

## VARI\***LITE** TECHNICAL BULLETIN

SUBJECT: <b>VL3015LT Spot Luminaire Software Release</b>	SERIES: <b>3000</b>
DISTRIBUTION: <b>Service Centers, End Users</b>	STATUS: <b>Routine</b>

## Introduction

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### Embedded Software Release

Vari-Lite has a new software release for VL3015LT Spot Luminaires. Software version **04/19/13** (file name, **VL3015LT\_041913.bin**) is now available for download and installation from the Support section of the Vari-Lite web site ([www.vari-lite.com](http://www.vari-lite.com)).

VL3015LT Spot Luminaires manufactured on and after **04/24/13** will have this software installed.



**Note:** Please review this bulletin in its entirety before downloading and installing the software. It is not necessary to download and install this software update unless you wish to include the new features described herein.

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For instructions on downloading and installing VARI\***LITE** luminaire software, refer to luminaire's user manual.

For more information on the USB Luminaire Programming Kit (Vari-Lite part number 28.8500.0054), please contact your Authorized VARI\***LITE** Dealer or Vari-Lite customer service.

If you have any questions regarding this release or your VARI\***LITE** product, please contact Vari-Lite Customer Service at 1-877-VARILITE (or +1-214-647-7880) or via e-mail at [entertainment.service@philips.com](mailto:entertainment.service@philips.com).

## Release Notes

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### Updates to VL3015LT Spot Luminaire software (04/19/13):

This version of software provides improved operation as indicated in the following descriptions.

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**Note:** Some of these improvements only affect internal fixture operation and are transparent to users. Some new features, as indicated in the following, may require console adjustments.

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### Self Test Mode

The Self Test Mode has been modified to match previously released Series 3000 fixtures. This improvement does not require console adjustment.

### Operational Improvement - Dimmer Snap

By enabling DIMMER SNAP, using the control channel as shown in [“Appendix A - Revised DMX Operation” on page 4](#) of this bulletin, you allow the dimmer wheel to take the shortest path during a zero-time move.

- From 0% to 1 thru 50%, the wheel moves in one direction (shortest path to desired value).
- From 0% to 51 thru 100%, the wheel moves in the other direction (shortest path to desired value).

There is also a delay added into the dimmer wheel with DIMMER SNAP enabled. If you cycle back and forth between 0 and 100% in zero time, what you will notice is that ONLY the strobe blades will open and close. The dimmer wheel will always remain in the 100% position. They will only close if you remain at 0% for MORE than 2 seconds.

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**Note:** If you change the intensity value, say from 100% to 80% before the 2-second delay has occurred, the dimmer wheel will NOT change position. It will remain at 100%. You have to hold either value for more than 2 seconds for the dimmer wheel to move.

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### Dimmer Snap and Timed Fades

If you have DIMMER SNAP enabled and a value above zero is given (such as executing a timed fade), the dimmer will behave normally (as if DIMMER SNAP is disabled).

### Fixture Color Control Operation Improvement - Color Snap

COLOR SNAP features has been added in the control channel. COLOR SNAP controls how the CYM color filter and CTO wheels travel when a command is given.

Depending where the wheels are positioned, they will travel, with COLOR SNAP enabled (as shown in [“Appendix A - Revised DMX Operation” on page 4](#) of this bulletin), the shortest distance to the new color value.

- For COLOR SNAP operation, DMX timing has to be zero.
- Timing for COLOR SNAP can be either a zero or 255.
  - a. A zero value will give the fastest move.
  - b. When a 255 value is given, with COLOR SNAP enabled, COLOR SNAP will still operate; it will include smoother operation.
- A color change time of zero will move the color and CTO wheels via the quickest path to their new value.

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### Iris Manual Mode

Added to menu structure to all for manual operation (testing) of the iris mechanism. This improvement does not require console adjustment.

### Follow Spot Mode

Added to menu structure to all for manual operation - removes power from pan and tilt motors when fixture is set to this mode. This improvement does not require console adjustment.

### Pan Stop

Internal code changes for improved pan calibration. This improvement does not require console adjustment.

### Command Lock (Power Setting)

Allows users to "Lock" the fixture's power setting. When command lock is ON, power setting cannot be changed at console. This improvement does not require console adjustment.

### Frost / Prism Operation

In previous versions of software, users were not allowed to dial in frost or bring in the prism mechanism unless the lens assembly was at a certain distance away from these mechanisms.

In this version of software, when frost or the prism mechanism is brought in, the lens assembly is automatically moved out to allow frost or prism mechanism operation.

### Individual / Partial Recalibration

Individual Recalibration of certain items has been added to match previously released Series 3000 fixtures. Items that can be individually recalibrate are:

- Color System (ReCal Color)
- Gobos (ReCal Gobo)
- Edge/Zoom/Iris (ReCal Beam)
- Dimmer/Strobe (ReCal Dim/Strobe)

## Appendix A - Revised DMX Operation

### VL3015LT Spot Luminaire DMX 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.

**Table 1: VL3015LT Spot Luminaire DMX Channel Map**

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value	Description
1	Intensity	0 - 255	0 - 100%	0	Linear Intensity control from 0 (closed) to 255 (open).
2	Pan Hi Byte	0 - 65535	0 - 100%	32767	16 bit control of Pan 540° of movement.
3	Pan Low Byte				
4	Tilt Hi Byte	0 - 65535	0 - 100%	32767	16 bit control of Tilt 270° of movement.
5	Tilt Low Byte				
6	Edge Hi Byte	0 - 65535	0 - 100%	32767	16 bit control of Edge from 0 to 65535.
7	Edge Low Byte				
8	Zoom Hi Byte	0 - 65535	0 - 100%	32767	16 bit control of Zoom from 0 (6 deg) to 65535 (60 deg).
9	Zoom Low Byte				
10	CTO	0 - 255	0 - 100%	0	Controls CTO color wheel. 0 (open) to 255 (full saturation).
11	Cyan	0 - 255	0 - 100%	0	Controls Cyan color wheel. 0 (open) to 255 (full saturation).
12	Yellow	0 - 255	0 - 100%	0	Controls Yellow color wheel. 0 (open) to 255 (full saturation).
13	Magenta	0 - 255	0 - 100%	0	Controls Magenta color wheel. 0 (open) to 255 (full saturation).
14	Fixed Color Wheel 1	0 - 255	0 - 100%	0	Controls Fixed Color Wheel 1. Linear control from 0 to 216. From 217 to 255 will give different speeds of wheel spin. Center color DMX values are denoted by (bold) type face.  Position 1 = Open DMX = 0 - 18 ( <b>0</b> ) Position 2 = Red DMX = 19 - 53 ( <b>36</b> ) Position 3 = Yellow DMX = 54 - 89 ( <b>72</b> ) Position 4 = Magenta DMX = 90 - 125 ( <b>108</b> ) Position 5 = Kelly Green DMX = 126 - 161 ( <b>144</b> ) Position 6 = Congo Blue DMX = 162 - 198 ( <b>180</b> ) Wheel Spin Fast to Slow DMX = 217 - 234 Stop DMX = 235 - 237 Wheel Spin Slow to Fast DMX = 238 - 255

**Table 1: VL3015LT Spot Luminaire DMX Channel Map**

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value	Description
15	Fixed Color Wheel 2	0 - 255	0 - 100%	0	<p>Controls Fixed Color Wheel 2. Linear control from 0 to 216. From 217 to 255 will give different speeds of wheel spin. Center color DMX values are denoted by (bold) type face.</p> <p>Position 1 = Open DMX = 0 - 18 (0)                      Position 2 = Blue DMX = 19 - 53 (36)                      Position 3 = Straw DMX = 54 - 89 (72)                      Position 4 = Fuchsia DMX = 90 - 125 (108)                      Position 5 = Orange DMX = 126 - 161 (144)                      Position 6 = Green DMX = 162 - 198 (180)                      Wheel Spin Fast to Slow DMX = 217 - 234                      Stop DMX = 235 - 237                      Wheel Spin Slow to Fast DMX = 238 - 255</p>
16	Gobo Wheel 1	0 - 255	0 - 100%	0	<p>Controls Rotating Gobo Wheel 1 using the following DMX values. Half gobo positioning not possible.</p> <p>Position 1 = Open (Indx) DMX = 0 - 10                      Position 2 = Alpha Rays (Indx) DMX = 11 - 32                      Position 3 = Night Sky (Indx) DMX = 33 - 54                      Position 4 = Five Ray (Indx) DMX = 55 - 75                      Position 5 = Block Breakup (Indx) DMX = 76 - 97                      Position 1 = Open (Rtate) DMX = 98 - 119                      Position 2 = Alpha Rays (Rtate) DMX = 120 - 141                      Position 3 = Night Sky (Rtate) DMX = 142 - 163                      Position 4 = Five Ray (Rtate) DMX = 164 - 184                      Position 5 = Block Breakup (Rtate) DMX = 185 - 206                      Position 1 = Open DMX = 207 - 216</p> <p>Wheel Spin Fast to Slow DMX = 217 - 236                      Wheel Spin Slow to Fast DMX = 237 - 255</p>
17	G1 Index Rt - High Byte	0 - 65535	0 - 100%	32767	16 bit control of Gobo 1 Index and Rotation in either direction.
18	G1 Index Rt - Low Byte				
19	Gobo Wheel 2	0 - 255	0 - 100%	0	<p>Controls Rotating Gobo Wheel 2 using the following DMX values. Half gobo positioning not possible.</p> <p>Position 1 = Open (Indx) DMX = 0 - 10                      Position 2 = Plowed (Indx) DMX = 11 - 32                      Position 3 = Droplets (Indx) DMX = 33 - 54                      Position 4 = On The Rocks (Indx) DMX = 55 - 75                      Position 5 = Pangea (Indx) DMX = 76 - 97                      Position 1 = Open (Rtate) DMX = 98 - 119                      Position 2 = Plowed (Rtate) DMX = 120 - 141                      Position 3 = Droplets (Rtate) DMX = 142 - 163                      Position 4 = On The Rocks (Rtate) DMX = 164 - 184                      Position 5 = Pangea (Rtate) DMX = 185 - 206                      Position 1 = Open DMX = 207 - 216</p> <p>Wheel Spin Fast to Slow DMX = 217 - 236                      Wheel Spin Slow to Fast DMX = 237 - 255</p>
20	G2 Index Rt - High Byte	0 - 65535	0 - 100%	32767	16 bit control of Gobo 2 Index and Rotation in either direction.
21	G2 Index Rt - Low Byte				

**Table 1: VL3015LT Spot Luminaire DMX Channel Map**

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value	Description
22	Gobo Wheel 3	0 - 255	0 - 100%	0	Controls Rotating Gobo Wheel 3 using the following DMX values. Half gobo positioning not possible.  Position 1 = Open (Indx) DMX = 0 - 10 Position 2 = Ovals (Indx) DMX = 11 - 32 Position 3 = Pebbles (Indx) DMX = 33 - 54 Position 4 = Uneven Bars (Indx) DMX = 55 - 75 Position 5 = Multi-Color Circles (Indx) DMX = 76 - 97 Position 1 = Open (Rtate) DMX = 98 - 119 Position 2 = Ovals (Rtate) DMX = 120 - 141 Position 3 = Pebbles (Rtate) DMX = 142 - 163 Position 4 = Uneven Bars (Rtate) DMX = 164 - 184 Position 5 = Multi-Color Circles (Rtate) DMX = 185 - 206 Position 1 = Open DMX = 207 - 216  Wheel Spin Fast to Slow DMX = 217 - 236 Wheel Spin Slow to Fast DMX = 237 - 255
23	G3 Index Rt - High Byte	0 - 65535	0 - 100%	32767	16 bit control of Gobo 3 Index and Rotation in either direction.
24	G3 Index Rt - Low Byte				
25	Beam Iris	0 - 255	0 - 100%	0	Controls beam size iris from 0 (Open) to 255 (small).
26	Frost	0 - 255	0 - 100%	0	Linear frost control from no frost (0) to full frost (255).
27	Prism	0 - 255	0 - 100%	0	Inserts Prism into beam for prism effects. Open (Out of Beam) DMX = 0 - 2 Prism Index DMX = 3 - 127 Prism Rotate DMX = 128 - 255
28	Prism Rt - High Byte	0 - 65535	0 - 100%	32767	16 bit control of Prism Index and Rotation in either direction.
29	Prism Rt - Low Byte				
30	Strobe	0 - 255	0 - 100%	0	Controls strobe operations as follows:  Open DMX = 0 - 2 Closed DMX = 3 - 5 Slow Rand DMX = 6 - 7 Med Rand DMX = 8 - 10 Fast Rand DMX = 11 - 12 Strobe Range DMX = 13 - 127 (fastest)
31	Range	0 - 255	0 - 100%	0	Applies different tables to optics mechanism, depending on throw distances. Used for achieving maximum optical quality of zoom and edge.
32	Focus Time	0 - 255	0 - 100%	255	Allows for luminaire timing of pan and tilt. Profile should default to DMX 255 for smoothest console fade times.
33	Color Time	0 - 255	0 - 100%	255	Allows for luminaire timing of color wheels. Profile should default to DMX 255 for smoothest console fade times.
34	Beam Time	0 - 255	0 - 100%	255	Allows for luminaire timing of beam and variable frost. Profile should default to DMX 255 for smoothest console fade times.
35	Gobo Time	0 - 255	0 - 100%	255	Allows for luminaire timing of gobo wheel and prism functions. Profile should default to DMX 255 for smoothest console fade times.

**Table 1: VL3015LT Spot Luminaire DMX Channel Map**

DMX Channel	Parameters	Range (DMX)	Range (%)	Default Value	Description
36	Control	0 - 255	0 - 100%	0	<p>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:</p> <p>Default Console Value (Idle) = DMX 0            Display-<b>Menu Settings</b>/Off = DMX 3 - 4            Reset Fixture to <b>Defaults</b> = DMX 5 - 7            *Color Snap ON = DMX 20 - 25            *<b>Color Snap OFF (Norm)</b> = DMX 30 - 35            *Dimmer Snap ON = DMX 40 - 45            *<b>Dimmer Snap OFF (Norm)</b> = DMX 50 - 55            Full Luminaire ReCal = DMX 81 - 87            ReCal Color = DMX 100 - 104            ReCal Gobo = DMX 112 - 116            ReCal Beam = DMX 126 - 130            ReCal Dim/Strobe = DMX 138 - 142            Lamp OFF = DMX 165 - 171            Lamp Low = DMX 176 - 184            Lamp Med = DMX 189 - 194            Lamp High = DMX 199 - 204            Lamp Strike = DMX 249 - 255</p> <p>When resetting fixtures to Defaults, settings in <b>Bold</b> will be activated.</p> <p>* Note that these functions do not require the 3 sec rule to execute. All other values do require the 3 sec rule.</p>

Notes:

- Default Values: Denotes recommended console default settings.
- Use of Timing Channels: The default value setting in the profile should be 255 (proportional control) to allow smooth movement when using console timing. The Timing channel data should change as a snap. A zero value will give the fastest move but without any smoothing, this can look steppy in console-timed moves.
- To use a timing channel instead of console timing it is necessary to set the timing channel to the desired value and set cue and/or parameter time to zero. A combination of time controls can produce unexpected results. Refer to [“VL3015LT Spot Luminaire Timing Channel Information” on page 8](#) of this bulletin for more information.
- Timing Channel Control: The luminaire uses the timing channel value to calculate a smooth continuous movement for a given time and transition.

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## VL3015LT Spot Luminaire Timing Channel Information

Timing channel control improves the timed moves of certain groups of parameters. We provide up to four timing channels - Focus (pan and tilt), Color Time (color parameters), Beam Time (beam parameters), and Gobo Time (gobo wheel operation).

Types of timing control:

- **Timing Control Channel:** the luminaire uses its timing channel value to calculate a smooth continuous movement for a given time and transition.
- **Console Timing:** the console calculates the time duration between the DMX increments to be sent for a given time and transition.

Guidelines:

- Timing channels support time values of up to six minutes.
- To use a timing channel instead of console timing, it is necessary to set the timing channel to the desired value and set cue and/or parameter time to zero. A combination of time controls can produce unexpected results.
- The default value setting in the profile should be 255 (proportional control) to allow smooth movement when using console timing.
- The timing channel data should change as a snap. A zero value will give the fastest move, however, without any smoothing this can appear "steppy" in console timed moves.

**Note:** Some parameters have been excluded from the timing channels. Wheel spin and gobo rotation rate changes are not affected by timing channels.

**Table 1-1: VL3015LT Spot Luminaire Channel Function / Timing Channel Relationship**

Channel Function	Timing Channel			
	Focus Time	Color Time	Beam Time	Gobo Time
Pan (Hi Byte/Lo Byte)	◆			
Tilt (Hi Byte/Lo Byte)	◆			
Cyan		◆		
Magenta		◆		
Yellow		◆		
CTO		◆		
Color Wheels		◆		
Beam Iris			◆	
Gobo Wheels 1, 2 and 3				◆

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A timing value of zero is full speed. A time value of 100% (or DMX 255) enables the associated parameter(s) to follow cue fade time (console time) rather than the timing channel.

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**Note:** The particular storing syntax for your console, as well as instructions on how to write part cues, can be found in the operation manual for that console.

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**To use these channels, you must:**

- Step 1. Create the cue, including color, gobo, edge and frost as required.
  - Step 2. Decide which fixtures and which parameter groups will use timing channels.
  - Step 3. Assign a value to the particular timing channel(s) you wish to use (for timing information, see chart on next page).
  - Step 4. Set console timing (or cue fade time) for parameters and timing channels to zero seconds.
  - Step 5. Store cue.
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**Note:** Avoid changing timing channel values in a fading cue. This can cause unexpected behavior in the luminaire as the timing channel value is updated over time. Timing channel values and the final destination of the parameters affected by the timing channel should always be sent in a zero count.

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