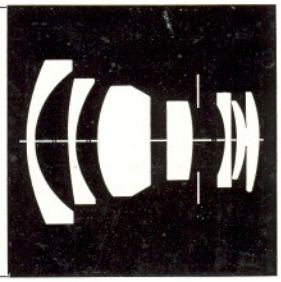
ZEISS

# Distagon f/3.5 = 60 mm
# Cat. No. 104852



HASSELBLAD

CARL ZEISS
Abteilung für Photographie

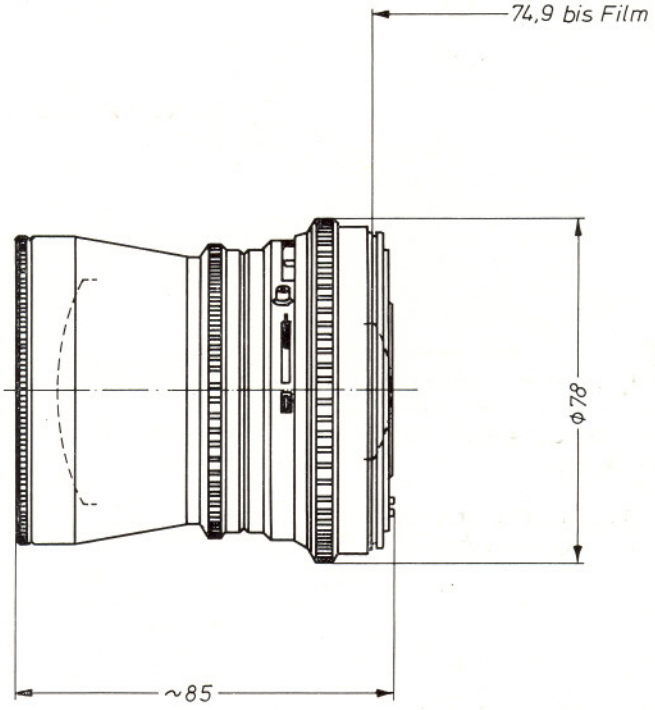
7082 Oberkochen
West Germany

In response to repeated requests, we developed this wide-angle lens which surpasses its predecessor, the Distagon f/4 - 60 mm, in performance and speed.

This was achieved even without an increase in optical sophistication through the use of most modern computers.

Special features of this lens are its compact design and its relatively low weight.

The varied applications of the Distagon f/3.5 - 60 mm make it almost a universal lens. Many owners of Hasselblad cameras will include this lens together with the Sonnar f/4 - 150 mm in their standard equipment.



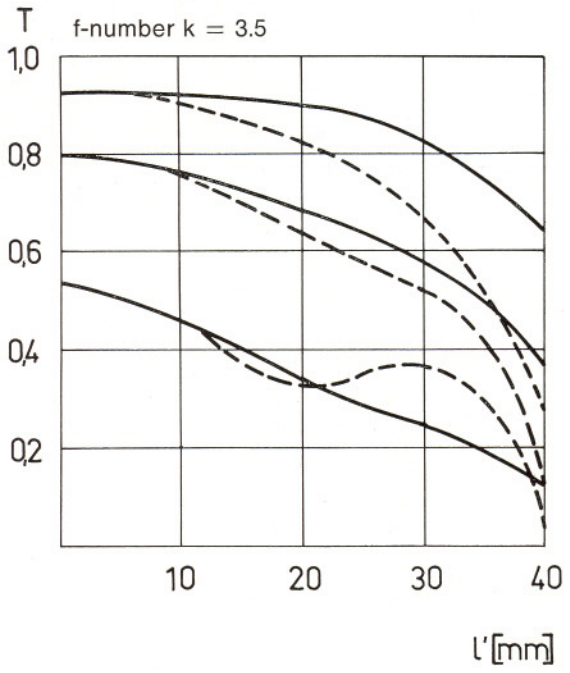

| | |
|---|---|
| Number of lens elements: | 7 |
| Number of components: | 7 |
| f-number: | 3.5 |
| Focal length: | 60.2 mm |
| Negative size: | 56.5 x 56.5 mm |
| Angular field 2 w: | diagonal 66°, side 50° |
| Spectral range: | visible spectrum |
| f-stop scale: | 3.5 - 4 - 5.6 - 8 - 11 - 16 - 22 |
| Mount: | Compur interchangeable reflex shutter size 0 with automatic iris diaphragm |
| Filter mounting: | adapter ring for Hasselblad series 63 |
| Weight: | 645 g |

| | |
|---|---|
| Distance range: | ∞ to 0.6 m |
| Automatic depth-of-field indication for z = 0.06 mm*) | |
| Position of entrance pupil: | 32.2 mm behind the first lens vertex |
| Diameter of entrance pupil: | 17.0 mm |
| Position of exit pupil: | 22.7 mm in front of the last lens vertex |
| Diameter of exit pupil: | 26.7 mm |
| Position of principal plane H: | 53.8 mm behind the first lens vertex |
| Position of principal plane H': | 11.0 mm behind the last lens vertex |
| Distance between first and last lens vertex: | 75.3 mm |

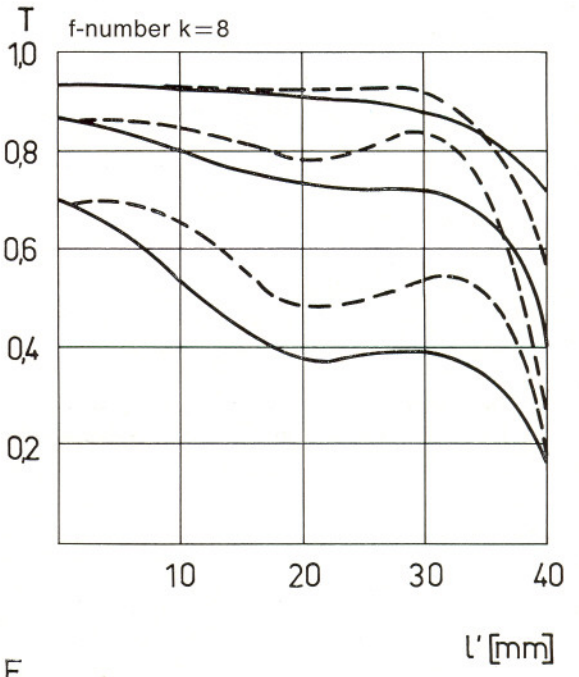
*) z = circle-of-confusion diameter

# Performance data: **Distagon f/3.5 = 60 mm Cat. Nr. 104852**

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

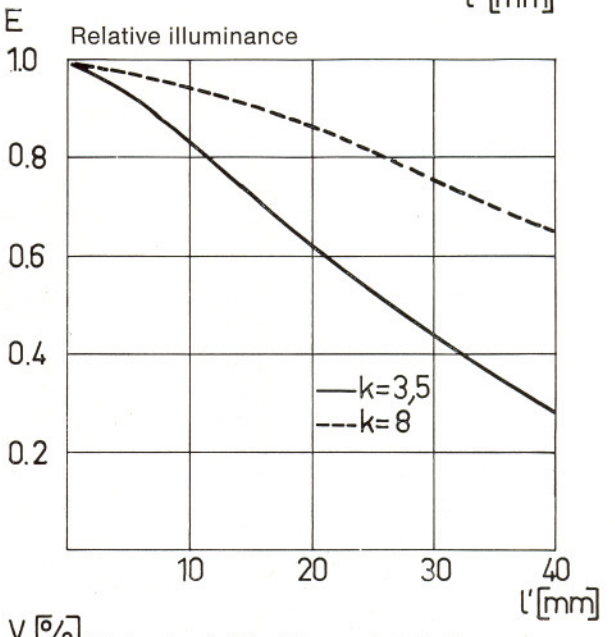


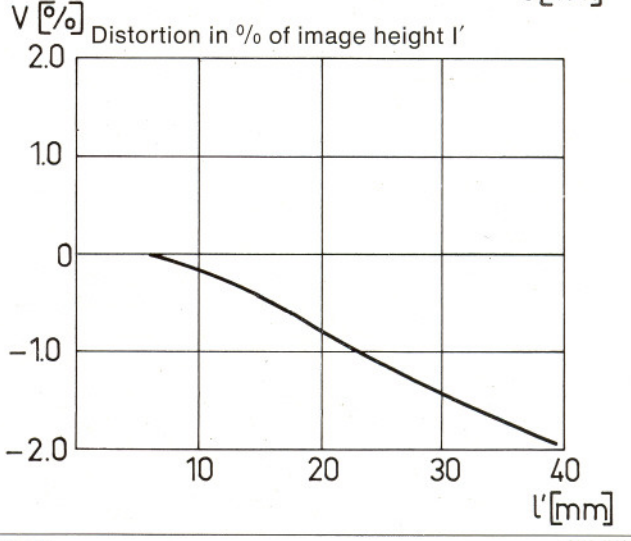

**1. MTF Diagrams**
The image height l′ — reckoned from the image center — is entered in mm on the horizontal axis of the graph. The modulation transfer T (MTF = **M**odulation **T**ransfer **F**actor) is entered on the vertical axis. Parameters of the graph are the spatial frequencies R in periods (line 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 "$\cos^4$ 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