COMPUTER HAVEN SOLAR SOLUTIONS

SUNNEW 12.8V SNR12100-1
100Ah Lithium Iron Phospate
(LifePO4) – 1200Wh
329mm L 172mm W 217mm H

Gicom Sky 1000VA

100Ah 12V AGM
329mm L 172mm W 217mm H

160W PV Module Poly

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	VA	Watt	Amp	Efficiency	Min	Hours
COMPUTER HAVEN 12 1000VA 900W 1 X 100Ah 12V Deep Cycle 7 Hours Estimated Recharge 53cm L 22cm W 40cm H Weight 38KG	200	120 W	0.52	80%	459	7.5
	400	240 W	1.04	83%	187	3
	600	360 W	1.56	83%	102	1.5
	800	480 W	2.08	85%	79	1
	1000	600 W	2.60	84%	62	1
	1200	720 W	3.13	83%	42	

	VA	Watt	Amp	Efficiency	Min	Hours
COMPUTER HAVEN 24 2000VA 1600W 2 X 100Ah 12V Deep Cycle 7 Hours Estimated Recharge 53cm L 44cm W 40cm H Weight 76KG	200	120 W	0.52	82%	941	15
	400	240 W	1.04	83%	374	6
	600	360 W	1.56	84%	207	3
	800	480 W	2.08	85%	157	2.5
	1000	600 W	2.60	86%	127	2
	1200	720 W	3.13	86%	87	1
	1400	840 W	3.65	86%	75	1
	1600	960 W	4.17	87%	66	1
	1800	1080 W	4.69	86%	45	
	2000	1200 W	5.21	86%	40	
	2200	1320 W	5.73	86%	37	
	2400	1440 W	6.26	86%	34	

A	Lighting	8 – 40 W 0.03 – 0.17 A
B	Laptop Computer	25 – 100 W 0.10 – 0.43 A
C	TV and DSTV	60 – 120 W 0.26 – 0.52 A
D	Desktop Computer	150 – 300 W 0.65 – 1.30 A
E	Fridge New Type	200 – 300 W 0.86 – 1.30 A

F	Washing Machine	600 – 1000 W 2.60 – 4.34 A
G	Heaters	1000 – 2000 W 4.34 – 8.69 A
H	Kettle	1500 – 2500 W 6.52 – 10.86 A
I	Stove	1500 – 3000 W 6.52 – 13.04 A
J	Geyser	2000 – 9000 W 8.69 – 39.13 A

COMPUTER HAVEN SALES AND REPAIRS

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When trying to work out how much power will be drawn from your batteries by an inverter, a very rough but easy calculation is for every 1 Amp 240 Watts at 240 Volt, you can expect the inverter will draw about 20 Amps at 12 Volt from your batteries.

Critical devices such as Computers Internet Television Security and Lighting together use about 1 Amp.

One battery can comfortably provide three hours of power during power outages at 1 Amp 240 Watts.

Lithium Iron Phosphate $LiFePO_4$

Parameter	AGM Battery (12V)	$LiFePO_4$ Battery (12V, 4S)
Bulk / Absorption	14.4 – 14.7 V	14.2 – 14.6 V
Float	13.5 – 13.8 V (required)	Not needed (can be disabled)
Cut-off (discharge)	~10.5 – 11.0 V	~11.0 – 11.5 V (BMS cuts off at ~10 V)
Nominal voltage	12.0 V	12.8 V
Fully charged (resting)	12.7 – 12.9 V	13.3 – 13.4 V

Key difference:

AGM batteries must have float charging to stay healthy.

$LiFePO_4$ batteries don't need float – a bulk/absorption charge to ~14.4 V is enough, and then charging can stop.

Not all inverters are designed for lithium batteries. Lead-Acid Battery chargers use a constant float stage that can shorten the lifespan of $LiFePO_4$ batteries. A proper inverter with a selectable charging profile lets you set the correct bulk, absorption, and float values for lithium – ensuring longer battery life and safer operation.

That includes configurable charging parameters. The unit must allow adjustment or complete deactivation of the float stage, as well as manual configuration of the bulk and absorption voltages for compatibility with $LiFePO_4$ batteries.

A lithium batteries BMS (Battery Management System) is designed primarily to protect the battery from extreme conditions, such as overcharging, over-discharging, overheating, or short circuits. However, the BMS does not recognize a “float charge” as a danger, because the float voltage typically remains below the overcharge protection threshold.

In other words, the BMS only intervenes when the voltage per cell rises above its maximum limit (usually around 3.65 V per cell). A float charge keeps the battery slightly below that level — safe enough that the BMS sees no immediate threat.

But unlike lead-acid batteries, lithium batteries do not need or tolerate a continuous float stage. Holding them at a constant voltage for long periods causes cell imbalance, heat build-up, and chemical stress, which can shorten battery life.

Therefore, the float stage must be disabled at the inverter or charge controller, ensuring the battery stops charging once it’s full and only starts again when the voltage drops naturally. This preserves cell health and extends the battery’s overall lifespan.

If your inverter can’t completely disable the float stage, the goal is to set the float voltage as low as possible — just high enough to prevent the inverter from thinking the battery is empty, but not high enough to keep pushing charge into the lithium cells unnecessarily.

Here’s the guideline:

Set the float voltage to around 13.2 V to 13.4 V for a 12 V $LiFePO_4$ battery.
This keeps the battery full without causing constant charging.
Anything above 13.6 V can slowly damage the cells over time.
Anything below 13.0 V may cause the inverter to think the battery is discharged and restart charging repeatedly.

If your inverter only allows settings in 0.1 V increments (from 12.0 V up to 14.0 V), then choose:
13.2 V – this will cause the least wear and is the safest setting.

Safest “cut-off” voltage for a 12 V system

Recommended low cut-off: 11.0 V – 11.2 V
Leaves roughly 5–10% capacity in the battery.
Safe for the cells and prolongs lifespan.

Absolute minimum: 10.5 V
Some BMS (Battery Management Systems) will cut off here.
Risky if used repeatedly — can cause long-term cell imbalance.

Ideal for maximum longevity: 11.5 V
Less usable capacity, but battery life is greatly extended.

Summary for 12 V $LiFePO_4$
Setting Voltage Notes
Float 13.2 V Minimal wear (Even better if you can turn it off)
Bulk/Absorption 14.2 V Full charge without overcharging
Low cut-off 11.0 V (Safest) Balance between protection and capacity