

DMX protocol

iPainte® - DMX protocol				
Version 1.0 Standard 16 bit, Mode 2 -enhanced gobo control				
Mode/Total channels		DMX Value	Function	Type of control
1/44	2/45			
1	1	0 - 255	Pan Pan movement by 540° (128=default)	proportional
2	2	0 - 255	Pan Fine Fine control of pan movement (0=default)	proportional
3	3	0 - 255	Tilt Tilt movement by 270° (128=default)	proportional
4	4	0 - 255	Tilt fine Fine control of tilt movement (0=default)	proportional
5	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	
		2 - 255	Time from 0.2 s to 25.5 sec.	proportional
6	6		Power/Special functions	
		0 -5	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 42/43 must be at range: 0-31 DMX). Corresponding menu items are temporarily overridden.</i>	
		6-7	Standby mode: On (fixture effects are deactivated, light output is closed)	step
		8-9	Standby mode: Off	step
		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	Graphic display: On	step
		25-29	Graphic display: Off	step
		30-31	Quiet mode: Fans On at blackout	step
		32-33	Quiet mode: Fans Off at blackout	step
		34-35	Dimmer curve: Super Square Law	step
		36-37	Pressure test: On (fixture does not respond to DMX during the test except values 36-37 (Pressure test Off))	step
		38-39	Pressure test: Off	step
		40-44	Pan/Tilt mode: Speed	step
		45-49	Pan/Tilt mode: Time	step
		50-54	Blackout while pan/tilt moving: On	step
		55-59	Blackout while pan/tilt moving: Off	step
		60-64	Blackout while gobo wheel moving: On	step
		65-69	Blackout while gobo wheel moving: Off	step
70-74	Blackout while colour wheel moving: On	step		
75-79	Blackout while colour wheel moving: Off	step		
80-84	Fans mode: Auto	step		
85-89	Fans mode: High	step		
90-99	Reserved			

DMX protocol

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1/44	2/45			
		100-104	Focus Tracking: On	step
		105-109	Focus Tracking: Off	step
		110-114	Dimmer curve: Square law	step
		115-119	Dimmer curve: Linear	step
		120-124	Parking position: On	step
		125-129	Parking position: Off	step
			<i>To activate following functions, stop in DMX value for at least 3 seconds.</i>	
		130 - 139	Total fixture reset (without pan/tilt)	step
		140 - 149	Pan and Tilt reset	step
		150 - 159	Colour system reset	step
		160 - 169	Gobo wheels reset	step
		170-174	Pan reset	step
		175-179	Tilt reset	step
		180 - 189	Zoom/focus/frost/prism reset	step
		190 - 199	Iris /framing shutters reset	step
		200 - 209	Total fixture reset (including pan/tilt)	step
		210 - 218	Reserved	
			The following three commands define transition from gobo rotation to gobo indexing:	
		219 - 220	Gobo indexing: Maximum speed and shortcut	step
		221 - 222	Gobo indexing: Follow speed and direction	step
		223 - 224	Gobo indexing: Maximum speed and follow direction	step
			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	Disabled "Quiet mode"	step
		241 - 255	Quiet mode - fan noise control from min. to max.	proportional
7	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
		25-29	High	step
		30-255	Reserved (fixture utilizes PWM frequency set in the display menu item Frequency Setup).	
8	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

DMX protocol

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1/44	2/45			
		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	9		Max. light intensity indication and setting	
		0-10	No function (0=default)	
		11-20	Indication of drop of max. light intensity	step
			<p><i>A drop of max. light intensity of the fixture (compared to its original intensity) is indicated by a corresponding colour output:</i></p> <p><i>0-5%, (WHITE /new LED module/)</i></p> <p><i>6-10% (RED)</i></p> <p><i>11-15% (GREEN)</i></p> <p><i>16-20% (BLUE)</i></p> <p><i>21-25% (CYAN)</i></p> <p><i>26-30% (MAGENTA)</i></p> <p><i>31-35% (YELLOW)</i></p> <p><i>36-40% (ORANGE)</i></p> <p><i>Pan/tilt is set at 128 DMX (50%), Dimmer is open at 255 DMX (100%).</i></p> <p><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“ 42/43 must be at range: 0-31 DMX). Corresponding menu items are permanently overwritten.</i></p>	
		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	10		Colour wheel	
			Continual positioning	
		0	Open/white	proportional

DMX protocol

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1/44	2/45			
		12	Deep red	proportional
		25	Deep blue	proportional
		39	Light green	proportional
		51	Lavender	proportional
		64	Orange	proportional
		77	Multicolor	proportional
		90	Filter CRI 90	proportional
		103	CTO 3200K	proportional
		115	Congo blue	proportional
		128-129	White	step
			Positioning	
		130-136	Deep red	step
		137-142	Deep blue	step
		143-149	Light green	step
		150-155	Lavender	step
		156-162	Orange	step
		163-168	Multicolor	step
		169-175	Filter CRI 90	step
		176-182	CTO 3200K	step
		183-189	Congo 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 (Set microphone sensitivity in menu „Personality“)	step
		250 - 255	Auto random colour selection from fast to slow	proportional
11	11		Colour wheel - fine positioning	
		0 - 255	Fine positioning (0=default)	proportional
12	12		Cyan	
		0 - 255	Cyan from min. saturation --> full cyan (0=default)	proportional
13	13		Magenta	
		0 - 255	Magenta from min. saturation --> full magenta (0=default)	proportional
14	14		Yellow	
		0 - 255	Yellow from min. saturation --> full yellow (0=default)	proportional
15	15		Virtual CTO	
		0-255	Colour temperature change from 6700K --> 2700K (0=default)	proportional
16	16		Green correction	
		0	Uncorrected white	step
		1-127	Minus green --> uncorrected white	proportional
		128	Uncorrected white (128=default)	step
		129-255	Uncorrected white --> Plus green	proportional
17	17		Virtual colour wheel	
		0	No function (0=default)	step
		1-2	Filter 4 (Medium Bastard Amber)	step
		3-4	Filter 10 (Medium Yellow)	step
		5-6	Filter 19 (Fire)	step
		7-8	Filter 26 (Bright Red)	step
		9-10	Filter 58 (Lavender)	step

DMX protocol

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1/44	2/45			
		11-12	Filter 68 (Sky Blue)	step
		13-14	Filter 71 (Tokyo Blue)	step
		15-16	Filter 79 (Just Blue)	step
		17-18	Filter 88 (Lime Green)	step
		19-20	Filter 90 (Dark Yellow Green)	step
		21-22	Filter 100 (Spring Yellow)	step
		23-24	Filter 101 (Yellow)	step
		25-26	Filter 102 (Light Amber)	step
		27-28	Filter 103 (Straw)	step
		29-30	Filter 104 (Deep Amber)	step
		31-32	Filter 105 (Orange)	step
		33-34	Filter 106 (Primary Red)	step
		35-36	Filter 111 (Dark Pink)	step
		37-38	Filter 115 (Peacock Blue)	step
		39-40	Filter 116 (Medium Blue-Green)	step
		41-42	Filter 117 (Steel Blue)	step
		43-44	Filter 118 (Light Blue)	step
		45-46	Filter 119 (Dark Blue)	step
		47-48	Filter 120 (Deep Blue)	step
		49-50	Filter 121 (Filter Green)	step
		51-52	Filter 128 (Bright Pink)	step
		53-54	Filter 131 (Marine Blue)	step
		55-56	Filter 132 (Medium Blue)	step
		57-58	Filter 134 (Golden Amber)	step
		59-60	Filter 135 (Deep Golden Amber)	step
		61-62	Filter 136 (Pale Lavender)	step
		63-64	Filter 137 (Special Lavender)	step
		65-66	Filter 138 (Pale Green)	step
		67-68	Filter 139 (Primary Green)	step
		69-70	Filter 141 (Bright Blue)	step
		71-72	Filter 147 (Apricot)	step
		73-74	Filter 148 (Bright Rose)	step
		75-76	Filter 152 (Pale Gold)	step
		77-78	Filter 154 (Pale Rose)	step
		79-80	Filter 157 (Pink)	step
		81-82	Filter 158 (Deep Orange)	step
		83-84	Filter 162 (Bastard Amber)	step
		85-86	Filter 164 (Flame Red)	step
		87-88	Filter 165 (Daylight Blue)	step
		89-90	Filter 169 (Lilac Tint)	step
		91-92	Filter 170 (Deep Lavender)	step
		93-94	Filter 172 (Lagoon Blue)	step
		95-96	Filter 179 (Chrome Orange)	step
		97-98	Filter 180 (Dark Lavender)	step
		99-100	Filter 181 (Congo Blue)	step
		101-102	Filter 197 (Alice Blue)	step
		103-104	Filter 201 (Full C.T. Blue)	step
		105-106	Filter 202 (Half C.T. Blue)	step

DMX protocol

Mode/Total channels		DMX Value	Function	Type of control
1/44	2/45			
		107-108	Filter 203 (Quarter C.T. Blue)	step
		109-110	Filter 204 (Full C.T. Orange)	step
		111-112	Filter 205 (Half C.T. Orange)	step
		113-114	Filter 206 (Quarter C.T. Orange)	step
		115-116	Filter 247 (Filter Minus Green)	step
		117-118	Filter 248 (Half Minus Green)	step
		119-120	Filter 281 (Three Quarter C.T. Blue)	step
		121-122	Filter 285 (Three Quarter C.T. Orange)	step
		123-124	Filter 352 (Glacier Blue)	step
		125-126	Filter 353 (Lighter Blue)	step
		127-128	Filter 715 (Cabana Blue)	step
		129-130	Filter 778 (Millennium Gold)	step
		131-132	Filter 793 (Vanity Fair)	step
		133-255	Reserved	
18	18		CMY and Colour wheel time	
		0	Function is off (0=default)	step
		1 - 255	Time of CMY and Colour wheel movement (0.1sec-->25.5sec.)	proportional
19	19		Framing shutters/Zoom/Focus/Frost/Iris/Prism time	
		0	Function is off (0=default)	step
		1 - 255	Time of framing shutters, zoom, focus, iris and frost movement (0.1 sec-->25.5 sec.)	proportional
		1-50	Time of prism movement (0.1 sec-->5 sec.)	proportional
20	20		Static gobo wheel	
		0-8	Open/hole	step
			<u>Positioning</u>	
		9-17	Gobo 1	step
		18-26	Gobo 2	step
		27-35	Gobo 3	step
		36-44	Gobo 4	step
		45-53	Gobo 5	step
		54-62	Gobo 6	step
		63-71	Gobo 7	step
		72-80	Gobo 8	step
		81-91	Gobo 9	step
			<u>Shaking gobos from slow to fast</u>	
		92-103	Gobo 1	proportional
		104-115	Gobo 2	proportional
		116-127	Gobo 3	proportional
		128-139	Gobo 4	proportional
		140-151	Gobo 5	proportional
		152-163	Gobo 6	proportional
		164-175	Gobo 7	proportional
		176-187	Gobo 8	proportional
		188-199	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

DMX protocol

Mode/Total channels		DMX Value	Function	Type of control
1/44	2/45			
			<i>(Set microphone sensitivity in menu „Personality“)</i>	
		250 - 255	<i>Auto random gobo selection from fast to slow</i>	proportional
21	*		Rotating gobo wheel	
			<i>Index - set indexing on channel 22</i>	
		0-9	Open/Hole (default)	step
		10-13	Gobo 1	step
		14-17	Gobo 2	step
		18-21	Gobo 3	step
		22-25	Gobo 4	step
		26-29	Gobo 5	step
		30-33	Gobo 6	step
		34-37	Gobo 7	step
		38-41	Gobo 8	step
			<i>Rotation - set rotation on channel 22</i>	
		42-45	Gobo 1	step
		46-49	Gobo 2	step
		50-53	Gobo 3	step
		54-57	Gobo 4	step
		58-61	Gobo 5	step
		62-65	Gobo 6	step
		66-69	Gobo 7	step
		70-73	Gobo 8	step
			<u>Shaking gobos from slow to fast</u>	
			<i>Index - set indexing on channel 22</i>	
		74-81	Gobo 1	proportional
		82-89	Gobo 2	proportional
		90-97	Gobo 3	proportional
		98-105	Gobo 4	proportional
		106-113	Gobo 5	proportional
		114-121	Gobo 6	proportional
		122-129	Gobo 7	proportional
		130-137	Gobo 8	proportional
			<u>Shaking gobos from slow to fast</u>	
			<i>Rotation - set rotation on channel 22</i>	
		138-145	Gobo 1	proportional
		146-153	Gobo 2	proportional
		154-161	Gobo 3	proportional
		162-169	Gobo 4	proportional
		170-177	Gobo 5	proportional
		178-185	Gobo 6	proportional
		186-192	Gobo 7	proportional
		193-199	Gobo 8	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
			<i>(Set microphone sensitivity in menu „Personality“)</i>	
		250 - 255	<i>Auto random gobo selection from fast to slow</i>	proportional

DMX protocol

Mode/Total channels		DMX Value	Function	Type of control
1/44	2/45			
*	21		Rotating gobo wheel	
			<i>Index - set indexing on channel 23</i>	
		0-9	Open/Hole (default)	step
		10-13	Gobo 1	step
		14-17	Gobo 2	step
		18-21	Gobo 3	step
		22-25	Gobo 4	step
		26-29	Gobo 5	step
		30-33	Gobo 6	step
		34-37	Gobo 7	step
		38-41	Gobo 8	step
			<i>Rotation - set rotation on channel 23</i>	
		42-45	Gobo 1	step
		46-49	Gobo 2	step
		50-53	Gobo 3	step
		54-57	Gobo 4	step
		58-61	Gobo 5	step
		62-65	Gobo 6	step
		66-69	Gobo 7	step
		70-73	Gobo 8	step
			Continual positioning	
			<i>Index - set indexing on channel 23</i>	
		74	Open/hole	proportional
		81	Gobo 1	proportional
		88	Gobo 2	proportional
		95	Gobo 3	proportional
		102	Gobo 4	proportional
		109	Gobo 5	proportional
		116	Gobo 6	proportional
		123	Gobo 7	proportional
		130	Gobo 8	proportional
		137	Open/hole	proportional
			Continual positioning	
			<i>Rotation - set rotation on channel 23</i>	
		138	Open/hole	proportional
		145	Gobo 1	proportional
		152	Gobo 2	proportional
		159	Gobo 3	proportional
		166	Gobo 4	proportional
		173	Gobo 5	proportional
		180	Gobo 6	proportional
		187	Gobo 7	proportional
		194	Gobo 8	proportional
		201	Open/hole	proportional
		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“)	

DMX protocol

Mode/Total channels		DMX Value	Function	Type of control
1/44	2/45			
		250 - 255	Auto random gobo selection from fast to slow	proportional
*	22		Rotating gobo wheel - fine positioning	
		0 - 255	Fine positioning (0=default)	proportional
22	23		Rot. Gobo indexing/rotation	
			<i>Gobo indexing - set position on channel 21</i>	
		0 - 255	Gobo indexing (128=default)	proportional
			<i>Gobo rotation - set position on channel 21</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
23	24		Rot. Gobo indexing/rotation - fine	
		0-255	Fine indexing/rotation (0=default)	proportional
24	25		Prism	
		0 - 19	Open position/hole (0=default)	step
		20 - 73	Prism indexing	step
		74-127	Prism rotation	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
		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
25	26		Prism indexing/rotation	
			<i>Prism indexing - set position on channel 24/25</i>	
		0 - 255	Prism 1 indexing	proportional
			<i>Prism rotation - set position on channel 24/25</i>	
		0	No rotation	step
		1 - 127	Forwards prism rotation from fast to slow	proportional
		128	No rotation (128=default)	step
		129-255	Backwards prism rotation from slow to fast	proportional
26	27		Frost	
		0	Open (0=default)	step
		1 - 179	Frost from 0% to 100%	proportional
		180 - 189	100% frost	step

DMX protocol

Mode/Total channels		DMX Value	Function	Type of control
1/44	2/45			
		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
27	28		Iris	
		0	Open (0=default)	step
		1 - 179	From max. diameter to min. diameter	proportional
		180 - 191	Closed	step
			<i>Pulse effects with Iris blackout</i>	
		192 - 219	Pulse opening from slow to fast	proportional
		220 - 247	Pulse closing from fast to slow	proportional
		248 - 249	Random pulse opening (fast)	step
		250 - 251	Random pulse opening (slow)	step
		252 - 253	Random pulse closing (fast)	step
		254 - 255	Random pulse closing (slow)	step
28	29		Iris - fine	
		0 - 255	Fine iris movement (0=default)	proportional
29	30		Zoom	
		0 - 255	Zoom from max. to min. beam angle (128=default)	proportional
30	31		Zoom - fine	
		0-255	Fine zooming (0=default)	proportional
31	32		Focus	
		0 - 255	Continuous adjustment from far to near (128=default)	proportional
32	33		Focus - fine	
		0- 255	Fine focusing (0=default)	proportional
33	34		Framing shutters module rotation	
		0-127	Rotation from right (0°) to 60°	proportional
		128	Centre (128=default)	step
		129-255	Rotation from 60° to left (120°)	proportional
34	35		Framing shutter 1- movement	
		0-255	Movement from Outward to Inward (0=default)	proportional
35	36		Framing shutter 1- swivelling	
		0-127	Swivelling from -30 degrees towards 0 degrees	proportional
		128	0 degrees (128=default)	step
		129-255	Swivelling from 0 degrees to +30 degrees	proportional
36	37		Framing shutter 2- movement	
		0-255	Movement from Outward to Inward (0=default)	proportional
37	38		Framing shutter 2- swivelling	
		0-127	Swivelling from -30 degrees towards 0 degrees	proportional
		128	0 degrees (128=default)	step
		129-255	Swivelling from 0 degrees to +30 degrees	proportional
38	39		Framing shutter 3 movement	
		0-255	Movement from Outward to Inward (0=default)	proportional
39	40		Framing shutter 3- swivelling	
		0-127	Swivelling from -30 degrees towards 0 degrees	proportional
		128	0 degrees (128=default)	step
		129-255	Swivelling from 0 degrees to +30 degrees	proportional
40	41		Framing shutter 4 movement	
		0-255	Movement from Outward to Inward (0=default)	proportional

DMX protocol

Mode/ <i>Total channels</i>		DMX Value	Function	Type of control
1/44	2/45			
41	42		Framing shutter 4- swivelling	
		0-127	Swivelling from -30 degrees towards 0 degrees	proportional
		128	0 degrees (128=default)	step
		129-255	Swivelling from 0 degrees to +30 degrees	proportional
42	43		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
43	44		Dimmer intensity	
		0 - 255	Dimmer intensity from 0% to 100% (0=default)	proportional
44	45		Dimmer intensity - fine	
		0 - 255	Fine dimming (0=default)	proportional
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