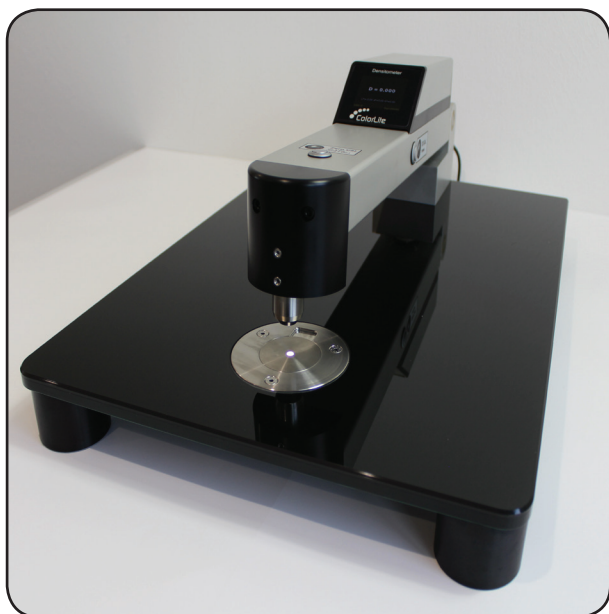# ColorLite sd350

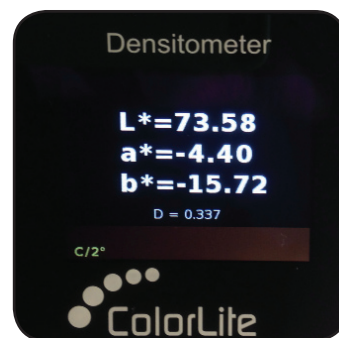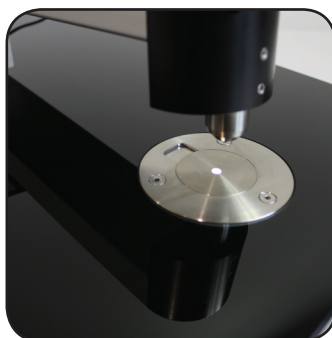## Spectral Transmission Densitometer

- LED light source - over 20 year life span

- True grating spectrometer - over 100 sampling points in the VIS range

- Solid aluminium integrating sphere as an ideal diffuse illumination source

- 2 Channel system measuring density values from 0.000 to 6.000 +/- 0.003

- Designed and „Made in Germany"

The ColorLite sd350 is a spectral densitometer designed for the high demands of the automotive industry. It measures transmission density values of optical film in the printing and screen printing industry.
The high quality device is characterised by a number of features which are not available in other densitometers on the market. From the integrating sphere light source to the high resolution spectrometer, the sd350 sets a new standard for measuring the quality of optical films.

Using high performance LED's, with a life span of over 20 years, and a grating spectrometer we can ensure perfect stability over its life time. Apart from a long life, this results in high accuracy which makes it possible to directly communicate absolute values.

A high dynamic range is guaranteed by a 2-channel system. Depending on the density of the film to be measured two separate measuring systems are used. This means density values between 0D and 6D can be measured with 3 digits after the decimal point with a precision of 0.003 density values.

The spectral transmission function is evaluated with any number of response curves that can be programmed into the software. Hereby evaluating with the CIE (Commission internationale de l'éclairage) colour matching functions, colour metric data such as L*, a*, b* can also be measured.

Features

- Designed to comply to the highest precision standards of the automobile industry.

- The ColorLite sd350 is a transmission spectrophotometer which measures the spectral transmission curve in 3.5 nm intervals. From this data various density values are calculated using functions stored in the software.

- As the complete spectral transmission characteristics are measured, various colour metric data such as the CIE L*,a*,b*-values or Y, x,y chromaticity values can be visualised.

- Display of density values with true precise 3 positions after the decimal point.

- The illumination is created in a high quality integrating sphere (Ulricht-Kugel) that is produced on a CNC controlled lathe from a solid aluminium block. The sphere surface then goes through a coating procedure, with the final coats made of an ideal diffuse barium sulphate powder as described in the DIN 5033.

- By implementing the light source using an integrating sphere (as described in the DIN 4512-8) and a real grating spectrometer, the ColorLite sd350 measures the same results as elaborate laboratory equipment.

- Variable calibration warnings for zero and D3 calibration. Warning when the calibration intervals have been reached.

- LED Illumination source with a guaranteed minimal 20-year life span.

- High resolution spectrometer of the ColorLite sd350 results in a highly accurate results and a superior inter-instrument agreement.

- By using our quality control PC software ColorDaTra emission curves for the sample film together with any light source can be calculated.

- Scans are automatically triggered by pressing the arm downwards.

- Trigger threshold is automatically determined during the zero calibration. This accounts for variations of the sample thickness.

- Zero calibration to determine the offset value of the carrier materials.

- Calibration made using a certified BAM Density 3 glass filter.

- MSA Measurement System Analysis type 1 study passed automobile industry; Determining the repeatability (50 scans) on glass filters with values between D2 and D5.

- MSA Measurement System Analysis type 2 study passed automobile industry; Determining the reproducibility on samples with measurements being repeated by different users.

- PC quality-control database software available.

- Via the USB interface measured data can be automatically uploaded to our database software - ColorDaTra - or to your own process control system.
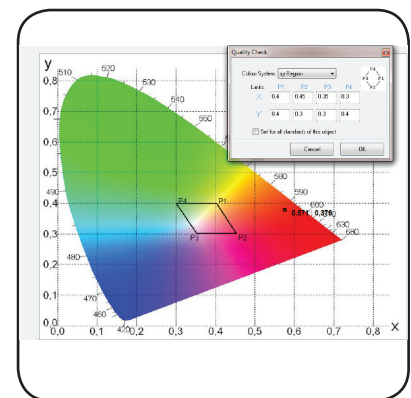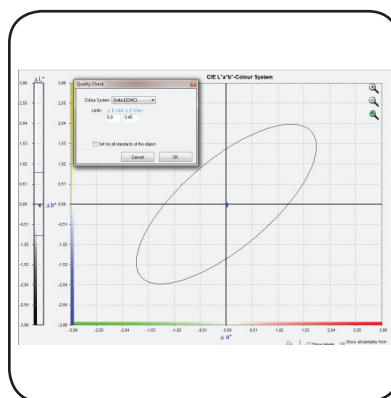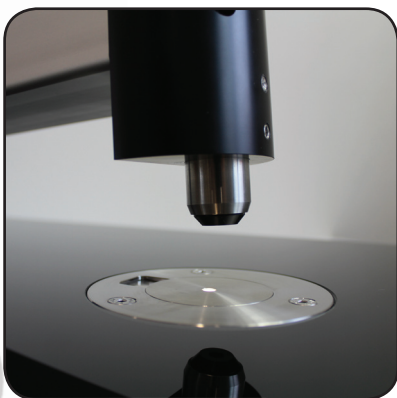
Unique selling points

- High accuracy through integrating sphere illumination and real grating spectrometer
- Changeable aperture for flexible application
- LED light source with a life span of over 20 years means high long term stability and low maintenance
- High resolution colour display
- Settings made with simple 2 button operation
- 115 measuring points per scan

- 2 channel system means high repeatability of +/- 0.003 D even at highest density values
- 350 mm maximum width of sample
- Calibration with BAM (Bundesanstalt für Materialforschung, Berlin) certified 3D glass filter
- Simple zero calibration function
- Software variable response functions

Technical Data

Measurement geometry	d/0° according to the DIN 4512-8 - Diffuse illumination with an
Standard illuminants	D65, D50, A, C, F11
Standard observer	2° and 10°
Spectral resolution	Holographic grating spectrometer. FWHM at 500 nm < 10 nm. Sampling rate 3.5 nm with 115 x 16-bit values per scan
Spectral range	400 to 700 nm
Colour metric values	CIE L*, a*, b*; Yxy; X,Y,Z
Density range	0.000 to 6.100 D
Repeatability	DD = +/- 0.003 at 3 D (MSA type 1-study - 50 measurements) DD = +/- 0.005 at 5 D (MSA type 1-study - 50 measurements)
Illumination	High performance LED's and integrating sphere
Measuring area	Variable 4 mm and 2 mm
Calibration	Zero calibration with open path. Certified BAM (Bundesanstalt für Materialforschung, Berlin) Density 3 glass filter
Accessories	Coloured and grey glass filters, PC software (optional)
Maximal sample size	700 mm
Language	English, German
Display	High resolution - TFT Colour display 1/4-VGA, 320 x 240 pixel
PC-Interface	USB 2.0
Dimensions (max.)	210 x 570 x 404 (H x L x W)
Weight	11.4 Kg
Power supply	110 - 240 VAC/50-60 Hz -
Climatic Conditions	Ambient temperature: 15°C to 45°C Relative humidity: max. 85% non-condensing

Here a few good reasons for choosing ColorLite as your partner for helping you to ensure the quality of your product colours

✓ We care about the satisfaction of you our customers, long before the purchase of a device.

✓ We are pleased to explain the basics of colour metrics, carry out sample measurements and advise you on the equipment needed.

✓ We are glad to send you a quote and meaningful product information.

✓ Using the internet and software tools like "Team Viewer" we can support you, where ever you are on the globe, quick and easy.

✓ Service through our network of woldwide distributors.

ColorLite develops and produces a wide range of quality products for colour measurement applications, mainly used in the field of quality assurance.

Our equipment is so simple to use, that even non-experts are able to carry out reliable measurements quickly and with ease.

We offer the perfect solutions for measuring all colours - no matter what material or samples. For each application, we have the right accessories. Or we can develop them for you by modifying our already available accessories!