

Introduction

There are two types of custom fixture available within Designer:

- Alias Fixtures
- Custom Fixtures

The difference between these is that an Alias fixture is a copy of a fixture within your fixture library which you can rename and change the size of, whereas a Custom Fixture is a brand new fixture personality within the library.

Alias Fixtures

An alias fixture can be used if you have a fixture for which there is a similar fixture personality (e.g. Generic RGB LED 8 Bit), but you want a specific name, shape and/or size for the fixture.

To create an Alias fixture:

1. Select the similar fixture in the fixture library.
2. Right click on the fixture.
3. Select Create Fixture Alias.
4. In the Fixture Alias Creator (right) set the New Model Name, size and Shape.
5. Click OK.
6. Your new fixture Alias will be available under Custom.



Custom Fixture

A custom fixture is required if you want to change the properties of a fixture, or create a fixture with additional channels.

Below is a fixture personality for the Generic LED - RGB 8 bit fixture:

```
fixture = LED - RGB 8 bit
manuid = 0
modelid = 5
class = led
shape = square
dimensions = 24x24
```

```
patchgroup = fixture
```

```
parameter = Cyan
default = 255
crossfade = linear
type = ltp8bit
range = 255, 0, %
```

```
parameter = Magenta
default = 255
crossfade = linear
type = ltp8bit
range = 255, 0, %
```

```
parameter = Yellow
default = 255
crossfade = linear
type = ltp8bit
range = 255, 0, %
```

There are three main sections in the personality:

- Fixture Header
- Patchgroups
- Channel Definitions

Fixture Header

The fixture header contain all the information that relates to the fixture as a whole.

```
fixture = LED - RGB 8 bit
manuid = 0
modelid = 5
class = led
shape = square
dimensions = 24x24
```

Each line contains a property name and its value, separated by an equals sign (=).

fixture	Required	The name of the fixture (as displayed in the Designer fixture library)
manuid	Required	The manufacturer ID for the fixture manufacturer. This can be found from an existing fixture by that manufacturer. If the manufacturer doesn't exist, then 100 should be used (Custom)
modelid	Required	A unique modelid (within the manufacturer)
modeid	Optional	The mode identifier where there a multiple modes available for a single fixture
class	Required	The class of the fixture. This will determine how the fixture is displayed on the layout (accessory, controller, conventional, dali, led, media, mirror, spot, wash)
shape	Optional (only used if class = led)	The shape of an LED fixture (circle or square)
dimensions	Required	The size of the fixture on the plan (in px)

Patchgroups

A fixture can have 1 or 2 patchgroups within the personality. A patchgroup is a separate section of the fixture that can be patched independently, e.g. a fixture containing multiple strings of LED nodes, or where the intensity of a fixture is controlled separately to the rest of the parameters.

```
patchgroup = fixture
```

The label of the patchgroup will be displayed within the Patch mode of Designer when you patch the fixture. Normally this can be left as `patchgroup = fixture`.

Channel Definitions

A channel definition contains all the information required to allow a single channel to work. Although a channel definition doesn't include a channel number, Designer will increment this for each new channel definition, so the channels should be added in the order that they need to be within the fixture.

```
parameter = Intensity
default = 0
crossfade = linear
type = ltp8bit
range = 0, 255, %
```

parameter	The main function of the channel. This should be one of the functions defined later in this document
default	The default level for the channel, this is what the channel will be set to if no Timelines or Scenes are controlling the fixture (0-255 or 0-65535)
crossfade	The crossfade path for the channel (linear or snap)
type	The type of channel (ltp8bit or ltp16bit). Sets whether the channel is an 8 bit (0-255) or 16 bit (0-65535) channel
range	See below

Range Declarations

A range declaration defines a DMX range or value which can be selected within Designer, and assigns a label to it.

Syntax:

```
range = int, label
```

OR

```
range = int1, int2, label
```

If a single value is set, then selecting the range in Designer will set the DMX output to that specific value. Setting two values will allow the user to select any value in that range.

int, int1, int2 = 0-255 for 8 bit channels, 0-65535 for 16 bit.

int1 may be more or less than int2, but cannot be the same.

The label is displayed within Designer on the button which is used to set the value.

If the label is set to %, then no label will appear.

Special Considerations

RGB Channels

Designer uses a CMY colour mixing engine internally, and as such RGB channels must be defined as their inverse colour with an inverted range:

Red:

```
parameter = Cyan
default = 255
crossfade = linear
type = ltp8bit
range = 255, 0, %
```

Green:

```
parameter = Magenta
```

```
default = 255  
crossfade = linear  
type = ltp8bit  
range = 255, 0, %
```

Blue:

```
parameter = Yellow  
default = 255  
crossfade = linear  
type = ltp8bit  
range = 255, 0, %
```

Multi Element Fixtures

If you have a multi-element fixture (e.g. a series of RGB LED Nodes), the fixture personality can be configured to create those nodes for you.

Syntax:

```
element = label  
          Channel Definitions  
elementcount = value
```

The label will be displayed as the name of the element within Designer (in the fixture browser)

The value of elementcount is the number of repetitions of the element within the fixture.

You will require an additional line in the fixture header:

```
geometry = intX x intY
```

intX and intY are the number of elements the fixture has in the X and Y directions.

Comments

Any line within a personality can be commented out using double forward slashes:

```
// This would be a comment
```

Unused Channels

If a channel in a personality is unused, it can be added to the personality to ensure the DMX footprint and channel numbering is correct without actually controlling anything.

```
constant = int
```

Constant defines this as a non-controllable channel, and int is the value to set this constant channel to, generally 0.

Saving a Custom Fixture

When you create a Custom Fixture manually, you will need to save it to the following location:

Windows: C:\Users\[user_name]\Documents\Pharos Controls\Designer 2\Fixtures

Mac OS X: /Users/[user_name]/Documents/Pharos Controls/Designer 2/Fixtures

The file should be saved as a *.txt file with any name of your choice.

Further Assistance

Should you require any further assistance, please send the following to your Dealer:

The name and mode of the fixture that is required

A user manual, including full DMX personality

The date you require the fixture personality

Functions List

The following functions are currently available as parameters for Channel Definitions:

Intensity	Strobe Sync	Saturation 2
Cyan	Strobe Delay	Tint
Magenta	Base Level	CIE X
Yellow	Base Level 2	CIE Y
Colour Temperature	Shimmer	Red Master
Amber	Global Pan	Red All
White	Pan Mode	Red All 2
Strobe	Pan 2	Green Master
Pan	Pan Offset	Green All
Tilt	Pan Offset 2	Green All 2
Colour	Pan Offset Amplitude	Blue Master
Colour Mode	Global Tilt	Blue All
Colour 2	Tilt Mode	Blue All 2
Colour Mode 2	Tilt 2	Amber 2
Gobo Mode	Tilt Offset	White 2
Gobo	Tilt Offset Amplitude	White Master
Gobo <> Mode	Pitch	White All
Gobo <>	Mirror Drum	White All 2
Gobo Mode 2	Mirror Drum 2	Strobe Colour Red
Gobo 2	Effect Head	Strobe Colour Green
Gobo <> Mode 2	Position Mode	Strobe Colour Blue
Gobo <> 2	Position Blink	Strobe Colour White
Iris	Position Macros	Green Cyan
Warm White	Position Macro Rate	Indigo
Cool White	Position Macro Size	Mint Green
Hue	Position Macro Crossfade Rate	Lime
Saturation	Tracking Mode	Orange
Brightness	Tracking Object	Purple
Dimmer Mechanism	Transition Time	Red Orange
Dimmer Mechanism 2	Dark Zone	UV
Dimmer Curve	Colour Mix Mode	UV 2
Dimmer Curve 2	Colour Mix Mode 2	Congo Blue
Intensity Mode	Colour Mix	Light Green
Intensity Mode 2	Colour Mix 2	Cool White 2
Intensity 2	Colour Mix Position	Warm White 2
Min Intensity	Colour Mix Position 2	Red Adjust
Max Intensity	Colour Mix Macro Rate	Green Adjust
Master Intensity	Colour Mix Macro Rate 2	Blue Adjust
Master Intensity 2	Colour Mix Macro Fade Time	Amber Adjust
Intensity Macros	Colour Mix Macro Duty Cycle	Cool White Adjust
Intensity Macro Rate	Colour Mix Blink	Cyan Adjust
Intensity Macro Crossfade Rate	Colour Mix Fan	Green Cyan Adjust
Strobe Mechanism	Colour Mix Range	Indigo Adjust
Strobe Mode	Colour Mix Step	Mint Green Adjust
Strobe Mode 2	Colour Mix Crossfade Rate	Lime Adjust
Strobe 2	Colour Mix Crossfade Rate 2	Red Orange Adjust
Duration	Cyan Mode	Orange Adjust
Duration 2	Cyan Saturation	Warm White Adjust
Strobe Effect Rate	Magenta Mode	White Adjust
Strobe Duty Cycle	Magenta Saturation	White Point Set
Strobe Fan	Yellow Mode	Colour 3
Master Shutter Strobe	Hue 2	Colour Offset

Colour Select Blink	Frost 3	Effect Macro Start
Colour Crossfade	Edge	Effect Macro Time
Colour Temperature 2	Edge 2	Stripy
Colour Temperature Adjust	Edge 3	Output Level
Internal Media Frame	Edge 4	Blackout
CTB	Edge Mode	Video Level
CTC	Beamshaper	Output Select
CTO	Beamshaper 2	Output Strobe
Colour Macros	Focus Mode	MediaServer Level
Colour Macros 2	Focus	DMX In Level
Colour Macro Rate	Focus 2	RGB Level
Colour Macro Pause	Focus 3	Pixel Map Level
Colour Macro Fade Time	Focus Adjust	Opacity
Chase	Focus Distance	Opacity 2
Chase 2	Zoom Mode	Opacity 3
Chase Rate	Zoom	Transparency
Chase Rate 2	Zoom 2	Brightness 2
Chase Level	Zoom Bypass	Image Adjust Brightness
Chase Level 2	Frame a	Image Adjust Lightness
Chase Crossfade	Frame a 2	Bypass
Chase Crossfade 2	Frame a 3	Digital Iris
Gobo 3	Frame a 4	Digital Iris Shutter Strobe
Gobo Offset	Frame b	Digital Iris Effect
Gobo Offset 2	Frame b 2	Contrast
Gobo Offset Amplitude	Frame b 3	Contrast 2
Gobo <> 3	Frame b 4	Alpha
Gobo <> 4	Frame In	Gamma
Gobo Forward	Frame In 2	Black Level
Gobo Forward 2	Frame In 3	Image Saturation
Gobo Reverse	Frame In 4	Colour Space
Gobo Reverse 2	Frame Angle	Output Colour
Gobo Wheels	Frame Angle 2	Colour Effect
Animation	Frame Angle 3	Colour Effect Parameter
Animation 2	Frame Angle 4	Colour Effect Parameter 2
Animation Incline	Frame Assembly	Colour Effect Parameter 3
Animation <> Mode	Frame Macros	Colour Effect Level
Animation <>	Frame Macro Rate	Colour Adjust Mode
Animation <> 2	Frame Macro Size	Image Adjust Red
Fx Mode	Frame Macro Time	Image Adjust Red 2
Fx	Barndoor	Image Adjust Green
Fx 2	Barndoor 2	Image Adjust Green 2
Fx 3	Barndoor 3	Image Adjust Blue
Fx Offset	Barndoor 4	Image Adjust Blue 2
Effect Wheel Position	Barndoors Assembly	Image Adjust Cyan
Fx <> Mode	Barndoor Macros	Image Adjust Magenta
Effect <>	Barndoor Macro Rate	Image Adjust Yellow
Effect <> 2	Fresnel	Image Adjust White
Effect <> 3	Effect Macros	Image Adjust Hue
Parabolic Mirror	Effect Macros 2	Image Adjust Saturation
Parabolic Mirror 2	Effect Macro Rate	Image Adjust Contrast
Iris Mode	Effect Macro Rate 2	Red Contrast
Iris 2	Effect Macro Rate 3	Green Contrast
Frost	Effect Macro Size	Blue Contrast
Frost 2	Effect Macro Size 2	Background Colour

Background Colour Red	Playback Speed 2	Anchor Y
Background Colour Green	Playback Direction	Anchor Z
Background Colour Blue	Playback Mode	Pivot Rotation X
Background Colour Alpha	Playback Mode 2	Pivot Rotation Y
Fade Colour Red	Play Mode	Pivot Rotation Z
Fade Colour Green	Play Mode 2	Pivot Scale X
Fade Colour Blue	Freeze	Pivot Scale Y
Fade Colour White	Playhead	Pivot Scale Z
ColorWave Speed	BPM	X Zoom
ColorWave Type	Timecode Offset Hours	X Zoom 2
Posterise Gamma	Timecode Offset Minutes	Y Zoom
Posterise Colours	Timecode Offset Seconds	Y Zoom 2
Media Server Input	Timecode Offset Frames	Z Zoom
Media Server Input Directory	Crossfade	Scale
Media Server Input Group	Crossfader	Scale 2
Layer Input Type	Crossfader Type	Lens Shift Offset X
Layer Input	Crossfader Time	Lens Shift Offset Y
Layer Input 2	Media Preset	Lens Shift Index Z
Layer Input Directory	Media Level	Target Position X
Layer Input Directory 2	Media Level 2	Target Position Y
Layer	Trigger Column	Target Position Z
Clip Directory	Trigger	Image Position X
Clip Directory 2	Trigger 2	Image Position Y
Clip Select	Trigger 3	Image Rotation Z
Clip Select 2	Retrigger	Dampening
Clip Trigger	Trails Duration	X Position
Clip Trigger 2	Show	X Position 2
Look	Output Preset	Position Offset X
Cluster	Output Preset 2	Position Offset X 2
Cluster 2	Pixelmap	Y Position
Deck	Viewpoint Mode	Y Position 2
Bus	Viewpoint Pan	Position Offset Y
Object Directory	Viewpoint Tilt	Z Position
Object File	Viewpoint Roll	Z Position 2
Shape Library	Viewpoint Zoom	Position
Shape	Image Movement Speed	Position 2
Text	Field Of View	X Spin
In Point	Near Plane	Y Spin
In Point 2	Far Plane	Z Spin
Out Point	Lens Throw Ratio	Perspective Offset X
Out Point 2	Overlay	Perspective Offset Y
Loop Start	Overlay Level	Keystone X
Frame	Geometry Mode	Keystone X 2
Timeline Position	Rotate X	Keystone Y
Timeline Position 2	Rotate X 2	Keystone Y 2
Cue	Rotate Mode X	Keystone In
Cue 2	Rotate Y	Keystone In 2
Cue Advance	Rotate Y 2	Keystone Angle
Cue Advance Period	Rotate Mode Y	Keystone Angle 2
Page	Rotate Z	Keystone
Page 2	Rotate Z 2	Keystone 2
Playlist	Rotate Mode Z	Keystone Mode
Playback Speed Mode	Rotate Offset Z	Keystone Position
Playback Speed	Anchor X	Keystone Position 2

Keystone Position X	Framing b 3	Effect Rate
Keystone Position Y	Framing b 4	Effect 1 Parameter
Keystone Horizontal	Framing X	Effect 1 Parameter 2
Keystone Vertical	Framing X 2	Effect 1 Parameter 3
Keystone Rotate	Framing X 3	Effect 1 Parameter 4
Keystone Level	Framing X 4	Effect 2 Parameter
Keystone Scale	Framing Y	Effect 2 Parameter 2
Keystone X Ratio	Framing Y 2	Effect 2 Parameter 3
Keystone Y Ratio	Framing Y 3	Effect 2 Parameter 4
Keystone X Linearity	Framing Y 4	Effect 3 Parameter
Keystone Y Linearity	Framing Shape	Effect 3 Parameter 2
Edge Blend	Crop Top	Effect 3 Parameter 3
Edge Blend 2	Crop Top 2	Effect 3 Parameter 4
Edge Blend Horizontal	Crop Bottom	Effect 4 Parameter
Edge Blend Vertical	Crop Bottom 2	Effect 4 Parameter 2
Edge Blend Profile	Crop Left	Effect 4 Parameter 3
Edge Blend Profile 2	Crop Left 2	Effect 4 Parameter 4
Edge Blend Curve	Crop Right	Effect 5 Parameter
Edge Blend Curve 2	Crop Right 2	Effect 5 Parameter 2
Edge Blend Mode	Crop X	Effect 5 Parameter 3
Edge Blend Mode 2	Crop X 2	Effect Enable
Edge Blend Marker	Crop Y	Effect Disable
Edge Blend Marker 2	Crop Y 2	Transition Page
Edge Blend Marker Width	Crop Edge	Transition Type
Edge Blend Marker Width 2	Banner In	Transition Type 2
Frame Scale	Banner In 2	Transition Mode
Aspect Ratio	Banner Angle	Transition
Aspect Mode	Banner Angle 2	Transition Speed
Mask Page	Banner Assembly	Transition Speed 2
Mask	Screen 1 Edge	Transition Angle
Mask Size	Screen 1 Edge 2	Transition Angle 2
Mask Aspect Ratio	Screen 1 Width	Transition Colour Red
Mask X Position	Screen 1 Height	Transition Colour Green
Mask Y Position	Screen 2 Edge	Transition Colour Blue
Mask Rotate	Screen 2 Edge 2	Transition Colour White
Mask Centre	Screen 3 Edge	Auto Fade
Mask Blur	Screen 3 Edge 2	Decay
Warp	Depth of Field X	Script Amplitude
Warp 2	Depth of Field Y	Script Rate
Image Edge	Depth of Field Radius	Plugin Rate
Image Edge 2	Layer Effect	Blur
Image Edge 3	Layer Effect 2	Cue Blur
Image Edge 4	Layer Effect Parameter	Wipe Blur
Image Edge Curve	Layer Effect Parameter 2	Blur Area
Output Index/Rotation	Effect	Blur Type
Output Shift X	Effect 2	Blur Radius
Output Shift Y	Effect Trigger	Spin
Output Zoom	Effect Directory	Texture Directory
Framing a	Effect Directory 2	Texture
Framing a 2	Effect Parameter	Shutter Damping
Framing a 3	Effect Parameter 2	Visual Mode
Framing a 4	Effect Level	Visual Mode Parameter
Framing b	Effect Level 2	Visual Mode Parameter 2
Framing b 2	Effect Level 3	Pixel Map Control

Pixel Mode	Render Mode	Fixture Enable
Pixel Mode Parameter	Screen Mode	Lamp Control
Pixel Mode Parameter 2	Screen Mode 2	Lamp Control 2
Pixel Mode Parameter 3	Screen Mode 3	Lamp Mode
Mixer Mode	Screen Mode 4	Lamp Power
Layer Blend Mode	Video Source	Lamp Rotate
Blend	Video Source 2	Reflector Adjust
Animation Mode	Video Source 3	Fixture Display
Animation Speed	Attack	Fans
Animation Parameter	Attack 2	Fixture Mode
Animation Parameter 2	Attack 3	Mode
Blend Timing	Attack 4	Mode 2
Iterations	Dashboard Dial	Mode 3
Envelope Fade In	Dashboard Dial 2	Mode Transition Speed
Envelope Fade Out	Clear	Optical Mode
Envelope Sustain	Tap	Fixture ID
Copy Mode	Resync	Group ID
Tiling Mode	Move Up	Transmitter Mode
Tiling Rows	Move Down	Probability
Tiling Columns	Solo	Macro
Tiling Grid Size	Sync Mode	Macro 2
Tiling	Sync Source	Macro 3
Collage Type	Sync Offset	Macro 4
Collage Array Configuration	Audio Volume	Macro 5
Collage Cell	Audio Auto Gain	Macro Rate
Collage Blend	MediaServer Audio Level	Macro Rate 2
Alignment Pattern	Input Audio Level	Macro Rate 3
Test Pattern	Audio Balance	Macro Rate 4
Drawing Mode	Projector Intensity	Macro Size
Drawing Mode 2	Projector Shutter Strobe	Macro Size 2
Vignette Effect	Projector Zoom	Macro Size 3
Vignette Radius	Projector Focus	Macro Size 4
Sepia Effect	Front/Rear Projection	laser
Noise Effect	Projector Input	laser 2
Scratch Effect	Projector Input 2	Laser Intensity
Toon Mode	Projector Channel	Laser Colour
Chromatics Mode	Projector Keypad	Scan Rate
Kaleidoscope Speed	Projector Keypad 2	Red Laser
Kaleidoscope Type	Projector Lens Shift	Red Laser Intensity
Ripple Type	Projector Lens Shift Horizontal	Green Laser
Ripple Speed	Projector Lens Shift Vertical	Green Laser Intensity
Distortion Type	Projector Mode	Blue Laser
Stars Speed	Projector Lens Mode	Blue Laser Intensity
Halftone Sharpness	Projector Fade In	Purple Laser
Halftone Gray Components	Projector Fade Out	Control Range
Halftone Colour Removal	Camera Zoom	Control Range 2
Picasso Animate Mode	Camera Iris	Control Range 3
Assign Channel To Layer	Camera Gain	Control Signal
Assign Channel To Layer 2	Camera Focus	Dummy
Assign Channel To Layer 3	White Balance	Fixture Sleep
On Screen Display	Camera Shutter	Position Optimisation Mode
Layer Mode	Camera IR Image	PWM Frequency
Layer Mode 2	Camera Image Colour	Visible Points
Layer Mode 3	Camera Image Horizontal Flip	Line Type

Wave Rate
Connected Load
Connected Load 2
Grouping
Audio Sensitivity
Position Limits
Control
Control 2
Position Reset
Colour Wheel Reset
Zoom Reset
Focus Reset
Blower
Blower 2
Haze
Low Smoke Generator
Fog
Fog 2
Snow
Heater
Puff Duration
Puff Interval
Water Jet
Flame
Flame 2
Mirror Ball
Slide
Kabuki Channel
Kabuki Channel 2
Kabuki Channel 3
Kabuki Channel 4
Kabuki Channel 5
Kabuki Channel 6
Safe Fire
Medium White