

Surprise! - Offshore Electrical Budget

Lighting		Amps	Hours	Ah/Day
	Masthead TriColor (LED)	0.30	10	3.0
	Cabin Lights (LED)	0.30	4	1.2
	Total Ah/Day - Lighting			4.2
Galley		Amps	Hours	Ah/Day
	Propane Solenoid	0.50	1	0.5
	Total Ah/Day - Galley			0.5
Electronics		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			130.0
Plumbing		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			4.3
Gross Energy Consumption - Ah/Day				139.0
Alternative Energy Sources:		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			110.0
Net Energy Consumption, Ah/Day				29.0
Desired Hours Between Charging				48
Range of Battery Use (Carbon Foam AGM = 25-85%)				0.6
Recommended Battery Capacity (Ah) *				96
Alternator Output, Amps (rated @ 100 Amps)				60
Charge Efficiency Factor (Carbon Foam AGM batteries)				0.97
Minimum Minutes to Charge (every 48 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