

## SmartPacker V3.11 Free Edition | 2022-03-03

### 0 Overview

SmartPacker software is to solve the container loading problem:

Whether a cargo-quantity combination can be loaded? How is the loading plan?

The free edition can be helpful for a small number of types (e.g. 5) of cargo, when the quantity for each type is big enough to occupy a length of the container. If there are many types and the quantity of each is few, you would need to the standard or higher edition.

The software is designed for scenarios like,, a purchaser talks with a sales on place order by FTL, or a logistics contractor estimates how many containers needed in making a quote, or a manufacturing company makes shipment plan to fulfill orders on ongoing base, when they care container space utilization.

The software requires Windows 64bit.

The default size of the software interface is 1366x768 to fit in small laptop screen but you can enlarge it.

The software does not require internet access.

It did not check update automatically either, you may visit [www.zhishuo.net/v3](http://www.zhishuo.net/v3) to check update.

The free edition is free of registration, activation and fee. Nevertheless








- The software is provided as is, no guarantee. You'd check the result before you use.
- You may use it for commercial purpose, but don't crack nor do reverse engineering.

Any questions, comments, please contact ZhiHuo company.

Email: [zhzx@zhishuo.com](mailto:zhzx@zhishuo.com)

## 1 The software package

The downloaded package is in zip format, when unzipped, you see the following files in the folder:

3f	2022/1/14 22:57
 borIndmm.dll	2019/2/5 7:55
 cc64260mt.dll	2019/2/5 7:55
 fmx260.bpl	2019/2/5 7:55
 iDLL64.dll	2019/7/8 10:01
 libxl.dll	2015/11/18 14:03
 rtl260.bpl	2019/2/5 7:55
 SmartPacker V3.1 FE	2022/1/14 22:59

- The file with blue logo is the executable, double click it to run the software (no installation needed).
- The dll, bpl are supporting libraries.
- In the 3f subfolder, a data.xlsx file keeps the container and cargo specifications.

Open the data.xlsx file,

- The 1<sup>st</sup> sheet is for cargo, each record has 5 fields: name of the cargo, length, width and height of the cargo by mm, and whether the cargo unit shall stay upwards.

	A	B	C	D	E
1	Name	L/mm	W/mm	H/mm	Upwards
2	A	520	439	370	No
3	B	785	697	553	No
4	C	1253	1032	780	Yes
5	D	674	542	335	Yes
6	E	522	455	422	Yes
7	F	875	755	366	Yes
8	G	1023	895	275	Yes

- The 2<sup>nd</sup> sheet is for the loading space, length, width and height for each container are provided.

	A	B	C	D
1	Container	L/mm	W/mm	H/mm
2	40HC	11850	2320	2670
3	45HC	13350	2320	2670
4	40GP	11850	2320	2320
5	20GP	5660	2320	2320

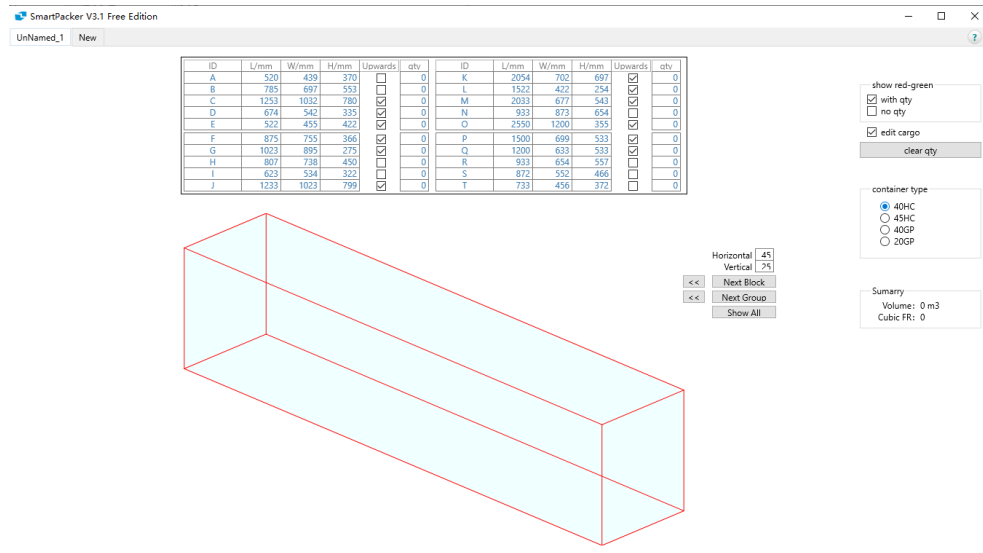
These data are provided as examples, for being replaced by the actual data for your cargo and container. The software reads these two data sheets upon start.

After you update and save the data.xlsx, if you could not start the software, contact [zhzx@zhihuo.com](mailto:zhzx@zhihuo.com) for support, it may be a data format issue.

If your cargo and space have got more specifications to account for, e.g. layers of stacking allowed, width constraint at the back door, etc., contact ZhiHuo for other editions.

## 2 Tune your cargo-quantity combination interactively

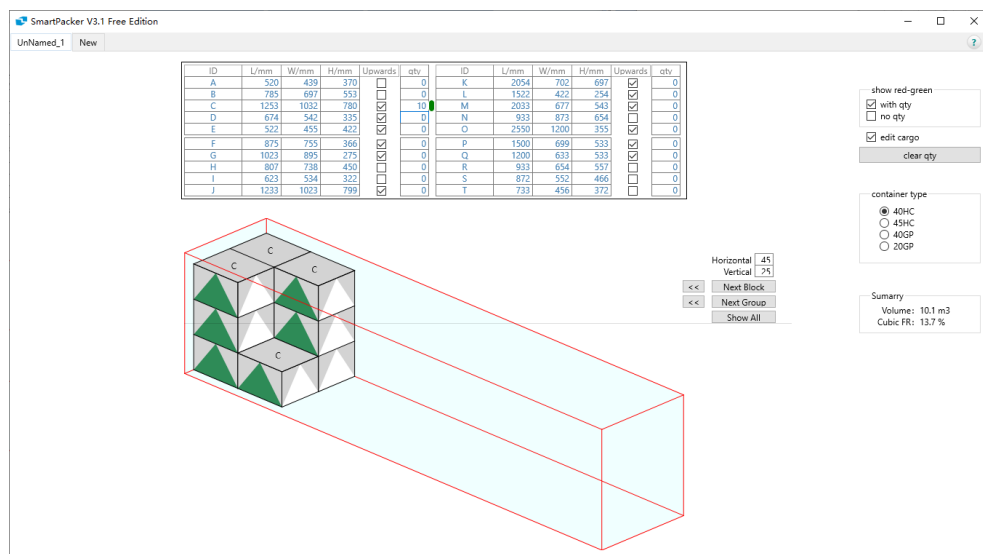
You see following user interface, when the software starts



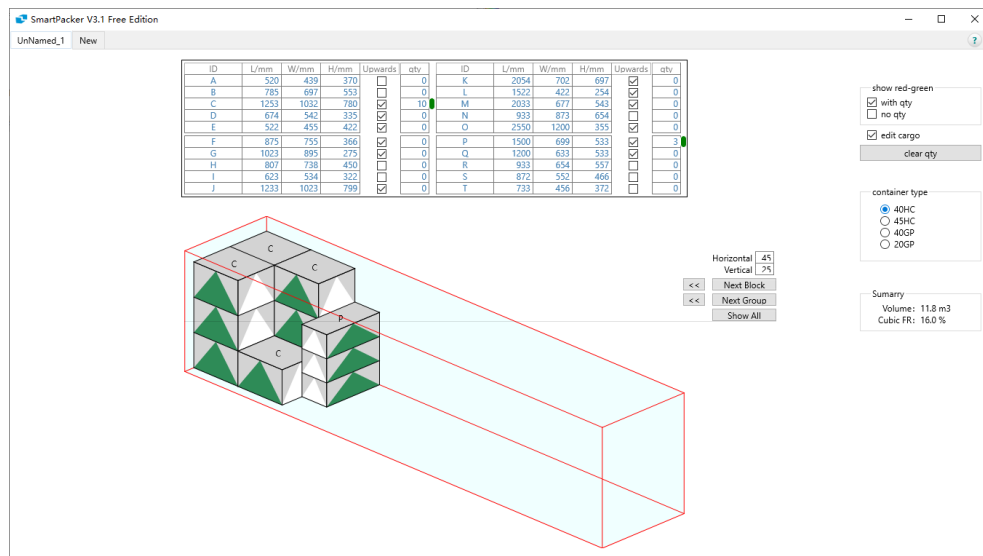
- You see 20 types of cargo with quantity, which is called the cargo-quantity panel.
- A three dimensional illustration, with controls to show the loading plan step by step.
- Control panel in the right side, to switch container in use, show fill rate, etc.

The software works interactively: you alter the cargo-quantity combination; the change takes effect immediately in loading plan illustrated.

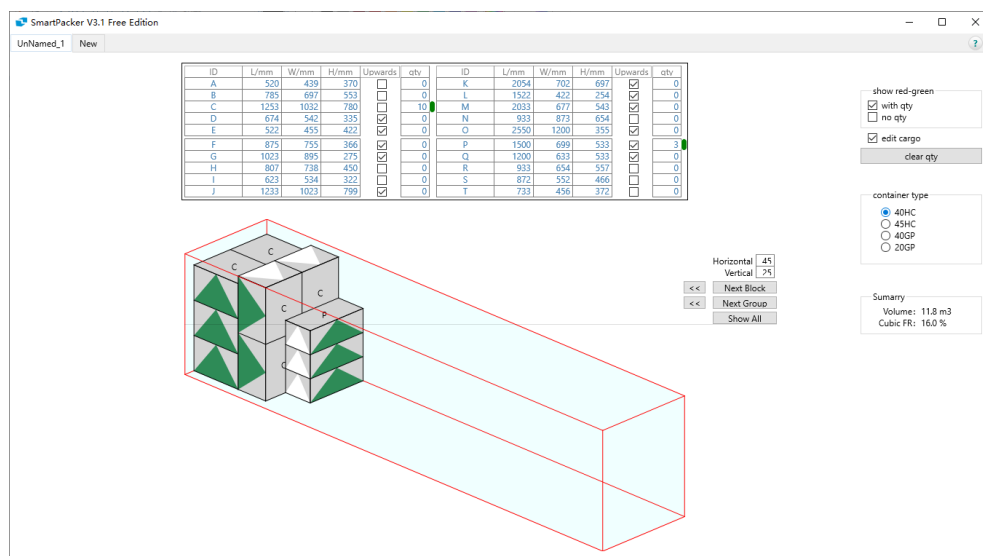
For example, you change the number of C from 0 to 10, the software responds as below, answer you yes 10 C can be loaded as illustrated.



Next, if you move the mouse pointer to the quantity of P, you can roll the mouse to increase the quantity from 0 to 3, the software responds that 10C + 3P can be loaded as below;



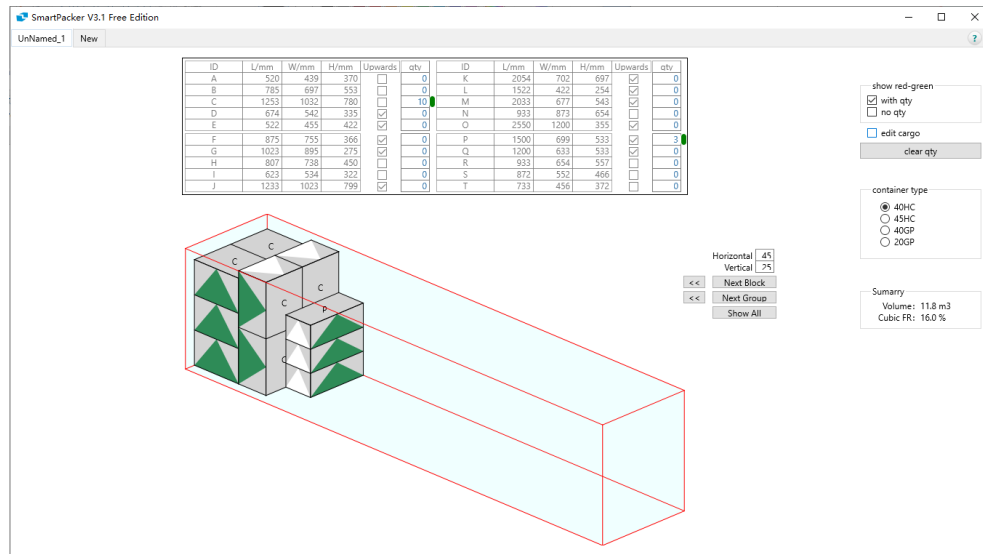
What if we did not limit C to stay upwards? Just click to uncheck the Upwards field of C. You see 4 of C are now rotated and floor space got saved.



You may try change the product name, length, etc. to see how the result responds.

- For a text field, you click to select the field, then use keyboard to edit.
- For a checkbox, e.g. Upwards, click to check or uncheck.
- For a number field, e.g. length, quantity, after selection, you may key a new value and Return, or use arrow key or mouse roll to fine tune the number.

If you have edited and saved the product list in Excel and do not need to amend them during compute, to avoid unintentional change when you moving mouse around, you'd uncheck the "Edit Cargo" checkbox, which change the product name, length, width and height into gray color and not editable.



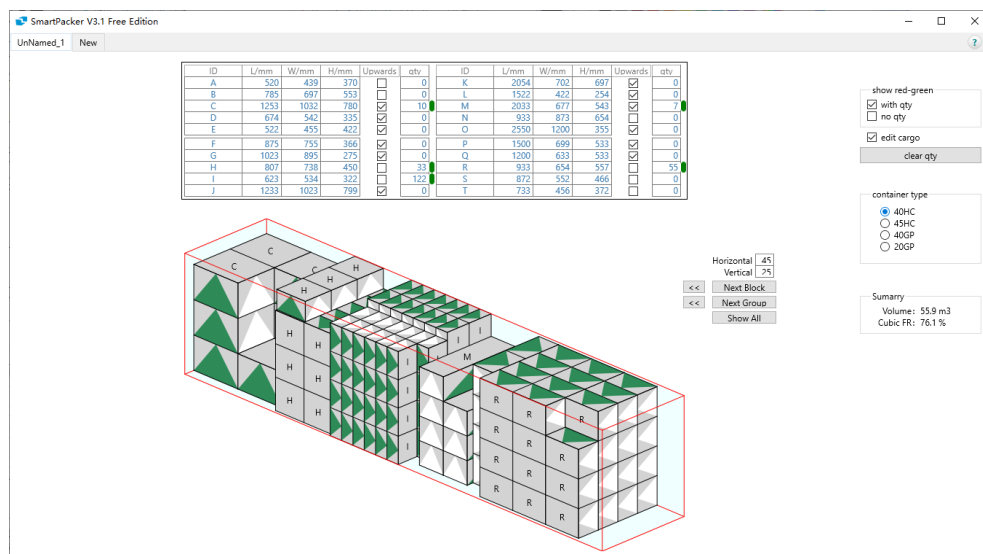
The cargo-quantity panel with red-green lights is designed to facilitate the exploration in possible cargo-quantity combinations to reach an optimum one, to support following use cases:

- A purchaser may want to make an order that the cargo can fit into a FCL (full container load). She would start with must-buys, later add optional items to get a combination with high cubic fill rate.
- A supplier would plan container shipment to a client to fulfill orders received on an ongoing base.

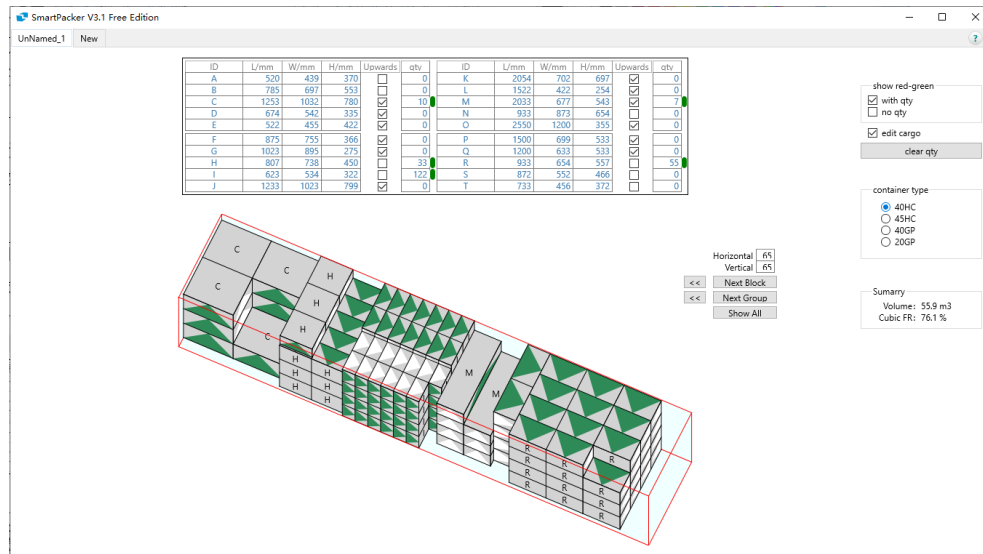
The cargo are divided and combined into multi container load, each with optimum space utilization.

ZhiHuo provides customized edition to use order and stock data, execute prioritizing rules, in computing container shipment plans.

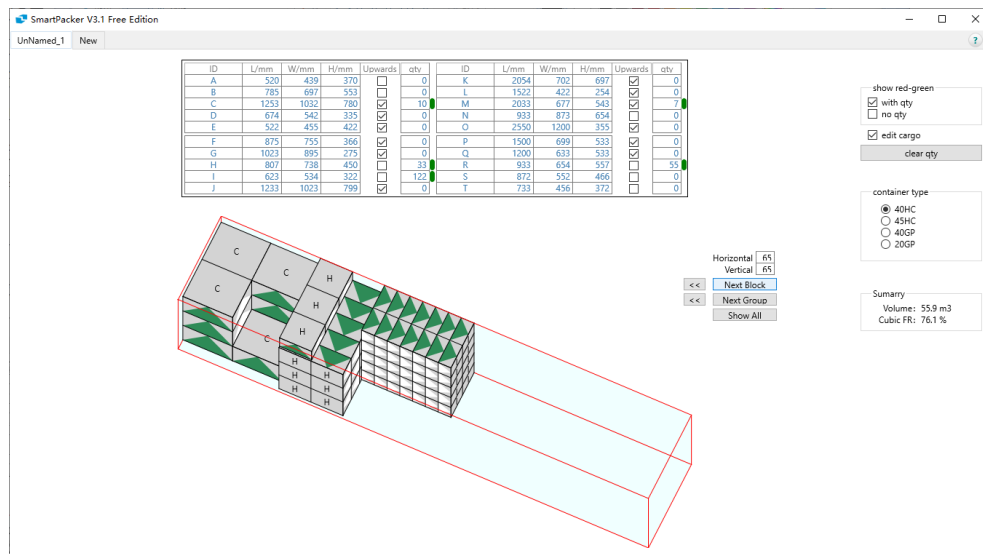
The quantity field for each cargo is paired with a red-green light: Green means it can still increase, and Red means otherwise - the software does not find a loading plan for the container to accommodate the cargo-quantity combination if that quantity be added by one.



When you explore and tune the cargo-quantity combination, you can use mouse to tune the horizontal or vertical observation angle.



You can also click “Next Group” button, etc. to show the loading plan step by step.

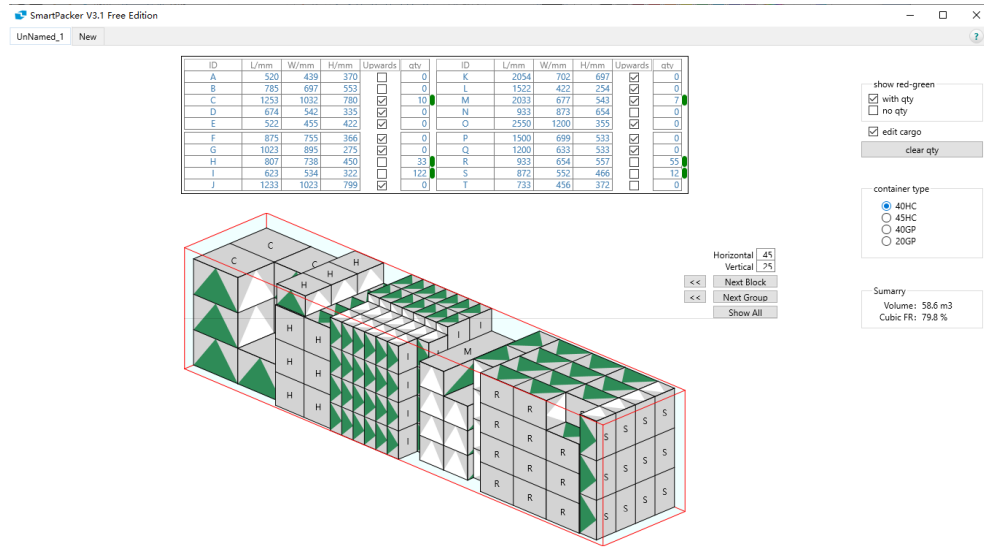


In the illustrated loading plan, you see this edition of SmartPacker software loads the 5 cargo-quantity in container from front to back, each taking certain length, when different cargo do not be loaded in parallel lengthwise. For example, there is a single C in the 2<sup>nd</sup> row of cargo and upon it you see a vacancy, in this free edition which can only be made use of by adding more C.

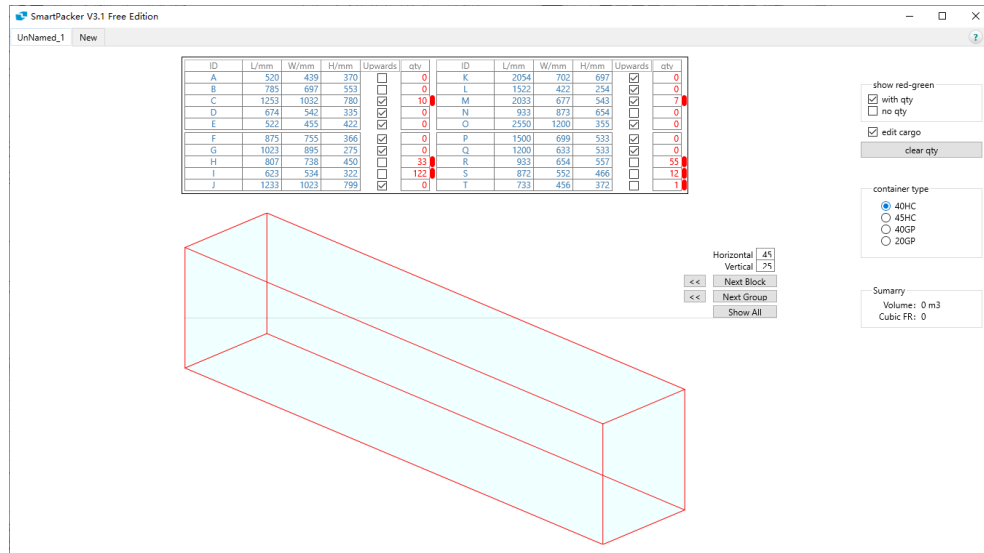
You see all the 5 quantities are paired with green light, means all of them can still increase.

You continue increase the cargo-quantity combination, for example, 12S, and see

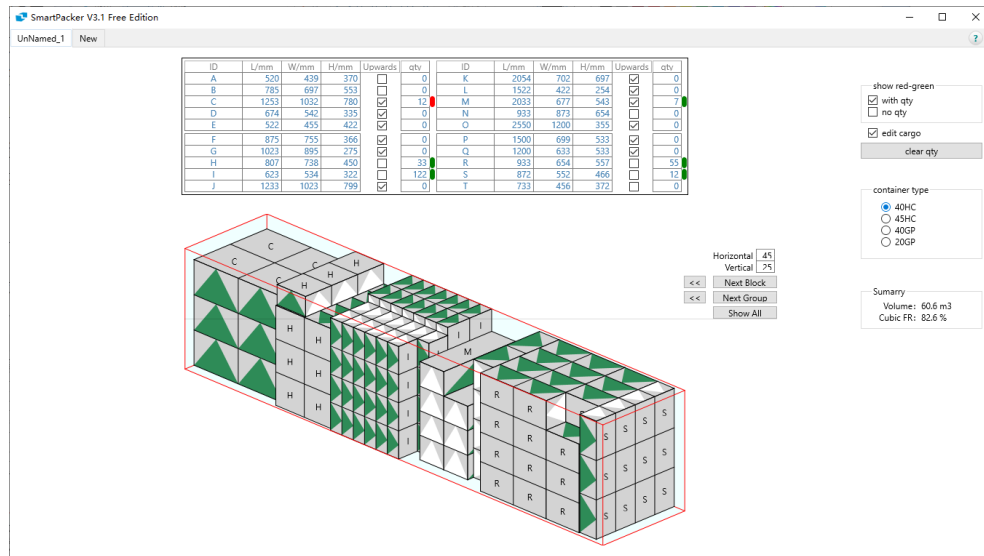
- The loading is now getting close to the back door
- All 6 quantities show green
- In the right side bottom, you see volume of cargo reach 58.6m<sup>3</sup>, and cubic fill rate reach 79.8%



If you add 1T at this time, the container turns empty and all the quantities and lights turn red, which means the software can not allocate a length of the container for the newcomer T, though the existing 6 types are OK to increase.



So remove the 1 T from the combination, and make increase on the existing 6.  
For example, increase quantity of C to 12, till the light turn red.



You may increase the other 5 the same way, then all 6 lights turn red.  
To this state, the cargo volume reaches 64.5m<sup>3</sup>, and cubic fill rate reaches 87.8%.

