

CASE STUDY

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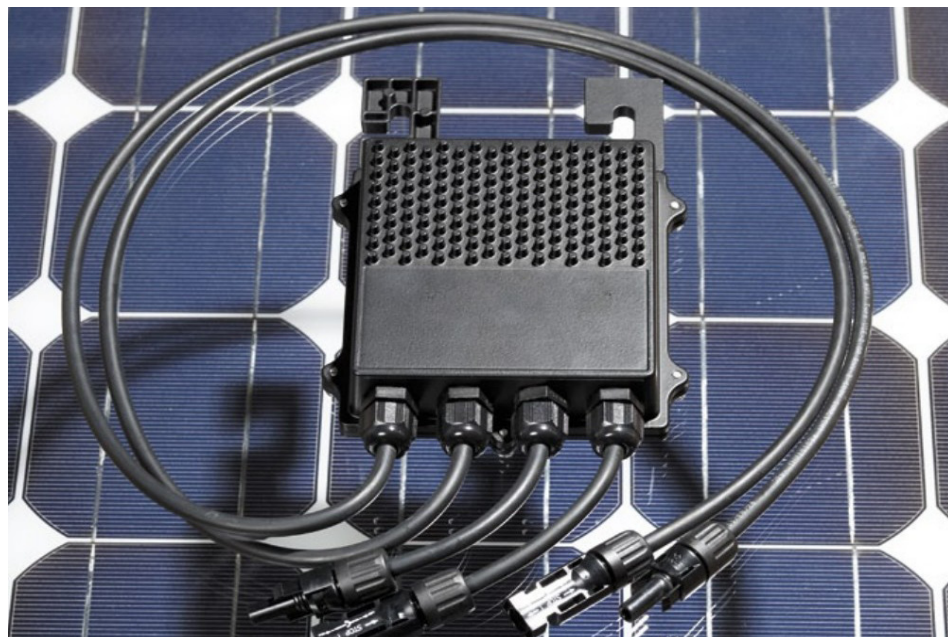
PHOTON Labs Put the SolarEdge Power Optimizers to the Test

“The system produced additional yield in all scenarios, even when no shadows were cast.”

“When it comes to the features everything is just right.”

“Module monitoring and automatic module disconnect increase the technical safety and economic stability.”

(PHOTON Magazine, Oct 2011)



“Convincing performance” reads the title of the lead article in PHOTON’s October 2011 issue in which the magazine put the SolarEdge power optimizers to the test. In the article PHOTON reveals the results of a new round of tests performed on SolarEdge power optimizers at the PHOTON Lab. Read a summary of the article below. Heads up: The tests show that SolarEdge “really does justice to the name »power optimizer.«”

Test summary:

SolarEdge power optimizers work with SolarEdge inverters as well as with third party inverters and PHOTON decided to test the performance of the power optimizers in both cases. “Both versions functioned flawlessly in PHOTON Lab’s test.” Tests were conducted for shaded as well as unshaded scenarios and results were then compared to a reference system without power optimizers. PHOTON Lab simulated four different shading situations which typically can be found in residential and commercial photovoltaic installations: horizontal shading, a dormer window, a pole and soiling (reduced irradiance).

Unshaded scenario:

With no shading at all the SolarEdge power optimizers **increased the energy yield by 1.5% - 1.7%**.

Shaded scenario:

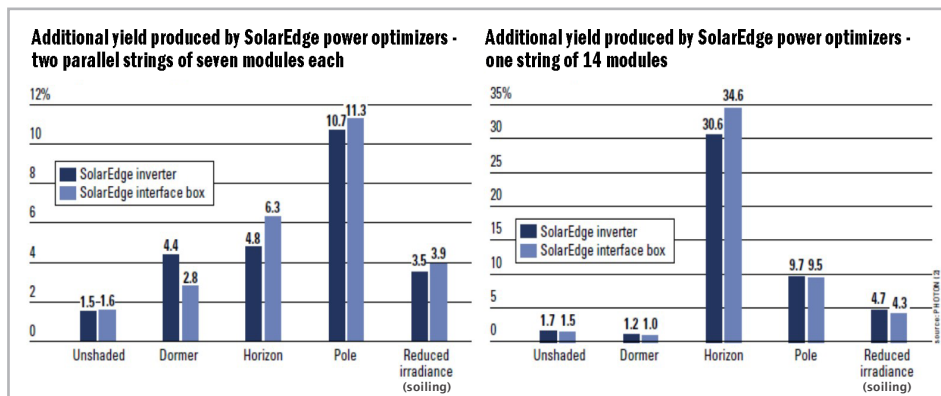
Energy gain peaked at 34% and 9.7% in the presence of horizontal shading and a pole respectively in a single-string-configuration.

The maximum energy gain was 11.3% and 6.3% in the presence of a pole and a dormer window, using a two-string-configuration.

Additional features:

Safety: PHOTON considers the SolarEdge module shut-down feature, the “normally-off” approach, to be the most important of the additional features and asserts that, “the solar system then poses no risk during fire-fighting activities.”

Monitoring: The SolarEdge monitoring portal “makes it easy to detect faulty modules – a task that can otherwise require a great deal of effort.”



Efficiency:

PHOTON also measured the efficiency of the power optimizers. Measurements show that their **efficiency has improved by 1%** compared to the previous version. Average efficiency was measured at **98.5%** and **in some cases efficiency exceeded 99%**.

Installation and operation:

Photon reports that SolarEdge power optimizers are “easy to install” and operated flawlessly. According to PHOTON, SolarEdge power optimizers are exemplary in this still emerging industry and are “among the few power optimizers available in mass production.”

Read the full article - www.solaredge.com/articles/photon