

Characteristics of bifacial solar panels





Overview

Are bifacial solar panels better than monofacial?

Under better albedo and proper mounting angles, a typical bifacial solar panel is expected to show 50% more power conversion efficiency than the monofacial counterpart. Bifacial silicon solar cells are monofacial cells with a back surface opened with a dielectric passivated layer, and a polymer back cover is replaced with a transparent sheet.

Why do bifacial solar panels increase power conversion efficiency?

The increase in the bifacial silicon solar cells is due to the reduction in silicon wafer thickness and the increase in the transparency of the panels. Under better albedo and proper mounting angles, a typical bifacial solar panel is expected to show 50% more power conversion efficiency than the monofacial counterpart.

What is a bifacial silicon solar panel?

The bifacial silicon-based cell architecture consists of PERC+, p-PERL, n-PERC, n-PERT, n-PERL, heterojunction, IBC and TOPCon cells. A typical bifacial silicon solar panel consists of a glass sheet on both front and back sides, a transparent polymer sheet and a thin silicon wafer layer with a shelf life of at least 25 years.

What are the characteristics of bifacial solar cells?

Characteristics of bifacial cells: bifaciality factor The specialty of bifacial solar cells is their high energy yields due to the front and backside illumination. The energy yields are measured as bifaciality factor ($\phi\eta$) and are defined as the ratio of the energy yields at the rear (η_{rear}) and front (η_{front}) sides. $\phi\eta = \eta_{\text{rear}} / \eta_{\text{front}}$



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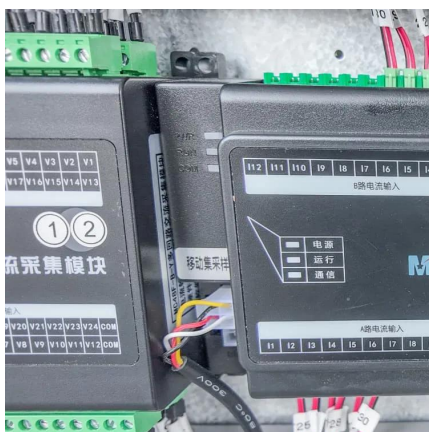
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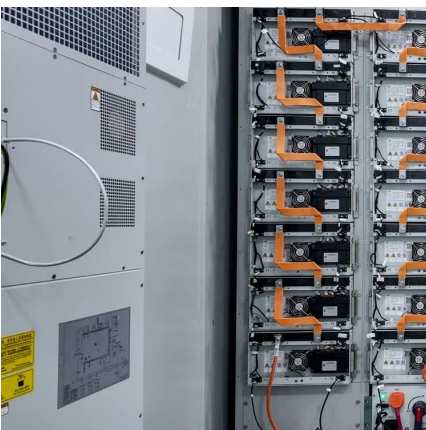


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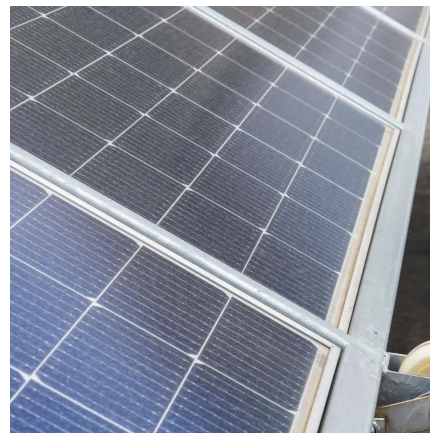


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