

Flint Hills Renewable Energy & Efficiency Cooperative, Inc

Canadian Solar System Cost with All Hardware, 2017								Usual Retail Estimate	
System Size		With Monitor	- 30% Tax Credit	Watts	\$/Watt	Yrly Return *	ROI		
# Panels	3	\$ 2,496.53	\$ 1,748	870	\$2.01	\$144.55	8.3%	\$ 3,881	
	4	\$ 2,998.37	\$ 2,099	1160	\$1.81	\$192.74	9.2%	\$ 5,174	
	5	\$ 3,500.22	\$ 2,450	1450	\$1.69	\$240.92	9.8%	\$ 6,468	
	6	\$ 4,002.06	\$ 2,801	1740	\$1.61	\$289.11	10.3%	\$ 7,761	
	7	\$ 4,503.90	\$ 3,153	2030	\$1.55	\$337.29	10.7%	\$ 9,055	
	8	\$ 5,005.75	\$ 3,504	2320	\$1.51	\$385.48	11.0%	\$ 10,348	
	9	\$ 5,507.59	\$ 3,855	2610	\$1.48	\$433.66	11.2%	\$ 11,642	
	10	\$ 6,009.43	\$ 4,207	2900	\$1.45	\$481.85	11.5%	\$ 12,935	
	11	\$ 6,511.28	\$ 4,558	3190	\$1.43	\$530.03	11.6%	\$ 14,229	
	12	\$ 7,013.12	\$ 4,909	3480	\$1.41	\$578.22	11.8%	\$ 15,522	
	1 Branch	13	\$ 7,514.96	\$ 5,260	3770	\$1.40	\$626.40	11.9%	\$ 16,816
		14	\$ 8,016.81	\$ 5,612	4060	\$1.38	\$674.58	12.0%	\$ 18,109
15		\$ 8,518.65	\$ 5,963	4350	\$1.37	\$722.77	12.1%	\$ 19,403	
16		\$ 9,020.49	\$ 6,314	4640	\$1.36	\$770.95	12.2%	\$ 20,696	
17		\$ 9,522.34	\$ 6,666	4930	\$1.35	\$819.14	12.3%	\$ 21,990	
18		\$ 10,024.18	\$ 7,017	5220	\$1.34	\$867.32	12.4%	\$ 23,284	
19		\$ 10,526.02	\$ 7,368	5510	\$1.34	\$915.51	12.4%	\$ 24,577	
20		\$ 11,027.87	\$ 7,720	5800	\$1.33	\$963.69	12.5%	\$ 25,871	
* Commercial Installers charge by the "Name Plate Capacity" instead of the actual capacity as determined by the inverter									
Fees and Permits will run approximately \$115								Yearly Return from	
Electrician will typically charge \$300-\$400 to run back to your breaker panel.								National Renewable Energy	
** Yearly Return based on not exporting anything back to the utility								Laboratory (NREL PV WATTS)	

www.fhrec.org Email: www.mail@fhrec.org or Call: 785/539-1956

Rail Sizing, 340 Watt PV Panels, 77.2" X 39.1" X 1.57"

Panels in Portrait #	39.1 Inches	Rail Width Ft & In
1	42.1	3'6"
2	83.2	7'
3	122.3	10' 2"
4	161.4	13' 5"
5	200.5	16' 8"
6	239.6	20'
7	278.7	23' 6"
8	317.8	26' 6"
9	356.9	29' 9"
10	396	33'
11	435.1	36' 3"
12	474.2	39'6"
13	513.3	42' 9"
14	552.4	46'
15	591.5	49' 4"
16	630.6	52' 6"

L-Leg Spans		
UniRac		
http://www.unirac.com/		
RAILS ?	SM	SM-HD
MAX SPAN ?		
[portrait]		
Zone 1	96"	100"
Zone 2	96"	100"
Zone 3	96"	100"
MAX CANTILEVER ?		
[portrait]		
Zone 1	32"	32"
Zone 2	32"	32"
Zone 3	32"	32"

ASCE 7-10, IBC 2009
 Wind Speed: 110 MPH
 Snow Load: 10 PSF

* Note that the spans work for all roof zones

Rails come in 11', 14', and 17' lengths
 Lengths can be spliced.

Panels in Landscape #	77.2 Length Inches	39.1 Ft & In
1	82.2	7'
2	159.4	13' 3"
3	236.6	19'8"
4	313.8	26'
5	391	32' 7"
6	468.2	39'
7	545.4	45'5"
8	622.6	51'10"
9	699.8	58' 4"
10	777	64' 9"

Portrait



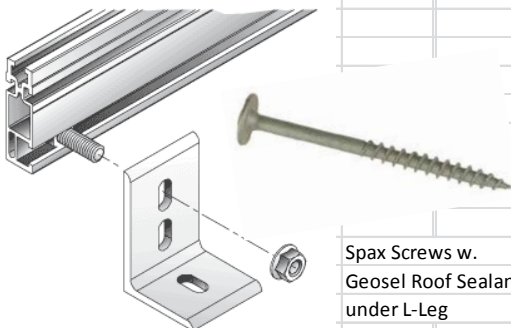
Every 6 rafters on 16" OC
 Every 4 rafters on 24" OC
 So 8' spans work on most old or new roofs

Landscape



For a good measurement across your roof (not down the slope), Zoom in to your address, on Google Earth or your County's GIS website. Then use the measuring tool, dragging the curser from one point across to the other on the roof you want to measure. Then compare to the chart on the left.

L-Leg & Rail



Spax Screws w. Geosel Roof Sealant under L-Leg

