

# Macro Varon Lens

## MACRO VARON 4.5/85-0002

The special lenses Macro Varon and Macro Varon fixed beta designed for the highest requirements of web and surface inspections are the first choice for FPD and PCB inspection systems, for example. These applications require line scan lenses with very high resolution in order to guarantee cost-efficient error detection in manufacturing and the associated quality assurance processes. When using high-resolution cameras, the lens is often the limiting factor for the optimal utilisation of the theoretically possible system performance. These lenses, however, have been specially developed for the use of 12k line scan sensors. In the optical magnification range required these lenses fully exploit all the possibilities of the very latest sensor generation.



MACRO VARON 4.5/85

### Key Features

- Robust mechanics for rough industrial environment
- Developed for high-resolution 12k line scan applications with pixel sizes from 3.5 µm
- Focus and iris setting lockable
- High resolution optics 400 - 1000 nm
- Very high optical image quality in the large sensor range
- V-mount connection

### Applications

- Web and surface inspections
- Quality control
- FPD inspection
- PCB inspection
- OLED inspection
- Line scan applications

### Technical Specifications

F-number	4.5
Focal length	85.1 mm
Image circle	62 mm
Transmission	400 - 1000 nm
Interface	V-Mount
Weight	270 gr.
Option	Other interface on request

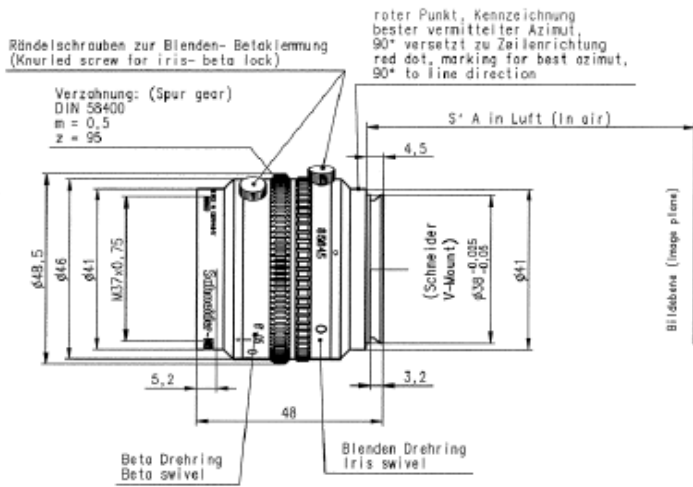
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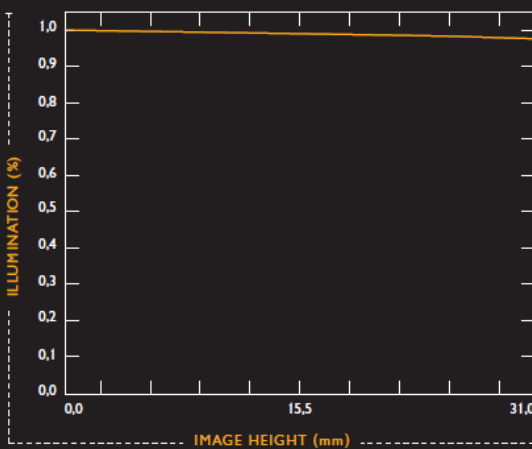


LENS	FOCAL LENGTH	MAX APERTURE	SENSOR PIXEL SIZE NOMINAL	IMAGE CIRCLE	MAGNIFICATION RANGE	MOUNT TYPE V-MOUNT	FILTER THREAD	WEIGHT	CODE NO.
MRV 4.5/85 - 0001 CAS 0.5X - 2.0	85 mm	F 4.5	5 µm	62 mm	0.5X - 2.0X	V-mount	M 37.0 x 0.75	200 g	1009001

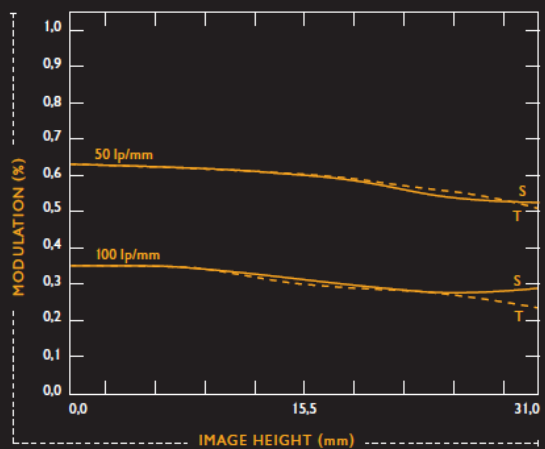
LENS	MAGNIFICATION	DISTORTION	WORKING DISTANCE	OBJECT-TO-IMAGE DISTANCE (00')	FLANGE-TO-IMAGE DISTANCE (s <sub>0</sub> )
MRV 4.5/85 - 0001 CAS 0.5X - 2.0X	0.5X	< 0.2 %	228 mm	378 mm	106 mm
	0.67X	< 0.1 %	186 mm	350 mm	121 mm
	1.0X	0 %	143 mm	335 mm	149 mm
	1.5X	< 0.1 %	114 mm	349 mm	192 mm
	2.0X	< 0.1 %	100 mm	378 mm	237 mm

## RELATIVE ILLUMINATION



Relative illumination over the image height.

## MODULATION TRANSFER FUNCTION



The MTF shows the contrast over the image height at 1X magnification.