

SOL-ARK 12K

STACKABLE
BATTERY-ORIENTED



+



+



COMMERCIAL / MEDICAL
No Glitch Transfer



MILITARY
Cage Code: 7U4P4



GRID SELL
+Time of Use



OFF-GRID
Battery Agnostic



RETRO-FIT
AC Coupling

Competitor Comparison

	Sol-Ark 12K	Outback Skybox 2xSBX5048	Pika X7600 + 4xS2500	SolarEdge 7600A + 32xP400	Outback Radian FPR-8048A	Schneider XWP6.8 + 3xMPPT80	Sonnen ECO-16 + String Inv	Tesla 2x Powerwall2 + String Inv	Sol-Ark 8K
Brand & Model									
MSRP Price	\$6,850	\$11,000	\$6,500	\$5,500	\$8,000	\$9,900	\$24,000	\$19,400	\$6,100
Solar PV <i>Continuous Power</i>	12KW	2x5.5KW	8KW	7.6KW	7.7KW	11.6KW	12KW	12KW	9KW
Inverter AC Continuous Power	9.6KW	2x5KW	7.6KW	7.6KW	8KW	6.8KW	8KW	2x5KW	8KW
Inverter Battery Continuous Power	8KW	2x5KW	6.7KW	5KW	8KW	6.8KW	8KW	2x5KW	8KW
Off Grid Inverter AC <i>Peak Power (5s)</i>	20KW	10KW	12KW	6.6KW	12KW	12KW	12KW	14KW	20KW
System Idle Power	60W	280W			76W	48W	60W	78W	60W
AC to DC Charger	185A	200A	6.7KW	5KW	115A	140A	115A	N/A	185A
<i>User Interface</i>	color touch	color touch	Text	Text	Text	Text	color touch	X	color touch
PV to Batt Efficiency @ 65%	97.5%	81.0%	92.0%	91.0%	97.5%	96.0%	82.0%	92.5%	97.5%
AC to Batt Efficiency @ 65%	96.0%	80.0%	93.0%	91.0%	85.0%	91.5%	85.0%	95.0%	96.0%
Batt to AC Efficiency @ 65%	95.0%	94.5%	93.0%	88.0%	93.0%	92.5%	93.0%	95.0%	95.5%
On Grid PV to AC Efficiency @ CEC	96.0%	94.0%	95.5%	96.5%	90.2%	88.5%	97.0%	97.0%	96.5%
<i>Off Grid or Time of Use</i>	7%	24%	15%	21%	10%	12%	25%	13%	7%
PV -> Batt -> AC Losses @ 65%									
Grid Failure <i>UPS Transfer Time</i>	4ms	20ms	1000ms	2000ms	8ms	8ms	100ms	2000ms	4ms
EMP/Solar Flare Hardened to >100KV/m	optional +\$1.4K	X	X	X	X	X	X	X	opt +\$1.2K
Low Cost Easy Install	✓	✓	✓	✓	X	X	✓	✓	✓
<i>Warranty</i>	10 yr	5/10 yr	10 yr	12/20/25 yr	5/10 yr	10 yr	10 yr	10 yr	5/10 yr
AC Coupling to existing Inverters	✓	✓	✓	✓	✓	✓	✓	✓	✓
<i>Parallel Stacking</i>	✓	✓	X	X	✓	✓	X	✓	X
120/240/208V 3Phase	✓	X	✓	X	X	✓	X	✓	X
Generator Support	✓	✓	X	X	✓	✓	✓	X	✓
AC Load Shedding for TOU & Off Grid	✓	✓	X	X	X	X	✓	X	✓
UL1741SA/Rule 21 & 14H (Grid Sell only)	✓	✓	✓	✓	✓	✓	✓	✓	✓
NEC UL1699B Arc Fault	✓	✓	✓	✓	✓	X	✓	✓	✓
Battery Bank	22KWh/2400cycles +\$5.2K	26KWh	20.3KWh	9.8KWh	26KWh	26KWh	16KWh	28KWh	22KWh +\$5.2K
	19KWh/6000cycles +\$12K	+\$7.2K	3500c +\$14K	3000c +\$7K	+\$7.2K	+\$7.2K	6000cycles	3500cycles	19KWh +\$12K

Brand & Model

MSRP Price

Solar PV *Continuous Power*

Inverter AC Continuous Power

Inverter Battery Continuous Power

Off Grid Inverter AC *Peak Power (5s)*

System Idle Power

AC to DC Charger

User Interface

PV to Batt Efficiency @ 65%

AC to Batt Efficiency @ 65%

Batt to AC Efficiency @ 65%

On Grid PV to AC Efficiency @ CEC

Off Grid or Time of Use

PV -> Batt -> AC Losses @ 65%

Grid Failure *UPS Transfer Time*

EMP/Solar Flare Hardened to >100KV/m

Low Cost Easy Install

Warranty

AC Coupling to existing Inverters

Parallel Stacking

120/240/208V 3Phase

Generator Support

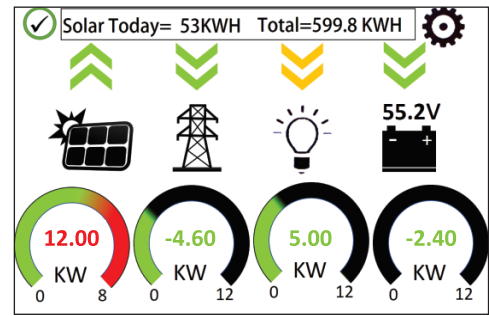
AC Load Shedding for TOU & Off Grid

UL1741SA/Rule 21 & 14H (Grid Sell only)

NEC UL1699B Arc Fault

Battery Bank

STACKABLE, No Glitch, ALL-IN-ONE HYBRID



Color Touch Display

Two Built-In 500V Charge Controllers

1 - 6 PV Strings

Battery Disconnect

48V Battery Input

Battery Temp Sensor

Auto-Generator Start

Rapid Shut Down Signal

Current Sensors Included

Battery Communication

PV Disconnect

Wiring Knockouts & WiFi

50A Breakers:

AC In/Out, AC Load Out,

AC Gen In/Smart Load Out



Limitless

PARALLEL STACKING, GRID SELL, METER ZERO, TIME OF USE, SMART LOAD, AC COUPLING, PEAK SHAVING, 20 kW PEAK POWER

Highly Accelerated Life Testing

PROVEN TO LAST WELL BEYOND THE STANDARD 10 YEAR WARRANTY

Engineered, Tested, Serviced in U.S.A

TALK TO A US BASED ENGINEER 7 DAYS A WEEK

No Glitch Switch (4ms)

FASTEST TRANSFER TIME IN THE INDUSTRY

Free Remote Monitoring / Programming



Sol-Ark-12K-P Specifications

Solar Output Power 12000W

Max allowed PV Power	9000W+9000W = 16,500W
Max PV power delivered to Battery & AC outputs	12000W
Max DC voltage	500V@18A, 450V@20A
MPPT voltage range	150-425V
Starting voltage	175V
Number of MPPT	2
Solar Strings per MPPT	2 w/o fuses, 3 w/ fuses
Max DC current per MPPT (self limiting)	20A@300V, 18A@400V
Max AC Coupled Input (Micro/String Inverters)	7,600W

AC Output Power 9600W On Grid & 8000W Off Grid

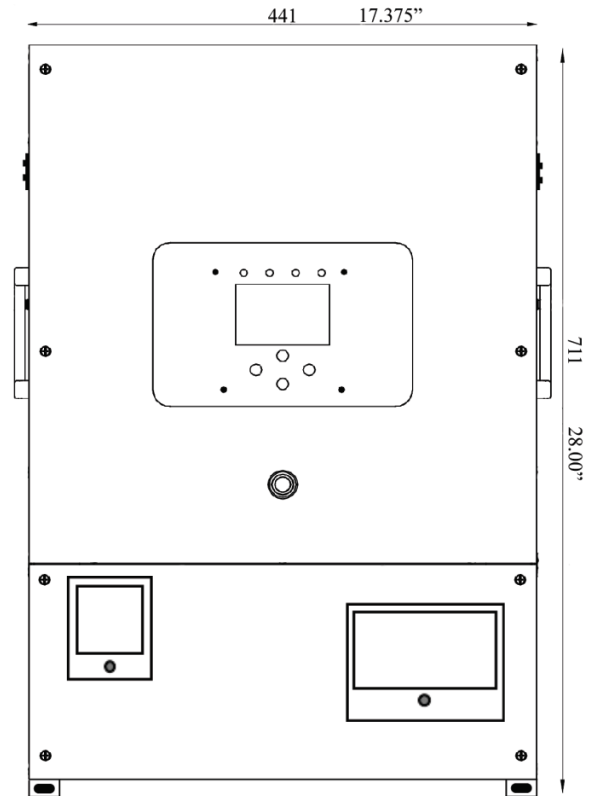
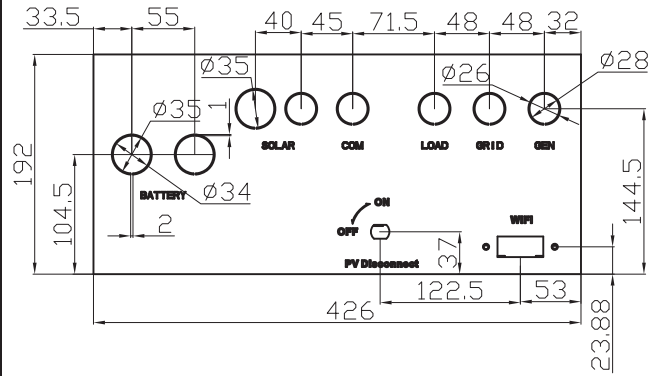
Connections	120/240/208V split phase
Continuous AC power to Grid (On Grid)	9600W 40A L-L (240V) 4800W 40A L-N (120V)
Continuous AC power to Grid (Off Grid)	8000W 40A L-L (240V) 4800W 40A L-N (120V)
Surge AC power 5sec	20,000VA L-L (240V) 10,000VA L-N (120V)
Parallel Stacking	2-3 (240V), 3 or 6 (208V)
Frequency	60/50Hz
Continuous AC power with Grid or Generator	12000W 50A L-L (240V) 6000W 50A L-N (120V)
CEC Efficiency	96.0% (Peak 97.0%)
Idle Consumption typical – no load	60W
Sell back power modes	Limited to Household or Full Grid-Tied
Design (DC to AC)	Transformer less DC
Response Time (Grid-Tied to Off-Grid)	4ms
Power Factor	+/-0.9 - 1.0

Battery (optional) Output Power 8000W

Type	Lead-Acid or Li-Ion
Nominal DC Input	48V
Capacity	90 – 2000Ah
Voltage Range	43.0 – 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)	28.0" x 17.375" x 9.37"
Weight	77 lbs
Enclosure	NEMA type 1 (Indoor Use)
Ambient Temperature (3 variable speed fans)	-25 to 55C, >45C derating
Display	Color touch screen
Wi-Fi Communication (monitoring or SW updates)	included
Snap on sensors for limited selling to Household	included
Standard Warranty (verified by HALT testing)	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, 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 breaker / disconnect	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