

# ImageMaster® VISION

## Imaging Quality Evaluation of Eye Glasses



The ImageMaster® VISION evaluates the imaging quality of ophthalmic glasses in terms of Modulation Transfer Function (MTF). Besides the MTF further measurement capabilities of the ImageMaster® VISION are:

- Dioptric power
- Through focus MTF
- Line spread function
- Phase transfer function
- Astigmatism

ImageMaster® VISION features a very flexible design which enables for different measurement settings. The  $\pm 40^\circ$  adjustable arms of ImageMaster® VISION allow on-axis and off-axis MTF measurement. Object distances between 30 cm and infinity conjugate are generated by a focusable collimator.

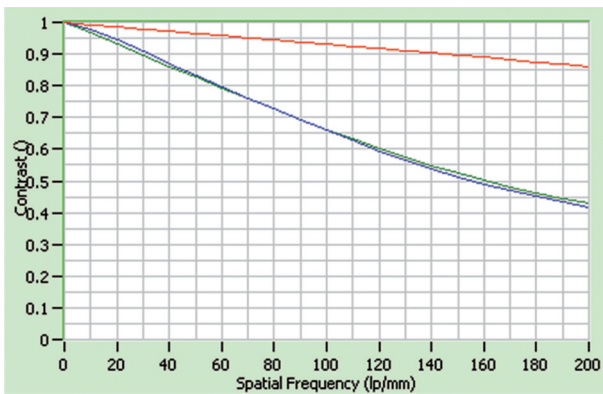
The accommodation and the adaption of the human eye can be simulated with the ImageMaster® VISION: The measuring head is focusable to simulate the accommodation of the eye in the range  $\pm 10$  dpt and the aperture of the detector is exchangeable to simulate the adaption of the eye.

The user friendly software of the ImageMaster® VISION offers a variety of measurement and analyzing tools. The software directly compares real MTF values of the eye glass

under test with simulated values from a design program.

The comparison of the imaging quality of the manufactured lenses with the design expectations is made easy in this way. The software of ImageMaster® VISION helps to analyze the measurement results of the eye glasses. The following output graphs are available:

- MTF vs. Spatial Frequency vs. Image Height
- MTF vs. Spatial Frequency
- MTF vs. Defocus



### Modulation Transfer Function

The Modulation Transfer Function (MTF) is a parameter describing objectively the performance of optical imaging systems. By testing the ability of a lens under test to transfer the details of an object to the image, the contrast for different spatial frequencies is determined. It has the value 1 for a perfect contrast reproduction and the value 0 for a system being unable to produce any image contrast.

### Technical Data of ImageMaster® VISION

Object distance	$\infty$ to 30 cm
Max. refraction power of the sample	$\pm 10$ dpt
Max. resolution	60 cycles/ $^{\circ}$
Diameter of glasses	max. 80 mm