

Flameeye App-Android/iOS

Software Manual

The Spectrometer Indicator Light Status Explanation:

Power On: Press and hold the button until the blue light illuminates.

Power Off: Press and hold the button until the blue light goes off.

Charging: Red light is on.

Charging Complete: Red light goes off.

Bluetooth Pairing: Blue light stays on continuously.

Bluetooth Not Paired/Disconnected: Bluetooth breathing light.

Low Power Mode: Press and hold the button until the blue light dims and stays on continuously.

Exit Low Power Mode: Short press the button.

I、App Home Page

There are 4 buttons on the homepage of the App: "To Measurement", "Connect to Spectrometer" (upper right corner), "History File" (lower left corner), and "Settings" (lower right corner). The default display for the first entry is "Not Connected".

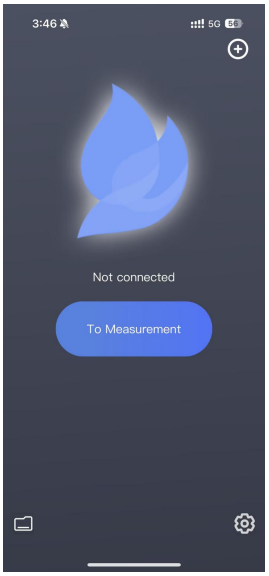


Figure 1

II、Connecting the Spectrometer

Click "To Measurement" or the plus sign in the upper right corner to connect the spectrometer. (Android users can add a mobile phone illumination measurement module. Click "To Measurement" to pop up "Mobile Phone Sensor" and "Torchbearer Sensor". Select "Mobile Phone Sensor" to perform illumination measurement without the Torchbearer spectral product).

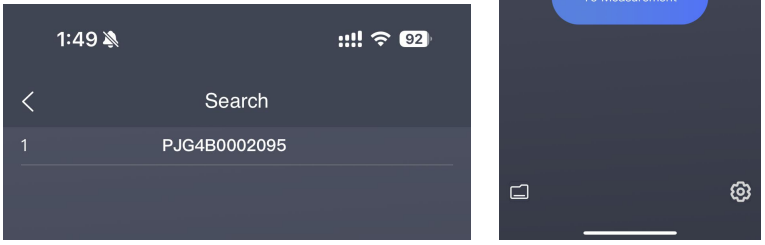


Figure 2

After entering the page, pull down to search for Bluetooth. The Bluetooth search will

display a list of related devices as shown in the left picture of Figure 2. Click the corresponding device to establish a connection with the device and jump to the home page. After a successful connection, the home page status is as shown in the right picture of Figure 2, showing the status as connected.

III、Setting

The setting page is divided into “Measurement” “General” “Spectrometer”and “About” as illustrated in Figure 3.

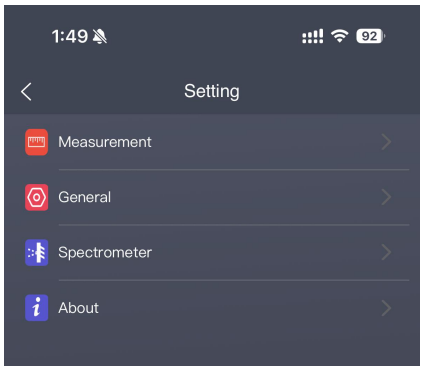


Figure 3

1. Measurement Settings

In the measurement settings, there is an "Automatic Results Save" option, which is turned off by default. If enabled, all valid data received during measurements will be saved; however, this option will automatically turn off each time the application is restarted, as shown in Figure 4.

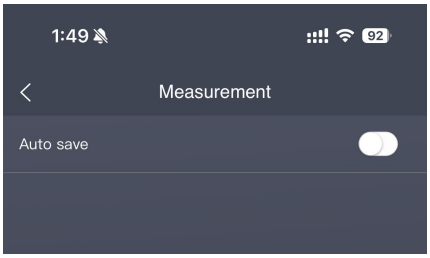


Figure 4

2. General Settings

The general settings include "Language Selection," "Bluetooth Information," and "Wired Connection." Language selection is used to switch languages, and the application will restart after switching. The Bluetooth information displays the Bluetooth connection status, and the wired connection function displays the wired device status or is used for debugging.

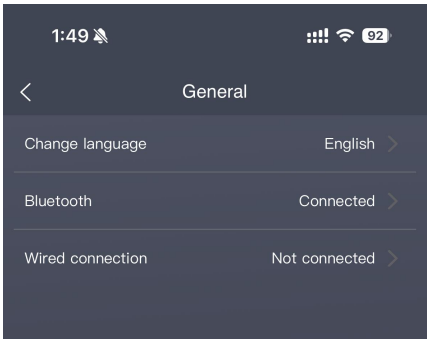


Figure 5

3. Spectrometer Settings

The spectrometer page is used to display basic information such as model, power and connection method. The near infrared and supreme models of the PJG series spectrometers provide three CIE modes: CIE1931 2° observer angle, CIE2015 2° observer angle, and CIE2015 10° observer angle. Users can switch settings according to their needs. Different units of measurement can be selected for irradiance units.

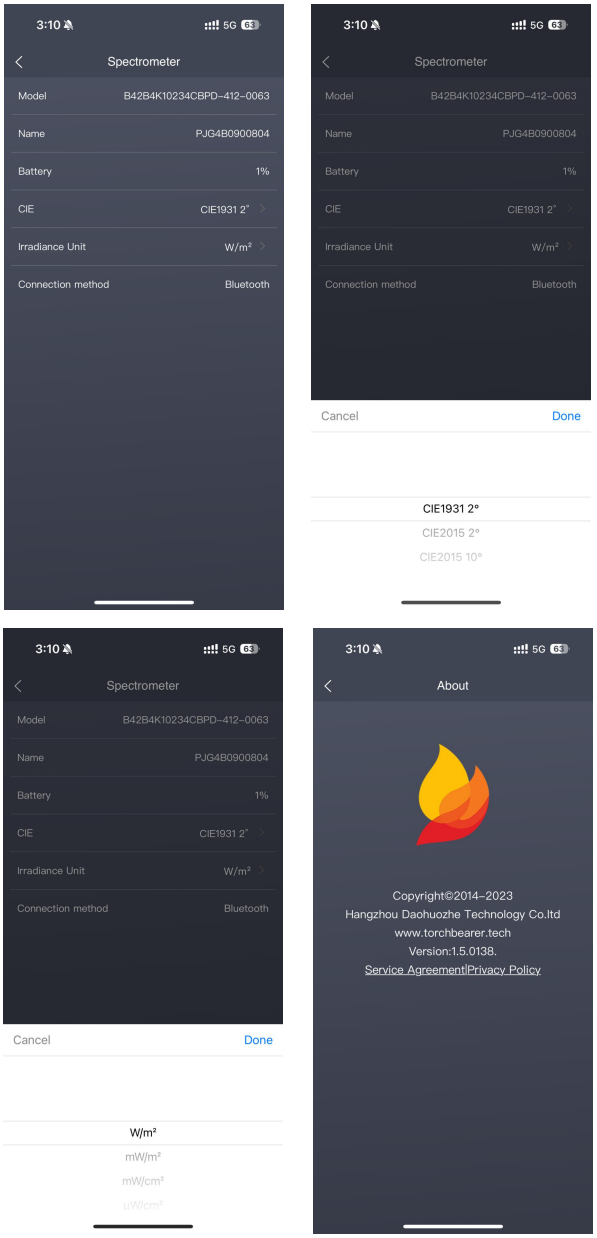


Figure 6

4. About

The "About" page displays information such as the company name, official website, version number, privacy policy, and user agreement, as shown in the right image of Figure 6.

Ⅳ、The spectrometer measurement interface

Upon entering the spectrometer, a measurement mode selection box pops up. The app provides four measurement modes: standard measurement, comparative measurement, reflectance measurement, and transmittance measurement:



Figure 7

(i) Standard Measurement

1．The exposure status and the currently selected CIE mode are displayed at the top of the measurement page. The exposure status is divided into normal, overexposure and underexposure;The light source photochromaticity image is displayed in the upper middle part of the interface, and different photochromaticity parameters are displayed at the bottom of the interface. There are 6 sections divided according to the parameter type. You can select the parameters you want to display in "LIKE" and replace them with a single click; the exposure mode can be switched below the parameters. The exposure is divided into automatic exposure and manual exposure. There are 5 buttons at the bottom, which represent:

(1) The first button: Continuously and automatically retrieve spectroscopic data.
(2) The second button: Retrieve the next frame of valid spectroscopic data.
(3) The third button: Pause the automatic retrieval of spectroscopic data.
(4) The fourth button: Save the currently displayed spectroscopic data.
(5) The fifth button: Navigate to the historical spectroscopic data list to review past data.

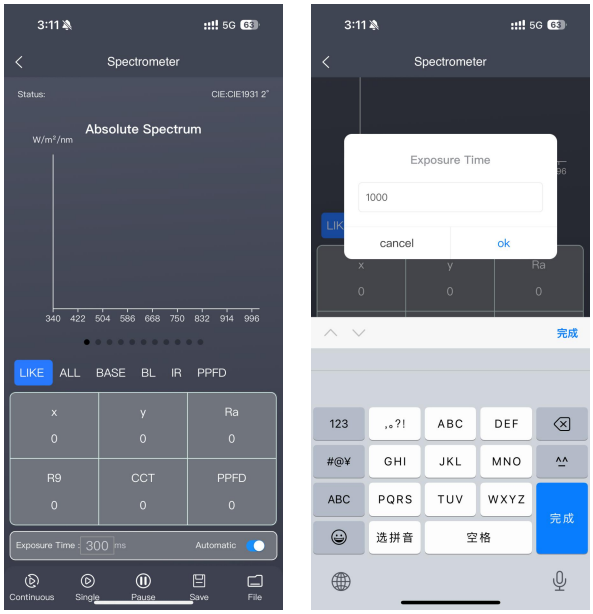


Figure 8

(6) Exposure time input field: Switch to manual exposure mode; clicking allows users to set the spectrometer's exposure time, as shown in the right image of Figure 8.. The range is from a minimum of 0.1ms to a maximum of 5000ms.

(7) Auto-exposure mode switch: Toggle the auto-exposure mode; the system will automatically adjust the exposure time based on the current light source intensity.

2 . The spectrometer page contains relevant spectral data at the bottom. You can click on different areas to scroll and view. In the "LIKE" section, you can freely select the parameters you want to display and click to replace them.

3 . The top section of the Spectrometer page displays various spectroscopic graphs, totaling 11 types. Users can switch between them by swiping left or right:

（1）Absolute spectrum, as shown in Figure 9. You can press and slide the spectrum downwards, then move it left or right to view the value corresponding to each wavelength.

（2）Color rendering index, as shown in the left image of Figure 10.

（3）CIE 1976, as shown in the right image of Figure 10.

（4）CIE 1960, as shown in the left image of Figure 11.

（5）CIE 1931, as shown in the right image of Figure 11.

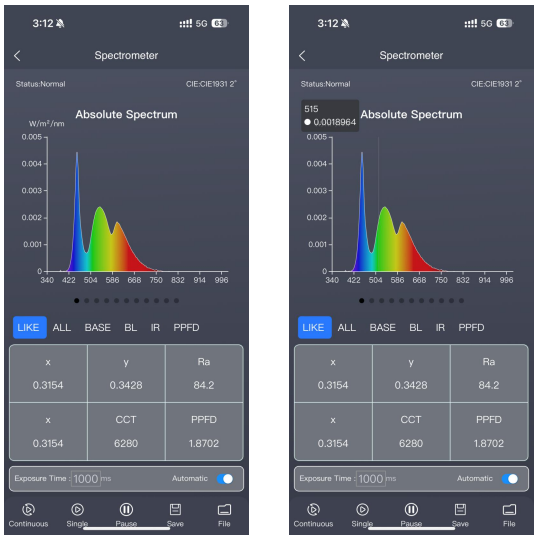


Figure 9

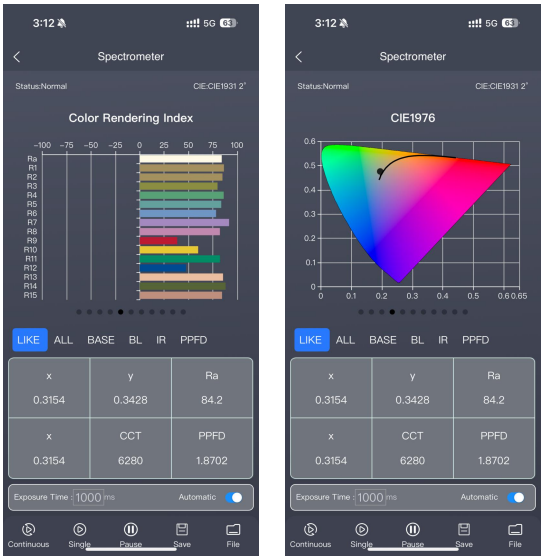


Figure 10

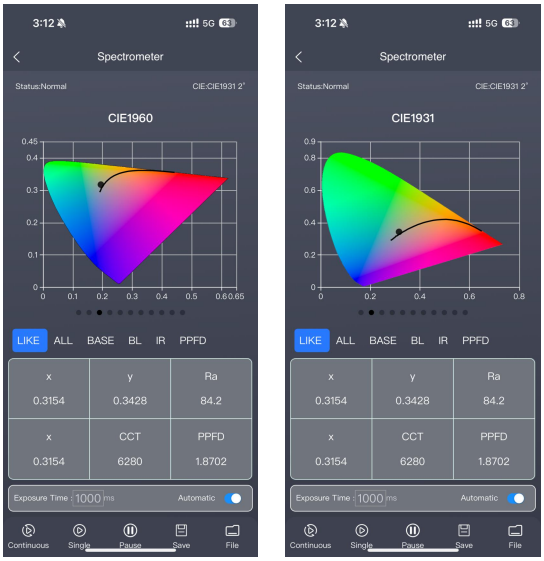


Figure 11

（6）Chromaticity change distribution, as shown in the left image of Figure 12.

（7）RF-RG color fidelity display, as shown in the right image of Figure 12.

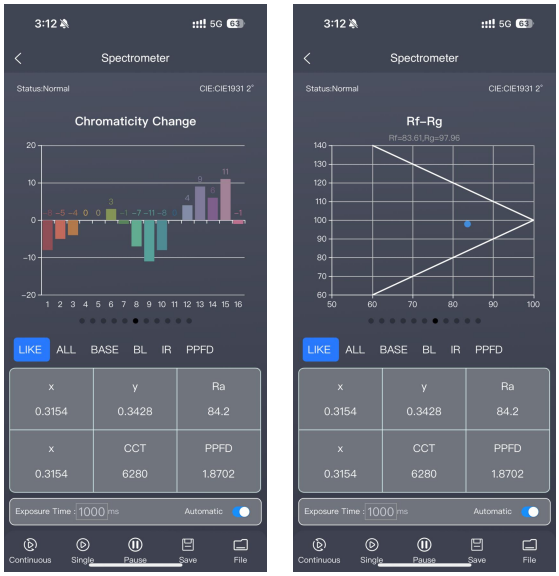


Figure 12

（8）Fidelity distribution, as shown in the left image of Figure 13.

（9）Data analysis table, as shown in the right image of Figure 13.

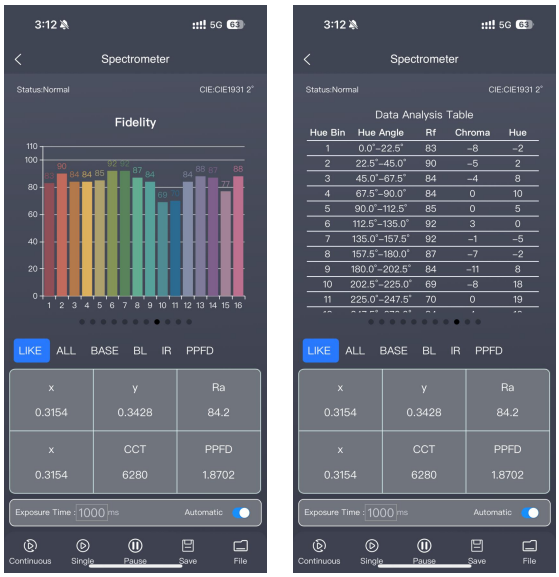


Figure 13

（10）Chromaticity vector distribution, as shown in the left image of Figure 14.

（11）Spectral power distribution, as shown in the right image of Figure 14.

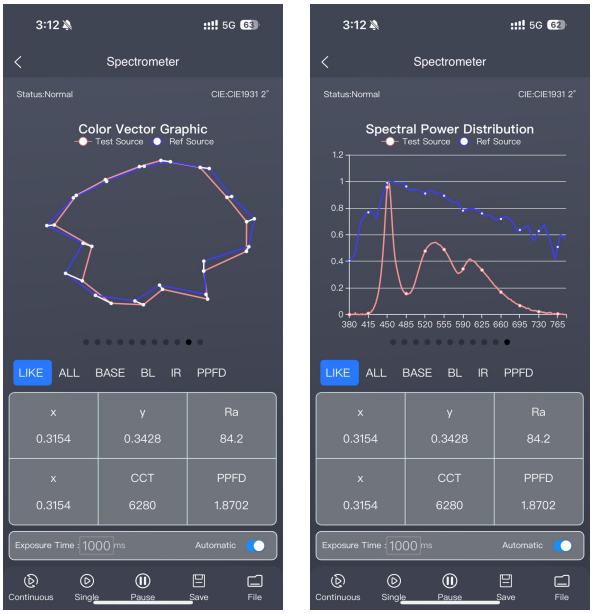


Figure 14

4 . By clicking the save button and entering a filename, you can save the currently measured spectral data. This is illustrated in Figure 15.



Figure 15

5 . Introduction to historical data list page

(1) Display the data saved during the measurement process, as shown in the left image of Figure 16. The list includes the file name, device name, and save time. If in automatic save mode, a random file name is generated with the prefix "AUTO." Long-pressing a file allows for moving, deleting, or renaming it, while clicking allows viewing historical files.

(2) The historical details page is similar to the real-time viewing page, as shown in the middle and right images of Figure 16. It includes graphical displays, data details, and exposure time exhibits.

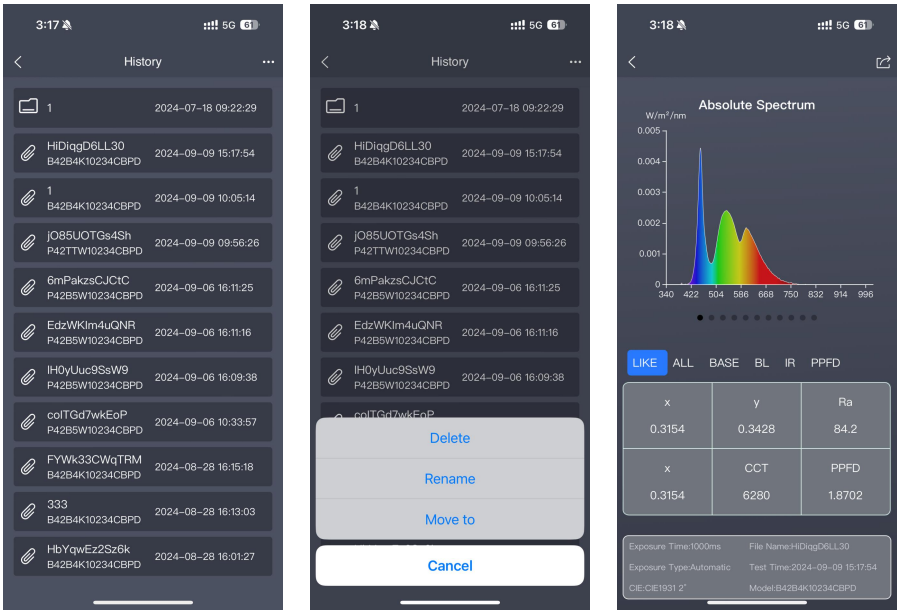
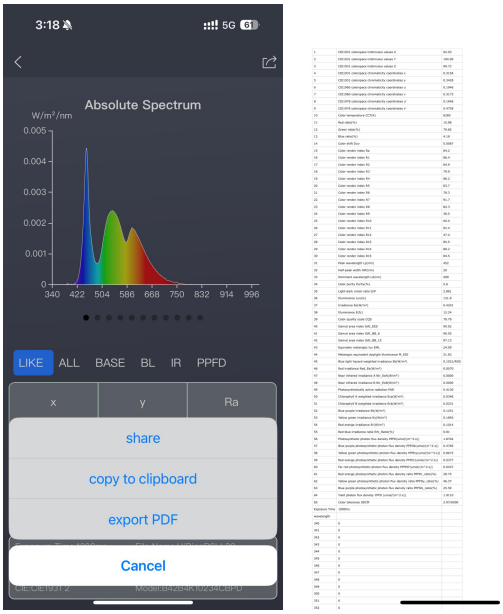


Figure 16

(3) Clicking the share button in the top right corner allows for saving the file as an Excel or PDF document or copying the data to the clipboard, as shown in Figure 17-1.



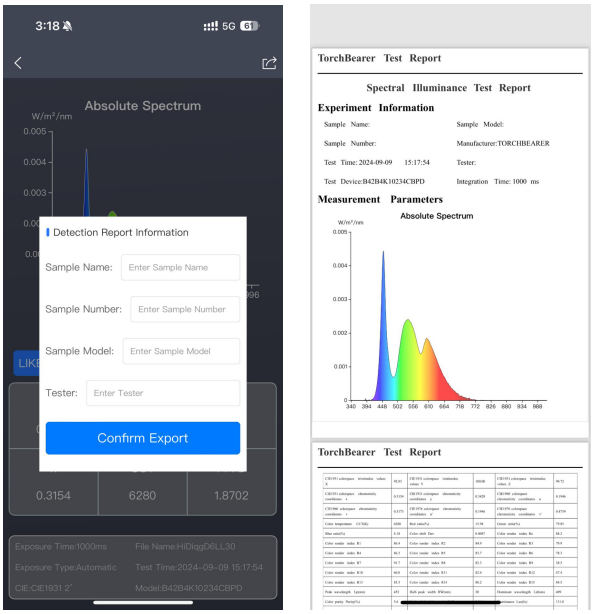


Figure 17-1

(4) You can also make multiple selections and export csv and pdf data in batches, as shown in Figure 17-2;

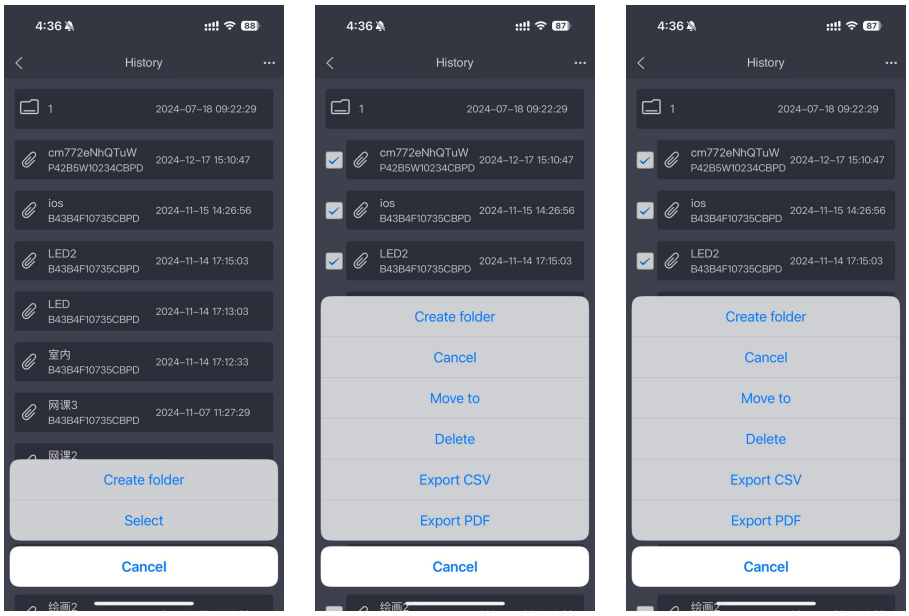


Figure 17-2

（ii）Comparative Measurement

You can simultaneously observe the spectra and parameters of two samples, enabling more intuitive analysis.

1．Measure the reference sample in the lower right corner of the screen, or select from the historical measurement files, as shown in Figure 18.

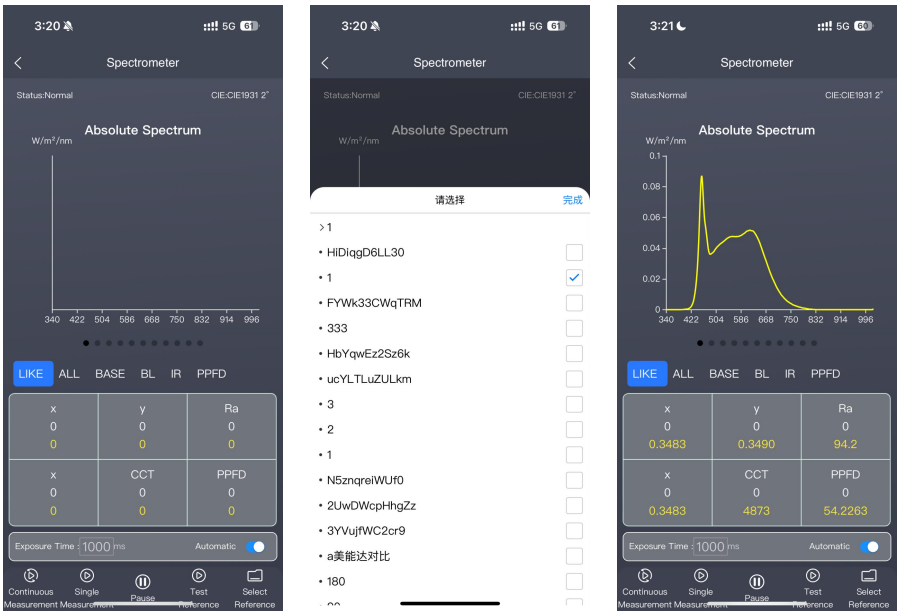


Figure 18

2．Click the button on the lower left to collect the test sample. You can measure the sample once or continuously.

3．The data section displays the parameters of two samples at the same time for easy comparison.

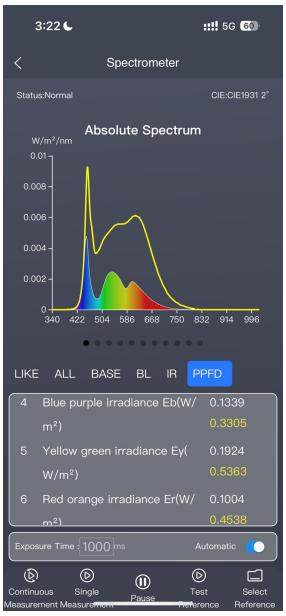


Figure 19

（iii）Reflectance Measurement

You can measure the reflectance and light attenuation of the sample.

1．Measure the reference sample in the lower right corner of the screen, or select from the historical measurement files.

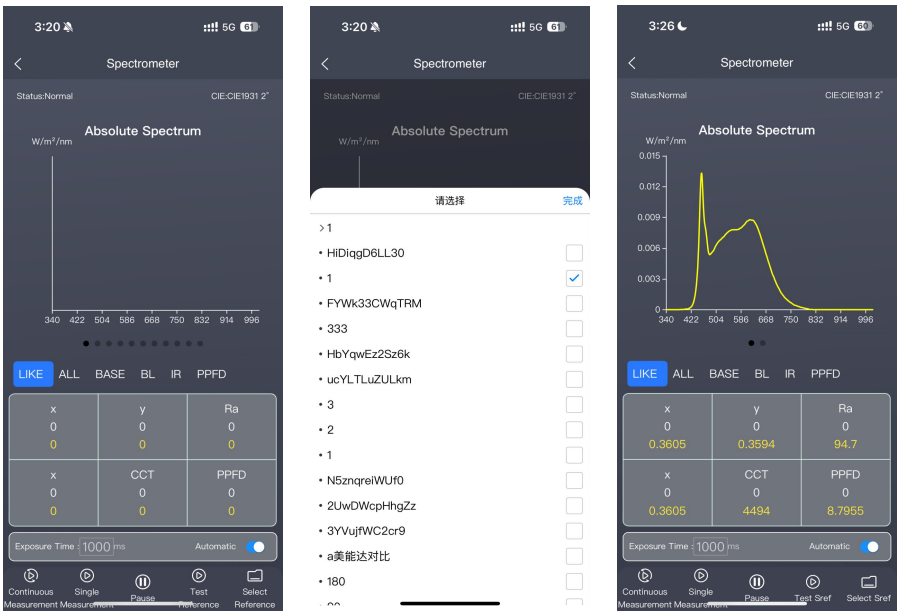


Figure 20

2．Click the button on the lower left to collect the test sample. You can measure the sample once or continuously.

3．You can switch between the reflectance (light attenuation) curve and spectral comparison by swiping left or right. Additionally, you can compare the color parameters of two samples by swiping up or down.

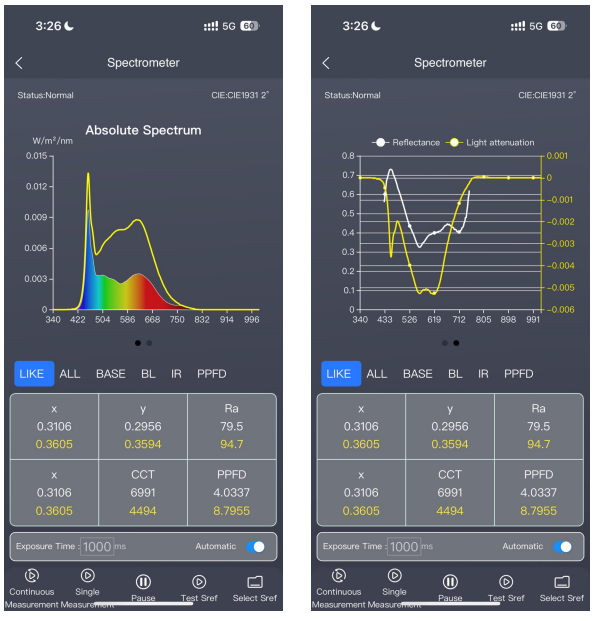


Figure 21

（iv）Transmittance Measurement

You can measure the transmittance and absorbance curve of the sample.

1．Measure the reference sample in the lower right corner of the screen, or select from the historical measurement files.

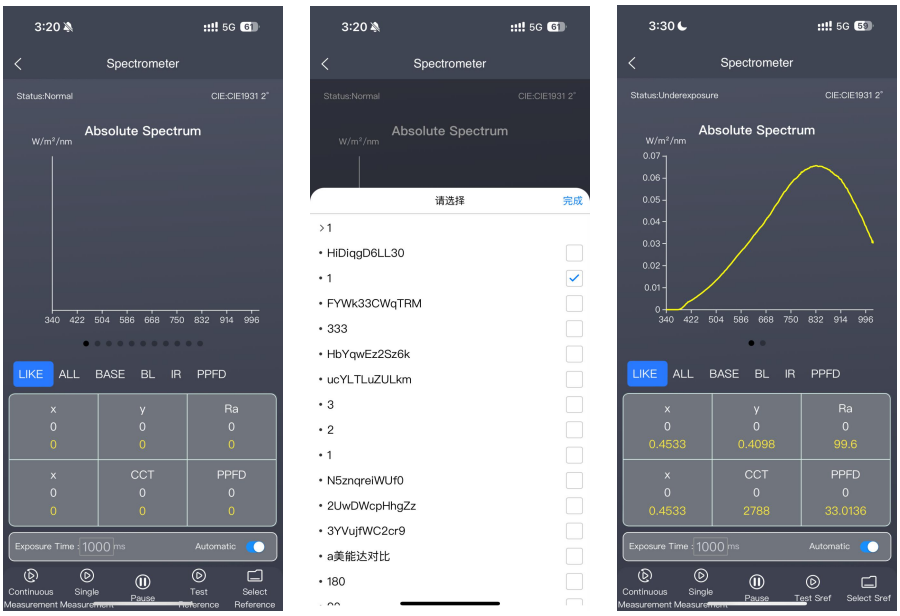


Figure 22

2．Click the button on the lower left to collect the test sample. You can measure the sample once or continuously.

3．You can switch between the transmittance (absorbance) curve and spectral comparison by swiping left or right. Additionally, you can compare the color parameters of two samples by swiping up or down.

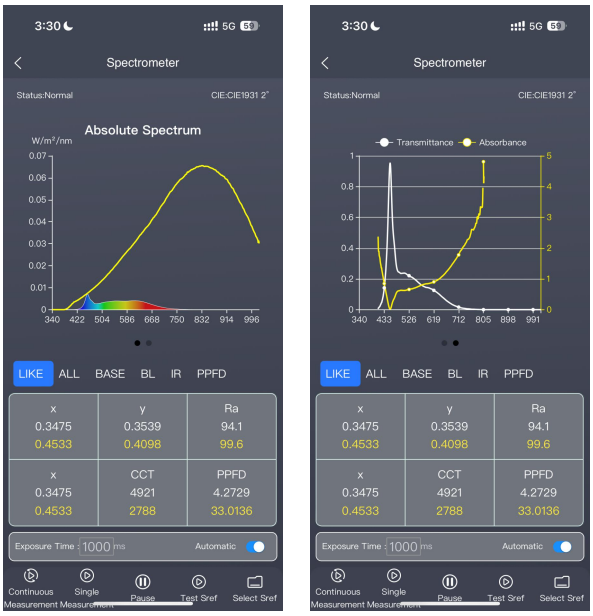


Figure 23