



LOADMOSAIC HELP MANUAL

LoadMosaic

Load optimization, manual design and documentation

Complete guide to features, tables, settings and the 3D viewer

Scope of this guide. The text and screenshots match the language of this edition. Visible control names are shown in quotation marks so that you can locate them unambiguously.

Help edition · 04/09/2026

How to use this manual

This guide describes the current LoadMosaic interface through its controls, validation rules and file formats. Options visible in the screenshots use the names for the language of this edition and are explained in that same language.

- Start with “Quick start” if you want to obtain an automatic layout in a few minutes.
- Check the chapters of tables when you have doubts about an editable column, its unit or its limits.
- Use the configuration chapter to choose engine, search depth, processors, rendering and truck appearance.
- Use the manual-editor chapters to learn about layers, boxes, Tetris, positioning and pallet hierarchies.

Visual convention. In the five main tables, bold italic headers identify editable columns. Regular headers indicate calculated or read-only data.

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1. What LoadMosaic is

LoadMosaic helps arrange boxes, packs and pallets on a conventional pallet or inside a transport load space. It can search for layouts automatically, convert a result into a manual configuration, edit layers, and export PDF reports and BMP images.

1.1 Two ways of working

Mode	When to use it	Outcome
Find better distributions	When you want the program to test the permitted strategies and orientations.	One or more optimised load units that can be browsed and exported.
Create manual configuration	When you need to impose a specific layout, refine a result or build it layer by layer.	An editable configuration with cut and isometric views, validated in real time.

1.2 Basic concepts

Concept	Meaning
Box	Rectangular unit with a reference, dimensions, optional weight, label, pack and orientation restrictions.
Label	Reusable size-and-position definition; it is shown in green and can be assigned to box types.
Pack	Logical grouping of two or more boxes per instance. Each type specifies how many units it contributes to the pack.
Pallet	Conventional base on which boxes or inner pallets are stacked.
Transport load space	Truck, trailer or container with internal length, width and height. The vehicle remains fixed when the layers are visually separated.
Cut / Layer	Horizontal construction level. Layer separation in the viewer is purely visual and does not alter the physical calculation.
Layout	Complete document containing catalogues, load units, automatic results and manual edits.
Settings	Portable interface and calculation preferences; they do not contain the current layout.

2. Quick start

This workflow covers the usual case: load data, define demand, optimise, review and export.

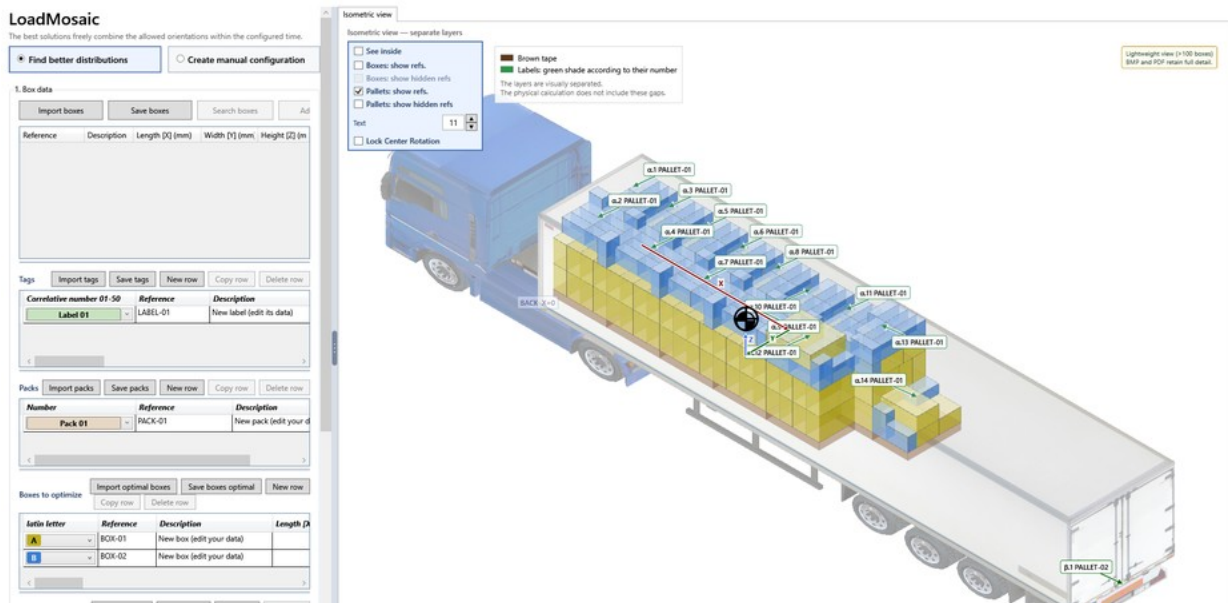


Figure 1. LoadMosaic start screen in English: mode selection and the “Box data” table.

2.1 Create an automatic layout

1. Select "Find better distributions."
2. Press "Import boxes" and open a CSV or XLSX with Reference, Description, Length [X], Width [Y] and Height [Z].
3. Add labels and packs if needed; then add the box types to “Boxes to optimize”.
4. Enter the Quantity for each box and configure its restrictions, label, pack and weight.
5. Define one or more pallets or load spaces in “Pallets to optimize” and set their Quantity. You can start with “Pallet examples” or “Container examples” and review the official source before adding the row.
6. Open “2. Configuration” and select “Optimize distributions”.
7. Select the layout found, navigate between instances if there are several, and check the isometric view and “Features of the selected distribution”.
8. Export using “Export PDF” or “Export BMP”, or transfer the result with “Transfer pallet to manual configuration”.

2.2 Create a manual configuration

9. Select “Create manual configuration”, then choose the load unit to edit in “Pallets to optimize”.
10. Add boxes to “Boxes to optimize” and select the type you want to insert.
11. Use “Add box”, the rotation controls and the position controls to build the active layer.
12. Duplicate, rotate or empty layers; use “Optimize by algorithm” or “Apply Tetris” when appropriate.
13. Check that the status is “Valid”, then export the PDF or BMP.

3. Main window and general use

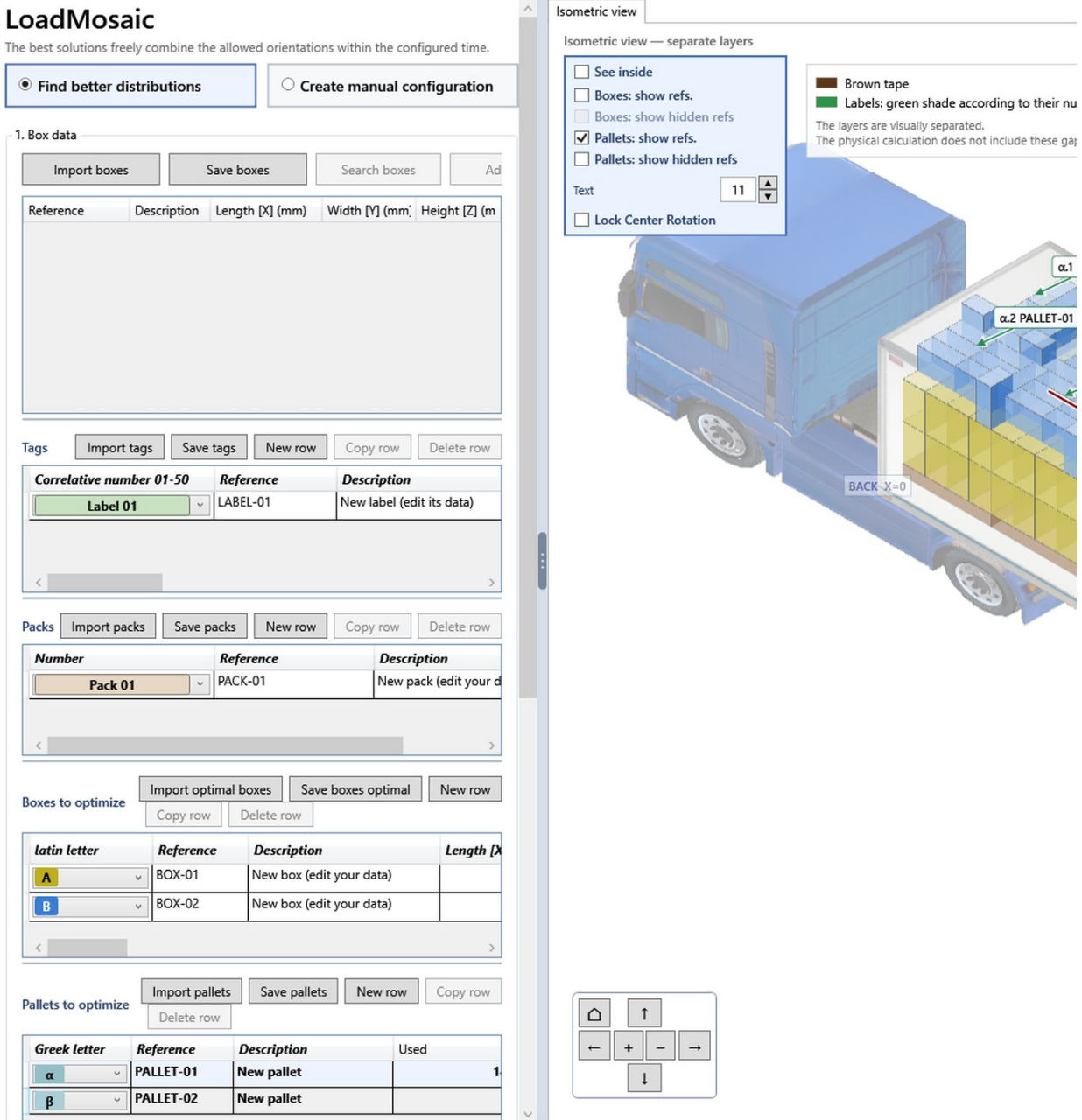


Figure 2. Main window with data, a loaded layout and the isometric viewer.

3.1 Left panel

It contains the catalogues, demand tables, layout files, settings, and the results or manual summary. Drag its right edge to change the width; use the centre handle to hide or restore the panel.

3.2 Right panel

Automatic mode shows “Isometric view”. Manual mode shows “Layer design”, which combines the layer bar, the plan view, the isometric view and the selected-box inspector.

3.3 Working with tables

- Click a header to select its column; Ctrl and Shift preserve or extend the column selection.
- Ctrl+C: always copies the header and the selected rows as tab-delimited text, even if not all rows or the header itself have been selected.
- Ctrl + V: adds rows at the end of the active table; the selected rows are not replaced.
- Delete: while a cell is being edited, it deletes characters or cell content, but not the row; outside edit mode, it deletes the selected rows when “Delete row” is enabled.
- Fill handle: drag vertically from the active cell to copy its value. Double-click to fill down to the first row without consecutive data.
- Headers can be reordered and their borders dragged. The height of each table can also be adjusted.

Persistence. Column order and width, table height, left-panel width and the expanded drop-down sections are saved as interface preferences.

4. “Box data” table

This is the source box catalogue. It is imported from CSV or XLSX and is read-only in the main window.

LoadMosaic

The best solutions freely combine the allowed orientations within the configured time.

☒ Find better distributions
 ☐ Create manual configuration

1. Box data

Reference	Description	Length [X] (mm)	Width [Y] (mm)	Height [Z] (mm)

Isometric view

Isometric view — separate layers

☐ See inside
☐ Boxes: show refs.
☐ Boxes: show hidden refs.
☒ Pallets: show refs.
☐ Pallets: show hidden refs.
☐ Lock Center Rotation

Brown tape

Labels: green shade according to their number

The layers are visually separated.
The physical calculation does not include these gaps.

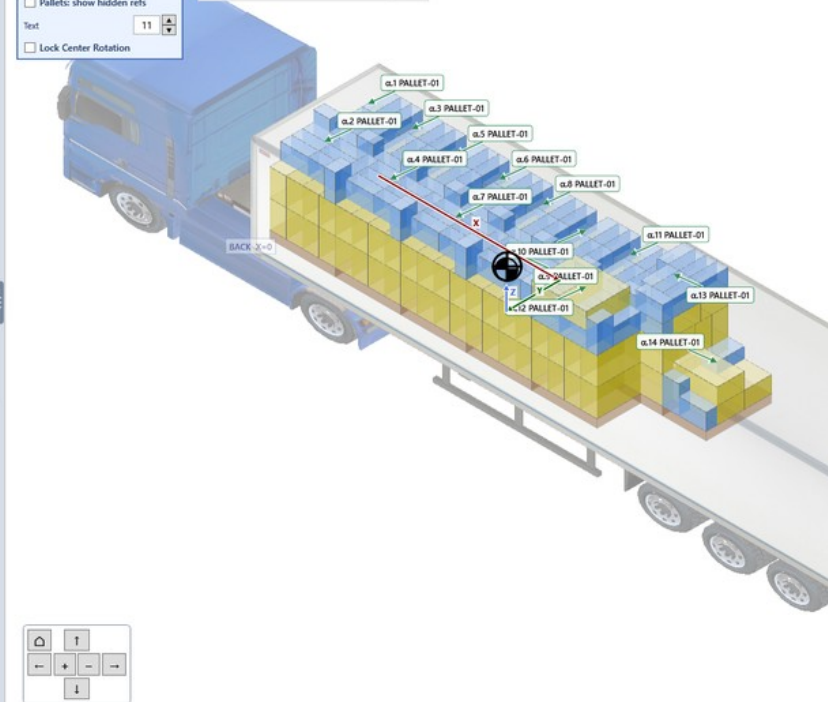


Figure 3. The “Box data”, “Tags” and “Packs” catalogues with sample data.

Interface name	Editable	Use
Reference	No	Stable identifier for the box type. It must uniquely identify the box during imports and assignments.
Description	No	Descriptive text; it does not affect the geometry.
Length [X] (mm)	No	Physical longitudinal dimension. It must be greater than zero.
Width [Y] (mm)	No	Physical transverse dimension. It must be greater than zero.
Height [Z] (mm)	No	Physical height. It must be greater than zero.

4.1 Buttons

Control	Function
Import boxes	It replaces the catalogue with the validated content of a CSV or XLSX.
Save boxes	Save the visible catalogue as CSV or XLSX.
Search boxes	Opens a search tool with column, wildcard, case-sensitivity and whole-cell options.
Add selected	Adds the selected boxes to “Boxes to optimize” while avoiding incompatible duplicates.

4.2 Tabular formats

The importers accept CSV files separated by semicolons, commas or tabs, with quoted fields and common encodings (UTF-8, UTF-16 and ANSI/Latin-1 where applicable). For an XLSX file, you may be asked which worksheet to import. Dimensions must be finite and greater than zero; the optional weight must be finite and non-negative.

5. Table "Tags"

Defines up to 50 reusable labels. The visible colour is derived from the label number and is used consistently in the interface, viewer and reports.

Interface name	Editable	Use and validation
Correlative number 01-50	Yes	Visual number from Label 01 to Label 50; it cannot be duplicated.
Reference	Yes	Stable label identifier; mandatory and unique.
Description	Yes	Free-form description.
Width (mm)	Yes	Non-negative width. Zero retains the logical assignment but prevents the geometry from being drawn.
Height (mm)	Yes	Non-negative height. Zero retains the logical assignment but prevents the geometry from being drawn.

Interface name	Editable	Use and validation
Placement reference	Yes	Anchor: centre or corner, expressed in millimetres or as a percentage.
Horizontal distance...	Yes	Displacement from the reference point. In percentage it is limited to 0... 100; if the anchorage is center it can be - 100... 100.
Vertical distance...	Yes	Equivalent rule for the vertical axis of the chosen face.

5.1 Placement references

Family	Interpretation
Center (mm /%)	The distance moves the center of the label; it supports negative values.
Top/Bottom + Left/Right (mm)	Measures inwards from the selected corner of the face; negative distances are not allowed.
Top/Bottom + Left/Right (%)	The same rule expressed as a percentage of the face; range 0-100.

5.2 Buttons

“Import tags” replaces the table; “Save tags” exports it; “New row” creates a 0 × 0 mm label with the first available number; “Copy row” duplicates the active row with another number; “Delete row” only deletes labels that are not assigned.

6. “Packs” table

A pack groups box types that must be counted together. The catalogue supports Pack 01 through Pack 50.

Interface name	Editable	Use
Number	Yes	Local number from Pack 01 to Pack 50; it is not the permanent identifier.

Interface name	Editable	Use
Reference	Yes	Stable, mandatory and unique identifier.
Description	Yes	Free-form description of the set.

In the interface, the “Packs” heading includes a brief explanation in parentheses: they are boxes handled as a single unit. For a pack to be valid, it must contain at least two boxes per instance. In “Boxes to optimize”, each type assigned to the pack specifies its quantity per instance; the total demand for each type must be a multiple of that quantity, and all types in the same pack must represent the same number of instances.

Example. If Pack 01 contains two A boxes and one B box, valid demand could be A = 20 and B = 10: both columns represent 10 packs. A = 20 and B = 9 causes an inconsistency.

7. “Boxes to optimize” table

Define the real demand that the optimizer or manual editor will use.

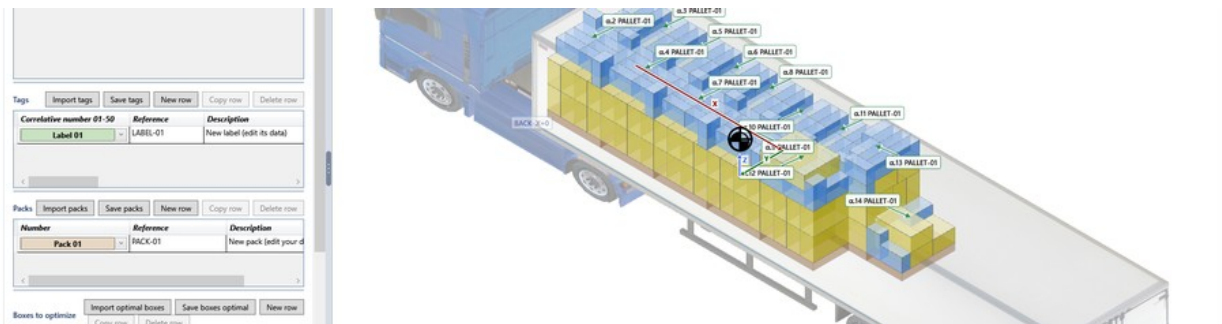


Figure 4. Start of the “Boxes to optimize” table with Latin letters, geometry and calculated column “Settings.”

Interface name	Editable	Use and validation
Latin letter	Yes	Unique visual identifier: A...Z and the subsequent permitted Latin letters.
Reference	Yes	Box-type reference; it is linked to the catalogue when it matches.
Description	Yes	Visible description in tables and reports.
Length [X] (mm)	Yes	Physical length, finite and greater than zero.

Interface name	Editable	Use and validation
Width [Y] (mm)	Yes	Physical width, finite and greater than zero.
Height [Z] (mm)	Yes	Physical height: finite and greater than zero.
Settings	No	Calculated summary of the placements used and, where applicable, a breakdown by pallet.
Quantity	Yes	Non-negative integer demand. Zero keeps the row but requests no units.
Volume (cm ³)	No	Unit volume calculated from dimensions.
Label number	Yes	“No label” or Label 01...50.
Label ref.	No	Resolved catalogue reference for the selected label.
Pack number	Yes	“No Pack” or Pack 01...50.
Pack reference	No	Resolved reference of the selected pack.
Quantity of this box in the pack	Yes	A positive integer when a pack is assigned; zero when no pack is assigned.
Dimension increase based on the difference (%)	Yes	Geometric allowance applied to the smaller dimension; 0 means no allowance.
Box weight (kg)	Yes	Finite, non-negative unit weight. A blank value means that no weight is configured.
Stack	Yes	Allows other boxes to be placed on top of this type.
Tilt	Yes	Allows the box to be tilted by swapping one base dimension with its height.
Rotate	Yes	Allows horizontal rotation by swapping length and width.

“New row” creates a box demand with practical initial values: Length [X] = 500 mm, Width [Y] = 200 mm, Height [Z] = 300 mm and Quantity = 10. All values remain editable.

7.1 Combined restrictions

The “Stack”, “Tilt” and “Rotate” checkboxes apply to each box type. Clearing “Tilt” keeps the box upright; clearing “Rotate” prevents a quarter-turn in the horizontal plane; clearing “Stack” prevents other boxes from resting on its top face. These restrictions affect both the optimizer’s candidates and the manual inspector.

8. “Pallets to optimize” table

Supports up to 24 references identified by the Greek letters $\alpha \dots \omega$. A row can represent a conventional pallet, an inner pallet or a transport load space.

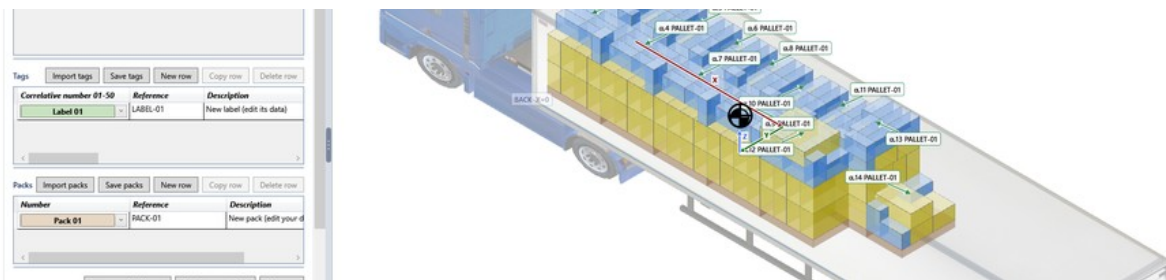


Figure 5. Start of “Pallets to optimize”; “Used” is calculated and the other visible columns are editable.

Interface name	Editable	Use and validation
Greek letter	Yes	Unique visual identifier $\alpha \dots \omega$.
Reference	Yes	Stable reference of the load unit.
Description	Yes	Free-form description.
Used	No	Quantity used and box breakdown calculated after optimisation.
Quantity	Yes	Maximum number of available instances; non-negative integer.
Length [X] (mm)	Yes	Usable or internal length, greater than zero.
Width [Y] (mm)	Yes	Usable or internal width, greater than zero.
Pallet height [Z] (mm)	Yes	Base height. In a load space, it is used as the floor or structural offset, depending on the model.
Matryoshka level...	Yes	Level I: outer unit. Level II: inner pallet inserted into another unit.
Upper gap on the inner pallet (mm)	Yes	Reserved top clearance on Level II pallets; disabled for Level I.

Interface name	Editable	Use and validation
Own weight of the pallet (kg)	Yes	Non-negative own weight, included in total mass calculations.
Maximum total height of outer pallet [Z] (mm)	Yes	Maximum total height for Level I. For a pallet it must exceed the base height; for a load space it must be at least the interior height.
Max layers	Yes	Maximum number of layers; a blank value means that no specific limit is set.
Maximum total weight (kg)	Yes	Total weight limit; a blank value means that it is not configured.
Adjust pallet edge (+ / – mm)	Yes	A negative value reduces the effective footprint; a positive value enlarges it.
Minimum support when stacking boxes (%)	Yes	Minimum supported percentage of the base; range 0–100. A blank value uses the document's compatible value.
Maximum gap for bridge box (mm)	Yes	Maximum coplanar gap that a box may bridge; it cannot exceed half of the larger base dimension.
Center of mass in center of pallet	Yes	It activates a criterion that favours less horizontal displacement of the C.M.
Low center of mass on pallet	Yes	It activates a criterion that favours a lower level Z of the C.M.

“New row” creates a pallet with Quantity = 10, dimensions of 1200 × 800 × 144 mm, Level I, a maximum total height of 1800 mm and a maximum of 99 layers; weights, clearances and technical criteria start at zero or disabled. Every value can be edited directly in the table.

8.1 Built-in examples

Choose a pallet, review all technical and verified-source data, enter the quantity, and select Level I if the table will not contain containers or Level II if containers will be added to the table.

Reference	Description	Length [X] (mm)	Width [Y] (mm)	Pallet height [Z] (mm)	Own weight of the pallet (kg)	Maximum total weight (kg)	Operating capacity (kg)	Capacity type	Official source
EPAL 1	EPAL pallet - Model EPAL 1 exchange pallet, wood, 11 boards and EPAL/HTC	1200	800	144	25	1525	1500	DWL	
EPAL 3	EPAL pallet - Model EPAL 3 made of wood, perimeter base and Asian industrial	1200	1000	144	30	1530	1500	DWL	https://www.epal-pallets.org/en/en/loaded-carriers/epal-3-pallet
B1210A/G1	CHIEP pallet - Model B1210A/G1 made of wood, 4-way entry and United Kingd	1200	1000	162	28	1520	1500	DWL	https://www.chiep.com/en/en/product/wooden-pallet-1200x
B1208A/G3	CHIEP pallet - European Model B1208A/G3 made of wood, 4-way entry and Chi	1200	800	144	25	1625	1600	DWL	https://www.chiep.com/en/en/product/wooden-pallet-1200x
B0806A	CHIEP pallet - Model B0806A display pallet, wood and metal, half pallet from th	800	600	163	13	513	500	Dynamic/tracking load capacity	https://www.chiep.com/files/download/CDG_B0806A_EN-Rev
P0804B/16	CHIEP pallet - Model P0804B/16 plastic display pallet, quarter pallet from the C	600	400	145	2	252	250	DWL	https://www.chiep.com/en/en/product/4-way-entry-plastic-quarter-pallet
S1165A (10001)	CHIEP pallet - Model S1165A (10001) made of wood, Australian standard in the C	1165	1165	150	38	0	Not comparable		https://www.chiep.com/en/en/product/australian-standard-in-the-c
16001	CHIEP pallet - Model 16001 made of blue-painted wood, New Zealand standar	1200	1000	140	30	0	Not published		https://www.chiep.com/en/en/product/nz-blue-pallet-1200x
08001	CHIEP pallet - Model 08001 made of wood, South African standard in the CHIE	1200	1000	166	33	1533	1500	Maximum UDL	https://www.chiep.com/en/en/product/wooden-pallet-1200x
E812	IPP pallet - European Model E812 made of wood, brick-wed IPP pool	1200	800	144	25	1225	1200	Maximum UDL	https://www.chiep.com/en/en/product/brick-wed-ipp-pallet
A1210	IPP pallet - Industrial Model A1210 made of wood, full perimeter base	1200	1000	161	29	1529	1500	Maximum UDL	https://www.gip-pooling.com/media/industrial/a1210-en.pdf
Mark 55/B48A/G4	CHIEP pallet - Model Mark 55/B48A/G4 wood-black pallet, North American stan	1219	1016	141	29	1299	1270	UDL in normal use	https://www.epal-pallets.org/en/en/loaded-carriers/epal-3-pallet
EPAL 2	EPAL pallet - Model EPAL 2 made of wood, 17 boards and flanged base for sea	1200	1000	162	35	1285	1270	DWL	https://www.epal-pallets.org/en/en/loaded-carriers/epal-2-pallet
EPAL 6	EPAL pallet - Model EPAL 6 made of wood, exchange half pallet	800	600	144	10	760	750	DWL	https://www.epal-pallets.org/en/en/loaded-carriers/epal-6-half
EPAL 7	EPAL pallet - Model EPAL 7 made of wood with steel brackets, half pallet	800	600	163	10	510	500	DWL	https://www.epal-pallets.org/en/en/loaded-carriers/epal-7-half
C1210	IPP pallet - Model C1210 made of wood, open base with three runners	1200	1000	141	22	1272	1250	Maximum UDL	https://www.gip-pooling.com/media/mhp/ipp/c1210-en.pdf
F608	IPP pallet - Model F608 made of wood and steel, half pallet reinforced for rack	800	600	144	11	781	750	Rated capacity	https://www.gip-pooling.com/media/ipp/ipp/f608-en.pdf
D068	IPP pallet - Model D068 wooden display pallet, half pallet from the IPP pool	800	600	161	14	514	500	Maximum UDL	https://www.gip-pooling.com/media/ipp/ipp/d068-en.pdf
DD086	IPP pallet - Model DD086 mixed-material display pallet made of wood, steel an	800	600	163	14	514	500	Maximum UDL	https://www.gip-pooling.com/media/ipp/ipp/dd086-en.pdf
P406	IPP pallet - Model P406 plastic display pallet, IPP quarter pallet measuring 598	598	398	145	2	252	250	Dynamic	https://www.gip-pooling.com/media/ipp/ipp/p406-en.pdf
O1119	CHIEP pallet - Model O1119 made of HDPE, with anti-slip raised deck edges	1200	800	160	19	1269	1250	DWL	https://www.chiep.com/en/en/product/plastic-pallet-1200-x-8
O1120	CHIEP pallet - Model O1120 made of metal-reinforced HDPE, without raised de	1200	800	160	22	1022	1000	DWL	https://www.chiep.com/en/en/product/plastic-pallet-1200-x-8
00077	CHIEP pallet - Model 00077 made of polypropylene, non-perimeter base and i	1200	1000	160	22	1022	1000	DWL	https://www.chiep.com/en/en/product/plastic-pallet-1200-x-8
16017 B	CHIEP pallet - Model 16017 B made of HDPE, flat decks for New Zealand	1200	1000	160	23	1020	1000	Normal use	https://www.chiep.com/en/en/product/new-generation-pallet
16017	CHIEP pallet - Model 16017 made of plastic, North American 48" x 40" inch stan	1219	1016	144	26	1296	1270	Maximum load	https://www.chiep.com/en/en/product/plastic-pallet-1219-x-1016-r
P1210C	CHIEP pallet - Model P1210C Blue Shield made of plastic and steel with RFID	1200	1000	150	27	1277	1250	Maximum load/tracking capacity	https://www.chiep.com/en/en/product/blue-shield-plastic-pa
PP12103B	CHIEP pallet - Model PP12103B made of plastic, Australian standard	1165	1165	150	28	0	Not comparable		https://www.chiep.com/files/download/CDG_PP12103B.pdf
11770	CHIEP pallet - Model 11770 made of plastic, intercontinental 1100 x 1100 mm	1100	1100	137	10	2010	2000	Dynamic	https://www.chiep.com/en/en/product/intercontinental-palle

Quantity Nesting level
 * Level I — no containers in the table
 ○ Level II — containers will be added to the table

Add Cancel

Figure 6. “Pallet examples” selector with verified data and a clickable official-source link.

Choose a container or vehicle, review all technical and verified-source data, and enter the quantity to add to the table.

Reference	Description	Length [X] (mm)	Width [Y] (mm)	Load floor height [Z] (mm)	Maximum total height [Z] (mm)	Tare weight (kg)	Maximum total weight (kg)	Category	Interior height (mm)	Official source
Maersk 20' Dry	Maersk container - 20-foot standard dry steel container, exterior height 8 feet	5898	2352	196	2591	2180	30480	Shipping container	2193	https://www.maersk.com
Maersk 40' Dry	Maersk container - 40-foot standard dry steel container, exterior height 8 feet	12032	2352	198	2591	3630	32500	Shipping container	2399	https://www.maersk.com
Maersk 40' High Cube Dry	Maersk container - 40-foot High Cube dry steel container, 305 mm taller than	12032	2352	198	2591	3630	32500	Shipping container	2699	https://www.maersk.com
Maersk 45' High Cube Dry	Maersk container - 45-foot High Cube dry steel container, longer than the 40'	13556	2352	198	2591	4850	32500	Shipping container	2698	https://www.maersk.com
Maersk 20' Open Top	Maersk container - 20-foot standard Open Top container, removable tarpaulin	5898	2352	243	2591	2170	30480	Shipping container	2406	https://www.maersk.com
Maersk 40' Open Top High	Maersk container - 40-foot Open Top High Cube container, tarpaulin roof and	12032	2352	243	2591	3940	32500	Shipping container	2693	https://www.maersk.com
Maersk 20' Standard Reefer	Maersk container - 20-foot standard reefer container, reduced volume due to	5898	2352	403	2591	2710	30480	Shipping container	2198	https://www.maersk.com
Maersk 40' High Cube Stand	Maersk container - 40-foot standard High Cube reefer container, interior height	11588	2352	406	2591	4330	34000	Shipping container	2470	https://www.maersk.com
Maersk 40' High Cube Magne	Maersk container - 40-foot High Cube Magnum reefer container, different gec	11578	2352	446	2591	4630	34000	Shipping container	2450	https://www.maersk.com
Maersk 40' High Cube Super	Maersk container - 40-foot High Cube Super Freezer container, down to -60 °C	11560	2352	441	2591	4630	34000	Shipping container	2451	https://www.maersk.com
Maersk 40' High Cube Flat B	Maersk container - 40-foot collapsible Flat Rack High Cube container, without	11652	2374	636	2591	5200	32500	Shipping container	2260	https://www.maersk.com
Hapag-Lloyd 40' Open Top	Hapag-Lloyd container - 40-foot standard Open Top container with an exterior	12029	2350	247	2591	4050	32500	Shipping container	2344	https://www.hapag-lloyd.com
Hapag-Lloyd 20' Open Top	Hapag-Lloyd container - 20-foot Open Top High Cube container, 305 mm taller	5892	2347	248	2591	2150	30480	Shipping container	2440	https://www.hapag-lloyd.com
Hapag-Lloyd 20' Flat Rack 45'	Hapag-Lloyd container - 20-foot 45' Flat Rack container, minimum usable wei	9638	2194	308	2591	2900	45000	Shipping container	2233	https://www.hapag-lloyd.com
Hapag-Lloyd 40' Flat Rack Hi	Hapag-Lloyd container - 40-foot 55' Flat Rack High Cube container, greater le	11652	2345	631	2591	5900	55000	Shipping container	2265	https://www.hapag-lloyd.com
CMA CGM 40' High Cube Flat	CMA CGM container - 40-foot High Cube Flat Wide container, interior width	12095	2444	204	2896	4260	34000	Shipping container	2692	https://www.cma-cgm.com
CMA CGM 45' High Cube Flat	CMA CGM container - 45-foot High Cube Flat Wide container, greater length	13624	2420	209	2896	4960	34000	Shipping container	2687	https://www.cma-cgm.com
CMA CGM 45' Reefer Pallet	CMA CGM container - 45-foot Pallet Wide reefer container, thermal insulation	13280	2440	314	2896	6180	34000	Shipping container	2582	https://www.cma-cgm.com
Schmitz 5.4D COOL SMART E	Schmitz Cargobull semi-trailer - 5.4D COOL SMART EXECUTIVE PLUS refrigerat	13410	2460	1359	4009	7860	39000	Semitrailer	2650	https://www.schmitz-cargobull.com
Schmitz 5.4D EXPRESS SMART	Schmitz Cargobull semi-trailer - 5.4D EXPRESS SMART PLUS, lightweight dry b	13685	2460	1293	3993	6962	39000	Semitrailer	2740	https://www.schmitz-cargobull.com
Schmitz WBO 7.45 S	Schmitz Cargobull swap body - WBO 7.45 S, corrugated walls and reinforced f	7290	2470	233	2750	3200	16000	Swap body	2517	https://www.schmitz-cargobull.com
Schmitz WBO 7.45 G	Schmitz Cargobull swap body - WBO 7.45 G, smooth aerodynamic walls and 2	7310	2470	233	2750	3200	16000	Swap body	2517	https://www.schmitz-cargobull.com
Schmitz WBO 7.82 G	Schmitz Cargobull swap body - WBO 7.82 G, smooth walls and 370 mm great	7680	2470	233	2750	3450	16000	Swap body	2517	https://www.schmitz-cargobull.com
KROONE Cool Box WB 7.5 S	KROONE swap body - Cool Box WB 7.5 S refrigerated Duplex Steel body, bare	7240	2460	330	2750	3400	16000	Swap body	2400	https://www.kroone.com
Hyundai Translead Original S	Hyundai Translead semi-trailer - Original 53-foot model, aluminum with posts	16002	2502	1321	4115	6128	30844	Semitrailer	2794	https://www.hyundai-translead.com
Hyundai Translead HY-Cube	Hyundai Translead semi-trailer - 53-foot HY-Cube model, interlocking HDPE in	16002	2563	1321	4115	6285	30844	Semitrailer	2794	https://www.hyundai-translead.com
Hyundai Translead Composite	Hyundai Translead semi-trailer - 53-foot Composite model, composite panel, 1	16002	2578	1321	4115	6055	30844	Semitrailer	2794	https://www.hyundai-translead.com

Quantity

Add Cancel

Figure 7. “Container examples” selector with internal dimensions, weights, category and official source.

The “Pallet examples” and “Container examples” buttons, located to the left of “Import pallets”, open built-in catalogues containing 28 pallets and 27 transport load spaces. The pallet selector displays 10 useful columns and the load-space selector displays 11: reference, localized description, dimensions, weights, capacity or category, and official source. Internal calculation parameters that do not assist with selection remain hidden, but are inserted together with all the other verified data for the example.

The selector table is read-only. The official-source address is a clickable HTTPS link and cannot be edited. After selecting a row, enter a positive integer quantity. For a pallet, you must also choose Level I when it will be an outer unit or no load spaces will be present in the table, or Level II when it will be inserted into a load space; containers and other load spaces are always added as Level I. Insertion respects the 24-row limit and does not create a second row with the same reference.

Scope of the data. The examples simplify data entry, but you should verify against the official source that the variant, year and commercial configuration match the actual equipment. After an example is added, all its calculation fields remain editable in “Pallets to optimize”.

8.2 Inner pallets and hierarchy

Level II pallets are treated as rigid units when placed inside a Level I unit. The interface lets you select the displayed inner instance, return to the outer level and browse each pallet’s layouts. A transport load space cannot be Level II.

9. Import, save and combine layouts

A LoadMosaic layout is saved in XLSX format. Import also supports legacy JSON files.

Control	Behaviour
Import a distribution	Opens an XLSX or legacy JSON file, then offers “Overwrite” or “Add”.
Overwrite	It replaces catalogues, demand, units and results with the imported document.
Add	Keeps the existing rows, adds the new ones and, when required for the merge, resets uninvolved quantities to zero.
Save a distribution	Saves to the associated path. If none exists yet, asks you to choose an XLSX path.
Save as... a distribution	Saves a copy to another path and makes it the current layout.

An asterisk next to the path indicates pending changes. During an active calculation, transfer or export, the application blocks file operations to avoid incomplete states.

Important distinction. A layout contains data and results. A JSON configuration contains only portable preferences; importing one does not alter the current layout.

10. Calculation and display configuration

The “2. Configuration” drop-down section contains portable preferences. Changes are marked with an asterisk until they are saved.

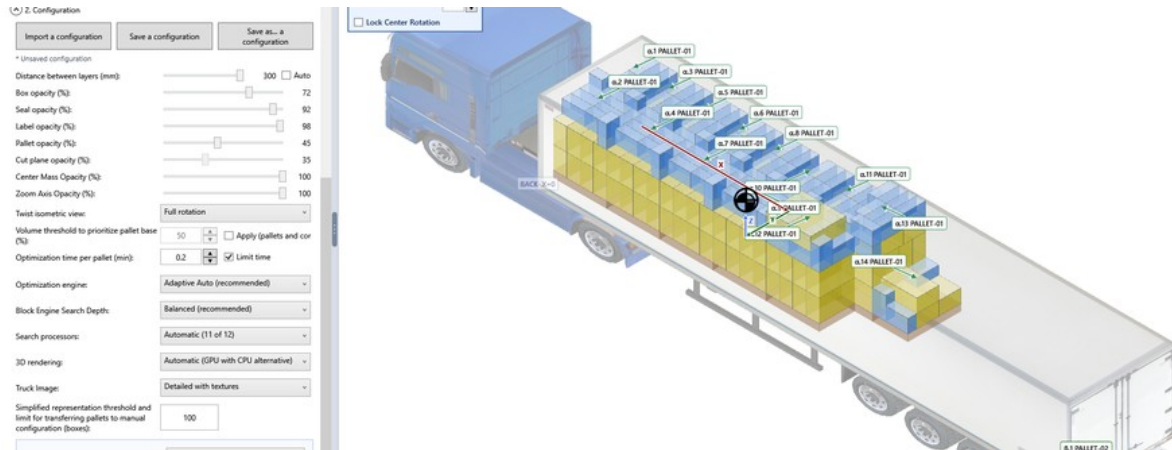


Figure 8. Upper part of “2. Settings” in English: files, separation and initial opacity controls.

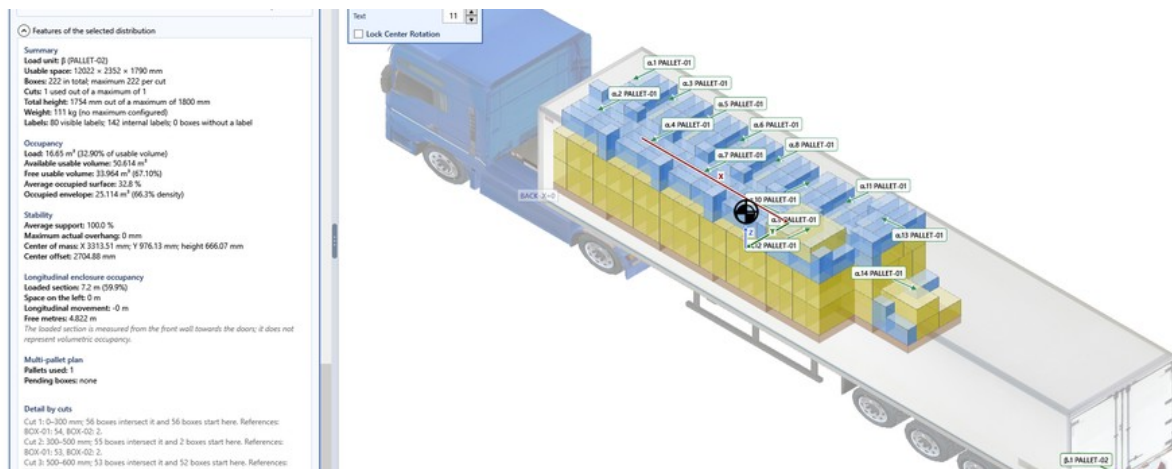


Figure 9. Configuration continued: pallet opacity, cut plane, centre of mass and zoom axis.

Interface option

What's the use?

Import a configuration

Loads a JSON preferences file without changing catalogues, demand or results.

Save a configuration

Saves to the associated JSON file; if none exists, asks you to choose a path.

Save as... a configuration

Saves the preferences to another path and associates that file as the current configuration.

Interface option	What's the use?
Distance between layers (mm)	Purely visual separation between layers. In load spaces, the truck remains fixed and only the box layers are separated. If interface.json does not exist when the application starts, the default value is 0 mm.
Automatic	Automatically calculates an intermediate layer spacing suited to the load; the exact value may change with the result.
Box opacity (%)	Transparency of the box faces.
Seal opacity (%)	Transparency of the brown securing band.
Label opacity (%)	Transparency of the green labels.
Pallet opacity (%)	Transparency of the pallet base or load-space representation.
Cut-plane opacity (%)	Transparency of the plane that marks the active layer in the manual editor.
Centre-of-mass opacity (%)	Opacity of the ISO 7000-0627 symbol and its X, Y and Z guides.
Zoom-axis opacity (%)	Opacity of the dashed line and the rotation/zoom centre.
Twist isometric view	"No spin", "360° rotation" or "Full rotation". Controls how freely the view can be rotated with the mouse.
Volume threshold to prioritize pallet base (%)	If the remaining volume does not exceed the set percentage, it favours solutions that take advantage of the base. The box applies the criterion to pallets and enclosures.
Optimization time per pallet (min)	Maximum time per pallet; supports decimals. "Limit time" activates or disables the limit.
Optimization engine	Selects the general layout-building engine.
Block-engine search depth	Adjusts the search depth when the block engine is used; in manual mode it is reused as the rearrangement profile.
Search processors	Limits the number of logical processors. Automatic mode normally leaves one free to keep the interface responsive.
3D rendering	Automatic, Direct3D 11 GPU, CPU WARP or the classic compatibility viewer.
Truck Image	Detailed textured truck or classic polygonal model; this setting is independent of the rendering mode.
Simplified representation threshold...	When the number of visible boxes exceeds this value, the interactive viewer reduces detail. BMP and PDF exports retain full detail.

Interface option	What's the use?
Interface language	Immediately changes the language of the entire application. If interface.json does not exist, LoadMosaic starts in English. The seven available languages are English, Spanish, German, French, Portuguese, Italian and Polish.
LoadMosaic licence	Shows the status and lets you enter, purchase, manage or deactivate the licence for this computer.

11. Optimization engines, search depth and processors

11.1 Optimization engine

Option	Recommended use
Adaptive Auto (recommended)	Analyses geometry and quantities, then selects or compares strategies. For conventional pallets, it can use a specialised set of tower and terrace strategies.
Base families	Many geometries, gradual size changes, transport load spaces or non-stackable inner pallets.
Blocks and cuboids	A small number of geometric families or large repeated quantities.
Blocks + family fill	Mixed load: places the repetitive part first, then fills gaps with the remaining families.

11.2 Block-engine search depth

Profile	Approximate effect
Fast (reduced exploration)	Roughly halves the beam width, candidates and states.
Balanced (recommended)	Base depth; a general balance between quality and runtime.
Expanded (more alternatives)	Explores about 1.5 times as many candidates and states.
Intensive (wide search)	Roughly doubles the beam width, candidates and states.
Maximum (slower)	Up to roughly three times the exploration. This is not a mathematical proof of optimality and may take much longer.

Scope. In automatic mode, depth only affects plans that use “Blocks” or “Blocks + family fill”. In manual mode, it determines axis priorities when you select “Optimize by algorithm”.

11.3 Search processors

“Automatic” uses at most all available logical processors minus one, with a minimum of one. Choosing a fixed number limits calculation parallelism, not 3D rendering. A lower value may improve the responsiveness of other programs; a higher value may shorten searches that can run in parallel.

12. 3D rendering and truck appearance

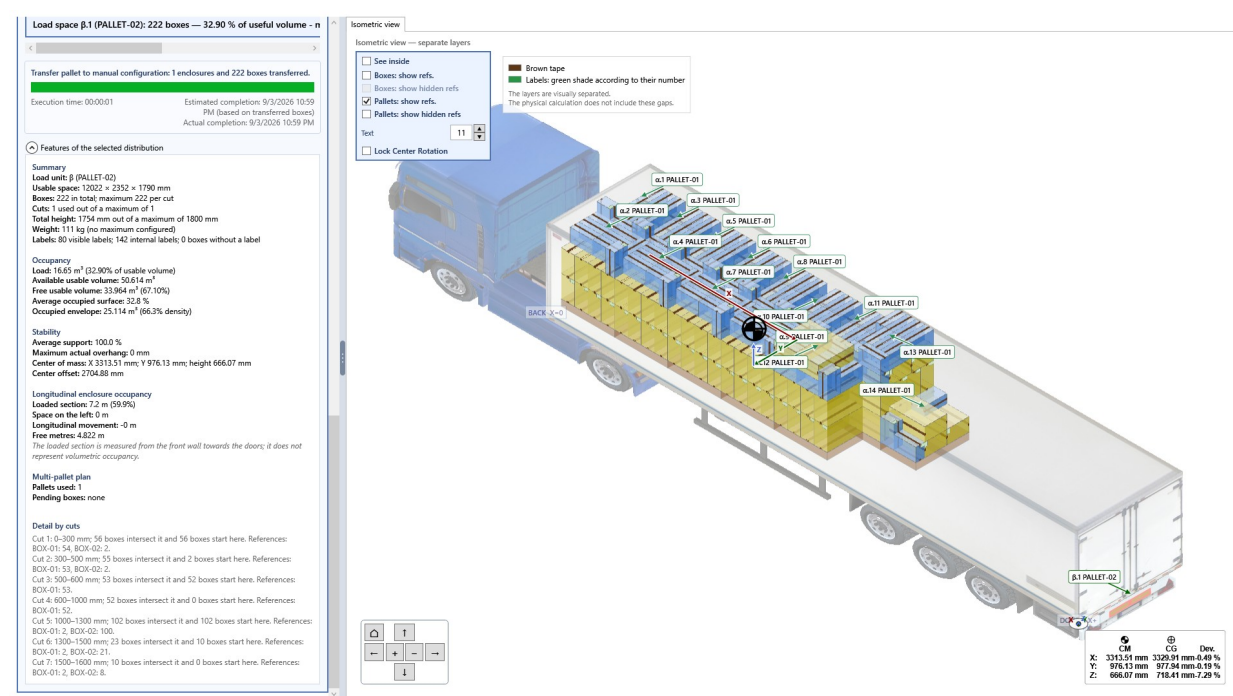


Figure 10. Full view of a transport load space with pallet references and the detailed truck.

Mode	Behaviour
Automatic (GPU with CPU fallback)	Try Direct3D 11 with manufacturer-independent hardware adapter; if not available, use WARP for CPU.
GPU (Direct3D 11)	Force a graphic hardware adapter. If it cannot be created, the view reports the failure rather than concealing the selection.

Mode	Behaviour
CPU (Direct3D 11 WARP)	Rasterises Direct3D in software on Windows; useful for diagnostics or systems without a compatible GPU.
Classic viewer (compatibility)	Keeps the classic WPF viewer as the maximum-compatibility option.

“Truck Image” is independent of “3D rendering”. “Detailed with textures” uses the embedded mesh and textures; “Classic by polygons” uses geometry generated by the program. This choice affects the vehicle image, not the usable space or load calculation.

Lightweight view. The simplified-rendering threshold affects interaction when many boxes are visible. PDF reports and BMP exports regenerate the view with full detail.

13. Automatic isometric viewer

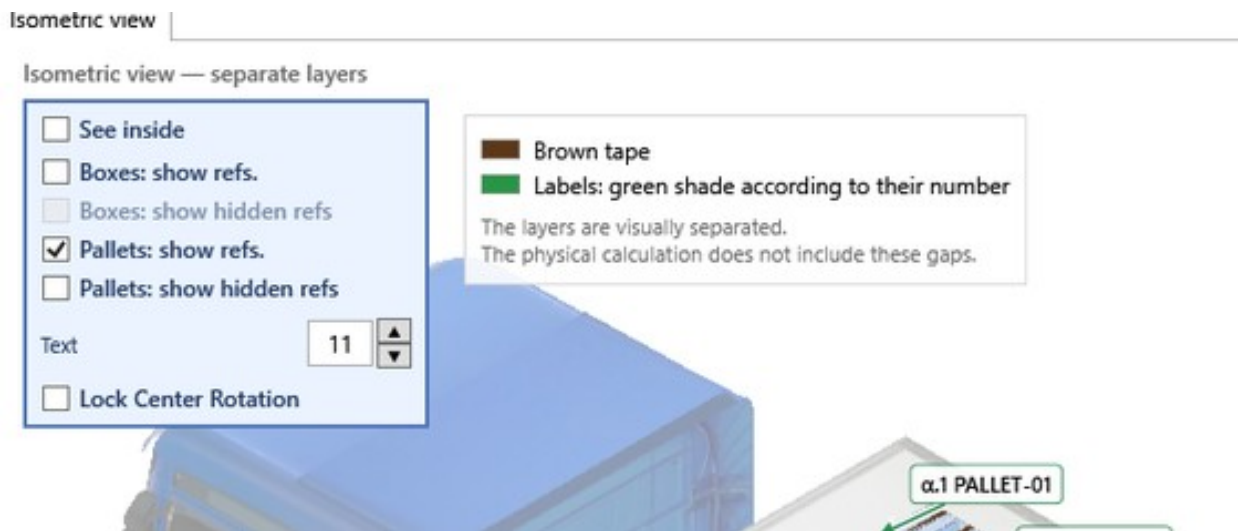


Figure 11. Upper controls of “Isometric view”.

Interface control	Function
See inside	It activates a horizontal cut to see a single inner layer; a vertical height control appears.
Boxes: show refs.	Shows the letter, number and reference of each visible box.
Boxes: show hidden refs	Includes references for boxes hidden by the projection.

Interface control	Function
Pallets: show refs.	Shows the Greek letter, instance number and reference of each pallet.
Pallets: show hidden refs	It includes hidden pallets in the projection.
Text	Increases or decreases the size of both reference text and centre-of-mass text.
Lock Center Rotation	It keeps the rotation center at the center of the current view.

13.1 Mouse and camera controls

- Mouse wheel: zooms in or out around the pointer.
- Drag with the left or middle mouse button to rotate the view according to the configured rotation mode.
- : restores the initial zoom, framing and orientation.
- + / -: zooms in fixed steps; arrows: pan the view.

13.2 Centre of mass

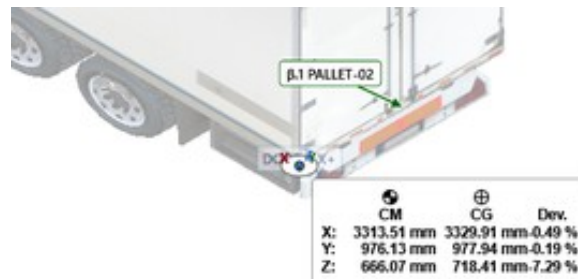


Figure 12. Table of the mass centre (CM), geometric center (CG) and deviation from the center.

The C.M. symbol is accompanied by X, Y and Z guides. The lower-right table compares the centre of mass with the geometric centre and shows the deviation on each axis. If weights are not configured, the calculation uses the available information and the report states this.

14. Automatic results

Load space β.1 (PALLET-02): 222 boxes — 32.90 % of useful volume - n

Transfer pallet to manual configuration: 1 enclosures and 222 boxes transferred.

Execution time: 00:00:01 Estimated completion: 9/3/2026 10:59 PM (based on transferred boxes)
Actual completion: 9/3/2026 10:59 PM

Features of the selected distribution

Summary
 Load unit: β (PALLET-02)
 Usable space: 12022 × 2352 × 1790 mm
 Boxes: 222 in total; maximum 222 per cut
 Cuts: 1 used out of a maximum of 1
 Total height: 1754 mm out of a maximum of 1800 mm
 Weight: 111 kg (no maximum configured)
 Labels: 80 visible labels; 142 internal labels; 0 boxes without a label

Occupancy
 Load: 16.65 m³ (32.90% of usable volume)
 Available usable volume: 50.614 m³
 Free usable volume: 33.964 m³ (67.10%)
 Average occupied surface: 32.8 %
 Occupied envelope: 25.114 m³ (66.3% density)

Stability
 Average support: 100.0 %
 Maximum actual overhang: 0 mm
 Center of mass: X 3313.51 mm; Y 976.13 mm; height 666.07 mm
 Center offset: 2704.88 mm

Longitudinal enclosure occupancy
 Loaded section: 7.2 m (59.9%)
 Space on the left: 0 m
 Longitudinal movement: -0 m
 Free metres: 4.822 m
The loaded section is measured from the front wall towards the doors; it does not represent volumetric occupancy.

Multi-pallet plan
 Pallets used: 1
 Pending boxes: none

Detail by cuts
 Cut 1: 0–300 mm; 56 boxes intersect it and 56 boxes start here. References: BOX-01: 54, BOX-02: 2.
 Cut 2: 300–500 mm; 55 boxes intersect it and 2 boxes start here. References: BOX-01: 53, BOX-02: 2.
 Cut 3: 500–600 mm; 53 boxes intersect it and 52 boxes start here. References: BOX-01: 53.
 Cut 4: 600–1000 mm; 52 boxes intersect it and 0 boxes start here. References: BOX-01: 52.
 Cut 5: 1000–1300 mm; 102 boxes intersect it and 102 boxes start here. References: BOX-01: 2, BOX-02: 100.
 Cut 6: 1300–1500 mm; 23 boxes intersect it and 10 boxes start here. References: BOX-01: 2, BOX-02: 21.
 Cut 7: 1500–1600 mm; 10 boxes intersect it and 0 boxes start here. References: BOX-01: 2, BOX-02: 8.

Isometric view

Isometric view — separate layers

☐ See inside
☐ Boxes: show refs.
☐ Boxes: show hidden refs
☒ Pallets: show refs.
☐ Pallets: show hidden refs

Text 11

☐ Lock Center Rotation

Brown tape
 Labels: green shade ac
 The layers are visually separab
 The physical calculation does i

BACK-X=0

Navigation controls: Home, Up, Down, Left, Right, Center, and a numeric keypad.

Figure 13. “Distributions found”, progress and “Features of the selected distribution”.

14.1 Navigation

When a reference has multiple instances, “Previous ($\leq$)” and “Next ($\geq$)” cycle through their layouts. Left/Up/Page Up and Right/Down/Page Down do the same; Home jumps to the first and End to the last. In hierarchies, the selector changes the displayed inner pallet.

14.2 Layout summary

Block	Information
Summary	Load unit, usable space, total boxes, layers, height, weight, labels and C.M.
Occupancy	Loaded, available and free volume, average surface usage and occupied-envelope density.
Stability	Average support, maximum overhang, C.M. coordinates and displacement from the centre.
Longitudinal enclosure occupancy	Loaded length, remaining space, longitudinal advance and free length in load spaces.
Multi-pallet plan	Pallets used and boxes still pending when a load contains inner pallets.
Detail by cuts	Z interval, boxes intersecting the layer, boxes starting in it and the references involved.

The progress bar shows elapsed time and an estimated completion time when one can be calculated. Esc cancels processes that support controlled cancellation.

15. Transfer a result to the manual editor

“Transfer pallet to manual configuration” replaces the manual configuration with all boxes shown in the selected result. The operation can be undone in the editor. If the result contains inner pallets, the hierarchy is preserved and you can choose the level to edit.

Complexity limit. The same simplified-representation threshold protects against excessively large transfers. If a transfer exceeds the limit, reduce the number of visible boxes, select another instance or deliberately raise the threshold.

16. Manual editor: overview

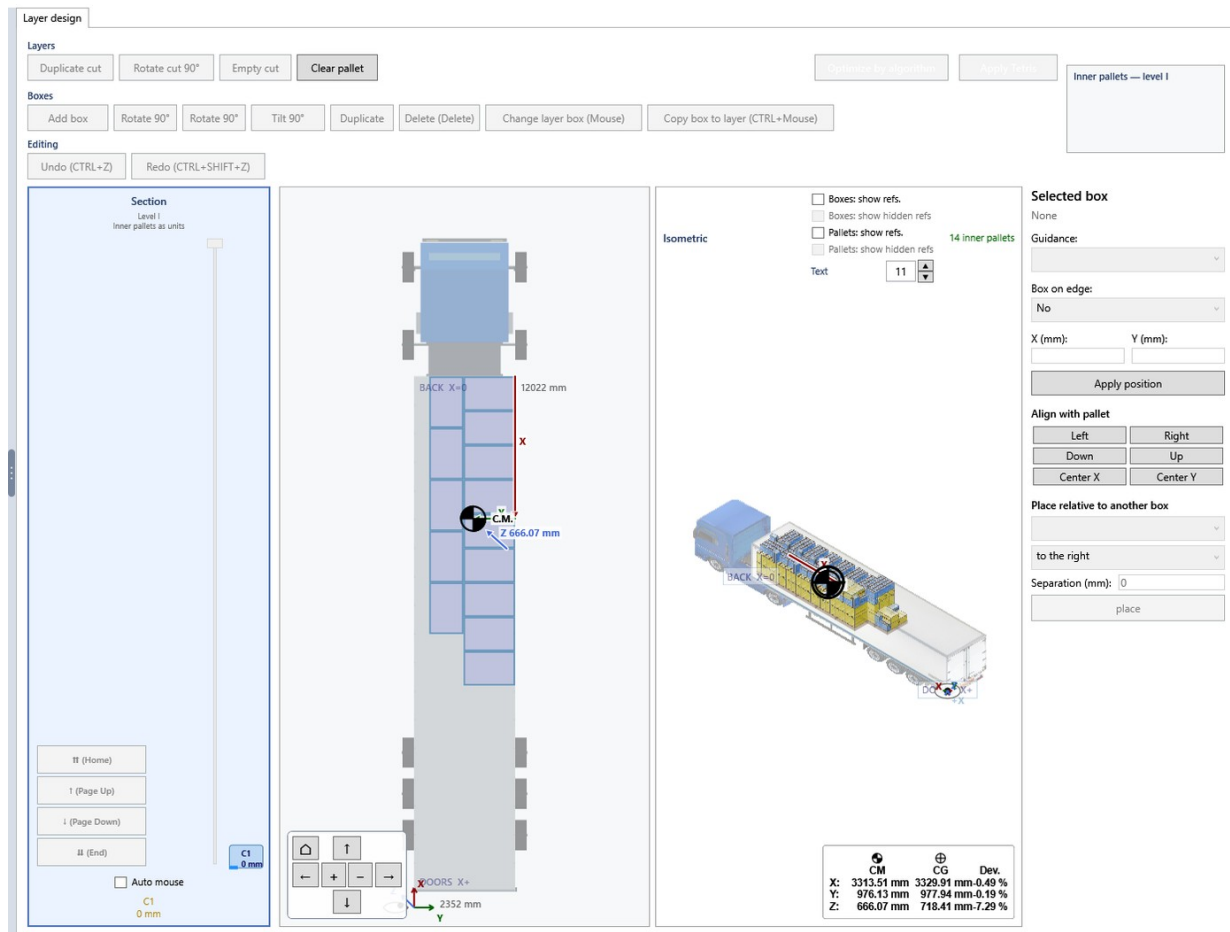


Figure 14. "Layer design": layer and box controls, section, plan view, isometric view and inspector.

16.1 Pallet status and selection

The “Pallet shown in manual configuration” selector chooses the unit or instance being edited. The validation message states whether the configuration is valid, how many boxes it contains, and whether the result and BMP export have been updated.

16.2 Upper-layer mode

Option	Outcome
Repeat the same layer	Repeat the geometry of the cut without mirror.
Alternate mirror left/right	Alternates a left/right mirror between layers.
Alternate mirror front/back	Alternates a front/back mirror between layers.

17. Manual editor: layers and cuts

Control	Function
Duplicate cut	Creates a top layer by copying all boxes from the active cut.
Rotate cut 90°	Rotates the entire layer around the centre of the usable surface.
Empty cut	Removes all boxes from the current cut while keeping the empty level.
Clean pallet	Removes all boxes from the manual configuration of the active unit.
Home / Page Up / Page Down / End	Moves to the first, previous, next or last layer, respectively. The mouse wheel over the bar also changes the active layer.
Auto mouse	Change the cut by passing the pointer through the vertical bar, without clicking.
Cut plane	Translucid plane that marks the active height; when separating layers it moves with the corresponding layer.

The bar shows the height limits, maximum number of layers, C1...Cn layers and the current elevation. In a load space, the truck floor remains fixed while the box layers and cutting plane receive the visual offset.

18. Manual editor: boxes and editing

Control	Function
Add box	Inserts a box of the selected type into the first available space in the cut.
Rotate 90°	Rotates the selected box in the plan view.
Roll 90°	Swaps length and height when “Tilt” is allowed.
Tilt 90°	Swaps width and height when “Tilt” is allowed.
Duplicate	It creates a copy of the selection.
Delete (Delete)	Deletes the selected boxes; the Delete key performs the same action.
Change box layer (Mouse)	Moves the box to another layer; you can also drag it onto a layer marker.
Copy box to layer (CTRL+Mouse)	Copies the box to another layer; Ctrl+drag performs the same action.
Undo (CTRL+Z)	Undoes the most recent manual edit.
Redo (CTRL+SHIFT+Z)	Redoes the edit that was undone.

18.1 Multiple selection

The plan view lets you select boxes and move them with the mouse. Operations that require a single box are disabled when the selection is incompatible. The upper panel shows a thumbnail of the current type and orientation.

19. Selected-box inspector

Control	Use
Guidance	Selects an allowed orientation for the box type.
Tip box	Marks the box as tipped when its orientation and the rules allow it.
X (mm), Y (mm)	Coordinates of the box reference corner on the active cut.
Apply position	Validates and applies the entered coordinates.

Control	Use
Left / Right / Down / Up	Aligns the selection with the corresponding edge of the usable surface.
Center X / Center Y	It focuses the selection on one of the axes.
Place relative to another box	Selects a reference box, a direction and a separation in millimetres.
Place	Places the selection next to the reference box if this causes no overlap or rule violation.

When rigid inner pallets are edited, the inspector switches from “box” to “pallet” and offers relative positioning between units. Validation prevents placements outside the effective surface, above the height limit or with incompatible overlaps.

20. “Optimize by algorithm” and “Apply Tetris”

Tool	What changes	When to use it
Optimize by algorithm	Rearranges the boxes in plan view while preserving their orientation and relative starting positions according to the configured profile.	To compact a cut without manually rebuilding it.
Apply Tetris	Repositions the boxes vertically according to overlaps and support surfaces.	To remove vertical gaps and settle boxes on valid support surfaces.

Tip. Save the layout or check that “Undo” is available before applying a large rearrangement. Afterwards, review support, height, C.M. and visible labels.

21. Manual cut and isometric views

The layer plan shows boxes that intersect the active height; boxes that start below it appear locked. The isometric view shows the complete configuration and uses the same visual layer separation, opacity, C.M. and camera settings.

Control	Function
Boxes: show refs.	Shows box references in the plan and isometric views.
Boxes: show hidden refs	It includes hidden references by projection.
Pallets: show refs.	Shows pallet and transport-enclosure references.
Pallets: show hidden refs	It includes hidden pallets in the projection.
Text	Controls the size of the text of the isometric view and the active cutting view, including the text of the C.M.
Go to pallet level I	It returns from an inner instance to the outer unit that contains it.

When “Distance between layers” is applied, the viewer moves the boxes, cut plane and visual focus together. Boxes that share the same physical base belong to the same visual cut and move together.

22. BMP export

Choose the number of pixels per side. Allowed range: 283 to 4096.

Pixels per side px

Final dimensions: 1000 × 1000 pixels.

Continue

Cancel

Figure 16. “Export BMP” dialog for choosing a square resolution between 283 and 4096 pixels.

Before you choose the file name and destination, “Export BMP” opens a dialog for specifying the number of pixels per side. The image is always square and 24-bit: it accepts between 283 and 4096 pixels per side and defaults to 1000 × 1000 pixels. The export uses full detail even when the interactive viewer is in lightweight mode.

- In automatic mode, the selected layout and active instance are exported automatically.
- In manual mode, export is enabled only for a valid configuration.
- The proposed name is formed from the reference and the load unit.

23. PDF export and preview

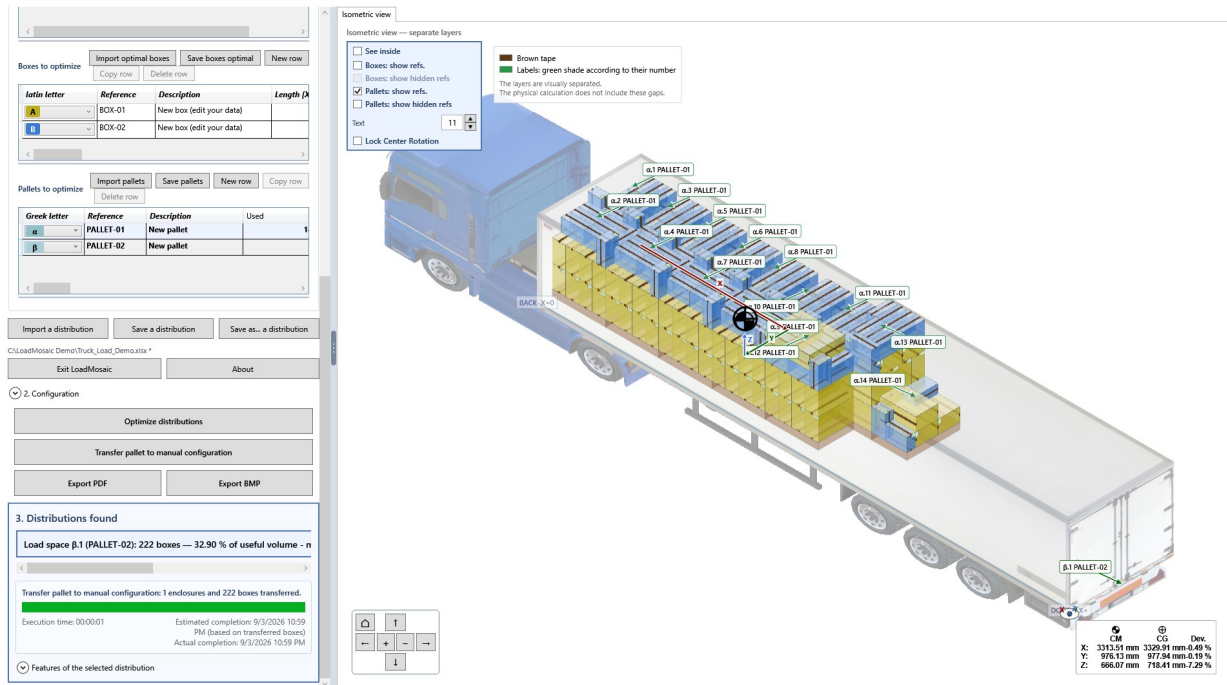


Figure 17. Export controls and the interface results area.

“Export PDF” first generates all rasterized pages and opens a preview. “← Previous” and “Next →” move through the report; “Continue and choose folder” asks for the destination, and “Cancel” stops the export.

23.1 Typical contents

- A header containing the file, reference, description, occupancy, limits and load-unit summary.
- A table of box types with quantities, dimensions, weights and restrictions.
- Pages for individual layers or stages, with isometric images and legends.
- A final page with the completed isometric configuration, the centre-of-mass symbol and X/Y/Z coordinates to two decimal places.

On the final page, the centre-of-mass text is placed in a box at the lower right without overlapping the footer. Labels and securing bands are included in the images when configured and large enough to be displayed.

The titles, tables, legends, units, messages and images generated in the PDF use the interface language that is active when the export starts.

24. Files and persistence

File	Location / purpose
interface.json	Active configuration created next to LoadMosaic.exe: language, window, tables, opacity, viewer, engines and other preferences.
license.dat	License status with LoadMosaic.exe, protected for the user and equipment using DPAPI.
translations.json	A catalogue of languages embedded within the EXE; it is not distributed as an external file.
LoadMosaic_configuration.json	Portable configuration saved by the user. It contains no boxes, pallets or results.
LoadMosaic_distribution.xlsx	Complete working document containing catalogues, units, automatic results and manual edits.
CSV / XLSX tabular	Independent exchange of Box data, Tags, Packs, Boxes to optimize and Pallets to optimize.
PDF / BMP	Report and image outputs; they are saved in the folder chosen by the user.

A clean official distribution package does not include interface.json or license.dat; the application creates each file alongside LoadMosaic.exe when required.

Backups. To transfer a workflow to another computer, save a portable configuration and the XLSX layouts. Do not copy license.dat between computers: DPAPI protection prevents it from acting as a transferable licence.

25. Language, licence and About

The interface, dialogs, progress bars, lists and default descriptions are localized into all seven languages. Imported headers are recognized through their canonical English names, translations in any of the seven languages and legacy aliases, so a document can be opened even when the current language differs from the language used when it was saved.

Control	Function
Enter Pro license	Open the activation of a Pro key.

Control	Function
Buy LoadMosaic Pro	Open the commercial information configured by the application.
Manage license	Shows or manages the status of the equipment's license.
Deactivate this computer	Release the activation of the equipment after confirmation.
About	Show version, date of compilation, license editing and site LoadMosaic.com.
Exit LoadMosaic	Closes the application and, when necessary, offers to save unsaved changes.

The public trial enables the same features as Pro for 14 days. A Pro licence is activated for the current computer, and its local state is stored using DPAPI encryption.

After a successful validation, if the licensing service becomes temporarily unavailable, LoadMosaic retains all Pro features and retries validation for up to 365 consecutive days. If the outage lasts for that entire period, the installation switches to permanent offline continuity mode for the purchased major version. Before that mode is reached, an explicit response stating that the licence is invalid, expired, revoked or refunded may disable it.

26. Troubleshooting

Symptoms	Recommended verification
"Optimize distributions" is not enabled	Check that there is at least one box with Quantity > 0 and a load unit with Quantity > 0, valid dimensions and consistent limits.
A box cannot be rotated or tilted	Check "Rotate" and "Tilt" in "Boxes to optimize" and that the orientation does not exceed the surface or height.
A label is not displayed	Check Label number, the resolved reference and Width/Height. A zero dimension retains the assignment but produces no geometry.
A pack reports inconsistencies	Check that each instance contains at least two boxes and that the total quantities are consistent multiples.
The 3D view is slow	Lower the simplified-view threshold, use "Automatic", or reduce visible references or opacity; PDF and BMP exports retain full detail.

Symptoms	Recommended verification
GPU does not work	Try “Automatic” and then “CPU (Direct3D 11 WARP)”. If the classic viewer works, update the Direct3D driver and use compatibility mode in the meantime.
The truck does not show textures	Select “Detailed with textures”. If the problem persists, try another 3D mode; the resources are embedded in the executable.
The separation between layers seems not to act	Disable "Auto" to set a value and confirm that there is more than one cut. In boxes only layers of boxes are moved, not the vehicle.
PDF or BMP are not exported	Wait for the calculations to finish, confirm that the selected result or manual configuration is valid, and try a folder for which you have write permission.
The imported configuration does not change the boxes	This is expected: a configuration contains only preferences. Import an XLSX layout to restore data and results.
Can't remove a label or pack	First remove your assignments in "Boxes to optimize"; the items in use are protected.
Not all references appear	Enable “Show hidden refs”. If there are many boxes, temporarily raise the simplified-rendering threshold when you need to inspect the interactive detail.

27. Keyboard shortcuts and mouse gestures

Shortcut / gesture	Action
Ctrl + C	Copies the header and the selected rows, even when not all rows are selected or the header is not explicitly selected; it also honours cell or column selections.
Ctrl + V	Appends compatible tab-delimited rows to the active table.
Delete	While a cell is being edited, deletes characters or the editor content without deleting the row. Outside edit mode, deletes the selected rows or boxes when the operation is enabled.
Ctrl + Z	Undo in the manual editor.
Ctrl+Shift+Z	Redo in the manual editor.

Shortcut / gesture	Action
Home / End	Moves to the first or last layout or layer, depending on the current focus.
Page Up / Page Down	Moves to the previous or next layout or layer.
Wheel in view	Zoom under the pointer.
Wheel over the layer bar	Change the active cut.
Left/middle-button drag in the isometric view	Rotates the camera.
Ctrl+drag a box to a layer	Copy the box to another layer.
Double-click the fill handle	Fills the value down the column.

28. Good practices

- Maintain stable and unique references; use the description for human text, not as an identifier.
- Start with “Adaptive Auto (recommended)” and “Balanced (recommended)”. Select another engine only when you understand the load pattern.
- Configure weights before assessing the mass center or load limits.
- Use zero-size labels only when you want to keep the logical allocation without representation.
- Check packs before optimisation; an inconsistent composition can invalidate the entire demand.
- Save portable configurations for work profiles and XLSX layouts for specific projects.
- Before exporting, select exactly the instance and hierarchy level you want to document.
- In manual mode, review validity, support, height, C.M., references and labels after each automatic rearrangement.

29. Glossary

Term	Definition
C.M.	Mass center calculated from available positions and weights.
C.G.	Geometric center of the volume or reference space.
Dimensional allowance	Allowance added to a dimension to represent clearance or deformation.

Term	Definition
Occupied envelope	Prism containing the placed load; its density may differ from the occupancy of the entire load space.
Bridge gap	Gap between coplanar supports that a box can bridge.
Level I	External unit that is not inserted into another.
Level II	Inner pallet placed inside an outer load unit.
WARP	Direct3D 11 software rasteriser running on the CPU.
Lightweight view	Reduced-detail interactive representation used above the box threshold.
Layer / cut	Horizontal layer that is active in the editor or result description.

30. Final checklist

- ☐ Box, label, pack and pallet references are unique.
- ☐ All dimensions are greater than zero and expressed in millimetres.
- ☐ Quantities are non-negative integers.
- ☐ Each pack contains at least two boxes, and the total quantities are compatible multiples.
- ☐ Weights and height limits are configured where required.
- ☐ The Stack, Tilt and Rotate checkboxes reflect the actual physical restrictions.
- ☐ The load unit, nesting level and clearances are correct.
- ☐ The engine, search depth, time limit and processor settings are appropriate for the case.
- ☐ The isometric view shows the correct instance and nesting level.
- ☐ The summary, centre of mass and support conditions are acceptable.
- ☐ The PDF preview has been reviewed through to the final page.
- ☐ The XLSX layout and, where applicable, the JSON configuration have been saved.

End of the guide. LoadMosaic combines automatic optimization, manual editing and reports in a single layout document.