Designation: E490 – 00a (Reapproved 2014)

Standard
Solar Constant and Zero Air Mass Solar Spectral Irradiance Tables[1]

1. Scope

1.1 These tables define the solar constant and zero air mass solar spectral irradiance for use in thermal analysis, thermal balance testing, and other tests of spacecraft and spacecraft components and materials. Typical applications include the calculation of solar absorptance from spectral reflectance data and the specification of solar UV exposure of materials during simulated space radiation testing.

1.2 These tables are based upon data from experimental measurements made from high-altitude aircraft, spacecraft, and the earth's surface and from solar spectral irradiance models.

1.3 The values stated in SI units are to be regarded as standard. Other units of measurement are included for information purposes only.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

E349 Terminology Relating to Space Simulation

3. Terminology

3.1 *air mass* (optical air mass) (AM), *n*—the ratio of the path length or radiation through the atmosphere (l_m) at any given angle, *Z* degrees, to the sea level path length toward the zenith (l_z).

$$AM = l_m/l_z \cong \sec Z \text{ , for } Z \leq 62° \tag{1}$$

Symbol: AM1 (air mass one), AM2 (air mass two)

3.2 *astronomical unit* (AU), *n*—a unit of length defined as the mean distance between the earth and the sun, that is, 149 597 890 ± 500 km.

3.3 *integrated irradiance, n*—spectral irradiance integrated over a specific wavelength interval from λ_1 to λ_2, measured in W·m^{-2}, Symbol:

$$E_{\lambda 1 - \lambda 2} = \int_{\lambda_1}^{\lambda_2} E_\lambda d\lambda \tag{2}$$

3.4 *irradiance at a point on a surface (E)*, *n*—quotient of the radiant flux incident on an element of the surface containing the point, by the area of that element, measured in W·m^{-2}.

3.5 *irradiance, spectral (E), n*—the irradiance per unit wavelength interval at a specific wavelength, or as a function of wavelength measured in W·m^{-2} · μm^{-1}.

3.6 *solar constant, n*—the total solar irradiance at normal incidence on a surface in free space at the earth's mean distance from the sun (1 AU).

3.7 *zero air mass* (AMO), *n*—the absence of atmospheric attenuation of the solar irradiance at one astronomical unit from the sun.

3.8 Additional definitions will be found in Terminology E349.

4. Solar Constant

4.1 The solar constant is 1366.1 W·m^{-2} . This value is the mean of daily averages from six different satellites over the 1978 to 1998 time period, all measured with absolute cavity radiometers, as reported by Fröhlich and Lean (1) [3]. The standard deviation of this mean value is 425 ppm, with a 0.37 % minimum-to-maximum range (1363 to 1368 W·m^{-2}).

4.2 Table 1 summarizes the results in different units, and Table 2 presents the total solar irradiance at various planetary distances from the sun.

TABLE 1 The Solar Constant in Alternative Units

Solar constant	= 1366.1 W·m⁻² [SI unit]
	= 0.136 61 W·cm⁻²
	= 136.61 m W·cm⁻²
	= 1.3661 × 10⁶ erg·cm⁻²·s⁻¹
	= 126.9 W·ft⁻²
	= 1.959 cal·cm⁻²·min⁻¹ (±0.03 cal·cm⁻²·min⁻¹)
	= 0.0326 cal·cm⁻²·s⁻¹
	= 433.4 Btu·ft⁻²·h⁻¹
	= 0.1202 Btu·ft⁻²·s⁻¹
	= 1.956 Langleys·min⁻¹

The calorie is the thermochemical calorie-gram and is defined as 4.1840 absolute joules.

The Btu is the thermochemical British thermal unit and is defined by the relationship: 1 Btu (thermochemical)/(°F·lb) = 1 cal·g (thermochemical)/(°C·g).

The Langley, however, is defined in terms of the older thermal unit the calorie·g (mean), that is, 1 Langley = 1 cal·g (mean)·cm⁻²; 1 cal·g (mean) = 4.190 02 J.

TABLE 2 Solar Irradiance at the Planets

Planet	Solar Irradiance, W·m⁻²		
	Mean	Perihelion	Aphelion
Mercury	9116.4	14447.5	6271.1
Venus	2611.0	2646.4	2575.7
Earth	1366.1	1412.5	1321.7
Mars	588.6	715.9	491.7
Jupiter	50.5	55.7	45.9
Saturn	15.04	16.76	13.53
Uranus	3.72	4.11	3.37
Neptune	1.510	1.515	1.507
Pluto	0.878	1.571	0.560

5. Solar Spectral Irradiance (Zero Air Mass)

5.1 The zero air mass solar spectral irradiance is based on data from satellites, space shuttle missions, high-altitude aircraft, rocket soundings, ground-based solar telescopes, and modeled spectral irradiance.

5.2 Table 3 presents the solar spectral irradiance in tabular form for the range from 0.1195 to 1000 µm. The first column gives the wavelength (λ) in µm; the second gives the spectral irradiance (E_λ) at λ in W·m⁻²·µm⁻¹; the third gives the total irradiance for the range from 0 to λ ($E_{0-\lambda}$) in W·m⁻²; and the fourth gives the percentage of the solar constant associated with wavelengths shorter than λ ($D_{0-\lambda}$).

5.3 Table 4 presents an abridged version of Table 3. Fig. 1 plots the Standard Solar Spectral Irradiance.

5.4 The Upper Atmosphere Research Satellite (UARS)/ATLAS-2 spectrum is used between 0.1195 and 0.3795 µm. The values are averages of two different instruments, the Solar Ultraviolet Spectral Irradiance Monitor (SUSIM) and the Solar Stellar Irradiance Comparison Experiment (SOLSTICE), reported by Woods et al (2). These data were obtained in April 1993 during a period of moderate solar activity and were scaled by a factor of 0.968 43 to match the Neckel and Labs (3) data over the 0.33- to 0.41-µm range.

5.5 In the 0.41- to 0.825-µm range, the values are from the McMath Solar Telescope at Kitt Peak, Arizona, as reported by Neckel and Labs (3).

5.6 In the 0.825- to 4.0-µm range, the values are from the high-resolution solar atlas computed by Kurucz (4). These data were smoothed to the 2- and 20-nm wavelength resolution of Table 3 and scaled by a factor of 1.000 85 to match the Neckel and Labs (3) data at 0.825 µm.

5.7 In the 4.0- to 1000-µm range, the values are from the logarithmic irradiance versus wavelength fits reported by Smith and Gottlieb (5). These data were scaled by a factor of 0.994 37 to match the Kurucz (4) data at 4.0 µm.

5.8 The composite spectral irradiance data were then scaled by a factor of 0.997 45 to force the integrated total irradiance to equal the solar constant.

6. Keywords

6.1 extraterrestrial; solar constant; solar spectral irradiance; space; zero air mass

TABLE 3 Solar Spectral Irradiance—Standard Curve

NOTE 1—Double lines indicate change in wavelength interval of integration. Each column continues to next page.

NOTE 2—λ = wavelength, μm,
E_λ = solar spectral irradiance averaged over small bandwidth centered at λ, W·m^{-2}·μm^{-1},
$E_{0-\lambda}$ = integrated solar irradiance in the wavelength range from 0 to λ, W·m^{-2}, and
$D_{0-\lambda}$ = percentage of solar constant (1366.1 W·m^{-2}) associated with wavelengths shorter than λ.

λ	E_λ	$E_{0-\lambda}$	$D_{0-\lambda}$	λ	E_λ	$E_{0-\lambda}$	$D_{0-\lambda}$
0.1195	6.185×10^{-2}	0.0	0.0	1.306	413.6	1117.65	81.81
0.1205	0.5614	3.12×10^{-4}	2.28×10^{-5}	1.308	412.3	1118.47	81.87
0.1215	4.901	3.04×10^{-3}	2.23×10^{-4}	1.310	410.6	1119.30	81.93
0.1225	1.184	6.09×10^{-3}	4.45×10^{-4}	1.312	403.3	1120.11	81.99
0.1235	4.770×10^{-2}	6.70×10^{-3}	4.91×10^{-4}	1.314	402.2	1120.92	82.05
0.1245	3.433×10^{-2}	6.74×10^{-3}	4.94×10^{-4}	1.316	397.9	1121.72	82.11
0.1255	2.882×10^{-2}	6.77×10^{-3}	4.96×10^{-4}	1.318	401.7	1122.52	82.17
0.1265	3.523×10^{-2}	6.81×10^{-3}	4.98×10^{-4}	1.320	401.6	1123.32	82.23
0.1275	2.127×10^{-2}	6.83×10^{-3}	5.00×10^{-4}	1.322	398.6	1124.12	82.29
0.1285	1.727×10^{-2}	6.85×10^{-3}	5.02×10^{-4}	1.324	398.1	1124.92	82.35
0.1295	3.994×10^{-2}	6.88×10^{-3}	5.04×10^{-4}	1.326	394.9	1125.71	82.40
0.1305	0.1206	6.96×10^{-3}	5.10×10^{-4}	1.328	390.8	1126.49	82.46
0.1315	3.983×10^{-2}	7.04×10^{-3}	5.16×10^{-4}	1.330	387.8	1127.27	82.52
0.1325	4.126×10^{-2}	7.08×10^{-3}	5.19×10^{-4}	1.332	386.3	1128.05	82.57
0.1335	0.1680	7.19×10^{-3}	5.26×10^{-4}	1.334	389.2	1128.82	82.63
0.1345	4.572×10^{-2}	7.29×10^{-3}	5.34×10^{-4}	1.336	386.6	1129.60	82.69
0.1355	3.802×10^{-2}	7.34×10^{-3}	5.37×10^{-4}	1.338	383.2	1130.37	82.74
0.1365	3.094×10^{-2}	7.37×10^{-3}	5.40×10^{-4}	1.340	379.0	1131.13	82.80
0.1375	2.920×10^{-2}	7.40×10^{-3}	5.42×10^{-4}	1.342	380.5	1131.89	82.86
0.1385	3.968×10^{-2}	7.44×10^{-3}	5.44×10^{-4}	1.344	379.8	1132.65	82.91
0.1395	7.562×10^{-2}	7.49×10^{-3}	5.49×10^{-4}	1.346	377.2	1133.41	82.97
0.1405	6.075×10^{-2}	7.56×10^{-3}	5.54×10^{-4}	1.348	376.6	1134.16	83.02
0.1415	4.207×10^{-2}	7.61×10^{-3}	5.57×10^{-4}	1.350	372.4	1134.91	83.08
0.1425	4.683×10^{-2}	7.66×10^{-3}	5.61×10^{-4}	1.352	374.2	1135.66	83.13
0.1435	5.110×10^{-2}	7.71×10^{-3}	5.64×10^{-4}	1.354	372.2	1136.40	83.19
0.1445	5.093×10^{-2}	7.76×10^{-3}	5.68×10^{-4}	1.356	367.5	1137.14	83.24
0.1455	5.535×10^{-2}	7.81×10^{-3}	5.72×10^{-4}	1.358	368.8	1137.88	83.29
0.1465	7.087×10^{-2}	7.87×10^{-3}	5.76×10^{-4}	1.360	367.3	1138.62	83.35
0.1475	8.485×10^{-2}	7.95×10^{-3}	5.82×10^{-4}	1.362	367.7	1139.35	83.40
0.1485	8.199×10^{-2}	8.03×10^{-3}	5.88×10^{-4}	1.364	365.7	1140.08	83.46
0.1495	7.956×10^{-2}	8.12×10^{-3}	5.94×10^{-4}	1.366	365.7	1140.81	83.51
0.1505	8.697×10^{-2}	8.20×10^{-3}	6.00×10^{-4}	1.368	362.8	1141.54	83.56
0.1515	9.266×10^{-2}	8.29×10^{-3}	6.07×10^{-4}	1.370	359.9	1142.27	83.62
0.1525	0.1163	8.39×10^{-3}	6.14×10^{-4}	1.372	362.1	1142.99	83.67
0.1535	0.1299	8.52×10^{-3}	6.23×10^{-4}	1.374	361.1	1143.71	83.72
0.1545	0.2059	8.68×10^{-3}	6.36×10^{-4}	1.376	356.1	1144.43	83.77
0.1555	0.2144	8.89×10^{-3}	6.51×10^{-4}	1.378	358.0	1145.14	83.83
0.1565	0.1847	9.09×10^{-3}	6.66×10^{-4}	1.380	357.9	1145.86	83.88
0.1575	0.1717	9.27×10^{-3}	6.79×10^{-4}	1.382	354.5	1146.57	83.93
0.1585	0.1675	9.44×10^{-3}	6.91×10^{-4}	1.384	354.7	1147.28	83.98
0.1595	0.1754	9.61×10^{-3}	7.04×10^{-4}	1.386	353.2	1147.99	84.03
0.1605	0.1934	9.80×10^{-3}	7.17×10^{-4}	1.388	353.0	1148.69	84.09
0.1615	0.2228	1.00×10^{-2}	7.32×10^{-4}	1.390	350.6	1149.40	84.14
0.1625	0.2519	1.02×10^{-2}	7.50×10^{-4}	1.392	351.3	1150.10	84.19
0.1635	0.2841	1.05×10^{-2}	7.69×10^{-4}	1.394	348.8	1150.80	84.24
0.1645	0.2973	1.08×10^{-2}	7.91×10^{-4}	1.396	348.7	1151.50	84.29
0.1655	0.4302	1.12×10^{-2}	8.17×10^{-4}	1.398	349.2	1152.19	84.34
0.1665	0.3989	1.16×10^{-2}	8.48×10^{-4}	1.400	342.7	1152.89	84.39
0.1675	0.3875	1.20×10^{-2}	8.76×10^{-4}	1.402	343.9	1153.57	84.44
0.1685	0.4556	1.24×10^{-2}	9.07×10^{-4}	1.404	342.8	1154.26	84.49
0.1695	0.5877	1.29×10^{-2}	9.46×10^{-4}	1.406	343.1	1154.95	84.54
0.1705	0.6616	1.35×10^{-2}	9.91×10^{-4}	1.408	342.7	1155.63	84.59
0.1715	0.6880	1.42×10^{-2}	1.04×10^{-3}	1.410	341.8	1156.32	84.64
0.1725	0.7252	1.49×10^{-2}	1.09×10^{-3}	1.412	334.8	1156.99	84.69
0.1735	0.7645	1.57×10^{-2}	1.15×10^{-3}	1.414	337.7	1157.67	84.74
0.1745	0.9067	1.65×10^{-2}	1.21×10^{-3}	1.416	338.5	1158.34	84.79
0.1755	1.079	1.75×10^{-2}	1.28×10^{-3}	1.418	338.6	1159.02	84.84
0.1765	1.220	1.86×10^{-2}	1.36×10^{-3}	1.420	335.7	1159.69	84.89
0.1775	1.403	2.00×10^{-2}	1.46×10^{-3}	1.422	331.5	1160.36	84.94
0.1785	1.538	2.14×10^{-2}	1.57×10^{-3}	1.424	331.1	1161.02	84.99
0.1795	1.576	2.30×10^{-2}	1.68×10^{-3}	1.426	328.1	1161.68	85.04
0.1805	1.831	2.47×10^{-2}	1.81×10^{-3}	1.428	328.5	1162.34	85.08
0.1815	2.233	2.67×10^{-2}	1.96×10^{-3}	1.430	325.7	1162.99	85.13
0.1825	2.243	2.90×10^{-2}	2.12×10^{-3}	1.432	330.0	1163.65	85.18
0.1835	2.244	312×10^{-2}	2.28×10^{-3}	1.434	328.4	1164.31	85.23
0.1845	2.066	3.34×10^{-2}	2.44×10^{-3}	1.436	328.5	1164.96	85.28
0.1855	2.311	3.55×10^{-2}	2.60×10^{-3}	1.438	328.3	1165.62	85.32
0.1865	2.700	3.81×10^{-2}	2.79×10^{-3}	1.440	318.8	1166.27	85.37

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TABLE 3 *Continued*

λ	E_λ	$E_{0-\lambda}$	$D_{0-\lambda}$	λ	E_λ	$E_{0-\lambda}$	$D_{0-\lambda}$
0.1875	3.009	4.09×10^{-2}	2.99×10^{-3}	1.442	318.6	1166.91	85.42
0.1885	3.291	4.41×10^{-2}	3.22×10^{-3}	1.444	319.7	1167.54	85.47
0.1895	3.569	4.75×10^{-2}	3.48×10^{-3}	1.446	321.6	1168.19	85.51
0.1905	3.764	5.12×10^{-2}	3.74×10^{-3}	1.448	321.6	1168.83	85.56
0.1915	4.165	5.51×10^{-2}	4.03×10^{-3}	1.450	318.7	1169.47	85.61
0.1925	4.113	5.93×10^{-2}	4.34×10^{-3}	1.452	315.4	1170.10	85.65
0.1935	3.808	6.32×10^{-2}	4.63×10^{-3}	1.454	314.3	1170.73	85.70
0.1945	5.210	6.77×10^{-2}	4.96×10^{-3}	1.456	313.1	1171.36	85.74
0.1955	5.427	7.30×10^{-2}	5.35×10^{-3}	1.458	316.7	1171.99	85.79
0.1965	6.008	7.88×10^{-2}	5.77×10^{-3}	1.460	315.6	1172.62	85.84
0.1975	6.191	8.49×10^{-2}	6.21×10^{-3}	1.462	312.1	1173.25	85.88
0.1985	6.187	9.10×10^{-2}	6.66×10^{-3}	1.464	310.5	1173.87	85.93
0.1995	6.664	9.75×10^{-2}	7.14×10^{-3}	1.466	310.8	1174.49	85.97
0.2005	7.326	0.104	7.65×10^{-3}	1.468	311.4	1175.12	86.02
0.2015	8.023	0.112	8.21×10^{-3}	1.470	310.2	1175.74	86.07
0.2025	8.261	0.120	8.81×10^{-3}	1.472	307.3	1176.35	86.11
0.2035	9.217	0.129	9.44×10^{-3}	1.474	303.4	1176.96	86.16
0.2045	10.25	0.139	1.02×10^{-2}	1.476	304.8	1177.57	86.20
0.2055	10.54	0.149	1.09×10^{-2}	1.478	304.4	1178.18	86.24
0.2065	11.08	0.160	1.17×10^{-2}	1.480	306.8	1178.79	86.29
0.2075	12.65	0.172	1.26×10^{-2}	1.482	304.4	1179.40	86.33
0.2085	15.05	0.186	1.36×10^{-2}	1.484	303.9	1180.01	86.38
0.2095	21.38	0.204	1.49×10^{-2}	1.486	303.3	1180.62	86.42
0.2105	27.92	0.229	1.67×10^{-2}	1.488	285.5	1181.21	86.47
0.2115	33.54	0.259	1.90×10^{-2}	1.490	301.5	1181.80	86.51
0.2125	31.30	0.292	2.14×10^{-2}	1.492	301.8	1182.40	86.55
0.2135	33.15	0.324	2.37×10^{-2}	1.494	303.3	1183.00	86.60
0.2145	40.03	0.360	2.64×10^{-2}	1.496	297.2	1183.60	86.64
0.2155	36.15	0.399	2.92×10^{-2}	1.498	299.4	1184.20	86.68
0.2165	32.27	0.433	3.17×10^{-2}	1.500	301.1	1184.80	86.73
0.2175	35.29	0.467	3.42×10^{-2}	1.502	292.4	1185.40	86.77
0.2185	44.37	0.506	3.71×10^{-2}	1.504	279.9	1185.97	86.81
0.2195	46.92	0.552	4.04×10^{-2}	1.506	284.8	1186.53	86.86
0.2205	47.33	0.599	4.39×10^{-2}	1.508	291.9	1187.11	86.90
0.2215	39.58	0.643	4.70×10^{-2}	1.510	294.7	1187.70	86.94
0.2225	49.65	0.687	5.03×10^{-2}	1.512	291.3	1188.28	86.98
0.2235	63.01	0.744	5.44×10^{-2}	1.514	288.3	1188.86	87.03
0.2245	58.97	0.805	5.89×10^{-2}	1.516	288.2	1189.44	87.07
0.2255	52.29	0.860	6.30×10^{-2}	1.518	288.4	1190.01	87.11
0.2265	39.40	0.906	6.63×10^{-2}	1.520	286.6	1190.59	87.15
0.2275	39.92	0.946	6.92×10^{-2}	1.522	282.4	1191.16	87.19
0.2285	51.95	0.992	7.26×10^{-2}	1.524	283.5	1191.72	87.24
0.2295	47.71	1.04	7.62×10^{-2}	1.526	284.6	1192.29	87.28
0.2305	52.12	1.09	7.99×10^{-2}	1.528	284.6	1192.86	87.32
0.2315	50.97	1.14	8.37×10^{-2}	1.530	276.5	1193.42	87.36
0.2325	53.26	1.20	8.75×10^{-2}	1.532	282.3	1193.98	87.40
0.2335	44.74	1.24	9.11×10^{-2}	1.534	278.4	1194.54	87.44
0.2345	38.97	1.29	9.41×10^{-2}	1.536	280.6	1195.10	87.48
0.2355	51.42	1.33	9.74×10^{-2}	1.538	277.3	1195.66	87.52
0.2365	48.59	1.38	0.101	1.540	273.0	1196.21	87.56
0.2375	48.44	1.43	0.105	1.542	275.3	1196.76	87.60
0.2385	41.96	1.47	0.108	1.544	277.8	1197.31	87.64
0.2395	44.12	1.52	0.111	1.546	277.2	1197.87	87.69
0.2405	39.56	1.56	0.114	1.548	271.1	1198.41	87.73
0.2415	51.48	1.61	0.118	1.550	271.3	1198.96	87.76
0.2425	70.60	1.67	0.122	1.552	273.1	1199.50	87.80
0.2435	66.53	1.73	0.127	1.554	267.6	1200.04	87.84
0.2445	60.97	1.80	0.132	1.556	267.1	1200.58	87.88
0.2455	49.39	1.85	0.136	1.558	268.9	1201.11	87.92
0.2465	50.40	1.90	0.139	1.560	268.3	1201.65	87.96
0.2475	55.50	1.96	0.143	1.562	269.7	1202.19	88.00
0.2485	45.65	2.01	0.147	1.564	266.9	1202.73	88.04
0.2495	56.38	2.06	0.151	1.566	265.4	1203.26	88.08
0.2505	60.10	2.12	0.155	1.568	263.3	1203.79	88.12
0.2515	46.01	2.17	0.159	1.570	264.5	1204.31	88.16
0.2525	41.55	2.21	0.162	1.572	267.3	1204.85	88.20
0.2535	51.55	2.26	0.165	1.575	261.0	1205.37	88.23
0.2545	59.57	2.32	0.169	1.576	253.6	1205.89	88.27
0.2555	79.30	2.38	0.175	1.578	254.7	1206.40	88.31
0.2565	101.8	2.48	0.181	1.580	265.0	1206.92	88.35
0.2575	125.4	2.59	0.190	1.582	259.0	1207.44	88.39
0.2585	125.1	2.71	0.199	1.584	259.1	1207.96	88.42
0.2595	104.0	2.83	0.207	1.586	259.9	1208.48	88.46
0.2605	88.51	2.92	0.214	1.588	249.0	1208.99	88.50
0.2615	89.80	3.01	0.220	1.590	240.5	1209.48	88.53

TABLE 3 *Continued*

λ	E_λ	$E_{0-\lambda}$	$D_{0-\lambda}$	λ	E_λ	$E_{0-\lambda}$	$D_{0-\lambda}$
0.2625	103.6	3.11	0.228	1.592	252.6	1209.97	88.57
0.2635	165.8	3.24	0.237	1.594	258.3	1210.48	88.61
0.2645	249.7	3.45	0.253	1.596	250.6	1210.99	88.65
0.2655	252.7	3.70	0.271	1.598	254.5	1211.49	88.68
0.2665	249.4	3.95	0.289	1.600	251.2	1212.00	88.72
0.2675	250.8	4.20	0.308	1.602	248.9	1212.50	88.76
0.2685	243.8	4.45	0.326	1.604	249.7	1213.00	88.79
0.2695	238.9	4.69	0.343	1.606	247.7	1213.50	88.83
0.2705	267.3	4.94	0.362	1.608	249.1	1213.99	88.87
0.2715	224.4	5.19	0.380	1.610	240.0	1214.48	88.90
0.2725	197.4	5.40	0.395	1.612	243.0	1214.96	88.94
0.2735	196.5	5.60	0.410	1.614	244.9	1215.45	88.97
0.2745	132.6	5.76	0.422	1.616	237.4	1215.93	89.01
0.2755	175.1	5.92	0.433	1.618	242.3	1216.41	89.04
0.2765	242.8	6.13	0.448	1.620	236.9	1216.89	89.08
0.2775	233.8	6.36	0.466	1.622	238.3	1217.37	89.11
0.2785	159.3	6.56	0.480	1.624	241.6	1217.85	89.15
0.2795	85.55	6.68	0.489	1.626	240.2	1218.33	89.18
0.2805	94.63	6.77	0.496	1.628	241.8	1218.81	89.22
0.2815	208.3	6.92	0.507	1.630	239.3	1219.29	89.25
0.2825	294.1	7.18	0.525	1.632	238.7	1219.77	89.29
0.2835	313.5	7.48	0.547	1.634	235.9	1220.25	89.32
0.2845	235.3	7.75	0.568	1.636	235.7	1220.72	89.36
0.2855	163.1	7.95	0.582	1.638	227.4	1221.18	89.39
0.2865	322.7	8.20	0.600	1.640	226.2	1221.63	89.42
0.2875	336.3	8.53	0.624	1.642	226.6	1222.09	89.46
0.2885	322.2	8.85	0.648	1.644	227.8	1222.54	89.49
0.2895	472.7	9.25	0.677	1.646	229.4	1223.00	89.52
0.2905	601.3	9.79	0.717	1.648	229.2	1223.46	89.56
0.2915	580.8	10.38	0.760	1.650	227.2	1223.91	89.59
0.2925	521.9	10.93	0.800	1.652	226.8	1224.37	89.63
0.2935	535.5	11.46	0.839	1.654	226.2	1224.82	89.66
0.2945	508.8	11.98	0.877	1.656	226.0	1225.27	89.69
0.2955	553.2	12.51	0.916	1.658	225.2	1225.72	89.72
0.2965	509.6	13.04	0.955	1.660	224.5	1226.17	89.76
0.2975	507.3	13.55	0.992	1.662	224.6	1226.62	89.79
0.2985	465.5	14.04	1.03	1.664	222.7	1227.07	89.82
0.2995	484.0	14.51	1.06	1.666	221.2	1227.51	89.86
0.3005	420.0	14.97	1.10	1.668	219.3	1227.95	89.89
0.3015	455.5	15.40	1.13	1.670	222.5	1228.40	89.92
0.3025	489.0	15.88	1.16	1.672	217.3	1228.84	89.95
0.3035	620.6	16.43	1.20	1.674	219.3	1229.27	89.98
0.3045	602.5	17.04	1.25	1.676	216.1	1229.71	90.02
0.3055	594.8	17.64	1.29	1.678	216.8	1230.14	90.05
0.3065	555.7	18.22	1.33	1.680	208.0	1230.57	90.08
0.3075	615.0	18.80	1.38	1.682	205.4	1230.98	90.11
0.3085	611.4	19.42	1.42	1.684	212.9	1231.40	90.14
0.3095	496.5	19.97	1.46	1.686	213.1	1231.82	90.17
0.3105	622.4	20.53	1.50	1.688	212.0	1232.25	90.20
0.3115	729.2	21.20	1.55	1.690	210.5	1232.67	90.23
0.3125	655.9	21.90	1.60	1.692	212.3	1233.09	90.26
0.3135	699.9	22.58	1.65	1.694	211.2	1233.52	90.29
0.3145	662.9	23.26	1.70	1.696	210.0	1233.94	90.33
0.3155	633.0	23.90	1.75	1.698	208.9	1234.36	90.36
0.3165	633.2	24.54	1.80	1.700	206.3	1234.77	90.39
0.3175	773.9	25.24	1.85	1.702	204.7	1235.18	90.42
0.3185	664.9	25.96	1.90	1.704	205.2	1235.59	90.45
0.3195	710.5	26.65	1.95	1.706	205.0	1236.01	90.48
0.3205	805.1	27.41	2.01	1.708	201.7	1236.41	90.51
0.3215	699.5	28.16	2.06	1.710	201.3	1236.81	90.54
0.3225	688.6	28.85	2.11	1.712	198.2	1237.21	90.57
0.3235	661.3	29.53	2.16	1.714	203.7	1237.62	90.59
0.3245	760.8	30.24	2.21	1.716	202.2	1238.02	90.62
0.3255	875.8	31.06	2.27	1.718	201.0	1238.42	90.65
0.3265	979.5	31.98	2.34	1.720	199.3	1238.82	90.68
0.3275	952.7	32.95	2.41	1.722	197.5	1239.22	90.71
0.3285	917.6	33.89	2.48	1.724	195.4	1239.61	90.74
0.3295	1061	34.87	2.55	1.726	198.2	1240.01	90.77
0.3305	1016	35.91	2.63	1.728	197.1	1240.40	90.80
0.3315	965.7	36.90	2.70	1.730	198.4	1240.80	90.83
0.3325	954.9	37.86	2.77	1.732	193.6	1241.19	90.86
0.3335	921.6	38.80	2.84	1.734	187.4	1241.57	90.88
0.3345	958.9	39.74	2.91	1.736	182.7	1241.94	90.91
0.3355	943.4	40.69	2.98	1.738	186.3	1242.31	90.94
0.3365	809.5	41.57	3.04	1.740	190.5	1242.69	90.97

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TABLE 3 *Continued*

λ	E_λ	$E_{0-\lambda}$	$D_{0-\lambda}$	λ	E_λ	$E_{0-\lambda}$	$D_{0-\lambda}$
0.3375	841.8	42.40	3.10	1.742	190.2	1243.07	90.99
0.3385	921.5	43.28	3.17	1.744	190.7	1243.45	91.02
0.3395	958.1	44.22	3.24	1.746	186.7	1243.83	91.05
0.3405	1007	45.20	3.31	1.748	187.2	1244.20	91.08
0.3415	923.8	46.17	3.38	1.750	185.8	1244.57	91.10
0.3425	993.0	47.12	3.45	1.752	185.0	1244.94	91.13
0.3435	950.6	48.10	3.52	1.754	185.6	1245.31	91.16
0.3445	795.7	48.97	3.58	1.756	184.9	1245.68	91.19
0.3455	939.2	49.84	3.65	1.758	184.3	1246.05	91.21
0.3465	926.4	50.77	3.72	1.760	183.1	1246.42	91.24
0.3475	901.7	51.68	3.78	1.762	179.3	1246.78	91.27
0.3485	897.2	52.58	3.85	1.764	180.7	1247.14	91.29
0.3495	889.8	53.48	3.91	1.766	181.7	1247.51	91.32
0.3505	1050	54.45	3.99	1.768	180.2	1247.87	91.35
0.3515	979.5	55.46	4.06	1.770	179.1	1248.23	91.37
0.3525	907.9	56.40	4.13	1.772	179.4	1248.59	91.40
0.3535	1033	57.37	4.20	1.774	179.2	1248.94	91.42
0.3545	1111	58.45	4.28	1.776	176.3	1249.30	91.45
0.3555	1045	59.52	4.36	1.778	174.7	1249.65	91.48
0.3565	912.3	60.50	4.43	1.780	175.6	1250.00	91.50
0.3575	796.0	61.36	4.49	1.782	174.7	1250.35	91.53
0.3585	693.6	62.10	4.55	1.784	173.5	1250.70	91.55
0.3595	991.1	62.94	4.61	1.786	173.9	1251.05	91.58
0.3605	970.8	63.92	4.68	1.788	174.7	1251.40	91.60
0.3615	878.1	64.85	4.75	1.790	173.3	1251.74	91.63
0.3625	997.8	65.79	4.82	1.792	172.1	1252.09	91.65
0.3635	996.9	66.78	4.89	1.794	170.9	1252.43	91.68
0.3645	1013	67.79	4.96	1.796	170.6	1252.77	91.70
0.3655	1152	68.87	5.04	1.798	170.3	1253.11	91.73
0.3665	1233	70.07	5.13	1.800	169.9	1253.45	91.75
0.3675	1180	71.27	5.22	1.802	167.2	1253.79	91.78
0.3685	1101	72.41	5.30	1.804	168.8	1254.13	91.80
0.3695	1226	73.58	5.39	1.806	168.8	1254.47	91.83
0.3705	1139	74.76	5.47	1.808	168.5	1254.80	91.85
0.3715	1175	75.91	5.56	1.810	168.6	1255.14	91.88
0.3725	1054	77.03	5.64	1.812	167.5	1255.48	91.90
0.3735	920.2	78.02	5.71	1.814	165.8	1255.81	91.93
0.3745	900.4	78.93	5.78	1.816	160.5	1256.14	91.95
0.3755	1062	79.91	5.85	1.818	152.0	1256.45	91.97
0.3765	1085	80.98	5.93	1.820	159.6	1256.76	92.00
0.3775	1282	82.16	6.01	1.822	159.8	1257.08	92.02
0.3785	1327	83.47	6.11	1.824	162.4	1257.40	92.04
0.3795	1066	84.67	6.20	1.826	162.8	1257.73	92.07
0.3805	1202	85.80	6.28	1.828	161.1	1258.05	92.09
0.3815	1082	86.94	6.36	1.830	160.6	1258.37	92.11
0.3825	791.3	87.88	6.43	1.832	159.3	1258.69	92.14
0.3835	684.1	88.62	6.49	1.834	158.5	1259.01	92.16
0.3845	959.7	89.44	6.55	1.836	158.1	1259.33	92.18
0.3855	1008	90.42	6.62	1.838	156.2	1259.64	92.21
0.3865	1007	91.43	6.69	1.840	156.2	1259.95	92.23
0.3875	1004	92.43	6.77	1.842	154.0	1260.26	92.25
0.3885	984.3	93.43	6.84	1.844	154.1	1260.57	92.28
0.3895	1174	94.51	6.92	1.846	153.5	1260.88	92.30
0.3905	1247	95.72	7.01	1.848	151.0	1261.18	92.32
0.3915	1342	97.01	7.10	1.850	154.6	1261.49	92.34
0.3925	1019	98.19	7.19	1.852	153.4	1261.80	92.37
0.3935	582.3	98.99	7.25	1.854	152.5	1262.10	92.39
0.3945	1026	99.80	7.31	1.856	150.9	1262.41	92.41
0.3955	1314	100.97	7.39	1.858	152.5	1262.71	92.43
0.3965	854.5	102.05	7.47	1.860	150.3	1263.01	92.45
0.3975	928.8	102.94	7.54	1.862	150.4	1263.32	92.48
0.3985	1522	104.17	7.63	1.864	150.9	1263.62	92.50
0.3995	1663	105.76	7.74	1.866	149.4	1263.92	92.52
0.4005	1682	107.43	7.86	1.868	149.2	1264.22	92.54
0.4015	1746	109.15	7.99	1.870	150.8	1264.52	92.56
0.4025	1759	110.90	8.12	1.872	147.3	1264.81	92.59
0.4035	1684	112.62	8.24	1.874	140.1	1265.10	92.61
0.4045	1674	114.30	8.37	1.876	129.9	1265.37	92.63
0.4055	1667	115.97	8.49	1.878	144.1	1265.65	92.65
0.4065	1589	117.60	8.61	1.880	146.2	1265.94	92.67
0.4075	1628	119.21	8.73	1.882	147.4	1266.23	92.69
0.4085	1735	120.89	8.85	1.884	146.4	1266.52	92.71
0.4095	1715	122.61	8.98	1.886	143.9	1266.81	92.73
0.4105	1532	124.24	9.09	1.888	145.3	1267.10	92.75
0.4115	1817	125.91	9.22	1.890	142.4	1267.39	92.77

TABLE 3 *Continued*

λ	E_λ	$E_{0-\lambda}$	$D_{0-\lambda}$	λ	E_λ	$E_{0-\lambda}$	$D_{0-\lambda}$
0.4125	1789	127.71	9.35	1.892	140.8	1267.67	92.80
0.4135	1756	129.49	9.48	1.894	139.6	1267.95	92.82
0.4145	1737	131.23	9.61	1.896	137.3	1268.23	92.84
0.4155	1734	132.97	9.73	1.898	139.0	1268.51	92.86
0.4165	1842	134.76	9.86	1.900	139.7	1268.78	92.88
0.4175	1665	136.51	9.99	1.902	140.9	1269.07	92.90
0.4185	1684	138.18	10.12	1.904	138.6	1269.34	92.92
0.4195	1701	139.88	10.24	1.906	139.0	1269.62	92.94
0.4205	1757	141.60	10.37	1.908	137.7	1269.90	92.96
0.4215	1797	143.38	10.50	1.910	137.8	1270.17	92.98
0.4225	1582	145.07	10.62	1.912	135.4	1270.45	93.00
0.4235	1711	146.72	10.74	1.914	137.0	1270.72	93.02
0.4245	1767	148.46	10.87	1.916	136.0	1270.99	93.04
0.4255	1695	150.19	10.99	1.918	135.3	1271.26	93.06
0.4265	1698	151.88	11.12	1.920	133.3	1271.53	93.08
0.4275	1569	153.52	11.24	1.922	135.0	1271.80	93.10
0.4285	1587	155.10	11.35	1.924	134.1	1272.07	93.12
0.4295	1475	156.63	11.47	1.926	134.4	1272.34	93.14
0.4305	1135	157.93	11.56	1.928	132.2	1272.60	93.16
0.4315	1686	159.34	11.66	1.930	131.3	1272.87	93.18
0.4325	1646	161.01	11.79	1.932	130.8	1273.13	93.19
0.4335	1731	162.70	11.91	1.934	132.0	1273.39	93.21
0.4345	1670	164.40	12.03	1.936	132.8	1273.66	93.23
0.4355	1723	166.09	12.16	1.938	132.1	1273.92	93.25
0.4365	1929	167.92	12.29	1.940	129.9	1274.18	93.27
0.4375	1806	169.79	12.43	1.942	129.4	1274.44	93.29
0.4385	1567	171.47	12.55	1.944	120.3	1274.69	93.31
0.4395	1825	173.17	12.68	1.946	119.2	1274.93	93.33
0.4405	1713	174.94	12.81	1.948	127.1	1275.18	93.34
0.4415	1931	176.76	12.94	1.950	126.1	1275.43	93.36
0.4425	1980	178.71	13.08	1.952	125.5	1275.68	93.38
0.4435	1909	180.66	13.22	1.954	128.6	1275.94	93.40
0.4445	1973	182.60	13.37	1.956	127.6	1276.19	93.42
0.4455	1821	184.50	13.51	1.958	127.1	1276.45	93.44
0.4465	1891	186.35	13.64	1.960	126.1	1276.70	93.46
0.4475	2077	188.34	13.79	1.962	124.0	1276.95	93.47
0.4485	1973	190.36	13.93	1.964	122.2	1277.20	93.49
0.4495	2027	192.36	14.08	1.966	123.1	1277.44	93.51
0.4505	2144	194.45	14.23	1.968	124.0	1277.69	93.53
0.4515	2109	196.57	14.39	1.970	123.9	1277.94	93.55
0.4525	1941	198.60	14.54	1.972	121.3	1278.18	93.56
0.4535	1970	200.55	14.68	1.974	120.8	1278.43	93.58
0.4545	1979	202.53	14.83	1.976	122.4	1278.67	93.60
0.4555	2034	204.53	14.97	1.978	119.4	1278.91	93.62
0.4565	2077	206.59	15.12	1.980	119.6	1279.15	93.64
0.4575	2100	208.68	15.28	1.982	120.5	1279.39	93.65
0.4585	1971	210.71	15.42	1.984	119.7	1279.63	93.67
0.4595	2009	212.70	15.57	1.986	117.8	1279.87	93.69
0.4605	2040	214.73	15.72	1.988	119.5	1280.10	93.71
0.4615	2055	216.77	15.87	1.990	119.8	1280.34	93.72
0.4625	2104	218.85	16.02	1.992	118.0	1280.58	93.74
0.4635	2040	220.93	16.17	1.994	116.2	1280.82	93.76
0.4645	1976	222.93	16.32	1.996	117.3	1281.05	93.77
0.4655	2042	224.94	16.47	1.998	115.9	1281.28	93.79
0.4665	1921	226.92	16.61	2.000	117.0	1281.52	93.81
0.4675	2015	228.89	16.76	2.002	116.1	1281.75	93.83
0.4685	1994	230.90	16.90	2.004	114.8	1281.98	93.84
0.4695	1990	232.89	17.05	2.006	114.7	1282.21	93.86
0.4705	1877	234.82	17.19	2.008	115.4	1282.44	93.88
0.4715	2018	236.77	17.33	2.010	114.9	1282.67	93.89
0.4725	2041	238.80	17.48	2.012	114.5	1282.90	93.91
9.4735	1991	240.81	17.63	2.014	113.8	1283.13	93.93
0.4745	2051	242.84	17.78	2.016	113.7	1283.36	93.94
0.4755	2016	244.87	17.92	2.018	113.4	1283.58	93.96
0.4765	1956	246.85	18.07	2.020	111.6	1283.81	93.98
0.4775	2075	248.87	18.22	2.022	110.7	1284.03	93.99
0.4785	2009	250.91	18.37	2.024	111.6	1284.25	94.01
0.4795	2076	252.95	18.52	2.026	111.5	1284.47	94.02
0.4805	2035	255.01	18.67	2.028	110.7	1284.70	94.04
0.4815	2090	257.07	18.82	2.030	108.6	1284.92	94.06
0.4825	2023	259.13	18.97	2.032	109.8	1285.13	94.07
0.4835	2019	261.15	19.12	2.034	109.2	1285.35	94.09
0.4845	1969	263.14	19.26	2.036	108.3	1285.57	94.11
0.4855	1830	265.04	19.40	2.038	106.4	1285.79	94.12
0.4865	1625	266.77	19.53	2.040	107.8	1286.00	94.14

TABLE 3 *Continued*

λ	E_λ	$E_{0-\lambda}$	$D_{0-\lambda}$	λ	E_λ	$E_{0-\lambda}$	$D_{0-\lambda}$
0.4875	1830	268.50	19.65	2.042	107.6	1286.22	94.15
0.4885	1914	270.37	19.79	2.044	107.6	1286.43	94.17
0.4895	1960	272.31	19.93	2.046	107.1	1286.65	94.18
0.4905	2007	274.29	20.08	2.048	106.3	1286.86	94.20
0.4915	1896	276.24	20.22	2.050	105.9	1287.07	94.22
0.4925	1896	278.14	20.36	2.052	104.7	1287.28	94.23
0.4935	1888	280.03	20.50	2.054	104.6	1287.49	94.25
0.4945	2058	282.00	20.64	2.056	104.6	1287.70	94.26
0.4955	1926	283.99	20.79	2.058	104.0	1287.91	94.28
0.4965	2017	285.97	20.93	2.060	102.8	1288.12	94.29
0.4975	2018	287.98	21.08	2.062	102.3	1288.32	94.31
0.4985	1866	289.93	21.22	2.064	100.5	1288.52	94.32
0.4995	1970	291.84	21.36	2.066	102.5	1288.73	94.34
0.5005	1857	293.76	21.50	2.068	101.9	1288.93	94.35
0.5015	1812	295.59	21.64	2.070	100.3	1289.13	94.37
0.5025	1894	297.44	21.77	2.072	100.4	1289.33	94.38
0.5035	1934	299.36	21.91	2.074	100.9	1289.54	94.40
0.5045	1869	301.26	22.05	2.076	100.6	1289.74	94.41
0.5055	1993	303.19	22.19	2.078	100.0	1289.94	94.42
0.5065	1961	305.17	22.34	2.080	98.78	1290.14	94.44
0.5075	1906	307.10	22.48	2.082	98.64	1290.33	94.45
0.5085	1919	309.01	22.62	2.084	97.72	1290.53	94.47
0.5095	1916	310.93	22.76	2.086	98.52	1290.73	94.48
0.5105	1947	312.86	22.90	2.088	98.35	1290.92	94.50
0.5115	1997	314.84	23.05	2.090	97.88	1291.12	94.51
0.5125	1867	316.77	23.19	2.092	95.67	1291.31	94.53
0.5135	1861	318.63	23.32	2.094	95.93	1291.51	94.54
0.5145	1874	320.50	23.46	2.096	95.80	1291.70	94.55
0.5155	1900	322.39	23.60	2.098	96.20	1291.89	94.57
0.5165	1669	324.17	23.73	2.100	96.06	1292.08	94.58
0.5175	1726	325.87	23.85	2.102	95.77	1292.27	94.60
0.5185	1654	327.56	23.98	2.104	95.59	1292.46	94.61
0.5195	1828	329.30	24.11	2.106	95.74	1292.66	94.62
0.5205	1831	331.13	24.24	2.108	95.13	1292.85	94.64
0.5215	1906	333.00	24.38	2.110	93.96	1293.04	94.65
0.5225	1823	334.86	24.51	2.112	94.52	1293.22	94.67
0.5235	1894	336.72	24.65	2.114	94.36	1293.41	94.68
0.5245	1958	338.65	24.79	2.116	93.31	1293.60	94.69
0.5255	1930	340.59	24.93	2.118	93.11	1293.79	94.71
0.5265	1674	342.39	25.06	2.120	92.75	1293.97	94.72
0.5275	1828	344.14	25.19	2.122	92.75	1294.16	94.73
0.5285	1897	346.01	25.33	2.124	91.89	1294.34	94.75
0.5295	1918	347.91	25.47	2.126	92.08	1294.53	94.76
0.5305	1952	349.85	25.61	2.128	92.25	1294.71	94.77
0.5315	1963	351.81	25.75	2.130	92.09	1294.90	94.79
0.5325	1770	353.67	25.89	2.132	92.10	1295.08	94.80
0.5335	1923	355.52	26.02	2.134	91.55	1295.26	94.81
0.5345	1858	357.41	26.16	2.136	90.12	1295.45	94.83
0.5355	1990	359.34	26.30	2.138	91.10	1295.63	94.84
0.5365	1871	361.27	26.45	2.140	90.83	1295.81	94.85
0.5375	1882	363.14	26.58	2.142	90.64	1295.99	94.87
0.5385	1904	365.04	26.72	2.144	90.06	1296.17	94.88
0.5395	1832	366.90	26.86	2.146	89.39	1296.35	94.89
0.5405	1760	368.70	26.99	2.148	89.79	1296.53	94.91
0.5415	1881	370.53	27.12	2.150	89.57	1296.71	94.92
0.5425	1825	372.38	27.26	2.152	89.13	1296.89	94.93
0.5435	1879	374.24	27.39	2.154	88.78	1297.07	94.95
0.5445	1879	376.11	27.53	2.156	88.74	1297.24	94.96
0.5455	1901	378.00	27.67	2.158	88.42	1297.42	94.97
0.5465	1879	379.90	27.81	2.160	87.81	1297.60	94.99
0.5475	1833	381.75	27.94	2.162	86.86	1297.77	95.00
0.5485	1863	383.60	28.08	2.164	84.56	1297.94	95.01
0.5495	1895	385.48	28.22	2.166	78.49	1298.11	95.02
0.5505	1862	387.36	28.35	2.168	83.00	1298.27	95.03
0.5515	1871	389.22	28.49	2.170	85.57	1298.44	95.05
0.5525	1846	391.08	28.63	2.172	85.91	1298.61	95.06
0.5535	1882	392.95	28.76	2.174	85.92	1298.78	95.07
0.5545	1898	394.84	28.90	2.176	85.32	1298.95	95.08
0.5555	1897	396.73	29.04	2.178	84.25	1299.12	95.10
0.5565	1821	398.59	29.18	2.180	84.97	1299.29	95.11
0.5575	1846	400.43	29.31	2.182	84.25	1299.46	95.12
0.5585	1787	402.24	29.44	2.184	84.57	1299.63	95.13
0.5595	1808	404.04	29.58	2.186	84.65	1299.80	95.15
0.5605	1843	405.87	29.71	2.188	82.77	1299.96	95.16
0.5615	1824	407.70	29.84	2.190	83.04	1300.13	95.17

TABLE 3 *Continued*

λ	E_λ	$E_{0-\lambda}$	$D_{0-\lambda}$	λ	E_λ	$E_{0-\lambda}$	$D_{0-\lambda}$
0.5625	1850	409.54	29.98	2.192	83.77	1300.30	95.18
0.5635	1861	411.40	30.11	2.194	83.49	1300.46	95.20
0.5645	1854	413.25	30.25	2.196	83.18	1300.63	95.21
0.5655	1798	415.08	30.38	2.198	82.99	1300.80	95.22
0.5665	1829	416.89	30.52	2.200	82.65	1300.96	95.23
0.5675	1887	418.75	30.65	2.202	82.30	1301.13	95.24
0.5685	1810	420.60	30.79	2.204	82.11	1301.29	95.26
0.5695	1860	422.44	30.92	2.206	79.66	1301.45	95.27
0.5705	1769	424.25	31.06	2.208	79.66	1301.61	95.28
0.5715	1823	426.05	31.19	2.210	80.80	1301.77	95.29
0.5725	1892	427.90	31.32	2.212	81.05	1301.93	95.30
0.5735	1876	429.79	31.46	2.214	80.72	1302.10	95.31
0.5745	1867	431.66	31.60	2.216	79.94	1302.26	95.33
0.5755	1830	433.51	31.73	2.218	79.70	1302.42	95.34
0.5765	1846	435.35	31.87	2.220	79.97	1302.58	95.35
0.5775	1857	437.20	32.00	2.222	79.62	1302.74	95.36
0.5785	1783	439.02	32.14	2.224	79.26	1302.89	95.37
0.5795	1828	440.83	32.27	2.226	78.11	1303.05	95.38
0.5805	1838	442.66	32.40	2.228	78.26	1303.21	95.40
0.5815	1853	444.50	32.54	2.230	78.31	1303.37	95.41
0.5825	1873	446.37	32.67	2.232	78.15	1303.52	95.42
0.5835	1857	448.23	32.81	2.234	78.02	1303.68	95.43
0.5845	1860	450.09	32.95	2.236	77.58	1303.83	95.44
0.5855	1783	451.91	33.08	2.238	76.48	1303.99	95.45
0.5865	1830	453.72	33.21	2.240	76.39	1304.14	95.46
0.5875	1848	455.56	33.35	2.242	76.42	1304.29	94.48
0.5885	1750	457.36	33.48	2.244	76.24	1304.45	95.49
0.5895	1612	459.04	33.60	2.246	76.12	1304.60	95.50
0.5905	1813	460.75	33.73	2.248	75.20	1304.75	95.51
0.5915	1787	462.55	33.86	2.250	75.41	1304.90	95.52
0.5925	1808	464.35	33.99	2.252	75.12	1305.05	95.53
0.5935	1796	466.15	34.12	2.254	74.02	1305.20	95.54
0.5945	1773	467.94	34.25	2.256	74.22	1305.35	95.55
0.5955	1782	469.72	34.38	2.258	74.41	1305.50	95.56
0.5965	1805	471.51	34.52	2.260	74.21	1305.65	95.57
0.5975	1780	473.80	34.65	2.262	72.99	1305.79	95.59
0.5985	1757	475.07	34.78	2.264	73.29	1305.94	95.60
0.5995	1774	476.84	34.91	2.266	73.15	1306.09	95.61
0.6005	1746	478.60	35.03	2.268	73.27	1306.23	95.62
0.6015	1751	480.35	35.16	2.270	72.97	1306.38	95.63
0.6025	1719	482.08	35.29	2.272	72.77	1306.52	95.64
0.6035	1787	483.83	35.42	2.274	72.52	1306.67	95.65
0.6045	1776	485.61	35.55	2.276	72.39	1306.81	95.66
0.6055	1763	487.38	35.68	2.278	72.42	1306.96	95.67
0.6065	1759	489.15	35.81	2.280	71.65	1307.10	95.68
0.6075	1757	490.90	35.93	2.282	70.07	1307.24	95.69
0.6085	1743	492.65	36.06	2.284	71.25	1307.39	95.70
0.6095	1744	494.40	36.19	2.286	71.24	1307.53	95.71
0.6105	1703	496.12	36.32	2.288	71.27	1307.67	95.72
0.6115	1746	497.85	36.44	2.290	71.10	1307.81	95.73
0.6125	1705	499.57	36.57	2.292	70.67	1307.95	95.74
0.6135	1683	501.26	36.69	2.294	69.20	1308.09	95.75
0.6145	1713	502.96	36.82	2.296	69.08	1308.23	95.76
0.6155	1713	504.67	36.94	2.298	69.19	1308.37	95.77
0.6165	1609	506.33	37.06	2.300	69.53	1308.51	95.78
0.6175	1707	507.99	37.19	2.302	69.55	1308.65	95.79
0.6185	1724	509.71	37.31	2.304	69.31	1308.79	95.80
0.6195	1707	511.42	37.44	2.306	69.23	1308.93	95.81
0.6205	1734	513.14	37.56	2.308	69.01	1309.06	95.82
0.6215	1690	514.85	37.69	2.310	68.70	1309.20	95.84
0.6225	1713	516.56	37.81	2.312	68.67	1309.34	95.85
0.6235	1666	518.24	37.94	2.314	68.26	1309.48	95.86
0.6245	1656	519.91	38.06	2.316	67.79	1309.61	95.87
0.6255	1632	521.55	38.18	2.318	67.45	1309.75	95.87
0.6265	1697	523.21	38.30	2.320	67.68	1309.88	95.88
0.6275	1697	524.91	38.42	2.322	66.75	1310.02	95.89
0.6285	1697	526.61	38.55	2.324	65.36	1310.15	95.90
0.6295	1677	528.29	38.67	2.326	65.59	1310.28	95.91
0.631	1639	530.78	38.85	2.328	66.29	1310.41	95.92
0.633	1651	534.07	39.09	2.330	66.16	1310.54	95.93
0.635	1656	537.38	39.34	2.332	65.84	1310.68	95.94
0.637	1654	540.69	39.58	2.334	65.71	1310.81	95.95
0.639	1651	543.99	39.82	2.336	65.36	1310.94	95.96
0.641	1614	547.25	40.06	2.338	64.96	1311.07	95.97
0.643	1621	550.49	40.30	2.340	65.20	1311.20	95.98

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TABLE 3 *Continued*

λ	E_λ	$E_{0-\lambda}$	$D_{0-\lambda}$	λ	E_λ	$E_{0-\lambda}$	$D_{0-\lambda}$
0.645	1627	553.74	40.53	2.342	65.39	1311.33	95.99
0.647	1603	556.97	40.77	2.344	65.09	1311.46	96.00
0.649	1558	560.13	41.00	2.346	64.86	1311.59	96.01
0.651	1606	563.29	41.23	2.348	64.72	1311.72	96.02
0.653	1599	566.50	41.47	2.350	64.53	1311.85	96.03
0.655	1532	596.63	41.70	2.352	62.89	1311.98	96.04
0.657	1384	572.54	41.91	2.354	62.39	1312.10	96.05
0.659	1549	575.48	42.13	2.356	62.82	1312.23	96.06
0.661	1571	578.60	42.35	2.358	62.66	1312.35	96.07
0.663	1555	581.72	42.58	2.360	63.08	1312.48	96.07
0.665	1560	584.84	42.81	2.362	63.05	1312.61	96.08
0.667	1535	587.93	43.04	2.364	62.95	1312.73	96.09
0.669	1546	591.01	43.26	2.366	62.84	1312.86	96.10
0.671	1516	594.08	43.49	2.368	62.63	1312.98	96.11
0.673	1521	597.11	43.71	2.370	62.11	1313.11	96.12
0.675	1510	600.15	43.93	2.372	62.07	1313.23	96.13
0.677	1508	603.16	44.15	2.374	60.66	1313.35	96.14
0.679	1498	606.17	44.37	2.376	61.64	1313.48	96.15
0.681	1492	609.16	44.59	2.378	61.92	1313.60	96.16
0.683	1479	612.13	44.81	2.380	61.72	1313.72	96.17
0.685	1455	615.07	45.02	2.382	60.98	1313.85	96.17
0.687	1467	617.99	45.24	2.384	58.85	1313.97	96.18
0.689	1461	620.92	45.45	2.386	59.08	1314.08	96.19
0.691	1448	623.83	45.66	2.388	60.04	1314.20	96.20
0.693	1448	626.72	45.88	2.390	60.29	1314.32	96.21
0.695	1436	629.61	46.09	2.392	60.08	1314.44	96.22
0.697	1416	632.46	46.30	2.394	60.03	1314.56	96.23
0.699	1425	635.30	46.50	2.396	59.96	1314.68	96.24
0.701	1386	638.11	46.71	2.398	59.89	1314.80	96.25
0.703	1388	640.89	46.91	2.400	59.44	1314.92	96.25
0.705	1415	643.69	47.12	2.402	59.65	1315.04	96.26
0.707	1400	646.51	47.33	2.404	59.45	1315.16	96.27
0.709	1384	649.29	47.53	2.406	59.19	1315.28	96.28
0.711	1385	652.06	47.73	2.408	59.15	1315.40	96.29
0.713	1373	654.82	47.93	2.410	59.02	1315.52	96.30
0.715	1366	657.56	48.13	2.412	58.94	1315.63	96.31
0.717	1354	660.28	48.33	2.414	57.34	1315.75	96.31
0.719	1328	662.96	48.53	2.416	55.99	1315.86	96.32
0.721	1331	665.62	48.72	2.418	57.48	1315.98	96.33
0.723	1348	668.30	48.92	2.420	57.70	1316.09	96.34
0.725	1350	671.00	49.12	2.422	57.67	1316.21	96.35
0.727	1346	673.69	49.31	2.424	57.26	1316.32	96.36
0.729	1319	676.36	49.51	2.426	57.17	1316.44	96.36
0.731	1326	679.00	49.70	2.428	57.12	1316.55	96.37
0.733	1318	681.64	49.90	2.430	57.12	1316.67	96.38
0.735	1309	684.27	50.09	2.432	57.02	1316.78	96.39
0.737	1307	686.89	50.28	2.434	56.41	1316.89	96.40
0.739	1278	689.47	50.47	2.436	56.18	1317.01	96.41
0.741	1258	692.01	50.66	2.438	55.99	1317.12	96.41
0.743	1286	694.55	50.84	2.440	56.39	1317.23	96.42
0.745	1279	697.11	51.03	2.442	56.17	1317.34	96.43
0.747	1283	699.67	51.22	2.444	56.03	1317.46	96.44
0.749	1270	702.23	51.40	2.446	54.98	1317.57	96.45
0.751	1262	704.76	51.59	2.448	54.57	1317.68	96.46
0.753	1259	707.28	51.77	2.450	54.62	1317.79	96.46
0.755	1255	709.79	51.96	2.452	54.32	1317.89	96.47
0.757	1248	712.30	52.14	2.454	54.55	1318.00	96.48
0.759	1240	714.78	52.32	2.456	53.70	1318.11	96.49
0.761	1237	717.26	52.50	2.458	53.92	1318.22	96.50
0.763	1241	719.74	52.69	2.460	54.57	1318.33	96.50
0.765	1221	722.20	52.87	2.462	54.42	1318.44	96.51
0.767	1185	724.60	53.04	2.464	54.35	1318.55	96.52
0.769	1203	726.99	53.22	2.466	54.05	1318.65	96.53
0.771	1204	729.40	53.39	2.468	53.90	1318.76	96.53
0.773	1208	731.81	53.57	2.470	52.85	1318.87	96.54
0.775	1188	734.21	53.74	2.472	53.30	1318.97	96.55
0.777	1196	736.59	53.92	2.474	53.13	1319.08	96.56
0.779	1187	738.97	54.09	2.476	53.43	1319.19	96.57
0.781	1187	741.35	54.27	2.478	53.03	1319.29	96.57
0.783	1176	743.71	54.44	2.480	51.77	1319.40	96.58
0.785	1180	746.07	54.61	2.482	51.40	1319.50	96.59
0.787	1177	748.42	54.79	2.484	52.19	1319.61	96.60
0.789	1174	750.77	54.96	2.486	51.60	1319.71	96.60
0.791	1158	753.11	55.13	2.488	51.69	1319.81	96.61
0.793	1143	755.41	55.30	2.490	52.25	1319.92	96.62

TABLE 3 *Continued*

λ	E_λ	$E_{0\text{-}\lambda}$	$D_{0\text{-}\lambda}$	λ	E_λ	$E_{0\text{-}\lambda}$	$D_{0\text{-}\lambda}$
0.795	1134	757.68	55.46	2.492	51.98	1320.02	96.63
0.797	1152	759.97	55.63	2.494	51.75	1320.12	96.63
0.799	1135	762.26	55.80	2.496	51.52	1320.23	96.64
0.801	1142	764.54	55.96	2.498	51.54	1320.33	96.65
0.803	1129	766.81	56.13	2.500	51.55	1320.43	96.66
0.805	1115	769.05	56.30	2.52	49.84	1321.45	96.73
0.807	1120	771.29	56.46	2.54	48.14	1322.43	96.80
0.809	1095	773.50	56.62	2.56	46.72	1323.38	96.87
0.811	1114	775.71	56.78	2.58	45.50	1324.30	96.94
0.813	1115	777.94	56.95	2.60	44.57	1325.20	97.01
0.815	1107	780.16	57.11	2.62	43.05	1326.08	97.07
0.817	1104	782.37	57.27	2.64	42.11	1326.93	97.13
0.819	1063	784.54	57.43	2.66	40.79	1327.76	97.19
0.821	1080	786.68	57.59	2.68	39.68	1328.56	97.25
0.823	1073	788.84	57.74	2.70	38.67	1329.34	97.31
0.825	1075	790.99	57.90	2.72	37.63	1330.11	97.37
0.826	1080	792.06	57.98	2.74	36.63	1330.85	97.42
0.828	1081	794.23	58.14	2.76	35.46	1331.57	97.47
0.830	1063	796.37	58.30	2.78	34.68	1332.27	97.52
0.832	1051	798.48	58.45	2.80	33.85	1332.96	97.57
0.834	1041	800.58	58.60	2.82	32.97	1333.63	97.62
0.836	1052	802.67	58.76	2.84	32.09	1334.28	97.67
0.838	1044	804.77	58.91	2.86	31.19	1334.91	97.72
0.840	1040	806.85	59.06	2.88	30.32	1335.52	97.76
0.842	1036	808.93	59.21	2.90	29.69	1336.12	97.81
0.844	1024	810.99	59.37	2.92	28.90	1336.71	97.85
0.846	1028	813.04	59.52	2.94	28.17	1337.28	97.89
0.848	1023	815.09	59.67	2.96	27.50	1337.84	97.93
0.850	966.0	817.08	59.81	2.98	26.82	1338.38	97.97
0.852	996.1	819.04	59.95	3.00	26.12	1338.91	98.01
0.854	878.0	820.92	60.09	3.02	25.47	1339.43	98.05
0.856	975.5	822.77	60.23	3.04	24.65	1339.93	98.08
0.858	1005	824.75	60.37	3.06	24.22	1340.42	98.12
0.860	996.9	826.75	60.52	3.08	23.64	1340.89	98.15
0.862	994.9	828.75	60.67	3.10	23.06	1341.36	98.19
0.864	999.3	830.74	60.81	3.12	22.46	1341.82	98.22
0.866	886.2	832.63	60.95	3.14	21.98	1342.26	98.25
0.868	939.5	834.45	61.08	3.16	21.44	1342.70	98.29
0.870	974.7	836.37	61.22	3.18	20.96	1343.12	98.32
0.872	983.3	838.32	61.37	3.20	20.48	1343.53	98.35
0.874	971.3	840.28	61.51	3.22	20.00	1343.94	98.38
0.876	964.0	842.21	61.65	3.24	19.51	1344.33	98.41
0.878	974.9	844.15	61.79	3.26	19.07	1344.72	98.43
0.880	955.4	846.08	61.93	3.28	18.58	1345.10	98.46
0.882	951.1	847.99	62.07	3.30	18.02	1345.46	98.49
0.884	957.9	849.90	62.21	3.32	17.68	1345.82	98.52
0.886	938.3	851.79	62.35	3.34	17.37	1346.17	98.54
0.888	944.3	853.68	62.49	3.36	16.97	1346.51	98.57
0.890	953.0	855.57	62.63	3.38	16.59	1346.85	98.59
0.892	939.4	857.47	62.77	3.40	16.15	1347.18	98.61
0.894	933.2	859.34	62.90	3.42	15.84	1347.50	98.64
0.896	938.7	861.21	63.04	3.44	15.54	1347.81	98.66
0.898	933.9	863.08	63.18	3.46	15.20	1348.12	98.68
0.900	915.8	864.93	63.31	3.48	14.86	1348.42	98.71
0.902	891.6	866.74	63.45	3.50	14.56	1348.71	98.73
0.904	928.5	868.56	63.58	3.52	14.25	1349.00	98.75
0.906	917.6	870.41	63.71	3.54	13.93	1349.28	98.77
0.908	902.5	872.23	63.85	3.56	13.62	1349.56	98.79
0.910	891.6	874.02	63.98	3.58	13.34	1349.83	98.81
0.912	896.7	875.81	64.11	3.60	13.07	1350.09	98.83
0.914	907.1	877.61	64.24	3.62	12.81	1350.35	98.85
0.916	900.4	879.42	64.37	3.64	12.51	1350.60	98.87
0.918	895.1	881.22	64.51	3.66	12.22	1350.85	98.88
0.920	890.8	883.00	64.64	3.68	11.93	1351.09	98.90
0.922	863.0	884.76	64.77	3.70	11.62	1351.33	98.92
0.924	858.5	886.48	64.89	3.72	11.45	1351.56	98.94
0.926	861.2	888.20	65.02	3.74	11.08	1351.78	98.95
0.928	876.9	889.94	65.14	3.76	10.96	1352.00	98.97
0.930	867.7	891.68	65.27	3.78	10.78	1352.22	98.98
0.932	865.1	893.41	65.40	3.80	10.57	1352.43	99.000
0.934	864.1	895.14	65.53	3.82	10.38	1352.64	99.015
0.936	854.7	896.86	65.65	3.84	10.19	1352.85	99.030
0.938	858.0	898.57	65.78	3.86	9.983	1353.05	99.045
0.940	843.8	900.28	65.90	3.88	9.782	1353.25	99.059
0.942	825.0	901.94	66.02	3.90	9.599	1353.44	99.073

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TABLE 3 *Continued*

λ	E_λ	$E_{0-\lambda}$	$D_{0-\lambda}$	λ	E_λ	$E_{0-\lambda}$	$D_{0-\lambda}$
0.944	832.4	903.60	66.14	3.92	9.427	1353.63	99.087
0.946	837.5	905.27	66.27	3.94	9.233	1353.82	99.101
0.948	840.7	906.95	66.39	3.96	9.032	1354.00	99.114
0.950	836.9	908.63	66.51	3.98	8.857	1354.18	99.128
0.952	831.7	910.30	66.63	4.00	8.669	1354.36	99.140
0.954	808.0	911.94	66.75	4.02	8.557	1354.53	99.153
0.956	808.2	913.55	66.87	4.04	8.385	1354.70	99.165
0.958	818.8	915.18	66.99	4.06	8.217	1354.86	99.178
0.960	815.1	916.81	67.11	4.08	8.054	1355.03	99.189
0.962	808.9	918.44	67.23	4.10	7.894	1355.19	99.201
0.964	801.3	920.05	67.35	4.12	7.739	1355.34	99.213
0.966	794.7	921.64	67.47	4.14	7.587	1355.50	99.224
0.968	796.9	923.23	67.58	4.16	7.439	1355.65	99.235
0.970	795.9	924.83	67.70	4.18	7.294	1355.79	99.246
0.972	793.6	926.42	67.81	4.20	7.153	1355.94	99.256
0.974	781.5	927.99	67.93	4.22	7.015	1356.08	99.266
0.976	782.5	929.56	68.04	4.24	6.881	1356.22	99.277
0.978	777.9	931.12	68.16	4.26	6.749	1356.35	99.287
0.980	774.6	932.67	68.27	4.28	6.621	1356.49	99.296
0.982	776.4	934.22	68.39	4.30	6.496	1356.62	99.306
0.984	769.8	935.77	68.50	4.32	6.374	1356.75	99.315
0.986	766.1	937.30	68.61	4.34	6.254	1356.87	99.325
0.988	761.5	938.83	68.72	4.36	6.138	1357.00	99.334
0.990	754.1	940.34	68.83	4.38	6.024	1357.12	99.343
0.992	756.7	941.86	68.94	4.40	5.913	1357.24	99.351
0.994	755.6	943.37	69.06	4.42	5.804	1357.36	99.360
0.996	752.5	944.88	69.17	4.44	5.698	1357.47	99.368
0.998	751.0	946.38	69.28	4.46	5.594	1357.58	99.377
1.000	747.9	947.88	69.39	4.48	5.492	1357.70	99.385
1.002	746.9	949.37	69.50	4.50	5.393	1357.80	99.393
1.004	726.1	950.85	69.60	4.52	5.296	1357.91	99.401
1.006	713.6	952.29	69.71	4.54	5.201	1358.02	99.408
1.008	733.5	953.73	69.81	4.56	5.108	1358.12	99.416
1.010	731.3	955.20	69.92	4.58	5.018	1358.22	99.423
1.012	726.2	956.66	70.03	4.60	4.929	1358.32	99.430
1.014	721.0	958.10	70.13	4.62	4.842	1358.42	99.438
1.016	713.9	959.54	70.24	4.64	4.757	1358.51	99.445
1.018	710.7	960.96	70.34	4.66	4.674	1358.61	99.452
1.020	704.1	962.38	70.45	4.68	4.593	1358.70	99.458
1.022	702.1	963.78	70.55	4.70	4.514	1358.79	99.465
1.024	705.4	965.19	70.65	4.72	4.436	1358.88	99.472
1.026	702.7	966.60	70.76	4.74	4.360	1358.97	99.478
1.028	698.9	968.00	70.86	4.76	4.285	1359.06	99.484
1.030	693.7	969.39	70.96	4.78	4.212	1359.14	99.491
1.032	690.5	970.78	71.06	4.80	4.141	1359.22	99.497
1.034	681.7	972.15	71.16	4.82	4.071	1359.31	99.503
1.036	684.0	973.52	71.26	4.84	4.003	1359.39	99.509
1.038	677.2	974.88	71.36	4.86	3.936	1359.47	99.514
1.040	676.1	976.23	71.46	4.88	3.870	1359.54	99.520
1.042	674.6	977.58	71.56	4.90	3.806	1359.62	99.526
1.044	671.4	978.93	71.66	4.92	3.743	1359.70	99.531
1.046	660.0	980.26	71.76	4.94	3.681	1359.77	99.537
1.048	664.4	981.58	71.85	4.96	3.621	1359.84	99.542
1.050	662.2	982.91	71.95	4.98	3.562	1359.92	99.547
1.052	658.6	984.23	72.05	5.00	3.504	1359.99	99.552
1.054	654.9	985.54	72.14	5.05	3.394	1360.16	99.565
1.056	655.7	986.85	72.24	5.10	3.267	1360.33	99.577
1.058	645.1	988.15	72.33	5.15	3.146	1360.49	99.589
1.060	641.5	989.44	72.43	5.20	3.030	1360.64	99.600
1.062	643.8	990.73	72.52	5.25	2.920	1360.79	99.611
1.064	645.9	992.02	72.62	5.30	2.815	1360.93	99.622
1.066	639.5	993.30	72.71	5.35	2.715	1361.07	99.632
1.068	631.7	994.57	72.80	5.40	2.619	1361.20	99.642
1.070	624.1	995.83	72.90	5.45	2.527	1361.33	99.651
1.072	632.6	997.09	72.99	5.50	2.439	1361.46	99.660
1.074	627.6	998.35	73.08	5.55	2.355	1361.58	99.669
1.076	628.0	999.60	73.17	5.60	2.275	1361.69	99.677
1.078	627.2	1000.86	73.26	5.65	2.198	1361.80	99.686
1.080	624.7	1002.11	73.36	5.70	2.124	1361.91	99.693
1.082	609.9	1003.34	73.45	5.75	2.054	1362.02	99.701
1.084	618.0	1004.57	73.54	5.80	1.986	1362.12	99.708
1.086	620.8	1005.81	73.63	5.85	1.921	1362.22	99.716
1.088	610.3	1007.04	73.72	5.90	1.859	1362.31	99.723
1.090	619.9	1008.27	73.81	5.95	1.799	1362.40	99.729
1.092	615.9	1009.51	73.90	6.00	1.742	1362.49	99.736

TABLE 3 *Continued*

λ	E_λ	$E_{0-\lambda}$	$D_{0-\lambda}$	λ	E_λ	$E_{0-\lambda}$	$D_{0-\lambda}$
1.094	584.9	1010.71	73.98	6.05	1.687	1362.58	99.742
1.096	598.3	1011.89	74.07	6.10	1.634	1362.66	99.748
1.098	596.1	1013.09	74.16	6.15	1.583	1362.74	99.754
1.100	604.2	1014.29	74.25	6.20	1.534	1362.82	99.760
1.102	593.2	1015.48	74.33	6.25	1.487	1362.89	99.765
1.104	597.4	1016.67	74.42	6.30	1.442	1362.97	99.771
1.106	594.5	1017.87	74.51	6.35	1.399	1363.04	99.776
1.108	591.6	1019.05	74.60	6.40	1.357	1363.11	99.781
1.110	590.6	1020.23	74.68	6.45	1.317	1363.17	99.786
1.112	584.3	1021.41	74.77	6.50	1.278	1363.24	99.790
1.114	584.4	1022.58	74.85	6.55	1.240	1363.30	99.795
1.116	583.1	1023.74	74.94	6.60	1.204	1363.36	99.800
1.118	581.5	1024.91	75.02	6.65	1.170	1363.42	99.804
1.120	574.1	1026.06	75.11	6.70	1.136	1363.48	99.808
1.122	579.6	1027.22	75.19	6.75	1.104	1363.53	99.812
1.124	576.9	1028.38	75.28	6.80	1.073	1363.59	99.816
1.126	565.5	1029.52	75.36	6.85	1.043	1363.64	99.820
1.128	570.0	1030.65	75.44	6.90	1.014	1363.69	99.824
1.130	565.3	1031.79	75.53	6.95	0.9862	1363.74	99.827
1.132	567.8	1032.92	75.61	7.00	0.9592	1363.79	99.831
1.134	563.8	1034.05	75.69	7.05	0.9331	1363.84	99.834
1.136	565.8	1035.18	75.78	7.10	0.9080	1363.89	99.838
1.138	556.9	1036.31	75.86	7.15	0.8836	1363.93	99.841
1.140	553.0	1037.42	75.94	7.20	0.8601	1363.97	99.844
1.142	553.1	1038.52	76.02	7.25	0.8374	1364.02	99.847
1.144	551.4	1039.63	76.10	7.30	0.8154	1364.06	99.850
1.146	554.8	1040.73	76.18	7.35	0.7942	1364.10	99.853
1.148	552.5	1041.84	76.26	7.40	0.7736	1364.14	99.856
1.150	548.9	1042.94	76.34	7.45	0.7537	1364.17	99.859
1.152	545.8	1044.04	76.42	7.50	0.7344	1364.21	99.862
1.154	547.9	1045.13	76.50	7.55	0.7158	1364.25	99.864
1.156	545.5	1046.22	76.58	7.60	0.6977	1364.28	99.867
1.158	543.5	1047.31	76.66	7.65	0.6802	1364.32	99.870
1.160	532.0	1048.39	76.74	7.70	0.6633	1364.35	99.872
1.162	532.5	1049.45	76.82	7.75	0.6469	1364.38	99.874
1.164	533.2	1050.52	76.90	7.80	0.6310	1364.42	99.877
1.166	530.3	1051.58	76.98	7.85	0.6156	1364.45	99.879
1.168	531.2	1052.64	77.05	7.90	0.6006	1364.48	99.881
1.170	527.6	1053.70	77.13	7.95	0.5862	1364.51	99.883
1.172	531.5	1054.76	77.21	8.00	0.5721	1364.54	99.886
1.174	527.3	1055.82	77.29	8.05	0.5585	1364.56	99.888
1.176	518.4	1056.86	77.36	8.10	0.5453	1364.59	99.890
1.178	519.0	1057.90	77.44	8.15	0.5324	1364.62	99.892
1.180	523.9	1058.94	77.52	8.20	0.5200	1364.65	99.894
1.182	515.9	1059.98	77.59	8.25	0.5079	1364.67	99.895
1.184	510.3	1061.01	77.67	8.30	0.4961	1364.70	99.897
1.186	518.7	1062.04	77.74	8.35	0.4847	1364.72	99.899
1.188	507.5	1063.07	77.82	8.40	0.4737	1364.74	99.901
1.190	508.5	1064.08	77.89	8.45	0.4629	1364.77	99.903
1.192	516.1	1065.11	77.97	8.50	0.4525	1364.79	99.904
1.194	514.5	1066.14	78.04	8.55	0.4423	1364.81	99.906
1.196	508.4	1067.16	78.12	8.60	0.4324	1364.84	99.907
1.198	494.3	1068.16	78.19	8.65	0.4228	1364.86	99.909
1.200	500.3	1069.16	78.26	8.70	0.4135	1364.88	99.911
1.202	506.8	1070.16	78.34	8.75	0.4044	1364.90	99.912
1.204	494.8	1071.17	78.41	8.80	0.3956	1364.92	99.913
1.206	503.9	1072.16	78.48	8.85	0.3870	1364.94	99.915
1.208	489.0	1073.16	78.56	8.90	0.3787	1364.96	99.916
1.210	488.2	1074.14	78.63	8.95	0.3706	1364.98	99.918
1.212	493.3	1075.12	78.70	9.00	0.3627	1364.99	99.919
1.214	494.2	1076.10	78.77	9.05	0.3550	1365.01	99.920
1.216	493.0	1077.09	78.84	9.10	0.3475	1365.03	99.922
1.218	489.7	1078.07	78.92	9.15	0.3402	1365.05	99.923
1.220	487.5	1079.05	78.99	9.20	0.3331	1365.06	99.924
1.222	485.4	1080.02	79.06	9.25	0.3262	1365.08	99.925
1.224	484.6	1080.99	79.13	9.30	0.3195	1365.10	99.927
1.226	481.7	1081.96	79.20	9.35	0.3129	1365.11	99.928
1.228	477.1	1082.92	79.27	9.40	0.3065	1365.13	99.929
1.230	479.2	1083.87	79.34	9.45	0.3003	1365.14	99.930
1.232	475.0	1084.83	79.41	9.50	0.2942	1365.16	99.931
1.234	472.9	1085.78	79.48	9.55	0.2883	1365.17	99.932
1.236	471.9	1086.72	79.55	9.60	0.2825	1365.19	99.933
1.238	470.3	1087.66	79.62	9.65	0.2769	1365.20	99.934
1.240	465.3	1088.60	79.69	9.70	0.2714	1365.21	99.935
1.242	464.2	1089.53	79.75	9.75	0.2661	1365.23	99.936

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TABLE 3 *Continued*

λ	E_λ	$E_{0\text{-}\lambda}$	$D_{0\text{-}\lambda}$	λ	E_λ	$E_{0\text{-}\lambda}$	$D_{0\text{-}\lambda}$
1.244	461.9	1090.46	79.82	9.80	0.2608	1365.24	99.937
1.246	463.5	1091.38	79.89	9.85	0.2558	1365.25	99.938
1.248	463.3	1092.31	79.96	9.90	0.2508	1365.27	99.939
1.250	462.4	1093.23	80.03	9.95	0.2460	1365.28	99.940
1.252	457.1	1094.15	80.09	10	0.2412	1365.29	99.941
1.254	457.4	1095.07	80.16	11	0.1635	1365.49	99.956
1.256	455.1	1095.98	80.23	12	0.1152	1365.63	99.966
1.258	453.3	1096.89	80.29	13	8.341×10^{-2}	1365.73	99.973
1.260	453.0	1097.79	80.36	14	6.188×10^{-2}	1365.80	99.978
1.262	449.7	1098.70	80.43	15	4.686×10^{-2}	1365.86	99.982
1.264	447.8	1099.59	80.49	16	3.613×10^{-2}	1365.90	99.985
1.266	446.7	1100.49	80.56	17	2.830×10^{-2}	1365.93	99.988
1.268	441.7	1101.38	80.62	18	2.247×10^{-2}	1365.96	99.9896
1.270	445.3	1102.26	80.69	19	1.807×10^{-2}	1365.98	99.9911
1.272	445.2	1103.16	80.75	20	1.470×10^{-2}	1365.99	99.9923
1.274	443.1	1104.04	80.82	25	6.054×10^{-3}	1366.046	99.9961
1.276	445.1	1104.93	80.88	30	2.928×10^{-3}	1366.069	99.9977
1.278	444.0	1105.82	80.95	35	1.584×10^{-3}	1366.080	99.9985
1.280	435.6	1106.70	81.01	40	9.307×10^{-4}	1366.086	99.9990
1.282	401.4	1107.54	81.07	50	3.826×10^{-4}	1366.093	99.9995
1.284	425.9	1108.37	81.13	60	1.850×10^{-4}	1366.096	99.9997
1.286	432.8	1109.22	81.20	80	5.882×10^{-5}	1366.098	99.999 87
1.288	431.4	1110.09	81.26	100	2.418×10^{-5}	1366.099	99.999 93
1.290	425.5	1110.94	81.32	120	1.169×10^{-5}	1366.0995	99.999 96
1.292	425.4	1111.80	81.38	150	4.807×10^{-6}	1366.0997	99.999 98
1.294	422.3	1112.64	81.45	200	1.528×10^{-6}	1366.099 87	99.999 991
1.296	422.4	1113.49	81.51	250	6.275×10^{-7}	1366.099 93	99.999 995
1.298	418.4	1114.33	81.57	300	2.950×10^{-7}	1366.099 95	99.999 996
1.300	418.6	1115.17	81.63	400	1.014×10^{-7}	1366.099 97	99.999 998
1.302	413.9	1116.00	81.69	1000	3.384×10^{-9}	1366.1	100.000 000
1.304	411.1	1116.82	81.75				

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TABLE 4 Solar Spectral Irradiance-Standard Curve, Abridged Version

NOTE 1—Double lines indicate change in wavelength interval of integration. Each column continues to next page.

NOTE 2—λ = wavelength, μm;

E_λ = solar spectral irradiance averaged over small bandwidth centered at λ, $W \cdot m^{-2} \cdot m^{-1}$; and

$D_{0-\lambda}$ = percentage of the solar constant (1366.1 $W \cdot m^{-2}$) associated with wavelengths shorter than λ.

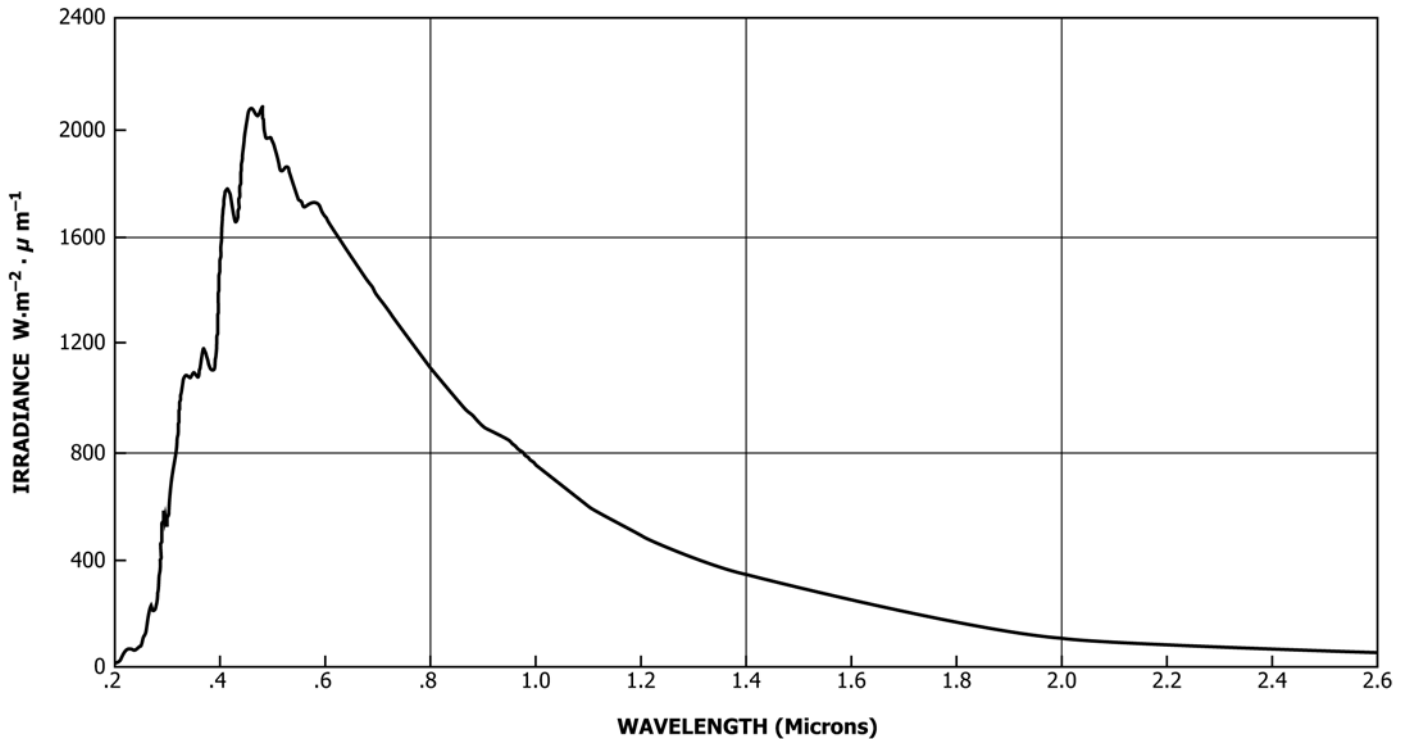| λ	E_λ	$D_{0-\lambda}$	λ	E_λ	$D_{0-\lambda}$
0.14	9.833×10^{-2}	0.0	0.57	1797	31.39
0.16	0.3195	3.1×10^{-4}	0.58	1801	32.71
0.18	2.042	2.0×10^{-3}	0.59	1758	34.01
0.20	10.83	1.1×10^{-2}	0.60	1745	35.29
0.22	44.93	5.2×10^{-2}	0.62	1663	37.78
0.23	49.64	8.7×10^{-2}	0.64	1610	40.18
0.24	51.83	0.12	0.66	1527	42.48
0.25	59.81	0.16	0.68	1485	44.68
0.26	129.1	0.23	0.70	1438	46.82
0.27	222.1	0.36	0.72	1360	48.87
0.28	212.9	0.52	0.75	1272	51.76
0.29	441.0	0.76	0.8	1132	56.16
0.30	526.0	1.12	0.9	882.6	63.53
0.31	634.5	1.54	1.0	719.7	69.40
0.32	746.5	2.05	1.2	487.1	78.23
0.33	948.7	2.67	1.4	342.5	84.30
0.34	947.3	3.36	1.6	243.5	88.59
0.35	969.5	4.06	1.8	167.1	91.60
0.36	985.2	4.78	2.0	115.0	93.66
0.37	1129	5.55	2.2	81.73	95.10
0.38	1091	6.36	2.4	58.78	96.13
0.39	1093	7.16	2.6	43.86	96.88
0.40	1518	8.12	2.8	33.43	97.45
0.41	1712	9.30	3.0	25.93	97.88
0.42	1740	10.56	3.2	20.45	98.22
0.43	1625	11.79	3.4	16.36	98.49
0.44	1826	13.06	3.6	13.26	98.71
0.45	2030	14.47	3.8	10.87	98.89
0.46	2077	15.97	4.0	8.977	99.03
0.47	2049	17.48	4.5	5.674	99.30
0.48	2057	18.98	5	3.691	99.47
0.49	1955	20.45	6	1.879	99.68
0.50	1948	21.88	7	1.022	99.78
0.51	1911	23.29	8	0.6041	99.84
0.52	1806	24.65	10	0.2663	99.90
0.53	1861	26.00	15	6.106×10^{-2}	99.96
0.54	1861	27.36	20	1.755×10^{-2}	99.98
0.55	1867	28.72	50	1.769×10^{-3}	100.00
0.56	1808	30.07			

FIG. 1 Solar Spectral Irradiance

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