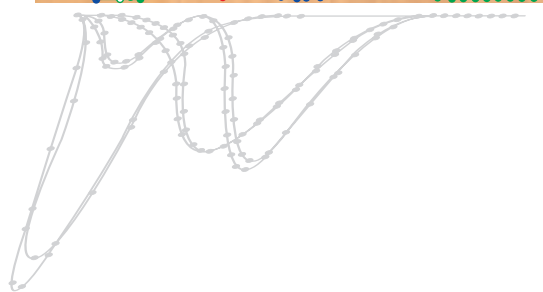
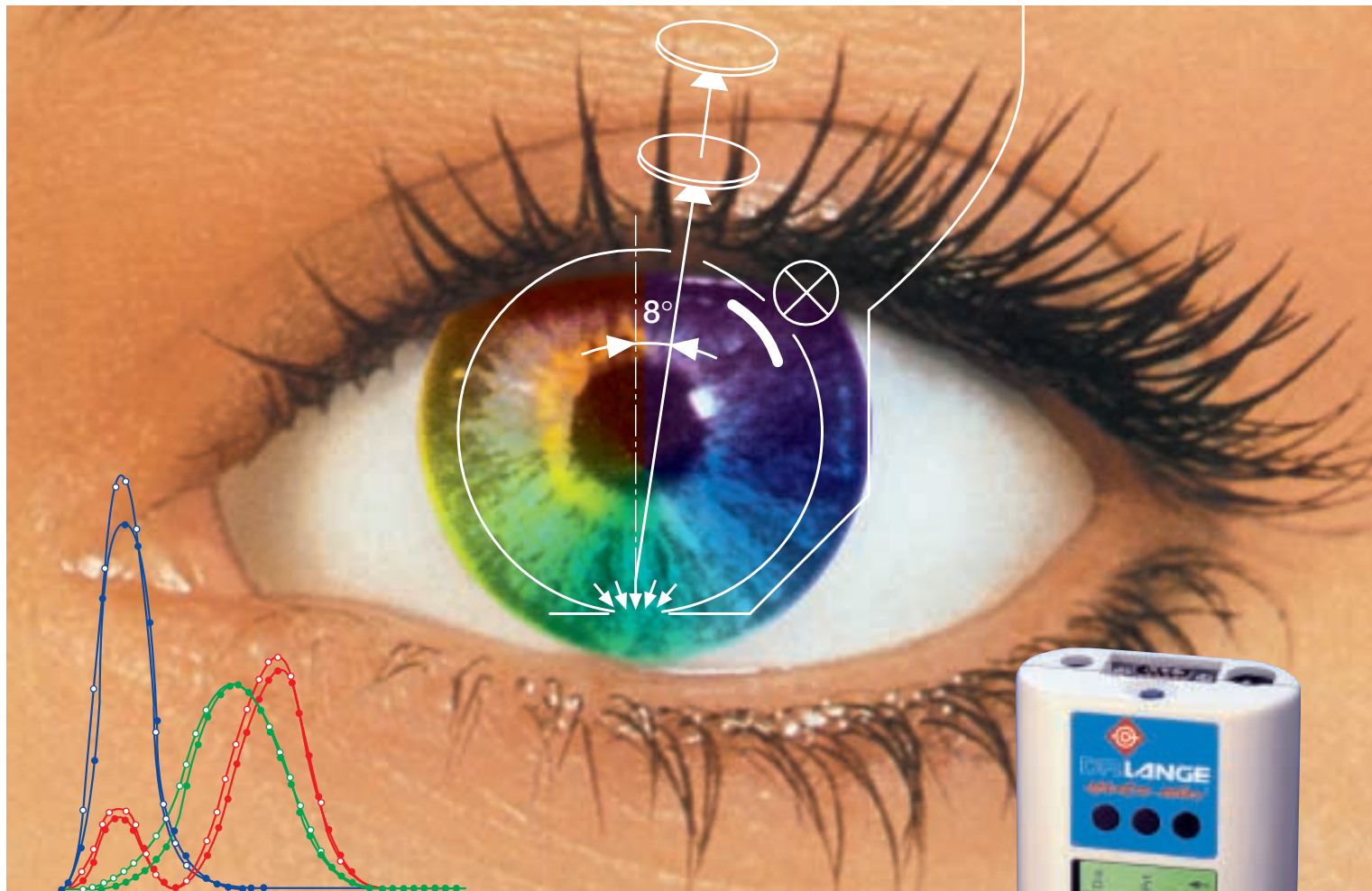


The Portable Spectral Colour Measuring Lab



spectro-color[®]



DR LANGE



spectro-color®, the portable colour lab keeping pace with the "big" ones.

spectro-color® puts an end to subjective visual colour assessment. Different illuminants make us perceive colours differently; therefore it is impossible to use "perception" in sensitive production processes.

For such tasks, user-friendly **spectro-color®** with its practical design was developed. A portable spectrophotometer, suitable for applications such as plastics, automotive, coatings, chemical and food industries.

spectro-color® is a spectral system, using the most common international viewing geometry of $d/8^\circ$ (circular) and of course, detection of metamerism.

spectro-color® is a step forward and sets a new limit for high safety, unique ease of operation and value for money.



Applications

Each and every field of application – solid, liquid, pastes or powders - is covered with the help of wellconceived accessories. Permanent contact with the real world helped us to find the best solutions for all applications.

The **cuvettes** are ideal to handle granulates and pastes. The **patented powder press** facilitates precision measurement of powders. The **stabilising device** is helpful for cuvette and other series measurements in the lab.



Even more comfortable and easier to handle.

Greater ease of handling

- Turn on and measure
- Measuring buttons for right- and lefthand users

Gloss assessment

- Spin and spex
- Numeric gloss subtraction

Dr. Lange's automatic safety system

- Time controlled calibration reminder
- Certified and retraceable test media control available for self checks acc. to DIN/ISO and GLP

Graphics display

- Clear presentation of results, spectra and values
- Clear user prompting, with only 3 softkeys in 6 different languages

Flash ROM technology

- Always up to date
- New functions downloadable via PC interface

Data memory for customized management

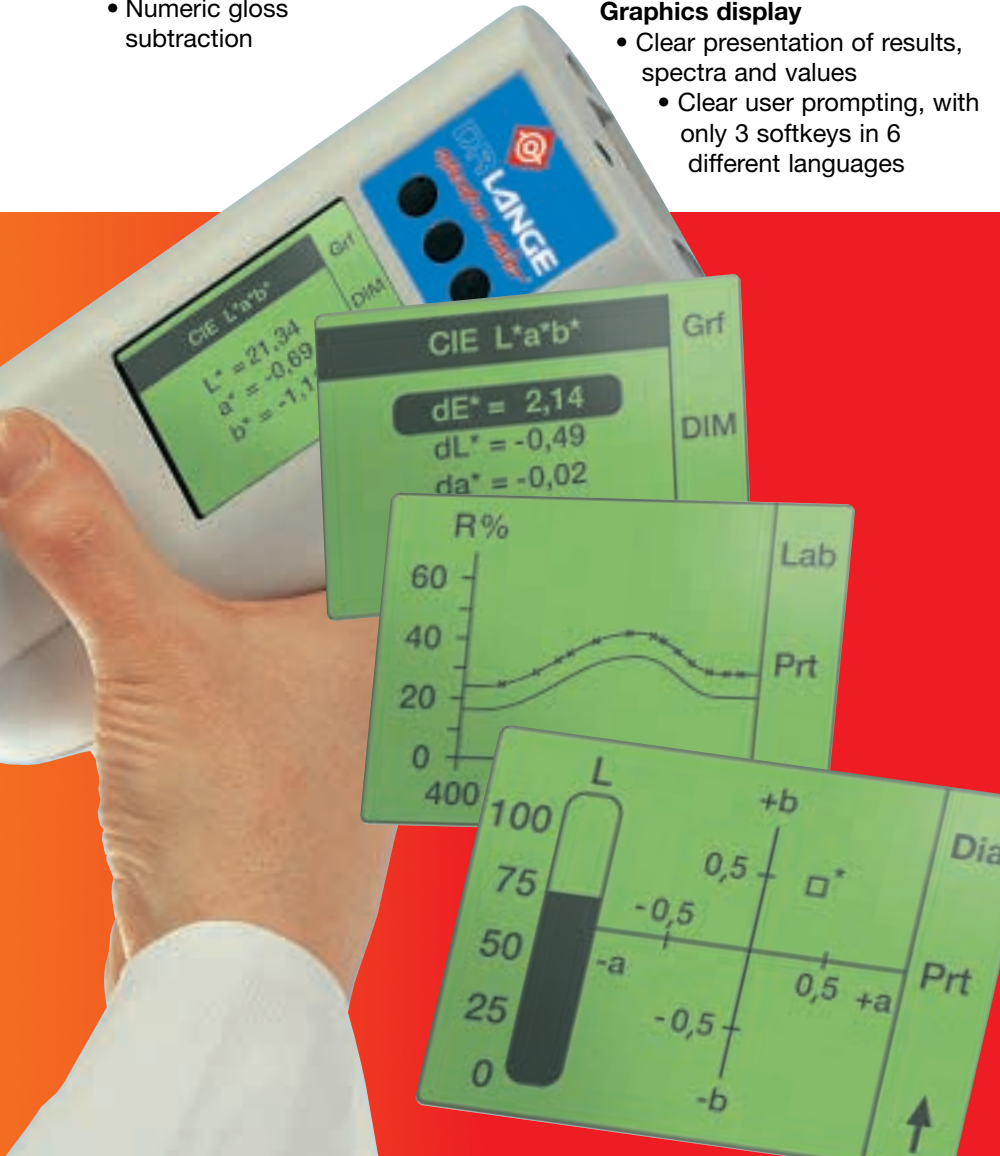
- Memory location with retrievable spectral data, sample name, time and date
- Individual assignment to reference and/or sample memory for better flexibility

Documentation conforming to GLP

- Date, time
- Instrument and calibration data
- Identification of sample and corresponding readings
- User identification

spectro-color® PC software

- For challenging lab requirements using Windows® 98/2000

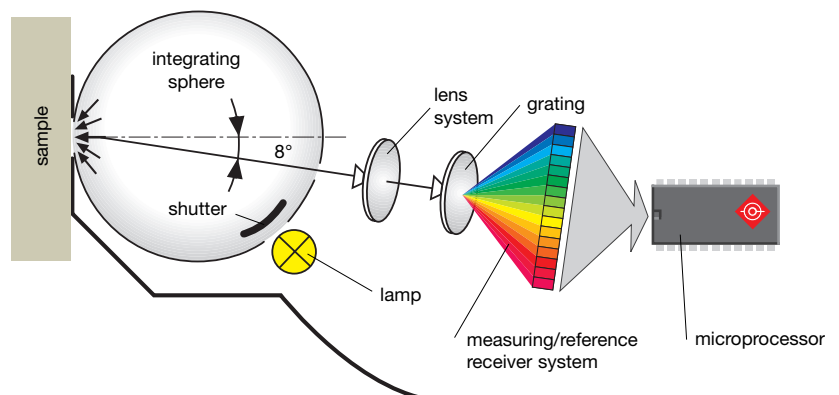
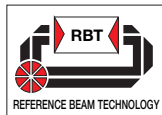


Bar code reader

The optional bar code reader makes sample management and assignment an easy task. Simple assignment of reference data e.g. location, sample identification, user identification etc. ensures correct evaluation of the measured data.

Measuring Principle • Viewing Geometry

The Dr. Lange reference beam path technology, i.e. spectral dispersion of the reflected light via a micro grating, ensures repeatable and reliable results. The universal and well-proven **circular viewing geometry d/8°** provides results eliminating the influence of gloss or sample texture.



Barcode Test

Software spectral-QC

State-of-the-art data processing under operating systems Windows® 98/2000. More than two decades of development and expertise are combined in this software package and allow for easy and intuitive handling.

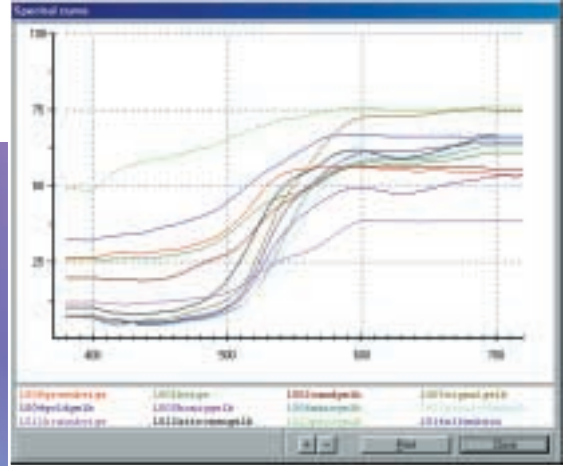
Important functions:

- Direct comparison of reference <-> sample
- Individual sample identification with time and date
- Measurement list in tables, easy to edit, with statistical and graphical evaluation

- Lab and tolerance diagrams
- Colour sorting
- Standard illuminants and standard observers
- Bidirectional data interchange between **spectro-color®** and software
- Generation of bar code labels for bar code reader
- Pass/fail evaluation
- Data base software for recipe management
- Direct data transfer to spread-sheet analysis

Technical data:

Instrument Type:	Portable spectrophotometer
Viewing Geometry:	d/8° (diffuse illumination/observer 8°)
Standards:	DIN 5033, 5036, 5174; JIS Z 8722; ISO 7724, ISO 2470; ASTM D 2244; E 308, E 313, E 1154, BS 5923; ASTM D 1925
Gloss Assessment:	Spin and spex numeric
Polychromator:	Dr. Lange micro-grating polychromator
Spectral range:	400-700 nm
Intervals:	10 nm
Measuring range:	0-170 % reflection
Light source:	Tungsten
Measuring aperture:	10 mm illuminated/ 8 mm measured
Repeatability:	$\leq \Delta E^*_{94}$ ab 0,06 (mean value of 10 measurements against white standard)
Inter-instrument agreement:	$\leq \Delta E^*_{94}$ ab 0,26 (mean value of BCRA series II set against mean instrument)
Data memory:	1000 measurements for references or samples
Illuminants:	CIE D ₆₅ , C, A, F 11, (TL 84)
Display:	Graphical LCD display (128 x 128 Pixel)
Data output/input:	1 x RS 232, 1 x bar code reader pen



Colour systems:	Graphical displays of spectral curves, spectral data and colour space XYZ/xyY/L*a*b*, C*h/Hunter Lab, CIE Δ 's, Hunter Δ 's DE ₉₄ , CMC Δ 's, metamerism index, W _i , Y _i , ISO Brightness, relative Opacity, PASS/FAIL
Accessories (optional):	Bar code reader pen/stabilising device/test tiles/software more on request
Standard accessories:	Certified standard/4 NI-MH batteries/charger/power pack/transport case
Power supply:	4 NI-MH rechargeable batteries, size AA or external charger/power pack
Battery capacity:	approx. 2000 single measurements
Dimensions:	210 x 40 x 85 mm
Weight:	520 g incl. batteries
Guarantee:	1 year

Subject to technical modification.



Colour Test

Are the two colours identical?
spectro-color® gives instant results.



DR LANGE



Thank you for reading this data sheet.

For pricing or for further information, please contact us at our UK Office, using the details below.



UK Office

Keison Products,

P.O. Box 2124, Chelmsford, Essex, CM1 3UP, England.

Tel: +44 (0)1245 600560

Fax: +44 (0)1245 600030

Email: sales@keison.co.uk

Please note - Product designs and specifications are subject to change without notice. The user is responsible for determining the suitability of this product.