minigrow

the ultimate one-plant grow box

Minigrow One
User manual

Model: Minigrow One (Model 21)
Version: 1.0.1
Date: July 12th, 2021

Disclaimer

Read this operating manual carefully and make sure you understand the contents. Not reading this manual could result in personal injury, inferior results or damage to the Minigrow One. Make sure everyone who uses the Minigrow One knows and understands the contents of this manual, in order te get the best results from the Minigrow One.

We have no influence or insight into the circumstances and methods used for assembly, handling, storage, use or disposal of the device. For these and other reasons we expressly accept no responsibility or liability for any loss, injury, damage or expense arising in any manner whatsoever from or relating to the assembly, handling, storage, use or disposal of the product. We comply with the WEEE Directive.

The information in this document was obtained from sources we believe are reliable. The information is provided without any warranty, express or implied, regarding its accuracy.

Intended Use of the Minigrow One

Minigrow One is designed to grow a plant in a small grow room. All our reseach & development aims to create an optimal plantgrow environment and make the best possible use of the available growing space. The device is made for use in the home environment.

All features are designed to prioritize these objectives. The device should not be used fopr another purpose.

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Preface

The chapters in this User Manual will help you to install and use the Minigrow One.

It contains important information and regulations regarding safety, installation and usage. Read all information carefully and observe the rules and guidelines, so you can have fun with growing and prevent accidents and injuries. Make sure everyone who uses the Minigrow One access to this manual.

We have made every effort to make this manual as accurately and completely as possible. The information is believed to be correct but does not a comprehensive list and should only be used as guidelines. If you discover errors, please let us know so we can make the necessary adjustments and improve our documentation and services.

Because we constantly innovate and make improvements to the Minigrow One, some parts may differ slightly from the pictures and descriptions in this manual.

This manual contains no instructions for actual growing the plant. There are many general sources available related to growing plants in small spaces.

1. Security and Compliance

This chapter is about safety and hazards. Read all information carefully to avoid accidents and injuries.

Safety Information

This guide contains the following warning and safety symbols.

Provides additional information that may be useful for better usage or to prevent problems.

Warns of a situation that could result in damage or injury if you do not observe the safety regulations.

General Safety Information

Minigrow LED lighting has a very high light output. When looking directly and unprotected in the LED lighting there is a risk of eye injury!
It should always be avoided to look directly in the LED lights.

Do never let children operate the device.

This device is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they will not be exposed to the LED lighting.

Do not make any changes or modifications to the Minigrow One, unless approved in writing by the manufacturer.

Use only accessories from the manufacturer, unless explicitely stated otherwise.

Placement of the device

	Use the Minigrow One only indoor.
	Do not use the device in an area where the humidity is higher than 75% Or the temperature is higher than 24 ˚ C.
	Do not place the Minigrow One in direct sunlight.
	Unplug the power cord during storms or when lightning is expected.
	Hold at the backside of the Minigrow One at least 10 cm of space for a proper functioning of the ventilation. Holds at least 10 cm in inlet at the bottom and remove any obstacles that may block the air inlet.
	Place the device out of reach of small children.

Threats

Electromagnetic compatibility (EMC)

The Minigrow One is an electrical appliance. Minigrow has been tested and is fully compliant with the EMC household certification EN 60335-1 Class B.

electrical safety

Minigrow should be used with the Meanwell OWA90E-24 power adapter and power cord supplied. Together these ensure safe use with respect to short-circuit, overload, overvoltage and overheating of the entire device.

Always unplug the device from the mains before performing maintenance or adjustments.

mechanical safety

The Minigrow One contains fans as moving parts. Keep hands away from the fans when they are on, to avoid injury.

Always unplug the device from the mains before performing maintenance, (dis)connecting a connector or other adjustments.

luminosity safety

Minigrow LED lighting has a very high light output. When looking directly and unprotected in the LED lighting there is a risk of eye injury!
Always avoid looking directly and unprotected in the LED lighting!

Do not allow children or pets look unprotected in the LED lighting.

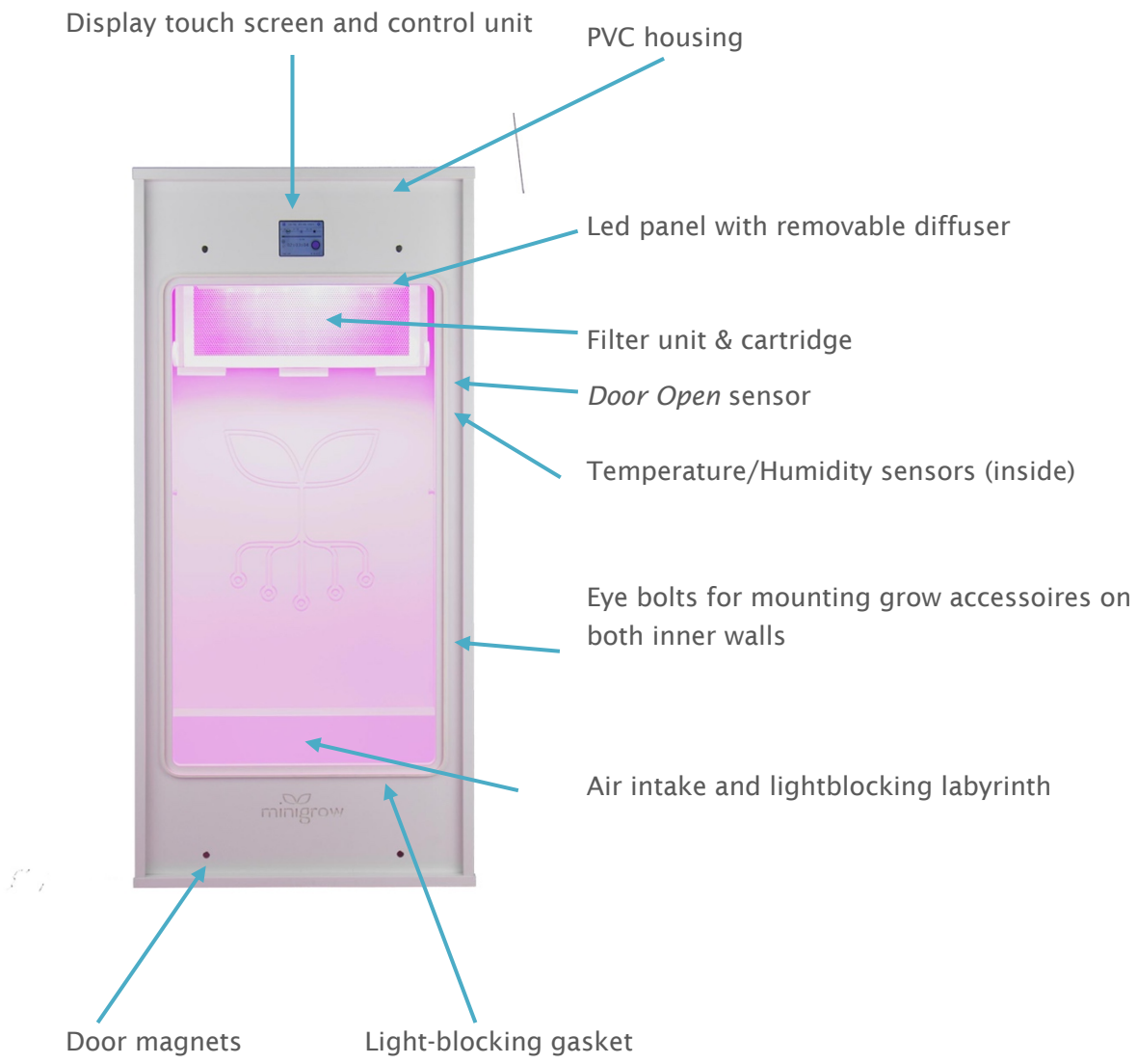
heat safety

The Minigrow One in combination with a heater pad can generate heat spots. Never sandwich a heater element between bottom and pot so that hot spots will not result in excessive heat generation.

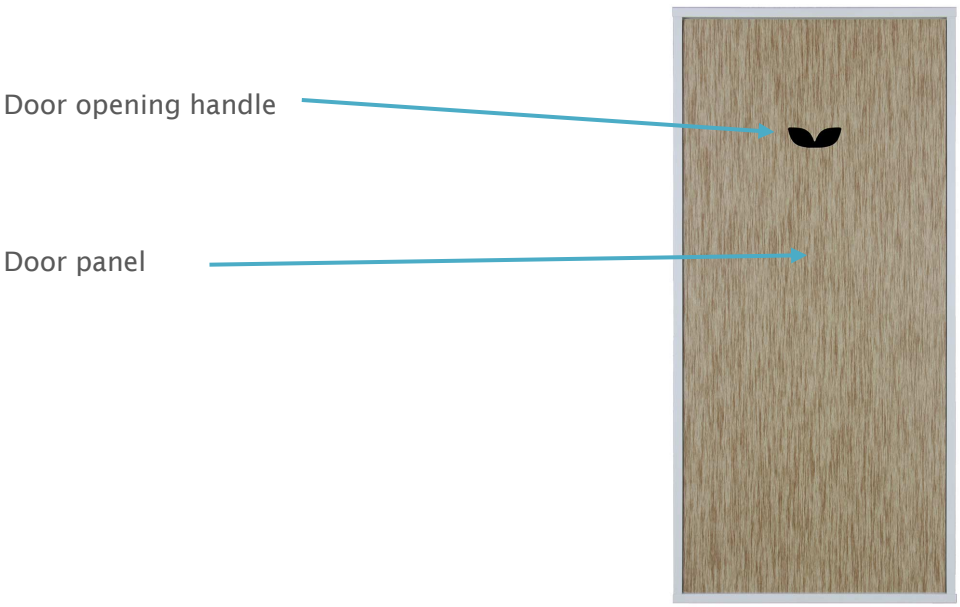
2. Introduction to Minigrow One

Meet the Minigrow One. This chapter describes the main functions and features are described.

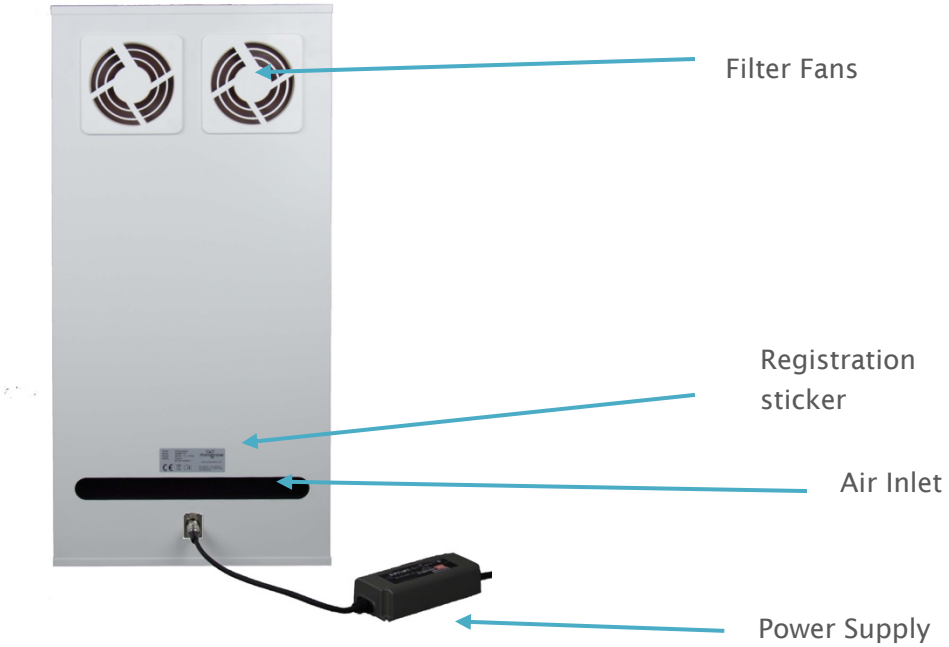
Main components



Frontside



Backside



Specifications

Housing	
Outside (imperial) cm	38,2 x 42,5 x 79,5
Growspace (imperial) cm	36,2 x 38 x 68
Weight without / with packaging	20 kg / 22 kg
Material	PVC based housing. Compliant with UL-94HB fire classification
Door	Fully removable front panel, printed pvc panel
LED-lighting	
Power	32 x 3W maximum, 65W actual power dissipation.
Brand	Osram Square
Spectrum	400 - 730nm. Full spectrum.
Filters	Minigrow MG500 filter system
Fans	Double 12cm Noctua
Cartridge	30 x 16 cm wide refillable carbon cartridge.
Filter Medium	Ca. 650gr activated carbon coconut pellets. Replaceable/refillable cartridge.
Control	
Service	Touch screen color display backed by mcu-controller board
Automation	Set schedule, grow, flower and dry phase, light per day, fans
Sensors	Several temp, humidity, door open/close
Power and Safety	
Input voltage	24V DC, 3.75A, 90W
Power Device	Included Meanwell OWA 90E-24, safety class II EN60335-1 with 100-240V AC Euro wall adapter
Environmental conditions	
Temperature	Room temperature between < 24 ˚ C
Humidity	Lower than 70% RH

Preparing for use

Follow these steps to prepare your Minigrow One for operation. It is advisable to carry out the operations in the described sequence.

Unpackaging

Follow the steps below to unpack the Minigrow One. The packaging and accessories can be easily removed without causing damage to yourself or the Minigrow.

1. Open the packaging box and take out the four protection corners.
2. Take the top accessories box out the packaging. It contains the power adapter and some other accessoires.
3. Take the Minigrow One out of the packaging box and gently put it on the floor. The logo on the door should be on bottom side. Watch out to not damage the corners or sides by coincidentally bumping against solid objects.
4. Remove any extra protective tape on the cartridge inside the box.
5. Place the Minigrow in a suitable location. See also the safety guidelines.
    a. Place the growbox on a flat surface.
    b. Ensure that at least 10 cm of open space exists at the rear of the device. It is important that the area behind the filter cartridges and the air inlet is free of obstacles so that air can freely flow in and out the box.
    c. Ensure sufficient airflow around the box so that air can reach the rarside of the box easily.
    d. Do not place the device in direct sunlight.
    e. The surrounding area must not have a humidity higher than 70% and the environmental temperature is not higher than 24°C. Room temperature is recommended between 15°C and 24°C.

The accessories box contains the following items:

1. Meanwell power adapter OWA 90E-24, class II EN60335-1 including mains-cord
2. Minimum amount of extra carbon, just in case that cartridge need some extra carbon.
3. Diffuser panel
4. This user manual

Connecting mains connector

When the Minigrow One is in place, connect the mains power cord.

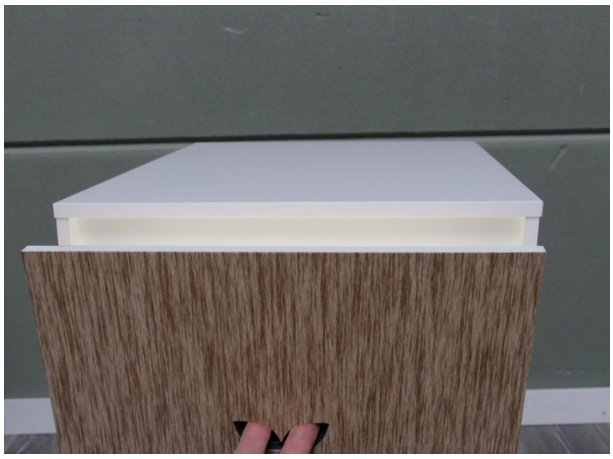
1. Connect the power adapter to the back of the Minigrow One first
2. Plug the power cord into a mains wall connector.

That's it! You have now unpacked and installed Minigrow One, ready to start your first grow!

Keep the packaging box and protective corner pieces in case you will need them later. The packaging box can easily be flattened for easier storage.

How to open and close the door

Minigrow One is equipped with a fully removable front door, based on magnets. Simply open and close it by taking the panel off or place it back on its place.



Water in the Minigrow One

Although the Minigrow One is made of waterresistant PVC-based material, avoid having a permanent layer of water in the Minigrow One. It is usually not good for a plant, and it will expose the electronics unnecessary to moisture.
It is not a problem if there is water on the bottom as a result of watering the plant if it is not permanently.

The LED panel or other electrical connections or pcb's may never be exposed to humidity or water. This is harmful and can be dangerous.

Avoid a permanent layer of water in the Minigrow One.

3. Operation and control

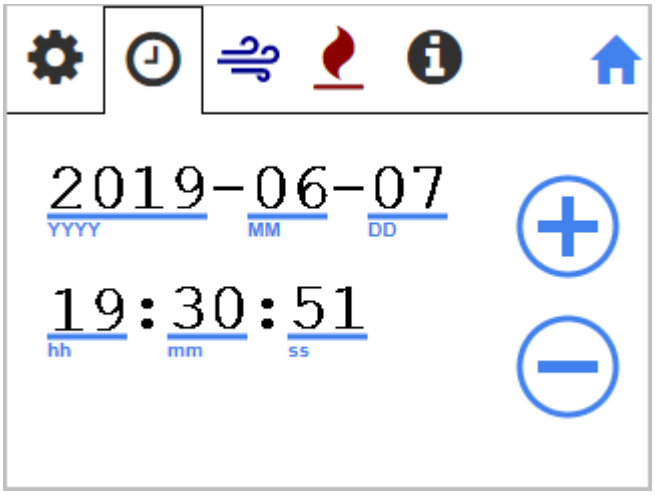
Minigrow One uses a highly interactive color touch screen for controlling all key-functions. The touch screen is connected to a micoprocessor board that is specifically made for controlling the LEDS, fans and heater. The user Interface below might differ from the one that you have on your box. The core functionality is the same though.

The user interface is designed to be very easy to use and offering reliable controlling functions.

Setting the time and date

If you use the Minigrow One for the first time, you need to immediately set the date and time. On the dashboard screen you see the date and time at the top (1).

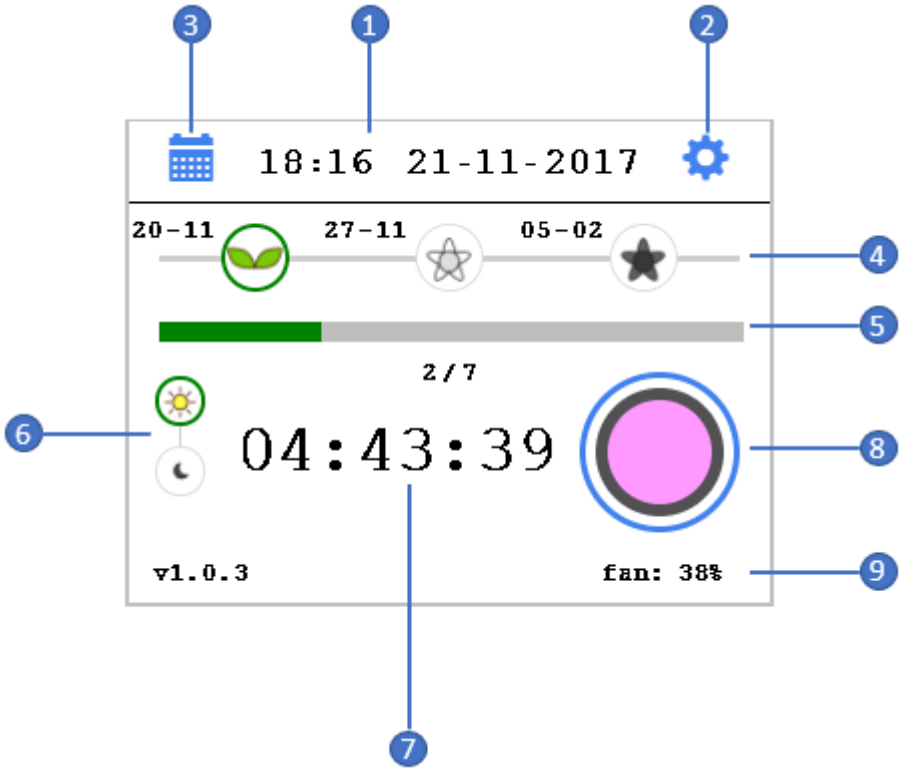
Pressing the settings-wheel (2), you get to the *General Settings* screen, then navigate to the second tab to set the date and time. During the first use it is possible that the display directly shows this screen. You can set both set the date and time from the *Time Settings* screen.



Press the home button (home-icon) to you return to the main screen.

Dashboard

On the main screen, also called dashboard, you see all the key information about the current status of the curent grow cycle.
A plant grow cycle can be fully automated from planting the seed to drying the blooms after a grow cycle.

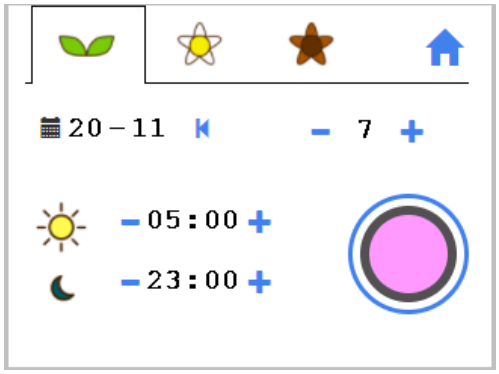


1	Current Time and Date
2	General settings
3	Grow schedule settings
4	Current growcycle (see explanation on schedule), with the start date for each phase
5	Progress of the current phase, for example, day 2 of 7 of the Grow phase
6	Day / night indicator (see explanation diagram)
7	Countdown indicating the remaining time of the current day or night.
8	Light indication (see explanation on schedule). Press to toggle between white light only and the regular LED settings. Minigrow One automatically switches to white light when the door is opened. When the door is closed, the light settings are restored to their normal settings.
9	Version / temperature indication L – ledpanel temp, B – temp box, H- humidity box

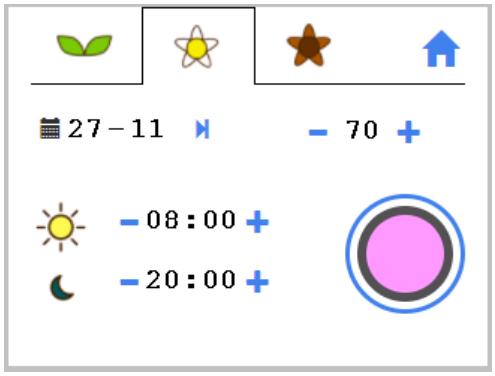
Grow scheme settings

A grow scheme is the basis for automating the plant grow cycle.

A schedule consists of three phases: "Grow," "Flower" and "Dry". See the following example of a scheme with two tabs for the Grow phase and Flower phase.



Grow phase



Flower Stage

Explanation:

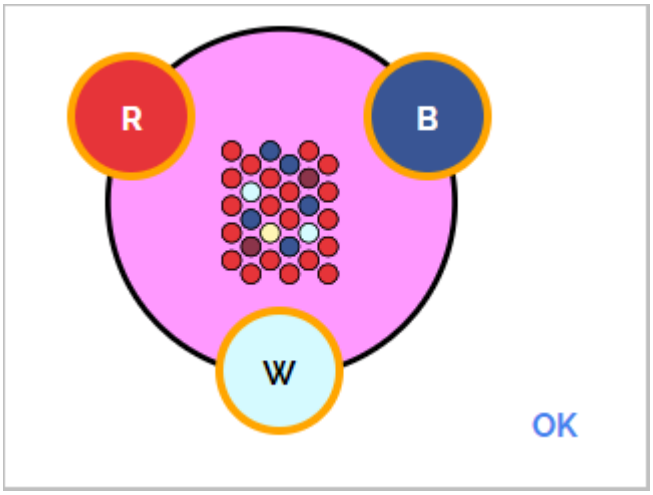
- The grow starts on November 20.
- The Grow phase is for 7 days (upper right of the screen). The day lasts from 5:00 in the morning until 23:00 in the evening, a total of 18 hours. All LEDs are on (the round button is light purple).
- Flower phase starts on November 27 and lasts 70 days. The day starts at 8:00 in the morning until 20:00 in the evening, a total of 12 hours. All LEDs are on.

Sometimes, it can be desired to swap day and night: plant-day at night, and the plant-night during our day. This can be achieved by setting the time of the Minigrow forward or backward by 12 hours.

The third phase is the dry phase. In the dry phase, the LEDs are off, and the fans are on. The dry phase has no specific duration and has no day / night rhythm, since it is only to dry the plant in a dark environment with a descent airflow. The heater pad is a welcome device to improve and fasten the drying process considerably.

LED group settings

The LED panel uses trhee led-groups that can be turned on or of separately.
You are able to turn groups of LEDS on or off. The groups are R (red), B (blue), and W (white), meaning that the specific color names are dominant in the LED group. When a ledgroup is off, the color of the group is dark.
Once you change the settings, these are immediately active when you navigate to the Home screen.



The color of the button indicates the current LED-color setting. If you are not sure which setting to use, just select all the LEDs. This corresponds to a light purple color round button. Press the round button to change the current setting. You will get the following screen:

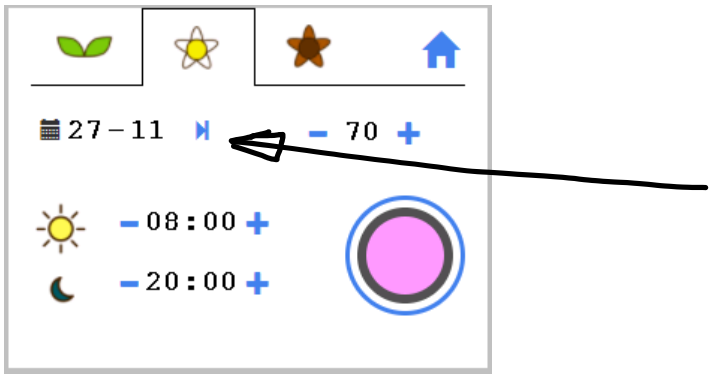
We recommend to always have all LED groups turned on on daytime. Only if you know what you do, we recommend to turn groups (temporary) off.

Germination and Grow phase

The difference between germination and grow can be confusing. Our definition usually is that during germination, the plant is not yet above the ground. The grow phase starts when the plant grows above the ground. The days before the grow phase (germination) is usually seen as grow phase also.
Usualy, if a scheme indicated the grow-phase takes 7 days, that means 7 days from the moment the plant has raised above the ground.

Restart Phase button

The Restart Phase button enables you to immediately start the phase of the selected Tab (Grow, Flower or Dry)



With this button, you can always switch to any phase immediately.

Suppose that your plant is in the grow phase and has still a few days to go, but you want to jump to the Flower phase immediately (and not wait for the remaining days in the grow-phase). To do that, navigate to the flower-phase tab in the Schedule screen and press the "next" button, right next to the start date. The flower phase will then immediately start.

In a similar way you can navigate to the to grow phase or dry phase tab in the Schedule screen, and immediately start in that specific phase by pressing the *Restart Phase* button. You can lengthen or shorten the duration of an arbitrary phase as pragmatic as you like

General settings

Setting the date and time is part of the general Setting screen. Resetting the device also is a general setting. The General Settings contain more tabs to control the fans, the optional heater device and to read the temperature and humidity sensors.
Navigate to the General Settings by press the (2) wheel buttton right above in the Dashboard screen.

Reset

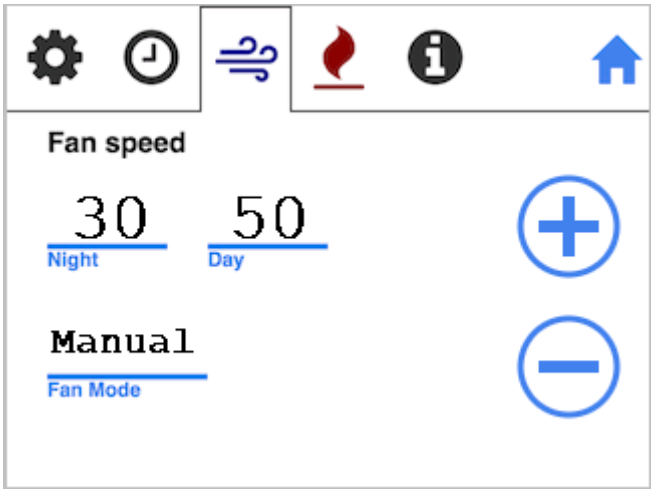
With the *Reset* button in the first page of the *General Settings* you bring the Minigrow back to the factory default settings. The standard scheme is restored, and the Minigrow restarts the grow phase. The set time and date rema are not changedins. Be sure to turn on all LEDs if desired after a reset.

Fan Settings

The fan settings allow you to either manually set the Fan speed on the day (when LEDs are on) and at night (when LEDs are off). Default these values are set to 50% on the day and 35% at night.

There are two fan modes available:

1. **Fan Manual Mode**: always use the fixed settings for Night and Day to set the speed of the fans.



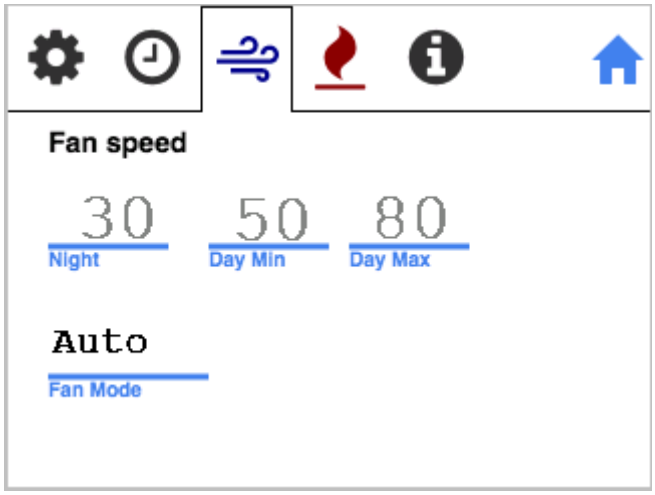
It may be desirable to increase the fan speed in some situations.

- If it gets too hot in the grow room. Especially in a warm environment, or if the plant is far under development, this may be the case that it is hotter than desirable. Ideal plant temperature is about 27-30 C and should not be above 32*C
- If the plant is well developed and has a thick canopy. This can result in some air flow resistance.
- If the humidity is high and should be reduced.
- The default settings are very silent. If there is no need for silence, the settings can be increased to get a higher air flow. For example, 40% in the night, and 65% During the daytime phase.

There are situations where it may be desirable to increase or decrease the fan speed. Fans can never be lower than 30% of full power. During the daytime phase the fans default to 50%. We recommend to not set the fans lower than 50% during daytime.

Maximum fan speed is set to 80% of full power. The filters are designed for low pressure. A higher speed does not increase the airflow significantly, while it draws relatively a lot more power.

2. **Fan Auto Mode**: controls fan speed automatically, based on temperature of the LED panel.
   - At night, the fans are set to 35%
   - On the day, the fanspeed is variable and in a range between 50% and 80% during the day, depending on the LED panel temperature (between 50'C and 60'C).
   - The Night and Day fields are not used and *Greyed Out* in this mode. These fields are only used for display purposes in the Auto mode. DayMin and DayMax is the range of the fan speed and cannot be changed.



Which Fan mode to choose?

Both fan modes do work well. If for whatever reason, the box becomes too hot, it will shutdown automatically.
The reason to use the Manual mode can be:

- that fanspeed should not be above 50% for noise reasons. 50% could be just fine, although the LED panel may become a bit warmer then if you would a auto fan mode. This does not have to be a problem.
- If noise is no issue, fans can be set a bit higher eg 70-75 or higher. It can keep led-panel temperature a bit lower.

The Fan auto mode is always automatically adjusting it's speed with focus on keeping the LED panel cool.

We recommend using the Auto Fan Mode. If it get's hot (hotter than recommended environmental temperatures) Manual mode could help forcing the fans to run higher than they would in the Auto Fan Mode.

Heater

In the future, an optional heater pad might be provided for use in the Minigrow One. The connector is at the top of the left-hand side on the LED panel. A connected heater element should operate on 24 volt DC and never consume more than 20 Watts power.
In order to avoid damage of injury, only use heater-devices provided by Minigrow and only use it according the instructions.

Heater Usage

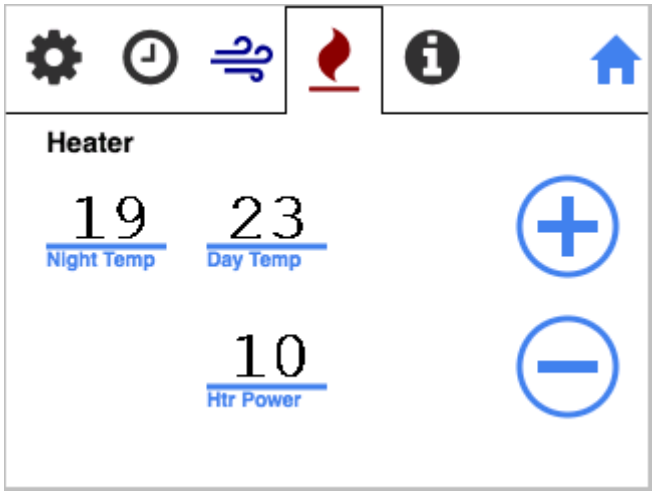
Special care should be taken if a heater is used. It is particularly important that the heater is not too hot and that it is not sandwiched between pot and the bottom of the Minigrow One to avoid burn spots.

Always make sure that the heater has sufficient free airspace both below and above the pad to spread the heat!
The heater should not be put directly on the bottom of the Minigrow One if it is too warm to comfortably touch by hand.
Although the housing of the Minigrow is fire-retardant, it can become soft and the surface can show brown spots when it is exposed to high temperatures.
Also, the plant's roots usually don't like being exposed to temperatures above 30*C.
Ideally, place the heater on a grid that is placed about 1,5cm above the bottom. Also, leave at least 1,5 cm or more between the heater pad and the bottom of the pot.
Alternatively, the heater pad can be placed aside of the pot in a more vertical position.
In case the heaer element has to be placed on the floor, adjust the temperature to handwarm with the *Heater Power* setting.

More advanced and easier usable heater solutions or instructions might be provided by us in the future.

Controlling the heater

A thermostat function is built-in in the *General Settings* screen.



A target temperature can be set for both day (Day Temp) and night (Night Temp)

When the Box temperature is below the target temperature, the heater is turned on.

The temperature sensor is placed about 40 cm above the bottom. Note that the temperature that is measured is usually not the temperature close to the heater surface!

Heater Power

The *Htr Power* Setting is a value between 0 and 100 and represents the percentage of power used when the heater is turned on. For example, f the Heater pad is a 40W device, 100% means that it runs on full power. A value of 50 means it runs on 20W, 25 is for 10W.

The heater can for example be set to "handwarm" and will not heat at full power when the heater is turned on.

Is is important to set the Heater Power to a low value if a heater pad is placed (directly) under the plant-pot. If the bottom of the pot gets too warm, water will evaporate faster and the plant may get too hot.

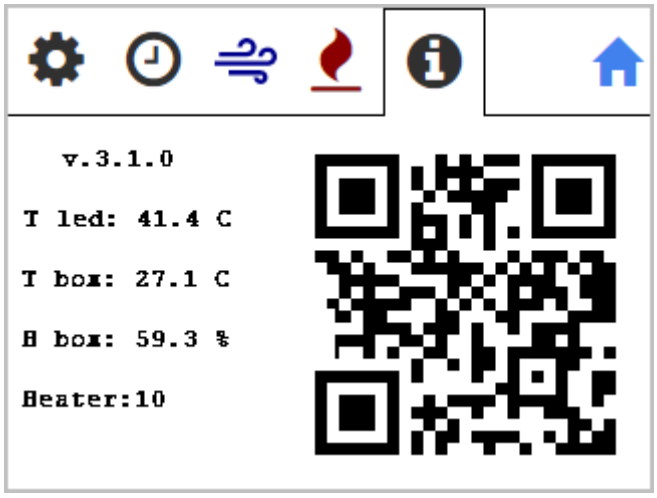
A hight value will heat the grow space faster and to a higher temperature.
Use only a high value if the heater(pad) is in free air and not blocked.

A low value – for exmaple 10-255 is used if the heater pad only needs to get maximum handwarm. A large heater pad surface makes the generated warmth spread evenly. If the heater pad is placed under the pot, use low HtrPwr value.

The heater pad is a welcome device in the dry phase. The herbs or dried flowers could be placed on the heater pad. Thermostate settings could be set at a higher temperature to keep it warm in the box. Use HtrPowr to set the temperatur of the Heater pad surface itself.

Info tab

The readings of the temperature and humidity sensors can be read in the info tab. The temperature in the box is the environmental temperature for the plant.
The LED panel temperature is higher than the temperature in the box (can go up to 60*C) and is used for safety reasons. The QR code is used for support purposes.



Dim function

The screen contains a Dim function. If the screen is not touched for longer than 30 seconds, navigate to the Home screen. If the screen is then not again for 30 seconds touched the display automatically dims (black). At the time when the screen is touched at an arbitrary position, the screen becomes active again.

The heater should never be placed directly on the bottom of the Minigrow One if it is too warm to comfortably touch by hand. Only use the heater elements from the manufacturer, otherwise guarantee may be lost

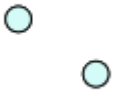
4.LED-lighting

The LED lighting consists of high-power LEDs which emit focused wavelengths of light. The chosen amount of light spectrum is optimized for plant growth, specifically in order to keep the plant relatively small with high resin yield. Since no unnecessary wavelengths of light are emitted, LEDs are much more efficient than the conventional growth lamps.

The LED colors have different functions for the plant. The plant needs relatively much blue light during the growing phase and more red light in the flowering phase. Infrared light also has specific functions during growth and flowering. Infrared LEDs appear dimmed for the human eye since their wavelength is just at the edge of the visible spectrum. For the plant is a major catalyst during flowering.

White light has a wide spectrum and fills missing wavelengths. Also, white light is used to watch the plant better when the door is open.

LED settings

B		This ledgroup contains a high amount of blue spectrum: These settings could be used during germination and the (initial) phase of the growth period.
R		Red LEDs are particularly needed during the flowering phase. Red stimulates the plant the best flowering. This group should be combined with blue and / or white.
W		Used to view the plant with "normal" light. White light has a broad spectrum and is better for us people to look at. This setting is used when the door is open.
full		All LEDs are on. This is the default setting for both growth and flowering stage. It is strongly recommened to always use this setting.

off		All LEDs are off. This setting is used for the night and the dry phase.

You can experiment with various light settings. Remember however, Turning Ledgroups off, results in less light power.
It is strongly recommended to turn all led groups on during both Grow and Flower phase.

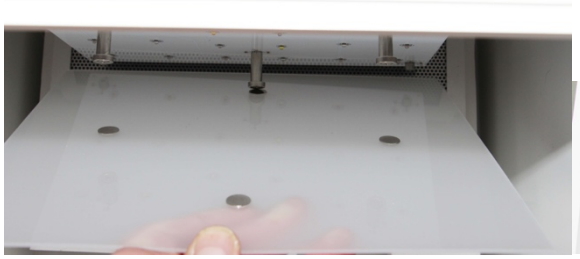
The above led-groups overview might differ slightly from the actual used led-panel.

Diffuser

The LEDs emit a high intensity light, which is key to be able to penetrate the plant's canopy. Simultaneously, it is important that the different colors of the spectrum are well distributed throughout the growing space. Also, it is desirable to be able to place the plant as close as possible to the LEDs, without causing light burn. As a result, the space is used optimally.

The diffuser panel is a high-grade panel with both a very high light transmission with a high diffusion factor at the same time. Diffused light ensures optimal indirect lighting, as a method which is also used in professional greenhouses.

The diffuser is mounted with magnets. Click it on the LED cover, as shown below.



Diffuser removed

Diffuser on its place

Overheating protection

Minigrow One runs on a safe low voltage of 24V and usually doesn't get very hot. Fans are redundanty applied.

Yet it may happen the system gets hotter or even overheated. .
Minigrow One has built-in protection against too high temperatures. It shall take effect when the temperature of the LED panel is 60'C or higher. When this temperature is reached, the light will be partially switched off and only the white LED-group remains on.
When the temperature of the LED panel is reduced to 50 ° C, the lighting schedule will be restored to its normal settings again.

The cause of the heat may have one of the following reasons:

- The fans are defective and / or do not work. As a result, the temperature rises. Inspect carefully whether you can see a connector (connection) which is loose. If it is not a loose connector, please contact customer support if one or both fans do not work.
- Minigrow One is placed on a wrong position or environment:
    - The environmental temperature is high (above 25'C) e.g., because of direct sunlight or too close to a heating radiator.
    - A blocking factor the air inlet or output. This is a problem alsof or plant grow: plants need enough fresh air.

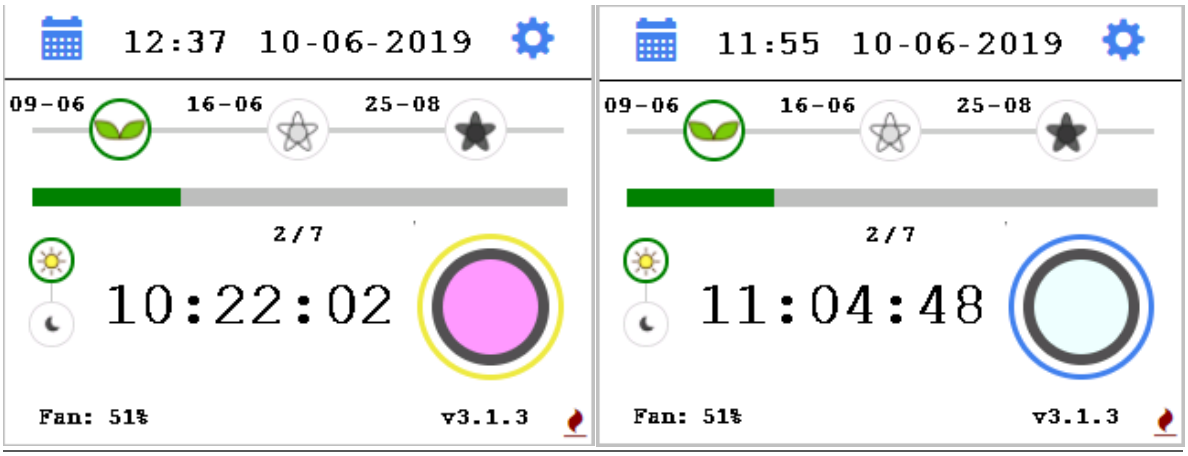
  Move the Minigrow to a different environment.
- The fan speed setting is too low, it should be minimum 50%.

It is important first to have fixed the cause of the problem before the grow scheme resumes.

Door Open - white light only

Because of the extreme light power of the LED panel, it is important to never directly expose your eyes to the LED lights. As a safety measure, the Red and Blue LEDS are always turned off automatically when the door is open.
If the door closes again, the LEDs will automatically restore tot the LED settings as set in the Schedule page.

It is possible to toggle the LEDs between “white only” and “normal LED settings” if the door is open. In this way, you can decide yourself which light you like most if the door is open.
Never look directly into the LED lights!



If the door opens during the Day, the White LEDS only are turned on automatically
If the door opens at night (when the LEDS are off), the white light will not be turned on automatically, since that might disturb the plantgrow.

You can always toggle between white-light-only and normal LED settings.

Ensure LED panel itself is never touched directly. Be careful when inserting or removing the diffuser panel so that no electronics are touched or damaged.

Beware of the bright light and make sure not to look in the LEDs directly. Turn the Minigrow off when the diffuser panel is changed.

5. Filter

A well-functioning filter mechanism that filters pollution and undesirable odors is essential for a growbox. Minigrow One is equipped with a solid activated carbon filter system.

The filters are designed to filter a small grow room where the filter takes up little space and produces a low noise level
It is advised to refill the cartridge once per 2 grows.
The carbon can be refilled yourself, which gives you maximum flexibility at the lowest cost.

How activated carbon works

Activated carbon is a specially treated carbon and extremely porous. 1gram of activated carbon has an internal surface area of several hundred square meters. The microscopically small openings capture the gas molecules by adsorption.

Minigrow filters use active carbon made from coconut. The size of the mazes is very suitable for the absorption of odor molecules that are released from the plant in the growbox.

Replacing the filter cartridge

The filter cartridge is attached to the filter system with sliders. These sliders should be taken away to take out the cartridge of the filter base. It might be needed to press on the cartridge while sliding off the calmps.

The process could be done with the Minigrow One in two positions:

1. Keep the Minigrow One in normal standing position and follow the instructions.
2. Place the Minigrow on the backside. The gravity helps to remove the sliders easier than if the box would be in normal (standing) position. Remove the wall plug and then the DC connector out of the Minigrow One first.

We recommend to not hurry through the process and choose for the second option.

The following process describes how to remove the cartridge, replace it with new carbon and place it back.

Step 0. What you need

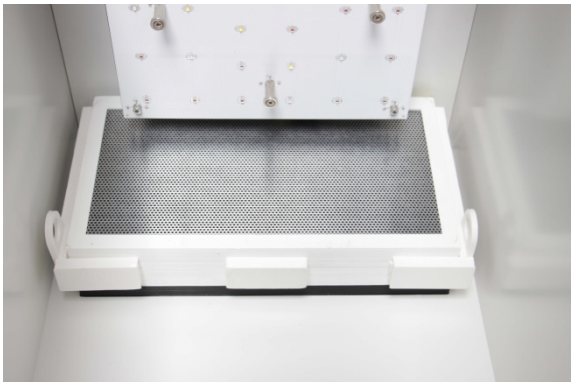
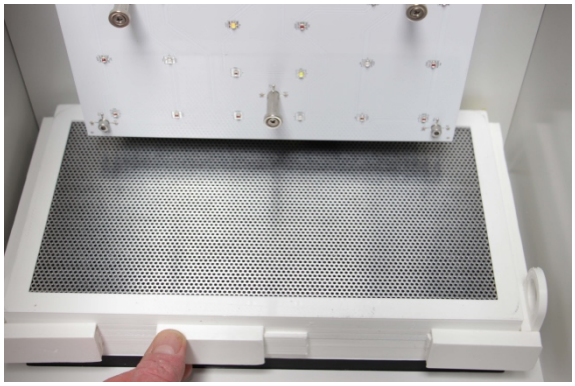
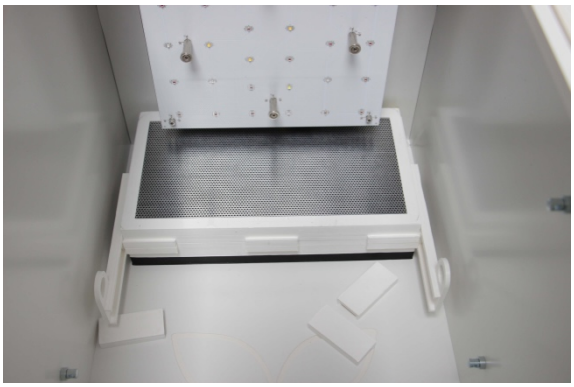
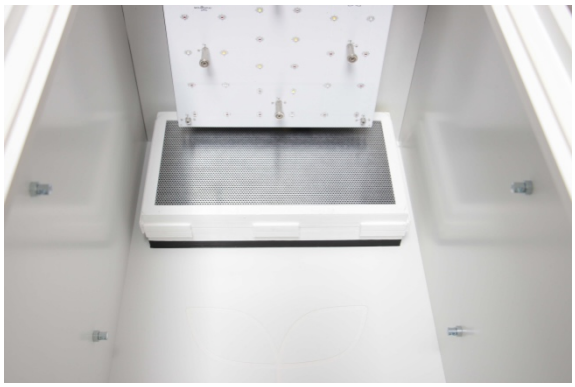
- the cartridge that needs to be refilled or replaced
- bag of fresh activated carbon of about 650 gr
- a funnel that fits into the cartridge opening
- piece of (thin) tape and a cup

Step 1 (Optional) Lay the Minigrow on its back

Before laying the Minigrow One on its back, make sure to protect the connector-tab.
Use the protection corners that were included with the original packaging to lift the back a few centimeters and protect the connector-pad that sticks out.
You can also use other material instead of the corners if you like.

Step 2. Remove clamps from filter

Slide the clamps from the filter. Start with the lower sliders. Gently press the cartridge while removing the sliders.

If the Minigrow is in standing position, make sure that the cartridge doesn't fall off when the sliders are removed!

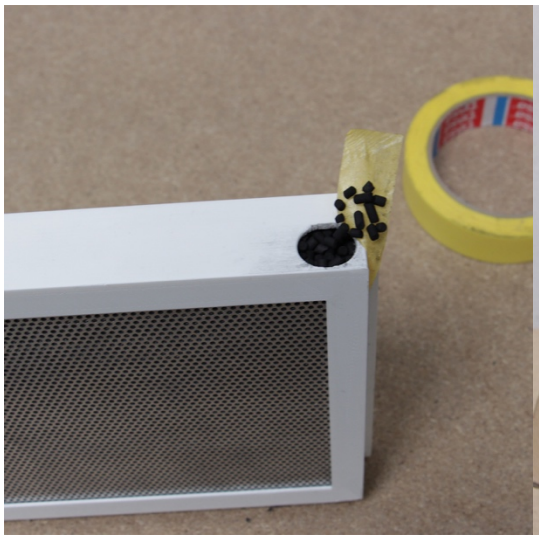
Step 2. Remove the cartridge from the filter unit

When removing the last sliders, make sure that you don't drop the cartridge accidentally.


Do not use excessive force and make sure not to touch the led-panel. That should not be necessary and may cause damage.

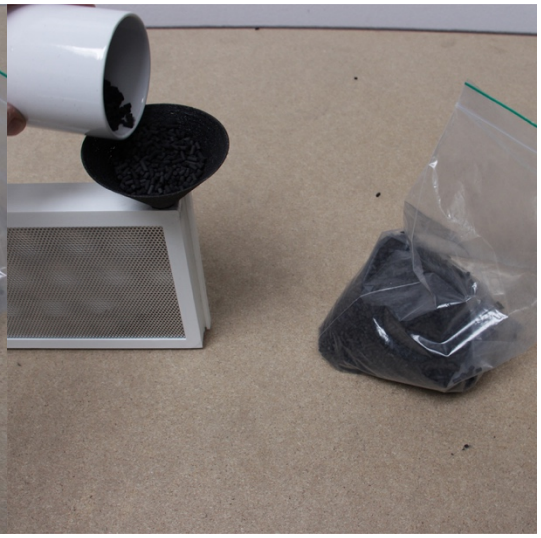
Step 3. Empty the cartridge

The old carbon must be removed first. Take off the tape and simply let all carbon flow out in a bucket or box. The old carbon can be thrown away in the garden or in the (green) waste container.




Step 4. Fill cartridge with new Carbon

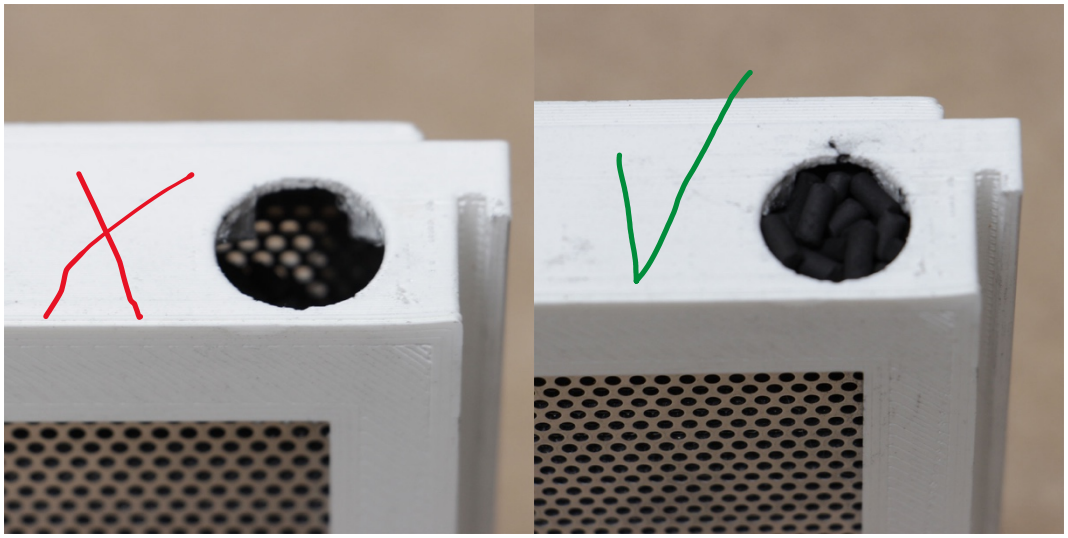
The cartridge uses 3mm carbon pellets.
A funnel is included and can be used to funnel that carbon in the cartridge.
As an intermediate step, it is easiest to use a cup to pour the carbon in the hole.

Step 5. fill it up to 100%

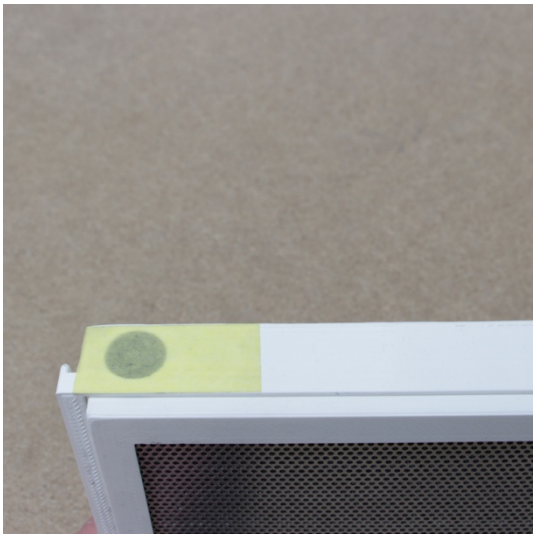
It is important that the cartridge is 100% filled with settled carbon pellets so that airgaps will be avoided. After the carbon is placed into the cartridge, gently shake and keep filling the

void until it does not become denser. Tap with your finger on the metal rack and see if the carbon is really settled. still needs to settle in the cartridge so that the carbon does not contain airgaps.
The cartridge is sufficiently filled when you do not hear carbon moving in the cartridge when you are shaking the cartridge in your hands (with your finger on the hole).



Put the funnel on the opening and add carbon until the cartridge is full. Then shake again gently with your finger on the opening! After a few iterations, the carbon is settled again and some new carbon can be added until it is full again. Repeat this step a few times until the carbon is nicely settled into the cartridge and reached the required density.

Do not forget to fix a piece of tape after filling so that the opening is closed.



The cartridge is sufficiently filled when you do not hear carbon moving in the cartridge when you are shaking the cartridge in your hands (with your finger on the hole).

Step 6. Place new cartridge back into the filter unit and attach the clamps.
Do all the steps to remove the cartridge in reverse order to place it back.

Step 7. Place back the diffuser panel

You now have a fresh new cartridge installed!

Still smelling something?

It may happen that some odor particles are still leaked. There are several causes/solutions:

1. The carbon is not 100% filled or settled completely in the cartridge (after the refill).
2. the placement of the cartridge on the filter base. It should fit well and all rubber sealings should be on their place.
3. The carbon must be replaced because its saturated.

6. Maintenance

In order to work properly and safe, it is important that the occasional maintenance is performed. This chapter contains instructions and tips for maintenance.

Check fasteners

It is possible that some components are loosened as a result of transporation, vibrations or other causes. Regularly check all bolts of the LED cover fasteners are tight. Check fixings especially good before and after Minigrow One is moved or transported.

Overall control

It is important to regularly check the operation of the components. Especially the fans must always work to pull out heat and provide fresh air.

Cleaning

Use a clean damp cloth to keep the outside and the inside of the Minigrow One clean. Never clean the electronics and/or LED bulbs itself! The diffuser is removable for cleaning purposes. Take it off to clean it with only a damp cloth. If more cleaning is needed, only use soapy handwarm water and detergent.
Never use thinner-based cleaners! Never touch the electronics or leds!

Keep airflow path clean

The airflow in and around the box should not have obstructions. The clean air enters the box via the inlet and is transported up in the box and driven to the two output fans/filters. These will blow the warm and polluted air through the activated carbon filters outside. Make sure that you keep dust and dirt away from the air intake, otherwise dirt and dust can accumulate in the air intake flow.

The fan blades should occasionally be cleaned with a dry cloth. Accumulated dust and dirt should be removed as much of the fan blades.

Battery change

A small CR1220 type battery is used to store date and time setting. Replacing the battery is only needed once per few years. Remove the display, unscrew the display from the PCB, replace the battery and then mount the display back on the PCB. Then place the unit back into the Minigrow One.

Never touch the electronics or Led bulbs on the LED panel or control unit.

Do never use aggressive cleaning agents such as thinner, or other solvent-based products.

7. Questions and answers

Below is a list of questions and problems and how to deal with it.

Two LEDs are weak

There are two infra-red LEDs with a wavelength just on the edge of the visible spectrum. As a result, we see less, but the LEDs are functioning properly.

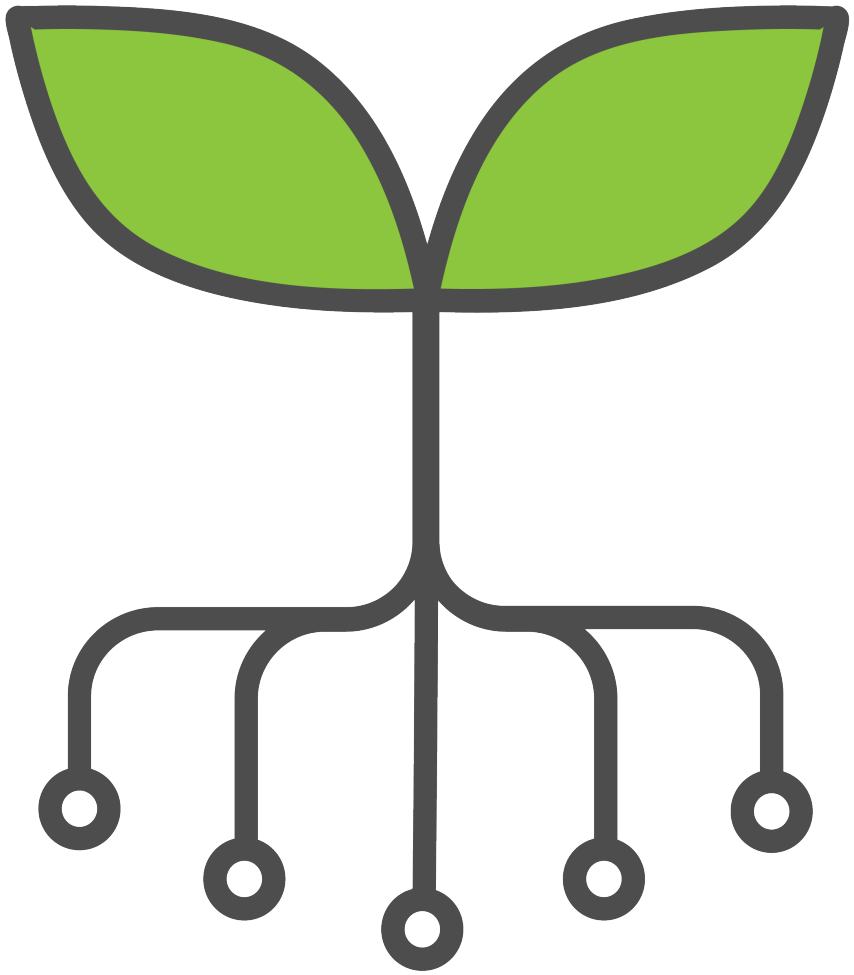
The door opening and closing properly

Clean the area where the door is clean. A grain or stone can be a good closure of the door in the way.
Also, a magnet can be loose. A magnet may be put again fixed with contact adhesive.

Minigrow does not work well

There can be several causes.

- Is the power supply firmly connected to the mains? Is the power supply still working?
- Is there a loose connector somewhere? A few connectors are used to connect various electronic components. The LED cover and the back of the display contains several connectors that can be loose. If a connector is visibly disconnected, you can fix it. If it is unclear how the connectors should be confirmed, please contact customer service and do not experiment yourself, because that can cause damage to yourself or the equipment.
- If the display is working but the light does not: Make sure that the schedule is set right. If anything doesn't work well after you checked this manual well, contact the vendor where you have purchased your Minigrow One. If you purchased via Minigrowbox.com, please contact us at info@minigrowbox.com and let us know your support question.



Enjoy your grow