

SolaFrame 1000 Luminaire DMX Control Protocol *

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 (Note 5)	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								
9	CTO	Full Saturation	0		0%		00h		255	
		Open (White)	255		100%		FFh			
10	Static Color Function	Indexed (Note 1)	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 (Note 5)	96	255	38%	100%	60h	FFh		
11	Static Color Position	Indexed Mode								0
		Open (White)	0	16	0%	6%	00h	10h		
		Open/Red	17	32	7%	13%	11h	20h		
		Red	33	48	13%	19%	21h	30h		
		Red/Light Blue	49	64	19%	25%	31h	40h		
		Light Blue	65	80	25%	31%	41h	50h		
		Light Blue/Green	81	96	32%	38%	51h	60h		
		Green	97	112	38%	44%	61h	70h		
		Green/TM30	113	128	44%	50%	71h	80h		
		TM30	129	144	51%	56%	81h	90h		
		TM30/Orange	145	160	57%	63%	91h	A0h		
		Orange	161	176	63%	69%	A1h	B0h		
		Orange/Dark Blue	177	192	69%	75%	B1h	C0h		
		Dark Blue	193	208	76%	82%	C1h	D0h		
		Dark Blue/Open	209	224	82%	88%	D1h	E0h		
		Open (White)	225	255	88%	100%	E1h	FFh		
		Scan Mode								
		Open/Red	0	35	0%	14%	00h	23h		
		Red/Light Blue	36	71	14%	28%	24h	47h		
		Light Blue/Green	72	107	28%	42%	48h	6Bh		
		Green/TM30	108	143	42%	56%	6Ch	8Fh		
		TM30/Orange	144	179	56%	70%	90h	B3h		
		Orange/Dark Blue	180	215	71%	84%	B4h	D7h		
		Dark Blue/Open	216	255	85%	100%	D8h	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	Indexed (Note 1)	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		
		Reserved (Note 5)	80	255	31%	100%	50h	FFh		
13	Gobo 1 Position	Indexed mode							0	
		Open	0	24	0%	9%	00h	18h		
		Tunnel	25	49	10%	19%	19h	31h		
		Triangles	50	74	20%	29%	32h	4Ah		
		Organic	75	99	29%	39%	4Bh	63h		
		Shatter	100	124	39%	49%	64h	7Ch		
		Abstract	125	149	49%	58%	7Dh	95h		
		Cobble	150	174	59%	68%	96h	AEh		
		Endgrain	175	199	69%	78%	AFh	C7h		
		Warped	200	224	78%	88%	C8h	E0h		
		Open	225	255	88%	100%	E1h	FFh		
		Spin & Random modes								
		Rotate Stop	0	3	0%	1%	00h	03h		
		Slowest to fastest	4	255	2%	100%	04h	FFh		
		Scan mode								
		Open/Tunnel	0	27	0%	11%	00h	1Bh		
		Tunnel/Triangles	28	55	11%	22%	1Ch	37h		
		Triangles/Organic	56	83	22%	33%	38h	53h		
		Organic/Shatter	84	111	33%	44%	54h	6Fh		
		Shatter/Abstract	112	139	44%	55%	70h	8Bh		
Abstract/Cobble	140	167	55%	65%	8Ch	A7h				
Cobble/Endgrain	168	195	66%	76%	A8h	C3h				
Endgrain/Warped	196	223	77%	87%	C4h	DFh				
Warped/Open	224	255	88%	100%	E0h	FFh				
14	Gobo 2 Function	Indexed (Note 1)	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		
		Reserved (Note 5)	80	255	31%	100%	50h	FFh		

15	Gobo 2 Position	Indexed mode							0
		Open	0	27	0%	11%	00h	1Bh	
		Bar	28	55	11%	22%	1Ch	37h	
		StripeStrips	56	83	22%	33%	38h	53h	
		Fracked	84	111	33%	44%	54h	6Fh	
		Starvolver	112	139	44%	55%	70h	8Bh	
		Pinwheel Dots	140	167	55%	65%	8Ch	A7h	
		Ice	168	195	66%	76%	A8h	C3h	
		Shower	196	223	77%	87%	C4h	DFh	
		Open	224	225	88%	88%	E0h	E1h	
		Spin & Random modes							
		Rotate Stop	0	3	0%	1%	00h	03h	
		Slowest to fastest	4	255	2%	100%	04h	FFh	
		Scan mode							
		Open/Bar	0	31	0%	12%	00h	1Fh	
		Bar/StripeStrips	32	63	13%	25%	20h	3Fh	
		StripeStrips/Fracked	64	95	25%	37%	40h	5Fh	
		Fracked/Starvolver	96	127	38%	50%	60h	7Fh	
		Starvolver/Pinwheel Dots	128	159	50%	62%	80h	9Fh	
		Pinwheel Dots/Ice	160	191	63%	75%	A0h	BFh	
Ice/Shower	192	223	75%	87%	C0h	DFh			
Shower/Open	224	255	88%	100%	E0h	FFh			
16	Gobo 2 Rotate Function	Indexed (Note 1)							0
		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 (Note 5)	80	255	31%	100%	50h	FFh	
17	Gobo 2 Rotate Coarse	Indexed 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	
		4	255	2%	100%	04h	FFh		
18	Gobo 2 Rotate Fine	Indexed Mode							255
		Low Order Byte 0-360 degrees	0	255	0%	100%	00h	FFh	
19	Blade 1 Angle A	Out of the light path							0
		Full in the light path	255		100%		FFh		
20	Blade 1 Angle B	Out of the light path							0
		Full in the light path	255		100%		FFh		
21	Blade 2 Angle A	Out of the light path							0
		Full in the light path	255		100%		FFh		
22	Blade 2 Angle B	Out of the light path							0
		Full in the light path	255		100%		FFh		
23	Blade 3 Angle A	Out of the light path							0
		Full in the light path	255		100%		FFh		
24	Blade 3 Angle B	Out of the light path							0
		Full in the light path	255		100%		FFh		
25	Blade 4 Angle A	Out of the light path							0
		Full in the light path	255		100%		FFh		
26	Blade 4 Angle B	Out of the light path							0
		Full in the light path	255		100%		FFh		
27	Frame Rotation Coarse	Frame Angle Negative							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
		Frame Angle 0 degrees	128		50%		80h		
		Frame Angle positive	129	255	51%	100%	81h	FFh	

29	Animation	Out of the light path	0		0%		00h		0
		Linear insertion in light path	1	254	0%	100%	01h	FEh	
		Full in the light path	255		100%		FFh		
30	Animation Rotate	Engaged, Forward Spin speed slow to fast	0	63	0%	25%	00h	3Fh	0
		Engaged, Reverse Spin speed slow to fast	64	127	25%	50%	40h	7Fh	
		Engaged, Forward Strobe rotate slow to fast	128	191	50%	75%	80h	BFh	
		Engaged, Reverse Strobe Rotate slow to fast	192	255	75%	100%	C0h	FFh	
31	Prism Function	Disengaged/Frost Enabled (Note 7)	0	15	0%	6%	00h	0Fh	0
		Continuous	16	31	6%	12%	10h	1Fh	
		Forward Spin	32	47	13%	18%	20h	2Fh	
		Reverse Spin	48	63	19%	25%	30h	3Fh	
		Forward Strobe Rotate (Effect animate)	64	79	25%	31%	40h	4Fh	
		Reverse Strobe Rotate (Effect animate)	80	95	31%	37%	50h	5Fh	
		Reserved (Note 5)	96	255	38%	100%	60h	FFh	
32	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
33	Prism Rotate Fine	Continuous mode						255	
		Low Order Byte 0-360 degrees	0	255	0%	100%	00h		FFh
34	Frost	Disengaged/Prism Enabled (Note 7)	0	1	0%		00h		0
		Variable Frost	2	254	1%		02h		
		Full Frost	255		100%		FFh		
35	Focus Coarse	Focus In	0		0%		00h		127
		Focus Out	255		100%		FFh		
36	Focus Fine	Focus In	0		0%		00h		255
		Focus Out	255		100%		FFh		
37	Zoom Coarse	Zoom In	0		0%		00h		127
		Zoom Out	255		100%		FFh		
38	Zoom Fine	Zoom In	0		0%		00h		255
		Zoom Out	255		100%		FFh		
39	Iris	Iris Closed	0		0%		00h		255
		Iris Open	255		100%		FFh		
40	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	
		Reserved (Note 5)	96	255	38%	100%	60h	FFh	
41	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
42	Dim Coarse	Close	0		0%		00h		0
		Open	255		100%		FFh		
43	Dim Fine		0		0%		00h		0
			255		100%		FFh		

44	Dim Macro (Note 2)	Macro off	0	3	0%	1%	00h	03h	0
		L to R - 1	4	7	2%	3%	04h	07h	
		L to R - 2	8	11	3%	4%	08h	0Bh	
		L to R - 3	12	15	5%	6%	0Ch	0Fh	
		R to L - 1	16	19	6%	7%	10h	13h	
		R to L - 2	20	23	8%	9%	14h	17h	
		R to L - 3	24	27	9%	11%	18h	1Bh	
		Scan - 1	28	31	11%	12%	1Ch	1Fh	
		Scan - 2	32	35	13%	14%	20h	23h	
		Scan - 3	36	39	14%	15%	24h	27h	
		Invert L to R - 1	40	43	16%	17%	28h	2Bh	
		Invert L to R - 2	44	47	17%	18%	2Ch	2Fh	
		Invert L to R - 3	48	51	19%	20%	30h	33h	
		Invert R to L - 1	52	55	20%	22%	34h	37h	
		Invert R to L - 2	56	59	22%	23%	38h	3Bh	
		Invert R to L - 3	60	63	24%	25%	3Ch	3Fh	
		Invert Scan - 1	64	67	25%	26%	40h	43h	
		Invert Scan - 2	68	71	27%	28%	44h	47h	
		Invert Scan - 3	72	75	28%	29%	48h	4Bh	
		Out/in - 2	76	79	30%	31%	4Ch	4Fh	
		Out/in - 4	80	83	31%	33%	50h	53h	
		In/out - 2	84	87	33%	34%	54h	57h	
		Out/in/out - 2	88	91	35%	36%	58h	5Bh	
Alternate - 4	92	95	36%	37%	5Ch	5Fh			
...									
Reserved (Note 5)	96	255	38%	100%	60h	FFh			
45	Dim Macro Speed	Stop	0		0%	0%	00h	00h	128
		Decreasing speed	1	127	0%	50%	01h	7Fh	
		Programmed speed x1	128				80h		
		Increasing speed	129	255	51%	100%	81h	FFh	
46	Dim Macro X fade	Stop	0		0%		00h	00h	128
		Decreasing speed	1	127	0%	50%	01h	7Fh	
		Programmed speed x1	128		50%		80h		
		Increasing speed	129	255	51%	100%	81h	FFh	
47	Mspeed (Note 8)	Disable	0	3	0%	1%	00h	03h	0
		Longest (252.7 seconds)	4		2%		04h		
		Shortest (0.15 seconds)	255		100%		FFh		

48	Control	The Control channel should not be crossfaded. No shutter channel requirement.						0
		Safe (normal operation)	0	9	0%	4%	00h 09h	
		Reserved (Note 5)	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	
		Reserved (Note 5)	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 4)						
		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	
		Studio Continuous fan control mode (Note 4)	97	103	38%	40%	61h 67h	
		Disable Pan/Tilt motors	104	110	41%	43%	68h 6Eh	
		Reserved (Note 5)	111	160	44%	63%	6Fh 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	
		Reserved (Note 5)	238	255	93%	100%	EEh FFh	

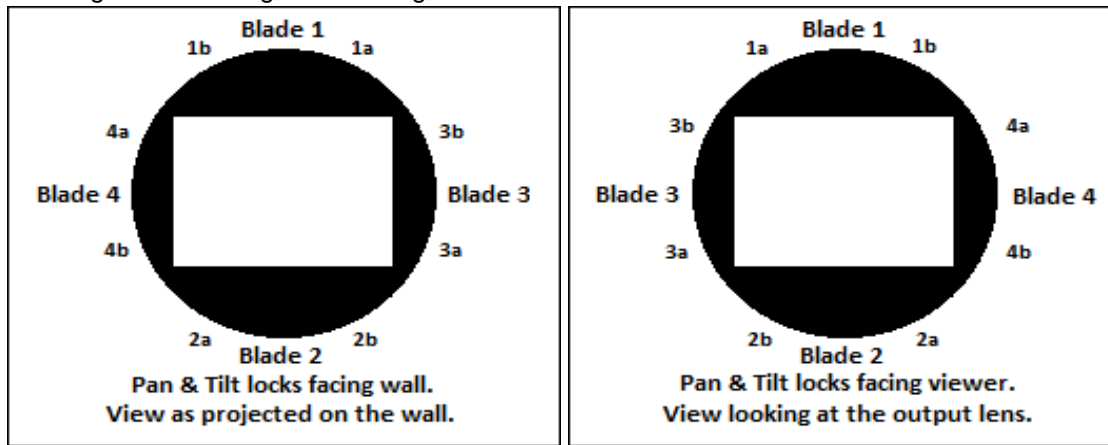
NOTES

- 1 Continuous/Indexed 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	36
Light Blue	73
Green	109
TM30	146
Orange	182
Dark Blue	219

- 2 Macros will operate independently. The Xfade and speed channels act as multipliers of the programmed speed in the discrete macro steps.
Speed / X fade channel operation
0 stops playback or crossfade
1-127 decreases playback speed / crossfade time (* <1)
128 playback or cross fade speed is as programmed (*1)
129-255 increases playback speed / crossfade time (* >1)
LED Macros are documented in the LED Macros tab.
- 3 Synchronous Random Strobes are synchronous across fixtures.
- 4 Fan control modes are retentive. When the fixture is turned off it will retain the selected fan mode.
- 5 Reserved ranges should function according to the controller default value.

6 Framing blades arranged according to chart below.



7 Frost and Prism are on the same plane. If both are engaged at the same time, neither will enter the light path.

8 mSpeed functions according to the table documented on the mSpeed tab.

9 RDM Manufacturers ID: 0x4c52

10 RDM Device ID: 0x544

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