



SOL-ARK 8K

We guarantee it's the most efficient & affordable Multi-Mode Inverter in its class

Most Efficient Battery Inverter

Visit www.Sol-Ark.com

Battery Solar made Affordable

Examples:

Grid Tied No Batteries	Battery Based Typical	Sol-Ark 8K With Batteries
10 kW PV	11 kW PV* w/ 20kWh Batt	10 kW PV w/ 20kWh Batt
\$25,000	\$50,000	\$31,000 (\$21,000 DIY)

Assumptions:
 Install cost = \$1 / Watt
 Solar Panels + Mounting = \$1 / Watt
 Electronics cost = \$0.50 / Watt

*Typical Battery based systems are 10% less efficient



Color Touch Display

Quiet Variable-speed Fans

On/Off Button

48V Battery

4 PV inputs

PV Shut-off

Wiring Knockouts & WiFi

120/240V 50A Breakers

- AC In/Out
- AC Load Out
- AC Gen In/Smart Load Out
- Battery Temp sensor
- Auto-Generator Start
- PV Rapid Shut Down
- External current sensors
- Battery communication

Solar Today= 53KWH Total=599.8 KWH

8.03 KW, -3.2 KW, 4.26 KW, 00.0 KW

55.2V

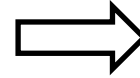
Battery Solar made Better

GROUND BREAKING EFFICIENCY

Sol-Ark 8K is 96.5% Efficient



0.7%
Wire Loss



120/240V AC

3.5% Transformerless Conversion Loss

POWERFUL

- ◇ 8,000W continuous for On Grid production & 20,000W peak Off Grid for starting 3 ton A/C or well pumps

FLEXIBLE

- ◇ Grow as you go. Sol-Ark 8K works with 5-36 Solar panels (up to 11KW) and 0-32 Batteries

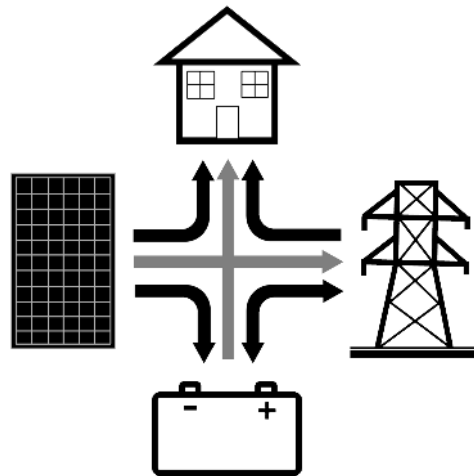
EMP/CME/LIGHTNING PROTECTION

- ◇ Protect your system and appliances from EMP/Solar Flare/Lightning at 2X military requirements

Competitor Comparison

	Sol-Ark 8K	Outback Radian FPR-8048A	Magnum 2x4448PAE +16xGT500	Pika X7600 + 4xS2500	SolarEdge 7600A + 32xP400	Tesla 2x Powerwall2 + String Inv	Darfon 2xH5001-ST
Price	\$6,500	\$9,000	\$12,000	\$6,500	\$5,500	\$20,000	\$6,500
Inverter Power	8KW	8KW	2x4KW	7.6K	7.6KW (Batt=5KW)	2x5KW	2x5.5KW
Inverter Power peak (5s)	20KW	12KW	17KW	12K	6.6KW !	14KW	13KW
System Idle Power	60W	76W	58W			78W	204W
120/240V Split Phase	✓	✓	✓	✓	✓	✓	✓
Solar Power	8.4KW	8.6KW	8.0KW	8.0K	8.0K	8.2KW (\$3K)	11.0K
AC to DC Charger	185A	115A	120A	6.7KW	5KW	N/A	120A
User Interface	color touch	Text	Text	Text	Text	X	Text
PV to AC Efficiency @ 65%	96.5%	90.2%	95.5%	95.5%	96.5%	97.0%	95.5%
Grid Tied/sell capability: UL1741	✓	✓	✓	✓	✓	✓	✓
PV to Batt Efficiency @ 65%	97.5%	97.5%	82.5%	92.2%	91.2%	92.5%	91.0%
AC to Batt Efficiency @ 65%	96.0%	80-85%	85.0%	93.1%	91.2%	95.0%	90.0%
Batt to AC Efficiency @ 65%	95.5%	93.0%	91.0%	93.1%	91.2%	95.0%	90.0%
Battery Bank	optional 17KWh +\$4.3K	26KWh +\$7.2K	26KWh +\$7.2K	380V 20.3KWh +\$15K	380V 9.8KWh +\$7K	included 26.4KWh	optional 20KWh +\$11K
UPS Backup Power (<15ms)	✓	✓	✓	X	X	✓	✓
EMP/Solar Flare Hardened to >100KV/m	optional +\$1.2K	X	X	X	X	X	X
Low Cost Easy Install	✓	X	X	X	X	X	✓
Warranty electronics	5/10 yr	5/10 yr	5 yr / 25yr	10 yr	12/20/25 yr	10 yr	5/10 yr
NEC UL1699B Arc Fault	✓	✓	✓	X	✓	✓	X
AC Coupling to Micro/String Inverters	✓	✓	✓	X	✓	✓	X
Parallel Stacking	X	✓	✓	X	X	✓	✓
UL1741SA / Rule 21 (California Sell only)	X	✓	X	✓	✓	X	✓

Battery Solar made Simple

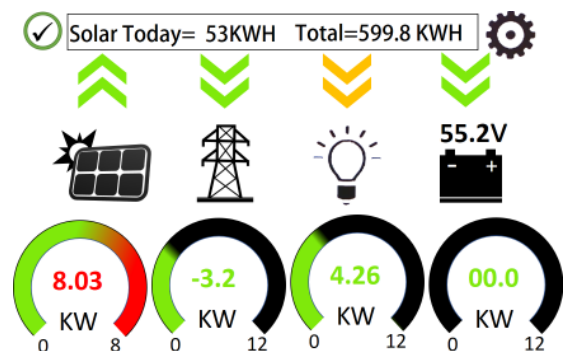


GRID-TIED, HYBRID OR OFF-GRID

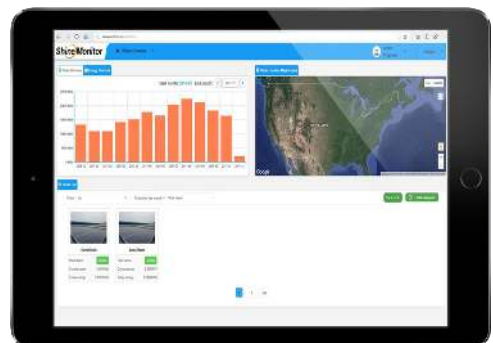
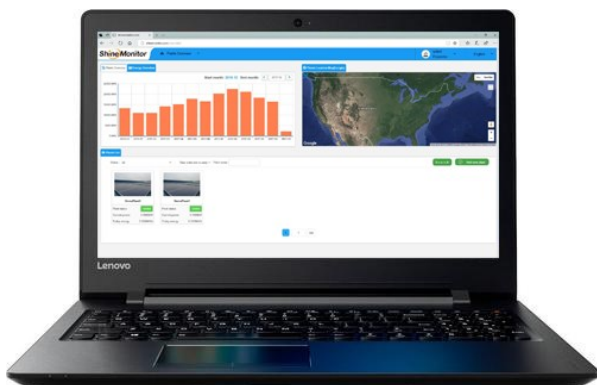
- ◇ Simultaneously manages power to/from Solar, Battery, Grid, Load, and Generator
- ◇ **Grid Tied Mode:** Sell your power to reduce your electric bill
- ◇ **Meter Zero Mode:** Zero your electric bill without a smart meter
- ◇ **Time of Use:** Use solar and batteries to minimize grid power usage when its most expensive
- ◇ **Smart Load:** Use a programable output for high power off-grid items or Grid time of use items to run only when there is a lot of Solar (hot water, A/C, pumps, dehumidifier)

SIMPLE TO INSTALL & USE

- ◇ Few external components for faster install
- ◇ Easy to understand touchscreen interface

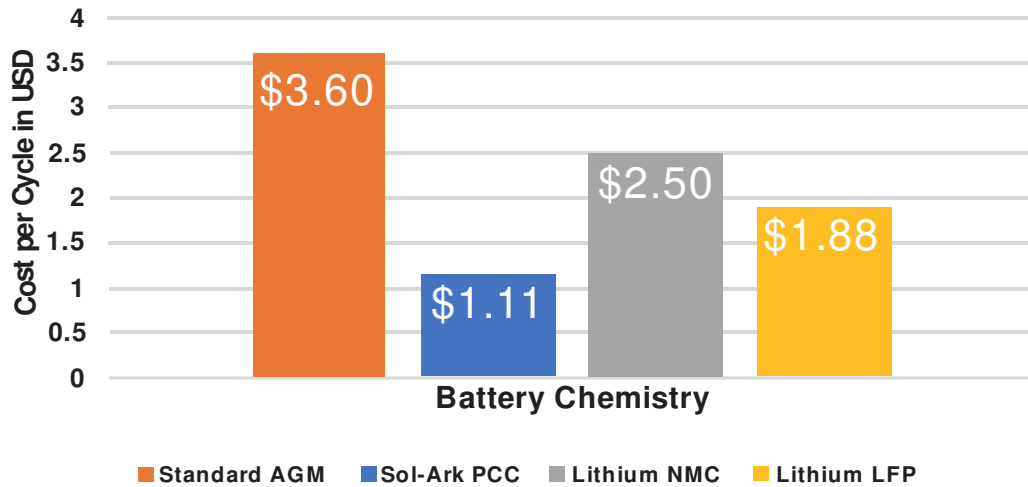


Wireless Monitoring & Remote Software updates



Solar Batteries made Affordable

Cost Per Cycle vs Chemistry



PCC = Partial Charge Carbon



Battery Option PCC-200: Partial Charge Carbon Sealed AGM

- ◇ 8.5 kWh bank w/ 4 batteries 48V
- ◇ 2800 cycles @ 50% DOD (7+ years, 12 years On Grid)
- ◇ Excellent Partial State of Charge, 3 year warranty

Battery Chemistry Cost Comparison

	Standard AGM	SoI-Ark PCC AGM	Lithium NMC	Lithium LFP
10kWh Cost Range	\$1.6K to \$2.4K	\$2.5K to \$3.2K	\$5K to \$7K	\$8k to \$12K
10kWh Cost	\$ 1,800	\$ 2,500	\$ 6,000	\$ 9,000
Off Grid Cycles 50% DOD (Lab Conditions)	600	2800	4000	8000
Off-Grid Cycles 50% DOD (Real World)	500	2250	2400	4800 to 7200
Off Grid Years Typ (Real World)	1.4	6.2	6.6	13.2
On Grid Years Typ	7	12	12	14
Cost per Cycle	\$ 3.60	\$ 1.11	\$ 2.50	\$ 1.88
Round Trip Efficiency	88%	98%	98%	98%
Benefits	Lowest cost UPS backup	Lowest cost/cycle, partial SOC, efficiency	Small size, Partial SOC, efficiency, high charge rates	Small size, Partial SOC, efficiency, high charge rates
Drawbacks	Size, cycles, partial SOC sulfates, >95F reduces cycle count 2x	Size, >95F reduces cycle count 2x	<32F reduces cycles 5x, 95F reduces cycle count 2x, BMS reliability	<32F reduces cycles 5x, 95F reduces cycle count 2x, BMS reliability

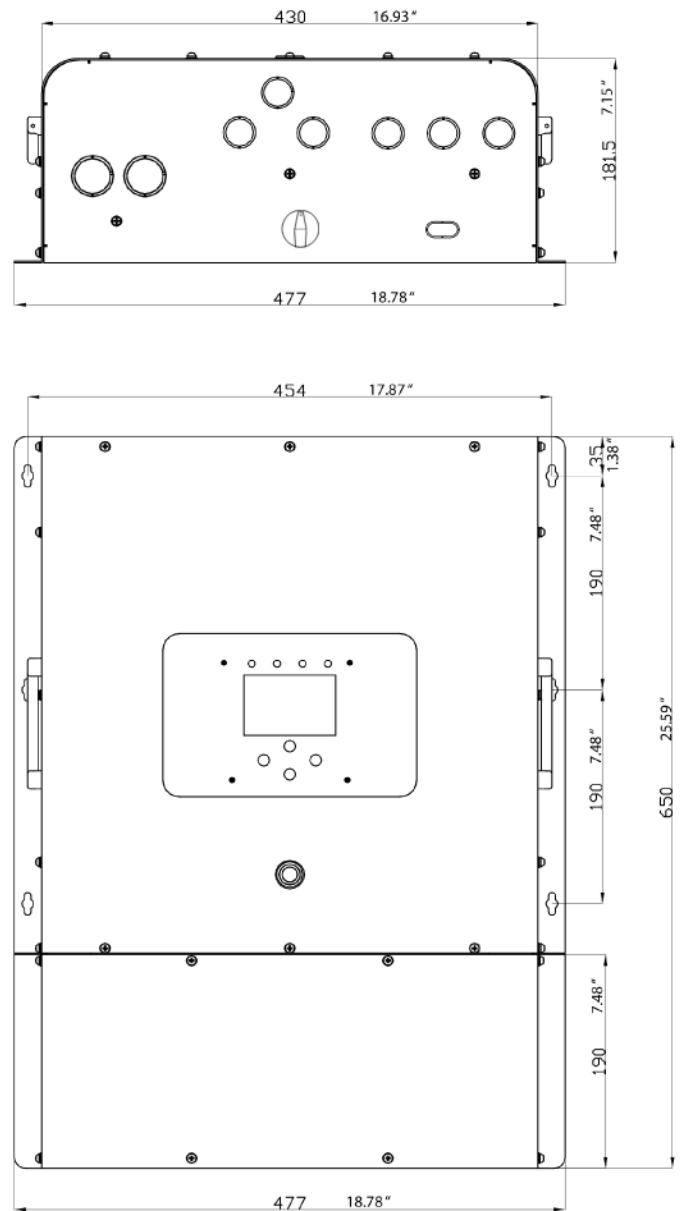
Sol-Ark 8K Specifications

Solar	
Max allowed PV Power	11000W
Max allowed PV Power per MPPT	5500W
Max DC voltage	500V
MPPT voltage range	150-425V
Starting voltage	175V
Number of MPPT	2
Solar Strings per MPPT	2
Max DC current per MPPT	18A (self limiting)

AC Output	
Connections	120/240V split phase
Continuous AC power on Solar or Battery	8000W 33A L-L (240V) 4000W 33A L-N (120V)
Surge AC power 5sec	20,000VA L-L (240V) 10,000VA L-N (120V)
Frequency	60/50Hz
Continuous AC power with Grid or Generator	12000W 50A L-L (240V) 6000W 50A L-N (120V)
CEC Efficiency	96.5% (Peak 97.5%)
Idle Consumption typical – no load	60W
Sell back power modes	Limited to Household or Full Grid-Tied
Design (DC to AC)	Transformerless DC
Response Time (Grid-Tied to Off-Grid)	25ms

Battery (optional)	
Type	Lead-Acid or Li-Ion
Nominal DC Input	48V
Capacity	90 – 1000Ah
Voltage Range	42.0 – 61.0V
Continuous Battery charging output	190A
Charging curve	3-stage w/ equalization
Grid to Battery Charging Efficiency	96.0%
External temperature sensor	included
Current shunt for accurate % SOC	integrated
External Generator Start based on voltage or % SOC	integrated
Communication to Lithium battery	CanBus & RS485

General	
Dimensions (H x W x D)	25.6" x 18.8" x 7.1"
Weight	75 lbs
Enclosure	NEMA type 1 (Indoor Use)
Ambient Temperature (4 variable speed fans)	-25 to 55C, >45C derating
Display	Color touch screen
Wi-Fi Communication (monitoring or SW updates)	integrated
Snap on sensors for limited selling to Household	included
Standard Warranty	5 years
Optional Extended Warranty	10 years



Protection & Certifications

Electronics certified safety by SGS labs to NEC & UL specs – NEC 690.4B & NEC 705.4/6	Yes
Grid Sell Back – UL1741-2010/2018, IEEE1547a-2003/2014, FCC 15 class B	Yes
PV DC disconnect switch – NEC 240.15	integrated
Ground Fault Detection – NEC 690.5	integrated
PV rapid shutdown control – NEC 690.12	integrated
PV Arc Fault detection – NEC 690.11/UL1699B	integrated
PV input lightning protection	integrated
AC input/output 50A breakers	integrated
Battery overcurrent fuse	integrated
User wiring enclosure w/ 3/4" knock-outs	integrated
Solar Flare/EMP Hardened to 2015 MIL-STD-461G (Independently tested June 2018)	optional