

# VEO\_JM DIAMOND 5.0 × / F1.3

For TDI Line Scan

## Key Features

- Optimized for 82 mm line scan sensors
- High resolution over the entire field
- Resolves 1.1  $\mu\text{m}$  in object space
- With beam splitter for axial in-line illumination
- Low chromatic focal shift
- No relative illumination loss at the edge
- Best azimuth marking

## Applications

- FPD (OLED / LCD) inspection
- PCB inspection
- Wafer inspection
- High resolution defect detection
- Quality assurance systems

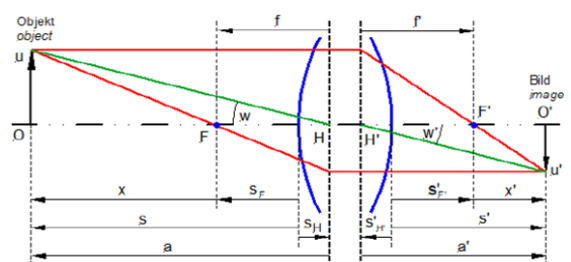


## Performance

Parameter	Specification	Remarks
Magnification range	5.0 (4.9 ... 5.1)	
F/# range	F/1.3 ... F/2.8	Optimum F/1.3
Numerical aperture	0.305	Object Plane
Max. sensor size [mm]	82	
Infinite F/#	F/1.3	
Focal length [mm]	100	
Depth of field [ $\mu\text{m}$ ]	6.2	@ P. CoC 10 $\mu\text{m}$
Distortion	< 0.1%	
Wavelength [nm]	400 ... 700	Visible
Working distance [mm]	31 (32 ... 30)	B/S ... Object
Beam splitter size	35 × 35 × 80	
Total length [mm]	691 ± 2	from Object to Sensor
Interface	V110 mount	0.75 pitch
Iris	Changeable	
Relative illumination	Less than 5%	
Weight [g]	3547	

## Optical Parameters

Contents	Parameter	Value
Chief Ray Angle (Max.) in object plane	CRA	3.2
Effective focal length	$f'_{\text{eff}}$ [mm]	100.18
Front focal length	SF [mm]	-12.46
Back focal length	S'F' [mm]	-62.55
Principal plane distance	HH' [mm]	-28.32
Pupil magnification	$\beta'P$	0.790
Entrance pupil position	SEP [mm]	114.28
Exit pupil position	S'AP [mm]	-141.73
Vertex width	$\Sigma d$ [mm]	222.12



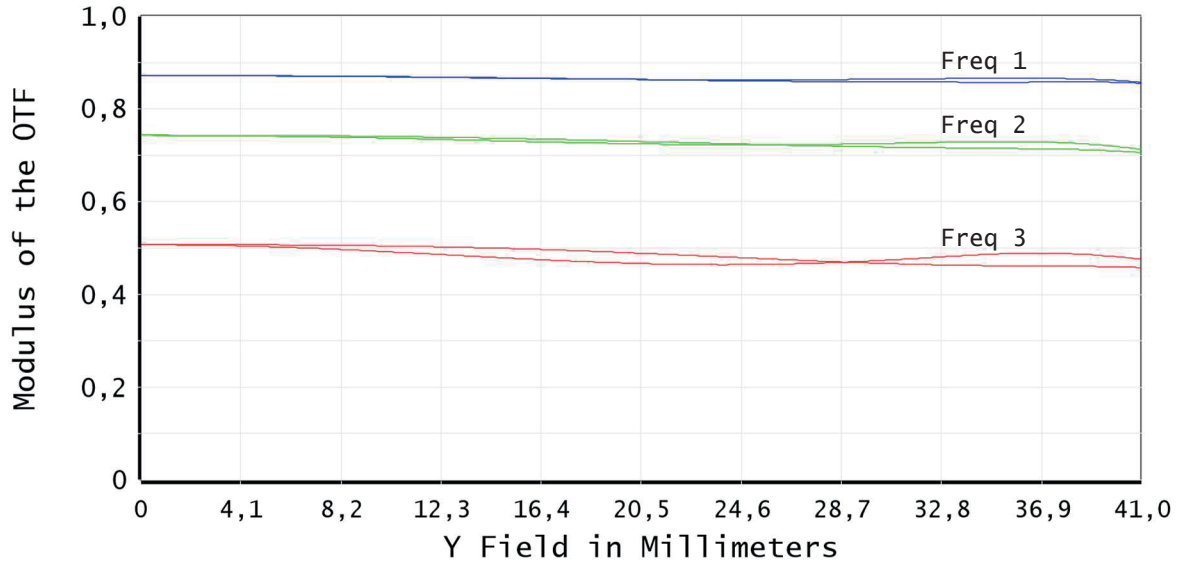
**VIEWWORKS**

www.viewworks.com

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## MTF



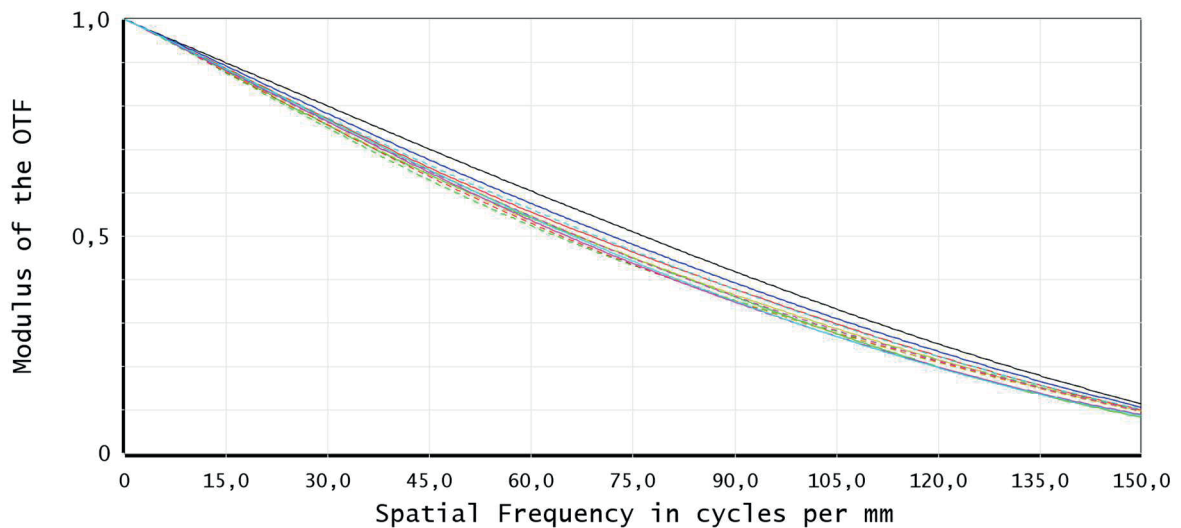
T1  
  S1  
  T2  
  S2  
  T3  
  S3

### FFT MTF vs. Field

Data for 436 to 645 nm

Freq 1: 18.00 cyc/mm      Freq 2: 36.00 cyc/mm      Freq 3: 72.00 cyc/mm

Legend items refer to Tangential (T) / Sagittal (S) frequency



<input checked="" type="checkbox"/> Diff. Limit-Tangential	<input checked="" type="checkbox"/> Diff. Limit-Sagittal	<input checked="" type="checkbox"/> 0,00 mm-Tangential	<input checked="" type="checkbox"/> 0,00 mm-Sagittal
<input checked="" type="checkbox"/> 41,00 mm-Tangential	<input checked="" type="checkbox"/> 41,00 mm-Sagittal	<input checked="" type="checkbox"/> 36,67 mm-Tangential	<input checked="" type="checkbox"/> 36,67 mm-Sagittal
<input checked="" type="checkbox"/> 31,76 mm-Tangential	<input checked="" type="checkbox"/> 31,76 mm-Sagittal	<input checked="" type="checkbox"/> 25,93 mm-Tangential	<input checked="" type="checkbox"/> 25,93 mm-Sagittal
<input checked="" type="checkbox"/> 18,34 mm-Tangential	<input checked="" type="checkbox"/> 18,34 mm-Sagittal		

### Polychromatic Diffraction MTF

Data for 436 to 645 nm

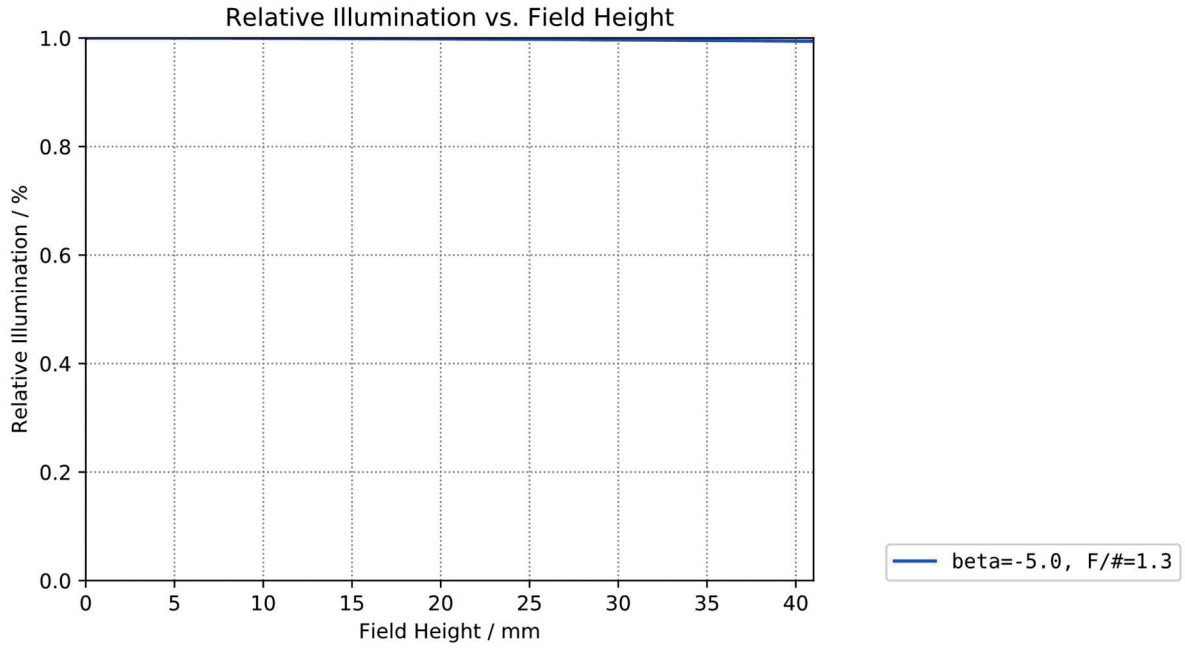
Surface: Image

Legend items refer to Field positions

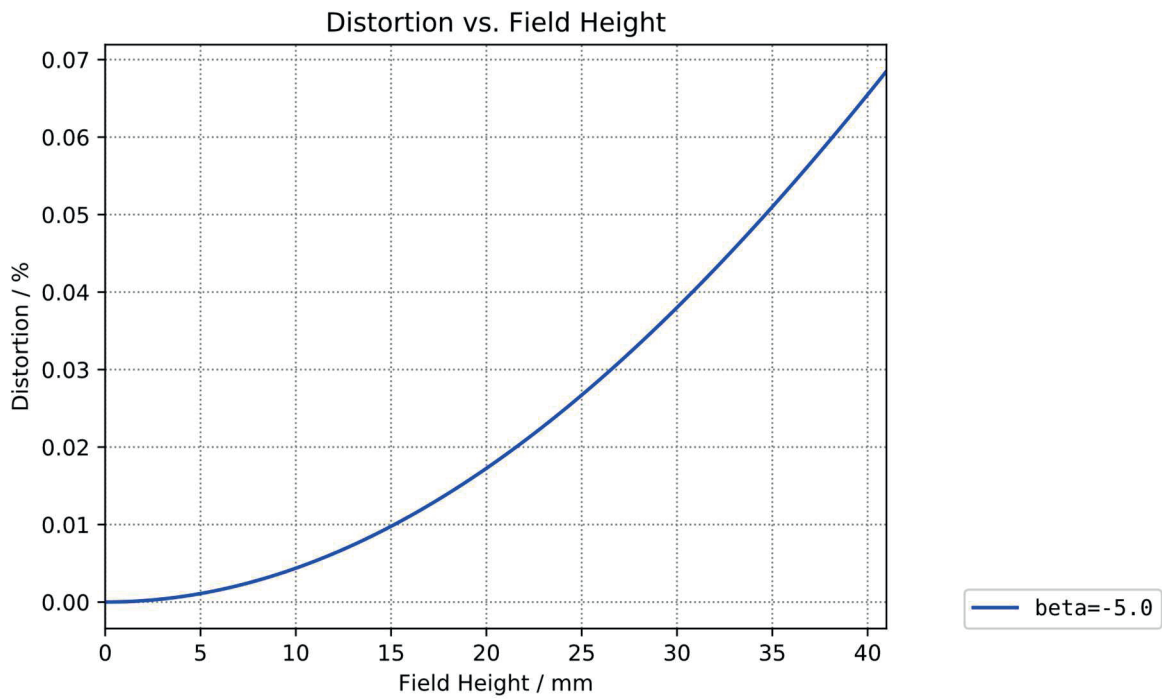
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## Relative Illumination



## Distortion



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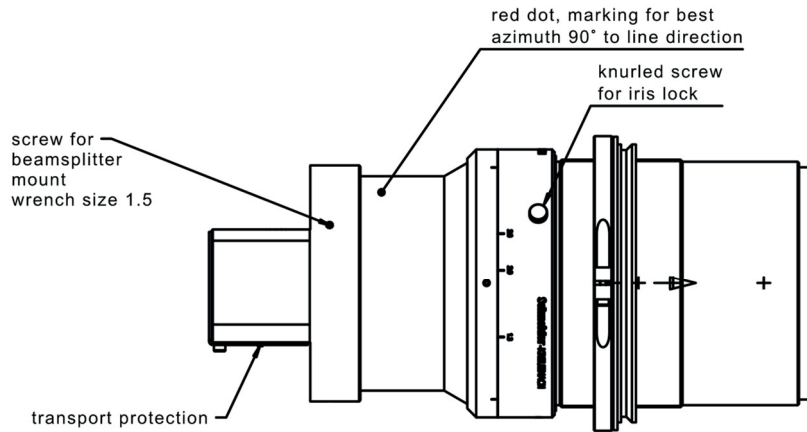
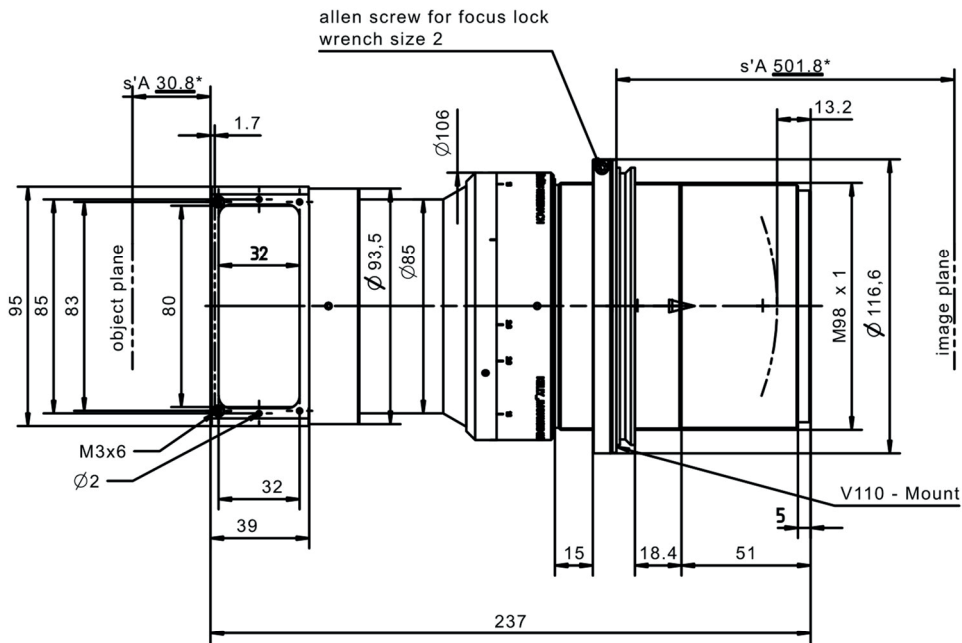
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## Dimensions

Unit: mm

\* WD and s'A  
in air at  
beta' -5,0

view without  
transport protection



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00158074 001  
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