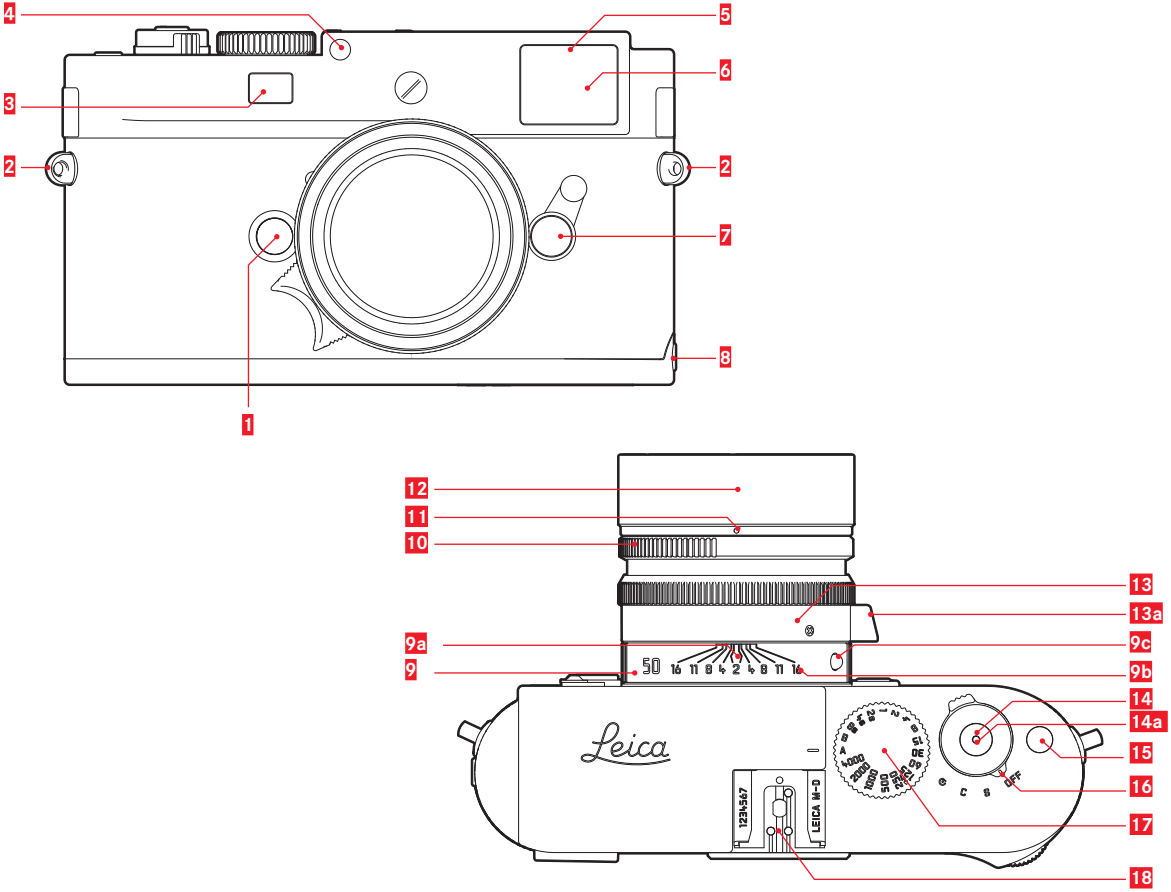
LEICA M-D

Anleitung | Instructions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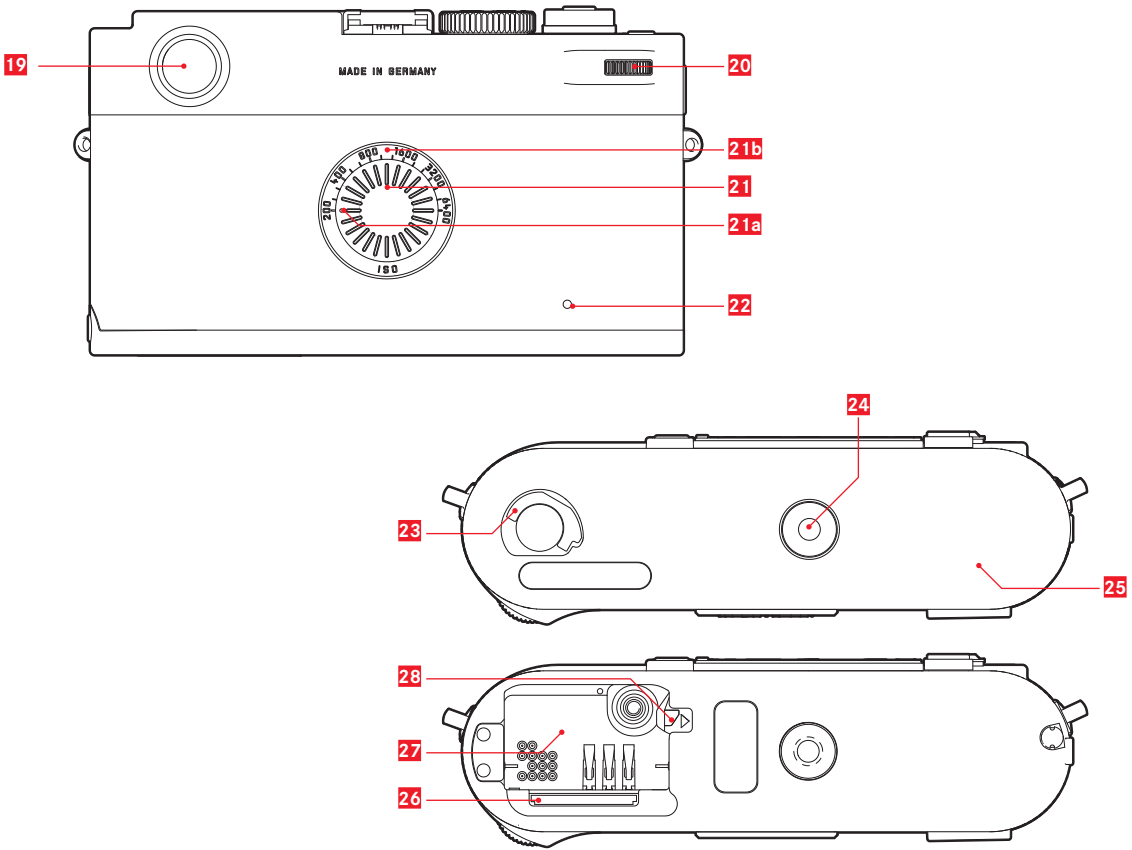
LEICA M-D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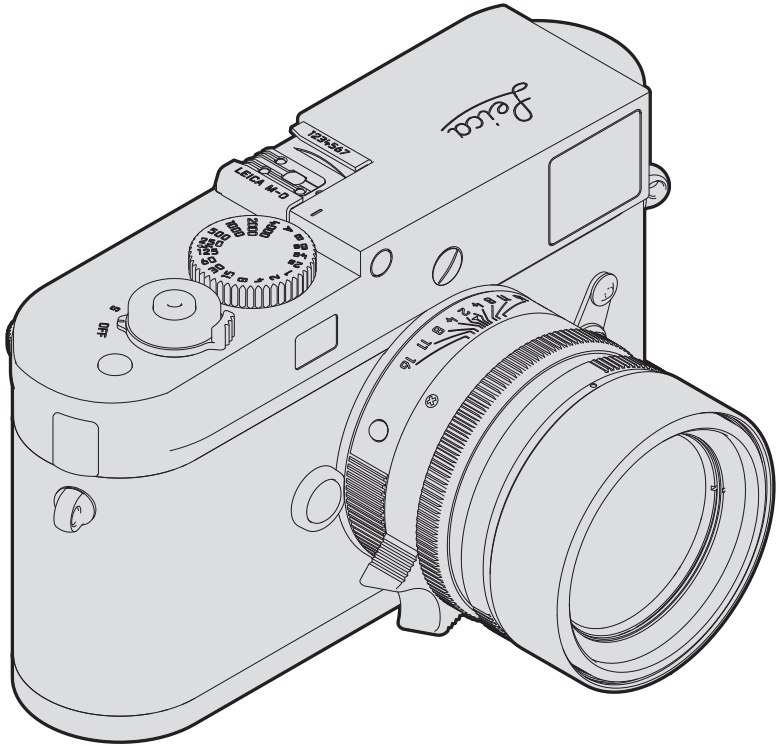
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LEICA M-D
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Leica M-D

Instructions

FOREWORD

Dear Customer,
Leica would like to thank you for purchasing the Leica M-D and to congratulate you on your choice. With this unique digital view and range finder camera, you have made an excellent choice.
We wish you a great deal of pleasure and success using your new camera.
In order to make best use of all the opportunities offered by this high performance camera, we recommend that you first read this instruction manual.

This is a Class B product based on the standard of the Voluntary Control Council for Interference from Information Technology Equipment (VCCI).
If this is used near a radio or television receiver in a domestic environment, it may cause radio interference. Install and use the equipment according to the instruction manual.

FCC Note:
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution:
To assure continued compliance, follow the attached installation instructions and use only shielded interface cables with ferrite core when connecting to computer or peripheral devices. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Trade Name:	LEICA
Model No.:	LEICA M-D (Typ 262)
Responsible party/ Support contact:	Leica Camera Inc. 1 Pearl Count, Unit A Allendale, New Jersey 07401 Tel.: +1 201 995 0051 Fax: +1 201 995 1684 technicalinfo@leicacamerausa.com

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

LEICA M-D
(Typ 262)

Tested To Comply
With FCC Standards

FOR HOME OR OFFICE USE

For Canada only:
CAN ICES-3 (B)/NMB-3(B)

TABLE OF CONTENTS

The CE identification of our products documents compliance with the fundamental requirements of the applicable EU directives.

WARNING MESSAGES

- Modern electronic elements react sensitively to electrostatic discharge. As you can easily pick up charges of tens of thousands of volts, by walking on synthetic carpets for example, a discharge can occur when you touch your camera, particularly if it is placed on a conductive surface. If only the camera housing is touched, this discharge is harmless to the electronics. However, despite built-in safety circuits, the outer contacts, such as the accessory shoe, battery or rear panel contacts, should not be touched if at all possible for safety reasons. If the accessory shoe is not in use, the relevant cover (supplied) should always be in place.
- For any cleaning of the contacts, do not use an optical microfiber cloth (synthetic); use a cotton or linen cloth instead! Before touching the contacts, you can make sure you discharge any electrostatic charge by deliberately touching a heating or water pipe (conductive, earthed material). You can also avoid soiling and oxidization of the contacts by storing your camera in a dry place with the lens or bayonet cover fitted.
- Use only the recommended accessories to prevent faults, short circuits or electric shock.
- Do not attempt to remove parts of the housing (covers); repairs must be done at authorized service centers only.

LEGAL INFORMATION

- Please ensure that you strictly observe copyright laws. The recording and publication of pre-recorded media such as tapes, CDs, or other published or broadcast material may contravene copyright laws.
- This also applies to all of the software supplied.
- The SD, HDMI, and USB logos are registered trademarks.
- Other names, company and product names referred to in this manual are trademarks or registered trademarks of the respective companies.

DISPOSAL OF ELECTRICAL AND ELECTRONIC EQUIPMENT

(Applies within the EU, and for other European countries with segregated waste collection systems)

This device contains electrical and/or electronic components and must therefore not be disposed of in general household waste! Instead, it should be disposed of at a recycling collection point provided by the local authority. This costs you nothing. If the device contains standard or rechargeable batteries, these must be removed first and also be disposed of in line with relevant regulations.
Further information on the subject is available from your local administration, your local waste collection company, or in the store where you purchased this device.

The production date of your camera can be found on the stickers in the warranty card and/or on the packaging and that of the rechargeable batteries on their housing. In the case of the camera, this is written year/month/day and in the case of the rechargeable batteries calendar week/year (WW/YY).

DESIGNATION OF PARTS

Figures in the front and rear cover pages

Front view

1 Lens release button
2 Eyes for carrying strap
3 Range finder viewing window
4 Brightness sensor[1]
5 Self-timer LED
6 Viewfinder viewing window
7 Image field selector
8 Bottom cover locking point

Top view

9 Fixed ring with
   a. Index for distance setting
   b. Depth of field scale
   c. Red index button for changing lenses
10 Aperture setting dial
11 Index point for aperture setting
12 Lens hood
13 Focusing ring with
   a. recessed grip
14 Shutter release button
15 Function button
16 Main switch with detent position for
   - **OFF** (camera turned off)
   - **S** (single pictures)
   - **C** (serial exposures)
   - ⏲ (self-timer, time/date setting, or sensor cleaning)
17 Time-setting dial with detent positions for
   - **A** for automatic shutter speed control
   - Shutter speeds 1/4000 - 8s (incl. intermediate values)
   - **B** (Long-time exposure)
   - ϟ Flash sync speed (1/180S)
18 Accessory shoe

1 Leica M lenses with viewfinder attachment cover the brightness sensor. Information about functions with these and other lenses can be found under "Displays in the viewfinder", p. 100, and „Leica M lenses ", p. 71.

Rear view

19 Viewfinder
20 Thumb wheel
21 ISO setting with
   a. Scale
   b. Setting disc
   c. Index point
22 LED for indicating picture mode/recording data

Bottom view

(with bottom cover fitted)

23 Locking toggle for bottom cover
24 Tripod thread A ¼, DIN 4503 (¼“)
25 Bottom cover

(with bottom cover removed)

26 Memory card slot
27 Battery compartment
28 Battery locking slider

QUICK-START GUIDE

YOU WILL NEED THE FOLLOWING ITEMS:

- Camera
- Battery
- Memory card (not supplied)
- Charger and mains cable

PREPARATIONS

1. Charge the battery (see p. 65)
2. Insert the battery (see p. 68)
3. Insert the memory card (see p. 69)
4. Turn on the camera (see p. 74)
5. Set the date and time (see p. 76)

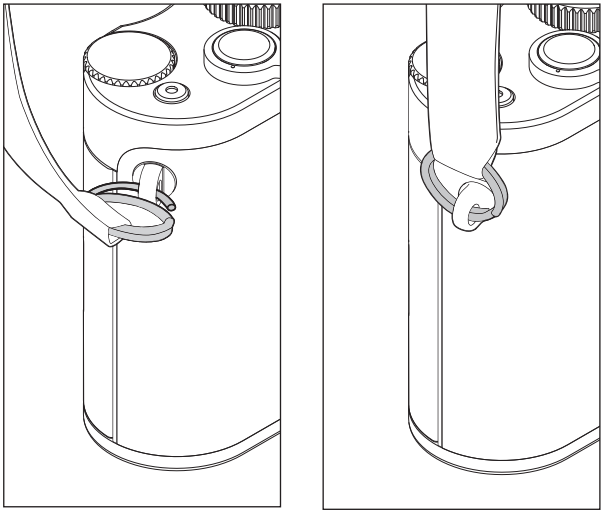
TAKING PHOTOGRAPHS

6. Attach the lens (see p. 73)
7. Set the shutter speed setting dial to **A** (see p. 75)
8. Set the subject focus (see p. 80)
9. Turn on the camera (see p. 74)
10. Turn on exposure metering (see p. 82)
11. Correct the exposure, if necessary (see p. 84)
12. Release the shutter (see p. 54)

DETAILED INSTRUCTIONS

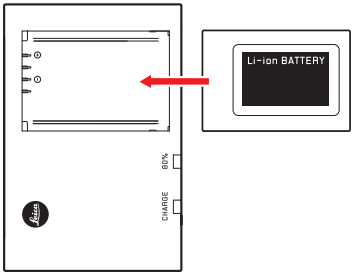
PREPARATION

ATTACHING THE CARRYING STRAP



CHARGING THE BATTERY

The camera is powered by a lithium ion battery.



- The green LED marked **CHARGE** starts flashing to confirm that charging is in progress. As soon as the battery has charged to at least ⅕ of its capacity, the yellow LED marked **80%** also lights up. When the battery is fully charged, the green LED also changes from flashing to continuously lit.

Note:
The **80%** LED lights up after around 2 hours due to the charging characteristics.

The charger should be disconnected from the mains when charging is complete. There is therefore no risk of overcharging.

Caution:

- Only the battery type specified and described in this manual (Order No. 14 499), or battery types specified and described by Leica Camera AG, may be used in this camera.
- These batteries may only be used in the units for which they are designed and may only be charged exactly as described below.
- Using this battery contrary to the instructions and using non-specified battery types can result in an explosion under certain circumstances!
- The batteries must not be exposed to heat or sunlight for prolonged periods, or to humidity or moisture. Likewise, the batteries must not be placed in a microwave oven or a high pressure container as this results in a risk of fire or explosion!
- A safety valve in the battery guarantees that any excess pressure caused by improper handling is discharged safely.
- Only the charger specified and described in this manual (order no. 14 494) is to be used. The use of other chargers not approved by Leica Camera AG can cause damage to the batteries and, in extreme cases, can cause serious or life-threatening injuries.
- The charger supplied should be used exclusively for charging this battery type. Do not attempt to use it for other purposes.
- The car charging cable supplied must never be connected while the charger is connected to the mains.
- Ensure that the mains outlet used for charging is freely accessible.
- The battery and charger must not be opened. Repairs may only be carried out by authorized service centers.

Notes:

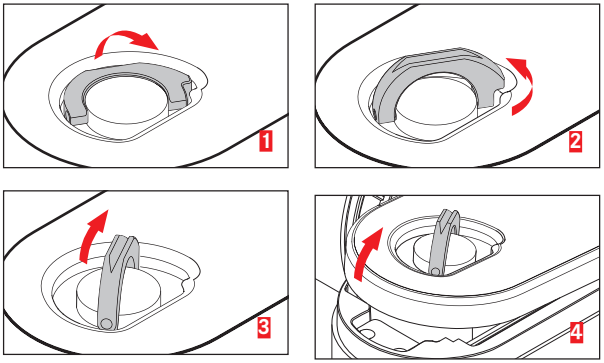
- The battery should be charged before the camera is used for the first time.
- The battery must have a temperature of 10°-30°C to be charged (otherwise the charger will not turn on, or will turn off again).
- Lithium ion batteries can be charged at any time, regardless of their current charge level. If a battery is only partly discharged when charging starts, it is charged to full capacity faster.
- The batteries warm up during the charging process. This is normal and not a malfunction.
- If the two LEDs on the charger flash rapidly (> 2Hz) after starting charging, this indicates a charging error (e.g. maximum charging time exceeded, voltages or temperatures outside the permitted ranges, or short circuit). In this case, disconnect the charger from the mains and remove the battery. Ensure that the above temperature conditions are met and then restart the charging process. If the problem persists, please contact your dealer, the Leica office in your country or Leica Camera AG.
- A new battery only reaches its full capacity after it has been fully charged and – by use in the camera - discharged again 2 or 3 times. This discharge procedure should be repeated every 25 cycles. To ensure a maximum service life of the battery, it should not be exposed to constant extremes of temperature (e.g. in a parked car in the summer or winter).
- Even when used under optimum conditions, every battery has a limited service life! After several hundred charging cycles, this becomes noticeable as the operating times become significantly shorter.
- The battery should be replaced after a maximum of four years, as its performance deteriorates and reliable operation can no longer be guaranteed, particularly in cold conditions.
- Defective batteries should be disposed of according to the respective instructions (see p. 61).
- The replaceable battery provides power to a back-up battery which is permanently fitted in the camera. This back-up battery retains the set date and time for up to 2 months. If this back-up battery becomes discharged it must be recharged by inserting the replaceable main battery. Once the replaceable battery has been inserted, the full capacity of the back-up battery is recovered after about a few days. This process does not require the camera to be turned on.

CHANGING THE BATTERY/MEMORY CARD

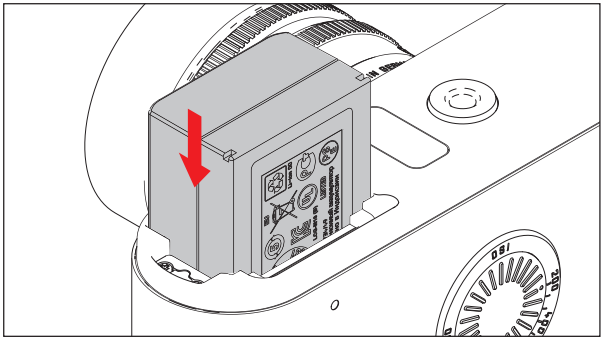
Turn the camera off (see p. 74).

Important:
Do not open the bottom cover or remove the memory card or battery while the red LED on the back of the camera is flashing, indicating picture recording and/or data saving to the card. Otherwise the unsaved (or not completely saved) picture data may be lost.

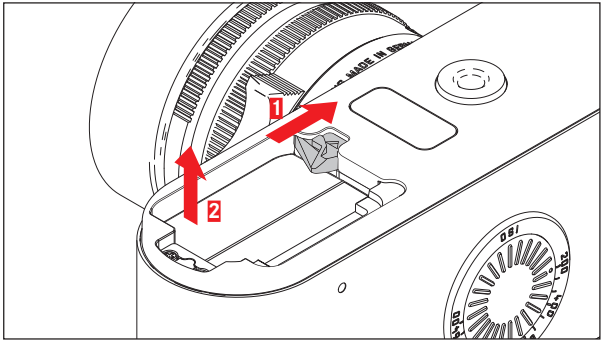
Removing the bottom cover



Inserting the battery



Removing the battery



Charge level display

You can display the current battery capacity in the viewfinder:

1. Turn on the camera

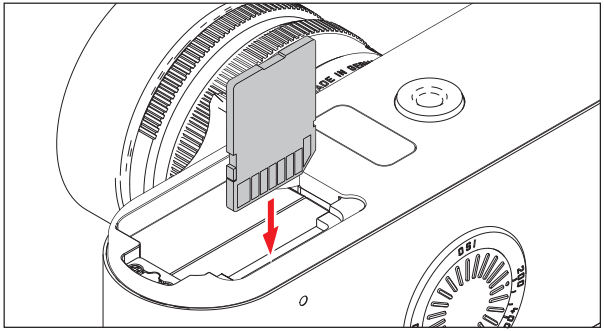
Only necessary if the viewfinder display has switched itself off again even though the camera is switched on:

2. Press the shutter release button to the first pressure point
3. Press the function button 2x.
    - When pressed repeatedly, the battery and memory card capacities are alternately displayed as percentages. To differentiate, when the battery capacity is displayed, a dot also lights up at the top of the display for the battery capacity.

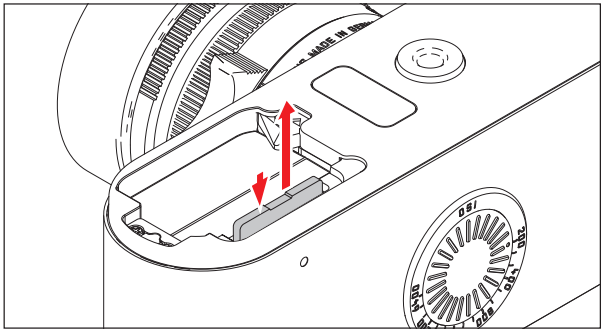
Notes:

- The capacity display appears irrespective of whether the viewfinder display was on before or not.
- Remove the battery if you will not be using the camera for a long period of time.
- A maximum of 2 months after the capacity of a battery left in the camera is exhausted (see also the last note under “Charging the battery”, p. 65), the date and time need to be re-entered.

Inserting the memory card



Removing the memory card



Compatible memory cards

The camera saves the pictures on an SD (secure digital), SDHC (high capacity), or SDXC (eXtended capacity) card.
SD/SDHC/SDXC memory cards are available from various suppliers and with different capacities and read/write speeds. Particularly those with high capacities and read/write speeds allow data to be recorded and retrieved very quickly. The cards have a write protection switch, which can be used to prevent unintentional storage and deletion of pictures. This switch takes the form of a slider on the non-beveled side of the card; in the lower position, marked LOCK, the data on the card is protected.

Note:
Do not touch the memory card contacts.

Displaying the memory card capacity

You can display the number photographs that can still be taken in the viewfinder:

1. Turn on the camera
   - The battery capacity is displayed first.
2. Press the function button 1x

Only necessary if the viewfinder display has switched itself off again even though the camera is switched on:

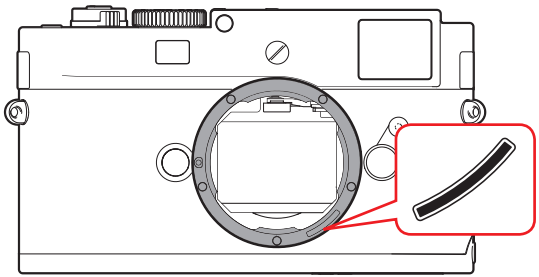
3. Press the shutter release button to the first pressure point
4. Press the function button 1x
   - The relevant value is displayed.
     3s after the shutter release button has been pressed to the first pressure point, or after the function button has been let go, the display returns to the normal state.
     When the card's capacity limit has been reached, FuLL always appears, irrespective of whether the viewfinder display was switched on before or not.

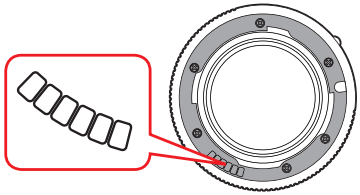
Notes:

- The range of SD/SDHC/SDXC cards is too large for Leica Camera AG to be able to completely test all available types for compatibility and quality. Although using other card types is not likely to damage the camera or the card, some "no name" cards do not comply with the SD/SDHC/SDXC standards and Leica Camera AG is unable to provide any guarantee that they will function correctly.
- If the memory card cannot be inserted, check that it is aligned correctly.
- As electromagnetic fields, electrostatic charges, and defects on the camera or the card can lead to damage or loss of the data on the memory card, we recommend that you also transfer the data to a computer and save it there (see p. 90).
- For the same reason, it is recommended that the card is always stored in its antistatic cover.

LEICA M LENSES

Generally, most Leica M lenses can be used. Details on the small number of exceptions and restrictions can be found in the following notes.
They can be used regardless of the lens features, and whether it does or does not have 6-bit coding in the bayonet. In the case of lenses with coding, the camera uses the information transmitted to optimize exposure and image data.
Even without this additional feature, i.e. when using Leica M lenses without identification, the camera will deliver excellent pictures in most situations.





Important:

- The following cannot be used:
  - Hologon 1:8/15mm,
  - Summicron 1:2/50mm with close-up,
  - Elmar 1:4/90mm with retractable tube (manufactured from 1954-1968)
  - Some versions of the Summilux-M 1.4/35mm (not aspherical, manufactured from 1961-1995, Made in Canada) cannot be fitted to the camera or will not focus to infinity. The Leica Customer Care department can modify these lenses so that they can be used on the camera.
- The following can be used, but risk damaging the camera or lens:
  Lenses with retractable tube can only be used with the tube extended, i.e. their tube must never be retracted into the camera. This is not the case with the current Macro-Elmar-M 1:4/90mm, as its tube does not protrude into the camera body even when retracted. It can therefore be used without any restrictions.

The following can be used with restrictions

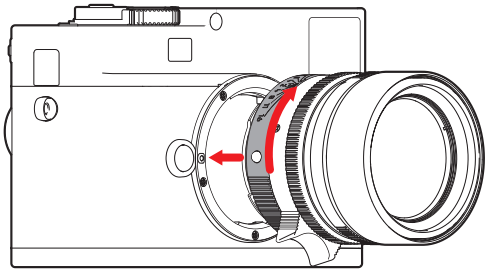
Despite the high precision of the range finder on the camera, exact focusing with 135mm lenses with an open aperture cannot be guaranteed due to the very low depth of field. Therefore, stopping down by at least 2 stops is recommended.

- Possible, but excluded from the exposure metering
  - Super-Angulon-M 1:4/21mm
  - Super-Angulon-M 1:3,4/21mm
  - Elmarit-M 1:2,8/28mm with serial nos. before 2 314 921.

Notes:

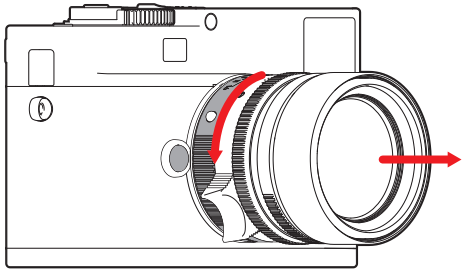
- The Leica Customer Care department can retrofit many Leica M lenses with 6-bit coding. (Address, see p. 108).
- When using the Leica Tri-Elmar-M 1:4/16-18-21mm ASPH., the set focal length is not transferred to the camera and thus is not included in the EXIF data for pictures.
- By contrast, the Leica Tri-Elmar-M 1:4/28-35-50mm ASPH features mechanical transfer of the set focal length to the camera, necessary to display the appropriate bright line frame in the viewfinder, which is scanned by the camera's electronics and used for focal-length-specific compensation. This applies to all three versions of the lens (item nos. 11 625, 11 890 and 11 894).

Attaching the lens



1. Turn off the camera
2. Hold the lens at the fixed ring
3. Align the red index button on the lens with the release button on the camera housing.
4. In this position, insert the lens straight
5. Turn the lens slightly to the right, and you will hear and feel it click into place.

Detaching the lens



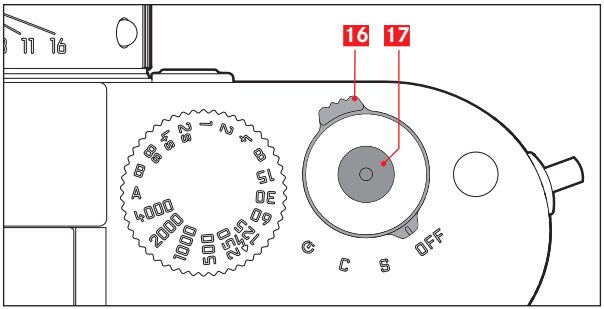
1. Turn off the camera
2. Hold the lens at the fixed ring.
3. Press down the release button on the camera housing
4. Turn the lens to the left until its red index button is aligned with the release button.
5. Remove the lens

Notes:

- Generally, to protect against ingress of dust etc. into the interior of the camera, it is important always to have a lens or a cover fitted to the camera body.
- For the same reason, when changing lenses work quickly and in an environment that is as dust-free as possible.
- Camera or lens rear covers should not be stored in your pants pocket as they attract dust that can get into the camera when they are fitted.

OPERATING ELEMENTS

MAIN SWITCH



The camera is turned ON and OFF using the main switch. This is below the shutter release button and is a lever with four detent positions:

OFF – Camera turned off

b. **S** – Single picture
Pressing the shutter release takes a single picture regardless of how long it is held down for. Activation of the shutter release button is extremely quiet and causes minimum vibration.

c. **C** - Continuous series
A series of pictures are taken for as long as the shutter release is held down and the capacity of the memory card used and the internal buffer memory is sufficient. At least 8 pictures are taken in rapid succession, subsequent pictures with a reduced frequency.

d. ⏲ - Self-timer
Pressing the shutter release starts the set delay time (see p. 90), then the picture is taken.

Notes:

- After turning on, the camera is ready to use after approx. 1s.
- If the camera is out of use for an extended period or is stored in a case, always turn it off at the main switch. This prevents any power consumption, including that which continues to occur in standby mode after the exposure meter is turned off automatically and the display is extinguished. This also prevents pictures from being taken accidentally.

SHUTTER RELEASE BUTTON

The shutter release button has two pressure points:

1. Pressing down to the 1st pressure point
   - activates exposure metering and the viewfinder display
   - saves the metered exposure value in aperture priority mode, i.e. the shutter speed determined by the camera (for more details, refer to the “Metering memory lock” section on p. 84)

* Depending on card speed

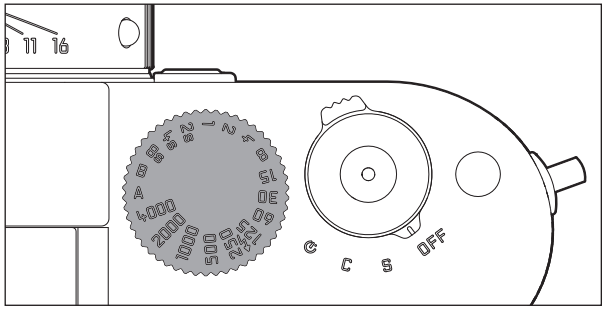
If the shutter release button is pressed down to this pressure stage, the display stays on. If the camera had previously been in stand-by mode, it will be reactivated and the displays switched on. If you release the shutter button, the metering system and the displays remain activated for around a further 30s (for more details, refer to the sections on p. 82).

Notes:
The shutter button remains blocked if
- the internal buffer memory is (temporarily) full, e.g. after a series of ≥16 pictures, or
- the memory card inserted and the internal buffer memory are (temporarily) full, or
- the memory card inserted is write-protected, or
- the picture numbering of the memory card inserted is used up (in such a case, format the card outside the camera after saving the data), or
- the battery has exceeded its performance limits (capacity, temperature, age)
- the bottom cover is not in place.

2. Pressing the shutter button all the way down takes a picture. The data is then transferred to the memory card.

Note:
To avoid wobble, the shutter button should be pressed gently, not jerkily, until the shutter is released with a soft click.

TIME THUMBWHEEL



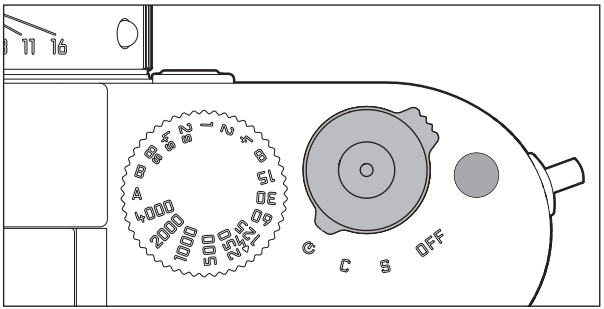
The exposure modes are selected using the shutter speed thumbwheel,
- Aperture priority mode by setting the **A** position (see p. 83),
- Manual mode by selecting a shutter speed of 1/4000s to 8s, (intermediate values in ½ step positions are also available), and
- the ϟ shortest possible sync speed of 1/180s for flash mode, marked with the symbol (s. S. 89), and
- **B** for long exposures (see p. 85).

The Leica M shutter speed dial has no stop, i.e. it can be turned in either direction from any position. It detents at all marked positions and at the intermediate values. Values between the detent positions cannot be used.
More details on setting the correct exposure can be found in the sections under the heading: "Exposure metering" from page 82.

BASIC SETTINGS

DATE AND TIME

Actual setting is done only with the function button, the thumbwheel and the viewfinder display.



Accessing the setting mode:

1. Set main switch to ⏲
2. Press the function button for a long time (≥12s, during this time, no other operation process may be carried out)

Setting each of the values:

3. With thumbwheel

Switching between the value groups:

4. Briefly press the function button

Order of the value groups

Adjusting the year:	
Adjusting the month:	
Adjusting the day:	
Adjusting the hour:	
Adjusting the minute:	

Leaving the setting mode

1. Press the function button for a long time(≥12s), or turn the main switch from the ⏲ position, or briefly touch the shutter release button
   All settings are accepted/saved.

ISO SENSITIVITY

The ISO setting covers a range of ISO 200 – 6400 in ⅓ ISO increments, and thus enables you to adapt the shutter speed/aperture values to the relevant situation as required. The setting disc with detent positions on the back of the camera is used for this. Turn it so that the index point is opposite the desired value on the scale.

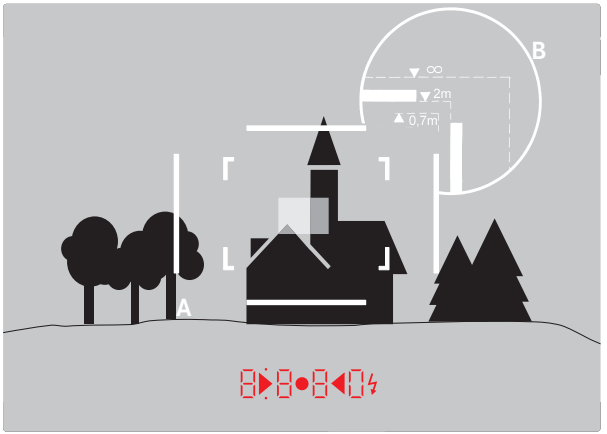
Note:
Particularly at high ISO values and when editing pictures, noise as well as vertical and horizontal stripes may become visible, especially in large, uniformly bright areas of the subject.

PERMANENT CAMERA SETTINGS

This camera saves the picture data in compressed loss-free DNG format. White balance is automatic.

BRIGHT-LINE VIEW AND RANGE FINDER

The camera's bright-line view and range finder is not only a very high-quality, large, brilliant and bright viewfinder, it is also a highly accurate range finder coupled to the lens. It has a magnification factor of 0.68x. The bright-line frames are lit in white by LEDs.
The bright-line frames are linked to the range setting to ensure that the parallax - the offset between the lens and the viewfinder axis - is automatically compensated. At a range of below 2m the sensor detects slightly less than shown by the inner edges of the bright-line frame, and slightly more at longer ranges (see adjacent diagram). These slight variations, which are hardly ever critical in practice, are due to the operating principle.
Bright-line frames on a viewfinder camera must be matched to the image angle of the relevant lens focal lengths. However, the nominal image angles change slightly when focusing due to the changing extension, i.e. the distance between the optical system and the sensor plane. If the set range is less than infinity (and the extension correspondingly greater), the actual image angle is smaller - the lens captures less of the subject. In addition, the differences in the image angle tend to be greater at longer focal lengths, as a result of the greater extension.
In the middle of the viewfinder image is the square range metering image, which is brighter than the surrounding image field.
If the exposure meter is turned on, the exposure meter LEDs and the flash symbol LED appear at the lower edge of the viewfinder image. For more details about setting the range and exposure metering, as well as flash mode, refer to the relevant sections on p. 80/82/86.



All pictures and bright-line frame positions relative to 50mm focal length

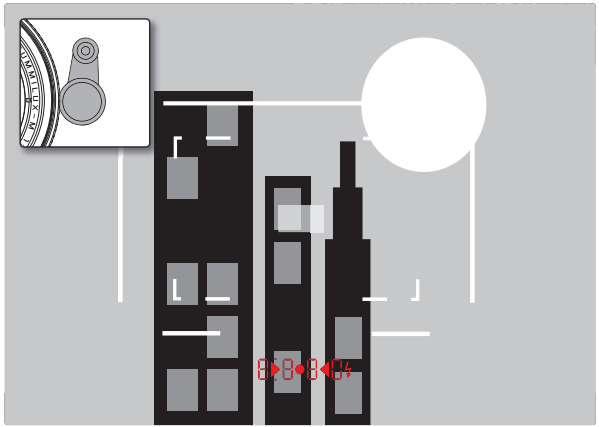
A	Bright-line frame
B	Actual image field
Set to 0.7m:	The sensor detects approx. one frame width less.
Set to 2m:	The sensor detects exactly the image field shown by the inner edges of the bright-line frame.
Set to infinity:	The sensor detects approx. 1 or 4 (vertical or horizontal) frame width(s) more.

IMAGE FIELD SELECTOR

The image field selector extends the possibilities of this built-in universal viewfinder: at any time, you can view frames that do not belong to the current lens. You can then see immediately if, for image composition reasons, it would be better to photograph the relevant subject using a different focal length.
If the lever is rotated outwards, i.e. away from the lens, the image field limits for 35 and 135mm focal length are shown.
If the lever is rotated to the vertical, centered position, the image field limits for 50 and 75mm focal length are shown. If the lever is rotated inward, i.e. toward the lens, the image field limits for 28 and 90mm focal length are shown.

35mm + 135mm

50mm + 75mm



28mm + 90mm

RANGE MEASUREMENT

Due to its large effective metering basis, the range finder on this camera is very precise. The benefits of this are particularly noticeable when using wide-angle lenses with their relatively high depth of field.

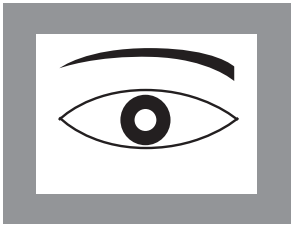
Mechanical metering basis (Distance between the optical axes of the viewfinder window and the range finder viewing window)	**x Viewfinder zoom**	**= Effective metering basis**
69.25mm	x 0.68	= approx. 47.1mm

The range finder metering field is visible as a bright, sharply defined rectangle in the center of the viewfinder. The focus can be set using either the superimposed image or split image method:

Superimposed image method

In a portrait, for example, aim the metering field at the eye and turn the distance setting ring on the lens until the contours in the metering field are brought into line. Then choose the subject detail.

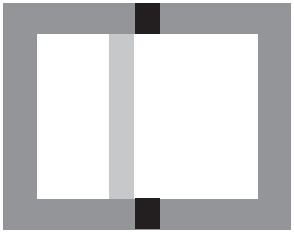
Out of focus



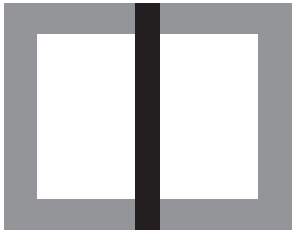
In focus

Split image method

When taking photographs of architecture, for example, aim the range finder metering field at the vertical edge or another clearly defined vertical line and turn the distance setting ring on the lens until the contours of the edge or line can be seen at the limits of the metering field with no misalignment. Then choose the subject detail.



Out of focus



In focus

EXPOSURE METERING

In this camera, the exposure is metered for the available ambient light though the lens with the working aperture with strong center weighting. The light reflected by a bright shutter diaphragm blade in the first shutter curtain is measured. The time/aperture combinations suitable for the correct exposure are indicated by the viewfinder displays or identified with their help.
In aperture priority mode, the aperture is selected manually, however the camera forms the shutter speed automatically. In this mode a digital LED display provides information on the shutter speed to be used (e.g. **1000**)
A light balance (►●◄) comprising three red LEDs is used to adjust the exposure for manual settings. If the setting is right, only the central, circular LED lights up.

Turning the exposure meter on/off

The exposure meter is switched on by lightly pressing the shutter release button down to its 1st pressure point, provided that the camera is switched on with the main switch and the shutter speed dial is not set to B. The readiness of the exposure meter is signaled by the constant lighting of one of the displays in the viewfinder:

- in aperture priority mode the digital LED display of the shutter speed,
- and in manual mode one of the two triangular LEDs lights up, either individually or in conjunction with the center circular LED.

If you let go of the shutter release button without activating the shutter, the exposure meter remains turned on for around 12s more, and the relevant LED(s) remain lit for the same time. If the shutter speed setting dial is set to **B**, the exposure meter is disabled.

Notes:

- When the displays have gone out, the camera is in a "stand-by" mode.
- In very low ambient light, i.e. at the limits of the exposure meter, it can take around 0.2s until the LEDs light up.
- In aperture priority mode, if correct exposure cannot be achieved using the available shutter speeds, the shutter speed display gives a warning by flashing (for more details, refer to the "Aperture priority mode" section on p. 83).
- If the exposure meter reading is below its working range in very low lighting conditions and in manual mode, the left hand triangular LED flashes as a warning. In aperture priority mode, the shutter speed is still displayed. If the required shutter speed falls below the slowest possible setting of 60s, this display also flashes.
- If the camera is out of use for an extended period or is stored in a case, always turn it off at the main switch. This prevents any power consumption, including that which continues to occur in standby mode after the exposure meter is turned off automatically and the display is extinguished. This also prevents pictures from being taken accidentally.

The appropriate shutter speed for correct exposure, or the variation from a correct exposure setting, are specified or determined using displays in the viewfinder (see following sections).

EXPOSURE MODES

The camera provides two exposure modes: Aperture priority mode and manual mode. Depending on the subject, situation and your individual preferences, you can thus choose between
- the familiar “semi automatic” operation, or
- setting a fixed shutter speed and aperture.

APERTURE PRIORITY

If the shutter speed thumbwheel is in the **A** position, the electronics within the camera generates the exposure time automatically and continuously in the range of $^{1}/_{4000}$s to 60s, in accordance with the film speed setting, the metered brightness and the manually selected aperture. The calculated shutter speed is displayed in half steps to provide a better overview.
For shutter speeds slower than 2s the remaining exposure time is counted down and displayed in seconds after the shutter release. The actually generated and continuously controlled exposure time can however vary from the half step value displayed: For example, if the display shows 16 (the closest value) before releasing the shutter, but the calculated exposure time is longer, the countdown after releasing the shutter may actually start from 19.
Under extreme lighting conditions, based on all the parameters the exposure meter may generate a shutter that is outside the working range, i.e. brightness values that would require shorter exposures than $^{1}/_{4000}$s or longer than 60s. In such cases the specified minimum or maximum shutter speed is nevertheless used, and these values flash in the viewfinder as a warning.

Notes:
- As described in connection with the ISO setting on p. 77, a certain amount of noise becomes apparent when using higher sensitivities, and particularly with uniform dark surfaces. To reduce this annoying phenomenon, after pictures with slow shutter speeds and high ISO values the camera automatically takes a second “black picture” (taken with the shutter closed). The noise present in this parallel picture is then digitally “subtracted” from the data for the real picture. This doubling of the “exposure” time can be significant at longer exposure times, and must be allowed for. During this time the camera should not be turned off.
- If you want a darker or brighter reproduction of the subject, it is recommended to set the exposure manually (see p. 84).

EXPOSURE LOCK

For compositional reasons, the most important part of the subject is often not in the center of the picture, and as a result such important parts of the subject may be excessively light or dark. Center-weighted metering, however, records only an area in the center of the image and is calibrated to an average gray scale value. Subjects and situations of this type can be overcome very easily even in aperture priority mode, using exposure lock.

Using the function

1. Aim at the important subject detail or alternatively at another detail with average brightness.
2. Press the shutter release button down to the 1st pressure point for measurement and saving. As long as the pressure point is held, a small red dot appears in the viewfinder at the top in the digits line for confirmation, and the exposure time no longer changes even if the lighting conditions are different.
3. Keeping the shutter release pressed, move the camera to capture the final trimming,
4. The shutter can then be released using the exposure originally determined.

Changing the aperture setting after using exposure lock has no effect on the shutter speed, and will lead to an incorrect exposure. Exposure lock is canceled when you remove your finger from the shutter release pressure point.

EXPOSURE COMPENSATION

Exposure meters are calibrated to a gray scale value, which corresponds to the brightness of a normal, i.e. average photographic subject. If the actual subject detail does not match this assumption, an appropriate exposure compensation can be performed. Particularly when taking several pictures in succession, for instance if for any reason a series of pictures is taken deliberately using slight under or overexposure, exposure compensation is a very useful function: In contrast to exposure lock, once set it remains effective until it is reset. Exposure compensation can be set in the range ±3EV in ⅓ EV steps (EV: Exposure Value).

1. Turn on the camera
2. Keep the function button pressed down and turn the thumbwheel
   - During setting, the digital display in the viewfinder shows the relevant value. Even after the shutter release button has been lightly pressed, it appears for a short time.

MANUAL EXPOSURE SETTING

If the exposure setting is performed entirely manually, the shutter speed dial must be clicked to one of the engraved exposure times or to one of the intermediate values.

Then:

1. Turn on the exposure meter, and
2. turn the shutter speed dial and /or the aperture setting ring on the lens – in each case in the direction indicated by the triangular LED that is lit up – until only the circular LED is lit up.

As well as the direction of rotation of the shutter speed thumbwheel and aperture setting ring necessary for correct exposure, the three LEDs in the light balance also indicate underexposure, overexposure and correct exposure in the following way:

- ▶ Underexposure by at least one aperture stop; turning to the right is required
- ▶● Underexposure by at most half an aperture stop; turning to the right is required
- ● Correct exposure
- ●◀ Overexposure by at most half an aperture stop; turning to the left is required
- ◀ Overexposure by at least one aperture stop; turning to the left is required

Note:
For shutter speeds slower than 2s the remaining exposure time is counted down and displayed in seconds after the shutter release.

THE B SETTING

With the **B** setting, the shutter remains open for as long as the shutter release button is held down (up to a maximum of 60s; depending on the ISO setting).
The exposure meter is disabled; however the digital display in the viewfinder counts the elapsed exposure time in seconds, for guidance.

Notes:

- Long exposure times can be associated with very heavy picture noise.
- To reduce this annoying phenomenon, following exposures with slower shutter speeds (below approx. $^1/_{30}$s) this camera automatically takes a second "black picture" (with the shutter closed). The noise present in this parallel picture is then digitally “subtracted” from the data for the real picture.
- This doubling of the “exposure” time can be significant at longer exposure times, and must be allowed for. During this time the camera should not be turned off.

VALUES ABOVE AND BELOW THE METERING RANGE

If the exposure meter reading is below its working range in very low lighting conditions and in manual mode, the left hand triangular LED (▶) flashes as a warning in the viewfinder, while the right hand LED (◀) does the same if there is too much light. In aperture priority mode, the shutter speed is still displayed. If the required shutter speed is more than the slowest possible 60s or less than the fastest possible of $^1/_{4000}$s, these displays also flash. As the exposure is metered with the working aperture, this situation can come about by stopping down the lens. Even if you are below the metering range, the exposure meter remains on for around 30s after you let go of the shutter release button. If the lighting conditions improve in this time (e.g. through a change in the subject detail or opening of the aperture), the LED display changes from flashing to continuously lit, indicating that the meter is ready.

FLASH MODE

The camera determines the necessary flash power by firing one or more ranging flashes, fractions of a second before taking the actual picture. Immediately after this, at the start of exposure, the main flash is fired. All factors that influence the exposure (such as picture filter and changes to the aperture setting) are automatically taken into account.

COMPATIBLE FLASH UNITS

The following flash units, when used on the camera, are capable of all the functions described in this manual, including TTL flash metering:

- Leica system flash units, such as the models SF 40, SF 64, SF 26, SF 58.
- Flash units that satisfy the technical requirements for a System 3000 System Camera Adaption (SCA), are fitted with the SCA-3502-M52 adapter.

Other commercially available flash attachments with standard flash foot and positive center contact, and fired by the center contact (X contact) can also be used.

ATTACHING THE FLASH UNIT

Before attaching a flash unit to the accessory shoe on the camera,
- the cover that protects the accessory shoe when not in use, must be detached to the rear, and
- the camera and flash unit must be turned off.

When attaching a flash unit, you should ensure that the foot of the flash unit is fully inserted into the accessory shoe and the clamping nut is tightened to prevent it accidentally falling out. This is particularly important for flash units with additional control and signal contacts, because if the position in the accessory shoe changes the necessary contacts can be broken, leading to malfunctions.

Note:
If the accessory shoe is not in use, the relevant cover (supplied) should always be in place.

FLASH EXPOSURE CONTROL

Fully automatic flash mode, i.e. controlled by the camera, is available on the camera with the system-compatible flash units listed in the previous section, and in aperture priority **A** and manual exposure modes.
In addition, automatic illumination control is operational in both exposure modes. This means that in order to ensure a balanced relationship between flash and other lighting at all times, the flash power is reduced by up to 1⅔EV as ambient brightness increases. However, if the ambient brightness plus even the shortest possible flash sync time of 1/180s would cause overexposure, a non-HSS compatible flash unit will not be fired in aperture priority mode (for details on HSS operation, see p. 89). In such cases the shutter speed is governed by the ambient brightness and is shown in the viewfinder.
In addition, the camera transfers the set sensitivity to the flash unit. This allows the flash unit, provided it has received such information and the aperture manually set on the lens is also input to the flash unit, automatically to adjust its range values accordingly. With system compatible flash units, the sensitivity setting cannot be influenced from the flash unit as it is transferred from the camera.

Notes:

- Studio flash systems may have a very long burning time. Therefore, when using them it may be useful to select a slower shutter speed than 1/180s.
- The same applies to radio controlled flash triggers for "unchained flash", as the radio transmission can cause a delay.
- The following sections describe only those settings and functions that are available when using this camera with system-compatible flash units.
- More details of flash use, in particular for other flash units not specially adapted to this camera and for different flash modes, can be found in the relevant manuals.

Settings for camera-controlled automatic flash mode

When the flash unit used has been switched on and set to the appropriate mode for TTL flash exposure control (see flash manual), exposure metering must be carried out on the camera:

1. before taking each flash picture by gently pressing the shutter release, so that the display in the viewfinder shows the shutter speed or switches to the light balance. If this stage is missed out by fully depressing the shutter release in one quick movement, the flash unit will not fire even if required.
2. The shutter speed dial must be set to **A**, to the flash sync speed ($^1/_{180}$s), or to a slower shutter speed (including **B**). In aperture priority mode, the camera determines the shutter speed in line with the ambient light, but limits slow shutter speeds in line with the 1/focal length rule to reduce blurring.
3. The desired aperture, or the aperture required for the relevant distance to the subject, must be set.

Note:

If the utomatically controlled or manually set shutter speed is faster than $^1/_{180}$s, the flash is not fired unless the flash unit is HSS-compatible (see p. 89).

Flash exposure displays in the viewfinder with system-compatible flash units

A flash-shaped LED appears in the viewfinder as confirmation and to display the various operating conditions. This LED appears together with the displays for exposure metering for the ambient light level, described in the relevant sections.

In automatic flash mode

(flash unit set to GNC or TTL)

- ⚡ does not appear despite the flash unit being switched on and ready for use:
  A faster shutter speed than $^1/_{180}$s is set manually on the camera and the connected flash unit is not HSS-compatible. In such cases the camera will not fire the flash unit even though it is switched on and ready for use.
- ⚡ flashes slowly (at 2Hz) before the picture is taken:
  The flash unit is not yet ready to use
- ⚡ is lit up before the picture is taken:
  The flash unit is ready for use
- ⚡ remains continuously lit after taking the picture, and the other displays go out:
  The flash is still ready to use.
- ⚡ flashes rapidly after taking the picture (at 4Hz), and the other displays go out:
  It is not yet ready to use again.
- ⚡ goes out after taking the picture, together with the other displays:
  Underexposure, perhaps due to the choice of too small an aperture stop for the subject.

When the flash unit is set to camera control (A) or manual mode (M)

- ⚡ does not appear despite the flash unit being switched on and ready for use:
  An exposure time shorter than $^{1}/_{180}$s has been set manually on the camera. In such cases the camera will not fire the flash unit even though it is switched on and ready for use.
- ⚡ flashes slowly (at 2Hz) before the picture is taken:
  The flash unit is not yet ready for use.
- ⚡ is lit up before the picture is taken:
  The flash unit is ready for use.

LINEAR FLASH MODE (HIGH SPEED SYNCHRONIZATION)

Fully automatic, i.e. camera controlled, linear flash operation is available with this camera when using correspondingly equipped Leica system flash units, with all shutter speeds and in aperture priority and manual exposure modes. The camera activates it automatically if the selected or calculated shutter speed is faster than the sync speed of $^{1}/_{180}$s. If the flash unit is set correctly, this change does not require the photographer to do anything else.

Important:
The range for HSS flash is significantly lower than for TTL flash.

Notes:

- Manual exposure control also allows any shutter speed up to the sync speed of $^{1}/_{180}$s to be set.
- If shutter speeds faster than $^{1}/_{180}$s are used, the flash unit automatically switched to HSS mode.

MISCELLANEOUS

TAKING PHOTOGRAPHS WITH THE SELF-TIMER

You can use the self-timer to take a picture with a delay of 12s. In such cases we recommend that the camera is placed on a tripod.
Setting and using the function

1. Turn the main switch to ⏲.
2. To start the delay time, press the shutter release button to the 2nd pressure point (see p. 74)
   - The LED 7 on the front of the camera flashes for the first 10s to show the progress of the delay time.

During the delay time, it can be restarted by touching the shutter release button again or the function can be canceled by turning the main switch out of the ⏲ position.

Important:
In self-timer mode, the exposure is not set by pressing the shutter release button to the pressure point, it is set immediately before the picture is taken.

REVIEW

Your photos are played back on your computer. You need one with an integrated or connected card reader.

TRANSFERRING DATA TO A COMPUTER

You will need a card reader to transfer image data from a memory card to a computer. This can be either an integrated card reader or an externally connected device via USB cable.

Data structure on the memory card

The 100LEICA, 101LEICA, etc. folders can each hold up to 9999 pictures.

USING RAW DATA DNG

For further image processing, you need software compatible with the DNG (Digital Negative) format used to convert the saved raw data to the highest quality, for example the raw data converter Adobe® Photoshop® Lightroom®. It provides quality-optimized algorithms for digital color processing, delivering exceptionally low noise photographs with incredible resolution.
During editing, you have the option of subsequently adjusting parameters such as white balance, noise reduction, gradation, sharpness etc. to achieve an optimum image quality.

INSTALLING FIRMWARE UPDATES

Leica is constantly working on developing and optimizing its products. As many functions of the camera are entirely controlled by software, some of these improvements and extended functions can be installed at a later date.
Leica provides firmware updates at irregular intervals for this purpose. Information about any resulting changes or additions to the details in this manual can be found on our website.
www.leica-camera.com

Procedure:

1. Turn off the camera
2. Insert the memory card in an integrated card reader, or one connected to your computer
3. Formatting the memory card
4. Download the firmware file from our website under the link "FIRMWARE"
5. Save the *.FW file to the highest level of the card folder structure.
6. Decompress the *.FW file if necessary
7. Remove the memory card from the card reader
8. Make sure that the camera is switched off, insert the memory card in the camera and close the bottom cover
9. Keep the function button pressed down and then switch the camera on

The update process begins. This can take up to 15 minutes.

Displays

	Viewfinder LED (permanently lit up)	**Back LED**
During the procedure		lights up
After an update		goes out
Battery capacity too low for update procedure		flashes slowly
Update not possible*		flashes quickly

*e.g. because the camera can't find an update file on the card

SYSTEM ACCESSORIES

INTERCHANGEABLE LENSES

The Leica M system provides a basis for optimum adaptation to fast and unobtrusive photography. The range of lenses incorporates focal lengths from 16 to 135mm and light intensities up to 1:0.95.

FILTERS

Various filter types and sizes are available for the current Leica M lenses.

Note:
Leica UV/IR filters specially developed for use on the Leica M8 and M8.2 should not be used on the Leica M as they can cause color shifts at the edges of pictures, particularly when using wide angle lenses.

MIRROR VIEWFINDER M

Mirror viewfinders are available for 18, 21, and 24mm lenses. They feature an exceptionally compact design and a bright viewfinder image. Bright line frames like those in the camera viewfinder are used to select the trimming (order no. 18mm: 12 022 black, 12 023 silver/21mm: 12 024 black, 12 025 silver/24mm: 12 026 black, 12 027 silver).

UNIVERSAL WIDE ANGLE VIEWFINDER M

The Leica universal wide-angle viewfinder M is a thoroughly practical accessory. It can be used without restriction on all analog and digital Leica M models and – just like the viewfinder in the camera – uses a reflected bright-line frame to outline the picture area for wide angle focal lengths 16, 18, 21, 24 and 28mm. The viewfinder is equipped with parallax compensation and a vial (spirit level) for exact leveling of the camera.
(Order No. 12 011)

VIEWFINDER MAGNIFIERS M 1.25x AND M 1.4x

The Leica M 1.25x and M 1.4x viewfinder magnifiers significantly simplify picture composition when using focal lengths above 35mm. They can be used on all Leica M models and magnify the central area of the viewfinder image. The 1.25x viewfinder magnifier gives the 0.68 x viewfinder on this camera a magnification of 0.85 x, while the 1.4 x gives 0.95 x magnification.
A security chain with snap fasteners prevents loss and can be used to hang the viewfinder on the carrying strap's fastening ring.
The viewfinder magnifiers are supplied in a leather bag. A loop on the case allows the viewfinder magnifier to be stored on the camera's carrying strap, where it is protected and ready for use.
(Order no. 12 004 M 1.25x, 12 006 M 1.4x)

FLASH UNITS

The Leica M-D can be used with different types of flash unit. Only system-compatible units with the proprietary Leica interface enable camera-based, fully automatic flash exposure control. Leica offers several models with varying specifications for this.

Note:
Ensure that the accessory shoe cover is always fitted when no accessories are in use.

CORRECTIVE LENSES

For optimum adaptation of the eye to the camera's viewfinder, we offer corrective lenses with the following positive or negative diopter values (spherical): ±0.5/1/1.5/2/3.

CASES

The new M ever-ready case has been specially developed for the new Leica M. It protects the camera reliably during transport and can be left connected to the camera so that the camera can be used quickly when taking photographs.
For effective protection during intensive photography, the front of the case can be detached and the section remaining on the camera then acts as a camera protector.
(Order No. 14 547)
For your full set of camera equipment, the classic Billingham combination case made of waterproof fabric is also available. This either holds two cameras and two lenses or one camera and three lenses. It has enough space for even large lenses and a fitted M hand grip. A zipped compartment also provides space for a Leica SF 26 flash and for other accessories.
(Order no. 14 854 black, 14 855 khaki)

SPARE PARTS	Order No.
Bayonet cover M	14 397
Accessory shoe cover M	14 900
Carry strap	439-612.105-000
Li ion battery BP-SCL2	14 499
Charger BC-SCL2 (with EU/USA mains cables, in-car charging cord)	14 494
Mains cable for AUS and UK	14 422 and 14 421

SAFETY AND CARE INSTRUCTIONS

GENERAL PRECAUTIONS

- Do not use your camera in the immediate vicinity of devices with powerful magnetic, electrostatic or electromagnetic fields (e.g. induction ovens, microwave ovens, television sets or computer monitors, video game consoles, cell phones, radio equipment).
- If you place the camera on or very close to a television set, its magnetic field could interfere with picture recordings.
- The same applies for use in the vicinity of cell phones.
- Strong magnetic fields, e.g. from speakers or large electric motors, can damage the stored data or the pictures.
- Do not use the camera in the immediate vicinity of radio transmitters or high-voltage power lines. Their magnetic fields can also interfere with picture recordings.
- If the camera malfunctions due to the effects of electromagnetic fields, remove the battery and turn the camera on again.
- Protect the camera from contact with insect sprays and other aggressive chemicals. Petroleum spirit, thinner and alcohol may not be used for cleaning.
- Certain chemicals and liquids can damage the camera's housing or the surface finish.
- As rubber and plastics sometimes emit aggressive chemicals, they should not remain in contact with the camera for a long time.
- Ensure that sand and dust cannot get into the camera, e.g. on the beach. Sand and dust can damage the camera and the memory card. Take particular care when changing lenses and when inserting and removing the card.
- Ensure that water cannot get into the camera, e.g. when it is snowing or raining and on the beach. Moisture can cause malfunctions and even permanent damage to the camera and memory card.
- Ensure that the accessory shoe cover is always fitted when no accessories are in use (such as a flash unit).
- If salt water spray gets onto the camera, wet a soft cloth with tap water, wring it out thoroughly and wipe the camera with it. Then wipe down thoroughly with a dry cloth.

SENSOR

- Cosmic radiation (e.g. on flights) can cause pixel defects.

CONDENSATION MOISTURE

- If condensation has formed on or in the camera, you should turn it off and leave it to stand at room temperature for around an hour. Once the camera temperature has adjusted to room temperature, the condensation will disappear by itself.

CARE INSTRUCTIONS

As any soiling also represents a growth medium for microorganisms, you should take care to keep the equipment clean.

FOR THE CAMERA

- Clean the camera only with a soft, dry cloth. Stubborn dirt should first of all be covered with a well-thinned cleaning agent and then wiped off with a dry cloth.
- To remove stains and fingerprints, the camera and lenses should be wiped with a clean lint-free cloth. Tougher dirt in hard to reach corners of the camera body can be removed with a small brush. The shutter blades may not be touched when doing this.
- All mechanically operated bearings and sliding surfaces on your camera are lubricated. Please remember this if you will not be using the camera for a long period of time. To prevent the lubrication points becoming gummed up, the camera shutter should be released a number of times every three months. It is also recommended that you repeatedly move and use all other controls. The range and aperture adjustment rings on the lens should also be moved periodically.
- Take care not to scratch the sensor for the 6-bit coding in the bayonet, or to get it dirty. Take care also that no grains of sand or similar particles enter the fastening, where they could scratch the bayonet. Only clean this component when dry and do not exert any pressure on the glass cover.

FOR THE BATTERY

Rechargeable lithium ion batteries generate power through internal chemical reactions. This reaction is influenced by ambient temperature and humidity. Very high and low temperatures shorten the operating time and service life of the batteries.

- Always remove the battery, if you will not be using the camera for a long period of time. Otherwise, after several weeks the battery could become totally discharged, i.e. the voltage is sharply reduced as the camera still consumes a small amount of current (for saving your settings) even when it is turned off.
- Lithium ion batteries should only be stored in a partially charged condition, i.e. not completely discharged or fully charged (in the corresponding display). If the battery is stored for a long period of time, it should be charged around twice a year for approximately 15 minutes to avoid a full discharge.
- Always ensure that the battery contacts are clean and freely accessible. Whilst lithium ion batteries are proof against short circuits, they should still be protected against contact with metal objects such as paper clips or jewelry. A short-circuited battery can get very hot and cause severe burns.
- If a battery is dropped, check the casing and the contacts immediately for any damage. Using a damaged battery can damage the camera.
- In case of noise, discoloration, deformation, overheating or leaking fluid, the battery must be removed from the camera or charger immediately and replaced. Continued use of the battery results in a risk of overheating, which can cause fire and/or explosion.
- In case of leaking fluid or a smell of burning, keep the battery away from sources of heat. Leaked fluid can catch fire!
- A safety valve in the battery guarantees that any excess pressure caused by improper handling is discharged safely.

- Batteries have a limited service life. It is recommended to replace it after around four years; this may be necessary sooner if used in a cold environment. (You will find the battery manufacture date on its casing. Written: calender week/year(WW/YY))
- Take damaged batteries to a collection point to ensure correct recycling.
- The batteries must not be exposed to heat or sunlight for prolonged periods, or to humidity or moisture. Likewise, the batteries may not be placed in a microwave oven or a high pressure container as this results in a risk of fire or explosion.

FOR THE CHARGER

- If the charger is used in the vicinity of radio receivers, it can interfere with the reception; make sure there is a distance of at least 1m between the devices.
- When the charger is in use, it can make a noise (buzzing) – this is quite normal and is not a malfunction.
- When it is not in use, disconnect the charger from the mains as otherwise it uses a certain (very small) amount of power even when no battery is inserted in it.
- Always keep the charger contacts clean, and never short circuit them.
- The car charging cable supplied
  - may only be operated with 12V electrical systems,
  - may never be connected while the charger is connected to the mains.

FOR MEMORY CARDS

- While a picture is being stored or the memory card is being read, it may not be removed, nor may the camera be turned off or exposed to vibrations.
- For safety, memory cards should only ever be stored in the anti-static case supplied.
- Do not store memory cards where they will be exposed to high temperatures, direct sunlight, magnetic fields or static discharge.
- Do not drop or bend a memory card as this can damage it and result in loss of the stored data.
- Always remove the memory card if you will not be using the camera for a long period of time,
- Do not touch the connections on the rear of the memory card and keep them free of dirt, dust and moisture.
- It is recommended that the memory card be reformatted from time to time, as fragmentation occurs when deleting, which can block some of the memory capacity.

CLEANING THE SENSOR

If any dust or dirt particles should adhere to the sensor cover glass, depending on the size of the particles this can be identified by dark spots or marks on the pictures. The camera can be returned to Leica AG Customer Service (Address: see p. 108) for chargeable cleaning of the sensor; this cleaning is not covered by the warranty.

However, you can do this cleaning yourself:

1. Check whether the camera battery has a capacity of at least 60%
2. Set the main switch to ⏲
3. Firstly, keep the function button pressed down, and then press the shutter release button.
   The shutter opens, thus revealing thesensor for cleaning (if the battery capacity is too low, the shutter will not open and the note bc (= Battery Capacity) appears in the viewfinder).
4. Clean:
   Make sure you follow the instructions below.
5. After you have finished cleaning, turn the camera off with the main switch. The shutter closes again after 10s.

Notes:

- Generally, To protect against ingress of dust, etc., it is important important always to have a lens or cover fitted.
- For the same reason, when changing lenses work quickly and in an environment that is as dust-free as possible.
- As plastic parts can easily pick up a static charge and then attract more dust, lens caps and covers made of these materials should only be stored for short periods in pockets in clothing.
- As far as possible, cleaning of the sensor should be performed in a dust-free environment to prevent further soiling.
- Lightly adhering dust can be blown off the sensor cover glass using clean and, if necessary ionized gases such as air or nitrogen. It makes sense to use a (rubber) bellows with no brush for this purpose. Special, low pressure cleaning sprays such as "Tetenal Anti-dust Professional" can also be used in line with their specified usage.
- If the particles cannot be removed from the sensor in this way, please refer the matter to Leica Customer Service.
- Preventing damage!
- To prevent damage, before switching off the camera always make sure that no objects can prevent the shutter from closing correctly!

Important:

- Leica Camera AG accepts no liability for damage caused by the user when cleaning the sensor.
- Do not attempt to blow dust particles off the sensor cover glass using your mouth; even tiny droplets of saliva can cause marks that are difficult to remove.
- Compressed air cleaners with high gas pressure may not be used as they can also cause damage.
- Take care to avoid touching the sensor surface with any hard objects during inspection and cleaning.

STORAGE

- If you are not using the camera for a longer period of time, we recommend that you:
  remove the memory card (see p. 69), and
  b. remove the battery (see p. 68), (after 2 months at the latest the date and time that were entered will be lost.
- A lens works like a magnifying glass if bright sunlight shines on the front of the camera. The camera must always be protected from strong sunlight. Use the lens cover and keep the camera in the shade (or immediately put it away in the case) help to prevent damage to the interior of the camera.
- Store the camera preferably in a closed and padded container so that nothing can rub against it and it is protected from dust.
- Store the camera in a dry, adequately ventilated place, where neither high temperatures nor high humidity will occur. When used in humid conditions, the camera should be completely free of all moisture before being stored away.
- Photo cases that became wet during use should be emptied to prevent damage to your equipment caused by moisture and any residues of leather-tanning agent that may be released.
- To prevent fungal growth during use in hot, humid tropical climates, the camera equipment should be exposed to the sun and air as much as possible. Storage in airtight containers or cases is recommended only if a desiccant such as silica gel is placed in the container.
- To prevent the formation of fungus, do not store the camera in a leather case for long periods of time.
- Note the serial numbers of your camera (engraved on the accessory shoe) and lenses, as these are extremely important in case of loss.

TROUBLESHOOTING

THE CAMERA DOES NOT RESPOND WHEN I TURN IT ON.

- Has the battery been correctly inserted?
- Does the battery have sufficient charge?
  Use a charged battery.
- Has the bottom cover been correctly fitted?

THE CAMERA TURNS ITSELF OFF AGAIN AS SOON AS I TURN IT ON.

- Does the battery have sufficient charge to operate the camera?
  Charge the battery or insert a charged battery.
- Is there any condensation?
  This occurs if the camera is moved from a cold place to a hot place. In this case, wait until the condensation has evaporated.

THE CAMERA SHUTTER REFUSES TO TRIP.

- Picture data is currently being transferred to the memory card and the back-up memory is full.
- The capacity of the memory card is exhausted and the back-up memory is full.
- No memory card has been inserted and the back-up memory is full.
- The memory card inserted is write-protected.
- The picture numbering of the memory card inserted is used up (in such a case, format the card outside the camera after saving the data).
- The battery has exceeded its performance limits (capacity, temperature, age)
- The bottom cover is not fitted.

I CANNOT SAVE THE PICTURE.

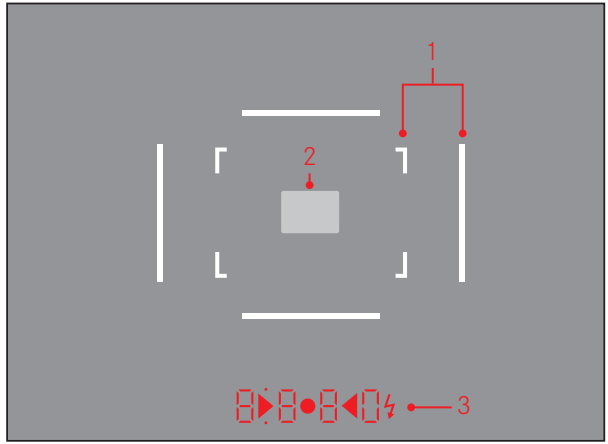
- Is a memory card inserted?
- The capacity of the memory card is full.

THE DATE AND TIME DISPLAYS SHOW INCORRECT VALUES OR ARE BLANK.

- The camera has not been used for a long period, particularly if the battery has been removed.
  Insert a fully charged battery.
  Set the date and time.

APPENDIX

VIEWFINDER DISPLAYS



1. Bright line frame for 50mm and 75mm[1] (example)

2. Metering field for distance setting

3. LEDs[1] (Light Emitting Diodes) for:
   Four-digit digital display with dots above and below
   8 8 8 0 Digital display:
   - Display of the automatically determined shutter speed for aperture priority **A**, or for counting down shutter speeds slower than 1s
   - Display of the exposure compensation set (when the shutter release button is pressed to the 1st pressure point)
   - Warning that the metering or setting ranges are overshot or undershot using aperture priority **A**
   - Display of the time/date (only during setting)
   - Indicates that the back-up memory is (temporarily) full
   - Indicates that the memory card is not inserted, damaged or write-protected (Sd), or the maximum number of pictures has been reached or the bottom cover is not fitted
   - Indicates that the memory card is full (Full)
   - Indicates that there is insufficient battery capacity (bc)
   - Indicates that the firmware update is taking place or has completed (UP)
   - Firmware update not possible (Err)

   b. • Dot above:
   - Indicates (when lit) that saved metering values are being used
   - Indicates date display (only during setting)
   - Indicates display of the battery capacity (after switching on the camera or in conjunction with the function button)

   c. • Dot below:
   - Indicates (flashing) that exposure compensation is being used
   - Indicates time display (only during setting) ▶ • ◀ Two triangular LEDs and one circular LED:
   - For manual exposure setting: Together as a light balance for exposure compensation. The triangular LEDs give the direction of rotation of the aperture setting ring and shutter speed thumbwheel to adjust the exposure.
   - Warning of values below the metering range

   d. ⚡ Flash symbol:
   - Flash ready to use
   - Details of flash exposure before and after the picture

[1] With automatic brightness control adjusted to the ambient brightness. This automatic control is not available for Leica M lenses with viewfinder attachments, since they cover the brightness sensor 5 which supplies the information required for their operation. In such cases the frame and displays always maintain a constant brightness.

KEYWORD INDEX

TECHNICAL DATA

Camera type
Leica M-D (Typ 262), compact digital view and range finder system camera
Lens attachment
Leica M bayonet with additional sensor for 6-bit coding
Lens system
Leica M lenses from 16 – 135mm
Picture format/image sensor
CMOS type, active area approx. 23.9 x 35.8mm (corresponds to usable format of analog Leica M models)
Resolution
5976 x 3992 pixels (24MP)
Data format
DNG™ (raw data), compressed loss-free, JPEG
File size
depends on subject
Buffer memory
1GB
Storage medium
SD cards up to 2GB/SDHC cards up to 32GB/SDXC cards

Exposure metering
Ambient light: Through the lens (TTL), with working aperture, flash light: TTL metering with system-compatible, SCA-3000/2-standard flash units
Metering principle/method
Metering the light reflected by light blades of the 1st shutter curtain onto a measuring cell: heavily center-weighted
Metering range
At room temperature, normal humidity and ISO 200,at aperture 1.0 EV0 to EV20 at aperture 32. Flashing of the left triangular LED in the viewfinder indicates values below the metering range
Sensitivity range
ISO 200 bis ISO 6400, can be set manually in $^{1}/_{3}$ ISO steps
Exposure mode
Choice of automatic shutter speed control with manual aperture preselection - aperture priority **A**, or manual shutter speed and aperture setting

Flash exposure control

Flash unit attachment

Via accessory shoe with central and control contacts

Synchronization

To the 1st shutter curtain

Flash sync time

↯ = $^1/_{180}$s; slower shutter speeds can be used if sync time is not met: automatic switching to TTL linear flash mode with HSS-compatible Leica system flash units

Flash exposure metering

With system-compatible flash units, control with center-weighted TTL pre-flash metering

Flash exposure compensation

Flash units with the appropriate specifications: in all modes ±3EV in $^1/_3$ EV steps

Displays in flash mode

Readiness: by means of constant lighting of the flash symbol LED in the viewfinder, success control: by further lighting or temporary fast flashing of the LED after the picture has been taken, underexposure display: by the LED going out temporarily

Viewfinder

Viewfinder principle

Large, bright line frame viewfinder with automatic parallax compensation

Eyepiece

Calibrated to -0.5 dpt.; corrective lenses from -3 to +3 diopter available

Image field limiter

By activating two bright lines each: For 35 and 135mm, or for 28 and 90mm, or for 50 and 75mm; automatic switching when lens is attached; frame color: white

Parallax compensation

The horizontal and vertical difference between the viewfinder and lens is automatically balanced by moving the bright-line frame in line with the relevant distance setting

Matching viewfinder and actual image

At a range setting of 2m, the bright-line frame size corresponds exactly to the sensor size of approx. 23.9 x 35.8mm; at infinity setting, depending on the focal length, approx. 7.3% (28mm) to 18% (135mm) more is recorded by the sensor than indicated by the corresponding bright line frame and slightly less for shorter distance settings than 2m

Magnification(For all lenses)

0.68 x

Large-base range finder

Split or superimposed image range finder shown as a bright field in the center of the viewfinder image

Effective metering basis

47.1mm (mechanical measurement basis 69.25mm x viewfinder magnification 0.68x)

Displays

Four-digit digital display with dots above and below, displays, see p. 100

Shutter and shutter release

Shutter

Metal blade focal plane shutter with vertical movement

Shutter speeds

For aperture priority: (**A**) continuous from 60s to $^{1}/_{4000}$s., with manual setting: 8s bis $^{1}/_{4000}$s in half steps,

B: For long-time exposures up to max. 60s, ↜ ($^{1}/_{180}$s): Fastest shutter speed for flash synchronization, HSS linear flash mode possible with all shutter speeds faster than $^{1}/_{180}$s with Leica system flash units with appropriate specifications

Activation of shutter release button

By integrated motor, low noise operation

Shutter release button

Two-stage, 1. Activation of exposure metering and exposure lock (in aperture priority mode), 2. Resolution

Turning the camera on/off

With main switch on the camera top panel, reactivation by touching the shutter release button

Power supply

1 lithium ion rechargeable battery, nominal voltage 7.4V, capacity 1800mAh.; capacity indicated in the viewfinder, operating conditions (in camera): 0°-40°C; Model No.: BP-SCL2; Manufacturer: PT. VARTA Microbattery, Made in Indonesia

Charger

Inputs: 100-240V AC, 50/60Hz, 300mA, automatic switching, or 12V DC, 1.3A; Output: Direct current nominal 7.4V,1000mA/max. 8.25V, 1100mA; operating conditions (charging): 10°-30°C; Model No.: BC-SCL2; Manufacturer: Guangdong PISEN Electronics Co., Ltd., Made in China

Camera body
Material
All-metal magnesium/aluminum body, leather covering, brass top panel and base, black lacquered finish.
Tripod thread
A ¼ (¼“) DIN stainless steel in bottom
Operating conditions
0°-40°C
Interfaces
ISO accesory shoe
Dimensions
(Width x Depth x Height) Approx. 138.6 x 42 x 80mm
Weight
Approx. 720g (with battery)

Package contents
Charger 100-240V with 2 mains cables (Euro, USA, different for some export markets), lithium-ion rechargeable battery, carrying strap, housing bayonet cover.
Cover for accessory shoe

LEICA PRODUCT SUPPORT

The Product Support Department at Leica AG can answer any technical questions relating to Leica products, including support for the supplied software in writing, on the phone or by email.
They are also the contact point for purchasing advice and to order instruction manuals. Alternatively, you can send us your questions using the contact form on the Leica Camera AG homepage.

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LEICA CUSTOMER CARE

The Leica Camera AG Customer Care department or the repair service provided by authorized Leica agents in your country are available for service, maintenance and repairs of your Leica equipment (see the warranty card for a list of addresses).

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