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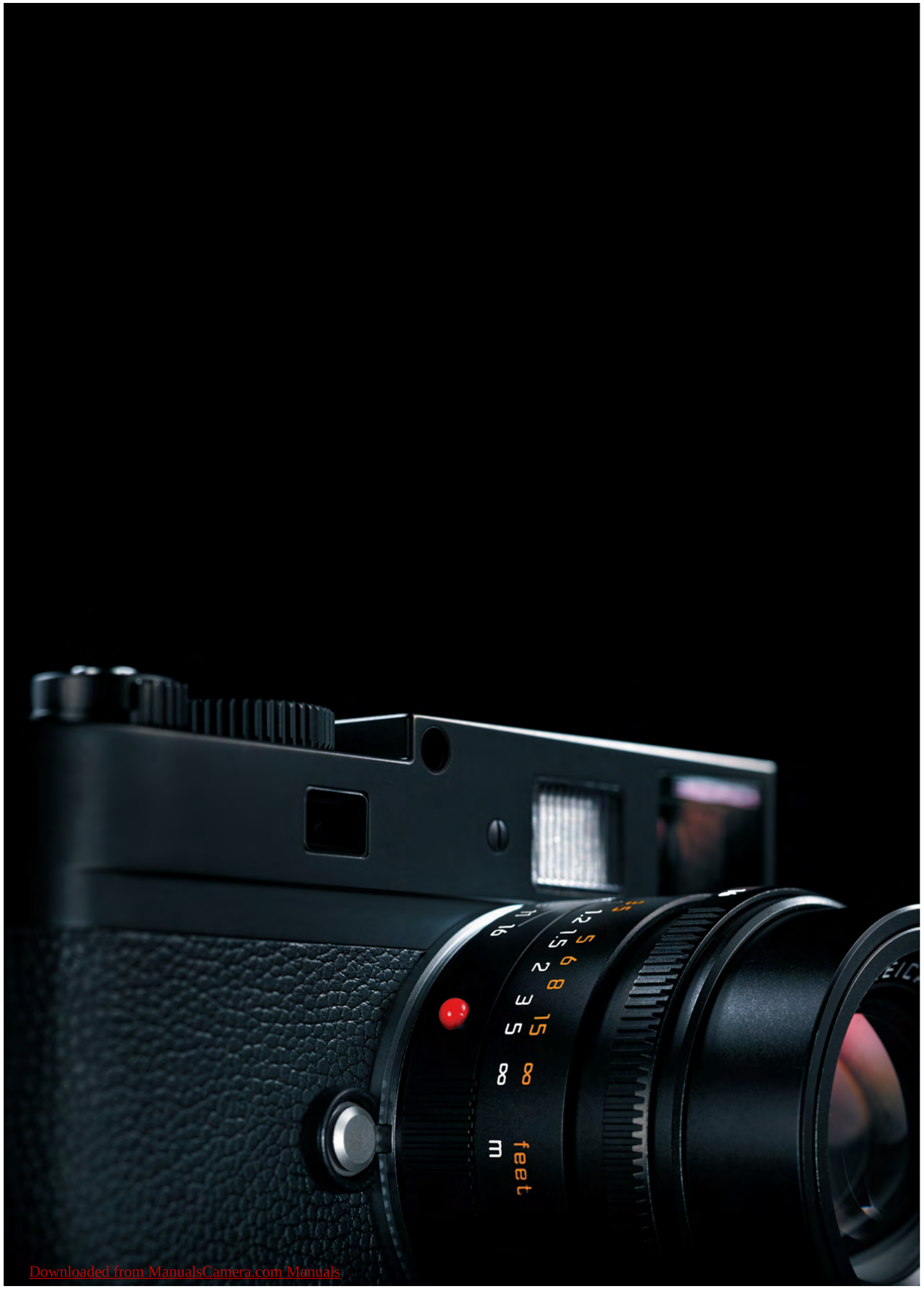
LEICA M MONOCHROM

The fascination of digital black-and-white photography.



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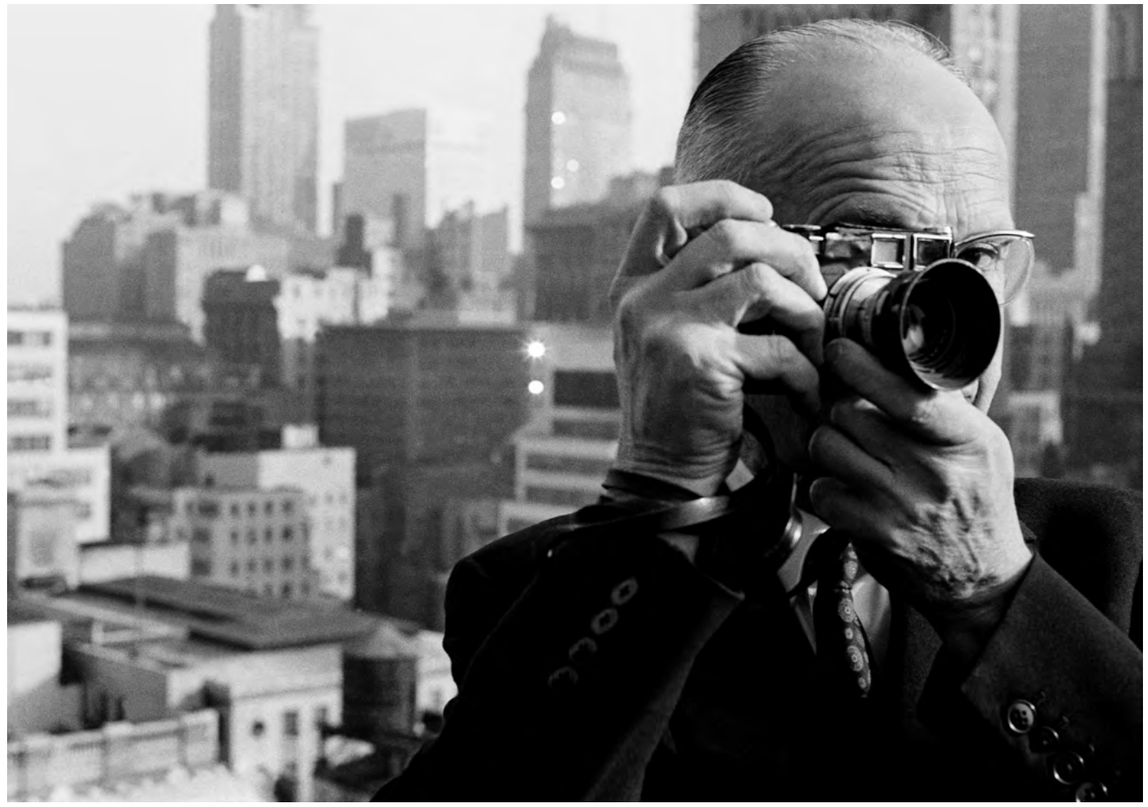
LEICA **CAMERA AG**

The future of black-and-white photography.



Henri Cartier-Bresson photographed by his Magnum colleague Dennis Stock on the roof of the Magnum building in Manhattan, 1961. Copyright Dennis Stock, Magnum Photos.

‘Only black and white reveals emotion’ – so said Henri Cartier-Bresson, perhaps the greatest black-and-white photographer of the 20th century. He certainly counts as one of the most important in the history of photography. With his Leica M, the co-founder of the legendary Magnum Photos independent photographic cooperative was always looking for the one ‘decisive moment’ that expresses the inner truth of a scene. It is no accident that he made an M-Camera his preferred tool. With the introduction of the rangefinder in 1954, many reportage photographers and artists discovered the merits of the fast, discreet cameras of the Leica M-System, which are ideal for capturing vibrant, authentic shots of life as it happens. Benefits that win the appreciation of many Magnum photographers, now as in the past. The Leica M-System is not the only photographic legend to have survived to the present day. The fascination of black-and-white photography, so often invoked by Cartier-Bresson, is as alive as ever. It is evident in the monochrome works of many young photographers – including members of Magnum Photos – and in the dominance of black and white in art photography. With an authenticity that surpasses colour photography, it enables the artist to ‘paint with light’. Light, and nothing else. So the time is right for a camera that builds on the rich tradition of analogue black-and-white photography and brings authentic monochrome photography into the digital era: the Leica M Monochrom. It is the world’s first digital black-and-white camera in 35 mm format. With the M Monochrom, photographers have a camera that combines state-of-the-art rangefinder and digital technologies to deliver black-and-white images of incomparable quality. The results rival those of medium-format cameras and effortlessly meet the demands of fine-art photography.

LEICA
REPORTAGE

LEICA APO-SUMMICRON-M 50 mm f/2 ASPH., ISO 800, f/4.8, 1/500 s

LEICA APO-SUMMICRON-M 50 mm f/2 ASPH., ISO 800, f/16, 1/125 s

LEICA **REPORTAGE**

Emotions within black and white.

The Yaroslavsky Railway Station stands proudly on Komsomolskaya Square in Moscow, a little way outside the historical city centre. It is one of the busiest railway stations in Moscow. More than 300 trains depart daily from here to destinations in the north. One of them is a particularly significant train. Every other day, ‘Train No. 2’ leaves the station on the start of its six-day journey to Vladivostok and the Pacific Ocean, 9,000 km away. On the way, it crosses two continents, seven time zones and makes about 400 stops. It is the longest continuous rail line in the world: the Trans-Siberian Railway.

It is a legend on wheels, and in cooperation with Leica Camera, the award-winning Magnum photographer, Jacob Aue Sobol, took the new Leica M Monochrom on board on a journey of discovery. The young Dane, who represents the third generation of a family of photographers, took the Trans-Siberian Railway from Moscow to Ulan-Ude, about 5,700 km away in south-eastern Siberia. From there, he continued through Mongolia and on to Beijing. This section is not officially on the Trans-Siberian line (although it is often presented as such); in fact, it is part of the Trans-Mongolian Railway, branching off the Trans-Siberian at Lake Baikal. Sobol chose to deviate from the original route – a decision that indicates that his main focus lies beyond making a historically accurate record of the railway itself. This extraordinary journey fascinated him for other reasons.

LEICA SUMMICRON-M 35 mm f/2 ASPH., ISO 1600, f/8, 1/30 s

LEICA APO-SUMMICRON-M 50 mm f/2 ASPH., ISO 320, f/8, 1/180 s

The idea for the ‘Trans-Siberian Railway Project’ was born in his home town of Copenhagen, as a photographic project in which a train becomes the central theme of a story about people who live in very different worlds, yet have much in common. A story that could be told in compelling detail through a journey on the Trans-Siberian and Trans-Mongolian. An added attraction: Sobol himself had never visited any of the countries along the route. In other words, everything that he would see there would be for the very first time: a situation that he knew would offer an ‘explosion of impressions’. Out the window, he saw ever-changing landscapes and their characteristic buildings, cities and people. But the interior of the train was his richest source of inspiration: the different people who came together in the confined space of a railway compartment.

The isolated environment of the compartment creates a unique relationship between the photographer, the passengers and, later, the viewers of the photographs. Sobol uses his camera to get closer to people, to make contact and create intimacy. As a photographer, Sobol aims not only to take us to new places and their people, but to capture them in images that address the existential questions of life. His images reveal deeply human emotions. And they show what brings people together: love, despair, longing, anger or fear. Explore the images on these pages and let them take you into unfamiliar worlds. Experience how Jacob Aue Sobol transforms the pulse and rhythm of a unique train journey into a continuous stream of images.

LEICA
M MONOCHROM

LEICA SUMMICRON-M 35 mm f/2 ASPH., ISO 320, f/8, 1/1000 s

LEICA **M MONOCHROM**

The fascination of monochrome photography enters the digital age.

M Monochrom, full-size view, black chrome finish. 7

M Monochrom, full-size view. 2

The newest camera in the Leica M-System builds on the tradition of its legendary predecessors, which have written history with their groundbreaking innovations: the Leica M Monochrom is the world's first digital black-and-white camera in 35 mm format. It does more than transform analogue black-and-white photography into digital: it sets a new benchmark in state-of-the-art photographic technology. Thanks to its full-format sensor and the absence of colour filters, it achieves unique image results with outstanding clarity and unmatched dynamics. That makes it the perfect camera for contemporary fine-art photography, and all who share a fascination for black and white.

1 UNCOMPROMISING IMAGE QUALITY
2 COMPATIBILITY AS A MATTER OF PRINCIPLE
3 ENDURING PERFORMANCE AND VALUE
4 SILENCE AND DISCRETION
5 SPEED AND FLEXIBILITY
6 COMPLETE CONTROL OF ALL IMAGE PARAMETERS
7 FULL FRAME 24 × 36 – WITHOUT COMPROMISE
8 NEW SENSOR
9 INTUITIVE CONTROLS
10 FULL INFORMATION AT THE PUSH OF A BUTTON

Discover the fascination of the Leica M Monochrom at **www.m-monochrom.leica-camera.com**

LEICA **M MONOCHROM**

Sharpness redefined.

M Monochrom, full-size view, black chrome finish.

At first glance, the Leica M Monochrom is almost indistinguishable from other M-Cameras. Its top plate, leather trim and carrying strap in perfect matt black maintain a discreetly low profile. The camera type is engraved unobtrusively on its accessory shoe. And, just like every other M-Camera, the design of the Leica M Monochrom concentrates purely on the essential photographic functions. Its manual focusing, based on the combined viewfinder and rangefinder concept and aperture priority exposure mode, is an aid to photographers rather than imposing undesired limitations on their creative freedom. In combination with the LCD monitor on the back of the body, the simple and intuitive menu navigation, managed by only a few control elements, ensures rapid access to all the camera functions.

1 UNCOMPROMISING IMAGE QUALITY

The M Monochrom features a new full-frame, 35 mm format sensor developed especially for black-and-white photography. In contrast to conventional sensors, it has no need for colour filters for individual pixels, and therefore requires no interpolation for the calculation of luminance values. This means that raw data and even JPEG image files from the M Monochrom can be used directly and without any further processing. This enables photographers to capture images with greater brilliance, superior sharpness and contrast resolution that can equal the quality of medium format. Due to their low compression rate, JPEG files from the camera also satisfy professional demands.

2 COMPATIBILITY AS A MATTER OF PRINCIPLE

The M Monochrom offers access to the complete range of Leica M-Lenses, long since recognised as being the best in the world. The first M-Camera was built in 1954, and the system has been continuously developed and improved ever since. The high-resolution, full-format image sensor fully exploits the performance of the lenses from corner to corner in every image.

3 ENDURING PERFORMANCE AND VALUE

It is not rare for a Leica to become its owner's lifelong companion. This applies particularly to the digital Leica M Monochrom: its top and base plates are machined from solid brass. Its full-metal housing is manufactured in one piece from high-strength magnesium alloy, and offers perfect protection for its precious inner mechanisms. The digital components and shutter assembly of the M Monochrom are similarly constructed with a lifetime of endurance in mind. In short: an M Monochrom is a long-term investment.

4 SILENCE AND DISCRETION

Discretion and unobtrusiveness are particular strengths of the M-System. The shutter of the M Monochrom is also extremely quiet. The very low noise level when cocking the shutter is ensured by a sophisticated motor gearing system. In discreet mode, the shutter is only cocked after the photographer's finger is taken from the shutter release button, when, for instance, the camera is concealed under a jacket. Then again, when longer exposure times requiring a steady camera stance are essential, even slight pressure on the shutter release button in 'soft' release mode is sufficient. At the same time, the combination of camera and lens is significantly more compact than any other full-frame camera system: this contributes to the fact that M-Photographers frequently go unnoticed and often simply melt into the background.

5 SPEED AND FLEXIBILITY

The Leica M Monochrom adapts flexibly to its intended use. Its sensitivity range extends from ISO 320 to ISO 10000. At the same time, very low image noise and finest resolution of details in shadows and highlights are achieved throughout the sensitivity range, even at the highest settings: the M Monochrom delivers razor-sharp images with the finest grain, even at ISO 10000. Very low image noise characteristics, a bright viewfinder/rangefinder, low-vibration shutter release and fast lenses make the M Monochrom the perfect camera for available-light photography.

6 COMPLETE CONTROL OF ALL IMAGE PARAMETERS

The Leica M Monochrom aids photographers with automatic functions whenever required, but it never dictates how to shoot. Depending on the lighting situation, the automatic ISO shift function increases the sensitivity of the camera as soon as a defined shutter speed is exceeded. At the same time, it also limits the shift to a maximum value set by the photographer. This means that correct exposure without camera shake and the lowest possible sensitivity is always available to guarantee the best possible image quality in all situations. In addition, the M Monochrom also offers automatic exposure bracketing with a user-selectable number of shots and incremental exposure values. This function ensures that even high-contrast subjects are captured perfectly.

LEICA **M MONOCHROM**

The ultimate in rangefinder precision meets cutting-edge digital technology.

10 | 7/8 | 9 M Monochrom, full-size view.

The Leica M Monochrom embodies the heritage and amassed experience of more than five decades of the M-System. At the same time, it is a digital system camera at the cutting edge of contemporary technology. For Leica designers, the photographic image has always been their prime concern – no matter whether film or digital, in black-and-white or in colour. The combination of an extremely efficient black and white image sensor, the latest digital components and the classic viewfinder/rangefinder principle, consistently optimised over many years, make the Leica M Monochrom absolutely unique.

7 FULL FRAME 24 × 36 – WITHOUT COMPROMISE

The CCD image sensor specifically designed and developed for the Leica M Monochrom offers full 35 mm film format without compromise. All M-Lenses mounted on the M Monochrom offer the angle of view they had when using film and are therefore used to optimum effect. In other words: all the outstanding characteristics of the lenses are now fully maintained for digital photography, too. Because of its high resolution and superior image quality, the M Monochrom has the ability to fully exploit the enormous potential of M-Lenses.

8 NEW SENSOR

When Leica created the M Monochrom, it wasn't a matter of modifying the lenses to match the image sensor, but rather the other way around: the monochrome sensor was perfectly attuned to its role in the compact M-System, and the superior performance of M-Lenses, during its development. The omission of the colour filter significantly increases the basic sensitivity of each individual pixel. It also means that the M Monochrom captures images with significantly greater contrast and clarity at all ISO settings. The special layout of the microlenses found only in the digital M-Camera sensor makes it tolerant of oblique light rays impinging on its surface, and guarantees uniform exposure and extreme sharpness from corner to corner in every image. Therefore, future lenses can be designed and optimised with uncompromising dedication to achieve both high performance and compact construction. A special glass sensor cover ensures the suppression of infrared light. The intentional decision to dispense with a moiré filter, a cause of image deterioration through loss of resolution, ensures maximum resolution of details.

9 INTUITIVE CONTROLS

The key control element of the M Monochrom is an intuitive four-way switch and dial combination used in conjunction with the large LCD screen on the back. Setting the sensitivity requires only continued pressure on the ISO button while simultaneously turning the dial to select the required setting. All other functions important for everyday situations are quickly and easily accessible by pressing the 'Set' button: these include image-data compression, resolution, exposure correction, exposure bracketing and programmable user profiles. User profiles can be programmed with any camera and shooting settings, stored under a specific name and accessed quickly whenever required for a particular situation. All other functions, from automatic lens recognition and six-bit lens-mount coding to sensor cleaning, are easy to find in the clearly laid-out main camera menu.

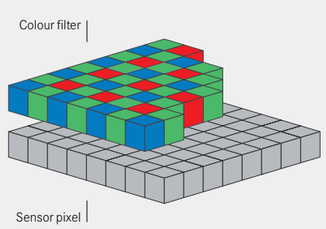
10 FULL INFORMATION AT THE PUSH OF A BUTTON

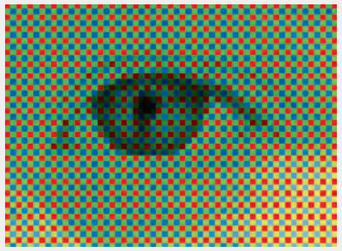
When the 'Info' button is pressed in shooting mode, the monitor on the back of the camera displays the precise charge level of the battery, the remaining capacity on the memory card and the most important basic shooting settings, for example the shutter speed. In review mode, users can toggle between an image-only view, with a zoom option up to single-pixel level operated by turning the dial, and other image information. This includes, for instance, information on the sensitivity setting, the shutter speed and a precise histogram display.

LEICA **M MONOCHROM**

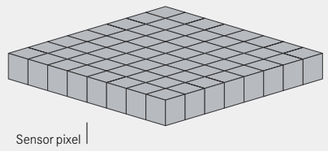
Technical details.

COLOUR AND MONOCHROME SENSORS – A COMPARISON





To allow an image sensor to 'see in colour', colour filters in the basic colours – red, green and blue – are allocated to individual pixels. However, before a visible image can be created, the colour information recorded by neighbouring pixels must be combined – an additive process that naturally reduces the native sharpness.



The sensor of the Leica M Monochrom does not see colours. As a result, each individual pixel records true luminance values from which a truly monochrome image, characterised by a native and incomparable sharpness, can be created without any additional processing.

MONOCHROME SENSOR

With a full native resolution of 18 megapixels, the Leica M Monochrom delivers 100% sharper images than a colour sensor. As its sensor does not 'see' colours, every single pixel records true luminance values. This means that the M Monochrom delivers a 'true' black-and-white image straight from the sensor. The combination of the brilliant imaging qualities of Leica lenses and perfect harmonisation of the sensor with the M-System results in images with outstanding sharpness and natural brilliance, without the need for sharpening in post-processing software. The result is an incomparable image quality that would normally be expected only from a medium-format camera.

The impressive quality of the native raw data from the M Monochrom not only enables images to be used directly, but also allows them to be stored in JPEG format with identical resolution. Thanks to the choice of a low compression rate, the quality of the JPEG files is even comparable with that of professionally processed TIFF files.

RAW DATA HISTOGRAM
(not illustrated)

The Leica M Monochrom more than satisfies the expectations of discerning users and fine-art photographers, with a raw data histogram for the precise assessment of tonal values. The difference compared to conventional histograms is that it displays original, unprocessed and unmodified raw data. The combination of this, with a configurable clipping display in particular, allows precise correction or optimisation of exposures. The subdivision of the raw data histogram into stops enables dedicated black-and-white photographers to employ a digital interpretation of the zone system.

USEFUL EFFECTS
(not illustrated)

With the Leica M Monochrom, photographers can apply characteristic toning effects from analogue black-and-white photography, such as sepia, cold or selenium toning to their images, at the touch of a button. The user saves the image in JPEG format and selects the desired toning effect – simply and conveniently, and without the need for post-processing.

BLACK-AND-WHITE WORKFLOW

Leica M Monochrom customers can take advantage of a free download of the digital work flow solution **Adobe® Photoshop® Lightroom® 4**.

M Monochrom customers are also entitled to a free download of the **Nik Software Silver Efex Pro™** software package.

BLACK-AND-WHITE WORKFLOW

Adobe® Photoshop® Lightroom® 4 is a professional workflow solution for Apple Mac® OS X, Microsoft Windows® Vista and Microsoft Windows 7*. The software is available as an online download for all new Leica M Monochrom customers, after online camera registration. It offers a wide range of functions for the management, processing and exporting of digital images. The latest release now enables the creation of simple print layouts, slide shows and photo books. In addition, many of its functions, including its processing speed, have been improved. If the images from the M Monochrom are saved as raw data in the standardised and future-proof Adobe® Digital Negative Format (DNG), Adobe® Photoshop® Lightroom® 4, with its sophisticated and precise processing options, guarantees direct and extremely high-quality image processing with maximum image quality.

In addition to this, the package also includes a plug-in version of the Nik Silver Efex Pro™ software, considered to be the most powerful tool for the creation of high-quality digital black-and-white images. For pictures that perfectly recreate the look of analogue exposures, Silver Efex Pro™ offers selective control of tonal values and contrast and an extensive collection of profiles for the simulation of black-and-white film types, grain structures and much more.

LENSES WITH SIX-BIT CODING
(not illustrated)

The high-performance image sensor of the M Monochrom demands a particularly high spatial resolution that is, above all, offered by the latest M-Lenses. The excellent correction of optical aberrations and high resolution makes them all the more suitable for digital use. The current M-Lenses are supplied with a six-bit code on the bayonet mount that is scanned optically by the M Monochrom as soon as the lens is mounted. If required, the M Monochrom can compensate for extremely minor, system-inherent vignetting effects on the basis of this coded information. In addition, the lens type is recorded in the Exif data of the image files and, when using the latest flash units such as the Leica SF 58, automatically adjusts the reflector to match the focal length of the lens attached. In most cases, Leica Customer Care can, on request, retrofit six-bit coding to the mounts of existing M-Lenses.

*As Adobe® Photoshop® Lightroom® 4 no longer supports Windows® XP, Adobe® Photoshop® Lightroom® 3.6 is also available as a free download for XP users.

LEICA **APO-SUMMICRON-M** 50 mm f/2 ASPH.

Anything but a standard lens.

Full-size view.

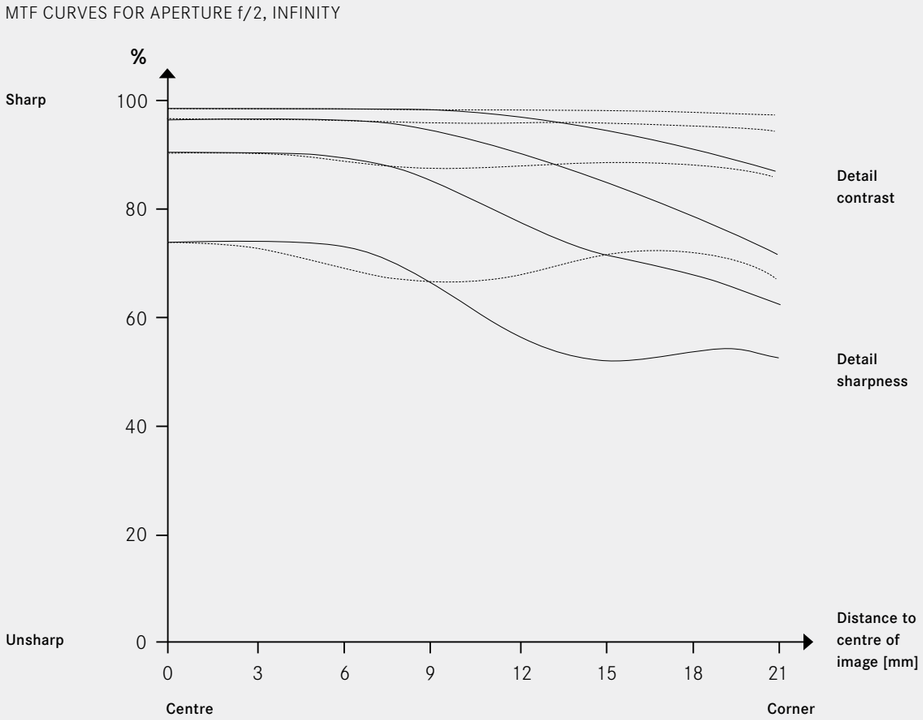
The enormous speed of developments in the field of digital photography in recent years has brought cameras with ever increasing resolution and, correspondingly, constantly increasing demands on lens quality. This is particularly true in the case of the Leica M Monochrom and its ability to resolve even the finest details with extreme sharpness. So the time was ripe for a lens constructed on the basis of optical calculations refined and perfected over many years. And now, our engineers have impressively redefined the limits of the technically possible, and have set entirely new standards in image quality, in the form of the new Leica APO-Summicron-M 50 mm f/2 ASPH. lens. The challenge they set themselves was to explore the limits of what is possible within standard specifications when a fast aperture, an extreme angle of view and the effort to be invested are not taken into account. This situation made it possible to concentrate entirely on achieving ultimate perfection in image quality from the beginning. The result is a lens that, for the first time ever, exploits the immense potential of contemporary high-resolution camera systems without compromise.

The new APO-Summicron-M 50 mm f/2 ASPH. features a total of eight lens elements. The design of the optical group in front of the diaphragm is based on that of the outstanding Leica Summilux-M 50 mm f/1.4 ASPH. The group behind it is similar to that of the Summilux-M 35 mm f/1.4 ASPH. As in the case of the Summilux, this is a floating element that ensures excellent image quality from infinity to the closest focusing range. Furthermore, the lens employs extremely complex and elaborate apochromatic correction, to correct chromatic aberrations. This minimises colour fringing on sharp edges to ensure natural rendition of every detail. This is achieved, for instance, by the ingenious incorporation of glass with anomalous partial dispersion in its optical design. Consequently, photographers benefit from the best possible image quality for prints in any format.

LEICA APO-SUMMICRON-M 50 mm f/2 ASPH., ISO 500, f/2, 1/180 s

LEICA **APO-SUMMICRON-M** 50 mm f/2 ASPH.

Sharp from corner to corner.



The MTF curves of the Leica APO-Summicron-M 50 mm f/2 ASPH. clearly show that the lens achieves outstanding values for both contrast and resolution of details.

As is the case with all Leica lenses, the Leica APO-Summicron-M 50 mm f/ 2 ASPH. was designed and constructed with the ambition of maximising not only image contrast, but also detail resolution at maximum aperture. An objective that it fulfils like no other lens: this new milestone in the history of the M-System is no less than spectacular in all its performance parameters. For instance, even at maximum aperture, the MTF curves that describe image sharpness remain consistently high. This shows that even the finest details are resolved with more than 50 % contrast: a previously unheard-of performance that confirms the exceptional properties of this lens. This enables extremely sharp images with superb corner-to-corner detail rendition in all photographic situations.

At the same time, Leica's engineers attached particular importance to ensuring an especially soft and harmonious rendition of objects outside the plane of focus. And this is revealed in the wonderfully attractive bokeh of the new standard lens. The APO-Summicron also impressively demonstrates high resistance to stray light and its detrimental effects on contrast, and masterly handling of frontal light sources. In addition, it is also distinguished by minimal distortion, minor vignetting and maximum image field flatness. In short: the Leica APO-Summicron-M 50 mm f/2 ASPH. is an exclusive, high-performance lens for photographers seeking unrivalled quality. Never before has a lens for 35 mm photography been designed and constructed with so few compromises. It provides new stimuli for photography with the Leica M rangefinder system, and once again confirms its reputation as one of the best collections of photographic instruments the world has ever seen.

Leica M Monochrom prints have the same features as analogue baryte prints.

LEICA MONOCHROM **PRINTS**

Digital has never been so 'analogue' before.

EXCLUSIVE PRINT SERVICE	Dedicated black-and-white photographers who don't want to miss out on the brilliance and quality of their images in print form can take advantage of a unique service offered exclusively by Leica. The Leica Monochrom Print Service, a cooperative venture with the photo finisher WhiteWall, offers M Monochrom customers the opportunity to have their images reproduced as exclusive black-and-white prints. With this service, digital images from the Leica M Monochrom are printed on premium-quality baryte photographic papers. Thanks to development using the classic wet-chemical silver halide process, the prints are indistinguishable from their analogue counterparts printed from negatives. After registering the purchase of their Leica M Monochrom online, customers wishing to use this exclusive service can order their prints directly from WhiteWall by means of a personal link.
LEICA MONOCHROM BARYTE PRINTS	Photographers who prefer their prints to look as if they are straight out of the darkroom simply cannot ignore baryte prints. This meticulous process provides far richer blacks and excellent tonal gradation in all parts of the print, compared to conventional processes. Where other methods and their various surface finishes tend to reflect light in many different ways, the familiar contrast and surface finish of baryte prints are far superior. Instead of being derived from the pixel pattern, all details are reproduced by real silver in the same way as printing from negatives. Connoisseurs also appreciate the extreme archival quality of baryte prints, proven time and time again by prints made up to 100 years ago.

TECHNICAL DATA

LEICA APO-SUMMICRON-M 50 mm f/2 ASPH., ISO 800, f/4, 1/180 s

LEICA **M MONOCHROM** AND LEICA **APO-SUMMICRON-M** 50 mm f/2 ASPH.

Technical data.

Product	**Leica M Monochrom**
Order no.	10 760.
Camera type	Compact digital rangefinder system camera with a dedicated black-and-white image sensor.
Lens mount	Leica M bayonet with additional sensor for six-bit coding.
Lens system	Leica M-Lenses from 16 to 135 mm.
Image format/ image sensor	Active area approx. 23.9 × 35.8 mm, 5212 × 3468 pixels (18 megapixels). Infrared blocking filter for invisible light with wavelengths longer than 700 nm, no low-pass filter.
Resolution	Selectable, DNG™: 5212 × 3468 (18 megapixels), JPEG: 5216 × 3472 (18 megapixels), 3840 × 2592 (10 megapixels), 2592 × 1728 (4.5 megapixels), 1728 × 1152 (2 megapixels), 1280 × 864 (1 megapixel).
Data formats	DNG™ (raw data), uncompressed, JPEG with quality-preserving compression.
File sizes	DNG™: 18 MB (compressed), 36 MB (uncompressed), JPEG: approx. 2–10 MB.
Colour space	sRGB hardwired.
Storage media	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	Through-the-lens (TTL) metering, centre-weighted at working aperture. Centre-weighted TTL metering for flash with system-compatible SCA-3000/2 standard flash units.
Metering range	At f/1.0/ISO 320/26°: EV 1 to 21. The left triangular LED in the viewfinder blinks when light levels are outside the lower metering range.
Sensitivity range	ISO 320/26° to ISO 10000/41°, selectable in 1/3 ISO increments, in aperture priority automatic mode (A) and manual exposure setting, optional automatic control or manual selection. ISO 160 also available as a pull function.
Exposure modes	Aperture priority (A)/Manual (M)
Flash exposure control	
Flash unit connection	Hot shoe with centre and control contacts.
Synchronisation	Choice of first or second curtain sync.
Flash sync speed	≤ = 1/180 s, longer shutter speeds may be used.
Flash exposure metering	Control by centre-weighted, TTL preflash metering (with SCA-3501/3502 adapters or SCA-3000 standard flash units, e.g. Leica SF 24D/Leica SF 58).
Flash metering cell	Two silicon photodiodes with condenser lens in camera base.
Flash exposure correction	±3 1/3 EV in 1/3 EV increments, adjustable on SCA-3501/3502 adapter. Settings in computer mode for Leica SF 24D, ±3 EV in 1/3 EV increments, or from 0 to –3 EV in 1 EV increments, with Leica SF 58, ±3 EV in 1/3 EV increments may be set in all modes.
Displays when using flash	Flash ready: constant illumination of flash symbol LED in the viewfinder, flash confirmation: constant illumination or temporary rapid flashing of LED after exposure, underexposure indicated by temporary extinguishing of LED.
Viewfinder	
Viewfinder principle	Large, bright, combined bright-line viewfinder with automatic parallax compensation.
Parallax compensation	The horizontal and vertical differences between the viewfinder and the lens are automatically compensated for in accordance with the focusing distance set, i.e. the bright-line frame of the viewfinder automatically moves to match the subject field covered by the respective lens.
Image field framing	By projection of two bright-line frames with each lens attached: for 35 and 135 mm, for 28 and 90 mm, or for 50 and 75 mm. Automatically displayed when lens bayonet locks into the lens mount. Any of the pairs of bright-line frames can be displayed by moving the frame selection lever.
Eyepiece	Set to –0.5 dioptres. Correction lenses for –3 to +3 dioptres available.
Correspondence between the viewfinder and the actual image	At a focusing distance of 1 metre, the size of the bright-line frame corresponds precisely to the sensor size of approx. 23.9 × 35.8 mm. At infinity, and depending on the focal length of the lens in use, more of the sensor is covered than the bright-line frame actually shows, the opposite is the case for focusing distances of less than 1 metre, i.e. somewhat less.
Magnification	0.68 x (for all lenses).
Long base rangefinder	Bright rectangular spot (RF spot) with coincident and superimposed image rangefinder in the centre of the viewfinder.
Effective rangefinder base	47.1 mm (mechanical rangefinder base 69.25 mm × viewfinder magnification 0.68 x).
Displays	
Viewfinder	LED symbol for flash status (on lower edge). Four-digit, seven-segment digital LED display, display brightness adapts to ambient light conditions, for: exposure compensation activation warning, display of automatically determined shutter speeds in aperture priority mode, reminder of activated exposure value lock.
	LED light balance with two triangular outer and one round central LED for manual exposure setting.
Camera back	2.5" monitor (colour TFT-LCD) with 230,000 pixels.
Shutter/ shutter release	
Shutter	Microprocessor-controlled, particularly low-noise, metal-leaf, vertical focal-plane shutter.
Shutter speeds	In aperture priority mode (A), continuous from 32 s to 1/4000 s. In manual mode, 8 s to 1/4000 s in half increments, B for time exposures up to max. 240 s, ≤ (1/180 s) shortest flash sync speed.
Continuous shooting	Approx. 2 fps, ≤ 8 frames in sequence.
Shutter release	Three steps: activation of metering – store metering values (in aperture priority mode) – shutter release. Standard internal thread for remote release.
Self-timer	2 s (in aperture priority or manual exposure modes) or 12 s delay menu setting option, countdown is indicated by a flashing LED on the front of the camera and a corresponding display on the monitor.
Camera power on/ power off	With main switch located on the top plate, optional sleep mode for camera electronics after 2/5/10 minutes, reactivation by tapping shutter release button.
Power supply	Rechargeable lithium-ion battery, nominal voltage 3.7 V, capacity 1900 mAh. Charge level displayed on monitor screen, when shutter locked in open position (for sensor cleaning), additional acoustic warning signal for insufficient capacity.
Battery charger	Inputs: 100–240 V AC, 50/60 Hz, automatic adaptation, or 12/24 V DC; output: 4.2 V DC, 800 mA.
Camera body	
Material	Full-metal housing in die-cast magnesium alloy with synthetic leather trim. Brass top plate and base plate, black chrome finish. Sapphire glass protective cover on the monitor screen.
Tripod thread	A 1/4 (1/4") DIN, stainless steel, integrated in base plate.
Operating temperature range	0 to +40°C.
Interface	Five-pin, high-speed mini USB 2.0 socket for fast data transfer.
Dimensions (L × H × D)	Approx. 139 × 80 × 37 mm.
Weight (with battery)	600 g.
Software licenses provided	Adobe® Photoshop® Lightroom®, Nik Silver Efex Pro™, as downloads (high-speed Internet connection required).
Compatibility	Windows® 7 SP1, Windows® Vista® SP2, Windows® XP SP2, Mac® OS X 10.6.8 (Snow Leopard) or later.
Package includes	100–240 V battery charger with two power cables (EU, USA, may differ in some export markets) and a car charging cable, rechargeable lithium-ion battery, USB cable, real leather carrying strap, original print of an image from the Leica M Monochrom campaign, instruction manual, information leaflets on registration and software downloads.

We reserve the right to make changes in the construction, features and ranges without advance notice.

Product	**Leica APO-Summicron-M 50 mm f/2 ASPH.**
Order no.	11 141
Angle of view	(diagonal/horizontal/vertical) 47°/40°/27°.
Optical design	
Number of elements/groups	8/5.
Distance of front lens from the bayonet flange	24.4 mm.
Distance settings	
Focusing range	0.7 m to ∞.
Distance scales	Combined, feet/metres.
Smallest object field	Approx. 271 × 407 mm.
Largest reproduction ratio	Approx. 1:11.3.
Aperture	
Setting/function	Preselection with click stops at half stops.
Smallest aperture	16.
Bayonet	Leica M quick-change bayonet.
Filter mount (type)	Inner threading for E39 screw-in filters.
Lens hood	Integrated, can be unscrewed.
Dimensions and weight	
Length	Approx. 47 mm.
Largest diameter	Approx. 53 mm.
Weight	Approx. 300 g.
Package includes	Lens, slip-over cap (metal), rear cap, leather lens case, E39 lens cap, presentation box.

Full technical specifications of the Leica APO-Summicron-M 50 mm f/2 ASPH. can be downloaded from www.m-lenses.leica-camera.com

Concept and design: G2 Germany, Frankfurt
Product photography: Alexander Göhr and Ralf Berndt
Author's photography: Jacob Aue Sobol
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