

SafeGen 3500 Luminometer

USER MANUAL



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Contents

1. Notes	1
2. Introduction	3
2.1 Preface	3
2.2 Product feature	3
2.3 Performance parameter	4
2.4 External structure	5
2.5 Accessories and the matching Swabs (optional)	6
3. Basic Operation	7
3.1 Power on/off operation	7
3.2 Charging and discharging of instrument	8
3.3 Test procedure	8
3.4 Data export	10
4. Instruction	11
4.1 Function interface	11
4.2 Quick test	12
4.3 Location	13
4.4 Testing Plan	14
4.5 History	16
4.6 Thresholds	18
4.7 Inspector	19
4.8 Cloud Platform Sync	21
4.9 Analysis Software Sync	24
4.10 Calibration	26
4.11 Settings	29
4.11.1 Language Switch	30
4.11.2 Wireless Network Setting	30
4.11.3 Bluetooth Setting	30
4.11.4 Date and Time Setting	30
4.11.5 Sleep Setting	31
4.11.6 Screen Brightness Setting	31
4.11.7 Export Setting	31
4.11.8 File Management	31

4.11.9 Input Method Switching	31
4.11.10 Data Management	31
4.11.11 Check For Update	32
4.11.12 Channel Renewal	32
4.11.13 System Information	32
5. Instrument Maintenance	33
5.1 Routine maintenance	33
5.2 Troubleshooting	33
5.2.1 Common check items of instrument hardware	33
5.2.2 Wireless network troubleshooting list	34
6. Contacts	35

1. Notes

Dear customers, welcome to choose our products. Please read the instruction manual carefully before using the instrument, so that you can understand the instrument faster, and use it correctly, so as to avoid unnecessary damage to the instrument due to improper operation.

Note: Always take basic security precautions, including everything listed below. Please read carefully before using the instrument:



Operating environment and precautions for electricity usage

Warn: Verify that the voltage configuration matches the supply voltage. (Please note that the original adapter and power cord must be used. If the adapter and power cord of other instruments are used incorrectly, the instrument may be damaged due to overvoltage.)

Warn: Unplug the charging connector when charging is complete.

Warn: Stay away from environments with strong electromagnetic interference sources.



Precautions for instrument operation

Warn: Do not put the instrument in liquid or place it where it may fall into liquid. If the instrument becomes wet, do not turn it on and remove the battery immediately.

Warn: The instrument must be used strictly in accordance with the purpose described in the instruction manual, and must use our matching Swabs.

Warn: Do not use if the instrument is not working properly or has been damaged. Do not contact the instrument or its wiring with heat sources.

Warn: Do not drop or place anything into the opening, line or joint of the instrument, except as specified in the instruction manual.

Attention: After use, please turn off the instrument in time.

Attention: Keep the device off when it is not used for a long time. If necessary, remove the rechargeable battery from the device.

Attention: Please note that in the test process, the tilt Angle of the instrument should be less than 45 degrees, do not tilt too much, otherwise it may lead to liquid leakage, resulting in unreliable test data, and in serious cases, it can cause damage to the instrument.

Attention: When the instrument is not in use, close the testing chamber cover and placed it away from light.

Attention: Avoid irradiating the testing chamber under strong light to avoid shortening the service life of the multiplier tube and instrument.

Attention: Pls remove the testing Swabs from the instrument after testing.



Precautions for using lithium batteries

Warn: Must use the matched adaptor to charge.

Warn: When charge to 100% capacity, please remove the plug in order to prevent the battery overcharge.

Attention: Lithium battery should do a charge and discharge cycle every three months to restore its original performance.

Attention: Avoid from frequent uses in high temperature or low temperature environment.

Attention: When transport the instrument, please remove the lithium battery.

Attention: To extend the service life of rechargeable batteries, you are advised to charge the device at least once a month.

2. Introduction

2.1 Preface

SafeGen 3500 Luminometer, is our handheld luminometer.

Through the combination of detection Swabs, the surface or water cleanliness can be quickly detected and used to verify the cleaning effect. Widely used in food, health care products, cosmetics, pharmaceutical, catering enterprises, health supervision, hospitals, large testing institutions, as well as government supervision functions of the field rapid testing.

The instrument has the characteristics of simple use, easy to carry and friendly man-machine interaction. No professional installation training is required, and the operation can be easily started according to the instruction manual.

2.2 Product feature

SafeGen 3500 Luminometer uses highly sensitive photodiode to detect the bioluminescence produced by detection Swabs, and calculates and analyzes the experimental results according to the strength of the bioluminescence signal, which can quickly and easily obtain the detection results.

Main functional features of the instrument:

- Equipped with 5.5 "capacitive touch screen, Android operating system, easy to operate.
- Simple APP interface, the clear operation logic, easy man-machine interaction.
- High sensitivity photodiode was used for fluorescence intensity counting, with high detection accuracy.
- Built-in 3.7 V lithium battery pack, with functions of charging and power saving mode, is capable of hibernating or powering off automatically.
- Automatically store test records, and support the retrieval by testing time and record statistical result.
- Test results can be transmitted to a PC.
- The instrument has automatic calibration function.
- Equipped with WIFI, Bluetooth, USB data communication interface.
- Equipped With the detection of the door sensor, swab detection sensor, open the hatch cover with the opening of the cover, insert the swab after the close of the

hatch, can automatically detect, all detection methods have automatic detection function.

- Equipped with a gyroscope sensor, when the instrument is in test mode, can alert users to avoid excessive inclination from affecting the test results.
- The instrument is small and light, rapid detection, the average detection time is just 10 seconds per once.

2.3 Performance parameter

The performance parameters of this instrument are as following:

- Dimension: 82mm× 190mm× 34mm (W * H * D).
- Weight: ≈410 g, small and light, can be operated with one hand.
- Display: the Android operating system, equipped with a 5.5 -inch capacitive touch screen, easy to operate.
- Precision: 1×10^{-16} mol (cleanliness).
- Detection range: 0-20000 RLU/s.
- Detector types: photodiode.
- Sensor: Built-in gyroscope sensor, door switch sensor, swab color sensor.
- Detection time: ≈10 s.
- Detection protection: Built-in gyroscope sensor, when the instrument is in detection mode, can remind the user to avoid excessive tilt affecting the detection result.
- Storage space: 50G, can store >10 million data, can be expanded by SD card.
- Data transmission: WiFi, Bluetooth, USB Type - C.
- Battery: 3.7 V 3500 mAh rechargeable lithium-ion batteries, in accordance with IEC62133-2 safety standards.
- Standby time: Continuous standby for 20 days, continuous detection of 2500 samples.
- Certification: CE- RoHS certification.

2.4 External structure



Figure 2.4-1 Front structure of the instrument

The front structure of the instrument is shown in Figure 2.4-1:

- ① Detection chamber cover, the chamber cover must be tightly closed when the instrument is working normally. Otherwise, the instrument displays an error and can't run the test.
- ② The Insert port of swabs and test tubes, get into the cabin for fluorescence data detection.
- ③ The switch button, "long press" to start or shut down." short press" to switch between sleep and wake up.
- ④ The main screen display area, display system and operation interface for man-machine interaction.
- ⑤ The instrument support.
- ⑥ USB Type-C charging port and Data transfer port.



Figure 2.4-2 The back structure of the instrument

The back structure of the instrument is shown in Figure 2.4-2:

- ① Rechargeable, removable battery.
- ② The maintenance port.

2.5 Accessories and the matching Swabs (optional)

Figure 2.5-1 shows the surface sampling swab used for the detection of surface cleanliness.



Figure 2.5-1 Surface sampling swab/matching test reagents 2

3. Basic Operation

3.1 Power on/off operation

"Long press" the left upper side of the instrument switch key "", about 2s after the instrument running indicator light up. Release the switch and wait for the instrument to start. After the system is started, the startup animation will be displayed, and then the main startup interface will be entered, as shown in Figure 3.1-1 below.

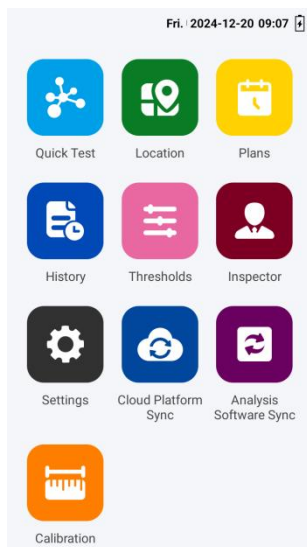


Figure 3.1-1 Power on main interface

In the startup state, "long press" the key " " on the upper left side of the instrument. After about 2 seconds, a prompt box will pop up on the screen, displaying "Shutdown" and "Restart" function options. Click the pop-up "Shutdown", and the system will automatically shut down. Click Restart. The system will automatically restart.

In the startup state, "short press" the on-off key " ", the instrument will" turn off the screen "and turn into hibernation state.

In the hibernation state, "short press" the on-off key " ", the instrument will" light up the screen" and turn into the working state.

3.2 Charging and discharging of instrument

When the battery is below 20%, the device will prompt the user to charge it in time. Use the adapter equipped with the device, connect the USB Type-C cable, and the device will start to charge. When the charging reaches 100%, the system will stop charging. Please remove the charging cable in time after the charging is completed.

When the instrument is shut off, insert the charging cable, and the instrument will automatically charge. After the charging is completed, the indicator will be turned off.

3.3 Test procedure

Prepare the instrument and swab in advance. The test procedure is as follows.

- ① Start the instrument (if the surface temperature of the instrument and room temperature are very different, it is recommended to stay it for 10-20 minutes, so that the instrument surface temperature and room temperature are as consistent as possible);
- ② Open the back stand of the instrument and place it stationary on the desktop (or handheld device and keep the tilt Angle $<45^{\circ}\text{C}$).
- ③ Take out the swab and the sampling rod, as shown in Figure 3.3-1-②.
- ④ Hold the sampling rod and rotate it at an Angle $<45^{\circ}\text{C}$ from the sampling surface to evenly smear it (horizontally and vertically), covering an area of 10cm x 10cm, as shown in Figure 3.3-1-③.
- ⑤ Insert the sampling rod into the swab tube and exert force to keep the sampling rod and swab tube in place.
- ⑥ Break the valve, squeeze the bulb to expel all the liquid down to the swab shaft and manually shake it about 10 times, as shown in Figure 3.3-1-④.
- ⑦ Open the hatch cover and insert the swab vertically, as shown in Figure 3.3-1-⑤.
- ⑧ After the cover is closed, the device automatically run the test. After the test is complete, the device indicates that the test is successful, as shown in Figure 3.3-1-⑥.
- ⑨ After testing, open the hatch cover and take out the swab.



① Swab



② Take out the sampling swab



③ Smear sampling area



④ Mixing by Vibration & Reaction



⑤ Insert vertically



⑥ Close the detection chamber tightly

Figure 3.3-1 Schematic diagram of the Test procedure

3.4 Data export

Users can export or transfer detection data to the instrument, cloud platform, and analysis software.

Export to the instrument: After executing the export in the "History" function interface, the historical data will be stored in the "/ storage / emulated / 0 / Documents / YZ3500 / ExcelDate" path of the instrument. Use a Type-C USB data cable to connect the instrument and computer separately, and find the corresponding file to view.

Export to cloud platform: Upload the detection data and other information of the instrument to the cloud platform. For specific operations, please refer to section 4.8 "Cloud Platform Synchronization".

Export to analysis software: Synchronize the detection data and other information of the instrument to the computer analysis software. For specific operations, please refer to section 4.9 "Synchronization of Analysis Software".

4. Instruction

4.1 Function interface

The luminometer mainly includes 10 functional modules: Quick test, Location, Testing Plan, History, Thresholds, Inspector, Settings, Cloud platform synchronization, analysis software synchronization and calibration, as shown in Figure 4.1-1.

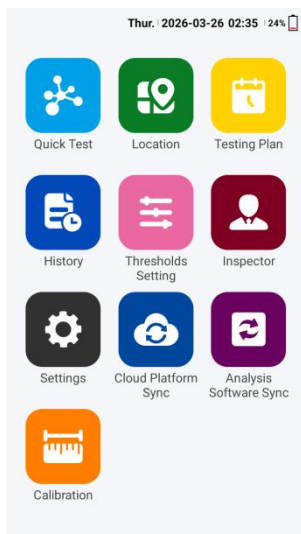


Figure 4.1-1 The main interface

4.2 Quick test



Quick Test

Click the “Quick Test” icon, enter the main test interface, as shown in Figure 4.2-1.

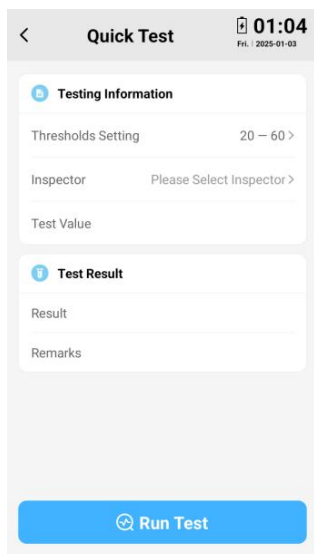


Figure 4.2-1 Test

Threshold settings and inspectors can select and set the threshold values through the entered data. The specific entry method is described in Chapter 4.6 "Thresholds" and Chapter 4.7 "Inspector". **Note:** When selecting inspectors, inspectors without passwords can be selected by clicking on them, while inspectors with passwords must enter the correct password after clicking to select.

Before conducting the test, please refer to Chapter 3.3 "Test procedure" for the steps and procedures related to the swab. After inserting the swab and closing the hatch, the instrument will automatically conduct the test. If the hatch is opened or the instrument is tilted too much during the test, the test will stop and an error message will be displayed. If the test is successful, it will display that the test is successful and remind you to replace the swab.

If you need to retest, click the "Retest" button or switch the hatch cover. The device will automatically test again, and the retest data will be marked with "Retest data" in the history record. **Note:** If a successful tested swab is not taken out and replaced in

time, a message will be displayed indicating that the swab has expired. If the swab is not replaced, repeated testing may lead to inaccurate test results.

After completing the test, pull out the test tube and close the hatch cover, and then exit for other functions.

The Result Interpretation rules are as follows:

- a) Interpret the result based on the maximum and minimum values in the "threshold settings";
- b) If the test value is less than the minimum value, the detection result is: pass;
- c) If the test value is less than or equal to the maximum value and greater than or equal to the minimum value, the detection result is: Caution;
- d) If the detection value is greater than the maximum value, the detection result is: fail.

4.3 Location



Click "Location" icon, the system will immediately enter the location interface, as shown in Figure 4.3-1 below. This setting is specific location information to perform the test. For example, "Desktop" or other specific locations.

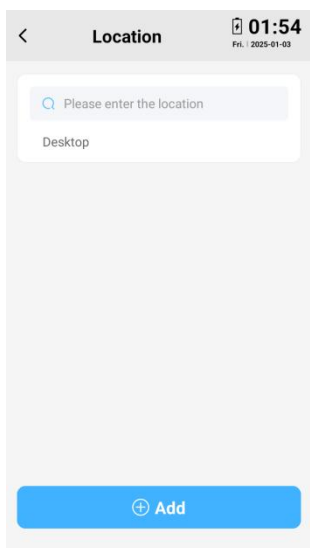


Figure 4.3-1 Locations interface

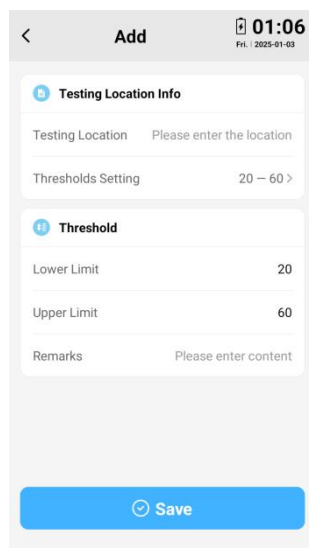


Figure 4.3-2 Add location interface

The Testing Location main screen includes the "Please enter the location" (search function), "Add", and "< (back)" buttons. It displays added locations under search box. Enter the location name or keyword in the search box. The system automatically searches for the locations matching the entered information. Click any name to enter the "test" main interface of the locations for corresponding test.

For details about the test procedure, see section 3.3 "Test procedure". After the swab is inserted and the hatch cover is closed, the device will automatically test, and the corresponding prompt will be displayed after the test is completed. If you need to retest, click the "Retest" button or switch the hatch cover. The device will automatically test again, and the retest data will be marked with "Retest data" in the history record. The rules for judging the test results are consistent with those described in 4.2 "Quick test".

Click the "Add" button, and the system will enter the interface for adding location, as shown in Figure 4.3-2 above; Enter the specific name of the location, select "Threshold Setting", or manually set the maximum and minimum RLU values of location, click "Save", that is, the location is added.

Note: When entering a value, ensure that the maximum value is greater than the minimum value; otherwise, incorrect information will be displayed and you need to enter it again. In the location interface, long press a location name to perform test or modification operations.

4.4 Testing Plan



Click "Testing Plan" button to enter the main interface of plans, as shown in Figure 4.4-1. By default, all plans of the current day are displayed on the main screen, including the Search and Add functions for detection plans. The main interface displays all the test plans of the day by default. It also includes "Search" and "Add" functions for plans. All plans are displayed on the All Plans page. Plan information on the Current Day Plan and All Plans page contains related information. When the scheduled reminder time for the day arrives, it will be reminded in the form of pop ups and buzzer sounds. The number of uncompleted plans is displayed in the upper right corner of the Check Plans icon on the main screen.

In the main interface of plans, click "Add" button to enter the interface of add new testing plan, as shown in Figure 4.4-2.

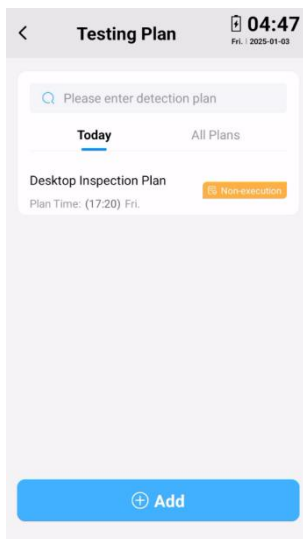


Figure 4.4-1 Main interface of detection plan

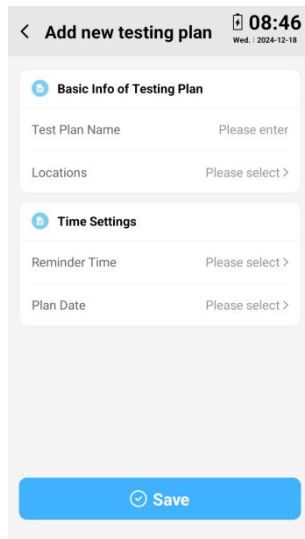


Figure 4.4-2 Adding interface

Enter the name of the test plan, and click "Locations" to select and add the planned plans. The location can be selected single or multiple, and the reminding time and planned time of the plan can be added at the same time. Then click "Save" button to complete the adding of the detection plan. In the plan interface, long press a test plan to perform test or modification operations.

Click the name of the existing plan to jump to the "Plans" interface of the plan, as shown in Figure 4.4-3, and then click the location to enter the test interface as shown in Figure 4.4-4.

For details about the test procedure, see section 3.3 "Test procedure". After the swab is inserted and the hatch cover is closed, the device will automatically test, and the corresponding prompt will be displayed after the test is completed. If you need to retest, click the "Retest" button or switch the hatch cover. The device will automatically test again, and the retest data will be marked with "Retest data" in the history record. The rules for judging the test results are consistent with those described in 4.2 "Quick test". **Note:** When the test plan contains multiple locations, the test plan can be executed only after all the locations in the plan have been tested. Otherwise, the test plan will always be displayed in execution. Click "Next" in the test interface to switch the location; After the selected location is completed, click "<" to go to the planned location interface (remove the swab to close the hatch cover). The completed location is marked with a green dot.

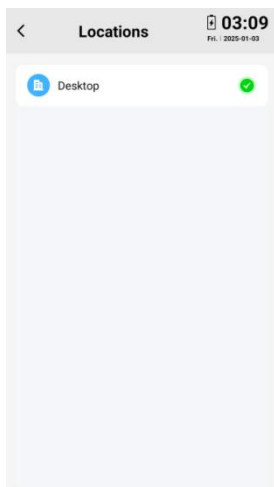


Figure 4.4-3 Location of the plan

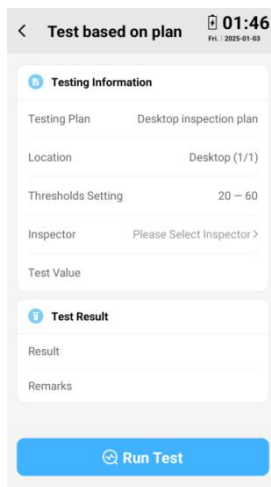


Figure 4.4-4 Test based on Plan interface

4.5 History



Click “History” button to enter the main interface of historical records, as shown in Figure 4.5-1. This module includes two presentation modes: "Results" and "Trends". The "Results" mode can display three types of result data: "Pass", "Caution", and "Fail", as well as "All" data. The "Results" mode can display the number of each detection result and its percentage in the total number; The interface also includes "reset", "export", and "filter" functions.

The selection options in the red box on the right of FIG. 4.5-1(from top to bottom) are inspector screening, detection point screening and detection plan screening, which can be screened by clicking the corresponding options according to the corresponding requirements; The test time can also be selected. Click the initial time to set it. Click the "Reset" button to restore all "Filter" options to the default options and the default time. Click the "Export" button to export all the currently displayed result information to the corresponding location (if the data result is "exported" after filtering, the exported data is the filtered data).

The "Trend" chart interface displays the quantity of each result within the test time range, which is displayed in the form of a bar chart by date, as shown in Figure 4.5-2

below. The trend chart can also be selected, and the number of results after screening is also displayed in the form of a bar chart. Click a "bar" in the bar chart to enter the display interface of a certain result data of that date.

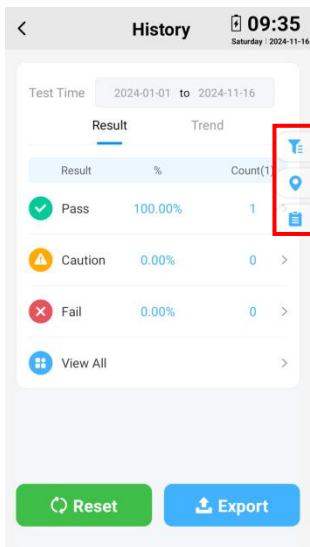


Figure 4.5-1 Main interface of history

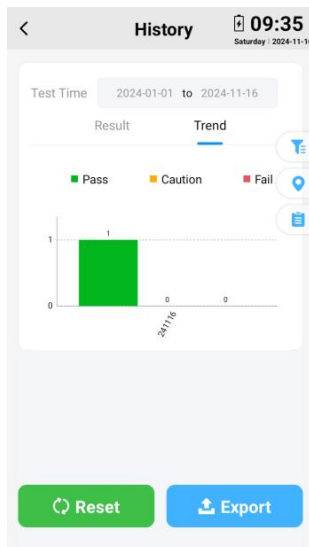


Figure 4.5-2 "Trend" interface

In the main interface of history record, click any result bar (Pass, caution, fail, View All) to enter the result data interface (as shown in Figure 4.5-3 below). Click on a piece of data in the result data interface to display all the information of the piece of data, and export a single piece of data (as shown in Figure 4.5-4 below); Long press a certain piece of data to delete it; Click "Clear Record" to clear all data for this result. If you click the "All" column, you will enter the display interface of all data. At this time, you will perform the "empty record" operation, and all data will be emptied.

Attention: When deleting or clearing a record, the password will be configured according to the data management function in the system settings. If the deletion password is set in the data management, a prompt will be given to enter the password before deleting the record. If a management password is required, the initial password is 123456. For specific data management instructions, please refer to 4.11.10.

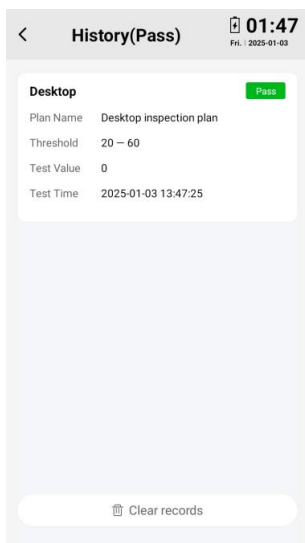


Figure 4.5-3 Result data interface

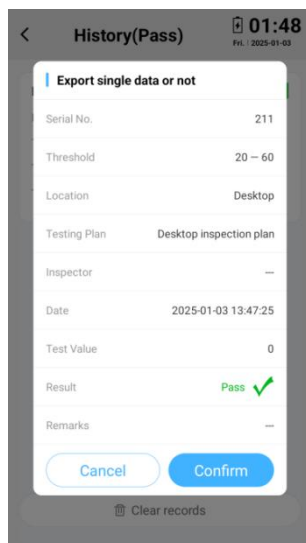


Figure 4.5-4 Single data interface

4.6 Thresholds



Click “Thresholds” to enter the threshold setting interface, it shows the information of threshold’s name and the upper and lower limits of the threshold, as shown in Figure 4.6-1.

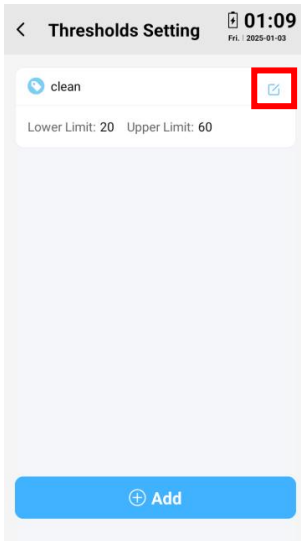


Figure 4.6-1 Threshold setup interface

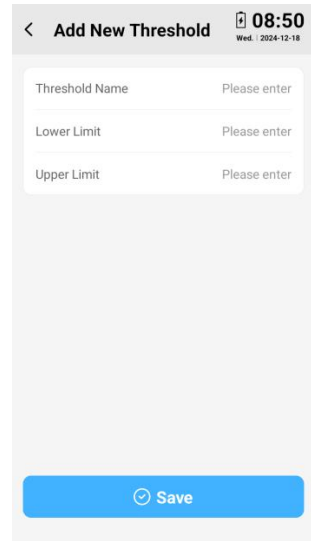


Figure 4.6-2 Threshold added interface

Click "Add" to enter the screen for adding a threshold (as shown in Figure 4.6-2). Enter the name, maximum value, and minimum value of the threshold, and click "Save" to display the new threshold on the main screen.

Note: The value must be the maximum value > the minimum value. Otherwise, an error message will be displayed and you need to enter it again.

Figure 4.6-1 shows the "Modify" icon in the red box. You can modify the name, Maximum value, and minimum value of a threshold. You can press and hold a threshold to delete it, but at least one threshold group should be retained.

4.7 Inspector



Click the "Inspector" icon to enter the main interface of Inspector, as shown in Figure 4.7-1.

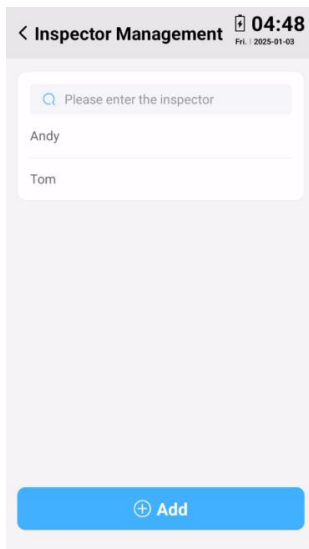


Figure 4.7-1 Inspector interface

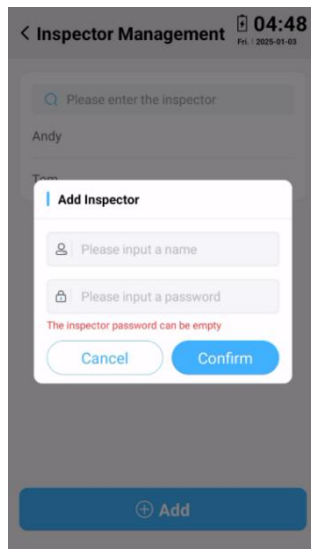


Figure 4.7-2 Inspector added interface

The Inspector main screen includes "Search" and "Add" functions. All the inspector information that has been added will be displayed in the current window panel. The inspector selected in the test interface will be set as the default inspector, and the "exit" button will be displayed after the default inspector information (as shown in Figure 4.7-1). Click "Exit" to cancel the current login status of the inspector. Click "Logout" to cancel the current login status of the inspector. In the inspector main interface, click "Add" button, the "Add Inspector" window will pop up (as shown in Figure 4.7-2), enter the inspector and password (which can be set as an empty password), click "OK" and save. Long press a certain inspector information to perform modification or deletion operations.

Attention: Inspectors without password settings can operate directly, while inspectors with password settings need to enter the correct password before they can operate.

The new method of "inspector" also includes: "Quick Test" function can add inspector; The "location" function can add inspectors when testing; In the Test Plan function, select location and add an inspector.

4.8 Cloud Platform Sync



The cloud platform synchronization function is: Upload and synchronize the detection data to the cloud platform, or obtain test related information (locations, plans, thresholds, inspectors) from the corresponding accounts on the cloud platform. The steps for synchronizing cloud platform data are as follows:

(1) Click on the cloud platform synchronization button of the instrument to enter its interface for registering an account (if an account exists, you can skip the registration step and log in directly), as shown in Figure 4.8-1;

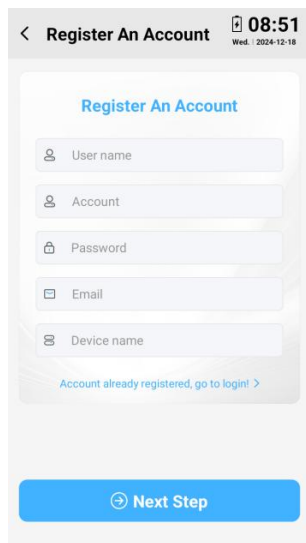


Figure 4.8-1 Registration interface

After registration is completed, log in to the account as shown in Figure 4.8-2. When the password corresponding to the account logged in to the cloud platform is forgotten, you can click "Forgot Password" to enter the "Forgot Password" interface. After entering the account, click "Next", and after verifying the security issue, you can reset the cloud platform account password.

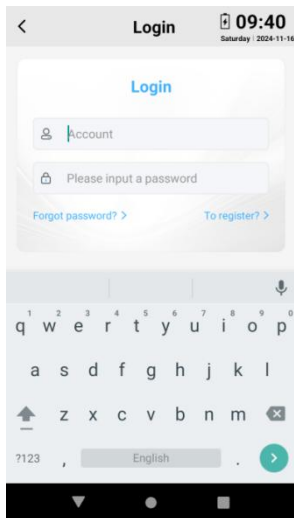


Figure 4.8-2 Login interface

(2) After logging in, you can perform cloud platform data pull or data synchronization upload, as shown in Figure 4.8-3. Clicking the "⚙️" button shown in Figure 4.8-3 will display the available operations: ① Modify device name; ② Pull server data coverage; ③ Set upload method; ④ log out.

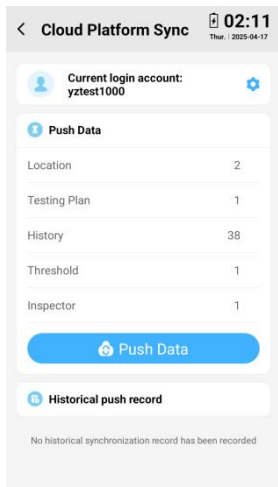


Figure 4.8-3 Cloud platform synchronization interface

Under the "Push Data" column, the current amount of unsynchronized data will be displayed. To synchronize this data to the cloud platform, click the "Push Data" button. After synchronization is complete, there will be a prompt message. To view the synchronized uploaded data in the cloud platform, go to the cloud platform website: <http://47.253.170.149:3300/cloud> . The login account and password are the account and password information registered for the instrument. The account password information for logging into the cloud platform must be consistent with the account information synchronized with the instrument data, otherwise the synchronized data cannot be viewed.

If you need to pull data from the cloud platform, click "Pull server data coverage" button under "⚙️". Enter the interface for pulling cloud platform data, as shown in Figure 4.8-4, and click the "Pull Data" button, The existing data information of this account on the cloud platform (detection points, detection plans, thresholds, inspectors) will be synchronized to the instrument.

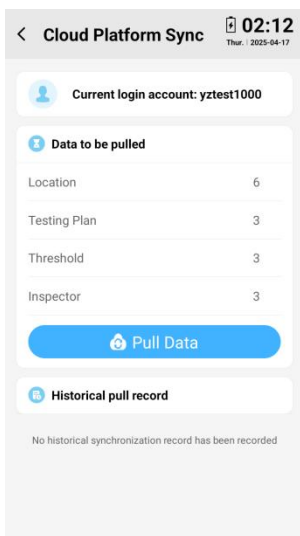


Figure 4.8-4 Pull Cloud Platform Data Interface

4.9 Analysis Software Sync

The download link for the analysis software is as follows:

<http://39.106.128.119:3838/download?link=5204ad1e6890ea0968dc1eb5ca9f50d2&key=EP41>



Analysis software sync

The synchronization function of the analysis software “Analysis software sync” is: Synchronize the detection points, detection plan, inspector, threshold, and detection data information of the instrument to the computer analysis software, or synchronize the data (detection points, detection plan, inspector, threshold) in the analysis software to the instrument. The operation of synchronizing analysis software data is as follows:

Install the analysis software “**Analyzer Software.exe**” onto the computer, and after installation, click on “Data Synchronization”. The interface is shown in Figure 4.9-1;

Push the instrument data to the analysis software end using both WIFI and USB connection methods. The specific steps are as follows:

WIFI connection method push data:

- (1) Click on the “Analysis Software Synchronization” icon to enter the analysis software synchronization interface, as shown in Figure 4.9-2. Fill in the software service IP and service port number displayed in the data synchronization interface of the computer analysis software into the corresponding box of the instrument analysis software synchronization interface;
- (2) On the data synchronization interface of the computer analysis software, click “Start Reception”;
- (3) Click the “Push Data” button on the instrument side;
- (4) After synchronization is completed, the synchronized data can be viewed on the computer analysis software.

USB connection method push data:

- (1) Please connect the instrument to a desktop computer with installed analysis software using a Type-C USB cable;
- (2) Click on the “Analysis Software Synchronization” icon on the device to enter the analysis software synchronization interface, and then click on “No network push”;
- (3) Select “YZ3500” in the “Equipment” column of the computer analysis software, and click “Netless Reception” to complete the synchronization operation of instrument data to the analysis software data.

Push the analysis software data to the device with WIFI and USB connection methods. The specific steps are as follows:

WIFI connection method to pull data:

- (1) Click the "Pull Data" button on the device side to enter the data pull interface, as shown in Figure 4.9-3, and then click the "Pull Data" button at the bottom of the interface to open the service;
- (2) Click the "Start Push" button in the analysis software, enter the device IP, and click the "Push Data" button to start the data transmission service;
- (3) After the data transmission is completed, the pulled data can be viewed on the device.

USB connection method for pulling data:

- (1) Connect the device and the desktop computer where the analysis software is located using a Type-C USB data cable;
- (2) On the device side, click the "Pull Data" button to enter the pull data interface. On the computer side, select "YZ3500" in the "Device" column of the analysis software, click the "No network push" button, and the data will start to be transmitted. After the transmission is completed, there will be relevant prompt messages;
- (3) Click the "No Network Pull" button on the device side to complete a network free data push.

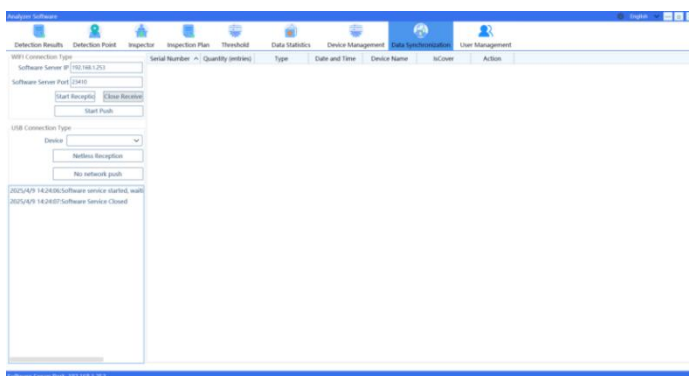


Figure 4.9-1 Computer Analysis Software Interface

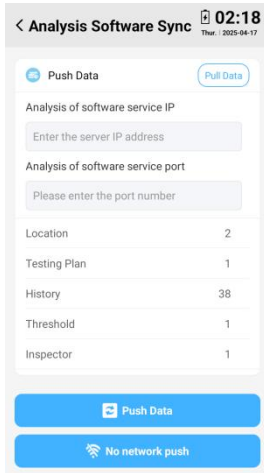


Figure 4.9-2 APP analysis software interface

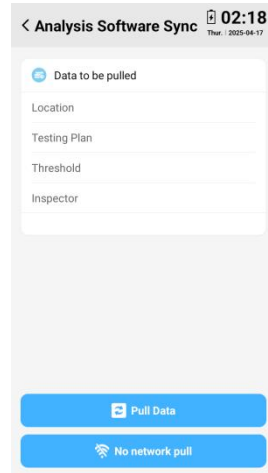


Figure 4.9-3 Data Pull Interface

4.10 Calibration

Use the calibration control tube to verify that the equipment is operating correctly and conforming to specifications through the calibration function. This function requires to be used with calibration quality control tube, the relevant use of calibration quality control tube please refer to the "Calibration Quality Control Rod Operation Manual".



Click on the " Calibration " icon to enter the calibration interface, as shown in Figure 4.10-1. If it has been calibrated before, there will be a calibration history. Click a record to view the details of the calibration record, as shown in Figure 4.10-2.

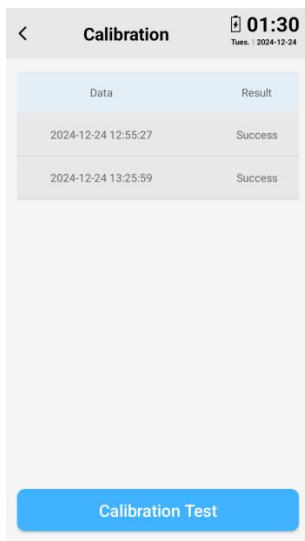


Figure 4.10-1 Calibration interface

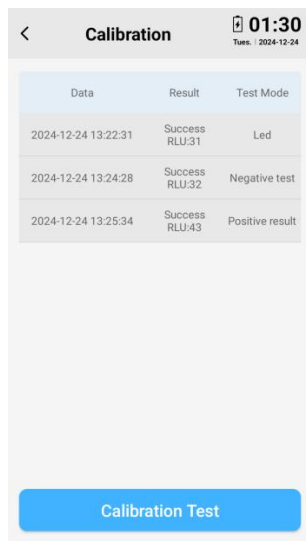


Figure 4.10-2 Calibration record details

First of all, click "Calibration Test" button to enter the internal Led testing interface (as shown in Figure 4.10-3-①).

When the test chamber is empty, click "Run Test" and the instrument will start automatic test. After the test is completed, it will indicate success, as shown in Figure 4.10-3-②.

If you need to check again, click "Retest" and the device will automatically check again. If there is no need to re-test, click "Next Step" directly to proceed to the next test. Figure 4.10-3-③, 4.10-3-④, 4.10-3-⑤, 4.10-3-⑥ shows the negative result test and positive result test screens. You can perform operations as prompted.

When the positive result test is completed, click the "Finish" button, it will automatically jump to the first line of calibration and save the record, this calibration is completed.

< **Calibration Test** 11:39
Tues. · 2024-12-24

Internal Led testing
Please ensure that the hatchery is empty

Run Test

① Internal Led detection

< **Calibration Test** 03:11
Tues. · 2024-12-24

Internal Led testing
Please ensure that the hatchery is empty

Success

Result	9561
Range	>500
Data	2024-12-24 15:11:34

Retest Next Step

② Internal Led detection completed

< **Calibration Test** 11:40
Tues. · 2024-12-24

Negative result detection
Please ensure that the incubator is empty

Tests

③ Negative result detection

< **Calibration Test** 11:41
Tues. · 2024-12-24

Negative result detection
Please ensure that the incubator is empty

Success

Result	0
Range	0-4
Data	2024-12-24 11:40:42

Retest Next Step

④ Negative result Check complete

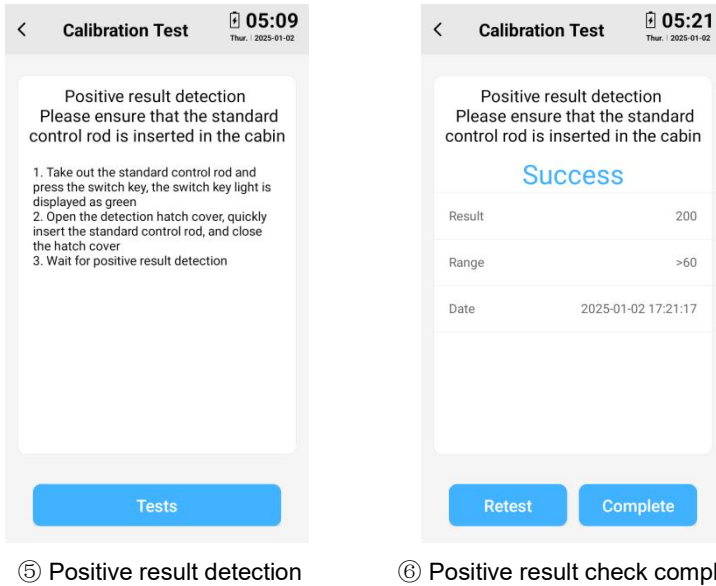


Figure 4.10-3 Calibration check process

4.11 Settings



Click on the “Settings” icon enter the system settings interface ,as shown in Figure 4.11-1, The system settings module includes 13 functional modules: Language Switch, Wireless Network Setting, Bluetooth setting, Data and Time Setting, Sleep Setting, Screen brightness setting, Export Settings, File Management, Input method switching, Data Management, Check For Update, Channel renewal, and System Information.

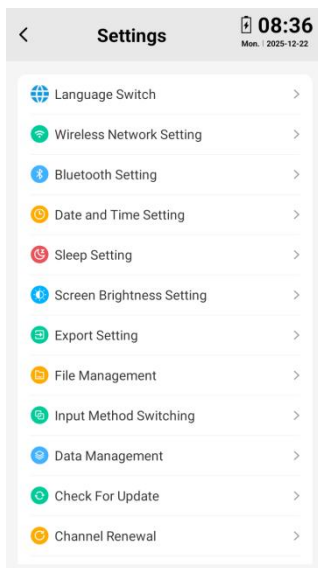


Figure 4.11-1 Setting interface

4.11.1 Language Switch

Adjust the language of the app through this feature.

4.11.2 Wireless Network Setting

Use this function to turn on and off WIFI and configure the instrument wireless (WIFI) network connection password.

4.11.3 Bluetooth Setting

Use this function to turn on or off the instrument Bluetooth signal.

4.11.4 Date and Time Setting

Adjust and set instrument time with this function.

4.11.5 Sleep Setting

Through this function, adjust and set the "screen time", "sleep time" and "shutdown time" of the instrument to save battery power consumption.

4.11.6 Screen Brightness Setting

Adjust the screen brightness of the instrument through this function.

4.11.7 Export Setting

Through this function you can adjust the instrument CSV export format encoding, usually users do not need to adjust; If the exported data cannot be identified, you can adjust the export format to achieve the exporting effect.

4.11.8 File Management

This function allows for the deletion of exported history files. Check the file information that needs to be deleted, click "Delete", and the corresponding historical files will be deleted.

4.11.9 Input Method Switching

Switch input methods through this feature.

4.11.10 Data Management

This function can control the deletion of historical data, and control the permission to delete historical records by making corresponding settings in data management. The main interface displays multiple data deletion management is turned off, and there are also "reset password" and "modify password" functions. **Note:** If the default setting for data deletion management is enabled, the initial management password for deletion operations in the history is 123456.

To enable data deletion management, first click "Change Password" to set the initial password (the password needs to be set to three or more characters and cannot be set to 123456), click "OK" to successfully set the management password; To enable data deletion management, you need to click the switch and enter the management password to set the deletion management switch status. You can set single or multiple data deletion management according to your needs. After enabling deletion

management, when deleting single or multiple data in the history, a password prompt will pop up according to the settings. Only after entering the correct management password can you delete them.

If you forget your management password, please contact customer service to request a reset password. After receiving the reset password, enter the data management interface and click "Reset Password". After successfully resetting the password, you can reset the management password. **Attention: After resetting the password, you need to immediately set the management password on the current interface to prevent other users from changing the data deletion management settings. If you do not set the management password, you cannot leave this interface.**

4.11.11 Check For Update

Check if the online app is the latest version, and users can upgrade it themselves. The upgrade method is: Network check updates and local updates, local updates require placing the corresponding version of the APP in the instrument directory.

4.11.12 Channel Renewal

When an upgrade is required, obtain the corresponding channel code, click on the button and enter the corresponding channel code to perform APP network upgrade or firmware network upgrade. **Note: Do not perform other operations during the upgrade process, and keep the power sufficient. If the power is insufficient, plug the cable to charge and upgrade.**

4.11.13 System Information

Display information such as instrument name and logo, APP version, and device number.

5. Instrument Maintenance

5.1 Routine maintenance

SafeGen 3500 Luminometer is a precision testing instrument, in order to keep the instrument in a good state, the routine maintenance must be conducted well.

Avoid Strong light!!

- Using neutral detergent or wet cloth for surface cleaning of the instrument.
- Using soft cloth to wipe LCD gently, avoid screen damage.
- When the instrument is not in use, it is necessary to fasten test chamber, in order to avoid from highlight irradiating at test chamber.
- When the instrument is not in use for a long time, should turn off the device. And charge it at least once a month.
- In the process of testing, when the instrument pop up warning of excessive inclination angle, it must be corrected, otherwise the liquid leakage may cause irreversible damage to the instrument.
- Do not allow any solvent, grease or corrosive substances to contact the instrument.

5.2 Troubleshooting

5.2.1 Common check items of instrument hardware

Common fault table of instrument hardware, as shown in the below table:

Common fault table

No.	Troubles	Fault reasons	Solutions
1	The screen does not light up when power on	Poor contact of power plug	Reinsert the power plug to ensure the contact is firm
		Electric parts damage	Return to factory for maintenance
2	System halted	Abnormal use	Restart
		Recurring	Need to check the hardware and software of the instrument

5.2.2 Wireless network troubleshooting list

- Instruments and routers have been opened and connected power supply, at the same time ensure the wi-fi is open and function well.
- If the wireless network running well, please try to access other devices in the wireless network. If the network cannot access the Internet, try another wireless connection to the Internet.
- Instrument and wireless access points, such as wireless router (in the use of WPA security network) use the same encryption method (AES or TKIP) .
- This instrument is in the wireless network coverage range. For most networks, this instrument must be within 20 meters of the wireless network access point (wireless router).
- No obstacles blocking the wireless signal. Remove any large metal objects between the wireless access point and the instrument. There are no brace rods, walls, or props containing metal or concrete between the instrument and the wireless access point.
- Keep away from the electronic devices that may interfere with the wireless signal. Many devices can interfere wireless signals, including electric motors, cordless phones, security system cameras, other wireless networks, and Bluetooth.
- Computer and the instrument should be connected to the same wireless network.

6. Contacts

Brand Owner:

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Email: info@generon.it

<https://www.generon-food-safety.com/>