

Color Spectrum

Color Spectrophotometer



EPC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

An ISO 9001 Certified Company

www.analyticalgroup.net

Highly precise spectrophotometer-ColorMate measures the color differences between batches or between products and standard. Using the versatile color indices, ColorMate is ideal for the most of color measurement which can be applied to the various applications. We offer our ColorMate to the customers in various fields including paint, textiles, plastics, chemicals, coating, food, paper, etc.

►► **Features:**

1. High repeatability & high accuracy

Highly accurate data through the dual beam structure
Implementation of high reproducibility up to 0.01 RMS level

2. Switchable SCI / SCE mode control

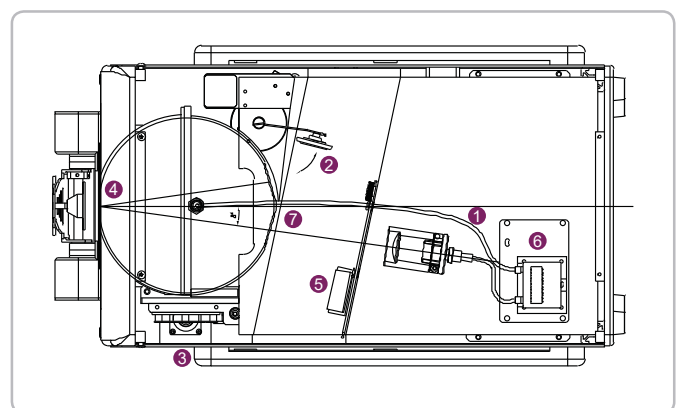
ColorMate can measure both the SCI and SCE mode by controlling the light trap.

Specular component included (SCI) geometry is suitable for actual color content or doing color formulation.

Specular component exclude (SCE) is for measurement of appearance and appearance difference as seen by eye.

3. Pulsed xenon arc lamp

The light source is the pulsed xenon arc lamp which provides long-lasting life time and reliable repeatability in all the color measurement applications.



4. Automatic recognition of sample aperture size

Three types of the reflectance apertures are provided as standard accessories

(LAV,(large area view), (28 mm))

(MAV, (medium area view), (11 mm))

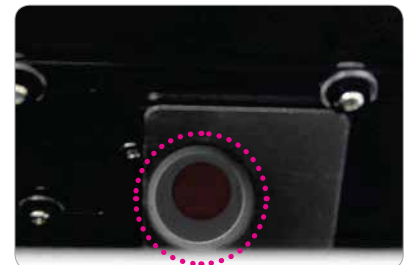
(SAV, (small area view), (6 mm)).

User can choose the proper aperture depending on the sample size, and each aperture is automatically recognized in the system.



5. Observing mirror for exact sample loading

Exact sample loading by using the slide-type observing mirror that enables the user to check whether the sample is properly loaded.



6. 256 pixel PDA detector

With the combination of optimized optical structure and PDA, data can be simultaneously processed on the full wavelength range (360 ~ 750 nm) in a very short time. It also provides excellent reproducibility and high accuracy.

7. Diffuse : 8° geometry

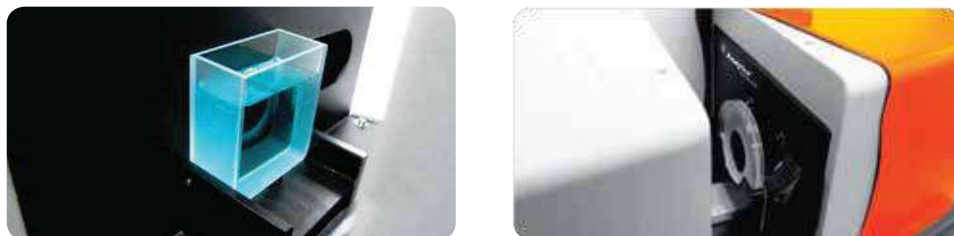
In case of the reflectance measurement, CIE, ASTM, DIN and JIS require the di : 8° geometry (diffuse illumination / 8° viewing). With this geometry adopted, the light source is diffused in the integrating sphere and gets reflected or transmitted depending on the sample type.

8. 6-inch integrating sphere

6-inch integrating sphere is adopted and it is coated with the Barium Sulfate (BaSO_4) by the Analytical Technologies's own technology.

9. Transmittance and transmittance haze measuring function

Apart from measuring the reflectance of the opaque sample, ColorMate can also measure the spectral transmittance of liquids / sheet / plate sample. Since the sample can be measured with the sample compartment open, transmittance of the samples such as glass and film can be measured regardless of the size. Also, transmittance haze of the transparent sample can be measured.



10. Changeable position of the system (Vertical or Horizontal)

Any types of sample can be measured. It can be specialized for the measurement of a powder type (an indeterminate form) sample by placing the equipment perpendicularly.



11. UV control for fluorescence-activated sample

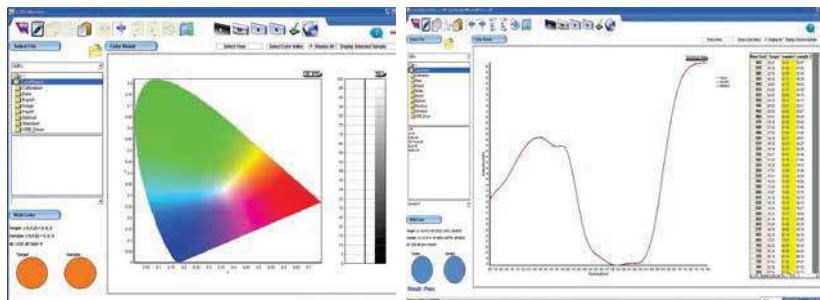
Data of the samples such as a clothing or a paper that has been processed with the fluorescent whitening agent (FWA) can be accurately measured with the UV light adjustment.

Color Master Software



The color quality control software in the best combination with ColorMate

ColorMaster is a software that accommodates the user in sample measurement and data collection with ColorMate, a highly-advanced color spectrophotometer. ColorMaster can be used in experiment, quality test and quality control of any sample type, measuring its color, reflectance, transmittance and transmittance haze. ColorMaster software can be easily operated under the Microsoft Windows XP and Windows 7 environments and it allows the user to obtain various types of result data.



Measure

- Reflectance
- Transmittance
- Color
- Transmittance Haze
- Yellowness
- Whiteness
- Metamerism
- K/S
- Brightness
- Opacity
- APHA / Gardner

Easy to use

Various color scales are available for the verification of the measured data. Also, it is easy for the user to check the color difference value.

Intuitive graphical user interface

Selected color indices; all traceable in a single window
The color difference value and the color value that the user desires to see can be checked in a single window.

User-selectable parameters and tolerances

Pass / Fail verification available on any color scale using the tolerance set-up

Customizable printing format

Depending on the applications, a user can choose to check only the Pass / Fail result or get the full analysis result for the R&D research. Partial printing for the selected parts are also available.

User-friendly validation

Easy equipment inspection using the validation program



WIDE RANGE OF APPLICATIONS

Required to control colors in the products, ColorMate and ColorMaster software are widely used in variety of industries, and provide easy and user-friendly operation and reliable data acquisition.



Plastic Industry

- Color measurement, Transmittance haze, Yellowness and Whiteness in the plastic industry
- Film, Resins, Plaques, Pellets, Molded samples, etc.

Textile Industry

- QC, Process control, Shade sorting, etc. as well as Color measurement in the textile industry
- Dyes, Fiber, Fabric, Clothes, Texture, etc.

Paper Industry

- Color, Brightness and Opacity of Paper & Pulp

Paint Industry

- QC, Process control, Color formulation In the paint industry
- Pigments, Dyes, Ink, etc.

Pharmaceutical Industry

- Color measurement, Whiteness, etc. for Pharmaceutical products
- Powder, Capsules, Tablets, Syrups, etc.

Food Industry

- Mainly color measurement for various sample ranging from liquid such as juices and sauce, meat, snacks to cereals, even non-uniform shape samples

Chemical Industry

- APHA, Gardner, Transmittance haze, Yellowness, Whiteness, etc. including color measurement for chemical and petroleum, regardless of sample types such as powder, liquid, fibers, tablets, pellets, pastes, etc.

Other Industries

- Cosmetics, Agriculture, Automobile, etc.

INSTRUMENT SPECIFICATIONS

Observation System	d / 8° (diffused illumination, 8-degree viewing)
Detector	256 pixel silicon photodiode array
Integrating Sphere Size	6 inch
Optics	Dual Beam
Wavelength Range	360 ~ 750 nm
Illumination	Pulsed xenon arc lamp

Wavelength Interval	5 nm
Repeatability	Spectral reflectance : 0.1% (STDEV)
	Colorimetric values : 0.01 (ΔE^*ab)
Inter-Instrument Agreement	Mean dE^*ab 0.1 Average for 12 standard color tiles. Max dE^*ab 0.3 for any of 12 standard color tiles. Spectral reflectance 0.5% for any of 12 standard color tiles.
Photometric Range	0 to 200% Reflectance
Photometric Resolution	0.001%
Reflectance Apertures	28, 11, 6 mm
Total Transmittance Aperture	25 mm
Dimensions	27.5 x 28.5 x 49.5 cm (10.8 x 11.2 x 19.5 inch)
Weight	15 kg (33 lb.)
Interface	RS-232, USB to RS-232 converter

Software SPECIFICATIONS

Illuminants	A, C, D50, D55, D65, F1~F12
Observer	CIE Standard Observers : 2° or 10°
Various Color Indices	Whiteness (CIE, ASTM E313, Stephansen, Taube, Harrison, Hunter, Stensby, Berger), Yellowness (ASTM E313, D1925, DIN6167), Tint (CIE, ASTM E313), Dominant Wave, Purity, Opacity, Brightness, APHA, Gardner, Metamerism Index, Strength, Gray Scale for assessing staining, Gray Scale for assessing change in color, Standard Depth (1/1), Transmittance Haze, Total Transmittance, Diffuse Transmittance
Color Scales	CIE $L^*a^*b^*$, CIE $L^*u^*v^*$, CIE XYZ, CIE Yxy, CIE UCS 1976, Hunter Lab
Statistical Quality Analysis	Mean average on each data field Standard deviation on each data field Trend Plots Histogram with Tolerances
Tolerances Setting for Pass / Fail function	Users can set the tolerance limits.
	Automatically calculated using statistical result
Operating System	MS Windows XP or 7

▶▶ **HPLC Servicing, Validation, Trainings and Preventive Maintenance :**

- HPLC Servicing : We have team of service engineers who can attend to any make of HPLC promptly @the most affordable cost.
- Trainings :We also take up preventive maintenance to reduce downtime of HPLC’s Trainings.
- AMC’s/CMC : We offer user training both in-House and at customer sites on PLC principles, operations, troubleshooting.
- Validations : We have protocols for carrying out periodic Validations as per GLP/ GMP/U SFDA norms.
- Instruments : We offer instruments/Renting Services Modules like pumps, detector etc. on Rent.



▶▶ **About Analytical Technologies**

Analytical Technologies is synonymous for offering technologies for doing analysis and is the Fastest Growing Global Brand having presence in at least 96 countries across the globe. Analytical Technologies Limited is an ISO :9001 Certified Company engaged in Designing, Manufacturing, Marketing & providing Services for the Analytical, Chromatography, Spectroscopy, Bio Technology, Bio Medical, Clinical Diagnostics, Material Science & General Laboratory Instrumentation. Analytical Technologies, India has across the Country operations with at least 4 Regional Offices, 6 Branch Offices & Service Centers. Distributors & Channel partners worldwide.

▶▶ **Our Products & Technologies**

						
UV/VIS Spectro 2080+ Double Beam	Infra FTIR	Optima Gas Chromatograph 3007	Optima Gas Chromatograph 2979 Plus	Flash Chromatograph	Atomic Absorption Spectrophotometer	Liquid Partical Counter
						
Optical Emission Spectrophotometer	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	NOVA-2100 Chemistry Analyzer	PCR/Gradient PCR/ RTPCR	TOC Analyzer	Laser Particle Size Analyzer	Ion Chromatograph	Water purification system

▶▶▶ Regulatory compliances



▶▶▶ Corporate Social Responsibility

Analytical Foundation is a Nonprofit Organization (NGO) found for the purpose of:



Analytical Foundation

1. Research & Innovation Scientist's awards / QC Professional Award : Quality life is possible by innovation only and the innovation is possible by research only, hence ANALYTICAL FOUNDATION is committed to identify such personalities for their contributions across various field of Science and Technology and awarding them yearly. To participate for award, send us your details of research / testing / publication at info@analyticalfoundation.org

2. Improving quality of life by offering YOGA Training courses, Work shops / Seminars etc.

3. ANALYTICAL FOUNDATION aims to DETOXYFY human minds, souls and body by means of Yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.

4. buy our products and be a part of social cost of analytical foundation.

▶▶▶ Reach us @



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