

A. DMX CHART

A.1 DMX chart, Digital moving luminiere

Overview

| Channel | Function | Type | Value | Default | Action |
|---------|------------------|------|-----------|---------|--|
| 1 | Pan coarse | x | 0 - 255 | 128 | Left → right movement (rotation of yoke) |
| 2 | Pan fine | x | 0 - 255 | 0 | |
| 3 | Tilt coarse | x | 0 - 255 | 128 | Forward movement (rotation of head) |
| 4 | Tilt fine | x | 0 - 255 | 0 | |
| 5 | Intensity | x | 0 - 255 | 0 | Adjust the light output between 0 and 100% |
| 6 | Optical zoom | x | 0 - 255 | 128 | From wide to narrow beam |
| 7 | Optical focus | x | 0 - 255 | 128 | Adjust focus from near to far |
| 8 | Shutter / strobe | | 0 - 15 | | Closed |
| | | | 16 - 31 | 16 | Open |
| | | | 32 - 47 | | Strobe, from slow to fast |
| | | | 48 - 239 | | For future expansions |
| | | | 240 - 255 | | Open |
| 9 | Cyan | x | 0 - 255 | 0 | Open → full cyan |
| 10 | Magenta | x | 0 - 255 | 0 | Open → full magenta |
| 11 | Yellow | x | 0 - 255 | 0 | Open → full yellow |
| 12 | CTO | x | 0 - 255 | 0 | Open → full CTO |
| 13 | Mode select | | 0 - 31 | 0 | Light mode |
| | | | 32 - 63 | | Video mode circular |
| | | | 64 - 95 | | Video mode |
| | | | 96 - 255 | | For future expansion |
| 14 | Iris | | 0 - 200 | | Open → close (1 cm remains open) |
| | | | 201 - 255 | | Not used |
| 15 | Control channel | | 0 - 31 | 0 | Disarmed |
| | | | 32 - 47 | | Reset (start homing sequence) |
| | | | 48 - 63 | | Homing without pan and tilt |
| | | | 64 - 79 | | Homing, pan and tilt only |
| | | | 80 - 95 | | Homing CMY only |
| | | | 96 - 127 | | Lamp on |
| | | | 128 - 159 | | Lamp off |
| | | | 160 - 191 | | For future expansion |
| | | | 192 - 223 | | EMP on/off |
| | | | 224 - 255 | | For future expansion |

3. x indicates XFade

A.2 DMX chart, Image

Overview

| Channel | Function | Type | Value | Default | Action |
|---------|------------------------|------|-----------|---------|---|
| 16 | Source select | | 0 - 31 | 0 | No source selected |
| | | | 32 - 63 | | RGBHV selected |
| | | | 64 - 95 | | HD-SDI/SDI selected |
| | | | 96 - 127 | | DVI selected |
| | | | 128 - 159 | | Media player selected |
| | | | 160 - 191 | | No source selected / for future expansion |
| | | | 192 - 223 | | No source selected / for future expansion |
| | | | 224 - 255 | | No source selected / for future expansion |
| 17 | Brightness | | 0 - 255 | 128 | Adjust the brightness between 0 and 100 % |
| 18 | Contrast | | 0 - 255 | 128 | Adjust the contrast between 0 and 100 % |
| 19 | Saturation | | 0 - 255 | 128 | Adjust the saturation between 0 and 100 % |
| 20 | Orientation | | 0 - 31 | 0 | Normal |
| | | | 32 - 63 | | Mirror |
| | | | 64 - 95 | | Flip |
| | | | 96 -127 | | Flip + Mirror |
| | | | 128 - 255 | | For future expansion |
| 21 | Blanking left Coarse | x | 0 - 255 | 0 | Adjust the left blanking |
| 22 | Blanking left Fine | x | 0 - 255 | 0 | |
| 23 | Blanking right Coarse | x | 0 - 255 | 0 | Adjust the right blanking |
| 24 | Blanking right Fine | x | 0 - 255 | 0 | |
| 25 | Blanking top Coarse | x | 0 - 255 | 0 | Adjust the top blanking |
| 26 | Blanking top Fine | x | 0 - 255 | 0 | |
| 27 | Blanking bottom Coarse | x | 0 - 255 | 0 | Adjust the bottom blanking |
| 28 | Blanking bottom Fine | x | 0 - 255 | 0 | |
| 29 | Soft edge left | x | 0 - 255 | 0 | Adjust the soft edge left side |
| 30 | Soft edge right | x | 0 - 255 | 0 | Adjust the soft edge right side |
| 31 | Soft edge top | x | 0 - 255 | 0 | Adjust the soft edge top side |
| 32 | Soft edge bottom | x | 0 - 255 | 0 | Adjust the soft edge bottom side |
| 33 | Video function select | | 0 - 7 | 0 | Disabled |
| | | | 8 - 255 | | For future expansion |
| 34 | Video parameter Coarse | | 0 - 255 | 128 | For future expansion |
| 35 | Video parameter Fine | | 0 - 255 | 128 | |

| Channel | Function | Type | Value | Default | Action |
|---------|--------------------------|------|----------------------|---------|----------------------|
| 36 | Warping function select | | 0 - 7 | 0 | Warp disabled |
| | | | 8 - 15 | | Load warp file 1 |
| | | | 16 - 23 | | Load warp file 2 |
| | | | 24 - 31 | | Load warp file 3 |
| | | | 32 - 39 | | Load warp file 4 |
| | | | 40 - 47 | | Load warp file 5 |
| | | | 48 - 55 | | Load warp file 6 |
| | | | 56 - 63 | | Load warp file 7 |
| | | | 64 - 71 | | Load warp file 8 |
| | | | 72 - 79 | | Load warp file 9 |
| | | | 80 - 87 | | Load warp file 10 |
| | | | 88 - 95 | | Load warp file 11 |
| | | | 96 - 103 | | Load warp file 12 |
| | | | 104 - 111 | | Load warp file 13 |
| | | | 112 - 119 | | Load warp file 14 |
| | | | 120 - 127 | | Load warp file 15 |
| | 128 - 135 | | Load warp parameters | | |
| | 136 - 247 | | For future expansion | | |
| | 248 - 255 | | Warp enabled | | |
| 37 | Warping parameter Coarse | | 0 - 255 | 128 | For future expansion |
| 38 | Warping parameter Fine | | 0 - 255 | 128 | |
| 39 | For future expansion | | | | |
| 40 | For future expansion | | | | |
| 41 | For future expansion | | | | |
| 42 | For future expansion | | | | |
| 43 | For future expansion | | | | |
| 44 | For future expansion | | | | |
| 45 | For future expansion | | | | |
| 46 | For future expansion | | | | |
| 47 | For future expansion | | | | |
| 48 | For future expansion | | | | |
| 49 | For future expansion | | | | |
| 50 | For future expansion | | | | |
| 51 | For future expansion | | | | |

A.3 DMX chart, EMP

Common layer

| Channel | Function | Type ³ | Value | Default | Action | | |
|---------|-----------------|-------------------|------------------|----------------------------|-----------------------------|-------------------------------|-----------------------------------|
| 52 | Matte layer FX | | | | | | |
| | | Number | Value | FX Listing | Par1 (ch53) | Par2 (ch54) | Par3 (ch55) |
| | | 1 | 0 - 1 | Color (RGB) | Red | Green | Blue |
| | | 2 | 2 - 5 | Rings | X = squeeze in X direction | Y = squeeze in Y direction | Z = roll out |
| | | 3 | 6 - 9 | Chess | X = number of vertical bars | Y = number of horizontal bars | Edge X = amplitude in X direction |
| | | 4 | 10 - 13 | Interference (C+C) | Speed | Size | Color |
| | | 5 | 14 - 17 | Interference, Retro (C+C) | Speed | Red 1 | Green 1 |
| | | 6 | 18 - 21 | Interference (R+C) | Speed | Size | Color |
| | | 7 | 22 - 25 | Interference, Retro (R+C) | Speed | Size | Color |
| | | 8 | 26 - 29 | Interference, Retro2 (R+C) | Speed | Size | Color |
| | | 9 | 30 - 33 | Interference (R+R) | Speed | Size | Color |
| | | 10 | 34 - 37 | Interference, Retro (R+R) | Speed | Size | Color |
| | | 11 | 38 - 41 | Clouds | Speed | Softness | Scale |
| | | 12 | 42 - 45 | Flowers | Rotspeed | Zoom | Color |
| | | 13 | 46 - 49 | Fog | Lightness | Speed | Brightness |
| | | 14 | 50 - 53 | Rain | Density | Angle | Speed |
| | | 15 | 54 - 57 | Starfield | Speed | Brightness | |
| 16 | 58 - 61 | Gradient | Hue1 | Hue2 | Speed | | |
| | | 62 - 255 | Future expansion | | | | |
| 53 | Matte layer P1 | | | | | | |
| 54 | Matte layer P2 | | | | | | |
| 55 | Matte layer P3 | | | | | | |
| 56 | Warp selection | | 0 - 1 | | Warp 0 | | |
| | | | 2 - 5 | | Warp 1 | | |
| | | | 6 - 9 | | Warp 2 | | |
| | | | 10 - 13 | | Warp 3 | | |
| | | | ... | | Warp x | | |
| 57 | Warp transition | | | | | | |

| Channel | Function | Type ³ | Value | Default | Action | | |
|---------|-----------------------|-------------------|----------------------|-------------------|---|--------------------|--------------------|
| 58 | Mask | | 0 - 3 | | Open (no masking) | | |
| | | | 4 - 7 | | Circular | | |
| | | | 8 - 11 | | 16-sided | | |
| | | | 12 - 15 | | 12-sided | | |
| | | | 16 - 19 | | 8-sided | | |
| | | | 20 - 23 | | 6-sided | | |
| | | | 24 - 27 | | 4-sided | | |
| | | | 28 - 31 | | 3-sided | | |
| | | | 32 - 35 | | 3-sided, inverted | | |
| | | | 36 - 39 | | 4-sided, inverted | | |
| | | | 40 - 43 | | 6-sided, inverted | | |
| | | | 44 - 47 | | 8-sided, inverted | | |
| | | | 48 - 51 | | 12-sided, inverted | | |
| | | | 52 - 55 | | 16-sided, inverted | | |
| | | | 56 - 59 | | Circular, inverted | | |
| | 60 - 251 | | For future expansion | | | | |
| | 252 - 255 | | Polygon shutter | | | | |
| 59 | Mask size | x | 0 - 255 | 128 | Small → Large | | |
| 60 | Mask indexed position | x | 0 - 255 | 128 | Plus / minus 90° | | |
| 61 | Mask aspect ratio | x | 0 - 255 | 128 | 128 = 1:1 0 = horizontal stretch 300%, vertical size 100% 255 = vertical stretch 300%, horizontal size 100% | | |
| 62 | Mask blur | x | 0 - 255 | | | | |
| 63 | Master FX select | | 0 - 255 | 0 | Selects one of n FX / FX combinations | | |
| | | Number | Value | FX Listing | Par1 (ch64) | Par2 (ch65) | Par3 (ch66) |
| | | 1 | 0 - 1 | No effect | | | |
| | | 2 | 2 - 5 | Radial Blur | Level | Amount | Whirl |
| | | 3 | 6 - 9 | Motion Blur | Blur amount | | |
| | | 4 | 10 - 13 | Color trafo | Level | Saturation | Hue |
| | | 5 | 14 - 17 | Multimage | Level | Size | Aspect ratio |
| | | 6 | 18 - 21 | Inv LumaKey | Level | Threshold | Softness |
| | | 7 | 22 - 25 | Shifter | Level | Speed X | Speed Z |
| | | 8 | 26 - 29 | ChromaKey | Level | Hue | Tolerance |
| | | 9 | 30 - 33 | Scroller | Level | Speed X | Speed Y |
| | | 10 | 34 - 37 | Color Studio | Level | Color shift A | Color shift B |
| | | 11 | 38 - 41 | Neon | Level | Width | |
| | | 12 | 42 - 45 | CTBO | Level | Filter | Brightness |
| | | 13 | 46 - 49 | DuoTone | Level | Col1 | Col2 |
| | | 14 | 50 - 53 | Palette | Level | Red | Green |
| | | 15 | 54 - 57 | Bloom | Level | Bloom | |
| | | 16 | 58 - 61 | Interlace | Level | Stripes | Saturation |
| | | 17 | 62 - 65 | Noise | Level | Frequency | Grain |
| | | 18 | 66 - 69 | Rings | Level | Rings | |
| 19 | 70 - 73 | CubeStyle | Level | Size | SpeedB | | |

A. DMX chart

| Channel | Function | Type ³ | Value | Default | Action |
|---------|-----------------------|-------------------|-----------|------------------|---|
| | | 20 | 74 - 77 | LED | Level Density Softness |
| | | 21 | 78 - 81 | Pixelate | Level Pixels |
| | | 22 | 82 - 85 | Halftone | Level Size Angle |
| | | 23 | 86 - 89 | Plasma | Level Random distortion Animation speed |
| | | 24 | 90 - 93 | Flower | Level Flora |
| | | 25 | 94 - 97 | Flip | Level Flip X Flip Y |
| | | 26 | 98 - 101 | Rotozoom | Level Rotation Zoom out |
| | | 27 | 102 - 105 | Glass | Level Glass |
| | | 28 | 106 - 109 | Aqua | Level Wave Speed |
| | | 29 | 110 - 113 | Tunnel | Level Zoom Speed camera |
| | | 30 | 114 - 117 | Planes | Level Wip Distplanes |
| | | 31 | 118 - 121 | Fluid Distortion | Level Speed A Speed B |
| | | 32 | 122 - 125 | Alphabet | Level Zoom Digits |
| | | 33 | 126 - 129 | Rimple | Level Numwaves Speed |
| | | 34 | 130 - 133 | Wave | Level Wave |
| | | 35 | 134 - 137 | Jitter | Level Speed Zoom |
| | | 36 | 138 - 141 | Stripes | Level Frequency Scale |
| | | 37 | 142 - 145 | Infinite Zoom | Level Zoom speed & direction |
| | | 38 | 146 - 149 | Infinity | Level Speed |
| | | 39 | 150 - 153 | Blinder | Level |
| | | 40 | 154 - 255 | Future expansion | |
| 64 | Master FX parameter 1 | x | 0 - 255 | 0 | Varies w. selected FX but nom. intensity |
| 65 | Master FX parameter 2 | x | 0 - 255 | 0 | Varies w. selected FX |
| 66 | Master FX parameter 3 | x | 0 - 255 | 0 | Varies w. selected FX |
| 67 | Keystone/Polygon A1 | x | 0 - 255 | 0 | |
| 68 | Keystone/Polygon A2 | x | 0 - 255 | 0 | |
| 69 | Keystone/Polygon B1 | x | 0 - 255 | 0 | |
| 70 | Keystone/Polygon B2 | x | 0 - 255 | 0 | |
| 71 | Keystone/Polygon C1 | x | 0 - 255 | 0 | |
| 72 | Keystone/Polygon C2 | x | 0 - 255 | 0 | |
| 73 | Keystone/Polygon D1 | x | 0 - 255 | 0 | |
| 74 | Keystone/Polygon D2 | x | 0 - 255 | 0 | |

Layer 1 + Layer 2

| Channel #1 | Channel #2 | Function | Type | Value | Default | Action |
|------------|------------|-----------------|------|---------|---------|-------------------------------------|
| 75 | 102 | Bank select | | 0 - 255 | 0 | Bank selection |
| 76 | 103 | Clip select | | 0 - 255 | | Clip selection within a bank |
| 77 | 104 | IN Frame Coarse | | 0 - 255 | 0 | Counting from beginning of clip |
| 78 | 105 | IN Frame Fine | | 0 - 255 | 0 | Counting from selected coarse point |

| Channel | | Function | Type | Value | Default | Action |
|---------|-----|----------------------|----------|---------|----------------------|--|
| #1 | #2 | | | | | |
| 79 | 106 | OUT Frame Coarse | | 0 - 255 | 0 | Counting down from 00:43:41.439 |
| 80 | 107 | OUT Frame Fine | | 0 - 255 | 0 | Counting down from selected coarse point |
| 81 | 108 | Image transition | | 0 - 1 | 0 | Bottom to top |
| | | | | 2 - 5 | | Bounce |
| | | | | 6 - 9 | | Corner zoom |
| | | | | 10 - 13 | | Fade |
| | | | | 14 - 17 | | Iris |
| | | | | 18 - 21 | | Left to right |
| | | | | 22 - 25 | | Multiple iris |
| | | | | 26 - 29 | | Right to left |
| | | | | 30 - 33 | | Rotate and zoom |
| | | | | 34 - 37 | | Shear flip |
| | | | | 38 - 41 | | Shutter |
| | | | | 42 - 45 | | Spherical Zoom |
| | | | | 46 - 49 | | Top to bottom |
| | | | | 50 - 53 | | Zoom |
| | | | | 54 - 57 | | SuperBall 1 |
| | | | 58 - 61 | | SuperBall 2 | |
| | | | 62 - 255 | | For future expansion | |
| 82 | 109 | Transition timing | | 0 - 255 | | Sets time for transition |
| 83 | 110 | Playback mode | | 0 - 3 | 0 | Forward once |
| | | | | 4 - 7 | | Forward loop |
| | | | | 8 - 11 | | Backward once |
| | | | | 12 - 15 | | Backward loop |
| | | | | 16 - 19 | | Ping Pong |
| | | | | 20 - 23 | | Random |
| | | | | 24 - 27 | | Single frame selected by IN Frame value |
| | | | | 28 - 31 | | Single frame selected by OUT Frame value |
| | | | | 32 - 35 | | Paused |
| | | | 36 - 255 | | For future expansion | |
| 84 | 111 | Playback speed | x | 0 - 255 | 128 | 128 = normal playback speed |
| 85 | 112 | Opacity | x | 0 - 255 | 0 | From clear to fully opaque |
| 86 | 113 | Contrast | x | 0 - 255 | 128 | 128 = normal contrast level |
| 87 | 114 | R | x | 0 - 255 | 128 | 128 = normal Red level |
| 88 | 115 | G | x | 0 - 255 | 128 | 128 = normal Green level |
| 89 | 116 | B | x | 0 - 255 | 128 | 128 = normal Blue level |
| 90 | 117 | Scale (digital zoom) | x | 0 - 255 | 128 | 128 = image fills 100% |
| 91 | 118 | Image X position | x | 0 - 255 | 128 | 128 = centered |
| 92 | 119 | Image Y position | x | 0 - 255 | 128 | 128 = centered |
| 93 | 120 | Aspect Ratio | x | 0 - 255 | 128 | 128 = 1:1 |

A. DMX chart

| Channel #1 | Channel #2 | Function | Type | Value | Default | Action | | | |
|------------|------------|--|----------------|--------------|-------------------|---|------------------------------|------------------------------|-------------------------------|
| 94 | 121 | Image rotation speed / position Coarse | x | 0 - 127 | 0 | rotated image between -180° and 180° (indexed position) | | | |
| | | | | 127 - 192 | | continuous rotation from fast to slow in counter clock wise direction | | | |
| | | | | 192 | | still image | | | |
| | | | | 192 - 255 | | continuous rotation from slow to fast in clock wise direction | | | |
| 95 | 122 | Image rotation speed / position Fine | x | 0 - 255 | | fine adjustment for the selected coarse value | | | |
| 96 | 123 | Image Blur | x | 0 - 255 | 0 | From sharp to fully blurred | | | |
| 97 | 124 | FX select | | 0 - 255 | 0 | Selects one of n FX / FX combinations | | | |
| | | | Num-ber | Value | FX Listing | | Par1 (ch98 & 125) | Par2 (ch99 & 126) | Par3 (ch100 & 127) |
| | | | 1 | 0 - 1 | No effect | | | | |
| | | | 2 | 2 - 5 | Radial Blur | | Level | Amount | Whirl |
| | | | 3 | 6 - 9 | Motion Blur | | Blur amount | | |
| | | | 4 | 10 - 13 | Color trafo | | Level | Saturation | Hue |
| | | | 5 | 14 - 17 | Multimage | | Level | Size | Aspect ratio |
| | | | 6 | 18 - 21 | Inv Lumakey | | Level | Threshold | Softness |
| | | | 7 | 22 - 25 | Shifter | | Level | Speed X | Speed Z |
| | | | 8 | 26 - 29 | ChromaKey | | Level | Hue | Tolerance |
| | | | 9 | 30 - 33 | Scroller | | Level | Speed X | Speed Y |
| | | | 10 | 34 - 37 | Color Studio | | Level | Color shift A | Color shift B |
| | | | 11 | 38 - 41 | Neon | | Level | Width | |
| | | | 12 | 42 - 45 | CTBO | | Level | Filter | Brightness |
| | | | 13 | 46 - 49 | DuoTone | | Level | Col1 | Col2 |
| | | | 14 | 50 - 53 | Palette | | Level | Red | Green |
| | | | 15 | 54 - 57 | Bloom | | Level | Bloom | |
| | | | 16 | 58 - 61 | Interlace | | Level | Stripes | Saturation |
| | | | 17 | 62 - 65 | Noise | | Level | Frequency | Grain |
| | | | 18 | 66 - 69 | Rings | | Level | Rings | |
| | | | 19 | 70 - 73 | CubeStyle | | Level | Size | SpeedB |
| | | | 20 | 74 - 77 | LED | | Level | Density | Softness |
| | | | 21 | 78 - 81 | Pixalate | | Level | Pixels | |
| | | | 22 | 82 - 85 | Halftone | | Level | Size | Angle |
| | | | 23 | 86 - 89 | Plasma | | Level | Random distortion | Animation speed |
| | | | 24 | 90 - 93 | Flower | | Level | Flora | |
| | | | 25 | 94 - 97 | Flip | | Level | Flip X | Flip Y |
| | | | 26 | 98 - 101 | Rotozoom | | Level | Rotation | Zoom out |
| | | | 27 | 102 - 105 | Glass | | Level | Glass | |
| | | | 28 | 106 - 109 | Aqua | | Level | Wave | Speed |
| | | | 29 | 110 - 113 | Tunnel | | Level | Zoom | Speed camera |
| | | | 30 | 114 - 117 | Planes | | Level | Wip | Distplanes |
| | | | 31 | 118 - 121 | Fluid Distortion | | Level | Speed A | Speed B |
| | | | 32 | 122 - 125 | Alphabet | | Level | Zoom | Digits |
| | | | 33 | 126 - 129 | Rimple | | Level | Numwaves | Speed |
| | | 34 | 130 - 133 | Wave | | Level | Wave | | |

| Channel | | Function | Type | Value | Default | Action | | | | | |
|---------|-----|------------------------------|------|-----------|-----------|--|----------------------|-------|------------------------|-------|--|
| #1 | #2 | | | | | | | | | | |
| | | | | 35 | 134 - 137 | Jitter | | Level | Speed | Zoom | |
| | | | | 36 | 138 - 141 | Stripes | | Level | Frequency | Scale | |
| | | | | 37 | 142 - 145 | Infinite Zoom | | Level | Zoom speed & direction | | |
| | | | | 38 | 146 - 149 | Infinity | | Level | Speed | | |
| | | | | 39 | 150 - 153 | Blinder | | Level | | | |
| | | | | 40 | 154 - 255 | Future expansion | | | | | |
| 98 | 125 | FX parameter 1 | x | 0 - 255 | 0 | Varies w. selected FX but nom. intensity | | | | | |
| 99 | 126 | FX parameter 2 | x | 0 - 255 | 0 | Varies w. selected FX | | | | | |
| 100 | 127 | FX parameter 3 | x | 0 - 255 | 0 | Varies w. selected FX | | | | | |
| 101 | 128 | Layer 1 (2) combination mode | | 0 - 7 | 0 | Additive Dissolve | | | | | |
| | | | | | 7 - 23 | | Subtractive Dissolve | | | | |
| | | | | | 24 - 39 | | Darken | | | | |
| | | | | | 40 - 55 | | Lighten | | | | |
| | | | | | 56 - 71 | | Softlight | | | | |
| | | | | | 72 - 87 | | Softlight inverse | | | | |
| | | | | | 88 - 103 | | Hardlight | | | | |
| | | | | | 104 - 119 | | Overlay | | | | |
| | | | | | 120 - 135 | | Difference | | | | |
| | | | | | 136 - 151 | | Multiply | | | | |
| | | | | | 152 - 167 | | Screen | | | | |
| | | | | | 168 - 183 | | Opaque | | | | |
| | | | | | 184 - 199 | | Sprite | | | | |
| | | | | 208 - 215 | | Luminance key | | | | | |
| | | | | 216 - 231 | | Matte | | | | | |
| | | | | 232 - 255 | | For future expansion | | | | | |