

SolaFrame1500® Luminaire DMX Control Protocol *

Standard Protocol	
Channel	Construct
1	Pan Coarse
2	Pan Fine
3	Tilt Coarse
4	Tilt Fine
5	Mix Color Function
6	Cyan
7	Magenta
8	Yellow
9	CTO
10	Static Color Function
11	Static Color Position
12	Gobo 1 Function
13	Gobo 1 Position
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15	Gobo 1 Rotate Coarse
16	Gobo 1 Rotate Fine
17	Gobo 2 Function
18	Gobo 2 Position
19	Blade 1 Angle A
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21	Blade 2 Angle A
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27	Frame Rotate Course
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29	Animation Function
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31	Prism Rotate Coarse
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34	Focus Coarse
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46	Control
47	Indigo Highlighter Function
48	Indigo Highlighter Dim

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Channel	Marketing Construct	Description	Decimal Low	Decimal High	Percent Low	Percent High	Hex Low	Hex High	Controller Defaults		
1	Pan	Pan Coarse	0	255	0%	100%	00h	FFh	127		
2	Pan	Pan Fine	0	255	0%	100%	00h	FFh	255		
3	Tilt	Tilt Coarse	0	255	0%	100%	00h	FFh	127		
4	Tilt	Tilt Fine	0	255	0%	100%	00h	FFh	255		
5	Color Mix Function	Pure Mix	0	31	0%	12%	00h	1Fh	0		
		Cycle	32	47	13%	18%	20h	2Fh			
		Random	48	63	19%	25%	30h	3Fh			
		Reserved	64	255	25%	100%	40h	FFh			
6 7 8	Cyan Magenta Yellow	Pure Mix							255		
		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						
9	CTO	Full Saturation	0		0%		00h		255		
		Open (White)	255		100%		FFh				
10	Static Color Function	Full Speed Control									
		Indexed	0	15	0%	6%	00h	0Fh	48		
		Forward Spin	16	31	6%	12%	10h	1Fh			
		Reverse Spin	32	47	13%	18%	20h	2Fh			
		Continuous (Note 1)	48	63	19%	25%	30h	3Fh			
		Fast Scan	64	79	25%	31%	40h	4Fh			
		Random	80	95	31%	37%	50h	5Fh			
Reserved	96	255	38%	100%	60h	FFh					
11	Static Color Position	Indexed, Scan & Blink modes									
		1. Open (White)	0	16	0%	6%	00h	10h	0		
		2. (Open/Red)	17	32	7%	13%	11h	20h			
		3. (Red)	33	48	13%	19%	21h	30h			
		4. (Red/Blue)	49	64	19%	25%	31h	40h			
		5. (Blue)	65	80	25%	31%	41h	50h			
		6. (Blue/Green)	81	96	32%	38%	51h	60h			
		7. (Green)	97	112	38%	44%	61h	70h			
		8. (Green/Orange)	113	128	44%	50%	71h	80h			
		9. (Orange)	129	144	51%	56%	81h	90h			
		10. (Orange/Magenta)	145	160	57%	63%	91h	A0h			
		11. (Magenta)	161	176	63%	69%	A1h	B0h			
		12. (Magenta/Congo Blue)	177	192	69%	75%	B1h	C0h			
		13. (Congo Blue)	193	208	76%	82%	C1h	D0h			
		14. (Congo Blue/Open)	209	224	82%	88%	D1h	E0h			
		1. Open (White)	225	255	88%	100%	E1h	FFh			
		Spin & Random modes									
		Stop	0		0%	0%	00h	00h			
		Slowest to fastest	255		100%	0%	FFh	00h			
Continuous mode											
Positioning from 0-360 degrees	0	255	0%	100%	00h	FFh					
12	Gobo 1 Function	Full Speed Control									
		Indexed	0	15	0%	6%	00h	0Fh	0		
		Forward Wheel Spin	16	31	6%	12%	10h	1Fh			
		Reverse Wheel Spin	32	47	13%	18%	20h	2Fh			
		Scan	48	63	19%	25%	30h	3Fh			
		Random	64	79	25%	31%	40h	4Fh			
TBD/Indexed	80	255	31%	100%	50h	FFh					

13	Gobo 1 Position	Indexed, Scan & Blink modes							0
		1. (Open)	0	31	0%	12%	00h	1Fh	
		2. (Animation)	32	63	13%	25%	20h	3Fh	
		3. (Rip Wheel)	64	95	25%	37%	40h	5Fh	
		4. (Curved Lines)	96	127	38%	50%	60h	7Fh	
		5. (Tech Wedge)	128	159	50%	62%	80h	9Fh	
		6. (Red Rings)	160	191	63%	75%	A0h	BFh	
		7. (Psy Dye)	192	223	75%	87%	C0h	DFh	
		1. (Open)	224	255	88%	100%	E0h	FFh	
		Spin & Random modes							
Rotate Stop	0	3	0%	1%	00h	03h			
Slowest to fastest	4	255	2%	100%	04h	FFh			
14	Gobo 1 Rotate Function	Full Speed Control							0
		Indexed	0	15	0%	6%	00h	0Fh	
		Forward Rotate	16	31	6%	12%	10h	1Fh	
		Reverse Rotate	32	47	13%	18%	20h	2Fh	
		Forward Strobe Rotate (Gobo animate)	48	63	19%	25%	30h	3Fh	
		Reverse Strobe Rotate (Gobo animate)	64	79	25%	31%	40h	4Fh	
Reserved	80	255	31%	100%	50h	FFh			
15	Gobo 1 Rotate Coarse	Indexed/Blink Modes							127
		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	Gobo 1 Rotate Fine	Indexed Mode							255
		Low Order Byte 0-360 degrees	0	255	0%	100%	00h	FFh	
17	Gobo 2 Function	Full Speed Control							0
		Indexed	0	15	0%	6%	00h	0Fh	
		Forward Wheel Spin	16	31	6%	12%	10h	1Fh	
		Reverse Wheel Spin	32	47	13%	18%	20h	2Fh	
		Scan	48	63	19%	25%	30h	3Fh	
		Random	64	79	25%	31%	40h	4Fh	
TBD/Indexed	80	255	31%	100%	50h	FFh			
18	Gobo 2 Position	1. (Open)	0	15	0%	6%	00h	0Fh	255
		2. (Tunnel)	16	47	6%	18%	10h	2Fh	
		3. (Bars)	48	79	19%	31%	30h	4Fh	
		4. (Fan)	80	111	31%	44%	50h	6Fh	
		5. (Breakup)	112	143	44%	56%	70h	8Fh	
		6. (Burst)	144	175	56%	69%	90h	AFh	
		7. (Fracture)	176	207	69%	81%	B0h	CFh	
		8. (Crosshatch)	208	239	82%	94%	D0h	EFh	
19	Blade 1 Angle A	1. (Open)	240	255	94%	100%	F0h	FFh	0
		Out of the light path	0		0%		00h		
		Full in the light path	255		100%		FFh		
20	Blade 1 Angle B	Out of the light path	0		0%		00h		0
		Full in the light path	255		100%		FFh		
21	Blade 2 Angle A	Out of the light path	0		0%		00h		0
		Full in the light path	255		100%		FFh		
22	Blade 2 Angle B	Out of the light path	0		0%		00h		0
		Full in the light path	255		100%		FFh		
23	Blade 3 Angle A	Out of the light path	0		0%		00h		0
		Full in the light path	255		100%		FFh		
24	Blade 3 Angle B	Out of the light path	0		0%		00h		0
		Full in the light path	255		100%		FFh		
25	Blade 4 Angle A	Out of the light path	0		0%		00h		0
		Full in the light path	255		100%		FFh		
26	Blade 4 Angle B	Out of the light path	0		0%		00h		0
		Full in the light path	255		100%		FFh		
27	Frame Rotation Coarse	Frame Angle Negative	0	127	0%	50%	00h	7Fh	0
		Frame Angle 0 degrees	128		50%		80h		
		Frame Angle positive	129	255	51%	100%	81h	FFh	
28	Frame Rotation Fine	Frame Angle Negative	0	127	0%	50%	00h	7Fh	0
		Frame Angle 0 degrees	128		50%		80h		
		Frame Angle positive	129	255	51%	100%	81h	FFh	

29	Animation Function	Disengaged	0	3	0%	1%	00h	03h	0
		Engaged, static	4	6	2%	2%	04h	06h	
		Engaged, motion stopped	7	8	3%	3%	07h	08h	
		Engaged, speed slow to fast	9	255	4%	100%	09h	FFh	
30	Prism Function	Full Speed Control							0
		Disengaged	0	15	0%	6%	00h	0Fh	
		Continuous	16	31	6%	12%	10h	1Fh	
		Forward Spin	32	47	13%	18%	20h	2Fh	
		Reverse Spin	48	63	19%	25%	30h	3Fh	
		Reserved	64	255	25%	100%	40h	FFh	
31	Prism Rotate Coarse	Continuous mode							127
		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	
32	Prism Rotate Fine	Continuous mode						255	
		Low Order Byte 0-360 degrees	0	255	0%	100%	00h	FFh	
33	Frost	Open (hard edge)	0		0%	0%	00h	00h	0
		Variable edge hard to soft)	1	127	0%	50%	01h	7Fh	
		Soft Edge	128	135	50%	53%	80h	87h	
		Periodic strobe	136	151	53%	59%	88h	97h	
		Random strobe	152	167	60%	65%	98h	A7h	
		Open (hard edge)	168	225	66%	88%	A8h	E1h	
34	Focus Coarse	Focus In	0		0%		00h		127
		Focus Out	255		100%		FFh		
35	Focus Fine	Focus In	0		0%		00h		255
		Focus Out	255		100%		FFh		
36	Zoom Coarse	Zoom In	0		0%		00h		127
		Zoom Out	255		100%		FFh		
37	Zoom Fine	Zoom In	0		0%		00h		255
		Zoom Out	255		100%		FFh		
38	Auto Focus	Auto Focus Off	0	15	0%	6%	00h	0Fh	0
		5m	16	31	6%	12%	10h	1Fh	
		7.5m	32	47	13%	18%	20h	2Fh	
		10m	48	255	19%	100%	30h	FFh	
39	Auto Focus Fine	Focus In Fine	0		0%		00h		0
		Focus Out Fine	255		100%		FFh		
40	Iris	Iris Closed	0		0%		00h		255
		Iris Open	255		100%		FFh		
41	Shutter/LED Functions	Normal Shutter Functions	0	31	0%	12%	00h	1Fh	0
		Random Random strobe	32	63	13%	25%	20h	3Fh	
		Synchronous Random Strobe	64	95	25%	37%	40h	5Fh	
		Normal Shutter Functions	96	255	38%	100%	60h	FFh	
42	Shutter/LED	Normal/Random/Sync Random shutter functions.							255
		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	
43	Dim Coarse	Close	0		0%		00h		0
		Open	255		100%		FFh		
44	Dim Fine		0		0%		00h		0
			255		100%		FFh		
45	Mspeed	Disable	0	3	0%	1%	00h	03h	0
		Longest (252.7 seconds)	4		2%		04h		
		Shortest (0.15 seconds)	255		100%		FFh		

46	Control	The Control channel should not be crossfaded. No shutter channel requirement.							0
		Safe (normal operation)	0	9	0%	4%	00h	09h	
		Pan & Tilt Mspeed Off	10	19	4%	7%	0Ah	13h	
		Display Off (send 20 packets)	20	28	8%	11%	14h	1Ch	
		Display On (send 20 packets)	29	35	11%	14%	1Dh	23h	
		TBD	36	48	14%	19%	24h	30h	
		Home All (send 20 packets)	49	68	19%	27%	31h	44h	
		Shutdown (send 80 packets)	69	75	27%	29%	45h	4Bh	
		Fan Control Modes (NOTE 2)							
		Studio fan control mode (send 20 packets)	76	82	30%	32%	4Ch	52h	
		Continuous fan control mode (send 20 packets)	83	89	33%	35%	53h	59h	
		Standard fan control mode (send 20 packets)	90	96	35%	38%	5Ah	60h	
		Disable Pan/Tilt motors	97	103	38%	40%	61h	67h	
		TBD	104	130	41%	51%	68h	82h	
		Audio Sync	131	160	51%	63%	83h	A0h	
		Internal Prog 1 scene 1-8 EEPROM	161	171	63%	67%	A1h	ABh	
		Internal Prog 2 scene 9-16 EEPROM	172	182	67%	71%	ACh	B6h	
		Internal Prog 3 scene 17-24 EEPROM	183	193	72%	76%	B7h	C1h	
		Internal Prog 4 scene 25-32 EEPROM	194	204	76%	80%	C2h	CCh	
		Internal Prog 5 scene 33-40 EEPROM	205	215	80%	84%	CDh	D7h	
		Internal Prog 6 scene 41-48 EEPROM	216	226	85%	89%	D8h	E2h	
		Internal Prog 7 scene 49-56 EEPROM	227	237	89%	93%	E3h	EDh	
		TBD	238	255	93%	100%	EEh	FFh	
47	Indigo Highlighter Function	Indigo Highlighter Dim Tracking Mode							0
		Continuous	0	15	0%	6%	00h	0Fh	
		Periodic Strobe (slow to fast)	16	41	6%	16%	10h	29h	
		Random Strobe (slow to fast)	42	67	16%	26%	2Ah	43h	
		TBD	68	127	27%	50%	44h	7Fh	
		Indigo Highlighter Independent Dim Mode							
		Continuous	128	143	50%	56%	80h	8Fh	
		Periodic Strobe (slow to fast)	144	169	56%	66%	90h	A9h	
		Random Strobe (slow to fast)	170	195	67%	76%	AAh	C3h	
		TBD	196	255	77%	100%	C4h	FFh	
48	Indigo Highlighter Dim	Indigo Highslihter Off	0		0%		00h		0
		Indigo Highlighter 100%	255		100%		FFh		

NOTES

- 1 Continuous mode should take quickest path from 255-0, and 0-255.
Continuous mode color wheel aperture centers

Color	Center of color DMX value
Open	0
Red	40
Blue	72
Green	110
Orange	144
Magenta	184
Congo Blue	219

- 2 Fan control modes are not retentive. When the fixture is turned off it will default back to Standard mode.

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