L-Series®

DMX Protocol

LIGHTING – TECHNICAL INFORMATION

DMX protocol version 3.3

Used in fixtures from firmware version 2.0

Lxx-TT (Tungsten Tuneable) / Lxx-T (Tungsten)

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 (only "TT" versions)

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 ("TT" only)** 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 ("TT" only)** 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			**Dimmer**
2	LO	0 – 65.535	0 - 100	closed → open
3	HI			**Color temperature CCT ("TT" only)**
4	LO	0 – 65.535	0 – 100	2.600 K → 3.600 K
5	HI			**GN saturation ("TT" only)**
		0 - 5.000	0-7	neutral / no effect
		5.001 – 10.000	8-15	full minus green
		10.001 – 29.999	16-46	-99% → -1%
6	LO	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			**Dimmer**
	0 – 255	0 - 100	closed → open
2	0 – 255	0 – 100	**Dimmer fine**
3			**Color temperature CCT coarse ("TT" only)**
	0 – 255	0 – 100	2.600 K → 3.600 K
4	0 – 255	0 - 100	**Color temperature CCT fine ("TT" only)**
5			**GN saturation ("TT" only)**
	0 - 10	0 - 4	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

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 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 – 65535	0 - 100	**Dimmer** closed → open
2	LO			
3	HI	0 – 65535	0 – 100	**Color temperature CCT** 5.000 K → 6.500 K
4	LO			
5	HI	0 - 5.000	0-7	**GN saturation** neutral / no effect
6	LO	5.001 – 10.000 10.001 – 29.999 30.000 – 40.000 40.001 – 59.999 60.000 – 65.535	8-15 16-46 46-61 61-92 92-100	full minus green -99% → -1% neutral / no effect 1% → 99% 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			**Dimmer**
2	LO	0 – 65.535	0 - 100	closed → open
3	HI			**Color temperature CCT**
4	LO	0 – 65.535	0 – 100	2.800 K → 10.000 K
5	HI			**GN saturation**
		0 - 5.000	0-7	neutral / no effect
		5.001 – 10.000	8-15	full minus green
		10.001 – 29.999	16-46	-99% → -1%
6	LO	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
7	HI			**Xfade to color**
8	LO	0 – 65.535	0 - 100	White → RGBW color
9	HI			**Intensity red**
10	LO	0 – 65.535	0 - 100	0% → 100%
11	HI			**Intensity green**
12	LO	0 – 65.535	0 - 100	0% → 100%
13	HI			**Intensity blue**
14	LO	0 – 65.535	0 - 100	0% → 100%
15	HI			**Intensity white**
16	LO	0 – 65.535	0 - 100	0% → 100%

Mode 7: White, 16 bit resolution per function

DMX Channel		Value	Percent	Function
1	HI			**Dimmer**
2	LO	0 – 65.535	0 - 100	closed → open
3	HI			**Color temperature CCT**
4	LO	0 – 65.535	0 – 100	2.800 K → 10.000 K
5	HI			**GN saturation**
		0 - 5.000	0-7	neutral / no effect
		5.001 – 10.000	8-15	full minus green
		10.001 – 29.999	16-46	-99% → -1%
6	LO	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 8: White & H S I, 16 bit resolution per function

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

Mode 9: RGBW, 16 bit resolution per function

DMX Channel		Value	Percent	Function
1	HI			**Dimmer**
2	LO	0 – 65.535	0 - 100	closed → open
3	HI			**Intensity red**
4	LO	0 – 65.535	0 - 100	0% → 100%
5	HI			**Intensity green**
6	LO	0 – 65.535	0 - 100	0% → 100%
7	HI			**Intensity blue**
8	LO	0 – 65.535	0 - 100	0% → 100%
9	HI			**Intensity white**
10	LO	0 – 65.535	0 - 100	0% → 100%

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

DMX Channel		Value	Percent	Function
1	HI			**Dimmer**
2	LO	0 – 65.535	0 - 100	closed → open
3	HI			**Hue**
4	LO	0 – 65.535	0 - 100	0° → 360°
5	HI			**Saturation**
6	LO	0 – 65.535	0 - 100	White → full saturated

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 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 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 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	**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**