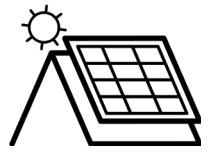




Case Study — Solar Atmospheres of California PVKIT® 2.0 & RibBracket™ III



At-A-Glance

Project Name: Solar Atmospheres

Location: Fontana, CA

Engineer: Paul Truong

General Contractor: SunGreen Systems Inc.

Solar Installer: SunGreen Systems Inc.

Battery Storage Partner: Stem

Module Manufacturer: URE

Inverter Manufacturer: Delta

Battery System Manufacturer: Tesla

Roof Profile: 26-gauge, American Buildings Long Span III trapezoidal, exposed-fastened

Industry: Commercial / Industrial



Situation

SunGreen Systems needed a solar attachment solution for California's largest commercial solar + energy storage system. They required a mounting system that would allow for flexibility in design and achieve maximum roof coverage.

Result

The S-5! team provided on-site training and helped SunGreen Systems determine the best path forward for their project utilizing S-5!'s rail-less, direct-attach™ solar mounting solution. The PVKIT®2.0 pre-assembled components provided a simple, economical method for installers to “lay & play” modules with tested, engineered, attachment of modules to all metal roof types.

Project Stats

Roof Size: 2 roofs, each measuring 90' x 225' (x2) = 40,500 ft²

Carpport Size: 40' x 150' (x 16' clear height) (x2) = 12,000 ft²

Roof Pitch & Carport Pitch: 5°

Solar Project Size: 772-kW DC TOTAL / 570-kW DC metal roof

Solar Modules: 1,494 rooftop, URE 380W panels

Battery System: 14 Tesla Powerpacks @ 1,561-kW/3,122-kWh

S-5! Products Supplied:

- PVKIT®2.0 (2976)
- RibBracket™ III (2976)

The Project

Solar Atmospheres of California (SCA) provides state-of-the-art vacuum thermal processing services. In response to the challenges of California's energy market, SCA commissioned and installed the state's largest commercial solar + energy storage system.

By combining onsite generation, an advanced energy storage system and a world-class artificial intelligence-powered analytics platform, SCA optimizes energy usage by automatically switching between onsite generation, battery power and grid power.

The robust system enables SCA to achieve a wide variety of goals, including energy expense reductions through reduced peak demand, onsite renewable power generation and demand response program participation.

The digitally connected energy storage network includes a 772-kW PV solar system and a 1,561-kW/3,122-kWh Tesla battery storage system on twin 20,000+ square foot metal buildings.

The facilities feature American Buildings Long Span III trapezoidal, exposed-fastened metal roofing with the solar modules secured in place by S-5!'s PVKIT®2.0 solar solution and RibBracket™ III.

The Challenge

With more than 60 furnaces for vacuum heat treating and brazing services, ranging from lab-size research and development furnaces to the largest commercial vacuum furnace (48 feet long, 150,000-pound capacity), the site experiences very high energy demands and energy charges. The customer requested the largest solar system the building could handle.

Solar installer, SunGreen Systems worked with its energy storage partner, Stem, to propose a combined solar and Tesla battery storage system to shave the demand and arbitrage energy.

The Solution

SunGreen Systems installed solar on every possible area of the roof; built an addition to the southern building for more roof space; and installed two, cantilevered carports along the property line—to provide additional hosting of solar arrays.

They chose S-5! products because the solar attachments provided design flexibility in attachment locations. In addition, the lightweight solution allowed them to avoid costly retrofits.

During initial client meetings, SunGreen Systems demonstrated the reliable racking solution via a sample kit provided by S-5!—enabling the client to find the right clamp for the project and allowing them to see first-hand the factory-installed gaskets that would preserve the building's integrity.

The S-5! team worked with SunGreen Systems to obtain a BOM for the project so they could determine their exact costs for such a large project. Additionally, the S-5! team worked hands-on with their crew on site to demonstrate best practices for rail-less installation, including advance module preparation while other crew members completed the electrical work.

The investment was particularly attractive to SCA because of two federal tax incentives and additional state-sponsored incentives. The company expects a full return on investment within 30-36 months.



How Did the S-5! Products Help?

- Reduced labor hours by eliminating the assembly and installation required by traditional railed solutions
- Minimized the amount of time workers spent in harnesses on an exposed roof
- Improved aesthetics
- Eliminated the risk of a voided roof manufacturer warranty

Long-Term Outlook

Solar Atmospheres has supplemented its high demand for power generation via the state's largest commercial solar + energy storage system.

The S-5! solar solution provided an aesthetically pleasing, cost-effective PV mounting system – enabling the client to avoid costly retrofits.

“SunGreen Systems specializes in challenging and unique projects, and S-5! is what we pull out of our toolbox for metal roofs. There is a myriad of reasons to choose S-5! from reliability, cost and ease of installation, which our customers appreciate. It demonstrates to them that we choose the right products for each project and S-5! has a solution for every metal roof we come across with rail and rail-less solutions.”

— John Hoffman, CEO, SunGreen Systems Inc.



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