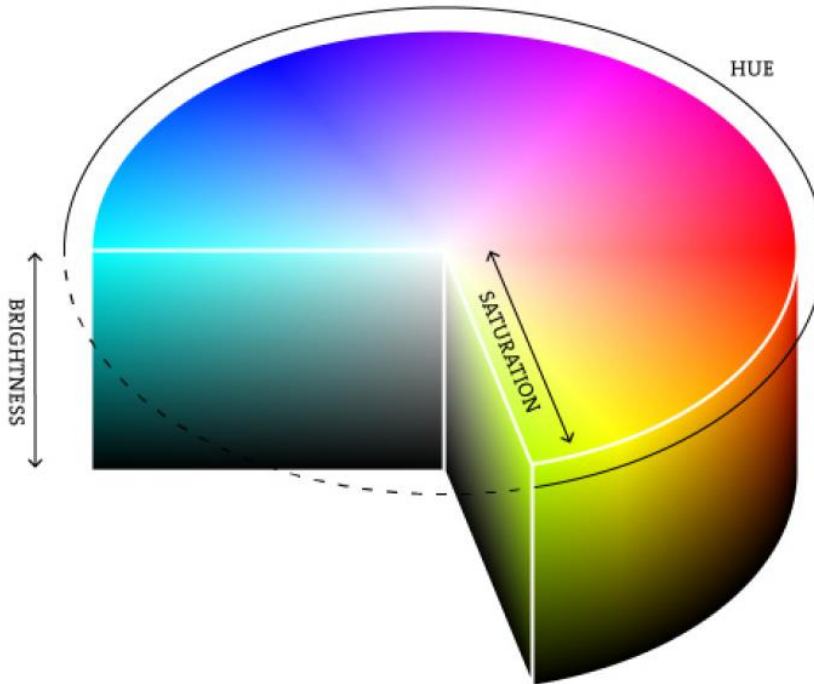


## OPERATING MODES

The projector has 4 operating modes: Raw Mode, HSV, RGB emulation and CMY emulation. Raw Mode enables specific control of each color. HSV Mode is based on a complex algorithm for a new type of management of both color and white light. In this mode, the CRI is kept constantly above 97 CRI, irrespective of colour temperature. HSV mode has the following characteristics:

1



## DMX MODES

DMX Mode	Parameter	Color Control Mode	RAW Mode
<i>Basic RGB</i>	15	<i>RGB or CMY</i>	<i>Not available</i>
<i>Basic HSV</i>	15	<i>HSV</i>	<i>Not available</i>
<i>Extended RGB</i>	28	<i>RGB or CMY</i>	<i>CCMode RAW</i>
<i>Extended HSV</i>	28	<i>HSV</i>	<i>CCMode RAW</i>

## BASIC MODE

Number	RGB	HSV	Note
1	Red/Cyan	Hue	Cyan with CCMOD CMY
2	Green/Magenta	Hue fine	Magenta with CCMOD CMY
3	Blue/Yellow	Saturation	Yellow with CCMOD CMY
4	CTO	CTO	
5	Macro color	Macro color	
6	Strobe	Strobe	
7	Dimmer	Dimmer	
8	Dimmer fine	Dimmer fine	
9	Crossfade	Crossfade	Not enabled yet
10	Fan	Fan	Not enabled yet
11	Tint	Tint	
12	Zoom	Zoom	
13	Function	Function	
14	Reset	Reset	
15	Frequency	Frequency	

RGB	HSV	DMX value	Function
1	-		<b>RED / CYAN</b>
		0 - 255	Red colour linearly increases from no-light to maximum intensity
2	-		<b>GREEN / MAGENTA</b>
		0 - 255	Green colour linearly increases from no-light to maximum intensity
3	-		<b>BLUE / YELLOW</b>
		0 - 255	Blue colour linearly increases from no-light to maximum intensity
-	1		<b>HUE</b>
		0 - 255	Linear Hue setting, define the target point color in the HSV color representation system (range from 0° (Red) to 360°)
-	2		<b>HUE FINE</b>
		0 - 255	Fine Hue setting
-	3		<b>SATURATION</b>
		0 - 255	Linear Saturation setting, define the INTENSITY/PURITY of the color at a constant lightness level. It ranges from 100% (pure color) to 0% (white)
4	4		<b>CTO</b>
			Colour Temperature linearly change from 8000K to 2500K
		0	OFF
		1 ...	8000 K
		... 47 ...	7000 K
		... 93 ...	6000 K
		... 112 ...	5600 K
		... 139 ...	5000 K
		... 186 ...	4000 K
		... 222 ...	3200 K
		... 245 ...	2700 K
... 255	2500 K		
5	5		<b>MACRO COLOR</b>
		0 - 255	See chart @ page 14
6	6		<b>STROBE</b>
		0 - 3	Light OFF
		4 - 103	Strobe at linearly variable frequency from low (1Hz) to fast (16Hz)
		104 - 107	Light ON
		108 - 207	Pulsation at linearly variable speed from slow (0.5 Hz) to fast (25 Hz)
		208 - 212	Light ON
		213 - 255	Random Slow Strobe
		226 - 238	Random Medium Strobe
		239 - 251	Random Fast Strobe
252 - 255	Light ON		

RGB	HSV	DMX value	Function
7	7		<b>DIMMER</b>
		0 - 255	Light output linearly increases from off to maximum brightness
8	8		<b>DIMMER FINE</b>
		0 - 255	Fine Dimmer positioning
9	9		<b>CROSSFADE</b>
		0 - 255	Faded Transition with selectable timing between two sets of color points. In accordance with the selected PATH, during the faded transition all the intermediate color along the route will be displayed
10	10		<b>FAN</b>
		0 - 255	Not activated yet
11	11		<b>TINT</b>
		0-127	Linear Tint setting, define the target point correction from Magenta to OFF
		128	OFF
	129-255	Linear Tint setting, define the target point correction from OFF to Green	
12	12		<b>ZOOM</b>
		0 - 255	Zoom linearly moves from narrow to wide beam

RGB	HSV	DMX value	Function	
13	13		<b>FUNCTION</b>	
		0 - 11	None	
		12 - 37	Free	
		38 - 42	Dimmer curve 1 (Default)	Details at page 13
		43 - 47	Dimmer curve 2	
		48 - 52	Dimmer curve 3	
		53 - 57	Dimmer curve 4	
		58 - 62	Raw color channels gamma 1 -	
		63 - 67	Raw color channels gamma 1.5	Details at page 13
		68 - 72	Raw color channels gamma 2.2 (Default)	
		73 - 77	Halogen mode disabled (Default)	
		78 - 82	Halogen mode 1, 750W lamp emulation	
		83 - 87	Halogen mode 2, 1000W lamp emulation	
		88 - 92	Halogen mode 3, 1200W lamp emulation	
		93 - 97	Halogen mode 4, 2000W lamp emulation	
		98 - 102	Halogen mode 5, 2500W lamp emulation	
		103 - 105	Free	
		106 - 108	CCMOD: RAW (Default)	
		109 - 111	CCMOD: RGB or HSV	
		112 - 114	CCMOD: CMY	
		115 - 117	Free	
		118 - 122	Free	
		123	CTO Filt (Default)	
		124	CTO White	
		125-163	Free	
		164	Base frequency=1000Hz	
		165	Base frequency=1500Hz (Default)	
		166	Base frequency=2400Hz	
		167	Base frequency=3700Hz	
		168	Base frequency=5600Hz	
		169	Base frequency=9400Hz	
		170	Base frequency=15100Hz	
		171	Base frequency=21400Hz	
172	Base frequency=31000Hz			
173	Base frequency=43700Hz			
174-250	Free			
251 - 255	Default function recall			
	Note: all the functions are non-volatile settings. Non-volatile means that the configuration still remains active after power off.			

RGB	HSV	DMX value	Function
14	14		<b>RESET</b>
		0 - 25	Unused range
		26 - 255	All-effects Reset sequence passing through the unused levels range and staying in this range for 5 seconds.
15	15		<b>FREQUENCY</b>
		0 – 255	Fine adjusting of frequency Base selected from the Function parameter (13) - Details at page 13

## EXTENDED MODE

Number	RGB	HSV	Note
1	Red	Red	Active in RAW mode only
2	Red fine	Red fine	Active in RAW mode only
3	PC Amber	PC Amber	Active in RAW mode only
4	PC Amber fine	PC Amber fine	Active in RAW mode only
5	PC Green	PC Green	Active in RAW mode only
6	PC Green fine	PC Green fine	Active in RAW mode only
7	Green	Green	Active in RAW mode only
8	Green fine	Green fine	Active in RAW mode only
9	Cyan	Cyan	Active in RAW mode only
10	Cyan fine	Cyan fine	Active in RAW mode only
11	Blu	Blu	Active in RAW mode only
12	Blu fine	Blu fine	Active in RAW mode only
13	CTO	CTO	Only with CTO White option in RAW mode
14	Macro color	Macro color	
15	Strobe	Strobe	
16	Dimmer	Dimmer	
17	Dimmer fine	Dimmer fine	
18	Red/Cyan	Hue	Cyan with CCMOD CMY
19	Green/Magenta	Hue fine	Magenta with CCMOD CMY
20	Blue/Yellow	Saturation	Yellow with CCMOD CMY
21	Crossfade	Crossfade	Not enabled yet
22	Path	Path	Not enabled yet
23	Fan	Fan	Not enabled yet
24	Tint	Tint	Not activated in RAW mode
25	Function	Function	
26	Zoom	Zoom	
27	Reset	Reset	
28	Frequency	Frequency	

RGB	HSV	DMX value	Function
1	1		<b>RED</b>
		0 - 255	Red colour linearly increases from no-light to maximum intensity
2	2		<b>RED FINE</b>
		0 - 255	Red fine intensity
3	3		<b>AMBER</b>
		0 - 255	Amber colour linearly increases from no-light to maximum intensity
4	4		<b>AMBER FINE</b>
		0 - 255	Amber fine intensity
5	5		<b>LIME</b>
		0 - 255	Lime colour linearly increases from no-light to maximum intensity
6	6		<b>LIME FINE</b>
		0 - 255	Lime fine intensity
7	7		<b>GREEN</b>
		0 - 255	Green colour linearly increases from no-light to maximum intensity
8	8		<b>GREEN FINE</b>
		0 - 255	Green fine intensity
9	9		<b>CYAN</b>
		0 - 255	Cyan colour linearly increases from no-light to maximum intensity
10	10		<b>CYAN FINE</b>
		0 - 255	Cyan fine intensity
11	11		<b>BLUE</b>
		0 - 255	Blue colour linearly increases from no-light to maximum intensity
12	12		<b>BLUE FINE</b>
		0 - 255	Blue fine intensity
13	13		<b>CTO</b>
			Colour Temperature linearly change from 8000K to 2500K
		0	OFF
		1 ...	8000 K
		... 47 ...	7000 K
		... 93 ...	6000 K
		... 112 ...	5600 K
		... 139 ...	5000 K
		... 185 ...	4000 K
		... 222 ...	3200 K
		... 245 ...	2700 K
... 255	2500 K		

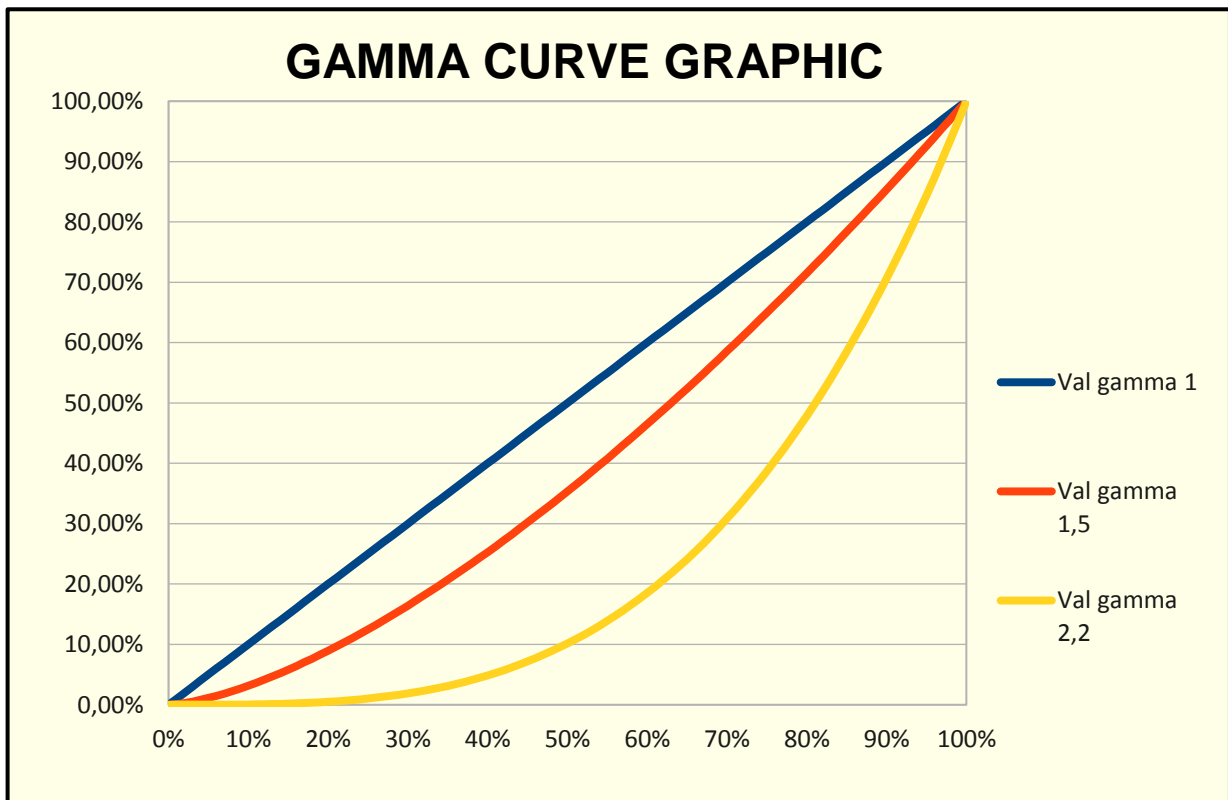
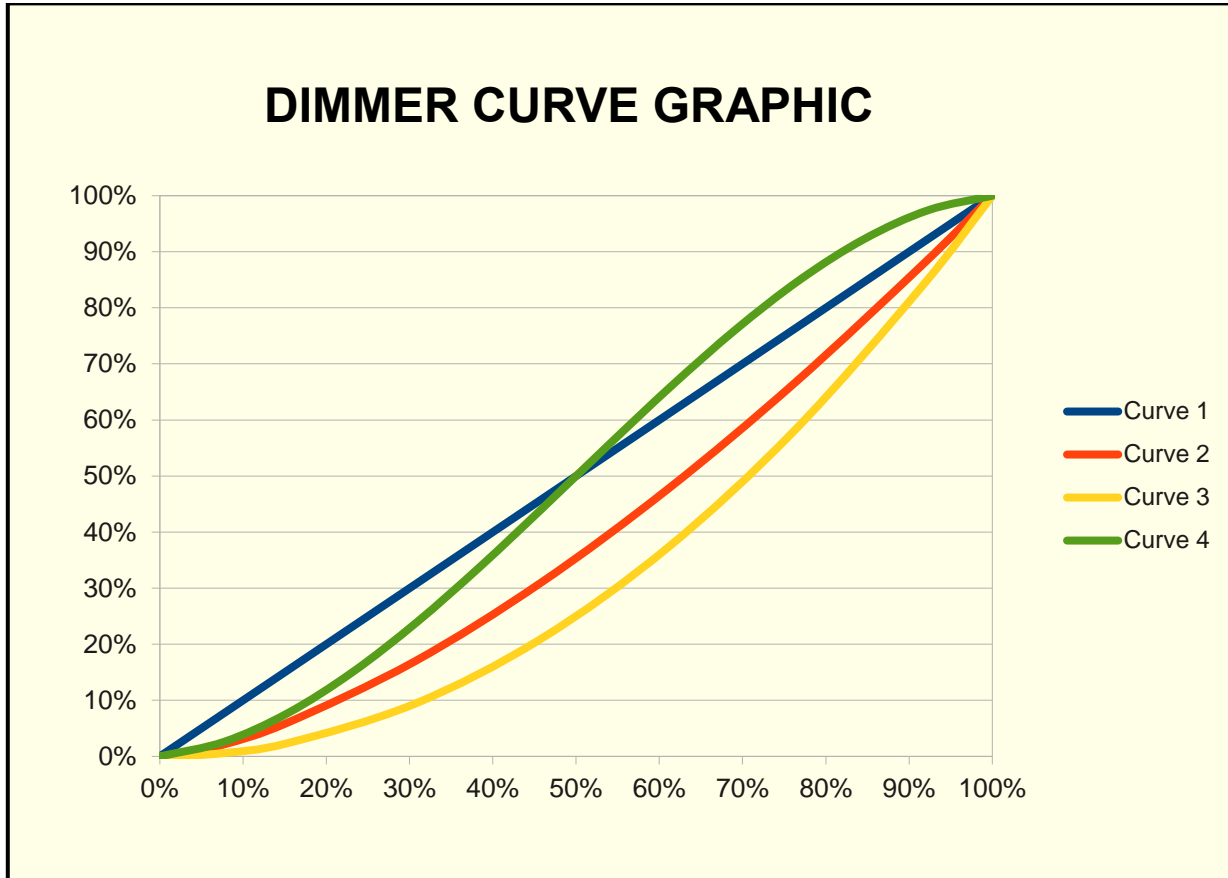


RGB	HUE	DMX value	Function
14	14		<b>MACRO COLOR</b>
		0 - 255	See chart @ page 14
15	15		<b>STROBE</b>
		0 - 3	Light OFF
		4 - 103	Strobe at linearly variable frequency from low (1Hz) to fast (16Hz)
		104 - 107	Light ON
		108 - 207	Pulsation at linearly variable speed from slow (0.5 Hz) to fast (25 Hz)
		208 - 212	Light ON
		213 - 255	Random Slow Strobe
		226 - 238	Random Medium Strobe
		239 - 251	Random Fast Strobe
252 - 255	Light ON		
16	16		<b>DIMMER</b>
		0 - 255	Light output linearly increases from off to maximum brightness
17	17		<b>DIMMER FINE</b>
		0 - 255	Fine Dimmer positioning
18	-		<b>RED / CYAN</b>
		0 - 255	Red colour linearly increases from no-light to maximum intensity
19	-		<b>GREEN / MAGENTA</b>
		0 - 255	Green colour linearly increases from no-light to maximum intensity
20	-		<b>BLUE / YELLOW</b>
		0 - 255	Blue colour linearly increases from no-light to maximum intensity
-	18		<b>HUE</b>
		0 - 255	Linear Hue setting, define the target point color in the HSV color representation system (range from 0° (Red) to 360°)
-	19		<b>HUE FINE</b>
		0 - 255	Fine Hue setting
-	20		<b>SATURATION</b>
		0 - 255	Linear Saturation setting, define the INTENSITY/PURITY of the color at a constant lightness level. It ranges from 100% (pure color) to 0% (white)
21	21		<b>CROSSFADE</b>
		0 - 255	Faded Transition with selectable timing between two sets of color points. In accordance with the selected PATH, during the faded transition all the intermediate color along the route will be displayed

RGB	HSV	DMX value	Function
22	22		<b>PATH</b>
		0 - 255	<del>Selection of the different types of route for the functionality "Crossfade" (example: along a straight line connecting directly the two points, clockwise or anticlockwise along the saturated color on the gamut border connecting the two points)</del>
23	23		<b>FAN</b>
		0 - 255	Not activated yet
24	24		<b>TINT</b>
		0-127	Linear Tint setting, define the target point correction from Magenta to OFF
		128	OFF
	129-255	Linear Tint setting, define the target point correction from OFF to Green	
25	25		<b>ZOOM</b>
		0 - 255	Zoom linearly moves from narrow to wide beam

RGB	HSV	DMX value	Function	
26	26		<b>FUNCTION</b>	
		0 - 11	None	
		12 - 37	Free	
		38 - 42	Dimmer curve 1 (Default)	Details at page 13
		43 - 47	Dimmer curve 2	
		48 - 52	Dimmer curve 3	
		53 - 57	Dimmer curve 4	
		58 - 62	Raw color channels gamma 1	Details at page 13
		63 - 67	Raw color channels gamma 1.5	
		68 - 72	Raw color channels gamma 2.2 (Default)	
		73 - 77	Halogen mode disabled (Default)	
		78 - 82	Halogen mode 1, 750W lamp emulation	
		83 - 87	Halogen mode 2, 1000W lamp emulation	
		88 - 92	Halogen mode 3, 1200W lamp emulation	
		93 - 97	Halogen mode 4, 2000W lamp emulation	
		98 - 102	Halogen mode 5, 2500W lamp emulation	
		103 - 105	Free	
		106 - 108	CCMOD: RAW (Default)	
		109 - 111	CCMOD: RGB or HSV	
		112 - 114	CCMOD: CMY	
		115 - 117	Free	
		118 - 122	Free	
		123	CTO Filt (Default)	
		124	CTO White	
		125-163	Free	
		164	Base frequency=1000Hz	
		165	Base frequency=1500Hz (Default)	
		166	Base frequency=2400Hz	
		167	Base frequency=3700Hz	
		168	Base frequency=5600Hz	
		169	Base frequency=9400Hz	
		170	Base frequency=15100Hz	
		171	Base frequency=21400Hz	
172	Base frequency=31000Hz			
173	Base frequency=43700Hz			
174-250	Free			
	Default function recall			
251 - 255	Note: all the functions are non-volatile settings. Non-volatile means that the configuration still remains active after power off.			

RGB	HSV	DMX value	Function
27	27		<b>RESET</b>
		0 - 25	Unused range
		26 - 255	All-effects Reset sequence passing through the unused levels range and staying in this range for 5 seconds.
28	28		<b>FREQUENCY</b>
		0 – 255	Fine adjusting of frequency Base selected from the Function parameter (26) - Details at page 13



## Macro Color

DMX Value	LEE Filter	Description
0 – 9	None	None
10 – 11	4	4 Med Bast Amber
12 – 13	9	Pale Amber Gold
14 – 15	10	<i>Reserved</i>
16 – 17	17	Surprise Peach
18 – 19	19	Fire
20 – 21	21	Gold Amber
22 – 23	26	Bright red
24 – 25	29	Plasa Red
26 – 27	35	Light Pink
28 – 29	58	Lavender
30 – 31	68	Sky Blue
32 – 33	71	Tokyo Blue
34 – 35	75	Evening Blue
36 – 37	79	Just Blue
38 – 39	88	Lime Green
40 – 41	90	Dark Yellow/Green
42 – 43	100	Spring Yellow
44 – 45	101	Yellow
46 – 47	102	Lt Amber
48 – 49	103	Straw
50 – 51	104	Deep Amber
52 – 53	105	Orange
54 – 55	106	Primary Red
56 – 57	108	English Rose
58 – 59	111	Dark Pink
60 – 61	113	Magenta
62 – 63	115	Peacock Blue
64 – 65	116	Med Blue-Green
66 – 67	117	Steel Blue
68 – 69	118	Light Blue
70 – 71	119	Dark Blue
72 – 73	120	Deep Blue
74 – 75	121	Lee Green
76 – 77	122	Fern Green
78 – 79	124	Dark Green
80 – 81	127	Smokey Pink
82 – 83	128	Bright Pink
84 – 85	131	Marine Blue
86 – 87	132	Med Blue
88 – 89	134	Golden Amber
90 – 91	135	Dip Golden Amber
92 – 93	136	Pale Lavender
94 – 95	137	Spec Lavender
96 – 97	138	Pale Green
98 – 99	139	Primary Green
100 – 101	141	Bright Blue
102 – 103	143	Pale Navy Blue
104 – 105	147	Apricot

DMX Value	LEE Filter	Description
106 – 107	152	Pale Gold
108 – 109	154	Pale Rose
110 – 111	157	Pink
112 – 113	158	Deep Orange
114 – 115	161	Slate Blue
116 – 117	162	Bastard Amber
118 – 119	164	Flame Red
120 – 121	165	Daylight Blue
122 – 123	169	Lilac Tint
124 – 125	170	Deep Lavender
126 – 127	172	Lagoon Blue
128 – 129	174	Dk Steel Blue
130 – 131	179	Chrome Orange
132 – 133	180	Dark Lavendar
134 – 135	181	Congo Blue
136 – 137	182	Light Red
138 – 139	197	Alice Blue
140 – 141	200	Double C.T. Blue
142 – 143	201	Full C.T. Blue
144 – 145	202	1/2 C.T. Blue
146 – 147	203	1/4 C.T. Blue
148 – 149	204	Full C.T. Orange
150 – 151	205	1/2 C.T. Orange
152 – 153	206	1/4 C.T. Orange
154 – 155	241	Lee Fluor 5700K
156 – 157	242	Lee Fluor 4300K
158 – 159	247	Lee Minus Green
160 – 161	248	1/2 Minus Green
162 – 163	281	3/4 C.T. Blue
164 – 165	285	3/4 C.T. Orange
166 – 167	328	Follies Pink
168 – 169	352	Glacier Blue
170 – 171	353	Lighter Blue
172 – 173	363	Special Medium Blue
174 – 175	706	King Fals Lavender
176 – 177	711	Cold Blue
178 – 179	724	Ocean Blue
180 – 181	728	Steel Green
182 – 183	747	Easy White
184 – 185	778	Millenium Gold
186 – 187	793	Vanity Fair
188 – 189	9999	Rose Tint (ROSCO)
190 – 255	None	Reserved

## Frequency parameter levels

Base Frequency setting	Value at 128 bit	Min value at 0 bit	Max value at 255 bit
1000 Hz	1000 Hz	744 Hz	1254 Hz
1500 Hz (Default)	1500 Hz	1244 Hz	1754 Hz
2400 Hz	2400 Hz	1760 Hz	3035 Hz
3700 Hz	3700 Hz	3060 Hz	4335 Hz
5600 Hz	5600 Hz	4320 Hz	6870 Hz
9400 Hz	9400 Hz	6840 Hz	11940 Hz
15100 Hz	15100 Hz	11900 Hz	18275 Hz
21400 Hz	21400 Hz	18200 Hz	24575 Hz
31000 Hz	31000 Hz	24600 Hz	37350 Hz
43700 Hz	43700 Hz	37300 Hz	50050 Hz