



LEICA S

In a class of its own.



CONTENTS

LEICA CAMERA AG	04
LEICA HISTORY	06
LEICA S	08
LEICA S-LENSES	14
The central shutter.	28
S-Adapters for third-party lenses.	32
The autofocus.	34
LEICA S2	38
Intuitive handling.	40
Perfect ergonomics.	42
Innovative menu control.	46
Ready for any situation.	48
LEICA S-SYSTEM	50
Sensor with offset microlenses.	54
The Maestro image processor.	56
Professional work flow.	58
Custom-designed accessories.	62
Service for the S-System.	63
Technical data.	64

LEICA CAMERA AG

Passionate photography.



1913/14

Oskar Barnack constructs the **Ur-Leica**.



1925

Leica I with a fixed lens is presented at the Leipzig Spring Fair.



1930

The first Leica with interchangeable thread-mount lenses appears on the market.



1954

Leica M3 with combined bright-line viewfinder/rangefinder and bayonet lens mount.

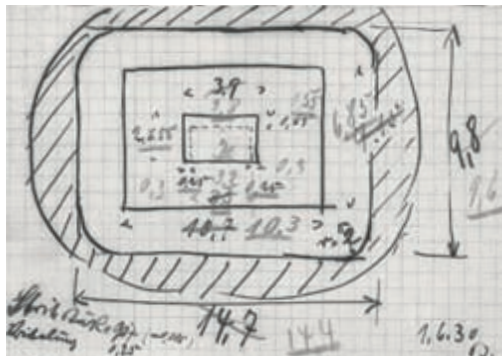


1966

Leica Noctilux-M 50 mm f/1.2: the first lens with an aspherical element.



Oskar Barnack (1879–1936).



Sketched construction diagram by Oskar Barnack.



"Kissing in the rearview mirror," by Magnum photographer Elliot Erwit, 1955.

Leica Camera shares something with countless people around the world: a love of, and a passion for, photography. It's the fascination of capturing a moment in time; shaping it, transforming it into something timeless, and experiencing it again and again as a unique photograph. This is what has driven Leica for almost 100 years: we create cameras using the best possible materials and assemble them meticulously by hand, so that every Leica delivers unwavering reliability and quality over a lifetime. All Leica cameras have one thing in common, regardless



Leica M5: the first rangefinder camera with selective metering through the lens.

Leica M6 with electronic metering and LED viewfinder display.

Leica M8: the first digital rangefinder camera.

Leica Noctilux-M 50 mm f/0.95 ASPH.: the world's fastest ever aspherical lens.

Leica S2: the professional digital camera sets new standards in medium-format photography.
Leica M9: the smallest digital system camera with a full-frame sensor.
Leica X1: the first compact camera with an APS-C sensor.

Leica X2: the trailblazer of its class in picture quality.



The Leitz Optics building, Wetzlar.



Lens element and assembled lens testing.



Leica X camera: fitting the shutter speed dial.

of whether they are used professionally, for art photography, or simply a passion for documenting life: they help the photographer to concentrate exclusively on what's essential – the perfect image. Each one is a small masterpiece. Leica cameras are compact, ageless, elegant, easy to use and yet uncompromising in their optical, mechanical and technical quality. They are the perfect tools for everyone who understands the fascination of photography and who loves a unique photograph.

IN THE BEGINNING WAS **LEICA**

From an idea to a legend.

Photography cannot stop the course of time. Yet it can capture, document and interpret fleeting moments. It creates a memory of a moment for eternity. This is one of the reasons why we take photographs. Thanks to Leica, today, it is possible for everyone to record their memories in pictures. Because, around 100 years ago, Oskar Barnack changed photography with his stroke of genius. He designed and constructed a camera with a film format of 24 × 36 mm: the Ur-Leica. Small, robust and simple to operate, this camera paved the way to photography as we know it today.

In 1954, the launch of the Leica M-System, with its combined viewfinder and rangefinder concept, opened up vast new horizons in photojournalism and artistic photography. And of course with perfect image quality, too. Because that is the standard against which every innovation and development at Leica is measured: the perfect image. These underlying principles also characterise Leica's motivation to create camera systems that are unique in their synthesis of intuitive handling, precision and ultimate optical performance – and, not without good reason, have always been the chosen tools of the best photographers, who have employed them in capturing an entire universe of emotive images.

The Leica S-System marks a further breakthrough that can be justifiably compared with Oskar Barnack's invention – a revolution that began the age of 35 mm photography: the innovative sensor format of the Leica S2 is no less than an incomparably ambitious redefinition of the quality levels that can be achieved with a camera system conceived for mobile use. The Leica S-System – the highlight thus far of a history uncompromisingly dedicated to the technical perfection of the photographic image.



Joachim Baldauf captured this image of Christina Kruse with a Leica S2.

- 1849 Carl Kellner founds the “Optische Institut Wetzlar” (“Wetzlar Optical Institute”).
- 1865 Ernst Leitz joins the company as a partner and gives it his name.
- 1913 Oskar Barnack constructs the Ur-Leica.
- 1925 The LEICA I with a fixed lens is premiered at the Leipzig Spring Fair.
- 1930 The first Leica with a screw mount and three interchangeable lenses appears on the market.
- 1932 The LEICA II with a built-in coupled rangefinder is launched.
- 1954 The LEICA M3 with bayonet mount and combined bright-line viewfinder and rangefinder brings in a whole new era.
- 1965 The LEICAFLEX is the first Leica single lens reflex camera to go into production.
- 1966 The LEICA NOCTILUX 50 mm f/1.2 is the first serial-production photographic lens constructed with an aspherical element.
- 1968 The LEICAFLEX SL is the first camera with selective metering through the lens.
- 1971 The LEICA M5 is the world’s first rangefinder camera with selective metering through the lens.
- 1975 The development of new glass enables the construction of the extremely fast LEICA NOCTILUX 50 mm f/1.0 lens.
- 1976 The LEICA R3 is the first electronic Leica with selective and centre-weighted integral metering.
- 1980 The LEICA R4 is Leica’s first multiprogram SLR.
- 1996 Leica introduces the microprocessor-controlled LEICA R8 single lens reflex camera.
- 1996 Introduction of the LEICA S1, a digital camera with an image resolution of 75 megapixels.
- 1998 The LEICA DIGILUX is the first digital Leica compact camera.
- 2003 Introduction of the LEICA DIGITAL MODULE-R, a digital back for the Leica R8 and R9.
- 2006 Leica launches the LEICA M8 digital rangefinder camera.
- 2008 Leica introduces the S-System as an independent digital single lens reflex camera system at Photokina.
- 2009 Introduction of the LEICA M9 with a 35 mm full-frame sensor and the compact LEICA X1 with an APS-C-format CMOS sensor.
- 2009 Market launch of the LEICA S2 camera with a sensor in 45 × 30 mm Leica ProFormat and the first S-Lenses.

LEICA **S**

In a class of its own.





LEICA S

In a class of its own.



The Leica ProFormat enables the lenses of the S-System to fully exploit their superior optical performance while simultaneously offering ideal levels of creative freedom.



In combination with the Leica ProFormat, the ultimate precision and compact design of the S2 guarantee both outstanding performance and perfect handling.

In the design and construction of a completely new and purely digital camera without the need to employ a classical recording format, it makes sense to also take the opportunity to select a sensor format that provides an ideal balance between imaging quality and creative capabilities. This ideal balance is fulfilled by the sensor of the Leica S2 with its dimensions of 45×30 mm: the Leica ProFormat solves problems that could not be solved by established standard photographic formats. The Leica ProFormat offers the same aspect ratio as 35 mm format, but is significantly larger. At the same time however, it is smaller than the classic medium format. The larger the format, the shallower the depth of field for the same angle of view, meaning that shallow depth of field can be used all the better for the isolation of details.

However, if the format is too large, the opportunity for the creative use of planes of sharpness also means that it becomes essential to stop down significantly to achieve an even slightly greater depth of field. In 35 mm format, and particularly in the case of wide-angle photography, extremely fast lenses are needed to accentuate planes of sharpness. In contrast, medium-format photography requires an enormous amount of light to achieve sufficient depth of field. At the same time, stopping down sharply has negative effects on lens performance. The format of the Leica S2 lies comfortably and ideally between these extremes: even in the wide-angle domain, S-Lenses permit the precise emphasis of planes of sharpness. At the same time, the selection of moderate apertures is sufficient to extend the depth of focus, allows the use of available light, and exploits the full performance potential of every lens.

LEICA S

In a class of its own.



Actual size

THE IDEAL FORMAT

The Leica S-System was conceived exclusively for digital photography from the ground up, and offers professional photographers a unique combination of functional advantages. It unites the imaging quality of a medium-format camera with the mobility, speed and versatility of a 35 mm camera. The innovative Leica ProFormat with its 45 × 30 mm sensor dimensions simultaneously enables compact camera design and a resolution of details at a much higher level than would ever have been possible in 35 mm format. At the same time, it preserves the familiar aspect ratio of 3:2, which enables a clear distinction between portrait and landscape formats, and is ideal for use in all contemporary media. The Leica S-System – an ideal symbiosis of ergonomics and performance.

LIGHTWEIGHT AND FAST

The design and form of the Leica S2 guarantees the superior speed and versatility needed for working on the move and in the studio. Its sophisticated ergonomic concept relies on a minimum number of controls that ensures perfect handling at all times, even in the most hectic situations. Thanks to its compact form and extraordinarily fast lenses, the S2 lets photographers achieve typical medium-format quality, even when shooting without a tripod and in available-light situations. Its fast autofocus, fine-tuned for maximum precision by Leica, is a further guarantee for perfectly sharp and richly detailed images. The body, the lenses and all other components of the S-System are sealed against dust and spray, are extremely robust and are built with a long working life in mind.

THE ULTIMATE IN LENS PERFORMANCE

The S-System lenses are specifically designed and constructed for use on a digital camera. The exceptionally fast lenses offer photographers everything they could wish for at all apertures and distances. No matter what the shooting distance, the S2 offers the highest optical performance at maximum aperture, so photographers can rely on the superior performance of S-Lenses in every situation. The central shutter versions of all the S-Lenses enable particular flexibility in the creative use of light – in every situation, whether on location or in a studio setting.

LEICA **S-LENSES**

For the ultimate in photographic perfection.

Image quality depends upon the quality of the lenses used. This is why our design engineers always push the limits of what is technically possible – and never accept compromises. In the case of the lenses for the S-System, legendary Leica quality is combined with cutting-edge technology. Our commitment to quality is founded on a simple principle: photographers must be able to rely completely on their lenses in all shooting situations and under all conditions. That is the reason Leica S-Lenses deliver excellent imaging performance, not only at all focusing distances, but also at all apertures.

The unique combination of many years of experience and state-of-the-art production methods makes Leica the only manufacturer with the ability to produce even large-diameter, aspherically ground lenses of this quality in serial production.

Leica also harnesses its expertise in using the highest quality grades of glass, which are extremely complex to work with and possess essential properties such as anomalous partial dispersion or a particularly high refractive index. Every Leica S-Lens also has its own integrated processor for all control functions of the autofocus. At the same time, the photographer can override the autofocus at any time and set the distance manually with the focusing ring. In addition, all Leica S-System lenses are also available with an innovative central shutter to guarantee maximum flexibility when using flash.



SUMMARIT-S 1:2.5/35 ASPH

LEICA

E209604

LEICA S-LENSES

For the ultimate in photographic perfection.

OUTSTANDINGLY FAST

All Leica S-Lenses are unusually fast – an outstanding feature, particularly when compared with conventional medium-format lenses. A decisive factor in this is that they achieve very close to their optimum performance even at maximum aperture – this enables the photographer to use the best possible aperture for their creative needs in every situation. Stopping down brings only marginal improvement, and the fast initial aperture offers unrivalled creative freedom for photographers to explore planes of sharpness and less sharpness to isolate specific details of their subjects. With the interplay of precisely defined planes of sharpness and harmoniously resolved areas of less sharpness, visual effects that can only be achieved with the degree of perfection offered by Leica lenses unfold. At the same time, these extremely fast lenses ensure an intensely bright and clear viewfinder image that guarantees outstanding image assessment, even when focusing manually.

CONSISTENT SYSTEM INTEGRATION

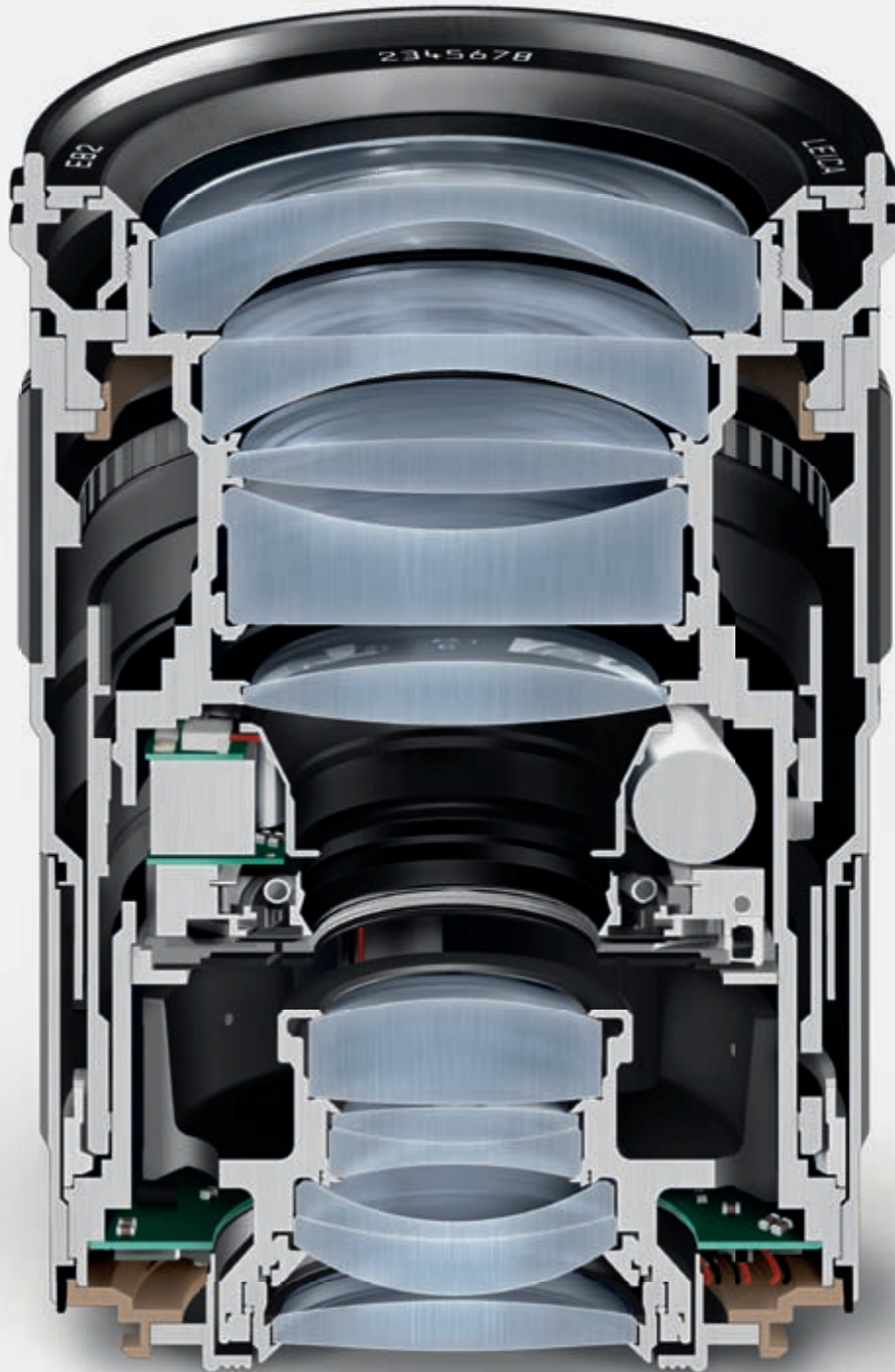
The purely digital concept of the S-System enables a significant improvement in imaging quality. For instance, the glass screen of the image sensor for all lenses and the dust and spray protection elements available with several lenses have been included as factors in their optical design. The image sensor of the S2 cannot be separated from the camera, is integrated with extreme precision, and, in contrast to film, has a much narrower and more precisely defined plane of sharpness. This in turn enables the use of optical designs that increase contrast rendition performance to previously unimagined levels. Such performance potential can only be fully exploited with an equally precise autofocus mechanism, and here, the microprocessor in every S-Lens works in perfect unison with the camera's control systems: the contacts of the interface between the camera and lens constantly relay and exchange data, commands, distance measurements and much more. Thus, during every exposure, the camera and lens are a single and inseparable entity that, thanks to painstaking and reciprocal fine-tuning of both its components, delivers perfect image quality in every situation.

MANUFACTURING PRECISION MAKES THE DIFFERENCE

Excellent design is only one part of the secret of these lenses, the other is extreme precision in their construction. All S-Lenses are built with a high proportion of manual expertise by highly qualified specialists. Only decades of experience in the development of the interaction between optical and mechanical manufacturing and assembly to ever new heights of perfection make it possible to achieve the extremely precise tolerances demanded by the design specifications of each high-performance Leica lens. Our technical staff don't simply adjust until a value is somewhere within the defined tolerances, they take the time to ensure maximum precision. And this is the only way to ensure an ambitious design becomes a perfect product. It is not just the unique number of manual production phases that are typical of Leica, but also the consistent use of mechanical and automated procedures wherever they offer benefits within the production process. For example, aspherical lens technologies: no other manufacturer possesses Leica's immense experience in the production of aspherical lenses – a treasure trove of knowledge and expertise, without which the extreme performance characteristics of the Leica S-Lenses would never have been possible.

PERFECTLY PROTECTED

Just like all other components of the S-System, the lenses are perfectly protected against environmental influences such as dust and moisture. The focusing ring can even be used in the rain and it is impossible for water to enter the lens barrel, through either the bayonet mount or around the front lens. The exposed glass surfaces of all S-Lenses also feature Leica's water and dirt repellent AquaDura™ coating, which, in a similar way to a lotus leaf, prevents the adhesion of drops of water and particles of dirt. This also means that the age-old problem of condensation misting the front lens in cold weather is now a thing of the past and that, even in the rain, the S2 is always ready to shoot.



Made in Germany: Master craftsmanship and advanced technology – these are the key factors in the production of Leica high-performance lenses.

LEICA **ELMARIT-S** 30 mm f/2.8 ASPH. (CS)

The extreme wide-angle.

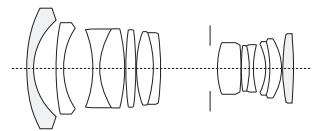


A WIDE VIEW OF THE WORLD

The LEICA Elmarit-S 30 mm f/2.8 ASPH. (CS) has an angle of view equivalent to that of a 24 mm lens in 35 mm format, therefore almost belonging in the domain of super-wide lenses. At the same time, the lens is optimised for maximum contrast rendition and highest resolution from its widest aperture, and guarantees a constantly high level of quality from its closest focusing distance to infinity. The extraordinary degree of correction of this optical design is reflected, for example, in its almost complete freedom from distortion. The Leica Elmarit-S 30 mm f/2.8 ASPH. is also available as a CS version with a central shutter.

CONSTRUCTION DETAILS

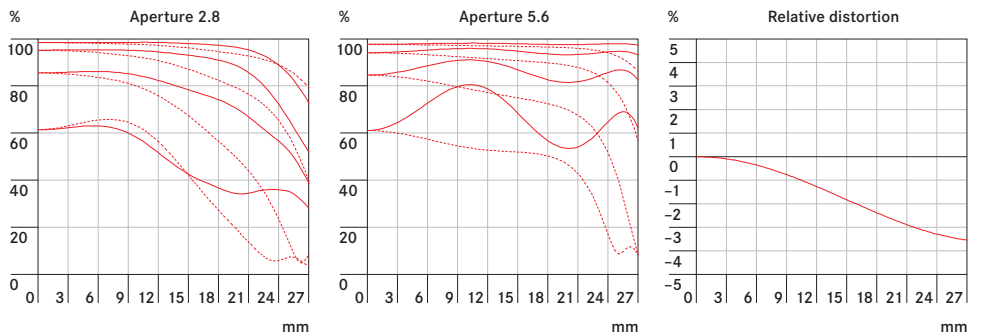
Of its 13 elements in nine groups, five are made of glasses with anomalous partial dispersion. Three of these are fluoride lens elements with particularly low dispersion for the correction of chromatic aberrations. Three elements with a particularly high refractive index and two aspherical elements minimise monochromatic aberration. Only the rear group, containing six elements, moves during focusing, which ensures excellent performance from infinity to its closest focusing range.



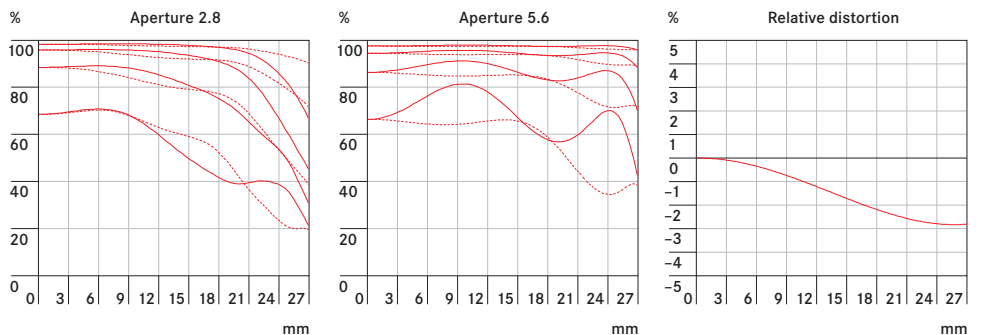
□ ASPH.

PERFORMANCE CHARACTERISTICS

At minimum focusing distance



At infinity



For a lens with a diagonal angle of view of 84°, the contrast rendition is already extraordinarily high at its maximum aperture. Stopping down increases its optical performance to only a very slight extent in the extreme corners of the image. The maximum distortion of 2.8% is impressively low for such an extremely wide-angle lens. The contrast values are displayed here in percent for 5, 10, 20 and 40 lp/mm for the height of the Leica ProFormat for tangential (dotted line) and sagittal (continuous line) structures.

LEICA **SUMMARIT-S** 35 mm f/2.5 ASPH. (CS)

The fast universal wide-angle.

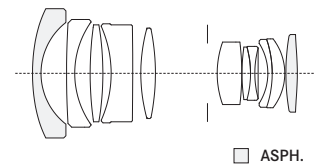


THE LENS FOR EVERY SITUATION

The angle of view of the Leica Summarit-S 35 mm f/2.5 ASPH. (CS) corresponds to that of a 28 mm lens in 35 mm film format and is an ideal focal length for landscape and architectural photography, as well as for studio work. Systematically designed with maximum contrast performance at maximum aperture from infinity to its closest focusing distance, this unusually fast lens is predestined for use as a universal lens. Its sophisticated design and construction almost completely eliminate optical errors such as distortion and chromatic aberration. The Leica Summarit-S 35 mm ASPH. f/2.5 is also available as a CS version with an integrated central shutter.

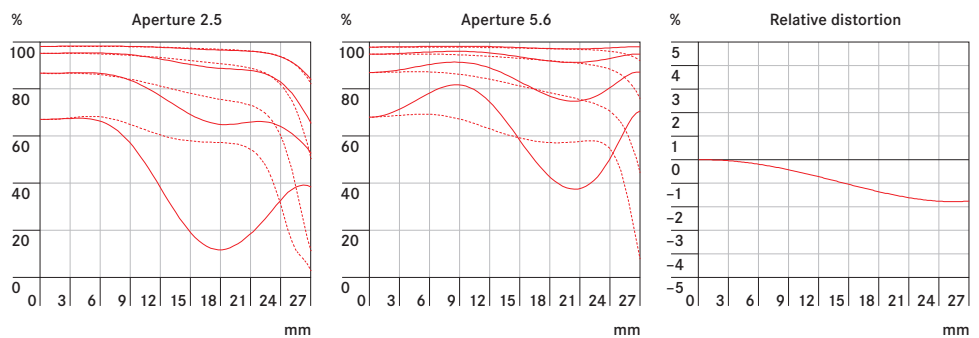
CONSTRUCTION DETAILS

To reduce chromatic aberrations to an absolute minimum, five of the 11 lens elements are manufactured from glasses with anomalous partial dispersion, of which three also display particularly low dispersion characteristics. Two elaborately manufactured aspherical surfaces ensure that effects like distortion are kept to an extraordinarily low level. Rear-group focusing guarantees consistently outstanding imaging properties from infinity to its closest focusing distance.

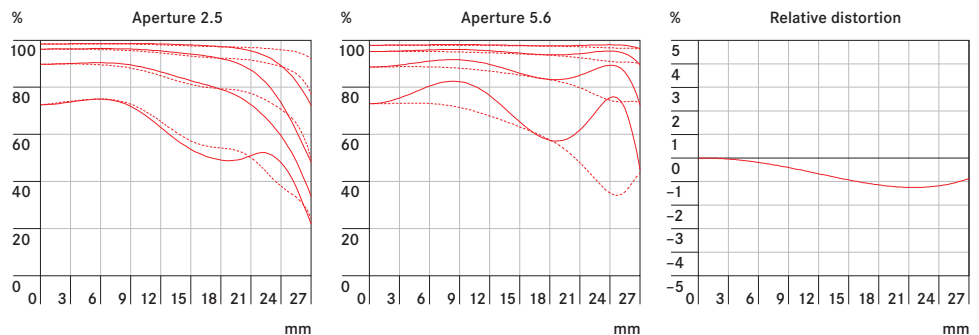


PERFORMANCE CHARACTERISTICS

At minimum focusing distance



At infinity



Considering how fast this lens is, the high contrast performance at maximum aperture is even more remarkable. Stopping down slightly lets the lens develop its already superior performance into the extreme corners of the image. Its very low distortion of only 1.2% enables its use as a universal lens and requires no additional correction or manipulation in postprocessing. The contrast values are displayed here in percent for 5, 10, 20 and 40 lp/mm for the height of the Leica ProFormat for tangential (dotted line) and sagittal (continuous line) structures.

LEICA **SUMMARIT-S** 70 mm f/2.5 ASPH. (CS)

The high-performance standard lens.

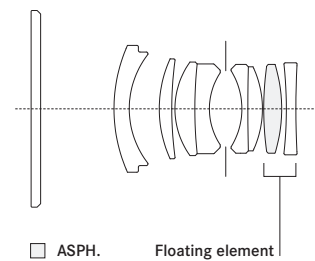


STANDARDS
REDEFINED

The Leica Summarit-S 70 mm f/2.5 ASPH., also available in a CS version with a central shutter, is suitable as a standard focal length for an enormous range of photographic situations, and, thanks to its speed and superior imaging quality, masters them at all apertures and focusing distances. The use of aspherical surfaces to almost completely eliminate monochromatic aberration is unusual for this focal length, and underlines the exceptional character of this lens.

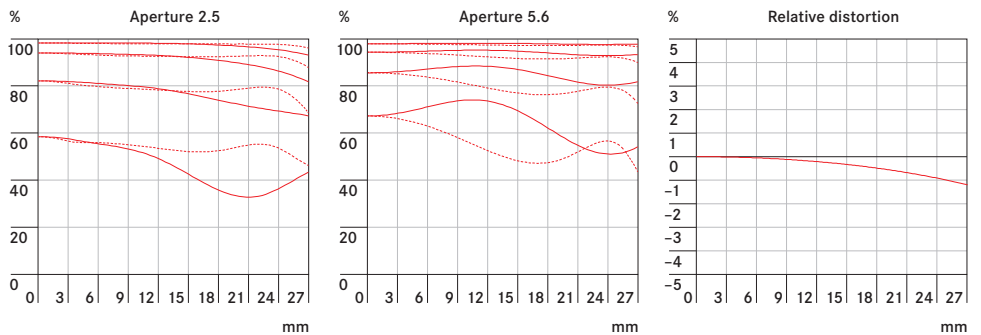
CONSTRUCTION
DETAILS

The eight lens elements of the Leica Summarit-S /70 mm f/2.5 ASPH. (CS) are arranged in six groups. Two cemented elements made from glasses with high anomalous partial dispersion minimise chromatic aberration, while glass with extremely high refractive indices and an aspherical element counteracts monochromatic aberrations. The built-in front filter is an integral part of the optical design and provides optimum protection against dust and spray. In this design, focusing in combination with a floating element ensures excellent performance in the close focusing range.

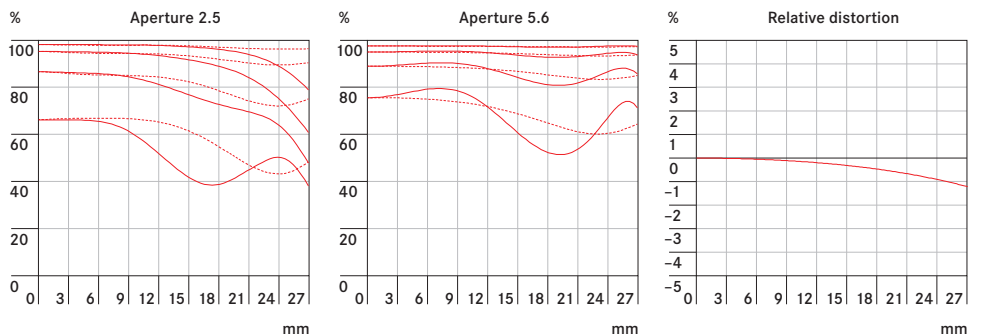


PERFORMANCE
CHARACTERISTICS

At minimum focusing distance



At infinity



This lens finds unlimited uses in practice thanks to its consistently high levels of performance. It achieves close to its maximum contrast rendition at its largest aperture. Stopping down even slightly brings perfect corner-to-corner sharpness. Its maximum distortion value of 1.2% is significantly below a perceptible level. The contrast values are displayed here in percent for 5, 10, 20 and 40 lp/mm for the height of the Leica ProFormat for tangential (dotted line) and sagittal (continuous line) structures.

LEICA **APO-MACRO-SUMMARIT-S** 120 mm f/2.5 (CS)

The perfect portrait lens.

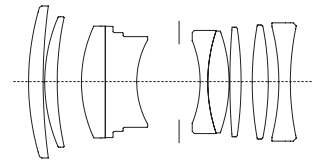


MUCH MORE THAN
JUST A PORTRAIT LENS

The Leica APO-Macro-Summarit-S 120 mm f/2.5 (CS) has a true dual function. Firstly, it is a macro lens for close-up photography up to a reproduction ratio of 1:2 and, secondly, it is a fast telephoto lens with an unusually wide maximum aperture of f/2.5. At the same time, it offers such astounding imaging qualities at maximum aperture throughout its entire focusing range that stopping down really only increases the depth of field, but cannot further increase its superior contrast rendition. This brings countless fascinating options for exploring the creative opportunities offered by selective sharpness. The alternative CS version with a central shutter further increases its enormous range of potential uses.

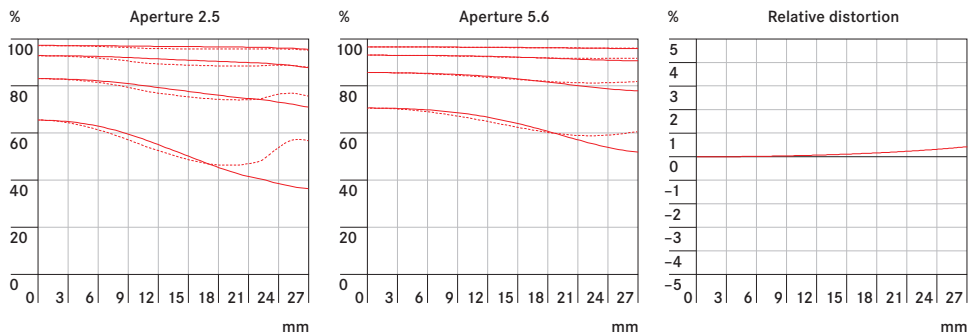
CONSTRUCTION
DETAILS

The lens design comprises nine elements in seven groups, and its front-group focusing with a floating element guarantees outstanding contrast performance at even the shortest focusing distances of the macro domain. Three elements are made of glasses with anomalous partial dispersion and two of these have extremely low dispersion, which minimises monochromatic aberrations. The sophisticated APO correction enables perfect resolution of even high-contrast, fine-detail structures.

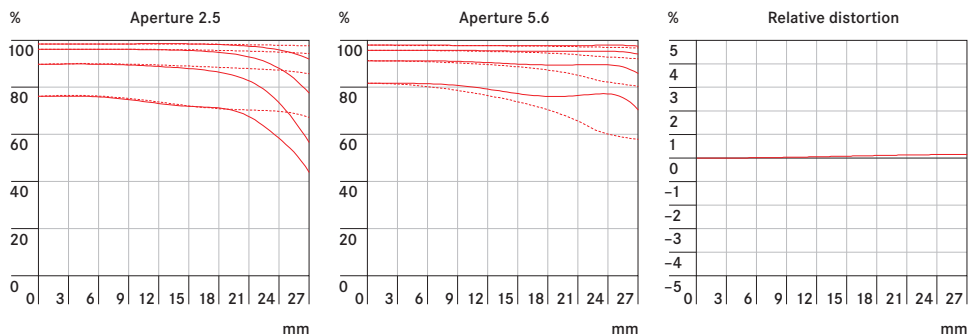


PERFORMANCE
CHARACTERISTICS

At minimum focusing distance



At infinity



The unusually fast initial aperture for this focal length, and for a lens designed for macro photography, already delivers almost perfect contrast performance wide open, which can be improved only slightly at the extreme edges of the frame by stopping down a little. This applies equally to both the macro and telephoto domains. The minimal barrel distortion remains insignificant in practice. The contrast values are displayed here in percentages for 5, 10, 20 and 40 lp/mm for the height of the Leica ProFormat for tangential (dotted line) and sagittal (continuous line) structures.

LEICA **APO-ELMAR-S** 180 mm f/3.5 (CS)

The ultimate in long lens photography.

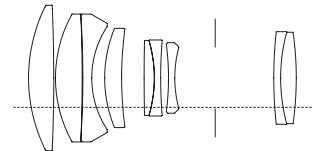


CUTTING
THE DISTANCE

The Leica APO-Elmar-S 180 mm f/3.5, also available as a CS version with a central shutter, sets new standards of quality for handheld telephoto photography. It's a fact: as the contrast performance cannot be improved any further by stopping down, wide open is a working aperture, and optical errors are practically unknown to this ultra-high performance lens. Thanks to its high speed, this lens is outstanding for the creative use of selective focus in portraits. At the same time, its closest focusing distance of only 1.5 metres makes it ideal for fascinating close-up studies. In studio work, the greater camera-to-subject distance helps by creating more space for setting up the lighting, for example.

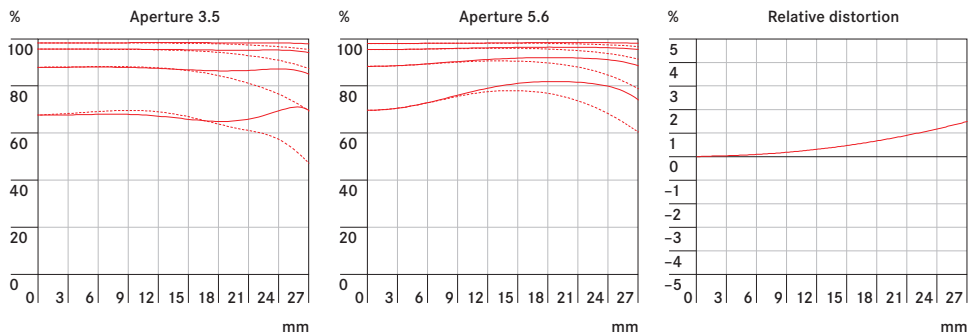
CONSTRUCTION
DETAILS

The design of the apochromatically corrected Leica APO-Elmar-S 180 mm f/3.5 (CS) consists of nine elements in seven groups. Of the six lenses made from glasses with anomalous partial dispersion, two have particularly low dispersion and are instrumental in the elimination of chromatic aberrations. Three lens elements made from glass with a high refractive index almost completely eliminate monochromatic aberrations.

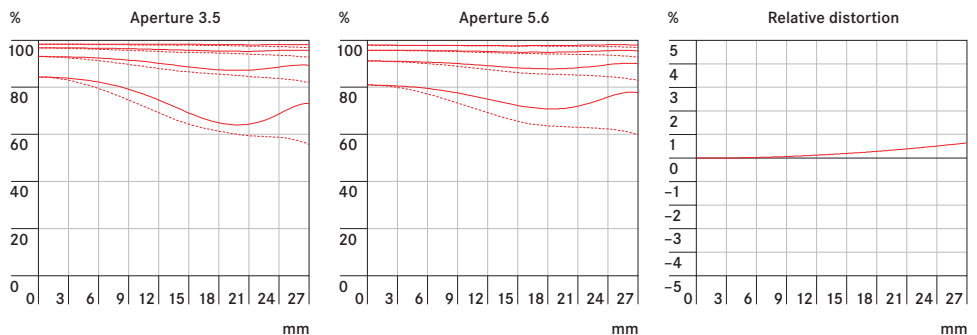


PERFORMANCE
CHARACTERISTICS

At minimum focusing distance



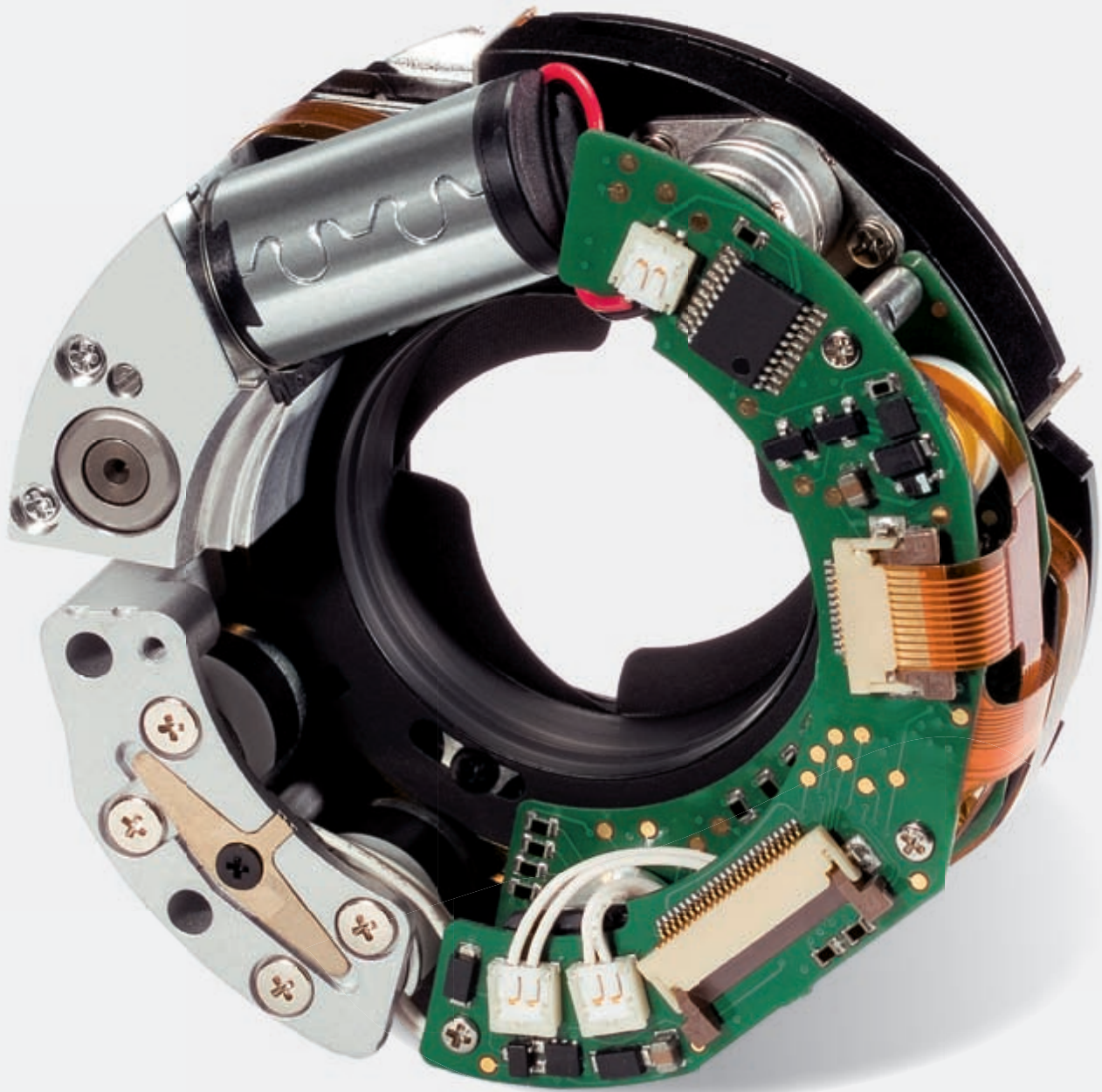
At infinity



The power to resolve extreme contrasts and the consistent edge-to-edge performance of this lens are extraordinary in every respect. In actual use, the improvement of its optical performance when stopped down, hardly perceptible in the MTF curves, has no effect whatsoever on the extraordinary imaging qualities of this lens. The contrast values are displayed here in percentages for 5, 10, 20 and 40 lp/mm for the height of the Leica ProFormat for tangential (dotted line) and sagittal (continuous line) structures.

LEICA **S-LENSES**

The central shutter.



Precision technology - made in Germany:
every Leica S-Lens is also
available with a central shutter.

CREATIVE CONTROL

Conceived, designed and constructed exclusively by Leica, the central shutter available for all Leica S-Lenses is a masterpiece of precision and reliability. Bigger inside than out: the Leica central shutter has a very large inner diameter to cater for the extraordinarily fast initial apertures of the Leica S-Lenses. At the same time, it is so compact in size that it can be easily integrated into every S-Lens. It is constructed with an extremely long service life of at least 100,000 shutter cycles and, with its fastest shutter speed of 1/1000th of a second, offers photographers significantly greater exposure leeway when working with professional flash systems for the suppression of ambient light or as fill lighting in bright settings when using larger apertures. This offers even more scope for exploring your creative limits.

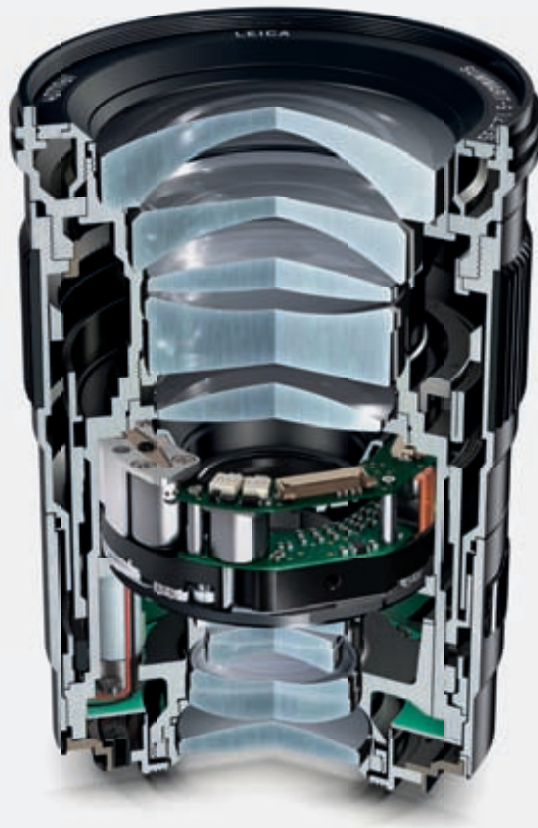
THE CHOICE IS YOURS

Photographers using a Leica S2 can choose between the fast metal focal plane shutter in the camera body and a top speed of 1/4000th of a second and the special benefits of the central shutter integrated in CS lenses. All they have to do is simply select either “Focal Plane Shutter” (FPS) or “Central Shutter” (CS) with the main switch on the camera body. When using flash, the shortest sync speed with the focal plane shutter is 1/125th of a second. In contrast, the central shutter offers flash sync up to its fastest speed of 1/1000th of a second and thus expands the working range by a whole three stops.

FAST FOCAL PLANE SHUTTER

The focal plane shutter designed especially for the Leica S2 is extremely fast and offers a top speed of 1/4000th of a second. This offers photographers a wide range of options – not only for freezing fast-moving subjects, but also the opportunity to use larger apertures in brightly lit situations. When using flash with lenses without a central shutter, the focal plane shutter offers flash sync speed of up to 1/125th of a second.





The Leica central shutter is so compact that it was easily integrated into all S-Lenses.

SUPERIOR CONSTRUCTION

The Leica central shutter is a masterpiece of mechatronics and a product that owes much to the decades of precision engineering, microtechnology, electronics and materials expertise of our design engineers. Even though it employs the classic solution of mechanical springs for the efficient storage of potential energy, the central shutter is a piece of cutting-edge technology. The tensioned-spring principle employed contributes significantly to the extremely compact dimensions that allow the integration of the central shutter in all S-Lenses.

The springs are tensioned by a specially developed electric motor with a high-precision overrunning clutch and release their stored energy to activate the shutter blades when the shutter release is depressed. A specially constructed solution ensures that the blades are prevented from rebounding when the shutter is opened or closed. A microprocessor-controlled pawl and ratchet mechanism controls the shutter cycle via two electromagnetically activated plungers.

CUTTING-EDGE MATERIALS

Lubricants and oils are as out of place in an optical system as dust and abrasion particles. In view of this, the Leica central shutter is constructed exclusively from state-of-the-art high-tech materials and with manufacturing methods that ensure the practically frictionless interaction of all moving parts without the need for lubricants. For instance, the shutter blades are made from precision-engineered carbon fibre. Several of the shutter's control elements are manufactured from high-performance ceramics, while other components are made from special synthetic materials. The surfaces and drilled holes of all components are elaborately machined with extreme precision and polished in a way that ensures that there is practically no friction and, in turn, no wear.

This consistent use of the latest high-tech materials, manufacturing and finishing methods that push the limits of the technically possible, is unique in the production of a mass-produced element like the Leica central shutter.



The central shutter is completely vibration-free and incredibly fast. Its high-performance construction enables shutter speeds of up to 1/1000th of a second and full flash system synchronisation at all shutter speeds. The use of cutting-edge materials in combination with meticulous construction and assembly procedures guarantees extreme reliability and a long service life.

EXTREME RELIABILITY

A professional camera like the Leica S2 must be absolutely dependable in every situation. Due to the sometimes enormous stresses on their components, central shutters are among the most sensitive components of a camera system. All the more reason for our design engineers to concentrate on the enduring reliability and robustness of the central shutter for our S-Lenses. It stands up to at least 100,000 cycles without any issues and is therefore just as reliable as every other component of the Leica S-System.

Above all, the design and construction of the central shutter makes this possible: wherever there is contact between moving parts, carefully selected combinations of materials, precise fitting and surface finishing that pushes the limits of the technically possible ensure practically frictionless operation. And where there's no friction, there's no wear – so consistent performance is guaranteed. A Leica central shutter guarantees shutter-speed precision, day in, day out – for its first exposure and after many years of demanding professional use.

MADE IN GERMANY

The Leica central shutter is a completely new design that owes much in its technical achievement to the most modern of advanced materials and manufacturing methods, which have only become available in the recent past. Only in this way is it possible to combine the ingeniously simple and exceedingly compact operating principle of the Leica central shutter with outstanding reliability and utmost precision.

Nevertheless, the true secret of the central shutter may well be found in its construction and assembly, because here the finishing of surfaces and fitting of components require the highest levels of precision, which demand so much from our highly qualified teams of experts. Each shutter is assembled in a clean-room environment after thorough cleaning of every single component. Each assembled shutter must then pass through a series of stringent testing and calibration processes before it can be installed in a CS lens. Only these meticulous procedures can provide the absolute guarantee that the shutter will accurately maintain its speeds without any variations – for many, many years to come.

LEICA **S-LENSES**

S-Adapters for third-party lenses.



The S-Adapter H supports all the original functions of Hasselblad HC and HCD lenses.

The Leica S-Adapters allow Hasselblad H and V lenses and lenses from the Mamiya 645 and Pentax 67 systems to be mounted on the Leica S2. This offers users of these systems the chance to discover the extraordinary image quality and compact size of the Leica S2 while maintaining their earlier investment in lenses. At the same time, it also means that the Leica S2 can be used with the largest selection of lenses in the medium-format segment.

THE LEICA S-ADAPTER H

The S-Adapter H allows all Hasselblad H System lenses to be mounted on the Leica S2. Thanks to an integrated microprocessor, the adapter allows photographers to use all the original functions of both Leica S2 and the Hasselblad lenses. The autofocus and manual override functions of the lenses are preserved with absolute precision. The integrated central shutters of the lenses can be used up to the maximum shutter speed of 1/750th of a second as an alternative to the focal plane shutter of the Leica S2. Full electronic aperture control allows the use of aperture priority, shutter speed priority and program AE modes.





Thanks to the electronic communication between the S2 and the Hasselblad lenses, the camera also registers the selected aperture, shutter speed and other parameters in the EXIF data of each image file. Leica has also computed lens profiles for the digital correction of optical errors in Adobe® Photoshop® Lightroom® and Camera Raw. The S-Adapter H is fully compatible with all Hasselblad HC and HCD lenses. It is, however, not compatible with the extension tubes for close-up photography, the teleconverters, or the tilt/shift converter.

THE LEICA S-ADAPTER V, M645 AND P67

Purely mechanical lens adapters are also available for the Hasselblad V, Mamiya 645 and Pentax 67 systems. As no electronic communication for aperture control or potentially available central shutters is provided, these lenses may only be used in conjunction with the focal plane shutter of the Leica S2. In such cases, the aperture is set on the lens and the Leica S2 provides the corresponding shutter speed in aperture priority mode. All Leica S-Adapters are manufactured from high-quality materials such as anodised aluminium or chrome-plated brass.

COMPATIBILITY

Lenses compatible with S-Adapters

	Hasselblad H		
	HCD 28 mm f/4 HC 80 mm f/2.8 HC 150 mm f/3.2 HC 50–110 mm f/3.5–4.5	HC 35 mm f/3.5 HC 100 mm f/2.2 HC 210 mm f/4 HCD 35–90 mm f/4–5.6	HC 50 mm f/3.5 II HC Macro 120 mm f/4 II HC 300 mm f/4.5
	Hasselblad V		
	Zeiss Distagon CFI 30 mm f/3.5 Zeiss Distagon CFI 60 mm f/3.5 Zeiss Makro-Planar CFE 120 mm f/4 Zeiss Sonnar Cfi 250 mm f/5.6	Zeiss Distagon CFE 40 mm f/4 Zeiss Planar CFI 80 mm f/2.8 Zeiss Sonnar CFI 150 mm f/4	Zeiss Distagon CFI 50 mm f/4 Zeiss Planar CFI 100 mm f/3.5 Zeiss Sonnar CFE 180 mm f/4
	Pentax 67		
	SMC 67 35 mm f/4.5 Fish-Eye SMC 67 75 mm f/2.8 AL SMC 67 105 mm f/2.4 SMC 67 300 mm f/4 SMC 67 600 mm f/4 SMC 67 1000 mm f/8 SMC 67 100 mm f/4 Macro SMC 67 300 mm f/4 ED IF SMC 67 90–180 mm f/5.6	SMC 67 45 mm f/4 SMC 67 90 mm f/2.8 LS SMC 67 165 mm f/4 LS SMC 67 400 mm f/4 SMC 67 800 mm f/4 SMC 67 Macro 135 mm f/4 SMC 67 120 mm f/3.5 Soft SMC 67 400 mm f/4 ED IF	SMC 67 55 mm f/4 SMC 67 90 mm f/2.8 SMC 67 200 mm f/4 SMC 67 500 mm f/5.6 SMC 67 800 mm f/6.7 EDIF SMC 67 Shift 75 mm f/4.5 SMC 67 165 mm f/2.8 SMC 67 55–100 mm f/4.5
	Mamiya 645		
	24 mm f/4 50 mm f/4 Shift 80 mm f/1.9 120 mm f/4 APO 150 mm f/3.8 LS 300 mm f/5.6 500 mm f/4.5 APO TS 120 mm f/5.6	35 mm f/3.5 55 mm f/2.8 80 mm f/2.8 150 mm f/2.8 200 mm f/2.8 APO 300 mm f/2.8 APO 55–110 mm f/4.5	45 mm f/2.8 55 mm f/2.8 LS 80 mm f/4 Macro 150 mm f/3.5 210 mm f/4 500 mm f/5.6 105–210 mm f/4.5

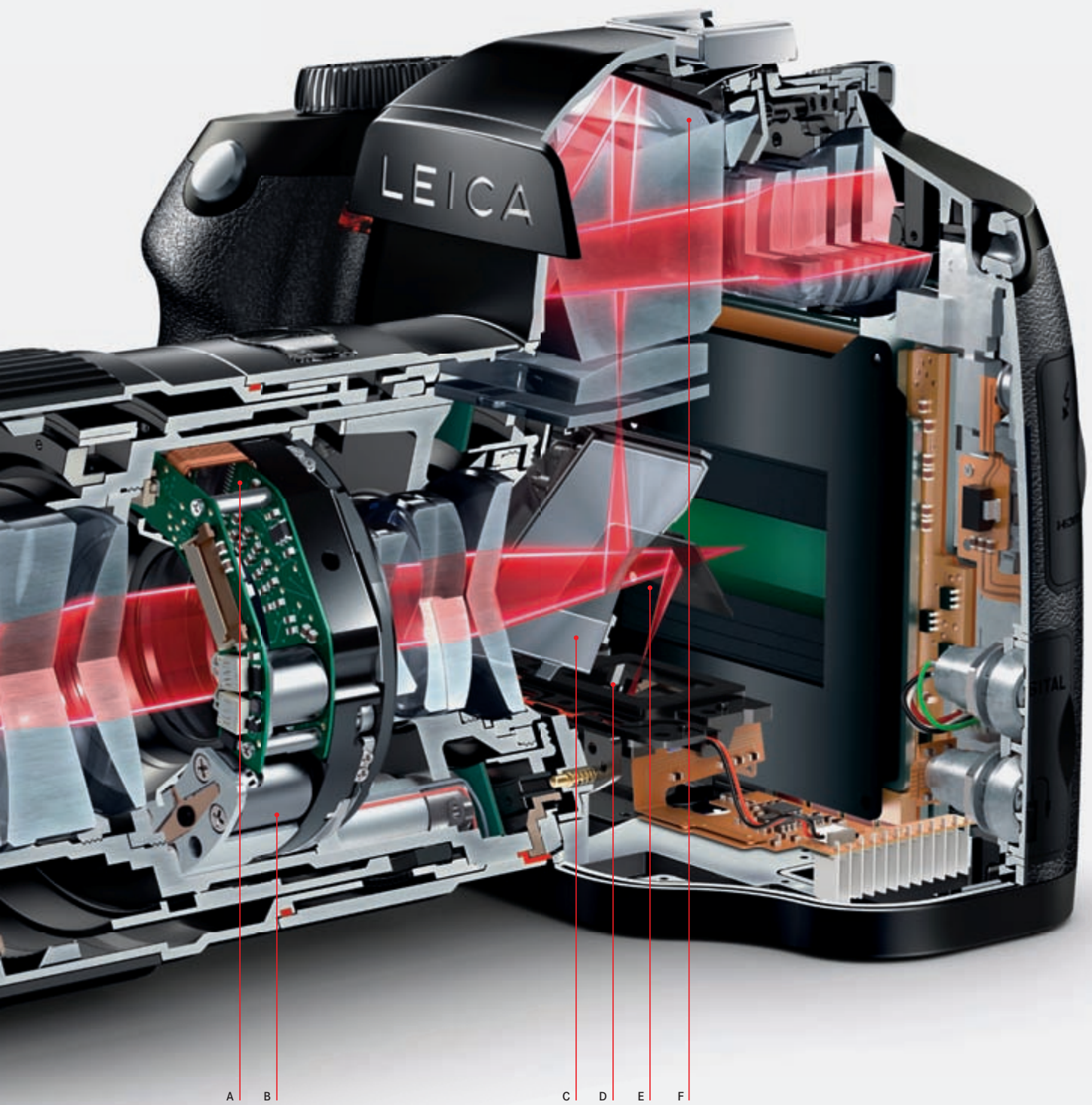
LEICA **S-LENSES**

The autofocus.

- A LENS PROCESSOR
- B AUTOFOCUS MOTOR
- C PARTIALLY TRANSPARENT MIRROR
- D AUTOFOCUS SENSOR
- E AUXILIARY MIRROR
- F VIEWFINDER DISPLAY



Only precise focusing reveals the full performance potential of the S-Lenses. Leica has developed an extremely high-performance autofocus system for the S-System that, although fundamentally similar to other AF systems, includes a number of advanced features. For example, additional sensors ensure that warming and colour temperature have no influence on its measuring accuracy, and that photographers can always rely completely on its focusing precision.



The AF system from Leica guarantees optimum productivity by ensuring more successful shots – without making the immense technical effort involved noticeable to the photographer. All they have to do is select the AF mode or take advantage of focus control in manual focusing mode – whichever they choose, exposures will be brilliant and pin-sharp in every detail and in every situation.

LEICA S-LENSES

The autofocus.



Flexible changeover from autofocus with focus or release + focus priority and manual focusing (full-size view).

GREAT PRECISION

The size of the Leica ProFormat and the fast S-Lenses with their corresponding shallow depth of field demand significantly greater autofocusing precision. Every S-Lens employs an innovative, magnetoresistive sensor to precisely measure the momentary distance setting and contains an exact table for the linearisation of the measured value of the AF sensor in the camera. The colour of light can also influence the measured values, and this is why the S2 also features an additional external sensor that recognises the ambient colour temperature and provides significant additional data for the determination of the correct white balance for the image. The precise and robust design and construction of the autofocus motor is also instrumental in ensuring consistently perfect focusing.

FLEXIBLE FOCUSING CONTROL

With a Leica S2, photographers always have complete control over the focusing process. They can choose between release + focus or focus priority AF modes, or can switch to manual focusing to set their desired plane of focus. A specially constructed mechanism in the lens ensures a reassuringly comfortable resistance when focusing manually and a focus throw that is sufficiently long to work precisely. The autofocus also assists photographers working in manual mode. The focus confirmation indicator in the viewfinder is an ideal aid to determining the correct focusing distance. If the easily accessible AF/AE memory button is set to the AF-L position, the autofocus can be temporarily activated even when the camera is set to manual mode.



In the S-System, focusing is controlled by the built-in 'brain' of each lens.

HIGH SPEED

The innovative Leica autofocus concept with its central cross sensor combines speed with precision. For instance, the camera automatically varies the size of the AF metering field within a split second to meet the needs of the photographic situation. One factor in the choice of the size of the AF metering field is the camera-to-subject distance determined by the magnetoresistive sensor installed in the lens. For subjects at greater distances, the measuring process begins with a somewhat wider AF metering field to ensure the fastest-possible determination of the distance, before narrowing it down automatically to precisely locate the details important to the composition. At shorter shooting distances, the system automatically selects a narrower AF metering field from the start. This metering strategy enables a simultaneously fast and accurate definition of the plane of focus.

INTELLIGENT LENSES

Every Leica S-Lens has its own 'brain' in the form of a microprocessor with its own firmware that autonomously controls the focusing process. This immense technical effort ensures that the focusing control can be ideally harmonised with each individual lens and its mechanical system. The focusing driver system itself comprises a high-precision motor and is designed and constructed to ensure low noise and a long service life. This sophisticated drive concept guarantees utmost precision and sufficiently high torque to focus even the larger Leica S-Lenses with outstanding speed and precision.

LEICA S2

Versatile, practical, ideal handling.

The Leica S-System was conceived from the ground up as a purely digital camera system and was built with the precise needs of professional photographers in mind. This meant that it was possible to create a camera system with a freely selectable format to enable an ideal symbiosis of excellent imaging quality and ideal handling. Perfect image quality has always been a good reason for choosing a Leica. At the same time, fast, uncomplicated and simple handling is an equally important factor in the everyday work of professional photographers. Photographers must be able to have an intuitive feel for the camera and its settings at all times, and particularly in hectic situations. The system must be light and compact enough to be used handheld for long periods without stress or strain. And, last but not least, it must be designed and constructed for a long and reliable service life, under even the toughest conditions.

The Leica S2 fulfils all these requirements: despite its large sensor format, it has an extremely compact body with dimensions that are reminiscent of a 35 mm SLR rather than a medium-format camera. It features a unique operating concept that relies on only a minimum of buttons and switches to enable fast and convenient access to all settings and functions. Thanks to the extremely robust construction of all its components, the system retains its residual value over many years of constant use. A further reason for this is the consistent protection of the camera and all its lenses against dust and water spray, meaning practical elements are as important as image quality when choosing such an essential working tool.



LEICA S2

Intuitive handling.



Actual size

When you hold a Leica S2 in your hands, you find the controls exactly where you expect them to be. Their layout and design, similar to that of a classic 35 mm SLR, is based on the maxims of ensuring intuitive handling in every respect, for instance by the combination of familiar elements like the shutter speed dial with state-of-the-art control components. Everything about the Leica S2 is dedicated to providing photographers with all they need for a spontaneous way of working.



Actual size

3 |

- 1 CONCENTRATION AND MINIMALISATION
- 2 BRIGHT AND CLEAR DISPLAY
- 3 BUILT TO FIT THE HAND
- 4 CONNECTIVITY
- 5 PERFECT ENERGY EFFICIENCY
- 6 SD AND COMPACT FLASH

You can find out more online at www.s.leica-camera.com and www.s-league.net.

LEICA S2

Perfect ergonomics.



Actual size

2 |

5 |

6

In the design of the camera control elements, Leica intentionally concentrated on the principle of 'less is more'. In addition to the click wheel and the main switch, also used for selecting the focal plane or central shutter, the controls on the back of the S2 are limited to a single memory button for AF and AE lock and the menu navigation buttons grouped around the monitor.

1 CONCENTRATION AND MINIMALISATION

Although a digital system camera offers numerous functions and settings, everyday professional photography demands one thing in particular – the ability to concentrate on the picture you want to achieve. With this in mind, Leica developed an intuitive operating concept for the S2 that relies on an absolute minimum of control elements. Instead of the typical ‘one button, one function’ concept, which demands a long familiarisation period, the Leica S2 offers easily accessible menus on its generously dimensioned monitor. These are subdivided into four categories: Camera, Image, Review and Setup, each of which is activated by one of the four buttons grouped around the monitor. The central control element of the S2 is the click wheel, ideally placed for operation by the photographer’s right thumb. The click wheel controls the aperture setting and helps the photographer to navigate through the menus.

The other control elements are a shutter speed dial and the main switch, which is simultaneously the switch for selecting focal plane or central shutter operation and a programmable AF/AE memory button. The most important exposure and camera data are also displayed by a bright and clear OLED panel on the top plate. In a nutshell: anyone holding a Leica S2 in their hands for the first time can rely completely on their intuition when getting to know its extensive range of functions. In fact, it sets entirely new standards in user-friendly handling.

2 BRIGHT AND CLEAR DISPLAY

The 3-inch TFT monitor on the back offers bright and clear viewing, even in brightly lit environments. It is not only ideal for checking image sharpness, but can also, if desired, display the exposure parameters and a histogram that relates exclusively to the currently viewed image segment to allow more efficient image assessment – a unique feature of Leica digital cameras. On the robust Leica S2-P, the monitor is protected by a virtually indestructible sapphire glass screen.

3 BUILT TO FIT THE HAND

The Leica S2 combines the dimensions of a 35 mm SLR with the image quality of the large format. Thanks to its ergonomically formed handgrip, the Leica S2 fits perfectly in its user’s hands, and its favourable centre of gravity enhances its suitability for longer handheld photography sessions. In comparison with traditional medium-format system cameras, where a digital element had to be combined with an existing analogue camera, the S2 has the enormous advantage that all its components are perfectly placed. The result: perfect ergonomics.

LEICA S2

Perfect ergonomics.



Actual size

Connectivity is one of the key strong points of the Leica S2. For instance, it can simultaneously record on SD and CompactFlash memory cards. Its sockets for USB 2.0 and the optional remote cable release are designed for heavy use and, if desired, an HD TV can be connected to its HDMI interface for large-screen image assessment.

4 CONNECTIVITY

The robustly built and spray-protected interfaces of the Leica S2 set brand-new standards in manageability.

Data is transferred from the camera to a Mac or PC via a LEMO High-Speed USB 2.0 socket with an integrated strain mechanism that makes it particularly robust and waterproof. The appropriate cable is of course included in the S2 package. The USB socket can be used for reading data from the memory cards, as well as for tethered shooting from a computer with the aid of the Leica Image Shuttle and Adobe® Lightroom® software supplied with the camera.

An HD TV can be connected to the camera via its standard micro-HDMI port to allow fast and efficient image assessment. The camera's X-sync socket allows professional flash systems to be triggered by the camera. As a compact alternative, flash units like the Leica SF58 or units with a SCA3002 adapter may be mounted on the accessory shoe.



Thanks to an integrated strain-relief mechanism, the LEMO USB 2.0 and remote-release sockets are particularly robust and ideal for the heavy demands of studio work.

5 PERFECT ENERGY EFFICIENCY

Another intelligent feature of the Leica S2 is its battery system: thanks to an additional safety catch, it doesn't simply drop out of the camera after unlocking. What's more, despite the compact size, each battery has sufficient reserves for around 1,000 exposures – an extremely welcome benefit for longer shoots. An empty battery can be recharged with the charger supplied with the camera within around three hours. A professional charger is available as an optional accessory, and can charge two batteries simultaneously, as well as connecting to the 12V cigarette lighter socket of any vehicle.

6 SD AND COMPACTFLASH

Opening the protective cover on the side of the Leica S2 body reveals two slots for memory cards: the photographer can choose between the robust CompactFlash cards and the much smaller SD cards – all modern high-speed cards and their current highest capacities are supported.

The presence of two card slots offers much more than a simple choice of two card types and extra storage capacity. The S2 can simultaneously write the raw data file of an image in DNG format to one card and the corresponding JPEG file to the other. This means you have immediate access to the JPEGs for quick assessment on the set and, at the same time, the raw data files in DNG format for optimisation in postprocessing after the shoot.

LEICA S2

Innovative menu control.

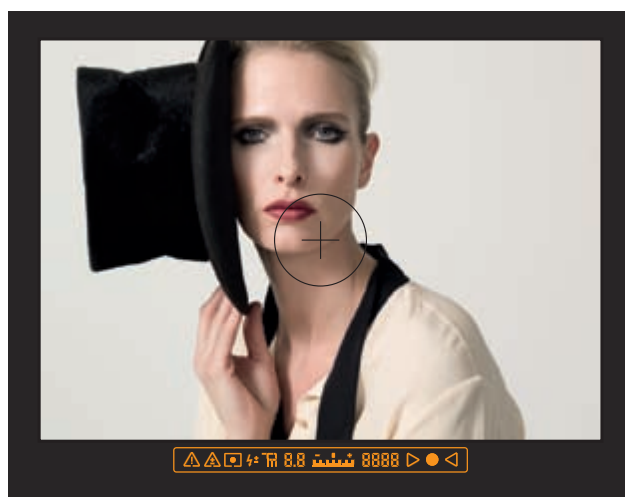


In combination with only four buttons, the clearly structured menu guarantees fast and intuitive control of all camera functions. (Actual size)

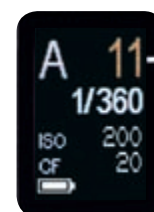
STRUCTURED MENU

During a photo shoot, all camera functions must be accessible immediately. The Leica S2 works with an unrivalled concept that is custom-designed for intuitive control: instead of linking as many functions as possible to one single control element, which can be complex, Leica has developed an ingenious and logical menu system that subdivides all settings and parameters into four distinct categories. The four buttons around the monitor lead directly to these categories: Camera, Image, Review and Setup. The monitor displays the most important settings in these categories in four segments, which makes it immediately clear which button calls up the function required.

Key camera functions like AF mode, exposure metering mode, or exposure compensation are located in the Camera menu. The Image menu contains, for example, setting options for ISO sensitivity or file formats and in Setup, the less frequently changed basic camera settings are found. In addition, the buttons can be programmed with custom functions that can then be accessed by holding down the appropriate button. Thanks to this intuitive menu concept, familiarisation with the handling of the Leica S2 is an extremely fast process and soon allows its users to concentrate on what's essential – photography.



The large, bright viewfinder of the Leica S2 shows a brilliantly clear image and displays the most important exposure information.



A glance at the OLED panel on the top of the Leica S2 shows its user the most important camera settings. (Actual size)

BRIGHT AND CLEAR VIEWFINDER

For users familiar with 35 mm DSLRs, the first look through the impressively large and bright viewfinder of the Leica S2 is a convincing argument for the advantages of the larger Leica ProFormat. The brilliant clarity of the viewfinder image, a result not only of the mirror and prism unit, but also the speed of the lenses, offers perfect qualities for assessing image composition and precise manual focusing. A single-line display along the bottom edge of the viewfinder image shows the most important exposure parameters such as the shutter speed and aperture, the focus confirmation indicator and camera settings like the exposure metering mode, exposure correction and camera mode, as well as the flash-ready symbol. So you can always see everything you need – without having to take your eye off the viewfinder.

OLED DISPLAY PANEL

The information display panel on the plate of the Leica S2 shows important parameters such as the shutter speed, aperture, exposure mode, ISO sensitivity, battery charge level and the remaining capacity on the memory cards. The panel is based on OLED (Organic Light-Emitting Diode) technology, making it clear and legible even in unusually bright shooting conditions.

LEICA S2

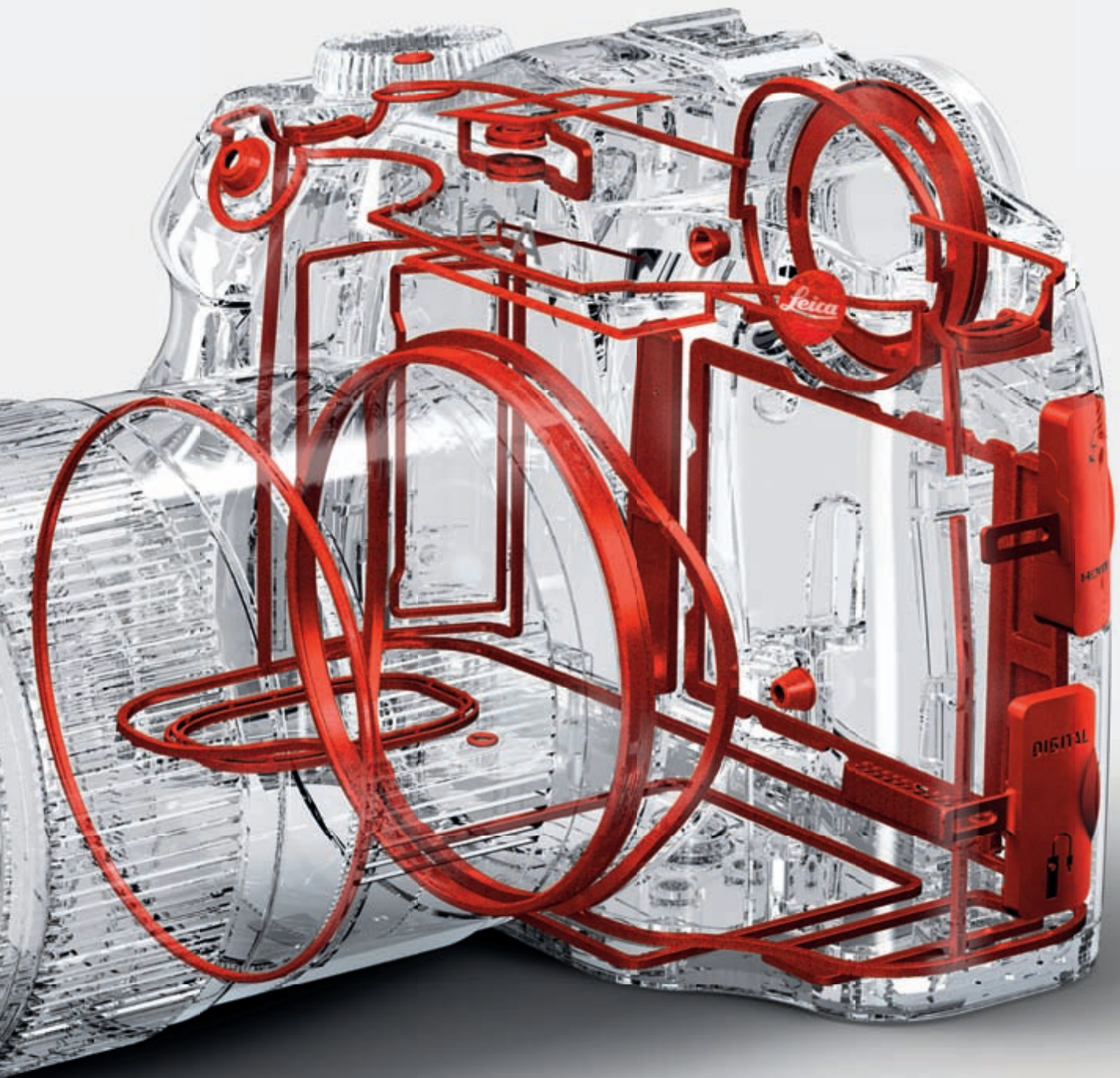
Ready for any situation.



PERFECTLY SEALED

Not all photos are shot in perfect weather or a safely protected studio. This is why all components of the S-System are protected against dust and water spray, to keep them working perfectly even in rainy weather or tough shooting conditions. The exposed surfaces of the lenses are treated with Leica's resilient AquaDura™ coating, which means raindrops just roll off the glass. This extreme protection not only safeguards the enduring value of the camera and lenses, but also makes them easier to clean.

No other camera system on the market offers such perfect all-round protection, not only for the camera but also for every lens – for instance, when shooting in the rain, the focusing rings let no trace of moisture enter the lens barrel. The technical effort required for this is immense: all control elements and all covers for output sockets or memory card slots are fitted with completely waterproof and dustproof seals.



A multitude of seals and special construction features guarantee perfect protection against dust and water.

ROBUST CONSTRUCTION

In the world of professional photography, cameras are often faced with enormous challenges. Thanks to its particularly robust construction, the Leica S2 takes them all in its stride: the entire body and the top plate are manufactured from die-cast magnesium, a tough and resilient metal that protects the valuable inner systems of the camera, even against hard knocks. At the same time, magnesium is extraordinarily light and contributes significantly to the comfortable handling of the Leica S2.

This extreme resilience applies not only to the camera body, but also to all attachments, control elements and compartment covers.



LEICA **S-SYSTEM**

Outstanding image quality.

The best images are always created on the spot, not in postprocessing on a computer. With its excellent lenses and an ideal sensor format in terms of both handling and image quality, the Leica S2 offers photographers everything they need to express their skills and creativity in images with maximum data volume.

Nevertheless, a camera is only truly versatile when it leaves the options completely open to the photographer. The Leica S2 employs a universal raw data format that offers photographers no end of options for getting the best out of their images in computer-based postprocessing. Furthermore, it can generate a fully developed image in the camera immediately after exposure. With an S2, photographers can even choose to record DNG and JPEG files of the same image simultaneously on two different memory cards. This is made possible by Leica's independently developed, high-performance Maestro processor that sets entirely new standards in fast image data processing.



LEICA **S-SYSTEM**

Outstanding image quality.



The CCD image sensor of the S2 accepts no compromises in its dedication to ultimate imaging quality (full-size view).

The outstanding imaging quality of the Leica S2 cannot be attributed to just one component of the system. Every single component is optimised to perfection, but its true powers are shown by their interaction.

Decisive proof of this can be seen in the 37.5-megapixel CCD image sensor with offset microlenses and an infrared blocking filter that works together with the high-performance Maestro processor to ensure that every creative idea leads to a correspondingly excellent image.

OPTIMUM
HARMONISATION

Image quality is not measured in megapixels alone, but is rather the result of careful attention to numerous factors and perfect harmonisation with the optical components of the system. The high resolution, enormous dynamic range and extremely low susceptibility to image noise of the CCD image sensor designed especially for the Leica S2 guarantees outstanding image quality. For instance, the optical properties of the glass screen in front of the sensor are included in the lens calculations, as is the focal plane, which is much more precisely defined than in film photography. The image quality achieved is only possible because the S-System was conceived as a purely digital camera system.

IDEAL
RESOLUTION

With its 37.5 million pixels, the CCD sensor of the Leica S2 offers a resolution suitable for images that require cropping and for printing in large format. However, what's decisive here is not the pixel count alone, but its optimum use within the framework of an overall concept dedicated solely to superior imaging quality. With a pixel pitch of six micrometres, the sensor of the Leica S2 strikes a particularly harmonious balance between high resolution and a pixel size that minimises image noise. The S-Lenses are fine-tuned for ultimate contrast rendition and are perfectly attuned to the resolving power of the image sensor. As Leica fundamentally omits the anti-aliasing filter for the prevention of moiré effects in its professional digital cameras, photographers can make full use of the theoretical maximum sensor resolution in practice. Thanks to the consistent optimisation of the entire process, from the instant the light enters the lens to its capture by the sensor and the reading of the charge packages, it is guaranteed that absolutely every single pixel of a digital image captured with a Leica S2 contains significant information and that no losses occur.

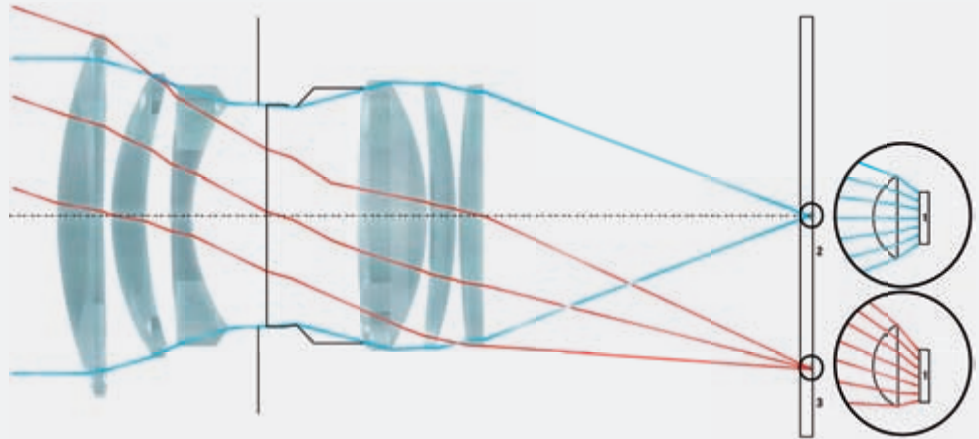
LOW NOISE
DYNAMIC RANGE

In order to cope with the extreme contrast performance of S-Lenses, the camera needs extensive reserves in terms of dynamic range. The secret of a wide dynamic range is, first of all, low image noise, and the resulting assurance that dark areas of the image show as much definition as possible. The image sensor of the Leica S2 was designed for particularly low susceptibility to image noise. At the same time, the physical interface between the sensor board and the camera chassis is also an important factor. As warming of the sensor increases image noise, the entire metal chassis of the S2 is employed as a heat sink for sensor cooling.

The S2 employs extremely precise analogue-digital converters to achieve its high dynamic range and particularly accurate and finely nuanced brightness and colour information. These guarantee superior definition in the highlights and shadows, as well as precise and natural colours. This all contributes to the camera's ability to master even the most demanding photographic situations.

LEICA **S-SYSTEM**

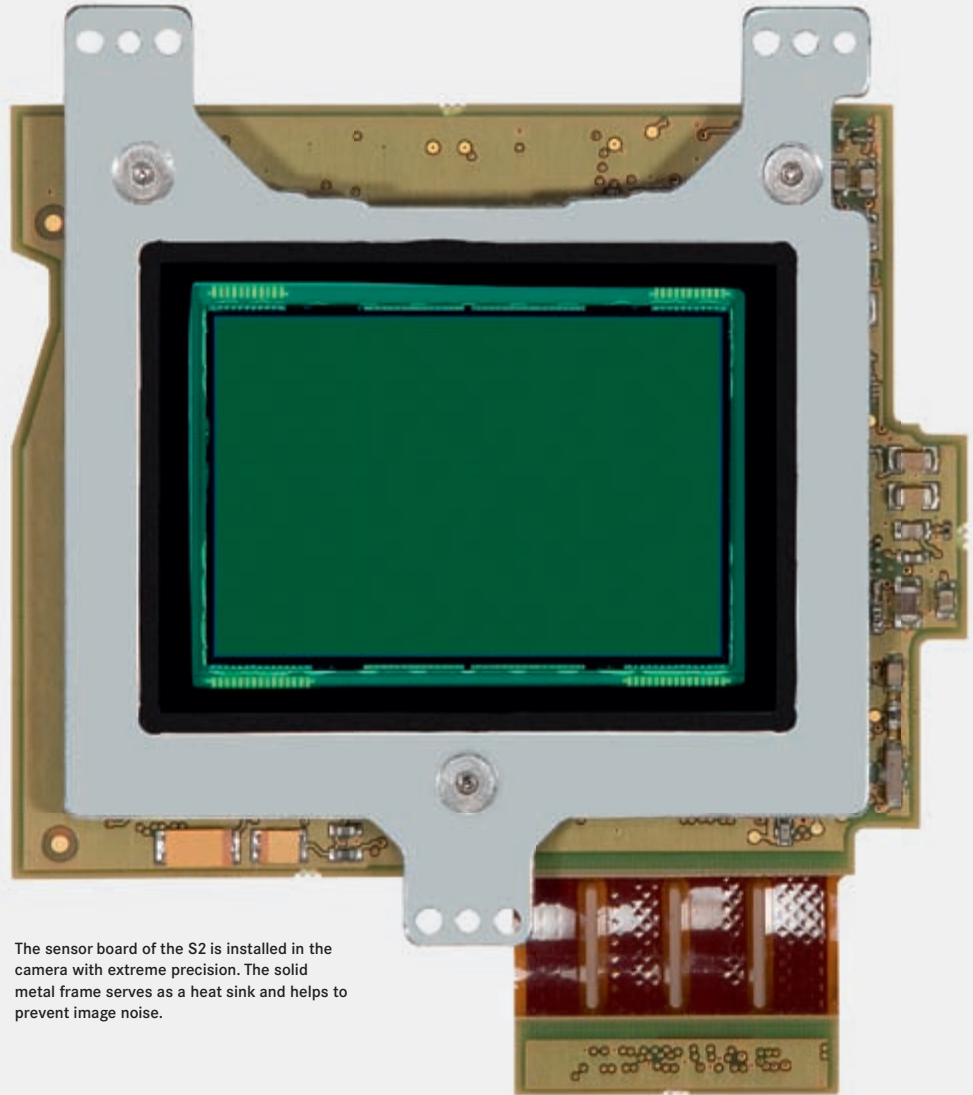
Sensor with offset microlenses.



As the microlenses at the edges of the frame are offset towards the centre, they are better able to capture oblique light, and thus avoid vignetting.

OFFSET MICROLENSES

In the Leica S2, a grid of microlenses on the sensor increases its sensitivity to light. The distinctive feature here is that the greater the distance of individual pixels from the centre of the sensor, the greater the relative offset of the microlenses. This compensates for the fact that image sensors are less sensitive to obliquely arriving rays of light at the edges, and that no lens can guarantee that incoming light rays are exclusively perpendicular to the sensor surface. The offset microlens solution was planned into the S-System concept from the beginning and is a feature that ensures that all Leica S-Lenses are practically free of vignetting.



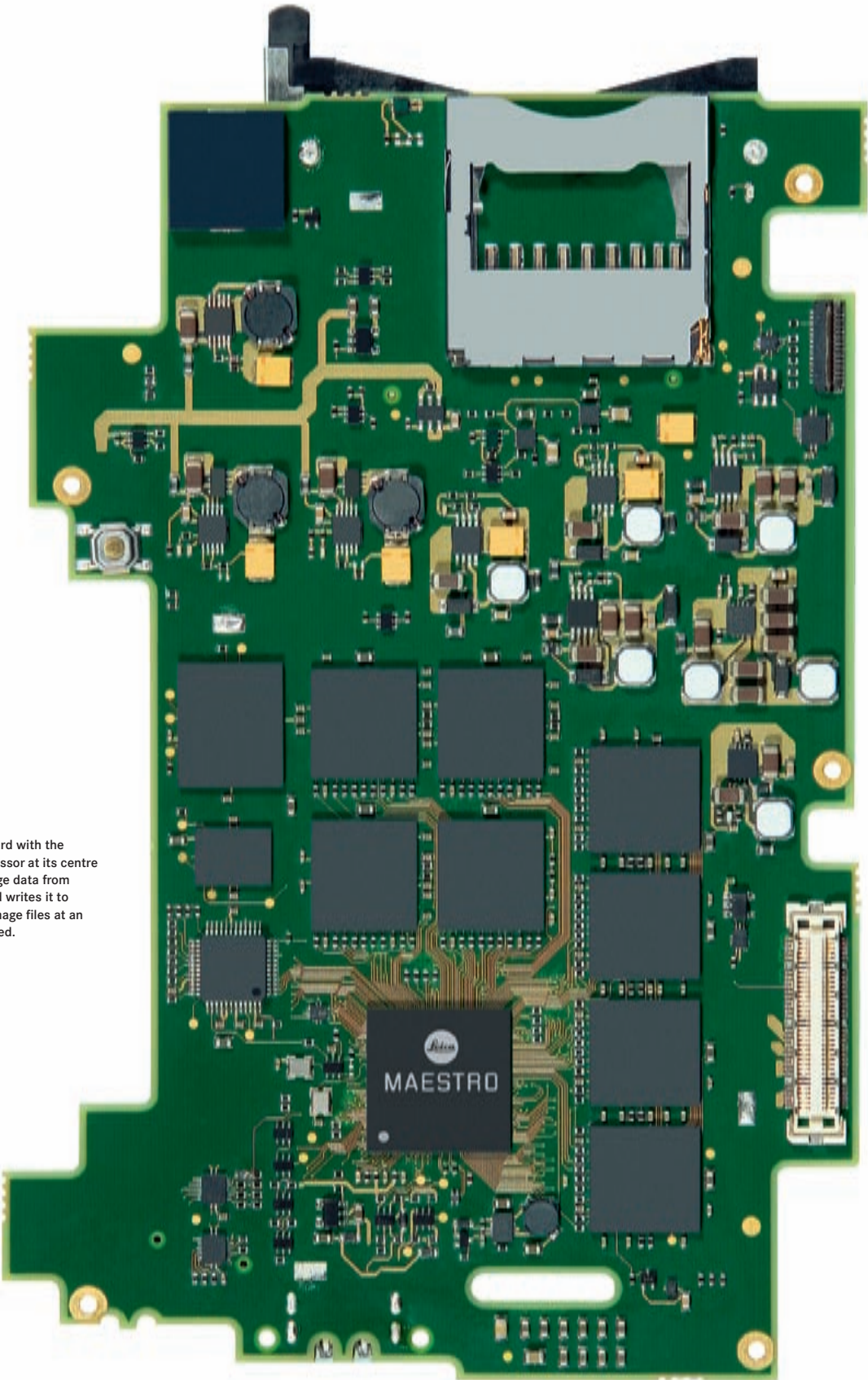
The sensor board of the S2 is installed in the camera with extreme precision. The solid metal frame serves as a heat sink and helps to prevent image noise.

PERFECT PROTECTION

The sensor, especially designed and constructed for Leica, features an infrared blocking filter that prevents the corruption of its natural colour rendition by infrared light. The same special coating as used for Leica lenses is also applied to both sides of this wafer-thin glass screen. Together with the coating of the rear elements of the lenses this firstly prevents reflections, but is also extremely hard and resistant to abrasion, meaning dust and smears on the large sensor of the Leica S2 can be conveniently cleaned with readily available sensor-cleaning products.

LEICA **S-SYSTEM**

The Maestro image processor.



The image board with the Maestro processor at its centre reads the image data from the sensor and writes it to high-quality image files at an incredible speed.

ULTIMATE PROCESSING PERFORMANCE

If we consider the sensor to be the eye of the Leica S2, then the Maestro processor is its brain – a brain that processes the image data coming from the sensor at an enormous speed and transforms it into image files. This elaborately designed and constructed image processor not only makes the Leica S2 much faster than other digital cameras, it also brings some quite unique abilities.

PARALLEL COMPUTING

Jointly developed with Fujitsu, the Maestro processor custom-designed for the Leica S2 features several, in part independently active, functional units that allow it to process one image while simultaneously writing the data of the one before to the memory card, for example. Thanks to its special functions, dedicated exclusively to the needs of image processing, it can also perform complex processing steps at an extremely high speed. At the same time, its power consumption is amazingly low, which in turn contributes to the long battery life of the Leica S2. As a separate processor takes care of classic camera functions like exposure or autofocus, these are not slowed by capacities demanded for the complexities of image processing, and the Maestro processor only draws power when it's actually needed.

FAST IMAGE REVIEW

Despite the exceptionally high resolution of the sensor, the high performance of the image processor allows the Leica S2 to generate a high-quality JPEG file in the camera – parallel to a DNG raw data file destined for final optimisation on a computer, if required. The JPEG image is ideal when a small file is needed for immediate image assessment or fast transmission, as it can be viewed almost anywhere without any special software. What's more, as image properties like sharpness, contrast and colour saturation are freely definable, the quality of the JPEG files is more than adequate for high-quality postprocessing.

LEICA S-SYSTEM

Professional work flow.



Adobe® Photoshop® Lightroom® is a part of the S2 package.

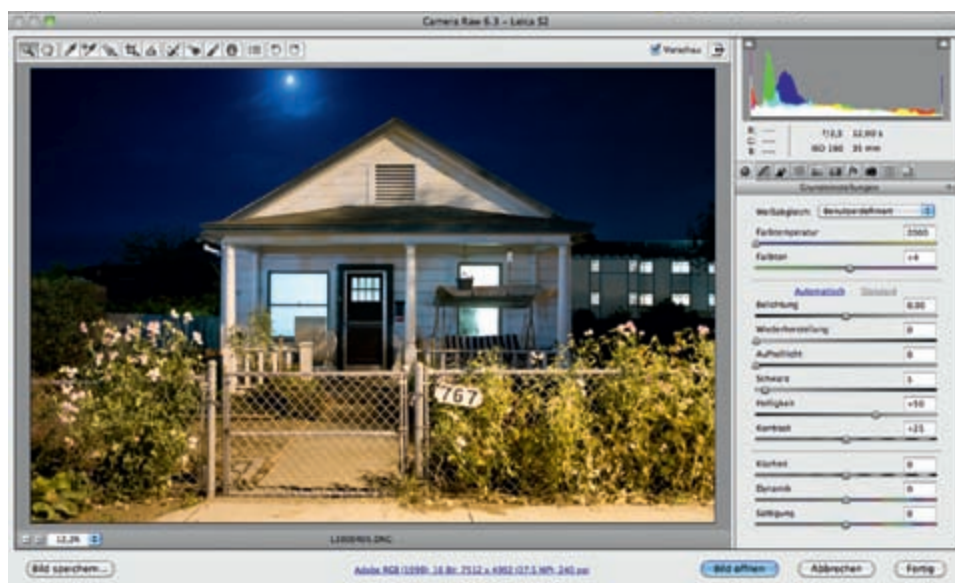
ABSOLUTE FLEXIBILITY

A camera should be flexible enough to allow a photographer to work in the way they prefer. The Leica S2 employs a universal raw data format that does not require one particular raw converter, that can, if required, generate high-quality JPEG files, supports two different memory card types, and can be remotely controlled from a computer. For photographers, this means the ability to react rapidly and flexibly to changing situations, and maximum freedom in the choice of tools for the task at hand. Nevertheless, no one is faced with difficult decisions, as the professional work flow solution Adobe® Photoshop® Lightroom® is part of the Leica S2 package.

UNIVERSAL IMAGE DATA FORMAT

The raw data from the sensor is the basic material from which images in optimum quality can be created with maximum flexibility in postprocessing. For the S2, Leica chose the DNG (Digital Negative) format developed by Adobe – the only standardised raw data format that safely preserves all image information and is recognised by all manufacturers. The majority of programs for raw data conversion or digital image processing, including Adobe Photoshop, allow the direct input and interpretation of DNG data, so S2 owners have almost unlimited freedom of choice if they wish to use their preferred work flow solution.

The Leica S2 takes advantage of all the benefits of the current DNG 1.3 standard, which generates files that contain all colour and image information, along with metadata such as the distance, aperture, etc. This in turn allows processing with all programs that support this standard – without the need for specific conversions or profiles – to achieve the optimum image quality of the S2 files. The S2 can record DNG files with around 75 megabytes per image in uncompressed format, or in absolutely lossless compressed format that requires only around half the memory space.



DNG files from the Leica S2 can be imported directly into Adobe Camera Raw.

THE RAW WORK FLOW

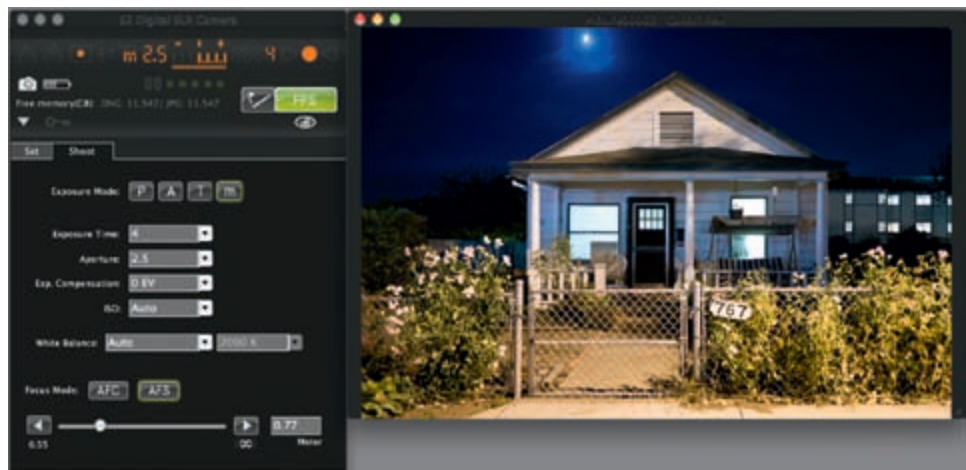
The Leica S2 package includes Adobe® Photoshop® Lightroom®, a fast and professional raw work flow solution. Lightroom is compatible with both Apple Macintosh and Microsoft Windows, and is fully equipped to serve as a control centre for all digital image processing needs: with Lightroom they have thought of everything, from importing files from memory cards, sorting (including definition of keywords) and image manipulation, to exporting images for e-mailing or directly to the Web. The extremely powerful digital image processing tools in Lightroom are perfectly designed for processing images for further use. Lightroom offers the particular advantage of a nondestructive raw work flow that leaves the original data untouched and stores all edits in a separate file. A new file with all edits applied is only created in the export phase, so there is no risk of overwriting the original data when creating several versions of the same image. Classic digital image processing software like Adobe Photoshop can be integrated into the work flow for further processing.

AUTOMATIC CORRECTION

The lenses of the Leica S-System are distinguished by an extraordinarily high degree of correction and are practically free of perceptible optical errors. Nevertheless, optical errors can never be completely eliminated. For the rare cases in which extremely critical images display phenomena such as slight curving of straight lines at the edges, Leica has calculated lens profiles especially for use in Adobe® Photoshop® Lightroom® and Adobe Camera Raw, on the basis of the construction data of the S-Lenses and extensive practical testing, that allow automatic correction of residual distortion and chromatic aberration effects (colour fringing). The technical prerequisites for the corrections to be applied are precisely registered and listed image data in the DNG files, such as the focal length, aperture and the actual focusing distance communicated by the lens. These lens profiles can save considerable time in the postprocessing phase and achieve consistently perfect imaging results under all subject-relevant circumstances.

LEICA S-SYSTEM

Professional work flow.



The Leica Image Shuttle software enables full remote control of the camera via a USB cable connected to a computer. It even allows manual focusing control from the computer.

LEICA IMAGE SHUTTLE

In studio work, it is often advantageous to control and operate the camera from a computer (tethered shooting). This setup, with automatic image transfer and the opportunities it offers for precise image assessment, can make the entire procedure much more efficient. The Image Shuttle software developed by Leica, and available in versions for Microsoft Windows and Apple Mac OS X, is an ideal solution for such situations. Connecting a computer to the special strain-relieved and robust USB port of the Leica S2 provides full remote control of the camera with Image Shuttle. Photographers can then choose between normal or tethered shooting with the Leica S2. The images are displayed immediately on the computer monitor and allow more precise image assessment than would be possible with the camera's built-in monitor. In addition, Image Shuttle offers full tethered remote control of all exposure parameters, such as the shutter speed, aperture and even lens focusing, directly from the computer keyboard. Photographers can define a specific folder for saving the incoming image files to the computer and can, for instance, automatically import images to the work flow software with the folder monitoring function.



Image Shuttle can export images directly to Adobe Bridge.

EXTENDED SOFTWARE SUPPORT

Tethered shooting, whereby the camera is connected to a computer by a USB cable, can be facilitated either with the Leica Image Shuttle software or with Adobe® Photoshop® Lightroom®. After each exposure by remote control using the software or with the camera shutter release, the image is transferred directly to the Lightroom catalogue and displayed for assessment. In addition to an extended range of control functions, users of Leica Image Shuttle also have the option to transfer images straight to Adobe Bridge and, in turn, then have direct image access from an Adobe Photoshop-based work flow.

Photographers who prefer to use CaptureOne from PhaseOne rather than Lightroom can download a special colour profile for the Leica S2 from the Leica Web site that ensures optimum colour rendition in this software package. CaptureOne does not support the Leica S2, but it does recognise DNG-format files. Image Shuttle also permits tethered shooting in conjunction with CaptureOne.

LEICA S-SYSTEM

Accessories and service packages.

Multifunction Handgrip S

Order no. (handgrip): 16003

Order no. (hand strap): 16004

The multifunction Handgrip S has a dual function: firstly, it has a compartment for an extra battery and thus doubles the number of shots you can take in one session.

Secondly, it guarantees comfortable handling and a secure grip when using the camera for shots in portrait format. To this end it offers a second shutter release, click wheel and AF/AE memory button. The Leica Hand strap S, made of neoprene, is available as an optional accessory for the Handgrip S.



S-Adapters

Order no. (Adapter H): 16030

Order no. (Adapter V): 16024

Order no. (Adapter M645): 16025

Order no. (Adapter P67): 16026

Remote release cable

Order no.: 16012

The 0.6-metre remote release cable for the S2 enables photographers to release the shutter without vibration, and is a valuable aid in numerous situations that arise when the camera is mounted on a tripod.



Focusing screens

Order no. (focusing screen): 16000

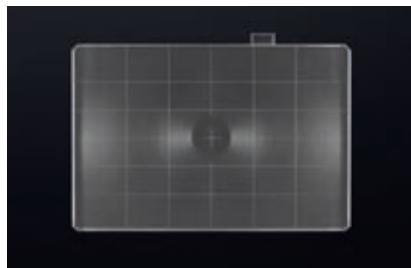
Order no. (focusing screen with grid): 16002

Order no. (focusing screen with split-image indicator and microprism spot): 16001

Users can exchange the focusing screen in the viewfinder of their Leica S2 with an absolute minimum of effort. Two alternative focusing screens are available in addition to the standard version provided with the camera: one with an engraved grid as an aid to precise camera alignment, and one matte screen with a split image and a microprism ring. These are particularly useful for S2 photographers who prefer to use manual focusing, and are also particularly helpful when using third-party lenses with S-Adapters on an S2 body.



Standard focusing screen.



Focusing screen with grid.



Focusing screen with split-image indicator and microprism spot.

Replacement battery

Order no.: 14429

High-performance, rechargeable lithium-ion battery, developed especially for the Leica S2. Constant monitoring of relevant battery data guarantees safe and convenient operation.

Professional charger S

Order no.: 16011

The Professional charger S is designed for the rapid, simultaneous and independent recharging of two batteries. The charger can also be powered from a standard vehicle cigarette lighter socket.



Leica SF 58 flash unit

Order no. (flash unit): 14488

Order no. (diffusor): 14489

The Leica SF 58 is an extremely high-performance professional flash unit offering a multitude of features. Its zoom reflector adapts automatically to cover the angle of view of all Leica S-Lenses with focal lengths from 30 to 120 mm.



THE S-SYSTEM UNIVERSE

The Leica S-System is distributed exclusively by specially qualified S specialist dealers who are able to offer professional photographers the best possible service and support. At Leica itself, a global team is dedicated exclusively to the S-System and maintains direct contact with customers. Perfect support, short communication channels and direct contact are a matter of course for a benchmark camera system such as this.

A professional camera system deserves a perfect service concept. All products in the S-System portfolio are supplied with a 12-month warranty from the date of purchase. Leica guarantees the availability of all replacement parts for at least six years after product discontinuation.

A dedicated repair helpline is available to all S-Users, ensuring faster, more efficient and shorter service channels, and guaranteeing rapid handling of repair orders. Telephone support is available to our customers throughout the entire working life of their Leica equipment.

THE SERVICE PACKAGES

The service packages for the S2 camera and S-Lenses allow users to extend the warranty period to 24 months from the date of purchase, and offer valuable extra services to meet the needs of professional photographers. The service packages offer even better assurance of equipment availability and provide a safety net for professional photographers who depend on constant camera system availability for their everyday work. Service packages can be purchased separately for cameras and lenses from authorised Leica S-System Dealers. Such specialist dealers are also the first port of call for service needs, and will organise further procedures as required.

PREMIUM SERVICE PACKAGE

The Premium service package extends the full terms and conditions of the standard warranty to a period of two years. Should a defect occur within the first three months, the product will be exchanged without delay. In addition, Premium customers also receive a once-only 30% discount on repairs for impact damage or similar damage not covered by the standard warranty.

PLATINUM SERVICE PACKAGE

In addition to the complete services of the Premium package, Platinum customers are entitled to the loan of replacement equipment for the duration of the repair. In most regions, a replacement will be made available free of charge within 24 hours. This includes once-only free maintenance by Leica customer service, including the camera or lens shutter. Platinum service is included in the S2-P package.

OVERVIEW

Service package/content	Guarantee	Premium package	Platinum package
Validity (Always valid from date of purchase of the S-Product)	12 months	24 months	24 months
1-year guarantee extension		●	●
Special Leica Repair Hotline	●	●	●
Exchange within the first 3 months after product purchase (new)		●	●
6-year availability of replacement parts	●	●	●
30% discount on repair charges		●	●
Free replacement product during repair (24 hours)			●
Free maintenance (incl. one shutter replacement)			●


Further information, details and the terms and conditions of the individual service packages may be found together with a list of authorised dealers and national representatives on our Web site at www.s.leica-camera.com.

LEICA S-SYSTEM

Technical data.

Product	Leica S2
Order no.	Leica S2 black 10 801, Leica S2-P black 10 802.
Camera type	Digital medium-format single lens reflex camera for use with Leica S-Lenses.
Image sensor	
Type	Low-noise CCD sensor.
Size	45 × 30 mm (Leica ProFormat).
Aspect ratio	3:2.
Resolution	37.5 megapixels.
Pixel pitch	6 µm.
Dynamic range	12 stops.
Colour depth	16 bits per pixel.
Colour spaces	sRGB / Adobe RGB / ECI RGB 2.0.
White balance	Presets: daylight, cloudy, shade, tungsten, HMI, fluorescent warm, fluorescent cool, flash / auto / manual set / colour temperature (Kelvin).
Low-pass filter / IR filter	No / on sensor.
Sensitivity range	ISO Pull 80 to ISO 1250 (manually or automatically controlled).
Lenses	
Lens mount	Leica S-Bayonet.
Focal length	Dependent on Leica S-Lens attached, conversion factor to 35 mm film equivalent 0.8×.
Focusing	
Type	Autofocus with central cross-sensor array, AF motor in lenses.
Focusing modes	AF single shot, AF continuous, manual.
AF memory	Activated by pressing shutter release to second resistance point, AF memory with AF lock button.
Manual focus	Focusing on lens barrel or tethered with Image Shuttle software.
Exposure setting	
Exposure metering	Multi-segment metering (5 fields), centre-weighted integral metering, selective (spot) metering (3.5% of image frame).
Exposure control	Program AE (with shift function), aperture priority AE, shutter speed priority AE, manual.
Exposure compensation	± 3 EV in half-EV increments.
Bracketing (AEB)	3/5 exposures (automatic/manual) / ½, 1, 2, 3 EV increments.
ISO sensitivity	Auto, Pull 80, 160, 320, 640, 1250.
Shutter	
Type	Vertical metal focal plane shutter integrated in camera body (FPS).
Shutter speeds FPS	1/4000s to 125 s, flash sync speed 1/125 s.
Optional	Optional central shutter in Leica S-Lenses (CS versions).
Shutter speeds CS	1/1000s to 8 s.
Viewfinder	
Type	Pentaprism viewfinder with high-eyepoint eyepiece.
Magnification	0.87× (with 70 mm lens at infinity).
Viewfinder coverage	Approx. 96%.
Diopter compensation	-3 to +1 diopter.
Focusing screen	Matt with crosshairs (interchangeable).
Display	Top-plate display (OLED), control monitor: 3-inch TFT display with 460,000 pixels, 16 million colours, Leica S2-P with extremely scratch-resistant sapphire glass protective cover.

Flash	
Connector	Hot shoe with centre and control contacts, standard coaxial sync socket.
Metering method/flash metering cell	TTL (multi-segment, selective, centre-weighted) / multi-segment photo diode.
Compatibility	Fully compatible with Leica SF 58 and flash units with SCA3002 adapters.
X synchronisation	Up to 1/125 s (FPS), up to 1/1000 s with CS lenses.
Flash exposure correction	± 3 EV in half-EV increments.
Second curtain sync	Yes.
Exposure	
Exposure modes	Single frame, continuous, self-timer 2 s (with mirror pre release), self-timer 12 s (with mirror pre release).
Data recording	
Format	DNG (7500 × 5000 pixels, approx. 75 MB per image), lossless compressed DNG (7500 × 5000 pixels, approx. 35–45 MB per image), JPEG (7500 × 5000 pixels, basic or fine, 1–16 MB dependent on image content and compression).
Maximum burst-rate capability	Max. 1.5 fps.
Image buffer	DNG max. 10 images, DNG compressed max. 14 images, JPEG no limit.
Simultaneous recording of DNG and JPEG data	Yes, arbitrary combinations of DNG and JPEG, various formats on different memory cards (e.g. DNG on CF card, JPEG on SD card).
Recording options	CompactFlash card (UDMA6), SD card (SDHC), tethered to PC.
Other functions	
Review formats	Single frame with exposure parameters, single frame, 4 thumbnails, 9 thumbnails, loupe function.
Zoom loupe function in review mode	4-step loupe function, pixel level magnification.
Delete protection	Delete protect for individual image.
Menu categories	Camera, exposure, setup, play.
Menu languages:	9 languages: English, German, French, Italian, Spanish, Russian, Japanese, traditional Chinese, simplified Chinese.
Firmware updates	User upload option.
Interfaces	
PC	High-speed USB 2.0 (LEMO socket with strain relief, cable included in package).
Other	HDMI, remote release, X flash sync, SCA3002.
OS compatibility	Windows XP, Windows Vista, Windows 7, Apple Macintosh from Mac OSX 10.5.
Software	
Provided software	Adobe® Photoshop® Lightroom® and Leica Image Shuttle, downloadable from the Leica Owners Area after product registration.
Power supply	
Battery	Rechargeable lithium-ion battery, nominal voltage 7.4 V, capacity 2100 mAh.
Battery level display	On OLED panel on top plate.
Power-saving options (sleep function)	4 steps, 2 min, 5 min, 10 min, off.
Power supply and battery charger	Rapid charger S (with integrated US mains plug, interchangeable EU, UK and AUS plugs and car adapter); inputs: 100–240 V AC, 50/60 Hz; automatic adaptation, or 12/24 V DC; output: 4.2 V DC, 800 mA.
Body	
Body material	Magnesium, black paint.
Operating conditions:	0 to +45°C, 15–80% relative humidity.
Dimensions (W × H × D)	160 × 80 × 120 mm.
Weight	Approx. 1410 g (body only, with battery).
Dust/spray sealed	Yes / yes.
Tripod thread	1/4-inch and 3/8-inch with locator holes for mounting plate antitwist locking pins.
Package includes	S2 camera, Rapid charger S, S camera battery, USB cable S (5 metres), Camera carrying strap S, bayonet cap, Eyepiece cover S and Adobe® Photoshop® Lightroom® and Leica Image Shuttle software as downloads after product registration.

 A trademark of the Leica Camera Group
'Leica' and product names = ® registered trademarks
© 2012 Leica Camera AG

HDMI, the HDMI logo and 'High-Definition Multimedia Interface' are brands or registered trademarks of HDMI Licensing LLC.

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

Concept and design: Leica Photographie GmbH, Tom Leifer Design

Product photography: Alexander Göhr

Editorial photography: Joachim Baldauf

Brochure order no.:

German 91600 | English (UK) 91677 | English (US) 91601 | French 91602 | Italian 91678

Leica Camera AG | Oskar-Barnack-Strasse 11 | 35606 SOLMS | GERMANY

Phone +49(0)6442-208-0 | Fax +49(0)6442-208-333 | www.leica-camera.com



Leica Camera AG | Oskar-Barnack-Strasse 11 | 35606 SOLMS | GERMANY
Phone +49(0)6442-208-0 | Fax +49(0)6442-208-333 | www.leica-camera.com