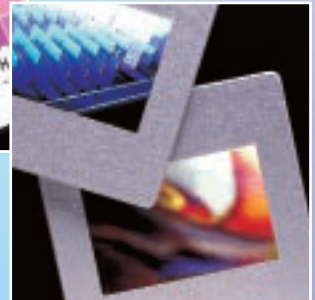


# Spectrolino™ Spectrophotometer

The Handheld System That Scores High  
In Color Measurement Precision



**gretamacbeth**  
YOUR COLOR. PRECISELY.

# One System For All Applications

**GretagMacbeth's Spectrolino is a precise color measurement instrument that can help control color through all phases of production in the graphics arts and digital imaging industries. Remission, transmission and emission? Color and paper samples, transparencies, color charts and monitors can be measured rapidly and accurately. Using this handy spectrophotometer lets you achieve top performance with little effort, ensuring consistent quality from the time that the order is placed right through to the delivery of the final printed image.**

Not only is Spectrolino remarkably easy to use (being as light as a feather and fitting easily in the palm of your hand), its outstanding technological performance makes it a highly prized tool for profes-

sionals in the graphics industry. Connect the Spectrolino to a computer, such as a PC or an Apple Macintosh, via the RS 232C interface, add the appropriate application software, and measured data can be exported and processed to meet your specific requirements.

## **Get Accurate Color Measurements You Can Trust**

Spectrolino can be positioned exactly on color and paper charts for accurate hand measurements. To ensure consistent results, Spectrolino uses an annular lens optical system. This patented, multidirectional approach to gathering light in a circle enables Spectrolino to read the target at any angle.

For monitor measurement, attach Spectrolino directly to the screen using the suction cup supplied for this purpose. Spectrolino reads the emissive light from your screen and within seconds provides the measurement data required for creating an accurate profile of your monitor.

## **Improve Efficiency By Automating The Process**

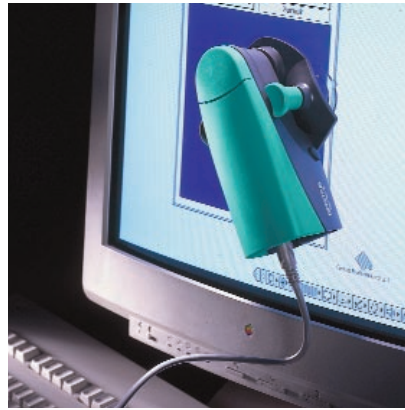
For fast, automatic and error-free measurement of color charts, mount Spectrolino on GretagMacbeth's SpectroScan™ x/y table. The printed sample is held tight to the SpectroScan table with an electromagnetic charge. In addition, there is no need to worry about exact positioning. Simply teach Spectrolino the orientation of the chart on the table by defining three corner points. Now press start and walk away. The time saved in automating the measurement of many color charts can quickly justify the investment.



**Fast and reliable:**  
*Mount Spectrolino on SpectroScan x/y table for fast, error-free color measurements.*



**Simple and accurate:**  
The shielded positioning attachment allows Spectrolino to be positioned exactly for precise hand measurements.



**Direct and exact:**  
With Spectrolino, spectral monitor measurements are made directly on the screen.



**Transparent precision:**  
It is now possible to measure transmission samples precisely using the SpectroScan T.

### **Increase Flexibility With Transmission Measurements**

For transmission measurement, you can now mount Spectrolino on the new SpectroScan T x/y table. SpectroScan T combines all the advantages of SpectroScan's proven technology with the ability to measure transparent reference samples. The supplied 1, 2 and 3 mm measurement apertures enable you to make accurate measurements in no time at all. The result: reliable quality assurance that takes just a second to achieve.

### **Measure The Color Once, Use The Data Again and Again**

Just one measurement is needed. Spectrolino automatically ships with our SpectroChart Light software. This software makes it possible to read in standard charts and store them as files that can be accessed by other software programs. SpectroChart Light

also includes an automatic link to other GretagMacbeth graphic arts software products with the ColorNet™ link. ColorNet™ allows network access to the color data, allowing it to be processed for creating color profiles, checking color quality control and converting special colors to process.

### **Innovative Software Packages From GretagMacbeth**

GretagMacbeth's complete range of software packages allow you to control color through all phases of the production process.

**ProfileMaker:** Specialists in color image processing have a high regard for the performance of Spectrolino and SpectroScan used in conjunction with the ProfileMaker software in defining the color characteristics of input and output devices. The creation of precise color profiles which meet the ICC standard is the key to successful color management.

**CMYK Conversion:** Spectrolino also supports this software system used in pre-press processing to accurately convert special colors to their nearest CMYK equivalent. With CMYK Conversion, the special colors are converted directly into the dot percentages of the process colors after being measured objectively and uniformly.

**Color Quality:** This software for continuous color quality is a must for ISO-certified companies in the graphics and ink manufacturing industries. Once the color data has been recorded by Spectrolino, they can be compared, displayed and statistically evaluated as often as required.



# Specifications

## Spectrolino

**Spectral analysis:** with a holographic diffraction grating

**Spectral range:** 380 to 730 nm

**Physical resolution:** 10 nm

**Measurement modes:** Reflection, Emission, Transmission

### Reflection:

Measurement geometry: 45°/0° ring optic, DIN 5033

Measurement aperture: 4 mm

Light source: gas-filled tungsten, type A illumination

Physical filters: D65 (approximated daylight), Pol (polarized) and No (neutral, incandescent lamp light A)

Spectra: reflection, density

Colorimetry: CIE-XYZ, CIE-xyY, CIE-L\*a\*b\*, CIE-L\*C\*h\*(a\*b\*), CIE-L\*u\*v\*, CIE-L\*C\*h\*(u\*v\*), LABmg, LCHmg, HunterLab, RxRyRz

Illumination types: D50, D65, A, C, D30...D300, F1...F12

Standard observers: 2°, 10°

White base: absolute, relative

Density standards: DIN 16536, DIN 16536 NB, ANSI STATUS A, ANSI STATUS T

Measurement time: No-Filter ca. 1 s, Pol-Filter ca. 2.5 s, D65-Filter ca. 2 s

Measurement range:

Density DIN 16536: 0.0 D – 2.5 D

Reflection:

380 – 480, 650 – 730 nm: 0...200 %

480 – 520, 600 – 650 nm: 0...150 %

520 – 600 nm: 0...120 %

Inter-instrument agreement: typically 0.3 ΔE\*CIELab (D50, 2°), average based on 12 BCRA tiles, maximally 0.8 ΔE\*CIELab (D50, 2°) on 12 BCRA tiles

Short-term repeatability: 0.03 ΔE\*CIELab (D50, 2°), mean value of 10 measurements every 10 s on white

Density repeatability: Density DIN 16536

(Repeatability ± 0.01 D):

No-Filter: 0.0 D – 2.2 D, Yellow 0.0 D – 1.8 D

Pol-Filter: 0.0 D – 2.2 D, Yellow 0.0 D – 1.5 D

### Emission:

Measurement spot size: 4 mm

Measurement range: 0...300 cd/m<sup>2</sup>

Video frequency: 50 – 250 Hz

Emission spectra: spectral radiometric emission measurement

Colorimetry: XYZ, xyY

Standard observers: 2°, 10°

Brightness base: absolute, relative

Measurement time: ca. 1.5 s

Short-term repeatability: x, y: ± 0.001 (typically, measured on white 80 cd/m<sup>2</sup>)

### Transmission (with SpectroScan T):

Measurement geometry: diffuse/specular (d/0), specular/specular (0/180) to DIN 5033

Apertures: 1 mm, 2 mm, 3 mm

Illuminant: illumination A to ISO 5/3

Spectra: transmission, density

Colorimetry: CIE-XYZ, CIE-xyY, CIE-L\*a\*b\*, CIE-L\*C\*h\*(a\*b\*), CIE-L\*u\*v\*, CIE-L\*C\*h\*(u\*v\*), LABmg, LCHmg, HunterLab

Illumination types: D50, D65, A, C, D30...D300, F1...F12

Standard observers: 2°, 10°

Density standards: DIN 16536, DIN 16536 NB, ANSI STATUS A, ANSI STATUS T

Measurement time: 5 s

Short-term repeatability: 0.5 ΔE\*CIELab (D65, 2°), mean value of 10 measurements every 15 s on 3 mm aperture, diffuse

Measurement range: standard deviation of 10 measurements every 10 s with 3 mm aperture, diffuse/specular:

density (ANSI A): Cyan 0.0 D – 2.5 D : 0.03 D

Magenta 0.0 D – 2.5 D : 0.03 D

Yellow 0.0 D – 2.5 D : 0.03 D

**Data interface specification:** RS 232C serial interface with baud rates from 110 to 57 600

**Data interface connector:** Mini DIN connector

**Power supply:** via data cable and external power supply provided

**Power supply requirements:** 90 to 270 V AC, 47 to 63 Hz

**Storage temperature:** –20°C to 50°C

**Operating temperature:** 10°C to 35°C

**Humidity:** max. 80 %, non condensing

**Physical dimensions:** length 155 mm, width 65 mm, height 63 mm

**Weight:** 230 g

## SpectroScan and SpectroScan T

**Data interface specification:** RS 232C serial interface with baud rates from 110 to 57 600

**Data interface connector:** Mini DIN and D-Sub connector

**Power requirements:** 90 to 270 V AC

**Frequency:** 47 to 63 Hz

**Power consumption:** 110 V AC 2A, 220 V AC 1A

**Storage temperature:** –20°C to 50°C

**Operating temperature:** 10°C to 35°C

**Humidity:** max. 80 %, non condensing

**Physical dimensions:** depth 53 cm, width 43 cm, height 15 cm

**Weight:** 7.5 kg

**Thickness of sample:** Reflection max. 1.5 mm, Transmission max. 0.25 mm

**Positioning precision:** ± 0.25 mm

**Positioning area:** max. 24 x 31 cm

**For more information about the Spectrolino and SpectroScan, please contact your nearest GretagMacbeth representative.**

**gretagmacbeth**  
YOUR COLOR. PRECISELY.

Switzerland:

United States:

Germany:

United Kingdom:

China:

Althardstrasse 70, CH-8105 Regensdorf, Tel: +41 1 842 24 00, Fax: +41 1 842 22 22

617 Little Britain Road, New Windsor, NY 12553-6148, Tel: 800-622-2384, 914-565-7660, (Outside USA and Canada), Fax: 914-561-0267

Siemensstrasse 11, D-63263 Neu-Isenburg, Tel: +49 61 02 79 57 0, Fax: +49 61 02 79 57 57

Macbeth House, Pacific Road, Altrincham, Cheshire WA145BJ, Tel: +44 161 926 9822, Fax: +44 161 926 9835

12A Wardley Centre, 9-11 Prat Avenue, Tsimshatsui, Kowloon, Hong Kong, Tel: +852 2368 7738, Fax: +852 2368 6717

**Visit our new World Wide Web Site at [www.gretagmacbeth.com](http://www.gretagmacbeth.com)**

™ Trademark of GretagMacbeth. GretagMacbeth is an ISO 9001 certified company.  
Apple and Macintosh are Registered Trademarks of Apple Computer, Inc.

Part No. 98.42.49 en (3/98)  
Printed in Switzerland