杭州虹谱光色科技有限公司

HANGZHOU HOPOO LIGHT&COLOR TECHNOLOGY CO., LTD

HPCS-310 Series Spectrometer

User’s Manual

HANGZHOU HOPOO LIGHT&COLOR TECHNOLOGY CO., LTD.

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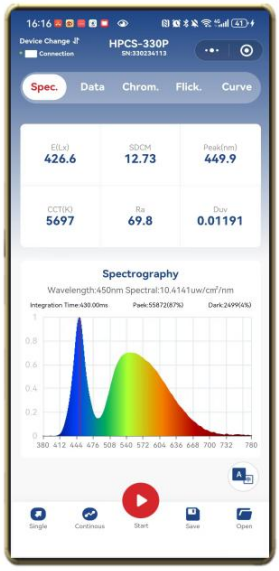
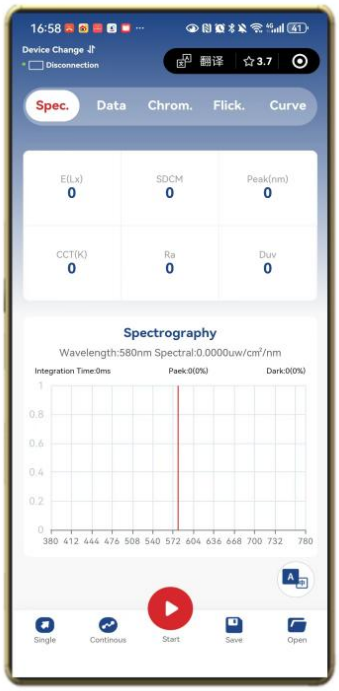
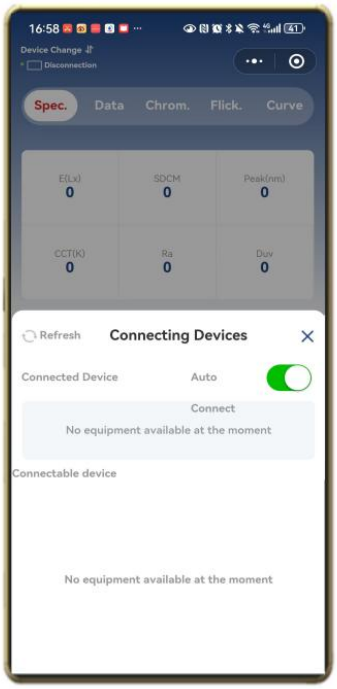
V1. 0

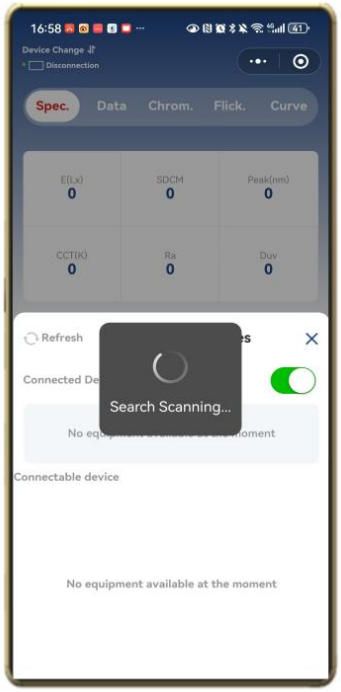
Wechat Program use

Bluetooth connect:

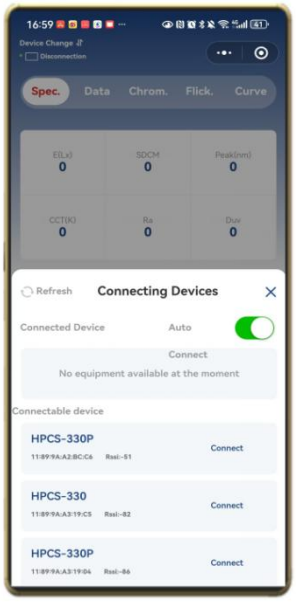




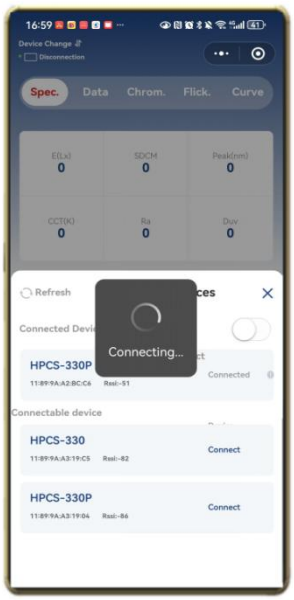




On the top of left side you can find connect position



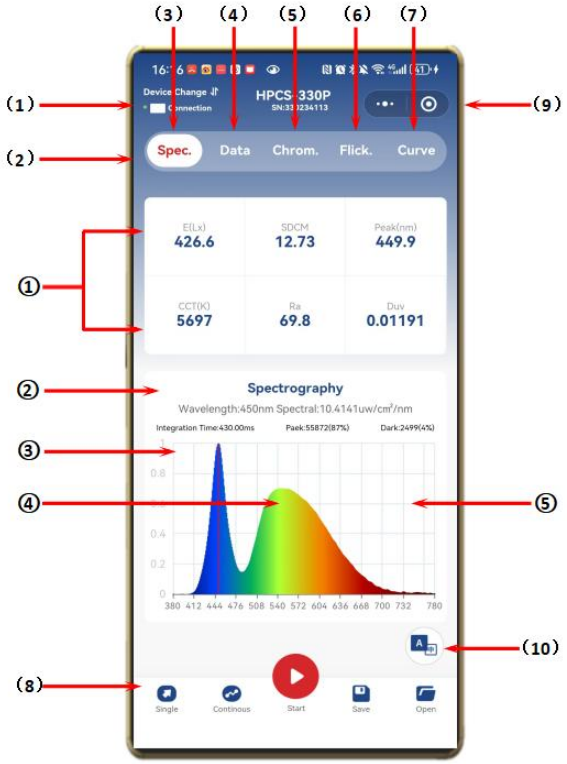
Search



Choose model

Connect

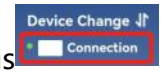
Details



(1) Device status (2) Menu bar (3) Spectrum (4) Date (5) Chroma (6) Flicker (7) Curve (8) Test bar (9) Shut down (10) Language Change

(1) Device status

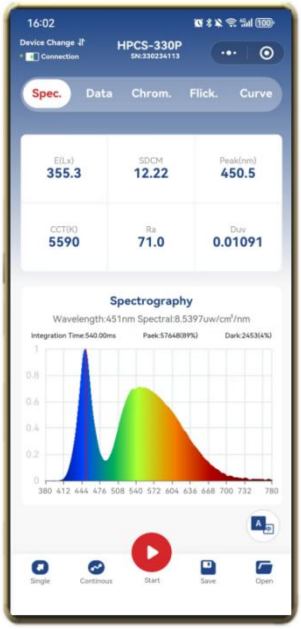
Model "HPCS-330P" 

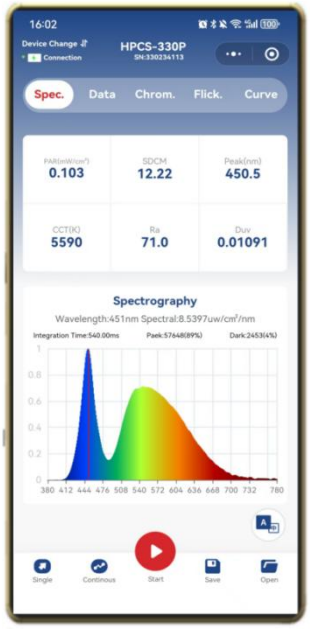
、Connection status 

(2) Menu Bar

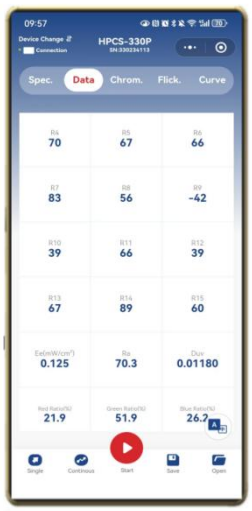
(3) Spectrum Interface

① Six boxes display data, and the data can be replaced manually

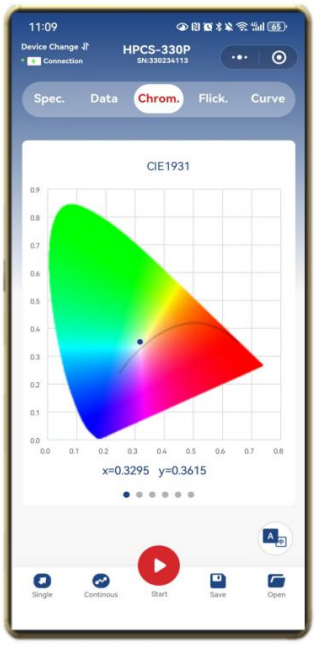


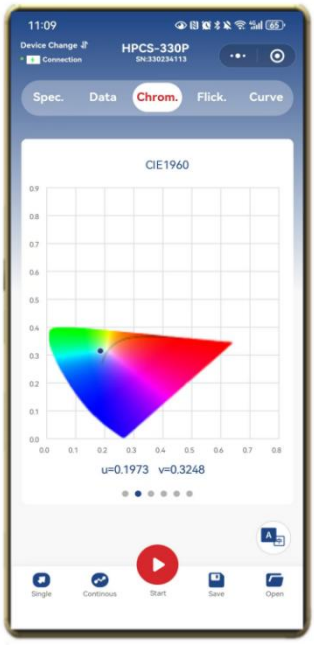


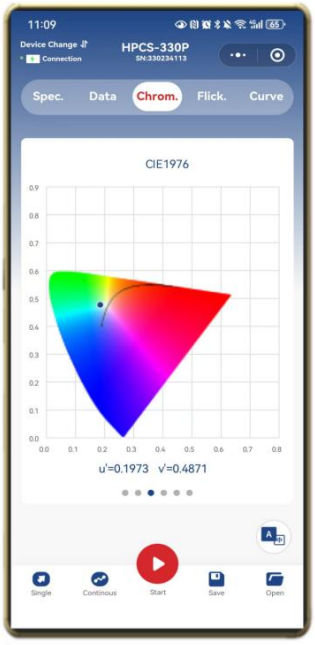
(4) Date interface



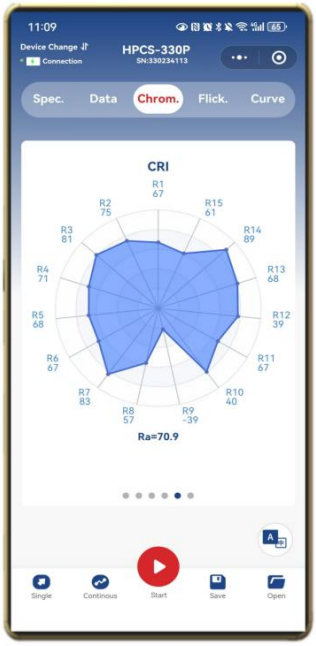
(5) Chroma Interface

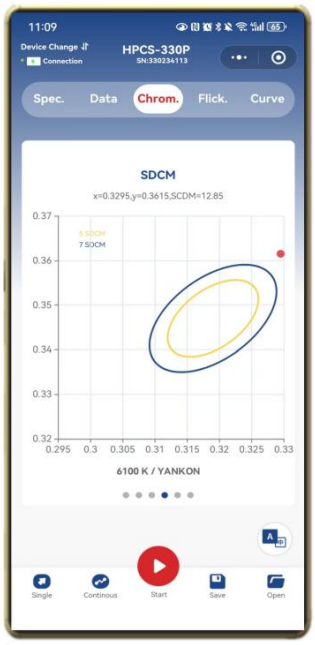


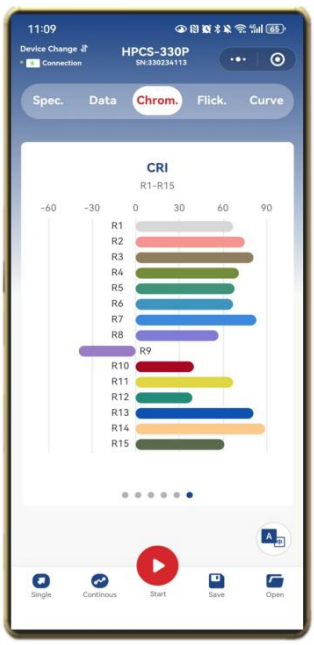




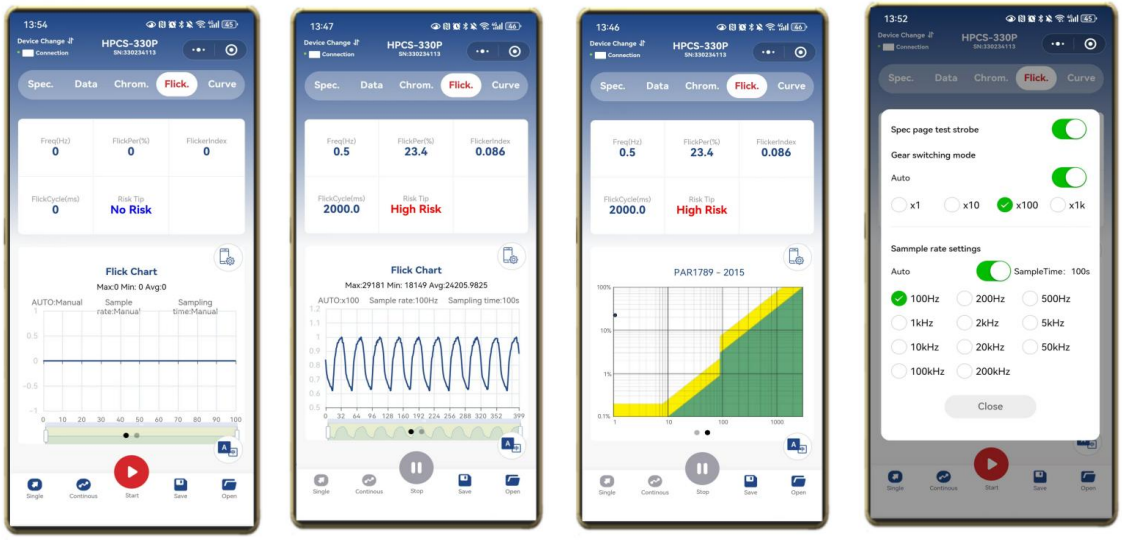
CRI1 and CRI2 show you different types of CRI 1-15





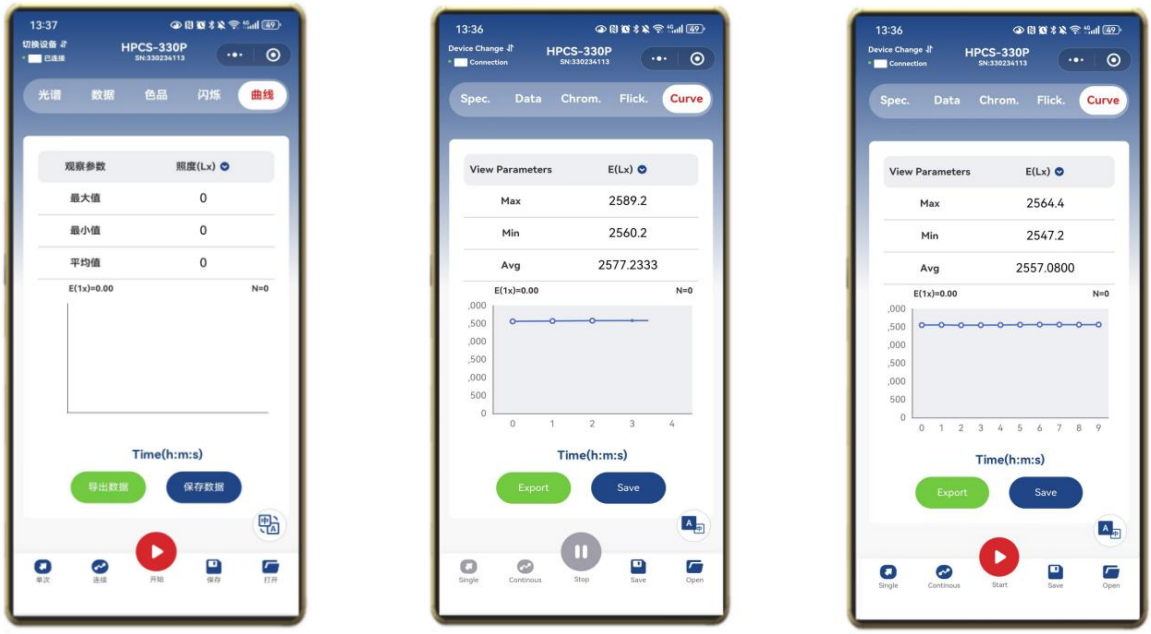


(6) Flicker Interface



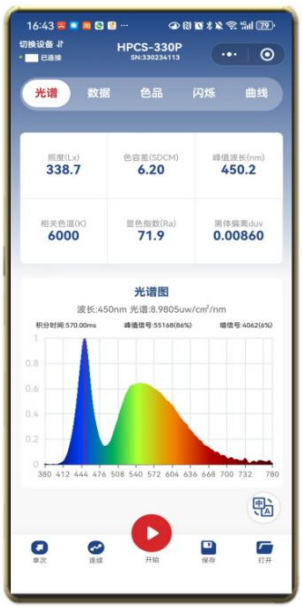
(7) Curve interface

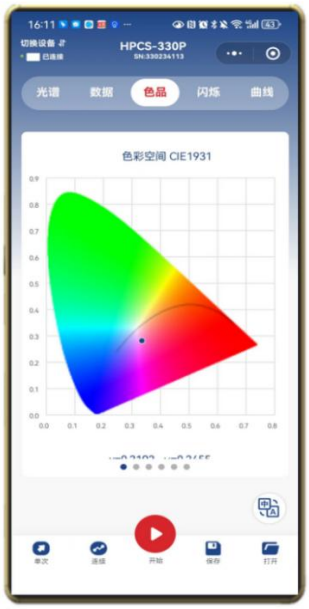
Click "Curve" , The curve interface displays the real-time changes of all the curve data that can be tested by the machine. The curve graph in the curve table area displays the latest 1000 real-time curves; the curve is a relative change trend.



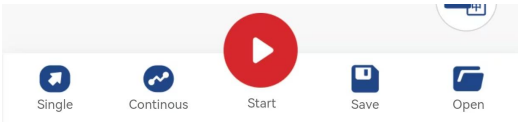
(8) Language Change

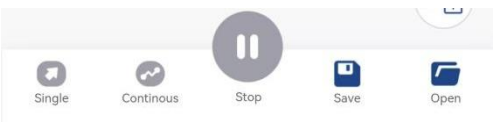
Language system: Icon Change Language between Chinese and English





(9) Test Bar





“Multi” 

: Continous test;

“Single” 

: Single test , save test five by hand ;

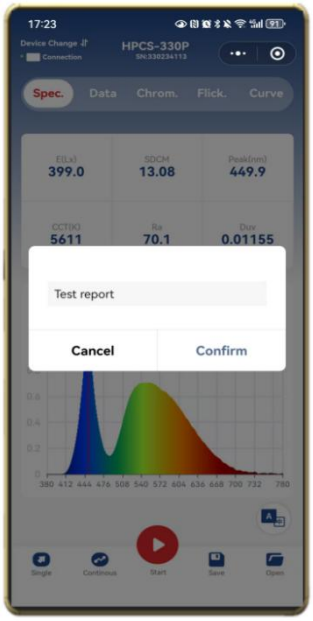
"Stop" : Clicking on this icon will terminate the test.

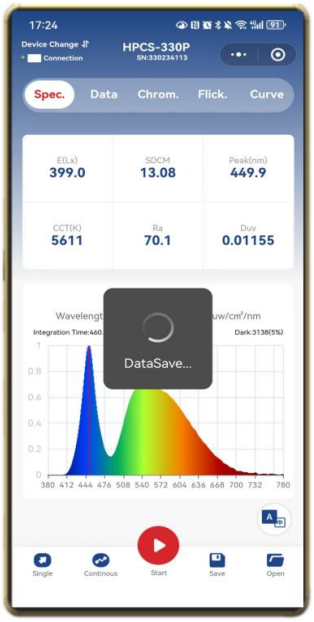
"Save" : Save file after test

"Open" : Open the saved file.

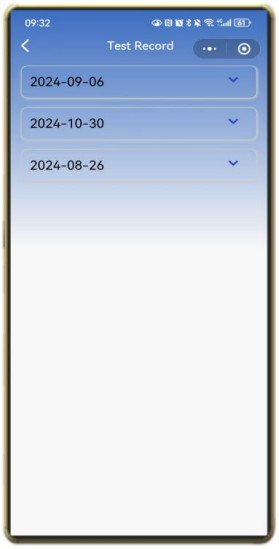
(10) File management

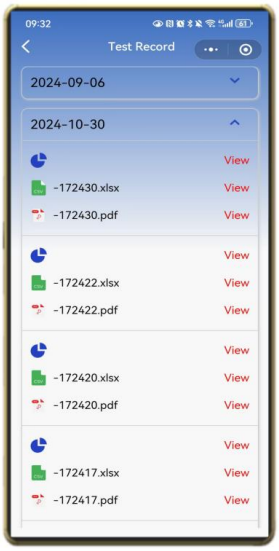
Click "Save" Save test file in program, so you can share to another person.

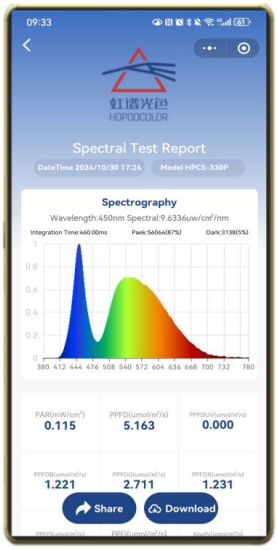


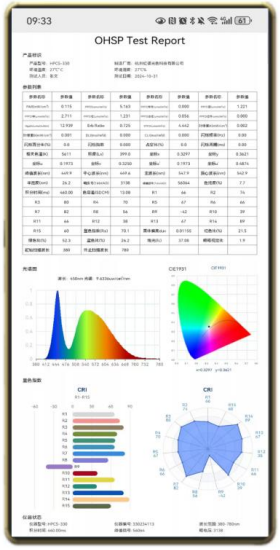


Click "Open" , You can open test file or export PDF file and share to another person









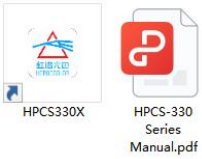
Software

1.system requirements

- Operating system: Windows 10 or higher version, 32 - bit or 64 - bit；
- Hard disk space: more than 200M；
- USB Interface：1；
- display resolving power：more than 1280×1024.

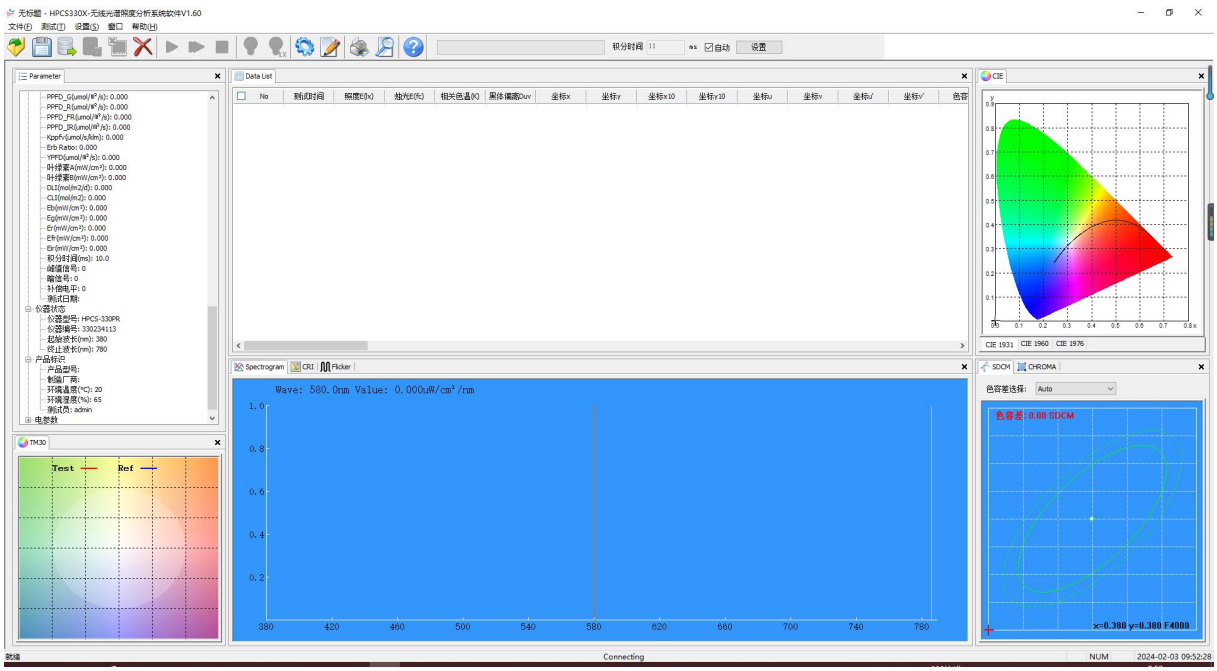
2. software acquisition

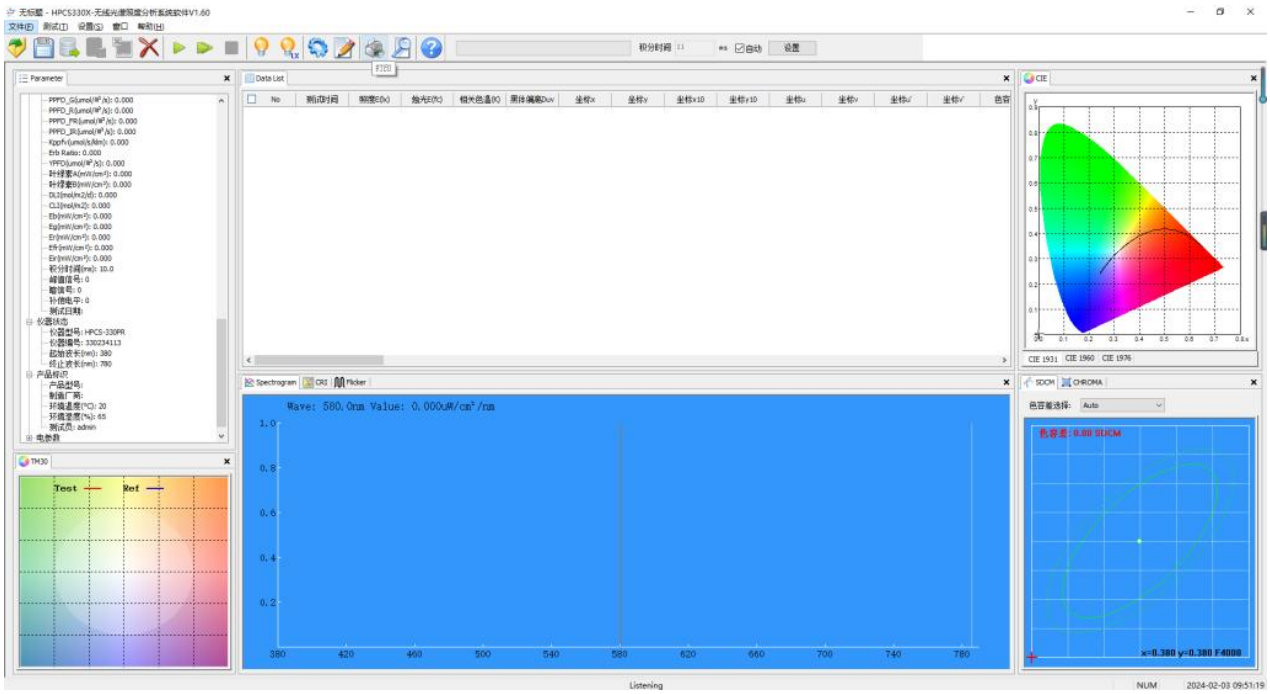
The test software and the user's manual have been copied into instrument before it out of the factory.
Acquisition method 1：Set the instrument as "U disk mode", then connect the instrument with the USB data line to the computer to open the software for installation；
Acquisition method 2 ： Contact the customer service to send the installation software online, and then open the software on the computer for installation.



3. Software installation

1) the naming rule of the software installation package is: HPCS _Setup_V*.**_YYYYMMDD.axe. The "*.**" means version, "YYYYMMDD" means release date, Thus the update sequence of the software installation package can be judged.
2) the software supports two installation modes in both simplified Chinese and English, which will remind users to choose the language type when the Chinese system is installed. By default, the software is installed in the "C:\Program Files (x86)\Hopoo Color\HPCS330X" directory (the 64 - bit operating system path will have the "(x86") identity).
3) while the software is installed, the HPCS hardware driver also be installed. ， but, due to security reasons, some systems will prevent such operations，In this case，The user needs to manually install the driver.If the user has failed to install the driver many times,pls contact our company service for remote assistance installation with QQ.
4) software installation diagram：





The test button lights up to indicate online success and can be tested.

4. Software introductions

1.Software start:

Windows Software:

Click 

or click " Start – HPCS330X" 。

Connection:

1) Connect sensor and display like picture 1，connect to Pc software via Type-C port

2) Connect Sensor and USB Module like picture 2 ，connect to Pc software via Type-C port;

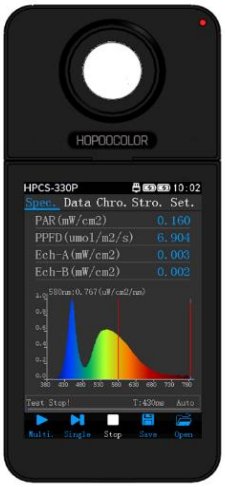
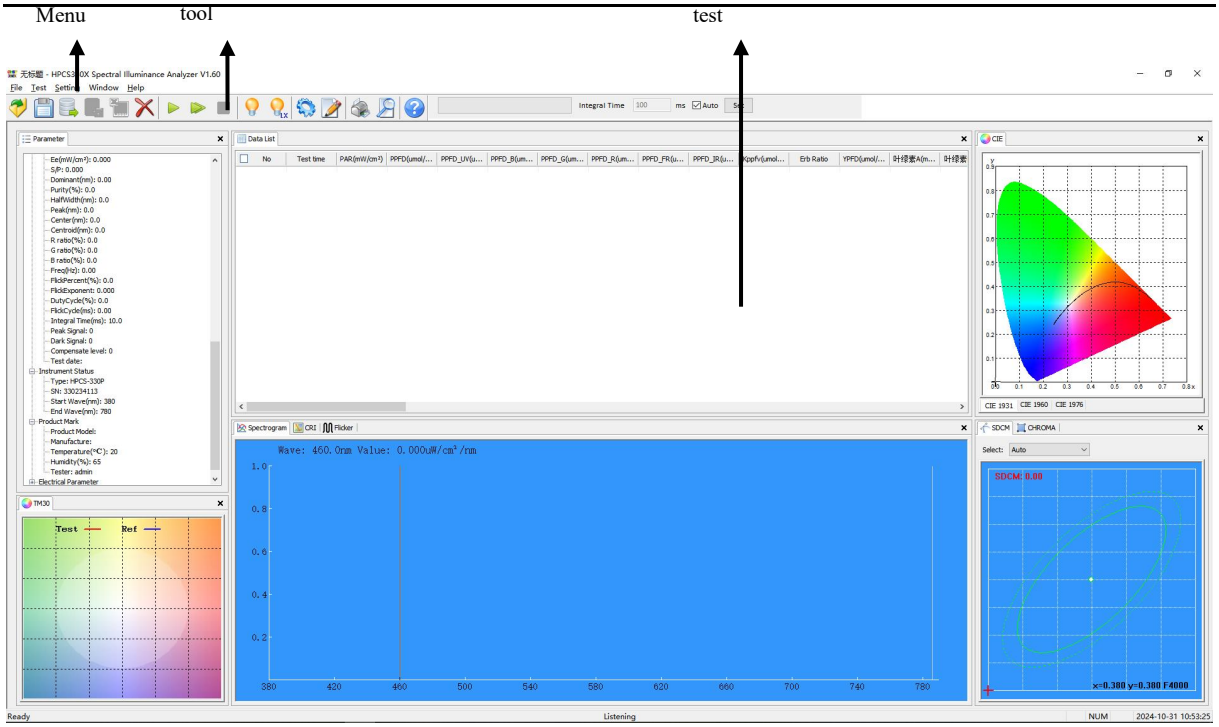
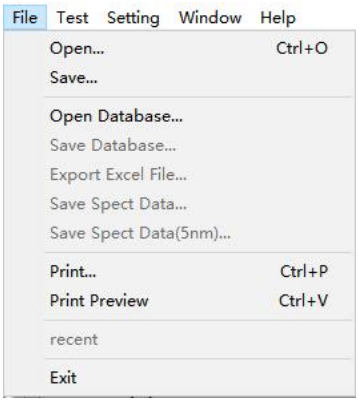


图 1

图 2

2. Software interface:





File menu：

Open：it can open the test file with the suffix named.HPCS and.ohs.

Save：Save the test data currently displayed as a file , suffix named .ohsp.;

Open database：can open a test file that is saved as a database, suffix named .db;

Save database：Save all test data in the current window into a database file，suffix named .db;

Export Excel file：Export all test data in the current window into Excel files，suffix named.csv;

Save spectral data: Spectral data for all tests are exported at 1nm intervals，suffix named.csv;

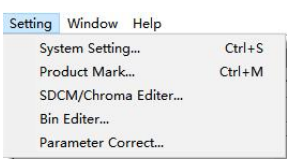
Save spectral data（5nm）：Spectral data for all tests are exported at 5nm intervals，suffix named.csv;

Print：Print the current test data;

Print preview：Preview the print effect of the current display test data;

Recent：Display the recently opened test file.

Test menu：



Single test：The test records one light source data and then stops;

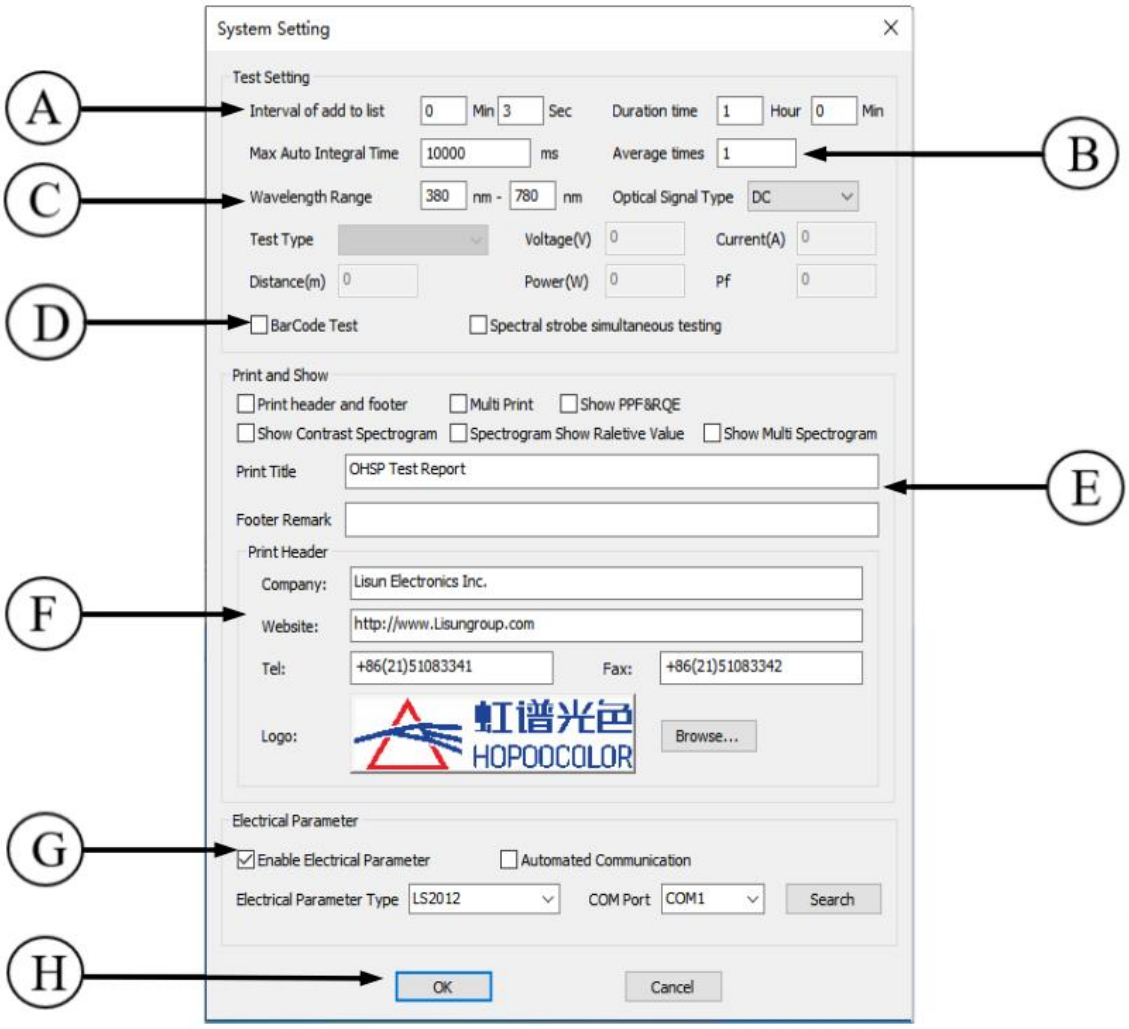
Continuous test：Continuous test and recording light source data;

Stop test：stop continuous testing;

calibration：need to use test instrument for calibration of standard light source（Light parameters and color parameters are calibrated simultaneously.）;

Lux calibration：need to use test instrument for calibration of standard light source.

Menu Settings：



System Setting

A. Set the total test time and automatically record the interval time of the data in the continuous test state

B. Set the time limit of instrument integral time and the number of average calculation of each test spectral data

C. Set range and frequency of wavelength measurement sampling in a measuring instrument

D. Whether to print the footer of the page or carry on the chromatographic color pad printing, etc

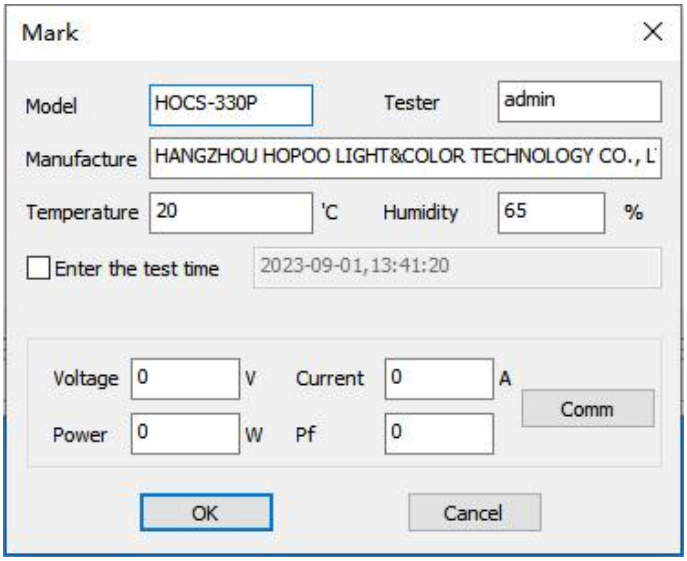
E. Customize the title and footer of the printed report.

F. Sets the text and trademark logo of the header in the printed report

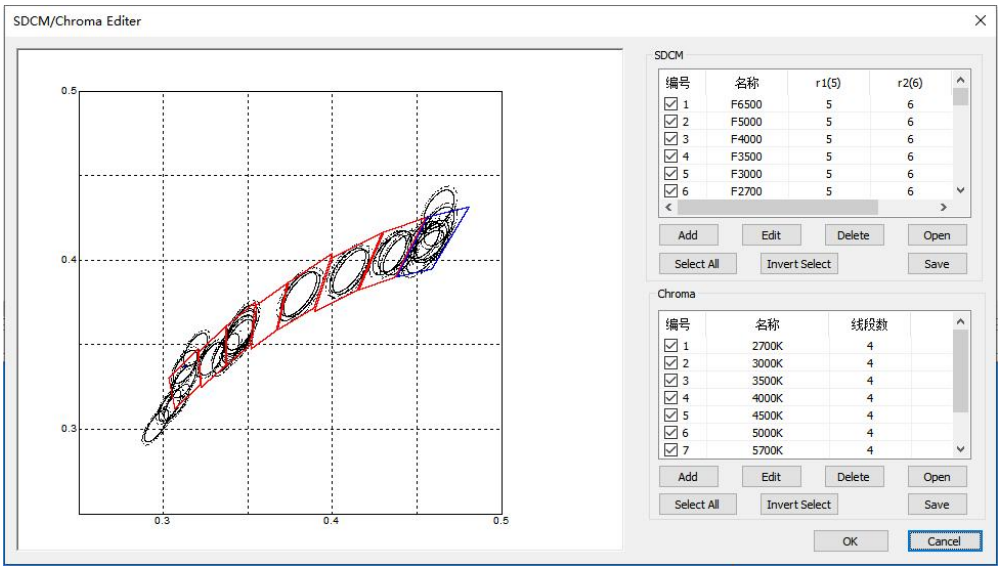
G. Enable and close the communication of the external electrical parameter measuring instrument, models and communication ports of electrical parameters can be modified，Such as：HP105 Communication port choose COM(1～4)，Or automatic search port number

H. After setting, click "confirm" to save and exit.

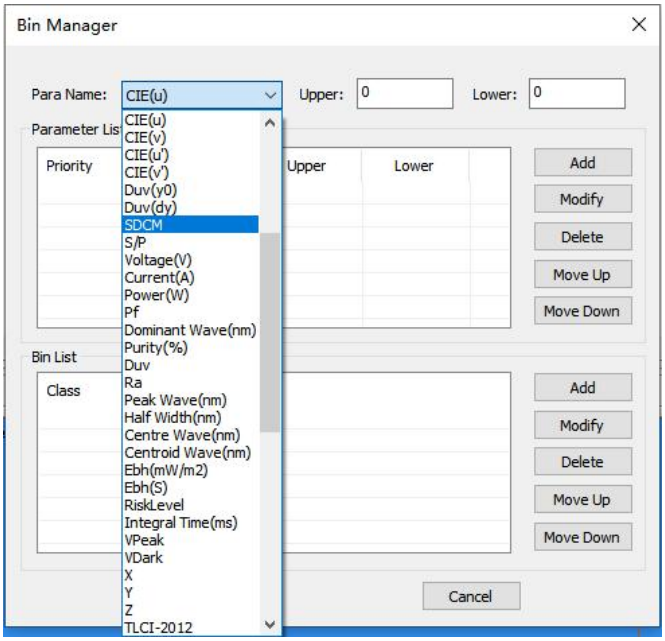
Mark info ：



SDCM management：Click on the SDCM option.，Open the TAB， Users can add or delete the standard values of SDCM and Chroma area.



Bin manager：Click on the bin manager options，open the TAB of bin manager.，Users can add the items and upper-lower limit of the bin judgment

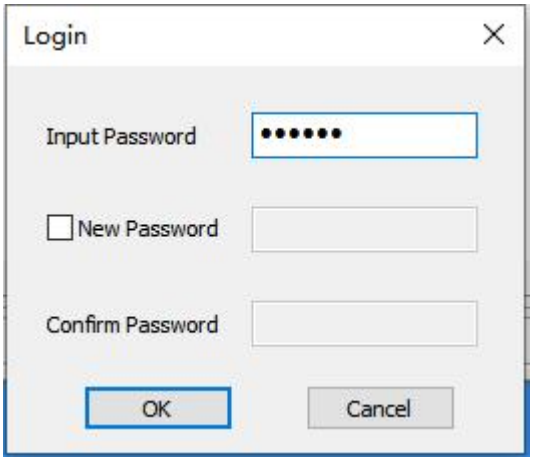


Parameter correction: If there are slight errors in test parameters X, Y, Ra, and dominant wavelength, can be corrected in this option. (User operation is not recommended)

Click the parameter calibration option, enter the password (factory password 123456)

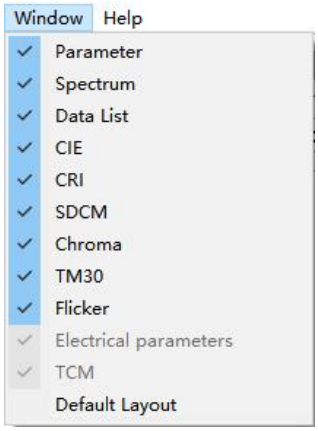
*Note: After entering the parameter modification tab, click the [Read] button once, then click [Write] after setting the parameters, and finally click [Exit].

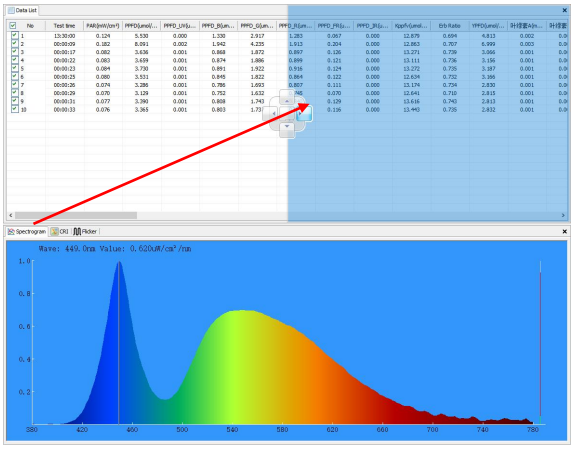
For example: When testing a low color temperature of 1000-3500K, there is a deviation in the X and Y coordinates. You can add correction parameters after the corresponding color temperature range. The system will automatically correct the parameters after the test is completed. "-0.0002" means that the test parameter value is reduced by 0.0002

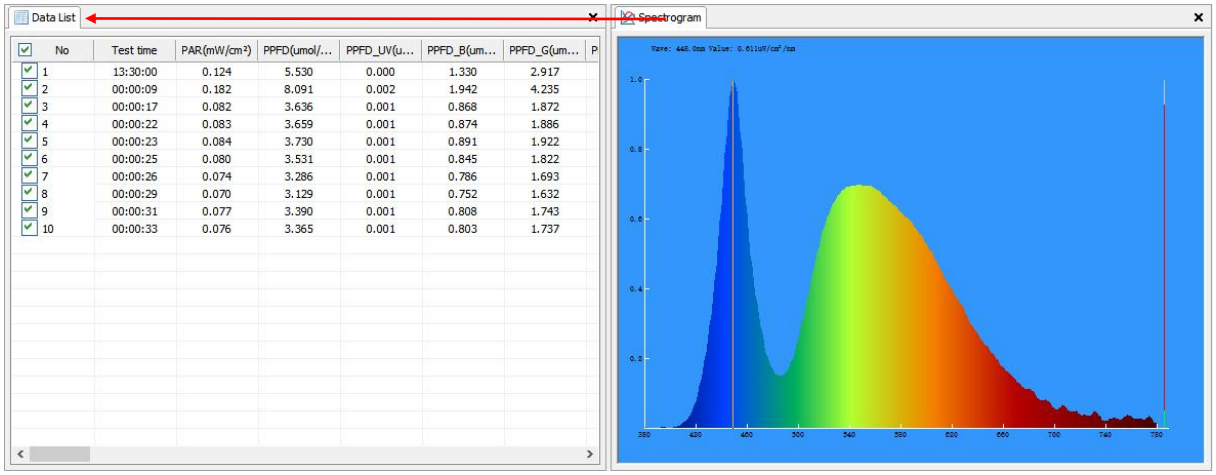


window menu：

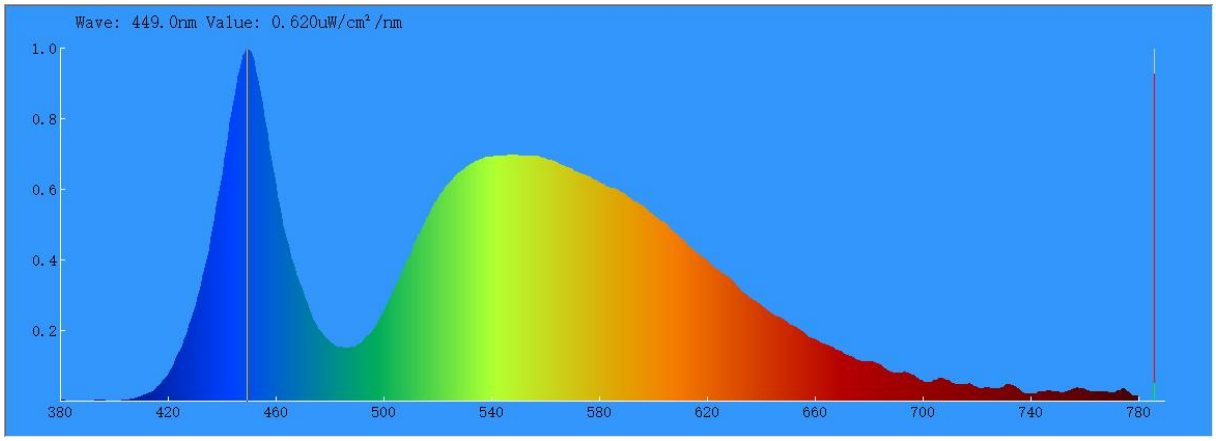
The box window in the test area can be towed, zoomed in, reduced, merged, and partitioned. options in the window menu are checked to indicate that the window is opened





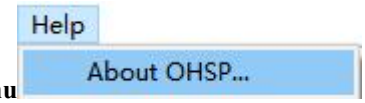


Drag and drop tags to the tag window to merge the display



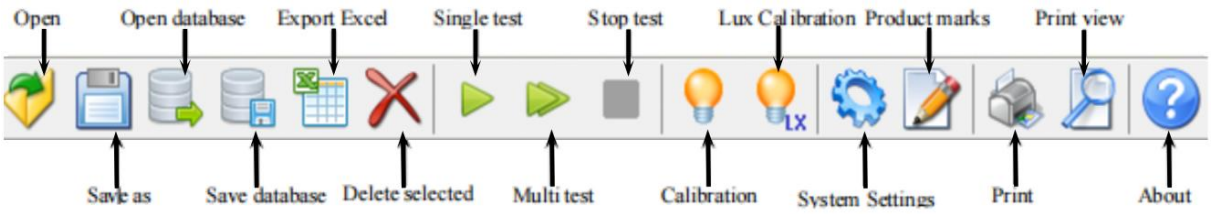
Window merge display

3. Help menu



Help menu contains“about HPCS(A)” options

Toolbar:



➢ 

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

➢ 

The second area is the test area.， The buttons are：Single test, continuous test and stop test.;

➢ 

The third area is the calibration area.， The buttons are：Spectral calibration and illumination calibration.\;

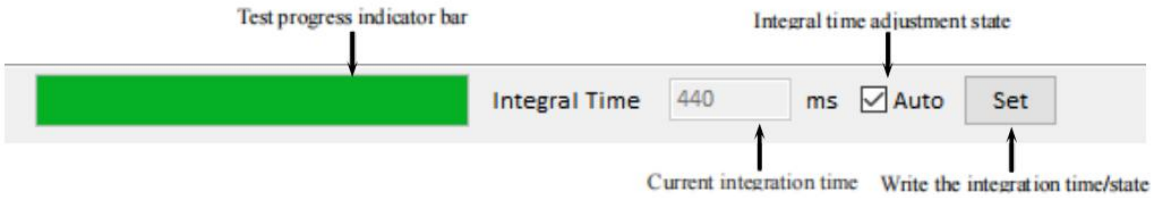
➢ 

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

➢ 

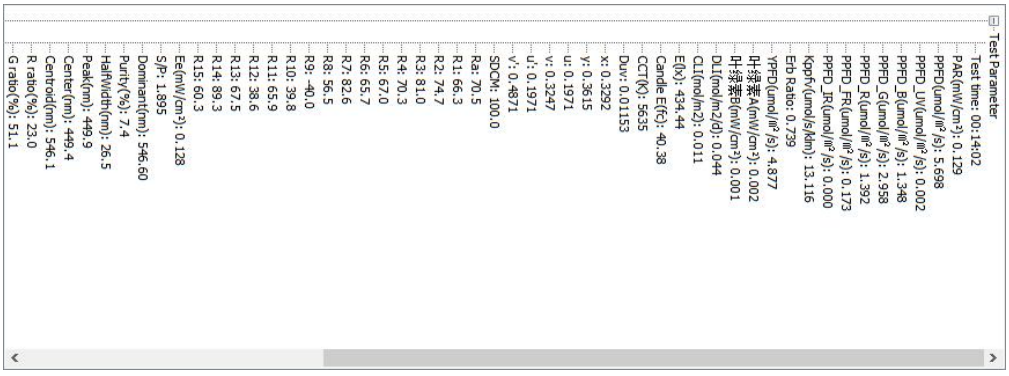
The fifth area is the output area.， The buttons are: print, print preview.、about HPCS;

Instrument status bar：



The test area：

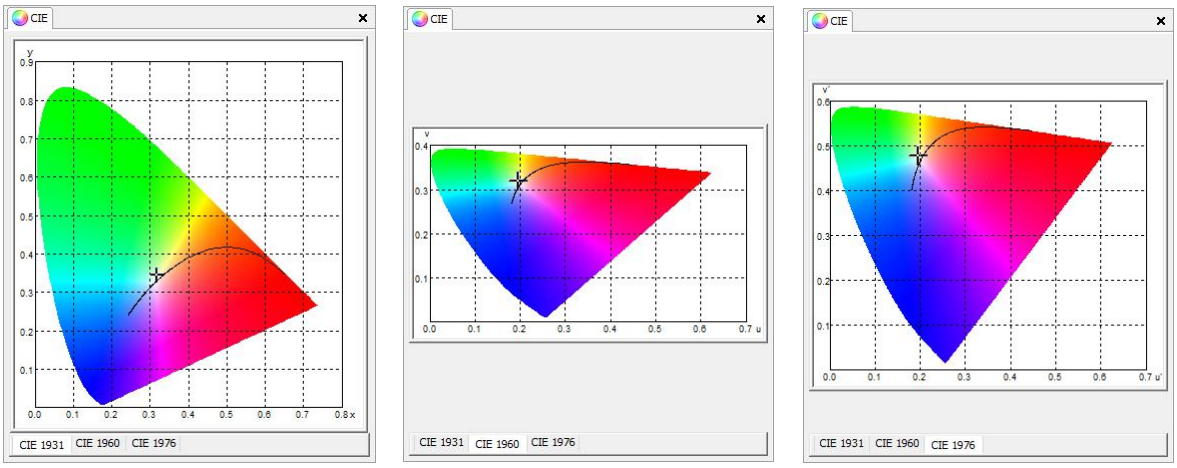
(1) parameters list ： Displays the current test of All parameters, instrument status information, product identification information



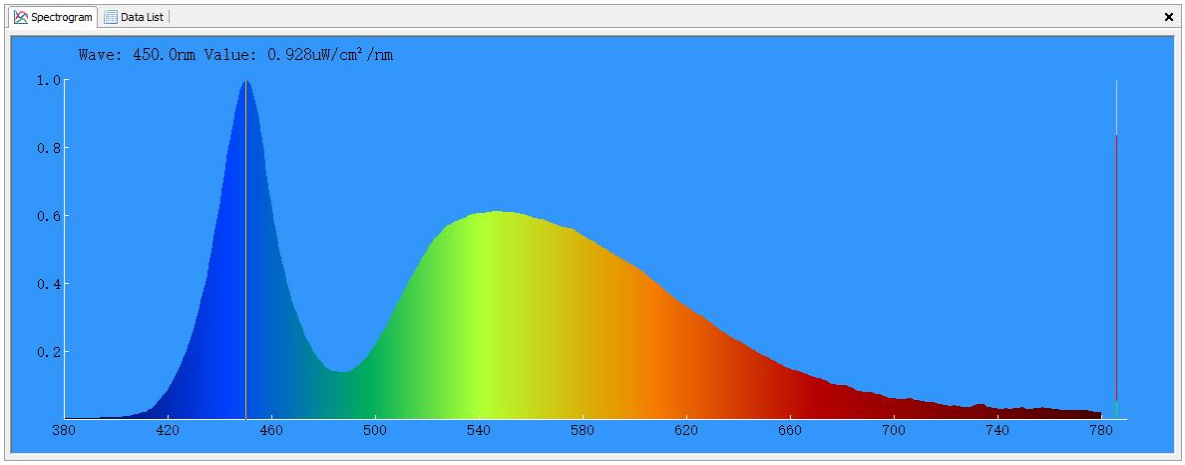
(2) Data list：The list shows multiple test parameters

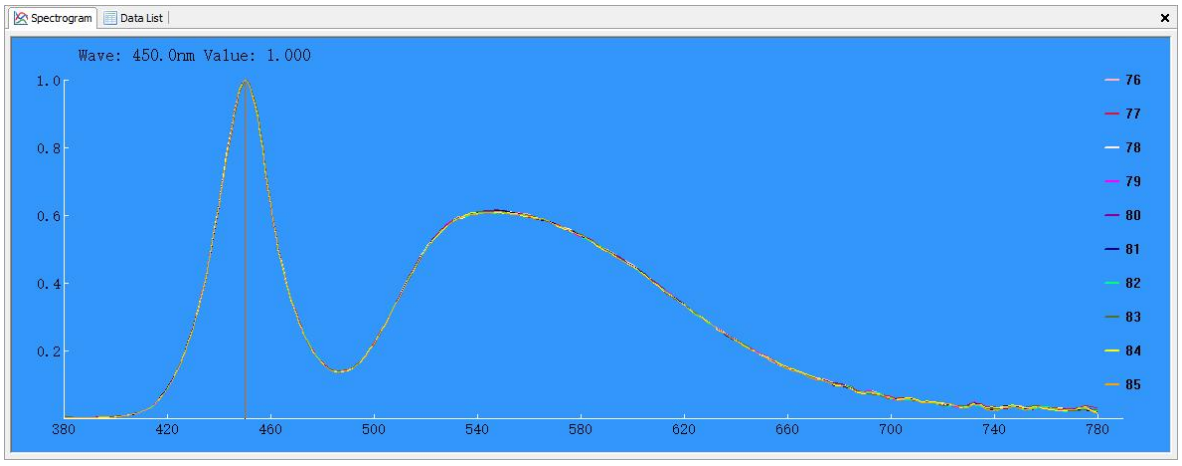
No	Test time	PAR(mW/cm²)	PPFD(umol/...	PPFD_UV(u...	PPFD_B(um...	PPFD_G(um...	PPFD_R(um...	PPFD_FR(u...	PPFD_IR(u...	Kppfv(umol...	Erb Ratio	YPFD(umol/...	叶绿素A(m...	叶绿
1	00:03:03	0.127	5.634	0.001	1.348	2.942	1.344	0.158	0.000	13.082	0.715	4.823	0.002	
2	00:03:07	0.126	5.609	0.001	1.344	2.932	1.333	0.146	0.000	12.996	0.711	4.842	0.002	
3	00:03:10	0.127	5.627	0.001	1.345	2.937	1.345	0.162	0.000	13.050	0.717	4.830	0.002	
4	00:03:14	0.126	5.595	0.001	1.339	2.926	1.330	0.148	0.000	12.991	0.712	4.829	0.002	
5	00:03:15	0.127	5.629	0.002	1.344	2.939	1.346	0.156	0.000	13.062	0.718	4.832	0.002	
6	00:03:20	0.127	5.629	0.001	1.344	2.943	1.342	0.161	0.000	13.018	0.716	4.850	0.002	
7	00:03:22	0.125	5.521	0.002	1.315	2.880	1.325	0.168	0.000	12.834	0.722	4.827	0.002	
8	00:03:25	0.125	5.556	0.002	1.323	2.892	1.341	0.166	0.000	13.029	0.726	4.785	0.002	
9	00:03:29	0.125	5.533	0.001	1.316	2.888	1.329	0.150	0.000	13.037	0.724	4.769	0.002	
10	00:03:31	0.124	5.504	0.001	1.299	2.867	1.337	0.153	0.000	12.975	0.738	4.771	0.002	
11	00:03:35	0.127	5.630	0.001	1.332	2.938	1.360	0.159	0.000	13.199	0.732	4.787	0.002	
12	00:03:39	0.125	5.539	0.001	1.309	2.895	1.335	0.150	0.000	12.942	0.732	4.804	0.002	
13	00:03:41	0.126	5.575	0.001	1.318	2.908	1.349	0.151	0.000	13.062	0.734	4.791	0.002	
14	00:03:44	0.126	5.601	0.002	1.326	2.912	1.364	0.164	0.000	13.120	0.737	4.791	0.002	
15	00:03:48	0.127	5.622	0.002	1.326	2.916	1.380	0.177	0.000	13.155	0.746	4.800	0.002	
16	00:03:50	0.127	5.615	0.002	1.328	2.921	1.365	0.164	0.000	13.114	0.737	4.816	0.002	
17	00:03:54	0.126	5.590	0.002	1.323	2.913	1.353	0.168	0.000	13.048	0.734	4.816	0.002	
18	00:03:57	0.125	5.544	0.002	1.316	2.899	1.329	0.143	0.000	12.980	0.725	4.798	0.002	
19	00:03:59	0.128	5.675	0.002	1.343	2.959	1.373	0.167	0.000	13.181	0.733	4.833	0.002	
20	00:04:03	0.125	5.532	0.001	1.308	2.881	1.343	0.156	0.000	12.876	0.736	4.828	0.002	
21	00:04:05	0.125	5.536	0.001	1.309	2.887	1.340	0.142	0.000	12.949	0.734	4.804	0.002	
22	00:04:09	0.126	5.575	0.001	1.319	2.912	1.344	0.150	0.000	13.092	0.730	4.777	0.002	

(3) Chromaticity diagram：Displays the current color coordinates.，You can switch between CIE 1931, CIE 1960 and CIE 1976 through the bottom Tab button.

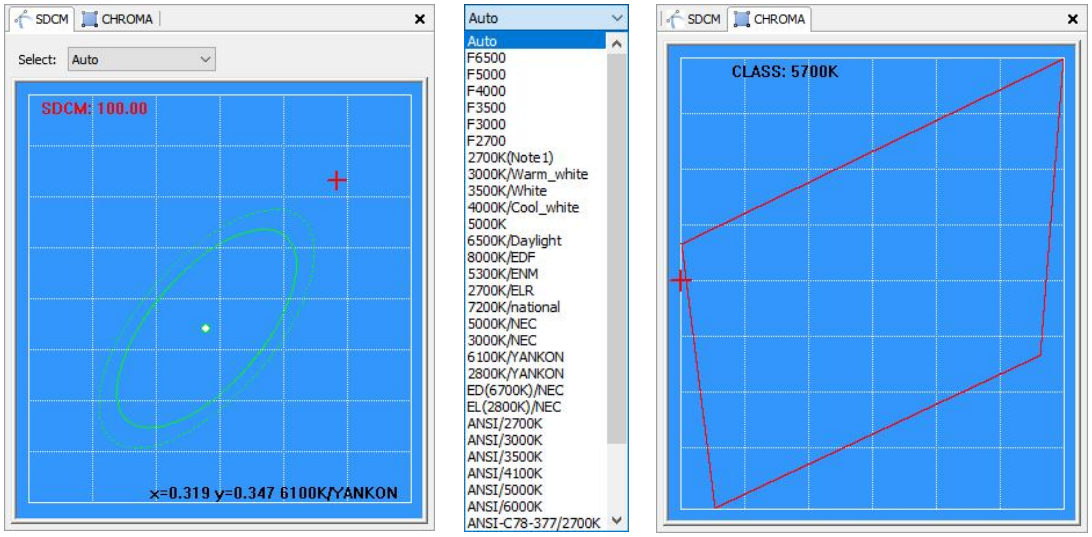


(4) Spectral curve："Color printing" shows the last data curve.，Cancel color printing to display the last ten data curves

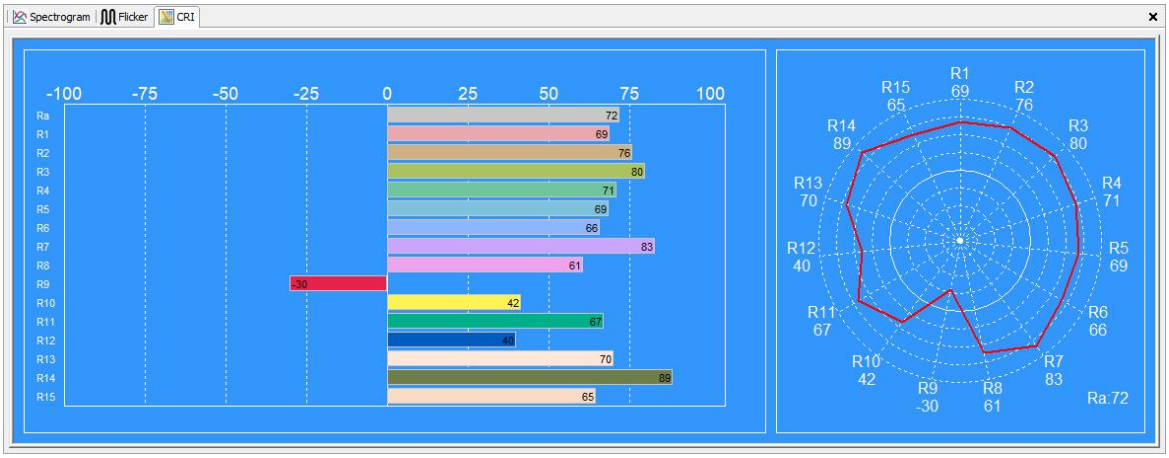




(5))SDCM and area of Chromaticity diagram.:



(6) Color index bar chart and radar map:



5. System Calibration

The instrument is calibrated before delivery. user can use it without calibration. and calibration can be referred to the
method on the instrument, Convenient and quick, If the user must use the software for calibration operation, pls consult
our company's technical personnel for guidance.

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method on the instrument, Convenient and quick, If the user must use the software for calibration operation, pls consult
our company's technical personnel for guidance.

7. Software test

1. Install the instrument in the test position and turn it on.；
2. Use USB data line to connect the instrument to the computer USB interface.；
3. Open test software on computer.，Click the continuous test icon  in the software toolbar.

Or click single test icon  .
then start testing；

4. If it's a continuous test state，you need to click the stop icon  in the toolbar.
to stop test；
5. Save file：

1） Connect to Computer via USB cable；

2） Open file  ，input saved file immediately ；

3）  Save as icon，only can save one test data that is currently displayed as a file ；

4）  Print Preview，Output PDF report via use Microsoft Print To PDF choose

5）  Print，Print current test data file

Report

OHSP Test Report

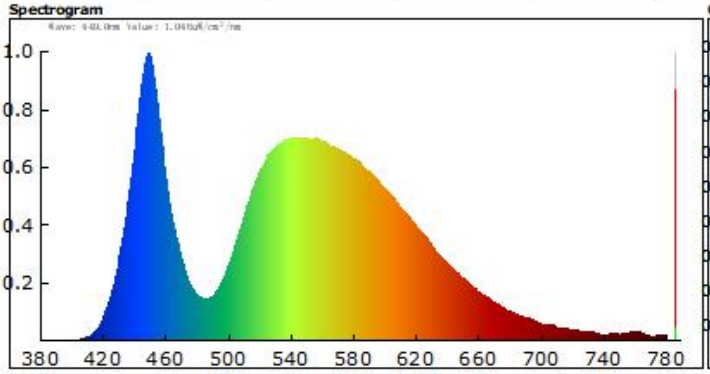
Product Mark

Model: HPCS-330P
Manufacture: HANGZHOU HOPOO LIGHT&COLOR TECHNOLOGY CO., LTD
Temperature: 20°C
Humidity: 65%
Tester: admin
Test Date: 2024-10-31,00:14:02

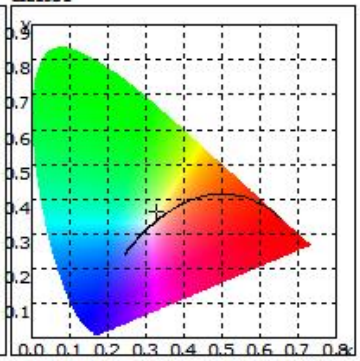
Parameter

Name	Value	Name	Value	Name	Value	Name	Value
PAR(mW/cm²)	0.129	Candle E(fc)	40.38	Color Ratio(RGB)	23.0,51.1,25.9		
PPFD(umol/㎡/s)	5.698	CCT(K)	5635	Freq(Hz)	0.00		
PPFD_UV(umol/㎡/s)	0.002	Duv	0.01153	FlickPercent(%)	0.0		
PPFD_B(umol/㎡/s)	1.348	x,y	0.3292,0.3615	FlickExponent	0.000		
PPFD_G(umol/㎡/s)	2.958	u,v	0.1971,0.3247	DutyCycle(%)	0.0		
PPFD_R(umol/㎡/s)	1.392	u',v'	0.1971,0.4871	FlickCycle(ms)	0.00		
PPFD_FR(umol/㎡/s)	0.173	SDCM	100.0	Integral Time(ms)	430		
PPFD_IR(umol/㎡/s)	0.000	Ra	70.5	Peak Signal	57216		
Kppfv(umol/s/klm)	13.116	Ee(mW/cm²)	0.13	Dark Signal	3236		
Erb Ratio	0.739	S/P	1.895	Compensate level	2540		
YPFD(umol/㎡/s)	4.877	Dominant(nm)	546.60				
EchA(mW/cm²)	0.002	Purity(%)	7.4				
EchB(mW/cm²)	0.001	HalfWidth(nm)	26.5				
DLI(mol/m2/d)	0.044	Peak(nm)	449.9				
CLI(mol/m2)	0.011	Center(nm)	449.4				
E(lx)	434.44	Centroid(nm)	546.1				

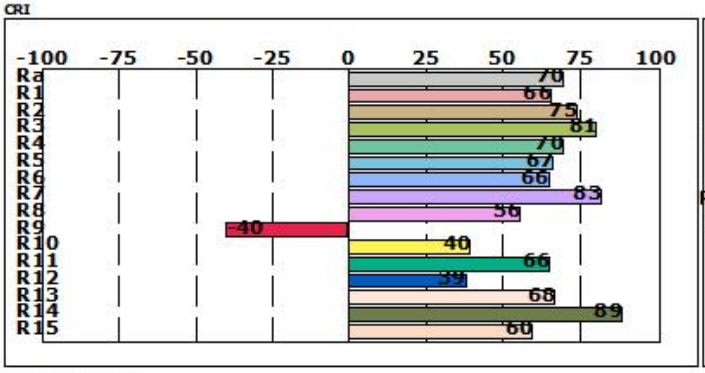
Spectrogram

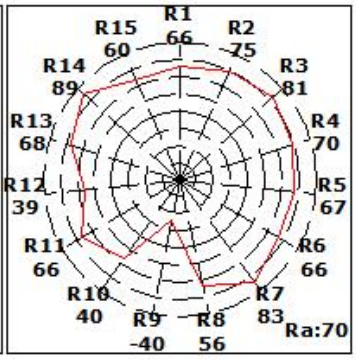


CIE1931



CRI





Instrument Status

Type: HPCS-330P
SN: 330234113
Scan Range: 380-780nm
Integral Time: 430.000ms
VPeak: 57216
VDark: 3236

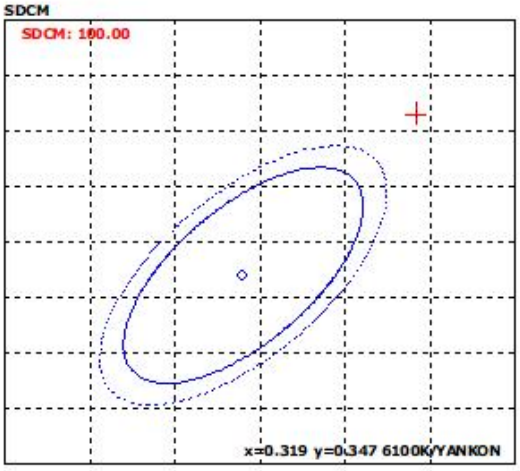
OHSP Test Report

Product Mark

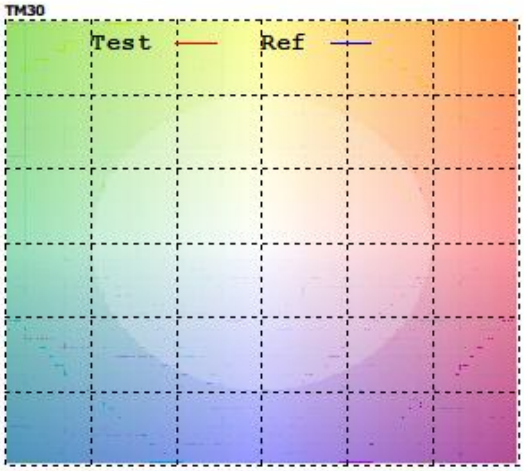
Model: HPCS-330P
Temperature: 20°C
Tester: admin

Manufacture: HANGZHOU HOPOO LIGHT&COLOR TECHNOLOGY CO., LTD
Humidity: 65%
Test Date: 2024-10-31,00:14:02

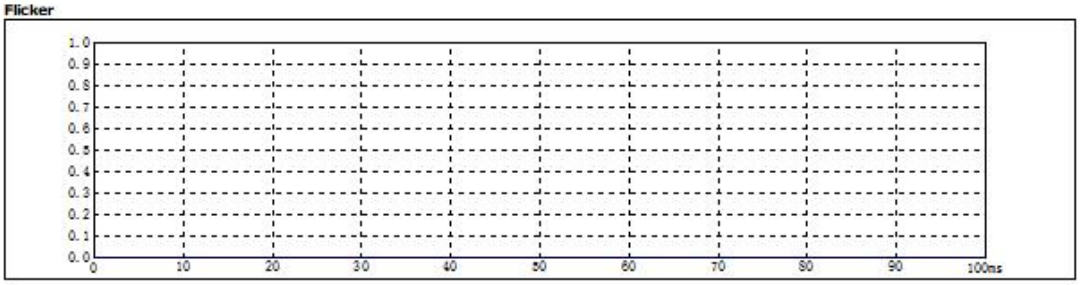
SDCM



TM30



Flicker



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Type: HPCS-330P
Integral Time: 430.000ms

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