

SPECTORD® PLUS

Applications in Material Analysis

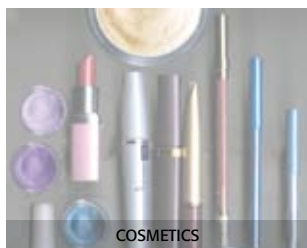


Optical properties as indicator for product quality

The optical properties of different materials are an attribute of their quality. The UV/Vis spectrophotometer SPECTORD® PLUS can be equipped with specific accessories and is best suitable for the determination of optical properties like transmittance, reflectance, color, haze or luminous of solid materials. These tasks are of particular interest in paper and textiles industries as well as optical and plastic industries, color industries and many more.

The diffuse reflectance accessory with integrating sphere for SPECTORD® PLUS is outstandingly suited for diffuse reflectance measurements of solids with textured (rough, grained, etc.) surfaces and powder samples as well as for diffuse transmittance measurements of light scattering samples. The obtained diffuse reflectance or transmittance spectrum is the basis for calculating parameters as color coordinates, white and yellow indices, etc. using the WinASPECT® PLUS software.

The scanning attachment for solid samples provides locally resolved spectra for large-scale, solid, transparent samples. The spectra of the sample are recorded in user defined resolution and analyzed for a total area. This simplifies the precise determination of properties as structure or quality of coatings for large surfaces.



Transmittance, Haze, Luminous

The standard for the determination of transparent materials provides the use of an integrating sphere, to ensure the uniform illumination of the receiver surface in the photometer, independent of any influence (scattering, deflection) on the beam by the sample. Hence the accuracy of the measurement results can be improved.

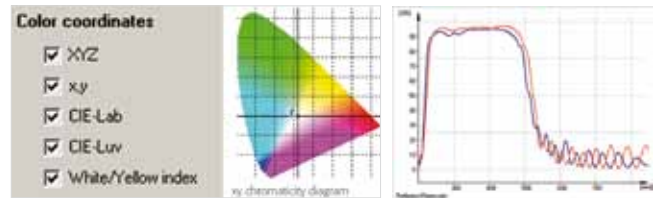
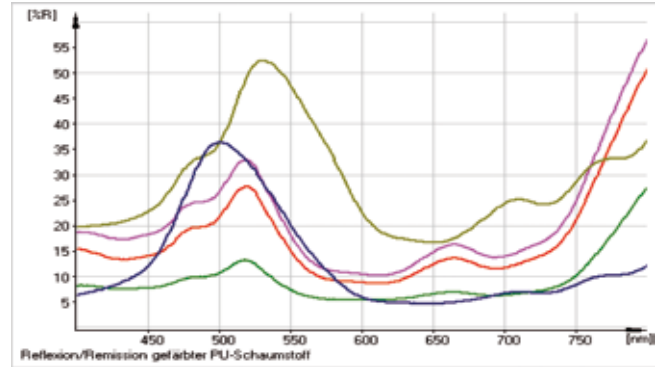
Color

For the determination of the color, Vis spectra are scanned and evaluated using the color software. This software offers the possibility of calculating different color indices with consideration of different angles of view and light models.

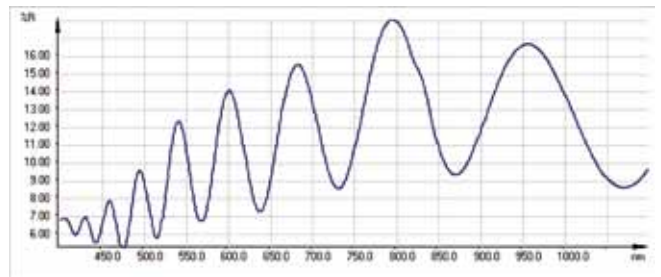
White/Yellow index

The white index is intended to compare the similarity of the shade with ideal white; the yellow index describes the absence of brightness or shades of gray in a color. By means of the color software it is possible to calculate the white and yellow indices conforming to the norms of ASTM E 313-67 and DIN 6167.

Numerous reflectance attachments offer the possibility to measure the reflectance of coated samples or layer thickness determination.



Material	White index	Yellow index
Paper	70–79	1–2
Textiles	72–76	2–3
Floor	26–31	15–17
Dentals	26–28	13–39



Recommended instrumentation

Device option	SPECORD® 50 PLUS	822-0050P-2
	SPECORD® 210 PLUS	823-0210P-2
	SPECORD® 250 PLUS	823-0250P-2
Accessory option	Integrating sphere	820-60139-P
	Variable angle reflectance accessory	820-60173-P
	Absolut reflectance accessory	820-60172-P
	Scanning attachment for solid samples	820-60262-P
	Solid sample holder	820-60090-0
Software	WinASPECT® PLUS software includes all special methods for color determinations	—