

# MA48 Multi-Angle Spectrophotometer



MA48 Multi-Angle Spectrophotometer

- Five measurement angles (15°, 25°, 45°, 75°, 110°)
- Single screen displays all angles
- Nine color value formats: L\*a\*b\*,  
ΔE<sub>L\*</sub>ΔE<sub>a\*</sub>ΔE<sub>b\*</sub>, L\*C\*h°,  
ΔE<sub>L\*</sub>ΔE<sub>C\*</sub>ΔE<sub>H\*</sub>, Flop Index,  
ΔE<sub>Flop</sub> Index, ΔE<sub>EL</sub>\*a\*b\*, ΔE<sub>Ecmc</sub>,  
and DIN 6175
- Seven languages
- Intuitive, menu-driven operation
- Industrial membrane switches – easy to see, use and clean

The X-Rite® MA48 is an affordable portable multi-angle spectrophotometer, designed to give fast, precise and accurate color measurement information on metallic, pearlescent and special effect finishes. It delivers a full range of angular viewing, from 15° to 110°. The MA48 allows remote measurement operation. Measurements are stored in the instrument and later uploaded to a PC running X-RiteColor® Master quality control and formulation software.

### **Dynamic Rotational Sampling (DRS)**

The MA48 employs Dynamic Rotational Sampling, a patented X-Rite technology that uses a simple, rugged optical system to measure all angles simultaneously.

### **Ergonomic Design**

The MA48 fits comfortably in the user's hands and is easy to position for accurate measurement. Its optional barcode-reading wand allows users to read and store data instantly. All controls are large and easy to operate.

### **Docking Station**

The docking station enables easy data transfer to a PC. The docking station provides open-port black calibration and has a place to store the calibration plaque. It charges/refreshes the battery and provides a convenient way to keep the instrument safe and secure when not in use.

### **Multiple Languages**

The MA48 supports English, German, French, Spanish, Italian, Portuguese and Chinese (simplified).

### **One-Year Warranty**

X-Rite offers a one-year limited warranty on this instrument.

### **Service and Support**

X-Rite leads the market in service, providing phone/web/e-mail support, instrument recertification and flat-rate service contracts, as well as hands-on training classes worldwide.

### **Specifications:**

#### Measuring Geometrics

- 45° illumination
- 15°, 25°, 45°, 75°, 110°  
aspecular viewing
- Angular accuracy ±0.15°
- Fiber optic pick-up, coupled  
with DRS technology

#### Measuring Area

0.5 in. diameter (12mm)

#### Light Source

Gas-filled tungsten lamp, color  
corrected to approx. 4000°K

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

Standard Observers  
2° & 10°

Receiver  
Blue-enhanced silicon photodiodes

Spectral Range  
400nm - 700nm

Spectral Interval  
28 band spectral measurement:  
• 10nm interval from  
400nm to 640nm  
• 20nm interval from  
640nm to 700nm  
• 15nm bandwidths

Spectral Data Output  
Spectral reflectance values are  
available for output from the  
RS-232 or USB port via the docking  
station for 5 angles at 10nm intervals  
from 400nm to 700nm

Measurement Range  
0 to 400% reflectance

Measuring Time  
Approx. 2.0 seconds

Inter-Instrument Agreement  
• 0.30  $\Delta E^*$  avg. on reference  
BCRA tile set  
• 0.40  $\Delta E^*$  max. on any  
chromatic tile  
• 0.15  $\Delta E^*$  max. on any grey tile  
Short-Term Repeatability  
0.10  $\Delta E^*$ ab on white ceramic

Lamp Life  
Approx. 500,000 measurements

Power Supply  
Built-in, rechargeable Ni-metal  
hydride battery pack; 7.2 VDC rated  
@ 1400 mAh

AC Adapter Requirements  
• MA48: 90-130VAC, 50-60Hz,

15W max

- MA48X: 90-260VAC, 50-60Hz,  
15W max

Charge Time

In Instrument: 4 hrs

Measurements Per Charge

1,000 5-angle measurements  
(continuous measurements @ 10 sec.  
intervals)

Data Storage (five angles)

200 Standards

850 Samples

Data Interface

Patented bi-directional RS-232 and USB,  
9,600-19,200 baud

Display

128 x 256 pixel graphical LCD

Operating Temperature Range

50° to 104°F (10° to 40°C)

85% Relative humidity max  
(non-condensing)

Storage Temperature Range

-4° to 122°F (-20° to 50°C)

Weight

2 lbs. 7 oz. (1.1 kg)

Dimensions

5.27"H 5.40"W 8.05"L

(13.4cm 13.7cm 20.4cm)

Accessories Provided

Calibration standards, docking station,  
AC adapter, operation manual, and  
wrist strap.

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