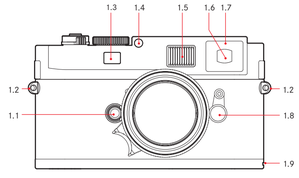
my point of view

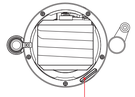
Leica Camera AG | Oskar-Barnack-Straße 11 | 35606 SOLMS | DEUTSCHLAND
Telefon +49 (0) 6442-208-0 | Telefax +49 (0) 6442-208-333 | www.leica-camera.com

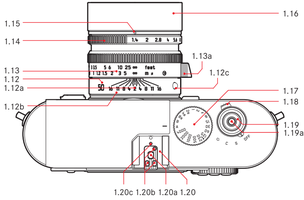
10448 X/12/EW/B

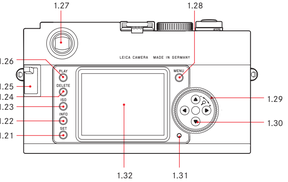
LEICA M Monochrom

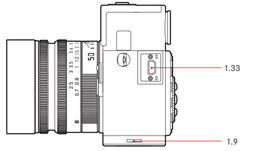
Anleitung/
Instructions

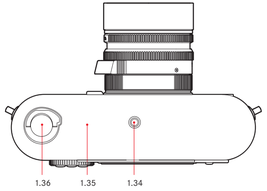


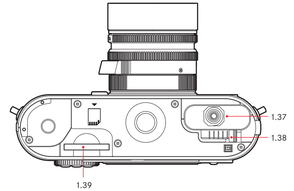


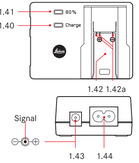


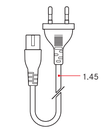













SUMMICRON-M 1:2/50 ASPH.

LEICA M Monochrom

Instructions

FOREWORD

Dear Customer,

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

This manual has been printed on 100% chlorine free bleached paper. The complex manufacturing process eases the burden on the water system and thus helps to protect our environment.

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: (U.S. only)

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 Monochrom
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.

This Class B digital apparatus complies with Canadian ICES-003

Leica M Monochrom

Tested To Comply
With FCC Standards

FOR HOME OR OFFICE USE

TABLE OF CONTENTS

WARNING MESSAGES

- You should use only the recommended accessories to prevent faults, short circuits or electric shock.
- Do not expose the unit to moisture or rain.
- Do not attempt to remove parts of the body (covers); specialist repairs can be carried out only at authorized service centers.

LEGAL INFORMATION

- Please ensure that you 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 logo is a registered trademark.
- Other names, company or product names referred to in this manual are trademarks or registered trademarks of the relevant companies.

DISPOSAL OF ELECTRICAL AND ELECTRONIC EQUIPMENT

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

This device contains electrical and/or electronic components and should 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 itself contains replaceable (rechargeable) batteries, these must be removed first and, if necessary, also be disposed of in line with the relevant regulations.
Further information on this issue is available from your local administration, your local waste collection company, or in the store where you purchased this device.

PACKAGE CONTENTS

Before using your Leica M Monochrom for the first time, please check that the accessories supplied are complete.

A. Battery

B. Charger

C. USB connecting cable

D. Carrying strap

DESIGNATION OF PARTS

FRONT VIEW

1.1 Lens release button
1.2 Eyes for carrying strap
1.3 Distance meter viewing window
1.4 Brightness sensor[1]
1.5 Illumination window for the bright-line frames
1.6 Viewfinder window with mirror blinds for better legibility of the displays against bright backgrounds
1.7 Self-timer LED
1.8 Image field selector
1.9 Bottom cover locking clip

FRONT VIEW OF CAMERA BAYONET /REAR VIEW OF LENS BAYONET

1.10 Sensor for lens identification
1.11 6-bit lens identification barcode

TOP VIEW

1.12 Fixed ring with
  a. Index for distance setting
  b. Depth of field scale and
  c. Red index button for changing lenses
1.13 Focusing ring with
  a. Finger grip
1.14 Aperture setting ring
1.15 White index point for aperture setting
1.16 Lens hood
1.17 Shutter speed setting dial with
  – **A** Detent position for automatic shutter speed control
1.18 Main switch with detent positions for
  – **OFF** (camera turned off)
  – **S** (single pictures)
  – **C** (continuous pictures)
  – (self-timer)
1.19 Shutter release button with
  – Thread for cable release
1.20 Flash unit shoe with
  a. Center (flash) and
  b. Control contacts, and
  c. Hole for retaining pin

[1] Leica M lenses with viewfinder adaptors cover the brightness sensor. Information about the use of these and other lenses can be found in the “Displays/In the viewfinder”, p. 94 and “Leica M lenses”, p. 104 sections.

REAR VIEW

1.21 **SET** button for calling up the picture parameter menus/for calling up the sub-menus within the menus / for confirming settings/functions selected in the sub-menus

1.22 **INFO** button for displaying settings/data for pictures / the picture data when reviewing an image

1.23 **ISO** button for calling up the sensitivity setting

1.24 **DELETE** button for selecting the delete function

1.25 USB port cover

1.26 **PLAY** button for turning on (continuous) review mode / to return to full picture display

1.27 Viewfinder window

1.28 **MENU** button for calling up and exiting the main menu

1.29 Central setting dial for navigation in menus / setting the selected menu items/functions / setting an exposure compensation value / scrolling in the memory / enlarging/reducing the pictures viewed

1.30 Direction buttons for navigation within the menus / for setting the selected menu items/functions / scrolling through the memory

1.31 LED for indicating picture mode / recording data

1.32 Monitor

VIEW WITH USB PORT COVER OPEN

1.33 USB port (5-pin, for connecting to computers)

BOTTOM VIEW

(with bottom cover in place)

1.34 Tripod thread A$^{1}/_{4}$“, DIN 4503 ($^{1}/_{4}$“)

1.35 Bottom cover

1.36 Locking toggle for bottom cover

(with bottom cover removed)

1.37 Battery compartment

1.38 Battery locking slider

1.39 Memory card slot

CHARGER

1.40 Green (**CHARGE**) LED to indicate charging

1.41 Yellow (**80%**) LED to indicate: 80% charge reached

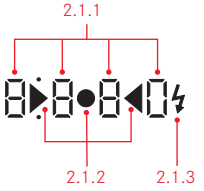
1.42 Charging slot for battery with
a. Contacts

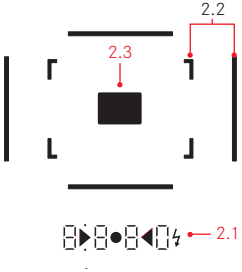
1.43 Socket for vehicle charging cable

1.44 2-pin socket for

1.45 Replaceable mains cable

DISPLAYS





2. IN THE VIEWFINDER

2.1 LEDs
(Light Emitting Diodes)
(with automatic brightness control, which responds to the ambient brightness[1]) for:

2.1.1 Four-digit seven-segment digital display with dots above and below

Digital display:
- Displays the automatically determined shutter speed for aperture priority **A**, or for counting down shutter speeds longer than 1s
- Warning that the metering or setting ranges are overshot or undershot using aperture priority **A**
- Displays the exposure compensation value (briefly during adjustment)
- Indicates that the buffer memory is (temporarily) full
- Indicates that no memory card is loaded (**Sd**)
- Indicates that the memory card is full (**Full**)

Dot above:
- Indicates (when lit) that metering memory lock is being used

Dot below:
- Indicates (flashing) that exposure compensation is being used

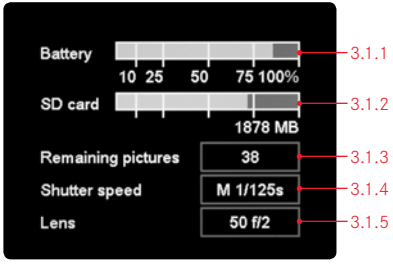
2.1.2 Two triangular and one circular LED:
- For manual adjustment: Jointly used as light balance for exposure compensation
- Warning of values below the metering range

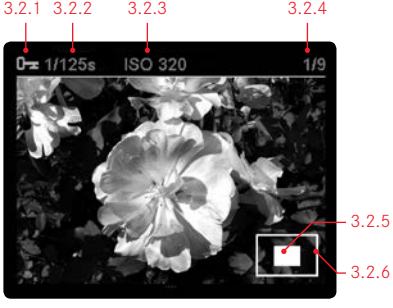
2.1.3 Flash symbol:
- Flash readiness
- Details of flash exposure before and after the picture

2.2 Bright line frame for 50mm and 75mm
(example)

2.3 Metering field for distance setting

[1] Automatic control is not available for Leica M lenses with viewfinder attachments, since they cover the brightness sensor 1.4 which supplies the information required. In such cases the displays always maintain a constant brightness.





3. IN THE MONITOR

3.1 When taking a picture

(by pressing the INFO button, 1.22)

3.1.1 Battery capacity

3.1.2 Remaining memory capacity in MB

3.1.3 Number of pictures remaining

3.1.4 Set/applied shutter speed

3.1.5 Lens type

3.2 In normal review mode

(image/s fill the entire monitor area)

3.2.1 Delete protection symbol (only if set)

3.2.2 Shutter speed (not in enlarged view)

3.2.3 Sensitivity (not in enlarged view)

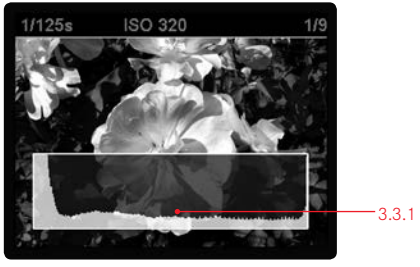
3.2.4 Picture number / total number of pictures (not in enlarged view)

3.2.5 Zoom level, or position of trimming shown (schematic, in enlarged review mode only)

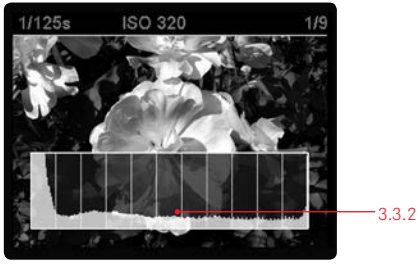
3.2.6 ☐ Selected picture (reduced viewing of 4 or 9 pictures only)

3.3 Review with histogram

(As in 3.2, additional)



3.3.1 JPG-Histogram

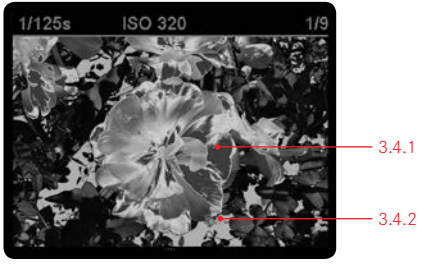


3.3.2 DNG-Histogram
(scematic illustration, the width and number of segments may be different in reality)

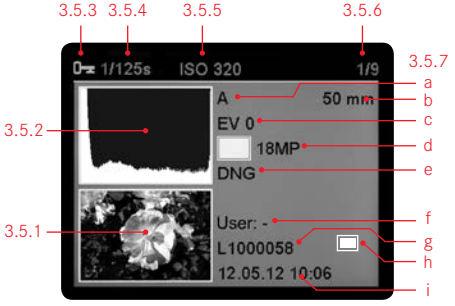
DISPLAYS

3. IN THE MONITOR (continued)

3.4 When viewing clipping indicators



3.4.1 Bright sections of picture without definition
3.4.2 Dark sections of picture without definition



3.5 Reviewing with additional information

(by pressing the INFO button, 1.22; picture reduced)

3.5.1 Picture (if necessary with "Clipping" display[1])
3.5.2 Histogram
3.5.3 Delete protection symbol (only if set)
3.5.4 Shutter speed
3.5.5 Sensitivity
3.5.6 Picture number / total number of pictures
3.5.7 Picture data
- a. Exposure mode
- b. Focal length[2]
- c. Exposure compensation
- d. Resolution
- e. Compression / file format
- f. User profile name
- g. File number
- h. Zoom level or position of trimming shown (only if set)
- i. Date / time

[1] See "Review with histogram 3.3", p. 140
[2] Only with the latest M lenses with 6-bit coding, or suitably converted lenses (see p. 104) or with manual setting in the menu (see p. 115).

MENU ITEMS

4.1 In the main menu (press **MENU** button, 1.28)

	Menu item	Explanation	
4.1.1	Lens detection	–	see p. 114
4.1.2	Save user Profile	User-specific profile (save)	see p. 136
4.1.3	Advance	Low vibration shutter release / shutter cocking time	see p. 108
4.1.4	Self-timer	Self-timer delay time	see p. 147
4.1.5	Auto ISO setup	–	see p. 116
4.1.6	Sharpening	Picture sharpening	see p. 118
4.1.7	Contrast	Picture contrast	see p. 118
4.1.8	Toning	Picture toning	see p. 118
4.1.9	Bracketing setup	Number of pictures / graduation / sequence	see p. 127
4.1.10	Exp. Comp. setup	Using menu / central setting dial	see p. 125
4.1.11	Monitor brightness	–	see p. 109
4.1.12	Clipping	Indication of under and overexposed areas	see p. 150
4.1.13	Folder manag.	Rename / create new	see p. 146
4.1.14	Auto review	Automatic review of the last picture	see p. 139
4.1.15	Auto power off	–	see p. 113
4.1.16	Flash sync	–	see p. 135
4.1.17	Auto Slow Sync	Flash exposure time	see p. 134
4.1.18	Reset	(To original factory settings)	see p. 137
4.1.19	Sensor cleaning	Shutter opening for cleaning the sensor	see p. 158
4.1.20	Date	–	see p. 112
4.1.21	Time	–	see p. 112
4.1.22	Tone	Button acknowledgement tone	see p. 113
4.1.23	Language	–	see p. 112
4.1.24	USB connection	Detection of camera as external drive or complying with PTP protocol	see p. 148
4.1.25	Format SD card	Formatting the memory card	see p. 147
4.1.26	Firmware	Firmware version	see p. 151

4.2 In the picture parameters menu (press **SET** button, 1.21)

	Menu item	Explanation	
4.2.1	Compression	Compression rate/file format	see p. 115
4.2.2	Resolution	–	see p. 115
4.2.3	Exp. Comp.	Exposure compensation (set)	see p. 125
4.2.4	Bracketing	Turn on/off	see p. 127
4.2.5	User profile	User-specific profile	see p. 136

QUICK GUIDE

You will need the following items:
- Camera
- Battery (A)
- Memory card (not supplied)
- Battery charger (B)

PRESETS

1. Insert the battery (A) into the charger (see p. 100)
2. Connect the charger (B) to the mains to charge the battery (see p. 100)
3. Set the main switch (1.18) to **OFF** (see p. 106).
4. Insert the charged battery into the camera (see p. 102).
5. Insert a memory card (see p. 103).
6. Set the main switch (1.18) to **S** (see p. 106).
7. Set the desired language (see p. 112).
8. Format the memory card (see p. 147).

Notes:

- This is generally only required if the card has not been factory-formatted
- Simple formatting does not cause the data on the card to be irretrievably lost. Only the directory is deleted, which means that the existing files are no longer directly accessible. The data can be accessed again using appropriate software. Only the data that is then overwritten by saving new data is actually permanently deleted. You should nevertheless make a habit of transferring all your pictures onto a secure bulk storage medium, e.g. the hard drive on your computer, as soon as possible (see p. 148 for details).

9. Set the date and time (see p. 112/113).

TAKING PHOTOGRAPHS

10. Attach the desired lens to the camera (see p. 105).
11. Set the shutter speed dial (1.17) to **A** to automatically control the shutter speed (see p. 108).
12. With the viewfinder to the eye, set the focus using the distance setting ring on the lens (see p. 122).
13. Press the shutter release button (1.19) as far as the first pressure point to activate the camera exposure metering.
14. If necessary, correct the exposure using the aperture setting ring on the lens (1.14) (see p. 124).
15. Press the shutter release button all the way down to take the picture.

VIEWING PICTURES

For automatic brief reviews of the last picture (in picture mode):
The Leica M Monochrom is preset for this function - **Auto review**. Various options for the function can be selected in the main menu under this item (4.1.14) (see p. 138/139).

For review without a time limit:

1. Select review mode by pressing the **PLAY** button (1.26) (see p. 138).
2. Press the left or right direction button (1.30) to view other pictures.

Note:

If you have been taking photographs using the picture series function (see p. 107), in both review modes the last picture in the series or the last picture in the series stored on the card - if not all pictures in the series have been transferred from the camera's buffer memory to the card at this point - is shown first.

ENLARGING PICTURES ON THE MONITOR

Turn the central setting dial (1.29) to the right (clockwise) to enlarge the picture displayed (see p. 142).

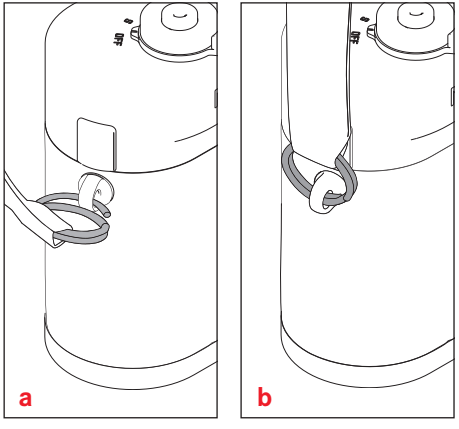
DELETING PICTURES

Press the delete button (**DELETE**, 1.24) and follow the instructions on the monitor (1.32) (see p. 143).

COMPREHENSIVE INSTRUCTIONS

PREPARATIONS

ATTACHING THE CARRYING STRAP



CHARGING THE BATTERY

The Leica M Monochrom is powered by a Lithium ion battery (A).

Attention:

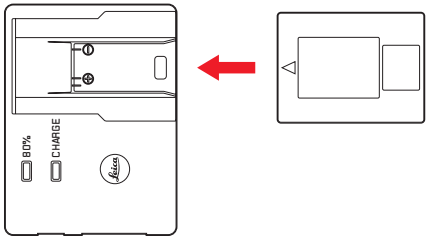
- Only the battery type specified and described in this manual, and/or battery types specified and described by Leica Camera AG, may be used in this camera.
- These batteries may only be used in the units for which it is designed and may only be charged exactly as described below.
- Using this battery contrary to the instructions and using non-specified battery types can result in an explosion under certain circumstances.
- The batteries may not be exposed to heat, sunlight, humidity or moisture for long periods. 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.
- 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 or the Leica charger, order no. 14 463 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, to 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 may not be connected while the charger is still connected to the mains.
- Ensure that the mains outlet used is freely accessible.
- The battery and charger may not be opened. Repairs may only be carried out by authorized workshops.

Notes:

- The battery should be charged before the Leica M Monochrom is used for the first time.
- The battery must have a temperature of 32°-95°F 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 (1.40/1.41) flash quickly once charging has begun (>2Hz), this indicates a charging error. 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 maximize the life of the battery, it should not be exposed to extremely high or low temperatures (e. g. in a stationary vehicle in summer or winter) for long periods.
- Even when used in optimum conditions, every battery has a limited service life. After several hundred charging cycles, this becomes noticeable as the operating times get significantly shorter.
- Defective batteries should be disposed of in line with the applicable regulations (see p. 90).
- The replaceable battery provides power to a back-up battery which is integrated into the camera. This back-up battery maintains the reference data such as the date for up to 3 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 60 hours. This process does not require the camera to be turned on.

1. Connect the charger, i.e. plug the connector on the mains cable (1.45) into the corresponding socket on the charger (1.44) and connect the other end to a mains outlet.
2. Insert a battery with its contacts underneath and the end marked with an arrow facing forwards as far as it will go into the charging slot (1.42) on the charger. The shape of the charging slot ensures that the battery is positioned correctly.



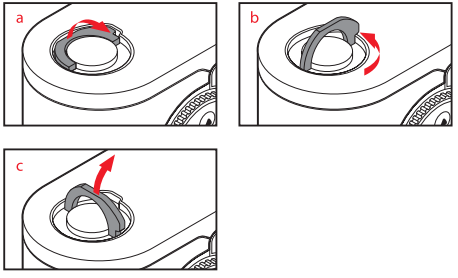
- The green LED marked **CHARGE** (1.40) starts flashing to confirm that charging is in progress. As soon as the battery has charged to at least $^{4}/_{5}$ of its capacity, the yellow LED marked **80%** (1.41) also lights up. When the battery is fully charged, i.e. 100% capacity reached - after approx. $3^{1}/_{2}$ hours - the green LED is continually lit rather than flashing.

Note:
The **80%** LED lights up after around 2 hours due to the charging characteristics. This battery capacity is enough for around 280 pictures.
Thus, if the full capacity of around 350 pictures is not required, the camera is ready to use again in a relatively short time.

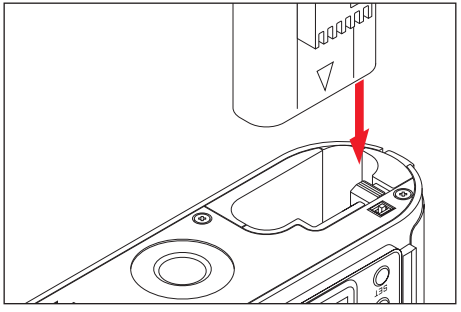
3. The charger should then be disconnected from the mains. However, there is no risk of overcharging.
4. Remove the battery by pulling or sliding it back out of the charging slot (there is a recess on the top of the slot for this purpose).

INSERTING / REMOVING THE BATTERY TO / FROM THE CAMERA

1. Set the main switch (1.19) to **OFF**.



2. Remove the bottom cover (1.35) of the camera. To do this:
   a. Flip up the toggle (1.36) in the bottom cover,
   b. Turn it to the left, and
   c. Lift off the bottom cover.



3. Insert the battery into the compartment with its contacts facing forwards. Press it into the compartment (1.37) until the white sprung locking catch (1.38) moves over the battery to hold it in place.
4. Replace the bottom cover. To do this:
   a. Insert it into the retaining clip (1.9) on the side of the camera
   b. Swing it down,
   c. Lock it by turning the toggle to the right as far as the stop, and
   d. Push the toggle back down.

To remove the battery, follow these instructions in reverse order. The white sprung locking catch in the battery compartment must be pushed to the side to release the battery.

Note:
Always turn the camera off before removing the battery. A fully charged battery (to CIPA standards) is sufficient for approx. 350 pictures each reviewed for 4s.

CHARGE LEVEL DISPLAYS (3.1.1)

In picture mode, the battery charge level is displayed on the monitor (1.32) by pressing the **INFO** button (1.22). If the capacity is below 10%, the battery must be replaced or recharged.

Notes:

- Remove the battery if you will not be using the camera for a long period of time. When doing so, turn the camera off using the main switch first.
- After 3 months out of use, the back-up battery in the camera will be exhausted (see also the last note under “Charging the battery”, p. 100), and all individual settings will need to be made again.

INSERTING AND REMOVING THE MEMORY CARD

The Leica M Monochrom saves picture data on an extremely compact SD (secure digital) or SDHC (high capacity) card.

SD/SDHC memory cards are small, light and interchangeable external storage media. SD/SDHC memory cards, particularly those with a high capacity, provide significantly faster read/write times and significantly faster recording and review of the data.

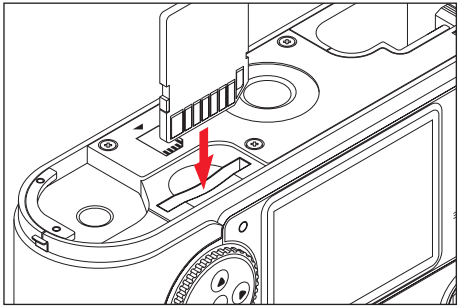
An SD card has a write protection switch, which can be used to prevent unintentional storage and deletion of pictures. This switch takes the form of a slider on the non-beveled side of the card; in the lower position, marked LOCK, the data on the card is protected.

SD/SDHC memory cards are available from various suppliers and with different capacities and read/write speeds.

Note:

Do not touch the memory card contacts.

1. Set the main switch (1.18) to **OFF**.
2. Remove the bottom cover (1.35) of the camera. To do this:
   a. Flip up the toggle (1.36) in the bottom cover,
   b. Turn it to the left as far as the stop, and
   c. Lift off the bottom cover.



3. Insert the memory card into the slot (1.42) with the contacts at the back and with the beveled corner pointing downwards. Slide it completely into the slot against the spring resistance until you hear it click into place.
4. Replace the bottom cover. To do this:
   a. Insert it into the retaining clip (1.9) on the side of the camera
   b. Swing it down,
   c. Lock it by turning the toggle to the right as far as the stop, and
   d. Push the toggle back down.

To remove the memory card, switch off the camera and follow this procedure in reverse order. To release, the card must first be pressed slightly further in – as indicated on the base of the camera.

Notes:

- The range of SD/SDHC cards is too large for Leica Camera AG to be able to completely test all available types for compatibility and quality. Therefore, we recommend using a card such as the "Extreme III" cards from the leading brand "SanDisk".
- 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 and SDHC 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.
- If you remove the bottom cover or take out the memory card, the monitor displays the corresponding warning messages instead of the normal display:
  – Attention Bottom cover removed
  – Attention No memory card

- Do not open the bottom cover nor remove the memory card or the battery whilst the red LED (1.31) at the bottom right of the monitor (1.32) is flashing, indicating picture recording and/or data being saved to the card. Otherwise the unsaved (or not completely saved) picture data may be lost.
- As electromagnetic fields, electrostatic charge, 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. 148).
- 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 on the Leica M Monochrom. 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 (latest version).
Even without this additional feature, i.e. when using Leica M lenses without identification, the Leica M Monochrom will deliver excellent pictures in most situations.
To ensure optimum picture quality in these situations, we recommend entering the lens type (see "Turning lens type identification on/off", p. 114).

Important:

- **Cannot be used:**
  - Hologon 15mm f/8
  - Summicron 50mm f/2 with close up
  - Elmar 90mm f/4 with retractable tube (manufactured from 1954–1968)
  - Some examples of the Summilux-M 35mm f/4 (not aspherical, manufactured from 1961–1995, Made in Canada) cannot be fitted to the Leica M Monochrom or will not focus to infinity. Leica Customer Service can modify these lenses so that they can be used on the Leica M Monochrom.
- **Can be used, but risks damaging the camera or lens**

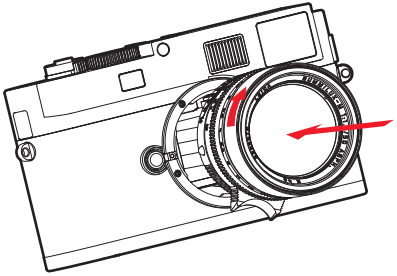
  Lenses with retractable tube can only be used with the tube extended, i.e. their tube must never be retracted into the Leica M Monochrom. This is not the case with the current Macro-Elmar-M 90mm f/4, whose tube does not protrude into the camera body even when retracted. It can therefore be used without any restrictions.
- **Can be used with restrictions**

  Despite the high precision of the rangefinder on the Leica M Monochrom, 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.
- **Can be used but are excluded from exposure metering**
  - Super-Angulon-M 21mm f/4
  - Super-Angulon-M 21mm f/3.4
  - Elmarit-M 28mm f/2.8 with serial nos. before 2 314 921.

Note:

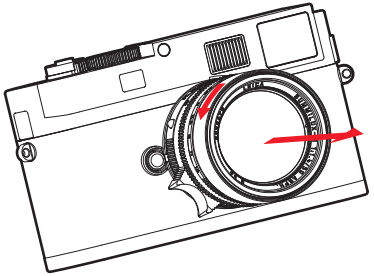
Leica Customer Service can upgrade many Leica M lenses with 6-bit coding. Enquiries for specific cases to (address, see p. 167).

ATTACHING A LENS



1. Hold the lens by the fixed ring (1.12).
2. Align the red index button (1.12c) on the lens with the release button (1.1) on the camera body.
3. Then push the lens straight on in this position.
4. Turn the lens slightly to the right, and you will hear and feel it click into place.

REMOVING A LENS



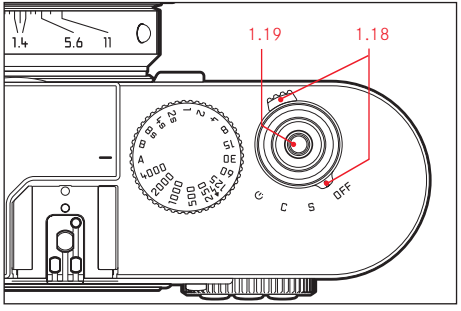
1. Hold the lens by the fixed ring (1.12).
2. Press down the release button (1.1) on the camera body.
3. Turn the lens to the left until its red index button (1.12c) is aligned with the release button.
4. Then pull the lens straight off.

Notes:

- Generally: To protect the Leica M Monochrom against ingress of dust etc. into the interior of the camera, it is important always to have a lens or a cap 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 caps should not be stored in your trouser pocket as they attract dust that can get into the camera when they are attached.

THE MOST IMPORTANT SETTINGS / CONTROLS

TURNING THE CAMERA ON AND OFF



The Leica M Monochrom is turned on and off using the main switch (1.18). This is below the shutter release button (1.19) and is a lever with four detent positions:

a. OFF – **Camera switched off**

This is the inactive position – the camera is turned off.

b. S – **Single picture mode**

Pressing the shutter release button (see below) takes only one picture, irrespective of how long it is kept pressed.
For very discreet working (see p. 97/110) the Discreet function can be activated in the menu (see p. 108).

c. C – **Continuous series of pictures**

Holding down the shutter release button (see p. 107) takes a series of ≤ 8 consecutive pictures - provided the memory card used and the internal back-up memory have sufficient capacity (see "Inserting and removing the memory card", p. 103).

d. ⏲ – **Self-timer**

Pressing the shutter release button (see p. 107) starts the set delay (see p. 147) and the picture is then taken.

Turning on

After turning on, i.e. after selecting one of the three functions S, C or ⏲ the LED (1.31) lights up briefly and the displays in the viewfinder (2.1.1) appear (see p. 94).

Turning off

Even if the main switch is not set to OFF the camera is automatically turned off if an automatic power off time has been set in the menu (Auto power off, 4.1.15, see p. 113), and none of the functions are used during this time.

Note:

If the camera is out of use for an extended period or is stored in a case, always switch 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 taking pictures accidentally.

SHUTTER RELEASE BUTTON

The shutter release button (1.19) has three pressure points:

1. Tapping briefly to the 1st pressure point activates exposure metering and the viewfinder display, and starts any preselected self-timer delay (see p. 147). When the shutter release button is released, the metering system and the displays remain activated for around a further 12s (for more details, refer to the sections under “Exposure metering” on p. 123). If the shutter release button is held at this pressure point the display remains active or, if review mode was previously selected (see p. 138) the camera reverts to picture mode.
   If the camera was previously in standby mode (see p. 106), it is reactivated and the display is turned on. While the shutter release button is held in this position, you can use the adjusting dial (1.29) to quickly and easily set an exposure compensation (for more details, refer to the “Exposure compensation” section on p. 125).

Note:

The shutter release button remains blocked
- if the internal buffer memory is (temporarily) full, e.g. after a series of ≥ 8 pictures, or
- if the memory card inserted and the internal buffer memory are (temporarily) full.

2. Pressing down to the 2nd pressure point 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. 124). After the shutter release button has been released a new metered value can be determined.
3. Pressing the shutter release button all the way down takes a picture. The data is then transferred to the memory card.

Notes:

- You cannot feel the second pressure point when using a cable release.
- Even if review mode (see p. 138) or the menu (see p. 110) was previously active, tapping the shutter release button switches immediately to picture mode.
- You can use the menu to select and set button acknowledgement (feedback) tones (see p. 113).
- To avoid camera shake, the shutter release button should be pressed gently – not jerkily - until the shutter releases with a soft click.

SERIAL EXPOSURES

On the Leica M Monochrom, you can not only take single pictures - by setting the main switch 1.18 to (S [single]), but also series of pictures - by setting the main switch to (C [continuous]), e.g. to capture sequences of movement in several stages.
Apart from the operation of the shutter release button (1.19), series of pictures are taken in the same way as single pictures: As long as you hold down the shutter release button (provided that the memory card has sufficient capacity), a series of pictures is taken. However, if you only press the shutter release button briefly, this will again result in a single picture.

Pictures can be taken at a maximum of about 2 frames per second and ≤ 8 in succession.

Notes:

- The specified picture frequency and the maximum possible number of pictures in a series relate to a standard setting – ISO 320 and DNG format. With other settings, the frequency and number may be lower.
- Regardless of how many pictures are taken in a series, in both review modes (see p. 138), the last picture in the series or the last picture in the series stored on the card - if not all pictures in the series have been transferred from the camera's back-up memory to the card at this point - is shown first.

DISCREET / LOW VIBRATION SHUTTER RELEASE

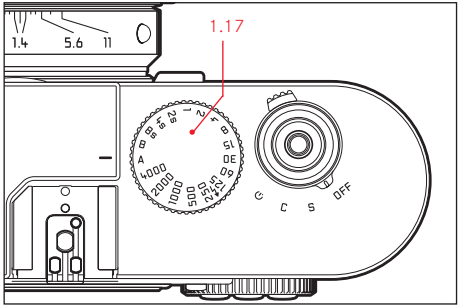
In situations that call for a maximum amount of discretion, it can be beneficial to suppress the noise of cocking the shutter, at least temporarily. There are also situations when it is useful to hold the camera as steadily as possible when taking a picture.
The operation of the shutter release button can be changed in the menu for this purpose.

Setting the functions

1. In the main menu (see p. 97-110), select **Advance** (4.1.3), and
2. the desired function in the submenu, **Standard**, **Soft**, **Discreet** or **Discreet & Soft**.

With the **Soft** functions, the shutter is released at the 2nd pressure point of the shutter release button, i.e. without having to overcome the increased resistance, as is normally necessary. This makes it easier to hold the camera steady at the moment of release - essential for sharp pictures with slow shutter speeds.
With the **Discreet** functions, the shutter is not cocked until you let go of the shutter release button, not immediately after taking the picture as is normal.
The delay time – which can be of any length – can be used to move the camera to a place with sound insulation to cock the shutter (under clothing or similar) or to wait for a more appropriate time.
While the **Soft** functions are available in both single picture and continuous series modes, the **Discreet** functions can only be used in single picture mode (main switch 1.18 set to **S** position).

SHUTTER SPEED DIAL



The size and position of the shutter speed dial (1.17) on the Leica M Monochrom are ergonomically optimized: On the one hand – even with the camera to the eye – it is very easy to use. On the other hand it is well protected against unintentional setting.
In addition its direction of rotation (like that of the aperture setting ring on the lenses) corresponds to the exposure meter displays in the viewfinder for manual adjustment (2.1.3): For example, if the left-hand triangular LED lights up, rotation in the direction of the arrow, i.e. to the right, leads to the required slower shutter speed.

The Leica M Monochrom shutter speed setting dial is used to select the three exposure control modes,

– Aperture priority mode by selecting the A position, marked in red (see p. 124)

– Manual mode by selecting a shutter speed of between $^1/_{4000}$s and 8s, (intermediate values in $^1/_2$ step graduations are also available, see p. 128)

as are

– the shortest possible sync speed for flash mode – marked with the ⚡ symbol – of $^1/_{180}$s (see p. 130), and

– **B** for long exposures (see p. 128).

The Leica M Monochrom shutter speed setting 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.

Notes:

- As described in connection with the ISO settings on p. 116, when using higher sensitivities and in particular with dark, even surfaces, a certain amount of noise will become apparent. To reduce this annoying phenomenon, after pictures with slow shutter speeds the Leica M Monochrom 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 set 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.
- At shutter speeds of more than 2s, the **Noise reduction 12s**[1] message appears in the monitor.
- If the **B** function is used in conjunction with the self-timer (see p. 147), there is no need to keep the shutter release button pressed; the shutter will remain open until the shutter release button is pressed a second time (this is then equivalent to the T function).

More details on setting the correct exposure can be found in the sections under: "Exposure metering" from p. 123.

[1] Time is an example

MONITOR

The Leica M Monochrom has a 2.5" liquid crystal color monitor (1.32).

It is used for:

- Displaying some basic settings in picture mode. Pressing the **INFO** button (1.22) allows you to display the battery and memory card capacities, and some additional settings (see p. 141).
- The menu (see next page).
- Viewing the pictures taken on the memory card. Review mode (see p. 138) is activated using the **PLAY** button (1.26) or automatically by selecting the **Auto review** function.

The monitor on the Leica M Monochrom is protected by an extremely hard and scratch-resistant sapphire glass cover.

Setting the brightness

The brightness of the monitor picture can be adjusted to five different levels using the menu control, so that you can select the optimum brightness for any situation, i.e. the ambient lighting conditions.

Setting the function

1. In the main menu (see p. 97/109), select **Monitor brightness** (4.1.11), and
2. then the required level (**Low**, **Medium low**, **Standard**, **Medium high**, **High**) in the submenu.

MENU CONTROL

Many settings on the Leica M Monochrom are made using menus (see p. 97).
In aperture priority and manual exposure modes, two independent menus are available. The main menu is made up of 26 items (4.1.1 - 26), and there is also a picture parameters menu. Based on experience, the menu items are grouped and separated according to which are used most frequently, allowing them to be called up and set quickly and easily.

MAIN MENU

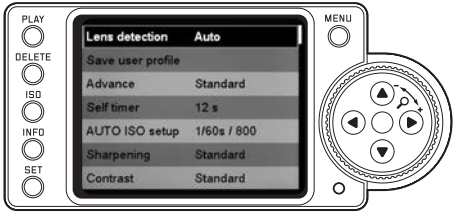
In aperture priority and manual exposure modes, in addition to the basic camera settings the main menu also includes storing user profiles and additional functions.

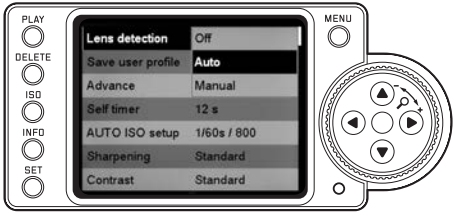
PICTURE PARAMETERS MENU

The picture parameters menu comprises 5 items (4.2.1 - 5) and is used to make basic settings for pictures and to select saved user profiles.
When the camera is turned on, an overview of the relevant settings and step-by-step instructions for setting these functions can be viewed in the monitor (1.32).
Settings are made in the same way in both menus, differing only in how they are accessed and exited.

SETTING THE MENU FUNCTIONS

1. The main menu is called up using the **MENU** button (1.28), the picture parameters menu using the **SET** button (1.21).
   - The first
     7 menu items appear in the main menu, and all items in the picture parameters menu.

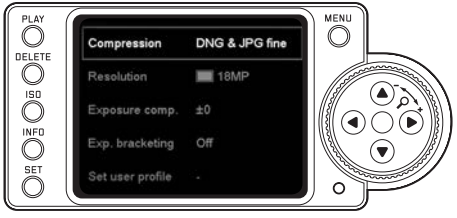


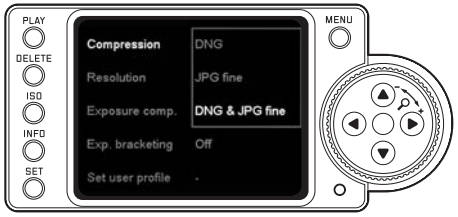


Notes:

- The picture parameters menu is:
  - Only accessible in picture mode, and
  - Only available when using aperture priority (see p. 124) and manual (see p. 128) exposure modes.
- The main menu cannot be accessed during a **DELETE** operation or when using the delete protection function (see p. 143/144).

2. You can select the desired menu item either by turning the setting dial (1.29) or by pressing the up/down direction button (1.30).





3. To set the relevant function, first press the **SET** button (in the picture parameters menu, press it again).
   - The associated multi-line sub-menu, identified by a red border, appears to the right of the menu item. The item selected is highlighted for identification.
4. You can then select the desired function option either by turning the setting ring or by pressing the up/down direction buttons.
5. Save your setting by pressing the **SET** button again.
   - The function option set is then shown to the right of the menu line.
6. You can exit the menus by pressing the following buttons:

	Release (1.19)	**PLAY** (1.25)	**MENU** (1.28)
Main menu	Camera switches to picture mode	Camera switches to review mode	No other change of function
Picture parameters menu		-	-

Notes:

- In the main menu, you can exit a sub-menu at any time without applying any settings you have made in it by pressing the **MENU** button.
- Menu items such as **Date** (4.1.22) and **Time** (4.1.23) require additional settings. The corresponding explanations, as well as further details about the other menu functions, can be found in the relevant sections.

PRESETS

BASIC CAMERA SETTINGS

Menu languages

By factory default, the language used for menu control is English, i.e. all menu items initially appear with their English names. German, French, Spanish, Italian, Japanese, and Traditional or Simplified Chinese can all be selected as alternative menu languages.

Setting the function

1. In the main menu (see p. 97/110), select **Language** (4.1.23), and
2. the desired language in the sub-menu.
   - Apart from a few exceptions (button names, short designations), all linguistic information changes.

DATE AND TIME

The date and time are each set using separate menu items.

DATE

There are 3 options available for the sequence of the date.

Setting

1. In the main menu (see p. 97/110), select **Date** (4.1.20), and
2. call up the sub-menu. It contains the two items **Setting** and **Sequence**.
3. Select **Setting**.
   - A further sub-menu appears, containing groups of figures for the year, month and day, in which the currently active group, i.e. the one that can be set, is identified by a black background and red border.
4. The figures are set using the setting dial (1.29) or the up and down direction buttons (1.30), while the left and right direction buttons are used to switch between the groups of figures.

Note:
Using the setting dial is normally not only more convenient but also significantly faster.

5. After setting all 3 values, confirm and save by pressing the **SET** button (1.21).
   - The list of menu items appears again.
6. To change the way in which the figures are displayed, select **Sequence** in the sub-menu.
   - The three available sequences appear - **Day/Month/Year**, **Month/Day/Year**, and **Year/Month/Day**.
7. The preferred option is set and confirmed as described in points 3 and 4.

Note:
Even if no battery is inserted or the battery is flat, the date and time settings are maintained for about 3 months by a built-in back-up battery (see also “Charge level displays”, p. 102). However, after that time the date and time must be set again as described above.

TIME

The time can either be shown in 24-hour or 12-hour format.

Setting

The settings for the two groups of figures and the display format are made in by selecting **Time** (5.1.19) in the menu and then using the **Setting** and **Time Format** options, as described for **Date** in the previous section.

AUTOMATIC POWER OFF

This function turns off the Leica M Monochrom automatically after a pre-set time. This is equivalent to setting the main switch to **OFF** (1.18, see p. 106).

You can select,

a. whether to activate this function, and if so

b. after what period of time the camera should be turned off.

In this way, you can tailor this function to your own personal working methods and also significantly extend the life of your battery charge.

Setting the function

1. In the main menu (see p. 97/110), select **Auto power off** (4.1.15), and
2. the desired function.

Note:

Even if the camera is in standby mode, i.e. the displays have gone out after 12s, or the active **Auto power off** function has turned it off, it can be restarted at any time by pressing the shutter release button (1.19).

BUTTON ACKNOWLEDGEMENT AND SIGNAL TONES

On the Leica M Monochrom, you can decide whether you want your settings and other functions and warning messages to be acknowledged by an acoustic signal – two volumes are available – or whether operation of the camera should be largely silent.

A click or a beep tone is used as an acknowledgement, which can be activated individually to confirm presses of buttons and to indicate a full memory card.

Note:

By factory default, the signal tones are deactivated.

Setting the functions

1. In the main menu (see p. 97/110), select **Acoustic Signal** (4.1.22), and
2. call up the sub-menu. This contains the three items **Volume**, **Key Click** and **SD Card full**.
3. Select **Volume**, and
   - A further sub-menu appears, containing the 3 alternatives - **Off** (no tones at all), **Low** and **High**.
4. Choose the desired function from this sub-menu.
   - After confirmation, the initial monitor screen appears again.
5. In the other two sub-menus, choose whether or not you want to activate the tones for the relevant functions.

TURNING LENS TYPE IDENTIFICATION ON/OFF

The 6-bit coding in the bayonet (1.11) of the latest Leica M lenses enables the Leica M Monochrom

- to detect the type of lens attached using the sensor in its bayonet (1.10).
- Among other things, this information is used to optimize the picture data. Thus edge darkening which can be particularly noticeable with wide-angle lenses and large apertures can be compensated in the corresponding picture data.
- The lens data is also used to control flash lighting and the flash reflector (see “Compatible flash units”, p. 130).
- In addition, the information provided by this 6-bit coding is written to the relevant EXIF file for the picture. With the picture data in the **INFO** display (see p. 141), the lens focal length is also displayed (3.3.7 b, see p. 96).

Note:

When using lenses without 6-bit coding, the identification function must be deactivated to prevent malfunctions, or the lens type used must be entered manually (see p. 114).

SETTING THE FUNCTION

1. In the main menu (see S. 97/110), select **Lens Detection** (4.1.1), and
2. the desired option in the sub-menu:
   - **Off**, or
   - **Auto**, if a coded lens is attached, or
   - **Manual** if a non-coded lens is attached.

MANUAL LENS TYPE /FOCAL LENGTH ENTRY

Earlier Leica M lenses are not detected by the camera body due to a lack of identification, but they can be identified using the menu.

3. Select the lens you are using from the list in the **Manual** sub-menu.
   - The monitor (1.32) shows a list of lenses, which also includes the relevant item numbers to ensure clear identification.

Notes:

- On many lenses, the item number is engraved on the reverse side of the depth of field scale.
- The list contains lenses that were available without coding (prior to around June 2006). Lenses introduced more recently are only available with coding and therefore cannot be selected manually.
- When using the Leica Tri-Elmar-M 16-18-21mm f/4 ASPH., the set focal length is not transferred to the camera and thus is not included in the EXIF data for pictures. If required, you can enter the relevant focal length manually.
- By contrast, the Leica Tri-Elmar-M 28-35-50mm f/4 ASPH. features mechanical transfer of the set focal length to the camera, necessary to display the appropriate bright line frame in the viewfinder. It is detected by the camera electronics and used for focal length specific compensation. However, only one item number - 11 625 - is listed in the menu for reasons of space. Of course, the other two versions - 11 890 and 11 894 - can be used and the settings made in the menu also apply to them.

RESOLUTION

The picture data can be recorded in JPEG format at five different pixel settings, i.e. resolutions. This allows you to adjust the setting precisely to the intended use or to the available memory card capacity.

At the highest resolution (which also means the largest data volume), which you should select for optimum quality for larger prints, it is of course possible to save considerably fewer pictures to a card than at the lowest resolution, which is perfectly adequate for sending a picture by e-mail or for a website.

Note:

Digital negative data (**DNG**, see next section) is always stored exclusively at the maximum resolution.

Setting the function

1. In the picture parameters menu (see p. 97/110), select **Resolution** (4.2.2), and
2. the desired resolution in the sub-menu.

FILE FORMAT

The picture data is recorded either

a. in JPEG format – **JPG fine** or

b. using the **DNG** file format, or

c. simultaneously in both formats (i.e. two files are always created for each picture). In this case, the JPG file will always be saved with the selected resolution.

On the one hand this allows you to take account of the intended usage and the available memory card capacity, and on the other hand provides the security and flexibility essential for deciding on the usage later.

Setting the function

1. In the picture parameters menu (see p. 97/110), select **Compression** (4.2.1), and
2. the desired option in the sub-menu.

Notes:

- The standardized DNG (Digital Negative) format is used for storage of completely unprocessed raw picture data.
- When storing raw data (**DNG**), irrespective of the existing setting (for JPEG format), the resolution is automatically set to ■ (18MP), (see previous section).
- If picture data is simultaneously stored as **DNG** and **JPG fine**, the existing resolution setting is used for JPEG format, i.e. the two files can have totally different resolutions.
- The remaining number of pictures shown in the monitor does not necessarily change after every picture. This depends on the subject; with JPEG files very fine structures result in higher quantities of data, homogeneous surfaces in lower quantities.

ISO SENSITIVITY

In traditional photography, the choice of the ISO value reflects the light sensitivity of the film used. Higher speed films allow faster shutter speeds and/or smaller apertures and vice versa, at the same brightness. The ISO setting on the Leica M Monochrom covers a range of ISO 320–10000. Optimum reproduction quality is achieved by using the a setting of **ISO 320**. Higher sensitivities result in an increase in picture noise. This effect can be compared to the "graining" that occurs with highly sensitive films. The **Pull 160** setting has the same brightness as a sensitivity of ISO 160. However, pictures taken using this setting have a lower contrast range. When using this sensitivity setting, it is important to make sure that important parts of the image are not overexposed. The setting is made in $^1/_3$ ISO increments, thus allowing delicate, targeted manual adjustment of the shutter speed/aperture values to the relevant situation.

In addition to the fixed settings, the Leica M Monochrom also provides an **AUTO ISO** function, in which the camera adjusts the sensitivity automatically to the ambient brightness. When used in conjunction with aperture priority mode[1] (see p. 124), this considerably extends the automatic exposure control range, specifically by up to 4 aperture stops. However, when using the function it is also possible to specify priorities, for example for compositional reasons. This enables you to limit the range of sensitivities used – e.g. because of the noise mentioned above, and also to set the shutter speed above which the automatic increase in sensitivity is activated, e.g. to reliably prevent blurred pictures.

[1] The function is not available when setting the exposure manually and when using flash units (always at $^1/_{180}$s).

Setting the function

1. Press and hold the **ISO** button (1.23).
   - The possible settings appear in the monitor (1.32), arranged in a grid.
2. While holding down the **ISO** button, use the setting dial (1.29, forwards and backwards) or the direction buttons (1.30, by row or column) to select the desired sensitivity or the automatic setting.

Note:

When you release the **ISO** button, the list remains visible for around
2s. Once the list disappears, the set value is applied. If **AUTO ISO** is set, you can adjust the function to your style of photography, or to your compositional preferences[2].

3. In the main menu (see p. 97/110), select **AUTO ISO Setup** (4.1.5), and
4. **Max ISO** and/or **Slowest speed** in the sub-menu.

[2] This function requires the use of coded lenses (see p. 104).

5. In the **Max ISO** sub-menu
   - select the range in which the automatic function will operate by specifying the highest sensitivity to be used, and/or
   - in the **Slowest speed** sub-menu, set whether you want to leave it to the camera to set shutter speeds that prevent blurring – by selecting **Lens dependent**- or
   - whether you want to specify a maximum shutter speed in the range between $^1/_{125}$s and $^1/_{8}$s (in whole steps).
     If you select **Lens dependent** only switches to a higher sensitivity if a lower brightness would cause the shutter speed to fall below the $^1/_{\text{Focal length}}$ threshold, e.g. at slower speeds than $^1/_{30}$s with a 35mm lens.

Note:

When using automatic bracketing (see p. 127) all **AUTO ISO** settings are defined:

- The sensitivity automatically determined by the camera for the first picture is also used for all other pictures in a series, i.e. this ISO value is not changed during a series.
- The settings in the **AUTO ISO** sub-menus have no effect, i.e. the camera's full shutter speed range is available.

Note:

The functions and settings described in the following three sections only affect pictures in one of the JPEG formats. If DNG file format is specified, they have no effect as in this case the picture data is always saved in its original form (changes must be made later on the computer).

IMAGE PROPERTIES / CONTRAST AND SHARPNESS

One of the many advantages of electronic photography is that it is very easy to change critical properties of a picture. While photographic software – after taking the picture and transferring it to a computer – provides great scope for doing this, the Leica M Monochrom itself allows you to influence two of the most important picture properties even before taking the picture:

- The contrast, i.e. the difference between light and dark areas, determines whether a picture has a more “matt” or “glossy” effect. As a consequence, the contrast can be influenced by increasing or reducing this difference, i.e. by lighter reproduction of light sections of the image and darker reproduction of dark sections.
- Sharp reproduction – at least of the main subject – using the correct distance setting is a prerequisite for a successful picture. In turn, the impression of sharpness of a picture is to a great extent determined by the sharpness of the edges, i.e. by how small the transition area between light and dark is at the edges in the picture. The impression of sharpness can thus be changed by expanding or reducing these areas.

Both picture properties can be adjusted independently to five different levels using the menu, allowing you to set the optimum values for any situation, i.e. the prevailing lighting conditions.

Note:

These settings only affect pictures in one of the JPEG formats. If one of the two DNG formats is specified, these settings have no effect, as in this case the picture data is always saved in its original form (changes must be made later on the computer).

Setting the functions

1. In the main menu (see p. 97/110), select Sharpening (4.1.6), or Contrast (4.1.7), and
2. select the desired level (Low, Medium low, Standard, Medium high, High) in the relevant sub-menu.

TONES

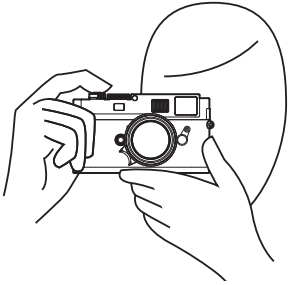
Toning has always been a very popular stylistic device in B&W photography. Slight "toning" of a black and white picture gives it a very different character. For example, a brown toning can create an "antique" effect, while blue creates a cold feel.

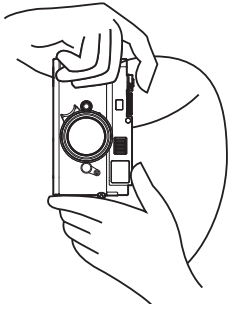
On the Leica M Monochrom, you can choose between three tonings, each of which has two intensity levels.

Setting the functions

1. In the main menu (see p. 97/110), select TONING (4.1.8) and
2. then select the type of toning, HUE or STRENGTH in the subsequent sub-menu, and
3. in the relevant sub-menu, select the desired level, the shade for coloring (sepia, blue or selenium), and/or the color saturation for the intensity, (Off, Medium low or High).

HOLDING THE CAMERA CORRECTLY





For sharp, blur-free pictures, the camera should be held as steadily and comfortably as possible. To ensure suitably secure “three point support” for the Leica M Monochrom, hold the camera with the right hand, with the index finger on the shutter release button and the thumb behind the rear of the camera body to stabilize it. The left-hand either supports the lens from below, ready for fast focusing adjustments, or is around the whole camera. Holding the camera against the forehead and cheek provides additional support. For portrait format pictures, turn the Leica M Monochrom to the left. The hands remain in the same position as for pictures in landscape format.
However, you can also turn it to the right. In this case, it may be advantageous to release the shutter with the thumb.

Notes:

- As a practical accessory, we recommend the M hand grip, which allows you to hold the Leica M Monochrom extremely steadily and to carry it with one hand (order no. 14 486 black).
- The Leica M Monochrom is equipped with an integral sensor, which detects the position of the camera – horizontal or vertical (both directions) – for each picture. This information automatically allows the pictures to be displayed upright when subsequently displayed on a computer running the appropriate programs (but not on the camera monitor).

BRIGHT LINE VIEW AND RANGE FINDER

The Leica M Monochrom's bright line view and range finder is not only a very high-quality, large, brilliant and bright viewfinder, it is also an extremely accurate range finder coupled to the lens. It has a magnification factor of 0.68x.

The size of the bright line frame is matched to the initial format of the Leica M Monochrom and thus corresponds to a sensor size of approximately 24 x 36mm[1] at a distance setting of 1m. The bright line frame is linked to the distance setting to ensure that parallax – the offset between the lens and the viewfinder axis – is automatically compensated. The bright line frame and the picture image are largely congruent over the entire distance range from 0.7m to ∞. Largely means that at distances of below 1m the sensor detects slightly less than shown by the inner edges of the bright line frame, and slightly more at greater distances (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 angle of view the relevant lens focal lengths. However, the nominal angle of view change slightly when focusing due to the changing extension, i.e. the distance between the optical system and the sensor plane. If the set distance is less than infinity (and the extension correspondingly greater), the actual angle of view is smaller – the lens captures less of the subject. In addition, the differences in the angle of view tend to be greater at longer focal lengths, as a result of the greater extension.

If lenses with focal lengths of 28 mm (Elmarit from serial number 2 411 001 onwards), 35, 50, 75, 90 and 135mm are used, the associated bright line frame is automatically displayed in the combinations 28+90mm, 35+135mm, 50+75mm.

In the middle of the viewfinder image is the rectangular distance metering field, which is brighter than the surrounding image field. All lenses from 16 to 135mm focal length are linked to the range finder when attached to the Leica M Monochrom.

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 distance and exposure metering, and on flash mode, refer to the relevant sections on pages 122/123/130.

IMAGE FIELD SELECTOR

The image field selector (1.8) expands the possibilities of the Leica M Monochrom viewfinder. This built in universal viewfinder allows you to activate bright lines at any time, which do not belong to the lens currently being used. You can then see immediately if, for compositional reasons, it would be better to photograph the relevant subject using a different focal length.

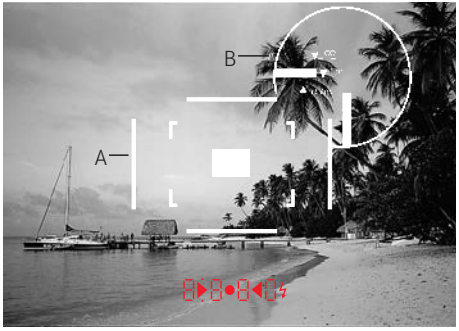
If the lever is rotated outwards, i.e. away from the lens, the frames for 35 and 135mm focal length are shown.

If the lever is moved to its vertical central position, the frames for the focal lengths 50 and 75mm appear.

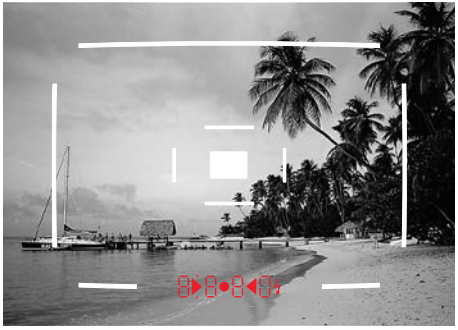
If the lever is rotated inwards, i.e. towards the lens, the frames for 28 and 90mm focal length are shown.

[1] The exact format is 23.9 x 35.8mm, thus corresponding to the usable format of analog Leica M models.

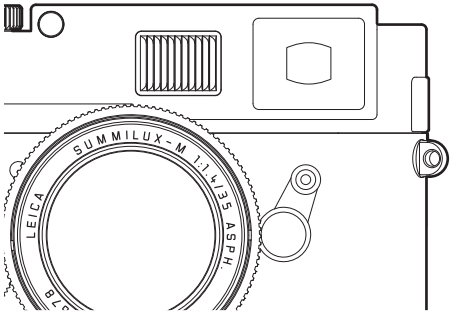
35mm + 135mm

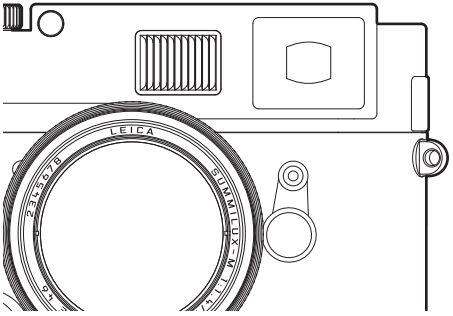


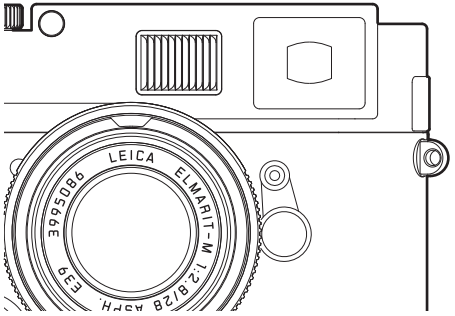
50mm + 75mm



28mm + 90mm







A Bright line frame / B Actual image field

Set to 0.7m:	The sensor detects around one frame width less.
Set to 1m:	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 (vertical)/4 (horizontal) frame width(s) more.

DISTANCE METERING

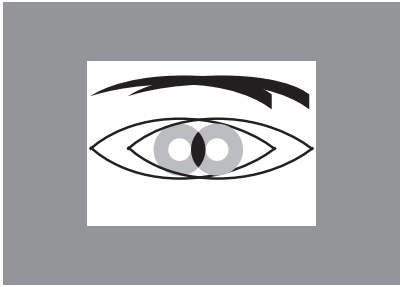
Due to its large effective metering basis, the range finder on the Leica M Monochrom is very precise. The benefits of this are particularly noticeable when using wide-angle lenses with their relatively large depth of field.

Mechanical measurement basis (Distance between optical axes of viewfinder window and rangefinder viewing window)	**× viewfinder magnification**	**= Effective measurement basis**
69.25mm	x 0.68	= 47.1 mm

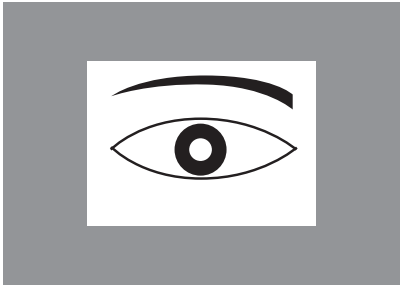
The range finder metering field is visible as a bright, sharply defined rectangle in the center of the viewfinder. If you keep the large viewfinder window (1.6) closed, only the activated bright line frames and this metering field remain visible. The focus can be set using either the superimposed image or split image method:

SUPERIMPOSED IMAGE METHOD (DOUBLE IMAGE)

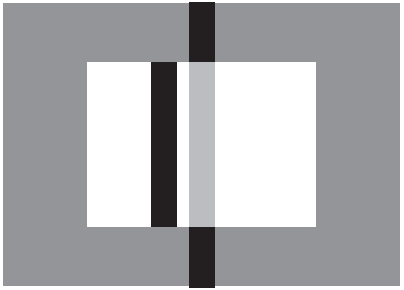
In a portrait, for example, aim the metering field at the eye and turn the distance setting ring on the lens until the contours in the metering field are brought into line. Then choose the subject detail.



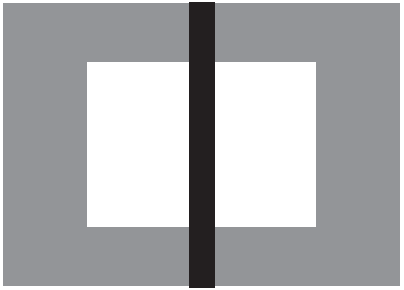
Double contour = Not sharp



Congruent contours = Sharp



Broken line = Not sharp



Continuous line = Sharp

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.

In practice, there is often no clear distinction between the two methods. The two criteria can be used to great effect in combination.

EXPOSURE METERING

On the Leica M Monochrom, exposure metering for the available ambient light is done through the lens with the working aperture. The light reflected by bright shutter diaphragm blades in the first shutter curtain is captured by a photo diode and measured. This silicon photo diode with forward-facing convex lens is positioned at the center lower edge, on the camera base.

The speed / aperture combinations for a correct exposure are specified by the viewfinder or monitor displays or are determined with their assistance.

In aperture priority mode the aperture is selected manually, and the camera then determines the appropriate shutter speed automatically. In this mode, a digital LED display indicates the resulting shutter speed (e.g. 1000)

If both values are set manually, a light balance made up of three red LEDs (▸•◂) is used to correct the exposure. When the setting is correct, only the central circular LED is lit up.

TURNING THE EXPOSURE METER ON/OFF

The exposure meter is turned on by gently pressing the shutter release button (1.19) to its 1st pressure point, provided the camera is turned on at the main switch (1.18) and the shutter speed setting dial (1.17) is not set to **B**.

One of the displays in the viewfinder lights up continuously to indicate that the exposure meter is ready:

- 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:

- If the displays go out, the camera is in “standby” mode.
- With very little ambient light, i.e. at the limits of the exposure meter’s range, it can take around 0.2s for the LEDs to light up.
- In aperture priority mode, if the correct exposure cannot be achieved using the available shutter speeds, the shutter speed display flashes as a warning (for more details, refer to the “Aperture priority mode” section on p. 124).
- When making manual settings, if you are below the exposure meter’s metering range at very low light densities, 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 32s, 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.
- For optimum pictures, we recommend making sure that bright sections of the image are not overexposed. This can be done very easily using the clipping display (see p. 140).

EXPOSURE MODES

The Leica M Monochrom 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 setting dial (1.17) is in the **A** position, the camera's electronics generate the shutter speed automatically and continuously in the range $^1/_{4000}$s to 32s, taking into account the sensitivity setting, the metered brightness and the manually selected aperture.

The generated shutter speed is displayed digitally in the camera viewfinder; for better clarity it is displayed in half steps.

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 speed that is outside the working range, i.e. brightness values that would require shorter exposures than $^1/_{4000}$s or longer than 32s. In such cases the specified minimum or maximum shutter speed is nevertheless used, and these values flash in the viewfinder, as a warning.

METERING MEMORY 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. However, the center-weighted metering on the Leica M Monochrom essentially only detects an area in the center of the picture 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 metering memory lock.

To do this:

1. The center of the viewfinder is first pointed at the crucial part of the subject by moving the camera, or alternatively at some other detail of average brightness,
2. and the shutter release button (1.19) is then pressed to its 2nd pressure point to meter and store the relevant values. 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 button pressed, move the camera to capture the final picture,
4. and the shutter can then be released using the exposure originally determined.

Changing the aperture setting after using metering memory lock has no effect on the shutter speed, and will lead to an incorrect exposure.

Storage is cancelled when you remove your finger from the shutter release pressure point.

Note:

Metering memory lock is not available if the Soft shutter release function is selected (see p. 108).

EXPOSURE COMPENSATION

Exposure meters are calibrated to an average gray scale value (18% reflection), 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: Once set, unlike with exposure lock, it remains in effect until (deliberately) cancelled (more details on exposure lock can be found in the relevant section on p. 124).

On the Leica M Monochrom, exposure compensation can be set in the range ±3EV in $^{1}/_{3}$EV increments (EV: Exposure Value).

Setting the function

The Leica M Monochrom provides three options for setting an exposure compensation. At the same time, you select whether you want to make the setting using the menu or the setting dial.

Setting using the menu is recommended if, for example, you know before taking a series of pictures that you want your subjects to be slightly under or overexposed. The exceptionally fast option using the setting dial is ideal when unexpected situations occur and enables you to track your subject in the viewfinder without interruptions.

A. Using the menu

1. In the picture parameters menu (see p. 97/110), select **Exposure comp.** (4.2.3), and
2. the compensation value in the sub-menu.

B. Using the setting dial

1. In the main menu (see p. 97/110), select **Exp. comp. setup** (4.1.10), and
2. then **Setting ring** in the sub-menu.
3. You can set the exposure compensation by turning the setting dial (1.29) - clockwise for positive values and anticlockwise for negative values.

C. Using the shutter release and setting dial

1. In the main menu (see p. 97/110), select **Exp. comp. setup** (4.1.10), and
2. then **Set. ring & rel. but.** in the sub-menu.
3. While holding the shutter release button (1.19) at the first pressure point[1] you can turn the setting dial (1.29) to set an exposure compensation for the subsequent picture.

Regardless of how the set compensation was originally entered:

- It remains effective until you reset it to 0 manually.
- It can be reset using either the menu or the setting dial.
- It is displayed in the picture parameters menu in the form of EV values, and in the viewfinder in the form of changed shutter speeds.

[1]For more details about the function of the shutter release button, refer to the corresponding section starting on p. 110

Note:
An exposure compensation set on the camera only influences the measurement of available light. If you want to simultaneously use compensation of the TTL flash exposure measurement in flash mode – in parallel or in the opposite direction, you must make this additional setting on the flash unit. See the sections on flash mode starting on p. 130 for details.

EXAMPLE OF A POSITIVE COMPENSATION

With very bright subjects, such as snow or a beach, the exposure meter selects a relatively short exposure time due to the extreme brightness. As a result, the snow shows up in an average gray and any people in the photograph are too dark: this is under exposure. To remedy this problem, the exposure time needs to be extended or the aperture increased, i.e. a setting of perhaps $+1\,^{1}/_{3}$EV needs to be made.

EXAMPLE OF A NEGATIVE COMPENSATION

For very dark subjects that reflect very little light, the exposure meter selects an exposure time that is far too long. A black car will appear gray: this is over exposure. The exposure time needs to be shortened, i.e. a setting such as –1EV is required.

AUTOMATIC BRACKETING

Many attractive subjects are very rich in contrast, i.e. they have both very light and very dark areas. The effect can be quite different, depending on which sections you base your exposure on. In such cases, the automatic bracketing function in aperture priority mode on the Leica M Monochrom enables you to produce several alternatives with graduated exposure, i.e. using different shutter speeds. You can then select the most suitable picture for further use, or use appropriate software to create a picture with an exceptionally high contrast range (HDR).

The following are available:

- 4 graduations: 0.5EV, 1EV, 1.5EV and 2EV
- 3 numbers of pictures: 3, 5 or 7
- 2 sequences: correct exposure, overexposure, underexposure or underexposure, correct exposure, overexposure.

Notes:

- When using automatic bracketing, all **AUTO ISO** settings (see p. 116) are specified:
  - The sensitivity automatically determined by the camera for the first picture is also used for all other pictures in a series, i.e. this ISO value is not changed during a series.
  - The settings in the **AUTO ISO** sub-menus have no effect, i.e. the camera's full shutter speed range is available.
- Depending on the initial shutter speed, the working range for automatic bracketing may be limited. Examples (always with fixed aperture setting):
  - Metered shutter speed $^1/_{1000}$s, series of 5 pictures/2EV: Limited function as the -2EV picture would require $^1/_{16000}$s.
  - Metered shutter speed $^1/_{125}$s, series of 5 pictures/2EV: Unrestricted function as the -2EV picture is possible at $^1/_{2000}$s.
  - Metered shutter speed $^1/_{1000}$s, series of 7 pictures/1EV: Limited function as the -3EV picture would require $^1/_{8000}$s.
  - Metered shutter speed $^1/_{500}$s, series of 7 pictures/1EV: Unrestricted function as the -3EV picture is possible at $^1/_{4000}$s.
- Regardless of this, the specified number of pictures are always taken, which may mean that several pictures in a series have the same exposure.
- Only 0.5EV and 1EV graduations are available for series of 7 pictures.
- Automatic bracketing is not possible when using flash. If an attached flash unit is turned on, no picture is taken.
- The function itself remains active until it is deactivated in the menu. If it is not deactivated, another series of pictures is taken each time the shutter release button is pressed.

Setting the function

1. In the picture parameters menu (see p. 97/110), select **Bracketing** (4.2.4), and
2. set whether you want to turn the function on or off.
3. In the main menu (see p. 97/110), select **Bracketing setup** (4.1.9),
4. select **No. of exposures**, **Sequence**, or **EV increments** in the sub-menu, and
5. set the desired values or options in the sub-menus.

MANUAL EXPOSURE SETTING

If the exposure setting is performed entirely manually, the shutter speed setting dial (1.17) must be clicked to one of the engraved shutter speeds or to one of the intermediate values.

Then:

1. Turn on the exposure meter, and
2. turn the shutter speed setting dial and/or the aperture setting ring on the lens (1.14) – in each case in the direction indicated by the triangular LED that is lit – until only the circular LED is lit.

As well as the direction of rotation of the shutter speed setting dial 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 $^1/_2$ aperture stop; turning to the right is required
- • Correct exposure
- •◂ Overexposure by $^1/_2$ 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.

B SETTING / T FUNCTION

In the **B** setting, the shutter remains open for as long as the shutter release button is held down (up to a maximum of 240s).

In conjunction with the self-timer, a T function is also available: If you select the **B** setting and also activate the self-timer by tapping the shutter release button (see p. 180 for details), the shutter opens automatically after the selected delay time. It then remains open until you press the shutter release button a second time – you do not need to hold the button down. This enables you to largely prevent any blurring, even with long exposures, by pressing the shutter release button.

In both cases, the exposure meter is disabled; after the shutter is released however the digital display in the viewfinder counts the elapsed exposure time in seconds, for guidance.

Notes:

- Long exposure times can result in significant picture noise.
  To reduce this annoying phenomenon, after pictures with very slow shutter speeds (from around $^{1}/_{30}$s, differs depending on other menu settings) the Leica M Monochrom automatically produces 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.
- At shutter speeds of more than 2s, the message **Noise reduction 12s**[1] appears in the monitor.

EXPOSURE METER METERING RANGE

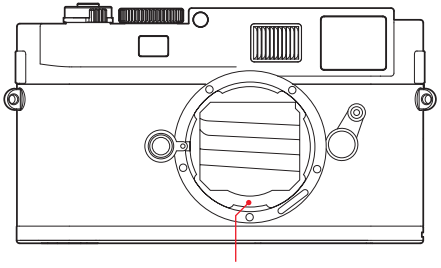
The metering range at room temperature, normal humidity and ISO 160/23 is EV 0 to 20, or f/1.0 and 12s to f/32 and $^{1}/_{1000}$s.

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, 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 less than 32s or more than $^{1}/_{4000}$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 12s 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.

[1] Time is an example

GENERAL INFORMATION ON FLASH EXPOSURE METERING AND CONTROL

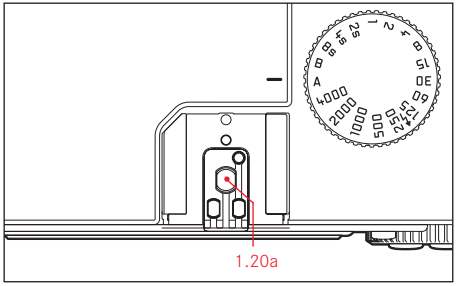


The Leica M Monochrom determines the necessary flash power by firing one or more ranging flashes, fractions of a second before taking the actual picture. Immediately after this, at the start of exposure, the main flash is fired.
All factors that influence the exposure (such as picture filter and changes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

COMPATIBLE FLASH UNITS

The following flash units enable all functions described in this manual to be used when attached to the Leica M Monochrom:

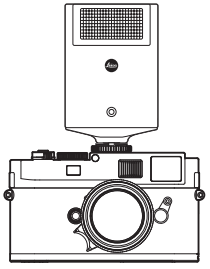
- The Leica SF 58 system flash unit (order no. 14 488). With a maximum guide number of 58 (in 105m setting), an automatically controlled zoom reflector (with coded Leica M lenses, see p. 104), an optional second reflector and many other functions, it is both powerful and versatile. Thanks to its permanently attached flash foot with additional control and signal contacts, which are used to automatically transfer a range of data and settings, it is very easy to use.
- The Leica SF 24D system flash unit (order no. 14 444). The ideal solution thanks to its compact dimensions and design geared to the camera. Like the Leica SF 58, it has a permanently attached flash foot with all contacts and is also very easy to operate.
- Flash units which meet the technical requirements for System Camera Adaption (SCA) System 3000, are fitted with the SCA-3502/3501 adaptor and which allow guide number control.



Other commercially available flash attachments with standard flash foot[1] and positive center contact, and fired by the center contact (X contact, 1.20a) can also be used. We recommend the use of modern thyristor-controlled electronic flash units.

[1] The aperture specified on the lens must be entered manually on the flash unit.

ATTACHING THE FLASH UNIT



When attaching a flash unit, you should ensure that the foot is securely fitted in the flash shoe (1.20) on the Leica M Monochrom and the clamping nut (if fitted) is tightened to prevent it accidentally falling out. This is particularly important for flash units with additional control and signal contacts, because if the flash moves from its position in the flash shoe the required contacts can be broken, leading to malfunctions.

Note:
Before attaching the flash, the camera and the flash unit must be turned off.

FLASH MODE

Fully automatic camera-controlled flash operation is available on the Leica M Monochrom when using system-compatible flash units as described in the previous section, in both exposure modes – aperture priority mode **A** and manual setting.
In addition, automatic illumination control is operational in all three exposure modes. This means that in order to ensure a balanced relationship between flash and available light at all times, the flash power is reduced by up to $1^{2}/_{3}$EV as ambient brightness increases. However, if the ambient brightness plus even the shortest possible flash sync time of $^{1}/_{180}$s would cause overexposure, the flash will not be fired in aperture priority mode. In such cases the shutter speed is governed by the ambient brightness and is shown in the viewfinder.

In aperture priority mode **A** and with manual setting, the Leica M Monochrom also allows the use of creative flash techniques such as synchronization of flash firing with the 2nd shutter curtain rather than the 1st, as is usual, and flash with slower shutter speeds than the sync speed of $^{1}/_{180}$s. These functions are set on the camera using the menu (for more details, refer to the relevant sections below).
In addition the Leica M Monochrom transfers the set sensitivity to the flash unit. Provided it has these displays and the aperture manually set on the lens is also entered on the flash unit, this enables the flash unit to automatically adjust its range values accordingly. The sensitivity setting cannot be changed from the flash unit.

Notes:

- The following sections describe only those settings and functions available on the Leica M Monochrom when using system-compatible flash units.
- An exposure compensation set on the camera (see p. 125) only influences the measurement of available light. If you want to simultaneously use compensation of the TTL flash exposure measurement – in parallel or in the opposite direction - you must make this additional setting on the flash unit.
- More information about using flash, particularly for other flash units not specifically adapted to the Leica M Monochrom , and for different flash unit modes, refer to the relevant user guides.

SETTINGS FOR CAMERA-CONTROLLED AUTOMATIC FLASH MODE

Once the flash unit in use has been turned on and set to the operating mode for GNC (= Guide Number Control), the following actions are necessary on the Leica M Monochrom:

1. Before taking each flash picture the exposure metering is first performed 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 setting dial must be set to **A**, to the flash sync speed ⚡ ($^1/_{180}$s), or - for special effects - to a slower shutter speed (including **B**). In aperture priority mode, the camera automatically switches to the flash sync speed set in the menu or the speed range (see "Selecting the sync speed/the sync speed range", p. 134).
3. The desired aperture, or the aperture required for the relevant distance to the subject, must be set.

Note:

If the automatically controlled or manually set shutter speed is faster than $^1/_{180}$s, the flash is not fired.

FLASH EXPOSURE DISPLAYS IN THE VIEWFINDER WITH SYSTEM-COMPATIBLE FLASH UNITS

A flash-shaped LED (2.1.3) appears in the Leica M Monochrom viewfinder as confirmation and to indicate the various operating modes. 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 Guide Number Control)

- ϟ does not appear although the flash unit is turned on and ready to use:
  A faster shutter speed than $^{1}/_{180}$s is set manually on the camera. In such cases, the Leica M Monochrom will not fire the flash unit even though it is turned on and ready to use.
- ϟ flashes slowly (at 2Hz) before the picture is taken:
  The flash unit is not yet ready to use
- ϟ lights up before taking the picture:
  The flash unit is ready to use
- ϟ remains continuously lit after firing but the rest of the displays have disappeared:
  Flash exposure was OK, the flash is still ready to use.
- ϟ flashes quickly (4Hz) after firing but the rest of the displays have disappeared:
  Flash exposure was OK, but the flash is not yet ready to use again.
- ϟ disappears along with the rest of the displays after firing:
  Underexposure, e.g. due to the selected aperture being too small for the subject. If the flash unit is set to a partial discharge power, because of the lower power requirement it may be ready for use despite the flash LED not lighting up.

FLASH UNIT SET TO COMPUTER CONTROL (A) OR MANUAL MODE (M)

- ϟ does not appear although the flash unit is turned on and ready to use:
  A faster shutter speed than $^{1}/_{180}$s is set manually on the camera. In such cases, the Leica M Monochrom will not fire the flash unit even though it is turned on and ready to use.
- ϟ flashes slowly (2Hz) before taking the picture:
  The flash unit is not yet ready to use.
- ϟ lights up before taking the picture:
  The flash unit is ready to use

SELECTING THE SYNC SPEED / THE SYNC SPEED RANGE

Whilst the shutter speed used has no bearing on the control of the flash exposure (because the flash duration is very much less than this), the reproduction of the available light is very strongly influenced by the shutter speed and by the aperture setting. A fixed setting of the fastest possible shutter speed for flash operation, the sync time, leads unnecessarily in many situations to a greater or lesser underexposure of all parts of the subject not directly lit by the flash.
The Leica M Monochrom allows you to combine flash operation with the shutter speed generated in aperture priority mode to subtly change the lighting conditions for the relevant subject to suit your compositional ideas. You can choose any of five ways of doing this:

1. **Lens dependent**
   Automatic control of the shutter speed depending on the focal length used (based on rule of thumb for blur-free pictures from the hand = $^1/_{\text{Focal length}}$, e.g. $^1/_{60}$s with the Summicron-M 50mm f/2) up to the sync speed $^1/_{180}$s.[1]
2. **Off (1/180s)**
   Fixed setting at the fastest possible shutter speed $^1/_{180}$s, e.g. for the sharpest possible reproduction of moving subjects and fill-in flash.
3. **down to 1/30s**, 4. **down to 1/8s** and 5. **down to 32s**
   Automatic control of all shutter speeds from the specified value to the sync speed $^1/_{180}$s.

[1] Only when using Leica M lenses with 6-bit coding in the bayonet and with lens identification enabled in the menu (see p. 97/114/110 for details)

Note:
Manual exposure control also allows any shutter speed up to the sync speed $^1/_{180}$s to be set.

Setting the function

1. In the main menu (see p. 97/110), select **Auto Slow Sync** (4.1.17) and
2. the desired option in the sub-menu.

SELECTING THE FIRING MOMENT

Flash photographs are illuminated by two light sources, the available light and the light from the flash. Parts of the subject that are exclusively or primarily illuminated by the flash are almost always reproduced extremely sharply (with correct focusing) due to the extremely fast pulse of light. By contrast, all other parts of the subject – those that are sufficiently illuminated by the available light or illuminate themselves – are portrayed with different degrees of sharpness in the same picture. Whether these parts of the subject are reproduced sharply or "blurred", and the degree of blurring, is determined by two independent factors.

1. The shutter speed, i.e. for how long these parts of the subject "act upon" the sensor, and
2. How quickly these parts of the subject – or the camera itself – are moving during exposure.

The slower the shutter speed or the faster this movement, the greater the extent to which the two – superimposed – parts of the picture can differ.

With the conventional time for firing the flash, at the beginning of the exposure, i.e. immediately after the 1st shutter curtain has completely opened the image window, this can actually lead to visible contradictions, e.g. in the picture of the motorcycle (left), which is being overtaken by its own light trail.

The Leica M Monochrom allows you to choose between this conventional firing moment and synchronization with the end of the exposure, i.e. immediately before the 2nd shutter curtain starts to close the image window again. In this case, the sharp image is located at the end of the movement. In the photograph (right), this flash technique gives a natural impression of movement and dynamics.

This function is available with all camera and flash unit settings, and in aperture priority mode as well as with manual shutter speed selection, in the various automatic flash modes as well as in manual flash mode; the displays are the same in all cases.

Setting the function

1. In the main menu (see p. 97/110), select **Flash sync** (4.1.16) and
2. the desired option in the sub-menu: **1st curtain** or **2nd curtain**.

USER / APPLICATION SPECIFIC PROFILES

On the Leica M Monochrom, any combination of settings from the main and picture parameters menus can be permanently stored, e.g. so that they can be retrieved quickly and easily for recurring situations / subjects.

A total of four memory slots are available for these combinations. The names of these four profiles have ten characters. By factory default, the first folder is called **Profile__1_**[1] the second **Profile__2_**[1], etc.. However, you can change the preset names on the camera, e.g. with the names of your applications. This makes them easier and faster to identify and retrieve.

[1] The underscores "_" are used as placeholders here; in the monitor unused characters appear blank.

Applying settings / Creating a profile

1. Set the desired functions in the main and picture parameters menus.
2. In the main menu (see p. 97/110), select **Save user profile** (4.1.2), and
3. a memory slot in the sub-menu.
   - The profile name appears. The first character is indicated as ready for editing.
4. Use the up and down direction buttons (1.30) and the central setting dial (1.29) to change the characters, and the left and right direction buttons to move to the other characters.
   - The available characters are upper case letters from **A** to **Z**, lower case letters from **a** to **z** and numbers from **0** to **9**, and you scroll through them in an endless loop.
5. Save your settings by pressing the **SET** button (1.21).

Selecting a saved profile

1. In the picture parameters menu (see p. 97/110), select **User profile** (4.2.5), and
2. the desired profile in the sub-menu.

Notes:

- If you change one of the settings for the profile currently in use, the corresponding figure is cleared.
- If the snapshot profile is active, it can be exited at any time by pressing the **SET** button (1.21).

RESETTING ALL CUSTOM SETTINGS

This function allows you to delete all previous custom settings in the main and picture parameters menus at once, and reset them to the factory default settings.

Setting the function

1. In the main menu (see p. 97/110), select **Reset** (4.1.18), and
2. press the **SET** button (1.21) to call up the corresponding sub-menu.
3. Then use the left/right direction button (1.30) to select the desired function, and
4. confirm your selection by pressing the **SET** button again.

Note:

This reset also affects any individual profiles specified and saved using the **Save user Profile** function (4.1.2, see above).

REVIEW MODE

You can choose between two modes for reviewing pictures in the monitor (1.32) on the Leica M Monochrom:

– **PLAY** Review for an unlimited time

– **Auto review** Brief review immediately after taking the picture

REVIEW FOR AN UNLIMITED TIME – PLAY

You can switch to review mode by pressing the **PLAY** button (1.26).

- The last picture taken appears in the monitor along with the corresponding displays (see p. 11). However, if the memory card inserted does not contain any picture files, when you switch to review mode the following message appears: **Attention: No valid image data to play**.

Notes:

- Depending on the function previously set, pressing the **PLAY** button generates different responses:

	Initial situation	**After pressing the PLAY button**
a.	Full review display of a picture	Picture mode, monitor off
b.	Review of an enlarged section / several reduced pictures (see p. 142)[1]	Full review display of the picture
c.	**INFO** display with any enlargement (see p. 142)	**INFO** display with full picture review
d.	One of the menu controls (see p. 110) or **DELETE** or the protection function[1] (see p. 143/144) activated.	Full picture review of the last picture displayed

[1] The **PLAY** button must be pressed twice in these situations.

- The Leica M Monochrom stores pictures in compliance with the DCF standards (Design Rule for Camera File System).
- The Leica M Monochrom can only be used to review pictures taken with cameras of this type.

AUTOMATIC REVIEW OF LAST PICTURE

In **Auto review** mode, each picture is displayed immediately after it is taken.
This allows you to quickly and easily check whether the picture was successful or needs to be taken again.
This function enables you to select the time for which the picture will be displayed.

Setting the function

1. In the main menu (see p. 97/110), select **Auto review** (4.1.14),
2. first **Duration** in the sub-menu, and
3. then the desired function or time in the next sub-menu that appears: (**Off**, **1s**, **3s**, **5s**, **Permanent**, **Release button hold**).
4. To select whether you want the picture to appear with or without a histogram (refer to p. 140 for details), return to the first sub-menu,
5. select **Histogram**,
6. and set the preferred option (**On**, **Off**). From **Auto review** mode, you can switch back to normal, i.e. unlimited, **PLAY** review mode (see above) at any time.

Notes:

- The review functions always access the active folder on the memory card you are using. If you want to view pictures from other folders, you must first activate the corresponding folder (see p. 146).
- If you have been taking photographs using the picture series function (see p. 107), in both review modes the last picture in the series or the last picture in the series stored on the card – if not all pictures in the series have been transferred from the camera's back-up memory to the card at this point – is shown first.

Details of how to select the other pictures in the series and further options in review mode are described in the sections below.

Normal review 3.2

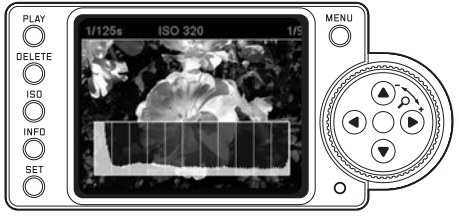
To allow uninterrupted viewing of the pictures, only the information in the header appears in normal review mode (3.2.1 – 3.2.6).
If a section of the picture is shown, a corresponding display also appears (see p. 95).

In addition to normal review, three other options with different additional information are available. All four options are in an endless loop and can be selected by pressing the **INFO** button (1.22) repeatedly.

Review with histogram 3.3

Press the **INFO** button once (starting from normal review mode) to display the histogram (3.3.1).

- The histogram appears in the lower half of the picture. When using DNG format (see p. 115) the histogram is divided into 11 sections, with the graduations corresponding to a 1EV difference in brightness. If clipping indicators are also activated (see next section), the left (blue) and/or right (red) ends of the histogram flash.



Notes:

- The division of the DNG histogram is comparable to the zone system. This system was used in analog B&W photography to adjust the exposure so that the contrast range present in the subject can be reproduced as required in the developed picture.
- The histogram is available when viewing both the entire picture and just one section of it (see p. 142) but not when simultaneously viewing 4 or 9 reduced pictures (see p. 142).
- The histogram always relates to the section of the picture currently displayed (see p. 142).

Review with clipping indicators 3.4

Press the **INFO** button twice (starting from normal review mode).

Clipping settings

You can use the menu to select whether the areas of the picture that are under or overexposed and therefore lack definition are to be indicated. This is referred to as clipping in photography.
In addition, you can set clipping thresholds, i.e. the brightness values from which the indicators are to be used.
If clipping indicators are activated, they also appear when reviewing with a histogram (3.3).

Setting the function

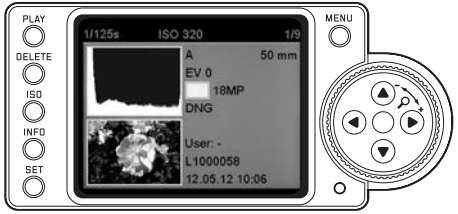
1. In the main menu (see p. 97/110), select **Clipping** (4.1.12), and
2. set whether you want to activate the indicators for underexposure - **Shadow Clipping**, and/or for overexposure - **Highlight Clipping** in the sub-menu.

3. In the subsequent sub-menus (essentially the same in both cases), select whether you want
   – no clipping indicators to appear – **Off**, or
   – only an indication that there are under or overexposed areas – **0%** or **100%**, or
   – to set the indicator thresholds – 0% - 5%, or 95% - 100%.

   The following then appears in the pictures:
   • Excessively dark areas are marked in blue, excessive bright areas in red, flashing in each case. When reviewing pictures with a histogram (3.2), the display is different depending on whether you have set 0% and 100% or other threshold values. In the former case, only the left and/or right edges appear in blue/red, in the latter case the corresponding sections of the histogram itself.

Notes:
• The clipping indicators are available when viewing both the entire picture and a section of it, but not when simultaneously viewing 4 or 9 reduced pictures (see p. 142).
• The clipping indicators always relate to the section of the picture currently displayed (see p. 142).

Review with additional information 3.4
Press the **INFO** button three times (starting from normal review mode) to display a range of additional picture data and a reduced picture.



Note:
This review option only allows you to view the entire picture, even if only a section was previously selected.

ADDITIONAL OPTIONS WHEN VIEWING

A. VIEWING OTHER PICTURES / "SCROLLING" IN THE MEMORY

You can open other saved pictures using the left and right direction buttons (1.30). Pressing the left button takes you to the pictures with lower numbers, pressing the right button takes you to those with higher numbers. Pressing and holding (approx. 2s) scrolls quickly through the pictures. After the highest and lowest numbers, the series of pictures begins again in an endless loop, which means you can reach all pictures in either direction.

- The picture and file numbers in the monitor change accordingly.

B. ENLARGING / SELECTING THE SECTION / SIMULTANEOUS VIEWING OF SEVERAL REDUCED PICTURES

On the Leica M Monochrom it is possible to open an enlarged section of an individual picture in the monitor to study it more closely, with a free choice of section. Conversely, you can also view up to 9 pictures simultaneously in the monitor, e.g. to gain an overview or to find the picture you are looking for more quickly.

Notes:

- The more the picture is enlarged, the more the reproduction quality in the monitor deteriorates – due to the proportionately lower resolution.
- While an enlarged picture is displayed, the direction buttons are no longer available to open other pictures, instead they are used to "navigate" within the picture. (Exception: see next note).

Turning the setting dial (1.29) to the right (clockwise) enlarges the central section. The more you turn the dial, the greater the enlargement and the smaller the section area. Enlargement is possible up to 1:1, i.e. until 1 pixel of the monitor displays 1 pixel of the picture.
The four direction buttons (1.30) can be used to select any position for the section to be enlarged. To do this, press the button (several times) for the direction in which you want to shift the section.

- In addition to the enlargement, the rectangle within the frame (3.2.5/3.5.7j) in the lower right-hand corner of the monitor symbolizes the position of the section displayed.

Note:
You can also switch from an enlarged picture directly to another picture, which will then be shown at the same enlargement. To do this press the left or right direction button again while holding down the **PLAY** button (1.26).

By turning the setting dial to the left (anticlockwise, starting from normal size), you can simultaneously view 4 – or by turning the dial further 9 – pictures in the monitor.

- Up to 9 reduced images are shown in the monitor (1.32) including the picture previously being viewed at normal size, which is marked with a red border.

You can use the four direction buttons to navigate freely among the reduced images, and the relevant image is marked accordingly. You can then view this image at normal size by turning the setting dial to the right.

Note:
When 9 pictures are displayed, turning the setting dial further to the right places the red frame around the entire group of pictures, which then allows you to "scroll" more quickly, a block at a time.

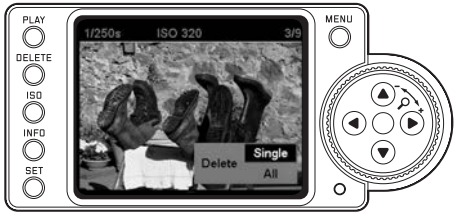
C. DELETING PICTURES

When a picture is displayed in the monitor, you have an opportunity to delete it if you wish to do so. This can be useful, for example if the pictures have already been saved to other media, if you no longer require them or if you need to free up more space on the memory card. The Leica M Monochrom allows you to delete single pictures, or all pictures at the same time, as required.

Notes:

- Deleting is only possible in review mode, but regardless of whether a picture is being displayed at normal size or several reduced pictures are displayed (but not if the 9 picture review is activated with a red frame around the entire block, see p. 147).
- For protected pictures, the protection must first be cancelled before they can be deleted (see also next section).

Important:
Deleting pictures is irreversible. Pictures cannot subsequently be recovered.



Procedure

1. Press the **DELETE** button (1.24).
   - The corresponding sub-menu appears in the monitor (1.32).

Notes:

- The delete process can be cancelled at any time by pressing the **DELETE** button again.
- The following controls and their functions are not available during the entire delete process: the **INFO** button (1.22) and the delete protection function.

2. The first step is to decide
   - whether you want to delete individual pictures **Delete Single**, or
   - all pictures simultaneously **Delete All**.

3. The subsequent procedure is controlled by the menu, i.e. essentially as described in the "Menu control" section (see p. 110). After specifying the relevant menu display, this is done using the setting dial (1.29), the direction buttons (1.30) and the **SET** button (1.21).

Note:

- If the picture displayed is protected (see p. 144), the **Single** option cannot be selected in the sub-menu.
- When deleting all pictures, to prevent accidental deletion there is an intermediate step in which you must reconfirm that you definitely want to delete all pictures on the memory card.

DISPLAYS AFTER DELETING

DELETING INDIVIDUAL PICTURES

After deleting, the preceding picture appears. If there are no more pictures saved on the card, the following message appears:
Attention No valid image to play.

DELETING ALL PICTURES ON THE MEMORY CARD

After deleting, the following message appears:
Attention No valid image to play.
However, if one or more pictures were protected, that picture or the first of those pictures then appears.

Note:

When a picture is deleted, the subsequent pictures in the picture counter (3.2.4/3.3.6) are re-numbered as follows: For example, if you delete picture no. 3, what was previously picture no. 4 then becomes no. 3, the previous no. 5 becomes no. 4 etc. However, this does not apply to the file numbering on the memory card (in the **INFO** display, see p. 96/141) for the remaining image files in the folder (3.3.7i), which remains unchanged.

D. PROTECTING PICTURES / CLEARING DELETE PROTECTION

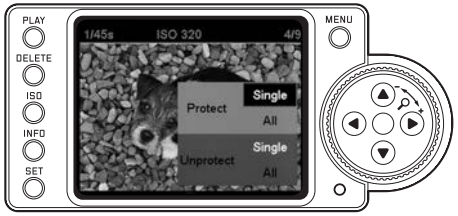
The pictures stored on the memory card can be protected against accidental deletion. This protection can then be cleared at any time.

Notes:

- Pictures can only be protected, or the protection can only be cleared, in review mode, irrespective of whether a picture is displayed at normal size or as one of several reduced pictures (but not when viewing 9 pictures with a red frame round the entire block, see p. 142).
- For details of the different procedures/responses when you attempt to delete protected pictures, refer to the previous section.
- If you decide you want to delete them, clear the protection as described below.
- Protection is only effective on the Leica M Monochrom.
- Even protected pictures are deleted if the memory card is reformatted (see next section for details).
- On SD/SDHC memory cards, you can prevent accidental deletion by sliding the protection switch on the card (see p. 103) to the position marked **LOCK**.

Procedure

1. Press the **SET** button (1.21).
   - The corresponding sub-menu appears in the monitor (1.32).



Notes:

- The setting process can be cancelled at any time, either by pressing the **PLAY** button (1.26) to return to normal review mode or by tapping the shutter release button (1.19) to switch to picture mode.
- The following controls and their functions are not available during the entire setting process: **DELETE** (1.24) and **INFO** (1.22) buttons

The subsequent procedure is controlled by the menu, i.e. essentially as described in the “Menu control” section (see p. 26). After specifying the relevant menu display, this is done using the setting dial (1.29), the direction buttons (1.30) and the **SET** button (1.21).

2. The first step is to decide
   - whether you want to protect individual pictures **Protect Single**, or
   - simultaneously protect all pictures **Protect All**, or
   - whether you want to clear the existing protection for individual pictures **Unprotect Single**, or
   - for all pictures **Unprotect All**.

Note:

The following functions cannot be performed and the menu text appears in white instead of black to indicate this:

– Protecting a picture that is already protected, or if all pictures are already protected.

– Clearing the protection for a picture that is already unprotected, or if no pictures are already protected.

DISPLAYS AFTER PROTECTION / CLEARING PROTECTION

After exiting the menu, the original monitor display appears again, with the corresponding symbol (3.2.1/3.3.3) for protected pictures.

Note:

The symbol also appears if a picture that is already protected is opened.

ADDITIONAL FUNCTIONS

FOLDER MANAGEMENT

The picture data on the card is stored in folders, which are created automatically. The folder names always consist of eight characters - three figures and five letters. In the factory default setting, the first folder is named "100LEICA", the second "101LEICA", etc. As a result, the camera can create a maximum of 999 folders. This counting can be reset at any time.
On the Leica M Monochrom, you can also create your own new folders and give them names, i.e.
– Resetting folder numbers
– create new folders / assign your own names

RESETTING FOLDER NUMBERS

Note:
This function can only be used with a memory card that does not contain any picture data or empty folders, in other words unused/new cards or those that have previously been formatted (see p. 147).

1. In the main menu (see p. 97/110), select **Folder managem.** (4.1.13), and
2. select **Reset folder no.** in the sub-menu.
   The camera's internal folder counting is reset, i.e. the lowest number not yet assigned is always used when creating a new folder.

Note:
Under certain circumstances this can mean that one or more numbers are not used. For example, if the camera last assigned the number 102, and a card is then inserted that has 105 as the highest folder number, subsequent new folders are assigned numbers starting at 106.

SELECTING A FOLDER

The review functions (see p. 138) and data transfer based on the PTP standard (see p. 148) always access the active folder on the memory card you are using. To view pictures from different folders or transfer them to an external storage medium, you must activate the corresponding folder first.

1. In the main menu (see p. 97/110), select **Folder managem.** (4.1.13), and
2. **Select folder** in the sub-menu.
   - A list of all available folders appears in the monitor (1.32). If the card contains large quantities of data, it will take a short time for this display to appear and the message **Folders are being read Please wait** will appear temporarily instead.
3. Select the desired folder.

CREATING NEW FOLDERS / ASSIGNING YOUR OWN NAMES

The Leica M Monochrom allows you to create new folders on the memory card and to give them your own names.

1. In the main menu (see p. 97/110), select **Folder managem.**(4.1.13), and
2. **Create new folder** in the sub-menu.
   - The folder name appears (initially always "Leica"). The first of the five characters is marked as ready for editing.

Note:
The next free number is always created as the folder number.

3. Use the up and down direction buttons (1.30) and the central setting dial (1.29) to change the first five characters, and the left and right direction buttons to move to the other characters.
   The available characters are upper case letters from **A** to **Z**, lower case letters from **a** to **z** and numbers from **0** to **9**, and you scroll through them in an endless loop.

FORMATTING THE MEMORY CARD

It is not normally necessary to format (initialize) a memory card that has already been used. However, if a card that has yet to be formatted is inserted for the first time, it must be formatted. In such cases, the **Format SD card** sub-menu is displayed automatically.
On the Leica M Monochrom, you can choose whether you only want to format the memory card or you want to actually delete all data on the card by overwriting, e.g. to protect against misuse.

Notes:

- Simple formatting does not cause the data on the card to be irretrievably lost. Only the directory is deleted, which means that the existing files are no longer directly accessible. The data can be accessed again using appropriate software.
  Only the data that is subsequently overwritten by saving new data is actually permanently deleted. However, we recommend that you get into the habit of transferring all your pictures to a secure mass storage medium, e.g. the hard drive on your computer, as soon as possible. This is particularly important if the camera is being sent for servicing along with the memory card.
- Depending on the memory card used, formatting can take up to 3 minutes.

Procedure

1. In the main menu (see p. 97/110), select **Format SD card** (4.1.25), and
2. the desired function - **Yes**, **No** or **Overwrite** - in the sub-menu.
3. If you definitely want the memory card to be overwritten, you must confirm this to guard against unintentional settings in the corresponding sub-menu.

Notes:

- Do not turn off the Leica M Monochrom while the memory card is being formatted/overwritten.
- If the memory card has been formatted in another device, such as a computer, you should reformat it in the Leica M Monochrom.
- If the memory card cannot be formatted/overwritten, you should ask your dealer or the Leica Information Service (for address, see p. 167) for advice.
- Even protected pictures (see previous section) are deleted when formatting the memory card.
- Depending on the capacity and read/write speed of the card, overwriting can take up to 60 minutes. Therefore, you should check the charge level of the battery first (see p. 102). If the capacity limit of the battery is reached while overwriting, a corresponding message appears in the monitor.

TAKING PHOTOGRAPHS WITH THE SELF-TIMER

You can use the self-timer to take a picture with a delay of either 2 or 12s. This can be particularly useful, for example in the first case if you want to avoid the picture being out of focus due to camera shake when releasing the shutter or, in the second case, for group photographs where you want to appear in the picture yourself.

Setting and using the function

1. Turn the main switch (1.18) to ⏲.
2. In the main menu (see p. 97/110), select **Selftimer** (4.1.4), and
3. the desired delay or **Off** in the sub-menu.
4. To start or initiate the delay time, press the shutter release button (1.19) to the 1st pressure point (see p. 23). The LED (1.7) on the front of the camera flashes for the first 10s of a 12s delay time, then it stays lit continuously, to show the progress of the delay time. The countdown is shown in the monitor at the same time.

While the self-timer delay time is running, it can be cancelled at any time by pressing the **SET** button (1.21) - the relevant setting is retained and the function can be restarted by pressing the shutter release button again.

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.

TRANSFERRING DATA TO A COMPUTER

The Leica M Monochrom is compatible with the following operating systems:
Microsoft®: Windows® XP/Vista®/7®
Apple®Macintosh®: Mac®OS X (10.6)
The Leica M Monochrom is equipped with a USB 2.0 interface for transferring data to a computer. This allows fast data transfer to computers with the same kind of interface. The computer used must have either a USB port (for direct connection to the Leica M Monochrom) or a card reader for SD/SDHC cards.

Note:
When using a USB connection, note the following: Connecting two or more devices to a computer or connecting using a hub or extension cables can result in malfunctions.

USB CONNECTION

The Leica M Monochrom allows data to be transferred via a USB cable using two different standards. It thus takes account of the fact that some programs for transferring picture data require a connection complying with the PTP protocol.
In addition, it is always possible to operate the camera as an external drive ("bulk storage").

Setting the function

1. In the main menu (see p. 13/26), select **USB connection** (4.1.24), and
2. then **PTP** or **Mass storage** in the sub-menu.

CONNECTING AND TRANSFERRING DATA USING THE PTP PROTOCOL

If the Leica M Monochrom is set to PTP and is detected by the connected computer, proceed as follows:

Note:
Data transfer complying with the PTP standard always accesses the active folder on the memory card you are using. To view pictures from different folders or transfer them to an external storage medium, you must activate the corresponding folder first (see p. 146).

WITH WINDOWS®XP/VISTA®/7®

1. Use the USB cable supplied (C) to connect the USB socket (1.33) on the Leica M Monochrom to a free USB port on the computer. To do this, first open the flap (1.26) over the socket on the camera downwards.

WITH WINDOWS®XP

- After connecting, a message appears on the desktop to confirm that the Leica M Monochrom has been detected as new hardware (1st connection only).

2. Double-click on the message (not required after the 1st connection).
   - A pull-down menu entitled “M Monochrom Digital Camera” opens for the data transfer wizard.
3. Click on “OK” and follow the subsequent instructions in the wizard to copy the pictures to a folder of your choice and access them in the normal way.

WITH WINDOWS®VISTA®/7®

- After connection, a message about installation of the device driver software appears above the taskbar. At the same time **USB connection** appears on the camera display. Successful installation is confirmed by another message. The **Auto review** menu opens with various device options.

2. You can use the Windows wizard to "Import Images" or "Open Device to View Files" in the normal way, to
3. access the card directory structure using Windows Explorer.

CONNECTING AND TRANSFERRING DATA WITH MAC® OS X (10.6)

1. Use the USB cable supplied (C) to connect the USB socket (1.33) on the Leica M Monochrom to a free USB port on the computer. To do this, first open the flap (1.26) over the socket on the camera downwards.
   - Once the camera has been successfully connected to the computer, **USB connection** appears on the camera display.
2. Now open the “Finder” on the computer.
3. In the left window, click on “Programs” in the “Locations” category.
4. Now select the “Digital Images” program in the right window.
   - The program opens and the name “M Monochrom Digital Camera” appears in the program title bar.
5. The pictures can now be saved on the computer using the “Load” button.

CONNECTING AND TRANSFERRING DATA WITH THE CAMERA AS AN EXTERNAL DRIVE (BULK STORAGE)

With Windows operating systems:

If the Leica M Monochrom is connected to the computer using the USB cable, the operating system detects it as an external drive and assigns it a drive letter. Use Windows Explorer to transfer/save the picture data to your computer.

With Mac operating systems:

If the Leica M Monochrom is connected to the computer using the USB cable, the memory card used appears as a storage medium on the desktop. Use the Finder to transfer/save the picture data to your computer.

Important:

- Only use the USB cable (C) supplied.
- While data is being transferred from the Leica M Monochrom to the computer, the connection must not under any circumstances be broken by removing the USB cable, as otherwise the computer and/or the Leica M Monochrom can crash‘ and the memory card may be irreparably damaged.
- While data is being transferred from the Leica M Monochrom to the computer, the camera must not be turned off or turn itself off due to a lack of battery capacity, as otherwise the computer can crash. For the same reason the battery must never be removed from the camera whilst the connection is active. If the capacity battery capacity runs low while transferring data, end the data transfer, turn off the Leica M Monochrom (see p. 106) and charge the battery (see p. 100).

CONNECTING AND TRANSFERRING DATA USING CARD READERS

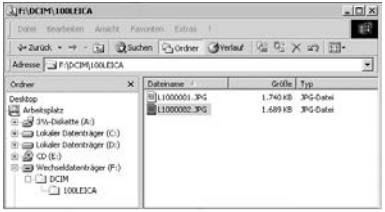
The picture files can also be transferred to other computers using a standard card reader for SD/SDHC memory cards. Card readers with a USB interface are available for computers with a USB interface. If your computer is equipped with a PCMCIA slot (common on portable models), plug-in cards with a PCMCIA connection are available as an alternative. These devices, and further information about them, is available from a computer accessory dealer.

Note:

The Leica M Monochrom is equipped with an integral sensor, which detects the position of the camera – horizontal or vertical (both directions) – for each picture. This information automatically allows the pictures to be displayed upright when subsequently displayed on a computer running the appropriate programs (but not on the camera monitor).

DATA STRUCTURE ON THE MEMORY CARD

When the data stored on a card is transferred to a computer, the following folder structure is used:



Up to 9999 pictures can be stored in the folders 100LEICA-, 101LEICA etc.

WORKING WITH DNG RAW DATA

If you have selected the standardized and future-proof DNG (Digital Negative) format, you require highly specialized software to convert the saved raw data into optimum quality, for example the professional raw data converter Photoshop®Lightroom®from Adobe®. It provides quality optimized algorithms for digital color processing, delivering exceptionally low noise photographs with incredible resolution.

During editing, you have the option of adjusting parameters such as noise reduction, gradation, sharpness etc. to achieve an optimum image quality. Adobe®Photoshop®Lightroom®is available as a free download when you register your Leica M Monochrom in the customer area of the Leica Camera AG homepage. Further details can be found on the registration card in the camera packaging.

When you register your Leica M Monochrom the Silver Efex Pro™ 2 software made by NIK® is also available. Silver Efex Pro™ 2 provides exceptionally powerful tools for producing captivating black and white pictures. Silver Efex Pro™ 2 features a unique range of powerful tools inspired by dark rooms, allowing you to produce premium quality black and white pictures. The revolutionary U Point® technology (selection of specific areas of the picture by clicking on them to edit) allows precise selective optimization of your pictures.

INSTALLING FIRMWARE UPDATES

Leica is constantly working on developing and optimizing its products. As digital cameras have many functions that are controlled electronically, some of these improvements and enhancements to the functions can be installed on the camera at a later date. To do this, Leica provides firmware updates at irregular intervals, which you can easily download from our homepage to your camera yourself:

1. Format a memory card in your Leica M Monochrom (see p. 147).
2. Turn off the camera and insert the card into an SD/SDHC card reader – either integrated or connected to your computer. (A reader is required for Firmware updates).
3. Download the Firmware file from the Leica M Monochrom site using the “UPDATES” link.
4. Save the file Mm-X_xxx.upd at the top level of the card's folder structure. X_xxx stands for the relevant version.
5. Remove the card properly from your card reader, insert the card into the camera and close the bottom cover. Turn on the camera using the main switch.
6. Confirm the prompt that appears in the monitor as to whether you want to update the Firmware on the camera to version X.xxx.

The update process takes around 180s. You will then be prompted to restart the camera using the main switch.

7. Turn the camera off and back on again.

Notes:

- If the battery does not have sufficient charge, you will see a corresponding warning message.
- The firmware version currently being used on the camera can be displayed by selecting Firmware (4.1.26) in the menu.

MISCELLANEOUS

SYSTEM ACCESSORIES FOR THE LEICA M MONOCHROM

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

UVa filters and a universal polarization filters are available for current Leica M lenses fitted with standard filter threads.

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 shows – just like the viewfinder in the camera – with a reflected bright line frame 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 horizontal alignment of the camera (order no. 12 011).

VIEWFINDER FOR 21/24/28MM

The Leica viewfinder for 21/24/28mm lenses can be used on all Leica M models and, thanks to its adjustable optical system, shows the trimming for the most popular wide angle focal lengths of 21mm, 24mm, and 28mm. The sophisticated optical design ensures an excellent reproduction quality equivalent to the viewfinder on the Leica M. Combined with the interpupillary distance of 15mm, suitable for users wearing glasses, the magnification allows good identification detail and convenient viewing of the entire image field (order no. 12 013).

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).

VIEWFINDER MAGNIFIER 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 0.68x viewfinder on the Leica M Monochrom a magnification of 0.85x, while the 1.4x gives 0.95x 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 bag 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

With a maximum guide number of 58 (in 105mm setting), an automatically controlled zoom reflector (with coded Leica M lenses, see p. 20), an optional second reflector and many other functions, the Leica SF 58 (order no. 14 488) system flash unit is both powerful and versatile. Thanks to its permanently attached flash foot with additional control and signal contacts, which are used to automatically transfer a range of data and settings, it is very easy to use.
With its compact dimensions and design that matches the camera, the Leica SF 24D system flash unit (order no. 14 444) is the perfect solution. Like the Leica SF 58, it has a permanently attached flash foot with all contacts and is also very easy to operate.

M HAND GRIP

As a practical accessory, we recommend the M8 hand grip, which allows you to hold the Leica M Monochrom extremely steadily and to carry it with one hand. It is fitted in place of the standard bottom cover. (order no. 14 486, black)

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

There are two neoprene cases for the Leica M Monochrom with different front sections for lenses of different lengths, a classic leather case and a protector that is similar to the lower section of a traditional case. This protector reliably protects the camera body, even when taking photographs (order no. 14 867 short, 14 868 long, 14 872 leather, 14 869 protector).
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 Velcro fastened compartment provides additional space for a Leica SF 24D flash and other accessories (order no. 14 854 black / 14 855 khaki).

SPARE PARTS — Order no.

Camera bayonet cap 14 495
Carrying strap 14,312
Lithium ion battery 14 464
Compact charger (with EU/USA mains cables, car charging cable) 14 470
Mains cable for AUS and UK 14 422/14 421
USB cable (2m, 4 to 6-pin) 420-200.023-000

GENERAL PRECAUTIONS

- Do not use your Leica M Monochrom 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 Leica M Monochrom 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 Leica M Monochrom in the immediate vicinity of radio transmitters or high-voltage power lines. Their magnetic fields can also interfere with picture recordings.
- If the Leica M Monochrom malfunctions due to the effects of electromagnetic fields, remove the battery and then turn the camera on again.
- Protect the Leica M Monochrom 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 Leica M Monochrom body or the surface finish.
- As rubber and plastics sometimes emit aggressive chemicals, they should not remain in contact with the Leica M Monochrom for extended periods.
- Ensure that sand and dust cannot get into the Leica M Monochrom, 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 Leica M Monochrom, e.g. when it is snowing or raining and on the beach. Moisture can cause malfunctions and even permanent damage to the Leica M Monochrom and the memory card.
- If salt water spray gets onto the Leica M Monochrom, 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.

MONITOR

The monitor is manufactured using a high-precision process. This ensures that, of the total of around 230,000 pixels, more than 99.995% work correctly and only 0.005% remain dark or are always light. However, this is not a malfunction and it does not impair the reproduction of the picture.

- If the Leica M Monochrom is exposed to significant temperature fluctuations, condensation can form on the monitor. Wipe it carefully with a soft dry cloth.
- If the Leica M Monochrom is very cold when it is turned on, the displays may at first appear darker than usual. As soon as it warms up, it will reach its normal level of brightness.

SENSOR

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

CONDENSATION

If condensation has formed on or in the Leica M Monochrom, 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

- Only clean the Leica M Monochrom 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 lens 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. Be careful not to damage the shutter blades, for instance with the shaft of the brush.
- All mechanical moving bearings and sliding surfaces on your Leica M Monochrom 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, such as the image field selector. The distance and aperture setting rings on the lens should also be moved periodically.
- Take care not to scratch the sensor for the 6-bit coding (1.10) in the bayonet fastening, 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. Never wet this component when cleaning it!

FOR LENSES

- Normally, a soft hair brush is sufficient to remove dust from the outer lens elements. However, in case of more stubborn dirt, they can be carefully cleaned with a very clean, soft cloth that is completely free of foreign matter, using circular motions from the inside to the outside. We recommend micro-fiber cloths (available from photographic and optical specialists) that are stored in a protective container and can be washed at temperatures of up to 40°C (without fabric softener, never iron!). Cloths for cleaning glasses, which are impregnated with chemicals, should not be used as they can damage the lens glass.
- Take care not to scratch the 6-bit coding (1.11) in the bayonet fastening, 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. Never wet this component when cleaning it!
- For optimum front lens protection in unfavorable photographic conditions (e.g. sand, salt water spray), use transparent UVa filters. However, you should bear in mind that, like all filters, they can cause unwanted reflections in certain backlight situations and with high contrasts. The generally recommended lens hood also protects the lens from unintentional fingerprints and the rain.

FOR THE BATTERY

Rechargeable lithium ion batteries generate power through internal chemical reactions. These reactions are also influenced by the external temperature and humidity. Very high or low temperatures reduce the life of the battery.

- Always remove the battery if you will not be using the Leica M Monochrom for a long period of time. Otherwise, after several weeks the battery could become totally discharged, i.e. the voltage is significantly reduced, as the Leica M Monochrom uses a low no-load current (to save the date) 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 in the monitor (1.32). For very long storage periods, it should be charged up and discharged again around once a year.
- 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 Leica M Monochrom.
- In case of noise, discoloration, deformation, overheating of 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, leading to 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 only a limited service life.
- Take damaged batteries to a collection point to ensure correct recycling.
- The batteries may not be exposed to heat, sunlight, humidity or moisture for long periods. 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 not be connected while the charger is still connected to the mains.
- Make sure that the charger is only stored at temperatures of between -40 and +70°C.

FOR MEMORY CARDS

- Whilst a picture is being stored or the memory card is being read, it may not be removed, and the Leica M Monochrom may not be turned off or exposed to vibrations.
- For safety, memory cards should only ever be stored in the antistatic cover 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 Leica M Monochrom 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.

Notes:

- Simple formatting does not cause the data on the card to be irretrievably lost. Only the directory is deleted, which means that the existing files are no longer directly accessible. The data can be accessed again using appropriate software.
  Only the data that is then overwritten by saving new data is actually permanently deleted. You should nevertheless get into the habit of transferring all your pictures onto a secure bulk storage medium, e.g. the hard drive on your computer, as soon as possible. This is particularly important if the camera is being sent for servicing along with the memory card.
- Depending on the memory card used, formatting can take up to 3 minutes.

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 Leica M Monochrom can be sent to Leica Camera AG's Customer Service for the sensor to be cleaned at a cost (address: see p. 167) – this cleaning is not included in the warranty.

You can also perform the cleaning yourself, using the **Sensor cleaning** function in the menu. This allows access to the sensor by keeping the shutter open.

Notes:

- Generally: To protect the Leica M Monochrom 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.
- As plastic parts can easily pick up a static charge and then attract more dust, individual lens and camera body caps should only be stored for short periods in pockets in clothing.

Setting the function

1. In the main menu (see p. 97/110), select **Sensor cleaning** (4.1.19).
   - The relevant sub-menu appears.
2. Providing the battery has sufficient capacity, i.e. at least 60%, confirm the function in the sub-menu.
   - A further sub-menu will appear.

Note:

If the battery capacity is lower, the warning message **Attention Battery too low for sensor cleaning** appears instead to indicate that the function is not available, i.e. **Yes** cannot be selected.

3. Press the shutter release button (1.19). The shutter opens and remains open.
4. Perform the cleaning. Comply with the following instructions:

Notes:

- As far as possible, both inspection and cleaning of the sensor should be performed in a dust-free environment to prevent further soiling.
- An 8x or 10x magnifying glass is very useful for the inspection and after cleaning.
- 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 Antidust 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 your Leica Information Service (address: see p. 167).
- If the battery capacity falls to less than 40% while the shutter is open, the warning message **Attention Battery low Switch off camera** appears in the monitor. At the same time a sustained beep tone will sound, which continues until the camera is switched off. Turning the camera off will cause the shutter to be closed again. Be absolutely sure in this case that the shutter window is clear, i.e. that no object can obstruct the closing movement of the shutter, otherwise damage may occur.

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 will not be using the Leica M Monochromfor an extended period, we recommend that you
  a. Turn it off (see p. 106),
  b. Remove the memory card (see p. 103), and
  c. Remove the battery (see p. 102), (the date and time entered will be lost after a maximum of 3 months, see p. 112).
- A lens works like a magnifying glass if bright sunlight shines on the front of the camera. The camera must therefore never be set aside in strong sunlight without protection. 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.
- You should preferably store the Leica M Monochrom in a closed and padded container so that nothing can damage it and it is protected from dust.
- Store the Leica M Monochrom in a dry, adequately ventilated place, where neither high temperatures nor high humidity will occur. When used in humid conditions, the Leica M Monochrom should be completely cleared of all moisture before being stored.
- Photo cases that became wet during use should be emptied to prevent damage to your equipment caused by moisture and any leather-tanning residue 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 Leica M Monochrom in a leather case for extended periods of time.
- Note the serial numbers of your Leica M Monochrom (engraved on the accessory shoe) and lenses, as these are extremely important in case of loss.

MALFUNCTIONS AND THEIR RESOLUTION

1. The LEICA M Monochrom does not respond when I turn it on.

1.1 Has the battery been correctly inserted?

1.2 Does the battery have sufficient charge?
Use a charged battery.

1.3 Has the bottom cover been correctly fitted?

2. The Leica M Monochrom turns itself off again as soon as I turn it on.

2.1 Does the battery have sufficient charge to operate the Leica M Monochrom?
Charge the battery or insert a charged battery.

2.2 Is there any condensation? This can occur if the Leica M Monochrom is moved from a cold place to a warm place.
Wait until the condensation clears.

3. The Leica M Monochrom shutter refuses to trip.

3.1 Picture data is currently being transferred to the memory card and the back-up memory is full.

3.2 The capacity of the memory card is exhausted and the back-up memory is full. Delete pictures you no longer require before taking new ones.

3.3 No memory card has been inserted and the back-up memory is full.

4. I cannot save the picture.

4.1 Is a memory card inserted?

4.2 The capacity of the memory card is full.
Delete pictures you no longer require before taking new ones.

5. The monitor is too dark or too bright.

5.1 When viewing the monitor image from wide angles it is always more difficult to see.
If it is too light or too dark although you are looking at the monitor full on: Select a different brightness.

6. The picture I have just taken is not shown in the monitor

6.1 Is the **Auto review** function activated (when the Leica M Monochrom is set to picture mode)?

7. I cannot display the picture.

7.1 Is a memory card inserted?

7.2 The memory card does not contain any data.

8. Despite being connected to a computer, I cannot transfer any data.

8.1 Check whether the computer and the camera are connected correctly.

9. The date and time displays show incorrect values or are blank.

9.1 The Leica M Monochrom has not been used for a long period, particularly if the battery has been removed.

1. Insert a fully charged battery.
2. Set the date and time.

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TECHNICAL DATA

Camera type Compact digital view and rangefinder system camera with black and white sensor.

Lens attachment Leica M bayonet with additional sensor for 6-bit coding.

Lens system Leica M lenses from 16-135 mm.

Picture format/image sensor 5270 x 3516 pixels (18.5 megapixels) Monochrome CCD chip, active area approx. 23.9 x 35.8 mm, 5212 x 3472 pixels (18 megapixels). Infrared filter for filtering the invisible spectrum above 700nm, no low pass filter

Resolution Selectable, DNG™: 5212 x 3472 (18 megapixels), JPEG: 5212 x 3472 (18 megapixels), 3840 x 2592 (10 megapixels), 2592 x 1728 (4.5 megapixels), 1728 x 1152 (2 megapixels), 1280 x 846 (1 megapixel).

Data formats DNG™ (raw data), uncompressed, JPEG with quality-based compression

File size DNG™: 36 MB, JPEG: approx. 2–10 MB.

Storage medium SD cards up to 2 GB, SDHC cards up to 32 GB.

Menu languages German, English, French, Spanish, Italian, Japanese, Traditional Chinese, Simplified Chinese, Russian.

Exposure metering Exposure metering through the lens (TTL), heavily center-weighted with working aperture.
Center-weighted TTL metering for flash exposure with system-compatible SCA-3000/2 standard flash units.

Metering principle Metering based on the light reflected by the bright blades of the 1st shutter curtain.

Metering range (at ISO 160/23°) At room temperature and normal humidity, corresponds to EV 0 to 20 or f/1.0 and 1.2s to f/32 and $^{1}/_{1000}$s. Flashing of the left triangular LED in the viewfinder indicates values below the metering range.

Measurement cell for available light (continuous light measurement) Silicon photo diode with collection lens, positioned in the center of the camera base.

Sensitivity range Adjustable from ISO 320/19° to ISO 10000/41°, in $^{1}/_{3}$ ISO increments, in aperture priority (**A**) mode and for manual exposure setting, choice of automatic control or manual setting. ISO 160 also available as pull function.

Exposure mode Choice of automatic shutter speed control with manual aperture selection - aperture priority **A** - with corresponding digital display, or manual shutter speed and aperture setting, and compensation using LED light balance with correct exposure display.

Flash exposure control

Flash unit connection Via accessory shoe with center and control contacts.

Synchronization Choice of 1st or 2nd shutter curtain.

Flash sync speed $\frac{1}{180}$s; slower shutter speeds can be used.

Flash exposure metering (with SCA-3501/3502 adapter or SCA-3000 standard flash unit, e.g. Leica SF 24D / Leica SF 58) Control with center-weighted TTL pre-flash metering.

Flash measurement cell 2 silicon photo diodes with collection lens on the camera base.

Flash exposure compensation ±3$\frac{1}{3}$ EV in $\frac{1}{3}$ EV
increments, adjustable on SCA-3501/3502 adapter. On Leica SF 24D ±3EV in $\frac{1}{3}$ EV increments or from 0 to –3EV in 1EV increments adjustable with computer control / on Leica SF 58 ±3EV in $\frac{1}{3}$ EV increments in all modes.

Displays in flash mode Ready: Flash LED in viewfinder continuously lit; Success confirmation: LED remains lit or flashes rapidly for a while after taking the picture; underexposure indicated by the LED going out for a while.

Viewfinder

Viewfinder principle Large, bright line frame viewfinder with automatic parallax compensation.

Eyepiece Adjusted to –0.5 dptr. Corrective lenses from –3 to +3 dpt. available.

Image field limitation By displaying two bright line frames: For 35 and 135mm, or for 28 and 90mm, or for 50 and 75mm. Automatic activation when lens is screwed in. Any desired pair of bright line frames can be activated using the image field selector.

Parallax compensation The horizontal and vertical difference between the viewfinder and the lens is automatically compensated according to the relevant distance setting, i.e. the viewfinder bright line frame automatically aligns with the subject detail recorded by the lens.

Matching of viewfinder and actual image The size of the bright-line frame corresponds to the sensor size of 23.9 x 35,8mm at a setting distance of 1 meter. 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 1m.

Magnification (For all lenses) 0.68.

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

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

Displays

In the viewfinder (At bottom edge) LED symbol for flash status. Four-digit seven-segment digital display with dots above and below, display brightness adjusted for ambient brightness, for: Warning of exposure compensation, display for automatically generated shutter speeds in aperture priority mode, indication of use of exposure lock, warning that the metering or setting ranges are overshot or undershot using aperture priority and counting down exposure times longer than 2s.
LED light balance with two triangular and one central circular LED for manual setting of exposures. The triangular LEDs give the direction of rotation of the aperture setting ring and shutter speed setting dial to adjust the exposure. Also warns if the metering range is overshot or undershot.

On rear panel 2.5" monitor (color TFT LCD) with 230,000 pixels, for displays see p. 95.

Shutter and shutter release

Shutter Microprocessor-controlled, exceptionally low-noise metal blade focal plane shutter with vertical movement.

Shutter speeds In aperture priority mode (**A**) continuously from 32s to $^{1}/_{4000}$s. With manual setting 8s to $^{1}/_{4000}$s in half steps, **B** setting for long exposures (≤ 240s, in conjunction with self-timer T function, i.e. 1st release = shutter opens, 2nd release = shutter closes), ⚡ ($^{1}/_{180}$s) fastest shutter speed for flash synchronization.

Shutter cocking Using low-noise integral motor, optionally after releasing the shutter release button.

Picture series Approx. 2 frames/s, ≤ 8 pictures in series.

Shutter release button Three positions: Exposure metering on – Exposure lock (in aperture priority mode) – Shutter release. Standard thread for cable release integrated.

Self-timer Delay time optionally 2 or 12 s, adjustable using menu, indicated by flashing LED on front of camera and corresponding display in monitor.

Turning camera on/off Using the main switch on the camera top panel, selectable automatic switch-off of the camera electronics after 2/5/10 minutes, reactivation by tapping the shutter release button.

Power supply Lithium ion battery, rated voltage 3.7 V, capacity 1900 mAh. Capacity display in monitor, if shutter is held open (for sensor cleaning) additional acoustic warning if capacity runs low.

Charger Inputs: 100–240 V AC, 50/60 Hz, automatic switching, or 12/24V DC; Output: 4.2 V DC, 800 mA.

Camera body

Material All-metal die cast magnesium body with KTL dip finish, synthetic leather covering. Top panel and bottom cover brass, black or steel gray lacquered finish.

Image field selector Allows the bright line pairs to be manually activated at any time (e.g. to compare detail).

Tripod thread A $^{1}/_{4}$ ($^{1}/_{4}$") DIN stainless steel, in base.

Operating conditions 0 to +40°C / 32°-104°F

Interface 5-pin mini-USB 2.0 High-Speed socket for quick data transfer.

Dimensions (Width x Depth x Height)
Approx. 139 x 37 x 80mm /$5^{15}/_{32}$ x $1^{29}/_{64}$ x $3^{5}/_{32}$"

Weight Approx. 600 g /1lb 5.16oz

Package contents Charger, 100–240V with 2 mains cables (Euro, USA, differs in some export markets) and 1 car charging cable, lithium ion battery, USB cable, carrying strap.

Subject to changes to design, manufacture and range.

LEICA ACADEMY

We not only manufacture high-performance products for everything from observation to photography, we also offer a special service in the form of the Leica Academy, which for many years has been providing practical seminars and training courses, where expertise from the world of photography, projection and magnification has been taught to both beginners and advanced photographic enthusiasts.
The content of the courses, which are run by our experienced team of expert instructors in our modern training facilities at the Solms plant and the nearby "Gut Altenberg", ranges from general photography to areas of special interest, and they provide a wealth of practical suggestions, information and advice.
More details, along with the current seminar program, including our photographic trips, are available from:

Leica Camera AG
Leica Academy
Oskar-Barnack-Str. 11
D- -35606 Solms
Tel.: +49 (0) 6442-208-421
Fax: +49 (0) 6442-208-425
la@Leica-camera.com

LEICA INFORMATION SERVICE

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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 (see above).

Leica Camera AG
Customer Service / Software support
PO Box 1180
D- -35599 Solms
Tel.: +49 (0) 6442-208-111 / -108
Fax: +49 (0) 6442-208-490
info@leica-camera.com /
software-support@leica-camera.com

LEICA CUSTOMER SERVICE

For servicing your Leica equipment or in the event of damage, the Leica Camera AG Customer Care department or the repair service provided by authorized Leica agents in your country are available (see the Warranty Card for a list of addresses).

Leica Camera AG
Customer Care
Solmser Gewerbepark 8
D- -35606 Solms
Tel.: +49 (0) 6442-208-189
Fax: +49 (0) 6442-208-339
customer.care@Leica-camera.com