

# DMX Operation

## VL4000 Spot Channel Mapping

These tables assume a DMX start address of 1. When a different starting address is used, this address becomes channel 1 function and other functions follow in sequence. This section contains the DMX channel maps for the VL4000 Spot Luminaire. Users can select one of two maps as detailed in these sections:

- “Enhanced 16-Bit Channel Mapping (Default)” (starting below)
- “16-Bit Channel Mapping” on page 38.

### Enhanced 16-Bit Channel Mapping (Default)

Table 3 provides DMX channel mapping of the DMX512 control values when the VL4000 Spot Luminaire is in Enhanced 16-Bit DMX mode (as set by the luminaire’s menu system).

**Table 3: VL4000 Spot Enhanced 16-Bit DMX Channel Mapping**

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description / Operation
1	Intensity	0 - 255	0 - 100%	0	8-bit control of Fixture Intensity from 0 - 100%
2	Pan High Byte	0 - 65535	0 - 100%	32767	16-bit linear control of pan from 0° to 520°.
3	Pan Low Byte				
4	Tilt High Byte	0 - 65535	0 - 100%	32767	16-bit linear control of tilt from 0° to 270°.
5	Tilt Low Byte				
6	Edge High Byte	0 - 65535	0 - 100%	0	16-bit linear control of edge functions.
7	Edge Low Byte				
8	Zoom High Byte	0 - 65535	0 - 100%	0	16-bit linear control of fixture zoom range between 0 (9 degrees) to 65535 (47 Degrees).
9	Zoom Low Byte				
10	Programming Control	0 - 255	0 - 100%	0	Used as a control channel for different programmable settings. Control Set discreet value of desired effect, wait >3 seconds, then set value to 0 (Idle). 0 - 2 = Idle 3 - 5 = Edge Track OFF (Fixture Default) 6 - 10 = Edge Track ON 11 - 15 = Dimmer Snap OFF 16 - 20 = Dimmer Snap ON (Fixture Default)
11	Cyan	0 - 255	0 - 100%	0	Controls Cyan color mechanism.
12	Yellow	0 - 255	0 - 100%	0	Controls Yellow color mechanism.
13	Magenta	0 - 255	0 - 100%	0	Controls Magenta color mechanism.
14	CTO	0 - 255	0 - 100%	0	Controls CTO mechanism.
15	Fixed Color Wheel 1	0 - 255	0 - 100%	0	8-bit control of Color Wheel 1. <b>See Channel 16 for options.</b> 0 - 23 = OPEN 24 - 69 = RED (Center at DMX 46) 70 - 116 = DARK FUCHSIA (Center at DMX 93) 117 - 162 = ORANGE (Center at DMX 139) 163 - 209 = KELLY GREEN (Center at DMX 186) 210 - 255 = CONGO BLUE (Center at DMX 232)

**Table 3: VL4000 Spot Enhanced 16-Bit DMX Channel Mapping**

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description / Operation
16	Fixed Color Wheel 1 Control	0 - 255	0 - 100%	0	Used as a control channel for different movement options of Color Wheel 1.  0 - 5 = Linear Movement using shortest (quickest) path. 6 - 10 = Linear Movement using normal (longest) path. 11 - 15 = Wheel Spin Forward (Fast to Slow) 16 - 20 = Wheel Spin STOP 21 - 25 = Wheel Spin Reverse (Slow to Fast) 26 - 56 = Color Shake Quickest Path (Slow to Fast) 57 - 87 = Color Shake Normal Path (Slow to Fast) 88 - 255 = <i>Reserved Values</i>
17	Fixed Color Wheel 2	0 - 255	0 - 100%	0	8-bit control of Color Wheel 2.  <b>See Channel 18 for options.</b>  0 - 23 = OPEN 24 - 69 = BLUE (Center at DMX 46) 70 - 116 = GREEN (Center at DMX 93) 117 - 162 = MINUS GREEN (Center at DMX 139) 163 - 209 = LAVENDER (Center at DMX 186) 210 - 255 = AMBER (Center at DMX 232)
18	Fixed Color Wheel 2 Control	0 - 255	0 - 100%	0	Used as a control channel for different movement options of Color Wheel 2.  0 - 5 = Linear Movement using shortest (quickest) path. 6 - 10 = Linear Movement using normal (longest) path. 11 - 15 = Wheel Spin Forward (Fast to Slow) 16 - 20 = Wheel Spin STOP 21 - 25 = Wheel Spin Reverse (Slow to Fast) 26 - 56 = Color Shake Quickest Path (Slow to Fast) 57 - 87 = Color Shake Normal Path (Slow to Fast) 88 - 255 = <i>Reserved Values</i>
19	Rotating Gobo Wheel 1	0 - 255	0 - 100%	0	8-bit control of Rotating Gobo Wheel 1.  <b>See Channel 22 for control options.</b>  0 - 5 = Open - No Gobo 6 - 10 = Gobo 1 (Alpha Waves) Index 11 - 15 = Gobo 2 (Leafy Breakup) Index 16 - 20 = Gobo 3 (Neurons V2) Index 21 - 25 = Gobo 4 (Night Sky) Index 26 - 30 = Gobo 5 (Bricked Out) Index 31 - 35 = Gobo 6 (On the Rocks) Index 36 - 40 = Gobo 7 (Droplets) Index 41 - 45 = Open - No Gobo 46 - 50 = Gobo 1 (Alpha Waves) Rotate 51 - 55 = Gobo 2 (Leafy Breakup) Rotate 56 - 60 = Gobo 3 (Neurons V2) Rotate 61 - 65 = Gobo 4 (Night Sky) Rotate 66 - 70 = Gobo 5 (Bricked Out) Rotate 71 - 75 = Gobo 6 (On the Rocks) Rotate 76 - 80 = Gobo 7 (Droplets) Rotate 81 - 85 = Open - No Gobo 86 - 90 = Gobo 1 (Alpha Waves) Rotate with Mega Stepping 91 - 95 = Gobo 2 (Leafy Breakup) Rotate with Mega Stepping 96 - 100 = Gobo 3 (Neurons V2) Rotate with Mega Stepping 101 - 105 = Gobo 4 (Night Sky) Rotate with Mega Stepping 106 - 110 = Gobo 5 (Bricked Out) Rotate with Mega Stepping 111 - 115 = Gobo 6 (On the Rocks) Rotate with Mega Stepping 116 - 120 = Gobo 7 (Droplets) Rotate with Mega Stepping 121 - 255 = <i>Reserved Values</i>
20	Rotating Gobo Wheel 1 Index / Rotate - High Byte	0 - 65535	0 - 100%	32767	16 bit control of the Rotating Gobo Wheel 1 index and rotation.
21	Rotating Gobo Wheel 1 Index / Rotate - Low Byte				Rotate Fast to Slow <<< = DMX 0 - 32756 Rotate STOP = DMX 32757 - 32780 Rotate Slow to Fast >>> = DMX 32781 - 65535

Table 3: VL4000 Spot Enhanced 16-Bit DMX Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description / Operation
22	Rotating Gobo Wheel 1 Control	0 - 255	0 - 100%	0	Used as a control channel for different movement options for Rotating Gobo Wheel 1 (Channel 19).  0 - 5 = Gobo Selection using shortest (quickest) path. 6 - 10 = Gobo Selection using normal (longest) path. 11 - 20 = <i>Reserved Values</i> 21 - 50 = Wheel Spin Forward (Fast to Slow) 51 - 60 = Wheel Spin STOP 61 - 90 = Wheel Spin Reverse (Slow to Fast) 91 - 120 = Gobo Shake Quickest Path (Slow to Fast) 121 - 150 = Gobo Shake Normal Path (Slow to Fast) 151 - 180 = Gobo Twist Quickest Path (Slow to Fast) 181 - 210 = Gobo Twist Normal Path (Slow to Fast) 211 - 255 = <i>Reserved Values</i>
23	Rotating Gobo Wheel 2	0 - 255	0 - 100%	0	8-bit control of Rotating Gobo Wheel 2.  <b>See Channel 26 for control options.</b>  0 - 5 = Open - No Gobo 6 - 10 = Gobo 1 (Circle of Eights) Index 11 - 15 = Gobo 2 (Punch Card) Index 16 - 20 = Gobo 3 (Vertical Bars) Index 21 - 25 = Gobo 4 (Lattice) Index 26 - 30 = Gobo 5 (Wavy Triangle) Index 31 - 35 = Gobo 6 (Dot Buffet) Index 36 - 40 = Gobo 7 (Quadcone Red) Index 41 - 45 = Open - No Gobo 46 - 50 = Gobo 1 (Circle of Eights) Rotate 51 - 55 = Gobo 2 (Punch Card) Rotate 56 - 60 = Gobo 3 (Vertical Bars) Rotate 61 - 65 = Gobo 4 (Lattice) Rotate 66 - 70 = Gobo 5 (Wavy Triangle) Rotate 71 - 75 = Gobo 6 (Dot Buffet) Rotate 76 - 80 = Gobo 7 (Quadcone Red) Rotate 81 - 85 = Open - No Gobo 86 - 90 = Gobo 1 (Circle of Eights) Rotate with Mega Stepping 91 - 95 = Gobo 2 (Punch Card) Rotate with Mega Stepping 96 - 10 = Gobo 3 (Vertical Bars) Rotate with Mega Stepping 101 - 105 = Gobo 4 (Lattice) Rotate with Mega Stepping 106 - 110 = Gobo 5 (Wavy Triangle) Rotate with Mega Stepping 111 - 115 = Gobo 6 (Dot Buffet) Rotate with Mega Stepping 116 - 120 = Gobo 7 (Quadcone Red) Rotate with Mega Stepping 121 - 255 = <i>Reserved Values</i>
24	Rotating Gobo Wheel 2 Index / Rotate - High Byte	0 - 65535	0 - 100%	32767	16 bit control of the Rotating Gobo Wheel 2 index and rotation.
25	Rotating Gobo Wheel 2 Index / Rotate - Low Byte				Rotate Fast to Slow <<< = DMX 0 - 32756 Rotate STOP = DMX 32757 - 32780 Rotate Slow to Fast >>> = DMX 32781 - 65535
26	Rotating Gobo Wheel 2 Control	0 - 255	0 - 100%	0	Used as a control channel for different movement options for Gobo Wheel 1 (Channel 23).  0 - 5 = Gobo Selection using shortest (quickest) path. 6 - 10 = Gobo Selection using normal (longest) path. 11 - 20 = <i>Reserved Values</i> 21 - 50 = Wheel Spin Forward (Fast to Slow) 51 - 60 = Wheel Spin STOP 61 - 90 = Wheel Spin Reverse (Slow to Fast) 91 - 120 = Gobo Shake Quickest Path (Slow to Fast) 121 - 150 = Gobo Shake Normal Path (Slow to Fast) 151 - 180 = Gobo Twist Quickest Path (Slow to Fast) 181 - 210 = Gobo Twist Normal Path (Slow to Fast) 211 - 255 = <i>Reserved Values</i>
27	Animation Wheel 1 ( <i>Dichro*</i> Fusion)	0 - 255	0 - 100%	0	Controls Animation Wheel 1 linearly within the beam.

**Table 3: VL4000 Spot Enhanced 16-Bit DMX Channel Mapping**

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description / Operation
28	Animation Wheel 1 (Dichro*Fusion) Index / Rotate - High Byte	0 - 65535	0 - 100%	32767	16 bit control of the Animation Wheel 1 index and rotation.
29	Animation Wheel 1 (Dichro*Fusion) Index / Rotate - Low Byte				Rotate Fast to Slow <<< = DMX 0 - 32756 Rotate STOP = DMX 32757 - 32780 Rotate Slow to Fast >>> = DMX 32781 - 65535
30	Animation Wheel 1 (Dichro*Fusion) Control	0 - 255	0 - 100%	0	Used as a control channel for Animation Wheel 1.  0 - 5 = Index using shortest (quickest) path. 6 - 10 = Index using normal (longest) path. 11 - 15 = Rotate Normal 16 - 20 = Rotate with Mega Stepping 21 - 25 = Reserved Values 26 - 56 = Image Shake using shortest (quickest) path slow to fast. 57 - 87 = Image Shake using normal (longest) path slow to fast. 88 - 255 = Reserved Values
31	Animation Wheel 2 (Wicked Waves)	0 - 255	0 - 100%	0	Controls Animation Wheel 2 linearly within the beam.
32	Animation Wheel 2 (Wicked Waves) Index / Rotate - High Byte	0 - 65535	0 - 100%	32767	16 bit control of the Animation Wheel 2 index and rotation.
33	Animation Wheel 2 (Wicked Waves) Index / Rotate - Low Byte				Rotate Fast to Slow <<< = DMX 0 - 32756 Rotate STOP = DMX 32757 - 32780 Rotate Slow to Fast >>> = DMX 32781 - 65535
34	Animation Wheel 2 (Wicked Waves) Control	0 - 255	0 - 100%	0	Used as a control channel for Animation Wheel 2.  0 - 5 = Index using shortest (quickest) path. 6 - 10 = Index using normal (longest) path. 11 - 15 = Rotate Normal 16 - 20 = Rotate with Mega Stepping 21 - 25 = Reserved Values 26 - 56 = Image Shake using shortest (quickest) path slow to fast. 57 - 87 = Image Shake using normal (longest) path slow to fast. 88 - 255 = Reserved Values
35	Beam Iris	0 - 255	0 - 100%	0	Controls beam size iris from 0 (open) to 255 (full).
36	Shutter Frame 1A	0 - 255	0 - 100%	0	Controls Framing Shutter 1A from 0 (open) to 255 (full).
37	Shutter Frame 1B	0 - 255	0 - 100%	0	Controls Framing Shutter 1B from 0 (open) to 255 (full).
38	Shutter Frame 2A	0 - 255	0 - 100%	0	Controls Framing Shutter 2A from 0 (open) to 255 (full).
39	Shutter Frame 2B	0 - 255	0 - 100%	0	Controls Framing Shutter 2B from 0 (open) to 255 (full).
40	Shutter Frame 3A	0 - 255	0 - 100%	0	Controls Framing Shutter 3A from 0 (open) to 255 (full).
41	Shutter Frame 3B	0 - 255	0 - 100%	0	Controls Framing Shutter 3B from 0 (open) to 255 (full).
42	Shutter Frame 4A	0 - 255	0 - 100%	0	Controls Framing Shutter 4A from 0 (open) to 255 (full).
43	Shutter Frame 4B	0 - 255	0 - 100%	0	Controls Framing Shutter 4B from 0 (open) to 255 (full).
44	Shutter Frame Rotate	0 - 255	0 - 100%	128	Controls Framing Shutter mechanism from +/- 50°
45	Prism	0 - 255	0 - 100%	0	Controls prism mechanism.  0 - 5 = Open 6 - 10 = Index 11 - 15 = Rotate Normal 16 - 20 = Rotate with Mega Stepping 21 - 255 = Reserved Values
46	Prism Index / Rotate - High Byte	0 - 65535	0 - 100%	32767	16 bit control of prism index or rotation and index.
47	Prism Index / Rotate - Low Byte				Rotate Fast to Slow <<< = DMX 0 - 32756 Rotate STOP = DMX 32757 - 32780 Rotate Slow to Fast >>> = DMX 32781 - 65535

**Table 3: VL4000 Spot Enhanced 16-Bit DMX Channel Mapping**

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description / Operation
48	Prism Diverge	0 - 255	0 - 100%	0	Controls spread of prism image from small (DMX 0) to wide (DMX 255). Note : there are some diverge positions that will not be available due to various lensing positions.
49	Frost	0 - 255	0 - 100%	0	Controls frost mechanism. Linear control from No Frost (DMX 0) to Full Frost (DMX 255).
50	Strobe Speed	0 - 255	0 - 100%	0	Controls strobe rate from slowest (DMX 0) to fastest (DMX 255)
51	Strobe Control	0 - 255	0 - 100%	0	Control Channel for strobing functions. 0 - 5 = Open 6 - 10 = Closed 11 - 15 = Normal Strobe 16 - 20 = Random Strobe 21 - 25 = Random Sync 26 - 255 = Reserved Values
52	Focus Timing	0 - 255	0 - 100%	255	Allows for luminaire timing of pan and tilt mechanisms. Profile should default to DMX 255 for smoothest console timing.
53	Optics Timing	0 - 255	0 - 100%	255	Adjustment of fixture timing to control lensing mechanisms. Profile should default to DMX 255 for smoothest console timing.
54	Color Timing	0 - 255	0 - 100%	255	Allows for luminaire timing to control color mechanisms. Profile should default to DMX 255 for smoothest console timing.
55	Beam Timing	0 - 255	0 - 100%	255	Allows for luminaire timing to control beam shaping mechanisms. Profile should default to DMX 255 for smoothest console timing.
56	Gobo Timing	0 - 255	0 - 100%	255	Allows for luminaire timing to control gobo mechanisms. Profile should default to DMX 255 for smoothest console timing.
57	Control	0 - 255	0 - 100%	0	To execute a command, the control channel must be set to idle (DMX 0) then changed to a particular value and held for 3 seconds then restored to DMX 0. Upon completion of this routine, the desired command will be executed by the luminaire.  Used to strike/douse the lamp, set lamp levels, and other various functions, as well as resetting the luminaire via the console. DMX values are:  0 - 5 = Idle (Default) 6 - 10 = Full Luminaire ReCal (1)  (1) This command is also used to Wake fixture up from shutdown  11 - 15 = Lamp ON 16 - 20 = Lamp OFF 21 - 25 = Fixture Shutdown 26 - 30 = Display - Menu ON 31 - 35 = Display - Menu OFF 36 - 40 = ReCal Position 41 - 45 = ReCal Color 46 - 50 = ReCal Gobo 51 - 55 = ReCal Beam 56 - 60 = ReCal Optics 61 - 65 = ReCal Dimmer/Strobe 66 - 70 = Reset Fixture to Defaults 71 - 75 = Full Luminaire Reboot (2)  (2) This command will douse lamp and reset all processors in fixture, then ReCal all parameters.  76 - 80 = Fixture Status On/Off (3)  (3) This command will enable the display to show fixture status for 5 min. After this time, displays will return to default configuration. Repeating this command in less than 5 minutes will behave as a toggle.  81 - 85 = Standard Mode - Fixture operates at maximum output (Default) 86 - 90 = Studio Mode - Reduced output with lower fan settings  91 - 255 = Reserved Values

Notes:

Default Values: \*Denotes recommended console default settings.

## 16-Bit Channel Mapping

Table 4 provides DMX channel mapping of the DMX512 control values when the VL4000 Spot Luminaire is in 16-Bit DMX mode (as set by the luminaire's menu system).

**Table 4: VL4000 Spot 16-Bit Channel Mapping**

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description / Operation
1	Intensity	0 (closed) - 255 (open)	0 - 100%	0	Linear Intensity control from 0 (closed) to 255 (open).
2	Pan High Byte	0 - 65535	0 - 100%	32767	16-bit linear control of pan from 0° to 520°.
3	Pan Low Byte				
4	Tilt High Byte	0 - 65535	0 - 100%	32767	16-bit linear control of tilt from 0° to 270°.
5	Tilt Low Byte				
6	Edge High Byte	0 - 65535	0 - 100%	0	16-bit linear control of edge functions.
7	Edge Low Byte				
8	Zoom High Byte	0 - 65535	0 - 100%	0	16-bit linear control of fixture zoom range between 0 (9 degrees) to 65535 (47 Degrees).
9	Zoom Low Byte				
10	Programming Control	0 - 255	0 - 100%	0	Used as a control channel for different programmable settings. Control Set discreet value of desired effect, wait >3 seconds, then set value to 0 (Idle). 0 - 2 = Idle 3 - 5 = Edge Track OFF (Fixture Default) 6 - 10 = Edge Track ON 11 - 15 = Dimmer Snap OFF 16 - 20 = Dimmer Snap ON (Fixture Default)
11	Cyan	0 - 255	0 - 100%	0	Controls Cyan color mechanism.
12	Yellow	0 - 255	0 - 100%	0	Controls Yellow color mechanism.
13	Magenta	0 - 255	0 - 100%	0	Controls Magenta color mechanism.
14	CTO	0 - 255	0 - 100%	0	Controls CTO mechanism.
15	Fixed Color Wheel 1	0 - 255	0 - 100%	0	8-bit control of Color Wheel 1. <b>See Channel 16 for options.</b> 0 - 23 = OPEN 24 - 69 = RED (Center at DMX 46) 70 - 116 = DARK FUCHSIA (Center at DMX 93) 117 - 162 = ORANGE (Center at DMX 139) 163 - 209 = KELLY GREEN (Center at DMX 186) 210 - 255 = CONGO BLUE (Center at DMX 232)
16	Fixed Color Wheel 1 Control	0 - 255	0 - 100%	0	Used as a control channel for different movement options of Color Wheel 1. 0 - 5 = Linear Movement using shortest (quickest) path. 6 - 10 = Linear Movement using normal (longest) path. 11 - 15 = Wheel Spin Forward (Fast to Slow) 16 - 20 = Wheel Spin STOP 21 - 25 = Wheel Spin Reverse (Slow to Fast) 26 - 56 = Color Shake Quickest Path (Slow to Fast) 57 - 87 = Color Shake Normal Path (Slow to Fast) 88 - 255 = Reserved Values
17	Fixed Color Wheel 2	0 - 255	0 - 100%	0	8-bit control of Color Wheel 2. <b>See Channel 18 for options.</b> 0 - 23 = OPEN 24 - 69 = BLUE (Center at DMX 46) 70 - 116 = GREEN (Center at DMX 93) 117 - 162 = MINUS GREEN (Center at DMX 139) 163 - 209 = LAVENDER (Center at DMX 186) 210 - 255 = AMBER (Center at DMX 232)

Table 4: VL4000 Spot 16-Bit Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description / Operation
18	Fixed Color Wheel 2 Control	0 - 255	0 - 100%	0	Used as a control channel for different movement options of Color Wheel 2.  0 - 5 = Linear Movement using shortest (quickest) path. 6 - 10 = Linear Movement using normal (longest) path. 11 - 15 = Wheel Spin Forward (Fast to Slow) 16 - 20 = Wheel Spin STOP 21 - 25 = Wheel Spin Reverse (Slow to Fast) 26 - 56 = Color Shake Quickest Path (Slow to Fast) 57 - 87 = Color Shake Normal Path (Slow to Fast) 88 - 255 = <i>Reserved Values</i>
19	Rotating Gobo Wheel 1	0 - 255	0 - 100%	0	8-bit control of Rotating Gobo Wheel 1.  <b>See Channel 22 for control options.</b>  0 - 5 = Open - No Gobo 6 - 10 = Gobo 1 (Alpha Waves) Index 11 - 15 = Gobo 2 (Leafy Breakup) Index 16 - 20 = Gobo 3 (Neurons V2) Index 21 - 25 = Gobo 4 (Night Sky) Index 26 - 30 = Gobo 5 (Bricked Out) Index 31 - 35 = Gobo 6 (On the Rocks) Index 36 - 40 = Gobo 7 (Droplets) Index 41 - 45 = Open - No Gobo 46 - 50 = Gobo 1 (Alpha Waves) Rotate 51 - 55 = Gobo 2 (Leafy Breakup) Rotate 56 - 60 = Gobo 3 (Neurons V2) Rotate 61 - 65 = Gobo 4 (Night Sky) Rotate 66 - 70 = Gobo 5 (Bricked Out) Rotate 71 - 75 = Gobo 6 (On the Rocks) Rotate 76 - 80 = Gobo 7 (Droplets) Rotate 81 - 85 = Open - No Gobo 86 - 90 = Gobo 1 (Alpha Waves) Rotate with Mega Stepping 91 - 95 = Gobo 2 (Leafy Breakup) Rotate with Mega Stepping 96 - 10 = Gobo 3 (Neurons V2) Rotate with Mega Stepping 101 - 105 = Gobo 4 (Night Sky) Rotate with Mega Stepping 106 - 110 = Gobo 5 (Bricked Out) Rotate with Mega Stepping 111 - 115 = Gobo 6 (On the Rocks) Rotate with Mega Stepping 116 - 120 = Gobo 7 (Droplets) Rotate with Mega Stepping 121 - 255 = <i>Reserved Values</i>
20	Rotating Gobo Wheel 1 Index / Rotate - High Byte	0 - 65535	0 - 100%	32767	16 bit control of the Rotating Gobo Wheel 1 index and rotation.  Rotate Fast to Slow <<< = DMX 0 - 32756 Rotate STOP = DMX 32757 - 32780 Rotate Slow to Fast >>> = DMX 32781 - 65535
21	Rotating Gobo Wheel 1 Index / Rotate - Low Byte				
22	Rotating Gobo Wheel 1 Control	0 - 255	0 - 100%	0	Used as a control channel for different movement options for Rotating Gobo Wheel 1 (Channel 19).  0 - 5 = Gobo Selection using shortest (quickest) path. 6 - 10 = Gobo Selection using normal (longest) path. 11 - 20 = <i>Reserved Values</i> 21 - 50 = Wheel Spin Forward (Fast to Slow) 51 - 60 = Wheel Spin STOP 61 - 90 = Wheel Spin Reverse (Slow to Fast) 91 - 120 = Gobo Shake Quickest Path (Slow to Fast) 121 - 150 = Gobo Shake Normal Path (Slow to Fast) 151 - 180 = Gobo Twist Quickest Path (Slow to Fast) 181 - 210 = Gobo Twist Normal Path (Slow to Fast) 211 - 255 = <i>Reserved Values</i>

Table 4: VL4000 Spot 16-Bit Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description / Operation
23	Rotating Gobo Wheel 2	0 - 255	0 - 100%	0	<p>8-bit control of Rotating Gobo Wheel 2.</p> <p><b>See Channel 26 for control options.</b></p> <p>0 - 5 = Open - No Gobo                      6 - 10 = Gobo 1 (Circle of Eights) Index                      11 - 15 = Gobo 2 (Punch Card) Index                      16 - 20 = Gobo 3 (Vertical Bars) Index                      21 - 25 = Gobo 4 (Lattice) Index                      26 - 30 = Gobo 5 (Wavy Triangle) Index                      31 - 35 = Gobo 6 (Dot Buffet) Index                      36 - 40 = Gobo 7 (Quadcone Red) Index                      41 - 45 = Open - No Gobo                      46 - 50 = Gobo 1 (Circle of Eights) Rotate                      51 - 55 = Gobo 2 (Punch Card) Rotate                      56 - 60 = Gobo 3 (Vertical Bars) Rotate                      61 - 65 = Gobo 4 (Lattice) Rotate                      66 - 70 = Gobo 5 (Wavy Triangle) Rotate                      71 - 75 = Gobo 6 (Dot Buffet) Rotate                      76 - 80 = Gobo 7 (Quadcone Red) Rotate                      81 - 85 = Open - No Gobo                      86 - 90 = Gobo 1 (Circle of Eights) Rotate with Mega Stepping                      91 - 95 = Gobo 2 (Punch Card) Rotate with Mega Stepping                      96 - 100 = Gobo 3 (Vertical Bars) Rotate with Mega Stepping                      101 - 105 = Gobo 4 (Lattice) Rotate with Mega Stepping                      106 - 110 = Gobo 5 (Wavy Triangle) Rotate with Mega Stepping                      111 - 115 = Gobo 6 (Dot Buffet) Rotate with Mega Stepping                      116 - 120 = Gobo 7 (Quadcone Red) Rotate with Mega Stepping                      121 - 255 = <i>Reserved Values</i></p>
24	Rotating Gobo Wheel 2 Index / Rotate - High Byte	0 - 65535	0 - 100%	32767	16 bit control of the Rotating Gobo Wheel 2 index and rotation.
25	Rotating Gobo Wheel 2 Index / Rotate - Low Byte				<p>Rotate Fast to Slow &lt;&lt;&lt; = DMX 0 - 32756                      Rotate STOP = DMX 32757 - 32780                      Rotate Slow to Fast &gt;&gt;&gt; = DMX 32781 - 65535</p>
26	Rotating Gobo Wheel 2 Control	0 - 255	0 - 100%	0	<p>Used as a control channel for different movement options for Rotating Gobo Wheel 2 (Channel 24).</p> <p>0 - 5 = Gobo Selection using shortest (quickest) path.                      6 - 10 = Gobo Selection using normal (longest) path.                      11 - 20 = <i>Reserved Values</i>                      21 - 50 = Wheel Spin Forward (Fast to Slow)                      51 - 60 = Wheel Spin STOP                      61 - 90 = Wheel Spin Reverse (Slow to Fast)                      91 - 120 = Gobo Shake Quickest Path (Slow to Fast)                      121 - 150 = Gobo Shake Normal Path (Slow to Fast)                      151 - 180 = Gobo Twist Quickest Path (Slow to Fast)                      181 - 210 = Gobo Twist Normal Path (Slow to Fast)                      211 - 255 = <i>Reserved Values</i></p>
27	Animation Wheel 1 ( <i>Dichro*Fusion</i> )	0 - 255	0 - 100%	0	Controls Animation Wheel 1 linearly within the beam.
28	Animation Wheel 1 ( <i>Dichro*Fusion</i> ) Index / Rotate - High Byte	0 - 65535	0 - 100%	32767	16 bit control of the Animation Wheel 1 index and rotation.
29	Animation Wheel 1 ( <i>Dichro*Fusion</i> ) Index / Rotate - Low Byte				<p>Rotate Fast to Slow &lt;&lt;&lt; = DMX 0 - 32756                      Rotate STOP = DMX 32757 - 32780                      Rotate Slow to Fast &gt;&gt;&gt; = DMX 32781 - 65535</p>



Table 4: VL4000 Spot 16-Bit Channel Mapping

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description / Operation
30	Animation Wheel 1 (Dichro*Fusion) Control	0 - 255	0 - 100%	0	Used as a control channel for Animation Wheel 1.  0 - 5 = Index using shortest (quickest) path. 6 - 10 = Index using normal (longest) path. 11 - 15 = Rotate Normal 16 - 20 = Rotate with Mega Stepping 21 - 25 = Reserved Values 26 - 56 = Image Shake using shortest (quickest) path slow to fast. 57 - 87 = Image Shake using normal (longest) path slow to fast. 88 - 255 = Reserved Values
31	Animation Wheel 2 (Wicked Waves)	0 - 255	0 - 100%	0	Controls Animation Wheel 2 linearly within the beam.
32	Animation Wheel 2 (Wicked Waves) Index / Rotate - High Byte	0 - 65535	0 - 100%	32767	16 bit control of the Animation Wheel 2 index and rotation.
33	Animation Wheel 2 (Wicked Waves) Index / Rotate - Low Byte				Rotate Fast to Slow <<< = DMX 0 - 32756 Rotate STOP = DMX 32757 - 32780 Rotate Slow to Fast >>> = DMX 32781 - 65535
34	Animation Wheel 2 (Wicked Waves) Control	0 - 255	0 - 100%	0	Used as a control channel for Animation Wheel 2.  0 - 5 = Index using shortest (quickest) path. 6 - 10 = Index using normal (longest) path. 11 - 15 = Rotate Normal 16 - 20 = Rotate with Mega Stepping 21 - 25 = Reserved Values 26 - 56 = Image Shake using shortest (quickest) path slow to fast. 57 - 87 = Image Shake using normal (longest) path slow to fast. 88 - 255 = Reserved Values
35	Beam Iris	0 - 255	0 - 100%	0	Controls beam size iris from 0 (open) to 255 (full).
36	Shutter Frame 1A	0 - 255	0 - 100%	0	Controls Framing Shutter 1A from 0 (open) to 255 (full).
37	Shutter Frame 1B	0 - 255	0 - 100%	0	Controls Framing Shutter 1B from 0 (open) to 255 (full).
38	Shutter Frame 2A	0 - 255	0 - 100%	0	Controls Framing Shutter 2A from 0 (open) to 255 (full).
39	Shutter Frame 2B	0 - 255	0 - 100%	0	Controls Framing Shutter 2B from 0 (open) to 255 (full).
40	Shutter Frame 3A	0 - 255	0 - 100%	0	Controls Framing Shutter 3A from 0 (open) to 255 (full).
41	Shutter Frame 3B	0 - 255	0 - 100%	0	Controls Framing Shutter 3B from 0 (open) to 255 (full).
42	Shutter Frame 4A	0 - 255	0 - 100%	0	Controls Framing Shutter 4A from 0 (open) to 255 (full).
43	Shutter Frame 4B	0 - 255	0 - 100%	0	Controls Framing Shutter 4B from 0 (open) to 255 (full).
44	Shutter Frame Rotate	0 - 255	0 - 100%	128	Controls Framing Shutter mechanism from +/- 50°
45	Prism	0 - 255	0 - 100%	0	Controls prism mechanism.  0 - 5 = Open 6 - 10 = Index 11 - 15 = Rotate Normal 16 - 20 = Rotate with Mega Stepping 21 - 255 = Reserved Values
46	Prism Index/Rotate - High Byte	0 - 65535	0 - 100%	32767	16 bit control of prism index or rotation.
47	Prism Index/Rotate - Low Byte				Rotate Fast to Slow <<< = DMX 0 - 32756 Rotate STOP = DMX 32757 - 32780 Rotate Slow to Fast >>> = DMX 32781 - 65535
48	Prism Diverge	0 - 255	0 - 100%	0	Controls spread of prism image from small (DMX 0) to wide (DMX 255). Note : there are some diverge positions that will not be available due to various lensing positions.
49	Frost	0 - 255	0 - 100%	0	Controls frost mechanism. Linear control from No Frost (DMX 0) to Full Frost (DMX 255).
50	Strobe Speed	0 - 255	0 - 100%	0	Controls strobe rate from slowest (DMX 0) to fastest (DMX 255)

**Table 4: VL4000 Spot 16-Bit Channel Mapping**

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value*	Description / Operation
51	Strobe Control	0 - 255	0 - 100%	0	Control Channel for strobing functions. 0 - 5 = Open 6 - 10 = Closed 11 - 15 = Normal Strobe 16 - 20 = Random Strobe 21 - 25 = Random Sync 26 - 255 = <i>Reserved Values</i>
52	Control	0 - 255	0 - 100%	0	To execute a command, the control channel must be set to idle (DMX 0) then changed to a particular value and held for 3 seconds then restored to DMX 0. Upon completion of this routine, the desired command will be executed by the luminaire.  Used to strike/douse the lamp, set lamp levels, and other various functions, as well as resetting the luminaire via the console. DMX values are:  0 - 5 = Idle (Default) 6 - 10 = Full Luminaire ReCal (1)  (1) This command is also used to Wake fixture up from shutdown  11 - 15 = Lamp ON 16 - 20 = Lamp OFF 21 - 25 = Fixture Shutdown 26 - 30 = Display - Menu ON 31 - 35 = Display - Menu OFF 36 - 40 = ReCal Position 41 - 45 = ReCal Color 46 - 50 = ReCal Gobo 51 - 55 = ReCal Beam 56 - 60 = ReCal Optics 61 - 65 = ReCal Dimmer/Strobe 66 - 70 = Reset Fixture to Defaults 71 - 75 = Full Luminaire Reboot (2)  (2) This command will douse lamp and reset all processors in fixture, then ReCal all parameters.  76 - 80 = Fixture Status On/Off (3)  (3) This command will enable the display to show fixture status for 5 min. After this time, displays will return to default configuration. Repeating this command in less than 5 minutes will behave as a toggle.  81 - 85 = Standard Mode - Fixture operates at maximum output (Default) 86 - 90 = Studio Mode - Reduced output with lower fan settings  91 - 255 = <i>Reserved Values</i>

Notes:

Default Values: \*Denotes recommended console default settings.