

Elcometer 6070 MA68II Multi-Angle Spectrophotometer



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

The remote operation feature allows measurement data to be stored. The stored data can be printed directly to a serial printer in a QA report format or downloaded to QA-Master® 2000, X-Rite’s Windows® based quality control software package.

At a glance

- Compact, portable spectrophotometer.
- Viewing angle at 15 to 100°.
- Evaluate variation in a variety of paint finishes.

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°.

Model	Description	Part Number		
		UK 240V	EUR 220V	US 110V
Elcometer 6070	XRITE MA68II Multi-Angle Spectrophotometer	K0UK6070M001	K0006070M001	K0US6070M001
Accessories	Battery Charger Kit	KTUK6070P001	K0006070P001	K0US6070P001

Measuring Geometrics	45° illumination 15°, 25°, 45°, 75°, 110° aspecular viewing Angular Accuracy $\pm 0.15^\circ$ Fibre optic pick-up, coupled with DRS technology
Measurement Area	12mm (0.5") diameter
Light Source	Gas-filled tungsten lamp, colour corrected to approximately 4000°K
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	28 band spectral measurement: 10nm interval from 400nm – 640nm 20nm interval from 640nm – 700nm
Spectral Data Output	Spectral reflectance values are available for output from the RS232 port for 5 angles at 10nm intervals from 400nm to 700nm
Measurement Range	0 to 400% reflectance
Measuring Time	Approximately 2 seconds
Inter-Instrument Agreement	0.18 ΔE^* average on reference BCRA tile set 0.35 ΔE^* maximum on any chromatic tile 0.15 ΔE^* maximum on any grey tile
Short-Term Repeat-	0.10 ΔE^* ab on white ceramic (standard deviation)
Lamp Life	500,000 measurements
Power Supply	Six rechargeable AA Ni-metal hydride batteries included – removable battery pack; 7.2V DC rated @ 1400mAh
AC Adapter Requirements	MA68: 90-130V AC, 50-60Hz, 15W maximum MA68X: 180-260V AC, 50-60Hz, 15W maximum 12 VDC @ 700mA
Charge Time	In Instrument: 4 hours (50%), 16 hours (100%)
Measurements per	1,000 5-angle measurements
Data Storage (Five Angles)	200 Standards, 850 Samples
Data Interface	Patented bi-directional RS232, 300 – 19,200 baud
Display	4-row by 20 character supertwist dot matrix 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	1.4kg (3.2lbs)
Dimensions	116 x 76 x 225mm (4.56" x 3.0" x 8.85")
Supplied with	Calibration Standards, Operating Manual, AC Adapter and Carrying Case

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.

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 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 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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