

**Multiplelabs**  
Turnkey Laboratories Solutions

# Spectro-9801

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## Reflectance Spectrophotometer



**Spectro-9801** is a high performance spectrophotometer with sideward test aperture. It could be widely used for printing, textile, plastic, food, medicine, automobile industries to meet customers' color measurement requirement.

## ►► INTRODUCTION

Instrument adopts geometric of D/8 which is highly recommend by CIE, integration of the full band LED composite light source, double beam optical system, ETC every-test calibration technology, spectral reflectance standard deviation within 0.08, maximum of chromaticity values  $\Delta E^*_{ab}$  is 0.03.

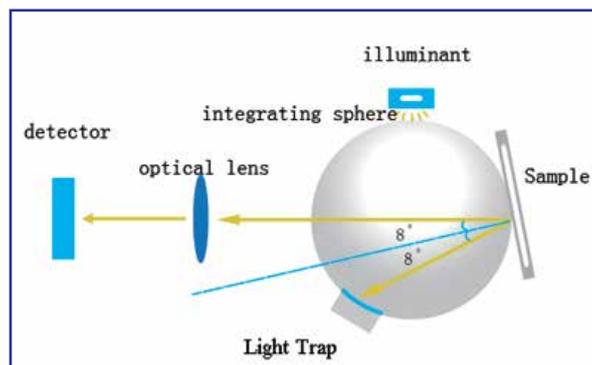
### Brief Introduction

1. Its test caliber is in the sideward which is more convenient to fix the sample. Solid samples (plastic sheet, cloth) can be placed directly on the test aperture. Paste objects can be placed in a glass cell/cuvette, and then placed in the measurement port. It is very suitable for powder material measurement in case of material falling into the integrating sphere.



### D\8 Structure

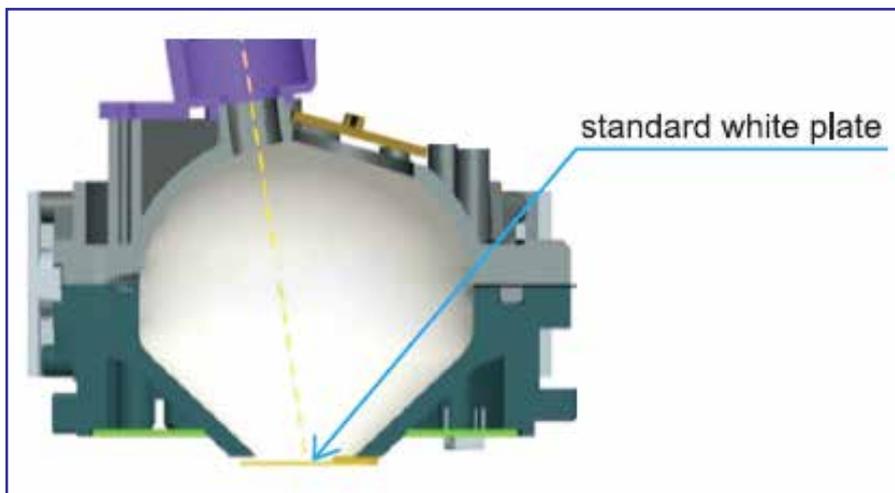
Our device adopts internationally agreed observe condition D/8 (Diffused illumination, 8 degrees observer) and SCI(specular component included)/SCE(specular component excluded).



**Can Measure SCI and SCE at the same time**

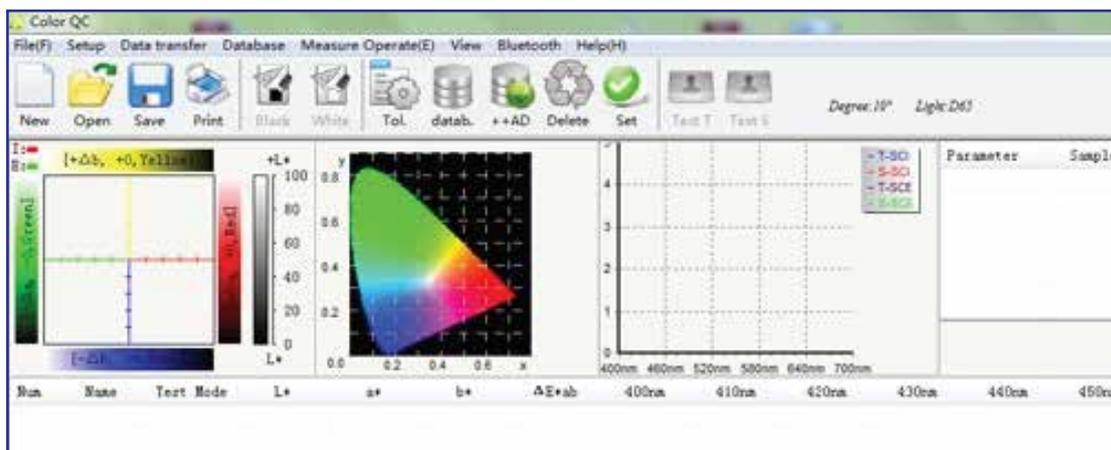


**ETC Technology (Every Test Calibration)**



**Color QC Software**

Our spectrophotometer comes with PC color QC software, which is applicable in various industries for management of color data. It is used for store test result, generate test report and print test report after connect with printer.





►► **TECHNICAL DATA**

<b>Type</b>	Spectro-9801
<b>Geometry</b>	d/8(Diffused lighting, 8 degrees observe angle)(conform to CIE 7No.15, ISO 7724/1, ASTM E1164, DIN 5033 Teil7, JIS Z8722 Condition c standards)
<b>Size of integrating sphere</b>	Φ40mm
<b>Illumination Light source</b>	CLEDs(entire wavelength balanced LED light source)
<b>Sensor</b>	dual light path sensor array
<b>Wavelength range</b>	400-700nm
<b>Wavelength interval</b>	10nm
<b>Half spectral width</b>	5nm
<b>Reflectivity range</b>	0-200%
<b>Reflectivity resolution</b>	0.01%
<b>Observation angle</b>	2°/10°
<b>Measurement light source</b>	A,C,D50,D55,D65,D75,F1,F2,F3,F4,F5,F6,F7,F8,F9,F10,F11,F12,DLF,TL83,TL84,NBF,U30,CWF
<b>Data being displayed</b>	sample's color values, reflectance, color difference values/graph, pass/fail results, color error tendency, color simulation, display measurement area, bhistory data color simulation, manual input standard sample, generate measurement report
<b>Measurement time</b>	About 1 second
<b>Measurement time interval</b>	0.5 second
<b>Measuring caliber</b>	Φ11mm
<b>Color space</b>	CIE-L*a*b,L*C*h,L*u*v, XYZ, Yxy, reflectance, Hunterlab, Munsell MI, CMYK,RGB,HSB
<b>Color difference formulas</b>	$\Delta E^*ab, \Delta E^*CH, \Delta E^*uv, \Delta E^*cmc(2:1), \Delta E^*cmc(1:1), \Delta E^*94, \Delta E^*00, \Delta Eab(Hunter), 555color$ classification
<b>Other colorimetric indices</b>	WI(ASTM E313-00,ASTM E313-73,CIE/ISO, AATCC, Hunter, Taube Berger Stensby), YI(ASTM D1925,ASTM E313-00, ASTM E313-73), Tint(ASTM E313,CIE,Ganz),metamerism index Milmm, adhesive/changing color fastness, ISO luminance,8 gloss, A density, T density, E density, M density

**►► TECHNICAL DATA**

<b>Repeatability</b>	Chromaticity values: $\Delta E^*ab \leq 0.015$ (After calibration, standard deviation of 30 measurements on test white board, 5 second intervals), Maximum:0.03
<b>Battery capacity</b>	rechargeable, 20000 continuous tests, 7.4V/6000mAh
<b>Interface</b>	USB
<b>Data storage</b>	40000 test results
<b>Light source longevity</b>	5 years, 1.5 million tests
<b>Inter-instrument agreement</b>	$\Delta E^*ab$ within 0.2(BCRA color charts II, average of the 12 charts)
<b>Size</b>	350*300*200mm(L*W*H)
<b>Weight</b>	4.5kg
<b>Display</b>	5 inches True color screen
<b>Work temperature range</b>	0~45°C, relative humidity 80% or below (at 35°C), no condensation
<b>Storage temperature range</b>	-25°C to 55°C, relative humidity 80% or below ( at 35°C), no condensation
<b>Standard accessories</b>	AC power line, operating manual, color management software, drive software, electronic operating manual, color management guide, USB cable, black/white calibration tube, measurement and test report
<b>Optional accessories</b>	powder molding device,40*10 cuvette
<b>Color matching system</b>	Matches
<b>UV light source</b>	without



▶▶ **APPLICATION**

**Fabric Color Measurement**



**Opaque Liquid Color Measurement**

