Voltage drop in PV array conductor

10' of #10 Awg

$R = 10'(0.001\ \Omega/ft) = 0.01\ \Omega$

$V_{VL} = IR = 4.1A \times 0.01\ \Omega = 0.04\ V$

$P = V \times I = 0.04V \times 4.1A = 0.16W$

Trivial loss, #10 Awg acceptable

Nightly Power Use

Item	Power	Amps	Hours	Amp-hrs
Laptop	60W	5	4	20
Galley light	13W	1.1	2	2.2
Cabin light	13W	1.1	2	2.2
Reading L+S	6W	0.5	2	1
Heating Pad	32W	2.7	1	2.7
Audio Amp	50W	4.1	4	16.7
			Total -	44.8 A-H/day

Battery Capacity

PV contribution = 4.1 Amps X 6 hours = 24.6 Amp-hrs
(80 watt array - Good orientation, sunny day)

Daily net power difference = 24.6 A-H - 44.8 A-H = -20.2 A-H

Total Battery Capacity = 220 A-H/2 = 110 A-H
(2-Trojan T-105 @ 50% discharge)

Days Reserve = $\frac{110\ A\text{-}H}{20.2\ A\text{-}H}$ = 5.4 days

No PV Array

Days Reserve - $\frac{110\ A\text{-}H}{44.8\ A\text{-}H}$ = 2.5 days