



Miasolé Producing CIGS Modules at Greater than 10% Efficiency
Performance Independently Confirmed by NREL

SANTA CLARA, Calif. -- Miasolé, a leader in the development of thin film solar products, announced today that the U.S. Department of Energy's National Renewable Energy Laboratory (NREL) has verified the company is producing modules exceeding 10% efficiency.

Tests by scientists at the National Laboratory showed Miasolé's modules measured at 10.2% efficiency. The modules tested were based on Miasolé's flexible cells encapsulated in a glass/glass construction. All of the CIGS (Copper, Indium, Gallium, Selenide) cell material in the modules was manufactured on the company's continuous, roll-to-roll production line.

"This demonstrates our ability to consistently produce high-efficiency CIGS modules on production equipment," said Joe Laia, CEO of Miasolé. "The ability to move from making CIGS on pilot lines and small lab champion cells to manufacturing modules in a production environment is challenging, and this is independent verification that we have achieved that. This is a critical step on our path to producing low cost solar modules in high volume."

Lawrence Kazmerski, director of the National Center for Photovoltaics at NREL, said, "NREL's Cell and Module Characterization Lab has confirmed that Miasolé's modules have tested at over 10% efficiency. Manufacturing high-efficiency CIGS material on a flexible substrate has proven to be difficult, and we applaud Miasolé on its ability to produce 10% modules. This is an important milestone for Miasolé and a significant achievement for the CIGS thin film market."

CIGS material has shown high efficiency in the labs, and is highly regarded as a thin film solar material. When combined with a proven and low cost manufacturing process, CIGS solar panels can hit cost points that enable solar generated power to reach grid parity with electricity generated by fossil fuels.

Miasolé utilizes sputtering, a well established method of Physical Vapor Deposition, to deposit CIGS on a 2 mile long, 3 foot wide wide roll of stainless steel foil in a continuous, roll to roll process. Because of its high utilization of material, an automated production process, and uniform and repeatable film deposition, Miasolé's production technology can produce modules at low cost and high volume. Miasolé has installed two 20MW production lines in its Santa Clara facility, and has demonstrated repeatability and transferability of their production process on both production lines.

About Miasolé

Santa Clara based Miasolé was formed in 2001 with the goal of dramatically reducing the cost of photovoltaic products. Miasolé is leveraging expertise in semiconductor

manufacturing and a deep understanding of CIGS material to manufacture new and versatile solar products. The company has installed two 20MW nameplate capacity production tools in its Santa Clara production facility.

About NREL

NREL is the U.S. Department of Energy's primary national laboratory for renewable energy and energy efficiency research and development. NREL is operated for DOE by Midwest Research Institute and Battelle.

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