

Sol-Ark[®]

Energy Insurance for your family



SOL-ARK 8K

*More Affordable:
5-15% less solar panels &
5-20% less batteries than others!*

World's Most Efficient Battery Inverter



Sol-Ark 8K: Renewable Energy Technology of 2018

FINALIST



S&P GLOBAL PLATTS
GLOBAL ENERGY AWARDS
2018 FINALIST



Sol-Ark 8K: Home Energy Product of 2018

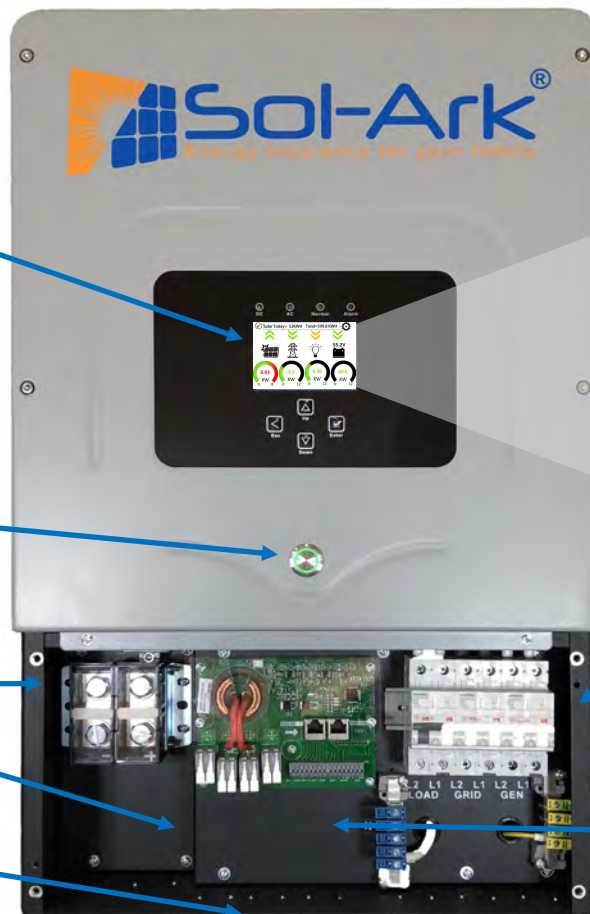
FINALIST

Battery Solar made Affordable

Examples:	Grid Tied	Battery Based	Sol-Ark 8K
	No Batteries	Typical	With Batteries
	10 kW PV	11 kW PV* w/ 20kWh Batt	10 kW PV w/ 18.5kWh Batt
	\$25,000	\$50,000	\$39,000

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

On/Off Button

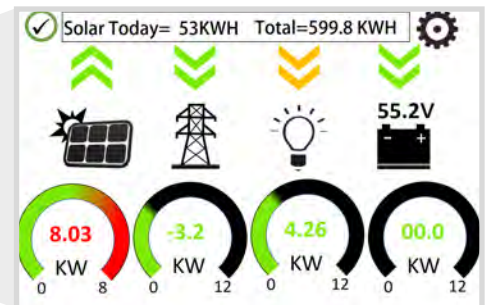
48V Battery

4 PV inputs

PV Shut-off

Wiring Knockouts & WiFi

Quiet Variable-speed Fans



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

Battery Solar made Simple

POWERFUL

- ◇ 9,000W 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

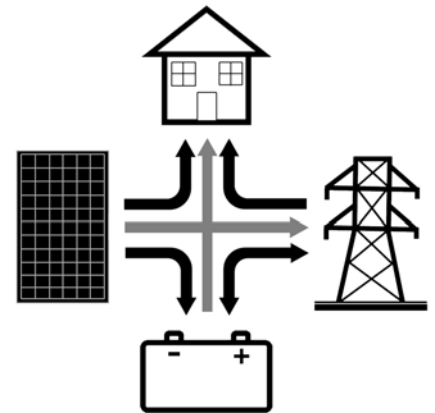
- ◇ Protect your system and appliances from EMP/Solar Flare/Lightning at 2X military requirements

GRID-TIED, HYBRID OR OFF-GRID

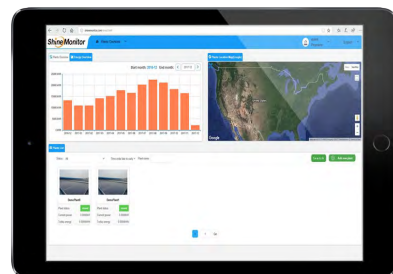
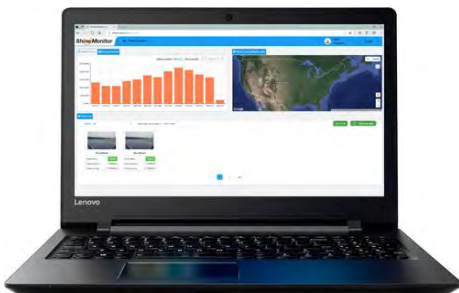
- ◇ Simultaneously manages power to/from Solar, Battery, Grid, Load, and Generator
- ◇ **Grid Tied Mode:** Sell your power to reduce your electric bill
- ◇ **Meter Zero Mode:** Zero your electric bill without a smart meter
- ◇ **Time of Use:** Use solar and batteries to minimize grid power usage when 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)
- ◇ **AC Coupling:** Compatible with up to 7kW of AC input
- ◇ **Peak Shaving:** Reduces your peak power demand from the grid

SIMPLE TO INSTALL & USE

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



Wireless Monitoring & Remote Software updates



Fortress Power Lithium Solar Batteries

Intelligent - Reliable - Powerful - Slick - User Friendly

- **High visibility:** LCD Display showing voltage, current output and state of charge
- **Capacity:** 360AH (48V)
- **Power:** 18.5KWH
- **More Power:** 8 batteries in parallel to 1 inverter (148 KWH)
- **Nominal Voltage:** 51.2V
- **Long Life:** 6000 Cycles @ 80% (16 Years)
- **Charge Current:** 150A
- **Discharge Power:** 160 A (8kW)
- **Surge Power:** 12 KW for 10 Sec
- **10 Year Warranty**

Fortress eVault 18.5



Sol-Ark-8K-48-ST Specifications

Solar

Max allowed PV Power	11000W
Max allowed PV Power per MPPT	6000W
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)
Max AC Coupled Input (Micro/String Inverters)	7,000W
Max Combined Solar Input (DC+AC)	13,000W

AC Output

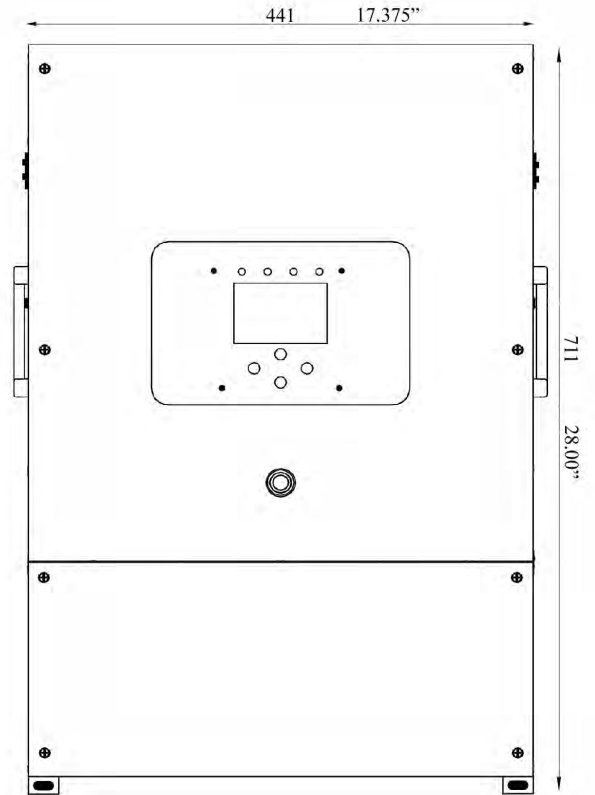
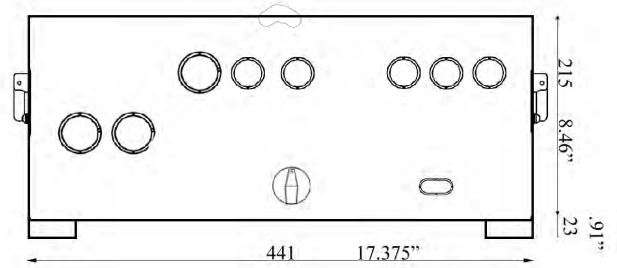
Connections	120/240V split phase
Continuous AC power on Solar or Battery	9000W 37.5A L-L (240V) 4800W 40A L-N (120V)
Surge AC power 5sec	20,000VA L-L (240V) 10,000VA L-N (120V)
Frequency	60/50Hz
Continuous AC power with Grid or Generator	12000W 50A L-L (240V) 6000W 50A L-N (120V)
CEC Efficiency	96.5% (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)	4ms
Power Factor	+0.9 - 1.0

Battery (optional)

Type	Lead-Acid or Li-Ion
Nominal DC Input	48V
Capacity	90 – 2000Ah
Voltage Range	41.0 – 59.0V
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)	28.0" x 17.375" x 9.37"
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, (April 2019: UL1741SA, CA Rule 21, HECO Rule 14H)	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" & 1" knock-outs	integrated
Solar Flare/EMP Hardened to 2015 MIL-STD-461G (Independently tested June 2018)	optional