

Surprise! - Offshore Electrical Budget

	Amps	Hours	Ah/Day
Lighting			
Masthead TriColor (LED)	0.30	10	3.0
Cabin Lights (LED)	0.30	4	1.2
Total Ah/Day - Lighting			4.2
Galley			
Propane Solenoid	0.50	1	0.5
Total Ah/Day - Galley			0.5
Electronics			
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			130.0
Plumbing			
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			4.3
Gross Energy Consumption - Ah/Day			139.0
Alternative Energy Sources:			
4 x 160 watt flexible panels	20.00	5	100.0
Contribution of AES - Ah/Day			100.0
Net Energy Consumption, Ah/Day			39.0
Desired Hours Between Charging			24
Range of Battery Use (Carbon Foam AGM = 25-85%)			0.6
Recommended Battery Capacity (Ah) *			65
Alternator Output, Amps (rated @ 100 Amps)			40
Charge Efficiency Factor (Carbon Foam AGM batteries)			0.97
Minimum Minutes to Charge (every 24 hours)			60

* 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