

Product Datasheet - Technical Specifications



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FLIR MR277: Moisture Meter, MSX IR Camera, and Hygrometer

P/N: MR277

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Website

<http://www.flir.com>

Customer support

<http://support.flir.com>

Disclaimer

Specifications subject to change without further notice. Camera models and accessories subject to regional market considerations. License procedures may apply. Products described herein may be subject to US Export Regulations. Please refer to exportquestions@flir.com with any questions.



General description	
Part number	MR277
Part name	Moisture Meter, MSX IR Camera, and Psychrometer
Description	Building Inspection System with Moisture Psychrometer and MSX IR Camera
Thermal imaging	
Imaging detector	FLIR Lepton microbolometer
Image calibration	Automatic with manual lock scale option
Thermal image resolution (W x H)	160 x 120 (19,200 pixels)
Object temperature range	0 to 100°C (32 to 212°F)
Spectral response	8–14 μm
Field of view (W x H)	55° x 43°
Sensitivity	<70 mK
Image update speed frequency	9 Hz
Thermal image palettes	Iron, Rainbow, Arctic, White-Hot, Black-Hot
Thermal image minimum focus distance	10 cm (4 in)
MSX	Adds visual details to full resolution thermal image
Saved image file format	Radiometric JPEG
Stored image capacity	15,000 images
Internal memory	8 GB
Digital camera	2MP
Digital camera field of view (HFOV)	83° FOV (70.5° HFOV x 56° VFOV)
Digital camera minimum focus distance	25 cm (9.8 in)
Display type	QVGA (320 x 240 pixels) 2.8 in. color TFT graphical display



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Moisture measurement	
Pin moisture range	7–100%
Pin moisture accuracy	±1.5%, 7 to 30% Reference only: 30 to 100%
Pin moisture groups	11 material groups
Pinless moisture range	0 to 100
Pinless moisture accuracy	Relative
Pinless measurement depth	0.75" (19 mm) Max
Measurement resolution	0.1
Response time pinless mode	100 ms
Response time pin mode	750 ms

Environmental measurement	
Relative humidity range	0 to 100%
Relative humidity basic accuracy	±2.5%
Relative humidity detailed accuracy	±4.7%, 0 to 10% ±2.5%, 10 to 90% ±4.7% 90 to 100%
Air temperature range	0 to 50°C (32 to 122°F)
Air temperature accuracy	±0.6°C (±1.1°F)
Dew point	–30 to 50°C (–22 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)

General information	
IP rating	IP54
Warranty	https://www.flir.com/testwarranty
Language options	22

Laser	
Type	Visible class 2
Orientation	Single laser pointer to center of thermal image
Power output	Maximum 1.0 mW
Wavelength	650 ±20 nm

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 3.7 V nominal, 5400 mAh LiPo

Certifications	
Certification standards	EN 61326 (EMC), EN 60825-1 Class 2 (Laser), IEC61010-1
Agency approvals	CE, FCC Class B, RCM



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Environmental specifications	
Operating temperature	-20 to +60°C (- 4 to +140°F)
Storage temperature	-20 to +45°C (- 4 to +113°F)
Operating humidity	5% to 95%
Storage humidity	90% relative humidity (no condensation)
Drop test	2 m (6.6 ft)

Meter physical data	
Weight	406 g (14.3 oz)
Size (L x W x H)	16 x 8.5 x 4.4 cm (6.2 x 3.3 x 1.7 in)

Shipping information	
Packaging type	Retail color box
Packaging contents	FLIR MR277, FLIR MR13 Replaceable Temperature and Relative Humidity Sensor, FLIR MR02 Standard Pin Probe, quick start guide, international USB charger, USB cable, and lanyard
Packaging weight	966 g (34 oz)
Packaging dimensions (H x W x L)	55 x 31 x 32 cm (21.6 x 12.3 x 12.4 in)
Master carton quantity	12
EAN-13	0793950374771
UPC-12	793950374771
Country of origin	China

Technical support	
Website	http://support.flir.com

Supplies & accessories:

- MR11; FLIR MR11: Handheld Temperature & Humidity sensor accessory
- MR12; FLIR MR12: Ball probe moisture sensor accessory
- MR01; Replaceable T/RH Probe for MR77
- MR02; Replaceable External Moisture Pin Probe for MR77
- MR05; Impact Pin Moisture Probe
- MR06; Wall Cavity Probe
- MR07; Hammer Probe
- MR08; Hammer and Wall Cavity Probe Combo
- MR09; Baseboard probe
- MR10-2; Protective case for FLIR Moisture Meters
- MR13; Replacement Temperature and Humidity Sensor for MR277