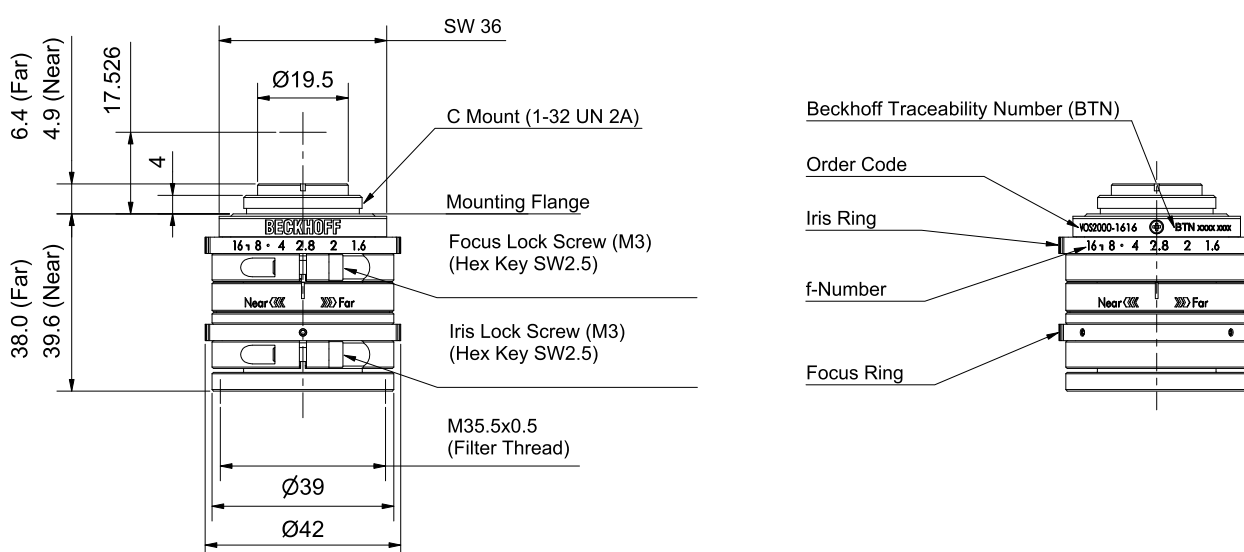


# Datasheet | VOS2000 lens series

Industrial-grade high-resolution C-mount lens of the VOS2000 series with broadband anti-reflection coating



Basic data	Value
Focal length (mm)	16.2
Resolution ( $\mu\text{m}$ )	2
f-number	1.6 ... 16.0 (continuous)
Working distance (mm)	150 ... infinity
Image circle diameter (mm)	11
Largest suitable sensor	2/3" with 8.1 MP



Mechanical data	Value
Total length (near - far) (mm)	44.4 ... 44.5
Length from lens shoulder (mm)	38.0 ... 39.6
Weight (g)	110
Diameter (mm)	42
Connection	C-mount
Filter thread	M35.5x0.5

Environmental conditions	Value
Vibration resistance <sup>1</sup> (G)	10
Operating temperature <sup>2</sup> (°C)	0 ... 60
Storage temperature <sup>3</sup> (°C)	-10 ... 60

<sup>1</sup> according to JISC60068-2-6 Freq. 10 - 150 [Hz], Test time: X,Y,X axis direction 20 cycles / 8 min total 160 min x 3 = 480 min.

<sup>2</sup> relative humidity 20 ... 70%, non-condensing

<sup>3</sup> non-condensing

Optical data	Symbol	Nominal object distance	Minimum object distance
Working distance (mm)		500	150
Object distance <sup>1</sup> (mm)	$s$	507.0	157.0
Focal length (mm)	$f, f'$	16.2	16.2
Object-side focal length (mm)	$s_F$	-12.24	-12.24
Image-side focal length (mm)	$s'_F$	12.16	13.20
Back focal length of the object-side principal plane (mm)	$s_H$	28.4	28.4
Back focal length of the image-side principal plane (mm)	$s'_H$	4.50	4.50
Interstitium (mm)	$i$	2.20	2.20
Distance from object to image (mm)		554.26	205.30
Object distance (mm)	$a$	535.4	185.4
Image distance (mm)	$a'$	16.7	17.7
f-number		1.6 ... 16.0	
Back focal length of the entrance pupil (mm)	$s_{EP}$	18.9	18.9
Back focal length of the exit pupil (mm)	$s'_{AP}$	28.1	28.1
Diameter of the entrance pupil (mm)		10.20	10.20
Diameter of the exit pupil (mm)		25.00	25.00
Angle of view <sup>2</sup> (degrees)	$\omega_{\max}$	37.59	37.59
Lateral magnification	$\beta'$	0.031	0.095
Distortion (%)		-0.47	-0.67
Depth of field <sup>3</sup> (mm)		131.9	14.4
Resolution <sup>4</sup> ( $\mu\text{m}$ )		2	
Relative illumination (%)		32.75	36.61
Image circle diameter (mm)		11	
Sensor size (inch)		2/3	
Flange focal length (mm)	$A_{O'}$	17.526	
Distance between object-side principal plane and lens shoulder (mm)	$H_A$	1.33	2.37
Available spectral range (nm)		420 ... 1050	

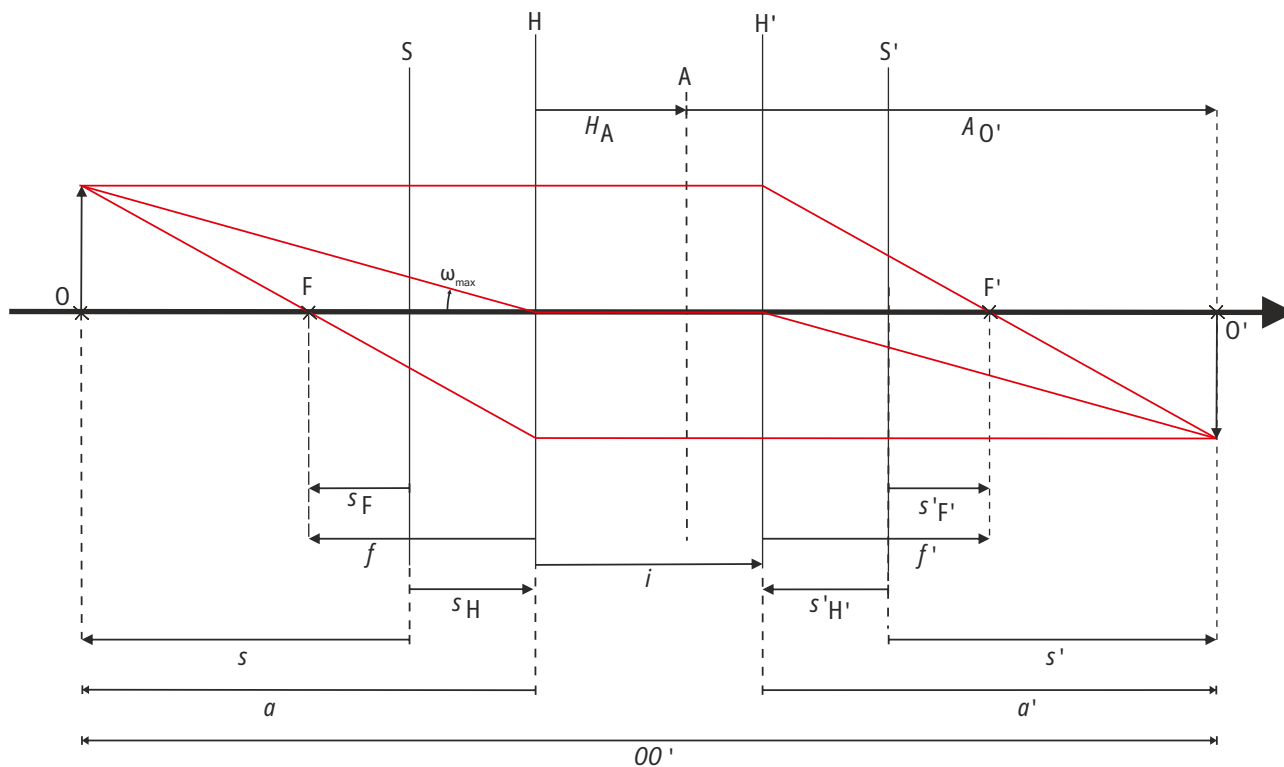
<sup>1</sup> identical with the *object distance* according to DIN 1335:2003-12

<sup>2</sup> identical with the double *object field angle* according to DIN 1335:2003-12

<sup>3</sup> at a circle of confusion diameter of 0.04 mm

<sup>4</sup> at 550 nm

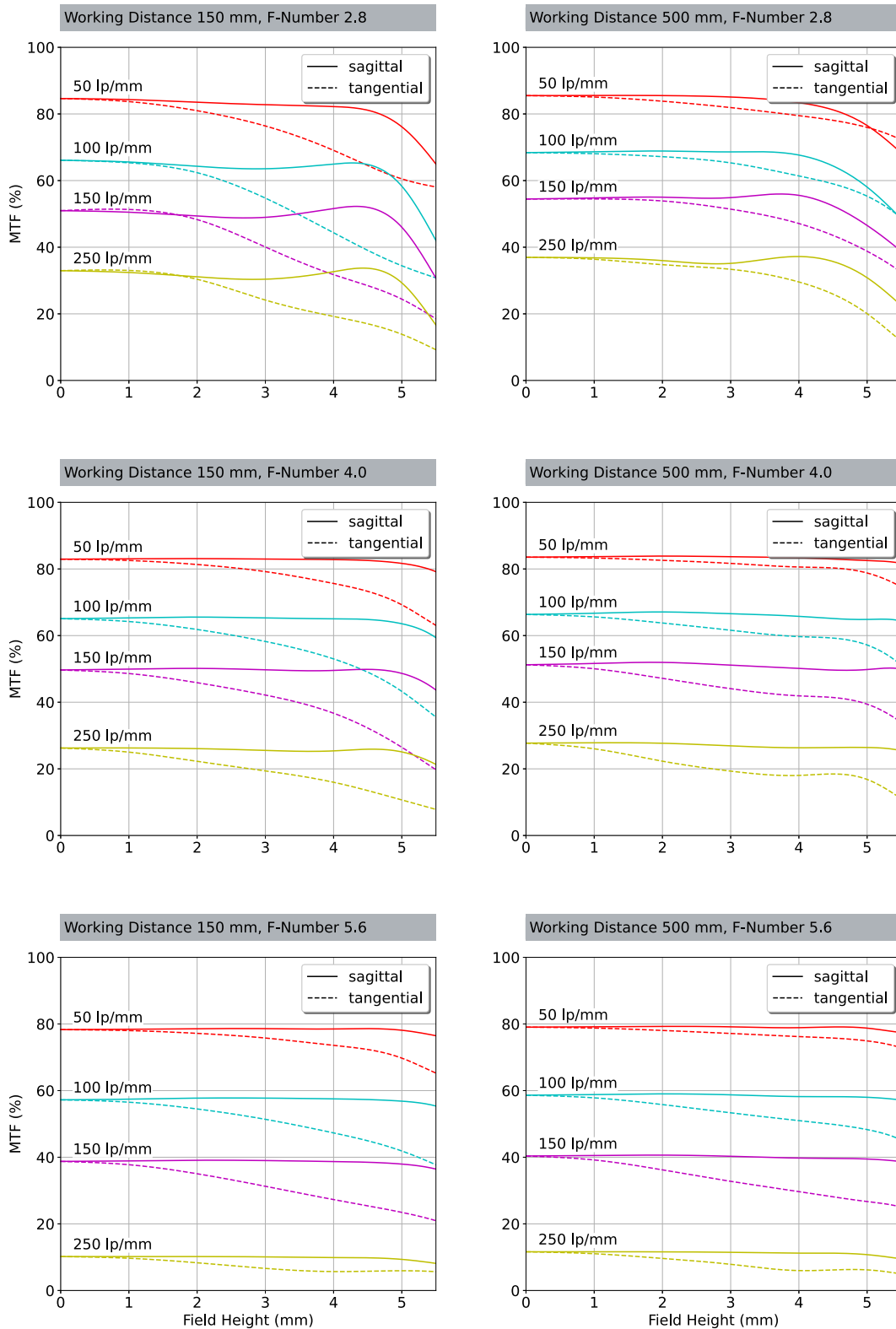
## Explanation of symbols



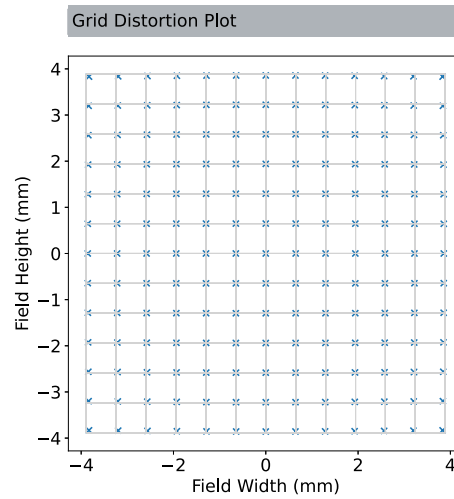
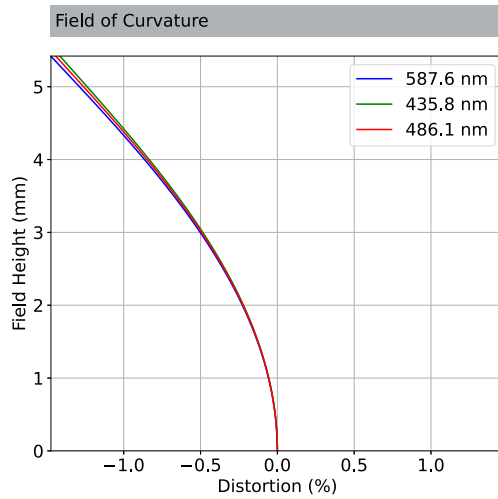
O	Axis point of the object	O'	Axis point of the image
F	object-side focal point	F'	image-side focal point
S	first vertex	S'	last vertex
H	object-side principal point	H'	image-side principal point
A	Lens shoulder	A <sub>O'</sub>	Flange focal length
s <sub>F</sub>	object-side back focal length	s' <sub>F'</sub>	image-side back focal length
f	object-side focal length	f'	image-side focal length
s <sub>H</sub>	Back focal length of the object-side principal point	s' <sub>H'</sub>	Back focal length of the image-side principal point
s	Object distance	s'	Flange focal length
a	Object distance	a'	Image distance
H <sub>A</sub>	Distance of the object-side principal point to the flange surface	i	Interstitium
ω <sub>max</sub>	object-side field angle	OO'	Distance of the axis points of object and image

**Note:** directional routes are indicated by arrows with an arrowhead.

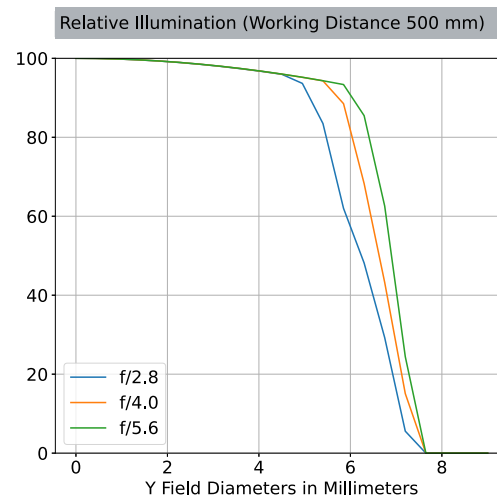
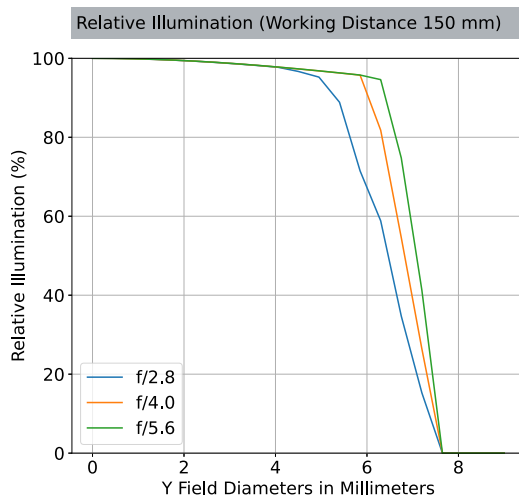
# Modulation transfer functions (MTF)



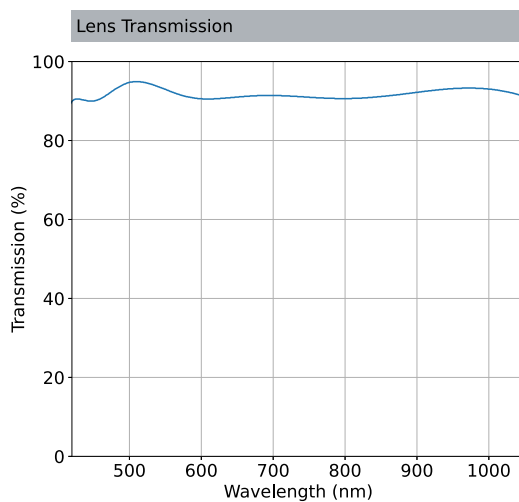
## Distortion



## Relative illumination



## Transmission



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