Surprise! - Electrical Budget

DC Loads:

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)	5.00	20	100.0
VHF (receive)	0.30	24	7.2
VHF (transmit)	3.00	0	0.0
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			**155.0**

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			**164.0**

Alternative Energy Sources:	Amps	Hrs/day	Ah/day
42 watt flexible panel	2.00	7	14.0
Contribution of AES - Ah/Day			**14.0**

Net Energy Consumption, Ah/Day	**150.0**
Desired Hours Between Charging	**12**
Range of Battery Use (Carbon Foam AGM = 25-85%)	**0.6**
Recommended Battery Capacity	**125**
Alternator Output, Amps (rated @ 100 Amps)	**60**
Charge Efficiency Factor (Carbon Foam AGM batteries)	**0.97**
Minimum Minutes to Charge (every 12 hours)	**77**

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