388.5	830.3	1395.3	1781.8	1649.2	1376.5	1265.1	971.7	587.9	386.4	183.6

Notes : " - " indicates value not available

Table 2 Valentia Observatory

Daily Totals of Diffuse Solar Radiation (J/cm )

1985

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Day 1	162	337	228	590	1038	473	1087	633	761	315	183	144
2	198	225	441	329	885	692	1260	1067	854	516	130	99
3	95	246	198	764	560	915	880	1040	845	427	270	184
4	151	295	343	701	844	1086	829	1044	609	471	275	179
5	119	129	251	796	596	702	1079	1153	435	340	286	139
6	169	128	450	741	1052	856	669	977	373	511	252	157
7	102	337	386	775	765	1277	1286	916	621	429	241	158
8	96	255	684	634	1233	1067	1157	560	564	316	210	158
9	93	250	339	724	937	1074	1220	887	491	497	279	139
10	177	172	441	774	619	1006	1033	1080	435	160	229	132
11	134	255	285	743	893	403	356	799	640	520	267	140
12	157	164	640	657	564	1250	720	965	506	381	159	39
13	110	321	582	907	1193	816	874	841	645	409	240	114
14	133	152	501	838	1096	702	1275	946	683	191	223	69
15	181	124	556	855	940	1374	544	546	740	137	214	105
16	176	142	519	668	1068	1286	856	735	296	477	182	119
17	195	426	441	540	985	1123	1059	597	721	235	154	78
18	158	510	398	424	865	970	1329	549	188	298	210	125
19	166	154	470	900	584	920	944	986	643	315	131	100
20	175	468	282	730	1085	620	1134	1051	456	273	225	39
21	101	447	619	585	684	497	781	701	435	458	198	94
22	204	345	765	810	1442	832	1002	1023	608	283	112	141
23	185	320	703	706	987	1043	652	308	610	234	99	143
24	288	414	639	415	1232	1290	934	768	702	202	105	125
25	47	479	763	1165	347	1308	1290	794	279	281	116	108
26	161	474	557	921	591	1186	1139	785	506	348	92	177
27	76	478	501	992	870	1027	846	339	452	154	225	179
28	119	197	862	677	1059	426	1183	953	379	235	215	61
29	184		340	1178	677	1294	412	480	569	131	207	202
30	241		757	1129	881	1251	701	795	238	188	46	31
31	172		654		645		997	687		199		141
Total	4725	8244	15595	22668	27217	28766	29528	25005	16284	9931	5775	3819
Mean	152.4	294.4	503.1	755.6	878.0	958.9	952.5	806.6	542.8	320.4	192.5	123.2

Notes : " - " indicates value not available

Table 3 Valentia Observatory

Daily Totals of Radiation Balance (J/cm )

1985

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Day 1	66	34	88	254	489	1156	593	274	649	260	-56	-37
2	-197	102	191	180	474	1006	903	844	637	494	25	-4
3	-347	118	-21	539	882	1098	382	971	842	113	60	-164
4	-417	-4	281	348	356	556	702	677	346	377	169	-125
5	-405	-3	95	676	298	332	884	832	696	111	2	-158
6	-290	-29	139	634	940	933	1229	513	650	187	-11	-75
7	-307	43	280	544	909	807	1081	767	336	64	111	-169
8	-77	21	201	836	740	541	1192	601	350	76	38	-86
9	-143	106	217	739	1009	520	702	886	729	222	-77	8
10	-149	12	402	476	914	670	524	654	699	78	-59	-130
11	-293	-13	292	622	891	203	233	907	451	366	131	-61
12	-241	-15	254	470	1036	904	428	716	696	199	19	-4
13	-115	11	331	451	500	1104	402	458	655	203	75	70
14	-252	-93	286	417	914	1183	1077	607	225	342	-113	-69
15	-295	-108	203	563	946	909	283	271	414	217	-39	27
16	-322	-36	283	361	618	1027	436	965	202	178	-82	-5
17	-338	91	164	841	1092	957	620	410	477	137	64	-52
18	-115	27	212	733	1255	1026	1012	301	136	162	-120	-259
19	-73	43	114	618	250	1339	1251	529	359	148	-349	-129
20	100	112	168	765	537	357	964	849	229	30	-207	-54
21	-65	-25	328	165	333	337	419	295	265	60	-158	-140
22	-122	116	323	682	1108	771	628	568	308	137	-251	-114
23	-5	111	409	724	836	560	387	109	350	5	-276	-242
24	-30	16	467	767	865	1103	564	873	431	-80	-223	-143
25	-141	206	349	576	197	890	794	591	169	-126	-225	-146
26	-46	160	501	994	373	834	569	448	288	147	-214	-228
27	-14	304	428	717	1468	511	894	150	418	-13	-28	-351
28	30	42	386	273	1094	263	538	603	287	198	-104	-377
29	32		212	755	1148	770	206	256	346	150	50	-130
30	-8		483	583	1033	697	389	700	139	94	6	-59
31	33		304		1082		663	653		126		-155
<b>Total</b>	<b>-4546</b>	<b>1349</b>	<b>8370</b>	<b>17303</b>	<b>24587</b>	<b>23364</b>	<b>20949</b>	<b>18278</b>	<b>12779</b>	<b>4662</b>	<b>-1842</b>	<b>-3561</b>
<b>Mean</b>	<b>-146.6</b>	<b>48.2</b>	<b>270.0</b>	<b>576.8</b>	<b>793.1</b>	<b>778.8</b>	<b>675.8</b>	<b>589.6</b>	<b>426.0</b>	<b>150.4</b>	<b>-61.4</b>	<b>-114.9</b>



Table 4

DIRECT SOLAR RADIATION AT NORMAL INCIDENCES  
INSTANTANEOUS BALUES (mW/cm<sup>2</sup>) 1985

MONTH AND DAY	TIME L.A.T.	ZENITH DISTANCE (Z)	AIR MASS (m)	RADIATION				PRESSURE	TEMPERATURE	VAPOUR PRESSURE	VISIBILITY	CLOUD	
				CLEAR	RED (RG <sub>2</sub> )	YELLOW (OG <sub>1</sub> )	RED (RG <sub>8</sub> )					TYPE	AMOUNT
				x10 <sup>1</sup>	x10 <sup>1</sup>	x10 <sup>1</sup>	x10 <sup>1</sup>	hPa	°C	hPa	Kb1		Okta
Jan													
3	1128	75.1	3.87	664	478	572	386	1018	6.9	6.6	88	FcSc	Tr
3	1328	77.2	4.47	598	445	523	362	1017	7.5	6.7	70	FcSc	Tr
5	1120	75.0	3.84	664	486	574	395	1015	6.0	5.6	60	CuFc	Tr
7	1400	78.8	5.08	593	444	522	358	1020	5.7	6.8	60	Fc	Tr
9	1140	74.2	3.65	696	500	597	400	1020	6.6	8.5	50	Cu	Tr
9	1344	77.5	4.57	650	473	564	384	1021	7.8	7.9	50	CuSc	3
10	1028	76.5	4.25	593	439	513	362	1025	1.6	6.2	40	Sc	Tr
11	1028	76.4	4.22	603	456	535	374	1027	5.0	6.8	50	CuFc	Tr
14	1120	73.8	3.57	607	465	536	382	1032	4.0	5.6	20	Sc	Tr
14	1336	76.2	4.16	571	449	513	372	1032	4.4	5.1	25		0
17	0930	79.7	5.50	253	230	239	201	1007	-1.9	4.3	16	Cu	1
17	1022	75.8	4.05	360	307	338	257	1007	-0.7	4.4	16	Fc	Tr
17	1056	74.0	3.61	380	315	349	265	1007	0.0	4.4	16		0
17	1140	72.8	3.37	380	311	338	270	1007	0.0	4.4	16		0
26	1044	72.6	3.33	677	486	575	396	1003	5.4	7.0	30	Cu	3
26	1148	70.7	3.00	719	505	606	408	1003	5.9	6.5	30	CuFc	3
29	1340	73.1	3.43	517	348	424	276	1011	11.5	11.8	20	CuFc	2
Mar													
10	1412	62.6	2.17	786	525	638	420	1039	11.7	9.7	35	Cu	1
11	0900	67.4	2.59	693	479	579	386	1043	5.5	7.9	45		0
11	0956	61.5	2.09	773	518	630	414	1043	8.3	8.1	45		0
11	1124	56.1	1.79	782	518	628	414	1042	10.0	9.1	45	Cu	1
11	1332	58.9	1.93	763	512	623	411	1041	10.5	8.9	45	Cu	1
11	1528	70.8	3.02	591	425	422	347	1040	10.5	8.8	45	Cu	1
26	1012	54.5	1.72	833	555	678	444	1002	9.0	7.8	50	CuCi	Tr
26	1036	52.6	1.64	838	552	673	443	1002	9.0	7.8	50	CuCi	Tr
26	1108	50.8	1.58	833	550	669	444	1002	9.4	7.8	50	CuCi	2
Apr													
8	1448	56.3	1.80	740	496	597	393	995	11.2	10.1	40	CuSc	2+
9	1034	47.8	1.49	824	530	649	418	1001	9.5	8.2	40	CuSc	5
9	1348	49.5	1.54	818	525	650	418	1002	11.0	9.7	40	Cu	5
18	0924	51.8	1.61	843	540	669	429	1022	16.0	9.6	45	Ci	2
18	1024	45.4	1.42	851	540	673	429	1023	16.5	10.5	45	Ci	2
18	1100	42.8	1.36	854	544	679	435	1023	16.5	10.5	45	Ci	2
23	1524	56.6	1.81	764	517	629	417	1023	13.0	8.3	40	ScCi	2
24	0844	55.3	1.75	800	531	649	423	1027	9.1	7.3	25		0
24	0932	49.1	1.53	827	538	658	436	1027	10.7	6.5	25		0
24	1034	42.8	1.36	840	546	667	440	1027	11.8	6.2	25		0
24	1428	49.0	1.52	801	526	645	424	1026	14.4	7.0	25		0
26	1052	40.7	1.32	834	531	657	419	1020	11.7	10.3	60	CuFcAc	3

Table 4 (Contd.)

DIRECT SOLAR RADIATION AT NORMAL INCIDENCES  
INSTANTANEOUS VALUES (mW/cm<sup>2</sup>) 1985

MONTH AND DAY	TIME L.A.T.	ZENITH DISTANCE (Z)	AIR MASS (m)	RADIATION				PRESSURE	TEMPERATURE	VAPOUR PRESSURE	VISIBILITY	CLOUD	
				CLEAR	RED (RG <sub>2</sub> )	YELLOW (OG <sub>1</sub> )	RED (RG <sub>8</sub> )					TYPE	AMOUNT
				x10 <sup>1</sup>	x10 <sup>1</sup>	x10 <sup>1</sup>	x10 <sup>1</sup>	hPa	°C	hPa	Kbl		Okta
May													
3	1452	49.6	1.54	801	513	634	413	1014	12.5	8.2	70	CuScCi	1
10	1100	36.3	1.24	900	573	707	453	1025	11.6	7.8	82	Cu	2
10	1412	43.0	1.37	877	558	681	449	1025	12.2	8.7	82	FcCi	3
11	0916	46.8	1.46	836	530	659	426	1024	13.5	9.7	50	CuCi	Tr
11	1436	45.7	1.43	649	444	535	362	1023	13.8	11.2	40	Cu	3
12	0940	43.5	1.38	794	525	643	422	1019	13.9	10.5	25	CuCi	3+
12	1104	35.5	1.23	860	555	680	444	1018	15.3	9.7	25	FcCi	2
12	1308	36.3	1.24	841	540	659	431	1018	16.0	10.3	25	CuCi	1+
12	1452	47.6	1.48	711	479	577	386	1017	15.5	10.9	25	CuCi	1
12	1540	54.4	1.72	718	484	587	393	1017	15.6	10.6	25	CuCi	1
15	1444	46.0	1.44	744	498	604	399	1005	14.3	11.0	15	CuCi	2+
17	1436	44.5	1.40	844	522	657	410	1023	16.0	14.0	40	CuScCi	1+
18	1100	34.4	1.21	898	551	707	443	1023	14.5	12.1	50	CuSc	3
18	1500	47.5	1.48	848	541	667	426	1024	14.8	11.8	50	Cu	5
18	1544	53.9	1.69	817	526	654	416	1023	15.0	11.3	50	Cu	1
27	1012	37.1	1.25	886	559	694	441	1006	11.1	9.7	50	Cu	3
28	1032	34.9	1.22	880	555	688	437	1019	13.0	9.6	50	Cu	4-
29	1236	31.0	1.17	869	539	676	426	1026	13.5	11.2	50	Cu	2
30	0900	45.8	1.43	739	505	608	402	1024	17.2	10.7	50	FcCi	Tr
31	0908	44.6	1.40	709	475	579	379	1025	18.4	11.6	40	Ci	2
31	1356	37.4	1.26	667	454	546	360	1026	16.1	14.1	40	Cu	1
June													
1	0904	45.0	1.41	790	511	628	407	1025	19.0	11.6	60	Ci	1
1	1002	37.5	1.26	820	522	646	414	1025	20.3	12.5	60	Ci	1
1	1100	32.0	1.18	812	518	640	412	1024	20.5	12.1	60		0
1	1252	31.5	1.17	849	537	667	428	1024	23.4	13.3	60		0
1	1304	32.3	1.18	828	530	654	420	1023	22.3	11.8	60		0
3	1408	38.5	1.28	759	496	611	395	1015	24.4	15.9	25	CuCi	3
6	1424	40.2	1.31	753	495	598	396	1014	13.2	9.9	25	Cu	5
13	1404	37.2	1.25	857	531	664	419	1015	14.2	10.6	50	CuScCi	3+
14	1336	34.0	1.21	903	559	698	443	1018	13.7	10.8	60	CuCi	1
14	1544	51.1	1.59	834	531	657	420	1019	13.5	10.9	60	CuCi	3
19	1256	30.5	1.16	864	531	668	417	1010	15.0	13.4	40	Cu	2
22	1432	40.7	1.32	729	499	625	396	1002	13.9	12.8	20	CuSc	5
22	1512	46.3	1.45	774	487	603	383	1002	13.8	12.6	20	Cu	3
July													
19	0916	44.4	1.40	819	511	643	401	1007	14.4	12.1	45	CbSc	1+
Aug													
7	1356	42.4	1.35	732	463	578	364	1009	15.4	12.9	25	CuScCi	4
8	1404	43.4	1.38	825	516	643	412	998	15.5	13.5	16	CuFc	3

Table 4 (Contd.)

DIRECT SOLAR RADIATION AT NORMAL INCIDENCES  
INSTANTANEOUS BALUES (mW/cm<sup>2</sup>) 1985

MONTH AND DAY	TIME L.A.T.	ZENITH DISTANCE (Z)	AIR MASS (m)	RADIATION				PRESSURE	TEMPERATURE	VAPOUR PRESSURE	VISIBILITY	CLOUD	
				CLEAR	RED (RG <sub>2</sub> )	YELLOW (OG <sub>1</sub> )	RED (RG <sub>B</sub> )					TYPE	AMOUNT
				x10 <sup>1</sup>	x10 <sup>1</sup>	x10 <sup>1</sup>	x10 <sup>1</sup>	hPa	°C	hPa	Kb1		Okta
Sept													
1	1240	44.5	1.40	855	537	668	422	1017	14.6	11.9	40	CuSc	3
5	1344	50.1	1.56	844	533	666	419	1025	15.0	10.6	50	CuFc	2
6	1404	52.3	1.63	828	517	648	406	1029	15.3	11.7	60	Cu	1
9	1348	51.8	1.61	872	552	685	434	1019	18.5	17.4	40	CuCi	2
9	1408	53.7	1.69	860	551	681	432	1019	17.6	15.8	45	CuAc	Tr
10	1352	52.6	1.64	788	507	629	401	1022	18.9	16.9	50	StScCi	3
10	1432	56.7	1.82	717	479	586	378	1021	18.7	17.0	40	StScCi	3
12	1400	53.9	1.69	791	495	618	383	1020	15.6	14.0	30	Cu	2
13	1056	50.1	1.56	773	480	603	375	1026	15.8	12.9	35	CuScFc	4
19	1440	60.5	2.03	801	518	642	407	1015	14.0	10.9	60	CbCuCi	3
28	1102	55.4	1.76	602	423	513	336	1018	24.1	18.6	10		0
Oct													
2	0932	63.7	2.25	742	463	588	368	1001	16.0	13.5	30	CuCi	3
14	0916	69.6	2.85	629	439	529	351	1036	12.2	13.9	15	St	1
14	1328	63.1	2.20	714	480	587	378	1035	15.5	14.4	25		0
22	0928	71.0	3.05	430	334	380	271	1030	9.4	10.7	15	Sc	2
22	1104	64.2	2.29	544	396	465	319	1030	12.5	11.6	10		0
25	1128	64.5	2.31	546	405	470	333	1027	11.7	10.5	6		0
28	1348	69.2	2.80	675	470	568	372	1030	15.0	12.5	25	Cu	3
29	1140	65.6	2.41	777	513	632	400	1026	11.0	9.9	50	Ci	2
29	1244	66.1	2.46	696	466	574	366	1026	12.0	10.4	50	Ci	1
29	1410	71.2	3.08	675	457	558	360	1025	11.8	10.4	50	Ci	1
30	1204	65.7	2.42	769	521	637	429	1019	12.0	8.5	40	CuCi	1+
30	1048	67.6	2.61	732	499	607	414	1020	10.9	9.5	45	ScCi	1+
Nov													
1	0940	73.1	3.43	507	394	454	334	1014	7.3	9.0	20		0
1	1216	66.5	2.50	631	460	546	386	1014	11.4	9.9	12	Cu	Tr
1	1344	70.2	2.93	596	443	520	370	1013	12.0	9.2	12	Fc	Tr
2	1020	69.5	2.84	784	524	638	439	1011	8.4	6.5	40	ScCi	2
2	1142	66.3	2.48	806	540	661	445	1011	9.2	6.6	40	ScAc	2+
12	1400	74.5	3.72	705	492	598	406	1019	10.0	7.6	60	FcSc	Tr
19	1008	75.5	3.97	540	410	479	347	1030	6.1	6.5	15		0
19	1100	72.7	3.35	639	471	557	393	1030	6.1	6.5	15		0
19	1200	71.4	3.11	644	469	558	392	1029	7.0	6.6	12	Fc	Tr
22	0932	79.0	5.16	561	440	509	370	1030	3.0	5.6	35	Cu	Tr
22	1352	76.2	4.16	613	464	540	389	1029	4.6	5.8	35	Cu	Tr
23	1100	73.5	3.51	712	507	607	421	1028	6.3	6.5	40	CuFc	Tr
23	1348	76.1	4.13	651	479	568	400	1027	7.0	6.6	40	Fc	Tr
24	0956	77.4	4.54	586	451	522	376	1026	3.1	6.7	40	Sc	1
25	1144	72.8	3.37	642	473	557	406	1020	6.9	5.9	40	Sc	Tr
26	1020	76.2	4.16	687	508	595	417	1016	3.8	5.9	40	FcSc	Tr
26	1140	73.1	3.43	741	529	629	439	1015	4.8	5.9	40	FcSc	Tr

Table 4 (Contd.)

DIRECT SOLAR RADIATION AT NORMAL INCIDENCES  
INSTANTANEOUS BALUES (mW/cm<sup>2</sup>) 1985

MONTH AND DAY	TIME L.A.T.	ZENITH DISTANCE (Z)	AIR MASS (m)	RADIATION				PRESSURE	TEMPERATURE	VAPOUR PRESSURE	VISIBILITY	CLOUD	
				CLEAR	RED (RG <sub>2</sub> )	YELLOW (OG <sub>1</sub> )	RED (RG <sub>8</sub> )					TYPE	AMOUNT
				x10 <sup>1</sup>	x10 <sup>1</sup>	x10 <sup>1</sup>	x10 <sup>1</sup>	hPa	°C	hPa	Kbl		Okta
Dec													
1	1444	82.0	6.96	387	294	353	239	994	13.5	12.0	20	FcSc	Tr
28	0956	80.0	5.65	665	511	587	426	1013	1.5	4.9	40		0
28	1100	76.4	4.22	764	561	657	462	1012	2.5	4.4	50		0
28	1200	75.2	3.89	780	563	664	465	1012	3.7	3.7	60		0
28	1404	80.0	5.65	673	516	598	429	1011	3.5	4.6	60	Ct	Tr

Table 5 VALENTIA DAILY TOTALS OF DIRECT SOLAR RADIATION AT NORMAL INCIDENCES (J/cm ) 1985

Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Day 1	0	39	2	120	65	3763	148	24	1299	151	1450	211
2	7	0	452	2	5	2930	702	828	473	907	1931	0
3	1199	1	1	273	2484	2501	2	997	1098	248	414	48
4	519	378	1536	31	38	106	887	193	6	919	222	142
5	798	3	0	839	12	30	1358	798	2232	2	521	447
6	292	0	158	1281	1291	1551	3035	43	2479	537	295	249
7	1119	298	1678	452	1813	543	1460	1261	5	247	253	584
8	0	7	35	2054	573	90	1169	1319	18	22	127	293
9	1347	1064	0	1398	1671	100	171	1399	1634	28	73	610
10	478	0	1722	493	2545	485	113	395	2566	0	512	811
11	742	291	2242	1079	1970	42	0	1701	697	663	638	4
12	86	0	61	514	3092	754	3	924	1704	7	1173	0
13	0	508	773	162	238	2526	145	450	776	68	209	0
14	1147	3	887	234	1394	3385	1211	422	111	2004	783	0
15	633	0	454	287	1927	1710	8	5	268	2358	22	0
16	868	2	715	0	610	1127	3	2230	0	741	560	5
17	541	212	0	2533	2005	934	136	18	53	0	0	0
18	284	154	1	2918	2299	1443	745	46	0	4	12	457
19	1	0	10	948	25	2133	2141	84	1196	4	1174	0
20	0	472	281	1850	84	42	1524	644	2	22	479	0
21	24	4	287	82	3	40	7	407	207	180	68	0
22	287	24	307	1824	744	1137	819	359	3	1124	1396	244
23	913	8	675	2321	634	100	4	17	168	1	1480	384
24	49	140	1213	3115	451	1644	45	1581	526	36	1395	181
25	0	496	957	545	0	587	429	597	0	1014	1274	0
26	1149	572	1860	1747	0	512	35	121	7	333	1512	308
27	0	688	1796	1300	2294	41	1862	1	1409	0	89	140
28	0	0	56	8	2198	6	96	537	1729	1507	27	1507
29	481	1	477	2804	165	11	0	76	1736	242	60	
30	4	569	287	2835	458	9	2147	0	1191	0		
31	0	15	3296	406	1506	1666	411					
Total	12968	5364	18744	29174	39400	30885	18684	21054	20742	17720	18331	7096
Mean	418.3	191.6	604.6	972.5	1271.0	1029.5	602.7	679.2	691.4	571.6	611.0	228.9

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Table 6

VALENTIA

DAILY TOTALS OF LONG-WAVE (INFRA-RED) RADIATION (J/cm )

1985

Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Day 1	2725	1616	2789	2887	2787	2546	3099	3091	2563	3297	2289	2943
2	2180	1757	2634	3017	2986	2592	3120	2970	2888	3034	2230	3042
3	1853	1620	2651	2904	2424	2814	3088	2948	2605	2869	2577	2674
4	1818	1200	2278	2902	2656	3114	3098	3168	2118	2785	2911	2676
5	1730	1951	2810	2733	2747	3016	2790	2947	-	3023	2476	2457
6	1825	3033	2705	2534	2585	2841	2607	3093	-	2668	2636	2665
7	1711	2763	2231	2799	2626	2734	2831	2866	-	2632	2891	2282
8	2297	2839	2678	2459	2685	2992	3124	2911	-	2895	2901	2434
9	1928	2478	2985	2478	2453	2879	3233	2791	-	3043	2533	2462
10	1781	2589	2481	2659	2331	2948	3246	2894	-	3171	2411	2428
11	1673	2383	2143	2604	2535	3036	3331	2815	-	2922	2641	2833
12	1966	2508	2724	2743	2404	2831	3298	2865	-	3152	2361	3071
13	2132	2286	2558	2650	2608	2653	2989	2822	-	3162	2766	3149
14	1542	2451	2353	2761	2604	2399	2780	2936	-	2587	2273	2972
15	1427	2389	2440	3021	2581	2499	3120	3157	-	2550	2502	3043
16	1390	2531	2422	3040	2823	2846	3174	2770	-	2633	2437	2964
17	1263	2480	2682	2575	2820	2991	3165	3311	-	3066	2901	2923
18	1434	2388	2759	2436	2780	2842	3000	3256	-	2979	2705	2397
19	1544	2836	2626	2646	2931	2895	2741	3162	-	3003	1965	2737
20	1938	2532	2673	2348	2867	3151	2777	3151	-	2958	2144	2964
21	1707	2560	2543	2588	3029	3233	3232	2990	3307	2712	2274	2669
22	1267	2811	2466	2306	2943	2876	3111	2899	3206	2535	2013	2480
23	1204	2886	2535	2276	2916	3026	3334	3069	3144	2903	1953	2265
24	1473	2607	2372	2135	2948	2701	3343	2692	3093	2816	2101	2435
25	1418	2665	2269	2613	3118	2913	3228	2870	3325	2269	2128	2587
26	932	2517	2229	2598	3137	2921	3096	2937	3314	2875	1995	2230
27	1441	2832	2191	2538	2584	3056	2689	3008	3029	3030	2553	1921
28	1543	2912	2651	2745	2482	3216	2938	2747	2829	2577	2288	1648
29	1584		3005	2848	2430	3115	3202	3027	3299	2321	2742	2285
30	1666		2736	2754	2488	3094	3237	2876	3385	2515	3067	2749
31	1800		2878		2549		3043	2580		2427		2277
Total	52192	68420	79497	79597	83857	86770	95064	91619	-	87409	73664	80662
Mean	1683.6	2443.6	2564.4	2653.2	2705.1	2892.3	3066.6	2955.5	-	2819.6	2455.5	2602.0

Note : " - " indicates value not available

Table 7 Kilkenny

Daily Totals of Global Solar Radiation (J/cm )

1985

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Day 1	414	352	317	469	1200	3168	2240	1136	1203	468	644	41
2	303	244	499	486	2195	3144	2341	1909	1238	871	821	29
3	498	196	285	1275	1932	2590	1878	2167	1492	1011	765	234
4	402	231	1092	422	754	2166	2205	951	726	1108	277	185
5	447	112	841	1508	646	328	2464	1643	2367	737	650	243
6	277	137	331	1702	1649	849	2690	1771	1602	847	559	119
7	378	67	1361	487	2462	2395	2588	1773	1399	978	418	360
8	362	129	843	1278	1773	1031	2009	797	1022	329	286	322
9	166	129	1177	1175	1716	1722	1316	2104	1216	606	373	111
10	246	418	1161	1214	1789	1538	1178	1724	1955	585	603	267
11	460	750	1464	1630	1363	838	795	1027	1848	930	546	190
12	282	341	1202	761	2523	2092	1248	1924	742	1057	411	86
13	129	497	794	1334	1351	1429	835	1775	1583	325	227	141
14	313	496	1345	1818	1959	2520	2279	1279	1131	799	543	104
15	246	857	1157	1302	1046	2130	928	504	1282	732	560	160
16	154	404	1092	1907	2160	2524	1668	1319	669	593	417	226
17	299	884	1362	1464	2428	874	910	997	1178	181	211	136
18	190	674	530	2220	1511	2183	1729	841	393	297	310	330
19	184	247	250	1378	873	1887	2230	1770	1094	173	329	166
20	39	342	335	1968	748	1299	2517	1519	558	186	180	71
21	293	502	355	760	482	761	1199	932	549	850	112	103
22	541	603	378	2354	1539	740	1704	1373	876	503	385	253
23	610	504	990	1636	990	1819	1582	356	1199	405	363	289
24	202	917	1173	2500	1785	2155	1793	1892	995	341	301	130
25	157	397	1424	983	735	1852	1341	1618	522	875	222	168
26	482	707	1372	1408	828	1330	1386	1269	632	248	439	135
27	94	391	1018	1718	1837	1309	2073	741	1129	499	289	223
28	383	719	737	803	2069	749	639	1335	1306	411	439	372
29	123		566	1189	2430	2119	1103	507	440	271	74	287
30	304		1005	1539	2916	1517	932	1638	625	306	62	96
31	238		1007		3098		1194	1678		197		204
Total	9216	12247	27463	40688	50787	51058	50994	42269	32971	17719	11816	5781
Mean	297.3	437.4	885.9	1356.3	1638.3	1701.9	1645.0	1363.5	1099.0	571.6	393.9	186.5

Notes : " - " indicates value not available

Table 8      Kilkenny      Daily Totals of Diffuse Solar Radiation (J/cm )      1985

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Day 1	124	307	295	459	983	464	1162	1117	811	328	275	39
2	143	238	449	443	872	519	962	1270	638	504	168	28
3	120	194	279	878	1096	1093	1534	1061	927	578	264	179
4	106	229	424	421	732	1370	1343	747	673	513	239	162
5	233	111	572	770	638	319	976	1239	558	544	276	187
6	180	132	314	680	1136	710	1023	1135	669	609	269	105
7	138	66	261	466	954	1199	1151	1397	1037	411	253	109
8	148	128	625	738	1302	1004	1456	593	884	325	192	134
9	165	129	516	777	1062	1336	1142	1048	858	446	236	111
10	172	306	384	837	1171	1305	1062	1205	364	500	226	174
11	126	320	251	677	1050	826	784	790	488	476	202	177
12	146	325	459	566	1003	1258	1049	825	454	413	330	84
13	128	383	649	929	1008	1281	796	889	734	321	221	130
14	162	419	478	831	1184	1163	1248	1044	870	491	148	103
15	147	257	475	724	948	1297	888	504	707	458	191	155
16	151	381	726	1033	1428	961	1202	968	602	488	190	189
17	219	236	545	967	1224	715	694	959	575	181	208	134
18	186	489	525	662	1074	1513	1220	719	369	295	222	125
19	173	247	250	1003	795	1305	1066	964	751	171	222	155
20	39	333	312	786	727	1069	830	868	533	186	175	70
21	168	498	344	688	476	738	1070	860	493	395	111	102
22	170	476	370	734	1097	712	1130	1152	664	348	158	123
23	129	434	715	1016	875	1384	1153	350	631	365	226	151
24	166	372	624	527	1232	1247	1336	814	628	319	210	124
25	154	251	647	893	686	1122	1139	890	486	275	219	147
26	248	433	653	1007	748	1082	1184	958	570	238	103	131
27	94	372	633	946	1199	1192	1317	665	606	398	182	183
28	207	579	702	777	949	721	632	1042	549	362	122	107
29	113		512	1067	770	1259	930	489	401	261	74	202
30	280		705	1054	821	1240	826	897	520	276	61	95
31	229		806		494		1045	743		190		168
Total	4964	8645	15500	23356	29734	31404	33350	28202	19050	11665	5973	4083
Mean	160.1	308.8	500.0	778.5	959.2	1046.8	1075.8	909.7	635.0	376.3	199.1	131.7

Notes : " - " indicates value not available



Table 9      Birr      .      <sup>2</sup>      Daily Totals of Global Solar Radiation (J/cm )      1985

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Day 1	275	325	368	451	895	2811	1816	884	932	557	622	153
2	299	253	375	490	1878	2856	1785	1642	1048	897	726	50
3	393	284	281	1440	1661	2334	897	1778	1129	854	621	342
4	348	263	953	597	876	1620	1247	595	735	833	310	191
5	163	206	634	1587	581	743	1929	1421	1768	644	512	252
6	210	259	342	1279	944	1531	2474	1510	1176	874	417	105
7	337	102	1170	663	2026	2051	1569	1265	767	761	365	337
8	319	337	753	1327	1342	1188	1770	860	937	319	345	337
9	231	364	570	1385	1188	1732	1410	1609	993	380	234	173
10	181	489	1004	1061	2120	1376	1075	1484	1517	382	502	280
11	385	571	1350	1438	2017	850	636	1180	1526	781	495	226
12	345	527	923	790	2518	1673	1126	1817	923	957	470	65
13	177	544	765	843	1042	1547	884	1738	951	208	232	156
14	357	476	1110	1627	1592	2067	1888	685	993	668	496	100
15	276	719	859	842	503	1858	682	363	1217	-	465	116
16	192	472	636	1013	1212	2219	1178	1195	314	547	390	84
17	207	805	1130	1413	1973	1290	866	1121	1224	192	142	139
18	126	783	318	2076	1395	1911	1919	1477	211	353	219	303
19	247	146	244	1182	499	1692	2126	1179	902	199	196	93
20	163	408	411	1673	571	1316	2166	1139	440	317	198	65
21	89	331	681	851	567	967	1366	787	542	394	188	106
22	338	389	574	2007	1819	545	1417	1244	533	545	513	289
23	430	290	893	1553	1125	2862	882	449	736	500	365	237
24	241	981	1013	2249	1459	2048	1556	1305	787	521	422	122
25	188	490	1388	970	686	2184	1442	1143	645	781	343	128
26	405	752	1065	1362	1520	1349	937	1082	578	196	367	300
27	150	466	862	1675	1565	1185	1553	991	1026	300	292	254
28	322	462	513	541	2311	1444	686	1265	1148	331	421	417
29	144		720	1032	2819	1686	756	374	748	287	284	283
30	248		913	1308	2431	1653	572	1322	403	252	81	106
31	197		944		2664		1363	1214		213		146
Total	7983	12494	23762	36725	45799	50588	41973	36118	26849	-	11233	5955
Mean	257.5	446.2	766.5	1224.2	1477.4	1686.3	1354.0	1165.1	895.0	-	374.4	192.1

Notes : " - " indicates value not available

Table 10 Birr

## Daily Totals of Diffuse Solar Radiation (J/cm )

1985

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Day 1	167	296	341	428	884	445	1220	882	860	376	292	117
2	177	251	351	483	944	483	1196	1053	625	-	261	48
3	105	260	281	930	1072	1126	887	930	805	-	295	203
4	107	225	431	592	872	970	1087	592	728	-	268	135
5	159	204	587	712	575	743	1186	1049	576	-	242	169
6	144	223	339	713	784	1316	968	1088	720	528	296	101
7	120	102	298	658	985	1293	1429	1087	735	366	295	151
8	118	241	573	839	1261	1085	1249	633	853	305	210	82
9	212	277	512	778	895	1328	1357	955	742	367	192	173
10	181	286	458	804	1012	1147	1045	1133	415	362	276	148
11	109	355	265	763	1123	753	630	912	452	403	267	192
12	122	407	574	588	754	1237	1022	1005	374	473	275	63
13	177	357	611	703	948	1336	857	938	653	207	231	156
14	139	420	491	828	1189	1059	1219	610	740	396	129	99
15	189	257	529	812	503	1226	673	352	662	-	201	104
16	179	339	592	941	1097	814	1112	858	310	492	181	84
17	186	390	680	1001	1330	1060	834	1028	613	191	141	128
18	126	387	318	541	983	1483	1218	854	211	353	175	120
19	207	146	244	942	499	1149	979	966	625	199	171	89
20	163	394	409	776	553	1082	941	779	433	293	195	65
21	89	321	621	782	567	916	1295	754	514	394	183	99
22	141	373	515	869	985	515	843	994	517	361	145	99
23	241	290	672	800	950	929	868	443	553	410	168	126
24	120	249	530	545	1153	1259	1239	885	544	304	143	117
25	188	310	481	905	675	1177	1278	783	553	223	125	122
26	183	422	697	897	1239	1088	858	941	507	184	205	183
27	149	436	683	944	938	1047	1408	909	628	283	138	145
28	191	424	513	541	1043	1130	682	1004	422	272	104	140
29	130		664	949	652	1243	696	374	693	285	185	178
30	247		617	1110	959	1252	569	786	396	247	81	104
31	196		772		660		1175	776		202		130
Total	4962	8642	15649	23174	28084	31691	32020	26353	17459	-	6070	3870
Mean	160.1	308.6	504.8	772.5	905.9	1056.4	1032.9	850.1	582.0	-	202.3	124.8

Notes : " - " indicates value not available

Table 11 Dublin Airport Daily Totals of Global Solar Radiation (J/cm ) 1985

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Day 1	327	407	235	473	1223	3003	1705	982	1237	557	674	59
2	292	257	528	694	2373	2994	2475	1838	723	432	594	38
3	277	246	271	1370	1406	2850	1506	2063	1217	824	653	324
4	228	178	706	290	948	2646	2226	497	742	691	214	173
5	90	540	962	1007	577	336	1219	1630	1726	811	484	243
6	352	395	380	1319	1368	1091	2171	1604	1602	630	417	50
7	190	100	1240	383	2033	2088	2048	1072	783	855	400	308
8	208	47	732	1008	1469	1068	1419	749	864	342	238	316
9	175	54	1064	1525	1191	2063	1845	1966	1141	537	288	240
10	107	622	1030	1082	1447	1848	1362	1770	1793	426	553	162
11	217	433	1315	1249	2311	1039	922	692	1564	732	563	226
12	171	632	890	829	2018	1910	1189	1700	584	795	307	88
13	185	419	721	1152	677	1209	655	1615	1313	468	301	183
14	181	741	1078	1696	1198	1855	1874	902	1124	534	318	132
15	163	760	793	1490	521	1739	906	648	1261	897	471	94
16	113	778	1285	1442	2129	2482	1599	1659	659	422	276	113
17	123	788	1516	1353	1417	900	1020	1696	1346	206	195	174
18	38	722	891	2075	1442	1490	1931	1349	251	257	400	297
19	103	211	683	1211	224	1884	2181	1422	820	110	99	150
20	51	464	511	1671	322	1594	2014	1400	468	227	128	82
21	115	465	163	1066	1026	708	1557	1020	483	680	78	147
22	474	574	167	1790	2011	608	1792	1134	881	591	223	266
23	457	381	393	1534	726	2346	1817	400	1008	605	106	251
24	175	966	966	2181	1784	2195	1600	1367	741	368	392	175
25	254	411	1407	1358	1018	2069	716	983	574	579	297	121
26	480	693	1048	1439	1342	1735	1396	1057	605	638	378	110
27	99	268	843	1641	1613	1178	1719	1209	1120	345	326	246
28	499	859	746	991	2272	1902	342	1058	1187	521	416	318
29	87		846	627	2554	1587	1257	537	851	623	304	162
30	288		1054	1373	2660	1216	983	1476	628	235	76	135
31	294		1320		2968		831	1682		171		104
Total	6813	13411	25784	37319	46268	51633	46277	39177	29296	16109	10169	5487
Mean	219.8	479.0	831.7	1244.0	1492.5	1721.1	1492.8	1263.8	976.5	519.6	339.0	177.0

Notes : " - " indicates value not available

Table 12 Dublin Airport

Daily Totals of Diffuse Solar Radiation (J/cm )

2

1985

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Day 1	90	295	234	467	1020	418	1317	952	802	418	165	54
2	171	253	424	645	551	434	958	902	444	381	200	38
3	87	245	245	850	854	775	1249	767	772	400	161	122
4	165	178	346	286	937	815	1313	496	740	450	176	150
5	90	272	487	757	573	336	1021	912	572	516	263	132
6	93	269	368	730	1047	958	1093	1116	622	513	280	50
7	150	99	259	376	1112	1027	1290	907	745	307	287	99
8	190	47	501	652	1185	1022	1264	627	783	341	196	72
9	173	54	422	694	896	1255	1458	887	868	503	187	159
10	104	251	335	906	1104	1283	1254	820	302	411	130	138
11	180	393	267	671	835	1007	915	582	502	359	131	154
12	141	368	598	603	1023	1072	1068	733	358	374	290	88
13	166	307	625	766	607	1038	650	818	568	437	281	154
14	160	272	433	646	986	1254	1062	778	648	418	186	131
15	126	273	519	981	520	1344	884	634	607	364	145	94
16	111	226	482	1001	1147	905	1203	823	624	398	170	97
17	120	267	315	755	1050	748	883	804	547	206	195	140
18	35	332	706	628	980	1112	1190	740	251	257	184	87
19	102	210	654	908	219	1018	865	913	658	110	99	138
20	50	388	452	771	320	1123	808	798	465	226	128	82
21	108	460	161	777	1003	707	1198	865	455	372	77	127
22	122	409	166	811	1213	603	932	943	681	359	172	76
23	137	381	385	972	722	1144	1240	384	595	414	105	104
24	164	195	649	572	990	1145	1202	769	600	332	151	140
25	233	401	461	915	937	1100	716	840	549	296	191	113
26	162	339	688	968	1130	1336	752	950	513	408	101	110
27	99	268	536	889	1270	1113	1207	946	517	316	130	109
28	158	478	707	917	863	1009	342	921	393	395	103	70
29	82		715	608	698	1183	809	536	651	274	167	141
30	265		620	1113	871	1040	850	878	506	235	76	131
31	219		672		434		773	691		170		101
Total	4253	7930	14432	22635	27097	29324	31766	24732	17338	10960	5127	3401
Mean	137.2	283.2	465.5	754.5	874.1	977.5	1024.7	797.8	577.9	353.5	170.9	109.7

Notes : " - " indicates value not available

Table 13 Malin Head

Daily Totals of Global Solar Radiation (J/cm )

2

1985

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Day 1	237	333	109	656	1318	2955	863	742	1003	459	210	90
2	231	263	382	568	2527	2678	1657	1775	458	730	466	59
3	258	168	147	1141	549	2889	859	1874	619	892	543	169
4	263	203	360	970	1334	2220	1036	1261	688	642	192	133
5	271	509	613	1155	679	534	1974	1722	1451	812	269	287
6	188	350	333	880	1602	2697	2716	1573	1509	937	181	89
7	130	172	1126	900	2442	2764	582	1574	236	547	316	101
8	220	68	296	1646	1415	1028	485	875	783	322	155	97
9	196	129	565	1156	869	2267	1882	1756	638	624	115	243
10	133	685	1200	689	2769	1818	790	1076	1523	589	304	99
11	277	595	1276	1488	2769	1183	786	1419	1065	814	251	120
12	285	348	489	706	2781	2406	1011	1494	966	464	266	46
13	150	490	896	1153	1925	2418	2359	1342	956	241	180	132
14	259	464	913	1670	971	2833	2424	437	1129	326	219	61
15	198	765	691	354	287	2648	787	789	1242	877	365	86
16	107	773	970	553	1238	2717	1626	939	459	809	262	53
17	73	307	1391	2052	917	1253	926	2023	1298	159	97	111
18	35	336	819	2157	1006	2491	1337	1117	391	848	130	155
19	209	296	346	1603	669	1400	2380	1579	1294	240	145	90
20	69	729	1065	1582	1851	1913	2122	961	584	328	77	31
21	43	442	363	1836	2306	1149	2332	930	479	252	154	121
22	172	273	235	1892	2246	2211	2068	1440	449	691	220	260
23	173	128	858	2275	800	1102	471	647	501	632	282	147
24	88	634	1053	1354	1503	2429	884	1383	763	154	203	222
25	113	483	1333	1849	865	1905	1137	702	215	653	163	70
26	426	804	1238	1472	1182	1338	1167	1232	1102	528	213	86
27	199	813	672	1756	1588	1067	1761	383	764	202	208	179
28	335	745	620	400	2470	1891	998	1392	1170	358	164	148
29	246		262	607	2633	1941	2146	788	781	531	287	295
30	257		843	1548	2731	1440	1358	930	317	300	66	47
31	227		821		2613		1535	601		626		137
Total	6068	12305	22285	38068	50855	59585	44459	36756	24833	16587	6703	3964
Mean	195.7	439.5	718.9	1268.9	1640.5	1986.2	1434.2	1185.7	827.8	535.1	223.4	127.9

Notes : " - " indicates value not available

Table 14 Malin Head

Daily Totals of Diffuse Solar Radiation (J/cm )

1985

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Day 1	87	278	109	553	1070	525	834	728	819	368	191	82
2	95	263	363	496	537	845	1211	929	377	416	243	58
3	80	168	147	683	543	597	840	961	600	466	247	156
4	73	196	352	683	988	1104	925	1021	667	491	181	129
5	99	245	440	663	677	528	837	1058	669	426	202	115
6	116	223	317	698	1095	744	912	979	722	327	177	89
7	120	171	315	681	703	744	571	1180	236	328	280	96
8	137	68	295	609	1270	998	462	673	701	314	150	78
9	135	127	488	913	800	1371	1416	775	611	405	115	91
10	112	391	281	648	478	1222	766	820	565	426	194	94
11	109	313	275	683	449	1040	763	1043	720	349	195	107
12	102	334	443	528	508	951	647	735	385	415	210	46
13	141	411	544	683	883	1224	989	941	596	239	172	122
14	165	291	437	694	851	748	1007	435	665	326	164	61
15	154	154	434	354	287	883	749	734	612	234	150	84
16	86	177	454	531	917	1055	1253	758	458	254	191	53
17	65	286	370	583	898	961	793	729	592	159	96	107
18	34	302	699	503	798	1315	1213	770	387	165	130	85
19	162	260	344	833	669	1004	896	956	468	240	139	82
20	69	235	645	778	1123	1008	910	788	533	318	77	31
21	42	325	363	968	846	1027	1044	740	478	250	119	105
22	158	272	224	872	917	1283	790	910	448	301	167	93
23	149	128	766	565	758	1076	469	591	492	300	157	115
24	86	377	705	1065	803	1209	857	911	558	151	166	120
25	99	408	533	959	778	1174	897	630	214	274	144	69
26	149	371	608	1038	910	1250	917	996	394	355	150	77
27	197	370	592	836	1107	945	1362	383	607	195	153	113
28	203	404	600	398	708	1287	948	870	380	300	126	83
29	213		262	607	1037	1372	1011	770	494	269	86	93
30	218		724	1047	778	1224	1100	676	305	210	66	45
31	216		577		858		1146	567		280		110
Total	3871	7548	13706	21152	25044	30714	28535	25057	15753	9551	4838	2789
Mean	124.9	269.6	442.1	705.1	807.9	1023.8	920.5	808.3	525.1	308.1	161.3	90.0

Notes : " - " indicates value not available

Table 15 Clones

Daily Totals of Global Solar Radiation (J/cm )

2

1985

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Day 1	263	295	118	494	1329	3025	1407	789	1055	382	494	103
2	371	351	324	423	2277	3012	2202	2122	865	793	571	52
3	259	236	121	1108	713	2902	851	1749	1126	942	351	256
4	400	182	919	590	1162	2715	1488	738	615	594	271	236
5	89	496	708	1207	965	802	1758	1671	1389	714	406	241
6	287	112	293	1387	1111	1562	2007	1284	1458	782	265	53
7	330	51	1222	405	2114	2062	946	1378	325	834	408	147
8	248	48	599	1464	903	1115	496	861	962	232	194	310
9	225	57	317	1363	1000	2150	1719	1757	716	554	204	406
10	342	432	948	908	2082	1816	1093	1645	567	305	500	183
11	308	477	1360	1363	2621	928	502	1427	1260	711	463	163
12	293	463	597	610	2690	1628	1447	1870	720	733	302	95
13	151	221	892	1111	1153	1663	1240	1462	938	205	208	144
14	215	559	1000	1777	1297	1779	2276	819	1002	468	342	85
15	233	785	975	698	471	1881	582	854	1021	-	461	30
16	141	801	1262	600	1042	1858	1165	1753	271	285	311	130
17	141	696	1493	1083	2062	1161	1236	1562	1126	152	166	86
18	120	606	808	2031	1187	1934	1413	1285	230	344	172	225
19	138	103	372	1399	371	1432	1792	1265	1111	152	149	91
20	77	689	526	1707	525	1805	2152	796	520	354	236	37
21	66	395	316	1115	1933	1581	1678	839	542	464	151	125
22	381	390	441	2272	2371	631	1791	1294	543	370	384	257
23	335	229	549	1795	647	1179	921	607	675	541	256	174
24	76	864	845	2214	1619	1740	1377	1468	726	442	359	193
25	248	400	1424	1670	635	2371	817	1246	415	655	214	-
26	522	745	931	1897	1391	1502	1590	1038	649	450	306	172
27	104	232	654	1860	1180	1280	1438	440	1078	238	272	285
28	457	857	757	531	2300	2627	899	1169	1068	574	399	354
29	198		408	482	2561	1926	1424	549	477	426	326	122
30	317		944	1310	2680	1362	1395	1186	474	484	70	105
31	223		753		2967		1485	761		334		174
Total	7558	11772	22876	36874	47359	53429	42587	37684	23924	-	9211	-
Mean	243.8	420.4	737.9	1229.1	1527.7	1781.0	1373.8	1215.6	797.5	-	307.0	-

Notes : " - " indicates value not available

Table 16 Clones

Daily Totals of Diffuse Solar Radiation (J/cm )

2

1985

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Day 1	85	274	117	489	1060	462	1206	757	815	363	251	-
2	125	327	318	421	768	471	1135	1054	548	487	225	-
3	95	226	121	743	658	807	823	955	875	421	307	-
4	131	181	510	580	1122	970	1277	724	600	487	257	-
5	89	234	544	734	811	785	1176	1128	655	501	259	-
6	82	112	293	666	964	1258	1251	1079	779	459	233	-
7	129	51	289	396	1034	1140	884	1180	310	407	296	-
8	162	48	527	801	598	1028	486	619	-	229	170	-
9	177	57	317	696	896	1212	1276	876	-	385	183	-
10	128	314	473	799	1003	1295	1018	1045	509	291	192	-
11	170	364	292	723	740	811	489	1077	587	420	197	-
12	162	387	528	495	713	1090	1187	902	471	414	274	-
13	151	220	550	766	825	1261	1155	1008	605	191	187	-
14	145	366	444	670	1081	1271	1083	742	623	425	154	-
15	143	191	502	638	464	1400	563	696	643	-	190	-
16	138	177	531	596	814	1137	960	866	269	270	221	-
17	110	314	311	899	1381	979	875	936	555	147	164	-
18	116	358	715	505	915	1352	1181	897	229	321	170	-
19	136	101	367	977	368	1040	1047	988	625	144	134	-
20	75	316	499	706	507	1065	1041	671	495	325	210	-
21	63	386	313	1010	1269	1285	1245	796	506	366	151	-
22	172	373	434	552	1080	618	763	1015	517	342	98	-
23	217	227	523	813	618	790	897	587	585	413	135	-
24	71	295	628	615	1164	1187	1143	923	549	298	119	-
25	248	318	442	1134	624	1198	793	843	377	322	177	-
26	125	419	725	934	1109	1149	-	914	539	324	168	-
27	102	230	587	1031	1086	1151	1269	433	478	233	163	-
28	185	510	678	525	856	1192	770	794	506	373	103	-
29	193		369	469	918	1315	1112	540	427	339	170	-
30	273		724	1033	840	1176	1141	734	392	268	64	-
31	178		615		607		1124	670		299		-
Total	4376	7376	14286	21416	26893	31895	-	26449	-	-	5622	-
Mean	141.2	263.4	460.8	713.9	867.5	1063.2	-	853.2	-	-	187.4	-

Notes : " - " indicates value not available



Table 17 Belmullet Daily Totals of Global Solar Radiation (J/cm ) 1985

Month	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Day 1	182	220	301	719	684	2747	1635	482	1415	471	353	97
2	203	263	641	198	1404	2780	1202	1757	1189	1030	526	121
3	331	358	172	1194	1540	2600	773	1919	1390	600	404	316
4	334	203	932	460	1121	1819	584	959	573	681	336	168
5	169	309	226	1749	1403	884	2410	1756	1718	342	457	223
6	228	236	440	1515	1857	2213	2380	1279	1146	963	262	100
7	183	544	1141	713	2070	1264	633	1368	233	765	301	92
8	348	270	215	1548	1533	907	679	1027	833	359	186	263
9	323	195	235	1738	1745	1379	1303	1860	720	462	214	341
10	372	570	1245	838	2510	1090	628	1669	1436	523	322	280
11	367	330	1226	1563	2613	928	595	2083	742	688	220	71
12	353	254	619	1073	2557	2080	1476	1917	1384	365	366	55
13	312	697	1018	1057	2015	2026	2545	1821	756	250	187	186
14	360	727	1106	1719	1491	2715	2140	817	1139	515	420	90
15	318	806	852	736	304	2008	825	1290	1113	982	153	67
16	339	649	867	678	1879	2514	1194	1440	427	407	406	88
17	127	465	1050	1343	1152	1936	1692	736	1137	143	68	84
18	254	205	184	1977	1556	1968	1977	751	330	237	104	188
19	332	519	465	1463	2050	1390	2292	1290	1348	524	440	86
20	49	401	336	1787	440	1173	2347	737	388	369	415	40
21	175	237	284	1619	1546	1029	1609	734	417	194	238	140
22	233	234	759	2106	2397	474	1865	1124	347	658	396	132
23	343	391	860	1778	910	1761	629	431	914	397	428	186
24	227	739	1415	1949	1412	2415	643	1735	812	483	395	74
25	293	562	805	1738	512	2468	1082	1622	361	604	264	96
26	463	693	1122	2117	722	1997	1084	1056	556	457	317	74
27	110	876	969	1650	2333	718	1777	411	454	424	257	253
28	363	284	842	465	2480	2248	1754	1385	1147	567	330	137
29	392		703	700	2572	2188	1411	531	686	722	184	175
30	257		1025	1727	2677	1715	845	970	163	494	72	45
31	128		1192		2723		1383	1000		588		193
Total	8468	12237	23247	39917	52208	53434	43392	37957	25274	16264	9021	4461
Mean	273.2	437.0	749.9	1330.6	1684.1	1781.1	1399.7	1224.4	842.5	524.6	300.7	143.9

Notes : " - " indicates value not available