

Longi photovoltaic panel hail impact simulation

Does Longi's Hi-mo 5 module withstand hail testing?

LONGi has conducted new hail performance testing which indicates that, whereas its Hi-MO 5 module (based on a 182mm wafer with dimensions of 2256#215;1133mm, 2.56m²), is able to withstand testing, the oversized module (dimensions 2384#215;1303mm, 3.11m²) is unable to do so.

Does hail affect PV modules performance?

Hail has a significant impact on the output of photovoltaic (PV) modules. Hence, this paper aims to give complete understanding of hail impacts on PV modules performance analytically and experimentally.

Does a PV module retain its integrity after a hail simulation?

The simulation results show that the protective layer of the PV module transmitted the impact energy to other PV layers, it did not reach its critical value (PV must absorb 293.6 kN/m² of stress) and thus its integrity was retained. Microcracks appeared in the PV module after hail simulation.

How thick should a PV module be if hit by hail?

According to the findings, PV modules with a front glass thickness of 3.2 mm are exemplary when hit by hail up to 35 mm in diameter at a velocity of 27 m/s. However, in hail-prone areas, installers should choose PV modules with a front glass thickness of 4 mm or higher to minimize or eliminate hail damage.

1. Introduction

How a PV module is used for hail testing?

PV modules with different thicknesses of front glasses are used for hail tests using different sizes and velocities of hail using a proper methodology described in the methodology section. After each round of the hail testing details, the investigation is done through STC, IR test, WLC test and EL.

What happens if a PV module is broken after a hail test?

If the glass of the PV module is broken after the hail test, then VI, P_{max} at STC, EL, IT and WLCT will be conducted. The thickness of the glass of the PV module will be increased, and the process will be continued with the new sample.

Minneapolis, May 7, 2024 - LONGi, a global leader in solar technology, announced the launch of its latest module, Hi-MO 5 Ice-Shield, specifically designed for durability and reliability in the face of increasing extreme hail and ...

RETCon's hail durability test takes UL and IEC standards testing a step further, exposing solar modules to higher kinetic impact to reflect the risk posed by hail over a 25 or 30-year operating life. In addition to ballistic impact ...

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