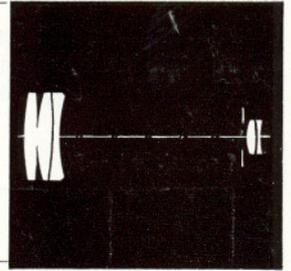


ZEISS

Tele-Tessar f/8 - 500 mm
Cat. No. 104603



H A S S E L B L A D

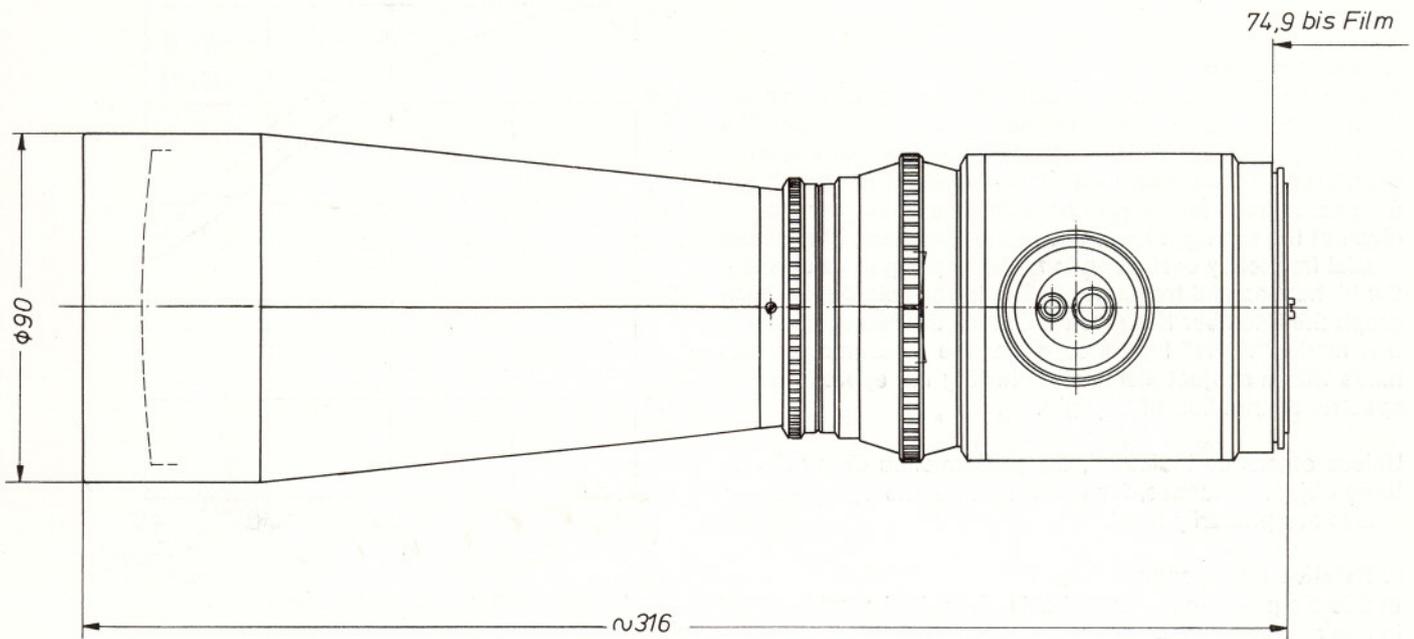
CARL ZEISS
Abteilung für Photographie

7082 Oberkochen
West Germany

This is a genuine tele lens consisting of a collective front component and a dispersive rear component separated by a large air space.

Compared with its focal length the lens is short. The weight of approx. 2 kg allows hand-held exposure.

Even at full aperture the lens offers optimum image quality. The TELE-TESSAR f/8 - 500 mm is preferably used for long-range work (landscape photography and photography of animals in their natural habitats). Other applications are sports and press photography when there are large distances between object and camera.

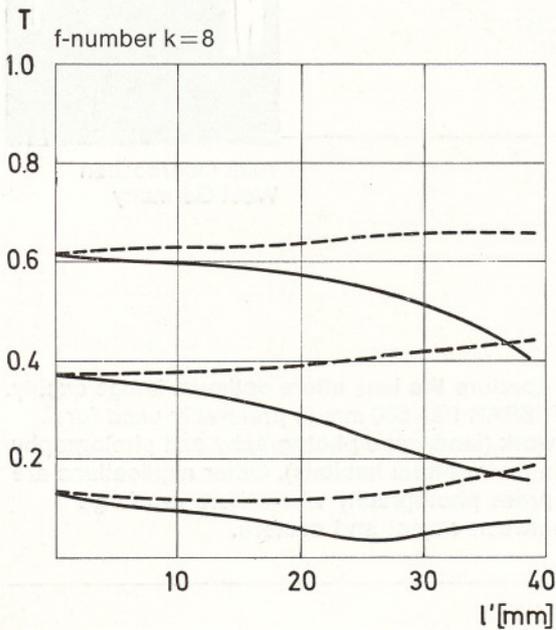


Number of lens elements: 5
Number of components: 3
f-number: 8
Focal length: 500.1 mm
Negative size: 56.5 x 56.5 mm
Angular field 2 w: diagonal 9°, side 6.5°
Spectral range: visible spectrum
f-stop scale: 8 - 11 - 16 - 22 - 32 - 45 - 64
Mount: Compur interchangeable reflex shutter size 0 with automatic iris diaphragm
Filter mounting: screw thread for Hasselblad series 86
Weight: 2100 g

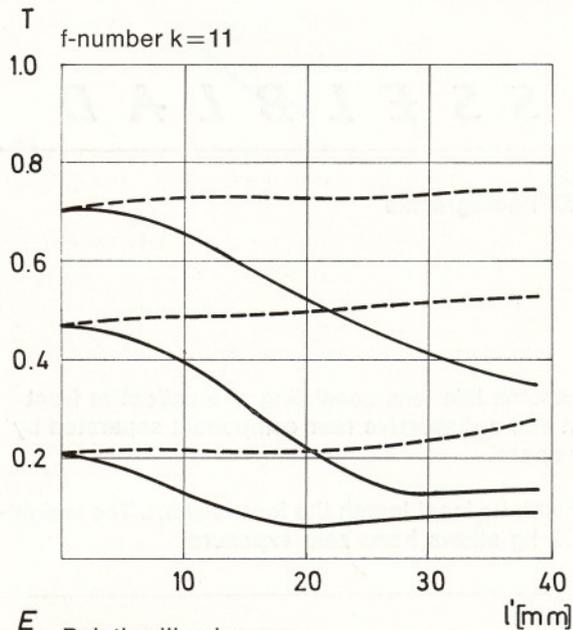
Distance range: ∞ to 8.5 m
Automatic depth-of-field indication for $z = 0.06 \text{ mm}^*$)
Position of entrance pupil: 477 mm behind the first lens vertex
Diameter of entrance pupil: 62.5 mm
Position of exit pupil: 8.4 mm in front of the last lens vertex
Diameter of exit pupil: 22.7 mm
Position of principal plane H: 413.5 mm in front of the first lens vertex
Position of principal plane H': 125.5 mm in front of the first lens vertex
Distance between first and last lens vertex: 203.2 mm

*) z = circle-of-confusion diameter

Modulation transfer T as a function of image height l'
 Slit orientation tangential ———
 sagittal - - - - -



White light
 Spatial frequencies $R = 10$ periods/mm 20 periods/mm
 40 periods/mm



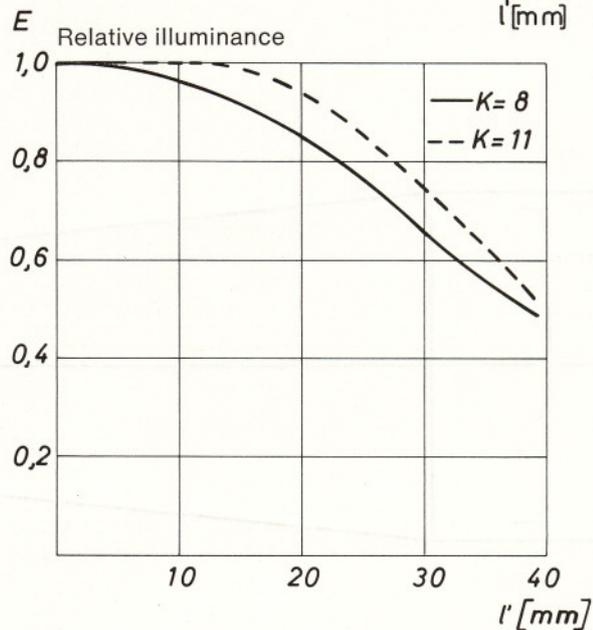
1. MTF Diagrams

The image height l' — reckoned from the image center — is entered in mm on the horizontal axis of the graph. The modulation transfer T (MTF = **M**odulation **T**ransfer **F**actor) is entered on the vertical axis. Parameters of the graph are the spatial frequencies R in periods (line pairs) per mm given at the top right hand above the diagrams. The lowest spatial frequency corresponds to the upper pair of curves, the highest spatial frequency to the lower pair. Above each graph the f-number k is given for which the measurement was made. "White" light means that the measurement was made with a subject illumination having the approximate spectral distribution of daylight.

Unless otherwise indicated, the performance data refer to large object distances, for which normal photographic lenses are primarily used.

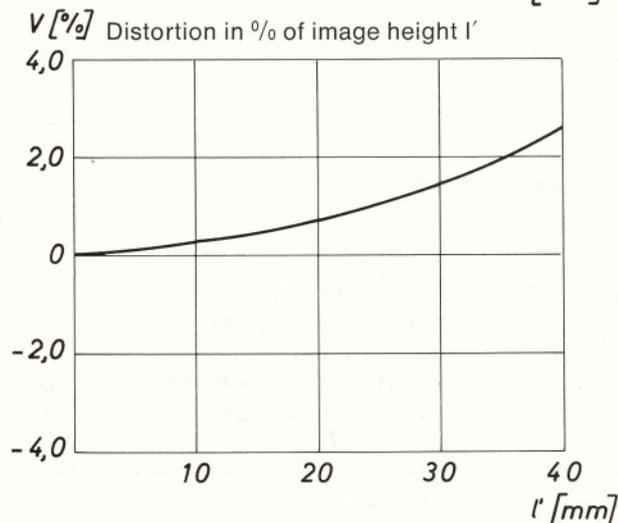
2. Relative illuminance

In this diagram the horizontal axis gives the image height l' in mm and the vertical axis the relative illuminance E , both for full aperture and a moderately stopped-down lens. The values for E are determined taking into account vignetting and natural light decrease. The natural light decrease increases with the factor "cos⁴ of half the angular field". It is independent of the design and degree of correction of the lens.



3. Distortion

Here again the image height l' is entered on the horizontal axis in mm. The vertical axis gives the distortion V in % of the relevant image height. A positive value for V means that the actual image point is further from the image center than with perfectly distortion-free imaging (pin-cushion distortion); a negative V indicates barrel distortion.



Subject to technical amendment