

L-Series®
DMX Protocol



LIGHTING – TECHNICAL INFORMATION

DMX protocol version 3.3

Used in fixtures from firmware version 2.0

Lxx-TT (Tungsten Tuneable)

Overview

8 bit 1 channel per function	16 bit 2 channels per function	Coarse / fine 1-2 channels per function
DMX mode 1*	DMX mode 2	DMX mode 3

* = Factory default

GN saturation

The value describes the shift from the neutral point to full minus green or full plus green in percent.
(Reference: Rosco Cinegel #3304 and #3308)

Mode 1: 8 bit resolution per function

DMX Channel	Value	Percent	Function
1	0 – 255	0 - 100	Dimmer closed → open
2	0 – 255	0 – 100	Color temperature CCT 2.600 K → 3.600 K
3	0 - 10 11 - 20 21 - 119 120 - 145 146 - 244 245 - 255	0 - 4 5 - 8 8 - 46 47 - 57 57 - 96 96 - 100	GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green

Mode 2: 16 bit resolution per function

DMX Channel		Value	Percent	Function
1	HI	0 – 65.5353	0 - 100	Dimmer closed → open
2	LO			
3	HI	0 – 65.5353	0 – 100	Color temperature CCT 2.600 K → 3.600 K
4	LO			
5	HI	0 - 5.000	0-7	GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green
6	LO	5.001 – 10.000	8-15	
		10.001 – 29.999	16-46	
		30.000 – 40.000	46-61	
		40.001 – 59.999	61-92	
		60.000 – 65.535	92-100	

Mode 3: Coarse / fine channel per function

Each of the 256 coarse steps is divided in 256 fine steps. Use this mode when your lighting control desk does not support true 16 bit resolution.

DMX Channel		Value	Percent	Function
1		0 – 255	0 - 100	Dimmer closed → open
2		0 – 255	0 – 100	Dimmer fine
3		0 – 255	0 – 100	Color temperature CCT coarse 2.600 K → 3.600 K
4		0 – 255	0 - 100	Color temperature CCT fine
5		0 - 10	0 - 4	GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green
		11 - 20	5 - 8	
		21 - 119	8 - 46	
		120 - 145	47 - 57	
		146 - 244	57 - 96	
		245 - 255	96 - 100	

Lxx-DT (Daylight Tuneable)

Overview

8 bit 1 channel per function	16 bit 2 channels per function	Coarse / fine 1-2 channels per function
DMX mode 1*	DMX mode 2	DMX mode 3

* = Factory default

GN saturation

The value describes the shift from the neutral point to full minus green or full plus green in percent.
(Reference: Rosco Cinegel #3304 and #3308)

Mode 1: 8 bit resolution per function

DMX Channel	Value	Percent	Function
1	0 – 255	0 - 100	Dimmer closed → open
2	0 – 255	0 – 100	Color temperature CCT 5.000 K → 6.500 K
3	0 - 10	0 - 4	GN saturation neutral / no effect
	11 - 20	5 - 8	full minus green
	21 - 119	8 - 46	-99% → -1%
	120 - 145	47 - 57	neutral / no effect
	146 - 244	57 - 96	1% → 99%
	245 - 255	96 - 100	full plus green

Mode 2: 16 bit resolution per function

DMX Channel	Value	Percent	Function	
1	HI	0 – 655353	Dimmer closed → open	
2	LO			
3	HI	0 – 655353	Color temperature CCT 5.000 K → 6.500 K	
4	LO			
5	LO	0 - 5.000	0-7	GN saturation neutral / no effect
		5.001 – 10.000	8-15	full minus green
		10.001 – 29.999	16-46	-99% → -1%
		30.000 – 40.000	46-61	neutral / no effect
		40.001 – 59.999	61-92	1% → 99%
		60.000 – 65.535	92-100	full plus green

Mode 3: Coarse / fine channel per function

Each of the 256 coarse steps is divided in 256 fine steps. Use this mode when your lighting control desk does not support true 16 bit resolution.

DMX Channel	Value	Percent	Function
1	0 – 255	0 - 100	Dimmer closed → open
2	0 – 255	0 – 100	Dimmer fine
3	0 – 255	0 – 100	Color temperature CCT coarse 5.000 K → 6.500 K
4	0 – 255	0 - 100	Color temperature CCT fine
5	0 - 10 11 - 20 21 - 119 120 - 145 146 - 244 245 - 255	0 - 4 5 - 8 8 - 46 47 - 57 57 - 96 96 - 100	GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green

Lxx-C (Color)

Overview

8 bit 1 channel per function	16 bit 2 channels per function	Coarse / fine 1-2 channels per function
DMX mode 1 White & RGBW	DMX mode 6 White & RGBW	DMX mode 11 White & RGBW
DMX mode 2 White	DMX mode 7 White	DMX mode 12 White
DMX mode 3 White & H S I	DMX mode 8 White & H S I	DMX mode 13 White & H S I
DMX mode 4 RGBW	DMX mode 9 RGBW	DMX mode 14 RGBW
DMX mode 5 H S I	DMX mode 10 H S I	DMX mode 15 H S I

= Factory default

GN saturation

The value describes the shift from the neutral point to full minus green or full plus green in percent.

(Reference: Rosco Cinegel #3304 and #3308)

Mode 1: White & RGBW, 8 bit resolution per function

DMX Channel	Value	Percent	Function
1	0 – 255	0 - 100	Dimmer closed → open
2	0 – 255	0 – 100	Color temperature CCT 2.800 K → 10.000 K
3	0 - 10 11 - 20 21 - 119 120 - 145 146 - 244 245 - 255	0 - 4 5 - 8 8 - 46 47 - 57 57 - 96 96 - 100	GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green
4	0 – 255	0 - 100	Xfade to color White → RGBW color
5	0 – 255	0 - 100	Intensity red 0% → 100%
6	0 – 255	0 - 100	Intensity green 0% → 100%
7	0 – 255	0 - 100	Intensity blue 0% → 100%
8	0 – 255	0 - 100	Intensity white 0% → 100%

Mode 2: White, 8 bit resolution per function

DMX Channel	Value	Percent	Function
1	0 – 255	0 - 100	Dimmer closed → open
2	0 – 255	0 – 100	Color temperature CCT 2.800 K → 10.000 K
3	0 - 10 11 - 20 21 - 119 120 - 145 146 - 244 245 - 255	0 - 4 5 - 8 8 - 46 47 - 57 57 - 96 96 - 100	GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green

Mode 3: White & H S I, 8 bit resolution per function

DMX Channel	Value	Percent	Function
1	0 – 255	0 - 100	Dimmer closed → open
2	0 – 255	0 – 100	Color temperature CCT 2.800 K → 10.000 K
3	0 - 10 11 - 20 21 - 119 120 - 145 146 - 244 245 - 255	0 - 4 5 - 8 8 - 46 47 - 57 57 - 96 96 - 100	GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green
4	0 – 255	0 - 100	Xfade to color White → RGBW color
5	0 – 255	0 - 100	Hue 0° → 360°
6	0 – 255	0 - 100	Saturation 0 → full saturated

Mode 4: RGBW, 8 bit resolution per function

DMX Channel	Value	Percent	Function
1	0 – 255	0 - 100	Dimmer closed → open
2	0 – 255	0 - 100	Intensity red 0% → 100%
3	0 – 255	0 - 100	Intensity green 0% → 100%
4	0 – 255	0 - 100	Intensity blue 0% → 100%
5	0 – 255	0 - 100	Intensity white 0% → 100%

Mode 5: H S I, 8 bit resolution per function

DMX Channel	Value	Percent	Function
1	0 – 255	0 - 100	Dimmer closed → open
2	0 – 255	0 - 100	Hue 0° → 360°
3	0 – 255	0 - 100	Saturation 0 → full saturated

Mode 6: White & RGBW, 16 bit resolution per function

DMX Channel		Value	Percent	Function
1	HI	0 – 65.5353	0 - 100	Dimmer closed → open
2	LO			
3	HI	0 – 65.5353	0 – 100	Color temperature CCT 2.800 K → 10.000 K
4	LO			
5	HI	0 - 5.000	0-7	GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green
6	LO	5.001 – 10.000	8-15	
		10.001 – 29.999	16-46	
		30.000 – 40.000	46-61	
		40.001 – 59.999	61-92	
		60.000 – 65.535	92-100	
7	HI	0 – 65.5353	0 - 100	Xfade to color White → RGBW color
8	LO			
9	HI	0 – 65.5353	0 - 100	Intensity red 0% → 100%
10	LO			
11	HI	0 – 65.5353	0 - 100	Intensity green 0% → 100%
12	LO			
13	HI	0 – 65.5353	0 - 100	Intensity blue 0% → 100%
14	LO			
15	HI	0 – 65.5353	0 - 100	Intensity white 0% → 100%
16	LO			

Mode 7: White, 16 bit resolution per function

DMX Channel		Value	Percent	Function
1	HI	0 – 65.5353	0 - 100	Dimmer closed → open
2	LO			
3	HI	0 – 65.5353	0 – 100	Color temperature CCT 2.800 K → 10.000 K
4	LO			
5	HI	0 - 5.000	0-7	GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green
6	LO	5.001 – 10.000	8-15	
		10.001 – 29.999	16-46	
		30.000 – 40.000	46-61	
		40.001 – 59.999	61-92	
		60.000 – 65.535	92-100	

Mode 8: White & H S I, 16 bit resolution per function

DMX Channel		Value	Percent	Function
1	HI	0 – 65.5353	0 - 100	Dimmer closed → open
2	LO			
3	HI	0 – 65.5353	0 – 100	Color temperature CCT 2.800 K → 10.000 K
4	LO			
5	HI	0 - 5.000	0-7	GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green
6	LO	5.001 – 10.000	8-15	
		10.001 – 29.999	16-46	
		30.000 – 40.000	46-61	
		40.001 – 59.999	61-92	
		60.000 – 65.535	92-100	
7	HI	0 – 65.5353	0 - 100	Xfade to color White → RGBW color
8	LO			
9	HI	0 – 65.5353	0 - 100	Hue 0° → 360°
10	LO			
11	HI	0 – 65.5353	0 - 100	Saturation White → full saturated
12	LO			

Mode 9: RGBW, 16 bit resolution per function

DMX Channel		Value	Percent	Function
1	HI	0 – 65.5353	0 - 100	Dimmer closed → open
2	LO			
3	HI	0 – 65.5353	0 - 100	Intensity red 0% → 100%
4	LO			
5	HI	0 – 65.5353	0 - 100	Intensity green 0% → 100%
6	LO			
7	HI	0 – 65.5353	0 - 100	Intensity blue 0% → 100%
8	LO			
9	HI	0 – 65.5353	0 - 100	Intensity white 0% → 100%
10	LO			

Mode 10: H S I, 16 bit resolution per function

DMX Channel		Value	Percent	Function
1	HI	0 – 65.5353	0 - 100	Dimmer closed → open
2	LO			
3	HI	0 – 65.5353	0 - 100	Hue 0° → 360°
4	LO			
5	HI	0 – 65.5353	0 - 100	Saturation White → full saturated
6	LO			

Mode 11: White & RGBW, Coarse/fine per function

DMX Channel		Value	Percent	Function
1		0 – 255	0 - 100	Dimmer closed → open
2		0 – 255	0 – 100	Dimmer fine
3		0 – 255	0 – 100	Color temperature CCT coarse 2.800 K → 10.000 K
4		0 – 255	0 - 100	Color temperature CCT fine
5		0 - 10 11 - 20 21 - 119 120 - 145 146 - 244 245 - 255	0 - 4 5 - 8 8 - 46 47 - 57 57 - 96 96 - 100	GN saturation neutral / no effect full minus green -99% → -1% neutral / no effect 1% → 99% full plus green
6		0 – 255	0 - 100	Xfade to color White → RGBW color
7		0 – 255	0 - 100	Intensity red coarse 0% → 100%
8		0 – 255	0 – 100	Red fine
9		0 – 255	0 - 100	Intensity green coarse 0% → 100%
10		0 – 255	0 – 100	Green fine
11		0 – 255	0 - 100	Intensity blue coarse 0% → 100%
12		0 – 255	0 – 100	Blue fine
13		0 – 255	0 - 100	Intensity white coarse 0% → 100%
14		0 – 255	0 – 100	White fine

Mode 12: White, Coarse / fine channel per function

DMX Channel	Value	Percent	Function
1	0 – 255	0 - 100	Dimmer closed → open
2	0 – 255	0 – 100	Dimmer fine
3	0 – 255	0 – 100	Color temperature CCT coarse 2.800 K → 10.000 K
4	0 – 255	0 - 100	Color temperature CCT fine
5	0 - 10	0 - 4	GN saturation neutral / no effect
	11 - 20	5 - 8	full minus green
	21 - 119	8 - 46	-99% → -1%
	120 - 145	47 - 57	neutral / no effect
	146 - 244	57 - 96	1% → 99%
	245 - 255	96 - 100	full plus green

Mode 13: White & H S I, Coarse / fine channel per function

DMX Channel	Value	Percent	Function
1	0 – 255	0 - 100	Dimmer closed → open
2	0 – 255	0 – 100	Dimmer fine
3	0 – 255	0 – 100	Color temperature CCT coarse 2.800 K → 10.000 K
4	0 – 255	0 - 100	Color temperature CCT fine
5	0 - 10	0 - 4	GN saturation neutral / no effect
	11 - 20	5 - 8	full minus green
	21 - 119	8 - 46	-99% → -1%
	120 - 145	47 - 57	neutral / no effect
	146 - 244	57 - 96	1% → 99%
	245 - 255	96 - 100	full plus green
6	0 – 255	0 - 100	Xfade to color White → RGBW color
7	0 – 255	0 - 100	Hue coarse 0° → 360°
8	0 – 255	0 – 100	Hue fine
9	0 – 255	0 - 100	Saturation coarse 0 → full saturated
10	0 – 255	0 – 100	Saturation fine

Mode 14: RGBW, Coarse / fine channel per function

DMX Channel	Value	Percent	Function
1	0 – 255	0 - 100	Dimmer closed → open
2	0 – 255	0 – 100	Dimmer fine
3	0 – 255	0 - 100	Intensity red coarse 0% → 100%
4	0 – 255	0 – 100	Red fine
5	0 – 255	0 - 100	Intensity green coarse 0% → 100%
6	0 – 255	0 – 100	Green fine
7	0 – 255	0 - 100	Intensity blue coarse 0% → 100%
8	0 – 255	0 – 100	Blue fine
9	0 – 255	0 - 100	Intensity white coarse 0% → 100%
10	0 – 255	0 – 100	White fine

Mode 15: H S I, Coarse / fine channel per function

DMX Channel	Value	Percent	Function
1	0 – 255	0 - 100	Dimmer closed → open
2	0 – 255	0 – 100	Dimmer fine
3	0 – 255	0 - 100	Hue coarse 0° → 360°
4	0 – 255	0 – 100	Hue fine
5	0 – 255	0 - 100	Saturation coarse 0 → full saturated
6	0 – 255	0 – 100	Saturation fine