User Manual for
Chroma-Q CQ1/D
Chroma-Q Broadway
Chroma-Q M-Range

Version 6.1 February 2001

NOTE:

The current version of the Chroma-Q range uses a "digital" control card, a binary DMX address switch and a different method of gel string calibration and fixing.
Please read this manual and the gel fitting supplement before using the product.

Table of DMX Binary Address Settings 385-512

DMX ADDRESS	BINARY SWITCH SETTING								
	1	2	4	8	16	32	64	128	256
385	ON							ON	ON
386		ON						ON	ON
387	ON	ON						ON	ON
388			ON					ON	ON
389	ON		ON					ON	ON
390		ON	ON					ON	ON
391	ON	ON	ON					ON	ON
392				ON				ON	ON
393	ON			ON				ON	ON
394		ON		ON				ON	ON
395	ON	ON		ON				ON	ON
396			ON	ON				ON	ON
397	ON		ON	ON				ON	ON
398		ON	ON	ON				ON	ON
399	ON	ON	ON	ON				ON	ON
400					ON			ON	ON
401	ON				ON			ON	ON
402		ON			ON			ON	ON
403	ON	ON			ON			ON	ON
404			ON		ON			ON	ON
405	ON		ON		ON			ON	ON
406		ON	ON		ON			ON	ON
407	ON	ON	ON		ON			ON	ON
408				ON	ON			ON	ON
409	ON			ON	ON			ON	ON
410		ON		ON	ON			ON	ON
411	ON	ON		ON	ON			ON	ON
412			ON	ON	ON			ON	ON
413	ON		ON	ON	ON			ON	ON
414		ON	ON	ON	ON			ON	ON
415	ON	ON	ON	ON	ON			ON	ON
416						ON		ON	ON
417	ON					ON		ON	ON
418		ON				ON		ON	ON
419	ON	ON				ON		ON	ON
420			ON			ON		ON	ON
421	ON		ON			ON		ON	ON
422		ON	ON			ON		ON	ON
423	ON	ON	ON			ON		ON	ON
424				ON		ON		ON	ON
425	ON			ON		ON		ON	ON
426		ON		ON		ON		ON	ON
427	ON	ON		ON		ON		ON	ON
428			ON	ON		ON		ON	ON
429	ON		ON	ON		ON		ON	ON
430		ON	ON	ON		ON		ON	ON
431	ON	ON	ON	ON		ON		ON	ON
432					ON	ON		ON	ON
433	ON				ON	ON		ON	ON
434		ON			ON	ON		ON	ON
435	ON	ON			ON	ON		ON	ON
436			ON		ON	ON		ON	ON
437	ON		ON		ON	ON		ON	ON
438		ON	ON		ON	ON		ON	ON
439	ON	ON	ON		ON	ON		ON	ON
440				ON	ON	ON		ON	ON
441	ON			ON	ON	ON		ON	ON
442		ON		ON	ON	ON		ON	ON
443	ON	ON		ON	ON	ON		ON	ON
444			ON	ON	ON	ON		ON	ON
445	ON		ON	ON	ON	ON		ON	ON
446		ON	ON	ON	ON	ON		ON	ON
447	ON	ON	ON	ON	ON	ON		ON	ON
448							ON	ON	ON

DMX ADDRESS	BINARY SWITCH SETTING								
	1	2	4	8	16	32	64	128	256
449	ON						ON	ON	ON
450		ON					ON	ON	ON
451	ON	ON					ON	ON	ON
452			ON				ON	ON	ON
453	ON		ON				ON	ON	ON
454		ON	ON				ON	ON	ON
455	ON	ON	ON				ON	ON	ON
456				ON			ON	ON	ON
457	ON			ON			ON	ON	ON
458		ON		ON			ON	ON	ON
459	ON	ON		ON			ON	ON	ON
460			ON	ON			ON	ON	ON
461	ON		ON	ON			ON	ON	ON
462		ON	ON	ON			ON	ON	ON
463	ON	ON	ON	ON			ON	ON	ON
464					ON		ON	ON	ON
465	ON				ON		ON	ON	ON
466		ON			ON		ON	ON	ON
467	ON	ON			ON		ON	ON	ON
468			ON		ON		ON	ON	ON
469	ON		ON		ON		ON	ON	ON
470		ON	ON		ON		ON	ON	ON
471	ON	ON	ON		ON		ON	ON	ON
472				ON	ON		ON	ON	ON
473	ON			ON	ON		ON	ON	ON
474		ON		ON	ON		ON	ON	ON
475	ON	ON		ON	ON		ON	ON	ON
476			ON	ON	ON		ON	ON	ON
477	ON		ON	ON	ON		ON	ON	ON
478		ON	ON	ON	ON		ON	ON	ON
479	ON	ON	ON	ON	ON		ON	ON	ON
480						ON	ON	ON	ON
481	ON					ON	ON	ON	ON
482		ON				ON	ON	ON	ON
483	ON	ON				ON	ON	ON	ON
484			ON			ON	ON	ON	ON
485	ON		ON			ON	ON	ON	ON
486		ON	ON			ON	ON	ON	ON
487	ON	ON	ON			ON	ON	ON	ON
488				ON		ON	ON	ON	ON
489	ON			ON		ON	ON	ON	ON
490		ON		ON		ON	ON	ON	ON
491	ON	ON		ON		ON	ON	ON	ON
492			ON	ON		ON	ON	ON	ON
493	ON		ON	ON		ON	ON	ON	ON
494		ON	ON	ON		ON	ON	ON	ON
495	ON	ON	ON	ON		ON	ON	ON	ON
496					ON	ON	ON	ON	ON
497	ON				ON	ON	ON	ON	ON
498		ON			ON	ON	ON	ON	ON
499	ON	ON			ON	ON	ON	ON	ON
500			ON		ON	ON	ON	ON	ON
501	ON		ON		ON	ON	ON	ON	ON
502		ON	ON		ON	ON	ON	ON	ON
503	ON	ON	ON		ON	ON	ON	ON	ON
504				ON	ON	ON	ON	ON	ON
505	ON			ON	ON	ON	ON	ON	ON
506		ON		ON	ON	ON	ON	ON	ON
507	ON	ON		ON	ON	ON	ON	ON	ON
508			ON	ON	ON	ON	ON	ON	ON
509	ON		ON	ON	ON	ON	ON	ON	ON
510		ON	ON	ON	ON	ON	ON	ON	ON
511	ON	ON	ON	ON	ON	ON	ON	ON	ON
512									

Table of DMX Binary Address Settings 257-384

DMX ADDRESS	BINARY SWITCH SETTING								
	1	2	4	8	16	32	64	128	256
257	ON								ON
258		ON							ON
259	ON	ON							ON
260			ON						ON
261	ON		ON						ON
262		ON	ON						ON
263	ON	ON	ON						ON
264				ON					ON
265	ON			ON					ON
266		ON		ON					ON
267	ON	ON		ON					ON
268			ON	ON					ON
269	ON		ON	ON					ON
270		ON	ON	ON					ON
271	ON	ON	ON	ON					ON
272					ON				ON
273	ON				ON				ON
274		ON			ON				ON
275	ON	ON			ON				ON
276			ON		ON				ON
277	ON		ON		ON				ON
278		ON	ON		ON				ON
279	ON	ON	ON		ON				ON
280				ON	ON				ON
281	ON			ON	ON				ON
282		ON		ON	ON				ON
283	ON	ON		ON	ON				ON
284			ON	ON	ON				ON
285	ON		ON	ON	ON				ON
286		ON	ON	ON	ON				ON
287	ON	ON	ON	ON	ON				ON
288						ON			ON
289	ON					ON			ON
290		ON				ON			ON
291	ON	ON				ON			ON
292			ON			ON			ON
293	ON		ON			ON			ON
294		ON	ON			ON			ON
295	ON	ON	ON			ON			ON
296				ON		ON			ON
297	ON			ON		ON			ON
298		ON		ON		ON			ON
299	ON	ON		ON		ON			ON
300			ON	ON		ON			ON
301	ON		ON	ON		ON			ON
302		ON	ON	ON		ON			ON
303	ON	ON	ON	ON		ON			ON
304					ON	ON			ON
305	ON				ON	ON			ON
306		ON			ON	ON			ON
307	ON	ON			ON	ON			ON
308			ON		ON	ON			ON
309	ON		ON		ON	ON			ON
310		ON	ON		ON	ON			ON
311	ON	ON	ON		ON	ON			ON
312				ON	ON	ON			ON
313	ON			ON	ON	ON			ON
314		ON		ON	ON	ON			ON
315	ON	ON		ON	ON	ON			ON
316			ON	ON	ON	ON			ON
317	ON		ON	ON	ON	ON			ON
318		ON	ON	ON	ON	ON			ON
319	ON	ON	ON	ON	ON	ON			ON
320							ON		ON

DMX ADDRESS	BINARY SWITCH SETTING								
	1	2	4	8	16	32	64	128	256
321	ON						ON		ON
322		ON					ON		ON
323	ON	ON					ON		ON
324			ON				ON		ON
325	ON		ON				ON		ON
326		ON	ON				ON		ON
327	ON	ON	ON				ON		ON
328				ON			ON		ON
329	ON			ON			ON		ON
330		ON		ON			ON		ON
331	ON	ON		ON			ON		ON
332			ON	ON			ON		ON
333	ON		ON	ON			ON		ON
334		ON	ON	ON			ON		ON
335	ON	ON	ON	ON			ON		ON
336					ON		ON		ON
337	ON				ON		ON		ON
338		ON			ON		ON		ON
339	ON	ON			ON		ON		ON
340			ON		ON		ON		ON
341	ON		ON		ON		ON		ON
342		ON	ON		ON		ON		ON
343	ON	ON	ON		ON		ON		ON
344				ON	ON		ON		ON
345	ON			ON	ON		ON		ON
346		ON		ON	ON		ON		ON
347	ON	ON		ON	ON		ON		ON
348			ON	ON	ON		ON		ON
349	ON		ON	ON	ON		ON		ON
350		ON	ON	ON	ON		ON		ON
351	ON	ON	ON	ON	ON		ON		ON
352						ON	ON		ON
353	ON					ON	ON		ON
354		ON				ON	ON		ON
355	ON	ON				ON	ON		ON
356			ON			ON	ON		ON
357	ON		ON			ON	ON		ON
358		ON	ON			ON	ON		ON
359	ON	ON	ON			ON	ON		ON
360				ON		ON	ON		ON
361	ON			ON		ON	ON		ON
362		ON		ON		ON	ON		ON
363	ON	ON		ON		ON	ON		ON
364			ON	ON		ON	ON		ON
365	ON		ON	ON		ON	ON		ON
366		ON	ON	ON		ON	ON		ON
367	ON	ON	ON	ON		ON	ON		ON
368					ON	ON	ON		ON
369	ON				ON	ON	ON		ON
370		ON			ON	ON	ON		ON
371	ON	ON			ON	ON	ON		ON
372			ON		ON	ON	ON		ON
373	ON		ON		ON	ON	ON		ON
374		ON	ON		ON	ON	ON		ON
375	ON	ON	ON		ON	ON	ON		ON
376				ON	ON	ON	ON		ON
377	ON			ON	ON	ON	ON		ON
378		ON		ON	ON	ON	ON		ON
379	ON	ON		ON	ON	ON	ON		ON
380			ON	ON	ON	ON	ON		ON
381	ON		ON	ON	ON	ON	ON		ON
382		ON	ON	ON	ON	ON	ON		ON
383	ON	ON	ON	ON	ON	ON	ON		ON
384								ON	ON

Product Overview

The Chroma-Q is designed to be one of the most reliable colour changers available. The utilization of digital circuitry and high technology composite materials, produces an affordable colour changer which is capable of scrolling gel strings of various lengths from 2 to 16 colours.

The Chroma-Q is designed to give years of trouble free use, providing that it is regularly adjusted and used in accordance with the instructions detailed in this manual. If you should experience any problems which fall outside of the scope of this manual, contact the selling dealer for further details. Like any electro-mechanical product the Chroma-Q is not designed to operate in wet or excessively humid conditions.

If the selling dealer is unable to satisfy your servicing needs, contact A.C. Lighting directly for full factory service:

Outside North America:
A.C. Lighting Ltd
Centauri House,
Hillbottom Road, Sands
High Wycombe, Bucks
HP12 4HQ England
Tel: +44 (0)1494 446000
Fax: +44 (0)1494 461024

North America:
A.C. Lighting (Canada) Ltd.
Unit #1, 435 Horner Avenue,
Toronto, ON. M8W 4W3
Canada

Tel: +1 416-255-9494
Fax: +1 416-255-3514

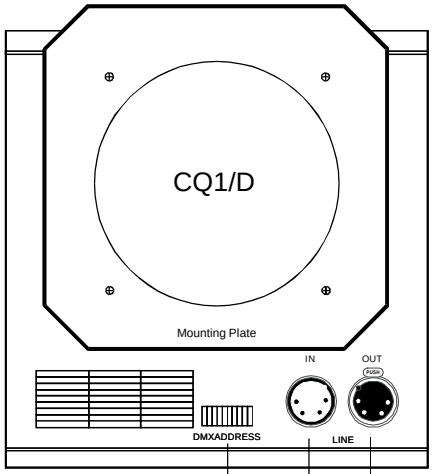
Product Description

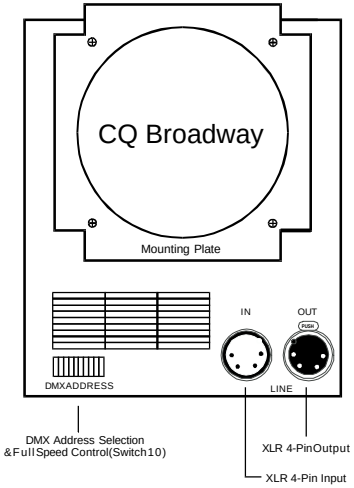
The Chroma Q will read USITT DMX512 (1990) protocol, which enables individual addressing of each unit. This allows for easy grouping of multiple units. The units are individually addressed by setting the 10 pin binary dip switch (three rotary switchs on M5 & M8), as displayed in the panel views on page 4 and the instructions on page 6 section b.

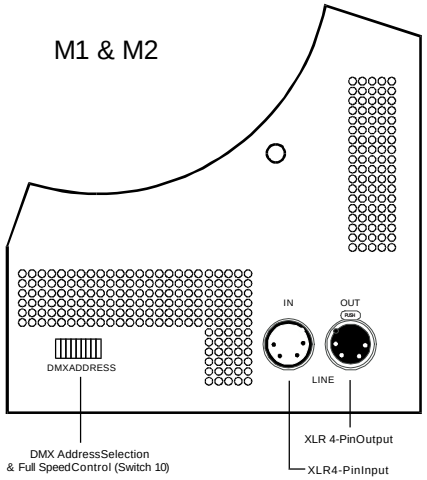
The Chroma-Q is supplied power and control signals by means of a XLR 4-pin connector. The XLR 4-pin output may then be used to connect other units in turn on the same line. Each chain line must be terminated by connecting the output cable from the last unit in the chain to the corresponding return connection on the PSU / Splitter box, as shown in the System Diagram on page 6

Note: For the optimum performance of a system the Chroma-Q colour changer maximum cable length per distribution line must not exceed 61mtrs. (200ft.) including the return to the PSU / Splitter box.

The Chroma-Q is equipped with an integral cooling fan. Each unit is also equipped with three diagnostic LED indicators (found on the underside of the unit); showing Power, DMX signal and DMX level (see section j - Troubleshooting on page 8 for full details).







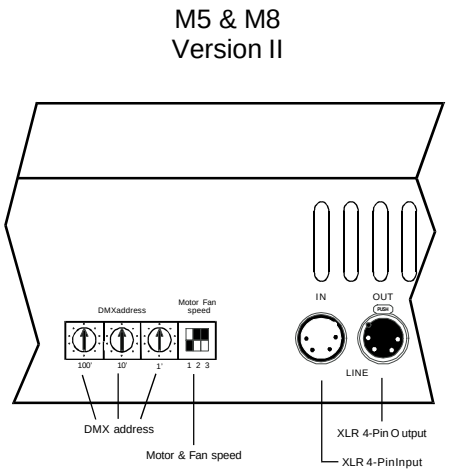


Table of DMX Binary Address Settings 129-256

DMX ADDRESS	BINARY SWITCH SETTING								
	1	2	4	8	16	32	64	128	256
129	ON							ON	
130		ON						ON	
131	ON	ON						ON	
132			ON					ON	
133	ON		ON					ON	
134		ON	ON					ON	
135	ON	ON	ON					ON	
136				ON				ON	
137	ON			ON				ON	
138		ON		ON				ON	
139	ON	ON		ON				ON	
140			ON	ON				ON	
141	ON		ON	ON				ON	
142		ON	ON	ON				ON	
143	ON	ON	ON	ON				ON	
144					ON			ON	
145	ON				ON			ON	
146		ON			ON			ON	
147	ON	ON			ON			ON	
148			ON		ON			ON	
149	ON		ON		ON			ON	
150		ON	ON		ON			ON	
151	ON	ON	ON		ON			ON	
152				ON	ON			ON	
153	ON			ON	ON			ON	
154		ON		ON	ON			ON	
155	ON	ON		ON	ON			ON	
156			ON	ON	ON			ON	
157	ON		ON	ON	ON			ON	
158		ON	ON	ON	ON			ON	
159	ON	ON	ON	ON	ON			ON	
160						ON		ON	
161	ON					ON		ON	
162		ON				ON		ON	
163	ON	ON				ON		ON	
164			ON			ON		ON	
165	ON		ON			ON		ON	
166		ON	ON			ON		ON	
167	ON	ON	ON			ON		ON	
168				ON		ON		ON	
169	ON			ON		ON		ON	
170		ON		ON		ON		ON	
171	ON	ON		ON		ON		ON	
172			ON	ON		ON		ON	
173	ON		ON	ON		ON		ON	
174		ON	ON	ON		ON		ON	
175	ON	ON	ON	ON		ON		ON	
176					ON	ON		ON	
177	ON				ON	ON		ON	
178		ON			ON	ON		ON	
179	ON	ON			ON	ON		ON	
180			ON		ON	ON		ON	
181	ON		ON		ON	ON		ON	
182		ON	ON		ON	ON		ON	
183	ON	ON	ON		ON	ON		ON	
184				ON	ON	ON		ON	
185	ON			ON	ON	ON		ON	
186		ON		ON	ON	ON		ON	
187	ON	ON		ON	ON	ON		ON	
188			ON	ON	ON	ON		ON	
189	ON		ON	ON	ON	ON		ON	
190		ON	ON	ON	ON	ON		ON	
191	ON	ON	ON	ON	ON	ON		ON	
192							ON	ON	

DMX ADDRESS	BINARY SWITCH SETTING								
	1	2	4	8	16	32	64	128	256
193	ON						ON	ON	
194		ON					ON	ON	
195	ON	ON					ON	ON	
196			ON				ON	ON	
197	ON		ON				ON	ON	
198		ON	ON				ON	ON	
199	ON	ON	ON				ON	ON	
200				ON			ON	ON	
201	ON			ON			ON	ON	
202		ON		ON			ON	ON	
203	ON	ON		ON			ON	ON	
204			ON	ON			ON	ON	
205	ON		ON	ON			ON	ON	
206		ON	ON	ON			ON	ON	
207	ON	ON	ON	ON			ON	ON	
208					ON		ON	ON	
209	ON				ON		ON	ON	
210		ON			ON		ON	ON	
211	ON	ON			ON		ON	ON	
212			ON		ON		ON	ON	
213	ON		ON		ON		ON	ON	
214		ON	ON		ON		ON	ON	
215	ON	ON	ON		ON		ON	ON	
216				ON	ON		ON	ON	
217	ON			ON	ON		ON	ON	
218		ON		ON	ON		ON	ON	
219	ON	ON		ON	ON		ON	ON	
220			ON	ON	ON		ON	ON	
221	ON		ON	ON	ON		ON	ON	
222		ON	ON	ON	ON		ON	ON	
223	ON	ON	ON	ON	ON		ON	ON	
224						ON	ON	ON	
225	ON					ON	ON	ON	
226		ON				ON	ON	ON	
227	ON	ON				ON	ON	ON	
228			ON			ON	ON	ON	
229	ON		ON			ON	ON	ON	
230		ON	ON			ON	ON	ON	
231	ON	ON	ON			ON	ON	ON	
232				ON		ON	ON	ON	
233	ON			ON		ON	ON	ON	
234		ON		ON		ON	ON	ON	
235	ON	ON		ON		ON	ON	ON	
236			ON	ON		ON	ON	ON	
237	ON		ON	ON		ON	ON	ON	
238		ON	ON	ON		ON	ON	ON	
239	ON	ON	ON	ON		ON	ON	ON	
240					ON	ON	ON	ON	
241	ON				ON	ON	ON	ON	
242		ON			ON	ON	ON	ON	
243	ON	ON			ON	ON	ON	ON	
244			ON		ON	ON	ON	ON	
245	ON		ON		ON	ON	ON	ON	
246		ON	ON		ON	ON	ON	ON	
247	ON	ON	ON		ON	ON	ON	ON	
248				ON	ON	ON	ON	ON	
249	ON			ON	ON	ON	ON	ON	
250		ON		ON	ON	ON	ON	ON	
251	ON	ON		ON	ON	ON	ON	ON	
252			ON	ON	ON	ON	ON	ON	
253	ON		ON	ON	ON	ON	ON	ON	
254		ON	ON	ON	ON	ON	ON	ON	
255	ON	ON	ON	ON	ON	ON	ON	ON	
256									ON

Table of DMX Binary Address Settings 1-128

DMX ADDRESS	BINARY SWITCH SETTING								
	1	2	4	8	16	32	64	128	256
1	ON								
2		ON							
3	ON	ON							
4			ON						
5	ON		ON						
6		ON	ON						
7	ON	ON	ON						
8				ON					
9	ON			ON					
10		ON		ON					
11	ON	ON		ON					
12			ON	ON					
13	ON		ON	ON					
14		ON	ON	ON					
15	ON	ON	ON	ON					
16					ON				
17	ON				ON				
18		ON			ON				
19	ON	ON			ON				
20			ON		ON				
21	ON		ON		ON				
22		ON	ON		ON				
23	ON	ON	ON		ON				
24				ON	ON				
25	ON			ON	ON				
26		ON		ON	ON				
27	ON	ON		ON	ON				
28			ON	ON	ON				
29	ON		ON	ON	ON				
30		ON	ON	ON	ON				
31	ON	ON	ON	ON	ON				
32						ON			
33	ON					ON			
34		ON				ON			
35	ON	ON				ON			
36			ON			ON			
37	ON		ON			ON			
38		ON	ON			ON			
39	ON	ON	ON			ON			
40				ON		ON			
41	ON			ON		ON			
42		ON		ON		ON			
43	ON	ON		ON		ON			
44			ON	ON		ON			
45	ON		ON	ON		ON			
46		ON	ON	ON		ON			
47	ON	ON	ON	ON		ON			
48					ON	ON			
49	ON				ON	ON			
50		ON			ON	ON			
51	ON	ON			ON	ON			
52			ON		ON	ON			
53	ON		ON		ON	ON			
54		ON	ON		ON	ON			
55	ON	ON	ON		ON	ON			
56				ON	ON	ON			
57	ON			ON	ON	ON			
58		ON		ON	ON	ON			
59	ON	ON		ON	ON	ON			
60			ON	ON	ON	ON			
61	ON		ON	ON	ON	ON			
62		ON	ON	ON	ON	ON			
63	ON	ON	ON	ON	ON	ON			
64							ON		

DMX ADDRESS	BINARY SWITCH SETTING								
	1	2	4	8	16	32	64	128	256
65	ON						ON		
66		ON					ON		
67	ON	ON					ON		
68			ON				ON		
69	ON		ON				ON		
70		ON	ON				ON		
71	ON	ON	ON				ON		
72				ON			ON		
73	ON			ON			ON		
74		ON		ON			ON		
75	ON	ON		ON			ON		
76			ON	ON			ON		
77	ON		ON	ON			ON		
78		ON	ON	ON			ON		
79	ON	ON	ON	ON			ON		
80					ON		ON		
81	ON				ON		ON		
82		ON			ON		ON		
83	ON	ON			ON		ON		
84			ON		ON		ON		
85	ON		ON		ON		ON		
86		ON	ON		ON		ON		
87	ON	ON	ON		ON		ON		
88				ON	ON		ON		
89	ON			ON	ON		ON		
90		ON		ON	ON		ON		
91	ON	ON		ON	ON		ON		
92			ON	ON	ON		ON		
93	ON		ON	ON	ON		ON		
94		ON	ON	ON	ON		ON		
95	ON	ON	ON	ON	ON		ON		
96						ON	ON		
97	ON					ON	ON		
98		ON				ON	ON		
99	ON	ON				ON	ON		
100			ON			ON	ON		
101	ON		ON			ON	ON		
102		ON	ON			ON	ON		
103	ON	ON	ON			ON	ON		
104				ON		ON	ON		
105	ON			ON		ON	ON		
106		ON		ON		ON	ON		
107	ON	ON		ON		ON	ON		
108			ON	ON		ON	ON		
109	ON		ON	ON		ON	ON		
110		ON	ON	ON		ON	ON		
111	ON	ON	ON	ON		ON	ON		
112					ON	ON	ON		
113	ON				ON	ON	ON		
114		ON			ON	ON	ON		
115	ON	ON			ON	ON	ON		
116			ON		ON	ON	ON		
117	ON		ON		ON	ON	ON		
118		ON	ON		ON	ON	ON		
119	ON	ON	ON		ON	ON	ON		
120				ON	ON	ON	ON		
121	ON			ON	ON	ON	ON		
122		ON		ON	ON	ON	ON		
123	ON	ON		ON	ON	ON	ON		
124			ON	ON	ON	ON	ON		
125	ON		ON	ON	ON	ON	ON		
126		ON	ON	ON	ON	ON	ON		
127	ON	ON	ON	ON	ON	ON	ON		
128								ON	

Operation

A summary of Chroma-Q's operations has been divided into the following sections:

For gel string dimensions, assembly, loading and calibration - see the separate leaflet enclosed with your Chroma-Q.

a) Control and Power cables

The Chroma-Q utilises an XLR 4-pin cable system. This is used to supply power and data transfer. Pins 1 and 4 supply 24VDC power. Pins 2 and 3 supply USITT 1990 DMX512 control protocol with a ground drain wire to the connector shell.

Only genuine Tourflex Data Safe cable is recommended for use with the Chroma-Q colour changing System (see Product Ordering List on page 15).

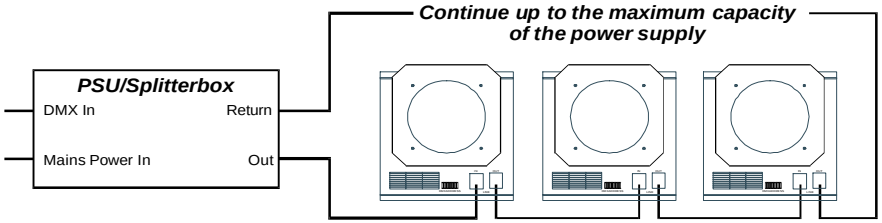
Damage will occur if the power connections short-circuit to the data or ground / shield connections. When assembling XLR 4-pin cables, heat shrink sleeving should be used on each individual data pin and the drain wire to prevent short circuits.

Note: *It is very important to ensure that the drain wire from the cable shield is connected to both connector cases.*

The cables are wired pin to pin, in the following format:

Pin	Function
1	0V DC
2	Control Data Minus
3	Control Data Plus
4	Plus 24V DC
Chassis	Ground Bonding

System Diagram



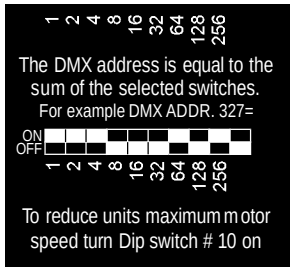
Each PSU / Splitter can accommodate two circuits. The total cable length per circuit must not exceed 61mtrs / 200 ft or a voltage drop will be imposed on the system. The total recommended number of Chroma-Q's of each type must not be exceeded or the system performance will be degraded (see PSU/Splitter Box Options on page 7). The total available current at 24V DC for the connected units is 8.1 Amps peak on the PS08 PSU/ Splitterboxand16.2Amps peak on the PS18/2.

b) Setting theDMXAddress

The DMX address for each unit is set using the 10 way binary switch (three rotary switches on M5 & M8) on the back of the unit (see drawings on page 4) . The address switches are pushed up (rotated) to the on setting. Add the address together to reach the control address required. Example: 1 + 2 = 3, 4 + 64 + 256 = 324.

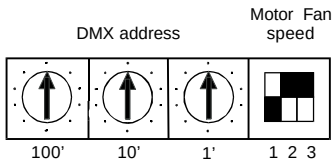
For example on CQ1D, Broadway & M1-M2:

Switch position = ☐



A complete chart of dip switch settings for DMX channels 1 to 511 is shown on pages 16 to 19.

Forexampleon M5 & M8:



The Chroma-Q can also be set to a second motor speed. By moving switch 10 on the binary dip switch (DIP 1 on M5 & M8) to the on (up) position, the inherent speed of the Chroma-Q will decrease by approximately 50% (ideal for environments that are particularly noise sensitive).

Product Ordering List

CQ1/D	Chroma-Q Digital Colour Changer
CQB	Broadway Digital Colour Changer
CQM1	M1 Digital Colour Changer
CQM2	M2 Digital Colour Changer
CQM5	M5 Digital Colour Changer Version II
CQM8	M8 Digital Colour Changer Version II
MP1	Mounting Plate for Par 64, aperture 165mm
MP2	Mounting Plate for Source 4 Par
MP3	Mounting Plate for Source 4 / Shakespeare
MP4	Mounting Plate for 6" Leko / 360Q, 190mm × 190mm
MP5	Mounting Plate 185mm × 185mm
MP6	Mounting Plate 254mm × 254mm, aperture 190mm for Analog
MP7	Mounting Plate 254mm × 254mm, aperture 190mm for Digital
MP8	Mounting Plate 305mm × 305mm for Digital
MPM5	Mounting Frame for M5 Version II
MPM8	Mounting Frame for M8 Version II
PS08	8.1 Amp PSU / Splitter box
PS18/2	16.2 Amp PSU / Splitter box
GST16	16 frame "Theatre" Gel String for original Chroma-Q
GST16/D	16 frame "Theatre" Gel String for digital Chroma-Q
GSR16	16 frame "Rock & Roll" Gel String for original Chroma-Q
GSR16/D	16 frame "Rock & Roll" Gel String for digital Chroma-Q
GT1	Gel tabs for Digital Chroma-Q, Broadway, M1, M2
GT2	Gel tabs for Digital M5, M8 Version I
ST	High Temperature Clear Tape
PT	Paper (masking) Tape
BDT	Set/3 Plastic Barndoor Tabs for Chroma-Q, M1
BDTM	Set/3 Metal Barndoor Tabsfor M2

Chroma-Q Data Safe Chroma-QCables

CQC3	1m / 3ft Chroma-Q Colour Changer Cable, 4 Pin Male - Female
CQC5	1.5m / 5ft Chroma-Q Colour Changer Cable, 4 Pin Male - Female
CQC10	3m / 10ft Chroma-Q Colour Changer Cable, 4 Pin Male - Female
CQC25	7.5m / 25ft Chroma-Q Colour Changer Cable, 4 Pin Male - Female
CQC50	15m / 50ft Chroma-Q Colour Changer Cable, 4 Pin Male - Female
CQC100	30m / 100ft Chroma-Q Colour Changer Cable, 4 Pin Male - Female

DMX Data Safe Control Cables

DS10	3m / 10ft Data Safe 5 pin XLR DMX Cable, Male - Female
Ds25	7.5m / 25ft Data Safe 5 pin XLR DMX Cable, Male - Female
DS50	15m / 50ft Data Safe 5 pin XLR DMX Cable, Male - Female
DS100	30m / 100ft Data Safe 5 pin XLR DMX Cable, Male - Female
TP	5 pin XLR DMX Termination plug (120 ohm)

Note: cables will be in metric lengths for Europe and imperial in the US

Chroma-Q PSU/Splitterbox Specification

	Dimensions Width	Height	Depth	Weight	Power Consumption
PS08	209mm/8¼"	69mm/2¼"	285mm/11¼"	2kg/4.4lb	3.2A max @ 115V 1.6A max@230V
PS18/2	300mm/12"	69mm/2¼"	281mm/11"	3.3kg/7.3lb	6.4A max @ 115V 3.2A max @ 230V

Power Requirements:	115 / 230V AC (internally switchable, isolate from mains before removing cover). This power supply must be connected to ground (earth)
Protocol Requirements:	USITT DMX512 (1990)
Body Material:	Powder-coated Aluminium
Mounting Options:	Either freestanding or can be hung from a hook clamp (not supplied)
Colour:	Black
Circuit Out Connector:	XLR 4-pin female (power and control protocol)
Return Connector:	XLR 4-pin male (power and control protocol)
Power Input Connector:	IEC 320 10A, UL rated
Control Out Connector:	XLR 5-pin female (DMX link)
Control Input Connector:	XLR 5-pin male (protected with clamping diodes)
European Approvals:	Complies with EU directives: EMC 89/336/EEC and LVD 73/23/EEC. Harmonized standards applied in order to verify compliance with directives: EN 50081-1 & EN 50082-1: 1992
North American Approvals:	Radiated Emissions: Complies with FCC part 15, subpart B, class A for unintentional radiators

c) PSU / Splitter box Options

The Chroma-Q PSU / Splitter box is available in 2 models: The PS08 is suitable for 8.1 Amps DC maximum and the PS18/2 is suitable for 16.2 Amps DC maximum load.

Each Chroma-Q PSU / Splitter box is equipped with the following:

1) Red 24 volt DC power indicator
2) Green DMX signal indicator
3) DMX 5 pin input and thru sockets
4) 2 x XLR 4-pin output sockets
5) 2 x XLR 4-pin return sockets
6) IEC 320 AC mains input socket

The purpose of the PSU / Splitter box is to combine the DMX control signal and the 24VDC power into individual outputs. There are two output circuits for distribution on each PSU / Splitter box, each is capable of supplying power and data for the Chroma-Q range of colour changers. The maximum cable length, including the return, for the circuit is 61mtrs. / 200 ft. on the PS08 and PS18/2.

Each output must be connected back to its own return. The reason for the return socket is to increase the size of the power cable to reduce voltage loss in each circuit and to provide DMX signal termination.

The PS08 PSU / Splitter box has two circuits and produces 24VDC at 8.1 Amps maximum output. The power consumption is approximately 3.2 Amps at 115V AC or 1.6 Amps at 230V AC. The PS18/2 PSU / Splitter box has two circuits and produces 24VDC at 16.2 Amps maximum output. The power consumption is approximately 6.4 Amps at 115V AC or 3.2 Amps at 230V AC. They will supply the total number of Chroma-Q colour changers listed in the table below through one or two circuits.

To change the operating voltage on the PS08 - PS18/2 PSU / Splitter box, first isolate the unit from the mains supply, then remove the main body cover by unscrewing the two Phillips screws on each side of the cover. Locate the red voltage selector on the side of the silver PSU module, two modules in the PS18/2 . Slide the selection switches to the desired setting and refit the cover using the four screws.

d) PSU / Splitter box capacities

	PS08	PS18/2
Chroma-Q	8	16
Broadway	12	24
M1	7	14
M2	7	14
M5	6	12
M8	7	14

e) Mounting Position
TheChroma-Q is designed to bemounted in an upright position with the base of the unit below the fixture. Do not mount in an inverted position with the base of the unit above the fixture, asthe rising heat from the fixture may causegelstringdamage.
A large number of mounting plates are available for the CQ1D, Broadway, M1 & M2. There are mounting frames to fit the M5 & M8 to popular lanterns. Please contact your dealer for a full list.

Always ensure that the Chroma-Q is powered before the fixture and that you reverse the procedure at the end ofthe show.Failure to do so may cause gel string damage.

f) M5 & M8 Version II Fan Speed
The fan speed of the M5 & M8 version II is adjustable. Dip switch 2 & 3 set the speed, see the drawing on page 4 and settings below.

Dip 2 off, 3 off - high
Dip 2 off, 3 on - medium high
Dip 2 on, 3 off - medium low
Dip 2 on, 3 on - low

g) Using Mark I and Mark II Chroma-Q CQ1's Units Together
Mark I and Mark II units can easily be used on the same show. To do this, calibrate the Mark I units first and last framesto thesame framesoftheMarkIIunits.

h) Safety Wires
Thesafety wire supplied with your Chroma-Q should alwaysbe used.

i) F.C.C. Regulations (USA)
This device complies with part 15 of the F.C.C. rules. Operation is subject to the following two conditions:
(i) This device may not cause harmful interference, and
(ii) This device must accept any interference that may cause undesired Operation

j) Troubleshooting
Troubleshooting of a Chroma-Q is aided by the indications provided by the 3 diagnostic LED's visibly through the Chroma-Q body. AIItroubleshooting procedures should begin with a LED check.
Thepower supplies aredesigned to shut down if their outputs areshorted. They willnot reset until theACsupply has been disconnected and reconnected. The power supply redLEDis an indicatorofoutputvoltage not input voltage.

Note: A high percentage of problems are caused by corrupt DMX control protocol. We highly recommend the use of genuine Tourflex DataSafe cables for all Chroma-Q colour changer and DMX control protocol cables.

Chroma-Q M5 & M8 Version II Colour Changer Specification

	Dimensions Width	Height	Depth	Weight	Aperture
M5	521mm/20½"	635mm/25"	75mm/3"	5kg/11lb*	406mm ×406mm 16" × 16"
M8	521mm/20½"	826mm/32½"	75mm/3"	5.5kg/12.1lb*	381mm × 610mm 15" × 24"

* without colour frame

Gel Frame Capacity:	between 2 - 16 frames
Speed:	1.5 seconds with dip switch 10 to Off
Speed 2:	3.2 seconds with dip switch 10 to On
Address:	3 rotary switches address up to 512 channels
Fan speed:	4 settings via 2 DIP switches
Power Requirements:	24V DC
Power Consumption:	1.1 Amperes peak at 24V DC with dip switch 10 to On 1.5 Amperes peak at 24V DC with dip switch 10 to Off
Protocol Requirements:	USITT DMX512 (1990)
Body Material:	Powder-coated Aluminium
Mounting Frame:	Mounting frames are available to suit numerous fixtures (see separate price list for current selection)
Colour:	Black
Input Connector:	XLR 4-pin male (power and control protocol)
Output Connector:	XLR 4-pin female (power and control protocol)
European Approvals:	Complies with EU directives: EMC 89/336/EEC Class A. Harmonized standards applied in order to verify compliance with directives: EN 56022:1994, EN 50082-1: 1992 & EN 60950
North American Approvals:	Radiated Emissions: Complies with FCC part 15 subpart B, class A for unintentional radiators. Low Voltage Directive: Complies with CSA 22.2 950, Ul1950

Chroma-Q M1 & M2 Colour Changer Specification

	Dimensions				
	Width	Height	Depth	Weight	Aperture
M1	305mm/12”	337mm/13¼”	83mm/3¼”	1.9kg/4.18lb*	191mm/7½”
M2	330mm/13”	360mm/14 1/8”	83mm/3¼”	2.3kg/5.06lb*	216mm/8 1/8”

* without colour frame

Gel Frame Capacity:	between 2 - 16 frames
Speed:	1.5 seconds with dip switch 10 to Off
Speed 2:	3.2 seconds with dip switch 10 to On
Address:	10 way binary dip switch address up to 512 channels
Power Requirements:	24V DC
Power Consumption:	1.1 Amperes peak at 24V DC with dip switch 10 to On 1.5 Amperes peak at 24V DC with dip switch 10 to Off
Protocol Requirements:	USITT DMX512 (1990)
Body Material:	Powder-coated Aluminium
Mounting Plate:	Mounting plates are available to suit numerous fixtures (see separate price list for current selection)
Colour:	Black
Input Connector:	XLR 4-pin male (power and control protocol)
Output Connector:	XLR 4-pin female (power and control protocol)
European Approvals:	Complies with EU directives: EMC 89/336/EEC Class A. Harmonized standards applied in order to verify compliance with directives: EN 56022:1994, EN 50082-1: 1992 & EN 60950
North American Approvals:	Radiated Emissions: Complies with FCC part 15 subpart B, class A for unintentional radiators.Low Voltage Directive: Complies with CSA 22.2 950, UL 1950

Symptom	Possible Cause	Solution
All Chroma-Q’s show no power indicator (Red LED).	24V DC power supply is not providing power to Chroma-Q.	Check if the mains power to the PSU is ok and the red 24VDC LED is on.
Single Chroma-Q power indicator is off (Red LED).	Electronics fault in Chroma-Q.	Call selling dealer.
Power indicator light is flashing. (Red LED).	Gel string is jammed.	Readjust or replace faulty gel string and / or turn power off and then on again. This will reset the unit.
Chroma-Q has dim power light (Red LED).	Voltage has dropped below acceptable level.	Check that the return line has been installed. Check maximum cable length has not been exceeded.
DMX indicator on all Chroma-Q are off (Green LED).	No DMX is present at the PSU/ Splitter box.	Check that the DMX cable is properly connected to DMX input on the PSU / Splitterbox. Check that DMX indicator light, located on the PSU/Splitterbox, is on.
DMX indicator light on one group of Chroma-Q's are off (Green LED).	One output of the PSU / Splitterbox has failed. Faulty first XLR 4-pin cable at Splitter box output.	Call selling dealer. Test cables.
Level indicator does not respond to DMX control signal (Yellow LED).	Improper address.	Reassign unit addressing.
Level indication changes intensity, but gel string does not move.	Mechanical failure.	Call selling dealer.
No power from PSU, but AC is OK.	Cable short has shut down PSU / Splitter box.	Remove all cables from the Splitter box allow 30 seconds to reset, reconnect AC supply and test. Check cables for shorts

Limited Warranty

Your Chroma-Q colour changers and PSU / Splitterbox are covered by a 12 month warranty against defects in manufacture. The warranty covers parts and labour but excludes the cost of freight. In the case of any warranty claims, please contact your selling dealer. If the selling dealer is unable to assist you, please contact A.C. Lighting directly at the appropriate address as detailed on page 3.

Chroma-Q Colour Changer Specification (CQ1/D)

Dimensions:	285mm (w) x 295mm (h) x 89mm (d) 11 ¼" (w) x 11 5/8" (h) x 3 ½"(d)
Aperture:	171mm / 6 ¾" diameter
Weight:	2.04kg / 4.5lb (without mounting frame)
Gel Frame Capacity:	between 2 - 16 frames
Speed:	1.5 seconds with dip switch 10 to Off
Speed 2:	3.2 seconds with dip switch 10 to On
Address:	10 way binary dip switch address up to 512 channels
Power Requirements:	24V DC
Power Consumption:	0.6 Amperes peak at 24V DC with dip switch 10 to On 0.9 Amperes peak at 24V DC with dip switch 10 to Off
Protocol Requirements:	USITT DMX512 (1990)
Body Material:	UL94 V0 rated reinforced PBT compound
Mounting Plate:	Mounting plates are available to suit numerous fixtures (see list on page 15 for current selection)
Colour:	Black
Input Connector:	XLR 4-pin male (power and control protocol)
Output Connector:	XLR 4-pin female (power and control protocol)
European Approvals:	Complies with EU directives: EMC 89/336/EEC Class A. Harmonized standards applied in order to verify compliance with directives: EN 56022:1994, EN 50082-1: 1992 & EN 60950
North American Approvals:	Radiated Emissions: Complies with FCC part 15 subpart B, class A for unintentional radiators.Low Voltage Directive: Complies with CSA 22.2 950, UL 1950

Chroma-Q Broadway Colour Changer Specification

Dimensions:	205mm (w) x 240mm (h) x 75mm (d) 8 1/8" (w) x 9 ½" (h) x 3 "(d)
Aperture:	127mm / 5" diameter
Weight:	1.05kg / 2.3lb (without mounting frame)
Gel Frame Capacity:	between 2 - 16 frames
Speed:	2 seconds with dip switch 10 to Off
Speed 2:	5 seconds with dip switch 10 to On
Address:	10 way binary dip switch address up to 512 channels
Power Requirements:	24V DC
Power Consumption:	0.45 Amperes peak at 24V DC with dip switch 10 to On 0.90 Amperes peak at 24V DC with dip switch 10 to Off
Protocol Requirements:	USITT DMX512 (1990)
Body Material:	UL94 V0 rated reinforced PBT compound
Mounting Plate:	Mounting plates are available to suit numerous fixtures (see separate price list for current selection)
Colour:	Black
Input Connector:	XLR 4-pin male (power and control protocol)
Output Connector:	XLR 4-pin female (power and control protocol)
European Approvals:	Complies with EU directives: EMC 89/336/EEC Class A. Harmonized standards applied in order to verify compliance with directives: EN 56022:1994, EN 50082-1: 1992 & EN 60950
North American Approvals:	Radiated Emissions: Complies with FCC part 15 subpart B, class A for unintentional radiators. Low Voltage Directive: Complies with CSA 22.2 950, UL 1950