

Niwa Grow Hub

User Manual



www.getniwa.com

Resources

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www.getniwa.com/videos

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Introduction

With the goal of supporting a hassle-free and high performance grow, Niwa has developed a powerful software that enable growers to automate their setups in a very simple way just by having them plug their existing devices (such as lamps, fans, humidifiers, dehumidifiers, A/C triggers, pumps, or heaters) to their Niwa Grow Hub.

This document describes how to set up your different Niwa Grow Hubs. For further information about all its features please visit www.getniwa.com.

Niwa Grow Hub

Warning! The Niwa Grow Hub can handle **resistive loads** up to **10A MAX** per outlet and **15A MAX in total for all four outlets**. **Make sure you don't exceed these loads**. Some grow lamps (and other pieces of equipment) have very high inrush currents, so please take this into consideration or ask the Niwa support team (support@getniwa.com) if you are not sure or you don't understand it.

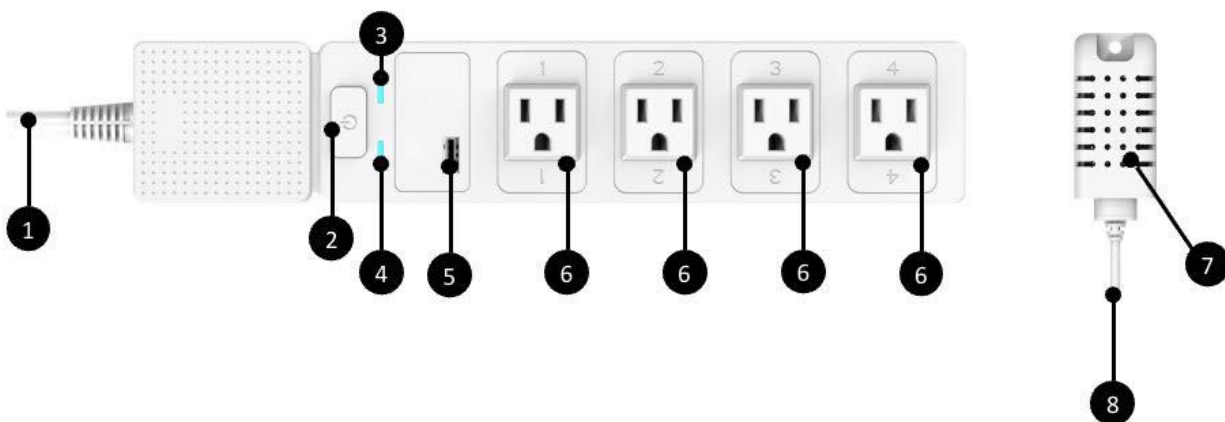
Please go to our **Settings/Outlet Configuration** section for greater details on amperage capacity.

Niwa Grow Hub+

Warning! The Niwa Grow Hub+ can handle **resistive loads** up to **15A MAX in total for all four outlets**. **Make sure you don't exceed these loads**. Some grow lamps (and other pieces of equipment) have very high inrush currents, so please take this into consideration or ask the Niwa support team (support@getniwa.com) if you are not sure, or you don't understand it.

Please go to our **Settings/Outlet Configuration** section for greater details on amperage capacity.

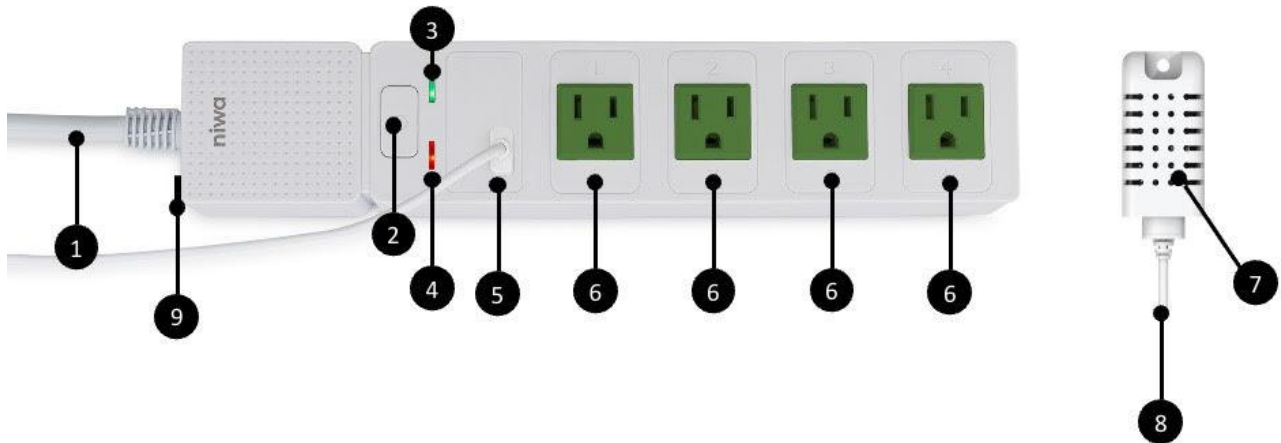
Hardware overview (Grow Hub)



1. Power cord.
2. Setup button.
3. Operation mode LED (Blue).
4. Malfunction LED (Red).
5. Niwa Sensors USB connector port (Do not plug anything else).

6. Configurable outlet for growing equipment (ON/OFF control).
7. Niwa Sensors.
8. Niwa Sensors cord.

Hardware overview (Grow Hub+)



1. Power cord.
2. Setup button.
3. Operation mode LED (Green).
4. Malfunction LED (Red).
5. Niwa Sensors USB connector port (Do not plug anything else).
6. Configurable outlet for growing equipment (ON/OFF control) (In the Niwa Grow Hub+ the outlets are green.)
7. Niwa Sensors.
8. Niwa Sensors cord.
9. Circuit breaker reset (Only Grow Hub+ models)

Help videos

You can find help videos in the following links:

[Connecting your Niwa Grow Hub to Wi-Fi for the First Time, Explained](#)

[The Niwa app Dashboard, Explained](#)

[Using the Stats Section of your Niwa Grow Hub app, Explained](#)

[The Niwa Recipes, Explained](#)

[The Niwa Grow Hub's Alarms Explained](#)

Set up instructions

Set up your Niwa Grow Hub device

1. Place your **Grow Hub Sensor** module somewhere inside your grow chamber protected from water. We recommend placing it where it can get light from the grow lamp (if available) and sense the temperature and relative humidity of your plants' environment.

Please note: Make sure the ventilation grid of your Grow Hub Sensors is not covered so light and environmental values can be measured properly. Protect the sensors' cord from being damaged or cut.

Pro tips:

- Do not place it under your lamps as it will get direct heat from it, interfering with the readings.
 - Since hot air rises, you should ideally place the sensor halfway between your plants and the top of your grow chamber.
 - Do not place it close to your climate control equipment (fans, heaters, A/C, humidifiers, dehumidifiers...) but make sure it receives good airflow.
2. Place your Grow Hub, somewhere outside of your grow chamber protected from water spills or extremely humid conditions.
 3. Plug in your selected pieces of equipment (Fan, lamp, humidifier, dehumidifier, cooler, heater, or watering pump) into the Grow Hub configurable outlets and note to what outlet number you connected each device for later in the app when you configure your outlets.
 - a. **Please note:** Only one outlet can be configured for each piece of equipment type. For example, if you have two fans, you can only set one outlet for fan control.
 - b. **CAUTION!** Make sure the **maximum** total resistive load **does not exceed 15A max in total for all four outlets***
 - c. **CAUTION!** External lamp controllers must be used when operating high powered grow lamps or multiple lamps, and those controllers can be triggered by your Grow Hub.*

**Please go to our 'power limitations' section for greater details on amperage capacity.*

4. Plug your Niwa Sensor into your Niwa Grow Hub.
CAUTION! Although it uses an USB plug, the Niwa Sensor must be connected to a Niwa Grow Hub only.*
5. Plug your Niwa Grow Hub to a protected and grounded outlet.

For the above **CAUTIONARY statements, these limitations must be acknowledged. Damages or malfunctions of the Niwa Grow Hub+ that are connected to these limitations will **void the entire warranty**.*

Download the App & register your user

1. Search the keywords "Niwa Grow Hub" in the App Store or Google Play store to download and install the Niwa app. Make sure you **download the Niwa Grow Hub app**, for there is our Niwa One Greenhouse app from our Niwa One product line. You will find links to the Niwa Grow Hub app in the getniwa.com site as well.

Here are the direct links for the Niwa Grow Hub apps:

Android: <https://play.google.com/store/apps/details?id=com.niwa.homegrow.beta>

Apple iOS: <https://apps.apple.com/us/app/niwa-grow-hub/id1503711468>

2. Open your Grow Hub App and tap on "Don't have an account? Register".
3. The app will ask for your email and a password of at least 8 characters.
4. Repeat your password and tap on "Register".
5. A code will automatically be sent to your email account. Once you have it, tap on "Continue".

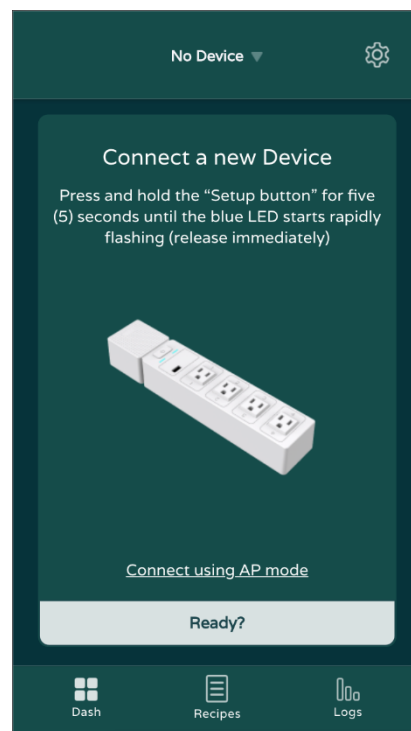
6. Enter the code and tap on "Validate code"

Connect your Niwa Grow Hub to your Wi-Fi

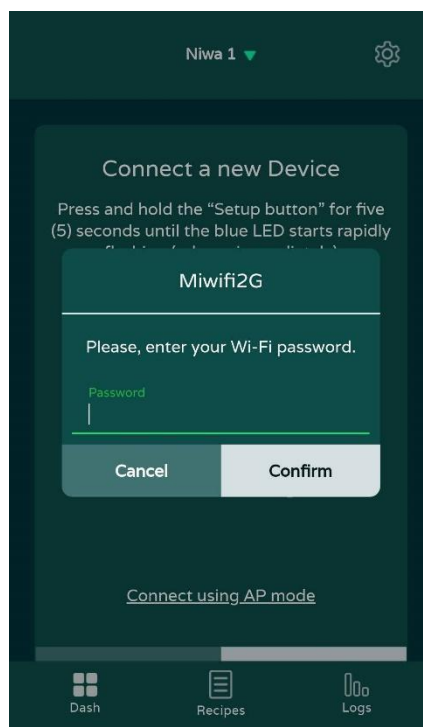
Important: Your Niwa Grow Hub will connect to the same Wi-Fi network that your mobile phone is connected to. As the majority of IoT devices, both **Niwa Grow Hub models only work with 2.4GHz b/g/n Wi-Fi networks**. Most Internet routers are 2.4GHz or 2.4Ghz compatible. Nevertheless, some of them may need some settings adjustments in order to enable the 2.4GHz network. Check our troubleshooting section for additional information.

Tip: When connecting your Niwa Grow Hub for the first time, we recommend placing your Niwa Grow Hub in front of your router. Once you're connected, you can place your Niwa Grow Hub anywhere with a quality WiFi signal.

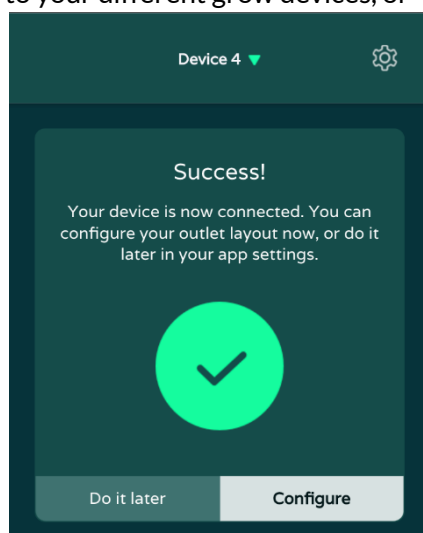
1. Once you have installed the Grow Hub app, registered your user and logged into the app, the device set up will automatically show.



2. Press and hold the "Setup button" on your Niwa Grow Hub for six (6) seconds until the green or blue LED starts rapidly flashing (then release it immediately)
3. Tap on "Ready" in the Niwa app, then enter the password of the 2G Wi-Fi network that your mobile device is connected to, then tap "Confirm".



4. **Please wait until you get the confirmation message**, this can take a while. If something goes wrong please;
 - Tap on “Try again”.
 - Unplug your Grow Hub from power.
 - Wait for about ten seconds, plug it back and repeat the whole process from step 2.
5. Once you get your confirmation message you can tap on “Configure” to set your Niwa Grow Hub+ up, assigning the different outlets to your different grow devices, or “Do it later”.

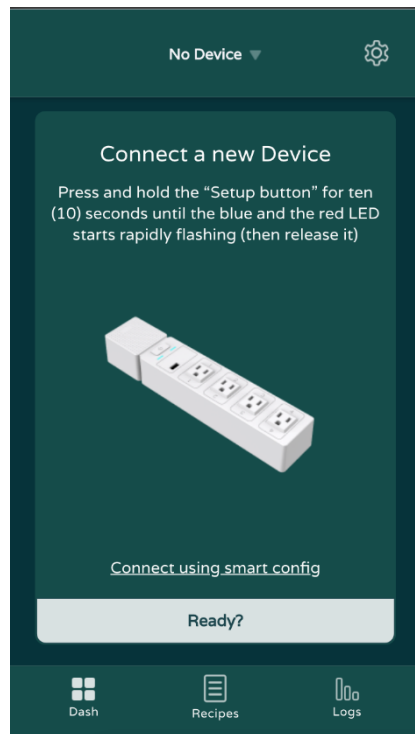


6. If you get an error message or experience any issue, **please check the Wi-Fi Tips & Troubleshooting section below.**

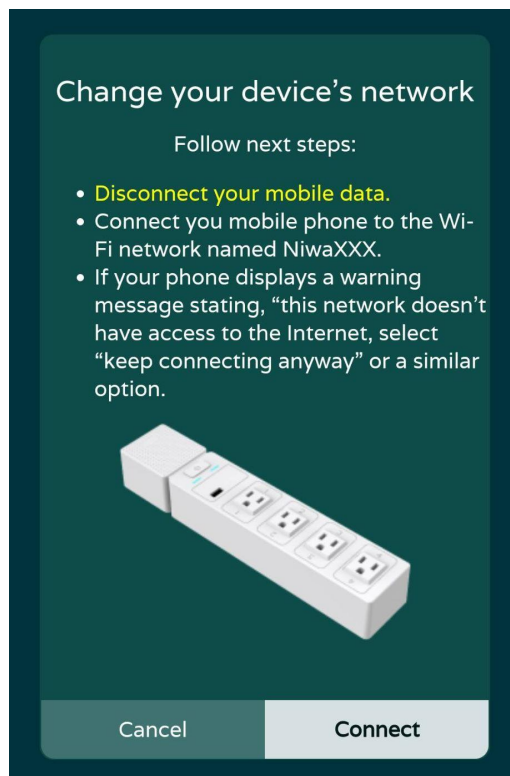
Alternative Wi-Fi setup (Advanced AP mode)

Depending on your own Wi-Fi network configuration, your default Wi-Fi setup may not work as expected, so there is an alternative ‘**Advanced AP mode**’ you can use following the steps below.

1. Power cycle your Grow Hub: unplug it from the main outlet, wait 5 seconds, and plug it back to the main outlet.
2. Once you have logged into the app, the ‘connect a new device’ set up will automatically show.



2. Right above the 'Ready?' button, please select **"Connect using AP mode"**
3. **Press and hold** the "Setup button" in your Niwa Grow Hub for **twelve (12) seconds** until the **green and the red LED start rapidly flashing** (then release it immediately).
4. Tap on **"Ready?"**. Then enter the password of the **2G Wi-Fi network** that your mobile device is connected to, then tap **"Confirm"**.



5. Next, please disable your mobile data connection.
6. Afterward, go to your available Wi-Fi networks and **connect your mobile phone to a Wi-Fi network named "Niwa****"**.

If your mobile phone displays a warning message saying that "this network does not have access to the Internet...", tap on "keep connected anyway" or a similar option.

iPhone Warning while using AP mode.

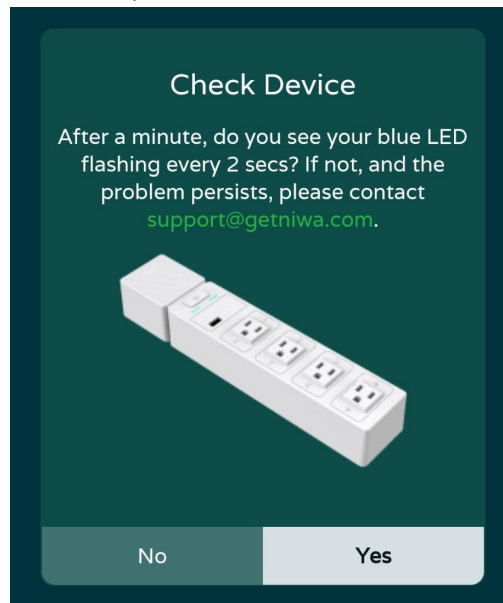
We have detected in the most recent iOS versions that iPhones will disconnect from the Niwa's WiFi network (Niwa****) and connect back to the home's WiFi automatically which interrupts the connectivity process. If this happens, you will see the iPhone WiFi icon on the top right side of your screen and you won't be able to complete the process.



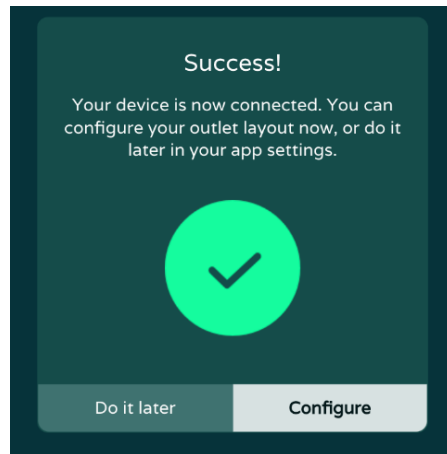
If this happens, you need to power cycle your Niwa (unplug/plug) and restart the Niwa app and repeat all the steps from the first one above. Based on our internal testing, it will work (the iPhone won't disconnect) on the second attempt.

Apple said they are working to solve this issue because this is a common bug when an iPhone connects to an Ad Hoc WiFi network.

7. Once your **phone is connected to the Niwa**** network**, tap on “**Connect**” in the Niwa app.
8. Please wait until you **get the confirmation message**. After some time you should see a **green** or **blue** LED on your Niwa **flashing every two seconds**, if not then the connection failed.



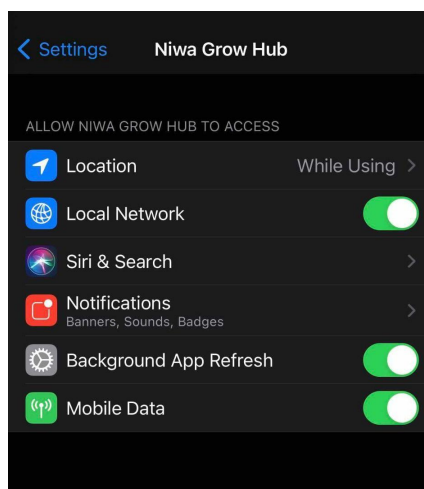
9. Once your Niwa Grow Hub is connected, you can tap on “**Configure**” to set your Niwa Grow Hub up, assign the different outlets to your different pieces of equipment , or “**Do it later**”.



Wi-Fi tips & Troubleshooting

General issues:

- When connecting your Niwa Grow Hub **for the first time**, we recommend you place your Niwa Grow Hub in front of your router. Once you're connected, you can place your Niwa Grow Hub anywhere with a quality WiFi signal.
- Make sure the correct LEDs are flashing on your Grow Hub before trying to set up (both **green** and **red** simultaneously for Grow Hub+ **and blue** and **red** for the Grow Hub).
- Your Niwa Grow Hub (**green** and **blue**) **should start slowly blinking** after it is connected. If that's not the case, and something went wrong, you may need to repeat the Wi-Fi connecting process from the beginning, after disconnecting and connecting your Niwa Grow Hub from power.
- If you want to change your Niwa Grow Hub from one Wi-Fi set up mode to another (i.e. from standard mode to access point mode or vice versa) please **power cycle your Niwa Grow Hub**, (unplug it from main outlet, wait for 10 seconds, and plug it back to the main outlet) and then push and hold the Setup button 6 or 11 seconds accordingly.
- Make sure you are entering the right Wi-Fi password and/or the exact Wi-Fi network name (if required). **Both are case-sensitive.**
- Make sure you granted your app all necessary permissions, please see screenshot below:



Internet Wi-Fi router related:

- **The Niwa Grow Hub only works with 2.4GHz b/g/n Wi-Fi networks**, make sure you are connecting to the 2G Wi-Fi network of your Internet router.
- Some Internet routers enable a single Wi-Fi network for both 2.4GHz and 5GHz channels under the

same name (SSID). This might not allow your Niwa Grow Hub+ to connect to the Internet. If that's the case, please **go to your router's settings and disable the 5GHz network** before proceeding with the Wi-Fi Setup. You can enable it after your Niwa Grow Hub+ is set-up.

- Make sure **DHCP** (Dynamic IP) is **enabled**.
- Make sure **MAC filtering is NOT enabled** and make sure that the router is not prohibiting devices from connection.
- If your router has reached the maximum number of devices that can be connected, please turn off the Wi-Fi connection of another device and repeat the setup process.
- If you have a firewall enabled, **make sure ports 443 and 8883 are open**.

Standard mode common issues:

- If nothing happens when you hit "Ready"; make sure your phone is connected to the same Wi-Fi network you want to connect your Niwa Grow Hub.
- If you enter your Wi-Fi password and the app keeps showing the **green** spinning wheel for a long time, please check your device. If the **green** or **blue** is slowly flashing (every 2 seconds) means your device successfully connected, but your app did not detect it. Please force close the app and open it again. You should be able to see live data in your dashboard after a few seconds.
- If you are not able to connect your device to your 2G Wi-Fi network and you are close to your router; please try restarting your router.

AP advanced mode common issues:

- If you find difficulties with the AP mode, we recommend you go to your phone's Wi-Fi settings and "forget" any Wi-Fi network within the current range of your phone. Some phones, even when they are connected to the Niwa**** network AP, will keep trying to connect to **other available known Wi-Fi networks in range**.

Using your Niwa Grow Hub

Introduction

The Niwa Grow Hub is not just a monitoring system but a growing controller. Hence the main benefit for the grower is being able to **automate** climate control, light cycles, fan and watering cycles reducing the human error and making sure all the parameters are kept as desired.

Controlling all of your connected pieces of equipment is done within a Grow Recipe. A Grow recipe defines the different desired parameters (VPD, temperature, RH, light schedules...) for every different plant stage (seedling, vegetative, flowering...).

Growers can use existing Grow Recipes or create their own. Once a Grow recipe is loaded into the Niwa Grow Hub, the system will keep those defined parameters using the different pieces of equipment connected to the Grow Hub, such as a lamp, pump, fan, etc...

Top and bottom toolbars

On the top toolbar, you will see the current Niwa device available. Use the dropdown menu to switch to your other available Grow Hubs.

You can access your setting by selecting the gear icon (right of the dropdown). And from the bell icon on the left you will open your notifications panel.



On the bottom toolbar, you can access the different sections of the app;

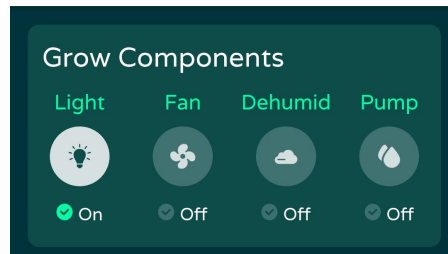
- Dashboard
- Recipes
- Stats



The Dashboard

Grow Components section

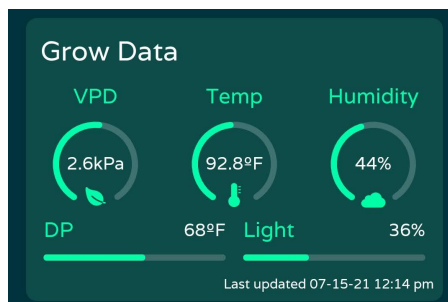
This will show your current outlet configuration and the status of each device, **please note you cannot operate the different devices manually**, all of them are operated following the current recipe settings.



Grow Data section

The gauges show:

- Current leaf VPD (Vapor Pressure Deficit). For accurate VPD readings you must define the Leaf Temperature Offset. Check the [Settings section](#) to find how to do this.
- Current temperature.
- Current relative humidity.
- Current DP (Dew Point).
- Current light level. The Grow Hub+ sensor incorporates an illuminance sensor, **measuring luminous flux per unit area**. This measurement shows the current light level percentage between 0 and the maximum set from the settings menu "Calibrate light sensor". When you "Calibrate" your light sensor, make sure your **light is at full capacity** so the sensor can produce accurate readings.



Grow Lifecycle section

In this section you will find the Circle of Life, from which you can check what current stage is active within your grow recipe and where you can choose to move to a different stage.

Grow Lifecycle



The alarms

How do the alarms work?

You can enable different types of alarms and get push notifications when your Niwa Grow Hub+ detects any parameter that is out of the pre-selected desired range(s).

Depending on several factors, the alarm can take a few minutes to trigger and notify you through your mobile phone. Make sure your push notifications are enabled on your phone. You will get a push notification every time a new alarm is triggered and your alarms will also be logged on the notifications panel.

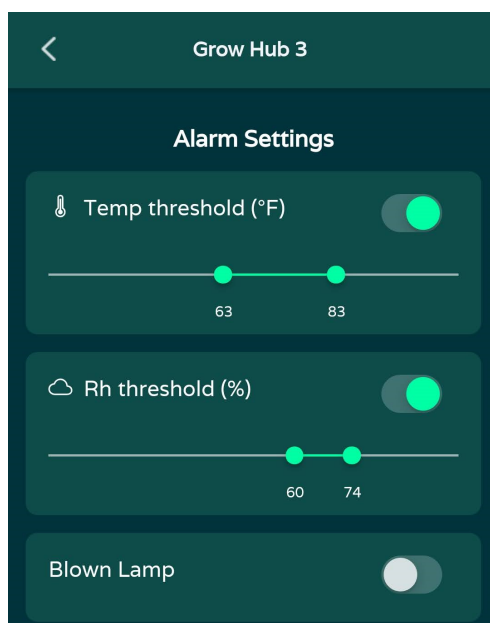
The Niwa Grow Hub must be online (**green** or **blue** LED flashing every 2 seconds) for the alarm to be triggered and received then sent to your mobile phone.

To set up an alarm, go to Settings > Alarm Settings, then:

Temperature and relative humidity alarm

To enable these alarms, tap on the button to the right of the title of the desired alarm which will turn **green** once enabled. Then you will be able to set the minimum and maximum acceptable values for your temperature and relative humidity.

Once you've finished, tap on "Save Changes"



Blown lamp alarm

This alarm will notify you if the Niwa detects your lamp is not performing as usual and will use the light level readings to determine if the performance is reduced.

Once you have your sensor placed into position, please calibrate your light sensor (instructions in the 'settings' section of this manual). If you change your lamp, the desired intensity of your light or your sensor's position, please calibrate it again.

To enable this alarm, tap on the button to the right of "Blown Lamp", once it is **green**, tap on "Save Changes"

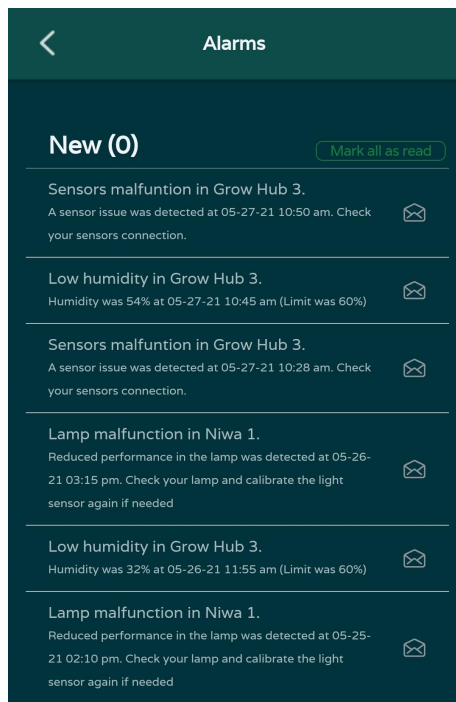
The notifications panel

When you tap on the bell icon of your dashboard (left of the dropdown toolbar), the notifications section will

open. Here you can see all different triggered alerts **from all your different devices** and information about them. From here, you can mark the different alarms as 'read' by tapping on the envelope icon once you have taken action to solve the situation. You can also mark all as read by tapping on "Mark all as read".

Important: Once you get an alarm, for example "High temperature in Grow Hub 1" this alarm won't be notified again while it is **unread** (otherwise you would be getting notifications continuously). If more than 24 hours pass and the situation is still unchanged, i.e. the temperature is still higher than the desired max in the Grow Hub 1, you will be notified again.

New types of alarms from this or other devices will keep being notified, for example, if at some point the humidity in your Grow Hub 1 is below the threshold, you will get a new alarm "Low humidity in Grow Hub 1".



The recipes

In the Recipes section you can either load an existing recipe from the Niwa catalog, or create your own recipe according to your specific needs.

The recipe menu

When you select a recipe you can:

- **See details**; you can check the different settings for all different recipe stages.
- **Let's get growing!**; this button will load the **first stage** of the selected recipe into the Grow Hub+.
- **Stop growing!**; this button will enable if the selected recipe is the currently loaded one, hit it to stop the recipe. **Please note**: the Grow Hub+ won't activate any outlet if there is no grow recipe running.
- **Edit recipe***; this button allows you to edit the different settings for all the recipe stages.
- **Delete recipe***; this button will erase your recipe from your personal catalog.

* Only available for personal recipes.

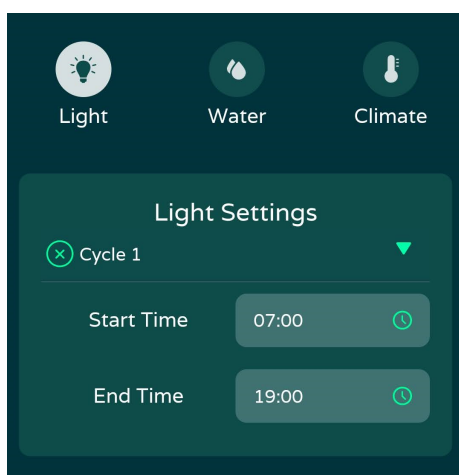
Stages and cycles

Plants have different stages of growth (Germination, Seedling, Vegetative, Flowering...) and each stage requires different care (i.e. different climate, hours of light, etc.). Because of this, a recipe can also have multiple stages (from 1 to 7).

Stages define how your system will behave (temperature, hours of light, etc.) along the day; these days will keep repeating starting at 12:00 AM and ending at 11:59 PM and you can add different cycles within the day for:

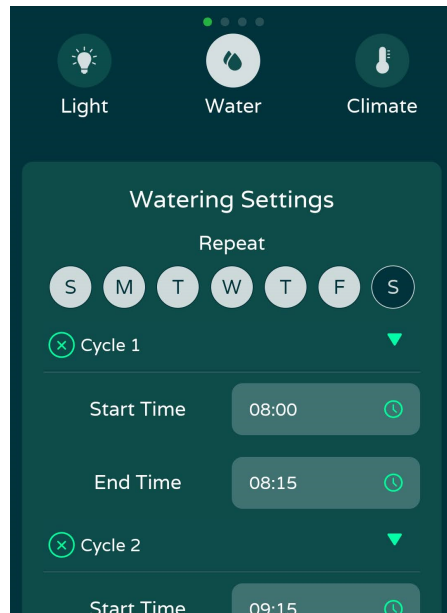
Light

Set the time range you want your lamp ON.



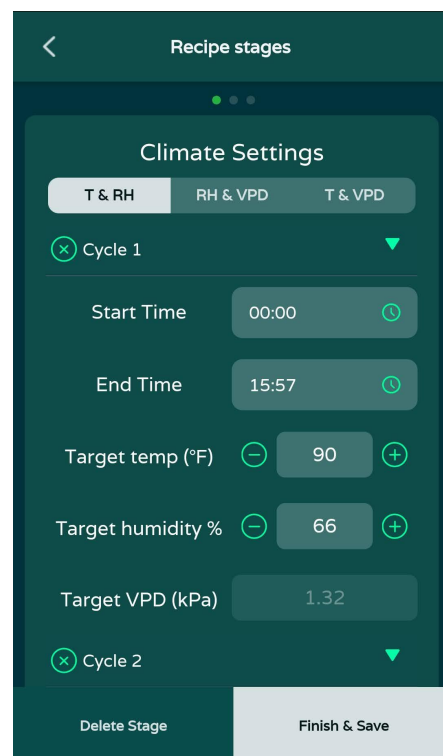
Watering

Set the time range(s) you want your pump ON. You can also set which days of the week your system will water. You can add up to four cycles per day, to add an additional cycle, just tap into "Add cycle" and a new dropdown will show.



Climate

Set the VPD (Vapor Pressure Deficit) temperature and/or humidity targets for a defined period of time within the day. The Grow Hub will control your heater, fan, a/c, humidifier and/or dehumidifier depending on your outlet configuration. You can add up to two cycles per day.



When setting your climate parameters you have three choices:

- Define the **temperature and relative humidity**, VPD is auto-calculated*.
- Define the **relative humidity and VPD**, temperature is auto-calculated*.
- Define the **temperature and VPD**, relative humidity is auto-calculated*.

* VPD auto-calculation is based on your current VPD Leaf Temperature Offset.

To choose the mode, please select “T & RH”, “RH & VPD” or “T & VPD” on the top selector.



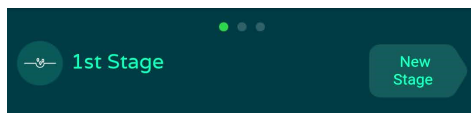
To manage your VPD more accurately, it will depend on your setup and your environmental parameters. For example, if you have a stable temperature, and you don't need heaters or coolers (A/C unit), you can use relative humidity (RH) & Vapor Pressure Deficit (VPD). Or, if you don't have humidifiers/dehumidifiers, then you can use temperature (T) & Vapor Pressure Deficit (VPD).

Important note: anytime you update the VPD offset, you should also update the auto calculated Temperature and relative humidity values on your recipe. To do so, just edit your recipe VPD goal and the new temp and relative humidity will be updated. Then you can save your recipe and load it again.

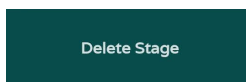
Navigating stages in the app

You can:

- **Add new stages** tapping on the top right “New Stage” button while creating or editing a recipe.
- **Navigate between stages;** Slide your finger right or left to view all the different stages that have been created.



- **Delete a stage;** tapping on the bottom left “Delete stage” button will delete the current displayed stage while creating or editing a recipe.



- **Save your recipe;** once you have finished editing your recipe, tap on “Finish & Save” to exit the recipe edit and save the changes.



How a recipe is executed

Once you load a recipe from the recipe menu, the first stage will automatically start to run, you can select a different stage anytime from the dashboard's Circle of Life, just tap over the desired stage and confirm. The Grow Hub+ will automatically load the new settings for your grow set up.

When a recipe's stage is loaded, it will keep running and repeating every 24h until you change the stage or the recipe.

Regardless of the recipe settings, the Grow Hub will automatically adapt the recipe to match its current outlet setup. **For example,** if you set a temperature target of 80°F but you don't have any heating element plugged into your Grow Hub, it won't try to connect the heater when temperature is below target.

How climate control cycles operate the different devices

In the current(*) version of our Firmware there are two different climate control systems. One is for a temperature that operates exclusively the A/C, the fan (if there is no A/C assigned in the outlet configuration) and the heater based on the current temperature readings and the temperature target.

The other climate control system controls the relative humidity and it actuates exclusively the humidifier and the dehumidifier based on the current humidity readings and the humidity target (or fan if a dehumidifier isn't assigned in the outlet configuration).

The control cycle will adapt to operate only the devices present in the outlet configuration.

Dead zones

In order to protect your climate control equipment (heater, fan, A/C, humidifier or dehumidifier), the Grow Hub enables a "dead zone" for **both temperature control and humidity control**.

- Temperature dead zone range: 0.3°C
- Humidity dead zone range: 2%

For example: If you set a humidity target of 62%, and have a humidifier assigned to your Grow Hub+, your humidifier will turn ON when the current humidity is lower than 60%; and it will turn OFF when humidity is greater than 62%. **On the other hand,** If you set a humidity target of 62%, and have a dehumidifier assigned to your Grow Hub+, your dehumidifier will turn ON when the current humidity is higher than 64%; and it will turn OFF when humidity is lower than 62%. This dead zone will prevent your humidifier and/or dehumidifier from turning ON and OFF constantly when the current humidity is close to your humidity target.

The Stats

In this section you can check the historic information captured by the Grow Hub sensors. You can choose between current day, week or month views. You can send the selected time interval of 'data' to the registered email you used for your Niwa app..



Settings

Outlet Configuration

Once you have installed your Niwa Grow Hub sensor inside your growing tent, it is time to plug your existing devices into your outlets, you can plug up to four of the following devices at the same time:

- Fan
- Lamp
- Humidifier
- Dehumidifier
- A/C trigger. Never plug an A/C machine directly to your Grow Hub.
- Heater
- Watering Pump

To do so, go to your settings section in the app (Gear icon) and select "Outlet Configuration". There you can select which device is connected to each specific outlet. Only one (1) device type can be connected to one outlet. For example, you **cannot** connect two lamps to two different outlets.

Power Limitations (Grow Hub)

WARNING!

The Niwa Grow Hub can handle **resistive loads** up to **10A MAX** (1200W @120V) per outlet and **15A MAX** (1800W @120V) **in total for all four outlets.**

Make sure you don't exceed these loads, overloading the Niwa Grow Hub will cause the internal soldered fuse to be broken and **will void the guarantee.**

If you want to use large ballasts, A/C units, etc. you can use the Niwa as a trigger with an external relay. Please note, these are resistive loads. If you are not sure about the power factor of your plugged devices, we recommend not exceeding 500W for LED, HPS lamps or any other non-pure resistive load. If you have any questions about the equipment you plan to use, you can always email our support team in advance.

WARNING! Air Conditioning Units

When A/C units are turned on, they can have a starting current higher than the running current stated on the basic specification sheet. You need to take into consideration the RLA/FLA which you can find on the nameplate of the A/C unit, if it's UL certified **and make sure it does not exceed 10 A.**

If you don't have this information, you can assume the starting current can be up to 3x times the running current, **hence the max running current the Grow Hub+ can handle would be 3A or 200W** (this way the starting current will be below the max 10A the Grow Hub+ can handle).

For A/C units we recommend using an external relay contactor and use the Grow Hub+ as a trigger only. If this is not an option, you can always use the built-in thermostat of the A/C unit.

WARNING! 1500/750W heaters

Some heaters have Hi/Low settings connected to one or two independent resistors and depending on the selected power setting it can draw different levels of power. There are heaters electronically controlled, so **they can draw up to the MAX rated power even if the Low position is selected, i.e. 12.5A.**



It will fry your Grow Hub!

WARNING! Grow Lamps

Some grow lamps **have very high** inrush currents above from the stated nominal load on the nameplate and/or in the technical specifications. That being said, please take this into consideration or ask the Niwa support team if you are not sure or you don't understand it. For LED/HPS do not exceed 500W MAX.

If you need to handle a load greater than 15A (or 1800W for resistive loads) you can use the Niwa Grow Hub as a trigger for a dedicated light controller or an external electrical device such as a contactor or solid state relay to handle the load. **Please note:** You must use a licensed technician/electrician performing those jobs to make sure your setup is up to code. We Are happy to offer advice so send us a message at support@getniwa.com.

Power Limitations (Grow Hub+)

WARNING!

The Niwa Grow Hub+ can handle **resistive loads** up to **15A MAX (1800W @120V) in total for all four outlets**. **Make sure you don't exceed these loads**, overloading the Niwa Grow Hub+, which is the model that has **green** outlets, will cause the internal soldered fuse to be broken and **will void the warranty**.

If you want to use large ballasts, A/C units, etc. you can use the Niwa as a trigger with an external relay. Please note, these are resistive loads. If you are not sure about the power factor of your plugged devices, we recommend not exceeding 800W for LED, HPS lamps or any other non-pure resistive load. If you have any questions about the equipment you plan to use, you can always email our support team in advance.

WARNING! Air Conditioning Units

When A/C units are turned on, they can have a starting current higher than the running current stated on the basic specification sheet. You need to take into consideration the RLA/FLA which you can find on the nameplate of the A/C unit, if it's UL certified **and make sure it does not exceed 10 A**.

If you don't have this information, you can assume the starting current can be up to 3x times the running current, **hence the max running current the Grow Hub+ can handle would be 3A or 200W** (this way the starting current will be below the max 10A the Grow Hub+ can handle).

For A/C units we recommend using an external relay contactor and use the Grow Hub+ as a trigger only. If this is not an option, you can always use the built-in thermostat of the A/C unit.

WARNING! Grow Lamps

Some grow lamps **have very high** inrush currents above from the stated nominal load on the nameplate and/or in the technical specifications. That being said, please take this into consideration or ask the Niwa support team if you are not sure or you don't understand it. For LED/HPS do not exceed 800W MAX.

If you need to handle a load greater than 15A (or 1800W for resistive loads) you can use the Niwa Grow Hub as a trigger for a dedicated light controller or an external electrical device such as a contactor or solid state relay to handle the load ([check out this video](#) for additional insight). **Please note:** You must use a licensed

technician/electrician performing those jobs to make sure your setup is up to code. We Are happy to offer advice so send us a message at support@getniwa.com.

Sensor's Offsets & calibration

The Niwa Grow Hub uses a high precision sensor and it comes precalibrated from the factory. In order to get accurate readings, it's very important where you place it:

- Do not place it under your lamps as it will get direct heat from it, interfering with the readings.
- Since hot air rises, you should ideally place the sensor halfway between your plants and the top of your grow chamber.
- Do not place it close to your climate control equipment (fans, heaters, A/C triggers, humidifiers, dehumidifiers...) but make sure it receives good airflow.

Once you have placed your sensor, if you still need some fine tuning, please follow the steps below:

- Get a high precision thermometer and hygrometer and place it as close as possible to the Niwa sensor. Leave it there for a day.
- Your Niwa Grow Hub should be on-line (flashing **green** or **blue** slowly every 2 seconds)
- Open your Niwa app > Note down the current temperature and relative humidity readings from your dashboard
- Tap on the Gear icon > Sensor's Offsets
- If necessary, Slide the dials left or right in order to add or subtract temperature or relative humidity to the readings you just noted down to match the readings from you high precision thermometer and hygrometer
- Tap on "Save changes"
- Then, after a few seconds, you can check adjusted readings from your dashboard

Your grow recipe will automatically adapt to follow the updated readings when managing your desired climate.

Calibrate Light Sensor

Your Grow Hub sensor measures illuminance, the goal of this information is to track the performance of your lamp to make sure the lamp is working properly. The light level is a percentage showing the current amount of light between 0 (total darkness) and the maximum level when your lamp is ON.

Every set up is different so you need to calibrate your sensor to let the Grow Hub learn the light level when the lamp is connected.

Tap on continue to proceed with the calibration. If you have a lamp plugged into the Grow Hub and is not connected, it will switch on momentarily to let the sensor measure the light level.

Change Device's Network

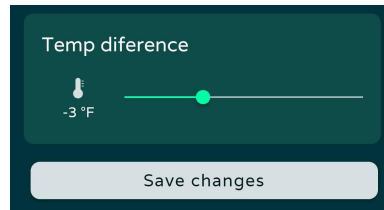
If you need to connect your Grow Hub to a new Wi-Fi network, you can do it from here using the standard Wi-Fi connection setting or the advanced one. Please refer to the "Connect your Niwa Grow Hub to your Wi-Fi" section as the steps are similar.

VPD Leaf Temperature Offset

To calculate the Leaf VPD, your Niwa Grow Hub needs to know the temperature difference between the leaves of your plants and the air environment around them. To find this difference, once your grow tent is at the desired working temperature and with the help of an IR thermometer, you need to follow the steps below:

1. Read the leave's temperature at different levels of the plant, and calculate the Average Plant Temperature (**APT**) from those readings.
2. Next, read the temperature at various spots in your grow tent (avoid direct readings to heat/cool sources), and calculate the Average Environmental Temperature (**AET**) from the different readings.
3. Now subtract **APT-AET** to find your Leaf Temperature Offset. Please note, this offset will usually be a **negative value**, around -3°F.

4. Then, open your 'Settings' section and select the "VPD Leaf Temperature Offset"
5. Slide the cursor left or right to set the right offset, **please take the sign into account.**



6. Then hit on "Save changes".



IR Thermometer

Important note: anytime you update the VPD offset, you should also update the auto calculated Temperature and Rh values on your recipe, to do so just edit your recipe VPD goal and the new temp and RH will be updated. Then you can save your recipe and load it again.

Account Settings

From here you can select the desired temperature scale; change your account's password and Log Out from the app.

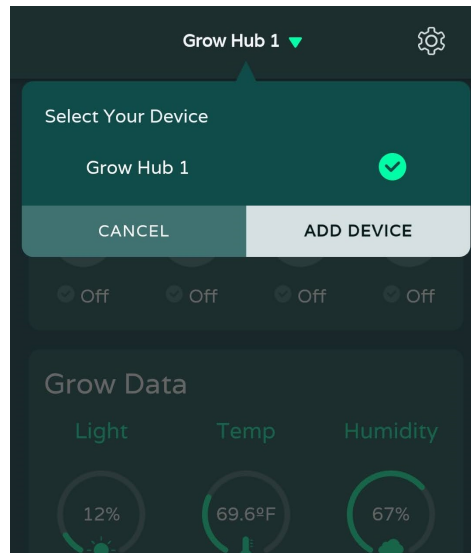
Support

From here you can email our support service support@getniwa.com

Managing multiple Niwa Grow Hubs

Adding a new device

To add an additional Niwa device to your account, tap on the name of your current device, a dropdown will show:



From there tap on “add device” and follow the same steps you followed when you added your first device. You can learn more in the [Connect your Niwa Grow Hub to your Wi-Fi](#) section and the [Alternative Wi-Fi setup \(Advanced AP mode\)](#) section of our manual. If you face any issue, please refer to the [Wi-Fi tips & Troubleshooting](#) section.

Please note: Make sure the new device you want to add has not been previously linked to any user account. If the new device you want to add is already linked to an account please contact support@getniwa.com.

Controlling different devices

You can control and monitor your different Niwa Grow Hubs linked to your account from the app by choosing which of your devices you want to interact with from the dashboard section.

To switch to a different device, tap on the name of the device which will show a dropdown with all the devices linked to your account. Then, tap on the name of the device you want to monitor and the app will load the data for that device. You can access the different sections; Dashboard, Recipes, Stats and Settings as usual for the current device you selected.

Niwa 1 ▼



Select Your Device

Niwa 1



Niwa 2

Grow Hub 3

CANCEL

ADD DEVICE

Niwa Grow Hub LED status

Mode / status	Green or Blue LED	Red LED
Standard SC Wi-Fi setup is enabled	Fast blinking	Off
Backup AP Wi-Fi setup is enabled	Fast blinking	Fast blinking
The Internet is connected. All OK	Slow blinking	Off
Internet disconnected. Time is synced. Offline data logger enabled. Recipe keeps executing.	Off	Slow blinking
Internet disconnected. Time does not sync. Offline data logger not enabled. Recipe can't be executed.	Off	Fast blinking

Note:

Slow blinking: 2 seconds on, 2 seconds off..

Fast blinking: 1 second on, 1 second off..

Warnings & Cautions

- Read all printed and online instructions before operating your Niwa Grow Hub.
- The Niwa Grow Hub can handle **resistive loads up to 15A MAX in total for all four outlets**. **Please Note:** The Niwa Grow Hub can handle **resistive loads up to 10A MAX in total for all four outlets**.
 - **Make sure you don't exceed these loads.** Some grow lamps (and other pieces of equipment) have very high inrush currents, so please take this into consideration or ask the Niwa support team (support@getniwa.com) if you are not sure or you don't understand it.

Please go to our 'power limitations' section for greater details on amperage capacity.

- If you want to use large ballasts, A/C units, etc. you can use the Niwa as a trigger with an external relay. **Please note**, these are resistive loads. If you are not sure about the power factor of your plugged devices, we recommend not exceeding 500W for LED (Grow Hub) or 800W (Grow Hub+), HPS lamps or any other non-pure resistive load. If you have any questions about the equipment you plan to use, you can always email support@getniwa.com
- When operating high powered grow lamps (above 1800W), external lamp controllers **must be used**. Those controllers can be triggered by the Niwa Grow Hub. There is more information on our website.
- Do not connect anything except the Niwa Sensors to the USB connector port located on the Niwa Grow Hub.
- Do not connect the Niwa Sensors cord to anything but the Niwa Grow Hub USB connector port.
- Do not put your Niwa Grow Hub or your Niwa Sensors in an area where it can get wet or sprayed.
- When using "bug bombs" or similar products, please cover your Niwa Grow Hub and the Sensors module completely to avoid corrosion.
- Do not put paper clips, tools, etc. into the Niwa Grow Hub outlets or Niwa Sensors ventilation grid. Possible electrocution and malfunction may occur, **thus voiding the warranty**.
- Plug the Niwa Grow Hub into a surge protector to avoid potential damage to the unit.
- Confirm that your power source is 120-240 Volts/15 Amps prior to plugging any equipment into any outlet on the Niwa Grow Hub+ (be aware of the starting current vs running current of your equipment because they can be different).
- Check all equipment that will be activated by the Niwa Grow Hub is the proper voltage.
- The Niwa Grow Hub and the Niwa Sensor is designed for "**indoor use**" only and is not waterproof or splash proof.
- Further damage can occur when operating Niwa Grow Hub in extremely humid environments (90% and above).
- Do not use the Niwa Grow Hub for purposes other than what the unit was designed for.
- Ask your retailer for tips and techniques regarding the use of this product or visit our community forum base [here](#).

Main Features

Grow recipes

Growers can pick one of the existing Niwa grow recipes or create one themselves. Temperature, humidity, watering, fan and light schedules are completely customizable, so growers can have the optimum control over their plants. The recipe will adapt to different equipment configurations.

Recipe stages

Plants have different needs in terms of their climate, lighting and how much water is required. Custom grow recipes offer several stages that define the different parameters needed for each plant stage. As the plants evolve, the grower needs to click "next stage" and choose their optimum settings for their plants' next growth phase.

Alarms

The Niwa app will notify growers if something is going wrong in their grow set-up. High temperatures and humidity along with mold or lamp malfunction are some of the possible alerts a grower can set to keep their plants safe and healthy.

Live dashboard

Growers can check the current status of their garden by glancing at their live dashboard, anytime, anywhere, and in a secure way.

Configuration, outlets.

Every setup is different. Growers can configure their Niwa Grow Hub+ to control **up to four of the following** devices at the same time:

- Fan
- Lamp
- Humidifier
- Dehumidifier
- A/C Trigger **ONLY**
- Heater
- Watering Pump
- CO2 (optional)

Each outlet is capable of handling a total of 15A MAX (or 10A for the Grow Hub model). Larger loads can be handled through accessories (not included).

Please go to our [Settings/Outlet Configuration](#) section for greater details on amperage capacity.

Stats

Logging & measuring the different parameters affecting a grower's crop is fundamental in order to achieve maximum performance and avoid future mistakes. The Niwa Grow Hub+ has a built-in data logger where growers can check and review their current or past parameters anytime from the Niwa app.

Connectivity

The Niwa Grow Hub incorporates the reliable Wi-Fi 2.4GHz standard to guarantee growers can access their plants from anywhere at any time. Additionally, strict security protocols are built into our software to guarantee absolute privacy and protection.

Over-The-Air updates

The Niwa Grow Hub is enabled with Over-The-Air Firmware and app updates that guarantee the latest features are instantly accessible to all growers. On top of that, the Niwa Grow Hub is fitted with the Niwa Grownet standard that will connect growers with the next generation of Niwa Grow devices effortlessly and wirelessly.

Electrical specifications (Grow Hub)

Input	15A AC120V 60Hz
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Output	10A AC120V 60Hz
Max Load	15A RESISTIVE in total Please go to our Settings/Outlet Configuration section for greater details on amperage capacity.
Overload Protection	Yes
Surge Protection	Yes
Wi-Fi network	2.4G b/n/g
Operating temperature and relative humidity	50°F ~ 130°F, (10°C ~ 55°C) 10%~90%RH, Non-condensing

Electrical specifications (Grow Hub+)

Input	15A AC120V 60Hz
Output	15A AC120V 60Hz
Max Load	15A RESISTIVE in total Please go to our Settings/Outlet Configuration section for greater details on amperage capacity.
Overload Protection	Yes
Surge Protection	Yes
Wi-Fi network	2.4G b/n/g
Operating temperature and relative humidity	50°F ~ 130°F, (10°C ~ 55°C) 10%~90%RH, Non-condensing

What's in the box?

1. Niwa Grow Hub Smart Controller.
2. Niwa Sensors (**CO2 sold separately**).
3. Instruction manual.

Contact

For further information about how to use the Niwa Grow Hub please visit www.getniwa.com.

For any service enquiries please email: support@getniwa.com

Warranty Information

- Niwa warrants the original purchase of this product against defects in material and workmanship under normal use for one (1) year from the date of purchase.
- All returns or repairs must be accompanied by a Return Merchandise Authorization (RMA) number given by a Niwa representative prior to any service of a Niwa product.
- You have 30 calendar days to return an item from the date you purchased your order. To be eligible for a return, your Niwa must be unused and in the same condition that you received it. Your Niwa must be in the original packaging with all protective wrapping and padding and you need the receipt or proof of purchase. The shipping cost is not included but a return label can be provided for U.S. customers.
- This warranty shall not apply to this product or any part thereof which had been damaged by accident, abuse, misuse, modification, negligence, alteration or misapplication. This determination will be decided upon after a product review has been executed by a Niwa representative.
- This warranty shall apply only to the United States, including Alaska, Hawaii and territories of the United States and Canada.
- Defective devices need to be returned with a “proof of purchase” receipt.
- For additional warranty information, contact the Niwa support team at support@getniwa.com. Our normal business hours are Monday – Friday, 9 a.m. to 4 p.m. Eastern Standard Time. We are closed for most major holidays.
- Monetary refunds of the warranty will not be given.
- All warranty service is provided through the factory or an authorized retail partner.

Service and Repair Program

For all service and repairs please contact our support team at support@getniwa.com. Our normal business hours are Monday – Friday, 9 a.m. to 4 p.m. Eastern Standard Time. We are closed for most major holidays.

Warranty Service

If, after reviewing the troubleshooting tips online, and your unit still doesn't work, you may contact us directly for technical support at support@getniwa.com. If we cannot help you resolve the problem, we will issue you an RMA # (Return Merchandise Authorization) authorizing you to return the controller to us for review (if the unit is under warranty). Contact support@getniwa.com for an RMA and shipping address. Complete the form (ask support@getniwa.com for it) and include it with your unit. Also, please write the RMA # on the outside of the box. Additionally, please package the unit in its original packaging. If it is damaged in shipment, we cannot be responsible. Once we receive the unit back, we will alert you and notify you of our review. We will return it to you freight prepaid if the product is within warranty and was not damaged by accident, abuse, misuse, modification, negligence, alteration or misapplication.