

## Introduction

There are two types of custom fixture available within Designer:

- Alias Fixtures
- Custom Fixtures

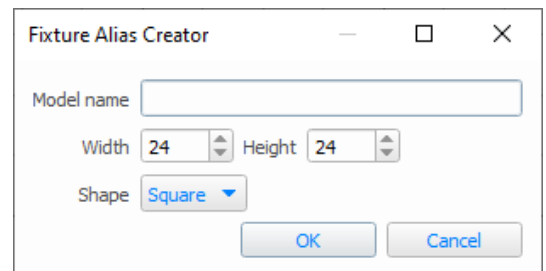
The difference between these is that an Alias fixture is a copy of a fixture within your fixture library which you can rename and change the size of, whereas a Custom Fixture is a brand new fixture personality within the library.

## 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. A custom fixture is created by inserting all the required information into a .txt file, this can be created using any text editor software capable of saving to this format. See "Saving a Custom Fixture" on page 5 for more details on where to place a created custom fixture file for Designer to add it to the fixture library.

Below is an example of a custom fixture personality for a 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 within any created custom fixture 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	For a custom fixture without a manufacturer use value 100. To find the Manufacturer ID for any given manufacturer drag a fixture from that manufacturer onto the layout within Designer and it will be displayed within the Fixture Properties in prenttheses (manuid).
modelid	Required	A unique modelid (within the manufacturer).
modeid	Optional	The mode identifier for single fixtures with multiple modes, this can be a value from 0 to 63 i.e 64 modes possible.
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).

**NOTE:** Custom Fixtures, created using a manuid = 100 value, do not require a unique modelid to be defined. For such fixtures we recommend using modelid = 10 though any value below 999 will work.

## Patchgroups

A fixture personality requires 1 patchgroup to be defined before any channel definitions, but can have as many as needed within a given 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.

A patchgroup is defined by inserting the below line before any channel definitions:

```
patchgroup = fixture note the fixture name can be descriptive and contain spaces if required.
```

If using a single patchgroup then it can be simply left as the default: `patchgroup = fixture`

A custom fixture personality with multiple patchgroups would have the following structure:

```
<Fixture Header>

patchgroup = Colour

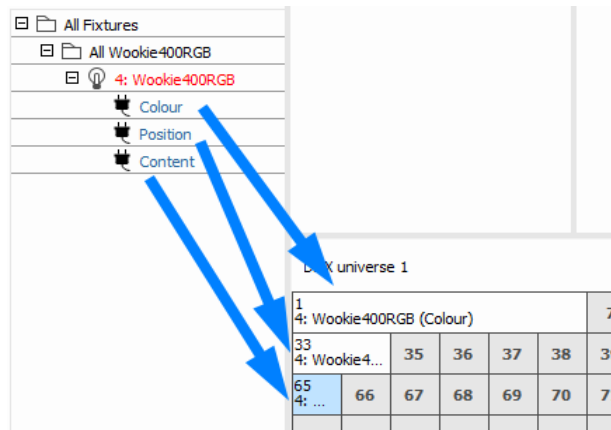
  <colour channel definitions>

patchgroup = Position

  <position channel definitions>

patchgroup = Content

  <content channel definitions>
```



As shown in the image above, for any given patchgroup its name will be displayed within the Patch mode of Designer. If the fixture name (Wookie400RGB in the above example) is dragged on then all patchgroups will be dragged together, if the patchgroups are individually dragged they can be separately assigned as shown.

If only a single (defaults) patchgroup is used then the patchgroup name will not be displayed.

## 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 in the Functions List on page 6. A unique function name must be used for each channel within an element, this is why the Functions List offers many numerical iterations of any function.
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
```

**NOTE:** If multiple ranges are defined for a single parameter they must have different `labels` otherwise the ranges will be merged.

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 the fixture browser of Designer.

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.

**NOTE:** Within each element all parameter definitions must use unique function names, however these can be repeated on any subsequent element meaning `element 1` and `element 2` can both have a `parameter = Intensity` channel without creating problems. Thus making it safe to copy paste channel definitions for identical elements within a fixture.

### 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.

### Inverting Channels

Sometimes it will be necessary to invert channels e.g. when a colour channel is full on at DMX 0 and off at DMS 255. To do this, the range values can be swapped (`range = 255, 0, %` becomes `range = 0, 255, %`).

If the virtual intensity also needs inverting then the line `invert_intensity =`  can be added.

### HSI Fixtures

Any fixture using HSI needs to use a `Brightness` channel instead of an `Intensity` channel to define the intensity value of a colour. Doing this will enable the colour picker for the fixture within the Designer interface.

### 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.

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## 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

This section covers the currently available functions as parameters for Channel Definitions, see "As shown in the image above, for any given patchgroup its name will be displayed within the Patch mode of Designer. If the fixture name (Wookie400RGB in the above example) is dragged on then all patchgroups will be dragged together, if the patchgroups are individually dragged they can be separately assigned as shown." on page 3 for more information on defining parameters. Parameters must be defined as one of the below functions otherwise the fixture profile will not be recognised by Designer. All available functions are defined within the:

functions.txt file located in:

C:\Users\[user\_name]\Documents\Pharos Controls\Designer 2\Fixtures

**IMPORTANT:** the functions.txt file MUST NOT be edited or moved, if it is it will break the Designer fixture library, please refer to the below list as reference for available functions for defining parameters.

Each parameter function falls into one of 7 categories:

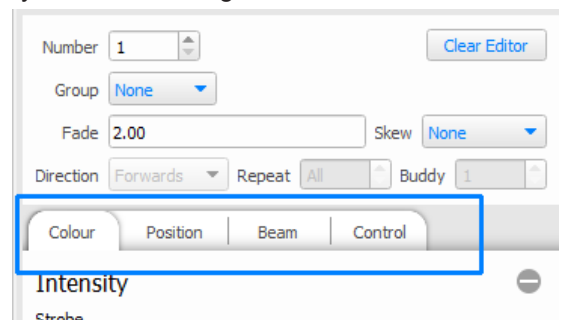
- Intensity.
- Colour.
- Colour adjustments.
- Position.
- Beam shape.
- Beam image.
- Control.

These function categories are specified within the functions.txt by a letter following the format:

function name = category specifier

The below parameter function lists have been sorted according to their respective categories as these also determine where controls for each of a fixture's parameters will appear within Designer.

Within the Scene Mode tab, after creating a scene and upon selecting a fixture, the Scene Properties panel (pictured to the right) will show 4 tabs: Colour, Position, Beam, and Control. Each function category will allocate a created parameter in the fixture profile to a specific Scene Property tab following the below sorting criteria:



Colour tab includes parameters made from:

- Intensity functions.
- Colour functions.
- Colour adjustments functions.

Position tab includes parameters made from:

- Position functions.

Beam tab includes parameters made from:

- Beam shape functions.
- Beam image functions.

Control tab includes parameters made from:

- Control functions.

### Intensity Functions

Intensity functions have the category specifier *i* in the functions.txt and are accessible, for fixtures possessing these capabilities, from the Colour tab under Intensity within the Scenes Mode - Scene Properties panel.

Background Intensity	Base Level 4	Dimmer Mechanism 12
Background Shutter Strobe	Dimmer Curve	Dimmer Mechanism 13
Background Shutter Strobe 2	Dimmer Curve 2	Dimmer Mechanism 14
Base Level	Dimmer Mechanism	Dimmer Mechanism 15
Base Level 2	Dimmer Mechanism 10	Dimmer Mechanism 16
Base Level 3	Dimmer Mechanism 11	Dimmer Mechanism 17

Dimmer Mechanism 18	Dimmer Mechanism 56	Duration 23
Dimmer Mechanism 19	Dimmer Mechanism 57	Duration 24
Dimmer Mechanism 2	Dimmer Mechanism 58	Duration 25
Dimmer Mechanism 20	Dimmer Mechanism 59	Duration 26
Dimmer Mechanism 21	Dimmer Mechanism 6	Duration 3
Dimmer Mechanism 22	Dimmer Mechanism 60	Duration 4
Dimmer Mechanism 23	Dimmer Mechanism 61	Duration 5
Dimmer Mechanism 24	Dimmer Mechanism 62	Duration 6
Dimmer Mechanism 25	Dimmer Mechanism 63	Duration 7
Dimmer Mechanism 26	Dimmer Mechanism 64	Duration 8
Dimmer Mechanism 27	Dimmer Mechanism 65	Duration 9
Dimmer Mechanism 28	Dimmer Mechanism 66	Foreground Intensity
Dimmer Mechanism 29	Dimmer Mechanism 67	Foreground Shutter Strobe
Dimmer Mechanism 3	Dimmer Mechanism 68	Foreground Shutter Strobe 2
Dimmer Mechanism 30	Dimmer Mechanism 69	Intensity
Dimmer Mechanism 31	Dimmer Mechanism 7	Intensity 2
Dimmer Mechanism 32	Dimmer Mechanism 70	Intensity 3
Dimmer Mechanism 33	Dimmer Mechanism 71	Intensity Adjust
Dimmer Mechanism 34	Dimmer Mechanism 72	Intensity Adjust 10
Dimmer Mechanism 35	Dimmer Mechanism 73	Intensity Adjust 11
Dimmer Mechanism 36	Dimmer Mechanism 74	Intensity Adjust 12
Dimmer Mechanism 37	Dimmer Mechanism 75	Intensity Adjust 13
Dimmer Mechanism 38	Dimmer Mechanism 76	Intensity Adjust 14
Dimmer Mechanism 39	Dimmer Mechanism 77	Intensity Adjust 15
Dimmer Mechanism 4	Dimmer Mechanism 78	Intensity Adjust 16
Dimmer Mechanism 40	Dimmer Mechanism 8	Intensity Adjust 17
Dimmer Mechanism 41	Dimmer Mechanism 9	Intensity Adjust 18
Dimmer Mechanism 42	Duration	Intensity Adjust 19
Dimmer Mechanism 43	Duration 10	Intensity Adjust 2
Dimmer Mechanism 44	Duration 11	Intensity Adjust 20
Dimmer Mechanism 45	Duration 12	Intensity Adjust 21
Dimmer Mechanism 46	Duration 13	Intensity Adjust 22
Dimmer Mechanism 47	Duration 14	Intensity Adjust 23
Dimmer Mechanism 48	Duration 15	Intensity Adjust 24
Dimmer Mechanism 49	Duration 16	Intensity Adjust 25
Dimmer Mechanism 5	Duration 17	Intensity Adjust 26
Dimmer Mechanism 50	Duration 18	Intensity Adjust 27
Dimmer Mechanism 51	Duration 19	Intensity Adjust 28
Dimmer Mechanism 52	Duration 2	Intensity Adjust 29
Dimmer Mechanism 53	Duration 20	Intensity Adjust 3
Dimmer Mechanism 54	Duration 21	Intensity Adjust 30
Dimmer Mechanism 55	Duration 22	Intensity Adjust 31

Intensity Adjust 32	Intensity Mode 2	Strobe 14
Intensity Adjust 33	Intensity Mode 3	Strobe 15
Intensity Adjust 34	Intensity Mode 4	Strobe 16
Intensity Adjust 35	Intensity Mode 5	Strobe 17
Intensity Adjust 36	Intensity Mode 6	Strobe 18
Intensity Adjust 37	Intensity Mode 7	Strobe 19
Intensity Adjust 38	Intensity Mode 8	Strobe 2
Intensity Adjust 39	LED Engine Effect Crossfade	Strobe 20
Intensity Adjust 4	Speed	Strobe 21
Intensity Adjust 40	LED Engine Effect Level	Strobe 22
Intensity Adjust 41	LED Engine Effect Rate	Strobe 23
Intensity Adjust 42	LED Engine Effect Step Time	Strobe 24
Intensity Adjust 43	LED Engine Effects	Strobe 25
Intensity Adjust 44	LFO Frequency	Strobe 26
Intensity Adjust 45	LFO Random Depth	Strobe 3
Intensity Adjust 46	LFO Triangle Depth	Strobe 4
Intensity Adjust 47	LFO Triangle Depth 2	Strobe 5
Intensity Adjust 48	LFO Triangle Depth 3	Strobe 6
Intensity Adjust 49	LFO Triangle Depth 4	Strobe 7
Intensity Adjust 5	Master Intensity	Strobe 8
Intensity Adjust 6	Master Intensity 2	Strobe 9
Intensity Adjust 7	Master Intensity 3	Strobe Delay
Intensity Adjust 8	Master Shutter Strobe	Strobe Duty Cycle
Intensity Adjust 9	Max Intensity	Strobe Effect Rate
Intensity Macro Crossfade	Min Intensity	Strobe Fan
Rate	Shimmer	Strobe Intensity
Intensity Macro Rate	Strobe	Strobe Intensity 2
Intensity Macros	Strobe 10	Strobe Mechanism
Intensity Macros 2	Strobe 11	Strobe Mode
Intensity Macros 3	Strobe 12	Strobe Mode 2
Intensity Mode	Strobe 13	Strobe Sync

## Colour Functions

Colour functions have the category parameter `c` in the `functions.txt` and are accessible, for fixtures possessing these capabilities, from the Colour tab under Colour within the Scenes Mode.

Amber 10	Amber 7	Background Green
Amber 11	Amber 8	Background Red
Amber 12	Amber 9	Background White
Amber 2	Amber Adjust	Blue Adjust
Amber 3	Amber All	Blue Adjust 2
Amber 4	Background Blue	Blue Adjust 3
Amber 5	Background Colour Mix	Blue All
Amber 6	Background Colour Mix 2	Blue All 2



Blue Master	Brightness 147	Brightness 196
Blue Maximum	Brightness 148	Brightness 197
Brightness 10	Brightness 149	Brightness 198
Brightness 100	Brightness 15	Brightness 199
Brightness 101	Brightness 150	Brightness 2
Brightness 102	Brightness 151	Brightness 20
Brightness 103	Brightness 152	Brightness 200
Brightness 104	Brightness 153	Brightness 201
Brightness 105	Brightness 154	Brightness 202
Brightness 106	Brightness 155	Brightness 203
Brightness 107	Brightness 156	Brightness 204
Brightness 108	Brightness 157	Brightness 205
Brightness 109	Brightness 158	Brightness 206
Brightness 11	Brightness 159	Brightness 207
Brightness 110	Brightness 16	Brightness 208
Brightness 111	Brightness 160	Brightness 209
Brightness 112	Brightness 161	Brightness 21
Brightness 113	Brightness 162	Brightness 210
Brightness 114	Brightness 163	Brightness 211
Brightness 115	Brightness 164	Brightness 212
Brightness 116	Brightness 165	Brightness 213
Brightness 117	Brightness 166	Brightness 214
Brightness 118	Brightness 167	Brightness 215
Brightness 119	Brightness 168	Brightness 216
Brightness 12	Brightness 169	Brightness 217
Brightness 120	Brightness 17	Brightness 218
Brightness 121	Brightness 170	Brightness 219
Brightness 122	Brightness 171	Brightness 22
Brightness 123	Brightness 172	Brightness 220
Brightness 124	Brightness 173	Brightness 221
Brightness 125	Brightness 174	Brightness 222
Brightness 126	Brightness 175	Brightness 223
Brightness 127	Brightness 176	Brightness 224
Brightness 128	Brightness 177	Brightness 225
Brightness 129	Brightness 178	Brightness 226
Brightness 13	Brightness 179	Brightness 227
Brightness 130	Brightness 18	Brightness 228
Brightness 131	Brightness 180	Brightness 229
Brightness 132	Brightness 181	Brightness 23
Brightness 133	Brightness 182	Brightness 230
Brightness 134	Brightness 183	Brightness 231
Brightness 135	Brightness 184	Brightness 232
Brightness 136	Brightness 185	Brightness 233
Brightness 137	Brightness 186	Brightness 234
Brightness 138	Brightness 187	Brightness 235
Brightness 139	Brightness 188	Brightness 236
Brightness 14	Brightness 189	Brightness 237
Brightness 140	Brightness 19	Brightness 238
Brightness 141	Brightness 190	Brightness 239
Brightness 142	Brightness 191	Brightness 24
Brightness 143	Brightness 192	Brightness 240
Brightness 144	Brightness 193	Brightness 241
Brightness 145	Brightness 194	Brightness 242
Brightness 146	Brightness 195	Brightness 243

Brightness 244	Brightness 293	Brightness 341
Brightness 245	Brightness 294	Brightness 342
Brightness 246	Brightness 295	Brightness 343
Brightness 247	Brightness 296	Brightness 344
Brightness 248	Brightness 297	Brightness 345
Brightness 249	Brightness 298	Brightness 346
Brightness 25	Brightness 299	Brightness 347
Brightness 250	Brightness 3	Brightness 348
Brightness 251	Brightness 30	Brightness 349
Brightness 252	Brightness 300	Brightness 35
Brightness 253	Brightness 301	Brightness 350
Brightness 254	Brightness 302	Brightness 351
Brightness 255	Brightness 303	Brightness 352
Brightness 256	Brightness 304	Brightness 353
Brightness 257	Brightness 305	Brightness 354
Brightness 258	Brightness 306	Brightness 355
Brightness 259	Brightness 307	Brightness 356
Brightness 26	Brightness 308	Brightness 357
Brightness 260	Brightness 309	Brightness 358
Brightness 261	Brightness 31	Brightness 359
Brightness 262	Brightness 310	Brightness 36
Brightness 263	Brightness 311	Brightness 360
Brightness 264	Brightness 312	Brightness 361
Brightness 265	Brightness 313	Brightness 362
Brightness 266	Brightness 314	Brightness 363
Brightness 267	Brightness 315	Brightness 364
Brightness 268	Brightness 316	Brightness 365
Brightness 269	Brightness 317	Brightness 366
Brightness 27	Brightness 318	Brightness 367
Brightness 270	Brightness 319	Brightness 368
Brightness 271	Brightness 32	Brightness 369
Brightness 272	Brightness 320	Brightness 37
Brightness 273	Brightness 321	Brightness 370
Brightness 274	Brightness 322	Brightness 371
Brightness 275	Brightness 323	Brightness 372
Brightness 276	Brightness 324	Brightness 373
Brightness 277	Brightness 325	Brightness 374
Brightness 278	Brightness 326	Brightness 375
Brightness 279	Brightness 327	Brightness 376
Brightness 28	Brightness 328	Brightness 377
Brightness 280	Brightness 329	Brightness 378
Brightness 281	Brightness 33	Brightness 379
Brightness 282	Brightness 330	Brightness 38
Brightness 283	Brightness 331	Brightness 380
Brightness 284	Brightness 332	Brightness 381
Brightness 285	Brightness 333	Brightness 382
Brightness 286	Brightness 334	Brightness 383
Brightness 287	Brightness 335	Brightness 384
Brightness 288	Brightness 336	Brightness 385
Brightness 289	Brightness 337	Brightness 386
Brightness 29	Brightness 338	Brightness 387
Brightness 290	Brightness 339	Brightness 388
Brightness 291	Brightness 34	Brightness 389
Brightness 292	Brightness 340	Brightness 39

Brightness 390	Brightness 439	Brightness 488
Brightness 391	Brightness 44	Brightness 489
Brightness 392	Brightness 440	Brightness 49
Brightness 393	Brightness 441	Brightness 490
Brightness 394	Brightness 442	Brightness 491
Brightness 395	Brightness 443	Brightness 492
Brightness 396	Brightness 444	Brightness 493
Brightness 397	Brightness 445	Brightness 494
Brightness 398	Brightness 446	Brightness 495
Brightness 399	Brightness 447	Brightness 496
Brightness 4	Brightness 448	Brightness 497
Brightness 40	Brightness 449	Brightness 498
Brightness 400	Brightness 45	Brightness 499
Brightness 401	Brightness 450	Brightness 5
Brightness 402	Brightness 451	Brightness 50
Brightness 403	Brightness 452	Brightness 500
Brightness 404	Brightness 453	Brightness 501
Brightness 405	Brightness 454	Brightness 502
Brightness 406	Brightness 455	Brightness 503
Brightness 407	Brightness 456	Brightness 504
Brightness 408	Brightness 457	Brightness 505
Brightness 409	Brightness 458	Brightness 506
Brightness 41	Brightness 459	Brightness 507
Brightness 410	Brightness 46	Brightness 508
Brightness 411	Brightness 460	Brightness 509
Brightness 412	Brightness 461	Brightness 51
Brightness 413	Brightness 462	Brightness 510
Brightness 414	Brightness 463	Brightness 511
Brightness 415	Brightness 464	Brightness 512
Brightness 416	Brightness 465	Brightness 513
Brightness 417	Brightness 466	Brightness 514
Brightness 418	Brightness 467	Brightness 515
Brightness 419	Brightness 468	Brightness 516
Brightness 42	Brightness 469	Brightness 517
Brightness 420	Brightness 47	Brightness 518
Brightness 421	Brightness 470	Brightness 519
Brightness 422	Brightness 471	Brightness 52
Brightness 423	Brightness 472	Brightness 520
Brightness 424	Brightness 473	Brightness 521
Brightness 425	Brightness 474	Brightness 522
Brightness 426	Brightness 475	Brightness 523
Brightness 427	Brightness 476	Brightness 524
Brightness 428	Brightness 477	Brightness 525
Brightness 429	Brightness 478	Brightness 526
Brightness 43	Brightness 479	Brightness 527
Brightness 430	Brightness 48	Brightness 528
Brightness 431	Brightness 480	Brightness 529
Brightness 432	Brightness 481	Brightness 53
Brightness 433	Brightness 482	Brightness 530
Brightness 434	Brightness 483	Brightness 531
Brightness 435	Brightness 484	Brightness 532
Brightness 436	Brightness 485	Brightness 533
Brightness 437	Brightness 486	Brightness 534
Brightness 438	Brightness 487	Brightness 535

Brightness 536	Brightness 585	Brightness 633
Brightness 537	Brightness 586	Brightness 634
Brightness 538	Brightness 587	Brightness 635
Brightness 539	Brightness 588	Brightness 636
Brightness 54	Brightness 589	Brightness 637
Brightness 540	Brightness 59	Brightness 638
Brightness 541	Brightness 590	Brightness 639
Brightness 542	Brightness 591	Brightness 64
Brightness 543	Brightness 592	Brightness 640
Brightness 544	Brightness 593	Brightness 641
Brightness 545	Brightness 594	Brightness 642
Brightness 546	Brightness 595	Brightness 643
Brightness 547	Brightness 596	Brightness 644
Brightness 548	Brightness 597	Brightness 645
Brightness 549	Brightness 598	Brightness 646
Brightness 55	Brightness 599	Brightness 647
Brightness 550	Brightness 6	Brightness 648
Brightness 551	Brightness 60	Brightness 649
Brightness 552	Brightness 600	Brightness 65
Brightness 553	Brightness 601	Brightness 650
Brightness 554	Brightness 602	Brightness 651
Brightness 555	Brightness 603	Brightness 652
Brightness 556	Brightness 604	Brightness 653
Brightness 557	Brightness 605	Brightness 654
Brightness 558	Brightness 606	Brightness 655
Brightness 559	Brightness 607	Brightness 656
Brightness 56	Brightness 608	Brightness 657
Brightness 560	Brightness 609	Brightness 658
Brightness 561	Brightness 61	Brightness 659
Brightness 562	Brightness 610	Brightness 66
Brightness 563	Brightness 611	Brightness 660
Brightness 564	Brightness 612	Brightness 661
Brightness 565	Brightness 613	Brightness 662
Brightness 566	Brightness 614	Brightness 663
Brightness 567	Brightness 615	Brightness 664
Brightness 568	Brightness 616	Brightness 665
Brightness 569	Brightness 617	Brightness 666
Brightness 57	Brightness 618	Brightness 667
Brightness 570	Brightness 619	Brightness 668
Brightness 571	Brightness 62	Brightness 669
Brightness 572	Brightness 620	Brightness 67
Brightness 573	Brightness 621	Brightness 670
Brightness 574	Brightness 622	Brightness 671
Brightness 575	Brightness 623	Brightness 672
Brightness 576	Brightness 624	Brightness 673
Brightness 577	Brightness 625	Brightness 674
Brightness 578	Brightness 626	Brightness 675
Brightness 579	Brightness 627	Brightness 676
Brightness 58	Brightness 628	Brightness 677
Brightness 580	Brightness 629	Brightness 678
Brightness 581	Brightness 63	Brightness 679
Brightness 582	Brightness 630	Brightness 68
Brightness 583	Brightness 631	Brightness 680
Brightness 584	Brightness 632	Brightness 681

Brightness 682	Brightness 730	Brightness 78
Brightness 683	Brightness 731	Brightness 780
Brightness 684	Brightness 732	Brightness 781
Brightness 685	Brightness 733	Brightness 782
Brightness 686	Brightness 734	Brightness 783
Brightness 687	Brightness 735	Brightness 784
Brightness 688	Brightness 736	Brightness 785
Brightness 689	Brightness 737	Brightness 786
Brightness 69	Brightness 738	Brightness 787
Brightness 690	Brightness 739	Brightness 788
Brightness 691	Brightness 74	Brightness 789
Brightness 692	Brightness 740	Brightness 79
Brightness 693	Brightness 741	Brightness 790
Brightness 694	Brightness 742	Brightness 791
Brightness 695	Brightness 743	Brightness 792
Brightness 696	Brightness 744	Brightness 793
Brightness 697	Brightness 745	Brightness 794
Brightness 698	Brightness 746	Brightness 795
Brightness 699	Brightness 747	Brightness 796
Brightness 7	Brightness 748	Brightness 797
Brightness 70	Brightness 749	Brightness 798
Brightness 700	Brightness 75	Brightness 799
Brightness 701	Brightness 750	Brightness 8
Brightness 702	Brightness 751	Brightness 80
Brightness 703	Brightness 752	Brightness 800
Brightness 704	Brightness 753	Brightness 801
Brightness 705	Brightness 754	Brightness 802
Brightness 706	Brightness 755	Brightness 803
Brightness 707	Brightness 756	Brightness 804
Brightness 708	Brightness 757	Brightness 805
Brightness 709	Brightness 758	Brightness 806
Brightness 71	Brightness 759	Brightness 807
Brightness 710	Brightness 76	Brightness 808
Brightness 711	Brightness 760	Brightness 809
Brightness 712	Brightness 761	Brightness 81
Brightness 713	Brightness 762	Brightness 810
Brightness 714	Brightness 763	Brightness 811
Brightness 715	Brightness 764	Brightness 812
Brightness 716	Brightness 765	Brightness 813
Brightness 717	Brightness 766	Brightness 814
Brightness 718	Brightness 767	Brightness 815
Brightness 719	Brightness 768	Brightness 816
Brightness 72	Brightness 769	Brightness 817
Brightness 720	Brightness 77	Brightness 818
Brightness 721	Brightness 770	Brightness 819
Brightness 722	Brightness 771	Brightness 82
Brightness 723	Brightness 772	Brightness 820
Brightness 724	Brightness 773	Brightness 821
Brightness 725	Brightness 774	Brightness 822
Brightness 726	Brightness 775	Brightness 823
Brightness 727	Brightness 776	Brightness 824
Brightness 728	Brightness 777	Brightness 825
Brightness 729	Brightness 778	Brightness 826
Brightness 73	Brightness 779	Brightness 827

Brightness 828	Brightness 877	Brightness 925
Brightness 829	Brightness 878	Brightness 926
Brightness 83	Brightness 879	Brightness 927
Brightness 830	Brightness 88	Brightness 928
Brightness 831	Brightness 880	Brightness 929
Brightness 832	Brightness 881	Brightness 93
Brightness 833	Brightness 882	Brightness 930
Brightness 834	Brightness 883	Brightness 931
Brightness 835	Brightness 884	Brightness 932
Brightness 836	Brightness 885	Brightness 933
Brightness 837	Brightness 886	Brightness 934
Brightness 838	Brightness 887	Brightness 935
Brightness 839	Brightness 888	Brightness 936
Brightness 84	Brightness 889	Brightness 937
Brightness 840	Brightness 89	Brightness 94
Brightness 841	Brightness 890	Brightness 95
Brightness 842	Brightness 891	Brightness 96
Brightness 843	Brightness 892	Brightness 97
Brightness 844	Brightness 893	Brightness 98
Brightness 845	Brightness 894	Brightness 99
Brightness 846	Brightness 895	CCT
Brightness 847	Brightness 896	Chase
Brightness 848	Brightness 897	Chase 2
Brightness 849	Brightness 898	Chase Crossfade
Brightness 85	Brightness 899	Chase Crossfade 2
Brightness 850	Brightness 9	Chase Level
Brightness 851	Brightness 90	Chase Level 2
Brightness 852	Brightness 900	Chase Rate
Brightness 853	Brightness 901	Chase Rate 2
Brightness 854	Brightness 902	CIE X
Brightness 855	Brightness 903	CIE X 10
Brightness 856	Brightness 904	CIE X 11
Brightness 857	Brightness 905	CIE X 12
Brightness 858	Brightness 906	CIE X 13
Brightness 859	Brightness 907	CIE X 14
Brightness 86	Brightness 908	CIE X 15
Brightness 860	Brightness 909	CIE X 16
Brightness 861	Brightness 91	CIE X 17
Brightness 862	Brightness 910	CIE X 18
Brightness 863	Brightness 911	CIE X 19
Brightness 864	Brightness 912	CIE X 2
Brightness 865	Brightness 913	CIE X 20
Brightness 866	Brightness 914	CIE X 21
Brightness 867	Brightness 915	CIE X 22
Brightness 868	Brightness 916	CIE X 23
Brightness 869	Brightness 917	CIE X 3
Brightness 87	Brightness 918	CIE X 4
Brightness 870	Brightness 919	CIE X 5
Brightness 871	Brightness 92	CIE X 6
Brightness 872	Brightness 920	CIE X 7
Brightness 873	Brightness 921	CIE X 8
Brightness 874	Brightness 922	CIE X 9
Brightness 875	Brightness 923	CIE Y
Brightness 876	Brightness 924	CIE Y 10

CIE Y 11	Colour Mix 21	Colour Temperature 2
CIE Y 12	Colour Mix 22	Colour Temperature 20
CIE Y 13	Colour Mix 23	Colour Temperature 21
CIE Y 14	Colour Mix 24	Colour Temperature 22
CIE Y 15	Colour Mix 25	Colour Temperature 23
CIE Y 16	Colour Mix 3	Colour Temperature 24
CIE Y 17	Colour Mix 4	Colour Temperature 3
CIE Y 18	Colour Mix 5	Colour Temperature 4
CIE Y 19	Colour Mix 6	Colour Temperature 5
CIE Y 2	Colour Mix 7	Colour Temperature 6
CIE Y 20	Colour Mix 8	Colour Temperature 7
CIE Y 21	Colour Mix 9	Colour Temperature 8
CIE Y 22	Colour Mix Blink	Colour Temperature 9
CIE Y 23	Colour Mix Crossfade Rate	Colour Temperature Adjust
CIE Y 3	Colour Mix Crossfade Rate 2	Colour Wheels
CIE Y 4	Colour Mix Crossfade Rate 3	Congo Blue
CIE Y 5	Colour Mix Crossfade Rate 4	Cool White 2
CIE Y 6	Colour Mix Crossfade Rate 5	Cool White 3
CIE Y 7	Colour Mix Crossfade Rate 6	Cool White 4
CIE Y 8	Colour Mix Crossfade Rate 7	Cool White 5
CIE Y 9	Colour Mix Crossfade Rate 8	Cool White 6
Colour	Colour Mix Crossfade Rate 9	Cool White 7
Colour 2	Colour Mix Fan	Cool White 8
Colour 3	Colour Mix Macro Duty Cycle	Cool White Adjust
Colour 4	Colour Mix Macro Fade Time	CRI
Colour 5	Colour Mix Macro Fade Time 2	CTB
Colour 6	Colour Mix Macro Rate	CTC
Colour 7	Colour Mix Macro Rate 2	CTO
Colour Crossfade	Colour Mix Macro Start	Cyan
Colour Crossfade 2	Colour Mix Macro Step Time	Cyan Adjust
Colour Crossfade Type	Colour Mix Macro Step Time 2	Cyan Mode
Colour Macro Fade Time	Colour Mix Mode	Cyan Saturation
Colour Macro Pause	Colour Mix Mode 2	Deep Blue
Colour Macro Rate	Colour Mix Position	Filter Colour Mode
Colour Macros	Colour Mix Position 2	Foreground Blue
Colour Macros 2	Colour Mix Range	Foreground Colour Mix
Colour Macros 3	Colour Mix Step	Foreground Colour Mix 2
Colour Macros 4	Colour Mode	Foreground Green
Colour Macros 5	Colour Mode 2	Foreground Red
Colour Macros 6	Colour Mode 3	Foreground White
Colour Macros 7	Colour Offset	Gel
Colour Mix	Colour Preset	Gel 2
Colour Mix 10	Colour Select Blink	Gel 3
Colour Mix 11	Colour Temperature	Gel 4
Colour Mix 12	Colour Temperature 10	Gel Manufacturer
Colour Mix 13	Colour Temperature 11	Gel Manufacturer 2
Colour Mix 14	Colour Temperature 12	Gel Range
Colour Mix 15	Colour Temperature 13	Gel Range 2
Colour Mix 16	Colour Temperature 14	Green Adjust
Colour Mix 17	Colour Temperature 15	Green Adjust 2
Colour Mix 18	Colour Temperature 16	Green Adjust 3
Colour Mix 19	Colour Temperature 17	Green All
Colour Mix 2	Colour Temperature 18	Green All 2
Colour Mix 20	Colour Temperature 19	Green Cyan

Green Cyan Adjust	Strobe Colour Green	Warm White 2
Green Master	Strobe Colour Green 2	Warm White 3
Green Maximum	Strobe Colour Mode	Warm White 4
Hue 2	Strobe Colour Red	Warm White 5
Hue Adjust	Strobe Colour Red 2	Warm White 6
Hue Adjust 2	Strobe Colour White	Warm White 7
Hue Adjust 3	Strobe Duration Blue	Warm White 8
Indigo	Strobe Duration Blue 2	Warm White 9
Indigo Adjust	Strobe Duration Green	Warm White Adjust
Indigo All	Strobe Duration Green 2	White 10
Internal Media Frame	Strobe Duration Red	White 11
Light Green	Strobe Duration Red 2	White 12
Lime	Strobe Duration White	White 13
Lime Adjust	Strobe Duration White 2	White 14
Magenta	Tint	White 15
Magenta Mode	Tint 10	White 16
Magenta Saturation	Tint 11	White 17
Medium White	Tint 12	White 18
Mint Green	Tint 13	White 19
Mint Green Adjust	Tint 14	White 2
Orange	Tint 15	White 20
Orange Adjust	Tint 16	White 21
Pink	Tint 17	White 22
Purple	Tint 18	White 23
Red Adjust	Tint 19	White 24
Red Adjust 2	Tint 2	White 25
Red Adjust 3	Tint 20	White 26
Red All	Tint 21	White 27
Red All 2	Tint 22	White 28
Red Master	Tint 23	White 29
Red Maximum	Tint 24	White 3
Red Orange	Tint 3	White 30
Red Orange Adjust	Tint 4	White 31
Red Shift	Tint 5	White 32
Royal Blue	Tint 6	White 33
Saturation 2	Tint 7	White 34
Saturation Adjust	Tint 8	White 35
Saturation Adjust 2	Tint 9	White 36
Saturation Adjust 3	UV	White 37
Shutter Strobe Blue	UV 10	White 38
Shutter Strobe Blue 2	UV 11	White 39
Shutter Strobe Green	UV 12	White 4
Shutter Strobe Green 2	UV 2	White 40
Shutter Strobe Red	UV 3	White 41
Shutter Strobe Red 2	UV 4	White 42
Shutter Strobe White	UV 5	White 43
Shutter Strobe White 2	UV 6	White 44
Source	UV 7	White 45
Source 2	UV 8	White 46
Source Type	UV 9	White 47
Source Type 2	Warm White 10	White 48
Strobe Colour Amber	Warm White 11	White 49
Strobe Colour Blue	Warm White 12	White 5
Strobe Colour Blue 2	Warm White 13	White 50



White 51	White 63	White 75
White 52	White 64	White 8
White 53	White 65	White 9
White 54	White 66	White Adjust
White 55	White 67	White Adjust 2
White 56	White 68	White Adjust 3
White 57	White 69	White All
White 58	White 7	White All 2
White 59	White 70	White Master
White 6	White 71	White Point Set
White 60	White 72	Yellow
White 61	White 73	Yellow Mode
White 62	White 74	

## Colour Adjustment

Colour adjustment functions have the category parameter `a` in the `functions.txt` and are accessible for fixtures possessing these capabilities from the Colour tab within the Scenes Mode.

Amber	Hue Table 1	Hue Table 6
Brightness	Hue Table 2	Saturation
Cool White	Hue Table 3	Warm White
Hue	Hue Table 4	White
Hue Table 0	Hue Table 5	

## Position Functions

Position functions have the category parameter `p` in the `functions.txt` and are accessible, for fixtures possessing these capabilities, from the Position tab within the Scenes Mode.

Dark Zone	Pan Offset Amplitude	Tilt 2
Effect Head	Pan Speed	Tilt 3
Effect Head 2	Pitch	Tilt 4
Global Pan	Position Blink	Tilt 5
Global Tilt	Position Macro Crossfade	Tilt 6
Infinite tilt	Rate	Tilt 7
Mirror Drum	Position Macro Rate	Tilt 8
Mirror Drum 2	Position Macro Size	Tilt 9
Mirror Drum 3	Position Macro Start	Tilt Mode
Mirror Drum 4	Position Macros	Tilt Mode 2
Pan	Position Mode	Tilt Offset
Pan 2	Position Source Crossfader	Tilt Offset Amplitude
Pan 3	Target Height	Tilt Speed
Pan 4	Tilt	Tracking Mode
Pan 5	Tilt 10	Tracking Object
Pan 6	Tilt 11	Tracking Offset X
Pan 7	Tilt 12	Tracking Offset Y
Pan Mode	Tilt 13	Tracking Offset Z
Pan Offset	Tilt 14	Tracking Speed
Pan Offset 2	Tilt 15	
	Tilt 16	

## Beam Shape Functions

Beam shape functions have the category parameters in the `functions.txt` and are accessible, for fixtures possessing these capabilities, from the Beam tab under Beam Shape within the Scenes Mode.

Barndoor	Effect Macro Rate 20	Effect Wheel Position
Barndoor 2	Effect Macro Rate 21	Effect Wheel Position 2
Barndoor 3	Effect Macro Rate 3	Focus
Barndoor 4	Effect Macro Rate 4	Focus 2
Barndoor Macro Rate	Effect Macro Rate 5	Focus 3
Barndoor Macros	Effect Macro Rate 6	Focus Adjust
Barndoors Assembly	Effect Macro Rate 7	Focus Distance
Beamshaper	Effect Macro Rate 8	Focus Mode
Beamshaper 2	Effect Macro Rate 9	Frame a
Beamshaper 3	Effect Macro Repeat	Frame a 2
Beamshaper 4	Effect Macro Size	Frame a 3
Beamshaper Mode	Effect Macro Size 2	Frame a 4
Compound Lens Index Rotate	Effect Macro Start	Frame a 5
Compound Lens Mode	Effect Macro Synchronisation	Frame a 6
Edge	Effect Macro Synchronisation 2	Frame a 7
Edge 2	Effect Macro Time	Frame Angle
Edge 3	Effect Macros	Frame Angle 2
Edge 4	Effect Macros 10	Frame Angle 3
Edge Colour Correction	Effect Macros 11	Frame Angle 4
Edge Mode	Effect Macros 12	Frame Assembly
Effect <>	Effect Macros 13	Frame b
Effect <> 2	Effect Macros 14	Frame b 2
Effect <> 3	Effect Macros 15	Frame b 3
Effect Macro Direction	Effect Macros 16	Frame b 4
Effect Macro Fade Time	Effect Macros 17	Frame b 5
Effect Macro Position	Effect Macros 18	Frame b 6
Effect Macro Position 2	Effect Macros 19	Frame b 7
Effect Macro Rate	Effect Macros 2	Frame In
Effect Macro Rate 10	Effect Macros 20	Frame In 2
Effect Macro Rate 11	Effect Macros 21	Frame In 3
Effect Macro Rate 12	Effect Macros 3	Frame In 4
Effect Macro Rate 13	Effect Macros 4	Frame Macro Rate
Effect Macro Rate 14	Effect Macros 5	Frame Macro Size
Effect Macro Rate 15	Effect Macros 6	Frame Macro Time
Effect Macro Rate 16	Effect Macros 7	Frame Macros
Effect Macro Rate 17	Effect Macros 8	Fresnel
Effect Macro Rate 18	Effect Macros 9	Frost
Effect Macro Rate 19	Effect Motor	Frost 2
Effect Macro Rate 2	Effect Motor 2	Frost Mode

Fx	Iris 2	Zoom
Fx <> Mode	Iris Mode	Zoom 2
Fx <> Mode 2	Light Frost	Zoom 3
Fx 2	Medium Frost	Zoom 4
Fx 3	Parabolic Mirror	Zoom 5
Fx Mode	Parabolic Mirror 2	Zoom All
Fx Offset	Scrim	Zoom Bypass
Heavy Frost	Scrim Index Rotate	Zoom Mode
Iris	Stripy	Zoom Mode 2

## Beam Image Functions

Beam image functions have the category parameter `b` in the `functions.txt` and are accessible for fixtures possessing these capabilities from the Beam tab under Beam Image within the Scenes Mode.

Alignment Pattern	Background Colour Alpha	Blue Highlight 3
Alpha	Background Colour Blue	Blue Shadow
Anchor X	Background Colour Green	Blue Shadow 2
Anchor Y	Background Colour Red	Blue Shadow 3
Anchor Z	Background Colour Red 2	Blur
Animation	Background Level	Blur Area
Animation <>	Banner Angle	Blur Radius
Animation <> 2	Banner Angle 2	Blur Type
Animation <> Mode	Banner Angle 3	BPM
Animation <> Mode 2	Banner Angle 4	Brightness Contrast Reset
Animation 2	Banner Assembly	Bus
Animation Incline	Banner In	Bypass
Animation Incline 2	Banner In 2	Cache
Animation Offset	Banner In 3	Camera Exposure
Aspect Mode	Banner In 4	Camera Focus
Aspect Ratio	Beam Macro Rate	Camera Gain
Assign Channel To Layer	Beam Macros	Camera Image Colour
Assign Channel To Layer 2	Beat Detect	Camera Image Horizontal Flip
Assign Channel To Layer 3	Black Level	Camera IR Image
Attack	Black Level Adjust	Camera Iris
Attack 2	Black Output	Camera Shutter
Attack 3	Blackout	Camera Zoom
Attack 4	Blend	Chromatics Mode
Audio Auto Gain	Blend Timing	Clear
Audio Balance	Blue Contrast	Clip Control
Audio Sync	Blue Gain	Clip Control 2
Audio Volume	Blue Gamma	Clip Directory
Auto Fade	Blue Highlight	Clip Directory 2
Background Colour	Blue Highlight 2	Clip Directory 3

Clip Directory Offset	Colour Effect Parameter 11	Crop Bottom 12
Clip Mode	Colour Effect Parameter 12	Crop Bottom 2
Clip Offset	Colour Effect Parameter 13	Crop Bottom 3
Clip Select	Colour Effect Parameter 14	Crop Bottom 4
Clip Select 10	Colour Effect Parameter 15	Crop Bottom 5
Clip Select 11	Colour Effect Parameter 16	Crop Bottom 6
Clip Select 12	Colour Effect Parameter 17	Crop Bottom 7
Clip Select 2	Colour Effect Parameter 18	Crop Bottom 8
Clip Select 3	Colour Effect Parameter 19	Crop Bottom 9
Clip Select 4	Colour Effect Parameter 2	Crop Edge
Clip Select 5	Colour Effect Parameter 20	Crop Edge 2
Clip Select 6	Colour Effect Parameter 3	Crop Left
Clip Select 7	Colour Effect Parameter 4	Crop Left 10
Clip Select 8	Colour Effect Parameter 5	Crop Left 11
Clip Select 9	Colour Effect Parameter 6	Crop Left 12
Clip Trigger	Colour Effect Parameter 7	Crop Left 2
Clip Trigger 2	Colour Effect Parameter 8	Crop Left 3
Clip Trigger 3	Colour Effect Parameter 9	Crop Left 4
Cluster	Colour Effect Parameter Blue	Crop Left 5
Cluster 10	Colour Effect Parameter Green	Crop Left 6
Cluster 11	Colour Effect Parameter Red	Crop Left 7
Cluster 12	Colour Effect Parameter White	Crop Left 8
Cluster 2	Colour Effect Rate	Crop Left 9
Cluster 3	Colour Space	Crop Right
Cluster 4	Colourblocks	Crop Right 10
Cluster 5	Continuous Loop Speed	Crop Right 11
Cluster 6	Contrast	Crop Right 12
Cluster 7	Contrast 10	Crop Right 2
Cluster 8	Contrast 11	Crop Right 3
Cluster 9	Contrast 12	Crop Right 4
Collage Array Configuration	Contrast 2	Crop Right 5
Collage Blend	Contrast 3	Crop Right 6
Collage Cell	Contrast 4	Crop Right 7
Collage Type	Contrast 5	Crop Right 8
ColorWave Speed	Contrast 6	Crop Right 9
ColorWave Type	Contrast 7	Crop Top
Colour Adjust Mode	Contrast 8	Crop Top 10
Colour Averaging	Contrast 9	Crop Top 11
Colour Effect	Copy Mode	Crop Top 12
Colour Effect Level	Crop Bottom	Crop Top 2
Colour Effect Parameter	Crop Bottom 10	Crop Top 3
Colour Effect Parameter 10	Crop Bottom 11	Crop Top 4

Crop Top 5	Deck A Cell Trigger 15	Deck B Cell Trigger 2
Crop Top 6	Deck A Cell Trigger 16	Deck B Cell Trigger 20
Crop Top 7	Deck A Cell Trigger 17	Deck B Cell Trigger 21
Crop Top 8	Deck A Cell Trigger 18	Deck B Cell Trigger 22
Crop Top 9	Deck A Cell Trigger 19	Deck B Cell Trigger 23
Crop X	Deck A Cell Trigger 2	Deck B Cell Trigger 24
Crop X 2	Deck A Cell Trigger 20	Deck B Cell Trigger 25
Crop X 3	Deck A Cell Trigger 21	Deck B Cell Trigger 26
Crop X 4	Deck A Cell Trigger 22	Deck B Cell Trigger 27
Crop Y	Deck A Cell Trigger 23	Deck B Cell Trigger 28
Crop Y 2	Deck A Cell Trigger 24	Deck B Cell Trigger 29
Crop Y 3	Deck A Cell Trigger 25	Deck B Cell Trigger 3
Crop Y 4	Deck A Cell Trigger 26	Deck B Cell Trigger 30
Crossfade	Deck A Cell Trigger 27	Deck B Cell Trigger 31
Crossfader	Deck A Cell Trigger 28	Deck B Cell Trigger 32
Crossfader Time	Deck A Cell Trigger 29	Deck B Cell Trigger 33
Crossfader Time 2	Deck A Cell Trigger 3	Deck B Cell Trigger 34
Crossfader Type	Deck A Cell Trigger 30	Deck B Cell Trigger 35
Crossfader Type 2	Deck A Cell Trigger 31	Deck B Cell Trigger 36
Cue	Deck A Cell Trigger 32	Deck B Cell Trigger 4
Cue 2	Deck A Cell Trigger 33	Deck B Cell Trigger 5
Cue 3	Deck A Cell Trigger 34	Deck B Cell Trigger 6
Cue Advance	Deck A Cell Trigger 35	Deck B Cell Trigger 7
Cue Advance Period	Deck A Cell Trigger 36	Deck B Cell Trigger 8
Cue Blur	Deck A Cell Trigger 4	Deck B Cell Trigger 9
Dampening	Deck A Cell Trigger 5	DeInterlace Mode
Dashboard Dial	Deck A Cell Trigger 6	Depth of Field Radius
Dashboard Dial 2	Deck A Cell Trigger 7	Depth of Field X
Dashboard Dial 3	Deck A Cell Trigger 8	Depth of Field Y
Dashboard Dial 4	Deck A Cell Trigger 9	Digital Iris
Dashboard Dial 5	Deck B Bank	Digital Iris Effect
Dashboard Dial 6	Deck B Cell Trigger	Digital Iris Shutter Strobe
Dashboard Dial 7	Deck B Cell Trigger 10	Display Position
Dashboard Dial 8	Deck B Cell Trigger 11	Distortion Type
Deck	Deck B Cell Trigger 12	DMX In Level
Deck A Bank	Deck B Cell Trigger 13	Drawing Mode
Deck A Cell Trigger	Deck B Cell Trigger 14	Drawing Mode 2
Deck A Cell Trigger 10	Deck B Cell Trigger 15	Edge Blend
Deck A Cell Trigger 11	Deck B Cell Trigger 16	Edge Blend 2
Deck A Cell Trigger 12	Deck B Cell Trigger 17	Edge Blend 3
Deck A Cell Trigger 13	Deck B Cell Trigger 18	Edge Blend 4
Deck A Cell Trigger 14	Deck B Cell Trigger 19	Edge Blend Curve

Edge Blend Curve 2	Effect 2 Parameter 14	Effect Parameter 12
Edge Blend Curve 3	Effect 2 Parameter 15	Effect Parameter 13
Edge Blend Curve 4	Effect 2 Parameter 16	Effect Parameter 14
Edge Blend Horizontal	Effect 2 Parameter 2	Effect Parameter 15
Edge Blend Marker	Effect 2 Parameter 3	Effect Parameter 16
Edge Blend Marker 2	Effect 2 Parameter 4	Effect Parameter 17
Edge Blend Marker 3	Effect 2 Parameter 5	Effect Parameter 18
Edge Blend Marker 4	Effect 2 Parameter 6	Effect Parameter 19
Edge Blend Marker Width	Effect 2 Parameter 7	Effect Parameter 2
Edge Blend Marker Width 2	Effect 2 Parameter 8	Effect Parameter 20
Edge Blend Marker Width 3	Effect 2 Parameter 9	Effect Parameter 3
Edge Blend Marker Width 4	Effect 3	Effect Parameter 4
Edge Blend Mode	Effect 3 Parameter	Effect Parameter 5
Edge Blend Mode 2	Effect 3 Parameter 2	Effect Parameter 6
Edge Blend Profile	Effect 3 Parameter 3	Effect Parameter 7
Edge Blend Profile 2	Effect 3 Parameter 4	Effect Parameter 8
Edge Blend Profile 3	Effect 3 Parameter 5	Effect Parameter 9
Edge Blend Profile 4	Effect 3 Parameter 6	Effect Parameter Clear
Edge Blend Vertical	Effect 3 Parameter 7	Effect Parameter Clear 2
Effect	Effect 3 Parameter 8	Effect Parameter Clear 3
Effect 1 Parameter	Effect 3 Parameter 9	Effect Previous
Effect 1 Parameter 10	Effect 4	Effect Rate
Effect 1 Parameter 11	Effect 4 Parameter	Effect Rate 2
Effect 1 Parameter 12	Effect 4 Parameter 2	Effect Start Offset
Effect 1 Parameter 13	Effect 4 Parameter 3	Effect Toggle
Effect 1 Parameter 14	Effect 4 Parameter 4	Effect Trigger
Effect 1 Parameter 15	Effect 5	Envelope Fade In
Effect 1 Parameter 16	Effect 5 Parameter	Envelope Fade Out
Effect 1 Parameter 2	Effect 5 Parameter 2	Envelope Sustain
Effect 1 Parameter 3	Effect 5 Parameter 3	Fade Colour Blue
Effect 1 Parameter 4	Effect Directory	Fade Colour Green
Effect 1 Parameter 5	Effect Directory 2	Fade Colour Red
Effect 1 Parameter 6	Effect Directory 3	Fade Colour White
Effect 1 Parameter 7	Effect Disable	Far Plane
Effect 1 Parameter 8	Effect Enable	Field Of View
Effect 1 Parameter 9	Effect Level	Filter
Effect 2	Effect Level 2	Frame
Effect 2 Parameter	Effect Level 3	Frame Scale
Effect 2 Parameter 10	Effect Next	Framing a
Effect 2 Parameter 11	Effect Parameter	Framing a 2
Effect 2 Parameter 12	Effect Parameter 10	Framing a 3
Effect 2 Parameter 13	Effect Parameter 11	Framing a 4

Framing Assembly	Gobo Offset	Image Adjust Green 3
Framing b	Gobo Offset 2	Image Adjust Green 4
Framing b 2	Gobo Offset Amplitude	Image Adjust Green 5
Framing b 3	Gobo Reverse	Image Adjust Green 6
Framing b 4	Gobo Reverse 2	Image Adjust Green 7
Framing Shape	Gobo Wheels	Image Adjust Green 8
Framing X	Green Contrast	Image Adjust Green 9
Framing X 2	Green Gain	Image Adjust Green High
Framing X 3	Green Gamma	Image Adjust Green Low
Framing X 4	Green Highlight	Image Adjust Green Medium
Framing Y	Green Highlight 2	Image Adjust Hue
Framing Y 2	Green Highlight 3	Image Adjust Lightness
Framing Y 3	Green Shadow	Image Adjust Magenta
Framing Y 4	Green Shadow 2	Image Adjust Red
Freeze	Green Shadow 3	Image Adjust Red 10
Front/Rear Projection	Halftone Colour Removal	Image Adjust Red 11
Gamma	Halftone Gray Components	Image Adjust Red 12
Generator	Halftone Sharpness	Image Adjust Red 2
Generator Parameter	Ignore	Image Adjust Red 3
Generator Parameter 2	Image Adjust Blue	Image Adjust Red 4
Generator Parameter 3	Image Adjust Blue 10	Image Adjust Red 5
Generator Parameter 4	Image Adjust Blue 11	Image Adjust Red 6
Generator Parameter 5	Image Adjust Blue 12	Image Adjust Red 7
Generator Parameter 6	Image Adjust Blue 2	Image Adjust Red 8
Generator Parameter 7	Image Adjust Blue 3	Image Adjust Red 9
Generator Parameter 8	Image Adjust Blue 4	Image Adjust Red High
Generator Parameter 9	Image Adjust Blue 5	Image Adjust Red Low
Geometry Mode	Image Adjust Blue 6	Image Adjust Red Medium
Gobo	Image Adjust Blue 7	Image Adjust Saturation
Gobo <>	Image Adjust Blue 8	Image Adjust White
Gobo <> 2	Image Adjust Blue 9	Image Adjust Yellow
Gobo <> 3	Image Adjust Blue High	Image Ambience
Gobo <> 4	Image Adjust Blue Low	Image Colour Invert
Gobo <> Mode	Image Adjust Blue Medium	Image Colour Shift
Gobo <> Mode 2	Image Adjust Brightness	Image Control
Gobo 2	Image Adjust Contrast	Image Control 2
Gobo 3	Image Adjust Cyan	Image Control 3
Gobo Forward	Image Adjust Green	Image Edge
Gobo Forward 2	Image Adjust Green 10	Image Edge 2
Gobo Mode	Image Adjust Green 11	Image Edge 3
Gobo Mode 2	Image Adjust Green 12	Image Edge 4
Gobo Mode 3	Image Adjust Green 2	Image Edge Curve

Image Movement Speed	Keystone In 3	Layer Input Directory 2
Image Position X	Keystone In 4	Layer Input Directory 3
Image Position Y	Keystone Mode	Layer Input Directory 4
Image Remap	Keystone Position	Layer Input Type
Image Rotation Z	Keystone Position 2	Layer Mode
Image Saturation	Keystone Position 3	Layer Mode 10
Image Select	Keystone Position 4	Layer Mode 11
Image Select 2	Keystone Position X	Layer Mode 12
In Point	Keystone Position Y	Layer Mode 13
In Point 10	Keystone Rotate	Layer Mode 14
In Point 11	Keystone Vertical	Layer Mode 15
In Point 12	Keystone X	Layer Mode 16
In Point 2	Keystone X 2	Layer Mode 17
In Point 3	Keystone X 3	Layer Mode 18
In Point 4	Keystone X 4	Layer Mode 19
In Point 5	Keystone X Linearity	Layer Mode 2
In Point 6	Keystone X Ratio	Layer Mode 20
In Point 7	Keystone Y	Layer Mode 21
In Point 8	Keystone Y 2	Layer Mode 22
In Point 9	Keystone Y 3	Layer Mode 23
In Point MSB	Keystone Y 4	Layer Mode 24
Input Audio Level	Keystone Y Linearity	Layer Mode 25
Iterations	Keystone Y Ratio	Layer Mode 26
Kaleidoscope Speed	Layer	Layer Mode 27
Kaleidoscope Type	Layer 2	Layer Mode 28
Key Mode	Layer Blend Mode	Layer Mode 29
Key Source Layer	Layer Command	Layer Mode 3
Key Source Mix	Layer Effect	Layer Mode 30
Keystone	Layer Effect 2	Layer Mode 31
Keystone 2	Layer Effect 3	Layer Mode 32
Keystone 3	Layer Effect 4	Layer Mode 4
Keystone 4	Layer Effect Parameter	Layer Mode 5
Keystone Angle	Layer Effect Parameter 2	Layer Mode 6
Keystone Angle 2	Layer Effect Parameter 3	Layer Mode 7
Keystone Angle 3	Layer Effect Parameter 4	Layer Mode 8
Keystone Angle 4	Layer Effect Parameter 5	Layer Mode 9
Keystone Angle X	Layer Effect Parameter 6	Lens Shift Index Z
Keystone Angle Y	Layer Input	Lens Shift Offset X
Keystone Blend	Layer Input 2	Lens Shift Offset Y
Keystone Horizontal	Layer Input 3	Lens Throw Ratio
Keystone In	Layer Input 4	Look
Keystone In 2	Layer Input Directory	Loop In Point



Loop In Point MSB	Notch Parameter 8	Perspective Offset X
Loop Out Point	Notch Parameter 9	Perspective Offset Y
Loop Out Point MSB	Object Directory	Picasso Animate Mode
Loop Start	Object File	Pivot Rotation X
Mask	Object Transition Speed	Pivot Rotation Y
Mask Aspect Ratio	Object Transition Type	Pivot Rotation Z
Mask Blur	On Screen Display	Pivot Scale X
Mask Centre	Opacity	Pivot Scale Y
Mask Level	Opacity 2	Pivot Scale Z
Mask Page	Opacity 3	Pixel Map Level
Mask Rotate	Out Point	Pixel Map Mode
Mask Size	Out Point 10	Pixel Mask
Mask X Position	Out Point 11	Pixel Mask 2
Mask Y Position	Out Point 12	Pixel Mask 3
Media Level	Out Point 2	Pixel Mask 4
Media Level 2	Out Point 3	Pixel Mask 5
Media Preset	Out Point 4	Pixel Mask 6
Media Preset Bank	Out Point 5	Pixel Mask 7
Media Server Input	Out Point 6	Pixel Mask 8
Media Server Input Directory	Out Point 7	Pixel Mask 9
Media Server Input Group	Out Point 8	Pixel Mask Crossfade Time
MediaServer Audio Level	Out Point 9	Pixel Mask Effect Parameter
MediaServer Level	Out Point MSB	Pixel Mask Effect Parameter
Mix	Output Colour	10
Mix Full A	Output Command	Pixel Mask Effect Parameter
Mix Full B	Output Index/Rotation	11
Mix Mode	Output Level	Pixel Mask Effect Parameter
Mixer Mode	Output Preset	12
Move Down	Output Preset 2	Pixel Mask Effect Parameter
Move Up	Output Select	13
Near Plane	Output Shift X	Pixel Mask Effect Parameter
Noise Effect	Output Shift Y	14
Notch Effect	Output Strobe	Pixel Mask Effect Parameter
Notch File	Output Zoom	15
Notch Parameter	Overlay	Pixel Mask Effect Parameter
Notch Parameter 10	Overlay Level	16
Notch Parameter 2	Page	Pixel Mask Effect Parameter
Notch Parameter 3	Page 2	17
Notch Parameter 4	Pattern Control	Pixel Mask Effect Parameter
Notch Parameter 5	Pattern Selection	18
Notch Parameter 6	Pattern Size	Pixel Mask Effect Parameter
Notch Parameter 7	Pause On Dark	19
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		Pixel Mask Effect Parameter 3

Pixel Mask Effect Parameter 4	Playback Mode 3	Posterise Colours
Pixel Mask Effect Parameter 5	Playback Mode 4	Posterise Gamma
Pixel Mask Effect Parameter 6	Playback Mode 5	Preset
Pixel Mask Effect Parameter 7	Playback Mode 6	Preset Mode
Pixel Mask Effect Parameter 8	Playback Mode 7	Projector Channel
Pixel Mask Effect Parameter 9	Playback Mode 8	Projector Fade In
Pixel Mask Effect Start	Playback Mode 9	Projector Fade Out
Pixel Mask Effect Step Time	Playback Pause	Projector Focus
Pixel Mask Effect Step Time 2	Playback Pause 2	Projector Input
Pixel Mask Effect Time	Playback Play Loop	Projector Input 2
Pixel Mask Effect Time 2	Playback Play Loop 2	Projector Intensity
Pixel Mask Index Rotate	Playback Play Once	Projector Iris
Pixel Mask Mode	Playback Play Once 2	Projector Keypad
Pixel Mask Mode 2	Playback Play Once Freeze	Projector Keypad 2
Pixel Mask Step Time	Playback Play Once Freeze 2	Projector Lens Mode
Pixel Mask Transparency	Playback Random	Projector Lens Shift
Pixel Mode	Playback Random 2	Projector Lens Shift Horizontal
Pixel Mode Parameter	Playback Sequential	Projector Lens Shift Vertical
Pixel Mode Parameter 2	Playback Sequential 2	Projector Mode
Pixel Mode Parameter 3	Playback Speed	Projector Shutter Strobe
Pixelmap	Playback Speed 10	Projector Zoom
Pixelmap Mode	Playback Speed 11	Red Contrast
Play Mode	Playback Speed 12	Red Gain
Play Mode 10	Playback Speed 2	Red Gamma
Play Mode 11	Playback Speed 3	Red Highlight
Play Mode 12	Playback Speed 4	Red Highlight 2
Play Mode 2	Playback Speed 5	Red Highlight 3
Play Mode 3	Playback Speed 6	Red Shadow
Play Mode 4	Playback Speed 7	Red Shadow 2
Play Mode 5	Playback Speed 8	Red Shadow 3
Play Mode 6	Playback Speed 9	Reflector Speed
Play Mode 7	Playback Speed Mode	Relay
Play Mode 8	Playback Stop	Relay Layer
Play Mode 9	Playback Stop 2	Render Mode
Playback Direction	Playhead	Resync
Playback Manual	Playlist	Retrigger
Playback Manual 2	Plugin Rate	Rewind On Dark
Playback Mode	Position	RGB Level
Playback Mode 10	Position 2	Ripple Speed
Playback Mode 11	Position Offset X	Ripple Type
Playback Mode 12	Position Offset X 2	Rotate Mode
Playback Mode 2	Position Offset Y	

Rotate Mode X	Screen 2 Edge	Tap
Rotate Mode Y	Screen 2 Edge 2	Target Position X
Rotate Mode Z	Screen 2 Edge 3	Target Position Y
Rotate Offset X	Screen 2 Edge 4	Target Position Z
Rotate Offset Y	Screen 3 Edge	Test Pattern
Rotate Offset Z	Screen 3 Edge 2	Text
Rotate X	Screen 3 Edge 3	Texture
Rotate X 2	Screen 3 Edge 4	Texture Directory
Rotate Y	Screen 4 Edge	Texture Transition Speed
Rotate Y 2	Screen 4 Edge 2	Texture Transition Type
Rotate Z	Screen 4 Edge 3	Tiling
Rotate Z 10	Screen 4 Edge 4	Tiling Columns
Rotate Z 11	Screen 5 Edge	Tiling Grid Size
Rotate Z 12	Screen 5 Edge 2	Tiling Mode
Rotate Z 2	Screen 5 Edge 3	Tiling Rows
Rotate Z 3	Screen 5 Edge 4	Timecode
Rotate Z 4	Screen 6 Edge	Timecode Flywheel
Rotate Z 5	Screen 6 Edge 2	Timecode Offset
Rotate Z 6	Screen 6 Edge 3	Timecode Offset Frames
Rotate Z 7	Screen 6 Edge 4	Timecode Offset Frames 2
Rotate Z 8	Screen Mode	Timecode Offset Hours
Rotate Z 9	Screen Mode 2	Timecode Offset Hours 2
Scale	Screen Mode 3	Timecode Offset MilliSeconds
Scale 10	Screen Mode 4	Timecode Offset Minutes
Scale 11	Script Amplitude	Timecode Offset Minutes 2
Scale 12	Script Rate	Timecode Offset Seconds
Scale 2	Sepia Effect	Timecode Offset Seconds 2
Scale 3	Shape	Timecode Source
Scale 4	Shape Enable	Timecode Sync
Scale 5	Show	Timeline
Scale 6	Shutter Damping	Timeline Position
Scale 7	Solo	Timeline Position 2
Scale 8	Speed	Timeline Position 3
Scale 9	Stars Speed	Toon Mode
Scene	Strobe BPM	Trails Duration
Scratch Effect	Strobe Reset	Transition
Screen 1 Edge	Strobe Toggle	Transition Colour Blue
Screen 1 Edge 2	Sync Mode	Transition Colour Green
Screen 1 Edge 3	Sync Offset	Transition Colour Red
Screen 1 Edge 4	Sync Output	Transition Colour White
Screen 1 Height	Sync Source	Transition Mode
Screen 1 Width	Take	Transition Page

Transition Speed	Video Source 7	X Position 5
Transition Speed 2	Video Source 8	X Position 6
Transition Type	Video Source 9	X Position 7
Transparency	Viewpoint Mode	X Position 8
Trigger	Viewpoint Pan	X Position 9
Trigger 2	Viewpoint Roll	X Spin
Trigger 3	Viewpoint Tilt	X Zoom
Trigger Column	Viewpoint Zoom	X Zoom 2
Video Level	Viewport	Y Position
Video Map	Viewport 2	Y Position 10
Video Map 2	Vignette Effect	Y Position 11
Video Map Enable	Vignette Radius	Y Position 12
Video Map Mixer	Visual Mode	Y Position 2
Video Map Mixer Mode	Visual Mode Parameter	Y Position 3
Video Map Mixer Morph Mode	Visual Mode Parameter 2	Y Position 4
Video Source	Warp	Y Position 5
Video Source 10	Warp 2	Y Position 6
Video Source 11	Warp Mix	Y Position 7
Video Source 12	Warp Mode	Y Position 8
Video Source 13	White Balance	Y Position 9
Video Source 14	Wipe Blur	Y Spin
Video Source 15	X Position	Y Zoom
Video Source 16	X Position 10	Y Zoom 2
Video Source 2	X Position 11	Z Position
Video Source 3	X Position 12	Z Position 2
Video Source 4	X Position 2	Z Spin
Video Source 5	X Position 3	Z Zoom
Video Source 6	X Position 4	

### Control Functions

Control functions have the category parameter 1 in the `functions.txt` and are accessible, for fixtures possessing these capabilities, from the Control tab within the Scenes Mode.

Audio Sensitivity	Connected Load 5	Control Range 15
Blower	Connected Load 6	Control Range 16
Blower 2	Control	Control Range 2
Blue Laser	Control 2	Control Range 3
Blue Laser Intensity	Control Range	Control Range 4
Colour Wheel Reset	Control Range 10	Control Range 5
Connected Load	Control Range 11	Control Range 6
Connected Load 2	Control Range 12	Control Range 7
Connected Load 3	Control Range 13	Control Range 8
Connected Load 4	Control Range 14	Control Range 9

Control Signal	laser 3	Macro Rate 3
Disable Enable	laser 4	Macro Rate 4
Dummy	laser 5	Macro Size
Fans	laser 6	Macro Size 2
Fans Mode	laser 7	Macro Size 3
Fixture Display	laser 8	Macro Size 4
Fixture Enable	laser 9	Mirror Ball
Fixture ID	Laser Colour	Mode
Fixture Mode	Laser Intensity	Mode 2
Fixture Sleep	Laser Wiggle Amplitude	Mode 3
Flame	LED strip program	Mode Rate
Flame 2	LED strip speed	Mode Transition Speed
Flame 3	Line Type	NDI Enable
Flame 4	Line Type 2	NDI Frame Rate
Flame 5	Low Smoke Generator	NDI Refresh Source List
Focus Reset	Macro	NDI Source
Fog	Macro 10	Number Select
Fog 2	Macro 11	Number Select 2
Fx Reset	Macro 12	Number Select 3
Gobo Wheel Shortcut Mode	Macro 13	Optical Mode
Gobo Wheel Shortcut Mode 2	Macro 14	Position Limits
Green Laser	Macro 15	Position Optimisation Mode
Green Laser 2	Macro 16	Position Reset
Green Laser Intensity	Macro 17	Probability
Group ID	Macro 18	Puff Duration
Grouping	Macro 19	Puff Interval
Haze	Macro 2	Purple Laser
Heater	Macro 20	PWM Frequency
Kabuki Drop	Macro 21	PWM Frequency 2
Kabuki Drop 2	Macro 3	PWM Frequency Adjust
Kabuki Drop 3	Macro 4	RDM Control
Kabuki Drop 4	Macro 5	Red Laser
Kabuki Drop 5	Macro 6	Red Laser 2
Kabuki Drop 6	Macro 7	Red Laser Intensity
Lamp Control	Macro 8	Reflector Adjust
Lamp Control 2	Macro 9	Safe Fire
Lamp Mode	Macro Pause	Scan Rate
Lamp Power	Macro Pause 2	Scan Rate 2
Lamp Rotate	Macro Position	Slide
laser	Macro Position 2	Smoke
laser 10	Macro Rate	Snow
laser 2	Macro Rate 2	Spout Source



Timer Reset	Wave Amplitude	Wave Rate 2
Timer Start	Wave Amplitude 2	Wind
Timer Stop	Wave Angle	Zoom Reset
Transmitter Mode	Wave Angle 2	
Visible Points	Wave Rate	