Cyberlight 2 Luminaire DMX Control Protocol *

Channel	Construct	Description	Decimal Low	Decimal High	Percent Low	Percent High	Hex Low	Hex High
1	Pan	Pan Coarse	0	255	0%	100%	00h	FFh
2	Pan	Pan Fine	0	255	0%	100%	00h	FFh
3	Tilt	Tilt Coarse	0	255	0%	100%	00h	FFh
4	Tilt	Tilt Fine	0	255	0%	100%	00h	FFh
5	Color Function	Full Speed Control						
		Continuous	0	15	0%	6%	00h	0Fh
		Cycle	16	31	6%	12%	10h	1Fh
		Random	32	47	13%	18%	20h	2Fh
		Tri-Color single flag	48	63	19%	25%	30h	3Fh
		Tri-Color dual flag	64	79	25%	31%	40h	4Fh
		TBD	80	127	31%	50%	50h	7Fh
		MSpeed Control						
		Continuous	128	143	50%	56%	80h	8Fh
		Cycle	144	159	56%	62%	90h	9Fh
		Random	160	175	63%	69%	A0h	AFh
		Tri-Color single flag	176	191	69%	75%	B0h	BFh
		Tri-Color dual flag	192	207	75%	81%	C0h	CFh
		TBD	208	255	82%	100%	D0h	FFh
6 7 8	Cyan Magenta Yellow	Continuous Mode						
		Full Saturation	0		100%		00h	
		Open	255		0%		FFh	
		Cycle & Random Modes. Scan Speed controlled by Cyan Channel						
		Slow Rate	0		0%		00h	
		Fast Rate	255		100%		FFh	
		Tri-Color Single Flag Mode (Note 4)						
		Flag 1 full to open, flag 2 open	0	127	0%	50%	00h	7Fh
		Flag 1 open, flag 2 full to open	128	255	50%	100%	80h	FFh
		Tri-Color Dual Flag Mode (Note 4)						
		Flag 1 & 2 full saturation	0		0%	0%	00h	00h
		Flag 1 full to open, flag 2 full	1	126	0%	49%	01h	7Eh
		Flag 1 & 2 open	127		50%	0%	7Fh	00h
		Flag 1 & 2 full saturation	128		50%	0%	80h	00h
		Flag 1 full, flag 2 full to open	129	254	51%	100%	81h	FEh
		Flag 1 & 2 open	255		100%	0%	FFh	00h
9	Static Color Function	Full Speed Control						
		Indexed	0	15	0%	6%	00h	0Fh
		Forward Spin	16	31	6%	12%	10h	1Fh
		Reverse Spin	32	47	13%	18%	20h	2Fh
		Slow Scan	48	63	19%	25%	30h	3Fh
		Fast Scan	64	79	25%	31%	40h	4Fh
		Random	80	95	31%	37%	50h	5Fh
		Blink	96	111	38%	44%	60h	6Fh
		TBD	112	127	44%	50%	70h	7Fh
		MSpeed Control						
		Indexed	128	143	50%	56%	80h	8Fh
		Forward Spin	144	159	56%	62%	90h	9Fh
		Reverse Spin	160	175	63%	69%	A0h	AFh
		Slow Scan	176	191	69%	75%	B0h	BFh
		Fast Scan	192	207	75%	81%	C0h	CFh
		Random	208	223	82%	87%	D0h	DFh
		Blink	224	239	88%	94%	E0h	EFh
		TBD	240	255	94%	100%	F0h	FFh
10	Static Color Position	Indexed, Scan & Blink modes						
		Position 1 (Open)	0	31	0%	12%	00h	1Fh
		Position 2 (Red)	32	63	13%	25%	20h	3Fh
		Position 3 (Purple)	64	95	25%	37%	40h	5Fh
		Position 4 (CTO)	96	127	38%	50%	60h	7Fh
		Position 5 (Aqua)	128	159	50%	62%	80h	9Fh
		Position 6 (Dark Blue)	160	191	63%	75%	A0h	BFh

		Position 7 (Dark Orange)	192	223	75%	87%	C0h	DFh
		Position 8 (Indigo)	224	255	88%	100%	E0h	FFh
		Spin & Random modes						
		Slowest to fastest	0	255	0%	100%	00h	FFh
11	Static Gobo Function	Full Speed Control						
		Indexed	0	15	0%	6%	00h	0Fh
		Forward Spin	16	31	6%	12%	10h	1Fh
		Reverse Spin	32	47	13%	18%	20h	2Fh
		Slow Scan (slowest to fastest)	48	63	19%	25%	30h	3Fh
		Fast Scan (slowest to fastest)	64	79	25%	31%	40h	4Fh
		Random	80	95	31%	37%	50h	5Fh
		Blink	96	111	38%	44%	60h	6Fh
		Shake (slowest to fastest)	112	127	44%	50%	70h	7Fh
		MSpeed Control						
		Indexed	128	143	50%	56%	80h	8Fh
		Forward Spin	144	159	56%	62%	90h	9Fh
		Reverse Spin	160	175	63%	69%	A0h	AFh
		Slow Scan (slowest to fastest)	176	191	69%	75%	B0h	BFh
		Fast Scan (slowest to fastest)	192	207	75%	81%	C0h	CFh
		Random	208	223	82%	87%	D0h	DFh
		Blink	224	239	88%	94%	E0h	EFh
		Shake (slowest to fastest)	240	255	94%	100%	F0h	FFh
12	Static Gobo Position	Indexed, Scan & Blink modes						
		Position 1 (Open)	0	31	0%	12%	00h	1Fh
		Position 2 (Leaves)	32	63	13%	25%	20h	3Fh
		Position 3 (Dots)	64	95	25%	37%	40h	5Fh
		Position 4 (Abyss)	96	127	38%	50%	60h	7Fh
		Position 5 (Tunnel)	128	159	50%	62%	80h	9Fh
		Position 6 (Sharp Burst)	160	191	63%	75%	A0h	BFh
		Position 7 (Lapse)	192	223	75%	87%	C0h	DFh
		Position 8 (Groovy)	224	255	88%	100%	E0h	FFh
		Spin & Random modes						
		Slowest to fastest	0	255	0%	100%	00h	FFh
13	Rotating Gobo Position	Position 1 (Net)	0	50	0%	20%	00h	32h
		Position 2 (Red Rings)	51	101	20%	40%	33h	65h
		Position 3 (Open)	102	152	40%	60%	66h	98h
		Position 4 (Indigo Chicklets)	153	203	60%	80%	99h	CBh
		Position 5 (Droplets)	204	255	80%	100%	CCh	FFh
14	Rotating Gobo Rotate Function	Full Speed Control						
		Indexed	0	15	0%	6%	00h	0Fh
		Forward Rotate	16	31	6%	12%	10h	1Fh
		Reverse Rotate	32	47	13%	18%	20h	2Fh
		Blink	48	63	19%	25%	30h	3Fh
		Forward Animate Rotate	64	79	25%	31%	40h	4Fh
		Reverse Animate Rotate	80	95	31%	37%	50h	5Fh
		Reserved	96	127	38%	50%	60h	7Fh
		MSpeed Control						
		Indexed	128	143	50%	56%	80h	8Fh
		Forward Rotate	144	159	56%	62%	90h	9Fh
		Reverse Rotate	160	175	63%	69%	A0h	AFh
		Blink	176	191	69%	75%	B0h	BFh
		Forward Animate Rotate	192	207	75%	81%	C0h	CFh
		Reverse Animate Rotate	208	223	82%	87%	D0h	DFh
		Reserved	224	255	88%	100%	E0h	FFh

15	Rotating Gobo Rotate Coarse	Indexed/Blink Modes						
		Position 0-360 degrees	0	255	0%	100%	00h	FFh
		Forward/Reverse/Forward Strobe/Reverse Strobe Rotate Modes						
		Rotate Stop	0	3	0%	1%	00h	03h
		Rotate Slowest to Fastest	4	255	2%	100%	04h	FFh
16	Rotating Gobo Rotate Fine	Indexed Mode						
		Low Order Byte 0-360 degrees	0	255	0%	100%	00h	FFh
17	Effect Function	Full Speed Control						
		Indexed	0	15	0%	6%	00h	0Fh
		Slow Scan	16	31	6%	12%	10h	1Fh
		Fast Scan	32	47	13%	18%	20h	2Fh
		Random	48	63	19%	25%	30h	3Fh
		Blink	64	79	25%	31%	40h	4Fh
		TBD	80	127	31%	50%	50h	7Fh
		MSpeed Control						
		Indexed	128	143	50%	56%	80h	8Fh
		Slow Scan	144	159	56%	62%	90h	9Fh
		Fast Scan	160	175	63%	69%	A0h	AFh
		Random	176	191	69%	75%	B0h	BFh
		Blink	192	207	75%	81%	C0h	CFh
		TBD	208	255	82%	100%	D0h	FFh
18	Effect Position	Indexed, Scan & Blink modes						
		Position 1 (amber stony)	0	31	0%	12%	00h	1Fh
		Position 2 (diffusion)	32	63	13%	25%	20h	3Fh
		Position 3 (wide angle)	64	95	25%	37%	40h	5Fh
		Position 4 (yellow burst)	96	127	38%	50%	60h	7Fh
		Position 5 (open)	128	159	50%	62%	80h	9Fh
		Position 6 (magenta ring)	160	191	63%	75%	A0h	BFh
		Position 7 (tri color mosaic C-Y-M)	192	223	75%	87%	C0h	DFh
		Position 8 (prism)	224	255	88%	100%	E0h	FFh
19	Frost	Open	0		0%	0%	00h	00h
		Variable	1	254	0%	100%	01h	FEh
		Full Frost	255		100%	0%	FFh	00h
20	Zoom	Zoom In	0		0%		00h	
		Zoom Out	255		100%		FFh	
21	Focus	Focus Out	0		0%		00h	
		Focus In	255		100%		FFh	
22	Iris	Iris Closed	0		0%		00h	
		Iris Open	255		100%		FFh	
23	Shutter/ Lamp Functions	Normal Shutter Functions	0	31	0%	12%	00h	1Fh
		Random Random strobe	32	63	13%	25%	20h	3Fh
		Synchronous Random Strobe	64	95	25%	37%	40h	5Fh
		Lamp Functions (note 3)	96	127	38%	50%	60h	7Fh
		Normal Shutter Functions	128	255	50%	100%	80h	FFh
24	Shutter	Normal/Random/Sync Random shutter functions. (Note1)						
		Close	0	23	0%	9%	00h	17h
		Strobe Rate (slow to fast)	24	229	9%	90%	18h	E5h
		Open	230	255	90%	100%	E6h	FFh
		Lamp functions. Accessed when the Control channel is set in the range 96 to 127. (Note 2)						
		Close	0	23	0%	9%	00h	17h
		Boost lamp 1.0 second, black	102	105	40%	41%	66h	69h
		Boost lamp 0.75 second, black	106	109	42%	43%	6Ah	6Dh
		Boost lamp 0.66 second, black	110	113	43%	44%	6Eh	71h
		Boost lamp 0.5 second, black	114	117	45%	46%	72h	75h
		Boost lamp 0.33 second, black	118	121	46%	47%	76h	79h
		Boost lamp 0.25 second, black	122	127	48%	50%	7Ah	7Fh
		Boost lamp 1.0 second, white	128	131	50%	51%	80h	83h
		Boost lamp 0.75 second, white	132	135	52%	53%	84h	87h
		Boost lamp 0.66 second, white	136	139	53%	55%	88h	8Bh
		Boost lamp 0.5 second, white	140	143	55%	56%	8Ch	8Fh
		Boost lamp 0.33 second, white	144	147	56%	58%	90h	93h
		Boost lamp 0.25 second, white	148	153	58%	60%	94h	99h
		Lightning strike 1	154	157	60%	62%	9Ah	9Dh
		Lightning strike 2	158	161	62%	63%	9Eh	A1h
		Lightning strike 3	162	165	64%	65%	A2h	A5h
		Lightning strike 4	166	169	65%	66%	A6h	A9h

		Lightning strike 5	170	173	67%	68%	AAh	ADh
		Lightning strike 6	174	179	68%	70%	AEh	B3h
		To be determined. Default Black.	180	231	71%	91%	B4h	E7h
		Open	232	255	91%	100%	E8h	FFh
25	Dim	Close	0		0%		00h	
		Open	255		100%		FFh	
26	Mspeed	Disable	0	3	0%	1%	00h	03h
		Longest (252.7 seconds)	4		2%		04h	
		Shortest (0.15 seconds)	255		100%		FFh	
27	Macro (Note 3)	Macro off	0	5	0%	2%	00h	05h
		Pan Sweep, small to large	6	62	2%	24%	06h	3Eh
		Macro off	63	65	25%	25%	3Fh	41h
		Tilt Sweep, small to large	66	122	26%	48%	42h	7Ah
		Macro off	123	125	48%	49%	7Bh	7Dh
		Clockwise Circle, small to large	126	160	49%	63%	7Eh	A0h
		Macro off	161	163	63%	64%	A1h	A3h
		Counterclockwise Circle, small to large	164	198	64%	78%	A4h	C6h
		Reserved. Macro off.	199	255	78%	100%	C7h	FFh
28	Control	The Control channel should not be crossfaded. No shutter channel requirement.						
		Safe (normal operation)	0	9	0%	4%	00h	09h
		Pan & Tilt Mspeed Off	10	19	4%	7%	0Ah	13h
		Shutter channel to 0 for access to the following commands.						
		Display Off (send 20 packets)	20	28	8%	11%	14h	1Ch
		Display On (send 20 packets)	30	38	12%	15%	1Eh	26h
		Home All (send 20 packets)	40	48	16%	19%	28h	30h
		Lamp On (send 20 packets)	50	58	20%	23%	32h	3Ah
		Lamp Off (send 20 packets)	60	68	24%	27%	3Ch	44h
		Shutdown (send 80 packets)	71	80	28%	31%	47h	50h
		No shutter channel requirement.						
		TBD	81	255	32%	100%	51h	FFh

NOTES

Note 1 Strobes transition smoothly from mechanical strobes to electronic strobes. Periodic strobes support 1 - 5.4 Hz operation. Electronic strobes support 5.4 - 20 Hz operation.

Note 2 Lamp Functions boost the lamp above 2000 watts for boost to white, boost to black, or lightning effects set in the shutter channel 18.

Note 3 The pan and tilt coarse channels set the center position of the position macro.

The Mspeed channel is used to control the speed of the macros.

0-4 Default speed of 2.5 seconds.

5-255 Minimum speed of 1/2 second with a maximum of 25 seconds.

With the Mspeed set at the default value of DMX 0-4 all internal effects complete moves at appr. 2.5 seconds. This provides a pleasing look for customers not wanting the additional variation given by using the Mspeed channel. With Mspeed set between DMX 5-255 all internal effects complete moves at selected Mspeed time (up to 25 secs). Those fixture types that support On Board Programming also support the Internal Effects as part of the On Board programming features. The Internal Effects will operate as an additional programming parameter labeled MACR.

Note 4 Tri-color mode representation.