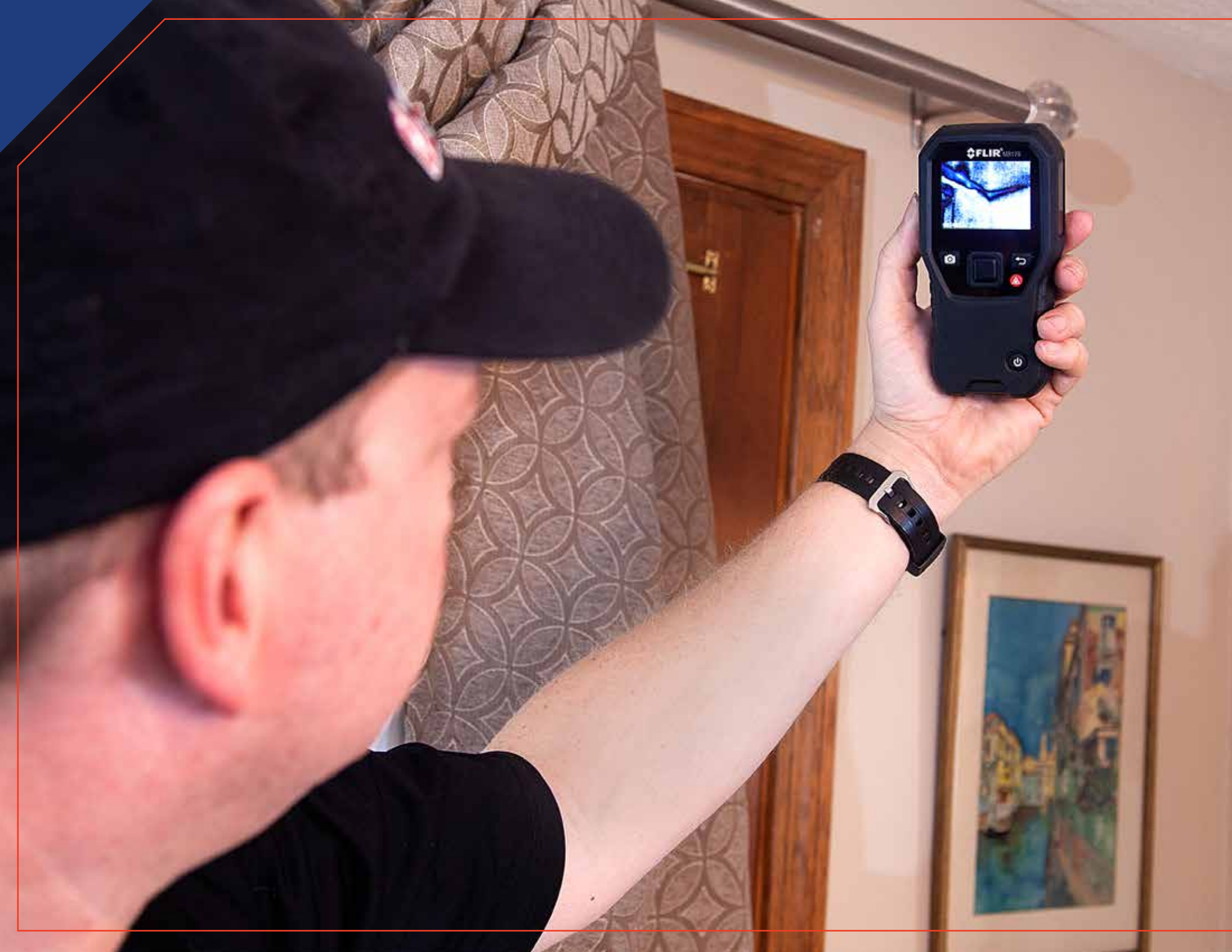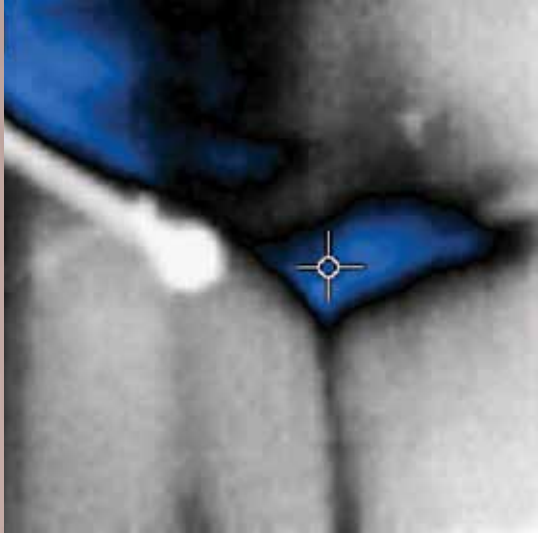# MOISTURE METER GUIDE

FIND THE RIGHT SOLUTION

FLIR

MOISTURE METERS
WITH IGM™

FLIR is proud to offer a line of high-quality moisture meters
for your inspection needs

What if you could identify the precise location of a moisture
problem behind a wall? Under the floorboards? In the ceiling?
Locating moisture can be the easiest part of your day.
FLIR's selection of moisture meters now includes options
with built-in thermal imaging – we call it IGM™ (Infrared
Guided Measurement). IGM is designed to save you time and
guide you to the precise spot that may require further testing
and investigation. With IGM, you can identify problems
before they become major issues.

Work faster, smarter, and move on to the next job.

Field-replaceable temperature/relative humidity sensor*

Laser pointer

80 x 60 thermal imaging sensor

FLIR MR176

≤ 44.4
(AIR) 79.1 °F
(RH) 48.3 % ●
(DEW) 58.8 °F
(MIX) 71.5 GPP
(VAP) 1.64 kPa

FLIR

Imaging Moisture Meter Plus with IGM™

Color LCD display

Snap and save up to 9999 images

3 m drop-tested durability

External connector for pin moisture sensor

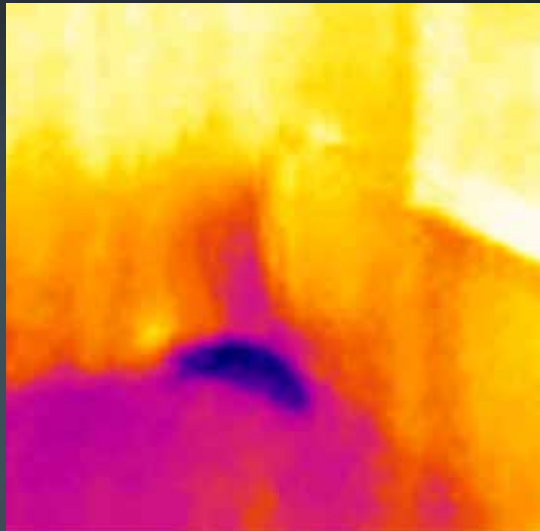* MR176 only

MR176/MR160

Moisture meters with IGM™

Pinless moisture sensor

Micro USB connector
RJ45 connector

Featuring IGM technology powered by a built-in thermal imaging sensor, the MR176 and MR160 can visually guide you to the precise spot that moisture may be hiding

KEY FEATURES

- Pinpoint moisture using the 80 x 60 FLIR Lepton® thermal imaging sensor
- Take either non intrusive or intrusive measurements using the integral or external pinless probe or external pin probe
- Target easily with the laser pointer and display crosshairs
- Review images and generate reports with free FLIR Tools® software

MR176 UNIQUE FEATURES

- Measure temperature and relative humidity (the field-replaceable sensor automatically calculates and displays environmental readings)
- Prevent extreme temperatures from interfering with images using the "lock image" setting
- Take accurate readings in locations with diverse environmental conditions (the Progressive Environmental Stability Indicator lets you know when relative humidity readings have stabilized)

Field-replaceable
temperature/relative
humidity sensor

2 m drop-tested durability

IR thermometer for non-
contact temperature
measurements

Bluetooth connectivity for
wireless data transfer

Pinless moisture sensor

Store readings
and recall up to 99
measurement points

RJ45 connector

MR77

5-in-1 MOISTURE METER WITH METERLiNK®

Everything you need in a meter for moisture remediation or HVAC: Bluetooth® METERLiNK capability, a pinless moisture sensor and pin probe, a temperature and relative humidity sensor, and an IR thermometer

KEY FEATURES

- View and share readings from a mobile device

- Wirelessly integrate moisture readings onto thermal images from compatible FLIR infrared cameras

- Measure temperature and relative humidity (The field-replaceable sensor automatically calculates and displays environmental readings)

- Manually store readings and recall up to 20 measurement points

MR60

MOISTURE METER PRO

A full-featured construction troubleshooting tool that allows the collection and storage of moisture data over time from multiple sites

Large-digit display and color bargraph

Save up to 10,000 screenshots and readings

3 m drop-tested durability

IP54 splashproof rating

External connector for pin moisture sensor

Pinless moisture sensor

Micro USB connector
RJ45 connector

KEY FEATURES

- Take either non intrusive or intrusive measurements using the integral or external pinless probe or external pin probe

- Save up to 10,000 screenshots and readings that you can transfer & view via PC/USB

- Tune the meter to the appropriate test material using a built-in library of 11 material groups, including timbers, drywall, and concrete

- Create reports easily using free FLIR Tools PC software

- Expand your meter as needed – the MR60 is compatible with FLIR's full line of external moisture probes

Field-replaceable electrode pins

Bright LED worklight

Tune meter to the test material via built-in library of 11 groups

Calibration/pin check integrated in cap

Bluetooth connectivity for wireless data transfer

3 m drop-tested durability

IP40 rating

MR55

PIN MOISTURE METER WITH BLUETOOTH

Optimize your workflow with wireless connectivity and a built-in library of 11 material-group settings for more accurate readings

KEY FEATURES

- Wirelessly connect the meter to FLIR Tools Mobile to remotely view readings from your mobile device

- Tune the meter to the appropriate test material using a built-in library of 11 material groups, including timbers, drywall, and concrete

- Access the correct group number for test materials by scanning the QR code on the back of the meter with your mobile device

Capacitance ball sensor for
non-intrusive measurements

Bright LED worklight

Bluetooth connectivity for
wireless data transfer

Backlit display

IP40 rating

2 m drop-tested durability

MR59

BALL PROBE MOISTURE METER WITH BLUETOOTH

An affordable Bluetooth pinless meter
with a ball-tip sensor that can help
you cover a large area in a short time
without leaving a mark

KEY FEATURES

- Measure into corners and around baseboards
  with the ball-tip sensor

- Wirelessly connect the meter to FLIR Tools Mobile
  to view live readings from your mobile device

- Locate hidden sources and migration paths of
  moisture by creating heat maps of affected areas

- Identify potential moisture problems up to
  100 mm (4 in) below the surface

MR40

MOISTURE PEN + FLASHLIGHT

A pocket-portable and rugged moisture meter/flashlight combo designed to find and quantify moisture content in wood and common building materials

KEY FEATURES

- Take accurate measurements with the two-pin, single-scale moisture meter

- Carry the meter in your pocket and take measurements in tight spaces

- Eliminate the need to carry a separate flashlight

- Use in combination with a thermal camera to confirm moisture

Calibration/pin check integrated in cap

3 m drop-tested durability

IP54 splashproof rating

Bright flashlight

Replaceable pins

TECHNICAL
SPECIFICATIONS

	MR40	MR55	MR59	MR60	MR77	MR160	MR176
Thermal Imaging							
IR Resolution (IGM)	—	—	—	—	—	80 × 60	80 × 60
Field of View	—	—	—	—	—	51° × 38°	51° × 38°
Thermal Image Palettes	—	—	—	—	—	Iron, Rainbow, Ice, Gray	Iron, Rainbow, Ice, Gray
Display							
LCD with LED Backlight	LCD (no backlight)	Yes	Yes	—	Yes	—	—
Color QVGA Display	—	—	—	2.3" 64K TFT graphic	—	2.3" 64K TFT graphic	2.3" 64K TFT graphic
Moisture Detection							
Moisture Measurement	Pin	Pin	Pinless	Pin and pinless	Pin and pinless	Pin and pinless	Pin and pinless
Pin Moisture Range	5% - 30% MC (±2% MC) 30% - 60% (reference only)	Wood groups (1-9): 7% - 30% MC (±2% MC) 30% - 99% (reference only) Construction material groups (10-11): 1 - 99% Group 10 (reference only) 1 - 35% Group 11 (reference only)	—	Wood groups (1-9): 7% - 30% MC (±1.5% MC) 30% - 100% (reference only) Construction material groups (10-11): 0 - 20% (reference only)	Wood groups (1-9): 7% - 30% MC (±1.5% MC) 30% - 100% (Reference Only)	Wood groups (1-9): 7% - 30% MC (±1.5% MC) 30% - 100% (reference only)	Wood groups (1-9): 7% - 30% MC (±1.5% MC) 30% - 100% (reference only)
Pinless Moisture Range	—	—	0 to 100% relative	0 to 100% relative	0 to 99.9% relative	0 to 100% relative	0 to 100% relative
Relative Humidity	—	0% - 20% (±5%) 20% - 80% (±3.5%) 80% - 100% (±5%)"	—	—	0% - 10% (±3%) 10% - 90% (±2.5%) 90% - 99% (±3%)"	—	10%- 90%(±2.5%)
Pinless Moisture Depth	—	—	Up to 100 mm (4 in)*	Up to 19 mm (0.75 in)*	Up to 19 mm (0.75 in)*	Up to 19 mm (0.75 in)*	Up to 19 mm (0.75 in)*
Pin Moisture Material Types	Group 9 / building materials: plywood, drywall, and oriented strand board (OSB) **	9 wood groups, 2 construction material groups	—	9 wood groups, 2 construction material groups	9 wood groups	9 wood groups	9 wood groups
General							
Laser Pointer	—	—	—	—	Yes, with IR temperature	Yes	Yes
Saved Image File Format	—	—	—	.BMP with values overlaid	—	.BMP with values overlaid	.BMP with values overlaid
.CSV Stored Data Format	—	—	—	Yes	—	Yes	Yes
Stored Image Capacity	—	—	—	9999 images	20 points internal storage	9999 images	9999 images
IR Temperature	—	—	—	—	-20 to 200°C (-4 to 392°F)	—	—
Connectivity	—	Bluetooth (BLE)	Bluetooth (BLE)	—	Bluetooth	—	—
Temperature/RH Sensor Calculations	—	—	—	—	Vapor Pressure, Relative Humidity, Temperature, GPP, Dew Point	—	Vapor Pressure, Relative Humidity, Temperature, GPP, Dew Point
Battery	2× AAA	2x 1.5 V AA	1x 9 V	Internal rechargeable Li ion	1x 9 V	Internal rechargeable Li ion	Internal rechargeable Li ion
Drop Test	3 m (9.8 ft)	2 m (6.6 ft)	2 m (6.6 ft)	3 m (9.8 ft)	2 m (6.5 ft)	3 m (9.8 ft)	3 m (9.8 ft)

*Depending on material under test
** For materials other than Group 9 download the MR40 Material Conversion Table (publication MR40-AN01): http://flir.custhelp.com/app/account/fl_download_manuals

UPGRADE YOUR MOISTURE METER
WITH FLIR ACCESSORIES

MR01 REPLACEABLE TEMPERATURE / RELATIVE HUMIDITY SENSOR
Designed for use with the FLIR MR77 or MR176 to take accurate temperature and humidity measurements. The MR01 is factory calibrated and features a protective cap. A metallic screw secures the probe in place.

MR01-EXT TEMPERATURE / RELATIVE HUMIDITY SENSOR AND EXTENSION ASSEMBLY
Use for acclimation purposes, such as dryer/dehumidifier exhaust vents and to extend the reach of moisture meter integral Temp/RH probes.

MR11 HANDHELD TEMPERATURE & HUMIDITY SENSOR ACCESSORY
Pre-deploy in dehumidifier exhaust vents for instantaneous readings, or use in locations where access is restricted, such as small holes inside wall cavities.

MR04 EXTENSION POLE
Easily probe large and out-of-reach areas with this telescoping pole that extends up to 52 in. Or use to extend the reach of the MR77 or MR176 relative humidity/temperature probe; for example, access inside of wall cavities.

MR05* IMPACT PROBE
Easily test for moisture in challenging spots – on rough or uneven surfaces, in corners, in hard woods or high-density materials, and in areas without a dry reference.

MR06* WALL CAVITY PROBE
Penetrate into wall cavities and the inside face of exterior walls to measure insulation moisture levels.

MR07 HAMMER PROBE
Take measurements in subfloor through carpet, hardwood flooring, and hard materials that are difficult to penetrate with a standard pin probe.

MR08 HAMMER / WALL PROBE
Comfortably hammer probe into vertical, angled, or inverted surfaces, and get down below carpet pads and subfloor.

MR09 BASEBOARD PROBE
Probe behind baseboards, wall trim, crown molding, and other inaccessible areas without requiring removal.

MR10 PROTECTIVE CASE
Safeguard your valuable FLIR T&M instruments with this durable EVA protective case to shield against dirt, dings, and harsh environmental conditions.

MR12 BALL PROBE MOISTURE SENSOR ACCESSORY
Take non-invasive readings up to 100 mm (4 in) below a surface.

*FLIR recommends using the MR05 or MR06 to test moisture in concrete/building materials. Please review your instruction manual for complete details.

MOISTURE METER
ACCESSORY COMPATIBILITY

Accessory / Moisture Meter	MR40	MR55	MR59	MR60	MR77	MR160	MR176
MR01 Temperature / Relative Humidity Sensor	-	-	-	-	x	-	x
MR01-EXT Temperature / Humidity Sensor with Extension	-	-	-	-	x	-	x
MR11 Handheld Temperature / Humidity Sensor	-	-	-	-	x	-	x
MR02 Pin Probe (spare)	-	-	-	x	x	x	x
MR04 Extension Pole	-	-	x	-	-	-	-
MR05 Impact Pin Probe	-	-	-	x	x	x	x
MR06 Wall Cavity Probe	-	-	-	x	x	x	x
MR07 Hammer Probe (with bag)	-	-	-	x	x	x	x
MR08 Hammer and Wall Cavity Probe Combo (with bag)	-	-	-	x	x	x	x
MR09 Baseboard Probe	-	-	-	x	x	x	x
MR10 EVA Protective Case	-	-	-	x	x	x	x
MR12 Ball-Type Moisture Sensor	-	-	-	x	-	x	x

MR01

MR11

MR04

MR05

MR06

MR07

MR08

MR09

MR10

MR12

FLIR MOISTURE KITS
PROVIDE THE
COMPLETE SOLUTION

FLIR MOISTURE KITS PROVIDE THE COMPLETE SOLUTION FOR FAST AND ACCURATE TROUBLESHOOTING

FLIR MR160-KIT5
PROFESSIONAL IMAGING MOISTURE KIT
Kit includes the FLIR MR160 Imaging Moisture Meter and the FLIR MR08 Hammer / Wall Cavity Probe.

FLIR MR176-KIT5
PROFESSIONAL IMAGING MOISTURE KIT
Kit includes FLIR's premium MR176 Imaging Moisture Meter, the FLIR MR08 Hammer / Wall Cavity Combo Probe accessory, plus an extra FLIR MR01 Replaceable Temperature / Relative Humidity Sensor.

MR160-KIT2
BUILDING INSPECTION KIT
Kit includes the FLIR MR160 Imaging Moisture Meter, the FLIR C2 Thermal Imager, and the FLIR MR06 Wall Cavity Probe accessory.

MR176-KIT6
PROFESSIONAL REMEDIATION KIT
Kit includes the FLIR MR176 Imaging Moisture Meter, the FLIR E6 thermal imager, and the FLIR MR08 Hammer / Wall Cavity Combo Probe.

◆FLIR® | The World's Sixth Sense®