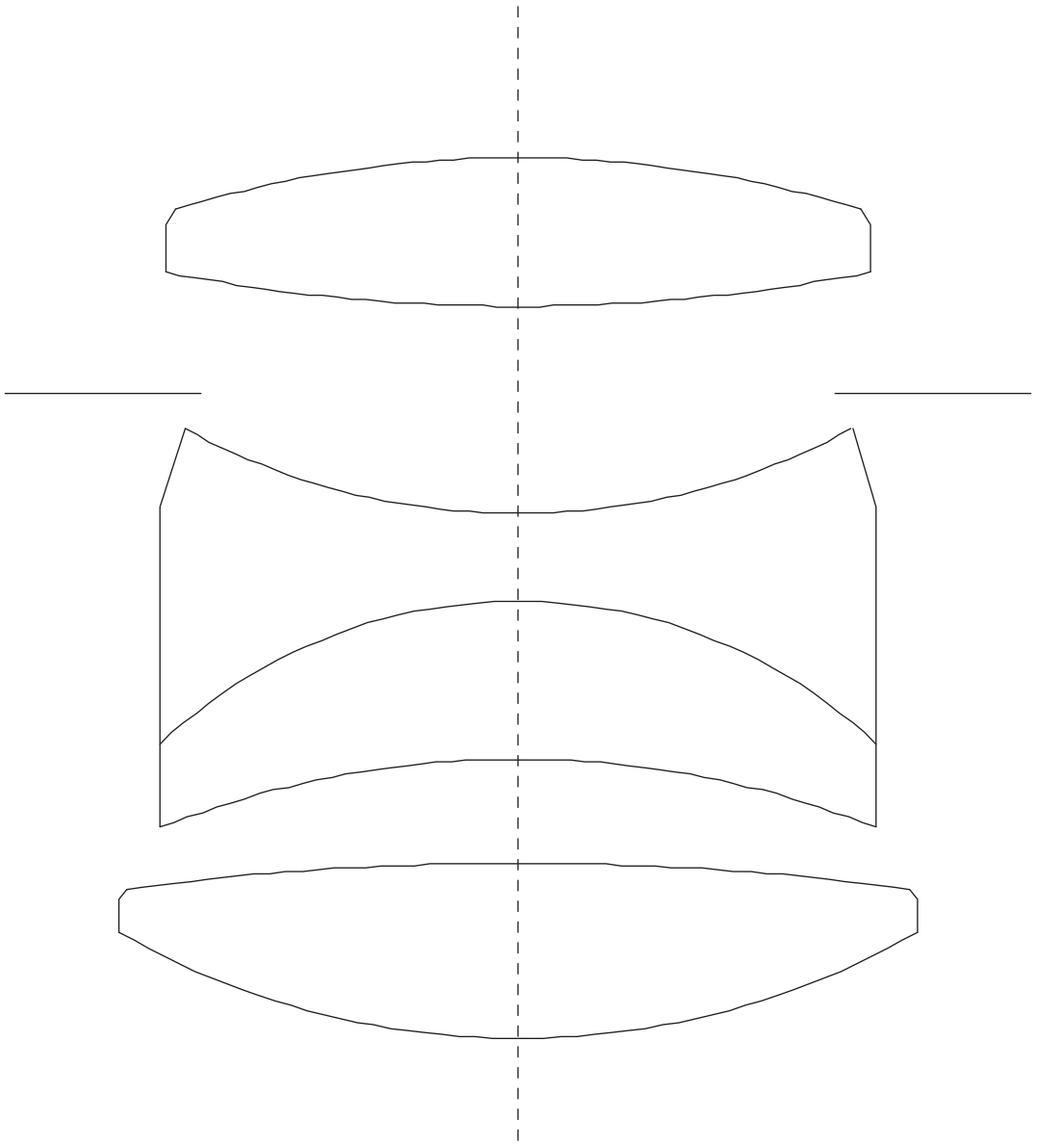
THAMBAR-M
1:2.2/90

ANLEITUNG | INSTRUCTIONS
NOTICE D'UTILISATION | GEBRUIKSAANWIJZING
ISTRUZIONI | INSTRUCCIONES
取扱説明書



Thank you for your show of confidence in purchasing this lens. To ensure your pleasure with this high-quality product for years to come, please read these instructions carefully.

TECHNICAL DATA

Special Soft Focus Portrait Telephoto Lens

Angles of view (diagonal, horizontal, vertical)	 approx. 27°, 23°, 15° (for 35 mm: 24x36 mm)[1]
Optical design Number of lenses/groups Position of entrance pupil (at infinity)	 4/3 49.6 mm (in the direction of light incidence behind the bayonet fitting contact area)
Focusing Focusing range Scale Smallest object field / Biggest scale	 1 m to ∞ Meter divisions approx. 215x322 mm/1:9.0 (for 35 mm: 24x36 mm)[1]
Aperture Setting/Function Setting range	 No detent positions 2.2 - 2.6 or 9 - 25 (values in white: for use without the associated center spot filter)/2.3 - 6.3 (values in red: for use with the associated center spot filter)
Bayonet fitting	Leica M quick-change bayonet with 6 bit lens identification bar code for digital M models[2]

Filter mount / lens hood	Internal thread for screw-on filter E49, center spot filter and push-on lens hood in the scope of delivery
Viewfinder	Camera viewfinder[3]
Finish	Black lacquered (Distance scale: silver)
Dimensions and weight Length to bayonet flange (without/with lens hood) Largest diameter (without lens hood) Weight	 approx. 90/110 mm approx. 57 mm approx. 500 g
Compatible cameras	All Leica M cameras[1, 3]

[1] Use with the Leica M8 models is not recommended since the optical properties do not suit for smaller formats than 35 mm (24x36 mm).

[2] The 6 bit lens identification bar code (8) situated on the bayonet flange enables the digital Leica M models to identify the attached type of lens. This information is utilized by the camera to optimize exposure and image data.

[3] The Leica M1 does not have a 90 mm bright-line frame.

SPECIAL FEATURES

Please visit the Leica Camera AG homepage for more information about the visual and technical details:

http://us.leica-camera.com

STRUCTURE OF THE LENS

In the Leica Thambar-M 90 f/2.2, the rotating front part of the lens mount contains the aperture setting ring (3), the knurled gripping ring for distace setting (4) and the aperture (3b) and distance scales (4a). The index for distance setting (5), the depth of field scale (6) and a red dot for lens change (7) are located on the fixed rear part of the lens mount. A 6 bit lens identification bar code (8) is situated on the bayonet flange. It relays lens data to the camera body so the exposure metering system of digital Leica M models can be calibrated. The information is also used to custom-optimize image data according to the respective lens.

USE WITH/WITHOUT CENTER SPOT FILTER

Due to its special optical properties, the degree of soft-focus of the Leica Thambar-M 90 f/2.2 can be controlled to a certain extent. Without the center spot filter (2) supplied, this is done only with the aperture; the scale with the white values applies in this case. When the aperture is open, the soft focus effect is very marked; with aperture values of around 9 and higher, the lens provides its highest contrast reproduction. This is due to the fact that then only the central area of the lens with the best image aberration correction is used. An even greater soft focus effect can be achieved with the center spot filter supplied: Since the opaque spot in the centre of the aperture blocks the central beam, the image is largely generated only by a ring of beams, and consquently only with the area of the lens that is primarily responsible for the soft focus effect. In this case, the aperture scales with the red values applies. The higher values of the larger apertures (in comparison to those on the white scale) take account of the light loss through the blocking of the central beam. This scale reaches only up to 6.3 since the simultaenous use of even smaller aperture

openings and the center spot results in dark to black round areas in the middle of the image. Blocking the central beam also means that unfocussed light spots are portrayed as bright rings.

ADJUSTING OF THE APERTURE

It is recommended first of all to set the aperture with the relevant ring (3) and only then to adjust the focus, since the aperture scales (3b) are located on the rotating front part of the lens mount and consequently cannot be seen completely from above at all distance settings. To protect against accidental missetting of the distance, you should hold the front part of the lens mount firmly when setting the aperture.

FOCUSING

The focus is set by turning the front part of the lens mount on the gripping section (4).

DEPTH OF FIELD SCALE

The scale (6) on the fixed back part of the lens mount shows the range of depth of field for the distance that has been set. It is read from the relevant line segments, marked with the aperture values.

LENS HOOD

The lens hood (1) for the Leica Thambar-M 90 f/2.2 is aligned straight to the lens and then pushed onto its front mount. It can also be put on the other way round for space-saving storage. In this position, the metal cover supplied can be put on. For as long as the camera is being carried and used ready for photography, the lens hood should always remain attached. It provides effective protection against contrast-reducing stray light and also against damage and soiling of the front lens, e.g. from accidental fingerprints.

ACCESSORIES

E49 screw-on filters can be used on the Leica Thambar-M 90 f/2.2. Appropriate filters are available from Leica, as are viewfinder magnifiers for the camera that enable more precise setting of the sharpness thanks to the enlarged viewfinder image. For more details, refer to the Leica Camera AG website: www.leica-camera.com

SPARE PARTS	Order No.
Lens hood	12 457
Lens hood cap	14 060
Lens back cover	14 059
Center spot filter	12 456
Case	439-606.146-000

TIPS ON LENS CARE

Dust on the outside of the lens is removed only with a soft-haired brush or a soft, clean, dry microfiber cloth. We recommend micro-fiber cloths (available from photographic and optical specialists) that are stored in a protective container and can be washed at temperatures of up to 40°C (without fabric softener, never iron!). If stains and fingerprints have to be removed, use such a cloth and clean with a circular movement starting at the center of the lens. Do not use the type of cloths used especially for cleaning eyeglasses since these are impregnated with chemicals which can damage the glass used for high performance lenses. For easy, smooth lens changes, the bayonet has had an extremely thin coating of grease applied in the factory. With normal use, this condition lasts for many years, even if the bayonet is wiped with a clean cloth from time to time. If a degreasing agent is used for cleaning, the grease film must be replaced afterwards. To do this, smear a small amount of Vaseline over the bayonet with you finger and rub with a clean cloth.

Important

Make sure not to apply too much vaseline to the bayonet, especially to omit the lens identification bar code (8), because residual grease could otherwise remain in the recess and lead to further grime accumulating. This could even cause the code to become illegible and thus interfere with some camera functions in digital M-models.
In addition to the designation by type, each lens has an individual serial number. Please note this number in your documents as a safety measure.

LEICA CUSTOMER CARE

Please contact the Customer Care department of Leica Camera AG for the maintenance of your Leica equipment and for help and advice regarding Leica products and how to order them. You can also contact the Customer Care department or the repair service provided by your regional Leica subsidiary for repairs or warranty claims.

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