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International Commission on Illumination
Commission Internationale de l'Eclairage
Internationale Beleuchtungskommission

TECHNICAL REPORT

Recommended Reference Solar Spectra for Industrial Applications

CIE 241:2020

UDC:	535.231.16 535.334	Descriptor:	Irradiance Solar spectra

THE INTERNATIONAL COMMISSION ON ILLUMINATION

The International Commission on Illumination (CIE) is an organization devoted to international co-operation and exchange of information among its member countries on all matters relating to the art and science of lighting. Its membership consists of the National Committees in about 40 countries.

The objectives of the CIE are:

1. To provide an international forum for the discussion of all matters relating to the science, technology and art in the fields of light and lighting and for the interchange of information in these fields between countries.
2. To develop basic standards and procedures of metrology in the fields of light and lighting.
3. To provide guidance in the application of principles and procedures in the development of international and national standards in the fields of light and lighting.
4. To prepare and publish standards, reports and other publications concerned with all matters relating to the science, technology and art in the fields of light and lighting.
5. To maintain liaison and technical interaction with other international organizations concerned with matters related to the science, technology, standardization and art in the fields of light and lighting.

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A plenary session is held every four years at which the work of the Divisions and Technical Committees is reported and reviewed, and plans are made for the future. The CIE is recognized as the authority on all aspects of light and lighting. As such it occupies an important position among international organizations.

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La Commission Internationale de l'Eclairage (CIE) est une organisation qui se donne pour but la coopération internationale et l'échange d'informations entre les Pays membres sur toutes les questions relatives à l'art et à la science de l'éclairage. Elle est composée de Comités Nationaux représentant environ 40 pays.

Les objectifs de la CIE sont :

1. De constituer un centre d'étude international pour toute matière relevant de la science, de la technologie et de l'art de la lumière et de l'éclairage et pour l'échange entre pays d'informations dans ces domaines.
2. D'élaborer des normes et des méthodes de base pour la métrologie dans les domaines de la lumière et de l'éclairage.
3. De donner des directives pour l'application des principes et des méthodes d'élaboration de normes internationales et nationales dans les domaines de la lumière et de l'éclairage.
4. De préparer et publier des normes, rapports et autres textes, concernant toutes matières relatives à la science, la technologie et l'art dans les domaines de la lumière et de l'éclairage.
5. De maintenir une liaison et une collaboration technique avec les autres organisations internationales concernées par des sujets relatifs à la science, la technologie, la normalisation et l'art dans les domaines de la lumière et de l'éclairage.

Les travaux de la CIE sont effectués par Comités Techniques, organisés en six Divisions. Les sujets d'études s'étendent des questions fondamentales, à tous les types d'applications de l'éclairage. Les normes et les rapports techniques élaborés par ces Divisions Internationales de la CIE sont reconnus dans le monde entier.
Tous les quatre ans, une Session plénière passe en revue le travail des Divisions et des Comités Techniques, en fait rapport et établit les projets de travaux pour l'avenir. La CIE est reconnue comme la plus haute autorité en ce qui concerne tous les aspects de la lumière et de l'éclairage. Elle occupe comme telle une position importante parmi les organisations internationales.

DIE INTERNATIONALE BELEUCHTUNGSKOMMISSION

Die Internationale Beleuchtungskommission (CIE) ist eine Organisation, die sich der internationalen Zusammenarbeit und dem Austausch von Informationen zwischen ihren Mitgliedsländern bezüglich der Kunst und Wissenschaft der Lichttechnik widmet. Die Mitgliedschaft besteht aus den Nationalen Komitees in rund 40 Ländern.

Die Ziele der CIE sind:

1. Ein internationales Forum für Diskussionen aller Fragen auf dem Gebiet der Wissenschaft, Technik und Kunst der Lichttechnik und für den Informationsaustausch auf diesen Gebieten zwischen den einzelnen Ländern zu sein.
2. Grundnormen und Verfahren der Messtechnik auf dem Gebiet der Lichttechnik zu entwickeln.
3. Richtlinien für die Anwendung von Prinzipien und Vorgängen in der Entwicklung internationaler und nationaler Normen auf dem Gebiet der Lichttechnik zu erstellen.
4. Normen, Berichte und andere Publikationen zu erstellen und zu veröffentlichen, die alle Fragen auf dem Gebiet der Wissenschaft, Technik und Kunst der Lichttechnik betreffen.
5. Liaison und technische Zusammenarbeit mit anderen internationalen Organisationen zu unterhalten, die mit Fragen der Wissenschaft, Technik, Normung und Kunst auf dem Gebiet der Lichttechnik zu tun haben.

Die Arbeit der CIE wird durch Technische Komitees geleistet, die in sechs Divisionen organisiert sind. Diese Arbeit betrifft Gebiete mit grundlegendem Inhalt bis zu allen Arten der Lichtanwendung. Die Normen und Technischen Berichte, die von diesen international zusammengesetzten Divisionen ausgearbeitet werden, sind auf der ganzen Welt anerkannt.
Alle vier Jahre findet eine Session statt, in der die Arbeiten der Divisionen berichtet und überprüft werden, sowie neue Pläne für die Zukunft ausgearbeitet werden. Die CIE wird als höchste Autorität für alle Aspekte des Lichtes und der Beleuchtung angesehen. Auf diese Weise unterhält sie eine bedeutende Stellung unter den internationalen Organisationen.

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Recommended Reference Solar Spectra for Industrial Applications

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This Technical Report has been prepared by CIE Technical Committee (TC) 2-88 of Division 2 "Physical Measurement of Light and Radiation" and has been approved by the Board of Administration and by Division 2 of the Commission Internationale de l'Eclairage. The document reports on current knowledge and experience within the specific field of light and lighting described, and is intended to be used by all with an interest in excellence in light and lighting. The information provided here is advisory, and not mandatory.

Ce rapport technique a été élaboré par le Comité Technique (TC) 2-88 de la CIE Division 2 "Mesures Physiques de la Lumière et des Radiations" et a été approuvé par le Bureau et Division 2 de la Commission Internationale de l'Eclairage. Le document expose les connaissances et l'expérience actuelles dans le domaine particulier de la lumière et de l'éclairage décrit ici. Il est destiné à être utilisé par tous ceux qui s'intéressent à l'excellence de la lumière et de l'éclairage. Les informations fournies ici sont données à titre indicatif et non obligatoire.

Dieser Technische Bericht ist vom Technischen Komitee (TC) 2-88 der CIE Division 2 "Physikalische Messungen von Licht und Strahlung" ausgearbeitet und vom Vorstand sowie Division 2 der Commission Internationale de l'Eclairage gebilligt worden. Das Dokument berichtet über den derzeitigen Stand des Wissens und Erfahrung in dem behandelten Gebiet von Licht und Beleuchtung; es ist zur Verwendung durch alle an Licht- und Beleuchtungsqualität Interessierte bestimmt. Die in diesem Dokument gegebenen Informationen sind eine Empfehlung und keine Vorschrift.

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The following members of TC 2-88 "Standard Reference Solar Spectra for Industrial Applications" took part in the preparation of this technical report. The committee comes under Division 2 "Physical Measurement of Light and Radiation".

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CONTENTS

RECOMMENDED REFERENCE SOLAR SPECTRA FOR INDUSTRIAL APPLICATIONS

Summary

This document provides CIE recommended reference solar spectra for industrial applications. It contains a large selection of simulation benchmarks for total, direct and diffuse components of solar spectra under various atmospheric conditions and solar geometries (defined by the air mass). For this purpose a freely available solar spectral irradiance model has been used to generate tables and figures of solar spectral irradiance under a number of different atmospheric conditions, in the form of explicit meteorological input parameters. The data as provided in this document are to a large extent comparable to those in CIE 085-1989, but they are presented with a higher spectral sampling. The respective solar spectra are the basis for national and international standard reference spectra for various applications. They have been extensively validated against measured spectra.

This document cancels and replaces CIE 085-1989.

SPECTRES SOLAIRES ETALONS RECOMMANDES POUR LES APPLICATIONS INDUSTRIELLES

Résumé

Ce document fournit les spectres solaires de référence de la CIE pour des applications industrielles. Il contient une large sélection de simulations pour les composantes diffuses, directes et totales de spectres solaires sous différentes conditions atmosphériques et différentes positions solaires (définies par la masse d'air). Pour faire ceci, un modèle libre d'éclairement énergétique du soleil a été utilisé pour générer les tableaux et les figures d'éclairement solaire en fonction de la longueur d'onde, pour un certain nombre de conditions atmosphériques, sous la forme de paramètres d'entrée météorologiques explicites. Les données fournies dans ce document sont, pour une part importante, comparables à celles de la publication CIE 085-1989, mais elles sont reportées avec un pas spectral plus fin. Ces spectres solaires sont à l'origine des spectres de référence utilisés dans les normes nationales et internationales pour des applications variées. Ils ont été largement validés par des mesures spectrales.

Ce document annule et remplace CIE 085-1989.

EMPFOHLENE REFERENZ-SOLARSPEKTREN FÜR INDUSTRIELLE ANWENDUNGEN

Zusammenfassung

Dieses Dokument stellt von der CIE empfohlene Referenzsolarspektren für industrielle Anwendungen zur Verfügung. Es beinhaltet eine große Auswahl von Simulationsrichtwerten für totale, direkte und diffuse Komponenten von Solarspektren für verschiedene atmosphärische Bedingungen und solare Geometrien (definiert durch die Luftmasse). Für diesen Zweck wurde ein frei erhältliches Modell für die Generierung von Tabellen und Graphiken der Solarspektralbeleuchtungsstärke unter verschiedenen atmosphärischen Bedingungen in Form expliziter meteorologischer Eingabeparameter verwendet. Die in diesem Dokument bereitgestellten Daten sind weitgehend vergleichbar zu den Daten in CIE 085-1989, aber sie werden mit einer größeren spektralen Auflösung präsentiert. Die entsprechenden Solarspektren sind die Grundlage für nationale und internationale Standardreferenzspektren für verschiedene Anwendungen. Sie wurden ausführlich gegenüber Messdaten validiert.

Dieses Dokument ersetzt CIE 085-1989.

1 Introduction

This document provides recommendations for simulated solar spectral irradiance values for industrial applications. It replaces CIE 085-1989 "Solar Spectral Irradiance".

The document contains a large selection of simulated solar radiation spectra for total, direct and diffuse components under various atmospheric conditions of clear sky and solar geometries (defined by the air mass (AM)). Such reference spectra as specified e.g. in ISO 4892 (ISO 2016) are useful for predicting the outcome of the effect of solar radiation and its variation in a number of areas when combined with the optical properties of materials. These include:

- daylighting;
- passive solar energy, photochemical applications;
- optical properties of window and fenestration technologies;
- building energy simulation;
- solar loading of vehicles, construction materials and other surfaces;
- calibration of ultraviolet radiometers;
- solar thermal and photovoltaic energy technologies.

To update CIE 085-1989 (CIE 1989), this document provides extended spectral data for the shorter wavelength region and the spectral data with short and regular intervals of wavelength, based on more recent measurements and an improved calculation model. Historical information is described in Annex D and the relation between this document and CIE 085-1989 is described in Annex E.

2 General considerations

Solar radiation propagating through the atmosphere is attenuated by absorption and scattering by molecules, gases, particles, water vapour, water droplets, and ice crystals. These processes decompose the solar radiation into constituents referred to as solar radiation ‘components’. The collimated part of the extraterrestrial solar radiation arriving at the Earth’s surface is the direct radiation, also called direct beam radiation, measured as direct normal irradiance (irradiance on a plane normal, or perpendicular, to the line connecting the observer and the centre of the solar disk). Solar radiation scattered by the atmosphere into the hemisphere of the sky is the global solar diffuse radiation, i.e. the diffuse component of radiation. The total global solar irradiance, E_{H}, incident on any plane is the combination of the direct normal irradiance multiplied by the cosine of the incidence angle of the beam, plus the irradiance resulting from the diffuse global sky radiation. If the plane is tilted away from horizontal, an irradiance component resulting from the reflected ground radiation based on albedo[1] must also be added; thus

$$E_{\mathrm{H}} = [E_{\mathrm{Dir,N}} \cos \theta] + E_{\mathrm{Dif}} + E_{\mathrm{R}}. \quad (1)$$

where

E_{H} is the total global solar irradiance;

$E_{\mathrm{Dir,N}}$ is the direct normal irradiance;

θ is the angle between the normal to the plane and the direction from the base of the normal to the centre of the solar disc;

E_{Dif} is the diffuse global sky irradiance;

E_{R} is the irradiance component resulting from the reflected ground radiation based on albedo.

NOTE The terms "global" and "hemispherical" are used as synonyms for the characterization of sky radiation. For the matter of consistency the term "global" is used in this document.

[1] Albedo is defined as the ratio of total irradiance reflected to the total irradiance received by a surface.

3 Extraterrestrial spectral irradiance

3.1 Solar constant

The solar radiation at the top of the atmosphere is referred to as the extraterrestrial solar radiation. Direct measurements of the extraterrestrial solar radiation from satellites, rockets, and balloon flights have been reported by Fröhlich and Lean (2004). In 1981, the World Meteorological Organization Commission for Instruments and Methods of Observation (WMO-CIMO) adopted the extraterrestrial solar irradiance (solar constant) of E_0 = (1,367 ± 0,007) kW·m^{-2}, but since then slightly lower values have been proposed in the literature. Short term fluctuations of the solar constant are confined to within the uncertainty limit of ± 0,5 %. Long term fluctuations of larger magnitude cannot be excluded based on the present state of knowledge.

3.2 Extraterrestrial solar spectrum

The starting point for computing terrestrial solar spectral irradiance is the extraterrestrial solar spectrum.

The extraterrestrial solar irradiance spectrum, $E_{\lambda,0}(\lambda)$, used in the computations is that of Gueymard (2004, 2005). It integrates to 1,3661 kW·m^{-2} and is tabulated in Table A.1 with a wavelength step of 5 nm. Figure 1 is a plot of the extraterrestrial solar spectrum on the basis of smaller sampling intervals ($\Delta\lambda$ = 0,5 nm for wavelengths from 280 nm to 400 nm, $\Delta\lambda$ = 1,0 nm for wavelengths from 400 nm to 1 700 nm, and $\Delta\lambda$ = 5 nm for wavelengths from 1 705 nm to 4 000 nm).

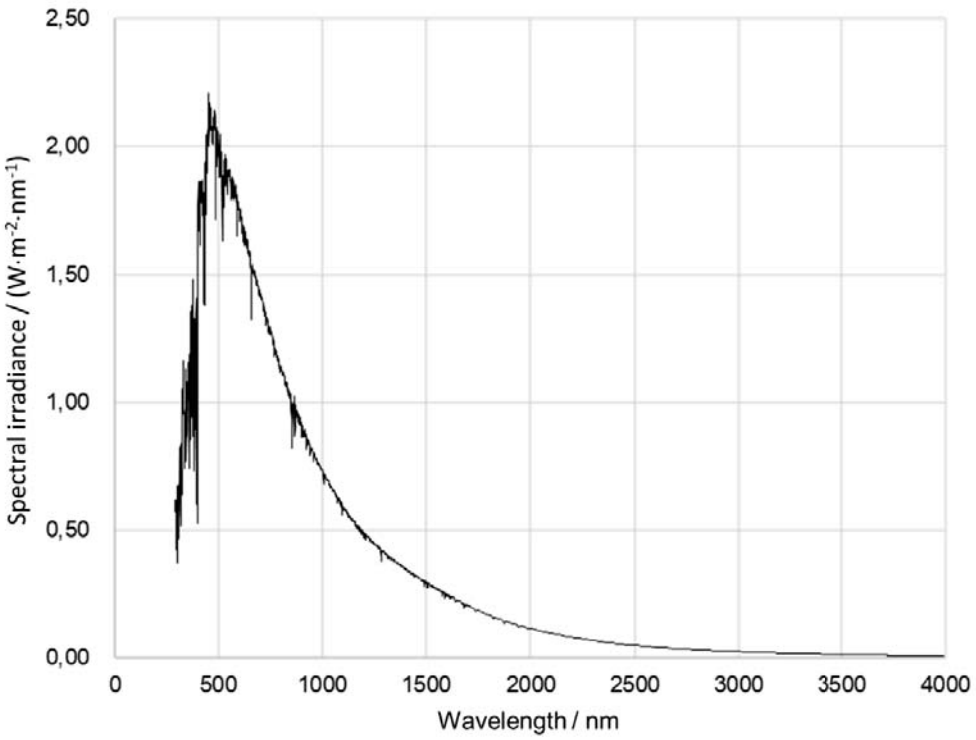

Figure 1 – Gueymard (2004) extraterrestrial solar spectrum used to generate the terrestrial spectra tabulated in Annex A

3.3 Variation during the year

Due to the elliptical nature of the Earth's orbit around the sun, the value of the extraterrestrial solar irradiance, E_j, varies according to the day of the year based on the inverse square law, as:

$$E_j = E_0 \, (R_0/R_j)^2 \tag{2}$$

where

E_0 is the extraterrestrial irradiance at the *mean* Earth-Sun distance R_0 (also referred to as the "Solar Constant");

R_0 is the mean Earth-Sun distance ($1{,}50 \times 10^8$ km);

R_j is the magnitude of the radius vector between the Sun and Earth on day j of the year (j = 1 … 365).

R_j may be computed with sufficient accuracy using

$$(R_0 \,/\, R_j)^2 = 1 + 2\varepsilon \, \cos\,[\omega\,(j - 1) - \psi] \tag{3}$$

where

ε 0,0167 is the eccentricity of the Earth's orbit;

ω 360°/365,25 = 0,9856° is the mean angular velocity of the Earth per day;

j is the day of the year, counted from January 1, 12:00 noon true solar time (TST);

ψ 1,735° is the difference in geocentric longitude between perihelion and that at January 1, 12:00 noon TST.

After insertion of numerical values, Equation (3) becomes:

$$(R_0 \,/\, R_j)^2 = 1 + 0{,}0334 \times \cos\,(0{,}9856°\,(j - 1) - 1{,}735°) \tag{4}$$

Thus, the distance correction $(R_0 \,/\, R_j)^2$ varies from 1,0334 at perihelion (approx. January 3*) to 0,9666 at aphelion (approximately July 3*), or ± 3,3 % throughout the year.

3.4 Direct and global clear sky spectra

The terrestrial spectral irradiance is calculated as the product of the extraterrestrial spectral irradiance and various spectrally dependent transmittance functions for atmospheric constituents:

$$E_\lambda(\lambda) = E_{\lambda,0}(\lambda)\,\tau_r(\lambda)\,\tau_o(\lambda)\,\tau_{mg}(\lambda)\,\tau_{tg}(\lambda)\,\tau_w(\lambda)\,\tau_a(\lambda) \tag{5}$$

where

$E_\lambda(\lambda)$ is the terrestrial spectral irradiance;

$E_{\lambda,0}(\lambda)$ is the extraterrestrial spectral irradiance;

$\tau_r(\lambda)$ is the spectral transmittance for Rayleigh scattering;

$\tau_o(\lambda)$ is the spectral transmittance for ozone absorption;

$\tau_{mg}(\lambda)$ is the spectral transmittance for mixed gases absorption;

$\tau_{tg}(\lambda)$ is the spectral transmittance for trace gases absorption;

$\tau_w(\lambda)$ is the spectral transmittance for water vapour absorption;

$\tau_a(\lambda)$ is the spectral transmittance for aerosol extinction.

* The precise date and time vary from year to year; the approximations used here are accurate enough for engineering applications discussed in this document.

Since transmittance τ can be expressed as an exponential function of the product of absorption coefficient, a, and path length, L, through the atmospheric constituent that the radiation traverses, (i.e. $\tau \approx \exp(-a \cdot L)$), atmospheric constituents such as water vapour and ozone (O_3) are specified in (normalized) terms of equivalent physical depths (in cm or mm) per unit area, as if they were condensed completely out of the atmosphere. Thus, units for these equivalent depth constituents are denoted 'atmosphere cm' (atm-cm). Other absorbing and scattering constituents such as aerosols are specified in terms of their 'optical depth'. Reference laboratory spectroscopic data are used to parameterize the temperature-dependent absorption by other gases. Rayleigh scattering is parameterized as a function of wavelength and pressure based on recent depolarization data (Bucholtz 1995; Bodhaine et al. 1999). Aerosol transmittance is parameterized using Ångström's law and band-integrated values of Ångström's turbidity coefficients for a variety of aerosol models.

In this document, the reference spectra are evaluated at sea level under normal atmospheric pressure.

Based on Equation (5) the solar spectral model (Annex B) generates the spectral irradiance values listed in the tables of Annex A. A collection of plots of the data in the tables in Annex A are shown in Annex C.

4 CIE tabular data set

For ease of reference, the 22 computed spectral irradiance spectra are designated with labels indicating the type of spectrum. The labels, with their associated atmospheric conditions and solar geometry, are shown in Table 1. The label designations (accompanied by the symbols for the respective spectral quantities in parentheses) are:

- CIE-E0 ($E_{\lambda,0}$) Extraterrestrial solar irradiance at the top of the Earth's atmosphere;
- CIE-Hn ($E_{\lambda,\mathrm{H}n}$) Global solar spectral irradiance at sea level (E_{DirN} + E_{Dif}) for n = 1 to 11.
- CIE-DNn ($E_{\lambda,\mathrm{DN}n}$) Direct normal spectral irradiance at sea level for n = 1 to 7;
- CIE-Dn ($E_{\lambda,\mathrm{D}n}$) Direct spectral irradiance projected on a horizontal surface at sea level ($E_{\mathrm{DirN}} \cdot \cos(z)$, where z is the zenith angle or $\cos(z)$ = 1 / (air mass)) for n = 1 to 3;

Spectral data in this document are given in 5 nm intervals. However, these tables were generated using data generated for intervals of 0,5 nm and 1,0 nm, depending on the spectral region. The spectral irradiance data described in Annex A have been generated at each interval and then convolved with a 5 nm bandpass filter (full width at half maximum (FWHM)). A Gaussian transmission shape of the filter is used for this convolution. The original data prior to convolution are at intervals of $\Delta\lambda$ = 0,5 nm for wavelengths from 280 nm to 400 nm, $\Delta\lambda$ = 1,0 nm for wavelengths from 400 nm to 1 700 nm, and $\Delta\lambda$ = 5 nm for wavelengths from 1 700 nm to 4 000 nm. Annex B provides a description of the model, and of further details associated with the generation of each of the 22 individual spectra reported in the tables. Options for the user to generate data with smaller wavelength intervals are described in Annex B.1.

Data for the spectra defined in this document are downloadable from the CIE server at http://files.cie.co.at/CIE_TC2-88_1nm_5nm_data-20200130.xlsx. These tables use 1 nm data with 1 nm FWHM over the range 290 nm to 1 700 nm and 5 nm data with 5 nm FWHM over the range 1 700 nm to 3 990 nm. This is because the extraterrestrial solar spectrum used in this computation for 1 700 nm to 3 990 nm is given in 5 nm intervals.

The various reference spectral irradiance distributions can be obtained as a function of various parameters including FWHM. Individual values are thus dependent on the FWHM chosen for the calculation. Therefore, it is not appropriate to reference an independent single irradiance spectrum without stating the specific underlying FWHM and other relevant conditions.

Interpolations of the data in 5 nm intervals are not recommended. For accurate calculations the data in 1 nm intervals should be used.

Table 1– Specifications for CIE spectral irradiance data in Tables A.1 through A.8

Spectrum Label	Spectrum Symbol	Spectrum Description	Air Mass	Water Vapour (atm-cm)	O_3 content (atm-cm)	AOD[a] at 500 nm	Albedo (Ground)	Annex A Table
CIE-E0	$E_{\lambda,0}$	Extraterrestrial solar	0	N/A	N/A	N/A	N/A	A.1
CIE-H1	$E_{\lambda,H1}$	Global	1,0	1,42	0,34	0,10	0,20	A.2
CIE-H2	$E_{\lambda,H2}$	Global	1,0	1,42	0,34	0,27	0,20	A.3
CIE-H3	$E_{\lambda,H3}$	Global	1,0	2,00	0,30	0,20	0,20	A.4
CIE-H4	$E_{\lambda,H4}$	Global	1,0	0,00	0,00	0,00	0,00	A.4
CIE-H5	$E_{\lambda,H5}$	Global	1,0	2,00	0,30	0,00	0,00	A.4
CIE-H6	$E_{\lambda,H6}$	Global	1,0	4,00	0,60	0,00	0,00	A.4
CIE-H7	$E_{\lambda,H7}$	Global	1,0	2,00	0,30	0,00	0,20	A.4
CIE-H8	$E_{\lambda,H8}$	Global	1,0	2,00	0,30	0,40	0,20	A.4
CIE-H9	$E_{\lambda,H9}$	Global	1,5	2,00	0,30	0,20	0,20	A.5
CIE-H10	$E_{\lambda,H10}$	Global	2,0	2,00	0,30	0,20	0,20	A.5
CIE-H11	$E_{\lambda,H11}$	Global	5,6	2,00	0,30	0,20	0,20	A.5
CIE-DN1	$E_{\lambda,DN1}$	Direct normal	1,0	1,42	0,34	0,10	0,20	A.6
CIE-DN2	$E_{\lambda,DN2}$	Direct normal	1,0	1,42	0,34	0,27	0,20	A.7
CIE-DN3	$E_{\lambda,DN3}$	Direct normal	1,0	2,00	0,30	0,20	0,20	A.8
CIE-DN4	$E_{\lambda,DN4}$	Direct normal	1,0	0,00	0,00	0,00	0,00	A.8
CIE-DN5	$E_{\lambda,DN5}$	Direct normal	1,0	2,00	0,30	0,00	0,00	A.8
CIE-DN6	$E_{\lambda,DN6}$	Direct normal	1,0	4,00	0,60	0,00	0,00	A.8
CIE-DN7	$E_{\lambda,DN7}$	Direct normal	1,0	2,00	0,30	0,40	0,20	A.8
CIE-D1	$E_{\lambda,D1}$	Direct horizontal	1,5	2,00	0,30	0,20	0,20	A.8
CIE-D2	$E_{\lambda,D2}$	Direct horizontal	2,0	2,00	0,30	0,20	0,20	A.8
CIE-D3	$E_{\lambda,D3}$	Direct horizontal	5,6	2,00	0,30	0,20	0,20	A.8

[a] AOD: Aerosol Optical Depth

Annex A
Spectral irradiance tables

NOTE All Annex A data include convolution with a 5 nm FWHM normal distribution bandpass function.

Table A.1 – CIE-E0 : Extraterrestrial solar irradiance at mean Earth-Sun distance

Wavelength nm	$E_{\lambda,0}$ $W \cdot m^{-2} \cdot nm^{-1}$	Wavelength nm	$E_{\lambda,0}$ $W \cdot m^{-2} \cdot nm^{-1}$	Wavelength nm	$E_{\lambda,0}$ $W \cdot m^{-2} \cdot nm^{-1}$	Wavelength nm	$E_{\lambda,0}$ $W \cdot m^{-2} \cdot nm^{-1}$
290	4,941E-01	545	1,893E+00	800	1,133E+00	1 055	6,524E-01
295	5,410E-01	550	1,891E+00	805	1,117E+00	1 060	6,410E-01
300	5,059E-01	555	1,877E+00	810	1,111E+00	1 065	6,362E-01
305	6,067E-01	560	1,827E+00	815	1,105E+00	1 070	6,234E-01
310	6,487E-01	565	1,830E+00	820	1,073E+00	1 075	6,223E-01
315	7,007E-01	570	1,819E+00	825	1,073E+00	1 080	6,139E-01
320	7,475E-01	575	1,835E+00	830	1,059E+00	1 085	6,073E-01
325	8,624E-01	580	1,820E+00	835	1,041E+00	1 090	6,008E-01
330	1,011E+00	585	1,807E+00	840	1,033E+00	1 095	5,812E-01
335	9,428E-01	590	1,751E+00	845	1,018E+00	1 100	5,855E-01
340	9,711E-01	595	1,770E+00	850	9,718E-01	1 105	5,851E-01
345	9,426E-01	600	1,737E+00	855	9,356E-01	1 110	5,801E-01
350	9,879E-01	605	1,736E+00	860	9,899E-01	1 115	5,741E-01
355	1,015E+00	610	1,713E+00	865	9,540E-01	1 120	5,668E-01
360	9,555E-01	615	1,669E+00	870	9,670E-01	1 125	5,584E-01
365	1,140E+00	620	1,670E+00	875	9,577E-01	1 130	5,526E-01
370	1,185E+00	625	1,642E+00	880	9,454E-01	1 135	5,485E-01
375	1,095E+00	630	1,639E+00	885	9,346E-01	1 140	5,395E-01
380	1,143E+00	635	1,621E+00	890	9,292E-01	1 145	5,397E-01
385	9,852E-01	640	1,602E+00	895	9,148E-01	1 150	5,366E-01
390	1,144E+00	645	1,584E+00	900	8,931E-01	1 155	5,319E-01
395	1,067E+00	650	1,565E+00	905	8,937E-01	1 160	5,200E-01
400	1,600E+00	655	1,480E+00	910	8,766E-01	1 165	5,168E-01
405	1,734E+00	660	1,502E+00	915	8,774E-01	1 170	5,148E-01
410	1,751E+00	665	1,509E+00	920	8,559E-01	1 175	5,087E-01
415	1,826E+00	670	1,507E+00	925	8,398E-01	1 180	5,046E-01
420	1,802E+00	675	1,498E+00	930	8,497E-01	1 185	4,990E-01
425	1,764E+00	680	1,472E+00	935	8,411E-01	1 190	4,954E-01
430	1,588E+00	685	1,461E+00	940	8,208E-01	1 195	4,910E-01
435	1,771E+00	690	1,444E+00	945	8,160E-01	1 200	4,819E-01
440	1,883E+00	695	1,428E+00	950	8,140E-01	1 205	4,799E-01
445	2,000E+00	700	1,417E+00	955	7,912E-01	1 210	4,732E-01
450	2,102E+00	705	1,414E+00	960	7,935E-01	1 215	4,772E-01
455	2,104E+00	710	1,398E+00	965	7,815E-01	1 220	4,727E-01
460	2,118E+00	715	1,372E+00	970	7,770E-01	1 225	4,668E-01
465	2,088E+00	720	1,353E+00	975	7,664E-01	1 230	4,622E-01
470	2,056E+00	725	1,342E+00	980	7,604E-01	1 235	4,581E-01
475	2,089E+00	730	1,322E+00	985	7,532E-01	1 240	4,528E-01
480	2,108E+00	735	1,315E+00	990	7,431E-01	1 245	4,492E-01
485	1,957E+00	740	1,286E+00	995	7,397E-01	1 250	4,464E-01
490	1,977E+00	745	1,287E+00	1 000	7,318E-01	1 255	4,421E-01
495	2,006E+00	750	1,275E+00	1 005	7,108E-01	1 260	4,398E-01
500	1,950E+00	755	1,267E+00	1 010	7,171E-01	1 265	4,357E-01
505	1,960E+00	760	1,248E+00	1 015	7,070E-01	1 270	4,334E-01
510	1,932E+00	765	1,221E+00	1 020	6,970E-01	1 275	4,304E-01
515	1,828E+00	770	1,207E+00	1 025	6,961E-01	1 280	4,123E-01
520	1,826E+00	775	1,195E+00	1 030	6,867E-01	1 285	4,136E-01
525	1,882E+00	780	1,178E+00	1 035	6,752E-01	1 290	4,179E-01
530	1,913E+00	785	1,167E+00	1 040	6,699E-01	1 295	4,165E-01
535	1,909E+00	790	1,155E+00	1 045	6,620E-01	1 300	4,127E-01
540	1,869E+00	795	1,133E+00	1 050	6,585E-01	1 305	4,086E-01

Table A.1 continued

Wavelength nm	$E_{\lambda,0}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,0}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,0}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,0}$ W·m^{-2}·nm^{-1}
1 310	4,032E-01	1 595	2,507E-01	1 880	1,421E-01	2 165	8,317E-02
1 315	3,963E-01	1 600	2,483E-01	1 885	1,430E-01	2 170	8,503E-02
1 320	3,976E-01	1 605	2,451E-01	1 890	1,409E-01	2 175	8,561E-02
1 325	3,940E-01	1 610	2,396E-01	1 895	1,381E-01	2 180	8,499E-02
1 330	3,881E-01	1 615	2,375E-01	1 900	1,388E-01	2 185	8,460E-02
1 335	3,880E-01	1 620	2,360E-01	1 905	1,381E-01	2 190	8,368E-02
1 340	3,835E-01	1 625	2,387E-01	1 910	1,367E-01	2 195	8,339E-02
1 345	3,822E-01	1 630	2,369E-01	1 915	1,358E-01	2 200	8,257E-02
1 350	3,783E-01	1 635	2,303E-01	1 920	1,342E-01	2 205	8,083E-02
1 355	3,736E-01	1 640	2,220E-01	1 925	1,334E-01	2 210	8,053E-02
1 360	3,707E-01	1 645	2,237E-01	1 930	1,306E-01	2 215	8,023E-02
1 365	3,678E-01	1 650	2,239E-01	1 935	1,301E-01	2 220	7,971E-02
1 370	3,638E-01	1 655	2,243E-01	1 940	1,271E-01	2 225	7,877E-02
1 375	3,615E-01	1 660	2,238E-01	1 945	1,210E-01	2 230	7,831E-02
1 380	3,599E-01	1 665	2,199E-01	1 950	1,246E-01	2 235	7,764E-02
1 385	3,572E-01	1 670	2,161E-01	1 955	1,266E-01	2 240	7,665E-02
1 390	3,548E-01	1 675	2,117E-01	1 960	1,252E-01	2 245	7,619E-02
1 395	3,519E-01	1 680	2,043E-01	1 965	1,232E-01	2 250	7,545E-02
1 400	3,472E-01	1 685	2,079E-01	1 970	1,225E-01	2 255	7,463E-02
1 405	3,453E-01	1 690	2,090E-01	1 975	1,205E-01	2 260	7,417E-02
1 410	3,417E-01	1 695	2,088E-01	1 980	1,192E-01	2 265	7,354E-02
1 415	3,395E-01	1 700	2,049E-01	1 985	1,184E-01	2 270	7,321E-02
1 420	3,359E-01	1 705	2,027E-01	1 990	1,182E-01	2 275	7,265E-02
1 425	3,305E-01	1 710	1,985E-01	1 995	1,164E-01	2 280	7,151E-02
1 430	3,294E-01	1 715	1,992E-01	2 000	1,159E-01	2 285	7,108E-02
1 435	3,306E-01	1 720	1,961E-01	2 005	1,148E-01	2 290	7,062E-02
1 440	3,233E-01	1 725	1,934E-01	2 010	1,144E-01	2 295	6,923E-02
1 445	3,224E-01	1 730	1,908E-01	2 015	1,134E-01	2 300	6,921E-02
1 450	3,200E-01	1 735	1,822E-01	2 020	1,116E-01	2 305	6,900E-02
1 455	3,164E-01	1 740	1,848E-01	2 025	1,108E-01	2 310	6,846E-02
1 460	3,162E-01	1 745	1,857E-01	2 030	1,092E-01	2 315	6,764E-02
1 465	3,128E-01	1 750	1,845E-01	2 035	1,082E-01	2 320	6,673E-02
1 470	3,095E-01	1 755	1,842E-01	2 040	1,077E-01	2 325	6,547E-02
1 475	3,044E-01	1 760	1,818E-01	2 045	1,077E-01	2 330	6,561E-02
1 480	3,049E-01	1 765	1,798E-01	2 050	1,065E-01	2 335	6,515E-02
1 485	3,006E-01	1 770	1,784E-01	2 055	1,053E-01	2 340	6,491E-02
1 490	2,984E-01	1 775	1,759E-01	2 060	1,038E-01	2 345	6,461E-02
1 495	2,992E-01	1 780	1,737E-01	2 065	1,030E-01	2 350	6,354E-02
1 500	2,938E-01	1 785	1,727E-01	2 070	1,024E-01	2 355	6,233E-02
1 505	2,826E-01	1 790	1,721E-01	2 075	1,022E-01	2 360	6,248E-02
1 510	2,902E-01	1 795	1,702E-01	2 080	1,007E-01	2 365	6,231E-02
1 515	2,874E-01	1 800	1,683E-01	2 085	9,978E-02	2 370	6,161E-02
1 520	2,847E-01	1 805	1,669E-01	2 090	9,878E-02	2 375	6,095E-02
1 525	2,828E-01	1 810	1,652E-01	2 095	9,744E-02	2 380	6,050E-02
1 530	2,789E-01	1 815	1,586E-01	2 100	9,747E-02	2 385	5,874E-02
1 535	2,772E-01	1 820	1,560E-01	2 105	9,688E-02	2 390	5,906E-02
1 540	2,731E-01	1 825	1,597E-01	2 110	9,581E-02	2 395	5,887E-02
1 545	2,733E-01	1 830	1,593E-01	2 115	9,493E-02	2 400	5,851E-02
1 550	2,691E-01	1 835	1,577E-01	2 120	9,378E-02	2 405	5,816E-02
1 555	2,660E-01	1 840	1,556E-01	2 125	9,295E-02	2 410	5,766E-02
1 560	2,661E-01	1 845	1,533E-01	2 130	9,277E-02	2 415	5,611E-02
1 565	2,632E-01	1 850	1,533E-01	2 135	9,176E-02	2 420	5,623E-02
1 570	2,611E-01	1 855	1,521E-01	2 140	9,144E-02	2 425	5,606E-02
1 575	2,526E-01	1 860	1,501E-01	2 145	9,067E-02	2 430	5,581E-02
1 580	2,548E-01	1 865	1,480E-01	2 150	9,011E-02	2 435	5,521E-02
1 585	2,514E-01	1 870	1,451E-01	2 155	8,924E-02	2 440	5,501E-02
1 590	2,433E-01	1 875	1,359E-01	2 160	8,763E-02	2 445	5,431E-02

Table A.1 continued

Wavelength nm	$E_{\lambda,0}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,0}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,0}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,0}$ W·m^{-2}·nm^{-1}
2 450	5,343E-02	2735	3,631E-02	3020	2,507E-02	3305	1,774E-02
2 455	5,303E-02	2740	3,600E-02	3025	2,490E-02	3310	1,769E-02
2 460	5,313E-02	2745	3,585E-02	3030	2,470E-02	3315	1,751E-02
2 465	5,299E-02	2750	3,555E-02	3035	2,433E-02	3320	1,724E-02
2 470	5,224E-02	2755	3,505E-02	3040	2,398E-02	3325	1,732E-02
2 475	5,205E-02	2760	3,465E-02	3045	2,415E-02	3330	1,730E-02
2 480	5,107E-02	2765	3,467E-02	3050	2,415E-02	3335	1,719E-02
2 485	5,071E-02	2770	3,457E-02	3055	2,399E-02	3340	1,707E-02
2 490	5,080E-02	2775	3,428E-02	3060	2,384E-02	3345	1,701E-02
2 495	5,054E-02	2780	3,411E-02	3065	2,364E-02	3350	1,689E-02
2 500	5,036E-02	2785	3,390E-02	3070	2,353E-02	3355	1,680E-02
2 505	4,998E-02	2790	3,378E-02	3075	2,344E-02	3360	1,673E-02
2 510	4,925E-02	2795	3,355E-02	3080	2,326E-02	3365	1,659E-02
2 515	4,898E-02	2800	3,327E-02	3085	2,308E-02	3370	1,646E-02
2 520	4,884E-02	2805	3,305E-02	3090	2,297E-02	3375	1,641E-02
2 525	4,859E-02	2810	3,289E-02	3095	2,283E-02	3380	1,632E-02
2 530	4,828E-02	2815	3,265E-02	3100	2,268E-02	3385	1,624E-02
2 535	4,780E-02	2820	3,244E-02	3105	2,259E-02	3390	1,617E-02
2 540	4,707E-02	2825	3,220E-02	3110	2,240E-02	3395	1,597E-02
2 545	4,687E-02	2830	3,202E-02	3115	2,205E-02	3400	1,578E-02
2 550	4,660E-02	2835	3,183E-02	3120	2,209E-02	3405	1,582E-02
2 555	4,622E-02	2840	3,151E-02	3125	2,202E-02	3410	1,576E-02
2 560	4,590E-02	2845	3,135E-02	3130	2,190E-02	3415	1,563E-02
2 565	4,560E-02	2850	3,113E-02	3135	2,178E-02	3420	1,560E-02
2 570	4,539E-02	2855	3,095E-02	3140	2,164E-02	3425	1,551E-02
2 575	4,527E-02	2860	3,076E-02	3145	2,151E-02	3430	1,542E-02
2 580	4,473E-02	2865	3,048E-02	3150	2,127E-02	3435	1,538E-02
2 585	4,376E-02	2870	2,998E-02	3155	2,120E-02	3440	1,530E-02
2 590	4,404E-02	2875	2,981E-02	3160	2,113E-02	3445	1,521E-02
2 595	4,379E-02	2880	2,989E-02	3165	2,096E-02	3450	1,513E-02
2 600	4,357E-02	2885	2,975E-02	3170	2,081E-02	3455	1,504E-02
2 605	4,336E-02	2890	2,955E-02	3175	2,076E-02	3460	1,497E-02
2 610	4,300E-02	2895	2,940E-02	3180	2,060E-02	3465	1,488E-02
2 615	4,258E-02	2900	2,920E-02	3185	2,050E-02	3470	1,477E-02
2 620	4,175E-02	2905	2,901E-02	3190	2,040E-02	3475	1,469E-02
2 625	4,004E-02	2910	2,885E-02	3195	2,028E-02	3480	1,463E-02
2 630	4,099E-02	2915	2,864E-02	3200	2,010E-02	3485	1,455E-02
2 635	4,137E-02	2920	2,844E-02	3205	2,002E-02	3490	1,447E-02
2 640	4,067E-02	2925	2,816E-02	3210	1,992E-02	3495	1,438E-02
2 645	4,072E-02	2930	2,805E-02	3215	1,977E-02	3500	1,432E-02
2 650	4,056E-02	2935	2,791E-02	3220	1,968E-02	3505	1,425E-02
2 655	4,008E-02	2940	2,772E-02	3225	1,955E-02	3 510	1,417E-02
2 660	3,995E-02	2945	2,749E-02	3230	1,944E-02	3 515	1,408E-02
2 665	3,925E-02	2950	2,735E-02	3235	1,930E-02	3 520	1,400E-02
2 670	3,942E-02	2955	2,721E-02	3240	1,917E-02	3 525	1,393E-02
2 675	3,911E-02	2960	2,706E-02	3245	1,906E-02	3 530	1,386E-02
2 680	3,901E-02	2965	2,691E-02	3250	1,901E-02	3 535	1,375E-02
2 685	3,885E-02	2970	2,673E-02	3255	1,887E-02	3 540	1,368E-02
2 690	3,856E-02	2975	2,657E-02	3260	1,875E-02	3 545	1,365E-02
2 695	3,826E-02	2980	2,637E-02	3265	1,864E-02	3 550	1,357E-02
2 700	3,808E-02	2985	2,622E-02	3270	1,855E-02	3 555	1,345E-02
2 705	3,778E-02	2990	2,603E-02	3275	1,842E-02	3 560	1,337E-02
2 710	3,748E-02	2995	2,583E-02	3280	1,828E-02	3 565	1,334E-02
2 715	3,728E-02	3000	2,563E-02	3285	1,817E-02	3 570	1,325E-02
2 720	3,702E-02	3005	2,556E-02	3290	1,800E-02	3 575	1,319E-02
2 725	3,672E-02	3010	2,541E-02	3295	1,766E-02	3 580	1,310E-02
2 730	3,652E-02	3015	2,524E-02	3300	1,762E-02	3 585	1,304E-02

Table A.1 continued

Wavelength nm	$E_{\lambda,0}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,0}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,0}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,0}$ W·m^{-2}·nm^{-1}
3 590	1,299E-02	3 695	1,150E-02	3 800	1,040E-02	3 905	9,403E-03
3 595	1,291E-02	3 700	1,135E-02	3 805	1,036E-02	3 910	9,364E-03
3 600	1,284E-02	3 705	1,136E-02	3 810	1,030E-02	3 915	9,319E-03
3 605	1,280E-02	3 710	1,133E-02	3 815	1,025E-02	3 920	9,269E-03
3 610	1,273E-02	3 715	1,131E-02	3 820	1,022E-02	3 925	9,231E-03
3 615	1,267E-02	3 720	1,130E-02	3 825	1,019E-02	3 930	9,180E-03
3 620	1,261E-02	3 725	1,126E-02	3 830	1,014E-02	3 935	9,128E-03
3 625	1,253E-02	3 730	1,119E-02	3 835	1,006E-02	3 940	9,097E-03
3 630	1,246E-02	3 735	1,101E-02	3 840	1,003E-02	3 945	9,035E-03
3 635	1,240E-02	3 740	1,077E-02	3 845	9,996E-03	3 950	8,959E-03
3 640	1,232E-02	3 745	1,074E-02	3 850	9,948E-03	3 955	8,904E-03
3 645	1,223E-02	3 750	1,083E-02	3 855	9,889E-03	3 960	8,877E-03
3 650	1,215E-02	3 755	1,082E-02	3 860	9,813E-03	3 965	8,858E-03
3 655	1,205E-02	3 760	1,081E-02	3 865	9,747E-03	3 970	8,818E-03
3 660	1,202E-02	3 765	1,079E-02	3 870	9,708E-03	3 975	8,770E-03
3 665	1,199E-02	3 770	1,073E-02	3 875	9,687E-03	3 980	8,720E-03
3 670	1,191E-02	3 775	1,064E-02	3 880	9,635E-03	3 985	8,650E-03
3 675	1,182E-02	3 780	1,060E-02	3 885	9,554E-03	3 990	8,595E-03
3 680	1,169E-02	3 785	1,056E-02	3 890	9,530E-03	-	-
3 685	1,167E-02	3 790	1,049E-02	3 895	9,481E-03	-	-
3 690	1,166E-02	3 795	1,044E-02	3 900	9,432E-03	-	-

Table A.2 – CIE-H1: Global solar spectral irradiance on a horizontal plane at sea level AM: 1,0, Water Vapour: 1,42 atm-cm, O_3: 0,340 atm-cm, AOD: 0,10, Albedo: 0,2

Wavelength nm	$E_{\lambda,H1}$ $W \cdot m^{-2} \cdot nm^{-1}$	Wavelength nm	$E_{\lambda,H1}$ $W \cdot m^{-2} \cdot nm^{-1}$	Wavelength nm	$E_{\lambda,H1}$ $W \cdot m^{-2} \cdot nm^{-1}$	Wavelength nm	$E_{\lambda,H1}$ $W \cdot m^{-2} \cdot nm^{-1}$
290	1,956E-05	570	1,653E+00	850	9,548E-01	1 130	1,941E-01
295	1,025E-03	575	1,658E+00	855	9,206E-01	1 135	1,765E-01
300	1,478E-02	580	1,656E+00	860	9,766E-01	1 140	2,776E-01
305	7,653E-02	585	1,657E+00	865	9,422E-01	1 145	2,163E-01
310	1,894E-01	590	1,572E+00	870	9,555E-01	1 150	2,346E-01
315	3,113E-01	595	1,594E+00	875	9,463E-01	1 155	2,941E-01
320	4,238E-01	600	1,587E+00	880	9,333E-01	1 160	3,588E-01
325	5,700E-01	605	1,598E+00	885	9,205E-01	1 165	4,140E-01
330	7,221E-01	610	1,587E+00	890	9,085E-01	1 170	4,415E-01
335	7,102E-01	615	1,551E+00	895	8,090E-01	1 175	4,379E-01
340	7,562E-01	620	1,549E+00	900	6,973E-01	1 180	4,323E-01
345	7,478E-01	625	1,506E+00	905	7,566E-01	1 185	4,285E-01
350	7,927E-01	630	1,497E+00	910	6,926E-01	1 190	4,389E-01
355	8,207E-01	635	1,515E+00	915	6,833E-01	1 195	4,467E-01
360	7,794E-01	640	1,512E+00	920	7,286E-01	1 200	4,263E-01
365	9,429E-01	645	1,494E+00	925	7,203E-01	1 205	4,260E-01
370	9,897E-01	650	1,466E+00	930	5,102E-01	1 210	4,308E-01
375	9,235E-01	655	1,395E+00	935	2,824E-01	1 215	4,425E-01
380	9,699E-01	660	1,415E+00	940	4,046E-01	1 220	4,478E-01
385	8,446E-01	665	1,432E+00	945	3,726E-01	1 225	4,457E-01
390	9,892E-01	670	1,449E+00	950	3,981E-01	1 230	4,501E-01
395	9,289E-01	675	1,446E+00	955	4,081E-01	1 235	4,509E-01
400	1,403E+00	680	1,422E+00	960	4,673E-01	1 240	4,476E-01
405	1,530E+00	685	1,354E+00	965	5,441E-01	1 245	4,442E-01
410	1,555E+00	690	1,257E+00	970	6,626E-01	1 250	4,399E-01
415	1,630E+00	695	1,319E+00	975	6,302E-01	1 255	4,318E-01
420	1,617E+00	700	1,333E+00	980	6,621E-01	1 260	4,166E-01
425	1,591E+00	705	1,344E+00	985	7,094E-01	1 265	3,910E-01
430	1,439E+00	710	1,346E+00	990	7,258E-01	1 270	3,797E-01
435	1,612E+00	715	1,276E+00	995	7,290E-01	1 275	4,069E-01
440	1,720E+00	720	1,138E+00	1 000	7,209E-01	1 280	4,001E-01
445	1,831E+00	725	1,145E+00	1 005	7,003E-01	1 285	4,051E-01
450	1,933E+00	730	1,160E+00	1 010	7,061E-01	1 290	4,056E-01
455	1,941E+00	735	1,236E+00	1 015	6,984E-01	1 295	3,967E-01
460	1,957E+00	740	1,241E+00	1 020	6,881E-01	1 300	3,791E-01
465	1,935E+00	745	1,258E+00	1 025	6,867E-01	1 305	3,605E-01
470	1,907E+00	750	1,249E+00	1 030	6,784E-01	1 310	3,436E-01
475	1,932E+00	755	1,229E+00	1 035	6,674E-01	1 315	3,221E-01
480	1,952E+00	760	8,012E-01	1 040	6,616E-01	1 320	3,057E-01
485	1,822E+00	765	8,253E-01	1 045	6,528E-01	1 325	2,937E-01
490	1,844E+00	770	1,143E+00	1 050	6,478E-01	1 330	2,291E-01
495	1,873E+00	775	1,173E+00	1 055	6,398E-01	1 335	2,177E-01
500	1,820E+00	780	1,157E+00	1 060	6,263E-01	1 340	1,967E-01
505	1,821E+00	785	1,143E+00	1 065	6,198E-01	1 345	1,154E-01
510	1,801E+00	790	1,114E+00	1 070	6,071E-01	1 350	2,803E-02
515	1,709E+00	795	1,097E+00	1 075	6,052E-01	1 355	1,902E-03
520	1,706E+00	800	1,094E+00	1 080	5,943E-01	1 360	9,100E-05
525	1,754E+00	805	1,083E+00	1 085	5,803E-01	1 365	7,789E-05
530	1,775E+00	810	1,062E+00	1 090	5,711E-01	1 370	1,466E-04
535	1,772E+00	815	9,460E-01	1 095	5,369E-01	1 375	1,587E-03
540	1,735E+00	820	9,211E-01	1 100	5,110E-01	1 380	1,116E-03
545	1,753E+00	825	9,431E-01	1 105	4,828E-01	1 385	4,112E-04
550	1,752E+00	830	9,476E-01	1 110	4,290E-01	1 390	1,880E-03
555	1,738E+00	835	9,798E-01	1 115	2,795E-01	1 395	1,060E-03
560	1,685E+00	840	1,003E+00	1 120	1,878E-01	1 400	3,258E-03
565	1,680E+00	845	9,984E-01	1 125	1,575E-01	1 405	4,441E-03

Table A.2 continued

Wavelength nm	$E_{\lambda,H1}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,H1}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,H1}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,H1}$ W·m^{-2}·nm^{-1}
1 410	8,153E-03	1 695	2,030E-01	1 980	8,295E-02	2 265	6,962E-02
1 415	2,291E-02	1 700	2,000E-01	1 985	8,855E-02	2 270	6,741E-02
1 420	2,693E-02	1 705	1,969E-01	1 990	9,087E-02	2 275	6,664E-02
1 425	4,241E-02	1 710	1,889E-01	1 995	8,657E-02	2 280	6,758E-02
1 430	5,505E-02	1 715	1,885E-01	2 000	5,406E-02	2 285	6,531E-02
1 435	4,782E-02	1 720	1,857E-01	2 005	3,121E-02	2 290	6,495E-02
1 440	5,993E-02	1 725	1,782E-01	2 010	5,357E-02	2 295	6,339E-02
1 445	7,207E-02	1 730	1,748E-01	2 015	4,376E-02	2 300	6,164E-02
1 450	8,585E-02	1 735	1,649E-01	2 020	6,014E-02	2 305	6,190E-02
1 455	1,266E-01	1 740	1,664E-01	2 025	8,259E-02	2 310	6,445E-02
1 460	1,425E-01	1 745	1,599E-01	2 030	9,103E-02	2 315	6,045E-02
1 465	1,143E-01	1 750	1,669E-01	2 035	9,823E-02	2 320	5,580E-02
1 470	8,452E-02	1 755	1,583E-01	2 040	9,521E-02	2 325	5,832E-02
1 475	1,190E-01	1 760	1,612E-01	2 045	9,496E-02	2 330	5,897E-02
1 480	1,172E-01	1 765	1,410E-01	2 050	7,910E-02	2 335	5,906E-02
1 485	1,429E-01	1 770	1,468E-01	2 055	6,925E-02	2 340	5,103E-02
1 490	1,835E-01	1 775	1,265E-01	2 060	7,808E-02	2 345	5,394E-02
1 495	2,104E-01	1 780	1,116E-01	2 065	7,394E-02	2 350	4,651E-02
1 500	2,367E-01	1 785	9,289E-02	2 070	7,679E-02	2 355	5,090E-02
1 505	2,263E-01	1 790	1,002E-01	2 075	8,515E-02	2 360	5,297E-02
1 510	2,530E-01	1 795	6,124E-02	2 080	9,109E-02	2 365	5,119E-02
1 515	2,581E-01	1 800	4,092E-02	2 085	9,037E-02	2 370	3,820E-02
1 520	2,655E-01	1 805	2,238E-02	2 090	9,253E-02	2 375	4,716E-02
1 525	2,709E-01	1 810	1,740E-02	2 095	9,248E-02	2 380	4,535E-02
1 530	2,697E-01	1 815	7,651E-03	2 100	9,024E-02	2 385	3,674E-02
1 535	2,706E-01	1 820	3,104E-03	2 105	9,440E-02	2 390	4,049E-02
1 540	2,682E-01	1 825	3,835E-03	2 110	9,224E-02	2 395	4,380E-02
1 545	2,697E-01	1 830	2,861E-04	2 115	9,290E-02	2 400	4,611E-02
1 550	2,669E-01	1 835	5,388E-05	2 120	8,969E-02	2 405	3,807E-02
1 555	2,641E-01	1 840	1,076E-05	2 125	9,008E-02	2 410	3,752E-02
1 560	2,642E-01	1 845	1,096E-04	2 130	9,052E-02	2 415	3,141E-02
1 565	2,606E-01	1 850	6,433E-05	2 135	9,066E-02	2 420	3,008E-02
1 570	2,476E-01	1 855	1,732E-05	2 140	9,091E-02	2 425	3,682E-02
1 575	2,378E-01	1 860	1,047E-04	2 145	8,989E-02	2 430	4,526E-02
1 580	2,410E-01	1 865	1,615E-04	2 150	8,646E-02	2 435	2,137E-02
1 585	2,460E-01	1 870	9,742E-06	2 155	8,610E-02	2 440	4,319E-02
1 590	2,412E-01	1 875	3,339E-05	2 160	8,462E-02	2 445	2,538E-02
1 595	2,481E-01	1 880	5,560E-04	2 165	7,881E-02	2 450	1,839E-02
1 600	2,371E-01	1 885	4,556E-04	2 170	8,204E-02	2 455	2,908E-02
1 605	2,323E-01	1 890	1,159E-03	2 175	8,172E-02	2 460	3,630E-02
1 610	2,279E-01	1 895	8,717E-04	2 180	8,225E-02	2 465	2,821E-02
1 615	2,324E-01	1 900	6,477E-05	2 185	7,723E-02	2 470	2,133E-02
1 620	2,338E-01	1 905	2,290E-05	2 190	8,020E-02	2 475	2,036E-02
1 625	2,368E-01	1 910	2,387E-04	2 195	7,964E-02	2 480	1,278E-02
1 630	2,344E-01	1 915	2,532E-04	2 200	7,439E-02	2 485	9,362E-03
1 635	2,268E-01	1 920	1,821E-03	2 205	7,562E-02	2 490	6,018E-03
1 640	2,163E-01	1 925	3,108E-03	2 210	7,890E-02	2 495	5,920E-03
1 645	2,170E-01	1 930	2,353E-03	2 215	7,720E-02	2 500	1,143E-02
1 650	2,172E-01	1 935	7,906E-03	2 220	7,779E-02	2 505	3,779E-03
1 655	2,193E-01	1 940	7,869E-03	2 225	7,620E-02	2 510	4,304E-03
1 660	2,205E-01	1 945	1,828E-02	2 230	7,619E-02	2 515	1,586E-03
1 665	2,107E-01	1 950	2,494E-02	2 235	7,493E-02	2 520	1,238E-03
1 670	2,120E-01	1 955	1,913E-02	2 240	7,399E-02	2 525	2,498E-04
1 675	2,084E-01	1 960	3,207E-02	2 245	7,237E-02	2 530	1,954E-05
1 680	2,010E-01	1 965	4,280E-02	2 250	7,269E-02	2 535	3,953E-06
1 685	2,039E-01	1 970	6,172E-02	2 255	6,992E-02	2 540	7,294E-06
1 690	2,035E-01	1 975	7,756E-02	2 260	6,912E-02	2 545	4,453E-07

Table A.2 continued

Wavelength nm	$E_{\lambda,H1}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,H1}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,H1}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,H1}$ W·m^{-2}·nm^{-1}
2 550	3,528E-09	2 835	2,858E-06	3 120	1,180E-02	3 405	6,888E-03
2 555	5,231E-08	2 840	1,622E-05	3 125	5,360E-03	3 410	8,401E-03
2 560	3,582E-09	2 845	2,115E-04	3 130	7,938E-03	3 415	9,499E-03
2 565	2,041E-11	2 850	2,546E-05	3 135	1,325E-02	3 420	1,376E-02
2 570	5,340E-15	2 855	1,351E-05	3 140	5,687E-03	3 425	1,178E-02
2 575	6,799E-18	2 860	1,626E-04	3 145	5,180E-03	3 430	1,078E-02
2 580	4,793E-20	2 865	5,881E-04	3 150	8,949E-03	3 435	1,250E-02
2 585	2,893E-21	2 870	1,523E-04	3 155	8,091E-03	3 440	1,032E-02
2 590	7,071E-25	2 875	1,124E-03	3 160	1,183E-02	3 445	1,247E-02
2 595	1,201E-25	2 880	8,614E-04	3 165	1,595E-02	3 450	1,239E-02
2 600	1,921E-24	2 885	1,188E-03	3 170	1,470E-02	3 455	1,032E-02
2 605	1,201E-25	2 890	9,092E-04	3 175	1,179E-02	3 460	1,318E-02
2 610	2,933E-29	2 895	4,790E-03	3 180	1,252E-02	3 465	1,158E-02
2 615	3,811E-27	2 900	1,774E-03	3 185	1,073E-02	3 470	1,303E-02
2 620	1,630E-23	2 905	7,126E-04	3 190	6,206E-03	3 475	1,227E-02
2 625	7,221E-19	2 910	4,254E-03	3 195	4,681E-03	3 480	1,244E-02
2 630	2,968E-15	2 915	3,024E-03	3 200	1,218E-03	3 485	1,292E-02
2 635	9,211E-14	2 920	4,647E-03	3 205	8,367E-04	3 490	1,188E-02
2 640	7,200E-13	2 925	2,745E-03	3 210	5,700E-04	3 495	1,299E-02
2 645	4,827E-14	2 930	8,927E-03	3 215	1,400E-03	3 500	1,283E-02
2 650	8,642E-15	2 935	9,179E-03	3 220	2,807E-03	3 505	1,274E-02
2 655	5,280E-16	2 940	3,751E-03	3 225	7,659E-04	3 510	1,281E-02
2 660	1,289E-19	2 945	3,217E-03	3 230	1,486E-03	3 515	1,247E-02
2 665	1,229E-25	2 950	7,633E-03	3 235	9,113E-03	3 520	1,281E-02
2 670	2,143E-35	2 955	4,302E-03	3 240	5,925E-03	3 525	1,230E-02
2 675	1,965E-34	2 960	7,477E-03	3 245	1,789E-03	3 530	1,200E-02
2 680	2,060E-28	2 965	9,550E-03	3 250	4,423E-03	3 535	1,076E-02
2 685	8,438E-25	2 970	1,281E-03	3 255	1,134E-02	3 540	1,039E-02
2 690	1,350E-23	2 975	1,896E-03	3 260	3,027E-03	3 545	1,077E-02
2 695	8,438E-25	2 980	3,262E-03	3 265	3,709E-03	3 550	1,137E-02
2 700	2,074E-28	2 985	1,007E-02	3 270	2,744E-03	3 555	1,042E-02
2 705	1,349E-24	2 990	1,296E-02	3 275	7,635E-03	3 560	1,155E-02
2 710	5,526E-21	2 995	6,920E-03	3 280	5,145E-03	3 565	1,153E-02
2 715	8,841E-20	3 000	9,664E-03	3 285	1,252E-02	3 570	9,732E-03
2 720	5,536E-21	3 005	4,987E-03	3 290	1,065E-02	3 575	9,979E-03
2 725	4,265E-20	3 010	8,977E-03	3 295	2,697E-03	3 580	1,096E-02
2 730	6,889E-19	3 015	8,192E-03	3 300	2,851E-03	3 585	1,032E-02
2 735	1,465E-19	3 020	2,290E-03	3 305	5,606E-03	3 590	1,047E-02
2 740	2,762E-19	3 025	9,483E-03	3 310	5,571E-03	3 595	1,056E-02
2 745	4,316E-18	3 030	8,141E-03	3 315	4,576E-04	3 600	1,099E-02
2 750	2,740E-19	3 035	4,084E-03	3 320	5,450E-04	3 605	1,107E-02
2 755	3,367E-22	3 040	3,739E-03	3 325	5,276E-03	3 610	1,046E-02
2 760	6,619E-26	3 045	5,849E-03	3 330	6,205E-03	3 615	1,041E-02
2 765	2,927E-26	3 050	2,248E-03	3 335	1,063E-02	3 620	1,185E-02
2 770	4,686E-25	3 055	1,317E-03	3 340	5,321E-03	3 625	1,098E-02
2 775	7,212E-24	3 060	7,995E-03	3 345	5,354E-03	3 630	1,071E-02
2 780	7,226E-18	3 065	5,050E-03	3 350	9,335E-03	3 635	1,096E-02
2 785	2,966E-14	3 070	3,697E-03	3 355	5,867E-03	3 640	1,170E-02
2 790	7,568E-13	3 075	7,837E-03	3 360	6,888E-03	3 645	1,112E-02
2 795	2,377E-11	3 080	5,200E-03	3 365	8,527E-03	3 650	1,076E-02
2 800	3,094E-10	3 085	3,570E-03	3 370	6,188E-03	3 655	1,126E-02
2 805	2,052E-09	3 090	4,338E-03	3 375	9,936E-03	3 660	1,123E-02
2 810	3,395E-08	3 095	2,046E-03	3 380	7,554E-03	3 665	1,068E-02
2 815	2,522E-08	3 100	5,976E-03	3 385	9,122E-03	3 670	8,811E-03
2 820	2,688E-07	3 105	2,287E-03	3 390	1,160E-02	3 675	6,475E-03
2 825	6,900E-06	3 110	2,045E-03	3 395	1,141E-02	3 680	9,066E-03
2 830	4,283E-05	3 115	4,201E-03	3 400	1,313E-02	3 685	1,002E-02

Table A.2 continued

Wavelength nm	$E_{\lambda,\mathrm{H1}}$ $\mathrm{W \cdot m^{-2} \cdot nm^{-1}}$	Wavelength nm	$E_{\lambda,\mathrm{H1}}$ $\mathrm{W \cdot m^{-2} \cdot nm^{-1}}$	Wavelength nm	$E_{\lambda,\mathrm{H1}}$ $\mathrm{W \cdot m^{-2} \cdot nm^{-1}}$	Wavelength nm	$E_{\lambda,\mathrm{H1}}$ $\mathrm{W \cdot m^{-2} \cdot nm^{-1}}$
3 690	1,030E-02	3 770	9,503E-03	3 850	9,141E-03	3 930	7,621E-03
3 695	1,050E-02	3 775	9,457E-03	3 855	8,876E-03	3 935	7,802E-03
3 700	1,095E-02	3 780	9,790E-03	3 860	8,520E-03	3 940	7,864E-03
3 705	1,084E-02	3 785	9,255E-03	3 865	8,502E-03	3 945	7,928E-03
3 710	9,920E-03	3 790	8,498E-03	3 870	8,001E-03	3 950	7,976E-03
3 715	9,788E-03	3 795	9,226E-03	3 875	7,542E-03	3 955	8,011E-03
3 720	1,060E-02	3 800	9,946E-03	3 880	7,370E-03	3 960	8,046E-03
3 725	1,078E-02	3 805	9,546E-03	3 885	7,492E-03	3 965	8,072E-03
3 730	9,787E-03	3 810	8,816E-03	3 890	7,584E-03	3 970	7,998E-03
3 735	9,160E-03	3 815	8,455E-03	3 895	8,008E-03	3 975	7,850E-03
3 740	9,283E-03	3 820	9,726E-03	3 900	8,302E-03	3 980	7,762E-03
3 745	1,022E-02	3 825	9,702E-03	3 905	8,268E-03	3 985	7,745E-03
3 750	9,650E-03	3 830	9,669E-03	3 910	7,746E-03	3 990	7,667E-03
3 755	9,420E-03	3 835	8,431E-03	3 915	7,591E-03	-	-
3 760	9,384E-03	3 840	9,210E-03	3 920	7,558E-03	-	-
3 765	9,143E-03	3 845	9,128E-03	3 925	7,482E-03	-	-

Table A.3 – CIE-H2: Global solar spectral irradiance on a horizontal plane at sea level AM: 1,0, Water Vapour: 1,42 atm-cm, O_3: 0,340 atm-cm, AOD: 0,27, Albedo: 0,2

Wavelength nm	$E_{\lambda,H2}$ $W \cdot m^{-2} \cdot nm^{-1}$	Wavelength nm	$E_{\lambda,H2}$ $W \cdot m^{-2} \cdot nm^{-1}$	Wavelength nm	$E_{\lambda,H2}$ $W \cdot m^{-2} \cdot nm^{-1}$	Wavelength nm	$E_{\lambda,H2}$ $W \cdot m^{-2} \cdot nm^{-1}$
290	1,824E-05	570	1,621E+00	850	9,433E-01	1 130	1,892E-01
295	9,386E-04	575	1,626E+00	855	9,096E-01	1 135	1,721E-01
300	1,394E-02	580	1,625E+00	860	9,651E-01	1 140	2,718E-01
305	7,255E-02	585	1,627E+00	865	9,312E-01	1 145	2,113E-01
310	1,803E-01	590	1,542E+00	870	9,443E-01	1 150	2,295E-01
315	2,954E-01	595	1,564E+00	875	9,354E-01	1 155	2,884E-01
320	4,020E-01	600	1,559E+00	880	9,224E-01	1 160	3,530E-01
325	5,426E-01	605	1,570E+00	885	9,097E-01	1 165	4,082E-01
330	6,891E-01	610	1,560E+00	890	8,977E-01	1 170	4,359E-01
335	6,798E-01	615	1,525E+00	895	7,973E-01	1 175	4,325E-01
340	7,256E-01	620	1,522E+00	900	6,853E-01	1 180	4,270E-01
345	7,183E-01	625	1,480E+00	905	7,450E-01	1 185	4,232E-01
350	7,613E-01	630	1,470E+00	910	6,807E-01	1 190	4,337E-01
355	7,885E-01	635	1,490E+00	915	6,712E-01	1 195	4,416E-01
360	7,495E-01	640	1,487E+00	920	7,174E-01	1 200	4,212E-01
365	9,080E-01	645	1,470E+00	925	7,090E-01	1 205	4,211E-01
370	9,543E-01	650	1,442E+00	930	4,987E-01	1 210	4,259E-01
375	8,916E-01	655	1,373E+00	935	2,736E-01	1 215	4,376E-01
380	9,373E-01	660	1,393E+00	940	3,941E-01	1 220	4,431E-01
385	8,173E-01	665	1,410E+00	945	3,625E-01	1 225	4,411E-01
390	9,582E-01	670	1,428E+00	950	3,876E-01	1 230	4,456E-01
395	9,007E-01	675	1,425E+00	955	3,976E-01	1 235	4,466E-01
400	1,363E+00	680	1,402E+00	960	4,563E-01	1 240	4,433E-01
405	1,490E+00	685	1,332E+00	965	5,334E-01	1 245	4,400E-01
410	1,514E+00	690	1,232E+00	970	6,528E-01	1 250	4,358E-01
415	1,588E+00	695	1,297E+00	975	6,204E-01	1 255	4,276E-01
420	1,576E+00	700	1,312E+00	980	6,527E-01	1 260	4,122E-01
425	1,551E+00	705	1,324E+00	985	7,005E-01	1 265	3,864E-01
430	1,403E+00	710	1,326E+00	990	7,176E-01	1 270	3,751E-01
435	1,571E+00	715	1,256E+00	995	7,209E-01	1 275	4,027E-01
440	1,678E+00	720	1,116E+00	1 000	7,130E-01	1 280	3,963E-01
445	1,787E+00	725	1,123E+00	1 005	6,926E-01	1 285	4,013E-01
450	1,887E+00	730	1,139E+00	1 010	6,983E-01	1 290	4,017E-01
455	1,895E+00	735	1,217E+00	1 015	6,908E-01	1 295	3,928E-01
460	1,912E+00	740	1,224E+00	1 020	6,807E-01	1 300	3,752E-01
465	1,890E+00	745	1,241E+00	1 025	6,793E-01	1 305	3,566E-01
470	1,864E+00	750	1,232E+00	1 030	6,711E-01	1 310	3,398E-01
475	1,889E+00	755	1,212E+00	1 035	6,602E-01	1 315	3,182E-01
480	1,909E+00	760	7,806E-01	1 040	6,544E-01	1 320	3,018E-01
485	1,784E+00	765	8,016E-01	1 045	6,457E-01	1 325	2,899E-01
490	1,806E+00	770	1,126E+00	1 050	6,408E-01	1 330	2,254E-01
495	1,835E+00	775	1,158E+00	1 055	6,328E-01	1 335	2,140E-01
500	1,784E+00	780	1,142E+00	1 060	6,194E-01	1 340	1,933E-01
505	1,784E+00	785	1,128E+00	1 065	6,130E-01	1 345	1,129E-01
510	1,766E+00	790	1,099E+00	1 070	6,004E-01	1 350	2,726E-02
515	1,676E+00	795	1,082E+00	1 075	5,986E-01	1 355	1,838E-03
520	1,674E+00	800	1,080E+00	1 080	5,877E-01	1 360	8,757E-05
525	1,720E+00	805	1,069E+00	1 085	5,737E-01	1 365	7,491E-05
530	1,741E+00	810	1,048E+00	1 090	5,646E-01	1 370	1,411E-04
535	1,738E+00	815	9,303E-01	1 095	5,305E-01	1 375	1,530E-03
540	1,702E+00	820	9,061E-01	1 100	5,042E-01	1 380	1,076E-03
545	1,720E+00	825	9,283E-01	1 105	4,758E-01	1 385	3,962E-04
550	1,719E+00	830	9,334E-01	1 110	4,221E-01	1 390	1,814E-03
555	1,706E+00	835	9,665E-01	1 115	2,735E-01	1 395	1,022E-03
560	1,654E+00	840	9,900E-01	1 120	1,829E-01	1 400	3,148E-03
565	1,648E+00	845	9,863E-01	1 125	1,532E-01	1 405	4,293E-03

Table A.3 continued

Wavelength nm	$E_{\lambda,H2}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,H2}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,H2}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,H2}$ W·m^{-2}·nm^{-1}
1 410	7,903E-03	1 695	2,017E-01	1 980	8,252E-02	2 265	6,945E-02
1 415	2,227E-02	1 700	1,988E-01	1 985	8,815E-02	2 270	6,722E-02
1 420	2,621E-02	1 705	1,958E-01	1 990	9,046E-02	2 275	6,644E-02
1 425	4,135E-02	1 710	1,878E-01	1 995	8,615E-02	2 280	6,741E-02
1 430	5,378E-02	1 715	1,874E-01	2 000	5,363E-02	2 285	6,512E-02
1 435	4,665E-02	1 720	1,846E-01	2 005	3,087E-02	2 290	6,476E-02
1 440	5,855E-02	1 725	1,771E-01	2 010	5,313E-02	2 295	6,320E-02
1 445	7,055E-02	1 730	1,738E-01	2 015	4,335E-02	2 300	6,144E-02
1 450	8,416E-02	1 735	1,639E-01	2 020	5,972E-02	2 305	6,170E-02
1 455	1,244E-01	1 740	1,654E-01	2 025	8,224E-02	2 310	6,427E-02
1 460	1,401E-01	1 745	1,589E-01	2 030	9,076E-02	2 315	6,025E-02
1 465	1,123E-01	1 750	1,659E-01	2 035	9,802E-02	2 320	5,559E-02
1 470	8,290E-02	1 755	1,573E-01	2 040	9,498E-02	2 325	5,813E-02
1 475	1,171E-01	1 760	1,603E-01	2 045	9,472E-02	2 330	5,878E-02
1 480	1,152E-01	1 765	1,400E-01	2 050	7,875E-02	2 335	5,887E-02
1 485	1,407E-01	1 770	1,458E-01	2 055	6,886E-02	2 340	5,081E-02
1 490	1,811E-01	1 775	1,255E-01	2 060	7,775E-02	2 345	5,373E-02
1 495	2,079E-01	1 780	1,107E-01	2 065	7,359E-02	2 350	4,630E-02
1 500	2,343E-01	1 785	9,204E-02	2 070	7,646E-02	2 355	5,070E-02
1 505	2,240E-01	1 790	9,934E-02	2 075	8,487E-02	2 360	5,277E-02
1 510	2,507E-01	1 795	6,055E-02	2 080	9,088E-02	2 365	5,100E-02
1 515	2,558E-01	1 800	4,042E-02	2 085	9,016E-02	2 370	3,798E-02
1 520	2,632E-01	1 805	2,205E-02	2 090	9,235E-02	2 375	4,695E-02
1 525	2,687E-01	1 810	1,712E-02	2 095	9,231E-02	2 380	4,515E-02
1 530	2,676E-01	1 815	7,522E-03	2 100	9,006E-02	2 385	3,654E-02
1 535	2,685E-01	1 820	3,048E-03	2 105	9,425E-02	2 390	4,030E-02
1 540	2,661E-01	1 825	3,767E-03	2 110	9,208E-02	2 395	4,360E-02
1 545	2,677E-01	1 830	2,809E-04	2 115	9,276E-02	2 400	4,591E-02
1 550	2,650E-01	1 835	5,273E-05	2 120	8,953E-02	2 405	3,788E-02
1 555	2,622E-01	1 840	1,054E-05	2 125	8,993E-02	2 410	3,733E-02
1 560	2,623E-01	1 845	1,073E-04	2 130	9,038E-02	2 415	3,124E-02
1 565	2,587E-01	1 850	6,299E-05	2 135	9,053E-02	2 420	2,991E-02
1 570	2,457E-01	1 855	1,695E-05	2 140	9,078E-02	2 425	3,663E-02
1 575	2,360E-01	1 860	1,026E-04	2 145	8,975E-02	2 430	4,506E-02
1 580	2,391E-01	1 865	1,582E-04	2 150	8,630E-02	2 435	2,123E-02
1 585	2,442E-01	1 870	9,541E-06	2 155	8,594E-02	2 440	4,300E-02
1 590	2,396E-01	1 875	3,273E-05	2 160	8,446E-02	2 445	2,522E-02
1 595	2,464E-01	1 880	5,450E-04	2 165	7,866E-02	2 450	1,826E-02
1 600	2,354E-01	1 885	4,468E-04	2 170	8,189E-02	2 455	2,890E-02
1 605	2,306E-01	1 890	1,138E-03	2 175	8,155E-02	2 460	3,611E-02
1 610	2,262E-01	1 895	8,549E-04	2 180	8,210E-02	2 465	2,805E-02
1 615	2,308E-01	1 900	6,351E-05	2 185	7,705E-02	2 470	2,119E-02
1 620	2,323E-01	1 905	2,246E-05	2 190	8,004E-02	2 475	2,022E-02
1 625	2,353E-01	1 910	2,341E-04	2 195	7,948E-02	2 480	1,267E-02
1 630	2,329E-01	1 915	2,487E-04	2 200	7,419E-02	2 485	9,276E-03
1 635	2,254E-01	1 920	1,793E-03	2 205	7,545E-02	2 490	5,960E-03
1 640	2,149E-01	1 925	3,060E-03	2 210	7,875E-02	2 495	5,860E-03
1 645	2,156E-01	1 930	2,314E-03	2 215	7,704E-02	2 500	1,131E-02
1 650	2,157E-01	1 935	7,789E-03	2 220	7,763E-02	2 505	3,738E-03
1 655	2,179E-01	1 940	7,756E-03	2 225	7,604E-02	2 510	4,257E-03
1 660	2,192E-01	1 945	1,804E-02	2 230	7,603E-02	2 515	1,567E-03
1 665	2,093E-01	1 950	2,463E-02	2 235	7,477E-02	2 520	1,222E-03
1 670	2,107E-01	1 955	1,888E-02	2 240	7,383E-02	2 525	2,464E-04
1 675	2,071E-01	1 960	3,172E-02	2 245	7,220E-02	2 530	1,927E-05
1 680	1,998E-01	1 965	4,237E-02	2 250	7,253E-02	2 535	3,896E-06
1 685	2,027E-01	1 970	6,124E-02	2 255	6,974E-02	2 540	7,187E-06
1 690	2,023E-01	1 975	7,708E-02	2 260	6,893E-02	2 545	4,388E-07

Table A.3 continued

Wavelength nm	$E_{\lambda,H2}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,H2}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,H2}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,H2}$ W·m^{-2}·nm^{-1}
2 550	3,475E-09	2 835	2,814E-06	3 120	1,171E-02	3 405	6,847E-03
2 555	5,153E-08	2 840	1,597E-05	3 125	5,314E-03	3 410	8,361E-03
2 560	3,528E-09	2 845	2,083E-04	3 130	7,879E-03	3 415	9,455E-03
2 565	2,011E-11	2 850	2,507E-05	3 135	1,316E-02	3 420	1,372E-02
2 570	5,260E-15	2 855	1,330E-05	3 140	5,638E-03	3 425	1,174E-02
2 575	6,696E-18	2 860	1,601E-04	3 145	5,135E-03	3 430	1,074E-02
2 580	4,720E-20	2 865	5,796E-04	3 150	8,877E-03	3 435	1,247E-02
2 585	2,849E-21	2 870	1,501E-04	3 155	8,027E-03	3 440	1,028E-02
2 590	6,963E-25	2 875	1,109E-03	3 160	1,174E-02	3 445	1,243E-02
2 595	1,182E-25	2 880	8,492E-04	3 165	1,586E-02	3 450	1,236E-02
2 600	1,891E-24	2 885	1,172E-03	3 170	1,462E-02	3 455	1,028E-02
2 605	1,182E-25	2 890	8,969E-04	3 175	1,171E-02	3 460	1,315E-02
2 610	2,888E-29	2 895	4,731E-03	3 180	1,245E-02	3 465	1,155E-02
2 615	3,752E-27	2 900	1,752E-03	3 185	1,066E-02	3 470	1,300E-02
2 620	1,605E-23	2 905	7,029E-04	3 190	6,160E-03	3 475	1,223E-02
2 625	7,108E-19	2 910	4,199E-03	3 195	4,636E-03	3 480	1,241E-02
2 630	2,921E-15	2 915	2,987E-03	3 200	1,205E-03	3 485	1,289E-02
2 635	9,067E-14	2 920	4,596E-03	3 205	8,275E-04	3 490	1,184E-02
2 640	7,087E-13	2 925	2,712E-03	3 210	5,634E-04	3 495	1,296E-02
2 645	4,751E-14	2 930	8,832E-03	3 215	1,384E-03	3 500	1,281E-02
2 650	8,506E-15	2 935	9,086E-03	3 220	2,780E-03	3 505	1,272E-02
2 655	5,197E-16	2 940	3,706E-03	3 225	7,575E-04	3 510	1,279E-02
2 660	1,269E-19	2 945	3,181E-03	3 230	1,472E-03	3 515	1,245E-02
2 665	1,210E-25	2 950	7,556E-03	3 235	9,051E-03	3 520	1,279E-02
2 670	2,109E-35	2 955	4,254E-03	3 240	5,876E-03	3 525	1,228E-02
2 675	1,933E-34	2 960	7,397E-03	3 245	1,772E-03	3 530	1,198E-02
2 680	2,027E-28	2 965	9,455E-03	3 250	4,387E-03	3 535	1,073E-02
2 685	8,303E-25	2 970	1,265E-03	3 255	1,128E-02	3 540	1,036E-02
2 690	1,328E-23	2 975	1,872E-03	3 260	3,001E-03	3 545	1,074E-02
2 695	8,303E-25	2 980	3,222E-03	3 265	3,680E-03	3 550	1,134E-02
2 700	2,040E-28	2 985	9,971E-03	3 270	2,721E-03	3 555	1,040E-02
2 705	1,327E-24	2 990	1,284E-02	3 275	7,589E-03	3 560	1,153E-02
2 710	5,437E-21	2 995	6,852E-03	3 280	5,110E-03	3 565	1,151E-02
2 715	8,698E-20	3 000	9,576E-03	3 285	1,246E-02	3 570	9,705E-03
2 720	5,447E-21	3 005	4,931E-03	3 290	1,059E-02	3 575	9,952E-03
2 725	4,197E-20	3 010	8,893E-03	3 295	2,676E-03	3 580	1,093E-02
2 730	6,778E-19	3 015	8,110E-03	3 300	2,829E-03	3 585	1,029E-02
2 735	1,441E-19	3 020	2,265E-03	3 305	5,568E-03	3 590	1,044E-02
2 740	2,718E-19	3 025	9,402E-03	3 310	5,530E-03	3 595	1,054E-02
2 745	4,246E-18	3 030	8,068E-03	3 315	4,536E-04	3 600	1,097E-02
2 750	2,696E-19	3 035	4,040E-03	3 320	5,398E-04	3 605	1,105E-02
2 755	3,312E-22	3 040	3,699E-03	3 325	5,237E-03	3 610	1,044E-02
2 760	6,512E-26	3 045	5,791E-03	3 330	6,169E-03	3 615	1,039E-02
2 765	2,880E-26	3 050	2,223E-03	3 335	1,058E-02	3 620	1,184E-02
2 770	4,610E-25	3 055	1,302E-03	3 340	5,288E-03	3 625	1,096E-02
2 775	7,096E-24	3 060	7,923E-03	3 345	5,319E-03	3 630	1,069E-02
2 780	7,110E-18	3 065	4,998E-03	3 350	9,290E-03	3 635	1,094E-02
2 785	2,918E-14	3 070	3,659E-03	3 355	5,828E-03	3 640	1,169E-02
2 790	7,447E-13	3 075	7,770E-03	3 360	6,850E-03	3 645	1,110E-02
2 795	2,339E-11	3 080	5,153E-03	3 365	8,487E-03	3 650	1,074E-02
2 800	3,044E-10	3 085	3,531E-03	3 370	6,148E-03	3 655	1,125E-02
2 805	2,019E-09	3 090	4,295E-03	3 375	9,892E-03	3 660	1,122E-02
2 810	3,341E-08	3 095	2,024E-03	3 380	7,509E-03	3 665	1,067E-02
2 815	2,482E-08	3 100	5,923E-03	3 385	9,080E-03	3 670	8,790E-03
2 820	2,645E-07	3 105	2,263E-03	3 390	1,155E-02	3 675	6,448E-03
2 825	6,791E-06	3 110	2,023E-03	3 395	1,137E-02	3 680	9,045E-03
2 830	4,217E-05	3 115	4,161E-03	3 400	1,309E-02	3 685	1,000E-02

Table A.3 continued

Wavelength nm	$E_{\lambda,\mathrm{H2}}$ $\mathrm{W \cdot m^{-2} \cdot nm^{-1}}$	Wavelength nm	$E_{\lambda,\mathrm{H2}}$ $\mathrm{W \cdot m^{-2} \cdot nm^{-1}}$	Wavelength nm	$E_{\lambda,\mathrm{H2}}$ $\mathrm{W \cdot m^{-2} \cdot nm^{-1}}$	Wavelength nm	$E_{\lambda,\mathrm{H2}}$ $\mathrm{W \cdot m^{-2} \cdot nm^{-1}}$
3 690	1,028E-02	3 770	9,492E-03	3 850	9,131E-03	3 930	7,606E-03
3 695	1,049E-02	3 775	9,445E-03	3 855	8,865E-03	3 935	7,789E-03
3 700	1,094E-02	3 780	9,780E-03	3 860	8,507E-03	3 940	7,852E-03
3 705	1,083E-02	3 785	9,242E-03	3 865	8,489E-03	3 945	7,917E-03
3 710	9,905E-03	3 790	8,484E-03	3 870	7,985E-03	3 950	7,966E-03
3 715	9,773E-03	3 795	9,215E-03	3 875	7,525E-03	3 955	8,001E-03
3 720	1,059E-02	3 800	9,938E-03	3 880	7,352E-03	3 960	8,036E-03
3 725	1,077E-02	3 805	9,536E-03	3 885	7,475E-03	3 965	8,063E-03
3 730	9,773E-03	3 810	8,802E-03	3 890	7,568E-03	3 970	7,988E-03
3 735	9,145E-03	3 815	8,441E-03	3 895	7,994E-03	3 975	7,840E-03
3 740	9,270E-03	3 820	9,718E-03	3 900	8,291E-03	3 980	7,751E-03
3 745	1,021E-02	3 825	9,694E-03	3 905	8,256E-03	3 985	7,735E-03
3 750	9,638E-03	3 830	9,661E-03	3 910	7,732E-03	3 990	7,657E-03
3 755	9,407E-03	3 835	8,417E-03	3 915	7,575E-03	-	-
3 760	9,370E-03	3 840	9,200E-03	3 920	7,543E-03	-	-
3 765	9,129E-03	3 845	9,117E-03	3 925	7,467E-03	-	-

Table A.4 – CIE-H3 to CIE-H8 : Global solar spectral irradiance on a horizontal plane at sea level for indicated atmospheric parameters Air Mass, Water Vapour, O_3, AOD and Albedo

Air mass	1,0	1,0	1,0	1,0	1,0	1,0
Water vapour content (atm-cm)	2,00	0,00	2,00	4,00	2,00	2,00
O_3 content (atm-cm)	0,30	0,00	0,30	0,60	0,30	0,30
AOD @ 500 nm	0,20	0,00	0,00	0,00	0,00	0,40
Albedo	0,20	0,00	0,00	0,00	0,20	0,20
Wavelength nm	$E_{\lambda,H3}$	$E_{\lambda,H4}$	$E_{\lambda,H5}$	$E_{\lambda,H6}$	$E_{\lambda,H7}$	$E_{\lambda,H8}$
	$W \cdot m^{-2} \cdot nm^{-1}$					
290	4,704E-05	3,310,E-01	4,752,E-05	1,438,E-07	5,026,E-05	4,435,E-05
295	1,740E-03	3,190,E-01	1,819,E-03	4,236,E-05	1,942,E-03	1,594,E-03
300	1,975E-02	3,130,E-01	1,993,E-02	2,078,E-03	2,147,E-02	1,853,E-02
305	8,958E-02	3,870,E-01	8,919,E-02	2,454,E-02	9,684,E-02	8,450,E-02
310	2,025E-01	4,250,E-01	1,999,E-01	1,000,E-01	2,183,E-01	1,915,E-01
315	3,162E-01	4,710,E-01	3,125,E-01	2,224,E-01	3,428,E-01	2,977,E-01
320	4,215E-01	5,140,E-01	4,154,E-01	3,467,E-01	4,565,E-01	3,970,E-01
325	5,611E-01	6,070,E-01	5,502,E-01	5,013,E-01	6,047,E-01	5,306,E-01
330	7,063E-01	7,240,E-01	6,915,E-01	6,605,E-01	7,590,E-01	6,695,E-01
335	6,929E-01	6,880,E-01	6,770,E-01	6,603,E-01	7,415,E-01	6,588,E-01
340	7,407E-01	7,200,E-01	7,222,E-01	7,143,E-01	7,888,E-01	7,070,E-01
345	7,313E-01	7,100,E-01	7,140,E-01	7,130,E-01	7,776,E-01	6,988,E-01
350	7,729E-01	7,560,E-01	7,572,E-01	7,586,E-01	8,219,E-01	7,381,E-01
355	8,008E-01	7,850,E-01	7,858,E-01	7,864,E-01	8,503,E-01	7,649,E-01
360	7,612E-01	7,480,E-01	7,478,E-01	7,481,E-01	8,065,E-01	7,276,E-01
365	9,217E-01	9,060,E-01	9,059,E-01	9,060,E-01	9,741,E-01	8,822,E-01
370	9,683E-01	9,520,E-01	9,521,E-01	9,522,E-01	1,021,E+00	9,278,E-01
375	9,043E-01	8,900,E-01	8,898,E-01	8,898,E-01	9,513,E-01	8,675,E-01
380	9,503E-01	9,360,E-01	9,358,E-01	9,358,E-01	9,979,E-01	9,124,E-01
385	8,282E-01	8,160,E-01	8,159,E-01	8,160,E-01	8,678,E-01	7,962,E-01
390	9,707E-01	9,570,E-01	9,568,E-01	9,568,E-01	1,015,E+00	9,341,E-01
395	9,121E-01	9,000,E-01	8,995,E-01	8,996,E-01	9,520,E-01	8,786,E-01
400	1,380E+00	1,360,E+00	1,356,E+00	1,356,E+00	1,432,E+00	1,330,E+00
405	1,507E+00	1,480,E+00	1,475,E+00	1,475,E+00	1,554,E+00	1,454,E+00
410	1,532E+00	1,500,E+00	1,500,E+00	1,500,E+00	1,578,E+00	1,478,E+00
415	1,606E+00	1,580,E+00	1,575,E+00	1,575,E+00	1,653,E+00	1,551,E+00
420	1,594E+00	1,570,E+00	1,564,E+00	1,564,E+00	1,639,E+00	1,540,E+00
425	1,569E+00	1,540,E+00	1,541,E+00	1,540,E+00	1,611,E+00	1,516,E+00
430	1,419E+00	1,400,E+00	1,395,E+00	1,394,E+00	1,456,E+00	1,372,E+00
435	1,589E+00	1,570,E+00	1,564,E+00	1,563,E+00	1,630,E+00	1,537,E+00
440	1,696E+00	1,670,E+00	1,671,E+00	1,669,E+00	1,739,E+00	1,642,E+00
445	1,806E+00	1,790,E+00	1,781,E+00	1,778,E+00	1,850,E+00	1,749,E+00
450	1,907E+00	1,890,E+00	1,882,E+00	1,879,E+00	1,952,E+00	1,848,E+00
455	1,916E+00	1,900,E+00	1,893,E+00	1,889,E+00	1,960,E+00	1,857,E+00
460	1,932E+00	1,920,E+00	1,911,E+00	1,905,E+00	1,976,E+00	1,874,E+00
465	1,910E+00	1,900,E+00	1,890,E+00	1,885,E+00	1,953,E+00	1,854,E+00
470	1,883E+00	1,870,E+00	1,866,E+00	1,859,E+00	1,925,E+00	1,828,E+00
475	1,908E+00	1,900,E+00	1,894,E+00	1,886,E+00	1,951,E+00	1,853,E+00
480	1,929E+00	1,930,E+00	1,916,E+00	1,904,E+00	1,972,E+00	1,875,E+00
485	1,801E+00	1,800,E+00	1,790,E+00	1,778,E+00	1,840,E+00	1,753,E+00
490	1,824E+00	1,830,E+00	1,814,E+00	1,802,E+00	1,863,E+00	1,776,E+00
495	1,853E+00	1,860,E+00	1,845,E+00	1,830,E+00	1,892,E+00	1,805,E+00
500	1,801E+00	1,810,E+00	1,793,E+00	1,773,E+00	1,838,E+00	1,754,E+00
505	1,801E+00	1,830,E+00	1,794,E+00	1,762,E+00	1,837,E+00	1,753,E+00
510	1,783E+00	1,800,E+00	1,777,E+00	1,750,E+00	1,818,E+00	1,737,E+00

Table A.4 continued

Wavelength nm	$E_{\lambda,H3}$	$E_{\lambda,H4}$	$E_{\lambda,H5}$	$E_{\lambda,H6}$	$E_{\lambda,H7}$	$E_{\lambda,H8}$
	$W \cdot m^{-2} \cdot nm^{-1}$					
515	1,693E+00	1,710,E+00	1,688,E+00	1,664,E+00	1,726,E+00	1,650,E+00
520	1,692E+00	1,710,E+00	1,687,E+00	1,661,E+00	1,724,E+00	1,648,E+00
525	1,739E+00	1,770,E+00	1,736,E+00	1,704,E+00	1,772,E+00	1,695,E+00
530	1,761E+00	1,800,E+00	1,760,E+00	1,722,E+00	1,795,E+00	1,717,E+00
535	1,758E+00	1,800,E+00	1,758,E+00	1,717,E+00	1,792,E+00	1,714,E+00
540	1,721E+00	1,770,E+00	1,722,E+00	1,678,E+00	1,754,E+00	1,679,E+00
545	1,739E+00	1,790,E+00	1,742,E+00	1,692,E+00	1,773,E+00	1,697,E+00
550	1,740E+00	1,790,E+00	1,743,E+00	1,694,E+00	1,773,E+00	1,697,E+00
555	1,727E+00	1,780,E+00	1,731,E+00	1,680,E+00	1,760,E+00	1,685,E+00
560	1,675E+00	1,740,E+00	1,680,E+00	1,626,E+00	1,707,E+00	1,635,E+00
565	1,670E+00	1,740,E+00	1,676,E+00	1,615,E+00	1,702,E+00	1,630,E+00
570	1,641E+00	1,720,E+00	1,649,E+00	1,579,E+00	1,674,E+00	1,601,E+00
575	1,646E+00	1,730,E+00	1,656,E+00	1,586,E+00	1,680,E+00	1,606,E+00
580	1,647E+00	1,720,E+00	1,656,E+00	1,593,E+00	1,680,E+00	1,607,E+00
585	1,646E+00	1,730,E+00	1,655,E+00	1,588,E+00	1,677,E+00	1,607,E+00
590	1,547E+00	1,670,E+00	1,561,E+00	1,461,E+00	1,581,E+00	1,508,E+00
595	1,572E+00	1,700,E+00	1,585,E+00	1,486,E+00	1,605,E+00	1,534,E+00
600	1,576E+00	1,670,E+00	1,586,E+00	1,507,E+00	1,606,E+00	1,540,E+00
605	1,591E+00	1,670,E+00	1,601,E+00	1,534,E+00	1,620,E+00	1,556,E+00
610	1,580E+00	1,650,E+00	1,590,E+00	1,529,E+00	1,608,E+00	1,546,E+00
615	1,543E+00	1,610,E+00	1,553,E+00	1,499,E+00	1,571,E+00	1,511,E+00
620	1,541E+00	1,600,E+00	1,552,E+00	1,502,E+00	1,569,E+00	1,508,E+00
625	1,497E+00	1,560,E+00	1,510,E+00	1,462,E+00	1,526,E+00	1,464,E+00
630	1,486E+00	1,550,E+00	1,500,E+00	1,452,E+00	1,515,E+00	1,452,E+00
635	1,504E+00	1,560,E+00	1,516,E+00	1,472,E+00	1,531,E+00	1,473,E+00
640	1,502E+00	1,550,E+00	1,513,E+00	1,474,E+00	1,528,E+00	1,471,E+00
645	1,480E+00	1,540,E+00	1,492,E+00	1,445,E+00	1,506,E+00	1,450,E+00
650	1,446E+00	1,520,E+00	1,459,E+00	1,401,E+00	1,472,E+00	1,415,E+00
655	1,378E+00	1,440,E+00	1,391,E+00	1,344,E+00	1,403,E+00	1,350,E+00
660	1,403E+00	1,450,E+00	1,415,E+00	1,383,E+00	1,427,E+00	1,374,E+00
665	1,422E+00	1,460,E+00	1,434,E+00	1,411,E+00	1,446,E+00	1,394,E+00
670	1,440E+00	1,470,E+00	1,451,E+00	1,431,E+00	1,463,E+00	1,413,E+00
675	1,436E+00	1,470,E+00	1,447,E+00	1,430,E+00	1,459,E+00	1,410,E+00
680	1,413E+00	1,440,E+00	1,424,E+00	1,408,E+00	1,435,E+00	1,387,E+00
685	1,343E+00	1,370,E+00	1,358,E+00	1,343,E+00	1,368,E+00	1,315,E+00
690	1,240E+00	1,290,E+00	1,261,E+00	1,238,E+00	1,269,E+00	1,209,E+00
695	1,290E+00	1,380,E+00	1,306,E+00	1,249,E+00	1,315,E+00	1,262,E+00
700	1,306E+00	1,390,E+00	1,321,E+00	1,266,E+00	1,330,E+00	1,279,E+00
705	1,321E+00	1,390,E+00	1,335,E+00	1,289,E+00	1,344,E+00	1,295,E+00
710	1,327E+00	1,370,E+00	1,341,E+00	1,309,E+00	1,349,E+00	1,303,E+00
715	1,245E+00	1,350,E+00	1,261,E+00	1,200,E+00	1,268,E+00	1,220,E+00
720	1,080E+00	1,330,E+00	1,100,E+00	9,829,E-01	1,106,E+00	1,053,E+00
725	1,088E+00	1,320,E+00	1,108,E+00	9,942,E-01	1,114,E+00	1,062,E+00
730	1,108E+00	1,300,E+00	1,127,E+00	1,019,E+00	1,133,E+00	1,081,E+00
735	1,206E+00	1,300,E+00	1,221,E+00	1,162,E+00	1,228,E+00	1,182,E+00
740	1,224E+00	1,270,E+00	1,237,E+00	1,208,E+00	1,243,E+00	1,202,E+00
745	1,248E+00	1,270,E+00	1,259,E+00	1,251,E+00	1,266,E+00	1,227,E+00
750	1,240E+00	1,260,E+00	1,251,E+00	1,247,E+00	1,257,E+00	1,219,E+00
755	1,219E+00	1,230,E+00	1,231,E+00	1,228,E+00	1,237,E+00	1,199,E+00
760	7,893E-01	8,120,E-01	8,102,E-01	8,084,E-01	8,135,E-01	7,653,E-01
765	8,115E-01	8,380,E-01	8,365,E-01	8,348,E-01	8,396,E-01	7,840,E-01
770	1,133E+00	1,150,E+00	1,147,E+00	1,144,E+00	1,152,E+00	1,113,E+00
775	1,164E+00	1,180,E+00	1,175,E+00	1,173,E+00	1,181,E+00	1,146,E+00
780	1,149E+00	1,160,E+00	1,160,E+00	1,156,E+00	1,165,E+00	1,131,E+00
785	1,133E+00	1,150,E+00	1,144,E+00	1,136,E+00	1,149,E+00	1,115,E+00

Table A.4 continued

Wavelength nm	$E_{\lambda,H3}$	$E_{\lambda,H4}$	$E_{\lambda,H5}$	$E_{\lambda,H6}$	$E_{\lambda,H7}$	$E_{\lambda,H8}$
	$W \cdot m^{-2} \cdot nm^{-1}$					
790	1,097E+00	1,140,E+00	1,109,E+00	1,083,E+00	1,114,E+00	1,078,E+00
795	1,082E+00	1,120,E+00	1,093,E+00	1,072,E+00	1,098,E+00	1,063,E+00
800	1,078E+00	1,120,E+00	1,090,E+00	1,064,E+00	1,094,E+00	1,060,E+00
805	1,068E+00	1,110,E+00	1,079,E+00	1,056,E+00	1,084,E+00	1,050,E+00
810	1,041E+00	1,100,E+00	1,054,E+00	1,017,E+00	1,058,E+00	1,023,E+00
815	9,001E-01	1,090,E+00	9,158,E-01	8,267,E-01	9,188,E-01	8,807,E-01
820	8,828E-01	1,060,E+00	8,976,E-01	8,230,E-01	9,005,E-01	8,644,E-01
825	9,088E-01	1,060,E+00	9,231,E-01	8,596,E-01	9,261,E-01	8,906,E-01
830	9,151E-01	1,050,E+00	9,288,E-01	8,682,E-01	9,317,E-01	8,975,E-01
835	9,557E-01	1,030,E+00	9,681,E-01	9,236,E-01	9,712,E-01	9,389,E-01
840	9,879E-01	1,020,E+00	9,991,E-01	9,758,E-01	1,002,E+00	9,720,E-01
845	9,890E-01	1,010,E+00	9,994,E-01	9,909,E-01	1,003,E+00	9,739,E-01
850	9,466E-01	9,630,E-01	9,564,E-01	9,501,E-01	9,594,E-01	9,323,E-01
855	9,133E-01	9,270,E-01	9,227,E-01	9,180,E-01	9,255,E-01	8,996,E-01
860	9,698E-01	9,820,E-01	9,796,E-01	9,777,E-01	9,826,E-01	9,555,E-01
865	9,359E-01	9,460,E-01	9,453,E-01	9,447,E-01	9,481,E-01	9,221,E-01
870	9,491E-01	9,590,E-01	9,587,E-01	9,583,E-01	9,615,E-01	9,352,E-01
875	9,399E-01	9,500,E-01	9,495,E-01	9,489,E-01	9,522,E-01	9,263,E-01
880	9,265E-01	9,380,E-01	9,360,E-01	9,339,E-01	9,386,E-01	9,130,E-01
885	9,129E-01	9,270,E-01	9,225,E-01	9,178,E-01	9,250,E-01	8,995,E-01
890	8,984E-01	9,220,E-01	9,083,E-01	8,966,E-01	9,106,E-01	8,849,E-01
895	7,769E-01	9,080,E-01	7,889,E-01	7,270,E-01	7,907,E-01	7,624,E-01
900	6,538E-01	8,870,E-01	6,667,E-01	5,796,E-01	6,680,E-01	6,392,E-01
905	7,223E-01	8,870,E-01	7,344,E-01	6,643,E-01	7,360,E-01	7,080,E-01
910	6,471E-01	8,710,E-01	6,599,E-01	5,681,E-01	6,612,E-01	6,327,E-01
915	6,328E-01	8,720,E-01	6,461,E-01	5,439,E-01	6,473,E-01	6,182,E-01
920	6,905E-01	8,500,E-01	7,025,E-01	6,258,E-01	7,039,E-01	6,767,E-01
925	6,798E-01	8,340,E-01	6,921,E-01	6,062,E-01	6,934,E-01	6,659,E-01
930	4,423E-01	8,440,E-01	4,549,E-01	3,254,E-01	4,556,E-01	4,293,E-01
935	2,168E-01	8,360,E-01	2,258,E-01	1,162,E-01	2,260,E-01	2,080,E-01
940	3,388E-01	8,160,E-01	3,502,E-01	2,242,E-01	3,506,E-01	3,273,E-01
945	3,087E-01	8,110,E-01	3,195,E-01	2,003,E-01	3,199,E-01	2,979,E-01
950	3,305E-01	8,090,E-01	3,419,E-01	2,159,E-01	3,423,E-01	3,191,E-01
955	3,432E-01	7,870,E-01	3,548,E-01	2,354,E-01	3,552,E-01	3,317,E-01
960	4,062E-01	7,890,E-01	4,184,E-01	3,046,E-01	4,190,E-01	3,938,E-01
965	4,917E-01	7,770,E-01	5,037,E-01	4,006,E-01	5,044,E-01	4,791,E-01
970	6,289E-01	7,730,E-01	6,395,E-01	5,686,E-01	6,406,E-01	6,169,E-01
975	5,933E-01	7,620,E-01	6,040,E-01	5,266,E-01	6,049,E-01	5,814,E-01
980	6,313E-01	7,560,E-01	6,415,E-01	5,785,E-01	6,426,E-01	6,197,E-01
985	6,907E-01	7,490,E-01	6,998,E-01	6,628,E-01	7,010,E-01	6,797,E-01
990	7,164E-01	7,390,E-01	7,247,E-01	7,101,E-01	7,259,E-01	7,062,E-01
995	7,226E-01	7,360,E-01	7,305,E-01	7,249,E-01	7,317,E-01	7,126,E-01
1 000	7,146E-01	7,280,E-01	7,225,E-01	7,170,E-01	7,237,E-01	7,048,E-01
1 005	6,943E-01	7,070,E-01	7,019,E-01	6,968,E-01	7,030,E-01	6,847,E-01
1 010	6,998E-01	7,140,E-01	7,076,E-01	7,021,E-01	7,087,E-01	6,902,E-01
1 015	6,932E-01	7,040,E-01	7,007,E-01	6,982,E-01	7,018,E-01	6,838,E-01
1 020	6,829E-01	6,930,E-01	6,904,E-01	6,876,E-01	6,914,E-01	6,737,E-01
1 025	6,814E-01	6,920,E-01	6,889,E-01	6,857,E-01	6,899,E-01	6,722,E-01
1 030	6,736E-01	6,830,E-01	6,810,E-01	6,794,E-01	6,820,E-01	6,646,E-01
1 035	6,631E-01	6,710,E-01	6,703,E-01	6,700,E-01	6,713,E-01	6,543,E-01
1 040	6,574E-01	6,650,E-01	6,646,E-01	6,645,E-01	6,655,E-01	6,486,E-01
1 045	6,487E-01	6,560,E-01	6,558,E-01	6,558,E-01	6,567,E-01	6,400,E-01
1 050	6,437E-01	6,510,E-01	6,508,E-01	6,508,E-01	6,517,E-01	6,351,E-01
1 055	6,357E-01	6,430,E-01	6,428,E-01	6,427,E-01	6,437,E-01	6,271,E-01
1 060	6,222E-01	6,300,E-01	6,293,E-01	6,289,E-01	6,301,E-01	6,137,E-01

Table A.4 continued

Wavelength nm	$E_{\lambda,H3}$	$E_{\lambda,H4}$	$E_{\lambda,H5}$	$E_{\lambda,H6}$	$E_{\lambda,H7}$	$E_{\lambda,H8}$
	$W \cdot m^{-2} \cdot nm^{-1}$					
1 065	6,155E-01	6,240,E-01	6,225,E-01	6,213,E-01	6,233,E-01	6,070,E-01
1 070	6,020E-01	6,130,E-01	6,089,E-01	6,050,E-01	6,097,E-01	5,937,E-01
1 075	5,989E-01	6,140,E-01	6,058,E-01	5,985,E-01	6,066,E-01	5,907,E-01
1 080	5,865E-01	6,080,E-01	5,934,E-01	5,817,E-01	5,941,E-01	5,784,E-01
1 085	5,701E-01	6,020,E-01	5,770,E-01	5,593,E-01	5,777,E-01	5,620,E-01
1 090	5,598E-01	5,970,E-01	5,668,E-01	5,461,E-01	5,674,E-01	5,518,E-01
1 095	5,205E-01	5,780,E-01	5,276,E-01	4,930,E-01	5,282,E-01	5,125,E-01
1 100	4,855E-01	5,830,E-01	4,933,E-01	4,371,E-01	4,938,E-01	4,771,E-01
1 105	4,494E-01	5,830,E-01	4,574,E-01	3,844,E-01	4,578,E-01	4,409,E-01
1 110	3,885E-01	5,780,E-01	3,964,E-01	3,122,E-01	3,968,E-01	3,803,E-01
1 115	2,327E-01	5,720,E-01	2,393,E-01	1,536,E-01	2,394,E-01	2,262,E-01
1 120	1,412E-01	5,650,E-01	1,461,E-01	6,815,E-02	1,462,E-01	1,364,E-01
1 125	1,148E-01	5,570,E-01	1,190,E-01	5,008,E-02	1,190,E-01	1,107,E-01
1 130	1,478E-01	5,510,E-01	1,528,E-01	7,363,E-02	1,529,E-01	1,428,E-01
1 135	1,367E-01	5,470,E-01	1,411,E-01	7,179,E-02	1,412,E-01	1,323,E-01
1 140	2,309E-01	5,380,E-01	2,373,E-01	1,433,E-01	2,374,E-01	2,246,E-01
1 145	1,706E-01	5,380,E-01	1,759,E-01	9,307,E-02	1,759,E-01	1,654,E-01
1 150	1,889E-01	5,350,E-01	1,943,E-01	1,097,E-01	1,944,E-01	1,835,E-01
1 155	2,491E-01	5,300,E-01	2,553,E-01	1,660,E-01	2,554,E-01	2,429,E-01
1 160	3,200E-01	5,180,E-01	3,266,E-01	2,465,E-01	3,268,E-01	3,132,E-01
1 165	3,810E-01	5,150,E-01	3,877,E-01	3,189,E-01	3,879,E-01	3,741,E-01
1 170	4,158E-01	5,130,E-01	4,222,E-01	3,667,E-01	4,226,E-01	4,089,E-01
1 175	4,168E-01	5,070,E-01	4,229,E-01	3,796,E-01	4,232,E-01	4,103,E-01
1 180	4,132E-01	5,030,E-01	4,192,E-01	3,799,E-01	4,195,E-01	4,067,E-01
1 185	4,090E-01	4,980,E-01	4,150,E-01	3,728,E-01	4,153,E-01	4,025,E-01
1 190	4,217E-01	4,940,E-01	4,276,E-01	3,902,E-01	4,279,E-01	4,154,E-01
1 195	4,314E-01	4,900,E-01	4,372,E-01	4,037,E-01	4,375,E-01	4,252,E-01
1 200	4,094E-01	4,800,E-01	4,151,E-01	3,796,E-01	4,154,E-01	4,033,E-01
1 205	4,114E-01	4,740,E-01	4,169,E-01	3,872,E-01	4,172,E-01	4,054,E-01
1 210	4,169E-01	4,700,E-01	4,223,E-01	3,942,E-01	4,226,E-01	4,110,E-01
1 215	4,291E-01	4,750,E-01	4,346,E-01	4,055,E-01	4,349,E-01	4,231,E-01
1 220	4,386E-01	4,680,E-01	4,438,E-01	4,253,E-01	4,441,E-01	4,328,E-01
1 225	4,371E-01	4,640,E-01	4,422,E-01	4,254,E-01	4,425,E-01	4,315,E-01
1 230	4,442E-01	4,600,E-01	4,490,E-01	4,392,E-01	4,493,E-01	4,388,E-01
1 235	4,471E-01	4,560,E-01	4,517,E-01	4,473,E-01	4,520,E-01	4,418,E-01
1 240	4,446E-01	4,510,E-01	4,492,E-01	4,475,E-01	4,495,E-01	4,395,E-01
1 245	4,416E-01	4,470,E-01	4,461,E-01	4,455,E-01	4,464,E-01	4,365,E-01
1 250	4,374E-01	4,420,E-01	4,418,E-01	4,412,E-01	4,421,E-01	4,323,E-01
1 255	4,291E-01	4,340,E-01	4,336,E-01	4,326,E-01	4,339,E-01	4,240,E-01
1 260	4,137E-01	4,190,E-01	4,185,E-01	4,174,E-01	4,187,E-01	4,085,E-01
1 265	3,880E-01	3,940,E-01	3,930,E-01	3,918,E-01	3,932,E-01	3,825,E-01
1 270	3,765E-01	3,830,E-01	3,816,E-01	3,799,E-01	3,818,E-01	3,711,E-01
1 275	4,036E-01	4,110,E-01	4,083,E-01	4,055,E-01	4,085,E-01	3,986,E-01
1 280	3,966E-01	4,050,E-01	4,008,E-01	3,964,E-01	4,010,E-01	3,919,E-01
1 285	4,011E-01	4,110,E-01	4,052,E-01	3,992,E-01	4,055,E-01	3,965,E-01
1 290	3,994E-01	4,160,E-01	4,037,E-01	3,914,E-01	4,039,E-01	3,947,E-01
1 295	3,873E-01	4,150,E-01	3,917,E-01	3,707,E-01	3,919,E-01	3,825,E-01
1 300	3,661E-01	4,120,E-01	3,706,E-01	3,423,E-01	3,708,E-01	3,614,E-01
1 305	3,445E-01	4,080,E-01	3,489,E-01	3,138,E-01	3,491,E-01	3,398,E-01
1 310	3,264E-01	4,020,E-01	3,307,E-01	2,928,E-01	3,309,E-01	3,217,E-01
1 315	3,014E-01	3,950,E-01	3,057,E-01	2,608,E-01	3,059,E-01	2,968,E-01
1 320	2,831E-01	3,960,E-01	2,875,E-01	2,376,E-01	2,876,E-01	2,786,E-01
1 325	2,688E-01	3,930,E-01	2,732,E-01	2,186,E-01	2,733,E-01	2,643,E-01
1 330	1,976E-01	3,870,E-01	2,017,E-01	1,382,E-01	2,018,E-01	1,935,E-01
1 335	1,853E-01	3,870,E-01	1,893,E-01	1,237,E-01	1,893,E-01	1,812,E-01

Table A.4 continued

Wavelength nm	$E_{\lambda,H3}$	$E_{\lambda,H4}$	$E_{\lambda,H5}$	$E_{\lambda,H6}$	$E_{\lambda,H7}$	$E_{\lambda,H8}$
	$W \cdot m^{-2} \cdot nm^{-1}$					
1 340	1,631E-01	3,830,E-01	1,668,E-01	1,022,E-01	1,668,E-01	1,594,E-01
1 345	8,309E-02	3,810,E-01	8,546,E-02	3,620,E-02	8,547,E-02	8,078,E-02
1 350	1,464E-02	3,780,E-01	1,517,E-02	2,880,E-03	1,517,E-02	1,413,E-02
1 355	5,889E-04	3,730,E-01	6,139,E-04	3,903,E-05	6,139,E-04	5,650,E-04
1 360	1,016E-05	3,700,E-01	1,064,E-05	3,154,E-08	1,064,E-05	9,698,E-06
1 365	6,115E-06	3,670,E-01	6,408,E-06	1,654,E-09	6,408,E-06	5,835,E-06
1 370	2,205E-05	3,630,E-01	2,308,E-05	9,104,E-08	2,308,E-05	2,107,E-05
1 375	3,297E-04	3,610,E-01	3,449,E-04	2,522,E-06	3,449,E-04	3,153,E-04
1 380	2,380E-04	3,590,E-01	2,489,E-04	2,181,E-06	2,489,E-04	2,276,E-04
1 385	6,768E-05	3,570,E-01	7,079,E-05	3,106,E-07	7,079,E-05	6,471,E-05
1 390	3,578E-04	3,540,E-01	3,739,E-04	1,837,E-06	3,739,E-04	3,423,E-04
1 395	2,175E-04	3,510,E-01	2,273,E-04	1,749,E-06	2,273,E-04	2,082,E-04
1 400	9,102E-04	3,470,E-01	9,496,E-04	1,800,E-05	9,496,E-04	8,726,E-04
1 405	1,312E-03	3,450,E-01	1,369,E-03	2,823,E-05	1,369,E-03	1,258,E-03
1 410	3,149E-03	3,410,E-01	3,274,E-03	2,494,E-04	3,274,E-03	3,029,E-03
1 415	1,195E-02	3,390,E-01	1,240,E-02	2,052,E-03	1,240,E-02	1,153,E-02
1 420	1,407E-02	3,350,E-01	1,457,E-02	2,405,E-03	1,457,E-02	1,360,E-02
1 425	2,480E-02	3,300,E-01	2,562,E-02	5,912,E-03	2,562,E-02	2,401,E-02
1 430	3,638E-02	3,070,E-01	3,748,E-02	1,229,E-02	3,748,E-02	3,532,E-02
1 435	3,002E-02	3,000,E-01	3,098,E-02	8,686,E-03	3,098,E-02	2,908,E-02
1 440	3,816E-02	3,010,E-01	3,933,E-02	1,092,E-02	3,933,E-02	3,703,E-02
1 445	4,894E-02	3,150,E-01	5,031,E-02	1,731,E-02	5,031,E-02	4,761,E-02
1 450	6,273E-02	3,180,E-01	6,436,E-02	2,727,E-02	6,437,E-02	6,114,E-02
1 455	9,764E-02	3,160,E-01	9,991,E-02	4,838,E-02	9,992,E-02	9,541,E-02
1 460	1,138E-01	3,160,E-01	1,163,E-01	6,264,E-02	1,163,E-01	1,113,E-01
1 465	8,890E-02	3,120,E-01	9,093,E-02	4,645,E-02	9,094,E-02	8,691,E-02
1 470	6,045E-02	3,090,E-01	6,199,E-02	2,464,E-02	6,200,E-02	5,895,E-02
1 475	9,330E-02	3,030,E-01	9,532,E-02	4,957,E-02	9,534,E-02	9,131,E-02
1 480	9,164E-02	3,040,E-01	9,365,E-02	4,839,E-02	9,367,E-02	8,966,E-02
1 485	1,163E-01	3,000,E-01	1,187,E-01	6,898,E-02	1,187,E-01	1,140,E-01
1 490	1,594E-01	2,980,E-01	1,621,E-01	1,121,E-01	1,621,E-01	1,568,E-01
1 495	1,883E-01	2,990,E-01	1,911,E-01	1,448,E-01	1,912,E-01	1,854,E-01
1 500	2,200E-01	2,930,E-01	2,228,E-01	1,863,E-01	2,228,E-01	2,171,E-01
1 505	2,104E-01	2,820,E-01	2,131,E-01	1,792,E-01	2,131,E-01	2,077,E-01
1 510	2,410E-01	2,900,E-01	2,437,E-01	2,170,E-01	2,437,E-01	2,382,E-01
1 515	2,470E-01	2,870,E-01	2,497,E-01	2,245,E-01	2,497,E-01	2,442,E-01
1 520	2,574E-01	2,840,E-01	2,599,E-01	2,414,E-01	2,600,E-01	2,547,E-01
1 525	2,651E-01	2,820,E-01	2,676,E-01	2,543,E-01	2,677,E-01	2,625,E-01
1 530	2,654E-01	2,780,E-01	2,678,E-01	2,584,E-01	2,679,E-01	2,628,E-01
1 535	2,679E-01	2,750,E-01	2,703,E-01	2,655,E-01	2,703,E-01	2,654,E-01
1 540	2,661E-01	2,710,E-01	2,684,E-01	2,652,E-01	2,684,E-01	2,636,E-01
1 545	2,677E-01	2,720,E-01	2,699,E-01	2,672,E-01	2,700,E-01	2,653,E-01
1 550	2,654E-01	2,690,E-01	2,675,E-01	2,661,E-01	2,676,E-01	2,630,E-01
1 555	2,627E-01	2,660,E-01	2,648,E-01	2,637,E-01	2,649,E-01	2,604,E-01
1 560	2,628E-01	2,660,E-01	2,649,E-01	2,640,E-01	2,650,E-01	2,606,E-01
1 565	2,592E-01	2,620,E-01	2,612,E-01	2,602,E-01	2,613,E-01	2,569,E-01
1 570	2,464E-01	2,490,E-01	2,486,E-01	2,480,E-01	2,486,E-01	2,441,E-01
1 575	2,366E-01	2,390,E-01	2,388,E-01	2,383,E-01	2,388,E-01	2,344,E-01
1 580	2,397E-01	2,420,E-01	2,419,E-01	2,414,E-01	2,419,E-01	2,375,E-01
1 585	2,447E-01	2,470,E-01	2,467,E-01	2,459,E-01	2,468,E-01	2,426,E-01
1 590	2,401E-01	2,430,E-01	2,419,E-01	2,412,E-01	2,420,E-01	2,381,E-01
1 595	2,468E-01	2,500,E-01	2,487,E-01	2,476,E-01	2,488,E-01	2,448,E-01
1 600	2,359E-01	2,390,E-01	2,379,E-01	2,373,E-01	2,380,E-01	2,339,E-01
1 605	2,312E-01	2,330,E-01	2,332,E-01	2,329,E-01	2,333,E-01	2,292,E-01
1 610	2,268E-01	2,290,E-01	2,287,E-01	2,282,E-01	2,287,E-01	2,248,E-01

Table A.4 continued

Wavelength nm	$E_{\lambda,H3}$	$E_{\lambda,H4}$	$E_{\lambda,H5}$	$E_{\lambda,H6}$	$E_{\lambda,H7}$	$E_{\lambda,H8}$
	$W \cdot m^{-2} \cdot nm^{-1}$					
1 615	2,314E-01	2,340,E-01	2,331,E-01	2,327,E-01	2,332,E-01	2,295,E-01
1 620	2,328E-01	2,350,E-01	2,345,E-01	2,342,E-01	2,346,E-01	2,310,E-01
1 625	2,359E-01	2,380,E-01	2,376,E-01	2,373,E-01	2,376,E-01	2,340,E-01
1 630	2,334E-01	2,350,E-01	2,352,E-01	2,348,E-01	2,352,E-01	2,317,E-01
1 635	2,258E-01	2,280,E-01	2,275,E-01	2,269,E-01	2,275,E-01	2,241,E-01
1 640	2,153E-01	2,180,E-01	2,169,E-01	2,162,E-01	2,170,E-01	2,136,E-01
1 645	2,159E-01	2,180,E-01	2,175,E-01	2,166,E-01	2,176,E-01	2,142,E-01
1 650	2,160E-01	2,190,E-01	2,176,E-01	2,163,E-01	2,176,E-01	2,143,E-01
1 655	2,179E-01	2,210,E-01	2,195,E-01	2,178,E-01	2,196,E-01	2,163,E-01
1 660	2,192E-01	2,220,E-01	2,207,E-01	2,188,E-01	2,208,E-01	2,175,E-01
1 665	2,093E-01	2,130,E-01	2,109,E-01	2,090,E-01	2,109,E-01	2,077,E-01
1 670	2,107E-01	2,140,E-01	2,122,E-01	2,103,E-01	2,122,E-01	2,091,E-01
1 675	2,070E-01	2,100,E-01	2,084,E-01	2,062,E-01	2,085,E-01	2,055,E-01
1 680	1,998E-01	2,030,E-01	2,011,E-01	1,993,E-01	2,012,E-01	1,983,E-01
1 685	2,025E-01	2,060,E-01	2,038,E-01	2,015,E-01	2,039,E-01	2,010,E-01
1 690	2,013E-01	2,070,E-01	2,027,E-01	1,984,E-01	2,028,E-01	1,999,E-01
1 695	2,007E-01	2,070,E-01	2,020,E-01	1,974,E-01	2,021,E-01	1,992,E-01
1 700	1,980E-01	2,030,E-01	1,993,E-01	1,954,E-01	1,994,E-01	1,966,E-01
1 705	1,949E-01	2,000,E-01	1,963,E-01	1,922,E-01	1,963,E-01	1,936,E-01
1 710	1,857E-01	1,970,E-01	1,870,E-01	1,802,E-01	1,870,E-01	1,843,E-01
1 715	1,849E-01	1,980,E-01	1,861,E-01	1,783,E-01	1,862,E-01	1,835,E-01
1 720	1,825E-01	1,950,E-01	1,838,E-01	1,775,E-01	1,838,E-01	1,812,E-01
1 725	1,734E-01	1,910,E-01	1,747,E-01	1,642,E-01	1,747,E-01	1,721,E-01
1 730	1,702E-01	1,890,E-01	1,714,E-01	1,613,E-01	1,714,E-01	1,689,E-01
1 735	1,598E-01	1,810,E-01	1,609,E-01	1,499,E-01	1,610,E-01	1,586,E-01
1 740	1,613E-01	1,840,E-01	1,625,E-01	1,506,E-01	1,625,E-01	1,601,E-01
1 745	1,540E-01	1,850,E-01	1,551,E-01	1,415,E-01	1,552,E-01	1,528,E-01
1 750	1,618E-01	1,840,E-01	1,630,E-01	1,502,E-01	1,630,E-01	1,606,E-01
1 755	1,517E-01	1,840,E-01	1,528,E-01	1,365,E-01	1,528,E-01	1,505,E-01
1 760	1,553E-01	1,810,E-01	1,564,E-01	1,415,E-01	1,564,E-01	1,541,E-01
1 765	1,322E-01	1,790,E-01	1,333,E-01	1,119,E-01	1,333,E-01	1,311,E-01
1 770	1,366E-01	1,770,E-01	1,378,E-01	1,129,E-01	1,378,E-01	1,354,E-01
1 775	1,138E-01	1,750,E-01	1,149,E-01	8,632,E-02	1,149,E-01	1,127,E-01
1 780	9,784E-02	1,730,E-01	9,887,E-02	6,924,E-02	9,888,E-02	9,680,E-02
1 785	7,727E-02	1,720,E-01	7,821,E-02	4,758,E-02	7,822,E-02	7,634,E-02
1 790	8,537E-02	1,710,E-01	8,637,E-02	5,596,E-02	8,638,E-02	8,437,E-02
1 795	4,523E-02	1,700,E-01	4,591,E-02	1,929,E-02	4,591,E-02	4,456,E-02
1 800	3,033E-02	1,680,E-01	3,081,E-02	1,363,E-02	3,081,E-02	2,986,E-02
1 805	1,279E-02	1,660,E-01	1,304,E-02	2,799,E-03	1,304,E-02	1,254,E-02
1 810	8,934E-03	1,650,E-01	9,120,E-03	1,286,E-03	9,120,E-03	8,751,E-03
1 815	3,236E-03	1,580,E-01	3,308,E-03	2,594,E-04	3,308,E-03	3,166,E-03
1 820	1,032E-03	1,560,E-01	1,056,E-03	3,699,E-05	1,056,E-03	1,008,E-03
1 825	1,195E-03	1,600,E-01	1,223,E-03	3,036,E-05	1,223,E-03	1,168,E-03
1 830	7,611E-05	1,590,E-01	7,789,E-05	1,808,E-06	7,789,E-05	7,437,E-05
1 835	4,842E-06	1,580,E-01	4,970,E-06	2,566,E-09	4,970,E-06	4,718,E-06
1 840	9,636E-07	1,550,E-01	9,886,E-07	5,395,E-10	9,886,E-07	9,392,E-07
1 845	1,082E-05	1,530,E-01	1,110,E-05	6,755,E-09	1,110,E-05	1,055,E-05
1 850	5,788E-06	1,530,E-01	5,937,E-06	2,395,E-09	5,937,E-06	5,642,E-06
1 855	1,349E-06	1,520,E-01	1,383,E-06	7,918,E-10	1,383,E-06	1,315,E-06
1 860	1,094E-05	1,500,E-01	1,122,E-05	1,082,E-08	1,122,E-05	1,067,E-05
1 865	1,668E-05	1,480,E-01	1,711,E-05	1,188,E-08	1,711,E-05	1,627,E-05
1 870	1,005E-06	1,450,E-01	1,031,E-06	7,071,E-10	1,031,E-06	9,806,E-07
1 875	5,831E-06	1,350,E-01	5,974,E-06	1,529,E-08	5,974,E-06	5,691,E-06
1 880	9,692E-05	1,400,E-01	9,931,E-05	2,584,E-07	9,931,E-05	9,459,E-05
1 885	7,986E-05	1,420,E-01	8,180,E-05	3,750,E-07	8,180,E-05	7,798,E-05

Table A.4 continued

Wavelength nm	$E_{\lambda,H3}$	$E_{\lambda,H4}$	$E_{\lambda,H5}$	$E_{\lambda,H6}$	$E_{\lambda,H7}$	$E_{\lambda,H8}$
	$W \cdot m^{-2} \cdot nm^{-1}$					
1 890	2,663E-04	1,410,E-01	2,725,E-04	2,334,E-06	2,725,E-04	2,602,E-04
1 895	1,910E-04	1,380,E-01	1,956,E-04	1,569,E-06	1,956,E-04	1,865,E-04
1 900	1,193E-05	1,390,E-01	1,222,E-05	8,973,E-08	1,222,E-05	1,165,E-05
1 905	2,320E-06	1,380,E-01	2,376,E-06	2,084,E-09	2,376,E-06	2,266,E-06
1 910	2,955E-05	1,370,E-01	3,026,E-05	3,352,E-08	3,026,E-05	2,886,E-05
1 915	4,830E-05	1,360,E-01	4,935,E-05	3,717,E-07	4,935,E-05	4,726,E-05
1 920	4,640E-04	1,340,E-01	4,734,E-04	5,923,E-06	4,734,E-04	4,547,E-04
1 925	9,434E-04	1,330,E-01	9,629,E-04	2,227,E-05	9,629,E-04	9,244,E-04
1 930	7,666E-04	1,300,E-01	7,829,E-04	3,270,E-05	7,829,E-04	7,507,E-04
1 935	3,462E-03	1,300,E-01	3,530,E-03	3,098,E-04	3,530,E-03	3,396,E-03
1 940	3,851E-03	1,250,E-01	3,924,E-03	6,086,E-04	3,924,E-03	3,780,E-03
1 945	1,120E-02	1,110,E-01	1,139,E-02	2,811,E-03	1,139,E-02	1,101,E-02
1 950	1,696E-02	9,890,E-02	1,723,E-02	6,067,E-03	1,723,E-02	1,669,E-02
1 955	1,260E-02	7,770,E-02	1,281,E-02	3,940,E-03	1,281,E-02	1,239,E-02
1 960	2,442E-02	8,910,E-02	2,477,E-02	1,171,E-02	2,477,E-02	2,408,E-02
1 965	3,541E-02	8,550,E-02	3,586,E-02	2,178,E-02	3,587,E-02	3,497,E-02
1 970	5,449E-02	9,690,E-02	5,503,E-02	3,966,E-02	5,504,E-02	5,395,E-02
1 975	6,901E-02	1,090,E-01	6,956,E-02	5,103,E-02	6,957,E-02	6,845,E-02
1 980	7,577E-02	1,160,E-01	7,626,E-02	5,958,E-02	7,627,E-02	7,527,E-02
1 985	8,206E-02	1,170,E-01	8,253,E-02	6,751,E-02	8,254,E-02	8,159,E-02
1 990	8,399E-02	1,170,E-01	8,448,E-02	6,834,E-02	8,448,E-02	8,350,E-02
1 995	8,124E-02	1,060,E-01	8,174,E-02	6,925,E-02	8,175,E-02	8,075,E-02
2 000	5,095E-02	6,420,E-02	5,145,E-02	4,441,E-02	5,145,E-02	5,047,E-02
2 005	2,877E-02	3,980,E-02	2,915,E-02	2,387,E-02	2,915,E-02	2,839,E-02
2 010	5,256E-02	5,570,E-02	5,308,E-02	5,072,E-02	5,308,E-02	5,204,E-02
2 015	4,117E-02	5,120,E-02	4,164,E-02	3,583,E-02	4,165,E-02	4,071,E-02
2 020	5,750E-02	6,700,E-02	5,800,E-02	5,169,E-02	5,800,E-02	5,701,E-02
2 025	8,053E-02	8,750,E-02	8,094,E-02	7,574,E-02	8,095,E-02	8,012,E-02
2 030	8,781E-02	9,920,E-02	8,815,E-02	7,987,E-02	8,816,E-02	8,748,E-02
2 035	9,664E-02	1,020,E-01	9,689,E-02	9,284,E-02	9,690,E-02	9,639,E-02
2 040	9,292E-02	1,010,E-01	9,320,E-02	8,726,E-02	9,321,E-02	9,264,E-02
2 045	9,328E-02	9,840,E-02	9,357,E-02	8,889,E-02	9,358,E-02	9,299,E-02
2 050	7,807E-02	8,100,E-02	7,848,E-02	7,584,E-02	7,848,E-02	7,766,E-02
2 055	6,796E-02	7,200,E-02	6,842,E-02	6,522,E-02	6,842,E-02	6,752,E-02
2 060	7,648E-02	8,190,E-02	7,687,E-02	7,264,E-02	7,688,E-02	7,609,E-02
2 065	7,273E-02	7,660,E-02	7,314,E-02	7,002,E-02	7,315,E-02	7,232,E-02
2 070	7,546E-02	7,950,E-02	7,586,E-02	7,229,E-02	7,586,E-02	7,508,E-02
2 075	8,423E-02	8,720,E-02	8,456,E-02	8,220,E-02	8,456,E-02	8,391,E-02
2 080	9,005E-02	9,370,E-02	9,030,E-02	8,757,E-02	9,031,E-02	8,980,E-02
2 085	8,941E-02	9,280,E-02	8,966,E-02	8,714,E-02	8,966,E-02	8,916,E-02
2 090	9,189E-02	9,390,E-02	9,210,E-02	9,042,E-02	9,211,E-02	9,167,E-02
2 095	9,158E-02	9,490,E-02	9,177,E-02	8,939,E-02	9,178,E-02	9,138,E-02
2 100	8,833E-02	9,600,E-02	8,855,E-02	8,375,E-02	8,856,E-02	8,811,E-02
2 105	9,386E-02	9,560,E-02	9,404,E-02	9,258,E-02	9,405,E-02	9,369,E-02
2 110	9,141E-02	9,440,E-02	9,159,E-02	8,933,E-02	9,160,E-02	9,122,E-02
2 115	9,236E-02	9,410,E-02	9,253,E-02	9,099,E-02	9,254,E-02	9,219,E-02
2 120	8,855E-02	9,300,E-02	8,874,E-02	8,574,E-02	8,875,E-02	8,836,E-02
2 125	8,921E-02	9,250,E-02	8,938,E-02	8,711,E-02	8,939,E-02	8,903,E-02
2 130	8,987E-02	9,250,E-02	9,003,E-02	8,844,E-02	9,004,E-02	8,970,E-02
2 135	9,023E-02	9,160,E-02	9,039,E-02	8,923,E-02	9,040,E-02	9,007,E-02
2 140	9,066E-02	9,130,E-02	9,082,E-02	9,019,E-02	9,083,E-02	9,051,E-02
2 145	8,961E-02	9,040,E-02	8,976,E-02	8,907,E-02	8,977,E-02	8,945,E-02
2 150	8,531E-02	8,950,E-02	8,551,E-02	8,233,E-02	8,551,E-02	8,512,E-02
2 155	8,508E-02	8,870,E-02	8,527,E-02	8,242,E-02	8,528,E-02	8,489,E-02
2 160	8,374E-02	8,690,E-02	8,392,E-02	8,153,E-02	8,393,E-02	8,356,E-02

Table A.4 continued

Wavelength nm	$E_{\lambda,H3}$	$E_{\lambda,H4}$	$E_{\lambda,H5}$	$E_{\lambda,H6}$	$E_{\lambda,H7}$	$E_{\lambda,H8}$
	$W \cdot m^{-2} \cdot nm^{-1}$					
2 165	7,770E-02	8,250,E-02	7,788,E-02	7,520,E-02	7,789,E-02	7,752,E-02
2 170	8,126E-02	8,450,E-02	8,143,E-02	7,954,E-02	8,144,E-02	8,108,E-02
2 175	8,047E-02	8,510,E-02	8,066,E-02	7,730,E-02	8,067,E-02	8,027,E-02
2 180	8,150E-02	8,430,E-02	8,168,E-02	7,973,E-02	8,168,E-02	8,132,E-02
2 185	7,517E-02	8,420,E-02	7,539,E-02	7,049,E-02	7,539,E-02	7,496,E-02
2 190	7,902E-02	8,340,E-02	7,921,E-02	7,614,E-02	7,922,E-02	7,883,E-02
2 195	7,841E-02	8,290,E-02	7,861,E-02	7,535,E-02	7,862,E-02	7,822,E-02
2 200	7,303E-02	7,830,E-02	7,327,E-02	6,994,E-02	7,327,E-02	7,280,E-02
2 205	7,429E-02	7,920,E-02	7,450,E-02	7,115,E-02	7,450,E-02	7,409,E-02
2 210	7,831E-02	8,010,E-02	7,848,E-02	7,691,E-02	7,849,E-02	7,813,E-02
2 215	7,628E-02	7,940,E-02	7,647,E-02	7,411,E-02	7,647,E-02	7,609,E-02
2 220	7,741E-02	7,850,E-02	7,759,E-02	7,658,E-02	7,759,E-02	7,723,E-02
2 225	7,564E-02	7,730,E-02	7,582,E-02	7,435,E-02	7,583,E-02	7,545,E-02
2 230	7,599E-02	7,650,E-02	7,617,E-02	7,574,E-02	7,617,E-02	7,580,E-02
2 235	7,460E-02	7,550,E-02	7,478,E-02	7,398,E-02	7,479,E-02	7,441,E-02
2 240	7,381E-02	7,420,E-02	7,400,E-02	7,362,E-02	7,400,E-02	7,362,E-02
2 245	7,210E-02	7,280,E-02	7,230,E-02	7,163,E-02	7,230,E-02	7,189,E-02
2 250	7,252E-02	7,290,E-02	7,271,E-02	7,234,E-02	7,271,E-02	7,233,E-02
2 255	6,971E-02	7,020,E-02	6,992,E-02	6,949,E-02	6,992,E-02	6,950,E-02
2 260	6,889E-02	6,940,E-02	6,911,E-02	6,861,E-02	6,911,E-02	6,868,E-02
2 265	6,943E-02	6,980,E-02	6,963,E-02	6,923,E-02	6,964,E-02	6,923,E-02
2 270	6,721E-02	6,760,E-02	6,743,E-02	6,697,E-02	6,743,E-02	6,699,E-02
2 275	6,643E-02	6,690,E-02	6,665,E-02	6,619,E-02	6,665,E-02	6,621,E-02
2 280	6,737E-02	6,780,E-02	6,757,E-02	6,705,E-02	6,758,E-02	6,717,E-02
2 285	6,509E-02	6,550,E-02	6,531,E-02	6,480,E-02	6,531,E-02	6,487,E-02
2 290	6,472E-02	6,520,E-02	6,494,E-02	6,437,E-02	6,494,E-02	6,450,E-02
2 295	6,314E-02	6,370,E-02	6,336,E-02	6,272,E-02	6,337,E-02	6,292,E-02
2 300	6,120E-02	6,220,E-02	6,143,E-02	6,011,E-02	6,143,E-02	6,096,E-02
2 305	6,137E-02	6,270,E-02	6,160,E-02	6,005,E-02	6,161,E-02	6,114,E-02
2 310	6,364E-02	6,570,E-02	6,385,E-02	6,138,E-02	6,385,E-02	6,343,E-02
2 315	5,966E-02	6,180,E-02	5,989,E-02	5,761,E-02	5,989,E-02	5,942,E-02
2 320	5,458E-02	5,890,E-02	5,483,E-02	5,171,E-02	5,483,E-02	5,434,E-02
2 325	5,662E-02	6,230,E-02	5,684,E-02	5,253,E-02	5,685,E-02	5,640,E-02
2 330	5,770E-02	6,140,E-02	5,793,E-02	5,417,E-02	5,793,E-02	5,747,E-02
2 335	5,805E-02	6,110,E-02	5,828,E-02	5,540,E-02	5,828,E-02	5,783,E-02
2 340	4,848E-02	5,830,E-02	4,873,E-02	4,248,E-02	4,873,E-02	4,823,E-02
2 345	5,236E-02	5,780,E-02	5,261,E-02	4,820,E-02	5,261,E-02	5,212,E-02
2 350	4,394E-02	5,580,E-02	4,418,E-02	3,841,E-02	4,418,E-02	4,370,E-02
2 355	4,910E-02	5,570,E-02	4,935,E-02	4,424,E-02	4,935,E-02	4,886,E-02
2 360	5,128E-02	5,710,E-02	5,152,E-02	4,668,E-02	5,153,E-02	5,105,E-02
2 365	4,869E-02	5,850,E-02	4,892,E-02	4,280,E-02	4,892,E-02	4,846,E-02
2 370	3,486E-02	4,940,E-02	3,511,E-02	2,784,E-02	3,511,E-02	3,462,E-02
2 375	4,469E-02	5,460,E-02	4,493,E-02	3,871,E-02	4,493,E-02	4,445,E-02
2 380	4,195E-02	5,770,E-02	4,219,E-02	3,351,E-02	4,219,E-02	4,172,E-02
2 385	3,273E-02	5,460,E-02	3,295,E-02	2,391,E-02	3,295,E-02	3,251,E-02
2 390	3,702E-02	5,580,E-02	3,724,E-02	2,877,E-02	3,724,E-02	3,680,E-02
2 395	4,074E-02	5,520,E-02	4,096,E-02	3,321,E-02	4,097,E-02	4,051,E-02
2 400	4,314E-02	5,610,E-02	4,337,E-02	3,544,E-02	4,337,E-02	4,291,E-02
2 405	3,411E-02	5,600,E-02	3,433,E-02	2,503,E-02	3,433,E-02	3,389,E-02
2 410	3,323E-02	5,640,E-02	3,345,E-02	2,371,E-02	3,345,E-02	3,301,E-02
2 415	2,681E-02	5,520,E-02	2,700,E-02	1,690,E-02	2,700,E-02	2,662,E-02
2 420	2,583E-02	5,540,E-02	2,602,E-02	1,673,E-02	2,602,E-02	2,565,E-02
2 425	3,272E-02	5,480,E-02	3,293,E-02	2,298,E-02	3,293,E-02	3,250,E-02
2 430	4,197E-02	5,500,E-02	4,221,E-02	3,239,E-02	4,221,E-02	4,173,E-02
2 435	1,764E-02	5,450,E-02	1,778,E-02	1,029,E-02	1,778,E-02	1,750,E-02

Table A.4 continued

Wavelength nm	$E_{\lambda,H3}$	$E_{\lambda,H4}$	$E_{\lambda,H5}$	$E_{\lambda,H6}$	$E_{\lambda,H7}$	$E_{\lambda,H8}$
	$W \cdot m^{-2} \cdot nm^{-1}$					
2 440	3,954E-02	5,450,E-02	3,977,E-02	2,937,E-02	3,977,E-02	3,930,E-02
2 445	2,072E-02	5,390,E-02	2,089,E-02	1,163,E-02	2,089,E-02	2,055,E-02
2 450	1,407E-02	5,300,E-02	1,420,E-02	6,590,E-03	1,421,E-02	1,394,E-02
2 455	2,405E-02	5,280,E-02	2,424,E-02	1,338,E-02	2,424,E-02	2,386,E-02
2 460	3,169E-02	5,290,E-02	3,190,E-02	2,015,E-02	3,190,E-02	3,147,E-02
2 465	2,338E-02	5,280,E-02	2,356,E-02	1,274,E-02	2,356,E-02	2,321,E-02
2 470	1,641E-02	5,210,E-02	1,655,E-02	7,120,E-03	1,655,E-02	1,627,E-02
2 475	1,501E-02	5,190,E-02	1,516,E-02	5,852,E-03	1,516,E-02	1,487,E-02
2 480	8,172E-03	5,100,E-02	8,268,E-03	2,123,E-03	8,268,E-03	8,078,E-03
2 485	5,480E-03	5,060,E-02	5,547,E-03	1,038,E-03	5,547,E-03	5,413,E-03
2 490	3,002E-03	5,070,E-02	3,041,E-03	3,666,E-04	3,041,E-03	2,964,E-03
2 495	2,987E-03	5,040,E-02	3,027,E-03	3,729,E-04	3,027,E-03	2,947,E-03
2 500	6,581E-03	5,020,E-02	6,668,E-03	1,148,E-03	6,668,E-03	6,495,E-03
2 505	1,716E-03	4,990,E-02	1,740,E-03	1,762,E-04	1,740,E-03	1,692,E-03
2 510	2,033E-03	4,910,E-02	2,062,E-03	1,922,E-04	2,062,E-03	2,004,E-03
2 515	5,974E-04	4,890,E-02	6,065,E-04	2,961,E-05	6,065,E-04	5,884,E-04
2 520	3,509E-04	4,870,E-02	3,566,E-04	6,507,E-06	3,566,E-04	3,453,E-04
2 525	4,571E-05	4,850,E-02	4,647,E-05	3,783,E-07	4,647,E-05	4,495,E-05
2 530	2,064E-06	4,820,E-02	2,099,E-06	2,683,E-09	2,099,E-06	2,029,E-06
2 535	1,539E-07	4,770,E-02	1,566,E-07	6,856,E-12	1,566,E-07	1,512,E-07
2 540	3,215E-07	4,700,E-02	3,272,E-07	1,184,E-11	3,272,E-07	3,159,E-07
2 545	1,969E-08	4,680,E-02	2,004,E-08	7,311,E-13	2,004,E-08	1,934,E-08
2 550	2,633E-11	4,650,E-02	2,680,E-11	1,796,E-16	2,680,E-11	2,587,E-11
2 555	3,413E-10	4,600,E-02	3,474,E-10	1,772,E-17	3,474,E-10	3,353,E-10
2 560	2,172E-11	4,540,E-02	2,211,E-11	1,108,E-18	2,211,E-11	2,134,E-11
2 565	2,970E-14	4,500,E-02	3,023,E-14	2,754,E-22	3,023,E-14	2,917,E-14
2 570	5,994E-18	4,480,E-02	6,102,E-18	1,477,E-27	6,102,E-18	5,888,E-18
2 575	4,011E-23	4,470,E-02	4,083,E-23	1,163,E-33	4,083,E-23	3,940,E-23
2 580	3,001E-26	4,450,E-02	3,055,E-26	1,406,E-44	3,055,E-26	2,947,E-26
2 585	1,388E-27	4,310,E-02	1,413,E-27	1,532,E-48	1,413,E-27	1,363,E-27
2 590	3,389E-31	4,290,E-02	3,450,E-31	3,708,E-52	3,450,E-31	3,328,E-31
2 595	1,674E-33	4,290,E-02	1,705,E-33	3,681,E-58	1,705,E-33	1,644,E-33
2 600	2,678E-32	4,260,E-02	2,727,E-32	2,315,E-58	2,727,E-32	2,629,E-32
2 605	1,674E-33	4,280,E-02	1,704,E-33	1,447,E-59	1,704,E-33	1,643,E-33
2 610	4,089E-37	4,230,E-02	4,164,E-37	4,343,E-63	4,164,E-37	4,015,E-37
2 615	3,031E-34	4,170,E-02	3,088,E-34	8,505,E-58	3,088,E-34	2,976,E-34
2 620	6,846E-29	4,120,E-02	6,974,E-29	3,097,E-42	6,974,E-29	6,721,E-29
2 625	7,049E-23	3,960,E-02	7,181,E-23	3,272,E-36	7,181,E-23	6,920,E-23
2 630	2,926E-19	4,060,E-02	2,981,E-19	3,939,E-32	2,981,E-19	2,873,E-19
2 635	2,069E-17	4,110,E-02	2,108,E-17	1,071,E-28	2,108,E-17	2,031,E-17
2 640	2,574E-16	4,050,E-02	2,622,E-16	1,710,E-27	2,622,E-16	2,526,E-16
2 645	1,624E-17	4,050,E-02	1,654,E-17	1,069,E-28	1,654,E-17	1,594,E-17
2 650	5,563E-19	4,030,E-02	5,668,E-19	5,813,E-32	5,668,E-19	5,460,E-19
2 655	3,400E-20	3,930,E-02	3,465,E-20	2,000,E-33	3,465,E-20	3,337,E-20
2 660	8,301E-24	3,490,E-02	8,458,E-24	4,883,E-37	8,458,E-24	8,148,E-24
2 665	7,917E-30	1,830,E-02	8,066,E-30	4,657,E-43	8,066,E-30	7,770,E-30
2 670	2,302E-44	1,570,E-03	2,346,E-44	1,588,E-71	2,346,E-44	2,259,E-44
2 675	1,174E-40	3,490,E-05	1,197,E-40	2,674,E-61	1,197,E-40	1,152,E-40
2 680	1,231E-34	8,540,E-09	1,255,E-34	2,804,E-55	1,255,E-34	1,208,E-34
2 685	5,044E-31	3,860,E-07	5,141,E-31	1,149,E-51	5,141,E-31	4,949,E-31
2 690	8,070E-30	6,350,E-06	8,225,E-30	1,838,E-50	8,225,E-30	7,918,E-30
2 695	5,044E-31	3,110,E-06	5,141,E-31	1,149,E-51	5,141,E-31	4,949,E-31
2 700	1,295E-34	1,710,E-07	1,320,E-34	1,014,E-52	1,320,E-34	1,270,E-34
2 705	5,627E-30	2,750,E-09	5,736,E-30	8,110,E-48	5,736,E-30	5,521,E-30
2 710	2,305E-26	1,020,E-05	2,349,E-26	3,321,E-44	2,349,E-26	2,261,E-26

Table A.4 continued

Wavelength nm	$E_{\lambda,H3}$	$E_{\lambda,H4}$	$E_{\lambda,H5}$	$E_{\lambda,H6}$	$E_{\lambda,H7}$	$E_{\lambda,H8}$
	$W \cdot m^{-2} \cdot nm^{-1}$					
2 715	3,688E-25	3,230,E-04	3,759,E-25	5,314,E-43	3,759,E-25	3,618,E-25
2 720	2,305E-26	3,150,E-03	2,350,E-26	3,321,E-44	2,350,E-26	2,262,E-26
2 725	1,193E-26	1,020,E-02	1,216,E-26	9,301,E-48	1,216,E-26	1,170,E-26
2 730	1,973E-25	1,320,E-02	2,011,E-25	1,041,E-46	2,011,E-25	1,936,E-25
2 735	1,175E-25	1,170,E-02	1,198,E-25	4,330,E-44	1,198,E-25	1,153,E-25
2 740	3,246E-24	4,150,E-03	3,309,E-24	1,718,E-40	3,309,E-24	3,185,E-24
2 745	5,184E-23	8,170,E-04	5,284,E-23	2,753,E-39	5,284,E-23	5,086,E-23
2 750	3,348E-24	3,770,E-05	3,412,E-24	2,526,E-40	3,412,E-24	3,284,E-24
2 755	7,530E-27	1,610,E-08	7,675,E-27	5,092,E-42	7,675,E-27	7,387,E-27
2 760	1,646E-30	2,800,E-06	1,678,E-30	1,233,E-45	1,678,E-30	1,615,E-30
2 765	1,608E-33	5,670,E-05	1,639,E-33	8,625,E-49	1,639,E-33	1,578,E-33
2 770	5,977E-32	1,940,E-04	6,092,E-32	3,631,E-45	6,092,E-32	5,864,E-32
2 775	9,695E-27	1,190,E-05	9,882,E-27	2,920,E-36	9,882,E-27	9,512,E-27
2 780	1,008E-20	3,780,E-09	1,028,E-20	3,062,E-30	1,028,E-20	9,893,E-21
2 785	4,140E-17	3,460,E-06	4,220,E-17	1,258,E-26	4,220,E-17	4,062,E-17
2 790	1,107E-15	7,010,E-05	1,128,E-15	1,189,E-24	1,128,E-15	1,086,E-15
2 795	1,141E-13	2,830,E-04	1,163,E-13	3,370,E-21	1,163,E-13	1,120,E-13
2 800	1,732E-12	7,760,E-04	1,765,E-12	4,359,E-19	1,765,E-12	1,699,E-12
2 805	5,716E-11	1,300,E-03	5,825,E-11	1,565,E-15	5,825,E-11	5,608,E-11
2 810	9,438E-10	2,080,E-03	9,619,E-10	2,514,E-14	9,619,E-10	9,260,E-10
2 815	5,585E-10	3,780,E-03	5,692,E-10	3,340,E-15	5,692,E-10	5,479,E-10
2 820	1,352E-08	9,230,E-03	1,378,E-08	7,249,E-13	1,378,E-08	1,327,E-08
2 825	5,322E-07	1,310,E-02	5,423,E-07	2,859,E-10	5,423,E-07	5,223,E-07
2 830	5,098E-06	1,660,E-02	5,194,E-06	4,407,E-09	5,194,E-06	5,003,E-06
2 835	3,316E-07	2,120,E-02	3,379,E-07	2,859,E-10	3,379,E-07	3,255,E-07
2 840	3,165E-06	1,990,E-02	3,224,E-06	2,236,E-08	3,224,E-06	3,107,E-06
2 845	4,735E-05	1,980,E-02	4,823,E-05	3,566,E-07	4,823,E-05	4,648,E-05
2 850	4,074E-06	2,020,E-02	4,150,E-06	2,270,E-08	4,150,E-06	3,999,E-06
2 855	2,175E-06	2,070,E-02	2,216,E-06	1,457,E-08	2,216,E-06	2,135,E-06
2 860	3,650E-05	2,030,E-02	3,717,E-05	4,567,E-07	3,717,E-05	3,584,E-05
2 865	1,758E-04	2,030,E-02	1,789,E-04	3,709,E-06	1,789,E-04	1,727,E-04
2 870	4,145E-05	2,300,E-02	4,218,E-05	1,203,E-06	4,218,E-05	4,074,E-05
2 875	4,080E-04	2,460,E-02	4,149,E-04	1,604,E-05	4,149,E-04	4,011,E-04
2 880	2,945E-04	2,390,E-02	2,997,E-04	1,150,E-05	2,997,E-04	2,893,E-04
2 885	4,271E-04	2,400,E-02	4,345,E-04	1,845,E-05	4,345,E-04	4,198,E-04
2 890	3,746E-04	2,470,E-02	3,809,E-04	3,404,E-05	3,809,E-04	3,684,E-04
2 895	2,641E-03	2,630,E-02	2,682,E-03	4,093,E-04	2,682,E-03	2,600,E-03
2 900	8,637E-04	2,720,E-02	8,771,E-04	1,016,E-04	8,771,E-04	8,506,E-04
2 905	2,900E-04	2,790,E-02	2,949,E-04	3,535,E-05	2,949,E-04	2,851,E-04
2 910	2,436E-03	2,830,E-02	2,476,E-03	4,621,E-04	2,476,E-03	2,396,E-03
2 915	1,526E-03	2,840,E-02	1,550,E-03	1,974,E-04	1,550,E-03	1,503,E-03
2 920	2,640E-03	2,830,E-02	2,678,E-03	4,705,E-04	2,678,E-03	2,603,E-03
2 925	1,542E-03	2,800,E-02	1,565,E-03	2,843,E-04	1,565,E-03	1,519,E-03
2 930	5,828E-03	2,800,E-02	5,909,E-03	1,624,E-03	5,910,E-03	5,748,E-03
2 935	6,352E-03	2,790,E-02	6,435,E-03	2,020,E-03	6,435,E-03	6,270,E-03
2 940	2,054E-03	2,770,E-02	2,086,E-03	3,711,E-04	2,086,E-03	2,023,E-03
2 945	1,694E-03	2,740,E-02	1,718,E-03	2,548,E-04	1,718,E-03	1,670,E-03
2 950	5,050E-03	2,720,E-02	5,116,E-03	1,381,E-03	5,116,E-03	4,984,E-03
2 955	2,788E-03	2,690,E-02	2,827,E-03	7,792,E-04	2,827,E-03	2,749,E-03
2 960	5,018E-03	2,650,E-02	5,088,E-03	1,606,E-03	5,088,E-03	4,949,E-03
2 965	7,069E-03	2,630,E-02	7,159,E-03	3,012,E-03	7,159,E-03	6,980,E-03
2 970	7,328E-04	2,610,E-02	7,435,E-04	2,179,E-04	7,436,E-04	7,222,E-04
2 975	9,260E-04	2,580,E-02	9,409,E-04	1,273,E-04	9,409,E-04	9,112,E-04
2 980	1,906E-03	2,550,E-02	1,935,E-03	4,489,E-04	1,935,E-03	1,877,E-03
2 985	7,432E-03	2,550,E-02	7,527,E-03	3,126,E-03	7,527,E-03	7,339,E-03

Table A.4 continued

Wavelength nm	$E_{\lambda,H3}$	$E_{\lambda,H4}$	$E_{\lambda,H5}$	$E_{\lambda,H6}$	$E_{\lambda,H7}$	$E_{\lambda,H8}$
	$W \cdot m^{-2} \cdot nm^{-1}$					
2 990	1,032E-02	2,560,E-02	1,043,E-02	5,321,E-03	1,043,E-02	1,020,E-02
2 995	4,734E-03	2,540,E-02	4,794,E-03	1,627,E-03	4,794,E-03	4,674,E-03
3 000	7,186E-03	2,550,E-02	7,271,E-03	3,056,E-03	7,271,E-03	7,102,E-03
3 005	3,289E-03	2,540,E-02	3,336,E-03	1,075,E-03	3,336,E-03	3,242,E-03
3 010	6,711E-03	2,520,E-02	6,792,E-03	2,977,E-03	6,792,E-03	6,631,E-03
3 015	5,778E-03	2,500,E-02	5,853,E-03	2,167,E-03	5,853,E-03	5,703,E-03
3 020	1,326E-03	2,490,E-02	1,344,E-03	3,753,E-04	1,344,E-03	1,308,E-03
3 025	7,368E-03	2,480,E-02	7,447,E-03	3,407,E-03	7,447,E-03	7,288,E-03
3 030	6,034E-03	2,460,E-02	6,104,E-03	2,524,E-03	6,104,E-03	5,965,E-03
3 035	2,638E-03	2,430,E-02	2,674,E-03	7,657,E-04	2,674,E-03	2,603,E-03
3 040	2,313E-03	2,400,E-02	2,346,E-03	6,134,E-04	2,346,E-03	2,282,E-03
3 045	3,878E-03	2,410,E-02	3,928,E-03	1,178,E-03	3,928,E-03	3,828,E-03
3 050	1,186E-03	2,410,E-02	1,203,E-03	2,116,E-04	1,203,E-03	1,169,E-03
3 055	7,129E-04	2,400,E-02	7,227,E-04	1,956,E-04	7,227,E-04	7,032,E-04
3 060	6,014E-03	2,380,E-02	6,084,E-03	2,661,E-03	6,084,E-03	5,945,E-03
3 065	3,278E-03	2,360,E-02	3,321,E-03	9,721,E-04	3,321,E-03	3,235,E-03
3 070	2,246E-03	2,350,E-02	2,277,E-03	5,566,E-04	2,277,E-03	2,216,E-03
3 075	5,858E-03	2,340,E-02	5,922,E-03	2,481,E-03	5,922,E-03	5,794,E-03
3 080	3,556E-03	2,320,E-02	3,596,E-03	1,215,E-03	3,596,E-03	3,515,E-03
3 085	2,095E-03	2,310,E-02	2,124,E-03	4,521,E-04	2,124,E-03	2,066,E-03
3 090	2,646E-03	2,300,E-02	2,680,E-03	6,067,E-04	2,680,E-03	2,612,E-03
3 095	1,088E-03	2,280,E-02	1,103,E-03	2,094,E-04	1,103,E-03	1,073,E-03
3 100	4,218E-03	2,270,E-02	4,268,E-03	1,562,E-03	4,268,E-03	4,170,E-03
3 105	1,294E-03	2,260,E-02	1,311,E-03	2,738,E-04	1,311,E-03	1,276,E-03
3 110	1,050E-03	2,240,E-02	1,065,E-03	1,442,E-04	1,065,E-03	1,036,E-03
3 115	2,678E-03	2,200,E-02	2,710,E-03	7,788,E-04	2,710,E-03	2,645,E-03
3 120	9,456E-03	2,200,E-02	9,553,E-03	4,930,E-03	9,553,E-03	9,360,E-03
3 125	3,834E-03	2,190,E-02	3,876,E-03	1,536,E-03	3,876,E-03	3,791,E-03
3 130	6,381E-03	2,180,E-02	6,441,E-03	3,336,E-03	6,441,E-03	6,321,E-03
3 135	1,105E-02	2,160,E-02	1,116,E-02	6,369,E-03	1,116,E-02	1,095,E-02
3 140	4,113E-03	2,130,E-02	4,158,E-03	1,644,E-03	4,158,E-03	4,068,E-03
3 145	3,753E-03	2,140,E-02	3,794,E-03	1,494,E-03	3,794,E-03	3,712,E-03
3 150	6,993E-03	2,060,E-02	7,067,E-03	3,522,E-03	7,067,E-03	6,920,E-03
3 155	6,250E-03	2,090,E-02	6,314,E-03	3,056,E-03	6,314,E-03	6,187,E-03
3 160	9,875E-03	1,970,E-02	9,966,E-03	5,924,E-03	9,966,E-03	9,785,E-03
3 165	1,473E-02	1,910,E-02	1,483,E-02	1,139,E-02	1,483,E-02	1,462,E-02
3 170	1,303E-02	1,990,E-02	1,313,E-02	9,170,E-03	1,313,E-02	1,294,E-02
3 175	1,031E-02	1,820,E-02	1,039,E-02	6,979,E-03	1,039,E-02	1,022,E-02
3 180	1,102E-02	1,980,E-02	1,110,E-02	7,430,E-03	1,110,E-02	1,094,E-02
3 185	9,196E-03	1,640,E-02	9,282,E-03	5,707,E-03	9,282,E-03	9,110,E-03
3 190	4,721E-03	1,910,E-02	4,766,E-03	2,181,E-03	4,766,E-03	4,676,E-03
3 195	3,188E-03	1,590,E-02	3,227,E-03	1,019,E-03	3,227,E-03	3,149,E-03
3 200	6,326E-04	1,730,E-02	6,413,E-04	1,040,E-04	6,413,E-04	6,240,E-04
3 205	3,673E-04	1,620,E-02	3,725,E-04	2,970,E-05	3,725,E-04	3,623,E-04
3 210	2,288E-04	1,510,E-02	2,322,E-04	1,627,E-05	2,322,E-04	2,255,E-04
3 215	6,879E-04	1,700,E-02	6,977,E-04	9,123,E-05	6,977,E-04	6,782,E-04
3 220	1,786E-03	1,390,E-02	1,808,E-03	4,665,E-04	1,808,E-03	1,764,E-03
3 225	3,900E-04	1,770,E-02	3,954,E-04	6,158,E-05	3,954,E-04	3,847,E-04
3 230	9,343E-04	1,420,E-02	9,451,E-04	3,069,E-04	9,451,E-04	9,236,E-04
3 235	7,394E-03	1,720,E-02	7,460,E-03	3,857,E-03	7,460,E-03	7,328,E-03
3 240	4,595E-03	1,330,E-02	4,643,E-03	2,117,E-03	4,643,E-03	4,546,E-03
3 245	1,150E-03	1,710,E-02	1,164,E-03	3,890,E-04	1,164,E-03	1,136,E-03
3 250	3,511E-03	1,350,E-02	3,547,E-03	1,846,E-03	3,547,E-03	3,476,E-03
3 255	9,794E-03	1,680,E-02	9,869,E-03	6,120,E-03	9,869,E-03	9,719,E-03
3 260	2,245E-03	1,290,E-02	2,269,E-03	9,994,E-04	2,269,E-03	2,221,E-03

Table A.4 continued

Wavelength nm	$E_{\lambda,H3}$	$E_{\lambda,H4}$	$E_{\lambda,H5}$	$E_{\lambda,H6}$	$E_{\lambda,H7}$	$E_{\lambda,H8}$
	$W \cdot m^{-2} \cdot nm^{-1}$					
3 265	2,447E-03	1,710,E-02	2,472,E-03	7,083,E-04	2,472,E-03	2,422,E-03
3 270	1,864E-03	1,340,E-02	1,884,E-03	5,767,E-04	1,884,E-03	1,844,E-03
3 275	6,001E-03	1,730,E-02	6,051,E-03	2,711,E-03	6,051,E-03	5,952,E-03
3 280	3,973E-03	1,480,E-02	4,008,E-03	1,826,E-03	4,008,E-03	3,938,E-03
3 285	1,105E-02	1,740,E-02	1,112,E-02	7,135,E-03	1,112,E-02	1,098,E-02
3 290	9,372E-03	1,550,E-02	9,439,E-03	6,010,E-03	9,439,E-03	9,305,E-03
3 295	1,822E-03	1,700,E-02	1,840,E-03	6,976,E-04	1,840,E-03	1,804,E-03
3 300	2,030E-03	1,530,E-02	2,050,E-03	7,281,E-04	2,050,E-03	2,010,E-03
3 305	4,191E-03	1,620,E-02	4,229,E-03	1,701,E-03	4,229,E-03	4,154,E-03
3 310	4,576E-03	1,130,E-02	4,619,E-03	2,534,E-03	4,619,E-03	4,534,E-03
3 315	3,712E-04	1,170,E-03	3,753,E-04	2,044,E-04	3,753,E-04	3,672,E-04
3 320	3,766E-04	4,750,E-03	3,808,E-04	1,651,E-04	3,808,E-04	3,724,E-04
3 325	4,387E-03	9,980,E-03	4,428,E-03	2,497,E-03	4,428,E-03	4,347,E-03
3 330	5,271E-03	1,520,E-02	5,310,E-03	3,386,E-03	5,310,E-03	5,233,E-03
3 335	9,636E-03	1,420,E-02	9,699,E-03	7,092,E-03	9,699,E-03	9,574,E-03
3 340	4,082E-03	1,620,E-02	4,115,E-03	2,052,E-03	4,115,E-03	4,049,E-03
3 345	4,319E-03	1,310,E-02	4,355,E-03	2,386,E-03	4,355,E-03	4,283,E-03
3 350	7,986E-03	1,590,E-02	8,037,E-03	5,073,E-03	8,037,E-03	7,936,E-03
3 355	4,635E-03	1,310,E-02	4,675,E-03	2,442,E-03	4,675,E-03	4,596,E-03
3 360	5,633E-03	1,490,E-02	5,674,E-03	3,213,E-03	5,674,E-03	5,593,E-03
3 365	7,366E-03	1,500,E-02	7,411,E-03	4,947,E-03	7,411,E-03	7,321,E-03
3 370	5,200E-03	1,120,E-02	5,242,E-03	3,231,E-03	5,242,E-03	5,157,E-03
3 375	8,754E-03	1,490,E-02	8,806,E-03	6,230,E-03	8,806,E-03	8,703,E-03
3 380	6,732E-03	1,050,E-02	6,782,E-03	5,072,E-03	6,782,E-03	6,682,E-03
3 385	8,003E-03	1,410,E-02	8,052,E-03	5,725,E-03	8,052,E-03	7,955,E-03
3 390	1,118E-02	1,270,E-02	1,124,E-02	1,004,E-02	1,124,E-02	1,113,E-02
3 395	1,071E-02	1,350,E-02	1,076,E-02	9,076,E-03	1,076,E-02	1,066,E-02
3 400	1,258E-02	1,440,E-02	1,263,E-02	1,111,E-02	1,263,E-02	1,254,E-02
3 405	6,176E-03	1,030,E-02	6,221,E-03	4,683,E-03	6,221,E-03	6,131,E-03
3 410	7,294E-03	1,410,E-02	7,340,E-03	5,285,E-03	7,340,E-03	7,249,E-03
3 415	9,056E-03	1,100,E-02	9,107,E-03	8,111,E-03	9,107,E-03	9,005,E-03
3 420	1,344E-02	1,440,E-02	1,348,E-02	1,250,E-02	1,348,E-02	1,340,E-02
3 425	1,147E-02	1,240,E-02	1,152,E-02	1,064,E-02	1,152,E-02	1,143,E-02
3 430	1,060E-02	1,110,E-02	1,066,E-02	1,014,E-02	1,066,E-02	1,055,E-02
3 435	1,187E-02	1,420,E-02	1,191,E-02	1,035,E-02	1,191,E-02	1,182,E-02
3 440	9,947E-03	1,120,E-02	9,998,E-03	8,987,E-03	9,998,E-03	9,897,E-03
3 445	1,185E-02	1,400,E-02	1,189,E-02	1,029,E-02	1,189,E-02	1,181,E-02
3 450	1,220E-02	1,280,E-02	1,224,E-02	1,168,E-02	1,224,E-02	1,215,E-02
3 455	9,794E-03	1,210,E-02	9,838,E-03	8,607,E-03	9,838,E-03	9,750,E-03
3 460	1,274E-02	1,420,E-02	1,277,E-02	1,155,E-02	1,277,E-02	1,270,E-02
3 465	1,141E-02	1,190,E-02	1,145,E-02	1,092,E-02	1,145,E-02	1,136,E-02
3 470	1,271E-02	1,380,E-02	1,275,E-02	1,189,E-02	1,275,E-02	1,268,E-02
3 475	1,192E-02	1,310,E-02	1,196,E-02	1,096,E-02	1,196,E-02	1,188,E-02
3 480	1,223E-02	1,290,E-02	1,226,E-02	1,161,E-02	1,226,E-02	1,219,E-02
3 485	1,259E-02	1,360,E-02	1,263,E-02	1,168,E-02	1,263,E-02	1,256,E-02
3 490	1,144E-02	1,290,E-02	1,148,E-02	1,025,E-02	1,148,E-02	1,140,E-02
3 495	1,275E-02	1,350,E-02	1,278,E-02	1,204,E-02	1,278,E-02	1,272,E-02
3 500	1,253E-02	1,360,E-02	1,256,E-02	1,163,E-02	1,256,E-02	1,250,E-02
3 505	1,247E-02	1,340,E-02	1,250,E-02	1,169,E-02	1,250,E-02	1,244,E-02
3 510	1,248E-02	1,360,E-02	1,251,E-02	1,149,E-02	1,251,E-02	1,245,E-02
3 515	1,191E-02	1,380,E-02	1,194,E-02	1,034,E-02	1,194,E-02	1,188,E-02
3 520	1,247E-02	1,370,E-02	1,250,E-02	1,146,E-02	1,250,E-02	1,244,E-02
3 525	1,185E-02	1,350,E-02	1,188,E-02	1,064,E-02	1,188,E-02	1,182,E-02
3 530	1,157E-02	1,310,E-02	1,160,E-02	1,040,E-02	1,160,E-02	1,154,E-02
3 535	1,024E-02	1,220,E-02	1,027,E-02	8,899,E-03	1,027,E-02	1,020,E-02

Table A.4 continued

Wavelength nm	$E_{\lambda,H3}$	$E_{\lambda,H4}$	$E_{\lambda,H5}$	$E_{\lambda,H6}$	$E_{\lambda,H7}$	$E_{\lambda,H8}$
	$W \cdot m^{-2} \cdot nm^{-1}$					
3 540	9,834E-03	1,200,E-02	9,872,E-03	8,419,E-03	9,872,E-03	9,797,E-03
3 545	1,026E-02	1,210,E-02	1,029,E-02	8,902,E-03	1,029,E-02	1,022,E-02
3 550	1,086E-02	1,290,E-02	1,089,E-02	9,558,E-03	1,089,E-02	1,083,E-02
3 555	9,683E-03	1,280,E-02	9,718,E-03	7,856,E-03	9,718,E-03	9,648,E-03
3 560	1,116E-02	1,280,E-02	1,119,E-02	1,010,E-02	1,119,E-02	1,113,E-02
3 565	1,128E-02	1,230,E-02	1,131,E-02	1,061,E-02	1,131,E-02	1,125,E-02
3 570	8,994E-03	1,250,E-02	9,028,E-03	7,250,E-03	9,028,E-03	8,961,E-03
3 575	9,388E-03	1,190,E-02	9,422,E-03	7,792,E-03	9,422,E-03	9,355,E-03
3 580	1,066E-02	1,210,E-02	1,068,E-02	9,848,E-03	1,068,E-02	1,063,E-02
3 585	9,811E-03	1,200,E-02	9,842,E-03	8,490,E-03	9,842,E-03	9,780,E-03
3 590	9,916E-03	1,240,E-02	9,945,E-03	8,481,E-03	9,945,E-03	9,887,E-03
3 595	1,005E-02	1,250,E-02	1,008,E-02	8,832,E-03	1,008,E-02	1,003,E-02
3 600	1,060E-02	1,250,E-02	1,062,E-02	9,586,E-03	1,062,E-02	1,057,E-02
3 605	1,085E-02	1,190,E-02	1,088,E-02	1,022,E-02	1,088,E-02	1,083,E-02
3 610	9,975E-03	1,210,E-02	1,000,E-02	8,677,E-03	1,000,E-02	9,948,E-03
3 615	9,903E-03	1,240,E-02	9,927,E-03	8,661,E-03	9,928,E-03	9,878,E-03
3 620	1,169E-02	1,240,E-02	1,171,E-02	1,120,E-02	1,171,E-02	1,167,E-02
3 625	1,068E-02	1,190,E-02	1,070,E-02	9,849,E-03	1,070,E-02	1,066,E-02
3 630	1,031E-02	1,210,E-02	1,033,E-02	9,256,E-03	1,033,E-02	1,028,E-02
3 635	1,058E-02	1,220,E-02	1,060,E-02	9,538,E-03	1,060,E-02	1,056,E-02
3 640	1,156E-02	1,210,E-02	1,158,E-02	1,112,E-02	1,158,E-02	1,155,E-02
3 645	1,098E-02	1,150,E-02	1,100,E-02	1,057,E-02	1,100,E-02	1,096,E-02
3 650	1,048E-02	1,160,E-02	1,051,E-02	9,742,E-03	1,051,E-02	1,046,E-02
3 655	1,102E-02	1,190,E-02	1,104,E-02	1,029,E-02	1,104,E-02	1,101,E-02
3 660	1,098E-02	1,190,E-02	1,100,E-02	1,024,E-02	1,100,E-02	1,096,E-02
3 665	1,042E-02	1,140,E-02	1,045,E-02	9,685,E-03	1,045,E-02	1,040,E-02
3 670	8,105E-03	1,160,E-02	8,132,E-03	6,504,E-03	8,132,E-03	8,079,E-03
3 675	5,330E-03	1,170,E-02	5,362,E-03	3,183,E-03	5,362,E-03	5,298,E-03
3 680	8,265E-03	1,160,E-02	8,293,E-03	6,313,E-03	8,293,E-03	8,238,E-03
3 685	9,533E-03	1,130,E-02	9,556,E-03	8,213,E-03	9,556,E-03	9,511,E-03
3 690	9,942E-03	1,120,E-02	9,963,E-03	8,892,E-03	9,963,E-03	9,922,E-03
3 695	1,019E-02	1,140,E-02	1,021,E-02	9,306,E-03	1,021,E-02	1,017,E-02
3 700	1,082E-02	1,120,E-02	1,083,E-02	1,042,E-02	1,083,E-02	1,081,E-02
3 705	1,071E-02	1,120,E-02	1,073,E-02	1,032,E-02	1,073,E-02	1,070,E-02
3 710	9,609E-03	1,090,E-02	9,628,E-03	8,800,E-03	9,628,E-03	9,591,E-03
3 715	9,416E-03	1,110,E-02	9,435,E-03	8,494,E-03	9,435,E-03	9,398,E-03
3 720	1,039E-02	1,120,E-02	1,040,E-02	9,796,E-03	1,040,E-02	1,038,E-02
3 725	1,067E-02	1,100,E-02	1,068,E-02	1,036,E-02	1,069,E-02	1,066,E-02
3 730	9,460E-03	1,090,E-02	9,477,E-03	8,647,E-03	9,477,E-03	9,443,E-03
3 735	8,714E-03	1,080,E-02	8,734,E-03	7,604,E-03	8,734,E-03	8,694,E-03
3 740	8,890E-03	1,060,E-02	8,908,E-03	7,903,E-03	8,908,E-03	8,872,E-03
3 745	1,009E-02	1,060,E-02	1,010,E-02	9,702,E-03	1,010,E-02	1,008,E-02
3 750	9,390E-03	1,060,E-02	9,405,E-03	8,746,E-03	9,405,E-03	9,376,E-03
3 755	9,071E-03	1,070,E-02	9,087,E-03	8,202,E-03	9,087,E-03	9,055,E-03
3 760	8,950E-03	1,070,E-02	8,968,E-03	7,795,E-03	8,968,E-03	8,932,E-03
3 765	8,737E-03	1,060,E-02	8,756,E-03	7,745,E-03	8,756,E-03	8,720,E-03
3 770	9,192E-03	1,060,E-02	9,208,E-03	8,423,E-03	9,208,E-03	9,177,E-03
3 775	9,157E-03	1,050,E-02	9,172,E-03	8,409,E-03	9,172,E-03	9,143,E-03
3 780	9,572E-03	1,040,E-02	9,585,E-03	8,992,E-03	9,586,E-03	9,560,E-03
3 785	8,868E-03	1,040,E-02	8,886,E-03	7,858,E-03	8,886,E-03	8,852,E-03
3 790	7,988E-03	1,030,E-02	8,008,E-03	6,785,E-03	8,008,E-03	7,969,E-03
3 795	8,927E-03	1,020,E-02	8,942,E-03	8,197,E-03	8,942,E-03	8,913,E-03
3 800	9,873E-03	1,010,E-02	9,883,E-03	9,658,E-03	9,883,E-03	9,863,E-03
3 805	9,332E-03	1,010,E-02	9,345,E-03	8,757,E-03	9,345,E-03	9,320,E-03
3 810	8,363E-03	1,010,E-02	8,381,E-03	7,187,E-03	8,381,E-03	8,345,E-03

Table A.4 continued

Wavelength nm	$E_{\lambda,H3}$	$E_{\lambda,H4}$	$E_{\lambda,H5}$	$E_{\lambda,H6}$	$E_{\lambda,H7}$	$E_{\lambda,H8}$
	$W \cdot m^{-2} \cdot nm^{-1}$					
3 815	7,955E-03	1,010,E-02	7,973,E-03	6,761,E-03	7,973,E-03	7,937,E-03
3 820	9,626E-03	9,990,E-03	9,636,E-03	9,347,E-03	9,636,E-03	9,616,E-03
3 825	9,579E-03	1,000,E-02	9,589,E-03	9,230,E-03	9,589,E-03	9,569,E-03
3 830	9,543E-03	9,970,E-03	9,553,E-03	9,172,E-03	9,553,E-03	9,533,E-03
3 835	7,943E-03	9,820,E-03	7,962,E-03	6,709,E-03	7,962,E-03	7,925,E-03
3 840	9,026E-03	9,670,E-03	9,039,E-03	8,518,E-03	9,039,E-03	9,014,E-03
3 845	8,986E-03	9,480,E-03	8,999,E-03	8,595,E-03	8,999,E-03	8,973,E-03
3 850	9,015E-03	9,440,E-03	9,028,E-03	8,655,E-03	9,028,E-03	9,003,E-03
3 855	8,669E-03	9,390,E-03	8,683,E-03	8,089,E-03	8,683,E-03	8,655,E-03
3 860	8,294E-03	9,070,E-03	8,310,E-03	7,624,E-03	8,310,E-03	8,278,E-03
3 865	8,421E-03	8,660,E-03	8,437,E-03	8,188,E-03	8,437,E-03	8,406,E-03
3 870	7,904E-03	8,200,E-03	7,922,E-03	7,635,E-03	7,922,E-03	7,886,E-03
3 875	7,388E-03	7,900,E-03	7,409,E-03	6,949,E-03	7,409,E-03	7,368,E-03
3 880	7,253E-03	7,630,E-03	7,274,E-03	6,930,E-03	7,274,E-03	7,232,E-03
3 885	7,429E-03	7,610,E-03	7,450,E-03	7,269,E-03	7,450,E-03	7,410,E-03
3 890	7,501E-03	7,730,E-03	7,521,E-03	7,264,E-03	7,521,E-03	7,482,E-03
3 895	7,963E-03	8,090,E-03	7,980,E-03	7,845,E-03	7,980,E-03	7,947,E-03
3 900	8,134E-03	8,680,E-03	8,149,E-03	7,628,E-03	8,149,E-03	8,119,E-03
3 905	8,213E-03	8,370,E-03	8,228,E-03	8,056,E-03	8,228,E-03	8,199,E-03
3 910	7,710E-03	7,800,E-03	7,728,E-03	7,620,E-03	7,728,E-03	7,693,E-03
3 915	7,544E-03	7,670,E-03	7,562,E-03	7,423,E-03	7,562,E-03	7,527,E-03
3 920	7,499E-03	7,660,E-03	7,518,E-03	7,337,E-03	7,518,E-03	7,482,E-03
3 925	7,399E-03	7,630,E-03	7,418,E-03	7,160,E-03	7,418,E-03	7,381,E-03
3 930	7,579E-03	7,690,E-03	7,596,E-03	7,471,E-03	7,596,E-03	7,563,E-03
3 935	7,780E-03	7,830,E-03	7,795,E-03	7,730,E-03	7,795,E-03	7,765,E-03
3 940	7,833E-03	7,910,E-03	7,848,E-03	7,752,E-03	7,848,E-03	7,819,E-03
3 945	7,880E-03	8,010,E-03	7,894,E-03	7,738,E-03	7,894,E-03	7,867,E-03
3 950	7,927E-03	8,060,E-03	7,941,E-03	7,779,E-03	7,941,E-03	7,915,E-03
3 955	7,987E-03	8,050,E-03	8,000,E-03	7,921,E-03	8,000,E-03	7,976,E-03
3 960	8,022E-03	8,080,E-03	8,034,E-03	7,952,E-03	8,034,E-03	8,011,E-03
3 965	8,047E-03	8,110,E-03	8,058,E-03	7,972,E-03	8,058,E-03	8,036,E-03
3 970	7,961E-03	8,050,E-03	7,973,E-03	7,851,E-03	7,973,E-03	7,950,E-03
3 975	7,817E-03	7,900,E-03	7,830,E-03	7,718,E-03	7,830,E-03	7,806,E-03
3 980	7,740E-03	7,790,E-03	7,752,E-03	7,679,E-03	7,752,E-03	7,728,E-03
3 985	7,723E-03	7,780,E-03	7,735,E-03	7,662,E-03	7,736,E-03	7,712,E-03
3 990	7,644E-03	7,700,E-03	7,656,E-03	7,577,E-03	7,656,E-03	7,632,E-03

Table A.5 – CIE-H9 to CIE-H11: Global solar spectral irradiance on a horizontal plane at sea level for indicated atmospheric parameters Air Mass, Water Vapour, O_3, AOD and Albedo

Air mass	1,5	2,0	5,6
Water vapour content (atm-cm)	2,00	2,00	2,00
O_3 content (atm-cm)	0,30	0,30	0,30
AOD @ 500 nm	0,20	0,20	0,20
Albedo	0,20	0,20	0,20
Wavelength nm	$E_{\lambda,H9}$	$E_{\lambda,H10}$	$E_{\lambda,H11}$
	$W \cdot m^{-2} \cdot nm^{-1}$		
290	1,240E-06	9,966E-08	9,065E-09
295	1,348E-04	1,798E-05	7,349E-07
300	3,392E-03	8,188E-04	1,820E-05
305	2,522E-02	9,157E-03	2,473E-04
310	7,833E-02	3,674E-02	1,936E-03
315	1,449E-01	7,906E-02	7,725E-03
320	2,137E-01	1,292E-01	1,945E-02
325	3,034E-01	1,923E-01	3,772E-02
330	3,939E-01	2,551E-01	5,628E-02
335	3,932E-01	2,582E-01	6,066E-02
340	4,238E-01	2,798E-01	6,751E-02
345	4,202E-01	2,782E-01	6,751E-02
350	4,462E-01	2,963E-01	7,190E-02
355	4,641E-01	3,090E-01	7,478E-02
360	4,429E-01	2,956E-01	7,128E-02
365	5,392E-01	3,610E-01	8,684E-02
370	5,688E-01	3,819E-01	9,169E-02
375	5,335E-01	3,591E-01	8,615E-02
380	5,624E-01	3,795E-01	9,101E-02
385	4,925E-01	3,334E-01	8,003E-02
390	5,795E-01	3,933E-01	9,458E-02
395	5,465E-01	3,720E-01	8,966E-02
400	8,292E-01	5,655E-01	1,362E-01
405	9,085E-01	6,207E-01	1,492E-01
410	9,262E-01	6,344E-01	1,530E-01
415	9,744E-01	6,690E-01	1,619E-01
420	9,697E-01	6,674E-01	1,621E-01
425	9,567E-01	6,598E-01	1,607E-01
430	8,678E-01	5,998E-01	1,467E-01
435	9,743E-01	6,748E-01	1,656E-01
440	1,042E+00	7,230E-01	1,777E-01
445	1,112E+00	7,723E-01	1,903E-01
450	1,177E+00	8,192E-01	2,027E-01
455	1,184E+00	8,258E-01	2,047E-01
460	1,196E+00	8,341E-01	2,063E-01
465	1,184E+00	8,274E-01	2,054E-01
470	1,169E+00	8,175E-01	2,032E-01
475	1,184E+00	8,278E-01	2,053E-01
480	1,198E+00	8,373E-01	2,062E-01
485	1,121E+00	7,856E-01	1,942E-01
490	1,137E+00	7,978E-01	1,980E-01
495	1,156E+00	8,116E-01	2,013E-01
500	1,123E+00	7,874E-01	1,935E-01
505	1,120E+00	7,834E-01	1,900E-01
510	1,112E+00	7,791E-01	1,900E-01
515	1,057E+00	7,420E-01	1,813E-01
520	1,056E+00	7,411E-01	1,802E-01

Table A.5 continued

Wavelength nm	$E_{\lambda,H9}$	$E_{\lambda,H10}$	$E_{\lambda,H11}$
	$W \cdot m^{-2} \cdot nm^{-1}$		
525	1,084E+00	7,598E-01	1,828E-01
530	1,096E+00	7,667E-01	1,819E-01
535	1,095E+00	7,655E-01	1,810E-01
540	1,072E+00	7,497E-01	1,769E-01
545	1,083E+00	7,564E-01	1,773E-01
550	1,083E+00	7,572E-01	1,771E-01
555	1,075E+00	7,514E-01	1,750E-01
560	1,041E+00	7,267E-01	1,674E-01
565	1,036E+00	7,211E-01	1,640E-01
570	1,013E+00	7,030E-01	1,573E-01
575	1,015E+00	7,029E-01	1,561E-01
580	1,019E+00	7,086E-01	1,594E-01
585	1,022E+00	7,127E-01	1,623E-01
590	9,516E-01	6,582E-01	1,463E-01
595	9,683E-01	6,704E-01	1,489E-01
600	9,774E-01	6,804E-01	1,528E-01
605	9,911E-01	6,925E-01	1,574E-01
610	9,879E-01	6,927E-01	1,600E-01
615	9,674E-01	6,801E-01	1,592E-01
620	9,656E-01	6,790E-01	1,596E-01
625	9,346E-01	6,552E-01	1,527E-01
630	9,265E-01	6,490E-01	1,511E-01
635	9,475E-01	6,697E-01	1,616E-01
640	9,508E-01	6,753E-01	1,664E-01
645	9,365E-01	6,651E-01	1,645E-01
650	9,124E-01	6,468E-01	1,596E-01
655	8,731E-01	6,210E-01	1,553E-01
660	8,895E-01	6,332E-01	1,591E-01
665	9,052E-01	6,467E-01	1,651E-01
670	9,225E-01	6,630E-01	1,734E-01
675	9,221E-01	6,639E-01	1,754E-01
680	9,079E-01	6,544E-01	1,739E-01
685	8,497E-01	6,049E-01	1,550E-01
690	7,630E-01	5,298E-01	1,229E-01
695	8,139E-01	5,781E-01	1,469E-01
700	8,295E-01	5,926E-01	1,539E-01
705	8,428E-01	6,044E-01	1,591E-01
710	8,520E-01	6,139E-01	1,642E-01
715	7,902E-01	5,645E-01	1,474E-01
720	6,628E-01	4,617E-01	1,121E-01
725	6,699E-01	4,675E-01	1,142E-01
730	6,872E-01	4,821E-01	1,196E-01
735	7,678E-01	5,494E-01	1,445E-01
740	7,881E-01	5,698E-01	1,555E-01
745	8,089E-01	5,885E-01	1,645E-01
750	8,049E-01	5,864E-01	1,650E-01
755	7,906E-01	5,755E-01	1,622E-01
760	4,563E-01	3,082E-01	7,768E-02
765	4,570E-01	2,962E-01	6,017E-02
770	7,267E-01	5,237E-01	1,417E-01
775	7,575E-01	5,528E-01	1,572E-01
780	7,478E-01	5,460E-01	1,556E-01
785	7,362E-01	5,369E-01	1,523E-01
790	7,077E-01	5,130E-01	1,423E-01
795	6,990E-01	5,074E-01	1,417E-01

Table A.5 continued

Wavelength nm	$E_{\lambda,\mathrm{H9}}$	$E_{\lambda,\mathrm{H10}}$	$E_{\lambda,\mathrm{H11}}$
	$W \cdot m^{-2} \cdot nm^{-1}$		
800	6,954E-01	5,042E-01	1,399E-01
805	6,899E-01	5,008E-01	1,395E-01
810	6,694E-01	4,835E-01	1,326E-01
815	5,597E-01	3,939E-01	9,939E-02
820	5,512E-01	3,897E-01	9,935E-02
825	5,725E-01	4,075E-01	1,067E-01
830	5,775E-01	4,118E-01	1,086E-01
835	6,113E-01	4,401E-01	1,203E-01
840	6,387E-01	4,639E-01	1,303E-01
845	6,441E-01	4,709E-01	1,357E-01
850	6,171E-01	4,516E-01	1,306E-01
855	5,959E-01	4,364E-01	1,267E-01
860	6,339E-01	4,649E-01	1,361E-01
865	6,122E-01	4,493E-01	1,322E-01
870	6,211E-01	4,560E-01	1,345E-01
875	6,151E-01	4,517E-01	1,333E-01
880	6,060E-01	4,448E-01	1,310E-01
885	5,964E-01	4,373E-01	1,282E-01
890	5,851E-01	4,278E-01	1,241E-01
895	4,896E-01	3,485E-01	9,187E-02
900	3,986E-01	2,768E-01	6,617E-02
905	4,489E-01	3,165E-01	7,969E-02
910	3,924E-01	2,716E-01	6,455E-02
915	3,799E-01	2,604E-01	6,002E-02
920	4,276E-01	3,003E-01	7,509E-02
925	4,192E-01	2,925E-01	7,109E-02
930	2,516E-01	1,624E-01	3,123E-02
935	1,051E-01	5,952E-02	8,255E-03
940	1,786E-01	1,098E-01	1,731E-02
945	1,625E-01	9,908E-02	1,518E-02
950	1,744E-01	1,069E-01	1,698E-02
955	1,850E-01	1,154E-01	1,946E-02
960	2,314E-01	1,497E-01	2,776E-02
965	2,901E-01	1,946E-01	4,086E-02
970	3,897E-01	2,736E-01	6,781E-02
975	3,633E-01	2,530E-01	6,066E-02
980	3,938E-01	2,780E-01	7,043E-02
985	4,427E-01	3,192E-01	8,803E-02
990	4,658E-01	3,403E-01	9,931E-02
995	4,728E-01	3,473E-01	1,035E-01
1 000	4,677E-01	3,436E-01	1,022E-01
1 005	4,544E-01	3,339E-01	9,950E-02
1 010	4,580E-01	3,365E-01	1,002E-01
1 015	4,545E-01	3,345E-01	1,005E-01
1 020	4,477E-01	3,294E-01	9,890E-02
1 025	4,465E-01	3,285E-01	9,851E-02
1 030	4,419E-01	3,253E-01	9,800E-02
1 035	4,352E-01	3,206E-01	9,682E-02
1 040	4,313E-01	3,176E-01	9,578E-02
1 045	4,253E-01	3,131E-01	9,414E-02
1 050	4,216E-01	3,100E-01	9,269E-02
1 055	4,158E-01	3,053E-01	9,058E-02
1 060	4,063E-01	2,979E-01	8,754E-02
1 065	4,013E-01	2,938E-01	8,571E-02
1 070	3,922E-01	2,870E-01	8,358E-02

Table A.5 continued

Wavelength nm	$E_{\lambda,H9}$	$E_{\lambda,H10}$	$E_{\lambda,H11}$
	$W \cdot m^{-2} \cdot nm^{-1}$		
1 075	3,897E-01	2,850E-01	8,326E-02
1 080	3,810E-01	2,781E-01	8,078E-02
1 085	3,685E-01	2,679E-01	7,648E-02
1 090	3,611E-01	2,622E-01	7,434E-02
1 095	3,312E-01	2,377E-01	6,417E-02
1 100	3,011E-01	2,112E-01	5,195E-02
1 105	2,722E-01	1,870E-01	4,243E-02
1 110	2,298E-01	1,541E-01	3,141E-02
1 115	1,263E-01	7,804E-02	1,205E-02
1 120	6,568E-02	3,529E-02	3,789E-03
1 125	4,947E-02	2,526E-02	2,491E-03
1 130	6,707E-02	3,629E-02	3,980E-03
1 135	6,454E-02	3,558E-02	4,018E-03
1 140	1,184E-01	7,042E-02	8,899E-03
1 145	8,161E-02	4,591E-02	5,311E-03
1 150	9,560E-02	5,564E-02	6,663E-03
1 155	1,356E-01	8,366E-02	1,207E-02
1 160	1,850E-01	1,214E-01	2,244E-02
1 165	2,289E-01	1,563E-01	3,420E-02
1 170	2,571E-01	1,796E-01	4,348E-02
1 175	2,604E-01	1,842E-01	4,740E-02
1 180	2,589E-01	1,835E-01	4,721E-02
1 185	2,548E-01	1,797E-01	4,490E-02
1 190	2,650E-01	1,882E-01	4,863E-02
1 195	2,730E-01	1,951E-01	5,165E-02
1 200	2,573E-01	1,830E-01	4,773E-02
1 205	2,598E-01	1,855E-01	4,911E-02
1 210	2,649E-01	1,899E-01	5,122E-02
1 215	2,735E-01	1,963E-01	5,310E-02
1 220	2,823E-01	2,045E-01	5,754E-02
1 225	2,822E-01	2,050E-01	5,862E-02
1 230	2,894E-01	2,119E-01	6,304E-02
1 235	2,931E-01	2,158E-01	6,581E-02
1 240	2,923E-01	2,158E-01	6,660E-02
1 245	2,905E-01	2,146E-01	6,639E-02
1 250	2,873E-01	2,119E-01	6,495E-02
1 255	2,806E-01	2,062E-01	6,160E-02
1 260	2,667E-01	1,933E-01	5,322E-02
1 265	2,439E-01	1,725E-01	4,139E-02
1 270	2,348E-01	1,651E-01	3,952E-02
1 275	2,599E-01	1,881E-01	5,142E-02
1 280	2,583E-01	1,890E-01	5,538E-02
1 285	2,624E-01	1,928E-01	5,793E-02
1 290	2,599E-01	1,900E-01	5,579E-02
1 295	2,498E-01	1,810E-01	5,106E-02
1 300	2,332E-01	1,673E-01	4,541E-02
1 305	2,161E-01	1,533E-01	3,952E-02
1 310	2,028E-01	1,428E-01	3,526E-02
1 315	1,835E-01	1,270E-01	2,890E-02
1 320	1,699E-01	1,161E-01	2,493E-02
1 325	1,591E-01	1,073E-01	2,178E-02
1 330	1,087E-01	6,843E-02	1,048E-02
1 335	1,010E-01	6,251E-02	8,531E-03
1 340	8,733E-02	5,244E-02	6,454E-03
1 345	3,877E-02	2,005E-02	1,821E-03

Table A.5 continued

Wavelength nm	$E_{\lambda,\mathrm{H9}}$	$E_{\lambda,\mathrm{H10}}$	$E_{\lambda,\mathrm{H11}}$
	$W \cdot m^{-2} \cdot nm^{-1}$		
1 350	4,584E-03	1,693E-03	1,284E-04
1 355	1,063E-04	2,553E-05	2,184E-06
1 360	4,996E-07	3,985E-08	5,733E-09
1 365	5,876E-08	1,302E-09	3,422E-10
1 370	7,602E-07	4,917E-08	7,842E-09
1 375	1,654E-05	1,394E-06	1,961E-07
1 380	1,455E-05	1,337E-06	1,812E-07
1 385	2,992E-06	2,000E-07	3,107E-08
1 390	1,832E-05	1,377E-06	2,028E-07
1 395	1,269E-05	1,092E-06	1,493E-07
1 400	8,316E-05	1,198E-05	1,246E-06
1 405	1,294E-04	1,817E-05	1,923E-06
1 410	6,022E-04	1,500E-04	1,176E-05
1 415	3,400E-03	1,134E-03	7,787E-05
1 420	4,182E-03	1,417E-03	9,660E-05
1 425	8,885E-03	3,566E-03	2,340E-04
1 430	1,434E-02	6,359E-03	4,141E-04
1 435	1,023E-02	4,140E-03	2,663E-04
1 440	1,360E-02	5,514E-03	3,543E-04
1 445	1,984E-02	8,960E-03	6,106E-04
1 450	2,708E-02	1,365E-02	1,020E-03
1 455	4,593E-02	2,480E-02	2,112E-03
1 460	5,602E-02	3,158E-02	3,005E-03
1 465	4,187E-02	2,310E-02	2,135E-03
1 470	2,578E-02	1,268E-02	9,494E-04
1 475	4,592E-02	2,561E-02	2,453E-03
1 480	4,511E-02	2,512E-02	2,288E-03
1 485	6,032E-02	3,544E-02	3,911E-03
1 490	8,977E-02	5,680E-02	8,512E-03
1 495	1,099E-01	7,254E-02	1,335E-02
1 500	1,335E-01	9,204E-02	2,086E-02
1 505	1,282E-01	8,867E-02	2,058E-02
1 510	1,509E-01	1,068E-01	2,736E-02
1 515	1,558E-01	1,107E-01	2,909E-02
1 520	1,649E-01	1,188E-01	3,301E-02
1 525	1,715E-01	1,246E-01	3,590E-02
1 530	1,726E-01	1,261E-01	3,731E-02
1 535	1,753E-01	1,289E-01	3,903E-02
1 540	1,746E-01	1,288E-01	3,966E-02
1 545	1,762E-01	1,302E-01	4,076E-02
1 550	1,752E-01	1,299E-01	4,137E-02
1 555	1,735E-01	1,287E-01	4,114E-02
1 560	1,736E-01	1,288E-01	4,119E-02
1 565	1,709E-01	1,266E-01	4,016E-02
1 570	1,593E-01	1,157E-01	3,249E-02
1 575	1,524E-01	1,103E-01	3,015E-02
1 580	1,547E-01	1,123E-01	3,105E-02
1 585	1,606E-01	1,184E-01	3,632E-02
1 590	1,585E-01	1,176E-01	3,760E-02
1 595	1,628E-01	1,206E-01	3,830E-02
1 600	1,530E-01	1,115E-01	3,192E-02
1 605	1,495E-01	1,086E-01	3,035E-02
1 610	1,468E-01	1,068E-01	3,007E-02
1 615	1,518E-01	1,120E-01	3,445E-02
1 620	1,537E-01	1,140E-01	3,643E-02

Table A.5 continued

Wavelength nm	$E_{\lambda,H9}$	$E_{\lambda,H10}$	$E_{\lambda,H11}$
	$W \cdot m^{-2} \cdot nm^{-1}$		
1 625	1,559E-01	1,157E-01	3,717E-02
1 630	1,541E-01	1,143E-01	3,644E-02
1 635	1,487E-01	1,100E-01	3,454E-02
1 640	1,410E-01	1,038E-01	3,157E-02
1 645	1,411E-01	1,036E-01	3,105E-02
1 650	1,411E-01	1,036E-01	3,102E-02
1 655	1,429E-01	1,052E-01	3,224E-02
1 660	1,442E-01	1,066E-01	3,346E-02
1 665	1,360E-01	9,935E-02	2,910E-02
1 670	1,384E-01	1,022E-01	3,181E-02
1 675	1,362E-01	1,007E-01	3,158E-02
1 680	1,314E-01	9,715E-02	3,053E-02
1 685	1,329E-01	9,808E-02	3,069E-02
1 690	1,318E-01	9,700E-02	2,994E-02
1 695	1,313E-01	9,657E-02	2,974E-02
1 700	1,298E-01	9,560E-02	2,959E-02
1 705	1,275E-01	9,374E-02	2,858E-02
1 710	1,207E-01	8,815E-02	2,625E-02
1 715	1,199E-01	8,755E-02	2,603E-02
1 720	1,187E-01	8,690E-02	2,626E-02
1 725	1,114E-01	8,060E-02	2,290E-02
1 730	1,090E-01	7,887E-02	2,234E-02
1 735	1,021E-01	7,372E-02	2,075E-02
1 740	1,029E-01	7,410E-02	2,044E-02
1 745	9,744E-02	6,984E-02	1,901E-02
1 750	1,032E-01	7,423E-02	2,004E-02
1 755	9,540E-02	6,792E-02	1,756E-02
1 760	9,832E-02	7,024E-02	1,836E-02
1 765	8,099E-02	5,639E-02	1,296E-02
1 770	8,278E-02	5,699E-02	1,241E-02
1 775	6,598E-02	4,385E-02	8,133E-03
1 780	5,484E-02	3,541E-02	5,702E-03
1 785	4,054E-02	2,477E-02	3,140E-03
1 790	4,525E-02	2,777E-02	3,637E-03
1 795	2,166E-02	1,095E-02	7,062E-04
1 800	1,458E-02	7,603E-03	4,644E-04
1 805	5,081E-03	1,891E-03	9,147E-05
1 810	2,635E-03	9,663E-04	4,424E-05
1 815	7,265E-04	1,703E-04	9,089E-06
1 820	1,612E-04	2,458E-05	1,600E-06
1 825	1,630E-04	2,332E-05	1,566E-06
1 830	9,907E-06	1,402E-06	9,445E-08
1 835	1,811E-07	1,244E-08	1,170E-09
1 840	1,771E-08	8,596E-10	9,237E-11
1 845	1,029E-07	1,790E-09	3,377E-10
1 850	4,861E-08	7,629E-10	1,504E-10
1 855	4,000E-08	2,199E-09	2,250E-10
1 860	5,633E-07	3,466E-08	3,408E-09
1 865	6,593E-07	3,099E-08	3,496E-09
1 870	3,924E-08	1,814E-09	2,065E-10
1 875	2,905E-07	2,238E-08	1,951E-09
1 880	4,793E-06	3,680E-07	3,213E-08
1 885	3,489E-06	2,403E-07	2,215E-08
1 890	1,463E-05	1,005E-06	9,358E-08
1 895	9,736E-06	8,115E-07	6,745E-08

Table A.5 continued

Wavelength nm	$E_{\lambda,\mathrm{H9}}$	$E_{\lambda,\mathrm{H10}}$	$E_{\lambda,\mathrm{H11}}$
	$W \cdot m^{-2} \cdot nm^{-1}$		
1 900	5,738E-07	4,762E-08	3,950E-09
1 905	7,133E-08	3,202E-09	3,577E-10
1 910	9,680E-07	4,808E-08	5,112E-09
1 915	3,555E-06	3,077E-07	2,480E-08
1 920	4,493E-05	4,511E-06	3,378E-07
1 925	1,217E-04	1,713E-05	1,076E-06
1 930	1,201E-04	2,305E-05	1,211E-06
1 935	7,618E-04	1,948E-04	8,923E-06
1 940	9,889E-04	3,280E-04	1,367E-05
1 945	3,958E-03	1,529E-03	6,076E-05
1 950	6,730E-03	2,913E-03	1,264E-04
1 955	4,368E-03	1,564E-03	6,450E-05
1 960	1,028E-02	4,727E-03	2,105E-04
1 965	1,518E-02	7,652E-03	4,448E-04
1 970	2,716E-02	1,570E-02	1,430E-03
1 975	3,774E-02	2,371E-02	3,185E-03
1 980	4,412E-02	2,930E-02	5,183E-03
1 985	4,928E-02	3,366E-02	6,991E-03
1 990	5,017E-02	3,418E-02	7,113E-03
1 995	4,780E-02	3,205E-02	5,936E-03
2 000	2,389E-02	1,292E-02	9,832E-04
2 005	1,051E-02	4,507E-03	2,077E-04
2 010	2,417E-02	1,262E-02	6,943E-04
2 015	1,738E-02	8,374E-03	4,081E-04
2 020	2,844E-02	1,596E-02	1,215E-03
2 025	4,635E-02	3,015E-02	4,417E-03
2 030	5,347E-02	3,663E-02	7,482E-03
2 035	6,129E-02	4,377E-02	1,124E-02
2 040	5,809E-02	4,081E-02	9,694E-03
2 045	5,814E-02	4,070E-02	9,265E-03
2 050	4,481E-02	2,901E-02	4,060E-03
2 055	3,672E-02	2,238E-02	2,262E-03
2 060	4,409E-02	2,865E-02	4,096E-03
2 065	4,100E-02	2,603E-02	3,192E-03
2 070	4,341E-02	2,812E-02	3,873E-03
2 075	5,116E-02	3,500E-02	6,738E-03
2 080	5,701E-02	4,064E-02	1,021E-02
2 085	5,663E-02	4,038E-02	1,009E-02
2 090	5,913E-02	4,279E-02	1,173E-02
2 095	5,936E-02	4,330E-02	1,259E-02
2 100	5,670E-02	4,103E-02	1,169E-02
2 105	6,158E-02	4,541E-02	1,408E-02
2 110	5,957E-02	4,367E-02	1,314E-02
2 115	6,069E-02	4,483E-02	1,404E-02
2 120	5,761E-02	4,220E-02	1,272E-02
2 125	5,840E-02	4,302E-02	1,343E-02
2 130	5,916E-02	4,381E-02	1,410E-02
2 135	5,962E-02	4,428E-02	1,441E-02
2 140	6,009E-02	4,475E-02	1,475E-02
2 145	5,931E-02	4,411E-02	1,444E-02
2 150	5,547E-02	4,058E-02	1,214E-02
2 155	5,543E-02	4,061E-02	1,224E-02
2 160	5,467E-02	4,015E-02	1,224E-02
2 165	5,046E-02	3,692E-02	1,113E-02
2 170	5,325E-02	3,925E-02	1,225E-02

Table A.5 continued

Wavelength nm	$E_{\lambda,H9}$	$E_{\lambda,H10}$	$E_{\lambda,H11}$
	$W \cdot m^{-2} \cdot nm^{-1}$		
2 175	5,224E-02	3,817E-02	1,137E-02
2 180	5,335E-02	3,929E-02	1,219E-02
2 185	4,805E-02	3,470E-02	9,854E-03
2 190	5,145E-02	3,770E-02	1,149E-02
2 195	5,095E-02	3,725E-02	1,115E-02
2 200	4,627E-02	3,303E-02	8,478E-03
2 205	4,789E-02	3,474E-02	9,943E-03
2 210	5,151E-02	3,809E-02	1,210E-02
2 215	4,979E-02	3,653E-02	1,115E-02
2 220	5,082E-02	3,749E-02	1,164E-02
2 225	4,946E-02	3,637E-02	1,108E-02
2 230	4,985E-02	3,675E-02	1,131E-02
2 235	4,874E-02	3,579E-02	1,077E-02
2 240	4,824E-02	3,542E-02	1,063E-02
2 245	4,673E-02	3,404E-02	9,683E-03
2 250	4,734E-02	3,474E-02	1,035E-02
2 255	4,488E-02	3,248E-02	8,815E-03
2 260	4,424E-02	3,193E-02	8,512E-03
2 265	4,494E-02	3,269E-02	9,186E-03
2 270	4,290E-02	3,079E-02	7,894E-03
2 275	4,233E-02	3,031E-02	7,674E-03
2 280	4,356E-02	3,165E-02	8,834E-03
2 285	4,150E-02	2,975E-02	7,566E-03
2 290	4,128E-02	2,960E-02	7,540E-03
2 295	4,018E-02	2,875E-02	7,219E-03
2 300	3,837E-02	2,705E-02	6,178E-03
2 305	3,860E-02	2,731E-02	6,396E-03
2 310	4,097E-02	2,967E-02	8,201E-03
2 315	3,747E-02	2,649E-02	6,235E-03
2 320	3,334E-02	2,298E-02	4,639E-03
2 325	3,554E-02	2,519E-02	6,271E-03
2 330	3,620E-02	2,558E-02	6,038E-03
2 335	3,669E-02	2,611E-02	6,463E-03
2 340	2,875E-02	1,934E-02	3,558E-03
2 345	3,186E-02	2,188E-02	4,343E-03
2 350	2,576E-02	1,717E-02	2,963E-03
2 355	2,958E-02	2,013E-02	3,773E-03
2 360	3,138E-02	2,168E-02	4,499E-03
2 365	2,972E-02	2,058E-02	4,504E-03
2 370	1,882E-02	1,165E-02	1,405E-03
2 375	2,643E-02	1,773E-02	3,123E-03
2 380	2,464E-02	1,646E-02	2,922E-03
2 385	1,790E-02	1,128E-02	1,554E-03
2 390	2,123E-02	1,386E-02	2,153E-03
2 395	2,392E-02	1,589E-02	2,683E-03
2 400	2,564E-02	1,723E-02	3,061E-03
2 405	1,923E-02	1,246E-02	1,971E-03
2 410	1,845E-02	1,178E-02	1,768E-03
2 415	1,481E-02	8,963E-03	9,109E-04
2 420	1,453E-02	8,916E-03	9,388E-04
2 425	1,867E-02	1,182E-02	1,450E-03
2 430	2,459E-02	1,624E-02	2,484E-03
2 435	9,227E-03	5,380E-03	5,144E-04
2 440	2,321E-02	1,535E-02	2,381E-03
2 445	1,113E-02	6,527E-03	5,806E-04

Table A.5 continued

Wavelength nm	$E_{\lambda,\mathrm{H9}}$	$E_{\lambda,\mathrm{H10}}$	$E_{\lambda,\mathrm{H11}}$
	$W \cdot m^{-2} \cdot nm^{-1}$		
2 450	6,907E-03	3,714E-03	2,309E-04
2 455	1,254E-02	7,527E-03	7,628E-04
2 460	1,751E-02	1,075E-02	1,071E-03
2 465	1,224E-02	6,958E-03	4,834E-04
2 470	7,765E-03	3,919E-03	1,688E-04
2 475	7,036E-03	3,463E-03	1,447E-04
2 480	3,032E-03	1,337E-03	4,948E-05
2 485	1,849E-03	6,652E-04	1,974E-05
2 490	9,881E-04	2,896E-04	8,850E-06
2 495	9,071E-04	2,701E-04	8,196E-06
2 500	1,963E-03	7,006E-04	2,056E-05
2 505	4,407E-04	1,475E-04	4,479E-06
2 510	5,150E-04	1,718E-04	5,330E-06
2 515	1,161E-04	3,170E-05	1,014E-06
2 520	4,370E-05	5,563E-06	2,530E-07
2 525	4,436E-06	5,182E-07	2,463E-08
2 530	1,362E-07	1,605E-08	7,395E-10
2 535	1,995E-09	2,126E-11	3,180E-12
2 540	3,666E-09	3,369E-11	5,820E-12
2 545	2,245E-10	2,074E-12	3,574E-13
2 550	1,948E-13	8,820E-16	1,969E-16
2 555	2,134E-12	5,678E-15	1,665E-15
2 560	2,049E-13	6,094E-16	1,686E-16
2 565	4,527E-15	1,606E-17	4,075E-18
2 570	1,342E-18	4,050E-21	1,061E-21
2 575	6,197E-23	4,048E-26	1,879E-26
2 580	3,864E-28	5,572E-32	3,149E-32
2 585	5,916E-30	6,572E-35	4,943E-35
2 590	1,444E-33	1,604E-38	1,206E-38
2 595	6,671E-38	8,193E-44	6,205E-44
2 600	1,044E-36	1,058E-42	8,024E-43
2 605	6,524E-38	6,611E-44	5,015E-44
2 610	5,768E-41	2,718E-46	2,053E-46
2 615	1,708E-37	1,047E-42	7,905E-43
2 620	3,248E-31	7,286E-35	4,460E-35
2 625	3,405E-25	7,640E-29	4,677E-29
2 630	1,395E-21	3,129E-25	1,916E-25
2 635	2,240E-20	5,016E-24	3,071E-24
2 640	2,718E-21	4,602E-25	2,922E-25
2 645	8,752E-23	9,523E-27	6,507E-27
2 650	4,221E-25	2,011E-29	1,447E-29
2 655	7,740E-27	1,842E-31	1,371E-31
2 660	1,929E-30	4,473E-35	3,331E-35
2 665	3,477E-33	3,999E-38	3,005E-38
2 670	8,484E-37	9,753E-42	7,328E-42
2 675	8,091E-43	9,301E-48	6,989E-48
2 680	5,203E-42	2,586E-48	1,964E-48
2 685	2,131E-38	1,059E-44	8,043E-45
2 690	3,410E-37	1,695E-43	1,288E-43
2 695	2,256E-38	1,213E-44	9,215E-45
2 700	8,346E-41	9,914E-47	7,526E-47
2 705	3,640E-38	5,054E-44	3,837E-44
2 710	1,492E-34	2,118E-40	1,606E-40
2 715	9,042E-32	5,018E-36	3,573E-36
2 720	3,692E-28	2,066E-32	1,472E-32

Table A.5 continued

Wavelength nm	$E_{\lambda,H9}$	$E_{\lambda,H10}$	$E_{\lambda,H11}$
	$W \cdot m^{-2} \cdot nm^{-1}$		
2 725	4,117E-26	8,268E-31	6,083E-31
2 730	5,673E-25	8,000E-30	6,011E-30
2 735	4,297E-26	6,484E-31	4,864E-31
2 740	4,816E-28	9,512E-33	7,095E-33
2 745	2,059E-30	2,530E-35	1,901E-35
2 750	1,215E-31	1,438E-36	1,081E-36
2 755	3,300E-35	3,564E-40	2,681E-40
2 760	5,847E-34	5,764E-39	4,339E-39
2 765	1,543E-30	1,855E-35	1,394E-35
2 770	2,464E-29	2,964E-34	2,228E-34
2 775	2,101E-30	7,622E-35	5,283E-35
2 780	5,880E-25	6,050E-29	4,079E-29
2 785	2,409E-21	2,480E-25	1,672E-25
2 790	1,356E-19	1,518E-22	4,986E-23
2 795	3,888E-16	6,049E-19	1,929E-19
2 800	6,277E-15	9,790E-18	3,120E-18
2 805	1,754E-13	3,712E-16	1,136E-16
2 810	2,916E-12	6,237E-15	1,900E-15
2 815	2,131E-12	5,811E-15	1,577E-15
2 820	1,557E-10	1,661E-12	2,380E-13
2 825	1,106E-08	2,580E-10	2,507E-11
2 830	1,378E-07	3,719E-09	3,417E-10
2 835	8,896E-09	2,403E-10	2,203E-11
2 840	2,041E-07	1,306E-08	7,745E-10
2 845	3,205E-06	2,077E-07	1,227E-08
2 850	2,309E-07	1,364E-08	8,342E-10
2 855	1,407E-07	1,001E-08	5,524E-10
2 860	3,229E-06	2,754E-07	1,392E-08
2 865	2,011E-05	2,089E-06	9,639E-08
2 870	5,199E-06	6,896E-07	2,777E-08
2 875	6,112E-05	9,210E-06	3,494E-07
2 880	4,380E-05	8,393E-06	2,779E-07
2 885	7,662E-05	1,227E-05	4,512E-07
2 890	7,724E-05	2,143E-05	6,016E-07
2 895	7,306E-04	2,415E-04	6,341E-06
2 900	2,372E-04	6,463E-05	1,821E-06
2 905	7,647E-05	2,397E-05	6,448E-07
2 910	8,576E-04	3,059E-04	7,872E-06
2 915	4,177E-04	1,290E-04	3,492E-06
2 920	9,193E-04	3,206E-04	8,304E-06
2 925	4,802E-04	1,756E-04	4,974E-06
2 930	2,156E-03	9,258E-04	2,729E-05
2 935	2,584E-03	1,127E-03	3,326E-05
2 940	5,929E-04	2,132E-04	6,151E-06
2 945	5,136E-04	1,635E-04	4,548E-06
2 950	1,942E-03	7,988E-04	2,223E-05
2 955	1,067E-03	4,545E-04	1,318E-05
2 960	1,883E-03	8,425E-04	3,010E-05
2 965	3,288E-03	1,650E-03	7,075E-05
2 970	2,991E-04	1,295E-04	5,153E-06
2 975	2,330E-04	7,766E-05	2,305E-06
2 980	5,608E-04	2,161E-04	7,742E-06
2 985	3,112E-03	1,543E-03	7,472E-05
2 990	4,940E-03	2,753E-03	2,047E-04
2 995	2,070E-03	9,478E-04	3,880E-05

Table A.5 continued

Wavelength nm	$E_{\lambda,\mathrm{H9}}$	$E_{\lambda,\mathrm{H10}}$	$E_{\lambda,\mathrm{H11}}$
	$W \cdot m^{-2} \cdot nm^{-1}$		
3 000	3,519E-03	1,785E-03	8,063E-05
3 005	1,403E-03	6,306E-04	2,418E-05
3 010	3,173E-03	1,642E-03	8,185E-05
3 015	2,292E-03	1,075E-03	4,265E-05
3 020	4,647E-04	1,951E-04	7,889E-06
3 025	3,411E-03	1,749E-03	7,663E-05
3 030	2,776E-03	1,379E-03	5,766E-05
3 035	1,058E-03	4,445E-04	1,342E-05
3 040	8,065E-04	3,288E-04	1,048E-05
3 045	1,551E-03	6,548E-04	1,980E-05
3 050	3,561E-04	1,327E-04	3,853E-06
3 055	2,352E-04	1,040E-04	4,241E-06
3 060	2,716E-03	1,381E-03	5,945E-05
3 065	1,182E-03	5,040E-04	1,702E-05
3 070	7,186E-04	2,781E-04	8,923E-06
3 075	2,608E-03	1,293E-03	5,231E-05
3 080	1,571E-03	7,205E-04	2,334E-05
3 085	6,574E-04	2,440E-04	6,832E-06
3 090	7,783E-04	2,891E-04	8,246E-06
3 095	3,064E-04	1,113E-04	3,564E-06
3 100	1,759E-03	8,272E-04	2,929E-05
3 105	3,950E-04	1,561E-04	5,067E-06
3 110	2,552E-04	7,235E-05	2,147E-06
3 115	1,014E-03	4,228E-04	1,633E-05
3 120	4,583E-03	2,501E-03	1,474E-04
3 125	1,603E-03	8,093E-04	4,421E-05
3 130	3,046E-03	1,663E-03	9,464E-05
3 135	5,771E-03	3,298E-03	2,258E-04
3 140	1,719E-03	8,322E-04	3,656E-05
3 145	1,551E-03	7,411E-04	2,942E-05
3 150	3,224E-03	1,723E-03	1,007E-04
3 155	2,959E-03	1,590E-03	9,493E-05
3 160	5,087E-03	2,911E-03	2,343E-04
3 165	8,324E-03	5,302E-03	6,342E-04
3 170	7,184E-03	4,501E-03	5,302E-04
3 175	5,446E-03	3,191E-03	2,513E-04
3 180	5,965E-03	3,623E-03	3,447E-04
3 185	4,380E-03	2,324E-03	1,169E-04
3 190	2,122E-03	1,078E-03	5,008E-05
3 195	1,068E-03	4,133E-04	1,262E-05
3 200	1,589E-04	4,511E-05	1,366E-06
3 205	6,582E-05	1,279E-05	4,568E-07
3 210	3,489E-05	7,146E-06	2,471E-07
3 215	1,416E-04	3,792E-05	1,158E-06
3 220	5,401E-04	1,756E-04	4,917E-06
3 225	8,374E-05	2,493E-05	7,335E-07
3 230	2,947E-04	1,319E-04	5,676E-06
3 235	3,377E-03	1,757E-03	8,000E-05
3 240	1,774E-03	7,660E-04	2,407E-05
3 245	3,971E-04	1,611E-04	5,120E-06
3 250	1,439E-03	6,836E-04	2,691E-05
3 255	4,897E-03	2,769E-03	1,695E-04
3 260	8,139E-04	3,658E-04	1,635E-05
3 265	8,910E-04	3,522E-04	9,893E-06
3 270	6,207E-04	2,381E-04	8,159E-06

Table A.5 continued

Wavelength nm	$E_{\lambda,\mathrm{H9}}$	$E_{\lambda,\mathrm{H10}}$	$E_{\lambda,\mathrm{H11}}$
	$W \cdot m^{-2} \cdot nm^{-1}$		
3 275	2,685E-03	1,349E-03	5,922E-05
3 280	1,678E-03	8,105E-04	3,923E-05
3 285	5,868E-03	3,520E-03	3,012E-04
3 290	4,655E-03	2,622E-03	1,649E-04
3 295	6,885E-04	3,228E-04	1,515E-05
3 300	7,926E-04	3,411E-04	1,057E-05
3 305	1,720E-03	7,956E-04	2,753E-05
3 310	1,897E-03	8,809E-04	3,020E-05
3 315	1,194E-04	5,285E-05	1,824E-06
3 320	1,144E-04	4,578E-05	1,402E-06
3 325	1,751E-03	7,786E-04	2,708E-05
3 330	2,689E-03	1,536E-03	1,125E-04
3 335	4,996E-03	2,936E-03	2,269E-04
3 340	1,843E-03	9,888E-04	6,646E-05
3 345	1,974E-03	1,000E-03	4,814E-05
3 350	4,229E-03	2,505E-03	2,162E-04
3 355	1,985E-03	9,994E-04	5,140E-05
3 360	2,830E-03	1,556E-03	9,671E-05
3 365	4,000E-03	2,403E-03	2,300E-04
3 370	2,405E-03	1,229E-03	7,014E-05
3 375	4,642E-03	2,840E-03	3,483E-04
3 380	3,160E-03	1,708E-03	1,083E-04
3 385	4,440E-03	2,702E-03	2,921E-04
3 390	6,276E-03	3,965E-03	4,512E-04
3 395	6,069E-03	3,907E-03	5,431E-04
3 400	7,621E-03	5,211E-03	1,025E-03
3 405	3,000E-03	1,654E-03	1,373E-04
3 410	4,083E-03	2,517E-03	3,129E-04
3 415	4,812E-03	2,903E-03	2,911E-04
3 420	8,356E-03	5,852E-03	1,309E-03
3 425	6,620E-03	4,293E-03	5,867E-04
3 430	5,889E-03	3,687E-03	4,084E-04
3 435	7,147E-03	4,883E-03	9,922E-04
3 440	5,421E-03	3,343E-03	3,649E-04
3 445	7,116E-03	4,797E-03	9,136E-04
3 450	7,335E-03	4,964E-03	8,719E-04
3 455	5,512E-03	3,525E-03	4,759E-04
3 460	7,920E-03	5,534E-03	1,283E-03
3 465	6,678E-03	4,403E-03	6,678E-04
3 470	7,926E-03	5,571E-03	1,297E-03
3 475	7,204E-03	4,896E-03	8,922E-04
3 480	7,457E-03	5,114E-03	9,762E-04
3 485	7,852E-03	5,491E-03	1,236E-03
3 490	6,850E-03	4,596E-03	7,995E-04
3 495	8,009E-03	5,657E-03	1,321E-03
3 500	7,828E-03	5,501E-03	1,247E-03
3 505	7,796E-03	5,478E-03	1,245E-03
3 510	7,812E-03	5,501E-03	1,261E-03
3 515	7,364E-03	5,103E-03	1,109E-03
3 520	7,859E-03	5,575E-03	1,351E-03
3 525	7,367E-03	5,159E-03	1,221E-03
3 530	7,130E-03	4,942E-03	1,058E-03
3 535	5,999E-03	3,965E-03	6,467E-04
3 540	5,681E-03	3,703E-03	5,608E-04
3 545	6,027E-03	3,985E-03	6,338E-04

Table A.5 continued

Wavelength nm	$E_{\lambda,\mathrm{H9}}$	$E_{\lambda,\mathrm{H10}}$	$E_{\lambda,\mathrm{H11}}$
	$W \cdot m^{-2} \cdot nm^{-1}$		
3 550	6,602E-03	4,531E-03	9,470E-04
3 555	5,645E-03	3,732E-03	6,464E-04
3 560	6,874E-03	4,785E-03	1,079E-03
3 565	6,979E-03	4,869E-03	1,067E-03
3 570	5,174E-03	3,397E-03	5,733E-04
3 575	5,402E-03	3,521E-03	5,416E-04
3 580	6,521E-03	4,512E-03	9,664E-04
3 585	5,805E-03	3,889E-03	6,884E-04
3 590	5,927E-03	4,021E-03	7,900E-04
3 595	6,133E-03	4,254E-03	9,751E-04
3 600	6,581E-03	4,631E-03	1,120E-03
3 605	6,728E-03	4,706E-03	1,057E-03
3 610	6,013E-03	4,110E-03	8,401E-04
3 615	6,059E-03	4,218E-03	9,828E-04
3 620	7,533E-03	5,465E-03	1,535E-03
3 625	6,639E-03	4,657E-03	1,080E-03
3 630	6,374E-03	4,466E-03	1,058E-03
3 635	6,597E-03	4,650E-03	1,131E-03
3 640	7,473E-03	5,433E-03	1,541E-03
3 645	6,944E-03	4,939E-03	1,206E-03
3 650	6,552E-03	4,626E-03	1,126E-03
3 655	7,045E-03	5,067E-03	1,352E-03
3 660	7,028E-03	5,061E-03	1,379E-03
3 665	6,524E-03	4,596E-03	1,066E-03
3 670	4,709E-03	3,138E-03	6,035E-04
3 675	2,686E-03	1,573E-03	1,802E-04
3 680	4,806E-03	3,158E-03	5,296E-04
3 685	5,826E-03	4,006E-03	8,417E-04
3 690	6,146E-03	4,277E-03	9,156E-04
3 695	6,438E-03	4,584E-03	1,164E-03
3 700	7,041E-03	5,152E-03	1,520E-03
3 705	6,941E-03	5,059E-03	1,457E-03
3 710	5,986E-03	4,216E-03	1,021E-03
3 715	5,854E-03	4,128E-03	1,038E-03
3 720	6,679E-03	4,835E-03	1,355E-03
3 725	6,935E-03	5,067E-03	1,480E-03
3 730	5,918E-03	4,193E-03	1,067E-03
3 735	5,305E-03	3,664E-03	8,137E-04
3 740	5,509E-03	3,871E-03	9,573E-04
3 745	6,533E-03	4,759E-03	1,369E-03
3 750	5,940E-03	4,247E-03	1,128E-03
3 755	5,662E-03	4,002E-03	1,006E-03
3 760	5,520E-03	3,846E-03	8,792E-04
3 765	5,390E-03	3,769E-03	8,929E-04
3 770	5,779E-03	4,111E-03	1,070E-03
3 775	5,765E-03	4,105E-03	1,070E-03
3 780	6,115E-03	4,405E-03	1,208E-03
3 785	5,515E-03	3,870E-03	9,375E-04
3 790	4,839E-03	3,327E-03	7,321E-04
3 795	5,628E-03	4,009E-03	1,054E-03
3 800	6,421E-03	4,695E-03	1,376E-03
3 805	5,963E-03	4,290E-03	1,168E-03
3 810	5,134E-03	3,552E-03	7,944E-04
3 815	4,848E-03	3,346E-03	7,683E-04
3 820	6,250E-03	4,565E-03	1,338E-03

Table A.5 continued

Wavelength nm	$E_{\lambda,\mathrm{H9}}$	$E_{\lambda,\mathrm{H10}}$	$E_{\lambda,\mathrm{H11}}$
	$W \cdot m^{-2} \cdot nm^{-1}$		
3 825	6,208E-03	4,525E-03	1,328E-03
3 830	6,191E-03	4,518E-03	1,321E-03
3 835	4,831E-03	3,313E-03	7,135E-04
3 840	5,751E-03	4,119E-03	1,077E-03
3 845	5,711E-03	4,080E-03	1,041E-03
3 850	5,738E-03	4,104E-03	1,055E-03
3 855	5,457E-03	3,859E-03	9,288E-04
3 860	5,108E-03	3,537E-03	7,449E-04
3 865	5,225E-03	3,647E-03	7,815E-04
3 870	4,768E-03	3,238E-03	5,827E-04
3 875	4,322E-03	2,844E-03	4,279E-04
3 880	4,210E-03	2,748E-03	3,875E-04
3 885	4,375E-03	2,900E-03	4,411E-04
3 890	4,443E-03	2,962E-03	4,680E-04
3 895	4,869E-03	3,348E-03	6,454E-04
3 900	5,049E-03	3,518E-03	7,604E-04
3 905	5,121E-03	3,590E-03	7,904E-04
3 910	4,667E-03	3,178E-03	5,741E-04
3 915	4,529E-03	3,058E-03	5,228E-04
3 920	4,502E-03	3,040E-03	5,200E-04
3 925	4,422E-03	2,974E-03	4,973E-04
3 930	4,594E-03	3,132E-03	5,695E-04
3 935	4,789E-03	3,315E-03	6,655E-04
3 940	4,846E-03	3,372E-03	6,997E-04
3 945	4,907E-03	3,435E-03	7,441E-04
3 950	4,971E-03	3,506E-03	7,970E-04
3 955	5,042E-03	3,579E-03	8,479E-04
3 960	5,082E-03	3,620E-03	8,783E-04
3 965	5,111E-03	3,650E-03	9,007E-04
3 970	5,042E-03	3,589E-03	8,682E-04
3 975	4,920E-03	3,481E-03	8,068E-04
3 980	4,860E-03	3,431E-03	7,835E-04
3 985	4,864E-03	3,444E-03	8,019E-04
3 990	4,805E-03	3,396E-03	7,802E-04

Table A.6 – CIE-DN1: Direct normal solar spectral irradiance at sea level AM: 1,0, Water Vapour: 1,42 atm-cm, O_3: 0,340 atm-cm, AOD: 0,10, Albedo: 0,2

Wavelength nm	$E_{\lambda,\mathrm{DN1}}$ $W \cdot m^{-2} \cdot nm^{-1}$	Wavelength nm	$E_{\lambda,\mathrm{DN1}}$ $W \cdot m^{-2} \cdot nm^{-1}$	Wavelength nm	$E_{\lambda,\mathrm{DN1}}$ $W \cdot m^{-2} \cdot nm^{-1}$	Wavelength nm	$E_{\lambda,\mathrm{DN1}}$ $W \cdot m^{-2} \cdot nm^{-1}$
290	1,136E-05	570	1,449E+00	850	9,047E-01	1 130	1,905E-01
295	5,659E-04	575	1,458E+00	855	8,729E-01	1 135	1,732E-01
300	7,109E-03	580	1,460E+00	860	9,265E-01	1 140	2,717E-01
305	3,599E-02	585	1,464E+00	865	8,944E-01	1 145	2,122E-01
310	8,829E-02	590	1,395E+00	870	9,076E-01	1 150	2,300E-01
315	1,507E-01	595	1,418E+00	875	8,995E-01	1 155	2,878E-01
320	2,106E-01	600	1,413E+00	880	8,876E-01	1 160	3,505E-01
325	2,879E-01	605	1,425E+00	885	8,760E-01	1 165	4,038E-01
330	3,725E-01	610	1,418E+00	890	8,653E-01	1 170	4,304E-01
335	3,741E-01	615	1,389E+00	895	7,726E-01	1 175	4,269E-01
340	4,088E-01	620	1,390E+00	900	6,679E-01	1 180	4,215E-01
345	4,165E-01	625	1,357E+00	905	7,239E-01	1 185	4,179E-01
350	4,565E-01	630	1,352E+00	910	6,639E-01	1 190	4,281E-01
355	4,862E-01	635	1,368E+00	915	6,557E-01	1 195	4,357E-01
360	4,744E-01	640	1,367E+00	920	6,983E-01	1 200	4,159E-01
365	5,869E-01	645	1,354E+00	925	6,908E-01	1 205	4,158E-01
370	6,284E-01	650	1,331E+00	930	4,921E-01	1 210	4,204E-01
375	5,986E-01	655	1,268E+00	935	2,745E-01	1 215	4,319E-01
380	6,398E-01	660	1,289E+00	940	3,918E-01	1 220	4,370E-01
385	5,672E-01	665	1,306E+00	945	3,611E-01	1 225	4,349E-01
390	6,748E-01	670	1,323E+00	950	3,859E-01	1 230	4,392E-01
395	6,435E-01	675	1,322E+00	955	3,956E-01	1 235	4,401E-01
400	9,860E-01	680	1,302E+00	960	4,524E-01	1 240	4,368E-01
405	1,089E+00	685	1,244E+00	965	5,255E-01	1 245	4,337E-01
410	1,120E+00	690	1,161E+00	970	6,378E-01	1 250	4,296E-01
415	1,188E+00	695	1,216E+00	975	6,072E-01	1 255	4,218E-01
420	1,192E+00	700	1,229E+00	980	6,377E-01	1 260	4,072E-01
425	1,185E+00	705	1,241E+00	985	6,825E-01	1 265	3,826E-01
430	1,082E+00	710	1,243E+00	990	6,981E-01	1 270	3,717E-01
435	1,223E+00	715	1,182E+00	995	7,012E-01	1 275	3,980E-01
440	1,317E+00	720	1,058E+00	1 000	6,938E-01	1 280	3,913E-01
445	1,414E+00	725	1,066E+00	1 005	6,742E-01	1 285	3,961E-01
450	1,505E+00	730	1,081E+00	1 010	6,800E-01	1 290	3,967E-01
455	1,523E+00	735	1,150E+00	1 015	6,728E-01	1 295	3,882E-01
460	1,547E+00	740	1,154E+00	1 020	6,632E-01	1 300	3,712E-01
465	1,539E+00	745	1,171E+00	1 025	6,621E-01	1 305	3,531E-01
470	1,528E+00	750	1,163E+00	1 030	6,543E-01	1 310	3,368E-01
475	1,559E+00	755	1,146E+00	1 035	6,439E-01	1 315	3,159E-01
480	1,586E+00	760	7,561E-01	1 040	6,385E-01	1 320	3,000E-01
485	1,488E+00	765	7,820E-01	1 045	6,303E-01	1 325	2,884E-01
490	1,515E+00	770	1,070E+00	1 050	6,257E-01	1 330	2,254E-01
495	1,547E+00	775	1,098E+00	1 055	6,182E-01	1 335	2,143E-01
500	1,510E+00	780	1,084E+00	1 060	6,055E-01	1 340	1,939E-01
505	1,518E+00	785	1,072E+00	1 065	5,994E-01	1 345	1,140E-01
510	1,508E+00	790	1,046E+00	1 070	5,873E-01	1 350	2,782E-02
515	1,437E+00	795	1,031E+00	1 075	5,857E-01	1 355	1,895E-03
520	1,441E+00	800	1,030E+00	1 080	5,754E-01	1 360	9,094E-05
525	1,488E+00	805	1,020E+00	1 085	5,621E-01	1 365	7,787E-05
530	1,512E+00	810	1,001E+00	1 090	5,534E-01	1 370	1,465E-04
535	1,515E+00	815	8,950E-01	1 095	5,208E-01	1 375	1,585E-03
540	1,489E+00	820	8,720E-01	1 100	4,963E-01	1 380	1,114E-03
545	1,510E+00	825	8,930E-01	1 105	4,694E-01	1 385	4,110E-04
550	1,514E+00	830	8,975E-01	1 110	4,177E-01	1 390	1,877E-03
555	1,507E+00	835	9,277E-01	1 115	2,734E-01	1 395	1,058E-03
560	1,467E+00	840	9,492E-01	1 120	1,843E-01	1 400	3,251E-03
565	1,466E+00	845	9,454E-01	1 125	1,547E-01	1 405	4,432E-03

Table A.6 continued

Wavelength nm	$E_{\lambda,\mathrm{DN1}}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,\mathrm{DN1}}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,\mathrm{DN1}}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,\mathrm{DN1}}$ W·m^{-2}·nm^{-1}
1 410	8,123E-03	1 695	2,005E-01	1 980	8,228E-02	2 265	6,907E-02
1 415	2,280E-02	1 700	1,975E-01	1 985	8,781E-02	2 270	6,690E-02
1 420	2,677E-02	1 705	1,946E-01	1 990	9,012E-02	2 275	6,613E-02
1 425	4,211E-02	1 710	1,867E-01	1 995	8,588E-02	2 280	6,706E-02
1 430	5,461E-02	1 715	1,863E-01	2 000	5,374E-02	2 285	6,481E-02
1 435	4,749E-02	1 720	1,835E-01	2 005	3,108E-02	2 290	6,446E-02
1 440	5,947E-02	1 725	1,762E-01	2 010	5,327E-02	2 295	6,292E-02
1 445	7,143E-02	1 730	1,728E-01	2 015	4,354E-02	2 300	6,119E-02
1 450	8,502E-02	1 735	1,631E-01	2 020	5,975E-02	2 305	6,145E-02
1 455	1,252E-01	1 740	1,646E-01	2 025	8,193E-02	2 310	6,396E-02
1 460	1,409E-01	1 745	1,582E-01	2 030	9,023E-02	2 315	6,001E-02
1 465	1,131E-01	1 750	1,650E-01	2 035	9,732E-02	2 320	5,542E-02
1 470	8,372E-02	1 755	1,566E-01	2 040	9,435E-02	2 325	5,789E-02
1 475	1,177E-01	1 760	1,595E-01	2 045	9,411E-02	2 330	5,855E-02
1 480	1,159E-01	1 765	1,395E-01	2 050	7,848E-02	2 335	5,863E-02
1 485	1,413E-01	1 770	1,453E-01	2 055	6,875E-02	2 340	5,069E-02
1 490	1,811E-01	1 775	1,252E-01	2 060	7,747E-02	2 345	5,357E-02
1 495	2,075E-01	1 780	1,106E-01	2 065	7,338E-02	2 350	4,621E-02
1 500	2,333E-01	1 785	9,211E-02	2 070	7,619E-02	2 355	5,057E-02
1 505	2,230E-01	1 790	9,939E-02	2 075	8,443E-02	2 360	5,262E-02
1 510	2,492E-01	1 795	6,082E-02	2 080	9,028E-02	2 365	5,085E-02
1 515	2,542E-01	1 800	4,067E-02	2 085	8,957E-02	2 370	3,798E-02
1 520	2,614E-01	1 805	2,228E-02	2 090	9,169E-02	2 375	4,686E-02
1 525	2,667E-01	1 810	1,733E-02	2 095	9,164E-02	2 380	4,506E-02
1 530	2,656E-01	1 815	7,628E-03	2 100	8,943E-02	2 385	3,653E-02
1 535	2,665E-01	1 820	3,097E-03	2 105	9,353E-02	2 390	4,025E-02
1 540	2,641E-01	1 825	3,826E-03	2 110	9,140E-02	2 395	4,353E-02
1 545	2,656E-01	1 830	2,856E-04	2 115	9,205E-02	2 400	4,582E-02
1 550	2,629E-01	1 835	5,388E-05	2 120	8,888E-02	2 405	3,785E-02
1 555	2,601E-01	1 840	1,076E-05	2 125	8,926E-02	2 410	3,731E-02
1 560	2,603E-01	1 845	1,096E-04	2 130	8,970E-02	2 415	3,124E-02
1 565	2,567E-01	1 850	6,433E-05	2 135	8,984E-02	2 420	2,991E-02
1 570	2,441E-01	1 855	1,731E-05	2 140	9,008E-02	2 425	3,661E-02
1 575	2,345E-01	1 860	1,047E-04	2 145	8,907E-02	2 430	4,498E-02
1 580	2,376E-01	1 865	1,615E-04	2 150	8,570E-02	2 435	2,126E-02
1 585	2,425E-01	1 870	9,741E-06	2 155	8,534E-02	2 440	4,293E-02
1 590	2,378E-01	1 875	3,338E-05	2 160	8,387E-02	2 445	2,525E-02
1 595	2,446E-01	1 880	5,559E-04	2 165	7,813E-02	2 450	1,831E-02
1 600	2,339E-01	1 885	4,555E-04	2 170	8,132E-02	2 455	2,893E-02
1 605	2,292E-01	1 890	1,158E-03	2 175	8,101E-02	2 460	3,609E-02
1 610	2,248E-01	1 895	8,714E-04	2 180	8,154E-02	2 465	2,806E-02
1 615	2,292E-01	1 900	6,475E-05	2 185	7,658E-02	2 470	2,123E-02
1 620	2,306E-01	1 905	2,290E-05	2 190	7,951E-02	2 475	2,028E-02
1 625	2,336E-01	1 910	2,386E-04	2 195	7,897E-02	2 480	1,274E-02
1 630	2,313E-01	1 915	2,529E-04	2 200	7,378E-02	2 485	9,334E-03
1 635	2,238E-01	1 920	1,817E-03	2 205	7,499E-02	2 490	6,002E-03
1 640	2,135E-01	1 925	3,102E-03	2 210	7,823E-02	2 495	5,906E-03
1 645	2,142E-01	1 930	2,349E-03	2 215	7,655E-02	2 500	1,140E-02
1 650	2,144E-01	1 935	7,886E-03	2 220	7,713E-02	2 505	3,771E-03
1 655	2,164E-01	1 940	7,848E-03	2 225	7,557E-02	2 510	4,295E-03
1 660	2,177E-01	1 945	1,821E-02	2 230	7,555E-02	2 515	1,584E-03
1 665	2,081E-01	1 950	2,484E-02	2 235	7,432E-02	2 520	1,237E-03
1 670	2,093E-01	1 955	1,907E-02	2 240	7,339E-02	2 525	2,496E-04
1 675	2,058E-01	1 960	3,192E-02	2 245	7,179E-02	2 530	1,954E-05
1 680	1,985E-01	1 965	4,257E-02	2 250	7,211E-02	2 535	3,953E-06
1 685	2,014E-01	1 970	6,133E-02	2 255	6,936E-02	2 540	7,294E-06
1 690	2,010E-01	1 975	7,698E-02	2 260	6,857E-02	2 545	4,453E-07

Table A.6 continued

Wavelength nm	$E_{\lambda,\mathrm{DN1}}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,\mathrm{DN1}}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,\mathrm{DN1}}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,\mathrm{DN1}}$ W·m^{-2}·nm^{-1}
2 550	3,528E-09	2 835	2,858E-06	3 120	1,175E-02	3 405	6,862E-03
2 555	5,231E-08	2 840	1,621E-05	3 125	5,342E-03	3 410	8,364E-03
2 560	3,582E-09	2 845	2,114E-04	3 130	7,905E-03	3 415	9,456E-03
2 565	2,041E-11	2 850	2,546E-05	3 135	1,319E-02	3 420	1,368E-02
2 570	5,340E-15	2 855	1,351E-05	3 140	5,667E-03	3 425	1,172E-02
2 575	6,799E-18	2 860	1,625E-04	3 145	5,162E-03	3 430	1,073E-02
2 580	4,793E-20	2 865	5,876E-04	3 150	8,917E-03	3 435	1,243E-02
2 585	2,893E-21	2 870	1,522E-04	3 155	8,061E-03	3 440	1,027E-02
2 590	7,071E-25	2 875	1,122E-03	3 160	1,178E-02	3 445	1,240E-02
2 595	1,201E-25	2 880	8,606E-04	3 165	1,587E-02	3 450	1,232E-02
2 600	1,921E-24	2 885	1,187E-03	3 170	1,463E-02	3 455	1,027E-02
2 605	1,201E-25	2 890	9,081E-04	3 175	1,173E-02	3 460	1,310E-02
2 610	2,933E-29	2 895	4,780E-03	3 180	1,246E-02	3 465	1,152E-02
2 615	3,811E-27	2 900	1,770E-03	3 185	1,069E-02	3 470	1,295E-02
2 620	1,630E-23	2 905	7,118E-04	3 190	6,183E-03	3 475	1,220E-02
2 625	7,221E-19	2 910	4,248E-03	3 195	4,670E-03	3 480	1,237E-02
2 630	2,968E-15	2 915	3,018E-03	3 200	1,216E-03	3 485	1,284E-02
2 635	9,211E-14	2 920	4,634E-03	3 205	8,353E-04	3 490	1,181E-02
2 640	7,200E-13	2 925	2,739E-03	3 210	5,694E-04	3 495	1,291E-02
2 645	4,827E-14	2 930	8,900E-03	3 215	1,398E-03	3 500	1,276E-02
2 650	8,642E-15	2 935	9,149E-03	3 220	2,801E-03	3 505	1,267E-02
2 655	5,280E-16	2 940	3,743E-03	3 225	7,648E-04	3 510	1,274E-02
2 660	1,289E-19	2 945	3,208E-03	3 230	1,483E-03	3 515	1,240E-02
2 665	1,229E-25	2 950	7,608E-03	3 235	9,077E-03	3 520	1,274E-02
2 670	2,143E-35	2 955	4,291E-03	3 240	5,907E-03	3 525	1,223E-02
2 675	1,965E-34	2 960	7,455E-03	3 245	1,785E-03	3 530	1,193E-02
2 680	2,060E-28	2 965	9,517E-03	3 250	4,409E-03	3 535	1,070E-02
2 685	8,438E-25	2 970	1,278E-03	3 255	1,129E-02	3 540	1,034E-02
2 690	1,350E-23	2 975	1,893E-03	3 260	3,018E-03	3 545	1,071E-02
2 695	8,438E-25	2 980	3,255E-03	3 265	3,697E-03	3 550	1,130E-02
2 700	2,074E-28	2 985	1,004E-02	3 270	2,737E-03	3 555	1,037E-02
2 705	1,349E-24	2 990	1,291E-02	3 275	7,603E-03	3 560	1,149E-02
2 710	5,526E-21	2 995	6,897E-03	3 280	5,127E-03	3 565	1,147E-02
2 715	8,841E-20	3 000	9,628E-03	3 285	1,246E-02	3 570	9,680E-03
2 720	5,536E-21	3 005	4,975E-03	3 290	1,060E-02	3 575	9,925E-03
2 725	4,265E-20	3 010	8,944E-03	3 295	2,689E-03	3 580	1,089E-02
2 730	6,889E-19	3 015	8,166E-03	3 300	2,842E-03	3 585	1,026E-02
2 735	1,465E-19	3 020	2,283E-03	3 305	5,585E-03	3 590	1,041E-02
2 740	2,762E-19	3 025	9,444E-03	3 310	5,553E-03	3 595	1,050E-02
2 745	4,316E-18	3 030	8,111E-03	3 315	4,565E-04	3 600	1,092E-02
2 750	2,740E-19	3 035	4,073E-03	3 320	5,440E-04	3 605	1,101E-02
2 755	3,367E-22	3 040	3,730E-03	3 325	5,259E-03	3 610	1,040E-02
2 760	6,619E-26	3 045	5,832E-03	3 330	6,179E-03	3 615	1,035E-02
2 765	2,927E-26	3 050	2,244E-03	3 335	1,058E-02	3 620	1,178E-02
2 770	4,686E-25	3 055	1,314E-03	3 340	5,301E-03	3 625	1,091E-02
2 775	7,212E-24	3 060	7,967E-03	3 345	5,335E-03	3 630	1,064E-02
2 780	7,226E-18	3 065	5,036E-03	3 350	9,292E-03	3 635	1,090E-02
2 785	2,966E-14	3 070	3,688E-03	3 355	5,846E-03	3 640	1,163E-02
2 790	7,568E-13	3 075	7,807E-03	3 360	6,859E-03	3 645	1,105E-02
2 795	2,377E-11	3 080	5,182E-03	3 365	8,488E-03	3 650	1,069E-02
2 800	3,094E-10	3 085	3,562E-03	3 370	6,166E-03	3 655	1,119E-02
2 805	2,052E-09	3 090	4,326E-03	3 375	9,889E-03	3 660	1,116E-02
2 810	3,395E-08	3 095	2,042E-03	3 380	7,525E-03	3 665	1,062E-02
2 815	2,522E-08	3 100	5,957E-03	3 385	9,081E-03	3 670	8,764E-03
2 820	2,688E-07	3 105	2,281E-03	3 390	1,154E-02	3 675	6,448E-03
2 825	6,899E-06	3 110	2,041E-03	3 395	1,136E-02	3 680	9,017E-03
2 830	4,283E-05	3 115	4,188E-03	3 400	1,305E-02	3 685	9,963E-03

Table A.6 continued

Wavelength nm	$E_{\lambda,\mathrm{DN1}}$ $\mathrm{W \cdot m^{-2} \cdot nm^{-1}}$	Wavelength nm	$E_{\lambda,\mathrm{DN1}}$ $\mathrm{W \cdot m^{-2} \cdot nm^{-1}}$	Wavelength nm	$E_{\lambda,\mathrm{DN1}}$ $\mathrm{W \cdot m^{-2} \cdot nm^{-1}}$	Wavelength nm	$E_{\lambda,\mathrm{DN1}}$ $\mathrm{W \cdot m^{-2} \cdot nm^{-1}}$
3 690	1,024E-02	3 770	9,447E-03	3 850	9,087E-03	3 930	7,580E-03
3 695	1,044E-02	3 775	9,401E-03	3 855	8,825E-03	3 935	7,759E-03
3 700	1,088E-02	3 780	9,731E-03	3 860	8,472E-03	3 940	7,821E-03
3 705	1,078E-02	3 785	9,201E-03	3 865	8,454E-03	3 945	7,884E-03
3 710	9,862E-03	3 790	8,451E-03	3 870	7,957E-03	3 950	7,931E-03
3 715	9,730E-03	3 795	9,172E-03	3 875	7,503E-03	3 955	7,966E-03
3 720	1,054E-02	3 800	9,885E-03	3 880	7,332E-03	3 960	8,000E-03
3 725	1,071E-02	3 805	9,489E-03	3 885	7,453E-03	3 965	8,026E-03
3 730	9,730E-03	3 810	8,765E-03	3 890	7,545E-03	3 970	7,952E-03
3 735	9,108E-03	3 815	8,407E-03	3 895	7,964E-03	3 975	7,806E-03
3 740	9,229E-03	3 820	9,667E-03	3 900	8,255E-03	3 980	7,718E-03
3 745	1,016E-02	3 825	9,643E-03	3 905	8,221E-03	3 985	7,702E-03
3 750	9,593E-03	3 830	9,610E-03	3 910	7,704E-03	3 990	7,624E-03
3 755	9,364E-03	3 835	8,384E-03	3 915	7,550E-03	-	-
3 760	9,329E-03	3 840	9,155E-03	3 920	7,518E-03	-	-
3 765	9,090E-03	3 845	9,074E-03	3 925	7,442E-03	-	-

Table A.7 – CIE-DN2: Direct normal solar spectral irradiance at sea level AM: 1,0, Water Vapour: 1,42 atm-cm, O_3: 0,340 atm-cm, AOD: 0,27, Albedo: 0,2

Wavelength nm	$E_{\lambda,DN2}$ $W \cdot m^{-2} \cdot nm^{-1}$	Wavelength nm	$E_{\lambda,DN2}$ $W \cdot m^{-2} \cdot nm^{-1}$	Wavelength nm	$E_{\lambda,DN2}$ $W \cdot m^{-2} \cdot nm^{-1}$	Wavelength nm	$E_{\lambda,DN2}$ $W \cdot m^{-2} \cdot nm^{-1}$
290	8,692E-06	570	1,255E+00	850	8,326E-01	1 130	1,805E-01
295	4,338E-04	575	1,265E+00	855	8,039E-01	1 135	1,642E-01
300	5,460E-03	580	1,269E+00	860	8,539E-01	1 140	2,576E-01
305	2,771E-02	585	1,274E+00	865	8,248E-01	1 145	2,013E-01
310	6,818E-02	590	1,216E+00	870	8,376E-01	1 150	2,182E-01
315	1,167E-01	595	1,237E+00	875	8,307E-01	1 155	2,732E-01
320	1,636E-01	600	1,235E+00	880	8,202E-01	1 160	3,329E-01
325	2,242E-01	605	1,248E+00	885	8,101E-01	1 165	3,837E-01
330	2,909E-01	610	1,243E+00	890	8,007E-01	1 170	4,091E-01
335	2,929E-01	615	1,219E+00	895	7,154E-01	1 175	4,059E-01
340	3,211E-01	620	1,222E+00	900	6,188E-01	1 180	4,010E-01
345	3,282E-01	625	1,194E+00	905	6,711E-01	1 185	3,977E-01
350	3,610E-01	630	1,191E+00	910	6,159E-01	1 190	4,075E-01
355	3,857E-01	635	1,207E+00	915	6,086E-01	1 195	4,148E-01
360	3,776E-01	640	1,207E+00	920	6,485E-01	1 200	3,962E-01
365	4,686E-01	645	1,197E+00	925	6,419E-01	1 205	3,962E-01
370	5,032E-01	650	1,178E+00	930	4,576E-01	1 210	4,007E-01
375	4,807E-01	655	1,124E+00	935	2,553E-01	1 215	4,118E-01
380	5,152E-01	660	1,144E+00	940	3,647E-01	1 220	4,169E-01
385	4,581E-01	665	1,161E+00	945	3,363E-01	1 225	4,150E-01
390	5,464E-01	670	1,177E+00	950	3,596E-01	1 230	4,192E-01
395	5,226E-01	675	1,177E+00	955	3,688E-01	1 235	4,202E-01
400	8,027E-01	680	1,161E+00	960	4,220E-01	1 240	4,172E-01
405	8,884E-01	685	1,110E+00	965	4,904E-01	1 245	4,143E-01
410	9,163E-01	690	1,037E+00	970	5,956E-01	1 250	4,106E-01
415	9,742E-01	695	1,087E+00	975	5,673E-01	1 255	4,032E-01
420	9,795E-01	700	1,101E+00	980	5,960E-01	1 260	3,894E-01
425	9,758E-01	705	1,112E+00	985	6,383E-01	1 265	3,660E-01
430	8,933E-01	710	1,115E+00	990	6,532E-01	1 270	3,557E-01
435	1,012E+00	715	1,062E+00	995	6,564E-01	1 275	3,810E-01
440	1,092E+00	720	9,516E-01	1 000	6,498E-01	1 280	3,746E-01
445	1,175E+00	725	9,594E-01	1 005	6,317E-01	1 285	3,794E-01
450	1,253E+00	730	9,739E-01	1 010	6,375E-01	1 290	3,801E-01
455	1,270E+00	735	1,037E+00	1 015	6,310E-01	1 295	3,720E-01
460	1,293E+00	740	1,043E+00	1 020	6,223E-01	1 300	3,558E-01
465	1,289E+00	745	1,058E+00	1 025	6,216E-01	1 305	3,386E-01
470	1,282E+00	750	1,053E+00	1 030	6,145E-01	1 310	3,230E-01
475	1,311E+00	755	1,038E+00	1 035	6,050E-01	1 315	3,030E-01
480	1,335E+00	760	6,855E-01	1 040	6,002E-01	1 320	2,878E-01
485	1,255E+00	765	7,097E-01	1 045	5,927E-01	1 325	2,768E-01
490	1,280E+00	770	9,724E-01	1 050	5,887E-01	1 330	2,164E-01
495	1,309E+00	775	9,981E-01	1 055	5,819E-01	1 335	2,058E-01
500	1,280E+00	780	9,865E-01	1 060	5,701E-01	1 340	1,862E-01
505	1,289E+00	785	9,764E-01	1 065	5,647E-01	1 345	1,096E-01
510	1,283E+00	790	9,539E-01	1 070	5,536E-01	1 350	2,674E-02
515	1,224E+00	795	9,407E-01	1 075	5,523E-01	1 355	1,822E-03
520	1,230E+00	800	9,402E-01	1 080	5,428E-01	1 360	8,741E-05
525	1,271E+00	805	9,319E-01	1 085	5,305E-01	1 365	7,487E-05
530	1,294E+00	810	9,158E-01	1 090	5,226E-01	1 370	1,409E-04
535	1,298E+00	815	8,193E-01	1 095	4,920E-01	1 375	1,525E-03
540	1,278E+00	820	7,989E-01	1 100	4,690E-01	1 380	1,072E-03
545	1,298E+00	825	8,188E-01	1 105	4,438E-01	1 385	3,956E-04
550	1,303E+00	830	8,235E-01	1 110	3,951E-01	1 390	1,808E-03
555	1,299E+00	835	8,519E-01	1 115	2,587E-01	1 395	1,019E-03
560	1,266E+00	840	8,723E-01	1 120	1,745E-01	1 400	3,132E-03
565	1,268E+00	845	8,695E-01	1 125	1,465E-01	1 405	4,271E-03

Table A.7 continued

Wavelength nm	$E_{\lambda,DN2}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,DN2}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,DN2}$ W·m^{-2}·nm^{-1}	Wavelength nm	$E_{\lambda,DN2}$ W·m^{-2}·nm^{-1}
1 410	7,829E-03	1 695	1,954E-01	1 980	8,079E-02	2 265	6,800E-02
1 415	2,197E-02	1 700	1,926E-01	1 985	8,623E-02	2 270	6,586E-02
1 420	2,581E-02	1 705	1,897E-01	1 990	8,851E-02	2 275	6,511E-02
1 425	4,062E-02	1 710	1,820E-01	1 995	8,435E-02	2 280	6,603E-02
1 430	5,267E-02	1 715	1,817E-01	2 000	5,279E-02	2 285	6,382E-02
1 435	4,582E-02	1 720	1,790E-01	2 005	3,054E-02	2 290	6,347E-02
1 440	5,739E-02	1 725	1,719E-01	2 010	5,234E-02	2 295	6,196E-02
1 445	6,895E-02	1 730	1,687E-01	2 015	4,278E-02	2 300	6,026E-02
1 450	8,208E-02	1 735	1,591E-01	2 020	5,871E-02	2 305	6,051E-02
1 455	1,209E-01	1 740	1,606E-01	2 025	8,050E-02	2 310	6,299E-02
1 460	1,360E-01	1 745	1,544E-01	2 030	8,867E-02	2 315	5,910E-02
1 465	1,093E-01	1 750	1,611E-01	2 035	9,564E-02	2 320	5,458E-02
1 470	8,089E-02	1 755	1,529E-01	2 040	9,272E-02	2 325	5,702E-02
1 475	1,137E-01	1 760	1,558E-01	2 045	9,249E-02	2 330	5,767E-02
1 480	1,120E-01	1 765	1,363E-01	2 050	7,713E-02	2 335	5,775E-02
1 485	1,366E-01	1 770	1,419E-01	2 055	6,758E-02	2 340	4,993E-02
1 490	1,751E-01	1 775	1,224E-01	2 060	7,614E-02	2 345	5,277E-02
1 495	2,007E-01	1 780	1,081E-01	2 065	7,213E-02	2 350	4,552E-02
1 500	2,257E-01	1 785	9,003E-02	2 070	7,490E-02	2 355	4,981E-02
1 505	2,158E-01	1 790	9,716E-02	2 075	8,300E-02	2 360	5,184E-02
1 510	2,412E-01	1 795	5,946E-02	2 080	8,875E-02	2 365	5,009E-02
1 515	2,460E-01	1 800	3,977E-02	2 085	8,806E-02	2 370	3,742E-02
1 520	2,531E-01	1 805	2,179E-02	2 090	9,015E-02	2 375	4,617E-02
1 525	2,583E-01	1 810	1,695E-02	2 095	9,010E-02	2 380	4,440E-02
1 530	2,572E-01	1 815	7,462E-03	2 100	8,794E-02	2 385	3,599E-02
1 535	2,581E-01	1 820	3,030E-03	2 105	9,197E-02	2 390	3,966E-02
1 540	2,558E-01	1 825	3,743E-03	2 110	8,988E-02	2 395	4,289E-02
1 545	2,574E-01	1 830	2,794E-04	2 115	9,052E-02	2 400	4,515E-02
1 550	2,548E-01	1 835	5,272E-05	2 120	8,741E-02	2 405	3,730E-02
1 555	2,522E-01	1 840	1,053E-05	2 125	8,779E-02	2 410	3,676E-02
1 560	2,524E-01	1 845	1,073E-04	2 130	8,822E-02	2 415	3,078E-02
1 565	2,490E-01	1 850	6,298E-05	2 135	8,836E-02	2 420	2,948E-02
1 570	2,368E-01	1 855	1,695E-05	2 140	8,861E-02	2 425	3,608E-02
1 575	2,276E-01	1 860	1,025E-04	2 145	8,762E-02	2 430	4,433E-02
1 580	2,306E-01	1 865	1,582E-04	2 150	8,430E-02	2 435	2,095E-02
1 585	2,354E-01	1 870	9,540E-06	2 155	8,395E-02	2 440	4,232E-02
1 590	2,309E-01	1 875	3,270E-05	2 160	8,251E-02	2 445	2,489E-02
1 595	2,375E-01	1 880	5,446E-04	2 165	7,686E-02	2 450	1,805E-02
1 600	2,272E-01	1 885	4,463E-04	2 170	8,001E-02	2 455	2,852E-02
1 605	2,227E-01	1 890	1,135E-03	2 175	7,971E-02	2 460	3,558E-02
1 610	2,185E-01	1 895	8,541E-04	2 180	8,023E-02	2 465	2,766E-02
1 615	2,228E-01	1 900	6,346E-05	2 185	7,535E-02	2 470	2,093E-02
1 620	2,242E-01	1 905	2,245E-05	2 190	7,824E-02	2 475	1,999E-02
1 625	2,271E-01	1 910	2,340E-04	2 195	7,771E-02	2 480	1,256E-02
1 630	2,249E-01	1 915	2,480E-04	2 200	7,261E-02	2 485	9,202E-03
1 635	2,177E-01	1 920	1,781E-03	2 205	7,380E-02	2 490	5,918E-03
1 640	2,077E-01	1 925	3,042E-03	2 210	7,699E-02	2 495	5,822E-03
1 645	2,084E-01	1 930	2,304E-03	2 215	7,534E-02	2 500	1,124E-02
1 650	2,086E-01	1 935	7,737E-03	2 220	7,592E-02	2 505	3,718E-03
1 655	2,107E-01	1 940	7,700E-03	2 225	7,438E-02	2 510	4,234E-03
1 660	2,119E-01	1 945	1,787E-02	2 230	7,437E-02	2 515	1,561E-03
1 665	2,026E-01	1 950	2,438E-02	2 235	7,315E-02	2 520	1,219E-03
1 670	2,038E-01	1 955	1,871E-02	2 240	7,224E-02	2 525	2,461E-04
1 675	2,004E-01	1 960	3,133E-02	2 245	7,067E-02	2 530	1,926E-05
1 680	1,934E-01	1 965	4,179E-02	2 250	7,098E-02	2 535	3,895E-06
1 685	1,962E-01	1 970	6,021E-02	2 255	6,829E-02	2 540	7,187E-06
1 690	1,959E-01	1 975	7,558E-02	2 260	6,751E-02	2 545	4,388E-07

Table A.7 continued

Wavelength nm	$E_{\lambda,\mathrm{DN2}}$ $\mathrm{W \cdot m^{-2} \cdot nm^{-1}}$	Wavelength nm	$E_{\lambda,\mathrm{DN2}}$ $\mathrm{W \cdot m^{-2} \cdot nm^{-1}}$	Wavelength nm	$E_{\lambda,\mathrm{DN2}}$ $\mathrm{W \cdot m^{-2} \cdot nm^{-1}}$	Wavelength nm	$E_{\lambda,\mathrm{DN2}}$ $\mathrm{W \cdot m^{-2} \cdot nm^{-1}}$
2 550	3,475E-09	2 835	2,814E-06	3 120	1,158E-02	3 405	6,778E-03
2 555	5,153E-08	2 840	1,596E-05	3 125	5,266E-03	3 410	8,261E-03
2 560	3,528E-09	2 845	2,081E-04	3 130	7,793E-03	3 415	9,341E-03
2 565	2,010E-11	2 850	2,506E-05	3 135	1,300E-02	3 420	1,351E-02
2 570	5,260E-15	2 855	1,329E-05	3 140	5,588E-03	3 425	1,158E-02
2 575	6,696E-18	2 860	1,600E-04	3 145	5,090E-03	3 430	1,060E-02
2 580	4,720E-20	2 865	5,785E-04	3 150	8,792E-03	3 435	1,228E-02
2 585	2,849E-21	2 870	1,498E-04	3 155	7,948E-03	3 440	1,015E-02
2 590	6,963E-25	2 875	1,105E-03	3 160	1,161E-02	3 445	1,225E-02
2 595	1,182E-25	2 880	8,473E-04	3 165	1,565E-02	3 450	1,218E-02
2 600	1,891E-24	2 885	1,169E-03	3 170	1,443E-02	3 455	1,015E-02
2 605	1,182E-25	2 890	8,940E-04	3 175	1,157E-02	3 460	1,294E-02
2 610	2,888E-29	2 895	4,706E-03	3 180	1,229E-02	3 465	1,138E-02
2 615	3,752E-27	2 900	1,743E-03	3 185	1,054E-02	3 470	1,279E-02
2 620	1,605E-23	2 905	7,007E-04	3 190	6,099E-03	3 475	1,205E-02
2 625	7,108E-19	2 910	4,182E-03	3 195	4,606E-03	3 480	1,222E-02
2 630	2,921E-15	2 915	2,971E-03	3 200	1,200E-03	3 485	1,269E-02
2 635	9,067E-14	2 920	4,562E-03	3 205	8,240E-04	3 490	1,167E-02
2 640	7,087E-13	2 925	2,696E-03	3 210	5,617E-04	3 495	1,276E-02
2 645	4,751E-14	2 930	8,762E-03	3 215	1,379E-03	3 500	1,261E-02
2 650	8,506E-15	2 935	9,007E-03	3 220	2,764E-03	3 505	1,252E-02
2 655	5,197E-16	2 940	3,685E-03	3 225	7,546E-04	3 510	1,258E-02
2 660	1,269E-19	2 945	3,159E-03	3 230	1,463E-03	3 515	1,225E-02
2 665	1,210E-25	2 950	7,490E-03	3 235	8,956E-03	3 520	1,258E-02
2 670	2,109E-35	2 955	4,224E-03	3 240	5,829E-03	3 525	1,208E-02
2 675	1,933E-34	2 960	7,340E-03	3 245	1,761E-03	3 530	1,179E-02
2 680	2,027E-28	2 965	9,369E-03	3 250	4,351E-03	3 535	1,057E-02
2 685	8,303E-25	2 970	1,258E-03	3 255	1,114E-02	3 540	1,021E-02
2 690	1,328E-23	2 975	1,864E-03	3 260	2,979E-03	3 545	1,058E-02
2 695	8,303E-25	2 980	3,204E-03	3 265	3,649E-03	3 550	1,117E-02
2 700	2,040E-28	2 985	9,880E-03	3 270	2,701E-03	3 555	1,025E-02
2 705	1,327E-24	2 990	1,271E-02	3 275	7,504E-03	3 560	1,135E-02
2 710	5,437E-21	2 995	6,790E-03	3 280	5,060E-03	3 565	1,133E-02
2 715	8,698E-20	3 000	9,478E-03	3 285	1,230E-02	3 570	9,566E-03
2 720	5,447E-21	3 005	4,898E-03	3 290	1,047E-02	3 575	9,809E-03
2 725	4,197E-20	3 010	8,807E-03	3 295	2,655E-03	3 580	1,076E-02
2 730	6,778E-19	3 015	8,041E-03	3 300	2,806E-03	3 585	1,014E-02
2 735	1,441E-19	3 020	2,249E-03	3 305	5,514E-03	3 590	1,029E-02
2 740	2,718E-19	3 025	9,301E-03	3 310	5,482E-03	3 595	1,038E-02
2 745	4,246E-18	3 030	7,988E-03	3 315	4,507E-04	3 600	1,080E-02
2 750	2,696E-19	3 035	4,012E-03	3 320	5,371E-04	3 605	1,088E-02
2 755	3,312E-22	3 040	3,673E-03	3 325	5,193E-03	3 610	1,028E-02
2 760	6,512E-26	3 045	5,744E-03	3 330	6,101E-03	3 615	1,023E-02
2 765	2,880E-26	3 050	2,210E-03	3 335	1,045E-02	3 620	1,164E-02
2 770	4,610E-25	3 055	1,294E-03	3 340	5,234E-03	3 625	1,078E-02
2 775	7,096E-24	3 060	7,849E-03	3 345	5,268E-03	3 630	1,052E-02
2 780	7,110E-18	3 065	4,961E-03	3 350	9,176E-03	3 635	1,077E-02
2 785	2,918E-14	3 070	3,634E-03	3 355	5,773E-03	3 640	1,150E-02
2 790	7,447E-13	3 075	7,693E-03	3 360	6,774E-03	3 645	1,092E-02
2 795	2,339E-11	3 080	5,106E-03	3 365	8,382E-03	3 650	1,057E-02
2 800	3,044E-10	3 085	3,510E-03	3 370	6,089E-03	3 655	1,107E-02
2 805	2,019E-09	3 090	4,263E-03	3 375	9,766E-03	3 660	1,103E-02
2 810	3,341E-08	3 095	2,012E-03	3 380	7,432E-03	3 665	1,050E-02
2 815	2,482E-08	3 100	5,871E-03	3 385	8,969E-03	3 670	8,664E-03
2 820	2,645E-07	3 105	2,249E-03	3 390	1,140E-02	3 675	6,374E-03
2 825	6,790E-06	3 110	2,012E-03	3 395	1,122E-02	3 680	8,914E-03
2 830	4,216E-05	3 115	4,129E-03	3 400	1,289E-02	3 685	9,849E-03

Table A.7 continued

Wavelength nm	$E_{\lambda,\mathrm{DN2}}$ $W \cdot m^{-2} \cdot nm^{-1}$	Wavelength nm	$E_{\lambda,\mathrm{DN2}}$ $W \cdot m^{-2} \cdot nm^{-1}$	Wavelength nm	$E_{\lambda,\mathrm{DN2}}$ $W \cdot m^{-2} \cdot nm^{-1}$	Wavelength nm	$E_{\lambda,\mathrm{DN2}}$ $W \cdot m^{-2} \cdot nm^{-1}$
3 690	1,012E-02	3 770	9,341E-03	3 850	8,987E-03	3 930	7,496E-03
3 695	1,032E-02	3 775	9,295E-03	3 855	8,727E-03	3 935	7,674E-03
3 700	1,075E-02	3 780	9,622E-03	3 860	8,378E-03	3 940	7,735E-03
3 705	1,065E-02	3 785	9,098E-03	3 865	8,360E-03	3 945	7,797E-03
3 710	9,750E-03	3 790	8,356E-03	3 870	7,869E-03	3 950	7,844E-03
3 715	9,620E-03	3 795	9,070E-03	3 875	7,420E-03	3 955	7,879E-03
3 720	1,042E-02	3 800	9,774E-03	3 880	7,251E-03	3 960	7,912E-03
3 725	1,059E-02	3 805	9,383E-03	3 885	7,370E-03	3 965	7,938E-03
3 730	9,620E-03	3 810	8,668E-03	3 890	7,461E-03	3 970	7,865E-03
3 735	9,005E-03	3 815	8,314E-03	3 895	7,876E-03	3 975	7,721E-03
3 740	9,125E-03	3 820	9,559E-03	3 900	8,164E-03	3 980	7,634E-03
3 745	1,004E-02	3 825	9,536E-03	3 905	8,131E-03	3 985	7,618E-03
3 750	9,485E-03	3 830	9,503E-03	3 910	7,620E-03	3 990	7,541E-03
3 755	9,259E-03	3 835	8,291E-03	3 915	7,467E-03	-	-
3 760	9,224E-03	3 840	9,053E-03	3 920	7,435E-03	-	-
3 765	8,988E-03	3 845	8,973E-03	3 925	7,360E-03	-	-

Table A.8 – CIE-DN3 to CIE-DN7, CIE-D1 to CIE-D3 : Direct normal spectral irradiance and direct spectral irradiance projected on a horizontal surface at sea level for indicated atmospheric parameters Air Mass, Water Vapour, O_3, AOD and Albedo

Air mass	1,0	1,0	1,0	1,0	1,0	1,5	2,0	5,6
Water vapour content (atm-cm)	2,00	0,00	2,00	4,00	2,00	2,00	2,00	2,00
O_3 content (atm-cm)	0,30	0,00	0,30	0,60	0,30	0,30	0,30	0,30
AOD @ 500 nm	0,20	0,00	0,00	0,00	0,40	0,20	0,20	0,20
Albedo	0,20	0,00	0,00	0,00	0,20	0,20	0,20	0,20
Wavelength nm	$E_{\lambda,DN3}$	$E_{\lambda,DN4}$	$E_{\lambda,DN5}$	$E_{\lambda,DN6}$	$E_{\lambda,DN7}$	$E_{\lambda,D1}$	$E_{\lambda,D2}$	$E_{\lambda,D3}$
	$W \cdot m^{-2} \cdot nm^{-1}$							
290	2,274E-05	1,216E-01	3,158E-05	1,047E-07	1,684E-05	3,177E-07	7,775E-09	4,061E-17
295	8,199E-04	1,460E-01	1,136E-03	2,867E-05	6,080E-04	3,603E-05	2,232E-06	7,550E-13
300	8,150E-03	1,500E-01	1,126E-02	1,332E-03	6,056E-03	8,507E-04	1,101E-04	8,470E-10
305	3,617E-02	1,956E-01	4,980E-02	1,446E-02	2,694E-02	6,273E-03	1,270E-03	9,364E-08
310	8,193E-02	2,259E-01	1,124E-01	5,828E-02	6,121E-02	1,985E-02	5,490E-03	2,227E-06
315	1,342E-01	2,612E-01	1,834E-01	1,303E-01	1,005E-01	3,945E-02	1,312E-02	1,590E-05
320	1,836E-01	2,972E-01	2,500E-01	2,110E-01	1,379E-01	6,083E-02	2,272E-02	5,709E-05
325	2,483E-01	3,644E-01	3,369E-01	3,118E-01	1,872E-01	8,893E-02	3,587E-02	1,490E-04
330	3,201E-01	4,493E-01	4,328E-01	4,171E-01	2,419E-01	1,202E-01	5,075E-02	2,886E-04
335	3,213E-01	4,402E-01	4,329E-01	4,257E-01	2,435E-01	1,251E-01	5,475E-02	4,002E-04
340	3,514E-01	4,749E-01	4,715E-01	4,682E-01	2,673E-01	1,409E-01	6,355E-02	5,730E-04
345	3,586E-01	4,806E-01	4,791E-01	4,777E-01	2,738E-01	1,475E-01	6,820E-02	7,352E-04
350	3,938E-01	5,246E-01	5,240E-01	5,234E-01	3,018E-01	1,658E-01	7,850E-02	9,995E-04
355	4,203E-01	5,573E-01	5,571E-01	5,568E-01	3,232E-01	1,803E-01	8,700E-02	1,271E-03
360	4,110E-01	5,426E-01	5,424E-01	5,423E-01	3,171E-01	1,797E-01	8,835E-02	1,479E-03
365	5,095E-01	6,700E-01	6,699E-01	6,699E-01	3,945E-01	2,271E-01	1,138E-01	2,186E-03
370	5,465E-01	7,161E-01	7,161E-01	7,161E-01	4,246E-01	2,475E-01	1,261E-01	2,714E-03
375	5,216E-01	6,809E-01	6,809E-01	6,809E-01	4,066E-01	2,400E-01	1,242E-01	3,000E-03
380	5,585E-01	7,267E-01	7,266E-01	7,266E-01	4,366E-01	2,603E-01	1,364E-01	3,611E-03
385	4,961E-01	6,431E-01	6,431E-01	6,431E-01	3,891E-01	2,347E-01	1,249E-01	3,691E-03
390	5,912E-01	7,639E-01	7,639E-01	7,638E-01	4,650E-01	2,833E-01	1,527E-01	4,945E-03
395	5,648E-01	7,274E-01	7,274E-01	7,273E-01	4,457E-01	2,741E-01	1,495E-01	5,296E-03
400	8,668E-01	1,113E+00	1,113E+00	1,113E+00	6,860E-01	4,254E-01	2,348E-01	9,032E-03
405	9,586E-01	1,227E+00	1,227E+00	1,227E+00	7,606E-01	4,752E-01	2,649E-01	1,096E-02
410	9,877E-01	1,261E+00	1,260E+00	1,260E+00	7,859E-01	4,946E-01	2,785E-01	1,238E-02
415	1,049E+00	1,335E+00	1,335E+00	1,335E+00	8,371E-01	5,303E-01	3,015E-01	1,435E-02
420	1,054E+00	1,338E+00	1,337E+00	1,337E+00	8,432E-01	5,375E-01	3,083E-01	1,563E-02
425	1,049E+00	1,328E+00	1,328E+00	1,327E+00	8,415E-01	5,395E-01	3,120E-01	1,680E-02
430	9,598E-01	1,212E+00	1,211E+00	1,210E+00	7,716E-01	4,975E-01	2,900E-01	1,656E-02
435	1,087E+00	1,368E+00	1,367E+00	1,367E+00	8,758E-01	5,675E-01	3,334E-01	2,011E-02
440	1,172E+00	1,473E+00	1,471E+00	1,469E+00	9,467E-01	6,163E-01	3,645E-01	2,311E-02
445	1,260E+00	1,580E+00	1,577E+00	1,574E+00	1,020E+00	6,667E-01	3,967E-01	2,632E-02
450	1,342E+00	1,679E+00	1,676E+00	1,674E+00	1,089E+00	7,153E-01	4,285E-01	2,986E-02
455	1,360E+00	1,697E+00	1,694E+00	1,691E+00	1,106E+00	7,293E-01	4,396E-01	3,202E-02
460	1,383E+00	1,724E+00	1,719E+00	1,714E+00	1,128E+00	7,453E-01	4,518E-01	3,420E-02
465	1,378E+00	1,714E+00	1,709E+00	1,704E+00	1,126E+00	7,467E-01	4,551E-01	3,582E-02
470	1,370E+00	1,701E+00	1,695E+00	1,689E+00	1,122E+00	7,453E-01	4,564E-01	3,711E-02
475	1,400E+00	1,735E+00	1,728E+00	1,721E+00	1,148E+00	7,640E-01	4,689E-01	3,891E-02
480	1,425E+00	1,766E+00	1,756E+00	1,745E+00	1,172E+00	7,813E-01	4,818E-01	4,136E-02
485	1,339E+00	1,657E+00	1,646E+00	1,635E+00	1,103E+00	7,387E-01	4,582E-01	4,107E-02
490	1,365E+00	1,686E+00	1,674E+00	1,663E+00	1,127E+00	7,567E-01	4,713E-01	4,364E-02
495	1,395E+00	1,721E+00	1,708E+00	1,695E+00	1,154E+00	7,760E-01	4,854E-01	4,623E-02

Table A.8 continued

Wavelength nm	$E_{\lambda,DN3}$	$E_{\lambda,DN4}$	$E_{\lambda,DN5}$	$E_{\lambda,DN6}$	$E_{\lambda,DN7}$	$E_{\lambda,D1}$	$E_{\lambda,D2}$	$E_{\lambda,D3}$
	$W \cdot m^{-2} \cdot nm^{-1}$							
500	1,364E+00	1,684E+00	1,666E+00	1,648E+00	1,130E+00	7,607E-01	4,768E-01	4,629E-02
505	1,371E+00	1,701E+00	1,672E+00	1,643E+00	1,138E+00	7,647E-01	4,799E-01	4,684E-02
510	1,365E+00	1,686E+00	1,661E+00	1,636E+00	1,135E+00	7,647E-01	4,822E-01	4,870E-02
515	1,302E+00	1,604E+00	1,582E+00	1,560E+00	1,085E+00	7,333E-01	4,640E-01	4,829E-02
520	1,308E+00	1,610E+00	1,586E+00	1,562E+00	1,091E+00	7,380E-01	4,685E-01	4,971E-02
525	1,352E+00	1,665E+00	1,636E+00	1,606E+00	1,130E+00	7,640E-01	4,854E-01	5,205E-02
530	1,376E+00	1,698E+00	1,662E+00	1,627E+00	1,152E+00	7,780E-01	4,951E-01	5,352E-02
535	1,380E+00	1,703E+00	1,664E+00	1,626E+00	1,157E+00	7,820E-01	4,989E-01	5,491E-02
540	1,357E+00	1,676E+00	1,634E+00	1,593E+00	1,140E+00	7,713E-01	4,927E-01	5,507E-02
545	1,378E+00	1,703E+00	1,656E+00	1,609E+00	1,159E+00	7,840E-01	5,015E-01	5,661E-02
550	1,383E+00	1,707E+00	1,660E+00	1,614E+00	1,166E+00	7,887E-01	5,060E-01	5,827E-02
555	1,379E+00	1,700E+00	1,651E+00	1,604E+00	1,164E+00	7,880E-01	5,065E-01	5,920E-02
560	1,344E+00	1,658E+00	1,606E+00	1,555E+00	1,136E+00	7,687E-01	4,943E-01	5,813E-02
565	1,345E+00	1,664E+00	1,605E+00	1,547E+00	1,140E+00	7,693E-01	4,948E-01	5,818E-02
570	1,329E+00	1,652E+00	1,582E+00	1,516E+00	1,128E+00	7,580E-01	4,860E-01	5,607E-02
575	1,340E+00	1,661E+00	1,591E+00	1,525E+00	1,139E+00	7,633E-01	4,893E-01	5,623E-02
580	1,344E+00	1,656E+00	1,593E+00	1,533E+00	1,145E+00	7,700E-01	4,965E-01	5,945E-02
585	1,347E+00	1,661E+00	1,594E+00	1,530E+00	1,150E+00	7,753E-01	5,025E-01	6,230E-02
590	1,275E+00	1,613E+00	1,506E+00	1,411E+00	1,090E+00	7,267E-01	4,663E-01	5,461E-02
595	1,299E+00	1,638E+00	1,532E+00	1,437E+00	1,112E+00	7,433E-01	4,785E-01	5,748E-02
600	1,303E+00	1,614E+00	1,534E+00	1,458E+00	1,118E+00	7,527E-01	4,894E-01	6,245E-02
605	1,319E+00	1,616E+00	1,549E+00	1,485E+00	1,133E+00	7,667E-01	5,010E-01	6,652E-02
610	1,313E+00	1,601E+00	1,540E+00	1,482E+00	1,130E+00	7,667E-01	5,035E-01	6,889E-02
615	1,287E+00	1,560E+00	1,507E+00	1,455E+00	1,109E+00	7,533E-01	4,962E-01	6,934E-02
620	1,289E+00	1,556E+00	1,507E+00	1,458E+00	1,112E+00	7,547E-01	4,973E-01	6,973E-02
625	1,257E+00	1,515E+00	1,468E+00	1,422E+00	1,087E+00	7,340E-01	4,816E-01	6,586E-02
630	1,252E+00	1,508E+00	1,460E+00	1,413E+00	1,084E+00	7,300E-01	4,788E-01	6,502E-02
635	1,268E+00	1,520E+00	1,476E+00	1,434E+00	1,100E+00	7,480E-01	4,964E-01	7,305E-02
640	1,268E+00	1,512E+00	1,474E+00	1,437E+00	1,101E+00	7,527E-01	5,025E-01	7,711E-02
645	1,254E+00	1,502E+00	1,455E+00	1,410E+00	1,090E+00	7,440E-01	4,965E-01	7,641E-02
650	1,229E+00	1,487E+00	1,424E+00	1,368E+00	1,070E+00	7,273E-01	4,845E-01	7,393E-02
655	1,174E+00	1,407E+00	1,358E+00	1,314E+00	1,023E+00	6,980E-01	4,669E-01	7,327E-02
660	1,197E+00	1,416E+00	1,383E+00	1,352E+00	1,045E+00	7,133E-01	4,777E-01	7,554E-02
665	1,215E+00	1,425E+00	1,403E+00	1,380E+00	1,062E+00	7,273E-01	4,897E-01	7,998E-02
670	1,232E+00	1,439E+00	1,420E+00	1,401E+00	1,078E+00	7,427E-01	5,040E-01	8,652E-02
675	1,231E+00	1,434E+00	1,417E+00	1,400E+00	1,079E+00	7,447E-01	5,060E-01	8,852E-02
680	1,214E+00	1,410E+00	1,395E+00	1,380E+00	1,065E+00	7,353E-01	5,005E-01	8,859E-02
685	1,160E+00	1,346E+00	1,332E+00	1,317E+00	1,019E+00	6,913E-01	4,635E-01	7,588E-02
690	1,081E+00	1,263E+00	1,238E+00	1,216E+00	9,501E-01	6,244E-01	4,062E-01	5,280E-02
695	1,121E+00	1,359E+00	1,283E+00	1,227E+00	9,869E-01	6,660E-01	4,458E-01	7,171E-02
700	1,135E+00	1,366E+00	1,298E+00	1,244E+00	1,001E+00	6,800E-01	4,588E-01	7,739E-02
705	1,149E+00	1,364E+00	1,312E+00	1,267E+00	1,015E+00	6,927E-01	4,696E-01	8,166E-02
710	1,156E+00	1,350E+00	1,318E+00	1,287E+00	1,022E+00	7,013E-01	4,788E-01	8,630E-02
715	1,090E+00	1,326E+00	1,240E+00	1,181E+00	9,641E-01	6,531E-01	4,412E-01	7,595E-02
720	9,532E-01	1,309E+00	1,084E+00	9,690E-01	8,445E-01	5,511E-01	3,613E-01	5,314E-02
725	9,619E-01	1,300E+00	1,092E+00	9,805E-01	8,532E-01	5,582E-01	3,670E-01	5,491E-02
730	9,794E-01	1,281E+00	1,111E+00	1,005E+00	8,698E-01	5,737E-01	3,797E-01	5,900E-02
735	1,063E+00	1,275E+00	1,204E+00	1,146E+00	9,451E-01	6,408E-01	4,347E-01	7,673E-02
740	1,077E+00	1,248E+00	1,219E+00	1,191E+00	9,592E-01	6,585E-01	4,528E-01	8,641E-02
745	1,099E+00	1,250E+00	1,241E+00	1,233E+00	9,792E-01	6,773E-01	4,693E-01	9,413E-02
750	1,093E+00	1,238E+00	1,234E+00	1,230E+00	9,755E-01	6,753E-01	4,690E-01	9,548E-02
755	1,078E+00	1,218E+00	1,215E+00	1,212E+00	9,626E-01	6,646E-01	4,614E-01	9,430E-02
760	7,116E-01	8,030E-01	8,013E-01	7,995E-01	6,362E-01	3,875E-01	2,459E-01	4,000E-02
765	7,364E-01	8,297E-01	8,281E-01	8,264E-01	6,592E-01	3,907E-01	2,362E-01	2,327E-02

Table A.8 continued

Wavelength nm	$E_{\lambda,DN3}$	$E_{\lambda,DN4}$	$E_{\lambda,DN5}$	$E_{\lambda,DN6}$	$E_{\lambda,DN7}$	$E_{\lambda,D1}$	$E_{\lambda,D2}$	$E_{\lambda,D3}$
	$W \cdot m^{-2} \cdot nm^{-1}$							
770	1,009E+00	1,135E+00	1,133E+00	1,131E+00	9,038E-01	6,157E-01	4,231E-01	8,118E-02
775	1,035E+00	1,164E+00	1,161E+00	1,159E+00	9,284E-01	6,423E-01	4,483E-01	9,457E-02
780	1,023E+00	1,149E+00	1,146E+00	1,143E+00	9,182E-01	6,354E-01	4,441E-01	9,455E-02
785	1,010E+00	1,139E+00	1,131E+00	1,123E+00	9,079E-01	6,269E-01	4,376E-01	9,257E-02
790	9,810E-01	1,129E+00	1,097E+00	1,072E+00	8,826E-01	6,041E-01	4,188E-01	8,532E-02
795	9,681E-01	1,108E+00	1,082E+00	1,060E+00	8,719E-01	5,977E-01	4,154E-01	8,579E-02
800	9,663E-01	1,108E+00	1,078E+00	1,053E+00	8,710E-01	5,959E-01	4,136E-01	8,470E-02
805	9,583E-01	1,094E+00	1,068E+00	1,046E+00	8,647E-01	5,923E-01	4,119E-01	8,527E-02
810	9,369E-01	1,088E+00	1,044E+00	1,007E+00	8,461E-01	5,760E-01	3,985E-01	8,073E-02
815	8,155E-01	1,082E+00	9,075E-01	8,195E-01	7,371E-01	4,838E-01	3,249E-01	5,696E-02
820	8,002E-01	1,052E+00	8,896E-01	8,159E-01	7,240E-01	4,771E-01	3,222E-01	5,784E-02
825	8,238E-01	1,052E+00	9,150E-01	8,523E-01	7,460E-01	4,960E-01	3,378E-01	6,366E-02
830	8,298E-01	1,039E+00	9,207E-01	8,609E-01	7,521E-01	5,010E-01	3,421E-01	6,548E-02
835	8,657E-01	1,022E+00	9,597E-01	9,158E-01	7,854E-01	5,307E-01	3,665E-01	7,489E-02
840	8,943E-01	1,015E+00	9,905E-01	9,676E-01	8,120E-01	5,549E-01	3,874E-01	8,314E-02
845	8,955E-01	9,998E-01	9,909E-01	9,825E-01	8,137E-01	5,602E-01	3,943E-01	8,855E-02
850	8,579E-01	9,551E-01	9,485E-01	9,423E-01	7,802E-01	5,376E-01	3,789E-01	8,598E-02
855	8,285E-01	9,199E-01	9,152E-01	9,106E-01	7,541E-01	5,199E-01	3,670E-01	8,409E-02
860	8,805E-01	9,737E-01	9,719E-01	9,700E-01	8,021E-01	5,537E-01	3,917E-01	9,107E-02
865	8,505E-01	9,386E-01	9,380E-01	9,374E-01	7,754E-01	5,355E-01	3,793E-01	8,889E-02
870	8,635E-01	9,518E-01	9,515E-01	9,511E-01	7,878E-01	5,441E-01	3,856E-01	9,088E-02
875	8,560E-01	9,431E-01	9,425E-01	9,419E-01	7,816E-01	5,397E-01	3,827E-01	9,052E-02
880	8,447E-01	9,312E-01	9,293E-01	9,272E-01	7,718E-01	5,324E-01	3,775E-01	8,923E-02
885	8,333E-01	9,209E-01	9,160E-01	9,113E-01	7,620E-01	5,247E-01	3,717E-01	8,754E-02
890	8,212E-01	9,159E-01	9,021E-01	8,905E-01	7,515E-01	5,157E-01	3,643E-01	8,464E-02
895	7,141E-01	9,019E-01	7,839E-01	7,226E-01	6,539E-01	4,331E-01	2,968E-01	5,938E-02
900	6,043E-01	8,809E-01	6,628E-01	5,764E-01	5,538E-01	3,539E-01	2,358E-01	4,014E-02
905	6,661E-01	8,817E-01	7,300E-01	6,605E-01	6,108E-01	3,985E-01	2,702E-01	5,046E-02
910	5,992E-01	8,651E-01	6,562E-01	5,651E-01	5,499E-01	3,493E-01	2,320E-01	3,934E-02
915	5,872E-01	8,661E-01	6,426E-01	5,412E-01	5,392E-01	3,387E-01	2,227E-01	3,588E-02
920	6,389E-01	8,450E-01	6,986E-01	6,226E-01	5,871E-01	3,810E-01	2,576E-01	4,795E-02
925	6,299E-01	8,294E-01	6,884E-01	6,031E-01	5,792E-01	3,741E-01	2,512E-01	4,473E-02
930	4,146E-01	8,394E-01	4,528E-01	3,241E-01	3,815E-01	2,260E-01	1,390E-01	1,590E-02
935	2,062E-01	8,311E-01	2,250E-01	1,159E-01	1,898E-01	9,540E-02	5,050E-02	2,211E-03
940	3,199E-01	8,113E-01	3,488E-01	2,235E-01	2,947E-01	1,613E-01	9,400E-02	6,798E-03
945	2,921E-01	8,067E-01	3,183E-01	1,997E-01	2,693E-01	1,470E-01	8,485E-02	5,730E-03
950	3,128E-01	8,049E-01	3,407E-01	2,153E-01	2,885E-01	1,579E-01	9,170E-02	6,904E-03
955	3,248E-01	7,825E-01	3,535E-01	2,347E-01	2,997E-01	1,675E-01	9,935E-02	8,791E-03
960	3,833E-01	7,849E-01	4,169E-01	3,036E-01	3,540E-01	2,092E-01	1,294E-01	1,436E-02
965	4,615E-01	7,732E-01	5,016E-01	3,991E-01	4,264E-01	2,619E-01	1,688E-01	2,400E-02
970	5,861E-01	7,690E-01	6,367E-01	5,662E-01	5,419E-01	3,510E-01	2,382E-01	4,509E-02
975	5,540E-01	7,586E-01	6,014E-01	5,245E-01	5,125E-01	3,278E-01	2,204E-01	3,970E-02
980	5,887E-01	7,528E-01	6,388E-01	5,762E-01	5,450E-01	3,553E-01	2,427E-01	4,784E-02
985	6,426E-01	7,458E-01	6,967E-01	6,600E-01	5,952E-01	3,992E-01	2,793E-01	6,277E-02
990	6,657E-01	7,359E-01	7,214E-01	7,070E-01	6,170E-01	4,201E-01	2,984E-01	7,296E-02
995	6,716E-01	7,327E-01	7,273E-01	7,217E-01	6,227E-01	4,267E-01	3,050E-01	7,693E-02
1 000	6,646E-01	7,250E-01	7,194E-01	7,140E-01	6,166E-01	4,225E-01	3,021E-01	7,618E-02
1 005	6,461E-01	7,043E-01	6,990E-01	6,939E-01	5,998E-01	4,109E-01	2,940E-01	7,438E-02
1 010	6,518E-01	7,106E-01	7,047E-01	6,993E-01	6,053E-01	4,145E-01	2,965E-01	7,509E-02
1 015	6,459E-01	7,006E-01	6,979E-01	6,954E-01	6,002E-01	4,117E-01	2,952E-01	7,580E-02
1 020	6,367E-01	6,906E-01	6,876E-01	6,849E-01	5,920E-01	4,059E-01	2,910E-01	7,479E-02
1 025	6,358E-01	6,896E-01	6,862E-01	6,831E-01	5,914E-01	4,052E-01	2,906E-01	7,466E-02
1 030	6,289E-01	6,799E-01	6,784E-01	6,768E-01	5,853E-01	4,013E-01	2,881E-01	7,461E-02
1 035	6,194E-01	6,681E-01	6,678E-01	6,675E-01	5,768E-01	3,956E-01	2,842E-01	7,398E-02

Table A.8 continued

Wavelength nm	$E_{\lambda,DN3}$	$E_{\lambda,DN4}$	$E_{\lambda,DN5}$	$E_{\lambda,DN6}$	$E_{\lambda,DN7}$	$E_{\lambda,D1}$	$E_{\lambda,D2}$	$E_{\lambda,D3}$
	$W \cdot m^{-2} \cdot nm^{-1}$							
1 040	6,145E-01	6,622E-01	6,621E-01	6,620E-01	5,725E-01	3,924E-01	2,819E-01	7,334E-02
1 045	6,067E-01	6,535E-01	6,534E-01	6,534E-01	5,656E-01	3,873E-01	2,782E-01	7,220E-02
1 050	6,025E-01	6,486E-01	6,486E-01	6,485E-01	5,619E-01	3,843E-01	2,758E-01	7,113E-02
1 055	5,954E-01	6,407E-01	6,406E-01	6,405E-01	5,556E-01	3,793E-01	2,719E-01	6,950E-02
1 060	5,832E-01	6,274E-01	6,271E-01	6,267E-01	5,444E-01	3,709E-01	2,654E-01	6,709E-02
1 065	5,773E-01	6,215E-01	6,205E-01	6,193E-01	5,392E-01	3,667E-01	2,621E-01	6,570E-02
1 070	5,651E-01	6,106E-01	6,070E-01	6,031E-01	5,281E-01	3,588E-01	2,563E-01	6,420E-02
1 075	5,625E-01	6,120E-01	6,039E-01	5,966E-01	5,260E-01	3,569E-01	2,548E-01	6,418E-02
1 080	5,513E-01	6,056E-01	5,915E-01	5,799E-01	5,158E-01	3,491E-01	2,489E-01	6,230E-02
1 085	5,365E-01	6,004E-01	5,753E-01	5,576E-01	5,021E-01	3,381E-01	2,400E-01	5,877E-02
1 090	5,273E-01	5,949E-01	5,651E-01	5,445E-01	4,938E-01	3,316E-01	2,351E-01	5,714E-02
1 095	4,911E-01	5,761E-01	5,261E-01	4,917E-01	4,602E-01	3,046E-01	2,132E-01	4,854E-02
1 100	4,595E-01	5,809E-01	4,920E-01	4,360E-01	4,308E-01	2,774E-01	1,895E-01	3,789E-02
1 105	4,264E-01	5,809E-01	4,563E-01	3,836E-01	3,999E-01	2,512E-01	1,678E-01	2,986E-02
1 110	3,698E-01	5,761E-01	3,955E-01	3,115E-01	3,470E-01	2,125E-01	1,383E-01	2,091E-02
1 115	2,234E-01	5,703E-01	2,388E-01	1,533E-01	2,097E-01	1,173E-01	6,980E-02	6,439E-03
1 120	1,365E-01	5,632E-01	1,459E-01	6,807E-02	1,282E-01	6,143E-02	3,135E-02	1,028E-03
1 125	1,112E-01	5,550E-01	1,188E-01	5,003E-02	1,045E-01	4,638E-02	2,240E-02	4,705E-04
1 130	1,429E-01	5,493E-01	1,526E-01	7,355E-02	1,344E-01	6,277E-02	3,232E-02	1,205E-03
1 135	1,321E-01	5,453E-01	1,409E-01	7,170E-02	1,243E-01	6,039E-02	3,176E-02	1,348E-03
1 140	2,221E-01	5,364E-01	2,369E-01	1,431E-01	2,090E-01	1,105E-01	6,315E-02	3,886E-03
1 145	1,647E-01	5,367E-01	1,756E-01	9,295E-02	1,551E-01	7,640E-02	4,111E-02	1,955E-03
1 150	1,821E-01	5,336E-01	1,940E-01	1,096E-01	1,715E-01	8,947E-02	4,996E-02	2,713E-03
1 155	2,393E-01	5,290E-01	2,548E-01	1,657E-01	2,255E-01	1,267E-01	7,540E-02	6,413E-03
1 160	3,063E-01	5,172E-01	3,260E-01	2,461E-01	2,888E-01	1,724E-01	1,099E-01	1,470E-02
1 165	3,636E-01	5,140E-01	3,869E-01	3,183E-01	3,430E-01	2,131E-01	1,418E-01	2,466E-02
1 170	3,962E-01	5,122E-01	4,214E-01	3,660E-01	3,739E-01	2,393E-01	1,632E-01	3,286E-02
1 175	3,970E-01	5,060E-01	4,220E-01	3,789E-01	3,748E-01	2,424E-01	1,677E-01	3,673E-02
1 180	3,937E-01	5,020E-01	4,183E-01	3,792E-01	3,718E-01	2,411E-01	1,671E-01	3,670E-02
1 185	3,900E-01	4,965E-01	4,142E-01	3,721E-01	3,685E-01	2,375E-01	1,638E-01	3,463E-02
1 190	4,020E-01	4,929E-01	4,267E-01	3,894E-01	3,800E-01	2,470E-01	1,717E-01	3,804E-02
1 195	4,112E-01	4,885E-01	4,363E-01	4,030E-01	3,888E-01	2,546E-01	1,782E-01	4,082E-02
1 200	3,906E-01	4,790E-01	4,143E-01	3,789E-01	3,695E-01	2,401E-01	1,672E-01	3,763E-02
1 205	3,925E-01	4,734E-01	4,161E-01	3,865E-01	3,714E-01	2,426E-01	1,697E-01	3,900E-02
1 210	3,977E-01	4,689E-01	4,215E-01	3,935E-01	3,766E-01	2,475E-01	1,739E-01	4,098E-02
1 215	4,094E-01	4,742E-01	4,338E-01	4,048E-01	3,878E-01	2,555E-01	1,798E-01	4,263E-02
1 220	4,183E-01	4,674E-01	4,429E-01	4,245E-01	3,963E-01	2,639E-01	1,875E-01	4,682E-02
1 225	4,169E-01	4,629E-01	4,414E-01	4,246E-01	3,952E-01	2,639E-01	1,882E-01	4,802E-02
1 230	4,236E-01	4,593E-01	4,482E-01	4,384E-01	4,016E-01	2,707E-01	1,947E-01	5,229E-02
1 235	4,263E-01	4,552E-01	4,509E-01	4,465E-01	4,044E-01	2,742E-01	1,985E-01	5,502E-02
1 240	4,240E-01	4,498E-01	4,483E-01	4,467E-01	4,024E-01	2,736E-01	1,986E-01	5,593E-02
1 245	4,213E-01	4,458E-01	4,453E-01	4,447E-01	4,000E-01	2,721E-01	1,977E-01	5,588E-02
1 250	4,175E-01	4,415E-01	4,411E-01	4,405E-01	3,964E-01	2,692E-01	1,953E-01	5,464E-02
1 255	4,098E-01	4,336E-01	4,328E-01	4,319E-01	3,893E-01	2,631E-01	1,901E-01	5,159E-02
1 260	3,957E-01	4,186E-01	4,178E-01	4,167E-01	3,760E-01	2,503E-01	1,782E-01	4,371E-02
1 265	3,718E-01	3,934E-01	3,924E-01	3,912E-01	3,535E-01	2,293E-01	1,591E-01	3,270E-02
1 270	3,611E-01	3,824E-01	3,810E-01	3,793E-01	3,434E-01	2,208E-01	1,523E-01	3,125E-02
1 275	3,865E-01	4,102E-01	4,076E-01	4,048E-01	3,677E-01	2,443E-01	1,738E-01	4,238E-02
1 280	3,795E-01	4,041E-01	4,002E-01	3,958E-01	3,612E-01	2,429E-01	1,748E-01	4,652E-02
1 285	3,839E-01	4,098E-01	4,046E-01	3,986E-01	3,655E-01	2,468E-01	1,785E-01	4,902E-02
1 290	3,826E-01	4,153E-01	4,031E-01	3,908E-01	3,643E-01	2,446E-01	1,760E-01	4,702E-02
1 295	3,713E-01	4,144E-01	3,911E-01	3,702E-01	3,537E-01	2,353E-01	1,677E-01	4,268E-02
1 300	3,515E-01	4,110E-01	3,700E-01	3,419E-01	3,349E-01	2,199E-01	1,551E-01	3,764E-02
1 305	3,311E-01	4,070E-01	3,484E-01	3,134E-01	3,156E-01	2,039E-01	1,421E-01	3,236E-02

Table A.8 continued

Wavelength nm	$E_{\lambda,DN3}$	$E_{\lambda,DN4}$	$E_{\lambda,DN5}$	$E_{\lambda,DN6}$	$E_{\lambda,DN7}$	$E_{\lambda,D1}$	$E_{\lambda,D2}$	$E_{\lambda,D3}$
	$W \cdot m^{-2} \cdot nm^{-1}$							
1 310	3,139E-01	4,016E-01	3,303E-01	2,925E-01	2,993E-01	1,915E-01	1,324E-01	2,857E-02
1 315	2,903E-01	3,942E-01	3,053E-01	2,605E-01	2,769E-01	1,735E-01	1,177E-01	2,288E-02
1 320	2,731E-01	3,957E-01	2,871E-01	2,374E-01	2,605E-01	1,607E-01	1,076E-01	1,939E-02
1 325	2,596E-01	3,925E-01	2,729E-01	2,184E-01	2,477E-01	1,507E-01	9,955E-02	1,662E-02
1 330	1,917E-01	3,868E-01	2,015E-01	1,381E-01	1,831E-01	1,033E-01	6,335E-02	6,986E-03
1 335	1,800E-01	3,866E-01	1,891E-01	1,236E-01	1,719E-01	9,600E-02	5,785E-02	5,309E-03
1 340	1,587E-01	3,820E-01	1,666E-01	1,021E-01	1,516E-01	8,307E-02	4,853E-02	3,704E-03
1 345	8,133E-02	3,808E-01	8,539E-02	3,618E-02	7,771E-02	3,705E-02	1,846E-02	6,680E-04
1 350	1,445E-02	3,770E-01	1,517E-02	2,879E-03	1,381E-02	4,415E-03	1,535E-03	1,195E-05
1 355	5,848E-04	3,724E-01	6,138E-04	3,902E-05	5,590E-04	1,033E-04	2,259E-05	1,026E-08
1 360	1,014E-05	3,695E-01	1,064E-05	3,154E-08	9,692E-06	4,917E-07	3,204E-08	9,073E-13
1 365	6,111E-06	3,666E-01	6,408E-06	1,654E-09	5,834E-06	5,832E-08	8,330E-10	1,562E-18
1 370	2,202E-05	3,627E-01	2,308E-05	9,104E-08	2,106E-05	7,493E-07	3,849E-08	3,427E-15
1 375	3,291E-04	3,603E-01	3,448E-04	2,522E-06	3,149E-04	1,627E-05	1,127E-06	2,057E-13
1 380	2,375E-04	3,588E-01	2,489E-04	2,181E-06	2,274E-04	1,430E-05	1,091E-06	1,372E-13
1 385	6,760E-05	3,561E-01	7,079E-05	3,106E-07	6,467E-05	2,950E-06	1,578E-07	4,139E-15
1 390	3,571E-04	3,538E-01	3,739E-04	1,837E-06	3,420E-04	1,804E-05	1,101E-06	3,502E-14
1 395	2,172E-04	3,508E-01	2,273E-04	1,749E-06	2,080E-04	1,249E-05	8,900E-07	1,269E-12
1 400	9,073E-04	3,462E-01	9,495E-04	1,800E-05	8,696E-04	8,147E-05	1,030E-05	1,938E-10
1 405	1,308E-03	3,443E-01	1,368E-03	2,823E-05	1,254E-03	1,267E-04	1,557E-05	1,896E-10
1 410	3,129E-03	3,408E-01	3,273E-03	2,494E-04	3,001E-03	5,857E-04	1,343E-04	4,766E-08
1 415	1,185E-02	3,386E-01	1,239E-02	2,051E-03	1,137E-02	3,291E-03	1,032E-03	1,735E-06
1 420	1,393E-02	3,350E-01	1,456E-02	2,405E-03	1,337E-02	4,049E-03	1,291E-03	2,871E-06
1 425	2,450E-02	3,293E-01	2,561E-02	5,911E-03	2,352E-02	8,580E-03	3,278E-03	1,943E-05
1 430	3,585E-02	3,063E-01	3,746E-02	1,228E-02	3,442E-02	1,381E-02	5,870E-03	5,264E-05
1 435	2,965E-02	2,994E-01	3,097E-02	8,684E-03	2,847E-02	9,873E-03	3,810E-03	2,088E-05
1 440	3,764E-02	3,008E-01	3,931E-02	1,091E-02	3,615E-02	1,313E-02	5,075E-03	2,936E-05
1 445	4,816E-02	3,145E-01	5,028E-02	1,730E-02	4,626E-02	1,913E-02	8,290E-03	1,169E-04
1 450	6,162E-02	3,176E-01	6,433E-02	2,726E-02	5,922E-02	2,605E-02	1,270E-02	3,175E-04
1 455	9,568E-02	3,153E-01	9,985E-02	4,836E-02	9,196E-02	4,413E-02	2,313E-02	8,977E-04
1 460	1,114E-01	3,154E-01	1,162E-01	6,261E-02	1,071E-01	5,378E-02	2,951E-02	1,511E-03
1 465	8,712E-02	3,120E-01	9,088E-02	4,643E-02	8,377E-02	4,023E-02	2,158E-02	1,035E-03
1 470	5,941E-02	3,083E-01	6,196E-02	2,463E-02	5,714E-02	2,484E-02	1,180E-02	3,038E-04
1 475	9,137E-02	3,029E-01	9,527E-02	4,955E-02	8,791E-02	4,413E-02	2,396E-02	1,258E-03
1 480	8,980E-02	3,036E-01	9,360E-02	4,837E-02	8,641E-02	4,337E-02	2,351E-02	1,118E-03
1 485	1,139E-01	2,998E-01	1,187E-01	6,895E-02	1,096E-01	5,793E-02	3,323E-02	2,338E-03
1 490	1,555E-01	2,976E-01	1,620E-01	1,121E-01	1,497E-01	8,607E-02	5,340E-02	6,170E-03
1 495	1,834E-01	2,983E-01	1,910E-01	1,447E-01	1,766E-01	1,053E-01	6,830E-02	1,052E-02
1 500	2,137E-01	2,930E-01	2,226E-01	1,862E-01	2,059E-01	1,278E-01	8,680E-02	1,748E-02
1 505	2,045E-01	2,820E-01	2,129E-01	1,791E-01	1,970E-01	1,228E-01	8,365E-02	1,737E-02
1 510	2,339E-01	2,895E-01	2,435E-01	2,168E-01	2,254E-01	1,445E-01	1,008E-01	2,364E-02
1 515	2,397E-01	2,867E-01	2,495E-01	2,244E-01	2,310E-01	1,492E-01	1,046E-01	2,529E-02
1 520	2,496E-01	2,840E-01	2,597E-01	2,412E-01	2,406E-01	1,578E-01	1,123E-01	2,904E-02
1 525	2,571E-01	2,820E-01	2,674E-01	2,541E-01	2,479E-01	1,641E-01	1,178E-01	3,182E-02
1 530	2,573E-01	2,776E-01	2,676E-01	2,582E-01	2,481E-01	1,652E-01	1,194E-01	3,323E-02
1 535	2,597E-01	2,744E-01	2,701E-01	2,653E-01	2,505E-01	1,678E-01	1,220E-01	3,493E-02
1 540	2,579E-01	2,708E-01	2,681E-01	2,650E-01	2,489E-01	1,672E-01	1,220E-01	3,563E-02
1 545	2,596E-01	2,721E-01	2,697E-01	2,670E-01	2,505E-01	1,687E-01	1,234E-01	3,675E-02
1 550	2,573E-01	2,685E-01	2,673E-01	2,659E-01	2,484E-01	1,678E-01	1,231E-01	3,743E-02
1 555	2,548E-01	2,655E-01	2,646E-01	2,635E-01	2,460E-01	1,663E-01	1,221E-01	3,729E-02
1 560	2,550E-01	2,656E-01	2,647E-01	2,638E-01	2,463E-01	1,664E-01	1,222E-01	3,736E-02
1 565	2,515E-01	2,620E-01	2,611E-01	2,600E-01	2,430E-01	1,639E-01	1,202E-01	3,641E-02
1 570	2,393E-01	2,488E-01	2,484E-01	2,479E-01	2,313E-01	1,529E-01	1,099E-01	2,893E-02
1 575	2,300E-01	2,389E-01	2,386E-01	2,382E-01	2,223E-01	1,463E-01	1,048E-01	2,675E-02

Table A.8 continued

Wavelength nm	$E_{\lambda,DN3}$	$E_{\lambda,DN4}$	$E_{\lambda,DN5}$	$E_{\lambda,DN6}$	$E_{\lambda,DN7}$	$E_{\lambda,D1}$	$E_{\lambda,D2}$	$E_{\lambda,D3}$
	$W \cdot m^{-2} \cdot nm^{-1}$							
1 580	2,330E-01	2,421E-01	2,417E-01	2,412E-01	2,253E-01	1,486E-01	1,066E-01	2,764E-02
1 585	2,377E-01	2,473E-01	2,465E-01	2,458E-01	2,299E-01	1,542E-01	1,125E-01	3,289E-02
1 590	2,332E-01	2,425E-01	2,418E-01	2,410E-01	2,255E-01	1,523E-01	1,119E-01	3,429E-02
1 595	2,398E-01	2,496E-01	2,485E-01	2,475E-01	2,320E-01	1,564E-01	1,148E-01	3,491E-02
1 600	2,294E-01	2,383E-01	2,378E-01	2,372E-01	2,220E-01	1,471E-01	1,061E-01	2,868E-02
1 605	2,250E-01	2,333E-01	2,331E-01	2,328E-01	2,177E-01	1,437E-01	1,034E-01	2,720E-02
1 610	2,206E-01	2,289E-01	2,285E-01	2,281E-01	2,136E-01	1,412E-01	1,017E-01	2,700E-02
1 615	2,250E-01	2,334E-01	2,330E-01	2,326E-01	2,179E-01	1,461E-01	1,067E-01	3,136E-02
1 620	2,264E-01	2,347E-01	2,344E-01	2,340E-01	2,193E-01	1,479E-01	1,087E-01	3,336E-02
1 625	2,294E-01	2,376E-01	2,374E-01	2,372E-01	2,223E-01	1,500E-01	1,103E-01	3,411E-02
1 630	2,271E-01	2,353E-01	2,350E-01	2,347E-01	2,201E-01	1,483E-01	1,090E-01	3,341E-02
1 635	2,198E-01	2,278E-01	2,273E-01	2,268E-01	2,130E-01	1,431E-01	1,049E-01	3,164E-02
1 640	2,096E-01	2,174E-01	2,168E-01	2,161E-01	2,032E-01	1,359E-01	9,905E-02	2,882E-02
1 645	2,103E-01	2,182E-01	2,174E-01	2,165E-01	2,039E-01	1,359E-01	9,890E-02	2,830E-02
1 650	2,103E-01	2,186E-01	2,174E-01	2,162E-01	2,040E-01	1,359E-01	9,885E-02	2,829E-02
1 655	2,123E-01	2,210E-01	2,194E-01	2,176E-01	2,059E-01	1,377E-01	1,005E-01	2,952E-02
1 660	2,135E-01	2,223E-01	2,206E-01	2,187E-01	2,071E-01	1,391E-01	1,019E-01	3,075E-02
1 665	2,040E-01	2,124E-01	2,108E-01	2,089E-01	1,980E-01	1,311E-01	9,490E-02	2,652E-02
1 670	2,053E-01	2,135E-01	2,120E-01	2,102E-01	1,993E-01	1,335E-01	9,765E-02	2,925E-02
1 675	2,017E-01	2,102E-01	2,083E-01	2,061E-01	1,958E-01	1,313E-01	9,625E-02	2,909E-02
1 680	1,947E-01	2,026E-01	2,010E-01	1,992E-01	1,891E-01	1,268E-01	9,290E-02	2,814E-02
1 685	1,974E-01	2,058E-01	2,037E-01	2,014E-01	1,917E-01	1,283E-01	9,385E-02	2,829E-02
1 690	1,963E-01	2,073E-01	2,026E-01	1,983E-01	1,907E-01	1,273E-01	9,280E-02	2,757E-02
1 695	1,957E-01	2,071E-01	2,019E-01	1,973E-01	1,901E-01	1,268E-01	9,245E-02	2,739E-02
1 700	1,931E-01	2,033E-01	1,992E-01	1,954E-01	1,877E-01	1,253E-01	9,155E-02	2,730E-02
1 705	1,902E-01	2,003E-01	1,962E-01	1,921E-01	1,848E-01	1,231E-01	8,975E-02	2,632E-02
1 710	1,812E-01	1,965E-01	1,869E-01	1,802E-01	1,762E-01	1,166E-01	8,445E-02	2,413E-02
1 715	1,805E-01	1,981E-01	1,861E-01	1,782E-01	1,755E-01	1,159E-01	8,390E-02	2,393E-02
1 720	1,782E-01	1,948E-01	1,837E-01	1,774E-01	1,733E-01	1,147E-01	8,330E-02	2,421E-02
1 725	1,694E-01	1,913E-01	1,746E-01	1,641E-01	1,648E-01	1,078E-01	7,725E-02	2,096E-02
1 730	1,663E-01	1,891E-01	1,713E-01	1,613E-01	1,618E-01	1,055E-01	7,560E-02	2,045E-02
1 735	1,562E-01	1,812E-01	1,609E-01	1,498E-01	1,519E-01	9,880E-02	7,070E-02	1,900E-02
1 740	1,577E-01	1,838E-01	1,624E-01	1,505E-01	1,535E-01	9,953E-02	7,105E-02	1,866E-02
1 745	1,506E-01	1,850E-01	1,551E-01	1,415E-01	1,465E-01	9,433E-02	6,700E-02	1,734E-02
1 750	1,582E-01	1,839E-01	1,629E-01	1,502E-01	1,540E-01	9,993E-02	7,120E-02	1,827E-02
1 755	1,484E-01	1,837E-01	1,527E-01	1,365E-01	1,444E-01	9,240E-02	6,515E-02	1,592E-02
1 760	1,519E-01	1,812E-01	1,563E-01	1,414E-01	1,479E-01	9,520E-02	6,740E-02	1,668E-02
1 765	1,295E-01	1,792E-01	1,332E-01	1,119E-01	1,261E-01	7,853E-02	5,410E-02	1,155E-02
1 770	1,338E-01	1,773E-01	1,377E-01	1,128E-01	1,304E-01	8,027E-02	5,470E-02	1,097E-02
1 775	1,116E-01	1,748E-01	1,148E-01	8,629E-02	1,087E-01	6,403E-02	4,206E-02	6,963E-03
1 780	9,609E-02	1,729E-01	9,884E-02	6,922E-02	9,363E-02	5,325E-02	3,396E-02	4,720E-03
1 785	7,603E-02	1,719E-01	7,819E-02	4,757E-02	7,410E-02	3,941E-02	2,374E-02	2,409E-03
1 790	8,398E-02	1,705E-01	8,635E-02	5,595E-02	8,186E-02	4,399E-02	2,661E-02	2,829E-03
1 795	4,464E-02	1,694E-01	4,589E-02	1,929E-02	4,352E-02	2,112E-02	1,045E-02	3,280E-04
1 800	2,997E-02	1,678E-01	3,081E-02	1,363E-02	2,922E-02	1,422E-02	7,265E-03	2,070E-04
1 805	1,269E-02	1,663E-01	1,304E-02	2,798E-03	1,237E-02	4,975E-03	1,791E-03	1,399E-05
1 810	8,875E-03	1,646E-01	9,119E-03	1,286E-03	8,656E-03	2,581E-03	9,150E-04	4,620E-06
1 815	3,219E-03	1,582E-01	3,307E-03	2,594E-04	3,140E-03	7,147E-04	1,588E-04	2,854E-07
1 820	1,028E-03	1,557E-01	1,056E-03	3,699E-05	1,003E-03	1,591E-04	2,249E-05	2,182E-10
1 825	1,191E-03	1,595E-01	1,223E-03	3,036E-05	1,162E-03	1,609E-04	2,127E-05	3,420E-11
1 830	7,584E-05	1,590E-01	7,788E-05	1,808E-06	7,399E-05	9,787E-06	1,279E-06	2,068E-12
1 835	4,841E-06	1,575E-01	4,970E-06	2,566E-09	4,718E-06	1,796E-07	1,090E-08	2,886E-15
1 840	9,631E-07	1,554E-01	9,886E-07	5,395E-10	9,391E-07	1,760E-08	7,375E-10	1,488E-16
1 845	1,081E-05	1,530E-01	1,110E-05	6,755E-09	1,054E-05	1,025E-07	1,341E-09	3,664E-20

Table A.8 continued

Wavelength nm	$E_{\lambda,DN3}$	$E_{\lambda,DN4}$	$E_{\lambda,DN5}$	$E_{\lambda,DN6}$	$E_{\lambda,DN7}$	$E_{\lambda,D1}$	$E_{\lambda,D2}$	$E_{\lambda,D3}$
	$W \cdot m^{-2} \cdot nm^{-1}$							
1 850	5,785E-06	1,531E-01	5,937E-06	2,395E-09	5,642E-06	4,845E-08	5,625E-10	3,752E-20
1 855	1,348E-06	1,519E-01	1,383E-06	7,918E-10	1,315E-06	3,972E-08	1,902E-09	1,515E-16
1 860	1,093E-05	1,499E-01	1,122E-05	1,082E-08	1,067E-05	5,591E-07	3,017E-08	2,429E-15
1 865	1,668E-05	1,478E-01	1,711E-05	1,188E-08	1,627E-05	6,550E-07	2,637E-08	2,463E-16
1 870	1,005E-06	1,449E-01	1,031E-06	7,071E-10	9,805E-07	3,899E-08	1,542E-09	6,648E-18
1 875	5,827E-06	1,350E-01	5,974E-06	1,529E-08	5,690E-06	2,881E-07	1,982E-08	2,814E-15
1 880	9,685E-05	1,401E-01	9,931E-05	2,584E-07	9,458E-05	4,753E-06	3,258E-07	4,564E-14
1 885	7,979E-05	1,420E-01	8,180E-05	3,750E-07	7,794E-05	3,461E-06	2,112E-07	1,304E-14
1 890	2,658E-04	1,404E-01	2,724E-04	2,334E-06	2,598E-04	1,451E-05	8,820E-07	1,491E-14
1 895	1,908E-04	1,379E-01	1,956E-04	1,569E-06	1,864E-04	9,653E-06	7,230E-07	1,507E-13
1 900	1,192E-05	1,386E-01	1,222E-05	8,973E-08	1,165E-05	5,688E-07	4,244E-08	9,400E-15
1 905	2,319E-06	1,379E-01	2,376E-06	2,084E-09	2,266E-06	7,093E-08	2,730E-09	1,274E-17
1 910	2,954E-05	1,365E-01	3,026E-05	3,352E-08	2,886E-05	9,620E-07	4,135E-08	1,591E-15
1 915	4,818E-05	1,356E-01	4,935E-05	3,717E-07	4,712E-05	3,523E-06	2,752E-07	3,571E-14
1 920	4,622E-04	1,340E-01	4,734E-04	5,923E-06	4,522E-04	4,450E-05	4,069E-06	1,632E-12
1 925	9,402E-04	1,332E-01	9,628E-04	2,227E-05	9,199E-04	1,203E-04	1,573E-05	3,659E-11
1 930	7,646E-04	1,304E-01	7,829E-04	3,270E-05	7,482E-04	1,185E-04	2,149E-05	3,732E-09
1 935	3,448E-03	1,298E-01	3,530E-03	3,098E-04	3,374E-03	7,500E-04	1,835E-04	9,334E-08
1 940	3,833E-03	1,250E-01	3,923E-03	6,086E-04	3,751E-03	9,720E-04	3,115E-04	8,116E-07
1 945	1,113E-02	1,106E-01	1,139E-02	2,811E-03	1,089E-02	3,883E-03	1,458E-03	5,204E-06
1 950	1,684E-02	9,886E-02	1,723E-02	6,066E-03	1,648E-02	6,595E-03	2,787E-03	2,786E-05
1 955	1,252E-02	7,765E-02	1,281E-02	3,940E-03	1,226E-02	4,289E-03	1,489E-03	5,859E-06
1 960	2,421E-02	8,912E-02	2,477E-02	1,171E-02	2,370E-02	1,007E-02	4,528E-03	5,670E-05
1 965	3,505E-02	8,552E-02	3,586E-02	2,178E-02	3,433E-02	1,485E-02	7,345E-03	2,123E-04
1 970	5,379E-02	9,692E-02	5,502E-02	3,965E-02	5,269E-02	2,653E-02	1,512E-02	1,004E-03
1 975	6,800E-02	1,094E-01	6,955E-02	5,102E-02	6,661E-02	3,683E-02	2,288E-02	2,604E-03
1 980	7,456E-02	1,157E-01	7,625E-02	5,957E-02	7,304E-02	4,302E-02	2,830E-02	4,527E-03
1 985	8,069E-02	1,173E-01	8,251E-02	6,749E-02	7,906E-02	4,803E-02	3,253E-02	6,284E-03
1 990	8,261E-02	1,167E-01	8,446E-02	6,833E-02	8,095E-02	4,891E-02	3,303E-02	6,396E-03
1 995	7,994E-02	1,062E-01	8,172E-02	6,923E-02	7,834E-02	4,661E-02	3,096E-02	5,236E-03
2 000	5,032E-02	6,421E-02	5,144E-02	4,440E-02	4,933E-02	2,332E-02	1,239E-02	5,877E-04
2 005	2,852E-02	3,978E-02	2,915E-02	2,387E-02	2,796E-02	1,029E-02	4,297E-03	4,530E-05
2 010	5,192E-02	5,571E-02	5,307E-02	5,071E-02	5,091E-02	2,359E-02	1,209E-02	2,896E-04
2 015	4,074E-02	5,116E-02	4,164E-02	3,582E-02	3,995E-02	1,699E-02	8,005E-03	1,270E-04
2 020	5,674E-02	6,701E-02	5,799E-02	5,168E-02	5,564E-02	2,775E-02	1,532E-02	7,375E-04
2 025	7,920E-02	8,747E-02	8,093E-02	7,573E-02	7,766E-02	4,513E-02	2,903E-02	3,652E-03
2 030	8,625E-02	9,917E-02	8,813E-02	7,986E-02	8,458E-02	5,202E-02	3,530E-02	6,646E-03
2 035	9,481E-02	1,020E-01	9,687E-02	9,282E-02	9,297E-02	5,960E-02	4,223E-02	1,034E-02
2 040	9,120E-02	1,004E-01	9,318E-02	8,724E-02	8,945E-02	5,651E-02	3,937E-02	8,823E-03
2 045	9,157E-02	9,842E-02	9,355E-02	8,887E-02	8,981E-02	5,657E-02	3,926E-02	8,388E-03
2 050	7,680E-02	8,098E-02	7,846E-02	7,582E-02	7,533E-02	4,365E-02	2,795E-02	3,330E-03
2 055	6,696E-02	7,200E-02	6,840E-02	6,520E-02	6,568E-02	3,581E-02	2,154E-02	1,654E-03
2 060	7,524E-02	8,190E-02	7,686E-02	7,263E-02	7,381E-02	4,296E-02	2,761E-02	3,384E-03
2 065	7,160E-02	7,655E-02	7,313E-02	7,001E-02	7,023E-02	3,996E-02	2,508E-02	2,523E-03
2 070	7,426E-02	7,948E-02	7,584E-02	7,228E-02	7,285E-02	4,231E-02	2,710E-02	3,173E-03
2 075	8,278E-02	8,717E-02	8,454E-02	8,219E-02	8,121E-02	4,983E-02	3,378E-02	5,955E-03
2 080	8,840E-02	9,372E-02	9,028E-02	8,755E-02	8,673E-02	5,549E-02	3,925E-02	9,398E-03
2 085	8,778E-02	9,277E-02	8,964E-02	8,712E-02	8,613E-02	5,513E-02	3,900E-02	9,282E-03
2 090	9,018E-02	9,392E-02	9,208E-02	9,040E-02	8,848E-02	5,756E-02	4,135E-02	1,092E-02
2 095	8,986E-02	9,484E-02	9,175E-02	8,937E-02	8,818E-02	5,779E-02	4,185E-02	1,180E-02
2 100	8,671E-02	9,596E-02	8,854E-02	8,373E-02	8,509E-02	5,521E-02	3,966E-02	1,093E-02
2 105	9,209E-02	9,559E-02	9,402E-02	9,256E-02	9,037E-02	5,994E-02	4,391E-02	1,329E-02
2 110	8,970E-02	9,433E-02	9,157E-02	8,931E-02	8,803E-02	5,799E-02	4,223E-02	1,237E-02
2 115	9,062E-02	9,403E-02	9,251E-02	9,098E-02	8,894E-02	5,909E-02	4,336E-02	1,328E-02

Table A.8 continued

Wavelength nm	$E_{\lambda,DN3}$	$E_{\lambda,DN4}$	$E_{\lambda,DN5}$	$E_{\lambda,DN6}$	$E_{\lambda,DN7}$	$E_{\lambda,D1}$	$E_{\lambda,D2}$	$E_{\lambda,D3}$
	$W \cdot m^{-2} \cdot nm^{-1}$							
2 120	8,691E-02	9,302E-02	8,872E-02	8,572E-02	8,530E-02	5,611E-02	4,082E-02	1,199E-02
2 125	8,755E-02	9,249E-02	8,937E-02	8,709E-02	8,593E-02	5,687E-02	4,163E-02	1,270E-02
2 130	8,819E-02	9,252E-02	9,001E-02	8,842E-02	8,656E-02	5,761E-02	4,240E-02	1,338E-02
2 135	8,855E-02	9,160E-02	9,037E-02	8,921E-02	8,692E-02	5,807E-02	4,285E-02	1,369E-02
2 140	8,897E-02	9,129E-02	9,080E-02	9,017E-02	8,734E-02	5,853E-02	4,332E-02	1,404E-02
2 145	8,794E-02	9,037E-02	8,975E-02	8,905E-02	8,633E-02	5,777E-02	4,271E-02	1,373E-02
2 150	8,378E-02	8,946E-02	8,549E-02	8,231E-02	8,225E-02	5,406E-02	3,929E-02	1,145E-02
2 155	8,355E-02	8,863E-02	8,525E-02	8,241E-02	8,203E-02	5,402E-02	3,932E-02	1,156E-02
2 160	8,223E-02	8,684E-02	8,391E-02	8,151E-02	8,074E-02	5,328E-02	3,888E-02	1,157E-02
2 165	7,632E-02	8,244E-02	7,787E-02	7,518E-02	7,493E-02	4,918E-02	3,575E-02	1,052E-02
2 170	7,980E-02	8,443E-02	8,142E-02	7,952E-02	7,836E-02	5,190E-02	3,802E-02	1,162E-02
2 175	7,905E-02	8,506E-02	8,065E-02	7,728E-02	7,762E-02	5,093E-02	3,697E-02	1,074E-02
2 180	8,005E-02	8,427E-02	8,166E-02	7,971E-02	7,861E-02	5,201E-02	3,807E-02	1,156E-02
2 185	7,389E-02	8,415E-02	7,538E-02	7,048E-02	7,256E-02	4,686E-02	3,362E-02	9,270E-03
2 190	7,764E-02	8,340E-02	7,920E-02	7,612E-02	7,625E-02	5,018E-02	3,654E-02	1,088E-02
2 195	7,706E-02	8,284E-02	7,860E-02	7,533E-02	7,568E-02	4,970E-02	3,610E-02	1,055E-02
2 200	7,182E-02	7,833E-02	7,325E-02	6,993E-02	7,054E-02	4,515E-02	3,200E-02	7,898E-03
2 205	7,303E-02	7,916E-02	7,448E-02	7,114E-02	7,173E-02	4,673E-02	3,368E-02	9,373E-03
2 210	7,694E-02	8,010E-02	7,847E-02	7,690E-02	7,557E-02	5,025E-02	3,694E-02	1,152E-02
2 215	7,497E-02	7,941E-02	7,645E-02	7,410E-02	7,364E-02	4,859E-02	3,543E-02	1,058E-02
2 220	7,607E-02	7,843E-02	7,757E-02	7,656E-02	7,473E-02	4,959E-02	3,637E-02	1,108E-02
2 225	7,435E-02	7,732E-02	7,581E-02	7,433E-02	7,303E-02	4,827E-02	3,528E-02	1,053E-02
2 230	7,469E-02	7,643E-02	7,615E-02	7,573E-02	7,337E-02	4,865E-02	3,565E-02	1,076E-02
2 235	7,333E-02	7,548E-02	7,477E-02	7,396E-02	7,205E-02	4,757E-02	3,473E-02	1,023E-02
2 240	7,256E-02	7,419E-02	7,398E-02	7,361E-02	7,129E-02	4,709E-02	3,438E-02	1,009E-02
2 245	7,090E-02	7,276E-02	7,228E-02	7,162E-02	6,966E-02	4,563E-02	3,304E-02	9,152E-03
2 250	7,131E-02	7,288E-02	7,270E-02	7,233E-02	7,006E-02	4,623E-02	3,372E-02	9,827E-03
2 255	6,858E-02	7,014E-02	6,991E-02	6,948E-02	6,738E-02	4,384E-02	3,153E-02	8,298E-03
2 260	6,778E-02	6,937E-02	6,910E-02	6,860E-02	6,660E-02	4,321E-02	3,099E-02	8,002E-03
2 265	6,830E-02	6,982E-02	6,962E-02	6,921E-02	6,712E-02	4,390E-02	3,174E-02	8,684E-03
2 270	6,614E-02	6,763E-02	6,742E-02	6,696E-02	6,500E-02	4,192E-02	2,989E-02	7,396E-03
2 275	6,538E-02	6,686E-02	6,664E-02	6,618E-02	6,425E-02	4,136E-02	2,944E-02	7,184E-03
2 280	6,629E-02	6,781E-02	6,756E-02	6,704E-02	6,515E-02	4,256E-02	3,074E-02	8,355E-03
2 285	6,407E-02	6,553E-02	6,530E-02	6,479E-02	6,297E-02	4,057E-02	2,889E-02	7,093E-03
2 290	6,371E-02	6,520E-02	6,493E-02	6,436E-02	6,262E-02	4,035E-02	2,875E-02	7,073E-03
2 295	6,217E-02	6,368E-02	6,335E-02	6,271E-02	6,110E-02	3,929E-02	2,793E-02	6,764E-03
2 300	6,028E-02	6,223E-02	6,142E-02	6,011E-02	5,925E-02	3,752E-02	2,628E-02	5,729E-03
2 305	6,045E-02	6,271E-02	6,160E-02	6,005E-02	5,942E-02	3,775E-02	2,654E-02	5,952E-03
2 310	6,265E-02	6,570E-02	6,384E-02	6,137E-02	6,159E-02	4,006E-02	2,884E-02	7,766E-03
2 315	5,877E-02	6,177E-02	5,988E-02	5,760E-02	5,777E-02	3,666E-02	2,575E-02	5,811E-03
2 320	5,381E-02	5,889E-02	5,482E-02	5,170E-02	5,289E-02	3,263E-02	2,233E-02	4,245E-03
2 325	5,579E-02	6,225E-02	5,684E-02	5,252E-02	5,484E-02	3,477E-02	2,449E-02	5,884E-03
2 330	5,685E-02	6,139E-02	5,792E-02	5,417E-02	5,589E-02	3,543E-02	2,487E-02	5,636E-03
2 335	5,720E-02	6,110E-02	5,827E-02	5,539E-02	5,623E-02	3,590E-02	2,539E-02	6,066E-03
2 340	4,783E-02	5,824E-02	4,872E-02	4,248E-02	4,703E-02	2,816E-02	1,880E-02	3,216E-03
2 345	5,164E-02	5,780E-02	5,260E-02	4,820E-02	5,077E-02	3,120E-02	2,128E-02	3,975E-03
2 350	4,336E-02	5,576E-02	4,417E-02	3,840E-02	4,264E-02	2,524E-02	1,670E-02	2,655E-03
2 355	4,844E-02	5,567E-02	4,934E-02	4,423E-02	4,763E-02	2,897E-02	1,958E-02	3,429E-03
2 360	5,058E-02	5,708E-02	5,152E-02	4,667E-02	4,974E-02	3,073E-02	2,109E-02	4,148E-03
2 365	4,803E-02	5,851E-02	4,891E-02	4,280E-02	4,722E-02	2,911E-02	2,002E-02	4,180E-03
2 370	3,447E-02	4,940E-02	3,511E-02	2,784E-02	3,390E-02	1,847E-02	1,132E-02	1,174E-03
2 375	4,412E-02	5,456E-02	4,493E-02	3,871E-02	4,338E-02	2,591E-02	1,725E-02	2,820E-03
2 380	4,142E-02	5,773E-02	4,218E-02	3,351E-02	4,074E-02	2,415E-02	1,602E-02	2,641E-03
2 385	3,236E-02	5,458E-02	3,295E-02	2,391E-02	3,182E-02	1,756E-02	1,097E-02	1,343E-03

Table A.8 continued

Wavelength nm	$E_{\lambda,DN3}$	$E_{\lambda,DN4}$	$E_{\lambda,DN5}$	$E_{\lambda,DN6}$	$E_{\lambda,DN7}$	$E_{\lambda,D1}$	$E_{\lambda,D2}$	$E_{\lambda,D3}$
	$W \cdot m^{-2} \cdot nm^{-1}$							
2 390	3,656E-02	5,579E-02	3,723E-02	2,876E-02	3,596E-02	2,082E-02	1,349E-02	1,907E-03
2 395	4,023E-02	5,515E-02	4,096E-02	3,320E-02	3,956E-02	2,345E-02	1,547E-02	2,413E-03
2 400	4,259E-02	5,606E-02	4,337E-02	3,544E-02	4,189E-02	2,514E-02	1,678E-02	2,775E-03
2 405	3,371E-02	5,594E-02	3,432E-02	2,502E-02	3,316E-02	1,887E-02	1,213E-02	1,755E-03
2 410	3,285E-02	5,634E-02	3,345E-02	2,371E-02	3,232E-02	1,811E-02	1,146E-02	1,560E-03
2 415	2,652E-02	5,520E-02	2,700E-02	1,690E-02	2,609E-02	1,454E-02	8,720E-03	7,346E-04
2 420	2,556E-02	5,538E-02	2,602E-02	1,673E-02	2,514E-02	1,427E-02	8,675E-03	7,670E-04
2 425	3,235E-02	5,478E-02	3,293E-02	2,298E-02	3,182E-02	1,833E-02	1,151E-02	1,234E-03
2 430	4,146E-02	5,502E-02	4,221E-02	3,239E-02	4,079E-02	2,413E-02	1,582E-02	2,211E-03
2 435	1,746E-02	5,450E-02	1,778E-02	1,029E-02	1,718E-02	9,067E-03	5,235E-03	4,079E-04
2 440	3,907E-02	5,450E-02	3,977E-02	2,937E-02	3,843E-02	2,278E-02	1,497E-02	2,127E-03
2 445	2,052E-02	5,387E-02	2,089E-02	1,163E-02	2,019E-02	1,095E-02	6,350E-03	4,518E-04
2 450	1,396E-02	5,300E-02	1,420E-02	6,589E-03	1,373E-02	6,793E-03	3,611E-03	1,513E-04
2 455	2,381E-02	5,274E-02	2,424E-02	1,338E-02	2,343E-02	1,233E-02	7,330E-03	6,211E-04
2 460	3,134E-02	5,290E-02	3,190E-02	2,015E-02	3,084E-02	1,721E-02	1,047E-02	8,713E-04
2 465	2,315E-02	5,280E-02	2,356E-02	1,274E-02	2,278E-02	1,204E-02	6,770E-03	3,427E-04
2 470	1,626E-02	5,206E-02	1,655E-02	7,119E-03	1,600E-02	7,647E-03	3,808E-03	8,116E-05
2 475	1,489E-02	5,193E-02	1,516E-02	5,852E-03	1,465E-02	6,927E-03	3,365E-03	6,654E-05
2 480	8,124E-03	5,095E-02	8,267E-03	2,123E-03	7,994E-03	2,989E-03	1,297E-03	1,730E-05
2 485	5,451E-03	5,054E-02	5,547E-03	1,038E-03	5,364E-03	1,826E-03	6,430E-04	1,713E-06
2 490	2,988E-03	5,065E-02	3,041E-03	3,666E-04	2,941E-03	9,773E-04	2,788E-04	1,314E-07
2 495	2,975E-03	5,044E-02	3,027E-03	3,729E-04	2,927E-03	8,967E-04	2,602E-04	1,920E-07
2 500	6,553E-03	5,023E-02	6,668E-03	1,148E-03	6,449E-03	1,939E-03	6,775E-04	1,902E-06
2 505	1,710E-03	4,988E-02	1,740E-03	1,762E-04	1,683E-03	4,356E-04	1,426E-04	4,468E-07
2 510	2,026E-03	4,914E-02	2,062E-03	1,922E-04	1,994E-03	5,090E-04	1,660E-04	6,482E-07
2 515	5,960E-04	4,886E-02	6,065E-04	2,961E-05	5,865E-04	1,149E-04	3,052E-05	5,823E-08
2 520	3,504E-04	4,872E-02	3,566E-04	6,507E-06	3,448E-04	4,339E-05	5,245E-06	1,193E-09
2 525	4,566E-05	4,848E-02	4,647E-05	3,783E-07	4,493E-05	4,407E-06	4,870E-07	2,286E-12
2 530	2,063E-06	4,818E-02	2,099E-06	2,683E-09	2,029E-06	1,353E-07	1,512E-08	1,204E-13
2 535	1,539E-07	4,769E-02	1,566E-07	6,856E-12	1,512E-07	1,993E-09	1,711E-11	2,939E-17
2 540	3,215E-07	4,698E-02	3,272E-07	1,184E-11	3,159E-07	3,662E-09	2,609E-11	2,809E-23
2 545	1,968E-08	4,679E-02	2,004E-08	7,311E-13	1,934E-08	2,242E-10	1,607E-12	2,711E-27
2 550	2,633E-11	4,646E-02	2,680E-11	1,796E-16	2,587E-11	1,947E-13	6,240E-16	6,654E-31
2 555	3,413E-10	4,599E-02	3,474E-10	1,772E-17	3,353E-10	2,133E-12	3,492E-15	2,039E-32
2 560	2,172E-11	4,536E-02	2,211E-11	1,108E-18	2,134E-11	2,049E-13	3,882E-16	1,649E-31
2 565	2,970E-14	4,494E-02	3,023E-14	2,754E-22	2,917E-14	4,525E-15	1,072E-17	1,027E-32
2 570	5,994E-18	4,477E-02	6,102E-18	1,477E-27	5,888E-18	1,342E-18	2,658E-21	2,507E-36
2 575	4,011E-23	4,471E-02	4,083E-23	1,163E-33	3,940E-23	6,200E-23	1,576E-26	2,391E-42
2 580	3,001E-26	4,444E-02	3,055E-26	1,406E-44	2,947E-26	3,867E-28	1,425E-32	5,975E-54
2 585	1,388E-27	4,312E-02	1,413E-27	1,532E-48	1,363E-27	5,921E-30	5,835E-37	9,743E-71
2 590	3,389E-31	4,291E-02	3,450E-31	3,708E-52	3,328E-31	1,445E-33	1,421E-40	6,127E-85
2 595	1,674E-33	4,290E-02	1,705E-33	3,681E-58	1,644E-33	6,680E-38	1,767E-46	4,677E-89
2 600	2,678E-32	4,259E-02	2,727E-32	2,315E-58	2,629E-32	1,045E-36	6,090E-46	2,886E-90
2 605	1,674E-33	4,275E-02	1,704E-33	1,447E-59	1,643E-33	6,529E-38	3,805E-47	7,046E-94
2 610	4,089E-37	4,224E-02	4,164E-37	4,343E-63	4,015E-37	5,773E-41	1,397E-48	6,023E-92
2 615	3,031E-34	4,167E-02	3,088E-34	8,505E-58	2,976E-34	1,709E-37	5,685E-45	2,468E-88
2 620	6,846E-29	4,115E-02	6,974E-29	3,097E-42	6,721E-29	3,250E-31	1,416E-35	1,083E-61
2 625	7,049E-23	3,962E-02	7,181E-23	3,272E-36	6,920E-23	3,408E-25	1,484E-29	1,136E-55
2 630	2,926E-19	4,060E-02	2,981E-19	3,939E-32	2,873E-19	1,396E-21	6,080E-26	4,654E-52
2 635	2,069E-17	4,106E-02	2,108E-17	1,071E-28	2,031E-17	2,241E-20	9,735E-25	7,445E-51
2 640	2,574E-16	4,046E-02	2,622E-16	1,710E-27	2,526E-16	2,721E-21	7,565E-26	4,654E-52
2 645	1,624E-17	4,051E-02	1,654E-17	1,069E-28	1,594E-17	8,760E-23	9,560E-28	1,136E-55
2 650	5,563E-19	4,025E-02	5,668E-19	5,813E-32	5,460E-19	4,225E-25	1,066E-30	1,085E-61
2 655	3,400E-20	3,927E-02	3,465E-20	2,000E-33	3,337E-20	7,747E-27	3,692E-33	8,616E-69

Table A.8 continued

Wavelength nm	$E_{\lambda,DN3}$	$E_{\lambda,DN4}$	$E_{\lambda,DN5}$	$E_{\lambda,DN6}$	$E_{\lambda,DN7}$	$E_{\lambda,D1}$	$E_{\lambda,D2}$	$E_{\lambda,D3}$
	$W \cdot m^{-2} \cdot nm^{-1}$							
2 660	8,301E-24	3,488E-02	8,458E-24	4,883E-37	8,148E-24	1,931E-30	8,615E-37	8,134E-75
2 665	7,917E-30	1,829E-02	8,066E-30	4,657E-43	7,770E-30	3,480E-33	4,272E-40	3,416E-81
2 670	2,302E-44	1,571E-03	2,346E-44	1,588E-71	2,259E-44	8,493E-37	1,041E-43	8,339E-85
2 675	1,174E-40	3,485E-05	1,197E-40	2,674E-61	1,152E-40	8,100E-43	9,925E-50	7,954E-91
2 680	1,231E-34	8,541E-09	1,255E-34	2,804E-55	1,208E-34	5,207E-42	6,655E-52	0,000E+00
2 685	5,044E-31	3,860E-07	5,141E-31	1,149E-51	4,949E-31	2,133E-38	2,727E-48	0,000E+00
2 690	8,070E-30	6,345E-06	8,225E-30	1,838E-50	7,918E-30	3,413E-37	4,371E-47	0,000E+00
2 695	5,044E-31	3,112E-06	5,141E-31	1,149E-51	4,949E-31	2,258E-38	4,069E-48	0,000E+00
2 700	1,295E-34	1,705E-07	1,320E-34	1,014E-52	1,270E-34	8,353E-41	8,460E-50	0,000E+00
2 705	5,627E-30	2,754E-09	5,736E-30	8,110E-48	5,521E-30	3,644E-38	4,216E-47	0,000E+00
2 710	2,305E-26	1,022E-05	2,349E-26	3,321E-44	2,261E-26	1,493E-34	4,755E-43	7,555E-75
2 715	3,688E-25	3,226E-04	3,759E-25	5,314E-43	3,618E-25	9,053E-32	3,175E-37	7,921E-69
2 720	2,305E-26	3,147E-03	2,350E-26	3,321E-44	2,262E-26	3,695E-28	1,302E-33	3,245E-65
2 725	1,193E-26	1,024E-02	1,216E-26	9,301E-48	1,170E-26	4,121E-26	2,655E-32	5,191E-64
2 730	1,973E-25	1,316E-02	2,011E-25	1,041E-46	1,936E-25	5,678E-25	9,325E-32	3,245E-65
2 735	1,175E-25	1,165E-02	1,198E-25	4,330E-44	1,153E-25	4,301E-26	8,605E-33	7,921E-69
2 740	3,246E-24	4,154E-03	3,309E-24	1,718E-40	3,185E-24	4,820E-28	1,806E-34	1,421E-74
2 745	5,184E-23	8,169E-04	5,284E-23	2,753E-39	5,086E-23	2,061E-30	2,924E-37	2,545E-78
2 750	3,348E-24	3,773E-05	3,412E-24	2,526E-40	3,284E-24	1,216E-31	1,554E-38	2,307E-82
2 755	7,530E-27	1,614E-08	7,675E-27	5,092E-42	7,387E-27	3,303E-35	3,801E-42	1,085E-87
2 760	1,646E-30	2,800E-06	1,678E-30	1,233E-45	1,615E-30	5,852E-34	6,040E-41	1,191E-83
2 765	1,608E-33	5,670E-05	1,639E-33	8,625E-49	1,578E-33	1,545E-30	2,193E-37	4,877E-80
2 770	5,977E-32	1,939E-04	6,092E-32	3,631E-45	5,864E-32	2,466E-29	3,507E-36	7,804E-79
2 775	9,695E-27	1,194E-05	9,882E-27	2,920E-36	9,512E-27	2,103E-30	6,800E-36	3,034E-62
2 780	1,008E-20	3,776E-09	1,028E-20	3,062E-30	9,893E-21	5,885E-25	6,900E-30	3,182E-56
2 785	4,140E-17	3,462E-06	4,220E-17	1,258E-26	4,062E-17	2,411E-21	2,836E-26	5,980E-38
2 790	1,107E-15	7,012E-05	1,128E-15	1,189E-24	1,086E-15	1,357E-19	8,650E-23	6,271E-32
2 795	1,141E-13	2,830E-04	1,163E-13	3,370E-21	1,120E-13	3,889E-16	3,524E-19	2,568E-28
2 800	1,732E-12	7,755E-04	1,765E-12	4,359E-19	1,699E-12	6,279E-15	5,705E-18	4,111E-27
2 805	5,716E-11	1,296E-03	5,825E-11	1,565E-15	5,608E-11	1,754E-13	2,225E-16	2,568E-28
2 810	9,437E-10	2,075E-03	9,619E-10	2,514E-14	9,260E-10	2,916E-12	3,750E-15	6,429E-32
2 815	5,585E-10	3,779E-03	5,692E-10	3,340E-15	5,479E-10	2,131E-12	3,748E-15	1,595E-27
2 820	1,352E-08	9,228E-03	1,378E-08	7,249E-13	1,327E-08	1,555E-10	1,352E-12	1,223E-23
2 825	5,321E-07	1,310E-02	5,423E-07	2,859E-10	5,223E-07	1,103E-08	2,257E-10	2,352E-20
2 830	5,096E-06	1,664E-02	5,194E-06	4,407E-09	5,003E-06	1,375E-07	3,278E-09	3,746E-19
2 835	3,315E-07	2,117E-02	3,379E-07	2,859E-10	3,255E-07	8,873E-09	2,120E-10	1,009E-19
2 840	3,163E-06	1,988E-02	3,224E-06	2,236E-08	3,106E-06	2,033E-07	1,208E-08	7,418E-17
2 845	4,732E-05	1,975E-02	4,823E-05	3,566E-07	4,648E-05	3,192E-06	1,921E-07	1,172E-15
2 850	4,072E-06	2,024E-02	4,150E-06	2,270E-08	3,999E-06	2,300E-07	1,258E-08	8,871E-17
2 855	2,174E-06	2,070E-02	2,216E-06	1,457E-08	2,135E-06	1,401E-07	9,305E-09	4,377E-15
2 860	3,647E-05	2,032E-02	3,717E-05	4,567E-07	3,582E-05	3,213E-06	2,578E-07	9,038E-14
2 865	1,756E-04	2,028E-02	1,789E-04	3,709E-06	1,725E-04	1,999E-05	1,968E-06	3,907E-13
2 870	4,139E-05	2,301E-02	4,218E-05	1,203E-06	4,065E-05	5,166E-06	6,550E-07	1,461E-12
2 875	4,071E-04	2,458E-02	4,149E-04	1,604E-05	3,999E-04	6,070E-05	8,775E-06	7,532E-11
2 880	2,941E-04	2,388E-02	2,997E-04	1,150E-05	2,889E-04	4,347E-05	8,050E-06	8,450E-10
2 885	4,264E-04	2,400E-02	4,345E-04	1,845E-05	4,188E-04	7,607E-05	1,171E-05	1,895E-10
2 890	3,738E-04	2,465E-02	3,809E-04	3,404E-05	3,672E-04	7,653E-05	2,072E-05	2,079E-08
2 895	2,632E-03	2,631E-02	2,682E-03	4,093E-04	2,585E-03	7,227E-04	2,341E-04	3,113E-07
2 900	8,606E-04	2,721E-02	8,771E-04	1,016E-04	8,454E-04	2,350E-04	6,240E-05	2,707E-08
2 905	2,893E-04	2,791E-02	2,949E-04	3,535E-05	2,842E-04	7,573E-05	2,323E-05	3,159E-08
2 910	2,430E-03	2,828E-02	2,476E-03	4,621E-04	2,387E-03	8,480E-04	2,970E-04	5,014E-07
2 915	1,521E-03	2,835E-02	1,550E-03	1,974E-04	1,494E-03	4,135E-04	1,249E-04	1,434E-07
2 920	2,627E-03	2,827E-02	2,678E-03	4,705E-04	2,581E-03	9,093E-04	3,110E-04	4,566E-07
2 925	1,536E-03	2,804E-02	1,565E-03	2,843E-04	1,509E-03	4,749E-04	1,706E-04	8,186E-07

Table A.8 continued

Wavelength nm	$E_{\lambda,DN3}$	$E_{\lambda,DN4}$	$E_{\lambda,DN5}$	$E_{\lambda,DN6}$	$E_{\lambda,DN7}$	$E_{\lambda,D1}$	$E_{\lambda,D2}$	$E_{\lambda,D3}$
	$W \cdot m^{-2} \cdot nm^{-1}$							
2 930	5,798E-03	2,796E-02	5,909E-03	1,624E-03	5,696E-03	2,129E-03	9,010E-04	7,143E-06
2 935	6,314E-03	2,785E-02	6,435E-03	2,020E-03	6,203E-03	2,553E-03	1,097E-03	8,877E-06
2 940	2,047E-03	2,767E-02	2,086E-03	3,711E-04	2,011E-03	5,865E-04	2,070E-04	1,049E-06
2 945	1,686E-03	2,742E-02	1,718E-03	2,548E-04	1,656E-03	5,083E-04	1,584E-04	3,234E-07
2 950	5,020E-03	2,718E-02	5,116E-03	1,381E-03	4,931E-03	1,919E-03	7,765E-04	4,225E-06
2 955	2,774E-03	2,687E-02	2,827E-03	7,792E-04	2,725E-03	1,055E-03	4,423E-04	3,134E-06
2 960	4,992E-03	2,654E-02	5,087E-03	1,606E-03	4,904E-03	1,859E-03	8,205E-04	1,216E-05
2 965	7,024E-03	2,630E-02	7,159E-03	3,012E-03	6,900E-03	3,244E-03	1,609E-03	3,798E-05
2 970	7,296E-04	2,611E-02	7,435E-04	2,179E-04	7,167E-04	2,955E-04	1,261E-04	2,366E-06
2 975	9,232E-04	2,579E-02	9,409E-04	1,273E-04	9,069E-04	2,305E-04	7,525E-05	3,434E-07
2 980	1,898E-03	2,546E-02	1,935E-03	4,489E-04	1,865E-03	5,543E-04	2,100E-04	2,723E-06
2 985	7,386E-03	2,553E-02	7,527E-03	3,126E-03	7,256E-03	3,071E-03	1,504E-03	4,384E-05
2 990	1,024E-02	2,560E-02	1,043E-02	5,321E-03	1,006E-02	4,869E-03	2,687E-03	1,551E-04
2 995	4,704E-03	2,542E-02	4,794E-03	1,627E-03	4,621E-03	2,043E-03	9,225E-04	1,859E-05
3 000	7,135E-03	2,547E-02	7,271E-03	3,056E-03	7,009E-03	3,471E-03	1,740E-03	4,477E-05
3 005	3,273E-03	2,540E-02	3,336E-03	1,075E-03	3,216E-03	1,385E-03	6,135E-04	1,053E-05
3 010	6,665E-03	2,518E-02	6,792E-03	2,977E-03	6,549E-03	3,129E-03	1,601E-03	4,952E-05
3 015	5,744E-03	2,500E-02	5,853E-03	2,167E-03	5,644E-03	2,262E-03	1,047E-03	1,996E-05
3 020	1,319E-03	2,487E-02	1,343E-03	3,753E-04	1,296E-03	4,589E-04	1,897E-04	3,561E-06
3 025	7,310E-03	2,478E-02	7,447E-03	3,406E-03	7,183E-03	3,363E-03	1,705E-03	4,164E-05
3 030	5,992E-03	2,462E-02	6,104E-03	2,524E-03	5,889E-03	2,738E-03	1,344E-03	2,950E-05
3 035	2,625E-03	2,429E-02	2,674E-03	7,656E-04	2,580E-03	1,045E-03	4,321E-04	3,280E-06
3 040	2,303E-03	2,395E-02	2,346E-03	6,134E-04	2,263E-03	7,967E-04	3,195E-04	2,905E-06
3 045	3,856E-03	2,413E-02	3,928E-03	1,178E-03	3,791E-03	1,531E-03	6,365E-04	4,911E-06
3 050	1,181E-03	2,413E-02	1,203E-03	2,116E-04	1,161E-03	3,520E-04	1,287E-04	6,355E-07
3 055	7,096E-04	2,396E-02	7,227E-04	1,956E-04	6,977E-04	2,323E-04	1,012E-04	1,995E-06
3 060	5,974E-03	2,382E-02	6,084E-03	2,661E-03	5,873E-03	2,678E-03	1,346E-03	3,163E-05
3 065	3,261E-03	2,362E-02	3,321E-03	9,721E-04	3,207E-03	1,167E-03	4,900E-04	5,700E-06
3 070	2,236E-03	2,351E-02	2,276E-03	5,566E-04	2,198E-03	7,100E-04	2,699E-04	2,325E-06
3 075	5,816E-03	2,342E-02	5,922E-03	2,481E-03	5,719E-03	2,573E-03	1,260E-03	2,571E-05
3 080	3,532E-03	2,324E-02	3,596E-03	1,215E-03	3,474E-03	1,551E-03	7,010E-04	7,671E-06
3 085	2,087E-03	2,306E-02	2,124E-03	4,521E-04	2,052E-03	6,498E-04	2,367E-04	8,443E-07
3 090	2,633E-03	2,295E-02	2,680E-03	6,067E-04	2,589E-03	7,693E-04	2,804E-04	1,158E-06
3 095	1,084E-03	2,281E-02	1,103E-03	2,094E-04	1,066E-03	3,029E-04	1,080E-04	8,321E-07
3 100	4,192E-03	2,266E-02	4,267E-03	1,562E-03	4,124E-03	1,735E-03	8,055E-04	1,159E-05
3 105	1,288E-03	2,255E-02	1,311E-03	2,738E-04	1,267E-03	3,903E-04	1,516E-04	1,394E-06
3 110	1,046E-03	2,235E-02	1,065E-03	1,442E-04	1,029E-03	2,527E-04	6,980E-05	8,341E-08
3 115	2,663E-03	2,198E-02	2,710E-03	7,788E-04	2,620E-03	1,001E-03	4,109E-04	6,689E-06
3 120	9,387E-03	2,201E-02	9,553E-03	4,930E-03	9,235E-03	4,516E-03	2,439E-03	9,973E-05
3 125	3,809E-03	2,187E-02	3,876E-03	1,536E-03	3,748E-03	1,581E-03	7,885E-04	2,795E-05
3 130	6,330E-03	2,179E-02	6,441E-03	3,336E-03	6,228E-03	3,001E-03	1,622E-03	6,261E-05
3 135	1,096E-02	2,159E-02	1,116E-02	6,369E-03	1,079E-02	5,684E-03	3,218E-03	1,652E-04
3 140	4,087E-03	2,130E-02	4,158E-03	1,644E-03	4,021E-03	1,695E-03	8,105E-04	1,911E-05
3 145	3,729E-03	2,138E-02	3,794E-03	1,494E-03	3,670E-03	1,531E-03	7,215E-04	1,363E-05
3 150	6,946E-03	2,058E-02	7,067E-03	3,522E-03	6,836E-03	3,177E-03	1,681E-03	6,720E-05
3 155	6,207E-03	2,086E-02	6,314E-03	3,056E-03	6,109E-03	2,916E-03	1,551E-03	6,411E-05
3 160	9,796E-03	1,973E-02	9,965E-03	5,924E-03	9,642E-03	5,010E-03	2,841E-03	1,816E-04
3 165	1,458E-02	1,912E-02	1,483E-02	1,139E-02	1,435E-02	8,193E-03	5,180E-03	5,502E-04
3 170	1,291E-02	1,990E-02	1,313E-02	9,170E-03	1,271E-02	7,067E-03	4,397E-03	4,579E-04
3 175	1,022E-02	1,819E-02	1,039E-02	6,979E-03	1,006E-02	5,363E-03	3,115E-03	1,939E-04
3 180	1,091E-02	1,977E-02	1,110E-02	7,430E-03	1,074E-02	5,871E-03	3,538E-03	2,827E-04
3 185	9,127E-03	1,638E-02	9,282E-03	5,706E-03	8,985E-03	4,317E-03	2,265E-03	7,050E-05
3 190	4,687E-03	1,911E-02	4,766E-03	2,181E-03	4,614E-03	2,093E-03	1,050E-03	2,793E-05
3 195	3,174E-03	1,587E-02	3,227E-03	1,019E-03	3,125E-03	1,055E-03	4,009E-04	2,518E-06

Table A.8 continued

Wavelength nm	$E_{\lambda,DN3}$	$E_{\lambda,DN4}$	$E_{\lambda,DN5}$	$E_{\lambda,DN6}$	$E_{\lambda,DN7}$	$E_{\lambda,D1}$	$E_{\lambda,D2}$	$E_{\lambda,D3}$
	$W \cdot m^{-2} \cdot nm^{-1}$							
3 200	6,307E-04	1,730E-02	6,413E-04	1,040E-04	6,210E-04	1,573E-04	4,350E-05	6,307E-08
3 205	3,663E-04	1,621E-02	3,725E-04	2,970E-05	3,607E-04	6,526E-05	1,222E-05	3,002E-10
3 210	2,284E-04	1,512E-02	2,322E-04	1,627E-05	2,249E-04	3,459E-05	6,840E-06	1,593E-09
3 215	6,862E-04	1,696E-02	6,977E-04	9,123E-05	6,758E-04	1,402E-04	3,652E-05	2,725E-08
3 220	1,778E-03	1,387E-02	1,808E-03	4,665E-04	1,751E-03	5,340E-04	1,697E-04	1,379E-07
3 225	3,889E-04	1,773E-02	3,953E-04	6,158E-05	3,830E-04	8,287E-05	2,406E-05	2,716E-08
3 230	9,297E-04	1,419E-02	9,451E-04	3,069E-04	9,157E-04	2,907E-04	1,282E-04	2,750E-06
3 235	7,339E-03	1,717E-02	7,460E-03	3,857E-03	7,228E-03	3,328E-03	1,712E-03	4,389E-05
3 240	4,568E-03	1,325E-02	4,643E-03	2,117E-03	4,500E-03	1,751E-03	7,440E-04	6,259E-06
3 245	1,145E-03	1,705E-02	1,164E-03	3,890E-04	1,128E-03	3,921E-04	1,563E-04	1,262E-06
3 250	3,490E-03	1,350E-02	3,547E-03	1,846E-03	3,438E-03	1,419E-03	6,650E-04	1,199E-05
3 255	9,710E-03	1,676E-02	9,869E-03	6,120E-03	9,566E-03	4,822E-03	2,700E-03	1,163E-04
3 260	2,232E-03	1,289E-02	2,269E-03	9,993E-04	2,199E-03	8,027E-04	3,556E-04	8,205E-06
3 265	2,432E-03	1,714E-02	2,472E-03	7,083E-04	2,396E-03	8,800E-04	3,415E-04	1,200E-06
3 270	1,854E-03	1,342E-02	1,884E-03	5,767E-04	1,827E-03	6,125E-04	2,304E-04	1,932E-06
3 275	5,955E-03	1,730E-02	6,051E-03	2,711E-03	5,867E-03	2,643E-03	1,310E-03	2,807E-05
3 280	3,945E-03	1,475E-02	4,008E-03	1,826E-03	3,887E-03	1,653E-03	7,875E-04	2,109E-05
3 285	1,094E-02	1,735E-02	1,112E-02	7,135E-03	1,078E-02	5,772E-03	3,433E-03	2,363E-04
3 290	9,290E-03	1,549E-02	9,439E-03	6,010E-03	9,155E-03	4,581E-03	2,554E-03	1,126E-04
3 295	1,811E-03	1,696E-02	1,840E-03	6,975E-04	1,785E-03	6,787E-04	3,136E-04	7,863E-06
3 300	2,018E-03	1,533E-02	2,050E-03	7,281E-04	1,989E-03	7,820E-04	3,308E-04	2,255E-06
3 305	4,162E-03	1,624E-02	4,228E-03	1,701E-03	4,102E-03	1,695E-03	7,725E-04	9,070E-06
3 310	4,547E-03	1,133E-02	4,619E-03	2,534E-03	4,481E-03	1,869E-03	8,555E-04	9,896E-06
3 315	3,694E-04	1,168E-03	3,753E-04	2,044E-04	3,641E-04	1,178E-04	5,130E-05	5,861E-07
3 320	3,748E-04	4,745E-03	3,808E-04	1,651E-04	3,695E-04	1,129E-04	4,439E-05	2,763E-07
3 325	4,359E-03	9,980E-03	4,428E-03	2,497E-03	4,297E-03	1,727E-03	7,560E-04	8,941E-06
3 330	5,227E-03	1,518E-02	5,310E-03	3,386E-03	5,153E-03	2,647E-03	1,497E-03	8,325E-05
3 335	9,549E-03	1,416E-02	9,699E-03	7,091E-03	9,413E-03	4,917E-03	2,863E-03	1,723E-04
3 340	4,051E-03	1,621E-02	4,115E-03	2,052E-03	3,994E-03	1,816E-03	9,630E-04	4,686E-05
3 345	4,288E-03	1,309E-02	4,355E-03	2,386E-03	4,228E-03	1,945E-03	9,735E-04	2,702E-05
3 350	7,913E-03	1,591E-02	8,037E-03	5,073E-03	7,802E-03	4,162E-03	2,443E-03	1,707E-04
3 355	4,604E-03	1,310E-02	4,675E-03	2,442E-03	4,539E-03	1,957E-03	9,725E-04	3,038E-05
3 360	5,587E-03	1,493E-02	5,674E-03	3,213E-03	5,508E-03	2,787E-03	1,516E-03	6,600E-05
3 365	7,298E-03	1,498E-02	7,411E-03	4,947E-03	7,196E-03	3,936E-03	2,344E-03	1,873E-04
3 370	5,162E-03	1,121E-02	5,242E-03	3,231E-03	5,090E-03	2,370E-03	1,197E-03	4,464E-05
3 375	8,672E-03	1,494E-02	8,805E-03	6,230E-03	8,551E-03	4,567E-03	2,771E-03	3,007E-04
3 380	6,679E-03	1,053E-02	6,782E-03	5,072E-03	6,587E-03	3,113E-03	1,664E-03	7,430E-05
3 385	7,930E-03	1,412E-02	8,051E-03	5,725E-03	7,820E-03	4,368E-03	2,637E-03	2,455E-04
3 390	1,107E-02	1,266E-02	1,124E-02	1,004E-02	1,091E-02	6,173E-03	3,870E-03	3,850E-04
3 395	1,060E-02	1,350E-02	1,076E-02	9,076E-03	1,046E-02	5,967E-03	3,815E-03	4,814E-04
3 400	1,244E-02	1,438E-02	1,263E-02	1,111E-02	1,227E-02	7,487E-03	5,090E-03	9,543E-04
3 405	6,128E-03	1,029E-02	6,221E-03	4,683E-03	6,044E-03	2,954E-03	1,612E-03	1,056E-04
3 410	7,229E-03	1,412E-02	7,340E-03	5,285E-03	7,130E-03	4,017E-03	2,457E-03	2,709E-04
3 415	8,971E-03	1,095E-02	9,107E-03	8,110E-03	8,848E-03	4,735E-03	2,832E-03	2,396E-04
3 420	1,328E-02	1,440E-02	1,348E-02	1,250E-02	1,310E-02	8,207E-03	5,720E-03	1,236E-03
3 425	1,135E-02	1,239E-02	1,152E-02	1,064E-02	1,120E-02	6,508E-03	4,191E-03	5,186E-04
3 430	1,050E-02	1,114E-02	1,066E-02	1,014E-02	1,035E-02	5,791E-03	3,598E-03	3,455E-04
3 435	1,173E-02	1,415E-02	1,191E-02	1,034E-02	1,157E-02	7,020E-03	4,770E-03	9,268E-04
3 440	9,849E-03	1,124E-02	9,998E-03	8,987E-03	9,715E-03	5,331E-03	3,261E-03	3,071E-04
3 445	1,172E-02	1,397E-02	1,189E-02	1,029E-02	1,156E-02	6,993E-03	4,685E-03	8,466E-04
3 450	1,206E-02	1,284E-02	1,224E-02	1,168E-02	1,189E-02	7,207E-03	4,848E-03	8,005E-04
3 455	9,692E-03	1,211E-02	9,838E-03	8,607E-03	9,561E-03	5,419E-03	3,441E-03	4,189E-04
3 460	1,258E-02	1,422E-02	1,277E-02	1,155E-02	1,241E-02	7,780E-03	5,405E-03	1,214E-03
3 465	1,128E-02	1,193E-02	1,145E-02	1,092E-02	1,113E-02	6,564E-03	4,299E-03	6,000E-04

Table A.8 continued

Wavelength nm	$E_{\lambda,DN3}$	$E_{\lambda,DN4}$	$E_{\lambda,DN5}$	$E_{\lambda,DN6}$	$E_{\lambda,DN7}$	$E_{\lambda,D1}$	$E_{\lambda,D2}$	$E_{\lambda,D3}$
	$W \cdot m^{-2} \cdot nm^{-1}$							
3 470	1,256E-02	1,382E-02	1,275E-02	1,189E-02	1,239E-02	7,787E-03	5,445E-03	1,228E-03
3 475	1,178E-02	1,311E-02	1,196E-02	1,096E-02	1,162E-02	7,080E-03	4,782E-03	8,227E-04
3 480	1,208E-02	1,291E-02	1,226E-02	1,161E-02	1,192E-02	7,327E-03	4,995E-03	9,054E-04
3 485	1,244E-02	1,362E-02	1,263E-02	1,168E-02	1,227E-02	7,713E-03	5,365E-03	1,166E-03
3 490	1,131E-02	1,285E-02	1,148E-02	1,025E-02	1,116E-02	6,733E-03	4,488E-03	7,323E-04
3 495	1,259E-02	1,354E-02	1,278E-02	1,204E-02	1,242E-02	7,867E-03	5,525E-03	1,251E-03
3 500	1,238E-02	1,356E-02	1,256E-02	1,163E-02	1,221E-02	7,687E-03	5,375E-03	1,177E-03
3 505	1,232E-02	1,340E-02	1,250E-02	1,168E-02	1,215E-02	7,653E-03	5,350E-03	1,176E-03
3 510	1,233E-02	1,359E-02	1,251E-02	1,149E-02	1,216E-02	7,673E-03	5,375E-03	1,192E-03
3 515	1,177E-02	1,381E-02	1,194E-02	1,034E-02	1,161E-02	7,233E-03	4,985E-03	1,042E-03
3 520	1,231E-02	1,368E-02	1,250E-02	1,146E-02	1,215E-02	7,720E-03	5,445E-03	1,284E-03
3 525	1,170E-02	1,351E-02	1,188E-02	1,063E-02	1,155E-02	7,233E-03	5,040E-03	1,157E-03
3 530	1,143E-02	1,313E-02	1,160E-02	1,040E-02	1,128E-02	7,000E-03	4,828E-03	9,934E-04
3 535	1,012E-02	1,220E-02	1,027E-02	8,899E-03	9,991E-03	5,895E-03	3,870E-03	5,866E-04
3 540	9,728E-03	1,196E-02	9,872E-03	8,418E-03	9,599E-03	5,584E-03	3,614E-03	5,029E-04
3 545	1,014E-02	1,213E-02	1,029E-02	8,902E-03	1,001E-02	5,923E-03	3,890E-03	5,730E-04
3 550	1,073E-02	1,285E-02	1,089E-02	9,558E-03	1,059E-02	6,485E-03	4,426E-03	8,863E-04
3 555	9,577E-03	1,276E-02	9,718E-03	7,855E-03	9,451E-03	5,548E-03	3,643E-03	5,911E-04
3 560	1,103E-02	1,275E-02	1,119E-02	1,010E-02	1,088E-02	6,753E-03	4,674E-03	1,018E-03
3 565	1,114E-02	1,232E-02	1,131E-02	1,061E-02	1,100E-02	6,853E-03	4,756E-03	1,003E-03
3 570	8,897E-03	1,251E-02	9,027E-03	7,250E-03	8,780E-03	5,085E-03	3,315E-03	5,216E-04
3 575	9,286E-03	1,193E-02	9,422E-03	7,792E-03	9,164E-03	5,308E-03	3,435E-03	4,857E-04
3 580	1,053E-02	1,209E-02	1,068E-02	9,848E-03	1,039E-02	6,404E-03	4,406E-03	9,061E-04
3 585	9,700E-03	1,199E-02	9,841E-03	8,490E-03	9,573E-03	5,703E-03	3,797E-03	6,313E-04
3 590	9,802E-03	1,238E-02	9,945E-03	8,481E-03	9,674E-03	5,823E-03	3,926E-03	7,334E-04
3 595	9,934E-03	1,250E-02	1,008E-02	8,832E-03	9,804E-03	6,023E-03	4,155E-03	9,207E-04
3 600	1,047E-02	1,248E-02	1,062E-02	9,585E-03	1,033E-02	6,463E-03	4,524E-03	1,063E-03
3 605	1,072E-02	1,186E-02	1,088E-02	1,022E-02	1,058E-02	6,607E-03	4,596E-03	9,963E-04
3 610	9,859E-03	1,213E-02	1,000E-02	8,677E-03	9,731E-03	5,906E-03	4,013E-03	7,836E-04
3 615	9,785E-03	1,243E-02	9,927E-03	8,661E-03	9,658E-03	5,951E-03	4,119E-03	9,293E-04
3 620	1,154E-02	1,236E-02	1,171E-02	1,120E-02	1,139E-02	7,393E-03	5,340E-03	1,476E-03
3 625	1,055E-02	1,189E-02	1,070E-02	9,849E-03	1,041E-02	6,520E-03	4,549E-03	1,021E-03
3 630	1,018E-02	1,210E-02	1,033E-02	9,256E-03	1,005E-02	6,259E-03	4,363E-03	1,002E-03
3 635	1,045E-02	1,217E-02	1,060E-02	9,538E-03	1,032E-02	6,478E-03	4,543E-03	1,074E-03
3 640	1,141E-02	1,208E-02	1,158E-02	1,112E-02	1,126E-02	7,333E-03	5,310E-03	1,483E-03
3 645	1,085E-02	1,146E-02	1,100E-02	1,057E-02	1,071E-02	6,820E-03	4,826E-03	1,146E-03
3 650	1,036E-02	1,162E-02	1,051E-02	9,742E-03	1,022E-02	6,434E-03	4,519E-03	1,070E-03
3 655	1,088E-02	1,192E-02	1,104E-02	1,029E-02	1,074E-02	6,920E-03	4,951E-03	1,295E-03
3 660	1,084E-02	1,189E-02	1,100E-02	1,024E-02	1,070E-02	6,900E-03	4,945E-03	1,323E-03
3 665	1,030E-02	1,141E-02	1,044E-02	9,685E-03	1,017E-02	6,407E-03	4,491E-03	1,009E-03
3 670	8,017E-03	1,159E-02	8,132E-03	6,504E-03	7,915E-03	4,628E-03	3,064E-03	5,591E-04
3 675	5,286E-03	1,174E-02	5,362E-03	3,183E-03	5,219E-03	2,643E-03	1,534E-03	1,522E-04
3 680	8,176E-03	1,157E-02	8,293E-03	6,313E-03	8,071E-03	4,723E-03	3,083E-03	4,821E-04
3 685	9,422E-03	1,133E-02	9,556E-03	8,213E-03	9,301E-03	5,723E-03	3,912E-03	7,884E-04
3 690	9,823E-03	1,122E-02	9,963E-03	8,892E-03	9,698E-03	6,037E-03	4,178E-03	8,596E-04
3 695	1,007E-02	1,136E-02	1,021E-02	9,306E-03	9,937E-03	6,323E-03	4,479E-03	1,111E-03
3 700	1,068E-02	1,124E-02	1,083E-02	1,042E-02	1,054E-02	6,913E-03	5,035E-03	1,467E-03
3 705	1,058E-02	1,116E-02	1,073E-02	1,032E-02	1,044E-02	6,813E-03	4,945E-03	1,405E-03
3 710	9,493E-03	1,092E-02	9,628E-03	8,799E-03	9,373E-03	5,879E-03	4,120E-03	9,704E-04
3 715	9,303E-03	1,107E-02	9,435E-03	8,494E-03	9,185E-03	5,750E-03	4,034E-03	9,898E-04
3 720	1,026E-02	1,121E-02	1,040E-02	9,796E-03	1,013E-02	6,558E-03	4,726E-03	1,304E-03
3 725	1,054E-02	1,103E-02	1,068E-02	1,036E-02	1,040E-02	6,807E-03	4,953E-03	1,428E-03
3 730	9,345E-03	1,091E-02	9,477E-03	8,647E-03	9,227E-03	5,813E-03	4,097E-03	1,018E-03
3 735	8,612E-03	1,078E-02	8,734E-03	7,604E-03	8,503E-03	5,211E-03	3,580E-03	7,668E-04

Table A.8 continued

Wavelength nm	$E_{\lambda,DN3}$	$E_{\lambda,DN4}$	$E_{\lambda,DN5}$	$E_{\lambda,DN6}$	$E_{\lambda,DN7}$	$E_{\lambda,D1}$	$E_{\lambda,D2}$	$E_{\lambda,D3}$
	$W \cdot m^{-2} \cdot nm^{-1}$							
3 740	8,784E-03	1,061E-02	8,908E-03	7,903E-03	8,673E-03	5,411E-03	3,783E-03	9,113E-04
3 745	9,961E-03	1,056E-02	1,010E-02	9,702E-03	9,835E-03	6,415E-03	4,652E-03	1,320E-03
3 750	9,275E-03	1,061E-02	9,405E-03	8,746E-03	9,158E-03	5,833E-03	4,151E-03	1,080E-03
3 755	8,961E-03	1,067E-02	9,087E-03	8,202E-03	8,848E-03	5,562E-03	3,912E-03	9,589E-04
3 760	8,844E-03	1,069E-02	8,968E-03	7,795E-03	8,733E-03	5,423E-03	3,758E-03	8,311E-04
3 765	8,634E-03	1,055E-02	8,755E-03	7,745E-03	8,526E-03	5,295E-03	3,683E-03	8,468E-04
3 770	9,080E-03	1,057E-02	9,207E-03	8,423E-03	8,966E-03	5,677E-03	4,018E-03	1,023E-03
3 775	9,045E-03	1,048E-02	9,172E-03	8,409E-03	8,932E-03	5,663E-03	4,012E-03	1,023E-03
3 780	9,453E-03	1,042E-02	9,585E-03	8,992E-03	9,334E-03	6,006E-03	4,306E-03	1,161E-03
3 785	8,763E-03	1,038E-02	8,885E-03	7,857E-03	8,653E-03	5,417E-03	3,782E-03	8,911E-04
3 790	7,897E-03	1,027E-02	8,008E-03	6,785E-03	7,798E-03	4,755E-03	3,251E-03	6,893E-04
3 795	8,819E-03	1,021E-02	8,942E-03	8,197E-03	8,708E-03	5,528E-03	3,919E-03	1,009E-03
3 800	9,747E-03	1,012E-02	9,883E-03	9,658E-03	9,625E-03	6,305E-03	4,591E-03	1,329E-03
3 805	9,216E-03	1,014E-02	9,345E-03	8,757E-03	9,101E-03	5,857E-03	4,193E-03	1,121E-03
3 810	8,265E-03	1,009E-02	8,381E-03	7,187E-03	8,162E-03	5,045E-03	3,471E-03	7,493E-04
3 815	7,863E-03	1,006E-02	7,973E-03	6,761E-03	7,765E-03	4,763E-03	3,270E-03	7,264E-04
3 820	9,503E-03	9,987E-03	9,636E-03	9,347E-03	9,385E-03	6,137E-03	4,463E-03	1,292E-03
3 825	9,457E-03	1,001E-02	9,589E-03	9,230E-03	9,340E-03	6,097E-03	4,424E-03	1,282E-03
3 830	9,422E-03	9,971E-03	9,553E-03	9,171E-03	9,304E-03	6,079E-03	4,417E-03	1,275E-03
3 835	7,852E-03	9,824E-03	7,962E-03	6,709E-03	7,755E-03	4,747E-03	3,237E-03	6,705E-04
3 840	8,915E-03	9,674E-03	9,039E-03	8,518E-03	8,805E-03	5,649E-03	4,027E-03	1,031E-03
3 845	8,876E-03	9,480E-03	8,999E-03	8,594E-03	8,766E-03	5,609E-03	3,988E-03	9,943E-04
3 850	8,904E-03	9,436E-03	9,028E-03	8,655E-03	8,794E-03	5,636E-03	4,012E-03	1,009E-03
3 855	8,564E-03	9,385E-03	8,683E-03	8,089E-03	8,458E-03	5,360E-03	3,771E-03	8,829E-04
3 860	8,196E-03	9,071E-03	8,310E-03	7,624E-03	8,095E-03	5,019E-03	3,456E-03	6,989E-04
3 865	8,322E-03	8,660E-03	8,437E-03	8,188E-03	8,219E-03	5,133E-03	3,564E-03	7,348E-04
3 870	7,814E-03	8,204E-03	7,922E-03	7,635E-03	7,717E-03	4,685E-03	3,163E-03	5,370E-04
3 875	7,308E-03	7,903E-03	7,409E-03	6,949E-03	7,218E-03	4,249E-03	2,778E-03	3,845E-04
3 880	7,175E-03	7,633E-03	7,274E-03	6,930E-03	7,086E-03	4,139E-03	2,684E-03	3,445E-04
3 885	7,348E-03	7,608E-03	7,450E-03	7,269E-03	7,257E-03	4,301E-03	2,832E-03	3,971E-04
3 890	7,419E-03	7,731E-03	7,521E-03	7,264E-03	7,327E-03	4,367E-03	2,893E-03	4,239E-04
3 895	7,871E-03	8,089E-03	7,980E-03	7,845E-03	7,774E-03	4,785E-03	3,271E-03	6,000E-04
3 900	8,038E-03	8,676E-03	8,149E-03	7,628E-03	7,939E-03	4,961E-03	3,439E-03	7,155E-04
3 905	8,116E-03	8,368E-03	8,228E-03	8,056E-03	8,016E-03	5,031E-03	3,509E-03	7,454E-04
3 910	7,623E-03	7,803E-03	7,728E-03	7,620E-03	7,529E-03	4,587E-03	3,106E-03	5,296E-04
3 915	7,459E-03	7,666E-03	7,562E-03	7,423E-03	7,368E-03	4,451E-03	2,988E-03	4,789E-04
3 920	7,415E-03	7,658E-03	7,517E-03	7,337E-03	7,324E-03	4,425E-03	2,970E-03	4,764E-04
3 925	7,317E-03	7,628E-03	7,417E-03	7,160E-03	7,227E-03	4,347E-03	2,906E-03	4,543E-04
3 930	7,493E-03	7,687E-03	7,596E-03	7,471E-03	7,401E-03	4,515E-03	3,061E-03	5,259E-04
3 935	7,689E-03	7,833E-03	7,795E-03	7,729E-03	7,595E-03	4,707E-03	3,240E-03	6,218E-04
3 940	7,741E-03	7,914E-03	7,848E-03	7,752E-03	7,646E-03	4,763E-03	3,296E-03	6,561E-04
3 945	7,787E-03	8,004E-03	7,894E-03	7,738E-03	7,692E-03	4,821E-03	3,358E-03	7,007E-04
3 950	7,833E-03	8,055E-03	7,940E-03	7,779E-03	7,737E-03	4,885E-03	3,427E-03	7,543E-04
3 955	7,891E-03	8,047E-03	7,999E-03	7,921E-03	7,795E-03	4,954E-03	3,499E-03	8,055E-04
3 960	7,925E-03	8,081E-03	8,033E-03	7,952E-03	7,828E-03	4,993E-03	3,539E-03	8,363E-04
3 965	7,949E-03	8,109E-03	8,058E-03	7,972E-03	7,852E-03	5,022E-03	3,569E-03	8,589E-04
3 970	7,866E-03	8,050E-03	7,973E-03	7,851E-03	7,770E-03	4,954E-03	3,510E-03	8,264E-04
3 975	7,724E-03	7,900E-03	7,830E-03	7,718E-03	7,630E-03	4,834E-03	3,403E-03	7,650E-04
3 980	7,648E-03	7,791E-03	7,752E-03	7,679E-03	7,555E-03	4,776E-03	3,355E-03	7,420E-04
3 985	7,631E-03	7,775E-03	7,735E-03	7,662E-03	7,538E-03	4,780E-03	3,368E-03	7,607E-04
3 990	7,553E-03	7,702E-03	7,656E-03	7,577E-03	7,461E-03	4,721E-03	3,320E-03	7,393E-04

Annex B
Description of the solar spectral irradiance model

B.1 Overview

The program used to generate spectral irradiance data is SMARTS 2.9.5, available from https://www.nrel.gov/grid/solar-resource/smarts.html. Detailed descriptions of the SMARTS model (simple model of the atmospheric radiative transfer of sunshine) are provided elsewhere in the literature (Gueymard 2001; Myers et al. 2002).

SMARTS 2.9.5 requires a number of input parameters in a default file (SMARTS295.INP.TXT), or user specified text input file with extension .INP.TXT.

The main components of the input file are (see also Table B.1):

1. Comments (a text header);
2. Site pressure/altitude;
3. Atmospheric profile (US Standard 1976, mid latitude summer, Tropical, etc., total of 10 choices);
4. Water vapour amount;
5. Ozone amount;
6. Gaseous absorption (default from atmosphere, or pollution levels);
7. Carbon dioxide concentration;
8. Extraterrestrial solar spectrum (9 choices, plus user defined option);
9. Aerosol optical depth profile (11 choices, plus user defined);
10. Aerosol optical depth total magnitude (‘turbidity’);
11. Near and far region ground albedo (65 material spectral functions, plus user defined or fixed value input);
12. Spectral limits and wavelength steps for calculation and output files;
13. Spectral output data selection (43 spectral dependent parameters available, including solar spectral irradiance for each radiometric component);
14. Configuration for circumsolar field-of-view computations;
15. Configurations for smoothing filter (FWHM; Gaussian (normal distribution) or triangular shape) if desired – output defaults to additional ‘scan file’, *.SCN.TXT;
16. Illuminance calculations options;
17. Ultraviolet (280 nm to 400 nm only) calculation option;
18. Solar geometry specifications (options are specific zenith/azimuth angles, air mass, time, date and location);

The default values of most parameters are those that produce the ASTM G173-03 (ASTM 2003) reference direct normal beam and global horizontal spectra for photovoltaic applications.

In addition to the default reference U.S. Standard Atmosphere (NOAA 1976), the model also allows for selection of other reference atmospheres and a selection of various seasonal atmospheric profiles.

The user may choose to modify the amount of variable pollutant gases by selecting five pre-defined pollution levels. Selectable levels are pristine/exceptionally clean, standard clean, light pollution, moderate pollution and heavy pollution. Further modification of concentrations of pollutant gases may be assigned by user specifiable mixing-layer pollutant concentrations for ten atmospheric gases. The 10 pollutant gases are formaldehyde (CH_2O), methane (CH_4), carbon monoxide (CO), nitrous acid (HNO_2) nitric acid (HNO_3), nitric oxide (NO), nitrogen dioxide (NO_2), nitrogen trioxide (NO_3), ozone (O_3), and sulfur dioxide (SO_2).

After editing/constructing the appropriate input file and saving it to the default input file name SMARTS295.INP.TXT, the SMARTS model executable is run. The input file is read, and up to three output files are generated. Output files consist of;

(i) SMARTS295.OUT.TXT: descriptive text and calculated results with an echo of input parameters

(ii) SMARTS295.EXT.TXT: spectral results, (user selected data as a function of wavelength)

(iii) SMARTS295.SCN.TXT: only if the “smoothing” option is chosen. This is a "scan" file of spectral data representing (at the specified wavelength interval) the integration of the minimum wavelength step spectral data within the limits of a user-selected filter (Gaussian or triangular profile). This option serves to simulate the solar spectrum produced by a spectroradiometer with the specified bandpass.

B.2 SMARTS 2.9.5 input parameter file

The text input file consists of a sequence of lines containing either text or a number to indicate the parameter, or parameter values, and whether the values are default, or user selected. In Tables B.1, B.2 and B.3, columns (except first lines) are exact images of text files in the exact structure needed to produce the indicated CIE spectrum table. Each value in a line represents either a code (integer values like 1 or 0) to indicate a user-entered a value, a default or standard value selected for certain parameters (e.g. “370” represents the present value of 370 parts per million by volume of CO_2). The preceding “1” indicates that the next value is a user input, and not a default value. Other numbers indicate spectral wavelengths and intervals, such as “280 4000 0,5” (e.g. 280 4000 0,5 are start, stop, and wavelength intervals in nm). Text in quotes refer to specific lookup file names such as “S&F_Rural” for Shettle and Fenn rural aerosol vertical profile. The final list of numbers in the columns is for air mass values.

NOTE: In the actual input file there can be NO BLANK LINES in the sequence of input parameters, as a blank line indicates the END of the input file. Note that lines 6a, 6b, 8a, 10c, 10d, are always to be ignored (not used, not even left blank) in any of the input files for the data in this document. All input and output files use the period as decimal delimiter.

Table B.1 – Parameters of Table A.1, A.2, A.3, A.6 and A.7

Card 1	comment	'E0'	'H1 DN1'	'H2 DN2'
Card 2	option of site's pressure	1	1	1
Card 2a	If card 2 = 0, SPR site's pressure if card 2 = 1, SPR / ALTIT altitude / HEIGHT height If card 2 = 2 LATIT latitude / ALTIT / HEIGHT	1013.25 0 0	1013.25 0 0	1013.25 0 0
Card 3	option of atmosphere model	1	1	1
Card 3a	If card 3 = 0 (user defined), TAIR atmospheric temperature / RH relative humidity / season ("winter" or "summer") / TDAY average daily temperature if card 3 = 1, "USSA"...	'USSA'	'USSA'	'USSA'
Card 4	option of water vapour (1=use ATM default, 0-user input on 4a)	1	0	0
Card 4a	If card 4 = 0, water vapour (at the site altitude in units of cm, or equivalently, g/cm) if card 4 = 1, defaulted value by selected reference atmosphere and the site altitude if card 4 = 2, calculated value by TAIR and RH	-	1.42	1.42
Card 5	option of ozone	1	0	0
Card 5a	If card 5 = 0, IALT (0 to bypasses the site altitude, 1 is in case of an elevated site) / Abo3 ozone total-column (atm-cm) [NOTE SPACE] if card 5 = 1, default value	-	0 0.34	0 0.34
Card 6	option of conditions for gaseous absorption (1=default input, jump to card 7)	1	1	1
Card 6a	If card 6 = 0, ILOAD option for tropospheric pollution (0 card 6b will be read, 1 default PRISTINE ATMOSPHERIC conditions, 2 LIGHT POLLUTION, 3 MODERATE POLLUTION, 4 SEVERE POLLUTION) If card 6 = 1, defaulted value [card 6a not used]	-	-	-
Card 6b	If card 6 = 0 card 6a = 0 input all tropospheric pollution [card 6b not used]	-	-	-
Card 7	carbon dioxide columnar volumetric concentration (ppmv)	370	370	370
Card 7a	option to select the proper extraterrestrial spectrum (0 - 8, 0 is Gueymard, 2004)	0	0	0
Card 8	the aerosol model (quoted text)	'S&F_RURAL'	'S&F_RURAL'	'S&F_RURAL'
Card 8a	If card 8 = "user", ALPHA1, ALPHA2, OMEGL, GG [card 8a not used]	-	-	-
Card 9	option to select the correct turbidity data input	0	0	0

Table B.1 continued

Card 9a	If card 9 = 0, Aerosol optical depth at 500 nm, τ5. If card 9 = 1, Ångström's turbidity coefficient, ß. If card 9 = 2, Schüepp's turbidity coefficient, B. If card 9 = 3, Meteorological range, VR. If card 9 = 4, Prevailing visibility, V. If card 9 = 5, Aerosol optical depth at 550 nm, τ550	0	0.1	0.27
Card 10	option to select the correct zonal (or far-field) albedo (-1 - 66)	-1	-1	-1
Card 10a	If card 10 = -1, RHOX Zonal broadband Lambertian ground albedo	0.2	0.2	0.2
Card 10b	option for tilted surface calculations (0 = no calculation, 1 = calculation using card 10c)	0	0	0
Card 10c	If card 10b = 1, IALBDG card 10 / TILT Tilt angle / WAZIM Surface azimuth [card 10c not used]	-	-	-
Card 10d	If card 10b = 1 and IALBDG = -1, RHOG Local broadband Lambertian foreground albedo [card 10d not used]	-	-	-
Card 11	WLMN min max wavelengths / WLMX max wavelengths / SUNCOR correction factor equal to the inverse squared actual radius vector, or true Sun-Earth distance / SOLARC selected Solar constant [NOTE SPACES]	280 4000 1 1367	280 4000 1 1366.1	280 4000 1 1366.1
Card 12	option to select the results to be printed on Files. If card 12 = 0, Only broadband results if card 12 = 1, read card 12a and output File 16 ('SMARTS295_OUT.txt'). if card 12 = 2, read card 12b and card 12c, output File 17 ('smarts295.ext.txt'). if card 12 = 3, read card 12b and card 12c, output file 16 and 17	2	2	2
Card 12a	If card 12 >= 1, WPMN min wavelengths / WPMX max wavelengths / INTVLN min wavelengths / WPMX max wavelengths / INTVL	290 4000 5	290 4000 5	290 4000 5
Card 12b	If card 12 >=2, select the total number of output type	1	2	2
Card 12c	If card 12 >=2, select type of out put file (1 - 43) 1=ETR, 2=DNI, 4=GHI, 9=DNI+Circumsolar	1	2 4	2 4
Card 13	option controlling the calculation of circumsolar radiation, 0 = bypasses these calculations	1	1	1
Card 13a	If card 13 = 1, indicates simulated radiometer, SLOPE Slope angle (half cone) / APERT Half aperture (or "opening") angle / LIMIT Limit angle (half cone) [NOTE SPACES]	0 2.9 0	0 2.9 0	0 2.9 0
Card 14	Option for using the scanning/smoothing virtual filter, 0 = no calculation, 1=use filter, read card 14a, Output to SMARTS.SCN.TXT (File 18)	1	1	1

Table B.1 continued

Card 14a	If card 14 = 1, IFILT / WV1 min wavelength / WV2 max wavelength / STEP Interval / FWHM Full Width at Half Maximum Option for the transmittance shape IFILT = 0, triangular shape, = 1 Gaussian shape	1 290 3990 5 5	1 290 3990 5 5	1 290 3990 5 5
Card 15	Option for illuminance If card 15 = 0 bypassed, = 1 or -1 V lambda 1924, = 2 or -2 V lambda 1988, = 1 or 2 add luminous efficacy	0	0	0
Card 16	Option UV calculations If card 16 = 0 no calculation, = 1 UVA, UVB, UV index	0	0	0
Card 17	Option for solar position and air mass calculations (2= use air mass alone)	2	2	2
Card 17a	If card 17 = 0, input ZENIT Apparent solar zenith angle / AZIM Solar azimuth	1	1	1

Table B.2 – Parameters of Tables A.4 and A.5: Global solar spectral irradiance at sea level

Card 1	CIE-H3, CIE-H9, CIE-H10, CIE-H11	CIE-H4	CIE-H5	CIE-H6	CIE-H7	CIE-H8
Card 2	1	1	1	1	1	1
Card 2a	1013.25 0 0	1013.25 0 0	1013.25 0 0	1013.25 0 0	1013.25 0 0	1013.25 0 0
Card 3	1	1	1	1	1	1
Card 3a	'USSA'	'USSA'	'USSA'	'USSA'	'USSA'	'USSA'
Card 4	0	0	0	0	0	0
Card 4a	2	0	2	4	2	2
Card 5	0	0	0	0	0	0
Card 5a	0 0.3	0 0.0	0 0.3	0 0.6	0 0.3	0 0.3
Card 6	1	1	1	1	1	1
Card 6a	-	-	-	-	-	-
Card 6b	-	-	-	-	-	-
Card 7	370	370	370	370	370	370
Card 7a	0	0	0	0	0	0
Card 8	'S&F_RURAL'	'S&F_RURAL'	'S&F_RURAL'	'S&F_RURAL'	'S&F_RURAL'	'S&F_RURAL'
Card 8a	-	-	-	-	-	-
Card 9	0	0	0	0	0	0
Card 9a	0.2	0.0	0.0	0.0	0.0	0.4
Card 10	-1	-1	-1	-1	-1	-1
Card 10a	0.2	0.0	0.0	0.0	0.2	0.2
Card 10b	0	0	0	0	0	0
Card 10c	-	-	-	-	-	-
Card 10d	-	-	-	-	-	-
Card 11	280 4000 1 1366.1	280 4000 1 1366.1	280 4000 1 1366.1	280 4000 1 1366.1	280 4000 1 1366.1	280 4000 1 1366.1
Card 12	2	2	2	2	2	2
Card 12a	290 4000 5	290 4000 5	290 4000 5	290 4000 5	290 4000 5	290 4000 5
Card 12b	1	1	1	1	1	1
Card 12c	4	4	4	4	4	4
Card 13	1	1	1	1	1	1
Card 13a	0 2.9 0	0 2.9 0	0 2.9 0	0 2.9 0	0 2.9 0	0 2.9 0
Card 14	1	1	1	1	1	1
Card 14a	1 290 3990 5 5	1 290 3990 5 5	1 290 3990 5 5	1 290 3990 5 5	1 290 3990 5 5	1 290 3990 5 5
Card 15	0	0	0	0	0	0
Card 16	0	0	0	0	0	0
Card 17	2	2	2	2	2	2
Card 17a	1 1.5 2 5.6	1	1	1	1	1

Table B.3 – Parameters of Table A.8: Direct normal spectral irradiance and direct spectral irradiance projected on a horizontal surface at sea level

Card 1	CIE-DN3, CIE-D1, CIE-D2, CIE-D3	CIE-DN4	CIE-DN5	CIE-DN6	CIE-DN7
Card 2	1	1	1	1	1
Card 2a	1013.25 0 0	1013.25 0 0	1013.25 0 0	1013.25 0 0	1013.25 0 0
Card 3	1	1	1	1	1
Card 3a	'USSA'	'USSA'	'USSA'	'USSA'	'USSA'
Card 4	0	0	0	0	0
Card 4a	2	0	2	4	2
Card 5	0	0	0	0	0
Card 5a	0 0.3	0 0.0	0 0.3	0 0.6	0 0.3
Card 6	1	1	1	1	1
Card 6a	-	-	-	-	-
Card 6b	-	-	-	-	-
Card 7	370	370	370	370	370
Card 7a	0	0	0	0	0
Card 8	'S&F_RURAL'	'S&F_RURAL'	'S&F_RURAL'	'S&F_RURAL'	'S&F_RURAL'
Card 8a	-	-	-	-	-
Card 9	0	0	0	0	0
Card 9a	0.2	0	0	0	0.4
Card 10	-1	-1	-1	-1	-1
Card 10a	0.2	0.0	0.0	0.0	0.2
Card 10b	0	0	0	0	0
Card 10c	-	-	-	-	-
Card 10d	-	-	-	-	-
Card 11	280 4000 1 1366.1	280 4000 1 1366.1	280 4000 1 1366.1	280 4000 1 1366.1	280 4000 1 1366.1
Card 12	2	2	2	2	2
Card 12a	290 4000 5	290 4000 5	290 4000 5	290 4000 5	290 4000 5
Card 12b	1	1	1	1	1
Card 12c	9	9	9	9	9
Card 13	1	1	1	1	1
Card 13a	0 2.9 0	0 2.9 0	0 2.9 0	0 2.9 0	0 2.9 0
Card 14	1	1	1	1	1
Card 14a	1 290 3990 5 5	1 290 3990 5 5	1 290 3990 5 5	1 290 3990 5 5	1 290 3990 5 5
Card 15	0	0	0	0	0
Card 16	0	0	0	0	0
Card 17	2	2	2	2	2
Card 17a	1 1.5 2 5.6	1	1	1	1

B.3 SMARTS 2.9.5 output files

The minimum wavelength intervals are 0,5 nm from 285 nm to 400 nm, 1 nm from 400 nm to 1 700 nm, and 5 nm from 1 700 nm to 3 990 nm. If 0,5 nm is selected for the wavelength interval, the data produced will have the smallest wavelength step interval for each wavelength region mentioned above, as long as the "create OUT and EXT files" option is selected.

Spectral data in columns of wavelength and irradiance are output into the *.EXT.TXT files.

B.4 Important note about the spectral irradiance tables

The tabulated data in this document have been produced using a 5 nm (FWHM) normal distribution as smoothing filter, normalized to unit amplitude. The data have been applied about the tabulated wavelength, to represent a 5 nm bandpass spectroradiometer measurement, in 5 nm steps from 290 nm to 3 990 nm. 3 990 nm is the SMARTS 2.9.5 long wavelength limit allowed for the 5 nm smoothing filter used to produce the tables.

The smoothing represents an integration of the product of the smallest wavelength step spectral data computed internally to the model, convoluting by a Gaussian shaped line spread function (LSF) with a 5 nm bandwidth (full-width at half maximum, FWHM), the LSF being normalized to have unit area. Additional information about the interpolation of spectral data and bandpass effects can be found in CIE 214:2014 (CIE 2014).

The spectral irradiance values in all of the tables in Annex A are given in the unit $W \cdot m^{-2} \cdot nm^{-1}$. If the data in the tables are summed and multiplied by 5, the total integrated value of the tabulated solar spectrum is produced.

B.5 Air mass

Regarding the direct normal spectral irradiance, $E_{\lambda,\mathrm{DN}n}$ (n = 1 to 7), and the direct spectral irradiance projected on a horizontal surface, $E_{\lambda,\mathrm{D}n}$ (n = 1 to 3), the user should note that the smoothed output SCN file only includes the Extraterrestrial, Direct Beam, Direct Beam plus Circumsolar, Global Horizontal, and Global Tilted[1] (when tilted geometry is specified) spectra at the given wavelength step. For the direct normal spectral irradiance and the direct spectral irradiance projected on a horizontal surface, the Direct Beam data in the SCN file must be multiplied by the cosine of the zenith angle for the specified air mass. For the air masses of “1,5”, “2,0” and “5,6” of Table A.7 the zenith angles are “48,2°”, “60,0°” and “79,7°”, respectively, and the cosine factor for each, respectively is “0,67”, “0,50” and “0,18”. The direct beam irradiance on a horizontal surface may be selected for the model output explicit spectral data generated with the SCN data.

[1] These terms are used in SMARTS 2.9.5, not used in this document except "Direct Beam".

Annex C
Figures representing the data of Tables A.2 through A.8

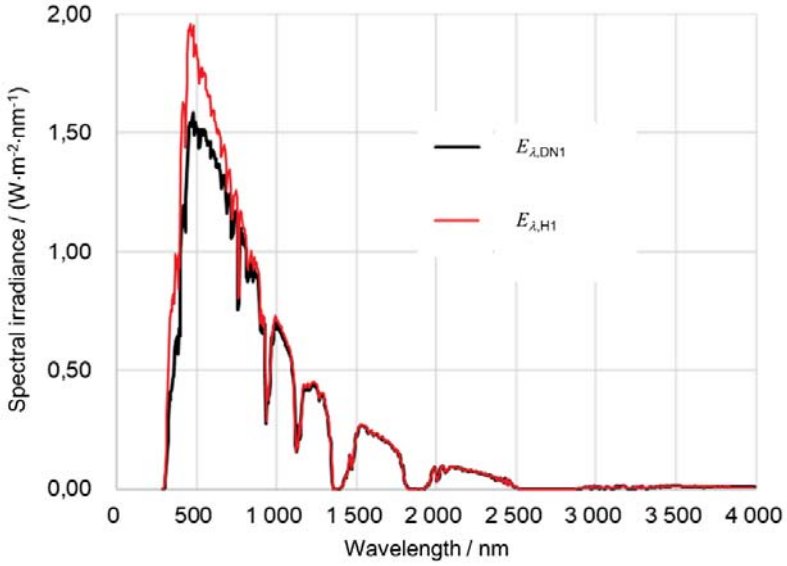

Figure C.1 – Plot of CIE-H1 ($E_{\lambda,H1}$) and CIE-DN1 ($E_{\lambda,DN1}$) data (Tables A.2 and A.6): Global solar spectral irradiance on a horizontal plane and direct normal solar spectral irradiance at sea level
Air Mass: 1,0, AOD: 0,10, Water Vapour: 1,42 atm-cm, O_3: 0,34 atm-cm, Albedo: 0,2 (see also Table 1)

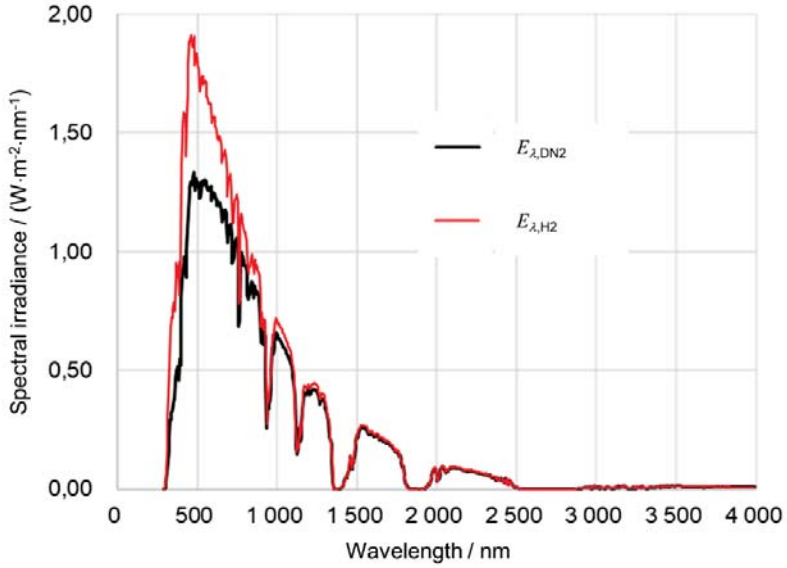

Figure C.2 – Plot of CIE-H2 ($E_{\lambda,H2}$) and CIE-DN2 ($E_{\lambda,DN2}$) data (Tables A.3 and A.7): Global solar spectral irradiance on a horizontal plane and direct normal solar spectral irradiance at sea level
Air Mass: 1,0, AOD: 0,27, Water Vapour: 1,42 atm-cm, O_3: 0,34 atm-cm, Albedo: 0,2 (see also Table 1)

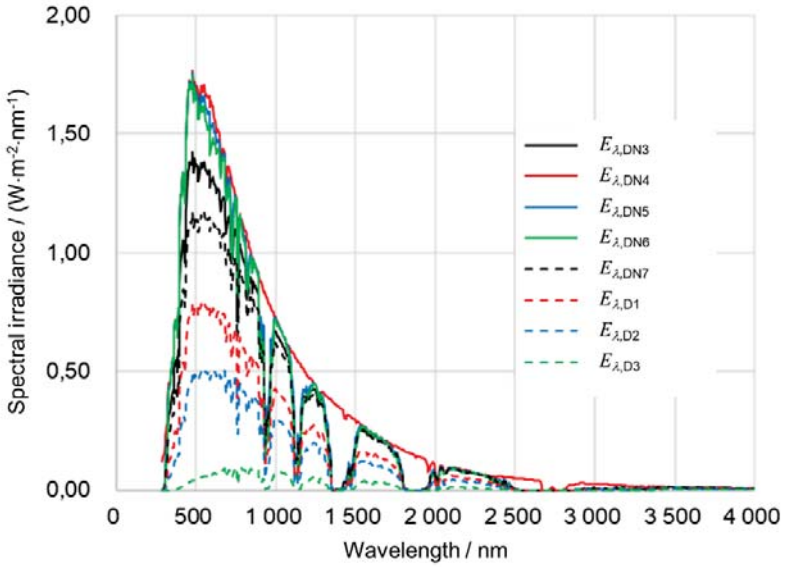

Figure C.3 – Plot of CIE-DN3 ($E_{\lambda,DN3}$) to CIE-DN7 ($E_{\lambda,DN7}$) and CIE-D1 ($E_{\lambda,D1}$) to CIE-D3 ($E_{\lambda,D3}$) data (Table A.8):
Direct normal spectral irradiance and direct spectral irradiance projected on a horizontal surface at sea level
(see Table 1 for atmospheric conditions)

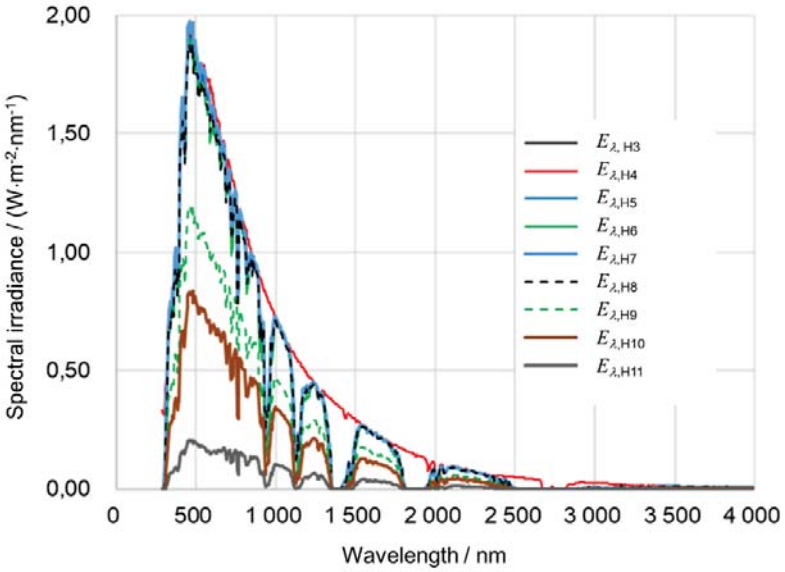

Figure C.4 – Plot of CIE-H3 ($E_{\lambda,H3}$) to CIE-H11 ($E_{\lambda,H11}$) data (Table A.4 and A.5):
Global solar spectral irradiance on a horizontal plane at sea level
(see Table 1 for atmospheric conditions)

Annex D
Historical information

Over the two decades from 1985 to 2005, there have been two principal sets of tables of solar spectral irradiance data widely used throughout the world as reference spectra. One was the solar irradiance data presented in CIE 085-1989 (CIE 1989), and the other standard tables of direct and global solar spectral irradiance for photovoltaic performance evaluation presented by the American Society for Testing and Materials (ASTM). The two ASTM spectra were essentially duplicated, with slight modifications and differences (Myers 2011), in the standards of the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC). The ASTM spectra were consolidated in a single standard G159-98 (ASTM 1998) – see also (Hulstrom et al. 1985) and (Bird and Riordan 1986). ASTM G159-98 was replaced in 2003 by ASTM G173-03 (ASTM 2003), republished in 2012 (ASTM 2012) to reflect the state of the art in atmospheric spectral modeling and atmospheric physics (Gueymard et al. 2002). The IEC also updated the photovoltaic reference spectra of IEC 60904-3 in the same manner, first in 2008, and adopted in its latest (4th) edition in 2019 (IEC 2019). Both ASTM G173 and IEC 60904-3 are based on an earlier (2.9.2) version of the SMARTS model (see Annex B).

CIE 20-1972 (CIE 1972) (now out of print and deprecated) contained spectral irradiance tables derived by Schulze (1970), after the work of Deirmendjian and Sekera (1954), by using simple manipulations of the extraterrestrial solar spectra as published by NASA (1970) and later reported by Thekaekara (1974). TC 2-17 adopted a more detailed modeling approach and a different extraterrestrial solar spectrum to derive the tabulations in CIE 085-1989, using information that was current in the early 1980s.

There were many inadequacies in CIE 085-1989 (CIE 1989), which the present document supersedes. The tabulated spectral data were not available in electronic format and were difficult to manipulate with respect to the inclusion of optical properties of materials and surfaces of interest in several fields. An older (Wehrli 1985) extraterrestrial solar spectrum was used as the starting point for the calculations. The Wehrli data were tabulated at variable wavelength intervals throughout the spectrum, with the smallest interval given to the band structure of the solar spectrum. CIE 085-1989 contained only a limited discussion on the preparation of the spectra, the equivalent bandpass and the use of any smoothing or other filtering. Data for the UV-A region were sparse and non-existent in the UV-B region. The tables were based on independent results from two different radiative models with slightly different extraterrestrial solar spectra and samplings, which resulted in inconsistencies. One of these models (Bird and Hulstrom 1983) can no longer be used since it is not possible to reproduce these spectra, as the BRITE algorithm used seven binary coded data tapes specific to the mainframe computer used for the computations (Gueymard et al. 2002). Moreover, the tables' sampling interval was that of the models themselves, providing no solutions for users in need of smaller sampling intervals, in the UV for instance (see 3.2).

New extraterrestrial and terrestrial spectra (Brueckner et al. 1993; Gueymard 2004) and new modeling capabilities have recently become available. The need for harmonization with updated reference spectra by ASTM was also recognized. Consequently, a revision of CIE 085-1989 was highly desirable, and therefore TC 2-88 decided to undertake this revision using the new model (SMARTS). The present document updates CIE 085-1989 with current radiative transfer information, improved UV data and smaller sampling interval, but for continuity uses the same atmospheric conditions and approximately the same table content and ordering as CIE 085-1989.

To address the issues described above, TC 2-17 and TC 2-88 searched for a single model capable of predicting spectra covering UV-A and UV-B, at smaller sampling intervals than needed in most industrial applications, and that can be reproduced by any interested party. A very important requirement was also that this new model be validated by actual measurements. Gueymard's solar spectral irradiance model, initially developed at the Florida Solar Energy Center, met all these requirements. TC 2-17 and TC 2-88 therefore used this model to develop the CIE-recommended reference tables contained in this document. The model has undergone

a stringent validation process throughout its development (Gueymard 2001; Gueymard et al. 2002; Gueymard 2005; Gueymard 2008).

Myers et al. (2002) presented a summary of atmospheric radiation solar spectrum models used to develop solar radiation spectral energy irradiance values as reference standards. Complex spectral solar radiation uses extremely high spectral resolution ("line-by-line") or moderate to high resolution ("band model") calculations. The many combinations of geometry, input parameters and their interaction require a great deal of understanding by the user, and interpretation of the results can be challenging (Blättner et al. 1974). Less complex models based on parameterization of transmittance and absorption functions for basic atmospheric constituents are suitable for engineering applications. These models offer a simple approach to modeling solar irradiance schemes. The SMARTS model described in Annex B is such a model. The model can be viewed as an updated, improved and considerably expanded version of the two models that were used to develop the data published in CIE 085-1989.

To maintain some historical consistency, the atmospheric and albedo conditions of this document are the same as conditions prescribed to generate the data tables in CIE 085-1989. Those values were prescribed in the table headings of CIE 085-1989. The conditions include prescribed levels of water vapour, aerosol optical depth (AOD), ozone, air mass (representing the solar geometry), and importantly, the fixed broadband albedo value of 0,2.

Part of the UV radiation reflected from the horizontal surface is re-reflected downward by the atmosphere, to contribute to the total UV on the surface. The model provides the user a menu of 65 spectral albedo files (reflectance as a function of wavelength) for man-made and natural materials, as well as provision for a user-specified spectral albedo, and the option for a constant broadband value that may be input by the user. Generally, most natural and man-made materials have much lower albedo values in the UV than the fixed broadband albedo of 0,2 specified in CIE 085-1989. Using optional material albedo files with the model in place of the specified constant albedo of 0,2 will result in lower UV spectral data values.

For example, trial runs with input data as in Table 4 of CIE 085-1989 using spectral albedo files for 'Dry Sand' (albedo of 0,04 at 340 nm) result in a spectral irradiance of 0,705 $W \cdot m^{-2} \cdot nm^{-1}$ at 340 nm, and 'Basalt' (albedo of 0,145 at 340 nm) produces a spectral irradiance of 0,738 $W \cdot m^{-2} \cdot nm^{-1}$ at 340 nm, as opposed to 0,746 $W \cdot m^{-2} \cdot nm^{-1}$ at 340 nm using the fixed 0,2 albedo as applied throughout the CIE 085-1989 document. For the sake of consistency with the original CIE 085-1989 approach, the constant albedo value of 0,2 is used in generating the model results in the present document.

The newer extraterrestrial solar spectrum available in the current model has 0,5 nm resolution in the UV (Gueymard 2004), a factor of 4 higher than the Wehrli spectra. In the discussion of the models used in Clauses 3.1 and 3.2 of CIE 085-1989, there is no mention of any compensation for different bandpasses, filtering or smoothing of the data used to produce the tables.

The heading of Table 2 in CIE 085-1989 states 'averaged over a 20 cm^{-1}' interval. The Wehrli (1985) spectrum is claimed to have a resolution of 2 nm. At 340 nm (29 411 cm^{-1}), this corresponds to a resolution of 173 cm^{-1} and at 1 000 nm to a resolution of 20 cm^{-1}. It is unlikely that higher resolution 'bandpass averages' in the region shorter than 1 000 nm were actually calculated. The '20 cm^{-1}' spectral resolution is often quoted with respect to the Bird and Hulstrom (1983), Hulstrom et al. (1985) and Bird and Riordan (1986) models and the Justus and Paris (1985; 1988) models. However this spectral resolution is actually defined as that of the Air Force Geophysical Laboratory (AFGL) LOWTRAN model versions (Anderson et al. (1994) provide a history of that model), which were often used for comparison with and validation of the simpler models.

Note that in Table 4 of CIE 085-1989 at 340 nm the value of 0,6793 $W \cdot m^{-2}$ is reported (with a supposed bandpass of 20 cm^{-1}, equivalent to 0,2 nm). If one selects the Wehrli (1985) spectrum (one of the 9 available in the SMARTS 2.9.5 solar spectral model (Annex B) inputs) and the

conditions for Table 4 of CIE 085-1989 are applied, the resulting SMARTS 2.9.5 value at 340 nm (without a 5 nm bandpass average applied) is 0,6813 $W \cdot m^{-2} \cdot nm^{-1}$, a difference of only 0,002 $W \cdot m^{-2} \cdot nm^{-1}$ or 0,3 % from the CIE 085-1989 Table 4 value at 340 nm. This implies that the CIE 085-1989 model results are actually values at specific wavelengths and not values averaged over specific wavelength intervals or bandpass.

The value at 340 nm for the CIE-H1 ($E_{\lambda,\mathrm{H1}}$) spectrum convolved with a 5 nm (FWHM) Gaussian bandpass, using the Gueymard (2004) extraterrestrial solar spectrum, is 0,7562 $W \cdot m^{-2} \cdot nm^{-1}$, much greater than the CIE 085-1989 value quoted as 0,679 $W \cdot m^{-2} \cdot nm^{-1}$. This is the result of the 5 nm integration interval applied in the present document.

Note that the papers of Justus and Paris (1985; 1988) mention that the models developed and used have the spectral resolution 'degraded' from 2 nm (based on Wehrli (1985) extraterrestrial solar spectrum) to the 5 nm sampling interval in the UV/VIS/NIR regions. These issues mean the new tabulated data, for the same given atmospheric parameters, may result in significantly different magnitudes from the CIE 085-1989 tabulated data in various spectral regions.

Annex E
Relation between this document and CIE 085-1989

Given the flexibility of the SMARTS model (see Annex B) and the range of atmospheric parameters published in CIE 085-1989, tests were run to establish that this new model would closely replicate the data in all of the tables of CIE 085-1989. An example of the comparison between the earlier and present spectra is shown in Figure E.1, where tabulated data of Tables 4 of CIE 085-1989 are compared with the (small sampling) spectra for CIE-H1 ($E_{\lambda,\mathrm{H1}}$).

To produce the correspondence seen in Figure E.1, several standard assumptions were made regarding the input file configuration and parameter choices. These included;

- The United States Standard Atmosphere Profile of 1976 (USSA 76) was used (NOAA 1976).
- The default profiles for the USSA 76 atmosphere were used, except for prescribed parameters (such as O_3 and total column water vapour).
- The rural aerosol distribution of Shettle and Fenn (Shettle and Fenn 1979) was assumed.
- A carbon dioxide concentration of $3{,}70 \times 10^{-8}$ by volume was assumed. See (Conway et al. 2004).
- The direct beam included a circumsolar component, as if seen with a 5,6° field of view pyrheliometer.

Annex B contains the exact model input files used to generate the reference solar spectral irradiance data plotted in Figure E.1 and tabulated in Annex A.

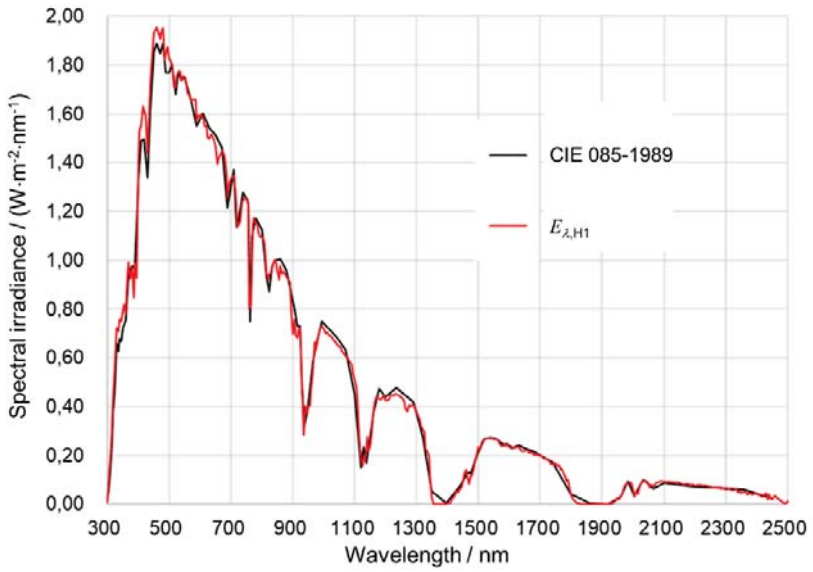

Figure E.1 – Comparison of spectrum according to Table 4 (Global solar spectral irradiance at sea level) of CIE 085-1989 (black line) and spectrum CIE-H1 ($E_{\lambda,\mathrm{H1}}$) according to Table A.2 (red line)

As these assumptions produced the good agreement seen in Figure E.1 between the tabulated data of CIE 085-1989 with a large sampling interval and the data produced by the Solar Spectral model (Annex B) program with a small sampling interval, it was clear that this model could be used to produce an update of the CIE 085-1989 data in smaller wavelength steps. In addition, it is clear that a user can also reproduce the new CIE spectra and tables.

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