

4 DMX Channel Selection (DMX Protocol)

Channel	Function	Time and Value	DMX	HEX	%	
1) PAN-coarse	0 .. 530°	min. 2,65 s	0..255	00..FF	0..100	
2) PAN-fine	High- Pos ... High- Pos + 2,1° (16 Bit)		0..255	00..FF	0..100	
3) Tilt-coarse	0 .. 285°	min. 1,8 s	0..255	00..FF	0..100	
4) Tilt-fine	High- Pos ... High- Pos + 1,1° (16 Bit)		0..255	00..FF	0..100	
5) Color	open (fast)	Chaser from color to color max. 140 BPM => 0,43 s	0..1	00..01	0,2	
	open / color 1 (fast)		2..3	02..03	1,0	
	color 1, Brilliant Blue (fast)		4..5	04..05	1,8	
	color 1 / color 2 (fast)		6..7	06..07	2,5	
	color 2, Blue (fast)		8..9	08..09	3,3	
	color 2 / color 3 (fast)		10..11	0A..0B	4,1	
	color 3, Blue Purple (fast)		12..13	0C..0D	4,9	
	color 3 / color 4 (fast)		14..15	0E..0F	5,7	
	color 4, Magenta (fast)		16..17	10..11	6,5	
	color 4 / color 5 (fast)		18..19	12..13	7,3	
	color 5, Pink (fast)		20..21	14..15	8,0	
	color 5 / color 6 (fast)		22..23	16..17	8,8	
	color 6, Orange (fast)		24..25	18..19	9,6	
	color 6 / color 7 (fast)		26..27	1A..1B	10,4	
	color 7, Canary (fast)		28..29	1C..1D	11,2	
	color 7 / color 8 (fast)		30..31	1E..1F	12,0	
	color 8, Italian Blue (fast)		32..33	20..21	12,7	
	color 8 / color 9 (fast)		34..35	22..23	13,5	
	color 9, Turquoise (fast)		36..37	24..25	14,3	
	color 9 / color 10 (fast)		38..39	26..27	15,1	
	color 10, Jade (fast)		40..41	28..29	15,9	
	color 10 / color 11 (fast)		42..43	2A..2B	16,7	
	color 11, Red (fast)		44..45	2C..2D	17,5	
	color 11 / open (fast)		46..47	2E..2F	18,2	
	open (fast)		48..63	30..3F	19,0	
	open (slow)		Chaser from color to color max. 70 BPM => 0,86 s	64..65	40..41	25,3
	open / color 1 (slow)			66..67	42..43	26,1
	color 1, Brilliant Blue (slow)			68..69	44..45	26,9
	color 1 / color 2 (slow)			70..71	46..47	27,6
	color 2, Blue (slow)			72..73	48..49	28,4
	color 2 / color 3 (slow)			74..75	4A..4B	29,2
	color 3, Blue Purple (slow)			76..77	4C..4D	30,0
	color 3 / color 4 (slow)			78..79	4E..4F	30,8
color 4, Magenta (slow)	80..81	50..51		31,6		
color 4 / color 5 (slow)	82..83	52..53		32,4		
color 5, Pink (slow)	84..85	54..55		33,1		
color 5 / color 6 (slow)	86..87	56..57		33,9		
color 6, Orange (slow)	88..89	58..59		34,7		
color 6 / color 7 (slow)	90..91	5A..5B		35,5		
color 7, Canary (slow)	92..93	5C..5D		36,3		
color 7 / color 8 (slow)	94..95	5E..5F		37,1		
color 8, Italian Blue (slow)	96..97	60..61		37,8		
color 8 / color 9 (slow)	98..99	62..63		38,6		
color 9, Turquoise (slow)	100..101	64..65		39,4		
color 9 / color 10 (slow)	102..103	66..67		40,2		
color 10, Jade (slow)	104..105	68..69		41,0		

Channel	Function	Time and Value	DMX	HEX	%
	color 10 / color 11 (slow)		106..107	6A..6B	41,8
	color 11, Red (slow)		108..109	6C..6D	42,5
	color 11 / open (slow)		110..111	6E..6F	43,3
	open (slow)		112..127	70..7F	44,1
	color rotation STOP		128..129	80..81	50
	color rotation, slow-fast, CW	min. 1,4 turns/h	130..191	82..BF	51..75
	color rotation, fast-slow, CCW	max. 2,9 turns/sec.	192..253	C0..FD	76..98
	Audio color chaser slow	each 4 th sound impulse → new color	254	FE	99
	Audio color chaser fast	each sound impulse → new color	255	FF	100
6) Gobo 1	Gobo 1 (open, fast)	Chaser from gobo to	0..7	0..7	0..2,9
	Gobo 2 (fast)	gobo max. 100 BPM	8..15	8..F	3..5,9
	Gobo 3 (fast)	=> 0,6 s	16..23	10..17	6..8,9
	Gobo 4 (fast)		24..31	18..1F	9..11,9
	Gobo 5 (fast)		32..39	20..27	12..14,9
	Gobo 6 (fast)		40..47	28..2F	15..17,9
	Gobo 7 (fast)		48..55	30..37	18..20,9
	Gobo 8 (fast)		56..63	38..3F	21..23
	Gobo 1 (open, slow)	Chaser from gobo to	64..71	40..47	24..26,9
	Gobo 2 (slow)	gobo max. 40 BPM	72..79	48..4F	27..29,9
	Gobo 3 (slow)	=> 1,51 s	80..87	50..57	30..33,9
	Gobo 4 (slow)		88..95	58..5F	34..36,9
	Gobo 5 (slow)		96..103	60..67	37..39,9
	Gobo 6 (slow)		104..111	68..6F	40..42,9
	Gobo 7 (slow)		112..119	70..77	43..45,9
	Gobo 8 (slow)		120..127	78..7F	46..49
	Gobo rotation STOP		128..129	80..81	50
	Gobo rotation, slow-fast, CW	min. 1,4 turns/h	130..191	82..BF	51..75
	Gobo rotation, fast-slow, CCW	max. 1.0 turns/sec.	192..253	C0..FD	76..98
Audio gobo chase, slow	each 4 th sound impulse → new gobo	254	FE	99	
	Audio gobo chase, fast	each sound impulse → new gobo	255	FF	100
7) Gobo 1 Posi./Rot	Gobo position 0 ... 540°		0..127	00..7F	0..49
	Gobo rotation STOP		128..129	80..81	50
	Gobo rotation, slow-fast, CW	min. 2,0 turns/h	130..191	82..BF	51..75
	Gobo rotation, fast-slow, CCW	max. 3,8 turns/sec.	192..253	C0..FD	76..100
	Audio gobo rotation, slow	each 4 th sound impulse → new position	254	FE	99
8) Gobo 2	Gobo 1 (open, fast)	Chaser from gobo to	0..3	0..3	0..1
	Gobo 2 (fast)	gobo max. 100 BPM	4..7	4..7	2..2,9
	Gobo 3 (fast)	=> 0,6 s	8..11	8..B	3..4
	Gobo 4 (fast)		12..15	C..F	5..5,9
	Gobo 5 (fast)		16..19	10..13	6..7
	Gobo 6 (fast)		20..23	14..17	8..8,9
	Gobo 7 (fast)		24..27	18..1B	9..10,9
	Gobo 8 (fast)		28..31	1C..1F	11..12
	Gobo 9 (fast)		32..35	20..23	13..13,9
	Gobo 10 (fast)		36..63	24..3F	14..24,9
	Gobo 1 (open, fast)		64..65	40..41	25..25,9
	Gobo 1 (open, slow)	Chaser from gobo to	66..67	42..43	26..26,9
	Gobo 2 (slow)	gobo max. 40 BPM	68..71	44..47	27..27,9
	Gobo 3 (slow)	=> 1,51 s	72..75	48..4B	28..29

Channel	Function	Time and Value	DMX	HEX	%
	Gobo 4 (slow)		76..79	4C..4F	30..30,9
	Gobo 5 (slow)		80..83	50..53	31..32
	Gobo 6 (slow)		84..87	54..57	33..34
	Gobo 7 (slow)		88..91	58..5B	35..35,9
	Gobo 8 (slow)		92..95	5C..5F	36..37
	Gobo 9 (slow)		96..99	60..63	38..38,9
	Gobo 10 (slow)		100..127	64..7F	39..50
	Gobo rotation STOP		128..129	80..81	50
	Gobo rotation, slow-fast, CW	min. 1,4 turns/h	130..191	82..BF	51..75
	Gobo rotation, fast-slow, CCW	max. 1.0 turns/sec.	192..253	C0..FD	76..98
	Audio gobo chase, slow	each 4 th sound impulse → new gobo	254	FE	99
	Audio gobo chase, fast	each sound impulse → new gobo	255	FF	100
	Audio gobo rotation, fast	each sound impulse → new position	255	FF	100
9) Shutter	Shutter closed		0..15	00..0F	0..6
	Random Strobe (different pattern)		16..31	10..1F	7..11,9
	Strobe Pulse effect , slow - fast	min. frequent 0,7 Hz	32..47	20..2F	12..12,9
	Strobe effect , slow - fast	max. frequent 10 Hz	48..239	30..EF	13..93
	Shutter open (lamp start)		240..255	F0..FF	94..100
10) Dimmer	Dimmer closed (0%)		0..3	0..3	0..1
	Dimmer 1%...99%	movement time 0,3 sec.	4..251	4..FB	2..98
	Dimmer open (100%)		252..255	FC..FF	99..100
11) Focus	In - out	full distance 1,5 sec.	0..255	0..FF	0..100
12) Prism	Prism swing out		0..5	00..05	0..2
	Prism position 0 ... 540°		6..127	06..7F	0..49
	Prism rotation stop		128..129	80..81	50
	Prism rotation, slow-fast, CW	min. 1,6 turns/h	130..191	80..BF	51..75
	Prism rotation, fast-slow, CCW	max. 4,4 turns/sec.	192..253	C0..FD	76..100
	Audio prism rotation, slow	each 4 th sound impulse → new prism	254	FE	99
	Audio prism rotation, fast	each sound impulse → new prism	255	FF	100
13) Iris	Iris open – closed		0..127	00..7F	0..50
	Ascend with Shutter, random		128..143	80..8F	51..56
	Descend with Shutter, random		144..159	90..9F	57..62
	Ascend with Shutter, audio		160..175	A0..AF	63..68
	Descend with Shutter, audio		176..191	B0..BF	69..75
	Ascend with Shutter		192..207	C0..CF	76..81
	Descend with Shutter		208..223	D0..DF	82..87
	Pulse - effect		224..239	E0..EF	88..93
	Ascend - descend effect		240..253	F0..FD	94..99
	Iris open		254..255	FE..FF	100
14) Special	No function		0..15	00..0F	0..6
	Gobo-shake +/- 10° slow – fast	3,5 moves / min. up to 60 moves / max.	16..31	10..1F	7..12
	Gobo-shake +/- 20° slow – fast	3,5 moves / min. up to 60 moves / max.	32..47	20..2F	13..18
	Gobo-shake +/- 30° slow – fast	3,5 moves / min. up to 60 moves / max.	48..63	30..3F	19..24
	Color-chaser C / C+1 slow – fast	0,7 BPS ... 2,3 BPS => 1,43 s ... 0,43 s	64..79	40..4F	25..31

Channel	Function	Time and Value	DMX	HEX	%	
	Color-chaser C / C+2 slow – fast	0,7 BPS ... 2,0 BPS => 1,43 s ... 0,5 s	80..95	50..5F	32..37	
	Audio Pan / Tilt slow	each 4 th sound impulse → new position	96..111	60..6F	38..43	
	Audio Pan / Tilt fast	each sound impulse → new position	112..127	70..7F	44..50	
	Laser flashing, random		128..143	80..8F	51..56	
	Laser, audio		144..159	90..9F	57..62	
	Laser blinking, slow - fast		160..175	A0..AF	63..68	
	Laser flashing, slow - fast		176..191	B0..BF	69..74	
	Laser ON		192..207	C0..CF	75..81	
	No function		208..223	D0..DF	82..87	
	Fan on min. as long as temp. < 90°C		224..229	E0..E5	88..90	
	Lamp OFF (min. 3 sec.)		230..249	E6..F9	92..97	
	Reset		250..255	FA..FF	98..100	
15) Movement	no movement		0	00	0	
	Movement	Size	Phase			
	PAN	1	0°	01..01	01..01	0,5
		1	90°	02..03	02..03	1,0
		1	180°	04..05	04..05	1,7
		1	270°	06..07	06..07	2,5
	PAN	2	0°	08..09	08..09	3,3
		2	90°	10..11	0A..0B	4,1
		2	180°	12..13	0C..0D	4,9
		2	270°	14..15	0E..0F	5,7
	PAN	3	0°	16..17	11..11	6,5
		3	90°	18..19	12..13	7,3
		3	180°	20..21	14..15	8,0
		3	270°	22..23	16..17	8,8
	PAN	4	0°	24..25	18..19	9,6
		4	90°	26..27	1A..1B	10,4
		4	180°	28..29	1C..1D	11,2
		4	270°	30..31	1E..1F	12
		TILT	size / phase see also PAN	32..63	20..3F	13..25
		PAN / TILT	size / phase see also PAN	64..95	40..5F	26..37
	PAN / TILT (inverse)	size / phase see also PAN	96..127	60..7F	38..50	
	Circle	size / phase see also PAN	128..159	80..9F	51..62	
	Circle (inverse)	size / phase see also PAN	160..191	A0..BF	63..75	
	lying eight	size / phase see also PAN	192..223	C0..DF	76..87	
	random movement	size see also PAN	224..255	E0..FF	88..100	
16) Speed Pan/Tilt	Pan/Tilt relative movement		0..15	00..0F	0..6	
	Pan/Tilt slow – fast		16..255	10..FF	7..100	
	Use this channel 14) also for the speed of the movements (channel 13).	Pan min. 530° = 200 s Pan max. 530° = 2,65 s Tilt min. 285° = 110 s Tilt max. 285° = 1,8 s				
Lamp ON	Shutter open		240..255	F0..FF	94..100	
Lamp OFF	Channel 14 (min. 3 sec.) (only if shutter is closed, channel 9 = 0 ..15)		230..249	6E..9F	92..97	