

* For use with 24VDC power supplies ONLY.

- ⚠ Control Module is suitable for use in dry locations only (IP20).
- ⚠ CONTROL MODULE must be installed by a qualified electrician.
- ⚠ All devices should always be disconnected from mains power supply and verify its absence prior to installation/maintenance.
- ⚠ Damage to CONTROL MODULE and/or light sheets may occur if wired incorrectly.

FCC STATEMENT:

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.



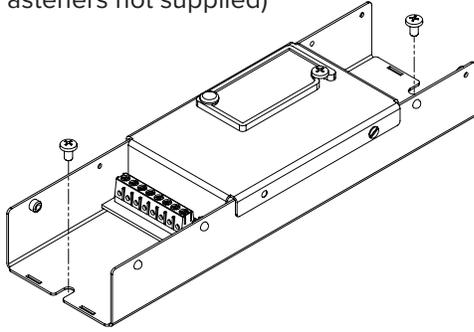
RoHS



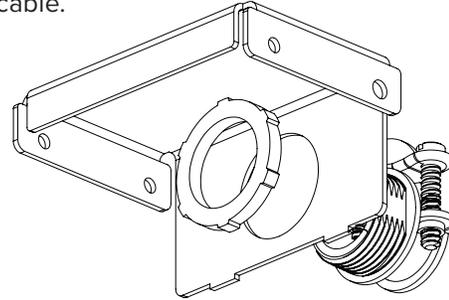
5 Year Limited Warranty:
Parts and workmanship

MOUNTING COOLEdge CONTROL MODULE

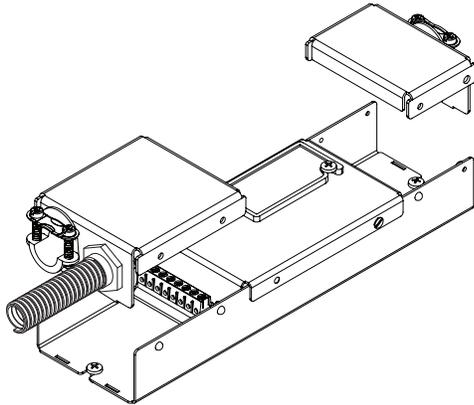
1) Fasten module in position by using the two mounting slots. (Fasteners not supplied)



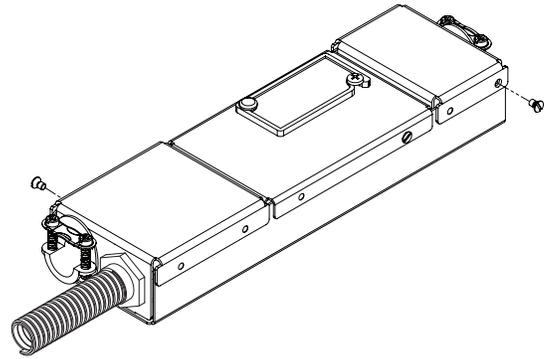
2) Terminal covers support 1/2" strain relief of conduit. Conduit or armoured cable must be used on power input cable.



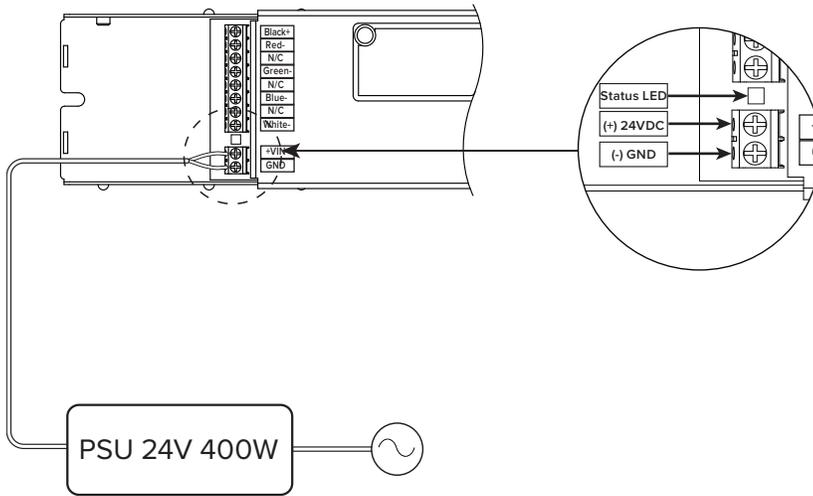
3) Thread cables through conduit/strain reliefs and covers; then make connections as required.



4) Snap covers in position and secure with provided fasteners.



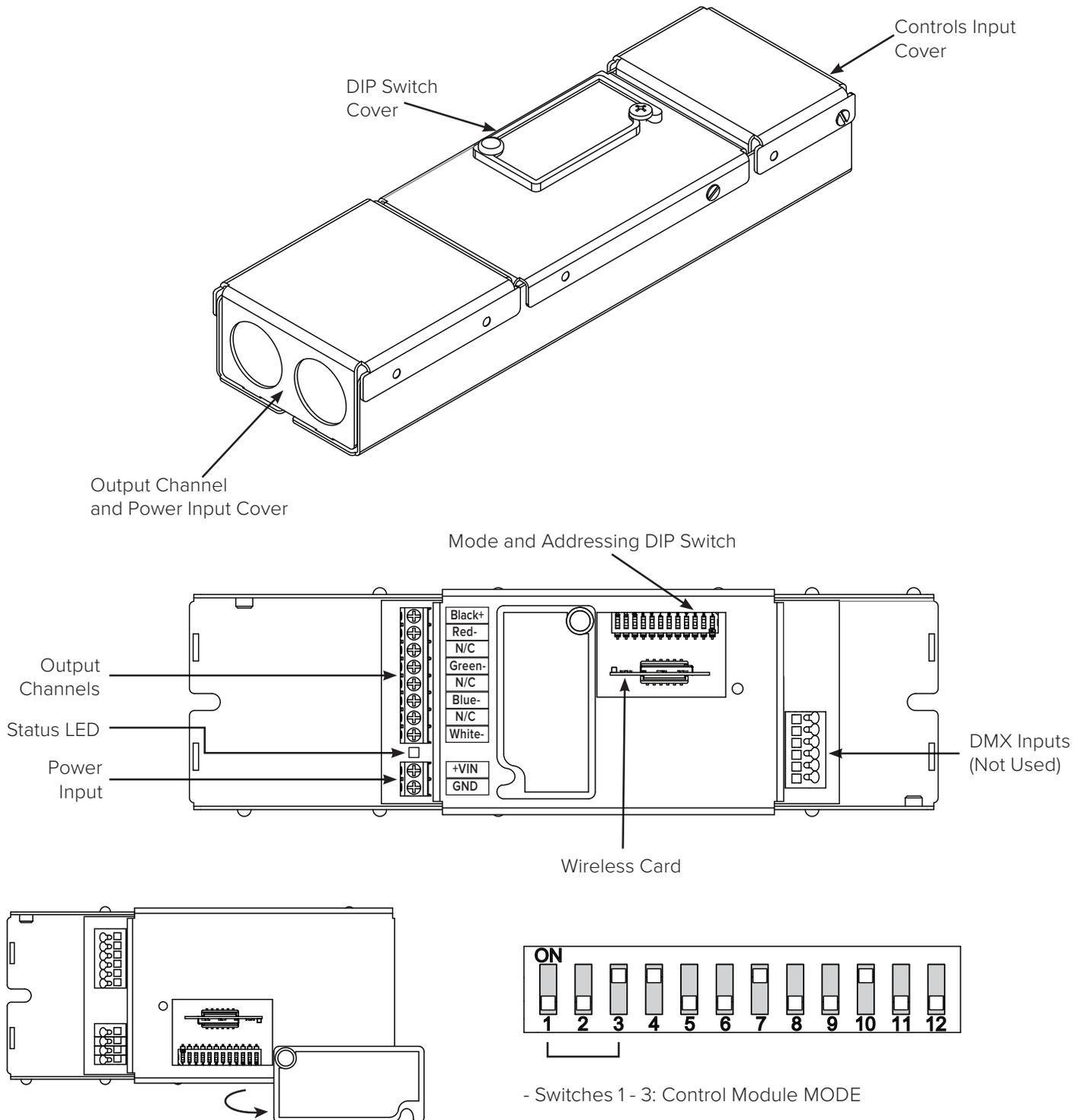
INPUT POWER - 24VDC: 400W - SELV



cUL Listed 24V	Control Module	400W PSU
Dimensions (in)	8.7 x 2.6 x 1.4	16.0 x 4.9 x 1.7
CE Compliant 24V	Control Module	400W PSU
Dimensions (mm)	220 x 66 x 36	262 x 125 x 44

INTRODUCTION TO COOLEGE CONTROL MODULE

The Cooledge Control Module receives a single 24V DC power input from a constant voltage power supply and converts it into up to 4 controlled output channels of max. 90W each. Input signals from 3rd party controllers are used to control dimming and color tuning (if applicable). Each channel drives a separate color: white, red, green or blue.



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.



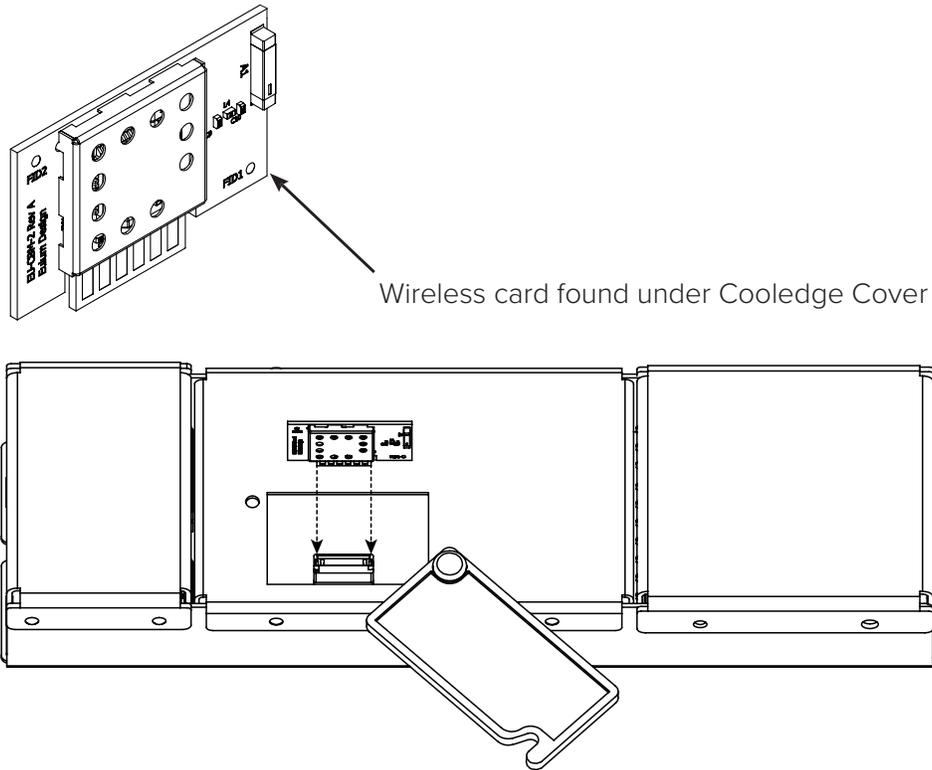
Note: The Control Module accepts wire gauges in the range of 14-16AWG **ONLY**. Remote electrical connection can still be achieved with 10-12AWG wire if it is spliced onto a section of 14AWG connected directly to the Control Module.



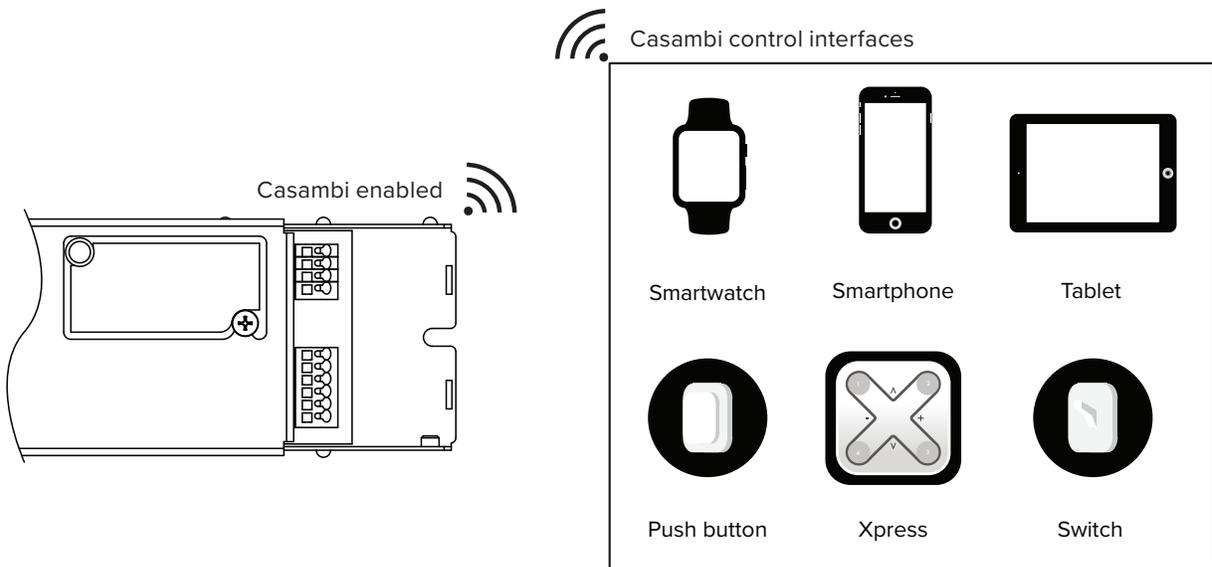
Note: When making electrical connections to the Control Module, **DO NOT** overtorque the set screws in the terminal blocks. Tighten the screws until they offer moderate resistance, using **ONLY** hand tools.

Wireless models of Cooledge Control Module are shipped with a factory-installed card that enables the Casambi functionality.

Warning: When inserting/removing the wireless card do so with the component side towards the DIP switch and only after Control Module was powered off.



The Cooledge Control Module is capable of wireless control through the Casambi app (free on IOS and Android Devices). To download the Casambi App and access other relevant documentation please visit www.casambi.com/downloads.html.



Consult the “Short User Guide to the Casambi App” at:

<https://support.casambi.com/support/solutions/articles/12000021612-first-time-casambi-app-use>
for additional information related to setting up and using Casambi

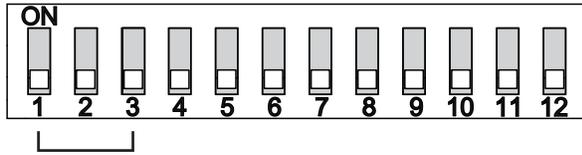


STANDARD MODE

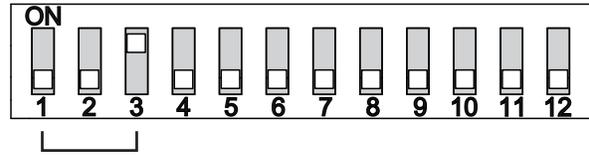
Standard Mode is a mode in the control module where colour and dimming are controlled wirelessly via Casambi. There are 4 output channels: RED, GREEN, BLUE, WHITE, each channel can handle up to a 90W load.

Choose the DIP Switch settings from the tables below to achieve the desired dimming level.

LOG MODE



LIN MODE



- Switches 1 - 3: Control Module MODE

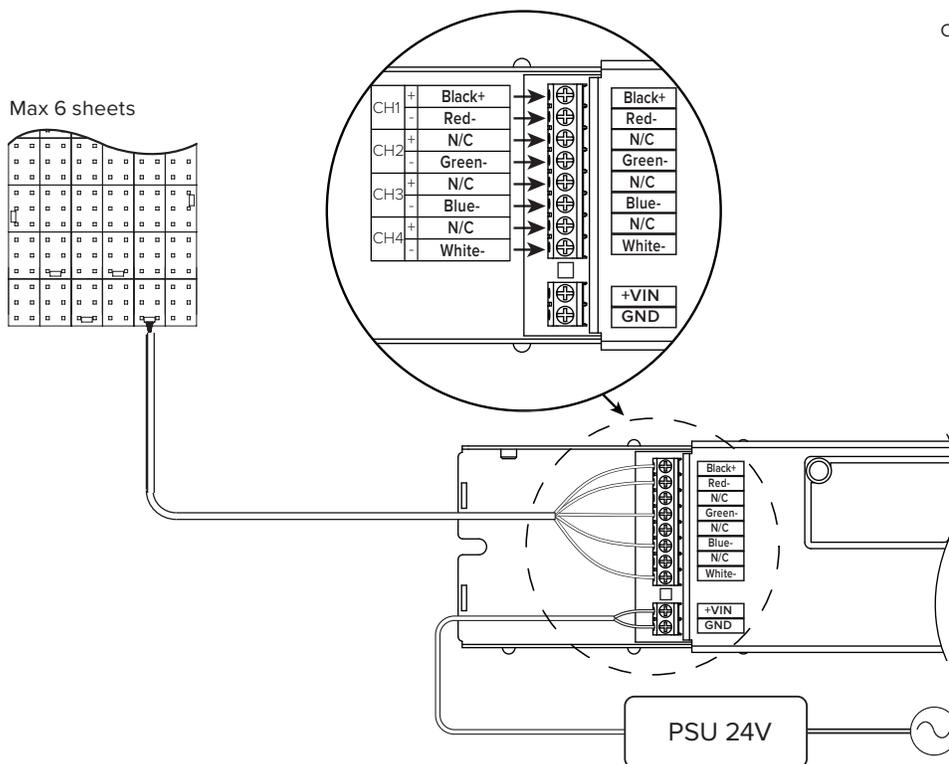
Dimming Protocol	Mode Switches 1-3 (Log)*	Mode Switches 1-3 (Linear)
Wireless SCT	0-0-0	0-0-1

*Standard.

DIP switch setting can be adjusted if another dimming curve is required. See APPENDIX A.

Warning! Changing DIP Switch Setting must be performed only after unit is powered down

OUTPUT CONNECTIONS: STANDARD MODE



Relevant Part No's:

CTR-RGBW-CAS-24V

STANDALONE MODES

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 wireless 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	MODE(Pos 1-3)	Switches 4-12	
FIXED RED LOG	1-0-0	X-X-X-X-X-X-0-0	RED channel fixed LOG
FIXED RED LIN	1-0-0	X-X-X-X-X-X-0-1	RED channel fixed LIN
FIXED GREEN LOG	1-0-0	X-X-X-X-X-X-1-0	GREEN channel fixed LOG
FIXED GREEN LIN	1-0-0	X-X-X-X-X-X-1-1	GREEN channel fixed LIN
FIXED BLUE LOG	1-0-1	X-X-X-X-X-X-0-0	BLUE channel fixed LOG
FIXED BLUE LIN	1-0-1	X-X-X-X-X-X-0-1	BLUE channel fixed LIN
FIXED WHITE LOG	1-0-1	X-X-X-X-X-X-1-0	WHITE channel fixed LOG
FIXED WHITE LIN	1-0-1	X-X-X-X-X-X-1-1	WHITE channel fixed LIN
FIXED 32 Colors With 16 Intensities	1-1-0	X-X-X-X-X-X-X-X	32 Colors = X-X-X-X-X and 16 intensities = X-X-X-X; See charts for intensities and colors (see page 12)

*DIP switch positions 1-3 are used to select one of four colors (W, R, G, B)

*DIP switch positions 11-12 are used to select one of two dimming curves (LIN, LOG)

*DIP switch positions 4-10 are used to control LED intensity % according to the selected dimming curve, shown in the Table below.

STANDALONE FIXED, RGBW: SETTINGS

LEVEL	DIP SETTING POS 4-10	LOG CURVE (%)	LIN CURVE (%)
1	0000000	0.05	0.05
2	0000001	0.21	1.15
3	0000010	0.24	1.95
4	0000011	0.24	2.73
5	0000100	0.27	3.51
6	0000101	0.27	4.31
7	0000110	0.29	5.1
8	0000111	0.32	5.87
9	0001000	0.32	6.67
10	0001001	0.35	7.46
11	0001010	0.37	8.24
12	0001011	0.4	9.03
13	0001100	0.4	9.82
14	0001101	0.43	10.6
15	0001110	0.46	11.4
16	0001111	0.49	12.18
17	0010000	0.51	12.98
18	0010001	0.54	13.75
19	0010010	0.57	14.55
20	0010011	0.58	15.33
21	0010100	0.59	16.12
22	0010101	0.62	16.91
23	0010110	0.64	17.7
24	0010111	0.67	18.48
25	0011000	0.69	19.28
26	0011001	0.72	20.05
27	0011010	0.73	20.85
28	0011011	0.76	21.64
29	0011100	0.78	22.42
30	0011101	0.81	23.2
31	0011110	0.84	24
32	0011111	0.87	24.78
33	0100000	0.92	25.58
34	0100001	0.94	26.35
35	0100010	0.98	27.15
36	0100011	1.02	27.92
37	0100100	1.06	28.72
38	0100101	1.1	29.51
39	0100110	1.15	30.3
40	0100111	1.2	31.08
41	0101000	1.23	31.88
42	0101001	1.3	32.65
43	0101010	1.34	33.45

LEVEL	DIP SETTING POS 4-10	LOG CURVE (%)	LIN CURVE (%)
44	0101011	1.4	34.22
45	0101100	1.45	35.01
46	0101101	1.51	35.81
47	0101110	1.59	36.6
48	0101111	1.66	37.37
49	0110000	1.74	38.17
50	0110001	1.8	38.95
51	0110010	1.89	39.75
52	0110011	1.98	40.53
53	0110100	2.07	41.32
54	0110101	2.17	42.1
55	0110110	2.25	42.9
56	0110111	2.37	43.68
57	0111000	2.47	44.47
58	0111001	2.61	45.25
59	0111010	2.73	46.05
60	0111011	2.87	46.83
61	0111100	3.01	47.63
62	0111101	3.16	48.4
63	0111110	3.32	49.19
64	0111111	3.48	49.97
65	1000000	3.67	50.77
66	1000001	3.85	51.55
67	1000010	4.04	52.34
68	1000011	4.24	53.12
69	1000100	4.47	53.92
70	1000101	4.71	54.7
71	1000110	4.95	55.49
72	1000111	5.2	56.27
73	1001000	5.47	57.07
74	1001001	5.76	57.85
75	1001010	6.07	58.65
76	1001011	6.39	59.42
77	1001100	6.73	60.21
78	1001101	7.1	61
79	1001110	7.47	61.8
80	1001111	7.87	62.58
81	1010000	8.3	63.38
82	1010001	8.75	64.15
83	1010010	9.21	64.95
84	1010011	9.71	65.73
85	1010100	10.24	66.51
86	1010101	10.8	67.3

LEVEL	DIP SETTING POS 4-10	LOG CURVE (%)	LIN CURVE (%)
87	1010110	11.36	68.08
88	1010111	12	68.88
89	1011000	12.65	69.67
90	1011001	13.35	70.45
91	1011010	14.07	71.24
92	1011011	14.85	72.02
93	1011100	15.65	72.82
94	1011101	16.52	73.6
95	1011110	17.43	74.4
96	1011111	18.4	75.18
97	1100000	19.4	75.98
98	1100001	20.46	76.75
99	1100010	21.6	77.54
100	1100011	22.8	78.33
101	1100100	24.06	79.12
102	1100101	25.38	79.9
103	1100110	26.8	80.7
104	1100111	28.3	81.48
105	1101000	29.85	82.28
106	1101001	31.51	83.04
107	1101010	33.25	83.84
108	1101011	35.11	84.64
109	1101100	37	85.42
110	1101101	39.13	86.21
111	1101110	41.3	86.98
112	1101111	43.6	87.77
113	1110000	46	88.56
114	1110001	48.6	89.34
115	1110010	51.3	90.14
116	1110011	54.18	90.92
117	1110100	57.2	91.71
118	1110101	60.4	92.49
119	1110110	63.8	93.28
120	1110111	67.35	94.08
121	1111000	71.1	94.88
122	1111001	75.1	95.64
123	1111010	79.28	96.44
124	1111011	83.71	97.2
125	1111100	88.4	97.97
126	1111101	93.35	98.76
127	1111110	98.58	99.53
128	1111111	100.0	100.0

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

*See next page for color settings.

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

COLOR NUMBER	COLOR	DIP SETTING POS 8-12	RED VALUE	GREEN VALUE	BLUE VALUE	WHITE VALUE
1	PINK	0-0-0-0-0	255	5	24	0
2	LIGHT PINK	0-0-0-0-1	255	22	30	0
3	VIOLET	0-0-0-1-0	129	0	104	0
4	FUCSHIA (MAGENTA)	0-0-0-1-1	162	0	41	0
5	PLUM	0-0-1-0-0	39	0	92	0
6	ORCHID	0-0-1-0-1	179	0	98	0
7	ORANGE	0-0-1-1-0	255	15	0	0
8	SALMON	0-0-1-1-1	255	19	6	0
9	CORAL	0-1-0-0-0	255	9	6	0
10	LIGHT CORAL	0-1-0-0-1	255	9	6	25
11	YELLOW	0-1-0-1-0	255	63	0	0
12	LIGHT VIOLET	0-1-0-1-1	199	0	199	79
13	OLIVE	0-1-1-0-0	0	45	8	94
14	AQUAMARINE	0-1-1-0-1	0	255	157	0
15	SPRING GREEN	0-1-1-1-0	0	245	6	24
16	LIGHT SEA GREEN	0-1-1-1-1	0	255	64	0
17	LIME GREEN	1-0-0-0-0	30	200	0	0
18	PALE GREEN	1-0-0-0-1	45	255	6	18
19	TURQUOISE	1-0-0-1-0	0	146	58	0
20	ROYAL BLUE	1-0-0-1-1	24	5	176	0
21	SKY BLUE	1-0-1-0-0	0	93	255	0
22	CYAN	1-0-1-0-1	0	255	255	0
23	POWDER BLUE	1-0-1-1-0	75	224	230	0
24	SLATE BLUE	1-0-1-1-1	106	90	205	0
25	LAVENDER	1-1-0-0-0	221	13	228	0
26	AZURE	1-1-0-0-1	0	128	255	0
27	2700K	1-1-0-1-0	161	38	0	255
28	3000K	1-1-0-1-1	79	22	0	255
29	3500K	1-1-1-0-0	39	21	4	255
30	4000K	1-1-1-0-1	16	25	16	255
31	5000K	1-1-1-1-0	0	38	42	255
32	5700K	1-1-1-1-1	0	49	58	255

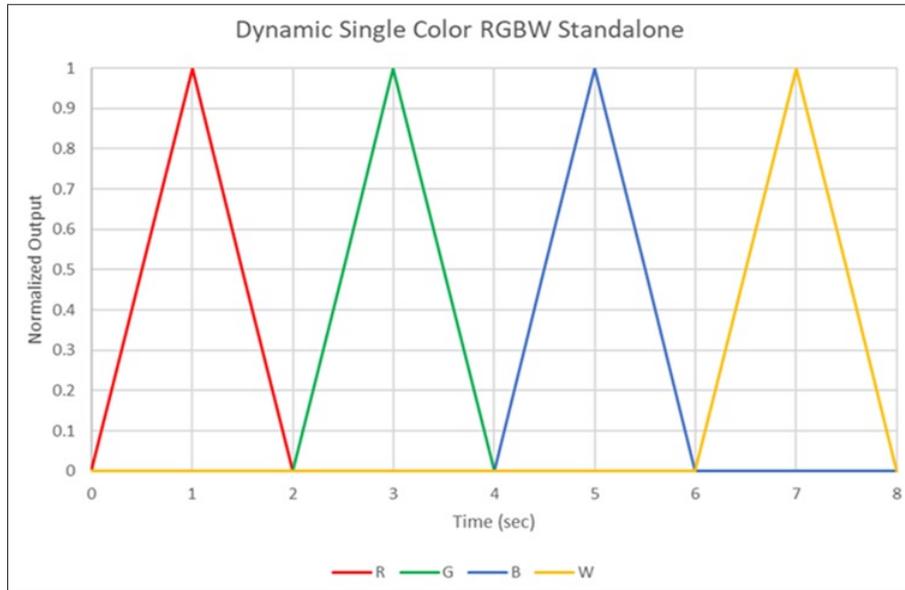
STANDALONE DYNAMIC MODES

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	MODE(Pos 1-3)	Switches 4-12
DYNAMIC Single color RGBW	1-1-1	X-X-X-X-X-X-X-0
DYNAMIC Mixed color RGBW	1-1-1	X-X-X-X-X-X-X-1

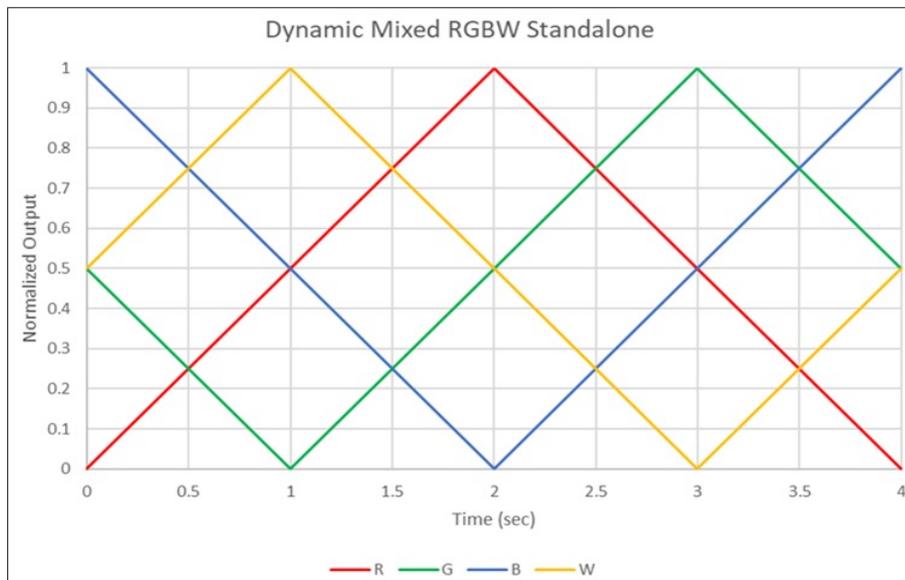
DYNAMIC SINGLE COLOR

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.

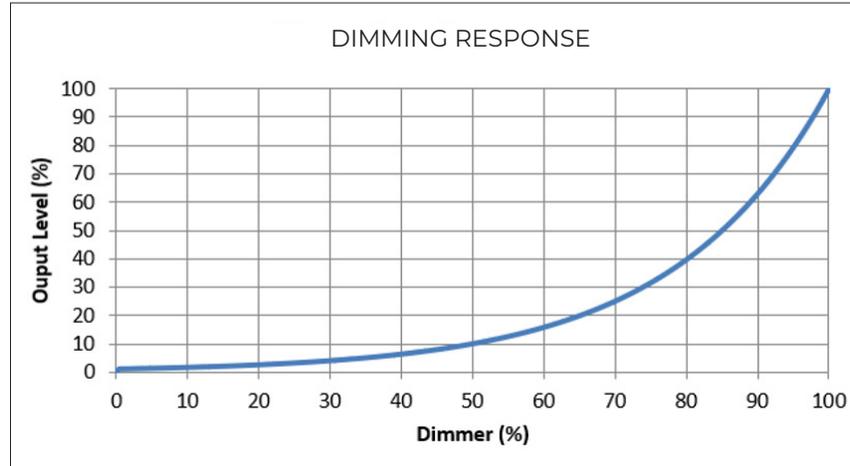


DYNAMIC MIXED COLOR

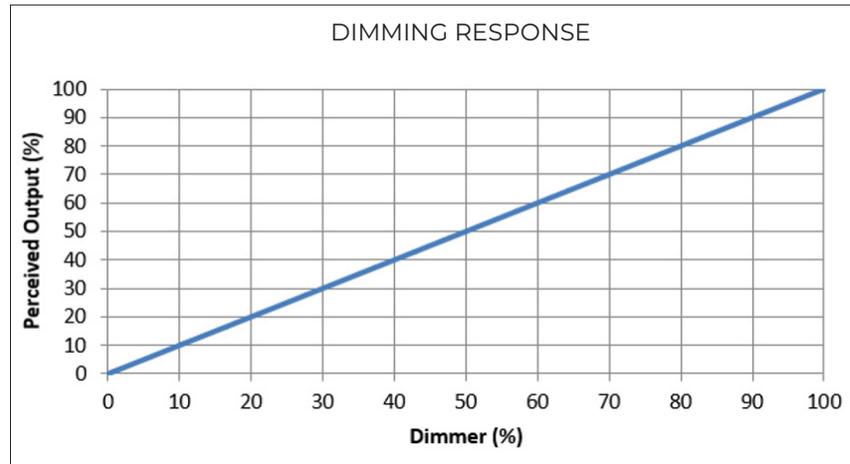
Each color output duty cycle starts from 0% and ramps linearly up to 100% output for 2s, then ramps back down to 0% for 2s. Channels start ramping with 1s delay starting with RED color and repeats indefinitely.



DIMMING CURVE FOR LOG MODE



DIMMING CURVE FOR LIN MODE



*For a 8-bit curve, the control values fall between 0-127 (Standalone Fixed RGBW, Standard).

*For a 16-bit curve, the control values fall between 0-255 (Standard).

*These curves do NOT apply to Standalone Fixed 32 Color (preset curve), or Standalone Dynamic (time-varying intensity)

*In Standalone Fixed modes, DIP switches 4-12 (or a subset thereof) determine intensity based on one of these curves. In Standard Mode, these switches are used for addressing, and the Casambi App itself is used to set intensity.

TROUBLESHOOTING

CONTROLLER STATUS	MODE	LED STATUS	LOAD BEHAVIOR
OFF (No input power)	All	OFF	OFF
Casambi Control Input Recognized	Standard	Green ON Steady	Responsive to Casambi Commands
Standalone Recognized	Standalone	Alternate Amber/Green Slow (1 Hz)	Responsive only to DIP Switch Settings
Casambi Control Input missing	All	Amber On Steady State	ALL colors at full ON, white color
Input Over Voltage	All	Amber Flashing Slow (1 Hz)	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 Casambi commands
Output short circuit between any two R,G,B,W	All	Red LED flashes at 1s rate	Color shorted is brighter, still Casambi control
Output Overload		Red LED flashes at 1s rate	Loads Flash at 1s rate
Casambi Disconnected during normal operation 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 LED

WARNING:

Each module treats the input controls available with the following priority:

1. Standalone (Fixed or Dynamic): If DIP Switch setting for one of these modes is selected, the module will ignore any other control input (Casambi, DMX) and operate according to the settings of the operational mode selected
2. Wireless (Casambi): When the wireless chip is installed in the Control Module all other inputs (DMX) are ignored even they are wired

PRODUCT SUPPORT
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