

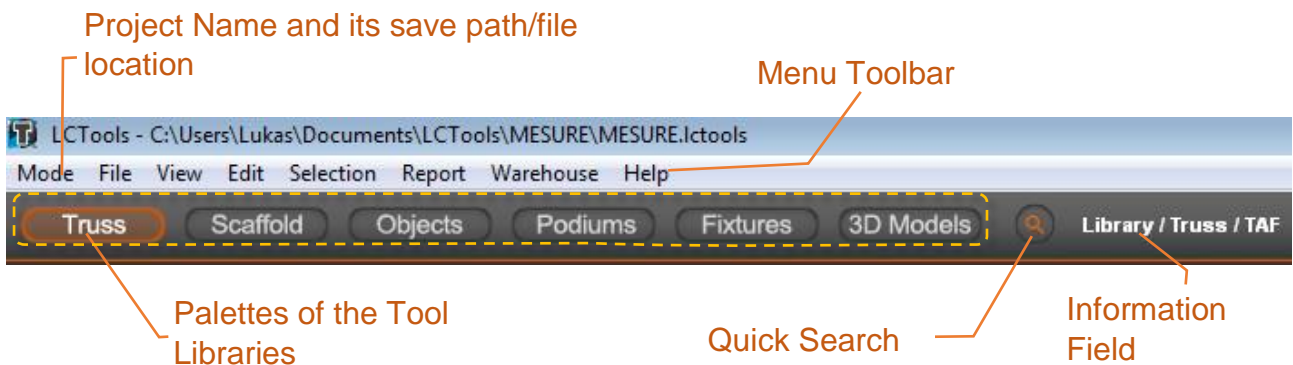
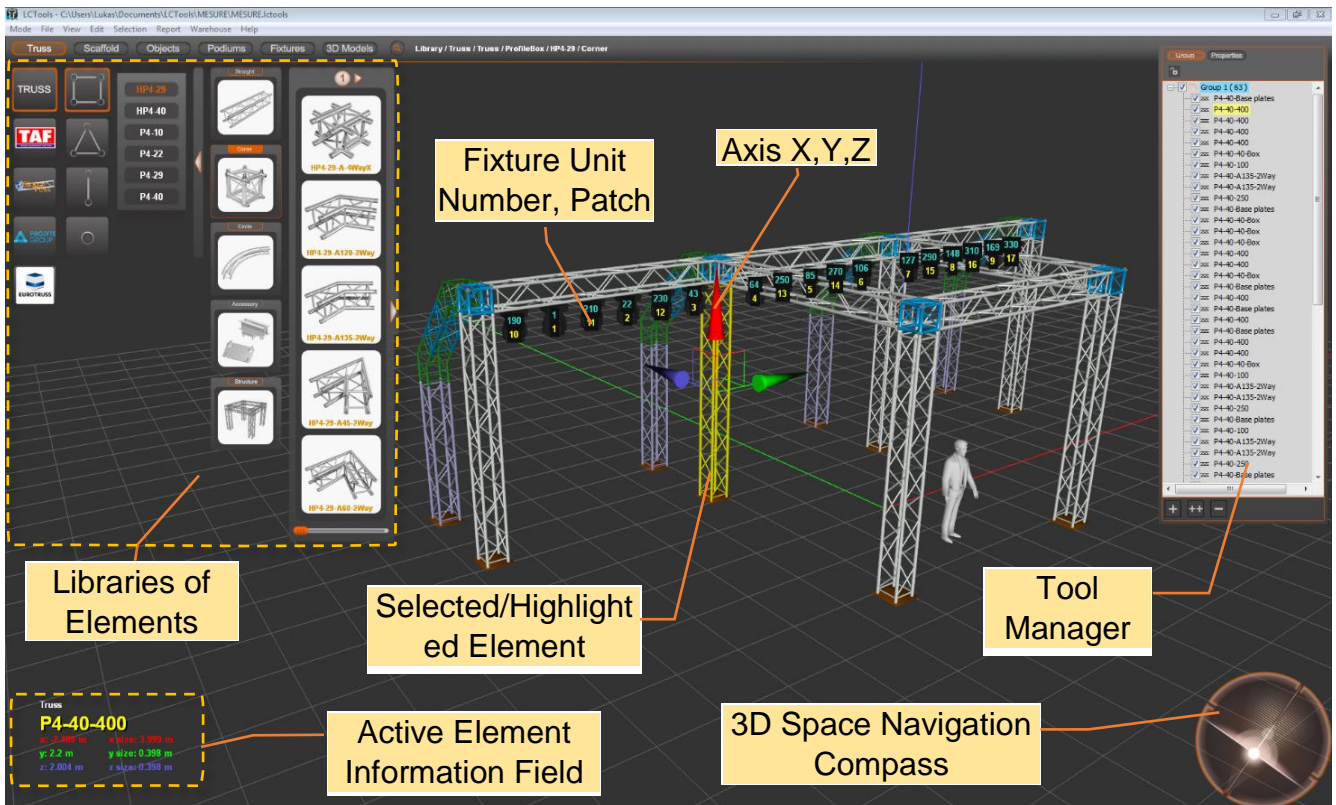
LIGHT**CONVERSE**[®]
TOOLS

MANUAL

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LIGHTCONVERSE TOOLS Interface Overview



Truss – Truss Library of different truss manufacturers

Scaffold – Scaffold Library

Objects – Object Library (equipment, musical instruments, etc.)

Fixtures – Lighting Equipment Library (compatible with LIGHTCONVERSE)

3D Models – Library of basic elements/templates

Tool Manager

Tool Manager allows you to group elements to groups, select the necessary elements, show or hide them in the 3D space and lock selected elements.

The Tool Manager contains two tabs: Group and Properties



Group Tab:

- Element block
- Group name (number of elements in a group)
- Selected object
- Show/Hide an object
- Add a group
- Add selected objects to a new group
- Delete group

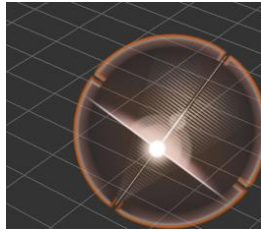
Properties Tab:

- Name and type of the selected element
- Move an object along the X,Y,Z axes
- Rotate an object around the X,Y,Z axes
- Color change
- Replace the element from another manufacturer

Mouse

Mouse Control Operation:

The Compass is the area located in the lower right corner of the screen and is used to navigate within the 3D space.



When moving within the 3D space, you can quickly navigate using the mouse buttons. Place your mouse cursor in the Compass area, then press and hold the Left Mouse Button to rotate the view on the horizontal plane and zoom the camera in and out. Use your Mouse Scroll Wheel to rotate the view on the vertical plane. See diagram below.

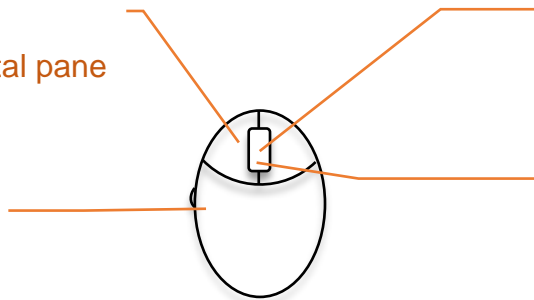
Mouse Buttons Description

Left Mouse Button

Rotate view on horizontal plane
Zoom camera in/out

Extra Mouse Button

Move camera relative to cursor



Scroll Wheel

Rotate view on vertical plane

Right Mouse Button

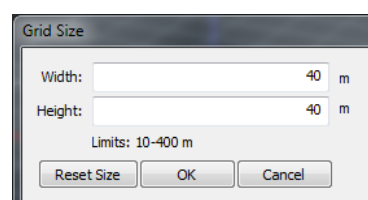
Set camera position to default

NOTE: To move the camera left/right and up/down, use the arrow keys on your keyboard.

3D Space Area

In the 3D space area, positive directions are shown for the X, Y and Z axes in red, green and blue, respectively. X, Y and Z directional icons in red, green and blue, respectively, will also appear when an element is selected.

The origin of X, Y, Z coordinates (Origin point) in the 3D space area is set in a default location. By selecting a 3D model and choosing "Set Origin To Object" from the Selection Menu, the origin of the coordinates will be changed and the coordinate axes center will become the center of the selected model. To reset the coordinate's origin back to default, choose Reset Origin from the Selection Menu.



Modes

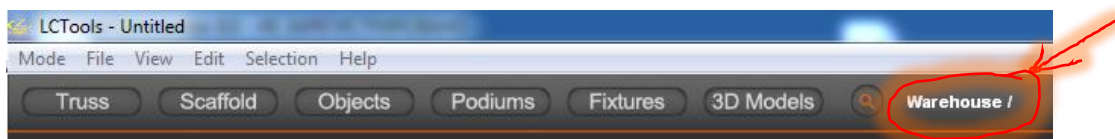
There are two main modes when working with LIGHTCONVERSE TOOLS:

1. Constructor Mode – unlimited number of items can be used.
The default Constructor workspace is loaded when LIGHTCONVERSE TOOLS is first started.
2. Warehouse Mode - limited number of items available.

To switch to the Warehouse Mode, select Set Warehouse from the Menu toolbar. A dialog box will appear with information about all the elements used in the project. After closing it, a “Select missing items” message will be displayed.

To work in Warehouse Mode properly you need to pre-fill the Warehouse with relevant information about the construction items and equipment to be used in your project.

To switch to the filling Warehouse mode, select Edit Warehouse from the Mode Menu. When in Warehouse mode, *Warehouse/* will be displayed in the information field.

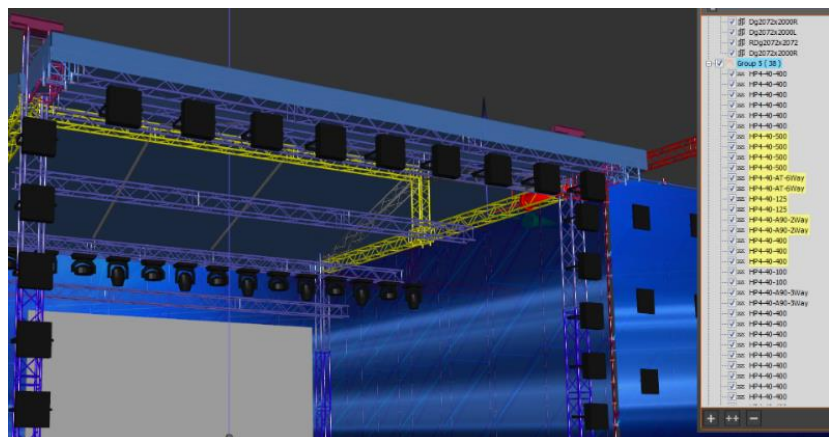


To switch to Constructor Mode, select Set Library from the Mode Menu. When in Constructor Mode, *Library/* will be displayed in the information field

You can build your project in Constructor Mode and switch into the Warehouse as needed, information about missing project items will be displayed in the additional tab. All missing items will be highlighted, which makes it possible to move them to their particular group.

Name	Missing objects...
Box	1
Dg2072x2000L	104
Dg2072x2000R	208
HP4-40-100	6
HP4-40-125	2
HP4-40-200	8
HP4-40-400	25
HP4-40-500	4
HP4-40-A30-2Way	2
HP4-40-A30-3Way	2
HP4-40-AT-6Way	2
Jang Example	37
J800	62
LCTool_3 Camera View5 m	1
P2000	214
Plane	2
R2072	404
RDg2072x2072	133
SHAPE SHIFTER C1 28ch	7
StudioSpot 575CMY(18)	7
T2 Base+4leg	4

OK



Balance Calculator in Warehouse Mode

LIGHTCONVERSE TOOLS software provides an elements balance calculator tool which shows an inventory of any missing elements for a certain time period. It is necessary to fill the warehouse to use this tool. Note that it is possible to create multiple warehouses, for example, for a warehouse which has different divisions or for other companies involved. For this purpose, there are import and export functions of the current base of elements.

Sorting buttons of the warehouse elements

Name of the elements and their quantity

Warehouse Export

Warehouse Import

Warehouse specification output into the text file

Window for filling data about the warehouse

Name	Pcs
F44450	200
F44450P	200
F44500	200
F44500P	200
F44Box	200
F44C21	200
F44C21P	200
F44C22	200
F44C22P	200
F44C23	200
F44C23P	200
F44C30	200
F44C30P	200
F44C41	200
F44C41P	200
F44C55	200
F44T35	200
F44T35P	200
F44T40	200
F44T40P	200
F44C55P	0
FD31-020	0
FD31-030	0
FD31-035	0
FD31-040	0
FD31-050	0
FD31-075	0

Balance Calculator Window

Projects

Selection of the event date (Double Click)

Adding of Projects

Filter of the balance selection by date

Window of the data analysis

Selection of the event date (Double Click)


Set Time Limits

Name	Total	Used	Balance
Box	0	3	-3
Dg2072x2000L	200	162	38
Dg2072x2000R	200	154	46
Impression (10 channels)	0	9	-9
Intellaspot	0	8	-8
Js600	0	60	-60
Js800	0	84	-84
L-Acoustic_K2	0	22	-22
LCTools_3 Camera View5 m	0	2	-2
Man	0	2	-2
P2000	0	216	-216
P4-40-075	0	2	-2
P4-40-100	0	8	-8
P4-40-110	0	2	-2
P4-40-200	0	12	-12
P4-40-250	0	4	-4
P4-40-300	0	4	-4
P4-40-40-Box	0	6	-6

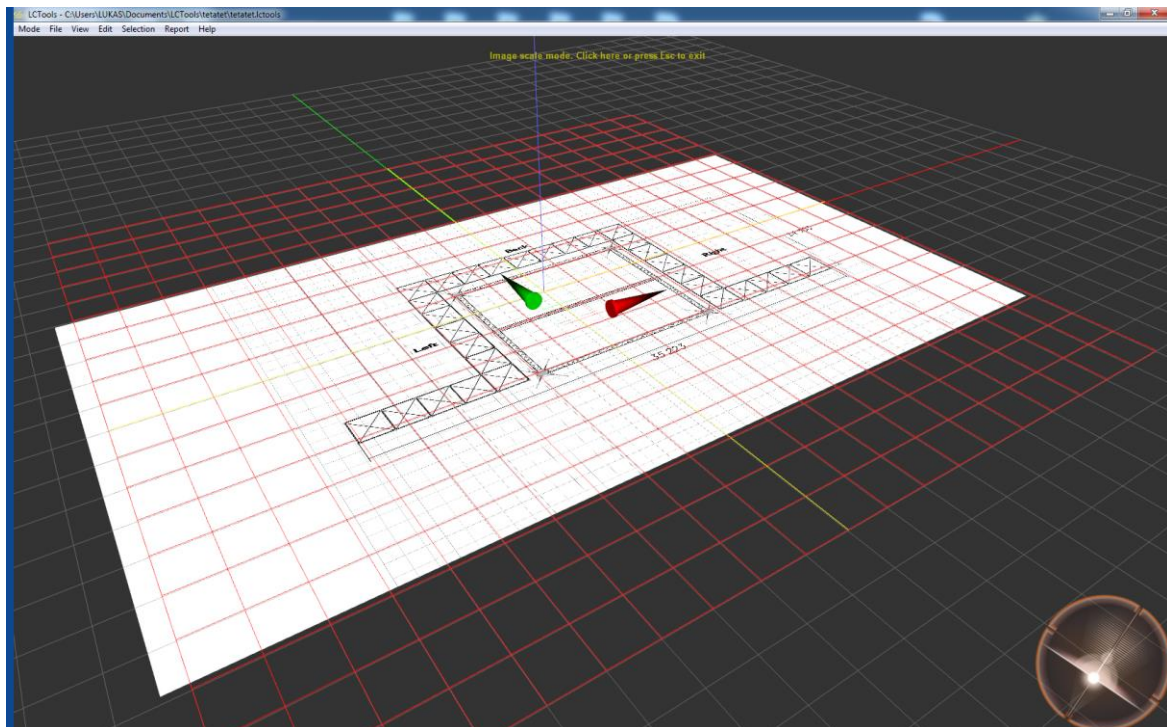
Workspace

Layers Setup

Your own images (*.jpeg or *.png representations of plans, schemes, drafts, etc.) can be imported as layers in the project by selecting Import from the File Menu. To change the image size by enlarging or reducing its scale, select the Properties Tab in the Tool Manager and press the Size button. An Image Size pop-up will appear and you will see actual size of the image. To zoom in, place your cursor at the intersection point of the coordinate grids (the origin). This point will be the center of picture scaling.

The size can be changed by the following key combination: **Ctrl** + **Mouse Wheel**. For more precise adjustment, use **Ctrl** + **Shift** + **Mouse Wheel**. After the image setup is complete, it is advisable to lock it (to prevent from slipping) by pressing the  Lock Object Button in Tool Manager.

It is also possible to scale the image on the vertical Z axis via the same procedure.



Truss Construction

Press Truss on the Palette bar to select a truss manufacturer. A sample **TRUSS** category is also available.

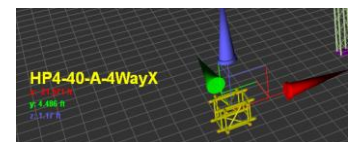
Next, select the desired truss type followed by the manufacturer's truss series, truss element form category (**Straight, Corner, Circle, Accessory, Structure**) and truss item from the expanding menu.



NOTE: Many common truss constructions can be found pre-built in the Structure form category.

When an element is selected, information about it will appear in the lower left area of the screen.

When adding additional elements, pressing Enter will locate the object to the highlighted (flashing red) area.

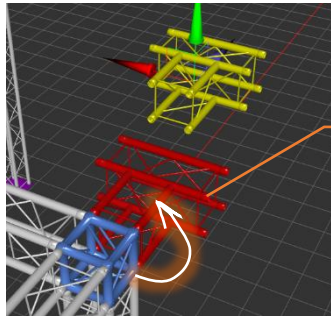
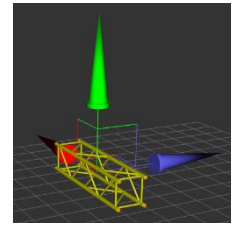


When selecting similar traverse elements, the Snapping tool allows you to quickly place an element without extra adjustment, as the system defines the proximate installation options automatically.

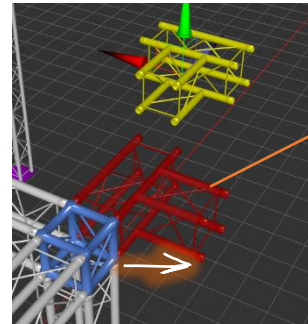
NOTE: When using the Snapping tool, if you select a group of element the last element will be the linking one. The last element has the 3D Manipulator.

The 3D Manipulator appears after selecting each element or groups of elements and helps you to transform different elements such as move, rotate and scale (similar operations can be performed in Tool Manager).

While inserting Corner truss elements, it is possible to spin traverse by pressing **W** and change snapping elements, by pressing **Q**.



Pressing **Q** –
Selected
element rotates
around the
snapping point



Pressing **W** –
Selected element
changes the
snapping point

Show truss point

Snapping points are illuminated with backlit orange dots. To disable/enable illuminated snapping points, select Show Truss Points in the View Menu.

NOTE: If your computer is not powerful enough, you may want to disable illuminated snapping points.

Align Angle

For the orthogonal alignment of the elements use Selection> Align Angle from the Menu bar.

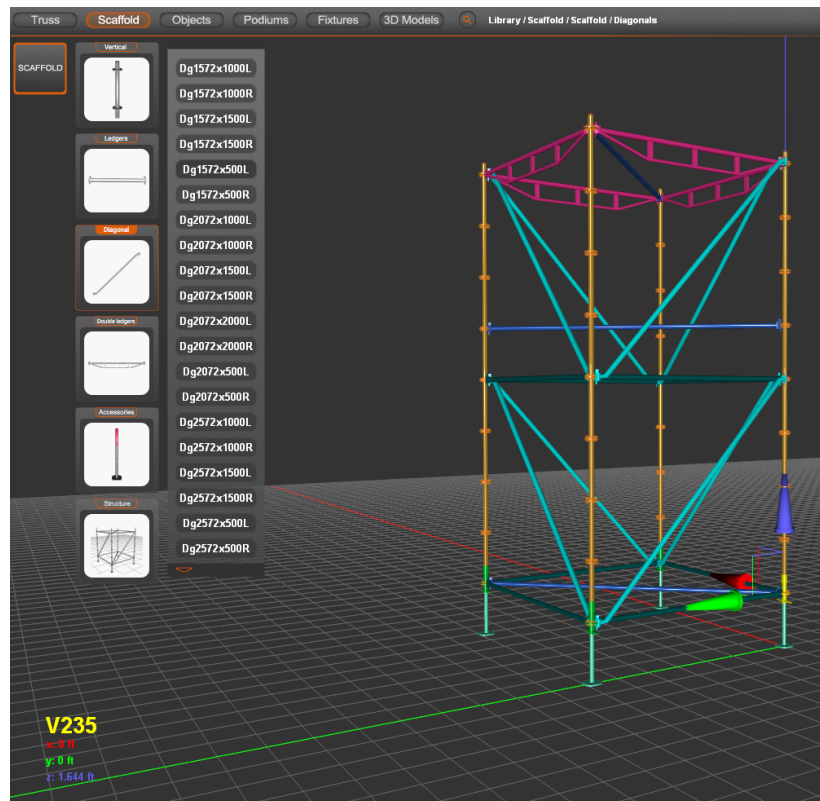
Flip

You can watch the mirror reflection of elements by pressing Selection> Flip coordinates X, Y, Z the Menu bar. In this case, the reflection point is the center of the traverse group. Left and right elements take the correct position as well.

Align selection to floor

To quickly set an element to a zero horizontal position, use the keyboard combination **Ctrl** + **F**.

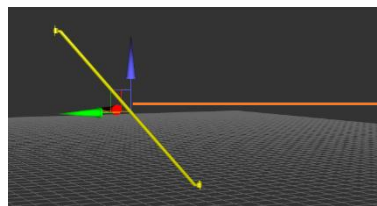
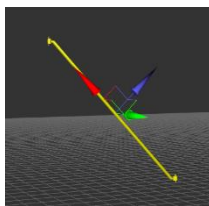
Scaffold Construction



Press the Scaffold library on the Palette bar to select a scaffold object.

Scaffold construction can be performed using the Snapping tool. If there is a problem with snapping an object it means that it is impossible to snap in that location.

It's possible to rotate scaffold Ledgers, Diagonals, Double Ledgers around Vertical and Accessory elements by pressing **Q**.



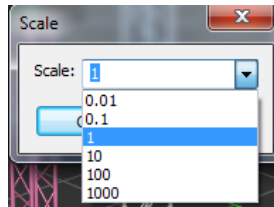
Whenever you need to change the direction of the 3D Manipulator, press **Shift** key.

The 3D Manipulator takes the position of the tilt angle of the element while installing Diagonals so you can move the element as needed.

If you need to move the element strictly along the orthogonal axes, hold down the Shift button for the 3D Manipulator to operate along the X, Y, Z axes.

Use of 3D Objects, 3D Models

There is a wide range of 3D Objects and 3D Models included in LIGHTCONVERSE TOOLS that can be added to a project, including elements such as sound systems, human models, primitive figures, decorations and more. It is also possible to import external models which use ***.obj** and ***.x** (DirectX) formats by selecting Import from the File Menu. During the import process, a dialog box will appear allowing you to set the scale.



When importing models with textures, the textures will be imported automatically. In case of texture absence, a dialog box will appear with a list of the missing associated textures.

When selecting 3D Objects and 3D Models, additional possibilities appear in the feature manager:

Name and type of the selected model

Model motion along the X,Y,Z coordinates

Element rotation on the X,Y,Z coordinates

Constructor of building of the arrays of models

Setting transparency Models from 0 to 100%

Mode of reflection of the glares

Change of size

Color change

Reflection of the surfaces inwards

Export project to LIGHTCONVERSE 3D SHOW PLATFORM

In the Main Menu, select "**File> Export> Export to LIGHTCONVERSE**" to export the project. It is possible to export selected items only (**Export Selected**) or the whole project (**Export All**). The exported file format has a **.3dl** extension and all structural elements, 3D objects and lighting devices are packed and stored in the file.

Before exporting, it is highly recommended to check the correct location of the World Center, as it affects the importation of the project into LIGHTCONVERSE.

Import (* .3dl) into LIGHTCONVERSE 3D SHOW PLATFORM

Project importation into LIGHTCONVERSE is accomplished in two steps:

Step 1 - Import objects in the Room Editor

Step 2 - Import lighting devices in the DMX Editor

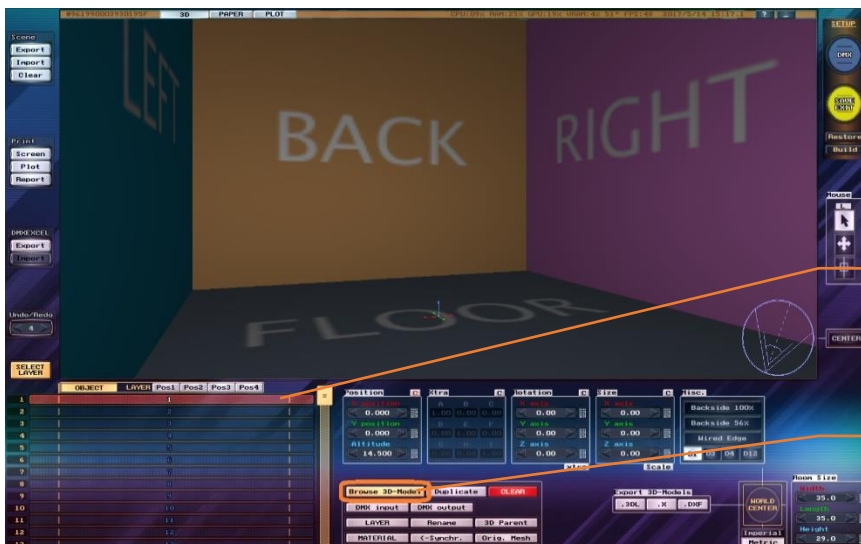


STEP 1 - Import objects in the Room Editor

In the Room Editor, before importing, make sure to set the World Center (WORLD CENTER) to "FLOOR". Simply select the floor and press WORLD CENTER. It is also necessary to set the Room Size required for your project:



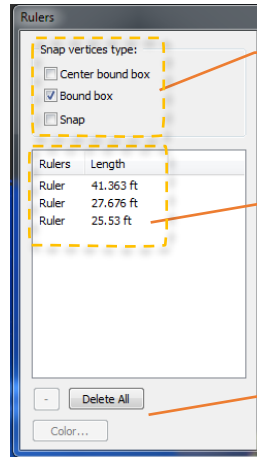
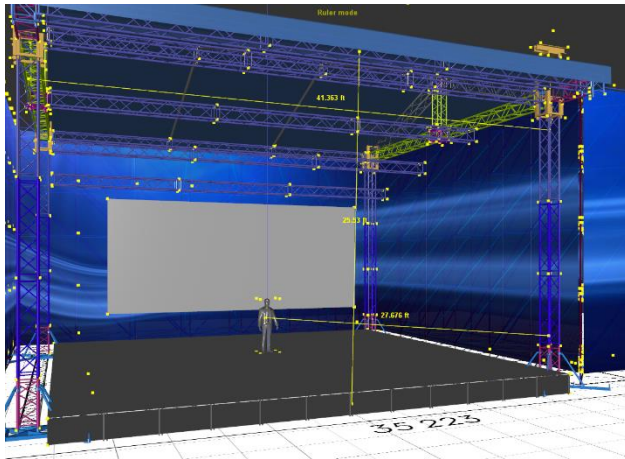
To import 3D objects of your project, place the cursor on a line in the Object List and press the Browse 3D-Model button. Next, press the Explorer button to open Windows Explorer and navigate to the location of the .3dl file.



Place cursor on an Object List line

Browse 3D Model button

Ruler Mode



Choose ruler top points:

1. Center bound box
2. Bound box

Ruler and its length

Delete Rulers and Change Colors

To switch into Ruler Mode, select Ruler from the Mode Menu. Ruler Mode will appear at the top center of the screen and a Rulers tab will open from which you can select what vertices type points you want to use a ruler to measure from (Center bound box, Bound box, Snap).

The parametric ruler binds to selected element points and performs measurement calculations when moving the element in Constructor Mode.

Press **ESC** button to exit Ruler Mode.

DMX Patch Mode

In the DMX Patch Mode users can assign lighting fixtures to specific DMX addresses. Fixture DMX addresses can then be shown on the drawing and printed out. Assigned DMX addresses are also saved while exporting a project into LIGHTCONVERSE.

To enter DMX Patch Mode, select “Mode> DMX Patch...” in the Main Menu. A pop-up notification “**DMX Patch Mode Click here or press Esc to exit**” will appear in the center of the screen.

During patching you can select fixtures in the 3D space or in the DMX Patch Window. All fixtures have given channels.

There are two tabs in the DMX Patch Window:

Table View – a table type view of the DMX address space.

Universe View – a graphic type view of the DMX address space.

In Table View, the addressing for the fixtures is assigned in the order in which they are selected. Highlighting of fixtures can be single and group. Table View allows to sort by headings.

Unit Number	User ID	Firm	Name	Universe	Channel	Address
6		ETC	Source Four Zoom15-30 model(2ch)	1	1	1
7		ETC	Source Four Zoom15-30 model(2ch)	1	3	3
2		High End	SolaSpotLED (28ch)	0	0	0
3		High End	SolaSpotLED (28ch)	0	0	0
4		High End	SolaSpotLED (28ch)	0	0	0
1		High End	SolaWash 37 (21ch)	0	0	0
5		High End	SolaWash 37 (21ch)	0	0	0

Unit Number – a sequence number of the fixture which is set by the program as a fixture is inserted into the project.

User ID – a number for fixture ID use in professional lighting consoles.

Firm – Manufacturer of lighting fixture.

Name – Name/type of lighting fixture.

Universe – DMX universe choice.

Channel – Address of fixture.

Address – Continuous addressing.

After selecting a fixture or group of fixtures, press the **Patch** key. The following options will appear in the Patch Properties window:

Patch Properties

User ID:

Universe:

Channel:

Channel offset

Gap:

Flow onto empty/new universes

OK Cancel

The fixtures which have been addressed move to the top according to the list with text color changed to dark.

In the Universe View tab, the patching is shown in the graphic view. The fixtures can be moved according to the addresses.

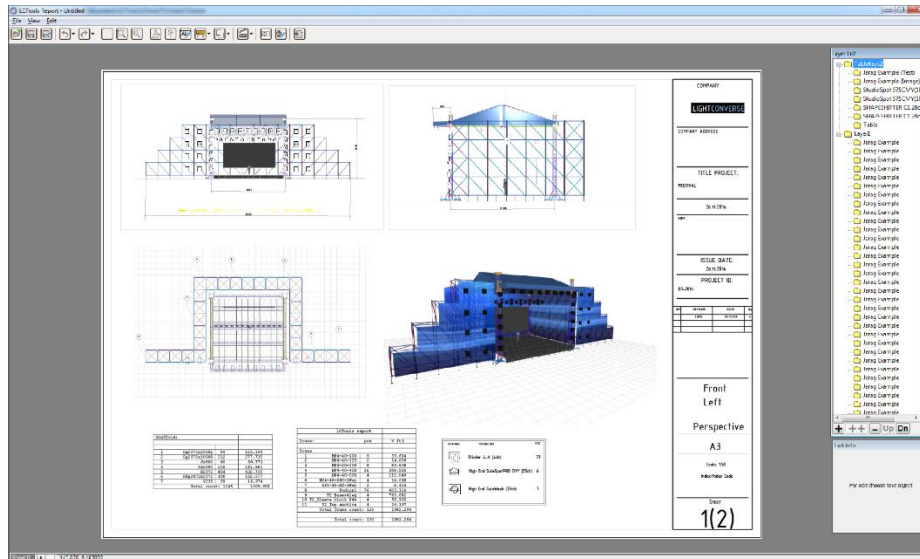
Table View		Universe View		
Universe 1		Universe 2		New
1 So...	3 So...	5		
24	25	26	27	28
29	30	31	32	33
34	35	36	37	38
39	40	41	42	43
44	45	46	47	48
49	50	51	52	53
54	55	56	57	58
59	60	61	62	63
64	65	66	67	68
69	70	71	72	73
74	75	76	77	78
79	80	81	82	83
84	85	86	87	88
89	90	91	92	93
94	95	96	97	98
99	100	101	102	103
104	105	106	107	108
109	110	111	112	113
114	115	116	117	118
119	120	121	122	123
124	125	126	127	128
129	130	131	132	133
134	135	136	137	138
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424	425	426	427	428
429	430	431	432	433
434	435	436	437	438
439	440	441	442	443
444	445	446	447	448
449	450	451	452	453
454	455	456	457	458
459	460	461	462	463
464	465	466	467	468
469	470	471	472	473
474	475	476	477	478
479	480	481	482	483
484	485	486	487	488
489	490	491	492	493
494	495	496	497	498
499	500	501	502	503
504	505	506	507	508
509	510	511	512	

Printing Options

Construct a custom pdf print-out of your show with annotations, links, information tables, equipment lists and more.

To open the print constructor select “File” > “Report” > “PDF Report”

*NOTE: Saving print outs is carried out in *.LCR format and also in *.PDF. Created or changed drawing should always be saved, otherwise all changes will be lost.*

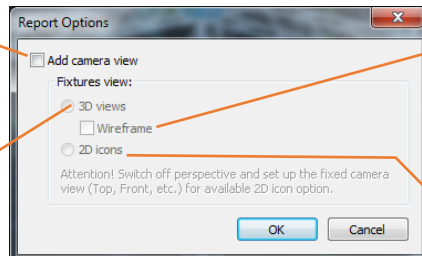


Print-out sheet creation

When selecting Paperwork from the Mode Menu, a “Report Options” dialog box will open.

Option of turning on the render of the preview window (Viewport)

For the render of all 3D views



For the render in frame view (Wireframe)

For the render of the projection view (in front, on the left, on the right, on top, from bottom, behind)

After selecting any desired report options, a preview window (Viewport) is downloaded to the sheet where its size and location on the sheet can be chosen. If the 2D Icons option is selected, Fixture type elements are downloaded and can be edited. Other images can be added to the sheet by selecting Load Jpeg from the Edit Menu, if needed.

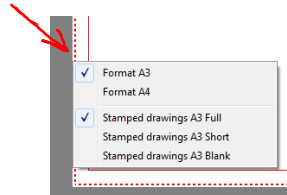
Before opening the module of edit and print of the sheet, it is necessary to select the position of camera in the 3D space. For setting orthogonal projections, it is necessary to set the camera at 0 degrees by pressing **[Ins]** (NumPad), to cancel - press **[Ins]** (NumPad) again.

When choosing orthogonal projections in Report Options, selecting the 2D Icons option allows for editing of Fixtures. Selecting the 3D Views option allows for inserting an image on the sheet in a perspective view.

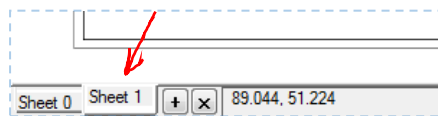
After opening the edit module of the sheet, it's necessary to configure parameters of the sheet.

Sheet format attributes

To change the sheet format and its orientation, right click on the border of the sheet.

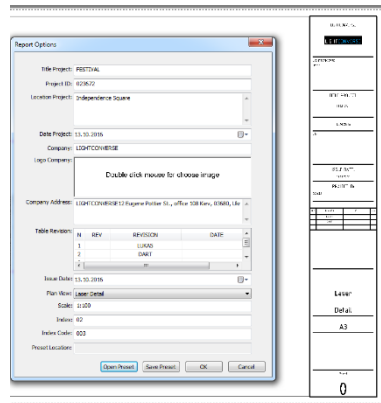


The number of the created sheets depends on the set task. To add new sheets to the project, choose the **+** button at the bottom of the project, to delete the sheet choose the **x** button. Choice of sheets is carried out by choosing the appropriate tabs.



Report Options data

























To fill in print out data of the print sheet, select Edit > Report Options (). All information can be saved for use on other sheets.



Tool palette

The Tool palette can be used during creation and has the following capabilities: Add Note, Add Text, Add Size, Add Patch, Add Table, Add Report Options, Add Fixture. All tools have setting and edit features.



	Open Project
	Save Project
	Save Project As..
	Undo
	Redo
	Pan
	Zoom
	Zoom All
	Load JPEG file
	Add Note
	Add Text
	Add Size
	Add Size Arrow
	Add Size Dot
	Add Size Slash
	Add Patch
	Add Patch without Edging
	Add Patch with Edging
	Add Table
	Add Fixture Key Table
	Add Trusses Table
	Add Scaffold Table
	Add Fixture Table
	Add Report Options
	Add Fixture
	Save Sheet(s) to PDF File

Shortcuts and Commands

Ctrl + Z	– Undo action Ctrl + X – Redo action
Ctrl + Y	– Redo action
Ctrl + D	– Duplicate selected unit(s)
Alt + Arrows	– Duplicate selected unit(s) in relative direction
Enter	– Locate object to highlighted (flashing) area
Ctrl + Enter	– Copy and locate object to highlighted (flashing) area

Q	– Change free connection junctions of selected truss
W	– Rotate the selected elements at connection point of trusses
Mouse Wheel Scrolling Actions:	
	- Use scroll wheel on Compass area – Tilt camera
	- Use scroll wheel on scene area – Move camera up/down
	- Use scroll wheel in the library – Scroll through library elements
	- Use scroll wheel on selected element axes – Rotate the element
	- Use scroll wheel + Ctrl in 3D Substrate Size and Image Size – Change size of 3D models and images
	- Use scroll wheel + Ctrl + Shift in 3D Substrate Size and Image Size – Change size of 3D models and images smoothly
Ctrl + A	- Select all objects
Esc	– Deselect all objects (also exit Ruler mode, 3D Substrate Size mode, Warehouse and Image Size mode)
Delete	– Delete all selected objects
Space	– Center camera on selected objects
Left Arrow	– Move camera left
Right Arrow	– Move camera right
Up Arrow	– Move camera up
Down Arrow	– Move camera down
Home	– Move camera forward
End	– Move camera backward
Shift + Arrow	– Slow camera motion
1-9	– Navigate camera to standard positions
Insert	– Toggle to perspective/orthogonal view
Left Mouse Click	– Single selection
Ctrl + Left Mouse Click	– Add to multiple selection
Alt + Left Mouse Click	– Remove from multiple selection
Double Left Mouse Click	– Multiple selection of continuously connected units
Double Right Mouse Click	– Multiple selection
Ctrl + Left Mouse Click	– Select main unit from already selected units
Ctrl + S	– Save in file
Ctrl + Shift + S	– Save As to project file
Ctrl + O	– Open a file
F12	– Toggle visibility of navigator
Ctrl + R	– Reset angles
Ctrl + F	– Align selected unit with the floor

Ctrl + Alt + N	– Show truss name
Ctrl + L	– Show a library window
Ctrl + Alt + C	– Show truss color
Ctrl + Alt + M	– Toggle Imperial/Metric measurement system
Ctrl + Alt + R	– Rip apart
Alt + F4	– Exit

Menus of the Main Modes (Constructor Mode, Warehouse Mode)

Mode	
Open Warehouse	
Paperwork...	Move to the mode of constructor of print and design of sheets
Ruler...	
DMX Patch...	
File	
New...	Creation of a new .lctools project
Open...	Open the .lctools project
Open Recent	Open the project from the list of the last 10 projects
Save	Save the .lctools project
Save...	Save the .lctools project under another name
Import >>	
.lctools	Import the project into the current project
.x	*.x file import into the project
.obj	*.obj file import into the project
.jpg	*.jpg file import into the project
.png	*.png file import into the project
Export >>	
Export to LIGHTCONVERSE	Project export into the .3dl file
Export to Project...	Export of the selected objects of the project into the .3dl file
View	
Show Window Library	Library switcher on trusses in the view of tree (windows style) and switcher of all libraries (Truss, Scaffold, Objects, Podiums, Fixtures, 3D Models) in the view of tabs (Direct X graphic style)
Show Group Window	Show/Hide a window of groups
Show Navigator	Show/Hide the camera navigator of the 3D world
Show Truss Names	Show/Hide names near the trusses and scaffolding in the 3D world
Show Truss colors	
Show Truss Points	Show/Hide points of connections of trusses and scaffolding in the view of shining points
Show Detect Collision	Show/Hide a flashing red highlighting of the objects when there is a full match of the positions in the space according to categories (Truss, Scaffold)
Show Fixture Unit Numbers	Show Fixture Unit Numbers
Show Fixture Addresses	Show Fixture Addresses Patching
Show Floor Grid	Show/Hide a grid on the floor
Floor Grid Size...	Edit the grid size on the floor
Set Imperial/Set Metric	Switch of the English and metric coordinate systems
Paper	Switch to the displaying of the 3D view on the white background

Camera >>	
Top	View from Top
Back	Rear view
Front	Front view
Left	Left side view
Right	Right side view
Top Front Right	Isometric view from top, from front, from the right
Top Front Left	Isometric view from top, from front, from the left
Top Back Right	Isometric view from top, from the back, from the right
Top Back Left	Isometric view from top, from the back, from the left
Perspective	Turn on/Turn off the perspective
Focus to selection	Camera flight to the selected object with an axis
Reset	Camera reset to the initial position
Rip Apart	
Brightness...	
Edit	
Undo	Cancel the last action
Redo	Repeat the cancelled action
Selection	
Reset Angles	Reset all angles of the object turns
Align Angle	Align the smallest angle of the turn to the straight angles
Align selection to floor	Align an object to the floor
Duplicate	Duplicate
Deselect	Remove selection from the selected objects
Select All	Select all objects
Delete	Delete selected objects
Select Collision	Select the objects which are in collision
Flip >>	Build a symmetric structure from the selected elements with consideration of replacement of the objects on their analogues
Flip X Local	With respect to the minimum X value of the Bound Box of the structure
Flip Y Local	With respect to the minimum Y value of the Bound Box of the structure
Flip Z Local	With respect to the minimum Z value of the Bound Box of the structure
Flip X Global	With respect to the YZ plane
Flip Y Global	With respect to the XZ plane
Flip Z Global	With respect to the XY plane
Set Origin To Object	Set the World Center value in the position of the axis of the selected object
Reset Origin	Reset the World Center value to 0, 0, 0
Report	
Camera View To Jpeg...	Save the camera view into the .jpg file
Specification...	Save a specification into the .txt file
PDF...	Save the camera view on the white background with the main stamp (table) with information about the project into the .pdf file
Jpeg with comments...	Save the camera view with the text information (comments) into the .jpg file
Warehouse	
Edit Warehouse...	
Check project for Warehouse Inventory conformity...	
Balance calculator...	
Help	
About	Show the About window with a list of hot keys