

# SolaSpot CMY® Luminaire DMX Control Protocol \*

Revision 1.0.0

20-May-15

## Revision History

Revision	Revision Notes
0.0.1	First Pass - 26 Sep 13
0.0.2	Added 16 bit dimming - 26 Sep 13
0.0.3	Color mix, Static color, gobo function changed, blink and strobe rotate for later development 30 Oct 13
1.0.0	Added console defaults - May P41

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
14	Gobo 1 Rotate Function
15	Gobo 1 Rotate Coarse
16	Gobo 1 Rotate Fine
17	Gobo 2 Function
18	Gobo 2 Position
19	Prism Function
20	Prism Rotate Coarse
21	Prism Rotate Fine
22	Frost
23	Focus Coarse
24	Focus Fine
25	Zoom Coarse
26	Zoom Fine
27	Iris
28	Shutter/Lamp Function
29	Shutter
30	Dim Coarse
31	Dim Fine
32	Mspeed
33	Control
34	Indigo Highlighter Function
35	Indigo Highlighter Dim

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## SolaSpot CMY 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	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	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	15	0%	6%	00h	0Fh	0	
		2. (Open/Color 1)	16	30	6%	12%	10h	1Eh		
		3. (Color 1)	31	45	12%	18%	1Fh	2Dh		
		4. (Color 1/Color 2)	46	60	18%	24%	2Eh	3Ch		
		5. (Color 2)	61	75	24%	29%	3Dh	4Bh		
		6. (Color 2/Color 3)	76	90	30%	35%	4Ch	5Ah		
		7. (Color 3)	91	105	36%	41%	5Bh	69h		
		8. (Color 3/Color 4)	106	120	42%	47%	6Ah	78h		
		9. (Color 4)	121	135	47%	53%	79h	87h		
		10. (Color 4/Color 5)	136	150	53%	59%	88h	96h		
		11. (Color 5)	151	165	59%	65%	97h	A5h		
		12. (Color 5/Color 6)	166	180	65%	71%	A6h	B4h		
		13. (Color 6)	181	195	71%	76%	B5h	C3h		
		14. (Color 6/Color 7)	196	210	77%	82%	C4h	D2h		
		15. (Color 7)	211	225	83%	88%	D3h	E1h		
		16. (Color 7/Open)	226	240	89%	94%	E2h	F0h		
		1. Open (White)	241	255	95%	100%	F1h	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. (Rot. Gobo 1)	32	63	13%	25%	20h	3Fh	
		3. (Rot. Gobo 2)	34	35	13%	14%	22h	23h	
		4. (Rot. Gobo 3)	96	127	38%	50%	60h	7Fh	
		5. (Rot. Gobo 4)	128	159	50%	62%	80h	9Fh	
		6. (Rot. Gobo 5)	160	191	63%	75%	A0h	BFh	
		7. (Rot. Gobo 6)	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	
Reserved	48	255	19%	100%	30h	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	0
		2. (Gobo 1)	16	47	6%	18%	10h	2Fh	
		3. (Gobo 2)	48	79	19%	31%	30h	4Fh	
		4. (Gobo 3)	80	111	31%	44%	50h	6Fh	
		5. (Gobo 4)	112	143	44%	56%	70h	8Fh	
		6. (Gobo 5)	144	175	56%	69%	90h	AFh	
		7. (Gobo 6)	176	207	69%	81%	B0h	CFh	
		8. (Gobo 7)	208	239	82%	94%	D0h	EFh	
		1. (Open)	240	255	94%	100%	F0h	FFh	
19	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	
20	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			
21	Prism Rotate Fine	Continuous mode							255
		Low Order Byte 0-360 degrees	0	255	0%	100%	00h	FFh	
22	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	
23	Focus Coarse	Focus In	0		0%		00h		127
		Focus Out	255		100%		FFh		
24	Focus Fine	Focus In	0		0%		00h		255
		Focus Out	255		100%		FFh		
25	Zoom Coarse	Zoom In	0		0%		00h		127
		Zoom Out	255		100%		FFh		

26	Zoom Fine	Zoom In	0		0%		00h		255	
		Zoom Out	255		100%		FFh			
27	Iris	Iris Closed	0		0%		00h		255	
		Iris Open	255		100%		FFh			
28	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		
29	Shutter/LED	Normal/Random/Sync Random shutter functions.								
		Close	0	23	0%	9%	00h	17h	255	
		Strobe Rate (slow to fast)	24	229	9%	90%	18h	E5h		
		Open	230	255	90%	100%	E6h	FFh		
30	Dim Coarse	Close	0		0%		00h			0
		Open	255		100%		FFh			
31	Dim Fine		0		0%		00h		0	
			255		100%		FFh			
32	Mspeed	Disable	0	3	0%	1%	00h	03h	0	
		Longest (252.7 seconds)	4		2%		04h			
		Shortest (0.15 seconds)	255		100%		FFh			
33	Control	The Control channel should not be crossfaded. No shutter channel requirement.								
		Safe (normal operation )	0	9	0%	4%	00h	09h	0	
		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)	29	48	11%	19%	1Dh	30h		
		Home All (send 20 packets)	49	68	19%	27%	31h	44h		
		Shutdown (send 80 packets)	69	130	27%	51%	45h	82h		
		Audio Sync	131	160	51%	63%	83h	A0h		
		No shutter channel requirement.								
		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				
34	Indigo Highlighter Function	Indigo Highlighter Dim Tracking Mode								
		Continuous	0	15	0%	6%	00h	0Fh	0	
		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				
35	Indigo Highlighter Dim	Indigo Highslighter Off	0		0%		00h		0	
		Indigo Highlighter 100%	255		100%		FFh			

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