

CS-3820N

Color Spectrophotometer



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Analytical Technologies Limited

An ISO 9001 Certified Company

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Color spectrophotometer CS-3820N made by ATL is all-in-one spectrophotometer which can measure both reflectance and transmittance. It is widely used for many industries for surface color measurement of paint, plastic, master batches, pigment, textile, printing products, food, chemical and other kinds of materials.

▶▶ Product Advantages

Transmittance and reflectance in one instrument

Transmittance measurement: D/O Geometry (diffuse illumination, 0 degree viewing) to measure liquid APHA, Pt-Co index, Gardner index and other parameter measurement.

D/8 geometry, simultaneous SCI/SCE measurement

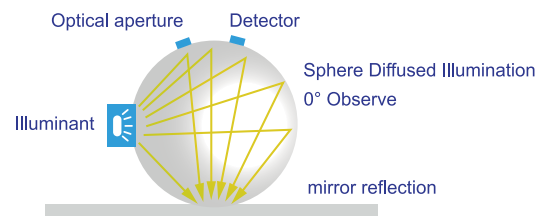
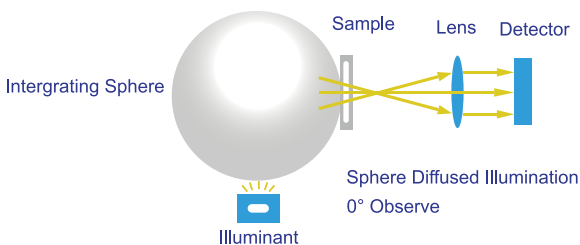
Reflectance measurement: D/8 Geometry (diffuse illumination, 8 degree viewing)

4 Testing Calibers

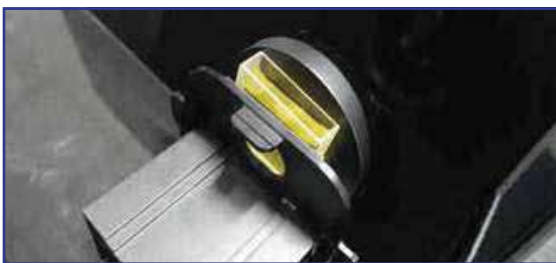
CS-3820N contains 4 kinds of testing calibers and the largest reaches 25.4mm to meet the color measurement requirement for different kinds of materials.

Double optical path spectrum analysis technology

Simultaneously obtains the sample reflection signal and the light source intensity signal, guarantees the instrument measuring accuracy and the long-term repeatability.



▶▶ Application Examples



▲ Liquid



▲ Spraying Industry



▲ Paint



▲ Plastic



▲ Building materials

►► Technical Data

Type	CS-3820N
Illumination / Viewing System	Viewing:2°/10° Reflectance: d/8 (diffused illumination, 8 degree viewing) Simultaneous measurement of SCI /SCE (conforms to CIE No.15, IS07724/1,ASTM E1164,DIN5033 Teil 7, JIS Z8722, Condition c standard)Transmittance: d/0 (diffused illumination, perpendicular reception)
Integrating Sphere Illumination	15.2cm, Avian-D Fully diffuse reflective surface coating CLEDS
Detector	Dual optical sensor array
Wavelength	400-700nm
Wavelength Pitch	10nm
Half Band Width	5nm
Reflectance Range / Resolution	0-200% 0.01%
Light Source	A,C,D50,D55,D65,D75,F1, F2, F3, F4, F5, F6, F7,F8,F9, F10, F11,F12,CWF,U30,DLF,NBF,TL83,TL84
Display	Reflectance graph/value, chromaticity value, color difference values, color assessment results, color tendency, display measurement area, history color value simulation, manual input standard sample, generate measurement reports
Measurement Caliber	Large (LAV):2.54cm (1 inch) Medium (MAV):1.5cm (0.6 inch) Small (SAV):0.75cmx1.01cm (0.3inchx0.4inch) Extra Small (VSAV):0.3 cmx-0.8cm (0.12inchx0.31 inch)
Measurement Time	2s
Color Space	CIE-L*a*b, L*Ct, L*u*v, XYZ, Yxy,Transmittance,Hunterlab, Munsell, MI,CMYK, RGB,HSB
Color Difference Formula	AE*ab, 4E*CH, 4E*uv, 4E*cmc(2:1), 4E*cmc (1:1), 4E*94, AE*00,Eab (Hunter), 555 shade sort
Other Indicators	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 E313-00, CIE, Ganz), Metamerism index Milm, staining fastness, color fastness, APHA, Pt-Co Index, Gardner, ISO Brightness, Saybolt, ASTM color, Haze.

Repeatability	Standard deviation within 0.08%; Chromaticity value: AE*ab 0.015 (When a white calibration plate is measured 30 x at 5-second intervals after white calibration), max. 0.03
Inter-instrument agreement	Within AE*ab 0.2 (BCRA Series II, average measurement of 12 color charts)
Interface	USB
Power	117VAC/50-60Hz, 230VAC/50-60Hz
Working Temperature	0-45°C, relative humidity 80% or below (at 35°C); no condensation



Painted Metal Samples

Test Condition	
Test Mode:	Reflectance
Light Source and Angles:	D65/10°
Test Parameter	L*a*b
Test Method	
One sample measure one same point to get the test result.	
Test Result	

				Test Result					
Test Condition				Datacolor 800V			ATL CS-3820N		
Name	Test Mode	Light Source	Angle	L*	a*	b*	L*	a*	b*
Sample 1	SCI	D65	10°	50.66	44.26	3.48	50.44	43.31	2.77
Sample 2	SCE	D65	10°	42.47	-8.18	17.39	42.53	-8.37	17.65
Sample 3	SCI	D65	10°	64.89	36.14	-16.09	64.65	35.2	-15.62
Sample 4	SCE	D65	10°	75.21	-30.31	1.69	74.77	-29.75	2.05
Sample 5	SCI	D65	10°	83.25	-3.5	-12.29	82.77	-3.45	-12.09

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Our Products & Technologies



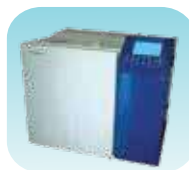
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Infra FTIR



Optima Gas Chromatograph 3007



Optima Gas Chromatograph 2979 Plus



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DSC/TGA



Semi Auto Bio Chemistry Analyzer



HEMA 2062 Hematology Analyzer



Micro Plate Reader/Washer



URINOVA 2800 Urine Analyzer



Total Organic Carbon 3800



Fully Automated CLIA



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PCR/Gradient PCR/ RTPCR



TOC Analyzer



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