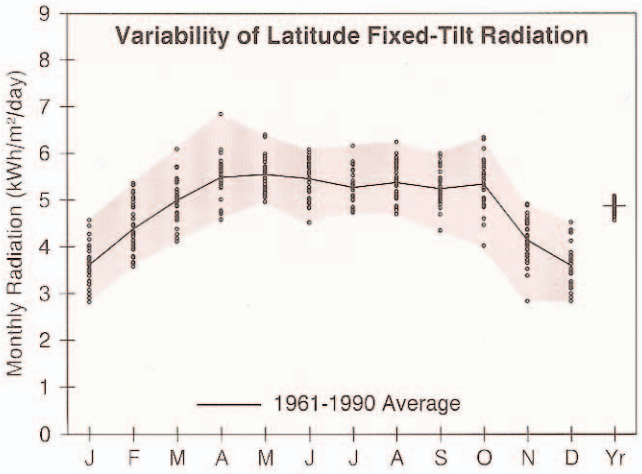


Baton Rouge, LA

WBAN NO. 13970

LATITUDE: 30.53° N
LONGITUDE: 91.15° W
ELEVATION: 23 meters
MEAN PRESSURE: 1015 millibars

STATION TYPE: Secondary

Solar Radiation for Flat-Plate Collectors Facing South at a Fixed Tilt (kWh/m²/day), Uncertainty ±9%

Tilt (°)		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
0	Average	2.6	3.5	4.4	5.4	5.9	6.0	5.7	5.4	4.8	4.3	3.0	2.5	4.5
	Min/Max	2.2/3.1	3.0/4.1	3.8/5.2	4.6/6.6	5.3/6.9	5.0/6.8	5.1/6.7	4.8/6.3	4.0/5.4	3.4/4.9	2.4/3.4	2.2/3.0	4.2/4.6
Latitude -15	Average	3.2	4.0	4.8	5.6	5.9	5.9	5.6	5.6	5.2	5.0	3.7	3.1	4.8
	Min/Max	2.6/4.0	3.4/4.8	4.0/5.8	4.7/6.9	5.2/6.8	4.9/6.6	5.0/6.6	4.9/6.4	4.3/5.9	3.8/5.8	2.7/4.3	2.6/3.9	4.5/5.0
Latitude	Average	3.6	4.4	5.0	5.5	5.5	5.5	5.3	5.4	5.2	5.3	4.1	3.6	4.9
	Min/Max	2.8/4.6	3.6/5.4	4.1/6.1	4.6/6.8	5.0/6.4	4.5/6.1	4.7/6.2	4.7/6.2	4.3/6.0	4.0/6.3	2.8/4.9	2.8/4.5	4.6/5.1
Latitude +15	Average	3.8	4.5	4.9	5.1	4.9	4.7	4.6	4.9	5.0	5.4	4.4	3.8	4.7
	Min/Max	2.9/4.9	3.6/5.6	4.0/6.0	4.3/6.3	4.4/5.6	3.9/5.2	4.2/5.4	4.3/5.7	4.2/5.8	4.0/6.5	2.9/5.2	3.0/4.9	4.4/4.9
90	Average	3.2	3.4	3.2	2.7	2.1	1.9	1.9	2.4	3.0	3.9	3.6	3.3	2.9
	Min/Max	2.4/4.3	2.7/4.3	2.6/3.9	2.3/3.1	2.0/2.3	1.7/1.9	1.8/2.1	2.1/2.6	2.6/3.5	2.8/4.7	2.2/4.4	2.5/4.4	2.7/3.0

Solar Radiation for 1-Axis Tracking Flat-Plate Collectors with a North-South Axis (kWh/m²/day), Uncertainty ±9%

Axis Tilt (°)		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
0	Average	3.5	4.6	5.7	6.9	7.4	7.6	7.0	6.8	6.2	5.8	4.1	3.4	5.8
	Min/Max	2.7/4.4	3.7/5.7	4.6/7.3	5.3/9.2	6.3/9.1	6.2/9.0	6.0/8.4	5.8/8.2	4.9/7.3	4.3/7.2	2.7/4.9	2.7/4.3	5.4/6.0
Latitude -15	Average	3.9	5.0	6.1	7.1	7.4	7.5	7.0	6.9	6.5	6.3	4.6	3.8	6.0
	Min/Max	3.0/5.1	4.0/6.3	4.8/7.8	5.4/9.5	6.3/9.1	6.1/8.9	6.0/8.4	5.9/8.4	5.1/7.6	4.6/7.8	2.9/5.6	3.0/4.9	5.6/6.3
Latitude	Average	4.2	5.3	6.2	7.0	7.2	7.2	6.7	6.8	6.5	6.6	4.9	4.2	6.1
	Min/Max	3.2/5.5	4.1/6.7	4.9/8.0	5.4/9.4	6.1/8.9	5.9/8.5	5.7/8.1	5.8/8.2	5.1/7.7	4.7/8.2	3.1/6.0	3.2/5.4	5.6/6.4
Latitude +15	Average	4.4	5.4	6.1	6.7	6.8	6.7	6.3	6.4	6.4	6.7	5.1	4.4	5.9
	Min/Max	3.2/5.8	4.2/6.8	4.8/7.9	5.1/9.1	5.7/8.3	5.5/7.9	5.3/7.6	5.5/7.8	5.0/7.6	4.7/8.3	3.1/6.3	3.3/5.8	5.5/6.2

Solar Radiation for 2-Axis Tracking Flat-Plate Collectors (kWh/m²/day), Uncertainty ±9%

Tracker		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
2-Axis	Average	4.4	5.4	6.2	7.1	7.5	7.6	7.1	6.9	6.6	6.7	5.1	4.5	6.3
	Min/Max	3.3/5.9	4.2/6.8	4.9/8.0	5.5/9.5	6.4/9.3	6.2/9.1	6.0/8.5	5.9/8.4	5.2/7.7	4.7/8.3	3.1/6.3	3.3/5.9	5.8/6.6

Direct Beam Solar Radiation for Concentrating Collectors (kWh/m²/day), Uncertainty ±8%

Tracker		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
1-Axis, E-W Horiz Axis	Average	2.4	2.8	3.0	3.3	3.4	3.4	3.1	3.0	3.0	3.6	2.8	2.6	3.0
	Min/Max	1.5/3.7	1.8/4.0	1.9/4.4	2.2/5.3	2.4/4.9	2.4/4.5	2.2/4.2	2.3/4.3	2.0/3.9	2.1/5.0	1.2/3.8	1.6/3.8	2.7/3.3
1-Axis, N-S Horiz Axis	Average	2.1	2.9	3.6	4.3	4.5	4.4	3.9	4.0	3.7	3.9	2.6	2.1	3.5
	Min/Max	1.3/3.2	1.9/4.1	2.3/5.4	2.7/7.0	3.2/6.5	3.2/5.9	2.8/5.4	2.9/5.6	2.4/5.0	2.3/5.5	1.1/3.5	1.3/3.1	3.1/3.8
1-Axis, N-S Tilt=Latitude	Average	2.7	3.5	4.0	4.4	4.3	4.1	3.7	3.9	4.0	4.6	3.3	2.8	3.8
	Min/Max	1.7/4.1	2.3/4.9	2.5/6.0	2.7/7.2	3.0/6.3	3.0/5.5	2.7/5.1	2.9/5.6	2.6/5.4	2.7/6.4	1.4/4.4	1.7/4.1	3.3/4.1
2-Axis	Average	2.9	3.6	4.0	4.5	4.6	4.5	4.0	4.0	4.0	4.6	3.4	3.0	3.9
	Min/Max	1.8/4.4	2.4/5.0	2.5/6.0	2.8/7.3	3.2/6.6	3.2/6.0	2.9/5.5	3.0/5.8	2.6/5.4	2.7/6.5	1.4/4.6	1.9/4.5	3.5/4.3

Average Climatic Conditions

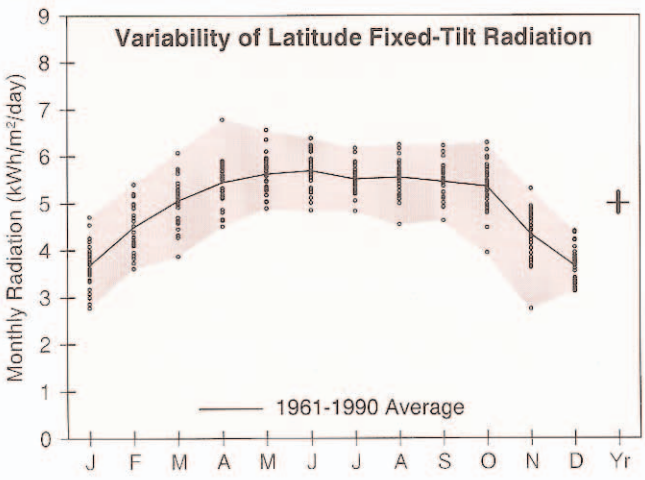
Element	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
Temperature (°C)	9.9	11.7	16.3	20.5	24.1	26.9	27.9	27.7	25.6	20.3	15.6	11.6	19.8
Daily Minimum Temp	4.2	5.8	10.1	14.4	18.2	21.3	22.9	22.6	20.4	13.9	9.4	5.8	14.1
Daily Maximum Temp	15.4	17.6	22.4	26.6	29.8	32.5	33.0	32.8	30.8	26.7	21.6	17.4	25.6
Record Minimum Temp	-12.8	-6.7	-6.7	0.0	6.7	11.7	14.4	15.0	6.1	0.0	-6.1	-13.3	-13.3
Record Maximum Temp	27.8	29.4	32.8	33.3	36.7	39.4	38.3	38.9	37.2	34.4	30.6	29.4	39.4
HDD, Base 18.3°C	272	192	94	15	0	0	0	0	0	27	109	218	927
CDD, Base 18.3°C	11	7	31	80	177	258	298	291	218	88	26	9	1494
Relative Humidity (%)	74	71	70	71	72	74	77	78	77	73	75	75	74
Wind Speed (m/s)	3.8	4.0	4.1	3.9	3.4	2.9	2.6	2.4	2.9	2.9	3.4	3.6	3.3

Lake Charles, LA

WBAN NO. 03937

LATITUDE: 30.12° N
LONGITUDE: 93.22° W
ELEVATION: 3 meters
MEAN PRESSURE: 1016 millibars

STATION TYPE: Primary



Solar Radiation for Flat-Plate Collectors Facing South at a Fixed Tilt (kWh/m²/day), Uncertainty ±9%

Tilt (°)		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
0	Average	2.7	3.6	4.5	5.4	6.0	6.3	6.0	5.6	5.0	4.3	3.2	2.6	4.6
	Min/Max	2.1/3.3	3.1/4.1	3.6/5.2	4.5/6.6	5.2/7.1	5.4/7.2	5.3/6.8	4.7/6.3	4.3/5.6	3.4/5.0	2.4/3.7	2.3/3.0	4.5/4.8
Latitude -15	Average	3.3	4.1	4.9	5.5	6.0	6.2	5.9	5.7	5.4	5.0	3.9	3.2	4.9
	Min/Max	2.5/4.1	3.4/4.9	3.8/5.8	4.6/6.9	5.2/7.0	5.2/6.9	5.2/6.6	4.7/6.5	4.6/6.1	3.8/5.8	2.6/4.6	2.8/3.8	4.7/5.1
Latitude	Average	3.7	4.5	5.1	5.4	5.6	5.7	5.5	5.6	5.4	5.4	4.3	3.7	5.0
	Min/Max	2.8/4.7	3.6/5.4	3.9/6.1	4.5/6.8	4.9/6.6	4.8/6.4	4.8/6.2	4.6/6.2	4.6/6.2	3.9/6.3	2.8/5.3	3.1/4.4	4.8/5.2
Latitude +15	Average	3.9	4.6	4.9	5.1	5.0	5.0	4.9	5.1	5.2	5.4	4.6	3.9	4.8
	Min/Max	2.9/5.1	3.6/5.6	3.8/6.0	4.2/6.3	4.4/5.8	4.2/5.5	4.3/5.4	4.2/5.7	4.4/6.0	3.9/6.4	2.8/5.7	3.3/4.8	4.6/5.0
90	Average	3.2	3.5	3.2	2.6	2.1	1.9	2.0	2.4	3.1	3.9	3.7	3.4	2.9
	Min/Max	2.4/4.3	2.7/4.3	2.4/3.9	2.3/3.1	2.0/2.3	1.8/2.0	1.8/2.0	2.1/2.6	2.7/3.6	2.7/4.6	2.1/4.8	2.8/4.2	2.8/3.1

Solar Radiation for 1-Axis Tracking Flat-Plate Collectors with a North-South Axis (kWh/m²/day), Uncertainty ±9%

Axis Tilt (°)		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
0	Average	3.6	4.7	5.8	6.8	7.5	7.9	7.4	7.1	6.4	5.8	4.3	3.4	5.9
	Min/Max	2.6/4.6	3.8/5.8	4.3/7.4	5.3/9.0	6.3/9.4	6.5/9.2	6.3/8.7	5.6/8.2	5.3/7.5	4.2/7.1	2.6/5.3	2.8/4.2	5.5/6.2
Latitude -15	Average	4.0	5.2	6.1	6.9	7.5	7.8	7.3	7.2	6.7	6.3	4.8	3.9	6.1
	Min/Max	2.9/5.2	4.1/6.4	4.5/7.8	5.4/9.3	6.3/9.4	6.4/9.1	6.3/8.6	5.6/8.4	5.5/7.9	4.4/7.7	2.8/6.0	3.2/4.8	5.8/6.5
Latitude	Average	4.3	5.4	6.2	6.9	7.2	7.5	7.0	7.0	6.8	6.6	5.2	4.3	6.2
	Min/Max	3.1/5.7	4.2/6.8	4.6/8.0	5.3/9.2	6.0/9.1	6.2/8.7	6.1/8.3	5.5/8.2	5.6/8.0	4.6/8.1	2.9/6.6	3.5/5.3	5.9/6.6
Latitude +15	Average	4.5	5.5	6.1	6.6	6.8	6.9	6.6	6.7	6.6	6.6	5.3	4.5	6.1
	Min/Max	3.2/6.0	4.2/6.9	4.5/8.0	5.1/8.8	5.7/8.5	5.7/8.1	5.7/7.8	5.2/7.8	5.4/7.8	4.5/8.1	3.0/6.8	3.6/5.6	5.7/6.4

Solar Radiation for 2-Axis Tracking Flat-Plate Collectors (kWh/m²/day), Uncertainty ±9%

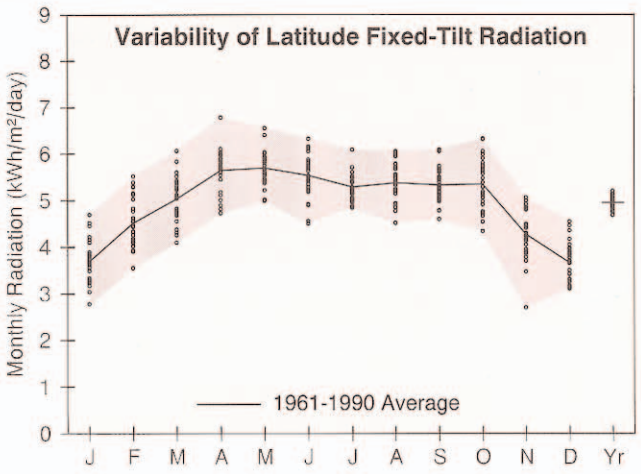
Tracker		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
2-Axis	Average	4.5	5.5	6.2	7.0	7.5	7.9	7.4	7.2	6.8	6.7	5.4	4.5	6.4
	Min/Max	3.3/6.0	4.3/6.9	4.6/8.1	5.4/9.3	6.3/9.5	6.6/9.3	6.4/8.8	5.7/8.4	5.6/8.0	4.6/8.2	3.0/6.9	3.7/5.7	6.0/6.8

Direct Beam Solar Radiation for Concentrating Collectors (kWh/m²/day), Uncertainty ±8%

Tracker		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
1-Axis, E-W Horiz Axis	Average	2.4	2.9	2.9	3.1	3.3	3.6	3.2	3.0	3.1	3.5	3.0	2.6	3.0
	Min/Max	1.4/3.8	1.7/4.0	1.8/4.3	1.9/5.0	2.4/5.0	2.6/4.6	2.5/4.3	2.0/3.9	2.1/4.0	1.9/4.8	1.0/4.5	1.8/3.6	2.8/3.4
1-Axis, N-S Horiz Axis	Average	2.1	3.0	3.5	4.1	4.3	4.6	4.1	4.0	3.8	3.8	2.8	2.1	3.5
	Min/Max	1.3/3.3	1.9/4.2	2.1/5.4	2.5/6.7	3.1/6.6	3.4/6.0	3.2/5.6	2.6/5.2	2.7/5.2	2.1/5.3	0.9/4.1	1.4/3.0	3.1/4.0
1-Axis, N-S Tilt=Latitude	Average	2.7	3.6	3.9	4.1	4.1	4.3	3.9	3.9	4.1	4.4	3.5	2.8	3.8
	Min/Max	1.6/4.3	2.2/5.0	2.3/5.9	2.5/6.8	2.9/6.3	3.1/5.6	3.0/5.3	2.5/5.1	2.8/5.5	2.4/6.1	1.1/5.2	1.9/3.9	3.3/4.3
2-Axis	Average	2.9	3.7	3.9	4.2	4.4	4.7	4.1	4.1	4.1	4.5	3.7	3.0	3.9
	Min/Max	1.7/4.6	2.3/5.1	2.3/5.9	2.6/6.9	3.1/6.7	3.4/6.1	3.3/5.7	2.6/5.3	2.8/5.5	2.4/6.2	1.2/5.4	2.1/4.3	3.5/4.5

Average Climatic Conditions

Element	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
Temperature (°C)	10.2	12.1	15.9	20.2	23.8	26.8	27.9	27.7	25.4	20.6	15.8	11.9	19.9
Daily Minimum Temp	5.1	6.7	10.4	14.8	18.7	22.0	23.1	22.8	20.3	14.4	10.0	6.4	14.6
Daily Maximum Temp	15.4	17.4	21.5	25.5	28.9	31.7	32.7	32.7	30.4	26.8	21.6	17.4	25.2
Record Minimum Temp	-9.4	-5.6	-3.9	1.1	9.4	13.3	16.1	16.1	8.3	0.0	-5.0	-11.7	-11.7
Record Maximum Temp	27.8	28.3	30.0	35.0	35.6	37.2	38.9	38.3	36.7	33.3	30.6	27.8	38.9
HDD, Base 18.3°C	259	182	99	22	0	0	0	0	0	19	107	208	898
CDD, Base 18.3°C	8	7	25	77	171	255	296	291	212	90	31	10	1472
Relative Humidity (%)	79	77	76	76	77	78	80	80	79	76	77	79	78
Wind Speed (m/s)	4.4	4.6	4.6	4.5	3.9	3.4	2.9	2.7	3.2	3.4	4.1	4.4	3.8



New Orleans, LA

WBAN NO. 12916

LATITUDE: 29.98° N
LONGITUDE: 90.25° W
ELEVATION: 3 meters
MEAN PRESSURE: 1017 millibars

STATION TYPE: Secondary

Solar Radiation for Flat-Plate Collectors Facing South at a Fixed Tilt (kWh/m²/day), Uncertainty ±9%

Tilt (°)		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
0	Average	2.7	3.6	4.5	5.5	6.1	6.1	5.7	5.5	4.9	4.3	3.1	2.6	4.6
	Min/Max	2.3/3.2	3.0/4.2	3.8/5.2	4.7/6.6	5.3/7.0	5.0/7.1	5.3/6.6	4.7/6.1	4.3/5.5	3.7/5.0	2.3/3.6	2.3/3.0	4.3/4.8
Latitude -15	Average	3.3	4.2	4.9	5.7	6.0	6.0	5.7	5.6	5.3	5.0	3.8	3.2	4.9
	Min/Max	2.6/4.1	3.3/5.0	4.0/5.8	4.8/6.9	5.3/7.0	4.8/6.9	5.2/6.5	4.7/6.3	4.6/6.0	4.1/5.8	2.5/4.4	2.8/3.9	4.6/5.1
Latitude	Average	3.7	4.5	5.0	5.6	5.7	5.5	5.3	5.4	5.3	5.3	4.3	3.7	5.0
	Min/Max	2.8/4.7	3.5/5.5	4.1/6.1	4.7/6.8	5.0/6.6	4.5/6.3	4.8/6.1	4.5/6.1	4.6/6.1	4.3/6.3	2.7/5.1	3.1/4.6	4.7/5.2
Latitude +15	Average	3.9	4.6	4.9	5.3	5.1	4.8	4.7	4.9	5.1	5.4	4.5	3.9	4.8
	Min/Max	2.8/5.1	3.6/5.7	4.0/6.0	4.4/6.3	4.4/5.8	4.0/5.4	4.3/5.3	4.1/5.5	4.4/5.9	4.3/6.5	2.7/5.4	3.3/4.9	4.5/5.0
90	Average	3.3	3.5	3.2	2.7	2.1	1.8	1.9	2.3	3.0	3.9	3.7	3.4	2.9
	Min/Max	2.3/4.4	2.7/4.4	2.6/3.9	2.3/3.0	1.9/2.2	1.7/1.9	1.8/2.0	2.1/2.5	2.7/3.5	3.0/4.7	2.1/4.5	2.7/4.4	2.7/3.0

Solar Radiation for 1-Axis Tracking Flat-Plate Collectors with a North-South Axis (kWh/m²/day), Uncertainty ±9%

Axis Tilt (°)		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
0	Average	3.6	4.7	5.8	7.1	7.7	7.6	7.0	6.8	6.3	5.8	4.2	3.5	5.8
	Min/Max	2.7/4.6	3.6/6.0	4.5/7.2	5.7/9.1	6.5/9.3	5.8/9.3	6.3/8.3	5.5/7.9	5.2/7.4	4.6/7.1	2.6/5.0	2.8/4.3	5.5/6.2
Latitude -15	Average	4.0	5.2	6.1	7.3	7.7	7.5	6.9	6.9	6.6	6.3	4.7	3.9	6.1
	Min/Max	3.0/5.2	3.9/6.6	4.8/7.6	5.8/9.3	6.5/9.3	5.8/9.1	6.2/8.2	5.5/8.0	5.4/7.7	4.9/7.8	2.8/5.7	3.2/5.0	5.7/6.5
Latitude	Average	4.3	5.5	6.3	7.3	7.4	7.2	6.7	6.7	6.6	6.6	5.1	4.3	6.2
	Min/Max	3.1/5.7	4.1/7.0	4.8/7.8	5.8/9.3	6.3/9.0	5.5/8.8	6.0/7.9	5.4/7.9	5.4/7.8	5.1/8.1	2.9/6.1	3.4/5.5	5.8/6.6
Latitude +15	Average	4.5	5.6	6.2	7.0	7.0	6.7	6.2	6.4	6.5	6.7	5.3	4.5	6.0
	Min/Max	3.2/6.0	4.1/7.1	4.7/7.8	5.5/8.9	5.9/8.5	5.1/8.1	5.6/7.4	5.1/7.5	5.3/7.6	5.1/8.2	2.9/6.4	3.6/5.8	5.6/6.4

Solar Radiation for 2-Axis Tracking Flat-Plate Collectors (kWh/m²/day), Uncertainty ±9%

Tracker		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
2-Axis	Average	4.5	5.6	6.3	7.3	7.8	7.7	7.0	6.9	6.6	6.7	5.3	4.5	6.4
	Min/Max	3.2/6.1	4.2/7.2	4.8/7.9	5.9/9.4	6.6/9.4	5.8/9.4	6.3/8.4	5.5/8.1	5.4/7.8	5.2/8.2	2.9/6.4	3.6/5.9	5.9/6.8

Direct Beam Solar Radiation for Concentrating Collectors (kWh/m²/day), Uncertainty ±8%

Tracker		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
1-Axis, E-W Horiz Axis	Average	2.4	2.9	3.0	3.5	3.6	3.5	3.0	3.0	3.0	3.6	2.9	2.6	3.1
	Min/Max	1.2/3.8	1.8/4.2	1.9/4.2	2.2/5.1	2.7/5.0	2.0/4.9	2.4/4.2	1.8/3.9	2.1/4.0	2.4/4.9	1.0/4.0	1.8/3.7	2.8/3.5
1-Axis, N-S Horiz Axis	Average	2.1	3.0	3.6	4.5	4.8	4.5	3.9	3.9	3.8	3.9	2.7	2.1	3.6
	Min/Max	1.1/3.3	1.9/4.4	2.2/5.1	2.9/6.8	3.5/6.7	2.6/6.3	3.1/5.3	2.3/5.1	2.5/5.0	2.6/5.4	0.9/3.7	1.4/3.1	3.1/4.0
1-Axis, N-S Tilt=Latitude	Average	2.7	3.6	4.0	4.6	4.6	4.2	3.6	3.8	4.0	4.5	3.4	2.8	3.8
	Min/Max	1.4/4.2	2.3/5.3	2.5/5.6	3.0/6.9	3.4/6.4	2.4/5.9	2.9/5.0	2.3/5.1	2.7/5.3	3.0/6.3	1.1/4.6	1.9/4.1	3.4/4.3
2-Axis	Average	2.9	3.7	4.0	4.7	4.8	4.5	3.9	3.9	4.1	4.6	3.6	3.0	4.0
	Min/Max	1.5/4.6	2.3/5.4	2.5/5.7	3.0/7.1	3.6/6.7	2.6/6.4	3.2/5.3	2.4/5.2	2.7/5.3	3.0/6.3	1.2/4.9	2.0/4.4	3.5/4.5

Average Climatic Conditions

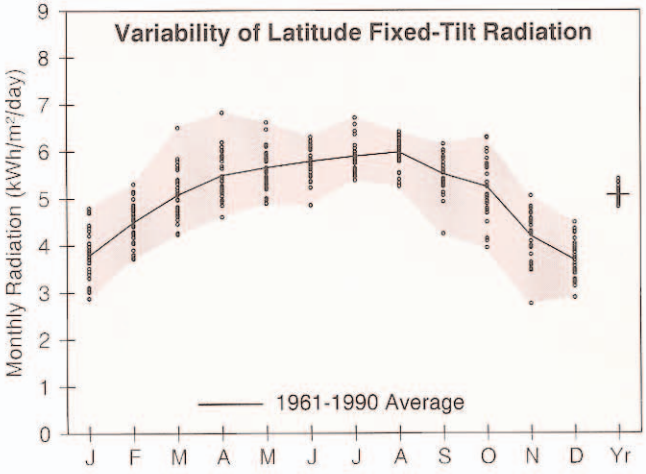
Element	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
Temperature (°C)	10.7	12.4	16.4	20.3	23.8	26.7	27.7	27.5	25.6	20.6	16.2	12.5	20.1
Daily Minimum Temp	5.4	6.9	10.9	14.7	18.4	21.6	22.8	22.7	20.8	14.8	10.6	7.1	14.7
Daily Maximum Temp	16.0	17.8	22.0	25.8	29.1	31.8	32.6	32.3	30.3	26.3	21.7	17.9	25.3
Record Minimum Temp	-10.0	-7.2	-3.9	0.0	5.0	10.0	15.6	15.6	5.6	1.7	-4.4	-11.7	-11.7
Record Maximum Temp	28.3	29.4	31.7	33.3	35.6	37.8	38.3	38.9	38.3	33.3	30.6	28.9	38.9
HDD, Base 18.3°C	250	176	90	16	0	0	0	0	0	17	99	194	841
CDD, Base 18.3°C	14	9	31	74	169	250	291	284	218	87	34	13	1475
Relative Humidity (%)	76	73	73	73	74	76	79	79	78	75	77	77	76
Wind Speed (m/s)	4.0	4.3	4.2	4.1	3.6	3.0	2.6	2.6	3.1	3.3	3.8	4.0	3.5

Shreveport, LA

WBAN NO. 13957

LATITUDE: 32.47° N
LONGITUDE: 93.82° W
ELEVATION: 79 meters
MEAN PRESSURE: 1008 millibars

STATION TYPE: Secondary



Solar Radiation for Flat-Plate Collectors Facing South at a Fixed Tilt (kWh/m²/day), Uncertainty ±9%

Tilt (°)		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
0	Average	2.6	3.4	4.4	5.4	6.0	6.4	6.4	6.0	5.0	4.1	3.0	2.5	4.6
	Min/Max	2.2/3.1	3.0/3.9	3.8/5.4	4.6/6.6	5.2/7.0	5.4/7.1	5.8/7.4	5.3/6.5	4.0/5.5	3.3/4.8	2.3/3.4	2.1/2.8	4.4/4.9
Latitude -15	Average	3.4	4.1	4.9	5.6	6.0	6.3	6.3	6.2	5.4	4.9	3.7	3.2	5.0
	Min/Max	2.7/4.2	3.5/4.8	4.1/6.2	4.7/6.9	5.2/7.0	5.3/6.8	5.8/7.2	5.4/6.7	4.2/6.0	3.8/5.8	2.6/4.4	2.6/3.8	4.8/5.3
Latitude	Average	3.8	4.5	5.1	5.5	5.7	5.8	5.9	6.0	5.5	5.2	4.2	3.7	5.1
	Min/Max	2.9/4.8	3.7/5.3	4.2/6.5	4.6/6.8	4.9/6.6	4.8/6.3	5.4/6.7	5.3/6.4	4.2/6.2	3.9/6.3	2.8/5.1	2.9/4.5	4.8/5.4
Latitude +15	Average	4.0	4.6	5.0	5.1	5.0	5.0	5.2	5.5	5.3	5.3	4.4	3.9	4.9
	Min/Max	3.0/5.2	3.7/5.5	4.1/6.4	4.3/6.3	4.4/5.8	4.2/5.4	4.8/5.8	4.8/5.9	4.0/5.9	3.9/6.4	2.8/5.4	3.0/4.9	4.6/5.2
90	Average	3.4	3.6	3.3	2.8	2.3	2.0	2.2	2.7	3.3	3.9	3.7	3.5	3.1
	Min/Max	2.4/4.5	2.8/4.4	2.7/4.3	2.4/3.3	2.1/2.5	1.9/2.1	2.0/2.3	2.4/2.8	2.5/3.7	2.8/4.8	2.2/4.6	2.6/4.4	2.9/3.3

Solar Radiation for 1-Axis Tracking Flat-Plate Collectors with a North-South Axis (kWh/m²/day), Uncertainty ±9%

Axis Tilt (°)		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
0	Average	3.6	4.6	5.8	6.9	7.6	8.1	8.2	7.8	6.5	5.6	4.1	3.4	6.0
	Min/Max	2.7/4.6	3.8/5.6	4.7/7.6	5.6/9.1	6.2/9.3	6.6/9.2	7.1/9.8	6.6/8.7	4.8/7.4	4.1/7.0	2.6/4.9	2.6/4.2	5.6/6.5
Latitude -15	Average	4.1	5.2	6.2	7.1	7.6	8.1	8.2	8.0	6.9	6.2	4.6	3.9	6.3
	Min/Max	3.0/5.3	4.1/6.3	4.9/8.2	5.7/9.4	6.2/9.4	6.5/9.1	7.1/9.8	6.7/8.8	5.0/7.8	4.4/7.8	2.9/5.7	3.0/4.9	5.9/6.9
Latitude	Average	4.4	5.4	6.3	7.0	7.4	7.7	7.9	7.8	7.0	6.5	5.0	4.3	6.4
	Min/Max	3.2/5.8	4.3/6.6	5.0/8.5	5.6/9.4	6.0/9.1	6.2/8.7	6.8/9.4	6.6/8.7	5.0/7.9	4.6/8.1	3.0/6.2	3.2/5.4	5.9/6.9
Latitude +15	Average	4.6	5.5	6.2	6.8	7.0	7.2	7.3	7.4	6.8	6.5	5.2	4.5	6.3
	Min/Max	3.3/6.1	4.3/6.8	4.9/8.4	5.4/9.0	5.6/8.5	5.8/8.1	6.4/8.8	6.3/8.3	4.9/7.8	4.6/8.2	3.0/6.4	3.3/5.7	5.8/6.8

Solar Radiation for 2-Axis Tracking Flat-Plate Collectors (kWh/m²/day), Uncertainty ±9%

Tracker		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
2-Axis	Average	4.7	5.5	6.3	7.1	7.7	8.2	8.3	8.0	7.0	6.6	5.2	4.6	6.6
	Min/Max	3.3/6.2	4.3/6.8	5.0/8.5	5.7/9.5	6.3/9.5	6.7/9.3	7.2/10.0	6.8/8.9	5.1/8.0	4.6/8.2	3.1/6.5	3.4/5.8	6.1/7.2

Direct Beam Solar Radiation for Concentrating Collectors (kWh/m²/day), Uncertainty ±8%

Tracker		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
1-Axis, E-W Horiz Axis	Average	2.6	2.9	3.0	3.3	3.5	3.8	3.9	3.7	3.2	3.5	2.9	2.7	3.3
	Min/Max	1.4/3.9	1.9/4.0	1.9/4.8	2.2/5.2	2.2/5.0	2.7/4.8	3.1/5.3	2.8/4.5	1.8/4.1	2.0/4.9	1.2/4.0	1.6/3.7	2.8/3.8
1-Axis, N-S Horiz Axis	Average	2.2	3.0	3.6	4.3	4.6	5.0	5.1	4.9	4.1	3.8	2.6	2.1	3.8
	Min/Max	1.2/3.3	2.0/4.0	2.3/5.7	2.9/6.9	2.9/6.6	3.5/6.2	4.0/7.0	3.6/6.0	2.2/5.1	2.1/5.3	1.0/3.6	1.3/3.0	3.2/4.4
1-Axis, N-S Tilt=Latitude	Average	2.9	3.6	4.1	4.4	4.4	4.6	4.8	4.9	4.4	4.5	3.4	2.9	4.1
	Min/Max	1.6/4.3	2.4/4.9	2.6/6.4	3.0/7.0	2.8/6.4	3.3/5.8	3.8/6.6	3.6/6.0	2.4/5.5	2.5/6.3	1.4/4.6	1.7/4.1	3.5/4.7
2-Axis	Average	3.1	3.7	4.1	4.5	4.7	5.0	5.2	5.0	4.4	4.5	3.6	3.1	4.2
	Min/Max	1.8/4.6	2.4/5.0	2.6/6.4	3.0/7.2	3.0/6.7	3.5/6.3	4.1/7.1	3.7/6.2	2.4/5.5	2.5/6.4	1.4/4.9	1.9/4.4	3.6/4.9

Average Climatic Conditions

Element	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
Temperature (°C)	7.3	9.6	14.2	18.7	22.6	26.3	28.2	27.9	24.8	19.2	13.7	8.9	18.4
Daily Minimum Temp	1.6	3.3	7.7	12.3	16.7	20.6	22.4	21.8	18.9	12.4	7.4	2.9	12.3
Daily Maximum Temp	13.0	15.9	20.7	25.1	28.4	32.1	33.9	33.9	30.7	25.9	20.0	14.7	24.6
Record Minimum Temp	-16.1	-11.1	-6.7	-0.6	5.6	11.1	14.4	12.2	5.6	-1.7	-8.9	-15.0	-16.1
Record Maximum Temp	28.9	31.7	33.3	34.4	35.0	38.3	41.1	41.7	39.4	36.1	31.1	28.9	41.7
HDD, Base 18.3°C	346	249	146	38	0	0	0	0	0	35	147	297	1258
CDD, Base 18.3°C	3	4	17	48	133	240	305	296	195	61	8	4	1316
Relative Humidity (%)	73	70	68	70	73	73	72	72	74	72	74	74	72
Wind Speed (m/s)	3.9	4.2	4.4	4.2	3.7	3.3	3.1	2.9	3.2	3.2	3.8	3.9	3.6