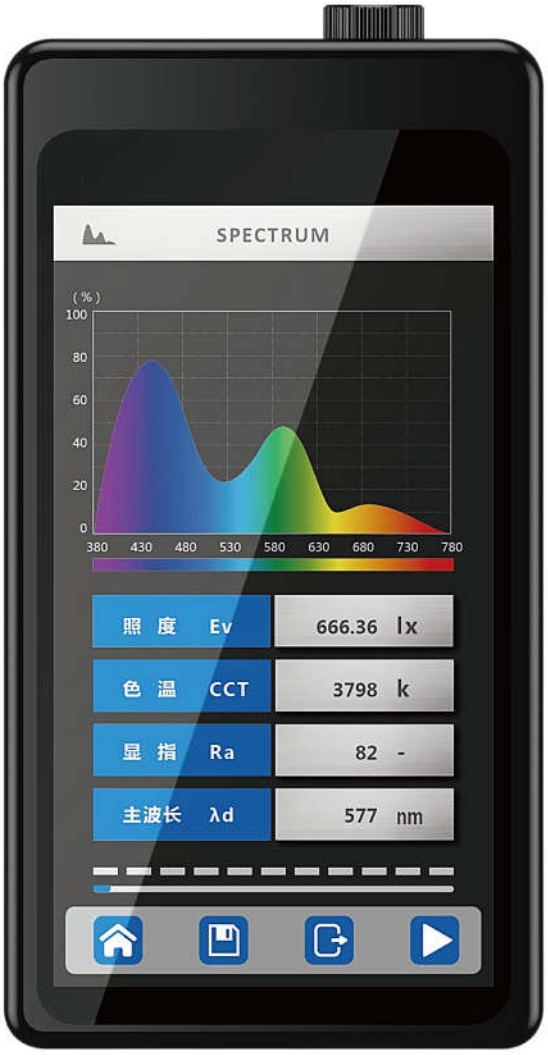



# S-1 Ultra

## 手持照度光谱仪
## Illuminance Spectrometer

## 快速入門使用指南
## Operation Instruction

## 1.1 外觀說明 / Appearance Description

### 按鍵說明 button instruction

| | |
|---|---|
| 開機：關機模式下，長按按鍵即可開啟儀器。 | Power on：Long press to power on. |
| 關機：開機模式下，長按按鍵即可關閉儀器。 | Power off：Long press to power off. |
| 測量：測量模式下，短按按鍵即可開始測量。 | Measure ：Short press to measure. |
| 休眠：休眠模式下，短按按鍵即可喚醒儀器。 | Hiberate ：Short press to wake up. |

## 2.1 主頁面 / HOME PAGE

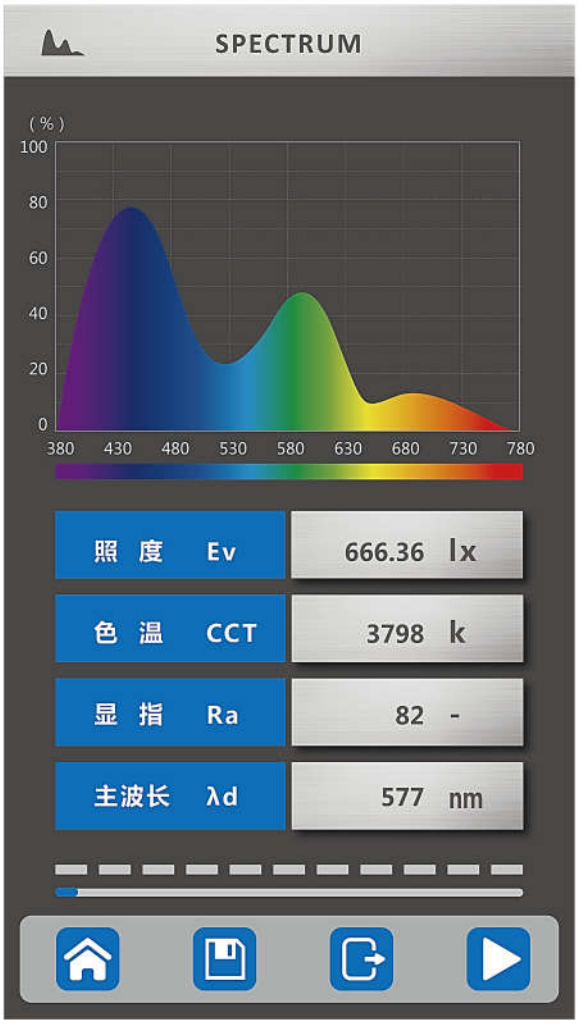
儀器啟動後首先出現logo頁面，加載完成後顯示主頁面。
主頁上面排列了各個測量項目，測試詳情頁按照主頁測量項目的順序進行排列，您也可以根據平時的測試習慣，自定測試項目的排列順序，長按測試項目的圖標拖動即可。

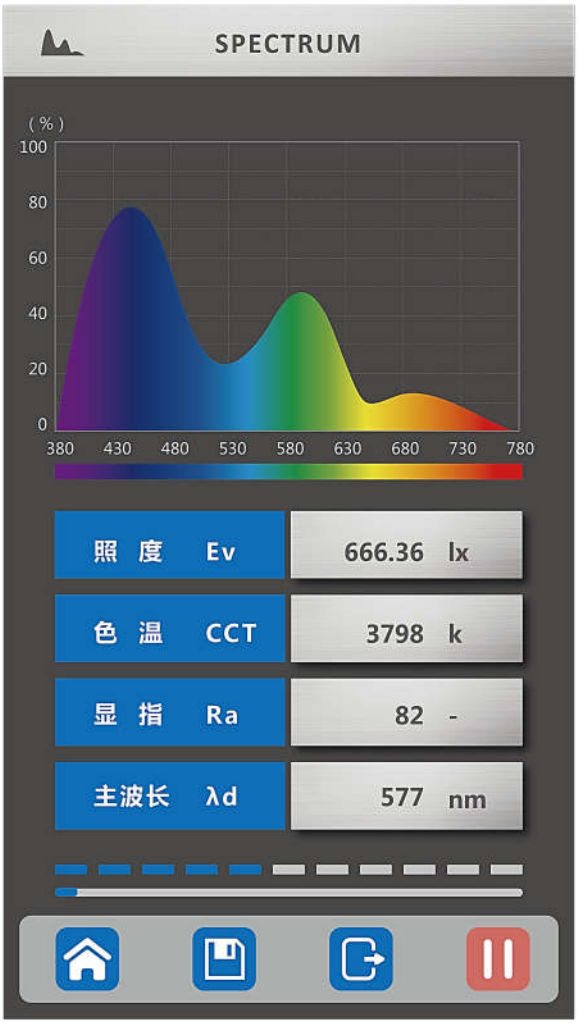
After the instrument is started, the logo page appears first, and the home page is displayed after the loading is complete.
Each measurement item is arranged on the home page, and the test details page is arranged according to the order of the measurement items on the home page. You can also customize the order of the test items according to your usual testing habits, long press the icon of the test item and drag it.

## 2.2 測量頁面 / Measurement page

選擇測量項目後會跳轉到對應的測量頁面，然後點擊測量頁面右下角測量按鍵，儀器開始測量，待頁面下方的進圖條全部顯示為藍色，表示測量完成，界面上顯示測試結果。您也可以通過左右翻頁查看不同的測量項目。測量過程中，也可按下暫停按鍵結束測量。

After selecting the measurement item, it will jump to the corresponding measurement page, then click the measurement button and the instrument will start to measure. When the drawing bar at the bottom of the page is all blue, ithe measurement is completed, and the test result will be displayed on the interface. You can also scroll left and right to see different measurement items. During the measurement process, you can also press the pause button to end the measurement.

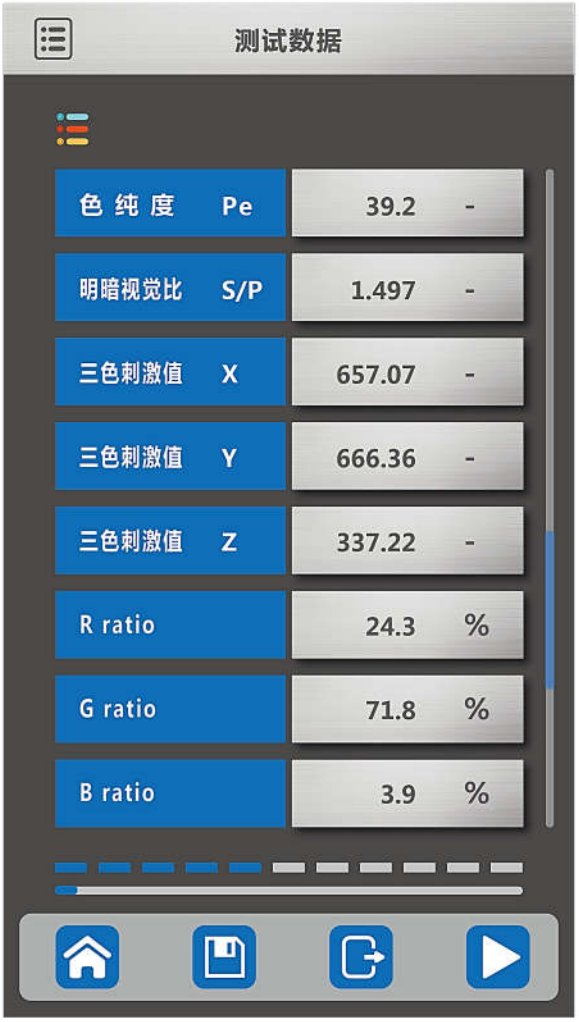


## 2.2 測量頁面 / Measurement page

測試數據為滚動頁面，可以上下滑動屏幕右側的滚動條查看具體的測試結果。

Test data is a scrolling page, you can swipe up and down the scroll bar on the right side of the screen to view the specific test results.



## 2.2 測量頁面 / Measurement page

光色品質：選取15種饱和色平均分佈於可見光譜中，以便更準確地分析光源的顏色質量。

Color quality scale：Fifteen saturated colors are evenly distributed in the visible spectrum to more accurately analyze the light source Color quality.

TLCI 數值等級分佈

Rank distribution：

Level 1：85-100；

Level 2：75-85；

Level 3：50-75；

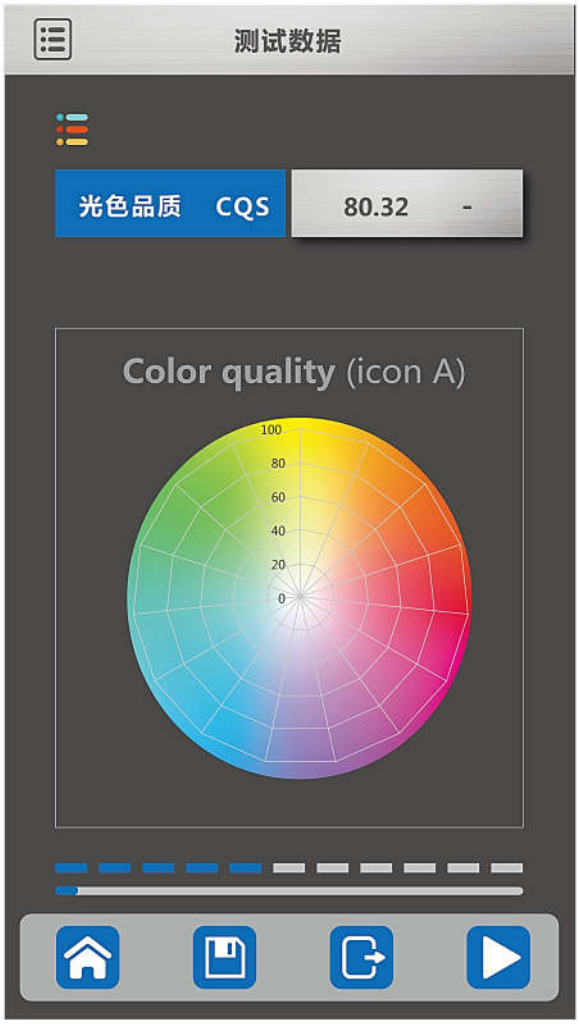
Level 4：25-50；

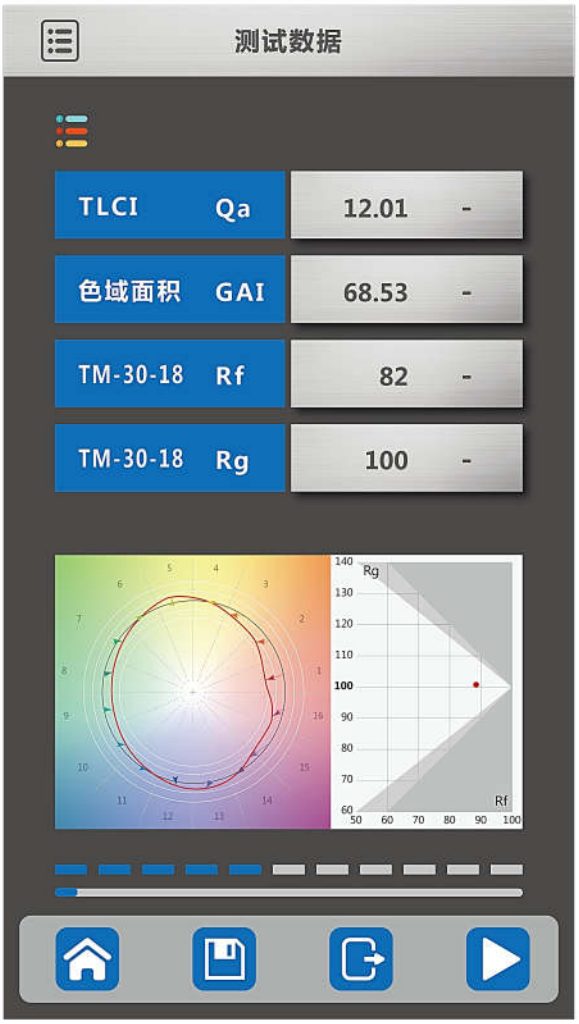
Level 5： 0-25。

色域面積：Gamut area index

色彩真實度：TM-30-18 Rf：

色彩飽和度：TM-30-18 Rg

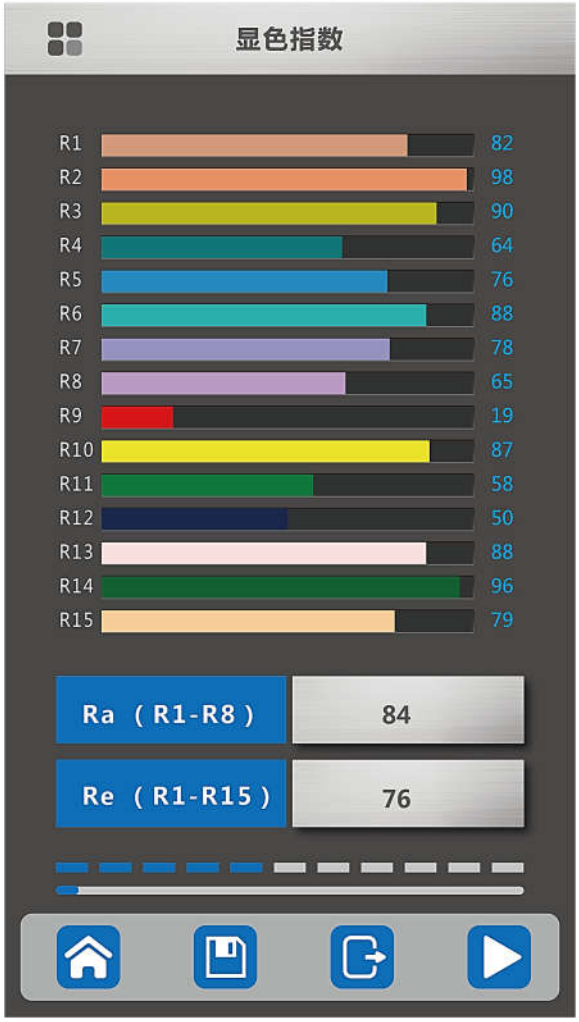


## 2.2 測量頁面 / Measurement page

顯色指數顯示Ra和Re兩個數值，Ra表示R1-R8的平均數值，Re表示R1-R15的平均數值。

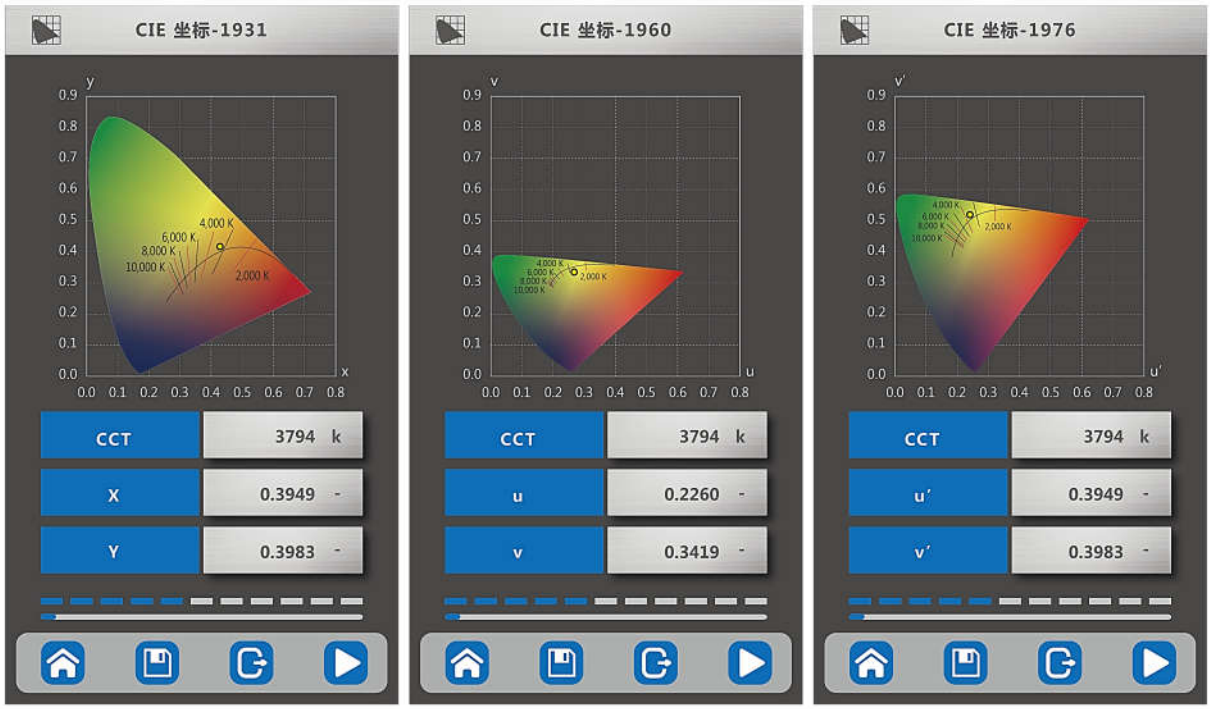
The color rendering index shows Ra and Re. Ra indicates the average value of R1-R8, and Re indicates the average value of R1-R15.



## 2.2 測量頁面 / Measurement page

CIE坐標頁面，可以查看CIE-1931、CIE-1960、CIE-1976,三個標準的坐標數值。坐標圖上可以查看對應坐標數值的坐標點位置。

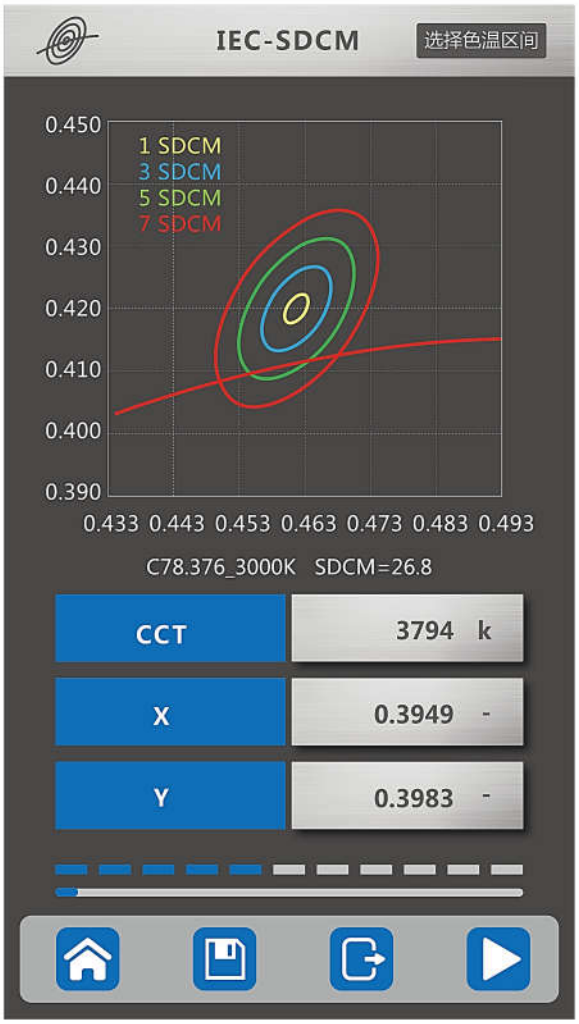
CIE coordinates page, you can view CIE-1931, CIE-1960, CIE-1976, three standard coordinate values.On the coordinate chart, you can view the coordinate point position of the corresponding coordinate value.



## 2.2 測量頁面 / Measurement page

色容差和色品規範這兩個測量項目，可以根據實際的色溫數據選對應的色溫區間查看圖示，也可以選擇多個或者全選色溫區間查看圖示。

The two measurement items of color tolerance and color specification can select the corresponding color temperature interval according to the actual color temperature data to view the diagram, or select multiple or all color temperature intervals to view the diagram.



## 2.2 測量頁面 / Measurement page

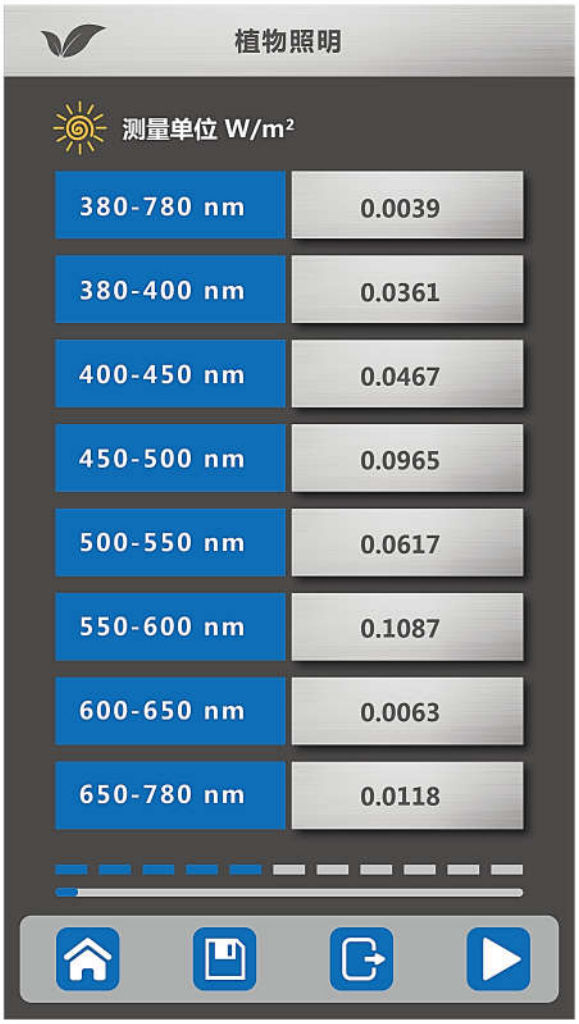
植物照明測量項目，基礎參數部分為滾動頁面，可以上下滑動屏幕右側的滾動條查看具體的測試結果。

The basic parameters section of the plant lighting measurement project is a scrolling page, you can swipe up and down the scroll bar on the right side of the screen to view the specific test results.

## 2.2 測量頁面 / Measurement page

植物照明測量項目，除了基礎參數外，還有自定義的波段範圍可供客戶根據實際測量需求進行設定。具體設定路徑：設置選項 —— 測量設置 —— 波長設置—— 波長範圍，然後手動輸入波段數值即可。

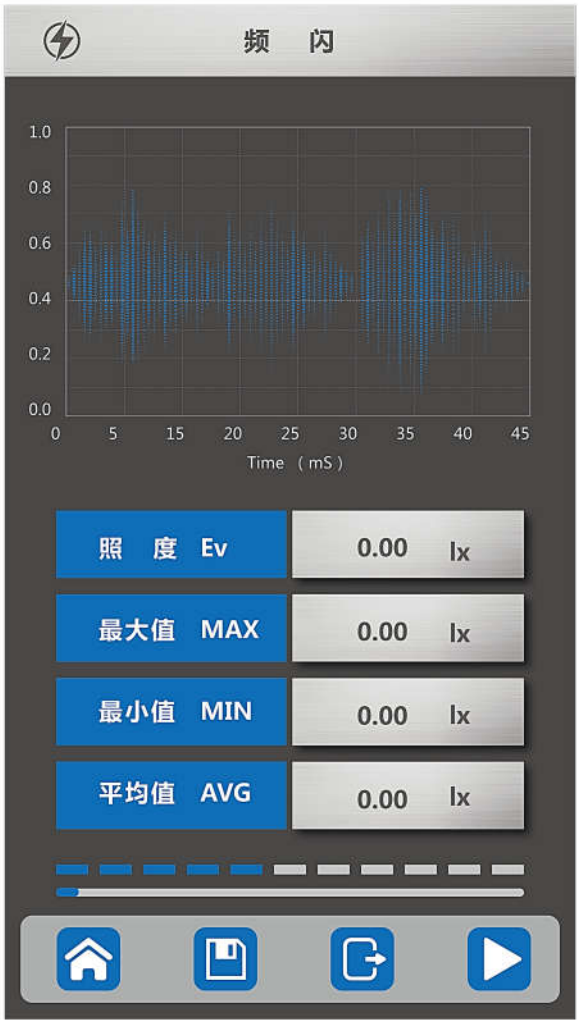
Plant lighting measurement project, in addition to the basic , there is a custom band range for customers to set according to the actual measurement needs. Specific setting path: set options -- measurement Settings -- wavelength Settings -- wavelength range, and then manually enter the band value.

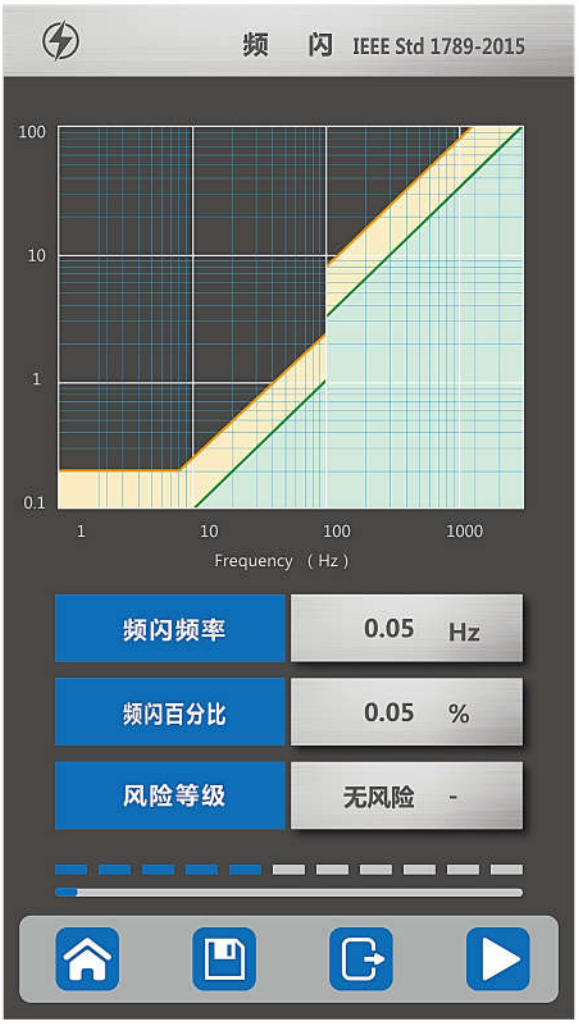


## 2.2 測量頁面 / Measurement page

频闪页面可以查看频闪频率、频闪百分比、SVM、风险等级等参数。單次測量模式下，只顯示照度值，不顯示最大、最小和平均值。連續測量模式下實時顯示當前的照度值，以及當前測試時段的最大、最小和平均值。

On the stroboscopic page, you can view parameters such as stroboscopic frequency, stroboscopic percentage, SVM, and risk level. In single measurement mode, only the illuminance value is displayed, and the maximum, minimum and average values are not displayed. In continuous measurement mode, the current illumination value is displayed in real time, as well as the maximum, minimum and average value of the current test period.

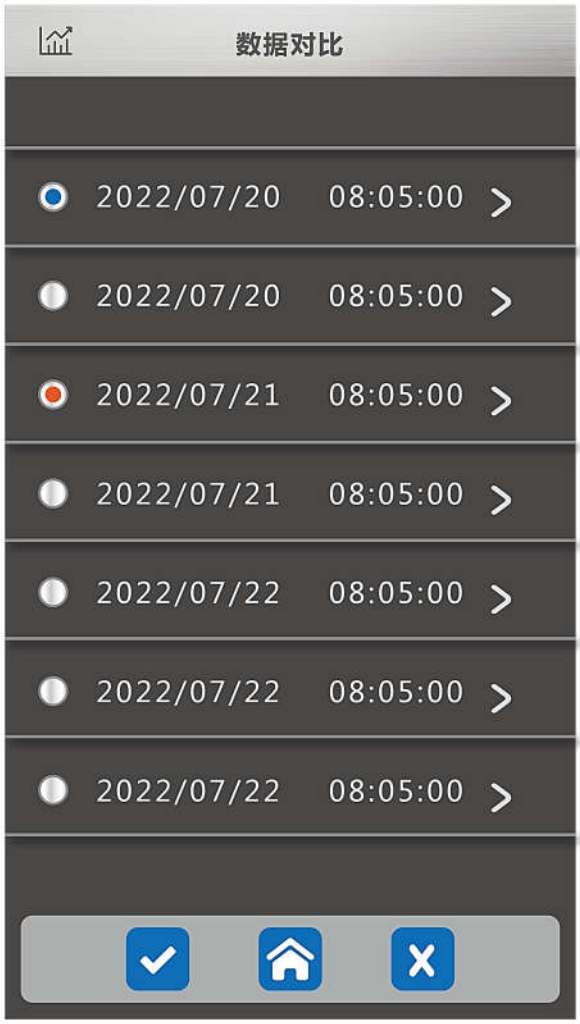


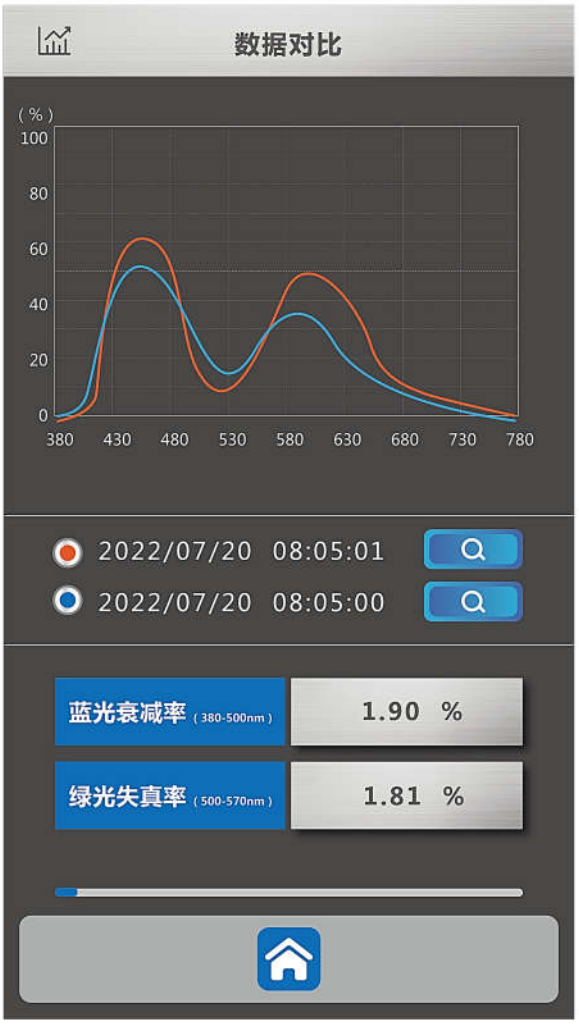



## 2.3 數據對比/ Compare

點擊選擇數據按鈕，跳轉到已保存的數據記錄頁面，選擇兩筆數據進行對比，兩筆數據都選擇完成後界面會顯示對比結果。左右滑動界面可以查看各項對比參數。

Click the "Select Data" button to jump to the page of saved data records. Select two sets of data for comparison. After both sets of data are selected, the interface will display the comparison result. You can swipe left and right to view comparison parameters.

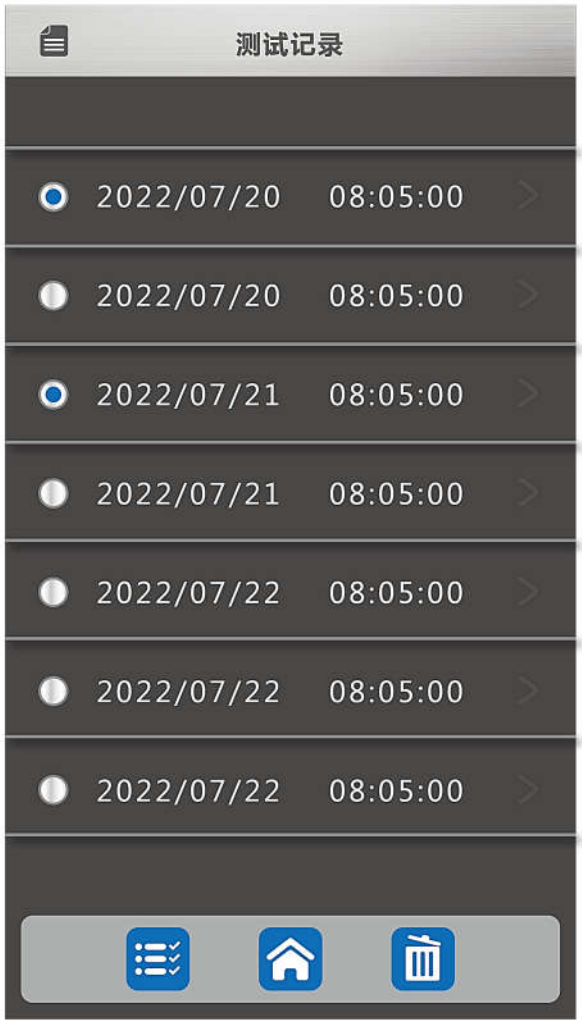


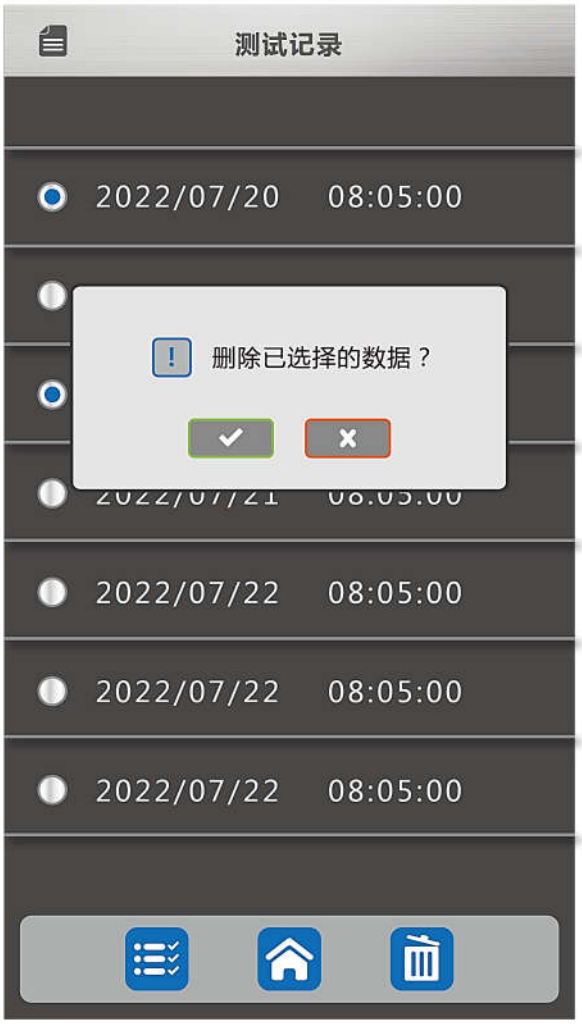



## 2.4 数据记录 / Record

數據記錄頁面可以查看已保存的測試數據，也可以通過單選、多選、全選刪除已保存的數據。
點擊頁面上的刪除圖標後，系統會再次提示是否刪除數據，如果確認刪除點擊“√”，如果取消刪除點擊“×”。

On the Data record page, you can view the saved test data and delete it by selecting one, multiple, or all. After clicking the delete icon on the page, the system will prompt you again whether to delete the data. If you confirm the deletion, click "√"; if you Cancel the deletion, click "×".



## 2.5 設置頁面 / Setting page

1、測量設置——測量模式 Measurement Mode

可以選擇單次測量模式，點擊一次測量按鍵測試一筆數據；也可以選擇連續測量模式，點擊測量按鍵儀器開始進行連續測量，點擊暫停按鍵儀器停止測量。

You can choose a single measurement mode, click the measurement button once to test a set of data; continuous measurement mode can also be selected click the measurement button to start the continuous measurement, click the pause button to stop the measurement.

## 2.5 設置頁面 / Setting page

2、測量設置——積分模式 Integral model

默認情況下，儀器採用自動積分模式，儀器會根據被測光源的強度自動調整積分時間。如有特殊測量需求，可以採用手動積分模式。

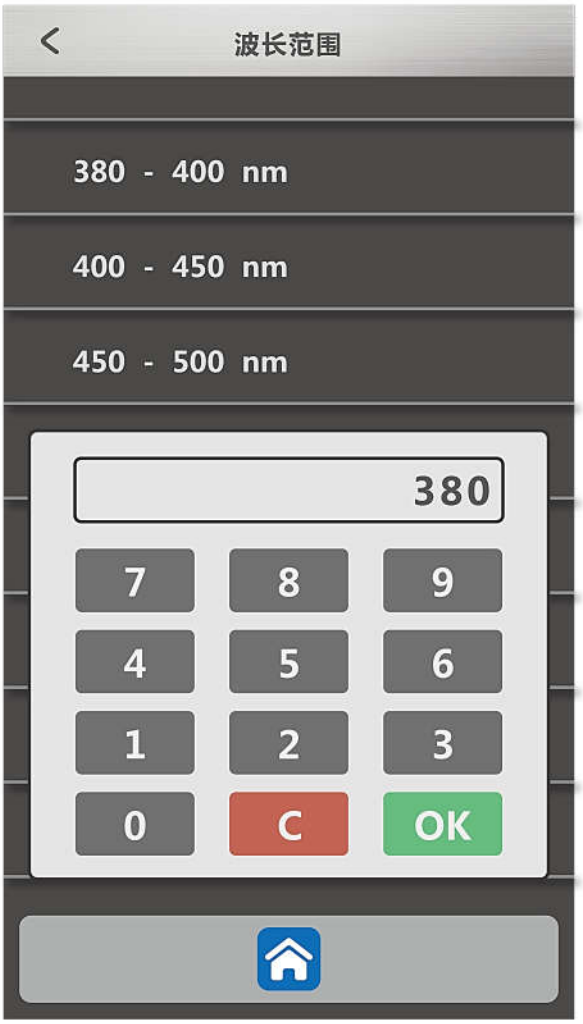
By default, the instrument uses automatic integration mode, and the instrument automatically adjusts the integration time according to the intensity of the light source being measured. If you have special measurement needs, you can use manual integration mode.

## 2.5 設置頁面 / Setting page

3、測量設置——波長設置 Wavelength Range Setting

可以根據實際測量需求，設定光子通量波長範圍和輻照度波長範圍。

The wavelength range of photon flux and irradiance can be set according to the actual measurement requirements.

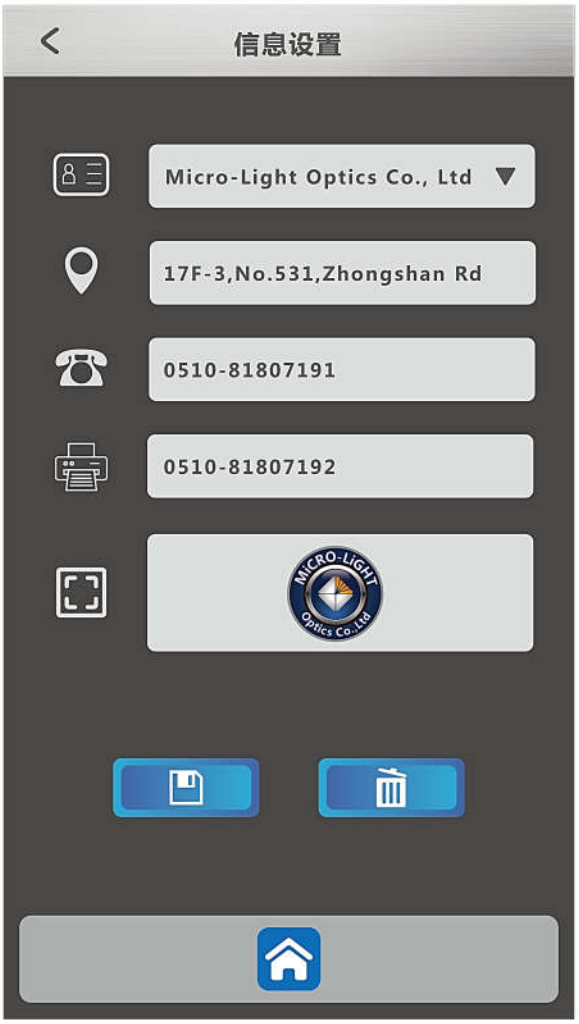


## 2.5 設置頁面 / Setting page

4、信息設置 Information Setting

設置公司的名稱、地址、電話、傳真，也可以上傳公司logo，設置完成後點擊“保存”即可，這些信息會在生成的測量報告上體現。

Set the company name, address, telephone, fax, you can also upload the company logo, click "save" after the completion of the setting, these information will be reflected in the generated measurement report.



## 2.5 設置頁面 / Setting page

5、電源設置 Power Settings

開啟休眠模式：設定自動休眠的時間，到達設定時間後，如果屏幕沒有任何的操作，儀器進入休眠狀態，按儀器左側的測量按鍵喚醒儀器。
關閉休眠模式：開機狀態下屏幕處於常亮的狀態。

Start the sleep mode: set the automatic sleep time. After reaching the set time, if there is no operation the instrument enters the sleep state, press the measurement button to wake up the instrument.
Turn off sleep mode: When the device is turned on, steady on screen.

## 2.5 設置頁面 / Setting page

6、亮度設置 Brightness Setting

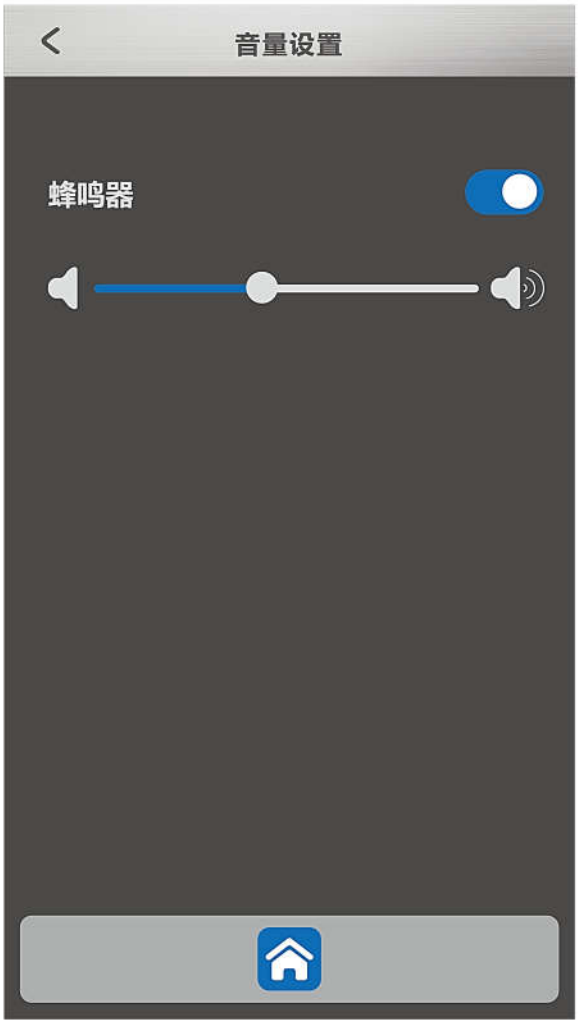
左右拖動圓形圖標可以調整屏幕的顯示亮度。

Drag the circular icon left and right to adjust the brightness of the screen.

7、音量設置 Volume setting

可以選擇開啟或關閉音效，也可以左右拖動圓形圖標調整音量。

You can choose to turn sound effects on or off, or drag the circular icon left and right to adjust the volume.



## 2.5 設置頁面 / Setting page

8、藍牙設置 Bluetooth Settings

打開儀器藍牙，搜索到需要進行文件傳輸的手機，然後連接。

Turn on the Bluetooth of the instrument, search for the mobile phone that needs to transfer files, and then connect.

9、無線局域網 Wifi Setting

打開儀器無線網絡，連接到可用於文件傳輸的無線網絡。

Turn on the instrument wifi network and connect to a wireless network that can be used for file transfer.

## 2.5 設置頁面 / Setting page

10、語言選擇 Language selection

有三種語言可供切換：簡體中文、繁體中文、英文。

Three languages are available: Simplified Chinese, Traditional Chinese and English.

11、日期時間 Date and time

可以選擇對應的時區讓系統自動設置時間，也可以關閉自動設置，通過手動模式設置當前時間。

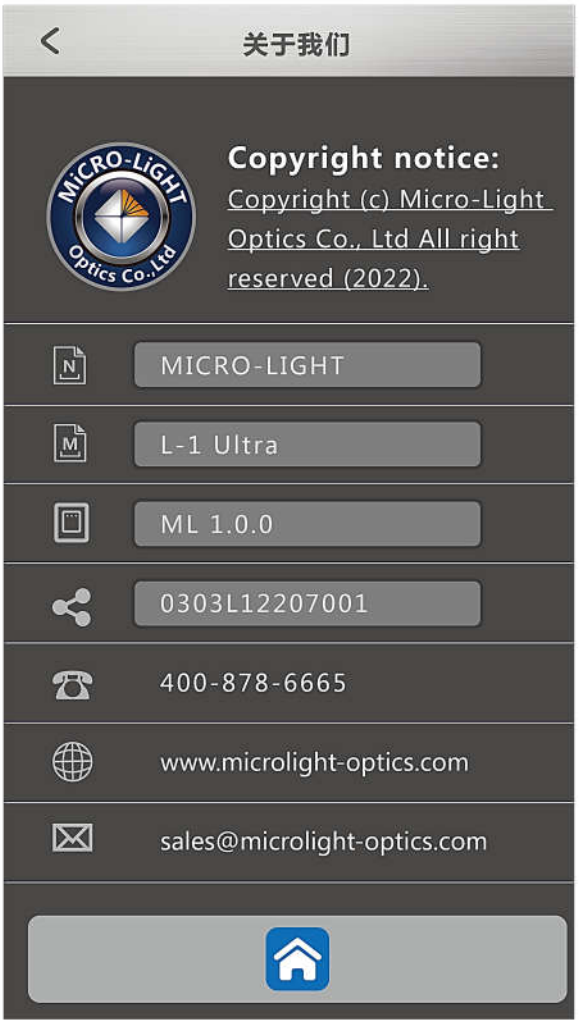
You can select the corresponding time zone to allow the system to set the time automatically, or disable the automatic setting and set the current time manually.

## 2.5 設置頁面 / Setting page

11、關於我們 About us

在此頁面可以自定義儀器的名稱，儀器的名稱在藍牙連接和PC連接的時候會同步顯示。還可以查看儀器的型號，軟件的版本號，儀器的序列號，以及我司的聯繫方式。

On this page, you can customize the name of the instrument. The name of the instrument will be displayed synchronously when the Bluetooth connection is connected to the PC. You can also view the instrument model, software version number, instrument serial number, and our contact information.



## 3.1 操作說明 / Operating Instructions

功能按鍵 Operating button

在任意界面點擊該按鈕都可返回到主頁面。
Click this button in any interface to return to the main page.

在測試頁面點擊該按鈕可以保存當前測試數據，手動輸入文檔的名稱，已保存的數據可以在數據記錄頁面查看。
Click the button on the test page to save the current test data, manually enter the name of the document, and the saved data can be viewed on the data record page.

測量按鍵，單次測量模式下，點擊一次測量一筆數據，連續測量模式下，點擊一次開始連續測量數據。
Measurement button, in single measurement mode, click to measure one data at a time, in continuous measurement mode, click once to start continuous measurement data.

暫停按鍵，連續測量模式下，點擊後暫停測量。
Pause button. In continuous measurement mode, click to pause the measurement.

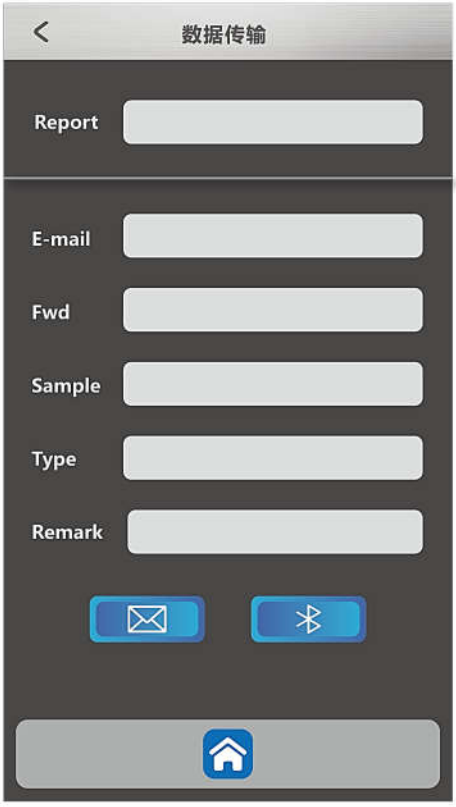
全選按鍵，選擇所有已保存的測試數據。
Select All button to select all saved test data.

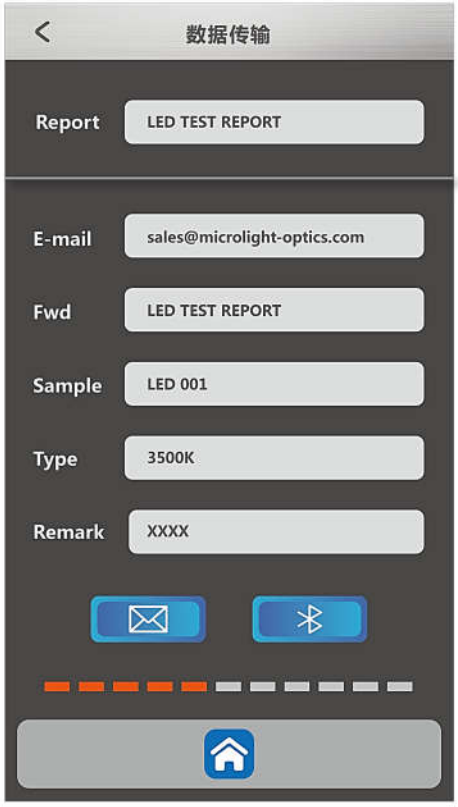
刪除按鍵，刪除當前已勾選的測試數據。
Delete button to delete the currently selected test data.

## 功能按鍵 Operating button

在測試頁面點擊數據傳輸，可以將當前的測試數據生成為PDF報告，然後通過藍牙或者郵箱進行傳輸。在傳輸準備頁面填入詳細的信息，這些內容會同步生成在PDF報告上面。如果選擇郵箱傳輸，需要先開啟並連接無線網絡，然後輸入正確的郵箱地址；如果選擇藍牙傳輸，需要先開啟並連接藍牙設備，然後進行傳輸。

Click Data transfer on the test page, you can generate the current test data into a PDF report, and then transfer it via Bluetooth or email. Fill in the detailed information on the transfer preparation page, which will be synchronized to the PDF report. If you choose email transmission, you need to open and connect to the wifi first, and then enter the correct email address; If you choose Bluetooth transmission, you need to turn on and connect the Bluetooth device first, and then transfer.



## 測試報告 Test report

**Micro-Light Optics Co. , Ltd**
17F-3,No.531,Zhongshan Rd.Wuxi City,P.R.C
Tel: 0510-81807191 Fax: 0510-81807192

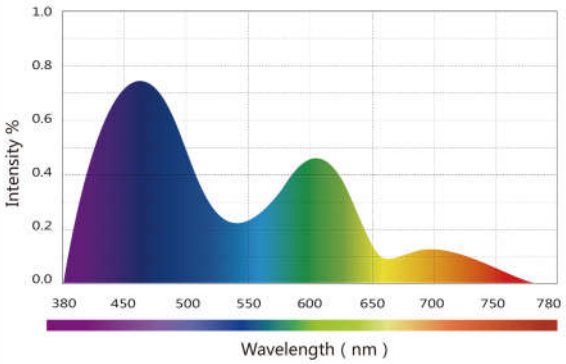
Report :
Sample :
Remark :
Date :

### Lighting Test Report

**BASIC DATA**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 照 度 | Ev | 5822 | lx | 光色品質 | CQS | 0.00 | |
| 相關色溫 | CCT | 3500 | k | T L C I | Qa | 0.00 | |
| 顯色指數 | Ra | 98 | | 色域面積 | GAI | 0.00 | |
| 主波長 | λd | 581 | nm | TM-30-18 | Rf | 0.00 | |
| 呎燭光 | fc | 0.00 | fc | TM-30-18 | Rg | 0.00 | |
| 輻照度 | Ee | 0.00 | W/m☒ | 紅色比 | | 0.00 | % |
| 黑体偏离 | duv | 0.00 | | 綠色比 | | 0.00 | % |
| 峰值信号 | IP | 0.00 | % | 藍色比 | | 0.00 | % |
| 峰值波长 | LP | 0.00 | nm | 藍光衰減率 | | 0.00 | % |
| 中心波长 | Lc | 0.00 | nm | 綠光失真率 | | 0.00 | % |
| 质心波长 | Lcr | 0.00 | nm | 藍光危害輻照 | | 0.00 | W/m☒ |
| 半宽度 | FWHM | 0.00 | nm | 藍光輻射比 | | 0.00 | |
| 色純度 | Pe | 0.00 | | 可照射時間 | | 0.00 | s |
| 明暗視覺比 | S/P | 0.00 | | 危險等級 | | 0.00 | |
| 三色刺激值 | X | 0.00 | | | | | |
| 三色刺激值 | Y | 0.00 | | | | | |
| 三色刺激值 | Z | 0.00 | | | | | |

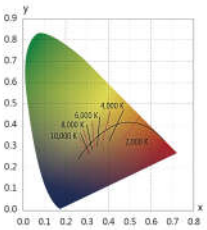
**SPECTRUM**




**CRI ( R1~R15 )**

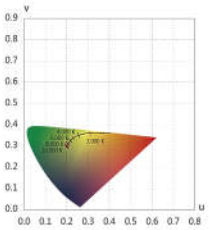
| | | |
|---|---|---|
| Ra | R1~R8 | 98 |
| Re | R1~R15 | 95 |
| R1 | | 82 |
| R2 | | 98 |
| R3 | | 90 |
| R4 | | 64 |
| R5 | | 76 |
| R6 | | 88 |
| R7 | | 78 |
| R8 | | 65 |
| R9 | | 19 |
| R10 | | 87 |
| R11 | | 58 |
| R12 | | 50 |
| R13 | | 88 |
| R14 | | 96 |
| R15 | | 79 |

**CIE 1931**



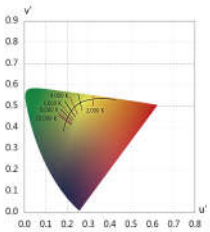
| | |
|---|---|
| X | 0.2548 |
| Y | 0.3548 |

**CIE 1960**



| | |
|---|---|
| u | 0.2548 |
| v | 0.3548 |

**CIE 1976**

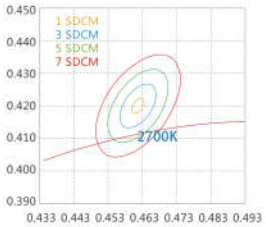


| | |
|---|---|
| u' | 0.2548 |
| v' | 0.3548 |

**CQS**

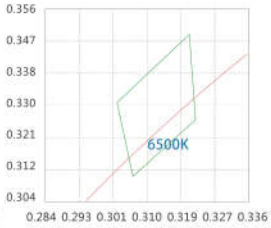
| | | |
|---|---|---|
| 光色品質 | CQS | 0.00 |
| TLCI | Qa | 0.00 |
| 色域面積 | GAI | 0.00 |
| TM-30-18 | Rf | 0.00 |
| TM-30-18 | Rg | 0.00 |

**IEC-SDCM**



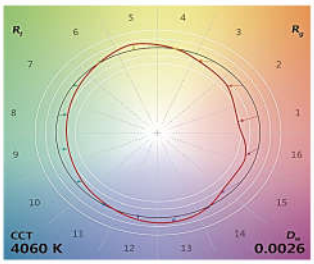

| | |
|---|---|
| X | 0.2548 |
| Y | 0.3548 |

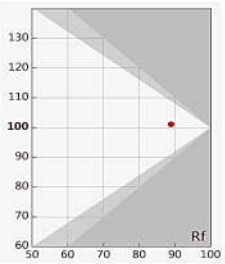
**C78.377-2008**




| | |
|---|---|
| X | 0.2548 |
| Y | 0.3548 |

**TM 30**




**PLANT LIGHTING**

| | | | |
|---|---|---|---|
| 光合有效輻射 | PAR | 5822 | W/m² |
| 光子通量密度 | PPFD | 3500 | umol/m²/s |
| PPFD 红外 | Eir | 98 | W/m² |
| PPFD 红 | Er | 581 | W/m² |
| PPFD 绿 | Eg | 0.00 | W/m² |
| PPFD 蓝 | Eb | 0.00 | W/m² |
| PPFD 紫外 | Ep | 0.00 | W/m² |
| 有效光合有效輻射 | PAR | 0.00 | W/m² |
| 有效光子通量密度 | YPFD | 0.00 | umol/m²/s |
| YPFD 红外 | Eir | 0.00 | W/m² |
| YPFD 红 | Er | 0.00 | W/m² |
| YPFD 绿 | Eg | 0.00 | W/m² |
| YPFD 蓝 | Eb | 0.00 | W/m² |
| YPFD 紫外 | Ep | 0.00 | W/m² |
| 红光/蓝光比 | Erb Ratio | 0.00 | |
| 红光/遠紅光比 | Erir Ratio | 0.00 | |

Measurements performed by the Micro-Light Optics Co., Ltd

## 測試報告 Test report

**Micro-Light Optics Co. , Ltd**
17F-3,No.531,Zhongshan Rd.Wuxi City,P.R.C
Tel: 0510-81807191 Fax: 0510-81807192

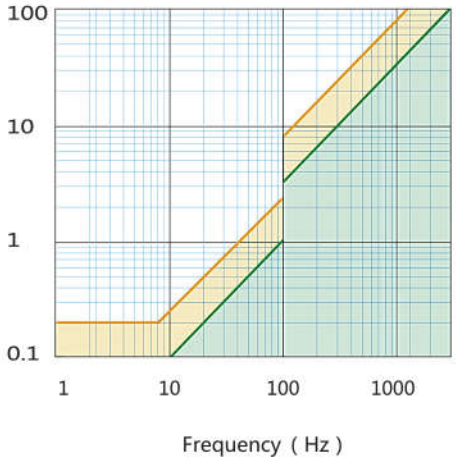
Report :
Sample :
Remark :
Date :

### Lighting Test Report

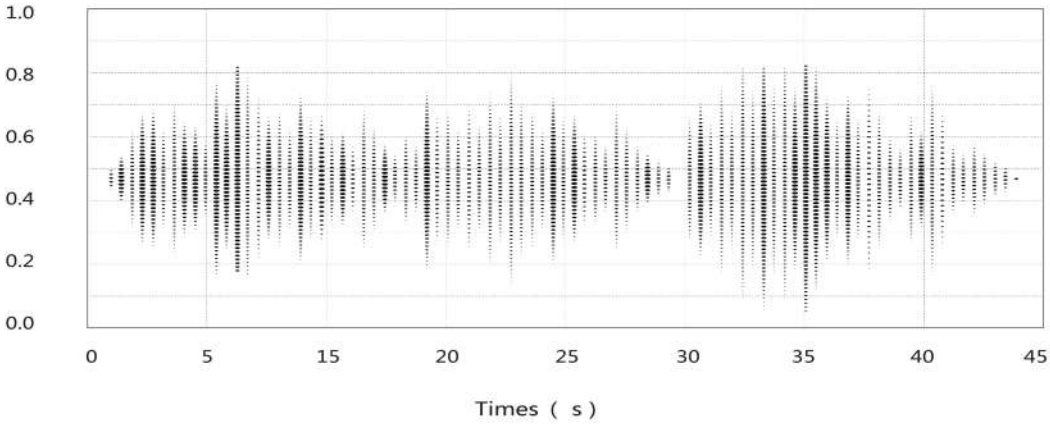
**BASIC DATA**

| Item | | Value | |
|---|---|---|---|
| 頻閃頻率 | | 300 | Hz |
| 頻閃指數 | | 0.09 | |
| 波動深度 | | 46.2 | % |
| 頻閃百分比 | | 26.4 | % |
| 照 度 | Ev | 0.00 | lx |
| 最 大 值 | MAX | 0.00 | lx |
| 最 小 值 | MIN | 0.00 | lx |
| 平 均 值 | AVG | 0.00 | lx |
| 風險等級 | | 0.00 | - |

IEEE Std 1789-2015




**FLICKER DATA**

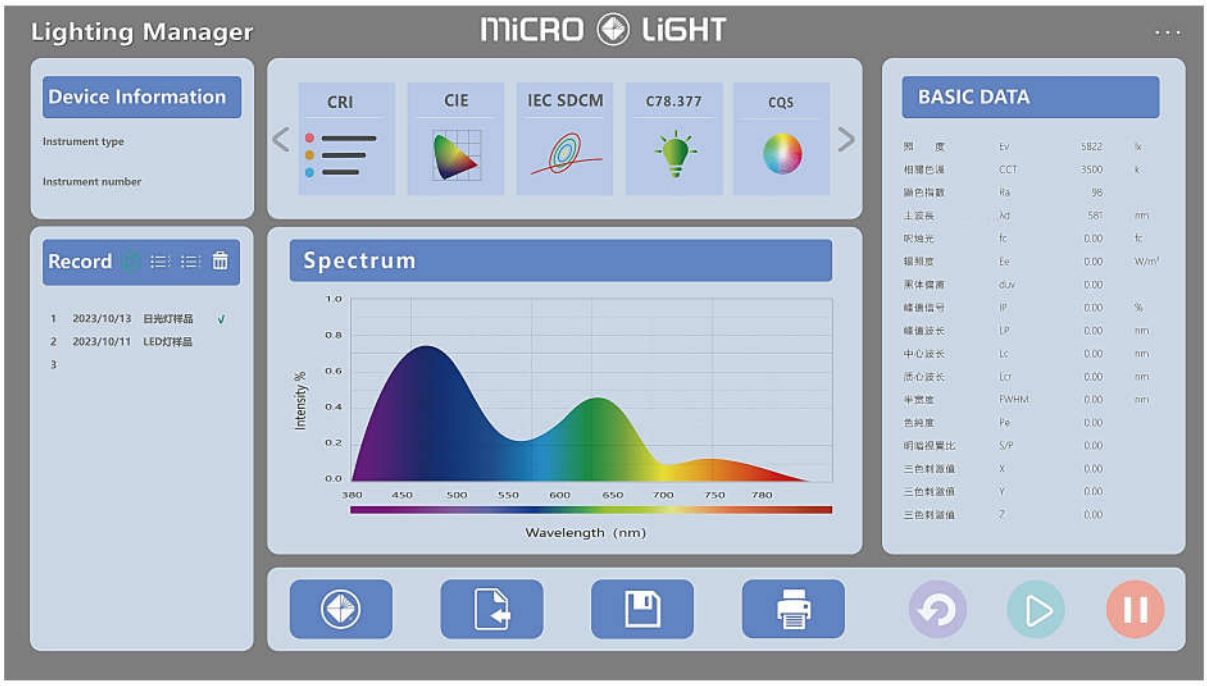



Measurements performed by the Micro-Light Optics Co., Ltd

## 3.2 PC軟件 / PC Software

儀器配套PC軟件，通過TypeC數據線將儀器和電腦連接，可以通過PC軟件控制儀器進行測量，也可以將儀器中已保存的數據導入到PC軟件查看，並可生成測試報告。

The instrument is equipped with PC software, the instrument is connected to the computer through the TypeC data cable, the instrument can be controlled by the PC software for measurement, the data saved in the instrument can also be imported to the PC software for viewing, and the test report can be generated.



FCC Caution.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:-Reorient or relocate the receiving antenna.-Increase the separation between theequipment and receiver.-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.-Consult the dealer or an experienced radio/TV technician for help.

*RF warning for Portable device: ThedevicehasbeenevaluatedtomeetgeneralRFexposurerequirement.Thedevicecanbeusedinportable exposureconditionwithoutrestriction.

MiCRO-LiGHT

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