

VIDAR HISDAL & ØYVIND FINNEKÅSA

RADIATION MEASUREMENTS IN NY-ÅLESUND, SPITSBERGEN, 1988–92



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the bottom of Kongsfjorden
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INTRODUCTION

GENERAL INFORMATION

The following tables contain data recorded at the radiation station of the Norwegian Polar Institute in Ny-Ålesund (78°55' N, 11°56' E) during the years 1988-92. The radiation instruments were mounted both on the roof of the station building (17 m a.s.l., Fig.1) and on the tundra nearby (12 m a.s.l., Fig.2).

Fig.3 shows the course of the geographic horizon as seen from the roof of the station. The mountain Zeppelifjellet to the south reaches an elevation of 13.7°, while Scheteligfjellet to the west reaches 8.4°. As indicated by the solar paths in the diagram the mountains in this sector may intercept direct solar radiation during a period after the end and before the start of the polar night. No attempt has been made to correct neither for this effect nor for the insignificant influence of the mountains on the sky radiation.

Assuming a refraction of 0.6° at the horizon, the polar night in Ny-Ålesund starts and ends on 25 October and 17 February respectively (whole solar disc remaining below the sea-level horizon). Correspondingly the period with midnight sun (whole solar disc remaining above the horizon) lasts from 18 April to 25 August. These dates may of course vary slightly according to the distance to a leap year and the magnitude of the refraction effect. At the equinoxes the sun's maximum altitude in Ny-Ålesund is 11.2°. At summer solstice the altitude varies between a minimum of 12.4° and a maximum of 34.5°. Diagrams giving the altitude of the sun in Ny-Ålesund for individual days and hours may be found in a publication by Hisdal & Berge (1987).

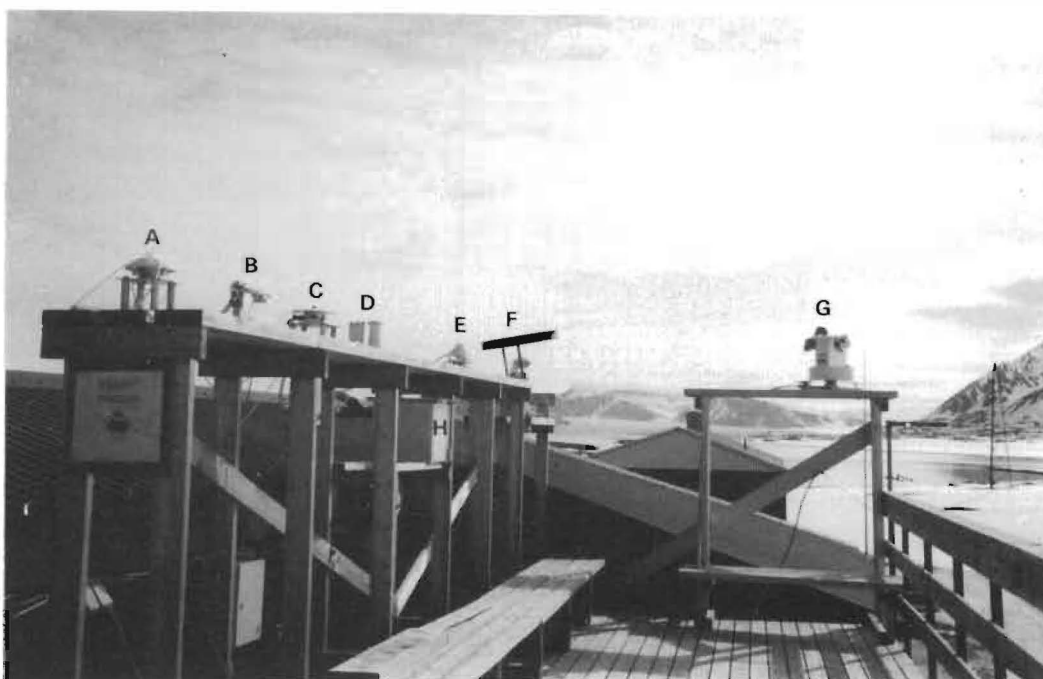


Fig.1. A view towards the east of the radiation instruments on the roof of the Research Station. A: pyranometer, B: pyrriometer, C: pyrgeometer, D: UV radiometer, E: UV-B radiometer, F: pyranometer for sky radiation, G: pyrliometer mounted on "solar tracker", H: turbo-fan for instrument ventilation.

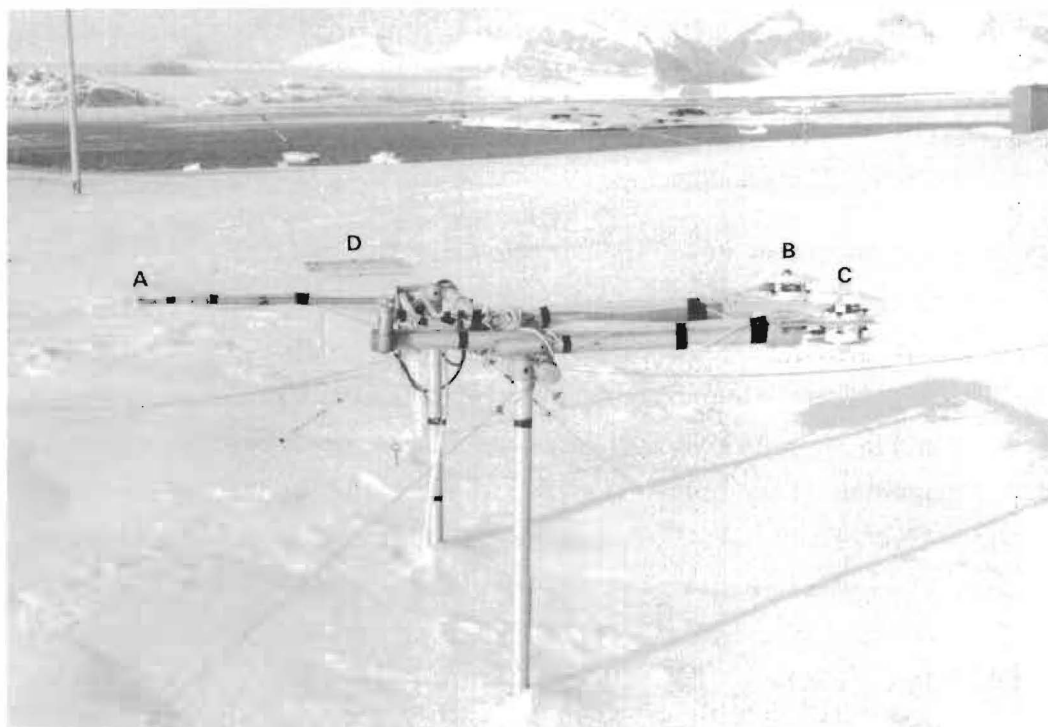


Fig.2. The instruments on the tundra seen towards the east. A: net pyrriometer, B and C: upwards and downwards facing pyrgeometers and pyranometers, respectively, D: turbo-fan for instrument ventilation.

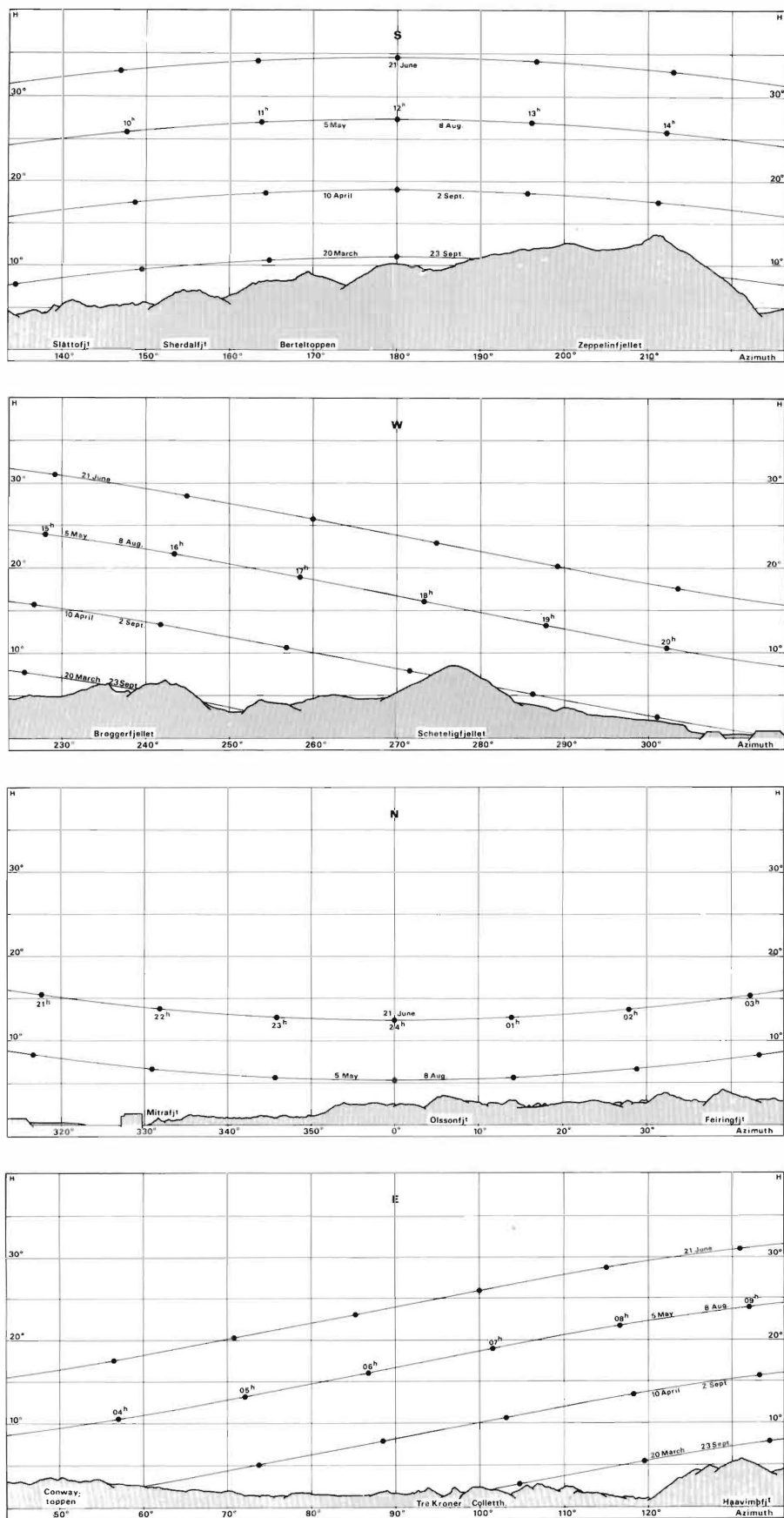


Fig.3. The geographical horizon as seen from the roof of the Research Station, with a selection of sun paths. (Hours in True Solar Time.)

INSTRUMENTS AND RADIATION COMPONENTS

The instruments used for recording the various radiation components, as well as their period of operation, are specified in Table A. In most cases WMO-adopted symbols are used. One exception is that reflected global radiation is indicated by $E_g\uparrow$ instead of $E_r\uparrow$.

To reduce zero-point deviations, as well as influences of water and ice on the transparency of the protective covers of the sensors, all instruments were ventilated by relatively strong air streams generated by turbo-fans.

The calibration methods are largely the same as those described in Hisdal et al., 1992 (in the following called "the 1981-87-publication"). We here confine ourselves to some supplementary remarks concerning the years 1988-92.

P y r h e l i o m e t e r s

The Ångström pyrheliometer (No. 19325) was used during the whole period for calibration of the "shortwave instruments". This pyrheliometer had been checked in 1986 by comparison with the self-calibrating cavity pyrheliometer EPAC (No. 13617) at the Radiation station in Bergen (cf. the "1981-87-publication"). A new comparison with the same instrument in March-April 1993 gave a mean factor (8 series) for the Ångström instrument relative to the Bergen standard, that was only 0.4% higher than the factor found by Eppley 13 years earlier. The original factor is therefor assumed to be unchanged during the whole period.

To obtain continuous records of Direct solar radiation an Eppley normal-incidence pyrheliometer (NIP No. 28256), mounted on a solar tracker, was put in operation in May 1991. This instrument too is calibrated by reference to a self-calibrating cavity pyrheliometer traceable to the WRR-scale.

P y r a n o m e t e r s

In June 1990 the Eppley pyranometer (No. 15614) measuring Global solar radiation was replaced by a new Kipp & Zonen pyranometer (No. 902907). Simultaneously an instrument of the same type (No. 902844), equipped with shadow ring took over the recording of Sky radiation instead of the old

measuring device, that did not work satisfactorily. A multiplication factor depending on latitude and solar declination, given by Kipp & Zonen, was used to correct for the influence of the shadow ring.

Table A. Specification of the instruments used for recording the radiation components tabulated for the years 1988-1992

INSTRUMENT	INSTR. NO.	PRODUCER	COMPONENT	SYMBOL	PERIOD
Mounted on the roof of the Research Station					
Pyrheliometer ¹	19325	Eppley Lab.	Direct solar rad.	S	Whole period
" " 2	28256	" "	" "	"	From 31.05.91
Pyranometer	15614	" "	Global solar rad.	E _g ↓	To 09.06.90
" "	902907	Kipp & Zonen	" "	"	From 09.06.90
" "	902844	" "	Sky rad.	E _d ↓	From 07.06.90
UV radiometer	19546	Eppley Lab.	Ultraviolet rad.	E _U ↓	To 09.06.90
" "	27887	" "	" "	"	From 09.06.90
UV Biometer ³	0618	Solar Light Co.	Ultrav.-B rad.	E _B ↓	From 25.05.92
Pyrgeometer	28346	Eppley Lab.	Downward longw. rad.	E _l ↓	From 31.05.91
Pyrradiometer	1191	Siemen Ersking	Downward total rad.	E↓	Whole period
Mounted on the tundra					
Pyranometer	11565	Eppley Lab.	Global solar rad.	E _g ↓	To 12.06.92
" "	15614	" "	" "	"	From 12.06.92
" "	17625	" "	Reflected glob. rad.	E _g ↑	To 12.06.92
" "	15615	" "	" "	"	From 12.06.92
Pyrgeometer	29134	" "	Downward longw. rad.	E _l ↓	From 01.06.92
" "	29135	" "	Upward longw. rad.	E _l ↑	From 01.06.92
Net pyrradiometer	1205	Siemen Ersking	Net total rad.	E*	Whole period

¹ Ångström pyrheliometer used periodically as a secondary standard for establishing shortwave calibration factors.

² Pyrheliometer mounted on an automatic solar tracker for continuous recording of direct solar radiation.

³ The UV-B measurements will be discussed in a separate report.

Later on, in June 1992 the old instruments for measuring Net shortwave radiation on the tundra station were replaced by the former global instrument, Eppley No. 15614, ("face up") in combination with an Eppley pyranometer No. 15615 ("face down"), previously used as a secondary standard for comparison tests.

A special problem was encountered when calibrating the shortwave instruments in May-June 1992. It turned out that on an average the multiplication factors of the individual instruments, found by means of the Ångström pyrliometer, were 2.8 to 3.0 % lower than those established during last summer. If correct, this would mean a considerable increased sensitivity of several instruments, which in itself was quite unlikely. As mentioned before, the Ångström instrument was tested in spring 1993, and the original calibration factor was verified. In all probability the reason for this deviation must be a relatively strong concentration of particles in the stratosphere, originating from the volcanic eruption of Mount Pinatubo. This is in accordance with the unusually pronounced "milky" appearance of the circumsolar sky during this period.

The "Pinatubo-effect" on the radiation conditions has been described by several authors (see e.g. Michalsky et al. 1994). An example of the influence of the effect on the circumsolar radiation is given by Skartveit et al. (1993). In our case the shading disc as seen from the pyranometer sensor (0.03 steradians) is considerably larger than the aperture angle of the pyrliometer (0.006 steradians). This would be tolerable in the case of "normal" scattering conditions. However, a strong increase of the circumsolar radiation at relatively large angular distances from the sun, will involve a too large difference between unshaded and shaded readings of the pyranometer compared with the Ångström value, and thus a too small multiplication factor for the instrument calibrated. A further discussion of the phenomenon is difficult, since we in the present case have no reliable measure of the change of circumsolar radiation with distance from the solar disc.

It should be mentioned in this connection that in spring 1993 the described reduction of the measured calibration factors were below 2%, while in spring 1994 it was practically absent.

U V r a d i o m e t e r s

The Eppley ultraviolet radiometer (No. 19546) was used till June 1990, when it was replaced by a new instrument of the same type (No. 27887). During an overlapping period of a couple of weeks the values given by the old instrument (calibrated by Eppley in June 1985) were only about 2% lower than those given by the new instrument (calibrated in January 1990). The usual cleaning of the diffusing quartz disc with alcohol proved to be important in this connection. For the period 1988-90 a slightly increasing calibration factor was used for the old instrument, in accordance with the difference observed between the two instruments.

P y r g e o m e t e r s a n d p y r r a d i o m e t e r s

Up to May 1991 the Downward and Upward longwave radiation were obtained from the recordings of the Siemen Ersking pyrradiometers (Nos. 1191 and 1205), as described in "the 1981-87-publication". In May 1991 an Eppley pyrgeometer (No. 28346) was mounted on the roof, and in May the following year two instruments of the same type, one upward facing (No. 29134) and one downward facing (No. 29135), were mounted on the tundra station. No doubt this meant an improved accuracy of the longwave radiation records, as the new instruments, to a good approximation, give a direct measure of this part of the radiation budget. Thus the cumbersome and somewhat uncertain "shortwave reduction" of the total radiation given by the pyrradiometers was avoided.

In order to obtain information about the correspondance between the two types of instruments, the pyrradiometers continued to record after the pyrgeometers had taken over as longwave instruments. As a whole there was a good agreement between the two sets of longwave data, especially during periods with cloudy weather.

Fig 4 shows the variation of the hourly sums of Downward longwave radiation and Net radiation for June and December 1992. For the former month also the Global solar radiation is entered. The conservative character of the longwave component is clearly apparent. As is well known, larger variations of this element are mainly due to major changes of the cloud cover. Thus, as illustrated by the June diagram, days with strong Global radiation (clear sky) are

distinguished by comparatively low Downward longwave radiation, and vice versa.

REGISTRATION TECHNIQUES

A Fluke Helios I datalogger scanned each sensor every second minute, and transferred the signals to a PC connected to a serial port. Each scan was displayed as calibrated values on the PC screen, while the PC program collected and stored the data as raw, uncalibrated values. The logger operated with a maximum resolution of $0.5 \mu\text{V}$, and was equipped with a thermocouple (T-type) board. As a routine check a printout of the data was taken every morning.

TABULATED DATA

There are several shorter or longer breaks in the recordings, mainly caused by technical problems in connection with irregularities in the electricity supply. Length and frequency of the breaks are indicated in Fig.5, where periods with recorded Downward longwave radiation are indicated. A corresponding figure for the other radiation components would be practically identical, disregarding the obvious fact that shortwave radiation is absent when the sun is below the horizon. Due to a break-down of the old logger unit and a time consuming renewal of the whole recording system, data from the first half of 1988 are lacking.

The tables contain hourly, daily, monthly, and annual values of the following radiation components:

1. Global solar radiation ($E_g\downarrow$)
2. Sky radiation ($E_d\downarrow$)
3. Direct solar radiation (S)
4. Ultraviolet radiation (E_U)
5. Net shortwave radiation (E_g^*)
6. Downward longwave radiation ($E_l\downarrow$)
7. Net longwave radiation (E_l^*)
8. Net radiation ($E^*=E_g^* + E_l^*$)

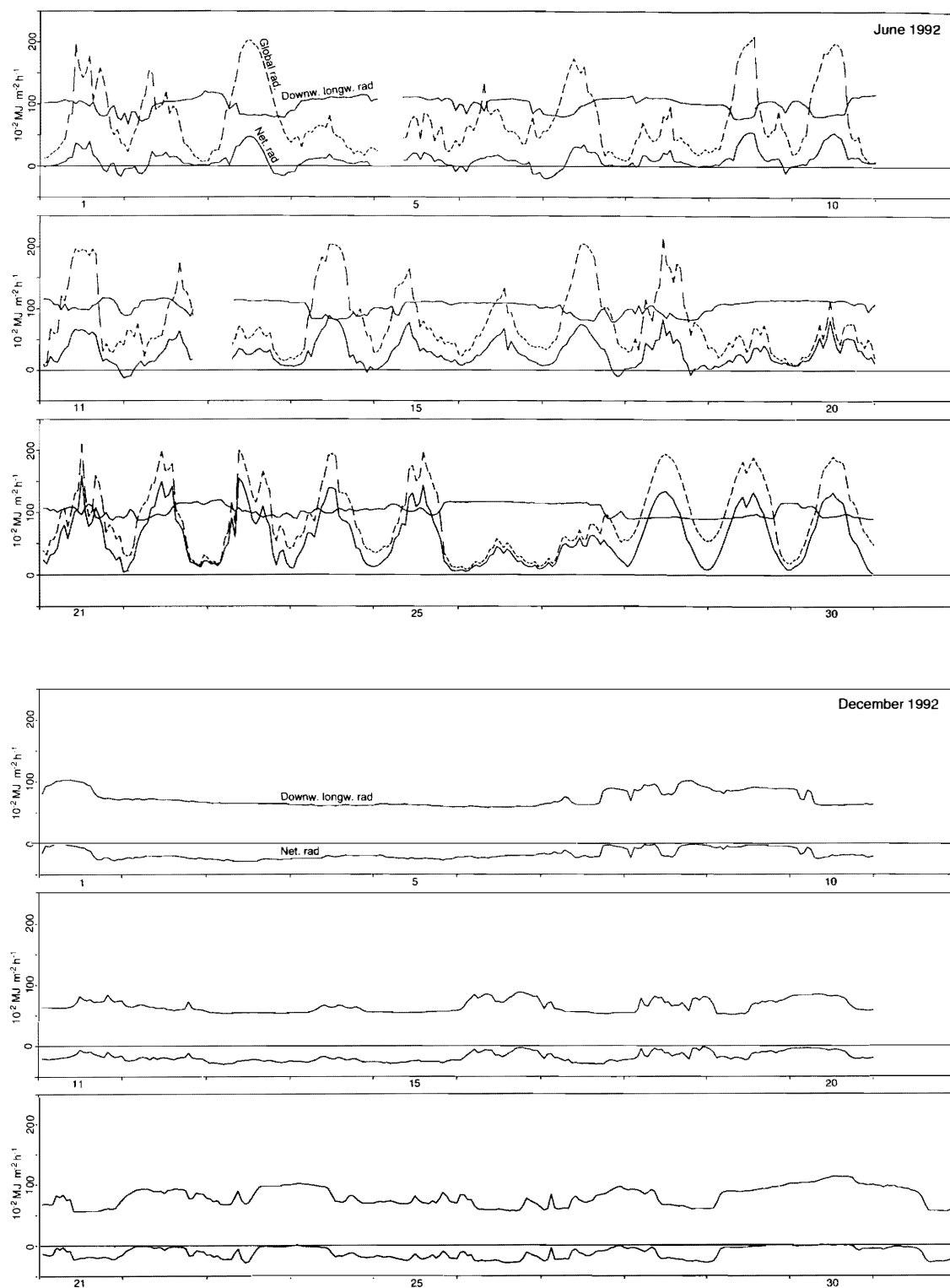


Fig.4. The variations of hourly sums of Downward longwave radiation (upper full line) and Net radiation (lower full line) for June and December 1992. In the June diagram also Global solar radiation (broken line) is entered.

	E_{\downarrow}										
1988											
1989											
1990											
1991											
1992											
JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER

Fig.5. The horizontal lines indicate periods with records of Downward longwave radiation. Breaks lasting two days or less are not shown.

During the polar night the number of components is restricted to E_{\downarrow} and $E^* = E_{\uparrow}^*$. The ground albedo (ρ_G) is not tabulated. It may be found from the expression:

$$\rho_G = (E_{g\downarrow} - E_g^*) / E_{g\downarrow}$$

The $E_{g\downarrow}$ values used when evaluating E_g^* are measured by the albedometer mounted on the tundra, which may differ slightly from the tabulated $E_{g\downarrow}$ values measured by the main instrument on the roof. In some cases with a low sun $E_{g\downarrow}$ and E_g^* may be larger than zero, while $E_{g\uparrow}$ and ρ_G are equal to zero. This is partly due to the limited sensitivity of the recording device.

The hours are given in True Solar Time (TST), and the hourly values refer to the indicated TST ± 0.5 hour.

Dots in the tables mean zero irradiance, while dashes mean breaks in the recordings. If one or more hourly sums are lacking during a day, the whole day is omitted, to prevent systematic diurnal variations from introducing a bias in the values of totals and means. To facilitate the general survey of the tabulated data, also months with no observations of one or more components are included, and appear as "dash-dot tables".

In agreement with the limits used by Skartveit et al. (Radiation Yearbook, Bergen), averages based on at least 25 days, but less than a complete month, are symbolized by the sign \approx before the row in the table. Correspondingly the sign \sim before a row indicates means based on at least 10 days, but less than 25 days. If there are less than 10 days with observations in a month, no means are calculated. Monthly totals (Type D tables, see below) are monthly means multiplied by the actual number of days of the month.

For each year there are four types of tables:

Type A gives totals (sums) for each hour and day, and their monthly means. These tables are not published here. They may be obtained on application to Norwegian Polar Institute.

Type B gives a summary of daily totals.

Type C gives a summary of monthly means for each hour.

Type D gives monthly and annual totals.

The values are given in hundredths of Megajoule per square metre (10^{-2}MJ m^{-2}), except for E_{\downarrow} , which is expressed in Kilojoule (KJ m^{-2}).

ACKNOWLEDGEMENTS

We are indebted to the staff of the station in Ny-Ålesund, who took care of the instruments and registration systems. Our thanks are also due to Arvid Skartveit at the Geophysical Institute, University of Bergen, for valuable discussions, as well as to the technical staff of the Radiation Observatory of the same institute for help with instrument comparisons. Finally we want to express our sincere thanks to Klaus Karlson, who accomplished the last, and often troublesome part of the data processing.

REFERENCES

- Hisdal, V., Finnekåsa, Ø. & Vinje, T. 1992: Radiation measurements in Ny-Ålesund, Spitsbergen, 1981-1987. *Norsk Polarinstitutt Meddelelser 118*. 380 pp.
- Hisdal, V. & Berge, T. 1987: Solhøydediagrammer. *Norsk Polarinstitutt Rapport 40*. 31 pp.
- Michalsky, J.J. & Perez, R. & Seals, R. & Ineichen, P. 1994: Degradation of solar concentrator performance in the aftermath of Mount Pinatubo. *Solar Energy 52 (2)*. 205-213.
- Skartveit, A., Cleveland, F. & Lange, T. de 1993: *Radiation observations in Bergen, Norway, 1992. Radiation Yearbook No. 28. Univ. of Bergen. 55.*

Type A tables 1988 - 92

Hourly totals

Tables of "Hourly totals" are not published here. These data may be obtained on application to Norwegian Polar Institute.

Type B tables 1988 - 92

Daily totals

1988		Daily totals of of global radiation										10 ⁻² MJ m ⁻²		
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
1	-	-	-	-	-	-	997	1537	-	-	-	0		
2	-	-	-	-	-	-	1311	865	-	-	0	0		
3	-	-	-	-	-	-	2803	1020	-	-	0	0		
4	-	-	-	-	-	-	3021	667	-	-	0	0		
5	-	-	-	-	-	-	1896	634	-	-	0	0		
6	-	-	-	-	-	-	1626	533	283	-	0	0		
7	-	-	-	-	-	-	1599	1786	-	-	0	-		
8	-	-	-	-	-	-	2189	-	-	-	0	0		
9	-	-	-	-	-	-	2223	408	-	45	0	0		
10	-	-	-	-	-	-	2754	-	-	47	-	0		
11	-	-	-	-	-	-	2682	-	-	37	-	0		
12	-	-	-	-	-	-	1661	-	-	29	-	0		
13	-	-	-	-	-	-	-	1184	-	25	-	0		
14	-	-	-	-	-	-	968	-	-	26	-	0		
15	-	-	-	-	-	-	767	828	571	26	0	0		
16	-	-	-	-	-	-	-	-	456	9	0	0		
17	-	-	-	-	-	-	1330	845	272	19	0	0		
18	-	-	-	-	-	-	1225	-	216	15	0	0		
19	-	-	-	-	-	-	1516	867	216	4	0	0		
20	-	-	-	-	-	-	2603	726	316	9	0	0		
21	-	-	-	-	-	-	2585	907	210	7	0	0		
22	-	-	-	-	-	-	2572	379	201	3	-	0		
23	-	-	-	-	-	-	2556	-	292	5	0	0		
24	-	-	-	-	-	-	1946	515	286	1	0	0		
25	-	-	-	-	-	-	-	279	237	0	-	0		
26	-	-	-	-	-	-	1011	416	225	-	0	0		
27	-	-	-	-	-	-	-	426	252	-	0	0		
28	-	-	-	-	-	-	2252	352	150	-	0	0		
29	-	-	-	-	-	-	2160	636	-	-	0	0		
30	-	-	-	-	-	-	1130	534	-	-	0	-		
31	-	-	-	-	-	-	1657	935	-	-	-	-		
Mean	-	-	-	-	-	-	1890 _≡	751 _~	279 _~	18 _~	0 _~	0 _≡		

1988	Daily totals of sky radiation												10 ⁻² MJ m ⁻²	
	Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean		-	-	-	-	-	-	-	-	-	-	-	-	-

1988		Daily totals of direct radiation										10 ⁻² MJ m ⁻²		
Day		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1		-	-	-	-	-	-	-	-	-	-	-	-	-
2		-	-	-	-	-	-	-	-	-	-	-	-	-
3		-	-	-	-	-	-	-	-	-	-	-	-	-
4		-	-	-	-	-	-	-	-	-	-	-	-	-
5		-	-	-	-	-	-	-	-	-	-	-	-	-
6		-	-	-	-	-	-	-	-	-	-	-	-	-
7		-	-	-	-	-	-	-	-	-	-	-	-	-
8		-	-	-	-	-	-	-	-	-	-	-	-	-
9		-	-	-	-	-	-	-	-	-	-	-	-	-
10		-	-	-	-	-	-	-	-	-	-	-	-	-
11		-	-	-	-	-	-	-	-	-	-	-	-	-
12		-	-	-	-	-	-	-	-	-	-	-	-	-
13		-	-	-	-	-	-	-	-	-	-	-	-	-
14		-	-	-	-	-	-	-	-	-	-	-	-	-
15		-	-	-	-	-	-	-	-	-	-	-	-	-
16		-	-	-	-	-	-	-	-	-	-	-	-	-
17		-	-	-	-	-	-	-	-	-	-	-	-	-
18		-	-	-	-	-	-	-	-	-	-	-	-	-
19		-	-	-	-	-	-	-	-	-	-	-	-	-
20		-	-	-	-	-	-	-	-	-	-	-	-	-
21		-	-	-	-	-	-	-	-	-	-	-	-	-
22		-	-	-	-	-	-	-	-	-	-	-	-	-
23		-	-	-	-	-	-	-	-	-	-	-	-	-
24		-	-	-	-	-	-	-	-	-	-	-	-	-
25		-	-	-	-	-	-	-	-	-	-	-	-	-
26		-	-	-	-	-	-	-	-	-	-	-	-	-
27		-	-	-	-	-	-	-	-	-	-	-	-	-
28		-	-	-	-	-	-	-	-	-	-	-	-	-
29		-	-	-	-	-	-	-	-	-	-	-	-	-
30		-	-	-	-	-	-	-	-	-	-	-	-	-
31		-	-	-	-	-	-	-	-	-	-	-	-	-
Mean		-	-	-	-	-	-	-	-	-	-	-	-	-

1988		Daily totals of of ultraviolet radiation										kJ m ⁻²	
Day		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1		-	-	-	-	-	-	575	687	-	-	-	-
2		-	-	-	-	-	-	710	443	-	-	-	-
3		-	-	-	-	-	-	1264	507	-	-	-	-
4		-	-	-	-	-	-	1291	368	-	-	-	-
5		-	-	-	-	-	-	906	341	-	-	-	-
6		-	-	-	-	-	-	800	307	149	-	-	-
7		-	-	-	-	-	-	879	737	-	-	-	-
8		-	-	-	-	-	-	1067	-	-	-	-	-
9		-	-	-	-	-	-	1021	230	-	28	-	-
10		-	-	-	-	-	-	1175	-	-	-	-	-
11		-	-	-	-	-	-	1164	-	-	-	-	-
12		-	-	-	-	-	-	845	-	-	-	-	-
13		-	-	-	-	-	-	-	565	-	-	-	-
14		-	-	-	-	-	-	533	-	-	-	-	-
15		-	-	-	-	-	-	442	421	244	-	-	-
16		-	-	-	-	-	-	-	-	216	-	-	-
17		-	-	-	-	-	-	663	424	165	-	-	-
18		-	-	-	-	-	-	654	-	130	-	-	-
19		-	-	-	-	-	-	775	469	135	-	-	-
20		-	-	-	-	-	-	1071	381	184	-	-	-
21		-	-	-	-	-	-	1076	427	138	-	-	-
22		-	-	-	-	-	-	1058	211	145	-	-	-
23		-	-	-	-	-	-	1042	-	161	-	-	-
24		-	-	-	-	-	-	870	265	157	-	-	-
25		-	-	-	-	-	-	-	155	145	-	-	-
26		-	-	-	-	-	-	533	221	136	-	-	-
27		-	-	-	-	-	-	-	242	129	-	-	-
28		-	-	-	-	-	-	931	199	113	-	-	-
29		-	-	-	-	-	-	881	313	-	-	-	-
30		-	-	-	-	-	-	576	298	-	-	-	-
31		-	-	-	-	-	-	751	401	-	-	-	-
Mean		-	-	-	-	-	-	872 _m	374 _m	156 _m	-	-	-

1988

Daily totals of net shortwave radiation

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	903	1307	-	-	-	0
2	-	-	-	-	-	-	1177	752	-	-	0	0
3	-	-	-	-	-	-	2483	875	-	-	0	0
4	-	-	-	-	-	-	2674	590	-	-	0	0
5	-	-	-	-	-	-	1643	559	-	-	0	0
6	-	-	-	-	-	-	1411	475	250	-	0	0
7	-	-	-	-	-	-	1409	1524	-	-	0	-
8	-	-	-	-	-	-	1929	-	-	-	0	0
9	-	-	-	-	-	-	1916	360	-	4	0	0
10	-	-	-	-	-	-	2413	-	-	5	-	0
11	-	-	-	-	-	-	2345	-	-	3	-	0
12	-	-	-	-	-	-	1467	-	-	2	-	0
13	-	-	-	-	-	-	-	1018	-	2	-	0
14	-	-	-	-	-	-	852	-	-	2	-	0
15	-	-	-	-	-	-	680	699	123	4	0	0
16	-	-	-	-	-	-	-	-	113	0	0	0
17	-	-	-	-	-	-	1157	712	55	0	0	0
18	-	-	-	-	-	-	1071	-	50	3	0	0
19	-	-	-	-	-	-	1330	708	26	0	0	0
20	-	-	-	-	-	-	2253	615	38	1	0	0
21	-	-	-	-	-	-	2227	766	17	0	0	0
22	-	-	-	-	-	-	2215	327	13	0	-	0
23	-	-	-	-	-	-	2189	-	18	0	0	0
24	-	-	-	-	-	-	1621	440	15	0	0	0
25	-	-	-	-	-	-	-	239	16	0	-	0
26	-	-	-	-	-	-	893	367	16	-	0	0
27	-	-	-	-	-	-	-	372	32	-	0	0
28	-	-	-	-	-	-	1905	309	20	-	0	0
29	-	-	-	-	-	-	1852	562	-	-	0	0
30	-	-	-	-	-	-	995	454	-	-	0	-
31	-	-	-	-	-	-	1415	764	-	-	-	-
Mean	-	-	-	-	-	-	1645~	643~	53~	2~	0~	0~

1988

Daily totals of downward longwave radiation

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	2606	2690	-	-	-	2360
2	-	-	-	-	-	-	2602	2884	-	-	1455	2589
3	-	-	-	-	-	-	2224	2806	-	-	2062	2131
4	-	-	-	-	-	-	2089	2811	-	-	1382	1604
5	-	-	-	-	-	-	2303	2783	-	-	1370	1791
6	-	-	-	-	-	-	2480	2841	2888	-	2065	1479
7	-	-	-	-	-	-	2512	2480	-	-	2457	-
8	-	-	-	-	-	-	2409	-	-	-	2113	2225
9	-	-	-	-	-	-	2254	2856	-	1910	2570	1959
10	-	-	-	-	-	-	2247	-	-	2039	-	1553
11	-	-	-	-	-	-	2279	-	-	2261	-	1333
12	-	-	-	-	-	-	2664	-	-	2043	-	1335
13	-	-	-	-	-	-	-	2519	-	2121	-	1550
14	-	-	-	-	-	-	2814	-	-	1536	-	1532
15	-	-	-	-	-	-	2738	2664	1932	1983	1849	1985
16	-	-	-	-	-	-	-	-	1922	2452	1381	1320
17	-	-	-	-	-	-	2606	2730	2316	2150	1331	1429
18	-	-	-	-	-	-	2589	-	2484	2247	1398	1845
19	-	-	-	-	-	-	2520	2486	2516	2188	1423	1598
20	-	-	-	-	-	-	2340	2559	2085	1651	1349	1504
21	-	-	-	-	-	-	2270	2441	1923	2018	1184	1506
22	-	-	-	-	-	-	2268	2679	1875	1489	-	1569
23	-	-	-	-	-	-	2211	-	1797	1423	1327	1393
24	-	-	-	-	-	-	2398	2754	1501	1974	1609	1173
25	-	-	-	-	-	-	-	2845	1593	1612	-	1293
26	-	-	-	-	-	-	2753	2814	1601	-	1552	1489
27	-	-	-	-	-	-	-	2597	1901	-	1326	1345
28	-	-	-	-	-	-	2308	2562	1908	-	1197	1974
29	-	-	-	-	-	-	2357	2421	-	-	1773	1631
30	-	-	-	-	-	-	2708	2490	-	-	2316	-
31	-	-	-	-	-	-	2610	2153	-	-	-	-
Mean	-	-	-	-	-	-	2450 ^m	2646 ^m	2016 ^m	1947 ^m	1659 ^m	1661 ^m

1988		Daily totals of net longwave radiation										10 ⁻² MJ m ⁻²	
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	-	-	-	-	-	-	-152	-402	-	-	-	-71	
2	-	-	-	-	-	-	-141	-166	-	-	-446	-34	
3	-	-	-	-	-	-	-743	-212	-	-	-244	-87	
4	-	-	-	-	-	-	-977	-145	-	-	-717	-241	
5	-	-	-	-	-	-	-549	-146	-	-	-657	-164	
6	-	-	-	-	-	-	-414	-93	-75	-	-155	-341	
7	-	-	-	-	-	-	-331	-516	-	-	-45	-	
8	-	-	-	-	-	-	-581	-	-	-	-179	-90	
9	-	-	-	-	-	-	-713	-37	-	-219	-37	-88	
10	-	-	-	-	-	-	-934	-	-	-236	-	-341	
11	-	-	-	-	-	-	-899	-	-	-118	-	-425	
12	-	-	-	-	-	-	-435	-	-	-216	-	-340	
13	-	-	-	-	-	-	-	-398	-	-191	-	-311	
14	-	-	-	-	-	-	-180	-	-	-492	-	-353	
15	-	-	-	-	-	-	-121	-254	-561	-256	-258	-161	
16	-	-	-	-	-	-	-	-	-567	-120	-563	-598	
17	-	-	-	-	-	-	-274	-176	-245	-337	-574	-419	
18	-	-	-	-	-	-	-329	-	-130	-198	-627	-345	
19	-	-	-	-	-	-	-484	-372	-112	-310	-640	-453	
20	-	-	-	-	-	-	-811	-328	-282	-527	-623	-386	
21	-	-	-	-	-	-	-911	-412	-327	-238	-616	-265	
22	-	-	-	-	-	-	-949	-180	-375	-705	-	-117	
23	-	-	-	-	-	-	-975	-	-323	-558	-620	-127	
24	-	-	-	-	-	-	-598	-164	-539	-249	-418	-23	
25	-	-	-	-	-	-	-	-72	-490	-463	-	25	
26	-	-	-	-	-	-	-246	-93	-445	-	-399	58	
27	-	-	-	-	-	-	-	-291	-309	-	-512	96	
28	-	-	-	-	-	-	-811	-288	-323	-	-516	36	
29	-	-	-	-	-	-	-809	-398	-	-	-269	53	
30	-	-	-	-	-	-	-340	-302	-	-	-60	-	
31	-	-	-	-	-	-	-459	-593	-	-	-	-	
Mean	-	-	-	-	-	-	-562	-263	-340	-320	-417	-197	

1988

Daily totals of net radiation

10⁻² MJ m⁻²

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	747	906	-	-	-	-71
2	-	-	-	-	-	-	1036	585	-	-	-446	-34
3	-	-	-	-	-	-	1739	664	-	-	-244	-87
4	-	-	-	-	-	-	1699	445	-	-	-717	-241
5	-	-	-	-	-	-	1096	414	-	-	-657	-164
6	-	-	-	-	-	-	1000	379	173	-	-155	-341
7	-	-	-	-	-	-	1077	1009	-	-	-45	-
8	-	-	-	-	-	-	1345	-	-	-	-179	-90
9	-	-	-	-	-	-	1204	325	-	-214	-37	-88
10	-	-	-	-	-	-	1477	-	-	-232	-	-341
11	-	-	-	-	-	-	1444	-	-	-117	-	-425
12	-	-	-	-	-	-	1031	-	-	-215	-	-340
13	-	-	-	-	-	-	-	620	-	-189	-	-311
14	-	-	-	-	-	-	672	-	-	-489	-	-353
15	-	-	-	-	-	-	558	445	-437	-253	-258	-161
16	-	-	-	-	-	-	-	-	-458	-119	-563	-598
17	-	-	-	-	-	-	887	535	-192	-335	-574	-419
18	-	-	-	-	-	-	747	-	-83	-197	-627	-345
19	-	-	-	-	-	-	847	337	-88	-310	-640	-453
20	-	-	-	-	-	-	1438	285	-242	-526	-623	-386
21	-	-	-	-	-	-	1320	351	-309	-237	-616	-265
22	-	-	-	-	-	-	1264	146	-360	-705	-	-117
23	-	-	-	-	-	-	1216	-	-304	-557	-620	-127
24	-	-	-	-	-	-	1024	277	-525	-249	-418	-23
25	-	-	-	-	-	-	-	169	-474	-463	-	25
26	-	-	-	-	-	-	651	273	-429	-	-399	58
27	-	-	-	-	-	-	-	81	-276	-	-512	96
28	-	-	-	-	-	-	1092	21	-303	-	-516	36
29	-	-	-	-	-	-	1041	161	-	-	-269	53
30	-	-	-	-	-	-	654	154	-	-	-60	-
31	-	-	-	-	-	-	957	169	-	-	-	-
Mean	-	-	-	-	-	-	1084=	380=	-287=	-318=	-417=	-197=

1989

Daily totals of of global radiation

10⁻² MJ m⁻²

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	0	47	531	1378	-	900	1921	868	118	0	0
2	0	0	-	428	1673	-	908	1496	952	148	0	0
3	0	0	60	732	1309	-	1169	456	576	89	0	0
4	0	0	78	1016	1558	-	1269	575	410	95	0	0
5	0	0	80	718	1305	-	2712	601	702	80	0	0
6	0	0	69	840	1076	-	1851	852	602	51	0	0
7	0	0	75	741	1352	-	2173	1577	716	88	0	0
8	0	0	92	682	1987	-	1497	607	509	38	0	0
9	0	0	141	911	1043	-	-	1606	-	46	0	0
10	0	0	109	1029	1738	-	1040	1288	637	18	0	0
11	0	0	146	925	1737	-	842	686	-	43	0	0
12	0	0	120	722	2070	-	1343	-	410	-	0	0
13	0	0	135	605	1357	-	829	854	267	-	0	0
14	0	0	180	699	1717	-	925	1398	186	42	0	0
15	0	0	231	1162	2346	-	1109	529	519	28	0	0
16	0	0	182	738	2187	978	1588	539	157	27	0	0
17	0	0	134	807	2490	2426	1178	851	328	12	0	0
18	0	4	255	925	1377	2874	537	1075	294	18	0	0
19	0	1	282	1330	2630	1326	811	756	364	12	0	0
20	0	9	352	1134	1704	1018	1326	653	160	-	0	0
21	0	14	366	1608	2648	2765	1260	276	313	-	0	0
22	0	17	364	1618	2707	2287	1322	623	325	1	0	0
23	0	16	405	1508	-	1933	-	482	135	0	0	0
24	0	14	489	1453	-	2778	-	776	116	0	0	0
25	0	22	495	896	-	2935	2179	908	82	0	0	0
26	-	23	501	1523	-	-	1474	525	-	0	0	0
27	0	44	426	937	2485	1991	1788	670	-	0	0	0
28	0	41	283	1066	1809	939	2224	449	113	0	0	0
29	0		461	1816	-	2653	2218	-	130	0	0	0
30	0		670	1158	-	1370	2130	-	86	-	0	0
31	0		490		-		2130	630		0		0
Mean	0=	7	257=	1009	1820=	2020=	1455=	845=	383=	37=	0	0

1989	Daily totals of sky radiation												10 ⁻² MJ m ⁻²			
	Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1989	Daily totals of direct radiation												10 ⁻² MJ m ⁻²		
	Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mean		-	-	-	-	-	-	-	-	-	-	-	-	-	-

1989	Daily totals of of ultraviolet radiation												kJ m ⁻²
	Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-	-	-	-	-	-	512	834	441	90	0	0
2	-	-	-	-	-	-	-	511	672	424	73	0	0
3	-	-	-	-	-	-	-	626	243	333	46	0	0
4	-	-	-	-	-	-	-	673	303	250	58	0	0
5	-	-	-	-	-	-	-	1189	318	361	50	0	0
6	-	-	-	-	-	-	-	937	416	320	35	0	0
7	-	-	-	-	-	-	-	967	642	327	41	0	0
8	-	-	-	-	-	-	-	773	312	262	28	0	0
9	-	-	-	-	-	-	-	-	628	-	25	0	0
10	-	-	-	-	-	-	-	540	574	293	15	0	0
11	-	-	-	-	-	-	-	454	-	-	27	0	0
12	-	-	-	-	-	-	-	609	-	212	-	0	0
13	-	-	-	-	-	-	-	471	399	150	-	0	0
14	-	-	-	-	-	-	-	491	578	106	22	0	0
15	-	-	-	-	-	-	-	616	284	214	14	0	0
16	-	-	-	-	-	-	-	749	307	84	16	0	0
17	-	-	-	-	-	-	-	589	399	171	10	0	0
18	-	-	-	-	-	-	-	316	498	147	13	0	0
19	-	-	-	-	-	-	-	421	358	173	6	0	0
20	-	-	-	-	-	-	-	651	320	90	-	0	0
21	-	-	-	-	-	-	-	622	157	151	-	0	0
22	-	-	-	-	-	-	-	596	345	151	5	0	0
23	-	-	-	-	-	-	-	-	256	72	5	0	0
24	-	-	-	-	-	-	-	-	387	66	3	0	0
25	-	-	-	-	-	-	-	920	420	49	3	0	0
26	-	-	-	-	-	-	-	691	306	-	3	0	0
27	-	-	-	-	-	-	-	780	347	-	1	0	0
28	-	-	-	-	-	-	-	922	258	66	0	0	0
29	-	-	-	-	-	-	-	908	-	85	0	0	0
30	-	-	-	-	-	-	-	871	-	53	-	0	0
31	-	-	-	-	-	-	-	873	361	-	0	0	0
Mean		-	-	-	-	-	-	689 [≡]	405 [≡]	194 [≡]	23 [≡]	0	0

1989

Daily totals of net shortwave radiation

10⁻² MJ m⁻²

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	0	6	38	156	-	813	1592	115	12	0	0
2	0	0	-	48	232	-	828	1266	143	30	0	0
3	0	0	8	86	274	-	1051	400	89	10	0	0
4	0	0	13	237	414	-	1131	506	70	10	0	0
5	0	0	7	105	356	-	2441	526	146	7	0	0
6	0	0	8	114	243	-	1704	745	132	6	0	0
7	0	0	11	95	263	-	1967	1358	155	19	0	0
8	0	0	11	81	448	-	1369	530	109	6	0	0
9	0	0	19	121	198	-	-	1350	-	13	0	0
10	0	0	16	125	387	-	950	1090	101	8	0	0
11	0	0	23	142	395	-	770	594	-	21	0	0
12	0	0	18	89	493	-	1226	-	155	-	0	0
13	0	0	17	89	289	-	762	726	145	-	0	0
14	0	0	26	123	331	-	841	1165	156	13	0	0
15	0	0	26	275	459	-	1007	450	437	8	0	0
16	0	0	17	140	433	314	1411	468	137	3	0	0
17	0	0	18	154	518	711	1034	735	281	0	0	0
18	0	0	18	163	249	1022	479	876	238	2	0	0
19	0	0	28	276	507	471	706	659	273	0	0	0
20	0	2	42	239	308	378	1172	562	142	-	0	0
21	0	0	43	355	501	1077	1101	243	215	-	0	0
22	0	0	47	383	533	903	1134	539	234	0	0	0
23	0	0	52	368	-	890	-	416	115	0	0	0
24	0	0	56	337	-	1461	-	668	98	0	0	0
25	0	1	63	189	-	1912	1837	751	72	0	0	0
26	-	2	72	375	-	-	1290	440	-	0	0	0
27	0	6	51	164	685	1737	1548	572	-	0	0	0
28	0	4	36	135	462	850	1912	93	15	0	0	0
29	0	0	66	325	-	2416	1918	-	13	0	0	0
30	0	0	92	155	-	1257	1802	-	15	-	0	0
31	0	0	64	-	-	-	1816	78	-	0	0	0
Mean	0 _{ms}	1	32 _{ms}	184	381 _~	1100 _~	1286 _{ms}	693 _{ms}	146 _{ms}	6 _{ms}	0	0

1989

Daily totals of downward longwave radiation

10⁻² MJ m⁻²

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	1616	1869	2722	2482	-	2755	2500	1885	1686	2640	1809
2	2557	1312	-	2493	2178	-	2687	2640	2145	2088	2310	1328
3	1741	1228	-	1484	2503	-	2714	2922	2525	2601	2694	1481
4	1223	1259	2155	1119	2479	-	2590	2817	2734	2486	2676	1405
5	1106	1290	1638	1862	2443	-	2261	2915	2167	2455	2599	1242
6	1178	1379	1274	2110	2636	-	2540	2951	2091	2703	2680	1300
7	1615	1561	2252	2168	2562	-	2442	2694	2044	2646	2303	1278
8	1493	1365	2055	2321	2219	-	2743	2949	2302	2732	2162	1923
9	1582	1587	1858	1784	2495	-	-	2512	-	2665	1690	1676
10	2040	2340	2443	1597	2354	-	2864	2574	2345	2549	1948	1445
11	1798	2451	2462	2435	2336	-	2804	2822	-	2472	1421	1480
12	1285	2376	2366	2679	2189	-	2834	-	2695	-	1759	1704
13	1830	1937	2272	2776	2450	-	2852	2657	2774	-	2265	1888
14	2330	1835	2184	2738	2321	-	2842	2416	2706	2112	1930	1641
15	2236	1692	1737	2562	1972	-	2798	2700	2202	2370	1707	1513
16	1852	1900	2114	2693	1933	2721	2771	2619	2605	2387	2459	1480
17	1135	1508	2286	2655	1805	2473	2805	2633	2242	1991	2257	1244
18	2171	1587	1562	2249	2407	2120	2906	2600	2195	1581	1681	1252
19	2103	1974	1560	1744	1764	2661	2693	2672	1871	2358	1337	1222
20	2053	1256	1788	1871	2272	2769	2795	2820	2547	-	1500	1185
21	1265	1487	1667	1521	1832	2335	2700	2842	2116	-	2016	1814
22	1033	1400	1560	1499	2053	2423	2772	2766	1791	1365	1603	1478
23	1406	1351	1503	1662	-	2501	-	2748	2600	1426	1886	1840
24	1828	1395	1301	2003	-	2383	-	2545	2662	1967	1814	1704
25	2239	1891	1308	2383	-	2197	2340	2187	2832	2103	1903	2105
26	-	2141	1502	1962	-	-	2733	2408	-	1976	2195	2508
27	1787	1736	2162	2474	2113	2555	2565	2345	-	1847	1862	2556
28	1555	1332	2399	2308	2290	2693	2346	2611	2376	2207	2444	2347
29	1173	-	1928	1799	-	2349	2488	-	2291	2211	2506	2330
30	1244	-	1521	2315	-	2639	2408	-	2288	-	1540	2341
31	1365	-	2078	-	-	-	2392	2326	-	2104	-	2222
Mean	1663 ^m	1650	1890 ^m	2133	2254 ⁻	2487 ⁻	2659 ^m	2650 ^m	2347 ^m	2196 ^m	2060	1701

1989

Daily totals of net longwave radiation

10⁻² MJ m⁻²

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-80	-141	-59	-127	-	-158	-709	-360	-806	-81	-307
2	-35	-491	-	-131	-314	-	-216	-612	-288	-424	-244	-704
3	-412	-356	-147	-373	-240	-	-237	-129	-98	-70	-49	-529
4	-635	-287	-94	-503	-249	-	-340	-202	-9	-107	-28	-642
5	-699	-185	-327	-256	-246	-	-826	-154	-477	-79	-58	-680
6	-409	-53	-373	-219	-145	-	-546	-254	-501	-15	-30	-650
7	-175	24	-12	-153	-141	-	-671	-599	-513	-109	-215	-614
8	-285	-41	-153	-76	-305	-	-299	-156	-302	-16	-244	-234
9	-180	-30	-176	-319	-187	-	-	-669	-	-84	-545	-476
10	-109	39	-54	-281	-222	-	-168	-533	-195	-195	-435	-551
11	-195	-79	-127	-144	-231	-	-227	-201	-	-251	-787	-571
12	-391	-194	-118	-92	-358	-	-271	-	16	-	-448	-328
13	-303	-389	-122	-33	-206	-	-226	-310	69	-	-135	-234
14	-93	-503	-134	-75	-272	-	-231	-606	-95	-433	-326	-565
15	-70	-540	-201	-233	-446	-	-299	-154	-569	-234	-453	-631
16	-215	-294	-116	-108	-456	-38	-414	-267	-126	-184	-52	-704
17	-372	-490	-143	-120	-560	-187	-360	-289	-473	-407	-168	-844
18	-3	-304	-338	-301	-142	-507	-118	-312	-472	-697	-569	-712
19	-269	-135	-247	-472	-487	-88	-327	-296	-746	-122	-716	-639
20	-240	-269	-305	-519	-262	31	-322	-156	-134	-	-537	-609
21	-721	-198	-310	-785	-500	-336	-410	-88	-545	-	-239	-221
22	-731	-98	-318	-772	-376	-264	-348	-215	-746	-594	-565	-578
23	-287	11	-398	-540	-	-222	-	-181	-84	-530	-290	-197
24	-297	34	-421	-302	-	-206	-	-369	-69	-225	-399	-312
25	-136	-80	-379	-277	-	-308	-788	-581	29	-202	-306	-349
26	-	-69	-263	-451	-	-	-402	-322	-	-301	-185	-27
27	-193	-317	-122	-149	-393	-334	-625	-398	-	-389	-421	-118
28	-187	-336	-173	-226	-337	-197	-906	-76	-155	-122	-34	-194
29	-409	-	-353	-417	-	-723	-869	-	-223	-151	-63	-91
30	-386	-	-391	-197	-	-313	-857	-	-252	-	-634	-104
31	-144	-	-134	-	-	-	-888	-192	-	-280	-	-161
Mean	-296 _w	-204	-220 _w	-286	-300 _w	-264 _w	-441 _w	-323 _w	-281 _w	-270 _w	-309	-438

1989

Daily totals of net radiation

 $10^{-2} \text{ MJ m}^{-2}$

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-	-80	-135	-17	27	-	659	882	-244	-795	-81	-307
2	-35	-491	-	-83	-84	-	610	652	-145	-396	-244	-704
3	-412	-356	-139	-287	29	-	813	29	-6	-58	-49	-529
4	-635	-287	-83	-267	165	-	794	306	60	-96	-28	-642
5	-699	-185	-319	-147	111	-	1616	373	-329	-68	-58	-680
6	-409	-53	-367	-109	97	-	1155	491	-368	-11	-30	-650
7	-175	24	-2	-58	119	-	1297	759	-359	-89	-215	-614
8	-285	-41	-140	5	138	-	1071	372	-196	-11	-244	-234
9	-180	-30	-157	-199	10	-	-	679	-	-69	-545	-476
10	-109	39	-39	-158	165	-	781	555	-93	-186	-435	-551
11	-195	-79	-104	-2	165	-	538	394	-	-229	-787	-571
12	-391	-194	-99	-3	136	-	950	-	169	-	-448	-328
13	-303	-389	-105	54	84	-	531	415	212	-	-135	-234
14	-93	-503	-108	49	62	-	611	559	60	-420	-326	-565
15	-70	-540	-175	41	15	-	705	299	-132	-225	-453	-631
16	-215	-294	-98	30	-23	273	997	201	11	-180	-52	-704
17	-372	-490	-125	35	-39	525	672	447	-191	-404	-168	-844
18	-3	-303	-320	-137	114	513	361	559	-235	-696	-569	-712
19	-269	-134	-218	-199	21	390	382	361	-476	-122	-716	-639
20	-240	-268	-264	-280	46	408	850	405	9	-	-537	-609
21	-721	-197	-267	-431	-1	741	688	153	-330	-	-239	-221
22	-731	-98	-270	-390	160	638	786	323	-510	-594	-565	-578
23	-287	11	-347	-173	-	668	-	233	33	-530	-290	-197
24	-297	37	-365	36	-	1251	-	299	28	-225	-399	-312
25	-136	-79	-316	-88	-	1602	1050	169	101	-202	-306	-349
26	-	-67	-189	-77	-	-	887	115	-	-301	-185	-27
27	-193	-311	-72	15	290	1402	920	176	-	-389	-421	-118
28	-187	-332	-137	-90	124	652	1004	17	-141	-122	-34	-194
29	-409	-	-290	-90	-	1694	1048	-	-209	-151	-63	-91
30	-386	-	-297	-41	-	944	947	-	-239	-	-634	-104
31	-144	-	-71	-	-	-114	928	-114	-	-280	-	-161
Mean	-296 [≡]	-203	-187 [≡]	-102	80 ⁻	836 [~]	845 [≡]	370 [≡]	-135 [≡]	-263 [≡]	-309	-438

1990

Daily totals of of global radiation

10⁻² MJ m⁻²

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0	0	39	644	1299	1534	1341	981	172	130	0	0
2	0	0	40	579	1971	1442	916	689	161	136	0	0
3	0	0	49	-	1094	1127	1692	1247	242	41	-	0
4	0	0	53	-	1438	1709	1682	1426	672	89	0	0
5	0	0	63	-	1933	2144	882	1493	144	32	0	0
6	0	0	67	800	1865	1806	1107	1369	301	48	0	0
7	0	0	107	636	1226	1614	2045	710	321	62	0	0
8	0	0	78	723	1701	1496	704	497	516	39	0	0
9	0	0	126	444	1472	1832	1151	854	139	55	0	0
10	0	0	104	774	2177	861	1552	538	136	39	-	0
11	0	0	162	791	2120	2521	807	950	-	47	-	0
12	0	0	183	721	1405	1392	1306	1222	218	36	-	-
13	0	0	170	833	1515	766	1474	1080	621	17	0	-
14	0	0	153	755	1573	975	964	1358	516	25	0	-
15	0	0	146	757	1573	989	1213	1010	171	14	0	0
16	0	0	210	848	2134	1380	1280	1720	258	19	0	0
17	0	2	214	991	2506	1935	1484	1184	199	15	0	0
18	0	0	292	1106	1561	1172	1114	1489	152	16	0	0
19	0	1	208	687	2178	1536	1079	1598	173	-	-	0
20	0	1	281	539	1875	-	1432	910	261	0	-	0
21	0	7	261	425	2323	2146	1485	876	338	0	-	0
22	0	13	285	1139	2544	2601	1299	587	192	2	-	0
23	0	14	372	802	2249	1546	1051	508	262	2	-	0
24	0	57	326	660	2581	1904	1447	430	63	0	-	0
25	0	19	350	1310	2296	1929	603	1210	92	0	-	0
26	0	26	151	1214	1946	2716	1380	419	123	0	-	0
27	0	37	192	1037	2333	1085	581	965	43	0	0	0
28	-	37	302	1069	1181	2704	519	540	136	0	0	0
29	0	472	472	1790	1211	1987	540	600	126	0	0	0
30	0	657	657	1941	2619	1768	2049	275	183	0	0	0
31	0	559	559	1811	1811	1079	82	0	0	0	0	0
Mean	0≈	8	215	889≈	1862	1676≈	1202	930	239≈	29≈	0≈	0≈

1990		Daily totals of sky radiation										10 ⁻² MJ m ⁻²		
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
1	-	-	-	-	-	-	1272	943	156	113	0	0		
2	-	-	-	-	-	-	907	615	148	121	0	0		
3	-	-	-	-	-	-	1276	892	225	36	-	0		
4	-	-	-	-	-	-	1386	923	300	77	0	0		
5	-	-	-	-	-	-	880	905	134	28	0	0		
6	-	-	-	-	-	-	981	1097	269	43	0	0		
7	-	-	-	-	-	-	1322	684	290	53	0	0		
8	-	-	-	-	-	-	701	480	382	37	0	0		
9	-	-	-	-	-	-	1131	795	125	49	0	0		
10	-	-	-	-	-	-	1382	516	124	32	-	0		
11	-	-	-	-	-	-	800	798	-	39	-	0		
12	-	-	-	-	-	-	1066	739	194	31	-	-		
13	-	-	-	-	-	-	1292	645	246	12	0	-		
14	-	-	-	-	-	-	944	711	277	23	0	-		
15	-	-	-	-	-	-	1095	846	150	11	0	0		
16	-	-	-	-	-	-	1104	407	231	17	0	0		
17	-	-	-	-	-	-	807	654	178	13	0	0		
18	-	-	-	-	-	-	1035	517	139	14	0	0		
19	-	-	-	-	-	-	1059	354	153	-	-	0		
20	-	-	-	-	-	-	1044	529	183	0	-	0		
21	-	-	-	-	-	-	1063	724	138	0	-	0		
22	-	-	-	-	-	-	1005	544	172	2	-	0		
23	-	-	-	-	-	-	903	473	208	3	-	0		
24	-	-	-	-	-	-	938	401	58	0	-	0		
25	-	-	-	-	-	-	593	386	82	0	-	0		
26	-	-	-	-	-	-	967	392	109	0	-	0		
27	-	-	-	-	-	-	568	462	40	0	0	0		
28	-	-	-	-	-	-	507	500	121	0	0	0		
29	-	-	-	-	-	-	528	485	112	0	0	0		
30	-	-	-	-	-	-	908	255	137	0	0	0		
31	-	-	-	-	-	-	1011	77		0		0		
Mean	-	-	-	-	-	-	983	605	175 _{sw}	25 _{sw}	0 _{sw}	0 _{sw}		

1990		Daily totals of direct radiation										10 ⁻² MJ m ⁻²		
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
1	-	-	-	-	-	-	-	-	-	-	-	-	-	
2	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	-	-	-	-	-	-	-	-	-	-	-	-	-	
4	-	-	-	-	-	-	-	-	-	-	-	-	-	
5	-	-	-	-	-	-	-	-	-	-	-	-	-	
6	-	-	-	-	-	-	-	-	-	-	-	-	-	
7	-	-	-	-	-	-	-	-	-	-	-	-	-	
8	-	-	-	-	-	-	-	-	-	-	-	-	-	
9	-	-	-	-	-	-	-	-	-	-	-	-	-	
10	-	-	-	-	-	-	-	-	-	-	-	-	-	
11	-	-	-	-	-	-	-	-	-	-	-	-	-	
12	-	-	-	-	-	-	-	-	-	-	-	-	-	
13	-	-	-	-	-	-	-	-	-	-	-	-	-	
14	-	-	-	-	-	-	-	-	-	-	-	-	-	
15	-	-	-	-	-	-	-	-	-	-	-	-	-	
16	-	-	-	-	-	-	-	-	-	-	-	-	-	
17	-	-	-	-	-	-	-	-	-	-	-	-	-	
18	-	-	-	-	-	-	-	-	-	-	-	-	-	
19	-	-	-	-	-	-	-	-	-	-	-	-	-	
20	-	-	-	-	-	-	-	-	-	-	-	-	-	
21	-	-	-	-	-	-	-	-	-	-	-	-	-	
22	-	-	-	-	-	-	-	-	-	-	-	-	-	
23	-	-	-	-	-	-	-	-	-	-	-	-	-	
24	-	-	-	-	-	-	-	-	-	-	-	-	-	
25	-	-	-	-	-	-	-	-	-	-	-	-	-	
26	-	-	-	-	-	-	-	-	-	-	-	-	-	
27	-	-	-	-	-	-	-	-	-	-	-	-	-	
28	-	-	-	-	-	-	-	-	-	-	-	-	-	
29	-	-	-	-	-	-	-	-	-	-	-	-	-	
30	-	-	-	-	-	-	-	-	-	-	-	-	-	
31	-	-	-	-	-	-	-	-	-	-	-	-	-	
Mean	-	-	-	-	-	-	-	-	-	-	-	-	-	

1990		Daily totals of ultraviolet radiation											kJ m ⁻²	
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
1	-	-	-	-	-	907	720	533	93	71	-	0		
2	-	-	-	-	-	933	500	367	98	47	-	0		
3	-	-	-	-	-	775	883	585	121	-	-	0		
4	-	-	-	-	-	1023	882	671	301	-	0	0		
5	-	-	-	-	-	1211	530	657	87	-	0	0		
6	-	-	-	-	-	1121	600	615	163	-	0	0		
7	-	-	-	-	-	1038	1025	393	167	-	0	0		
8	-	-	-	-	-	948	418	284	220	-	0	0		
9	-	-	-	-	-	969	651	460	73	-	0	0		
10	-	-	-	-	-	578	816	316	74	-	-	0		
11	-	-	-	-	-	1356	474	510	-	-	-	0		
12	-	-	-	-	-	880	712	584	111	-	-	-		
13	-	-	-	-	-	537	725	536	231	-	0	-		
14	-	-	-	-	-	647	538	628	201	-	0	-		
15	-	-	-	-	-	663	635	527	91	-	0	0		
16	-	-	-	-	-	773	672	682	124	-	0	0		
17	-	-	-	-	-	1110	696	538	93	-	0	0		
18	-	-	-	-	-	731	624	599	120	-	0	0		
19	-	-	-	-	-	899	597	619	118	-	-	0		
20	-	-	-	-	-	-	760	407	123	-	-	0		
21	-	-	-	-	-	1139	678	433	153	-	-	0		
22	-	-	-	-	-	1273	640	309	99	-	-	0		
23	-	-	-	-	-	865	557	306	124	-	-	0		
24	-	-	-	-	-	1000	744	242	40	-	-	0		
25	-	-	-	-	-	1045	362	479	49	-	-	0		
26	-	-	-	-	1086	1282	651	209	71	-	-	0		
27	-	-	-	-	1191	613	337	409	24	-	0	0		
28	-	-	-	-	768	1263	311	286	71	-	0	0		
29	-	-	-	-	785	971	316	312	68	-	0	0		
30	-	-	-	-	1299	889	865	162	85	-	0	0		
31	-	-	-	-	1037	-	541	53	-	-	-	0		
Mean	-	-	-	-	-	946 ^{ms}	628	442	117 ^{ms}	-	0	0 ^{ms}		

1990

Daily totals of downward longwave radiation

10⁻² MJ m⁻²

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1770	1980	1268	1430	2085	2590	2656	2781	2982	2250	1399	2169
2	2430	2356	1199	1489	1749	2609	2705	2739	3017	2592	2100	2117
3	2694	2542	1345	-	2438	2755	2522	2593	2903	2694	-	2203
4	2425	2588	1138	-	2294	2729	2596	2360	2604	2512	2185	1795
5	2417	2434	1265	-	1914	2590	2847	2363	2874	2698	2190	1462
6	2558	2378	1370	1722	2028	2730	2757	2364	2702	2715	2185	1436
7	2000	2374	1453	2123	2267	2737	2506	2619	2800	2601	2044	1392
8	2246	2204	1318	2306	2078	2767	2806	2682	2630	2532	1857	1935
9	1587	1945	1264	2337	2497	2104	2726	2630	2760	1930	1437	2400
10	1646	1345	1291	2224	1871	2792	2677	2632	2945	1751	-	2122
11	1547	1381	1373	2243	2002	2259	2724	2573	-	1976	-	1764
12	1791	1647	1422	2464	2578	2770	2595	2375	2883	2249	-	-
13	1794	1344	1914	2211	2605	2783	2681	2501	2319	2561	1421	-
14	2000	1477	2117	2171	2454	2805	2771	2377	2387	2464	1472	-
15	2398	1641	2511	2116	2432	2840	2692	2556	2653	2439	2221	1877
16	2528	1402	2210	2396	2121	2583	2687	2244	2497	2526	2376	1876
17	2630	2144	1635	2460	2073	2576	2662	2455	2659	2220	1881	2405
18	1681	2452	1691	2503	2351	2796	2750	2377	2543	1725	2073	1813
19	1468	2459	2250	2675	2214	2735	2839	2129	2550	-	-	1447
20	1956	2235	1883	2614	2435	-	2746	2490	2453	2465	-	1322
21	2481	1792	1700	2611	2318	2625	2813	2614	2172	2561	-	1929
22	2534	1656	2098	2292	1987	2412	2770	2719	2566	2047	-	2039
23	2429	1774	1974	2485	2183	2741	2859	2721	2415	2206	-	2300
24	2123	1621	1911	2432	2000	2568	2710	2699	2620	2307	-	2496
25	1592	1356	2107	1940	2171	2548	2913	2286	2624	2516	-	2477
26	1484	-	2607	2050	2320	2174	2635	2629	2604	2295	-	2416
27	1503	1228	2304	2513	2225	2636	2909	2433	2678	2547	1223	2547
28	-	1190	2031	2311	2707	2358	2911	2488	2560	1768	1200	2449
29	2109	-	1620	1583	2601	2557	2867	2514	2373	2170	1608	2185
30	1815	-	1382	1537	2113	2618	2411	2770	2148	1962	1681	2028
31	2394	-	1475	-	2418	-	2747	2926	-	1475	-	1632
Mean	2068≈	1887≈	1714	2194≈	2243	2613≈	2725	2537	2618≈	2292≈	1809≈	2001≈

1990		Daily totals of net shortwave radiation											10 ⁻² MJ m ⁻²	
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
1	0	0	3	111	174	196	1181	857	156	98	0	0		
2	0	0	5	104	275	195	852	598	142	119	0	0		
3	0	0	6	-	126	152	1540	1055	218	38	-	0		
4	0	0	7	-	202	378	1553	1195	576	27	0	0		
5	0	0	7	-	284	537	837	1252	137	28	0	0		
6	0	0	7	109	269	485	1011	1157	276	46	0	0		
7	0	0	21	68	147	435	1835	618	291	53	0	0		
8	0	0	12	73	197	418	659	437	460	34	0	0		
9	0	0	21	65	185	332	1084	743	129	43	0	0		
10	0	0	13	122	298	216	1425	382	124	32	-	0		
11	0	0	32	85	349	736	746	636	-	39	-	0		
12	0	0	37	81	175	396	1189	1006	202	29	-	-		
13	0	0	32	108	221	204	1360	921	499	4	0	-		
14	0	0	16	76	240	243	879	1120	429	4	0	-		
15	0	0	19	86	242	271	1112	860	159	2	0	0		
16	0	0	41	104	366	389	1130	1369	236	4	0	0		
17	0	0	25	192	447	636	1275	973	183	1	0	0		
18	0	0	46	265	239	400	1003	1195	137	1	0	0		
19	0	0	41	125	391	585	971	1256	160	-	-	0		
20	0	0	52	58	303	-	1267	736	226	0	-	0		
21	0	0	40	56	430	1094	1301	727	259	0	-	0		
22	0	2	52	126	487	1227	1134	511	176	0	-	0		
23	0	3	65	84	443	654	915	446	219	4	-	0		
24	0	12	58	59	486	779	1285	376	56	2	-	0		
25	0	2	45	163	486	802	546	963	80	0	-	0		
26	0	3	13	163	341	1098	1176	363	54	0	-	0		
27	0	5	18	138	451	436	522	798	37	0	0	0		
28	-	4	35	139	160	1325	465	473	123	0	0	0		
29	0	0	62	252	152	1195	475	520	112	0	0	0		
30	0	0	92	293	420	1409	1727	248	146	0	0	0		
31	0	0	92		264		937	75		0		0		
Mean	0 [≈]	1	33	122 [≈]	298	594 [≈]	1077	770	207 [≈]	20 [≈]	0 [≈]	0		

1990

Daily totals of net longwave radiation

10⁻² MJ m⁻²

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-416	-490	-740	-444	-148	-33	-199	-327	5	-400	-544	-122
2	-57	-215	-597	-405	-353	-28	-204	-276	-31	-130	-202	-290
3	-38	-60	-451	-	3	82	-468	-530	-88	-66	-	-191
4	-149	-135	-544	-	-140	24	-409	-717	-331	-163	-199	-420
5	-133	-288	-491	-	-261	-52	-150	-653	-19	-37	-185	-498
6	-56	-305	-449	-141	-285	50	-230	-661	-215	-57	-174	-537
7	-577	-170	-405	-63	-133	47	-525	-290	-132	-165	-259	-665
8	-341	-246	-491	-76	-203	77	-185	-186	-308	-178	-312	-232
9	-705	-388	-511	8	-71	55	-283	-308	-136	-630	-647	-114
10	-687	-699	-460	-247	-411	84	-335	-170	-44	-714	-	-107
11	-750	-614	-415	-119	-201	-187	-253	-306	-	-506	-	-278
12	-621	-400	-401	-72	34	89	-386	-544	-96	-281	-	-
13	-639	-597	-264	-103	20	69	-373	-488	-504	-74	-495	-
14	-502	-481	-121	-91	-104	108	-262	-633	-433	-129	-439	-
15	-189	-448	-36	-170	-81	141	-382	-493	-155	-191	-138	-296
16	-51	-674	-262	-144	-208	-97	-386	-767	-254	-91	-139	-200
17	-38	-284	-580	-187	-293	-76	-406	-550	-128	-239	-395	-100
18	-775	-133	-394	-156	-225	95	-359	-661	-226	-522	-228	-337
19	-672	-204	-114	-19	-348	10	-257	-804	-248	-	-	-536
20	-340	-330	-302	-32	-133	-	-388	-427	-371	-60	-	-581
21	-129	-493	-390	-58	-244	-49	-400	-306	-523	-40	-	-264
22	-117	-495	-204	-42	-319	-251	-393	-237	-178	-425	-	-351
23	-234	-449	-338	-44	-238	77	-280	-217	-291	-176	-	-242
24	-434	-531	-286	-4	-316	-25	-418	-199	-108	-125	-	-192
25	-783	-560	-198	-228	-358	-106	-161	-589	-87	-81	-	-167
26	-695	-542	-78	-241	-159	-277	-426	-227	-91	-171	-	-174
27	-602	-593	-110	-44	-170	-45	-140	-494	-91	-47	-662	-136
28	-	-680	-203	-167	38	-84	-119	-391	-158	-465	-671	-183
29	-176	-	-389	-333	-82	51	-140	-353	-293	-181	-356	-382
30	-408	-	-527	-311	-392	-163	-693	-105	-456	-271	-454	-442
31	-55	-	-384	-	-133	-	-386	9	-	-468	-	-664
Mean	-379≈	-411	-359	-146≈	-191	-14≈	-322	-416	-207≈	-236≈	-361-	-311≈

1990		Daily totals of net radiation										10 ⁻² MJ m ⁻²	
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	-416	-490	-738	-334	27	163	980	531	163	-303	-544	-122	
2	-57	-215	-594	-301	-81	171	646	324	109	-14	-202	-290	
3	-38	-60	-446	-	132	233	1070	522	130	-28	-	-191	
4	-149	-135	-537	-	59	402	1144	480	245	-132	-199	-420	
5	-133	-288	-483	-	21	484	690	595	116	-10	-185	-498	
6	-56	-305	-440	-31	-14	533	781	497	61	-12	-174	-537	
7	-577	-170	-385	5	10	482	1314	329	158	-111	-259	-665	
8	-341	-246	-481	-2	-3	492	475	248	152	-144	-312	-232	
9	-705	-388	-491	75	111	333	798	434	-10	-583	-647	-114	
10	-687	-699	-445	-126	-113	301	1089	212	80	-681	-	-107	
11	-750	-614	-384	-31	147	549	492	324	-	-470	-	-278	
12	-621	-400	-366	7	211	490	810	462	107	-250	-	-	
13	-639	-597	-232	4	245	272	990	430	-2	-70	-495	-	
14	-502	-481	-104	-13	135	356	621	484	-1	-126	-439	-	
15	-189	-448	-17	-78	158	412	727	371	3	-189	-138	-296	
16	-51	-674	-223	-41	159	289	742	603	-20	-87	-139	-200	
17	-38	-284	-555	7	153	559	864	423	57	-237	-395	-100	
18	-775	-133	-345	109	16	497	644	532	-90	-521	-228	-337	
19	-672	-204	-71	106	41	595	716	451	-89	-	-	-536	
20	-340	-330	-251	26	169	-	876	310	-145	-60	-	-581	
21	-129	-492	-349	-2	183	1042	905	422	-264	-40	-	-264	
22	-117	-492	-153	85	167	976	742	276	-1	-425	-	-351	
23	-234	-445	-271	41	205	730	639	227	-73	-173	-	-242	
24	-434	-517	-230	58	168	753	868	174	-51	-123	-	-192	
25	-783	-558	-152	-66	130	698	385	370	-9	-81	-	-167	
26	-695	-539	-67	-82	180	820	754	137	-36	-171	-	-174	
27	-602	-588	-92	92	282	391	384	301	-54	-47	-	-136	
28	-	-677	-166	-26	195	1242	347	83	-37	-465	-671	-183	
29	-176	-	-328	-78	70	1246	337	165	-179	-181	-356	-382	
30	-408	-	-433	-19	29	1248	1037	141	-308	-271	-454	-442	
31	-55	-	-291	-	135	82	551	82	-	-468	-	-664	
Mean	-379 [≈]	-410	-326	-23 [≈]	107	580 [≈]	755	353	0 [≈]	-216 [≈]	-361 ⁻	-311 [≈]	

1991

Daily totals of global radiation

10⁻² MJ m⁻²

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0	0	25	428	952	2820	1884	2237	579	164	0	0
2	0	0	43	797	2039	2972	999	1385	738	145	0	0
3	0	0	33	841	1735	2083	1636	1579	263	108	0	0
4	0	0	48	738	1366	2864	1860	1846	453	107	0	0
5	0	0	35	520	2187	2682	840	2156	647	88	0	0
6	0	0	36	481	1619	1318	716	466	941	69	0	0
7	0	0	69	353	1636	2709	1190	469	462	87	0	0
8	0	0	90	656	1076	1890	1571	631	660	81	0	0
9	0	0	95	1041	1973	2482	1240	-	712	72	0	0
10	0	0	85	537	2374	3087	957	411	354	36	0	0
11	0	0	103	442	1128	-	1664	1325	581	36	0	0
12	0	0	98	862	1213	-	1047	1113	720	41	0	0
13	0	0	146	1048	2476	-	1194	567	672	48	0	0
14	0	0	212	702	-	2669	1211	844	338	30	0	0
15	0	0	186	1223	2423	1666	2087	1046	358	29	0	0
16	0	0	193	1047	1297	-	2232	1628	499	21	0	0
17	0	0	230	-	901	1384	-	582	384	23	0	0
18	0	0	174	1390	795	1847	-	331	218	16	0	0
19	0	2	247	1279	1067	1764	1449	366	295	16	0	0
20	0	2	271	1391	1816	-	1529	355	268	6	0	0
21	0	6	213	1384	-	2688	-	832	88	0	0	0
22	0	9	144	1305	1995	2818	2626	558	246	0	0	0
23	0	12	187	834	1577	1460	2128	326	307	2	0	0
24	0	18	171	1654	-	1470	864	398	194	0	0	0
25	0	16	233	1791	-	2015	708	386	286	0	0	0
26	0	26	166	881	833	2869	1266	230	196	0	0	0
27	0	12	216	1388	1560	1654	1341	357	204	0	0	0
28	0	25	336	1235	2246	2305	1894	524	191	0	0	0
29	0		641	534	1227	1831	962	553	201	0	0	0
30	0		621	530	2063	849	855	796	167	0	0	0
31	0		622		2683		~	563		0		0
Mean	0	5	193	942≈	1639≈	2168≈	1406≈	829≈	407	40	0	0

1991

Daily totals of sky radiation

10⁻² MJ m⁻²

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0	0	21	308	900	1335	1690	695	458	144	0	0
2	0	0	38	250	580	877	994	885	365	129	0	0
3	0	0	28	239	975	1343	1416	1009	241	79	0	0
4	0	0	40	372	1027	1270	1270	966	408	90	0	0
5	0	0	31	456	718	1170	841	580	446	77	0	0
6	0	0	33	414	1106	1317	716	432	262	59	0	0
7	0	0	65	322	1139	1015	1149	451	360	78	0	0
8	0	0	79	381	1042	1780	1382	612	299	73	0	0
9	0	0	84	384	823	1626	1199	-	376	63	0	0
10	0	0	77	487	638	802	922	394	322	30	0	0
11	0	0	92	405	1097	-	1325	837	256	31	0	0
12	0	0	88	742	1182	-	1008	798	193	35	0	0
13	0	0	130	488	657	-	1054	497	270	40	0	0
14	0	0	189	586	-	1546	1061	678	303	28	0	0
15	0	0	164	568	840	1648	1290	860	316	25	0	0
16	0	0	175	631	1252	-	1201	569	333	21	0	0
17	0	0	204	-	881	1380	-	537	264	18	0	0
18	0	0	152	427	777	1723	-	311	200	14	0	0
19	0	2	222	532	1052	1610	1286	345	264	14	0	0
20	0	3	240	610	1541	-	1288	333	207	6	0	0
21	0	7	191	828	-	1092	-	779	78	0	0	0
22	0	6	129	567	1633	1097	561	521	192	0	0	0
23	0	10	167	754	1491	1439	846	305	270	3	0	0
24	0	16	154	644	-	1457	849	370	175	0	0	0
25	0	14	206	481	-	1645	691	361	256	0	0	0
26	0	22	148	714	823	918	1117	216	173	0	0	0
27	0	9	193	783	1339	1388	1254	331	181	0	0	0
28	0	23	253	732	1411	1107	944	483	170	0	0	0
29	0		234	508	1169	1673	941	497	174	0	0	0
30	0		274	506	1605	849	839	359	100	0	0	0
31	0		422		1006		-	475		0		0
Mean	0	4	146	521 _{ME}	1063 _{ME}	1324 _{ME}	1079 _{ME}	550 _{ME}	264	34	0	0

1991		Daily totals of direct radiation										10 ⁻² MJ m ⁻²	
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	-	-	-	-	-	4452	297	4237	313	53	0	0	
2	-	-	-	-	-	5276	3	1664	1083	38	0	0	
3	-	-	-	-	-	1966	399	1823	-	199	0	0	
4	-	-	-	-	-	4001	1313	3296	-	102	0	0	
5	-	-	-	-	-	3500	1	5042	821	-	0	0	
6	-	-	-	-	-	0	0	196	2955	-	0	0	
7	-	-	-	-	-	3749	119	0	294	-	0	0	
8	-	-	-	-	-	112	342	0	1363	-	0	0	
9	-	-	-	-	-	-	71	-	1377	-	0	0	
10	-	-	-	-	-	5659	118	0	29	-	0	0	
11	-	-	-	-	-	-	661	1853	1323	-	0	0	
12	-	-	-	-	-	-	49	707	2502	-	0	0	
13	-	-	-	-	-	-	215	162	1730	-	0	0	
14	-	-	-	-	-	2522	283	620	0	-	0	0	
15	-	-	-	-	-	17	1882	831	34	-	0	0	
16	-	-	-	-	-	-	2901	3277	993	-	0	0	
17	-	-	-	-	-	7	-	57	468	-	0	0	
18	-	-	-	-	-	179	-	0	22	-	0	0	
19	-	-	-	-	-	515	280	0	78	-	0	0	
20	-	-	-	-	-	-	374	0	280	-	0	0	
21	-	-	-	-	-	4241	-	1088	4	-	0	-	
22	-	-	-	-	-	3750	5969	212	337	-	0	0	
23	-	-	-	-	-	45	3385	0	-	-	0	0	
24	-	-	-	-	-	12	0	0	61	-	0	0	
25	-	-	-	-	-	807	0	0	-	-	-	0	
26	-	-	-	-	-	4600	313	4	220	0	-	0	
27	-	-	-	-	-	1091	49	24	30	0	0	0	
28	-	-	-	-	-	2833	2243	32	1	0	0	0	
29	-	-	-	-	-	217	0	268	49	0	0	0	
30	-	-	-	-	-	5	1	1670	468	0	0	0	
31	-	-	-	-	-	-	-	186	-	0	-	0	
Mean	-	-	-	-	-	2065 [~]	788 [~]	908 [~]	648 [~]	39 [~]	0 [~]	0 [~]	

1991		Daily totals of of ultraviolet radiation											kJ m ⁻²	
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
1	0	0	-	-	568	1226	952	900	302	83	0	0	0	
2	0	0	-	-	838	1268	569	602	372	75	0	0	0	
3	0	0	-	-	787	1041	846	697	209	78	0	0	0	
4	0	0	-	-	705	1283	908	756	292	68	0	0	0	
5	0	0	-	-	862	1232	485	850	341	71	0	0	0	
6	0	0	-	275	732	779	421	264	405	41	0	0	0	
7	0	-	-	202	757	1253	645	270	282	47	0	0	0	
8	0	0	-	333	615	1020	824	344	297	49	0	0	0	
9	0	0	-	425	873	1186	666	-	318	39	0	0	0	
10	0	0	-	324	970	1304	519	240	207	24	0	0	0	
11	0	0	-	283	640	-	802	587	285	28	0	0	0	
12	0	0	-	418	693	-	594	479	296	26	0	0	0	
13	0	0	-	468	1041	-	662	289	279	28	0	0	0	
14	0	0	-	393	-	1276	626	415	204	21	0	0	0	
15	0	0	-	517	1039	931	961	481	208	17	0	0	0	
16	0	0	-	498	720	-	1042	632	230	14	0	0	0	
17	0	-	-	-	577	807	-	322	200	16	0	0	0	
18	0	-	-	563	534	1014	-	186	136	13	0	0	0	
19	0	-	-	551	657	962	778	208	183	11	0	0	0	
20	0	-	-	584	950	-	770	210	155	5	0	0	0	
21	0	-	-	571	-	1234	-	375	55	5	0	-	0	
22	0	-	-	567	1026	1325	1096	275	134	5	0	0	0	
23	0	-	-	472	889	805	937	184	138	5	0	0	0	
24	0	-	-	677	-	832	460	216	103	3	0	0	0	
25	0	-	-	714	-	1039	386	209	119	2	-	0	0	
26	0	-	-	485	530	1314	612	125	111	1	-	0	0	
27	0	-	-	647	836	842	693	195	87	3	0	0	0	
28	0	-	-	590	1093	1114	810	271	75	1	0	0	0	
29	0	-	-	349	742	938	499	262	86	0	0	0	0	
30	0	-	-	335	1073	498	426	338	88	0	0	0	0	
31	0	-	-	-	1214	-	-	304	-	0	-	0	0	
Mean	0	0	-	468	813	1061	703	383	207	25	0	0	0	

1991 Daily totals of net shortwave radiation $10^{-2} \text{ MJ m}^{-2}$

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0	0	2	44	143	807	1760	1850	231	30	0	0
2	0	0	6	112	391	903	937	1158	405	35	0	0
3	0	0	3	123	346	590	1509	1345	54	21	0	0
4	0	0	6	108	245	870	1652	1505	46	27	0	0
5	0	0	1	89	393	802	775	1700	49	8	0	0
6	0	0	0	67	259	395	661	414	104	8	0	0
7	0	0	8	39	317	935	1089	426	75	14	0	0
8	0	0	13	128	169	646	1436	557	124	13	0	0
9	0	0	5	208	355	883	1140	-	137	16	0	0
10	0	0	5	86	429	1121	868	374	78	7	0	0
11	0	0	8	58	194	-	1530	1097	99	9	0	0
12	0	0	14	129	179	-	966	957	115	10	0	0
13	0	0	20	188	409	-	1090	488	113	10	0	0
14	0	0	38	107	-	988	1109	726	70	9	0	0
15	0	0	32	218	462	707	1874	898	59	6	0	0
16	0	0	35	194	224	-	1990	1303	69	5	0	0
17	0	0	38	-	126	590	-	520	63	3	0	0
18	0	0	22	292	137	819	-	293	31	2	0	0
19	0	0	40	263	162	810	1313	332	45	4	0	0
20	0	4	49	284	375	-	1360	322	131	0	0	0
21	0	0	29	276	-	1591	-	706	83	2	0	0
22	0	5	20	251	365	2041	2213	493	206	2	0	0
23	0	2	25	123	256	1227	1797	284	228	6	0	0
24	0	3	24	308	-	1330	764	355	170	0	0	0
25	0	1	25	356	-	1853	629	345	219	0	0	0
26	0	3	17	125	103	2595	1101	210	162	0	0	0
27	0	0	21	227	287	1528	1181	314	174	0	0	0
28	0	8	38	172	590	2095	1601	462	165	0	0	0
29	0		82	62	311	1687	843	485	164	0	0	0
30	0		75	86	605	785	753	617	124	0	0	0
31	0		85		837		-	265		0		0
Mean	0	1	25	163≈	321≈	1144≈	1257≈	693≈	126	8	0	0

1991		Daily totals of downward longwave radiation											10 ⁻² MJ m ⁻²	
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
1	1519	2515	2672	1352	2492	2006	2587	2209	2333	2060	1816	1653		
2	1760	2255	2570	1208	1565	1969	2697	2522	2142	2009	1659	1544		
3	2010	2515	2521	1234	1802	2324	2562	2444	2517	1790	1787	1528		
4	1485	2453	2545	1502	2001	2140	2419	2331	2288	1996	1874	1658		
5	1430	2396	2531	2071	1529	2130	2641	2121	2004	2242	1810	2236		
6	1787	2213	2418	2138	1665	2593	2667	2743	2090	2495	1816	2361		
7	1628	2218	2226	2574	1838	2304	2614	2817	2548	2383	1833	2624		
8	1633	2013	2196	1849	2317	2519	2428	2772	2224	1866	1703	2415		
9	1465	1876	2348	1450	1841	2372	2576	-	2027	1944	1640	1971		
10	1357	1757	1476	2440	1535	2086	2643	2836	2351	2449	2170	2340		
11	1319	2256	1444	2545	2371	-	2498	2505	2104	2522	2005	2380		
12	1306	2395	1985	2188	2352	-	2566	2785	1826	2347	1762	1596		
13	1818	2131	1565	1627	1689	-	2595	2756	1895	1928	1355	1412		
14	2365	2014	1519	2193	-	2357	2704	2563	2361	1934	1337	2061		
15	2600	1197	1599	1616	1819	2658	2481	2572	2304	1977	1352	2117		
16	2141	1459	1618	1401	2415	-	2359	2418	2057	1947	1876	2037		
17	2380	1673	1493	-	2647	2638	-	2735	2217	1533	2297	1900		
18	2006	1619	1987	1376	2745	2632	-	2753	2415	1457	2068	2049		
19	2166	1730	2043	1510	2607	2577	2622	2768	2277	1762	1769	1727		
20	2240	1524	1907	1580	2505	-	2652	2793	2464	2206	1722	1873		
21	1780	1690	2321	1628	-	2221	-	2574	2638	2452	2115	1798		
22	1268	1590	2452	1655	2362	2169	2223	2708	2300	2373	2028	1835		
23	1213	2170	2633	1927	2475	2640	2477	2788	2201	2187	1634	1888		
24	1224	1535	2668	1351	-	2646	2780	2712	2225	2382	1851	1629		
25	1402	2319	2384	1388	-	2508	2739	2651	2111	2277	1406	1262		
26	2262	2191	2393	2131	2516	2265	2650	2777	2166	2089	1373	1213		
27	2511	2723	2438	2153	2557	2586	2522	2816	2191	1673	1721	1576		
28	2407	2649	1743	2018	2276	2406	2499	2629	2363	1958	2183	2002		
29	2126		1280	2584	2614	2675	2759	2599	1972	2185	2226	1470		
30	2379		1326	2656	2387	2733	2746	2222	1900	2480	1981	1419		
31	2089		1377		2041		-	2486		2160		2062		
Mean	1841	2038	2054	1839 ^m	2184 ^m	2406 ^m	2582 ^m	2614 ^m	2217	2099	1806	1859		

1991

Daily totals of net longwave radiation

10⁻² MJ m⁻²

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-600	-45	-45	-425	-107	-499	-389	-834	-321	-297	-334	-712
2	-360	-135	-107	-441	-594	-527	-193	-494	-485	-379	-568	-607
3	-266	-146	-87	-499	-487	-230	-365	-568	-116	-551	-451	-593
4	-615	-210	-69	-474	-315	-381	-376	-724	-152	-362	-286	-473
5	-707	-172	-52	-180	-617	-434	-193	-912	-257	-204	-254	-116
6	-511	-158	-83	-154	-502	-34	-129	-189	-217	-132	-272	-135
7	-665	-83	-157	0	-434	-317	-211	-121	-18	-145	-268	-33
8	-676	-228	-109	-336	-109	-100	-369	-159	-247	-326	-352	-102
9	-694	-262	-72	-638	-322	-203	-281	-	-389	-408	-404	-305
10	-570	-253	-666	-23	-501	-456	-233	-107	-191	-82	-95	-85
11	-557	-72	-446	-129	-63	-	-344	-542	-458	-96	-295	-91
12	-533	-28	-272	-265	-95	-	-171	-296	-502	-165	-463	-659
13	-188	-120	-518	-424	-399	-	-182	-244	-407	-454	-844	-764
14	-18	-200	-674	-120	-	-255	-205	-412	-147	-392	-851	-152
15	26	-432	-658	-464	-449	27	-494	-404	-175	-334	-707	-214
16	-150	-271	-564	-466	-129	-	-659	-575	-341	-352	-235	-208
17	-67	-413	-474	-	-59	-14	-	-214	-221	-689	-126	-271
18	-139	-495	-271	-448	13	-30	-	-131	-125	-705	-184	-187
19	-102	-520	-353	-325	-93	-84	-403	-110	-365	-414	-400	-483
20	-88	-459	-508	-334	-155	-	-395	-131	-221	-226	-257	-273
21	-233	-282	-170	-345	-	-341	-	-412	-88	-65	-150	-232
22	-439	-333	-37	-286	-194	-423	-958	-243	-405	-53	-187	-178
23	-573	-93	-46	-214	-130	-81	-641	-84	-455	-151	-361	-116
24	-604	-293	-38	-423	-	-153	-214	-143	-444	-103	-158	-384
25	-469	-31	-74	-410	-	-371	-173	-127	-543	-146	-496	-723
26	-66	-58	-96	-191	-74	-698	-306	-84	-437	-195	-514	-714
27	-17	-6	-73	-273	-146	-300	-505	-101	-425	-514	-646	-406
28	-57	-48	-378	-331	-247	-518	-555	-186	-259	-248	-314	-228
29	-380		-481	-44	-100	-275	-203	-248	-586	-137	-318	-732
30	-91		-394	-73	-247	-162	-229	-457	-563	-38	-475	-656
31	-214		-478		-494		-	-192		-134		-177
Mean	-343	-209	-273	-301≈	-265≈	-274≈	-347≈	-315≈	-319	-281	-376	-355

1991

Daily totals of net radiation

 $10^{-2} \text{ MJ m}^{-2}$

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-600	-45	-43	-381	38	306	1370	1016	-85	-263	-334	-712
2	-360	-135	-102	-333	-203	375	743	664	-81	-343	-568	-607
3	-266	-146	-83	-376	-142	357	1146	777	-63	-528	-451	-593
4	-615	-210	-65	-366	-73	490	1275	781	-105	-335	-286	-473
5	-707	-172	-50	-92	-223	368	582	789	-207	-195	-254	-116
6	-511	-158	-81	-86	-241	362	529	224	-114	-120	-272	-135
7	-665	-83	-150	40	-115	618	878	305	51	-131	-268	-33
8	-676	-228	-97	-210	57	549	1067	396	-122	-515	-352	-102
9	-694	-262	-65	-429	34	677	859	-	-252	-393	-404	-305
10	-570	-253	-661	67	-73	667	632	266	-116	-76	-95	-85
11	-557	-72	-438	-71	129	-	1188	556	-356	-89	-295	-91
12	-533	-28	-256	-136	85	-	799	660	-387	-156	-463	-659
13	-188	-120	-497	-231	8	-	911	243	-290	-444	-844	-764
14	-18	-200	-636	-11	-	731	902	316	-77	-384	-851	-152
15	26	-432	-626	-246	12	732	1377	496	-119	-328	-707	-214
16	-150	-271	-527	-274	99	-	1331	726	-268	-348	-235	-208
17	-67	-413	-439	-	72	575	-	305	-157	-688	-126	-271
18	-139	-495	-250	-154	151	789	-	165	-95	-703	-184	-187
19	-102	-520	-311	-60	70	727	910	219	-322	-411	-400	-483
20	-88	-454	-459	-50	214	-	967	193	-87	-226	-257	-273
21	-233	-281	-143	-68	-	1245	-	295	-3	-63	-150	-232
22	-439	-328	-17	-35	172	1617	1257	254	-199	-51	-187	-178
23	-573	-89	-21	-91	126	1148	1149	205	-223	-144	-361	-116
24	-604	-291	-15	-114	-	1176	553	211	-275	-103	-158	-384
25	-469	-29	-50	-57	-	1478	460	218	-322	-146	-496	-723
26	-66	-56	-81	-68	28	1903	795	126	-276	-195	-514	-714
27	-17	-6	-54	-45	142	1228	675	213	-253	-514	-646	-406
28	-57	-40	-335	-158	247	1576	1045	274	-95	-248	-314	-228
29	-380		-399	19	213	1412	641	238	-422	-137	-318	-732
30	-91		-321	16	361	625	523	160	-440	-38	-475	-656
31	-214		-389		341		-	73		-134		-177
Mean	-343	-208	-247	-138 ^w	57 ^w	869 ^w	910 ^w	379 ^w	-192	-273	-376	-355

1992

Daily totals of global radiation

 $10^{-2} \text{ MJ m}^{-2}$

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0	-	37	555	1033	2028	2993	625	790	-	-	0
2	0	-	57	613	729	1582	-	1449	510	-	-	0
3	0	-	43	632	1579	2768	2984	1370	915	-	-	0
4	0	0	66	649	963	1010	2693	1175	483	-	-	0
5	0	0	62	304	1384	-	1448	744	307	-	0	0
6	0	0	60	552	1974	1578	1316	748	479	-	0	0
7	0	0	73	795	1892	2048	1138	1181	352	64	0	0
8	-	0	87	535	949	1001	1786	1118	663	42	0	0
9	0	0	68	870	-	2234	962	1246	145	35	0	0
10	0	0	102	771	830	2254	1946	-	191	67	0	0
11	0	0	142	1103	870	2484	1139	747	226	27	0	0
12	0	0	159	1083	1031	-	1293	1234	143	52	0	0
13	0	0	187	1140	1417	-	1712	-	346	-	0	0
14	0	-	209	942	1309	2716	1576	-	280	30	0	0
15	0	0	219	959	2397	1848	1367	583	316	17	0	0
16	0	0	148	1132	1829	1546	1704	841	139	27	0	0
17	0	0	-	1227	1988	2647	1240	831	137	11	0	0
18	0	0	246	1359	2617	2413	932	820	124	-	0	0
19	0	2	263	1069	2425	919	1085	937	318	4	0	0
20	0	2	263	1363	1391	1190	1702	403	58	-	0	0
21	-	7	318	1385	1099	2220	1027	352	46	8	0	0
22	0	10	362	1503	1133	2171	-	404	135	7	0	0
23	0	11	428	1526	1270	2288	2504	314	202	-	0	0
24	0	19	485	1156	1783	2430	1985	385	165	-	0	0
25	0	18	523	1694	1782	2210	-	1099	116	-	0	0
26	0	17	510	1149	-	649	1753	1247	70	-	0	0
27	0	29	559	850	1651	1427	1711	806	-	-	0	0
28	0	26	599	1703	1036	2965	1997	1158	-	-	0	0
29	0	47	635	1143	2123	2718	339	1128	122	-	0	0
30	0		416	1008	1682	2625	562	224	-	-	0	0
31	-		346		1403		1002	451		-		0
Mean	0 _≡	8 _≡	256 _≡	1026	1502 _≡	1999 _≡	1568 _≡	844 _≡	288 _≡	30 _~	0 _≡	0

1992

Daily totals of sky radiation

10⁻² MJ m⁻²

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0	-	33	426	971	1593	1109	571	552	-	-	0
2	0	-	49	518	699	1309	-	1042	463	-	-	0
3	0	-	36	522	1205	1238	955	1049	401	-	-	0
4	0	0	56	476	924	984	1307	1122	404	-	-	0
5	0	0	55	277	1070	-	1319	698	281	-	-	0
6	0	0	53	503	976	1390	1274	716	405	-	-	0
7	0	0	68	531	1052	1342	1081	854	315	59	0	0
8	-	0	75	488	915	994	1517	930	398	37	-	0
9	0	0	59	630	-	1338	939	884	134	29	-	0
10	0	0	90	635	807	1041	1339	-	176	57	-	0
11	0	0	124	491	851	1386	1111	716	204	22	-	0
12	0	0	141	586	995	-	1204	844	128	42	0	0
13	0	-	142	572	1296	-	1460	-	244	-	0	0
14	0	-	168	729	1168	1247	1437	-	252	27	0	0
15	0	0	187	839	1126	1596	1262	553	253	14	0	0
16	0	0	130	784	1641	1546	1170	783	122	21	0	0
17	0	0	-	757	1667	1515	1173	690	122	8	0	0
18	0	0	219	685	1136	1591	917	535	110	-	0	0
19	0	3	233	848	1280	918	1068	732	248	4	0	0
20	0	3	232	750	1365	1156	1147	377	53	-	0	0
21	-	7	280	818	1085	1582	989	327	38	9	0	0
22	0	7	307	805	1117	1409	-	379	120	9	0	0
23	0	9	307	794	1258	1504	882	293	179	-	0	0
24	0	17	304	995	1655	1564	1005	359	149	-	-	0
25	0	16	282	853	1616	1400	-	557	102	-	-	0
26	0	15	285	959	-	648	773	486	62	-	0	0
27	0	26	332	807	1621	1241	1003	538	-	-	0	0
28	0	23	333	902	1024	1070	826	441	-	-	0	0
29	0	40	317	916	1703	1112	329	435	109	-	0	0
30	0		378	905	1370	1280	550	204	-	-	0	0
31	-		314		1378		844	408		-		0
Mean	0 _m	7 _m	186 _m	693	1206 _m	1296 _m	1071 _m	626 _m	223 _m	26 _m	0 _m	0

1992

Daily totals of direct radiation

10⁻² MJ m⁻²

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0	-	0	327	134	925	4522	-	806	-	-	-
2	0	-	0	183	9	695	-	-	37	-	-	-
3	0	-	0	235	848	3345	4917	-	1767	-	-	-
4	0	0	0	424	0	86	3263	-	203	-	-	-
5	0	0	0	0	587	-	178	-	1	-	-	-
6	0	0	0	21	2534	605	64	-	139	-	-	-
7	0	0	0	757	2125	1881	125	-	1	-	-	-
8	-	0	0	40	27	22	530	-	-	-	-	-
9	0	0	0	619	-	1759	48	-	-	-	-	-
10	0	0	0	426	0	2417	1231	-	-	-	-	-
11	0	0	0	2090	0	2088	99	-	-	-	-	-
12	0	0	18	1589	60	-	160	-	-	-	-	-
13	0	-	226	1870	221	-	428	-	-	-	-	-
14	0	-	157	740	382	3024	189	-	-	-	-	-
15	0	0	58	342	3113	561	248	-	-	-	-	-
16	0	0	0	949	690	4	941	-	-	-	-	-
17	0	0	-	1272	863	2159	72	-	-	-	-	-
18	0	0	14	1954	3891	1602	3	-	-	-	-	-
19	0	0	12	654	2638	10	10	-	-	-	-	-
20	0	0	6	1720	9	90	1172	-	-	-	-	-
21	-	0	32	1574	1	1469	72	-	-	-	-	-
22	0	0	169	2041	4	1530	-	-	-	-	-	-
23	0	0	426	2081	0	1610	4293	-	-	-	-	-
24	0	0	-	438	210	1739	2317	-	-	-	-	-
25	0	0	-	2450	409	1506	-	-	-	-	-	-
26	0	0	925	637	-	0	-	2508	-	-	-	-
27	-	0	983	0	10	589	-	881	-	-	-	-
28	0	0	1142	2205	0	4499	-	2501	-	-	-	-
29	0	0	1345	650	1216	3554	-	2448	-	-	-	-
30	0	0	11	162	1035	2976	-	0	-	-	-	-
31	-	-	0	-	14	-	-	35	-	-	-	-
Mean	0≈	0~	197≈	948	725≈	1509≈	1131~	-	-	-	-	-

1992		Daily totals of of ultraviolet radiation											kJ m ⁻²	
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
1	0	-	24	286	560	1040	1207	314	327	-	-	-		
2	0	-	33	294	440	885	-	622	257	-	-	-		
3	0	-	29	297	763	1294	1194	636	344	-	-	-		
4	0	0	44	312	567	642	1108	554	226	-	-	-		
5	0	0	39	202	713	-	713	379	164	-	-	-		
6	0	0	40	297	887	865	653	374	261	-	-	-		
7	0	0	48	368	868	1044	583	531	189	32	-	-		
8	-	0	55	301	561	665	831	521	276	24	-	-		
9	0	0	47	413	-	1131	498	554	81	24	-	-		
10	0	0	64	384	533	1123	935	-	107	36	-	-		
11	0	0	82	461	539	1179	577	391	111	16	-	-		
12	0	0	96	455	633	-	652	543	72	28	-	-		
13	0	-	109	485	752	-	805	-	165	-	-	-		
14	0	-	111	452	726	1258	771	-	133	16	-	-		
15	0	1	114	468	1056	967	663	305	139	11	-	-		
16	0	1	94	511	907	862	785	418	77	15	-	-		
17	0	3	-	541	970	1231	666	357	75	8	-	-		
18	0	3	138	579	1113	1172	482	363	61	-	-	-		
19	0	4	148	520	1080	544	560	443	137	-	-	-		
20	0	5	152	600	778	671	795	217	36	-	-	-		
21	-	5	169	620	684	1046	518	193	30	-	-	-		
22	0	6	183	647	659	1037	-	221	64	-	-	-		
23	0	11	185	649	760	1041	1003	170	99	-	-	-		
24	0	13	194	569	945	1120	849	205	79	-	-	-		
25	0	12	208	697	942	1026	-	456	64	-	-	-		
26	0	13	236	572	-	364	771	470	42	-	-	-		
27	-	21	245	498	983	703	742	347	-	-	-	-		
28	0	17	264	772	690	1240	827	442	-	-	-	-		
29	0	27	280	580	1085	1166	199	424	67	-	-	-		
30	0		231	567	912	1115	308	138	-	-	-	-		
31	0		228		847		514	224		-		-		
Mean	0 ^{ss}	6 ⁻	130 ^{ss}	480	791 ^{ss}	979 ^{ss}	722 ^{ss}	386 ^{ss}	136 ^{ss}	21 [~]	-	-		

1992

Daily totals of net shortwave radiation

10⁻² MJ m⁻²

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	0	-	6	80	255	372	2688	544	674	-	-	0
2	0	-	11	104	141	247	-	1240	456	-	-	0
3	0	-	6	124	338	739	2595	1179	730	-	-	0
4	0	0	8	109	197	209	2313	1034	387	-	-	0
5	0	0	8	34	312	-	1295	656	83	-	0	0
6	0	0	8	85	448	309	1191	664	129	-	0	0
7	0	0	8	146	439	467	1029	1017	168	38	0	0
8	-	0	12	81	197	256	1572	978	472	15	0	0
9	0	0	7	159	-	688	862	1082	134	5	0	0
10	0	0	14	133	133	724	1687	-	173	13	-	0
11	0	0	20	214	126	833	1019	669	208	3	0	0
12	0	0	30	230	128	-	1154	1061	132	9	0	0
13	0	0	29	242	243	-	1466	-	299	-	0	0
14	0	-	37	178	216	1248	1398	-	253	8	0	0
15	0	0	41	180	477	879	1214	528	271	7	0	0
16	0	0	23	238	304	752	1509	742	129	8	0	0
17	0	0	-	273	360	1138	1085	717	124	6	0	0
18	0	0	39	293	526	989	838	706	112	-	0	0
19	0	0	37	207	509	416	961	808	264	4	0	0
20	0	0	39	306	202	841	1461	364	57	-	0	0
21	-	0	51	306	146	1811	915	323	46	3	0	0
22	0	1	63	329	143	1960	-	363	124	3	0	0
23	0	2	95	334	193	2110	2115	286	185	-	0	0
24	0	3	115	239	290	2265	1684	353	149	-	0	0
25	0	6	105	370	280	2063	-	935	109	-	0	0
26	0	1	88	232	-	609	1469	1009	63	-	0	0
27	0	6	107	143	371	1312	1457	680	-	-	0	0
28	0	2	100	391	179	2695	1696	944	-	-	0	0
29	0	8	133	252	428	2466	306	914	48	-	0	0
30	0		67	232	339	2394	502	206	-	-	0	0
31	-		39		309		886	408		-		0
Mean	0≈	1≈	45≈	208	284≈	1140≈	1370≈	729≈	221≈	9≈	0≈	0

1992		Daily totals of downward longwave radiation										10 ⁻² MJ m ⁻²	
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
1	2118	-	2308	2121	2482	2298	2208	2682	2246	-	-	2134	
2	1946	-	2200	1940	2468	2351	-	2526	2381	-	-	1697	
3	2093	-	2450	2041	2017	2161	2176	2381	1938	-	-	1552	
4	1840	1450	2213	2136	2349	2595	2199	2521	2283	-	-	1489	
5	1557	1785	2306	2370	2264	-	2623	2683	2490	-	1375	1492	
6	1477	1433	2471	2192	2019	2409	2613	2633	2424	-	2022	1434	
7	1373	1719	2133	1884	2080	2313	2605	2493	2552	2199	2058	1737	
8	-	1712	2171	2139	2406	2549	2583	2237	2237	2211	1590	2152	
9	1761	1332	2271	1790	-	2255	2659	2592	2690	2043	1538	2096	
10	1701	1495	1860	1991	2407	2346	2297	-	2743	1851	-	1619	
11	1308	1428	1506	1678	2311	2541	2614	2619	2759	2326	1930	1693	
12	1566	1328	1499	1730	2347	-	2616	2402	2749	1740	2451	1509	
13	2125	1627	1733	1568	2295	-	2603	-	2604	-	2354	1294	
14	2318	-	1950	1688	2248	2187	2600	-	2600	1935	2042	1444	
15	1934	2022	2160	1657	1791	2551	2589	2696	2497	1966	2433	1334	
16	1757	2322	2376	1514	2015	2594	2610	2635	2667	1555	2352	1876	
17	1996	2387	-	1602	1901	2187	2641	2618	2740	1751	2382	1365	
18	1987	2453	2085	1676	1588	2224	2691	2486	2722	-	2251	1669	
19	2216	2444	2217	1848	1806	2670	2641	2487	2378	1950	1993	1545	
20	2290	1981	2036	1778	2365	2674	2352	2721	2845	-	2303	1798	
21	2269	2286	1772	1765	2550	2413	2605	2761	2850	-	2163	1565	
22	2462	2100	1666	1699	2582	2473	-	2767	2684	1574	2260	2097	
23	2140	1801	1652	1663	2358	2454	2165	2734	2453	-	2241	2010	
24	1701	1924	1544	2069	2209	2423	2394	2756	2482	-	2253	2035	
25	1852	2092	1409	1762	2274	2557	-	2216	2672	-	1684	1730	
26	1894	2383	1391	2196	-	2792	2389	2008	2718	-	1578	1542	
27	2213	2035	1392	2556	2558	2609	2377	2324	-	-	1722	1814	
28	2132	2299	1383	2014	-	2177	2390	2013	-	-	2276	1755	
29	1722	1963	1561	2311	2206	2326	2828	2037	2333	-	2335	2106	
30	1653	-	2092	2529	2231	2364	2840	2689	-	-	1777	2526	
31	-	-	2312	-	2441	-	2697	2645	-	-	-	1885	
Mean	1910 ^{me}	1912 ^{me}	1937 ^{me}	1930	2235 ^{me}	2426 ^{me}	2522 ^{me}	2527 ^{me}	2546 ^{me}	1896 ^{me}	2055 ^{me}	1742	

1992

Daily totals of net longwave radiation

10⁻² MJ m⁻²

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	-231	-	-37	-230	-175	-170	-943	-256	-511	-	-	-298
2	-314	-	-138	-460	-131	-118	-	-459	-337	-	-	-529
3	-179	-	-59	-440	-338	-425	-1029	-527	-719	-	-	-650
4	-477	-325	-72	-153	-39	-42	-870	-389	-323	-	-	-523
5	-648	-85	-36	-86	-92	-	-307	-218	-117	-	-417	-578
6	-688	-325	-38	-360	-370	-191	-282	-228	-211	-	-88	-501
7	-709	-163	-161	-595	-325	-281	-274	-421	-122	-284	-166	-342
8	-	-200	-67	-270	-128	-59	-427	-327	-439	-208	-423	-202
9	-379	-364	-51	-430	-	-242	-226	-366	-127	-224	-382	-113
10	-586	-296	-313	-480	-6	-218	-596	-	-96	-485	-	-440
11	-860	-426	-501	-661	-65	-89	-315	-219	-54	-96	-243	-383
12	-490	-387	-526	-364	-113	-	-316	-462	-35	-476	-42	-486
13	-105	-213	-379	-412	-215	-	-369	-	-196	-	-92	-623
14	-43	-	-362	-408	-186	-395	-428	-	-214	-375	-216	-552
15	-274	-159	-232	-450	-363	-162	-388	-194	-285	-301	-72	-625
16	-426	21	-30	-427	-217	-58	-394	-261	-109	-593	-101	-256
17	-212	-50	-	-339	-258	-350	-319	-274	-48	-456	-64	-588
18	-227	-17	-123	-407	-461	-339	-226	-387	-45	-	-120	-286
19	-62	-85	-84	-443	-381	36	-274	-383	-306	-260	-292	-330
20	-82	-166	-130	-390	-12	-9	-492	-139	-19	-	-101	-244
21	-	-88	-244	-502	2	-301	-266	-99	-56	-526	-141	-390
22	-143	-373	-285	-455	-11	-355	-	-103	-118	-485	-80	-136
23	-107	-563	-341	-461	-60	-571	-956	-86	-240	-	-115	-288
24	-282	-332	-352	-217	-112	-678	-642	-126	-181	-	-96	-248
25	-233	-196	-371	-418	-145	-565	-	-627	-77	-	-412	-475
26	-137	-7	-607	-290	-	-117	-563	-745	-36	-	-491	-537
27	-62	-135	-684	-36	-60	-353	-593	-434	-	-	-664	-312
28	-206	-214	-524	-347	-29	-996	-697	-739	-	-	-256	-415
29	-381	-348	-352	-233	-271	-834	-93	-689	-225	-	-172	-119
30	-372	-	-130	-155	-244	-822	-117	-109	-	-	-456	-48
31	-	-	-58	-	-107	-	-310	-179	-	-	-	-312
Mean	-318≡	-220≡	-243≡	-364	-169≡	-322≡	-454≡	-337≡	-194≡	-367~	-228≡	-382

1992		Daily totals of net radiation											10 ⁻² MJ m ⁻²	
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
1	-231	-	-29	-151	80	204	1748	287	169	-	-	-298		
2	-314	-	-128	-353	11	313	-	775	117	-	-	-529		
3	-179	-	-53	-316	2	313	1566	656	9	-	-	-650		
4	-477	-325	-63	-42	153	165	1444	644	65	-	-	-523		
5	-648	-85	-29	-52	221	-	989	439	-31	-	-417	-578		
6	-688	-325	-29	-274	75	120	908	436	-83	-	-88	-501		
7	-709	-163	-153	-446	112	184	755	595	50	-245	-166	-342		
8	-	-200	-52	-188	70	198	1144	652	35	-193	-423	-202		
9	-379	-364	-41	-268	-	448	638	716	4	-218	-382	-113		
10	-586	-296	-300	-350	129	502	1088	-	76	-472	-	-440		
11	-860	-426	-482	-448	60	747	701	449	152	-91	-243	-383		
12	-490	-387	-497	-134	12	-	835	597	94	-469	-42	-486		
13	-105	-213	-352	-170	30	-	1100	-	103	-	-92	-623		
14	-43	-	-327	-231	28	853	974	-	38	-366	-216	-552		
15	-274	-159	-190	-267	117	717	824	336	-14	-294	-72	-625		
16	-426	21	-8	-185	88	696	1112	477	19	-586	-101	-256		
17	-212	-50	-	-67	103	788	764	447	76	-450	-64	-588		
18	-227	-17	-83	-113	63	650	610	319	69	-	-120	-286		
19	-62	-85	-45	-239	133	453	687	423	-43	-258	-292	-330		
20	-82	-165	-89	-85	192	833	969	227	39	-	-101	-244		
21	-	-86	-190	-194	150	1514	652	217	-8	-524	-141	-390		
22	-143	-370	-222	-125	133	1605	-	258	6	-484	-80	-136		
23	-107	-560	-245	-132	130	1540	1159	200	-56	-	-115	-288		
24	-282	-329	-237	21	174	1586	1043	229	-33	-	-96	-248		
25	-233	-190	-269	-47	135	1498	-	309	32	-	-412	-475		
26	-137	-5	-519	-61	-	494	903	263	25	-	-491	-537		
27	-62	-129	-576	105	311	956	865	247	-	-	-664	-312		
28	-206	-211	-423	47	142	1696	999	202	-	-	-256	-415		
29	-381	-342	-218	21	156	1635	212	223	-174	-	-172	-119		
30	-372	-	-60	78	94	1573	384	99	-	-	-456	-48		
31	-	-	-21	202	202	579	230	230	-	-	-	-312		
Mean	-318 ^m	-218 ^m	-198 ^m	-156	114 ^m	818 ^m	916 ^m	391 ^m	27 ^m	-358 ^m	-228 ^m	-382		

Type C tables 1988 - 92
Monthly means
of hourly totals

1988		Mean diurnal variation of global radiation																10 ⁻² MJ m ⁻²								
Month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jul	31	36	43	56	68	78	91	105	113	122	124	126	126	128	124	113	101	89	79	62	54	43	38	33	32	1890
Aug	5	7	9	15	19	28	40	46	57	62	67	67	67	64	54	49	43	36	27	19	13	9	6	4	4	751
Sep	-	-	-	-	-	3	9	18	27	35	41	40	40	30	24	24	14	8	3	1	-	-	-	-	-	279
Oct	-	-	-	-	-	-	-	-	1	3	4	4	4	4	2	1	-	-	-	-	-	-	-	-	-	18
Nov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0

1988		Mean diurnal variation of sky radiation																10 ⁻² MJ m ⁻²								
Month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jul	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oct	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1988		Mean diurnal variation of direct radiation																10 ⁻² MJ m ⁻²								
Month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jul	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oct	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1988		Mean diurnal variation of ultraviolet radiation																		kJ m ⁻²						
Month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jul	14	16	19	24	30	35	41	49	54	59	60	61	62	60	54	46	41	35	28	24	19	16	14	13	872	
Aug	2	4	5	7	10	14	19	22	27	31	33	33	31	28	26	23	18	13	9	6	4	3	2	2	374	
Sep	-	-	-	-	-	2	5	9	14	17	20	21	20	17	13	9	5	2	-	-	-	-	-	-	156	
Oct	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1988

Mean diurnal variation of net shortwave radiation

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jul	26	31	37	47	57	67	79	92	99	107	109	110	113	109	99	89	78	70	55	48	37	33	28	27	1645
Aug	4	6	7	12	17	24	34	39	49	54	58	57	55	47	42	37	31	24	16	11	8	5	3	3	643
Sep	0	0	0	0	0	1	1	3	5	6	7	8	7	5	5	3	2	1	1	0	0	0	0	0	53
Oct	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

1988

Mean diurnal variation of downward longwave radiation

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jul	104	103	102	100	100	100	100	100	100	101	103	102	102	101	102	104	104	103	103	102	104	104	105	104	2450
Aug	112	111	109	109	110	109	107	109	108	107	108	108	110	110	110	111	111	113	113	112	112	112	113	113	2646
Sep	83	83	84	84	82	80	80	82	84	87	88	87	85	85	88	85	83	84	85	83	84	84	84	84	2016
Oct	79	80	79	80	80	82	82	82	81	81	83	82	80	80	80	83	82	82	82	83	82	82	80	78	1947
Nov	67	69	68	69	70	70	70	68	68	68	67	68	68	68	70	69	69	70	70	70	71	71	71	71	1659
Dec	71	71	72	71	70	70	71	70	70	68	69	69	69	70	69	69	68	67	67	67	68	69	68	68	1661

1988		Mean diurnal variation of net longwave radiation																	10 ⁻² MJ m ⁻²						
Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jul	-20	-21	-22	-23	-22	-23	-24	-25	-24	-24	-23	-24	-25	-25	-25	-24	-24	-25	-25	-25	-23	-23	-21	-21	-562
Aug	-7	-7	-10	-10	-10	-11	-13	-13	-14	-15	-14	-15	-15	-15	-13	-13	-11	-10	-9	-9	-9	-8	-6	-6	-263
Sep	-13	-14	-13	-13	-14	-14	-16	-15	-14	-14	-14	-16	-17	-16	-15	-15	-16	-14	-13	-14	-13	-12	-12	-12	-340
Oct	-15	-14	-15	-14	-15	-13	-13	-13	-14	-13	-12	-13	-15	-14	-12	-11	-12	-12	-12	-12	-13	-13	-15	-16	-320
Nov	-19	-17	-18	-17	-16	-16	-17	-18	-18	-19	-19	-18	-18	-17	-17	-17	-18	-17	-17	-18	-17	-16	-17	-17	-417
Dec	-9	-8	-8	-8	-9	-8	-8	-8	-8	-9	-8	-8	-8	-8	-8	-8	-8	-9	-9	-9	-8	-8	-8	-9	-197

1988		Mean diurnal variation of net radiation																	10 ⁻² MJ m ⁻²						
Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jul	6	10	15	24	34	44	55	67	75	83	86	86	88	83	74	64	54	45	30	23	14	10	7	6	1084
Aug	-3	-1	-3	2	7	13	21	27	35	39	43	43	40	32	29	25	19	14	8	2	-1	-3	-3	-3	380
Sep	-13	-14	-13	-13	-14	-13	-15	-13	-10	-8	-7	-8	-11	-12	-10	-12	-14	-13	-13	-14	-13	-12	-12	-12	-287
Oct	-15	-14	-15	-14	-15	-13	-13	-13	-14	-13	-12	-13	-14	-14	-12	-11	-12	-12	-12	-12	-13	-13	-15	-16	-318
Nov	-19	-17	-18	-17	-16	-16	-17	-18	-18	-19	-19	-18	-18	-17	-17	-17	-18	-17	-17	-18	-17	-16	-17	-17	-417
Dec	-9	-8	-8	-8	-9	-8	-8	-8	-8	-9	-8	-8	-8	-8	-8	-8	-8	-9	-9	-9	-8	-8	-8	-9	-197

1989		Mean diurnal variation of global radiation																	10 ⁻² MJ m ⁻²					Total		
Month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Jan ^{me}		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0
Feb ^{me}		.	.	.	.	.	1	3	8	15	26	32	36	38	29	23	14	7	3	1	.	.	.	.	.	7
Mar ^{me}		3	4	8	13	22	34	48	65	78	86	91	95	95	87	76	63	49	35	23	15	9	5	3	3	1009
Apr ^{me}		21	27	35	41	53	71	86	105	121	132	137	141	142	135	114	98	85	70	56	43	35	27	24	21	1820
May ^{me}		35	33	36	50	71	76	79	98	116	136	149	146	154	137	133	106	95	80	64	61	53	43	37	33	2020
Jun ^{me}		24	27	30	36	41	51	65	81	87	96	105	107	106	98	93	73	69	61	48	42	37	31	23	25	1455
Jul ^{me}		6	7	11	16	23	30	42	59	65	71	72	68	64	64	56	51	42	30	22	16	10	8	6	6	845
Aug ^{me}		.	.	.	1	4	9	16	27	34	40	43	47	42	36	32	24	15	8	3	1	.	.	.	.	383
Sep ^{me}		.	.	.	.	.	.	.	1	3	5	6	6	7	5	3	1	.	.	.	.	.	.	.	.	37
Oct ^{me}		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0
Nov ^{me}		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0
Dec ^{me}		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0

1989		Mean diurnal variation of sky radiation																	10 ⁻² MJ m ⁻²					Total		
Month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jul	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oct	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1989		Mean diurnal variation of direct radiation																	10 ⁻² MJ m ⁻²							
Month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jul	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oct	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1989		Mean diurnal variation of ultraviolet radiation																				kJ m ⁻²				
Month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jul	10	12	13	16	20	25	32	38	42	46	50	52	52	52	48	44	36	32	28	22	20	17	13	11	10	689
Aug	3	4	5	8	11	14	20	26	31	34	34	34	33	30	27	24	20	14	11	7	5	4	3	3	3	405
Sep	-	-	-	1	2	5	8	13	17	20	22	23	22	19	16	12	8	4	2	1	-	-	-	-	-	194
Oct	-	-	-	-	-	-	-	1	2	3	4	4	4	3	2	1	-	-	-	-	-	-	-	-	-	23
Nov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0
Dec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0

1989

Mean diurnal variation of net shortwave radiation

10⁻² MJ m⁻²

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Mar	0	0	0	0	0	0	1	2	3	4	5	5	4	3	3	2	1	0	0	0	0	0	0	0	32
Apr	0	1	1	2	3	5	8	11	14	16	17	18	18	17	15	12	9	6	4	2	1	1	1	0	184
May	3	4	5	7	10	12	16	20	25	29	30	32	34	33	27	23	19	15	11	8	6	5	4	3	381
Jun	18	17	18	24	34	39	40	49	60	72	82	85	92	81	78	60	53	43	34	32	28	23	20	17	1100
Jul	21	24	26	31	36	45	58	72	77	85	93	95	96	87	82	65	61	53	42	36	32	27	20	21	1286
Aug	5	6	9	13	19	25	35	48	53	58	59	56	52	53	46	42	34	24	18	13	8	7	5	4	693
Sep	0	0	0	0	1	2	5	10	14	17	18	20	15	14	13	9	5	2	1	0	0	0	0	0	146
Oct	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	6
Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

1989

Mean diurnal variation of downward longwave radiation

10⁻² MJ m⁻²

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	72	71	71	71	70	70	70	70	70	70	71	71	71	70	69	68	67	65	64	66	68	68	69	70	1663
Feb	69	69	69	69	69	68	68	68	68	68	67	68	68	68	69	68	67	69	70	69	69	70	71	71	1650
Mar	79	78	77	77	78	78	78	77	77	79	80	81	82	81	81	80	79	78	79	78	78	78	78	79	1890
Apr	86	86	86	87	89	88	89	89	89	91	90	93	94	94	93	92	91	90	88	87	86	85	84	84	2133
May	95	95	95	95	95	94	94	93	92	90	89	90	90	91	93	95	94	96	97	96	95	96	96	97	2254
Jun	104	105	106	105	103	103	105	104	102	98	100	102	100	104	105	106	106	105	106	106	105	104	103	101	2487
Jul	109	109	109	110	111	111	111	111	111	112	111	112	112	111	111	112	113	112	113	111	109	110	109	110	2659
Aug	108	109	110	110	110	111	110	110	110	111	111	112	113	113	112	111	111	111	112	111	110	109	109	108	2650
Sep	96	97	98	98	97	97	98	97	98	100	100	100	100	100	100	99	99	99	97	97	96	95	96	97	2347
Oct	94	93	90	89	89	87	88	88	88	91	92	91	93	93	93	93	93	93	91	92	92	93	95	96	2196
Nov	87	88	88	87	87	87	87	87	87	87	88	86	86	85	84	83	85	84	84	85	85	85	85	84	2060
Dec	70	72	72	72	73	72	72	71	71	72	72	71	70	70	70	71	71	70	70	69	68	69	70	70	1701

1989		Mean diurnal variation of net longwave radiation																	10 ⁻² MJ m ⁻²						
Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan \approx	-10	-11	-11	-11	-12	-12	-12	-12	-12	-12	-12	-12	-11	-12	-13	-13	-14	-15	-15	-14	-13	-13	-11	-11	-296
Feb \approx	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-8	-8	-8	-9	-8	-8	-8	-8	-8	-8	-8	-204
Mar \approx	-8	-8	-8	-8	-7	-8	-8	-10	-10	-11	-11	-11	-11	-10	-10	-10	-9	-9	-8	-9	-10	-9	-9	-8	-220
Apr \approx	-9	-9	-9	-9	-9	-10	-12	-13	-13	-14	-14	-13	-13	-15	-15	-15	-14	-12	-12	-10	-10	-11	-11	-10	-286
May \approx	-11	-12	-13	-14	-16	-15	-13	-11	-11	-11	-10	-9	-11	-12	-13	-15	-18	-17	-13	-10	-11	-12	-12	-11	-300
Jun \approx	-11	-11	-9	-10	-14	-12	-10	-9	-9	-11	-11	-10	-12	-10	-9	-9	-10	-13	-12	-11	-10	-11	-13	-14	-264
Jul \approx	-15	-15	-14	-14	-15	-17	-19	-20	-21	-21	-23	-21	-23	-23	-23	-20	-19	-20	-17	-16	-19	-16	-16	-15	-441
Aug \approx	-10	-9	-9	-10	-13	-13	-16	-17	-18	-18	-18	-17	-15	-15	-16	-16	-16	-14	-12	-11	-10	-11	-10	-9	-323
Sep \approx	-11	-10	-10	-10	-11	-12	-11	-12	-12	-10	-11	-12	-11	-11	-12	-13	-12	-12	-12	-13	-13	-14	-13	-12	-281
Oct \approx	-10	-11	-13	-14	-14	-15	-14	-13	-13	-11	-10	-11	-10	-10	-10	-10	-10	-11	-12	-11	-11	-10	-9	-9	-270
Nov \approx	-12	-11	-11	-12	-12	-13	-12	-12	-12	-12	-12	-13	-13	-14	-15	-15	-13	-14	-15	-14	-13	-13	-14	-14	-309
Dec \approx	-18	-18	-17	-17	-17	-17	-18	-18	-19	-18	-17	-18	-19	-19	-19	-17	-18	-18	-19	-20	-20	-19	-19	-19	-438

1989	Mean diurnal variation of net radiation																								10 ⁻² MJ m ⁻²				
Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total				
Jan <i>≈</i>	-10	-11	-11	-11	-12	-12	-12	-12	-12	-12	-12	-12	-11	-12	-13	-13	-14	-15	-15	-14	-13	-13	-11	-11	-296				
Feb <i>≈</i>	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-9	-8	-8	-8	-9	-8	-8	-8	-8	-8	-8	-8	-203				
Mar <i>≈</i>	-8	-8	-8	-8	-7	-7	-7	-8	-7	-7	-6	-6	-7	-8	-7	-8	-8	-8	-8	-9	-10	-9	-9	-8	-187				
Apr <i>≈</i>	-8	-9	-8	-8	-7	-7	-5	-2	1	2	3	5	5	3	0	-2	-5	-6	-8	-8	-9	-10	-10	-9	-102				
May <i>≈</i>	-8	-8	-8	-7	-6	-3	3	9	14	18	21	24	23	21	14	7	0	-2	-2	-3	-5	-7	-8	-7	80				
Jun <i>~</i>	7	7	9	14	20	27	30	40	51	60	71	74	80	71	68	51	43	30	22	21	18	12	7	4	836				
Jul <i>≈</i>	6	9	12	17	21	28	39	52	56	64	70	74	73	64	60	45	41	34	25	20	14	10	5	7	845				
Aug <i>≈</i>	-5	-3	-1	2	6	11	20	31	35	40	41	40	37	38	30	26	18	11	6	2	-2	-4	-5	-5	370				
Sep <i>≈</i>	-11	-10	-10	-10	-11	-10	-6	-2	1	7	7	8	4	3	1	-4	-7	-9	-11	-13	-13	-14	-13	-12	-135				
Oct <i>≈</i>	-10	-11	-13	-14	-14	-15	-14	-13	-12	-10	-9	-10	-8	-9	-9	-10	-10	-11	-12	-11	-11	-10	-9	-9	-263				
Nov	-12	-11	-11	-12	-12	-13	-12	-12	-12	-12	-12	-13	-13	-14	-15	-15	-13	-14	-15	-14	-13	-13	-14	-14	-309				
Dec	-18	-18	-17	-17	-17	-17	-18	-18	-19	-18	-17	-18	-19	-19	-19	-17	-18	-18	-19	-20	-20	-19	-19	-19	-438				

1990		Mean diurnal variation of global radiation																	10 ⁻² MJ m ⁻²							
Month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan ≈		.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0
Feb		.	.	.	.	.	3	7	12	21	25	28	28	25	23	20	12	6	2	.	.	.	.	.	.	8
Mar		.	.	.	.	.	30	45	58	72	79	80	83	85	77	67	54	41	27	19	12	7	4	3	2	889
Apr ≈	2	3	7	12	19	30	45	58	72	79	80	83	83	85	77	67	54	41	27	19	12	7	4	3	2	889
May	26	32	39	48	65	77	91	107	121	128	128	122	122	123	124	113	106	95	79	61	48	40	33	29	26	1862
Jun ≈	30	33	38	45	56	69	80	89	101	105	113	111	111	109	107	104	92	78	67	57	48	43	37	32	32	1676
Jul	22	25	28	34	42	51	54	68	74	78	76	79	79	79	78	70	69	58	50	42	34	26	24	21	21	1202
Aug	7	9	14	21	28	35	47	56	67	72	74	71	71	70	68	66	57	47	34	26	20	16	11	7	6	930
Sep ≈	.	.	.	.	2	4	.	9	13	20	28	32	28	26	25	21	15	9	4	2	1	.	.	.	.	239
Oct ≈	.	.	.	.	.	.	.	.	1	2	4	5	6	5	4	2	1	.	.	.	.	.	.	.	.	29
Nov ≈	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0
Dec ≈	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0

1990		Mean diurnal variation of sky radiation																	10 ⁻² MJ m ⁻²							
Month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jul	18	21	24	29	35	43	46	56	62	66	62	65	65	63	63	58	54	44	40	34	27	21	19	18	17	983
Aug	6	8	11	14	19	22	28	33	40	42	48	48	48	49	45	40	35	29	23	19	15	12	9	6	5	605
Sep ≈	0	0	0	0	1	3	7	10	15	19	22	20	20	18	17	15	12	8	4	2	1	0	0	0	0	175
Oct ≈	0	0	0	0	0	0	0	1	2	3	5	5	4	3	2	1	0	0	0	0	0	0	0	0	0	25
Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec ≈	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

1990		Mean diurnal variation of direct radiation																								10 ⁻² MJ m ⁻²	
Month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total	
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jul	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aug	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sep	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oct	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1990		Mean diurnal variation of ultraviolet radiation																								kJ m ⁻²	
Month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total	
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun	17	18	21	26	32	39	45	51	57	61	65	64	64	63	61	59	52	45	38	31	26	23	20	17	16	946	
Jul	11	12	14	17	21	25	28	35	40	42	41	42	42	42	42	39	36	31	26	21	17	14	12	10	10	628	
Aug	4	5	6	9	12	16	21	26	31	35	36	35	35	35	34	32	27	22	16	12	9	6	5	4	3	442	
Sep	-	-	-	-	-	1	2	4	6	9	12	15	15	13	12	11	8	5	3	1	-	-	-	-	-	117	
Oct	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nov	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Dec	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	

1990		Mean diurnal variation of net shortwave radiation																			10 ⁻² MJ m ⁻²					
Month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	≈	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Mar		0	0	0	0	0	0	1	2	3	4	4	4	4	4	4	2	1	0	0	0	0	0	0	0	33
Apr	≈	0	0	1	1	3	4	6	8	9	11	11	12	13	12	10	7	6	3	2	2	1	1	0	0	122
May		4	4	6	8	11	11	13	16	19	21	21	20	21	22	20	19	16	13	9	7	6	5	4	4	298
Jun	≈	10	11	13	16	20	24	28	31	34	37	39	38	37	37	38	34	29	26	21	18	16	14	12	12	594
Jul		19	22	24	30	37	45	49	61	66	71	69	71	71	71	64	62	52	44	37	30	23	21	19	18	1077
Aug		6	7	11	16	22	28	38	46	55	60	62	60	60	58	56	48	39	29	21	16	13	9	6	5	770
Sep	≈	0	0	0	0	1	4	7	11	17	24	27	24	23	22	19	13	8	4	2	1	0	0	0	0	207
Oct	≈	0	0	0	0	0	0	0	1	2	3	4	4	3	3	1	0	0	0	0	0	0	0	0	0	20
Nov	≈	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec	≈	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

1990		Mean diurnal variation of downward longwave radiation																				10 ⁻² MJ m ⁻²				
Month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	86	85	87	88	87	87	87	86	85	85	85	85	85	85	85	86	85	85	86	86	87	87	87	86	88	2068
Feb	77	79	79	80	81	81	81	81	81	81	81	81	80	80	80	79	79	77	76	76	76	75	75	76	75	1887
Mar	70	70	70	70	69	70	71	71	71	72	72	74	75	74	75	75	73	73	71	70	70	70	69	69	70	1714
Apr	90	91	92	92	91	90	89	92	93	92	91	90	90	90	93	95	95	93	93	90	91	90	90	91	90	2194
May	89	88	88	88	90	92	95	95	96	96	100	99	99	99	98	98	97	96	96	95	92	90	88	89	89	2243
Jun	107	108	108	109	109	109	108	107	107	111	108	108	108	111	110	111	112	110	112	111	109	107	106	108	107	2613
Jul	111	111	112	113	113	113	114	114	115	116	117	116	116	116	116	115	114	113	114	113	113	112	112	112	112	2725
Aug	104	104	103	104	104	105	104	104	105	106	108	109	110	108	108	108	108	108	107	107	105	104	104	104	104	2537
Sep	111	111	109	109	109	109	110	111	111	109	109	108	108	109	110	108	107	108	109	109	108	109	108	109	110	2618
Oct	94	94	97	98	96	94	96	97	97	98	97	96	96	96	97	97	95	94	93	94	95	95	95	95	92	2292
Nov	73	73	74	75	75	75	77	76	76	76	76	78	78	76	77	76	76	75	76	76	75	75	74	76	75	1809
Dec	83	84	84	85	84	83	84	83	84	83	85	85	85	86	83	81	81	80	82	83	84	84	84	83	83	2001

1990		Mean diurnal variation of net longwave radiation																	10 ⁻² MJ m ⁻²						
Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	-16	-17	-15	-14	-15	-15	-15	-16	-17	-17	-17	-16	-17	-17	-16	-16	-17	-16	-16	-15	-15	-15	-16	-15	-379
Feb	-18	-17	-17	-16	-15	-15	-15	-15	-15	-15	-15	-16	-17	-16	-17	-17	-18	-19	-20	-19	-20	-20	-19	-20	-411
Mar	-16	-15	-16	-15	-16	-16	-15	-15	-14	-14	-12	-12	-13	-14	-13	-15	-15	-17	-16	-16	-16	-16	-16	-16	-359
Apr	-8	-7	-7	-7	-8	-8	-7	-4	-3	-3	-3	-2	-4	-4	-4	-5	-7	-7	-8	-8	-8	-8	-7	-8	-146
May	-13	-14	-15	-16	-15	-11	-5	-2	0	1	4	4	2	0	-3	-8	-11	-13	-11	-11	-13	-13	-13	-13	-191
Jun	-4	-3	-3	-3	-2	-1	0	1	3	2	4	5	4	3	3	1	-1	0	0	-2	-5	-6	-5	-4	-14
Jul	-11	-11	-11	-11	-12	-12	-12	-13	-14	-14	-14	-15	-16	-16	-16	-17	-17	-15	-14	-13	-12	-12	-11	-11	-322
Aug	-11	-11	-12	-14	-15	-17	-19	-21	-22	-23	-22	-21	-22	-23	-23	-21	-20	-18	-16	-15	-14	-13	-11	-11	-416
Sep	-5	-5	-6	-6	-6	-7	-7	-8	-9	-11	-13	-14	-13	-12	-13	-12	-10	-8	-7	-7	-7	-7	-6	-5	-207
Oct	-10	-11	-8	-8	-9	-11	-9	-9	-9	-8	-9	-10	-10	-9	-9	-10	-11	-12	-11	-10	-10	-10	-10	-11	-236
Nov	-16	-16	-15	-15	-15	-15	-14	-14	-15	-15	-15	-14	-15	-14	-15	-15	-15	-15	-15	-16	-16	-16	-16	-15	-361
Dec	-13	-12	-12	-12	-12	-13	-13	-13	-13	-13	-11	-12	-11	-13	-15	-16	-16	-15	-13	-13	-13	-12	-13	-13	-311

1990		Mean diurnal variation of net radiation																	10 ⁻² MJ m ⁻²						
Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	-16	-17	-15	-14	-15	-15	-15	-16	-17	-17	-17	-16	-17	-17	-16	-16	-17	-16	-16	-15	-15	-15	-16	-15	-379
Feb	-18	-17	-17	-16	-15	-15	-15	-15	-15	-15	-15	-16	-16	-16	-17	-17	-18	-19	-20	-19	-20	-20	-19	-20	-410
Mar	-16	-15	-16	-15	-16	-16	-14	-13	-12	-10	-8	-8	-9	-10	-9	-13	-14	-16	-16	-16	-16	-16	-16	-16	-326
Apr	-8	-6	-6	-6	-6	-5	-1	4	7	8	8	10	9	8	6	3	-2	-3	-6	-6	-7	-8	-7	-7	-23
May	-9	-10	-10	-8	-4	1	8	14	19	22	25	23	23	21	17	11	5	0	-2	-4	-7	-8	-8	-9	107
Jun	5	8	9	13	18	23	28	32	38	39	43	42	42	40	41	35	29	26	21	16	11	8	6	8	580
Jul	8	11	14	19	25	33	37	48	53	57	55	57	55	55	48	45	35	29	23	16	10	9	8	7	755
Aug	-5	-4	-1	2	7	11	19	25	33	38	41	39	38	34	33	27	19	11	5	1	-2	-4	-5	-6	353
Sep	-5	-5	-6	-6	-5	-3	0	4	8	13	14	10	10	10	5	1	-2	-4	-5	-7	-7	-7	-6	-5	0
Oct	-10	-11	-8	-8	-9	-11	-9	-8	-7	-6	-6	-6	-7	-7	-8	-10	-11	-12	-11	-10	-10	-10	-10	-11	-216
Nov	-16	-16	-15	-15	-15	-15	-14	-14	-15	-15	-15	-14	-15	-14	-15	-15	-15	-15	-15	-16	-16	-16	-15	-15	-361
Dec	-13	-12	-12	-12	-12	-13	-13	-13	-13	-13	-11	-12	-11	-13	-15	-16	-16	-15	-13	-13	-13	-12	-13	-13	-311

1991 **Mean diurnal variation of global radiation** **10⁻² MJ m⁻²**

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	.	.	.	.	.	.	.	.	.	1	1	1	.	.	.	.	.	.	.	.	.	.	.	.	0
Feb	.	.	.	.	.	.	6	12	18	24	26	26	24	21	16	10	6	2	.	.	.	.	.	.	5
Mar	.	.	.	.	.	2	50	61	71	81	87	88	84	78	67	55	43	30	21	15	8	5	3	2	193
Apr	25	26	34	41	47	59	73	90	99	108	118	119	119	116	111	96	80	66	55	43	35	29	26	25	1639
May	40	46	51	62	79	90	106	120	134	138	145	152	146	139	120	110	100	86	72	64	50	42	40	37	2168
Jun	22	24	30	34	43	53	69	82	95	97	105	100	99	89	81	75	65	58	46	36	31	26	23	21	1406
Jul	8	8	12	17	24	31	38	45	49	59	64	66	64	57	58	53	46	38	29	21	14	10	9	8	829
Aug	.	.	.	1	4	9	17	27	35	43	47	47	45	39	36	26	18	8	4	1	.	.	.	.	407
Sep	.	.	.	.	.	.	.	1	3	6	7	7	7	5	3	1	.	.	.	.	.	.	.	.	40
Oct	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0
Nov	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0
Dec	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0

1991 **Mean diurnal variation of sky radiation** **10⁻² MJ m⁻²**

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	4
Mar	0	0	0	0	0	2	4	9	13	18	20	19	18	16	13	8	5	2	0	0	0	0	0	0	146
Apr	2	3	6	10	15	22	28	33	38	43	43	41	41	39	37	32	25	20	15	11	6	4	3	2	521
May	20	21	25	27	33	41	48	59	62	69	70	72	73	68	62	56	53	45	39	31	27	23	21	21	1063
Jun	27	29	33	39	51	59	66	74	76	76	79	85	89	82	75	69	62	53	44	41	34	29	27	25	1324
Jul	19	20	24	28	34	42	52	65	68	71	77	70	70	70	65	59	49	45	37	29	25	21	19	18	1079
Aug	6	7	8	12	16	21	27	29	33	38	42	47	46	41	36	34	28	21	17	13	9	7	7	6	550
Sep	0	0	0	1	3	7	13	18	23	28	29	30	28	24	21	16	11	6	3	1	0	0	0	0	264
Oct	0	0	0	0	0	0	0	1	2	5	5	6	6	4	3	1	0	0	0	0	0	0	0	0	34
Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

1991		Mean diurnal variation of direct radiation																			10 ⁻² MJ m ⁻²					
Month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Apr	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
May	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jun	76	83	79	84	87	81	89	92	102	111	118	116	116	105	107	86	89	93	84	80	77	60	56	66	47	2065
Jul	19	22	26	24	31	30	41	34	53	48	48	52	50	35	30	31	37	34	27	28	28	24	23	12	788	
Aug	19	15	17	30	34	32	33	42	36	45	43	36	34	31	55	59	63	68	57	50	39	28	27	17	908	
Sep	0	0	0	1	6	17	25	47	52	57	62	57	58	60	78	59	51	17	3	0	0	0	0	0	648	
Oct	0	0	0	0	0	0	0	8	5	18	8	0	0	0	0	1	0	0	0	0	0	0	0	0	39	
Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

1991		Mean diurnal variation of ultraviolet radiation																								kJ m ⁻²	
Month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total	
Jan	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Feb	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Mar	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Apr	~	2	3	5	7	12	17	24	30	35	40	43	44	42	39	33	27	21	16	11	7	5	3	2	2	468	
May	~	12	12	16	19	24	30	37	45	50	56	61	61	61	58	54	47	39	31	26	21	17	14	12	12	813	
Jun	~	18	21	24	29	36	43	51	59	64	70	74	76	74	70	62	56	49	41	35	29	24	20	18	17	1061	
Jul	~	11	12	14	17	21	26	33	40	47	49	53	51	51	47	42	38	33	28	22	18	15	12	11	10	703	
Aug	~	3	4	5	7	10	14	18	21	24	28	31	33	32	29	27	24	20	16	12	8	6	4	3	3	383	
Sep	-	-	-	-	1	2	5	8	13	17	21	23	24	23	21	18	13	9	5	2	1	-	-	-	-	207	
Oct	-	-	-	-	-	-	-	-	1	2	3	4	5	4	3	2	1	-	-	-	-	-	-	-	-	25	
Nov	~	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Dec	~	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	

1991

Mean diurnal variation of net shortwave radiation

10⁻² MJ m⁻²

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Mar	0	0	0	0	0	0	1	1	2	4	4	4	3	3	2	1	1	0	0	0	0	0	0	0	25
Apr ≈	0	1	1	2	3	5	7	9	12	15	16	17	17	16	13	10	7	5	3	2	1	1	0	0	163
May ≈	4	4	5	6	8	10	12	16	19	22	24	25	26	26	25	22	17	13	11	8	6	5	4	4	321
Jun ≈	19	22	25	31	40	46	53	63	69	75	79	82	81	76	64	61	56	47	38	33	25	21	20	18	1144
Jul ≈	19	22	26	30	38	48	62	74	86	87	94	89	89	80	73	67	58	53	41	32	28	23	20	18	1257
Aug ≈	6	7	10	14	19	25	31	37	41	50	55	57	55	49	50	45	38	31	23	16	12	8	7	6	693
Sep	0	0	0	0	1	2	4	8	11	14	15	16	14	13	12	8	4	2	1	0	0	0	0	0	126
Oct	0	0	0	0	0	0	0	0	0	1	1	2	1	1	1	0	0	0	0	0	0	0	0	0	8
Nov	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

1991

Mean diurnal variation of downward longwave radiation

10⁻² MJ m⁻²

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	76	77	77	77	78	78	78	78	78	77	78	77	77	76	76	77	77	75	75	75	76	77	77	76	1841
Feb	85	86	85	85	86	86	85	85	86	86	85	85	86	86	86	84	85	84	83	84	84	85	85	84	2038
Mar	86	86	87	87	87	87	87	87	88	88	88	86	85	86	86	86	84	83	83	84	83	83	84	84	2054
Apr ≈	72	72	72	71	72	73	76	77	79	80	81	81	82	81	82	82	81	79	77	74	74	74	74	74	1839
May ≈	87	88	89	89	91	92	92	93	93	95	92	91	91	91	93	95	95	94	92	90	88	87	87	87	2184
Jun ≈	98	98	98	98	100	100	101	101	101	101	100	101	102	103	102	102	102	101	100	100	100	99	100	99	2406
Jul ≈	108	107	107	108	108	108	107	107	107	108	108	107	107	108	108	108	108	108	108	107	107	107	107	107	2582
Aug ≈	108	109	109	109	109	110	110	110	111	111	111	111	111	111	110	109	108	107	106	107	107	106	107	107	2614
Sep	94	93	94	93	92	93	94	93	92	93	93	94	92	92	91	91	91	90	92	93	93	91	91	93	2217
Oct	89	89	89	89	88	88	87	87	87	86	86	86	87	86	86	86	87	88	89	88	88	89	88	87	2099
Nov	75	75	77	77	78	77	75	75	74	75	75	74	75	74	73	74	74	75	75	76	75	76	77	76	1806
Dec	76	77	78	78	77	77	77	77	77	78	78	78	79	78	77	77	78	76	77	78	78	78	77	77	1859

1991

Mean diurnal variation of net longwave radiation

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	-14	-14	-14	-14	-13	-13	-14	-14	-14	-15	-14	-15	-15	-15	-15	-14	-14	-15	-15	-15	-15	-14	-14	-14	-343
Feb	-8	-8	-9	-9	-7	-8	-9	-9	-8	-8	-9	-9	-9	-9	-8	-9	-9	-10	-10	-10	-9	-9	-9	-9	-209
Mar	-11	-11	-10	-10	-10	-10	-10	-10	-10	-10	-11	-12	-12	-12	-12	-12	-13	-14	-13	-12	-12	-13	-12	-12	-273
Apr	-13	-13	-14	-16	-17	-16	-14	-11	-10	-11	-10	-9	-11	-11	-11	-11	-12	-13	-13	-14	-13	-14	-13	-13	-301
May	-14	-13	-13	-14	-12	-10	-8	-6	-8	-8	-8	-8	-9	-10	-11	-12	-10	-11	-11	-13	-14	-14	-14	-13	-265
Jun	-14	-14	-13	-13	-11	-10	-8	-8	-9	-10	-11	-11	-10	-10	-10	-11	-12	-14	-12	-11	-12	-13	-13	-12	-274
Jul	-12	-13	-12	-11	-12	-13	-14	-15	-16	-17	-17	-18	-18	-17	-16	-16	-16	-16	-14	-14	-14	-13	-13	-12	-347
Aug	-11	-10	-10	-10	-11	-11	-12	-12	-12	-13	-14	-15	-15	-14	-15	-16	-16	-16	-16	-15	-14	-13	-13	-11	-315
Sep	-12	-13	-12	-13	-13	-12	-12	-13	-13	-13	-12	-11	-13	-14	-15	-15	-15	-16	-14	-13	-13	-14	-14	-12	-319
Oct	-11	-11	-11	-11	-11	-12	-12	-12	-13	-13	-13	-13	-12	-13	-13	-12	-12	-11	-11	-11	-12	-10	-11	-11	-281
Nov	-15	-15	-14	-14	-14	-15	-16	-16	-17	-16	-16	-17	-17	-17	-18	-17	-17	-16	-16	-15	-15	-15	-14	-14	-376
Dec	-16	-16	-15	-14	-15	-15	-15	-15	-15	-14	-14	-15	-13	-14	-15	-14	-14	-16	-15	-15	-14	-14	-15	-16	-355

1991

Mean diurnal variation of net radiation

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	-14	-14	-14	-14	-13	-13	-14	-14	-14	-15	-14	-15	-15	-15	-15	-14	-14	-15	-15	-15	-15	-14	-14	-14	-343
Feb	-8	-8	-9	-9	-7	-8	-9	-9	-8	-8	-8	-9	-9	-8	-8	-9	-9	-10	-10	-10	-9	-9	-9	-9	-208
Mar	-11	-11	-10	-10	-10	-10	-9	-8	-7	-6	-7	-8	-8	-9	-10	-11	-13	-14	-13	-12	-12	-13	-12	-12	-247
Apr	-13	-12	-13	-14	-14	-12	-7	-2	1	4	7	8	7	5	2	0	-4	-8	-10	-12	-12	-13	-13	-12	-138
May	-10	-9	-8	-8	-4	0	4	10	11	13	16	17	17	15	14	10	7	3	0	-5	-7	-9	-9	-9	57
Jun	5	9	12	18	28	35	45	54	60	64	68	71	71	66	54	49	44	34	25	21	13	8	7	6	869
Jul	8	9	14	19	26	35	48	59	70	71	77	72	71	64	57	51	42	37	27	18	14	10	7	6	910
Aug	-5	-3	-1	4	8	15	20	25	29	37	41	42	40	35	34	29	22	15	8	2	-2	-5	-5	-5	379
Sep	-12	-13	-12	-13	-13	-10	-8	-5	-2	2	3	5	1	-2	-2	-7	-11	-14	-13	-13	-13	-14	-14	-12	-192
Oct	-11	-11	-11	-11	-11	-12	-12	-12	-12	-12	-11	-11	-11	-12	-12	-12	-12	-11	-11	-11	-12	-10	-11	-11	-273
Nov	-15	-15	-14	-14	-14	-15	-16	-16	-17	-16	-16	-17	-17	-17	-18	-17	-17	-16	-16	-15	-15	-15	-14	-14	-376
Dec	-16	-16	-15	-14	-15	-15	-15	-15	-15	-14	-14	-15	-13	-14	-15	-14	-14	-16	-15	-15	-14	-14	-15	-16	-355

1992

Mean diurnal variation of global radiation

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan ≈	.	.	.	.	.	.	.	.	.	.	1	2	2	.	.	.	.	.	.	.	.	.	.	.	0
Feb ≈	.	.	.	.	.	.	.	.	.	1	2	2	2	1	.	.	.	.	.	.	.	.	.	.	8
Mar ≈	.	.	.	.	1	4	8	15	22	30	34	34	32	26	23	15	8	3	1	.	.	.	.	.	256
Apr ≈	3	5	9	15	24	36	50	63	73	83	93	98	95	89	75	64	51	36	25	15	9	5	4	3	1026
May ≈	23	26	30	38	51	63	77	88	97	104	113	109	103	99	90	79	68	59	48	39	32	25	22	21	1502
Jun ≈	29	34	43	51	71	88	101	110	125	139	147	143	137	126	117	107	86	76	62	54	47	40	36	30	1999
Jul ≈	25	30	33	43	54	65	73	84	92	103	108	116	111	103	94	88	78	63	53	44	34	29	24	23	1568
Aug ≈	5	8	12	18	25	34	44	52	60	64	70	67	68	61	58	51	44	33	25	17	11	8	5	5	844
Sep ≈	.	.	.	1	3	7	15	22	25	28	33	35	31	28	22	16	12	6	3	1	.	.	.	.	288
Oct ≈	.	.	.	.	.	.	.	.	1	4	6	7	6	4	2	.	.	.	.	.	.	.	.	.	30
Nov ≈	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0
Dec	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0

1992

Mean diurnal variation of sky radiation

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan ≈	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb ≈	0	0	0	0	0	0	0	0	0	1	2	2	2	1	0	0	0	0	0	0	0	0	0	0	7
Mar ≈	0	0	0	0	1	3	7	11	16	21	23	24	23	20	17	11	7	3	1	0	0	0	0	0	186
Apr ≈	3	5	8	13	19	27	35	44	48	53	58	61	59	56	49	43	34	26	19	13	8	5	3	3	693
May ≈	20	22	25	32	40	50	62	70	75	80	85	83	81	78	73	65	57	48	39	32	27	22	20	18	1206
Jun ≈	25	29	36	42	53	60	64	72	73	80	81	77	77	76	70	67	58	51	45	39	34	32	31	26	1296
Jul ≈	21	23	25	31	38	45	51	57	60	65	69	70	70	64	62	60	54	47	38	33	26	23	20	19	1071
Aug ≈	5	7	11	15	19	26	33	39	44	47	48	48	48	43	38	35	32	26	20	15	10	7	5	4	626
Sep ≈	0	0	0	1	3	6	11	16	19	21	25	27	24	22	18	13	9	5	3	1	0	0	0	0	223
Oct ≈	0	0	0	0	0	0	0	0	1	3	5	6	5	4	2	0	0	0	0	0	0	0	0	0	26
Nov ≈	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

1992		Mean diurnal variation of direct radiation																10 ⁻² MJ m ⁻²								
Month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	≈	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Feb	~	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mar	≈	0	0	0	0	4	7	13	18	27	30	24	22	14	20	12	6	0	0	0	0	0	0	0	0	197
Apr	≈	2	4	7	17	27	38	50	55	64	71	78	81	82	77	67	62	59	39	31	18	9	4	2	2	948
May	≈	19	20	20	24	33	33	34	39	44	43	50	45	41	40	34	28	23	29	28	27	24	18	15	13	725
Jun	≈	20	23	24	30	49	71	83	77	99	105	114	112	102	88	88	81	62	59	47	50	49	37	23	15	1509
Jul	~	25	33	33	39	47	52	48	50	55	68	66	79	65	70	52	55	53	43	48	40	32	34	25	18	1131
Aug		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sep		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Oct		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nov		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dec		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1992		Mean diurnal variation of ultraviolet radiation																								kJ m ⁻²
Month		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	≈	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0
Feb	≈	.	.	.	.	.	.	.	.	1	1	2	.	1	1	.	.	.	.	.	.	.	.	.	.	6
Mar	≈	.	.	.	.	2	.	.	4	7	11	14	17	18	15	11	7	4	2	1	.	.	.	.	.	130
Apr	≈	2	2	4	7	11	17	23	30	35	40	44	46	45	41	35	30	23	17	11	7	4	2	2	2	480
May	≈	11	13	15	20	25	32	40	46	51	56	60	59	56	53	49	43	36	31	25	20	16	13	11	10	791
Jun	≈	15	17	21	25	34	42	49	55	62	69	73	72	68	63	58	53	43	36	30	25	21	18	16	15	979
Jul	≈	11	13	14	19	23	29	34	39	43	48	51	55	53	49	45	41	36	29	24	19	15	12	11	10	722
Aug	≈	3	4	5	8	11	15	19	24	28	31	32	32	32	29	26	23	19	15	11	8	5	3	3	2	386
Sep	≈	.	.	.	.	1	2	4	.	.	.	.	.	.	.	.	.	.	.	1	1	.	.	.	.	136
Oct	≈	.	.	.	.	.	.	.	1	2	3	4	4	4	3	2	.	.	.	.	.	.	.	.	.	21
Nov		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dec		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

1992

Mean diurnal variation of net shortwave radiation

10⁻² MJ m⁻²

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total	
Jan ≈	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Feb ≈	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Mar ≈	0	1	0	0	0	1	1	2	4	5	6	6	6	4	4	3	1	0	0	0	0	0	0	0	45	
Apr ≈	1	1	2	3	5	7	10	13	16	18	21	21	21	19	15	12	9	6	4	2	1	1	1	1	1	208
May ≈	3	4	5	6	9	11	14	17	19	21	23	22	21	20	18	15	13	11	8	7	5	4	3	3	284	
Jun ≈	16	18	22	27	38	47	53	60	71	80	85	83	79	74	69	66	54	47	36	30	26	23	21	17	1140	
Jul ≈	22	25	28	36	46	56	64	74	80	90	96	102	99	91	82	77	69	55	46	37	29	25	21	20	1370	
Aug ≈	5	7	10	15	21	29	37	44	52	56	60	58	59	53	51	44	38	29	21	15	10	6	5	4	729	
Sep ≈	0	0	0	1	2	5	11	16	19	21	25	27	24	22	18	13	9	5	2	1	0	0	0	0	221	
Oct ≈	0	0	0	0	0	0	0	0	1	1	2	2	2	1	1	0	0	0	0	0	0	0	0	0	9	
Nov ≈	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Dec	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

1992

Mean diurnal variation of downward longwave radiation

10⁻² MJ m⁻²

Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan ≈	82	81	83	82	81	79	78	78	78	78	79	78	78	78	79	79	79	80	80	80	80	80	80	80	1910
Feb ≈	80	79	80	79	79	79	79	79	80	80	80	79	78	79	80	79	79	80	81	81	81	82	81	80	1912
Mar ≈	81	81	81	82	81	80	81	81	81	82	81	80	80	80	80	80	80	80	81	81	81	81	81	81	1937
Apr ≈	79	80	80	80	82	81	81	81	82	82	82	82	81	81	81	80	79	79	79	80	79	79	78	78	1930
May ≈	92	91	92	92	92	93	93	94	94	95	94	94	95	95	95	95	95	93	92	92	92	92	91	91	2235
Jun ≈	103	103	103	103	102	99	99	100	100	100	99	99	100	102	102	101	102	102	101	102	101	100	101	102	2426
Jul ≈	105	105	106	105	105	105	106	106	106	106	106	105	104	103	104	105	104	106	105	106	105	105	105	107	2522
Aug ≈	106	105	105	104	104	105	105	106	105	106	106	107	106	105	105	105	105	105	105	105	106	106	105	105	2527
Sep ≈	105	105	106	106	106	105	103	104	107	107	106	106	107	108	107	108	107	107	107	107	105	105	105	106	2546
Oct ≈	74	75	78	79	78	80	80	83	83	82	84	84	84	83	81	80	78	77	77	77	77	77	74	73	1896
Nov ≈	86	85	86	86	85	86	85	84	84	84	86	87	86	85	85	85	86	86	86	86	86	86	86	87	2055
Dec	72	72	73	73	74	74	73	74	75	73	72	72	72	72	71	72	72	72	72	72	72	72	72	72	1742

1992		Mean diurnal variation of net longwave radiation																		10 ⁻² MJ m ⁻²					
Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	-12	-13	-12	-12	-13	-14	-15	-15	-14	-14	-13	-13	-13	-14	-13	-14	-13	-12	-12	-13	-13	-14	-14	-14	-318
Feb	-9	-10	-10	-9	-10	-9	-9	-9	-9	-9	-9	-10	-11	-10	-9	-9	-10	-9	-8	-8	-8	-8	-9	-9	-220
Mar	-9	-9	-9	-9	-9	-11	-11	-11	-11	-10	-11	-11	-11	-11	-10	-11	-11	-10	-10	-10	-10	-10	-10	-9	-243
Apr	-16	-15	-16	-16	-16	-17	-18	-16	-14	-13	-12	-11	-11	-11	-13	-14	-16	-17	-17	-17	-17	-17	-17	-17	-364
May	-10	-10	-10	-10	-10	-9	-8	-6	-5	-4	-3	-3	-3	-3	-3	-5	-6	-9	-9	-9	-9	-9	-10	-10	-169
Jun	-10	-10	-10	-10	-12	-14	-13	-11	-12	-13	-13	-14	-14	-15	-16	-16	-16	-17	-16	-13	-14	-15	-14	-13	-322
Jul	-15	-14	-14	-16	-17	-18	-18	-20	-21	-22	-23	-25	-25	-25	-24	-22	-22	-19	-19	-17	-16	-15	-14	-13	-454
Aug	-9	-10	-11	-12	-13	-13	-14	-15	-17	-17	-17	-17	-18	-18	-18	-17	-17	-16	-14	-13	-11	-10	-10	-10	-337
Sep	-7	-7	-6	-7	-7	-8	-10	-10	-9	-9	-10	-11	-10	-9	-9	-8	-7	-7	-7	-7	-8	-8	-8	-7	-194
Oct	-19	-18	-15	-15	-16	-15	-15	-13	-13	-13	-12	-12	-12	-13	-14	-14	-17	-17	-17	-16	-16	-16	-19	-19	-367
Nov	-10	-10	-9	-10	-10	-10	-10	-10	-10	-10	-9	-8	-9	-9	-10	-9	-9	-9	-9	-10	-10	-10	-10	-9	-228
Dec	-16	-16	-15	-15	-15	-15	-15	-15	-14	-16	-17	-17	-17	-17	-17	-17	-16	-16	-16	-16	-16	-17	-16	-16	-382

1992		Mean diurnal variation of net radiation																10 ⁻² MJ m ⁻²							
Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Total
Jan	-12	-13	-12	-12	-13	-14	-15	-15	-14	-14	-13	-13	-13	-14	-13	-14	-13	-12	-12	-13	-13	-14	-14	-14	-318
Feb	-9	-10	-10	-9	-10	-9	-9	-9	-9	-9	-9	-10	-11	-10	-9	-9	-10	-9	-8	-8	-8	-8	-9	-9	-218
Mar	-9	-9	-9	-9	-9	-10	-10	-9	-7	-5	-4	-4	-5	-7	-6	-8	-10	-10	-9	-10	-10	-10	-10	-9	-198
Apr	-15	-14	-15	-14	-11	-10	-7	-3	1	5	9	11	10	8	3	-2	-7	-11	-13	-15	-16	-16	-17	-17	-156
May	-7	-7	-5	-4	-1	3	7	11	15	17	20	19	19	17	14	11	7	2	-1	-2	-3	-5	-6	-7	114
Jun	5	8	12	17	26	33	40	49	59	67	72	69	65	59	54	49	38	30	20	16	12	8	7	4	818
Jul	7	11	14	20	29	38	46	54	60	68	73	77	73	66	59	55	47	36	27	20	13	10	7	7	916
Aug	-4	-3	-1	3	8	16	23	29	35	39	43	41	42	35	33	27	21	13	7	2	-1	-4	-6	-6	391
Sep	-7	-7	-6	-6	-4	-3	0	6	10	12	15	16	14	14	9	5	1	-2	-4	-6	-7	-8	-8	-7	27
Oct	-19	-18	-15	-15	-16	-15	-15	-13	-12	-12	-10	-10	-10	-11	-13	-14	-17	-17	-17	-16	-16	-16	-19	-19	-358
Nov	-10	-10	-9	-10	-10	-10	-10	-10	-10	-10	-9	-8	-9	-9	-10	-9	-9	-9	-9	-10	-10	-10	-10	-9	-228
Dec	-16	-16	-15	-15	-15	-15	-15	-15	-14	-16	-17	-17	-17	-17	-17	-17	-16	-16	-16	-16	-16	-17	-16	-16	-382

Type D tables 1988 - 92
Monthly and
annual totals

1988

Monthly and annual totals

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Global radiation (10^{-2} MJ m $^{-2}$)	-	-	-	-	-	-	58590=	23281=	8370=	558=	0=	0=	-
Sky radiation (10^{-2} MJ m $^{-2}$)	-	-	-	-	-	-	-	-	-	-	-	-	-
Direct radiation (10^{-2} MJ m $^{-2}$)	-	-	-	-	-	-	-	-	-	-	-	-	-
Ultraviolet radiation (10^{-2} MJ m $^{-2}$)	-	-	-	-	-	-	27032=	11594=	4680=	-	-	-	-
Net shortwave radiation (10^{-2} MJ m $^{-2}$)	-	-	-	-	-	-	50995=	19933=	1590=	62=	0=	0=	-
Downward longwave rad. (10^{-2} MJ m $^{-2}$)	-	-	-	-	-	-	75950=	82026=	60480=	60357=	49770=	51491=	-
Net longwave radiation (10^{-2} MJ m $^{-2}$)	-	-	-	-	-	-	-17422=	-8153=	-10200=	-9920=	-12510=	-6107=	-
Net radiation (10^{-2} MJ m $^{-2}$)	-	-	-	-	-	-	33604=	11780=	-8610=	-9858=	-12510=	-6107=	-

1989

Monthly and annual totals

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Global radiation (10^{-2} MJ m $^{-2}$)	0=	196	7967=	30270	56420=	60600=	45105=	26195=	11490=	1147=	0	0	239390
Sky radiation (10^{-2} MJ m $^{-2}$)	-	-	-	-	-	-	-	-	-	-	-	-	-
Direct radiation (10^{-2} MJ m $^{-2}$)	-	-	-	-	-	-	-	-	-	-	-	-	-
Ultraviolet radiation (10^{-2} MJ m $^{-2}$)	-	-	-	-	-	-	21359=	12555=	5820=	713=	0	0	-
Net shortwave radiation (10^{-2} MJ m $^{-2}$)	0=	28	992=	5520	11811=	33000=	39866=	21483=	4380=	186=	0	0	117266
Downward longwave rad. (10^{-2} MJ m $^{-2}$)	51553=	46200	58590=	63990	69874=	74610=	82429=	82150=	70410=	68076=	61800	52731	782413
Net longwave radiation (10^{-2} MJ m $^{-2}$)	-9176=	-5712	-6820=	-8580	-9300=	-7920=	-13671=	-10013=	-8430=	-8370=	-9270	-13578	-110840
Net radiation (10^{-2} MJ m $^{-2}$)	-9176=	-5684	-5797=	-3060	2480=	25080=	26195=	11470=	-4050=	-8153=	-9270	-13578	6457

1990

Monthly and annual totals

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Global radiation (10^{-2} MJ m $^{-2}$)	0=	224	6665	26670=	57722	50280=	37262	28830	7170=	899=	0=	0=	215722
Sky radiation (10^{-2} MJ m $^{-2}$)	-	-	-	-	-	-	30473	18755	5250=	775=	0=	0=	-
Direct radiation (10^{-2} MJ m $^{-2}$)	-	-	-	-	-	-	-	-	-	-	-	-	-
Ultraviolet radiation (10^{-2} MJ m $^{-2}$)	-	-	-	-	-	28380=	19468	13702	3510=	-	0=	0=	-
Net shortwave radiation (10^{-2} MJ m $^{-2}$)	0=	28	1023	3660=	9238	17820=	33387	23870	6210=	620=	0=	0=	95856
Downward longwave rad. (10^{-2} MJ m $^{-2}$)	64108=	52836=	53134	65820=	69533	78390=	84475	78647	78540=	71052=	54270=	62031=	812836
Net longwave radiation (10^{-2} MJ m $^{-2}$)	-11749=	-11508	-11129	-4380=	-5921	-420=	-9982	-12896	-6210=	-7316=	-10830=	-9641=	-101982
Net radiation (10^{-2} MJ m $^{-2}$)	-11749=	-11480	-10106	-690=	3317	17400=	23405	10943	0=	-6696=	-10830=	-9641=	-6127

1991

Monthly and annual totals

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Global radiation	(10 ⁻² MJ m ⁻²)	0	140	5983	28260 [~]	50809 [~]	65040 [~]	43586 [~]	25699 [~]	12210	1240	0	0	232967
Sky radiation	(10 ⁻² MJ m ⁻²)	0	112	4526	15630 [~]	32953 [~]	39720 [~]	33449 [~]	17050 [~]	7920	1054	0	0	152414
Direct radiation	(10 ⁻² MJ m ⁻²)	-	-	-	-	-	61950 [~]	24428 [~]	28148 [~]	19440 [~]	1209 [~]	0 [~]	0 [~]	-
Ultraviolet radiation	(kJ m ⁻²)	0	0 [~]	-	14040 [~]	25203 [~]	31830 [~]	21793 [~]	11873 [~]	6210	775	0 [~]	0 [~]	-
Net shortwave radiation	(10 ⁻² MJ m ⁻²)	0	28	775	4890 [~]	9951 [~]	34320 [~]	38967 [~]	21483 [~]	3780	248	0	0	114442
Downward longwave rad.	(10 ⁻² MJ m ⁻²)	57071	57064	63674	55170 [~]	67704 [~]	72180 [~]	80042 [~]	81034 [~]	66510	65069	54180	57629	777327
Net longwave radiation	(10 ⁻² MJ m ⁻²)	-10633	-5852	-8463	-9030 [~]	-8215 [~]	-8220 [~]	-10757 [~]	-9765 [~]	-9570	-8711	-11280	-11005	-111501
Net radiation	(10 ⁻² MJ m ⁻²)	-10633	-5824	-7657	-4140 [~]	1767 [~]	26070 [~]	28210 [~]	11749 [~]	-5760	-8463	-11280	-11005	3034

1992

Monthly and annual totals

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Global radiation	(10 ⁻² MJ m ⁻²)	0 [~]	232 [~]	7936 [~]	30780	46562 [~]	59970 [~]	48608 [~]	26164 [~]	8640 [~]	930 [~]	0 [~]	0	229822
Sky radiation	(10 ⁻² MJ m ⁻²)	0 [~]	203 [~]	5766 [~]	20790	37386 [~]	38880 [~]	33201 [~]	19406 [~]	6690 [~]	806 [~]	0 [~]	0	163128
Direct radiation	(10 ⁻² MJ m ⁻²)	0 [~]	0 [~]	6107 [~]	28440	22475 [~]	45270 [~]	35061 [~]	-	-	-	-	-	-
Ultraviolet radiation	(kJ m ⁻²)	0 [~]	174 [~]	4030 [~]	14400	24521 [~]	29370 [~]	22382 [~]	11966 [~]	4080 [~]	651 [~]	-	-	-
Net shortwave radiation	(10 ⁻² MJ m ⁻²)	0 [~]	29 [~]	1395 [~]	6240	8804 [~]	34200 [~]	42470 [~]	22599 [~]	6630 [~]	279 [~]	0 [~]	0	122646
Downward longwave rad.	(10 ⁻² MJ m ⁻²)	59210 [~]	55448 [~]	60047 [~]	57900	69285 [~]	72780 [~]	78182 [~]	78337 [~]	76380 [~]	58776 [~]	61650 [~]	54002	781997
Net longwave radiation	(10 ⁻² MJ m ⁻²)	-9858 [~]	-6380 [~]	-7533 [~]	-10920	-5239 [~]	-9660 [~]	-14074 [~]	-10447 [~]	-5820 [~]	-11377 [~]	-6840 [~]	-11842	-109990
Net radiation	(10 ⁻² MJ m ⁻²)	-9858 [~]	-6322 [~]	-6138 [~]	-4680	3534 [~]	24540 [~]	28396 [~]	11211 [~]	810 [~]	-11098 [~]	-6840 [~]	-11842	12623

