

DMX protocol

Robin DL4LF - DMX protocol - version 1.2						
Mode/channel			DMX Value	Function	Type of control	
1	2	3				
1	1	1		Pan		
			0 - 255	Pan movement by 540°	proportional	
2	2	*		Pan Fine		
			0 - 255	Fine control of pan movement	proportional	
3	3	2		Tilt		
			0 - 255	Tilt movement by 260°	proportional	
4	4	*		Tilt fine		
			0 - 255	Fine control of tilt movement	proportional	
5	5	3		Pan/Tilt speed , Pan/Tilt time		
			0	Max. speed-Standard Mode (0=default)	step	
				P./T. speed-set Speed Mode in menu: Pan/Tilt Mode		
			1 - 255	Speed from max. to min.	proportional	
				P./T. time - set Time Mode in menu: Pan/Tilt Mode		
			1 - 255	Time from 0.1 s to 25.5 sec.	proportional	
6	6	4		Power/Special functions		
				<i>To activate following functions, stop in DMX value for at least 3 seconds.</i>		
			0 - 4	Flight Case Parking Position Off	step	
			5 - 9	Flight Case Parking Position On	step	
				<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 27/22/20 must be at range: 0-31 DMX). Corresponding menu items are temporarily overridden).</i>		
			10-14	DMX input: Wired DMX *	step	
			15-19	DMX input: Wireless DMX *	step	
				* function is active only 10 seconds after switching the fixture on		
			20-24	White point 8000K ON	step	
			25-29	White point 8000K OFF	step	
			30-39	RGB colour mixing mode	step	
			40-49	CMY colour mixing mode	step	
			50 - 59	Pan/Tilt speed mode	step	
			60 - 69	Pan/Tilt time mode	step	
			70 - 79	Blackout while pan/tilt moving	step	
			80 - 89	Disabled blackout while pan/tilt moving	step	
			90-94	DL Colour compatible mode On	step	
			95-99	DL Colour compatible mode Off	step	
			100-104	Dimmer curve: Square law	step	
			105-109	Dimmer curve: Linear	step	
			110-129	Reserved		
				<i>To activate following functions, stop in DMX value for at least 3 seconds.</i>		
			130 - 139	Fixture reset (except pan/tilt)		
			140 - 149	Pan/Tilt reset	step	
			150 - 179	Reserved		
			180 - 189	Zoom//frost/ reset	step	
			190 - 199	Beam shaper reset	step	
			200 - 209	Total fixture reset	step	
			210 - 239	Reserved		
			240	Disable "Theatre mode"	step	

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1	2	3			
			241	"Theatre mode" -automatic control of fan noise	step
			242 - 255	"Theatre mode" -fan noise control from min. to max.	proportional
7	7	5		Virtual colour wheel	
			0	No function	step
			1-2	White 2700 K	step
			3	White 2700 K (Halogen lamp mode**)	step
			4-5	White 3200 K	step
			6	White 3200 K (Halogen lamp mode**)	step
			7-9	White 4200 K	step
			10-12	White 5600 K	step
			13-15	White 8000 K	step
			16	Blue (Blue=full, Red+Green+White=0)	step
			17-55	Red=0, Green->up,Blue =full, White=0	proportional
			56	Light Blue (Red=0, Green=full, Blue =full, White=0)	step
			57 - 95	Red=0, Green=full, Blue->down, White=0	proportional
			96	Green (Red=0, Green=full, Blue =0, White=0)	step
			97 – 134	Red->up, Green=full, Blue=0, White=0	proportional
			135	Yellow (Red=full, Green=full, Blue=0, White=0)	step
			136 - 174	Red=full, Green->down, Blue=0, White=0	proportional
			175	Red(Red=full, Green=0, Blue=0, White=0)	step
			176 -214	Red=full, Green=0, Blue->up, White=0	proportional
			215	Magenta (Red=full, Green=0, Blue=full, White=0)	step
			216 - 246	Red -> down, Green=0, Blue=full, White=0	proportional
			247	Blue (Red=0, Green=0, Blue=full, White=0)	step
			248-251	Rainbow effect (with fade time)from slow-> fast	proportional
			252-255	Rainbow effect from slow-> fast	proportional
8	8	6		Red/Cyan (8 bit)***	
			0 - 255	Red or Cyan colour saturation control - coarse (0-100%)	proportional
9	*	*		Red/Cyan (16bit)***	
			0 - 255	Red or Cyan colour saturation control - fine	proportional
10	9	7		Green/Magenta (8 bit)***	
			0 - 255	Green or Magenta colour saturation control - coarse (0-100%)	proportional
11	*	*		Green/Magenta (16bit)***	
			0 - 255	Green or Magenta colour saturation control - fine	proportional
12	10	8		Blue/Yellow (8 bit)***	
			0 - 255	Blue or Yellow colour saturation control - coarse (0-100%)	proportional
13	*	*		Blue/ Yellow (16bit)***	
			0 - 255	Blue or Yellow colour saturation control - fine	proportional
14	11	9		White (8 bit)	
				If RGBW mode is selected:	
			0-255	White colour saturation control - coarse (0-100%)	proportional
				If CMY mode is selected:	
			0 - 255	No function	
15	*	*		White (16 bit)	
			0 - 255	White colour saturation control - fine (RGBW mode only)	proportional
16	12	10		CTC	
				<i>If function "White Point 8000K" is ON</i>	
			0-255	Col. temperature correction from 8000K to 2700K -for whites only	proportional

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1	2	3			
				(0=8000K, 64=5600K, 128=4200K, 192=3200K, 0=2700K) To get colour temperatures stated above, RGBW channels have to be set at the same value (e.g. 255DMX) or RGB=0 and White channel > 0 DMX <i>If function "White Point 8000K" is OFF</i>	
			0-255	Colour temperature correction for mixed colours	proportional
17	13	11		Wide zoom	
			0	Wide zoom Off	step
			1-100	Wide zoom On	step
			101-255	Reserved	
18	14	12		Zoom	
			0 - 255	Zoom from min. to max. beam angle	proportional
19	*	*		Zoom - fine	
			0-255	Fine zooming	proportional
20	15	13		Barndoors rotation	
			0- 255	Rotation 0°--> 180°	proportional
21	16	14		Barndoor 1- movement	
			0- 255	Movement Out-->In	proportional
22	17	15		Barndoor 2- movement	
			0- 255	Movement Out-->In	proportional
23	18	16		Barndoor 3- movement	
			0- 255	Movement Out-->In	proportional
24	19	17		Barndoor 4- movement	
			0- 255	Movement Out-->In	proportional
25	20	18		Barndoors macros	
			0-3	No function	
			4-7	Macro 1	step
			8-11	Macro 2	step
			12-15	Macro 3	step
			16-19	Macro 4	step
			20-23	Macro 5	step
			24-27	Macro 6	step
			28-31	Macro 7	step
			32-35	Macro 8	step
			36-39	Macro 9	step
			40-43	Macro 10	step
			44-47	Macro 11	step
			48-51	Macro 12	step
			52-55	Macro 13	step
			56-59	Macro 14	step
			60-63	Macro 15	step
			64-67	Macro 16	step
			68-71	Macro 17	step
			72-75	Macro 18	step
			76-79	Macro 19	step
			80-83	Macro 20	step
			84-87	Macro 21	step
			88-91	Macro 22	step
			92-95	Macro 23	step
			96-99	Macro 24	step

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Mode/channel			DMX Value	Function	Type of control
1	2	3			
			100-103	Macro 25	step
			104-107	Macro 26	step
			108-111	Macro 27	step
			112-115	Macro 28	step
			116-119	Macro 29	step
			120-123	Macro 30	step
			124-127	Macro 31	step
			128-131	Macro 32	step
			132-135	Macro 33	step
			136-139	Macro 34	step
			140-143	Macro 35	step
			144-147	Macro 36	step
			148-151	Macro 37	step
			152-155	Macro 38	step
			156-159	Macro 39	step
			160-163	Macro 40	step
			164-167	Macro 41	step
			168-255	Reserved	
26	21	19		Barndoors macro speed	
			0- 255	Speed from slow to fast.	proportional
27	22	20		Shutter/ strobe	
			0 - 31	Shutter closed	step
			32 - 63	Shutter open	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	step
			192 - 223	Random strobe-effect from slow to fast	proportional
			224 - 255	Shutter open	step
28	23	21		Dimmer intensity	
			0 - 255	Dimmer intensity from 0% to 100%	proportional
29	*	*		Dimmer intensity - fine	
			0 - 255	Fine dimming	proportional
** In the Halogen lamp mode the Dimmer channel imitates behaviour of the halogen lamp during dimming					
*** Select RGB or CMY mixing mode on channel "Power/Special functions"					

Virtual colour wheel - colour mixing chart					
Scale*	Virtual Colour Wheel	Red	Green	Blue	White
	DMX	DMX	DMX	DMX	DMX
	Theatre mode off				
	1-3 (White 2700K)	255	176	8	20
	4-6 (White 3200K)	255	201	12	100
	7-9 (White 4200K)	249	243	28	200
	10-12 (White 5600K)	165	255	36	255
	13-15 (White 8000K)	172	255	65	255
	Theatre mode on				
	1-3 (White 2700K)	255	176	8	20
	4-6 (White 3200K)	255	201	12	100
	7-9 (White 4200K)	248	253	31	35
	10-12 (White 5600K)	209	255	46	63
	13-15 (White 8000K)	171	255	61	61
	16	0	0	255	0
	17	0	3	255	0
	18	0	6	255	0
	19	0	9	255	0
	20	0	12	255	0
	21	0	15	255	0
	22	0	18	255	0
	23	0	21	255	0
	24	0	24	255	0
	25	0	27	255	0
	26	0	30	255	0
	27	0	36	255	0
	28	0	41	255	0
	29	0	46	255	0
	30	0	52	255	0
	31	0	58	255	0
	32	0	64	255	0
	33	0	68	255	0
	34	0	74	255	0
	35	0	80	255	0
	36	0	86	255	0
	37	0	92	255	0
	38	0	98	255	0
	39	0	104	255	0
	40	0	110	255	0
	41	0	119	255	0
	42	0	129	255	0
	43	0	138	255	0
	44	0	147	255	0
	45	0	156	255	0
	46	0	165	255	0
	47	0	174	255	0
	48	0	183	255	0
	49	0	192	255	0
	50	0	201	255	0
	51	0	210	255	0
	52	0	219	255	0
	53	0	228	255	0
	54	0	237	255	0
	55	0	246	255	0
	56	0	255	255	0
	57	0	255	246	0
	58	0	255	237	0

Scale*	Virtual Colour Wheel	Red	Green	Blue	White
	DMX	DMX	DMX	DMX	DMX
	59	0	255	228	0
	60	0	255	219	0
	61	0	255	210	0
	62	0	255	201	0
	63	0	255	192	0
	64	0	255	183	0
	65	0	255	174	0
	66	0	255	165	0
	67	0	255	156	0
	68	0	255	147	0
	69	0	255	138	0
	70	0	255	129	0
	71	0	255	119	0
	72	0	255	110	0
	73	0	255	104	0
	74	0	255	98	0
	75	0	255	92	0
	76	0	255	86	0
	77	0	255	80	0
	78	0	255	74	0
	79	0	255	68	0
	80	0	255	64	0
	81	0	255	58	0
	82	0	255	52	0
	83	0	255	46	0
	84	0	255	41	0
	82	0	255	36	0
	86	0	255	30	0
	87	0	255	27	0
	88	0	255	24	0
	89	0	255	21	0
	90	0	255	18	0
	91	0	255	15	0
	92	0	255	12	0
	93	0	255	9	0
	94	0	255	6	0
	95	0	255	3	0
	96	0	255	0	0
	97	3	255	0	0
	98	6	255	0	0
	99	9	255	0	0
	100	12	255	0	0
	101	15	255	0	0
	102	18	255	0	0
	103	21	255	0	0
	104	24	255	0	0
	105	27	255	0	0
	106	30	255	0	0
	107	36	255	0	0
	108	41	255	0	0
	109	46	255	0	0
	110	52	255	0	0
	111	58	255	0	0
	112	64	255	0	0
	113	68	255	0	0
	114	74	255	0	0

Scale*	Virtual Colour Wheel	Red	Green	Blue	White
	DMX	DMX	DMX	DMX	DMX
	115	80	255	0	0
	116	86	255	0	0
	117	92	255	0	0
	118	98	255	0	0
	119	104	255	0	0
	120	110	255	0	0
	121	119	255	0	0
	122	129	255	0	0
	123	138	255	0	0
	124	147	255	0	0
	125	156	255	0	0
	126	165	255	0	0
	127	174	255	0	0
	128	183	255	0	0
	129	192	255	0	0
	130	201	255	0	0
	131	210	255	0	0
	132	219	255	0	0
	133	228	255	0	0
	134	240	255	0	0
	135	255	255	0	0
	136	255	246	0	0
	137	255	237	0	0
	138	255	228	0	0
	139	255	219	0	0
	140	255	210	0	0
	141	255	201	0	0
	142	255	192	0	0
	143	255	183	0	0
	144	255	174	0	0
	145	255	165	0	0
	146	255	156	0	0
	147	255	147	0	0
	148	255	138	0	0
	149	255	129	0	0
	150	255	119	0	0
	151	255	110	0	0
	152	255	104	0	0
	153	255	98	0	0
	154	255	92	0	0
	155	255	86	0	0
	156	255	80	0	0
	157	255	74	0	0
	158	255	68	0	0
	159	255	64	0	0
	160	255	58	0	0
	161	255	52	0	0
	162	255	46	0	0
	163	255	41	0	0
	164	255	36	0	0
	165	255	30	0	0
	166	255	27	0	0
	167	255	24	0	0
	168	255	21	0	0
	169	255	18	0	0
	170	255	15	0	0

Scale*	Virtual Colour Wheel	Red	Green	Blue	White
	DMX	DMX	DMX	DMX	DMX
	171	255	12	0	0
	172	255	9	0	0
	173	255	6	0	0
	174	255	3	0	0
	175	255	0	0	0
	176	255	0	3	0
	177	255	0	6	0
	178	255	0	9	0
	179	255	0	12	0
	180	255	0	15	0
	181	255	0	18	0
	182	255	0	21	0
	183	255	0	24	0
	184	255	0	27	0
	185	255	0	30	0
	186	255	0	36	0
	187	255	0	41	0
	188	255	0	46	0
	189	255	0	52	0
	190	255	0	58	0
	191	255	0	64	0
	192	255	0	68	0
	193	255	0	74	0
	194	255	0	80	0
	195	255	0	86	0
	196	255	0	92	0
	197	255	0	98	0
	198	255	0	104	0
	199	255	0	110	0
	200	255	0	119	0
	201	255	0	129	0
	202	255	0	138	0
	203	255	0	147	0
	204	255	0	156	0
	205	255	0	165	0
	206	255	0	174	0
	207	255	0	183	0
	208	255	0	192	0
	209	255	0	201	0
	210	255	0	210	0
	211	255	0	219	0
	212	255	0	228	0
	213	255	0	237	0
	214	255	0	246	0
	215	255	0	255	0
	216	246	0	255	0
	217	237	0	255	0
	218	228	0	255	0
	219	219	0	255	0
	220	210	0	255	0
	221	201	0	255	0
	222	192	0	255	0
	223	183	0	255	0
	224	174	0	255	0
	225	165	0	255	0
	226	156	0	255	0

Scale*	Virtual Colour Wheel	Red	Green	Blue	White
	DMX	DMX	DMX	DMX	DMX
	227	147	0	255	0
	228	138	0	255	0
	229	129	0	255	0
	230	119	0	255	0
	231	110	0	255	0
	232	104	0	255	0
	233	98	0	255	0
	234	91	0	255	0
	235	84	0	255	0
	236	77	0	255	0
	237	70	0	255	0
	238	63	0	255	0
	239	56	0	255	0
	240	49	0	255	0
	241	42	0	255	0
	242	35	0	255	0
	243	28	0	255	0
	244	21	0	255	0
	245	14	0	255	0
	246	7	0	255	0
	247	0	0	255	0
	248-255 (Rainbow effect)	****	****	****	****
* Colour scale as an illustration only					