



xDNA™ 

Color Measurement and System Control

The New Technology X-Rite MA98™

Portable Multi-Angle Spectrophotometer

X-Rite MA98

Portable Multi-Angle Spectrophotometers



Color can make or break a product. Metallics, pearlescents, and other complex special effect finishes deliver limitless possibilities for enhancing product appeal. And limitless challenges as well. Duplicating complex colors from part to part is no easy task.

X-Rite has answers. Our MA98 spectrophotometer is an intelligent, hand-held tool with the power to provide reliable, consistent data on special effect coatings that were formerly impossible to measure.

By using dual illuminators and sensors that measure more in-plane and out-of-plane angles than any instrument in its class, the MA98 is the only device that meets the ASTM standard (E2539) for measuring interference pigments. We developed a proprietary mathematical model for just this purpose. It identifies surface data points and create a unique color signature that takes into account the coating formula and how the coating was applied.

Operation is enhanced by exclusive advantages, such as X-ColorQC® software that enhances process recording, reporting, and control and a JOBs software mode that allows text or visual measurement direction to ensure consistency.

So now, the only limit to working with special effect finishes is your imagination.



X-Rite MA98 Features and Advantages

Accurate, repeatable sample positioning. Innovative user selectable pressure sensors ensure consistent sample interface on flexible or curved surfaces.

Portable, lightweight. The unit weighs a little more than a kilogram, making it ideally suited for long term use without discomfort.

Rugged design. Engineered to withstand demanding production environments. Supported by an unprecedented two-year warranty.

xDNA™ driven. Bundled with X-Rite's exclusive X-Color QC™ measurement and analysis software.

Complete analysis. Ten angles of measurement, including out-of-plane readings, and two illumination angles produce a precise, dimensional portrait for each color, a critical advantage when attempting to measure, analyze, or duplicate special effects paints and coating.

Quick reads. Consistent measurements are achieved in 2 seconds.

Universal functionality. Universal menu icons simplify usage while eliminating language barrier.

Program measurement position and sequence.

Through software JOBs mode, workers can be given text and/or visual measurement directions to ensure consistency of measurement from shift to shift.

Increased lamp life, reduced battery consumption.

Improved illumination efficiency, results in reduced power consumption from the lamp, allowing up to 700 reads from a fully charged battery.

Compatibility with previous X-Rite instruments.

Maintaining similar optical configurations from previous generations of X-Rite instruments provides compatibility with existing data.

International standards ready. Meets DIN and ASTM standards: ASTM E 2539, D 2244, E 308, E 1164, E 2194; DIN 5033, 6174, 6175-2; ISO 7724; SAE J1545.



Setup and Maintenance Advantages

- 1** *Soft touch overmold case with two-hand configuration.* Designed to ensure a safe, steady grip and consistent positioning. Safety wrist strap enhances control.
- 2** *Icon driven color LCD.* Backlit color display allows for easy screen viewing in varying light conditions.
- 3** *Replaceable lamp modules.* If service is ever required, the self-contained modules can be replaced at approved X-Rite service centers without affecting the measurement results of the instrument.
- 4** *Strategic aperture location.* Aperture is located at front end of instrument, providing consistent readings of corner points and other difficult geometries.

Optical Features

- 5** *Measurement unaffected by ambient light.* A circumferential non-marking seal prevents ambient light from affecting measurements.
- 6** *Enhanced color resolution.* A 31-point DRS (Dynamic Rotation Sampling) color engine ensures that every angle is measuring surface reflectance at 10mm intervals from 400 mm to 700mm, creating a true color representation. The motor drive stops precisely at the center point of each of the 31 filters for every measurement, improving repeatability and inter-instrument agreement over prior generations.

Handling and Operating Features

- 7** *Pressure feedback control.* Solid-state sensors positioned around the spring-loaded aperture plate produce a visible LED signal when proper pressure is achieved. This improves measurement repeatability, particularly on flexible or curved surfaces.
- 8** *Pressure indicator LEDs.* LEDs on the front of the unit align with the pressure feedback control sensors to provide visual confirmation of sample presentation.
- 9** *Four-button intuitive navigation.* Enables users to scroll quickly through menus, permitting easy use with minimal training.
- 10** *External measure trigger switch.* An optional activation system that works with pressure feedback control or as the sole means of triggering the instrument.

Setup and Maintenance Advantages

- 11** *USB or wireless communication (Bluetooth®).* Removable port cover protects USB and AC power ports when not in use. Wireless communication available where permitted and with compatible software.
Easily integrated. Using X-Color QC software, instruments provide for quick setup and on-board upload and download capacity.
- 12** *Lithium ion 7.4 v. commercially available battery.* Each instrument includes two batteries and a two-pocket external battery charger. The instrument will operate with batteries or via direct connection.





X-Rite: Your source for accurate color. On time. Every time.

X-Rite is a world leader in providing global color control solutions for manufacturing and quality management requirements.

We lead the industry in offering service options to ensure uninterrupted performance of all X-Rite products. Training and educational resources are available globally and on line for both new and experienced users to optimize their color measurement capabilities.

Visit xrite.com for more information about X-Rite products. X-Rite customers worldwide may also call the Applications Support team at CASupport@xrite.com or Customer Service at 800-248-9748.

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X-Rite MA98 Specifications

Measuring Geometrics

Illumination	45°
Aspecular Viewing	-15°, 15°, 25°, 45°, 75°, 110°
Out-of-plane	25°az90, 25°az-90, 60°az125.3, 60°az-125.3
Secondary Illumination	15°
Aspecular Viewing	-15°, 15°

Angular Accuracy

±0.15°
Fiber Optic pick up coupled with DRS technology

Measurement Area

Approx. 12mm (.5 inch)

Light Source

Gas filled tungsten lamp

Lamp Life

750,000 measurements typical

Spectral Range

400nm – 700nm

Spectral Interval

10nm (31 measured points)

Measurement Range

0 - 400%

Colorimetric Illuminants

A, C, D50, D65, F2, F7, F11 & F12

Colorimetric Standard Observers

2° & 10°

Colorimetric Scales

L*a*b*, L*C*h°, ΔE*; ΔECMC; ΔE DIN6175, ΔE₂₀₀₀

Effect Parameters

xDNA, Flop Index

Measurement Time

Approx. 2 seconds

Reproducibility (Inter-instrument agreement)

0.18 ΔE* avg on reference Series II BCRA tile set

Repeatability

0.03 ΔE* max on white cal plaque (20 measurements at 5 sec intervals)

Power Supply

Rechargeable Lithium Ion battery pack
7.4vDC @ 2400mAh

AC Adapter

12vDC, 2.5 amps

Measurements per charge

Up to 1500 measurements, Li ion dual battery packs

Measurement storage

250 Standards
1000 Samples

Data interface

USB 2.0
Bluetooth wireless

Operating Temperature Range

50F to 104F (10C to 40C)
85% Relative Humidity max (non-condensing)

Storage Temperature Range

-4F to 122F (-20C to 50C)

Dimensions

3.4 x 4.5x 10.6 inches
(8,7cm x 11,4cm x 26,9cm)

Weight

2.5 lbs 1.13 kgs

Standards

ASTM	E 2539, D 2244, E 308, E 1164, E 2194
DIN	5033, 6174, 6175-2
ISO	7724
SAE	J1545

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