

## Surprise! - Offshore Electrical Budget

<b>Lighting</b>	Amps	Hours	Ah/Day
Masthead TriColor (LED)	0.30	10	3.0
Cabin Lights (LED)	0.30	4	1.2
Total Ah/Day - Lighting			<b>4.2</b>
<b>Galley</b>	Amps	Hours	Ah/Day
Propane Solenoid	0.50	1	0.5
Total Ah/Day - Galley			<b>0.5</b>
<b>Electronics</b>	Amps	Hours	Ah/Day
DC Main	0.20	24	4.8
Autopilot (engaged)	4.00	18	72.0
VHF (receive)	0.30	24	7.2
VHF (transmit)	3.00	1	3.0
Instruments	1.00	24	24.0
Large chartplotter	0.50	2	1.0
Small chartplotter	0.40	24	9.6
AIS Transceiver	0.30	24	7.2
Stereo and iDevice charger	0.40	3	1.2
Total Ah/Day - Electronics			<b>130.0</b>
<b>Plumbing</b>	Amps	Hours	Ah/Day
Bilge Pump	7.00	0.25	1.8
Water Pump	8.00	0.25	2.0
Head Mercerator	10.00	0.05	0.5
Total Ah/Day - Plumbing			<b>4.3</b>
Gross Energy Consumption - Ah/Day			<b>139.0</b>
<b>Alternative Energy Sources:</b>	Amps	Hrs/day	Ah/day
4 x 160 watt flexible panels	20.00	5	100.0
1 x 42 watt flexible panel	2.00	5	10.0
Contribution of AES - Ah/Day			<b>110.0</b>
<b>Net Energy Consumption, Ah/Day</b>			<b>29.0</b>
<b>Desired Hours Between Charging</b>			<b>48</b>
<b>Range of Battery Use (Carbon Foam AGM = 25-85%)</b>			<b>0.6</b>
<b>Recommended Battery Capacity (Ah) *</b>			<b>96</b>
<b>Alternator Output, Amps (rated @ 100 Amps)</b>			<b>60</b>
<b>Charge Efficiency Factor (Carbon Foam AGM batteries)</b>			<b>0.97</b>
<b>Minimum Minutes to Charge (every 48 hours)</b>			<b>60</b>

\* Actual Battery Capacity = 3@116Ah house + 1@79 Ah starting = 427Ah

Fuel: Engine uses 1/3 gal/hour x 30 gal tank = 90 hours charging