Santinel WiFi
Santinel Cellular
Hand Disinfecting Station

User Manual

Document revisions

Revision number	Notes	Date released
20220607-1	Santinel WiFi and Santinel Cellular pairing procedures updated. Covers firmware V. 1.0.0	06/2022
20210909-1	First version available. Covers firmware V. 1.0.0	09/2021

GLP® Santinel WiFi / Cellular - Hand Disinfecting Station User Manual

Table of Contents

1. Safety

Key to symbols

The following symbols are used in this manual:

Warning! Safety hazard.	Warning! Risk of electric shock.	Warning! Risk of fire.	Warning! See user documentation for important safety information.

General safety information

When the Santinel is installed, used and serviced as described in this user manual it is a reliable product that is safe to use in public spaces, but read this section carefully before installing the product. If you have any questions about the product, contact your GLP® supplier for assistance. Your GLP supplier will be happy to help.

Areas of application

- To prevent the spread of microbial and viral infection via the hands.
- To protect from infection in shared spaces, in the presence of customer traffic, at events, in public institutions, and in similar applications.

Contraindications

- Not suitable for disinfecting mucous membranes.
- Do not use in the immediate vicinity of the eyes or open wounds.
- Do not use in the case of hypersensitivity (allergy) to any of the ingredients.

For more detailed information, read the package insert supplied with the disinfectant or consult a doctor or pharmacist.

Possible side effects of the hand disinfectant

- Occasionally there may be slight dryness or irritation of the skin. In such cases, it is recommended to apply or step up a general skin care routine.
- Allergic reactions are rare.

For more detailed information, read the package insert supplied with the disinfectant or consult a doctor or pharmacist.

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General

- Respect all warnings and directions given in this user manual and on the product. Read this manual and familiarize yourself with the safety precautions it contains before installing or using the product. The manufacturer will take no responsibility for damages or harm resulting from disregard for the information in this manual.

- Save this user manual for future reference.

- Make this user manual available to any person who is responsible for installing or servicing the product.

- Use the product only as directed in this user manual. Observe all markings in this user manual and on the product.

- Refill the product with hand disinfectant from GLP only.

- Ensure that there is free and unobstructed airflow around the product.

- Do not allow children to use the product unsupervised.

Fire safety

- The disinfectant has a low flash point of around 23° C / 73.4° F and is therefore highly inflammable. Do not allow the solution to come into contact with a naked flame. Do not use the product near sources of ignition.

- If disinfectant is spilled:

  - Wipe up the liquid immediately and clean the affected surfaces with a cloth soaked in water. Soak all cloths used for cleaning in water. Ventilate the room. Eliminate naked flames and any other sources of ignition.

  - Prevent persons from smoking.

- In the event of fire, disconnect the product from power and extinguish with water, extinguishing powder, foam or CO_2.

Electrical safety

- The product is for indoor use in dry locations only. Do not allow the product to become wet.

- Use only a source of AC mains power that complies with local building and electrical codes and has both overload and ground fault (earth fault) protection.

Rev. 20220607-1

- Ensure that the product is electrically connected to ground (earth).

- Disconnect the product from AC mains power before carrying out service or moving the product and when the product is not in use.

- Disconnect the product from power if the power plug, power cable or any cover or other component is damaged, defective or deformed. Do not reapply power until the product has been repaired and made safe by a technician authorized by GLP.

- If a fuse blows, replace it with one of the original type and rating only. If new fuses blow, disconnect the product from power and send it to a technician authorized by GLP for repair. Do not attempt to bypass a fuse.

Disinfectant safety

- Use only a disinfectant that is approved by GLP.

- Do not use the disinfectant on babies under 28 days old or premature babies.

- The disinfectant is harmful when swallowed. Do not allow any person to drink it. If a person has drunk hand disinfectant, give him a glass of water or tea to rinse, so that the disinfectant is diluted. If necessary, give him something sweet to keep the blood sugar from dropping. In any case, call medical assistance.

- If you need to transfer disinfectant from one container to another, do so under aseptic conditions only.

- For information on risks and possible side effects in connection with the disinfectant, read the package insert supplied with the disinfectant container. If in any doubt, consult a doctor or pharmacist.

Installation safety and protection from personal injury

- Ensure that the product is safely supported and cannot fall. If mounting the product on a wall or other vertical surface or structure, use fasteners that are suitable for the surface and strong enough to safely hold the weight of the product with a full container of disinfectant plus a generous safety margin so that there is no risk of the product falling.

- Install the product on a surface, stand or structure only as directed in this user manual.

- Check that the hatch over the disinfectant container is securely locked before allowing the product to be used.

- If the product becomes damaged, stop using it immediately and disconnect it from power. Do not attempt to use a product that is obviously damaged.

- Do not modify the product in any way not described in this user manual.

- Product overview
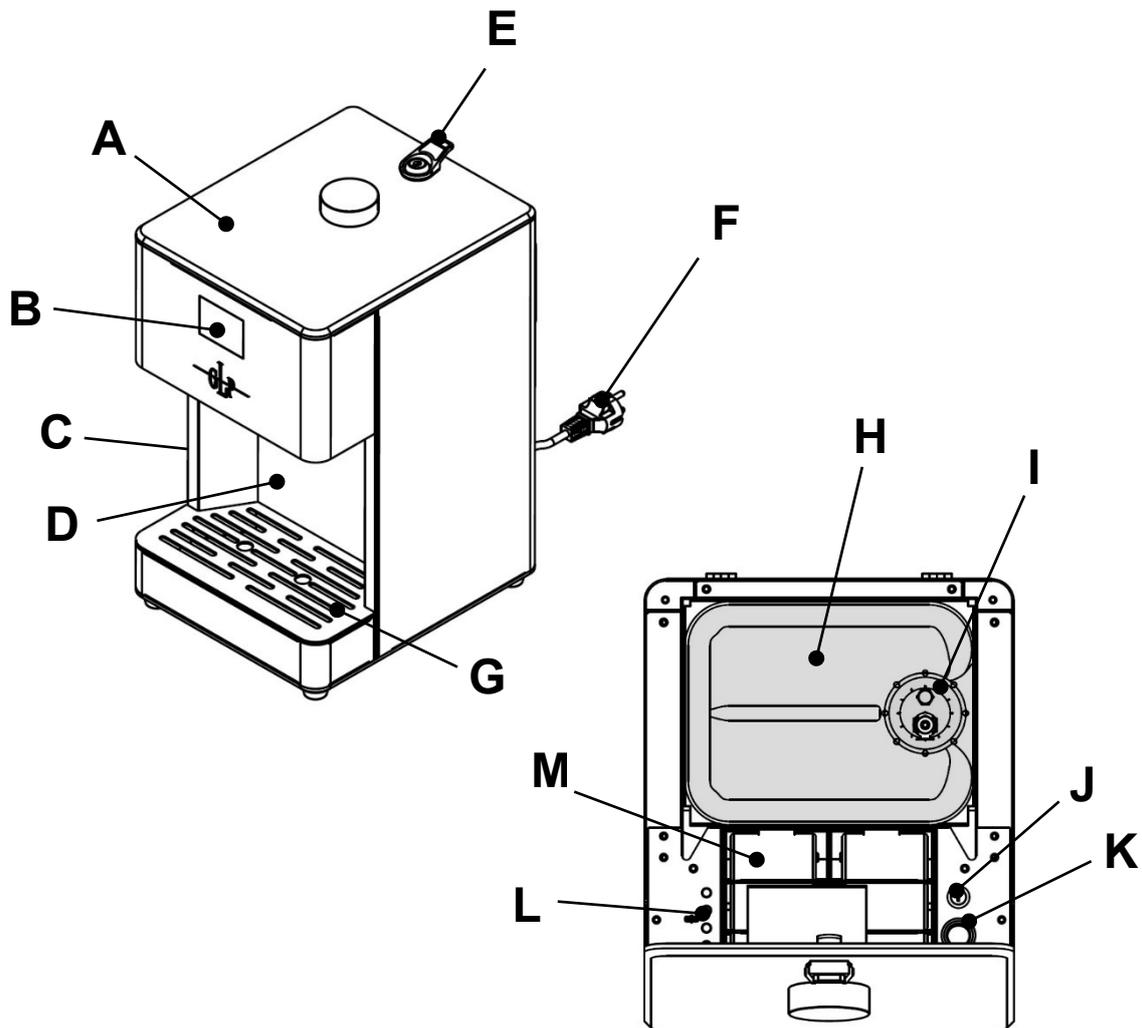
Figure 1. Overview

A. Access flap

B. Backlit LCD display

C. Standby button (on left-hand side of housing)

D. Dispensing area

E. Access flap lock and handle

F. Mains power cable

G. Drip tray

H. Disinfectant fluid container

I. Container cap with fluid hose connector

J. Fuse holder

K. Main ON/OFF switch

L. Control buttons

M. Battery compartment

2. Features

The Santinel from GLP is an automatic hand sanitizer designed for permanent or temporary indoor use that provides protection with a viricidal, disinfecting agent. The disinfectant is suitable for use against a wide range of bacterial and viral pathogens including coronaviruses belonging to the group *coronaviridae*. Among others, these pathogens include SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus-2, the virus responsible for Covid-19), SARS-CoV and MERS-CoV (Middle East Respiratory Syndrome Coronavirus).

The disinfecting area has sensors, attractive and convenient colored ambient lighting of the disinfectant dispensing area and a backlit LCD display that guides the user.

Contactless dispenser technology allows the desired dispensing amount to be set precisely. The subtle ambient LED lighting in the disinfectant dispensing area means that it can also be used easily in locations with low light levels. Electronic fill level monitoring and a lockable disinfectant container compartment provide additional convenience and security.

The 5-liter disinfectant container is enough for 2500 typical dispensing operations of 2 ml of disinfectant fluid. The container can be changed in seconds. The fluid container and all sensitive components are hidden under a tamper-proof locking service flap, where there is also a 4-button control panel that works together with the LCD display on the front of the housing

The Santinel is available in two versions:

- Wi-Fi version that lets you monitor the Santinel's fluid level and performance from any web browser or using the Santinel App for mobile devices.

- Cellular version that lets you monitor the Santinel's fluid level and performance via smartphone (you will need to install a SIM card inside the Santinel) or using the Santinel App for mobile devices.

The Santinel can operate on 100 – 240 V mains power, but in locations where mains power is not available the Santinel can operate on battery power. Batteries are located under the locking flap for easy access and replacement.

Optional Accessories

The following range of accessories is available to complement the Santinel:

- Santinel Storage Tower – an elegant tower with lockable storage space and potential for use as an advertising surface.

- F33 or F34 adapter plate – a practical solution that lets you install the Santinel on an existing standard crossbar.

- Transport cases for convenient movement between locations and fast installation.

- Customized display animations – the integrated color display can be configured to show customer-specific logos or animations.

- Customized RAL color options that let you match the Santinel perfectly with your corporate image.

3. Preparing for use

Warning! Read 'Safety' starting on page 4 for important safety information that you must understand before you install or operate the fixture.

Included items

- The Santinel is supplied with a Santinel Wall Mount Plate – an attractive and discreet means of fastening the Santinel to a vertical surface.

Accessing or storing the power cable

The Santinel's power cable can be stored in the cable compartment on the back of the Santinel during battery operation. The compartment and its door have cutouts that let the cable pass through with the door closed.
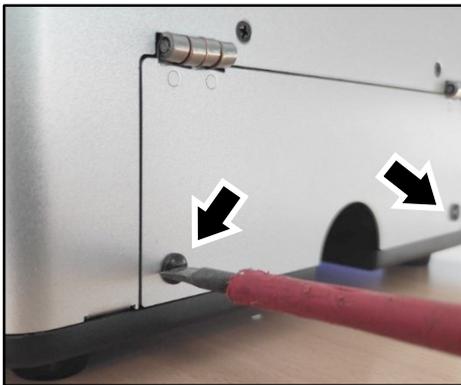
Figure 2. Power cable storage compartment

See Figure 2. To open the power cable storage compartment if you need to remove or insert the power cable, remove the two screws (arrowed) in the compartment door. Close the door and reinstall the two screws when you no longer need access to the compartment.

Physical installation

The Santinel is suitable for mounting on the Santinel Tower Stand accessory available from GLP, on a horizontal surface or on a vertical surface using the Santinel Wall Mount also available from GLP.

Mounting upright on a level surface

The Santinel may be placed upright on a level surface.

To secure the Santinel against the risk of falling, in which case the owner of the Santinel would normally be liable for any injury or damage caused, the Santinel must be fastened into position.

Using camlock fasteners

See Figure 3. Two receptacles for camlock quick-release fasteners are provided in the base of the Santinel to allow secure fastening to the surface that the Santinel is mounted on as well as fast installation and removal. The receptacles are spaced 140 mm (5.51 in.) apart and 175 mm (2.95 in.) from the front of the base.

To use camlock fasteners:

1. Drill suitably dimensioned holes in the mounting surface with reference to Figure 3.

2. Pass two camlock quick-release fasteners through the surface from underneath, push them into the receptacles in the base of the Santinel and turn each fastener a full 90° clockwise to lock it.

3. Make sure that the Santinel is held securely. Make sure that the fasteners are not accessible to unauthorized persons.
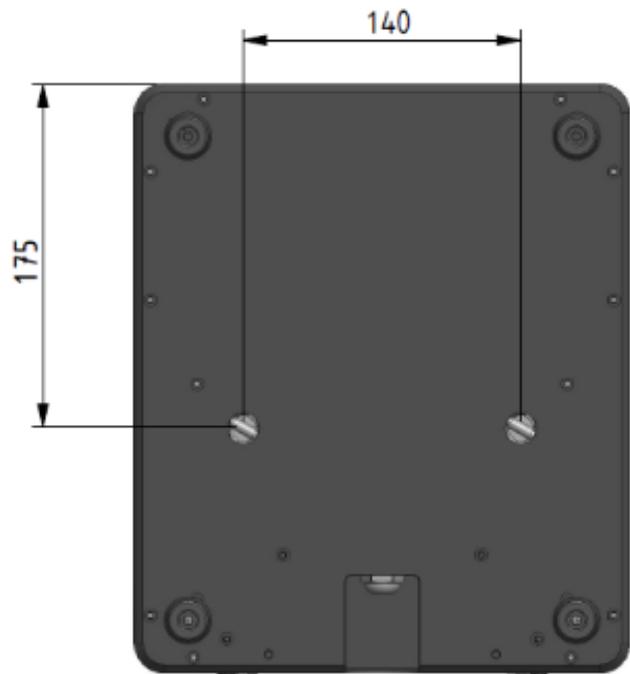
Figure 3. Receptacles for camlock fasteners

Mounting on the Santinel Tower Stand

The Santinel Storage Tower optional accessory is a convenient solution that provides storage space in a lockable compartment.

To install the Santinel on its Storage Tower:

1. Place the Tower Stand in the desired location with the lockable storage compartment door facing to the front.

2. If necessary, screw the adjustable feet in the base in or out until the stand is perfectly stable and does not rock in any direction. Do not screw a foot out of the base so far that it becomes unstable or falls out.

Figure 4. Santinel on Storage Tower

3. Open the storage compartment door and note the positions of the two camlock fasteners (arrowed in Figure 4) in the top of the stand.

4. Place the Santinel onto the stand as shown in Figure 4, passing the camlock fasteners into the receptacles in the bottom of the Santinel. Turn both camlock fasteners a full 90° clockwise to lock.

5. Check that the Santinel and stand are secure before locking the storage compartment door and using the Santinel.

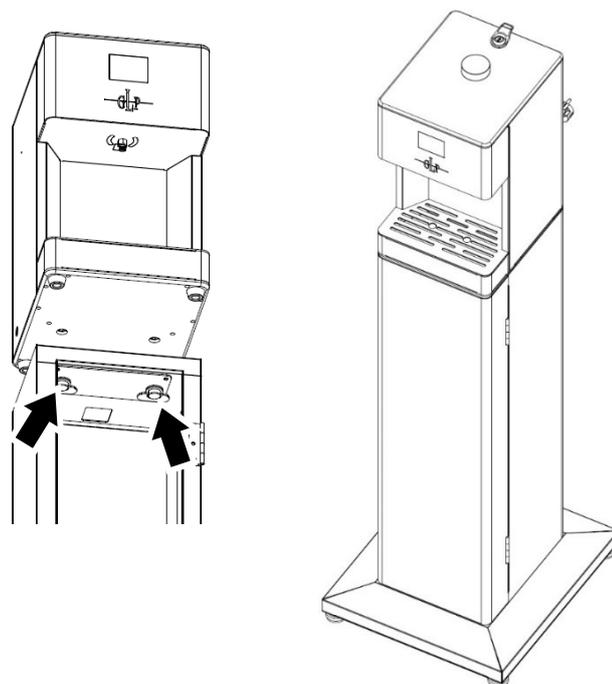**Mounting on the Santinel Wall Mount Bracket**

The Santinel Wall Mount Bracket optional accessory lets you mount the Santinel securely on a vertical surface. It is possible to remove and reinstall the Santinel on the bracket in seconds.

To install the Santinel using a Wall Mount Bracket:

1. Hold the bracket up to the mounting surface in the position where it will support the Santinel and mark up the position of holes for four fasteners.

2. Drill holes for the fasteners and prepare them with suitable screw plugs or similar anchoring hardware if necessary.

3. Fasten the bracket securely to the surface with four suitable fasteners in high-tensile steel or similar strength material.

4. See Figure 5. Hang the Santinel on the bracket by passing the two cutouts (arrowed) in the rear of the Santinel housing over the hooks in the bracket and lowering the Santinel until both hooks engage in the cutouts and hold the Santinel on the bracket.

5. Check that the Santinel is held securely and cannot fall before using it.
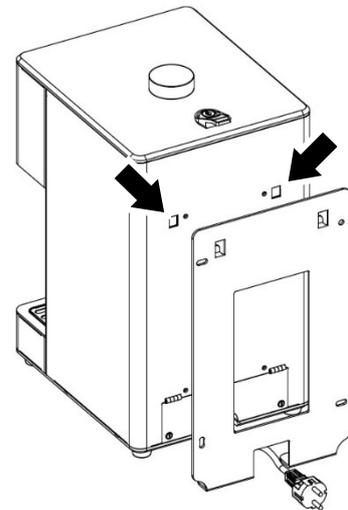
Figure 5. Wall Mount Bracket

Installing batteries

You can use the Santinel with no need for mains power using 6 x D-size 1.5 V batteries. We recommend that you either use good-quality alkaline batteries or protect the environment and save money long-term by using NiMH rechargeable batteries with a spare set of batteries and suitable charging equipment.

To install batteries:

1. See 'Product overview' on page 7. Unlock and open the flap on top of the Santinel.

2. Place six D-size 1.5 volt batteries into the battery bays in the top of the Santinel. Respect the battery polarity that is marked on the Santinel carefully. Incorrect battery installation may cause damage.

3. Switch on the Santinel and check that it starts up correctly, then close and lock the flap.

When operating on batteries, remember to shut down the Santinel by pressing and holding the standby button on the left-hand side of the housing each time the Santinel is not being used. This will save energy and maximize battery life.

Connecting to mains power

You can connect the Santinel to mains power at 100-240 V, 50/60 Hz. The mains power supply must include a connection to ground / protective earth. It must be protected against ground / earth leakage and overload.

Replacing the power plug

The Santinel is supplied with a 1.5 m (4 ft. 10 in.) power cable / power cord with a standard EU (Schuko-type) mains power plug. If this plug is not suitable for your local mains power sockets / convenience receptacles and you need to install a new mains power plug / cord cap on the supplied power input cable, follow the instructions below.

1. Check that the new mains plug / cord cap is rated minimum 250 V, 16 A, that it has a connection to ground / earth and that it has an integral cable grip.

2. Cut the existing Schuko-type plug off the power cable.

3. To install the new mains plug / cord cap, follow the plug / cap manufacturer's instructions. Respect the color coding used in the Santinel's power cable and in your local mains power wiring system. US and EU systems use the color coding shown below:

	Live or L	Neutral or N	Ground / Earth or ⏚
US system	Black	White	Green
EU system	Brown	Blue	Yellow/green

Main fuse

See 'Product overview' on page 7. The main fuse sits in a fuse holder under the lockable container compartment access flap.

If the Santinel appears to be completely shut down even though power is applied, the main fuse may have blown. Disconnect the Santinel from power before replacing the fuse. Replace only with a fuse of the same type and rating.

4. Using the Santinel

Warning! Read 'Safety' starting on page 4 for important safety information that you must understand before you install or operate the fixture.

Switching on and off

See 'Product overview' on page 7. The main power ON/OFF switch is located under the locking flap on top of the Santinel. Set power to ON and give the Santinel a few seconds to start up to begin using the Santinel.

Putting the Santinel into standby mode

Besides the main power ON/OFF switch, the Santinel also has a standby button located low down on the left-hand side of the housing. You can use this button to put the Santinel into standby mode if you want to switch it off for shorter periods or shut it down overnight and save energy. The standby button also lets you shut down power without the key to open the locking flap on top of the Santinel.

Important! If you are operating the Santinel on battery power, we recommend that you always put the Santinel into standby mode when it is not being used.

- To put the Santinel into standby mode, press and hold the standby button for 5 seconds.

- To exit standby mode and return to normal operation, press the standby button briefly.

Disinfecting hands

Santinel ready to dispense

When the Santinel is ready to dispense disinfectant, it invites the user to put their hands into the disinfecting area as follows:

- The backlit LCD display on the front of the Santinel shows a pair of hands and an arrow pointing into the disinfecting area (see Figure 6).

- The disinfecting area is lit up with a purple light.

Santinel dispensing

During the hand disinfecting process:

Figure 6. LCD display

- The backlit LCD display on the front of the Santinel shows drops of disinfectant being directed onto a hand.

- The disinfecting area lights up with a blue light.

Dispensing complete

When the Santinel has dispensed the default quantity of hand disinfectant (or any other quantity that has been set in the control menus):
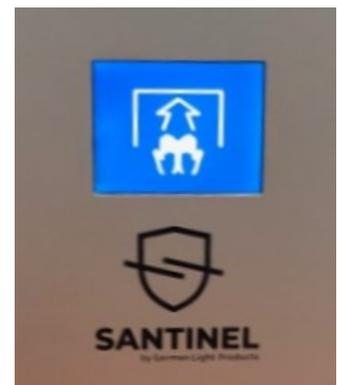
- The backlit LCD display on the front of the Santinel shows a smiley icon. ☺

- The disinfecting area lights up with a green light as a signal to the user to remove their hands.

- When the user has removed their hands, the Santinel goes back to its 'Ready to dispense' state as described above.

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5. Control panel

The Santinel features a control panel (see Figure 7) with four buttons underneath the locking flap on top of the dispenser. The control panel and LCD display on the front of the Santinel let you read out information and change settings to configure the Santinel.

Control buttons

Pressing any of the control buttons activates the control menus in the LCD display on the front of the Santinel.

Figure 7. Control panel
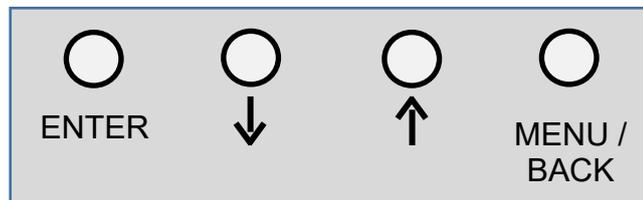
The control buttons have the following functions:

MENU/BACK

When the control menus are not active, the 'Insert hands' icon will be showing in the LCD display on the front of the Santinel. If you want to use the control panel, open the flap and:

- Press [MENU/BACK] once to call up the following information in the display:
    - Volume (amount per disinfection process)
    - Dispensing volume (approx. total amount of disinfectant dispensed)
    - Dispensing units (total number of completed disinfection processes)
    - Aborted dispenses (number of aborted disinfection processes)
    - Remaining units (approx. number of disinfection processes remaining until the container will be empty)
- Press [MENU/BACK] twice to open the control menus.

When you are navigating in the control menus, pressing [MENU/BACK] without pressing [ENTER] lets you escape and go back to the previous menu without making any changes.

ENTER

When you are navigating in the control menus, pressing [ENTER] confirms a change and saves the new setting or confirms the start of a process.

DOWN and **UP** ↓ ↑

The [DOWN] and [UP] arrows let you scroll down and up through menus or menu items.

LCD display while using the control panel

When you activate the control panel, the LCD display on the front of the Santinel shows the control menus (see Figure 8).
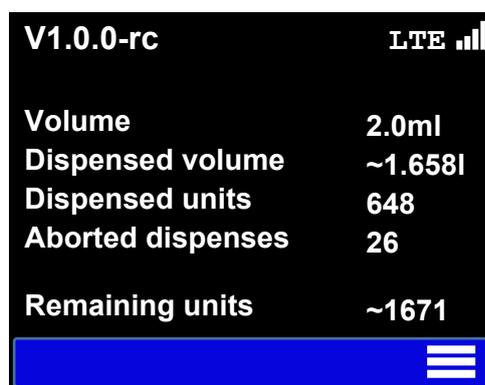
```
┌──────────────────────────────┐
│ V1.0.0-rc            LTE ▃▅▇█ │
│                              │
│ Volume              2.0ml    │
│ Dispensed volume    ~1.658l  │
│ Dispensed units     648      │
│ Aborted dispenses   26       │
│                              │
│ Remaining units     ~1671    │
│ ════════════════════════════ │
│                          ≡   │
└──────────────────────────────┘
```

Figure 8. LCD display – main information screen

The top line of the display shows the firmware version, shows whether the Santinel is connected to Wi-Fi or the cellphone network and indicates signal strength with four bars. In Figure 8, the Santinel is running firmware version 1.0.0. It is connected to a cellphone network (LTE) and the signal strength is excellent.

The rest of the display shows the control menus. In Figure 8, the Santinel is showing the main information display that is called up with one press on [MENU/BACK]. Pressing [MENU/BACK] twice calls up the full control menus described in the rest of this section.

Using the control panel

The following readouts and functions are available in the control panel (see also 'Control menus overview' on page 23 for a table showing the menu structure):

Replace Canister - Resetting the dispenser counters

Each time you replace an empty disinfectant fluid container with a new one, it is a good idea to reset the dispenser counters so that you can monitor how much disinfectant fluid is being used and how often the Santinel is activated. To reset the counters, open the control menus and go to **Information → Counters**, then press and hold [ENTER] for 3 seconds (or press [MENU/BACK] to cancel and escape).

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Dispense Duration – Adjust the amount of fluid per process

You can adjust the amount of disinfectant fluid dispensed at each activation by adjusting the length of time disinfectant is dispensed. To adjust dispensing time, open the control menus and go to **Dispense Duration → Set Value**, then use [UP] and [DOWN] to increase or decrease the duration of each dispensing operation in 0.1 second steps. Press [ENTER] to confirm the new setting (or press [MENU/BACK] to cancel and escape).

Sensor Adjustment – Set the trigger point

Depending on the ambient conditions, it may be necessary to adjust the proximity sensor. To adjust the optimal trigger distance, hold your hand in the dispensing area at the maximum desired distance from the dispensing nozzle, then press and hold [ENTER] for 3 seconds (or press [MENU/BACK] to cancel and escape).

Connecting to the Internet and account pairing

To link the Santinel to a web page that you can view with a browser or to the smartphone app, the Santinel must have an internet connection via either a Wi-Fi or a cellular phone module.

To configure the Santinel's internet connection, open the **Web Configuration** control menu and enter the configuration figures.

Once the Santinel is connected to the internet, you can open the **Account Pairing** control menu and start the pairing process.

The 'Santinel web interface and smartphone app' chapter on page 19 explains these procedures in detail.

Standby Button – Enable or disabling the standby button

You can disable the standby button (see 'Putting the Santinel into standby mode' on page 13) to prevent the Santinel from being put into standby mode accidentally or by tampering.

To change the standby button setting, open the control menus and go to **Standby Button**. Use [UP] or [DOWN] to select **Enable** or **Disable**. Press [ENTER] to confirm your choice (or press [MENU/BACK] to cancel and escape).

Battery Modes – Choose an energy saving mode

When using the Santinel on battery power, you can select between different battery modes which activate or de-activate different features. This lets you choose a balance between active features and battery life.

The battery modes available are:

A: Dispense only – In Battery Mode A the Santinel will only dispense fluid. The WiFi or cellphone module is enabled during inactive operating time, but all other features are disabled during inactive operating time in order to save energy.

B: Ambient Light – In Battery Mode B the Santinel dispenses fluid, the disinfectant area's ambient light and the WiFi / cellular module are enabled during inactive operating time. All other features are disabled to save energy.

C: Display + Ambient Light – In Battery Mode C the Santinel dispenses fluid, the disinfectant area's ambient light, the WiFi / cellular module and the display on the

front of the Santinel are enabled during inactive operating time. All other features are disabled to save energy.

D: Expanded – In Battery Mode D the Santinel dispenses fluid, the disinfectant area ambient light, the WiFi / cellular module, the display on the front of the Santinel and all other peripheral functions are enabled during inactive operating time.

Factory Settings – Load all default settings

To delete all custom configuration settings and return the Santinel to factory settings, press and hold [ENTER] for 3 seconds (or if you do not want to return to factory settings press [MENU/BACK] to cancel and escape).

Information

Use [UP] and [DOWN] to scroll through the following information:

- Currently installed firmware, firmware bootloader and hardware versions.

- Any errors logged by the Santinel's self-diagnosis system.

- WiFi / cellular information

- Counter readouts. To reset the counters when replacing the disinfectant container, press and hold [ENTER] for 3 seconds (or press [MENU/BACK] to exit the counters without resetting them).

To exit the information menus, press [MENU/BACK].

6. Santinel web interface and smartphone app

Santinel Wi-Fi and Santinel Cellular models let you monitor performance and view a range of data remotely either by opening the Santinel web interface in any web browser or by using the Santinel app on a mobile device. This feature lets you monitor disinfectant fluid level and check the remaining battery charge if running on batteries, for example, from any location you like. You can monitor any number of Santinels from one web browser or mobile device.
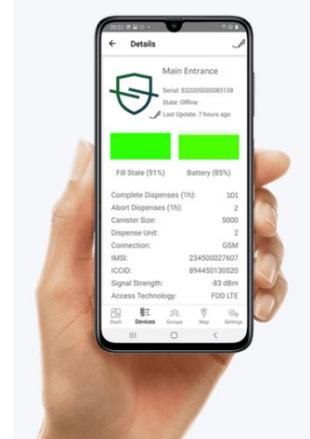

Figure 9. Santinel smartphone app

https://disp-dev.glp.de/login

To use remote monitoring, the Santinel needs to be connected to the Internet via an internal cellphone module and SIM card or via an internal WiFi module.

If your Santinel does not already have the correct module installed, GLP can convert it by installing the module. Your GLP supplier will be happy to give you details.

WiFi configuration

The Santinel WiFi can be connected to a WiFi network and you can use the Santinel app to control the Santinel WiFi remotely. For this the Santinel need to be connected to a WiFi network with internet access. The connection is made using WPS technology.

To set up the Santinel WiFi:

1. Trigger WPS connection on your WiFi router (see your router's user manual if necessary).

2. Open the Santinel control menus using the Santinel's menu buttons and go to **Start WPS connect**.

3. Activate **Start WPS push button connect** by confirming by pressing [ENTER]. If necessary, you can cancel by pressing [MENU/BACK].

4. The Santinel WiFi will now connect to the WiFi network and display the current network status (Status, SSID, BSSID, ...).

Cellular configuration

The Santinel Cellular can be connected to a cellphone (mobile phone) network and you can use the Santinel Service app to control the Santinel Cellular remotely.

As soon as a valid SIM card is installed in the cellular module, the Santinel will establish a connection to the cellphone network and get internet access. If the connection to the cellphone network is successful, The Santinel Cellular displays the cellphone signal strength in the upper right-hand area of the display.

Santinel account

To connect one or more Santinel devices to the Santinel web interface, you must first create a Santinel account. You can then connect to and manage all your Santinels from one account.

Email address

Email address

Password

Password

Register

If you do not yet have a Santinel account, you will first need to register and create a new account. You will need to give an e-mail address which will be verified during the account creation process.
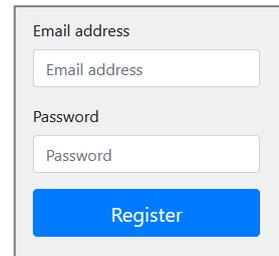
Account Pairing

To be able to read out information from one or more Santinel devices using the Santinel app, you need to pair the Santinel device with a Santinel account using account pairing. To do this:

1. Connect the Santinel to the Internet (when a Santinel WiFi or Santinel Cellular is powered on, it looks for a WiFi signal or cellphone signal and connects to the internet automatically).

2. Open the Santinel control menus using the Santinel's menu buttons, go to **Account pairing** and confirm.

3. The Santinel device will request a pairing key online that will let you link the Santinel to your account. The Santinel will then show the pairing key as a QR code in its display.

4. Pair your Santinel account with the Santinel device:

    *   If using a cellphone, start the GLP Santinel mobile app. Open the **Pairing Account** menu and confirm pairing. Point the cellphone's camera at the *Account Pairing* QR code displayed on the front of the Santinel. If the code is recognized, the Santinel will be linked to your Santinel account.

    *   If using a PC connected to the Internet, open the GLP Santinel webpage and log in with your GLP Santinel account data. Upload the Santinel's *Account Pairing* QR code to your Santinel account on the Santinel webpage. If the code is recognized, the Santinel will be linked to your Santinel account.

Repeat the above procedure for any other Santinel devices that you want to add to your account and manage remotely.

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7. Replacing the disinfectant container

The Santinel controls disinfectant consumption and current disinfectant level by counting the number of disinfecting processes carried out, measuring the disinfectant fluid level in several stages and checking the pipe system for empty running. If the Santinel runs out of disinfectant, it will indicate the need for a new container and shows a message on the display. If the hose system is running empty, it is reported as an error for safety reasons.

When the Santinel runs out of disinfectant we recommend that you always replace the disinfectant container with a new one. Refilling a container that has already been used can create a risk of contamination or exceeding the use-by date. Doing so may also contravene health regulations in your region. Do not mix different disinfectant liquids (different brands, types or compositions).

To replace the disinfectant container:

1. Open the lockable flap on the top of the Santinel.

2. See Figure 10. Push the metal lock (arrowed) towards the connector to release the disinfectant tube connector. Pull the tube connector vertically upwards to remove it from the connector stub on top of the disinfectant container.

3. Lift the empty container vertically up and out of the Santinel, making sure that no liquid (on the outside of the container for example) drips into the Santinel.

4. Clean the container compartment inside the Santinel and make sure that there is no fluid in this area. If necessary, clean the interior with a dry cloth.

5. See Figure 11. Lower the new fluid container into its compartment inside the Santinel.

6. Remove the sealed lid from the top of the new fluid container. Take the lid with the hose connector stub from the old container and screw it onto the new container.

7. Connect the fluid hose to the hose connector stub on top of the new container by pushing the metal connector lock (arrowed in Figure 10) and pushing the hose connector onto the connection on the top of the container.

8. Purge any air that is trapped in the system by performing a few disinfection processes until the Santinel sprays disinfectant correctly.

9. Reset the counters in the control menu by scrolling to Information → Counters, then pressing and holding [ENTER] for 3 seconds. Press [MENU/BACK] to return to the top level of the control menus.

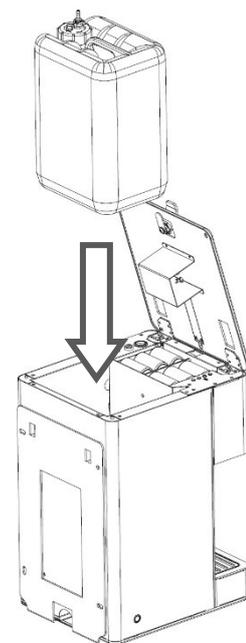*Figure 10. Releasing the disinfectant tube*

Figure 11. Inserting a fluid container

10. If the Santinel is working properly, close and lock the top flap.

11. Take the sealed lid that was on the new container and screw it onto the old, empty container. Recycle or dispose of the empty container properly. If in doubt about where to dispose of used disinfectant containers, consult your disinfectant supplier.

8. Control menus overview

Level 1	Level 2	Notes
Replace Canister	Reset Counter [ENTER]	To reset the counter, press and hold [ENTER] for 3s. To cancel and escape, press [BACK].
Dispense Duration	Set Value … (0,1s)	Use the [UP/DOWN] buttons to decrease or increase the duration of each dispensing process in steps of 0.1 seconds. To confirm a new setting, press [ENTER]. To cancel and escape, press [BACK].
Standby Button	Enable	Enable or disable the Soft Power button on the right-hand side of the Santinel. Use the [UP/DOWN] buttons to select **Enable** or **Disable**. To confirm a new setting, press [ENTER]. To cancel and escape, press [BACK].
	Disable	
Battery Mode	A: Dispense only	The Santinel dispenses fluid. The WiFi / cellular module is enabled while the Santinel is not dispensing disinfectant. All other features are disabled while the Santinel is not dispensing disinfectant in order to save energy.
	B: Ambient Light	The Santinel dispenses fluid. The disinfectant area ambient lighting and the WiFi / cellular module are enabled while the Santinel is not dispensing disinfectant. All other features are disabled to save energy.
	C: Display + Ambient Light	The Santinel dispenses fluid. The disinfectant area ambient lighting, the WiFi / cellular module and the backlit display on the front of the Santinel are enabled while the Santinel is not dispensing disinfectant. All other features are disabled to save energy.
	D: Expanded	The Santinel dispenses fluid. The disinfectant area ambient light, the WiFi / cellular module, the display on the front of the Santinel and all other peripheral functions are enabled while the Santinel is not dispensing disinfectant.
Sensor Adjustment	Position your hand while pressing [ENTER]	To set the optimal triggering distance, hold your hand at the maximum desired distance from the disinfectant nozzle while pressing and holding [ENTER] for 3 seconds. To cancel and escape, press [BACK].

Account pairing	Start pairing, then press and hold [ENTER]	To link the Santinel with a mobile device app or web interface, start pairing and then press and hold [ENTER] for 3 seconds. If internet connection is successful, the display on the front of the Santinel will show a QR code for pairing. To cancel and escape, press [BACK].
Start WPS connect	Start WPS push-button connect? → Yes/No	Establish a connection to a router using WPS.
Factory Settings	Confirm with [ENTER]	To return the Santinel to factory settings press and hold [ENTER] for 3 seconds. To cancel and escape press [BACK].
Information	Show Information: Firmware Main Controller, Firmware LP Controller, Firmware Bootloader, Hardware	Shows information on Santinel's internal software and hardware versions.
	Errors	Shows any internal errors that the Santinel has detected.
	Cellular	Shows information on cellphone connection.
	Counters	Shows readouts for total number of completed disinfection processes, total number of aborted disinfection processes and approximate number of disinfection processes remaining until the container will be empty.

9. Cleaning and maintenance

WARNING! Any service operation that requires removal of a cover must be performed by a professional service technician with the necessary tools, skills, qualifications and personal protective equipment to maintain and repair electronic and electrical medical equipment safely and efficiently.

Suggested maintenance intervals

The recommended intervals for servicing the Santinel are as follows:

Maintenance task	Interval	How
Clean the dispensing nozzle	Weekly	See 'Cleaning the nozzle' on page 26.
Replace the disinfectant canister	As required	See 'Replacing the disinfectant container' on page 21.
Empty the drip tray	Daily	Empty the drip tray into a small bucket. Wipe tray dry with a soft cloth.
Clean the outside of the Santinel	Monthly	See below.
Replace the batteries	As required	See 'Installing batteries' on page 11.

Cleaning the housing

You can clean the outside of the Santinel using a soft cloth moistened in a mild household cleaning product. Do not use any product that is abrasive or otherwise aggressive to surfaces that consist of clear plastic.

Each time you replace the disinfectant fluid container with a new one, clean the container compartment. Wipe up any spilled disinfectant fluid carefully.

Cleaning the nozzle

Depending on the period of time between dispensing operations, disinfectant deposits may stick to the nozzle and block it. If this happens, clean the nozzle as described below. To prevent clogging, we recommend cleaning the nozzle weekly or after a long period of inactivity.

To clean the nozzle, carefully turn the front cap of the nozzle 180° clockwise and back again. The nozzle should now be free and the Santinel should work normally again.

Important: Do not turn the nozzle too far or it may come off and expose the sealing mechanism. If this happens, reassemble it carefully and reinstall it.

It is only necessary to dismantle the sealing mechanism if the nozzle becomes extremely clogged.
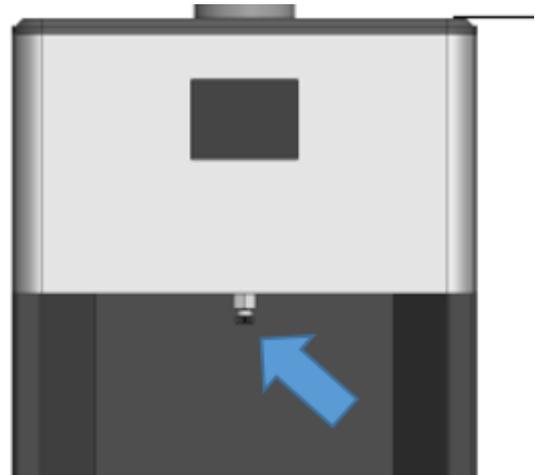
GLP Service and Support

Contact information for the nearest GLP Service and Support is available online at www.glp.de/en/service, by email at info@glp.de, or by telephone at the following numbers:

- GLP Germany: +49 (7248) 927 19-55

- GLP N. America: +1 818 767-8899

- GLP UK: +44 1392 690140

- GLP Asia: +852 (3151) 7730

- GLP Nordic: +46 737 57 11 40

10. Troubleshooting

If you experience an issue with the Santinel, the table below may help you resolve it.

Issue	Possible cause	Solution
Disinfecting process is not working	Disinfectant container is empty	Check the level in the container. If empty, replace with a full container.
	Disinfectant container is not connected correctly	Check fluid hose system. Make sure that the hose is correctly fixed onto the container and that there are no leaks.
	Nozzle is clogged	Clean the nozzle.
Device cannot be switched on	No power	Check that the Santinel is connected to power or check that the batteries are not discharged.
Disinfectant appears below the Santinel	Drip tray is full	Empty the drip tray and put it back into position in the Santinel.
	Leaking or defective disinfectant container or hose	Disconnect the Santinel from power. Check if the leakage is coming from the container or the Santinel's hose system. If the container is damaged, replace it with a new container. If a Santinel hose is leaking, contact GLP Service.
Signs of overheating	Possible power issue	Disconnect the Santinel from power immediately and contact GLP Service.
Santinel is not responding to web interface or smartphone app	Wrong control module is installed	Check that the correct network module (WiFi or cellphone) is installed in the Santinel. If you have any questions, get in touch with GLP Service or your GLP dealer.
	Incorrect network configuration	Check that the WiFi or cellphone configuration is done correctly. If necessary, carry out the configuration process again using the Santinel's control panel under the top flap.

11. Technical Specifications

Features

Remote options: Internal Wi-Fi or Cellular network module

Dispensing area light: Multicolor LEDs

Dispensing quantity: Adjustable in 0.1 ml steps

Dispensing activation: Adjustable IR sensor

Operation modes: Normal with constant power or four battery modes (Dispense only / Ambient Light / Display + Ambient Light / Expanded)

Configuration

Backlit multicolor LCD display, 4-button control panel under tamper-proof locking flap

Web interface or smartphone app

Firmware update via USB-C cable, web interface or smartphone app

Counter options

Number of disinfection processes

Number of disinfection processes remaining for current disinfectant fluid container

Construction

Housing color: Silver / black (other colors on request)

Housing material: Hygienic aluminum housing, stainless steel drip tray and plates, high-impact flame resistant thermoplastic

Ingress protection rating: IP20

Removable drip tray

5 liter disinfectant fluid container

Integrated Wi-Fi / cellular network antenna

Standby button

Authorized fluid

Sterillium® disinfectant fluid

Installation

Location: Dry location only

Mounting on horizontal surface: Standing, two quick-release camlock fasteners

Mounting on vertical surface: Optional wall mounting plate

Optional storage tower available

Electrical

Power options: Mains power or battery

Mains power: 100-240 VAC / 50-60 Hz

Batteries: 6 x D-size, 1.5 V

Power cable included: 1.5mm², H05VV-F, 1.5 m (59 in.) with standard EU plug (Schuko), other configurations possible on request.

Power supply unit: Auto-ranging electronic switch-mode

Fuse: T 2 A, 250 V, 6x32 mm

Maximum power consumption @230V: 12 W, 0.110 A

Standby power @230 V: 3.2 W, 0.035 A

Thermal

Ambient temperature operating range: From 5° C (40° F) to 45° C (115° F)

Dimensions and weight

Santinel

Height: 453 mm (17.9 in.)

Width: 250 mm (9.9 in.)

Depth: 300 mm (11.9 in.)

Weight not incl. disinfectant or bracket: 9.0 kg (19.9 lbs.)

Santinel storage tower

Height: 973 mm (38.4 in.)

Width: 400 mm (15.8 in.)

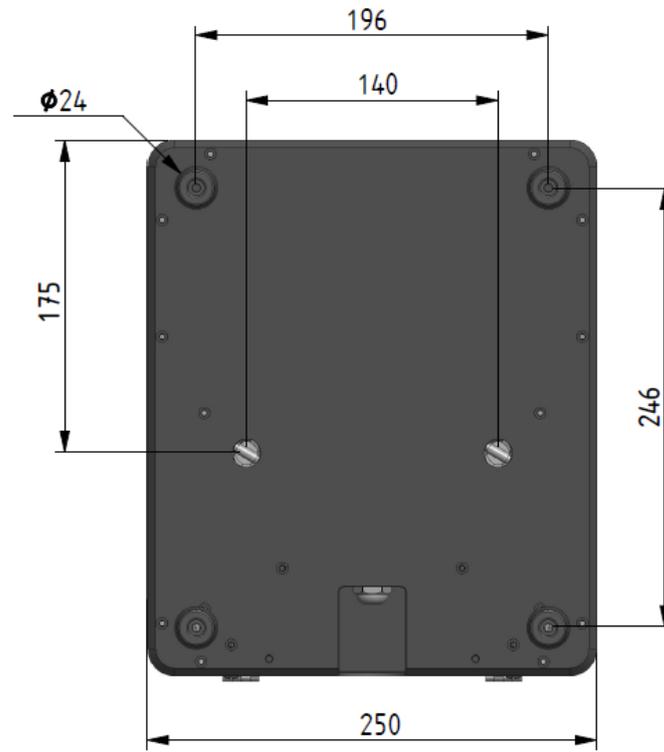Depth: 450 mm (17.8 in.)

Weight: 18.5 kg (40.8 lbs.)

Santinel Flightcase 1 (Single Transport Flightcase)
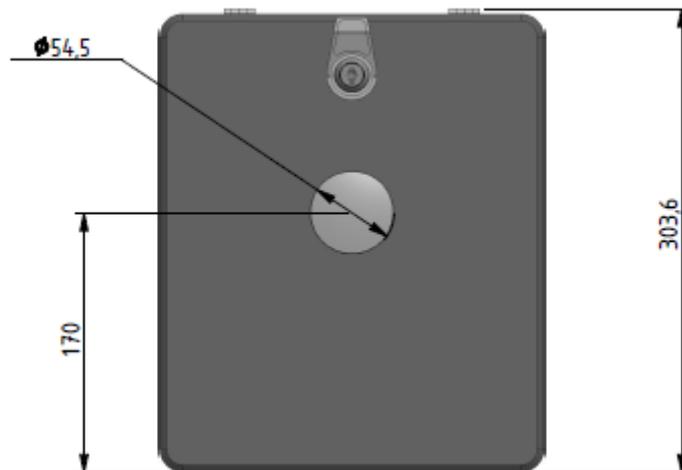
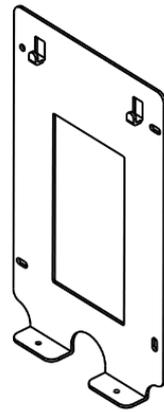Contact GLP for availability details

12. Dimensions
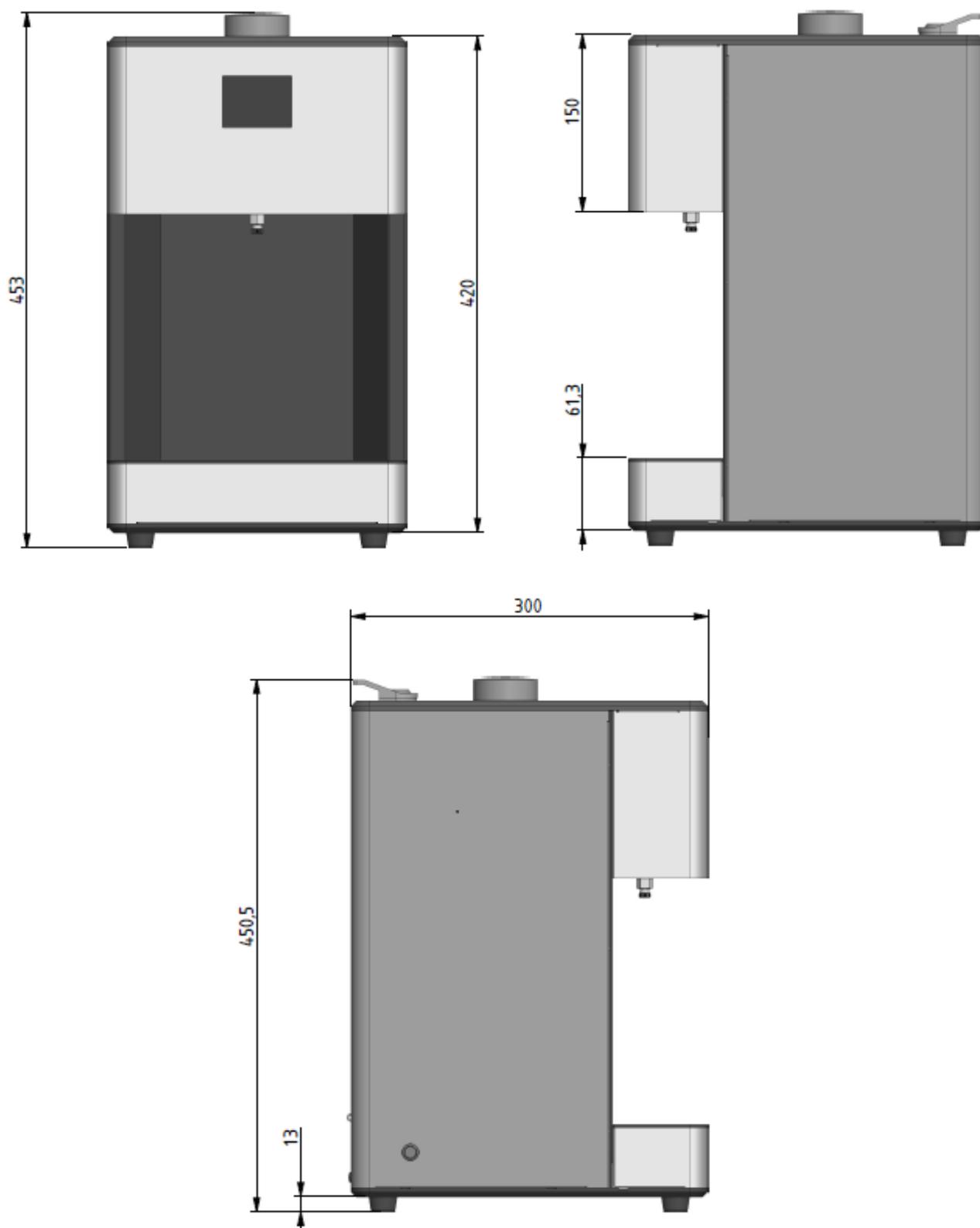
Base

Access flap

Wall Mount Plate

220

ø7

373

255

195