

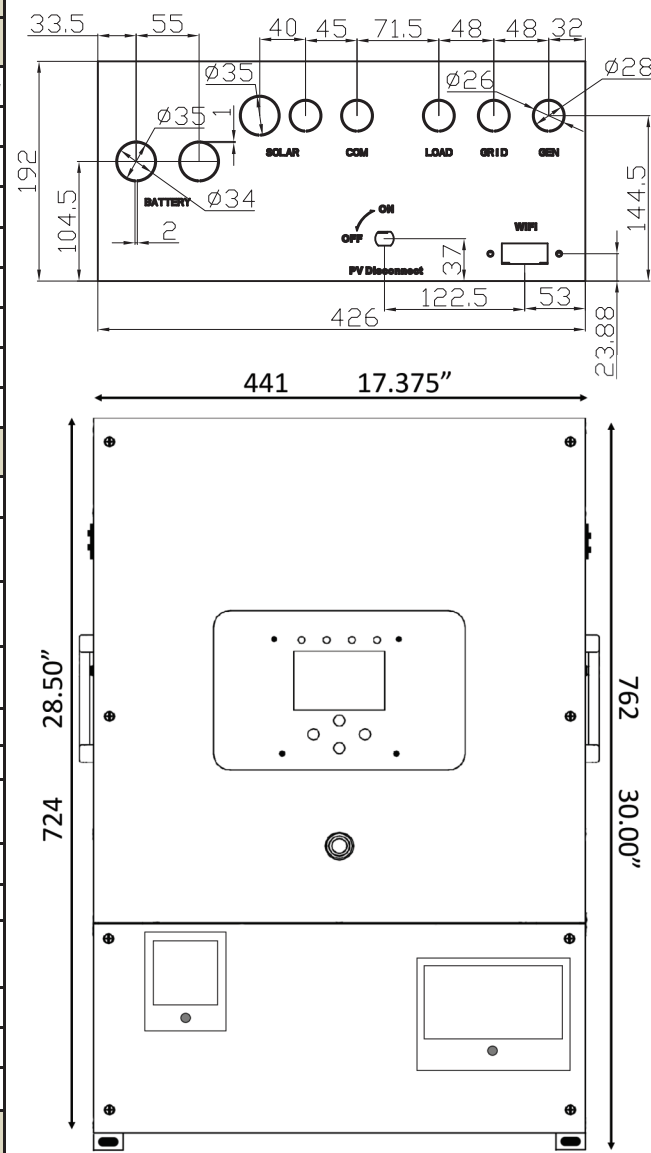
Sol-Ark-12K-P Specifications

Solar Output Power 12000W	
Max allowed PV DC Capacity	6,500W+6,500W = 13,000W
Max PV power delivered to Battery & AC outputs	12000W
Max DC voltage	500V@18A, 450V@20A
MPPT voltage range	150-425V
MPPT 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 Coupling (Gen Breaker / Load Breaker)	7,600W / 9,600W

AC Output Power 9000W On Grid & 8000W Off Grid	
Connections	120/240/208V split phase
Continuous AC power to Grid (On Grid)	9000W 37.5A L-L (255V) 4800W 40A L-N (120V)
Continuous AC power to Loads (Off Grid)	8000W 33A L-L (240V) 4800W 40A L-N (120V)
Surge AC power 10sec	16,000VA L-L (240V)
Surge AC power 100ms	25,000VA L-L (240V)
Parallel Stacking	2-8 (240V), 3-9 (208V)
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) Output Power 9000W	
Type	Lead-Acid or Li-Ion
Nominal DC Input	48V
Capacity	50 – 9900Ah
Voltage Range	43.0 – 63.0V
Continuous Battery charging output	185A
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)	30.0" x 16.75" x 9.37"
Weight	74 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
250A 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

SOL-ARK 12K

OFF-GRID



+



+



COMMERCIAL / MEDICAL
No Glitch Transfer



MILITARY
Cage Code: 7U4P4



GRID SELL
+Time of Use



OFF-GRID
Battery Agnostic

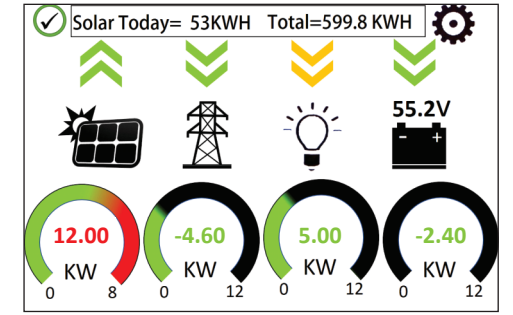


RETRO-FIT
AC Coupling

Competitor Comparison

Design Type	DC Transformerless			DC Coupled			AC Coupled						
	Sol-Ark 12K	Sol-Ark 8K	Outback Skybox 2x5BX5048	Generac PWRcell 7.6 +4x52500	SolarEdge 7.6 StorEdge 32xP400	Panasonic (Darfon) 2xH5001	Outback FPR-8048A	Schneider XWPPro.6.8 +3xMPPPT80	Victron 2xQuattro5K +3xMPPPT150	SMA 11000TL + 2x4548	Enphase 2x10 +36xIQ7P	Sonnen ECO-20 + String Inv	Tesla 2x Powerwall2 + String Inv
Brand & Model													
MSRP Price	\$6,850	\$6,100	\$10,000	\$6,500	\$6,900	\$6,200	\$8,000	\$9,900	\$9,200	\$9,800	\$36,500	\$24,000	\$19,400
Solar PV Continuous Power	12KW	9KW	2x5.5KW	8KW	7.6KW	2x6KW	7.7KW	11.6KW	12KW	11KW	10.4KW	12KW	12KW
Inverter AC Continuous Power	9KW	9KW	2x5KW	7.6KW	7.6KW	2x5KW	8KW	6.8KW	8KW	11KW	10.4KW	8KW	2x5KW
Inverter Battery Continuous Power	9KW	9KW	2x5KW	6.7KW	5KW	2x5.5KW	8KW	6.8KW	8KW	2x4.5KW	2x3.8KW	8KW	2x5KW
Off Grid Inverter AC Peak Power (5s)	20KW	20KW	10KW	12KW	7.6KW	13KW	12KW	20KW	20KW	20KW	8.8KW	14KW	14KW
System Idle Power	60W	60W	280W	200W	200W	200W	76W	48W	75W	50W	60W	78W	78W
AC to DC Charger	185A	185A	200A	6.7KW	5KW	120A	115A	140A	255A	170A	N/A	N/A	N/A
User Interface	color touch	color touch	color touch	Text	Text	Text	Text	Text	color touch	Text	X	color touch	X
PV to Batt Efficiency @ 65%	97.5%	97.5%	81.0%	92.0%	91.0%	91.0%	97.5%	96.0%	97.5%	78.0%	92.0%	82.0%	92.5%
AC to Batt Efficiency @ 65%	96.0%	96.0%	80.0%	93.0%	91.0%	90.0%	85.0%	91.5%	85.0%	80.0%	95.0%	85.0%	95.0%
Batt to AC Efficiency @ 65%	95.5%	95.5%	94.5%	93.0%	88.0%	90.0%	93.0%	92.5%	91.5%	94.5%	95.0%	93.0%	95.0%
On Grid PV to AC Efficiency @ CEC	96.5%	96.5%	94.0%	95.5%	96.5%	95.5%	90.2%	88.5%	89.2%	98.0%	97.0%	97.0%	97.0%
Time of Use or Off Grid	7%	7%	24%	15%	21%	19%	10%	12%	11%	28%	13%	25%	13%
PV -> Batt -> AC Losses @ 65%	4ms	8ms	20ms	1000ms	2000ms	20ms	8ms	8ms	20ms	5000ms	2000ms	100ms	2000ms
Grid Failure UPS Transfer Time	optional +\$1.5K	opt +\$1.2K	X	X	X	X	X	X	X	X	X	X	X
EMP/Solar Flare Hardened to >100KV/m	✓	✓	✓	✓	✓	✓	X	X	X	✓	✓	✓	✓
Low Cost Easy Install Warranty	10 yr	5/10 yr	5/10 yr	10 yr	12/20/25 yr	5/10 yr	5/10 yr	10 yr	5yr	10 yr	10 yr	10 yr	10 yr
AC Coupling to existing Inverters	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Parallel Stacking	✓	X	✓	✓	X	✓	✓	✓	✓	✓	✓	✓	✓
120/240/208V 3Phase Generator Support	✓	X	✓	✓	X	✓	X	✓	✓	✓	✓	✓	✓
AC Load Shedding for TOU & Off Grid	✓	✓	✓	✓	X	✓	X	✓	✓	✓	✓	✓	X
UL1741SA/Rule 21 & 14H (Grid Sell only)	✓	✓	✓	✓	X	✓	X	✓	✓	✓	✓	✓	X
NEC UL1699B Arc Fault Outdoor Enclosure	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Battery Bank	22KWh/2400cycles +\$5.2K	22KWh +\$5.2K	26KWh +\$7.2K	20.3KWh 3500c +\$14K	2x9.8KWh 3000c +\$12K	19.4KWh 6000c +\$19K	26KWh +\$7.2K	26KWh +\$7.2K	26KWh +\$7.2K	26KWh +\$7.2K	21.0KWh 6000cycles	20KWh 6000cycles	28KWh 3500cycles

STACKABLE, No Glitch, ALL-IN-ONE HYBRID



Color Touch Display

What's Inside

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 AC In/Out

50A AC Load Out

40A AC Gen In/Smart Load Out



Limitless

PARALLEL STACKING (1-9), GRID SELL, METER ZERO, TIME OF USE, SMART LOAD, PEAK SHAVING, 20 kW PEAK POWER, 9.6kW AC COUPLING

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

FASTEST TRANSFER TIME

Free Remote Monitoring / Programming

