Kessil

LED Aquarium Lighting

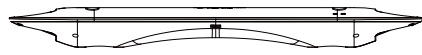# AP9 X

USER MANUAL

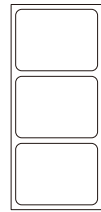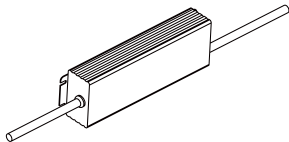# TABLE OF CONTENT

INSIDE THE BOX

AP9X

Kessil Sticker

Warranty Card

QR Code Stickers
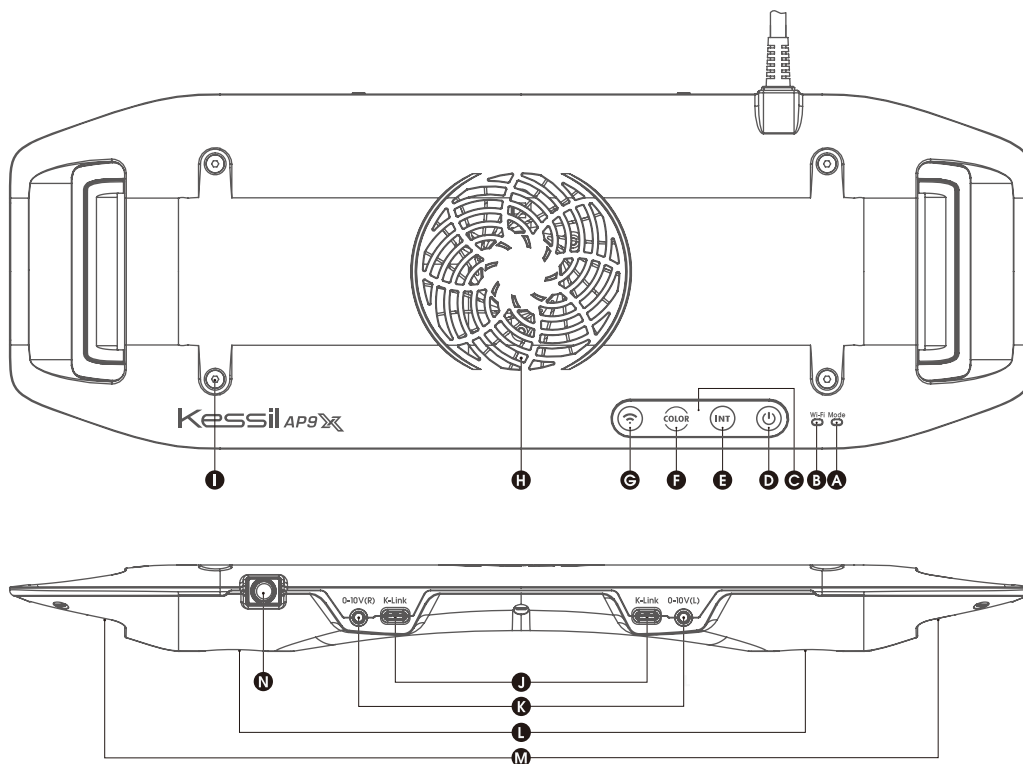(This is for wireless connection process, please SAVE these stickers)

Power Adapter

AC Adapter Cable
(Plug type varies from country to country)

Screw Hook &
Hanging Bracket x4

PARTS DIAGRAM

Kessil AP9X

A   Mode Indicator

B   Wi-Fi Indicator

C   Touch Panel - Touch once to activate

D   Power - Turn the AP9X on or off.

E   Intensity - Adjust the intensity of the light.

F   Color - Adjust the color of the light.

G   Wi-Fi - Turn on/off the Wi-Fi signal.

H   Fan (Air Inlet)

I   Screw Holes - For AP9X Mounting Arm / Hanging Kit / Brackets

J   K-Link Ports

K   0-10V Output Ports

L   LED Arrays + Reflectors

M   Vents (Air Outlet)

N   Power Cord

1

INSTALLATION

Power Cord
(9.2ft / 2.8m)

Power Adapter

Adapter Cable (5.9ft / 1.8m)
(Plug type varies from country to country)

Booting   After booting

Wi-Fi Mode

Wi-Fi Mode

Wi-Fi OFF   Wi-Fi ON

Wi-Fi Mode

Wi-Fi Mode

COLOR   INT
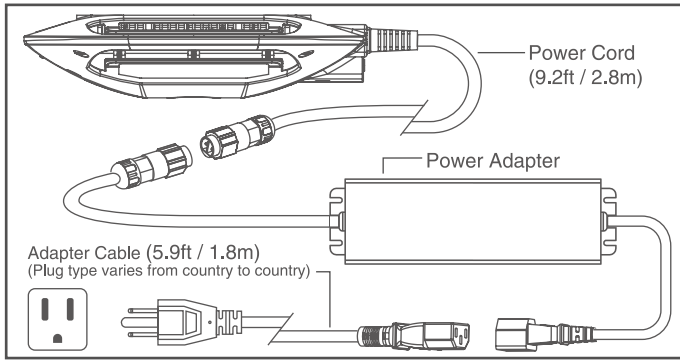
Step 1 Power

Connect the AP9X to the Power Adapter and plug it into a wall outlet. The Wi-Fi Indicator (B) will be *solid purple* to indicate booting mode (it may take up to 40 seconds).
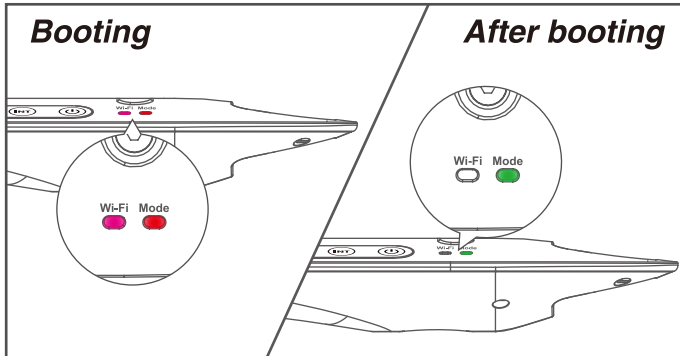
Step 2 Booting

The AP9X requires up to 40 seconds to boot. The Wi-Fi Indicator (B) will first show *solid purple* light, and then disappear. The Mode Indicator (A) will then show *solid green* light.

* The light will be turned on automatically. DO NOT place the AP9X on any object.
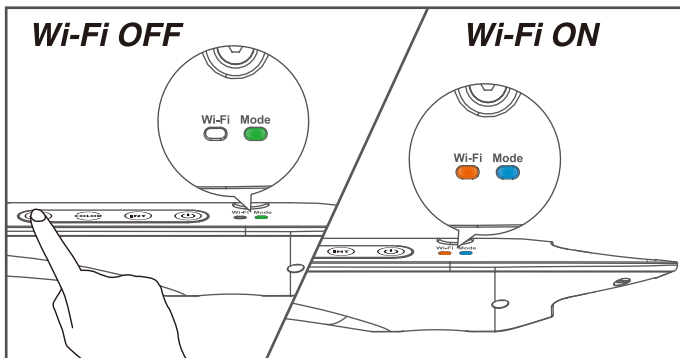
Step 3 Turn On Wi-Fi for App Connection

Touch and hold the Wi-Fi (G) button for 3 seconds to turn on Wi-Fi signal. Do the same to turn off Wi-Fi signal.
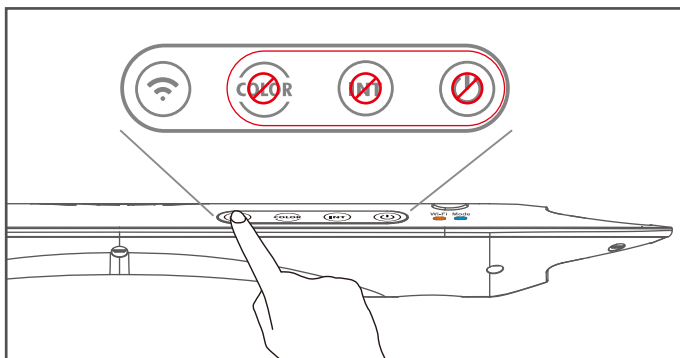
NOTE Control Buttons Disabled

When the Wi-Fi of AP9X is turned on (Wi-Fi indicator is ON), control buttons are disabled. Turn off Wi-Fi (press "Wi-Fi" (G) button for 3 seconds) for manual control on touch panel.

CONNECTION

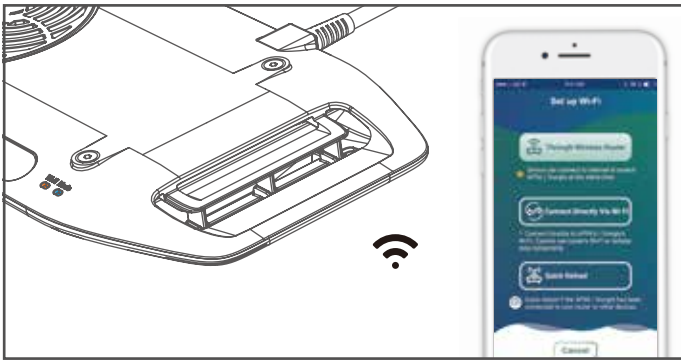**Step 1** **Download "Kessil WiFi" App**

Download the "Kessil WiFi" app* in App Store or Google Play Store.

* Only supports iOS 10.0 or above and Android 5.0 or above

Step 2 **Connection**

Open the "Kessil WiFi" app and follow the instructions in the app to connect to AP9X. You will need the QR Code Sticker provided in the package. **If you wish to enter the password manually, the password is reverse of the S/N of the AP9X (capital letter matters).**
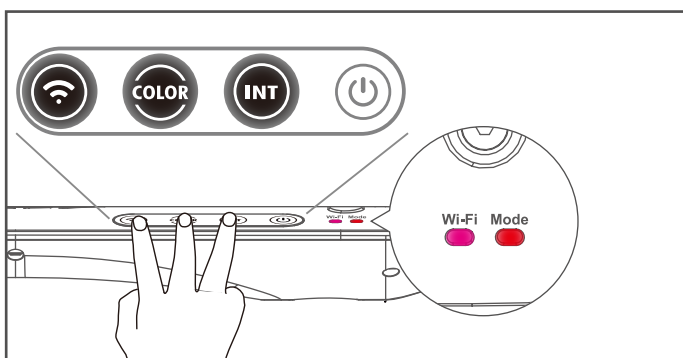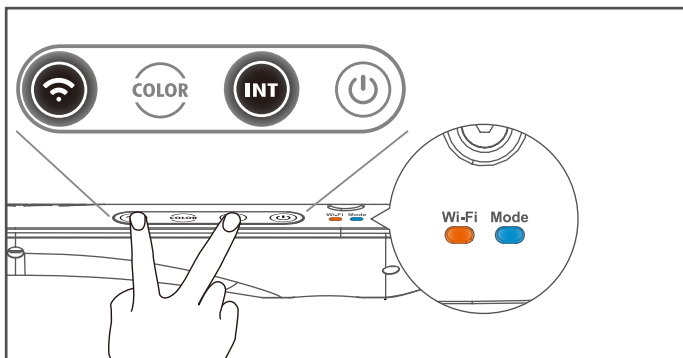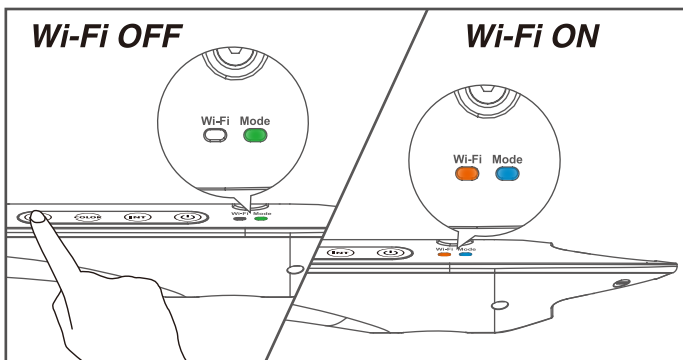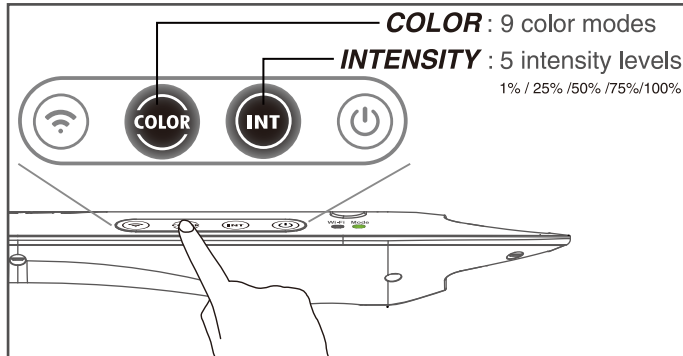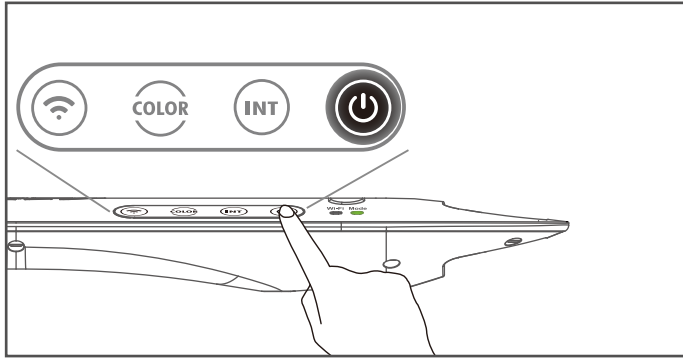
Step 3 **Set up More AP9X**

If you have more AP9Xs, choose "Set up Additional AP9X". Choose "Done" if you complete the setup.

TOUCH PANEL
Touch the Touch Panel (C) once to activate

● Turn On/Off the AP9X

Touch the Power (D) button to turn on/off the AP9X. When the AP9X is off, the Power (D), Intensity (E), or Color (F) buttons can be used to turn on the AP9X.

COLOR : 9 color modes
INTENSITY : 5 intensity levels
1% / 25% /50% /75%/100%

● Manual Control

Touch the Intensity (E) button and Color (F) button to adjust the intensity and color of the AP9X. Intensity levels and color modes are in cycles.

Wi-Fi OFF   **Wi-Fi ON**

Wi-Fi   Mode

Wi-Fi   Mode

● Turn On Wi-Fi for App Connection

Touch and hold the Wi-Fi (G) button for 3 seconds to turn on Wi-Fi signal. Do the same to turn off Wi-Fi signal.

Wi-Fi   Mode

● Reset the AP9X Wi-Fi Configuration

Touch and hold the Intensity (E) & Wi-Fi (G) buttons simultaneously for 3 seconds to reset the Wi-Fi configuration (i.e. to reconnect). The Mode indicator (A) will first disappear and then **blink red** at 3 seconds. User's settings will not be deleted. The Wi-Fi Indicator (B) will change to **solid orange**.

● Factory Reset the AP9X

Wi-Fi   Mode

Touch and hold the Intensity (E), Color (F) & Wi-Fi (G) buttons simultaneously for more than 10 seconds to reset the AP9X. The Mode indicator (A) will first disappear and then **blink red** at 10 seconds. User's settings will be deleted. The Wi-Fi indicator (B) will be **solid purple** to indicate booting mode (may take up to 40 seconds) - See INSTALLATION Step 2.

WI-FI INDICATOR STATES

		Wi-Fi_AP Mode (Allow other Wi-Fi devices to connect to itself)	Wi-Fi_STA Mode (To connect to a wireless router or master Kessil Wi-Fi enabled products)
Wi-Fi ON	Booting	Solid Purple	Solid Purple
	Standby / No Connection	Solid Orange	Solid Red
	Connected	Solid Blue	Solid Green
Wi-Fi OFF		No Light	No Light

Solid Purple

The AP9X requires up to 40 seconds to boot. The AP9X Wi-Fi Indicator (B) will show **solid purple** light.

Solid Orange

Standby mode, ready to be connected.

Solid Blue

AP mode. Successfully connected to mobile device and act as the master (through "Connect Directly Via Wi-Fi").

Solid Red

Attempting to connect. If it stays for more than 3 minutes, reset AP9X's WiFi configuration (Touch and hold the Intensity (E) & Wi-Fi (G) buttons simultaneously for 3 seconds) and add the AP9X in the app again.

Solid Green

STA mode. Successfully connected to wireless router or to a master Kessil Wi-Fi enabled product as slave.

Blinking Green

When updating the AP9X's firmware through Kessil WiFi app, the Wi-Fi Indicator (B) will **blink green** light.

MODE INDICATOR STATES

	Mode
Booting	Solid Red
Control buttons enabled	Solid Green
Control buttons disabled	Solid Blue

Solid Green

Control buttons enabled. Able to control other K-Link daisy-chained fixtures.

Solid Blue

Control buttons disabled when the Wi-Fi of AP9X is turned on or when there is a K-Link signal input (e.g. Spectral Controller X).
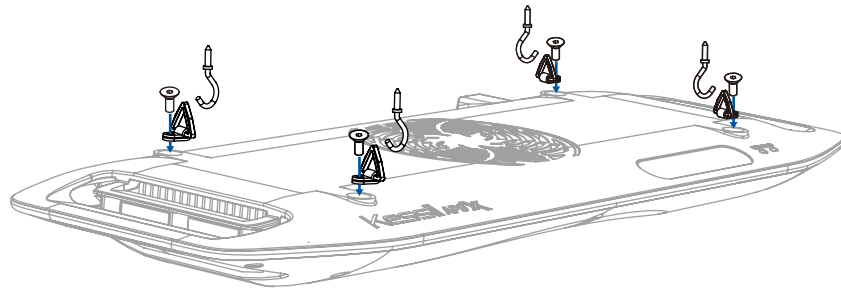
Solid Red

The AP9X requires up to 40 seconds to boot. The AP9X Mode Indicator (A) will show **solid red** light.

Blinking Red

Error mode. One of the main causes is signal collision, touch and hold the Wi-Fi (G) button for 3 seconds to turn off Wi-Fi signal.

MOUNTING

- Hang the light with the four Screw Hooks and the four Hanging Brackets.
- To install the Hanging Brackets, remove the screws on the AP9X, use the same screws to secure the fasteners with triangular rings (Hanging Brackets) onto the light fixture.

CONTROLLING MULTIPLE K-LINK & 0-10V FIXTURES
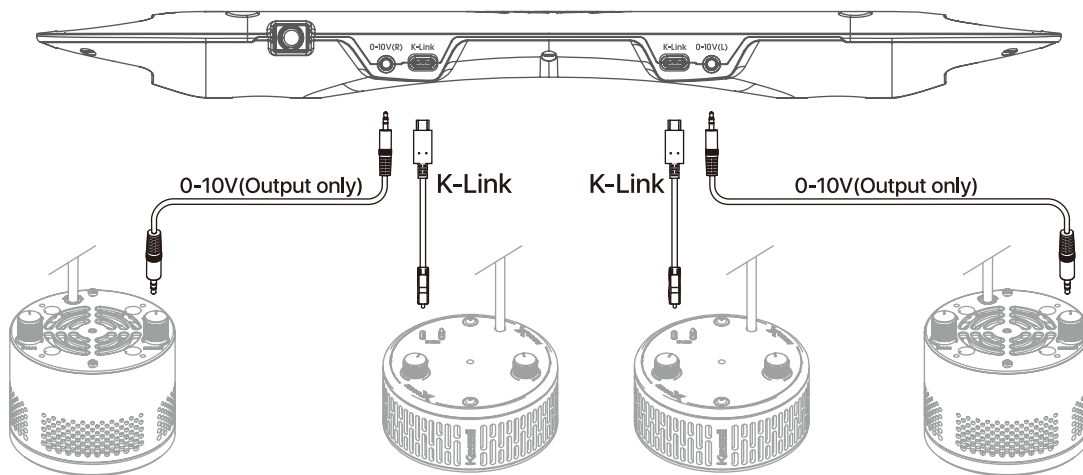
- Two K-Link ports (J): Connect and control multiple X-series K-Link fixtures using "Kessil WiFi" app and K-Link Cables. When connecting Kessil Wi-Fi enabled products, make sure to turn off the Wi-Fi signal of the slave fixtures. When controlling them (Tuna Blue only) manually, tuning controls on any light control all other lights in chain.
- Two 0-10V Output ports (K): Connect and control multiple 0-10V fixtures using "Kessil WiFi" app.

AP9X DAISY-CHAIN SCENARIO
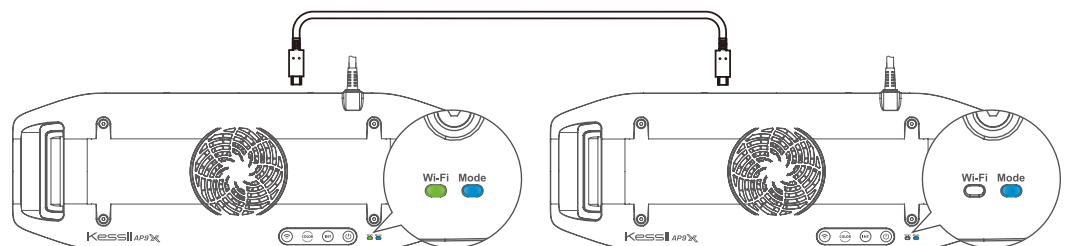
Multiple AP9X (up to 32 K-Link fixtures) can be connected using "Kessil WiFi" app and K-Link Cables. Only the master AP9X should have Wi-Fi signal turned on (Wi-Fi indicator (B) is ON), Wi-Fi signal on the other fixtures should be OFF.

Mode Indicator (A) will be **solid blue** and control buttons are disabled.

CONTROLLED BY SPECTRAL CONTROLLER X

Slave: Control buttons (C) are disabled
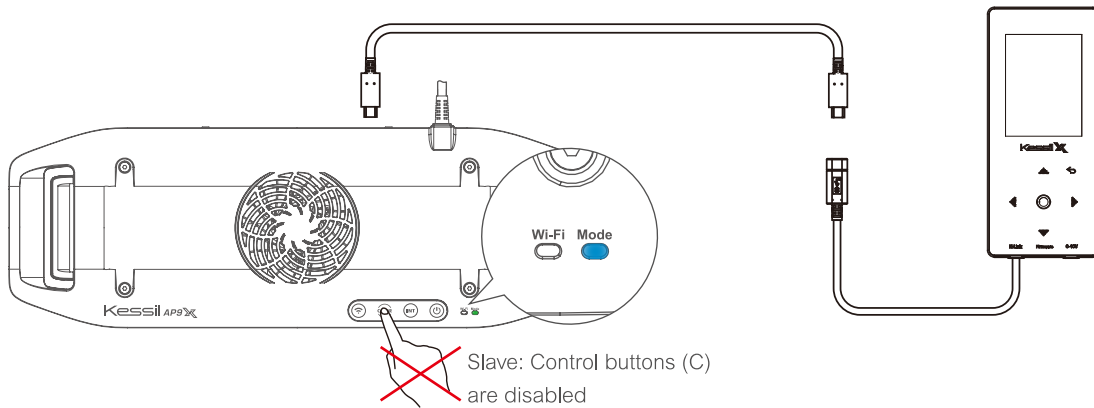
- AP9X can be connected and controlled through Kessil Spectral Controller X with a K-Link Cable.
- The AP9X control buttons will be disabled.

MAINTENANCE

1. Keep the Fan (Air Inlet) (H) and Vents (Air Outlet) (M) clear of dust. To clean the fan, unplug the unit and insert the tip of a CO2 dust blower (or similar dust blower) in one of the venting holes for the Fan (Air Inlet) (H). Hold and spray. You can also gently vacuum out the dusts through the venting holes.
2. Keep the LED Arrays + Reflectors (L) clean. If the array lenses and reflectors become contaminated with water, dust, or other particles, unplug the unit and clean them with isopropyl alcohol. Wet a cotton swab or a napkin in isopropyl alcohol, gently wipe the surface, and let it dry.
3. Keep plastic covers for K-Link Ports (J) and 0-10V Output Ports (K) plugged in when the ports are not in use. Keep the ports clean all-time.

TROUBLESHOOTING GUIDE

Please make sure to perform maintenance before doing any troubeshooting.

Problem	Cause / Solution
Light doesn't turn ON	Make sure the unit is connected to the power adapter and the power adapter is plugged into an outlet with the correct specifications.
	Make sure the power adapter has the right specifications.
	Make sure electrical power is available to the AC outlet being used.
	Make sure the device is operating within the specified operating temperature range. If unit overheats, it will automatically shut down.
Unit is flickering	Make sure the power adapter has the right specifications.
	Make sure the unit has not overheated by operating at a room temperature above 100°F/40°C.
	Make sure the fan is operating properly.

SAFETY INSTRUCTIONS

1. Caution: Misuse of this device contrary to these instructions may result in physical injury or damage to the product.

2. **DO NOT** use a power adapter outside of the specifications. This is a fire hazard and may lead to unit failure.

3. **DO NOT** use outdoors. This unit is intended for indoor use only.

4. **DO NOT** expose unit to an extremely humid environment or submerse unit in water. This may lead to unit failure.

5. **DO NOT** place working illuminator in close contact with any objects. This may cause objects to heat up and the unit to overheat.

6. **KEEP** LED Arrays + Reflectors (L) away from sharp objects. Sharp objects may break the array lens and lead to unit failure.

7. **DO NOT** cover or place objects on the power adapter. Power adapter should not be contained in an airtight space.

8. **DO NOT** block or cover the Fan (Air Inlet) (H) or Vent (Air Outlet) (M). This may cause the device to overheat and lead to failure.

9. **ENSURE** that the light is correct and securely mounted.

INSTRUCTIONS DE SECURITE

1. Attention: Une mauvaise utilisation de cet appareil contrairement à ces instructions peut entraîner des blessures ou endommager le produit.

2. N'UTILISEZ PAS d'adaptateur secteur en dehors des spécifications. Il s'agit d'un risque d'incendie et peut entraîner une panne de l'unité.

3. NE PAS utiliser à l'extérieur. Cet appareil est destiné à une utilisation en intérieur uniquement.

4. N'exposez PAS l'appareil à un environnement extrêmement humide et ne l'immergez pas dans l'eau. Cela peut entraîner une panne de l'unité.

5. NE placez PAS l'illuminateur de travail en contact étroit avec des objets. Cela peut provoquer une surchauffe des objets et une surchauffe de l'appareil.

6. Gardez la matrices LED + le réflecteurs (L) loin des objets pointus. Des objets tranchants peuvent briser la lentille du réseau et entraîner une défaillance de l'unité.

7. NE PAS couvrir ni placer d'objets sur l'adaptateur secteur. L'adaptateur secteur ne doit pas être contenu dans un espace hermétique.

8. NE PAS bloquer ou couvrir le ventilateur (entrée d'air) (H) ou l'évent (sortie d'air) (M). Cela peut entraîner une surchauffe de l'appareil et entraîner une panne.

9. ASSUREZ-VOUS que la lumière est correcte et solidement montée.

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, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect the equipment into an outlet on a circuit different from thatto which the receiver is connected.

• Consult the dealer or an experienced radio/TV technician for help.

FCC Caution:

• Any changes or modifications not expressly approved by the party responsible for compliance could void the user's

   authority to operate this equipment.

• This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance of 8 inches (20cm) between the radiator & your body.

SPECIFICATIONS

Unit Dimensions and Weight		
Dimensions	16.46" x 5.71" x 1.42" (418mm x 145mm x 36mm)	
Weight	2.29 lbs (1.04 kg)	
Illuminator	Power Adapter	
Power Consumption	185W maximum	Input	100-240V~ AC 50-60 Hz
Input Voltage	48V DC $\pm$ 5%	Output	48V DC, maximum 4.2A
Wi-Fi Module		
Operating Frequency	IEEE 802.11b/g/n(2.4GHz) & IEEE 802.11a/ac(5GHz)	
Network Encryption Type	WPA-PSK / WPA2-PSK (Do not support WEP, WPA-Enterprise, WPA2-Enterprise, and Monitor Mode.)	

kessil.led   kessiltube   @kessil   @kessilled   kessil.com

IOTA USER GUIDE
Control of Kessil A360X and AP9X lighting with APEX

CONTENTS

INTRODUCTION

This guide will assist you in setting up Kessil A360X Tuna Sun™, A360X Tuna Blue™, and AP9X™ LED lighting fixtures to be controlled by an Apex controller system. The A360X Refugium™ and A500™ models are not currently supported.

In this guide, you will see references to IoTa and IOTA. IoTa is an acronym of *Internet of Things: Aquarium*. IoTa is the name of an initiative created by Neptune Systems to standardize and facilitate development of Apex control of Internet-connected aquarium equipment such as the Kessil A360X™ and AP9X™ LED lights.

REQUIREMENTS

- An Apex or ApexEL is required; this capability is not available in Apex Classic models, which include the Apex Classic, Apex Gold, Apex Lite, and Apex Jr.
- The Apex must have AOS version 5.06_7F21 (or later) installed.
- The Apex must be connected to the local network via Wi-Fi or Ethernet.
- The Kessil LED lights which will be directly controlled by the Apex must be connected over Wi-Fi to the same network as the Apex.

SYSTEM ARCHITECTURE

- Kessil A360X Tuna Blue and Tuna Sun lights equipped with a WiFi Dongle may be directly controlled by the Apex.
- Kessil A360X lights *of the same model (Tuna Sun or Tuna Blue)* which are not equipped with a WiFi Dongle may be connected to an A360X controlled by an Apex by using a K-Link cable; additional A360X without WiFi Dongles may be daisy-chained with K-Link. If the Kessil lights are connected this way, the daisy-chain lights will mirror the light being controlled by the Apex.
- Kessil AP9X lights in Apex-controlled mode will be directly controlled by the Apex.
- Kessil AP9X lights not in Apex-controlled mode may be connected to an AP9X controlled by an Apex by using a K-Link cable; additional AP9X may be daisy-chained with K-Link.
- Each IoTa device being directly controlled by an Apex counts as an Apex module and is subject to the Apex limit of 49 modules.

Do not mix light models and variants of the same model in the same K-Link chain.

🚫 Do not link AP9X and A360X with Wi-Fi Dongle together using K-Link.

🚫 Do not link A360X Tuna Sun and A360X Tuna Blue lights together using K-Link.

If you have multiple lights of the same model and type, and you wish to control all lights together with the same lighting schedule, then only one AP9X or one WiFi Dongle-equipped A360X should be in Apex-controlled mode, and other lights be daisy-chained from that light. This configuration offers simplicity; only the Apex-controlled light needs to have a lighting schedule assigned in the Apex; the other lights will automatically follow that same schedule.
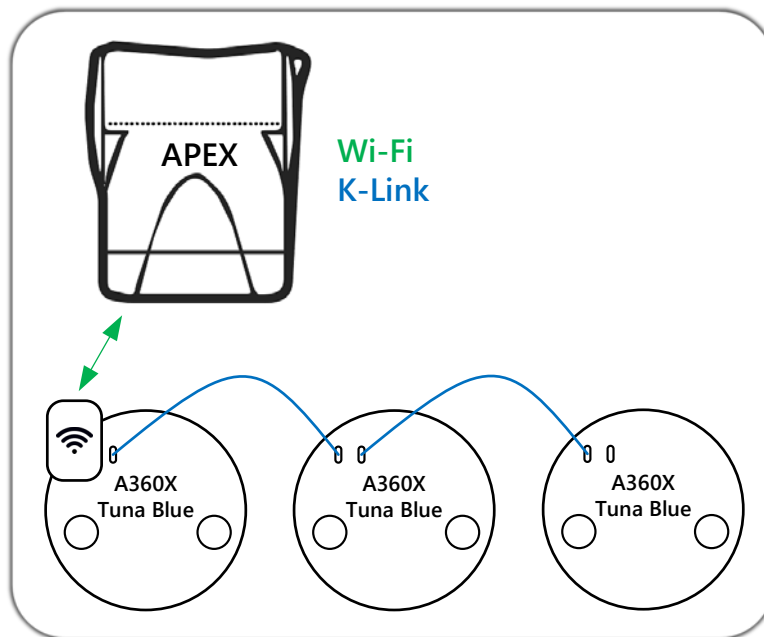
Apex controlling a K-Link chain of A360X
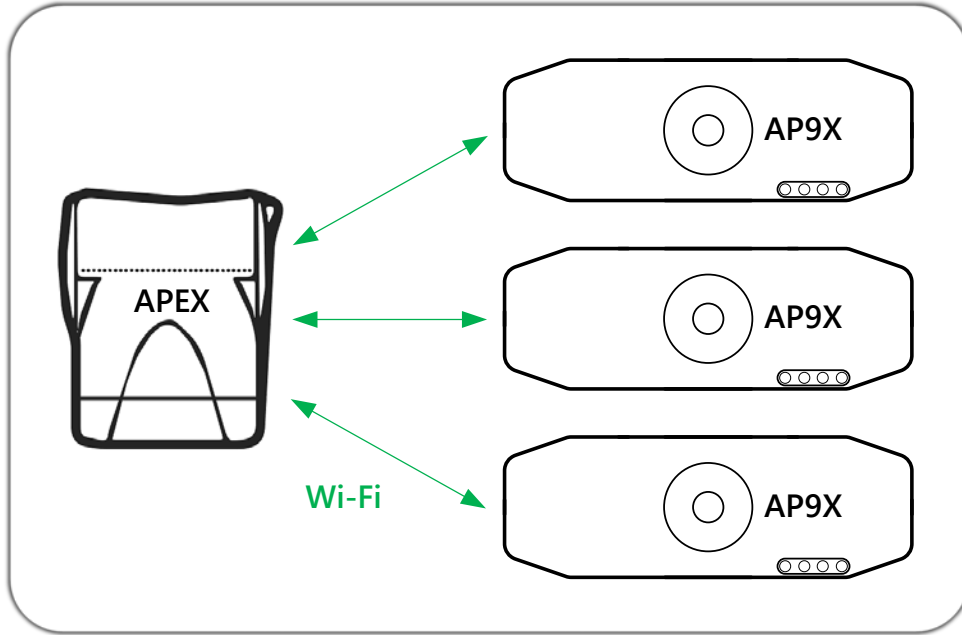
Apex controlling a K-Link chain of AP9X

If you have multiple lights of the same model and type (A360X Tuna Sun or A360X Tuna Blue), and you wish to control each light independently, each light must have a dongle and each should be configured in Apex-controlled mode. This offers the most flexibility, but the lighting schedule for each light must be set separately.
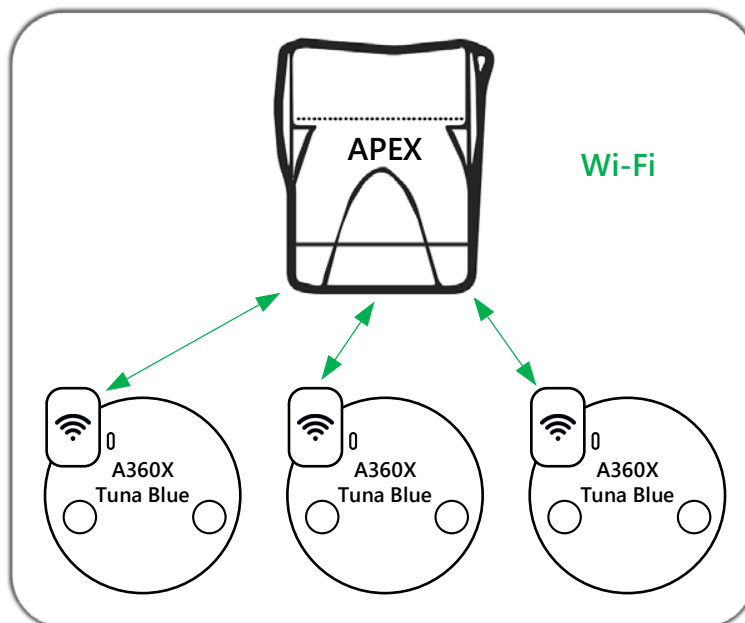
Apex independently controlling three A360X
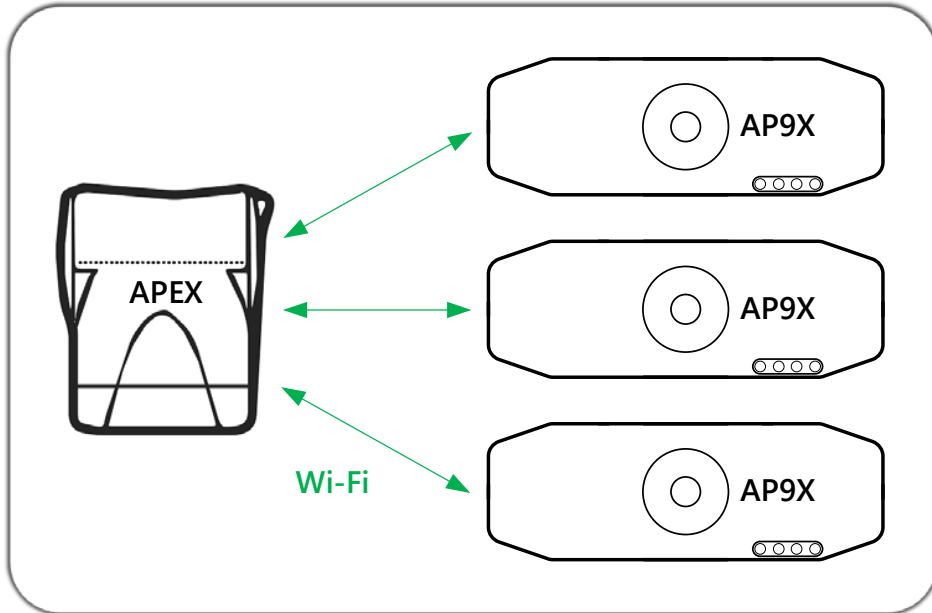
Apex independently controlling three AP9X

If you have both AP9X lights and A360X lights, you may control each light individually, or you may form two chains of K-Linked lights of the same model.
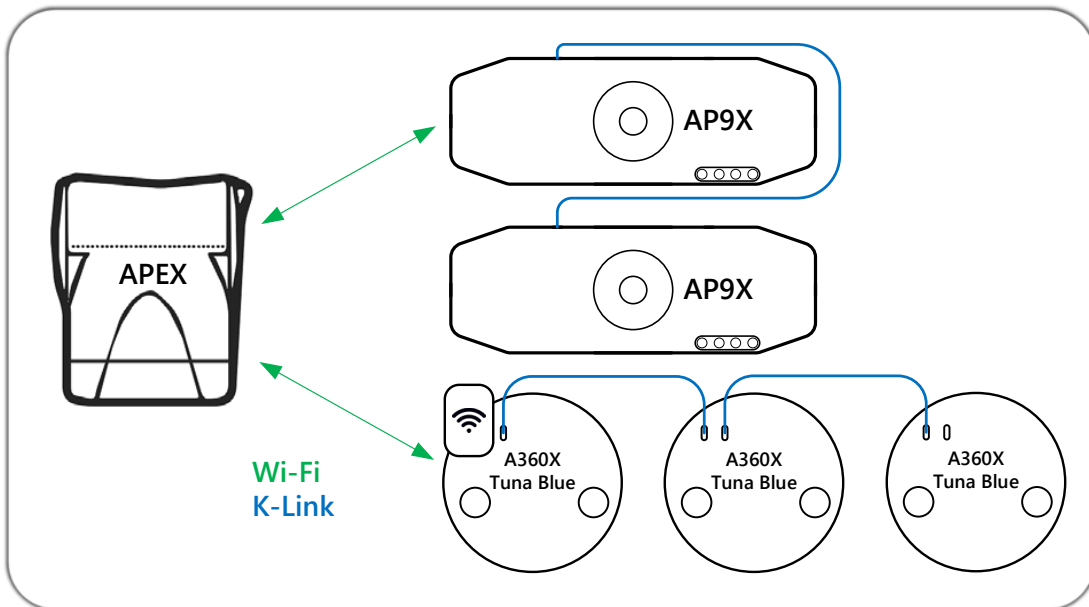
Apex controlling chains of both AP9X and A360X

The Apex supports a maximum of 12 IoTa devices of any type, which includes:

- Kessil A360X equipped with a WiFi Dongle and configured in Apex control mode
- Kessil AP9X configured in Apex control mode
- AquaIllumination Prime, Prime HD, Hydra 26HD, and Hydra 52HD under Apex control
- Sicce Syncra SDC™ pumps and XStream SDC™ pumps which have been upgraded for IoTa and Apex control

This limit applies to all IoTa devices on the local wireless network; there can be no more than 12 present.

Examples:

1. You have (6) A360X equipped with WiFi Dongles, (2) Sicce Syncra SDC pumps, and (2) Sicce XSstream SDC power heads. This is a total of 12 IoTa devices, and all of these devices may be controlled by a single Apex, or some may be controlled by one Apex, and other controlled by another Apex.

2. You have (6) A360X equipped with WiFi Dongles, (2) AP9X, (2) Sicce Syncra SDC pumps, and (2) Sicce XStream SDC power heads. This is a total of 14 devices, which exceeds the limit of 12. To reduce the number of devices present on the network, use K-Link cables to daisy-chain the AP9X lights, some of the A360X, or some combination thereof as needed to reduce the totally quantity of IoTa devices to 12 or less.

For larger installations involving more than 12 Kessil lights, special consideration must be given to ensure the 12 item limit is observed. For stores, coral farms, etc., it will generally be optimal to handle raceways or rows of frag tanks with one light being directly Apex-controlled, and the remaining lights in each row or each raceway be daisy-chained using K-Link.

Let's take a store as an example.

- It has 3 saltwater display tanks in the showroom, each with 2 AP9X
- Each display tank's pair of lights must be able to be controlled separately
- The store also has 3 long rows of frag tanks, each with 8 A360X
- All frag tanks in any given row can have the same lighting schedule, but each row must be able to have a different schedule
- Each display tank has a dedicated Apex system
- Each row of frag tanks has a dedicated Apex system

To meet these goals and to stay within the limit of 12 active IoTa devices, the lighting could be configured using a mixture of some lights with direct Apex control and the remaining lights daisy-chained from those lights, as seen in this image:
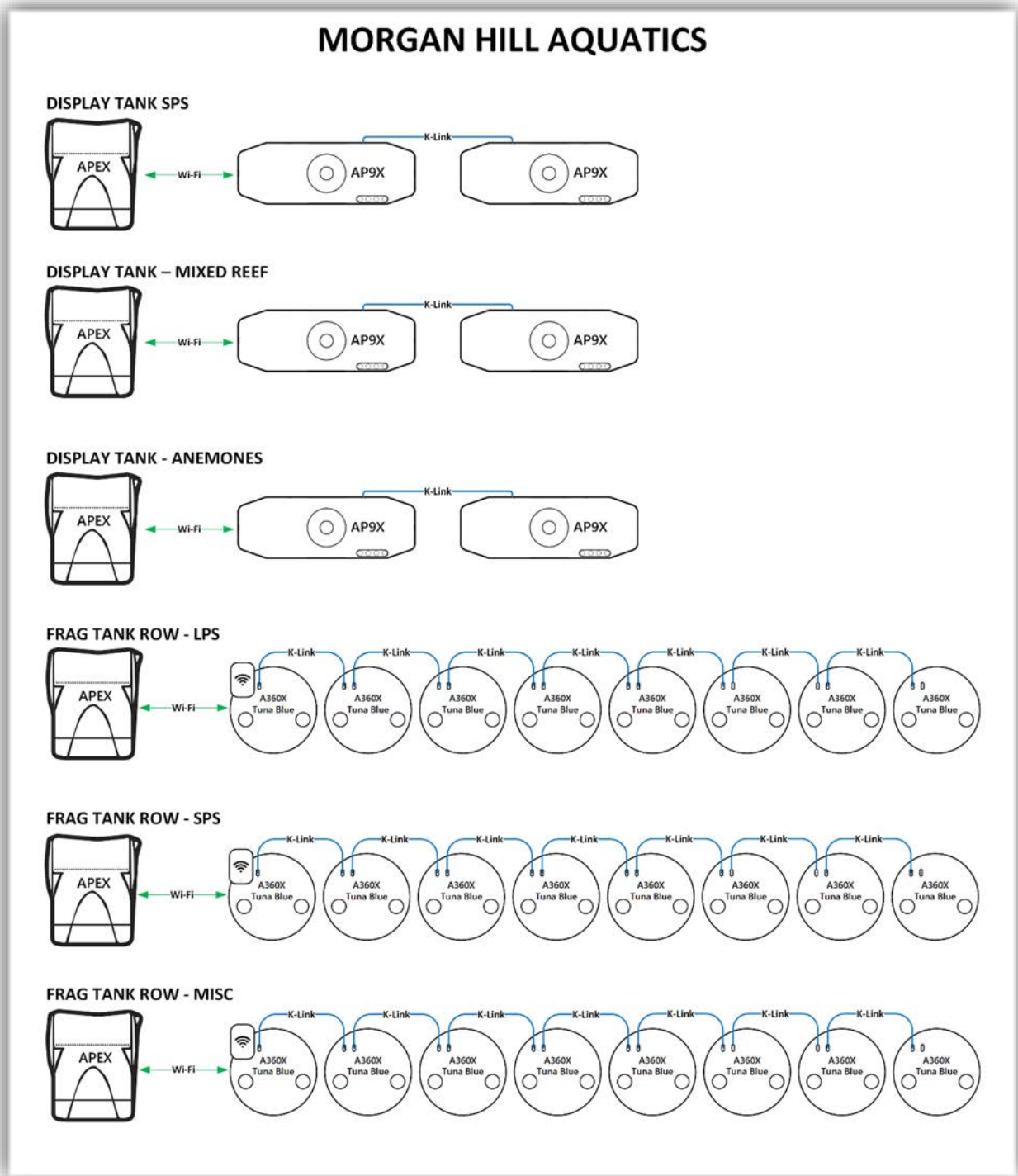
The depicted layout offers simplicity and ease of use, has the flexibility to meet the different requirements of the various types of livestock, yet still allows ample room for growth.

PREPARING YOUR KESSIL LIGHT TO BE CONTROLLED BY THE APEX

If you are changing existing Kessil lighting from control via the Kessil WiFi app to Apex control, take screenshots or make notes about your current lighting schedule now so you can recreate your current lighting schedule in the Apex after the lights are under Apex control.

After installing the latest version of the Kessil WiFi app:

1. Reset all lights (AP9X and WiFi Dongle-equipped A360X).
2. Reset the app; tap Settings at the bottom, then tap Reset App.
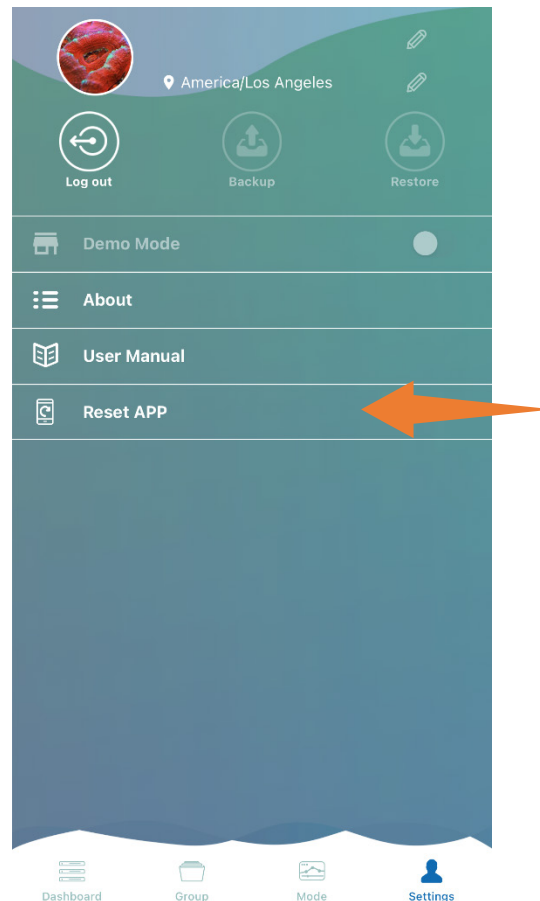
3. Follow the setup instructions in the [Kessil WiFi app manual](). Use the "Through Wireless Router" method **_after_** enabling the **Apex Fusion control ONLY** option. When performing this step, the AP9X or the WiFi Dongle must be configured to connect to the same network as the Apex which will be used to control it.

If a firmware update is available for the AP9X or the WiFi Dongle, it will be installed during the process of configuring the Kessil light for your wireless network.

4. When the configuration process through the app has completed, it will be ready to attach to your Apex.

After you complete the setup of each AP9X or WiFi Dongle-equipped A360X with *Apex Fusion control ONLY* enabled, it will no longer be visible in the app.

PROVIDING POWER TO YOUR KESSIL LIGHT

The power supplies for A360X and AP9X lights do not need to be plugged into an EnergyBar outlet; instead, they should be plugged into a regular wall outlet or power strip. Neptune Systems recommends that the power supplies for A360X and AP9X lights not be plugged into an EnergyBar outlet. However, if you do, the EnergyBar outlet should be programmed to be always ON. You can use the APEX Fusion "Always" Task to

configure the EnergyBar outlet to be always On, or if you prefer to program it yourself, use this simple program:

> **Fallback ON**
> **Set ON**

In APEX Fusion, the "Always" Task may be found by clicking on the **Tasks** 📋 button.
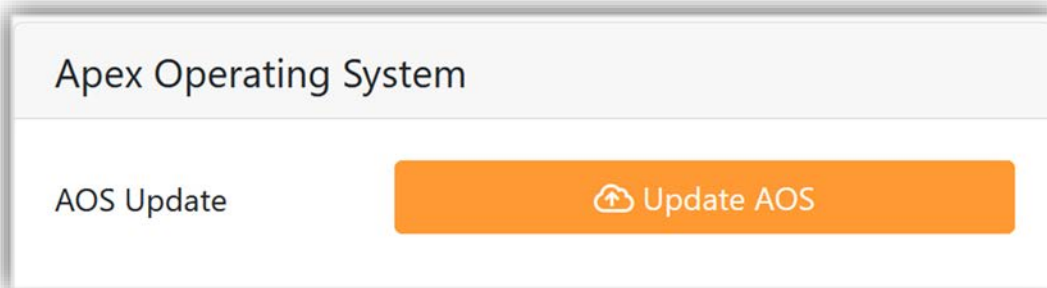
UPDATING YOUR APEX AOS

Your Apex must have AOS version 5.06_7F21 or later installed. You can check for the availability of a newer AOS than installed and install an AOS update if one is available using either APEX Local or APEX Fusion.   On the **Dashboard** ⏱, click the **Expand** ⚙ button, then click the **Network** 📶 button.

The page will either show that no update is needed, or that an AOS is available to install.

Apex Operating System

AOS Update   This Apex is currently running the latest AOS.

- or -

Apex Operating System
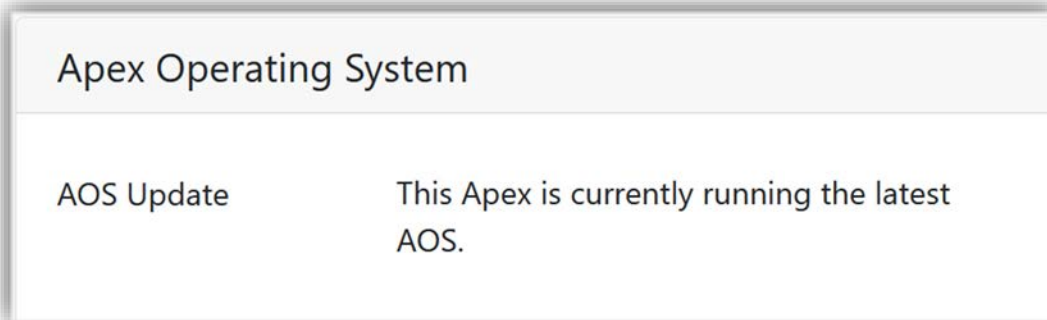
AOS Update   ☁ Update AOS

If an update is available, click the ☁ **Update AOS** button, then follow the prompts. Wait at least 15 minutes after the AOS update process completes before proceeding.

ATTACHING A KESSIL LIGHT TO THE APEX USING THE APEX FUSION IOTA TASK
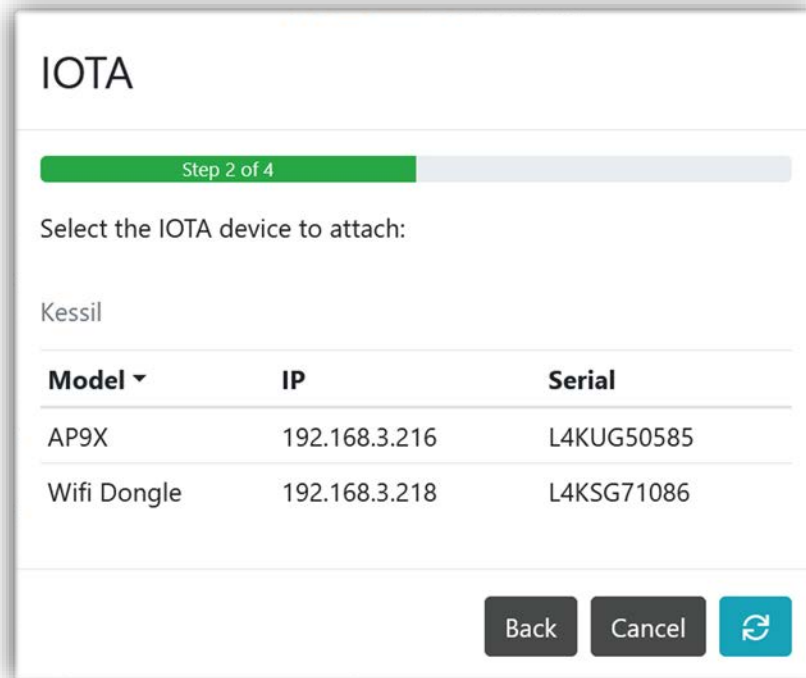
The process of configuring an Apex to control an A360X™ or AP9X™ is called "attaching". The simplest and preferred method of attaching an A360X™ or AP9X™ is by use of the IOTA Task in APEX Fusion (not APEX Local). While viewing your Apex dashboard, click on the **Tasks** 📋 button; then click on the IOTA Task:
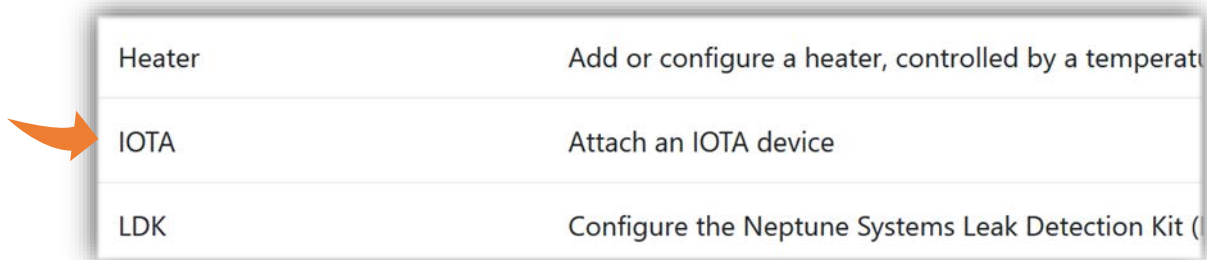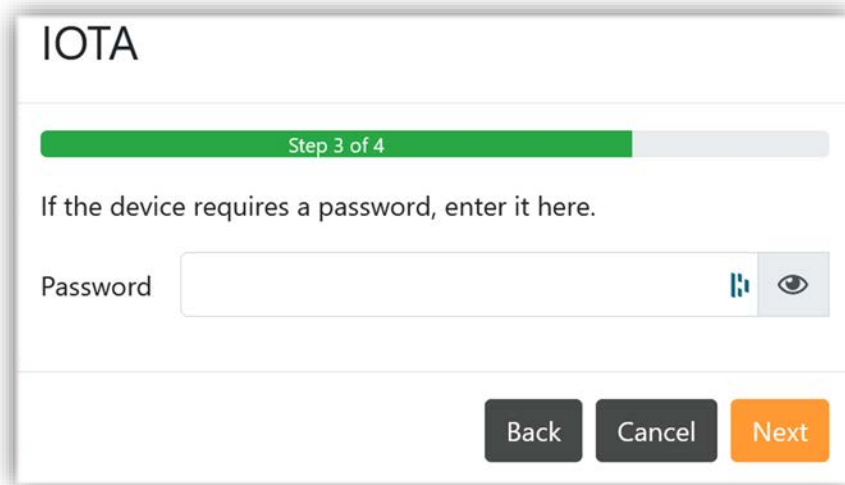

Follow the IOTA Task steps. Step 1 is a summary of what the task does and the basic requirements to be able to attach the Kessil light to the Apex:
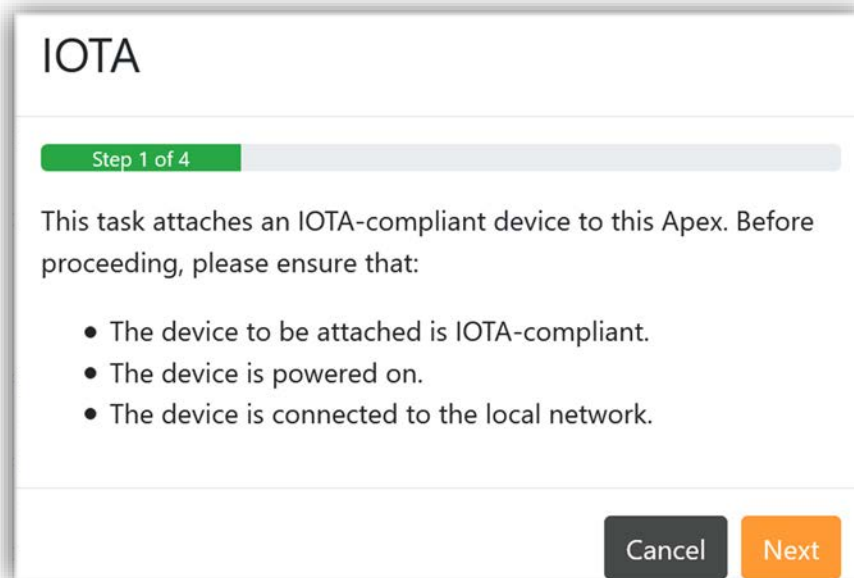
In Step 2, you will be presented a list of all compatible lights and pumps that the Apex has discovered on your network and which are not already attached to this Apex. In the image below, you can see that one AP9X and one Wifi Dongle (A360X) were found. The Serial displayed here is the same as the one printed on the QR-Code stickers which came with your lights. Click on the light you wish to attach, then click the **Next** button.

IOTA

Step 2 of 4

Select the IOTA device to attach:

Kessil

Model ▾	IP	Serial
AP9X	192.168.3.216	L4KUG50585
Wifi Dongle	192.168.3.218	L4KSG71086

Back   Cancel   ⟳

Some IoTa devices may optionally be configured with a password, or may require the use of a password when setting this up for control by an Apex. Kessil lights do not use a password. In Step 3, just skip the password entry and click the **Next** button.
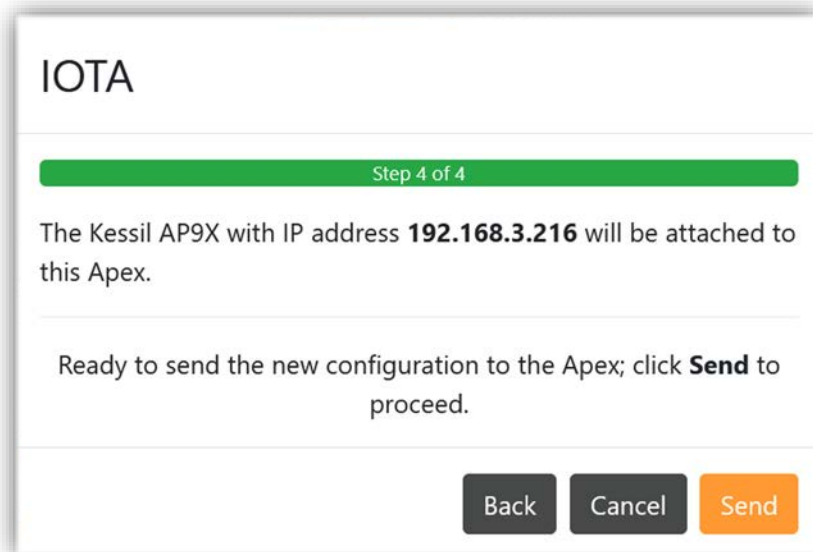
Step 4 summarizes the action to be taken. Click the **Send** button to finish the IOTA Task.

Run the IOTA Task again for each additional Kessil light to be attached.

ATTACHING A KESSIL LIGHT TO THE APEX USING THE MODULES LIST IN APEX LOCAL OR APEX FUSION

As an alternative to using the APEX Fusion IOTA Task, A360X or AP9X lights may be attached using the Modules view in either APEX Fusion or APEX Local.

While viewing your Apex dashboard, click on the **Expand ⚙** button, then click the **Modules 🗁** button. A listing of all connected modules will be shown:

1	Disp_1	Display	✓
2	EB832_2	EB832	✓
3	COR_3	COR	✓
4	1LNK_4	1Link	✓

Click on the **Add IOTA Module ⊞** button in the upper right. You will be presented with a list of all compatible IoTa devices that the Apex has discovered on your network and which are not already attached to this Apex. In the image below, you can see that one AP9X and one WiFi Dongle (A360X) were found. The Serial displayed here is the same as the one printed on the QR-Code stickers which came with your lights. Click on the line for Kessil light you wish to attach, then click the **OK** button.
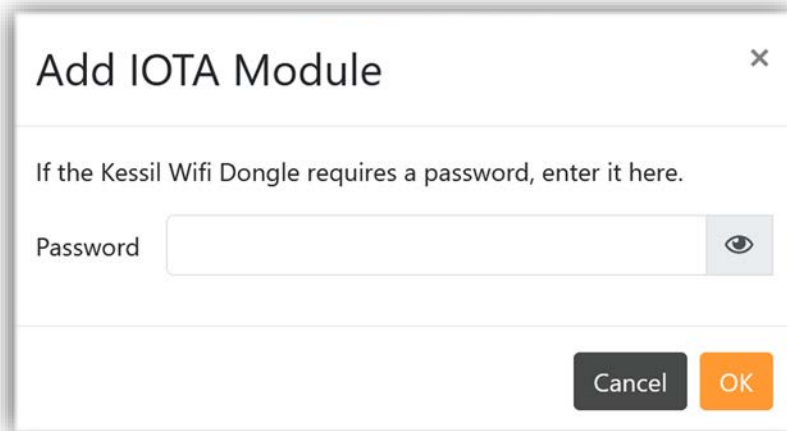
Add IOTA Module ✕

Select a module to attach to this Apex.

Kessil

Model ▾	IP	Serial
AP9X	192.168.3.216	L4KUG50585
Wifi Dongle	192.168.3.218	L4KSG71086

Cancel   OK

Some IoTa devices may optionally be configured with a password, or may require the use of a password when setting this up for control by an Apex. Kessil lights currently do not use a password. Skip the password entry and click the **OK** button.

You will be returned to the Modules view. If you are using APEX Local, wait 5-10 seconds, then click the Refresh ↻ button. You should now see a new module named IOTA_# where # is the Aquabus address which the Apex assigned for newly-attached Kessil light. It may take a minute or so if you are using APEX Fusion before the newly-added light appears as a module.

Repeat this process for any additional Kessil lights you wish to connect. In the image below, you can see that two Kessil IoTa devices have been attached and have been assigned Aquabus addresses 3 & 4.

OUTPUTS AND DASHBOARD TILES FOR IOTA-ATTACHED DEVICES

When IoTa devices such as A360X or AP9X are attached to the Apex, new outputs and dashboard tiles will automatically be created. Outputs will appear in the **Outputs** 🔲 view. The Apex outputs for the A360X and AP9X which were attached earlier can be seen in this image:

The default output name for any Kessil IoTa device is **Kessil**_xx_**_#_1**; The _xx_ will be **TB** (for Tuna Blue) or **TS** (for Tuna Sun), and **#** is the Aquabus address of the IoTa module.

Now go back to the **Dashboard** ⏱; it will show the New Tiles indicator:
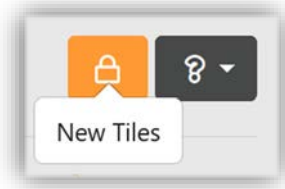
Click the **Unlock** 🔒 button to show the hidden tiles area, then locate and drag the new tile(s) named KessilTB_#_1, and/or KessilTS_#_1 onto your dashboard and position each one where desired. When done, close the hidden tiles area by clicking on the **Lock** 🔓 button again.

MIGRATING A LIGHTING SCHEDULE FROM KESSIL APP TO APEX

Skip to the next section if you have not previously used the Kessil app to control your lights.

Schedules created in the Kessil WiFi app cannot be directly converted or imported into APEX Local or APEX Fusion. If you are changing existing Kessil lighting from control via the Kessil WiFi app to Apex control, take screenshots or make notes about your current lighting schedule so you can refer to them when recreating your current lighting schedule in the Apex.

In the Kessil app, the Kessil Tuna Blue Core (blue and white) is controlled by a single setting which is continuously variable between all blue and all white. Similarly, for Tuna Sun lights, the Tuna Sun Core is continuously variable between 6000K and 9000K white. When under Apex control, blue and white for Tuna Blue lights are split into separate channels. When under Apex control, the Tuna Sun Core is split into separate 6000K and 9000K channels.

In order to facilitate an easy migration from Kessil app to Apex, use these conversion charts to convert from an Kessil app schedule to Apex schedule.

Tuna Blue Core to Apex Conversion			Tuna Sun Core to Apex Conversion		
Kessil Tuna Blue %	Apex Blue Channel %	Apex White Channel %	Kessil Tuna Sun %	Apex 6000K Channel %	Apex 9000K Channel %
0	100	0	0	100	0
5	100	10	5	100	10
10	100	20	10	100	20
15	100	30	15	100	30
20	100	40	20	100	40
25	100	50	25	100	50
30	100	60	30	100	60
35	100	70	35	100	70
40	100	80	40	100	80
45	100	90	45	100	90
50	100	100	50	100	100
55	90	100	55	90	100
60	80	100	60	80	100
65	70	100	65	70	100
70	60	100	70	60	100
75	50	100	75	50	100
80	40	100	80	40	100
85	30	100	85	30	100
90	20	100	90	20	100
95	10	100	95	10	100
100	0	100	100	0	100

This same conversion is presented in graphical form below, along with an example for both Tuna Blue and Tuna Sun lights.

Tuna Blue Core to Apex Blue & White Channel Conversion
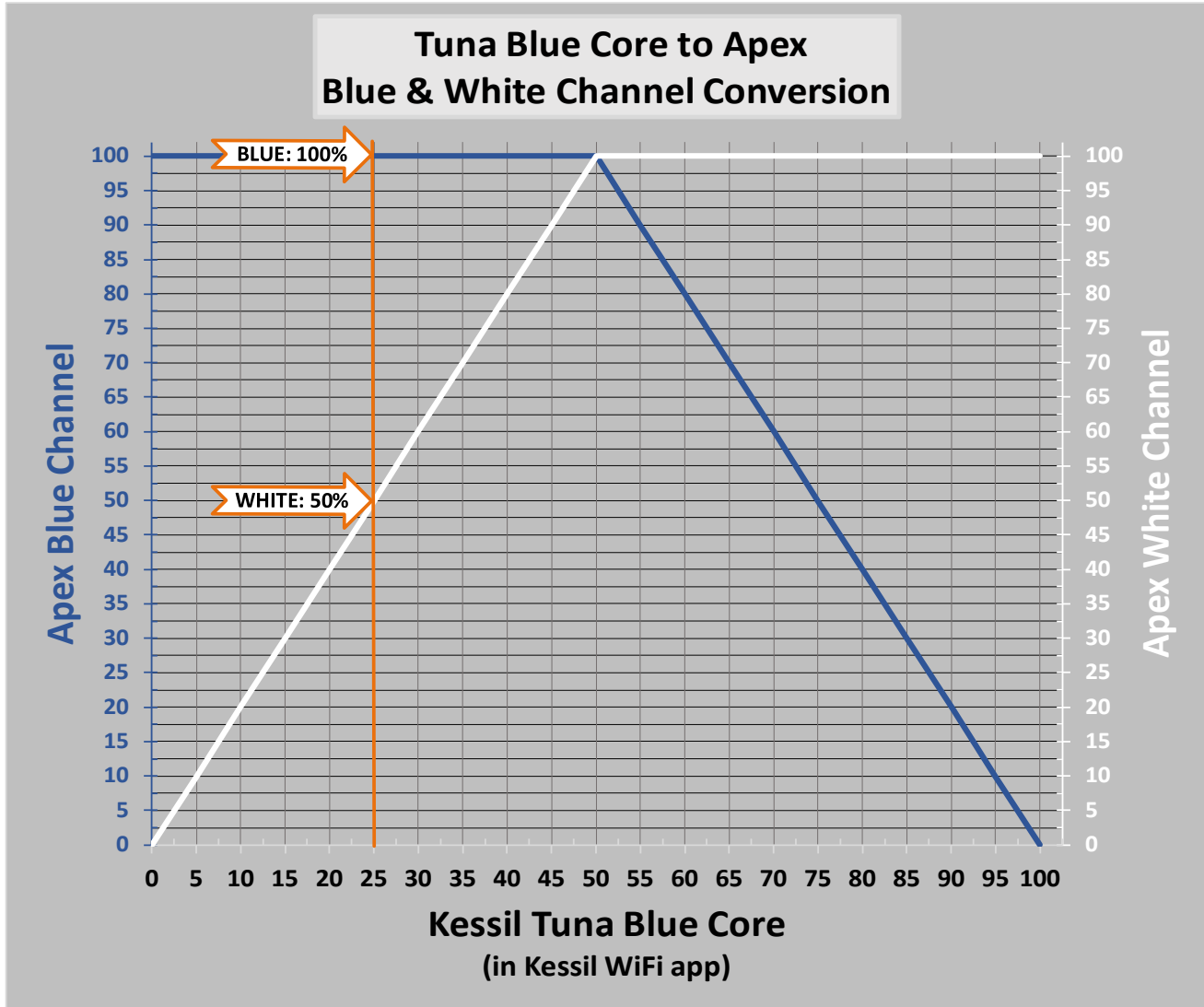
EXAMPLE

You have been using a value of 25% percent in the Kessil WiFi app. To convert that into Apex spectrum slider values for Blue and White, draw an imaginary line upward from 25% on the Tuna Blue axis; the points where that line intersect the blue and white lines are the values to use in the Apex schedule for that light.

Tuna Sun Core to Apex Channel Conversion
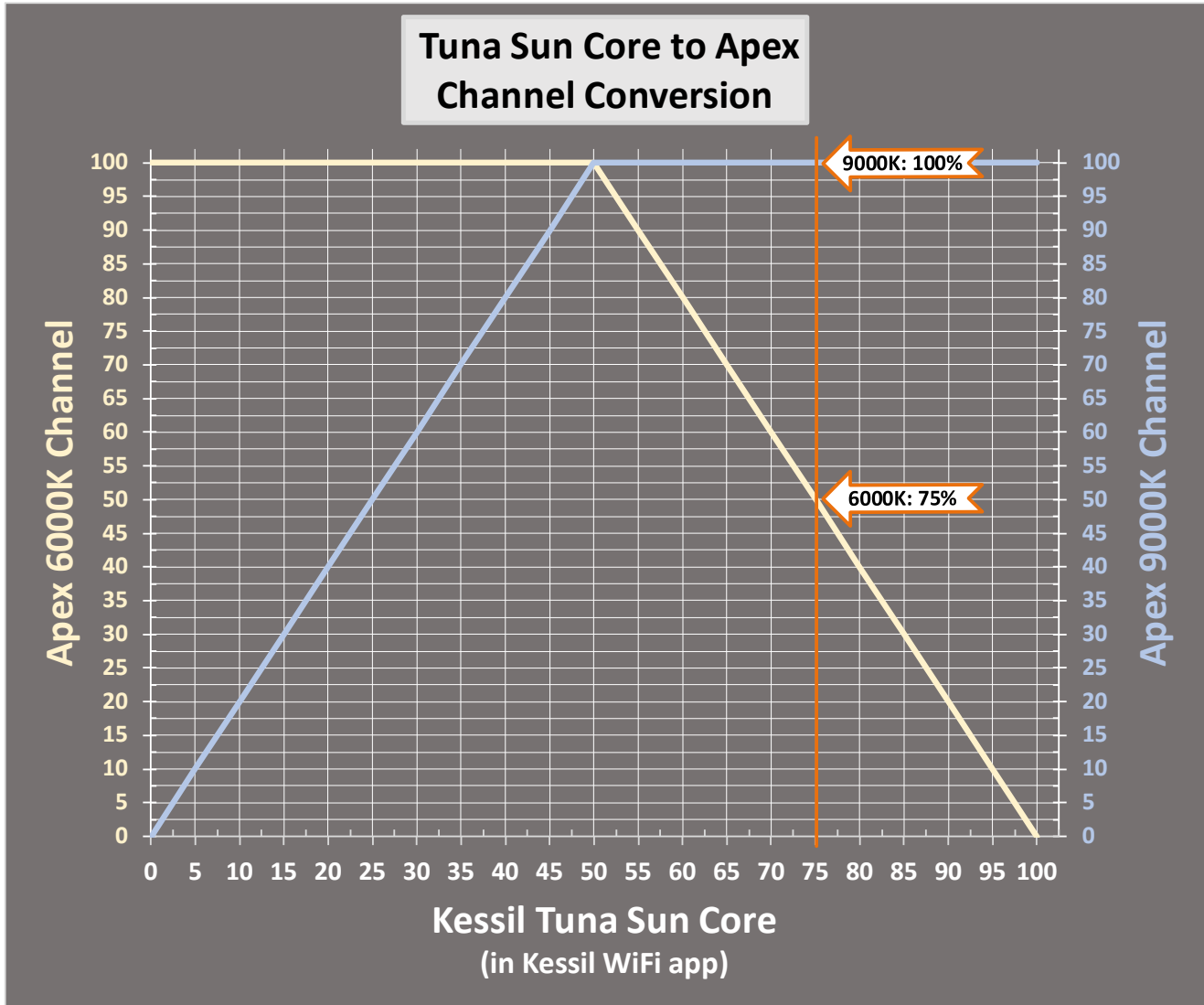
EXAMPLE
You have been using a value of 75% percent in the Kessil WiFi app. To convert that into Apex spectrum slider values for Blue and White, draw an imaginary line upward from 75% on the Tuna Sun axis; the points where that line intersect the bluish and whitish lines are the values to use in the Apex schedule for that light.

![Neptune Systems logo]

CREATING A SCHEDULE FOR YOUR KESSIL LIGHT

To create a schedule for your newly-attached Kessil light, locate its dashboard tile and click the ⚙ on the tile. The lighting wizard with a sample lighting schedule will be shown. Use this as starting point.


Modify the schedule as desired by dragging each schedule points to adjust the time and overall intensity. Add an additional schedule point by clicking on the ⚙ for a point then clicking on Add Point. You can also adjust the time and intensity for a point, or remove a point.
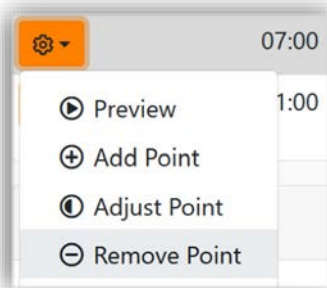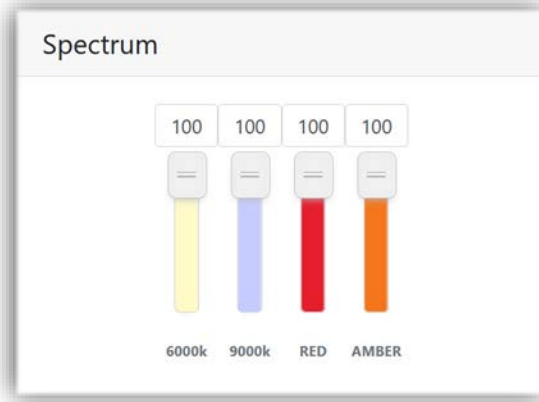

For each point, choose the color spectrum desired. Optionally, enable random cloudy effects for a point by clicking in the checkbox next to the ☁ symbol.
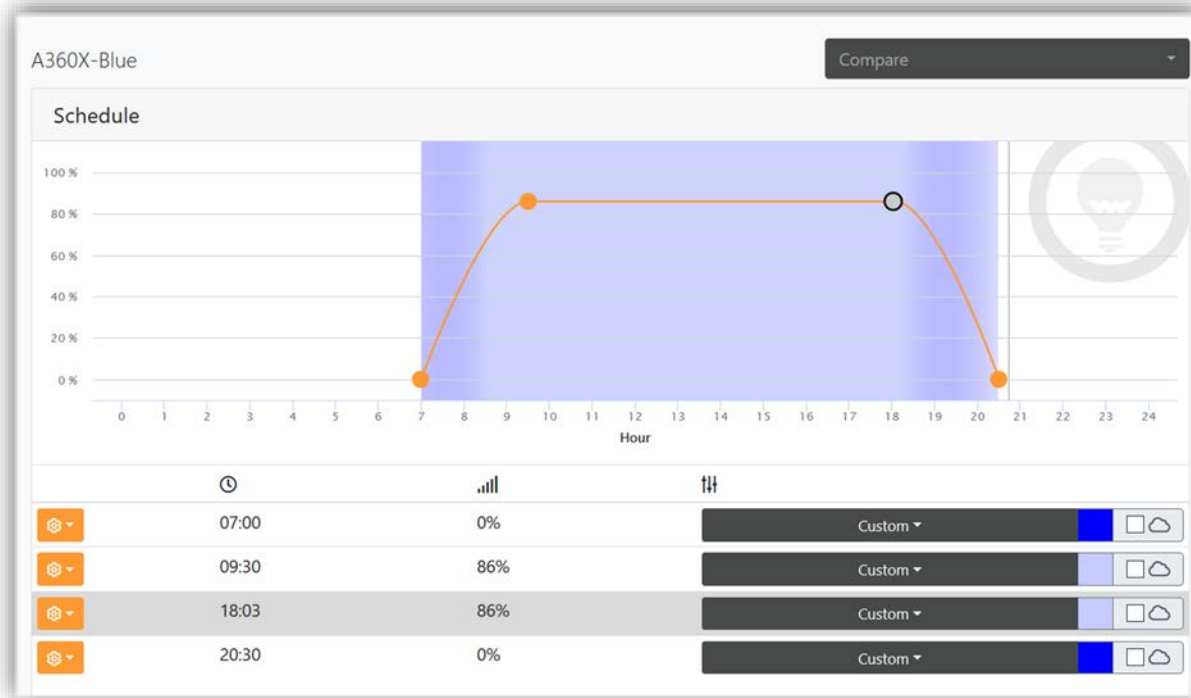
To define a custom spectrum, use the vertical sliders in the Spectrum box to adjust the desired intensity for each color channel.
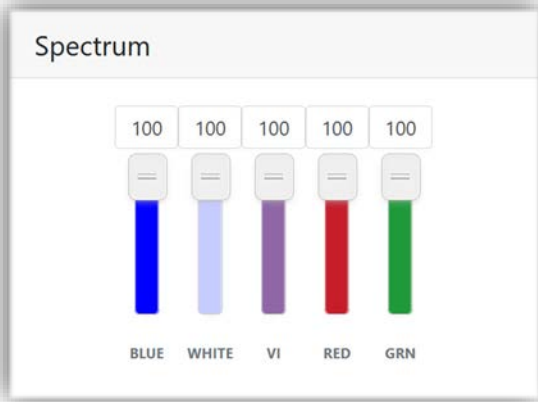
Spectrum sliders for AP9X & A360X Tuna Blue

Spectrum sliders for A360X Tuna Sun

After creating your lighting schedule, assign a custom name to the output by clicking on the **Configuration** ⚙ in the upper right corner.

Edit the default output name to give it a descriptive and meaningful name; click the **OK** button when done.

When finished creating your lighting schedule, send it to the Apex by clicking the **Update APEX** ☁ button.

LIGHTING SCHEMES

The IoTA lighting wizard in APEX Fusion supports the use of Schemes, which are lighting schedules that can be saved for your own later use and can also be shared with other Apex owners.

- To save a lighting schedule as a Scheme, click the **Save Scheme** ⤳ button.
- To search for Schemes shared by others, click the **Download Scheme** ⤓ button. Schemes are available only in APEX Fusion; they are not available in APEX Local.
- You can save a Scheme, then load it onto another IoTa light of the same model.
- Schemes are vendor- and model-specific:
  - 🚫 A Scheme created from a AquaIllumination brand light, for example, cannot be used with a Kessil output.
  - 🚫 A Scheme created from a AP9X cannot be used with a A360X.
  - 🚫 A Scheme created from a A360X Tuna Sun cannot be used with A360 Tuna Blue.

ADDITIONAL INFORMATION

- ❖ The use of Apex profiles is not supported with IoTa outputs.

- ❖ Schedules created in the Kessil WiFi app cannot be converted or imported into APEX Local or APEX Fusion.

- ❖ Fallback is not supported.

Additional detail about an attached Kessil light is available on the Modules view. To see that information, start on the **Dashboard** ⓘ. Click or tap on the **Expand** ⚙ button, click or tap the **Modules** 🗀 button, then select the desired IOTA Module. You will see the detailed status on the IOTA Module view:

Of primary interest here is the model and IP address of the Kessil light. Note that A360X lights will appear here as "Wifi Dongle".

The serial number shown here is the same as the identifier on the QR code sticker that came with each Kessil light.

Summary

IOTA Module named IOTA_3 at Aquabus address 3.

Type	IOTA
Name	IOTA_3
Address	3
Status	Connected
Vendor	Kessil
Model	Wifi Dongle
Serial	L4KSG71086
MAC	9e65f903d802
IP Address	192.168.3.218

Summary

IOTA Module named IOTA_4 at Aquabus address 4.

Type	IOTA
Name	IOTA_4
Address	4
Status	Connected
Vendor	Kessil
Model	AP9X
Serial	L4KUG50293
MAC	5ef3700e4662
IP Address	192.168.3.215

CHANGE LOG

1.0   8/17/2021   Initial release