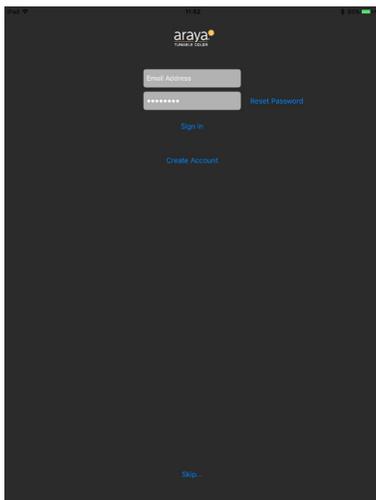
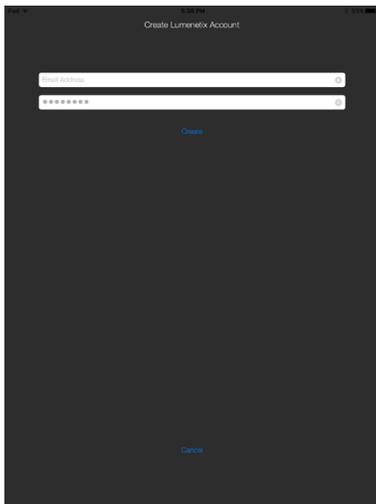


1 GETTING STARTED

Make sure that the lighting fixture is turned on.



Download the latest version of the araya⁵ 2.0 Tunable Color app from the App Store and launch it.

Login is necessary ONLY if you need to operate modules that are password-protected. If you want to keep the modules open and accessible by everyone, you need to click on the “Skip” option in the login screen, or logout if you are already logged in.

1.1 Create Account (optional)

Click on the drop-down Options Menu on the top left of the screen, and click on ‘Login’ to access the ‘Create Account’ screen. Enter a valid email address and 6-character password to create an account and log in, after which you can secure and control any Bluetooth-equipped modules “discovered” by the app that are unlocked (no bulb icon).

NOTE: The password you create will be assigned to any unlocked modules and automatically lock them with a green lock  icon.

1.2 Login with an Account (optional)

If you have already created an account, you can log in by entering your email address and your password and then pressing “OK”. You will then be able to control any modules that you have previously secured with this password (these modules will have a green lock  icon).

Modules with a magenta  icon indicate that a different password was used to lock them, and you will not be able to control these modules.

The app remembers if you have previously logged in, so there is no need to re-enter the password each time. To logout, you have to go to the Options Menu->Logout <user name>.

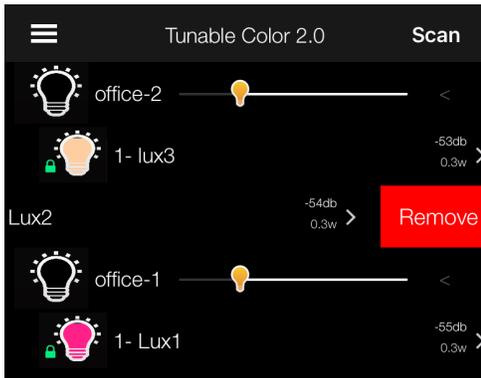
1.3 ‘Skip’ (Login without an Account)

Using this option, you can discover — but NOT control — the values of locked modules with a red  icon. This option also prevents the app from locking any open modules.

NOTE: When you log in without an account, you cannot lock open modules to prevent access by others, and some buttons on the Options menu are not available (“grayed out”) to prevent unauthorized use.

After completing one of these three startup options, click ‘Scan’ on the top right of the screen to discover modules.

2 MAIN SCREEN



The main screen lists all discovered modules or groups of modules.

In the main screen, the modules can be turned on and off by pressing and holding on the bulb icon belonging to that module. The signal strength of the Bluetooth connection is shown on the right of each module.

Clicking the '>' shown in the row will open a more detailed view. Sliding a row to the left will reveal a red 'Remove' button. This will remove the selected module from the display (until the next scan).

NOTE: The left slider icon or red 'Remove' button is not available for the parent of any group.

The inside of each module 'bulb' icon represent the color of the light as well as the dimming level. The dots around the bulb icon tell you if the module is turned on or off. If the dots are present, the module is ON; if the dots are not shown, the module is OFF.

To the left of each module's colored bulb icon, there is one of three smaller 'lock' icons: green, red, or magenta.

- If  is green, the user is logged in and the module's password matched the user's password. This module can now be controlled and commissioned by the user.
- If  is magenta, the user is logged in, but the module is locked under a different password. This module cannot be controlled unless the password that was previously used to secure the module is entered. The user won't be able to change the module name or group, nor be able to bring the group name dialog up.
- If  is red, the user is NOT logged in, but the module is password-protected and so it cannot be controlled. The user won't be able to change the module name or group, nor be able to bring the group name dialog up.
- If there is no lock icon, the user is NOT logged in and the module is 'open' (not password-protected).

Module 'Bulb' and 'Lock' Icons



If there is a larger bulb icon with a slider located above any of the module bulb icons, this means that those modules have been assigned to a group.

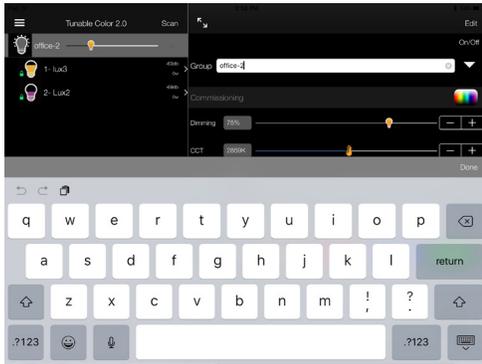
NOTE: Any changes made to the group dimming slider or the on/off dots around the group bulb icon will apply to all of the lamps in that group. At the same time, individual modules can be dimmed or controlled even if they are part of a group (including the ability to reset the password or Factory Default a single module or an entire group of modules at a time).

Simply tap on a desired module or group to launch its Commissioning Screen.

3 COMMISSIONING SCREEN

3.1 Properties Menu

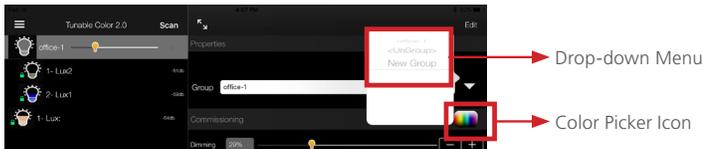
This top section of the Commissioning Screen shows the Group name field if a group is chosen, or the Module and Group name fields if a Module is chosen.



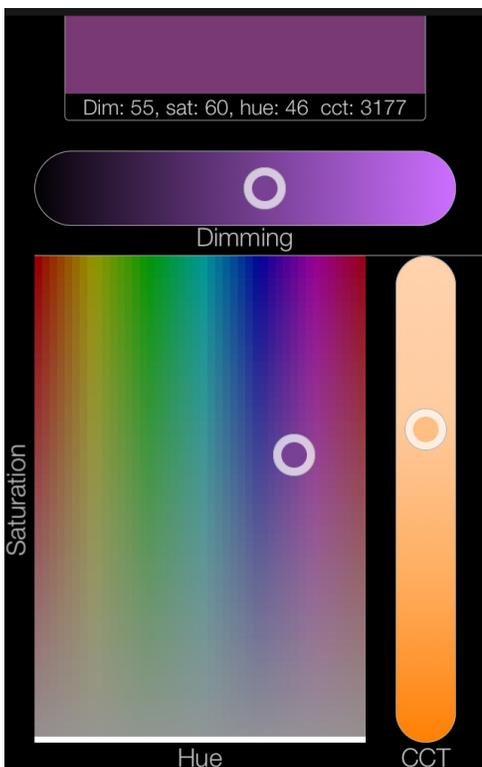
3.1.1 Module / Group Properties

The names for a chosen module and/or group are listed here. These names can be changed as needed.

The On / Off button shown on the right of the Group Name or Module Name field allows for toggling the selecting group or module on or off without going back to the Main Screen.



In addition, the arrow to the right of the Group field displays a drop-down menu that allows for the modules in the group to be moved to a different group, or to be added to a new group, or to be ungrouped again into individual modules.



3.1.2 Color Picker

Instead of clicking or sliding one at a time to choose individual values in the Commissioning section below, a color with specific Dimming/CCT/Hue/Saturation values can be visually chosen from the color picker palette. Simply slide the circle icons to the desired color value.

3 COMMISSIONING SCREEN

3.2 Commissioning Controls Menu

The module or group can be commissioned in one of three ways:

- clicking on the value field to the left of the sliders, which will display a keyboard for typing in the desired value;
- dragging the sliders left or right with numerical DMX values showing up during the sliding action;
- tapping on the -/+ buttons on the right side of the sliders.

3.2.1 Dimming

The module or the group can be dimmed from 100–1%, in increments of 1%. The dimming value is shown at the far left.

3.2.2 CCT

The CCT of an individual module or selected group of modules can be changed in increments of 25K. The CCT range of 1650 – 4000K, 2700 – 6000K, or 1650 – 8000K is automatically detected.

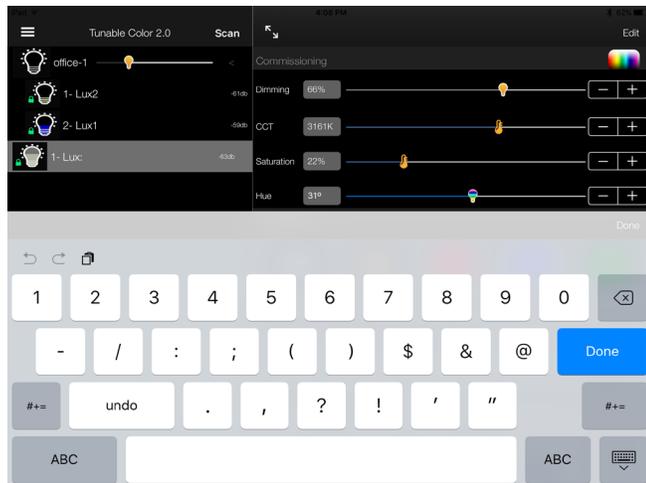
NOTE: Only modules of the same CCT range can be grouped together.

3.2.3 Saturation

Saturation adds gradients of color to a white point. Saturation can be added in increments of 1%, from 1 - 100% (fully saturated).

3.2.4 Hue

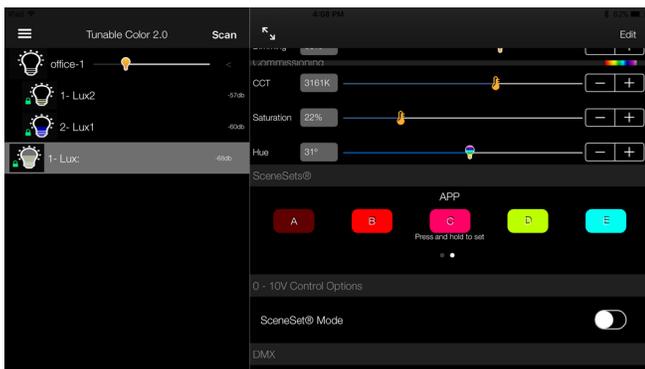
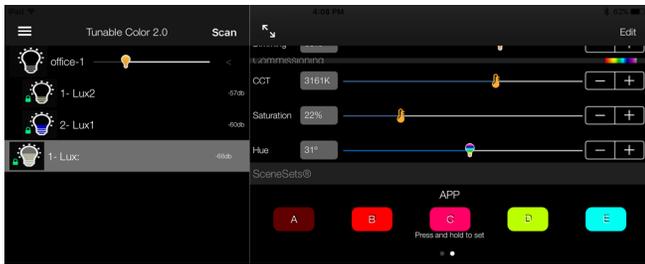
Hue enables different colors to be added to the light in increments of 1°, from 1° to 60°.



3 COMMISSIONING SCREEN

3.3 SceneSet® Options Menu

Allows up to five scenes to be programmed and recalled for a selected module or group. For Color Tuning Modules, the color of the SceneSet rectangle represents the dominant color of the selected module. For Dynamic Dimming Modules, the rectangles are depicted in shades of gray.



3.3.1 Light / Application SceneSets®

To activate SceneSet, tap on any one of the SceneSet rectangles (labeled "1", "2", "3", "4" or "5"). Commission the lamp as previously described. To save scenes, press and hold one of the SceneSet buttons until the color of the chosen SceneSet rectangle changes. The SceneSet button will then display the dominant color of the scene as a visual cue.

NOTE: Users can swipe to switch between the Light SceneSets (1-5) and the App SceneSets (A-E), or tap on the dots below the SceneSet rectangles. The App SceneSets will stay with the app regardless of the module chosen.

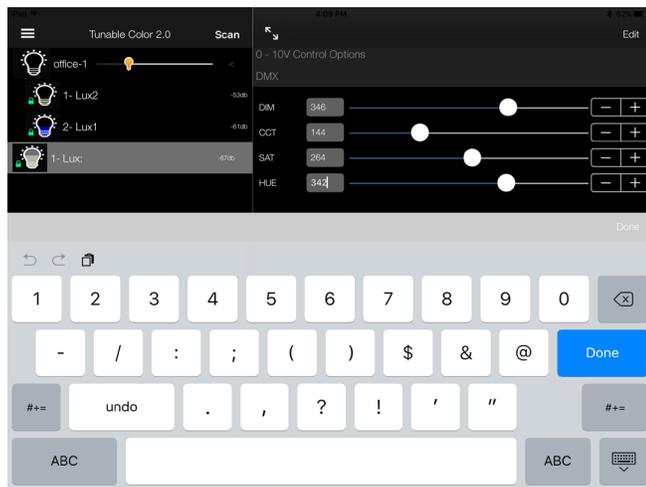
3.3.2 0 - 10V Control Option

When the lamp is connected to a 0-10V line, the default is control of Correlated Color Temperature (CCT). If desired, the 0-10V line can be set to control SceneSet by sliding the SceneSet Mode button to the "on" position. In this mode, the 0-10V control will toggle the light between up to 5 preset scenes.

3 COMMISSIONING SCREEN

3.4 DMX Slots Configuration

This feature enables the configuration of DMX channels using an iOS device. The DMX control system should first be powered OFF, and only modules that are connected to the DMX system should be powered on.



3.4.1 DMX Channel Selection Process

- On the Main Screen, select the module or group to be configured.
- Scroll to the bottom of the Commissioning Screen until the DMX Channels selection menu is visible.
- Set the four channel numbers appropriately as desired numbers between 0 and 512, either by dragging the sliders, or by clicking in the value fields and typing in the desired values, or by pressing the +/- buttons located on the right of the sliders.

3.4.2 Testing the Slot Configuration

- Power up the DMX control system.
- Apply the DMX signals to the channels set during slot configuration.



DMX Lookup Tables (8-Bit Generic)

Notes

Tunable White Options

If you want to strictly do Tunable White control with DMX, then use Channel 1 (INT) and Channel 2 (CCT).

- Channel 3 (SAT) is set at 0.
- Channel 4 (HUE) is set at 0.

If you want to play with a more saturated version of a Tunable White CCT setting, then keep Channel 4 (HUE) at 0 and use Channel 3 (SAT). As you go from 0 to 100 on Channel 3 (SAT), you are adding “ RED ” to the current CCT value, pulling it more towards red on the CIE chromaticity diagram (away from the black body curve).

Full Color Gamut Options

If you want to play with full color gamut options, you will really only be using Channel 1 (INT), Channel 3 (SAT) and Channel 4 (HUE). Channel 2 (CCT) would be set to 0. (It can be left at current value if needed in program.)

For full saturated color, Channel 3 (SAT) = 100.

- Channel 1 (INT) can be anything from 0 - 100.
- Channel 4 (HUE) will be the range of colors shown on the spreadsheet (0 = RED, 100 = RED, other colors in between for values shown).

You can go less saturated at different HUE values, but recommend that it remains at 100.

Refer to ‘DMX512-A Protocol’ section in individual data sheets for additional notes.

| % | CH1 (Hex) | CH2 (Hex) | CH3 (Hex) | CH4 (Hex) | Color | CIE Chart |
|------------|-----------|-----------|------------|-----------|--------------|------------|
| Percentage | Dim | CCT | Saturation | Hue | Center Point | Hue Values |
| 0 | 0 | 0 | 0 | 0 | RED | 0 |
| 1 | 2 | 2 | 2 | 0 | | 0 |
| 2 | 5 | 5 | 5 | 3 | | 0 |
| 3 | 7 | 7 | 7 | 6 | | 0 |
| 4 | 10 | 10 | 10 | 9 | ORANGE | 0 |
| 5 | 12 | 12 | 12 | 12 | | 3 |
| 6 | 15 | 15 | 15 | 15 | | 3 |
| 7 | 17 | 17 | 17 | 15 | | 3 |
| 8 | 20 | 20 | 20 | 18 | | 3 |
| 9 | 22 | 22 | 22 | 21 | | 3 |
| 10 | 25 | 25 | 25 | 24 | YELLOW | 6 |
| 11 | 28 | 28 | 28 | 27 | | 6 |
| 12 | 30 | 30 | 30 | 30 | | 6 |
| 13 | 33 | 33 | 33 | 33 | | 6 |

TABLE 1

CONTINUED: On next page.



DMX Lookup Tables (8-Bit Generic)

| % | CH1 (Hex) | CH2 (Hex) | CH3 (Hex) | CH4 (Hex) | Color | CIE Chart |
|------------|-----------|-----------|------------|-----------|--------------|------------|
| Percentage | Dim | CCT | Saturation | Hue | Center Point | Hue Values |
| 14 | 35 | 35 | 35 | 33 | | 6 |
| 15 | 38 | 38 | 38 | 36 | | 9 |
| 16 | 40 | 40 | 40 | 39 | | 9 |
| 17 | 43 | 43 | 43 | 42 | | 9 |
| 18 | 45 | 45 | 45 | 45 | GREEN | 9 |
| 19 | 48 | 48 | 48 | 48 | | 9 |
| 20 | 51 | 51 | 51 | 51 | | 12 |
| 21 | 53 | 53 | 53 | 51 | | 12 |
| 22 | 56 | 56 | 56 | 54 | | 12 |
| 23 | 58 | 58 | 58 | 57 | | 12 |
| 24 | 61 | 61 | 61 | 60 | | 12 |
| 25 | 63 | 63 | 63 | 63 | | 15 |
| 26 | 66 | 66 | 66 | 66 | | 15 |
| 27 | 68 | 68 | 68 | 66 | | 15 |
| 28 | 71 | 71 | 71 | 69 | | 15 |
| 29 | 73 | 73 | 73 | 72 | | 15 |
| 30 | 76 | 76 | 76 | 75 | | 18 |
| 31 | 79 | 79 | 79 | 78 | | 18 |
| 32 | 81 | 81 | 81 | 81 | | 18 |
| 33 | 84 | 84 | 84 | 84 | | 18 |
| 34 | 86 | 86 | 86 | 84 | | 18 |
| 35 | 89 | 89 | 89 | 87 | | 21 |
| 36 | 91 | 91 | 91 | 90 | | 21 |
| 37 | 94 | 94 | 94 | 93 | | 21 |
| 38 | 96 | 96 | 96 | 96 | | 21 |
| 39 | 99 | 99 | 99 | 99 | | 21 |
| 40 | 102 | 102 | 102 | 102 | | 24 |
| 41 | 104 | 104 | 104 | 102 | | 24 |
| 42 | 107 | 107 | 107 | 105 | | 24 |
| 43 | 109 | 109 | 109 | 108 | | 24 |

TABLE 2

IMPORTANT: Please refer to notes on Page 1. Refer to “DMX512-A Protocol” section in individual data sheets for additional notes.

CONTINUED: On next page.



DMX Lookup Tables (8-Bit Generic)

| % | CH1 (Hex) | CH2 (Hex) | CH3 (Hex) | CH4 (Hex) | Color | CIE Chart |
|------------|-----------|-----------|------------|-----------|--------------|------------|
| Percentage | Dim | CCT | Saturation | Hue | Center Point | Hue Values |
| 82 | 209 | 209 | 209 | 207 | | 48 |
| 83 | 211 | 211 | 211 | 210 | | 48 |
| 84 | 214 | 214 | 214 | 213 | | 48 |
| 85 | 216 | 216 | 216 | 216 | | 51 |
| 86 | 219 | 219 | 219 | 219 | | 51 |
| 87 | 221 | 221 | 221 | 219 | | 51 |
| 88 | 224 | 224 | 224 | 222 | | 51 |
| 89 | 226 | 226 | 226 | 225 | | 51 |
| 90 | 229 | 229 | 229 | 228 | | 54 |
| 91 | 232 | 232 | 232 | 231 | | 54 |
| 92 | 234 | 234 | 234 | 234 | | 54 |
| 93 | 237 | 237 | 237 | 237 | | 54 |
| 94 | 239 | 239 | 239 | 237 | | 54 |
| 95 | 242 | 242 | 242 | 240 | VIOLET | |
| 96 | 244 | 244 | 244 | 243 | | 57 |
| 97 | 247 | 247 | 247 | 246 | | 57 |
| 98 | 249 | 249 | 249 | 249 | | 57 |
| 99 | 252 | 252 | 252 | 252 | | 57 |
| 100 | 255 | 255 | 255 | 255 | RED | 60 |

TABLE 3

IMPORTANT: Please refer to notes on Page 1. Refer to “DMX512-A Protocol” section in individual data sheets for additional notes.

CONTINUED: On next page.



DMX Lookup Tables (8-Bit Generic)

| % | CH1 (Hex) | CH2 (Hex) | CH3 (Hex) | CH4 (Hex) | Color | CIE Chart |
|------------|-----------|-----------|------------|-----------|--------------|------------|
| Percentage | Dim | CCT | Saturation | Hue | Center Point | Hue Values |
| 44 | 112 | 112 | 112 | 111 | | 24 |
| 45 | 114 | 114 | 114 | 114 | | 27 |
| 46 | 117 | 117 | 117 | 117 | | 27 |
| 47 | 119 | 119 | 119 | 117 | | 27 |
| 48 | 122 | 122 | 122 | 120 | | 27 |
| 49 | 124 | 124 | 124 | 123 | | 27 |
| 50 | 127 | 127 | 127 | 126 | | 30 |
| 51 | 130 | 130 | 130 | 129 | | 30 |
| 52 | 132 | 132 | 132 | 132 | | 30 |
| 53 | 135 | 135 | 135 | 135 | | 30 |
| 54 | 137 | 137 | 137 | 135 | | 30 |
| 55 | 140 | 140 | 140 | 138 | | 33 |
| 56 | 142 | 142 | 142 | 141 | | 33 |
| 57 | 145 | 145 | 145 | 144 | | 33 |
| 58 | 147 | 147 | 147 | 147 | | 33 |
| 59 | 150 | 150 | 150 | 150 | | 33 |
| 60 | 153 | 153 | 153 | 153 | | 36 |
| 61 | 155 | 155 | 155 | 153 | | 36 |
| 62 | 158 | 158 | 158 | 156 | | 36 |
| 63 | 160 | 160 | 160 | 159 | | 36 |
| 64 | 163 | 163 | 163 | 162 | | 36 |
| 65 | 165 | 165 | 165 | 165 | | 39 |
| 67 | 170 | 170 | 170 | 168 | | 39 |
| 68 | 173 | 173 | 173 | 171 | BLUE | 39 |
| 69 | 175 | 175 | 175 | 174 | | 39 |
| 70 | 178 | 178 | 178 | 177 | | 42 |
| 71 | 181 | 181 | 181 | 180 | | 42 |
| 72 | 183 | 183 | 183 | 183 | | 42 |
| 73 | 186 | 186 | 186 | 186 | | 42 |
| 74 | 188 | 188 | 188 | 186 | | 42 |
| 75 | 191 | 191 | 191 | 189 | | 45 |
| 76 | 193 | 193 | 193 | 192 | | 45 |
| 77 | 196 | 196 | 196 | 195 | | 45 |
| 78 | 198 | 198 | 198 | 198 | | 45 |
| 79 | 201 | 201 | 201 | 201 | | 45 |
| 80 | 204 | 204 | 204 | 204 | | 48 |
| 81 | 206 | 206 | 206 | 204 | | 48 |

TABLE 4

IMPORTANT: Please refer to notes on Page 1. Refer to “DMX512-A Protocol” section in individual data sheets for additional notes.