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Elcometer 6075/1 SP60 Portable Sphere Spectrophotometer

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The SP60 is an affordable sphere spectrophotometer, designed to give fast, precise and accurate colour measurement information on materials ranging from paper and paint to plastics and textiles.

- Lightweight, compact, portable instrument
- Diffuse/8° sphere optical geometry
- Fixed 8mm aperture
- Large, easy-to-read graphical LCD display
- Opacity and colour strength measurement
- Flip-back target shoe for flexible use
- Simultaneous measurement of both specular component included and specular component excluded
- Rugged construction
- Rechargeable battery for remote use

On-Board, Built-In Software
- PROJECTS - User can collect colours under one title.

Appearance
Appearance measurement is a way of putting numbers to characteristics of surfaces that we see. The ability to independently quantify appearance allows for products to be similar whenever and wherever the product is manufactured or coated.

Elcometer provide a comprehensive range of hand held instruments to measure most of the individual characteristics that generate the overall appearance of a material or coating.

Gloss
The ability of a surface to reflect light without scattering is known as Gloss. Gloss is measured by directing a constant power light beam at an angle to the test surface and then by monitoring the amount of reflected light. Different surfaces require different reflective angles. Elcometer Glossmeters cover the range necessary to measure almost any surface from high gloss to matt, from large to small surfaces - flat or curved

Haze
Some materials appear to have considerable difference in gloss yet give comparable readings when measured with a glossmeter at one angle. These materials can be separated by measuring at a second angle and comparing the difference of the two readings. Haze is defined by ASTM D4039 as the difference between gloss at 60° and the gloss at 20°.

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KEY FEATURES

Measuring Functions and Indices

The SP60 provides absolute and difference measurements for the following colourmetric systems. These values can be obtained from any of the nine illuminants with 2° or 10° observer angle: L*a*b*, DL*Da*Db*, L*C*h^o, DL*DC*DH*, DE*ab, DECMC, DE CIE94 and XYZ. Whiteness and yellowness per ASTM E313-98.

Pass/Fail Mode

The SP60 stores up to 1,024 standards with tolerances for easy pass/fail measurement. A red/green LED indicator and the LCD display provide visual confirmation of results. A tone also sounds to indicate a fail result and measurement completion.

Quick Colour Compare

An operator can take a quick measurement and compare two colours. This allows the operator to take quality-control readings in a time efficient manner without having to create tolerances or store data.

The Sphere

The SP60's diffusing sphere is made of Spectralon®, a durable, highly reflective material designed to perform in a rigorous production environment. The diffusing material prevents premature degradation due to the flaking and chipping of the sphere wall material.

Opacity, Colour Strength and Shade Sorting

The SP60 can measure opacity as well as three colour-strength options: chromatic, apparent and tri-stimulus calculations. The SP60 also performs 555 shade sorting. These are important considerations in the colour quality control of manufactured products involving plastics, painted or textile materials.

Texture and Gloss Influence

To determine the influence of the specular component , the SP60 allows simultaneous measurement of both specular-included (colour) and specular-excluded (appearance).

User-Friendly Ergonomics

In addition to on-board programs to assist the operator in the measurement process, the instrument itself is highly user-friendly. It is compact and light-weight. A wrist strap and tactile side grips make it easy to hold. Read-outs are large and easy to see. A rechargeable battery pack allows extended operation of the instrument.

Shade
This is the measurement of darkness or lightness of a surface. Only shading is measured, irrespective of colour, and is referred to as 'whiteness'. The test surface is illuminated at an angle of 45º and the intensity of scattered light at the perpendicular (Oº), is measured on a grey scale where black is 0% and white is 100%.

Opacity
This is the degree to which a coating will obscure the surface to which it has been applied. Opacity is measured in a similar way to shade, however opacity, or hiding power, as defined by ISO 2814 involves measuring whiteness of a known film of test material on both a black (less than 5%) and a white (greater than 75%, less than 85%) substrate. A full range of opacity test charts are available – See Leneta Test Charts for further information.

Colour
The ability of a material to absorb certain wavelengths of light and reflect others. For example a black material reflects no light across the complete colour spectrum, whereas a pure white material reflects all of the light. All other colours reflect light at different points of the spectrum. Colour is quantified by the material's Red, Green and Blue (RGB) values.

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Measuring Geometrics	d/8°, DRS spectral engine, fixed aperture: 8mm viewing / 12mm illumination
Light Source	Gas-filled tungsten lamp
Illuminant Types	C, D50, D65, D75, A, F2, F7, F11 and F12
Standard Observers	2° and 10°
Receiver	Blue enhanced silicon photodiodes
Spectral Range	400 – 700nm
Spectral Interval	10nm – measured, 10nm – output
Storage	1,024 standards with tolerances, 2,000 samples
Measurement Range	0 to 200% reflectance
Measuring Time	Approximately 2 seconds
Inter-Instrument Agreement	*CIE L*a*b*:* Average 0.40 ΔE*ab based on average of 12 BCRA Series II tiles (specular component included) Maximum 0.60 ΔE*ab on any tile (specular component included) *CMC Equivalent:* Average 0.30 ΔEcmc based on avg. of 12 BCRA Series II tiles (specular component included) Maximum 0.50 ΔEcmc on any tile (specular component included)
Short-Term Repeatability[1]	0.10 ΔE*ab on white ceramic (standard deviation)
Lamp Life	Approximately 500,000 measurements
Power Supply	Removable (Ni-metal hydride) battery pack; 7.2V DC rated @1450mAh
AC Adapter Requirements	90-130V AC, 50-60Hz, 15W maximum
Charge Time	Approximately 4 hours – 100% capacity
Measurements per Charge	1,000 measurements within 8 hour period
Display	64 x 128 pixel graphical LCD
Operating Temperature Range	10 to 40°C (50° to 104°F) 85% Relative Humidity Maximum (non-condensing)
Storage Temperature Range	-20° to 50°C (-4° to 122°F)
Weight	1.1kg (2.4lbs)
Dimensions	109 x 83 x 195mm (4.3 x 3.3 x 7.7")
Supplied with	Calibration Standards, Operating Manual, AC Adapter and Carrying Case

[1] *Based on 20 measurements on a white tile.*

Model	Description	Part Number		
		UK 240V	**EUR 220V**	**US 110V**
Elcometer 6075/1	XRITE SP60 Portable Sphere Spectrophotometer 8mm Fixed Aperture	K0UK6075M001	K0006075M001	K0US6075M001
Accessories	Battery Charger Kit	KTUK6075P001	KT006075P001	KTUS6075P001
	NiMH Battery Pack		KT006075P002	

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Related products

Elcometer 6075/2

The SP62 is an affordable sphere colour spectrophotometer, designed to give fast, precise and accurate colour measurement information on materials ranging from paper and paint to plastics and textiles and is supplied with 4mm, 8mm or 16mm fixed apertures.

Elcometer 6075/3

The most popular product suitable for most coating applications, the SP64 colour spectrophotometer is fast, accurate and ideal for measuring a wide range of materials. Supplied with a switchable aperture size, the user can select the test area of 4mm or 8mm or it can be supplied with an optional fixed 16mm aperture.

Elcometer 6060

The Elcometer 6060 is a versatile 0/45 spectrophotometer, with interchangeable apertures for 4mm, 7mm or 15mm measurement areas. A wrist strap and tactile side grips make the instrument easy to hold. Read-outs are large and easy to see. A rechargeable battery pack allows extended operation of the instrument.

Elcometer 6060/4

The Elcometer 6060/4 has all of the functionality of the Elcometer 6060 but with tighter inter-instrument agreement and JOB capability. The JOB function is a programmed sequence of specific steps to assist the operator in the colour measurement process. Up to six lines of specific instructions per measurement routine can be downloaded from X-Rite software and displayed on the LCD screen.

Elcometer 6070

The Elcometer 6070 is the "ultimate" portable multi-angle colour spectrophotometer. Five viewing angles of 15° to 110° allow accurate evaluation of the variation in metallic, pearlescent and special effect paint finishes.

Elcometer 6090

The X-RiteColor® Master Software, has the power to measure, analyse, control and communicate colour data through one sophisticated, yet simple software program that helps you reduce cycle time, create multiple colour formulation matches and increase efficiency of your colour data communication.

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