

Leica

LENSES



ERNST LEITZ GMBH WETZLAR
GERMANY

The progressive amateur knows why he chooses the LEICA: he needs a camera which will satisfy his high demands. With its precision and constant readiness for action the LEICA captures the live subject, however fleeting the moment.

But how many photographers really appreciate the full scope of the LEICA – especially the range of effects available with the interchangeable lenses. Nowadays, very short exposures are possible with the LEICA even in barely adequate lighting conditions – poorly lit rooms, the theatre, or circus – without the disturbance of flash. The result? Completely unspoilt natural shots. For the focal plane shutter of the LEICA permits the use of the fastest lenses.

You can get new and arresting pictorial effects by controlling perspective through your choice of focal lengths. Distant subjects loom large and close in the picture; cramped and confined views unfold themselves in their full breadth; or the observant eye of the LEICA camera man discovers a manifold world of little things with the aid of the focusing bellows.

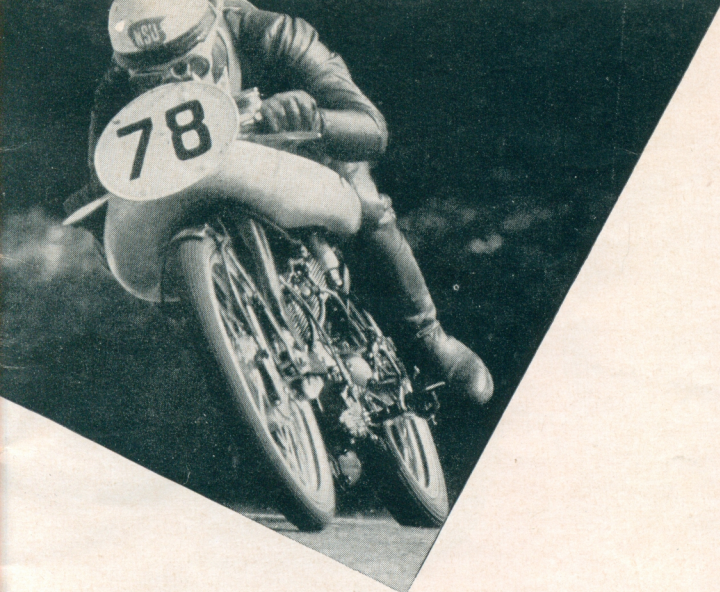
Ten matched interchangeable lenses are available for the LEICA. In conjunction with the LEICA system of equipment they provide the technical tool for tackling the most difficult photographic problems. The amateur will, however, often find that even one extra lens appreciably extends the scope of his LEICA.

Experienced LEICA enthusiasts will tell you the thrill of discovering new photographic fields with these quality instruments by LEITZ.

The following pages show how to use the LEICA lenses and what effects you can get with them. They will also help you to choose the most suitable extra LEICA lens or a more extensive lens outfit.

The illustrations and descriptions cover the lenses for the LEICA If, IIf, and III f. You can also use the same lenses on all earlier LEICA models with the standard screw mount.

The lenses for the LEICA M 3 with the bayonet mount are summarized on page 33.



Photos: top: Fritz Fenzl,
Frankfurt
right: Ungermann
bottom: S. Hartwig

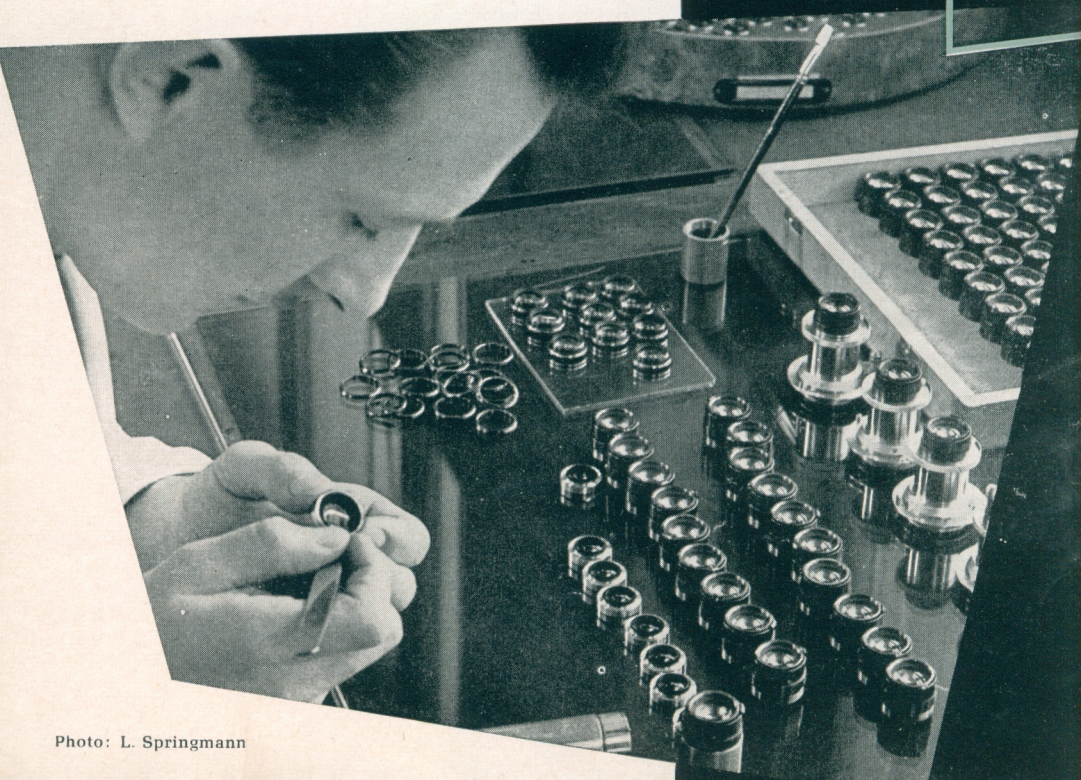
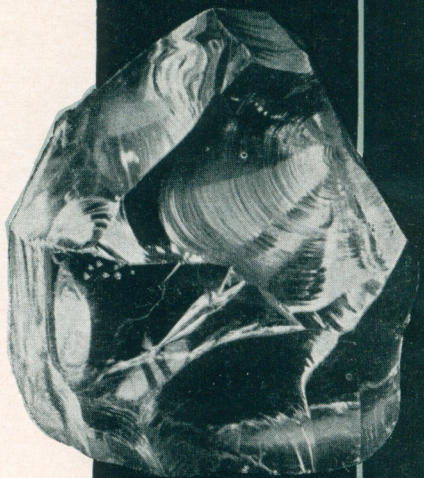


All LEICA lenses
are available with
distance scales
calibrated in metres
or feet

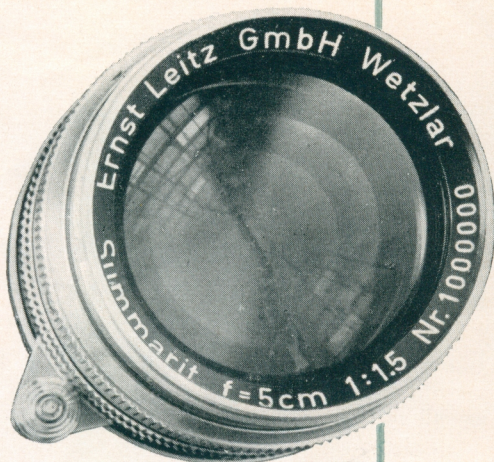
Light and Glass

Glass has the property of deflecting – or, as the expert calls it, of “refracting” – a ray of light. This is a fundamental principle of physics on which depends the design of all optical apparatus, including photographic lenses.

It is a long way from a block of glass to a high-class lens. The journey starts in the optical computing departments with the calculation of the mathematical data for the



New scientific research,
selected raw materials,
conscientious workmanship,
up-to-date production methods,
careful checks,
over a century of experience.

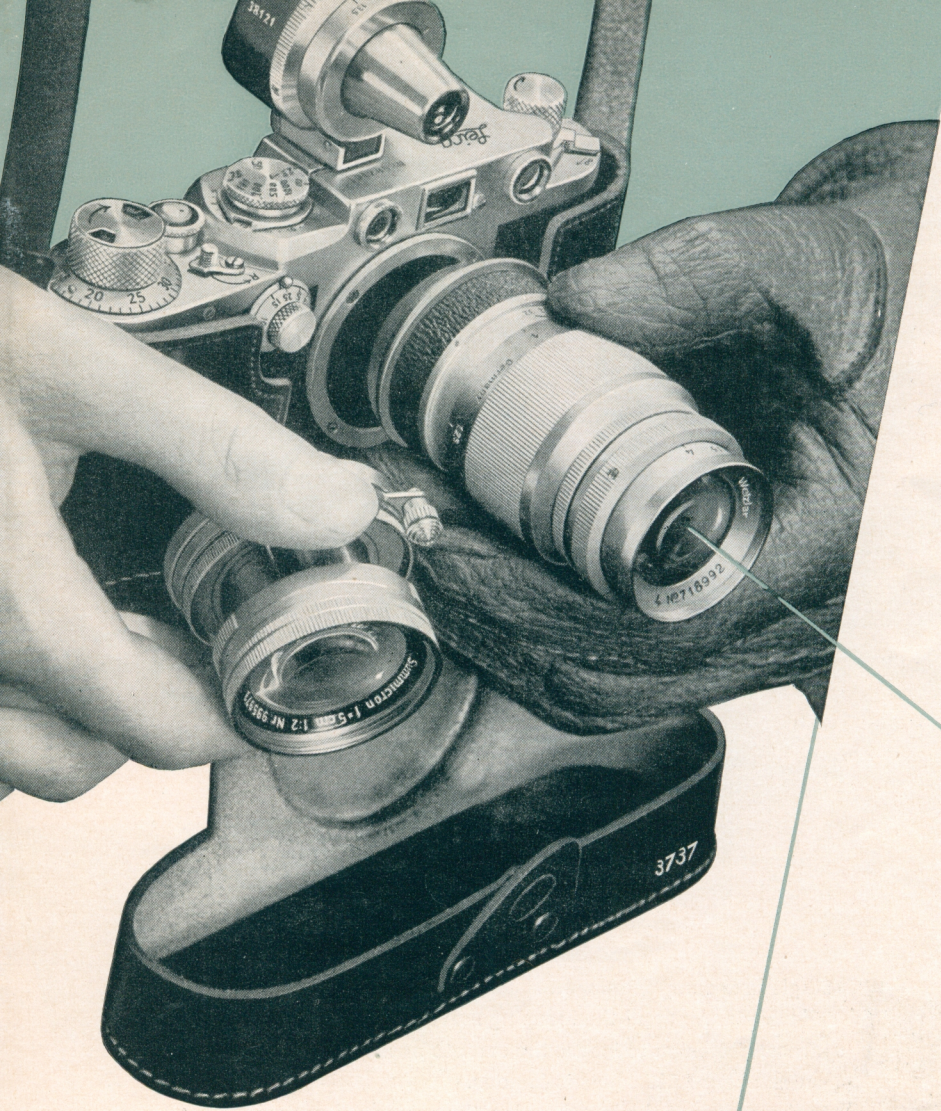


The LEICA SUMMARIT f/1.5 50 mm. lens
No. 1,000,000, made on October 24th, 1952.

lens system. It continues through the production stages where the individual lens elements undergo countless grinding and polishing operations, and on the final stages of mounting and alignment. Some LEICA lenses have no less than seven single lens components, all accurately matched to each other. The lens mount and the focusing movement are made with utmost precision to insure the smooth positive operation for which every LEITZ lens is famous.

In the course of the last decades, the science of optical computation, aided by the use of new kinds of glass and the most up-to-date production methods, has continually advanced to further levels of perfection in the LEITZ works.

It is this teamwork developed over many years and an ambition to reach still higher standards of performance, which produce such outstanding lenses in the experienced hands of LEITZ craftsmen. These lenses are the pride of every LEICA enthusiast, leading him on to still better pictures.



The Standard for All Things

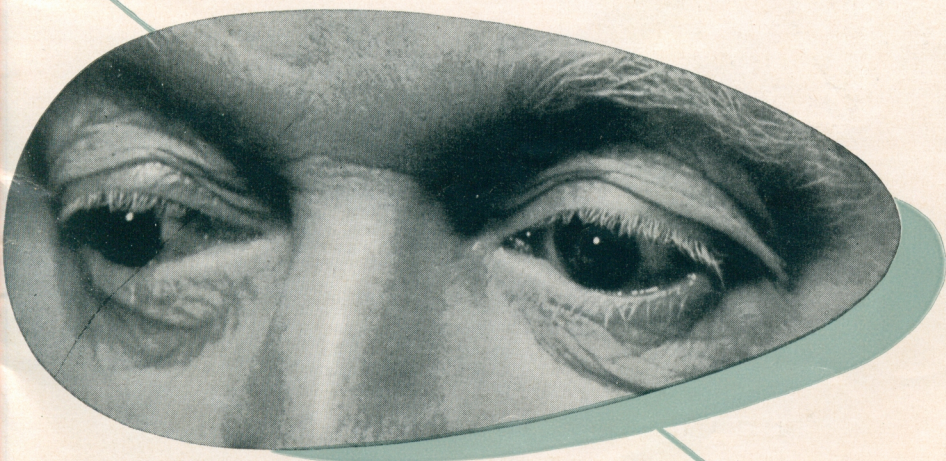
is man's own judgment. This Greek saying is equally valid in photography: the ideal camera must approach the function of the eye. But, while our eyes roam over the view around us and instantly focus sharply on any point, the LEICA "sees" by a different means – the interchangeable lenses coupled to its range finder.

In contrast to the normal focal length of 50 mm. a wide angle lens, for instance, covers a much wider field from the same viewpoint. This is useful in narrow streets and confined interiors where you cannot get farther from the subject.

On the other hand, the standard focal length of the 50 mm. lens often tends to exaggerate perspective. In that case a longer focal length reduces any distortion.

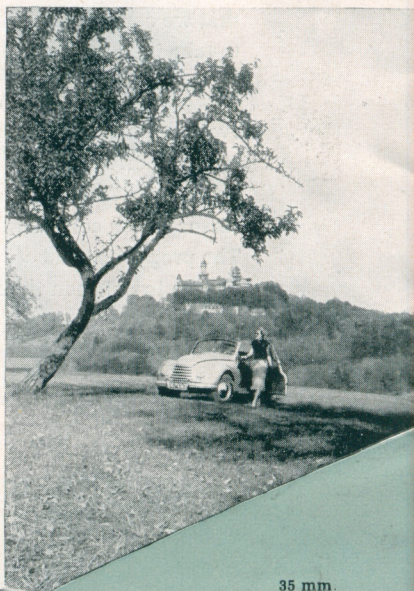
Finally, your eye is more sensitive than the fastest film. It is only with one of the wide-aperture lenses of the LEICA that we can approach the eye's sensitivity closely enough to take instantaneous shots in poor light without flash.

Modern optics not only reach the range of the eye but even surpass it in some ways. They give us the means to create pictorial effects which are often more attractive and impressive than our normal everyday vision. An important factor which controls the picture is the focal length of the lens. The properties and effects of the different focal lengths are shown in detail in the following pages.



Bridging the Distance

For comparison, we photographed the same subject from the same viewpoint with lenses of different focal length. The illustrations give you an idea of the range, from the wide angle view of the 35 mm. lens to the telescopic effect of the longer and longest focal lengths. Most LEICA lenses are focused by means of the LEICA range finder. This is automatically coupled with the lens as soon as you screw the lens into the LEICA body. The HEKTOR 125 mm. (also 135 mm. if desired), and the TELYT 200 mm. and 400 mm. lenses are focused by means of the ground glass screen of the LEITZ VISOFLEX focusing housing.



35 mm.



Summaron 35 mm.

A wide angle lens includes a lot of the surroundings of the subject in the picture, together with large sky areas. You'll find it excellent, for instance, for architectural shots in narrow streets, where the angle of view of the standard focal length of 50 mm. is insufficient.



50 mm.



Elmar 50 mm.
Summicron 50 mm.
Summarit 50 mm.

The LEICA lenses of standard focal length differ only in their maximum aperture. The angle of view covered yields a pleasant perspective for all normal subjects, coupled with a very great depth of field.



90 mm.



Elmar 90 mm.
Summarex 85 mm.

The focal length is nearly double that of the standard 50 mm. lenses. And it yields almost twice the subject magnification from the same taking distance. In near shots the especially good perspective rendering avoids undesirable distortion — e. g. with portraits — and makes it easy to fill the picture area with the main subject.



135 mm.



Hektor 125 mm.
Hektor 135 mm.

Compared with the 50 mm. lenses, these lenses magnify the image 2.5 and 2.7 times respectively. The long-focus effect of "fetching" distant subjects close is the secret of many successful sports and news shots which show seemingly inaccessible subjects large in the picture area. The scope of these lenses is particularly great in landscape photography. Here the HEKTOR produces amazing and impressive perspective effects. A further interesting field is that of close-up work (see page 23).

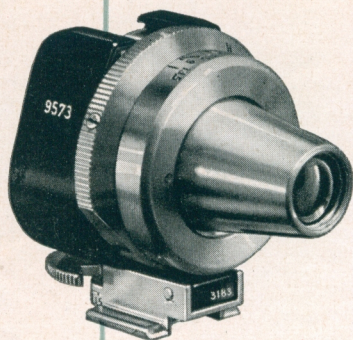


200 mm.

12°

Telyt 200 mm.
Telyt 400 mm.

These two lenses are genuine telephoto systems and so have a comparatively short overall length. The magnification compared with the normal focal length of 50 mm. is 4 times and 8 times respectively. The especially long focus yields large views of very distant subjects. You see and "shoot" the scene as through telescopic rifle focusing on the ground glass screen of the VISOFLEX focusing housing.)



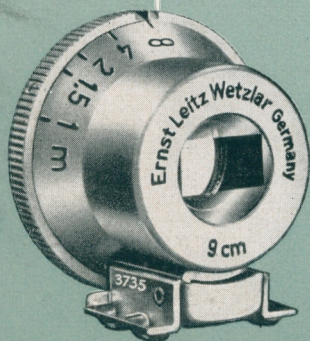
Leitz
The Universal Viewfinder
The Reflecting Viewfinder

Since the angle of view is different for lenses of different focal lengths, the finder image must be matched to the focal length in use. You can adjust the field of view of the "Imarect" universal viewfinder absolutely accurately for focal lengths from 35 to 135 mm. Your subject always appears sharply framed in the finder field. The finder also compensates for the parallax error between it and the lens axis, and lets you determine the subject area precisely.

Code: VIOOH

With the LEICA M 3 you need no universal viewfinder because the built-in bright-line viewfinder with parallax compensation automatically shows the view for the 50 mm., 90 mm., and 135 mm. lenses.

Besides the universal viewfinder, you can also get special finders for every focal length LEICA lens. While the frame viewfinders are designed especially for fast moving sports shots, the clear image of the new LEITZ reflecting viewfinders makes them very popular for all types of subjects. The reflecting system produces a bright image in natural size, outlined by a brilliant frame. Both your eyes stay open for viewing. A parallax adjustment is also provided in the models for focal lengths of 90 mm. and longer. For codes see page 30.



You can control the relative proportions of foreground and background to a great extent by the use of different focal lengths.

A subject you take at close range with a wide angle lens will show a violent convergence of receding lines. On the other hand, if you take the same subject from a great distance with a long focus lens, it will appear compressed in depth.

Thus the LEICA gives you a wide

Control of Perspective



The "Hektor Look"

is an apt description of the perspective given by the 135 mm. LEITZ HEKTOR lens.

Its long focal length gives an unique pictorial effect: receding lines of buildings appear markedly foreshortened; mountains, taken from the hillside across the valley, seem much steeper. The background moves up to the foreground objects, and thus becomes overawing in the picture.

With the right subjects, this property of the HEKTOR produces extremely attractive results which you could not get in any other way.



The Summaron View

The 35 mm. wide angle lens dwarfs distant large objects in the background. With buildings this gives an exaggerated perspective effect characterized by the fact that receding lines appear to converge strongly. The illusion is one of great depth, often resulting in surprising pictorial effects.

10 *LEICA-Lenses* *Transform Your LEICA at Will*

Here are the LEICA lenses with details of their characteristics.
to help you choose the right one for any task.

All the air/glass surfaces of every LEITZ lens are coated. What's more, the outer surfaces have an especially resistant hard coating. This eliminates almost entirely disturbing reflections which are particularly liable to crop up in against-the-light shots. At the same time, the coating increases the light transmission and insures more brilliant images.

Standard Lenses

ELMAR f/3.5 50 mm.	Page 15
SUMMICRON f/2 50 mm.	Page 17

Wide Angle Lens

SUMMARON f/3.5 35 mm	Page 18
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Long Focus Lenses

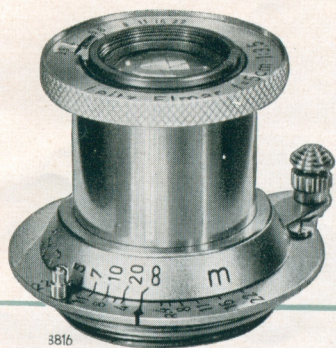
ELMAR f/4 90 mm.	Page 19
HEKTOR f/2.5 125 mm. (short mount without VISOFLEX)	Page 20
HEKTOR f/4.5 135 mm. (short mount without VISOFLEX)	Page 22

Telephoto Lenses

TELYT f/4.5 200 mm.	Page 25
TELYT f/5 400 mm.	Page 25

Ultra High-speed Lenses

SUMMARIT f/1.5 50 mm	Page 28
SUMMAREX f/1.5 85 mm	Page 29



3816



Elmar f/3.5 50 mm.

Construction: Triplet type

Angle of view: 45°

Number of elements: 4

Coupled to range finder

Mount: chrome

Code: ELMAR

When the 50 mm. ELMAR lens appeared at the beginning of the development of the LEICA, it was a sensation. Such a masterpiece of optical design could have come only from a firm used to the high precision of microscope construction. The ELMAR is the most-used standard lens, unsurpassed in its class for optical quality. Its outstanding color correction is also superb for color shots. Amateur or expert, you'll like this lens for normal light conditions where accurate results with the finest detail rendering are a "must", and ultra-high speed is less important. Its high resolving power makes the ELMAR ideal for close-ups, copying, and other technical photographic jobs.







Construction:

Symmetrical derivative

Angle of view: 45°

Number of elements: 7

Coupled to range finder

Mount: chrome

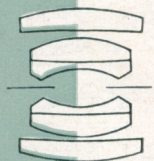
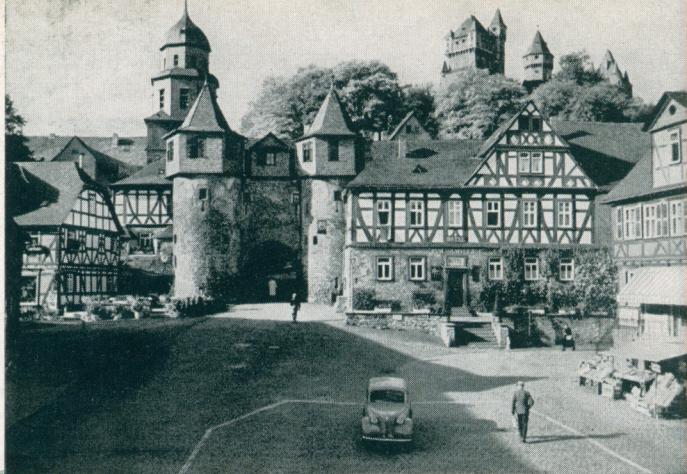
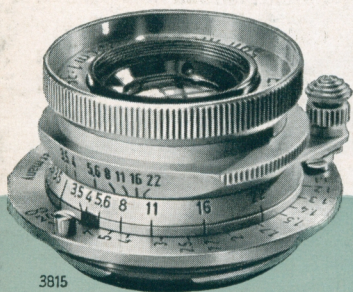
Code: SOOIC

Summicron f/2 50 mm.

Here is a lens that brings you the advantages of the latest in optical design. It is a remarkable high-speed lens with outstanding color correction, particularly valuable for short exposures in unfavorable light. You will also want it when rapid subject movement calls for an appreciable reserve of light to permit high shutter speeds. The SUMMICRON is three times as fast as the 50 mm. ELMAR, and has sufficient speed for snapshot exposures in dull weather, in dark streets, or by artificial light. It is revolutionary in its freedom from vignetting, a special advantage in color photography.

In computing the SUMMICRON, we made full use of the new highly refracting lanthanum crown glasses which are the basis for its outstanding optical performance. The ingenious use of additional air spaces in the SUMMICRON is another way in which we have perfected its correction. Thus, we eliminated most of the off-axis spherical aberration, which normally is particularly difficult to correct in large-aperture lenses. In the SUMMICRON, you have an unsurpassed lens whose optical quality shows up to its full extent in big enlargements.

Photo: A. Tritschler
LEICA III f with SUMMARON
35 mm.



Summaron f/3.5 35 mm.

Have you ever framed a perfect subject in your finder, only to discover that the angle of view of your 50 mm. lens is too narrow to include the whole scene? And you can't get far enough away to take it in? Well, it's not hopeless! The 35 mm. SUMMARON lens with its wide angle of view will let you shoot in confined spaces, narrow streets, or in front of high buildings, without tilting your camera up or down. The SUMMARON is also popular with press photographers because of its great depth of field which makes the LEICA even faster to operate since it nearly eliminates focusing. For instance, when set to f/8, the SUMMARON reproduces everything sharp from 7 feet in front of the camera to infinity. What's more, its freedom from vignetting is especially valuable in color shots.

Construction:

Symmetrical type

Angle of view: 64°

Number of elements: 6

Coupled to range finder

Mount: chrome

Code: SOONC

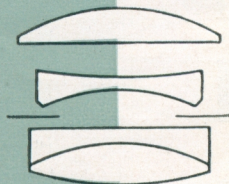
Elmar f/4 90 mm.

You can easily handle full frame portraits, large views of architectural details, closely cropped landscape scenes, and still-life subjects



3819

Photo:
A. Tritschler
LEICA III f
90 mm. ELMAR



Construction: Triplet type

Angle of view: 27°

Number of elements: 4

Coupled to range finder

Mount: chrome

Code: ELANG

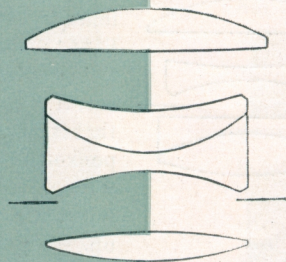
with this medium long focus lens. Although the 90 mm. ELMAR records things nearly twice as large as the 50 mm. lenses, it is so small and handy that it slips easily into your pocket. You can carry it everywhere. It is always at hand when attractive subject crops up. We particularly recommend the 90 mm. ELMAR as your first additional LEICA lens to help you with selective composition. The 90 mm. ELMAR easily and unobtrusively captures from a distance pictures of playing children, street life, sport scenes, and candid subjects.

Hektor f/2,5 125 mm.

The new 125 mm. HEKTOR lens was especially developed for action shots in the theatre and circus, and for large portrait heads even in poor light. This lens



3820



Construction: Triplet type

Angle of view: 20°

Number of elements: 4

Focused on ground glass screen
of LEITZ VISOFLEX focusing
housing

Mount: chrome

Code: HIKOO



*The lens hood with
bayonet mount fitting is included
in the price of this lens.*

combines medium long focus with ultra-high speed. It is a valuable lens to professional and amateur alike. The press photographer who often has to shoot his subjects in unfavourable lighting from appreciable distances, will find this lens a particularly successful solution of his problems. Its speed reserve will make it equally useful for the portrait worker. For focusing, the ground glass screen of the LEITZ VISOFLEX focusing housing is used; there the 125 mm. HEKTOR produces a brilliant clear image which is thus extremely easy to check for sharpness even in dim light.



Construction: Triplet type
 Angle of view: 18°
 Number of elements: 4

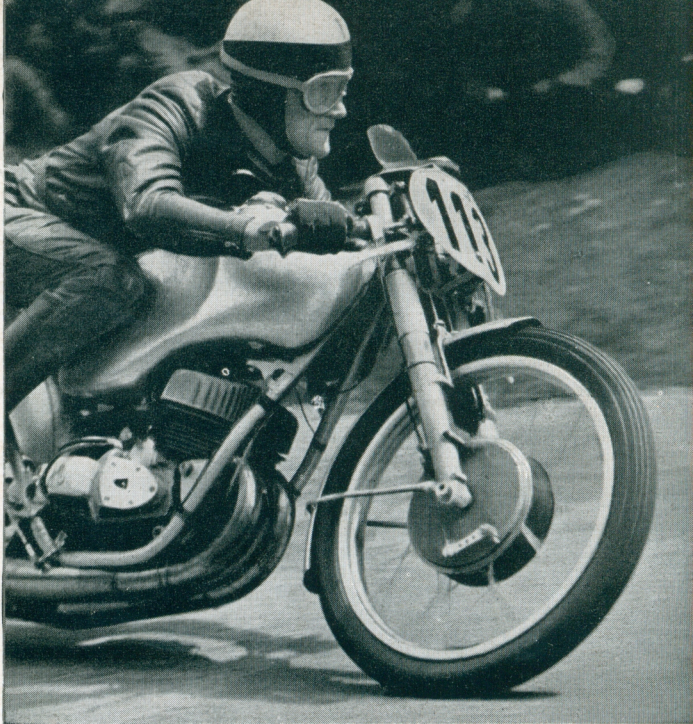


Photo: S. Hartig

Coupled to range
 finder, can also be
 focused (in short
 mount) on ground
 glass screen of
 VISOFLEX focus-
 ing housing
 Code: HEFAR
 In short mount
 Code: OHEBO
 LEITZ VISOFLEX
 focusing
 housing with 5 \times focusing
 magnifier and double cable
 release

Code: OZYXO

For further accessories see page 30



Hektor f/4.5 135 mm.

The "long arm" of this focal length puts your LEICA right in the center of anything that is going on. A 135 mm. lens magnifies 2.7 times compared to the "normal" image of a 50 mm. lens. That makes it easy for you to get large close-ups of sporting events right from the grandstand, or to record in full detail high and inaccessible architectural feature of old buildings. A chain of hills which may appear vaguely in the background with a normal focal length lens becomes an impressive mountain range in a HEKTOR shot. The long focus also permits you to photograph small animals, birds, and insects from an appreciable distance. You need never disturb them. The red line shows

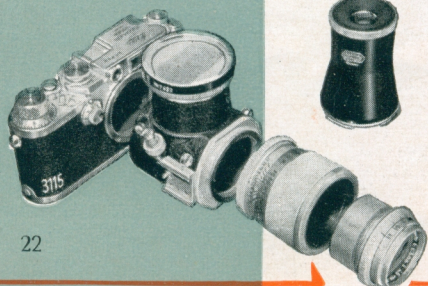
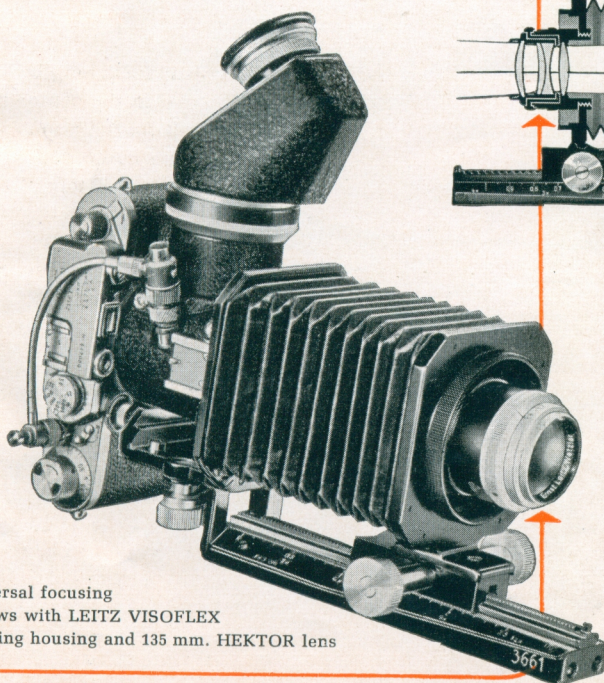
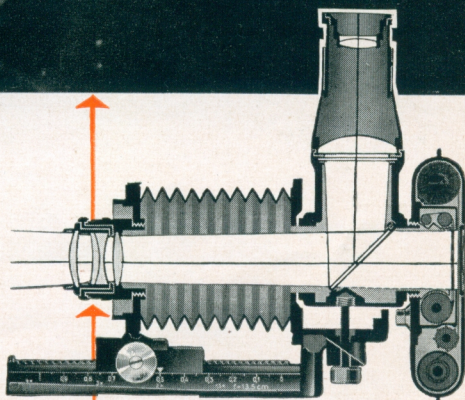




Photo: Liselotte Laubmann



Universal focusing
bellows with LEITZ VISOFLEX
focusing housing and 135 mm. HEKTOR lens



how you can use the lens
unit of the 135 mm. HEKTOR
by itself on the VISOFLEX
focusing housing and with
the universal focusing bel-
lows. The variable extension
of the bellows attachment
allows continuous focusing
from infinity to life-size
reproduction.

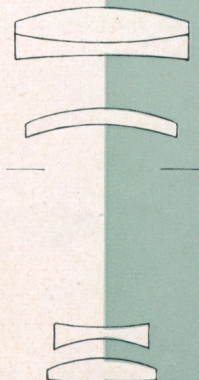


These telephoto lenses give you an image magnification of 4 times and 8 times respectively. With the TELYT you can get marvelous close-ups of wild life, thrilling shots of inaccessible sport scenes, and surprising perspective effects! It's just as if your LEICA had been right on top of it all! To the amateur this lens opens up new pictorial possibilities. Backgrounds increase in importance. Everything appears compressed in depth. By using large apertures, you can limit image

*Telyt f/4.5 200 mm. and
Telyt f/5 400 mm.*



sharpness to the most important object plane; your subject stands out clearly and almost three-dimensionally against a softly blurred background. The TELYT is focused on the ground glass screen of the LEITZ VISOFLEX focusing housing. It is a real joy to watch the brilliantly enlarged screen image with all the fine detail of the distant subject filling the whole picture area.



Construction:
Telephoto system

Angle of view:
12° (200 mm.)
6° (400 mm.)

Focusing by ground
glass screen of VISO-
FLEX focusing housing

Mount:
black enameled
Code: 200 mm. OTPLO
Code: 400 mm. TLCOO

**For short exposures
in dull weather,
indoors,
at the theatre:**

Use LEITZ Ultra-high Speed Lenses

Without Flash

f/1.5

Film needs a certain minimum amount of light.
Otherwise — no pictures!

So, all sorts of ways have been found to provide
extra light in dim interiors.

First, there is flash.

Naturally, flash is a big help in a lot of situations.

But you will often want to catch a picture at its
peak when there just isn't time to set up your flash
equipment. Or, you may find that a theatre or
concert hall won't let you use flash.

How can you get the picture?

It's no problem at all when you use a LEICA!

For there are LEICA lenses with an aperture of f/1.5
— twice as fast as even the SUMMICRON —
which now permit short exposures at the theatre,
in normally lit rooms, on dull days, and at home.

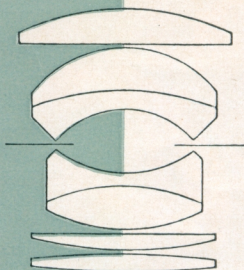
You can take hand-held shots of your friends
and children by ordinary room illumination without
additional light!

Equipped in this way, your LEICA will unobtrusi-
vely shoot beautifully "alive" scenes indoors
and out.

Photo: Th. Kisselbach
LEICA III f with SUMMAREX
85 mm. 1/25 sec. at f/1.5



Construction:
Symmetrical derivative
Angle of view: 45°
Number of elements: 7
Coupled to range finder
Mount: chrome
Code: SOOIA

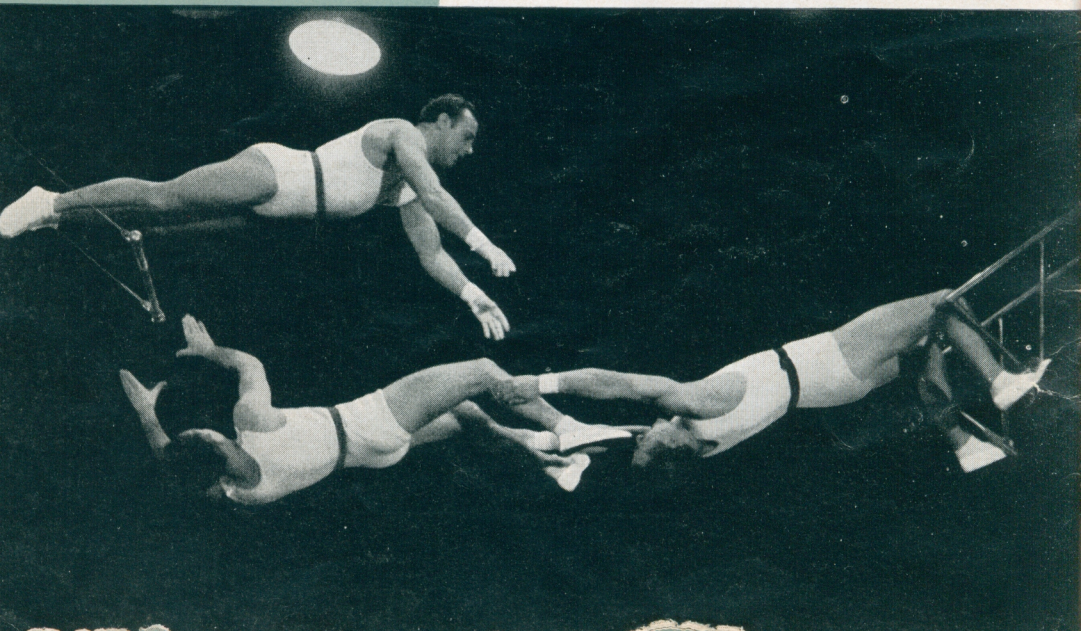


3133

Summarit f/1.5 50 mm.

Even at full aperture this highly corrected 7 element lens gives brilliant images of outstanding definition. The SUMMARIT opens up new and exciting possibilities for color photography in poor light. News shots which require fast shutter speeds in unfavorable light are possible because of the efficiency of the LEICA focal plane shutter and fast lenses. It is only a focal plane shutter that can take advantage of the full light-transmitting ability of these high-aperture lenses.

Photo: Otfried Schmidt



Summarex f/1,5 85 mm.

Construction: Symmetrical derivative

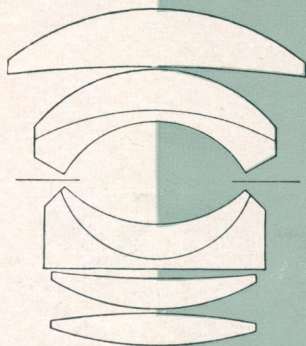
Angle of view: 28°

Number of elements: 7

Coupled to range finder

Mount: chrome

Code: SOOCX



For technical reasons, high lens speed cannot always be combined with long focal lengths. But in practice LEICA users are often faced with just the type of situation where such a combination would be ideal. In this respect the SUMMAREX achieves everything that is practically possible. It is a masterpiece of optical and mechanical precision – and its performance is amazing! This optical giant brilliantly fills the LEICA frame with large close-ups, news subjects, theatre shots in dim light, or thrilling pictures of circus acrobatics. Whenever you need short exposures in poor light at greater distances, the SUMMAREX is your best answer.





Exposure without filter



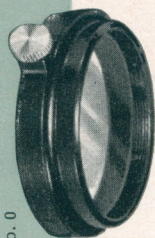
With yellow filter No. 0



With yellow filter No. 1



With orange filter



Filters

Often you will get better pictures with the help of a suitable filter.

Although present-day negative materials are largely sensitive to all colors, special effects like bold cloud rendering, haze-free distant views, or control of skin tones can only be gotten with an appropriate filter. Filters are available in slip-on or screw-in mounts to fit all LEICA lenses. In every case a lens hood can also be fitted with the filter in position.

The LEICA range covers the following colors:

Yellow No. 0

Yellow No. 1

Yellow No. 2

Green

Orange

Graduated yellow

Graduated green

Light red

Medium red

Dark red

Ultra-violet absorbing (colorless)

Blue

Polarizing filter

Filters marked *) available only in USA and Canada.

Refer to:
E. Leitz Inc.,
468, Fourth
Avenue,
New York 16,
NY / USA

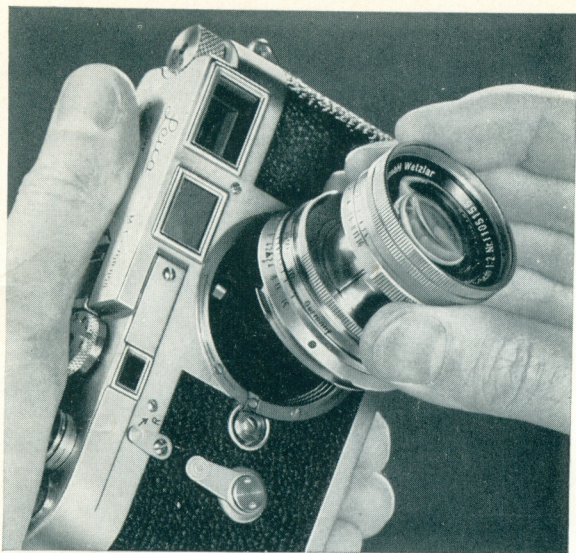
and

Messrs.
Walter A.
Carveth
431,
Yonge Street
Toronto/Ont.
Canada

For special filters to correct color films of other make please refer directly to the manufacturer.

- *) Type "A" (for Type "A" Kodachrome when you shoot outdoors in daylight.)
- *) Photoflood (when you use daylight Kodachrome with photofloods.)
- *) Flash (for Type "A" films when you use clear flash bulbs.)
- *) Skylight (use it with daylight Kodachrome to absorb excess blue in the mountain air and at the beach.)

LEITZ filters for black-and-white photography are made from solid optical glass, ground thin and polished plane-parallel. Those for color film and polarizing are laminated.



Lenses for the LEICA M 3 with bayonet mount

All the data in this booklet about the scope and applications of interchangeable LEICA lenses apply equally to the bayonet mounted interchangeable lenses for the LEICA M 3 listed below.

SUMMARON f/3.5 35 mm.	Code
Wide angle reflecting viewfinder for above	SOONC-M
ELMAR f/3.5 50 mm.	SBLOO
SUMMICRON f/2 50 mm.	ELMAR-M
SUMMARIT f/1.5 50 mm.	SOOIC-M
ELMAR f/4 90 mm.	SOOIA-M
ELMAR f/4 90 mm. in collapsible mount	ELANG-M
HEKTOR f/4.5 135 mm.	ILNOO
LEICA VISOFLEX focusing housing with	HEFAR-M
rear bayonet fitting for the LEICA M 3	
and front screw thread. Including 5×	
focusing magnifier and double release	OZYXO-M

The 125 mm. HEKTOR (and 135 mm. HEKTOR in the short mount) as well as the 200 mm. and 400 mm. TELYT lenses screw into the LEICA VISOFLEX focusing housing in the normal way.

An important point is that all lenses for the LEICA M 3, from the 35 mm. wide angle SUMMARON to the 135 mm. long focus HEKTOR (except for the f/1.5 and f/2.5 lenses) have a standard front mount diameter of 42 mm. Thus one set of filters will fit all these lenses.

You can also use *LEICA lenses with screw threads* on the LEICA M 3 by buying an intermediate bayonet ring.

Intermediate ring for 35 mm. and 50 mm. lenses IRZOO
for 90 mm. lenses ISBOO
for 135 mm. lenses ISOOZ

A characteristic feature of the LEICA M 3

is the built-in measuring bright-line viewfinder with automatic parallax compensation and field frame changeover for 50, 90 and 135 mm. lenses. No accessory finder is therefore required with these focal lengths.



Leica

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