



# Industrial Thermal Imaging Multimeter with Datalogging, Wireless Connectivity, and IGM

## P/N: DM285

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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](mailto:exportquestions@flir.com) with any questions.



Part number	DM285
Part name	Industrial Thermal Imaging Multimeter with Datalogging, Wireless Connectivity, and IGM
<p>The FLIR DM285 is an industrial, all-in-one true RMS digital multimeter and thermal imager that can show you exactly where a temperature anomaly is for faster troubleshooting. Featuring Infrared Guided Measurement (IGM) powered by a built-in 160 × 120 FLIR thermal imager, the meter visually guides you to the precise location of a problem. You'll pinpoint issues faster, more safely, and efficiently. Ideal for inspecting industrial electrical, mechanical, HVAC/R, and electronic systems, and can be used for benchtop electronics and in the field. The FLIR DM285 uniquely features Bluetooth METERLiNK, and is compatible with the new FLIR InSite workflow management tool that allows you to prepare efficient survey routes, maintain accurate documentation, share information with clients, and file instant reports.</p>	
<p>Work safer and smarter:</p> <ul style="list-style-type: none"> <li>Thermal imaging allows you to quickly scan for overheating system components, then use the DMM test functions to troubleshoot and diagnose the fault.</li> <li>Non-contact temperature measurement identifies energized and potentially faulty equipment from a safe distance.</li> <li>Wirelessly connect to the FLIR InSite professional workflow management tool to streamline inspections and simplify data collection, sharing, and reporting.</li> <li>Onboard data storage for both electrical parameter data and thermal images.</li> </ul>	
<p>Troubleshoot challenging problems more efficiently and effectively:</p> <ul style="list-style-type: none"> <li>Fully loaded with features for high- and low-voltage applications.</li> <li>18-function DMM including VFD mode, true RMS, LoZ, NCV, a built-in worklight, and a laser pointer.</li> <li>Measures voltage, current, frequency, resistance, continuity, diode, capacitance, and temperature.</li> <li>Intuitive menu for ease of use.</li> </ul>	
<p>Design and functionality:</p> <ul style="list-style-type: none"> <li>An all-in-one tool that's built to last.</li> <li>Durable and drop tested with a 10-year warranty.</li> <li>Quick and easy battery changes with the "no tool" battery compartment.</li> <li>Upgraded display with an improved viewing angle.</li> </ul>	
<b>Static datalogging and storage</b>	
Data storage interval, configurable	1–99 seconds
Readings per memory set	40 000
Maximum number of memory sets	10
<b>Thermal image storage</b>	
Maximum number of images	100



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<b>Connectivity</b>	
Wireless technology	Bluetooth BLE
Communications protocol	METERLiNK
<b>Thermal imaging</b>	
Detector type	FLIR Lepton; micro-bolometer focal plane array (FPA)
Infrared (IR) imaging resolution (V × H)	160 × 120 pixels
IR imaging field of view (V × H)	57° × 44°
IR imaging spectral response	8–14 μm
Thermal sensitivity	150 mK (0.15°C)
IR image capture frequency	9 Hz
IR image color palettes	Rainbow, Iron, Gray scale
Laser pointer type	Class I (red)
Laser pointer power	<0.4 mW
IR temperature measurement range	–10 to 150°C (14–302°F)
Over- and under-range indication	OL
Temperature reading stabilization	Dashes are displayed for approximately 30 seconds while the temperature reading stabilizes
IR temperature resolution	0.1°C (0.1°F)
IR temperature accuracy	±3°C (5.4°F) or ± 3% of the reading (whichever is greater) for temperatures > 25°C (77°F), ±5°C for temperatures –10°C to 25°C (14–77°F)
Distance-to-spot (D:S) ratio	30:1
Emissivity adjustment	0.95 maximum, 4 presets plus a custom setting (0.10–0.99)
Targeting	Displayed cross-hairs pinpoint the center of the measurement spot
Hold	Image with measurement
<b>Electrical measurement</b>	
Display count	6000
AC/DC V	1000 V AC RMS or 1000 V DC ± 1%/0.09%
AC/DC mV	600.0 mV ± 1%/0.5%
VFD AC V	1000 V AC RMS, 45–65 Hz, ± 1%
AC/DC LoZ V	1000 V AC RMS or 1000 V DC ± 2.0%
AC/DC A	10.00 A AC RMS or 10.00 A DC ± 1.5%/1.0%
AC/DC mA range	400.0 mA ± 1.5%/1.0%
AC/DC μA range	4000 μA AC RMS or 4000 μA DC ± 1.0%
Frequency counter	100.00 kHz ± 0.1%
Resistance	6.000 MΩ ± 0.9%, 50.00 MΩ ± 3.0%
Continuity check threshold	20–200Ω
Diode test	1.500 V ± 0.9%
Capacitance	10.00 mF ± 1.9%
Temperature, type K thermocouple	–40 to 400°C DMM ± (1.0% + 3°C)/IGM ± (1.0% + 5°C) (–40 to 752°F DMM ± (1.0% + 5.4°F)/IGM ± (1.0% + 9°F))



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<b>Electrical measurement</b>	
Measuring rate	3 samples per second
Accuracy is given as $\pm$ (% of reading)	
<b>Meter data</b>	
Category rating	CAT IV—600 V, CAT III—1000 V
IP rating	IP40
Drop test	3 m (9.8 ft.)
Warranty	<a href="https://www.flir.com/testwarranty">https://www.flir.com/testwarranty</a>
Calibration cycle	Once per year, recommended
<b>Certifications</b>	
Certifications	C-UL-US, CE, RCM
Safety standards compliance	IEC 61010-1 CAT IV—600 V, CAT III—1000 V
<b>Power system</b>	
Power requirements	3 × AA Energizer L91 Lithium (Li/FeS <sub>2</sub> ) batteries or optional TA04 lithium polymer rechargeable battery system
Battery life, Energizer L91 lithium batteries	Approximately 12 hours constant IGM
Battery life, TA04 lithium polymer batteries	Approximately 12 hours constant IGM
Auto power off	Default: 10 minutes
<b>Environmental data</b>	
Operating ambient temperatures and relative humidity (RH)	-10 to 30°C (14–86°F), <85% RH; 30 to 40°C (86–104°F), <75% RH; 40–50°C (104 to 122°F), <45% RH
Storage temperature and RH	-20 to 60°C (-4 to 140°F), 0–80% RH (without batteries)
Temperature coefficient	0.1 × (specified accuracy)/°C, <18°C (64.4°F), >28°C (82.4°F)
Operating altitude	2000 m (6560 ft.)
Pollution degree	2
EMC	EN61326-1
<b>Meter physical data</b>	
Weight	537 g (18.9 oz.)
Dimensions (L × W × H)	200 mm × 95 mm × 49 mm (7.9 in. × 3.7 in. × 1.9 in.)
Material	Polycarbonate/ABS
Color	Gray, black, and blue
<b>Shipping information</b>	
Packaging type	Color box with view of product in clamshell
Packaging contents	DM285 FLIR meter, TA82 premium test leads, TA70 alligator clips, TA60 thermocouple probe with adapter, TA84 test lead holder storage/tripod accessory, 3 × AA Energizer batteries, English-only quick start guide
Packaging weight	1.3 kg (2.8 lb.)
Packaging dimensions (H × W × L)	33 cm × 14 cm × 11 cm (13 in. × 5.5 in. × 4.33 in.)
Carton weight	16.5 kg (36.4 lb.)



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Shipping information	
Carton dimensions (H x W x L)	65 cm x 30 cm x 56 cm (25.6 in. x 11.8 in. x 22.0 in.)
Carton quantity	12
EAN-13	0793950372876
UPC-12	793950372876
Country of origin	Taiwan
Tariff code	9027504020

Technical support	
Website	<a href="http://support.flir.com">http://support.flir.com</a>

Included in the box	
DM285 Industrial Thermal Imaging Multimeter with Datalogging, Wireless Connectivity, and IGM	
TA82 Premium Silicone Test Leads	
TA84 Test Lead Storage/Tripod Accessory	
TA60 Thermocouple Adapter with Type K Probe	
TA70 CAT IV Insulated Alligator Probes (Slip On)	
Soft-sided carrying case	

## Supplies & accessories:

- TA04-KIT; Lithium Polymer Rechargeable Battery Kit
- TA10; Protective case for DM9x and IM7x Series
- TA10-F; Protective Case for DM9x and TA72/74 Series
- TA15; Universal Soft Sided Case
- TA16; Pouch for FLIR Multimeters
- TA42; TA42 Belt Clip
- TA50; Magnetic Hanging Strap for DM9x, IM7x Series
- TA52; TA52 Magnetic Meter Mount
- TA60; Thermocouple probe with adapter
- TA70; CAT IV Insulated Alligator Probes
- TA72; Large Universal Flex Current Probe Accessory (25 cm)
- TA74; Large Universal Flex Current Probe Accessory (45 cm)
- TA80; CAT IV Silicone Test Leads

**Teledyne FLIR LLC - EXTECH BRAND**

**9 Townsend West, Nashua NH 03063 / Phone: 603.324.7800 / Fax: 603.324.7864**

## **Declaration of Conformity**

**Extech Model: DM285**

**Description: Multimeter w/Lepton**

**Date of Issue: 01-Oct-21**

We, FLIR Commercial Systems, Inc. - Extech Brand, 9 Townsend West, Nashua, NH 03063 declare that a sample of the product listed above has been tested by a third party for CE marking according to:

**EMC Directive**                    **2014/30/EU**  
**EMC Report #**                    **R11820283-EMC**  
**Report Date of Issue:** **11/13/2017**

**Standards:**

EN 61326-1:2013

**RED Directive**                    **2014/53/EU**  
**RED Report #**                    **R11820283-EMC**  
**Report Date of Issue:** **11/13/2017**

**Standards:**

EN 301 489-1 v2.2.0  
EN 301 489-17 v3.2.0

**LVD Directive**                    **2014/35/EU**  
**Report Number:**                **E201687-D1002-1/A2/C0-ULCB**  
**Report Date of Issue:** **7/28/2017**

**Standards:**

IEC 61010-1 (Ed. 3)  
IEC 61010-2-033 (Ed. 1)

**RoHS Directive:                    EU Directive 2015/863/EU (RoHS 3)**

The test reports show that the product fulfills the requirement in the EC Low Voltage Directive, EMC Directive, RED Directive, and RoHS Directive for CE Marking. On this basis, together with the manufacturer's own documented production control, the manufacturer (or their European authorized representative) can in their EC Declaration of Conformity verify compliance with the EC Low Voltage Directive, EMC Directive, RED Directive, and RoHS Directive.



Mark Sultzbach / QA Manager

Taipei, Taiwan Oct 6, 2021

## UK Declaration of Conformity

**Product:** FLIR DM285

**Name and address of the manufacturer:** Teledyne FLIR LLC,  
9 Townsend West,  
Nashua, NH 03063

This declaration of conformity is issued under the sole responsibility of the manufacturer.

The object of the declaration: FLIR DM285

The object of the declaration described above is in conformity with the relevant statutory requirements applicable to the specific product:

### Standards review between UK and EU

UK legislation refr.	UK designated standard*	EU regulation refr.	EU harmonised standard
<b>EMC</b>			
S.I. 2016 No. 1091	EN 61326-1:2013	2014/30/EU	EN 61326-1:2013
<b>LVD Directive</b>			
S.I. 2016 No. 1101	EN 61010-1:2012	2014/35/EU	IEC 61010-1 (Ed. 1)
S.I. 2016 No. 1101	EN 61010-1:2012	2014/35/EU	IEC 61010-2-033 (Ed. 1)
<b>Radio equipment (RE)</b>			
S.I. 2016 No.1091	EN 301 489-1 V1.9.2	2014/53/EU (RED)	EN 301 489-1 V2.2.0
S.I. 2016 No.1091	EN 301 489-34 V1.4.1	2014/53/EU (RED)	EN 301 489-17 V3.2.0
<b>RoHS</b>			
S.I. 2012 No. 3032	EN 50581:2012	2015/65/EU (RoHS)	EN 50581:2012

\* <https://www.gov.uk/guidance/designated-standards>

Designated standards: EMC – consolidated list, version 1, 1 January 2021

Designated standards: low voltage – notice of publication, 1 January 2021

Designated standards: radio equipment – consolidated list, version 1, 1 January 2021.

Designated standards: RoHS – consolidated list, version 1, 1 January 2021

### FLIR Commercial Systems

Quality Assurance



Hank Tsai  
Quality Manager