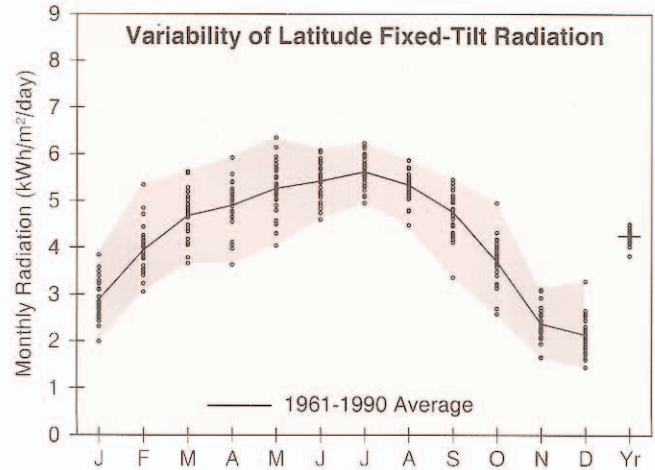


Burlington, VT

WBAN NO. 14742

LATITUDE: 44.47° N
 LONGITUDE: 73.15° W
 ELEVATION: 104 meters
 MEAN PRESSURE: 1003 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	1.6	2.6	3.6	4.6	5.5	6.0	6.1	5.2	4.0	2.6	1.6	1.2	3.7
	Min/Max	1.2/2.0	2.1/3.1	3.0/4.3	3.5/5.3	4.3/6.6	5.2/6.8	5.4/6.7	4.4/5.7	3.1/4.4	2.0/3.3	1.2/1.8	0.9/1.6	3.4/3.9
Latitude -15	Average	2.6	3.6	4.5	5.0	5.6	5.9	6.1	5.6	4.7	3.5	2.2	1.9	4.3
	Min/Max	1.8/3.4	2.8/4.8	3.6/5.4	3.7/6.0	4.3/6.8	5.0/6.6	5.3/6.7	4.7/6.1	3.4/5.4	2.5/4.6	1.6/2.8	1.3/2.8	3.9/4.5
Latitude	Average	2.9	3.9	4.7	4.9	5.3	5.4	5.6	5.3	4.8	3.7	2.4	2.1	4.3
	Min/Max	2.0/3.8	3.0/5.3	3.7/5.6	3.6/5.9	4.0/6.3	4.6/6.1	4.9/6.2	4.5/5.9	3.4/5.4	2.6/4.9	1.6/3.1	1.4/3.3	3.8/4.5
Latitude +15	Average	3.1	4.1	4.6	4.5	4.6	4.7	4.9	4.8	4.5	3.7	2.4	2.2	4.0
	Min/Max	2.1/4.1	3.1/5.6	3.5/5.6	3.4/5.5	3.6/5.6	4.0/5.2	4.3/5.4	4.1/5.3	3.1/5.2	2.5/5.0	1.6/3.2	1.5/3.6	3.6/4.3
90	Average	3.0	3.8	3.9	3.2	2.9	2.7	2.9	3.2	3.4	3.1	2.2	2.2	3.0
	Min/Max	2.0/4.1	2.8/5.3	2.8/4.9	2.4/3.8	2.3/3.3	2.5/3.0	2.6/3.2	2.7/3.5	2.3/3.9	2.1/4.2	1.4/3.0	1.5/3.5	2.7/3.2

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	2.3	3.6	5.0	6.0	7.1	7.7	7.9	6.9	5.4	3.6	2.0	1.7	4.9
	Min/Max	1.5/3.0	2.8/4.9	3.7/6.0	4.1/7.3	5.0/8.8	6.0/9.2	6.9/9.0	5.6/7.8	3.8/6.2	2.4/4.8	1.4/2.6	1.1/2.5	4.3/5.3
Latitude -15	Average	3.0	4.4	5.7	6.4	7.3	7.8	8.0	7.2	6.0	4.2	2.5	2.2	5.4
	Min/Max	2.0/4.1	3.3/6.1	4.2/6.9	4.4/7.9	5.1/9.1	5.9/9.3	7.0/9.1	5.8/8.3	4.0/7.0	2.8/5.8	1.7/3.4	1.4/3.4	4.7/5.8
Latitude	Average	3.3	4.6	5.8	6.3	7.0	7.4	7.7	7.1	6.0	4.4	2.6	2.4	5.4
	Min/Max	2.2/4.4	3.5/6.6	4.2/7.1	4.3/7.9	4.9/8.9	5.7/8.9	6.7/8.8	5.7/8.1	4.0/7.1	2.9/6.1	1.8/3.6	1.6/3.8	4.7/5.8
Latitude +15	Average	3.4	4.8	5.7	6.1	6.6	6.9	7.2	6.7	5.8	4.4	2.7	2.5	5.2
	Min/Max	2.3/4.7	3.6/6.7	4.2/7.1	4.1/7.5	4.6/8.3	5.3/8.3	6.3/8.3	5.4/7.7	3.8/6.9	2.9/6.1	1.8/3.7	1.6/4.0	4.5/5.6

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	3.5	4.8	5.8	6.4	7.4	8.0	8.2	7.3	6.0	4.4	2.7	2.5	5.6
	Min/Max	2.3/4.7	3.6/6.7	4.3/7.1	4.4/7.9	5.2/9.2	6.1/9.5	7.1/9.3	5.8/8.3	4.0/7.1	3.0/6.2	1.8/3.8	1.6/4.1	4.9/6.0

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	1.7	2.2	2.5	2.8	3.2	3.5	3.7	3.2	2.8	2.2	1.3	1.2	2.5
	Min/Max	1.0/2.5	1.5/3.6	1.6/3.5	1.6/3.9	1.7/4.8	2.0/4.6	2.9/4.5	2.2/3.9	1.4/3.6	1.1/3.5	0.7/2.2	0.7/2.3	2.1/2.8
1-Axis, N-S Horiz Axis	Average	1.1	1.8	2.8	3.5	4.2	4.6	4.9	4.2	3.3	2.1	0.9	0.7	2.8
	Min/Max	0.6/1.7	1.3/3.1	1.7/3.7	2.0/4.9	2.1/6.2	2.6/6.2	3.9/5.9	2.8/5.2	1.7/4.2	1.0/3.3	0.5/1.7	0.4/1.4	2.3/3.1
1-Axis, N-S Tilt=Latitude	Average	1.8	2.6	3.4	3.8	4.2	4.4	4.7	4.3	3.8	2.8	1.4	1.2	3.2
	Min/Max	1.0/2.8	1.8/4.3	2.1/4.6	2.1/5.3	2.1/6.2	2.5/5.9	3.7/5.7	2.9/5.4	1.9/4.9	1.3/4.4	0.7/2.5	0.7/2.4	2.6/3.5
2-Axis	Average	2.0	2.7	3.4	3.9	4.4	4.8	5.1	4.5	3.8	2.8	1.5	1.3	3.3
	Min/Max	1.1/2.9	1.9/4.4	2.1/4.6	2.2/5.4	2.2/6.6	2.7/6.4	4.0/6.1	3.0/5.5	1.9/4.9	1.4/4.4	0.8/2.7	0.8/2.6	2.8/3.7

Average Climatic Conditions

Element	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
Temperature (°C)	-8.7	-7.7	-0.7	6.6	13.5	18.4	21.4	19.9	14.9	8.8	2.7	-5.0	7.0
Daily Minimum Temp	-13.6	-12.8	-5.6	1.2	7.4	12.6	15.4	14.4	9.3	3.7	-1.3	-9.2	1.8
Daily Maximum Temp	-3.8	-2.5	4.1	12.0	19.6	24.3	27.3	25.5	20.6	13.9	6.7	-0.9	12.2
Record Minimum Temp	-34.4	-34.4	-28.9	-16.7	-4.4	0.6	3.9	1.7	-3.9	-9.4	-18.9	-32.2	-34.4
Record Maximum Temp	17.2	16.7	28.9	32.8	33.9	36.1	37.2	38.3	34.4	29.4	23.9	18.3	38.3
HDD, Base 18.3°C	839	728	591	352	157	32	3	16	111	296	470	723	4317
CDD, Base 18.3°C	0	0	0	0	7	36	98	66	9	0	0	0	216
Relative Humidity (%)	68	67	66	64	66	69	70	73	75	73	73	73	70
Wind Speed (m/s)	4.3	4.1	4.3	4.2	4.0	3.8	3.6	3.4	3.7	3.9	4.4	4.5	4.0