

Electrical Budget Worksheet (Kali O Kalani Hawkfram 28)

1 Calculate your DC Loads:

Lighting	Amps	Hours	AH/Day
Running Lights			0.0
Masthead Tricolor Light	0.3	9	2.3
Anchor Light			0.0
Strobe Light			0.0
Spreader Lights			0.0
Cabin Light (small)	0.3	5	1.5
Cabing Light (big incandescent)			0.0
Cabing Light (fourescent)			0.0
Instrument Lights	0.1	9	0.9
Handheld Spot Light			0.0
Other			0.0
Lighting AH			4.7

Galley	Amps	Hours	AH/Day
Refrigeration			0.0
Prop Solenoid			0.0
Other			0.0
Galley AH			0.0

Electronics	Amps	Hours	AH/Day
Autopilot	1.0	12	12.0
VHF (receive)	0.5	24	12.0
VHF (transmit)			0.0
SSB (receive)	1.5	4	6.0
SSB (transmit)	20.0	0.5	10.0
SSB Digital controller			0.0
GPS	0.4	4	1.6
Instruments	0.0	24	0.0
Weather fax receiver			0.0
Radar (standby)	2.5	9	22.5
Radar (transmit)			0.0
AIS			0.0
Energy Monitors			0.0
Stereo			0.0
Computer (screen off)			0.0
Computer (screen on)	1.0	6	6.0
Computer (serial adapter)			0.0
Battery Charger			0.0
Electronics AH			70.1

Plumbing	Amps	Hours	AH/Day
Fresh Water Pump			0.0
Bilge Pump(s)			0.0
Other			0.0
Plumbing AH			0.0

Calculate using average water consumption.
This should be zero unless the boat leaks.

Inverter	Watts	Hrs/day	AH/Day
Microwave			0.0
Chargers (nicad)			0.0
Other			0.0
Inverter AH			0.0

All values assume inverter efficiency = 85%.
Power factor may mess up this estimate.

Gross Energy Consumption AH/Day 74.8

2 Alternative Energy Sources	Device	Amps	Hrs/day	AH/day
	Solar, avg	9.0	7	63.0
	Wind, avg			0.0
	Water, avg.			0.0
	Contribution of AES AH/Day			63.0

Assumes one large panel.
Assumes AIR Marine wind turbine in good location.

3 Net Energy Consumption, AH/Day 11.8

4 Desired Hours Between Charging 24

5 Range of Battery Use 0.35

For example, from 50-85% state of charge.

6 Recommended Battery Capacity 34

7 Alternator Output, Amps 35

Target would be 25% flooded, 40% gel, of capacity.

8 Charge Efficiency Factor 0.95

Gels = 95%, flooded cells = 85%

9 Minimum Minutes to Charge 21

Assumes alternator runs at full output.