



# ZEISS Ventum 2.8/21



## Features

- excellent image quality, leading to highest data precision over the complete image field
- fixed infinity focus setting
- lightweight mechanical design with reduced moving parts
- robust full-metal alloy housing
- 50% weight reduction to comparable lens ZEISS Interlock Compact 2.8/21
- splash-water and dust-resistant lens housing
- covers line scan sensors up to 43 mm or are scan up to 24x36 mm<sup>2</sup>

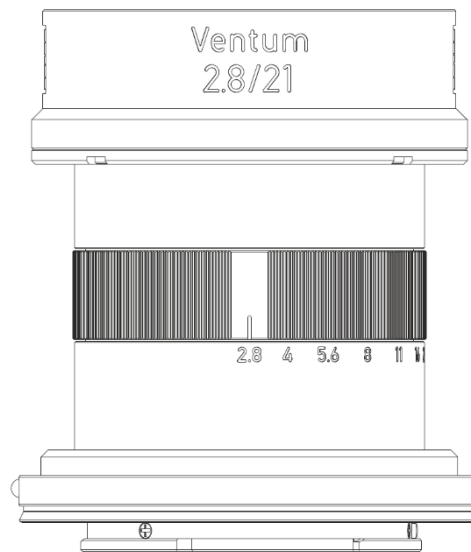
## Camera Mount

Available with  
E mount



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## Technical Specifications



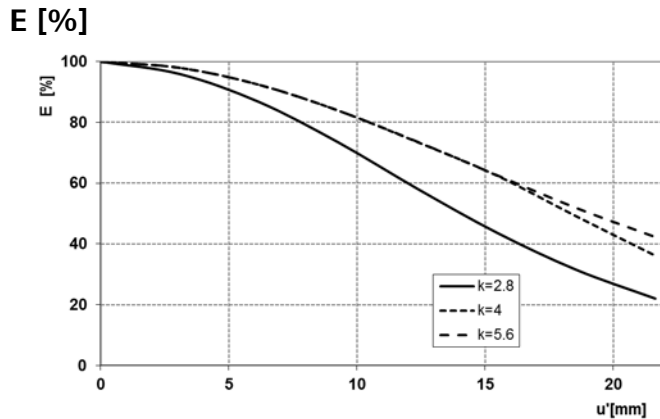
<b>Focal length</b>	21 mm
<b>Aperture range</b>	f/2.8 – f/22
<b>Number of elements / groups</b>	11 / 9
<b>Focus range (object to sensor)</b>	Fixed: set to $\infty$
<b>Angular field* (diag. / horiz. / vert.)</b>	91° / 81° / 59°
<b>Max. diameter of image field</b>	43.3 mm (1.7")
<b>Flange focal length (in air)</b>	18.0 mm (0.7"), E mount
<b>Position of entrance pupil (relative to image sensor)</b>	66.91 mm (2.63")
<b>Position of exit pupil (relative to image sensor)</b>	39.28 mm (1.55")
<b>Filter-thread</b>	M 52 x 0.75
<b>Length (without caps)</b>	67.8 mm (2.67")
<b>Diameter (max.)</b>	62.0 mm (2.44")
<b>Diameter (aperture ring)</b>	47.4 mm (1.87")
<b>Weight (without caps)</b>	227 g (0.5 lbs)
<b>Camera mount</b>	E mount

\* referring to 24 x 36 mm format resp. 43 mm line



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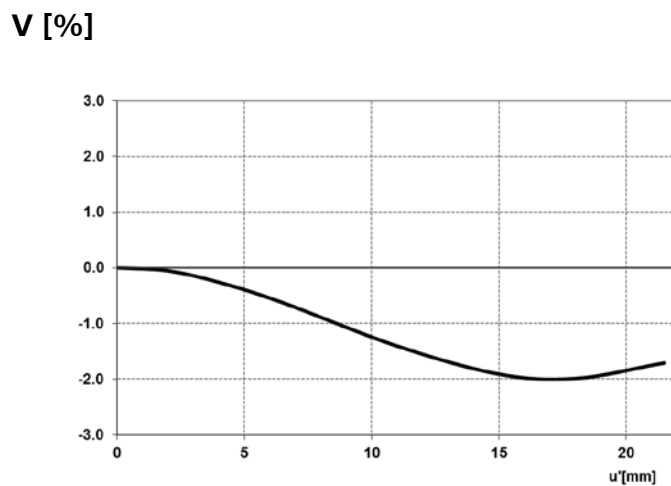
## Relative Illuminance



The relative illuminance shows the image brightness over the image height  $u'$  in relation to the image center.

- f-number = 2.8
- - - f-number = 4
- - - f-number = 5.6

## Relative Distortion

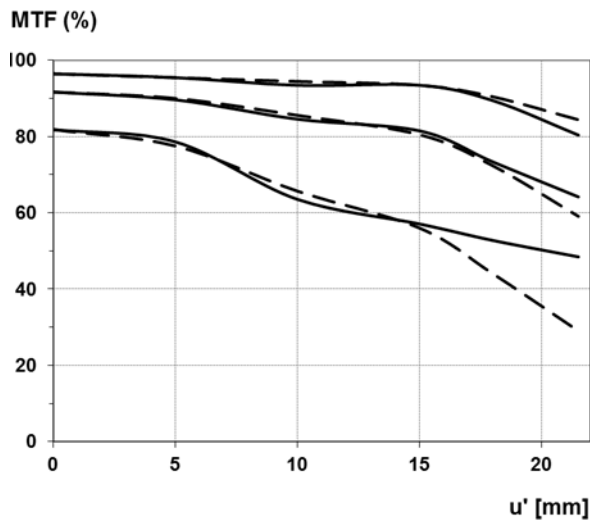


The relative distortion shows the deviation of the image height from the expected image height  $u'$  in percent.



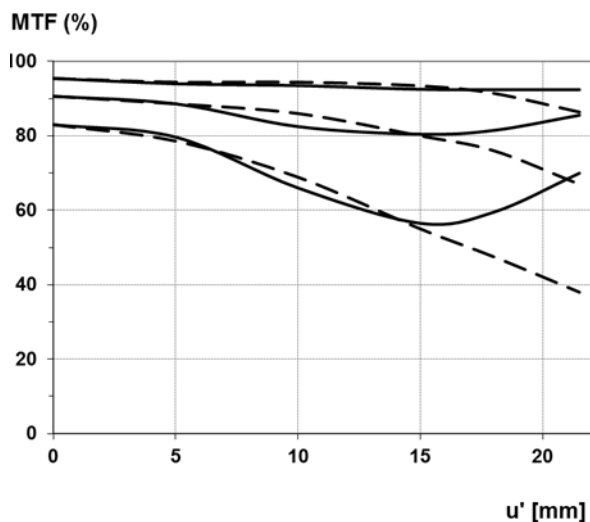
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## MTF Charts



The Modulation Transfer (MTF) as a function of image height ( $u$ ) and slit orientation (sagittal, tangential) has been measured with white light at spatial frequencies of  $R = 10, 20$  and  $40$  cycles/mm.

F-Number 2.8  
— Sagittal  
... Tangential



F-Number 5.6  
— Sagittal  
... Tangential



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## Depth of Field (DOF)\*

	<b>f/2.8</b>		<b>f/4</b>		<b>f/5.6</b>		<b>f/8</b>		<b>f/11</b>		<b>f/16</b>		<b>f/22</b>	
	from	to	from	to	from	to	from	to	from	to	from	to	from	to
<b>[m]</b>	6.38	INF	5.13	INF	4.07	INF	3.11	INF	2.40	INF	1.66	INF	1.05	INF

\* Depth of field table for sensor format 24x36mm, circle of confusion 0.015mm (D/3000), rounded to 0.01m