

Power generation efficiency of double-glass bifacial modules





Overview

Double- glass modules are able to absorb sunlight from two directions due to their double-sided design, thus increasing the efficiency of power generation. Under ideal conditions, double-glazed modules can generate 5% to 22% more power compared to single-glazed modules. Does a glass bifacial module increase power?

Applying the lattice pattern on the rear glass boosts the front-side power by about 1.7%, but lowers the bifaciality factors by about eight percentages from 72% to 64%. The energy yield gain of glass/glass bifacial module is about 6% during the period of investigation.

Do bifacial modules gain more energy?

As for the bifacial modules, the rear side power is the key parameter in determining the energy gains, and the index of bifaciality factor (Zhu et al., 2019) is usually used to evaluate the ability of getting extra gain of bifacial modules.

Do glass/glass modules with bifacial cells generate more energy?

Both the long-term field data collected from inverters and Multi I-V tracer clearly demonstrate that glass/glass modules with bifacial cells, DG Bi-PERC and DG Bi-PERC/RC, generate more energy than regular modules with monofacial cells, REG PERC.

What is the energy yield gain of glass/glass bifacial module?

The energy yield gain of glass/glass bifacial module is about 6% during the period of investigation. However, it can be increased to above 10% with optical enhanced effects of the reflective coating on the rear glass.

Do glass/glass bifacial solar cells provide more energy yield?

Our results show that the glass/glass bifacial modules encapsulated with bifacial solar cells provide over 6% more energy yield compared to the



glass/backsheet monofacial modules encapsulated with regular monofacial solar cells.

Why do bifacial modules have glass panels?

Manufacturers tend to prefer glass panels on both the front and rear sides of a bifacial module because these designs tend to better transmit light and are more resistant to inclement weather, moisture permeation, corrosion, and more excellent mechanical load ability.



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Increasing power generation: maximizing the efficiency of bifacial modules

Double-sided double-glass modules can increase the power output of the module by 20-30% when the conditions are ideal. And the background reflectivity of the installation location ...

[TOPCon's Bifaciality Solar Panel Compared to BC Brings a 10.5% Power](#)

As a key parameter of double-glass modules, bifaciality directly reflects the photoelectric conversion ability of the back of the module when receiving scattered light and ...



[Study on the comprehensive ratio of power generation capacity of ...](#)

By evaluating the power generation capabilities of bifacial double-glass modules and single-sided N-type modules on different ground types (artificial grass, concrete, sandy soil, white paint, ...



Optical enhanced effects on the electrical performance and energy yield

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the glass/backsheet monofacial ...



High performance double-glass bifacial PV modules through...

Significant amount of near infrared light passes through bifacial cells. Double-glass structure shows a loss of ~ 1.30% compare to the glass/backsheet structure under STC measurements.

How bifacial PV modules work: Factors that affect rear side power

In most cases, industry experts calculate the power generation on a bifacial panel's rear side in terms of the "bifacial gain," as a fraction of the energy produced by the front side of ...



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