



**Spectro-Densitometer  
TECHKON SpectroDens**

**SPECTRO  
SDENS**

**All Colors under  
perfect Control**



**TECHKON®**

# Color measurement redefined

## Multi-talent

- High-quality spectral engine
- Patented measurement head for exact and direct positioning
- Exchangeable apertures even for the smallest measurement patches
- Quick measurement (approx. 1 second)
- Durable precision

## Standardized

- Insertable polarization filter by push of a button
- Conform to ISO and DIN standards
- Exceptionally suitable for measurement of the Ugra/fogra media wedge
- Absolute white standard integrated and protected in charging console

## Power package

- Rechargeable, high-capacity batteries
- Quick recharge on practical charging console
- Up to 10.000 measurements per battery charge
- Battery level control

## Modern electronics

- Download of additional functions and device upgrades via PC

## Optimal display of measurement data

- Large, high-resolution graphic display
- Clear contrasting display screen

## At the click of a button

- Ergonomically positioned, user-friendly measurement button
- Automatic measurement function displays always the relevant values
- Measurement values can be memorized with date and time tag

## Menu-driven operation

- All measurement functions are easy selectable
- Custom configuration depending on application
- Self-explanatory operation
- Several dialog languages included

## Attractive design


- Handy and compact
- Fits your hand like a glove
- Low weight

Image in original size

## External connections

- USB-port for easy transfer of measurement data to a PC

## Four axioms of perfect measurement technology:

The new SpectroDens series is the result of many years of experience in developing and manufacturing high-quality measurement devices for the print and graphics industry. We applied four decisive principles: 

1. easy and quick operation
2. high measurement accuracy
3. robust engineering and reliability
4. ergonomic design

## A measurement device for all applications

Using measurement technology for quality assurance in print is a universally accepted practice these days. SpectroDens is your all-purpose, modern measurement device. Whether it be in pre-print for verifying proofs, for ongoing quality control at the printing press, during delivery inspection of paper and print products or in a color lab, SpectroDens is exceptionally suitable, whatever your application. Thanks to the individually adjustable display functions, you can quickly set up the device for your particular job.

## Two devices in one

The product name alone suggests the multiple uses of the device. As a spectro-densitometer, SpectroDens combines the qualities of a highly accurate spectro-photometer and an easy-to-use densitometer. Measurement is spectral, i.e. the entire color information - the spectral fingerprint of the color - is precisely registered. The measured spectral data is converted into measurement data for descriptive analysis and display:

- **Densitometric data** is widely used in quality control during the printing process.
- **Colorimetric data** is used in the evaluation of print proofs, the creation of color profiles in color management and the color matching and formulation of inks.

## Densitometry

A push of a button provides you with solid density as well as all useful additional information such as dot gain, dot area, gray balance and print contrast. In the automatic measurement mode the device always displays the relevant information instantly. You can even quickly and easily produce complete characteristic printing curves. The spectral measurement technology calculates not only density values for CMYK, but also exact data for the density of spot colors.

## Colorimetry

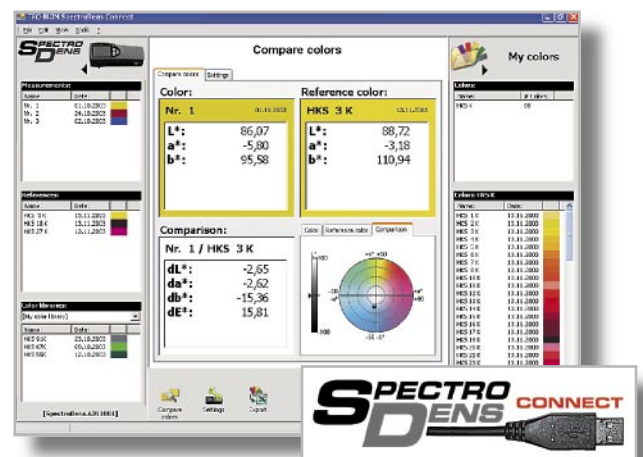
All standard colorimetric functions are displayed clearly. Even the entire  $L^*a^*b^*$ - color circle appears in the display. Reference colors and complete digital color books can be saved in the color library.

## Standardized measurement

The device works strictly according to the standards valid for the graphic industry. Select different status filters for density measurement among the device settings. A special technical feature is the polarization filter which can be activated via the push of a button.

## Comprehensive software

Connect the measurement device via USB-cable to a PC. The SpectroDens Connect software supplied with the device explicitly displays measurement data on a computer monitor. Measurement data can be transferred into Microsoft Excel or other applications. The integrated color library is especially easy to use. For example, you can load complete „digital color books“ into the device. The software also serves as the connecting module for other applications, e.g. programs for the production of characteristic printing curves or colorimetric quality control.



Apart from the standard aperture with a 3 mm diameter, we also offer easily exchangeable apertures with 1.5 x 1.5 and 2.5 x 1 mm which are particularly suitable for measuring small color bars. Even an UV-Cut filter can be inserted.

SpectroDens is particularly good at evaluating the Ugra/fogra media wedge because the device toggles between colorimetric measurement without polarization filter and density measurement with filter at the push of a button.

The solid design makes SpectroDens a reliable tool for quality assurance also in harsh environments. Easy positioning on the measurement field ensures secure and quick measurement.

We supply:

- Measurement device
- Charging console with integrated white standard
- shock-proof device case
- USB-cable
- CD with SpectroDens Connect
- Manual, ISO 9000 certificate

# Specifications

# SPECTRO DENS

## Measurement technology

Spectral remission measurement and color density determination to ISO 5-3/4

## Measurement geometry

0/45° optics to DIN 5033

## Spectral range

400 to 700 nm in 10 nm steps

## Measurement aperture

3 mm round standard  
optional (easily exchangeable):  
1,5 x 1,5 mm  
2,5 x 1 mm  
3 mm round with UV-Cut filter

## Light source

Gas-filled lamp, type A illumination

## Polarization filter

Twice linear crossed,  
Switched on and off per button release

## Measurement time

Approx. 1 second per measurement

## White reference

Absolute and relative  
Absolute white standard integrated and protected in charging console

## Illumination types / Standard Observer

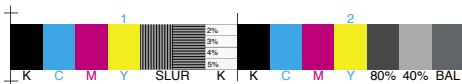
A, C, D50, D65 / 2°, 10°

## Density filter

DIN 16536, DIN 16536 NB,  
ISO/ANSI T, ISO/ANSI I, ISO E,  
Dmax (Advanced and Premium  
models only)

## Density measurement range

0,00 D - 2,50 D



## Repeatability

0,01 D  
0,03 CIE  $\Delta E_{ab}$

## Inter-instrument agreement

0,01 D  
0,3 CIE  $\Delta E_{ab}$

## Display

High-contrast, LCD-graphic display,  
240 x 160 pixels, 16 gray levels,  
contrast adjustable

## Power supply

Rechargeable Ni-MH battery,  
regulated recharge via charging  
console with A/C adapter,  
100 - 240 V, 47- 63 Hz,  
Up to 10,000 measurements  
per battery charge,  
Battery level control

## Communication-Port

USB

## Weight

520 grams

## Accessories

Small apertures, UV-Cut filter  
Print control strip TCS Film  
Print control strip TCS Digital  
Software modules for Spectrodens Connect:  
Ugra/fogra media wegde evaluation, PhotoLab

## Functions

We supply SpectroDens in three types of performance packages: The model **Basic** with the essential density functions, the **Advanced** version which adds extended densitometry functions, colorimetry and a color library and as the flagship model the comprehensive **Premium** device. You can upgrade the devices post-purchase to higher performance levels by program upload.

## SpectroDens Basic

- Automatic measurement
- Density CMYK
- Reference measurements
- Dot area, dot gain
- Gray and color balance
- Ink trapping to Preucil
- Print contrast

## SpectroDens Advanced

as the „Basic“ model, but also features:

- Spectral density for spot colors
- Characteristic printing curve
- Slur/doubling value
- Dot area to Yule-Nielsen
- Ink trapping to Brunner and Ritz
- Density spectrum
- CIE Lab,  $\Delta E_{ab}$ , XYZ, color circle
- Remission spectrum
- Color library

## SpectroDens Premium

as the „Advanced“ model, but also features:

- ColorGuide (according to ISO 12647)
- CIE LChab, xyY, Luv, LCHuv, DIN Lab99
- $\Delta E_{94}$ ,  $\Delta E_{2000}$ ,  $\Delta E_{99}$ ,  $\Delta E_{cmc}$ ,  $\Delta E_{uv}$
- Metamery index
- Whiteness, yellowness
- Pass-/fail tolerance, average
- Ugra/fogra media wedge evaluation

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## SpectroDens in the internet

Please visit our internet pages !

You will find useful information about the whole range and theme of measurement technology. Download current program versions for the SpectroDens devices. Or simply order your personal test device !



[www.techkon.com](http://www.techkon.com)

# TECHKON® - Measurement technology on the highest level