

Fixture Builder

USER MANUAL

of MA Lighting





Fixture Builder User Manual

Version 1.3



Table of contents

1. Introduction	3
2. First Steps	4
2.1. System requirements	4
2.2. Installation on your Computer	5
2.3. Start the Program	5
2.4. Program Surface	6
3. Fixture Type Information	8
4. Attributes	9
4.1. Mix Color Attribute Table	11
4.2. Add DMX Channels	11
4.3. Delete DMX Channels	13
5. Channel Function Ranges	14
5.1. Add Channel Function Ranges	14
5.2. Delete Channel Function Ranges	16
5.3. Wizard	16
6. Function Sets	18
6.1. Add a Function Set	20
6.2. Delete a Function Set	20
7. Export and Import	21
7.1. Export Fixture	21
7.2. Import Fixture	22
8. Release Notes	23
9. Index	24



Fixture Builder User Manual

Version 1.3



1. Introduction

The MA Fixture Builder is a tool to create fixture types.

It is developed to import fixture types created with the MA Fixture Builder into MA consoles or onPC software. A fixture type created with the MA Fixture Builder ensures a visualization in the MA 3D and dot2 3D.

The following manual includes descriptions of the functions and introduce you step by step in the application.



Fixture Builder User Manual

Version 1.3



2. First Steps

This chapter describes how to [install the MA Fixture Builder](#) and [start the program](#).

It shows you also the [program surface](#) for a better overview.

2.1. System requirements

If you want to run the MA Fixture Builder on your PC, here is what it takes.

Operating system	Minimum
	Microsoft Windows® 7
	Microsoft Windows® 8
	Microsoft Windows® 8.1
	Microsoft Windows® 10
	Apple OS X 10.10.5 Yosemite

Additional requirements to use certain features:

- To use the online help and download the latest version of MA Fixture Builder you need internet access.
- To save on an USB stick you need an USB 2.0 or 3.0 port.

We recommend you visit your PC manufacturer's website for information on updated drivers and hardware compatibility.



Fixture Builder User Manual

Version 1.3



2.2. Installation on your Computer

Download the latest version from www.ma-dot2.com or www.malighting.com.

The installation is possible in every root directory or in the standard directory "MA Lighting Technologies\MA Fixture Builder" in the folder "Program Files".

**Administration rights:**

You should have administration rights to install the program.

If you downloaded only the MA Fixture Builder, start the installation file MA_Fixture_Builder_vx.x.exe with a double click.

If you downloaded the MA software release package, extract the file into a temporary folder and start the installation file MA_Fixture_Builder_vx.x.exe with a double click.

On the screen appears the installation program. You get detailed hints and information regarding the installation.

Watch out for the suggested directory and change it if you want to. The installation directory is not changeable in the program.



Fixture Builder User Manual



Version 1.3

2.3. Start the Program

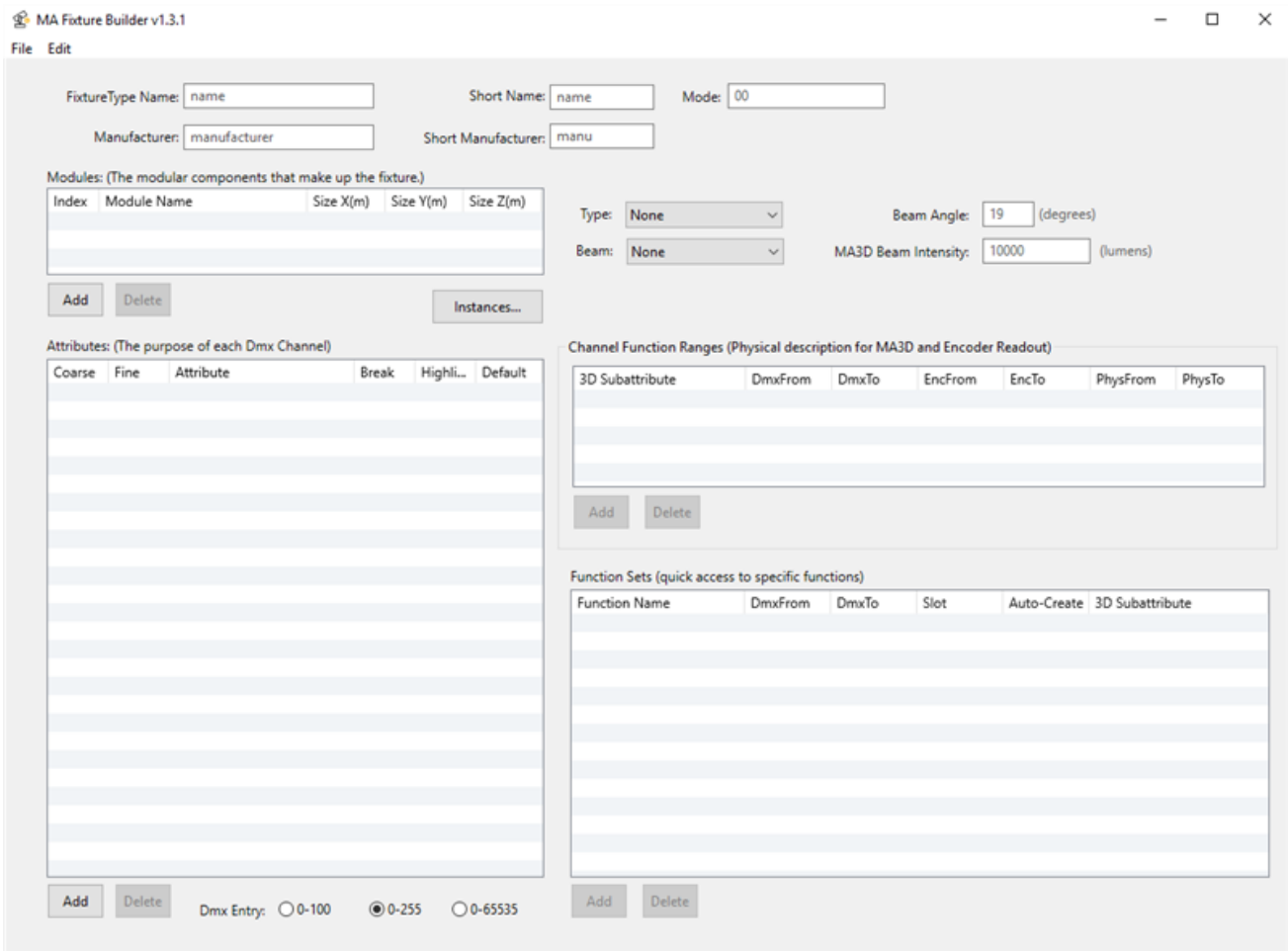
Start the MA Fixture Builder after installation.

To open the MA Fixture Builder, double-click on the desktop icon with the name **MA Fixture Builder v.x.x.**

A folder called **MA Fixture Builder v.x.x.** is located in the start menu (Start - All Programs - MA Fixture Builder v.x.x.).

Open and uninstall the MA Fixture Builder in this folder.

- To open the program, click on **MA Fixture Builder v.x.x.**
- To uninstall the program, click on **MA Fixture Builder v.x.x remove.**



Start MA Fixture Builder



Fixture Builder User Manual



Version 1.3

2.4. Program Surface

The program surface is divided into four areas.

- **Fixture Type Information:**
Type basic information referred to the fixture type and modules.
- **Channel Function Ranges:**
Add and delete functions ranges of subattributes.
- **Function Sets:**
Add and delete specific functions of subattributes.
- **Attributes:**
Add and delete purpose of DMX channels.

Fixture Type Information

MA Fixture Builder v1.3.1

File Edit

FixtureType Name: AlphaSptHPE1500 Short Name: AlphaSpt Mode: 00

Manufacturer: ClayPaky Short Manufacturer: ClayPaky

Modules: (The modular components that make up the fixture.)

Index	Module Name	Size X(m)	Size Y(m)	Size Z(m)
0	Module	0.5	0.5	0.5

Type: Headmover Beam Angle: 19 (degrees)

Beam: Spot MA3D Beam Intensity: 10000 (lumens)

Add Delete Instances...

Attributes: (The purpose of each Dmx Channel)

Coarse	Fine	Attribute	Break	Highli...	Default
1		COLORRGB1	<input checked="" type="checkbox"/>	255	255
2		COLORRGB2	<input type="checkbox"/>	255	255
3		COLORRGB3	<input type="checkbox"/>	255	255
4		CTO	<input type="checkbox"/>		0
5		COLOR1	<input type="checkbox"/>		0
6		COLOR2	<input type="checkbox"/>		0
7		COLOR3	<input type="checkbox"/>		0
8		CTB	<input type="checkbox"/>		0
9	10	DIM	<input type="checkbox"/>	255	0
11		DIGITALIRISSHUTTERSTROBE	<input type="checkbox"/>		

Add Delete Dmx Entry: 0-100 0-255 0-65535

Channel Function Ranges (Physical description for MA3D and Encoder Readout)

3D Subattribute	DmxFrom	DmxTo	EncFrom	EncTo	PhysFrom	PhysTo
COLORRGB1	0	255	100	0	1	0

Add Delete

Function Sets (quick access to specific functions)

Function Name	DmxFrom	DmxTo	Slot	Auto-Create	3D Subattribute
min	0	0		<input checked="" type="checkbox"/>	COLORRGB1
	0	0		<input checked="" type="checkbox"/>	COLORRGB1
max	255	255		<input checked="" type="checkbox"/>	COLORRGB1

Add Delete

Attributes Function Sets Channel Function Ranges

Program surface



Fixture Builder User Manual

Version 1.3



3. Fixture Type Information

Open the MA Fixture Builder.

Index	Module Name	Size X(m)	Size Y(m)	Size Z(m)
0	Module	0.5	0.5	0.5

Fixture Type Information

The required fixture type information can be found in the fixture type manual.

Fill out the following fields:

- FixtureType Name
- Mode
- Manufacturer
- Beam Angle

Short Name and Short Manufacturer are automatically generated.

If you would like to change Short Name and Short Manufacturer, type into the input field.

Select the 3D type in the first drop-down called Type.

Choose between:

- None
- Headmover
- Conventional (can also be used for LED spots)
- Mirror (can also be used for scanners)
- LED (use for LED tiles only)

Select the beam in the second drop-down called Beam.

Choose between:

- None
- Spot
- Wash
- Effect
- Fibre

To set the beam intensity in lumens, type the number into the input field.



Fixture Builder User Manual

Version 1.3



Start Address:

All attributes share a start patch number after a start address. This allows the creation of fixtures using multiple DMX start addresses. DMX channel 1 is always a start address. If another DMX channel is set to a start address, it is displayed as two horizontal black lines.

- **Break:** Displays the DMX start address of a fixture. There are up to four DMX start addresses in a fixture type.
- **Highlight:** Displays the highlight value.
- **Default:** Displays the default value.
- **DMX Entry**
 - 0-100:** Displays values in percent.
 - 0-255:** Displays values in decimal 8 bit.
 - 0-65535:** Displays values in decimal 16 bit.



Fixture Builder User Manual

Version 1.3



4.1. Mix Color Attribute Table

This table displays the array of the mix color attributes with their corresponding colors.

For more information on how to add DMX channels see [Add DMX Channels](#).

Attribute	Color
COLORRGB1	Red
COLORRGB2	Green
COLORRGB3	Blue
COLORRGB4	Amber
COLORRGB5	White
COLORRGB6	Warm white
COLORRGB7	Cool white
COLORRGB8	Orange
COLORRGB9	Red orange
COLORRGB10	Purple
COLORRGB11	Indigo
COLORRGB12	Cyan
COLORRGB13	Magenta
COLORRGB14	Yellow
COLORRGB15	UV
COLORRGB16	Green cyan
COLORRGB17	Medium white
COLORRGB18	Mint green
COLORRGB19	Lime
COLORRGB20	Congo blue
COLORRGB21	Royal blue
COLORRGB22	Light green

4.2. Add DMX Channels



Hint:

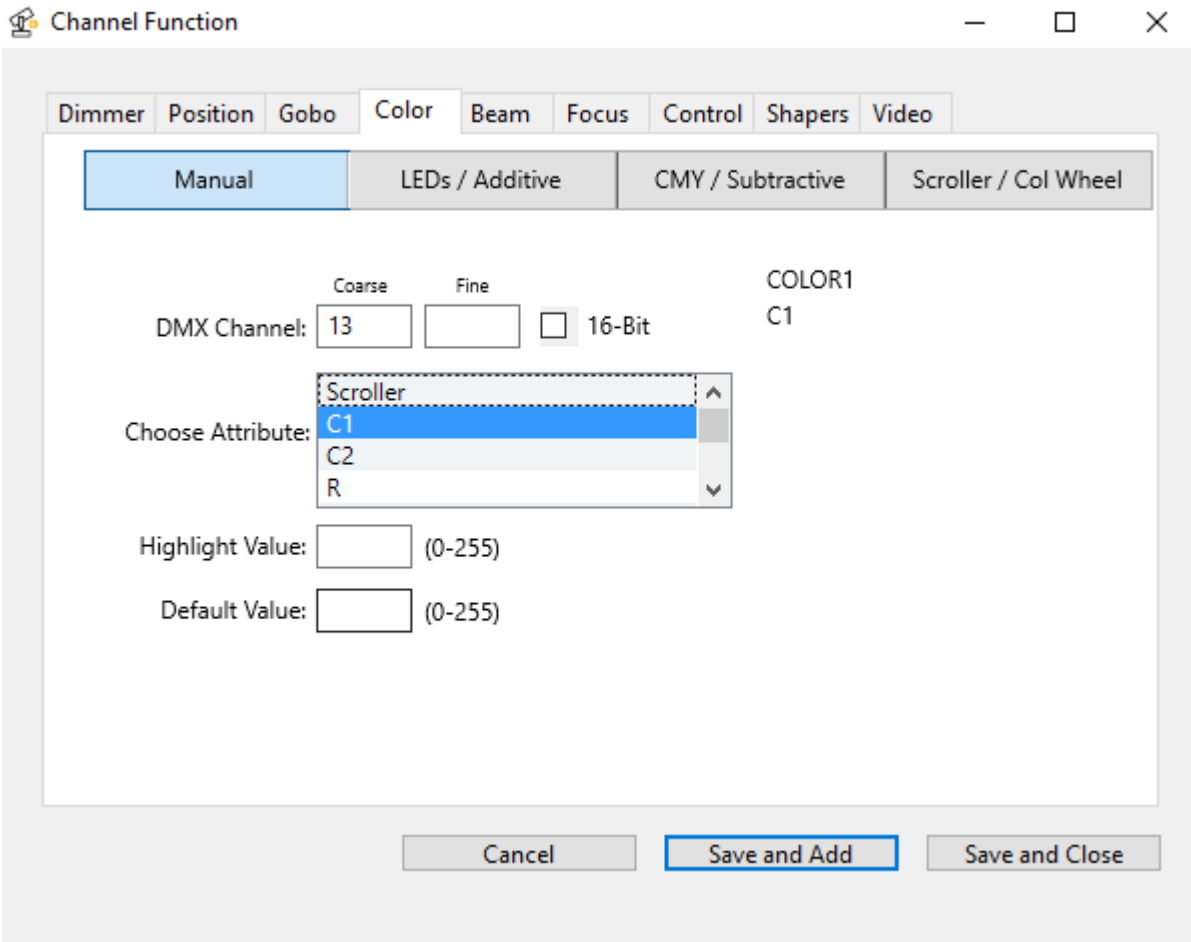
It is recommended that the the DMX channels be added directly in the correct order. This avoids rearranging channels und setting correct patch breaks afterwards.

- To add DMX channels to the fixture, click on **Add** below the table Attributes.
- The window Channel Function opens.



Fixture Builder User Manual

Version 1.3



Add DMX channels

All DMX channels have to be added complying the selected mode.

1. Select the **preset type tab** of the DMX channel, for example **Color**.
2. Select the **attribute** by scrolling down in the Choose Attribute, for example **C1**.
For more information on mix color attributes see [Mix color attribute table](#).
3. Type the **coarse** DMX channel, e.g., **13**.
4. If the attribute has an additional **fine** DMX channel, check the checkbox **16-Bit**.
The program automatically inserts the next number after the coarse channel number.
5. Type the **fine** DMX channel if the automatically inserted channel number is incorrect.
6. Type the **highlight value** corresponding to the encoder readout.
The highlight value is the output of the fixture for this attribute if you press **Highlt** on the console.
If the field is empty and you press **Highlt**, the programmer values do not change.
We recommend you use full dimmer and white color as highlight values. This helps you to find the fixture in a rack or on the stage.
7. To save and close the window, click **Save and Close**.
-or-
To save and add the next channel, click **Save and Add**.
To close the window Channel Function, click **Cancel**.

The DMX channel is now saved and added to the DMX channel list.

For information on how to delete DMX channels see [Delete DMX Channels](#).



Fixture Builder User Manual

Version 1.3



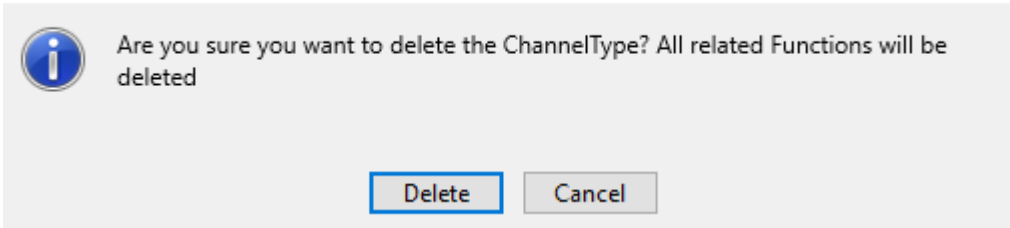
4.3. Delete DMX Channels

It is possible to delete single DMX channels in the table Attributes.

Delete a single DMX channel

1. Select the DMX channel in the table Attributes and click **Delete** below the table Attributes.
2. A warning pop-up appears.

MA Fixture Builder v1.3.1



Warning pop-up

3. To delete the DMX channel, click **Delete**.
To abort the operation, click **Cancel**.

The DMX channel is now deleted.



Important:

The DMX addresses Fine and Coarse may have to be adjusted for the following attributes in some cases.



Fixture Builder User Manual

Version 1.3



5. Channel Function Ranges

Channel Function Ranges display the subattributes of the selected DMX channel.

The basic functions will be created automatically in the Function Sets after a DMX channel was added.

It is possible to:

- [Add](#)
- [Delete](#)

channel function ranges.

- To edit the ranges of the channel function, double-click the cell below a column. The cell is selected and displayed in blue. Type to edit using the keyboard on your PC.

Channel Function Ranges (Physical description for MA3D and Encoder Readout)

3D Subattribute	DmxFrom	DmxTo	EncFrom	EncTo	PhysFrom	PhysTo
DIM	0	255	0	100	0	1

Channel Function Ranges

The table Channel Function Ranges displays seven columns:

- **3D Subattributes:** Displays the subattributes to the selected DMX channel.
- **DmxFrom:** Displays on which DMX value the subattribute starts.
- **DmxTo:** Displays on which DMX value the subattribute ends.
- **EncFrom:** Displays the start entry of subattributes.
- **EncTo:** Displays the end entry of subattributes.
- **PhysFrom:** Displays the start of the physical range used by the 3D.
- **PhysTo:** Displays the end of the physical range used by the 3D.

5.1. Add Channel Function Ranges

Requirement:

- Select attribute in the table Attributes.

For more information see [Attributes](#).

To add channel function ranges, click on **Add** below the table Channel Function Ranges.



Fixture Builder User Manual

Version 1.3



The window Add Channel Function opens.

Add Channel Function

3D SubAttribute:

Dmx From: (0-255) Entry units: % 8Bit 16Bit

Dmx To: (0-255)

Encoder From: The natural value that is seen in encoder,
Encoder To: on the sheets and stored in cues.

Physical From: The Physical range for MA3D, E.g., Degrees
Physical To: for Pan/Tilt and Zoom; RPM for gobo spin.

Add channel function ranges

1. Select the **3D SubAttribute** in the drop-down list.
2. Enter the DMX ranges in the columns **Dmx From** and **Dmx To**.
3. Select an entry unit on the right of the window.
4. Enter the encoder ranges in the input fields **Encoder From** and **Encoder To**.
5. Enter the physical range for the 3D in the input fields **Physical From** and **Physical To**.
6. To save and close the window, click **Save**.
7. To abort the operation, click **Cancel**.

The channel function range is now added.



Important:

Please make sure that the DMX channel ranges do not overlap.

For information on how to delete a function in the table see [Delete channel function ranges](#).



Fixture Builder User Manual



Version 1.3

5.2. Delete Channel Function Ranges

It is possible to delete channel function ranges.

1. Click to select the channel function in the table **Channel Function Ranges**.
2. Click **Delete**.
3. The function is now deleted.

5.3. Wizard

The table Channel Function Ranges offers a Color Wheel or a Gobo Wheel Wizard, depending on attribute – color or gobo.

Requirement:

- Add a gobo or a color wheel in the column Attributes.
- To enable the corresponding wizard, click the attribute first.

The following is described on the basis of the on the Color Wheel Wizard.

Open the wizard:

1. Click the Color Wheel Wizard after enabling.
2. The wizard opens.

Color Wheels

All Search Number

Swatch	Number	Name	RGB
MA colors	1	White	255 255 255
MA colors	2	Red	255 0 0
MA colors	3	Orange	255 128 0
MA colors	4	Yellow	255 255 0
MA colors	5	Fern Green	128 255 0
MA colors	6	Green	0 255 0
MA colors	7	Sea Green	0 255 128
MA colors	8	Cyan	0 255 255
MA colors	9	Lavender	0 128 255
MA colors	10	Blue	0 0 255
MA colors	11	Violet	128 0 255
MA colors	12	Magenta	255 0 255
MA colors	13	Pink	255 0 128
CalColor	4215	calcolor 15 blue	191 206 219
CalColor	4230	calcolor 30 blue	147 173 198
CalColor	4260	calcolor 60 blue	85 113 159

(Double-click a row to add a new frame)

Slot	Name	RGB
1	Sea Green	0 255 128
2	Magenta	255 0 255
3	Fern Green	128 255 0
4	Red	255 0 0
5	calcolor 15 blue	191 206 219
6	Blue	0 0 255
7	Lavender	0 128 255
8	R393	61 147 198

Create New ChannelSets on Exit

Remove Selected Remove All Cancel Done

Using the color wheel wizard



Fixture Builder User Manual

Version 1.3



3. Select the manufacturer by clicking the drop-down list **All**.
Or display the array of colors by the number:
-Enter the number in the input field **Search Number**.
4. To add the colors to the column on the right, double-click a color.
5. To remove single colors in the table on the right, click a line to mark it.
Then, click **Remove Selected**.
6. The line is now removed.
7. If you would like to remove all lines on the right, click **Remove All**.
8. To create new channel sets on exiting the subattributes, check the checkbox **Create New ChannelSets on Exit**.



Important:

Checking **Create New ChannelSets on Exit** overwrites all existing function sets of the subattribute.

9. If the settings are adjusted, click **Done**.
10. The wizard closes and the settings are now applied.

To abort the operation, click **Cancel**.



Fixture Builder User Manual

Version 1.3



6. Function Sets

Function sets display the function of each subattribute and offer quick access to specific functions.

These function sets are displayed in calculators of grandMA2 and dot2.

Requirement:

- Set channel function ranges

For more information see [Channel Function Ranges](#).

Function Sets (quick access to specific functions)

Function Name	DmxFrom	DmxTo	Slot	Auto-Create	3D Subattribute
Open	0	25	1	<input checked="" type="checkbox"/>	GOBO1
gam 018900101	26	76	2	<input checked="" type="checkbox"/>	GOBO1
gam 018900106	77	127	3	<input checked="" type="checkbox"/>	GOBO1
varilite 0479002001	128	178	4	<input checked="" type="checkbox"/>	GOBO1
varilite 0479002013	179	229	5	<input checked="" type="checkbox"/>	GOBO1
varilite 0479002024	230	239	6	<input checked="" type="checkbox"/>	GOBO1
open	240	255	1	<input checked="" type="checkbox"/>	GOBO1

Function sets

The table Function Sets consists of six columns:

- **Function Name:** Displays the name of the channel function in the console, for example the label in the calculator or in a preset.
- **Dmx From:** Displays on which DMX value the subattribute starts.
- **Dmx To:** Displays on which DMX value the subattribute ends.
- **Slot:** Displays the slot of a wheel if the fixture has a color or a gobo wheel.
- **Auto-Create:** Displays if a preset will be generated by the auto create function in the console (grandMA2 only)
- **3D Subattribute:** Displays the corresponding subattribute the function set belongs to.

It is possible to:

[Add](#)

[Delete](#)

function sets in the corresponding table Function Sets.

1. To edit function sets, double-click a row in the table Function Sets.
2. The window Add Function opens.



Fixture Builder User Manual

Version 1.3



Add Function

Function Name:

Dmx From: (0-255)

Dmx To: (0-255)

Slot:

Edit function set

3. Adjust the settings of the row you clicked.
4. To save the settings edited, click **Save**.
5. The function set is now edited.



Fixture Builder User Manual

Version 1.3



6.1. Add a Function Set

It is possible to add function sets:

1. Click **Add** below the table Function Sets.
2. The window Add Function opens.

Add Function

Function Name:

Dmx From: (0-255)

Dmx To: (0-255)

Slot: ▼

Add a function set

3. Enter the function name in the corresponding input field.
4. Enter the DMX range in the input fields Dmx From and Dmx To.
5. Select the slot in the drop-down list.
6. To save the function set, click Save.
7. To abort the operation, click Cancel.
8. The settings are now saved.

6.2. Delete a Function Set

It is possible to delete function sets.

1. Click to select a row in the table **Function Sets**.
2. Click **Delete**.
3. The function set is now deleted.



Fixture Builder User Manual

Version 1.3



7. Export and Import

It is possible to [export the fixtures created](#) from the MA Fixture Builder as an .xml file and save it to a USB drive or a folder.

This .xml file can be imported into the console or the onPC software.

You can also [import](#) .xml files from the subfolder "library" of dot2 and gma2.

This may be useful if you would like to adjust fixtures or adjust an already existing one.

7.1. Export Fixture

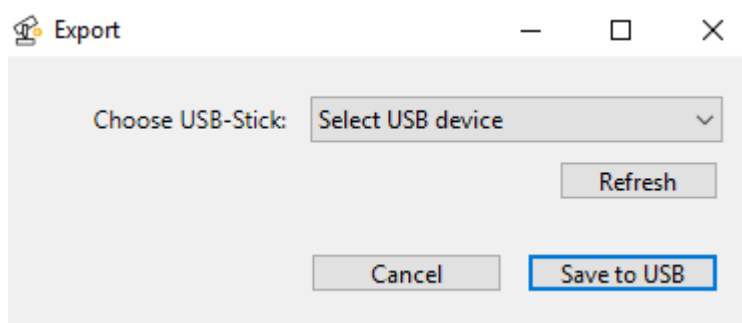
You can export fixtures to a USB drive or a folder.

After the export it is possible to import these files to the console or the onPC software of both systems – dot2 and grandMA2.

Export a Fixture to a USB Drive

1. Click **File**.
2. Click **Export to USB Drive**.

The window Export opens.



Export fixture to USB drive

3. Select the USB device and click **Save to USB**.

The fixture file is exported to the selected USB drive.

The file is then saved into the subfolders "library" of dot2 and gma2.

Export a Fixture to a Folder

1. Click **File**.
2. Click **Export to Folder**.
3. Choose the destination and click **Save To Folder**.

The file is exported and saved into the selected folder.



Fixture Builder User Manual

Version 1.3



7.2. Import Fixture

It is possible to import fixtures from:

- MA Fixture Builder
- The subfolder "library" of dot2
- The subfolder "library" of gma2

1. Click **File**.
2. Click **Import**.
3. Select the .xml file and click **Open**.

The selected .xml file is imported into the MA Fixture Builder and can now be edited.



Fixture Builder User Manual

Version 1.3



8. Release Notes

The latest release of MA Fixture Builder v1.3.2.2 rolls out several enhancements that enrich your lighting experience. Read on for a quick introduction that offers more information.

Bug fix version 1.3.2.2

Fixed Bugs

Description

Fixed: GUI draw issues with maximizing / full screen in windows.

Fixed: Resizing restrictions are blocked. GUI does not resize as expected.

Enhancements/Fixed Bugs in the MA Fixture Builder

Description

Added: Both applications (Microsoft and Apple) are now 64 bit.

Added: It is now possible to import a fixture type, edit the wheels and export again. The new images and colors remain intact.

Added: New Module and Instance Manager.

Added: Scroller and Color Wheel Manager is now implemented.

Added: Gobo Wheel Manager is now implemented.

Added: Open button was added to create an empty gobo slot without gobos.

Added: Exiting application offers the exit option "Save As..."

Added: Mac OS X now has license agreement without needing the unnecessary installer.

Added: Dmx Add Highlight now respects the global Dmx Entry Units.

Added: New attribute and feature list form Carallon.

Added: Units in meters (m) were added to XYZ in the Instance Manager.

Added: Information pop-up when attempting to add a second module.

Fixed: Crash when opening Wheel Manager that contains media that is not in the default library.

Fixed: Adding a color from the manual list after using the CMY shortcut buttons inverts the physical range.

Fixed: React_To_Dim does not survive import or export.

Fixed: It is possible to set highlight and default to values exceeding the range.

Fixed: Rounding errors in Default / Highlight.



Fixture Builder User Manual

Version 1.3



9. Index

16 bit [5.1.](#)
3D SubAttribute [5.1.](#)
8 bit [5.1.](#)
add [6.1.](#)
Add a Function Set [6.1.](#)
Add channel function ranges [5.1.](#)
Add DMX Channels [4.](#) [4.2.](#)
add function ranges [5.1.](#)
add functions [5.1.](#)
Attributes [4.](#)
Beam [3.](#)
channel function [5.](#)
channel function ranges [5.](#)
Channel Function Ranges [5.](#)
Coarse [4.](#)
color array [4.1.](#)
Color Wheel Wizard [5.3.](#)
color wizard [5.3.](#)
colors [4.1.](#)
delete [5.2.](#) [6.2.](#)
Delete a function set [6.2.](#)
Delete channel function ranges [5.2.](#)
Delete DMX Channel table [4.3.](#)
Delete DMX Channels [4.](#) [4.3.](#)
DMX Channels Table [4.](#)
DMX from [5.](#)
Dmx Range [6.](#)
DMX to [5.](#)
Download [2.2.](#)
Edit DMX Channels [4.](#)
Enc from [5.](#)
Enc to [5.](#)
Encoder Readout [6.](#)
Export and Import [7.](#)
Export Fixture [7.1.](#)
Fine [4.](#)
First Steps [2.](#)
Fixture Type Information [3.](#)
Folder [7.1.](#)
function [6.1.](#)



Fixture Builder User Manual

Version 1.3



Function Name [5.1.](#)
function set [6.1.](#)
Function Sets [6.](#)
Gobo Wheel Wizard [5.3.](#)
gobo wizard [5.3.](#)
Highlight [4.](#) [4.2.](#)
Import Fixture [7.2.](#)
Installation [2.2.](#)
Introduction [1.](#)
MA 3D Intensity [3.](#)
Mix color attribute table [4.1.](#)
Mode [3.](#)
Patch Break [4.](#)
Phys from [5.](#)
Phys to [5.](#)
Physical [6.](#)
Program Surface [2.4.](#)
Release Notes [8.](#)
RGB [4.1.](#)
Start Address [4.](#)
Start Program [2.3.](#)
Subattribute [6.](#)
system requirements [2.1.](#)
USB Drive [7.1.](#)
Wizard [5.3.](#)