



User Guide

The ColorFader™ Series



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Introduction

Welcome to the technology of Morpheus Lights, Inc. and thank you for purchasing the MFader, The “Original” ColorFader or the “New SFader. Both are members of The ColorFader Series. The ColorFader Series uses a revolutionary color system with the ability to dissolve or bump directly to and from any color in the spectrum. Utilizing the same color technology as the PC Spot, the ColorFader Series eliminates the need to purchase costly color scrolls. Lightweight and compact, the ColorFaders set a new standard in stage lighting technology.

Description

The ColorFader housing is constructed of rugged lightweight aluminum and has a durable black anodized finish. The SFader comes standard with a 6.25” mounting bracket designed for ellipsoidal fixtures, and the MFader with a 10” bracket. A variety of optional brackets are also available.

All of the ColorFaders utilize digital electronics for consistency and accuracy, and operate with precision high temperature servomotors. All of the ColorFaders can be operated with most digital controllers. It has an internal line protector and uses LED indicators to confirm data signal reception.

ColorFaders are equipped with many unique features, setting them apart from conventional color changers on the market today. ColorFaders use an innovative dichromatic color system that provides a virtually unlimited choice of colors. The true beauty of the ColorFaders is their ability to bump or fade directly to and from any color. It is no longer necessary to preset colors in a black-out to avoid scrolling through undesired colors. Other features include variable speed color changes and pre-programmed color effects. The MFader functions in any position and utilizes variable speed forced air cooling for extended color life and to provide quiet operation. The SFader also functions in any position while using Hot Mirror technology, eliminating the need for forced air-cooling and noise.

Operation

The ColorFaders receive DC power and data from the PS-6 power supply. Each power supply is able to provide power and data to six ColorFaders. The power supply receives 100/120/220/240 VAC current through a three-pin I.E.C. connector and receives data through a five pin male Switchcraft connector. Data and DC power are then distributed through six four pin female Switchcraft connectors to six separate ColorFaders. The power supply is also equipped with a fuse for added protection.

LED Indicators

On the back of both the SFader and MFader there are two LED indicator lights. The Amber LED marked "DATA", flashes when the ColorFader is receiving data. (Note: the data light may flash even when receiving a different type of data than the option switch is selected for. The amber LED indicates only that bytes are being received, not that they are being processed correctly.)

The Green LED, marked "ELECTRONICS", flashes to indicate power is on and the ColorFader computer is operating. The LED flashes a set number of times followed by a long OFF pause to indicate the Controller Option Switch setting. (i.e. 3 flashes indicates switch setting #3 has been selected.)

Controller Option Switch Settings

The ColorFaders' internal mechanisms, color scrolls, and electronics may be accessed from the front of the unit. The front cover of the MFader hinges open and are secured with two-quarter turn fasteners. Located inside the unit is an electronic circuit board. On the circuit board are two small blue rotary dip switches. The right hand switch, labeled 0-9 and A-F is the Controller Option Switch, and its settings distinguish the type of control console to be used. The SFader requires two screws on either side of the unit to be taken out and the front panel lifts off. The Controller Option Switch is accessible from the exterior, on the lower right corner of the unit.

Option Switch Setting

Green LED Indicator

Option 0 = Factory Test	(no flash)
Option 1 = USITT STD., Access	(1 flash)
Option 2 = Panache, Commander-KPP Channels 1-192 only	(2 flashes)
Option 3 = Commander 11-KPP Channels 1-576 only	(3 flashes)
Option 4 = ETC Expression/DMX 512	(4 flashes)
Option 5 = AVAB Expert	(5 flashes)
Option 6 = CAE	(6 flashes)
Option 7 = LMI	(7 flashes)
Option 8 = Strand Impact 90	(8 flashes)
Option 9 = Lee Prestige 2000-USITT	(9 flashes)
Option A = Celco/Avo USITT	(10 flashes)
Option 8 = EDI	(11 flashes)
Option C = Commander 3 Scroll Direct Control	(12 flashes)
Option D = USITT 3 Scroll Direct Control	(13 flashes)
Option E = LDS Consoles including ColorCue	(14 flashes)
Option F = Barem 1 Test Fixture Mode	(15 flashes)

Note: The Controller Option Switch must be set in order for your ColorFader to operate correctly. During power up verify the Controller Option Switch settings by observing the GREEN LED INDICATOR.

Fan Speed Control Option Switch Settings

The forced air-cooling fan in the MFader is necessary to properly cool the gel. However, there are some applications where it may be necessary for the ColorFader to be quieter than it already is with full fan speed. For this reason, there is a feature that allows the board operator to control the fan speed or temporarily turn the fan off from the control console.

This Feature Works as Follows:

Under the front cover, the left-hand rotary dip switch is used to select the different fan speed control options. Using switch settings 1-4 gives the board operator control of the fan speed through the 11th channel of each ColorFader GROUP. (See Control Channel Address Patching for details.) If the value of this channel is set above 50%, the “fan off” function is activated. If the value of this channel is set below 50%, the maximum fan speed will be as specified in the following table:

Switch Position	Function
0	No change - 11 th channel is Inactive.
1	Fan at Full - 11 th channel greater than 50% kills fan.
2	Fan at 90% - 11 th channel greater than 50% kills fan.
3	Fan at 70% - 11 th channel greater than 50% kills fan.
4	Fan at 50% - 11 th channel greater than 50% kills fan.
5	Fan off.
6-9	No operation

It should be noted that gel life is greatly affected by the type and wattage of the lamp used, and by the fan setting that is selected. The fan also functions to cool the electronics. The channel 11 “fan off” feature can best be used to turn off the fan when the lamp is not turned on. It is advised that the fan should be turned on whenever the lamp is on. The fan should be set to the highest possible setting for the application.

(Note: This function does not apply to the SFader.)

Control Channel Address Patching

On the back of the SFader and MFader there are three rotary dip switches. Two are labeled “GROUP” of, and one is labeled “ADDRESS”. These switches must be set properly in order for the ColorFader to operate correctly.

The two GROUP # switches assign the individual ColorFader to one of 99 groups. For example, 01 is group #1, 22 is group #22, etc. Within each group is a block of 12 control channels. For example, GROUP 01 is channels 1-12, GROUP 02 is channels 13-24, GROUP 03 is channels 25-36, etc.

The ADDRESS switch defines which control channel of a group a ColorFader is to be assigned to. For example, a ColorFader addressed at GROUP 01 ADDRESS 6 is controlled by channel #6.

It should be noted that there are only 10 addresses used for ColorFader channels within a group of 12. These are addresses 1-10. The 11th and 12th addresses are channels controlling time fades, bumps and rate of the ColorFaders assigned to that group when using pre-programmed effects, which will be discussed later.

The following table will help you to visualize the relationship between GROUPS, ADDRESSES and Control Channel assignments.

GROUP #	ADDRESS	DMX CONTROL CHANNEL
01	1	1
01	2	2
01	3	3
01	4	4
01	5	5
01	6	6
01	7	7
01	8	8
01	9	9
01	10	10
01		11 (bump for channels 1 - 10) (F)
01		12 (time for channels 1 - 10)
02	1	13
02	2	14
02	3	15
02	4	16
02	5	17
02	6	18
02	7	19
02	8	20
02	9	21
02	10	22
02		23 (bump for channels 13-22) (F)
02		24 (time for channels 13-22)
03	1	25
Etc.	Etc.	Etc.

For a complete list of all Group Address Assignments see page 10.

(Note: Several ColorFaders can be controlled by the same control channel if given the same group # and address #.)

Control Channel Numeric Values

When operating ColorFaders, the control channels that you have assigned will allow access to the full spectrum of colors available. Control channel numeric values from 0-90 will create the colors as shown in the ColorFader Colors Table on page 12.

Control channel numeric values from 91-100 will evoke 10 pre-programmed special effects called M-CUES that will be discussed later.

Time Fade Control Channels

When you are using the ColorFader in the control channel range of 00-90 the 12th channel in the group, (channel 12 in group 01, channel 24 in group 02, etc.), will be the time fade control channel for that group. For example, if all the ColorFaders in group 01 were programmed to change from color 21 to color 71, and the time fade channel, (channel 12 in group 01), was at a value of 50, the ColorFaders controlled by channels 1-10 would change from 21 to 71 taking 5.0 seconds. If the time fade control channel were at 00 the color change would be instantaneous.

The time fade control chart below shows the approximate time fades for time control channel settings.

Control Channel Level (12 th Ch.)	Time Fade
00	0 SEC
10	1 SEC
20	2 SEC
30	3 SEC
40	4 SEC
50	5 SEC
60	6 SEC
70	7 SEC
80	8 SEC
90	9 SEC
91	10 SEC
92	11 SEC
93	12 SEC
94	13 SEC
95	14 SEC
96	15 SEC
97	17 SEC
98	19 SEC
99	22 SEC
FULL	25 SEC

Direct Scroll Mode

Option switch settings “C” and “D” allow for the direct control of each color scroll, (yellow, magenta and cyan), on a separate control channel. Setting “C” is used with the Commander Console and setting “D” is used with ALL USITT controllers.

When in Direct Scroll control mode, three channels are used to control the positions of the three scrolls. Zero percent (off) equals clear, (no color), and Full equals full saturation for each scroll.

Addressing

As in all other modes, the GROUP switch selects the group of 12 channels, which the ColorFader will be controlled. In Direct Scroll control mode, the operation of the ADDRESS switch differs. The ADDRESS switch selects the FIRST of the THREE channels that will directly control the three scrolls. Note that there are no STEP or TIME channels when operating in this mode. Therefore, the 11th and 12th channel of each group may be used for scroll control channels.

For Example:

GROUP switch 01
ADDRESS switch 01
Yellow on channel 1
Magenta on channel 2
Cyan on channel 3

GROUP switch 01
ADDRESS switch 10
Yellow on channel 10
Magenta on channel 11
Cyan on channel 12

GROUP switch 01
ADDRESS switch 02
Yellow on channel 2
Magenta on channel 3
Cyan on channel 4

GROUP switch 02
ADDRESS switch 12
Yellow on channel 22
Magenta on channel 23
Cyan on channel 24

(Note: For an analog control console to operate ColorFaders in the Direct Scroll Mode, an A to D box will be needed.)

Using a ColorCue Controller

When using a ColorCue Controller, OPTION switch setting “E”, the function of the GROUP and ADDRESS switches change. The ColorCue can control up to 48 discreet channels. The ColorFaders are assigned to these channels using the GROUP # switches only. GROUP 01 is channel #1, GROUP 22 is channel #22, etc. The ADDRESS switch is not used and should be set at 01. The M-Cues, bump and time functions are disabled in the ColorCue mode.

M-Cues

The internal memory of the ColorFader has 10 pre-programmed effects called M-Cues. These are broken down into chases and fades between various colors.

An M-Cue is invoked by having a ColorFader control channel at any value from 91-100. The 11th and 12th control channels in a group control the bump function and the rate of color change in all M-Cues.

Chasing M-Cues

Odd numbered M-Cues up to 97 (91, 93, etc.) are chasing M-Cues. They will chase or bump between the colors shown in the M-Cue Effects Table. The 12th channel in the group, (channel 12 in-group 01, channel 24 in-group 02, etc.), will control the rate of movement between these color changes. A value of 100 is full speed and 00 is stop. The 11th control channel in each group, (channel 11 in-group 01, channel 23 in-group 02, etc.), will provide the ability to bump or step to the colors in a chase when the rate channel is 00. For example, if the ColorFaders in-group 01 are in M-Cue 93, (control channels 1-10 at 93), and the rate control channel is at 00 (ch. 12 at 00), the bump control channel, (ch. 11), can be used to single step to each of the colors in M-Cue 93. Every time ch. 11 is taken from 00 to full the ColorFader will advance to the next color and remain there until ch. 11 is taken from 00 to full again.

This could be utilized by having the board operator bump the colors in time with the music using a bump button on the console. It should be noted that the bump control channel is only used with an odd numbered chasing M-Cue and when the rate control channel is at 00.

Fading M-Cues

The even numbered M-Cues are fading M-Cues. They will fade between and pause at the colors shown in the M-Cue Effects Table. The 12th channel in the group will control the rate of the fade between the colors. 100 is full speed, 00 is stop. The bump control channel is not used in Fading M-Cues.

M-Cue Effects Table

M-CUE#	SEQUENCE	TYPE
91	RED-BLUE-GREEN	CHASING
92	RED-BLUE-GREEN	FADING
93	YELLOW-MAGENTA-CYAN	CHASING
94	YELLOW-MAGENTA-CYAN	FADING
95	COLORS NO. 30-10-50-17	CHASING
96	COLORS NO. 30-10-50-17	FADING
97	COLORS NO. 58-74-49-68	CHASING
98	COLORS NO. 58-74-49-68	FADING
99	COLORS NO. 10-30-50-58-59-64-70-90-00	FADING
FULL	COLORS NO. 10-00-31-00-50-00-60 00-70-00-80-00-90-00	FADING

We hope that this overview will assist you in the operation of your ColorFaders. We are sure that the ColorFader will be a beneficial addition to your creative palette.

ColorFader Dichromatic Strip Installation

The scrolls in the ColorFader Series have been designed to have long life in typical applications. If a scroll gets burned to the point that there are wrinkles preventing the scroll from rolling up smoothly, it is time to replace it. To replace a scroll, use the following procedure:

1. Install Yellow scroll first, Magenta scroll second, Cyan scroll third.
2. Hook the Silver Leader Tab on to the Spring Roller, be sure it is well seated.
3. Roll the Gel onto the Spring Roller.
4. Holding the Yellow colored Leader Tab, wind the non-spring Roller until spring is completely wound.
5. Gently continue winding the non-spring Roller, while holding the Leader Tab, until the first row of holes in the gel line up with the non-spring Roller. Secure the Leader Tab to the non-spring Roller.

Mfader™ Specifications

Weight:	6.5 lbs.	2.95 kilograms
Dimensions (H x W x D):	12.5 x 13 x 3.75"	318 x 330 x 95mm
Maximum ambient operating temp:	122 degrees Fahrenheit	50 degrees Celsius
Noise at Idle:	62 Dba	
Plate Adapters:	standard 10"	standard 25 cm
Units allowed per PS-6 power supply:	6	

Sfader™ Specifications

Weight:	5.25 lbs.	2.10 kilograms
Dimensions (H x W x D):	10 x 10 x 3.5"	254 x 254 x 90mm
Maximum ambient operating temp:	122 degrees Fahrenheit	50 degrees Celsius
Plate Adapters:	standard 6.25"	standard 19 cm
Units allowed per PS-6 power supply:	6	

XLfader™ Specifications

Weight:	14.8 lbs.	6.70 kilograms
Dimensions (H x W x D):	22 x 19 x 4"	559 x 483 x 102mm
Maximum ambient operating temp:	122 degrees Fahrenheit	50 degrees Celsius
Units allowed per PS-6 power supply:	3	

PS-6 Specifications

Weight:	12.5 lbs.	5.68 kilograms
Power:	100 V setting - 6 A 50/60 HZ 120 V setting - 5 A 50/60 HZ 220 V setting - 3 A 50/60 HZ 240 V setting - 2.5 A 50/60 HZ	
Distribution:	6 M or SFaders – 3 XL Faders maximum	

Internal data buffer for daisy chain, maximum cable length: 250'
Input power connector: Standard I.E.C.

COLOR FADER ADDRESS TABLE

CC DMX CHANNEL	GROUP	ADDRESS	
1	0,1	1	
2	0,1	2	
3	0,1	3	
4	0,1	4	
5	0,1	5	
6	0,1	6	
7	0,1	7	
8	0,1	8	
9	0,1	9	*
10	0,1	10	*
13	0,2	1	
14	0,2	2	
15	0,2	3	
16	0,2	4	
17	0,2	5	
18	0,2	6	
19	0,2	7	
20	0,2	8	
21	0,2	9	*
22	0,2	10	*
25	0,3	1	
26	0,3	2	
27	0,3	3	
28	0,3	4	
29	0,3	5	
30	0,3	6	
31	0,3	7	
32	0,3	8	
33	0,3	9	*
34	0,3	10	*
37	0,4	1	
38	0,4	2	
39	0,4	3	
40	0,4	4	
41	0,4	5	
42	0,4	6	
43	0,4	7	
44	0,4	8	
45	0,4	9	*
46	0,4	10	*
49	0,5	1	
50	0,5	2	
51	0,5	3	
52	0,5	4	
53	0,5	5	
54	0,5	6	
55	0,5	7	
56	0,5	8	
57	0,5	9	*
58	0,5	10	*
61	0,6	1	

* NOT A VALID XL FADER ADDRESS

COLOR FADER ADDRESS TABLE

CC DMX CHANNEL	GROUP	ADDRESS	
62	0,6	2	
63	0,6	3	
64	0,6	4	
65	0,6	5	
66	0,6	6	
67	0,6	7	
68	0,6	8	
69	0,6	9	*
70	0,6	10	*
73	0,7	1	
74	0,7	2	
75	0,7	3	
76	0,7	4	
77	0,7	5	
78	0,7	6	
79	0,7	7	
80	0,7	8	
81	0,7	9	*
82	0,7	10	*
85	0,8	1	
86	0,8	2	
87	0,8	3	
88	0,8	4	
89	0,8	5	
90	0,8	6	
91	0,8	7	
92	0,8	8	
93	0,8	9	*
94	0,8	10	*
97	0,8	1	
98	0,9	2	
99	0,9	3	
100	0,9	4	
101	0,9	5	
102	0,9	6	
103	0,9	7	
104	0,9	8	
105	0,9	9	*
106	0,9	10	*
109	1,0	1	
110	1,0	2	
111	1,0	3	
112	1,0	4	
113	1,0	5	
114	1,0	6	
115	1,0	7	
116	1,0	8	
117	1,0	9	*
118	1,0	10	*
121	1,1	1	
122	1,1	2	

* NOT A VALID XL FADER ADDRESS

COLOR FADER ADDRESS TABLE

CC DMX CHANNEL	GROUP	ADDRESS	
123	1,1	3	
124	1,1	4	
125	1,1	5	
126	1,1	6	
127	1,1	7	
128	1,1	8	
129	1,1	9	*
130	1,1	10	*
133	1,2	1	
134	1,2	2	
135	1,2	3	
136	1,2	4	
137	1,2	5	
138	1,2	6	
139	1,2	7	
140	1,2	8	
141	1,2	9	*
142	1,2	10	*
145	1,3	1	
146	1,3	2	
147	1,3	3	
148	1,3	4	
149	1,3	5	
150	1,3	6	
151	1,3	7	
152	1,3	8	
153	1,3	9	*
154	1,3	10	*
157	1,4	1	
158	1,4	2	
159	1,4	3	
160	1,4	4	
161	1,4	5	
162	1,4	6	
163	1,4	7	
164	1,4	8	
165	1,4	9	*
166	1,4	10	*
169	1,5	1	
170	1,5	2	
171	1,5	3	
172	1,5	4	
173	1,5	5	
174	1,5	6	
175	1,5	7	
176	1,5	8	
177	1,5	9	*
178	1,5	10	*
181	1,6	1	
182	1,6	2	
183	1,6	3	

* NOT A VALID XL FADER ADDRESS

COLOR FADER ADDRESS TABLE

CC DMX CHANNEL	GROUP	ADDRESS	
184	1,6	4	
185	1,6	5	
186	1,6	6	
187	1,6	7	
188	1,6	8	
189	1,6	9	*
190	1,6	10	*
193	1,7	1	
194	1,7	2	
195	1,7	3	
196	1,7	4	
197	1,7	5	
198	1,7	6	
199	1,7	7	
200	1,7	8	
201	1,7	9	*
202	1,7	10	*
205	1,8	1	
206	1,8	2	
207	1,8	3	
208	1,8	4	
209	1,8	5	
210	1,8	6	
211	1,8	7	
212	1,8	8	
213	1,8	9	*
214	1,8	10	*
217	1,9	1	
218	1,9	2	
219	1,9	3	
220	1,9	4	
221	1,9	5	
222	1,9	6	
223	1,9	7	
224	1,9	8	
225	1,9	9	*
226	1,9	10	*
229	2,0	1	
230	2,0	2	
231	2,0	3	
232	2,0	4	
233	2,0	5	
234	2,0	6	
235	2,0	7	
236	2,0	8	
237	2,0	9	*
238	2,0	10	*
241	2,1	1	
242	2,1	2	
243	2,1	3	
244	2,1	4	

* NOT A VALID XL FADER ADDRESS

COLOR FADER ADDRESS TABLE

CC DMX CHANNEL	GROUP	ADDRESS	
245	2,1	5	
246	2,1	6	
247	2,1	7	
248	2,1	8	
249	2,1	9	*
250	2,1	10	*
253	2,2	1	
254	2,2	2	
255	2,2	3	
256	2,2	4	
257	2,2	5	
258	2,2	6	
259	2,2	7	
260	2,2	8	
261	2,2	9	*
262	2,2	10	*
265	2,3	1	
266	2,3	2	
267	2,3	3	
268	2,3	4	
269	2,3	5	
270	2,3	6	
271	2,3	7	
272	2,3	8	
273	2,3	9	*
274	2,3	10	*
277	2,4	1	
278	2,4	2	
279	2,4	3	
280	2,4	4	
281	2,4	5	
282	2,4	6	
283	2,4	7	
284	2,4	8	
285	2,4	9	*
286	2,4	10	*
289	2,5	1	
290	2,5	2	
291	2,5	3	
292	2,5	4	
293	2,5	5	
294	2,5	6	
295	2,5	7	
296	2,5	8	
297	2,5	9	*
298	2,5	10	*
301	2,6	1	
302	2,6	2	
303	2,6	3	
304	2,6	4	
305	2,6	5	

* NOT A VALID XL FADER ADDRESS

COLOR FADER ADDRESS TABLE

CC DMX CHANNEL	GROUP	ADDRESS	
306	2,6	6	
307	2,6	7	
308	2,6	8	
309	2,6	9	*
310	2,6	10	*
313	2,7	1	
314	2,7	2	
315	2,7	3	
316	2,7	4	
317	2,7	5	
318	2,7	6	
319	2,7	7	
320	2,7	8	
321	2,7	9	*
322	2,7	10	*
325	2,8	1	
326	2,8	2	
327	2,8	3	
328	2,8	4	
329	2,8	5	
330	2,8	6	
331	2,8	7	
332	2,8	8	
333	2,8	9	*
334	2,8	10	*
337	2,9	1	
338	2,9	2	
339	2,9	3	
340	2,9	4	
341	2,9	5	
342	2,9	6	
343	2,9	7	
344	2,9	8	
345	2,9	9	*
346	2,9	10	*
349	3,0	1	
350	3,0	2	
351	3,0	3	
352	3,0	4	
353	3,0	5	
354	3,0	6	
355	3,0	7	
356	3,0	8	
357	3,0	9	*
358	3,0	10	*
361	3,1	1	
362	3,1	2	
363	3,1	3	
364	3,1	4	
365	3,1	5	
366	3,1	6	

* NOT A VALID XL FADER ADDRESS

COLOR FADER ADDRESS TABLE

CC DMX CHANNEL	GROUP	ADDRESS	
367	3,1	7	
368	3,1	8	
369	3,1	9	*
370	3,1	10	*
373	3,2	1	
374	3,2	2	
375	3,2	3	
376	3,2	4	
377	3,2	5	
378	3,2	6	
379	3,2	7	
380	3,2	8	
381	3,2	9	*
382	3,2	10	*
385	3,3	1	
386	3,3	2	
387	3,3	3	
388	3,3	4	
389	3,3	5	
390	3,3	6	
391	3,3	7	
392	3,3	8	
393	3,3	9	*
394	3,3	10	*
397	3,4	1	
398	3,4	2	
399	3,4	3	
400	3,4	4	
401	3,4	5	
402	3,4	6	
403	3,4	7	
404	3,4	8	
405	3,4	9	*
406	3,4	10	*
409	3,5	1	
410	3,5	2	
411	3,5	3	
412	3,5	4	
413	3,5	5	
414	3,5	6	
415	3,5	7	
416	3,5	8	
417	3,5	9	*
418	3,5	10	*
421	3,6	1	
422	3,6	2	
423	3,6	3	
424	3,6	4	
425	3,6	5	
426	3,6	6	
427	3,6	7	

* NOT A VALID XL FADER ADDRESS

COLOR FADER ADDRESS TABLE

CC DMX CHANNEL	GROUP	ADDRESS	
428	3,6	8	
429	3,6	9	*
430	3,6	10	*
433	3,7	1	
434	3,7	2	
435	3,7	3	
436	3,7	4	
437	3,7	5	
438	3,7	6	
439	3,7	7	
440	3,7	8	
441	3,7	9	*
442	3,7	10	*
445	3,8	1	
446	3,8	2	
447	3,8	3	
448	3,8	4	
449	3,8	5	
450	3,8	6	
451	3,8	7	
452	3,8	8	
453	3,8	9	*
454	3,8	10	*
457	3,9	1	
458	3,9	2	
459	3,9	3	
460	3,9	4	
461	3,9	5	
462	3,9	6	
463	3,9	7	
464	3,9	8	
465	3,9	9	*
466	3,9	10	*
469	4,0	1	
470	4,0	2	
471	4,0	3	
472	4,0	4	
473	4,0	5	
474	4,0	6	
475	4,0	7	
476	4,0	8	
477	4,0	9	*
478	4,0	10	*
481	4,1	1	
482	4,1	2	
483	4,1	3	
484	4,1	4	
485	4,1	5	
486	4,1	6	
487	4,1	7	
488	4,1	8	

* NOT A VALID XL FADER ADDRESS

COLOR FADER ADDRESS TABLE

CC DMX CHANNEL	GROUP	ADDRESS	
489	4,1	9	*
490	4,1	10	*
493	4,2	1	
494	4,2	2	
495	4,2	3	
496	4,2	4	
497	4,2	5	
498	4,2	6	
499	4,2	7	
500	4,2	8	
501	4,2	9	*
502	4,2	10	*
505	4,3	1	
506	4,3	2	
507	4,3	3	
508	4,3	4	
509	4,3	5	
510	4,3	6	

* NOT A VALID XL FADER ADDRESS

COLOR FADER CROSS REFERENCE TABLE

Color	Yellow Hex	Magenta Hex	Cyan Hex		Yellow %	Magenta %	Cyan %
1	92	0	0		36	0	0
2	158	0	51		62	0	20
3	182	0	0		71	0	0
4	255	51	0		100	20	0
5	255	55	0		100	22	0
6	178	0	0		70	0	0
7	164	0	75		64	0	29
8	215	0	89		84	0	35
9	228	0	71		89	0	28
10	255	0	0		100	0	0
11	94	60	0		37	24	0
12	110	75	0		43	29	0
13	118	102	0		46	40	0
14	140	80	0		55	31	0
15	140	84	0		55	33	0
16	220	100	0		86	39	0
17	255	129	0		100	51	0
18	255	160	0		100	63	0
19	255	176	0		100	69	0
20	231	188	0		91	74	0
21	194	172	0		76	67	0
22	169	172	0		66	67	0
23	244	202	0		96	79	0
24	244	215	0		96	84	0
25	134	158	0		53	62	0
26	149	175	0		58	69	0
27	174	187	0		68	73	0
28	225	207	0		88	81	0
29	236	228	0		93	89	0
30	255	255	0		100	100	0
31	71	83	0		28	33	0
32	93	98	0		36	38	0
33	107	115	0		42	45	0
34	93	107	0		36	42	0
35	64	101	0		25	40	0
36	64	115	0		25	45	0
37	84	135	0		33	53	0
38	130	178	0		51	70	0
39	154	223	0		60	87	0
40	150	212	0		59	83	0
41	0	77	0		0	30	0
42	0	81	0		0	32	0
43	0	88	0		0	35	0
44	3	89	0		1	35	0
45	0	143	0		0	56	0
46	0	200	0		0	78	0
47	96	230	0		38	90	0
48	0	255	89		0	100	35
49	0	235	86		0	92	34
50	0	255	0		0	100	0
51	0	81	51		0	32	20

COLOR FADER CROSS REFERENCE TABLE

Color	Yellow Hex	Magenta Hex	Cyan Hex		Yellow %	Magenta %	Cyan %
52	0	111	83		0	44	33
53	0	81	72		0	32	28
54	0	116	116		0	45	45
55	0	131	151		0	51	59
56	0	127	118		0	50	46
57	0	175	156		0	69	61
58	0	181	165		0	71	65
59	0	235	190		0	92	75
60	0	255	214		0	100	84
61	0	65	87		0	25	34
62	0	65	108		0	25	42
63	0	114	173		0	45	68
64	0	109	164		0	43	64
65	0	110	179		0	43	70
66	0	160	228		0	63	89
67	0	179	247		0	70	97
68	0	196	237		0	77	93
69	0	218	243		0	85	95
70	0	255	255		0	100	100
71	0	0	168		0	0	66
72	70	0	207		27	0	81
73	75	0	255		29	0	100
74	61	0	255		24	0	100
75	0	0	101		0	0	40
76	0	64	172		0	25	67
77	0	78	178		0	31	70
78	0	109	225		0	43	88
79	0	108	255		0	42	100
80	0	0	255		0	0	100
81	134	0	103		53	0	40
82	143	0	109		56	0	43
83	198	0	158		78	0	62
84	185	0	186		73	0	73
85	176	0	197		69	0	77
86	173	0	255		68	0	100
87	208	0	255		82	0	100
88	195	0	255		76	0	100
89	173	0	255		68	0	100
90	255	0	255		100	0	100
91	255	0	0		100	0	0
92	255	255	0		100	100	0
93	0	255	0		0	100	0
94	0	255	255		0	100	100
95	0	0	255		0	0	100
96	255	0	255		100	0	100
G110	0	166	0		0	65	0
G120	50	180	0		20	71	0
G130	0	122	0		0	48	0
G140	44	255	0		17	100	0
G160	40	74	0		16	29	0
G170	50	100	0		20	39	0

COLOR FADER CROSS REFERENCE TABLE

Color	Yellow Hex	Magenta Hex	Cyan Hex		Yellow %	Magenta %	Cyan %
G180	117	178	0		46	70	0
G220	140	218	0		55	85	0
G235	166	195	0		65	76	0
G245	219	236	0		86	93	0
G250	235	255	0		92	100	0
G280	214	168	0		84	66	0
G290	240	152	0		94	60	0
G305	83	63	0		33	25	0
G315	226	131	0		89	51	0
G320	142	92	0		56	36	0
G325	100	45	0		39	18	0
G330	106	45	0		42	18	0
G343	150	46	0		59	18	0
G350	230	91	0		90	36	0
G375	151	76	0		59	30	0
G420	188	0	34		74	0	13
G460	150	0	68		59	0	27
G480	167	0	76		65	0	30
G540	135	0	94		53	0	37
G650	218	0	255		85	0	100
G655	208	0	255		82	0	100
G660	184	0	205		72	0	80
G685	132	0	214		52	0	84
G710	60	0	180		24	0	71
G725	58	0	192		23	0	75
G740	0	40	203		0	16	80
G750	0	70	220		0	27	86
G760	0	36	173		0	14	68
G780	0	30	116		0	12	45
G790	0	30	95		0	12	37
G810	0	100	210		0	39	82
G815	0	76	150		0	30	59
G820	0	40	89		0	16	35
G830	0	34	78		0	13	31
G835	0	140	230		0	55	90
G840	0	87	159		0	34	62
G842	0	45	90		0	18	35
G847	0	102	165		0	40	65
G850	0	210	237		0	82	93
G860	0	70	116		0	27	45
G882	0	82	134		0	32	53
G885	0	31	57		0	12	22
G888	0	71	115		0	28	45
G890	0	230	239		0	90	94
G905	0	255	230		0	100	90
G910	0	114	152		0	45	60
G920	0	38	50		0	15	20
G925	0	202	200		0	79	78
G930	0	255	202		0	100	79
G940	0	105	117		0	41	46
G945	0	240	202		0	94	79

COLOR FADER CROSS REFERENCE TABLE

Color	Yellow Hex	Magenta Hex	Cyan Hex		Yellow %	Magenta %	Cyan %
G948	0	195	172		0	76	67
G950	0	148	146		0	58	57
G960	0	104	101		0	41	40
G970	0	88	80		0	35	31
G990	0	132	90		0	52	35
G995	0	255	96		0	100	38
L101	226	0	64		89	0	25
L102	152	0	28		60	0	11
L103	80	0	0		31	0	0
L104	214	20	0		84	8	0
L105	255	88	0		100	35	0
L106	236	255	0		93	100	0
L107	72	76	0		28	30	0
L109	60	67	0		24	26	0
L110	28	72	0		11	28	0
L111	39	109	0		15	43	0
L113	132	255	0		52	100	0
L115	92	0	233		36	0	91
L116	64	0	255		25	0	100
L117	0	0	101		0	0	40
L118	0	62	224		0	24	88
L119	0	168	255		0	66	100
L120	0	211	255		0	83	100
L121	184	0	154		72	0	60
L122	162	0	178		64	0	70
L124	168	0	255		66	0	100
L126	0	255	104		0	100	41
L127	55	95	0		22	37	0
L128	30	216	0		12	85	0
L132	0	124	255		0	49	100
L134	150	70	0		59	27	0
L135	255	155	0		100	61	0
L136	0	72	70		0	28	27
L137	0	92	110		0	36	43
L138	132	0	100		52	0	39
L139	230	0	255		90	0	100
L141	0	75	255		0	29	100
L142	0	111	138		0	44	54
L143	0	62	168		0	24	66
L144	0	40	170		0	16	67
L147	133	63	0		52	25	0
L148	115	182	0		45	71	0
L151	70	53	0		27	21	0
L152	60	36	0		24	14	0
L153	35	55	0		14	22	0
L154	38	39	0		15	15	0
L156	100	40	0		39	16	0
L157	100	109	0		39	43	0
L158	255	112	0		100	44	0
L161	0	86	168		0	34	66
L162	43	26	0		17	10	0

COLOR FADER CROSS REFERENCE TABLE

Color	Yellow Hex	Magenta Hex	Cyan Hex		Yellow %	Magenta %	Cyan %
L164	220	183	0		86	72	0
L165	0	92	200		0	36	78
L166	126	141	0		49	55	0
L170	0	90	80		0	35	31
L174	0	73	132		0	29	52
L176	89	71	0		35	28	0
L179	255	54	0		100	21	0
L180	0	168	157		0	66	62
L181	0	255	202		0	100	79
L182	236	230	0		93	90	0
L183	0	70	255		0	27	100
L192	53	106	0		21	42	0
L193	100	104	0		39	41	0
L194	0	103	110		0	40	43
L195	0	192	255		0	75	100
L196	0	73	165		0	29	65
L197	0	114	185		0	45	73
L202	0	40	85		0	16	33
L203	0	21	53		0	8	21
L204	132	36	0		52	14	0
L205	94	20	0		37	8	0
L206	50	14	0		20	5	0
L211	120	72	117		47	28	46
L213	94	0	73		37	0	29
L236	122	39	0		48	15	0
L238	79	60	0		31	24	0
N12	55	226	0		22	89	0
N14	22	147	0		9	58	0
N15	0	115	15		0	45	6
N16	0	85	15		0	33	6
N17	0	70	0		0	27	0
N18	54	65	0		21	25	0
N22	255	255	0		100	100	0
N24	255	183	0		100	72	0
N26	137	162	0		54	64	0
N31	240	106	0		94	42	0
N33	255	105	0		100	41	0
N34	212	80	0		83	31	0
N35	122	60	0		48	24	0
N36	132	27	0		52	11	0
N37	154	113	0		60	44	0
N38	122	79	0		48	31	0
N40	209	0	73		82	0	29
N41	230	0	54		90	0	21
N43	184	0	17		72	0	7
N44	168	0	82		66	0	32
N45	108	0	0		42	0	0
N46	134	0	71		53	0	28
N52	214	0	255		84	0	100
N53	228	0	188		89	0	74
N54	108	0	255		42	0	100

COLOR FADER CROSS REFERENCE TABLE

Color	Yellow Hex	Magenta Hex	Cyan Hex		Yellow %	Magenta %	Cyan %
N55	135	0	147		53	0	58
N57	98	0	255		38	0	100
N58	132	0	255		52	0	100
N59	172	0	217		67	0	85
N61	110	0	255		43	0	100
N63	0	30	255		0	12	100
N64	0	46	110		0	18	43
N65	0	72	217		0	28	85
N66	0	76	209		0	30	82
N67	0	57	150		0	22	59
N70	0	122	177		0	48	69
N71	0	255	255		0	100	100
N72	0	220	255		0	86	100
N73	0	175	255		0	69	100
N74	0	120	255		0	47	100
N76	0	76	176		0	30	69
N77	0	124	255		0	49	100
N78	0	106	192		0	42	75
N79	32	0	97		13	0	38
N81	0	255	110		0	100	43
N83	0	151	96		0	59	38
N84	0	255	162		0	100	64
N85	0	200	164		0	78	64
N86	0	230	255		0	90	100
N87	0	161	188		0	63	74
N88	0	92	106		0	36	42
R802	100	73	0		39	29	0
R803	77	54	0		30	21	0
R804	37	0	0		15	0	0
R805	95	0	16		37	0	6
R806	225	0	40		88	0	16
R807	236	0	0		93	0	0
R809	255	27	0		100	11	0
R810	172	10	0		67	4	0
R811	121	63	0		47	25	0
R813	149	69	0		58	27	0
R815	235	92	0		92	36	0
R817	255	118	0		100	46	0
R818	220	178	0		86	70	0
R819	180	180	0		71	71	0
R821	234	255	0		92	100	0
R823	255	255	0		100	100	0
R825	33	53	0		13	21	0
R826	69	80	0		27	31	0
R827	97	167	0		38	65	0
R828	0	150	25		0	59	10
R829	74	122	0		29	48	0
R830	72	88	0		28	35	0
R832	120	255	0		47	100	0
R834	53	71	0		21	28	0
R835	62	78	0		24	31	0

COLOR FADER CROSS REFERENCE TABLE

Color	Yellow Hex	Magenta Hex	Cyan Hex		Yellow %	Magenta %	Cyan %
R836	103	113	0		40	44	0
R837	99	234	0		39	92	0
R838	0	255	70		0	100	27
R839	0	255	85		0	100	33
R840	0	71	71		0	28	28
R841	0	100	112		0	39	44
R842	0	96	116		0	38	45
R843	0	192	168		0	75	66
R844	0	111	126		0	44	49
R846	0	181	179		0	71	70
R848	0	0	95		0	0	37
R849	0	0	91		0	0	36
R850	0	49	164		0	19	64
R851	0	93	188		0	36	74
R853	0	18	156		0	7	61
R854	35	0	200		14	0	78
R855	0	53	146		0	21	57
R856	0	100	255		0	39	100
R857	0	124	255		0	49	100
R859	0	96	255		0	38	100
R861	0	140	255		0	55	100
R862	0	155	255		0	61	100
R863	0	210	255		0	82	100
R866	0	255	255		0	100	100
R869	125	0	67		49	0	26
R871	161	0	255		63	0	100
R874	186	0	255		73	0	100
R877	0	0	255		0	0	100
R878	176	0	176		69	0	69
R880	106	62	107		42	24	42
X01	90	68	0		35	27	0
X02	70	30	0		27	12	0
X03	97	58	0		38	23	0
X04	85	54	0		33	21	0
X05	30	30	0		12	12	0
X06	74	0	29		29	0	11
X08	90	0	24		35	0	9
X09	107	28	0		42	11	0
X10	210	0	82		82	0	32
X11	140	0	23		55	0	9
X12	214	0	82		84	0	32
X13	112	14	0		44	5	0
X14	172	20	0		67	8	0
X15	216	32	0		85	13	0
X16	128	40	0		50	16	0
X17	117	63	0		46	25	0
X18	134	57	0		53	22	0
X19	249	164	0		98	64	0
X20	196	65	0		77	25	0
X21	220	82	0		86	32	0
X22	255	148	0		100	58	0

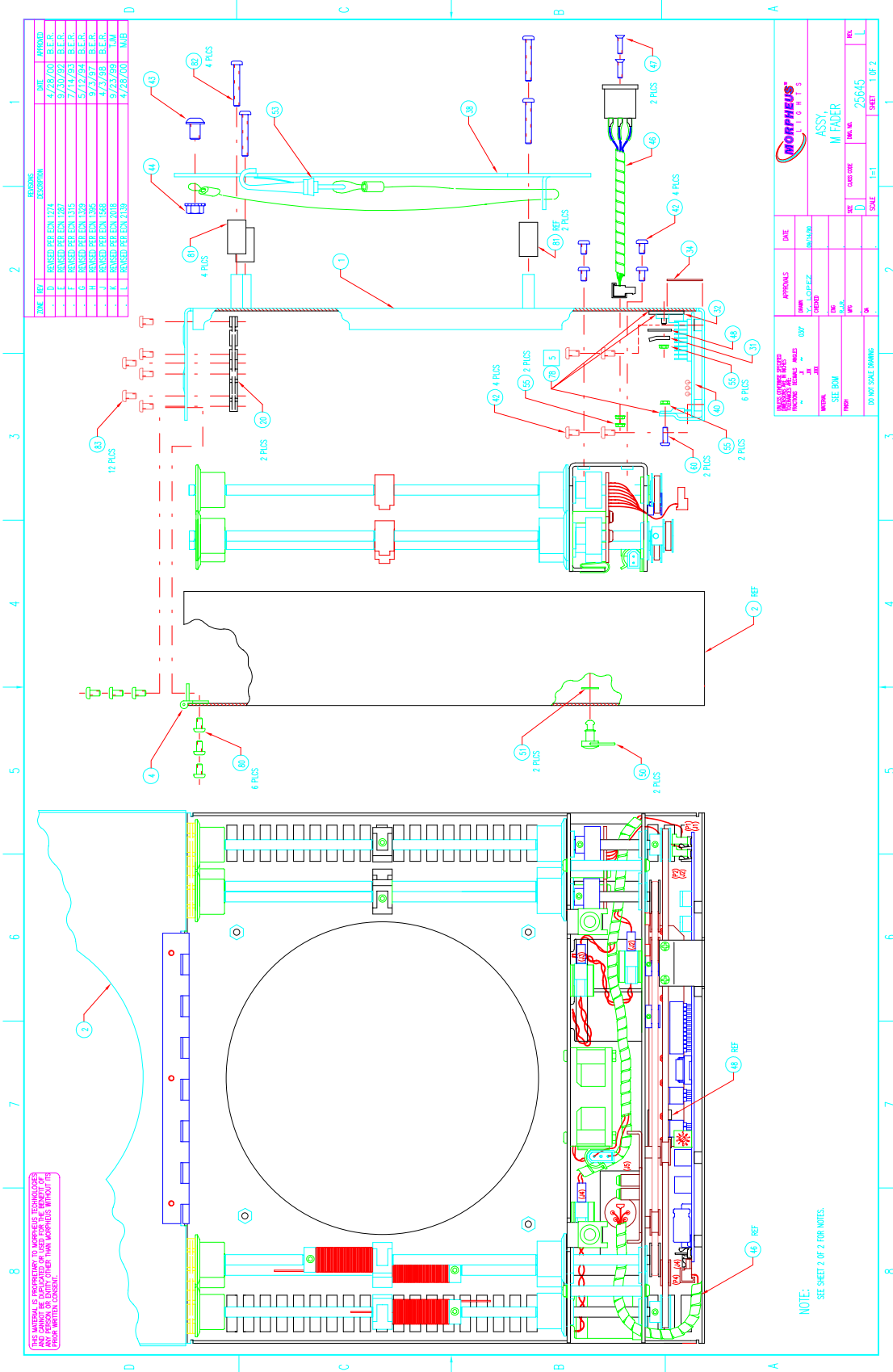
COLOR FADER CROSS REFERENCE TABLE

Color	Yellow Hex	Magenta Hex	Cyan Hex		Yellow %	Magenta %	Cyan %
X23	188	105	0		74	41	0
X24	161	165	0		63	65	0
X25	222	196	0		87	77	0
X26	225	255	0		88	100	0
X27	235	255	0		92	100	0
X30	100	80	0		39	31	0
X31	89	87	0		35	34	0
X32	121	119	0		47	47	0
X33	0	56	0		0	22	0
X34	67	86	0		26	34	0
X35	0	59	0		0	23	0
X36	33	92	0		13	36	0
X37	0	61	0		0	24	0
X38	15	66	0		6	26	0
X40	133	109	0		52	43	0
X41	166	148	0		65	58	0
X42	158	200	0		62	78	0
X43	39	138	0		15	54	0
X44	0	126	0		0	49	0
X45	113	177	0		44	69	0
X46	137	255	0		54	100	0
X47	0	126	107		0	49	42
X48	0	137	71		0	54	28
X49	0	255	92		0	100	36
X50	119	120	0		47	47	0
X51	0	59	55		0	23	22
X52	0	85	83		0	33	33
X53	0	40	53		0	16	21
X54	0	63	72		0	25	28
X55	0	77	102		0	30	40
X56	0	191	177		0	75	69
X57	0	105	120		0	41	47
X58	0	152	141		0	60	55
X59	0	230	180		0	90	71
X60	0	44	87		0	17	34
X61	0	27	74		0	11	29
X62	0	46	104		0	18	41
X63	0	36	92		0	14	36
X64	0	86	162		0	34	64
X65	0	72	171		0	28	67
X66	0	0	83		0	0	33
X67	0	85	184		0	33	72
X68	0	126	230		0	49	90
X69	0	86	255		0	34	100
X70	0	27	126		0	11	49
X71	0	41	164		0	16	64
X72	0	36	161		0	14	63
X73	47	0	178		18	0	70
X74	0	190	255		0	75	100
X75	183	0	228		72	0	89
X76	0	66	255		0	26	100

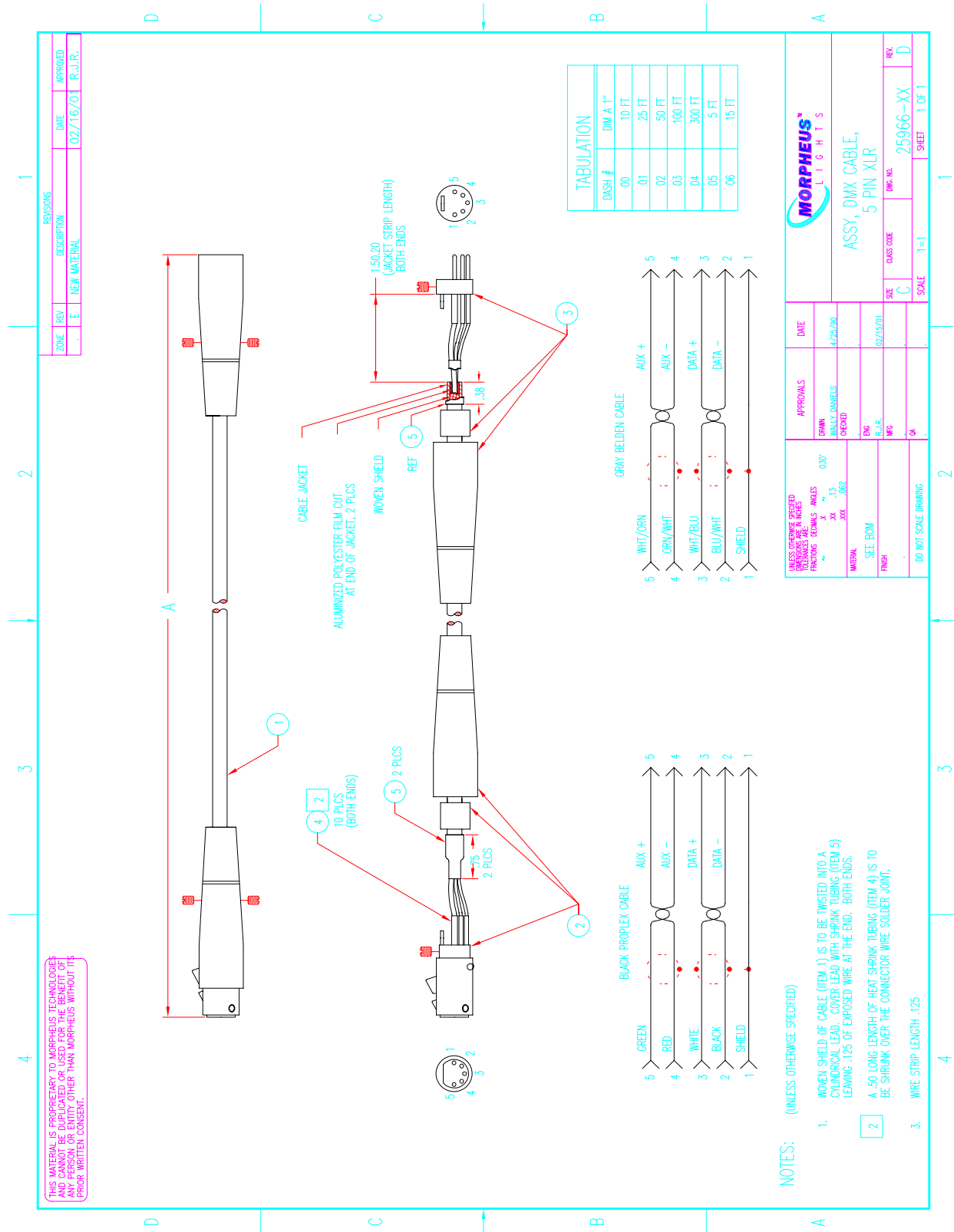
COLOR FADER CROSS REFERENCE TABLE

Color	Yellow Hex	Magenta Hex	Cyan Hex		Yellow %	Magenta %	Cyan %
X77	0	116	255		0	45	100
X78	0	109	167		0	43	65
X79	0	164	255		0	64	100
X80	0	160	247		0	63	97
X81	0	121	193		0	47	76
X82	0	143	199		0	56	78
X83	0	220	244		0	86	96
X84A	0	127	195		0	50	76
X85	0	190	255		0	75	100
X86A	181	0	162		71	0	64
X87	103	0	73		40	0	29
X88	130	0	100		51	0	39
X89	174	0	203		68	0	80
X90	190	0	255		75	0	100
X91	168	0	255		66	0	100
X92	112	0	168		44	0	66
X93	114	0	182		45	0	71
X94	145	0	255		57	0	100
X95	61	0	255		24	0	100
X96	143	0	80		56	0	31
X99	91	37	0		36	15	0
X389	183	0	228		72	0	89

ColorFader Parts Drawing Sheet 1

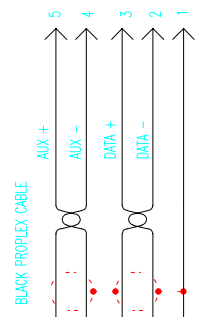
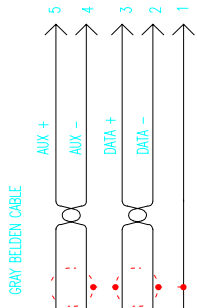


ColorFader Cable Drawing



THIS MATERIAL IS PROPRIETARY TO MORPHEUS TECHNOLOGIES AND CANNOT BE DUPLICATED OR USED FOR THE BENEFIT OF ANY PERSON OR ENTITY OTHER THAN MORPHEUS WITHOUT ITS PRIOR WRITTEN CONSENT.

DASH #	DIM A 1"
00	10 FT
01	25 FT
02	50 FT
03	100 FT
04	300 FT
05	5 FT
06	15 FT



NOTES: (UNLESS OTHERWISE SPECIFIED)

- WOVEN SHIELD OF CABLE (ITEM 1) IS TO BE TWISTED INTO A CYLINDRICAL LEAD. COVER LEAD WITH SHRINK TUBING (ITEM 5) LEAVING .125 OF EXPOSED WIRE AT THE END. BOTH ENDS.
- A .50 LONG LENGTH OF HEAT SHRINK TUBING (ITEM 4) IS TO BE SHRUNK OVER THE CONNECTOR WIRE SOLDER JOINT.
- WIRE STRIP LENGTH .125

MORPHEUS LIGHTS

ASSY, DMX CABLE, 5 PIN XLR

APPROVALS	DATE
DRINK	4/28/01
MALLY/DANIELS	
CHECKED	
ENG	02/15/01
FOR	
WFS	
FINISH	
DO NOT SCALE DRAWING	

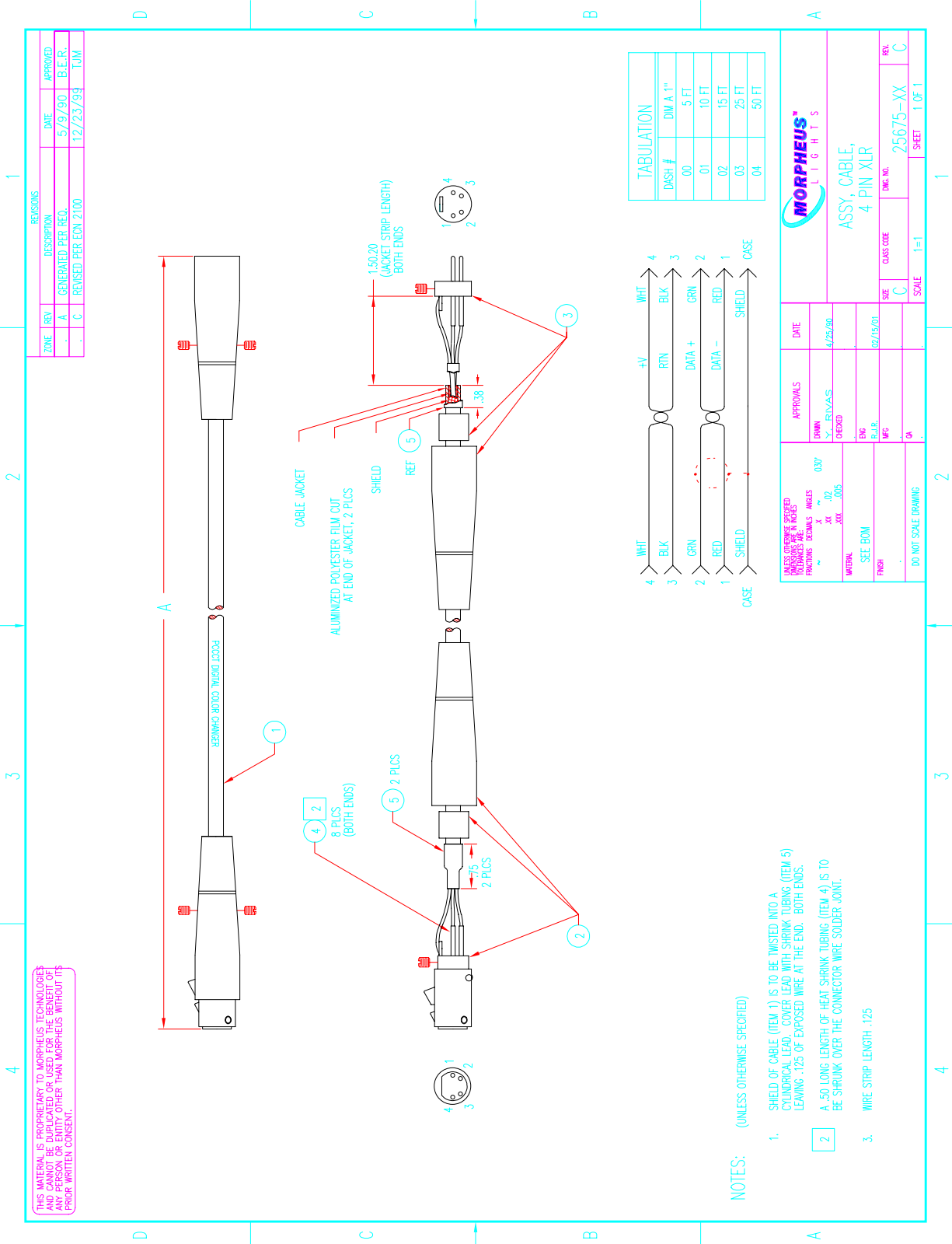
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES FRACTIONS DECIMALS ANGLES
 ~ XX .13
 ~ XX .062
 ~ XX .030

WIREL

SEE BOM

CLASS CODE DIM. NO. 25966-XX
 SIZE C SHEET 1 OF 1
 SCALE 1=1

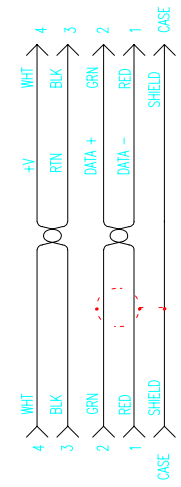
DMX Cable Drawing



THIS MATERIAL IS PROPRIETARY TO MORPHEUS TECHNOLOGIES AND CANNOT BE DUPLICATED OR USED FOR THE BENEFIT OF ANY PERSON OR ENTITY OTHER THAN MORPHEUS WITHOUT ITS PRIOR WRITTEN CONSENT.

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED
...	A	GENERATED PER REQ.	5/9/90	B.L.R.
...	C	REVISED PER ECN 2100	12/23/99	TOM

TABULATION	
DASH #	DIM A 1"
00	5 FT
01	10 FT
02	15 FT
03	25 FT
04	50 FT



ASSY, CABLE, 4 PIN XLR	
APPROVALS	DATE
DRAWN: [initials] CHECKED: [initials] ENG: [initials] MFG: [initials]	4/25/00 02/15/01
MATERIAL	SEE BOM
FINISH	
DO NOT SCALE DRAWING	
SIZE: C	CLASS CODE: 25675-XX
SCALE: 1=1	SHEET 1 OF 1

NOTES: (UNLESS OTHERWISE SPECIFIED)

- SHIELD OF CABLE (ITEM 1) IS TO BE TWISTED INTO A CYLINDRICAL LEAD. COVER LEAD WITH SHRINK TUBING (ITEM 5) LEAVING .125 OF EXPOSED WIRE AT THE END. BOTH ENDS.
- A .50 LONG LENGTH OF HEAT SHRINK TUBING (ITEM 4) IS TO BE SHRUNK OVER THE CONNECTOR WIRE SOLDER JOINT.
- WIRE STRIP LENGTH: .125