

# 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  $\mu\text{m}$  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

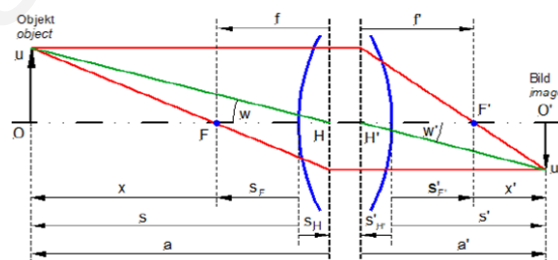


## Performance

| Parameter                        | Specification      | Remarks                   |
|----------------------------------|--------------------|---------------------------|
| Magnification range              | 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 [ $\mu\text{m}$ ] | 16.4               | @ P. CoC 10 $\mu\text{m}$ |
| 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                           | $\Sigma d$ [mm] | 193.01 |



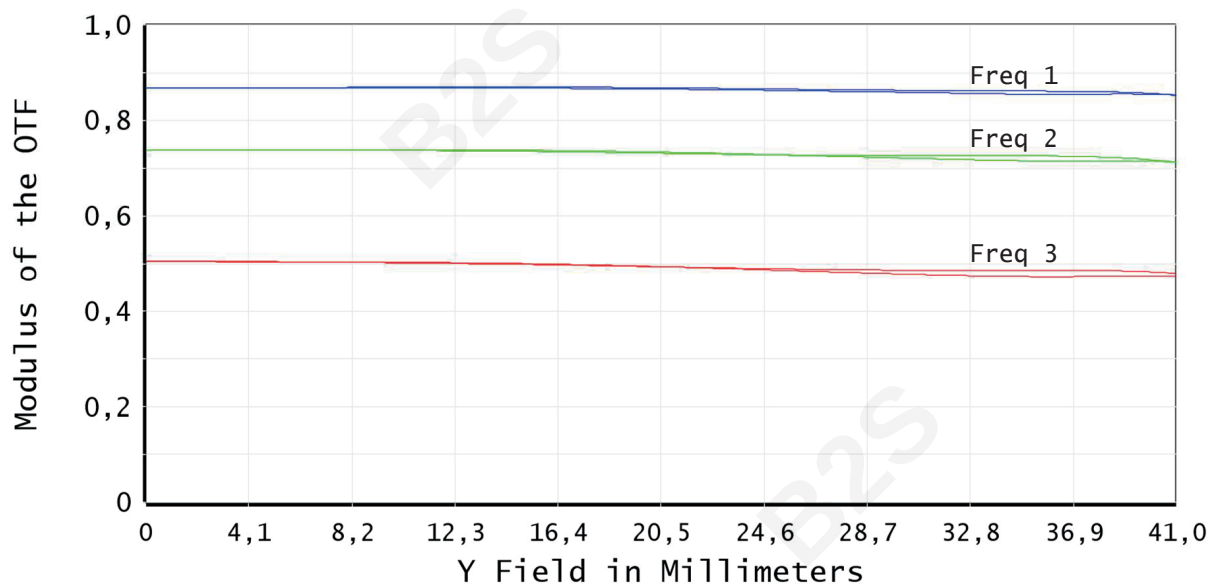
# VIEWWORKS

vision.viewworks.com

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## MTF



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

### FFT MTF vs. Field

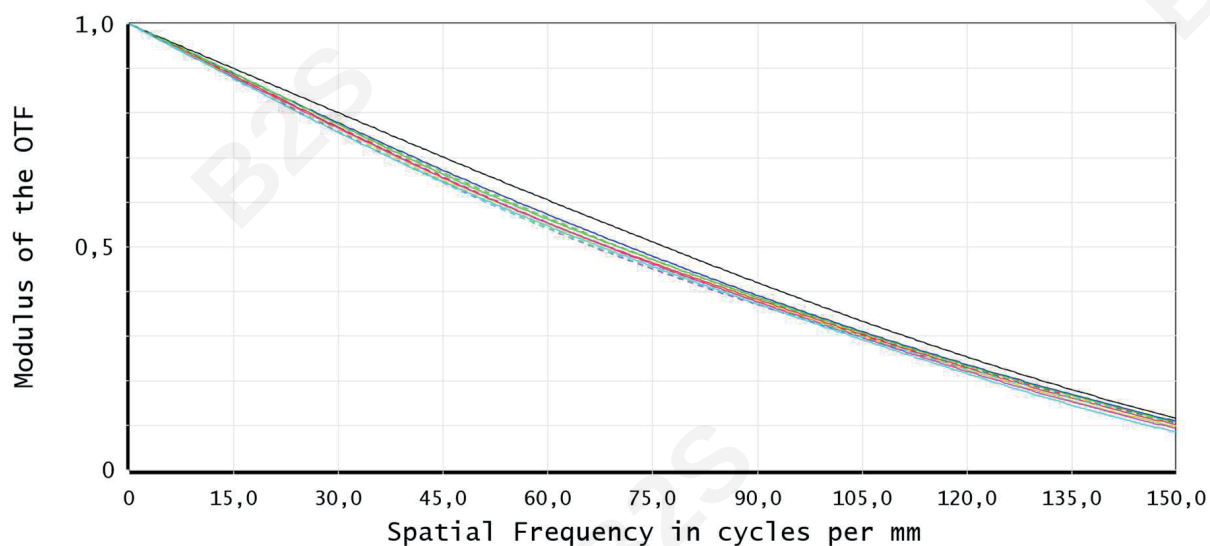
Data for 436 to 645 nm

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

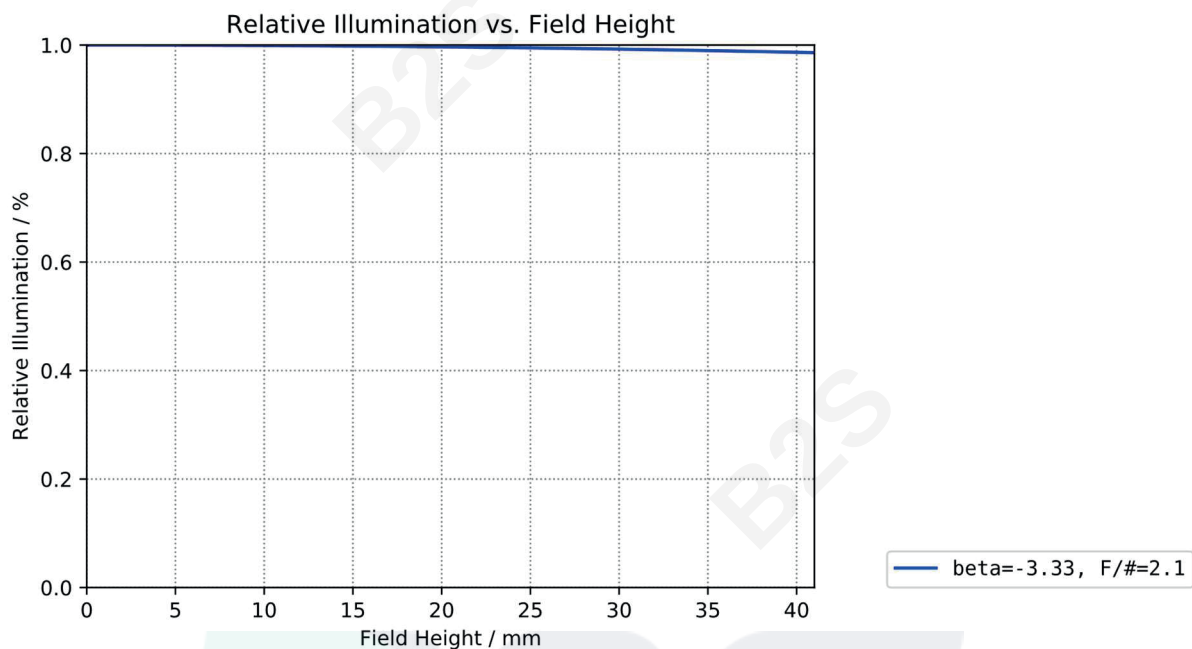
### Polychromatic Diffraction MTF

Data for 436 to 645 nm

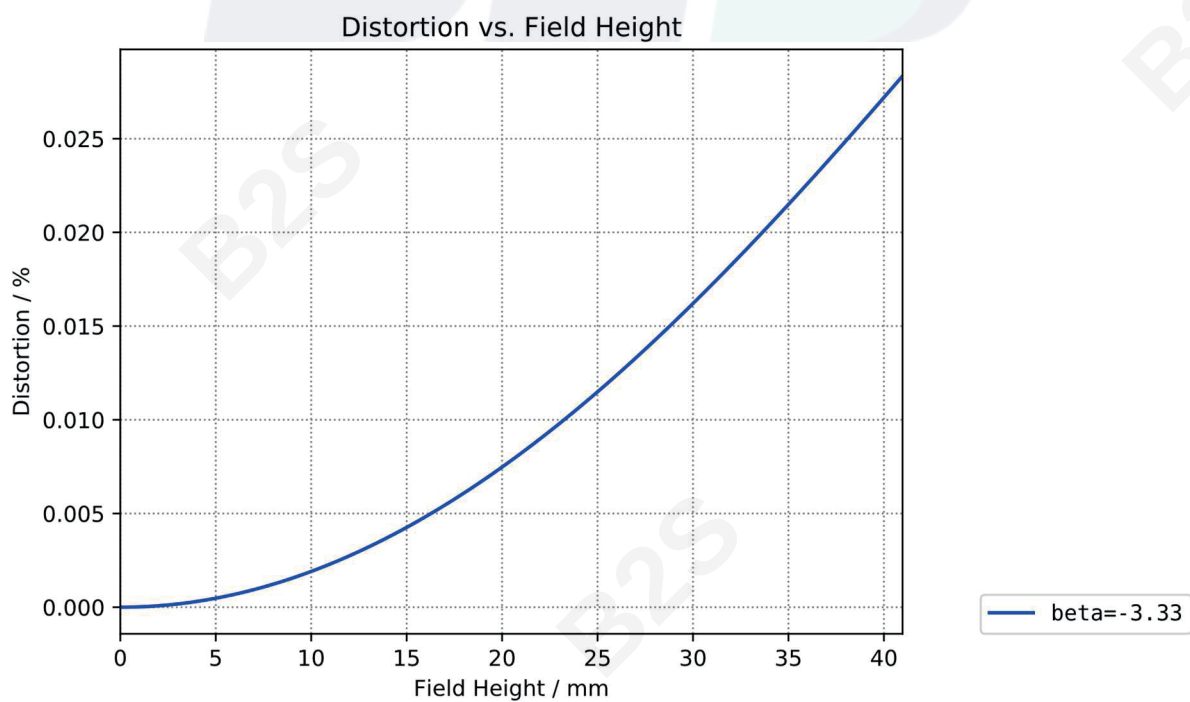
Surface: Image

Legend items refer to Field positions

## Relative Illumination



## Distortion



For TDI Line Scan

## Unit: mm

view without  
transport protection

