

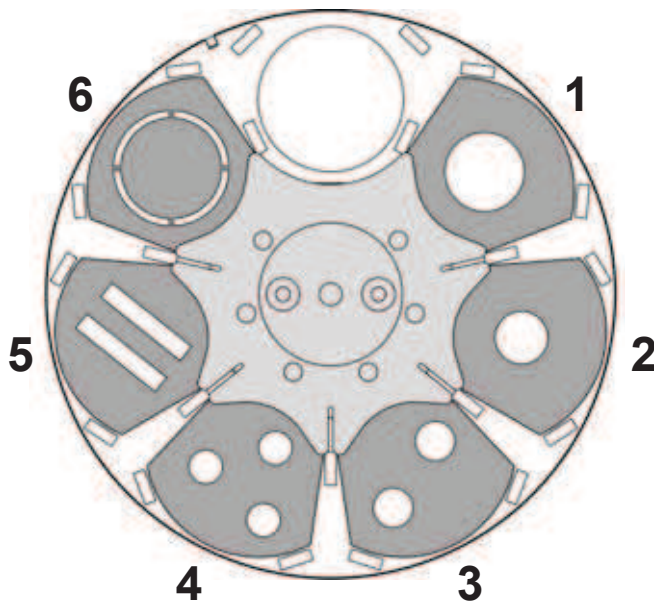
DMX protocol

Channel – 16 Bt (16-Bit Mode)	Channel – 16 Ex (16-bit Extended)	Value	Percent	Function
1	1	0 - 19 20 - 49 50 - 72 73 - 79 80 - 99 100 - 119 120 - 127 128 - 147 148 - 167 168 - 187 188 - 190 191 - 193 194 - 196 197 - 199 200 - 202 203 - 207 208 - 217 218 - 227 228 - 237 238 - 247 248 - 255	0 - 7 8 - 19 20 - 28 29 - 31 31 - 39 39 - 47 47 - 50 50 - 58 58 - 65 66 - 73 74 - 75 75 - 76 76 - 77 77 - 78 78 - 79 80 - 81 82 - 85 85 - 89 89 - 93 93 - 97 97 - 100	Shutter, strobe, reset, lamp on/off Shutter closed Shutter open Strobe, fast → slow Shutter open Opening pulse, fast → slow Closing pulse, fast → slow Shutter open Random strobe, fast Random strobe, medium Random strobe, slow Shutter open Random opening pulse, fast Random opening pulse, slow Random closing pulse, fast Random closing pulse, slow Shutter open Reset fixture (see notes a. and b. on left) Shutter open Lamp on Shutter open Lamp off (see note c. on left)
		a. If DMX Reset is disabled in the control menu (<i>PERS</i> → <i>RES=OFF</i>), the fixture can only be reset via DMX if all 3 CMY channels are set to a value from 230 - 232 (91%).		
		b. A 5 second delay can be applied to the reset command from the control menu under <i>PERS</i> → <i>RES</i> .		
		c. If DMX Lamp Off is disabled in the control menu (<i>PERS</i> → <i>LLOF=OFF</i>), the lamp can only be doused via DMX if all 3 CMY channels are set to a value from 230 - 232 (91%).		
2	2	0 - 255	0 - 100	Dimmer Closed → open
-	3	0 - 255	0 - 100	Dimmer fine (Least Significant Byte)
3	4	0 - 255 0 1 - 127 128 - 254 255	0 - 100 0 1 - 50 51 - 99 100	Cyan White → full cyan Random CMY color (when set on channel 6 in 16 bt or channel 10 in 16 ex) Normal (full range) Minimum cyan setting (127: full cyan) Maximum cyan setting (128: no cyan) Normal (full range)
-	5	0 - 255	0 - 100	Cyan fine (Least Significant Byte)
4	6	0 - 255 0 1 - 127 128 - 254 255	0 - 100 0 1 - 50 51 - 99 100	Magenta White → full magenta Random CMY color (when set on channel 6 in 16 bt or channel 10 in 16 ex) Normal (full range) Minimum magenta setting (127: full cyan) Maximum magenta setting (128: no cyan) Normal (full range)
-	7	0 - 255	0 - 100	Magenta fine (Least Significant Byte)
5	8	0 - 255 0 1 - 127 128 - 254 255	0 - 100 0 1 - 50 51 - 99 100	Yellow White → full yellow Random CMY color (when set on channel 6 in 16 bt or channel 10 in 16 ex) Normal (full range) Minimum yellow setting (127: full cyan) Maximum yellow setting (128: no cyan) Normal (full range)
-	9	0 - 255	0 - 100	Yellow fine (Least Significant Byte)

6	10	0	0	Color wheel scrolling and rotation, random CMY Continuous scrolling (split color positions) White (open) White → CTC 5500-2900 K CTC 5500-2900 K → Pink 312 Pink 312 → UV UV → Red 308 Red 308 → Green 206 Green 206 → Blue 108 Blue 108 → White (open) Stepped scrolling (full color positions) Blue 108 Green 206 Red 308 UV Pink 312 CTC 5500-2900 K White (open) Continuous rotation Clockwise, fast → slow Counterclockwise, slow → fast Random CMY color (set min. & max. CMY levels on channels 3, 4 & 5 in 16 bt and channels 4, 6 & 8 in 16 ex. modes) Fast Medium Slow
		1 - 26	0 - 10	
		27 - 51	11 - 20	
		52 - 77	21 - 30	
78 - 102	31 - 40			
103 - 128	41 - 50			
129 - 152	51 - 60			
153 - 179	61 - 70			
180 - 183	71 - 72			
184 - 187	72 - 73			
188 - 191	74 - 75			
192 - 195	75 - 76			
196 - 199	77 - 78			
200 - 203	78 - 79			
204 - 207	80 - 81			
208 - 226	82 - 88			
227 - 245	89 - 96			
246 - 248	97			
249 - 251	98			
252 - 255	99 - 100			
-	11	0 - 255	0 - 100	Color fine (Least Significant Byte)
7	12	0 - 255	0 - 100	Frost filter Open (off) → full
-	13	0 - 255	0 - 100	Frost filter fine (Least Significant Byte)
8	14	0 - 255	0 - 100	Pan Left → right (128 = neutral)
9	15	0 - 255	0 - 100	Pan fine (Least Significant Byte)
10	16	0 - 255	0 - 100	Tilt Up → down (128 = neutral)
11	17	0 - 255	0 - 100	Tilt fine (Least Significant Byte)
12	18	0 - 2	0 - 1	Pan/tilt speed Tracking Fast → slow Tracking, <i>PTSP SLOW</i> (overrides control menu) Tracking, <i>PTSP NORM</i> (overrides control menu) Tracking, <i>PTSP FAST</i> (overrides control menu) Blackout while moving
		3 - 242	1 - 95	
		243 - 245	96	
		246 - 248	97	
249 - 251	98			
252 - 255	99 - 100			
13	19	0 - 2	0 - 1	Effects speed Dimmer, CMY filters Tracking mode Vector speed, fast → slow Tracking, <i>SCUT OFF</i> (overrides control menu) Tracking, <i>SCUT ON</i> (overrides control menu) Vector speed, fast Color wheel Tracking mode Vector speed, fast → slow Tracking, <i>SCUT OFF</i> (overrides control menu) Tracking, <i>SCUT ON</i> (overrides control menu) Blackout while moving Frost Tracking mode Vector speed, fast → slow Tracking Vector speed, fast
		3 - 245	1 - 96	
		246 - 248	97	
		249 - 251	98	
		252 - 255	99 - 100	
		0 - 2	0 - 1	
		3 - 245	1 - 96	
		246 - 248	97	
		249 - 251	98	
		252 - 255	99 - 100	
		0 - 2	0 - 1	
		3 - 245	1 - 96	
246 - 251	97 - 98			
252 - 255	99 - 100			

Appendix: MAC 250 Beam

If the standard MAC 250 Wash is converted to a MAC 250 Beam with a MAC 250 Beam Kit (available from Martin, P/N 91610101), i.e. color filters are removed and beam effect gobos are inserted in the color wheel, the wheel looks as shown in Figure 18:



Position	Gobo
1	Beam aperture 15
2	Beam aperture 10
3	Beam two dots
4	Beam three dots
5	Beam two bars 10
6	Beam cone 15

Table 8: Standard MAC 250 Beam gobos

Figure 18: MAC 250 Beam updated color wheel (viewed from lamp side)

The control menu commands `HEAD` → `COL` → `COL 1` - `COL 6` now manually select beam effect gobos rather than color filters. DMX Channel 6 (in 16-bit mode) or 10 (in 16-bit extended mode) now controls beam effect gobos as shown in Table 9:

6	10	0	0	Beam gobo wheel scrolling and rotation, random CMY Continuous scrolling (split gobos) Open Open → Beam aperture 15 Beam aperture 15 → Beam aperture 10 Beam aperture 10 → Beam two dots Beam two dots → Beam three dots Beam three dots → Beam two bars Beam two bars → Beam cone Beam cone → Open Stepped scrolling (full gobos) Beam cone Beam two bars Beam three dots Beam two dots Beam aperture 10 Beam aperture 15 Open Continuous rotation Clockwise, fast → slow Counterclockwise, slow → fast Random CMY color (set min. & max. CMY levels on channels 3, 4 & 5 in 16-bit and channels 4, 6 & 8 in 16-bit ex. modes) Fast Medium Slow
		1 - 26	0 - 10	
		27 - 51	11 - 20	
		52 - 77	21 - 30	
78 - 102	31 - 40			
103 - 128	41 - 50			
129 - 152	51 - 60			
153 - 179	61 - 70			
180 - 183	71 - 72			
184 - 187	72 - 73			
188 - 191	74 - 75			
192 - 195	75 - 76			
196 - 199	77 - 78			
200 - 203	78 - 79			
204 - 207	80 - 81			
208 - 226	82 - 88			
227 - 245	89 - 96			
246 - 248	97			
249 - 251	98			
252 - 255	99 - 100			

Table 9: MAC 250 Beam updated DMX channel 6/10