



# Smart Lux Meter User Manual

# Content

Content.....	- 1 -
HPCS-320 series spectrometer adopts high-speed AMR processor and high-precision electronic CCD optical sensor, and is developed and designed by using the principle of cross asymmetric CT spectroscopic system. It has the characteristics of light design, stable performance, high accuracy, high cost performance, and easy portability. , and is equipped with a 3.5-inch high-definition capacitive touch display .....	- 4 -
Thank you for purchasing and using our products. In order to protect your rights and interests, please check the list as soon as possible after unpacking. If you find that the instrument model and accessories do not match the list, please call the supplier to exchange or reissue.....	- 4 -
lower panel.....	- 8 -
<b>Operation guide</b> .....	- 9 -
<b>Booting</b> .....	- 9 -
<b>Single test</b> .....	- 10 -
(1) Device status bar: .....	- 11 -
(2) Menu Bar: .....	- 12 -
(1) Spectral interface: .....	- 12 -
(2) data interface: .....	- 13 -
data interface.....	- 13 -
(3) Graphic interface: .....	- 13 -
(1) Set interface: .....	- 14 -
1) Test settings: .....	- 15 -
2) file management: .....	- 18 -
3) Illuminance calibration: .....	- 19 -
4) System settings: .....	- 20 -
System language:.....	- 20 -
Set date and time: .....	- 22 -
"Screen brightness" adjustment.....	- 22 -
"System Theme" setting: .....	- 23 -
5) Version Information: .....	- 24 -
6) test status bar: .....	- 24 -
7) Integral adjustment status:.....	- 25 -
(9) touch key bar: .....	- 25 -
File save method: .....	- 26 -
file open method: .....	- 27 -
Software Instructions.....	- 27 -
1.System Requirements.....	- 27 -
2.software acquisition .....	- 27 -



OHSP-320X Drivers

Driver package



OHSP-320-B-C-L-P-S-UW user's  
manua 1.20.1.pdf  
PDF File

User'smanua



OHSP\_Setup\_V1.20\_20180129

Software installation package

3.Software Installation.....	- 28 -
4.Software introduction .....	- 32 -
Typical report .....	- 35 -

**Foreword:**

Thank you very much for purchasing and using our company's HPCS-320 series products. This user manual contains all the functions, operation methods, safety regulations and other technical information of the instrument. In order to ensure the correct use of the instrument, please read this manual carefully before operating the instrument and use it according to the regulations.

Please keep this manual in a safe place for quick reference in case of problems. If you have any comments or questions in the process of using our company's products, please call us. We will respond !

**Immediately Statement:**

Hangzhou HOPOO Light&Color Technology Co., Ltd. reserves the copyright for all parts of this product, including appearance, software, hardware, manuals, packaging, etc., and may not be imitated, copied, translated, reprinted, etc. in any form without permission. The user should read this manual carefully before starting to use the device, and operate it according to the regulations. The company does not take any responsibility for safety accidents or damage to the device and connected devices caused by non-

**Warranty scope:**

Hangzhou Hopoo Light&Color Technology Co., Ltd. guarantees that every equipment you purchase has undergone strict inspection

compliance with the regulations.

This manual contains all the technical specifications of the listed models, if there is any doubt, please refer to the guidance of technicians.

The company reserves the right to change the parameters and contents of this manual.

**Safety warning:**

In order to avoid equipment damage or personal property damage caused by improper use of the instrument, please read the following contents carefully before using the equipment, and operate according to the regulations.

Do not use the instrument in flammable, explosive, high temperature, high humidity, high pressure, dusty and other harsh environments;

Do not place anything on the instrument;

Do not insert or remove accessories such as measuring probes, TF cards, communication cables, etc. during the working test of the instrument;

This product contains a glass display screen, handle it with care during use, do not drop it to avoid personal injury from screen breakage; Persons who are not authorized by the company should not open the case for maintenance to avoid expanding the failure or causing personal injury.

and testing before leaving the factory, and the product quality and data calculation fully meet the requirements; All equipment with 1 year warranty period .If you find that the

instrument is faulty during use, please contact us or agent first, and then repair or replace the equipment according to the plan after confirming the treatment plan.

For repair or replacement during the warranty period, the user only needs to pay the postage. For repairs not within the warranty period or man-made damage, we will notify the user after estimating the repair cost. After obtaining the user's consent to repair the equipment, the repair cost and postage will

be determined by the user. bear.

During the warranty period, the original warranty plan will continue to be implemented after the equipment is repaired or replaced; beyond the warranty period, the equipment will be guaranteed for 30 days after the equipment is repaired, and the newly purchased parts will be guaranteed for 90 days. Wear parts and accessories are not covered by the warranty.

**Product introduction:**

HPCS-320 series spectrometer adopts high-speed AMR processor and high-precision electronic CCD optical sensor, and is developed and designed by using the principle of cross asymmetric CT

spectroscopic system. It has the characteristics of light design, stable performance, high accuracy, high cost performance, and easy portability. , and is equipped with a 3.5-inch high-definition capacitive touch display .

**Instrument list:**

Thank you for purchasing and using our products. In order to protect your rights and interests, please check the list as soon as

possible after unpacking. If you find that the instrument model and accessories do not match the list, please call the supplier to exchange or reissue.

## Measurement parameters and technical indicators

### Measurable Parameters:

- ◆ Correlated color temperature Tc (K), black body deviation Duv
- ◆ Illuminance E (lx), Candlelight E (Fc)
- ◆ Dominant wavelength (nm), peak wavelength (nm), center wavelength (nm), centroid wavelength (nm), half

Product	QTY	Remark
HPCS-320 host	1	Built-in lithium battery
5V/1A Power Adapter	1	USB interface
Type-C interface USB data line (1 meter)	1	≥1A current carrying capacity
Instrument bag	1	Random Color
Certificate	1	Factory inspection mark
Warranty Card	1	Product warranty certificate
Product Manual (Electronic Version)	1	Please read carefully before use
PC software	1	Windows operating system

- ◆ Chromaticity coordinates (x, y) 、 (u, v) 、 (u', v')
- ◆ Relative spectral power distribution P (λ)
- ◆ Color rendering index Ra, Ri (i=1 ~ 15)
- Color Tolerance SDCM (MacAdam Ellipse, Rectangle Box, and CIE u' v' Circle)
- width (nm) Light and dark vision ratio S/P
- ◆ Color Purity, Red Ratio, Green Ratio, Blue Ratio, CIE1931 Three primary color stimulation values X, Y, Z
- ◆ Integration time (ms)
- Peak signal, dark signal

### Main Specifications:

Model	HPCS-320
Wavelength range	380nm ~ 780nm
Spectral mode	Cross Asymmetric CT Spectroscopic System
Sensor	High precision CCD
Detector	Φ10mm Cosine Corrector
Spectral Resolution/Repeatability	0.2nm X, Y repeatability ±0.0005

Wavelength accuracy	±0.5nm
Illumination accuracy	Level 1 (±4% of reading ±1 reading)
Spectral Bandwidth (FWHM)	4nm
Chromaticity Coordinate Accuracy	±0.0025 (relative to standard light sources whose stability is better than ±0.0005 traceable to NIM)
Color temperature range	1,000K ~ 100,000K
Illumination range	10 lx ~ 200k lx
Integration time	50µs ~ 10000ms
Communication Interface	Type-C interface
Operating temperature/humidity range	(-10 ~ 40)°C, relative humidity <70% (non-condensing)
Storage temperature/humidity range	(-20 ~ 50) °C, relative humidity <70% (non-condensing)
Screen size	3.5-inch high-definition touch screen
Communication method	Host-PC: USB
Storage capacity	Built-in 4G Bit
Power supply	Built-in lithium battery/power adapter
Continuous working time	About 20 hours of use on a single charge
Standard accessories	Power adapter, data cable, cloth bag, warranty card, certificate, electronic manual
Host size/weight	132mm×61mm×15mm/about 210g for the whole machine

## Features:

- ◆ Small size, light weight, easy to carry;
- ◆ 3.5"HD touch screen, easy to operate;
- ◆ 3500mA battery
- ◆ Large-capacity data storage card, data storage capacity is more than 60,000;
- ◆ Cross asymmetric CT spectroscopic system has good measurement linearity and measurement accuracy;
- ◆ It integrates measurement functions such as spectrum, illuminance, and chromaticity;
- ◆ Independent research and development of operating system, friendly interface, simple and smooth operation;
- ◆ Automatic temperature drift zero calibration technology, no need to calibrate the zero position before use.

## Power Requirements:

- ◆ Charging adapter: Input: AC110V~220V  $\pm 10\%$  Output: DC5V/1A  $\pm 5\%$
- ◆ Built-in lithium battery: charging voltage 3.8V Capacity: 3500mAh Size: 75mm×54.5mm×5.5mm
- ◆ Data line: Type-C interface carrying current  $\geq 1A$

## Storage environment:

- ◆ Storage humidity: <70%RH; Storage temperature: -20°C ~ 50°C;
- ◆ Keep away from water, oil, chemicals, corrosive liquid gases, high temperature and high pressure, direct sunlight, etc.;
- ◆ Avoid long-term or severe vibration, avoid falling from high places, and avoid heavy objects.

## Use environment:

- ◆ The whole machine: -10 °C ~ 40 °C 0 ~ 70%RH (can not be placed in water) away from strong magnetic field, strong electric field and vibration. In order to ensure the high measurement accuracy of the instrument, the best working environment, temperature: 20 °C -25 °C, humidity: 50%RH ~ 75%RH.

## Calibration:

- ◆ In order to ensure the accuracy of the instrument for long-term use, it is recommended that the user regularly send the instrument to our company for testing and calibration, or to a laboratory with accreditation for spectral and photometric calibration for calibration; the recommended calibration cycle: once two year.

## Appearance:

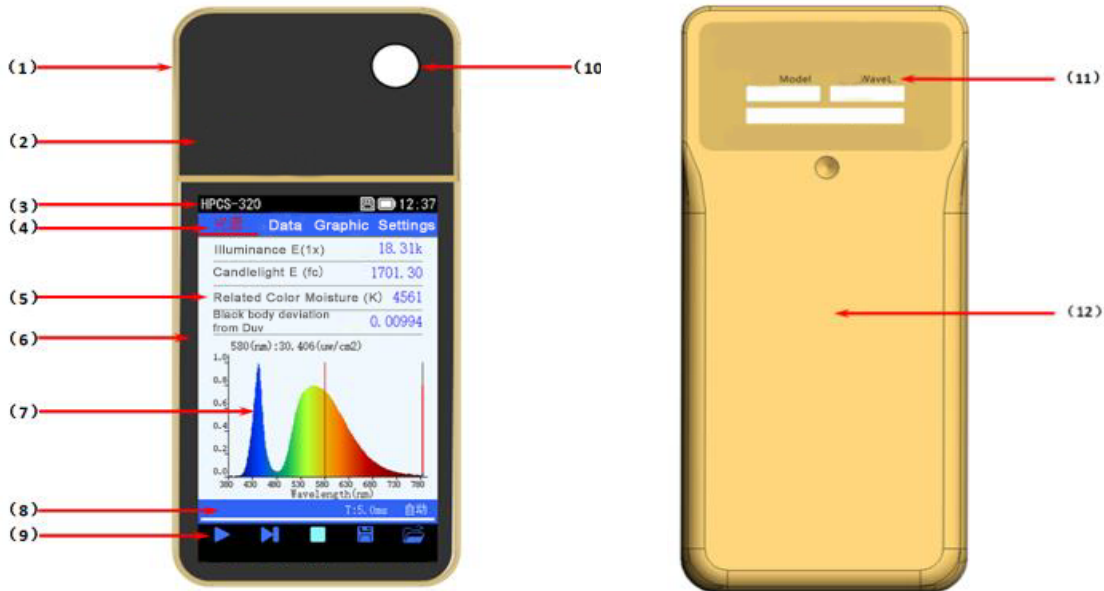
- ◆ Main unit: width x height x thickness: 61mm x 132mm x 15mm ,weight about 210g
- ◆ Screen: Overall: 59mm×91mm Display area: 49.5mm×73.5mm (3.5-inch high-definition touch screen)

## Cleaning method:

- ◆ Scrub with a wet towel or with a medical alcohol cotton ball (do not wash with water or with strong corrosive solvents).

## Instrument introduction

### Description of front and rear panels and display interface



Description of front and rear panels and display interface

- (1) Metal alloy shell (2) Instrument LOGO (3) Device status bar (4) Menu bar  
 (5) Data display area (6) 3.5" capacitive touch display (7) Graphic display area (8) Test status display area (9) Touch key operation area (10) Spectral sampling channel cosine modifier (11) Instrument nameplate (12) Metal alloy back cover

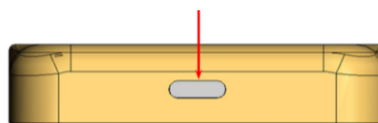
### Side Panel Description

Power and Test Buttons



right panel

USB communication and charging



lower panel

## Operation guide

HPCS-320 series products use the operating system independently developed by our company, which is not limited by any external factors. The interface is friendly and intuitive. Simply click the test icon or test button to quickly complete the test of light source parameters.

### Booting

The operating system of HPCS-320 series products is independently developed

Booting: Press the power button of the device (the black round button on the right side of the instrument)

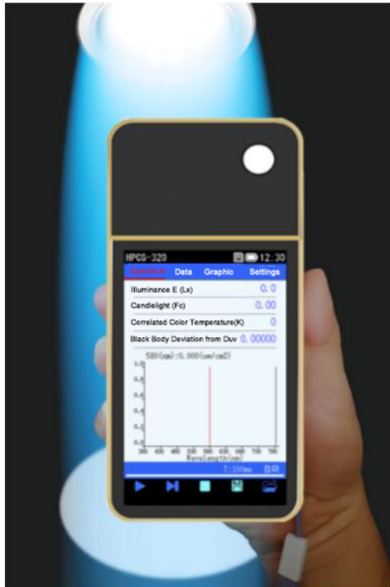


### Shutdown

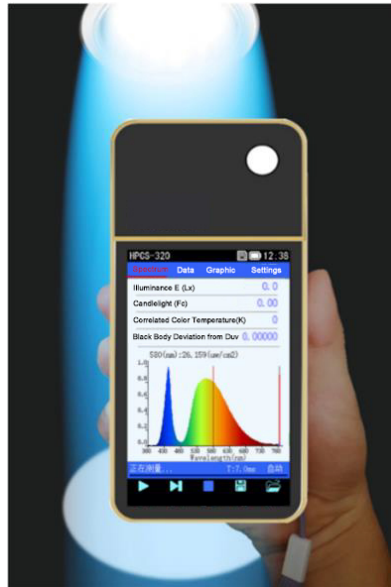
Press and hold the power button for 2 seconds (the black round button on the right side of the instrument), a shutdown dialog box will pop up on the screen, click [Shut Down], and the instrument will shut down instantly. Press and hold for 2 seconds and click [Shutdown]



## Single test



Place the instrument in the test position



Press the "Singal" icon to start the test



Press the "Stop" icon again to stop the test

\*\*\*Note: Users should wipe the surface of the sampling hole clean before use, so as

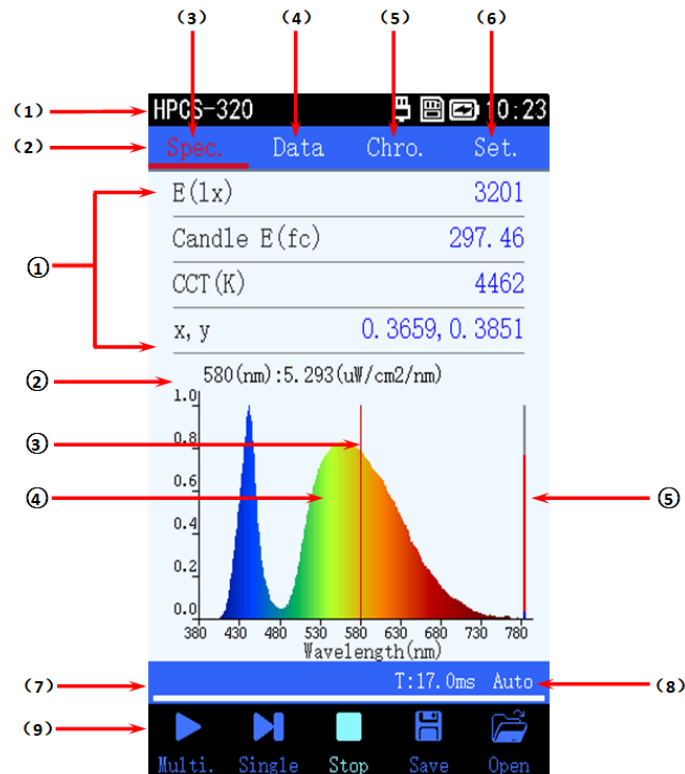
not to affect the test results by fingerprints!

\*Note: The default is single test when pressing the power button directly after starting the test. If the continuous test icon is pressed once, it will become a continuous

test when the power button is used for testing; if the single test icon is pressed again, When testing with the power key, it becomes a single test again.

## Detailed interface function

### HPCS-320 wavelength range 380-780nm spectral interface



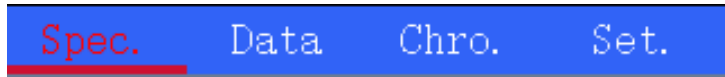
- (1) Device status bar
- (2) Menu bar
- (3) Spectrum of the interface
- (4) Data interface
- (5) Graphical interface
- (6) Set interface
- (7) Tests the status bar
- (8) Integral time regulation state
- (9) Touch button bar

#### (1) Device status bar:

Following figure:

The device status bar displays the hardware information of the current device, Such as: equipment type "HPCS-320" 、USB Online Icon 、SD Card Icon 、Battery power icon ( $\leq 10\%$  to red ,  $11\% \sim 20\%$  To orange ,  $21\% \sim 100\%$  to white , system time etc.

**(2) Menu Bar:**



Following figure:

The menu bar contains the "Spec" , "Data" , "Chro" , "Set" .

**(1) Spectral interface:**

Click on the "Spec." menu, as shown above, "spectral interface", "spectral interface" contains the data area and the graphics area of two parts.

① Data area to provide users with 6 replaceable display data to facilitate users to view the most concerned about the project

data.

Replacement method: Click on the data to be replaced, and then pop up the box to replace the data items, click on the [ok] icon to replace the success.

As shown below:



Click on the required data item

Upper and lower sliding to select the required item

Turn green then Click [ok]

Replace success

- ② Wavelength and spectral power at the spectral vernier;
- ③ Spectral vernier;
- ④ Spectral pattern;
- ⑤ The upper red area indicates the peak intensity of the measured signal; green area at bottom indicates dark current (zero signal).

## (2) data interface:

Click the "Data" menu to display the "Data" interface as shown below. The data interface displays all data items that can be tested .

Spec.	Data	Chro.	Set.
E(1x)			239.4
Candle E(fc)			22.25
CCT(K)			5819
Duv			0.00400
x, y	0.3253, 0.3426		
u, v	0.2014, 0.3182		
u', v'	0.2014, 0.4772		
SDCM			9.46
Ra			86.3
R1-5	85, 89, 92, 86, 85		

Figure 1

Spec.	Data	Chro.	Set.
R6-10	85, 91, 77, 30, 74		
R11-15	85, 68, 86, 96, 82		
S/P			2.153
Dominant(nm)			507.80
Purity(%)			2.5
Half width(nm)			30.6
Peak(nm)			450.8
Center(nm)			452.4
Centroid(nm)			566.6
R ratio(%)			14.6

Figure 2

Spec.	Data	Chro.	Set.
Centroid(nm)			566.6
R ratio(%)			14.6
G ratio(%)			81.7
B ratio(%)			3.7
Integrat. Time(ms)			490
Peak Signal			50733
Dark Signal			2528
Compensate level			2510
Test date	2022-05-07		
Test time	15:36:21		

Figure 3

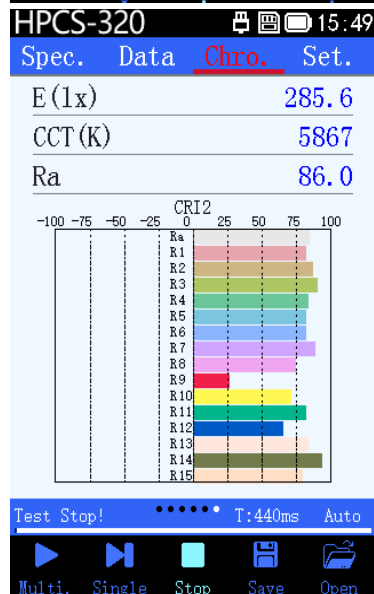
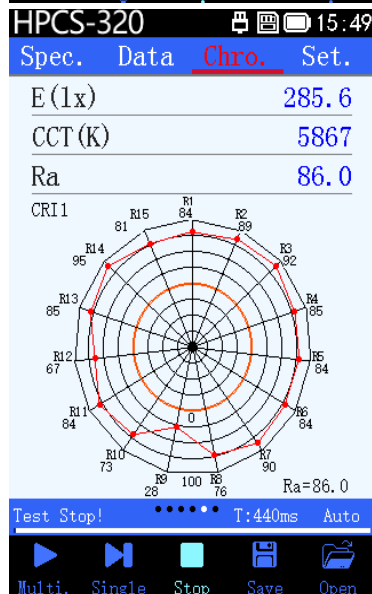
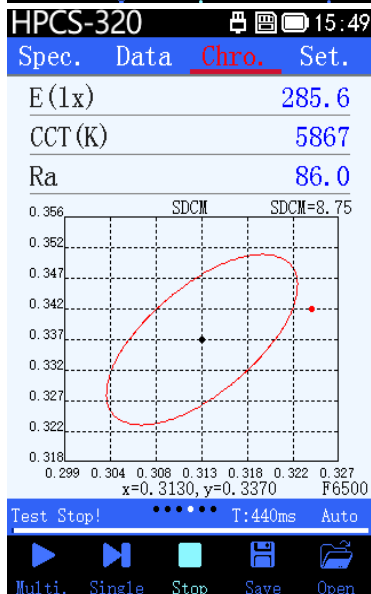
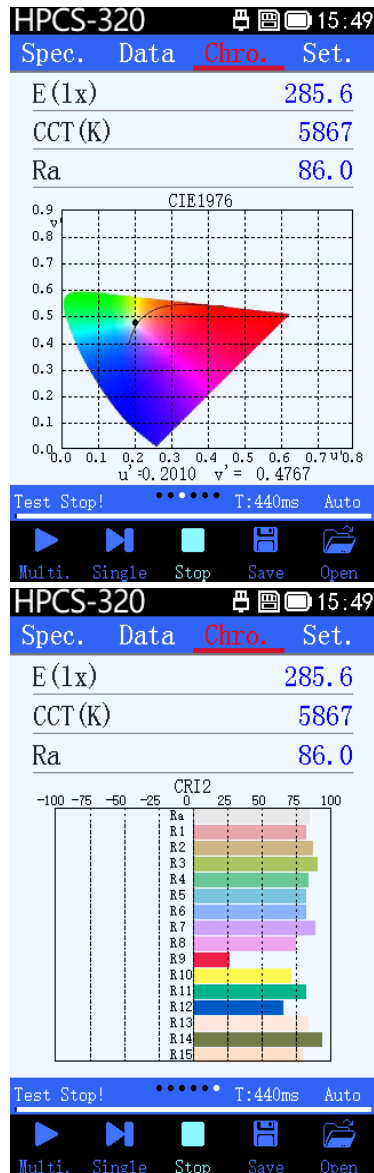
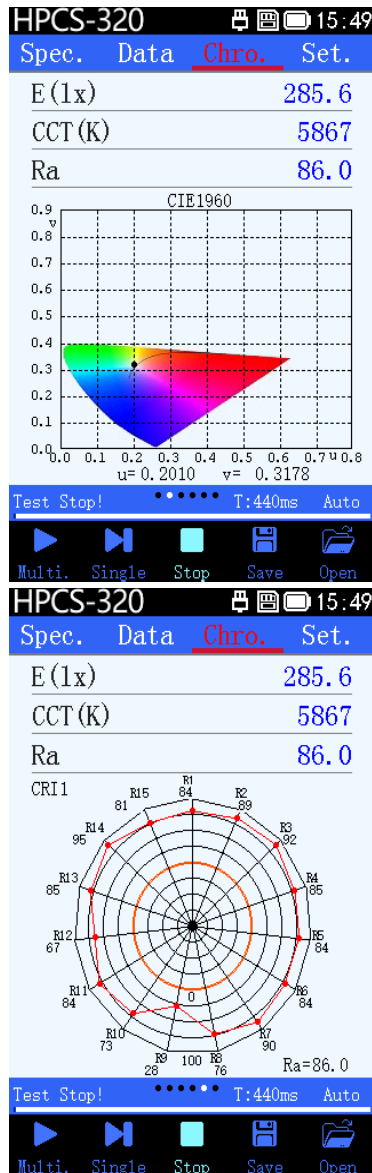
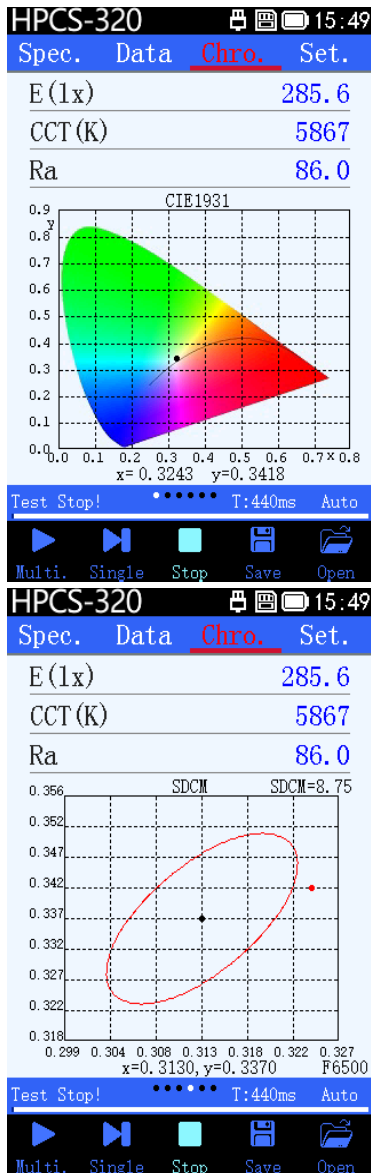
data interface

## (3) Graphic interface:

Click the "Graph" menu to display the "Graph" interface as shown below. The "graphical interface" also includes two parts, the data area and the graphics area. The data area displays the first three data items in the spectrum interface (cannot be changed here); the user can switch to display the CIE chromaticity diagram (including CIE1931, CIE1960 and CIE1976 chromaticity diagrams),

color tolerance by sliding the finger left and right in the graphics area , Color rendering index radar chart, color rendering index histogram.

Through the three CIE chromaticity diagrams, the position of the measured light source chromaticity coordinates on the chromaticity diagram can be located.



### (1) Set interface:

Click the "Settings" menu to show the following settings".

"Settings interface" in the "test setting", "file management", "illuminance setting", "system setting", "version information"; advanced mode will also be "spectral calibration"



Regular mode settings



InterfaceAdvanced mode settings interface

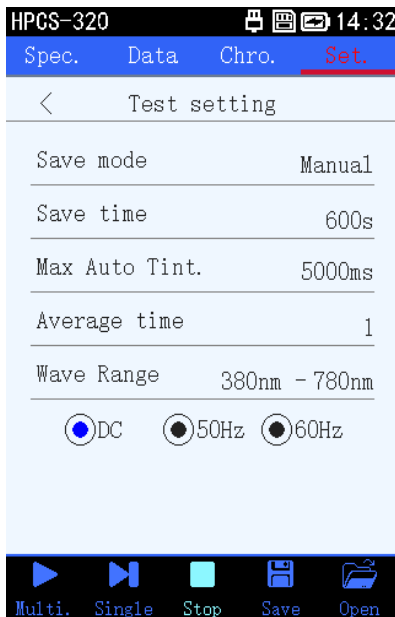
### 1) Test settings:

Click "test settings", Pop up dialog(as figure 1), "test settings" can be used to set up the file storage mode, the file storage interval, the automatic integration time limit, the average number of measurement data, the frequency synchronization, the wavelength measurement range and so on. Click "save mode" after the "blue character" will pop up the file save mode dialog box (pictured below). Select "manual" or "automatic", after select "manual" If you

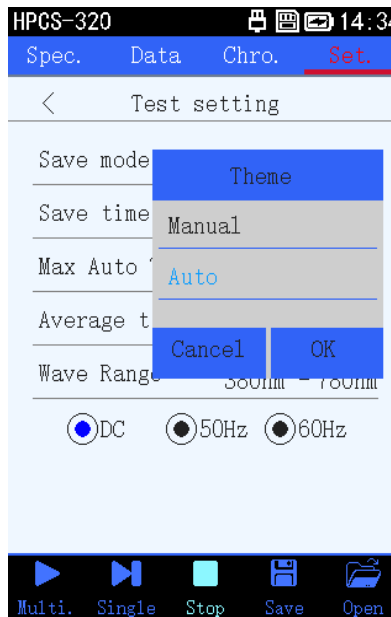
need to save the test data only by clicking



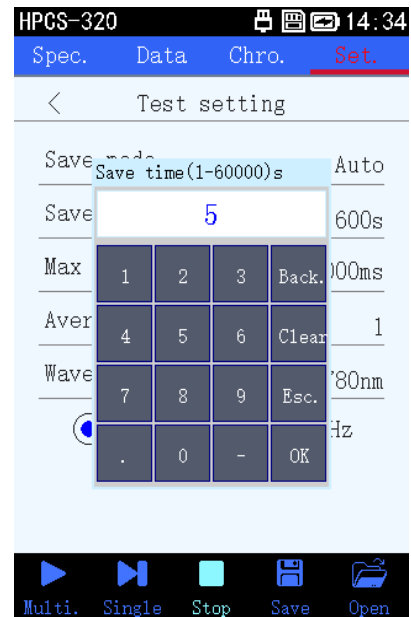
on the save icon. After selecting "automatic", click the save interval after the blue character will pop up the input box. According to the demand, enter the time interval to save data automatically (1-60000S). When continuous test, Press the set interval the instrument will automatically save a test data. after single test, it will automatic save test data.



Measurement settings dialog



Save mode selection dialog

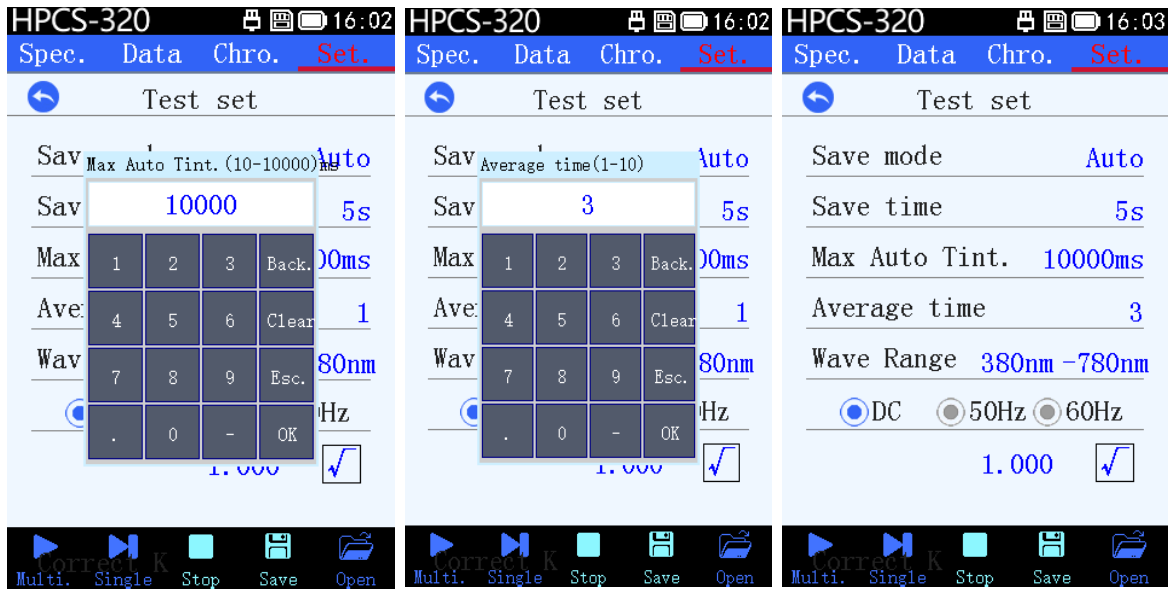


Save interval setting

- ◆ After Click "Max Auto Tint"(means the upper limit of automatic integration)" then Pop-up input box (as figure1) , According to the demand, enter the number (100-10000ms) , After setting up, the integral time of the instrument is adjusted automatically under the upper limit.
- ◆ After Click "Average time" then Pop-up input box (as figure 2) , According to the demand, enter the number (1-

10) if the number is 3 times, and the equipment will calculate the sample data of 3 times as the final result of the test., Click [ok],then setting up.

- ◆ " Frequency synchronization " is the synchronization of sampling frequency and light source frequency. When the light source is AC power or pulse power supply or stroboscopic light source for frequency synchronization using this function.



◆ "Compatibility factor" is a compatibility mode provided by the instrument to be compatible with other manufacturers' equipment. Check the box of

"Compatibility factor", enter the required correction factor, and click "Confirm" to carry out the test data. Correction to avoid test data anomalies.



Figure 1"Compatibility factor"

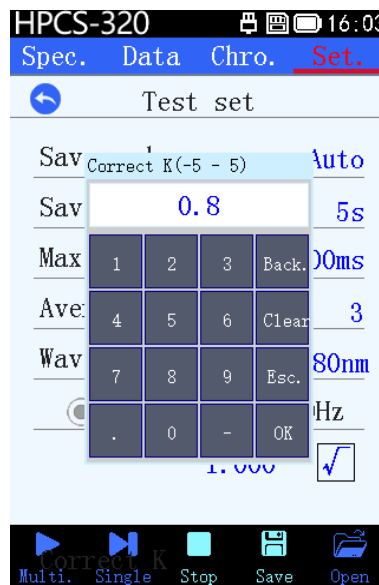


Figure 2Correction factor setting

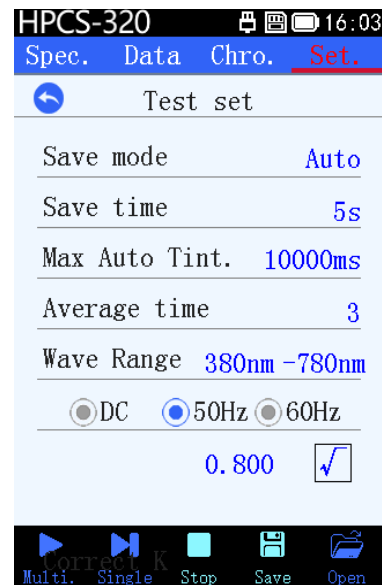
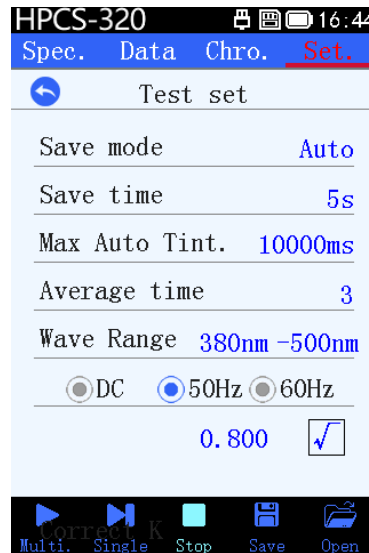


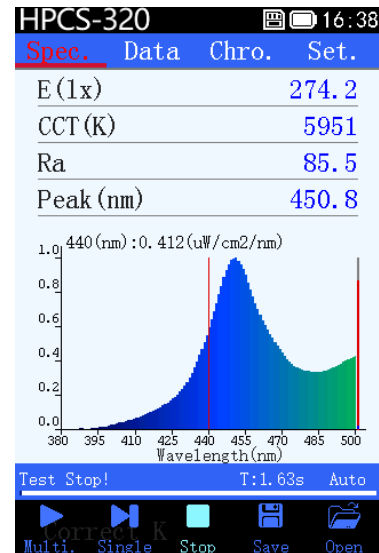
Figure 3set successfully checked



Wavelength measurement range setting



After setting, click [Exit]



Test results in the desired wavelength range

## 2) file management:

"File Management" can open and delete files saved in the instrument. RecFile is the test data folder

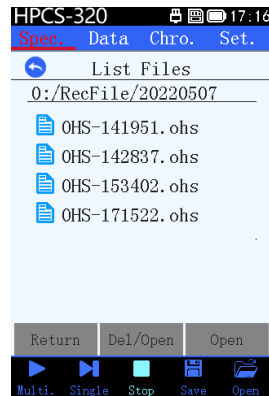
File open: Click "File Management" to enter the disk dialog box, click the drive letter to enter the disk, click to enter the RecFile test data folder, and then click the test date folder to enter the test file list (the folder with the suffix of OHS is the test data folder, CSV The suffix is the Excel folder), double-click the test file to be opened, you can

Open the file (steps are shown in Figure 1, 2, 3, 4).

Deletion of files or folders: Click "File Management" to enter the disk dialog box, click the drive letter to enter the disk, long press the file or folder to be deleted for 3 seconds, the file or folder is checked, click the [Delete] button to The file or folder can be deleted (it cannot be recovered after deletion, please operate with caution) (steps 5, 6, 7, 8 as shown below).



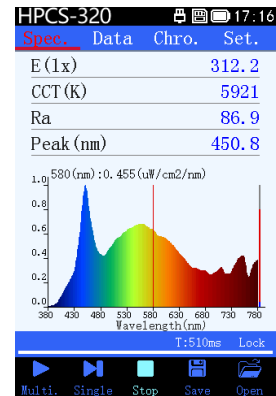
enter the disk



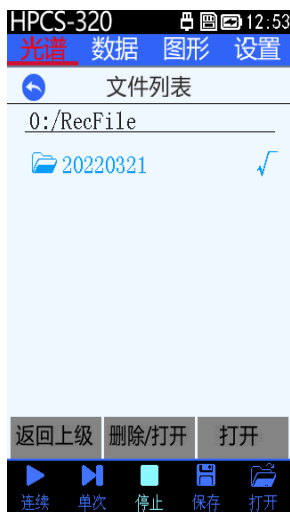
enter the test data folder



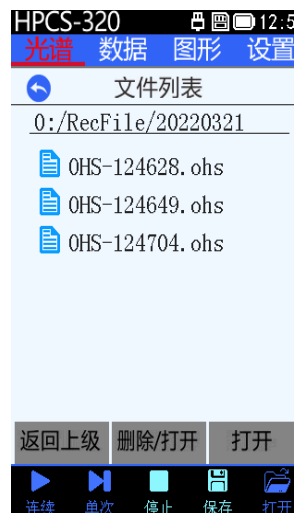
Double click the file to open



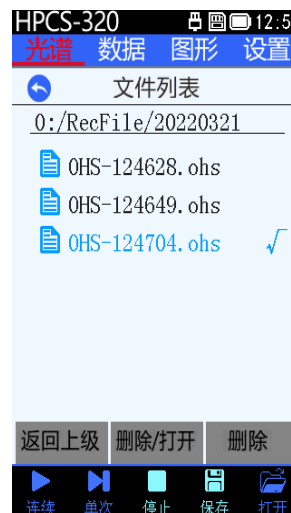
The file is opened showing



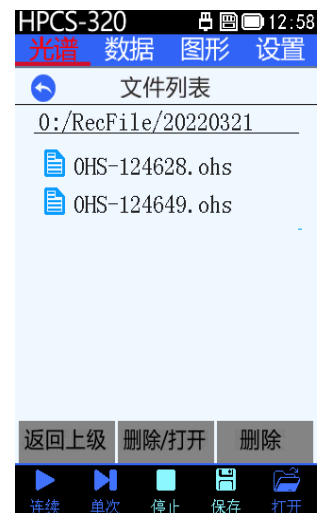
enter the disk, long press and open



Long press on the file or folder you want to delete



After the file is selected, click [Delete]

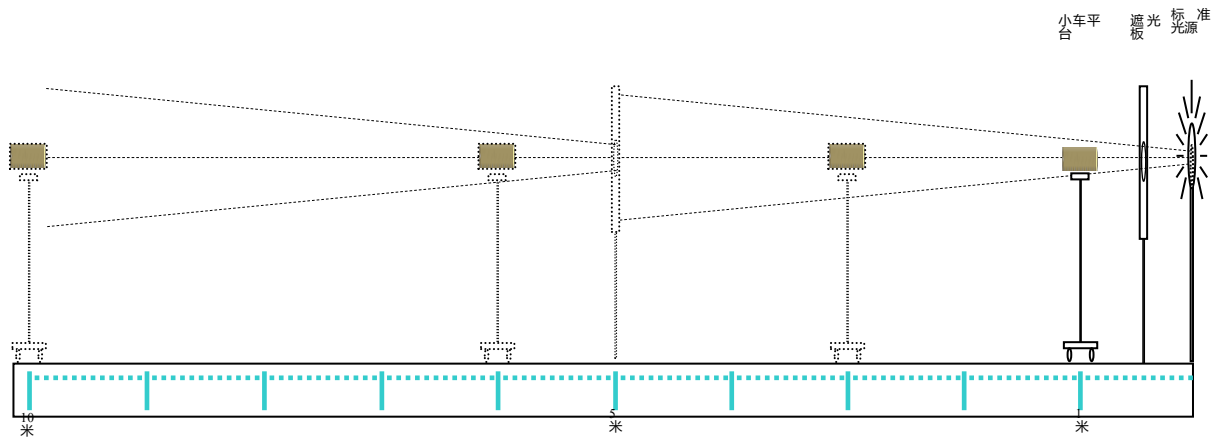


file is deleted

### 3) Illuminance calibration:

The illuminance parameters have been calibrated before the instrument leaves the factory, and users can use it without illuminance calibration. If the deviation of the test results is large, the user can

perform re-calibration or parameter correction in the illuminance calibration. There are two methods for illuminance calibration, namely illuminance calibration and illuminance correction.



**Schematic diagram of illuminance calibration track**

Illuminance calibration method: Professional illuminance calibration needs to be carried out on the light track of the darkroom laboratory (the light track is shown in the figure above). Turn on the standard light source of light intensity and wait for the light source to warm up and stabilize. Place the device to be calibrated on the trolley platform, with the lighting hole facing the center of the shading plate, move the trolley to a distance

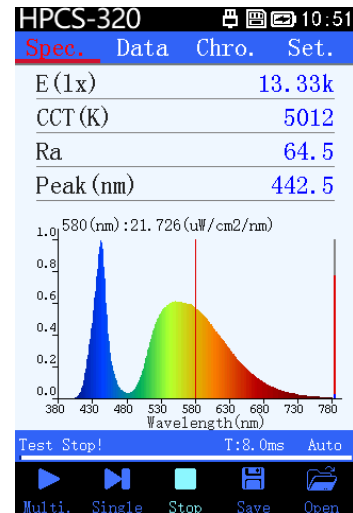
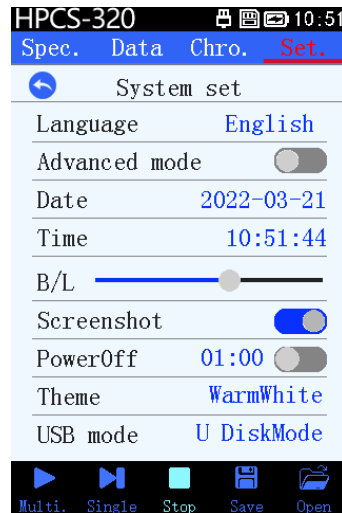
of 1 meter from the light source, and click "Illuminance Calibration" to pop up the illuminance setting. Enter the standard illuminance value at "E(lx)" and click [Calibrate] (see Figure 2 below), wait for the data to stabilize and click [Stop] (see Figure 3 below), then click [Save] ] (see Figure 4 below), the calibration is complete. Then record the test data at 1 meter, 2 meters, 3 meters...the standard light source to judge the accuracy.

**4) System settings:**

Click "System Settings" to pop up the system settings dialog box (as shown in the figure below). In the system settings, you can

set "System Language", "Advanced Mode" settings, "Date" and "Time" settings, "Screen Brightness" adjustment, "Automatic Shutdown" setting, "USB Mode" setting.

**System language:**



Advanced Mode: Click the checkbox of "Advanced Mode", the password input dialog box will pop up, enter the initial password: 123456 (if the password has been modified, please enter the changed password) Click the [Confirm] checkbox, which means the setting is successful , click

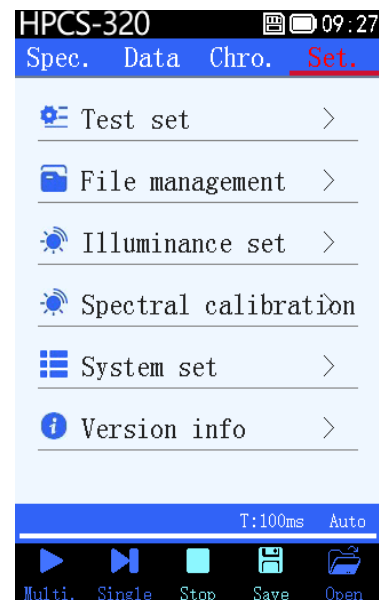
[Exit], two setting items of "Spectral Calibration" and "Modify Password" are added to the setting interface (as shown in the figure below). To turn off Advanced Mode, just click the checkbox next to Advanced Mode and uncheck it.



Click the "Advanced Mode" checkbox to enter a password

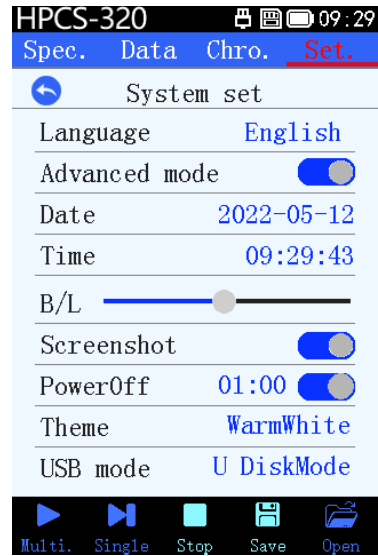


Click to exit

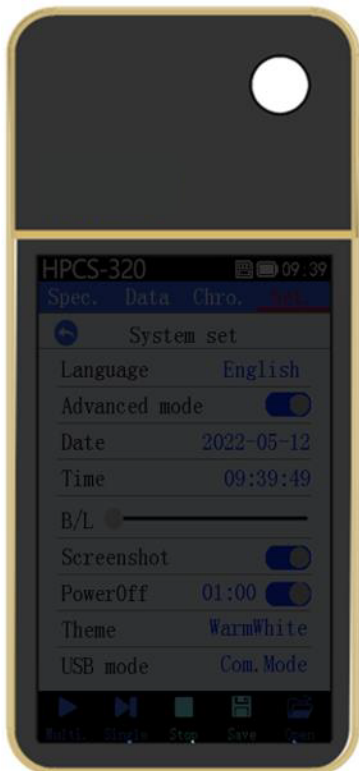


Settings interface in advanced mode

**Set date and time:**



**"Screen brightness" adjustment**



lowest brightness



Moderate intensity



highest brightness

screen backlight

Tap the brightness bar with your finger or slide the brightness adjustment slider left and right to adjust the brightness of the

"Auto Shutdown" setting: Click the check box after automatic shutdown to activate the automatic shutdown function (check the box to activate), and then click the "Blue Time" after "Auto Shutdown" to pop up the "Set Time" dialog box. Set the waiting time for the automatic shutdown to take effect (for example, 01:00). After the setting is complete, click [Confirm] and then click

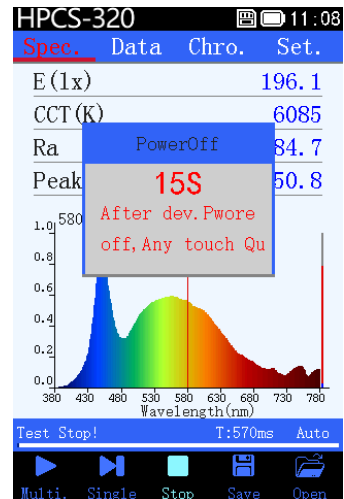
[Exit]. When the instrument does not have any operation, it will automatically shut down after 1 minute (as shown in the picture below). To cancel the automatic shutdown mode, just click the checkbox next to "Auto Shutdown" to uncheck it. Automatic shutdown does not take effect when USB is powered.



Tick to activate automatic shutdown



Set the automatic shutdown time to 1 minute



Automatic shutdown 10 seconds countdown, any operation can be canceled

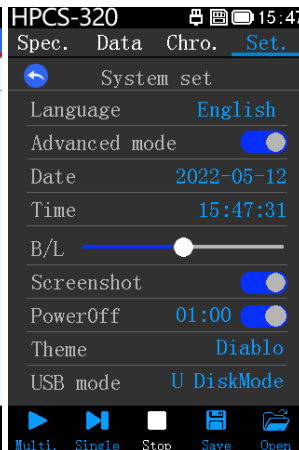
### "System Theme" setting:



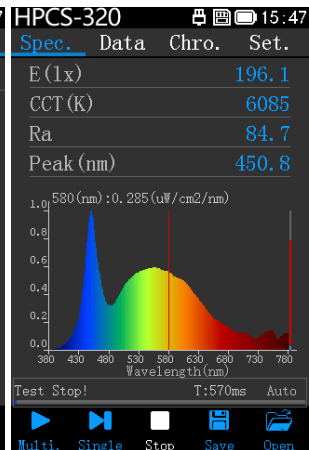
Choose warm white



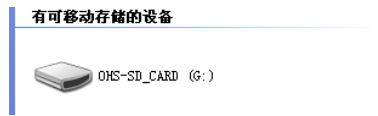
choose dark night



dark night theme



dark night test interface



U disk icon appears on computer

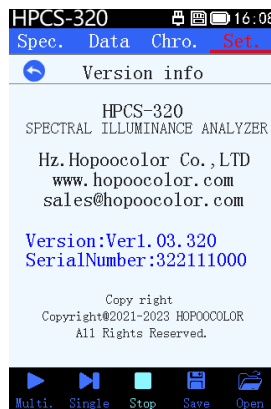


In-instrument files

### 5) Version Information:

The version information displays the instrument model, instrument name, instrument number, system version,

company name, website, copyright information, etc. of the device.



Version Information

### 6) test status bar:

The test status bar displays the instrument test status, integration time, and integration adjustment status.

weak or the integration time is locked. The instrument cannot adapt to the current intensity of the light signal test;

"Integrating..." The instrument is adjusting the integration time according to the intensity of the light source;

"Auto" integration time is automatically adjusted;

"Measuring..." the instrument is measuring light source data;

"Locked" integration time is locked;

"Stopped!" Test terminated;

"Signal overflow!" The light source signal is too strong and exceeds the measurement range or the integration time is locked and cannot adapt to the test of the current intensity light signal;

"Done" light source data measurement is completed;

"Signalweak!" The light source signal is too





Measurement status bar

## 7) Integral adjustment status:

The integral adjustment state is divided into two types: "Auto" and "Lock". In the "Auto" state, the instrument will automatically adjust to the appropriate integration time according to the brightness of the measured light source for testing; "Lock" lock is divided into "Lock the current integration time" and "Input integration time lock", click [Auto], the instrument will lock the current integration time, and [Auto] will change to [Lock] If you measure light sources with the same or similar brightness, the test results will not be affected. The advantage is to

speed up the test. The disadvantage is that when measuring light sources with large brightness changes, the signal overflows or the signal is too weak, resulting in inaccurate measurement results (see Figure 1-3 below). The user can also click "[T: xxxms]", an input dialog box will pop up to input a fixed integration time, the input range is 1-10000ms (as shown in Figure 4 below). Integration time setting (used for light sources with very short lighting time and high brightness).

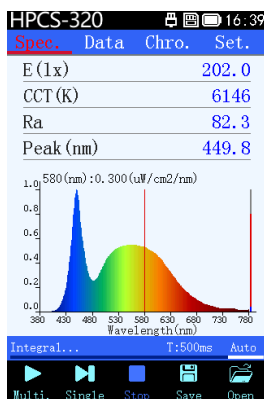


Figure 1 Auto integration time

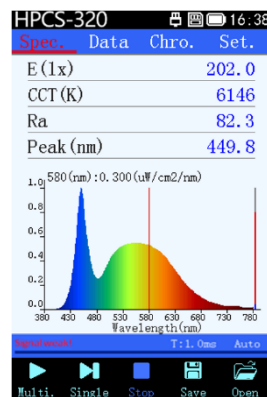


Figure 2 A more intense light signal will overflow when it is locked.

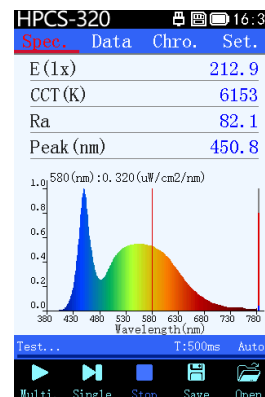


Figure 3 It is normal after the automatic integration time.

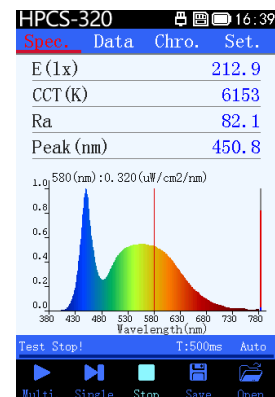


Figure 4 Input integration timelock

## (9) touch key bar:

There are 5 icons in the touch button bar: "Continuous" test icon, "Single" test icon, "Stop" test



icon, "Save" file icon, "Open" file icon (as shown in the group below).





Button bar when stopped





Button bar in test state


"Continuous" test : After clicking, the instrument starts to repeat the test of the light source continuously. If automatic save is set, the test data will be automatically saved to the TF card at regular intervals. To stop the test, click "Stop"  test icon;

"Single" test : After clicking, the instrument stops after measuring the light

source once, manually click the "Save" file icon  save document;

"Stop" the test : Clicking this icon in the test state will terminate the test;"save document : After the test is completed, click this icon to save the test data as a file (as shown in the group below).

### File save method:

Click "Save"  The icon pops up the file save dialog box, use different input methods to enter the file name to save, click [OK] to complete the file save (as shown in the group below).

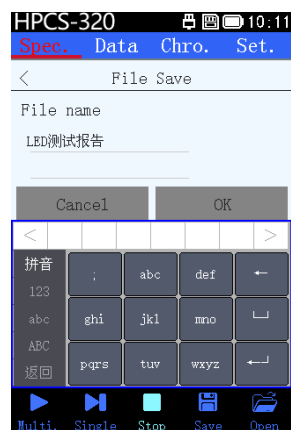
The OHS file is a file format recognized by equipment and software.

CSV is the Excel data file format. A single Excel file contains spectral data and can also be opened and displayed by the instrument.

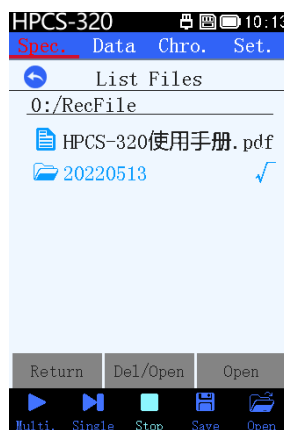
The CSV data file format is divided into single save and multiple save. The multiple data save format does not include wavelength data and can only be opened and viewed on the computer.



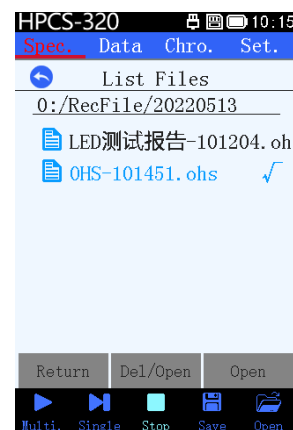
Click on file to save



input file name




Select file save type



Saved test files

## file open method:

Click "Open"  The icon pops up, enter the disk dialog box, click the drive letter to enter the disk, click to enter the RecFile test data folder, and then click the test date folder to

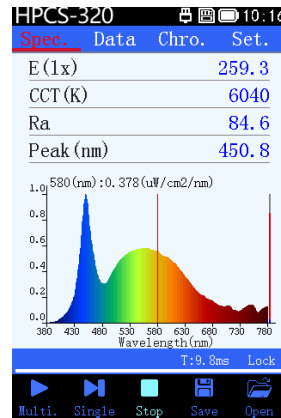
enter the test file list (the folder with the suffix of OHS is the test data folder, and the folder with the CSV suffix is the Excel file folder), double-click the test file to be opened to open the file (as shown in the group below).



Click to enter the desired test data folder



Click to enter the date folder



The file is opened showing

HPSCS-320 10:16  
Spec. Data Chro. Set.  
E (lx) 259.3  
Candle E (fc) 24.10  
CCT (K) 6040  
Duv 0.00402  
X, y 0.3208, 0.3384  
u', v' 0.1999, 0.3163  
u'', v'' 0.1999, 0.4745  
SDCM 6.68  
Ra 84.6  
R1-5 83, 88, 91, 84, 83

View more parameters

## Software Instructions

### 1. System Requirements

- Operating system: Windows XP or higher, 32-bit or 64-bit;
- Hard disk remaining space: 200M or more;

- USB interface: 1;
- Display resolution: above 1280×1024.

### 2. software acquisition

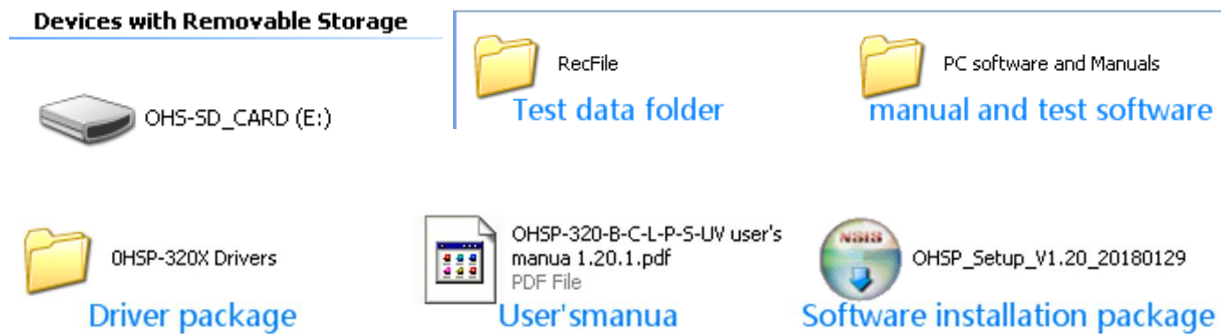
The test software and user manual are stored in the instrument before leaving the factory.

open the software on the computer for installation;

Obtaining method 1: Set the instrument to "U disk mode", then connect the instrument to the computer with a USB data cable, and

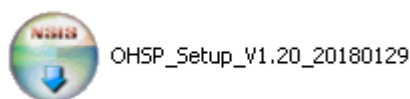
Obtaining method 2: Contact our company's service personnel to send the installation software online, and then open the software

on the computer for installation.

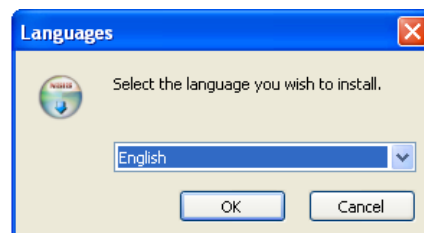


### 3. Software Installation

- ① The naming rules for software installation packages are: : OHSP\_Setup\_V\*.\*\*\_YYYYMMDD.exe. in “\*.\*\*” Indicates the version number, “YYYYMMDD” Indicates the release date, from which the update sequence of the software installation package can be judged.
- ② This software supports two installation modes, Simplified Chinese and English, and will remind the user to select the language type when the Chinese system is installed. By default, the software is installed to “C:\Program Files (x86)\HopooColor\OHSP” Under contents (64-bit OS paths will be marked with "(x86)") .
- ③ When the software is installed, the OHSP hardware driver will also be installed, but some systems will prevent such operations due to security reasons. In this case, the user needs to manually install the driver. (This step can be skipped for the Windows 10 system's own driver.) If the user fails to install the driver for many times, he can contact our company's service personnel for remote assistance in the installation.
- ④ Installation:

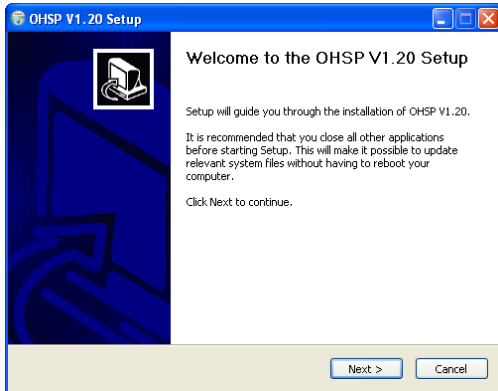


Double-click the software installation package with the left mouse button



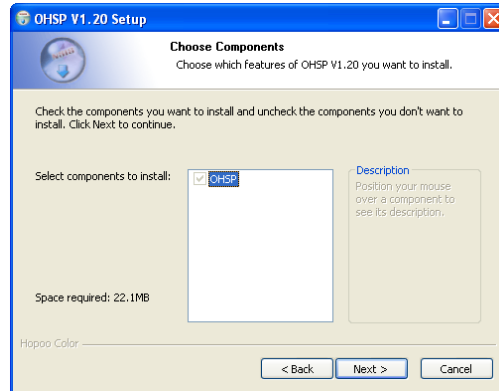
Select the installation language and click

[OK]

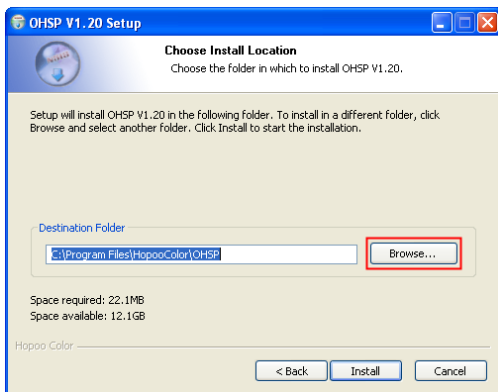


The

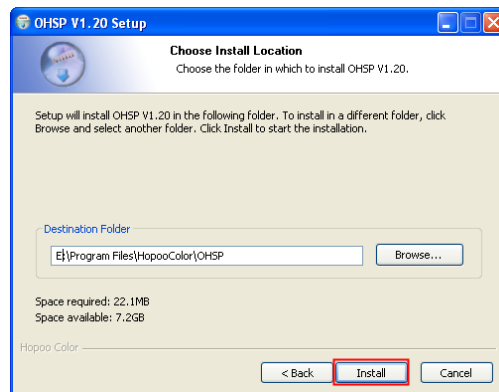
software installation interface pops up and click [Next (N)]



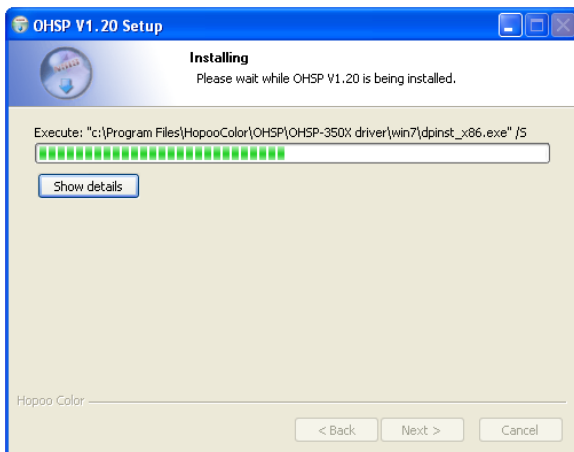
Select the installation components (there are no other components by default) and click [Next (N)]



Select the software installation location (the software is small and default) and click [Install (I)]



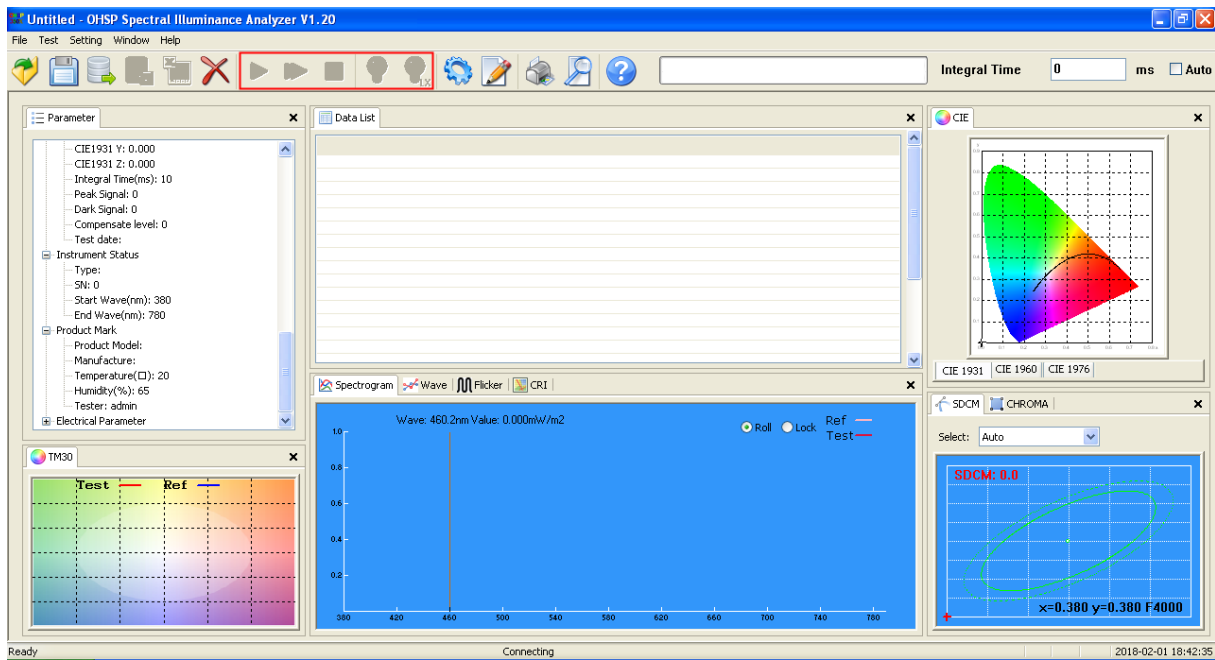
Changed software installation path



Software is installing please wait. . . . .




After the software is installed successfully, click [Finish (F)]

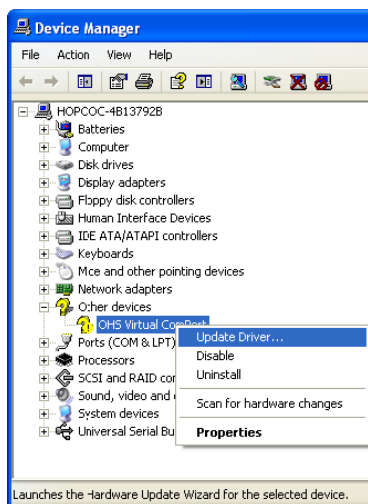


After the software installation is completed, the gray display area of the function keys on the software interface is unavailable, and the test report of the instrument can be opened for print preview.

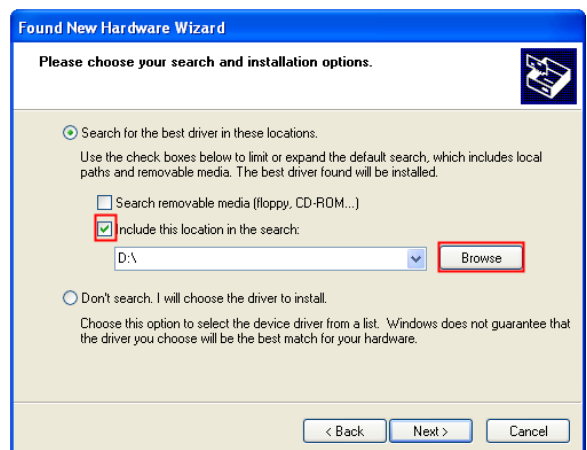
## 1) Manually install the driver diagram:

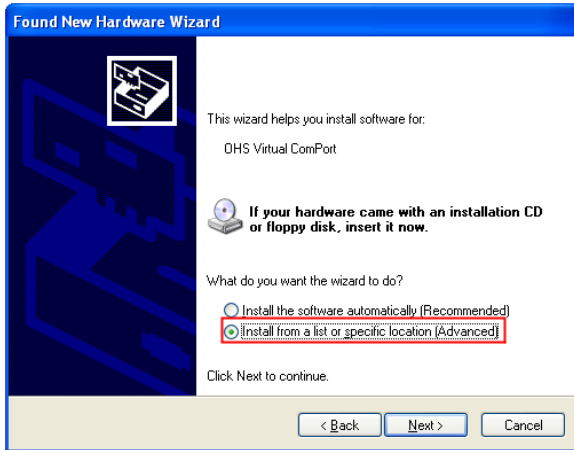
Connect the instrument to the computer using a USB cable. New hardware found pops up in the lower right corner of

the computer,  The "Found New Hardware Wizard" dialog box then pops up. If not, open Device Manager, right-click on the USB device with the yellow question mark or exclamation mark to update the driver.

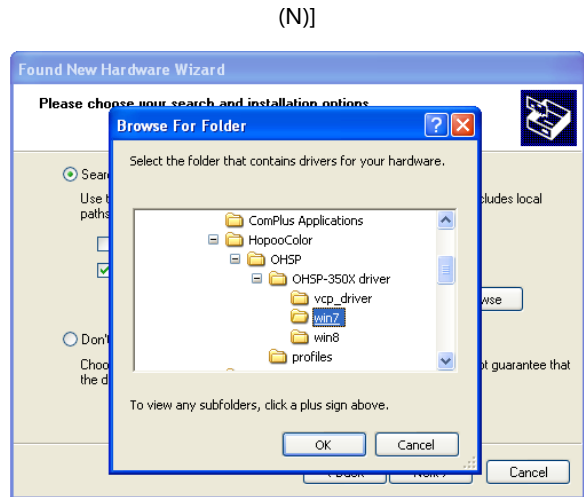


Update the driver in device manager

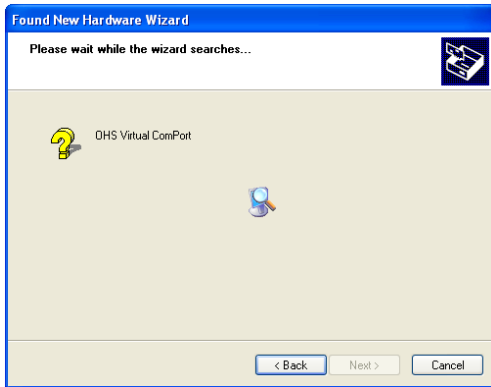




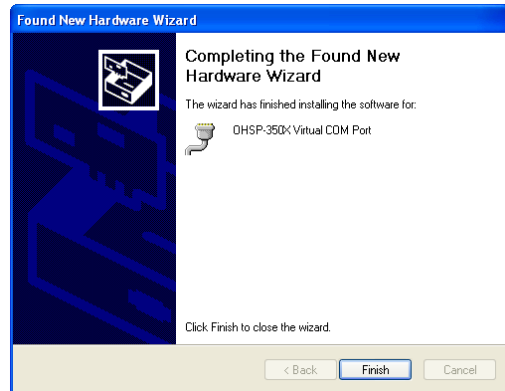
The Found New Hardware Wizard dialog box pops up, select Install from a specified location, and click [Next



Click [Browse (R)] to select the path to the directory where the driver is located "X:\Program Files\HopooColor\OHSP\OHSP-320 driver/win xx" Click [Next (N)]

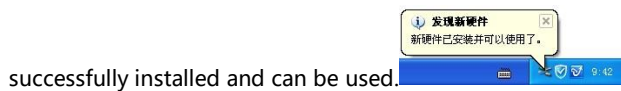


If this dialog box pops up, please click [Continue Anyway (C)]

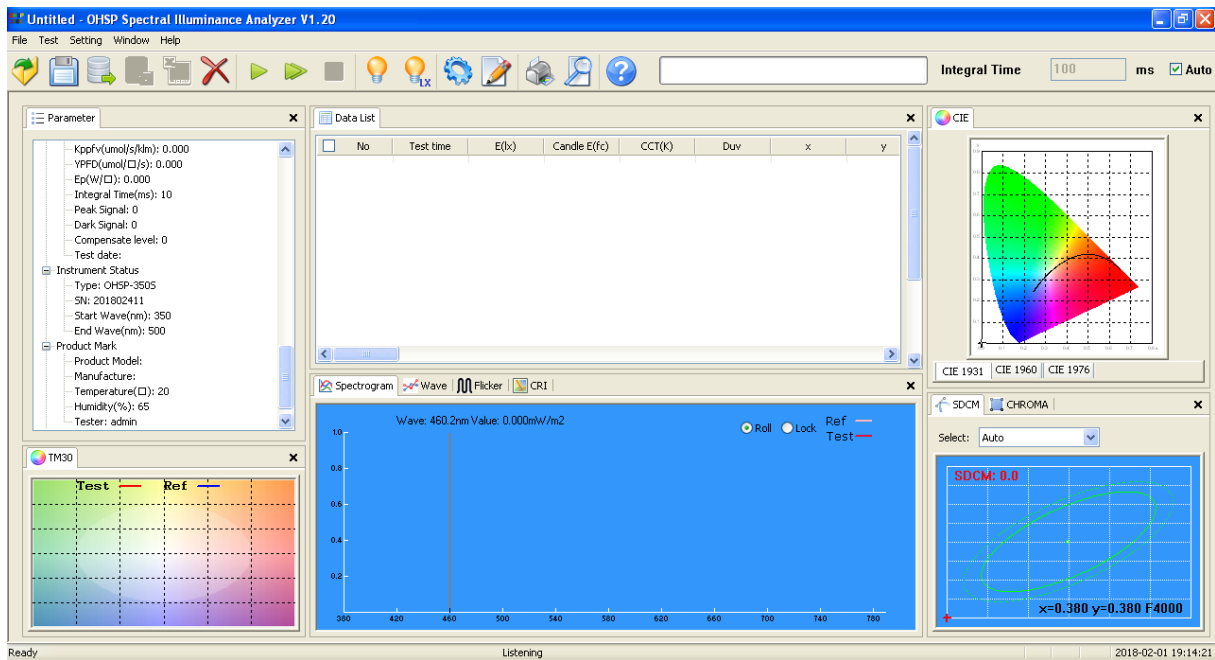


After the driver installation is complete, click [Finish]

The installation is successful, and the lower right corner of the computer prompts that the new hardware has been



\*\*\*Note: If the user fails to install the driver for many times, you can contact our company's service personnel for remote assistance installation.



The print preview lights up to indicate successful online connection, and report preview and printing are available

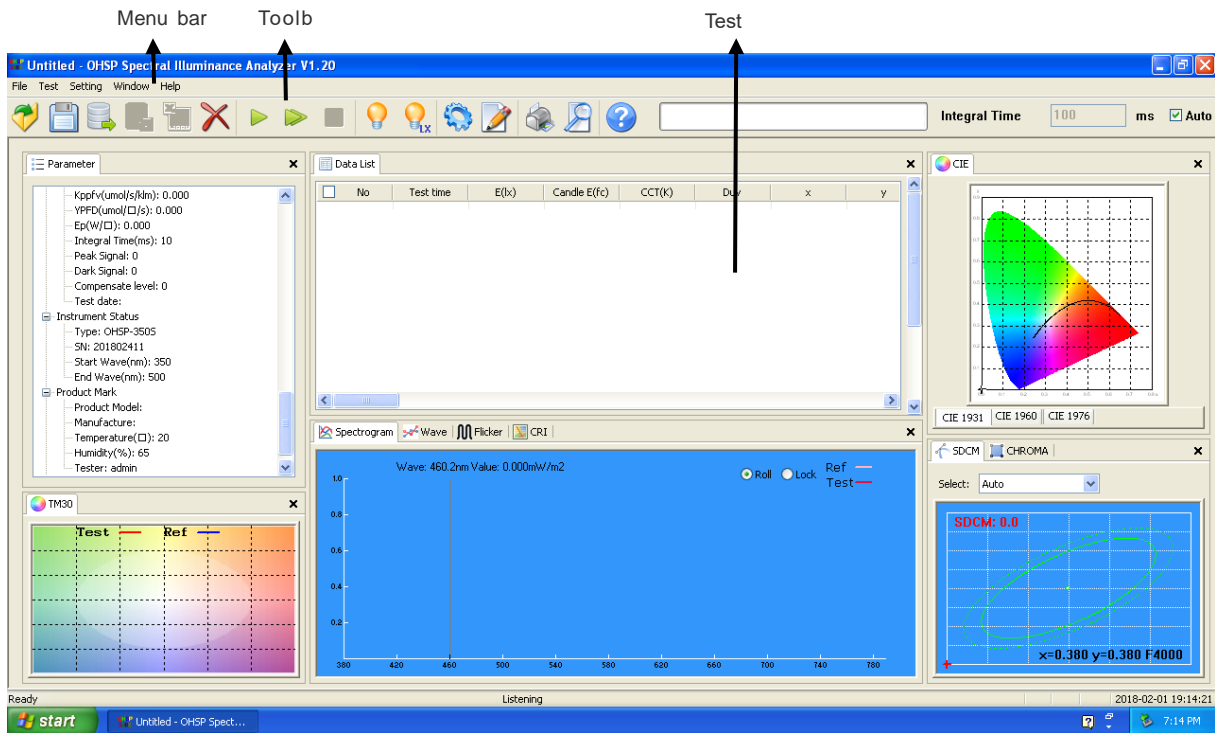
## 4. Software introduction

### 1. Start :

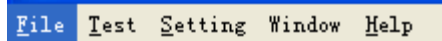
After the software is installed, a shortcut icon will be generated on the computer desktop. Double-click the icon to open the software.



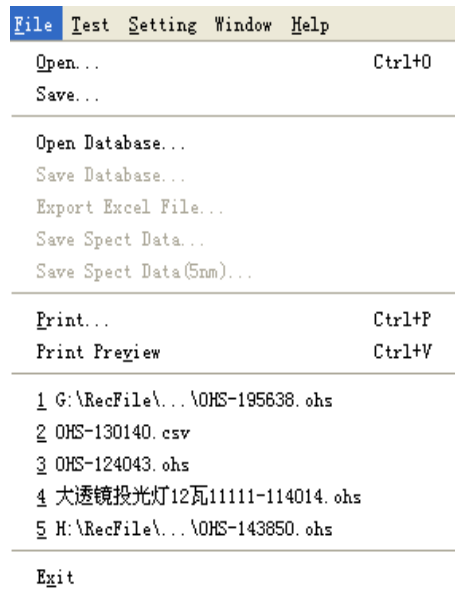
### 2. software interface :



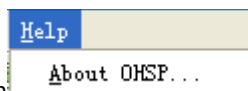
### File menu:



- Open: You can open test files with display suffixes .ohsp and .ohs;
- Save: save the currently displayed test data as a file with the suffix .ohsp;
- Open database: You can open and display the test file saved as a database, with a suffix of .db;
- Save database: save all test data in the current window as a database file with a suffix of .db;
- Export Excel file: export all the test data in the current window into an Excel file with the suffix .csv;
- Print: print the current test data;
- Print preview: preview the print effect of the currently displayed test data;
- Open History: Displays recently opened test files.



### 3. Help menu :



Help menu contains "About HPCS(A)" option



The About label contains the company logo, software name, company website, contact email, version, copyright, company name and other information

## 4. Toolbar :

The appearance of the toolbar is as shown in the figure below. The icon in the toolbar is the shortcut icon of the option in the menu bar, and the function is the same as that of the option in the menu bar. Note: The gray icon is an option that the software is not activated.



The buttons in the first area are: open file, save as, open database and delete the selected data in the list;



The fourth area is the setting area, and the buttons are: system setting and product identification;



The fifth area is the output area, and the buttons are: print, print preview, and about HPCS; For calibration operation with software, please call our company's technical staff for guidance.

## 5. Software test :

1. e the USB data cable to connect the instrument to the computer USB port for U disk connection;

2. en document, The test data in the instrument can be previewed in the analysis software in the current window;

3. save document:

4. Save as icon, only the currently displayed test data can be saved as a file with the suffix name.ohsp;

5. Save the database icon, you can save all the test data in the current window as a file with a suffix named .db;

6. Print preview icon, which can print and preview the data file opened in the current window;

7. The print report icon can print the data file opened in the current window.

# Typical Report

## OHSP Test Report

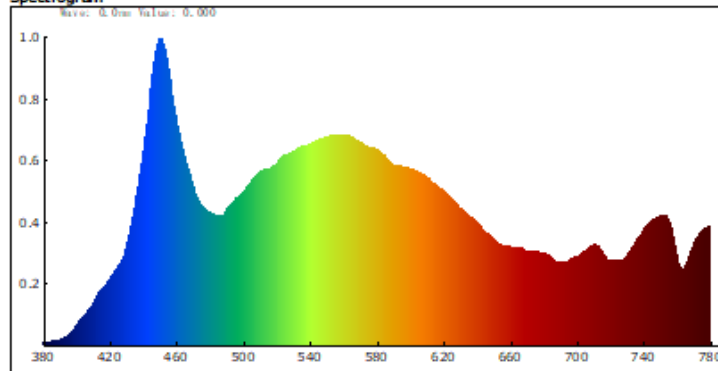
**Product Mark**

Model:	Manufacture:
Temperature: 20°C	Humidity: 65%
Tester: admin	Test Date: 2022-05-07,14:19:51

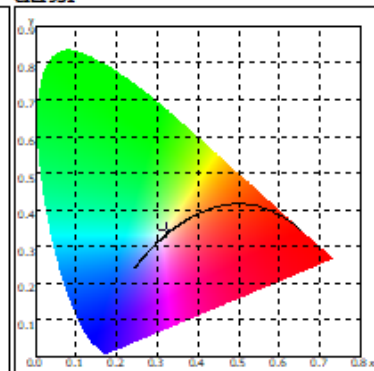
**Parameter**

Name	Value	Name	Value	Name	Value	Name	Value
E(lx)	312.17	Color Ratio(RGB)	14.5,81.7,3.8				
Candle E(fc)	29.01	Integral Time(ms)	400				
CCT(K)	5921	Peak Signal	51920				
Duv	0.00484	Dark Signal	2928				
x,y	0.3231,0.3422	Compensate level	2540				
u,v	0.2001,0.3178						
u',v'	0.2001,0.4767						
SDCM	7.61						
Ra	86.9						
S/P	2.188						
Dominant(nm)	503.50						
Purity(%)	3.1						
HalfWidth(nm)	34.2						
Peak(nm)	450.8						
Center(nm)	453.3						
Centroid(nm)	574.8						

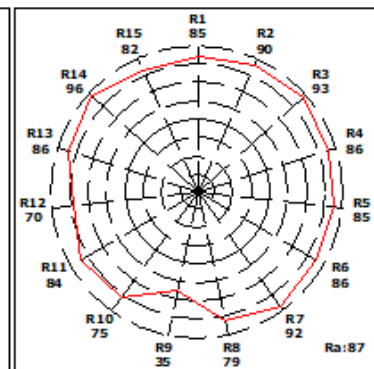
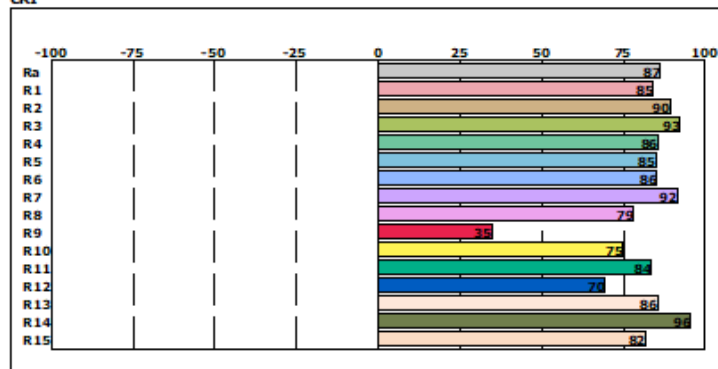
**Spectrogram**



**CIE1931**



**CRI**



**Instrument Status**

Type: HPCS-320	SN: 0	Scan Range: 380-780nm
Integral Time: 400.000ms	VPeak: 51920	VDark: 2928

Remark: