

# Case Study: Cline Cellars' Solar PV Installation Includes AE Solaron® Grid-Tie Inverter With >97% CEC Efficiency

*High-Efficiency Inverter Helps Maximize Returns on PV Array*

Cline Cellars, a Sonoma Valley vineyard and winery, produces the distinctive brands of Cline, Oakley, and Jacuzzi Family Vineyards. Cline Cellars boasts several sustainable business practices, from the use of organic soils to its energy-independent facility. Solar technology employed at Cline Cellars includes a PV array atop the winery's 50,000 ft<sup>2</sup> warehouse roof. SolarCraft Services, Inc. constructed the 411 kW system using nearly 2000 Sharp® PV panels and an AE Solaron® 333 kW grid-tie PV inverter.

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The AE Solaron® 333 kW inverter—typically operating at 97.5% efficiency—helps deliver approximately 586,000 kWh of annual power, for lower energy bills and substantial reductions in the winery's carbon footprint.

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SolarCraft chose the Solaron inverter due to its breakthrough efficiency and reliable energy conversion. Advanced Energy has a longstanding history of high quality standards in power conversion products. The Solaron inverter helps deliver approximately 586,000 kWh of annual power for substantial reductions in the winery's carbon footprint and electricity costs, and for savings in utility credits and government incentives. The inverter's robust, transformerless, bipolar design is quiet, and its compact size provides the industry's smallest footprint at this power level.

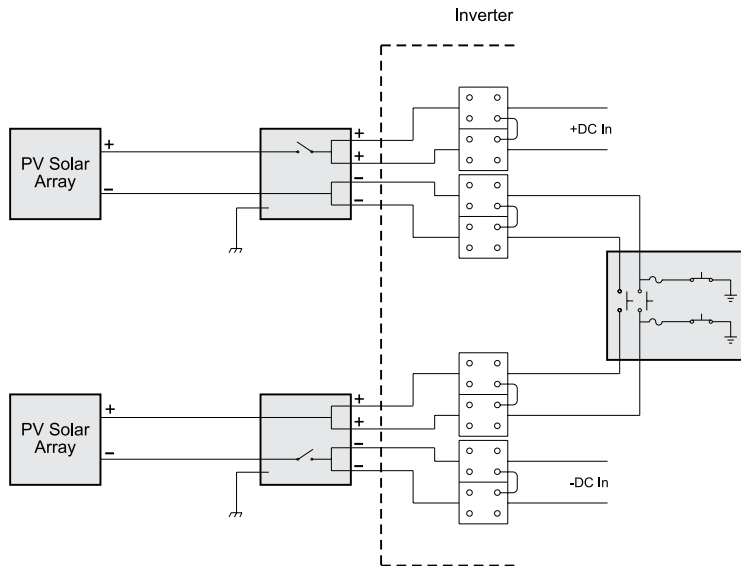
## Easy Implementation

AE has delivered next-generation capability with its bipolar array configuration ( $\pm 600$  VDC), which offers the same low-voltage advantages as a monopolar configuration but with greater efficiency. Implementation is easy. At Cline Cellars, the PV modules are connected in strings as usual, and each half of the array adjoins to a separate combiner box. The remaining installation is quite typical with junction boxes, DC home runs, and disconnect boxes that deliver power from the positive and negative arrays to the Solaron inverter.

### Solaron® Inverter Highlights

Inverter	AE Solaron® 333 kW unit
CEC Efficiency	97% <sup>[1]</sup>
UL Listing	1741-2005 by CSA International
Compatibility	Separable, bipolar wiring configuration
Communication	Remote monitoring via integrated data acquisition & networking
Dimensions	81.2" (H) x 74.0" (W) x 34.7" (D)
	206 cm (H) x 188 cm (W) x 88 cm (D)
Weight	2045 lb (927.5 kg) unit weight
	2344 lb (1063.2 kg) shipping weight
Service	7 x 24 x 365 service & support

[1] New Solaron 333 kW models achieve 97.5% CEC-weighted efficiency.



Details: Wiring diagram for a bipolar PV array

## Extraordinary Results

Cline Cellars has achieved extraordinary results with this PV system. Specifically, the Solaron inverter has helped Cline Cellars maximize business operations, inverter performance, and financial benefits.

### Operational Benefits

- Located outside, along the back wall of the facility, the inverter operates quietly and independently with automatic startup and shutdown each day.
- Cline Cellars can monitor performance either inside the office or remotely via a network connection through the inverter's wireless, remote-access system interface.
- The unit's compact size allows Cline to achieve high efficiency in a small footprint.

### Breakthrough Performance

- The Solaron inverter typically exceeds its 97% CEC rating<sup>[2]</sup>, often operating at 97.5% efficiency.
- The  $\pm 330$  VDC to  $\pm 600$  VDC tracking range provides a wide MPPT window for maximum performance; Cline Cellars generally operates between  $\pm 350$  VDC and  $\pm 400$  VDC.

### Return on Investment

- Cline Cellars has greatly reduced its reliance on grid electricity and its CO<sub>2</sub> output, helping to preserve the land it so carefully cultivates.
- The Solaron inverter's high efficiency—in concert with effective PV system design—contributes to better energy harvest, reduced operating costs, and higher returns on Cline Cellars' investment.

[2] New Solaron 333 kW models achieve 97.5% CEC-weighted efficiency.



The AE Solaron® 333 kW inverter installed at Cline Cellars

AE provides Solar Craft and Cline Cellars with standard 7 x 24 x 365 support. With nearly three decades of experience, we can offer the performance our customers expect through world-class service, support, and educational programs.

## Schedule a Tour

Enjoy a tour of Cline Cellars and view a working Solaron inverter model in action. Ask your AE account manager for details, and come see how an AE Solaron inverter can contribute to your next PV installation. For more information, contact AE at 800.446.9167 or visit [www.aesolaron.com](http://www.aesolaron.com).

Specifications are subject to change without notice.



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