

Performance of solar home system

Location: 32°30'0" North, 3°9'50" East, Elevation: 706 m a.s.l.,

Nominal power of the PV system: 100 W

Inclination of modules: 25 deg.

Battery size : 12 V, 40 Ah

Discharge cutoff limit (%) 20 %

Consumption per day: 400 Wh

Number of days used for the calculation: 1827

Percentage of days with fully charged battery 72.03%

Average energy not captured due to full battery: 95.59Wh

Percentage of days the battery became fully discharged: 14%

Average energy missing: 76Wh

Month	Ed	Ff	Fe
Jan	367.0	25	31
Feb	388.0	75	16
Mar	385.0	77	15
Apr	395.0	84	9
May	397.0	86	6
Jun	397.0	86	4
Jul	399.0	92	3
Aug	396.0	90	2
Sep	385.0	70	16
Oct	383.0	69	20
Nov	390.0	70	16
Dec	380.0	36	30

Ed: Average energy production per day (Wh/day)

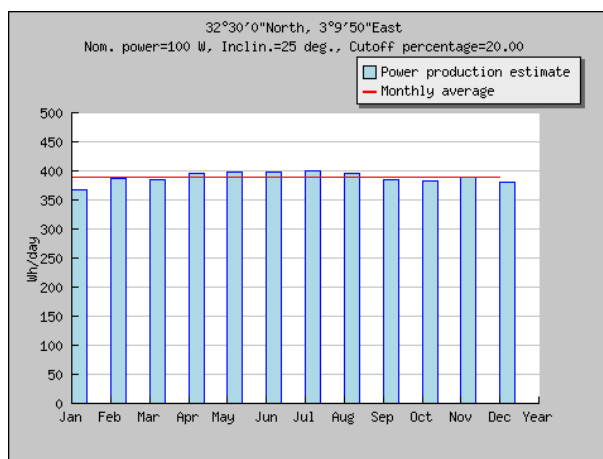
Ff: Percentage of days when battery became full (%)

Fe: Percentage of days when battery became empty (%)

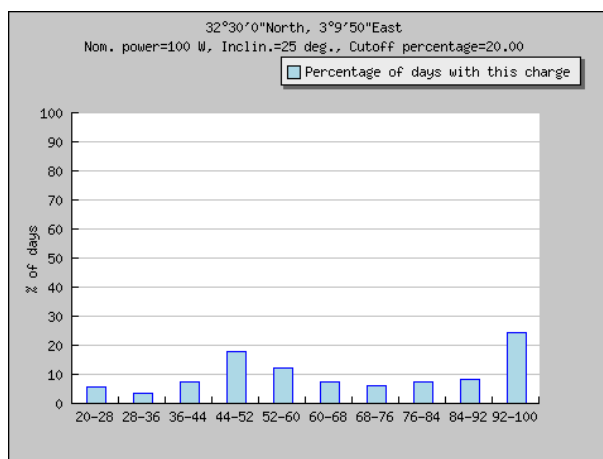
Cs	Cb
20-28	5
28-36	3
36-44	7
44-52	18
52-60	11
60-68	7
68-76	6
76-84	7
84-92	8
92-100	24

Cs: Charge state at end of each hour (%)

Cb: Percentage of days with this charge state (%)



Monthly energy output from SHS system



Probabilities of battery charge state at the end of each hour

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