



Satcon Solstice 100 kW System Solution

Clean power.

SDMS-0100-208-LNIU
SDMS-0100-240-LNIU
SDMS-0100-480-LNIU

5-12% Improvement in Total Energy Harvest

20-25% Reduction in Balance of System Expense

The industry's first complete power-harvesting and array management solution for utility class solar power plants.

Satcon™ Solstice® enables centralized, intelligent management of the entire PV system along with the flexibility of localized control over every component in the array, from the panel, to a single string, to the inverter, to the grid – thus serving as a total system solution.



String Level Maximum Power Point Tracking (MPPT) ensures that the negative effects of module shading, soiling and aging mismatch are minimized and contained within the string.

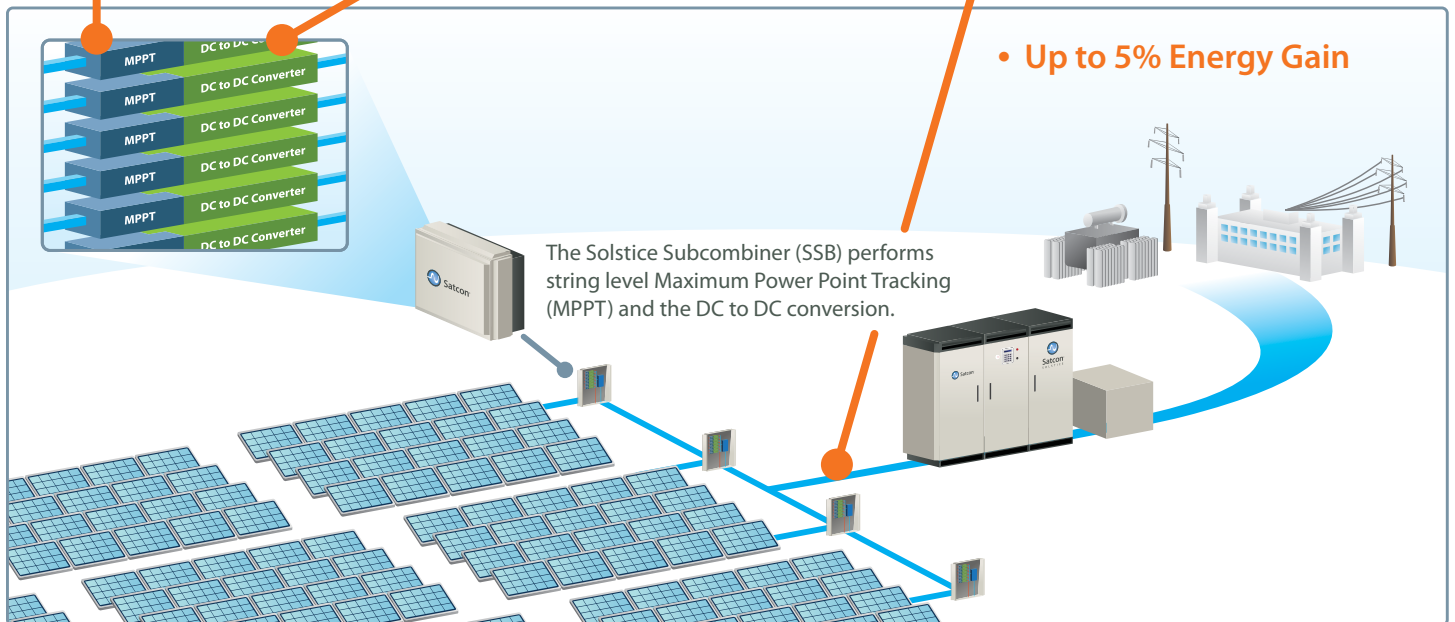
• **1-5% Energy Gain**

String level DC to DC conversion boosts string voltages to a higher, fixed level, reducing line losses and allowing the inverter to operate more efficiently. Higher voltages result in lower current, permitting the use of smaller gauge cable, and a reduction in wiring costs. The entire DC/DC conversion is accomplished with an efficiency of 99%.

• **Up to 2% Energy Gain**

Reduced Balance of System Expense by 20-25% While Gaining Greater Design Flexibility

- Utilize smaller gauge, lower cost cable
- Decreased conduit size requirements
- Lower installed costs due to factory integrated total system design
- Greater design flexibility by ability to use different panel technologies, power ratings, vintages, sizes, mounts and brands in the same array



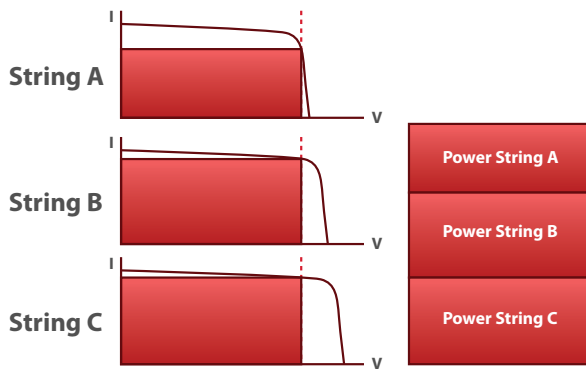
Total system monitoring, diagnostics and control

- String level instrumentation provides greater visibility to poorly behaving elements in the system
- Bidirectional communication allows you to send commands, and receive status and operating characteristics from the inverter.
- Ability to sense, identify and mitigate ground faults as they occur - in milliseconds

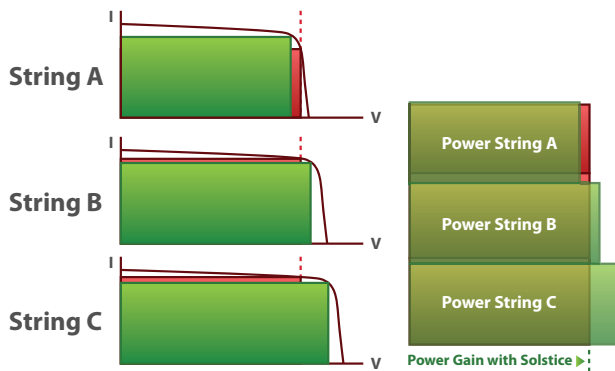
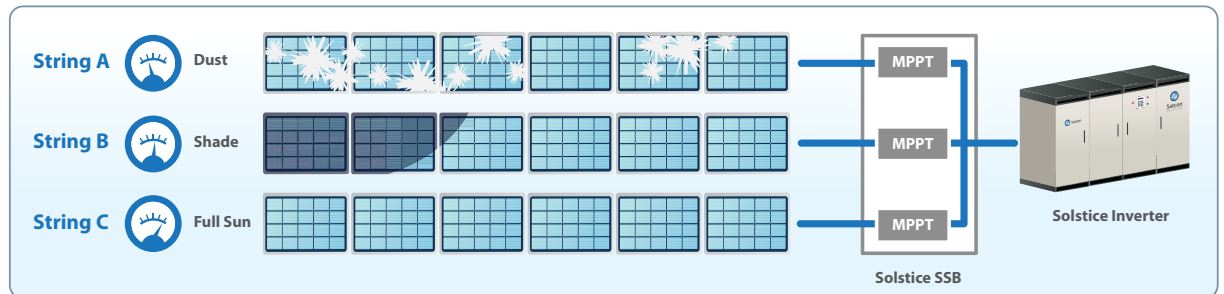
AC Side System Value

- Control of real and reactive power
- Ability to stop, start and restart a solar PV power plant remotely
- Controllable ride-thru
- Dynamic VAR generation
- Simplified Utility SCADA system integration via the Solstice PV site controller

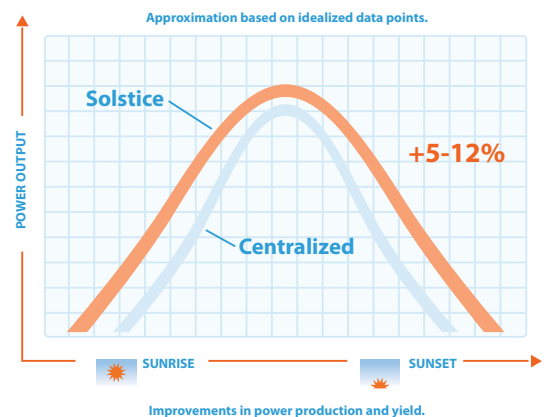
How Solstice Works



In any system, individual string IV curves are seldom identical due to shading, soiling or other causes of module mismatch. In a centralized system, this results in each string operating below its maximum power point, leading to suboptimal energy production from the whole system.



With Solstice, power output from each string is independently optimized, allowing each string to operate at its full potential all day long. As a result, energy production from the entire system is increased by 5-12%.



Advanced, Rugged, and Reliable

Engineered from the ground up to meet the demands of large-scale installations, Satcon Solstice features NEMA4 SSB enclosure, NEMA 3S inverter electronic section, advanced monitoring and control capabilities, and Edge™, Satcon's next-generation MPPT solution.

Low Maintenance

Total system intelligence and modular components make service efficient

String level Maximum Power Point Tracking (MPPT)

Highly optimized DC to AC conversion

Total system monitoring, diagnostics and control

Advanced grid interconnection and utility control capabilities

Natural convection cooled SSB for simplicity and high reliability

Rugged Construction

Hermetically sealed NEMA 4 Cabinet for Subcombiner and for power control electronics in inverter

Output Transformer

Provides galvanic isolation

Matches the output voltage of the PV inverter to the grid

Subcombiner Specification

Solstice 25 kW SSB Specifications			UL/CSA
Input Parameters			
Maximum Array Input Voltage	600 VDC		●
PV Array Configuration	Negative Ground		●
	Positive Ground		○
Maximum Number of String Inputs	2.2 kW	12	○
	2.9 kW	9	●
Input Voltage Range Full Power	250-575 VDC ¹		●
Input Voltage Range, MPPT	50-600 VDC ²		●
Maximum String Input Current	9.0 ADC		●
Maximum String Power Output	2.2 kW		○
	2.9 kW		●
Output Parameters			
Output Voltage	575 VDC		●
CEC-Weighted Efficiency	98.5%		●
Peak Efficiency	99%		●
Distribution Current	46 A		●
Temperature			
Operating Temp	-20° C to 55° C		●
Storage Temp	-40° to +85° C		●
Cooling	Natural Convection		●
SSB Cabinet			
Cabinet Finish	RAL 7035		●
Cabinet Dimensions	30" H x 40" W x 13.6" D		●
Cabinet Weight	275lbs		●
Enclosure Rating	NEMA 4		●

- Standard
- Optional

¹ Power output will be limited below 300V in high ambient temperature conditions.

² Open circuit voltage must be above 100 VDC to start

Note: Specifications are subject to change.

Safety

UBC Seismic Zone 4 compliant

Built-in DC and AC disconnect switches

Integrated DC two-pole disconnect switch isolates the inverter (with the exception of the GFDI circuit) from the photovoltaic power system to allow inspection and maintenance

Protective covers over exposed power connections

Inverter Specification

Solstice 100 kW Specifications		UL/CSA
Distribution Parameters		
Distribution Input Voltage	575 VDC	●
Distribution Input Voltage range	550-600 VDC	●
Maximum Input Current	189 A	●
Number of SSBs per Inverter	4	●
Output Parameters		
Nominal Output Voltage (transformer)	208 VAC	●
	240 VAC	●
	480 VAC	●
Output Voltage Range (L-L)	208 VAC	183-229 VAC ●
	240 VAC	211-264 VAC ●
	480 VAC	422-528 VAC ●
Output Frequency Range	59.3-60.5 Hz ●	
Nominal Output Frequency	60 Hz ●	
Max Output Current/Phase	208 VAC	278 A ●
	240 VAC	241 A ●
	480 VAC	120 A ●
CEC-Weighted Efficiency	208 VAC	96.5% ●
	240 VAC	96.5% ●
	480 VAC	96.5% ●
Max Continuous Power Output	100kW (KVA) ●	
Tare Losses	208 VAC	60.4 W ●
	240 VAC	61.8 W ●
	480 VAC	63.9 W ●
Power Factor @ Full Load	>0.99 ●	
Harmonic Distortion	Transformer	< 3% THD ●
Temperature		
Operating Temperature Range (Full Power)	-20° C to +55° C* ●	
Storage Temperature Range	-30° C to +70° C ●	
Cooling	Forced air ●	
Noise		
Noise Level	<65 dB(A)	
Combiner		
Number of Inputs and Fuse Ratings	6 x (80 A)	○
	5 x (80 A)	○
	4 x (100A)	○

- Standard
- Optional

* 55° C with additional option package
Note: Specifications are subject to change.

Output Options

Satcon Solstice 100kW System

UL/CSA	Output
	208V AC Output
	240V AC Output
	480V AC Output

Solstice 100 kW Specifications

UL/CSA

Inverter Cabinet

Cabinet Finish	RAL 7035	•
Hood and Base Trim Finish	RAL 5001	•
Cabinet Dimensions	67.87" H x 85.72" W x 23.39" D	•
Cabinet Weight	2605 lbs	•
Enclosure Rating	NEMA 3R, NEMA 3S for power and control electronics	•

Transformer

Integrated Internal Transformer		•
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Testing and Certification

UL1741, CSA 107.1-01, IEEE 1547, IEEE C62.41.2, IEEE C62.45, IEEE C37.90.1, IEEE C37.90.2		•
UBC Zone 4 Seismic Rating		•

- Standard
- Optional

Note: Specifications are subject to change.



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