Laserliner Thermo Visualizer Pocket Temperature Instruction Manual

Contents

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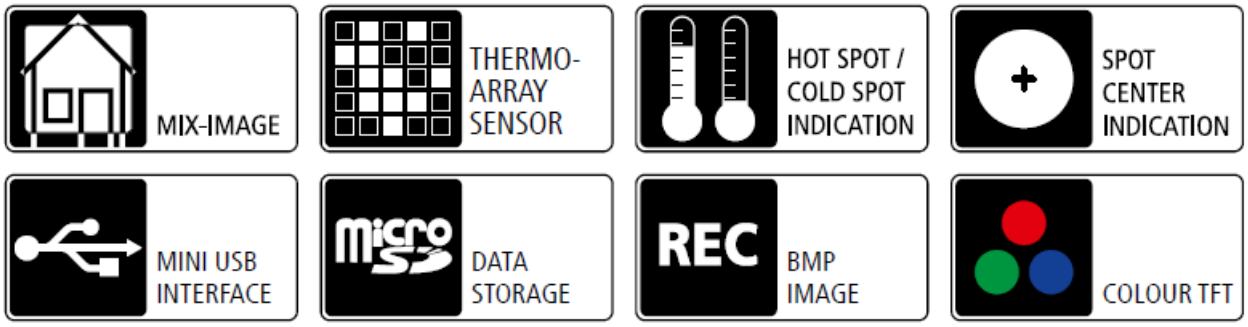
FEATURES



WARNING: Completely read through the operating instructions, the „Warranty and Additional Information“ booklet as well as the latest information under the internet link at the end of these instructions. Follow the instructions they contain. This document must be kept in a safe place and passed on together with the device.

Function / Application

The thermal imaging camera provides visualisation of tempera-ture curves, energy losses, thermal bridges, electrical overloads and moisture build-up. The infrared image, digital image and mix image allow the user to have a flexible illustration of the area under inspection. Images are stored on exchangeable Micro-SD cards. The device features a USB interface and a high-contrast, colour TFT display.

General safety instructions

- The device must only be used in accordance with its intended purpose and within the scope of the

specifications.

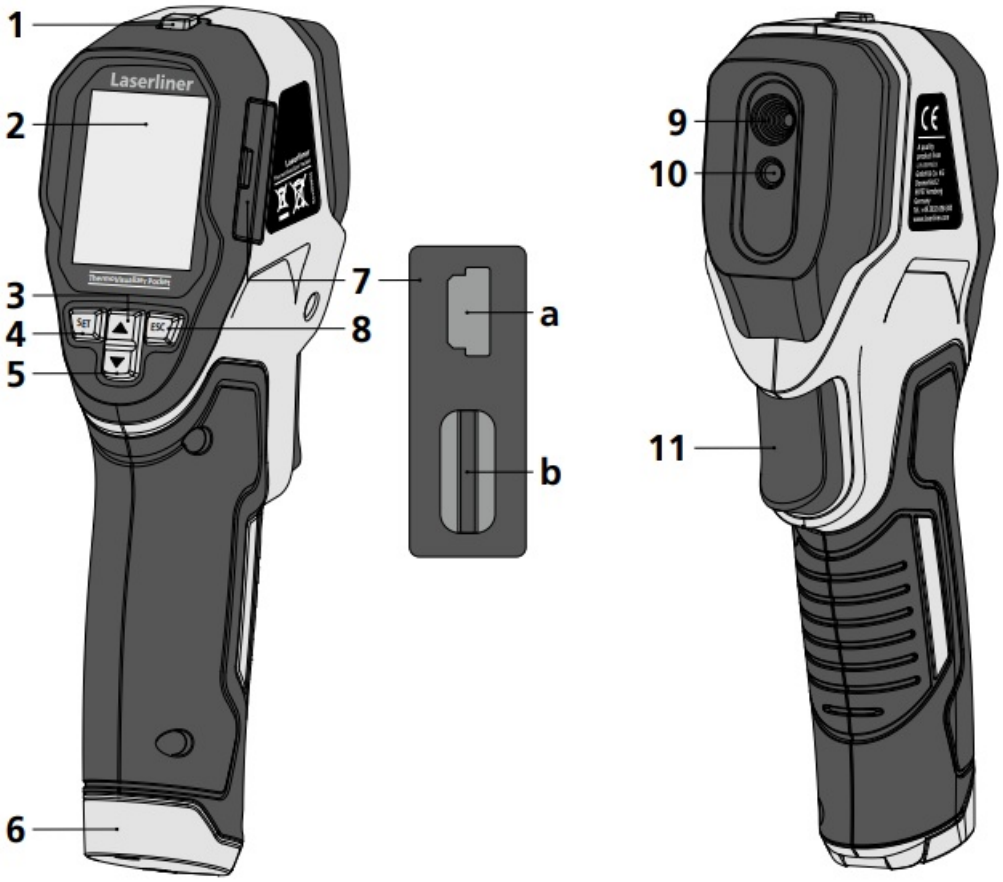
- The measuring tools and accessories are not toys.
  Keep out of reach of children.
- Modifications or changes to the device are not permitted, this will otherwise invalidate the approval and safety specifi-cations.
- Do not expose the device to mechanical stress, extreme temperatures, moisture or significant vibration.
- The device must no longer be used if one or more of its functions fail or the battery charge is weak.

Safety instructions

Dealing with electromagnetic radiation

- The measuring device complies with electromagnetic compatibility regulations and limit values in accordance with EMC-Directive 2014/30/EU.
- Local operating restrictions – for example, in hospitals, aircraft, petrol stations or in the vicinity of people with pacemakers – may apply. Electronic devices can potentially cause hazards or interference or be subject to hazards or interference.
- The measuring accuracy may be affected when working close to high voltages or high electromagnetic alternating fields.

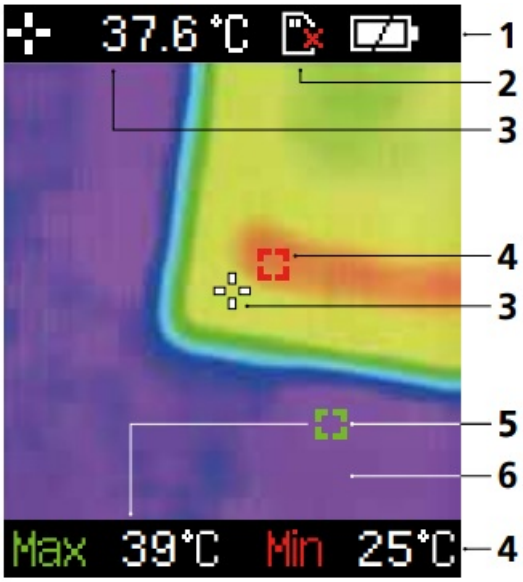
ON/OFF



- 1,8“ colour display
- Menu navigation / select digital image, overlay infrared / digital image
- Menu / Control menu (Confirmation)

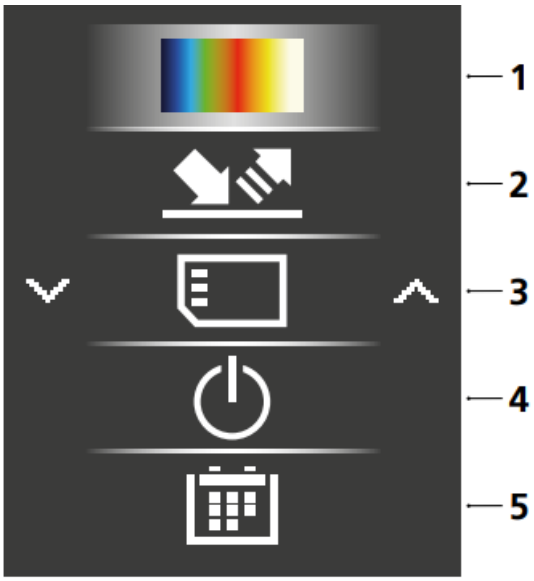
- Menu navigation /select digital image, overlay infrared / digital image
- Battery compartment
- Shaft
- Mini USB interface
- Micro-SD card slot Control menu (cancel / back)
- Infrared sensor
- Digital camera
- Trigger: save image

Standard measurement view



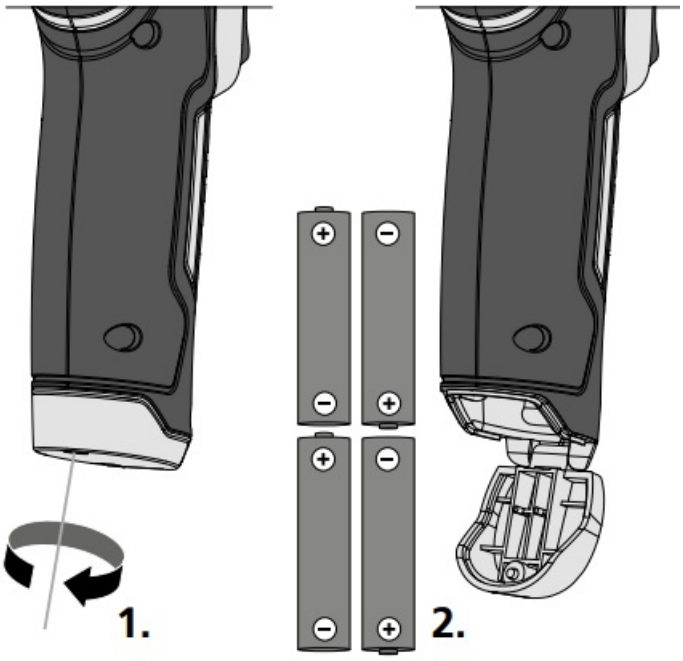
1. Battery charge indicator
2. Micro-SD card not inserted
3. Temperature at centre
   of image
4. Min. temperature
5. Max. temperature
6. Thermography image

Main Menu



1. Change color palette
2. Set emissivity coefficient
3. Open media gallery / Delete images from micro-SD card
4. Auto shutdown
5. Set date/time

Inserting batteries

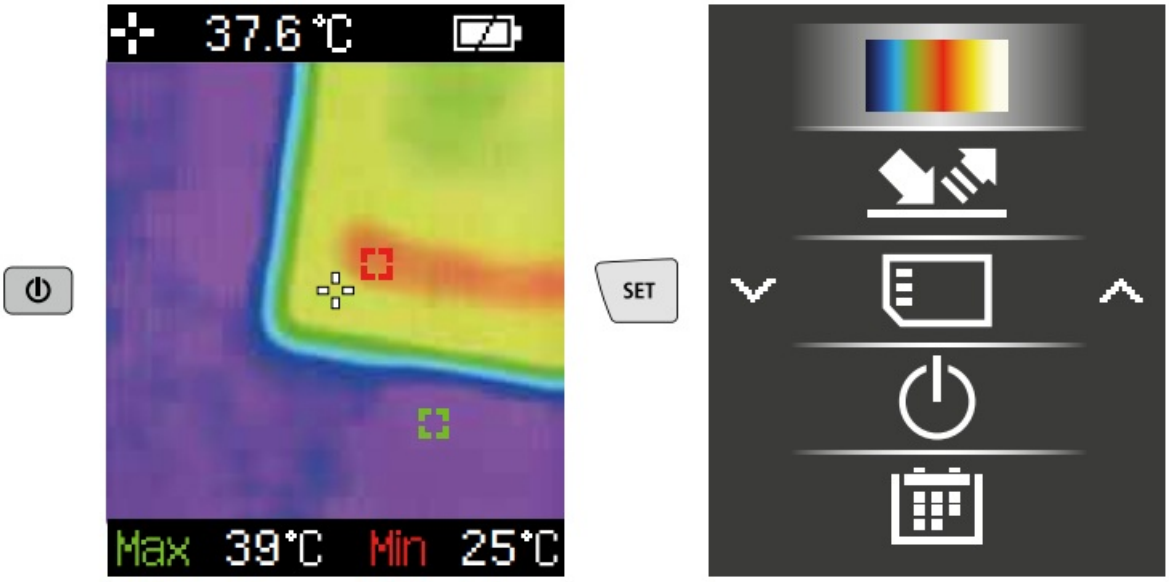


Open the battery compartment and insert batteries according to the symbols. Be sure to pay attention to polarity.

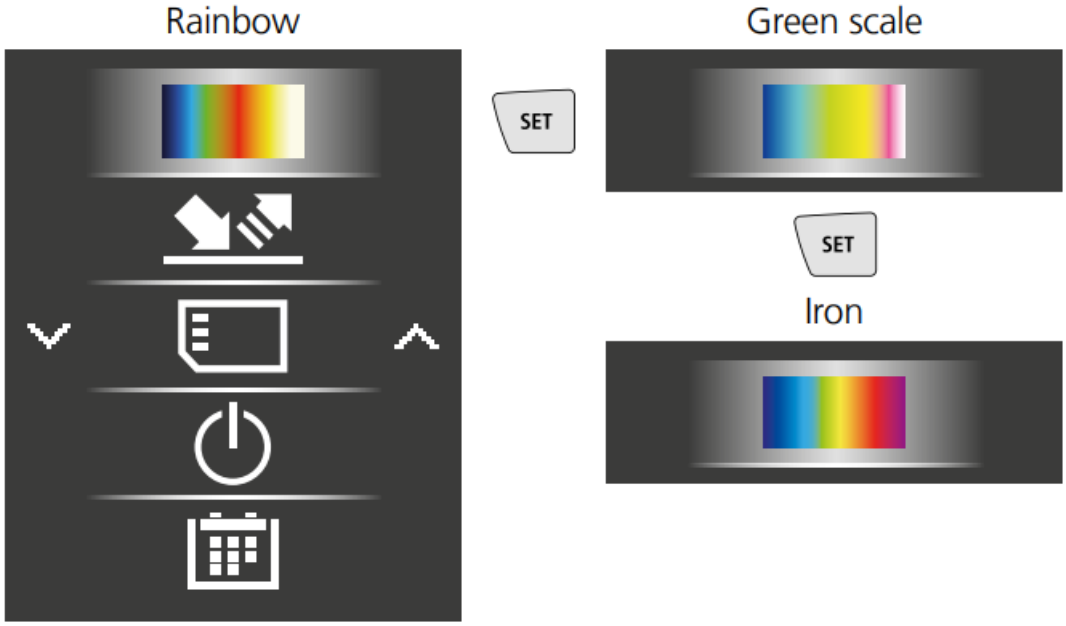
ON / **OFF**

Inserting micro-SD card
To insert a micro-SD card, first open the rubber cover and then insert the memory card as illustrated. You cannot record anything without a storage medium.

WARNING: The device must be swit-ched off before removing the micro-SD.
Main menu: General and measurement-specific settings can be made in the main menu. The menu is controlled with the four buttons (3, 4, 5, 8).

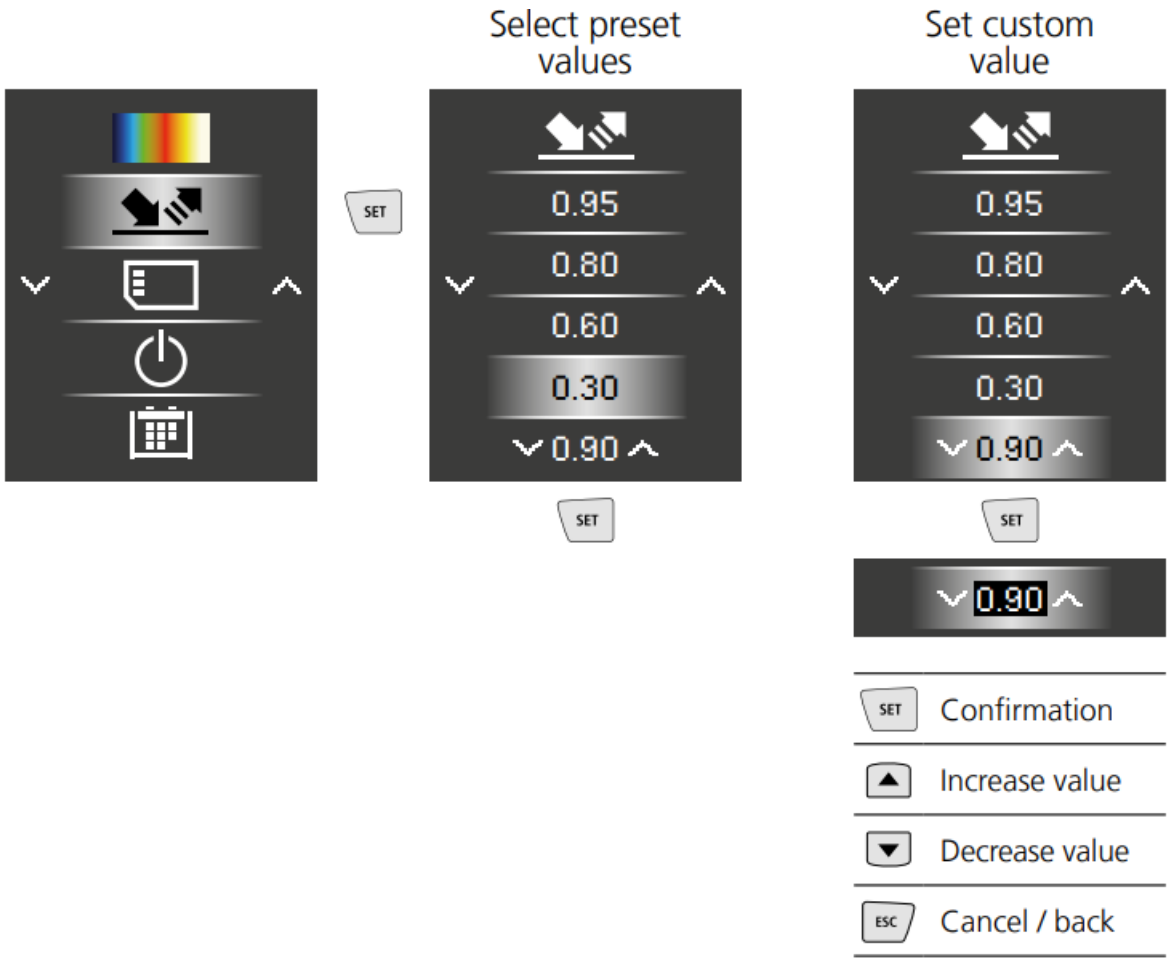


Colour ranges IR image: You can choose from several standard colour ranges to represent the measured infrared temperatures. Depending on the colour palette, the measured temperatures are adjusted within the current image section and displayed in the respective colour space.



Emissivity coefficient

The level of infrared emissions given off by everything depends on the specific material and surface. This factor is determined by the emissivity coefficient (0.10 … 1.0). For
accurate measure-ments, it is absolutely essential that the emissivity coefficient is set first. The emissivity coefficient can either be custom set or selected from the predefined emissivity coefficients from the list.



Emission coefficient tables: Reference values with tolerances

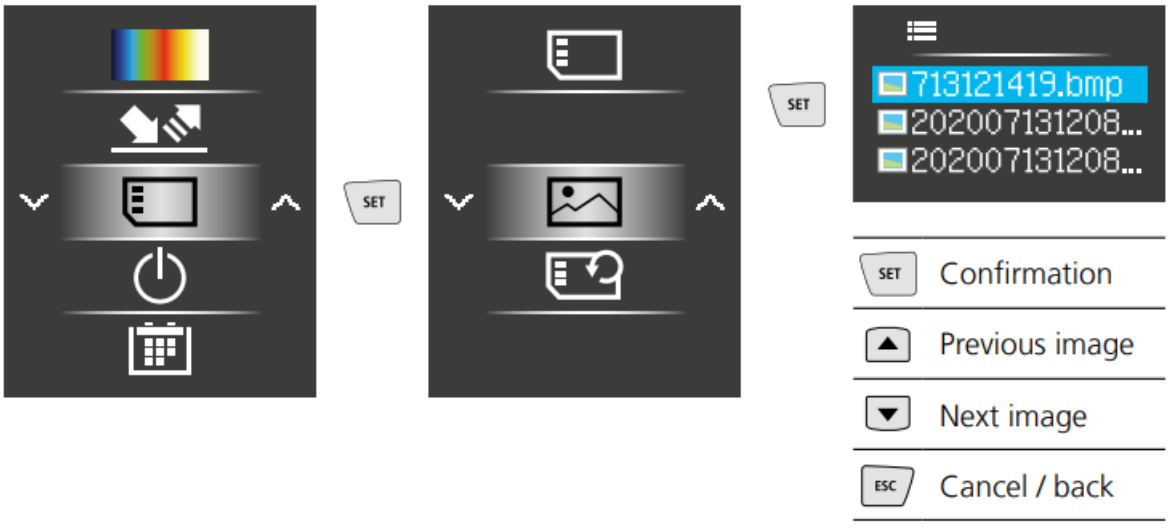
Metals

Alloy A3003	
Oxidised	0.20
Roughened	0.20
Aluminium	
Oxidised	0.30
Polished	0.05
Brass	
Polished	0.30
Oxidised	0.50
Chromium oxide	0.81
Copper	
Oxidised	0.72
Copperoxide	0.78
Inconel	
Oxidised	0.83
Electropolished	0.15
Iron	
Oxidised	0.75
With rust	0.60
Iron, cast	
Non-oxidised	0.20
Molten mass	0.25
Iron, forged	
Matt	0.90
Lead	
Rough	0.40
Platinum	
Black	0.90
Steel	
Cold rolled	0.80
Ground plate	0.50
Polished plate	0.10
Alloy (8% nickel, 18% chromium)	0.35
Galvanised	0.28
Oxidised	0.80
Heavily oxidised	0.88
Freshly rolled	0.24
Rough, flat surface	0.96
Rusty, red	0.69
Sheet, nickel plated	0.11
Sheet, rolled	0.56
Stainless steel	0.45
Zinc	
Oxidised	0.10

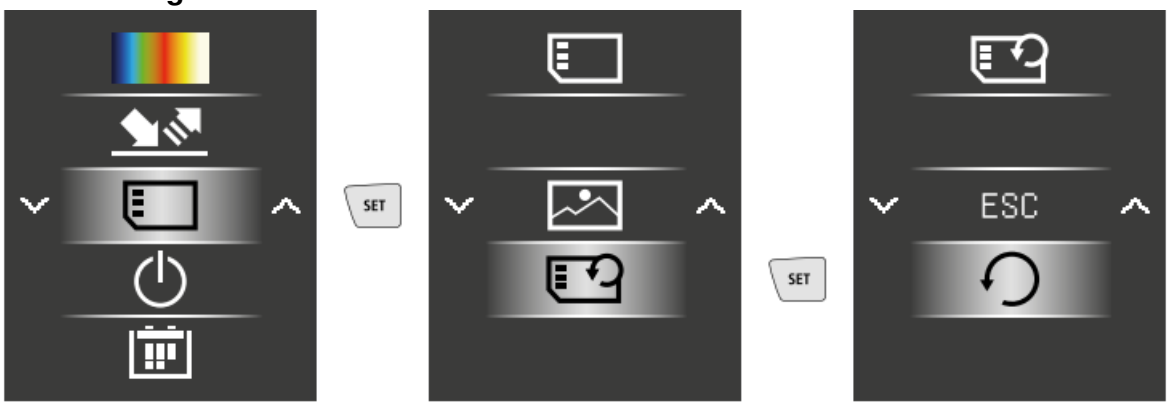
Nonmetals			
Asbestos	0.93	**Lime**	0.35
Asphalt	0.95	**Lime malm brick**	0.95
Basalt	0.70	**Limestone**	0.98
Brick, red	0.93	**Marble**	
Carborundum	0.90	Black, dull finish	0.94
Cement	0.95	Greyish, polished	0.93
Ceramics	0.95	**Masonry**	0.93
China		**Paint**	
Brilliant white	0.73	Black, matt	0.97
With glaze	0.92	Heat-resistant	0.92
Clay	0.95	White	0.90
Coal		**Paper**	
Non-oxidised	0.85	All colours	0.96
Concrete, plaster, mortar	0.93	**Plastic**	
Cotton	0.77	Translucent	0.95
Earthenware, matt	0.93	PE, P, PVC	0.94
Fabric	0.95	**Quartz glass**	0.93
Glass	0.90	**Rubber**	
Glass wool	0.95	Hard	0.94
Graphite	0.75	Soft, grey	0.89
Gravel	0.95	**Sand**	0.95
Grit	0.95	**Screed**	0.93
Gypsum	0.88	**Snow**	0.80
Gypsum cardboard	0.95	**Soil**	0.94
Heat sink		**Tar**	0.82
Black, anodized	0.98	**Tar paper**	0.92
Human skin	0.98	**Transformer paint**	0.94
Ice		**Wallpaper, light-coloured**	0.89
Clear	0.97	**Water**	0.93
With heavy frost	0.98	**Wood**	
Laminate	0.90	Untreated	0.88
		Beech, planed	0.94

Media gallery/playback mode

All image data recorded with the ThermoVisualizer Pocket is available in the media gallery.



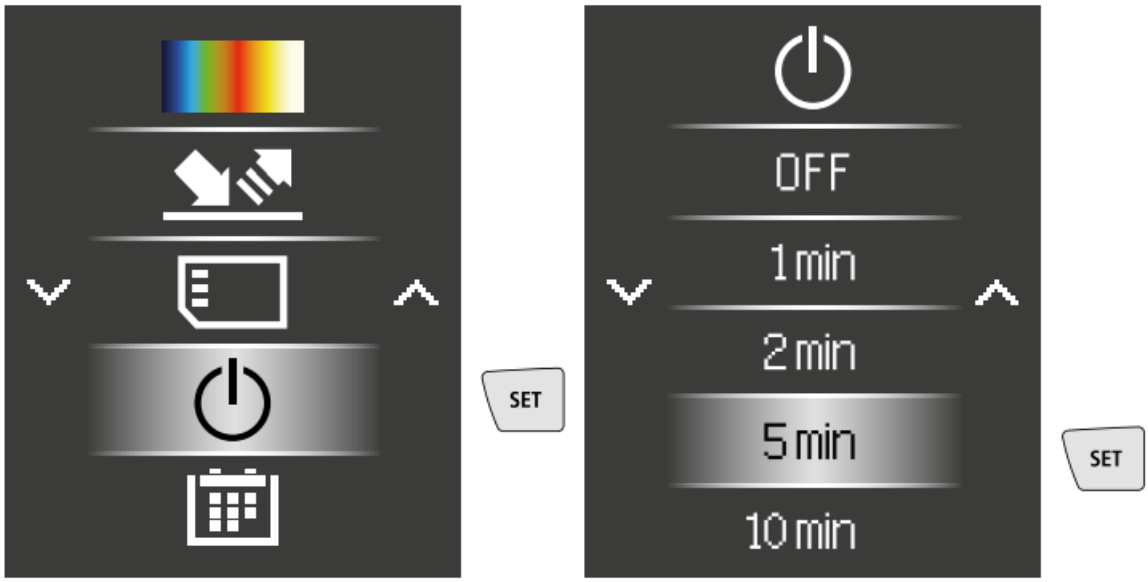
To delete recording



WARNING: The files are deleted immediately. There is no prompt to confirm deletion.

Auto power off

The device switches off automatically after a set period of inactivity.



Date / Time

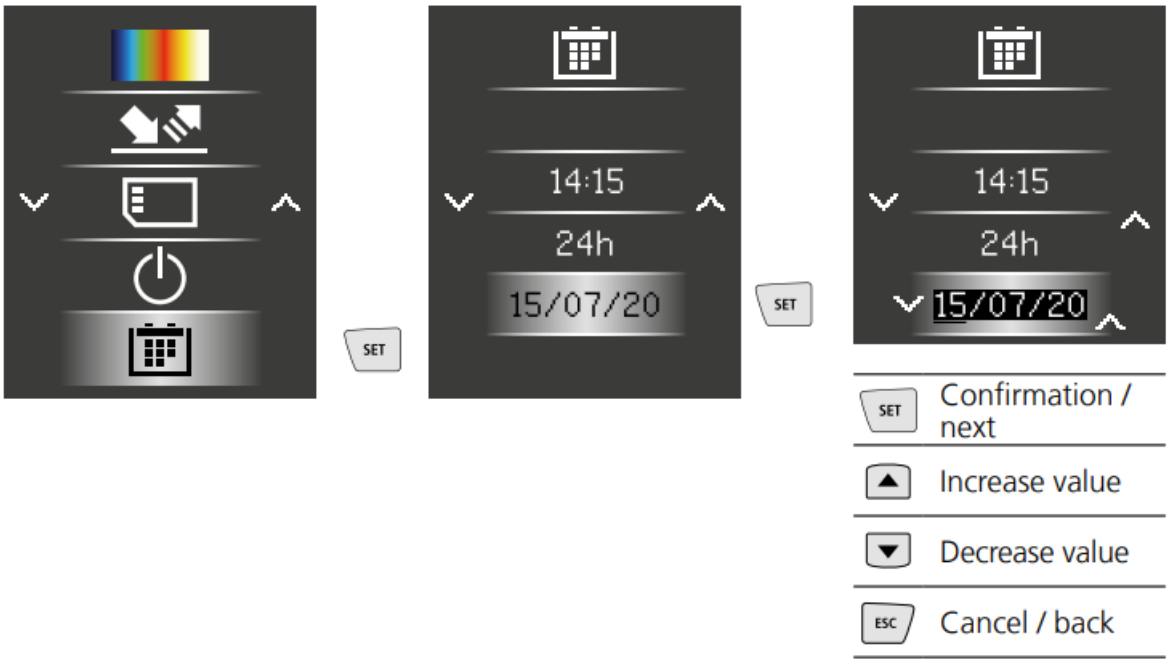
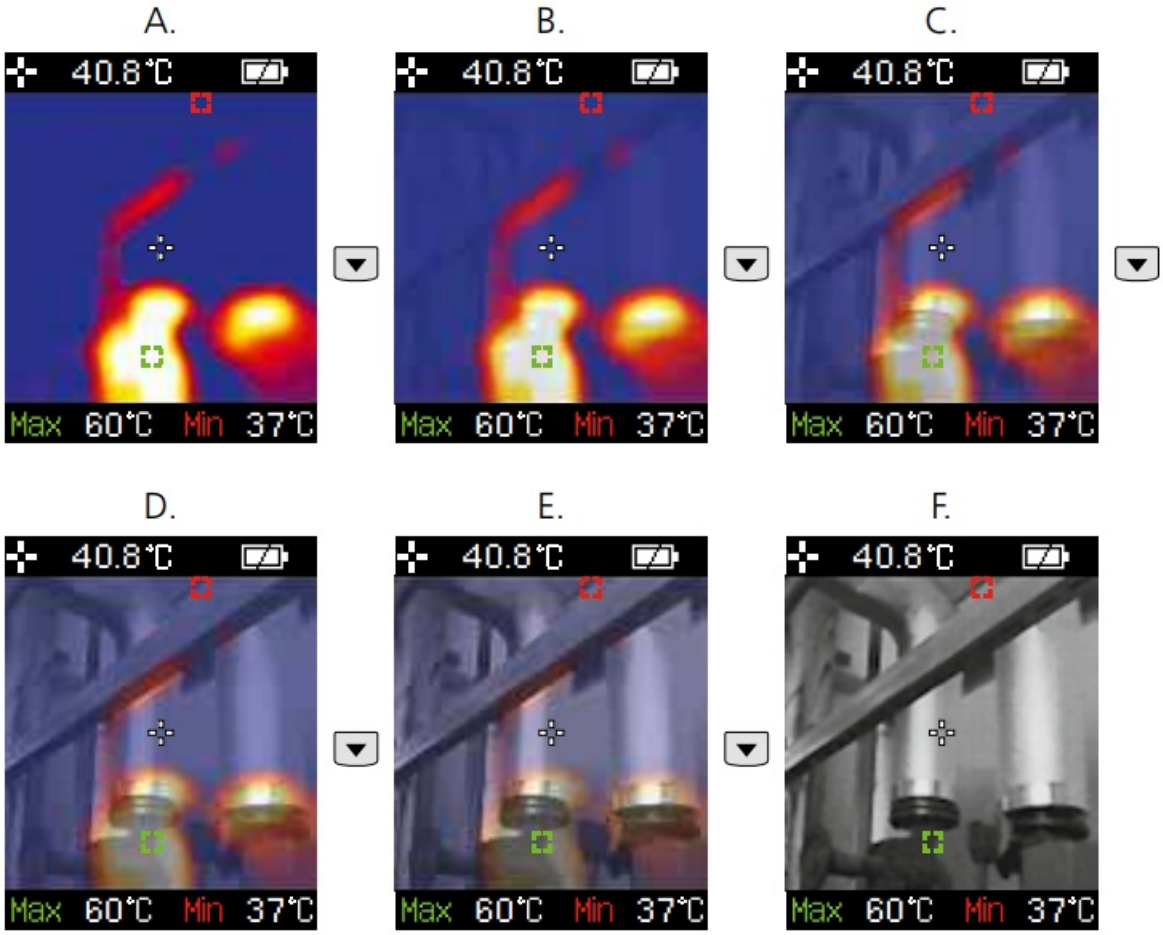


Image modes
There are 6 image modes to choose from.



- **A.** IR image (Thermal image)
- **B. –** E. Digital image with IR image overlay (MIX), 4 stages
- **F.** Digital image (black/white)

Data transfer

Data saved on the micro-SD card can be transferred to PC either with a suitable card reader or via the mini-USB port. Please refer to the manual supplied with your card reader for information about connecting your card adapter or card reader to a PC.

Information on maintenance and care
Clean all components with a damp cloth and do not use cleaning agents, scouring agents and solvents. Remove the battery(ies) before storing for longer periods. Store the device in a clean and dry place.

Calibration
The measuring device must be calibrated and tested on a regular basis to ensure it is accurate and working properly. We recommend carrying out calibration once a year. Contact your distributor or the UMAREX-LASERLINER service department.

Technical data (Subject to technical changes without notice. Rev21W07)	
Measured variable	Infrared temperature
Spectral range	8-14 µm
Therm. sensitivity (NETD)	150 mK
Measuring range infrared temperature	-20°C … 650°C
Accuracy infrared temperature	± 3%
Infrared temperature resolution	0.1°C
Screen type	1.8" colour TFT
Display resolution	128 x 160 pixels
Image format	BMP
Image frequency	9 Hz
Digital camera resolution	640 x 480 pixels
Field of view (FOV)	33°
Memory	Micro-SD memory card up to 16 GB
Protection class	IP 54
Sensor type	Thermoarray-Sensor
Power supply	4 x 1.5V LR03 (AAA)
Operating time	approx. 100 hours
Operating conditions	0°C … 50°C, max. humidity 20 … 85% rH, no condensation, max. working altitude 2000 m above sea level
Storage conditions	-10°C … 60°C, max. humidity 80% rH
Dimensions (W x H x D)	70 x 180 x 46 mm
Weight	175 g (incl. batteries)

EU directives and disposal

- This device complies with all necessary standards for the free movement of goods within the EU.
- This product is an electric device and must be collected separately for disposal according to the European Directive on waste electrical and electronic equipment.
- Further safety and supplementary notices at: http://laserliner.com/info?an=AKA

Documents / Resources

	**Laserliner Thermo Visualizer Pocket Temperature** [pdf] Instruction Manual Thermo Visualizer Pocket Temperature, Thermo Visualizer Pocket, Temperature

References

- Info - Laserliner
- Home