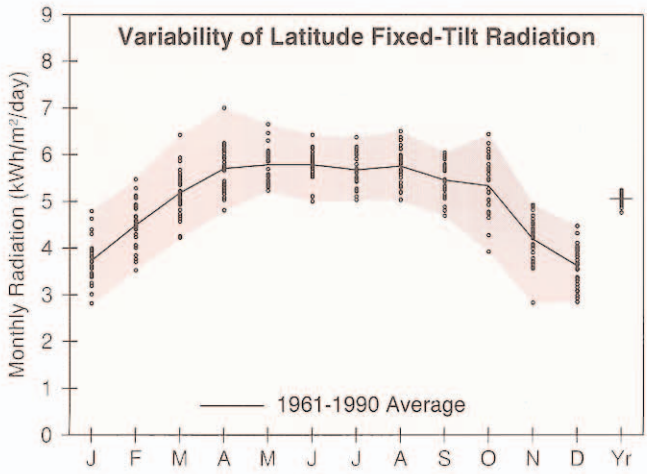
Jackson, MS

WBAN NO. 03940

LATITUDE: 32.32° N
LONGITUDE: 90.08° W
ELEVATION: 101 meters
MEAN PRESSURE: 1006 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	4.5	5.5	6.1	6.4	6.2	5.8	4.9	4.2	3.0	2.4	4.6
	Min/Max	2.2/3.1	2.9/4.0	3.8/5.4	4.8/6.7	5.6/7.1	5.5/7.2	5.4/6.9	5.1/6.5	4.3/5.4	3.3/4.9	2.3/3.3	2.1/2.8	4.3/4.8
Latitude -15	Average	3.3	4.1	5.0	5.8	6.1	6.3	6.1	6.0	5.4	5.0	3.7	3.2	5.0
	Min/Max	2.6/4.1	3.3/4.9	4.1/6.1	4.9/7.1	5.5/7.1	5.4/7.0	5.4/6.8	5.2/6.7	4.7/5.9	3.8/5.9	2.7/4.3	2.6/3.8	4.7/5.2
Latitude	Average	3.7	4.5	5.2	5.7	5.8	5.8	5.7	5.8	5.5	5.3	4.2	3.6	5.1
	Min/Max	2.8/4.8	3.5/5.5	4.2/6.4	4.8/7.0	5.2/6.7	5.0/6.4	5.0/6.4	5.0/6.5	4.7/6.0	3.9/6.4	2.8/4.9	2.8/4.5	4.8/5.2
Latitude +15	Average	4.0	4.6	5.1	5.3	5.1	5.0	5.0	5.3	5.2	5.4	4.4	3.9	4.9
	Min/Max	2.9/5.2	3.5/5.7	4.1/6.3	4.5/6.5	4.7/5.9	4.4/5.5	4.4/5.6	4.6/5.9	4.5/5.8	3.9/6.6	2.9/5.2	3.0/4.8	4.6/5.0
90	Average	3.4	3.6	3.4	2.9	2.3	2.0	2.1	2.6	3.2	4.0	3.7	3.4	3.0
	Min/Max	2.4/4.6	2.7/4.6	2.7/4.2	2.5/3.4	2.1/2.5	1.9/2.1	2.0/2.2	2.4/2.9	2.8/3.6	2.8/4.9	2.3/4.4	2.5/4.4	2.9/3.2

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	5.9	7.2	7.8	8.1	7.7	7.4	6.4	5.7	4.1	3.3	6.0
	Min/Max	2.6/4.6	3.6/5.8	4.8/7.6	5.9/9.4	6.8/9.5	6.5/9.4	6.5/9.1	6.1/8.6	5.4/7.2	4.2/7.0	2.7/4.8	2.6/4.1	5.5/6.3
Latitude -15	Average	4.1	5.2	6.4	7.4	7.8	8.0	7.7	7.5	6.8	6.3	4.6	3.9	6.3
	Min/Max	2.9/5.3	3.9/6.5	5.0/8.1	6.0/9.7	6.8/9.5	6.5/9.3	6.4/9.0	6.2/8.8	5.7/7.6	4.5/7.8	2.9/5.5	2.9/4.8	5.8/6.6
Latitude	Average	4.4	5.4	6.5	7.3	7.6	7.7	7.4	7.4	6.8	6.6	5.0	4.2	6.4
	Min/Max	3.1/5.8	4.1/6.9	5.1/8.4	6.0/9.6	6.6/9.3	6.2/8.9	6.2/8.7	6.1/8.7	5.7/7.7	4.7/8.2	3.1/6.0	3.2/5.3	5.9/6.7
Latitude +15	Average	4.6	5.5	6.4	7.1	7.1	7.1	6.9	7.0	6.7	6.6	5.2	4.4	6.2
	Min/Max	3.2/6.1	4.1/7.0	5.0/8.3	5.7/9.3	6.2/8.7	5.8/8.3	5.8/8.1	5.8/8.3	5.6/7.6	4.6/8.3	3.1/6.2	3.3/5.6	5.8/6.5

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

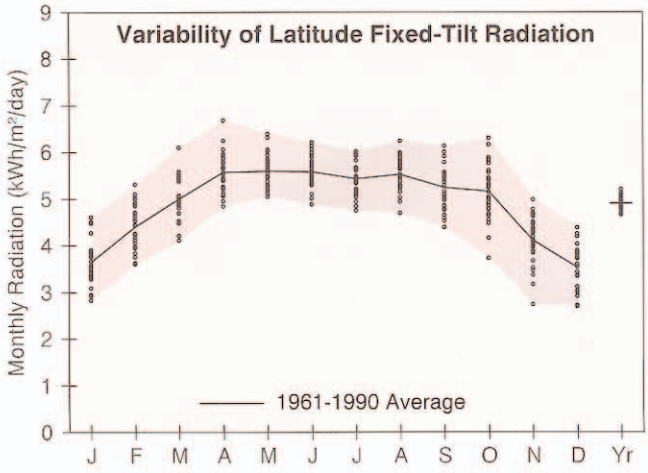
Tracker		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
2-Axis	Average	4.6	5.6	6.5	7.4	7.9	8.2	7.8	7.6	6.8	6.7	5.2	4.5	6.6
	Min/Max	3.2/6.2	4.1/7.1	5.1/8.4	6.1/9.8	6.9/9.6	6.6/9.5	6.5/9.2	6.3/8.8	5.7/7.8	4.7/8.3	3.1/6.3	3.3/5.7	6.1/6.9

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	3.0	3.2	3.5	3.7	3.8	3.5	3.4	3.2	3.6	2.9	2.6	3.2
	Min/Max	1.4/4.0	1.8/4.2	2.1/4.8	2.5/5.4	2.9/5.0	2.5/4.9	2.5/4.5	2.3/4.5	2.3/3.9	2.1/4.9	1.3/3.9	1.5/3.7	2.9/3.5
1-Axis, N-S Horiz Axis	Average	2.2	3.0	3.8	4.6	4.8	4.9	4.5	4.5	3.9	3.9	2.6	2.1	3.7
	Min/Max	1.1/3.4	1.8/4.2	2.6/5.8	3.3/7.2	3.8/6.7	3.2/6.4	3.2/5.9	3.0/5.9	2.9/4.9	2.3/5.2	1.1/3.4	1.2/2.9	3.3/4.1
1-Axis, N-S Tilt=Latitude	Average	2.9	3.7	4.3	4.7	4.6	4.6	4.2	4.5	4.3	4.6	3.4	2.8	4.0
	Min/Max	1.5/4.5	2.2/5.2	2.9/6.4	3.4/7.4	3.6/6.5	3.0/6.0	3.0/5.6	3.0/5.8	3.1/5.3	2.7/6.2	1.4/4.4	1.6/4.0	3.6/4.4
2-Axis	Average	3.1	3.8	4.3	4.8	4.9	4.9	4.6	4.6	4.3	4.6	3.6	3.1	4.2
	Min/Max	1.6/4.8	2.2/5.3	2.9/6.5	3.4/7.5	3.8/6.8	3.2/6.5	3.3/6.0	3.1/6.0	3.1/5.3	2.7/6.3	1.5/4.7	1.8/4.4	3.7/4.6

Average Climatic Conditions

Element	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
Temperature (°C)	6.7	8.8	13.7	18.1	22.2	26.0	27.5	27.2	24.4	18.2	13.2	8.8	17.9
Daily Minimum Temp	0.4	2.1	6.7	11.1	15.6	19.5	21.4	20.9	17.6	10.2	5.7	2.3	11.1
Daily Maximum Temp	13.1	15.6	20.7	25.2	28.9	32.6	33.6	33.3	31.1	26.2	20.7	15.3	24.7
Record Minimum Temp	-16.7	-11.7	-9.4	-2.8	3.3	8.3	10.6	12.8	1.7	-1.7	-8.3	-15.6	-16.7
Record Maximum Temp	27.8	29.4	31.7	34.4	37.2	40.6	41.1	38.9	40.0	35.0	31.1	28.9	41.1
HDD, Base 18.3°C	364	269	158	48	4	0	0	0	3	58	164	301	1371
CDD, Base 18.3°C	4	3	16	42	124	230	284	274	185	52	11	5	1231
Relative Humidity (%)	76	73	71	71	73	74	77	77	77	74	76	76	75
Wind Speed (m/s)	3.7	3.8	4.0	3.7	3.2	2.8	2.6	2.5	2.9	2.9	3.4	3.8	3.3



Meridian, MS

WBAN NO. 13865

LATITUDE: 32.33° N
LONGITUDE: 88.75° W
ELEVATION: 94 meters
MEAN PRESSURE: 1007 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	5.9	6.2	5.9	5.6	4.8	4.1	2.9	2.4	4.5
	Min/Max	2.2/3.0	3.0/3.9	3.7/5.1	4.8/6.4	5.4/6.8	5.3/6.9	5.2/6.5	4.8/6.3	4.1/5.5	3.2/4.8	2.3/3.4	2.0/2.8	4.2/4.7
Latitude -15	Average	3.2	4.1	4.8	5.7	5.9	6.0	5.8	5.7	5.2	4.8	3.7	3.1	4.8
	Min/Max	2.6/4.0	3.4/4.8	4.1/5.8	4.9/6.8	5.4/6.8	5.2/6.7	5.1/6.4	4.9/6.4	4.4/6.0	3.6/5.8	2.6/4.4	2.5/3.8	4.6/5.1
Latitude	Average	3.6	4.4	5.0	5.6	5.6	5.6	5.4	5.5	5.2	5.2	4.1	3.5	4.9
	Min/Max	2.8/4.6	3.6/5.3	4.1/6.1	4.8/6.7	5.1/6.4	4.9/6.2	4.8/6.0	4.7/6.2	4.4/6.1	3.7/6.3	2.7/5.0	2.7/4.4	4.7/5.2
Latitude +15	Average	3.8	4.5	4.9	5.2	5.0	4.9	4.8	5.0	5.0	5.2	4.3	3.8	4.7
	Min/Max	2.9/5.0	3.6/5.5	4.0/6.0	4.5/6.2	4.5/5.7	4.3/5.4	4.2/5.3	4.3/5.7	4.2/5.9	3.7/6.4	2.8/5.3	2.8/4.8	4.5/5.0
90	Average	3.3	3.5	3.3	2.8	2.2	2.0	2.1	2.6	3.1	3.9	3.6	3.3	3.0
	Min/Max	2.4/4.4	2.8/4.4	2.7/4.0	2.5/3.3	2.1/2.4	1.9/2.1	2.0/2.2	2.3/2.8	2.6/3.7	2.6/4.8	2.2/4.5	2.3/4.3	2.8/3.2

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	7.0	7.5	7.7	7.2	7.0	6.1	5.5	4.0	3.2	5.7
	Min/Max	2.7/4.4	3.6/5.6	4.6/7.1	5.8/8.9	6.5/8.9	6.3/9.0	6.2/8.4	5.6/8.1	4.9/7.3	3.8/6.9	2.6/4.8	2.5/4.0	5.4/6.2
Latitude -15	Average	4.0	5.1	6.1	7.2	7.5	7.6	7.2	7.1	6.5	6.1	4.5	3.8	6.0
	Min/Max	3.0/5.1	4.0/6.3	4.8/7.7	5.9/9.1	6.5/8.9	6.2/8.9	6.1/8.4	5.7/8.2	5.1/7.8	4.1/7.6	2.8/5.6	2.8/4.7	5.6/6.5
Latitude	Average	4.3	5.3	6.2	7.1	7.2	7.3	6.9	7.0	6.5	6.4	4.9	4.1	6.1
	Min/Max	3.1/5.6	4.1/6.7	4.9/7.8	5.9/9.1	6.3/8.6	5.9/8.5	5.9/8.1	5.6/8.1	5.1/7.8	4.3/8.0	3.0/6.1	3.0/5.2	5.7/6.6
Latitude +15	Average	4.4	5.4	6.1	6.8	6.8	6.8	6.5	6.6	6.3	6.4	5.0	4.3	6.0
	Min/Max	3.2/5.9	4.2/6.8	4.8/7.8	5.6/8.7	5.9/8.1	5.5/7.9	5.5/7.6	5.3/7.7	4.9/7.7	4.2/8.1	3.0/6.3	3.0/5.5	5.6/6.5

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	5.4	6.2	7.2	7.6	7.8	7.3	7.1	6.5	6.4	5.1	4.4	6.3
	Min/Max	3.2/6.0	4.2/6.9	4.9/7.9	6.0/9.2	6.6/9.0	6.3/9.1	6.2/8.5	5.7/8.3	5.1/7.9	4.3/8.1	3.0/6.3	3.1/5.6	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	2.5	2.8	2.9	3.3	3.3	3.4	3.1	3.0	2.9	3.4	2.8	2.5	3.0
	Min/Max	1.3/3.7	1.8/4.1	1.9/4.3	2.4/4.9	2.5/4.5	2.3/4.4	2.1/4.0	1.9/3.9	1.9/3.9	1.7/4.7	1.2/3.9	1.4/3.5	2.7/3.4
1-Axis, N-S Horiz Axis	Average	2.1	2.9	3.5	4.4	4.4	4.4	4.0	3.9	3.6	3.6	2.5	2.0	3.4
	Min/Max	1.1/3.2	1.7/4.1	2.3/5.1	3.1/6.5	3.3/6.0	2.9/5.8	2.8/5.3	2.5/5.1	2.3/4.8	1.8/5.1	1.0/3.4	1.0/2.8	3.0/4.0
1-Axis, N-S Tilt=Latitude	Average	2.8	3.5	3.9	4.5	4.2	4.1	3.8	3.9	3.9	4.3	3.2	2.7	3.7
	Min/Max	1.5/4.2	2.2/5.1	2.6/5.7	3.2/6.7	3.1/5.8	2.7/5.4	2.6/5.0	2.5/5.1	2.5/5.2	2.1/6.0	1.3/4.5	1.4/3.8	3.3/4.3
2-Axis	Average	2.9	3.6	3.9	4.5	4.5	4.4	4.0	4.0	3.9	4.3	3.4	2.9	3.9
	Min/Max	1.6/4.5	2.2/5.2	2.6/5.7	3.3/6.8	3.3/6.1	2.9/5.9	2.8/5.4	2.6/5.2	2.5/5.3	2.2/6.1	1.4/4.7	1.6/4.2	3.5/4.5

Average Climatic Conditions

Element	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
Temperature (°C)	7.2	9.4	13.7	17.8	21.8	25.6	27.2	27.0	24.1	17.8	13.1	9.1	17.8
Daily Minimum Temp	0.8	2.6	6.4	10.5	14.9	18.9	21.1	20.7	17.7	10.3	5.8	2.6	11.0
Daily Maximum Temp	13.6	16.2	20.9	25.2	28.7	32.2	33.4	33.2	30.5	25.4	20.3	15.6	24.6
Record Minimum Temp	-17.8	-13.3	-9.4	-2.2	3.3	5.6	12.8	11.7	1.1	-4.4	-8.9	-16.7	-17.8
Record Maximum Temp	28.3	29.4	32.2	35.0	37.2	40.0	41.7	40.0	40.6	36.1	30.6	27.8	41.7
HDD, Base 18.3°C	349	253	162	55	8	0	0	0	3	68	167	292	1358
CDD, Base 18.3°C	4	3	17	40	117	218	276	269	177	53	9	6	1188
Relative Humidity (%)	74	71	70	71	73	74	77	77	76	75	75	75	74
Wind Speed (m/s)	3.2	3.4	3.5	3.2	2.6	2.3	2.1	2.1	2.4	2.3	2.8	3.2	2.7