

DMX protocol

Robin Spote - DMX protocol			
Version 1.1			
Channel	DMX Value	Function	Type of control
1		Pan	
	0 - 255	Pan movement by 540° (128=default)	proportional
2		Pan Fine	
	0 - 255	Fine control of pan movement (0=default)	proportional
3		Tilt	
	0 - 255	Tilt movement by 270° (128=default)	proportional
4		Tilt fine	
	0 - 255	Fine control of tilt movement (0=default)	proportional
5		Pan/Tilt speed , Pan/Tilt time	
	0	Standard mode (0=default)	step
	1	Max. Speed Mode	step
		Pan/Tilt speed mode	
	2 - 255	Speed from max. to min.	proportional
		Pan/Tilt time mode	
6		Power/Special functions	
	0 - 19	Reserved (0=default)	
		<i>To activate following functions, stop in DMX value for at least 3 s and shutter must be closed at least 3 sec. („Shutter,Strobe“ channel 23 must be at range: 0-31 DMX). Corresponding menu items are temporarily overridden.</i>	
	20-24	Display On	step
	25-29	Display Off	step
	30-49	Reserved	
	50-54	Dimmer curve: Square law	step
	55-59	Dimmer curve: Linear	step
	60-64	Fans mode: Auto	step
	65-69	Fans mode: High	step
	70-89	Reserved	
	90 - 94	Pan/Tilt speed mode	step
	95-99	Pan/Tilt time mode	step
	100 - 104	Blackout while pan/tilt moving	step
	105 -109	Disabled blackout while pan/tilt moving	step
	110-114	Blackout while colour wheel moving	step
	115 -119	Disabled blackout while colour wheel moving	step
	120-139	Reserved	step
		<i>To activate following functions, stop in DMX value for at least 3 seconds.</i>	
	140 - 149	Pan/Tilt reset	step
	150 - 159	Colour wheel reset	step
	160 - 169	Gobo wheel reset	step
170 - 179	Dimmer/Shutter reset		
180 - 189	Focus/frost/prism reset	step	
190 - 199	Reserved		
200 - 209	Total reset	step	
210-224	Reserved		

DMX protocol

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		The following RoboSpot related commands are only applicable when the RoboSpot is connected:	
	225 - 229	RoboSpot enabled	step
	230 - 234	RoboSpot disabled - except handle faders and pan/tilt	step
	235 - 239	RoboSpot fully disabled	step
	240 - 255	Reserved	
7		LED frequency selection	
		Factory display menu setting: 600Hz	
		<i>Select PWM output frequency of LEDs. Selected PWM frequency can be fine adjusted in 127 steps up/down around selected PWM frequency on the channel below. Corresponding menu item is temporarily overridden.</i>	
	0-4	PWM frequency from Display menu (fixture utilizes PWM frequency set in the display menu item Frequency Setup).	step
	5-9	300 Hz	step
	10-14	600 Hz (10=default)	step
	15-19	1200 Hz	step
	20-24	2400 Hz	step
	25-255	Reserved (fixture utilizes PWM frequency set in the display menu item Frequency Setup).	
8		LED frequency fine adjusting	
		Factory display menu setting: 600Hz	
		<i>Select desired PWM output frequency of LEDs on the channel above.</i>	
	0-1	Selected LED Frequency	step
	2	LED Frequency (step -126)	step
	3	LED Frequency (step -125)	step
	4	LED Frequency (step -124)	step
	:		
	125	LED Frequency (step -3)	step
	126	LED Frequency (step -2)	step
	127	LED Frequency (step -1)	step
	128	Selected LED Frequency (128=default)	step
	129	LED Frequency (step +1)	step
	130	LED Frequency (step +2)	step
	131	LED Frequency (step +3)	step
	:		
	252	LED Frequency (step +124)	step
	253	LED Frequency (step +125)	step
	254	LED Frequency (step +126)	step
	255	Selected LED Frequency	step
9		Max. light intensity indication and setting	
	0-10	No function (0=default)	
	11-20	Indication of drop of max. light intensity	step
		<i>A drop of max. light intensity of the fixture (compared to its original intensity) is indicated by a corresponding colour output: 0-5%, (WHITE /new LED module/) 6-10% (RED) 11-15% (GREEN) 16-20% (BLUE)</i>	

DMX protocol

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		21-25% (CYAN) 26-30% (MAGENTA) 31-35% (YELLOW) 36-40% (ORANGE) <i>Pan/tilt/zoom is set at 128 DMX (50%), Dimmer is open at 255 DMX (100%).</i>	
		<i>To set a drop of max. light intensity (compared to original light intensity), stay at DMX value for at least 3 sec. and shutter must be closed at least 3 sec. (Channel „Shutter/ Strobe” 23 must be at range: 0-31 DMX). Corresponding menu items are permanently overwritten.</i>	
	21-30	Set drop by 6-10% (RED)	step
	31-40	Set drop by 11-15% (GREEN)	step
	41-50	Drop by 16-20% (BLUE)	step
	51-60	Set drop by 21-25% (CYAN)	step
	61-70	Set drop by 26-30% (MAGENTA)	step
	71-80	Set drop by 31-35% (YELLOW)	step
	81-90	Set drop by 36-40% (ORANGE)	step
	91-100	Original intensity (WHITE)	step
	101-255	Reserved	
10		Colour wheel	
		<i>Continual positioning</i>	
	0	Open/white	proportional
	9	Deep Red	proportional
	18	Deep Blue	proportional
	27	Yellow	proportional
	37	Light green	proportional
	46	Magenta	proportional
	55	Lavender	proportional
	64	Pink	proportional
	73	Dark green	proportional
	82	CTO 2700K	proportional
	91	Blue	proportional
	101	Orange	proportional
	110	CTO 3200K	proportional
	119	UV (Kongo blue)	proportional
	128-129	White	step
		<i>Positioning</i>	
	130-134	Deep Red	step
	135-138	Deep Blue	step
	139-143	Yellow	step
	144-147	Light green	step
	148-152	Magenta	step
	153-157	Lavender	step
	158-161	Pink	step
	162-166	Dark green	step
	167-171	CTO 2700K	step
	172-176	Blue	step
	177-180	Orange	step

DMX protocol

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	181-185	CTO 3200K	step
	186-189	UV (Kongo blue)	step
	190 - 215	Forwards rainbow effect from fast to slow	proportional
	216 - 217	No rotation	step
	218 - 243	Backwards rainbow effect from slow to fast	proportional
	244 - 249	Random colour selection by audio control	step
		(Set microphone sensitivity in menu „Personality“)	
	250 - 255	Auto random colour selection from fast to slow	proportional
11		Colour wheel - fine positioning	
	0 - 255	Fine positioning (0=default)	proportional
12		Effect speed	
	0-255	Speed of rot.gobo selection from max. to min. (0=default)	proportional
13		Colour wheel time	
	0	Function is off (0=default)	step
	1 - 255	Time of Colour wheel movement (0.1sec-->25.5sec.)	proportional
14		Focus/Frost/Prism time	
	0	Function is off (0=default)	step
	1 - 255	Time of focus and frost movement (0.1 sec-->25.5 sec.)	proportional
	1-50	Time of prism movement (0.1 sec-->5 sec.)	proportional
15		Rotating gobo wheel	
		<i>Index - set indexing on channel 16</i>	
	0-4	Open/Hole (default)	step
	5-7	Gobo 1	step
	8-10	Gobo 2	step
	11-13	Gobo 3	step
	14-16	Gobo 4	step
	17-19	Gobo 5	step
	20-22	Gobo 6	step
	23-25	Gobo 7	step
	26-28	Gobo 8	step
	29-31	Gobo 9	step
		<i>Rotation - set rotation on channel 16</i>	
	32-34	Gobo 1	step
	35-37	Gobo 2	step
	38-40	Gobo 3	step
	41-43	Gobo 4	step
	44-46	Gobo 5	step
	47-49	Gobo 6	step
	50-52	Gobo 7	step
	53-55	Gobo 8	step
	56-59	Gobo 9	step
		<u>Shaking gobos from slow to fast</u>	
		<i>Index - set indexing on channel 16</i>	
	60-67	Gobo 1	proportional
	68-75	Gobo 2	proportional
	76-83	Gobo 3	proportional
	84-91	Gobo 4	proportional
	92-99	Gobo 5	proportional

DMX protocol

Channel	DMX Value	Function	Type of control
	100-107	Gobo 6	proportional
	108-115	Gobo 7	proportional
	116-123	Gobo 8	proportional
	124-129	Gobo 9	proportional
		<i>Shaking gobos from slow to fast</i>	
		<i>Rotation - set rotation on channel 16</i>	
	130-137	Gobo 1	proportional
	138-145	Gobo 2	proportional
	146-153	Gobo 3	proportional
	154-161	Gobo 4	proportional
	162-169	Gobo 5	proportional
	170-177	Gobo 6	proportional
	178-185	Gobo 7	proportional
	186-193	Gobo 8	proportional
	194-199	Gobo 9	proportional
	200 - 201	Open/hole	step
	202 - 222	Forwards gobo wheel rotation from fast to slow	proportional
	223 - 243	Backwards gobo wheel rotation from slow to fast	proportional
	244 - 249	Random gobo selection by audio control	step
		(Set microphone sensitivity in menu „Personality“)	
	250 - 255	Auto random gobo selection from fast to slow	proportional
16		Rot. Gobo indexing/rotation	
		<i>Gobo indexing - set position on channel 17</i>	
	0 - 255	Gobo indexing	proportional
		<i>Gobo rotation - set position on channel 17</i>	
	0	No rotation	step
	1 - 127	Forwards gobo rotation from fast to slow	proportional
	128	No rotation (128=default)	step
	129 - 255	Backwards gobo rotation from slow to fast	proportional
17		Rot. Gobo indexing/rotation - fine	
	0-255	Fine indexing/rotation (0=default)	proportional
18		Prism	
		<i>Note: prism and frost cannot be inserted into light beam at the same time</i>	
	0 - 19	Open position/hole (0=default)	step
	20 - 127	8-facet rotating prism	step
		Prism/gobo macros	
		<i>The following channels are blocked: Rotating gobo wheel, Rot. Gobo indexing and rotation, Rot. Gobo wheel fine rotation</i>	
	128 - 135	Macro 1	step
	136 - 143	Macro 2	step
	144 - 151	Macro 3	step
	152 - 159	Macro 4	step
	160 - 167	Macro 5	step
	168 - 175	Macro 6	step
	176 - 183	Macro 7	step
	184 - 191	Macro 8	step
	192 - 199	Macro 9	step

DMX protocol

Channel	DMX Value	Function	Type of control
	200 - 207	Macro 10	step
	208 - 215	Macro 11	step
	216 - 223	Macro 12	step
	224 - 231	Macro 13	step
	232 - 239	Macro 14	step
	240 - 247	Macro 15	step
	248 - 255	Macro 16	step
19		Prism rotation	
	0	No rotation	step
	1 - 127	Forwards rotation from fast to slow	proportional
	128	No rotation (128= default)	step
	129-255	Backwards rotation from slow to fast	proportional
20		Frost	
		<i>Note: prism and frost cannot be inserted into light beam at the same time</i>	
	0	Open (0=default)	step
	1 - 179	Frost from 0% to 100%	proportional
	180 - 189	100% frost	step
	190 - 211	Pulse closing from slow to fast	proportional
	212 - 233	Pulse opening from fast to slow	proportional
	234 - 255	Ramping from fast to slow	proportional
21		Focus	
	0 - 255	Continuous adjustment from far to near (128=default)	proportional
22		Focus - fine	
	0- 255	Fine focusing (0=default)	proportional
23		Shutter/ strobe	
	0 - 31	Shutter closed	step
	32 - 63	Shutter open (32=default)	step
	64 - 95	Strobe-effect from slow to fast	proportional
	96 - 127	Shutter open	step
	128 - 143	Opening pulse in sequences from slow to fast	proportional
	144 - 159	Closing pulse in sequences from fast to slow	proportional
	160 - 191	Shutter open	proportional
	192 - 223	Random strobe-effect from slow to fast	proportional
	224 - 255	Shutter open	step
24		Dimmer intensity	
	0 - 255	Dimmer intensity from 0% to 100% (0=default)	proportional
25		Dimmer intensity - fine	
	0 - 255	Fine dimming (0=default)	proportional
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