

JUST SOLAR PV Modules Packing Solution

1. Main PV modules' dimensions:

Type	Mono 72cells	Poly 54cells	Poly 60cells	Poly 72cells
Dimension(mm)	1580×808×40	1482×992×40	1640×992×40	1956×992×50

2. Packing Quantity:

Type	Mono 72cells	Poly 54cells	Poly 60cells	Poly 72cells
Pcs/pallet	23	23	23	18
Pallet Gross Weight(kg)	360	410	460	440
Pallets/container	28	28	28	22
Pcs/container	644	644	644	396

3. Packing Pallets

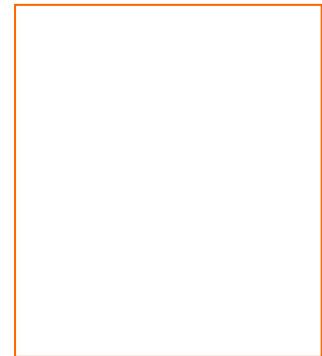
The sizes of woody pallets:

Type	Mono 72cells	Poly 54cells	Poly 60cells	Poly 72cells
Pallet (mm)	1633×861×120	1535×1045×120	1693×1045×120	2009×1045×120

Remark: one 5mm-thickness wood board was inserted between 2 pallets.

4. Bar-code

- A. Pallet number in a water-proof poly-bag attached on the side of the carton in order to ease stock management.
- B. Module bar-code are encapsulated on the top of each module.



5. Just solar Current Classification for PV modules

A- Purpose:

When several modules are installed on one string (=series connection), the modules with the lowest current at maximum power (I_{mp}) will penalize the electricity production of the full string. This phenomenon is called performance loss due to current mismatch. current. JUST SOLAR propose this service by sorting every module during flash test to avoid

To limit this effect, this is important to verify that all the modules that will be connected on one string are showing similar maximum power under table for the 2 main products families identified in JUST SOLAR catalogue: monocrystalline and polycrystalline. complications to the customer during his PV system installation.

B- Classification:

5 current classes have been defined (alpha, beta, gamma, delta and epsilon). The ranges of current for each class are given in the here- polycrystalline.

Module type	Alpha (α)	Beta (β)	Gamma (γ)	Delta (δ)	Epsilon (ϵ)
Label					

Ref.					
JST-MXXXM	$4.6A \leq I_{\alpha} <$	$4.7A \leq I_{\beta} <$	$4.8A \leq I_{\gamma} <$	$4.9A \leq I_{\delta} <$	$I_{\varepsilon} \geq 5.0A$
Monocrystalline	4.7A	4.8A	4.9A	5.0A	
Ref.					
JST-MXXXP	$7.55A \leq I_{\alpha} <$	$7.65A \leq I_{\beta} <$	$7.75A \leq I_{\gamma} <$	$7.85A \leq I_{\delta} <$	$I_{\varepsilon} \geq 7.95A$
Polycrystalline	7.65A	7.75A	7.85A	7.95A	

C- Integration to the manufacturing process:

During the flash test in factory, the modules are first sorted per power by excluding from the lot the ones for which the maximum power value is not included in the range of $\pm 3\%$ of the nominal power. Modules are then sorted per current according to the I-V curve values given by the same flash test.

- One pallet will only content modules of the same current class.
- A label indicating the current class is stuck on each module frame (see labels format here-above)

N.B: The values given in this document are defined as standard and are susceptible to be adjusted in the future, due to continuous technology improvement.

6. Flash Reports

Flash Reports of Just solar contains lead sealing numbers, container numbers, pallet numbers , current classification and module bar-code.

Container No.: OOLU7462055			Lead sealing No.: ALD9515						
Pallet No.	No.	Serial No.	Pm(W)	Voc(V)	Isc(A)	Vpm(V)	Ipm(A)	FF	Grade
JST4M028090300407	1	JST0120280903220080	179.9	44.80	5.275	36.32	4.952	0.76	Ig

	23	JST0120280903220083	179.3	44.66	5.249	36.46	4.919	0.77	Ig

7. Just solar safety packing process:

