

## Product Datasheet - Technical Specifications



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## MOISTURE METER, MSX® IR CAMERA & HYGROMETER

# FLIR MR277™

The FLIR MR277 is an accurate, easy-to-use, all-in-one tool for quickly locating moisture and building envelope issues. This professional moisture meter combines the advantages of Infrared Guided Measurement (IGM™) with FLIR Multi-Spectral Dynamic Imaging (MSX®) and advanced environmental sensors to help you locate, identify, and document problems. The integrated pinless moisture sensor provides fast, non-invasive readings which you can then confirm with the external pin probe. Features such as the built-in hygrometer and the field-replaceable temperature/relative-humidity sensor expedite troubleshooting, while METERLiNK® allows you to connect to mobile devices and upload data to the FLIR Tools® app for reporting.



### LOCATE BUILDING PROBLEMS FASTER

Easily investigate the source of moisture build-up and building envelope issues

- Clearly see areas of concern with a high-performance 160 × 120 thermal imaging sensor
- Quickly find suspected problems with IGM technology
- Easily identify both the context and the issue with MSX, which embosses visual details on full thermal images
- Target the exact source of problems with the integrated laser pointer



### DIAGNOSE EFFICIENTLY AND ACCURATELY

Take comprehensive measurements and analyze moisture readings

- Quickly scan for moisture with the integrated non-invasive pinless sensor
- Capture exact measurements with an external pin probe (included) and wide range of optional moisture probes
- Reduce downtime with field-replaceable temperature/humidity sensor
- Calculated parameters based on multi-sensor input: grains per pound or grams per kilogram, vapor pressure, and dew point



### DO MORE IN LESS TIME

One tool helps you get the job done

- Create a single file documenting comprehensive thermal and visual imagery with hygrometer readings and laser location
- Download images and data wirelessly or using the included USB cable
- Analyze images and quickly generate reports with free FLIR Tools software
- Easy to use with intuitive interface

## SPECIFICATIONS

Thermal imaging	
Thermal image resolution	160 × 120 (19,200 pixels)
Spectral response	8 μm to 14 μm
Field of view (W × H)	55° × 43°
Sensitivity	<70 mK
Object temperature range	0°C to 100°C (32°F to 212°F)
Image update speed frequency	9 Hz
Image modes and displays	
Thermal image palettes	Iron, Rainbow, Arctic, White-hot, Black-hot
MSX®	Adds visual details to full resolution thermal image
Image modes	Thermal, visual, MSX®
Internal memory	8 GB
Image gallery	Yes
Display type	QVGA (320 × 240 pixels) 2.8 in. color TFT graphical display
Moisture measurements	
Pin moisture range	7% to 100%
Pin moisture accuracy	±1.5%, 7 to 30% Reference only: 30 to 100%
Pin moisture groups	11 material groups
Pinless moisture range and accuracy	0 to 100; relative
Pinless measurement depth	Max of 19 mm (0.75 in)
Measurement resolution	0.1
Response time pinless mode	100 ms
Response time pin mode	750 ms
Environmental measurements	
Relative humidity range	0% to 100% RH
Relative humidity basic accuracy	±2.5%
Relative humidity detailed accuracy	±4.7% (0% to 10% RH), ±2.5% (10% to 90% RH), ±4.7% (90% to 100% RH)
Air temperature range	0°C to 50°C (32°F to 122°F)
Air temperature accuracy	±0.6°C (±1.1°F)
Dew point	-30°C to 50°C (-22°F to 122°F)
Dew point basic accuracy	±1.0°C (±1.8°F)
Vapor pressure	0 to 12.0 kPa
Vapor pressure basic accuracy	±0.05 kPa
Mixing ratio range	0 to 80.0 g/kg (0 to 560 GPP)
Mixing ratio basic accuracy	0.25 g/kg (±2 GPP)

Specifications are subject to change without notice.

General information	
Saved image file format	Radiometric jpeg
Stored image capacity	15,000 Images
Digital camera	2 MP
Digital camera field of view (FOV)	83° (70.5° HFOV × 56° VFOV)
Language options	22
Laser type	Visible class 2, single laser pointer to center of thermal image
Power system	
Continuous run time	16 hours maximum
Typical usage	4 work weeks
Auto power off	Programmable: off, 1, 5, or 20 minutes
Battery	Rechargeable 4.2 V, 5400 mAh LiPo
Certifications	
Certification standards	EN 61326 (EMC), EN 60825-1 Class 2 (laser), IEC61010-1
Agency approvals	CE, FCC Class B, RCM
Environmental and physical data	
Operating temperature	-20°C to 60°C (-4°F to 140°F)
Storage temperature	-20°C to 45°C (-4°F to 113°F)
Operating humidity	5% to 95%
Storage humidity	90% relative humidity (no condensation)
Drop test	2 m (6.6 ft)
Weight:	406 g (14.3 oz)
Size (L × W × H)	16 × 8.5 × 4.4 cm (6.2 × 3.3 × 1.7 in)
Shipping information	
Packaging contents	FLIR MR277, FLIR MR13 Replaceable Temperature and Relative Humidity Sensor, FLIR MR02 Standard Moisture Pin Probe, quick start guide, international USB charger, USB cable, and lanyard

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