

# DMX PROTOCOL

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## i-3 WASH



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## DMX MODES

### 3 CHANNEL RGB

CHANNEL	NAME	DMX		DMX PERCENTAGE		DESCRIPTION	INFO
1	Red	0	255	0,0%	100,0%	0% → 100% Red	Fade
2	Green	0	255	0,0%	100,0%	0% → 100% Green	Fade
3	Blue	0	255	0,0%	100,0%	0% → 100% Blue	Fade

### 4 CHANNEL RGB

CHANNEL	NAME	DMX		DMX PERCENTAGE		DESCRIPTION	INFO
1	Red	0	255	0,0%	100,0%	0% → 100% Red	Fade
2	Green	0	255	0,0%	100,0%	0% → 100% Green	Fade
3	Blue	0	255	0,0%	100,0%	0% → 100% Blue	Fade
4	White	0	255	0,0%	100,0%	0% → 100% White	Fade

### 6 CHANNEL CTC (DEFAULT)

CHANNEL	NAME	DMX		DMX PERCENTAGE		DESCRIPTION	INFO
1	Shutter	0	7	0,0%	2,7%	Closed	Snap
		8	15	3,1%	5,9%	Open	Snap
		16	151	6,3%	59,2%	Variable Strobe	Fast → Slow
		152	175	59,6%	68,6%	Pulse - Open	Slow → Fast
		176	199	69,0%	78,0%	Pulse - Close	Slow → Fast
		200	244	78,4%	95,7%	Variable Random Strobe	Slow → Fast
		245	255	96,1%	100,0%	Open	Snap
2	Intensity	0	255	0,0%	100,0%	0% → 100% Intensity	Fade
3	CTC	0	0	0,0%	0,0%	Default Calibrated White	Note 1
		1	4	0,4%	1,6%	Raw	
		5	255	2,0%	100,0%	2000K → 10000K	See CTC Chart
4	Red	0	255	0,0%	100,0%	0% → 100% Red	Fade
5	Green	0	255	0,0%	100,0%	0% → 100% Green	Fade
6	Blue	0	255	0,0%	100,0%	0% → 100% Blue	Fade

## 8 CHANNEL RAW

CHANNEL	NAME	DMX		DMX PERCENTAGE		DESCRIPTION	INFO
1+2	Red	0	65535	0,0%	100,0%	0% → 100% Red	Fade
3+4	Green	0	65535	0,0%	100,0%	0% → 100% Green	Fade
5+6	Blue	0	65535	0,0%	100,0%	0% → 100% Blue	Fade
7+8	White	0	65535	0,0%	100,0%	0% → 100% White	Fade

## 10 CHANNEL CTC

CHANNEL	NAME	DMX		DMX PERCENTAGE		DESCRIPTION	INFO
1	Shutter	0	7	0,0%	2,7%	Closed	Snap
		8	15	3,1%	5,9%	Open	Snap
		16	151	6,3%	59,2%	Variable Strobe	Fast → Slow
		152	175	59,6%	68,6%	Pulse - Open	Slow → Fast
		176	199	69,0%	78,0%	Pulse - Close	Slow → Fast
		200	244	78,4%	95,7%	Variable Random Strobe	Slow → Fast
		245	255	96,1%	100,0%	Open	Snap
2+3	Intensity	0	65535	0,0%	100,0%	0% → 100% Intensity	Fade
4	CTC	0	0	0,0%	0,0%	Default Calibrated White	Note 1
		1	4	0,4%	1,6%	Raw	
		5	255	2,0%	100,0%	2000K → 10000K	See CTC Chart
5+6	Red	0	65535	0,0%	100,0%	0% → 100% Red	Fade
7+8	Green	0	65535	0,0%	100,0%	0% → 100% Green	Fade
9+10	Blue	0	65535	0,0%	100,0%	0% → 100% Blue	Fade

## 21 CHANNEL STUDIO

CHANNEL	NAME	DMX		DMX PERCENTAGE		DESCRIPTION	INFO
1 + 2	Intensity	0	65535	0,0%	100,0%	0% → 100% Intensity	Fade
3	Duration	0	255	0,0%	100,0%	Strobe duration	Short → Long
4	Rate	0	255	0,0%	100,0%	Strobe rate	Slow → Fast
5	Effect	0	5	0,0%	2,0%	No effect	Snap
		6	10	2,4%	3,9%	Flicker	
		11	15	4,3%	5,9%	Random strobe panel	
		16	20	6,3%	7,8%	Random strobe pixels	
		21	25	8,2%	9,8%	Flicker colors	
		26	30	10,2%	11,8%	Random color panels	
		31	35	12,2%	13,7%	Spikes colors	
		36	40	14,1%	15,7%	Spikes panel	
		41	45	16,1%	17,6%	Pre-red	
		46	50	18,0%	19,6%	Pre-green	
		51	55	20,0%	21,6%	Pre-blue	
		56	60	22,0%	23,5%	RGB-flicker	
		61	65	23,9%	25,5%	Lightning	
		66	70	25,9%	27,5%	Roll effect RGB	
		71	75	27,8%	29,4%	Fire	
		76	80	29,8%	31,4%	Ice	
		81	85	31,8%	33,3%	Magenta-red-blue	
		86	90	33,7%	35,3%	Random color fade pixel	
91	95	35,7%	37,3%	Halogen attack			
96	100	37,6%	39,2%	Halogen decay			
101	255	39,6%	100,0%	No strobe			
6	Macro	0	4	0,0%	1,6%	Open	
		5	9	2,0%	3,5%	Congo/color 1	
		10	14	3,9%	5,5%	Red/color 2	
		15	19	5,9%	7,5%	Green/color 3	
		20	24	7,8%	9,4%	Blue/color 4	
		25	29	9,8%	11,4%	Orange/color 5	

CHANNEL	NAME	DMX		DMX PERCENTAGE		DESCRIPTION	INFO
6	Macro	30	34	11,8%	13,3%	Light green/color 6	
		35	39	13,7%	15,3%	Pink/color 7	
		40	44	15,7%	17,3%	Light blue/ color 8	
		45	49	17,6%	19,2%	Purple/color 9	
		50	54	19,6%	21,2%	Neon green/color 10	
		55	59	21,6%	23,1%	Magenta/color 11	
		60	64	23,5%	25,1%	Cyan/color 12	
		65	69	25,5%	27,1%	Yellow/color 13	
		70	74	27,5%	29,0%	CTC/color 14	
		75	79	29,4%	31,0%	Scroll (CCW)	Slow → Fast
		80	84	31,4%	32,9%	Scroll (CW)	Slow → Fast
		85	89	33,3%	34,9%	Random color	See color filter chart
		90	180	35,3%	70,6%	Color filter emulation	
		181	255	71,0%	100,0%	Reserved	
7	Color mode	0	4	0,0%	1,6%	CTC RGB	Snap Note 2
		5	9	2,0%	3,5%	xy (CIE 1931)	
		10	14	3,9%	5,5%	CTC RGBW	
		15	19	5,9%	7,5%	HSI	
		20	24	7,8%	9,4%	CMY	
		25	29	9,8%	11,4%	CTC RGB+W	
		30	255	11,8%	100,0%	Reserved (keeps last mode)	
8	Plus/minus green	0	4	0,0%	1,6%	Neutral	Snap
		5	125	2,0%	49,0%	Minus green	Max → Min
		126	134	49,4%	52,5%	Neutral	Snap
		135	255	52,9%	100,0%	Plus green	Min → Max
9	Dimming Curve	0	4	0,0%	1,6%	Smooth Gamma Corrected	Snap Note 3
		5	9	2,0%	3,5%	Smooth Linear	
		10	14	3,9%	5,5%	Halogen Gamma Corrected	
		15	19	5,9%	7,5%	Halogen Linear	
		20	24	7,8%	9,4%	Fast Gamma Corrected	
		25	29	9,8%	11,4%	Fast Linear	
		30	255	11,8%	100,0%	Reserved	

CHANNEL	NAME	DMX		DMX PERCENTAGE		DESCRIPTION	INFO
10	CTC	0	0	0,0%	0,0%	Default Calibrated White	Note 1
		1	4	0,4%	1,6%	Raw	
		5	255	2,0%	100,0%	2000K → 10000K	See CTC chart
11	Color path	0	127	0,0%	49,8%	SGM Standard	
		128	255	50,2%	100,0%	SGM VersaPath™	Note 4
12+13	Red	0	65535	0,0%	100,0%	0% → 100% Red	Fade
14+15	Green	0	65535	0,0%	100,0%	0% → 100% Green	Fade
16+17	Blue	0	65535	0,0%	100,0%	0% → 100% Blue	Fade
18+19	White	0	65535	0,0%	100,0%	0% → 100% White	Fade
20	Frequency	0	4	0,0%	1,6%	Default (2,44kHz)	Snap
		5	255	2,0%	100,0%	2,44kHz → 22,22kHz	Min → Max
21	Fan Control	0	4	0,0%	1,6%	Default (Auto)	Snap
		5	255	2,0%	100,0%	Manual speed control	Min → Max

### NOTE 1

When the CTC channel is set to value 000, the fixture will output a different calibrated white depending on the LED configuration of the fixture.

**I-3 Wash POI RGBW3000K:** 3000K calibrated white

**I-3 Wash POI RGBW4000K:** 4000K calibrated white

**I-3 Wash POI RGBW5700K:** 5600K calibrated white

### NOTE 2

- **CTC RGB** allows RGBW mixing with CTC control over white on the Red, Green and Blue channels (4000K White LED is controlled via RGB color engine).
- **CTC RGBW** allows RGBW mixing with CTC control over white on the Red, Green, Blue and White channels (4000K White LED is controlled via RGBW color engine).
- **CTC RGB+W** allows RGB mixing with CTC control over white on the Red, Green and Blue channels, plus independent control over 4000K White LED on the White channel (4000K White LED is not part of the color engine).
- **HSI** and **CMY** modes use the Red, Green and Blue channels for the color mix.
- **xy** mode does not allow CTC control.

CTC RGB, CTC RGBW, CTC RGB+W, HSI, and CMY modes can be combined with the CTC, Color Path, Macro, and Plus/Minus Green channels.

### NOTE 3

- **Smooth Gamma Corrected** is compatible with previous SGM products.
- **Halogen** creates an organic delay, similar to tungsten-lamp performance when filament is heated up.
- **Fast Gamma Corrected/Linear** allows for a faster response to the incoming DMX signal. Using this dimming curve might result in less smooth dimming fades.

### NOTE 4

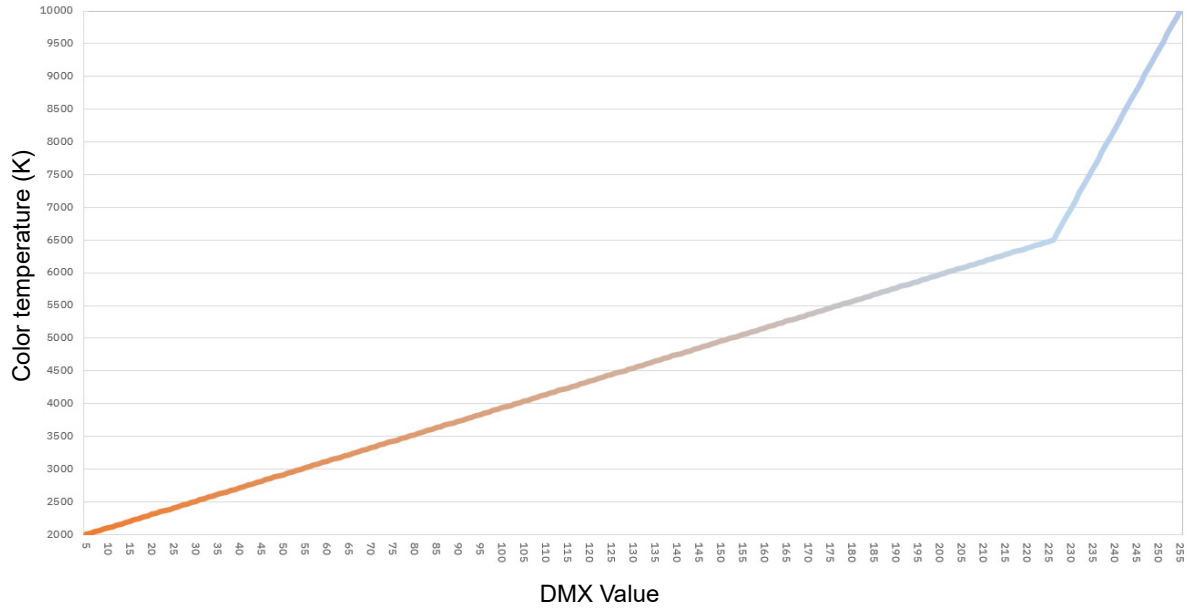
With the Color Path set to **VersaPath™**, the color emulation reacts in the same way as a physical filter over a specific native color temperature (from 2000K to 10000K), editable via the CTC channel.

When Dimming Curve channel is set to Halogen, a “tungsten-lamp with color filter” look can be achieved.

When the Color Path is set to **VersaPath™**, the CTC channel can be used to move the RGB color mix over the black-body curve. In order to achieve this, at least 2 primary colors need to have values above 000.



## CTC CHART



CTC	DMX	DMX PERCENTAGE	COLOR TEMPERATURE
2000K → 10000K	5	2,0%	2000K
	15	5,9%	2200K
	25	9,8%	2400K
	35	13,7%	2600K
	45	17,6%	2800K
	55	21,6%	3000K
	65	25,5%	3200K
	75	29,4%	3400K
	85	33,3%	3600K
	95	37,3%	3800K
	105	41,1%	4000K
	115	45,1%	4200K
	125	49,0%	4400K
	135	53,0%	4600K
	145	56,9%	4800K
	155	60,8%	5000K
	165	64,7%	5200K
	175	68,6%	5400K
	185	72,6%	5600K
	195	76,5%	5900K
205	80,4%	6100K	
215	84,3%	6300K	
225	88,2%	6500K	
235	92,2%	7500K	
245	96,1%	8800K	
255	100%	10000K	

## COLOR FILTER EMULATION CHART

MACRO	DMX	DMX PERCENTAGE	COLOR NAME	FILTER
Color Filter Emulation	90	35,3%	Med Bast Amber	LEE 004
	91	35,7%	Med Yellow	LEE 010
	92	36,1%	Straw Tint	LEE 013
	93	36,5%	Surprise Peach	LEE 017
	94	36,9%	Fire	LEE 019
	95	37,3%	Med Amber	LEE 020
	96	37,6%	Gold Amber	LEE 021
	97	38,0%	Dark Amber	LEE 022
	98	38,4%	Sunset red	LEE 025
	99	38,8%	Bright red	LEE 026
	100	39,2%	Light Pink	LEE 035
	101	39,6%	Med Pink	LEE 036
	102	40,0%	Medium Purple	LEE 049
	103	40,4%	Lt Lavender	LEE 052
	104	40,8%	Lavender	LEE 058
	105	41,2%	Sky Blue	LEE 068
	106	41,6%	Tokyo Blue	LEE 071
	107	42,0%	Just Blue	LEE 079
	108	42,4%	Lime Green	LEE 088
	109	42,7%	Moss Green	LEE 089
	110	43,1%	Dk Yellow/Green	LEE 090
	111	43,5%	Spring Yellow	LEE 100
	112	43,9%	Lt Amber	LEE 102
	113	44,3%	Straw	LEE 103
	114	44,7%	Deep Amber	LEE 104
	115	45,1%	Orange	LEE 105
	116	45,5%	Primary Red	LEE 106
	117	45,9%	Lt. Rose	LEE 107
	118	46,3%	English Rose	LEE 108
	119	46,7%	Lt. Salmon	LEE 109
120	47,1%	Middle Rose	LEE 110	
121	47,5%	Dark Pink	LEE 111	
122	47,8%	Magenta	LEE 113	
123	48,2%	Peacock Blue	LEE 115	
124	48,6%	Med Blue-Green	LEE 116	
125	49,0%	Steel Blue	LEE 117	
126	49,4%	Light Blue	LEE 118	

MACRO	DMX	DMX PERCENTAGE	COLOR NAME	FILTER
Color Filter Emulation	127	49,8%	Dark Blue	LEE 119
	128	50,2%	Deep Blue	LEE 120
	129	50,6%	Lee Green	LEE 121
	130	51,0%	Fern Green	LEE 122
	131	51,4%	Dark Green	LEE 124
	132	51,8%	Mauve	LEE 126
	133	52,2%	Bright Pink	LEE 128
	134	52,5%	Marine Blue	LEE 131
	135	52,9%	Med Blue	LEE 132
	136	53,3%	Golden Amber	LEE 134
	137	53,7%	Deep Golden Amber	LEE 135
	138	54,1%	Pale Lavender	LEE 136
	139	54,5%	Spec Lavender	LEE 137
	140	54,9%	Pale Green	LEE 138
	141	55,3%	Primary Green	LEE 139
	142	55,7%	Summer Blue	LEE 140
	143	56,1%	Bright Blue	LEE 141
	144	56,5%	Pale Navy Blue	LEE 143
	145	56,9%	Apricot	LEE 147
	146	57,3%	Bright Rose	LEE 148
	147	57,6%	Pale Gold35	LEE 152
	148	58,0%	Pale Rose	LEE 154
	149	58,4%	Pink	LEE 157
	150	58,8%	Deep Orange	LEE 158
	151	59,2%	Slate Blue	LEE 161
	152	59,6%	Bastard Amber	LEE 162
	153	60,0%	Flame Red	LEE 164
	154	60,4%	Daylight Blue	LEE 165
	155	60,8%	Lilac Tint	LEE 169
	156	61,2%	Deep Lavender	LEE 170
	157	61,6%	Lagoon Blue	LEE 172
158	62,0%	Dk Steel Blue	LEE 174	
159	62,4%	Chrome Orange	LEE 179	
160	62,7%	Dark Lavender	LEE 180	
161	63,1%	Congo Blue	LEE 181	
162	63,5%	Light Red	LEE 182	
163	63,9%	Surprise Pink	LEE 194	
164	64,3%	Alice Blue	LEE 197	
165	64,7%	Double C.T. Blue	LEE 200	

MACRO	DMX	DMX PERCENTAGE	COLOR NAME	FILTER
Color Filter Emulation	166	65,1%	Full C.T. Blue36	LEE 201
	167	65,5%	1/2 C.T. Blue	LEE 202
	168	65,9%	1/4 C.T. Blue	LEE 203
	169	66,3%	Full C.T. Orange	LEE 204
	170	66,7%	1/4 C.T. Orange	LEE 206
	171	67,1%	Fluorescent Green	LEE 219
	172	67,5%	Lee Minus Green	LEE 247
	173	67,8%	1/2 Minus Green	LEE 248
	174	68,2%	3/4 C.T. Blue	LEE 281
	175	68,6%	3/4 C.T. Orange	LEE 285
	176	69,0%	Follies Pink	LEE 328
	177	69,4%	S Spec Rose Pink	LEE 332
	178	69,8%	Fuchsia Pink	LEE 345
	179	70,2%	Glacier Blue	LEE 352
	180	70,6%	Lighter Blue	LEE 353



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