

Off-Grid PV Performance



FearTheSkunk

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Site Summary

Site Name			
Location	WATERLOO, IA, USA		
Latitude	42.55 N	Longitude	92.40 W
		Elevation	265 m
Comments	NREL : 94910		

Load / System Summary

Design Load	18.43 kWh/d-AC		
Tilt	65 S	Azimuth	0 E
		Tracking	Fixed
Min ALR	1.25	Avg ALR	1.73
LOLP	0.46%	Avail	99.949%
		Avg BSOC	96.9%

System Summary

PV (Module / Array)		Battery (Unit / Total)		System Controller	
Model	REC260PE	Model	Generic 2V	Model	Standard
Rating	260 W / 18.7 kWp	Storage	200.30 kWh	Type	xxx
Modules	72	# Units	24	VDC	48
Config	3 S x 24 P	Config	24 S x 1 P	Rating	60 A
Vmpp	30.90 / 92.7 V	VDC	2.0 / 48.0	Quantity	5
Imp	8.50 / 204.0 A	Amp-hr	4173.0 / 4173.0	Battery Inverter	
Voc	37.80 / 113.4 V	Rating	5.0 days	Model	generic
Isc	9.01 / 216.2 A			VAC	240 V
				Rating	5 kVA
				Quantity	1

Sizing Analysis

	Array Inso	Avg Temp	Array	Load	Sys Losses	Batt Size	Array/Load	Avg BSOC	LOLP
Month	kWh/m2/d	deg C	Ah/d	Ah/d	%	Days	Ratio	%	%
Jan	3.63	-9.7	666.2	417.4	10	4.2	1.60	97	0.005
Feb	4.14	-6.6	759.7	417.4	10	4.3	1.82	97	0.001
Mar	3.99	1.2	732.6	417.4	10	4.5	1.76	97	0.001
Apr	4.12	9.1	755.7	417.4	10	4.7	1.81	98	0.000
May	4.23	15.7	776.9	417.4	10	4.9	1.86	98	0.000
Jun	4.38	20.6	804.5	417.4	10	4.9	1.93	98	0.000
Jul	4.43	22.8	813.2	417.4	10	5.0	1.95	98	0.000
Aug	4.41	21.3	810.0	417.4	10	5.0	1.94	98	0.000
Sep	4.26	16.6	782.3	417.4	10	4.9	1.87	98	0.000
Oct	3.82	10.1	700.5	417.4	10	4.8	1.68	97	0.001
Nov	3.08	2.1	565.2	417.4	10	4.6	1.35	94	0.148
Dec	2.83	-6.5	519.8	417.4	10	4.3	1.25	92	0.458

