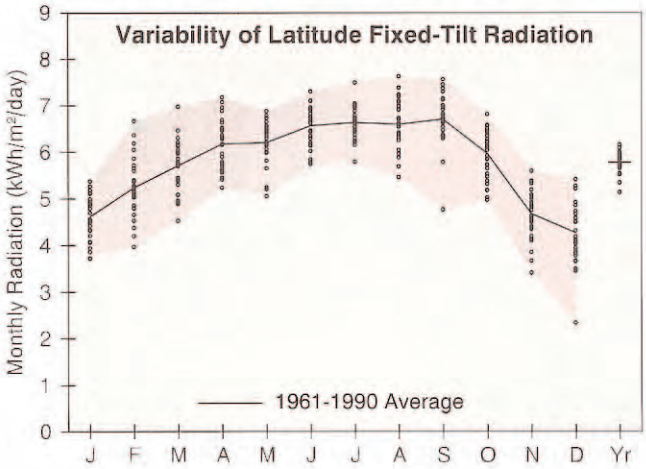

Ely, NV

WBAN NO. 23154

LATITUDE: 39.28° N
LONGITUDE: 114.85° W
ELEVATION: 1906 meters
MEAN PRESSURE: 809 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	2.6	3.4	4.5	5.8	6.6	7.5	7.3	6.5	5.6	4.1	2.8	2.2	4.9
	Min/Max	2.2/2.9	2.8/4.1	3.8/5.3	5.0/6.6	5.5/7.4	6.5/8.3	6.3/8.3	5.5/7.5	4.2/6.2	3.6/4.6	2.3/3.1	1.6/2.6	4.5/5.1
Latitude -15	Average	4.0	4.7	5.5	6.3	6.6	7.2	7.2	6.9	6.6	5.5	4.1	3.6	5.7
	Min/Max	3.3/4.6	3.6/5.9	4.4/6.6	5.3/7.3	5.4/7.4	6.3/8.0	6.3/8.2	5.7/7.9	4.8/7.4	4.7/6.2	3.1/4.9	2.1/4.6	5.1/6.0
Latitude	Average	4.6	5.2	5.7	6.2	6.2	6.6	6.6	6.6	6.7	6.0	4.7	4.3	5.8
	Min/Max	3.7/5.4	4.0/6.7	4.5/7.0	5.2/7.2	5.1/6.9	5.8/7.3	5.8/7.5	5.5/7.6	4.8/7.6	5.0/6.8	3.4/5.6	2.3/5.4	5.1/6.2
Latitude +15	Average	5.0	5.5	5.6	5.7	5.5	5.6	5.7	6.0	6.5	6.1	5.0	4.7	5.6
	Min/Max	4.0/5.9	4.1/7.1	4.4/7.0	4.9/6.7	4.5/6.1	5.0/6.3	5.1/6.5	4.9/6.9	4.5/7.3	5.0/7.0	3.6/6.0	2.5/5.9	4.9/6.0
90	Average	4.8	4.8	4.3	3.6	2.9	2.6	2.8	3.4	4.4	4.9	4.5	4.5	4.0
	Min/Max	3.7/5.7	3.6/6.3	3.3/5.7	3.2/4.1	2.5/3.1	2.4/2.8	2.6/3.0	2.9/3.8	3.1/5.0	4.0/5.7	3.2/5.5	2.3/5.7	3.4/4.3

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	4.0	5.1	6.5	8.0	9.0	10.3	10.2	9.3	8.3	6.3	4.2	3.5	7.1
	Min/Max	3.0/4.7	4.0/6.7	4.8/8.1	6.2/9.7	7.3/10.4	8.5/11.8	8.3/12.0	7.4/11.2	5.6/9.8	5.1/7.1	3.0/5.1	2.0/4.4	6.2/7.5
Latitude -15	Average	5.0	6.1	7.2	8.5	9.2	10.3	10.3	9.6	9.1	7.3	5.2	4.6	7.7
	Min/Max	3.8/6.0	4.6/8.0	5.3/9.1	6.6/10.3	7.3/10.6	8.5/11.7	8.3/12.1	7.7/11.6	6.0/10.7	5.9/8.4	3.7/6.4	2.4/5.9	6.7/8.2
Latitude	Average	5.5	6.5	7.4	8.4	8.9	9.9	9.9	9.5	9.2	7.7	5.6	5.1	7.8
	Min/Max	4.2/6.6	4.9/8.6	5.4/9.4	6.5/10.3	7.1/10.3	8.1/11.3	8.0/11.6	7.5/11.4	6.1/10.9	6.1/8.8	3.9/6.9	2.6/6.6	6.7/8.3
Latitude +15	Average	5.8	6.6	7.3	8.1	8.4	9.2	9.3	9.0	9.0	7.7	5.9	5.4	7.7
	Min/Max	4.4/7.0	5.0/8.9	5.3/9.4	6.2/9.9	6.7/9.8	7.6/10.6	7.5/11.0	7.2/10.9	5.9/10.6	6.2/8.9	4.0/7.3	2.7/7.0	6.5/8.2

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	5.9	6.6	7.4	8.5	9.3	10.5	10.5	9.7	9.2	7.8	5.9	5.5	8.1
	Min/Max	4.4/7.1	5.0/8.9	5.5/9.4	6.6/10.4	7.5/10.8	8.7/12.0	8.5/12.3	7.7/11.7	6.1/10.9	6.2/8.9	4.1/7.3	2.7/7.1	6.9/8.6

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	3.6	3.8	3.7	4.2	4.6	5.7	5.7	5.1	5.2	4.7	3.7	3.5	4.5
	Min/Max	2.4/4.8	2.3/5.7	2.3/5.0	2.7/5.7	3.0/5.8	4.1/7.0	4.2/7.3	3.5/6.9	2.8/6.4	3.5/5.8	2.1/5.0	1.2/5.3	3.5/5.0
1-Axis, N-S Horiz Axis	Average	2.7	3.5	4.4	5.5	6.3	7.7	7.8	7.0	6.5	4.8	3.0	2.5	5.1
	Min/Max	1.6/3.6	2.1/5.4	2.5/5.9	3.4/7.7	4.3/8.0	5.4/9.5	5.5/9.9	4.9/9.4	3.5/8.4	3.5/5.9	1.6/4.1	0.8/3.7	4.1/5.6
1-Axis, N-S Tilt=Latitude	Average	4.0	4.6	5.1	5.8	6.1	7.2	7.4	7.1	7.3	6.1	4.2	3.8	5.7
	Min/Max	2.6/5.3	2.8/7.1	3.0/6.9	3.6/8.1	4.2/7.8	5.1/8.9	5.3/9.5	5.0/9.5	3.9/9.3	4.4/7.4	2.3/5.8	1.2/5.7	4.5/6.3
2-Axis	Average	4.3	4.7	5.1	5.9	6.5	7.9	8.0	7.3	7.3	6.1	4.4	4.1	6.0
	Min/Max	2.7/5.7	2.9/7.3	3.0/6.9	3.6/8.2	4.4/8.3	5.6/9.7	5.7/10.2	5.1/9.9	3.9/9.3	4.5/7.5	2.4/6.1	1.4/6.2	4.6/6.6

Average Climatic Conditions

Element	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Year
Temperature (°C)	-4.1	-1.4	1.4	5.3	10.3	15.3	19.7	18.6	13.5	7.7	1.2	-3.6	7.0
Daily Minimum Temp	-12.6	-9.2	-6.3	-3.3	0.9	4.8	8.9	8.1	2.9	-2.1	-7.2	-11.9	-2.2
Daily Maximum Temp	4.3	6.4	9.1	13.9	19.6	25.7	30.6	29.1	24.0	17.5	9.6	4.8	16.2
Record Minimum Temp	-32.8	-34.4	-25.0	-20.6	-13.9	-7.8	-1.1	-4.4	-9.4	-19.4	-26.1	-33.9	-34.4
Record Maximum Temp	20.0	19.4	22.8	27.2	31.7	37.2	37.8	36.1	33.9	28.9	23.9	19.4	37.8
HDD, Base 18.3°C	696	552	523	392	250	104	8	34	152	331	513	678	4234
CDD, Base 18.3°C	0	0	0	0	0	14	51	43	7	0	0	0	116
Relative Humidity (%)	65	64	59	52	47	39	35	39	42	51	60	64	51
Wind Speed (m/s)	4.1	4.2	4.5	4.6	4.6	4.5	4.5	4.5	4.3	4.1	4.1	4.1	4.3