

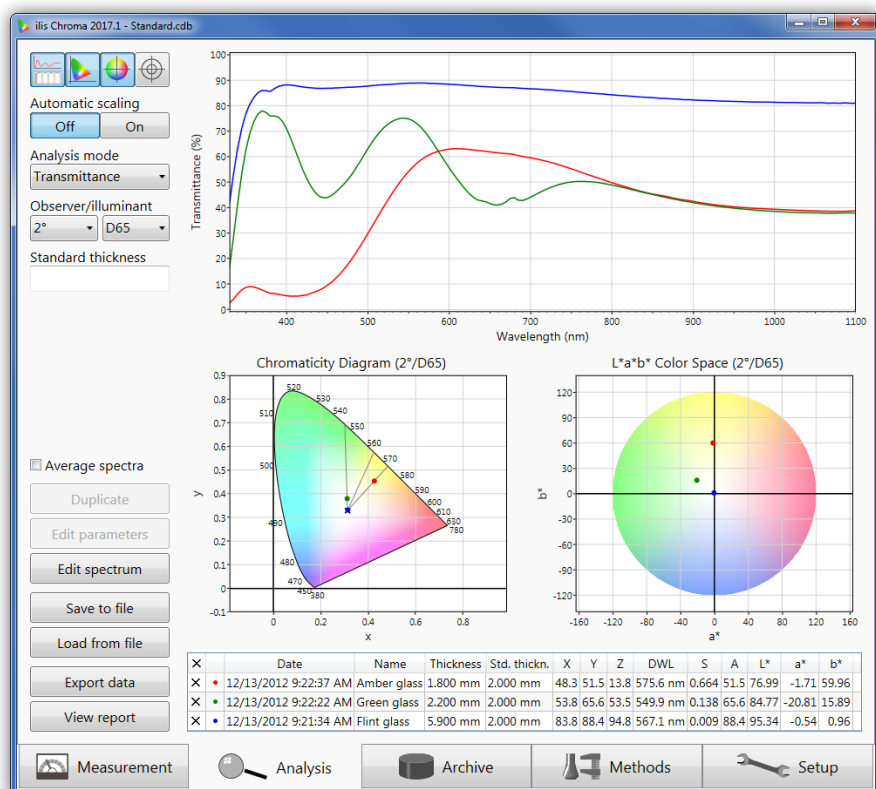
Chroma™



Powerful software package for optical spectrum analysis and color measurement

Color can be of decisive significance for the commercial success of a product. Especially when using natural or recycled raw materials with fluctuating chemical composition, the continuous and objective control of the color effect is an essential precondition for an unchanging quality.

Using the Chroma software package and a PC-controlled spectrophotometer, spectral characteristics of solids and fluids can be accurately determined and color values can be calculated and displayed.



Your Benefits

Optimization of quality by stabilization of the color

Modern and convenient user interface

Easy data management through integrated database

Direct control of many spectrometer types

Chroma™ Spectrum – Color – Glass

Basic functions	Spectrum	Color	Glass
Transmission measurement in air with correction of the surface reflectance (constant factor or refractive index interpolation acc. to Sellmeier, Schott or Cauchy equation)	✓	✓	✓
Transmission measurement in immersion with correction of the absorbance (dimethyl phthalate, monochlorobenzene or user-defined spectrum)	✓	✓	✓
Reflection measurement with correction of the white standard and the black reference	✓	✓	✓
Import of spectral data from various file formats	✓	✓	✓
Normalization of transmittance spectra for any layer thickness	✓	✓	✓
Graphical presentation of transmittance, absorbance and reflectance spectra with direct comparison of up to ten measurements	✓	✓	✓
Simulation of transmittance spectra based on user-defined absorbance spectra	✓	✓	✓
Data export to CSV files for further processing in other programs	✓	✓	✓
Creation of configurable measurement reports according to the WYSIWYG principle	✓	✓	✓
Convenient management of all measuring parameters in methods	✓	✓	✓
Definition of nominal values and/or limit values for all calculated parameters	✓	✓	✓
User-defined attributes for organizing measurements	✓	✓	✓
Extendable by customer-specific calculations	✓	✓	✓
User access control with convenient rights management	✓	✓	✓
Database			
Automatic storage of all measurements into the integrated database	✓	✓	✓
Comprehensive list view of all measuring results	✓	✓	✓
Filtering by multiple criteria (date, name, attributes, etc.)	✓	✓	✓
Management of standards for fast access to reference measurements	✓	✓	✓
Statistical analysis using trend charts	✓	✓	✓
Color analysis			
Tristimulus values (X, Y, Z) and chromaticity coordinates (x, y, z) acc. to ISO 11664-3:2012		✓	✓
Helmholtz color values (DWL, S, A) with presentation in the chromaticity diagram (CIE 1931/1964)		✓	✓
CIELAB color values (L^* , a^* , b^* , C_{ab}^* , h_{ab} , ΔL^* , Δa^* , Δb^* , ΔC_{ab}^* , Δh_{ab} , ΔH_{ab}^* , ΔE_{ab}^*) acc. to ISO 11664-4:2008 with presentation in the $L^*a^*b^*$ color space (CIE 1976)		✓	✓
Graphical presentation of the CIELAB values relative to nominal values or a selected standard		✓	✓
Reference to 2° or 10° standard colorimetric observer (ISO 11664-1:2007) and standard illuminants A or D65 (ISO 11664-2:2007) or illuminant C (CIE 15:2004)		✓	✓
Serial measurement			
Measurement and simultaneous display of up to ten spectra			✓
Automatic calculation and presentation of the mean spectrum			✓
Archiving as individual measurements or as an averaged measurement			✓
Direct control of automatic sample changers			✓
Glass analysis			
Parameters T_e , T_v , T_{UV} , R_e , R_v , R_a , T_{df} , F_{sd} for glazings acc. to ISO 9050:2003 / EN 410:2011			✓
Light transmittance T_L of greenhouse glass acc. to NEN 2675:1990			✓
Parameters $Y_{A/2}$, $Y_{D65/10}$, $\Delta L/2^*$, ΔE_{ab}^* , $L/2$, T_{NIR} , T_{UVA} and T_{UVB} for automotive glazings			✓
Parameters T_{UV} , T_{DS} , R_{DS} and T_{TS} for AM 1 and AM 1.5 acc. to ISO 13837:2008			✓
Redox state of flint glass (Fe^{2+}/Fe^{3+} ratio) acc. to Bamford/Hudson			✓
Fe^{2+} and Fe^{3+} concentrations acc. to Lambert-Beer law			✓
Inspectability of amber glass (A_{min} , I) acc. to VLB Berlin			✓
Color determination of bottle glass according to Weiffen (WX, WY, WZ, DGL, P, B)			✓
Predefined absorbance spectra for common coloring oxides (Fe, Cr, Co, Cu, Ni, Mn, Er, Nd, Pr)			✓
Compatible spectrometers (others on request)			
PerkinElmer Lambda 2, 12/14, 20/40, 25/35/45, 800/900, 650/750/850/950/1050			
Shimadzu UV-1600/1700/1800/1900, UV-2600/2700			
Spectronic CamSpec M501, M550			
HunterLab UltraScan PRO, UltraScan VIS, ColorQuest XE			
ilis SmartSpec VIS / tec5 MultiSpec MMS1			

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