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Objective

Canadian Solar understands that the quality of logistics is becoming more decisive and relevant to the strategic success of our company as well as of our customers. This logistics manual is designed to explain our packaging, the corresponding handling of our modules and the logistics services we provide among other logistics relevant subjects.
# Product Measurements

## Single Module

<table>
<thead>
<tr>
<th>Type</th>
<th>Dimensions (mm)</th>
<th>Weight Kgs</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS6P (60 cells)</td>
<td>1638<em>982</em>40</td>
<td>18.00</td>
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<tr>
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</table>

## Single Pallet

<table>
<thead>
<tr>
<th>Type</th>
<th>Dimensions (mm) Empty Pallet</th>
<th>Dimensions (mm) Loaded Pallet</th>
<th>Weight Kg</th>
<th>Loaded Pallet</th>
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<tbody>
<tr>
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## Carton

<table>
<thead>
<tr>
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<th>Modules/ Carton</th>
<th>Cartons/ Pallet</th>
<th>Modules/ Pallet</th>
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</table>
# Product Measurements

## Pallets per Container

<table>
<thead>
<tr>
<th>Type</th>
<th>Pallets/ 20ft Container</th>
<th>Pallets/ 40ft Container</th>
<th>Pallets/ 40HQ Container</th>
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</thead>
<tbody>
<tr>
<td>CS6P (60 cells)</td>
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<td>12</td>
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<td>CS6K (60 cells)</td>
<td>6</td>
<td>14</td>
<td>28</td>
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<tr>
<td>CS6P-SD (Smart module)</td>
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<td>14</td>
<td>28</td>
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<td>CS6U (72 cells)</td>
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<td>11</td>
<td>22</td>
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<tr>
<td>CS6X-FG (72 cells)</td>
<td>5</td>
<td>11</td>
<td>22</td>
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</tbody>
</table>

## Pieces (modules) per Container

<table>
<thead>
<tr>
<th>Type</th>
<th>20 Ft Container</th>
<th>40 Ft Container</th>
<th>40 HQ Container</th>
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<tr>
<td>CS6X (72 cells)</td>
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<td>CS6K (60 cells)</td>
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<td>728</td>
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<tr>
<td>CS6P-SD (Smart module)</td>
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<td>CS6U (72 cells)</td>
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# Product Measurements

## Weight and volume information 20ft Container

<table>
<thead>
<tr>
<th>Type</th>
<th>G.W. Kg</th>
<th>N.W. Kg</th>
<th>VOLUME (CBM ~ Cubic Meter)</th>
</tr>
</thead>
<tbody>
<tr>
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## Weight and volume information 40ft Container

<table>
<thead>
<tr>
<th>Type</th>
<th>G.W. Kg</th>
<th>N.W. Kg</th>
<th>VOLUME (CBM ~ Cubic Meter)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS6P (60 cells)</td>
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</table>

## Weight and volume information 40 HQ Container

<table>
<thead>
<tr>
<th>Type</th>
<th>G.W. Kg</th>
<th>N.W. Kg</th>
<th>VOLUME (CBM ~ Cubic Meter)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS6P (60 cells)</td>
<td>14420</td>
<td>13104</td>
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<tr>
<td>CS6X (72 cells)</td>
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<td>CS6U (72 cells)</td>
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<td>CS6X-FG (72 cells)</td>
<td>19800</td>
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<td>61.88</td>
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</table>
Packaging

Our pallets are mainly composed of plywood and cardboard. According to the ISPM (International Standards For Phytosanitary Measure) rules of international shipping, plywood and cardboard do not require a fumigation certificate.

Plywood pallet and cardboard

Our pallets are always wrapped in plastic and are double stacked.

Plywood pallet and cardboard
Packaging

1. Unpacking instructions
Disconnect the three middle packing belts

2. Unpacking instructions
Remove the upper cover of the box, then disconnect the vertical and upper horizontal packing belts, leave the bottom one

3. Unpacking instructions
Tear apart the Hook & Loop from the upper of front cover
Packaging

4. Unpacking instructions

Bend down the front cover along the middle cutting line

5. Unpacking instructions

Two workers peel off cardboard tapes at the two ends of one module at a time and the tapes need to be rolled up as above picture

6. Unpacking instructions

Two workers take out the module from the box. They repeat steps 5 and 6, removing all modules one at a time.
Packaging

Unpacking instructions

- The modules are vertically packed in the box
- pallets should be placed on a flat area before unpacking
- Remove all modules before completely unpacking the box
- Always have two workers unpack modules from the packing box
- Always use both hands when handling modules
## Packaging

### Pallet and module label

All our pallets have a label on the side. The information contained on the label can be seen in the picture.
Packaging

Module label

Our modules always present a label, which fulfills the VDE standards.

Pallet number

Every module has a bar code on the exterior of the frame. This reveals its associated pallet number.

Barcodes

Both our modules and pallets have bar codes.
Containers

What we can do

Canadian Solar has the possibility to offer deliveries by containers. We use 20’, 40’ and 40’ High Cube (HQ) General Purpose containers.

Details about the measurements and volumes of containers have already been explained in the previous slides.
Containers

General purpose container 20’

- Suitable for any normal cargo.
- Fork-lift pockets supplied on a number of containers
- Various lashing devices existing on the top and bottom longitudinal rails and the corner posts
- Lashing devices have a permissible load of 1,000 kg (2 205 lbs.) each
Containers

General purpose container 40’

- Suitable for any normal cargo
- Various lashing devices existing on the top and bottom longitudinal rails and the corner posts
- Lashing devices have a permissible load of 1,000 kg (2 205 lbs.) each
Containers

40’ High Cube (HQ) General Purpose Container

- Suitable especially for light, voluminous cargo and over height cargo up to 2.70 m (8’ 10 ¼’’)
- Numerous lashing devices on the top and bottom longitudinal rails, as well as the corner posts
- Each lashing devices have a permissible load of 1 000 kg (2 205 lbs.)
- Consider over height for inland transportation
- Weight limits for road and rail transport
Containers

Container number

- According to ISO 6346 containers must have an identification number
- The identification number must always be visible on the exterior of the container
- The identification system consists of (picture example):
  - An owner code: KOC
  - Product Group Code: U
  - Registration Number: 809070
  - Check Digit: 6
  - Size and Type Code: 22G1

NO TWO CONTAINERS HAVE THE SAME MARKINGS !!!!!
Containers

Container Seal
(also known as security seal) is used to secure the shipping containers, trailers and trucks

Container Seal
These seals are put on international shipping containers once a shipment is loaded. They remain in place until container has reached final destination, where they will be removed by the consignee.

Container Seal
In case the modules are stored in our warehouse we keep the seal together with the corresponding CMR/POD.
Containers

Loading and unloading

Unload the double-stacked pallets using a loading dock.
- Loading dock must be flush and on the same level as the truck or container
- Even though our pallets are customized they can be handled by a standard European forklift

Loading and unloading

Our pallets are always located in the same direction as the container.
- In order to carry the pallets from the short edge the use of extended forks is necessary
- The use of a ramp to load or unload from a truck into an open site is important
Storage

High rack storage

Our modules can also be stored on racks. Pallet rack is a material handling storage aid system designed to store materials on pallets. Maximum two pallets are to be stacked on top of each other!
Storage

Bulk Storage

Pallets should be stored over hard and even ground.

- Maximum two pallets are to be stacked on top of each other
- It is forbidden to stand on top of the pallets or lose modules
We can offer different kinds of trucks. For inland transportation we offer:
- Guardrail trucks
- Flatcar trucks
Our most common truck used is the side lift curtain truck.

Side lift curtain trucks can be unloaded from the back of the truck (if the receiver has the necessary unloading platform) or from the side.
Trucks

Curtain Side unloading

Benefits:
- Loading and unloading time is reduced by 50%
- No more waiting at the dock
- No more tarping
- Creates new backhaul opportunities

Curtain Side unloading

Benefits:
- Easy to Open
- Protects like a Van
- Loads like a Flatbed
Trucks

Inland Transportation

- The recommended width of the truck is 2340 – 2450 mm if the pallets are loaded into the truck vertically
- The pallet should be loaded in the same direction as the truck
- If using a guardrail truck, the guardrail must be reach the midway point of the pallet
- The floor of the truck or trailer should be flat
- Pallets should be placed closely to each other during the transport to prevent them from moving
Trucks

Loading and unloading trucks

Unload the double-stacked pallets using a loading dock, flush with bed of the container or trailer. Even though our pallets are customized they can be handled by a standard European forklift.

Loading and unloading trucks

Our pallets are always loaded in the same direction of the trailer. While unloading from the side, it is necessary to use extended forks.
HS Code and Taric Code

HS Code or Harmonized Item Description and Coding System

World Customs Organization creates international classification (HS Code) for all traded products
- Modules Hs Code: 854140

TARIC (Integrated Tariff of the European Communities) Code

A code designed to show the various rules applying to specific products when being imported to the EU
- TARIC Code for Chinese modules: 85414090 21
- TARIC Code for Vietnamese modules: 85414090 29