

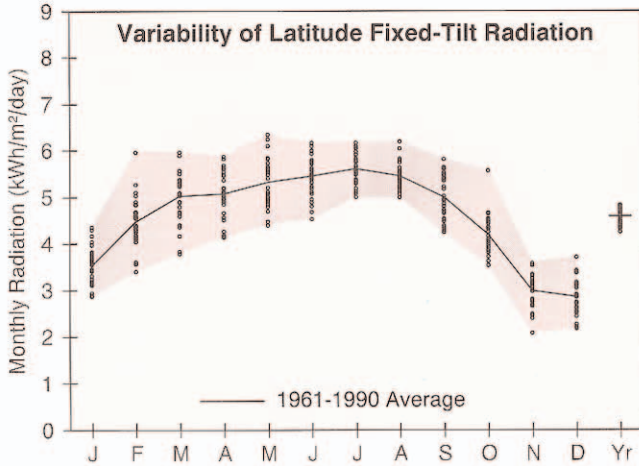
LATITUDE: 43.20° N

LONGITUDE: 71.50° W

ELEVATION: 105 meters

MEAN PRESSURE: 1003 millibars

STATION TYPE: Secondary



Solar Radiation for Flat-Plate Collectors Facing South at a Fixed Tilt (kWh/m²/day), Uncertainty ±11%

Tilt (°)		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
0	Average	1.9	2.8	3.9	4.7	5.6	6.1	6.1	5.3	4.2	2.9	1.8	1.5	3.9
	Min/Max	1.6/2.2	2.3/3.4	3.2/4.5	4.0/5.3	4.7/6.6	5.1/6.9	5.5/6.7	4.9/5.9	3.7/4.7	2.5/3.6	1.4/2.0	1.3/1.7	3.7/4.1
Latitude -15	Average	3.1	4.1	4.8	5.2	5.7	5.9	6.0	5.7	5.0	3.9	2.7	2.5	4.6
	Min/Max	2.6/3.8	3.1/5.3	3.7/5.7	4.3/6.0	4.7/6.8	4.9/6.7	5.4/6.6	5.2/6.4	4.3/5.7	3.3/5.2	1.9/3.2	1.9/3.2	4.2/4.8
Latitude	Average	3.5	4.5	5.0	5.1	5.3	5.4	5.6	5.5	5.0	4.2	3.0	2.8	4.6
	Min/Max	2.9/4.3	3.4/6.0	3.8/6.0	4.1/5.9	4.4/6.3	4.5/6.2	5.0/6.2	5.0/6.2	4.2/5.8	3.5/5.6	2.1/3.6	2.2/3.7	4.2/4.8
Latitude +15	Average	3.8	4.7	5.0	4.7	4.7	4.7	4.9	4.9	4.8	4.2	3.1	3.1	4.4
	Min/Max	3.0/4.7	3.5/6.3	3.7/6.0	3.8/5.4	3.9/5.6	4.0/5.3	4.4/5.4	4.5/5.6	4.0/5.6	3.5/5.7	2.1/3.8	2.3/4.1	4.0/4.6
90	Average	3.7	4.3	4.1	3.2	2.8	2.6	2.8	3.1	3.5	3.5	2.8	3.0	3.3
	Min/Max	2.9/4.6	3.3/5.9	2.9/5.2	2.6/3.8	2.4/3.3	2.3/2.9	2.5/3.0	2.9/3.6	2.9/4.1	2.9/4.7	1.8/3.4	2.1/4.0	3.0/3.5

Solar Radiation for 1-Axis Tracking Flat-Plate Collectors with a North-South Axis (kWh/m²/day), Uncertainty ±11%

Axis Tilt (°)		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
0	Average	2.8	4.1	5.4	6.3	7.2	7.9	7.9	7.1	5.6	4.1	2.5	2.2	5.3
	Min/Max	2.2/3.5	3.2/5.5	4.0/6.6	4.9/7.4	5.5/8.9	6.0/9.4	6.8/8.9	6.3/8.1	4.7/6.7	3.5/5.5	1.7/3.0	1.6/2.8	4.8/5.6
Latitude -15	Average	3.7	5.0	6.1	6.7	7.4	7.9	7.9	7.4	6.3	4.8	3.2	2.9	5.8
	Min/Max	3.0/4.6	3.8/6.9	4.4/7.4	5.1/8.0	5.6/9.2	6.0/9.4	6.9/9.0	6.6/8.5	5.2/7.5	4.1/6.7	2.1/3.8	2.2/3.9	5.3/6.2
Latitude	Average	4.1	5.4	6.3	6.6	7.1	7.5	7.7	7.3	6.3	5.0	3.4	3.2	5.8
	Min/Max	3.3/5.1	4.0/7.4	4.5/7.6	5.0/7.9	5.4/8.9	5.7/9.1	6.7/8.7	6.4/8.4	5.2/7.5	4.2/7.0	2.3/4.2	2.4/4.3	5.3/6.2
Latitude +15	Average	4.3	5.5	6.2	6.3	6.7	7.0	7.2	6.9	6.1	5.1	3.5	3.4	5.7
	Min/Max	3.4/5.4	4.1/7.6	4.4/7.6	4.8/7.6	5.0/8.4	5.3/8.5	6.2/8.1	6.1/8.0	5.0/7.4	4.2/7.0	2.3/4.3	2.5/4.6	5.2/6.1

Solar Radiation for 2-Axis Tracking Flat-Plate Collectors (kWh/m²/day), Uncertainty ±11%

Tracker		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
2-Axis	Average	4.3	5.5	6.3	6.7	7.5	8.1	8.1	7.4	6.3	5.1	3.5	3.5	6.0
	Min/Max	3.4/5.4	4.1/7.6	4.5/7.6	5.1/8.0	5.7/9.3	6.2/9.7	7.1/9.2	6.6/8.6	5.2/7.6	4.2/7.0	2.3/4.3	2.5/4.7	5.5/6.4

Direct Beam Solar Radiation for Concentrating Collectors (kWh/m²/day), Uncertainty ±11%

Tracker		Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
1-Axis, E-W Horiz Axis	Average	2.4	2.7	2.8	3.0	3.3	3.6	3.7	3.4	3.0	2.7	1.9	1.9	2.9
	Min/Max	1.6/3.2	1.8/4.4	1.5/3.7	1.9/3.9	1.9/4.7	2.1/4.8	3.0/4.5	2.7/4.2	2.2/4.0	2.0/4.3	1.1/2.6	0.9/2.9	2.4/3.2
1-Axis, N-S Horiz Axis	Average	1.6	2.3	3.1	3.8	4.4	4.8	4.9	4.4	3.5	2.5	1.4	1.2	3.2
	Min/Max	1.1/2.1	1.6/3.9	1.7/4.0	2.4/5.1	2.5/6.2	2.8/6.5	3.9/5.9	3.5/5.5	2.6/4.7	1.9/4.1	0.8/1.9	0.6/1.8	2.6/3.6
1-Axis, N-S Tilt=Latitude	Average	2.6	3.3	3.8	4.1	4.3	4.6	4.7	4.6	4.1	3.4	2.2	2.0	3.6
	Min/Max	1.7/3.4	2.2/5.4	2.1/4.8	2.6/5.4	2.5/6.1	2.6/6.2	3.8/5.7	3.7/5.7	3.0/5.4	2.5/5.4	1.2/2.9	1.0/3.0	3.0/4.0
2-Axis	Average	2.8	3.4	3.8	4.2	4.6	5.0	5.1	4.7	4.1	3.4	2.3	2.2	3.8
	Min/Max	1.8/3.6	2.3/5.5	2.1/4.8	2.6/5.5	2.6/6.5	2.9/6.7	4.1/6.1	3.8/5.9	3.0/5.4	2.6/5.4	1.3/3.1	1.1/3.3	3.1/4.2

Average Climatic Conditions

Element	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
Temperature (°C)	-7.4	-5.7	0.2	6.6	12.9	17.9	20.8	19.6	14.9	8.8	2.8	-4.3	7.3
Daily Minimum Temp	-13.7	-12.0	-5.5	-0.3	5.2	10.7	13.6	12.6	7.8	1.6	-2.8	-9.8	0.6
Daily Maximum Temp	-1.2	0.6	6.0	13.5	20.5	25.2	28.0	26.6	22.0	15.9	8.4	1.2	13.9
Record Minimum Temp	-36.1	-38.3	-26.7	-13.3	-6.1	-1.1	1.7	-1.7	-6.1	-12.2	-20.6	-30.0	-38.3
Record Maximum Temp	20.0	18.9	29.4	35.0	36.1	36.7	38.9	38.3	36.7	32.2	26.7	20.0	38.9
HDD, Base 18.3°C	799	672	562	352	173	39	7	22	109	296	465	701	4197
CDD, Base 18.3°C	0	0	0	0	4	26	85	62	6	0	0	0	182
Relative Humidity (%)	68	66	65	62	65	71	72	75	76	73	73	72	70
Wind Speed (m/s)	3.0	3.2	3.5	3.5	3.0	2.9	2.5	2.4	2.4	2.5	3.0	3.0	3.0