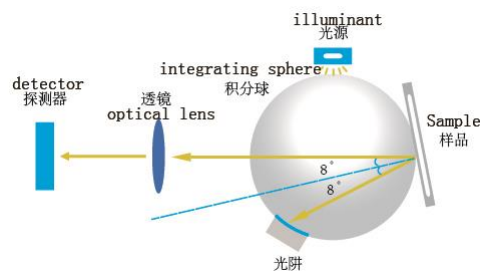


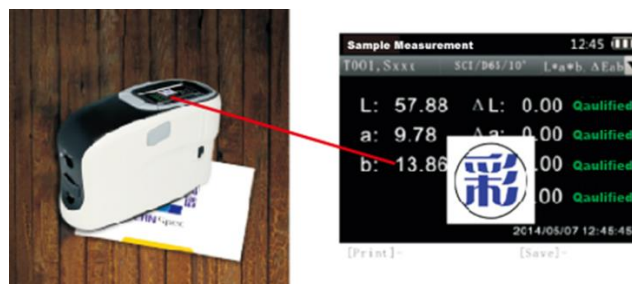
Spectrophotometer CS-650



- 1) Our device adopts internationally agreed observe condition D/8 (Diffused illumination, 8°viewing) and SCI (specular component included)/SCE(specular component excluded). It could be used for metallurgy industry, paint industry, textile industry, plastic industry, food industry, building material industry and other industries for color measurement.



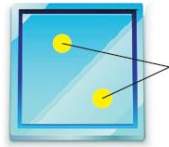
- 2) Camera to view the testing area
Our spectrophotometers include a camera; the user can clearly see the measurement area to avoid measurement errors.



- 3) CLEDs light source – spectrally balanced LED light source (Patent Right No.: ZL2013107548347)
LED light source that has balanced intensity across visible spectrum avoids the spectral deficiency in certain parts of the spectrum in common white LEDs, and guarantees the

6) Automatic gloss compensation technology (Patent Right No.: ZL20130519382X)

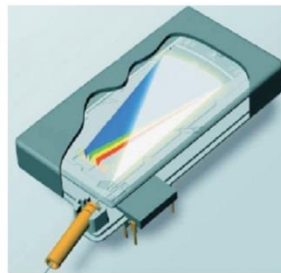
Different gloss or different instrument's lighting or observation conditions will largely affect the measurement of color. The automatic gloss compensation technology guarantees the accuracy of color measurement data for surfaces of different gloss. This research finding is published in international leading journal Optik.



The same color in different gloss will lead to different measured data.

7) Innovative SCS optical engine (Patent Right No.:ZL201210337619.2)

Adopt innovative single-grating-dual-light-paths light splitting system: SCS optical engine which creates the best measurement repeatability for portable spectrophotometers in the industry, and guaranteed accurate measurement.



8) Device Guarantee



9) Technical Data

Type	CS-650
Illumination	d/8(Diffused illumination, 8 degree viewing), SCl(specular component included)/SCE(specular component excluded) simultaneous measurement (conform to CIE No.15, ISO7724/1, ASTM E 1164, DIN5033 Tei17, JIS Z8722 condition C standard)
Size of integrating sphere	Φ40mm,Avian diffused reflection surface coating
Illumination Light source	Pulse Xenon Lamp
Sensor	dual light path sensor array
Wavelength range	360-740nm
Wavelength interval	10nm
Half spectral width	5nm
Reflectivity range	0-200%
Reflectivity resolution	0.01%
Observation angle	2°/10°
Measurement light source	A,C,D50,D55,D65,D75,F1,F2,F3,F4,F5,F6,F7,F8,F9,F10,F11,F12,DLF,TL83, TL84,NBF,U30,CWF
Data being displayed	Reflectance curve /data, color values, color difference values, pass/fail, color tendency, color simulation, camera view, historical data color simulation, manually input standard, generate measurement report
Measurement time interval	1 second
Measurement time	2 seconds
Color space	CIE-L*a*b, L*C*h, L*u*v, XYZ, Yxy, Reflectance Hunterlab,Munsell MI,CMYK,RGB,HSB
Color difference formulas	ΔE^*ab , ΔE^*CH , ΔE^*uv , $\Delta E^*cmc(2:1)$, $\Delta E^*cmc(1:1)$, ΔE^*94 , ΔE^*00 ΔEab (Hunter),555 shade sort
Other colorimetric indices	WI(ASTM E313-10,ASTM E313-73,CIE/ISO, AATCC, Hunter, Taube Berger, Ganz, Stensby); YI(ASTM D1925, ASTM E313-00,ASTM E313-73); Tint(ASTM E313,CIE,Ganz) Metamerism index Milm, Stick color fastness, Color fastness ISO luminance, 8 gloss, A density, T density, M density, E density
Repeatability	light splitting reflectivity: standard deviation within 0.08%
	color values: $\Delta E^*ab \leq 0.02$, Maximum:0.04
Battery capacity	rechargeable, 10000 continuous tests, 7.4V/6000mAh

Interface	USB
Data storage	20000 test results
Light source longevity	5 years, 1.5 million tests
Inter-instrument agreement	ΔE^*_{ab} within 0.2(BCRA color charts II, average of the 12 charts)
Size	181*73*112mm(L*W*H)
Weight	about 550g(does not include battery's weight)
Display	True color screen that includes all colors
Work temperature range	0~45°C, relative humidity 80% or below(at 35°C),no condensation
Storage temperature range	-25°C to 55°C, relative humidity 80% or below(at 35°C),no condensation
Standard accessories	power adapter, lithium battery, manual, color QC software, USB cable, black/white calibration tile, protective cover, portable bag, packing list, warranty card

10) Application



11) Packing List



Qty.	Name	Qty.	Name
1	Main Instrument	1	Power Line
1	Operating Manual	1	USB Cable
1	Driving Software	1	Black/White Calibration Tile
1	Color QC Software	1	Verification Certification
1	Packing List	1	Warranty Card