



# iColor™ MR USER GUIDE

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Congratulations on your purchase of iColor™ MR, not to mention your good taste. Welcome to a more colorful world brought to you by Color Kinetics and Chromacore®, our patented technology that generates colored light and effects using a microprocessor to control Red, Green and Blue LEDs.

This guide contains important information not only on operating your new iColor MR, but also on using it safely. For your protection, please read it carefully before embarking on your colorful adventure. There are very few rules, but those that exist are there for your safety.

## THE WORLD ACCORDING TO COLOR KINETICS

For the most part, the language of Color Kinetics and Chromacore is oriented around Effects and Variations.

### Effects

Effects refer to what type of output, or displays, are produced. With iColor MR you can select any one of six Effects:

- Fixed Color
- Cross Fade
- Fixed Color Strobe
- Color Wash
- Random Color
- Variable Color Strobe

### Variations

Once you have chosen the desired Effect, you can then choose different Variations which will further modify the Effect by adjusting factors such as:

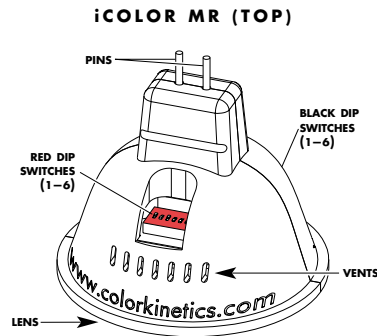
- Color
- Brightness
- Strobe Rate
- Speed
- Saturation
- Cycle Direction

Not every Variation is available with every Effect. Each Effect has a unique combination of variables (see *Table One: Settings Table*). Each combination of Effects and Variations produces a unique "Show."

After you choose the desired Effects and Variations, the information is communicated to the unit's "brain," that smart microprocessor which controls the mixing of the Red, Green, and Blue LEDs—the breakthrough technology we call Chromacore.

## Lay of the Land

The following illustration shows the components of iColor MR.



## Power Me Up

iColor MR lamps are powered by standard MR16 fixtures (track heads, desktop lamps, etc). They are designed to fit into nearly all MR16 fixtures. Simply insert the pins on iColor MR into the fixture sockets and secure it as you would a conventional MR16 replacement lamp, following the instructions provided by your fixture manufacturer.

A few notes about using iColor MR with track lighting fixtures:

- You can power iColor MR and conventional MR16 lamps at the same time on the same track when using iColor MR in Stand Alone mode.
- You cannot power iColor MR and conventional MR16 lamps at the same time on the same track if you are using iColor MR in DMX mode.
- Do not use iColor MR with series-connected high voltage fixtures (such as most strip lights and cyc lights), because these may damage the unit.
- If you are using iColor MR in a fixture connected to a dimmer switch, be aware that iColor MR does not dim as a conventional lamp does. As the dimmer switch is turned down, iColor MR will simply turn off.

## Do the DIP

Your iColor MR has been pre-programmed with an assortment of Shows. To change shows, change the switch settings as described below. There are two banks of six switches, for a total of 12 DIP switches, on each unit. For both banks, the switch's ON position is closer to the center of the unit.

To reposition the DIP switches, we suggest you use a blunt object such as a stylus or pen cap, not a sharp object which may damage the unit.

To select or change the Effects or Variations, remove power from the unit (i.e., by turning off the switch or unplugging the fixture), configure the DIP switches according to the desired Show, and then repower the unit. NEW SHOWS WILL NOT BE DISPLAYED UNTIL THE UNIT IS REPOWERED.

## DMX512 Control

Color Kinetics Juice Box 2 is required for sending both power and data to iColor MR lamps. Juice Box 2 can be used in place of other step down transformers for up to 40 iColor MR lamps. Please refer to the Juice Box 2 installation guide for additional information.

If you are using a DMX512 controller, such as Color Kinetics Synchronizer, Multi Synchronizer, iPlayer, or another external controller to control your iColor MR, set RED switches 4, 5, and 6 OFF on every iColor MR lamp. You can then assign each light a unique DMX base address. Each iColor MR requires three DMX channels: one each for Red, Green, and Blue. The DMX

base address indicates the first of three consecutive channels for that light.

The following table shows the DMX base address settings for the first 40 lights. (A complete list of all DMX base address settings is available upon request, or at [www.colorkinetics.com](http://www.colorkinetics.com) under Support.)

TABLE ONE: DMX BASE ADDRESSES

BINARY NO.	LIGHT NO.	DMX BASE ADDRESS	RED SWITCH#					
			1	2	3	4	5	6
0	1	1						
3	2	4	■	■				
6	3	7			■			
9	4	10	■			■		
12	5	13			■		■	
15	6	16	■	■	■			
18	7	19			■			
21	8	22	■		■			
24	9	25			■	■		
27	10	28	■	■	■			
30	11	31		■	■	■		
33	12	34	■				■	
36	13	37			■			■
39	14	40	■	■	■			
42	15	43		■			■	
45	16	46			■			■
48	17	49			■	■		
51	18	52	■	■	■			
54	19	55		■	■	■		
57	20	58			■	■	■	
60	21	61	■	■	■			
63	22	64	■	■	■	■		
66	23	67		■				■
69	24	70	■		■			
72	25	73			■			■
75	26	76	■	■	■			
78	27	79		■	■	■		
81	28	82	■		■			■
84	29	85			■	■		
87	30	88	■	■	■			
90	31	91		■	■	■		
93	32	94	■		■	■		
96	33	97			■	■	■	
99	34	100	■	■	■			
102	35	103			■	■	■	
105	36	106	■					■
108	37	109		■	■	■		
111	38	112	■	■	■			
114	39	115			■	■	■	
117	40	118	■	■	■			

(For these DMX Base Addresses, leave red switches 2-6 in the OFF position.) ■ = ON

Throughout this guide, the symbol ■ indicates the switch should be ON.

TABLE TWO: SETTINGS TABLE

SWITCH #	BLACK						RED						
	1	2	3	4	5	6	1	2	3	4	5	6	
<b>FIXED COLOR</b>	Add levels of Red			Add levels of Green			Add levels of Blue			On	On	On	
<b>COLOR WASH</b>	Speed .5 sec - 2 hrs						Satura- tion	Bright- ness	Cycle Direc- tion	On	On		
<b>CROSS FADE</b>	Ending Color red, green, blue, cyan, magenta, yellow, white, black			Starting Color red, green, blue, cyan, magenta, yellow, white, black			Speed from starting color to ending color and back again						
<b>RANDOM COLOR</b>	Speed .05 sec - 3 min						Satura- tion	Starting Color red, green, blue, cyan, magenta, yellow, white, black					On
<b>FIXED COLOR STROBE</b>	Color red, green, blue, cyan, magenta, yellow, white, black						Strobe Rate 20/sec - 2/sec						On
<b>VARIABLE COLOR STROBE</b>	Speed (color advance)						Cycle Direc- tion	Strobe Rate 20/sec - 2/sec					On
<b>PC DMX</b>	PC DMX Base Address									On			
<b>DMX512</b>	DMX512 Base Address												

## EFFECTS & VARIATIONS

Table Two: Settings Table, following, is the key to what each DIP switch setting governs. Effects are governed by red switches #4-6. Variations are governed by all other switches.

Now let's explore each of these Effects and Variations in detail.

### FIXED COLOR

Fixed Color allows the static display of any one of 512 possible colors. A Fixed Color Effect is generated by blending the primary colors of Red, Green and Blue.

To select Fixed Color, first set the switches for the Fixed Color Effect (remember, ON is the UP position, closer to the center of the unit).

#### CHOOSE THE EFFECT: FIXED COLOR

Red switches #4, 5 and 6: ON

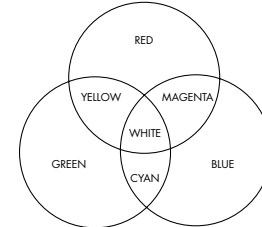
#### CHOOSE THE VARIATION: FIXED COLOR

Choose one of 512 discrete colors to vary Fixed Color.

#### Discrete Color

Black switches #1-3 control hues of Red. Black switches #4-6 control hues of Green. Red switches #1-3 control hues of Blue. In general, the fewer switches in the ON position, the lighter the shade of color which is displayed.

### ILLUSTRATION A



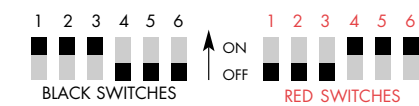
With additive color mixing, you can mix Reds, Greens and Blues to produce secondary colors. White is produced by adding Red, Green and Blue. Illustration A shows how secondary colors are produced.

In other words, if you want:

- |                      |                  |
|----------------------|------------------|
| <b>Desired Color</b> | <b>Mix</b>       |
| Yellow               | Green and Red    |
| Magenta              | Blue and Red     |
| Cyan                 | Green and Blue   |
| White                | Red, Green, Blue |

### SAMPLE FIXED COLOR EFFECT

Full Intensity Red



### COLOR WASH

The Color Wash Effect moves sequentially around the spectrum of colors in either clockwise (Red-Orange-Yellow-Green-Blue-Indigo-Violet or ROYGBIV) or counterclockwise (Violet-Indigo-Blue-Green-Yellow-Orange-Red or VIBGYOR) direction, repeating the same cycle over and over, at user-definable speeds. The Color Wash differs from Random Color which has no distinct or sequential pattern of color generation.

To select Color Wash, first set the switches for the Color Wash Effect. (Remember that ON is toward the center of the unit.)

#### CHOOSE THE EFFECT: COLOR WASH

Red switches #4 and 5: ON Red switch #6: OFF

TABLE THREE: COLOR WASH SPEED

SWITCH #	BLACK					
	1	2	3	4	5	6
0	0.5 sec					
1	0.6 sec	■				
2	0.7 sec		■			
3	0.8 sec			■		
4	0.9 sec				■	
5	1.1 sec	■				
6	1.2 sec		■			
7	1.4 sec			■		
8	1.6 sec				■	
9	1.9 sec	■				
10	2.2 sec		■			
11	2.5 sec			■		
12	2.9 sec	■				
13	3.3 sec		■			
14	3.8 sec			■		
15	4.4 sec				■	
16	5 sec					■
17	5.8 sec	■				
18	6.7 sec		■			
19	7.7 sec			■		
20	8.8 sec				■	
21	10.2 sec	■				
22	11.7 sec		■			
23	13.4 sec			■		
24	15.4 sec				■	
25	18 sec	■				
26	20 sec		■			
27	24 sec			■		
28	27 sec				■	
29	30 sec	■				
30	35 sec		■			
31	40 sec			■		
32	45 sec				■	
33	50 sec	■				
34	1 min		■			
35	1.1 min			■		
36	1.3 min				■	
37	1.5 min	■				
38	1.8 min		■			
39	2 min			■		
40	2.3 min				■	
41	2.7 min	■				
42	3 min		■			
43	3.5 min			■		
44	4 min				■	
45	4.5 min	■				
46	5 min		■			
47	5.5 min			■		
48	6 min				■	
49	6.5 min	■				
50	7 min		■			
51	8 min			■		
52	9 min				■	
53	10 min	■				
54	12 min		■			
55	15 min			■		
56	20 min				■	
57	25 min	■				
58	30 min		■			
59	40 min			■		
60	50 min				■	
61	1 hr	■				
62	1.5 hrs		■			
63	2 hrs			■		

### CHOOSE THE VARIATION: COLOR WASH

Vary Color Wash by Speed, Saturation, Brightness and Cycle Direction.

#### Speed

Table Three illustrates the available speed options and their switch settings.

In Color Wash, Speed is defined as the amount of time which elapses between the initial display of the Starting Color in Cycle One (Red in ROYGBIV, or Violet in VIBGYOR), and its next display which begins Cycle Two. There are 64 different speeds which can be set in the Color Wash Effect, ranging from as fast as 0.5 seconds to as long as 2 hours to complete a single cycle. Black switches #1-6 control the speed options. For the fastest speed (0.5 sec.), black switches #1-6 are OFF. For the slowest speed (2 hrs.), black switches #1-6 are ON.

#### Saturation

Red switch #1 controls Saturation. In the Color Wash Effect, you can vary the saturation by choosing light saturation (pastels) or full saturation. For light saturation, set red switch #1 OFF. For full saturation, set red switch #1 ON.

#### Brightness

In the Color Wash Effect, red switch #2 controls the level of brightness. The brightness, or intensity, of the light can be set to either half intensity or full intensity. For half intensity, set red switch #2 OFF. For full intensity, set red switch #2 ON.

#### Cycle Direction

The direction of the sequential flow of colors can be controlled in the Color Wash Effect through red switch #3. When red switch #3 is OFF, the direction of the flow of colors is clockwise from Red to Violet (ROYGBIV). When red switch #3 is ON, the direction of the flow of colors is counterclockwise from Violet to Red (VIBGYOR).

**AUTOMATIC TRICK OF THE TRADE: YOU CAN ACHIEVE A UNIQUE CONVERGING DISPLAY WHEN TWO iColor MRs ARE SET TO THE SAME SPEED BUT DIFFERENT CYCLE DIRECTIONS, ONE GOING CLOCKWISE AND THE OTHER COUNTERCLOCKWISE.**

### SAMPLE COLOR WASH EFFECT

Speed of 20 seconds, full saturation, full brightness, in a clockwise direction (ROYGBIV)



### CROSS FADE

The Cross Fade lets you set iColor MR to smoothly move from one color to another. The Cross Fade differs from a Color Wash in that it alternates between only two colors while the Color Wash cycles through the entire spectrum of colors. The Cross Fade slowly increases the intensity of one color of light while simultaneously reducing the intensity of another color. For example, a Cross Fade set to begin with red and end in blue will first display a fully intense red, then mix in a bit of blue (producing pinkish hues), then mix more blue (to produce magenta hues), then display fully intense blue, and reverse the process (magenta, pink, red) before beginning the next cycle (red-pink-magenta-blue-magenta-pink-red).

#### CHOOSE THE EFFECT: CROSS FADE

Red switch #5: ON Red switches #4 and 6: OFF

#### CHOOSE THE VARIATION: CROSS FADE

Vary the Cross Fade by choosing one of eight Starting Colors and one of eight Ending Colors at one of eight different speeds.

◆ Starting Color

In the Cross Fade Effect, black switches #4–6 govern which color begins the fade. Choose one of the following eight colors: black, red, green, yellow, blue, magenta, cyan or white.

		BLACK		
SWITCH#		4	5	6
COLOR	0 Black			
	1 Red	■		
	2 Green		■	
	3 Yellow	■	■	
	4 Blue			■
	5 Magenta	■		■
	6 Cyan		■	■
	7 White	■	■	■

◆ Ending Color

In the Cross Fade Effect, black switches #1–3 govern which color to fade to before it reverses back to the Starting Color. Choose one of the following eight colors: black, red, green, magenta, blue, yellow, cyan or white

		BLACK		
SWITCH#		1	2	3
COLOR	0 Black			
	1 Red	■		
	2 Green		■	
	3 Yellow	■	■	
	4 Blue			■
	5 Magenta	■		■
	6 Cyan		■	■
	7 White	■	■	■

Do not set your Starting Color and Ending Color to the same color. If you want a static color display, choose the Fixed Color Effect.

**AUTOMATIC TRICK OF THE TRADE: SINGLE COLOR FADE. TO SET THE iCOLOR MR TO FADE WITHIN A SINGLE COLOR (NO SATURATION/DARKNESS TO FULL SATURATION), SET YOUR STARTING COLOR TO BLACK. IF YOU WANT TO GO FROM WHITE LIGHT, THROUGH PASTEL SHADES, TO FULL SATURATION, SET YOUR STARTING COLOR TO WHITE.**

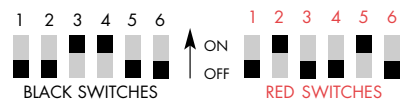
◆ Speed

In Cross Fade, Speed is defined as the amount of time between the initial display of the Starting Color to the Ending Color and back again. There are eight different speeds you can set for the Cross Fade Effect, ranging from as fast as 5 seconds for the round trip to as long as 1 hour to complete the round trip. Red switches #1–3 control the speed options. For the fastest speed (5 sec.), red switches #1–3 are OFF. For the slowest speed (1 hr.), red switches #1–3 are ON. This table illustrates all available speed options.

		RED		
SWITCH#		1	2	3
SPEED	0 5 sec			
	1 10 sec	■		
	2 30 sec		■	
	3 1 min	■	■	
	4 2 min			■
	5 15 min	■		■
	6 30 min		■	■
	7 1 hr	■	■	■

SAMPLE CROSS FADE EFFECT

Starting from red, fading to blue at a speed of 30 seconds round trip



RANDOM COLOR

Random Color or “step” produces a randomly generated set of colors at user definable speeds. Colors step in discrete increments from one hue to the next. This differs from a Color Wash which sequentially and more gradually moves through the color spectrum.

CHOOSE THE EFFECT: RANDOM COLOR

Red switches #4 and 5: OFF Red switch #6: ON

CHOOSE THE VARIATIONS: RANDOM COLOR

Vary the Random Color Effect by Speed, Saturation and Starting Color.

◆ Speed

In Random Color, Speed is defined as the amount of time a single color is displayed before it “jumps” to the next color. There are 32 different speeds which can be set for the Random Color Effect, ranging from as fast as 0.05 seconds to as long as 3 minutes before jumping to the next color. Black switches #1–5 control speed. For the fastest speed (0.05 sec.), black switches #1–5 are OFF. For the slowest speed (3 min.), black switches #1–5 are ON. Table Four: Random Color Speed, following, illustrates the available options and their switch settings.

TABLE FOUR: RANDOM COLOR SPEED

		BLACK				
SWITCH#		1	2	3	4	5
SPEED	0 0.05 sec					
	1 0.06 sec	■				
	2 0.08 sec		■			
	3 0.12 sec	■	■			
	4 0.15 sec			■		
	5 0.21 sec	■		■		
	6 0.25 sec		■	■		
	7 0.3 sec	■	■	■		
	8 0.4 sec				■	
	9 0.5 sec	■			■	
	10 0.75 sec	■	■			
	11 1 sec	■	■	■		
	12 1.2 sec			■	■	
	13 1.5 sec	■	■	■	■	
	14 2 sec	■	■	■	■	
	15 2.5 sec	■	■	■	■	
	16 3.5 sec					■
	17 4.5 sec	■				■
	18 5 sec	■	■			■
	19 7.5 sec	■	■	■		■
	20 10 sec	■	■	■	■	■
	21 12 sec	■	■	■	■	■
	22 15 sec	■	■	■	■	■
	23 20 sec	■	■	■	■	■
	24 25 sec	■	■	■	■	■
	25 30 sec	■	■	■	■	■
	26 45 sec	■	■	■	■	■
	27 1 min	■	■	■	■	■
	28 1.5 min	■	■	■	■	■
	29 2 min	■	■	■	■	■
	30 2.5 min	■	■	■	■	■
	31 3 min	■	■	■	■	■

◆ Saturation

In the Random Color Effect, you can vary the saturation by choosing light saturation (pastels) or full saturation. Black switch #6 controls the amount of saturation. For light saturation, set black switch #6 OFF. For full saturation, set black switch #6 ON.

◆ Starting Color

You can choose from one of eight different starting colors in the Random Color Effect.

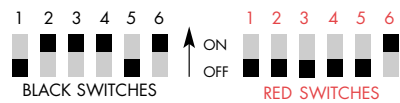
From these eight different starting points the iColor MR will cycle through a set of 128 colors which step in discrete increments of at least 25% of the color spectrum so no two colors in a row have similar values. Red switches #1–3 govern the Starting Color. The following table illustrates all available options:

		RED		
SWITCH#		1	2	3
COLOR	0 starting color 1			
	1 starting color 2	■		
	2 starting color 3		■	
	3 starting color 4	■	■	
	4 starting color 5			■
	5 starting color 6	■		■
	6 starting color 7		■	■
	7 starting color 8	■	■	■

**AUTOMATIC TRICK OF THE TRADE: FOR AN ASYNCHRONOUS DISPLAY OF COLORS IN MULTIPLE iCOLOR MR UNITS, SET THEM TO THE SAME SPEED, BUT DIFFERENT STARTING COLORS.**

SAMPLE RANDOM COLOR EFFECT

A speed of every 2 seconds, Fully Saturated, Starting with Color 1



If you use the same settings as above on another iColor MR but change the Starting Color, each iColor MR will change colors at the same rate but will not follow the same color display.

FIXED COLOR STROBE

Strobes are a “stop action,” or rapid series of very short intense light flashes which can make actions seem intermittent. In the Fixed Color Strobe Effect, the same color is strobed at each flash.

CHOOSE THE EFFECT: FIXED COLOR STROBE

Red switch #5: ON Red switches #4 and 6: OFF

CHOOSE THE VARIATION: FIXED COLOR STROBE

Vary the Fixed Strobe Effect by Color and Strobe Rate.

◆ Color

In the Fixed Color Strobe Effect, black switches #1–3 AND #4–6 govern which single color will be displayed during the flash. Choose one of the following eight colors: black, red, green, yellow, blue, magenta, cyan, or white. (User contest: if you find a good use for a black strobe, let us know!) Configure black switches #1–3 AND #4–6 in EXACTLY the same way. This table illustrates the available colors and their settings:

		BLACK					
SWITCH#		1	2	3	4	5	6
COLOR	0 Black						
	1 Red	■					
	2 Green		■				
	3 Yellow	■	■				
	4 Blue			■			
	5 Magenta	■		■			
	6 Cyan		■	■			
	7 White	■	■	■			

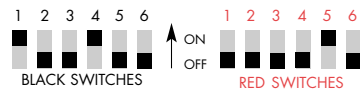
◆ Strobe Rate

In the Fixed Color Strobe Effect, red switches #1–3 govern the strobe rate which can be set from as fast as 20 flashes per second to as slow as 2 flashes per second. For the fastest speed (20/sec.), red switches #1–3 are OFF. For the slowest speed (2/sec), red switches #1–3 are ON. The following table illustrates all available options:

		RED		
SWITCH#		1	2	3
STROBE RATE	0 20/sec			
	1 13/sec	■		
	2 10/sec		■	
	3 7.5/sec	■	■	
	4 5/sec			■
	5 4/sec	■		■
	6 3/sec		■	■
	7 2/sec	■	■	■

SAMPLE FIXED COLOR STROBE EFFECT

Strobing Red at a rate of 20 flashes/second



VARIABLE COLOR STROBE

Strobes are a “stop motion,” or rapid series of very short intense light flashes which can make actions seem intermittent. The Variable Color Strobe Effect cycles through a sequence of colors, generating strobes of different colors.

CHOOSE THE EFFECT: VARIABLE COLOR STROBE

Red switches #4 and 6: ON Red switch #5: OFF

CHOOSE THE VARIATION: VARIABLE COLOR STROBE

Vary the Variable Color Strobe Effect by Speed, Cycle Direction and Strobe Rate.

◆ Speed

In the Variable Color Strobe Effect, black switches #1–5 govern the pattern of colors displayed during the flash of the strobe. The pattern of colors displayed depends on how fast the colors are advancing through the spectrum. This advance is measured as a percentage around the spectrum. At the lower Speeds, each strobe will flash sequential colors since it is slowly advancing through the spectrum. Faster Speeds will flash colors further apart in the spectrum, with the fastest Speed flashing complementary colors. Table Five: Variable Strobe Speed, following, illustrates all available Speed options:

TABLE FIVE: VARIABLE STROBE SPEED

		BLACK				
SWITCH#		1	2	3	4	5
SPEED	0 0.07%					
	1 0.13%	■				
	2 0.20%		■			
	3 0.26%	■	■			
	4 0.33%			■		
	5 0.39%	■		■		
	6 0.46%		■	■		
	7 0.52%	■	■	■		
	8 0.65%				■	
	9 0.78%	■			■	
	10 1.00%	■	■			
	11 1.20%	■	■	■		
	12 1.40%			■	■	
	13 1.60%	■		■	■	
	14 2.00%	■	■	■	■	
	15 2.30%	■	■	■	■	
	16 2.90%					■
	17 3.60%	■				■
	18 4.20%	■	■			■
	19 4.90%	■	■	■		■
	20 5.90%				■	■
	21 7.20%	■			■	■
	22 8.50%	■	■		■	■
	23 10%	■	■	■		■
	24 12%				■	■
	25 15%	■		■	■	■
	26 18%	■	■	■	■	■
	27 22%	■	■	■	■	■
	28 26%	■	■	■	■	■
	29 33%	■	■	■	■	■
	30 38%	■	■	■	■	■
	31 49.9%	■	■	■	■	■

◆ Cycle Direction

You can control the direction of color flow in the Variable Color Strobe through black switch #6. When black switch #6 is OFF, the direction of the flow of colors is clockwise from Red to Violet (ROYGBIV). When black switch #6 is ON, the direction the color flow is counterclockwise from Violet to Red (VIBGYOR).

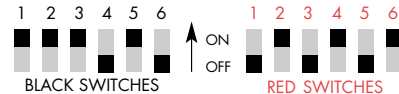
◆ Strobe Rate

In the Variable Color Strobe Effect, red switches #1–3 govern the strobe rate which can be set from as fast as 20 flashes per second to as slow as 2 flashes per second. For the fastest speed (20/sec.), red switches #1–3 are OFF. For the slowest speed (2/sec), red switches #1–3 are ON. The following table illustrates all available options:

		RED		
SWITCH#		1	2	3
STROBE RATE	0 20/sec			
	1 13/sec	■		
	2 10/sec		■	
	3 7.5/sec	■	■	
	4 5/sec			■
	5 4/sec	■		■
	6 3/sec		■	■
	7 2/sec	■	■	■

SAMPLE VARIABLE COLOR STROBE EFFECT

Speed of 10% advance\*, Clockwise Direction, Strobe Rate of 10/sec



\* this Speed will display advancing complementary colors.

iCOLOR MR SPECIFICATIONS

<b>COLOR RANGE</b>	16.7 million (24bit) additive RGB colors; Continuously variable intensity output range
<b>SOURCE</b>	Variable intensity colored LEDs
<b>BEAM ANGLE</b>	24°
<b>DATA INTERFACE</b>	DMX512 (RS485) compatible; serial and parallel port compatible with Smart Jack Adapters (Contact Color Kinetics for information)
<b>CONTROL</b>	DMX512 (RS485) or Color Kinetics controller. Requires Juice Box 2 (Color Kinetics Item#: 106-000002-01). Stand Alone mode is always available.
<b>PACKAGING</b>	White ABS plastic
<b>CONNECTORS</b>	Standard MR16 pins
<b>LISTINGS</b>	UL Classified, CE Certified
<b>WEIGHT</b>	0.9 oz (26g)
<b>PWR REQUIREMENT</b>	40mA @ 24V DC (1W)
<b>DIMENSIONS</b>	
OVERALL HEIGHT (WITHOUT PINS)	1.54" (39mm)
DIAMETER	1.97" (50 mm)
SOURCE LIFE	100,000 hours

Source Life

Color Kinetics illumination products utilize high brightness LEDs as the illumination source. LED manufacturers predict LED life of up to 100,000 hours MTBF (mean time between failure), the standard used by conventional lamp manufacturers to measure source life. However, like all basic light sources, LEDs also experience lumen depreciation over time. So while LEDs can emit light for an extremely long period of time, MTBF is not the only consideration in determining useful life. LED lumen depreciation is affected by numerous environmental conditions such as ambient temperature, humidity and ventilation. Lumen depreciation is also affected by means of control, thermal management, current levels, and a host of other electrical design considerations.

Color Kinetics systems are expertly engineered to optimize LED life when used under normal operating conditions [ambient temperature: -40F to 1040F (-200C to 400C), humidity: 0-95% non-condensing humidity, adequate ventilation and air volume] and when operated using typical color-changing effects. Long-term operation outside of these ranges or conditions, or at the upper limits of these ranges or conditions, may subject the product to further degradation of the LED source life, or in extreme cases, failure of internal components. Source life information is based on LED manufacturers’ data, as well as other third party testing.

Warning

Do not open, alter or tamper with the product case. This will void the manufacturer’s warranty. To avoid electrical shock, never open the iColor MR case. Do not attempt to service the electronic components yourself. Non-expert handling may damage the product and cause injury to the user.

Strobe Warning

There is some anecdotal evidence that strobe lighting may induce epilepsy in certain susceptible individuals, although no associated product warnings have been issued by United States government according to the Food and Drug Administration.

If strobe lights are used, some international regulatory agencies’ recommend keeping flicker rates at or below four flashes per second (as less of the flicker-sensitive population will then be at risk of an attack). This flicker rate applies only to the overall output of any group of lights in direct view. However, when more than one strobe light is used, the flashes should be synchronized. End users should also consider issuing a warning, alerting audience or viewers to the presence of strobe lighting.

The Don’ts

- Do not block vents on either side of the unit.
- Do not insert anything into these openings.
- Do not use iColor MR in a damaged MR16 fixture.
- Do not paint, dye, repackage or alter the physical housing.
- Do not use this unit near high humidity or water or expose it to rain. If an iColor MR gets wet, unplug it and contact Color Kinetics Technical Support Group immediately.
- Do not store units in dirty, dusty areas.
- Do not bend or force the pins on your iColor MR.

The Dos

- Make sure the vents are clear and unobstructed.

- Operate your iColor MR only in places where sufficient airflow to cool the unit is present. (At least 100 cubic inches of free-moving air.)
- Keep the unit dry. Precipitation, humidity and liquids contain minerals that corrode electronic circuits.
- Handle iColor MR as you would any delicate product. Be careful not to drop the unit.
- Follow the instructions that come with your MR16 style fixture. Make sure the pins on iColor MR are properly seated in the fixture you are using.
- Have