

What is a glass-glass PV module?

A growing share of decommissioned PV modules will be glass-glass PV modules, these modules are different from regular glass-back sheet (GBS) modules and replace the traditional polymer back sheet with a glass layer identical to the top glass layer. Glass-glass PV modules currently account for about 15% market share in the PV industry.

What is a glass-glass module?

Glass-Glass module designs are an old technology that utilises a glass layer on the back of modules in place of traditional polymer backsheets. They were heavy and expensive allowing for the lighter polymer backsheets to gain the majority of the market share at the time.

Are glass-glass PV modules safe?

Especially since glass defects arise more frequently at glass-glass PV modules [12,13 ]. Glass defects can disrupt the insulation of the encapsulant layer and PV cells, which can lead to ingress of water. This affects the reliability of the PV modules and might cause safety and/or performance issues [11 ].

Are glass-glass PV modules more expensive than regular GBS modules?

While there are no technical disadvantages to glass-glass PV modules [10,19 ], in general glass-glass PV designs are more expensive than regular GBS modules due to the use of an additional costly glass layer and the increased weight that may lead to higher costs for support structures.

Where are our glass-glass modules made?

All our glass-glass modules are tested in Germany. They are manufactured in highest quality at our Dresden production site or made to order at selected manufacturing lines. All our glass-glass are designed and developed in Germany with almost 30 years of experience in manufacturing solar panels.

What is the market share of glass-glass PV modules?

Glass-glass PV modules currently account for about 15% market share in the PV industry. Nonetheless, these glass-glass designs are predicted to represent up to 50% of the PV market in 2030 [10 ]. Glass-glass PV modules have a more durable design and higher mechanical strength [11 ].

The choice of glass in a PV module has become a key consideration in efforts to improve durability in the face of extreme weather conditions.

o Indoor and outdoor IV for monofacial modules described in IEC 60904  
o IV procedures for bifacial modules recently released in 2019 (IEC TS60904-1-2)  
o Rear spectrum/intensity depends on orientation, height, tilt, shading, transparent area of module, ground albedo, etc.

In this work, we examine the interfacial degradation modes in G/G modules under damp heat (DH) with and without bias voltage, comparing emerging polyolefin ...

Due to the potential outdoor energy yield advantages of glass/glass modules reported in the literature, we recommend a glass/glass module structure for bifacial solar cells.

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With the rapid growth of G/G deployment, understanding the outdoor performance, degradation, and reliability of this PV module construction becomes highly valuable.

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We found that glass-glass PV modules which endured glass defects did not show performance loss, nor internal damage to the PV cells. These results were expected, since ...

o Glass-glass modules absorb light incident on the back o The increased energy absorption is the primary cause of elevated operating temperature in glass-glass modules

We found that glass-glass PV modules which endured glass defects did not show performance loss, nor internal damage to the PV cells. These results were expected, since glass-glass PV modules are resilient to cell breakage and glass defects are expected to cause degradation over time.

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In this work, we examine the interfacial degradation modes in G/G modules under damp heat (DH) with and without bias voltage, comparing emerging polyolefin elastomers (POE) and industry-standard poly (ethylene-co-vinyl acetate) (EVA) encapsulants.

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Fung et al. [116] presented a one-dimensional transient heat transfer model applicable to PV modules that have different orientations and inclinations, for evaluating the heat gain of semi-transparent photovoltaic modules for building integrated applications.

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