



TRI-ELMAR-M f/4/28-35-50mm ASPH.

*Compact,
high performance,
universal lens
with three focal lengths*

The new TRI-ELMAR-M f/4/28-35-50mm ASPH. represents a whole new milestone in the almost 45 year history of LEICA M photography. For the first time, an extremely compact M lens has been made that successfully combines three focal lengths of high image performance without reducing the compatibility with all LEICA M cameras. The new lens covers the most popular LEICA M focal lengths 28mm, 35mm and 50mm and this versatility

makes it ideal for instance while travelling.

This lens, which was designed and manufactured in Germany is composed of 8 lens elements in 6 groups. In order to achieve the high image performance for a lens of this speed and especially compact size, two aspherical lenses were used. One of the aspherical lenses (element 2) serves mainly to reduce distortions, while the second (element 4) reduces the

monochromatic image errors down to a minimum. Five of the lens elements in this complex optical system are made of highly-refractive glass.

The LEICA TRI-ELMAR-M f/4/28-35-50mm ASPH. distinguishes itself with a good to very good image performance with all three focal lengths. Already at full aperture a richly contrasting image with good detail reproduction is achieved. Stopping down to f/5.6 can increase the con-

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trast even more. Due to the already good image performance at maximum aperture, the critical f/stop for this lens lies between f/5.6 and f/8.

The field curvature could be reduced to a minimum for all three focal lengths, so that it is no longer visible in practice. Compared to good zoom lenses and most of the fixed focal length lenses for 35mm format cameras distortion is very slight. Only with the 28mm focal length does the

lens not quite reach the high standard of the corresponding LEICA M fixed focal length lens.

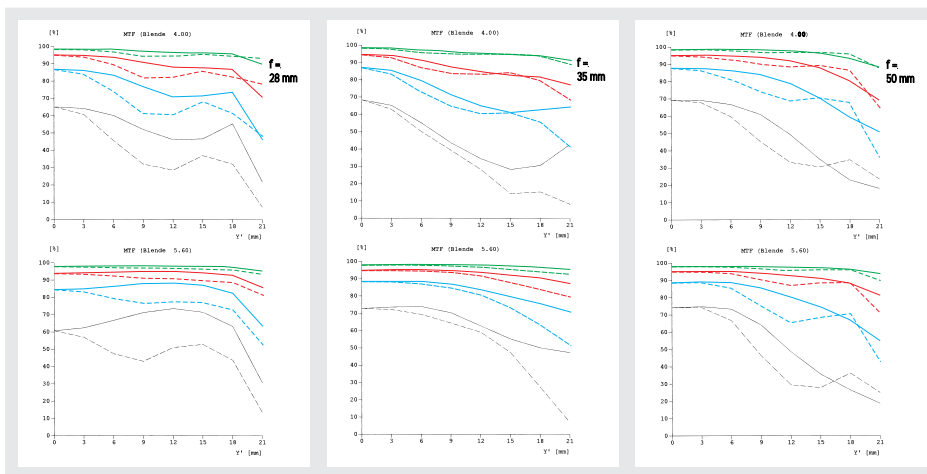
Every optical system is affected to some extent by vignetting. This is generally more apparent with short focal length than it is with normal or long focal length lenses. This decrease of light toward the edge of the image can be especially noticeable when taking pictures of bright, evenly lit surfaces at full aperture and short exposures. With 50mm and 35mm this vignetting is relatively slight and comparable to the LEICA M fixed focal lengths, only with the 28 mm is the artificial vignetting a little bit more pronounced. Starting from f/8, all three focal lengths of the TRI-ELMAR-M f/4/28-35-50mm ASPH. are free of artificial vignetting.

Range and focal length are selected with separate setting rings similar to a two-ring



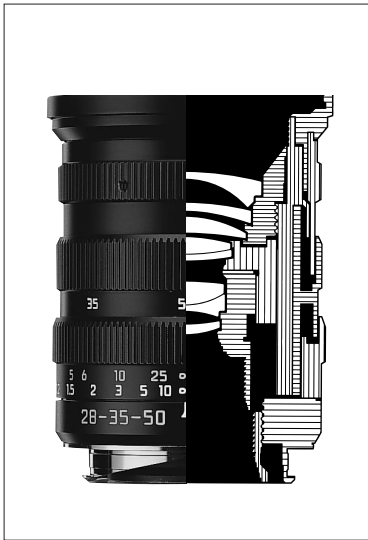
zoom lens. The focal length setting ring has a catch that can be heard and felt for all three settings so that an accidental change of the focal length setting can be prevented. Contrary to zoom lenses, the settings in between can not be used.

The order of the focal lengths is unusual; the 50mm focal length is positioned in the center of the ring and the wide angle settings 35 and 28mm are selected by tur-



The MTF is indicated both at full aperture and at f/5.6 respectively f/8 at long taking distances (infinity). Shown is the contrast in percentage for 5, 10, 20 and 40 lp/mm across the height of the 35 mm film format, for tangential (dotted line) and sagittal (solid line) structures, in white light. The 5 and 10 lp/mm will give an indication regarding the contrast ratio for large object structures. The 20 and 40 lp/mm records the resolution of finer and finest object structures.

— sagittal structures
- - - tangential structures



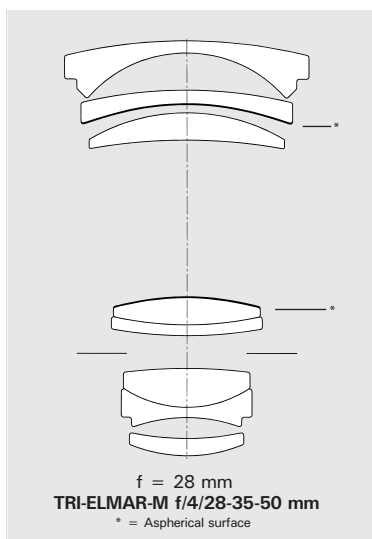
ring the ring 45° to the right or to the left accordingly. This design is necessary due to the traditional sequence of the brilliant frames that are mirrored into the LEICA M camera rangefinders: The reflection of the frame that corresponds to the used focal length occurs mechanically via a control cam in the lens bayonet. The frame setting mechanism measures the length of this cam and the focal length combination can clearly be recognized in one of the three settings. This order which was introduced already in the 50's makes the mentioned focal length line up necessary.

As usual, focusing is done by looking through the brilliant frame finder of the camera. A complicated setting mechanism makes it possible for the correct brilliant frame to be reflected in automatically for each of the three focal length

hs; 28 mm, 35 mm or 50 mm. The lens can generally also be used on older LEICA M cameras. Depending on the camera model, the viewfinder masks can be exchanged for independently catching metal masks by the LEICA customer service. This would ensure trouble-free use of the brilliant frames.

In order to keep the lens as compact as it is and in order to ensure that the viewfinder image be obstructed as little as possible, a lens hood was integrated directly into the lens. The longer the focal length that is used, the further the front lens lies back inside of the front mount. This guarantees that for all focal lengths the lens's path of rays is not interrupted while at the same time protecting the front lens from stray light.

The filter thread is for filters



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of the size E 55. A padded case of high quality nappa leather protects the lens while traveling.

This single compact system offers a choice of three angles of view: 76°, 64° and 45°. The resulting creative possibilities makes the lens suitable for all photographic situations in cases where the time-consuming focal length changing must be avoided and where light-weight and compact dimensions of the equipment are important factors. This makes the TRI-ELMAR-M f/4/28-35-50mm ASPH. - possibly paired with the ELMARIT-M f/2.8/90mm - the ideal companion when travelling. The lens is also suited for reportage photography when high and top light speed are not a must.

Embedded in the classic concept of the LEICA range finder camera, the new three



focal length lens represents a unique synthesis of tradition and most modern optical calculation as well as precision mechanics. The TRI-ELMAR-M f/4/28-35-50 mm ASPH.

enriches the LEICA M system with an extraordinarily versatile, compact lens with excellent image performance and places a whole new emphasis on the long tradition of M lenses.



**TRI-ELMAR-M
1:4/28-35-50mm ASPH.**

in a soft leather case,
with lens cap and rear cover
black anodized finish

Order no. **11 890** _____

Accessories:

UVa filter E55
for TRI-ELMAR-M

Order no. **13 373** _____

Yellow-green filter E55

Order no. **13 391** _____

Orange filter E55

Order no. **13 312** _____

Brilliant finder for 28mm*

Order no. **12 009** _____

Replacements:

Soft leather case

Order no. **14 713** _____

Lens front cap

Order no. **14 289** _____

Lens rear cover

Order no. **14 269** _____

Technical data

- Angle of view (28, 35, 50mm)..... 76°, 64°, 45°
- Number of elements..... 8 (6 components, 2 aspherical surfaces)
- Filter size..... E55
- Internal thread..... M55 x 0,75, non rotating
- Clickstops..... yes, including half values
- Smallest aperture..... 22
- Scale..... combined meter/feet
- Focusing range..... infinity to 1 m
- Smallest object field.....
 - Focal length 28mm..... 750x1130 mm (approx. 1:31)
 - Focal length 35 mm..... 620x930 mm (approx. 1:26)
 - Focal length 50mm..... 430x650 mm (approx. 1:18)
- Viewfinder..... camera viewfinder for LEICA M6 and LEICA M4-P
- When focal length is changed..... automatic bright line frame is displayed in the camera
- LEICA M quick change bayonet..... yes
- Finish..... black anodized
- Lens hood..... built in
- Front lens diameter..... 58mm
- Length from bayonet flange..... 70mm
- Largest diameter: 58mm
- Weight..... approx. 0,340 kg

* Brilliant finder is not necessary for LEICA M6 and LEICA M4-P

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