



# FLIR MR176

## Imaging Moisture Meter Plus with IGM™

The FLIR MR176 Imaging Moisture Meter Plus with IGM™ is an all-in-one tool equipped with a built-in thermal camera that can show you exactly where to measure moisture. Featuring **Infrared Guided Measurement (IGM)** technology, the MR176 helps you quickly scan and target moisture issues, visually guiding you to the spot where you can confidently take measurements and analyze readings. An integrated pinless sensor and an external pin probe provide the flexibility to take either non-intrusive or intrusive measurements. Coupled with a field-replaceable temperature and relative humidity sensor, and automatically calculated environmental readings, the MR176 delivers added convenience and ease of use, producing the right measurements — faster.

### Visually identify hidden moisture with IGM.

*Easily investigate moisture issues and troubleshoot quickly*

- An 80 x 60, 4800-pixel Lepton® thermal imager powers IGM technology, visually indicating potential moisture areas via the color display
- Customize thermal images: select which measurements are integrated (moisture, temperature, relative humidity, dew point, vapor pressure, mixing ratio), and choose from one of four color palettes (Iron, Rainbow, Ice, Greyscale); a lock-image setting prevents extreme hot and cold temperatures from interfering with images while scanning for issues
- Equipped with a laser and cross hair to easily reference the exact location of the potential moisture issue seen in the thermal image

### Get precise readings.

*Confidently take measurements and analyze readings*

- Field-replaceable temperature/relative humidity sensor can simply be removed from meter and exchanged when needed, so you can continue to work and reduce downtime
- Progressive Environmental Stability Indicator removes response time error when you move through a site to different measurement locations, informing you when the relative humidity readings have reached a steady state
- Integrated pinless moisture measurements for fast detection, and external pin probe included with expandable probe options

### Convenient, flexible, and easy to operate.

*Get more work done in less time*

- Rugged, portable design with intuitive menu system
- Document readings and images to share via included USB cable
- Free FLIR Tools PC software quickly generates reports



IGM technology guides you where to measure



Verify moisture with Pinless measurements

# Specifications

| FLIR MR176: Imaging Moisture Meter                |   |                   |
|---|---|-------------------|
| Imaging Detector                                  | FLIR Lepton microbolometer  |                   |
| Image Calibration                                 | Automatic with manual lock scale option   |                   |
| Thermal Image Resolution (W x H)                  | 4800 pixels (80 x 60)   |                   |
| Spectral Response                                 | 8 to 14µm   |                   |
| Field of View (W x H)                             | 51° x 38°   |                   |
| Sensitivity                                       | <150mK  |                   |
| Detection Limit (Wet Area Detection @ 32ft (10m)) | 19.7in <sup>2</sup> (49cm <sup>2</sup> )  |                   |
| Image Update Speed Frequency                      | 9Hz   |                   |
| Thermal Image Palettes                            | Iron, Rainbow, Ice, Greyscale   |                   |
| Thermal Image Minimum Focus Distance              | 4" (10cm)   |                   |
| Moisture Measurement                              | Range   | Basic Accuracy    |
| Pin Moisture                                      | 7% to 30%   | ±1.5% MC          |
|   | 30% to 100%   | Reference only    |
| Pin Moisture Groups                               | 9 Material Groups   |                   |
| Pinless Moisture Range                            | 0 to 100  | Relative          |
| Pinless Measurement Depth                         | 0.75" (19mm) Max  |                   |
| Measurement Resolution                            | 0.1   |                   |
| Response Time Pinless Mode                        | 100ms   |                   |
| Response Time Pin Mode                            | 750ms   |                   |
| Environmental Measurement                         | Range   | Basic Accuracy    |
| Relative Humidity                                 | 0 to 100%   | 2.5%RH            |
| Air Temperature                                   | 32 to 122°F (0 to 50°C)   | ±1.1°F (±0.6°C)   |
| Dew Point   | -22 to 122°F (-30 to 50°C)  | ±1.8°F (±1.0°C)   |
| Vapor Pressure                                    | 0.0 to 12.0kPa  | ±0.05kPa          |
| Mixing Ratio                                      | 0 to 560GPP (0.0 to 80.0 g/kg)  | ±2GPP (0.25 g/kg) |
| General information                               |   |                   |
| Display Type                                      | QVGA (320 x 240 pixel) 2.3" color TFT graphical display   |                   |
| Saved Image File Format                           | BMP with measurement values overlaid  |                   |
| Stored Image Capacity                             | 9999 images   |                   |
| Laser Orientation                                 | Single laser pointer to center of thermal image   |                   |
| Continuous Run Time                               | 18 hours max  |                   |
| Typical Usage*                                    | 4 work weeks  |                   |
| Battery   | 3.7V, 3000mAh Li-ion rechargeable via micro USB   |                   |
| Certification Standards                           | EN 61326 (EMC), EN 60825-1 Class 2 (Laser)  |                   |
| Agency Approvals                                  | CE, FCC Class B   |                   |
| Includes  | MR01 Replaceable Temperature and Relative Humidity Sensor, MR02 Standard Pin Probe, Quick Start Guide, International USB Charger, USB Cable |                   |

\*See FAQs at [flir.com/MR176](http://flir.com/MR176)



Register within 60 days of purchase at [www.flir.com/testwarranty](http://www.flir.com/testwarranty)



MR05



MR06



MR10



MR07



MR08

## USA-NASHUA

FLIR Systems, Inc.  
9 Townsend West  
Nashua, NH 03063  
USA  
PH: +1 866.477.3687

## USA-PORTLAND

Corporate Headquarters  
FLIR Systems, Inc.  
27700 SW Parkway Ave.  
Wilsonville, OR 97070  
USA  
PH: +1 866.477.3687

## EUROPE

FLIR Systems  
Luxemburgstraat 2  
2321 Meer  
Belgium  
PH: +32 (0) 3665 5100

## UNITED KINGDOM

FLIR Systems UK  
2 Kings Hill Ave. - Kings Hill  
West Malling  
Kent  
ME19 4AQ  
United Kingdom  
Tel.: +44 (0)1732 220 011  
Fax: +44 (0)1732 843 707  
E-mail: [flir@flir.com](mailto:flir@flir.com)

[www.flir.com](http://www.flir.com)  
NASDAQ: FLIR

Equipment described herein may require US Government authorization for export purposes. Diversion contrary to US law is prohibited. Imagery for illustration purposes only. Specifications are subject to change without notice. ©2015 FLIR Systems, Inc. All rights reserved. [Updated 08/12/15]

| Ordering Information                    | UPC          | EAN           |
|---|--------------|---------------|
| MR176                                   | 793950371763 | 0793950371763 |
| MR05 Impact Pin Probe                   | 793950370056 | 0793950370056 |
| MR06 Wall Cavity Probe                  | 793950370063 | 0793950370063 |
| MR07 Hammer Probe                       | 793950370070 | 0793950370070 |
| MR08 Hammer and Wall Cavity Probe Combo | 793950370087 | 0793950370087 |
| MR10 Protective Case                    | 793950370117 | 0793950370117 |