Showgun© 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
		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
	Color	TBD	80	127	31%	50%	50h	7Fh
5	Function	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
		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 6)						
6	Cyan	Flag 1 full to open, flag 2 open	0	127	0%	50%	00h	7Fh
7	Magenta	Flag 1 open, flag 2 full to open	128	255	50%	100%	80h	FFh
8	Yellow	Tri-Color Dual Flag Mode (Note 6)						
		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
		Position 1 (Open)	0	31	0%	12%	00h	1Fh
		Position 2 (Red Gatlin Gun)	32	63	13%	25%	20h	3Fh
9	Gobo 1	Position 3 (Crystal)	64	95	25%	37%	40h	5Fh
	Position	Position 4 (Indigo)	96	127	38%	50%	60h	7Fh
		Position 5 (Round Dot)	128	159	50%	62%	80h	9Fh
		Position 1 (Open)	160	191	63%	75%	A0h	BFh
		Reserved	192	255	75%	100%	C0h	FFh
		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 Strobe Rotate	64	79	25%	31%	40h	4Fh
		Reverse Strobe Rotate	80	95	31%	37%	50h	5Fh
	Gobo 1	Reserved	96	127	38%	50%	60h	7Fh
10	Rotate	MSpeed Control						
	Function	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 Strobe Rotate	192	207	75%	81%	C0h	CFh
		Reverse Strobe Rotate	208	223	82%	87%	D0h	DFh
		Reserved	224	255	88%	100%	E0h	FFh

11	Gobo 1 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
12	Gobo 1 Rotate Fine	Indexed Mode						
		Low Order Byte 0-360 degrees	0	255	0%	100%	00h	FFh
13	Soft Edge	Open (hard edge)	0		0%	0%	00h	00h
		Variable edge hard to soft)	1	254	0%	100%	01h	FEh
		Soft Edge	255		100%	0%	FFh	00h
14	Zoom	Zoom In	0		0%		00h	
		Zoom Out	255		100%		FFh	
15	Focus	Focus Out	0		0%		00h	
		Focus In	255		100%		FFh	
16	Iris	Iris Closed	0		0%		00h	
		Iris Open	255		100%		FFh	
17	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
18	Shutter	Normal/Random/Sync Random shutter functions. (Note 2)						
		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 3)						
		Close	0	23	0%	9%	00h	17h
		Periodic lamp strobes	24	49	9%	19%	18h	31h
		Random random lamp strobes	50	75	20%	29%	32h	4Bh
		Synchronous random lamp strobes	76	101	30%	40%	4Ch	65h
		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
19	Dim	Close	0		0%		00h	
		Open	255		100%		FFh	
20	Mspeed	Disable	0	3	0%	1%	00h	03h
		Longest (252.7 seconds)	4		2%		04h	
		Shortest (0.15 seconds)	255		100%		FFh	
21	Macro (Note 4)	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
		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
22	Control	Display Bright (send 20 packets)	40	48	16%	19%	28h	30h
		Home All (send 20 packets)	60	68	24%	27%	3Ch	44h
		Lamp On (send 20 packets)	80	88	31%	35%	50h	58h
		Lamp Off (send 20 packets)	90	98	35%	38%	5Ah	62h
		Shutdown (send 80 packets)	120	130	47%	51%	78h	82h
		No shutter channel requirement.						
		Outrig Mode	131	140	51%	55%	83h	8Ch
		TBD	141	255	55%	100%	8Dh	FFh
23	Tracking Ring Dim	Tracking Ring Off	0		0%		00h	
		Tracking Ring 100%	255		100%		FFh	
		Tracking Ring Dim Tracking Mode						
		Continuous	0	15	0%	6%	00h	0Fh
		Cycle	16	31	6%	12%	10h	1Fh
		Random	32	47	13%	18%	20h	2Fh
		Periodic Strobe (slow to fast)	48	73	19%	29%	30h	49h
		Reserved	74	127	29%	50%	4Ah	7Fh
24	Ring Function (note 1)	Tracking Ring Independent Dim Mode						
		Continuous	128	143	50%	56%	80h	8Fh
		Cycle	144	159	56%	62%	90h	9Fh
		Random	160	175	63%	69%	A0h	AFh
		Periodic Strobe (slow to fast)	176	201	69%	79%	B0h	C9h
		Reserved	202	255	79%	100%	CAh	FFh
	Tracking Ring	Continuous Mode (off 0/0, full 255/255, see note 5)						
		Red Coarse	0	255	0%	100%	00h	FFh
25	Red	Red Fine	0	255	0%	100%	00h	FFh
26	Red	Green Coarse	0	255	0%	100%	00h	FFh
27	Green	Green Fine	0	255	0%	100%	00h	FFh
28	Green	Blue Coarse	0	255	0%	100%	00h	FFh
29	Blue	Blue Fine	0	255	0%	100%	00h	FFh
30	Blue	Cycle & Random Modes. Cycle Speed is controlled by Red Coarse Channel (25)						
		Slow Rate	0		0%		00h	
		Fast Rate	255		100%		FFh	

NOTES

Note 1 In Dim Tracking mode, the Dim Channel (19) will override Tracking Ring Dim (23) if it is at a lower intensity. Visually, the lowest level will take precedence. In Independent Dim mode, the tracking ring will operate at an independent dim level from the dim channel(19).

Note 2 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 3 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 4 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 5 In Continuous Mode LED intensity runs from full intensity at 255/255 to off at 0/0. In strobe modes channels 25-30 adjust color, just as in continuous mode.

Note 6 Tri-color mode representation.