

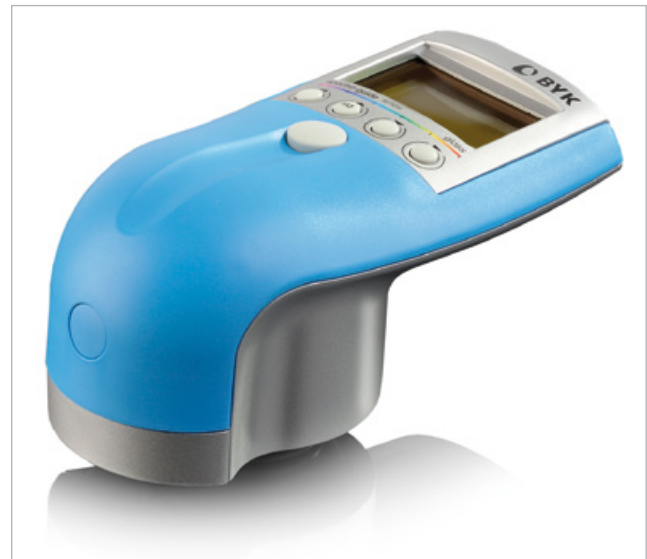
spectro-guide

Total Appearance Control – color and gloss in one unit

The overall appearance of a product is influenced by color and gloss. A sample of the same color but higher gloss level is visually perceived darker and more saturated than a low gloss sample. In order to get a uniform appearance, both attributes need to be controlled. The spectro-guide spectrophotometer is unique as it measures both attributes simultaneously. Thus, the cause of a mismatch can be clearly defined in any situation.

- Color (45/0 or sphere) and 60° gloss are displayed at the same time
- In compliance with international specifications
- Tolerances for color and gloss allow quick pass/fail decisions in production

Color	Gloss
L* 43.36	
a* 44.41	60.6
b* 25.67	



Easy to use and handle

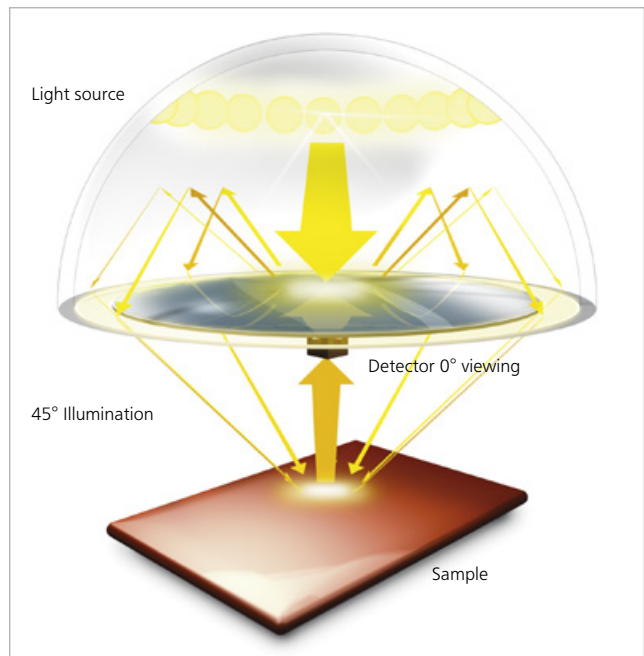
The spectro-guide spectrophotometer makes quality control simple and secure – even for color beginners. Thanks to the intuitive pulldown menu and the four-cursor button operation, quality control has never been easier.

- Light weight and small size – weighs only 500 g
- Ergonomic design – can easily measure difficult to access areas
- Designated buttons for standard and sample readings
- Customization of the display to your needs

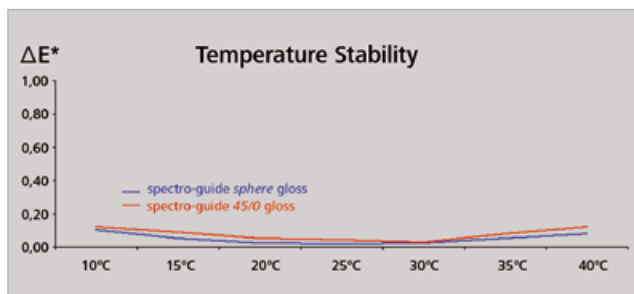


Highly repeatable on textured surfaces

The key criterion for a 45/0 instrument is a circumferential illumination. spectro-guide 45/0 is using a unique, patented measurement principle to achieve a 100% circumferential illumination. A white coated hemisphere acts as a mixing chamber and guarantees completely uniform illumination. Thus, any influence of measurement direction is eliminated and excellent repeatability even on highly textured surfaces is guaranteed.



Measurement principle spectro-guide 45/0
True circumferential illumination for best repeatability on textured samples.



Always precise color values

With the new spectro-guide spectrophotometer you can measure any color: dark – brilliant – steep reflectance curves. The 10 nm spectral resolution not only ensures highly precise color results, but also an excellent agreement with competitive color instruments – even bench-top units.

Additionally, a patented illumination control provides temperature independent results – even in extreme conditions.

Always ready to use

Economical and reliable operation of a spectrophotometer is often taken as given. spectro-guide guarantees superior accuracy for many years and low maintenance efforts.

- Long lasting standard AA batteries – up to 8,000 readings per set
- 10 year warranty on the light source – no lamp changes needed
- Rugged and compact design
- Stable, long-term calibration – needed only every three months

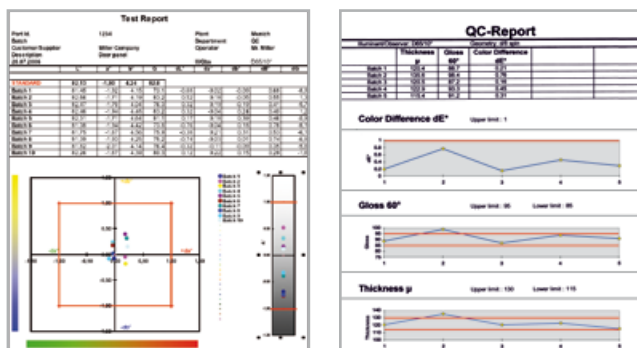


Professional Documentation with easy-link

No matter whether you want to compare a batch to a defined standard or monitor process changes over time, easy-link, included with spectro-guide, offers all of the necessary tools. Direct data transfer from the spectrophotometer into predefined QC templates makes you ready for routine color control.

Are all parts within specification?

The CIE Lab-Graph charts differences in color and lightness together with production tolerances.

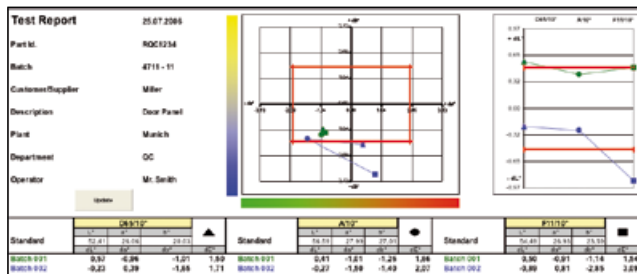


Is production stable over time?

All data are summarized in a trend graph: Color, gloss, film thickness and your own product specific information.

Do parts made out of different materials match?

Color differences are displayed simultaneously for three illuminants to control metamerism.



Ordering Information

Cat. No.	Description
4545	BYKWARE easy-link

Hardware Requirements:

Operating system: Windows® 2000 or higher
Excel® version: 2000 or higher including VBA
Interface: serial or USB port



Easy Standard Management

Manual entry of standard

If you have to match colors and the physical sample is no longer available, you can easily enter the spectral data in easy-link. The standards can then be transferred to the spectro-guide spectrophotometer for color QC.

Back-up your standard data

For safety reasons, it is recommended to store your complete database of standards on the PC. They can be downloaded with the individual tolerances to spectro-guide – whenever needed.

Establish your tolerances

The auto tolerancing function assists you in setting up the tolerances for Pass/Fail control. Measure at least 20 visually accepted production trials, transfer the readings to easy-link and have the tolerances automatically calculated for you – saving time and headaches.

spectro-guide gloss S

Color and Gloss Control of automotive interior parts

Most people consider color and gloss harmony of the car interior to be a key item when judging the perceived quality of a vehicle. Consequently, the quality requirements for the interior design of a car have increased over the last years. A variety of materials are used and need to be harmonized. To achieve a uniform look among the interior trim parts, very tight tolerances are specified. Only instruments with excellent precision are able to objectively control the production.



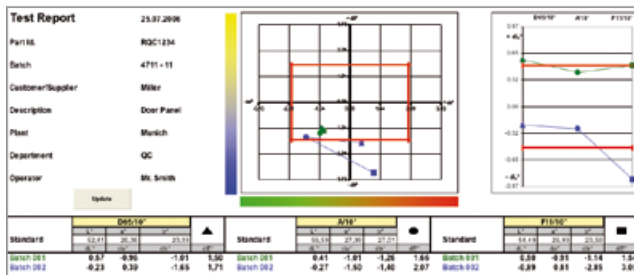
The new spectro-guide S family offers improved technical performance for 60° gloss in the low gloss range 0 - 10 GU. The excellent repeatability of ± 0.1 can be guaranteed due to a patented calibration procedure.

In addition, the spectro-guide S spectrophotometer offers unique benefits to always guarantee precise results:

- Highly repeatable results independent of measuring direction due to a patented, true circumferential illumination
- Long-term stable calibration – needed only every three months
- Temperature stable color and gloss data between 10 - 40°C
- 10 year warranty on the light source
- 10 nm resolution for precise readings on brilliant and dark colors
- Professional documentation with easy-link software

Do parts made out of different materials match?

Color differences are displayed simultaneously for three illuminants to control metamerism



Technical Specifications

Gloss Measurement Range	0 to 10 GU	10 to 100 GU
Repeatability¹	± 0.1 GU	± 0.2 GU
Reproducibility¹	± 0.5 GU	± 1.0 GU

¹ Standard deviation

spectro-guide Training

BYK-Gardner offers you more than just an instrument. We assist you in analyzing your color readings, understanding how to set tolerances and as a result be able to use the spectro-guide to save time and money and at the same time improve your quality. Therefore, the instrument comes with a half-day training course including:

1. Color Theory

- The building blocks of color: illuminant, observer, object
- Color differences with interpretation

2. Operation and Software Training

- Measure samples and standards by single and average readings
- Save, recall and delete measurements
- Change illuminants, observers, color scales
- Direct data transfer to easy-link



Ordering Information

Cat. No.	Description
6801	spectro-guide 45/0 gloss
6802	spectro-guide 45/0 gloss S
6834	spectro-guide sphere gloss
6836	spectro-guide sphere gloss S

Comes complete with:

Spectrophotometer; Black calibration standard; White calibration standard with certificate; Green checking reference; High gloss standard; Sample area locator; Software easy-link; Interface cable; 4 x AA batteries; Hand strap; Carrying case; Operating instructions; Color theory folder; Training

Extended Warranty: see pages about Technical Service

Standards

	Color	Gloss
ASTM	D 2244, E 308, E 1164	D 523, D 2457
DIN	5033, 5036, 6174, 11664	67530
ISO		2813, 7668

Certified

Please refer to section
Preventive Maintenance

Technical Specifications

Color Geometry	Gloss Geometry	Color Aperture	Gloss Aperture
45/0	60°	11 mm	5 x 10 mm
45/0	60°	11 mm	5 x 10 mm
d/8 spin	60°	11 mm	5 x 10 mm
d/8 spin	60°	11 mm	5 x 10 mm

Color

Spectral Range	400 - 700 nm, 10 nm resolution
Repeatability¹	0.01 ΔE^* (10 consecutive measurements on white)
Reproducibility¹	0.2 ΔE^* (average on 12 BCRA II tiles)
Color Systems	CIE Lab/Ch; Lab(h); XYZ; Yxy
Color Differences	ΔE^* ; $\Delta E(h)$; ΔE_{FMC2} ; ΔE_{94} ; ΔE_{CMC} ; ΔE_{99} ; ΔE_{2000}
Indices	YIE313; YID1925; WIE313; CIE; Berger; Color strength; Opacity; Metamerism
Illuminants	A; C; D50; D55; D65; D75; F2; F6; F7; F8; F10; F11; UL30
Observer	2°; 10°

Gloss

Measurement Range	0 - 100 GU
Repeatability²	± 0.2 GU
Reproducibility²	± 1.0 GU
Memory	1500 Standards, 999 Samples

Languages	English; German; French; Italian; Spanish; Japanese; Chinese
Power Supply	4 AA alkaline; NiCd or MH batteries
Operating Temperature	10 °C - 42 °C (50 °F - 110 °F)
Humidity	< 85% relative humidity, non-condensing / 35 °C (95 °F)
Dimensions	9.5 x 8 x 18 cm (3.7 x 3.2 x 7 in)
Weight	approx. 0.5 kg (approx. 1.1 lbs)

¹ Standard deviation

² for S-type instruments see previous page