

VEO_JM DIAMOND 3.33 × / F2.1

For TDI Line Scan

Key Features

- Optimized for 82 mm line scan sensors
- High resolution over the entire field
- Resolves 1.86 μm 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

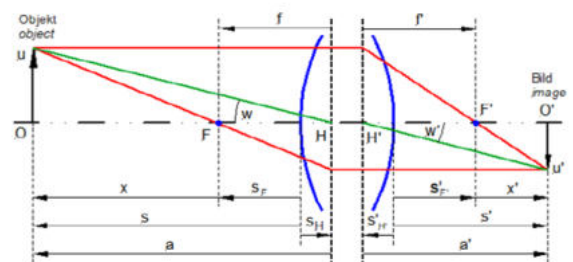


Performance

| Parameter | Specification | Remarks |
|----------------------------------|--------------------|---------------------------|
| Magnification range | 3.33 (3.2 ... 3.4) | |
| F/# range | F/2.1 ... F/4.0 | Optimum F/2.1 |
| Numerical aperture | 0.180 | Object Plane |
| Max. sensor size [mm] | 82 | |
| Infinite F/# | F/2.1 | |
| Focal length [mm] | 121 | |
| Depth of field [μm] | 16.4 | @ P. CoC 10 μm |
| Distortion | < 0.05% | |
| Wavelength [nm] | 400 ... 700 | Visible |
| Working distance [mm] | 39 (40 ... 38) | B/S ... Object |
| Beam splitter size | 25 × 25 × 80 | |
| Total length [mm] | 665 ± 2 | from Object to Sensor |
| Interface | V110 mount | 0.75 pitch |
| Iris | Changeable | |
| Relative illumination | Less than 5% | |
| Weight [g] | 3101 | |

Optical Parameters

| Contents | Parameter | Value |
|--|------------------------|--------|
| Chief Ray Angle (Max.) in object plane | CRA | 4.2 |
| Effective focal length | f'_{eff} [mm] | 121.50 |
| Front focal length | SF [mm] | -3.47 |
| Back focal length | S'F' [mm] | 27.25 |
| Principal plane distance | HH' [mm] | -19.23 |
| Pupil magnification | $\beta'P$ | 0.95 |
| Entrance pupil position | SEP [mm] | 125.06 |
| Exit pupil position | S'AP [mm] | -87.57 |
| Vertex width | Σd [mm] | 193.01 |



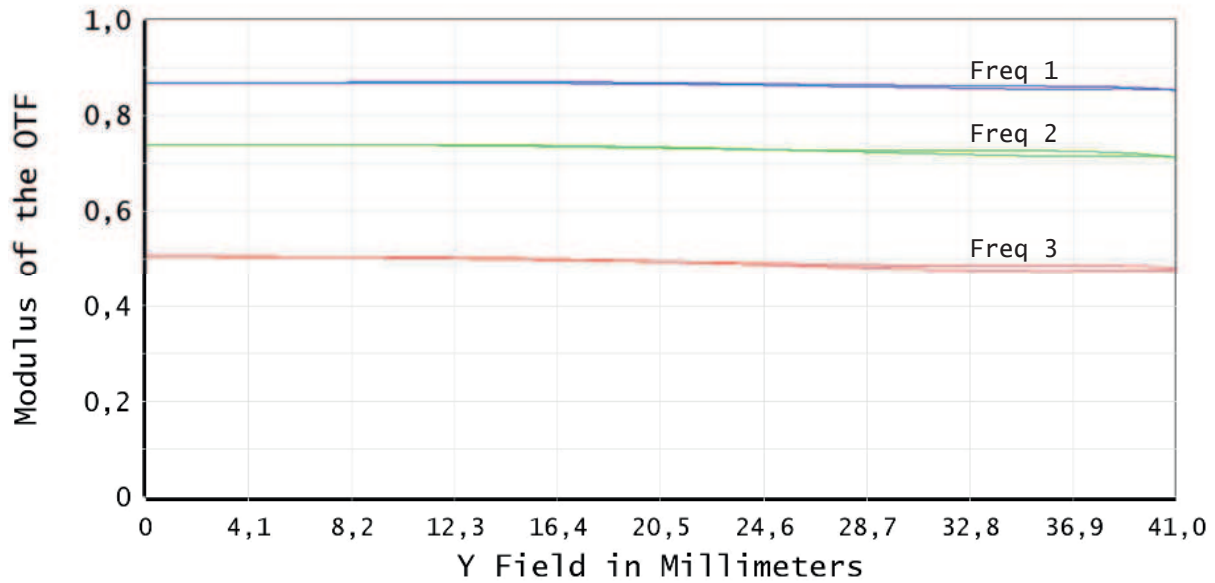
VIEWWORKS

vision.viewworks.com

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MTF



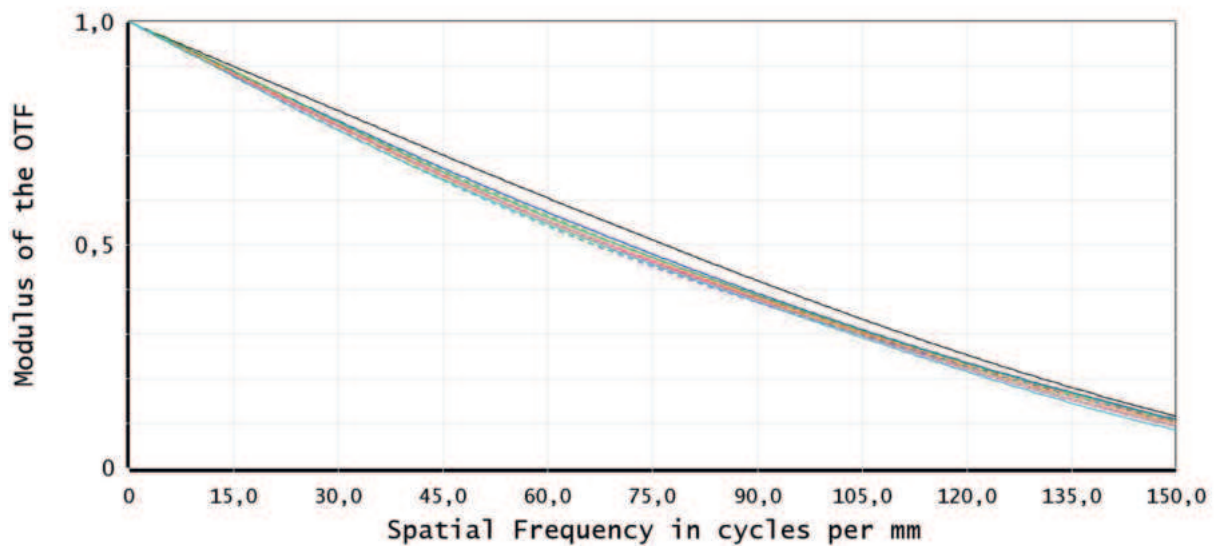
Legend: T1, S1, T2, S2, T3, S3

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



Legend: Diff. Limit-Tangential, Diff. Limit-Sagittal, 0,00 mm-Tangential, 0,00 mm-Sagittal, 18,34 mm-Tangential, 18,34 mm-Sagittal, 25,93 mm-Tangential, 25,93 mm-Sagittal, 31,76 mm-Tangential, 31,76 mm-Sagittal, 36,67 mm-Tangential, 36,67 mm-Sagittal, 41,00 mm-Tangential, 41,00 mm-Sagittal

Polychromatic Diffraction MTF

Data for 436 to 645 nm

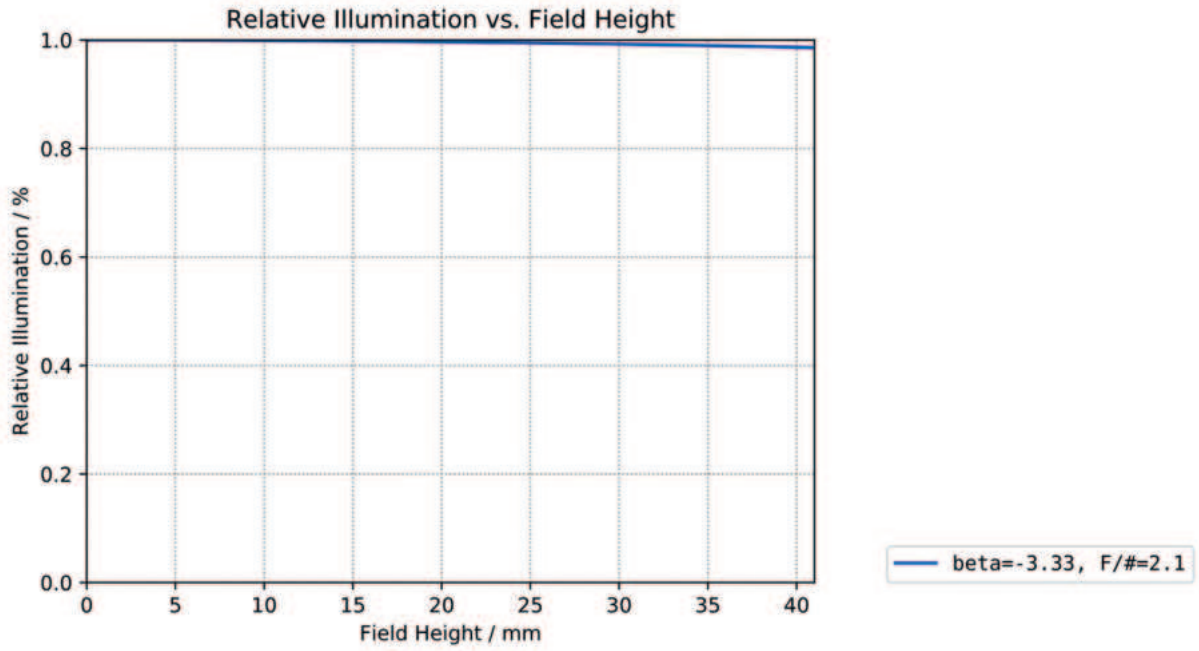
Surface: Image

Legend items refer to Field positions

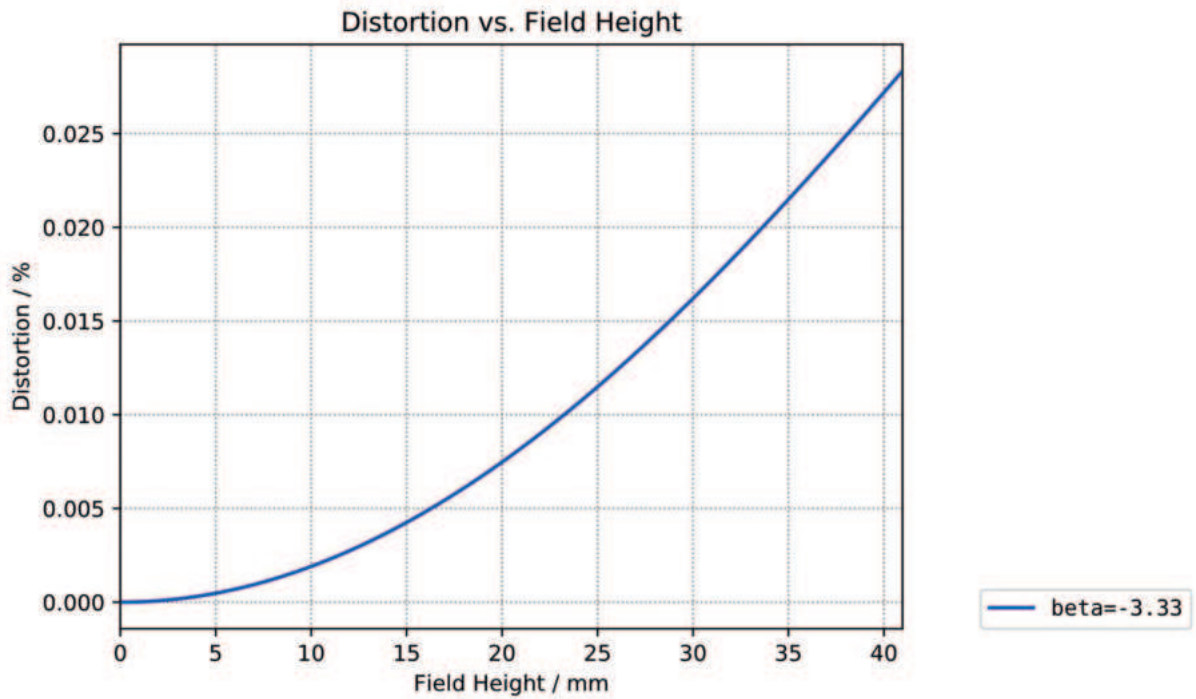
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Relative Illumination



Distortion



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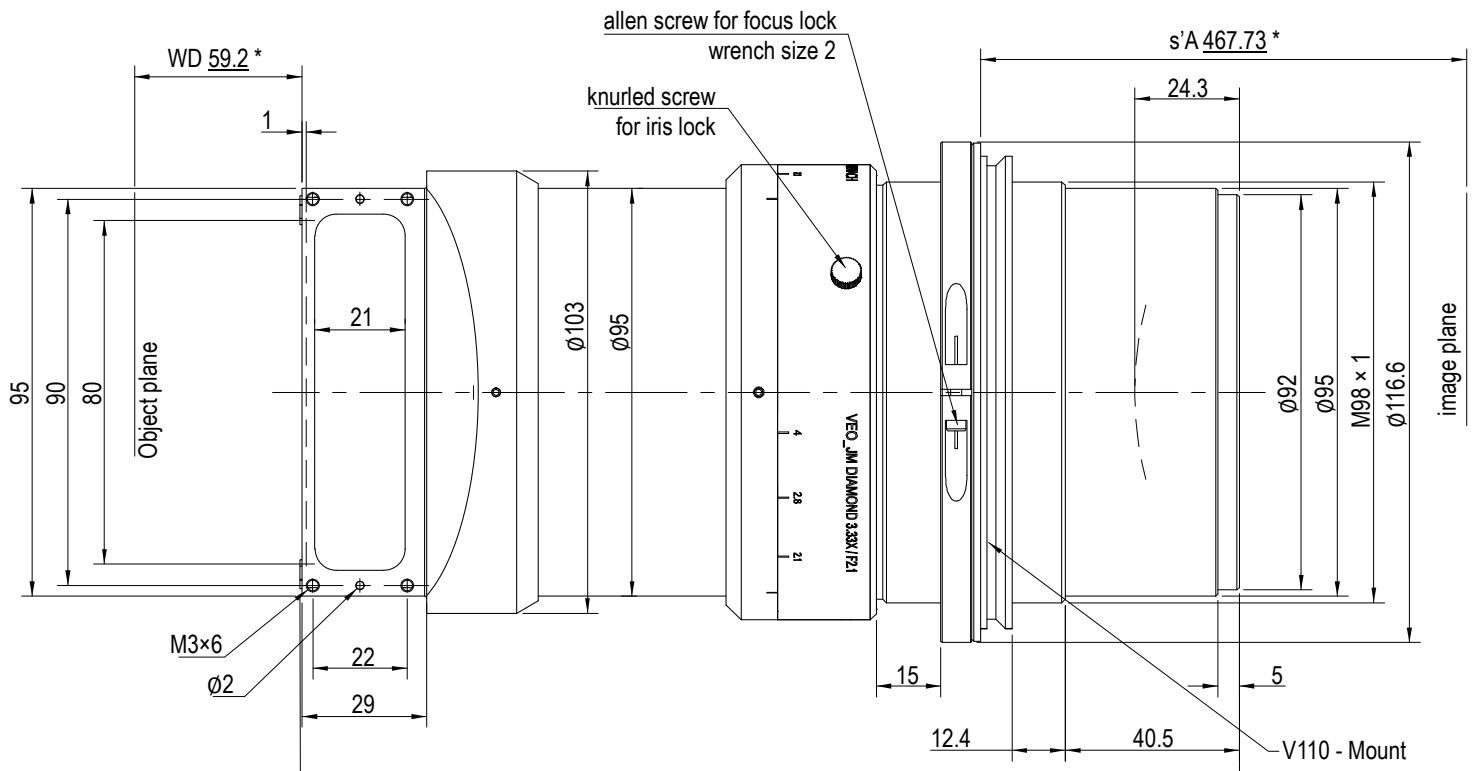
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Dimensions

Unit: mm

* WD and s'A
in air at
bcta' -3.33

view without
transport protection



-screws for
beamsplitter
mount
wrench size 1.3

red dot, making for best
azimuth 90° to line direction

transport
protection