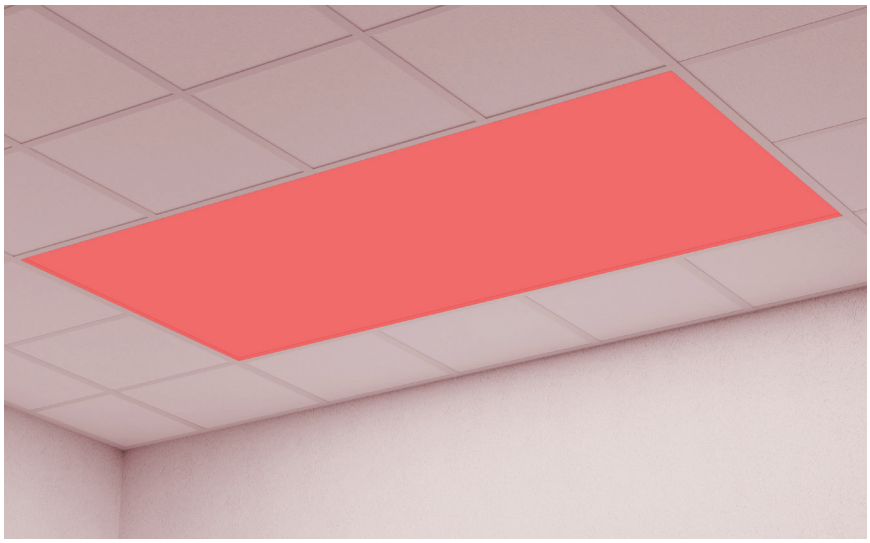
COOLEDGE™

COOLEDGE LUMINOUS CEILINGS

FABRICOLOR - GRID (T-BAR)

INSTALLATION GUIDE



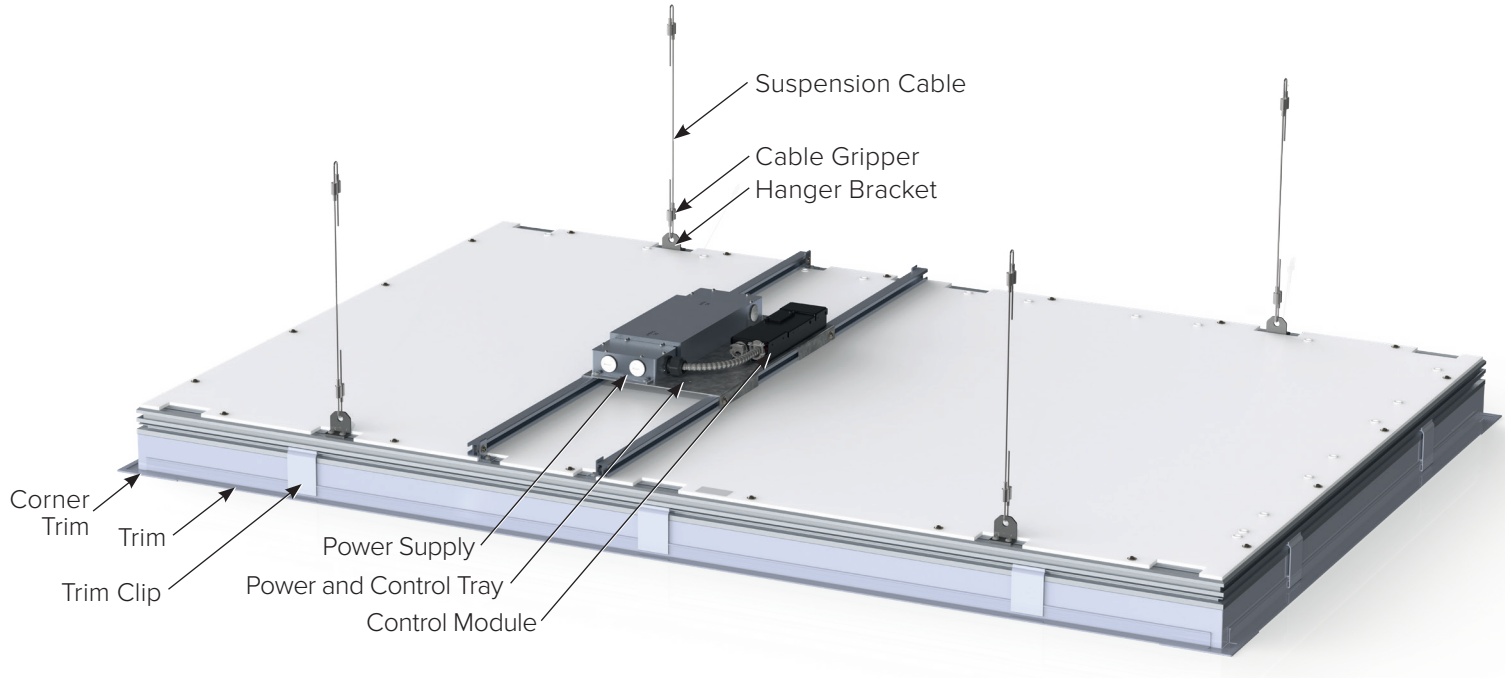
Cooledge **FABRIColor** is a simple, out-of-the-box way to incorporate the unique look and feel of a stretch fabric ceiling into your space. Create a canopy of light in T-bar grid ceilings by adding skylights to provide immersive illumination that delivers the visual, biological, and emotional benefits of large luminous surfaces.

Grid (T-Bar) luminaires deliver immersive illumination for:

- Offices
- Healthcare facilities
- Meeting rooms
- Educational buildings

Features Cooledge's unique "Infinity Edge" design for uniform illumination from edge to edge.

1. COMPONENTS



CE

c UL us LISTED

RoHS

5 YEAR SYSTEM WARRANTY 5

5 Year Limited Warranty:
Parts and workmanship

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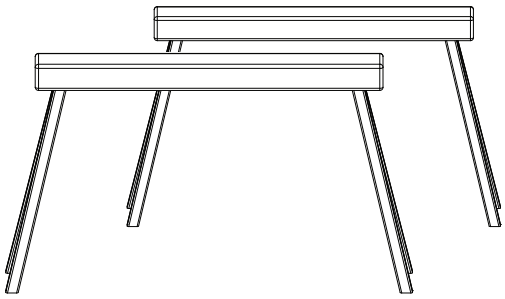
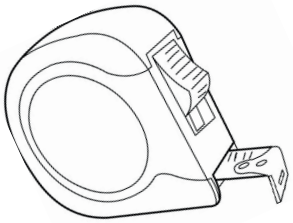
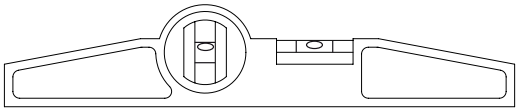
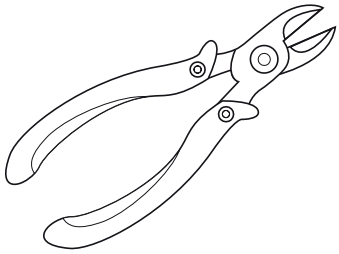
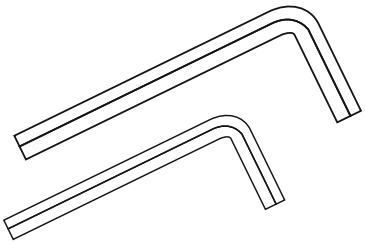
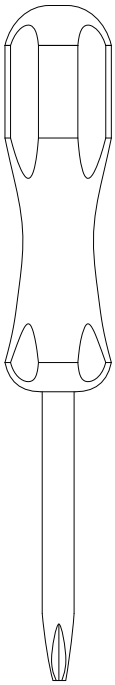
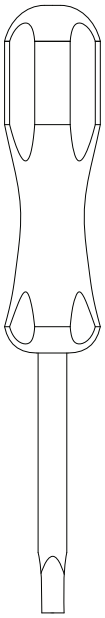
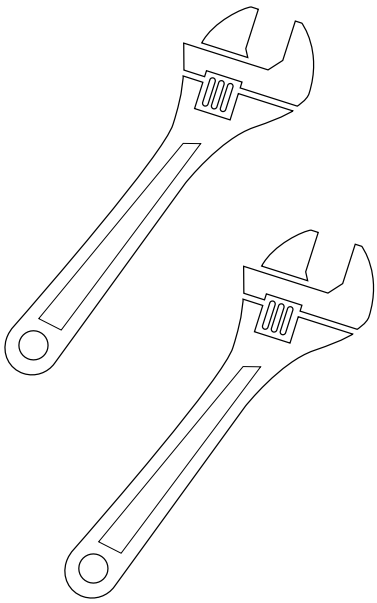
2. TOOLS

⚠ **WARNING:** Wear clean cotton or latex gloves when handling Cooledge FABRIColor.
Do not remove the plastic protective film until the point noted in this install guide.

Saw Horses 	Gloves 	Measuring Tape 
Level 	Cable Cutters 	4mm and 5mm Hex Key 
#2 Phillips Screwdriver 	3mm Flat Head Screwdriver 	2x wrenches (only required for threaded rod mounting) 

⚠ **CAUTION:** Observe precautions for handling electrostatic sensitive devices.

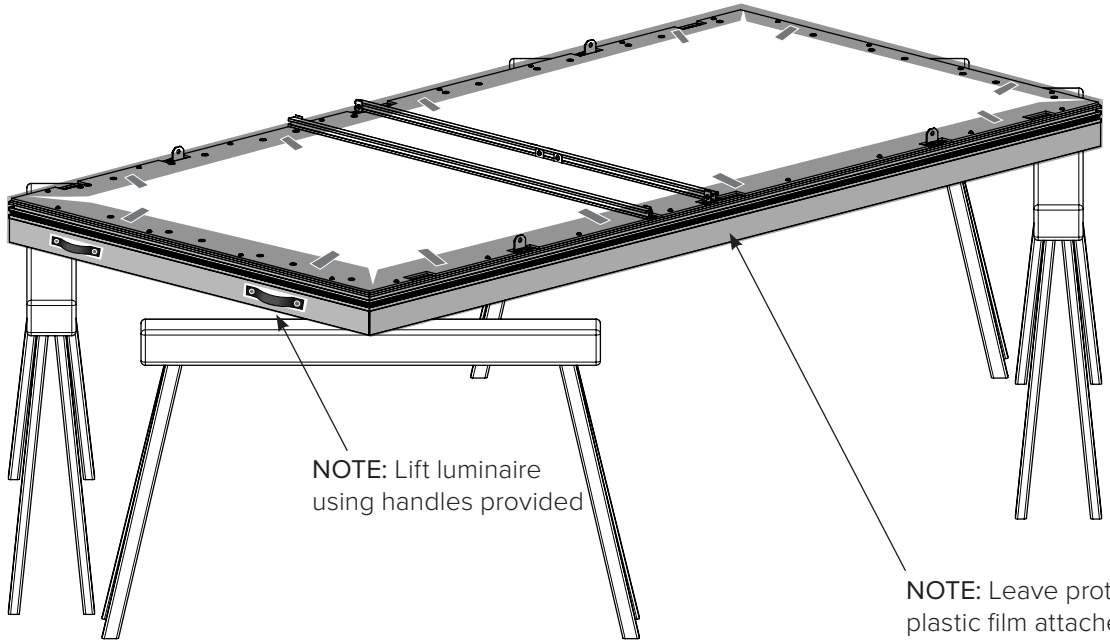
⚠ **CAUTION:** Use appropriate Personal Protective Equipment (PPE) to ensure safety at work.

3. INSTALLATION PROCEDURE

3.1. REMOVE THE CEILING TILES AND ANY CROSS TEES TO GIVE CORRECT CEILING OPENING

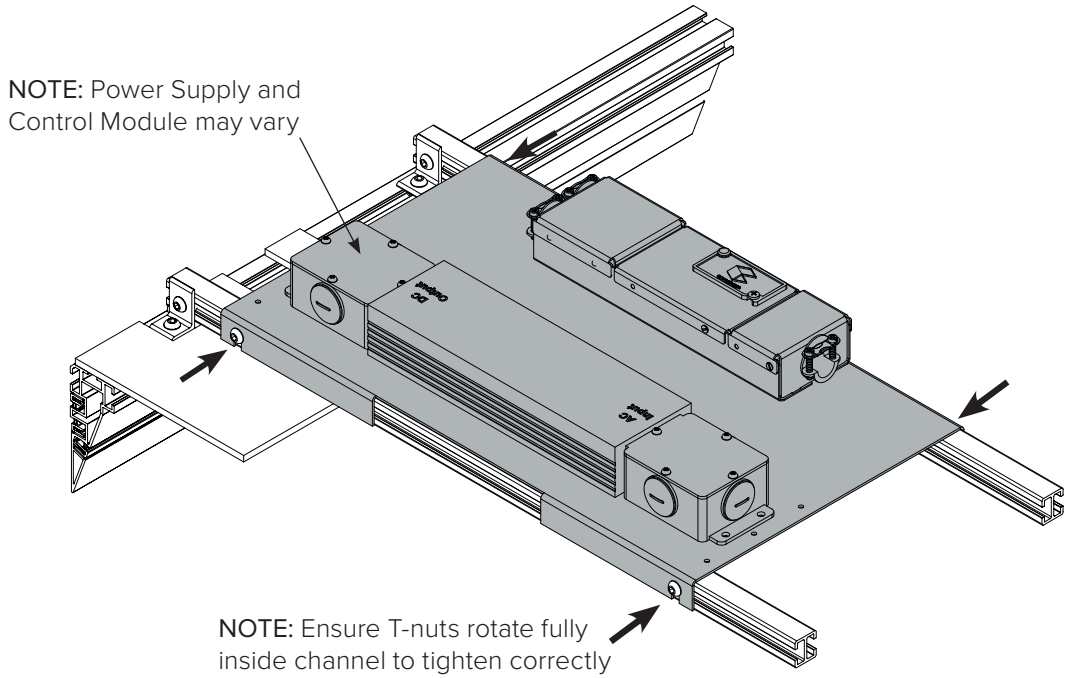
WARNING: Do not cut or remove any main beam tees. If this is required to make the correct opening size for the luminaire, consult a ceiling contractor.

3.2. UNPACK LUMINAIRE AND PLACE FACE DOWN ON SAW HORSES AT CORNERS



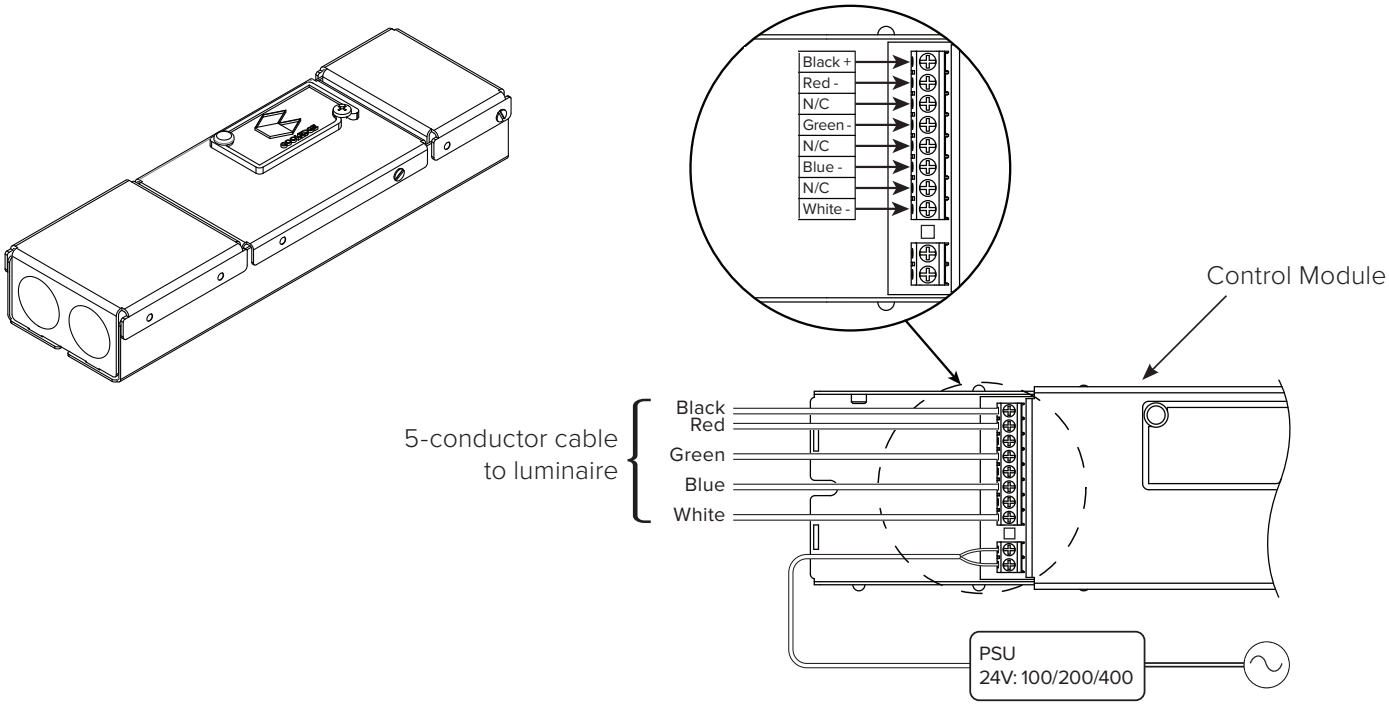
3.3. ATTACH POWER AND CONTROL TRAY(S) TO STIFFENERS

NOTE: Trays may be mounted remotely. In this case, the DC power connections should be made to the Luminaire (section 3.4) with a suitable length of cable.
Refer to Section 8. APPENDIX – DMX CONTROL for setting up the control module.



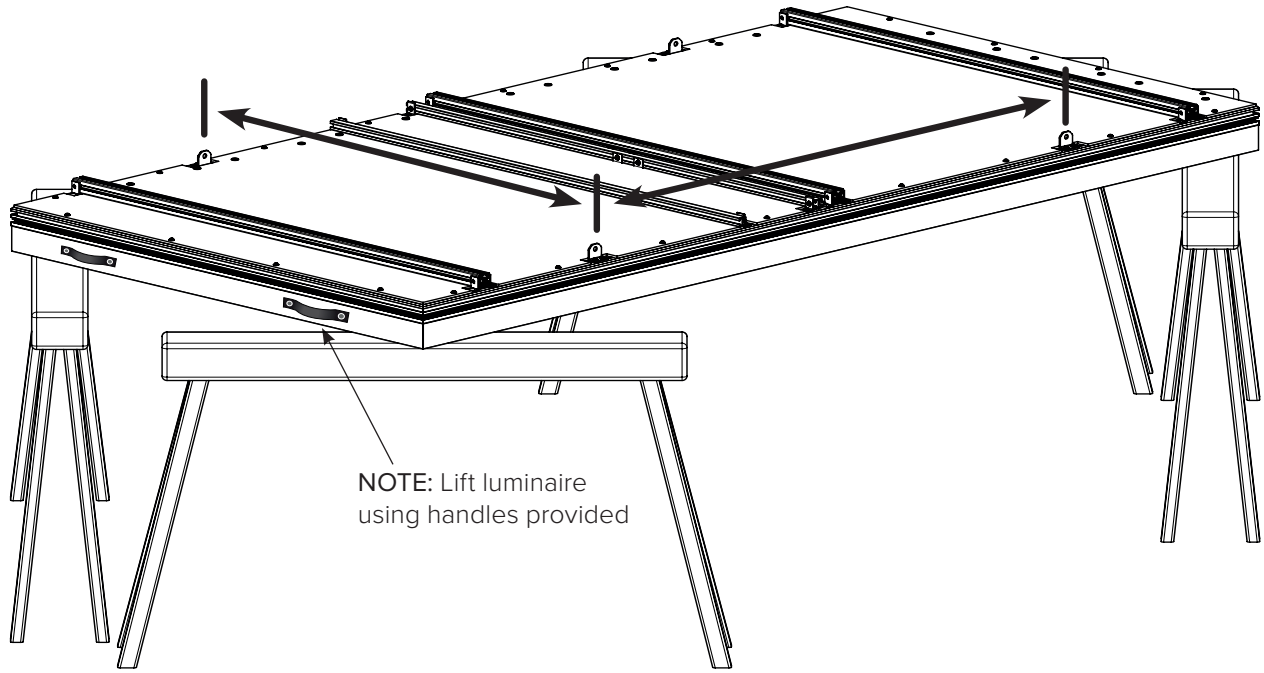
3.4. CONNECT POWER AND CONTROL TRAY TO LUMINAIRE

NOTE: The power and control tray type will vary depending on region and luminaire size.

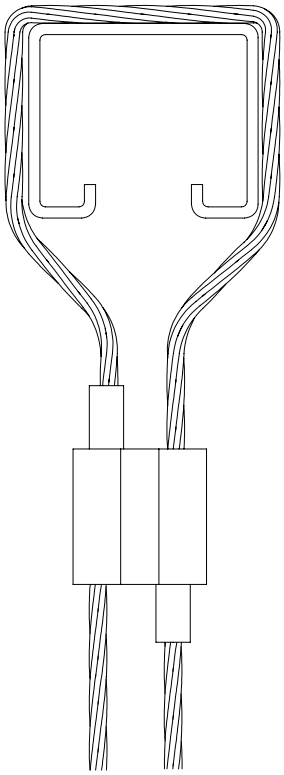


3.5. ESTABLISH THE REQUIRED POSITIONS FOR SUSPENSION CABLES

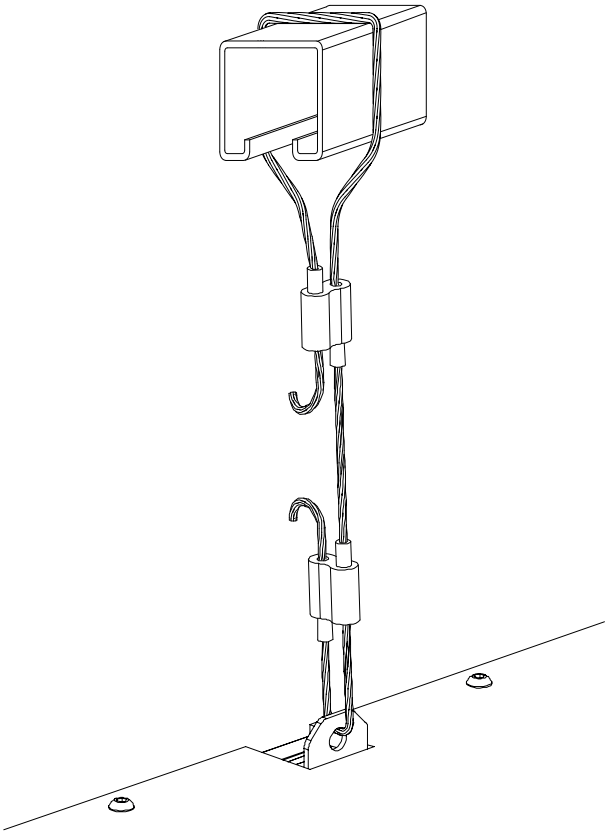
Either measure between the suspension points or refer to TABLE 1, PAGE 10.



3.6. ATTACH CABLES TO CEILING ANCHOR POINTS AT REQUIRED POSITIONS

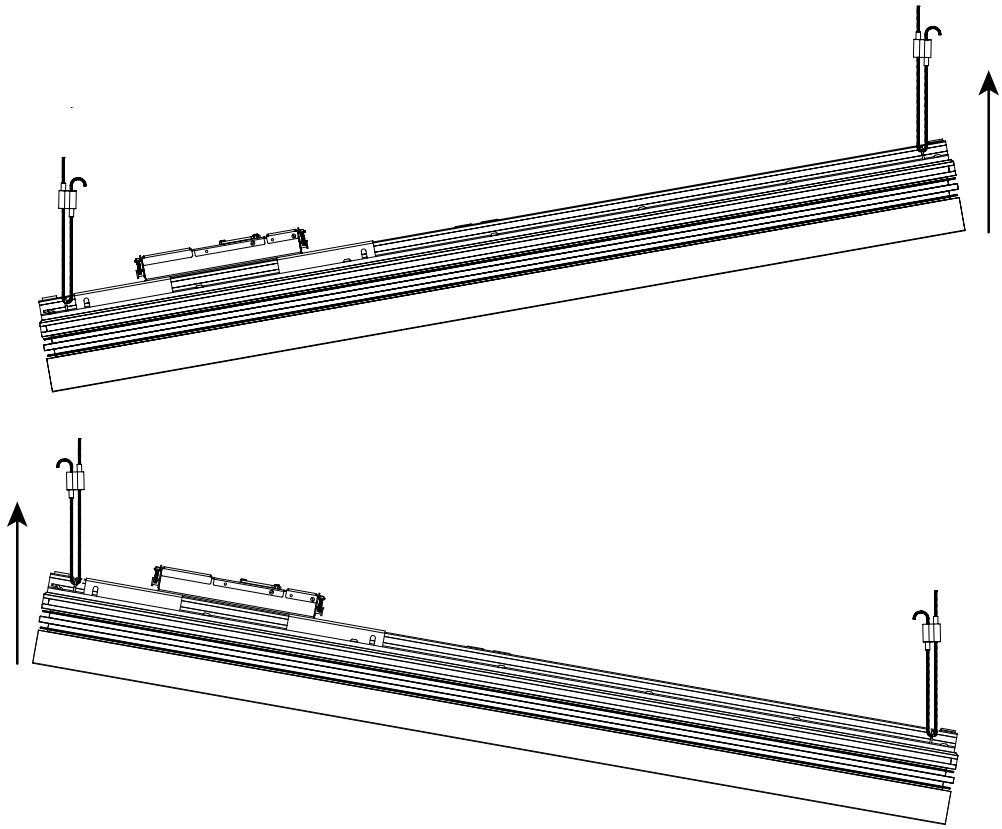


3.7. ATTACH CABLES TO HANGER BRACKETS WITH GRIPPERS



3.8. RAISE LUMINAIRE TO JUST BELOW CEILING LEVEL

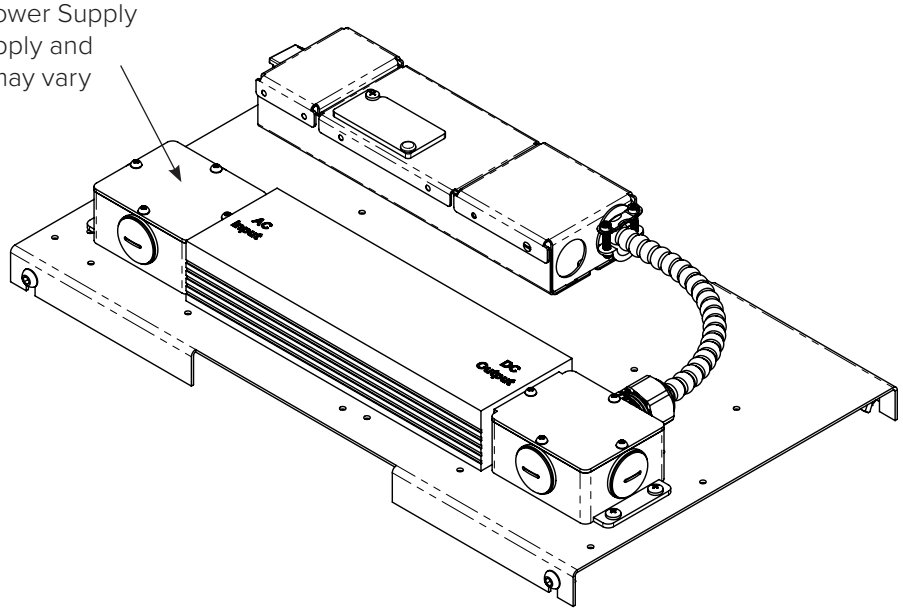
Leave space for electrician to make connection to power supply.



3.9. CONNECT THE ELECTRICAL POWER

The electrical power connections should be made by a qualified electrician in accordance with all national and local electrical and construction codes.
Refer to Section 8. APPENDIX – DMX CONTROL for setting up the control module.

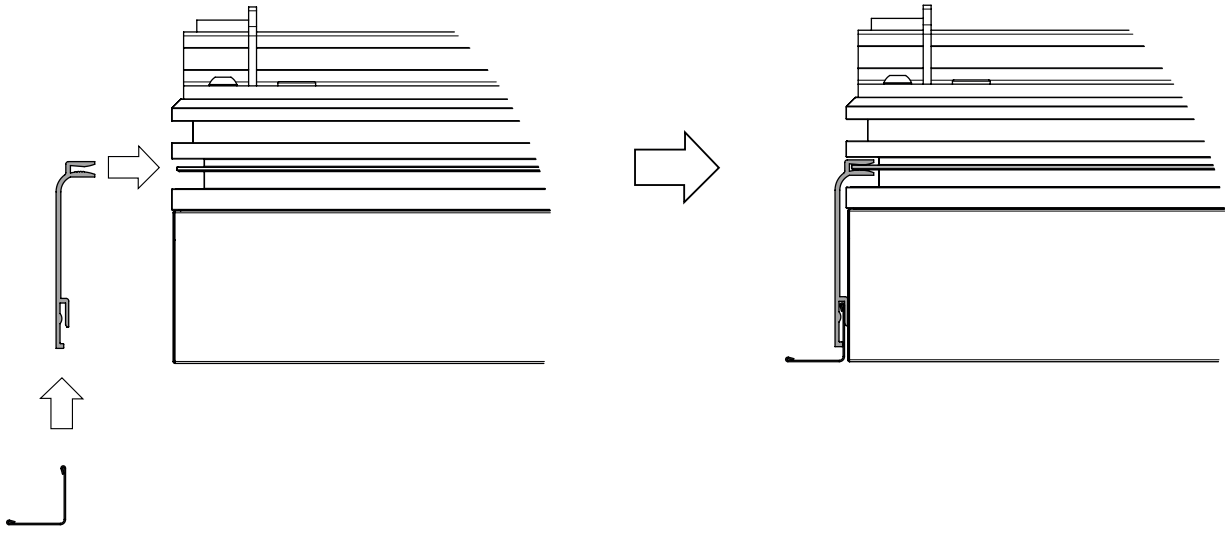
Connect AC to Power Supply
NOTE: Power Supply and Control Module may vary



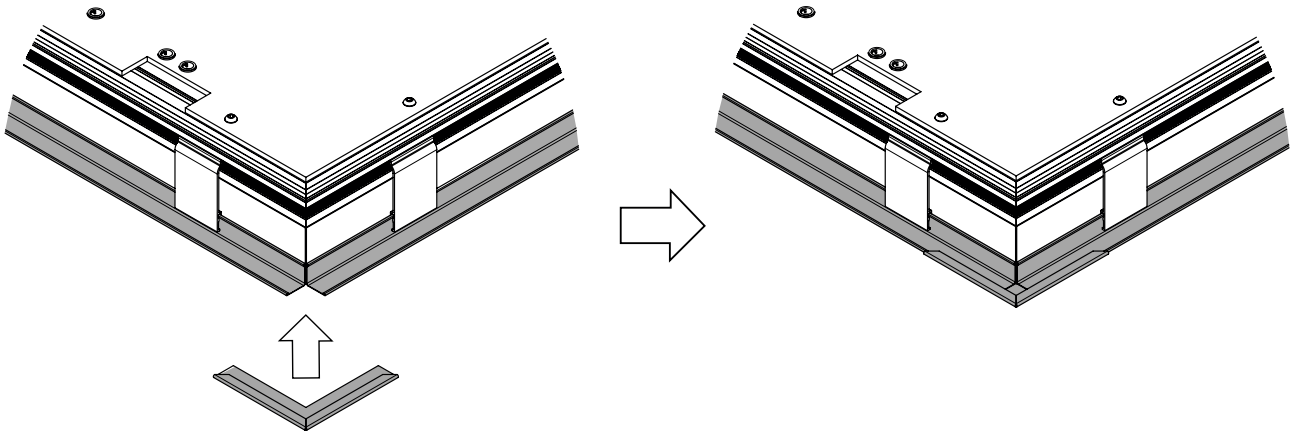
3.10. REMOVE THE PROTECTIVE PLASTIC WRAPPING AND LIFTING HANDLES

Remove the lifting handles using a 4mm Hex Key.
Ensure you wear gloves from this point forward to prevent marks on the fabric.

3.11. ATTACH TRIM WITH PROVIDED CLIPS

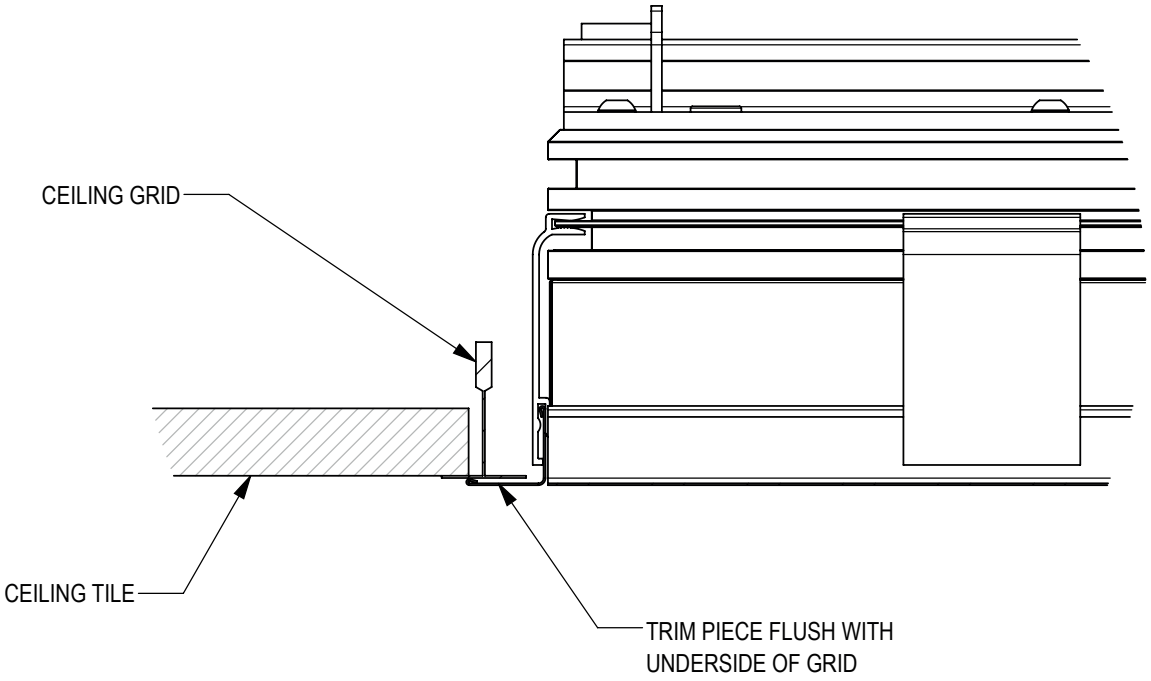


3.12. ATTACH CORNER COVER TO TRIM



3.13. LIFT LUMINAIRE INTO FINAL POSITION

Access the cable grippers through adjacent ceiling grid opening and lift the luminaire until the trim is flush with the underside of the ceiling grid.
WARNING: Overtightening the cables may lift the ceiling grid and cause damage to the luminaire.



4. HANDLING & MAINTENANCE

In general, Cooledge FABRIColor require little or no maintenance; however, if there is a need to handle or clean the luminaires, Cooledge recommends the following procedures.

Handling:

- Always handle the luminaire from the sides and avoid touching the diffuser to prevent fingerprints, oil, or dirt from marking the fabric.
- Always use cloth gloves if handling the fabric diffuser.

Cleaning:

Fabric Diffuser

Over time there may be some accumulation of dust from the environment. To remove dust there are several methods available including:

- Brush gently with a clean, micro fiber cloth or “magic eraser” (if available in your region)
- Vacuum with a clean brush-tip vacuum nozzle
- Blow with compressed air (ensure there is no oil or grease)
- Use an adhesive lint-roller (recommended to test a small area in case the specific type of roller leaves a residue)

For minor stains, spots or streaks, Cooledge recommends gently wiping the fabric with isopropyl alcohol, “IPA”, (99% or higher) applied to a clean, soft cloth and allow to dry.

Note: use of liquids other than IPA to clean the fabric diffuser may result in permanent stains. FABRICated Luminaires are rated for dry locations only and should not be exposed to moisture or direct contact with water.

Trim/Fascia

- Wipe trim with a clean, soft cloth

5. APPENDIX – POSITIONS OF SUSPENSION POINTS

5.1. CABLE ATTACHMENT POINTS

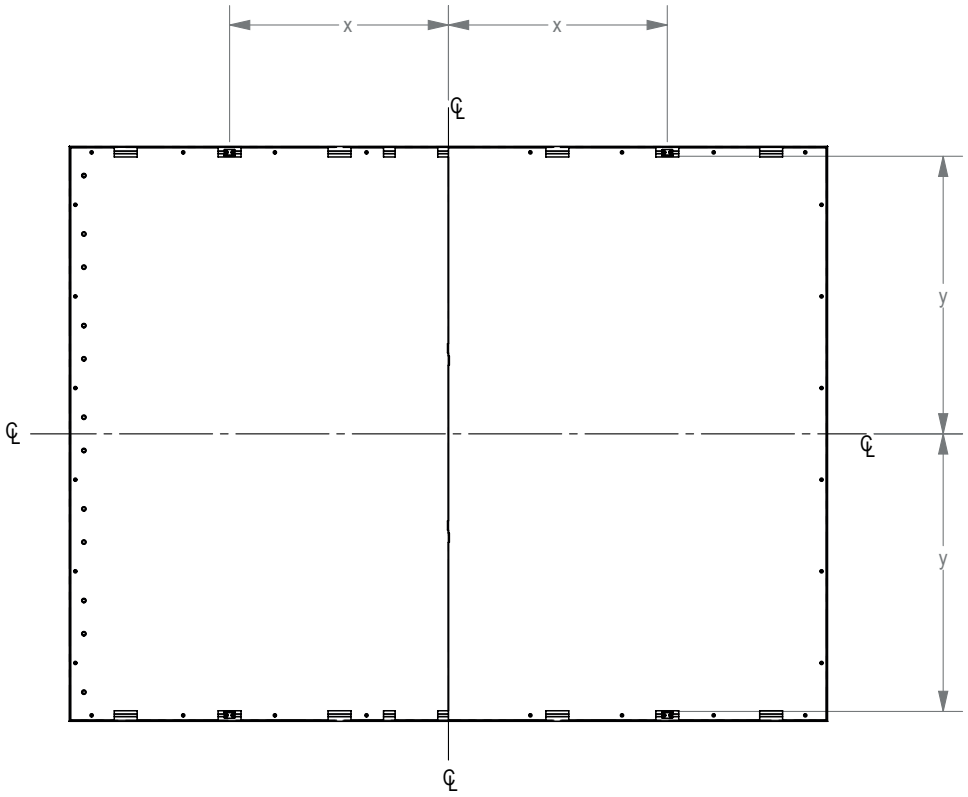
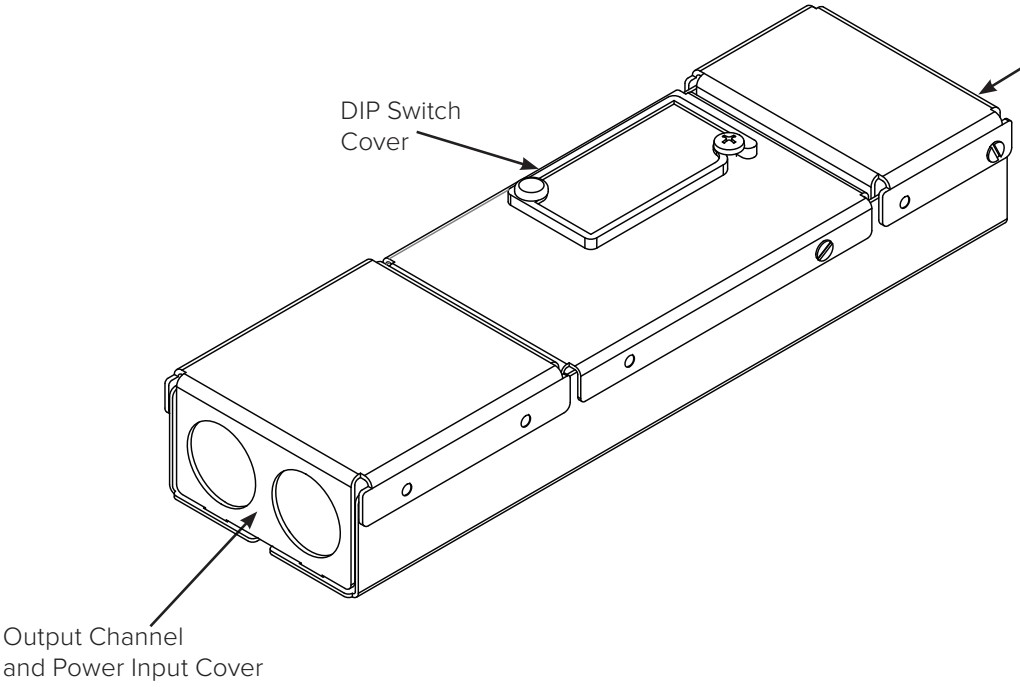


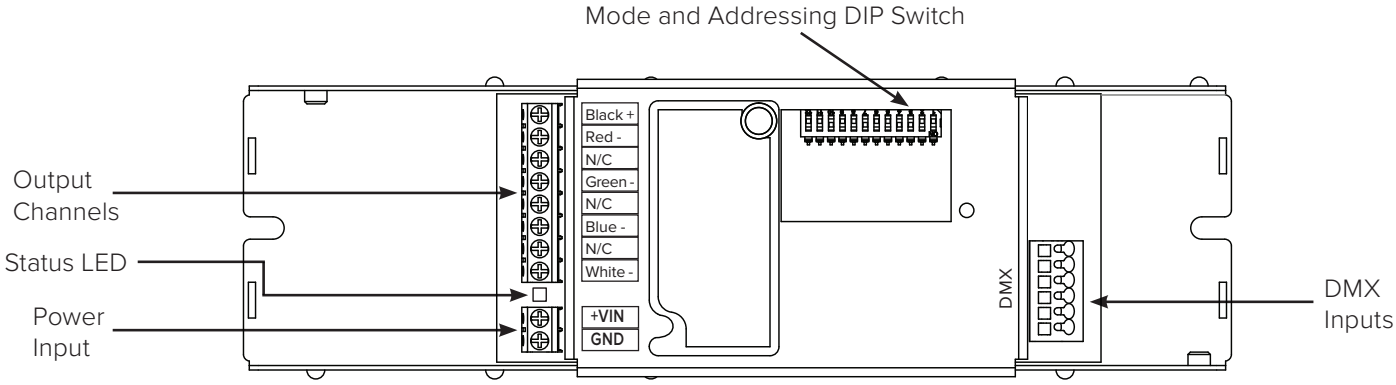
TABLE 1

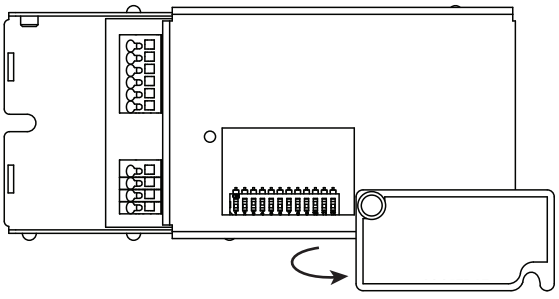
NOMINAL SIZE	# SUSPENSION POINTS	DIM “X”	DIM “Y”
4’ X 4’	4	20 5⁄8”	22 1⁄8”
4’ X 6’	4	21 5⁄8”	22 1⁄8”
4’ X 8’	4	26 5⁄8”	22 1⁄8”
1200mm X 1200mm	4	525mm	550mm
1200mm X 1800mm	4	550mm	550mm
1200mm X 2400mm	4	655mm	550mm

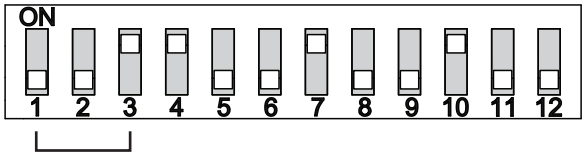
8. APPENDIX – DMX CONTROL

Control Module overview



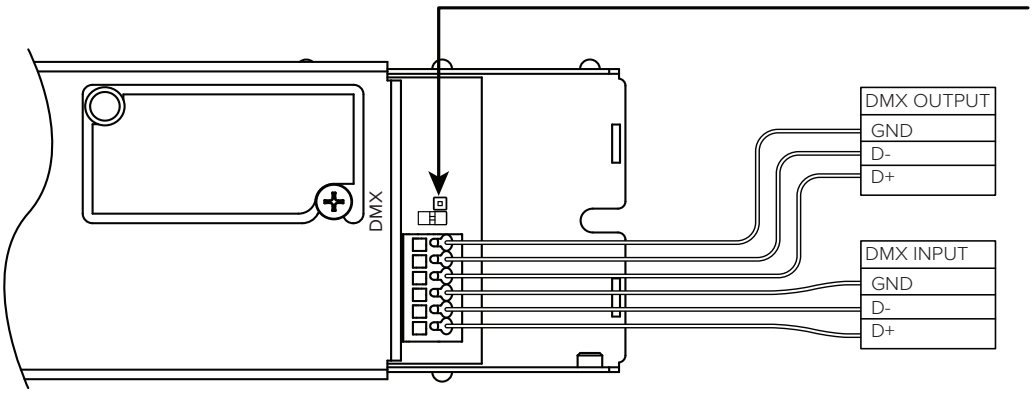




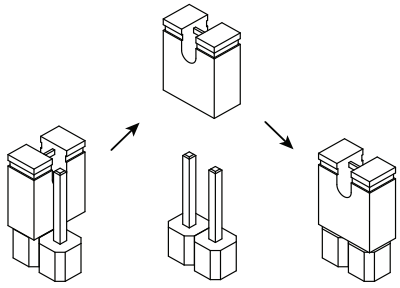


- Switches 1 - 3: Control Module MODE

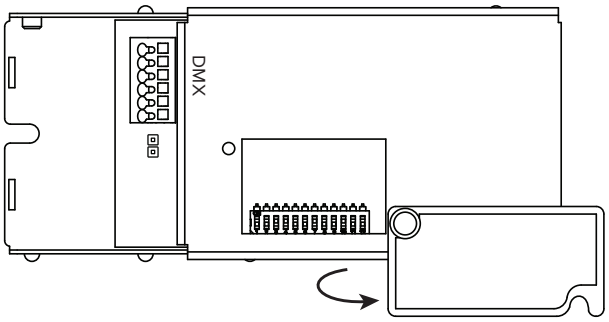
To access the DIP switches for selecting the operational mode, unfasten the cover screw and rotate cover out of the way. Positions 1-3 are used to identify the controller mode. Settings for each mode are explained in each section.



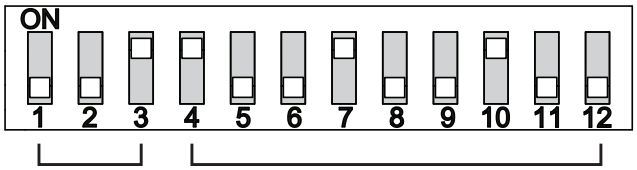
When installing the final controller (termination point) in a DMX network use the provided jumper on the indicated header.



SELECTING DMX ADDRESSES



1 = On , 0 = Off



- Switches 1 - 3: Factory set, refer to modes below for details.
- Switches 4 - 12: Addressing switches.

- To access the dip switch for selecting addresses for DMX controls, unfasten the cover screw and rotate cover out of the way.

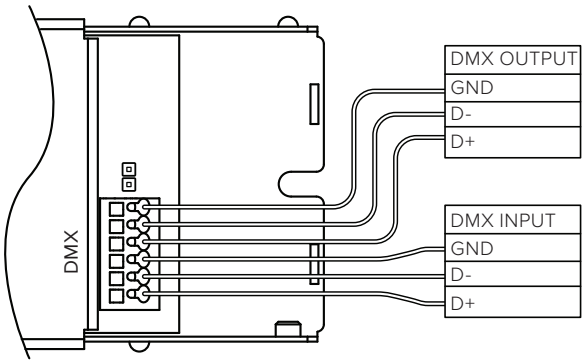
DMX Controllers are factory set to address 1

- Each of the 9 switches (4-12) represents a bit in binary representation for the address. For example, when switch 12 is 'ON' only address 1 is selected, if switch 12 & 11 are 'ON' then address 3 is selected. The address is selected by the sum of the values of each 'ON' switch. Addresses 1 through 511 are possible

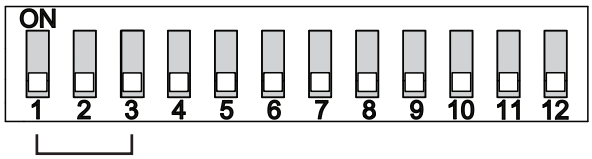
Switch:	4	5	6	7	8	9	10	11	12
Address:	256	128	64	32	16	8	4	2	1

STANDARD MODE

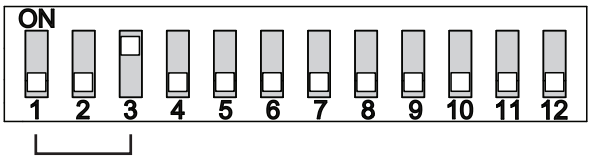
In standard mode there are Red, Green, Blue, and White channels. Each can handle up to a 90W load.



LOG MODE



LIN MODE



- Switches 1 - 3: Control Module MODE

Table 1:

STANDARD MODES 8bits/16bits	MODE (Pos 1-3)	Switches 4-12	DESCRIPTION
DMX Standard LOG 16 bits	0-0-0	Addressing	Standard LOG 16 bits
DMX Standard LIN 16 bits	0-0-1	Addressing	Standard LIN 16 bits
DMX Standard LOG 8 bits	0-1-0	Addressing	Standard LOG 8 bits
DMX Standard LIN 8 bits	0-1-1	Addressing	Standard LIN 8 bits

Warning! Unit must be powered off when changing DIP switch settings

For STANDARD -16bit Modes- LOG or LIN- each Output Channel uses 2 x DMX Channels:
1 for DIM Coarse
1 for DIM Fine
In total, each controller occupies 8 x DMX channels, assigned as below:
DMX CH1 – DIM Coarse RED Channel
DMX CH2 – DIM Fine RED Channel
DMX CH3 – DIM Coarse GREEN Channel
DMX CH4 – DIM Fine GREEN Channel
DMX CH5 – DIM Coarse BLUE Channel
DMX CH6 – DIM Fine BLUE Channel
DMX CH7 – DIM Coarse WHITE Channel
DMX CH8 – DIM Fine WHITE Channel
Example of addressing units for 16-bit LIN/LOG Modes on DMX bus:
1. Unit 1 takes DMX Address = 1, and unit occupies DMX Channels # 1-8
2. Unit 2 takes DMX Address = 9, and unit occupies DMX Channels # 9-16
3. Unit 3 takes DMX Address = 17, and unit occupies DMX Channels # 17-24

For the above the DIP SETTINGS are:
1. 000 000000001 Controller set for 16-bit LIN/LOG Mode, unit occupies DMX Channels 1-8
2. 000 000001001 Controller set for 16-bit LIN/LOG Mode, unit occupies DMX Channels 9-16
3. 000 000010001 Controller set for 16-bit LIN/LOG Mode, unit occupies DMX Channels 17-24

For STANDARD -8bit LIN/LOG Modes - each Output Channel uses 1x DMX Channel:

In total, each controller occupies 4 x DMX channels, assigned as below:

DMX CH1 – DIM RED Channel

DMX CH2 – DIM GREEN Channel

DMX CH3 – DIM BLUE Channel

DMX CH4 – DIM WHITE Channel

Example of addressing units for 8-bit LIN/LOG Modes on DMX bus:

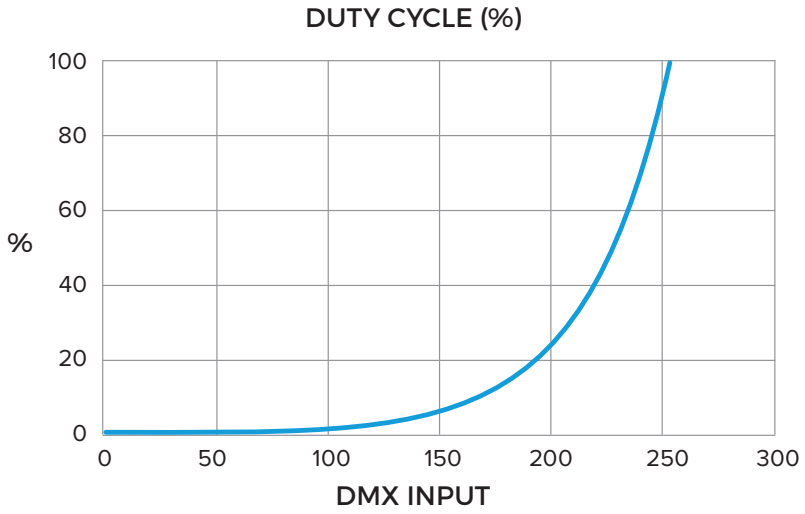
1. Unit 1 takes DMX Address = 1 and unit occupies DMX Channels # 1-4
2. Unit 2 takes DMX Address = 5 and unit occupies DMX Channels # 5-8
3. Unit 3 takes DMX Address = 9 and unit occupies DMX Channels # 9-12

For the above the DIP SETTINGS are:

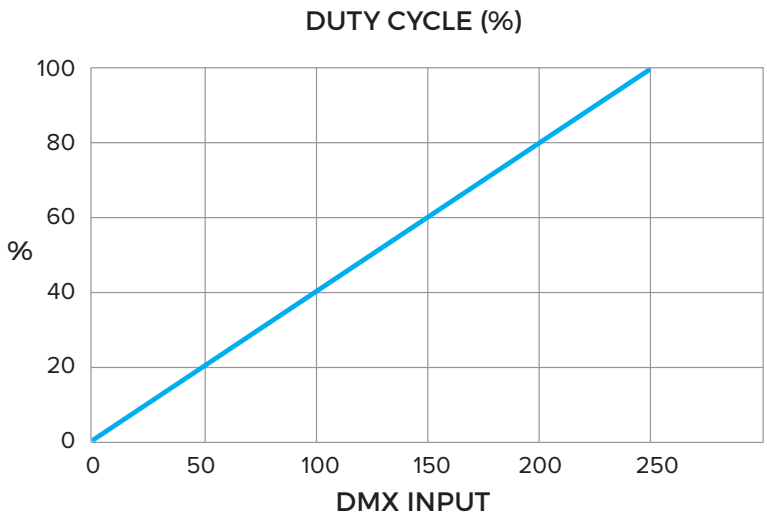
1. 000 000000001 Controller set for 8-bit LIN/LOG Mode, unit occupies DMX Channels 1-4
2. 000 000000101 Controller set for 8-bit LIN/LOG Mode, unit occupies DMX Channels 5-8
3. 000 000001001 Controller set for 8-bit LIN/LOG Mode, unit occupies DMX Channels 9-12

For 16-bit Standard Modes the dimming curves are shown below:

16-bit LOG DIMMING CURVE

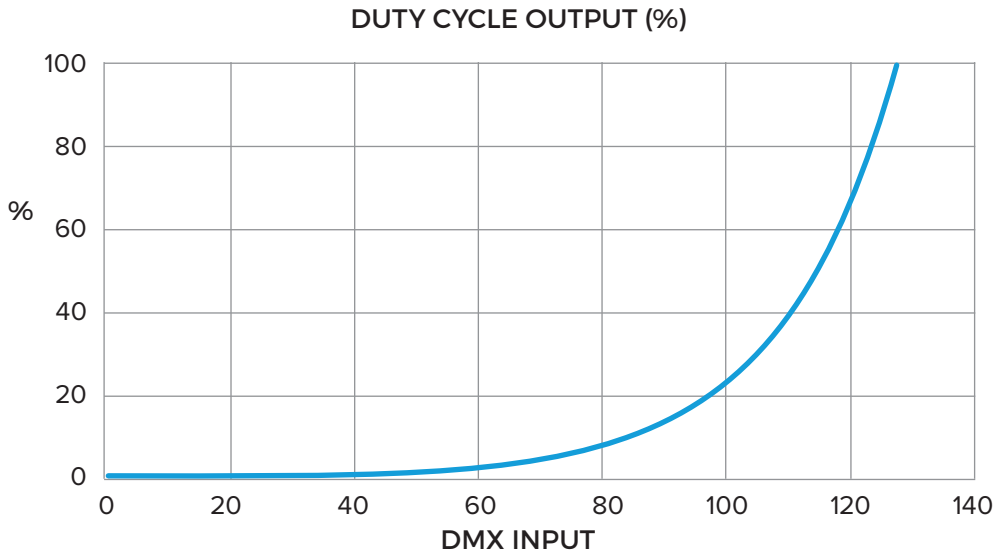


16-bit LINEAR DIMMING CURVE

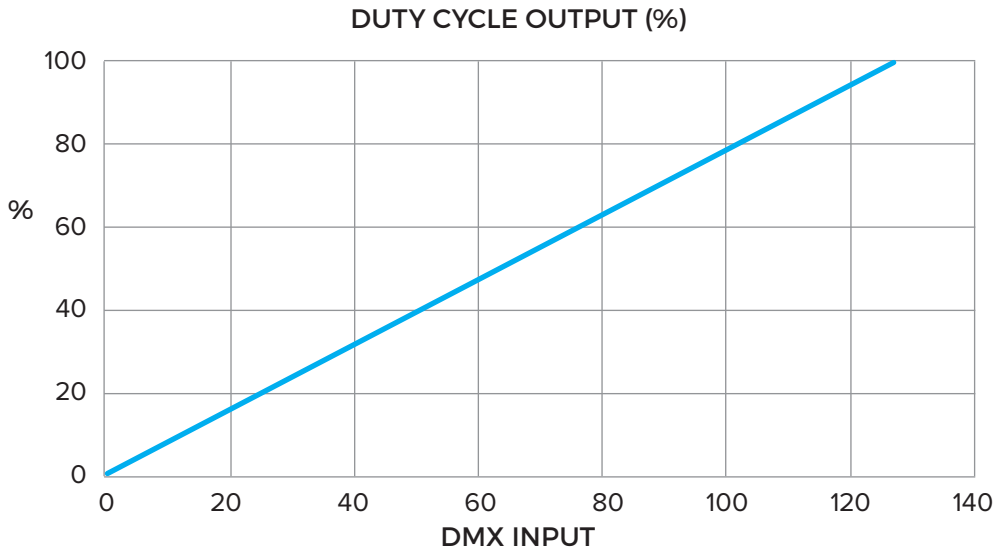


For 8-bit Standard Modes the dimming curves are shown below:

8-bit LOG DIMMING CURVE



8-bit LIN DIMMING CURVE



STANDALONE MODE

Standalone mode gives a pre-defined user-selectable fixed color output. No external control input is required.
When one of the operational modes (Standalone Fixed or Standalone Dynamic) is selected through the DIP Switch setting, the module will ignore DMX commands and operate according to the settings, as per table below.
Standalone Fixed Modes selection include:

- 8 x Fixed R, G, B, W colors
- 26 predefined mixed colors
- 6 x CCT white combinations

Standalone Fixed Modes

STANDALONE FIXED RGBW 8bits/16bits	MODE (Pos 1-3)	Switches 4-12	DESCRIPTION
FIXED RED LOG	1-0-0	X-X-X-X-X-X-X-0-0	RED channel fixed LOG for 16bit/8bit
FIXED RED LIN	1-0-0	X-X-X-X-X-X-X-0-1	RED channel fixed LIN for 16bit/8bit
FIXED GREEN LOG	1-0-0	X-X-X-X-X-X-X-1-0	GREEN channel fixed LOG for 16bit/8bit
FIXED GREEN LIN	1-0-0	X-X-X-X-X-X-X-1-1	GREEN channel fixed LIN for 16bit/8bit
FIXED BLUE LOG	1-0-1	X-X-X-X-X-X-X-0-0	BLUE channel fixed LOG for 16bit/8bit
FIXED BLUE LIN	1-0-1	X-X-X-X-X-X-X-0-1	BLUE channel fixed LIN for 16bit/8bit
FIXED WHITE LOG	1-0-1	X-X-X-X-X-X-X-1-0	WHITE channel fixed LOG for 16bit/8bit
FIXED WHITE LIN	1-0-1	X-X-X-X-X-X-X-1-1	WHITE channel fixed LIN for 16bit/8bit
FIXED 32 Colors with 16 intensities	110	X-X-X-X-X-X-X-X-X	32 Colors*** = X-X-X-X-X and 16 intensities = X-X-X-X

***DIP switch positions 4-7 are used to select 16 intensities for each of 32 fixed colors as shown in Table below:

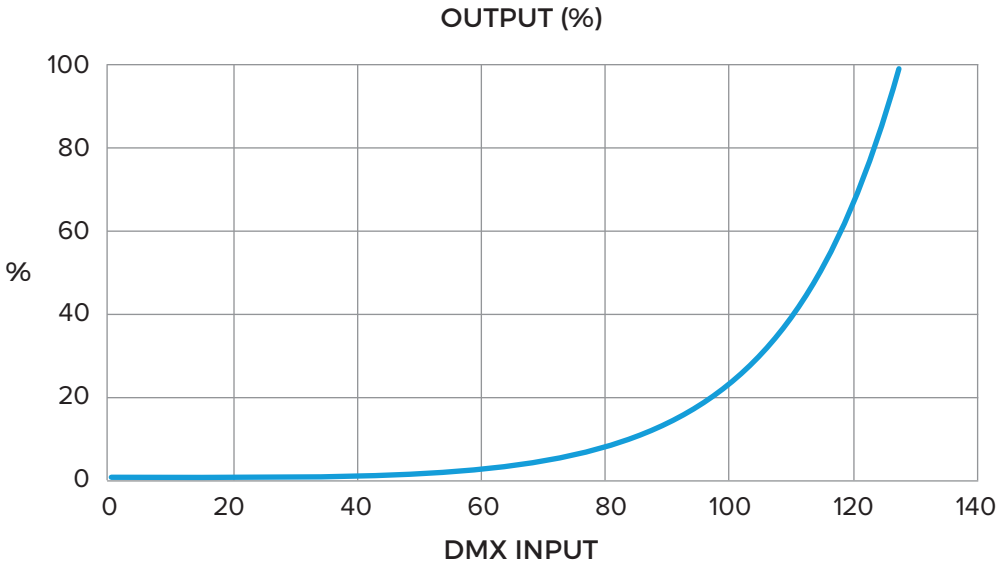
INTENSITY LEVEL	DIP SETTING POS 4-7	OUTPUT %
1	0-0-0-0	1
2	0-0-0-1	5
3	0-0-1-0	10
4	0-0-1-1	15
5	0-1-0-0	20
6	0-1-0-1	25
7	0-1-1-0	30
8	0-1-1-1	35
9	1-0-0-0	40
10	1-0-0-1	45
11	1-0-1-0	50
12	1-0-1-1	60
13	1-1-0-0	70
14	1-1-0-1	80
15	1-1-1-0	90
16	1-1-1-1	100

DIP switch positions 8-12 are used to select 32 colors as shown in Table below:

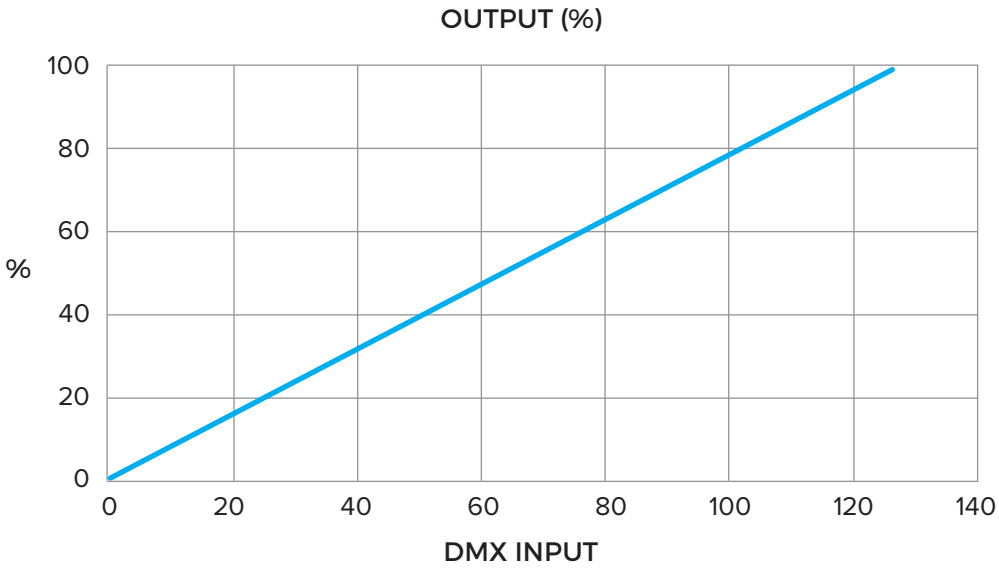
COLOR NUMBER	COLOR	DIP SETTING POS 8-12
1	PINK	0-0-0-0-0
2	LIGHT PINK	0-0-0-0-1
3	VIOLET	0-0-0-1-0
4	FUCSHIA (MAGENTA)	0-0-0-1-1
5	PLUM	0-0-1-0-0
6	ORCHID	0-0-1-0-1
7	ORANGE	0-0-1-1-0
8	SALMON	0-0-1-1-1
9	CORAL	0-1-0-0-0
10	LIGHT CORAL	0-1-0-0-1
11	YELLOW	0-1-0-1-0
12	LIGHT VIOLET	0-1-0-1-1
13	OLIVE	0-1-1-0-0
14	AQUAMARINE	0-1-1-0-1
15	SPRING GREEN	0-1-1-1-0
16	LIGHT SEA GREEN	0-1-1-1-1
17	LIME GREEN	1-0-0-0-0
18	PALE GREEN	1-0-0-0-1
19	TURQUOISE	1-0-0-1-0
20	ROYAL BLUE	1-0-0-1-1
21	SKY BLUE	1-0-1-0-0
22	CYAN	1-0-1-0-1
23	POWDER BLUE	1-0-1-1-0
24	SLATE BLUE	1-0-1-1-1
25	LAVENDER	1-1-0-0-0
26	AZURE	1-1-0-0-1
27	2700K	1-1-0-1-0
28	3000K	1-1-0-1-1
29	3500K	1-1-1-0-0
30	4000K	1-1-1-0-1
31	5000K	1-1-1-1-0
32	5700K	1-1-1-1-1

For Standalone RED, GREEN, BLUE or WHITE Fixed Modes the dimming curves are shown below:

STANDALONE FIXED RGBW LOG DIM CURVE



STANDALONE FIXED RGBW LIN DIM CURVE



LOG DIP SETTINGS/DIMMING LEVELS FOR FIXED RGBW

LEVEL	DIPSW SETTING	OUTPUT (%)
1	0000000	0.05
2	0000001	0.21
3	0000010	0.24
4	0000011	0.24
5	0000100	0.27
6	0000101	0.27
7	0000110	0.29
8	0000111	0.32
9	0001000	0.32
10	0001001	0.35
11	0001010	0.37
12	0001011	0.4
13	0001100	0.4
14	0001101	0.43
15	0001110	0.46
16	0001111	0.49
17	0010000	0.51
18	0010001	0.54
19	0010010	0.57
20	0010011	0.58
21	0010100	0.59
22	0010101	0.62
23	0010110	0.64
24	0010111	0.67
25	0011000	0.69
26	0011001	0.72
27	0011010	0.73
28	0011011	0.76
29	0011100	0.78
30	0011101	0.81
31	0011110	0.84
32	0011111	0.87
33	0100000	0.92
34	0100001	0.94
35	0100010	0.98
36	0100011	1.02
37	0100100	1.06
38	0100101	1.1
39	0100110	1.15
40	0100111	1.2
41	0101000	1.23
42	0101001	1.3
43	0101010	1.34
44	0101011	1.4
45	0101100	1.45
46	0101101	1.51
47	0101110	1.59
48	0101111	1.66
49	0110000	1.74
50	0110001	1.8
51	0110010	1.89
52	0110011	1.98
53	0110100	2.07
54	0110101	2.17
55	0110110	2.25
56	0110111	2.37
57	0111000	2.47
58	0111001	2.61
59	0111010	2.73
60	0111011	2.87
61	0111100	3.01
62	0111101	3.16
63	0111110	3.32
64	0111111	3.48
65	1000000	3.67
66	1000001	3.85
67	1000010	4.04
68	1000011	4.24
69	1000100	4.47
70	1000101	4.71
71	1000110	4.95
72	1000111	5.2
73	1001000	5.47
74	1001001	5.76
75	1001010	6.07
76	1001011	6.39
77	1001100	6.73
78	1001101	7.1
79	1001110	7.47
80	1001111	7.87
81	1010000	8.3
82	1010001	8.75
83	1010010	9.21
84	1010011	9.71
85	1010100	10.24
86	1010101	10.8
87	1010110	11.36
88	1010111	12
89	1011000	12.65
90	1011001	13.35
91	1011010	14.07
92	1011011	14.85
93	1011100	15.65
94	1011101	16.52
95	1011110	17.43
96	1011111	18.4
97	1100000	19.4
98	1100001	20.46
99	1100010	21.6
100	1100011	22.8
101	1100100	24.06
102	1100101	25.38
103	1100110	26.8
104	1100111	28.3
105	1101000	29.85
106	1101001	31.51
107	1101010	33.25
108	1101011	35.11
109	1101100	37
110	1101101	39.13
111	1101110	41.3
112	1101111	43.6
113	1110000	46
114	1110001	48.6
115	1110010	51.3
116	1110011	54.18
117	1110100	57.2
118	1110101	60.4
119	1110110	63.8
120	1110111	67.35
121	1111000	71.1
122	1111001	75.1
123	1111010	79.28
124	1111011	83.71
125	1111100	88.4
126	1111101	93.35
127	1111110	98.58
128	1111111	100

LIN DIP SETTINGS/DIMMING LEVELS FOR FIXED RGBW

LEVEL	DIPSW SETTING	OUTPUT (%)
1	0000000	0.05
2	0000001	1.15
3	0000010	1.95
4	0000011	2.73
5	0000100	3.51
6	0000101	4.31
7	0000110	5.1
8	0000111	5.87
9	0001000	6.67
10	0001001	7.46
11	0001010	8.24
12	0001011	9.03
13	0001100	9.82
14	0001101	10.6
15	0001110	11.4
16	0001111	12.18
17	0010000	12.98
18	0010001	13.75
19	0010010	14.55
20	0010011	15.33
21	0010100	16.12
22	0010101	16.91
23	0010110	17.7
24	0010111	18.48
25	0011000	19.28
26	0011001	20.05
27	0011010	20.85
28	0011011	21.64
29	0011100	22.42
30	0011101	23.2
31	0011110	24
32	0011111	24.78
33	0100000	25.58
34	0100001	26.35
35	0100010	27.15
36	0100011	27.92
37	0100100	28.72
38	0100101	29.51
39	0100110	30.3
40	0100111	31.08
41	0101000	31.88
42	0101001	32.65
43	0101010	33.45
44	0101011	34.22
45	0101100	35.01
46	0101101	35.81
47	0101110	36.6
48	0101111	37.37
49	0110000	38.17
50	0110001	38.95
51	0110010	39.75
52	0110011	40.53
53	0110100	41.32
54	0110101	42.1
55	0110110	42.9
56	0110111	43.68
57	0111000	44.47
58	0111001	45.25
59	0111010	46.05
60	0111011	46.83
61	0111100	47.63
62	0111101	48.4
63	0111110	49.19
64	0111111	49.97
65	1000000	50.77
66	1000001	51.55
67	1000010	52.34
68	1000011	53.12
69	1000100	53.92
70	1000101	54.7
71	1000110	55.49
72	1000111	56.27
73	1001000	57.07
74	1001001	57.85
75	1001010	58.65
76	1001011	59.42
77	1001100	60.21
78	1001101	61
79	1001110	61.8
80	1001111	62.58
81	1010000	63.38
82	1010001	64.15
83	1010010	64.95
84	1010011	65.73
85	1010100	66.51
86	1010101	67.3
87	1010110	68.08
88	1010111	68.88
89	1011000	69.67
90	1011001	70.45
91	1011010	71.24
92	1011011	72.02
93	1011100	72.82
94	1011101	73.6
95	1011110	74.4
96	1011111	75.18
97	1100000	75.98
98	1100001	76.75
99	1100010	77.54
100	1100011	78.33
101	1100100	79.12
102	1100101	79.9
103	1100110	80.7
104	1100111	81.48
105	1101000	82.28
106	1101001	83.04
107	1101010	83.84
108	1101011	84.64
109	1101100	85.42
110	1101101	86.21
111	1101110	86.98
112	1101111	87.77
113	1110000	88.56
114	1110001	89.34
115	1110010	90.14
116	1110011	90.92
117	1110100	91.71
118	1110101	92.49
119	1110110	93.28
120	1110111	94.08
121	1111000	94.88
122	1111001	95.64
123	1111010	96.44
124	1111011	97.2
125	1111100	97.97
126	1111101	98.76
127	1111110	99.53
128	1111111	100%

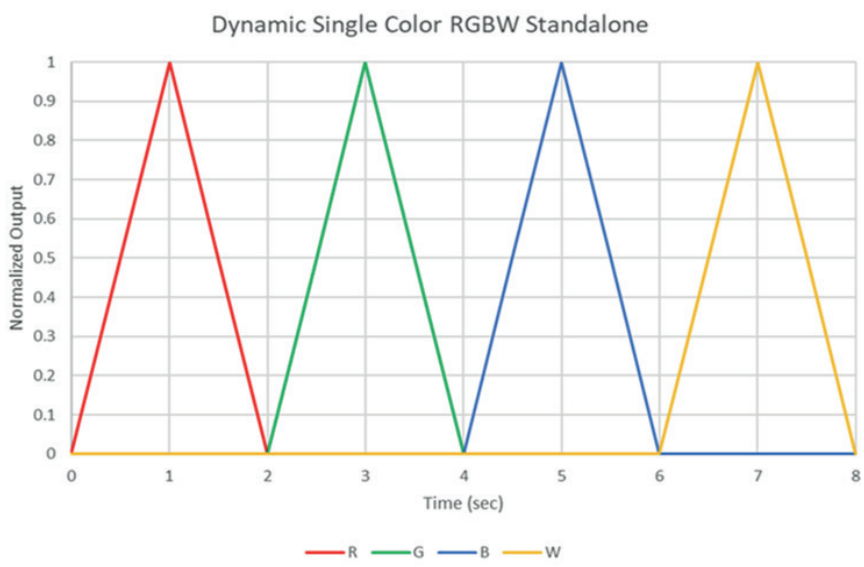
STANDALONE DYNAMIC MODES

Dynamic test mode is used to check the system functionality. This mode will ignore control inputs and cycle through the output range.

STANDALONE DYNAMIC RGBW 8bits/16bits	MODE(Pos 1-3)	Switches 4-12
DYNAMIC Single color RGBW 16bit/8bit	111	X-X-X-X-X-X-X-X-0
DYNAMIC Mixed color RGBW 16bit/8bit	111	X-X-X-X-X-X-X-X-1

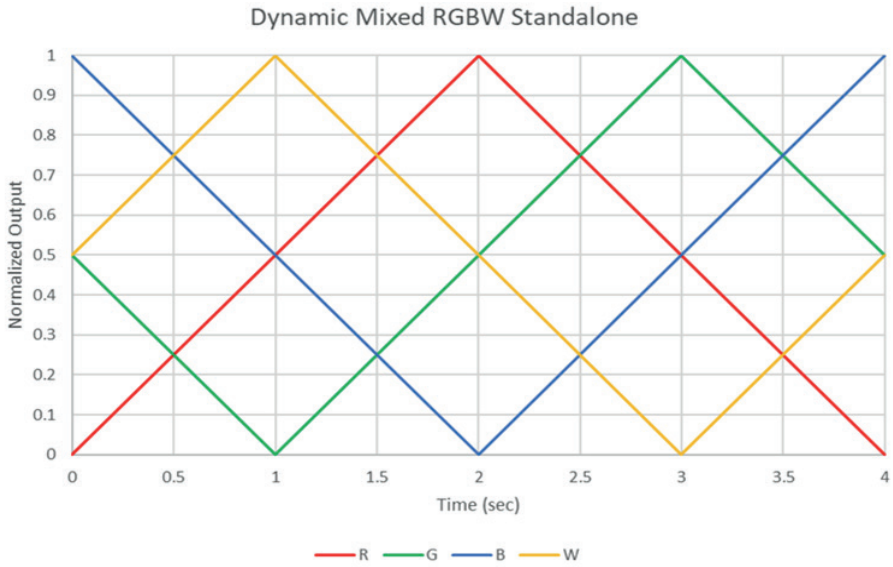
DYNAMIC SINGLE COLOR

Each color output duty cycle starts from 0% and ramps linearly up to 100% output for 1s, then ramps back down to 0% for 1s, starting with RED, GREEN, BLUE, WHITE and then repeats indefinitely with a period of 8 seconds.



DYNAMIC MIXED COLOR

Each color output duty cycle starts from 0% and ramps linearly up to 100% output for 2s, then ramps back down to 0% for 2s. Channels start ramping with 1s delay starting with RED color and repeats indefinitely.



TROUBLESHOOTING

CONTROLLER STATUS	MODE	LED STATUS	LOAD BEHAVIOR
OFF (No input power)	All	OFF	OFF
DMX Control Input Recognized	Standard	Green ON Steady	Responsive to DMX Commands
Standalone Recognized	Standalone	Alternate Amber/Grenn Slow(1 Hz)	Responsive only to DIP Switch Settings
DMX Control Input missing	Standard	Amber On Steady State	ALL colors at full ON, white color
DMX Shorted	Standard	Amber On Steady State	ALL colors at full ON, white color
Input Over Voltage	All	Amber Flashing Slow (1Hz)	OFF
Input Under Voltage	All	Amber Flashing Fast (8 Hz)	OFF
Output Short Circuit Common + to any R,G,B,W color -	All	RED LED flashes at 1s rate	Load is OFF on shorted Channel All loads of the unit, except the shorted one, are flashing The rest of units in the installation remain responsive to DMX commands
Output short circuit between any two R,G,B,W -	All	RED LED flashes at 1s rate	Color shorted is brighter, still DMX control
Output Overload		RED LED flashes at 1s rate	Loads Flash at 1s rate
DMX Disconnected during normal operation (D- or D+) from unit “n”	Standard	Amber LED on units with addresses > "n"	Units with addresses <n have loads flickering and units with addresses >n are at full ON and display amber LE

CE

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RoHS

5 YEAR SYSTEM WARRANTY 5 YEAR SYSTEM WARRANTY

5 Year Limited Warranty:
Parts and workmanship

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