

# AUTO-TESSAR®

**New!**



*Reflex-free HDR lenses for frontview  
and night-vision applications under  
adverse conditions*

## The challenge:

*To eliminate reflections and veiling glare that can cause a loss of signal quality.*



FRONTVIEW CAMERA SYSTEM  
WITH STANDARD LENS

Reflections and excessive veiling glare were up to now two of the main problems encountered in connection with the use of high-resolution sensor chips for frontview and night-vision camera systems. These problems had to be eliminated, but the solution was not to be found at the level of electronic components or software. In the final analysis, the ideal approach was to make sure that reflections and veiling glare in the images received by the sensor chips would be reduced to an absolute minimum from the very beginning or eliminated altogether.

CTIONS, NO VEILING GLARE.

**The solution:**

***Docter Optics HDR lenses developed especially for these applications.***



FRONTVIEW CAMERA SYSTEM WITH  
AUTO-TESSAR® HDR LENS

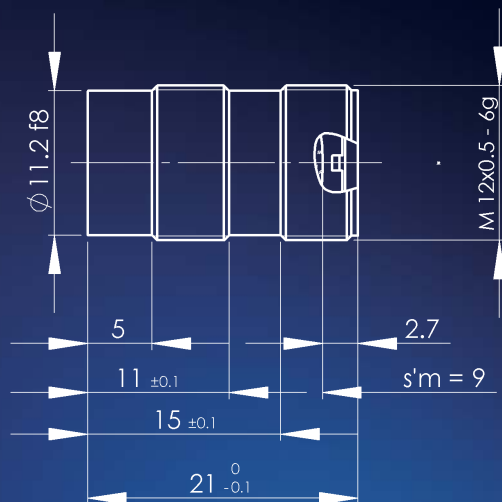
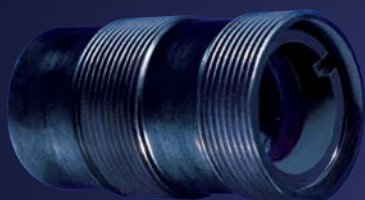
As an internationally recognized producer of special-purpose lenses and a major supplier to the automotive industry, Docter Optics accepted this challenge. Docter Optics now offers high dynamic range lenses (HDR) for reflex-free imaging with veiling glare of less than 1 percent. These new lenses, which are marketed under the Auto-Tessar® trade name, meet the specific needs of the automobile industry and manufacturers of frontview and night-vision systems not only in terms of technology, but also in terms of economy.

# MINIATURIZED PRECI

## Auto-Tessar® 2/7

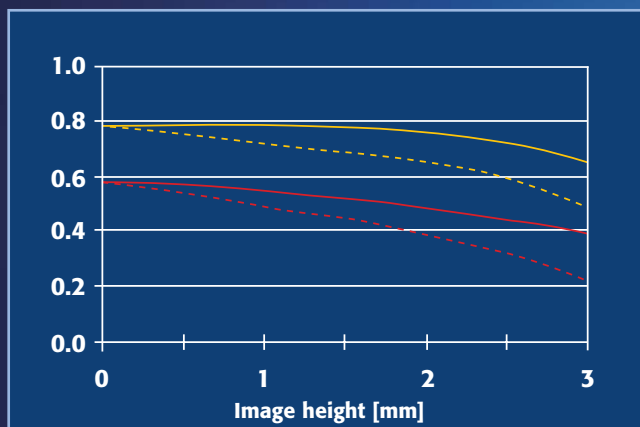
Reflex-free lens with fixed iris for high-definition imaging also under unfavorable light conditions, e. g., light from oncoming vehicles

- Especially developed for high-resolution sensors with high dynamic sensitivity
- Corrected for visible area or NIR region
- For images up to 1/3"
- Relative illumination > 90%, veiling glare < 1%

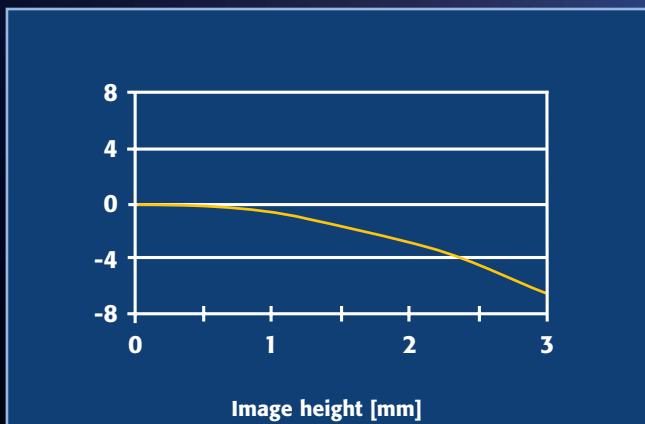


### Modulation

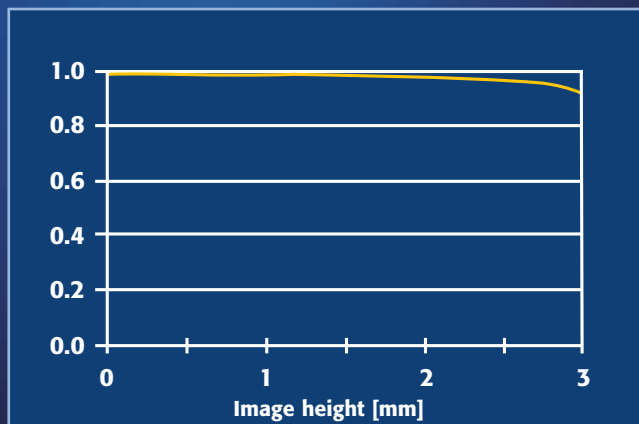
MTF over image height for 40 and 60 lp/mm;  $s = \infty$ ; radial: — tangential: .....



### Distortion/ %



### Rel. illumination

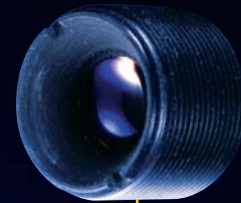
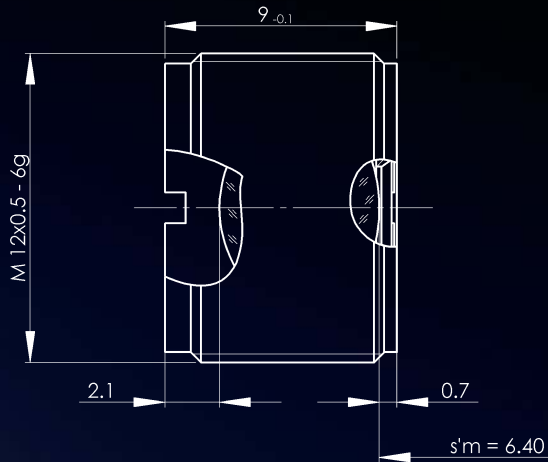


# SION: AUTO-TESSAR®

## Auto-Tessar® 2.3/9.6

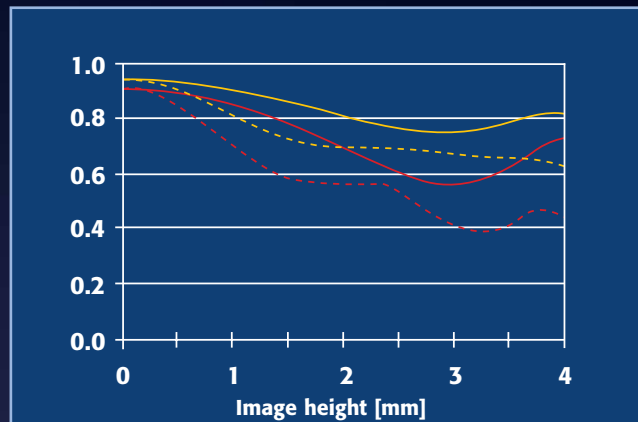
Reflex-free lens with fixed iris, ideal for high-definition imaging under unfavorable light conditions, e. g., light from oncoming vehicles.

- Especially developed for high-resolution sensors with high dynamic sensitivity
- Corrected for the 500 to 900 nm lambda range
- For images up to 1/2" (9 mm diagonal optionally available)

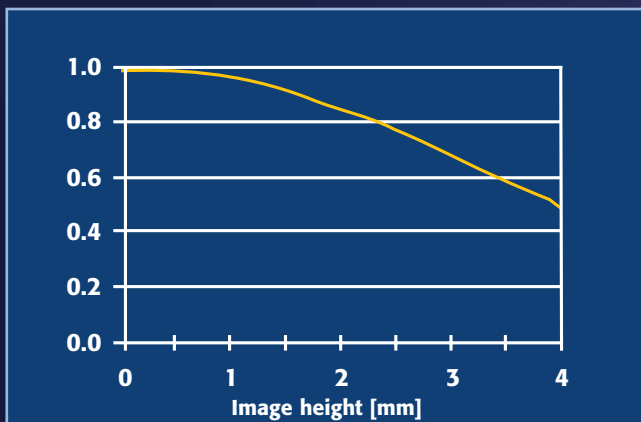


### Modulation

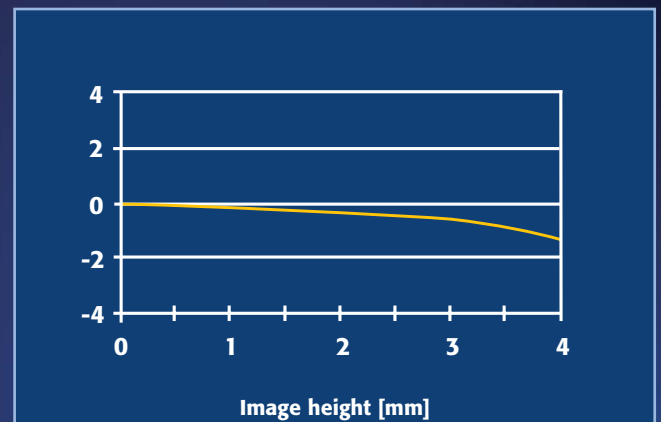
MTF over image height for 20 and 30 Lp/mm ;  $s = \infty$  ; radial: — tangential: ····



### Rel. illumination



### Distortion / %

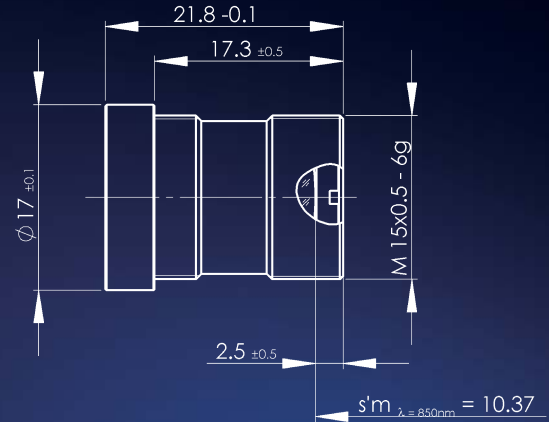


# AUTO-TESSAR®: SERIES -

## Auto-Tessar® 2.3/17

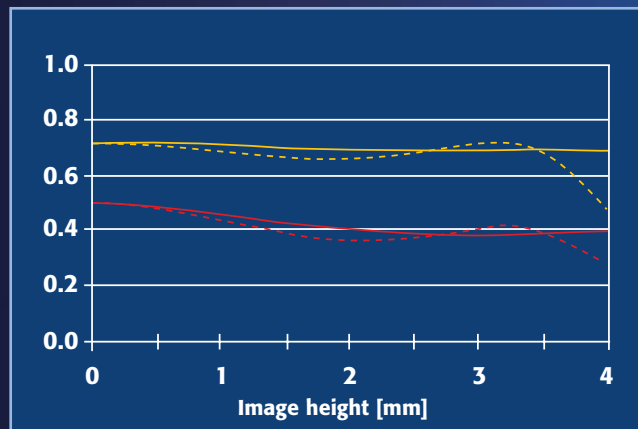
Reflex-free high-resolution lens with fixed iris, ideal for high-definition imaging under unfavorable light conditions, e. g., light from oncoming vehicles.

- Especially developed for high-resolution sensors with high dynamic sensitivity
- Corrected for the 500 to 900 nm lambda range
- For images up to 1/2" (8 mm diagonal optionally available)
- Very high relative illumination of > 90%
- Veiling glare < 1%

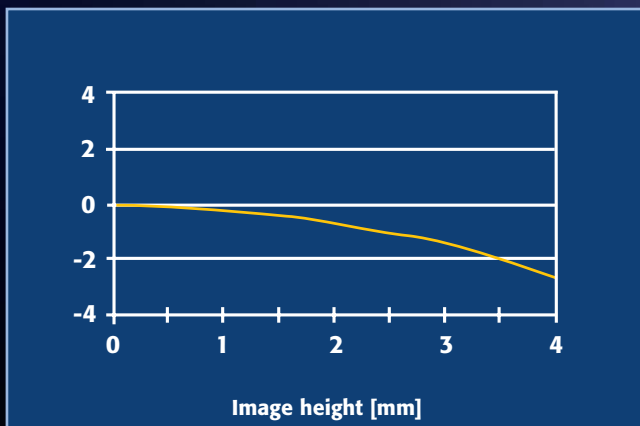


### Modulation

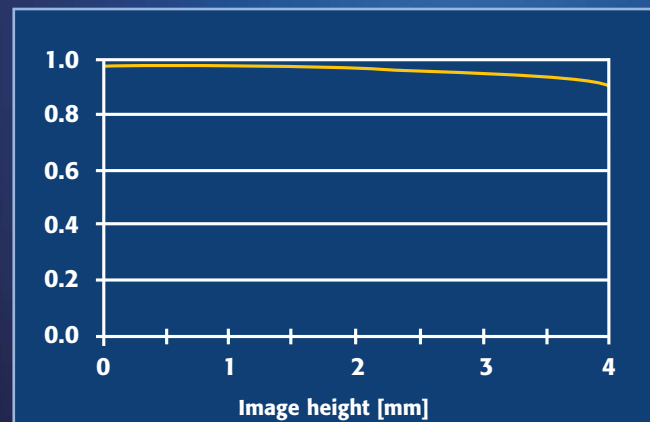
MTF over image height for 40 and 80 Lp/mm;  $s = \infty$ ; radial: — tangential: ····



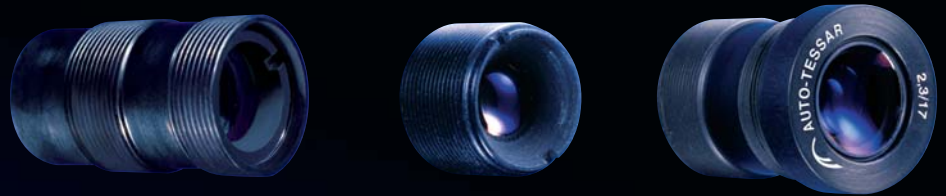
### Distortion / %



### Rel. illumination



# PRODUCED HDR-LENSES.



Lens data	AutoTessar® 2/7	AutoTessar® 2.3/9.6	AutoTessar® 2.3/17
Focal length	7 mm	9.6 mm	17.3 mm
Back focal length (s'm)	9 mm	6.4 mm	10.4 mm
Max. relative aperture	2 mm	2.3	2.3
Image circle diameter	6 mm	8.0 mm	8.0 mm
Object angle	56°	53.2°	26.6°
Total thickness of lens	18.0 mm	6.2 mm	17.25 mm
Front edge to first vertex	0.3 mm	2.1 mm	2.0 mm
Back edge to vertex	2.7 mm	0.7 mm	2.5 mm
Lens length (min.)	21.0 mm	9.0 mm	21.8 mm
Lens diameter (max.)	12.0 mm	12.0 mm	17.0 mm
Mount	C-, CS-, S-mounts, M12x0.5 and special threads	C-, CS-, S-mounts, M12x0.5 and special threads	M15 x 0.5 and C-, CS-mounts
Focusing control	adjustable	adjustable	adjustable
Iris control	Fixed iris 2.0	Fixed iris 2.3	Fixed iris 2.3
Mass	4.9 g	2.5 g	10.5 g

Of course, Docter Optics also offers custom-developed Auto-Tessar® lenses or modifications of the lenses shown here for customer-specific applications.

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