

## English

The **EXTENDER-R 2x** is a high-quality optical accessory for all **LEICA R** Lenses of 50mm focal length and longer and for lens speeds from  $f/2$  and less. With lenses of focal length 400mm and longer – with the exception of the mirror lens **MR-TELYT-R**  $f/8$  500mm – slight vignetting in the extreme corners of the picture area, which will become more noticeable at close focusing distances and when the lens is stopped down will occur. In practice, however, this shading is rarely disturbing. Not even in slides, because it is almost completely masked by the frame, and hardly noticeable in projection. The **EXTENDER-R 2x** doubles the focal length and reduces lens speed by 2 stops. The focusing range of the lenses is fully preserved. At minimum focusing distance the smallest object area becomes 2x smaller linearly, i.e. only a quarter of the original area is photographed and the reproduction scale is doubled. Example: The **EXTENDER** converts the 180mm **ELMARIT-R**  $f/2.8$ , minimum focusing distance 1.8m and smallest object area 193 x 290mm (reproduction scale about 1:8), into a lens of 360mm focal length and  $f/5.6$  maximum aperture, minimum focusing distance 1.8m smallest object area of 96.5 x 145mm (reproduction scale about 1:4).

The **EXTENDER-R 2x for the LEICA R** (Code No. 11 236) is for use with the **LEICA R** models at full aperture measurement and has fully automatic diaphragm transfer for all recommended **LEICA R** lenses (with cam for **LEICA R**) with automatic shutter speed control and with manual setting of shutter speed and lens aperture. On the **LEICA R 4** the **EXTENDER** must not be used with automatic aperture control or automatic program because this produces faulty exposures.

The **EXTENDER-R 2x for the LEICA FLEX SL/SL2** (Code No. 11 237) can be used both on the **LEICA FLEX** models and on the **LEICA R** models with working aperture measurement with automatic shutter speed control and with manual setting of shutter speed and lens aperture.

On the **LEICA R4** the **EXTENDER** must not be used with automatic aperture control or automatic program because this produces faulty exposures.

### Attaching the EXTENDER

The **EXTENDER-R 2x** is attached to the camera like a lens and the lens in turn attached to the **EXTENDER**.

### Recommended aperture setting

The optical performance achieved with the **EXTENDER** is respectable even at full aperture. It can be appreciably improved when  $f/2$  lenses are stopped down by 2 stops, and  $f/2.8$  and slower lenses by 1 stop.

### Distance setting

To guarantee optimum performance for all recommended **LEICA R** lenses the **EXTENDERS** have been adjusted so that when used with them, some lenses can be focused beyond infinity. Focusing must therefore always be carried out on the focusing screen of the camera.

Because the **EXTENDER** reduces the speed of the lens by 2 stops, often neither the split wedge nor the coarse micro prism screen of the universal screen are suitable for focusing, because these focusing elements have been optimised for apertures to  $f/4/5.6$ . With smaller apertures, shading of the part images occurs, which makes precision focusing impossible. We therefore recommend focusing in the surrounding field of the micro-matt micro prisms or on a groundglass screen.

### Photography with ultra-high-speed lenses

50mm **SUMMILUX-R**  $f/1.4$  and 80mm **SUMMILUX-R**  $f/1.4$  lenses can also be used with the **EXTENDER**. The higher speed of these lenses, however, does not brighten the viewfinder image, and the shutter speed does not become higher than with a  $f/2$  lens. Because with the **EXTENDER-R 2x** on the **LEICA R** the exposure is measured at full aperture, but the **EXTENDER** has been designed only for lenses

of f/2 and slower, with the f/1.4 lenses the exposure measurement must be corrected by setting the override at „-1“. Moreover, these lenses should be stopped down to f/2, better to f/4. When the EXTENDER-R 2x for the **LEICAFLEX SL/SL2** is used, the exposure is measured at the working aperture. Here no correction is required, but the f/1.4 aperture is not functional.

#### Photography in the close-up range

The 60mm MACRO-ELMARIT-R f/2.8 and 100mm MACRO-ELMARIT-R f/4 objectives can also be used with the EXTENDER in the close-up range. At a given camera distance the maximum reproduction scale is double. With the 60mm MACRO-ELMARIT-R f/2.8 the 1:1 reproduction scale is reached even without MACRO-ADAPTER-R.

Combined with the EXTENDER, the macro lenses offer a respectable optical performance also in the close-up range. 2-dimensional originals (for instance stamps), however, cannot be photographed without distortion.

The EXTENDER can also be used with the macro lenses including the MACRO-ADAPTER-R. Here it must be inserted between the camera and the MACRO-ADAPTER-R, which also doubles the reproduction scale. With all other lenses the use of extension accessories (MACRO-ADAPTER-R, Universal Focusing Bellows-R etc) in conjunction with the EXTENDER-R 2x is not recommended.

#### Depth of field

If a lens is used with the EXTENDER, the engraved depth-of-field scale is no longer valid, because the depth of field for the combination of lens and EXTENDER is determined by the new optical data. If, for instance, the 90mm ELMARIT-R f/2.8 is used with the EXTENDER at f/4, the depth of field must be obtained from the table for a 180mm lens at f/8.

#### Tips for cleaning

Dust on the lens surface is removed with a soft sable brush or very gently with a clean, dry, soft piece of lint. Special

cleaning cloths, for instance for the cleaning of spectacles, are not recommended. They are chemically impregnated, and may attack the lenses (glasses used for spectacles are different from that of the optical glass of the EXTENDER).

#### Accessories

Rear cover (lens rear cover) . . . . .	14 162
Front cover (camera body cover) . . . . .	14 103

#### After-Sales Service

In cases of damage our After-Sales Service will be at your disposal:

ERNST LEITZ WETZLAR GMBH  
Technical Service  
Postfach 2027  
D-6330 Wetzlar  
or your national Leitz Agency.