

Elcometer 6075/3 SP64 Portable Sphere Spectrophotometer



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The SP64 is the *ultimate* 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
- 0.10 ΔE_{cmc} inter-instrument agreement
- Switchable 4mm or 8mm aperture, or fixed 14mm aperture
- Large, easy-to-read graphical LCD display
- JOBS and PROJECT operation mode
- Opacity and colour strength measurement
- Flip-back target shoe for flexible use
- Rugged construction
- Simultaneous measurement of both specular component included and specular component excluded
- Rechargeable battery for remote use

On-Board, Built-In Software:

- JOBS - Available on some models. Walks a user through measurement routines on the production floor. Up to six lines of clear instructions per routine can be displayed after download from X-Rite's software.
- PROJECTS - User can collect colors under one title. Data can be uploaded and/or downloaded via patented, bi-directional communications link to computer software.

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°.

KEY FEATURES

Measuring Functions and Indices

The SP64 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: CIE XYZ, CIE Yxy, CIE LAB, Hunter LAB, CIE LCH, CMC and CIE94. Whiteness and Yellowness per ASTM E313-98, Metamerism Index and DIN 6172.

Special JOB and PROJECT Modes

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 SP64's LCD screen. Multiple colour standards can also be collected under an identified PROJECT, a feature that supports corporate colour standards programs.

Pass/Fail Mode

The SP64 stores up to 1,024 standards with tolerances for easy pass/fail measurement. A red/green LED indicator and the instrument's LCD display provide visual confirmation of results. A tone also sounds to indicate a fail result and measurement completion.

Switchable Apertures

The internal apertures can be quickly changed with the flip of a switch for 4mm or 8mm measurement areas. The instrument will recognise which aperture is being utilized and automatically adapt calibration data. This allows the operator to change measurement mode quickly and efficiently, depending on the sample size.

The Sphere

The SP64'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.

Inter-Instrument Agreement

The SP64 has superior inter-instrument agreement – essential in multiple instrument colour-control programs. The SP64 offers excellent inter-instrument agreement with X-Rite's SP62 Sphere Spectrophotometer. Both input data into X-Rite's line of Windows-based colour quality assurance and colour formulation software.

Opacity, Colour Strength and Shade Sorting

The SP64 can measure opacity as well as three colour-strength options: chromatic, apparent and tri-stimulus calculations. The SP64 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 SP64 allows simultaneous measurement of both specular-included (colour) and specular-excluded (appearance).

User-Friendly Ergonomics

A wrist strap and tactile side grips make the instrument easy to hold. Read-outs are large and easy to use. 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 45° and the intensity of scattered light at the perpendicular (0°), 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.

Model	Description	Part Number		
		UK 240V	EUR 220V	US 110V
Elcometer 6075/3	XRITE SP64 Portable Sphere Spectrophotometer 4 and 8mm Fixed Aperture	K0UK6075M003	K0006075M003	K0US6075M003
	XRITE SP64 Portable Sphere Spectrophotometer 14mm Fixed Aperture	K0UK6075M203	K0006075M203	K0US6075M203
Accessories	Battery Charger Kit	KTUK6075P001	KT006075P001	KTUS6075P001
	NiMH Battery Pack	KT006075P002		

Measuring Geometrics	d/8°, DRS spectral engine, switchable 4mm measurement area / 6.5mm target window or 8mm measurement area / 13mm target window (optional fixed 14mm measurement area / 20mm target window)	
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	
Inter-Instrument Agreement	8mm / 14mm	CIE L*a*b*: Average 0.13 ΔE^*ab based on average of 12 BCRA Series II tiles (specular component included) Maximum 0.25 ΔE^*ab on any tile (specular component included) CMC Equivalent: Average 0.10 ΔE_{cmc} based on average of 12 BCRA Series II tiles (specular component included) Maximum 0.20 ΔE_{cmc} on any tile (specular component included)
	4mm	CIE L*a*b*: Average 0.20 ΔE^*ab based on average of 12 BCRA Series II tiles (specular component included) Maximum 0.40 ΔE^*ab on any tile (specular component included) CMC Equivalent: Average 0.15 ΔE^*cmc based on average of 12 BCRA Series II tiles (specular component included) Maximum 0.30 ΔE^*cmc on any tile (specular component included)
Short-Term Repeatability¹	0.05 ΔE^*ab on white ceramic (standard deviation)	
Measurement Range	0 to 200% reflectance	
Measuring Time	Approximately 2 seconds	
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	128 x 256 pixel graphical LCD	
Data Interface	Patented bi-directional RS232, 300 – 57,000 baud	
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.		

Related products



Elcometer 6075/1

The SP60 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. Supplied with an 8mm fixed aperture.



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 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 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 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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