

IRISPalOptimizer Lite

User handbook

Preface



IRISPalOptimizer Lite is a tool designed to speed and simplify the search for the optimal arrangement of objects on a pallet ("*Bin Packing Problem*"). The user interface, developed according to the criterion of simplicity of use, makes it possible to quickly enter all the information needed to create professional solutions for palletizing.

The powerful optimization "*heuristic*" engine "*IOE*" (*IRIS Optimizer Engine*) provide optimal solutions in a few moments, displays them in graphical format easily interpreted by the user and provides the data for creating reports, for printing, for export to other formats (spreadsheets, databases) or for send directly to an eventual robotic palletizing.

Installation

Run "*IRISPalOptimizerSetup.exe*" and follow the directions given. After installing, the links for "*IRISPalOptimizer Lite*" will be created both on the "*Desktop*" that in the "*Menu Programs*". At the first run of "*IRISPalOptimizer Lite*" will display the dialog shown in Figure 1: select the desired language and the unit of measure, then press the "OK".

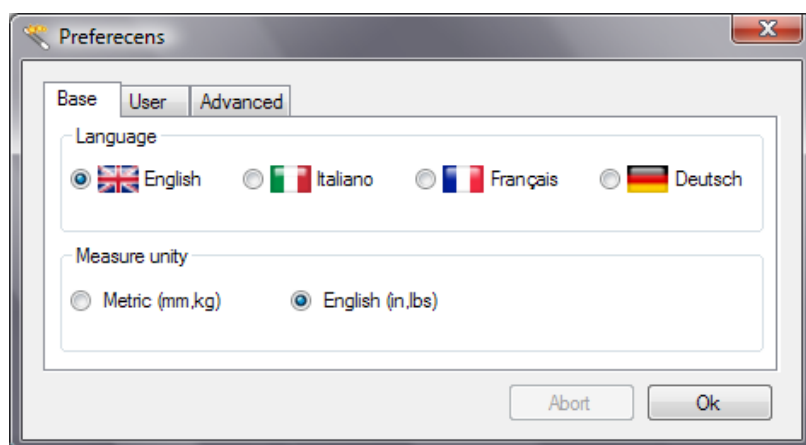


Fig. 1

Will then be prompted for entry of the activation data, as shown in Figure 2:

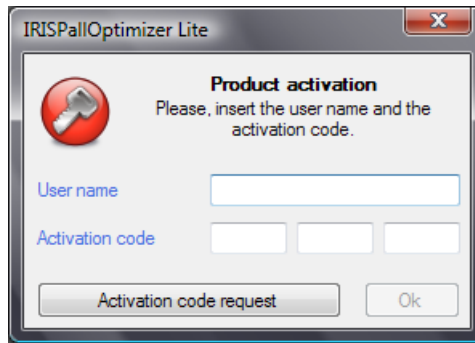


Fig. 2

Enter the "User Name" and "Activation code" and press the button "Ok" to finish the installation process. If you do not yet have the necessary activation information, you can request it via the "Activation code request" button, which allows you to display the window (Figure 3) containing the details of the methods for requesting activation data.

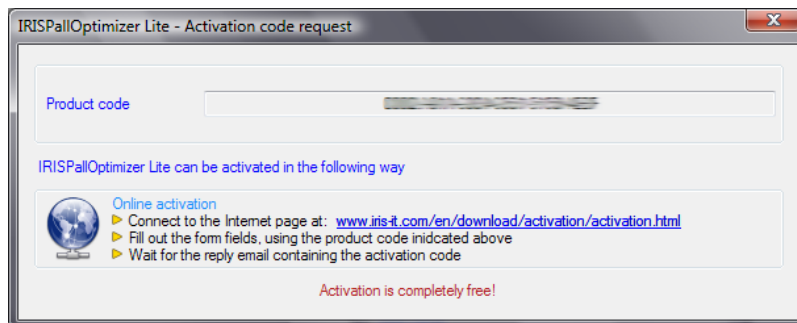


Fig. 3

User interface

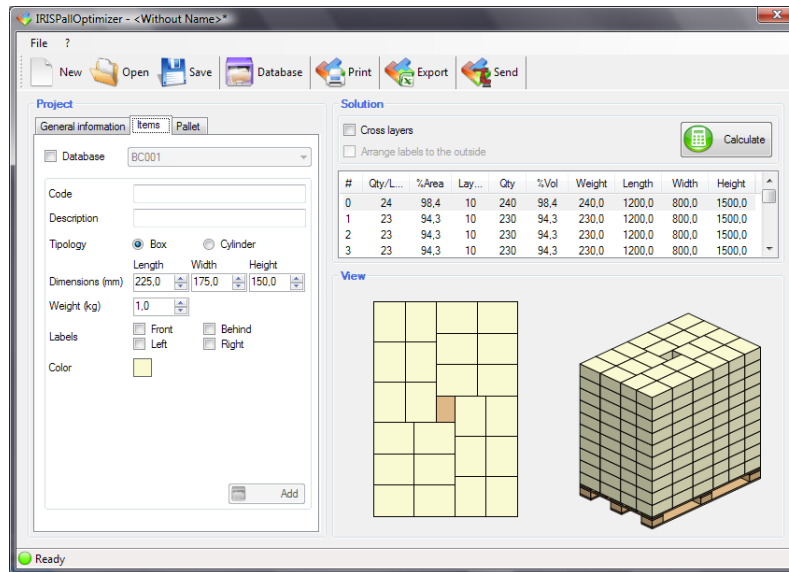


Fig. 4

Figure 4 shows the main screen of IRISPalOptimizer Lite, in which are visible the 5 main areas (Menu Bar, Toolbar, Project Section, Solution Section and View Section) whose functions are described below.

Menu Bar

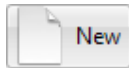
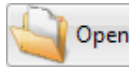

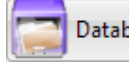



The program's interface contains the following menu:

Menu "File"	
Command	Function
New	Reset the interface of IRISPalOptimizer Lite with the default data to allow the creation of a new palletizing solution.
Open	Allows you to select a palletizing solution saved earlier.
Save	Saves the current palletizing solution.
Save as..	Saves, with a different name, the current palletizing solution.
Preferences	Displays a dialog box where you can choose, between the various options, the interface language, the unit of measurement used to indicate the size of the objects, the method used to search for solutions (basic, standard, advanced), etc..
Exit	Closing the program IRISPalOptimizer Lite.

Menu "?"	
Command	Function
Help	Viewing the contents of the " <i>online</i> " handbook of IRISPalOptimizer Lite.
Info about IRISPalOptimizer Lite	Visualization of the window containing the informations about the version of IRISPalOptimizer Lite in use and about its copyright.

Toolbar

Is just below the "Menu Bar" and contains a series of buttons whose functions are described in the table below:

Button	Function
 New	Reset the interface of IRISPalOptimizer Lite with the default data to allow the creation of a new palletizing solution.
 Open	Allows you to select a palletizing solution saved earlier.
 Save	Saves the current palletizing solution.
 Database	Opens the window for managing the database of the elements. See Chapter "Advanced Features".
 Print	Print a summary report for the palletizing solution selected. See Chapter "Advanced Features".
 Export	Export the Data of the selected palletizing solution in other formats. See Chapter "Advanced Features".
 Send	Send the data of the selected solution at the palletizing robot. See Chapter "Advanced Features".

"Project" Section

Is the area of the interface dedicated to the introduction of project data. The elements present in it are described in detail in the chapter "Creating a project of palletizing".

"Solution" Section

This section contains the following elements:

- Option "Cross layers": allows you to increase the stability of the pallet through to the positioning of the layers of the pallet according to a "cross-scheme".
- Option "Arrange labels to the outside": allows you to optimize the layout of the boxes in order to ensure the visibility of the labels of the boxes on the perimeter.
- "Calculate" button: allows you to search for palletizing solutions with the data included in the "Project" section.
- List of palletizing solutions, sorted by the number of boxes per layer. Selecting a solution from the list, in the below "View" Section it will show the graphic representation and, simultaneously, will be enabled the buttons "Print", "Export", "Submit" (See Chapter "Advanced Features").

"View" Section

In this area of the interface is represented graphically the selected palletizing solution. To facilitate the interpretation and visual analysis of the results, are showed both the 2D (top) than 3D (only in cases of boxes) schemes.

Creating a project of palletizing

Data entry of a palletizing project takes a few instants and can be divided in 3 easy steps:

1. (Optional) Introduction of the "General Information"

By clicking on the "General Informations" label of the "Project" section, fields appear for the introduction of a number of optional data made available to the user for purposes such as identification of the project and the creation of any print reports. In the table below it will show the list of the information and their meanings:

Field	Meanings
Code (num)	18-digit numeric code that identifies the possible "Serial Shipping Container Code" of the barcode shown in the print report.
Description	Field made available to indicate whether the project description.
Batch	20-character alphanumeric code that identifies the possible "Batch Number" of the barcode shown in the print report.
Destination	Field made available to enter the destination to be indicated in the print report.
Editor	Field made available to indicate the editor of the project.
Comapany	Field made available to indicate the company affiliation of the editor
Barcode	Allows you to define the information to be included in the barcode shown in the print report. If you select one of the default options, the barcode will be printed according to the standard UCC/EAN-128, otherwise, the string specified by the user will be printed according to the standard CODE 128
Notes	Provide any notes to the project.

2. The definition of the characteristics of the item to palletize

The definition of the characteristics of the item to palletize happens in the "Items" table of the "Project" section. The default option requires the user to enter the significant informations, such as type (box or cylinder), size, weight, color and the presence of any labels; the indication of the fields "Code" and "Description" is optional and can be used to facilitate the identification of the item and to allow their inclusion in the database (using the appropriate "Add" button). Alternatively you can select the "Database" option and select the desired item from the dropdown.

3. The definition of the pallet

The definition of the characteristics of the pallet happens in the "Pallet" table of the "Project" section. Again, the default option requires the user to enter the significant informations, such as size, weight, maximum load height, maximum load weight, maximum transhipped allowed beyond the perimeter of the pallet itself and (possibly) color; the indication of the fields "Code" and "Description" is optional and can be used to facilitate the identification of the pallet and to allow their inclusion in the database (using the appropriate "Add" button). Alternatively you can select the "Database" option and select the desired pallet from the dropdown.

Advanced features

Database elements management

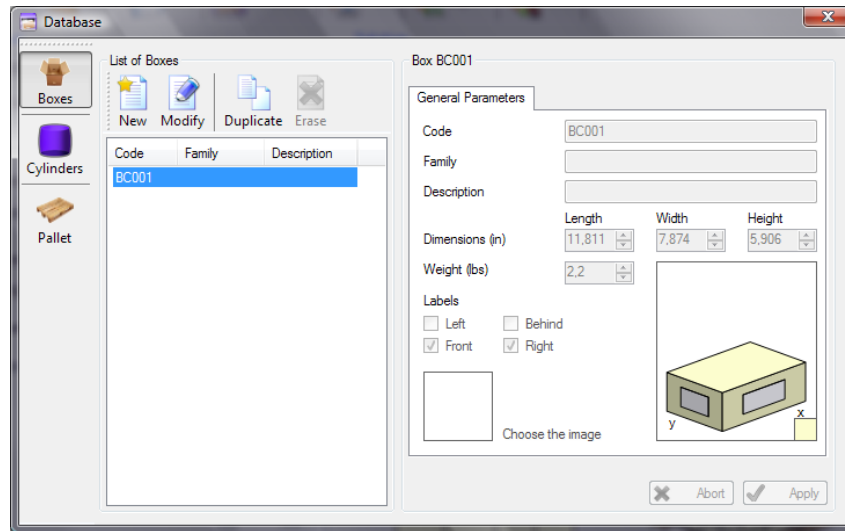


Fig. 5

Figure 5 shows the window for managing the database of the elements, that can be recalled by the appropriate button "Database" of the "Toolbar" (see chapter "User Interface"). By selecting the type (Boxes, Cylinders, Pallet) you will receive a list of related items in the database. Their management is granted by the buttons:

Button	Funvtion
New	Allows the introduction of a new item for the selected type. For the meaning of the data entry fields, see the preceding understood "Creating a project of palletizing". In the case of "boxes" and "cylinders" is also possible to select the representative image of the product that will be printed in the report.
Modify	Allow modification of the data of the selected item.
Duplicate	Allows you to duplicate the selected item, creating a new element having the same characteristics of those selected, but different code
Erase	Allows you to remove the selected item from the database.

Print

Prints a "report" of the selected palletizing solution, which refers to the data entered into the "General Informations" of the project (see section "Creating a project of palletizing"), the summary data of the selected solution (description, number of items, number of layers, dimensions, weights, etc.), the graphical representation of the palletizing solution and the optional barcode (see section "Creating a project of palletizing").

Export

Allows you to export data of the selected palletizing solution in formats compatibles with the most common "Database" and "Spreadsheets".

Send (to robot)

This particular feature allows you to send data (store locations, rotations, distances of approach, etc.) of the selected solution to the palletizing robot interfaced to the "*IRIS PallOptimizer Lite*" application. Supports the major robot manufacturers such as ABB, Kuka, Comau, Fanuc, Motoman, etc.

Software license terms

These license terms are an agreement between IRIS Ltd. and the licensee. Using the software, you accept these conditions. If you do not accept them, you may not use the software.

These license terms permit installation and use of a copy of the software on one device, all as described below.

Before using the software under a license, you must assign that license to one device. This device is the "licensed device". You may install and use one copy of the software on the licensed device. The components of the software are licensed as single product. You may not separate the components and install them on different devices.

Use of the software is subject to a mandatory activation, which combines the use of software to a specific device.

Any risk associated with the use of software is borne by the user. You acknowledge non-liability of IRIS Ltd. and agree not to make any claim against the IRIS Ltd. following the use of software. Content, documentation, products and services contained in the software are provided "as is" without warranty of any kind. IRIS Ltd disclaims all warranties, express or implied, with respect to content, documentation, products and services contained in the software, including, without limitation, any warranty regarding the infringement of third party rights, merchantability and fitness for a particular purpose, or arising from use, dealing or trade practice. IRIS Ltd disclaims any liability for any damage direct, indirect, special, consequential or incidental, including, without limitation, damages resulting from lost profits or revenues and costs of replacement goods, loss or corruption of data, even if the IRIS Ltd. had been advised of the possibility of such damages