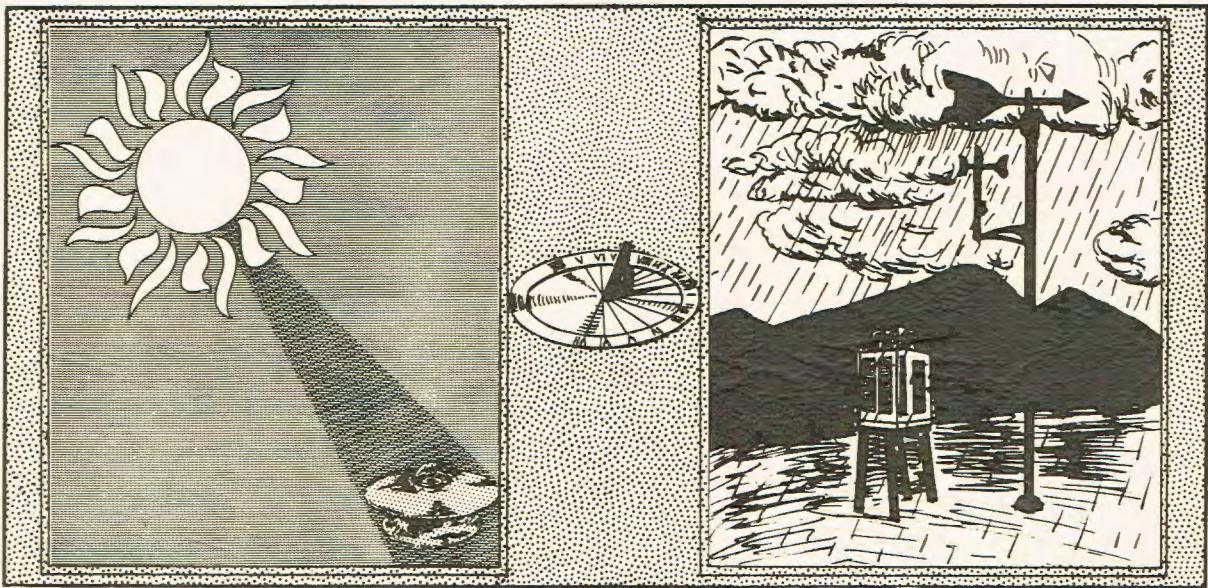


SOLDAY

USER'S MANUAL

TD - 9739



Daily Solar Radiation - Surface Meteorological Data

Sponsored by
Department of Energy
Insolation Assessment Program

SOLDAY

USER'S MANUAL

TD-9739

DAILY SOLAR RADIATION -
SURFACE METEOROLOGICAL DATA

NOVEMBER 1979

This manual has been prepared by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Environmental Data and Information Service, National Climatic Center, Asheville, North Carolina, for the Department of Energy, Insolation Assessment Program, under Interagency Agreement No. E(49-26)-1041. The contents of this manual reflect the views of the contractor, who is responsible for the facts and accuracy of the data presented, and do not necessarily reflect the official views or policy of the DOE.



CONTENTS

Introduction. 1

Format. 1

Tape characteristics. 2

By-products available 2

Ordering information. 3

Rehabilitation process. 3

References. 4

Tape format description 5

Conversion table. 9

Station notes for 27 stations with rehabilitated
solar radiation data. 10

Schematic flow chart of SOLDAY process. 23

Percent of ETR at true solar noon (15-day averages) for
27 SOLDAY stations. 24

Sensor history for 27 SOLDAY stations, listing calibration
corrections applied to observed data 50

Standard year, clear sky, solar noon irradiance (SYI)
values for each day of the year for 26 SOLDAY stations. 55

True solar noon transmission values for each day of the
year for 26 SOLDAY stations 81

Explanation of SOLDAY data listing. 107

Samples of data listings available. 108



TAPE DECK	SOLDAY	PAGE NO.
9739	SOLDAY	1

INTRODUCTION

To satisfy the need for long-term insolation data, the National Climatic Center (NCC) rehabilitated and reformatted these data by removing all known procedural and instrumental errors and by including all available meteorological elements. SOLMET Volume 1 - User's Manual describes the contents of Tape Deck 9724, which contains hourly solar radiation and collateral meteorological data. SOLMET Volume 2 - Final Report discusses the methods used to create TD 9724 and the reasons why they were developed. SOLDAY - the second phase of the rehabilitation process - describes Tape Deck 9739, which contains daily solar radiation and collateral meteorological data. Since the SOLDAY rehabilitation process essentially parallels SOLMET's, this manual discusses only significant differences and only presents tables and graphs not appearing in either of the two SOLMET volumes.

Daily totals of solar radiation are available at the NCC on magnetic tape in a card image version of Card Deck 480. These daily sums include data from stations that:

1. Used mechanical integrators for totals and recorded solar radiation on circular charts. (Most of the SOLDAY stations were selected from this category.)
2. Recorded solar radiation on strip charts and daily amounts calculated by summing hand-computed hourly values (One SOLDAY station - Blue Hill - falls into this category, as does the majority of SOLMET stations.)
3. Recorded solar radiation on strip charts and daily amounts obtained for a part of the time by summing hand-computed hourly values. For the remainder of the time, daily sums were obtained from a mechanical integrator.

Rehabilitated hourly insolation data stations (SOLMET) were not chosen for inclusion in the SOLDAY format because of data redundancy. However, daily Card Deck 480 data for SOLMET stations have been updated by checking values with published data and are available on magnetic tape or paper copy.

The SOLDAY format is a metric conversion of all parameters currently available in Card Deck 480 and Tape Deck 9750 (WBAN Summary of Day - daily surface meteorological data). SOLDAY was not designed to archive data from new networks or accommodate a variety of solar radiation observations.

FORMAT

The identification portion of the tape format (page 5) contains the tape deck number, station number, and date of the daily observation. The local standard time (LST) of sunrise and sunset may be considered also as

identification. The rate change in sunrise/sunset times contains 1-minute irregularities due to rounding of LST times derived from existing, rounded true solar times of sunrise/sunset. A list of stations showing latitude, longitude, elevation, periods of record, and changes in station location appears on pages 10-22. Only noted are data gaps consisting of more than 30 consecutive days.

The solar radiation portion of the tape format provides for the theoretical extraterrestrial radiation on a horizontal surface based on a solar constant of $1377 \text{ J}/(\text{m}^2 \cdot \text{s})$; direct radiation; three fields of global radiation - observed data, observed data corrected for engineering changes, such as recorder scales, sensor deterioration, calibration errors, etc., and observed data corrected to a standard year irradiance model; a supplemental radiation field; minutes of sunshine and percentage of possible sunshine. The individual station histories note any pertinent information that will enable the user to properly interpret the data. NOTE: The NCC will only include extraterrestrial and global solar radiation in the SOLDAY format. The latter data type (Field 105) will not be serially complete. If the data were not observed or more than 60 days elapsed between clear solar noon irradiance values, no sky cover/sunshine model, for example, will be used to fill the data gaps.

The surface meteorological data are a metric (SI) conversion of the summary of daily surface observations contained in NCC's Tape Deck 9750.

TAPE CHARACTERISTICS

Each logical record is 100 bytes long. Archive files are blocked in 30 logical records (3000 bytes) per physical tape record on 1600 bpi, 9 track, EBCDIC mode, odd parity tapes. Data for the entire period of record for all stations are contained on one archive file tape. The tape may be ordered, however, with different blocking factors, tracks, and densities.

The SOLDAY format is FORTRAN compatible and contains no overpunches or alpha characters. A graphical representation of the format indicating Tape Fields, Tape Positions, and Element Definition is included in this manual.

BY-PRODUCTS AVAILABLE

1. Taped Data

- a. Clear noon irradiance.
- b. Extraterrestrial radiation (ETR) with solar elevation angles.
- c. Standard year irradiance (SYI).

TAPE DECK		PAGE NO.
9739	SOLDAY	3
<p>2. <u>Data Listings</u> (see samples on pages 108-110)</p> <ul style="list-style-type: none"> a. SOLDAY data listing (see explanation on page 107). b. Data inventories c. Extraterrestrial radiation (ETR) with solar elevation angles. (see <u>SOLMET, Volume 1</u>, p. B-3). d. Clear noon irradiance. (see <u>SOLMET, Volume 1</u>, p. B-3). 		
<p><u>ORDERING INFORMATION</u></p>		
<p>Address requests to Director, National Climatic Center, Asheville, NC 28801. Please write the Center or call (704) 258-2850, extension 203 (FTS 672-0203) prior to ordering tapes to insure that the desired data fields and periods of record are available and to obtain costs for tape copies. Call extension 683 for paper or microfilm copies of data listings.</p>		
<p><u>REHABILITATION PROCESS</u></p>		
<p>The schematic flow chart on page 23 depicts the rehabilitation process of the historical daily solar radiation data base and addition of available meteorological observations. Pages 24-49 contain 15-day average plots of the percent of extraterrestrial radiation (ETR) of 1-minute clear sky irradiance values at true solar noon for 27 SOLDAY stations. The graphs illustrate the time variability of solar radiation data, including sensor degradation. Note that San Antonio and Hondo, TX are shown on the same graph.</p>		
<p>Before producing work tapes, data were converted to their metric equivalent, using the International System of Units (SI) specified in ANSI Z210.1 (1976) <u>American National Standard Metric Practice</u> (see conversion table on page 9).</p>		
<p>The 26 graphs plus calibration corrections listed on pages 50-54 provide a sensor and recorder history of the SOLDAY stations. The flat and linear corrections were applied to the observed daily global solar radiation (Field 103) and the engineering corrected values appear in Field 104. Observed values from the old, bulb-type Eppley pyranometer were not temperature corrected because of the difficulty in determining the proper correction temperature for the day. Unadjusted readings may differ significantly from temperature compensated ones for northern stations in wintertime. Both the solar radiation data and meteorological data were checked for consistency and errors corrected.</p>		
<p>The procedure for applying standard year irradiance (SYI) corrections to the observed data (Field 103) is exactly the same as that described on pages 5-6 of <u>SOLMET Volume 2 - Final Report</u>. The model corrected daily</p>		

TAPE DECK		PAGE NO.
9739	SOLDAY	4

values appear in Field 105. Pages 55-80 present 26 tables of modeled daily standard year, clear sky, solar noon irradiance values, in langleys. They are 1-minute values over the period of true solar noon plus and minus 30 seconds. Pages 81-106 list 26 corresponding tables of input modeled values to the SYI correction method - true solar noon atmospheric transmission for each day of the year. We recommend Field 105 (SYI model corrected solar radiation) data for applications usage.

REFERENCES

Institute of Electrical and Electronics Engineers, 1976: American National Standard Metric Practice, Institute of Electrical and Electronics Engineers, Inc., New York, 47 pp.

U.S. Department of Commerce, 1978: SOLMET, Volume 1 - User's Manual, Department of Energy, Contract No. E(49-26)-1041, Asheville, NC, 44 pp.

U.S. Department of Commerce, 1979: SOLMET, Volume 2 - Final Report, Department of Energy, Contract No. E(49-26)-1041, Asheville, NC, 184 pp.

IDENTIFICATION							SOLAR RADIATION OBSERVATION							
TAPE DECK #	WBAN STN #	YR	MO	DY	SUN-RISE	SUN-SET	E T R kJ/m ²	RADIATION VALUES kJ/m ²					SUNSHINE	
								DIRECT	OBS	ENG COR	MODEL COR	SUPP FIELD	M I N U T E S	% P O S S I B L E
9739	XXXXX	XX	XX	XX	XXXX	XXXX	XXXXX	iXXXXX	iXXXXX	iXXXXX	iXXXXX	iXXXXX	XXXX	XXX
FIELD NUMBER	001	002	003		004		101	102	103	104	105	106	107	

SURFACE METEOROLOGICAL OBSERVATION									
TEMPERATURE			P R E C I P I T A T I O N	S N O W		DAY WITH WEATHER	S, K, Y, C, O, V, E, R		
MAX °C	MIN °C	MEAN °C		A M O U N T	D E P T H				
XXXX	XXXX	XXXX	.1 mm	.1 cm	cm	XXXXXXXXXXXX	XX		
201			202	203		204	205		

TAPE FIELD NUMBER	TAPE POSITIONS	ELEMENT
001	001-004	TAPE DECK NUMBER
002	005-009	WBAN STATION NUMBER
003	010-015	DATE (YEAR, MONTH, DAY)
004	016-023	SUNRISE/SUNSET (LOCAL STANDARD TIME-HOUR AND MINUTE)
101	024-028	EXTRATERRESTRIAL RADIATION
102	029-034	DIRECT RADIATION
103	035-040	GLOBAL RADIATION ON A HORIZONTAL SURFACE-OBSERVED DATA
104	041-046	GLOBAL RADIATION ON A HORIZONTAL SURFACE-ENGINEERING CORRECTED DATA
105	047-052	GLOBAL RADIATION ON A HORIZONTAL SURFACE-MODEL CORRECTED DATA
106	053-058	ADDITIONAL RADIATION MEASUREMENT
107	059-065	SUNSHINE (MINUTES AND PERCENT OF POSSIBLE)
201	066-077	TEMPERATURE (TENTHS OF DEGREES C)
202	078-081	PRECIPITATION (TENTHS OF MILLIMETERS)
203	082-087	SNOW (SNOWFALL AMOUNT IN TENTHS OF CENTIMETERS; SNOW DEPTH IN WHOLE CENTIMETERS)
204	088-098	DAY WITH WEATHER
205	099-100	SKY COVER (TENTHS)

TAPE DECK		SOLDAY		PAGE NO.
9739				6
Note: Except for tape positions 001-015 in fields 001-003, elements with a tape configuration of 9's indicate missing or unknown data.				
<u>TAPE FIELD NUMBER</u>	<u>TAPE POSITIONS</u>	<u>ELEMENT</u>	<u>TAPE CONFIGURATION</u>	<u>CODE DEFINITIONS AND REMARKS</u>
001	001-004	TAPE DECK NUMBER	9739	
002	005-009	WBAN STATION NUMBER	01001-98999	Unique number used to identify each station.
003	010-015	DATE		
	010-011	YEAR	52-76	Year of Observation 52-76=1952-1976
	012-013	MONTH	01-12	Month of Observation 01-12=January-December
	014-015	DAY	01-31	Day of Month
004	016-023	SUNRISE/SUNSET		Local standard time hours and minutes of the occurrence of sunrise and sunset.
	016-019	SUNRISE	0000-2359	
	020-023	SUNSET	0000-2359	
101	024-028	EXTRATERRESTRIAL RADIATION	00000-99999	Amount of solar energy in kJ/m^2 received at the top of the atmosphere on a horizontal surface during the day. (Based on the solar constant= $1377\text{J}/(\text{m}^2.\text{s})$).
102	029-034	DIRECT RADIATION		
	029	DATA CODE INDICATOR	0-9	(See Note after Field 106)
	030-034	DATA	00000-99999	Portion of radiant energy in kJ/m^2 received at the pyrheliometer directly from the sun during the day.
NOTE: Only global solar radiation data are available in SOLDAY.				
103	035-058	GLOBAL RADIATION ON A HORIZONTAL SURFACE.		Total of direct and diffuse radiant energy in kJ/m^2 received on a horizontal surface by a pyranometer during the day.
	035-040	OBSERVED DATA		
	035	DATA CODE INDICATOR	0-9	(See Note after Field 106)
	036-040	DATA	00000-99999	Observed value.
104	041-046	ENGINEERING CORRECTED DATA		
	041	DATA CODE INDICATOR	0-9	(See Note after Field 106)
	042-046	DATA	00000-99999	Observed value corrected for known scale changes, station moves, recorder and sensor calibration changes, etc. (See sensor history on page 50)
105	047-052	MODEL CORRECTED DATA		
	047	DATA CODE INDICATOR	0-9	(See Note after Field 106)

TAPE DECK		SOLDAY			PAGE NO.
9739					7
TAPE FIELD NUMBER	TAPE POSITIONS	ELEMENT	TAPE CONFIGURATION	CODE DEFINITIONS AND REMARKS	
	048-052	DATA	00000-99999	Observed value adjusted to Standard Year Model. This model yields expected clear sky irradiance received on a horizontal surface at the elevation of the station.	
106	053-058	SUPPLEMENTAL FIELD DATA			
	053	DATA CODE INDICATOR	0-9	(See Note after Field 106)	
	054-058	DATA		Supplemental field for additional radiation measurement specified in station-period of record list.	
NOTE FOR FIELDS 102-106: Data code indicators are:					
		0	Observed data		
		1	Estimated from model using sunshine and cloud data		
		2	Estimated from model using cloud data		
		3	Estimated from model using sunshine data		
		4	Estimated from model using sky condition data		
		5	Estimated from linear interpolation		
		6	Reserved for future use		
		7	Estimated from other model (see individual station notes at end of manual)		
		8	Estimated without use of a model		
		9	Missing data follows		
107	059-065	SUNSHINE			
	059-062	MINUTES OF SUNSHINE	0000-1440	Minutes of recorded sunshine	
	063-065	PERCENT OF POSSIBLE SUNSHINE	000-100	Minutes of sunshine received divided by the minutes of sunshine possible for the location, multiplied by 100.	
201	066-077	TEMPERATURE			
	066-069	MAXIMUM	-700 to 0600	°C and tenths	
	070-073	MINIMUM	-700 to 0600	°C and tenths	
	074-077	MEAN	-700 to 0600	°C and tenths -700 to 0600=-70.0 to 60.0°C	
202	078-081	PRECIPITATION	0000-9999	Millimeters and tenths-Rainfall and melted frozen precipitation are included. 0001 denotes an immeasurable amount (trace).	
203	082-087	SNOW			
	082-084	AMOUNT	000-999	Centimeters and tenths for 24 hours (includes sleet/ice pellets effective 4/01/70, hail included from 7/48-12/55. Hail may have been included as late as 1963 at some stations.) 001 denotes an immeasurable amount (trace).	
NOTE FOR FIELD 203: The relationship between snowfall amount and snow depth may be inconsistent.					

TAPE DECK		SOLDAY			PAGE NO.
9739					8
<u>TAPE FIELD NUMBER</u>	<u>TAPE POSITIONS</u>	<u>ELEMENT</u>	<u>TAPE CONFIGURATION</u>	<u>CODE DEFINITIONS AND REMARKS</u>	
	085-087	DEPTH	000-999	Whole centimeters (Includes sleet/ice pellets. Hail was included with snow on ground from 7/48-12/55. Hail occurring alone was not included with snowfall amount and snow on ground before and after that period.) 001 denotes an immeasurable amount (trace).	
204	088-098	DAY WITH WEATHER	0,1,9	0 indicates no occurrence; 1 indicates an occurrence; 9 indicates missing.	
	88	FOG		Includes ground fog and ice fog. When position 98 is 1, position 88 is also 1.	
	89	THUNDER			
	90	SLEET/ICE PELLETS		Includes sleet showers/ice pellet showers. Sleet (also small hail designated as ice pellets, effective 4/01/70.)	
	91	HAIL			
	92	RAIN		Includes rain showers, drizzle, freezing rain.	
	93	SNOW		Includes snow pellets, snow showers, snow grains, and ice crystals.	
	94	GLAZE		If position 92 is a 1 because of freezing rain or freezing drizzle, position 94 is also keyed 1. If glaze persists because of freezing rain or drizzle on a previous day, position 94 is keyed 1 even though position 92 is keyed 0.	
	95	DUSTSTORM		Includes blowing sand and blowing dust with a prevailing visibility less than 5/8 mile.	
	96	SMOKE OR HAZE			
	97	BLOWING SNOW			
	98	HEAVY FOG		Includes heavy ground fog and heavy ice fog. Keying of position 98 began 1/1/65. Prevailing visibility 1/4 mile or less at any time during the day.	
205	099-100	SKY COVER	00-10	Average total sky cover (sunrise to sunset) in tenths.	

CONVERSION TABLE

<u>To convert from</u>	<u>to</u>	<u>Multiply by</u>
British thermal unit (thermochemical)	joule	1.054350×10^3
Btu (thermochemical)/h	watt	2.928751×10^{-1}
Btu (thermochemical)/min	watt	1.757250×10^1
Btu (thermochemical)/s	watt	1.054350×10^3
Btu (thermochemical)/ft ²	joule per meter ²	1.134893×10^4
Btu (thermochemical)/ft ² ·h	watt per meter ²	3.152481×10^0
Btu (thermochemical)/ft ² ·min	watt per meter ²	1.891489×10^2
Btu (thermochemical)/ft ² ·s	watt per meter ²	1.134893×10^4
calorie (thermochemical)	joule	4.184000×10^0
cal (thermochemical)/cm ²	joule per meter ²	4.184000×10^4
cal (thermochemical)/min	watt	6.973333×10^{-2}
cal (thermochemical)/s	watt	4.184000×10^0
cal (thermochemical)/cm ² ·min	watt per meter ²	6.973333×10^2
cal (thermochemical)/cm ² ·s	watt per meter ²	4.184000×10^4
degree Fahrenheit	degree Celsius	$t_{oC} = (t_{oF} - 32)/1.8$
foot	meter	3.048000×10^{-1}
inch	centimeter	2.540000×10^0
knot (international)	meter per second	5.144444×10^{-1}
langley	joule per meter ²	4.184000×10^4
langley	Btu per foot ²	3.686691×10^0
mile (statute)	meter	1.609300×10^3
millibar	pascal	1.000000×10^2
watt·hour	joule	3.600000×10^3

ASTORIA, OREGON
 WBAN NO. 94224
 TIME ZONE: PACIFIC

STATION LOCATION

<u>Solar Radiation Data</u>					<u>Collateral Meteorological Data</u>						
Period of Record	Latitude		Longitude		Elevation	Period of Record	Latitude		Longitude		Elevation
YRMODA - YRMODA	Deg	Min	Deg	Min	Meters	YRMODA - YRMODA	Deg	Min	Deg	Min	Meters
530124 - 761231	N46	09	W123	53	8	530116 - 761231	N46	09	W123	53	2

NOTES

- A. Solar radiation data missing 730216 - 730425.
- B. Additionally, SYI model corrected solar radiation data missing 530309-530509, 571210-580228, 581127-590131, 600320-600527, 610127-610403, 631211-640218, 660117-660323, 741104-750223, 751001-751216
- C. Minutes of sunshine and percent of possible sunshine missing for the entire period.

ATLANTA, GEORGIA
 WBAN NO. 13874
 TIME ZONE: EASTERN

STATION LOCATION

<u>Solar Radiation Data</u>					<u>Collateral Meteorological Data</u>						
Period of Record	Latitude		Longitude		Elevation	Period of Record	Latitude		Longitude		Elevation
YRMODA - YRMODA	Deg	Min	Deg	Min	Meters	YRMODA - YRMODA	Deg	Min	Deg	Min	Meters
520701 - 620402	N33	39	W84	25	302	520701 - 620402	N33	39	W84	25	297
620403 - 741031	N33	39	W84	26	308	620403 - 741031	N33	39	W84	26	311

NOTES

- A. Station moved 0.9 mi. WSW 620403.
- B. Solar radiation data missing 560611 - 561023, 690627 - 690831, 730501 - 730618, 731230 - 740725.
- C. Additionally, SYI model corrected solar radiation data missing 530604-530823, 540607-540817, 550603-550914, 570416-570923, 580522-580817, 590425-591011, 600610-600912, 610531-610915, 620318-620926, 630502-630923, 640417-640812, 660411-660727, 670528-670922, 700518-701203, 710601-710827, 720624-720911, 730619-730902, 740726-740929.

BLUE HILL, MASSACHUSETTS
WBAN NO. 14753
TIME ZONE: EASTERN

STATION LOCATIONSolar Radiation DataCollateral Meteorological Data

Period of Record	Latitude		Longitude		Elevation	Period of Record	Latitude		Longitude		Elevation
YRMODA - YRMODA	Deg	Min	Deg	Min	Meters	YRMODA - YRMODA	Deg	Min	Deg	Min	Meters
621001 - 761231	N42	13	W71	07	204	621001 - 761231	N42	13	W71	07	192

NOTES

- A. Day with weather (Field 204) missing for the entire period of record.
B. Sky cover (Field 205) missing for the entire period of record.

BOISE, IDAHO
WBAN NO. 24131
TIME ZONE: MOUNTAIN

STATION LOCATIONSolar Radiation DataCollateral Meteorological Data

Period of Record	Latitude		Longitude		Elevation	Period of Record	Latitude		Longitude		Elevation
YRMODA - YRMODA	Deg	Min	Deg	Min	Meters	YRMODA - YRMODA	Deg	Min	Deg	Min	Meters
520701 - 761231	N43	34	W116	13	867	520701 - 761231	N43	34	W116	13	865

NOTES

- A. Solar radiation data missing 570105 - 570430, 600113 - 600228, 611003 - 611129, 640222 - 640410, 750526 - 760131.
B. Additionally, SYI model corrected solar radiation data missing 750307-750509.

BURLINGTON, VERMONT
 WBAN NO. 14742
 TIME ZONE: EASTERN

STATION LOCATION

<u>Solar Radiation Data</u>					<u>Collateral Meteorological Data</u>						
Period of Record	Latitude		Longitude		Elevation	Period of Record	Latitude		Longitude		Elevation
YRMODEA - YRMODEA	Deg	Min	Deg	Min	Meters	YRMODEA - YRMODEA	Deg	Min	Deg	Min	Meters
630101 - 760708	N44	28	W73	09	112	630101 - 760731	N44	28	W73	09	101

NOTES

- A. Solar radiation data missing 651030 - 670821, 690818 - 691117, 730720 - 760305.
- B. Additionally, SYI model corrected solar radiation data missing 631020 - 631229, 701107 - 710311.

CLEVELAND, OHIO
 WBAN NO. 14820
 TIME ZONE: EASTERN

STATION LOCATION

<u>Solar Radiation Data</u>					<u>Collateral Meteorological Data</u>						
Period of Record	Latitude		Longitude		Elevation	Period of Record	Latitude		Longitude		Elevation
YRMODEA - YRMODEA	Deg	Min	Deg	Min	Meters	YRMODEA - YRMODEA	Deg	Min	Deg	Min	Meters
520701 - 750228	N41	24	W81	51	265	520701 - 750228	N41	24	W81	51	237

NOTES

- A. Solar radiation data missing 521122 - 530221, 530702 - 550318, 710916 - 711205.
- B. Additionally, SYI model corrected solar radiation data missing 671008 - 680115, 681124 - 690201, 691126 - 700131.

GLASGOW, MONTANA
 WBAN NO. 94008
 TIME ZONE: MOUNTAIN

STATION LOCATION

<u>Solar Radiation Data</u>					<u>Collateral Meteorological Data</u>						
Period of Record YRMODA - YRMODA	Latitude Deg Min		Longitude Deg Min		Elevation Meters	Period of Record YRMODA - YRMODA	Latitude Deg Min		Longitude Deg Min		Elevation Meters
520701 - 551025	N48	11	W106	38	UNK	520701 - 551025	N48	11	W106	38	637
551026 - 741130	N48	13	W106	37	699	551026 - 741130	N48	13	W106	37	696

NOTES

- A. Location changed from City Office to Municipal Airport 551026.
- B. Day with weather (Field 204) missing 650301 - 680531.
- C. Solar radiation data missing 531231 - 550604, 560918 - 561109, 580611 - 580805.
- D. Minutes of sunshine and percent of possible sunshine missing for the entire period.

GRAND JUNCTION, COLORADO
 WBAN NO. 23066
 TIME ZONE: MOUNTAIN

STATION LOCATION

<u>Solar Radiation Data</u>					<u>Collateral Meteorological Data</u>						
Period of Record YRMODA - YRMODA	Latitude Deg Min		Longitude Deg Min		Elevation Meters	Period of Record YRMODA - YRMODA	Latitude Deg Min		Longitude Deg Min		Elevation Meters
520701 - 761226	N39	07	W108	32	1473	520701 - 761231	N39	07	W108	32	1476

NOTES

- A. Solar radiation data missing or spotty 560513 - 561018; missing 610507 - 610706, 650909 - 651112, 701001 - 701116, 710622 - 710824, 740601 - 760218.

GREENSBORO, NORTH CAROLINA
 WBAN NO. 13723
 TIME ZONE: EASTERN

STATION LOCATION

Solar Radiation Data

Collateral Meteorological Data

Period of Record YRMODA - YRMODA	Latitude Deg Min		Longitude Deg Min		Elevation Meters	Period of Record YRMODA - YRMODA	Latitude Deg Min		Longitude Deg Min		Elevation Meters
520701 - 751205	N36	05	W79	57	283	520701 - 751231	N36	05	W79	57	273

NOTES

- A. SYI model corrected solar radiation data missing 710601-710812, 720626-720906.

INDIANAPOLIS, INDIANA
 WBAN NO. 93819
 TIME ZONE: CENTRAL

STATION LOCATION

Solar Radiation Data

Collateral Meteorological Data

Period of Record YRMODA - YRMODA	Latitude Deg Min		Longitude Deg Min		Elevation Meters	Period of Record YRMODA - YRMODA	Latitude Deg Min		Longitude Deg Min		Elevation Meters
520701 - 650614	N39	44	W86	16	255	520701 - 650614	N39	44	W86	16	241
650615 - 741130	N39	44	W86	17	251	650615 - 741130	N39	44	W86	17	241

NOTES

- A. Station moved 0.5 mi. NW 650615.
 B. SYI model corrected solar radiation data missing 680707-680905, 720527-720804, 740428-740720.
 C. Station converted from Central Time to Eastern Time 610901; all times of sunrise and sunset are in Central Time.

LAKELAND, FLORIDA
 WBAN NO. 12883
 TIME ZONE: EASTERN

STATION LOCATION

<u>Solar Radiation Data</u>					<u>Collateral Meteorological Data</u>						
Period of Record	Latitude		Longitude		Elevation	Period of Record	Latitude		Longitude		Elevation
YRMODA - YRMODA	Deg	Min	Deg	Min	Meters	YRMODA - YRMODA	Deg	Min	Deg	Min	Meters
631001 - 741118	N28	02	W81	57	82	631001 - 741130	N28	02	W81	57	65

NOTES

- A. Day with weather (Field 204) missing for entire period of record.
- B. SYI model corrected solar radiation data missing 640630-641027, 650518-651010, 660627-660827, 690531-691010, 700702-700830, 710601-710929, 720418-720901, 730717-730916.

LANDER, WYOMING
 WBAN NO. 24021
 TIME ZONE: MOUNTAIN

STATION LOCATION

<u>Solar Radiation Data</u>					<u>Collateral Meteorological Data</u>						
Period of Record	Latitude		Longitude		Elevation	Period of Record	Latitude		Longitude		Elevation
YRMODA - YRMODA	Deg	Min	Deg	Min	Meters	YRMODA - YRMODA	Deg	Min	Deg	Min	Meters
520701 - 750505	N42	49	W108	44	1699	520701 - 750531	N42	49	W108	44	1694

NOTES

- A. Solar radiation data missing 551230 - 560413, 570813 - 580110.

LAS VEGAS, NEVADA
 WBAN NO. 23169
 TIME ZONE: PACIFIC

STATION LOCATION

<u>Solar Radiation Data</u>				<u>Collateral Meteorological Data</u>							
Period of Record	Latitude		Longitude		Elevation	Period of Record	Latitude		Longitude		Elevation
YRMODA - YRMODA	Deg	Min	Deg	Min	Meters	YRMODA - YRMODA	Deg	Min	Deg	Min	Meters
520701 - 761231	N36	05	W115	10	661	520701 - 761231	N36	05	W115	10	659

NOTES

- A. Solar radiation data missing 700815 - 701113, 720324 - 720630, 760701 - 761119.

LOS ANGELES, CALIFORNIA
 WBAN NO. 23174
 TIME ZONE: PACIFIC

STATION LOCATION

<u>Solar Radiation Data</u>				<u>Collateral Meteorological Data</u>							
Period of Record	Latitude		Longitude		Elevation	Period of Record	Latitude		Longitude		Elevation
YRMODA - YRMODA	Deg	Min	Deg	Min	Meters	YRMODA - YRMODA	Deg	Min	Deg	Min	Meters
520101 - 680621	N33	56	W118	23	38	520101 - 761231	N33	56	W118	23	30
680622 - 761231	N33	56	W118	24	36						

NOTES

- A. Station moved 0.75 mi. W 680622.
 B. Minutes of sunshine and percent of possible sunshine missing for the entire period.

MIDLAND, TEXAS
WBAN NO. 23023
TIME ZONE: CENTRAL

STATION LOCATION

<u>Solar Radiation Data</u>					<u>Collateral Meteorological Data</u>						
Period of Record	Latitude		Longitude		Elevation	Period of Record	Latitude		Longitude		Elevation
YRMODA - YRMODA	Deg	Min	Deg	Min	Meters	YRMODA - YRMODA	Deg	Min	Deg	Min	Meters
531119 - 720424	N31	56	W102	12	881	531101 - 720424	N31	56	W102	12	871
720425 - 750501	N31	56	W102	11	874	720425 - 750531	N31	56	W102	11	869

NOTES

- A. Station moved 1.0 mi. ENE 720425.
- B. Solar radiation data missing 571028 - 580219.
- C. Minutes of sunshine and percent of possible sunshine missing for the entire period.

NORTH LITTLE ROCK, ARKANSAS
WBAN NO. 13963
TIME ZONE: CENTRAL

STATION LOCATION

<u>Solar Radiation Data</u>					<u>Collateral Meteorological Data</u>						
Period of Record	Latitude		Longitude		Elevation	Period of Record	Latitude		Longitude		Elevation
YRMODA - YRMODA	Deg	Min	Deg	Min	Meters	YRMODA - YRMODA	Deg	Min	Deg	Min	Meters
521105 - 751215	N34	44	W92	14	84	521101 - 761231	N34	44	W92	14	78
751216 - 761231	N34	50	W92	15	177						

NOTES

- A. Solar instruments moved from Adams Field to North Little Rock Airport 751216. WBAN No. is for Adams Field.
- B. Solar radiation data missing 580622 - 580820, 661214 - 670221.
- C. Additionally, SYI model corrected solar radiation data missing 600509-600709, 651102-660122.

OKLAHOMA CITY, OKLAHOMA
 WBAN NO. 13967
 TIME ZONE: CENTRAL

STATION LOCATION

Solar Radiation Data

Collateral Meteorological Data

Period of Record	Latitude		Longitude		Elevation	Period of Record	Latitude		Longitude		Elevation
YRMODA - YRMODA	Deg	Min	Deg	Min	Meters	YRMODA - YRMODA	Deg	Min	Deg	Min	Meters
520701 - 750213	N35	24	W97	36	397	520701 - 750228	N35	24	W97	36	392

NOTES

- A. Solar radiation missing 530710 - 530903, 550514 - 551006.
- B. Additionally, SYI model corrected solar radiation data missing 710713-710911.

PORTLAND, MAINE
 WBAN NO. 14764
 TIME ZONE: EASTERN

STATION LOCATION

Solar Radiation Data

Collateral Meteorological Data

Period of Record	Latitude		Longitude		Elevation	Period of Record	Latitude		Longitude		Elevation
YRMODA - YRMODA	Deg	Min	Deg	Min	Meters	YRMODA - YRMODA	Deg	Min	Deg	Min	Meters
520701 - 750430	N43	39	W70	19	30	520701 - 750430	N43	39	W70	19	13

NOTES

- A. Solar radiation data missing 620101 - 620805.

RAPID CITY, SOUTH DAKOTA
 WBAN NO. 24090
 TIME ZONE: MOUNTAIN

STATION LOCATION

<u>Solar Radiation Data</u>					<u>Collateral Meteorological Data</u>						
Period of Record	Latitude		Longitude		Elevation	Period of Record	Latitude		Longitude		Elevation
YRMODA - YRMODA	Deg	Min	Deg	Min	Meters	YRMODA - YRMODA	Deg	Min	Deg	Min	Meters
520701 - 750309	N44	03	W103	04	972	520701 - 750331	N44	03	W103	04	964

NOTES

- A. SYI model corrected solar radiatin data missing 731209-740308.

SALT LAKE CITY, UTAH
 WBAN NO. 24127
 TIME ZONE: MOUNTAIN

STATION LOCATION

<u>Solar Radiation Data</u>					<u>Collateral Meteorological Data</u>						
Period of Record	Latitude		Longitude		Elevation	Period of Record	Latitude		Longitude		Elevation
YRMODA - YRMODA	Deg	Min	Deg	Min	Meters	YRMODA - YRMODA	Deg	Min	Deg	Min	Meters
660719 - 741124	N40	46	W111	58	1288	660701 - 741130	N40	46	W111	58	1286

NOTES

- A. Solar radiation data missing 670716 - 671202.

SAN ANTONIO/HONDO, TEXAS
 WBAN NO. 12921
 TIME ZONE: CENTRAL

STATION LOCATIONSolar Radiation DataCollateral Meteorological Data

Period of Record YRMODA - YRMODA	Latitude Deg Min	Longitude Deg Min	Elevation Meters	Period of Record YRMODA - YRMODA	Latitude Deg Min	Longitude Deg Min	Elevation Meters
520701 - 741130	N29 32	W98 28	249	520701 - 761231	N29 32	W98 28	240
750201 - 761231	N29 21	W99 10	279				

NOTES

- A. Solar radiation data missing 741201 - 750131; solar instruments moved to Hondo, TX 741218.
- B. Additionally, SYI model corrected solar radiation data missing 570406-570624, 730729-730927, 750415-750708.

SAULT STE. MARIE, MICHIGAN
 WBAN NO. 14847
 TIME ZONE: EASTERN

STATION LOCATIONSolar Radiation DataCollateral Meteorological Data

Period of Record YRMODA - YRMODA	Latitude Deg Min	Longitude Deg Min	Elevation Meters	Period of Record YRMODA - YRMODA	Latitude Deg Min	Longitude Deg Min	Elevation Meters
520701 - 750511	N46 28	W84 22	221	520701 - 750531	N46 28	W84 22	220

NOTES

- A. Solar radiation data missing 720122 - 720518.
- B. Additionally, SYI model corrected solar radiation data missing 521217-530224, 551011-551213, 561006-570118, 611022-620226, 681001-681214.

SPOKANE, WASHINGTON
 WBAN NO. 24157
 TIME ZONE: PACIFIC

STATION LOCATION

<u>Solar Radiation Data</u>					<u>Collateral Meteorological Data</u>						
Period of Record	Latitude		Longitude		Elevation	Period of Record	Latitude		Longitude		Elevation
YRMODA - YRMODA	Deg	Min	Deg	Min	Meters	YRMODA - YRMODA	Deg	Min	Deg	Min	Meters
520701 - 650517	N47	37	W117	31	728	520701 - 650517	N47	37	W117	31	718
650518 - 761231	N47	38	W117	32	718	650518 - 761231	N47	38	W117	32	718

NOTES

- A. Station moved 0.7 mi. NW 650518.
- B. Solar radiation data missing 520925 - 540908, 741120 - 750313.
- C. Additionally, SYI model corrected solar radiation data missing 541120-550201, 610128-610328, 731010-731230.

ST. CLOUD, MINNESOTA
 WBAN NO. 14926
 TIME ZONE: CENTRAL

STATION LOCATION

<u>Solar Radiation Data</u>					<u>Collateral Meteorological Data</u>						
Period of Record	Latitude		Longitude		Elevation	Period of Record	Latitude		Longitude		Elevation
YRMODA - YRMODA	Deg	Min	Deg	Min	Meters	YRMODA - YRMODA	Deg	Min	Deg	Min	Meters
540702 - 720214	N45	35	W94	11	315	540701 - 720214	N45	35	W94	11	326
720215 - 750430	N45	33	W94	04	313	720215 - 750430	N45	33	W94	04	315

NOTES

- A. Station moved 5.4 mi. SE 720215.
- B. Day with weather (Field 204) missing or very spotty 580101 - 750430.
- C. Minutes of sunshine and percent of possible sunshine missing for the entire period.

TALLAHASSEE, FLORIDA
 WBAN NO. 93805
 TIME ZONE: EASTERN

STATION LOCATIONSolar Radiation DataCollateral Meteorological Data

Period of Record YRMODA - YRMODA	Latitude Deg Min	Longitude Deg Min	Elevation Meters	Period of Record YRMODA - YRMODA	Latitude Deg Min	Longitude Deg Min	Elevation Meters
690101 - 761231	N30 23	W84 22	21	690101 - 761231	N30 23	W84 22	17

NOTES

- A. Solar radiation data missing 710818 - 720607, 730901 - 731204.
- B. Additionally, SYI model corrected solar radiation data missing 690511-690912, 700522-700829, 710426-710817, 730518-730831, 740620-741101, 750406-751011, 760505-760818.
- C. Minutes of sunshine and percent of possible sunshine missing for the entire period.

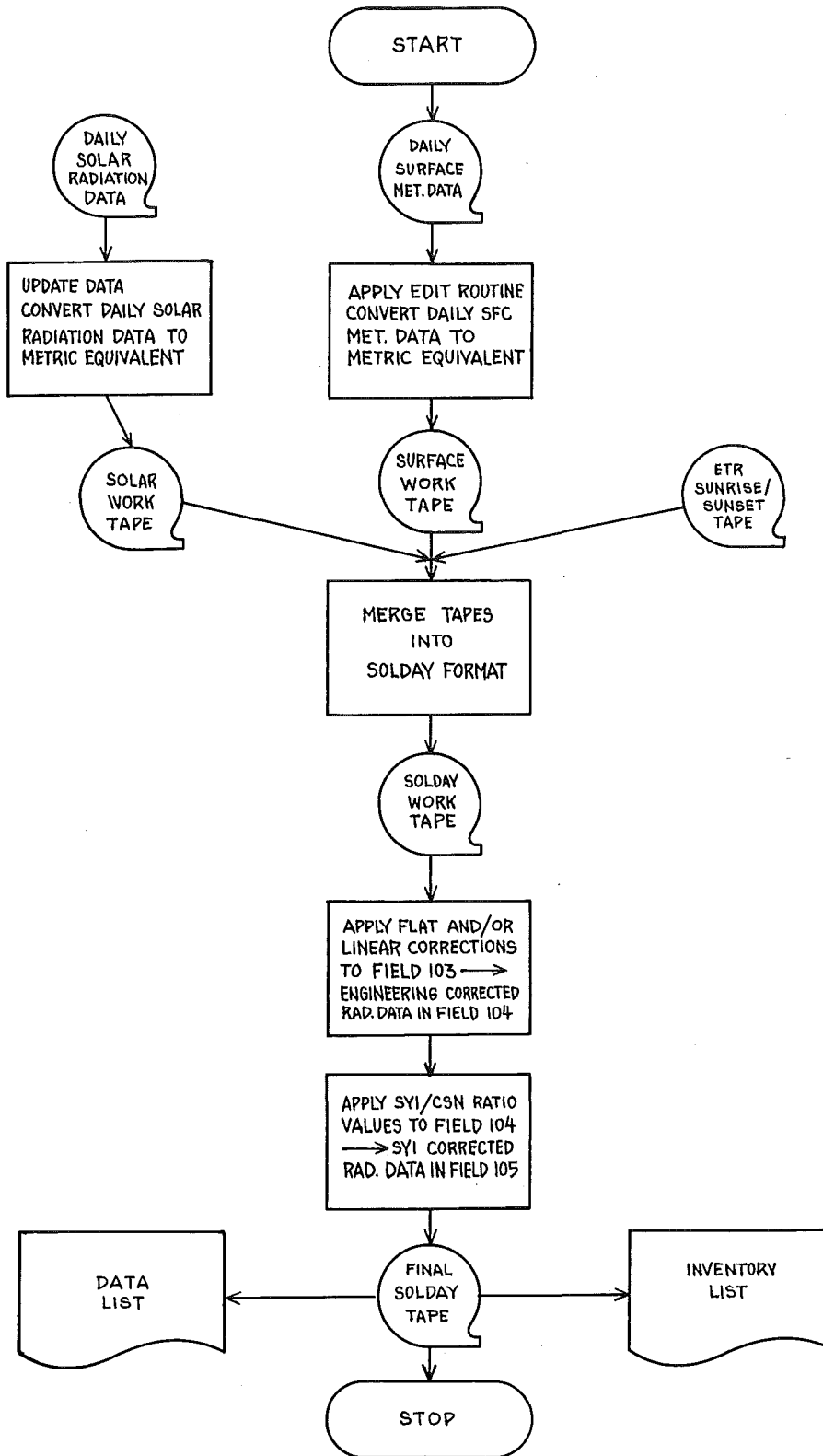
TAMPA, FLORIDA
 WBAN NO. 12842
 TIME ZONE: EASTERN

STATION LOCATIONSolar Radiation DataCollateral Meteorological Data

Period of Record YRMODA - YRMODA	Latitude Deg Min	Longitude Deg Min	Elevation Meters	Period of Record YRMODA - YRMODA	Latitude Deg Min	Longitude Deg Min	Elevation Meters
520701 - 740511	N27 58	W82 32	14	520701 - 740531	N27 58	W82 32	6

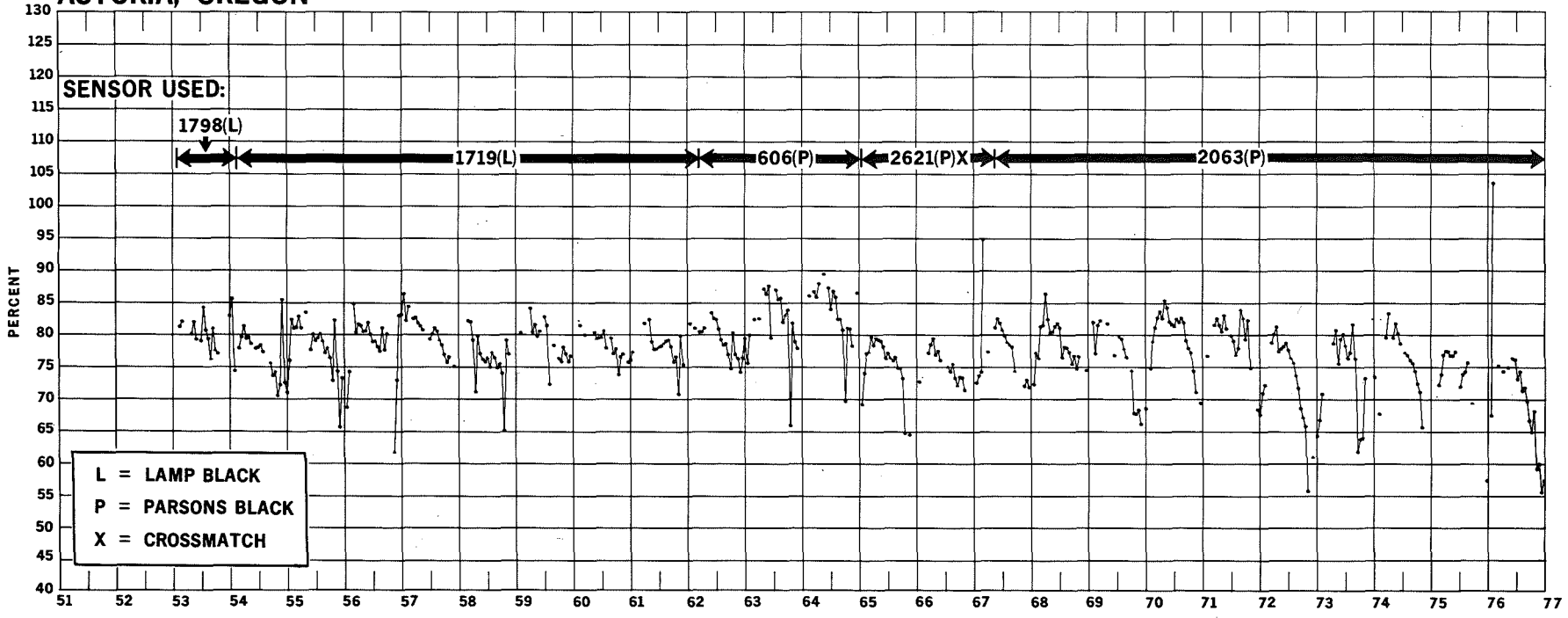
NOTES

- A. SYI model corrected solar radiation data missing 520731-521027, 550625-551018, 570630-571006, 590702-590916, 600613-600930, 610708-610912, 620715-621005, 640710-641017, 650503-650722, 680709-681001, 710720-710929, 720422-720630, 730722-730928.

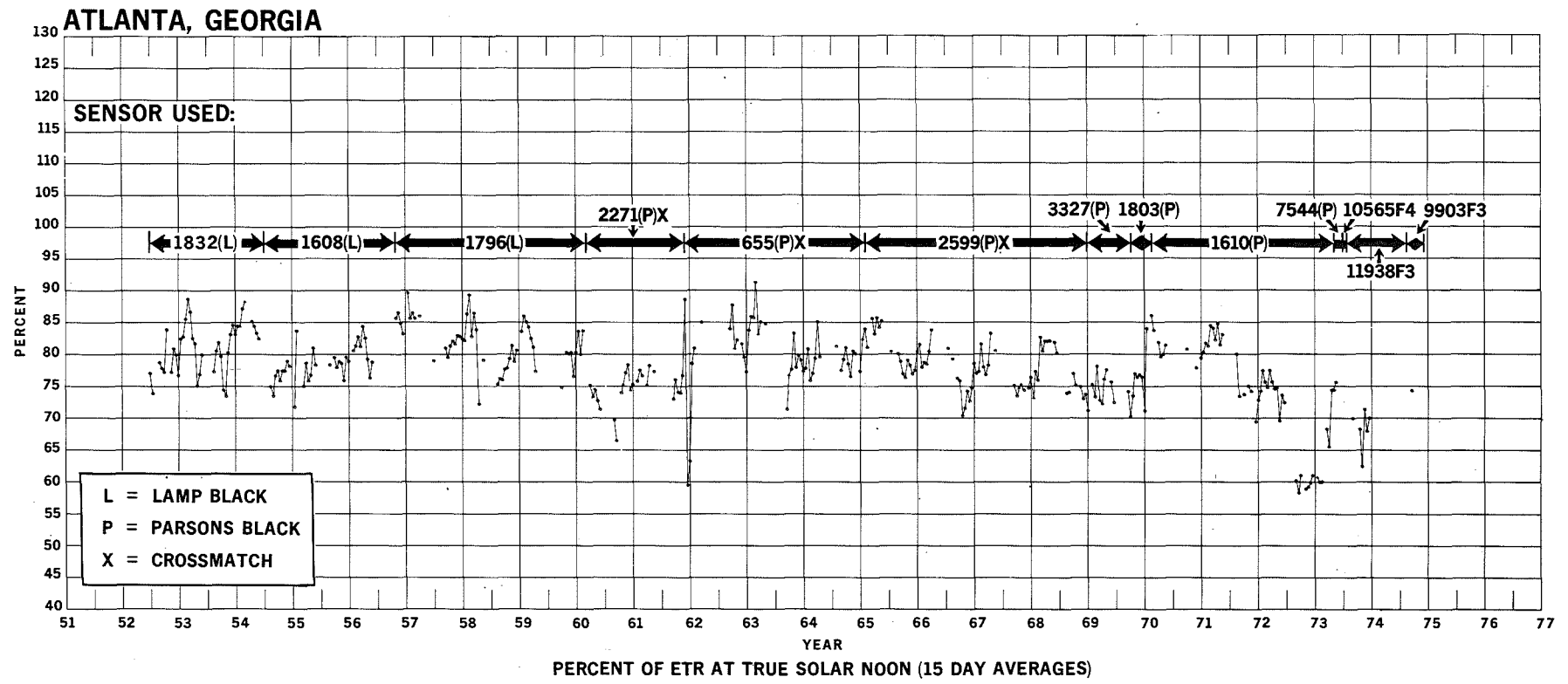


SCHEMATIC FLOW DIAGRAM OF SOLDAY PROCESS

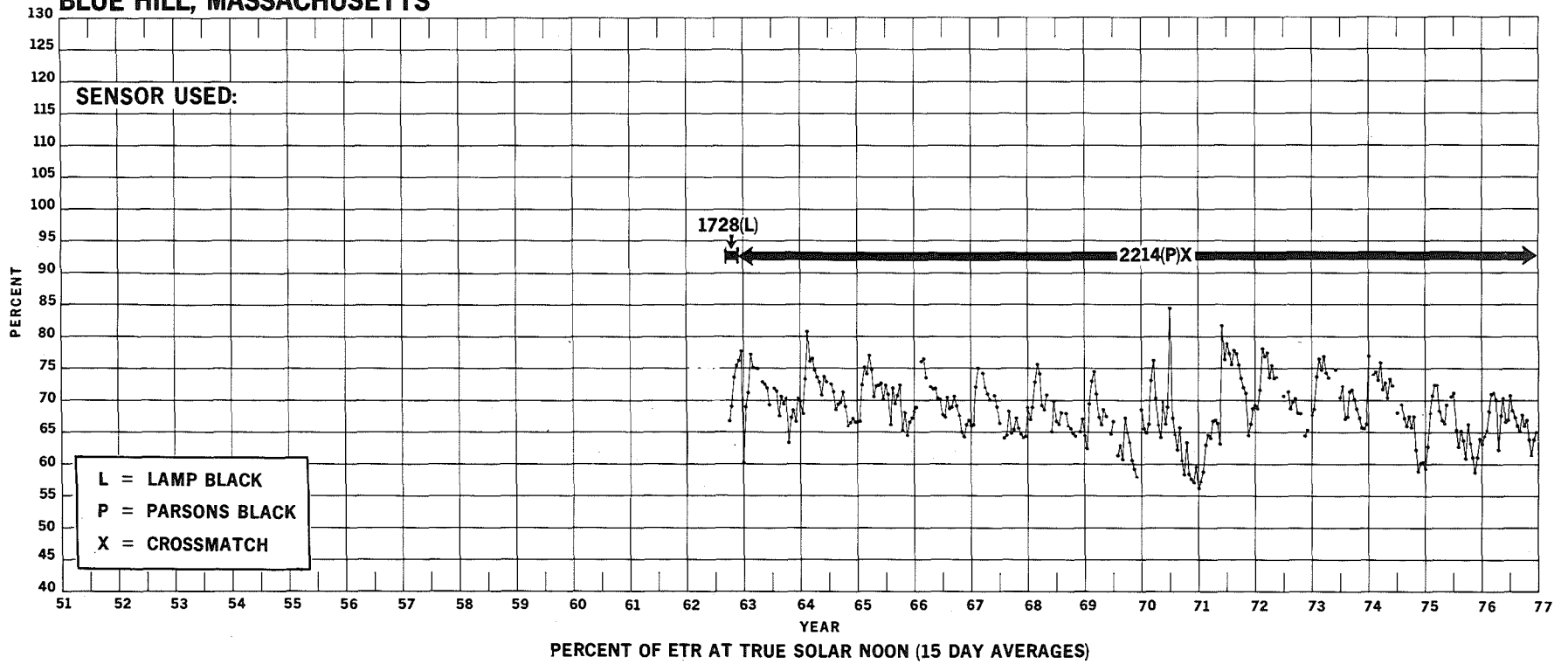
ASTORIA, OREGON



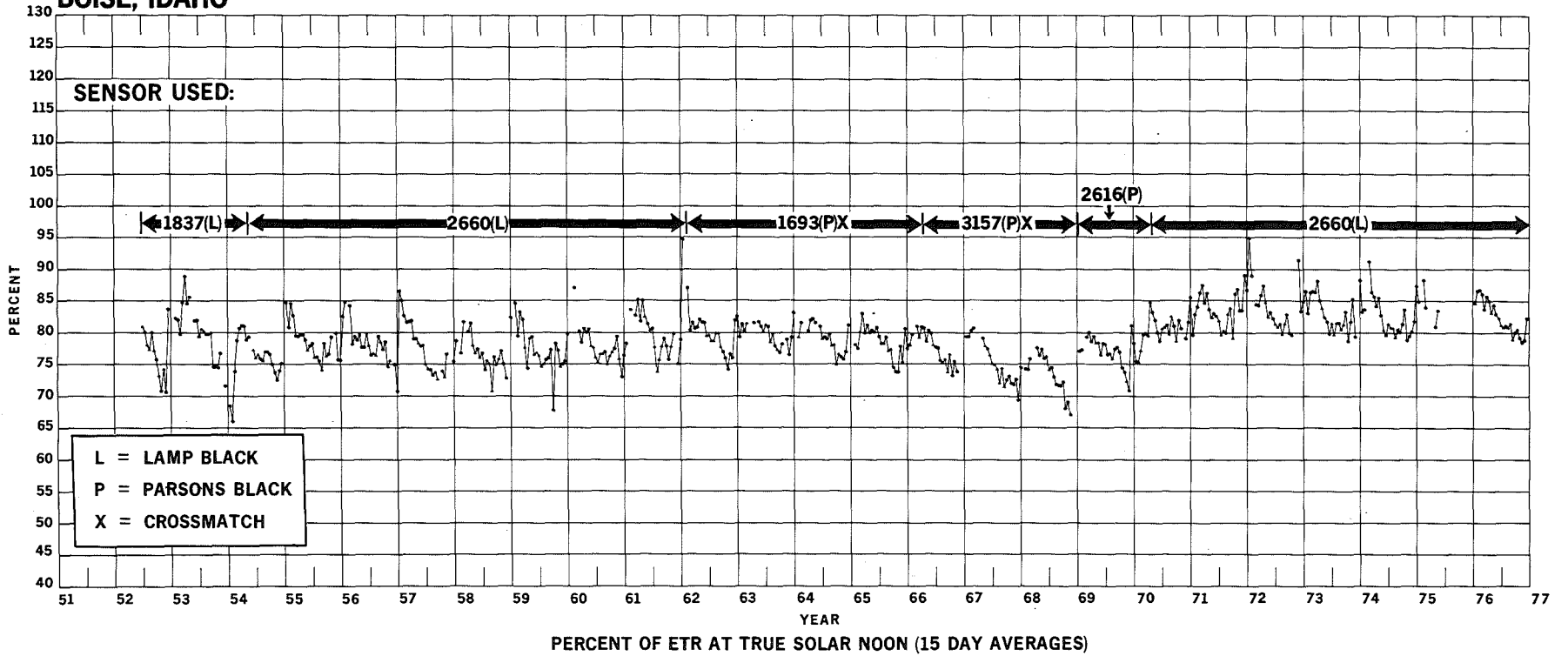
PERCENT OF ETR AT TRUE SOLAR NOON (15 DAY AVERAGES)

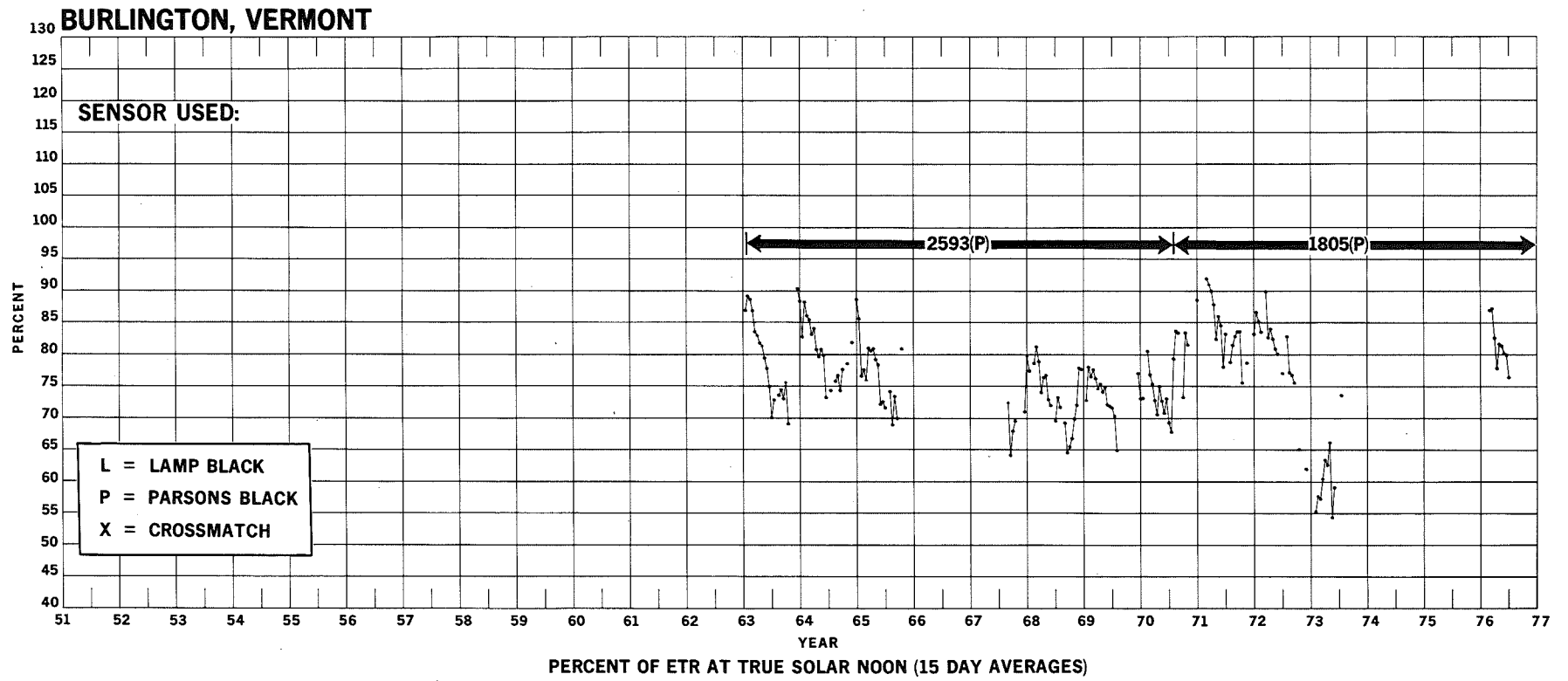


BLUE HILL, MASSACHUSETTS

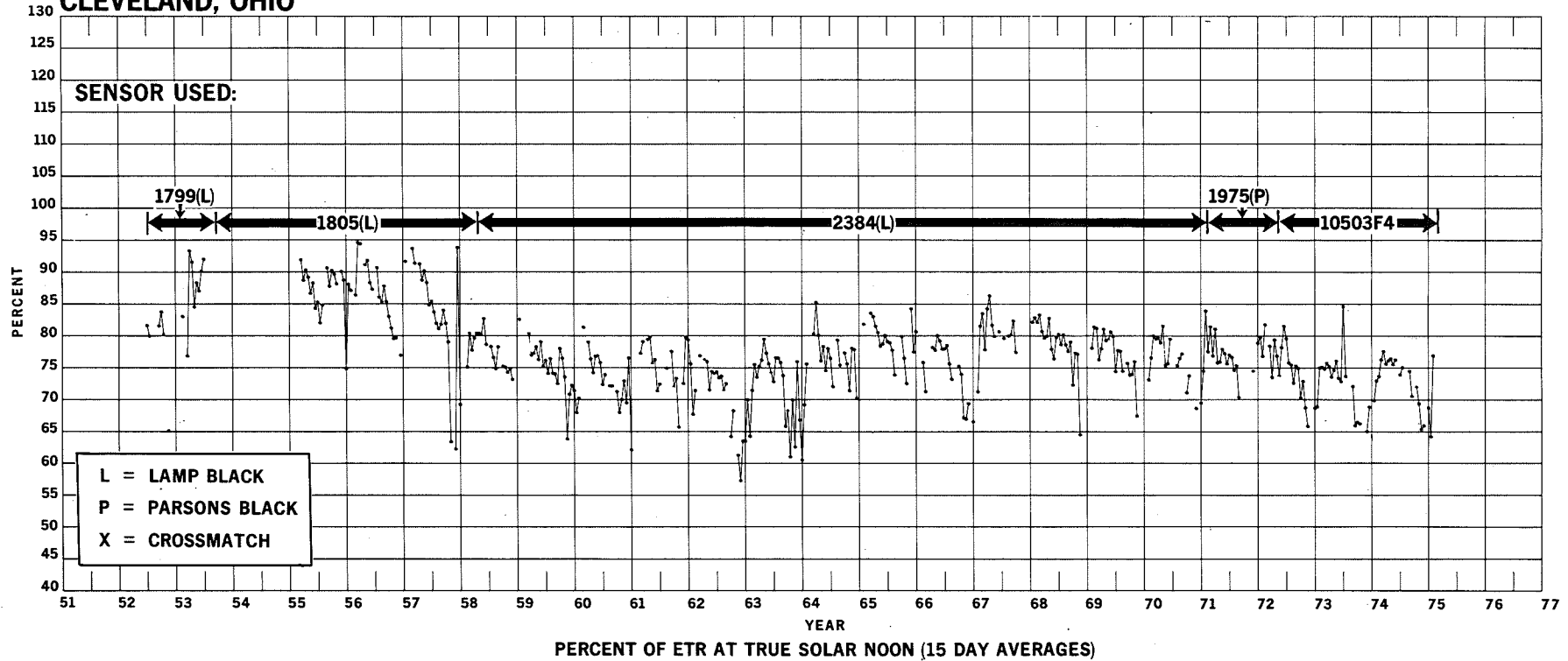


BOISE, IDAHO

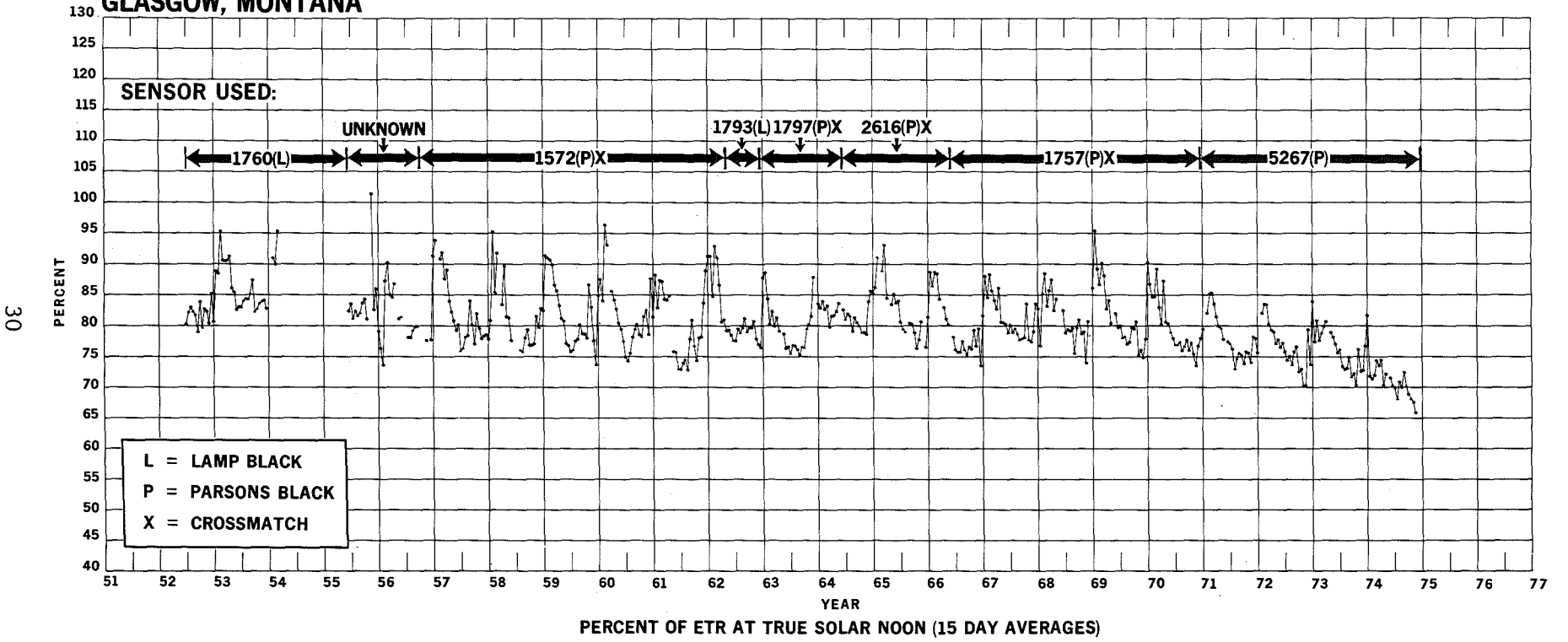




CLEVELAND, OHIO

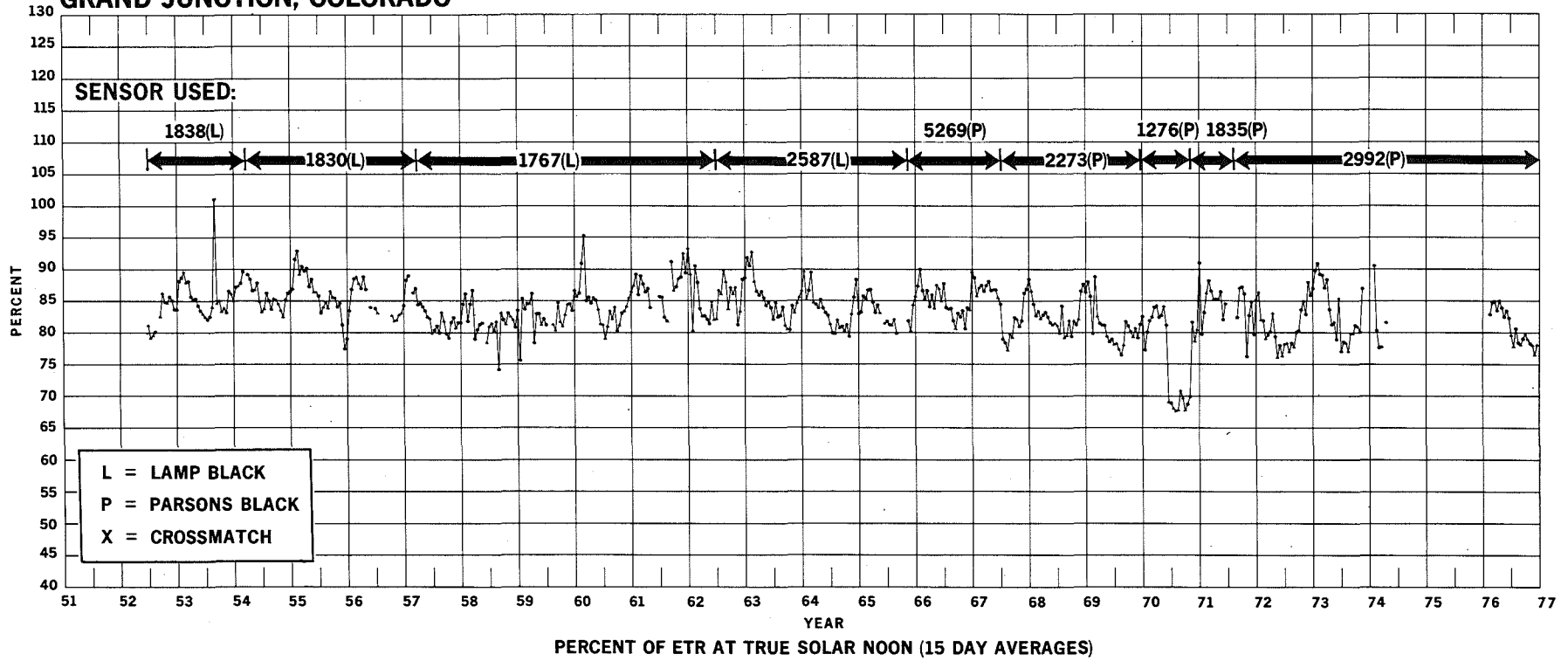


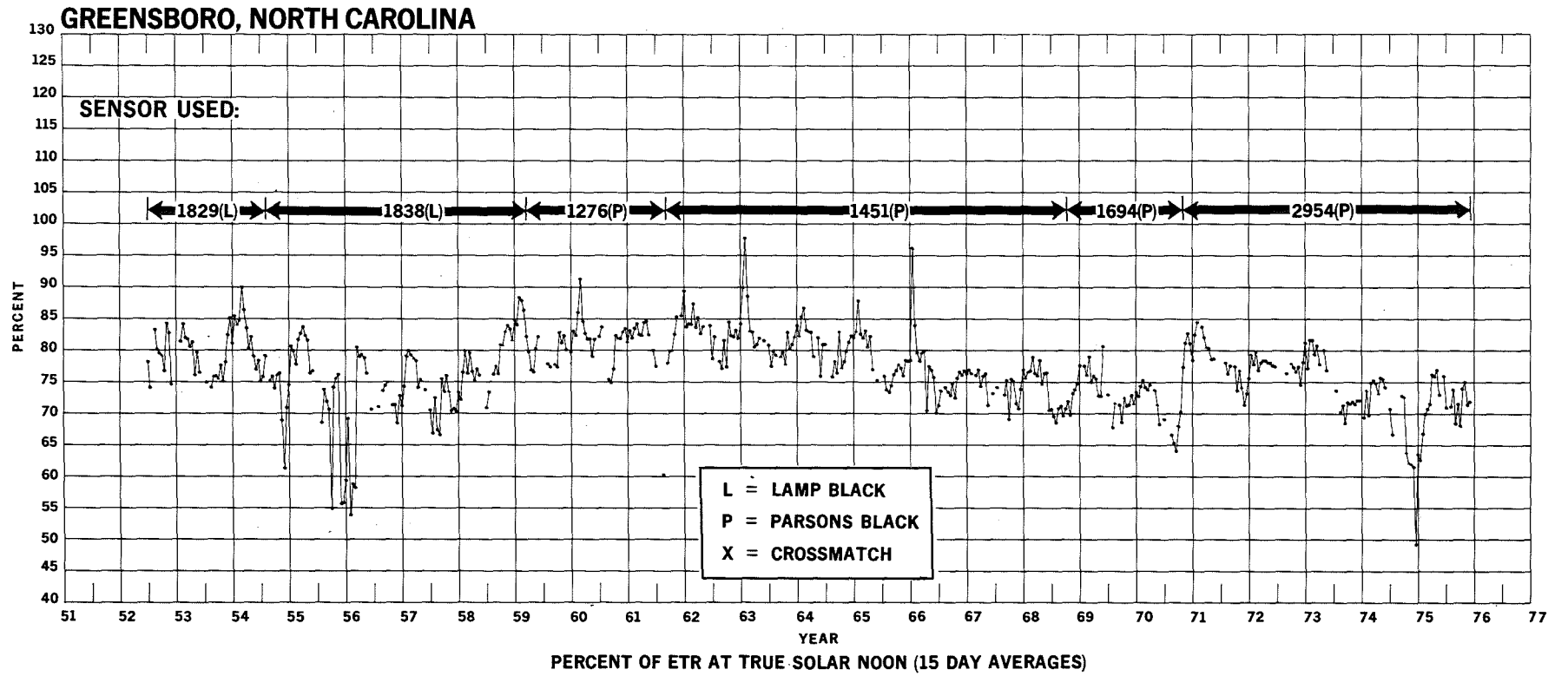
GLASGOW, MONTANA



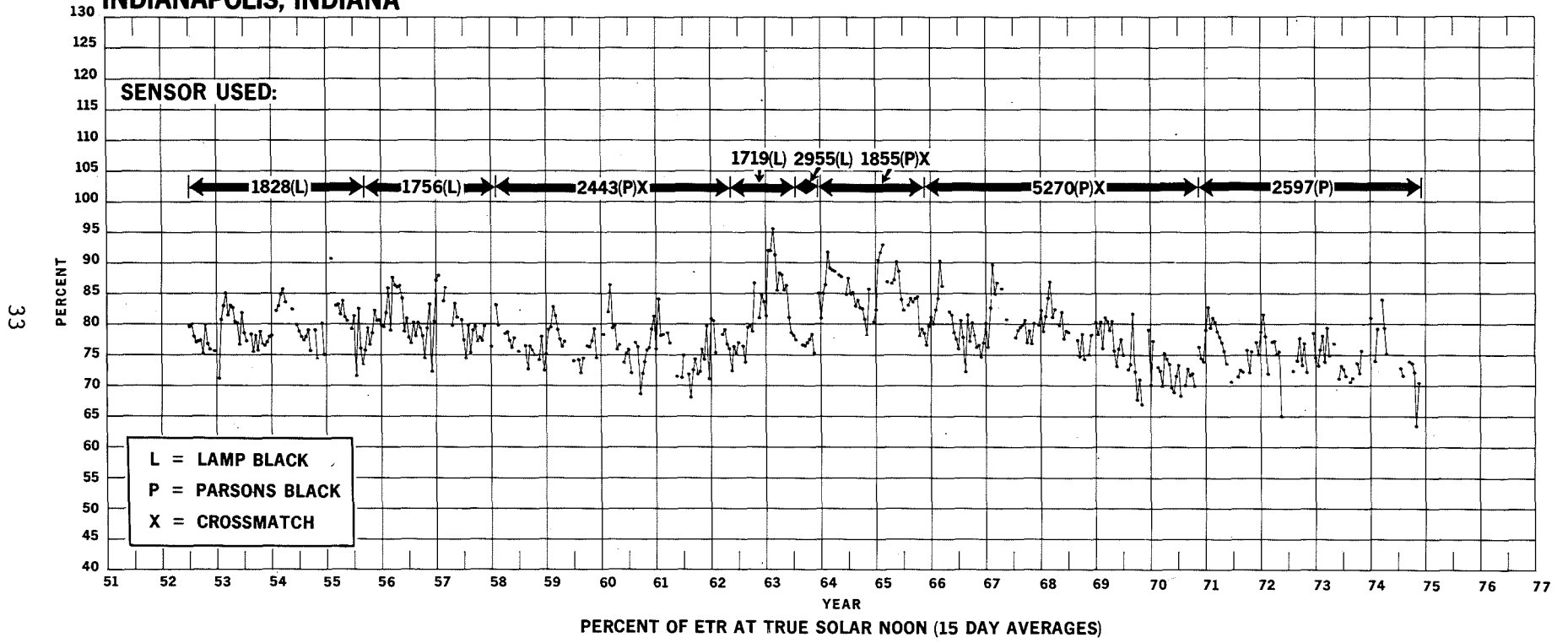
30

GRAND JUNCTION, COLORADO



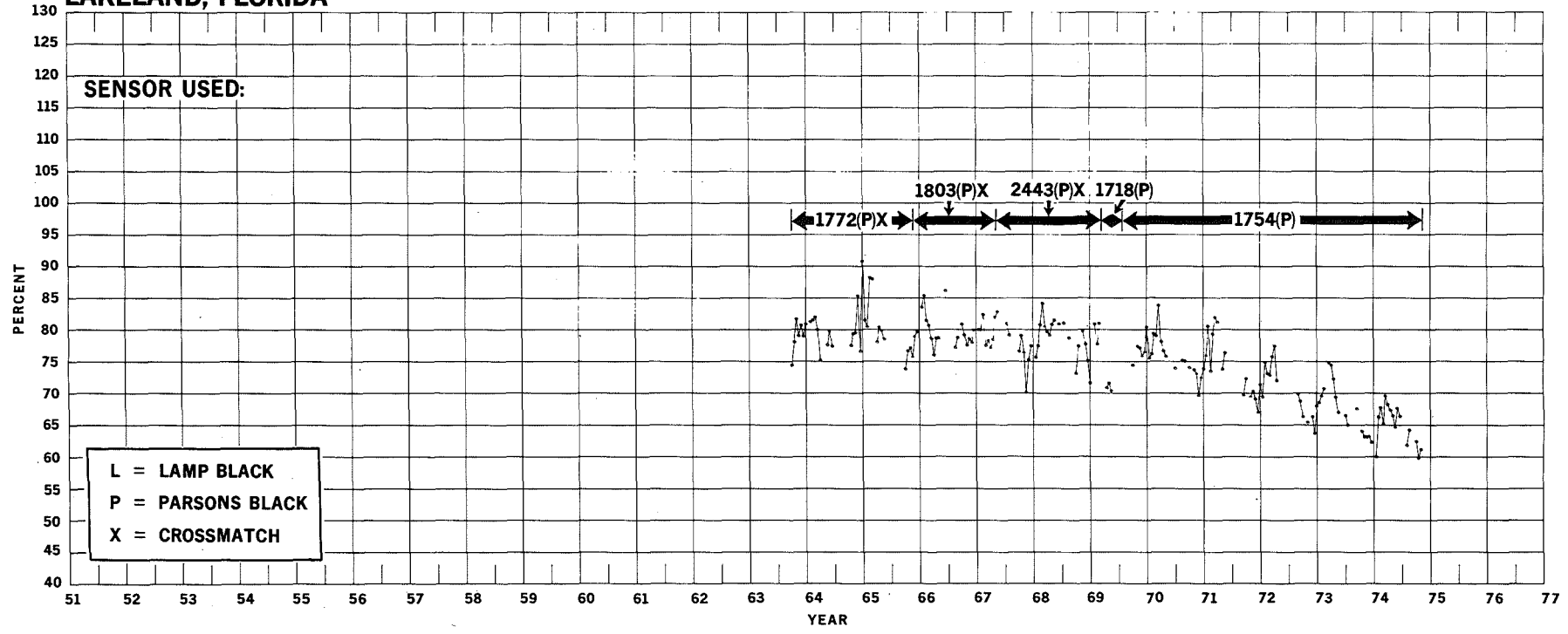


INDIANAPOLIS, INDIANA



LAKELAND, FLORIDA

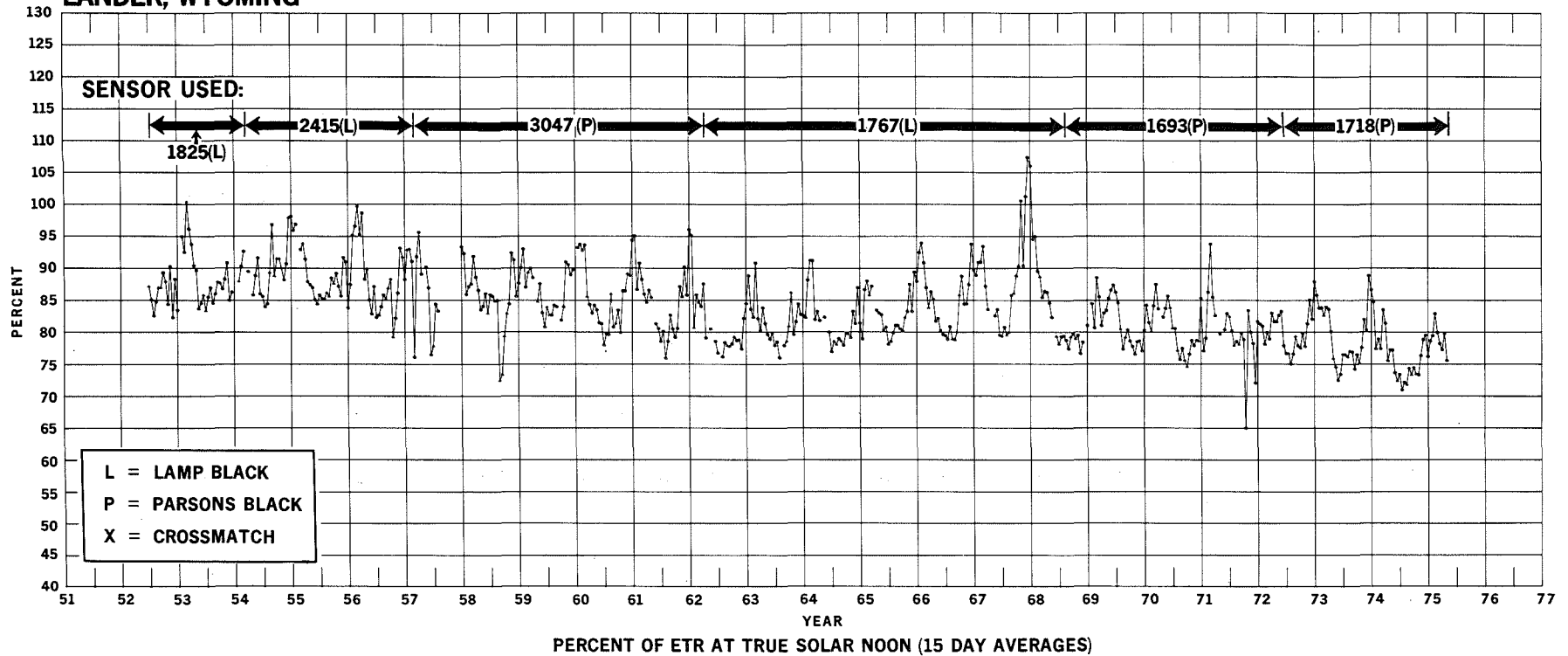
SENSOR USED:



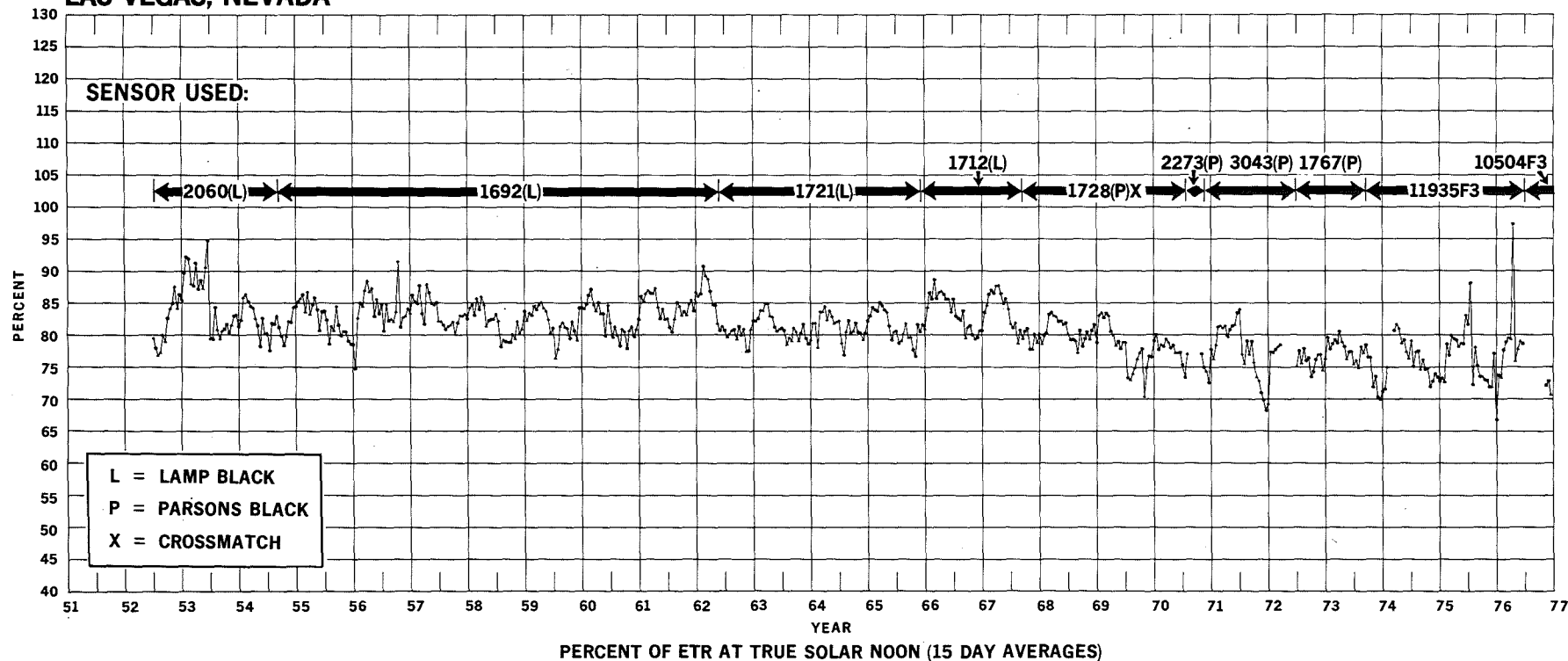
34

PERCENT OF ETR AT TRUE SOLAR NOON (15 DAY AVERAGES)

LANDER, WYOMING

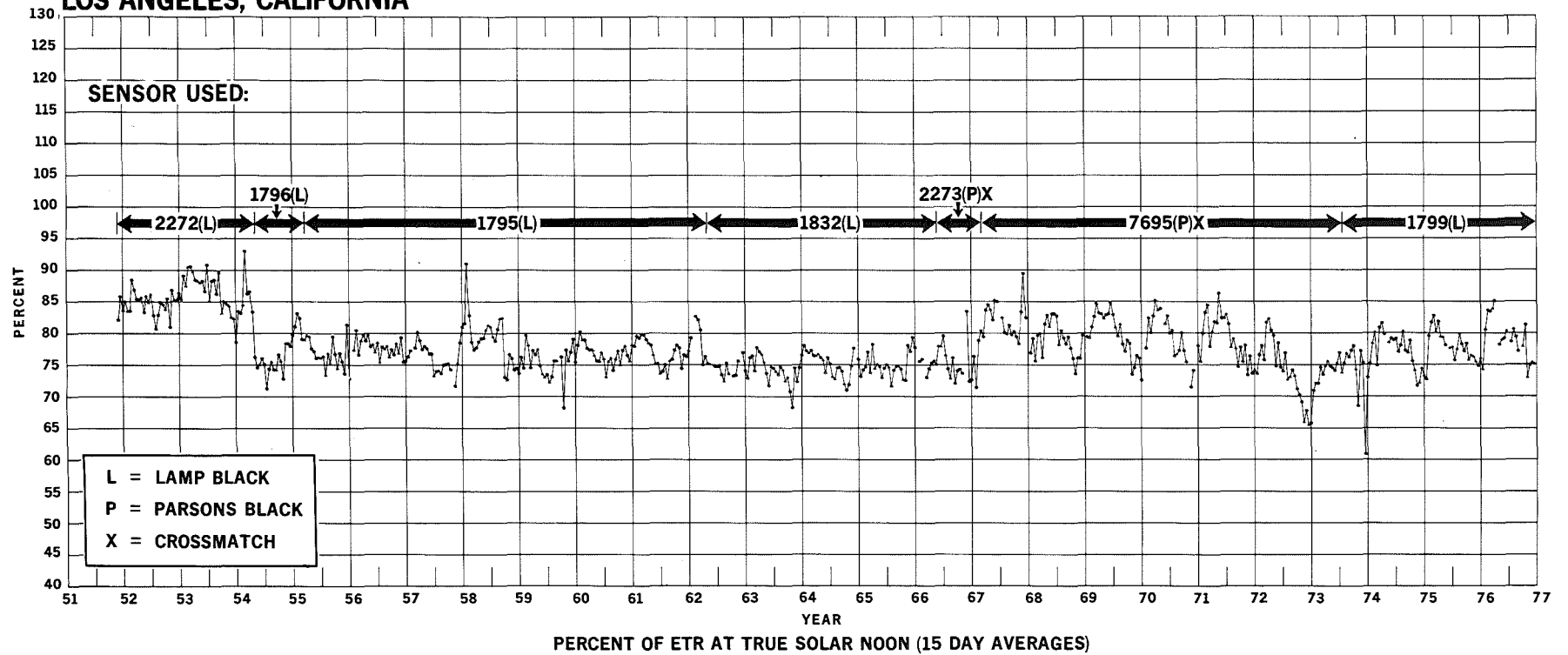


LAS VEGAS, NEVADA

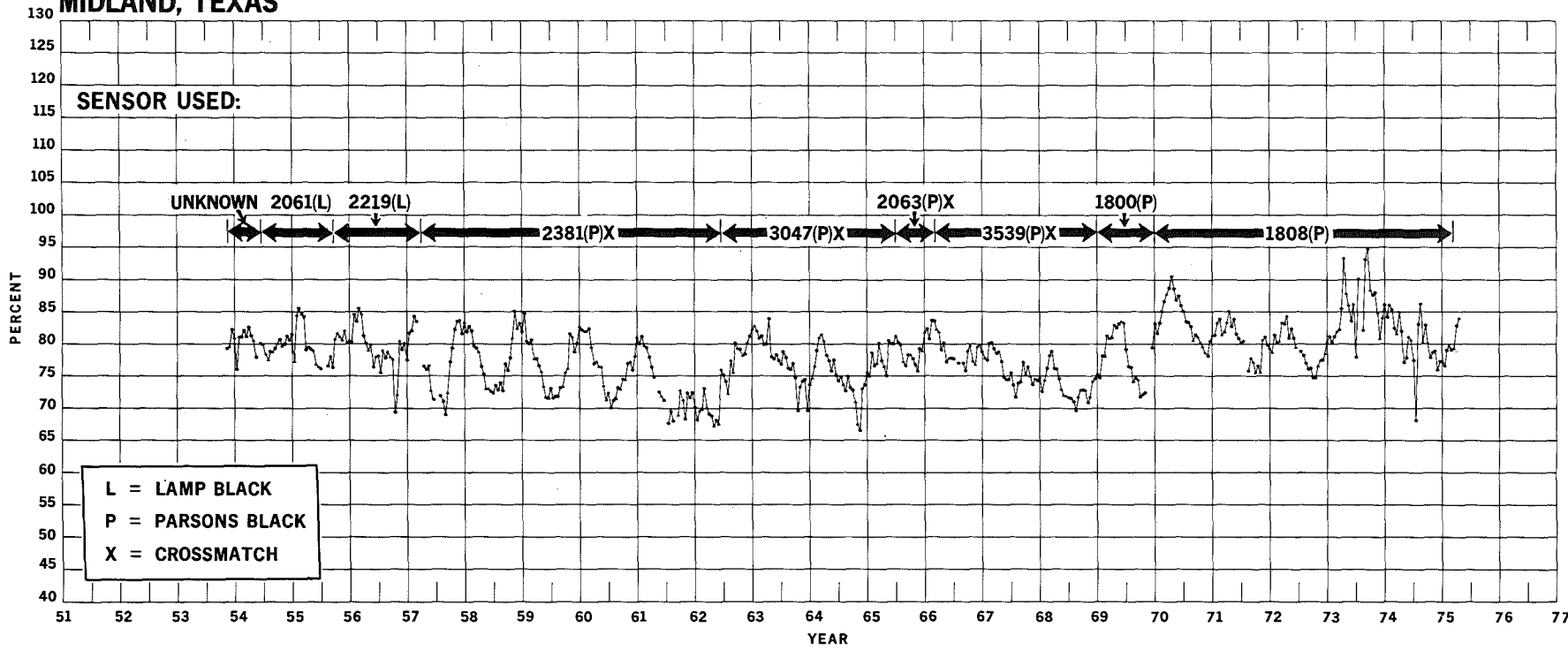


96

LOS ANGELES, CALIFORNIA

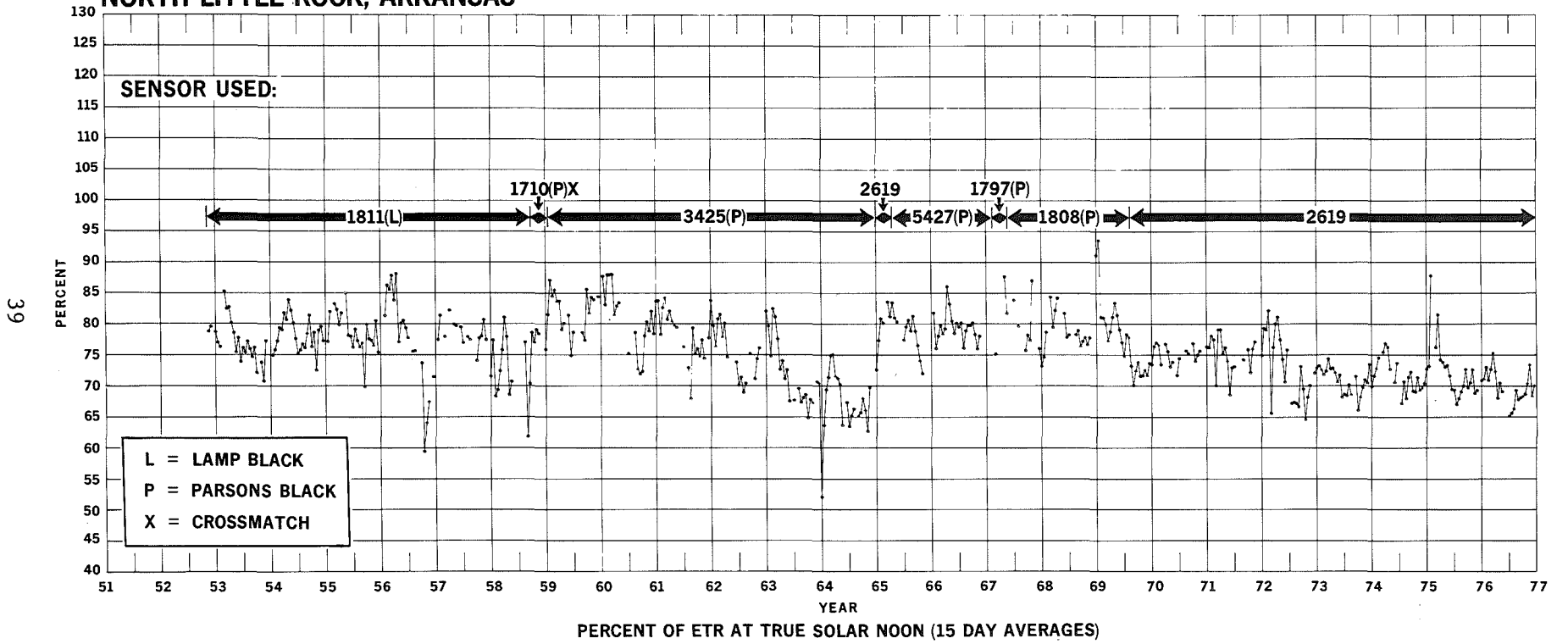


MIDLAND, TEXAS

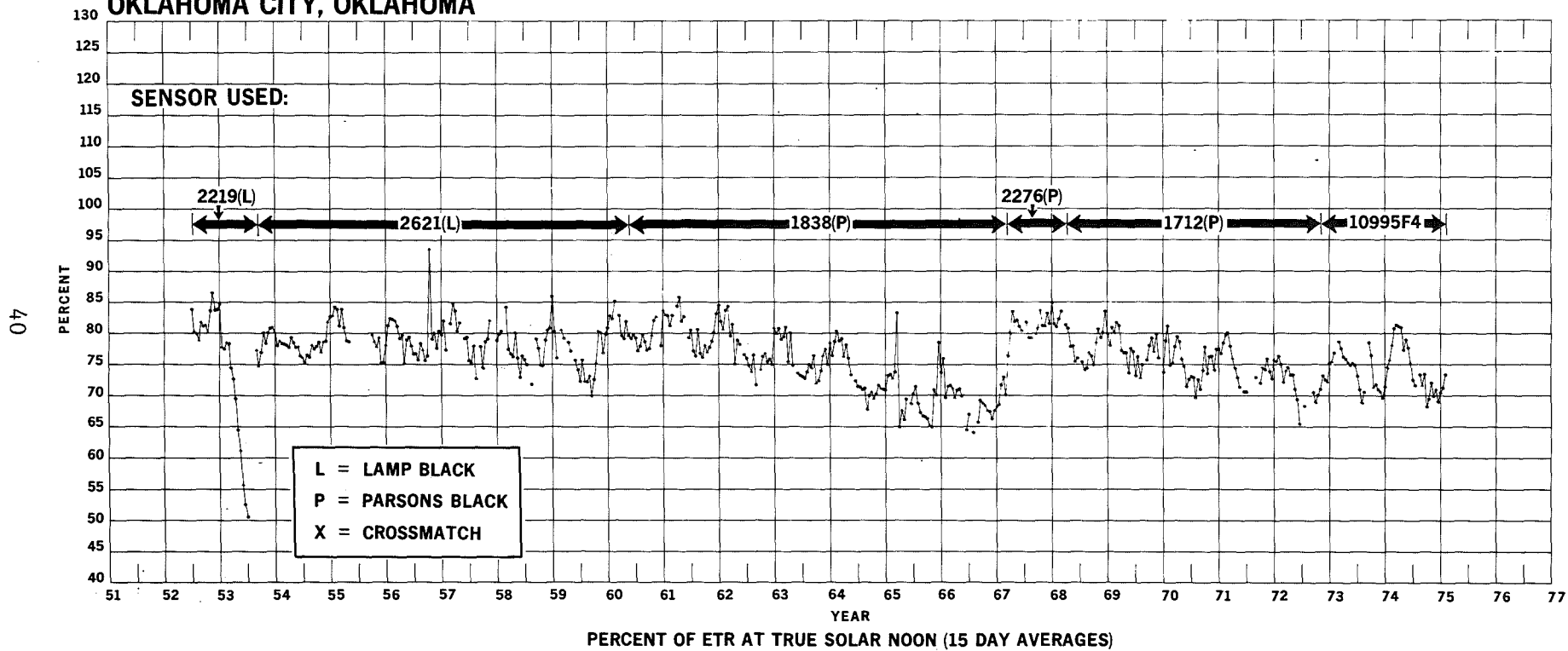


83

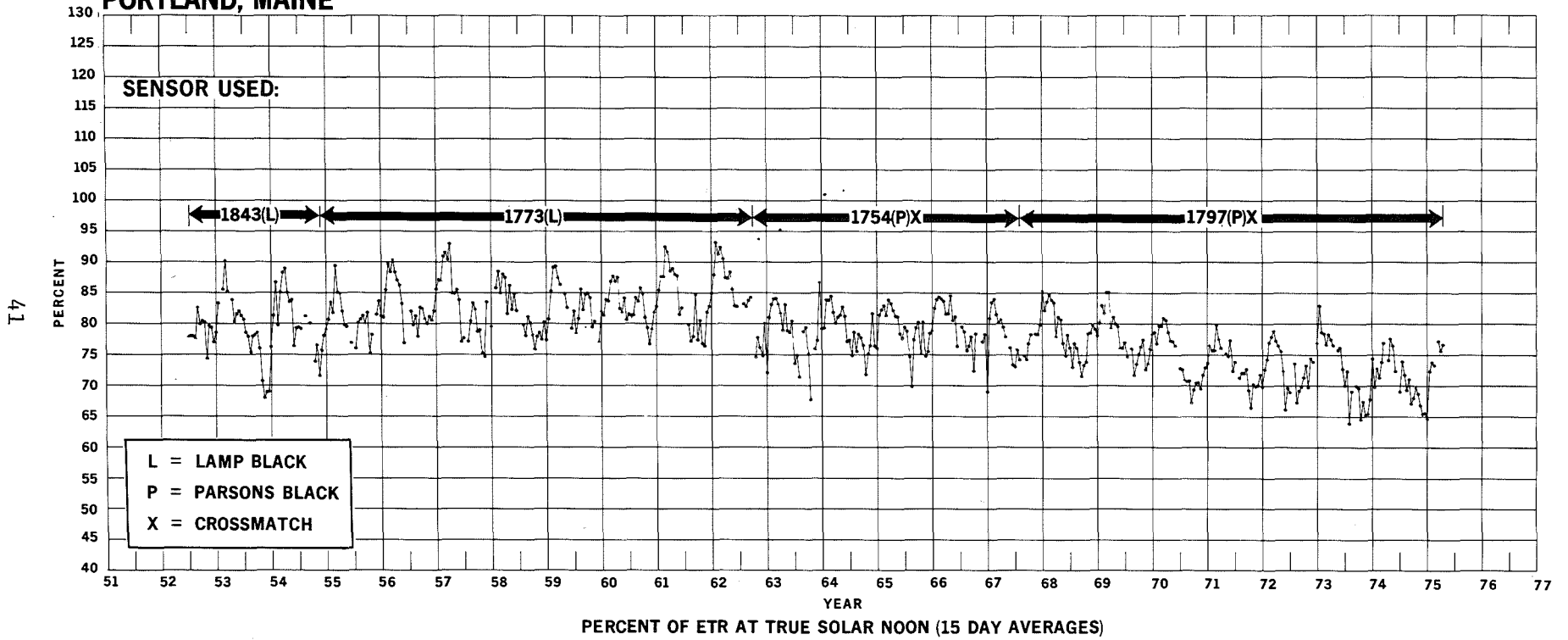
NORTH LITTLE ROCK, ARKANSAS



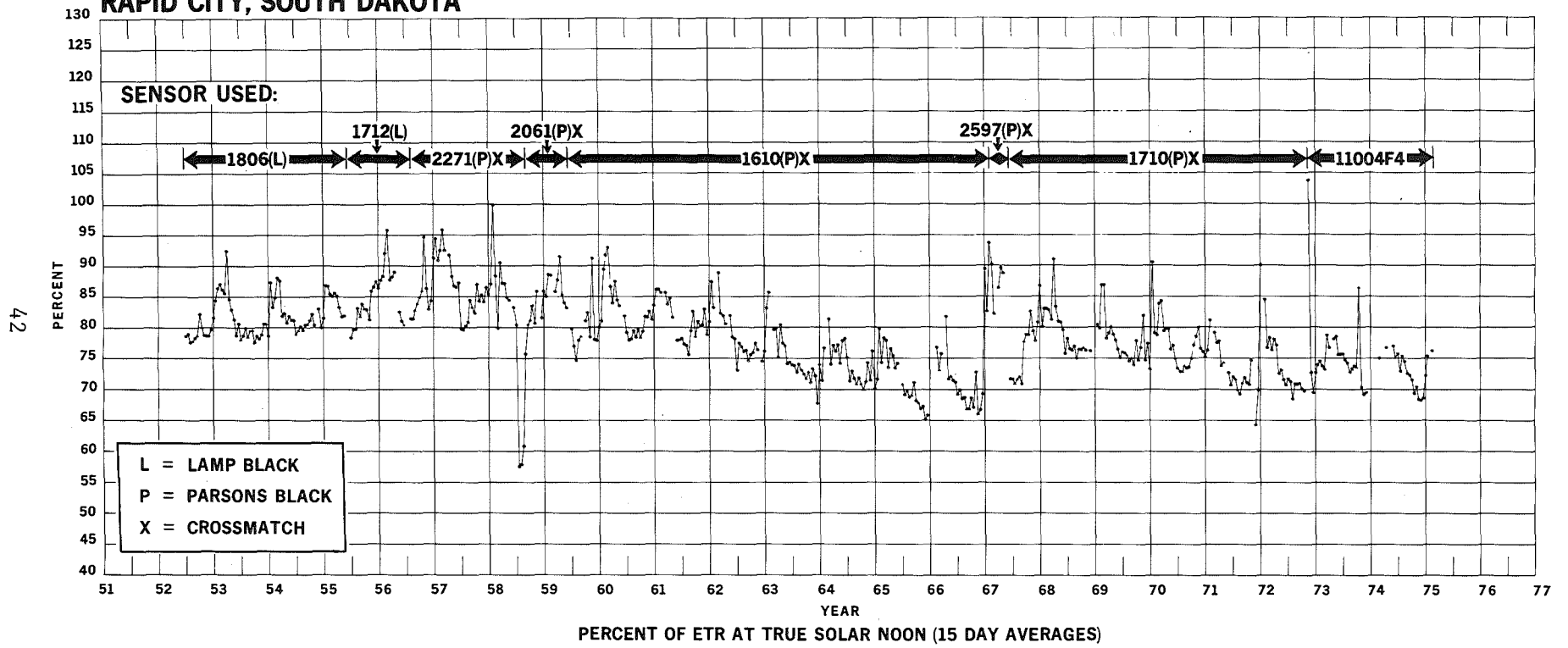
OKLAHOMA CITY, OKLAHOMA



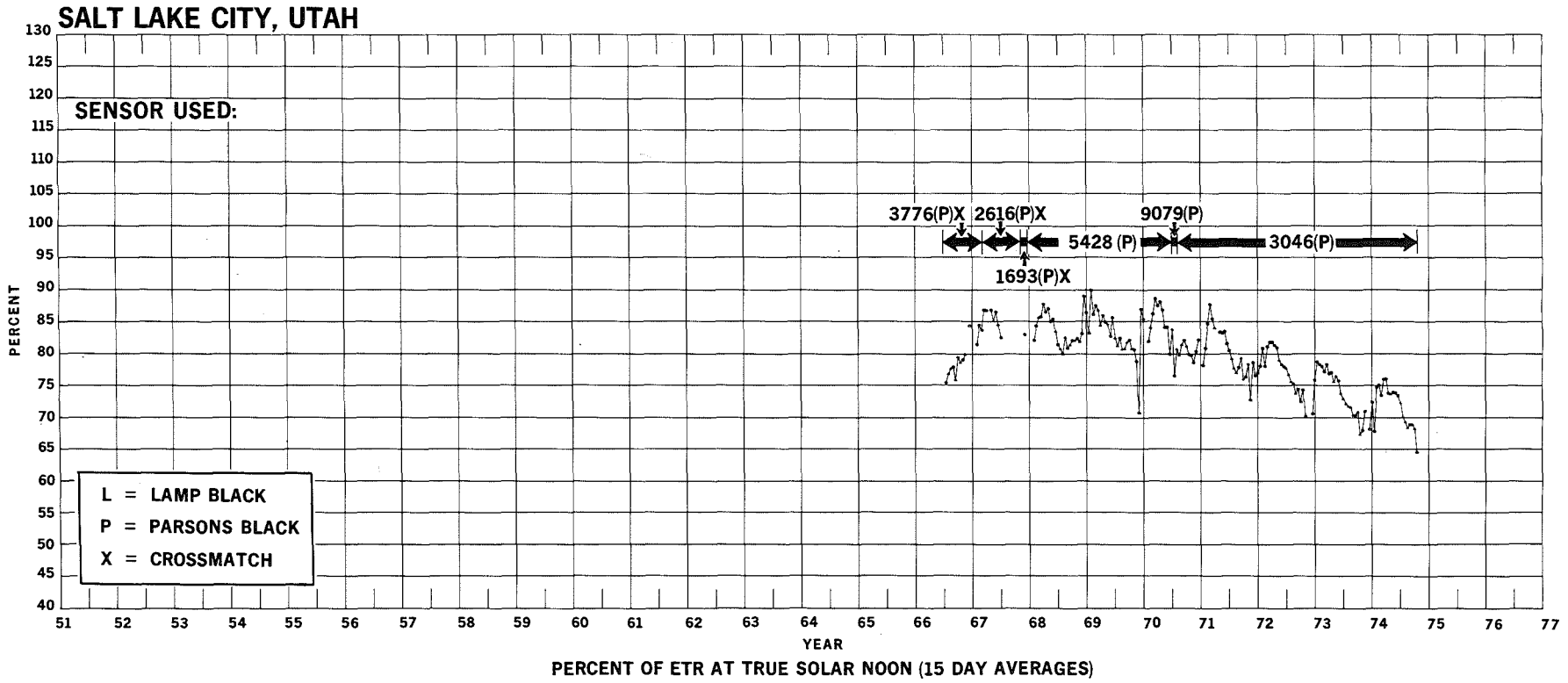
PORTLAND, MAINE



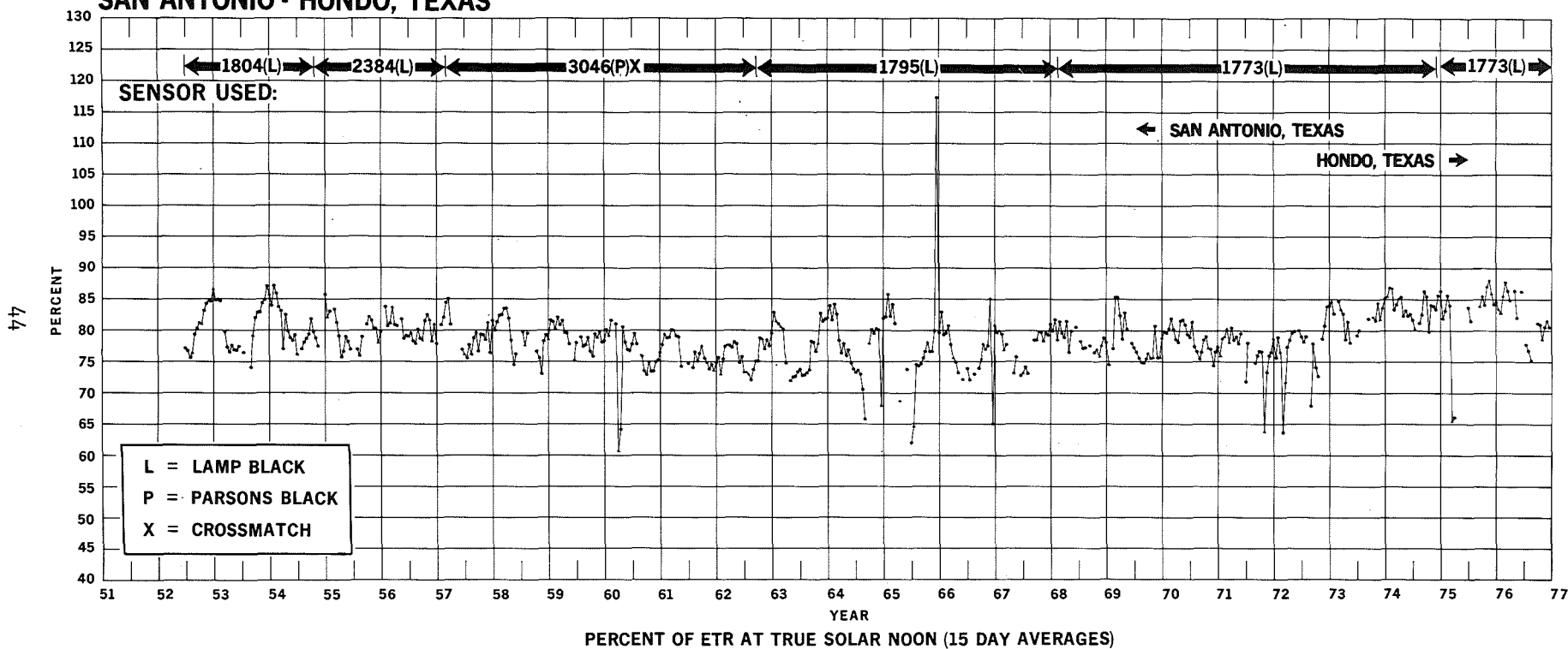
RAPID CITY, SOUTH DAKOTA



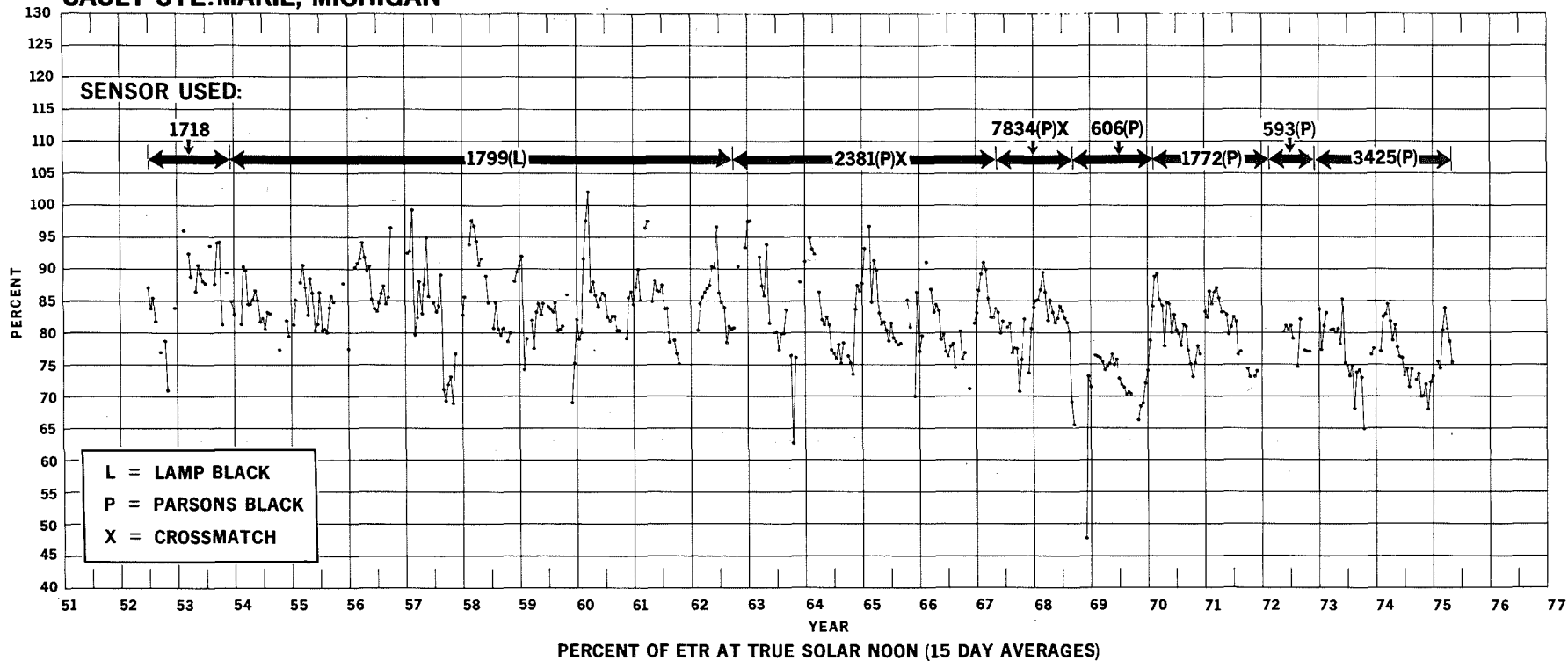
42

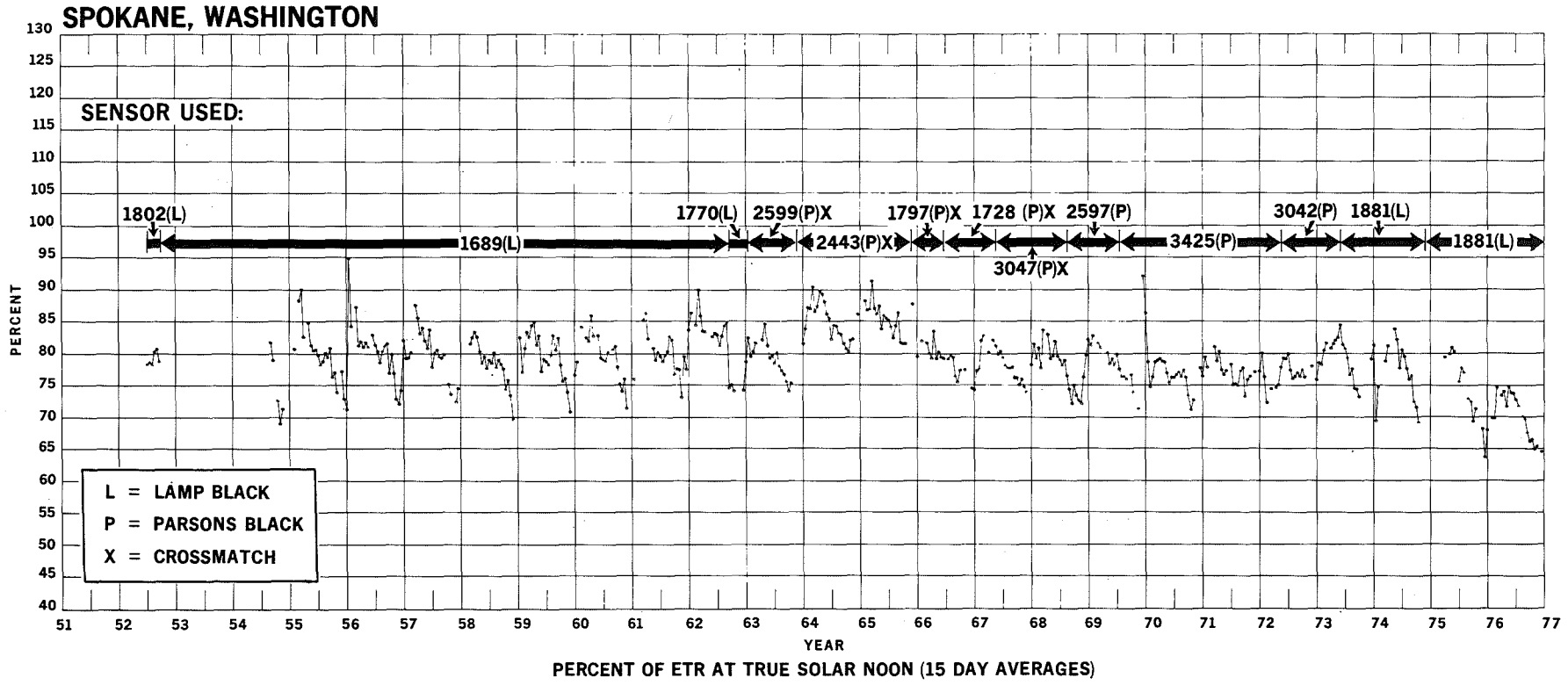


SAN ANTONIO - HONDO, TEXAS

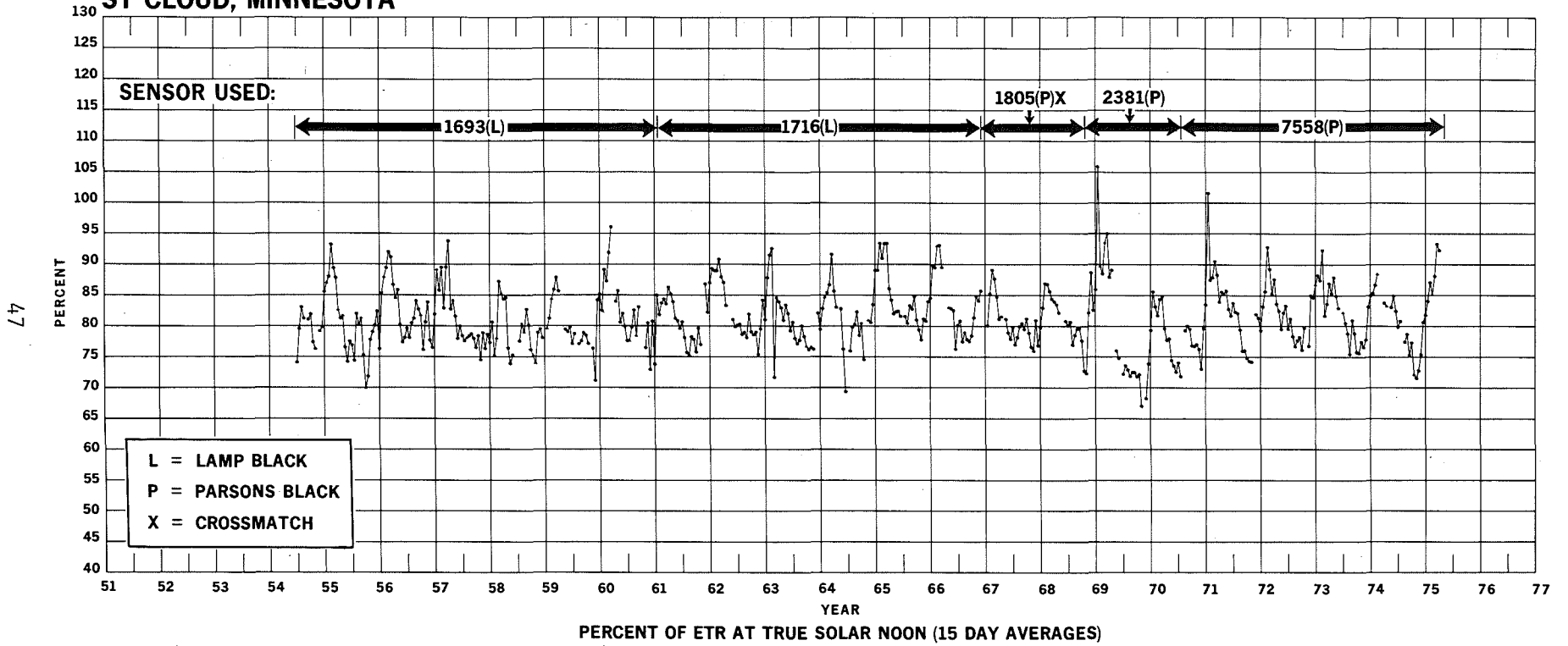


SAULT STE. MARIE, MICHIGAN

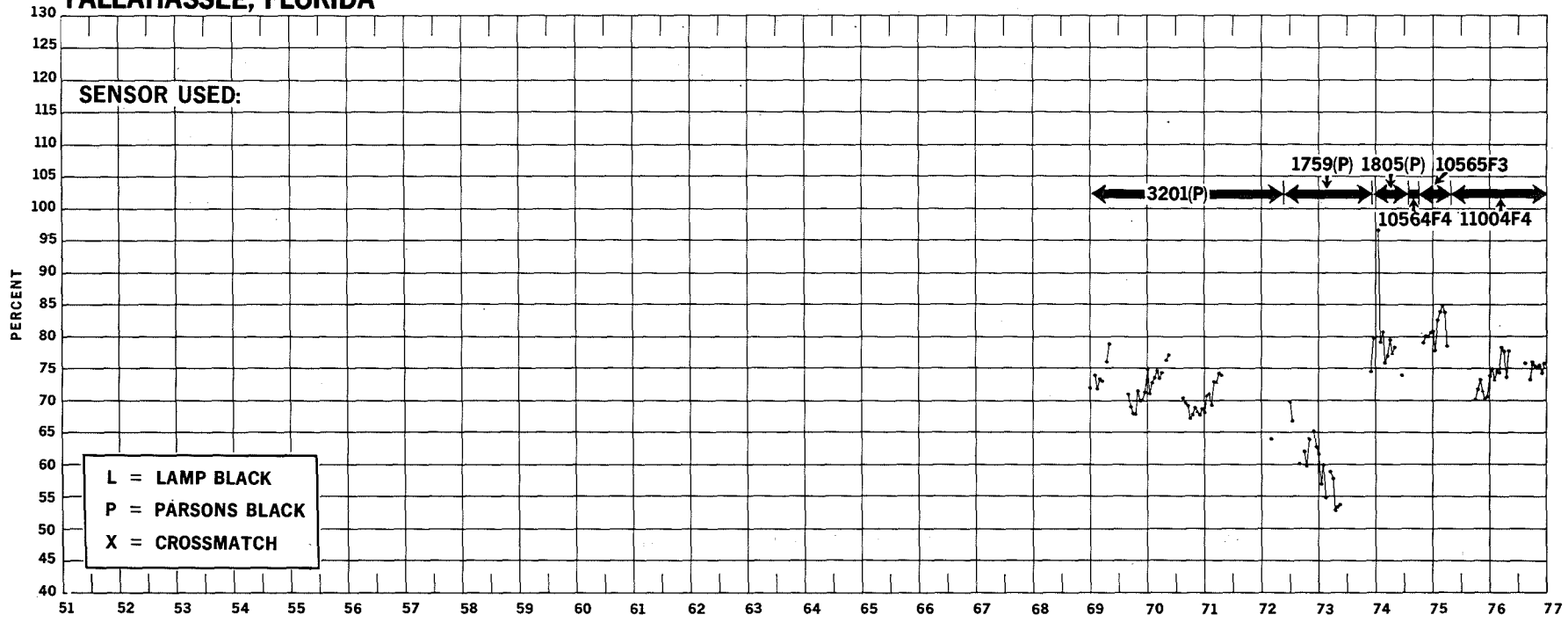




ST CLOUD, MINNESOTA

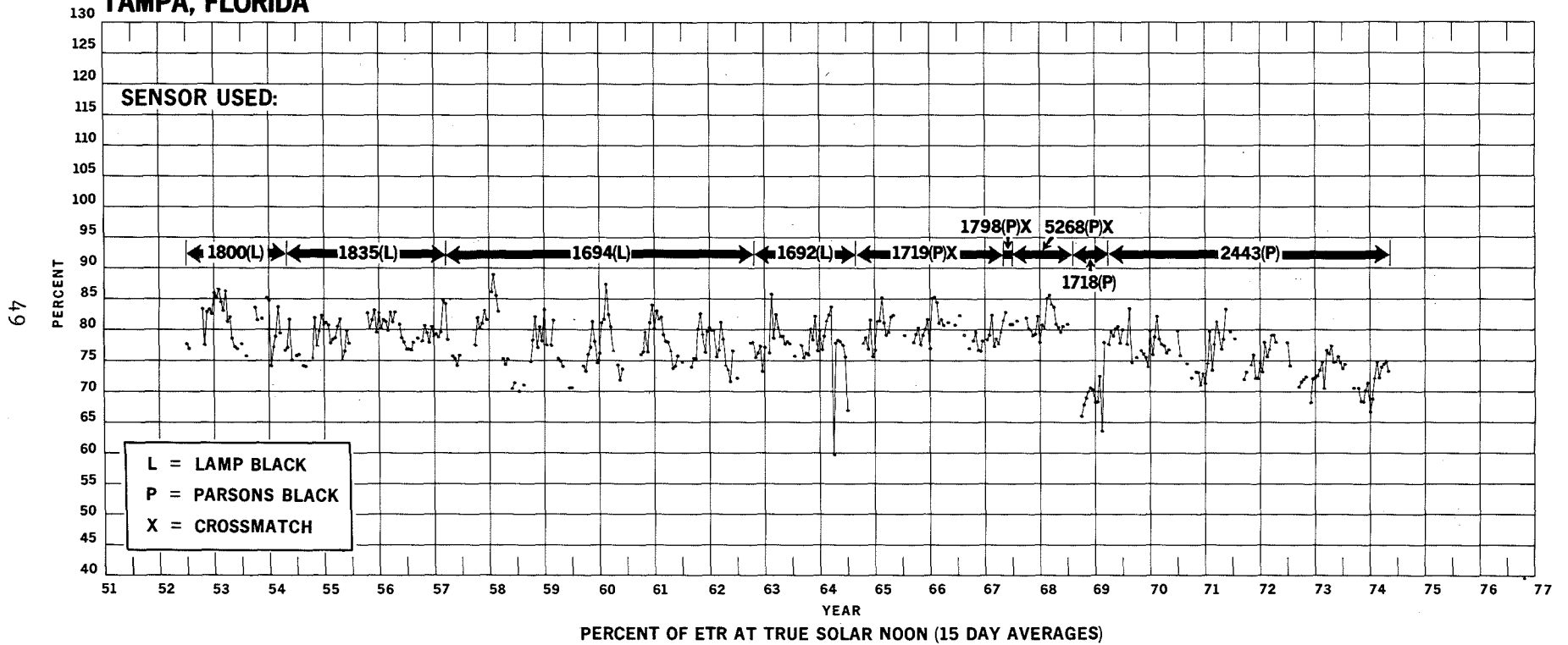


TALLAHASSEE, FLORIDA



PERCENT OF ETR AT TRUE SOLAR NOON (15 DAY AVERAGES)

TAMPA, FLORIDA



Sensor history for 27 daily solar radiation stations, listing calibration corrections applied to observed data.

<u>STATION</u>	<u>STATE</u>	<u>STATION NUMBER</u>	<u>FLAT</u>		<u>LINEAR</u>	
			<u>YRMODA-YRMODA</u>	<u>CORR</u>	<u>YRMODA-YRMODA</u>	<u>CORR</u>
Astoria	OR	94224	530130-570630	0.980	530120-540127	1.028
					540128-620304	0.961
			620305-641220	0.930		
			641221-650105	0.920		
			650106-660511	0.930	650106-670509	1.013
			660512-661115	0.946		
			661116-670509	0.950		
			681122-700610	1.038		
			700611-710602	0.983		
Atlanta	GA	13874	490305-530406	0.994	490305-540707	0.934
			530407-540429	0.999		
			540430-570701	0.980		
			600319-681128	0.930	650208-681128	1.072
					700112-730426	1.255
Blue Hill	MA	14753	621107-711108	1.029		
			711109-761231	0.930		
Boise	ID	24131	500422-570701	0.980		
			590121-590305	0.980		
			620212-690102	0.930	660407-690102	1.069
			690103-700413	1.038	690103-700413	1.013
			750428-761231	0.984		
Burlington	VT	14742			591018-700804	1.074
			620703-680227	0.930		
Cleveland	OH	14820	680228-700804	0.946		
			490602-530220	0.980	490602-530828	0.976
			530829-550220	0.980		
			550221-570630	0.830		
			650315-710131	0.983		
			710201-710810	0.931		
		710811-720507	0.946			

*Listed correction for ending date; correction for beginning date equals 1.0.

Sensor history for 27 daily solar radiation stations, listing calibration corrections applied to observed data.

<u>STATION</u>	<u>STATE</u>	<u>STATION NUMBER</u>	<u>FLAT YRMODA-YRMODA</u>	<u>CORR</u>	<u>LINEAR YRMODA-YRMODA</u>	<u>CORR</u>
Glasgow	MT	94008	500129-561010	0.980	500129-550603	0.947
			561011-570630	0.911	561011-620411	1.072
			570701-610419	0.930		
			610420-620411	0.951		
			620412-621113	1.019		
			621114-640603	0.930	621114-640602	0.986
			651027-660512	0.951	640603-660519	1.019
			660513-660519	0.964		
			660520-701117	0.930	660520-701117	1.012
Grand Junction	CO	23066	490425-570630	0.980	490425-540206	0.959
			610710-620129	0.981	570305-620129	0.924
			651112-670713	0.930	651112-670713	0.979
			670714-691221	0.929		
					710824-750102	1.035
Greensboro	NC	13723	490717-570630	0.980		
			590310-590520	0.949		
			610901-681008	0.930		
			681009-701028	1.061		
Indianapolis	IN	93819	491106-550901	0.980		
			580108-640426	0.930		
			631212-651118	0.930		
			651119-701109	0.938	651119-701109	1.080
					701110-741130	1.084
Lakeland	FL	12883	630308-690310	0.930	630308-651115	1.016
					690311-690709	1.019
					690710-741119	1.240
Lander	WY	24021	490709-570309	0.980	540217-570309	0.979
			570310-570630	0.911	570310-620408	1.072
			570701-620408	0.930		
			670623-680114	1.017	620409-680804	0.966
			680115-680804	1.028		
			680805-720615	1.060	680805-720615	1.019
			720616-750506	0.926	720616-750506	1.072
Las Vegas	NV	23169	500820-570630	0.980	540901-620507	0.965
			570718-571207	0.980		
			600620-620507	0.980		
			620508-650516	0.984		
			651124-690410	0.930		
			690411-700729	0.949		

Sensor history for 27 daily solar radiation stations, listing calibration corrections applied to observed data.

<u>STATION</u>	<u>STATE</u>	<u>STATION NUMBER</u>	<u>FLAT</u>		<u>LINEAR</u>	
			<u>YRMODA-YRMODA</u>	<u>CORR</u>	<u>YRMODA-YRMODA</u>	<u>CORR</u>
Los Angeles	CA	23174	510830-570630	0.980	550315-620417	0.975
			660523-670215	0.913		
			670216-680218	0.882		
			680219-730801	0.921		
			730802-761231	0.981		
Midland	TX	23023	500511-570324	0.980	570416-620612 620613-650625 650626-660302 660303-681229 681230-691217	1.117 1.361 1.075 1.033
			570416-570630	0.911		
			570701-660302	0.930		
			660303-681229	0.925		
			681230-691217	1.056		
North Little Rock	AR	13963	490719-570630	0.980	490719-580923 670428-690818	0.974 1.016
			580924-650404	0.930		
			670221-670427	0.930		
			670428-690818	0.932		
			690819-761231	1.024		
Oklahoma City	OK	13967	520121-520921	0.958	600513-670314 680326-721109 721110-750214	1.150 1.120 1.016
			520922-530515	0.980		
			530516-530907	0.958		
			530908-540523	0.969		
			540524-570630	0.980		
			600513-601018	0.930		
			601019-610622	0.906		
			610623-670314	0.930		
			680326-721109	0.929		
Portland	ME	14764	490324-570630	0.980	490324-541203 541204-621001 621002-670807 670808-750430	0.987 0.986 1.052 1.121
			620314-621001	0.990		
			621002-670807	0.922		
			670808-680318	0.907		
			680319-700715	0.920		
			700716-710112	0.935		
			710121-740403	0.941		
			740404-750430	0.920		

Sensor history for 27 daily solar radiation stations, listing calibration corrections applied to observed data.

<u>STATION</u>	<u>STATE</u>	<u>STATION NUMBER</u>	<u>FLAT YRMODA-YRMODA</u>	<u>CORR</u>	<u>LINEAR YRMODA-YRMODA</u>	<u>CORR</u>
Rapid City	SD	24090	500731-560722	0.980		
			560723-570630	0.911		
			570701-580901	0.930		
			580902-610731	0.949		
			610801-670601	0.930	670103-670601	1.014
			670602-721101	0.940	670602-721101	1.022
					721102-750310	1.032
Salt Lake City	UT	24127	660701-671215	0.930		
					700807-750131	1.081
San Antonio/Hondo	TX					
San Antonio		12921	490325-570304	0.980	490325-540914	0.933
			570305-570630	0.911	540915-570304	0.987
			570701-620911	0.930	570305-620911	1.075
			740628-741217	0.977		
Hondo	TX	12962	750115-760204	1.036		
			760205-761231	0.982		
Sault Ste. Marie	MI	14847	500604-530119	0.980	500604-531126	0.876
			530120-531126	0.994		
			531127-590707	0.980	531127-621004	0.954
			621005-670425	0.930	621005-670425	1.036
			670426-680909	0.922	670426-680909	1.018
					680910-700125	1.036
					721229-750512	1.022
Spokane	WA	24157	490505-570630	0.980	531123-620911	0.966
			621231-631118	0.930	621231-631118	0.978
			631120-640623	0.914		
			640624-670420	0.930		
			670421-671030	0.944		
			671031-680509	0.930		
			680510-680812	0.944		
			680813-690718	1.059	680813-690718	0.978
			690719-700128	1.015		
			700129-700712	1.021		
			70713 -710908	1.017		
			710709-720515	1.013		
			721101-730115	1.018		
			730116-730213	1.039		
			730214-730429	1.018		
			730430-740605	1.012		
			750313-761120	1.020		
			761121-761231	1.016		

Sensor history for 27 daily solar radiation stations, listing calibration corrections applied to observed data

<u>STATION</u>	<u>STATE</u>	<u>STATION NUMBER</u>	<u>FLAT YRMODA-YRMODA</u>	<u>CORR</u>	<u>LINEAR YRMODA-YRMODA</u>	<u>CORR</u>
St. Cloud	MN	14926	490718-560724	0.980		
			560725-570418	0.941		
			570419-571125	0.980		
			571126-580416	0.994		
			580417-590304	0.980		
			590402-590414	0.980		
			590813-600623	1.014		
			610110-610724	1.013		
			651013-661025	0.982		
			670128-670411	0.939	670128-681013	1.038
			670412-681013	0.930		
			681014-700810	1.039		
			710818-720222	1.026		
			720223-730722	1.021		
740421-750430	1.010					
Tallahassee	FL	93805	681004-720514	1.038		
			760623-761231	0.982	720515-731204	1.034
Tampa	FL	12842	490402-570630	0.980	490402-540412	0.954
					540413-570315	0.967
			610314-611017	0.988	570316-621009	0.988
			640811-670618	0.930	670422-670618	1.013
			670619-681117	0.942		
681118-690310	1.063	681118-690310	1.015			

STANDARD YEAR, CLEAR SKY, SOLAR NOON IRRADIANCE VALUES FOR EACH DAY OF THE YEAR (cal/cm²min)

ASTORIA, OR

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.441	0.602	0.847	1.112	1.279	1.350	1.353	1.291	1.152	0.935	0.670	0.476	1
2	0.444	0.610	0.857	1.119	1.283	1.351	1.352	1.288	1.146	0.927	0.662	0.472	2
3	0.446	0.618	0.866	1.126	1.287	1.352	1.351	1.284	1.140	0.919	0.654	0.468	3
4	0.449	0.626	0.876	1.133	1.291	1.352	1.350	1.281	1.134	0.910	0.646	0.464	4
5	0.452	0.634	0.885	1.140	1.294	1.353	1.349	1.277	1.128	0.902	0.638	0.461	5
6	0.455	0.642	0.894	1.147	1.297	1.353	1.348	1.273	1.122	0.894	0.630	0.458	6
7	0.458	0.650	0.904	1.154	1.300	1.354	1.347	1.269	1.115	0.885	0.622	0.455	7
8	0.462	0.659	0.913	1.161	1.303	1.354	1.345	1.265	1.108	0.877	0.615	0.452	8
9	0.466	0.667	0.922	1.168	1.306	1.354	1.344	1.261	1.102	0.869	0.607	0.449	9
10	0.470	0.676	0.931	1.174	1.308	1.354	1.342	1.257	1.095	0.860	0.600	0.447	10
11	0.474	0.684	0.940	1.181	1.311	1.355	1.341	1.252	1.088	0.852	0.592	0.444	11
12	0.478	0.693	0.949	1.187	1.313	1.355	1.339	1.248	1.081	0.843	0.585	0.442	12
13	0.482	0.701	0.958	1.193	1.315	1.355	1.338	1.244	1.074	0.834	0.578	0.440	13
14	0.487	0.710	0.967	1.199	1.318	1.355	1.336	1.239	1.066	0.826	0.571	0.439	14
15	0.492	0.719	0.976	1.205	1.320	1.355	1.334	1.235	1.059	0.817	0.564	0.437	15
16	0.497	0.728	0.985	1.211	1.322	1.355	1.332	1.231	1.052	0.808	0.557	0.435	16
17	0.502	0.737	0.993	1.216	1.325	1.355	1.330	1.226	1.044	0.799	0.551	0.434	17
18	0.508	0.746	1.002	1.221	1.327	1.356	1.328	1.222	1.037	0.791	0.544	0.433	18
19	0.513	0.755	1.010	1.226	1.329	1.356	1.326	1.217	1.029	0.782	0.538	0.432	19
20	0.519	0.764	1.019	1.231	1.331	1.356	1.324	1.213	1.022	0.773	0.532	0.431	20
21	0.525	0.773	1.027	1.236	1.333	1.356	1.322	1.208	1.014	0.764	0.526	0.431	21
22	0.531	0.782	1.035	1.241	1.335	1.356	1.319	1.203	1.006	0.755	0.520	0.430	22
23	0.538	0.791	1.043	1.245	1.337	1.356	1.317	1.199	0.999	0.746	0.515	0.430	23
24	0.544	0.801	1.051	1.250	1.339	1.356	1.315	1.194	0.991	0.738	0.509	0.431	24
25	0.551	0.810	1.059	1.254	1.341	1.356	1.312	1.189	0.983	0.729	0.504	0.431	25
26	0.558	0.819	1.067	1.258	1.343	1.356	1.309	1.184	0.975	0.720	0.499	0.432	26
27	0.565	0.829	1.074	1.263	1.344	1.355	1.307	1.179	0.967	0.712	0.494	0.433	27
28	0.572	0.838	1.082	1.267	1.346	1.355	1.304	1.174	0.959	0.703	0.489	0.434	28
29	0.579		1.090	1.271	1.347	1.354	1.301	1.169	0.951	0.695	0.485	0.435	29
30	0.587		1.097	1.275	1.348	1.354	1.298	1.163	0.943	0.687	0.480	0.437	30
31	0.594		1.104		1.349		1.294	1.158		0.678		0.439	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

ATLANTA, GA

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.796	0.932	1.131	1.310	1.389	1.395	1.372	1.342	1.280	1.157	0.976	0.825	1
2	0.798	0.939	1.138	1.315	1.390	1.394	1.371	1.340	1.277	1.152	0.970	0.822	2
3	0.800	0.946	1.145	1.319	1.390	1.393	1.370	1.339	1.274	1.147	0.964	0.819	3
4	0.803	0.952	1.152	1.323	1.391	1.393	1.369	1.338	1.270	1.141	0.958	0.816	4
5	0.805	0.959	1.159	1.327	1.392	1.392	1.366	1.336	1.267	1.136	0.952	0.814	5
6	0.808	0.966	1.166	1.331	1.393	1.391	1.367	1.334	1.263	1.131	0.946	0.812	6
7	0.810	0.973	1.173	1.335	1.393	1.390	1.366	1.333	1.260	1.126	0.940	0.810	7
8	0.813	0.980	1.180	1.339	1.394	1.390	1.365	1.331	1.256	1.121	0.935	0.808	8
9	0.817	0.986	1.187	1.342	1.394	1.389	1.363	1.329	1.252	1.115	0.929	0.806	9
10	0.820	0.993	1.194	1.346	1.395	1.388	1.362	1.328	1.248	1.110	0.923	0.805	10
11	0.823	1.000	1.201	1.349	1.395	1.387	1.361	1.326	1.244	1.105	0.918	0.803	11
12	0.827	1.008	1.207	1.352	1.395	1.386	1.360	1.324	1.240	1.100	0.912	0.802	12
13	0.831	1.015	1.214	1.355	1.396	1.386	1.359	1.323	1.236	1.094	0.907	0.801	13
14	0.835	1.022	1.220	1.358	1.396	1.385	1.356	1.321	1.232	1.089	0.901	0.799	14
15	0.839	1.029	1.226	1.361	1.396	1.384	1.357	1.319	1.228	1.083	0.896	0.798	15
16	0.843	1.036	1.232	1.364	1.396	1.383	1.356	1.317	1.224	1.077	0.891	0.797	16
17	0.848	1.044	1.237	1.366	1.396	1.383	1.355	1.315	1.220	1.071	0.885	0.795	17
18	0.852	1.051	1.243	1.368	1.397	1.382	1.355	1.314	1.216	1.065	0.880	0.794	18
19	0.857	1.058	1.248	1.370	1.397	1.381	1.354	1.312	1.212	1.059	0.875	0.793	19
20	0.862	1.065	1.253	1.372	1.397	1.381	1.354	1.310	1.208	1.052	0.870	0.792	20
21	0.867	1.073	1.259	1.374	1.397	1.380	1.353	1.308	1.204	1.046	0.865	0.791	21
22	0.872	1.080	1.264	1.376	1.397	1.379	1.352	1.306	1.200	1.039	0.860	0.791	22
23	0.878	1.087	1.268	1.378	1.397	1.378	1.352	1.304	1.196	1.033	0.856	0.790	23
24	0.883	1.095	1.273	1.379	1.397	1.378	1.351	1.301	1.191	1.026	0.851	0.790	24
25	0.889	1.102	1.276	1.381	1.397	1.377	1.350	1.299	1.187	1.020	0.847	0.790	25
26	0.895	1.109	1.283	1.382	1.397	1.376	1.349	1.297	1.182	1.014	0.843	0.790	26
27	0.901	1.116	1.287	1.384	1.397	1.375	1.348	1.294	1.177	1.007	0.839	0.791	27
28	0.907	1.124	1.292	1.385	1.396	1.375	1.347	1.292	1.172	1.001	0.835	0.791	28
29	0.913		1.297	1.386	1.396	1.374	1.346	1.289	1.167	0.995	0.832	0.792	29
30	0.919		1.301	1.387	1.396	1.373	1.345	1.286	1.162	0.988	0.828	0.793	30
31	0.926		1.306		1.395		1.343	1.283		0.982		0.795	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

BLUE HILL, MA

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.564	0.749	0.983	1.207	1.330	1.369	1.351	1.296	1.192	1.017	0.785	0.608	1
2	0.587	0.756	0.991	1.212	1.333	1.369	1.350	1.293	1.187	1.010	0.778	0.605	2
3	0.589	0.764	0.999	1.218	1.335	1.369	1.348	1.291	1.182	1.003	0.770	0.601	3
4	0.592	0.772	1.008	1.223	1.338	1.369	1.347	1.288	1.178	0.995	0.763	0.598	4
5	0.595	0.780	1.016	1.228	1.340	1.369	1.345	1.285	1.173	0.988	0.756	0.595	5
6	0.598	0.788	1.024	1.233	1.342	1.369	1.343	1.282	1.168	0.981	0.749	0.592	6
7	0.602	0.796	1.033	1.238	1.344	1.368	1.342	1.279	1.163	0.973	0.742	0.590	7
8	0.606	0.805	1.041	1.243	1.346	1.368	1.340	1.276	1.158	0.966	0.735	0.588	8
9	0.610	0.813	1.049	1.248	1.347	1.368	1.338	1.272	1.153	0.958	0.728	0.585	9
10	0.614	0.821	1.058	1.252	1.349	1.367	1.336	1.269	1.148	0.951	0.721	0.584	10
11	0.618	0.830	1.066	1.257	1.350	1.367	1.334	1.265	1.143	0.943	0.714	0.582	11
12	0.623	0.838	1.074	1.261	1.352	1.367	1.332	1.262	1.138	0.936	0.707	0.580	12
13	0.628	0.847	1.082	1.265	1.353	1.366	1.331	1.259	1.132	0.928	0.701	0.579	13
14	0.633	0.855	1.089	1.270	1.355	1.366	1.329	1.255	1.127	0.921	0.694	0.577	14
15	0.638	0.864	1.097	1.274	1.356	1.365	1.327	1.252	1.121	0.913	0.688	0.576	15
16	0.643	0.873	1.104	1.278	1.357	1.364	1.325	1.249	1.115	0.905	0.682	0.575	16
17	0.649	0.881	1.112	1.282	1.359	1.364	1.324	1.246	1.109	0.898	0.676	0.573	17
18	0.654	0.890	1.119	1.286	1.360	1.363	1.322	1.243	1.104	0.890	0.670	0.572	18
19	0.660	0.898	1.126	1.290	1.361	1.363	1.320	1.240	1.097	0.883	0.665	0.571	19
20	0.666	0.907	1.133	1.294	1.362	1.362	1.319	1.236	1.091	0.875	0.659	0.571	20
21	0.672	0.915	1.139	1.298	1.363	1.361	1.317	1.233	1.085	0.867	0.654	0.570	21
22	0.678	0.924	1.146	1.302	1.364	1.361	1.315	1.230	1.079	0.860	0.649	0.570	22
23	0.685	0.932	1.152	1.305	1.365	1.360	1.314	1.227	1.072	0.852	0.644	0.570	23
24	0.691	0.941	1.159	1.309	1.366	1.359	1.312	1.224	1.066	0.845	0.639	0.570	24
25	0.698	0.949	1.165	1.312	1.367	1.358	1.310	1.220	1.059	0.837	0.634	0.571	25
26	0.705	0.957	1.171	1.315	1.368	1.357	1.308	1.216	1.052	0.829	0.629	0.572	26
27	0.712	0.966	1.177	1.319	1.368	1.356	1.306	1.213	1.045	0.822	0.625	0.573	27
28	0.719	0.974	1.183	1.322	1.369	1.355	1.304	1.209	1.038	0.815	0.620	0.575	28
29	0.726		1.189	1.325	1.369	1.354	1.302	1.204	1.031	0.807	0.616	0.577	29
30	0.733		1.195	1.328	1.369	1.352	1.300	1.200	1.024	0.800	0.612	0.579	30
31	0.741		1.201		1.369		1.298	1.196		0.792		0.581	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

BOISE, ID

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.565	0.731	0.974	1.230	1.387	1.446	1.444	1.392	1.262	1.054	0.792	0.598	1
2	0.568	0.739	0.983	1.237	1.390	1.447	1.443	1.389	1.256	1.046	0.783	0.594	2
3	0.571	0.747	0.992	1.243	1.394	1.447	1.442	1.386	1.251	1.038	0.775	0.590	3
4	0.574	0.755	1.001	1.250	1.397	1.448	1.442	1.383	1.245	1.030	0.767	0.586	4
5	0.577	0.763	1.010	1.257	1.400	1.448	1.441	1.380	1.239	1.022	0.759	0.583	5
6	0.580	0.771	1.019	1.264	1.403	1.448	1.440	1.377	1.233	1.014	0.751	0.580	6
7	0.584	0.780	1.027	1.270	1.406	1.448	1.439	1.373	1.227	1.006	0.743	0.577	7
8	0.588	0.788	1.036	1.276	1.408	1.448	1.438	1.369	1.221	0.997	0.735	0.574	8
9	0.592	0.797	1.045	1.283	1.411	1.448	1.437	1.366	1.215	0.989	0.728	0.572	9
10	0.596	0.805	1.053	1.289	1.413	1.447	1.435	1.362	1.208	0.981	0.720	0.569	10
11	0.601	0.814	1.061	1.295	1.416	1.447	1.434	1.358	1.202	0.972	0.712	0.567	11
12	0.605	0.823	1.070	1.300	1.418	1.447	1.433	1.354	1.195	0.964	0.705	0.565	12
13	0.610	0.831	1.078	1.306	1.420	1.447	1.431	1.350	1.189	0.955	0.698	0.563	13
14	0.615	0.840	1.087	1.312	1.422	1.446	1.430	1.346	1.182	0.947	0.691	0.562	14
15	0.620	0.849	1.095	1.317	1.424	1.446	1.428	1.342	1.175	0.938	0.684	0.560	15
16	0.625	0.858	1.103	1.322	1.426	1.446	1.426	1.338	1.168	0.929	0.677	0.559	16
17	0.631	0.867	1.112	1.327	1.428	1.446	1.425	1.334	1.161	0.921	0.671	0.557	17
18	0.636	0.875	1.120	1.332	1.429	1.446	1.423	1.329	1.154	0.912	0.664	0.556	18
19	0.642	0.884	1.128	1.337	1.431	1.445	1.422	1.325	1.146	0.903	0.658	0.555	19
20	0.648	0.893	1.137	1.342	1.432	1.445	1.420	1.321	1.139	0.895	0.652	0.554	20
21	0.654	0.902	1.145	1.347	1.434	1.445	1.418	1.316	1.131	0.886	0.647	0.554	21
22	0.660	0.911	1.153	1.351	1.435	1.445	1.416	1.312	1.124	0.877	0.641	0.553	22
23	0.667	0.920	1.161	1.356	1.437	1.445	1.414	1.307	1.116	0.868	0.635	0.553	23
24	0.673	0.929	1.169	1.360	1.438	1.445	1.412	1.303	1.109	0.860	0.630	0.554	24
25	0.680	0.938	1.177	1.364	1.439	1.445	1.410	1.298	1.101	0.851	0.625	0.554	25
26	0.687	0.947	1.185	1.368	1.440	1.445	1.408	1.293	1.093	0.842	0.620	0.555	26
27	0.694	0.956	1.193	1.372	1.441	1.445	1.405	1.288	1.086	0.834	0.615	0.556	27
28	0.701	0.965	1.200	1.376	1.443	1.445	1.403	1.283	1.078	0.825	0.611	0.557	28
29	0.708		1.208	1.380	1.444	1.444	1.401	1.278	1.070	0.817	0.606	0.559	29
30	0.716		1.215	1.383	1.444	1.444	1.398	1.273	1.062	0.808	0.602	0.561	30
31	0.723		1.222		1.445		1.395	1.267		0.800		0.563	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

BURLINGTON, VT

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.531	0.704	0.948	1.172	1.296	1.345	1.333	1.276	1.155	0.964	0.724	0.550	1
2	0.533	0.712	0.956	1.178	1.299	1.345	1.332	1.273	1.149	0.956	0.716	0.547	2
3	0.536	0.720	0.965	1.183	1.302	1.345	1.331	1.270	1.144	0.949	0.709	0.544	3
4	0.540	0.728	0.973	1.188	1.304	1.345	1.329	1.267	1.139	0.942	0.701	0.541	4
5	0.543	0.737	0.982	1.193	1.307	1.345	1.328	1.264	1.133	0.934	0.694	0.538	5
6	0.547	0.746	0.991	1.198	1.309	1.345	1.326	1.261	1.127	0.927	0.687	0.536	6
7	0.550	0.755	0.999	1.202	1.312	1.345	1.325	1.257	1.121	0.919	0.679	0.534	7
8	0.554	0.764	1.008	1.207	1.314	1.344	1.323	1.254	1.115	0.912	0.672	0.532	8
9	0.559	0.773	1.017	1.211	1.316	1.344	1.321	1.251	1.109	0.904	0.665	0.530	9
10	0.563	0.782	1.025	1.215	1.318	1.344	1.320	1.247	1.103	0.896	0.658	0.529	10
11	0.568	0.791	1.034	1.219	1.321	1.343	1.318	1.244	1.097	0.889	0.652	0.527	11
12	0.572	0.800	1.042	1.224	1.323	1.343	1.316	1.240	1.091	0.881	0.645	0.526	12
13	0.577	0.809	1.050	1.228	1.324	1.343	1.314	1.236	1.085	0.874	0.638	0.525	13
14	0.583	0.818	1.058	1.232	1.326	1.342	1.313	1.233	1.078	0.866	0.632	0.524	14
15	0.588	0.827	1.066	1.236	1.328	1.342	1.311	1.229	1.072	0.858	0.626	0.523	15
16	0.594	0.836	1.073	1.240	1.330	1.342	1.309	1.225	1.066	0.850	0.620	0.522	16
17	0.599	0.845	1.081	1.244	1.331	1.341	1.308	1.221	1.059	0.842	0.614	0.521	17
18	0.605	0.854	1.088	1.249	1.333	1.341	1.306	1.217	1.053	0.834	0.609	0.520	18
19	0.611	0.862	1.094	1.253	1.334	1.341	1.305	1.213	1.047	0.826	0.603	0.519	19
20	0.617	0.871	1.101	1.257	1.336	1.340	1.303	1.209	1.040	0.818	0.598	0.519	20
21	0.624	0.880	1.107	1.261	1.337	1.340	1.301	1.205	1.034	0.810	0.593	0.518	21
22	0.630	0.888	1.114	1.265	1.338	1.340	1.300	1.201	1.027	0.802	0.588	0.518	22
23	0.637	0.897	1.120	1.269	1.339	1.339	1.298	1.197	1.021	0.794	0.583	0.518	23
24	0.644	0.905	1.126	1.273	1.340	1.339	1.296	1.192	1.014	0.786	0.578	0.518	24
25	0.651	0.914	1.132	1.277	1.341	1.338	1.294	1.188	1.007	0.778	0.574	0.519	25
26	0.658	0.922	1.138	1.281	1.342	1.337	1.292	1.184	1.000	0.770	0.570	0.520	26
27	0.665	0.931	1.144	1.284	1.343	1.337	1.290	1.179	0.993	0.762	0.565	0.521	27
28	0.673	0.939	1.150	1.287	1.343	1.336	1.287	1.174	0.986	0.754	0.561	0.522	28
29	0.680		1.156	1.290	1.344	1.335	1.285	1.169	0.979	0.747	0.557	0.524	29
30	0.688		1.161	1.293	1.344	1.334	1.282	1.165	0.971	0.739	0.554	0.526	30
31	0.696		1.167		1.344		1.279	1.160		0.731		0.528	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

CLEVELAND, OH

09

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.616	0.784	1.008	1.212	1.326	1.362	1.354	1.309	1.201	1.026	0.798	0.632	1
2	0.619	0.792	1.016	1.217	1.328	1.362	1.353	1.307	1.196	1.019	0.790	0.629	2
3	0.623	0.799	1.023	1.222	1.330	1.362	1.353	1.304	1.191	1.013	0.783	0.626	3
4	0.626	0.807	1.031	1.227	1.332	1.362	1.352	1.302	1.186	1.006	0.776	0.624	4
5	0.630	0.815	1.039	1.232	1.334	1.362	1.351	1.299	1.181	0.999	0.769	0.621	5
6	0.634	0.823	1.047	1.237	1.336	1.362	1.350	1.296	1.175	0.992	0.762	0.619	6
7	0.638	0.831	1.054	1.241	1.338	1.362	1.349	1.293	1.170	0.985	0.755	0.617	7
8	0.643	0.840	1.062	1.245	1.340	1.362	1.348	1.290	1.165	0.978	0.748	0.615	8
9	0.647	0.848	1.069	1.250	1.342	1.361	1.346	1.287	1.159	0.971	0.741	0.614	9
10	0.652	0.856	1.076	1.254	1.343	1.361	1.345	1.284	1.154	0.964	0.734	0.612	10
11	0.657	0.865	1.083	1.258	1.345	1.361	1.344	1.280	1.148	0.957	0.728	0.611	11
12	0.662	0.873	1.090	1.262	1.347	1.361	1.342	1.277	1.142	0.949	0.721	0.610	12
13	0.667	0.882	1.097	1.266	1.348	1.360	1.341	1.274	1.137	0.942	0.715	0.609	13
14	0.672	0.890	1.104	1.270	1.350	1.360	1.339	1.270	1.131	0.934	0.709	0.608	14
15	0.677	0.898	1.111	1.274	1.351	1.360	1.338	1.267	1.125	0.927	0.703	0.607	15
16	0.682	0.906	1.118	1.278	1.352	1.360	1.337	1.264	1.119	0.919	0.697	0.606	16
17	0.688	0.914	1.124	1.282	1.353	1.359	1.335	1.260	1.113	0.912	0.692	0.605	17
18	0.693	0.922	1.131	1.286	1.355	1.359	1.334	1.257	1.107	0.904	0.687	0.604	18
19	0.699	0.930	1.137	1.289	1.356	1.359	1.332	1.254	1.102	0.896	0.682	0.603	19
20	0.704	0.937	1.144	1.293	1.357	1.359	1.331	1.250	1.096	0.889	0.677	0.603	20
21	0.710	0.945	1.150	1.297	1.357	1.358	1.329	1.247	1.090	0.881	0.672	0.602	21
22	0.716	0.953	1.156	1.300	1.358	1.358	1.328	1.243	1.084	0.873	0.668	0.602	22
23	0.722	0.960	1.162	1.304	1.359	1.358	1.326	1.240	1.077	0.865	0.663	0.602	23
24	0.729	0.968	1.168	1.307	1.359	1.357	1.325	1.236	1.071	0.858	0.659	0.602	24
25	0.735	0.976	1.174	1.310	1.360	1.357	1.323	1.232	1.065	0.850	0.655	0.603	25
26	0.742	0.984	1.180	1.313	1.360	1.357	1.321	1.228	1.059	0.842	0.651	0.604	26
27	0.748	0.992	1.185	1.316	1.361	1.356	1.319	1.224	1.052	0.835	0.647	0.605	27
28	0.755	1.000	1.191	1.318	1.361	1.356	1.318	1.220	1.046	0.827	0.643	0.607	28
29	0.762		1.197	1.321	1.361	1.355	1.316	1.215	1.039	0.820	0.639	0.609	29
30	0.769		1.202	1.323	1.362	1.355	1.314	1.211	1.033	0.812	0.636	0.611	30
31	0.777		1.207		1.362		1.311	1.209		0.805		0.614	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

GLASGOW, MT

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.437	0.614	0.877	1.144	1.301	1.368	1.362	1.298	1.155	0.934	0.668	0.470	1
2	0.440	0.622	0.887	1.150	1.304	1.369	1.361	1.295	1.149	0.925	0.661	0.466	2
3	0.443	0.631	0.897	1.157	1.308	1.369	1.360	1.291	1.143	0.917	0.653	0.462	3
4	0.446	0.639	0.906	1.164	1.311	1.370	1.358	1.288	1.136	0.909	0.645	0.458	4
5	0.449	0.648	0.916	1.170	1.314	1.370	1.357	1.284	1.130	0.900	0.637	0.454	5
6	0.453	0.657	0.926	1.176	1.317	1.370	1.356	1.280	1.124	0.891	0.629	0.451	6
7	0.456	0.666	0.936	1.182	1.320	1.371	1.354	1.276	1.117	0.883	0.622	0.447	7
8	0.461	0.675	0.945	1.188	1.323	1.371	1.352	1.272	1.110	0.874	0.614	0.444	8
9	0.465	0.684	0.955	1.194	1.326	1.371	1.351	1.268	1.104	0.865	0.607	0.442	9
10	0.469	0.694	0.965	1.200	1.328	1.371	1.349	1.263	1.097	0.856	0.599	0.439	10
11	0.474	0.703	0.974	1.206	1.331	1.371	1.347	1.259	1.090	0.847	0.592	0.437	11
12	0.479	0.712	0.984	1.212	1.334	1.371	1.346	1.255	1.083	0.839	0.585	0.435	12
13	0.484	0.722	0.993	1.217	1.336	1.371	1.344	1.250	1.076	0.830	0.578	0.433	13
14	0.490	0.731	1.002	1.223	1.339	1.371	1.342	1.246	1.068	0.821	0.571	0.431	14
15	0.495	0.741	1.011	1.228	1.341	1.371	1.340	1.241	1.061	0.812	0.564	0.430	15
16	0.501	0.751	1.020	1.233	1.343	1.371	1.338	1.237	1.054	0.803	0.557	0.429	16
17	0.506	0.760	1.029	1.239	1.346	1.371	1.336	1.232	1.046	0.794	0.550	0.428	17
18	0.512	0.770	1.037	1.244	1.348	1.371	1.334	1.227	1.038	0.786	0.544	0.427	18
19	0.519	0.780	1.045	1.249	1.350	1.371	1.332	1.223	1.031	0.777	0.537	0.426	19
20	0.525	0.789	1.054	1.254	1.352	1.370	1.330	1.218	1.023	0.768	0.531	0.425	20
21	0.531	0.799	1.062	1.259	1.354	1.370	1.328	1.214	1.015	0.760	0.525	0.425	21
22	0.538	0.809	1.070	1.263	1.356	1.370	1.325	1.209	1.007	0.751	0.519	0.425	22
23	0.545	0.818	1.078	1.268	1.358	1.369	1.323	1.204	0.999	0.743	0.513	0.425	23
24	0.552	0.828	1.085	1.273	1.359	1.369	1.321	1.199	0.991	0.734	0.507	0.425	24
25	0.559	0.838	1.093	1.277	1.361	1.368	1.318	1.194	0.983	0.726	0.501	0.426	25
26	0.566	0.848	1.101	1.281	1.362	1.367	1.315	1.189	0.975	0.718	0.495	0.427	26
27	0.574	0.857	1.108	1.285	1.364	1.366	1.313	1.183	0.967	0.709	0.490	0.428	27
28	0.581	0.867	1.115	1.289	1.365	1.366	1.310	1.178	0.959	0.701	0.485	0.429	28
29	0.589		1.123	1.293	1.366	1.365	1.307	1.172	0.950	0.693	0.480	0.431	29
30	0.597		1.130	1.297	1.367	1.363	1.304	1.167	0.942	0.685	0.475	0.433	30
31	0.605		1.137		1.367		1.301	1.161		0.677		0.435	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

GRAND JUNCTION, CO

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.732	0.895	1.124	1.353	1.482	1.524	1.507	1.455	1.356	1.180	0.940	0.759	1
2	0.734	0.903	1.133	1.359	1.485	1.524	1.506	1.453	1.352	1.172	0.932	0.755	2
3	0.737	0.910	1.141	1.365	1.487	1.524	1.505	1.450	1.347	1.165	0.925	0.751	3
4	0.741	0.918	1.150	1.371	1.490	1.525	1.503	1.448	1.343	1.157	0.917	0.748	4
5	0.744	0.926	1.158	1.377	1.492	1.525	1.502	1.445	1.338	1.150	0.910	0.745	5
6	0.748	0.934	1.166	1.383	1.494	1.525	1.500	1.442	1.333	1.142	0.903	0.742	6
7	0.751	0.942	1.174	1.388	1.496	1.526	1.499	1.439	1.328	1.135	0.895	0.740	7
8	0.756	0.950	1.182	1.394	1.498	1.526	1.497	1.436	1.324	1.127	0.888	0.737	8
9	0.760	0.958	1.190	1.399	1.500	1.526	1.496	1.433	1.319	1.120	0.881	0.735	9
10	0.764	0.966	1.197	1.404	1.501	1.526	1.494	1.430	1.313	1.112	0.874	0.733	10
11	0.769	0.974	1.205	1.409	1.503	1.526	1.492	1.427	1.308	1.104	0.867	0.731	11
12	0.773	0.982	1.212	1.414	1.505	1.526	1.491	1.423	1.303	1.096	0.860	0.729	12
13	0.778	0.990	1.220	1.419	1.506	1.526	1.489	1.420	1.297	1.089	0.853	0.728	13
14	0.783	0.998	1.228	1.424	1.508	1.525	1.488	1.417	1.292	1.081	0.846	0.726	14
15	0.788	1.006	1.235	1.428	1.509	1.525	1.486	1.414	1.286	1.073	0.840	0.725	15
16	0.793	1.014	1.242	1.432	1.510	1.524	1.484	1.411	1.280	1.065	0.834	0.724	16
17	0.798	1.022	1.250	1.436	1.512	1.524	1.483	1.408	1.274	1.057	0.828	0.723	17
18	0.804	1.031	1.257	1.440	1.513	1.523	1.481	1.405	1.268	1.049	0.822	0.722	18
19	0.809	1.039	1.265	1.444	1.514	1.522	1.480	1.402	1.262	1.041	0.816	0.721	19
20	0.815	1.048	1.272	1.448	1.515	1.521	1.478	1.399	1.255	1.033	0.811	0.720	20
21	0.820	1.056	1.280	1.452	1.516	1.520	1.477	1.396	1.249	1.026	0.805	0.719	21
22	0.826	1.064	1.287	1.455	1.517	1.519	1.475	1.393	1.242	1.018	0.800	0.719	22
23	0.832	1.073	1.294	1.459	1.518	1.517	1.474	1.390	1.236	1.010	0.795	0.719	23
24	0.839	1.081	1.301	1.462	1.519	1.516	1.472	1.386	1.229	1.002	0.790	0.719	24
25	0.845	1.090	1.308	1.465	1.520	1.515	1.470	1.383	1.222	0.994	0.785	0.720	25
26	0.852	1.099	1.315	1.468	1.521	1.514	1.468	1.379	1.215	0.986	0.780	0.721	26
27	0.859	1.107	1.322	1.471	1.521	1.513	1.466	1.376	1.208	0.978	0.776	0.722	27
28	0.866	1.116	1.328	1.474	1.522	1.511	1.464	1.372	1.201	0.971	0.771	0.723	28
29	0.873		1.335	1.477	1.522	1.510	1.462	1.368	1.194	0.963	0.767	0.725	29
30	0.880		1.341	1.480	1.523	1.509	1.460	1.364	1.187	0.955	0.763	0.727	30
31	0.888		1.347		1.523		1.458	1.360		0.948		0.729	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON IRRADIANCE VALUES FOR EACH DAY OF THE YEAR (cal/cm²min)

GREENSBORO, NC

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.743	0.892	1.104	1.299	1.390	1.393	1.352	1.307	1.242	1.121	0.933	0.771	1
2	0.745	0.899	1.111	1.304	1.391	1.392	1.351	1.306	1.240	1.116	0.926	0.768	2
3	0.747	0.906	1.119	1.309	1.393	1.390	1.349	1.304	1.236	1.111	0.920	0.764	3
4	0.750	0.914	1.127	1.313	1.394	1.389	1.347	1.302	1.233	1.105	0.913	0.761	4
5	0.753	0.921	1.134	1.318	1.395	1.388	1.345	1.300	1.230	1.100	0.907	0.758	5
6	0.756	0.929	1.141	1.323	1.396	1.387	1.343	1.298	1.227	1.095	0.901	0.755	6
7	0.759	0.936	1.149	1.327	1.397	1.385	1.341	1.295	1.223	1.089	0.895	0.753	7
8	0.763	0.944	1.156	1.331	1.398	1.384	1.339	1.292	1.219	1.084	0.889	0.750	8
9	0.766	0.952	1.163	1.335	1.399	1.382	1.337	1.290	1.216	1.079	0.883	0.748	9
10	0.770	0.959	1.170	1.339	1.400	1.381	1.335	1.287	1.212	1.073	0.877	0.746	10
11	0.774	0.967	1.177	1.343	1.400	1.379	1.333	1.285	1.208	1.067	0.871	0.744	11
12	0.778	0.975	1.183	1.347	1.401	1.378	1.331	1.282	1.204	1.062	0.865	0.742	12
13	0.782	0.983	1.190	1.350	1.401	1.377	1.329	1.280	1.200	1.056	0.859	0.741	13
14	0.786	0.990	1.197	1.354	1.402	1.375	1.328	1.277	1.196	1.050	0.854	0.739	14
15	0.791	0.998	1.203	1.357	1.402	1.374	1.326	1.275	1.192	1.044	0.848	0.738	15
16	0.796	1.006	1.209	1.360	1.402	1.373	1.325	1.273	1.188	1.038	0.842	0.737	16
17	0.801	1.013	1.215	1.363	1.402	1.372	1.323	1.271	1.184	1.032	0.837	0.736	17
18	0.806	1.021	1.222	1.365	1.402	1.370	1.322	1.270	1.180	1.025	0.831	0.735	18
19	0.811	1.028	1.228	1.368	1.402	1.369	1.321	1.268	1.176	1.019	0.826	0.734	19
20	0.816	1.035	1.234	1.370	1.402	1.368	1.321	1.267	1.172	1.012	0.821	0.733	20
21	0.821	1.043	1.239	1.372	1.401	1.367	1.320	1.265	1.168	1.006	0.816	0.733	21
22	0.827	1.050	1.245	1.374	1.401	1.366	1.319	1.264	1.163	0.999	0.810	0.732	22
23	0.833	1.058	1.251	1.376	1.400	1.365	1.318	1.262	1.159	0.992	0.806	0.732	23
24	0.839	1.065	1.256	1.378	1.400	1.363	1.317	1.261	1.155	0.986	0.801	0.733	24
25	0.845	1.073	1.262	1.380	1.399	1.362	1.316	1.259	1.150	0.979	0.796	0.733	25
26	0.851	1.081	1.267	1.382	1.398	1.361	1.315	1.257	1.145	0.972	0.791	0.734	26
27	0.858	1.088	1.273	1.384	1.398	1.359	1.314	1.255	1.141	0.966	0.787	0.735	27
28	0.864	1.096	1.278	1.385	1.397	1.358	1.313	1.253	1.136	0.959	0.783	0.736	28
29	0.871		1.284	1.387	1.396	1.356	1.312	1.250	1.131	0.952	0.779	0.737	29
30	0.878		1.289	1.388	1.395	1.354	1.310	1.248	1.126	0.946	0.775	0.739	30
31	0.885		1.294		1.394		1.309	1.245		0.939		0.741	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

INDIANAPOLIS, IN

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.648	0.807	1.022	1.229	1.341	1.369	1.358	1.317	1.218	1.056	0.840	0.671	1
2	0.651	0.815	1.029	1.234	1.343	1.369	1.357	1.315	1.213	1.050	0.833	0.667	2
3	0.654	0.822	1.037	1.239	1.345	1.369	1.356	1.313	1.209	1.044	0.827	0.663	3
4	0.657	0.830	1.044	1.244	1.347	1.369	1.355	1.310	1.204	1.037	0.820	0.660	4
5	0.661	0.837	1.052	1.249	1.349	1.369	1.354	1.308	1.199	1.031	0.813	0.657	5
6	0.665	0.845	1.060	1.254	1.351	1.369	1.353	1.306	1.194	1.024	0.806	0.654	6
7	0.669	0.852	1.067	1.259	1.353	1.368	1.352	1.303	1.189	1.018	0.800	0.651	7
8	0.673	0.860	1.075	1.264	1.355	1.368	1.350	1.300	1.184	1.011	0.793	0.649	8
9	0.677	0.868	1.082	1.268	1.356	1.368	1.349	1.298	1.179	1.004	0.787	0.646	9
10	0.681	0.875	1.090	1.273	1.358	1.368	1.348	1.295	1.174	0.997	0.781	0.644	10
11	0.686	0.883	1.097	1.277	1.359	1.367	1.347	1.292	1.168	0.990	0.774	0.642	11
12	0.691	0.891	1.105	1.282	1.361	1.367	1.346	1.289	1.163	0.983	0.768	0.640	12
13	0.695	0.898	1.112	1.286	1.362	1.367	1.344	1.286	1.158	0.976	0.762	0.639	13
14	0.700	0.906	1.119	1.290	1.363	1.366	1.343	1.283	1.152	0.969	0.756	0.637	14
15	0.705	0.914	1.126	1.294	1.364	1.366	1.342	1.280	1.147	0.962	0.750	0.636	15
16	0.710	0.922	1.133	1.298	1.365	1.366	1.341	1.277	1.142	0.955	0.744	0.635	16
17	0.715	0.929	1.140	1.301	1.366	1.366	1.340	1.274	1.136	0.948	0.738	0.634	17
18	0.720	0.937	1.146	1.305	1.366	1.365	1.338	1.271	1.131	0.940	0.733	0.633	18
19	0.725	0.945	1.153	1.308	1.367	1.365	1.337	1.268	1.125	0.933	0.727	0.632	19
20	0.731	0.953	1.159	1.311	1.367	1.365	1.336	1.264	1.119	0.926	0.722	0.632	20
21	0.736	0.960	1.166	1.315	1.368	1.365	1.335	1.261	1.114	0.919	0.716	0.632	21
22	0.742	0.968	1.172	1.318	1.368	1.364	1.333	1.258	1.108	0.912	0.711	0.632	22
23	0.748	0.976	1.178	1.320	1.369	1.364	1.332	1.254	1.102	0.904	0.706	0.632	23
24	0.754	0.983	1.184	1.323	1.369	1.364	1.330	1.251	1.097	0.897	0.701	0.633	24
25	0.760	0.991	1.190	1.326	1.369	1.363	1.329	1.247	1.091	0.890	0.696	0.634	25
26	0.766	0.999	1.196	1.329	1.369	1.362	1.327	1.243	1.085	0.883	0.691	0.635	26
27	0.773	1.006	1.201	1.331	1.369	1.362	1.326	1.239	1.080	0.876	0.687	0.637	27
28	0.779	1.014	1.207	1.334	1.369	1.361	1.324	1.235	1.074	0.869	0.683	0.638	28
29	0.786		1.213	1.336	1.369	1.360	1.323	1.231	1.068	0.861	0.678	0.640	29
30	0.793		1.218	1.338	1.370	1.359	1.321	1.227	1.062	0.854	0.674	0.643	30
31	0.800		1.223		1.370		1.319	1.222		0.847		0.645	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

LAKELAND, FL

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.918	1.048	1.223	1.374	1.427	1.412	1.380	1.366	1.320	1.224	1.073	0.939	1
2	0.920	1.054	1.229	1.377	1.427	1.411	1.388	1.367	1.317	1.220	1.068	0.936	2
3	0.922	1.061	1.235	1.381	1.428	1.410	1.387	1.366	1.315	1.215	1.063	0.933	3
4	0.924	1.067	1.241	1.384	1.428	1.409	1.387	1.365	1.312	1.211	1.058	0.931	4
5	0.927	1.073	1.247	1.387	1.428	1.408	1.380	1.364	1.309	1.207	1.053	0.928	5
6	0.930	1.079	1.253	1.390	1.428	1.407	1.385	1.363	1.306	1.203	1.048	0.926	6
7	0.933	1.086	1.259	1.393	1.428	1.406	1.385	1.361	1.303	1.199	1.043	0.923	7
8	0.936	1.092	1.264	1.396	1.428	1.405	1.384	1.360	1.300	1.194	1.038	0.921	8
9	0.940	1.099	1.270	1.399	1.428	1.403	1.383	1.359	1.296	1.190	1.034	0.919	9
10	0.943	1.105	1.276	1.402	1.427	1.402	1.382	1.357	1.293	1.185	1.029	0.918	10
11	0.947	1.111	1.281	1.405	1.427	1.401	1.382	1.356	1.290	1.181	1.024	0.916	11
12	0.951	1.118	1.286	1.408	1.427	1.400	1.381	1.354	1.287	1.176	1.019	0.915	12
13	0.955	1.124	1.292	1.410	1.426	1.399	1.380	1.353	1.283	1.172	1.014	0.913	13
14	0.959	1.131	1.297	1.412	1.426	1.398	1.380	1.351	1.280	1.167	1.010	0.912	14
15	0.963	1.137	1.302	1.414	1.425	1.397	1.379	1.350	1.277	1.162	1.005	0.911	15
16	0.967	1.143	1.307	1.416	1.424	1.396	1.378	1.349	1.274	1.157	1.000	0.910	16
17	0.971	1.149	1.312	1.417	1.424	1.395	1.378	1.347	1.271	1.152	0.995	0.909	17
18	0.976	1.155	1.317	1.418	1.423	1.395	1.377	1.346	1.268	1.147	0.991	0.909	18
19	0.980	1.162	1.322	1.420	1.422	1.394	1.377	1.344	1.265	1.142	0.986	0.908	19
20	0.985	1.168	1.326	1.421	1.422	1.393	1.377	1.343	1.262	1.136	0.982	0.908	20
21	0.989	1.174	1.331	1.421	1.421	1.393	1.376	1.342	1.259	1.131	0.977	0.908	21
22	0.994	1.180	1.335	1.422	1.420	1.392	1.376	1.340	1.256	1.126	0.973	0.908	22
23	0.999	1.186	1.340	1.423	1.420	1.392	1.375	1.338	1.253	1.121	0.968	0.908	23
24	1.004	1.192	1.344	1.423	1.419	1.391	1.375	1.337	1.249	1.115	0.964	0.908	24
25	1.009	1.198	1.348	1.424	1.418	1.391	1.374	1.335	1.246	1.110	0.960	0.909	25
26	1.014	1.204	1.352	1.425	1.417	1.391	1.373	1.333	1.243	1.105	0.956	0.910	26
27	1.020	1.210	1.356	1.425	1.416	1.390	1.373	1.331	1.239	1.099	0.952	0.911	27
28	1.025	1.217	1.360	1.426	1.416	1.390	1.372	1.329	1.235	1.094	0.949	0.912	28
29	1.031		1.363	1.426	1.415	1.389	1.371	1.327	1.231	1.089	0.945	0.913	29
30	1.037		1.367	1.427	1.414	1.389	1.370	1.325	1.228	1.084	0.942	0.914	30
31	1.042		1.370		1.413		1.369	1.322		1.078		0.916	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

LANDER, WY

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.638	0.809	1.058	1.300	1.440	1.496	1.491	1.438	1.318	1.117	0.864	0.670	1
2	0.641	0.817	1.067	1.306	1.444	1.497	1.489	1.435	1.313	1.109	0.856	0.666	2
3	0.643	0.825	1.076	1.312	1.446	1.497	1.488	1.432	1.307	1.101	0.848	0.662	3
4	0.647	0.833	1.085	1.318	1.449	1.498	1.487	1.429	1.302	1.093	0.841	0.658	4
5	0.650	0.842	1.094	1.324	1.452	1.498	1.486	1.426	1.296	1.085	0.833	0.655	5
6	0.654	0.851	1.103	1.330	1.455	1.498	1.485	1.423	1.290	1.077	0.825	0.652	6
7	0.657	0.859	1.112	1.335	1.457	1.498	1.483	1.419	1.284	1.069	0.818	0.649	7
8	0.661	0.868	1.121	1.341	1.460	1.498	1.482	1.416	1.278	1.060	0.811	0.646	8
9	0.665	0.877	1.130	1.346	1.462	1.498	1.481	1.413	1.272	1.052	0.803	0.644	9
10	0.670	0.886	1.139	1.351	1.465	1.497	1.479	1.409	1.266	1.044	0.796	0.641	10
11	0.674	0.896	1.147	1.356	1.467	1.497	1.478	1.406	1.259	1.035	0.789	0.639	11
12	0.679	0.905	1.156	1.361	1.469	1.497	1.476	1.402	1.253	1.027	0.782	0.637	12
13	0.684	0.914	1.164	1.366	1.471	1.496	1.475	1.398	1.246	1.019	0.775	0.635	13
14	0.689	0.923	1.173	1.371	1.473	1.496	1.473	1.395	1.240	1.010	0.768	0.634	14
15	0.694	0.932	1.181	1.376	1.475	1.496	1.472	1.391	1.233	1.002	0.761	0.632	15
16	0.699	0.941	1.189	1.381	1.477	1.496	1.471	1.387	1.226	0.994	0.754	0.631	16
17	0.705	0.950	1.197	1.386	1.478	1.496	1.469	1.383	1.219	0.985	0.748	0.629	17
18	0.711	0.959	1.205	1.390	1.480	1.496	1.467	1.380	1.212	0.977	0.741	0.628	18
19	0.717	0.968	1.212	1.395	1.481	1.496	1.466	1.376	1.205	0.969	0.735	0.627	19
20	0.723	0.977	1.220	1.399	1.483	1.496	1.464	1.372	1.198	0.961	0.728	0.626	20
21	0.729	0.986	1.227	1.404	1.484	1.496	1.463	1.368	1.191	0.953	0.722	0.626	21
22	0.736	0.995	1.234	1.408	1.485	1.496	1.461	1.364	1.184	0.944	0.716	0.625	22
23	0.742	1.004	1.241	1.412	1.487	1.496	1.459	1.360	1.177	0.936	0.710	0.625	23
24	0.749	1.013	1.248	1.416	1.488	1.495	1.457	1.355	1.169	0.928	0.704	0.625	24
25	0.756	1.022	1.255	1.420	1.489	1.495	1.455	1.351	1.162	0.920	0.699	0.626	25
26	0.763	1.031	1.262	1.424	1.490	1.495	1.453	1.347	1.155	0.912	0.694	0.627	26
27	0.770	1.040	1.268	1.427	1.491	1.494	1.451	1.342	1.147	0.904	0.689	0.628	27
28	0.778	1.049	1.275	1.431	1.492	1.493	1.448	1.337	1.140	0.896	0.684	0.629	28
29	0.785		1.282	1.434	1.493	1.492	1.446	1.333	1.132	0.888	0.679	0.631	29
30	0.793		1.288	1.437	1.494	1.492	1.443	1.328	1.124	0.880	0.674	0.633	30
31	0.801		1.294		1.495		1.441	1.323		0.872		0.635	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

LAS VEGAS, NV

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.787	0.942	1.165	1.386	1.499	1.530	1.507	1.458	1.378	1.227	1.001	0.819	1
2	0.790	0.949	1.173	1.392	1.501	1.530	1.506	1.456	1.374	1.220	0.994	0.815	2
3	0.792	0.956	1.182	1.397	1.502	1.531	1.504	1.454	1.371	1.214	0.987	0.812	3
4	0.795	0.964	1.190	1.403	1.504	1.531	1.503	1.452	1.367	1.207	0.979	0.808	4
5	0.798	0.971	1.198	1.408	1.506	1.531	1.501	1.450	1.363	1.201	0.972	0.805	5
6	0.801	0.979	1.206	1.413	1.508	1.531	1.499	1.448	1.359	1.195	0.965	0.802	6
7	0.804	0.986	1.214	1.419	1.509	1.531	1.498	1.445	1.355	1.188	0.958	0.799	7
8	0.807	0.994	1.222	1.424	1.510	1.531	1.496	1.443	1.352	1.182	0.950	0.797	8
9	0.811	1.002	1.230	1.429	1.512	1.531	1.494	1.440	1.348	1.175	0.943	0.794	9
10	0.815	1.010	1.237	1.434	1.513	1.531	1.492	1.438	1.343	1.168	0.936	0.792	10
11	0.818	1.018	1.245	1.439	1.514	1.531	1.491	1.435	1.339	1.161	0.930	0.790	11
12	0.823	1.026	1.253	1.443	1.515	1.531	1.489	1.433	1.335	1.154	0.923	0.788	12
13	0.827	1.034	1.260	1.448	1.516	1.530	1.487	1.430	1.330	1.147	0.916	0.786	13
14	0.831	1.042	1.268	1.452	1.517	1.530	1.486	1.427	1.326	1.140	0.909	0.784	14
15	0.836	1.050	1.275	1.456	1.518	1.529	1.484	1.425	1.321	1.133	0.903	0.783	15
16	0.841	1.058	1.282	1.460	1.519	1.528	1.483	1.423	1.316	1.126	0.897	0.782	16
17	0.846	1.066	1.290	1.463	1.520	1.527	1.481	1.420	1.311	1.118	0.890	0.780	17
18	0.852	1.074	1.297	1.466	1.521	1.526	1.480	1.418	1.305	1.110	0.884	0.779	18
19	0.857	1.083	1.304	1.469	1.521	1.525	1.478	1.416	1.300	1.102	0.878	0.778	19
20	0.863	1.091	1.311	1.472	1.522	1.523	1.477	1.414	1.294	1.095	0.873	0.777	20
21	0.869	1.099	1.318	1.475	1.523	1.522	1.476	1.411	1.288	1.087	0.867	0.777	21
22	0.875	1.107	1.324	1.478	1.524	1.520	1.474	1.409	1.282	1.079	0.862	0.777	22
23	0.881	1.115	1.331	1.480	1.525	1.519	1.473	1.406	1.276	1.071	0.856	0.776	23
24	0.888	1.124	1.338	1.483	1.525	1.518	1.471	1.404	1.270	1.063	0.851	0.777	24
25	0.894	1.132	1.344	1.485	1.526	1.516	1.470	1.401	1.264	1.055	0.846	0.777	25
26	0.901	1.140	1.350	1.487	1.527	1.515	1.469	1.398	1.258	1.047	0.841	0.778	26
27	0.907	1.149	1.356	1.490	1.527	1.513	1.467	1.395	1.252	1.039	0.836	0.779	27
28	0.914	1.157	1.363	1.492	1.528	1.512	1.465	1.392	1.245	1.032	0.832	0.780	28
29	0.921		1.369	1.494	1.528	1.510	1.464	1.389	1.239	1.024	0.827	0.782	29
30	0.928		1.374	1.496	1.529	1.509	1.462	1.385	1.233	1.016	0.823	0.783	30
31	0.935		1.380		1.529		1.460	1.382		1.009		0.785	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

LOS ANGELES, CA

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.776	0.922	1.126	1.326	1.424	1.439	1.408	1.370	1.291	1.149	0.958	0.802	1
2	0.778	0.928	1.133	1.331	1.426	1.438	1.407	1.368	1.287	1.143	0.951	0.798	2
3	0.781	0.935	1.140	1.336	1.427	1.438	1.405	1.367	1.283	1.137	0.945	0.795	3
4	0.783	0.942	1.148	1.341	1.429	1.437	1.404	1.365	1.279	1.132	0.939	0.792	4
5	0.786	0.949	1.155	1.346	1.430	1.437	1.402	1.364	1.275	1.126	0.933	0.789	5
6	0.789	0.956	1.162	1.351	1.431	1.437	1.400	1.363	1.271	1.120	0.927	0.786	6
7	0.792	0.963	1.169	1.355	1.432	1.436	1.398	1.361	1.266	1.114	0.921	0.784	7
8	0.796	0.970	1.177	1.360	1.433	1.436	1.396	1.359	1.261	1.109	0.915	0.782	8
9	0.799	0.977	1.184	1.364	1.434	1.436	1.394	1.358	1.256	1.103	0.909	0.780	9
10	0.803	0.984	1.191	1.368	1.435	1.435	1.392	1.356	1.251	1.097	0.904	0.778	10
11	0.807	0.992	1.198	1.372	1.436	1.435	1.390	1.354	1.247	1.091	0.898	0.776	11
12	0.811	0.999	1.205	1.376	1.436	1.434	1.388	1.352	1.242	1.085	0.892	0.775	12
13	0.815	1.006	1.211	1.380	1.437	1.434	1.386	1.350	1.237	1.078	0.887	0.773	13
14	0.819	1.014	1.218	1.384	1.437	1.433	1.384	1.348	1.232	1.072	0.881	0.772	14
15	0.824	1.021	1.225	1.387	1.438	1.432	1.383	1.346	1.227	1.066	0.876	0.771	15
16	0.829	1.028	1.232	1.390	1.439	1.431	1.382	1.344	1.222	1.060	0.871	0.770	16
17	0.833	1.036	1.238	1.393	1.439	1.430	1.381	1.341	1.218	1.053	0.865	0.769	17
18	0.838	1.043	1.245	1.396	1.439	1.428	1.380	1.338	1.213	1.047	0.860	0.768	18
19	0.844	1.051	1.251	1.399	1.440	1.427	1.380	1.335	1.208	1.041	0.855	0.767	19
20	0.849	1.058	1.258	1.402	1.440	1.425	1.379	1.332	1.204	1.034	0.850	0.767	20
21	0.854	1.066	1.264	1.404	1.441	1.424	1.379	1.329	1.199	1.028	0.845	0.767	21
22	0.860	1.073	1.270	1.406	1.441	1.422	1.378	1.326	1.194	1.021	0.840	0.766	22
23	0.865	1.081	1.276	1.409	1.441	1.420	1.378	1.323	1.190	1.015	0.835	0.766	23
24	0.871	1.089	1.282	1.411	1.441	1.419	1.378	1.319	1.185	1.008	0.831	0.767	24
25	0.877	1.096	1.288	1.413	1.441	1.417	1.377	1.316	1.180	1.002	0.826	0.767	25
26	0.883	1.103	1.294	1.415	1.441	1.416	1.376	1.313	1.175	0.996	0.822	0.768	26
27	0.889	1.111	1.299	1.417	1.441	1.414	1.375	1.309	1.170	0.989	0.817	0.768	27
28	0.895	1.118	1.305	1.419	1.440	1.413	1.374	1.306	1.165	0.983	0.813	0.770	28
29	0.902		1.311	1.421	1.440	1.411	1.373	1.302	1.159	0.976	0.809	0.771	29
30	0.908		1.316	1.423	1.440	1.410	1.372	1.299	1.154	0.970	0.805	0.772	30
31	0.915		1.321		1.439		1.371	1.295		0.964		0.774	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

MIDLAND, TX

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.895	1.043	1.244	1.423	1.499	1.502	1.481	1.451	1.382	1.259	1.078	0.921	1
2	0.898	1.049	1.251	1.428	1.500	1.502	1.480	1.449	1.379	1.254	1.072	0.917	2
3	0.900	1.056	1.258	1.432	1.501	1.501	1.479	1.447	1.375	1.249	1.066	0.914	3
4	0.903	1.063	1.265	1.436	1.502	1.501	1.478	1.446	1.372	1.244	1.060	0.911	4
5	0.906	1.070	1.272	1.440	1.503	1.500	1.477	1.444	1.368	1.239	1.054	0.908	5
6	0.909	1.077	1.279	1.444	1.504	1.499	1.476	1.442	1.364	1.234	1.048	0.905	6
7	0.912	1.084	1.286	1.448	1.504	1.498	1.475	1.440	1.360	1.229	1.042	0.903	7
8	0.916	1.091	1.292	1.451	1.505	1.498	1.474	1.439	1.356	1.224	1.037	0.900	8
9	0.920	1.098	1.299	1.455	1.505	1.497	1.473	1.437	1.352	1.219	1.031	0.898	9
10	0.923	1.106	1.305	1.458	1.506	1.496	1.472	1.435	1.348	1.213	1.025	0.896	10
11	0.927	1.113	1.312	1.462	1.506	1.495	1.471	1.433	1.344	1.208	1.019	0.894	11
12	0.932	1.120	1.318	1.465	1.507	1.494	1.470	1.431	1.340	1.202	1.014	0.892	12
13	0.936	1.127	1.324	1.468	1.507	1.494	1.469	1.429	1.336	1.197	1.008	0.891	13
14	0.940	1.135	1.330	1.470	1.507	1.493	1.468	1.427	1.332	1.191	1.003	0.889	14
15	0.945	1.142	1.336	1.473	1.507	1.492	1.467	1.425	1.328	1.185	0.997	0.888	15
16	0.950	1.149	1.342	1.475	1.507	1.491	1.466	1.423	1.324	1.179	0.991	0.887	16
17	0.955	1.157	1.348	1.478	1.507	1.491	1.465	1.421	1.320	1.173	0.986	0.886	17
18	0.960	1.164	1.353	1.480	1.507	1.490	1.465	1.419	1.316	1.167	0.980	0.885	18
19	0.965	1.171	1.359	1.482	1.507	1.490	1.464	1.417	1.312	1.160	0.975	0.884	19
20	0.970	1.179	1.364	1.484	1.506	1.489	1.464	1.415	1.307	1.154	0.970	0.884	20
21	0.975	1.186	1.369	1.486	1.506	1.488	1.463	1.413	1.303	1.148	0.965	0.884	21
22	0.981	1.193	1.375	1.487	1.506	1.488	1.462	1.410	1.299	1.141	0.959	0.884	22
23	0.986	1.200	1.380	1.489	1.506	1.487	1.462	1.408	1.295	1.135	0.954	0.884	23
24	0.992	1.208	1.385	1.491	1.505	1.487	1.461	1.406	1.290	1.128	0.950	0.884	24
25	0.998	1.215	1.390	1.492	1.505	1.486	1.460	1.403	1.286	1.122	0.945	0.885	25
26	1.004	1.222	1.395	1.493	1.505	1.485	1.459	1.400	1.282	1.116	0.941	0.886	26
27	1.010	1.230	1.400	1.495	1.504	1.485	1.458	1.398	1.277	1.109	0.936	0.887	27
28	1.016	1.237	1.405	1.496	1.504	1.484	1.457	1.395	1.273	1.103	0.932	0.888	28
29	1.023		1.409	1.497	1.504	1.483	1.455	1.392	1.268	1.097	0.928	0.890	29
30	1.029		1.414	1.498	1.503	1.482	1.454	1.389	1.263	1.090	0.924	0.891	30
31	1.036		1.419		1.503		1.452	1.385		1.084		0.893	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

NORTH LITTLE ROCK, AR

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.751	0.903	1.111	1.287	1.371	1.382	1.350	1.307	1.232	1.109	0.936	0.778	1
2	0.753	0.910	1.118	1.291	1.373	1.381	1.349	1.305	1.229	1.105	0.930	0.774	2
3	0.756	0.917	1.126	1.294	1.375	1.380	1.348	1.303	1.225	1.100	0.924	0.771	3
4	0.759	0.925	1.133	1.298	1.377	1.379	1.346	1.301	1.222	1.095	0.919	0.767	4
5	0.762	0.932	1.140	1.301	1.379	1.378	1.345	1.299	1.218	1.090	0.913	0.764	5
6	0.765	0.939	1.147	1.304	1.381	1.377	1.344	1.297	1.214	1.085	0.908	0.761	6
7	0.769	0.947	1.155	1.307	1.382	1.375	1.342	1.294	1.210	1.080	0.902	0.758	7
8	0.772	0.954	1.162	1.310	1.384	1.374	1.341	1.292	1.206	1.076	0.897	0.755	8
9	0.776	0.961	1.170	1.312	1.385	1.373	1.339	1.289	1.201	1.071	0.892	0.752	9
10	0.780	0.969	1.177	1.315	1.386	1.371	1.338	1.287	1.197	1.066	0.886	0.750	10
11	0.784	0.976	1.184	1.318	1.387	1.370	1.336	1.284	1.193	1.061	0.881	0.748	11
12	0.788	0.984	1.191	1.320	1.388	1.369	1.335	1.282	1.189	1.056	0.876	0.746	12
13	0.793	0.991	1.197	1.323	1.389	1.367	1.334	1.280	1.184	1.051	0.871	0.744	13
14	0.797	0.998	1.204	1.325	1.390	1.366	1.332	1.277	1.180	1.045	0.865	0.742	14
15	0.802	1.006	1.210	1.328	1.390	1.365	1.331	1.275	1.176	1.040	0.860	0.741	15
16	0.807	1.014	1.216	1.331	1.390	1.364	1.330	1.273	1.172	1.034	0.854	0.740	16
17	0.812	1.021	1.221	1.334	1.390	1.363	1.329	1.271	1.168	1.029	0.849	0.739	17
18	0.817	1.029	1.226	1.337	1.390	1.362	1.328	1.269	1.164	1.023	0.843	0.738	18
19	0.822	1.037	1.231	1.340	1.390	1.362	1.326	1.266	1.161	1.017	0.838	0.738	19
20	0.827	1.044	1.236	1.343	1.390	1.361	1.325	1.264	1.157	1.010	0.832	0.737	20
21	0.833	1.052	1.241	1.346	1.389	1.360	1.324	1.262	1.153	1.004	0.826	0.737	21
22	0.838	1.059	1.245	1.348	1.389	1.359	1.323	1.260	1.149	0.998	0.821	0.737	22
23	0.844	1.067	1.250	1.351	1.388	1.359	1.322	1.258	1.145	0.992	0.815	0.738	23
24	0.850	1.075	1.254	1.354	1.388	1.358	1.320	1.255	1.141	0.985	0.810	0.738	24
25	0.856	1.082	1.258	1.357	1.387	1.357	1.319	1.253	1.137	0.979	0.805	0.739	25
26	0.862	1.089	1.262	1.360	1.386	1.356	1.318	1.250	1.133	0.973	0.800	0.740	26
27	0.869	1.097	1.267	1.362	1.386	1.355	1.316	1.248	1.128	0.966	0.795	0.741	27
28	0.875	1.104	1.271	1.365	1.385	1.354	1.314	1.245	1.124	0.960	0.791	0.743	28
29	0.882		1.275	1.367	1.384	1.353	1.313	1.242	1.119	0.954	0.786	0.744	29
30	0.889		1.279	1.369	1.384	1.352	1.311	1.239	1.114	0.948	0.782	0.746	30
31	0.896		1.283		1.383		1.309	1.236		0.942		0.748	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

OKLAHOMA CITY, OK

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.782	0.932	1.137	1.326	1.410	1.424	1.404	1.371	1.286	1.151	0.966	0.805	1
2	0.784	0.939	1.145	1.330	1.412	1.424	1.403	1.369	1.281	1.146	0.960	0.802	2
3	0.787	0.946	1.152	1.335	1.413	1.423	1.402	1.367	1.277	1.141	0.953	0.798	3
4	0.791	0.953	1.160	1.339	1.414	1.423	1.401	1.366	1.273	1.136	0.947	0.795	4
5	0.794	0.960	1.167	1.343	1.415	1.422	1.400	1.364	1.268	1.131	0.941	0.792	5
6	0.798	0.967	1.174	1.347	1.416	1.421	1.399	1.362	1.263	1.126	0.935	0.789	6
7	0.801	0.974	1.182	1.351	1.417	1.420	1.397	1.361	1.258	1.121	0.929	0.787	7
8	0.805	0.982	1.189	1.355	1.417	1.420	1.396	1.359	1.253	1.116	0.923	0.784	8
9	0.809	0.989	1.196	1.358	1.418	1.419	1.395	1.357	1.248	1.111	0.917	0.782	9
10	0.813	0.996	1.203	1.362	1.419	1.418	1.394	1.356	1.243	1.106	0.911	0.780	10
11	0.818	1.003	1.210	1.365	1.419	1.417	1.392	1.354	1.238	1.101	0.906	0.779	11
12	0.822	1.011	1.217	1.369	1.420	1.416	1.391	1.352	1.233	1.096	0.900	0.777	12
13	0.827	1.018	1.224	1.372	1.420	1.415	1.390	1.350	1.228	1.090	0.894	0.776	13
14	0.831	1.026	1.231	1.375	1.421	1.415	1.389	1.347	1.224	1.085	0.889	0.774	14
15	0.836	1.033	1.237	1.378	1.421	1.414	1.388	1.345	1.219	1.079	0.883	0.773	15
16	0.841	1.040	1.243	1.381	1.422	1.413	1.387	1.342	1.215	1.073	0.877	0.772	16
17	0.846	1.048	1.249	1.384	1.422	1.413	1.386	1.340	1.210	1.067	0.872	0.771	17
18	0.850	1.055	1.255	1.386	1.423	1.412	1.385	1.337	1.206	1.060	0.867	0.770	18
19	0.855	1.062	1.261	1.389	1.423	1.412	1.385	1.334	1.202	1.054	0.861	0.769	19
20	0.861	1.070	1.267	1.391	1.423	1.412	1.384	1.331	1.198	1.047	0.856	0.768	20
21	0.866	1.077	1.272	1.393	1.424	1.411	1.383	1.327	1.194	1.040	0.851	0.768	21
22	0.871	1.085	1.277	1.395	1.424	1.411	1.383	1.324	1.190	1.034	0.846	0.768	22
23	0.877	1.092	1.283	1.397	1.425	1.410	1.382	1.320	1.186	1.027	0.841	0.768	23
24	0.882	1.100	1.288	1.399	1.425	1.410	1.381	1.317	1.182	1.020	0.836	0.768	24
25	0.888	1.107	1.293	1.401	1.425	1.409	1.380	1.313	1.178	1.013	0.831	0.769	25
26	0.894	1.114	1.298	1.403	1.425	1.408	1.379	1.309	1.174	1.006	0.826	0.770	26
27	0.900	1.122	1.303	1.404	1.425	1.408	1.378	1.306	1.169	0.999	0.822	0.771	27
28	0.906	1.130	1.308	1.406	1.425	1.407	1.378	1.302	1.165	0.993	0.817	0.773	28
29	0.913		1.312	1.408	1.425	1.406	1.375	1.298	1.160	0.986	0.813	0.775	29
30	0.919		1.317	1.409	1.425	1.405	1.374	1.294	1.155	0.979	0.809	0.777	30
31	0.926		1.322		1.424		1.372	1.290		0.973		0.779	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

PORTLAND, ME

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.544	0.716	0.951	1.177	1.314	1.358	1.344	1.290	1.174	0.986	0.744	0.566	1
2	0.548	0.724	0.959	1.184	1.316	1.358	1.343	1.287	1.169	0.979	0.737	0.562	2
3	0.551	0.732	0.967	1.190	1.319	1.358	1.341	1.285	1.164	0.972	0.729	0.559	3
4	0.554	0.741	0.975	1.196	1.322	1.358	1.340	1.282	1.158	0.964	0.722	0.556	4
5	0.558	0.749	0.983	1.202	1.324	1.358	1.339	1.279	1.153	0.957	0.714	0.553	5
6	0.562	0.758	0.991	1.208	1.326	1.358	1.338	1.276	1.147	0.950	0.706	0.550	6
7	0.566	0.766	0.998	1.214	1.329	1.358	1.336	1.273	1.142	0.942	0.699	0.548	7
8	0.570	0.775	1.006	1.220	1.331	1.357	1.335	1.269	1.136	0.934	0.691	0.546	8
9	0.574	0.784	1.014	1.225	1.333	1.357	1.333	1.266	1.131	0.927	0.684	0.544	9
10	0.579	0.792	1.021	1.231	1.335	1.356	1.332	1.263	1.125	0.919	0.677	0.542	10
11	0.583	0.801	1.028	1.236	1.336	1.356	1.330	1.259	1.119	0.911	0.670	0.540	11
12	0.588	0.810	1.036	1.241	1.338	1.355	1.329	1.256	1.113	0.904	0.663	0.538	12
13	0.593	0.819	1.043	1.246	1.340	1.355	1.327	1.252	1.107	0.896	0.656	0.537	13
14	0.598	0.827	1.051	1.251	1.341	1.354	1.326	1.249	1.101	0.888	0.649	0.535	14
15	0.603	0.836	1.058	1.256	1.343	1.354	1.324	1.245	1.095	0.880	0.643	0.534	15
16	0.608	0.844	1.065	1.261	1.344	1.354	1.322	1.242	1.089	0.872	0.637	0.533	16
17	0.614	0.853	1.073	1.265	1.346	1.353	1.321	1.238	1.082	0.864	0.631	0.532	17
18	0.620	0.861	1.080	1.269	1.347	1.353	1.319	1.235	1.076	0.856	0.625	0.531	18
19	0.625	0.869	1.088	1.273	1.348	1.352	1.317	1.231	1.070	0.848	0.620	0.530	19
20	0.631	0.877	1.095	1.277	1.349	1.352	1.316	1.227	1.063	0.840	0.614	0.529	20
21	0.638	0.886	1.102	1.281	1.350	1.351	1.314	1.224	1.056	0.831	0.609	0.529	21
22	0.644	0.894	1.110	1.285	1.351	1.351	1.312	1.220	1.050	0.823	0.604	0.529	22
23	0.650	0.902	1.117	1.288	1.352	1.350	1.310	1.216	1.043	0.815	0.599	0.529	23
24	0.657	0.910	1.124	1.292	1.353	1.350	1.308	1.212	1.036	0.807	0.595	0.529	24
25	0.664	0.918	1.131	1.295	1.354	1.349	1.306	1.208	1.029	0.799	0.590	0.530	25
26	0.671	0.926	1.138	1.298	1.355	1.348	1.304	1.204	1.022	0.791	0.586	0.531	26
27	0.678	0.934	1.145	1.302	1.355	1.347	1.302	1.199	1.015	0.783	0.581	0.533	27
28	0.685	0.943	1.152	1.305	1.356	1.347	1.300	1.194	1.008	0.775	0.577	0.534	28
29	0.693		1.158	1.308	1.357	1.346	1.297	1.190	1.001	0.767	0.573	0.537	29
30	0.701		1.165	1.311	1.357	1.345	1.295	1.185	0.994	0.760	0.569	0.539	30
31	0.708		1.171		1.357		1.293	1.180		0.752		0.542	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

RAPID CITY, SD

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.572	0.745	0.995	1.234	1.368	1.420	1.411	1.357	1.240	1.044	0.795	0.604	1
2	0.575	0.753	1.004	1.240	1.371	1.420	1.410	1.355	1.235	1.037	0.788	0.600	2
3	0.578	0.761	1.013	1.246	1.374	1.420	1.406	1.352	1.230	1.029	0.780	0.596	3
4	0.581	0.770	1.022	1.252	1.376	1.421	1.407	1.349	1.224	1.021	0.772	0.593	4
5	0.585	0.778	1.031	1.257	1.379	1.421	1.406	1.346	1.219	1.013	0.765	0.589	5
6	0.589	0.787	1.040	1.262	1.382	1.421	1.405	1.343	1.214	1.005	0.758	0.586	6
7	0.593	0.795	1.049	1.268	1.384	1.421	1.403	1.340	1.208	0.997	0.750	0.582	7
8	0.597	0.804	1.058	1.273	1.387	1.421	1.402	1.337	1.202	0.989	0.743	0.579	8
9	0.602	0.813	1.067	1.278	1.389	1.421	1.400	1.333	1.197	0.981	0.736	0.577	9
10	0.606	0.822	1.075	1.283	1.391	1.421	1.398	1.330	1.191	0.973	0.729	0.574	10
11	0.611	0.831	1.084	1.287	1.393	1.420	1.397	1.326	1.185	0.965	0.722	0.572	11
12	0.616	0.840	1.092	1.292	1.395	1.420	1.395	1.323	1.179	0.956	0.715	0.569	12
13	0.621	0.849	1.101	1.297	1.397	1.420	1.393	1.319	1.173	0.948	0.708	0.567	13
14	0.627	0.858	1.109	1.301	1.399	1.419	1.392	1.316	1.166	0.940	0.702	0.566	14
15	0.632	0.867	1.117	1.306	1.401	1.419	1.390	1.312	1.160	0.932	0.695	0.564	15
16	0.637	0.876	1.125	1.311	1.403	1.419	1.388	1.308	1.153	0.924	0.688	0.563	16
17	0.643	0.885	1.133	1.315	1.404	1.418	1.387	1.305	1.147	0.916	0.682	0.561	17
18	0.649	0.894	1.140	1.319	1.406	1.418	1.385	1.301	1.140	0.908	0.675	0.560	18
19	0.655	0.903	1.148	1.324	1.407	1.418	1.384	1.297	1.133	0.899	0.669	0.560	19
20	0.661	0.912	1.155	1.328	1.408	1.417	1.382	1.293	1.126	0.891	0.662	0.559	20
21	0.667	0.921	1.162	1.332	1.410	1.417	1.380	1.289	1.119	0.883	0.656	0.559	21
22	0.673	0.931	1.169	1.336	1.411	1.417	1.379	1.285	1.112	0.875	0.650	0.559	22
23	0.680	0.940	1.176	1.340	1.412	1.416	1.377	1.281	1.105	0.867	0.644	0.559	23
24	0.686	0.949	1.183	1.344	1.413	1.416	1.375	1.277	1.097	0.859	0.639	0.559	24
25	0.693	0.958	1.190	1.348	1.414	1.415	1.373	1.273	1.090	0.851	0.633	0.560	25
26	0.700	0.967	1.197	1.352	1.415	1.414	1.371	1.269	1.083	0.843	0.628	0.561	26
27	0.707	0.976	1.203	1.355	1.416	1.414	1.369	1.264	1.075	0.835	0.623	0.562	27
28	0.714	0.985	1.210	1.358	1.417	1.413	1.367	1.259	1.067	0.827	0.618	0.564	28
29	0.722		1.216	1.362	1.418	1.412	1.365	1.255	1.060	0.819	0.613	0.565	29
30	0.729		1.222	1.365	1.418	1.411	1.362	1.250	1.052	0.811	0.609	0.567	30
31	0.737		1.228		1.419		1.360	1.245		0.803		0.570	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

SALT LAKE CITY, UT

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.673	0.838	1.074	1.310	1.446	1.494	1.486	1.435	1.326	1.142	0.893	0.703	1
2	0.676	0.846	1.083	1.317	1.449	1.494	1.485	1.432	1.321	1.135	0.885	0.699	2
3	0.679	0.854	1.091	1.323	1.452	1.495	1.483	1.430	1.316	1.127	0.877	0.696	3
4	0.682	0.862	1.100	1.329	1.455	1.495	1.482	1.427	1.311	1.120	0.869	0.692	4
5	0.685	0.870	1.108	1.335	1.457	1.495	1.481	1.424	1.306	1.112	0.861	0.689	5
6	0.688	0.878	1.116	1.341	1.459	1.495	1.480	1.421	1.301	1.104	0.853	0.686	6
7	0.692	0.886	1.125	1.347	1.462	1.495	1.478	1.418	1.296	1.096	0.846	0.683	7
8	0.696	0.894	1.133	1.352	1.464	1.495	1.476	1.415	1.290	1.089	0.839	0.681	8
9	0.700	0.903	1.142	1.357	1.466	1.495	1.475	1.412	1.285	1.081	0.831	0.679	9
10	0.704	0.911	1.150	1.363	1.468	1.495	1.473	1.408	1.280	1.073	0.824	0.676	10
11	0.709	0.919	1.158	1.368	1.469	1.495	1.472	1.405	1.274	1.065	0.817	0.674	11
12	0.713	0.928	1.166	1.373	1.471	1.495	1.470	1.402	1.269	1.056	0.810	0.673	12
13	0.718	0.936	1.174	1.378	1.473	1.494	1.468	1.399	1.263	1.048	0.803	0.671	13
14	0.723	0.944	1.182	1.382	1.474	1.494	1.467	1.395	1.257	1.040	0.797	0.669	14
15	0.728	0.953	1.190	1.387	1.476	1.494	1.465	1.392	1.251	1.032	0.790	0.668	15
16	0.733	0.962	1.198	1.391	1.478	1.494	1.464	1.389	1.245	1.024	0.784	0.667	16
17	0.738	0.970	1.205	1.396	1.479	1.493	1.462	1.385	1.239	1.016	0.777	0.665	17
18	0.744	0.979	1.213	1.400	1.481	1.493	1.461	1.382	1.232	1.007	0.771	0.664	18
19	0.750	0.988	1.220	1.404	1.482	1.493	1.459	1.379	1.226	0.999	0.765	0.663	19
20	0.755	0.996	1.228	1.408	1.483	1.492	1.458	1.375	1.219	0.991	0.759	0.662	20
21	0.761	1.005	1.235	1.412	1.485	1.492	1.456	1.372	1.212	0.983	0.753	0.662	21
22	0.768	1.014	1.242	1.416	1.486	1.492	1.455	1.368	1.206	0.975	0.747	0.662	22
23	0.774	1.023	1.249	1.420	1.487	1.491	1.453	1.365	1.199	0.966	0.742	0.661	23
24	0.780	1.031	1.256	1.423	1.488	1.491	1.452	1.361	1.192	0.958	0.736	0.662	24
25	0.787	1.040	1.263	1.427	1.489	1.490	1.450	1.357	1.185	0.950	0.731	0.662	25
26	0.794	1.049	1.270	1.430	1.490	1.489	1.448	1.353	1.178	0.942	0.726	0.663	26
27	0.801	1.057	1.277	1.434	1.491	1.489	1.446	1.349	1.171	0.933	0.721	0.664	27
28	0.808	1.066	1.284	1.437	1.492	1.488	1.444	1.344	1.164	0.925	0.716	0.665	28
29	0.815		1.291	1.440	1.492	1.487	1.442	1.340	1.157	0.917	0.712	0.667	29
30	0.823		1.297	1.443	1.493	1.486	1.440	1.335	1.149	0.909	0.707	0.669	30
31	0.831		1.304		1.493		1.437	1.331		0.901		0.671	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

SAN ANTONIO, TX

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.910	1.049	1.235	1.394	1.451	1.445	1.429	1.410	1.354	1.242	1.080	0.933	1
2	0.913	1.056	1.242	1.398	1.452	1.444	1.428	1.409	1.351	1.238	1.074	0.930	2
3	0.915	1.062	1.248	1.401	1.452	1.443	1.427	1.408	1.348	1.233	1.069	0.927	3
4	0.918	1.069	1.255	1.404	1.453	1.443	1.427	1.406	1.344	1.229	1.063	0.924	4
5	0.921	1.075	1.261	1.407	1.453	1.442	1.426	1.405	1.341	1.224	1.058	0.921	5
6	0.924	1.082	1.267	1.410	1.453	1.441	1.425	1.404	1.337	1.219	1.053	0.918	6
7	0.927	1.088	1.274	1.413	1.453	1.441	1.425	1.402	1.334	1.214	1.047	0.916	7
8	0.931	1.095	1.280	1.415	1.453	1.440	1.424	1.401	1.330	1.210	1.042	0.914	8
9	0.935	1.102	1.287	1.418	1.453	1.439	1.424	1.399	1.326	1.205	1.037	0.912	9
10	0.938	1.108	1.293	1.420	1.452	1.439	1.423	1.397	1.322	1.200	1.032	0.910	10
11	0.942	1.115	1.299	1.423	1.452	1.438	1.423	1.396	1.318	1.195	1.027	0.908	11
12	0.946	1.122	1.305	1.425	1.452	1.437	1.422	1.394	1.314	1.190	1.021	0.907	12
13	0.950	1.128	1.311	1.427	1.452	1.437	1.422	1.392	1.311	1.184	1.016	0.905	13
14	0.955	1.135	1.316	1.429	1.451	1.436	1.421	1.391	1.307	1.179	1.011	0.904	14
15	0.959	1.142	1.322	1.431	1.451	1.436	1.421	1.389	1.303	1.174	1.006	0.903	15
16	0.963	1.149	1.327	1.433	1.451	1.436	1.421	1.387	1.299	1.169	1.001	0.902	16
17	0.968	1.156	1.332	1.435	1.451	1.435	1.420	1.386	1.296	1.163	0.996	0.901	17
18	0.973	1.162	1.337	1.436	1.450	1.435	1.420	1.384	1.292	1.158	0.991	0.900	18
19	0.977	1.169	1.342	1.438	1.450	1.435	1.419	1.382	1.289	1.152	0.986	0.900	19
20	0.982	1.176	1.347	1.439	1.450	1.435	1.419	1.381	1.285	1.147	0.981	0.899	20
21	0.987	1.182	1.351	1.441	1.450	1.434	1.418	1.379	1.282	1.141	0.976	0.899	21
22	0.992	1.189	1.356	1.442	1.450	1.434	1.418	1.377	1.278	1.136	0.971	0.899	22
23	0.997	1.196	1.360	1.444	1.450	1.434	1.417	1.375	1.274	1.130	0.966	0.899	23
24	1.003	1.202	1.364	1.445	1.449	1.433	1.417	1.373	1.271	1.125	0.961	0.899	24
25	1.008	1.209	1.368	1.446	1.449	1.433	1.416	1.371	1.267	1.119	0.957	0.900	25
26	1.014	1.216	1.372	1.447	1.449	1.432	1.415	1.369	1.263	1.113	0.953	0.901	26
27	1.019	1.222	1.376	1.448	1.448	1.432	1.415	1.367	1.259	1.108	0.948	0.902	27
28	1.025	1.229	1.380	1.449	1.448	1.431	1.414	1.364	1.255	1.102	0.944	0.903	28
29	1.031		1.384	1.450	1.447	1.430	1.413	1.362	1.251	1.097	0.941	0.905	29
30	1.037		1.387	1.451	1.446	1.430	1.412	1.359	1.247	1.091	0.937	0.906	30
31	1.043		1.391		1.446		1.411	1.356		1.085		0.908	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

SAULT STE. MARIE, MI

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.483	0.660	0.921	1.166	1.297	1.349	1.342	1.282	1.147	0.939	0.691	0.509	1
2	0.486	0.668	0.931	1.171	1.301	1.349	1.341	1.279	1.142	0.931	0.684	0.505	2
3	0.489	0.677	0.941	1.177	1.304	1.349	1.340	1.275	1.136	0.923	0.676	0.501	3
4	0.493	0.685	0.950	1.182	1.306	1.349	1.339	1.272	1.130	0.915	0.668	0.498	4
5	0.496	0.694	0.960	1.187	1.309	1.349	1.338	1.268	1.124	0.907	0.661	0.495	5
6	0.500	0.703	0.970	1.192	1.311	1.349	1.337	1.264	1.118	0.899	0.654	0.492	6
7	0.504	0.712	0.980	1.197	1.314	1.349	1.335	1.260	1.111	0.891	0.646	0.490	7
8	0.508	0.721	0.990	1.202	1.316	1.349	1.333	1.256	1.105	0.883	0.639	0.487	8
9	0.512	0.730	0.999	1.206	1.318	1.348	1.331	1.252	1.098	0.875	0.632	0.485	9
10	0.517	0.739	1.009	1.211	1.320	1.348	1.330	1.248	1.092	0.867	0.625	0.483	10
11	0.521	0.748	1.018	1.215	1.322	1.348	1.328	1.244	1.085	0.858	0.618	0.481	11
12	0.526	0.758	1.028	1.220	1.324	1.348	1.326	1.240	1.078	0.850	0.612	0.479	12
13	0.531	0.767	1.037	1.224	1.325	1.347	1.324	1.236	1.071	0.842	0.605	0.478	13
14	0.537	0.776	1.046	1.229	1.327	1.347	1.322	1.231	1.064	0.834	0.598	0.476	14
15	0.542	0.786	1.054	1.233	1.329	1.347	1.320	1.227	1.057	0.826	0.592	0.475	15
16	0.548	0.796	1.062	1.237	1.331	1.347	1.318	1.223	1.050	0.818	0.586	0.474	16
17	0.553	0.805	1.070	1.242	1.333	1.347	1.316	1.219	1.043	0.810	0.579	0.473	17
18	0.559	0.815	1.077	1.246	1.334	1.347	1.315	1.214	1.036	0.802	0.573	0.472	18
19	0.566	0.825	1.085	1.251	1.336	1.346	1.313	1.210	1.029	0.794	0.567	0.471	19
20	0.572	0.834	1.092	1.255	1.338	1.346	1.311	1.206	1.022	0.786	0.562	0.470	20
21	0.578	0.844	1.098	1.259	1.340	1.346	1.309	1.201	1.014	0.778	0.556	0.470	21
22	0.585	0.854	1.105	1.264	1.341	1.346	1.307	1.197	1.007	0.770	0.551	0.470	22
23	0.592	0.864	1.111	1.268	1.343	1.346	1.305	1.192	1.000	0.762	0.545	0.470	23
24	0.599	0.873	1.118	1.272	1.344	1.345	1.303	1.188	0.992	0.754	0.540	0.470	24
25	0.606	0.883	1.124	1.276	1.345	1.345	1.301	1.183	0.985	0.746	0.535	0.471	25
26	0.613	0.893	1.130	1.280	1.346	1.345	1.299	1.178	0.977	0.738	0.530	0.472	26
27	0.621	0.902	1.136	1.284	1.347	1.344	1.296	1.173	0.970	0.730	0.525	0.473	27
28	0.628	0.912	1.142	1.287	1.347	1.344	1.294	1.168	0.962	0.722	0.521	0.475	28
29	0.636		1.148	1.291	1.348	1.343	1.291	1.163	0.954	0.714	0.517	0.476	29
30	0.644		1.154	1.294	1.348	1.343	1.288	1.158	0.947	0.707	0.513	0.479	30
31	0.652		1.160		1.349		1.285	1.153		0.699		0.481	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

SPOKANE, WA

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.439	0.610	0.862	1.130	1.303	1.378	1.381	1.317	1.166	0.940	0.665	0.469	1
2	0.442	0.618	0.871	1.137	1.307	1.379	1.380	1.314	1.160	0.931	0.657	0.465	2
3	0.445	0.626	0.880	1.145	1.311	1.380	1.379	1.310	1.153	0.922	0.648	0.462	3
4	0.449	0.635	0.890	1.152	1.314	1.380	1.378	1.307	1.147	0.914	0.640	0.458	4
5	0.452	0.643	0.899	1.159	1.318	1.381	1.377	1.303	1.140	0.905	0.632	0.455	5
6	0.456	0.652	0.908	1.166	1.322	1.381	1.376	1.299	1.133	0.896	0.624	0.452	6
7	0.460	0.660	0.917	1.173	1.325	1.382	1.375	1.295	1.126	0.887	0.616	0.449	7
8	0.464	0.669	0.926	1.180	1.328	1.382	1.374	1.291	1.120	0.879	0.608	0.447	8
9	0.468	0.678	0.936	1.186	1.332	1.383	1.373	1.287	1.113	0.870	0.600	0.444	9
10	0.472	0.687	0.945	1.193	1.335	1.383	1.371	1.282	1.106	0.861	0.593	0.442	10
11	0.477	0.696	0.953	1.199	1.338	1.383	1.370	1.278	1.098	0.852	0.585	0.440	11
12	0.482	0.705	0.962	1.206	1.341	1.383	1.368	1.273	1.091	0.843	0.578	0.438	12
13	0.487	0.714	0.971	1.212	1.344	1.384	1.367	1.268	1.084	0.834	0.571	0.436	13
14	0.492	0.723	0.980	1.218	1.346	1.384	1.365	1.264	1.076	0.825	0.564	0.435	14
15	0.497	0.732	0.989	1.224	1.349	1.384	1.363	1.259	1.069	0.816	0.557	0.433	15
16	0.502	0.741	0.998	1.230	1.352	1.384	1.361	1.254	1.061	0.807	0.550	0.432	16
17	0.508	0.750	1.007	1.236	1.354	1.384	1.359	1.249	1.054	0.798	0.544	0.430	17
18	0.514	0.759	1.015	1.241	1.356	1.384	1.356	1.244	1.046	0.789	0.537	0.429	18
19	0.519	0.769	1.024	1.247	1.359	1.385	1.354	1.240	1.038	0.780	0.531	0.428	19
20	0.525	0.778	1.033	1.252	1.361	1.385	1.352	1.235	1.030	0.771	0.525	0.427	20
21	0.532	0.787	1.041	1.257	1.363	1.385	1.349	1.229	1.022	0.762	0.519	0.427	21
22	0.538	0.796	1.050	1.262	1.365	1.385	1.346	1.224	1.014	0.753	0.513	0.426	22
23	0.545	0.805	1.058	1.267	1.367	1.384	1.344	1.219	1.006	0.744	0.508	0.426	23
24	0.551	0.815	1.067	1.272	1.368	1.384	1.341	1.214	0.998	0.735	0.502	0.426	24
25	0.558	0.824	1.075	1.277	1.370	1.384	1.338	1.208	0.990	0.726	0.497	0.427	25
26	0.565	0.833	1.083	1.282	1.371	1.384	1.335	1.202	0.982	0.717	0.492	0.428	26
27	0.572	0.843	1.091	1.286	1.373	1.383	1.332	1.197	0.973	0.708	0.487	0.429	27
28	0.579	0.852	1.099	1.290	1.374	1.383	1.329	1.191	0.965	0.700	0.482	0.431	28
29	0.587		1.107	1.295	1.375	1.382	1.326	1.185	0.957	0.691	0.478	0.432	29
30	0.594		1.115	1.299	1.376	1.381	1.323	1.179	0.948	0.682	0.474	0.434	30
31	0.602		1.122		1.377		1.320	1.172		0.674		0.437	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

ST. CLOUD, MN

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.514	0.687	0.940	1.177	1.311	1.364	1.353	1.286	1.162	0.966	0.725	0.543	1
2	0.516	0.696	0.950	1.182	1.314	1.364	1.351	1.284	1.157	0.958	0.718	0.539	2
3	0.519	0.704	0.959	1.188	1.317	1.365	1.350	1.281	1.152	0.950	0.711	0.535	3
4	0.523	0.712	0.968	1.193	1.320	1.365	1.348	1.278	1.146	0.942	0.704	0.531	4
5	0.526	0.721	0.977	1.198	1.323	1.365	1.347	1.274	1.141	0.934	0.697	0.528	5
6	0.530	0.730	0.986	1.203	1.326	1.365	1.345	1.270	1.135	0.926	0.690	0.525	6
7	0.534	0.739	0.996	1.208	1.328	1.365	1.344	1.267	1.130	0.918	0.683	0.522	7
8	0.538	0.748	1.005	1.212	1.331	1.365	1.342	1.263	1.124	0.910	0.677	0.519	8
9	0.542	0.757	1.014	1.217	1.333	1.365	1.341	1.259	1.118	0.901	0.670	0.517	9
10	0.547	0.766	1.023	1.222	1.336	1.364	1.339	1.255	1.112	0.893	0.663	0.515	10
11	0.551	0.775	1.032	1.226	1.338	1.364	1.337	1.251	1.106	0.885	0.657	0.513	11
12	0.556	0.784	1.041	1.231	1.340	1.364	1.336	1.247	1.100	0.877	0.650	0.511	12
13	0.561	0.793	1.049	1.235	1.342	1.364	1.334	1.243	1.094	0.869	0.644	0.509	13
14	0.567	0.803	1.058	1.239	1.344	1.363	1.332	1.239	1.087	0.861	0.637	0.507	14
15	0.572	0.812	1.066	1.244	1.346	1.363	1.330	1.235	1.081	0.853	0.631	0.506	15
16	0.578	0.821	1.074	1.249	1.348	1.363	1.328	1.231	1.074	0.845	0.625	0.505	16
17	0.583	0.830	1.081	1.253	1.349	1.362	1.326	1.227	1.068	0.837	0.618	0.504	17
18	0.589	0.840	1.089	1.258	1.351	1.362	1.324	1.223	1.061	0.830	0.612	0.503	18
19	0.595	0.849	1.096	1.263	1.352	1.362	1.322	1.219	1.054	0.822	0.606	0.502	19
20	0.601	0.858	1.103	1.267	1.354	1.362	1.320	1.216	1.047	0.814	0.600	0.501	20
21	0.607	0.867	1.109	1.272	1.355	1.361	1.318	1.212	1.040	0.807	0.594	0.501	21
22	0.614	0.876	1.116	1.276	1.356	1.361	1.315	1.208	1.033	0.799	0.588	0.501	22
23	0.620	0.886	1.122	1.281	1.357	1.360	1.313	1.203	1.026	0.792	0.582	0.501	23
24	0.627	0.895	1.129	1.285	1.358	1.360	1.311	1.199	1.018	0.784	0.576	0.501	24
25	0.634	0.904	1.135	1.289	1.359	1.359	1.308	1.195	1.011	0.777	0.571	0.502	25
26	0.641	0.913	1.141	1.293	1.360	1.358	1.305	1.191	1.004	0.770	0.566	0.503	26
27	0.648	0.922	1.147	1.297	1.361	1.357	1.303	1.186	0.996	0.762	0.561	0.504	27
28	0.656	0.931	1.153	1.301	1.362	1.356	1.300	1.182	0.989	0.755	0.556	0.505	28
29	0.663		1.159	1.304	1.362	1.355	1.297	1.177	0.981	0.747	0.551	0.507	29
30	0.671		1.165	1.308	1.363	1.354	1.294	1.172	0.973	0.740	0.547	0.509	30
31	0.679		1.171		1.363		1.291	1.167		0.733		0.511	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON
IRRADIANCE VALUES FOR EACH DAY OF THE
YEAR (cal/cm²min)

TALLAHASSEE, FL

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.835	0.981	1.168	1.326	1.389	1.381	1.356	1.322	1.259	1.157	0.998	0.850	1
2	0.838	0.988	1.174	1.329	1.390	1.380	1.355	1.321	1.256	1.152	0.992	0.847	2
3	0.841	0.994	1.181	1.333	1.391	1.379	1.354	1.319	1.253	1.148	0.987	0.844	3
4	0.844	1.001	1.187	1.336	1.392	1.378	1.353	1.318	1.250	1.144	0.981	0.841	4
5	0.847	1.008	1.193	1.339	1.392	1.377	1.352	1.316	1.247	1.140	0.976	0.838	5
6	0.850	1.015	1.199	1.342	1.392	1.376	1.351	1.314	1.243	1.136	0.971	0.835	6
7	0.854	1.022	1.206	1.345	1.393	1.375	1.350	1.313	1.240	1.132	0.965	0.833	7
8	0.858	1.029	1.212	1.348	1.393	1.374	1.349	1.311	1.236	1.127	0.960	0.831	8
9	0.862	1.036	1.218	1.351	1.393	1.373	1.348	1.309	1.232	1.123	0.955	0.829	9
10	0.866	1.043	1.224	1.354	1.393	1.372	1.347	1.307	1.228	1.119	0.950	0.827	10
11	0.870	1.049	1.230	1.356	1.393	1.371	1.345	1.306	1.225	1.114	0.945	0.825	11
12	0.875	1.056	1.236	1.359	1.393	1.370	1.344	1.304	1.221	1.110	0.940	0.824	12
13	0.879	1.063	1.242	1.361	1.392	1.369	1.343	1.302	1.217	1.105	0.934	0.822	13
14	0.883	1.070	1.247	1.364	1.392	1.368	1.342	1.300	1.214	1.100	0.929	0.821	14
15	0.888	1.077	1.253	1.366	1.392	1.367	1.341	1.298	1.210	1.095	0.924	0.820	15
16	0.893	1.084	1.258	1.368	1.392	1.366	1.340	1.296	1.207	1.090	0.919	0.819	16
17	0.897	1.091	1.264	1.370	1.392	1.365	1.339	1.294	1.204	1.084	0.914	0.818	17
18	0.902	1.097	1.269	1.372	1.391	1.365	1.338	1.292	1.200	1.079	0.908	0.817	18
19	0.907	1.104	1.273	1.374	1.391	1.364	1.337	1.290	1.197	1.073	0.903	0.816	19
20	0.912	1.111	1.278	1.376	1.391	1.363	1.336	1.288	1.194	1.067	0.898	0.816	20
21	0.917	1.117	1.283	1.377	1.390	1.363	1.335	1.286	1.191	1.062	0.893	0.816	21
22	0.922	1.124	1.287	1.379	1.390	1.362	1.334	1.284	1.188	1.056	0.888	0.816	22
23	0.927	1.130	1.292	1.380	1.389	1.361	1.333	1.282	1.185	1.050	0.883	0.816	23
24	0.932	1.137	1.296	1.382	1.389	1.361	1.332	1.279	1.182	1.044	0.879	0.817	24
25	0.938	1.143	1.300	1.383	1.388	1.360	1.331	1.277	1.179	1.038	0.874	0.816	25
26	0.944	1.149	1.304	1.384	1.387	1.359	1.330	1.275	1.176	1.032	0.870	0.819	26
27	0.950	1.156	1.308	1.385	1.386	1.359	1.329	1.272	1.172	1.026	0.865	0.821	27
28	0.956	1.162	1.312	1.387	1.385	1.358	1.327	1.270	1.168	1.021	0.861	0.823	28
29	0.962		1.315	1.388	1.385	1.357	1.326	1.267	1.164	1.015	0.857	0.826	29
30	0.968		1.319	1.389	1.384	1.356	1.325	1.265	1.161	1.009	0.854	0.828	30
31	0.975		1.323		1.382		1.324	1.262		1.004		0.831	31

STANDARD YEAR, CLEAR SKY, SOLAR NOON IRRADIANCE VALUES FOR EACH DAY OF THE YEAR (cal/cm²min)

TAMPA, FL

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
1	0.913	1.044	1.219	1.370	1.423	1.408	1.384	1.364	1.315	1.220	1.070	0.934	1
2	0.915	1.050	1.225	1.373	1.423	1.407	1.383	1.364	1.312	1.216	1.064	0.931	2
3	0.918	1.056	1.230	1.377	1.423	1.405	1.382	1.363	1.310	1.212	1.059	0.928	3
4	0.920	1.062	1.236	1.380	1.423	1.404	1.382	1.362	1.307	1.207	1.054	0.926	4
5	0.923	1.068	1.242	1.383	1.423	1.403	1.381	1.361	1.304	1.203	1.049	0.923	5
6	0.926	1.074	1.248	1.386	1.423	1.402	1.380	1.360	1.301	1.199	1.044	0.921	6
7	0.929	1.080	1.254	1.389	1.423	1.400	1.380	1.359	1.298	1.194	1.039	0.918	7
8	0.932	1.087	1.259	1.392	1.423	1.399	1.379	1.357	1.295	1.190	1.034	0.916	8
9	0.935	1.093	1.265	1.395	1.423	1.398	1.379	1.356	1.291	1.185	1.029	0.915	9
10	0.939	1.099	1.271	1.398	1.423	1.397	1.378	1.355	1.288	1.181	1.024	0.913	10
11	0.943	1.105	1.276	1.400	1.423	1.396	1.378	1.353	1.285	1.176	1.019	0.911	11
12	0.946	1.112	1.282	1.403	1.423	1.395	1.378	1.352	1.282	1.171	1.014	0.910	12
13	0.950	1.118	1.287	1.405	1.423	1.394	1.377	1.350	1.278	1.167	1.010	0.908	13
14	0.954	1.125	1.293	1.407	1.422	1.393	1.377	1.349	1.275	1.162	1.005	0.907	14
15	0.958	1.131	1.298	1.409	1.422	1.392	1.376	1.347	1.272	1.157	1.000	0.906	15
16	0.962	1.137	1.303	1.411	1.422	1.391	1.375	1.345	1.269	1.152	0.995	0.905	16
17	0.966	1.144	1.308	1.413	1.421	1.391	1.375	1.344	1.266	1.147	0.990	0.904	17
18	0.971	1.150	1.313	1.414	1.421	1.390	1.374	1.342	1.263	1.142	0.986	0.903	18
19	0.975	1.157	1.318	1.415	1.420	1.390	1.373	1.341	1.260	1.137	0.981	0.903	19
20	0.980	1.163	1.322	1.417	1.419	1.390	1.373	1.339	1.257	1.132	0.976	0.902	20
21	0.984	1.170	1.327	1.418	1.418	1.389	1.372	1.337	1.254	1.127	0.972	0.902	21
22	0.989	1.176	1.331	1.419	1.418	1.389	1.371	1.336	1.251	1.122	0.967	0.902	22
23	0.994	1.183	1.336	1.420	1.417	1.389	1.370	1.334	1.248	1.116	0.963	0.902	23
24	0.999	1.189	1.340	1.420	1.416	1.388	1.370	1.332	1.245	1.111	0.959	0.902	24
25	1.004	1.195	1.344	1.421	1.415	1.388	1.369	1.330	1.242	1.106	0.955	0.903	25
26	1.009	1.201	1.348	1.421	1.414	1.387	1.368	1.328	1.239	1.101	0.951	0.904	26
27	1.015	1.207	1.352	1.422	1.413	1.387	1.368	1.326	1.235	1.096	0.947	0.905	27
28	1.020	1.213	1.356	1.422	1.412	1.386	1.367	1.324	1.231	1.090	0.944	0.906	28
29	1.026		1.359	1.422	1.411	1.385	1.367	1.322	1.228	1.085	0.940	0.908	29
30	1.032		1.363	1.423	1.410	1.385	1.366	1.320	1.224	1.080	0.937	0.909	30
31	1.038		1.367		1.409		1.365	1.317		1.075		0.911	31

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

ASTORIA, OR

1.	.712	56.	.760	111.	.790	166.	.790	221.	.785	276.	.763	331.	.718
2.	.713	57.	.761	112.	.790	167.	.790	222.	.785	277.	.763	332.	.717
3.	.713	58.	.762	113.	.790	168.	.790	223.	.785	278.	.762	333.	.716
4.	.714	59.	.763	114.	.790	169.	.790	224.	.784	279.	.761	334.	.716
5.	.714	60.	.764	115.	.790	170.	.790	225.	.784	280.	.761	335.	.715
6.	.715	61.	.765	116.	.790	171.	.790	226.	.784	281.	.760	336.	.715
7.	.715	62.	.766	117.	.790	172.	.790	227.	.783	282.	.759	337.	.714
8.	.716	63.	.767	118.	.790	173.	.791	228.	.783	283.	.758	338.	.714
9.	.717	64.	.767	119.	.790	174.	.791	229.	.783	284.	.758	339.	.714
10.	.717	65.	.768	120.	.790	175.	.791	230.	.783	285.	.757	340.	.713
11.	.718	66.	.769	121.	.790	176.	.791	231.	.783	286.	.756	341.	.713
12.	.719	67.	.770	122.	.790	177.	.791	232.	.782	287.	.755	342.	.713
13.	.720	68.	.771	123.	.791	178.	.791	233.	.782	288.	.755	343.	.712
14.	.721	69.	.772	124.	.791	179.	.791	234.	.782	289.	.754	344.	.712
15.	.721	70.	.772	125.	.791	180.	.791	235.	.782	290.	.753	345.	.712
16.	.722	71.	.773	126.	.791	181.	.791	236.	.781	291.	.752	346.	.712
17.	.723	72.	.774	127.	.791	182.	.791	237.	.781	292.	.751	347.	.712
18.	.724	73.	.775	128.	.791	183.	.791	238.	.781	293.	.750	348.	.712
19.	.725	74.	.775	129.	.791	184.	.791	239.	.781	294.	.749	349.	.712
20.	.726	75.	.776	130.	.791	185.	.791	240.	.780	295.	.748	350.	.711
21.	.726	76.	.777	131.	.791	186.	.791	241.	.780	296.	.748	351.	.711
22.	.727	77.	.777	132.	.791	187.	.791	242.	.780	297.	.747	352.	.711
23.	.728	78.	.778	133.	.790	188.	.791	243.	.779	298.	.746	353.	.711
24.	.729	79.	.778	134.	.790	189.	.791	244.	.779	299.	.745	354.	.710
25.	.730	80.	.779	135.	.790	190.	.791	245.	.779	300.	.744	355.	.710
26.	.731	81.	.779	136.	.790	191.	.791	246.	.778	301.	.743	356.	.710
27.	.732	82.	.780	137.	.791	192.	.791	247.	.778	302.	.742	357.	.710
28.	.733	83.	.780	138.	.791	193.	.790	248.	.778	303.	.741	358.	.710
29.	.734	84.	.781	139.	.791	194.	.790	249.	.777	304.	.740	359.	.710
30.	.735	85.	.781	140.	.791	195.	.790	250.	.777	305.	.739	360.	.711
31.	.736	86.	.782	141.	.791	196.	.790	251.	.777	306.	.738	361.	.711
32.	.737	87.	.782	142.	.791	197.	.790	252.	.776	307.	.737	362.	.711
33.	.738	88.	.783	143.	.791	198.	.790	253.	.776	308.	.736	363.	.711
34.	.739	89.	.783	144.	.791	199.	.790	254.	.775	309.	.736	364.	.712
35.	.740	90.	.783	145.	.791	200.	.790	255.	.775	310.	.735	365.	.712
36.	.741	91.	.784	146.	.791	201.	.790	256.	.774	311.	.734		
37.	.742	92.	.784	147.	.791	202.	.789	257.	.774	312.	.733		
38.	.743	93.	.785	148.	.791	203.	.789	258.	.773	313.	.732		
39.	.744	94.	.785	149.	.791	204.	.789	259.	.773	314.	.731		
40.	.745	95.	.785	150.	.791	205.	.789	260.	.773	315.	.730		
41.	.746	96.	.786	151.	.791	206.	.789	261.	.772	316.	.729		
42.	.747	97.	.786	152.	.791	207.	.789	262.	.772	317.	.728		
43.	.748	98.	.787	153.	.791	208.	.788	263.	.771	318.	.727		
44.	.749	99.	.787	154.	.791	209.	.788	264.	.770	319.	.726		
45.	.750	100.	.787	155.	.791	210.	.788	265.	.770	320.	.726		
46.	.751	101.	.787	156.	.791	211.	.788	266.	.769	321.	.725		
47.	.752	102.	.788	157.	.791	212.	.788	267.	.769	322.	.724		
48.	.753	103.	.788	158.	.791	213.	.787	268.	.768	323.	.723		
49.	.754	104.	.788	159.	.791	214.	.787	269.	.768	324.	.722		
50.	.755	105.	.789	160.	.791	215.	.787	270.	.767	325.	.722		
51.	.756	106.	.789	161.	.790	216.	.787	271.	.766	326.	.721		
52.	.757	107.	.789	162.	.790	217.	.786	272.	.766	327.	.720		
53.	.758	108.	.789	163.	.790	218.	.786	273.	.765	328.	.720		
54.	.759	109.	.789	164.	.790	219.	.786	274.	.765	329.	.719		
55.	.759	110.	.789	165.	.790	220.	.786	275.	.764	330.	.718		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

ATLANTA, GA

1.	.760	56.	.777	111.	.779	166.	.767	221.	.764	276.	.765	331.	.760
2.	.760	57.	.777	112.	.779	167.	.767	222.	.764	277.	.765	332.	.760
3.	.760	58.	.778	113.	.779	168.	.767	223.	.764	278.	.765	333.	.760
4.	.760	59.	.778	114.	.778	169.	.767	224.	.764	279.	.765	334.	.760
5.	.760	60.	.778	115.	.778	170.	.767	225.	.764	280.	.765	335.	.760
6.	.760	61.	.779	116.	.778	171.	.767	226.	.764	281.	.766	336.	.760
7.	.760	62.	.779	117.	.778	172.	.767	227.	.764	282.	.766	337.	.760
8.	.760	63.	.779	118.	.777	173.	.767	228.	.764	283.	.766	338.	.761
9.	.760	64.	.780	119.	.777	174.	.767	229.	.764	284.	.766	339.	.761
10.	.761	65.	.780	120.	.777	175.	.766	230.	.764	285.	.766	340.	.761
11.	.761	66.	.780	121.	.776	176.	.766	231.	.764	286.	.766	341.	.761
12.	.761	67.	.781	122.	.776	177.	.766	232.	.764	287.	.766	342.	.761
13.	.761	68.	.781	123.	.776	178.	.766	233.	.764	288.	.766	343.	.762
14.	.761	69.	.781	124.	.776	179.	.766	234.	.764	289.	.766	344.	.762
15.	.762	70.	.782	125.	.775	180.	.766	235.	.764	290.	.765	345.	.762
16.	.762	71.	.782	126.	.775	181.	.766	236.	.765	291.	.765	346.	.763
17.	.762	72.	.782	127.	.775	182.	.766	237.	.765	292.	.765	347.	.763
18.	.762	73.	.782	128.	.774	183.	.766	238.	.765	293.	.765	348.	.763
19.	.763	74.	.783	129.	.774	184.	.766	239.	.765	294.	.765	349.	.764
20.	.763	75.	.783	130.	.774	185.	.765	240.	.765	295.	.764	350.	.763
21.	.763	76.	.783	131.	.773	186.	.765	241.	.765	296.	.764	351.	.763
22.	.764	77.	.783	132.	.773	187.	.765	242.	.765	297.	.764	352.	.763
23.	.764	78.	.783	133.	.773	188.	.765	243.	.765	298.	.764	353.	.762
24.	.764	79.	.783	134.	.772	189.	.765	244.	.765	299.	.764	354.	.762
25.	.765	80.	.783	135.	.772	190.	.765	245.	.765	300.	.763	355.	.762
26.	.765	81.	.783	136.	.772	191.	.765	246.	.765	301.	.763	356.	.761
27.	.765	82.	.783	137.	.772	192.	.765	247.	.765	302.	.763	357.	.761
28.	.766	83.	.783	138.	.772	193.	.764	248.	.765	303.	.763	358.	.761
29.	.766	84.	.782	139.	.771	194.	.764	249.	.765	304.	.763	359.	.761
30.	.766	85.	.782	140.	.771	195.	.764	250.	.765	305.	.763	360.	.760
31.	.767	86.	.782	141.	.771	196.	.764	251.	.765	306.	.762	361.	.760
32.	.767	87.	.782	142.	.771	197.	.764	252.	.765	307.	.762	362.	.760
33.	.768	88.	.782	143.	.771	198.	.764	253.	.765	308.	.762	363.	.760
34.	.768	89.	.782	144.	.771	199.	.764	254.	.765	309.	.762	364.	.760
35.	.768	90.	.782	145.	.771	200.	.764	255.	.764	310.	.762	365.	.760
36.	.769	91.	.782	146.	.770	201.	.764	256.	.764	311.	.762		
37.	.769	92.	.782	147.	.770	202.	.764	257.	.764	312.	.762		
38.	.770	93.	.782	148.	.770	203.	.764	258.	.764	313.	.761		
39.	.770	94.	.782	149.	.770	204.	.764	259.	.764	314.	.761		
40.	.771	95.	.782	150.	.770	205.	.764	260.	.764	315.	.761		
41.	.771	96.	.782	151.	.770	206.	.764	261.	.765	316.	.761		
42.	.772	97.	.782	152.	.770	207.	.764	262.	.765	317.	.761		
43.	.772	98.	.781	153.	.769	208.	.764	263.	.765	318.	.761		
44.	.773	99.	.781	154.	.769	209.	.764	264.	.765	319.	.761		
45.	.773	100.	.781	155.	.769	210.	.764	265.	.765	320.	.761		
46.	.773	101.	.781	156.	.769	211.	.764	266.	.765	321.	.761		
47.	.774	102.	.781	157.	.769	212.	.764	267.	.765	322.	.761		
48.	.774	103.	.781	158.	.769	213.	.764	268.	.765	323.	.760		
49.	.775	104.	.781	159.	.768	214.	.764	269.	.765	324.	.760		
50.	.775	105.	.781	160.	.768	215.	.764	270.	.765	325.	.760		
51.	.775	106.	.780	161.	.768	216.	.764	271.	.765	326.	.760		
52.	.776	107.	.780	162.	.768	217.	.764	272.	.765	327.	.760		
53.	.776	108.	.780	163.	.768	218.	.764	273.	.765	328.	.760		
54.	.776	109.	.780	164.	.768	219.	.764	274.	.765	329.	.760		
55.	.777	110.	.779	165.	.767	220.	.764	275.	.765	330.	.760		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

BLUE HILL, MA

1.	.756	56.	.793	111.	.790	166.	.779	221.	.768	276.	.766	331.	.750
2.	.757	57.	.793	112.	.790	167.	.779	222.	.768	277.	.766	332.	.750
3.	.758	58.	.794	113.	.790	168.	.779	223.	.768	278.	.766	333.	.750
4.	.758	59.	.794	114.	.790	169.	.778	224.	.768	279.	.765	334.	.750
5.	.759	60.	.794	115.	.790	170.	.778	225.	.768	280.	.765	335.	.750
6.	.759	61.	.795	116.	.790	171.	.778	226.	.767	281.	.765	336.	.750
7.	.760	62.	.795	117.	.789	172.	.778	227.	.767	282.	.764	337.	.750
8.	.761	63.	.795	118.	.789	173.	.777	228.	.767	283.	.764	338.	.750
9.	.761	64.	.796	119.	.789	174.	.777	229.	.768	284.	.764	339.	.750
10.	.762	65.	.796	120.	.789	175.	.777	230.	.768	285.	.763	340.	.750
11.	.763	66.	.796	121.	.789	176.	.777	231.	.768	286.	.763	341.	.751
12.	.764	67.	.796	122.	.788	177.	.776	232.	.768	287.	.763	342.	.751
13.	.764	68.	.797	123.	.788	178.	.776	233.	.768	288.	.762	343.	.751
14.	.765	69.	.797	124.	.788	179.	.776	234.	.769	289.	.762	344.	.752
15.	.766	70.	.797	125.	.788	180.	.776	235.	.769	290.	.762	345.	.752
16.	.767	71.	.798	126.	.787	181.	.775	236.	.769	291.	.761	346.	.752
17.	.767	72.	.798	127.	.787	182.	.775	237.	.769	292.	.761	347.	.753
18.	.768	73.	.798	128.	.787	183.	.775	238.	.769	293.	.761	348.	.753
19.	.769	74.	.798	129.	.787	184.	.774	239.	.769	294.	.760	349.	.754
20.	.769	75.	.798	130.	.787	185.	.774	240.	.770	295.	.760	350.	.754
21.	.770	76.	.798	131.	.786	186.	.774	241.	.770	296.	.760	351.	.753
22.	.771	77.	.798	132.	.786	187.	.774	242.	.770	297.	.759	352.	.753
23.	.771	78.	.798	133.	.786	188.	.773	243.	.770	298.	.759	353.	.753
24.	.772	79.	.798	134.	.785	189.	.773	244.	.770	299.	.758	354.	.753
25.	.773	80.	.797	135.	.785	190.	.773	245.	.770	300.	.758	355.	.753
26.	.774	81.	.797	136.	.785	191.	.772	246.	.770	301.	.758	356.	.753
27.	.774	82.	.797	137.	.785	192.	.772	247.	.770	302.	.757	357.	.753
28.	.775	83.	.797	138.	.785	193.	.772	248.	.770	303.	.757	358.	.753
29.	.776	84.	.797	139.	.785	194.	.771	249.	.770	304.	.757	359.	.753
30.	.777	85.	.797	140.	.784	195.	.771	250.	.771	305.	.756	360.	.754
31.	.778	86.	.796	141.	.784	196.	.771	251.	.771	306.	.756	361.	.754
32.	.778	87.	.796	142.	.784	197.	.771	252.	.771	307.	.755	362.	.754
33.	.779	88.	.796	143.	.784	198.	.771	253.	.771	308.	.755	363.	.754
34.	.780	89.	.796	144.	.784	199.	.771	254.	.771	309.	.755	364.	.755
35.	.781	90.	.796	145.	.784	200.	.771	255.	.771	310.	.754	365.	.755
36.	.782	91.	.795	146.	.783	201.	.771	256.	.771	311.	.754		
37.	.783	92.	.795	147.	.783	202.	.770	257.	.771	312.	.754		
38.	.783	93.	.795	148.	.783	203.	.770	258.	.771	313.	.753		
39.	.784	94.	.795	149.	.783	204.	.770	259.	.771	314.	.753		
40.	.785	95.	.794	150.	.783	205.	.770	260.	.771	315.	.753		
41.	.786	96.	.794	151.	.782	206.	.770	261.	.770	316.	.752		
42.	.787	97.	.794	152.	.782	207.	.770	262.	.770	317.	.752		
43.	.787	98.	.794	153.	.782	208.	.770	263.	.770	318.	.752		
44.	.788	99.	.793	154.	.782	209.	.770	264.	.770	319.	.751		
45.	.789	100.	.793	155.	.782	210.	.770	265.	.769	320.	.751		
46.	.789	101.	.793	156.	.781	211.	.770	266.	.769	321.	.751		
47.	.790	102.	.792	157.	.781	212.	.770	267.	.769	322.	.751		
48.	.790	103.	.792	158.	.781	213.	.770	268.	.769	323.	.751		
49.	.791	104.	.792	159.	.781	214.	.769	269.	.768	324.	.750		
50.	.791	105.	.791	160.	.780	215.	.769	270.	.768	325.	.750		
51.	.791	106.	.791	161.	.780	216.	.769	271.	.768	326.	.750		
52.	.792	107.	.791	162.	.780	217.	.769	272.	.768	327.	.750		
53.	.792	108.	.791	163.	.780	218.	.769	273.	.767	328.	.750		
54.	.792	109.	.791	164.	.780	219.	.769	274.	.767	329.	.750		
55.	.793	110.	.791	165.	.779	220.	.769	275.	.767	330.	.750		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

BOISE, ID

1.	.770	56.	.804	111.	.823	166.	.818	221.	.815	276.	.800	331.	.768
2.	.771	57.	.805	112.	.823	167.	.818	222.	.815	277.	.799	332.	.768
3.	.771	58.	.805	113.	.823	168.	.818	223.	.815	278.	.799	333.	.768
4.	.772	59.	.806	114.	.823	169.	.818	224.	.814	279.	.799	334.	.768
5.	.772	60.	.806	115.	.823	170.	.818	225.	.814	280.	.798	335.	.767
6.	.773	61.	.807	116.	.823	171.	.818	226.	.814	281.	.798	336.	.767
7.	.774	62.	.807	117.	.823	172.	.818	227.	.814	282.	.797	337.	.767
8.	.774	63.	.808	118.	.823	173.	.818	228.	.814	283.	.797	338.	.767
9.	.775	64.	.808	119.	.823	174.	.818	229.	.813	284.	.796	339.	.767
10.	.776	65.	.808	120.	.823	175.	.818	230.	.813	285.	.796	340.	.767
11.	.776	66.	.809	121.	.823	176.	.818	231.	.813	286.	.795	341.	.767
12.	.777	67.	.809	122.	.823	177.	.819	232.	.813	287.	.794	342.	.767
13.	.778	68.	.810	123.	.823	178.	.819	233.	.813	288.	.794	343.	.768
14.	.778	69.	.810	124.	.823	179.	.819	234.	.813	289.	.793	344.	.768
15.	.779	70.	.810	125.	.823	180.	.819	235.	.813	290.	.793	345.	.768
16.	.780	71.	.811	126.	.823	181.	.819	236.	.812	291.	.792	346.	.768
17.	.780	72.	.811	127.	.823	182.	.819	237.	.812	292.	.791	347.	.768
18.	.781	73.	.811	128.	.823	183.	.819	238.	.812	293.	.791	348.	.769
19.	.781	74.	.811	129.	.823	184.	.819	239.	.812	294.	.790	349.	.769
20.	.782	75.	.812	130.	.823	185.	.819	240.	.812	295.	.789	350.	.769
21.	.783	76.	.812	131.	.823	186.	.819	241.	.811	296.	.789	351.	.768
22.	.783	77.	.813	132.	.823	187.	.819	242.	.811	297.	.788	352.	.768
23.	.784	78.	.813	133.	.822	188.	.819	243.	.811	298.	.787	353.	.768
24.	.784	79.	.814	134.	.822	189.	.819	244.	.811	299.	.786	354.	.768
25.	.785	80.	.814	135.	.822	190.	.819	245.	.811	300.	.786	355.	.767
26.	.786	81.	.815	136.	.822	191.	.819	246.	.810	301.	.785	356.	.767
27.	.786	82.	.815	137.	.822	192.	.819	247.	.810	302.	.784	357.	.767
28.	.787	83.	.816	138.	.822	193.	.819	248.	.810	303.	.784	358.	.767
29.	.788	84.	.816	139.	.822	194.	.819	249.	.810	304.	.783	359.	.767
30.	.788	85.	.816	140.	.822	195.	.818	250.	.809	305.	.782	360.	.767
31.	.789	86.	.817	141.	.822	196.	.818	251.	.809	306.	.781	361.	.767
32.	.790	87.	.817	142.	.822	197.	.818	252.	.809	307.	.781	362.	.767
33.	.790	88.	.817	143.	.821	198.	.818	253.	.808	308.	.780	363.	.767
34.	.791	89.	.818	144.	.821	199.	.818	254.	.808	309.	.779	364.	.767
35.	.792	90.	.818	145.	.821	200.	.818	255.	.808	310.	.778	365.	.768
36.	.792	91.	.819	146.	.821	201.	.818	256.	.807	311.	.777		
37.	.793	92.	.819	147.	.821	202.	.818	257.	.807	312.	.777		
38.	.794	93.	.819	148.	.821	203.	.818	258.	.807	313.	.776		
39.	.794	94.	.819	149.	.821	204.	.818	259.	.806	314.	.775		
40.	.795	95.	.820	150.	.820	205.	.818	260.	.806	315.	.774		
41.	.796	96.	.820	151.	.820	206.	.818	261.	.806	316.	.774		
42.	.796	97.	.820	152.	.820	207.	.817	262.	.805	317.	.773		
43.	.797	98.	.821	153.	.820	208.	.817	263.	.805	318.	.772		
44.	.798	99.	.821	154.	.820	209.	.817	264.	.805	319.	.772		
45.	.798	100.	.821	155.	.820	210.	.817	265.	.804	320.	.771		
46.	.799	101.	.821	156.	.820	211.	.817	266.	.804	321.	.771		
47.	.800	102.	.822	157.	.819	212.	.817	267.	.804	322.	.770		
48.	.800	103.	.822	158.	.819	213.	.817	268.	.803	323.	.770		
49.	.801	104.	.822	159.	.819	214.	.816	269.	.803	324.	.770		
50.	.801	105.	.822	160.	.819	215.	.816	270.	.803	325.	.770		
51.	.802	106.	.822	161.	.819	216.	.816	271.	.802	326.	.769		
52.	.802	107.	.823	162.	.819	217.	.816	272.	.802	327.	.769		
53.	.803	108.	.823	163.	.818	218.	.816	273.	.801	328.	.769		
54.	.803	109.	.823	164.	.818	219.	.815	274.	.801	329.	.768		
55.	.804	110.	.823	165.	.818	220.	.815	275.	.800	330.	.768		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

BURLINGTON, VT

1.	.766	56.	.809	111.	.790	166.	.780	221.	.774	276.	.762	331.	.749
2.	.766	57.	.809	112.	.789	167.	.780	222.	.774	277.	.761	332.	.749
3.	.767	58.	.809	113.	.789	168.	.780	223.	.773	278.	.761	333.	.750
4.	.767	59.	.809	114.	.789	169.	.780	224.	.773	279.	.761	334.	.750
5.	.768	60.	.809	115.	.789	170.	.780	225.	.773	280.	.760	335.	.751
6.	.769	61.	.810	116.	.789	171.	.779	226.	.773	281.	.760	336.	.751
7.	.770	62.	.810	117.	.789	172.	.779	227.	.772	282.	.760	337.	.752
8.	.771	63.	.810	118.	.789	173.	.779	228.	.772	283.	.759	338.	.753
9.	.771	64.	.810	119.	.788	174.	.779	229.	.772	284.	.759	339.	.753
10.	.772	65.	.810	120.	.788	175.	.779	230.	.772	285.	.759	340.	.754
11.	.773	66.	.810	121.	.788	176.	.779	231.	.772	286.	.758	341.	.755
12.	.774	67.	.811	122.	.788	177.	.779	232.	.772	287.	.758	342.	.755
13.	.775	68.	.811	123.	.788	178.	.779	233.	.772	288.	.758	343.	.756
14.	.776	69.	.811	124.	.787	179.	.779	234.	.772	289.	.757	344.	.757
15.	.777	70.	.811	125.	.787	180.	.779	235.	.772	290.	.757	345.	.758
16.	.778	71.	.811	126.	.787	181.	.779	236.	.771	291.	.757	346.	.759
17.	.779	72.	.811	127.	.787	182.	.778	237.	.771	292.	.756	347.	.760
18.	.779	73.	.811	128.	.787	183.	.778	238.	.771	293.	.756	348.	.761
19.	.780	74.	.811	129.	.786	184.	.778	239.	.771	294.	.755	349.	.762
20.	.781	75.	.811	130.	.786	185.	.778	240.	.771	295.	.755	350.	.762
21.	.782	76.	.810	131.	.786	186.	.778	241.	.771	296.	.755	351.	.761
22.	.783	77.	.809	132.	.786	187.	.778	242.	.770	297.	.754	352.	.761
23.	.784	78.	.809	133.	.786	188.	.778	243.	.770	298.	.754	353.	.761
24.	.785	79.	.808	134.	.785	189.	.778	244.	.770	299.	.753	354.	.762
25.	.786	80.	.808	135.	.785	190.	.777	245.	.770	300.	.753	355.	.762
26.	.786	81.	.807	136.	.785	191.	.777	246.	.769	301.	.752	356.	.762
27.	.787	82.	.807	137.	.785	192.	.777	247.	.769	302.	.752	357.	.762
28.	.788	83.	.806	138.	.785	193.	.777	248.	.769	303.	.752	358.	.762
29.	.789	84.	.805	139.	.785	194.	.777	249.	.769	304.	.751	359.	.763
30.	.790	85.	.805	140.	.784	195.	.777	250.	.768	305.	.751	360.	.763
31.	.791	86.	.804	141.	.784	196.	.776	251.	.768	306.	.750	361.	.763
32.	.792	87.	.804	142.	.784	197.	.776	252.	.768	307.	.750	362.	.764
33.	.793	88.	.803	143.	.784	198.	.776	253.	.768	308.	.749	363.	.764
34.	.794	89.	.802	144.	.784	199.	.776	254.	.767	309.	.749	364.	.765
35.	.795	90.	.802	145.	.784	200.	.776	255.	.767	310.	.748	365.	.765
36.	.796	91.	.801	146.	.784	201.	.776	256.	.767	311.	.748		
37.	.797	92.	.800	147.	.783	202.	.776	257.	.766	312.	.748		
38.	.799	93.	.800	148.	.783	203.	.776	258.	.766	313.	.747		
39.	.800	94.	.799	149.	.783	204.	.776	259.	.766	314.	.747		
40.	.801	95.	.798	150.	.783	205.	.776	260.	.766	315.	.746		
41.	.802	96.	.797	151.	.783	206.	.776	261.	.765	316.	.746		
42.	.803	97.	.797	152.	.782	207.	.776	262.	.765	317.	.746		
43.	.804	98.	.796	153.	.782	208.	.776	263.	.765	318.	.745		
44.	.805	99.	.795	154.	.782	209.	.776	264.	.765	319.	.745		
45.	.806	100.	.794	155.	.782	210.	.775	265.	.765	320.	.745		
46.	.806	101.	.794	156.	.782	211.	.775	266.	.764	321.	.745		
47.	.806	102.	.793	157.	.782	212.	.775	267.	.764	322.	.746		
48.	.807	103.	.792	158.	.781	213.	.775	268.	.764	323.	.746		
49.	.807	104.	.791	159.	.781	214.	.775	269.	.764	324.	.746		
50.	.807	105.	.790	160.	.781	215.	.775	270.	.763	325.	.747		
51.	.807	106.	.790	161.	.781	216.	.775	271.	.763	326.	.747		
52.	.808	107.	.790	162.	.781	217.	.774	272.	.763	327.	.747		
53.	.808	108.	.790	163.	.780	218.	.774	273.	.762	328.	.748		
54.	.808	109.	.790	164.	.780	219.	.774	274.	.762	329.	.748		
55.	.808	110.	.790	165.	.780	220.	.774	275.	.762	330.	.748		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

CLEVELAND, OH

1.	.770	56.	.800	111.	.782	166.	.773	221.	.770	276.	.762	331.	.751
2.	.772	57.	.800	112.	.782	167.	.773	222.	.770	277.	.761	332.	.752
3.	.773	58.	.800	113.	.782	168.	.773	223.	.770	278.	.761	333.	.752
4.	.774	59.	.800	114.	.782	169.	.773	224.	.770	279.	.761	334.	.753
5.	.774	60.	.800	115.	.782	170.	.773	225.	.770	280.	.761	335.	.753
6.	.775	61.	.799	116.	.782	171.	.773	226.	.770	281.	.760	336.	.754
7.	.776	62.	.799	117.	.781	172.	.773	227.	.769	282.	.760	337.	.755
8.	.777	63.	.799	118.	.781	173.	.773	228.	.769	283.	.760	338.	.755
9.	.778	64.	.799	119.	.781	174.	.773	229.	.769	284.	.760	339.	.756
10.	.779	65.	.799	120.	.781	175.	.773	230.	.769	285.	.760	340.	.757
11.	.780	66.	.798	121.	.780	176.	.773	231.	.769	286.	.759	341.	.757
12.	.781	67.	.798	122.	.780	177.	.773	232.	.769	287.	.759	342.	.758
13.	.782	68.	.798	123.	.780	178.	.773	233.	.769	288.	.759	343.	.759
14.	.783	69.	.798	124.	.780	179.	.773	234.	.769	289.	.758	344.	.760
15.	.784	70.	.797	125.	.779	180.	.773	235.	.769	290.	.758	345.	.761
16.	.784	71.	.797	126.	.779	181.	.773	236.	.769	291.	.758	346.	.762
17.	.785	72.	.797	127.	.779	182.	.773	237.	.769	292.	.757	347.	.763
18.	.785	73.	.796	128.	.779	183.	.773	238.	.768	293.	.757	348.	.764
19.	.786	74.	.796	129.	.778	184.	.773	239.	.768	294.	.756	349.	.765
20.	.786	75.	.796	130.	.778	185.	.773	240.	.768	295.	.756	350.	.765
21.	.787	76.	.795	131.	.778	186.	.773	241.	.768	296.	.755	351.	.764
22.	.787	77.	.795	132.	.778	187.	.772	242.	.768	297.	.755	352.	.764
23.	.788	78.	.795	133.	.777	188.	.772	243.	.768	298.	.754	353.	.764
24.	.788	79.	.794	134.	.777	189.	.772	244.	.768	299.	.754	354.	.764
25.	.789	80.	.794	135.	.777	190.	.772	245.	.767	300.	.753	355.	.764
26.	.789	81.	.794	136.	.777	191.	.772	246.	.767	301.	.753	356.	.765
27.	.790	82.	.793	137.	.777	192.	.772	247.	.767	302.	.753	357.	.765
28.	.790	83.	.793	138.	.776	193.	.772	248.	.767	303.	.752	358.	.765
29.	.791	84.	.793	139.	.776	194.	.772	249.	.767	304.	.752	359.	.765
30.	.792	85.	.792	140.	.776	195.	.772	250.	.766	305.	.751	360.	.765
31.	.792	86.	.792	141.	.776	196.	.772	251.	.766	306.	.751	361.	.766
32.	.793	87.	.792	142.	.776	197.	.772	252.	.766	307.	.750	362.	.766
33.	.793	88.	.791	143.	.776	198.	.772	253.	.766	308.	.750	363.	.766
34.	.794	89.	.791	144.	.776	199.	.772	254.	.765	309.	.749	364.	.767
35.	.795	90.	.790	145.	.776	200.	.772	255.	.765	310.	.749	365.	.767
36.	.795	91.	.790	146.	.776	201.	.772	256.	.765	311.	.749		
37.	.796	92.	.790	147.	.775	202.	.772	257.	.765	312.	.748		
38.	.797	93.	.789	148.	.775	203.	.772	258.	.764	313.	.748		
39.	.797	94.	.789	149.	.775	204.	.772	259.	.764	314.	.747		
40.	.798	95.	.788	150.	.775	205.	.772	260.	.764	315.	.747		
41.	.798	96.	.788	151.	.775	206.	.772	261.	.764	316.	.747		
42.	.799	97.	.787	152.	.775	207.	.772	262.	.764	317.	.746		
43.	.800	98.	.787	153.	.775	208.	.772	263.	.764	318.	.746		
44.	.800	99.	.787	154.	.775	209.	.772	264.	.764	319.	.746		
45.	.801	100.	.786	155.	.774	210.	.771	265.	.763	320.	.746		
46.	.801	101.	.786	156.	.774	211.	.771	266.	.763	321.	.746		
47.	.801	102.	.785	157.	.774	212.	.771	267.	.763	322.	.747		
48.	.801	103.	.785	158.	.774	213.	.771	268.	.763	323.	.747		
49.	.801	104.	.784	159.	.774	214.	.771	269.	.763	324.	.748		
50.	.801	105.	.784	160.	.774	215.	.771	270.	.763	325.	.748		
51.	.801	106.	.783	161.	.773	216.	.771	271.	.762	326.	.749		
52.	.801	107.	.783	162.	.773	217.	.771	272.	.762	327.	.749		
53.	.800	108.	.783	163.	.773	218.	.771	273.	.762	328.	.750		
54.	.800	109.	.783	164.	.773	219.	.771	274.	.762	329.	.750		
55.	.800	110.	.783	165.	.773	220.	.770	275.	.762	330.	.751		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

GLASGOW, MT

1.	.765	56.	.816	111.	.817	166.	.807	221.	.801	276.	.786	331.	.764
2.	.766	57.	.817	112.	.817	167.	.807	222.	.801	277.	.785	332.	.763
3.	.766	58.	.818	113.	.817	168.	.807	223.	.800	278.	.785	333.	.763
4.	.767	59.	.818	114.	.816	169.	.807	224.	.800	279.	.784	334.	.763
5.	.768	60.	.819	115.	.816	170.	.807	225.	.800	280.	.784	335.	.762
6.	.769	61.	.819	116.	.816	171.	.807	226.	.800	281.	.783	336.	.762
7.	.769	62.	.820	117.	.816	172.	.807	227.	.799	282.	.782	337.	.762
8.	.770	63.	.821	118.	.816	173.	.807	228.	.799	283.	.782	338.	.762
9.	.771	64.	.821	119.	.816	174.	.807	229.	.799	284.	.781	339.	.761
10.	.772	65.	.822	120.	.815	175.	.807	230.	.799	285.	.781	340.	.761
11.	.773	66.	.822	121.	.815	176.	.807	231.	.799	286.	.780	341.	.761
12.	.774	67.	.823	122.	.815	177.	.807	232.	.799	287.	.780	342.	.761
13.	.775	68.	.823	123.	.815	178.	.807	233.	.799	288.	.779	343.	.761
14.	.776	69.	.824	124.	.815	179.	.806	234.	.799	289.	.779	344.	.761
15.	.777	70.	.824	125.	.814	180.	.806	235.	.799	290.	.779	345.	.761
16.	.778	71.	.825	126.	.814	181.	.806	236.	.799	291.	.778	346.	.761
17.	.779	72.	.825	127.	.814	182.	.806	237.	.798	292.	.778	347.	.761
18.	.780	73.	.826	128.	.814	183.	.806	238.	.798	293.	.778	348.	.762
19.	.781	74.	.826	129.	.814	184.	.806	239.	.798	294.	.778	349.	.762
20.	.782	75.	.826	130.	.813	185.	.806	240.	.798	295.	.777	350.	.762
21.	.783	76.	.826	131.	.813	186.	.805	241.	.798	296.	.777	351.	.761
22.	.784	77.	.826	132.	.813	187.	.805	242.	.798	297.	.777	352.	.761
23.	.785	78.	.826	133.	.813	188.	.805	243.	.797	298.	.776	353.	.761
24.	.786	79.	.826	134.	.812	189.	.805	244.	.797	299.	.776	354.	.761
25.	.787	80.	.826	135.	.812	190.	.805	245.	.797	300.	.776	355.	.761
26.	.788	81.	.825	136.	.812	191.	.805	246.	.797	301.	.776	356.	.761
27.	.789	82.	.825	137.	.812	192.	.805	247.	.796	302.	.775	357.	.762
28.	.790	83.	.825	138.	.812	193.	.804	248.	.796	303.	.775	358.	.762
29.	.791	84.	.825	139.	.812	194.	.804	249.	.796	304.	.775	359.	.762
30.	.792	85.	.824	140.	.812	195.	.804	250.	.796	305.	.774	360.	.762
31.	.793	86.	.824	141.	.811	196.	.804	251.	.795	306.	.774	361.	.763
32.	.794	87.	.824	142.	.811	197.	.804	252.	.795	307.	.774	362.	.763
33.	.795	88.	.824	143.	.811	198.	.804	253.	.795	308.	.773	363.	.763
34.	.796	89.	.823	144.	.811	199.	.804	254.	.795	309.	.773	364.	.764
35.	.797	90.	.823	145.	.811	200.	.804	255.	.794	310.	.773	365.	.764
36.	.798	91.	.823	146.	.811	201.	.804	256.	.794	311.	.772		
37.	.799	92.	.823	147.	.811	202.	.803	257.	.794	312.	.772		
38.	.800	93.	.822	148.	.811	203.	.803	258.	.793	313.	.772		
39.	.802	94.	.822	149.	.810	204.	.803	259.	.793	314.	.771		
40.	.803	95.	.822	150.	.810	205.	.803	260.	.793	315.	.771		
41.	.804	96.	.821	151.	.810	206.	.803	261.	.792	316.	.771		
42.	.805	97.	.821	152.	.810	207.	.803	262.	.792	317.	.770		
43.	.806	98.	.820	153.	.810	208.	.803	263.	.792	318.	.770		
44.	.807	99.	.820	154.	.810	209.	.803	264.	.791	319.	.770		
45.	.808	100.	.820	155.	.809	210.	.803	265.	.791	320.	.769		
46.	.809	101.	.819	156.	.809	211.	.803	266.	.790	321.	.769		
47.	.810	102.	.819	157.	.809	212.	.802	267.	.790	322.	.768		
48.	.810	103.	.818	158.	.809	213.	.802	268.	.789	323.	.768		
49.	.811	104.	.818	159.	.809	214.	.802	269.	.789	324.	.767		
50.	.812	105.	.818	160.	.809	215.	.802	270.	.789	325.	.767		
51.	.813	106.	.817	161.	.808	216.	.802	271.	.788	326.	.766		
52.	.813	107.	.817	162.	.808	217.	.802	272.	.788	327.	.766		
53.	.814	108.	.817	163.	.808	218.	.801	273.	.787	328.	.765		
54.	.815	109.	.817	164.	.808	219.	.801	274.	.787	329.	.765		
55.	.816	110.	.817	165.	.808	220.	.801	275.	.786	330.	.764		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

GRAND JUNCTION, CO

1.	.813	56.	.834	111.	.840	166.	.833	221.	.822	276.	.819	331.	.805
2.	.813	57.	.834	112.	.840	167.	.832	222.	.822	277.	.819	332.	.805
3.	.813	58.	.835	113.	.840	168.	.832	223.	.822	278.	.818	333.	.805
4.	.814	59.	.835	114.	.840	169.	.832	224.	.822	279.	.818	334.	.805
5.	.814	60.	.835	115.	.839	170.	.832	225.	.821	280.	.818	335.	.805
6.	.815	61.	.835	116.	.839	171.	.831	226.	.821	281.	.817	336.	.806
7.	.815	62.	.835	117.	.839	172.	.831	227.	.821	282.	.817	337.	.806
8.	.816	63.	.836	118.	.839	173.	.831	228.	.821	283.	.817	338.	.806
9.	.816	64.	.836	119.	.839	174.	.831	229.	.821	284.	.817	339.	.806
10.	.817	65.	.836	120.	.839	175.	.830	230.	.821	285.	.816	340.	.807
11.	.818	66.	.836	121.	.839	176.	.830	231.	.821	286.	.816	341.	.807
12.	.818	67.	.836	122.	.838	177.	.830	232.	.822	287.	.816	342.	.807
13.	.819	68.	.836	123.	.838	178.	.830	233.	.822	288.	.815	343.	.807
14.	.820	69.	.837	124.	.838	179.	.829	234.	.822	289.	.815	344.	.808
15.	.820	70.	.837	125.	.838	180.	.829	235.	.822	290.	.815	345.	.808
16.	.821	71.	.837	126.	.838	181.	.829	236.	.822	291.	.814	346.	.809
17.	.821	72.	.837	127.	.838	182.	.829	237.	.822	292.	.814	347.	.809
18.	.821	73.	.837	128.	.838	183.	.828	238.	.822	293.	.814	348.	.809
19.	.821	74.	.837	129.	.837	184.	.828	239.	.822	294.	.813	349.	.810
20.	.822	75.	.837	130.	.837	185.	.828	240.	.822	295.	.813	350.	.810
21.	.822	76.	.838	131.	.837	186.	.827	241.	.822	296.	.812	351.	.810
22.	.822	77.	.838	132.	.837	187.	.827	242.	.822	297.	.812	352.	.809
23.	.823	78.	.838	133.	.837	188.	.827	243.	.822	298.	.812	353.	.809
24.	.823	79.	.838	134.	.836	189.	.827	244.	.822	299.	.811	354.	.809
25.	.823	80.	.838	135.	.836	190.	.826	245.	.823	300.	.811	355.	.809
26.	.824	81.	.839	136.	.836	191.	.826	246.	.823	301.	.811	356.	.809
27.	.824	82.	.839	137.	.836	192.	.826	247.	.823	302.	.810	357.	.809
28.	.824	83.	.839	138.	.836	193.	.825	248.	.823	303.	.810	358.	.809
29.	.825	84.	.839	139.	.836	194.	.825	249.	.823	304.	.810	359.	.809
30.	.825	85.	.839	140.	.836	195.	.825	250.	.823	305.	.809	360.	.810
31.	.826	86.	.839	141.	.836	196.	.825	251.	.823	306.	.809	361.	.810
32.	.826	87.	.839	142.	.836	197.	.825	252.	.823	307.	.808	362.	.810
33.	.826	88.	.840	143.	.836	198.	.825	253.	.823	308.	.808	363.	.810
34.	.827	89.	.840	144.	.835	199.	.824	254.	.823	309.	.808	364.	.810
35.	.827	90.	.840	145.	.835	200.	.824	255.	.823	310.	.807	365.	.810
36.	.828	91.	.840	146.	.835	201.	.824	256.	.823	311.	.807		
37.	.828	92.	.840	147.	.835	202.	.824	257.	.823	312.	.807		
38.	.828	93.	.840	148.	.835	203.	.824	258.	.823	313.	.806		
39.	.829	94.	.840	149.	.835	204.	.824	259.	.823	314.	.806		
40.	.829	95.	.840	150.	.835	205.	.824	260.	.822	315.	.806		
41.	.829	96.	.840	151.	.835	206.	.824	261.	.822	316.	.805		
42.	.830	97.	.840	152.	.835	207.	.824	262.	.822	317.	.805		
43.	.830	98.	.840	153.	.834	208.	.824	263.	.822	318.	.805		
44.	.831	99.	.840	154.	.834	209.	.824	264.	.822	319.	.804		
45.	.831	100.	.840	155.	.834	210.	.824	265.	.822	320.	.804		
46.	.831	101.	.840	156.	.834	211.	.823	266.	.821	321.	.804		
47.	.832	102.	.840	157.	.834	212.	.823	267.	.821	322.	.804		
48.	.832	103.	.840	158.	.834	213.	.823	268.	.821	323.	.804		
49.	.832	104.	.840	159.	.834	214.	.823	269.	.821	324.	.804		
50.	.832	105.	.840	160.	.834	215.	.823	270.	.820	325.	.804		
51.	.833	106.	.840	161.	.833	216.	.823	271.	.820	326.	.804		
52.	.833	107.	.840	162.	.833	217.	.823	272.	.820	327.	.804		
53.	.833	108.	.840	163.	.833	218.	.823	273.	.820	328.	.805		
54.	.834	109.	.840	164.	.833	219.	.822	274.	.819	329.	.805		
55.	.834	110.	.840	165.	.833	220.	.822	275.	.819	330.	.805		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

GREENSBORO, NC

1.	.764	56.	.789	111.	.792	166.	.767	221.	.752	276.	.767	331.	.763
2.	.764	57.	.789	112.	.791	167.	.767	222.	.752	277.	.767	332.	.763
3.	.764	58.	.790	113.	.791	168.	.766	223.	.752	278.	.767	333.	.763
4.	.764	59.	.790	114.	.791	169.	.766	224.	.752	279.	.767	334.	.763
5.	.765	60.	.790	115.	.790	170.	.766	225.	.752	280.	.768	335.	.763
6.	.765	61.	.791	116.	.790	171.	.765	226.	.752	281.	.768	336.	.763
7.	.765	62.	.791	117.	.790	172.	.765	227.	.751	282.	.768	337.	.763
8.	.766	63.	.791	118.	.789	173.	.764	228.	.752	283.	.769	338.	.763
9.	.766	64.	.792	119.	.789	174.	.764	229.	.752	284.	.769	339.	.763
10.	.766	65.	.792	120.	.789	175.	.763	230.	.753	285.	.769	340.	.763
11.	.767	66.	.792	121.	.788	176.	.763	231.	.753	286.	.770	341.	.763
12.	.767	67.	.792	122.	.788	177.	.762	232.	.753	287.	.770	342.	.763
13.	.768	68.	.793	123.	.788	178.	.762	233.	.754	288.	.770	343.	.763
14.	.768	69.	.793	124.	.788	179.	.762	234.	.754	289.	.770	344.	.763
15.	.769	70.	.793	125.	.787	180.	.761	235.	.755	290.	.770	345.	.763
16.	.769	71.	.793	126.	.787	181.	.761	236.	.755	291.	.770	346.	.763
17.	.769	72.	.794	127.	.787	182.	.760	237.	.755	292.	.770	347.	.763
18.	.770	73.	.794	128.	.786	183.	.760	238.	.756	293.	.769	348.	.764
19.	.770	74.	.794	129.	.786	184.	.759	239.	.756	294.	.769	349.	.764
20.	.771	75.	.794	130.	.785	185.	.759	240.	.756	295.	.769	350.	.764
21.	.771	76.	.794	131.	.785	186.	.758	241.	.757	296.	.769	351.	.763
22.	.772	77.	.794	132.	.785	187.	.758	242.	.757	297.	.769	352.	.763
23.	.772	78.	.794	133.	.784	188.	.757	243.	.757	298.	.769	353.	.763
24.	.773	79.	.794	134.	.784	189.	.757	244.	.758	299.	.768	354.	.763
25.	.773	80.	.794	135.	.784	190.	.756	245.	.758	300.	.768	355.	.763
26.	.774	81.	.794	136.	.783	191.	.756	246.	.758	301.	.768	356.	.763
27.	.774	82.	.794	137.	.783	192.	.755	247.	.758	302.	.768	357.	.763
28.	.775	83.	.794	138.	.782	193.	.755	248.	.759	303.	.768	358.	.763
29.	.776	84.	.794	139.	.782	194.	.754	249.	.759	304.	.768	359.	.763
30.	.776	85.	.794	140.	.781	195.	.754	250.	.759	305.	.767	360.	.763
31.	.777	86.	.794	141.	.781	196.	.753	251.	.760	306.	.767	361.	.763
32.	.777	87.	.794	142.	.780	197.	.753	252.	.760	307.	.767	362.	.763
33.	.778	88.	.794	143.	.780	198.	.753	253.	.760	308.	.767	363.	.763
34.	.779	89.	.794	144.	.779	199.	.753	254.	.760	309.	.767	364.	.763
35.	.779	90.	.794	145.	.779	200.	.753	255.	.761	310.	.767	365.	.763
36.	.780	91.	.794	146.	.778	201.	.753	256.	.761	311.	.767		
37.	.780	92.	.794	147.	.778	202.	.753	257.	.761	312.	.767		
38.	.781	93.	.794	148.	.777	203.	.753	258.	.761	313.	.766		
39.	.782	94.	.794	149.	.777	204.	.753	259.	.762	314.	.766		
40.	.782	95.	.794	150.	.776	205.	.753	260.	.762	315.	.766		
41.	.783	96.	.794	151.	.775	206.	.753	261.	.762	316.	.766		
42.	.783	97.	.794	152.	.775	207.	.753	262.	.763	317.	.766		
43.	.784	98.	.794	153.	.774	208.	.753	263.	.763	318.	.766		
44.	.785	99.	.794	154.	.774	209.	.753	264.	.763	319.	.766		
45.	.785	100.	.794	155.	.773	210.	.753	265.	.764	320.	.766		
46.	.786	101.	.794	156.	.773	211.	.753	266.	.764	321.	.766		
47.	.786	102.	.794	157.	.772	212.	.753	267.	.764	322.	.765		
48.	.786	103.	.793	158.	.772	213.	.753	268.	.764	323.	.765		
49.	.787	104.	.793	159.	.771	214.	.753	269.	.765	324.	.765		
50.	.787	105.	.793	160.	.771	215.	.753	270.	.765	325.	.765		
51.	.787	106.	.793	161.	.770	216.	.753	271.	.765	326.	.764		
52.	.788	107.	.793	162.	.770	217.	.753	272.	.765	327.	.764		
53.	.788	108.	.792	163.	.769	218.	.753	273.	.766	328.	.764		
54.	.788	109.	.792	164.	.768	219.	.752	274.	.766	329.	.764		
55.	.789	110.	.792	165.	.768	220.	.752	275.	.766	330.	.763		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

INDIANAPOLIS, IN

1.	.758	56.	.783	111.	.782	166.	.772	221.	.769	276.	.763	331.	.750
2.	.759	57.	.784	112.	.782	167.	.772	222.	.769	277.	.763	332.	.750
3.	.760	58.	.784	113.	.782	168.	.772	223.	.769	278.	.763	333.	.750
4.	.760	59.	.784	114.	.781	169.	.772	224.	.769	279.	.762	334.	.750
5.	.761	60.	.784	115.	.781	170.	.772	225.	.769	280.	.762	335.	.750
6.	.762	61.	.784	116.	.781	171.	.772	226.	.769	281.	.762	336.	.750
7.	.763	62.	.784	117.	.781	172.	.772	227.	.769	282.	.762	337.	.750
8.	.764	63.	.784	118.	.781	173.	.772	228.	.769	283.	.762	338.	.750
9.	.764	64.	.784	119.	.780	174.	.772	229.	.768	284.	.762	339.	.750
10.	.765	65.	.784	120.	.780	175.	.772	230.	.768	285.	.762	340.	.750
11.	.766	66.	.784	121.	.780	176.	.772	231.	.768	286.	.762	341.	.750
12.	.767	67.	.784	122.	.780	177.	.771	232.	.768	287.	.762	342.	.750
13.	.768	68.	.785	123.	.780	178.	.771	233.	.768	288.	.761	343.	.750
14.	.769	69.	.785	124.	.779	179.	.771	234.	.768	289.	.761	344.	.751
15.	.770	70.	.785	125.	.779	180.	.771	235.	.768	290.	.761	345.	.751
16.	.770	71.	.785	126.	.779	181.	.771	236.	.768	291.	.761	346.	.751
17.	.771	72.	.785	127.	.779	182.	.771	237.	.768	292.	.760	347.	.751
18.	.771	73.	.785	128.	.778	183.	.771	238.	.768	293.	.760	348.	.752
19.	.771	74.	.785	129.	.778	184.	.771	239.	.768	294.	.760	349.	.752
20.	.771	75.	.785	130.	.778	185.	.771	240.	.768	295.	.759	350.	.752
21.	.772	76.	.785	131.	.778	186.	.771	241.	.767	296.	.759	351.	.752
22.	.772	77.	.785	132.	.777	187.	.771	242.	.767	297.	.759	352.	.752
23.	.772	78.	.785	133.	.777	188.	.771	243.	.767	298.	.758	353.	.752
24.	.773	79.	.785	134.	.777	189.	.771	244.	.767	299.	.758	354.	.752
25.	.773	80.	.785	135.	.777	190.	.771	245.	.767	300.	.758	355.	.752
26.	.773	81.	.785	136.	.776	191.	.771	246.	.767	301.	.757	356.	.753
27.	.774	82.	.785	137.	.776	192.	.771	247.	.766	302.	.757	357.	.753
28.	.774	83.	.785	138.	.776	193.	.770	248.	.766	303.	.757	358.	.753
29.	.775	84.	.785	139.	.776	194.	.770	249.	.766	304.	.757	359.	.753
30.	.775	85.	.785	140.	.776	195.	.770	250.	.766	305.	.756	360.	.754
31.	.775	86.	.784	141.	.776	196.	.770	251.	.766	306.	.756	361.	.754
32.	.776	87.	.784	142.	.776	197.	.770	252.	.765	307.	.756	362.	.754
33.	.776	88.	.784	143.	.776	198.	.770	253.	.765	308.	.755	363.	.755
34.	.777	89.	.784	144.	.775	199.	.770	254.	.765	309.	.755	364.	.755
35.	.777	90.	.784	145.	.775	200.	.770	255.	.765	310.	.755	365.	.756
36.	.778	91.	.784	146.	.775	201.	.770	256.	.764	311.	.755		
37.	.778	92.	.784	147.	.775	202.	.770	257.	.764	312.	.754		
38.	.778	93.	.784	148.	.775	203.	.770	258.	.764	313.	.754		
39.	.779	94.	.784	149.	.775	204.	.770	259.	.764	314.	.754		
40.	.779	95.	.784	150.	.774	205.	.770	260.	.764	315.	.754		
41.	.780	96.	.784	151.	.774	206.	.770	261.	.764	316.	.754		
42.	.780	97.	.784	152.	.774	207.	.770	262.	.764	317.	.753		
43.	.781	98.	.784	153.	.774	208.	.770	263.	.764	318.	.753		
44.	.781	99.	.784	154.	.774	209.	.770	264.	.764	319.	.753		
45.	.782	100.	.783	155.	.774	210.	.770	265.	.764	320.	.753		
46.	.782	101.	.783	156.	.773	211.	.770	266.	.764	321.	.752		
47.	.782	102.	.783	157.	.773	212.	.770	267.	.764	322.	.752		
48.	.782	103.	.783	158.	.773	213.	.770	268.	.763	323.	.752		
49.	.782	104.	.783	159.	.773	214.	.770	269.	.763	324.	.752		
50.	.782	105.	.783	160.	.773	215.	.770	270.	.763	325.	.751		
51.	.783	106.	.783	161.	.773	216.	.770	271.	.763	326.	.751		
52.	.783	107.	.783	162.	.772	217.	.770	272.	.763	327.	.751		
53.	.783	108.	.782	163.	.772	218.	.770	273.	.763	328.	.751		
54.	.783	109.	.782	164.	.772	219.	.770	274.	.763	329.	.751		
55.	.783	110.	.782	165.	.772	220.	.769	275.	.763	330.	.751		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

LAKELAND, FL

1.	.765	56.	.782	111.	.785	166.	.773	221.	.770	276.	.768	331.	.764
2.	.765	57.	.782	112.	.785	167.	.773	222.	.770	277.	.768	332.	.764
3.	.766	58.	.783	113.	.785	168.	.773	223.	.770	278.	.768	333.	.764
4.	.766	59.	.783	114.	.785	169.	.773	224.	.770	279.	.768	334.	.764
5.	.766	60.	.783	115.	.784	170.	.773	225.	.770	280.	.768	335.	.764
6.	.767	61.	.783	116.	.784	171.	.773	226.	.769	281.	.768	336.	.763
7.	.767	62.	.783	117.	.784	172.	.773	227.	.769	282.	.768	337.	.763
8.	.767	63.	.784	118.	.784	173.	.773	228.	.769	283.	.768	338.	.763
9.	.767	64.	.784	119.	.783	174.	.773	229.	.769	284.	.768	339.	.763
10.	.768	65.	.784	120.	.783	175.	.773	230.	.769	285.	.768	340.	.763
11.	.768	66.	.784	121.	.783	176.	.772	231.	.769	286.	.768	341.	.763
12.	.769	67.	.784	122.	.783	177.	.772	232.	.769	287.	.768	342.	.763
13.	.769	68.	.785	123.	.782	178.	.772	233.	.769	288.	.768	343.	.763
14.	.769	69.	.785	124.	.782	179.	.772	234.	.769	289.	.768	344.	.763
15.	.770	70.	.785	125.	.782	180.	.772	235.	.769	290.	.768	345.	.764
16.	.770	71.	.785	126.	.782	181.	.772	236.	.769	291.	.768	346.	.764
17.	.770	72.	.785	127.	.781	182.	.772	237.	.769	292.	.768	347.	.764
18.	.770	73.	.786	128.	.781	183.	.772	238.	.769	293.	.768	348.	.764
19.	.771	74.	.786	129.	.781	184.	.772	239.	.769	294.	.768	349.	.764
20.	.771	75.	.786	130.	.781	185.	.772	240.	.769	295.	.768	350.	.764
21.	.771	76.	.786	131.	.780	186.	.772	241.	.769	296.	.767	351.	.764
22.	.772	77.	.786	132.	.780	187.	.772	242.	.769	297.	.767	352.	.764
23.	.772	78.	.786	133.	.780	188.	.772	243.	.769	298.	.767	353.	.764
24.	.772	79.	.786	134.	.779	189.	.772	244.	.769	299.	.767	354.	.764
25.	.772	80.	.786	135.	.779	190.	.772	245.	.769	300.	.767	355.	.764
26.	.773	81.	.786	136.	.779	191.	.771	246.	.768	301.	.767	356.	.764
27.	.773	82.	.787	137.	.779	192.	.771	247.	.768	302.	.767	357.	.764
28.	.773	83.	.787	138.	.779	193.	.771	248.	.768	303.	.767	358.	.764
29.	.774	84.	.787	139.	.778	194.	.771	249.	.768	304.	.767	359.	.764
30.	.774	85.	.787	140.	.778	195.	.771	250.	.768	305.	.767	360.	.764
31.	.774	86.	.787	141.	.778	196.	.771	251.	.768	306.	.767	361.	.764
32.	.775	87.	.787	142.	.778	197.	.771	252.	.768	307.	.767	362.	.764
33.	.775	88.	.787	143.	.778	198.	.771	253.	.768	308.	.767	363.	.765
34.	.775	89.	.787	144.	.777	199.	.771	254.	.767	309.	.766	364.	.765
35.	.776	90.	.787	145.	.777	200.	.771	255.	.767	310.	.766	365.	.765
36.	.776	91.	.787	146.	.777	201.	.771	256.	.767	311.	.766		
37.	.776	92.	.787	147.	.777	202.	.771	257.	.767	312.	.766		
38.	.777	93.	.787	148.	.777	203.	.771	258.	.767	313.	.766		
39.	.777	94.	.787	149.	.776	204.	.771	259.	.767	314.	.766		
40.	.777	95.	.787	150.	.776	205.	.771	260.	.767	315.	.766		
41.	.778	96.	.787	151.	.776	206.	.771	261.	.767	316.	.766		
42.	.778	97.	.787	152.	.776	207.	.771	262.	.767	317.	.766		
43.	.779	98.	.787	153.	.776	208.	.771	263.	.767	318.	.766		
44.	.779	99.	.787	154.	.775	209.	.771	264.	.767	319.	.766		
45.	.779	100.	.787	155.	.775	210.	.771	265.	.767	320.	.766		
46.	.780	101.	.787	156.	.775	211.	.771	266.	.767	321.	.766		
47.	.780	102.	.787	157.	.775	212.	.771	267.	.767	322.	.766		
48.	.780	103.	.787	158.	.775	213.	.771	268.	.768	323.	.765		
49.	.780	104.	.787	159.	.774	214.	.770	269.	.768	324.	.765		
50.	.781	105.	.787	160.	.774	215.	.770	270.	.768	325.	.765		
51.	.781	106.	.786	161.	.774	216.	.770	271.	.768	326.	.765		
52.	.781	107.	.786	162.	.774	217.	.770	272.	.768	327.	.765		
53.	.781	108.	.786	163.	.774	218.	.770	273.	.768	328.	.764		
54.	.782	109.	.786	164.	.773	219.	.770	274.	.768	329.	.764		
55.	.782	110.	.786	165.	.773	220.	.770	275.	.768	330.	.764		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

LANDER, WY

1.	.816	56.	.846	111.	.841	166.	.833	221.	.830	276.	.823	331.	.813
2.	.817	57.	.847	112.	.841	167.	.833	222.	.830	277.	.823	332.	.813
3.	.817	58.	.847	113.	.841	168.	.833	223.	.830	278.	.823	333.	.813
4.	.817	59.	.847	114.	.841	169.	.833	224.	.829	279.	.823	334.	.813
5.	.818	60.	.847	115.	.841	170.	.833	225.	.829	280.	.822	335.	.813
6.	.818	61.	.848	116.	.840	171.	.833	226.	.829	281.	.822	336.	.813
7.	.819	62.	.848	117.	.840	172.	.833	227.	.829	282.	.822	337.	.812
8.	.819	63.	.848	118.	.840	173.	.833	228.	.829	283.	.821	338.	.813
9.	.820	64.	.848	119.	.840	174.	.833	229.	.829	284.	.821	339.	.813
10.	.821	65.	.849	120.	.840	175.	.833	230.	.829	285.	.821	340.	.813
11.	.821	66.	.849	121.	.840	176.	.833	231.	.829	286.	.820	341.	.813
12.	.822	67.	.849	122.	.839	177.	.833	232.	.829	287.	.820	342.	.813
13.	.823	68.	.849	123.	.839	178.	.833	233.	.829	288.	.820	343.	.813
14.	.823	69.	.849	124.	.839	179.	.833	234.	.829	289.	.820	344.	.813
15.	.824	70.	.850	125.	.839	180.	.833	235.	.829	290.	.820	345.	.813
16.	.824	71.	.850	126.	.839	181.	.833	236.	.829	291.	.820	346.	.814
17.	.825	72.	.850	127.	.839	182.	.833	237.	.829	292.	.820	347.	.814
18.	.825	73.	.850	128.	.838	183.	.833	238.	.829	293.	.819	348.	.814
19.	.826	74.	.850	129.	.838	184.	.832	239.	.829	294.	.819	349.	.815
20.	.827	75.	.850	130.	.838	185.	.832	240.	.829	295.	.819	350.	.814
21.	.827	76.	.850	131.	.838	186.	.832	241.	.829	296.	.819	351.	.814
22.	.828	77.	.850	132.	.838	187.	.832	242.	.829	297.	.819	352.	.814
23.	.828	78.	.850	133.	.837	188.	.832	243.	.829	298.	.819	353.	.814
24.	.829	79.	.849	134.	.837	189.	.832	244.	.829	299.	.819	354.	.814
25.	.829	80.	.849	135.	.837	190.	.832	245.	.829	300.	.819	355.	.814
26.	.830	81.	.849	136.	.837	191.	.832	246.	.829	301.	.818	356.	.814
27.	.831	82.	.849	137.	.837	192.	.832	247.	.829	302.	.818	357.	.813
28.	.831	83.	.849	138.	.837	193.	.832	248.	.829	303.	.818	358.	.814
29.	.832	84.	.848	139.	.837	194.	.832	249.	.828	304.	.818	359.	.814
30.	.833	85.	.848	140.	.836	195.	.831	250.	.828	305.	.818	360.	.814
31.	.833	86.	.848	141.	.836	196.	.831	251.	.828	306.	.818	361.	.814
32.	.834	87.	.848	142.	.836	197.	.831	252.	.828	307.	.817	362.	.814
33.	.834	88.	.847	143.	.836	198.	.831	253.	.828	308.	.817	363.	.814
34.	.835	89.	.847	144.	.836	199.	.831	254.	.828	309.	.817	364.	.814
35.	.836	90.	.847	145.	.836	200.	.831	255.	.828	310.	.817	365.	.815
36.	.836	91.	.847	146.	.836	201.	.831	256.	.828	311.	.817		
37.	.837	92.	.846	147.	.836	202.	.831	257.	.828	312.	.817		
38.	.838	93.	.846	148.	.836	203.	.831	258.	.827	313.	.816		
39.	.838	94.	.846	149.	.836	204.	.831	259.	.827	314.	.816		
40.	.839	95.	.845	150.	.835	205.	.831	260.	.827	315.	.816		
41.	.840	96.	.845	151.	.835	206.	.831	261.	.827	316.	.816		
42.	.840	97.	.845	152.	.835	207.	.831	262.	.827	317.	.816		
43.	.841	98.	.844	153.	.835	208.	.831	263.	.826	318.	.816		
44.	.842	99.	.844	154.	.835	209.	.831	264.	.826	319.	.816		
45.	.842	100.	.844	155.	.835	210.	.831	265.	.826	320.	.815		
46.	.843	101.	.843	156.	.835	211.	.831	266.	.826	321.	.815		
47.	.843	102.	.843	157.	.835	212.	.831	267.	.826	322.	.815		
48.	.843	103.	.843	158.	.834	213.	.831	268.	.825	323.	.814		
49.	.844	104.	.842	159.	.834	214.	.831	269.	.825	324.	.814		
50.	.844	105.	.842	160.	.834	215.	.830	270.	.825	325.	.814		
51.	.845	106.	.842	161.	.834	216.	.830	271.	.825	326.	.814		
52.	.845	107.	.842	162.	.834	217.	.830	272.	.824	327.	.814		
53.	.845	108.	.841	163.	.834	218.	.830	273.	.824	328.	.813		
54.	.846	109.	.841	164.	.834	219.	.830	274.	.824	329.	.813		
55.	.846	110.	.841	165.	.833	220.	.830	275.	.824	330.	.813		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

LAS VEGAS, NV

1.	.798	56.	.823	111.	.836	166.	.829	221.	.816	276.	.819	331.	.799
2.	.798	57.	.824	112.	.836	167.	.828	222.	.816	277.	.819	332.	.799
3.	.798	58.	.824	113.	.836	168.	.828	223.	.816	278.	.818	333.	.799
4.	.798	59.	.825	114.	.836	169.	.827	224.	.815	279.	.818	334.	.799
5.	.799	60.	.825	115.	.835	170.	.827	225.	.815	280.	.818	335.	.798
6.	.799	61.	.825	116.	.835	171.	.827	226.	.815	281.	.818	336.	.798
7.	.799	62.	.826	117.	.835	172.	.826	227.	.815	282.	.818	337.	.798
8.	.799	63.	.826	118.	.835	173.	.826	228.	.815	283.	.818	338.	.798
9.	.800	64.	.827	119.	.835	174.	.826	229.	.815	284.	.818	339.	.798
10.	.800	65.	.827	120.	.834	175.	.825	230.	.816	285.	.818	340.	.798
11.	.800	66.	.828	121.	.834	176.	.825	231.	.816	286.	.818	341.	.798
12.	.801	67.	.828	122.	.834	177.	.825	232.	.816	287.	.818	342.	.798
13.	.801	68.	.829	123.	.834	178.	.824	233.	.816	288.	.818	343.	.798
14.	.802	69.	.829	124.	.833	179.	.824	234.	.816	289.	.817	344.	.798
15.	.802	70.	.829	125.	.833	180.	.823	235.	.816	290.	.817	345.	.798
16.	.802	71.	.830	126.	.833	181.	.823	236.	.817	291.	.816	346.	.798
17.	.803	72.	.830	127.	.833	182.	.823	237.	.817	292.	.816	347.	.798
18.	.803	73.	.831	128.	.833	183.	.822	238.	.817	293.	.815	348.	.798
19.	.804	74.	.831	129.	.832	184.	.822	239.	.817	294.	.815	349.	.798
20.	.804	75.	.831	130.	.832	185.	.822	240.	.817	295.	.814	350.	.798
21.	.805	76.	.832	131.	.832	186.	.821	241.	.817	296.	.814	351.	.798
22.	.805	77.	.832	132.	.832	187.	.821	242.	.818	297.	.813	352.	.798
23.	.806	78.	.832	133.	.831	188.	.821	243.	.818	298.	.813	353.	.797
24.	.806	79.	.832	134.	.831	189.	.820	244.	.818	299.	.812	354.	.797
25.	.807	80.	.833	135.	.831	190.	.820	245.	.818	300.	.812	355.	.797
26.	.807	81.	.833	136.	.831	191.	.820	246.	.818	301.	.811	356.	.797
27.	.808	82.	.833	137.	.831	192.	.819	247.	.818	302.	.811	357.	.797
28.	.808	83.	.833	138.	.831	193.	.819	248.	.818	303.	.811	358.	.797
29.	.809	84.	.834	139.	.831	194.	.819	249.	.819	304.	.810	359.	.797
30.	.809	85.	.834	140.	.831	195.	.818	250.	.819	305.	.810	360.	.797
31.	.810	86.	.834	141.	.831	196.	.818	251.	.819	306.	.809	361.	.797
32.	.810	87.	.834	142.	.831	197.	.818	252.	.819	307.	.809	362.	.797
33.	.811	88.	.835	143.	.830	198.	.818	253.	.819	308.	.808	363.	.797
34.	.811	89.	.835	144.	.830	199.	.818	254.	.819	309.	.808	364.	.797
35.	.812	90.	.835	145.	.830	200.	.818	255.	.819	310.	.807	365.	.798
36.	.812	91.	.835	146.	.830	201.	.818	256.	.819	311.	.807		
37.	.813	92.	.835	147.	.830	202.	.818	257.	.819	312.	.806		
38.	.814	93.	.835	148.	.830	203.	.818	258.	.820	313.	.806		
39.	.814	94.	.836	149.	.830	204.	.818	259.	.820	314.	.805		
40.	.815	95.	.836	150.	.830	205.	.817	260.	.820	315.	.805		
41.	.815	96.	.836	151.	.830	206.	.817	261.	.820	316.	.804		
42.	.816	97.	.836	152.	.830	207.	.817	262.	.819	317.	.804		
43.	.817	98.	.836	153.	.830	208.	.817	263.	.819	318.	.803		
44.	.817	99.	.836	154.	.830	209.	.817	264.	.819	319.	.803		
45.	.818	100.	.837	155.	.830	210.	.817	265.	.819	320.	.803		
46.	.818	101.	.837	156.	.830	211.	.817	266.	.819	321.	.802		
47.	.819	102.	.837	157.	.829	212.	.817	267.	.819	322.	.802		
48.	.819	103.	.837	158.	.829	213.	.817	268.	.819	323.	.802		
49.	.820	104.	.837	159.	.829	214.	.817	269.	.819	324.	.801		
50.	.820	105.	.837	160.	.829	215.	.817	270.	.819	325.	.801		
51.	.821	106.	.837	161.	.829	216.	.817	271.	.819	326.	.801		
52.	.821	107.	.837	162.	.829	217.	.816	272.	.819	327.	.800		
53.	.822	108.	.837	163.	.829	218.	.816	273.	.819	328.	.800		
54.	.822	109.	.836	164.	.829	219.	.816	274.	.819	329.	.800		
55.	.823	110.	.836	165.	.829	220.	.816	275.	.819	330.	.799		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

LOS ANGELES, CA

1.	.751	56.	.777	111.	.793	166.	.782	221.	.769	276.	.758	331.	.750
2.	.752	57.	.778	112.	.793	167.	.781	222.	.769	277.	.758	332.	.750
3.	.752	58.	.778	113.	.792	168.	.781	223.	.769	278.	.758	333.	.749
4.	.752	59.	.779	114.	.792	169.	.781	224.	.769	279.	.758	334.	.749
5.	.752	60.	.779	115.	.792	170.	.780	225.	.769	280.	.758	335.	.749
6.	.753	61.	.780	116.	.792	171.	.780	226.	.769	281.	.758	336.	.749
7.	.753	62.	.780	117.	.792	172.	.779	227.	.769	282.	.758	337.	.749
8.	.753	63.	.781	118.	.792	173.	.779	228.	.769	283.	.758	338.	.749
9.	.754	64.	.781	119.	.792	174.	.778	229.	.769	284.	.758	339.	.749
10.	.754	65.	.782	120.	.792	175.	.778	230.	.768	285.	.758	340.	.749
11.	.755	66.	.782	121.	.791	176.	.777	231.	.768	286.	.758	341.	.749
12.	.755	67.	.782	122.	.791	177.	.777	232.	.768	287.	.757	342.	.749
13.	.756	68.	.783	123.	.791	178.	.776	233.	.768	288.	.757	343.	.750
14.	.756	69.	.783	124.	.791	179.	.776	234.	.767	289.	.757	344.	.750
15.	.756	70.	.784	125.	.791	180.	.776	235.	.767	290.	.757	345.	.750
16.	.757	71.	.784	126.	.791	181.	.775	236.	.767	291.	.757	346.	.750
17.	.757	72.	.785	127.	.790	182.	.775	237.	.766	292.	.757	347.	.750
18.	.758	73.	.785	128.	.790	183.	.774	238.	.766	293.	.756	348.	.751
19.	.758	74.	.785	129.	.790	184.	.774	239.	.766	294.	.756	349.	.751
20.	.759	75.	.786	130.	.790	185.	.773	240.	.766	295.	.756	350.	.751
21.	.759	76.	.786	131.	.790	186.	.773	241.	.765	296.	.756	351.	.751
22.	.759	77.	.786	132.	.789	187.	.772	242.	.765	297.	.756	352.	.750
23.	.760	78.	.787	133.	.789	188.	.772	243.	.765	298.	.755	353.	.750
24.	.760	79.	.787	134.	.789	189.	.771	244.	.764	299.	.755	354.	.750
25.	.761	80.	.787	135.	.789	190.	.771	245.	.764	300.	.755	355.	.750
26.	.761	81.	.788	136.	.789	191.	.770	246.	.764	301.	.755	356.	.750
27.	.762	82.	.788	137.	.788	192.	.770	247.	.763	302.	.755	357.	.750
28.	.762	83.	.788	138.	.788	193.	.769	248.	.763	303.	.754	358.	.750
29.	.763	84.	.789	139.	.788	194.	.769	249.	.762	304.	.754	359.	.750
30.	.763	85.	.789	140.	.788	195.	.769	250.	.762	305.	.754	360.	.750
31.	.764	86.	.789	141.	.788	196.	.768	251.	.762	306.	.754	361.	.750
32.	.765	87.	.790	142.	.787	197.	.768	252.	.761	307.	.754	362.	.751
33.	.765	88.	.790	143.	.787	198.	.768	253.	.761	308.	.754	363.	.751
34.	.766	89.	.790	144.	.787	199.	.768	254.	.760	309.	.753	364.	.751
35.	.766	90.	.790	145.	.787	200.	.768	255.	.760	310.	.753	365.	.751
36.	.767	91.	.791	146.	.787	201.	.768	256.	.760	311.	.753		
37.	.767	92.	.791	147.	.786	202.	.769	257.	.759	312.	.753		
38.	.768	93.	.791	148.	.786	203.	.769	258.	.759	313.	.753		
39.	.768	94.	.791	149.	.786	204.	.769	259.	.759	314.	.753		
40.	.769	95.	.792	150.	.786	205.	.769	260.	.759	315.	.752		
41.	.770	96.	.792	151.	.786	206.	.769	261.	.759	316.	.752		
42.	.770	97.	.792	152.	.785	207.	.769	262.	.759	317.	.752		
43.	.771	98.	.792	153.	.785	208.	.769	263.	.759	318.	.752		
44.	.771	99.	.792	154.	.785	209.	.769	264.	.759	319.	.752		
45.	.772	100.	.792	155.	.785	210.	.769	265.	.759	320.	.752		
46.	.772	101.	.793	156.	.784	211.	.769	266.	.759	321.	.752		
47.	.773	102.	.793	157.	.784	212.	.769	267.	.759	322.	.751		
48.	.773	103.	.793	158.	.784	213.	.769	268.	.759	323.	.751		
49.	.774	104.	.793	159.	.784	214.	.769	269.	.759	324.	.751		
50.	.774	105.	.793	160.	.783	215.	.769	270.	.759	325.	.751		
51.	.775	106.	.793	161.	.783	216.	.769	271.	.759	326.	.750		
52.	.775	107.	.793	162.	.783	217.	.769	272.	.759	327.	.750		
53.	.776	108.	.793	163.	.783	218.	.769	273.	.759	328.	.750		
54.	.776	109.	.793	164.	.782	219.	.769	274.	.758	329.	.750		
55.	.777	110.	.793	165.	.782	220.	.769	275.	.758	330.	.750		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

MIDLAND, TX

1.	.800	56.	.820	111.	.820	166.	.807	221.	.801	276.	.801	331.	.798
2.	.801	57.	.820	112.	.820	167.	.807	222.	.801	277.	.801	332.	.798
3.	.801	58.	.820	113.	.820	168.	.807	223.	.801	278.	.802	333.	.798
4.	.802	59.	.820	114.	.820	169.	.807	224.	.801	279.	.802	334.	.798
5.	.802	60.	.821	115.	.819	170.	.807	225.	.801	280.	.802	335.	.798
6.	.802	61.	.821	116.	.819	171.	.806	226.	.801	281.	.802	336.	.798
7.	.803	62.	.821	117.	.819	172.	.806	227.	.801	282.	.802	337.	.798
8.	.803	63.	.821	118.	.818	173.	.806	228.	.801	283.	.802	338.	.798
9.	.803	64.	.822	119.	.818	174.	.806	229.	.801	284.	.802	339.	.798
10.	.804	65.	.822	120.	.818	175.	.806	230.	.801	285.	.802	340.	.798
11.	.804	66.	.822	121.	.818	176.	.806	231.	.801	286.	.803	341.	.798
12.	.804	67.	.822	122.	.817	177.	.806	232.	.801	287.	.803	342.	.798
13.	.805	68.	.822	123.	.817	178.	.806	233.	.801	288.	.803	343.	.798
14.	.805	69.	.823	124.	.817	179.	.805	234.	.801	289.	.803	344.	.798
15.	.806	70.	.823	125.	.816	180.	.805	235.	.801	290.	.803	345.	.799
16.	.806	71.	.823	125.	.816	181.	.805	236.	.801	291.	.802	346.	.799
17.	.806	72.	.823	127.	.816	182.	.805	237.	.801	292.	.802	347.	.799
18.	.807	73.	.823	128.	.816	183.	.805	238.	.801	293.	.802	348.	.799
19.	.807	74.	.823	129.	.815	184.	.805	239.	.801	294.	.802	349.	.799
20.	.807	75.	.823	130.	.815	185.	.805	240.	.801	295.	.802	350.	.799
21.	.808	76.	.823	131.	.815	186.	.804	241.	.801	296.	.802	351.	.799
22.	.808	77.	.823	132.	.814	187.	.804	242.	.801	297.	.802	352.	.799
23.	.808	78.	.823	133.	.814	188.	.804	243.	.801	298.	.802	353.	.799
24.	.808	79.	.823	134.	.814	189.	.804	244.	.800	299.	.802	354.	.799
25.	.809	80.	.823	135.	.813	190.	.804	245.	.800	300.	.802	355.	.799
26.	.809	81.	.823	135.	.813	191.	.804	246.	.800	301.	.801	356.	.799
27.	.810	82.	.823	137.	.813	192.	.804	247.	.800	302.	.801	357.	.799
28.	.810	83.	.823	138.	.813	193.	.803	248.	.800	303.	.801	358.	.799
29.	.810	84.	.823	139.	.813	194.	.803	249.	.800	304.	.801	359.	.799
30.	.811	85.	.823	140.	.812	195.	.803	250.	.800	305.	.801	360.	.800
31.	.811	86.	.823	141.	.812	196.	.803	251.	.800	306.	.801	361.	.800
32.	.812	87.	.823	142.	.812	197.	.803	252.	.800	307.	.801	362.	.800
33.	.812	88.	.823	143.	.812	198.	.803	253.	.800	308.	.801	363.	.800
34.	.812	89.	.823	144.	.812	199.	.803	254.	.800	309.	.801	364.	.800
35.	.813	90.	.823	145.	.811	200.	.803	255.	.799	310.	.801	365.	.800
36.	.813	91.	.823	146.	.811	201.	.803	256.	.799	311.	.801		
37.	.814	92.	.823	147.	.811	202.	.803	257.	.799	312.	.801		
38.	.814	93.	.823	148.	.811	203.	.803	258.	.799	313.	.801		
39.	.814	94.	.823	149.	.811	204.	.803	259.	.799	314.	.801		
40.	.815	95.	.823	150.	.810	205.	.803	260.	.799	315.	.801		
41.	.815	96.	.823	151.	.810	206.	.803	261.	.799	316.	.801		
42.	.816	97.	.823	152.	.810	207.	.803	262.	.800	317.	.801		
43.	.816	98.	.823	153.	.810	208.	.803	263.	.800	318.	.801		
44.	.817	99.	.823	154.	.810	209.	.802	264.	.800	319.	.801		
45.	.817	100.	.823	155.	.809	210.	.802	265.	.800	320.	.800		
46.	.817	101.	.822	156.	.809	211.	.802	266.	.800	321.	.800		
47.	.817	102.	.822	157.	.809	212.	.802	267.	.800	322.	.800		
48.	.818	103.	.822	158.	.809	213.	.802	268.	.800	323.	.800		
49.	.818	104.	.822	159.	.808	214.	.802	269.	.800	324.	.800		
50.	.818	105.	.822	160.	.808	215.	.802	270.	.801	325.	.799		
51.	.818	106.	.822	161.	.808	216.	.802	271.	.801	326.	.799		
52.	.819	107.	.822	162.	.808	217.	.802	272.	.801	327.	.799		
53.	.819	108.	.821	163.	.808	218.	.802	273.	.801	328.	.799		
54.	.819	109.	.821	164.	.807	219.	.802	274.	.801	329.	.799		
55.	.819	110.	.821	165.	.807	220.	.802	275.	.801	330.	.799		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

NORTH LITTLE ROCK, AR

1.	.74	56.	.780	111.	.775	166.	.762	221.	.749	276.	.751	331.	.750
2.	.74	57.	.780	112.	.775	167.	.762	222.	.749	277.	.751	332.	.749
3.	.749	58.	.781	113.	.775	168.	.762	223.	.748	278.	.751	333.	.749
4.	.749	59.	.781	114.	.775	169.	.762	224.	.748	279.	.751	334.	.749
5.	.750	60.	.782	115.	.775	170.	.762	225.	.748	280.	.752	335.	.748
6.	.750	61.	.782	116.	.775	171.	.761	226.	.747	281.	.752	336.	.748
7.	.751	62.	.782	117.	.775	172.	.761	227.	.747	282.	.752	337.	.748
8.	.751	63.	.783	118.	.775	173.	.761	228.	.747	283.	.752	338.	.747
9.	.752	64.	.783	119.	.775	174.	.761	229.	.747	284.	.753	339.	.747
10.	.752	65.	.784	120.	.775	175.	.760	230.	.747	285.	.753	340.	.747
11.	.753	66.	.784	121.	.775	176.	.760	231.	.747	286.	.753	341.	.746
12.	.754	67.	.784	122.	.775	177.	.760	232.	.747	287.	.753	342.	.746
13.	.754	68.	.785	123.	.776	178.	.760	233.	.747	288.	.754	343.	.746
14.	.755	69.	.785	124.	.776	179.	.759	234.	.747	289.	.754	344.	.746
15.	.756	70.	.786	125.	.776	180.	.759	235.	.748	290.	.754	345.	.746
16.	.756	71.	.786	126.	.776	181.	.759	236.	.748	291.	.754	346.	.746
17.	.757	72.	.786	127.	.776	182.	.759	237.	.748	292.	.754	347.	.745
18.	.757	73.	.787	128.	.776	183.	.758	238.	.748	293.	.754	348.	.745
19.	.758	74.	.787	129.	.776	184.	.758	239.	.748	294.	.754	349.	.745
20.	.758	75.	.787	130.	.776	185.	.758	240.	.748	295.	.754	350.	.745
21.	.759	76.	.786	131.	.776	186.	.758	241.	.748	296.	.754	351.	.745
22.	.759	77.	.786	132.	.775	187.	.757	242.	.748	297.	.754	352.	.745
23.	.760	78.	.785	133.	.775	188.	.757	243.	.748	298.	.754	353.	.745
24.	.761	79.	.785	134.	.775	189.	.757	244.	.748	299.	.754	354.	.745
25.	.761	80.	.785	135.	.775	190.	.757	245.	.748	300.	.754	355.	.745
26.	.762	81.	.784	136.	.775	191.	.756	246.	.748	301.	.754	356.	.746
27.	.763	82.	.784	137.	.775	192.	.756	247.	.748	302.	.754	357.	.746
28.	.763	83.	.783	138.	.774	193.	.756	248.	.748	303.	.754	358.	.746
29.	.764	84.	.783	139.	.774	194.	.755	249.	.748	304.	.754	359.	.746
30.	.765	85.	.783	140.	.773	195.	.755	250.	.747	305.	.754	360.	.746
31.	.765	86.	.782	141.	.773	196.	.755	251.	.747	306.	.754	361.	.747
32.	.766	87.	.782	142.	.773	197.	.755	252.	.747	307.	.754	362.	.747
33.	.767	88.	.781	143.	.772	198.	.754	253.	.747	308.	.754	363.	.747
34.	.767	89.	.781	144.	.772	199.	.754	254.	.747	309.	.754	364.	.747
35.	.768	90.	.781	145.	.771	200.	.754	255.	.747	310.	.754	365.	.748
36.	.769	91.	.780	146.	.771	201.	.754	256.	.747	311.	.754		
37.	.769	92.	.780	147.	.771	202.	.754	257.	.747	312.	.755		
38.	.770	93.	.779	148.	.770	203.	.753	258.	.747	313.	.755		
39.	.771	94.	.779	149.	.770	204.	.753	259.	.747	314.	.755		
40.	.771	95.	.779	150.	.769	205.	.753	260.	.747	315.	.755		
41.	.772	96.	.778	151.	.769	206.	.753	261.	.747	316.	.755		
42.	.773	97.	.778	152.	.768	207.	.753	262.	.748	317.	.755		
43.	.773	98.	.777	153.	.768	208.	.752	263.	.748	318.	.756		
44.	.774	99.	.777	154.	.768	209.	.752	264.	.748	319.	.756		
45.	.775	100.	.776	155.	.767	210.	.752	265.	.748	320.	.755		
46.	.775	101.	.776	156.	.767	211.	.752	266.	.749	321.	.755		
47.	.776	102.	.776	157.	.766	212.	.751	267.	.749	322.	.754		
48.	.776	103.	.775	158.	.766	213.	.751	268.	.749	323.	.754		
49.	.777	104.	.775	159.	.765	214.	.751	269.	.749	324.	.753		
50.	.777	105.	.774	160.	.765	215.	.751	270.	.750	325.	.753		
51.	.778	106.	.774	161.	.765	216.	.750	271.	.750	326.	.752		
52.	.778	107.	.774	162.	.764	217.	.750	272.	.750	327.	.752		
53.	.778	108.	.775	163.	.764	218.	.750	273.	.750	328.	.751		
54.	.779	109.	.775	164.	.763	219.	.749	274.	.750	329.	.751		
55.	.779	110.	.775	165.	.763	220.	.749	275.	.751	330.	.750		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

OKLAHOMA CITY, OK

1.	.783	56.	.801	111.	.799	166.	.786	221.	.783	276.	.779	331.	.778
2.	.783	57.	.801	112.	.798	167.	.786	222.	.783	277.	.780	332.	.777
3.	.784	58.	.802	113.	.798	168.	.786	223.	.783	278.	.780	333.	.777
4.	.784	59.	.802	114.	.798	169.	.786	224.	.783	279.	.780	334.	.777
5.	.785	60.	.802	115.	.797	170.	.786	225.	.783	280.	.781	335.	.777
6.	.785	61.	.802	116.	.797	171.	.786	226.	.783	281.	.781	336.	.777
7.	.786	62.	.803	117.	.797	172.	.786	227.	.783	282.	.781	337.	.777
8.	.786	63.	.803	118.	.797	173.	.786	228.	.783	283.	.781	338.	.777
9.	.787	64.	.803	119.	.796	174.	.785	229.	.783	284.	.782	339.	.777
10.	.787	65.	.803	120.	.796	175.	.785	230.	.782	285.	.782	340.	.777
11.	.788	66.	.803	121.	.796	176.	.785	231.	.782	286.	.782	341.	.777
12.	.789	67.	.804	122.	.795	177.	.785	232.	.782	287.	.783	342.	.777
13.	.789	68.	.804	123.	.795	178.	.785	233.	.782	288.	.783	343.	.778
14.	.790	69.	.804	124.	.795	179.	.785	234.	.782	289.	.783	344.	.778
15.	.791	70.	.804	125.	.794	180.	.785	235.	.781	290.	.783	345.	.778
16.	.791	71.	.804	126.	.794	181.	.785	236.	.781	291.	.783	346.	.778
17.	.791	72.	.805	127.	.794	182.	.785	237.	.781	292.	.782	347.	.778
18.	.791	73.	.805	128.	.793	183.	.784	238.	.781	293.	.782	348.	.779
19.	.791	74.	.805	129.	.793	184.	.784	239.	.781	294.	.782	349.	.779
20.	.792	75.	.805	130.	.793	185.	.784	240.	.780	295.	.782	350.	.779
21.	.792	76.	.805	131.	.792	186.	.784	241.	.780	296.	.782	351.	.779
22.	.792	77.	.804	132.	.792	187.	.784	242.	.780	297.	.782	352.	.779
23.	.792	78.	.804	133.	.792	188.	.784	243.	.780	298.	.782	353.	.779
24.	.792	79.	.804	134.	.791	189.	.784	244.	.779	299.	.781	354.	.779
25.	.793	80.	.804	135.	.791	190.	.784	245.	.779	300.	.781	355.	.779
26.	.793	81.	.804	136.	.791	191.	.783	246.	.779	301.	.781	356.	.779
27.	.793	82.	.804	137.	.791	192.	.783	247.	.779	302.	.781	357.	.779
28.	.793	83.	.804	138.	.791	193.	.783	248.	.778	303.	.781	358.	.779
29.	.794	84.	.804	139.	.791	194.	.783	249.	.778	304.	.781	359.	.779
30.	.794	85.	.803	140.	.790	195.	.783	250.	.778	305.	.781	360.	.779
31.	.794	86.	.803	141.	.790	196.	.783	251.	.778	306.	.781	361.	.779
32.	.795	87.	.803	142.	.790	197.	.783	252.	.777	307.	.780	362.	.780
33.	.795	88.	.803	143.	.790	198.	.783	253.	.777	308.	.780	363.	.780
34.	.795	89.	.803	144.	.790	199.	.783	254.	.777	309.	.780	364.	.780
35.	.795	90.	.803	145.	.790	200.	.783	255.	.776	310.	.780	365.	.780
36.	.796	91.	.803	146.	.790	201.	.783	256.	.776	311.	.780		
37.	.796	92.	.802	147.	.789	202.	.783	257.	.776	312.	.780		
38.	.796	93.	.802	148.	.789	203.	.783	258.	.775	313.	.780		
39.	.797	94.	.802	149.	.789	204.	.783	259.	.775	314.	.780		
40.	.797	95.	.802	150.	.789	205.	.783	260.	.776	315.	.780		
41.	.797	96.	.802	151.	.789	206.	.783	261.	.776	316.	.780		
42.	.797	97.	.802	152.	.789	207.	.783	262.	.776	317.	.780		
43.	.798	98.	.802	153.	.788	208.	.783	263.	.776	318.	.780		
44.	.798	99.	.801	154.	.788	209.	.783	264.	.777	319.	.780		
45.	.798	100.	.801	155.	.788	210.	.783	265.	.777	320.	.780		
46.	.799	101.	.801	156.	.788	211.	.783	266.	.777	321.	.779		
47.	.799	102.	.801	157.	.788	212.	.783	267.	.777	322.	.779		
48.	.799	103.	.801	158.	.788	213.	.783	268.	.777	323.	.779		
49.	.799	104.	.800	159.	.787	214.	.783	269.	.778	324.	.779		
50.	.800	105.	.800	160.	.787	215.	.783	270.	.778	325.	.778		
51.	.800	106.	.800	161.	.787	216.	.783	271.	.778	326.	.778		
52.	.800	107.	.800	162.	.787	217.	.783	272.	.778	327.	.778		
53.	.800	108.	.799	163.	.787	218.	.783	273.	.779	328.	.778		
54.	.801	109.	.799	164.	.787	219.	.783	274.	.779	329.	.778		
55.	.801	110.	.799	165.	.786	220.	.783	275.	.779	330.	.778		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

PORTLAND, ME

1.	.758	56.	.797	111.	.793	166.	.782	221.	.777	276.	.766	331.	.744
2.	.758	57.	.797	112.	.793	167.	.782	222.	.776	277.	.766	332.	.744
3.	.759	58.	.796	113.	.793	168.	.782	223.	.776	278.	.766	333.	.744
4.	.760	59.	.796	114.	.792	169.	.782	224.	.776	279.	.765	334.	.744
5.	.761	60.	.796	115.	.792	170.	.782	225.	.776	280.	.765	335.	.745
6.	.762	61.	.796	116.	.792	171.	.782	226.	.776	281.	.765	336.	.745
7.	.763	62.	.796	117.	.792	172.	.782	227.	.775	282.	.764	337.	.745
8.	.764	63.	.796	118.	.792	173.	.782	228.	.775	283.	.764	338.	.745
9.	.765	64.	.796	119.	.791	174.	.782	229.	.775	284.	.764	339.	.746
10.	.766	65.	.795	120.	.791	175.	.782	230.	.775	285.	.763	340.	.746
11.	.767	66.	.795	121.	.791	176.	.781	231.	.775	286.	.763	341.	.746
12.	.768	67.	.795	122.	.791	177.	.781	232.	.775	287.	.762	342.	.747
13.	.769	68.	.795	123.	.791	178.	.781	233.	.775	288.	.762	343.	.747
14.	.770	69.	.795	124.	.791	179.	.781	234.	.775	289.	.762	344.	.748
15.	.771	70.	.794	125.	.790	180.	.781	235.	.775	290.	.761	345.	.748
16.	.772	71.	.794	126.	.790	181.	.781	236.	.775	291.	.760	346.	.749
17.	.772	72.	.794	127.	.790	182.	.781	237.	.775	292.	.760	347.	.750
18.	.773	73.	.794	128.	.790	183.	.781	238.	.775	293.	.759	348.	.750
19.	.774	74.	.793	129.	.789	184.	.780	239.	.774	294.	.759	349.	.751
20.	.775	75.	.793	130.	.789	185.	.780	240.	.774	295.	.758	350.	.751
21.	.775	76.	.793	131.	.789	186.	.780	241.	.774	296.	.757	351.	.751
22.	.776	77.	.794	132.	.789	187.	.780	242.	.774	297.	.757	352.	.751
23.	.777	78.	.794	133.	.789	188.	.780	243.	.774	298.	.756	353.	.751
24.	.778	79.	.794	134.	.788	189.	.780	244.	.774	299.	.756	354.	.751
25.	.779	80.	.794	135.	.788	190.	.780	245.	.774	300.	.755	355.	.751
26.	.779	81.	.794	136.	.788	191.	.779	246.	.773	301.	.754	356.	.751
27.	.780	82.	.794	137.	.788	192.	.779	247.	.773	302.	.754	357.	.751
28.	.781	83.	.794	138.	.788	193.	.779	248.	.773	303.	.753	358.	.751
29.	.782	84.	.794	139.	.787	194.	.779	249.	.773	304.	.753	359.	.751
30.	.783	85.	.794	140.	.787	195.	.779	250.	.773	305.	.752	360.	.752
31.	.784	86.	.794	141.	.787	196.	.779	251.	.772	306.	.751	361.	.752
32.	.785	87.	.794	142.	.787	197.	.779	252.	.772	307.	.751	362.	.752
33.	.786	88.	.794	143.	.787	198.	.779	253.	.772	308.	.750	363.	.753
34.	.787	89.	.794	144.	.787	199.	.779	254.	.772	309.	.750	364.	.753
35.	.788	90.	.794	145.	.786	200.	.778	255.	.771	310.	.749	365.	.753
36.	.788	91.	.794	146.	.786	201.	.778	256.	.771	311.	.748		
37.	.789	92.	.794	147.	.786	202.	.778	257.	.771	312.	.748		
38.	.790	93.	.794	148.	.786	203.	.778	258.	.771	313.	.747		
39.	.791	94.	.794	149.	.786	204.	.778	259.	.770	314.	.747		
40.	.792	95.	.794	150.	.786	205.	.778	260.	.770	315.	.746		
41.	.793	96.	.794	151.	.785	206.	.778	261.	.770	316.	.745		
42.	.794	97.	.794	152.	.785	207.	.778	262.	.770	317.	.745		
43.	.795	98.	.794	153.	.785	208.	.778	263.	.770	318.	.744		
44.	.796	99.	.794	154.	.785	209.	.778	264.	.769	319.	.744		
45.	.797	100.	.794	155.	.785	210.	.778	265.	.769	320.	.744		
46.	.797	101.	.794	156.	.784	211.	.778	266.	.769	321.	.744		
47.	.797	102.	.794	157.	.784	212.	.778	267.	.769	322.	.744		
48.	.797	103.	.794	158.	.784	213.	.778	268.	.768	323.	.744		
49.	.797	104.	.794	159.	.784	214.	.778	269.	.768	324.	.744		
50.	.797	105.	.794	160.	.784	215.	.777	270.	.768	325.	.744		
51.	.797	106.	.794	161.	.783	216.	.777	271.	.768	326.	.744		
52.	.797	107.	.793	162.	.783	217.	.777	272.	.767	327.	.744		
53.	.797	108.	.793	163.	.783	218.	.777	273.	.767	328.	.744		
54.	.797	109.	.793	164.	.783	219.	.777	274.	.767	329.	.744		
55.	.797	110.	.793	165.	.782	220.	.777	275.	.766	330.	.744		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

RAPID CITY, SD

1.	.791	56.	.827	111.	.819	166.	.809	221.	.805	276.	.800	331.	.787
2.	.791	57.	.827	112.	.819	167.	.809	222.	.805	277.	.799	332.	.787
3.	.792	58.	.828	113.	.818	168.	.809	223.	.805	278.	.799	333.	.786
4.	.793	59.	.828	114.	.818	169.	.809	224.	.805	279.	.799	334.	.786
5.	.793	60.	.828	115.	.818	170.	.809	225.	.805	280.	.799	335.	.786
6.	.794	61.	.829	116.	.818	171.	.809	226.	.805	281.	.798	336.	.786
7.	.795	62.	.829	117.	.818	172.	.809	227.	.805	282.	.798	337.	.786
8.	.796	63.	.829	118.	.817	173.	.809	228.	.805	283.	.798	338.	.786
9.	.796	64.	.830	119.	.817	174.	.809	229.	.805	284.	.797	339.	.786
10.	.797	65.	.830	120.	.817	175.	.808	230.	.805	285.	.797	340.	.785
11.	.798	66.	.830	121.	.817	176.	.808	231.	.805	286.	.797	341.	.785
12.	.799	67.	.831	122.	.817	177.	.808	232.	.805	287.	.796	342.	.785
13.	.800	68.	.831	123.	.816	178.	.808	233.	.805	288.	.796	343.	.785
14.	.801	69.	.831	124.	.816	179.	.808	234.	.805	289.	.796	344.	.786
15.	.802	70.	.831	125.	.816	180.	.808	235.	.805	290.	.796	345.	.786
16.	.802	71.	.832	126.	.816	181.	.808	236.	.805	291.	.796	346.	.786
17.	.803	72.	.832	127.	.816	182.	.808	237.	.805	292.	.796	347.	.786
18.	.803	73.	.832	128.	.815	183.	.808	238.	.805	293.	.795	348.	.786
19.	.804	74.	.832	129.	.815	184.	.808	239.	.805	294.	.795	349.	.786
20.	.804	75.	.832	130.	.815	185.	.807	240.	.805	295.	.795	350.	.786
21.	.805	76.	.832	131.	.815	186.	.807	241.	.805	296.	.795	351.	.786
22.	.806	77.	.831	132.	.814	187.	.807	242.	.805	297.	.795	352.	.786
23.	.806	78.	.831	133.	.814	188.	.807	243.	.805	298.	.795	353.	.786
24.	.807	79.	.831	134.	.814	189.	.807	244.	.805	299.	.794	354.	.786
25.	.808	80.	.831	135.	.814	190.	.807	245.	.805	300.	.794	355.	.786
26.	.808	81.	.830	136.	.813	191.	.807	246.	.805	301.	.794	356.	.786
27.	.809	82.	.830	137.	.813	192.	.807	247.	.805	302.	.794	357.	.786
28.	.810	83.	.830	138.	.813	193.	.806	248.	.805	303.	.794	358.	.786
29.	.810	84.	.829	139.	.813	194.	.806	249.	.805	304.	.793	359.	.786
30.	.811	85.	.829	140.	.813	195.	.806	250.	.805	305.	.793	360.	.786
31.	.812	86.	.828	141.	.813	196.	.806	251.	.804	306.	.793	361.	.787
32.	.813	87.	.828	142.	.813	197.	.806	252.	.804	307.	.793	362.	.787
33.	.813	88.	.828	143.	.813	198.	.806	253.	.804	308.	.793	363.	.787
34.	.814	89.	.827	144.	.813	199.	.806	254.	.804	309.	.793	364.	.788
35.	.815	90.	.827	145.	.812	200.	.806	255.	.804	310.	.792	365.	.788
36.	.815	91.	.826	146.	.812	201.	.806	256.	.804	311.	.792		
37.	.816	92.	.826	147.	.812	202.	.806	257.	.804	312.	.792		
38.	.817	93.	.826	148.	.812	203.	.806	258.	.804	313.	.792		
39.	.818	94.	.825	149.	.812	204.	.806	259.	.804	314.	.792		
40.	.818	95.	.825	150.	.812	205.	.806	260.	.803	315.	.792		
41.	.819	96.	.824	151.	.812	206.	.806	261.	.803	316.	.791		
42.	.820	97.	.824	152.	.811	207.	.806	262.	.803	317.	.791		
43.	.821	98.	.823	153.	.811	208.	.806	263.	.803	318.	.791		
44.	.821	99.	.823	154.	.811	209.	.806	264.	.803	319.	.791		
45.	.822	100.	.822	155.	.811	210.	.806	265.	.802	320.	.791		
46.	.823	101.	.822	156.	.811	211.	.806	266.	.802	321.	.790		
47.	.823	102.	.821	157.	.811	212.	.806	267.	.802	322.	.790		
48.	.823	103.	.821	158.	.810	213.	.806	268.	.802	323.	.790		
49.	.824	104.	.820	159.	.810	214.	.806	269.	.802	324.	.789		
50.	.824	105.	.820	160.	.810	215.	.806	270.	.801	325.	.789		
51.	.825	106.	.820	161.	.810	216.	.806	271.	.801	326.	.788		
52.	.825	107.	.820	162.	.810	217.	.806	272.	.801	327.	.788		
53.	.826	108.	.819	163.	.810	218.	.806	273.	.801	328.	.788		
54.	.826	109.	.819	164.	.809	219.	.805	274.	.800	329.	.787		
55.	.826	110.	.819	165.	.809	220.	.805	275.	.800	330.	.787		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

SALT LAKE CITY, UT

1. .799	56. .827	111. .833	166. .826	221. .821	276. .816	331. .797
2. .801	57. .827	112. .832	167. .826	222. .821	277. .816	332. .797
3. .801	58. .827	113. .832	168. .826	223. .820	278. .816	333. .797
4. .802	59. .828	114. .832	169. .826	224. .820	279. .815	334. .797
5. .802	60. .828	115. .832	170. .826	225. .820	280. .815	335. .797
6. .802	61. .828	116. .832	171. .826	226. .820	281. .815	336. .797
7. .803	62. .828	117. .832	172. .826	227. .820	282. .815	337. .797
8. .803	63. .829	118. .832	173. .825	228. .820	283. .814	338. .797
9. .804	64. .829	119. .832	174. .825	229. .820	284. .814	339. .797
10. .805	65. .829	120. .832	175. .825	230. .820	285. .814	340. .797
11. .805	66. .829	121. .831	176. .825	231. .820	286. .813	341. .797
12. .806	67. .829	122. .831	177. .825	232. .820	287. .813	342. .797
13. .806	68. .830	123. .831	178. .825	233. .820	288. .813	343. .797
14. .807	69. .830	124. .831	179. .825	234. .820	289. .812	344. .798
15. .808	70. .830	125. .831	180. .825	235. .820	290. .812	345. .798
16. .808	71. .830	126. .831	181. .825	236. .820	291. .812	346. .798
17. .808	72. .830	127. .831	182. .824	237. .820	292. .811	347. .798
18. .809	73. .830	128. .830	183. .824	238. .821	293. .811	348. .799
19. .809	74. .831	129. .830	184. .824	239. .821	294. .810	349. .799
20. .810	75. .831	130. .830	185. .824	240. .821	295. .810	350. .799
21. .810	76. .831	131. .830	186. .824	241. .821	296. .809	351. .799
22. .811	77. .831	132. .830	187. .824	242. .821	297. .809	352. .798
23. .811	78. .831	133. .829	188. .824	243. .821	298. .809	353. .798
24. .812	79. .831	134. .829	189. .823	244. .821	299. .808	354. .798
25. .812	80. .832	135. .829	190. .823	245. .821	300. .808	355. .798
26. .813	81. .832	136. .829	191. .823	246. .821	301. .807	356. .798
27. .813	82. .832	137. .829	192. .823	247. .820	302. .807	357. .798
28. .814	83. .832	138. .829	193. .823	248. .820	303. .806	358. .798
29. .814	84. .832	139. .829	194. .823	249. .820	304. .806	359. .798
30. .815	85. .832	140. .829	195. .823	250. .820	305. .805	360. .798
31. .815	86. .832	141. .829	196. .822	251. .820	306. .805	361. .798
32. .816	87. .832	142. .829	197. .822	252. .820	307. .804	362. .798
33. .816	88. .833	143. .829	198. .822	253. .820	308. .804	363. .798
34. .817	89. .833	144. .828	199. .822	254. .820	309. .803	364. .798
35. .817	90. .833	145. .828	200. .822	255. .820	310. .803	365. .798
36. .818	91. .833	146. .828	201. .822	256. .820	311. .803	
37. .819	92. .833	147. .828	202. .822	257. .820	312. .802	
38. .819	93. .833	148. .828	203. .822	258. .820	313. .802	
39. .820	94. .833	149. .828	204. .822	259. .820	314. .801	
40. .820	95. .833	150. .828	205. .822	260. .820	315. .801	
41. .821	96. .833	151. .828	206. .822	261. .819	316. .800	
42. .821	97. .833	152. .828	207. .822	262. .819	317. .800	
43. .822	98. .833	153. .828	208. .822	263. .819	318. .799	
44. .823	99. .833	154. .827	209. .822	264. .819	319. .799	
45. .823	100. .833	155. .827	210. .822	265. .819	320. .799	
46. .823	101. .833	156. .827	211. .822	266. .818	321. .798	
47. .824	102. .833	157. .827	212. .822	267. .818	322. .798	
48. .824	103. .833	158. .827	213. .822	268. .818	323. .798	
49. .825	104. .833	159. .827	214. .822	269. .818	324. .798	
50. .825	105. .833	160. .827	215. .821	270. .818	325. .798	
51. .825	106. .833	161. .827	216. .821	271. .817	326. .797	
52. .826	107. .833	162. .827	217. .821	272. .817	327. .797	
53. .826	108. .833	163. .826	218. .821	273. .817	328. .797	
54. .826	109. .833	164. .826	219. .821	274. .817	329. .797	
55. .826	110. .833	165. .826	220. .821	275. .816	330. .797	

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

SAN ANTONIO, TX

1.	.781	56.	.800	111.	.800	166.	.790	221.	.788	276.	.785	331.	.779
2.	.781	57.	.800	112.	.800	167.	.790	222.	.788	277.	.785	332.	.779
3.	.781	58.	.801	113.	.799	168.	.790	223.	.788	278.	.785	333.	.779
4.	.782	59.	.801	114.	.799	169.	.790	224.	.788	279.	.785	334.	.779
5.	.782	60.	.801	115.	.799	170.	.790	225.	.788	280.	.785	335.	.779
6.	.782	61.	.801	116.	.799	171.	.790	226.	.787	281.	.785	336.	.779
7.	.783	62.	.802	117.	.799	172.	.790	227.	.787	282.	.785	337.	.779
8.	.783	63.	.802	118.	.798	173.	.790	228.	.787	283.	.785	338.	.779
9.	.783	64.	.802	119.	.798	174.	.790	229.	.787	284.	.785	339.	.778
10.	.784	65.	.803	120.	.798	175.	.790	230.	.787	285.	.785	340.	.778
11.	.784	66.	.803	121.	.798	176.	.790	231.	.787	286.	.785	341.	.778
12.	.785	67.	.803	122.	.797	177.	.790	232.	.787	287.	.785	342.	.778
13.	.785	68.	.803	123.	.797	178.	.790	233.	.787	288.	.785	343.	.778
14.	.786	69.	.804	124.	.797	179.	.790	234.	.787	289.	.785	344.	.778
15.	.786	70.	.804	125.	.797	180.	.790	235.	.787	290.	.784	345.	.778
16.	.786	71.	.804	126.	.796	181.	.790	236.	.787	291.	.784	346.	.778
17.	.787	72.	.804	127.	.796	182.	.790	237.	.787	292.	.784	347.	.778
18.	.787	73.	.804	128.	.796	183.	.789	238.	.787	293.	.784	348.	.779
19.	.787	74.	.805	129.	.795	184.	.789	239.	.787	294.	.784	349.	.779
20.	.788	75.	.805	130.	.795	185.	.789	240.	.787	295.	.784	350.	.779
21.	.788	76.	.805	131.	.795	186.	.789	241.	.786	296.	.784	351.	.779
22.	.788	77.	.804	132.	.795	187.	.789	242.	.786	297.	.784	352.	.779
23.	.788	78.	.804	133.	.794	188.	.789	243.	.786	298.	.784	353.	.779
24.	.789	79.	.804	134.	.794	189.	.789	244.	.786	299.	.784	354.	.779
25.	.789	80.	.804	135.	.794	190.	.789	245.	.786	300.	.783	355.	.779
26.	.789	81.	.804	136.	.794	191.	.789	246.	.786	301.	.783	356.	.779
27.	.790	82.	.804	137.	.794	192.	.789	247.	.786	302.	.783	357.	.779
28.	.790	83.	.804	138.	.793	193.	.789	248.	.786	303.	.783	358.	.779
29.	.790	84.	.804	139.	.793	194.	.789	249.	.785	304.	.783	359.	.779
30.	.791	85.	.804	140.	.793	195.	.789	250.	.785	305.	.783	360.	.779
31.	.791	86.	.804	141.	.793	196.	.789	251.	.785	306.	.783	361.	.779
32.	.792	87.	.804	142.	.793	197.	.789	252.	.785	307.	.783	362.	.780
33.	.792	88.	.804	143.	.793	198.	.789	253.	.785	308.	.783	363.	.780
34.	.792	89.	.803	144.	.793	199.	.789	254.	.785	309.	.783	364.	.780
35.	.793	90.	.803	145.	.793	200.	.789	255.	.784	310.	.783	365.	.780
36.	.793	91.	.803	146.	.793	201.	.789	256.	.784	311.	.783		
37.	.794	92.	.803	147.	.793	202.	.789	257.	.784	312.	.783		
38.	.794	93.	.803	148.	.792	203.	.789	258.	.784	313.	.783		
39.	.794	94.	.803	149.	.792	204.	.789	259.	.784	314.	.783		
40.	.795	95.	.803	150.	.792	205.	.789	260.	.784	315.	.783		
41.	.795	96.	.803	151.	.792	206.	.789	261.	.784	316.	.783		
42.	.796	97.	.802	152.	.792	207.	.789	262.	.784	317.	.783		
43.	.796	98.	.802	153.	.792	208.	.789	263.	.784	318.	.783		
44.	.796	99.	.802	154.	.792	209.	.788	264.	.784	319.	.783		
45.	.797	100.	.802	155.	.792	210.	.788	265.	.784	320.	.782		
46.	.797	101.	.802	156.	.791	211.	.788	266.	.784	321.	.782		
47.	.797	102.	.802	157.	.791	212.	.788	267.	.784	322.	.782		
48.	.798	103.	.802	158.	.791	213.	.788	268.	.784	323.	.781		
49.	.798	104.	.801	159.	.791	214.	.788	269.	.784	324.	.781		
50.	.798	105.	.801	160.	.791	215.	.788	270.	.784	325.	.781		
51.	.799	106.	.801	161.	.791	216.	.788	271.	.784	326.	.781		
52.	.799	107.	.801	162.	.791	217.	.788	272.	.785	327.	.780		
53.	.799	108.	.801	163.	.791	218.	.788	273.	.785	328.	.780		
54.	.799	109.	.800	164.	.790	219.	.788	274.	.785	329.	.780		
55.	.800	110.	.800	165.	.790	220.	.788	275.	.785	330.	.780		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

SAULT STE. MARIE, MI

1. .770	56. .821	111. .804	166. .790	221. .785	276. .770	331. .759
2. .771	57. .821	112. .804	167. .790	222. .785	277. .770	332. .759
3. .772	58. .822	113. .804	168. .790	223. .784	278. .769	333. .759
4. .772	59. .823	114. .803	169. .790	224. .784	279. .769	334. .759
5. .773	60. .823	115. .803	170. .790	225. .784	280. .769	335. .760
6. .774	61. .824	116. .803	171. .790	226. .784	281. .768	336. .760
7. .775	62. .825	117. .802	172. .790	227. .783	282. .768	337. .760
8. .776	63. .825	118. .802	173. .790	228. .783	283. .767	338. .760
9. .777	64. .826	119. .802	174. .790	229. .783	284. .767	339. .761
10. .777	65. .827	120. .802	175. .790	230. .783	285. .766	340. .761
11. .778	66. .827	121. .801	176. .790	231. .783	286. .766	341. .761
12. .779	67. .828	122. .801	177. .790	232. .783	287. .765	342. .762
13. .781	68. .829	123. .801	178. .790	233. .783	288. .765	343. .762
14. .782	69. .829	124. .800	179. .790	234. .783	289. .765	344. .763
15. .783	70. .830	125. .800	180. .790	235. .782	290. .764	345. .763
16. .784	71. .830	126. .800	181. .790	236. .782	291. .764	346. .764
17. .784	72. .831	127. .799	182. .790	237. .782	292. .764	347. .765
18. .785	73. .832	128. .799	183. .790	238. .782	293. .764	348. .765
19. .786	74. .832	129. .799	184. .790	239. .782	294. .764	349. .766
20. .787	75. .831	130. .798	185. .790	240. .781	295. .764	350. .766
21. .788	76. .831	131. .798	186. .790	241. .781	296. .763	351. .766
22. .789	77. .830	132. .798	187. .789	242. .781	297. .763	352. .766
23. .790	78. .829	133. .797	188. .789	243. .781	298. .763	353. .766
24. .791	79. .829	134. .797	189. .789	244. .781	299. .763	354. .766
25. .792	80. .828	135. .796	190. .789	245. .780	300. .763	355. .766
26. .793	81. .827	136. .796	191. .789	246. .780	301. .762	356. .766
27. .794	82. .826	137. .796	192. .789	247. .780	302. .762	357. .766
28. .795	83. .826	138. .796	193. .789	248. .780	303. .762	358. .767
29. .796	84. .825	139. .796	194. .789	249. .779	304. .762	359. .767
30. .797	85. .824	140. .796	195. .789	250. .779	305. .761	360. .767
31. .798	86. .823	141. .795	196. .788	251. .779	306. .761	361. .768
32. .799	87. .822	142. .795	197. .788	252. .778	307. .761	362. .768
33. .800	88. .821	143. .795	198. .788	253. .778	308. .761	363. .769
34. .801	89. .821	144. .795	199. .788	254. .778	309. .761	364. .769
35. .802	90. .820	145. .795	200. .788	255. .778	310. .760	365. .770
36. .803	91. .819	146. .794	201. .788	256. .777	311. .760	
37. .804	92. .818	147. .794	202. .788	257. .777	312. .760	
38. .805	93. .817	148. .794	203. .788	258. .776	313. .760	
39. .806	94. .816	149. .794	204. .788	259. .776	314. .760	
40. .807	95. .815	150. .794	205. .788	260. .776	315. .760	
41. .808	96. .814	151. .793	206. .788	261. .776	316. .760	
42. .809	97. .813	152. .793	207. .787	262. .775	317. .759	
43. .810	98. .812	153. .793	208. .787	263. .775	318. .759	
44. .811	99. .812	154. .793	209. .787	264. .775	319. .759	
45. .812	100. .811	155. .793	210. .787	265. .774	320. .759	
46. .813	101. .810	156. .792	211. .787	266. .774	321. .759	
47. .814	102. .809	157. .792	212. .787	267. .774	322. .759	
48. .815	103. .808	158. .792	213. .787	268. .773	323. .759	
49. .815	104. .807	159. .792	214. .786	269. .773	324. .759	
50. .816	105. .806	160. .792	215. .786	270. .773	325. .759	
51. .817	106. .805	161. .791	216. .786	271. .772	326. .759	
52. .818	107. .805	162. .791	217. .786	272. .772	327. .759	
53. .818	108. .805	163. .791	218. .786	273. .772	328. .759	
54. .819	109. .805	164. .791	219. .785	274. .771	329. .759	
55. .820	110. .804	165. .790	220. .785	275. .771	330. .759	

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

SPOKANE, WA

1.	.750	56.	.794	111.	.811	166.	.809	221.	.804	276.	.781	331.	.745
2.	.751	57.	.794	112.	.811	167.	.809	222.	.803	277.	.780	332.	.744
3.	.751	58.	.795	113.	.811	168.	.809	223.	.803	278.	.780	333.	.744
4.	.752	59.	.795	114.	.811	169.	.809	224.	.803	279.	.779	334.	.744
5.	.753	60.	.796	115.	.811	170.	.809	225.	.802	280.	.778	335.	.744
6.	.754	61.	.796	116.	.811	171.	.809	226.	.802	281.	.778	336.	.744
7.	.755	62.	.797	117.	.811	172.	.809	227.	.802	282.	.777	337.	.744
8.	.756	63.	.797	118.	.811	173.	.809	228.	.801	283.	.776	338.	.744
9.	.757	64.	.798	119.	.811	174.	.809	229.	.801	284.	.776	339.	.744
10.	.757	65.	.798	120.	.811	175.	.809	230.	.801	285.	.775	340.	.744
11.	.758	66.	.799	121.	.811	176.	.809	231.	.801	286.	.774	341.	.744
12.	.760	67.	.799	122.	.811	177.	.809	232.	.800	287.	.773	342.	.744
13.	.761	68.	.799	123.	.811	178.	.809	233.	.800	288.	.773	343.	.744
14.	.762	69.	.800	124.	.811	179.	.809	234.	.800	289.	.772	344.	.745
15.	.763	70.	.800	125.	.811	180.	.809	235.	.800	290.	.771	345.	.745
16.	.763	71.	.800	126.	.811	181.	.809	236.	.799	291.	.771	346.	.745
17.	.764	72.	.801	127.	.811	182.	.809	237.	.799	292.	.770	347.	.746
18.	.765	73.	.801	128.	.811	183.	.809	238.	.799	293.	.769	348.	.746
19.	.766	74.	.801	129.	.811	184.	.809	239.	.798	294.	.768	349.	.746
20.	.766	75.	.802	130.	.811	185.	.809	240.	.798	295.	.768	350.	.746
21.	.767	76.	.802	131.	.811	186.	.809	241.	.798	296.	.767	351.	.746
22.	.768	77.	.803	132.	.811	187.	.809	242.	.798	297.	.766	352.	.746
23.	.769	78.	.803	133.	.811	188.	.809	243.	.797	298.	.765	353.	.745
24.	.769	79.	.803	134.	.811	189.	.809	244.	.797	299.	.765	354.	.745
25.	.770	80.	.804	135.	.811	190.	.809	245.	.796	300.	.764	355.	.745
26.	.771	81.	.804	136.	.811	191.	.809	246.	.796	301.	.763	356.	.745
27.	.772	82.	.804	137.	.811	192.	.809	247.	.796	302.	.762	357.	.745
28.	.773	83.	.805	138.	.811	193.	.809	248.	.795	303.	.761	358.	.745
29.	.774	84.	.805	139.	.811	194.	.809	249.	.795	304.	.761	359.	.745
30.	.774	85.	.806	140.	.811	195.	.809	250.	.794	305.	.760	360.	.745
31.	.775	86.	.806	141.	.811	196.	.809	251.	.794	306.	.759	361.	.746
32.	.776	87.	.806	142.	.811	197.	.809	252.	.794	307.	.758	362.	.746
33.	.777	88.	.806	143.	.811	198.	.809	253.	.793	308.	.757	363.	.746
34.	.778	89.	.807	144.	.811	199.	.809	254.	.793	309.	.756	364.	.746
35.	.779	90.	.807	145.	.811	200.	.808	255.	.792	310.	.756	365.	.747
36.	.779	91.	.807	146.	.811	201.	.808	256.	.792	311.	.755		
37.	.780	92.	.808	147.	.811	202.	.808	257.	.791	312.	.754		
38.	.781	93.	.808	148.	.811	203.	.808	258.	.791	313.	.753		
39.	.782	94.	.808	149.	.811	204.	.808	259.	.790	314.	.752		
40.	.783	95.	.808	150.	.811	205.	.808	260.	.790	315.	.751		
41.	.784	96.	.808	151.	.810	206.	.807	261.	.789	316.	.751		
42.	.785	97.	.809	152.	.810	207.	.807	262.	.789	317.	.750		
43.	.785	98.	.809	153.	.810	208.	.807	263.	.788	318.	.749		
44.	.786	99.	.809	154.	.810	209.	.807	264.	.788	319.	.748		
45.	.787	100.	.809	155.	.810	210.	.807	265.	.787	320.	.748		
46.	.788	101.	.809	156.	.810	211.	.806	266.	.787	321.	.747		
47.	.788	102.	.809	157.	.810	212.	.806	267.	.786	322.	.747		
48.	.789	103.	.810	158.	.810	213.	.806	268.	.786	323.	.747		
49.	.790	104.	.810	159.	.810	214.	.806	269.	.785	324.	.746		
50.	.790	105.	.810	160.	.809	215.	.805	270.	.785	325.	.746		
51.	.791	106.	.810	161.	.809	216.	.805	271.	.784	326.	.746		
52.	.791	107.	.810	162.	.809	217.	.805	272.	.783	327.	.746		
53.	.792	108.	.810	163.	.809	218.	.804	273.	.783	328.	.745		
54.	.793	109.	.810	164.	.809	219.	.804	274.	.782	329.	.745		
55.	.793	110.	.810	165.	.809	220.	.804	275.	.782	330.	.745		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

ST. CLOUD, MN

1.	.777	56.	.819	111.	.803	166.	.794	221.	.783	276.	.775	331.	.771
2.	.777	57.	.819	112.	.803	167.	.794	222.	.783	277.	.774	332.	.770
3.	.778	58.	.819	113.	.803	168.	.794	223.	.782	278.	.774	333.	.770
4.	.778	59.	.820	114.	.803	169.	.793	224.	.782	279.	.774	334.	.770
5.	.779	60.	.820	115.	.803	170.	.793	225.	.782	280.	.773	335.	.770
6.	.780	61.	.821	115.	.803	171.	.793	226.	.781	281.	.773	336.	.770
7.	.781	62.	.821	117.	.803	172.	.793	227.	.781	282.	.772	337.	.770
8.	.781	63.	.822	118.	.802	173.	.793	228.	.781	283.	.772	338.	.770
9.	.782	64.	.822	119.	.802	174.	.793	229.	.781	284.	.772	339.	.770
10.	.783	65.	.822	120.	.802	175.	.793	230.	.781	285.	.771	340.	.770
11.	.784	66.	.823	121.	.802	176.	.793	231.	.781	286.	.771	341.	.770
12.	.785	67.	.823	122.	.802	177.	.792	232.	.781	287.	.770	342.	.771
13.	.786	68.	.823	123.	.802	178.	.792	233.	.781	288.	.770	343.	.771
14.	.787	69.	.824	124.	.802	179.	.792	234.	.781	289.	.770	344.	.771
15.	.788	70.	.824	125.	.802	180.	.792	235.	.781	290.	.770	345.	.771
16.	.789	71.	.824	126.	.802	181.	.792	236.	.781	291.	.770	346.	.772
17.	.789	72.	.825	127.	.801	182.	.792	237.	.781	292.	.770	347.	.772
18.	.790	73.	.825	128.	.801	183.	.791	238.	.781	293.	.771	348.	.772
19.	.791	74.	.825	129.	.801	184.	.791	239.	.781	294.	.771	349.	.773
20.	.791	75.	.825	130.	.801	185.	.791	240.	.781	295.	.771	350.	.773
21.	.792	76.	.824	131.	.801	186.	.791	241.	.781	296.	.771	351.	.773
22.	.793	77.	.823	132.	.801	187.	.791	242.	.781	297.	.771	352.	.773
23.	.794	78.	.823	133.	.801	188.	.791	243.	.781	298.	.771	353.	.773
24.	.794	79.	.822	134.	.800	189.	.790	244.	.781	299.	.771	354.	.773
25.	.795	80.	.821	135.	.800	190.	.790	245.	.781	300.	.771	355.	.773
26.	.796	81.	.821	136.	.800	191.	.790	246.	.781	301.	.771	356.	.773
27.	.797	82.	.820	137.	.800	192.	.790	247.	.781	302.	.771	357.	.773
28.	.798	83.	.820	138.	.800	193.	.790	248.	.781	303.	.771	358.	.773
29.	.799	84.	.819	139.	.800	194.	.789	249.	.781	304.	.771	359.	.774
30.	.800	85.	.818	140.	.799	195.	.789	250.	.781	305.	.771	360.	.774
31.	.800	86.	.818	141.	.799	196.	.789	251.	.781	306.	.772	361.	.774
32.	.801	87.	.817	142.	.799	197.	.789	252.	.781	307.	.772	362.	.775
33.	.802	88.	.816	143.	.799	198.	.789	253.	.780	308.	.772	363.	.775
34.	.803	89.	.816	144.	.799	199.	.788	254.	.780	309.	.772	364.	.776
35.	.804	90.	.815	145.	.798	200.	.788	255.	.780	310.	.772	365.	.776
36.	.805	91.	.814	146.	.798	201.	.788	256.	.780	311.	.772		
37.	.806	92.	.813	147.	.798	202.	.788	257.	.780	312.	.772		
38.	.807	93.	.813	148.	.798	203.	.788	258.	.780	313.	.772		
39.	.808	94.	.812	149.	.798	204.	.787	259.	.780	314.	.773		
40.	.809	95.	.811	150.	.797	205.	.787	260.	.779	315.	.773		
41.	.809	96.	.810	151.	.797	206.	.787	261.	.779	316.	.773		
42.	.810	97.	.810	152.	.797	207.	.787	262.	.779	317.	.773		
43.	.811	98.	.809	153.	.797	208.	.787	263.	.779	318.	.773		
44.	.812	99.	.808	154.	.797	209.	.786	264.	.778	319.	.774		
45.	.813	100.	.807	155.	.796	210.	.786	265.	.778	320.	.773		
46.	.814	101.	.807	156.	.796	211.	.786	266.	.778	321.	.773		
47.	.814	102.	.806	157.	.796	212.	.786	267.	.778	322.	.773		
48.	.815	103.	.805	158.	.796	213.	.785	268.	.777	323.	.772		
49.	.815	104.	.804	159.	.795	214.	.785	269.	.777	324.	.772		
50.	.816	105.	.803	160.	.795	215.	.785	270.	.777	325.	.772		
51.	.816	106.	.803	161.	.795	216.	.784	271.	.776	326.	.772		
52.	.817	107.	.803	162.	.795	217.	.784	272.	.776	327.	.771		
53.	.817	108.	.803	163.	.794	218.	.784	273.	.776	328.	.771		
54.	.818	109.	.803	164.	.794	219.	.784	274.	.775	329.	.771		
55.	.818	110.	.803	165.	.794	220.	.783	275.	.775	330.	.771		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

TALLAHASSEE, FL

1.	.738	56.	.770	111.	.770	166.	.756	221.	.747	276.	.744	331.	.733
2.	.739	57.	.770	112.	.769	167.	.756	222.	.747	277.	.744	332.	.732
3.	.739	58.	.770	113.	.769	168.	.756	223.	.747	278.	.744	333.	.732
4.	.740	59.	.771	114.	.769	169.	.756	224.	.747	279.	.744	334.	.732
5.	.741	60.	.771	115.	.769	170.	.756	225.	.746	280.	.744	335.	.731
6.	.742	61.	.771	116.	.769	171.	.756	226.	.746	281.	.745	336.	.731
7.	.742	62.	.771	117.	.768	172.	.756	227.	.746	282.	.745	337.	.731
8.	.743	63.	.772	118.	.768	173.	.755	228.	.746	283.	.745	338.	.731
9.	.744	64.	.772	119.	.768	174.	.755	229.	.746	284.	.745	339.	.730
10.	.745	65.	.772	120.	.768	175.	.755	230.	.745	285.	.745	340.	.730
11.	.746	66.	.772	121.	.768	176.	.755	231.	.745	286.	.746	341.	.730
12.	.747	67.	.773	122.	.767	177.	.755	232.	.745	287.	.746	342.	.730
13.	.748	68.	.773	123.	.767	178.	.755	233.	.745	288.	.746	343.	.730
14.	.748	69.	.773	124.	.767	179.	.755	234.	.745	289.	.746	344.	.730
15.	.749	70.	.773	125.	.767	180.	.754	235.	.745	290.	.745	345.	.730
16.	.750	71.	.774	126.	.766	181.	.754	236.	.745	291.	.745	346.	.730
17.	.750	72.	.774	127.	.766	182.	.754	237.	.744	292.	.745	347.	.730
18.	.751	73.	.774	128.	.766	183.	.754	238.	.744	293.	.745	348.	.730
19.	.751	74.	.774	129.	.766	184.	.754	239.	.744	294.	.744	349.	.730
20.	.752	75.	.774	130.	.765	185.	.754	240.	.744	295.	.744	350.	.730
21.	.752	76.	.774	131.	.765	186.	.754	241.	.744	296.	.744	351.	.730
22.	.753	77.	.774	132.	.765	187.	.753	242.	.743	297.	.743	352.	.730
23.	.753	78.	.774	133.	.764	188.	.753	243.	.743	298.	.743	353.	.730
24.	.754	79.	.774	134.	.764	189.	.753	244.	.743	299.	.743	354.	.730
25.	.754	80.	.774	135.	.764	190.	.753	245.	.743	300.	.743	355.	.730
26.	.755	81.	.774	136.	.764	191.	.753	246.	.743	301.	.742	356.	.730
27.	.756	82.	.774	137.	.763	192.	.753	247.	.742	302.	.742	357.	.730
28.	.756	83.	.774	138.	.763	193.	.752	248.	.742	303.	.742	358.	.730
29.	.757	84.	.774	139.	.763	194.	.752	249.	.742	304.	.741	359.	.731
30.	.757	85.	.774	140.	.763	195.	.752	250.	.742	305.	.741	360.	.731
31.	.758	86.	.773	141.	.763	196.	.752	251.	.741	306.	.741	361.	.731
32.	.758	87.	.773	142.	.762	197.	.752	252.	.741	307.	.741	362.	.731
33.	.759	88.	.773	143.	.762	198.	.752	253.	.741	308.	.740	363.	.732
34.	.760	89.	.773	144.	.762	199.	.751	254.	.740	309.	.740	364.	.732
35.	.760	90.	.773	145.	.762	200.	.751	255.	.740	310.	.740	365.	.732
36.	.761	91.	.773	146.	.761	201.	.751	256.	.740	311.	.740		
37.	.761	92.	.773	147.	.761	202.	.751	257.	.739	312.	.739		
38.	.762	93.	.773	148.	.761	203.	.751	258.	.739	313.	.739		
39.	.763	94.	.773	149.	.761	204.	.751	259.	.739	314.	.739		
40.	.763	95.	.772	150.	.760	205.	.750	260.	.740	315.	.739		
41.	.764	96.	.772	151.	.760	206.	.750	261.	.740	316.	.738		
42.	.765	97.	.772	152.	.760	207.	.750	262.	.740	317.	.738		
43.	.765	98.	.772	153.	.760	208.	.750	263.	.740	318.	.738		
44.	.766	99.	.772	154.	.759	209.	.750	264.	.741	319.	.738		
45.	.766	100.	.772	155.	.759	210.	.750	265.	.741	320.	.737		
46.	.767	101.	.771	156.	.759	211.	.749	266.	.741	321.	.737		
47.	.767	102.	.771	157.	.759	212.	.749	267.	.742	322.	.736		
48.	.767	103.	.771	158.	.758	213.	.749	268.	.742	323.	.736		
49.	.768	104.	.771	159.	.758	214.	.749	269.	.742	324.	.735		
50.	.768	105.	.771	160.	.758	215.	.749	270.	.742	325.	.735		
51.	.768	106.	.770	161.	.758	216.	.748	271.	.742	326.	.735		
52.	.769	107.	.770	162.	.757	217.	.748	272.	.743	327.	.734		
53.	.769	108.	.770	163.	.757	218.	.748	273.	.743	328.	.734		
54.	.769	109.	.770	164.	.757	219.	.748	274.	.743	329.	.733		
55.	.769	110.	.770	165.	.757	220.	.748	275.	.743	330.	.733		

TRUE SOLAR NOON TRANSMISSION VALUES FOR EACH DAY OF THE YEAR

TAMPA, FL

1. .762	56. .780	111. .784	166. .771	221. .768	276. .766	331. .761
2. .762	57. .780	112. .783	167. .771	222. .768	277. .766	332. .761
3. .763	58. .780	113. .783	168. .771	223. .768	278. .766	333. .761
4. .763	59. .780	114. .783	169. .771	224. .768	279. .766	334. .760
5. .763	60. .781	115. .783	170. .771	225. .768	280. .766	335. .760
6. .763	61. .781	116. .783	171. .771	226. .768	281. .766	336. .760
7. .764	62. .781	117. .782	172. .771	227. .768	282. .766	337. .760
8. .764	63. .781	118. .782	173. .771	228. .768	283. .766	338. .760
9. .764	64. .782	119. .782	174. .771	229. .768	284. .766	339. .760
10. .765	65. .782	120. .782	175. .771	230. .768	285. .766	340. .760
11. .765	66. .782	121. .781	176. .771	231. .768	286. .766	341. .760
12. .766	67. .782	122. .781	177. .771	232. .767	287. .766	342. .760
13. .766	68. .783	123. .781	178. .771	233. .767	288. .766	343. .760
14. .766	69. .783	124. .781	179. .771	234. .767	289. .766	344. .760
15. .767	70. .783	125. .780	180. .771	235. .767	290. .766	345. .760
16. .767	71. .783	126. .780	181. .770	236. .767	291. .766	346. .760
17. .767	72. .783	127. .780	182. .770	237. .767	292. .766	347. .761
18. .767	73. .784	128. .779	183. .770	238. .767	293. .766	348. .761
19. .768	74. .784	129. .779	184. .770	239. .767	294. .766	349. .761
20. .768	75. .784	130. .779	185. .770	240. .767	295. .765	350. .761
21. .768	76. .784	131. .779	186. .770	241. .767	296. .765	351. .761
22. .769	77. .784	132. .778	187. .770	242. .767	297. .765	352. .761
23. .769	78. .784	133. .778	188. .770	243. .767	298. .765	353. .761
24. .769	79. .784	134. .778	189. .770	244. .767	299. .765	354. .761
25. .769	80. .784	135. .778	190. .770	245. .767	300. .765	355. .761
26. .770	81. .784	136. .777	191. .770	246. .767	301. .765	356. .761
27. .770	82. .785	137. .777	192. .770	247. .767	302. .765	357. .761
28. .770	83. .785	138. .777	193. .770	248. .766	303. .764	358. .761
29. .771	84. .785	139. .777	194. .770	249. .766	304. .764	359. .761
30. .771	85. .785	140. .777	195. .770	250. .766	305. .764	360. .761
31. .771	86. .785	141. .776	196. .770	251. .766	306. .764	361. .761
32. .772	87. .785	142. .776	197. .770	252. .766	307. .764	362. .761
33. .772	88. .785	143. .776	198. .770	253. .766	308. .764	363. .761
34. .772	89. .785	144. .776	199. .770	254. .766	309. .764	364. .762
35. .773	90. .785	145. .776	200. .770	255. .766	310. .764	365. .762
36. .773	91. .785	146. .775	201. .769	256. .765	311. .764	
37. .774	92. .785	147. .775	202. .769	257. .765	312. .764	
38. .774	93. .785	148. .775	203. .769	258. .765	313. .764	
39. .774	94. .785	149. .775	204. .769	259. .765	314. .764	
40. .775	95. .785	150. .775	205. .769	260. .765	315. .763	
41. .775	96. .785	151. .774	206. .769	261. .765	316. .763	
42. .775	97. .785	152. .774	207. .769	262. .765	317. .763	
43. .776	98. .785	153. .774	208. .769	263. .765	318. .763	
44. .776	99. .785	154. .774	209. .769	264. .765	319. .763	
45. .777	100. .785	155. .773	210. .769	265. .766	320. .763	
46. .777	101. .785	156. .773	211. .769	266. .766	321. .763	
47. .777	102. .785	157. .773	212. .769	267. .766	322. .763	
48. .777	103. .785	158. .773	213. .769	268. .766	323. .762	
49. .778	104. .785	159. .773	214. .769	269. .766	324. .762	
50. .778	105. .785	160. .772	215. .769	270. .766	325. .762	
51. .778	106. .785	161. .772	216. .769	271. .766	326. .762	
52. .779	107. .785	162. .772	217. .769	272. .766	327. .762	
53. .779	108. .784	163. .772	218. .768	273. .766	328. .761	
54. .779	109. .784	164. .772	219. .768	274. .766	329. .761	
55. .779	110. .784	165. .771	220. .768	275. .766	330. .761	

SOLDAY DATA LISTING

STA NAME station name

WBAN Weather Bureau, Army, Navy (station numbering system)

SUN SUN LOCAL STANDARD TIME (24-hour clock) of sunrise and sunset (1-minute irregularities
RISE SET due to rounding)

ETR extraterrestrial radiation on a horizontal surface in kilojoules per square meter

DIRECT direct solar radiation not available in SOLDAY format

OBSRV observed global (total hemispheric) solar radiation on a horizontal surface in kilojoules
per square meter

ENGRG engineering corrected observed data

SYI Standard Year Irradiance model corrected observed data (Note: to convert listed data to
langleys or to British thermal units per square foot, multiply by 0.02390 or 0.08811,
respectively). Modeled data are not serially complete.

SUPFLD supplementary field for additional data

SUN PCT minutes of sunshine; percent of possible sunshine
MIN POS

TEMPERATURE maximum, minimum, and mean daily dry bulb temperature in tenths of degrees Celsius
MAX MIN MEAN

PCP precipitation - includes rainfall and melted frozen precipitation in tenths
of millimeters

SNOW snowfall and snow depth amounts in tenths of centimeters and whole centimeters,
FALL DEP respectively

WEATHER day with weather - 0 indicates no occurrence, 1 indicates an occurrence, 9 means missing.
Weather elements, reading left to right: fog, thunder, sleet/ice pellets, hail, rain,
snow, glaze, duststorm, smoke or haze, blowing snow, heavy fog

SKY average total sky cover (sunrise to sunset) in tenths
COVER

DATA LISTING

S O L D A Y

STA NAME		SAULT STE. MARIE													SEP 1956				WBAN 14847	
DAY	SUN RISE	SUN SET	ETR	DIRECT	OBSRV	ENGRG	SYI	SUPFLD	SUN PCT			TEMPERATURE			S N O W		W E A T H E R		SKY COVER	
									MIN	POS	MAX	MIN	MEAN	FALL	DEP					
01	0556	1920	32024	999999	010493	010136	009088	999999	0025	003	0211	0139	0175	0001	000	000	00001000009	09		
02	0557	1917	31772	999999	025564	024692	022241	999999	0644	080	0222	0117	0170	0000	000	000	00000000009	04		
03	0558	1916	31518	999999	024481	023646	021391	999999	0759	095	0272	0122	0197	0000	000	000	00000000009	01		
04	0600	1913	31260	999999	018887	018243	016481	999999	0356	045	0178	0094	0136	0000	000	000	00000000009	07		
05	0601	1911	31006	999999	001937	001871	001688	999999	0000	000	0128	0067	0098	0340	000	000	10001000109	10		
06	0602	1910	30748	999999	014782	014278	012863	999999	0140	018	0139	0094	0117	0041	000	000	10001000009	09		
07	0603	1907	30486	999999	017067	016485	014830	999999	0317	040	0117	0050	0084	0041	000	000	00001000009	07		
08	0604	1906	30226	999999	022138	021383	019209	999999	0205	026	0128	0039	0084	0048	000	000	00001000009	06		
09	0606	1904	29958	999999	022271	021509	019298	999999	0530	068	0156	0017	0087	0000	000	000	10000000009	05		
10	0607	1901	29696	999999	007757	007492	006712	999999	0050	006	0178	0100	0139	0020	000	000	10001000009	09		
11	0608	1900	29430	999999	014866	014358	012846	999999	0342	044	0178	0089	0134	0000	000	000	00000000009	08		
12	0610	1858	29162	999999	002389	002307	002061	999999	0000	000	0156	0078	0117	0041	000	000	10001000009	10		
13	0611	1855	28894	999999	004925	004757	004244	999999	0010	001	0194	0133	0164	0074	000	000	10001000009	10		
14	0612	1854	28622	999999	023409	022608	020143	999999	0583	077	0133	0039	0086	0000	000	000	10000000009	05		
15	0613	1851	28352	999999	004071	003932	003498	999999	0000	000	0078	0039	0059	0086	000	000	00001000009	10		
16	0614	1850	28080	999999	999999	999999	999999	999999	0020	003	0128	0078	0103	0130	000	000	10001000009	10		
17	0616	1848	27808	999999	016723	016149	014328	999999	0320	043	0117	0067	0092	0084	000	000	00001000009	07		
18	0617	1845	27532	999999	012870	012429	011012	999999	0045	006	0117	0039	0078	0168	000	000	00001000009	09		
19	0618	1844	27262	999999	999999	999999	999999	999999	0165	022	0100	0006	0053	0051	001	000	00101000009	07		
20	0620	1842	26984	999999	999999	999999	999999	999999	0105	014	0072	-006	0033	0066	006	000	10001000009	09		
21	0621	1839	26712	999999	017891	017277	015243	999999	0457	062	0111	0011	0061	0013	000	000	00001000009	05		
22	0622	1838	26438	999999	012987	012542	011049	999999	0407	055	0128	0000	0064	0001	000	000	00001000009	06		
23	0624	1836	26164	999999	003460	003341	002939	999999	0010	010	0117	0072	0095	0030	000	000	10001000009	10		
24	0625	1833	25886	999999	008088	007810	006861	999999	0075	010	0128	0061	0095	0038	000	000	10001000009	09		
25	0626	1832	25608	999999	017251	016658	014613	999999	0319	044	0156	0039	0098	0000	000	000	10000000009	07		
26	0627	1829	25328	999999	019958	019271	016882	999999	0717	099	0161	0039	0100	0000	000	000	10000000009	01		
27	0628	1828	25048	999999	022071	021312	018416	999999	0600	083	0161	0044	0103	0000	000	000	10000000009	04		
28	0630	1826	24774	999999	019426	018758	015990	999999	0693	097	0189	0078	0134	0001	000	000	00001000009	06		
29	0631	1823	24494	999999	007979	007705	006477	999999	0055	008	0172	0072	0122	0033	000	000	00001000009	10		
30	0632	1822	24218	999999	015464	014930	012376	999999	0250	035	0100	0011	0056	0005	000	000	00001000009	08		

DATA INVENTORY

DECK 9739 STATION 12842		MONTHS												ANN
YEAR 71		01	02	03	04	05	06	07	08	09	10	11	12	
A	SUNRISE	31	28	31	30	31	30	31	31	30	31	30	31	365
B	SUNSET	31	28	31	30	31	30	31	31	30	31	30	31	365
C	ETR	31	28	31	30	31	30	31	31	30	31	30	31	365
D	DIRECT SOLAR	0	0	0	0	0	0	0	0	0	0	0	0	0
E	OBSERVED	31	28	30	30	31	30	31	31	29	31	27	30	359
F	ENGINEERING	31	28	30	30	31	30	31	31	29	31	27	30	359
G	SYI CORRECTIONS	31	28	30	30	31	30	19	0	1	31	27	30	288
H	SUPPLEMENTAL	0	0	0	0	0	0	0	0	0	0	0	0	0
I	SUNSHINE MIN.	31	28	31	30	31	30	31	31	30	31	30	31	365
J	PRECIP	31	28	31	30	31	30	31	31	30	31	30	31	365
K	MAX TMP C	31	28	31	30	31	30	31	31	30	31	30	31	365
L	MIN TMP C	31	28	31	30	31	30	31	31	30	31	30	31	365
M	MEAN TMP C	31	28	31	30	31	30	31	31	30	31	30	31	365
N	SNOW DEPTH	31	28	31	30	31	30	31	31	30	31	30	31	365
O	SNOW FALL	31	28	31	30	31	30	31	31	30	31	30	31	365
P	SNOW DEP	31	28	31	30	31	30	31	31	30	31	30	31	365
Q1	FOG	31	28	31	30	31	30	31	31	30	31	30	31	365
Q2	THUNDER	31	28	31	30	31	30	31	31	30	31	30	31	365
Q3	SLEET	31	28	31	30	31	30	31	31	30	31	30	31	365
Q4	HAIL	31	28	31	30	31	30	31	31	30	31	30	31	365
Q5	RAIN	31	28	31	30	31	30	31	31	30	31	30	31	365
Q6	SNOW	31	28	31	30	31	30	31	31	30	31	30	31	365
Q7	GLAZE	31	28	31	30	31	30	31	31	30	31	30	31	365
Q8	HEAVY FOG	31	28	31	30	31	30	31	31	30	31	30	31	365
Q9	SKY COVER	31	28	31	30	31	30	31	31	30	31	30	31	365
QA	BLOWING SNOW	31	28	31	30	31	30	31	31	30	31	30	31	365
QB	HEAVY FOG	31	28	31	30	31	30	31	31	30	31	30	31	365
QC	SMOKE HAZE	31	28	31	30	31	30	31	31	30	31	30	31	365

FOOTNOTES:
A=SUNRISE F=ENGINEERING K=MAX TMP C P=SNOW DEPTH Q5=RAIN QA=BLOWING SNOW
B=SUNSET G=SYI CORRECTIONS L=MIN TMP C Q1=FOG Q6=SNOW QB=HEAVY FOG
C=ETR H=SUPPLEMENTAL M=MEAN TMP C Q2=THUNDER Q7=GLAZE R=SKY COVER
D=DIRECT SOLAR I=SUNSHINE MIN. N=PRECIP M. Q3=SLEET Q8=DUST
E=OBSERVED J=% POSSIBLE O=SNOW FALL Q4=HAIL Q9=SMOKE HAZE

MEAN HOURLY SOLAR ELEVATION ANGLE AND HOURLY EXTRATERRESTRIAL RADIATION - SOLAR TIME

STATION 12842 TAMPA FL

LATITUDE 27.967

MO	DAY	12+13		11+14		10+15		09+16		08+17		07+18		06+19		05+20		04+21		03+22		02+23		01+24		TOT ETR	SUN	
		SE	ETR	SE	ETR	SE	ETR	SE	ETR	SE	ETR	SE	ETR	SE	ETR	SE	ETR	SE	ETR	SE	ETR	SE	ETR	SE	ETR		RISE	SET
2	1	44	3539	39	3249	32	2689	22	1898	10	928	2	70												24746	6134	17:26	
2	2	44	3556	39	3266	32	2705	22	1912	11	941	2	75												24910	6134	17:26	
2	3	44	3573	40	3282	32	2721	22	1927	11	955	2	80												25076	6133	17:27	
2	4	44	3590	40	3299	32	2737	22	1942	11	969	2	85												25244	6132	17:28	
2	5	45	3607	40	3316	32	2753	22	1958	11	983	2	90												25414	6132	17:28	
2	6	45	3625	41	3333	33	2770	23	1973	11	997	2	96												25588	6131	17:29	
2	7	45	3642	41	3350	33	2786	23	1989	11	1012	2	102												25762	6130	17:30	
2	8	46	3660	41	3368	33	2803	23	2004	12	1026	2	108												25938	6129	17:31	
2	9	46	3678	41	3385	33	2820	23	2020	12	1041	2	114												26116	6129	17:31	
2	10	46	3696	42	3403	34	2837	23	2036	12	1056	3	120												26296	6128	17:32	
2	11	46	3714	42	3421	34	2854	24	2053	12	1071	3	127												26480	6127	17:33	
2	12	47	3732	42	3438	34	2871	24	2069	12	1086	3	134												26660	6127	17:33	
2	13	47	3750	43	3456	34	2888	24	2085	12	1102	3	141												26844	6126	17:34	
2	14	47	3768	43	3474	35	2906	24	2102	13	1117	3	149												27032	6125	17:35	
2	15	48	3786	43	3492	35	2923	24	2118	13	1133	3	156												27216	6124	17:36	
2	16	48	3805	43	3510	35	2940	25	2135	13	1148	3	164												27404	6123	17:37	
2	17	48	3823	44	3528	35	2958	25	2152	13	1164	3	173												27596	6123	17:37	
2	18	49	3841	44	3546	36	2975	25	2168	13	1180	3	181												27782	6122	17:38	
2	19	49	3859	44	3564	36	2993	25	2185	14	1196	3	190												27974	6121	17:39	
2	20	49	3878	45	3582	36	3010	26	2202	14	1212	3	199												28166	6120	17:40	
2	21	50	3896	45	3600	36	3028	26	2219	14	1228	3	208												28358	6120	17:40	
2	22	50	3914	45	3618	37	3045	26	2236	14	1244	4	218												28550	6119	17:41	
2	23	51	3932	46	3636	37	3063	26	2253	14	1260	4	228												28744	6118	17:42	
2	24	51	3950	46	3654	37	3080	27	2270	15	1277	4	238												28938	6117	17:43	
2	25	51	3968	46	3671	38	3098	27	2286	15	1293	4	248												29128	6116	17:44	
2	26	52	3986	47	3689	38	3115	27	2303	15	1309	4	259												29322	6116	17:44	
2	27	52	4004	47	3707	38	3132	27	2320	15	1326	4	269												29516	6115	17:45	
2	28	52	4022	47	3724	38	3150	27	2337	15	1342	4	280												29710	6114	17:46	

CLEAR NOON IRRADIANCE

STA	YR	MO	DA	RAD	ETR	%
23183	52	09	03	1.432	1.775	80.7
	52	09	11	1.458	1.736	84.0
	52	09	13	1.502	1.725	87.1
	52	09	18	1.390	1.696	82.0
	52	09	25	1.388	1.652	84.0
	52	09	29	1.354	1.625	83.3
	52	09	30	1.342	1.618	82.9
	52	10	02	1.336	1.604	83.3
	52	10	04	1.326	1.590	83.4
	52	10	05	1.340	1.582	84.7
	52	10	06	1.318	1.575	83.7
	52	10	08	1.348	1.560	86.4
	52	10	09	1.300	1.552	83.8
	52	10	12	1.286	1.529	84.1
	52	10	16	1.252	1.498	83.6
	52	10	21	1.268	1.458	87.0
	52	10	22	1.258	1.451	86.7
	52	10	23	1.244	1.443	86.2
	52	10	28	1.206	1.403	86.0
	52	10	29	1.150	1.395	82.4
	52	11	01	1.170	1.371	85.3
	52	11	04	1.142	1.348	84.7
	52	11	10	1.138	1.303	87.3
	52	11	14	1.072	1.275	84.1
	52	11	18	1.028	1.248	82.4
	52	11	19	1.036	1.242	83.4
	52	11	25	1.000	1.207	82.9
	52	11	26	.982	1.201	81.8
	52	11	28	.970	1.191	81.4
	52	12	03	.954	1.169	81.6
	52	12	08	.928	1.151	80.6
	52	12	09	.940	1.148	81.9
	52	12	12	.924	1.140	81.1
	52	12	14	.898	1.136	79.0
	52	12	22	.918	1.129	81.3
	52	12	27	.954	1.132	84.3
	53	01	02	.976	1.143	85.4
	53	01	04	.980	1.148	85.4
	53	01	05	.974	1.151	84.6
	53	01	08	.918	1.162	79.0
	53	01	09	.958	1.166	82.2
	53	01	10	.960	1.170	82.1
	53	01	16	1.020	1.198	85.1
	53	01	20	.992	1.220	81.3
	53	01	22	1.046	1.232	84.9
	53	01	23	1.038	1.239	83.8
	53	01	29	1.088	1.279	85.1
	53	02	02	1.120	1.309	85.6
	53	02	09	1.106	1.363	81.1
	53	02	11	1.190	1.379	86.3
	53	02	14	1.232	1.404	87.7
	53	02	17	1.258	1.429	88.0

