



MODULE PACKING INSTRUMENT

In order to have a more safe, practical, economic and sustainable packaging of solar modules. developed a new design of packaging—corner stacking packaging.

General advantage of new packaging

- **Safe transportation:** Package design follows the fundamental requirements for a safe transportation of goods. In order to asses the necessary measures we need to consider container transportation (terminal handling, truck, railway, sea ship),handling of entire pallets and individual modules in stock, general cargo transportation to the customer as well as the handling on the construction site.
- **Practical packaging:** The packaging is designed by practical aspects and ease of use purposes. This includes the handling on packing, shipping, commissioning and unpacking along the entire transportation chain.
- **Sustainable packaging:** Our new packaging meets the criteria of performance and cost and is physically designed to optimize use of materials and energy. Furthermore it maximizes the use of renewable or recycled source materials that might be effectively recovered.
- **Economic/efficient packaging:** Criteria for economic and efficient packaging involve the total cost of packaging (materials, use, disposal) as well as it's relation to general transportation cost (efficient use of limited container/trailer space).

New Packaging Guidelines:

Corner-Stack method: This highly preferred solution by customers for safe, practical and material-saving stacking is the so called corner stack. This piece of plastic is specially designed for any frame-type and covers the requirements as separating layer and prevention of shift of module.



Figure: The corner stack we use to support the module



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- **Horizontal stacking of modules:** For safe and stable transportation and in favor of simple handling we horizontally stacked modules.



- **Number of modules per unit:** For easy assessment of the number of product in a batch right now the number of modules per unit is 58 pieces.
- **Weight per unit <3000 kg:** To ensure proper warehouse and forwarder handling the total weight/unit (including pallet and all packaging) shall not exceed 3000kg.
- **Plywood cover/intermediate layer:** On top of the module stack we use a plywood panel (IPPC regulation ISPM 15). This ensures proper alignment and gives large area support for the top pallet and protects the packed modules for any impact from above.

