AL-G12M210-12BB PERC Solar Module: Technical Insights and Market Positioning

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Decoding the Solar Nomenclature

When you see a product code like AL-G12M210-12BB PERC, it's like reading a solar DNA sequence. Let's break down what this alphanumeric code reveals:

- AL: Manufacturer code (likely Aoli Solar)
- G12: 12th generation product line
- M210: 210mm silicon wafer size
- 12BB: 12 busbar cell design
- PERC: Passivated Emitter Rear Cell technology

The PERC Advantage in Modern Solar

This module uses the industry-proven PERC architecture that's been dominating solar farms since 2016. Unlike traditional panels that let 10-15% of photons escape, PERC's rear-side passivation acts like a photon bouncy castle - keeping light particles dancing in the silicon longer. Current production models achieve 23.5% efficiency, just 1% shy of the theoretical 24.5% limit.

Market Performance Metrics

Parameter	Specification
Cell Type	N-type monocrystalline
Power Output	650W?3%
Temperature Coefficient	-0.34%/?C

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Installation Flexibility

With its 210mm wafer size, this module offers the Goldilocks zone for installers - large enough to reduce balance-of-system costs by 8-12%, yet manageable for rooftop installations. The 12-busbar design acts like a multi-lane highway for electrons, reducing resistive losses by 0.5% compared to 9BB designs.

Competitive Landscape Analysis

While newer technologies like TOPCon and HJT grab headlines, PERC modules still command 65% of the global market. Their secret sauce? Manufacturing simplicity - existing production lines can be upgraded for PERC at $0.5M/GW versus $2M/GW for TOPCon conversions.

Durability Considerations

Field data from Arizona solar farms shows PERC modules maintain 92% output after 25 years. However, the rear-side passivation layer requires careful handling during installation - think of it as a solar panel's "sunscreen" that needs proper application.

Application Scenarios

- Utility-scale projects requiring LCOE < $0.03/kWh
- Commercial rooftops with space constraints
- High-temperature environments (desert installations)

For detailed technical specifications or customized solutions, we recommend contacting Aoli Solar's technical support team directly. Current lead times for this model range 6-8 weeks for bulk orders, with flexible payment terms available for projects over 10MW capacity.

Web: https://www.sphoryzont.edu.pl