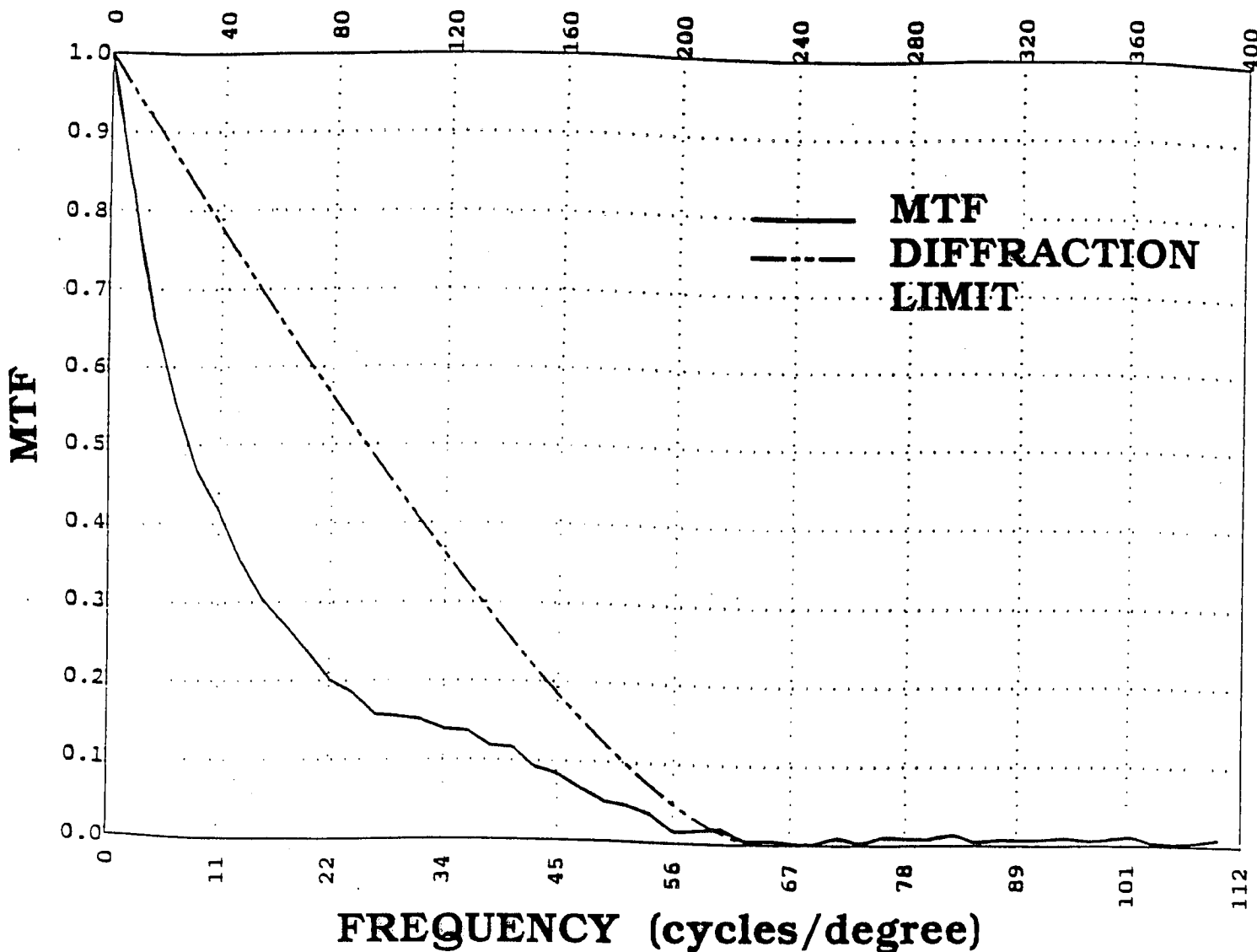


MODULATION TRANSFER FUNCTION

FREQUENCY (lp/mm)



MONOFOCAL IOL
2 mm PUPIL DISTANCE FOCUS

APPENDIX A

CALCULATION OF DIFFRACTION LIMIT AND SPATIAL FREQUENCY

The Diffraction Limit at 0 MTF is given by:

$$\frac{n_{aq}d}{f\lambda} = v_{co}$$

where:

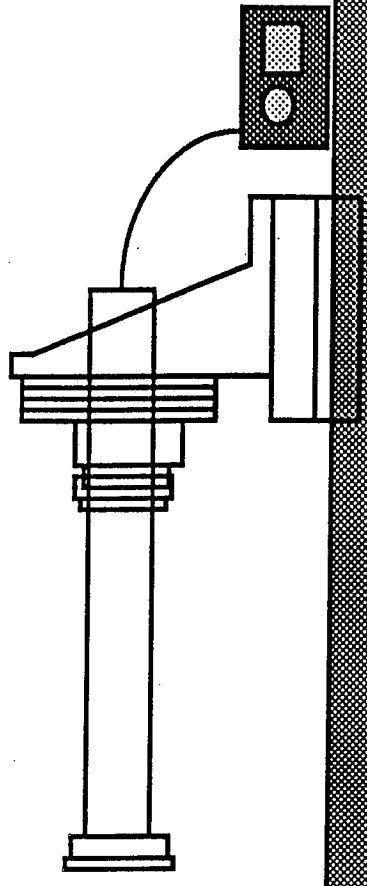
n_{aq} = Refractive Index of aqueous = 1.336

d = pupil size = 3 mm

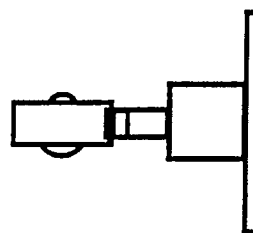
λ = wavelength of light = 0.000555 mm

f = focal length of the lens (system) under test

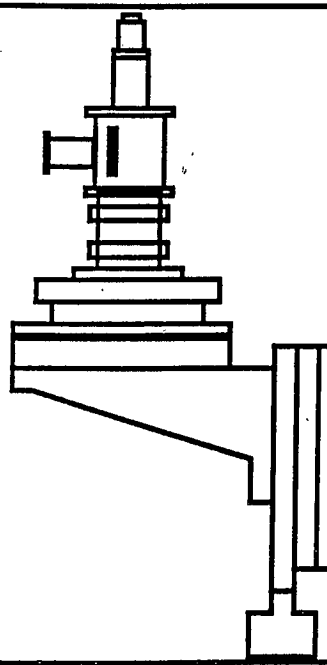
The Object Generator System



The Test System

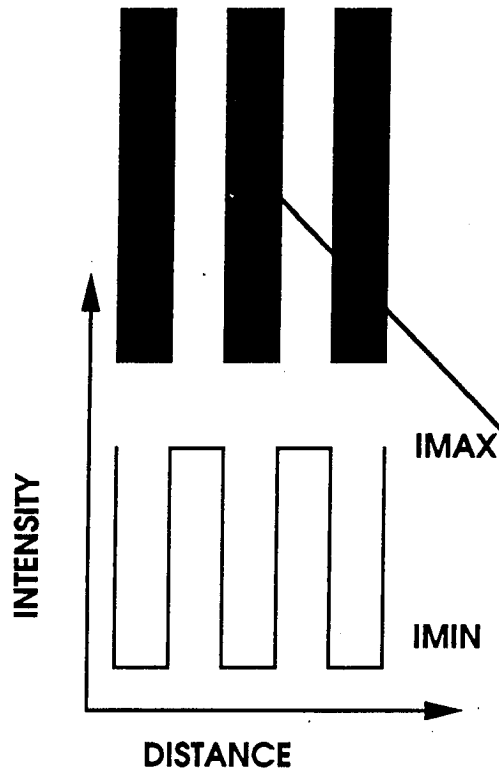


The Detector System

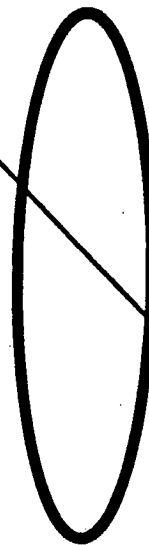


IMAGING AN IDEAL OBJECT THROUGH A REAL LENS

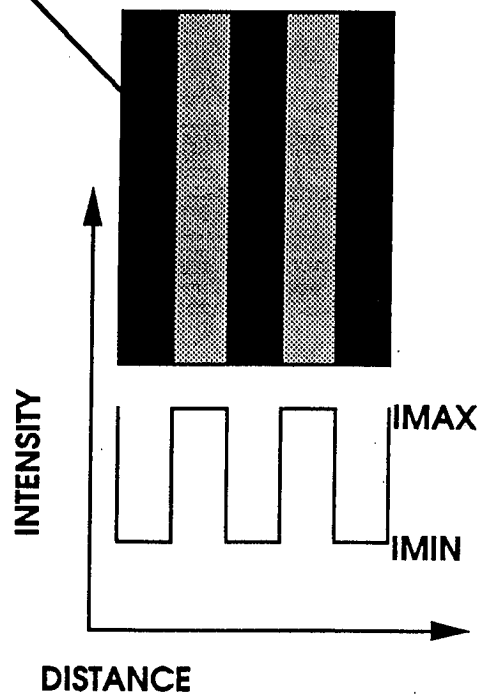
OBJECT



LENS



IMAGE

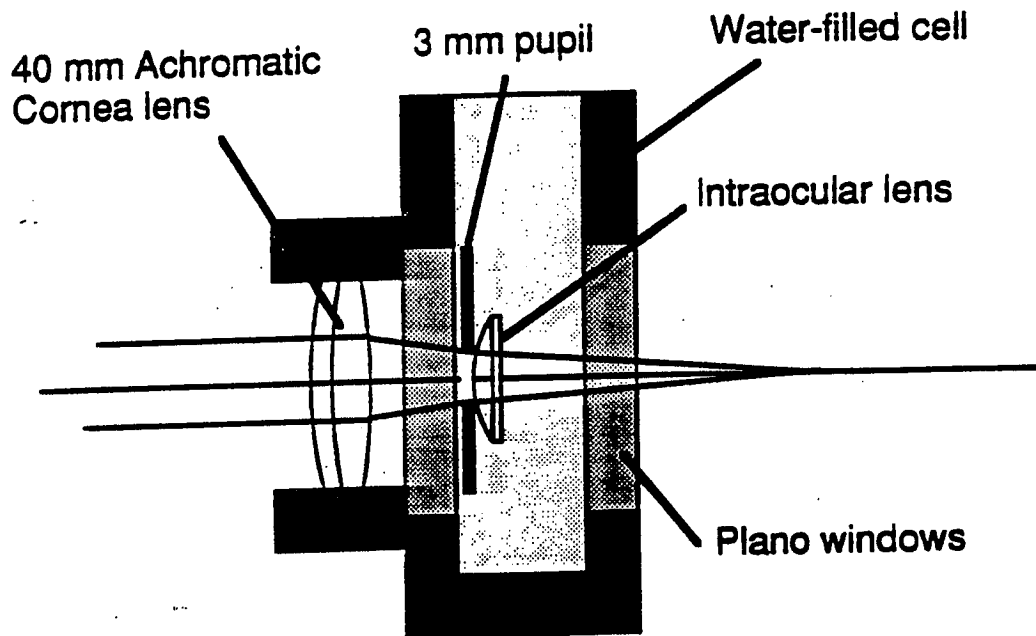


$$\text{MODULATION} = \frac{I_{\text{MAX}} - I_{\text{MIN}}}{I_{\text{MAX}} + I_{\text{MIN}}}$$

$$\text{MTF} = \frac{\text{IMAGE MODULATION}}{\text{OBJECT MODULATION}}$$

OPERATION OF MTF OPTICAL TEST BENCH

FIGURE 2. DIAGRAM OF IOLAB EYE MODEL TEST CELL



Title

OPERATING THE MODULATION TRANSFER FUNCTION (MTF) BENCH

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Document No.
MPS 1254

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N/C

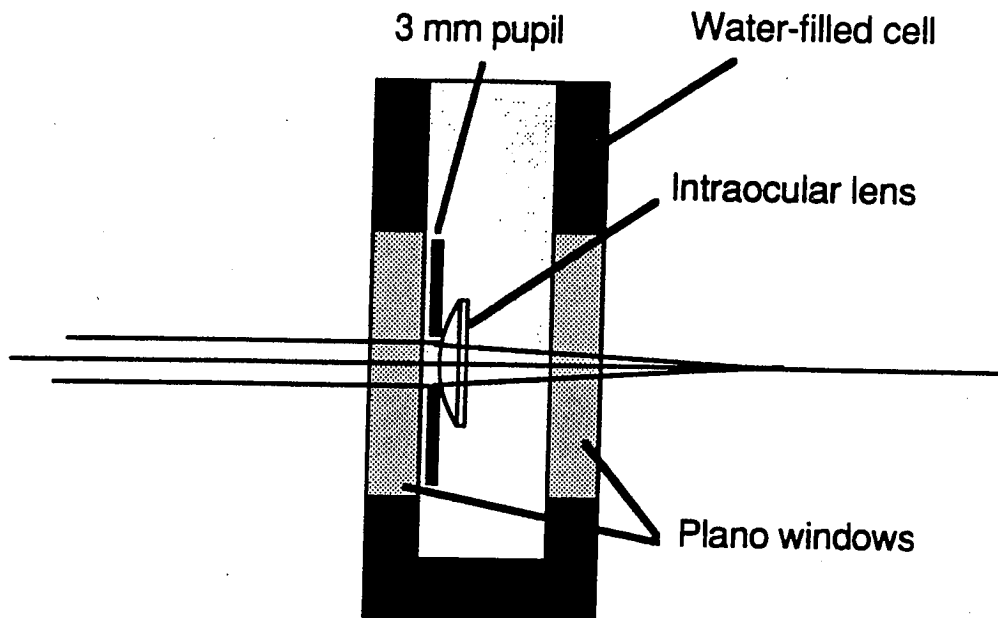
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Date
08/19/92

File
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Figure 2

IOLAB EYE MODEL TEST CELL



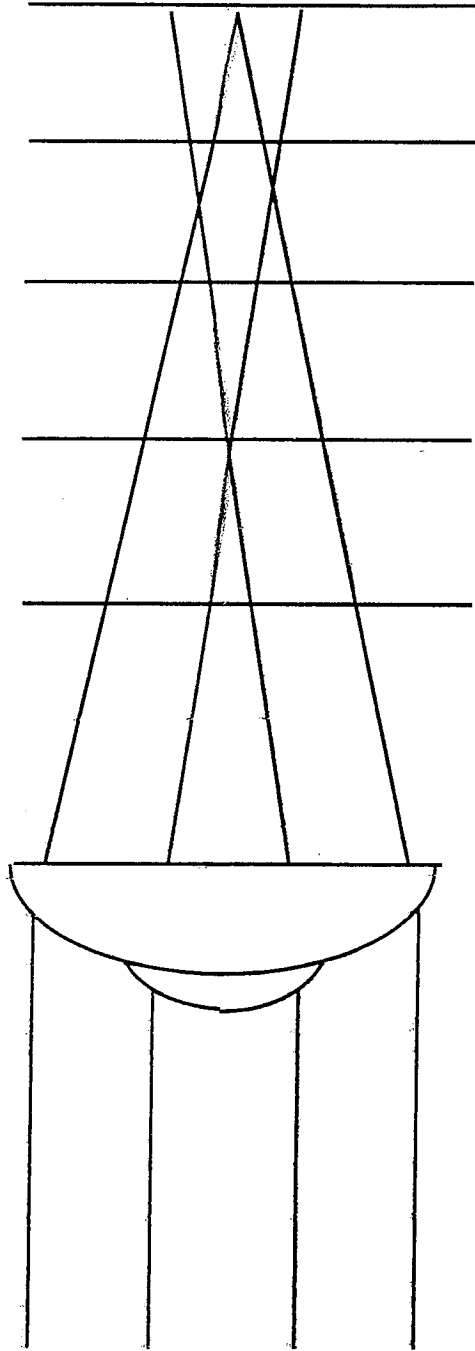
DOCUMENT

CONTROLLED

THROUGH FOCUS RESPONSE

BEST
NEAR

BEST
DISTANCE



MTF values at various points
along the optical axis.



THROUGH FOCUS RESPONSE

