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TRANSMISSION AND ABSORPTION COEFFICIENTS FOR OCULAR MEDIA OF THE RHESUS MONKEY

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USAF SCHOOL OF AEROSPACE MEDICINE
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NOTICES

This final report was submitted by personnel of the Laser Effects Branch, Radiation Sciences Division, USAF School of Aerospace Medicine, AFSC, Brooks Air Force Base, Texas, under job order 7757-02-52.

The animals involved in this study were procured, maintained, and used in accordance with the Animal Welfare Act of 1970 and the "Guide for the Care and Use of Laboratory Animals" prepared by the Institute of Laboratory Animal Resources - National Research Council.

This technical report has been reviewed and is approved for publication.

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Tissue transmissivity and absorption coefficients were calculated for components of the refractive media, distilled water, and physiological saline throughout the wavelength interval of 0.2-15 μm. All transmission measurements required for these calculations were performed spectrophotometrically using freshly enucleated rhesus monkey eyes and narrow-bandwidth radiation.

Much of the absorption coefficient data presented is from wavelength regions where values have not been previously reported.

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CONTENTS

TRANSMISSION AND ABSORPTION COEFFICIENTS FOR OCULAR MEDIA OF THE RHESUS MONKEY

INTRODUCTION

Levels of injury and other deleterious effects due to laser radiation have been obtained largely by empirical methods (12, 13, 14, 17). Current investigations of this type usually subject animals to various ocular and skin exposures, and the rhesus monkey is the species of choice for ocular studies.

Determining laser safety criteria for the eye usually involves multiple exposures of the lens, cornea, or retina, with laser power varied so that an ED_{50} for a "minimum visible" lesion can be established. In the early stages of studying laser injury, this approach was adequate since there were relatively few laser-exposure conditions to be examined, the cost of experimental animals was rather low, and the number of laser systems to be considered was limited.

Recent advances in laser technology and its wide ranging applications, however, have evolved many laser systems, capable of radiating wavelengths throughout the 0.2- to 15-μm region at pulse durations from 10^{-12} s to continuous wave (CW). When pulse-train coding and the possibility of synergistic effects are considered, hundreds of new exposure scenarios can easily be expected. Thus, an empirical approach to establishing permissible exposures will not alone accommodate the increasing demand for safety criteria.

The approach taken by the Laser Effects Branch of the USAF School of Aerospace Medicine to determine safe levels of exposure has been to rely on the increased use of biomathematical models for predicting various ocular hazards due to lasers.

To predict ocular damage, existing models use the thermal diffusion equation and an adjusted Henriques damage integral. Eye models require accurate estimates for the various thermal and morphological properties of the tissues comprising the refractive media and retinal layers; the more important of these are thermal conductivity, specific heat, and coefficients of reflection and absorption. Ocular-tissue thermal conductivity and specific heat appear to be adequately represented by the values used for water or other biological tissue and are relatively constant over a wide variety of conditions. Other quantities, however, such as the transmission and absorption of the ocular tissues, change greatly with the irradiating wavelength and tissue type. Unfortunately, absorption and transmission data for the ocular media is sparse for much of the spectrum covered by current lasers, particularly in the infrared.

Ocular transmission data for visible wavelengths (0.4-0.7 μm) is abundant, with most of the information determined because of interest in the physiology of vision (1, 9, 26-29, 31, 32, 36, 39, 40). Transmission data for the ultraviolet, near-infrared, and infrared, however, has been reported by only a few investigators (4-6, 15, 21, 24); and most of these data are limited to wavelengths less than 2 μm. Some of these studies used abnormal human eyes, sometimes severely diseased (1, 5, 16); and more often than not, measurements made were inadequate to yield statistically reliable data.

The purpose of this study was to obtain statistically valid absorption coefficients for use with predictive models of laser-radiation thermal damage. In these studies absorption values were measured with narrow-bandwidth instruments and calculated over the wavelength region of 0.2-15 μm. Careful attention was given to the integrity of the refractive media, accuracy of corrections for reflective and scattered losses, and reliability of instrumentation.

Transmission measurements and subsequent calculations of absorption coefficients were performed for the refractive media; i.e.. cornea, aqueous humor, lens, and vitreous humor of the rhesus (Macaca mulatta) monkey eye. The rhesus eye was chosen because of its similarities to the human eye and to insure consistency between the model's predictions and empirical studies that have used rhesus monkeys.

Included with the absorption coefficients for the ocular media are similar measurements for physiological saline (0.9%) and distilled water. The purposes for including these fluids were to: (1) determine the wavelength regions where the spectra for the refractive media and saline or water are similar, (2) obtain absorption coefficients for the tear layer by measuring saline, and (3) provide a means to test the validity of our measurement-system absorption coefficients for saline and water with those determined by other investigators.

THEORY

Tissue Transmissivity Calculations

Light energy impinging on a surface can be accounted for by the following relation:

$$I_o = I_t + I_s + I_a + I_r \qquad (1)$$

where I_o, I_t, I_s, I_a, and I_r are the incident, transmitted, scattered, absorbed, and reflected intensities, respectively. In spectrophotometry I_o, I_t, and I_s can be measured; I_r can be calculated using the indices of refraction at each boundary; and I_a can be determined once the other quantities are known. I_a, the absorbed intensity, is that portion of the incident light which is absorbed, creating heat or other forms of energy conversion within the sample. For a homogeneous sample, the portion absorbed can be quantitized by the Lambertian absorption coefficient,

$$\alpha = Ln(1/T)/x \tag{2}$$

where

T = sample transmissivity, which is the sum of those fractions of I_0 that are directly transmitted and scattered after correction for reflective losses, and

X = sample thickness.

In general, spectrophotometry does not permit a direct measurement of T; instead, T can be calculated when given the total transmission (including forward scattering) of:

(1) an optical cell without sample,

(2) an optical cell containing a sample, and

(3) the amount of reflective losses encountered at the interfaces of both of the above cells.

Equations necessary for these calculations can be developed from a simplified diagram (Fig. 1) for the optical tissue-cell "sandwich" used in this investigation.

The transmissivity of the tissue is defined as I_b/I_a, where I_a is the light intensity entering the tissue and I_b is the intensity passing through the tissue (includes that light expected to be reflected at the tissue's posterior side). The light intensity reflected back from the air/first window interface (surface #1) can be defined (3) as:

$$I_{aw} = I_o R_{aw} \tag{3}$$

where R_{aw} is the reflectivity coefficient arising from the dissimilar indices of refraction at the air/window interface.

In the same fashion, R_{wt} is the reflectivity coefficient for the window/tissue interface. (Note that $R_{aw} = R_{wa}$ and $R_{wt} = R_{tw}$.)

The intensity on the window side of surface #1 can be written as:

$$I_1 = I_o - I_o R_{aw} \tag{4}$$

and the intensity just prior to reaching surface #2 (first-window/tissue interface) is

$$I_1 T_W = I_o T_W (1 - R_{aw}) \tag{5}$$

where T_W is the transmissivity of the cell window.

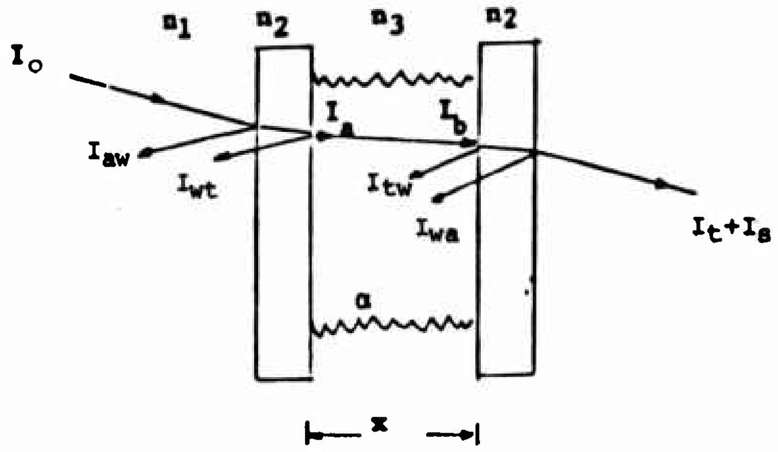

Figure 1. Schematic of sample cell containing tissue.

I_o, I_a, and I_b -- Light intensity incident on sample cell, entering the tissue, and passing through the tissue (includes light expected to be reflected at the tissue's posterior side), respectively.

n_1, n_2, n_3 -- Indices of refraction for air, optical cell window, and tissue respectively

I_{aw} (I_{wa}) -- Light intensity reflected from air/window interface

I_{wt} (I_{tw}) -- Light intensity reflected from window/tissue interface

I_t+I_s -- Light intensity transmitted and scattered by the tissue and the cell

α -- Absorption coefficient

x -- Sample thickness

I_a, the intensity entering the tissue, is:

$$I_a = I_o T_W (1-R_{aw})(1-R_{wt}) \qquad (6)$$

I_b, the intensity I_a attenuated according to the tissue's transmissivity (T), is given by:

$$I_b = I_o T_W T(1-R_{aw})(1-R_{wt}) \qquad (7)$$

Similarly, the intensity on the window side of surface #3 (tissue/second-window interface) is

$$I_3 = I_b(1-R_{wt})$$
$$= I_o T_W T(1-R_{aw})(1-R_{wt})^2 \tag{8}$$

and I_t+I_s, the light intensity transmitted and scattered by the tissue and cell, is:

$$I_t+I_s = I_o T_W^2 T(1-R_{aw})^2(1-R_{wt})^2 \tag{9}$$

The tissue's transmissivity (T) can now be determined by

$$T = \frac{(I_t+I_s)}{I_o}\left[(1-R_{aw})(1-R_{wt})T_W\right]^{-2} \tag{10}$$

The quantity (I_t+I_s) is the transmission ratio, measured spectrophotometrically, of "the light leaving the optical tissue cell" to "the light incident to the optical tissue cell." The values of R_{aw} and R_{wt} can be calculated from approximations of the Fresnel reflection equation, given below, for normally incident light and the indices of refraction for the respective mediums:

$$R_{aw} = \frac{(n_1-n_2)^2}{(n_1+n_2)^2} \quad \text{and} \quad R_{wt} = \frac{(n_2-n_3)^2}{(n_2+n_3)^2} \tag{11 \& 12}$$

where n_1, n_2, and n_3 are the indices of refraction for air, cell window, and tissue, respectively.

The transmissivity of each window can be derived analogous to equation 10.

$$T_W = \frac{(I_t'+I_s')}{I_o'}\left[1-\frac{(n_1-n_2)^2}{(n_1+n_2)^2}\right]^{-2} \tag{13}$$

where $\frac{(I_t'+I_s')}{I_o'}$ is the measured transmission of one cell window.

Replacing equation 10 with the analytical expressions for R_{aw}, R_{wt}, and T_W, the equation calculating the transmissivity of the tissue is (assuming $n_1 = 1$ for air):

$$T = \frac{(I_t+I_s)}{I_o}\left[\frac{(I_t'+I_s')}{I_o'}\right]^{-2}\left[1-\frac{(1-n_2)^2}{(1+n_2)^2}\right]^{-2}\left[1-\frac{(n_2-n_3)^2}{(n_2+n_3)^2}\right]^{-2} \tag{14}$$

A computer performed the calculation in equation 14 from the raw transmission data of the blank cell and the cell plus tissue, along with the values generated for n_2 and n_3 as a function of wavelength.

Generation of the Indices of Refraction

Calculations required in determining the reflection coefficient were accomplished using values for the indices of refraction, n_2 and n_3 at the measured wavelengths. The refractive index for air, n_1, was asssumed equal to 1.000 for all measurement wavelengths. The refractive indices for the window material and tissue, n_2 and n_3, respectively, were generated from dispersion equations for the mediums.

In this investigation the window materials used were either quartz (infrasil), calcium fluoride, or silver chloride, depending on the measurement wavelength. Analytical expressions yielding 3-decimal-place accuracy for each dispersion value were obtained from the window's manufacturer (37) and are listed below:

For quartz (infrasil)

$$n^2 = 2.978645 + \frac{0.0087778}{\lambda^2 - 0.01061} + \frac{84.0622}{\lambda^2 - 96.0} \quad (15)$$

For calcium fluoride (CaF_2)

$$n^2 = 1.00 + \frac{0.5675888\lambda^2}{\lambda^2 - 0.050263605^2} + \frac{0.4710914\lambda^2}{\lambda^2 - 0.1000914^2} + \frac{3.8484723\lambda^2}{\lambda^2 - 34.64904^2} \quad (16)$$

For silver chloride (AgCl)

$$n^2 = 4.00804 - 0.00085111\lambda^2 - 0.00000019762\lambda^4 + \frac{0.079086}{\lambda^2 - 0.04584} \quad (17)$$

The dispersion of distilled and deionized water was substituted for that of the refractive-media tissues. The substitution was necessary because of the lack of dispersion data on the ocular media. The large water content (75-99%) of the ocular media (11) qualifies this as a good substitution, one that has been used before by various investigators (6, 26).

Two analytical expressions for water dispersion were obtained from the data of several studies. The first, used for the wavelength region of 0.2-2.0 µm, was taken directly from Kislovskii (23); while the other expression, used in the 1.0-25-µm region, was obtained through an analytical curve fitting of the data from several investigators (7, 10, 19, 22, 30, 33, 35, 41).

The analytical fit was determined for the general form of the Sellimeier dispersion equation shown below.

$$n^2 = A + \frac{B\lambda^2(\lambda^2-\lambda_1^2)}{(\gamma_1^2+(\lambda 2-\lambda_1^2)^2)} + \frac{C\lambda_2^2(\lambda^2-\lambda_2^2)}{(\gamma_2^2+(\lambda^2-\lambda_2^2)^2)} + \frac{D\lambda^2(\lambda^2-\lambda_3^2)}{(\gamma_3^2+(\lambda^2-\lambda_3^2)^2)} \quad (18)$$

Initially, coefficients A, B, C, and D were obtained from four simultaneous solutions of equation 18, averaged for several different wavelengths outside the regions of anomalous dispersion. An average value for n was obtained using data from the investigations listed above. In each of these solutions, γ_1, γ_2, and γ_3 were assumed to be negligible.

The values for γ_1, γ_2, and γ_3 were later determined through a trial and error curve-fitting exercise aided by use of a calculator and plotter. Values for λ_1, λ_2, and λ_3 were obtained from recent literature (7, 10, 33) or through our own measurements and represent the wavelengths in the center of each anomalous dispersion band.

Both water-dispersion expressions are accurate to the second decimal position and are presented below according to the wavelength regions in which they are valid.

For $0.2 < \lambda < 2.0$ µm)

$$n^2 = 1.290 + \frac{0.470\lambda^2}{\lambda^2-0.119^2} + \frac{0.0800\lambda^2}{\lambda^2-2.92^2} \quad (19)$$

(For $1.00 < \lambda < 25.0$ µm)

$$n^2 = 1.759425 + \frac{0.021685\lambda^2(\lambda^2-2.94^2)}{0.2^2 + (\lambda^2-2.94^2)^2} + \frac{0.007297\lambda^2(\lambda^2-6.094^2)}{1.0307^2 + (\lambda^2-6.094^2)^2} + \frac{0.183852\lambda^2(\lambda^2-15.5^2)}{45.0^2 + (\lambda^2-15.5^2)^2} \quad (20)$$

The graph of dispersion relationships for the three window materials and water is seen in Figure 2.

Absorption coefficients in units of cm^{-1} were calculated for the ocular media using the transmissivity of the tissue (equation 14); thickness (cm) of the tissue; and the Lambertian absorption coefficient (equation 2) which is repeated below:

$$\alpha = Ln(1/T)x$$

METHODS AND MATERIALS

All ocular media components were obtained from freshly enucleated rhesus monkey eyes (Macaca mulatta). The primates ranged from 2.2 to 5 kg in weight and were approximately 2 to 2.5 years old and of mixed sex. All animals were in good physical health with no observed opacities or lesions of the cornea or lens.

The primates were tranquilized by a 0.4 cm^3 injection of ketamine hydrochloride (100 mg/cm^3) administered intramuscularly. Once the animal was quieted, one leg was catheterized for administration of the anesthetic (sodium pentobarbital). The barbiturate was given for effect at a strength of 50 mg/ml. The components of the refractive media were surgically removed after the animal had reached an adequate plane of surgical anesthesia.

Aqueous Humor Removal

With the proper anesthetic plane achieved, a small-bore (#22) hypodermic needle was inserted into the anterior chamber of the eye around the corneoscleral junction. A 0.1- to 0.2-cm^3 sample of aqueous was slowly withdrawn in such a manner that the iris would not prolapse or the cornea or that iris pigment was not drawn into syringe along with the sample. After sample withdrawal was completed, the animal was returned to the animal care facility for future use. From visual inspection, the lost aqueous humor was usually regenerated in 1-2 weeks following removal.

Cornea, Lens, and Vitreous Removal

When the animal was returned a few weeks later, anesthesia was again administered for surgery. At this time, the remainder of the refractive-media components were extracted.

The cornea was removed by either using a corneal trephine or cutting around the corneoscleral junction with fine tissue scissors. After removal, the cornea was immediately placed in a relatively air-tight tissue cell for measurement. Total time between removal and measurement was usually less than 5 minutes.

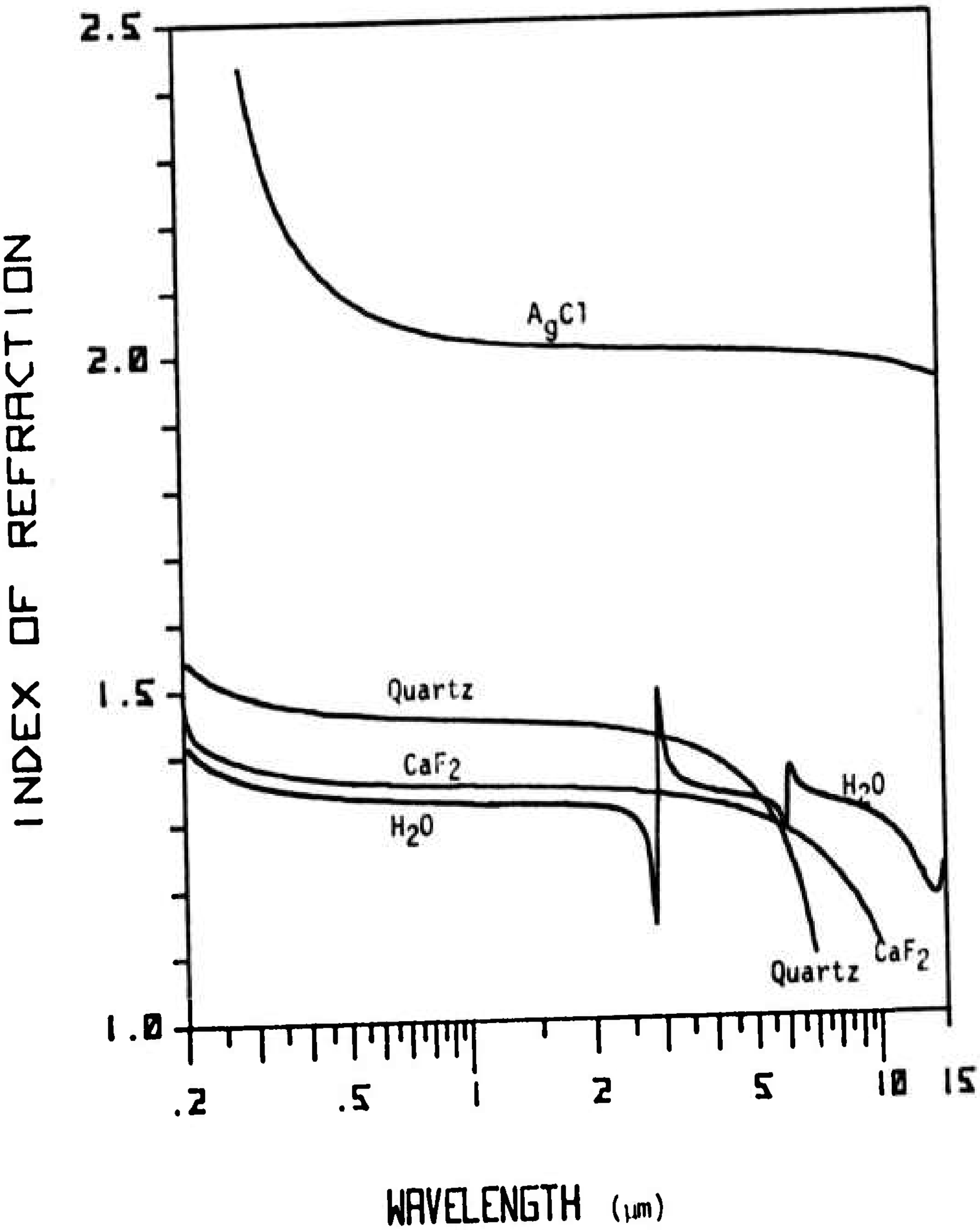

Figure 2. Dispersion curves used in the investigation.

The lens was removed through the anterior chamber by blunt dissection, with precautions taken to prevent seepage of blood onto the lens or into the vitreous body. As with the cornea, the lens was quickly placed in an optical cell for measurement.

The vitreous humor was withdrawn in a similar fashion to the aqueous, using a #12 bore needle. The needle was inserted into the opening vacated by the lens, and approximately 1-2 cm^3 of sample were withdrawn. Care was exercised to insure that the needle did not suction retinal pigment or blood into the syringe.

The animal was maintained under a deep plane of anesthesia throughout the surgical removal of both eyes so as to maintain near-normal ocular tissue metabolism during the accumulative surgical time, or 2 hours. Following the removal of the refractive media from both eyes, the animal was euthanized with a lethal dose of Barb-euthol or Lethol and submitted for necropsy.

Ocular Sample Cells

The small volumes of aqueous humor withdrawn required that microvolume cells be used in measuring spectral transmission. Two types of microcells were used for this study: (1) rectangular cells constructed of NIR quartz (infrasil) glass, with a useful transmission range of 0.2-3.5 μm; and (2) oval, disposable cells in which the window material was silver chloride (AgCl), with an IR transmission cutoff of about 25 μm. The two types of cells allowed transmission measurements over the complete region of interest; i.e., 0.2-15.0 μm.

By minimizing cell widths, the quartz microcells could have pathlengths as large as 1, 2, 5, 10, or 20 mm, with corresponding volumes of 0.05-0.4 cm^3. The use of microcells required the spectrophotometer's slit width to be reduced to less than the cell width. The longer pathlengths were necessary to increase measurement accuracy in spectral regions where the aqueous was transmitting nearly all of the incident energy; i.e., near-UV, visible, and near-IR regions. Pathlengths less than 1 mm were verified by observing interference fringe patterns from the transmission scan of the empty cell and by using appropriate equations to compute pathlength.

Both the rectangular cells described above and a set of cylindrical cells were used in the transmission measurements for physiological saline and distilled water. The cylindrical cells were used because their larger pathlengths (10, 20, 50, and 100 mm) increased measurement accuracy in the highly transmitting, visible, and near-infrared wavelengths. An ample supply of saline and water permitted using the large-volume cylindrical cells, a situation not possible with aqueous or vitreous samples.

In spectral regions where light absorption was near 100% of the incident, extremely small pathlengths were required to provide transmission data necessary for calculation of absorption coefficient. To fulfill this requirement, a variable-pathlength optical liquid cell was used that allowed pathlength adjustments from 2 to 2000 μm with a relatively high degree of repeatability. The optical cell was used with all liquid specimens except the aqueous, and was fitted with either CaF_2 or AgCl circular windows. The cell was primarily useful at wavelengths in the far-infrared, where pathlengths less than 25 μm were often required.

Corneal and lenticular transmittance was measured by using a set of quickly demountable tissue cells (Figure 3). For preparation, the tissue was sandwiched between two calcium fluoride (CaF_2) or AgCl crystal windows that were separated by Teflon spacers whose thickness depended on the tissue being measured. A 0.4-mm spacer was used with the cornea, and a 3-mm spacer with the lens. The thickness of the spacers tended to compress the tissues slightly, thus reducing their curvature and refractive power. The windows, spacer, and tissue were all held together by a circular-front-aperture plate and rear retaining plate, which anchored two machine screws holding the various components under a slight pressure. The front aperture varied between 7 and 9 mm in diameter, depending on the size of the tissue sample used, while the rear plate had a fixed rectangular aperture of 15 x 30 mm.

To prevent contaminating film being left on a cell, after each use tissue and liquid cells were thoroughly cleaned in a solution of Sparkleen and deionized water and rinsed with deionized water. The cell was dried by suctioning air out of it rather than blowing it dry, which could deposit dust and lint on the inside of the cell and eventually change the transmission spectra of the sample or cell.

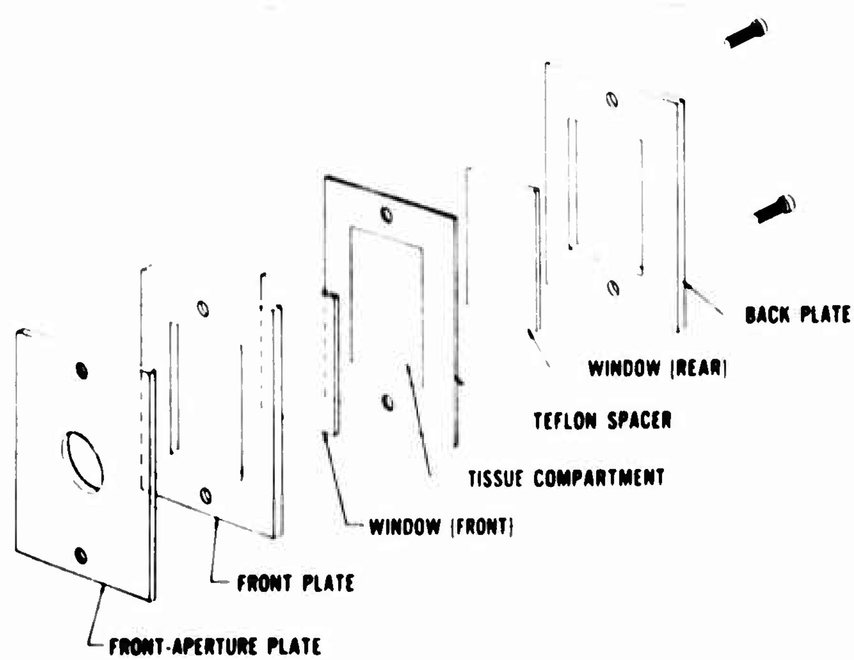

Figure 3. Exploded view of tissue cell for cornea and lens.

Instrumentation and Calibration

Total transmission measurements (scattered plus directly transmitted intensities) were made in the spectral range of 0.2 to 15 μm for components of the refractive media, physiological saline, and distilled water. Two ratio-recording spectrophotometers were used: Beckman model ACTA MVII and model IR-9.

Prior to the recording sessions, both spectrophotometers were allowed a 2-hour warmup and stabilizing period, which helped reduce random-noise levels during measurement sessions. The zero and 100% scale limits were calibrated by first scanning with the sample beam blocked and then balancing the sample and reference-light intensities. Variations in the zero or 100% lines with wavelength were corrected electronically or accounted for in the calculations. In addition, the recording accuracy of both spectrophotometers was periodically checked by measuring fixed-screen filters which ranged in value from 7% to 49%.

In an attempt to obtain absorption coefficients comparable to those that would be found with a laser source, the spectral bandwidth of both instruments was kept at a minimum. High resolution was maintained throughout the investigation as long as noise levels were not excessive. Bandwidths were controlled by using minimal slit widths and by scanning the spectrum slowly. Table 1 lists the bandwidth constraints followed during our measurements.

TABLE 1. MEASUREMENT BANDWIDTH

Spectral range (μm)	Slit width (mm)	Bandwidth (A)
0.2 - 0.7	0.006 - 0.18	< 2.0
0.7 - 2.5	0.006 - 0.25	< 10.0
2.5 -15.0	0.0 - 4.0	< 70.0

Transmission Measurements

To obtain high resolution and wavelength accuracy, the maximum scan rates were set as follows: 10 nm/s (0.2-0.8 μm); 20 nm/s (0.8-2.5 μm), and 80 cm^{-1}/min (2.5-15 μm). In regions where the transmission was changing rapidly with wavelength, the scan rate was reduced to prevent exceeding the response of the recording pen.

Each sample and corresponding blank cell was placed in the center of the sample chamber and centered within the beam at normal incidence. In each measurement, a scan of the blank (empty) cell immediately preceded the scan for the same cell containing tissue. Photometric ranges were changed according to the amount of transmission and maximum pen deflection obtainable. In highly absorptive regions, screen filters were placed in the reference beam to raise the analog signal above the ambient noise. When reference filters were used, the highest sensitivity, full scale, was zero to 0.56% for both spectrophotometers.

Total transmission was previously defined as the summation of the directly transmitted and forward-scattered light intensities. Direct light intensities exit the tissue parallel to the measurement beam's axis, while forward-scattered light intensities are transmitted at acute angles to the beam. Back scatter, that light which is scattered back into the anterior hemisphere of the tissue, was assumed negligible (4-6). The amount of forward scatter detected by the instrument is a function of the tissue-scattering angles, distance to the collecting mirrors or detector, and size of baffles in the light path.

Boettner's investigation (5) into the forward scatter of human eyes (age 4 weeks to 75 years) determined that approximately 35% of 566-μm incident light is forward scattered outside an angle of 1^{o}. He also found that nearly all scattered energy was contained within a 3^{o} exit angle. Although our study did not repeat his measurements, there was concern to determine if our spectrophotometers were detecting all measurable forward scatter. The geometry of the ACTA's optical design between tissue and convergent detector mirror was such to collect all light scattered within an angle of 15.5^{o}. Detection of the total transmission required that all transmitted energy fall within this collecting angle. The effectiveness of the system to detect all the transmitted light was tested by two methods. The first was to introduce a +15-cm focal-length lens directly behind the posterior side of the tissue cell and collimate the transmitted light prior to its reaching the collecting mirror. The second method was to place an integrating sphere in the sample compartment behind and adjacent to the tissue cell. The sphere gathered the radiation energy over a cone with an angle of 140^{o}. Corneal, vitreous, and lenticular total transmission measurements determined with the two modification schemes showed no significant differences from measurements with the normal Beckman optics. From this comparison we concluded that the instrument's ability to measure scattered light was adequate for total-transmission measurement of the ocular media.

Tissue Thickness Measurements

A previous investigator at USAFSAM (14) used ultrasonic techniques to determine tissue thicknesses for the various components of the ocular media. His study determined the in-vivo thickness of the cornea, lens, anterior chamber, and vitreous body for a population of 128 rhesus eyes (Table 2). In-vivo measurements for thicknesses were chosen to eliminate measurement errors associated with techniques using enucleated specimens; i.e., tissue shrinkage and distortion. The primates for both his and our studies were from the same animal colony and were approximately the same age and weight. Many of the rhesus included in our transmission measurement had been subjects for the thickness measurements.

Anterior chamber and vitreous body depths were used to calculate the total ocular transmission contained in the Results section of this report.

TABLE 2. THICKNESSES OF THE OCULAR MEDIA (17)

Tissue	Average thickness (mm)	± SD
Cornea	0.5527	0.0028
Anterior chamber	2.8564	0.0492
Crystalline lens	3.4927	0.0428
Vitreous	11.5473	0.6488

Absorption Coefficient Calculations

The raw transmission data from an empty cell and a cell containing the specimen were electronically digitized (Hewlett-Packard model 9864A digitizer) from the spectrophotometric charts and transferred into the memory of an H-P model 9820 calculator system. The calculator unit performed the various calculations for tissue transmissivity and compiled the data at uniform wavelength or wavenumber intervals. The information was then stored on digital magnetic tape cassettes (H-P model 9865A cassette memory) for future use.

RESULTS

A total of 48 rhesus eyes (24 monkeys) were used for these measurements, which encompassed nearly 2 years of investigation. Since all animal subjects were approximately the same age and weight, any observed transmittance differences in the data were not attributed to these factors. The previous ultrasonic measurements for in-vivo tissue thicknesses showed no apparent variations that could be correlated to the right or left eye, weight, or sex of the animal.

Figures 4-10 represent the transmissivity of the cornea, aqueous humor, lens, vitreous, entire rhesus ocular media, distilled water, and physiological saline, respectively, in the wavelength region of 0.2-2.5 μm. This spectral region was chosen because it contains most laser emissions and encompasses nearly all wavelengths of significant tissue transparency. The percent-transmissivity curves were plotted for the in-vivo thicknesses of the individual ocular media components. The 1.85-cm pathlength used in calculating the percent transmissivity for distilled water and physiological saline is approximately the total thickness of the rhesus monkey ocular media (14).

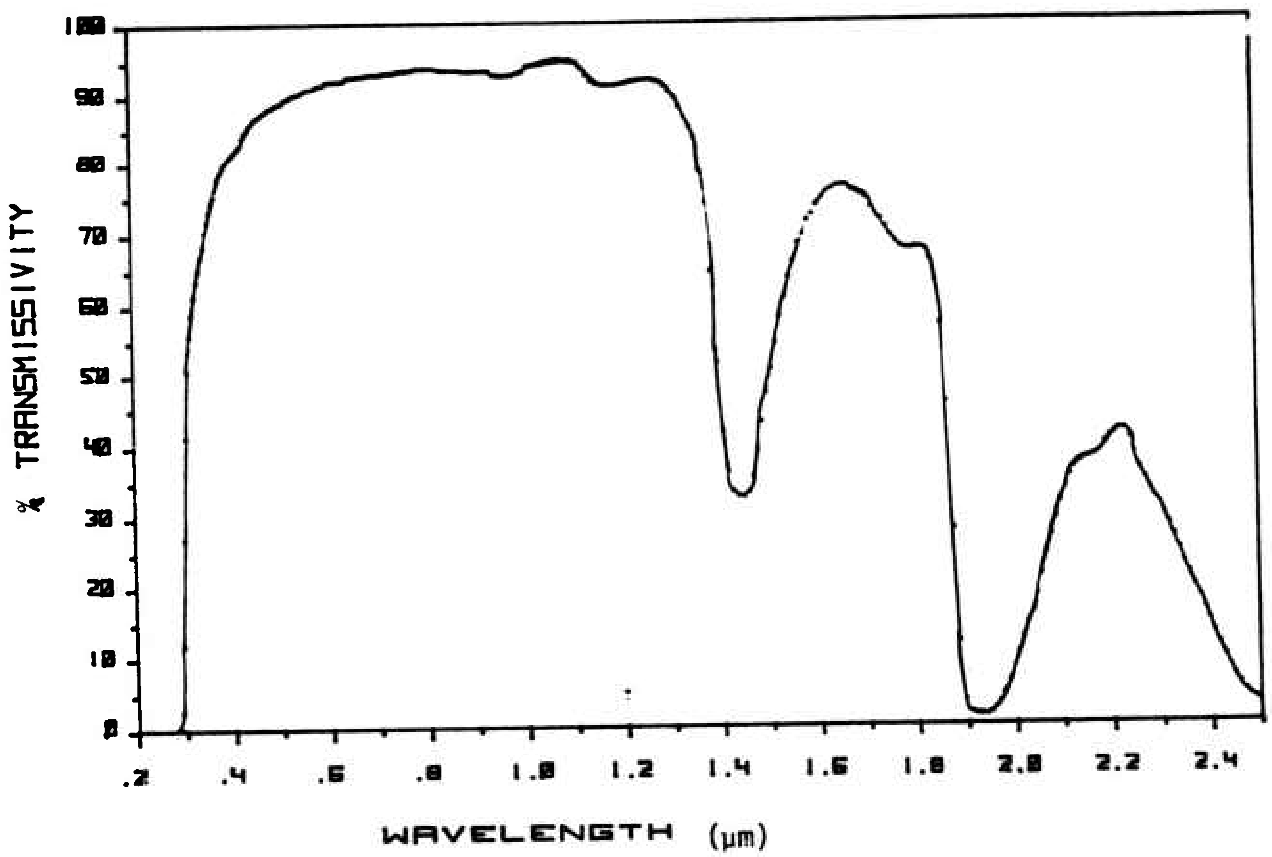

Figure 4. Percent transmissivity of the rhesus cornea (0.5527-mm in vivo thickness).

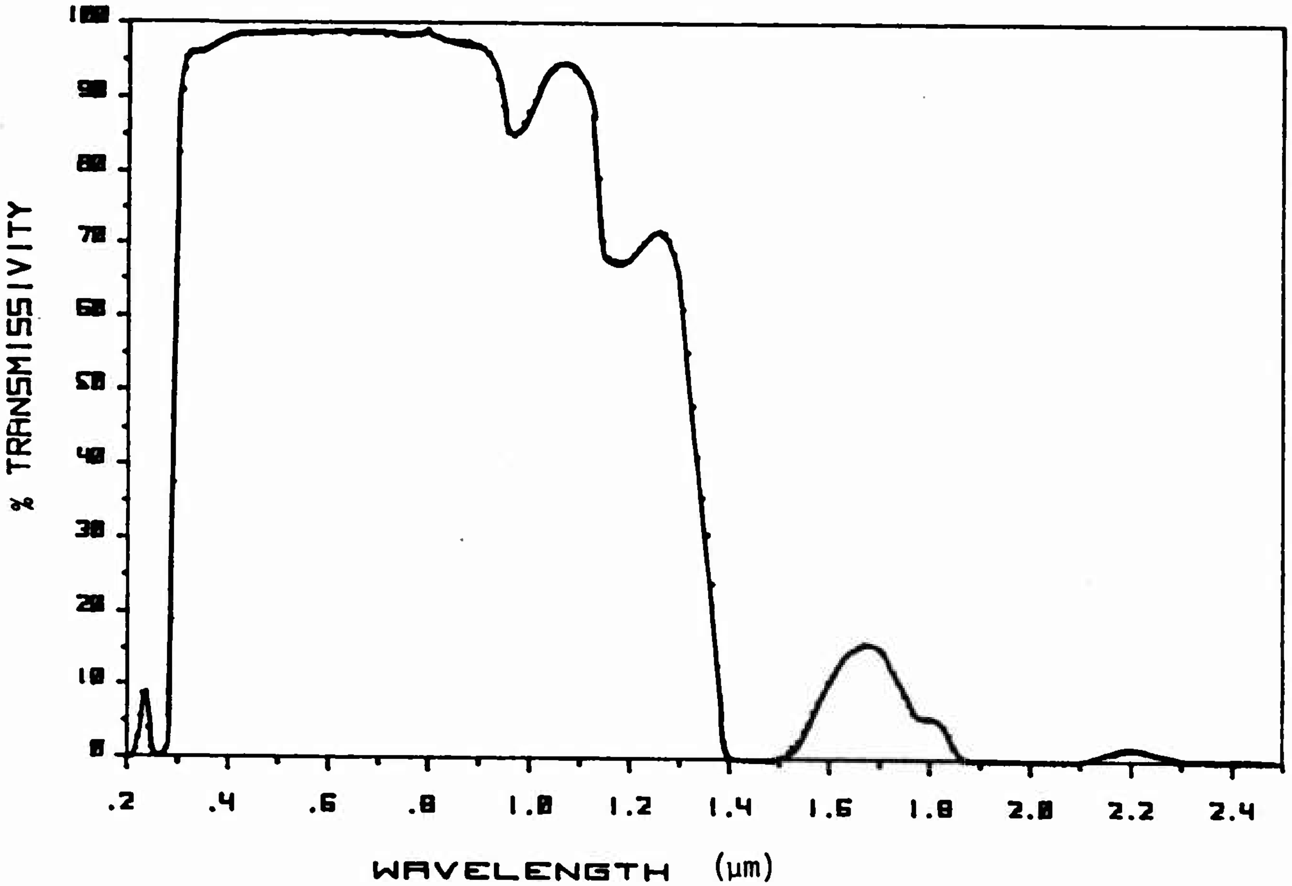

Figure 5. Percent transmissivity of the rhesus aqueous humor (2.8564--mm in vivo thickness).

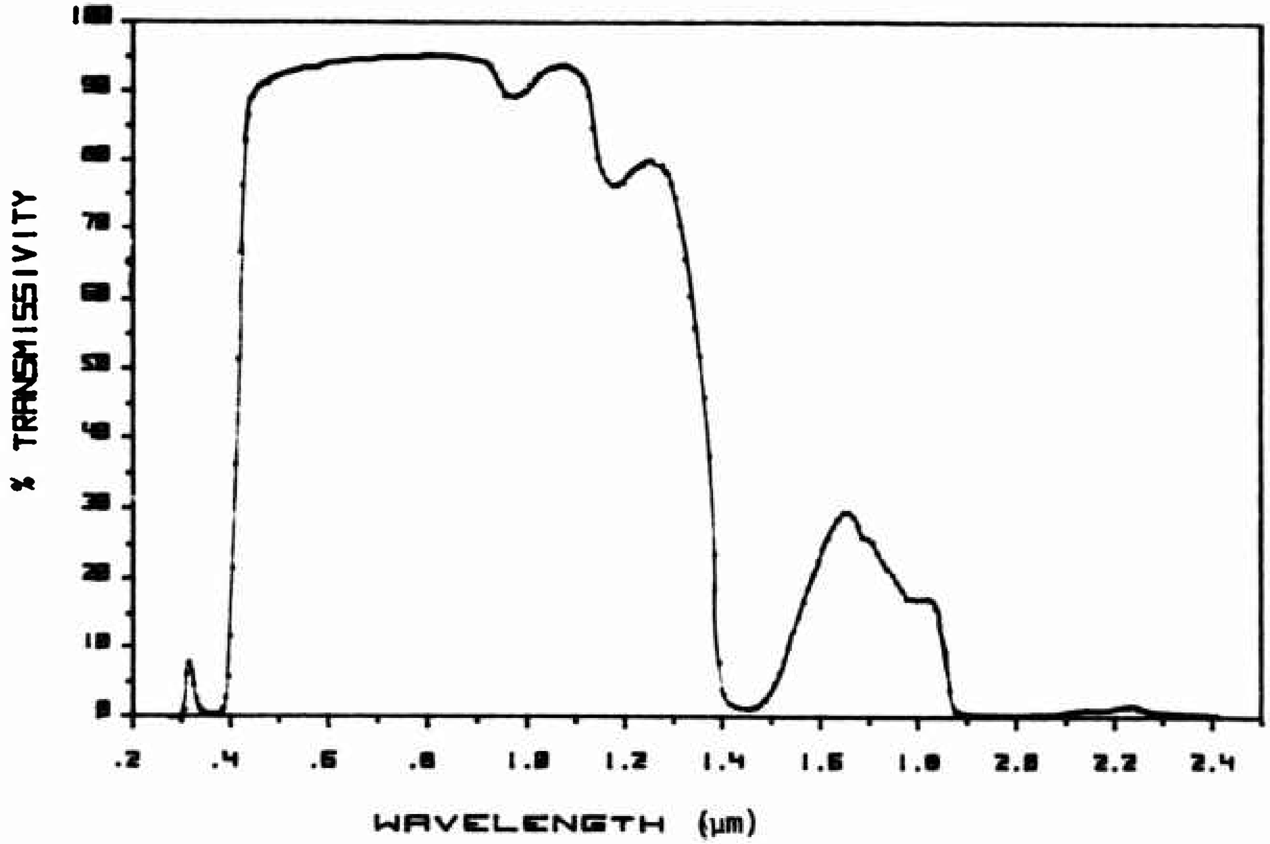

Figure 6. Percent transmissivity of the rhesus lens (3.4927--mm in vivo thickness).

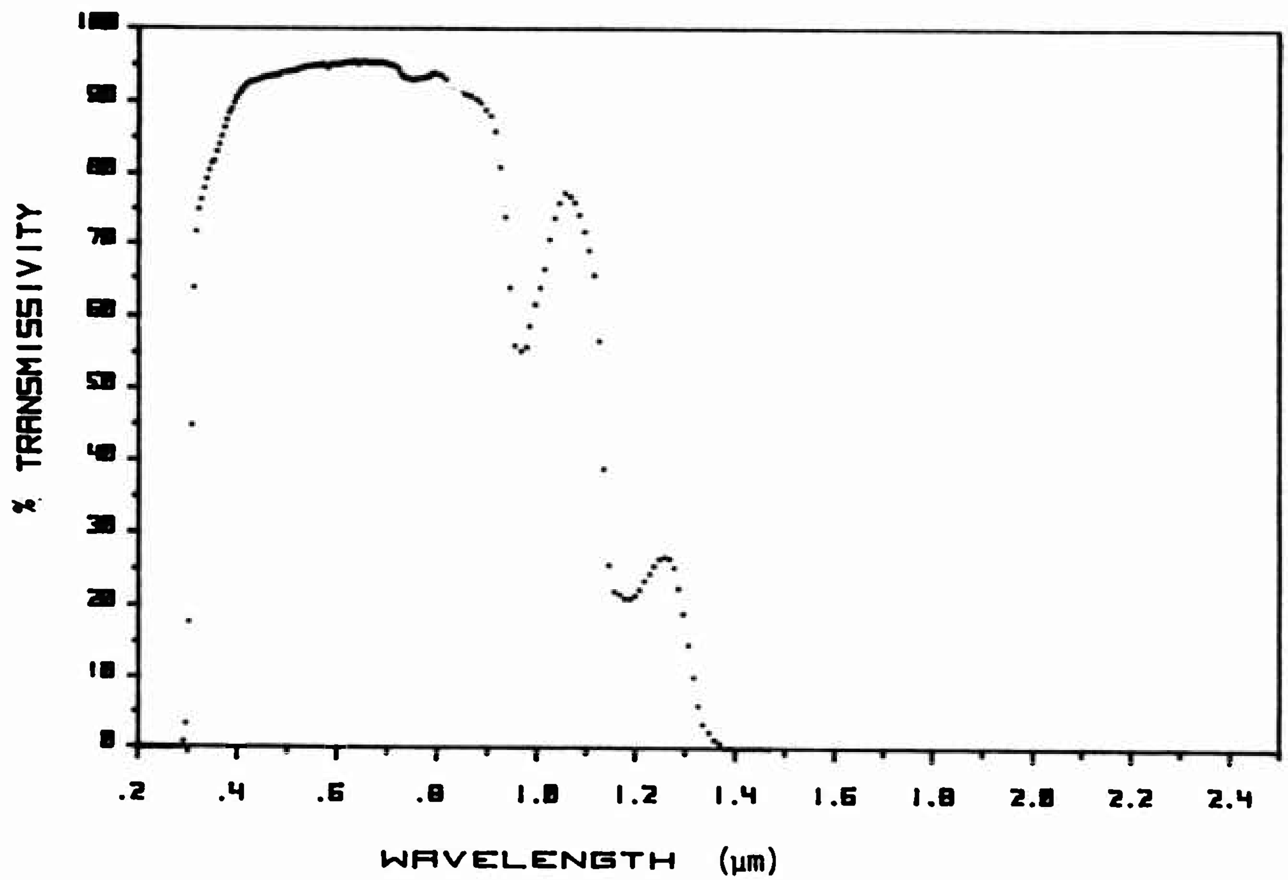

Figure 7. Percent transmissivity of the rhesus vitreous humor (11.5473-mm in vivo thickness).

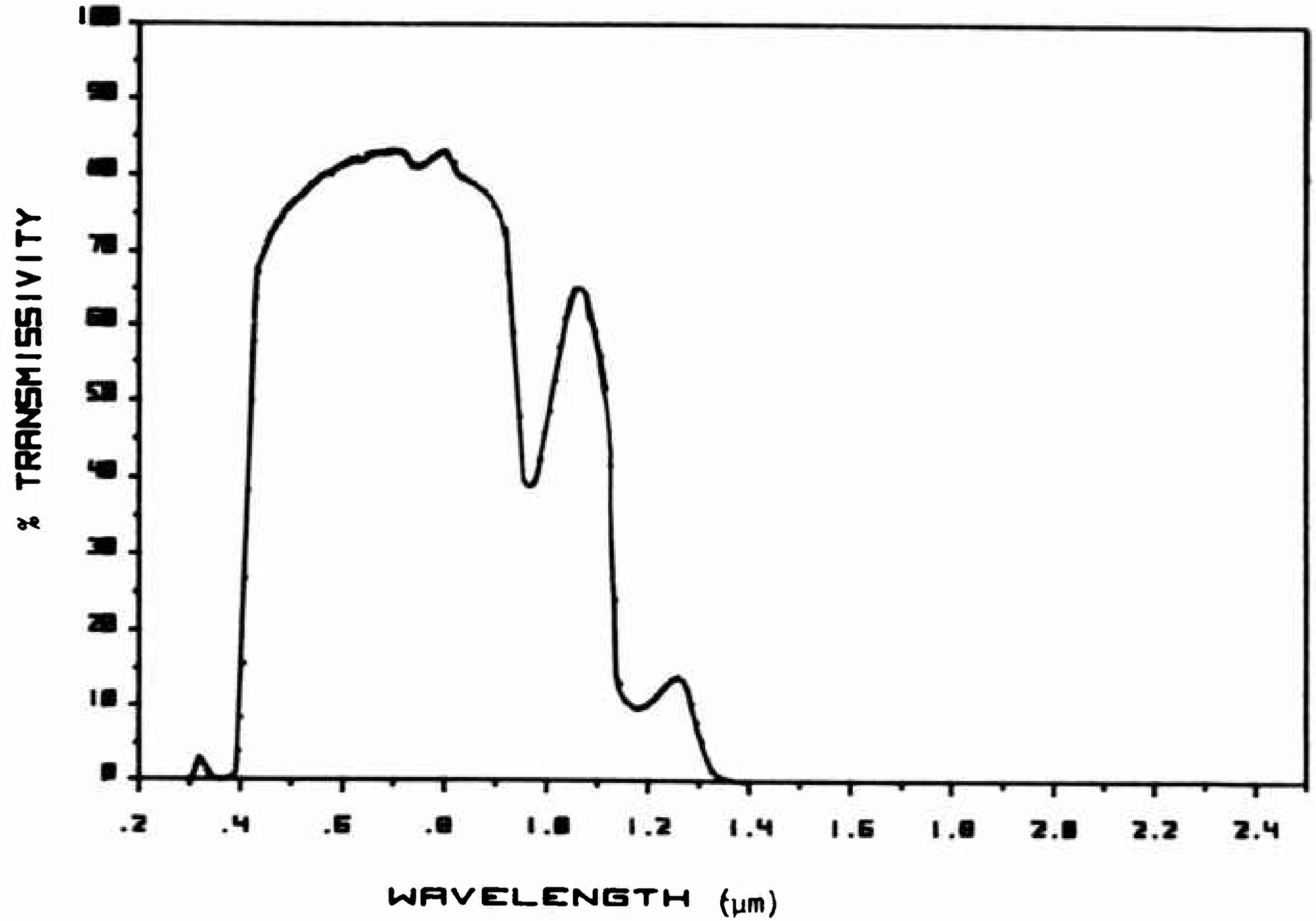

Figure 2. Percent transmissivity through the entire rhesus eye (1.85-cm pathlength).

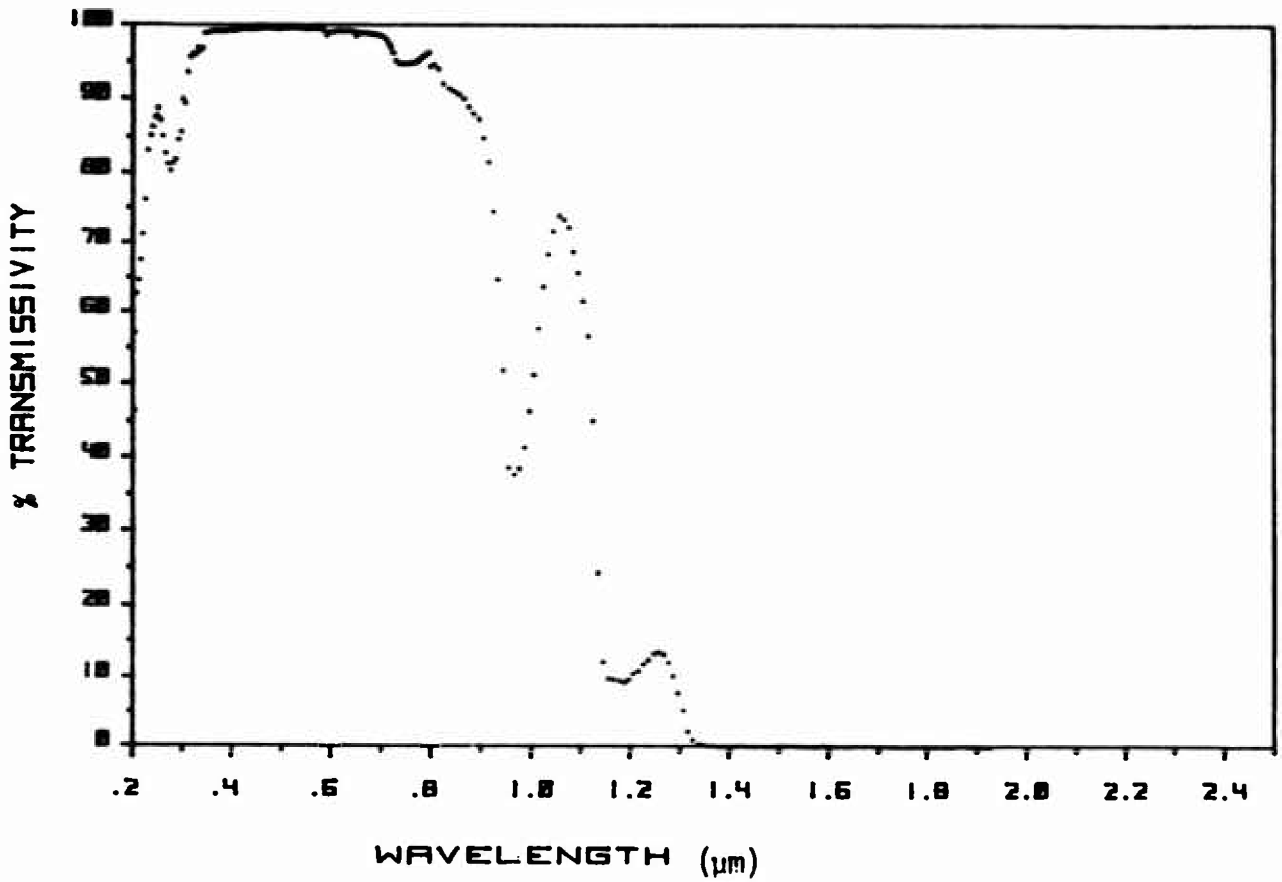

Figure 9. Percent transmissivity of distilled water (1.85-cm pathlength).

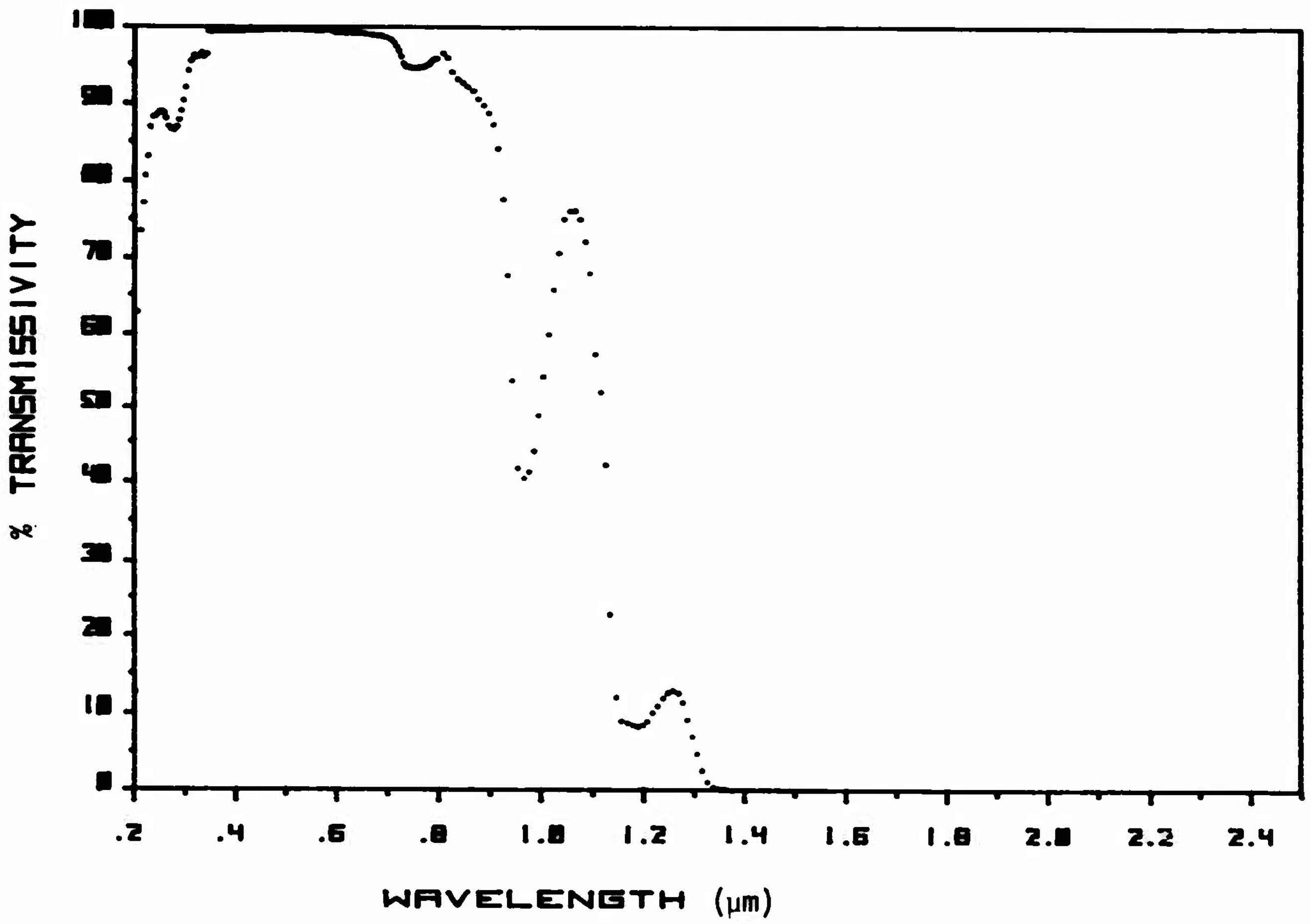

Figure 10. Percent transmissivity of physiological saline (1.85-cm pathlength).

Tabulated values for the mean absorption coefficients, standard deviation for the absorption coefficients, optical density, percent transmissivity, and the number of specimens are contained in Appendix A, as a function of wavelength. Since much of the raw transmission data was measured using various pathlengths, the unbiased standard deviation was calculated relative to the absorption coefficient. In nearly all instances, the absorption coefficients were normally distributed about the mean value and minimally skewed. In all cases, the percent transmissivity was calculated using the mean value of the absorption coefficient and the in-vivo tissue thickness. All optical density values were calculated from the percent transmissivity. The optical-density and percent-transmissivity values of the appendix were calculated up to 100 OD and 1.0 x 10^{-99}%, respectively. Percent-transmissivity values smaller than this were not tabulated.

The appendix tables display the results at four uniform wavelength intervals that corresponded with the spectral regions of measurement: (1) 5-nm intervals for 0.2-0.8 µm; (2) 10-nm intervals for 0.8-2.5 µm; (3) 100 wavenumber steps for 2.5-5.0 µm; and (4) 200 wavenumber steps for 5.0-15 µm.

Figures 11-16 are logarithmic plots of the results of absorption coefficient measurements in the wavelength interval of 0.2-15 µm. The gaps in these curves represent wavelengths for which the absorption coefficient was extremely large (beyond the sensitivity of the detectors; consequently, values could not be obtained.

In a few instances, some transmissivity data were excluded from the final results because of irregularities or instrument malfunctions. Most frequently, the excluded samples were lenses with opacities or vitreous humor specimens contaminated with blood or fragments of retinal tissue. One aqueous humor sample was excluded because it contained particulates sloughed from a lens afflicted with a severe opacity. All but two of the corneas measured were termed as normal. In total, approximately 5% of the total samples measured were excluded from the final results.

DISCUSSION

In most previous investigations, variations in species, measurement techniques, and tissue preparations have been too diverse to allow comparisons between their respective results. For example, the reported elapsed times from tissue enucleation to measurement have ranged from 15 minutes to over 8 hours between various studies, with tissue preparation ranging from immersion in a variety of solutions to no immersion at all, thus raising concern about the integrity of some of the measurements. Only one study reviewed has attempted to minimize the measurement system's bandwidth and provide detailed statistics (6).

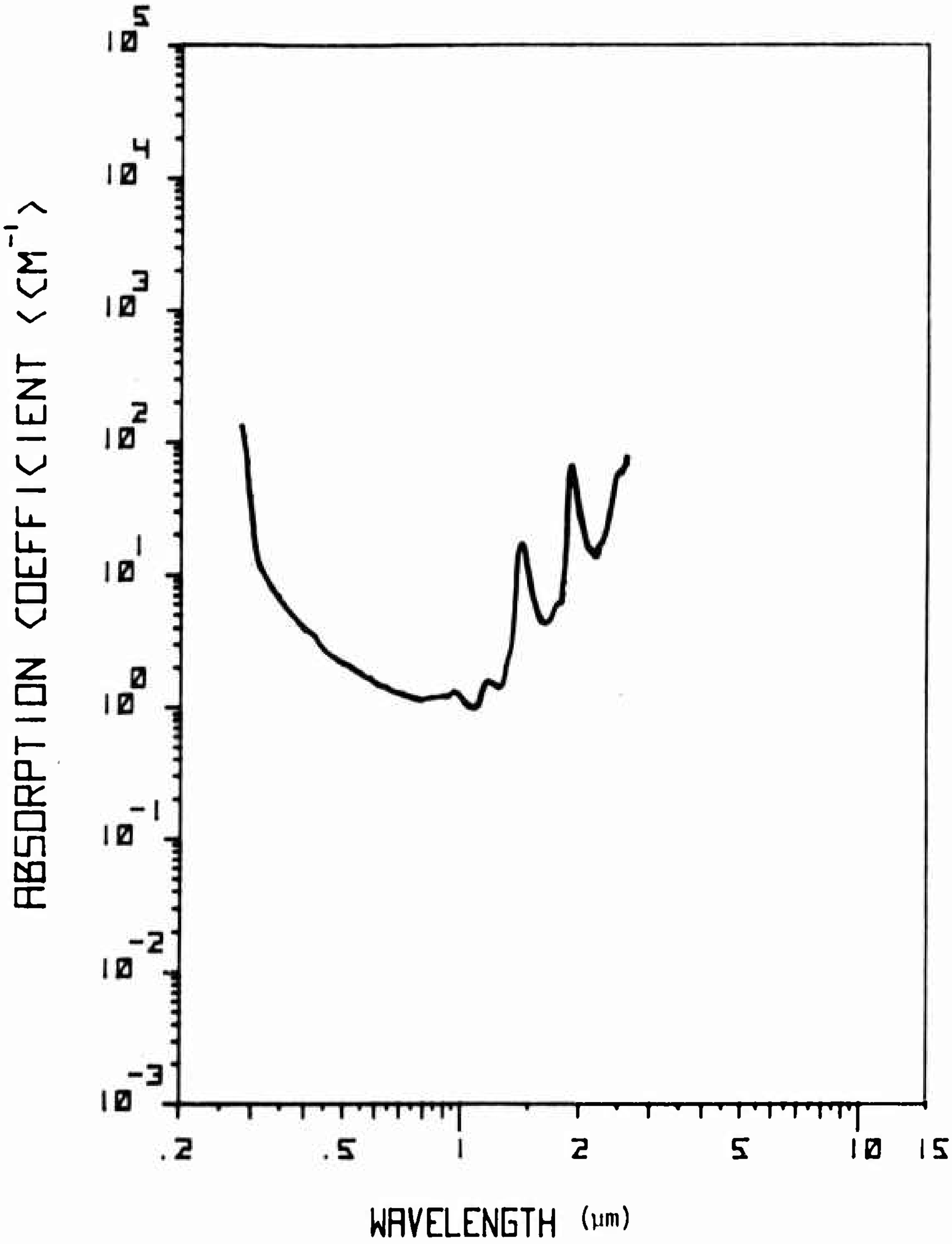

Figure 11. Absorption coefficients for the cornea.

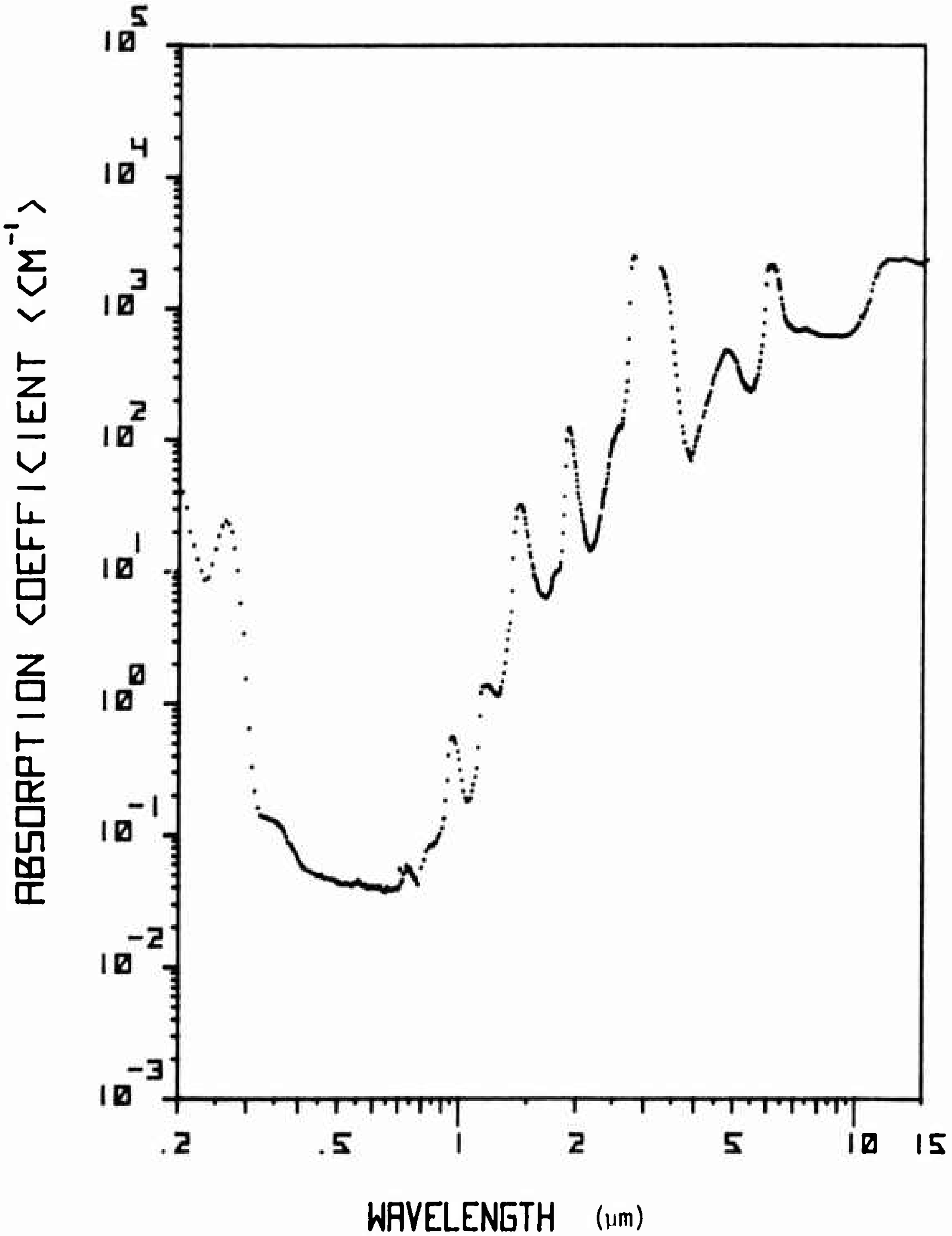

Figure 12. Absorption coefficients for the aqueous humor.

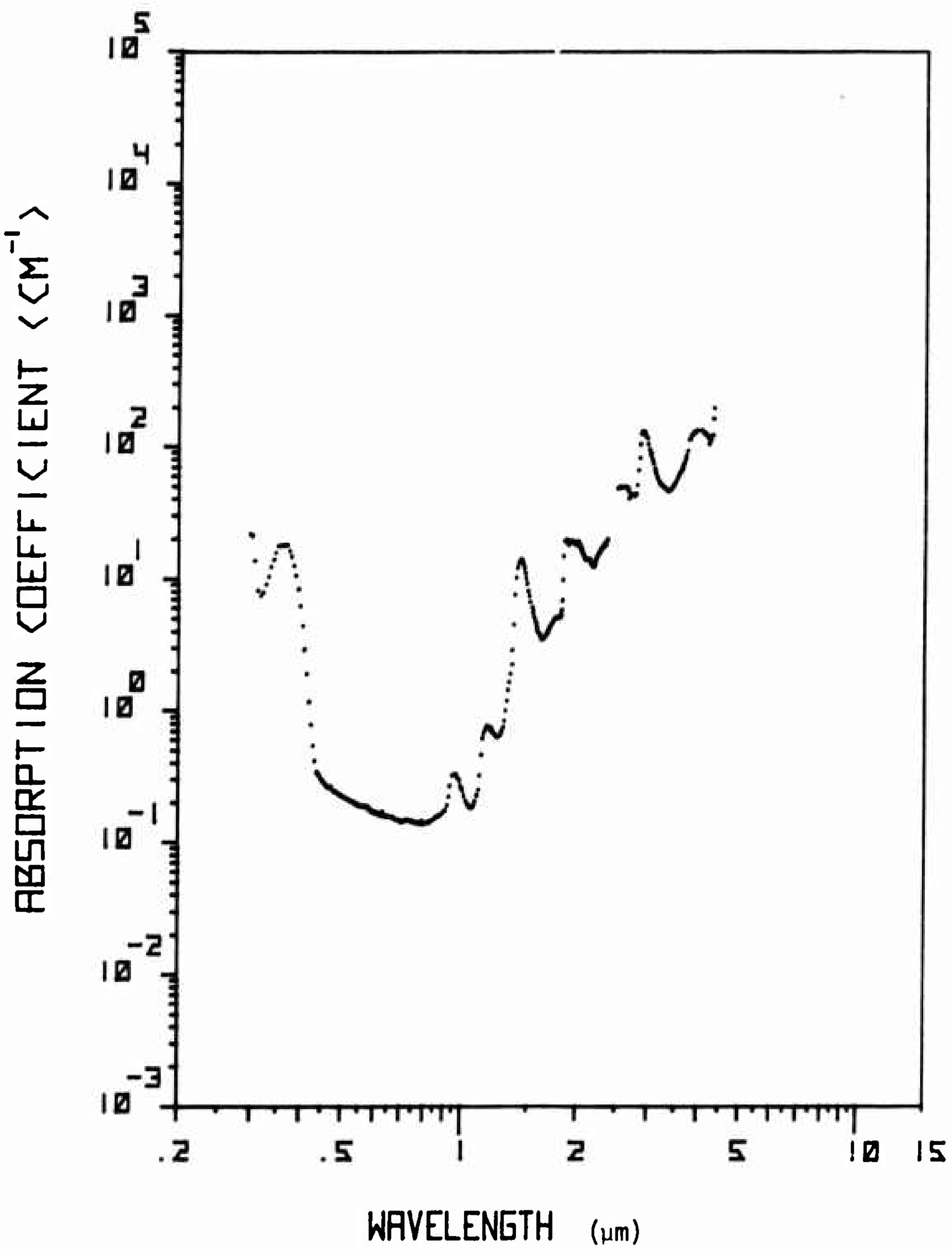

Figure 13. Absorption coefficients for the crystalline lens.

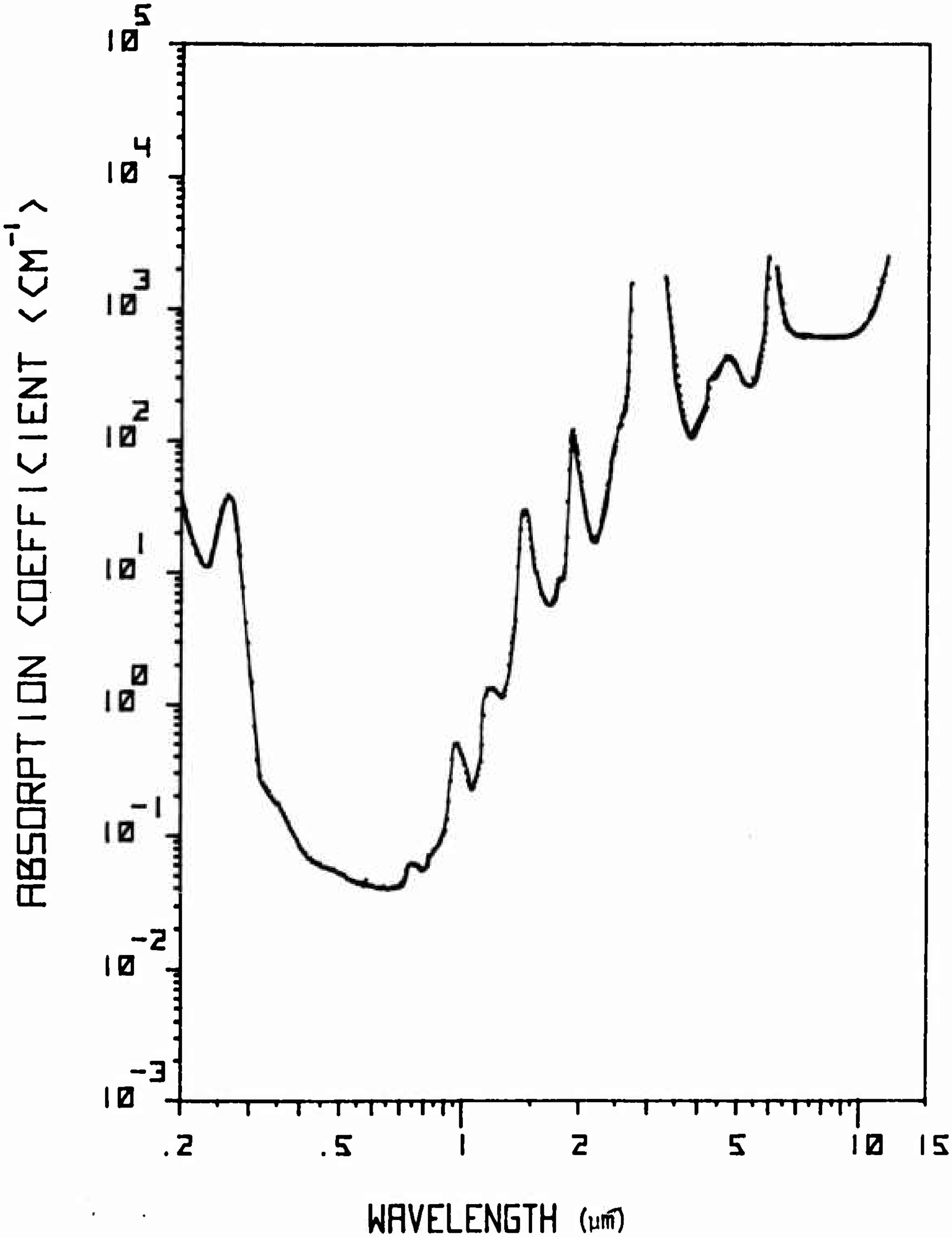

Figure 14. Absorption coefficients for the vitreous humor.

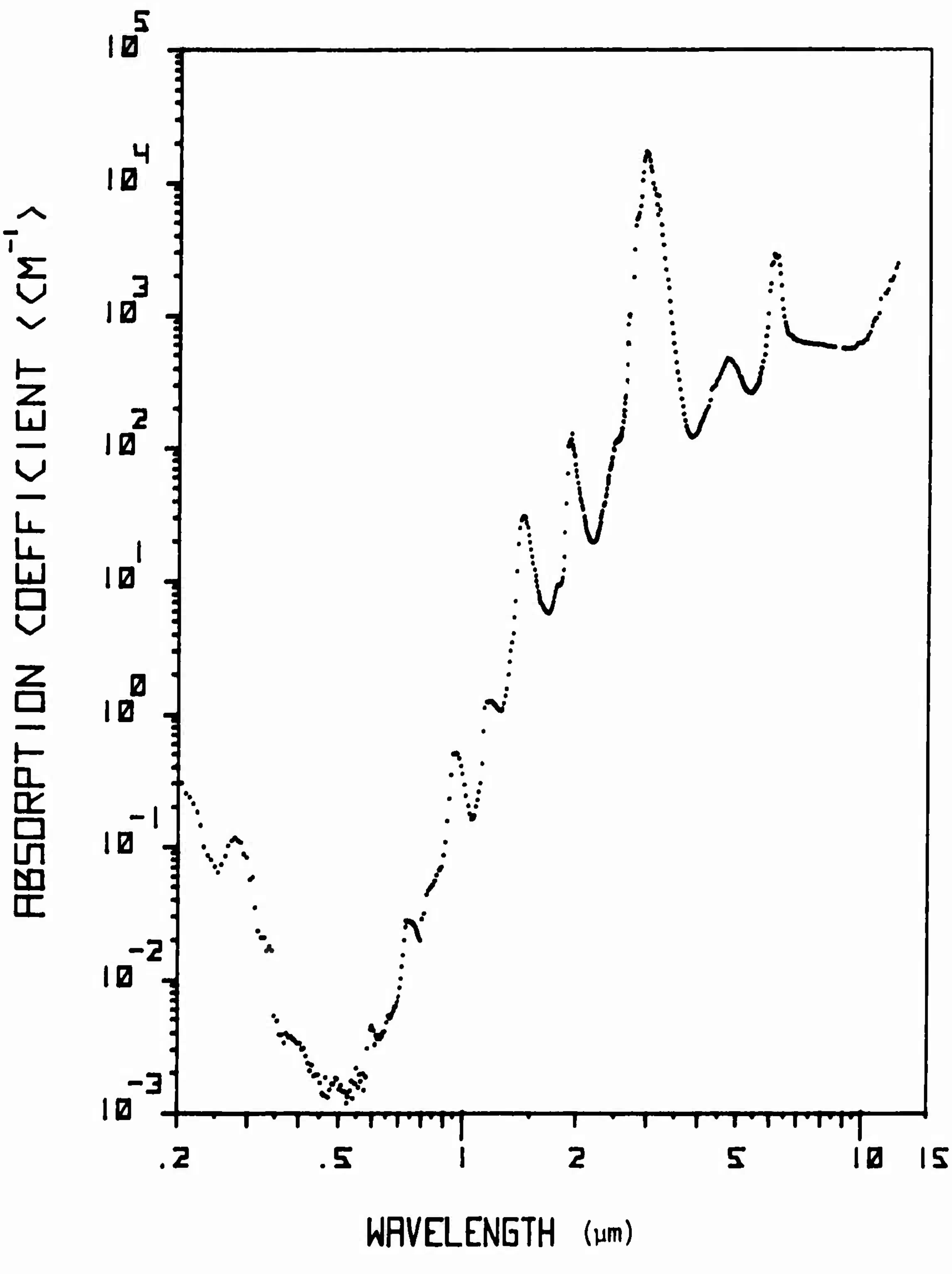

Figure 15. Absorption coefficients for distilled water.

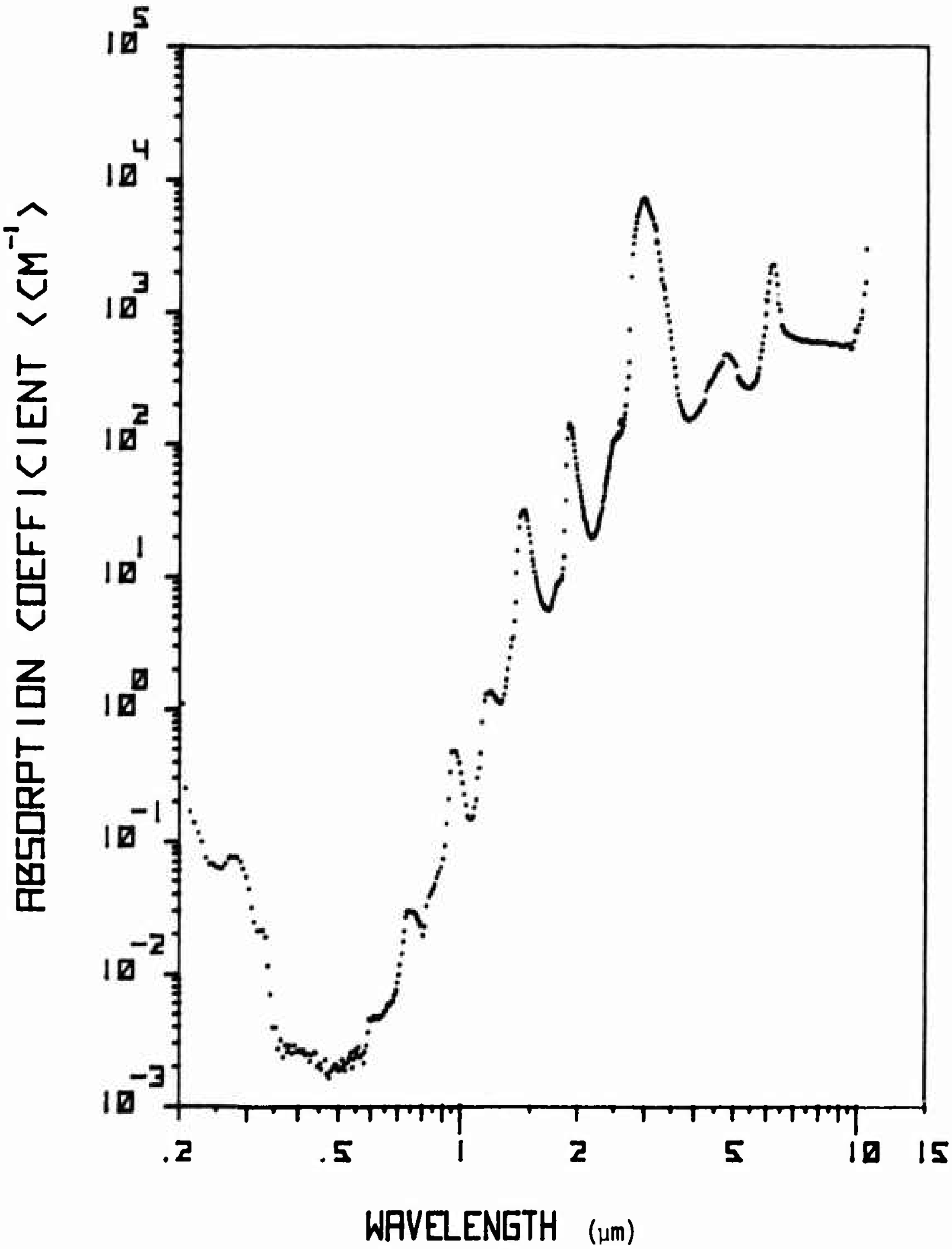

Figure 16. Absorption coefficients for physiological saline.

Many studies show large transmission differences, particularly at wavelengths where the absorption is high. Of these discrepancies, many can be attributed to anatomical variations between the rhesus monkey, rabbit, bovine, and human eyes or to lack of or erroneous corrections for reflective and scatter losses. To date, only one study reviewed has recorded tissue thicknesses and calculated absorption coefficients (6).

In contrast, our investigation was conducted with a comparatively large number of specimens that were measured immediately after enucleation. The utmost care was exercised throughout the surgical-removal, tissue-mounting, and measurement phases of the study. All specimens were handled in the same fashion so that differences due to various methodologies would not be encountered.

The transmission measurement in all reviewed studies of this sort has been by one of two methods. The first method measures transmission through the total refractive media either by reflecting the incident beam off the sclera or lens, in vivo, and determining the single-pass percent transmission (1, 36), or by measuring direct transmission through the entire eye in vitro (5, 15, 20, 40). The second method, which yields more information, measures the transmission of the individual components of the refractive media (4-6, 9, 24, 31, 32). The latter method allows calculation of the various tissue absorption coefficients. Both methods are comparable in determining the transmission through the entire ocular media, as demonstrated by Boettner (5).

The remaining discussion will focus on measurement results for each component of the refractive media and comparing the transmissivity of the refractive media, distilled water, and physiological saline to other studies.

Sample Measurements

Cornea--With wavelengths from 0.200 to 0.295 µm, the cornea is opaque with optical densities in excess of 4. With wavelengths from 0.300 µm, the transmissivity increases very rapidly, and a maximum transmission of approximately 95% is attained at 1.085 µm. Boettner (6) obtained a value of 97.2% at 1.085 µm; however, he measured a maximum transmissivity of 97.7% at 1.234 µm, whereas this study measured 92.3% at the 1.234-µm wavelength. These minor discrepancies may partly be the result of Boettner's reporting median rather than mean values. For our measurements, median values were consistently slightly higher than the mean.

Starting from about 0.535 µm and extending into the near infrared at 1.310 µm, the cornea has a relatively flat transmission spectra, with transmissivities greater than 90%. Centered at 1.45 and 1.93 µm, however, the cornea demonstrates pronounced absorption bands which are attributed to water absorption. Significant transmissivity windows were found in the 1.5- to 1.8-μm and 2.0- to 2.4-μm wavelength bands where the maximum transmissivities were 76.5% and 41.5% respectively. Throughout the near infrared, these measurements agreed well with other investigations (4-6, 24, 31, 32).

Accurate transmissivity measurements at wavelengths greater than 2.5 μm were not possible because of the very high (nearly 100%) absorption of the cornea. Measurements were attempted, but data reliability was quite poor and often not repeatable. Attempts were made to obtain absorption coefficients by freezing the cornea to reduce the absorbing pathlength and sectioning with a microtome; however, this effort failed to yield reliable values because of the large variability and uncertainty in determining the final pathlength, and the inability to obtain sections with surface areas large enough to transmit the measuring beam. For wavelengths greater than 2.5 μm, reasonable estimates for corneal absorption coefficients would be those of water because of the high water content of the cornea (75-85%).

The change in corneal transmissivity with time after enucleation was dramatic. Bathed in Ringer's solution, the cornea would usually cloud over in less than 30 minutes. When enclosed within the cell, the cornea could be maintained up to 2 hours with only a small loss in transmissivity (~5%); for times less than 1 hour, no change in transmissivity was observed.

Absorption coefficients calculated from these corneal transmissivity measurements demonstrated some minor variations from those obtained by Boettner (6), particularly at very high or very low absorbing wavelengths. These discrepancies may be explained in two ways. First, in regions of very high or very low absorption, a small change in transmissivity will have a large effect on the absorption coefficient. For example, a 2% change in corneal transmissivity at 1.08 μm will cause a 41% change in the absorption coefficient. A similar effect can be demonstrated in spectral regions of low absorption. The second explanation for some of our differences with Boettner's coefficients may lie in the fact that he used a smaller corneal thickness (0.0515 cm) in his calculations, based on the human corneal thickness proportionally reduced by the ratio of the diameter of the human eye to the diameter of the monkey eye. In contrast, our corneal thicknesses were measured in vivo by ultrasonic reflections. This difference in thickness itself can produce up to a 10% increase in Boettner's absorption coefficients relative to those measured in this study.

<u>Aqueous Humor</u>--The aqueous humor showed a small but significant transmission in the ultraviolet, with a maximum transmissivity of 8.6% at 0.235 μm. The transmissivity increased rapidly, starting at 0.280 μm, and continuing to 0.310 μm where the rate of change decreased, eventually reaching a maximum transmissivity of almost 99% throughout the visible and near infrared. A weak absorption band is noticeable in the wavelength region between 0.900 and 1.03 μm, where the transmissivity

makes a slight dip; this absorption region is associated with water. The aqueous began to absorb appreciably near 1.13 μm and increased rapidly, peaking in the strong water band at 1.435 μm. A small area of transmissivity (<20%) was observed between the two strong absorbing regions at 1.435 and 1.925 μm, and a second smaller window was found centered at approximately 2.2 μm. Negligible transmissivity is encountered past a wavelength of 2.3 μm. A comparison with previous literature shows excellent agreement in this wavelength region (4-6, 24, 31, 32).

Aqueous absorption coefficients were obtained throughout the infrared to 15 μm, by use of 25-μm pathlength cells. Table A-2 shows that aqueous absorption is very similar to that of water. Absorption coefficients could not be calculated around the 3- and 6-μm regions because of the extremely high absorptions.

As long as 48 hours after removal from the eye, aqueous samples were measured without a noticeable decrement in transmissivity. This observation was expected since the aqueous humor is approximately 99% water by weight.

Crystalline Lens--The rhesus lenses demonstrated no transmittance in the far ultraviolet up to a wavelength of 0.310 μm. At this point the transmissivity began to increase, showing a small window in the region of 0.31-0.345 μm, with a maximum transmissivity of 7.45% at 0.320 μm. The lens was highly absorptive at 0.350-0.390 μm, with the transmissivity increasing rapidly into the visible wavelengths and finally obtaining a maximum value of 95.3% between 0.780 and 0.820 μm. The transmissivity remained high until the water band at 1.45 μm; then, in the region of 1.500-1.870 μm, a window appeared. The remaining spectrum out to 15 μm was void of any appreciable transmittance (<2%).

Our results were compared with those of Boettner (6) and Weale (39). In the highly transmitting wavelengths, Boettner's values were about 1-2.5% larger than ours; again, the discrepancy possibly arose from his use of the median value. The largest difference in the two sets of data, however, occurs at wavelengths in the near-infrared water bands, where Boettner reported values of less than 0.2%, the measurement limit of his instrument, and was unable to obtain absorption coefficients through these regions. In contrast, we showed a transmissivity of approximately 1% through the 1.45-μm absorption band at 0.2% or less through the 1.95-μm water band. Because of the high absorption in the 1.95-μm band, we could not calculate with a high degree of certainty the absorption coefficients at a few wavelengths. These differences are perhaps due to the measurement limits of the respective spectrophotometers at the highly absorptive wavelengths. The ACTA MVII, operating in expanded scale, permitted our measurements without reference beam attenuation of ± 0.2%.

Weale used only two freshly enucleated human lenses and limited his measurements to the visible spectrum. His data appears to be slightly lower throughout the visible wavelength, 0.4-0.7 μm, than either Boettner's or ours.

Lens transmissivity in our study was unchanged even after the lens had been in the cell as long as 2 hours. Noticeable lens "yellowing" occurred at 4 hours post enucleation and was accelerated after UV irradiation.

Absorption coefficients for the lens were determined at from 0.300 to approximately 4.4-μm wavelengths. To obtain reasonable values in the highly absorptive wavelengths of 2.5-4.4 μm, a 0.4-mm slice from the anterior side of the lens was used to measure transmittance on three rhesus lenses. Besides reducing the pathlength, we increased the spectrophotometer slit width and attenuated the reference beam. The wide slit width seriously lowered the instrument's resolution to greater than 400 A at 2.5 μm; because of this, the actual absorption coefficient in the 2.5- to 4.4-μm spectrum may be higher than reported here, particularly around the 3-μm water band where the absorption is extremely large. Since measurements of this type have not been reported before, we had no reference with which to compare our results. A comparison with the coefficients of water suggests that the lens values could actually be a factor of 2 or more higher at certain wavelengths. Whether or not this difference is real is not known.

Vitreous Humor--The vitreous humor absorbed nearly all of the far ultraviolet at wavelengths less than 0.300 μm. As the wavelength increased from 0.300 μm, the transmissivity increased rapidly and remained high until the water absorption band at 1.2 μm. Throughout this region, the maximum transmissivity was calculated to be 95.9% in the 0.62- to 0.66-μm wavelength interval. In addition to the band at 1.2 μm, a moderate water absorption band was observed at approximately 0.98 μm. Absorptive regions were also found at 1.45, 1.92, 2.94, and 6.09 μm, with the 2.94- and 6.09-μm bands being the strongest. In considering the in-vivo thickness of the vitreous and the amount of absorption measured, a negligible fraction of energy incident upon the cornea will be transmitted to the retina for wavelengths greater than 1.4 μm.

The infrared absorption spectrum was almost identical to that of water, particularly at wavelengths greater than 2.5 μm. Data could not be measured through the 3-, 6-, and 15-μm absorption bands because the viscosity of the vitreous prohibited using shorter pathlength optical cells.

The transmissivity values of Table A-4 are in excellent agreement with those of previous studies (4, 31, 32) for the 0.30- to 1.4-μm wavelength interval. Beyond 1.4 μm, no transmissivity measurements were available for comparison.

Absorption coefficients were calculated throughout the 0.2- to 15-μm wavelengths, with the exception of the strong 3- and 6-μm bands.

The results are tabulated in Table A-4. Absorption coefficients at wavelengths greater than 11.7 μm could not be determined but were in excess of 2000 cm^{-1}.

Transmissivity Comparisons

Entire Ocular Media--To compare our data and techniques with studies that measured the entire ocular media in vivo or in vitro, we calculated a composite transmissivity curve for the eye, using the data from Figures 4-7 and the following equation:

$$\%T_{eye} = T_C \times T_a \times T_1 \times T_v \times 100 \qquad (21)$$

where

$\%T_{eye}$ = % transmissivity through the entire clear media of the rhesus eye, and

T_C, T_a, T_1, T_v = transmissivity of the cornea, aqueous, lens, and vitreous respectively.

In composite-curve calculation, all inner-reflection losses from the interfaces of the ocular media have been neglected because, at best, they would total less than 0.3% (6).

Figure 8 shows that the effective wavelength region for significant transmittance is from 0.4 to 1.4 μm, along with a small interval at 0.3-0.33 μm. The maximum percent transmissivity through the eye was calculated to be slightly less than 85% at 0.75-0.8 μm. Our transmissivity values agree quite well with Boettner's (4, 5) which had an average value of 83.5% at 0.7 μm for nine human eyes and 86.5% at 0.75 μm for five rhesus eyes. Pitts (31, 32), measuring the total transmittance through the bovine eye, determined a maximum transmissivity of 85.9% at 0.65 μm, which also compares closely with our measurements. Wiesinger et al. (40) and Geeraets and Berry (15) had the only studies of those reviewed, that measured the transmissivity of the rabbit eye in vitro. Both of their results were 8-10% higher than any similar measurements using rhesus. Geeraets' data (which included monkey, rabbit, and human eyes) determined that the monkey transmissivity was consistently lower than that of rabbit eyes even though the same methods were used.

Other differences between our values and other investigators occurred near the UV and near-IR transmittance-cutoff wavelengths, where anatomical species variations appear to be important.

Distilled Water--Table A-5 lists the results of measurements performed on doubly distilled water. As mentioned previously, these results and those for physiological saline were compared to the transmittance spectrums for the refractive media. Transmissivity measurements for water and saline were made with a 1.85-cm pathlength, the approximate thickness of the rhesus refractive media (14).

The transmissivity of distilled water was relatively high in the ultraviolet, even at the UV measurement limit of 0.200 µm where the transmissivity was 46.6%. Considerable variability was observed in the far-UV wavelengths, most likely due to the random presence of minute contaminates and trace chemicals introduced through the distillation apparatus which can have a severe effect on the UV spectra (2). Data variability found in previous studies for the UV spectra of water could be due partly to the various degrees of purity of the water measured.

The near-UV, visible, and portions of the near-IR spectra had very high transmissivities, approaching 100%. Extremely high transmissivities made it important to check and recheck all instrument parameters and calibrations, because any measurement errors could change the calculated value for the absorption coefficient by several factors. Second-order reflections, which were ignored, could also have a significant effect in this region. A change as small as 0.3% in transmissivity would cause the corresponding absorption coefficient to change by a factor of 2 or 3.

In surveying the literature, a wealth of information for absorption coefficients for water and ice was found, although agreement between studies was sometimes poor. The least information, only a handful of comprehensive papers (18, 25, 38), was found in the UV and visible spectral regions. The works of Irvine and Pollack (22) and Hale and Querry (19) were used to compare the UV and visible water data. Both papers presented a composite review of nearly all data measured in this region of interest. These reviews present absorption coefficient values in the 0.2- to 0.7-µm wavelength region that compare very well with our values, except absorption coefficients for the 0.45- to 0.55-µm interval. In this region both reviews report absorption coefficients of 1.0 to 4.0 x $10^{-4}cm^{-1}$, while in the same interval, our study produced values of 1.0 to 2.0 x $10^{-3}cm^{-1}$. We found no explanation for these discrepancies except that variations of this magnitude are common for very low absorptions. At these wavelengths, pathlengths apparently need to be in excess of 100 mm for accurate calculation of the absorption coefficient. Unfortunately, most commercial spectrophotometers would need modification to accommodate pathlengths of this size.

Absorption coefficients calculated in the near- and far-IR show excellent agreement with the literature (10, 19, 22, 23, 33-35, 41). A region of somewhat minor variation was in the strong absorption band at 2.85-3.10 µm, where our absorption coefficients appear to be 20-30% higher than those reported by Robertson and Williams (34). The differences are probably the result of uncertainties in the sample thicknesses which at times were as small as 2-5 µm. This problem was present in all investigations that attempted to measure the absorption through the strong 3-μm band. At the peak of the absorption, our study calculated an average absorption coefficient of 17,700 cm^{-1} with a standard deviation of 13%. Our water absorption coefficients are in good overall agreement with current values in the literature when the various techniques and instrumentations used by previous investigators are considered. In some wavelength regions, ours comprise the only reliable data available.

Physiological Saline--Results of saline measurements are contained in Figures 10-16 and Table A-6. Since the results are very similar to those for water, a detailed discussion of the saline values is not undertaken. The only differences observed were at the limit of the UV measurements. Although slight, there appeared to be more absorption in saline, starting at 0.25 μm and increasing towards the shorter wavelengths, than for an equal pathlength of water. This small increase in absorption was assumed to be due to the ionic concentration of saline (8).

A comparison of the transmissivity of the refractive media of the eye and an equivalent thickness of water or saline demonstrated the following similarities and differences. In the ultraviolet, the refractive media and water spectrum are quite dissimilar, with the refractive media being opaque in the far-UV wavelengths. These differences are apparently due to UV-absorbing species of aromatic amino acids and nucleotides found in the cornea, lens, and vitreous (11). As wavelength increases into the near-UV and visible, the spectra become more nearly alike, although the refractive media still absorbs 10-15% more than either water or saline. The three absorption spectra become almost indistinguishable from each other in the near- and far-infrared, and transmissivity is negligible at wavelengths greater than 1.4 μm.

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APPENDIX A

TABULATED VALUES FOR CORNEA, AQUEOUS HUMOR, LENS, VITREOUS HUMOR, DISTILLED WATER, AND PHYSIOLOGICAL SALINE

LAMBDA--Wavelength (μm)

ALPHA--Mean absorption coefficients in units of cm^{-1}

SD--Standard deviation for absorption coefficients

OD--Optical density

%T--Percent transmissivity

NO.--Number of specimens

TABLE A-1. CORNEA

LAMBDA (UM)	ALPHA	SD	OD	%T	NO.
.2000 to	>1.67E+02	------	>4.000	<1.00E-02	--
.2750	>1.67E+02	------	>4.000	<1.00E-02	--
.2800	1.34E+02	3.36E+01	3.230	5.89E-02	4
.2850	1.31E+02	4.04E+01	3.150	7.11E-02	4
.2900	1.09E+02	2.15E+01	2.613	2.44E-01	9
.2950	7.08E+01	1.49E+01	1.698	2.00E+00	22
.3000	3.94E+01	7.42E+00	0.946	1.13E+01	22
.3050	2.39E+01	3.38E+00	0.574	2.66E+01	22
.3100	1.61E+01	2.59E+00	0.387	4.09E+01	22
.3150	1.24E+01	1.79E+00	0.297	5.04E+01	22
.3200	1.06E+01	1.66E+00	0.255	5.56E+01	22
.3250	9.64E+00	1.64E+00	0.231	5.87E+01	22
.3300	8.87E+00	1.58E+00	0.213	6.13E+01	22
.3350	8.28E+00	1.57E+00	0.199	6.33E+01	22
.3400	7.81E+00	1.54E+00	0.187	6.49E+01	22
.3450	7.32E+00	1.54E+00	0.176	6.67E+01	22
.3500	6.89E+00	1.50E+00	0.165	6.83E+01	22
.3550	6.36E+00	1.28E+00	0.153	7.03E+01	22
.3600	5.99E+00	1.24E+00	0.144	7.18E+01	22
.3650	5.65E+00	1.19E+00	0.136	7.32E+01	22
.3700	5.34E+00	1.18E+00	0.128	7.45E+01	22
.3750	5.04E+00	1.18E+00	0.121	7.57E+01	22
.3800	4.89E+00	1.15E+00	0.117	7.63E+01	22
.3850	4.54E+00	1.13E+00	0.109	7.78E+01	22
.3900	4.33E+00	1.11E+00	0.104	7.87E+01	22
.3950	4.16E+00	1.10E+00	0.100	7.94E+01	22
.4000	3.99E+00	1.11E+00	0.096	8.02E+01	22
.4050	3.87E+00	1.08E+00	0.093	8.08E+01	22
.4100	3.78E+00	1.11E+00	0.091	8.11E+01	22
.4150	3.71E+00	1.09E+00	0.089	8.15E+01	22
.4200	3.63E+00	1.06E+00	0.087	8.18E+01	22
.4250	3.54E+00	1.05E+00	0.085	8.22E+01	22
.4300	3.40E+00	1.00E+00	0.082	8.28E+01	22
.4350	3.18E+00	1.00E+00	0.076	8.39E+01	22
.4400	3.00E+00	1.02E+00	0.072	8.47E+01	22
.4450	2.91E+00	1.01E+00	0.069	8.51E+01	22
.4500	2.80E+00	9.85E-01	0.067	8.57E+01	22
.4550	2.71E+00	9.71E-01	0.065	8.61E+01	22
.4600	2.62E+00	9.88E-01	0.063	8.65E+01	22
.4650	2.55E+00	9.73E-01	0.061	8.68E+01	22
.4700	2.49E+00	9.49E-01	0.060	8.71E+01	22

TABLE A-1. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
0.4750	2.42E+00	9.44E-01	0.058	8.74E+01	22
0.4800	2.38E+00	9.45E-01	0.057	8.77E+01	22
0.4850	2.34E+00	9.39E-01	0.056	8.79E+01	22
0.4900	2.26E+00	9.47E-01	0.054	8.82E+01	22
0.4950	2.22E+00	9.33E-01	0.053	8.85E+01	22
0.5000	2.19E+00	9.24E-01	0.052	8.86E+01	22
0.5050	2.14E+00	9.24E-01	0.051	8.88E+01	22
0.5100	2.11E+00	9.12E-01	0.050	8.90E+01	22
0.5150	2.08E+00	9.13E-01	0.050	8.92E+01	22
0.5200	2.10E+00	8.77E-01	0.050	8.91E+01	21
0.5250	1.99E+00	8.87E-01	0.048	8.96E+01	22
0.5300	1.95E+00	8.93E-01	0.047	8.98E+01	22
0.5350	1.93E+00	8.74E-01	0.046	8.99E+01	22
0.5400	1.87E+00	8.97E-01	0.045	9.02E+01	22
0.5450	1.84E+00	8.96E-01	0.044	9.03E+01	22
0.5500	1.82E+00	8.74E-01	0.044	9.04E+01	22
0.5550	1.80E+00	8.64E-01	0.043	9.05E+01	22
0.5600	1.77E+00	8.38E-01	0.043	9.07E+01	22
0.5650	1.72E+00	8.59E-01	0.042	9.09E+01	22
0.5700	1.70E+00	8.48E-01	0.041	9.10E+01	22
0.5750	1.69E+00	8.72E-01	0.041	9.11E+01	21
0.5800	1.66E+00	8.45E-01	0.039	9.12E+01	22
0.5850	1.70E+00	7.74E-01	0.041	9.10E+01	22
0.5900	1.61E+00	8.45E-01	0.039	9.15E+01	22
0.5950	1.56E+00	8.50E-01	0.038	9.17E+01	22
0.6000	1.55E+00	8.27E-01	0.037	9.18E+01	22
0.6050	1.52E+00	8.29E-01	0.037	9.20E+01	22
0.6100	1.48E+00	8.21E-01	0.035	9.22E+01	22
0.6150	1.46E+00	8.09E-01	0.035	9.22E+01	22
0.6200	1.47E+00	7.57E-01	0.035	9.22E+01	22
0.6250	1.44E+00	7.83E-01	0.034	9.24E+01	22
0.6300	1.44E+00	7.81E-01	0.034	9.24E+01	22
0.6350	1.44E+00	8.07E-01	0.035	9.23E+01	21
0.6400	1.43E+00	7.88E-01	0.034	9.24E+01	22
0.6450	1.42E+00	7.76E-01	0.034	9.25E+01	22
0.6500	1.41E+00	7.72E-01	0.034	9.25E+01	22
0.6550	1.36E+00	7.54E-01	0.033	9.28E+01	22
0.6600	1.35E+00	7.48E-01	0.032	9.28E+01	22
0.6650	1.33E+00	7.50E-01	0.032	9.29E+01	22
0.6700	1.33E+00	7.52E-01	0.032	9.29E+01	22
0.6750	1.32E+00	7.37E-01	0.032	9.29E+01	22
0.6800	1.31E+00	7.36E-01	0.031	9.30E+01	22
0.6850	1.30E+00	7.39E-01	0.031	9.30E+01	22

TABLE A-1. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
0.6900	1.29E+00	7.57E-01	0.031	9.31E+01	22
0.6950	1.28E+00	7.38E-01	0.031	9.31E+01	22
0.7000	1.28E+00	7.38E-01	0.031	9.32E+01	22
0.7050	1.28E+00	7.22E-01	0.031	9.32E+01	22
0.7100	1.28E+00	7.12E-01	0.031	9.32E+01	22
0.7150	1.27E+00	7.10E-01	0.031	9.32E+01	22
0.7200	1.26E+00	6.91E-01	0.030	9.33E+01	22
0.7250	1.24E+00	6.88E-01	0.030	9.34E+01	22
0.7300	1.24E+00	6.86E-01	0.029	9.34E+01	22
0.7350	1.23E+00	6.80E-01	0.029	9.34E+01	22
0.7400	1.24E+00	6.77E-01	0.030	9.33E+01	22
0.7450	1.23E+00	6.77E-01	0.029	9.34E+01	22
0.7500	1.21E+00	6.70E-01	0.029	9.35E+01	22
0.7550	1.20E+00	6.54E-01	0.029	9.36E+01	22
0.7600	1.20E+00	6.58E-01	0.029	9.36E+01	22
0.7650	1.18E+00	6.59E-01	0.028	9.37E+01	22
0.7700	1.18E+00	6.60E-01	0.028	9.37E+01	22
0.7750	1.18E+00	6.64E-01	0.028	9.37E+01	22
0.7800	1.15E+00	6.74E-01	0.028	9.38E+01	22
0.7850	1.16E+00	6.66E-01	0.028	9.38E+01	22
0.7900	1.13E+00	6.48E-01	0.027	9.39E+01	22
0.7950	1.13E+00	6.35E-01	0.027	9.39E+01	22
0.8000	1.12E+00	6.97E-01	0.027	9.40E+01	22
0.8100	1.14E+00	4.10E-01	0.027	9.39E+01	15
0.8200	1.16E+00	4.19E-01	0.028	9.38E+01	15
0.8300	1.15E+00	4.08E-01	0.028	9.38E+01	15
0.8400	1.18E+00	3.99E-01	0.028	9.37E+01	15
0.8500	1.18E+00	3.94E-01	0.028	9.37E+01	15
0.8600	1.20E+00	3.83E-01	0.029	9.36E+01	15
0.8700	1.21E+00	3.89E-01	0.029	9.35E+01	15
0.8800	1.20E+00	3.74E-01	0.029	9.36E+01	15
0.8900	1.22E+00	3.67E-01	0.029	9.35E+01	15
0.9000	1.22E+00	3.64E-01	0.029	9.35E+01	15
0.9100	1.24E+00	3.41E-01	0.030	9.33E+01	15
0.9200	1.20E+00	3.58E-01	0.029	9.36E+01	15
0.9300	1.21E+00	3.56E-01	0.029	9.35E+01	15
0.9400	1.23E+00	3.54E-01	0.029	9.34E+01	15
0.9500	1.31E+00	3.69E-01	0.031	9.30E+01	15
0.9600	1.35E+00	3.76E-01	0.032	9.28E+01	15
0.9700	1.35E+00	3.62E-01	0.032	9.28E+01	15
0.9800	1.32E+00	3.49E-01	0.032	9.30E+01	15
0.9900	1.29E+00	3.67E-01	0.031	9.31E+01	15
1.0000	1.25E+00	3.69E-01	0.030	9.33E+01	15

TABLE A-1. (continued)

LAMBDA(μM)	ALPHA	SD	OD	%T	NO.
1.0100	1.20E+00	3.84E-01	0.029	9.36E+01	15
1.0200	1.07E+00	3.59E-01	0.026	9.42E+01	15
1.0300	1.04E+00	3.54E-01	0.025	9.44E+01	15
1.0400	1.00E+00	3.44E-01	0.024	9.46E+01	15
1.0500	9.71E-01	3.69E-01	0.023	9.48E+01	15
1.0600	9.47E-01	3.92E-01	0.023	9.49E+01	15
1.0700	9.32E-01	4.04E-01	0.022	9.50E+01	15
1.0800	9.22E-01	4.08E-01	0.022	9.50E+01	15
1.0900	9.21E-01	4.07E-01	0.022	9.50E+01	15
1.1000	9.29E-01	4.08E-01	0.022	9.50E+01	15
1.1100	9.68E-01	3.84E-01	0.023	9.48E+01	15
1.1200	9.88E-01	4.10E-01	0.024	9.47E+01	15
1.1300	1.14E+00	3.69E-01	0.027	9.39E+01	15
1.1400	1.37E+00	3.86E-01	0.032	9.30E+01	15
1.1500	1.51E+00	3.50E-01	0.036	9.20E+01	15
1.1600	1.59E+00	3.56E-01	0.038	9.16E+01	15
1.1700	1.63E+00	3.52E-01	0.039	9.14E+01	15
1.1800	1.65E+00	3.64E-01	0.040	9.13E+01	15
1.1900	1.65E+00	3.50E-01	0.040	9.13E+01	15
1.2000	1.61E+00	3.50E-01	0.039	9.15E+01	15
1.2100	1.57E+00	3.50E-01	0.038	9.17E+01	15
1.2200	1.53E+00	3.48E-01	0.037	9.19E+01	15
1.2300	1.50E+00	3.66E-01	0.036	9.20E+01	15
1.2400	1.48E+00	3.58E-01	0.036	9.21E+01	15
1.2500	1.45E+00	3.56E-01	0.035	9.23E+01	15
1.2600	1.45E+00	3.43E-01	0.035	9.23E+01	15
1.2700	1.46E+00	3.36E-01	0.035	9.22E+01	15
1.2800	1.51E+00	3.34E-01	0.036	9.20E+01	15
1.2900	1.57E+00	3.56E-01	0.038	9.17E+01	15
1.3000	1.65E+00	3.60E-01	0.040	9.13E+01	15
1.3100	1.82E+00	3.77E-01	0.044	9.04E+01	15
1.3200	2.00E+00	3.90E-01	0.048	8.96E+01	15
1.3300	2.28E+00	4.27E-01	0.055	8.82E+01	15
1.3400	2.59E+00	4.15E-01	0.062	8.67E+01	15
1.3500	2.87E+00	4.49E-01	0.069	8.53E+01	15
1.3600	3.23E+00	5.31E-01	0.078	8.37E+01	15
1.3700	4.34E+00	1.14E+00	0.104	7.87E+01	15
1.3800	5.49E+00	1.75E+00	0.132	7.38E+01	15
1.3900	7.95E+00	1.48E+00	0.191	6.44E+01	15
1.4000	1.20E+01	1.57E+00	0.288	5.15E+01	15
1.4100	1.59E+01	1.46E+00	0.381	4.16E+01	15
1.4200	1.83E+01	1.38E+00	0.439	3.64E+01	15
1.4300	1.97E+01	1.46E+00	0.474	3.36E+01	15

TABLE A-1. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
1.4500	2.04E+01	1.54E+00	0.489	3.25E+01	15
1.4600	1.99E+01	1.55E+00	0.477	3.33E+01	15
1.4700	1.88E+01	1.57E+00	0.451	3.54E+01	15
1.4800	1.71E+01	1.50E+00	0.411	3.88E+01	15
1.4900	1.53E+01	1.41E+00	0.368	4.29E+01	15
1.5000	1.38E+01	1.31E+00	0.330	4.68E+01	15
1.5100	1.24E+01	1.12E+00	0.296	5.05E+01	15
1.5200	1.11E+01	1.04E+00	0.265	5.43E+01	15
1.5300	9.88E+00	1.05E+00	0.237	5.79E+01	15
1.5400	9.03E+00	9.06E-01	0.217	6.07E+01	15
1.5500	8.21E+00	8.05E-01	0.197	6.35E+01	15
1.5600	7.59E+00	7.83E-01	0.182	6.57E+01	15
1.5700	6.92E+00	9.67E-01	0.166	6.82E+01	15
1.5800	6.58E+00	6.76E-01	0.158	6.95E+01	15
1.5900	6.08E+00	8.80E-01	0.146	7.15E+01	15
1.6000	5.88E+00	6.39E-01	0.141	7.23E+01	15
1.6100	5.55E+00	6.49E-01	0.133	7.36E+01	15
1.6200	5.33E+00	6.39E-01	0.128	7.45E+01	15
1.6300	5.12E+00	6.19E-01	0.123	7.53E+01	15
1.6400	4.98E+00	6.11E-01	0.120	7.59E+01	15
1.6500	4.88E+00	5.96E-01	0.117	7.64E+01	15
1.6600	4.85E+00	6.01E-01	0.116	7.65E+01	15
1.6700	4.90E+00	5.94E-01	0.118	7.63E+01	15
1.6800	5.06E+00	5.78E-01	0.121	7.56E+01	15
1.6900	5.13E+00	5.89E-01	0.123	7.53E+01	15
1.7000	5.22E+00	5.96E-01	0.125	7.49E+01	15
1.7100	5.33E+00	5.92E-01	0.128	7.45E+01	15
1.7200	5.63E+00	6.22E-01	0.135	7.33E+01	15
1.7300	5.84E+00	6.10E-01	0.140	7.24E+01	15
1.7400	6.05E+00	6.25E-01	0.145	7.16E+01	15
1.7500	6.31E+00	6.42E-01	0.151	7.06E+01	15
1.7600	6.62E+00	6.34E-01	0.159	6.94E+01	15
1.7700	6.86E+00	6.45E-01	0.165	6.84E+01	15
1.7800	7.03E+00	6.79E-01	0.169	6.78E+01	15
1.7900	7.12E+00	6.96E-01	0.171	6.75E+01	15
1.8000	7.09E+00	6.78E-01	0.170	6.76E+01	15
1.8100	7.04E+00	6.98E-01	0.169	6.78E+01	15
1.8200	7.08E+00	6.84E-01	0.170	6.76E+01	15
1.8300	7.17E+00	6.84E-01	0.172	6.73E+01	15
1.8400	7.53E+00	7.07E-01	0.181	6.60E+01	15
1.8500	8.36E+00	8.54E-01	0.201	6.30E+01	15
1.8600	1.02E+01	1.23E+00	0.245	5.68E+01	15
1.8700	1.44E+01	2.53E+00	0.344	4.52E+01	15

TABLE A-1. (continued)

LAMBDA(µM)	ALPHA	SD	OD	%T	NO.
1.8800	2.36E+01	5.01E+00	0.567	2.71E+01	15
1.8900	3.90E+01	4.79E+00	0.936	1.16E+01	15
1.9000	6.20E+01	5.59E+00	1.488	3.25E+00	15
1.9100	7.53E+01	5.89E+00	1.807	1.56E+00	15
1.9200	7.93E+01	4.02E+00	1.904	1.25E+00	15
1.9300	8.08E+01	3.61E+00	1.939	1.15E+00	15
1.9400	7.84E+01	4.14E+00	1.882	1.31E+00	15
1.9500	7.44E+01	4.74E+00	1.787	1.63E+00	15
1.9600	6.89E+01	4.38E+00	1.655	2.22E+00	15
1.9700	6.29E+01	4.24E+00	1.509	3.10E+00	15
1.9800	5.67E+01	4.19E+00	1.362	4.35E+00	15
1.9900	5.11E+01	4.10E+00	1.226	5.95E+00	15
2.0000	4.59E+01	3.44E+00	1.103	7.88E+00	15
2.0100	4.17E+01	3.34E+00	1.002	9.96E+00	15
2.0200	3.81E+01	2.79E+00	0.914	1.22E+01	15
2.0300	3.54E+01	2.54E+00	0.849	1.42E+01	15
2.0400	3.34E+01	2.35E+00	0.801	1.58E+01	15
2.0500	3.09E+01	2.26E+00	0.741	1.81E+01	15
2.0600	2.82E+01	2.18E+00	0.678	2.10E+01	15
2.0700	2.58E+01	1.92E+00	0.619	2.40E+01	15
2.0800	2.39E+01	1.76E+00	0.573	2.68E+01	15
2.0900	2.22E+01	1.68E+00	0.533	2.93E+01	15
2.1000	2.09E+01	1.57E+00	0.501	3.16E+01	15
2.1100	1.98E+01	1.51E+00	0.475	3.35E+01	15
2.1200	1.89E+01	1.35E+00	0.455	3.51E+01	15
2.1300	1.83E+01	1.28E+00	0.439	3.64E+01	15
2.1400	1.80E+01	1.30E+00	0.431	3.71E+01	15
2.1500	1.77E+01	1.22E+00	0.425	3.76E+01	15
2.1600	1.76E+01	1.21E+00	0.423	3.78E+01	15
2.1700	1.75E+01	1.19E+00	0.420	3.81E+01	15
2.1800	1.72E+01	1.21E+00	0.413	3.86E+01	15
2.1900	1.68E+01	1.14E+00	0.402	3.96E+01	15
2.2000	1.64E+01	1.13E+00	0.393	4.04E+01	15
2.2100	1.62E+01	1.05E+00	0.388	4.09E+01	15
2.2200	1.59E+01	1.11E+00	0.382	4.15E+01	15
2.2300	1.60E+01	1.13E+00	0.384	4.13E+01	15
2.2400	1.65E+01	1.16E+00	0.395	4.03E+01	15
2.2500	1.74E+01	1.22E+00	0.416	3.83E+01	15
2.2600	1.83E+01	1.24E+00	0.440	3.63E+01	15
2.2700	1.91E+01	1.37E+00	0.459	3.48E+01	15
2.2800	1.99E+01	1.34E+00	0.478	3.33E+01	15
2.2900	2.05E+01	1.42E+00	0.493	3.21E+01	15
2.3000	2.11E+01	1.34E+00	0.507	3.11E+01	15

TABLE A-1. (continued)

LAMBDA(µM)	ALPHA	SD	OD	%T	NO.
2.3100	2.19E+01	1.47E+00	0.527	2.97E+01	15
2.3200	2.27E+01	1.46E+00	0.546	2.84E+01	15
2.3300	2.39E+01	1.59E+00	0.573	2.67E+01	15
2.3400	2.53E+01	1.64E+00	0.607	2.47E+01	15
2.3500	2.67E+01	1.72E+00	0.642	2.28E+01	15
2.3600	2.80E+01	1.78E+00	0.673	2.12E+01	15
2.3700	2.96E+01	1.85E+00	0.711	1.95E+01	15
2.3800	3.12E+01	1.88E+00	0.749	1.78E+01	15
2.3900	3.29E+01	1.76E+00	0.790	1.62E+01	15
2.4000	3.49E+01	2.21E+00	0.839	1.45E+01	15
2.4100	3.72E+01	2.25E+00	0.892	1.28E+01	15
2.4200	3.97E+01	2.45E+00	0.954	1.11E+01	15
2.4300	4.25E+01	2.48E+00	1.021	9.53E+00	15
2.4400	4.59E+01	2.79E+00	1.101	7.93E+00	15
2.4500	4.94E+01	3.09E+00	1.185	6.53E+00	15
2.4600	5.30E+01	3.39E+00	1.271	5.36E+00	15
2.4700	5.67E+01	3.31E+00	1.360	4.36E+00	15
2.4800	6.03E+01	3.59E+00	1.448	3.56E+00	14
2.4900	6.28E+01	3.78E+00	1.507	3.11E+00	15
2.5000	6.60E+01	4.04E+00	1.584	2.61E+00	15

TABLE A-2. AQUEOUS HUMOR

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
.2000	4.89E 01	1.38E 01	6.065	8.61E-05	7
.2050	4.02E 01	1.17E 01	4.983	1.04E-03	8
.2100	3.05E 01	1.14E 01	3.783	1.65E-02	8
.2150	2.03E 01	3.32E 00	2.512	3.07E-01	8
.2200	1.59E 01	1.19E 00	1.966	1.08E 00	8
.2250	1.26E 01	1.28E 00	1.562	2.74E 00	9
.2300	1.02E 01	8.68E-01	1.264	5.44E 00	9
.2350	8.59E 00	1.09E 00	1.066	8.60E 00	9
.2400	9.07E 00	1.60E 00	1.125	7.50E 00	9
.2450	1.13E 01	2.36E 00	1.397	4.01E 00	9
.2500	1.51E 01	3.39E 00	1.871	1.34E 00	8
.2550	1.87E 01	4.42E 00	2.318	4.81E-01	8
.2600	2.24E 01	5.29E 00	2.774	1.68E-01	8
.2650	2.43E 01	5.70E 00	3.010	9.78E-02	8
.2700	2.33E 01	5.49E 00	2.888	1.29E-01	8
.2750	2.00E 01	4.70E 00	2.487	3.26E-01	8
.2800	1.54E 01	3.65E 00	1.914	1.22E 00	8
.2850	1.02E 01	2.01E 00	1.263	5.46E 00	12
.2900	5.79E 00	1.36E 00	.718	1.91E 01	18
.2950	3.44E 00	4.67E-01	.426	3.75E 01	18
.3000	1.56E 00	1.97E-01	.193	6.41E 01	18
.3050	6.65E-01	1.11E-01	.083	8.27E 01	18
.3100	3.30E-01	1.13E-01	.041	9.10E 01	18
.3150	2.16E-01	1.11E-01	.027	9.40E 01	18
.3200	1.62E-01	9.62E-02	.020	9.55E 01	18
.3250	1.44E-01	9.32E-02	.018	9.60E 01	18
.3300	1.39E-01	8.89E-02	.017	9.61E 01	18
.3350	1.36E-01	8.58E-02	.017	9.62E 01	18
.3400	1.33E-01	8.33E-02	.017	9.63E 01	18
.3450	1.31E-01	7.93E-02	.016	9.63E 01	18
.3500	1.30E-01	7.19E-02	.016	9.63E 01	18
.3550	1.26E-01	6.88E-02	.016	9.65E 01	18
.3600	1.20E-01	6.38E-02	.015	9.66E 01	18
.3650	1.14E-01	5.92E-02	.014	9.68E 01	18
.3700	1.06E-01	5.62E-02	.013	9.70E 01	18
.3750	9.78E-02	5.58E-02	.012	9.72E 01	18
.3800	8.94E-02	5.21E-02	.011	9.75E 01	18
.3850	8.40E-02	5.06E-02	.010	9.76E 01	18
.3900	7.87E-02	4.83E-02	.010	9.78E 01	18
.3950	7.37E-02	4.73E-02	.009	9.79E 01	18
.4000	6.90E-02	4.68E-02	.009	9.80E 01	18
.4050	6.36E-02	4.62E-02	.008	9.82E 01	18
.4100	6.02E-02	4.65E-02	.007	9.83E 01	18

TABLE A-2. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
.4150	5.74E-02	4.65E-02	.007	9.84E 01	18
.4200	5.56E-02	4.42E-02	.007	9.84E 01	18
.4250	4.59E-02	3.64E-02	.006	9.87E 01	18
.4300	5.30E-02	4.18E-02	.007	9.85E 01	18
.4350	4.80E-02	3.52E-02	.006	9.86E 01	16
.4400	5.13E-02	4.16E-02	.006	9.85E 01	18
.4450	5.16E-02	4.19E-02	.006	9.85E 01	18
.4500	4.95E-02	4.12E-02	.006	9.86E 01	18
.4550	4.97E-02	4.04E-02	.006	9.86E 01	18
.4600	5.08E-02	4.07E-02	.006	9.86E 01	17
.4650	4.81E-02	4.01E-02	.006	9.86E 01	18
.4700	4.72E-02	3.90E-02	.006	9.87E 01	18
.4750	4.78E-02	3.95E-02	.006	9.86E 01	18
.4800	4.12E-02	3.40E-02	.005	9.88E 01	18
.4850	4.67E-02	3.91E-02	.006	9.87E 01	18
.4900	3.94E-02	3.34E-02	.005	9.89E 01	18
.4950	4.62E-02	3.94E-02	.006	9.87E 01	18
.5000	4.52E-02	3.92E-02	.006	9.87E 01	18
.5050	4.29E-02	3.66E-02	.005	9.88E 01	18
.5100	4.38E-02	3.69E-02	.005	9.88E 01	18
.5150	4.26E-02	3.79E-02	.005	9.88E 01	18
.5200	4.28E-02	3.79E-02	.005	9.88E 01	18
.5250	4.39E-02	3.79E-02	.005	9.88E 01	18
.5300	4.33E-02	3.72E-02	.005	9.88E 01	18
.5350	4.23E-02	3.76E-02	.005	9.88E 01	18
.5400	4.16E-02	3.78E-02	.005	9.88E 01	18
.5450	4.32E-02	3.61E-02	.005	9.88E 01	18
.5500	4.37E-02	3.67E-02	.005	9.88E 01	18
.5550	4.31E-02	3.57E-02	.005	9.88E 01	18
.5600	4.62E-02	3.41E-02	.006	9.87E 01	17
.5650	4.44E-02	3.29E-02	.006	9.87E 01	18
.5700	4.20E-02	3.38E-02	.005	9.88E 01	18
.5750	4.22E-02	3.32E-02	.005	9.88E 01	18
.5800	4.20E-02	3.30E-02	.005	9.88E 01	18
.5850	3.98E-02	3.35E-02	.005	9.89E 01	18
.5900	4.04E-02	3.12E-02	.005	9.89E 01	18
.5950	3.98E-02	3.30E-02	.005	9.89E 01	18
.6000	4.13E-02	3.33E-02	.005	9.88E 01	18
.6050	4.05E-02	3.14E-02	.005	9.89E 01	18
.6100	3.98E-02	3.38E-02	.005	9.89E 01	18
.6150	4.11E-02	3.32E-02	.005	9.88E 01	18
.6200	3.99E-02	3.40E-02	.005	9.89E 01	18
.6250	3.96E-02	3.33E-02	.005	9.89E 01	18

TABLE A-2. (continued)

LAMBDA(μM)	ALPHA	SD	OD	%T	NO.
.6300	4.14E-02	3.24E-02	.005	9.88E 01	18
.6350	3.97E-02	3.24E-02	.005	9.89E 01	18
.6400	5.10E-02	5.29E-02	.006	9.86E 01	18
.6450	3.81E-02	3.21E-02	.005	9.89E 01	18
.6500	3.79E-02	3.33E-02	.005	9.89E 01	18
.6550	3.74E-02	3.11E-02	.005	9.89E 01	18
.6600	4.03E-02	2.99E-02	.005	9.89E 01	18
.6650	3.88E-02	3.04E-02	.005	9.89E 01	18
.6700	3.87E-02	2.80E-02	.005	9.89E 01	18
.6750	3.90E-02	2.85E-02	.005	9.89E 01	18
.6800	3.83E-02	2.78E-02	.005	9.89E 01	18
.6850	3.91E-02	2.87E-02	.005	9.89E 01	18
.6900	3.93E-02	2.91E-02	.005	9.89E 01	18
.6950	3.99E-02	2.73E-02	.005	9.89E 01	18
.7000	3.95E-02	2.81E-02	.005	9.89E 01	18
.7050	3.90E-02	2.59E-02	.005	9.89E 01	18
.7100	4.04E-02	2.49E-02	.005	9.89E 01	18
.7150	5.56E-02	6.07E-02	.007	9.84E 01	18
.7200	4.40E-02	2.58E-02	.005	9.88E 01	18
.7250	4.63E-02	2.59E-02	.006	9.87E 01	18
.7300	5.07E-02	2.51E-02	.006	9.86E 01	18
.7350	5.32E-02	2.49E-02	.007	9.85E 01	18
.7400	5.91E-02	2.62E-02	.007	9.83E 01	18
.7450	5.59E-02	2.52E-02	.007	9.84E 01	18
.7500	5.66E-02	2.47E-02	.007	9.84E 01	18
.7550	5.63E-02	2.48E-02	.007	9.84E 01	18
.7600	5.42E-02	2.43E-02	.007	9.85E 01	18
.7650	5.17E-02	2.52E-02	.006	9.85E 01	18
.7700	4.94E-02	2.51E-02	.006	9.86E 01	18
.7750	4.74E-02	2.94E-02	.006	9.87E 01	18
.7800	4.67E-02	3.44E-02	.006	9.87E 01	18
.7850	4.66E-02	2.94E-02	.006	9.87E 01	18
.7900	4.26E-02	3.15E-02	.005	9.88E 01	18
.7950	3.83E-02	3.19E-02	.005	9.89E 01	18
.8000	2.82E-02	7.52E-02	.004	9.92E 01	18
.8100	5.73E-02	3.29E-02	.007	9.84E 01	16
.8200	6.47E-02	3.47E-02	.008	9.82E 01	16
.8300	7.56E-02	3.53E-02	.009	9.79E 01	16
.8400	8.03E-02	3.62E-02	.010	9.77E 01	16
.8500	8.25E-02	3.69E-02	.010	9.77E 01	16
.8600	8.17E-02	3.54E-02	.010	9.77E 01	16
.8700	8.71E-02	3.68E-02	.011	9.75E 01	16

TABLE A-2. (continued)

LAMBDA (UM)	ALPHA	SD	OD	%T	NO.
.8800	8.87E-02	3.44E-02	.011	9.75E 01	16
.8900	9.56E-02	3.32E-02	.012	9.73E 01	16
.9000	1.03E-01	3.47E-02	.013	9.71E 01	16
.9100	1.12E-01	3.41E-02	.014	9.68E 01	16
.9200	1.34E-01	3.92E-02	.017	9.62E 01	16
.9300	1.82E-01	4.41E-02	.023	9.49E 01	16
.9400	2.63E-01	5.64E-02	.033	9.28E 01	16
.9500	4.04E-01	7.39E-02	.050	8.91E 01	16
.9600	5.41E-01	7.45E-02	.067	8.57E 01	16
.9700	5.58E-01	6.99E-02	.069	8.53E 01	16
.9800	5.40E-01	6.34E-02	.067	8.57E 01	16
.9900	4.94E-01	5.91E-02	.061	8.68E 01	16
1.0000	4.36E-01	4.81E-02	.054	8.83E 01	16
1.0100	3.82E-01	5.02E-02	.047	8.97E 01	16
1.0200	3.12E-01	4.01E-02	.039	9.15E 01	16
1.0300	2.59E-01	3.46E-02	.032	9.29E 01	16
1.0400	2.17E-01	3.81E-02	.027	9.40E 01	16
1.0500	1.94E-01	3.45E-02	.024	9.46E 01	16
1.0600	1.82E-01	3.54E-02	.023	9.49E 01	16
1.0700	1.81E-01	3.54E-02	.022	9.50E 01	16
1.0800	1.90E-01	3.93E-02	.024	9.47E 01	16
1.0900	2.16E-01	4.59E-02	.027	9.40E 01	14
1.1000	2.41E-01	4.44E-02	.030	9.34E 01	16
1.1100	2.76E-01	4.64E-02	.034	9.24E 01	16
1.1200	3.25E-01	5.44E-02	.040	9.11E 01	16
1.1300	4.58E-01	8.21E-02	.057	8.77E 01	16
1.1400	8.09E-01	1.37E-01	.100	7.94E 01	16
1.1500	1.22E 00	1.80E-01	.152	7.05E 01	17
1.1600	1.34E 00	1.75E-01	.167	6.81E 01	17
1.1700	1.36E 00	1.73E-01	.169	6.77E 01	17
1.1800	1.37E 00	1.72E-01	.171	6.75E 01	17
1.1900	1.37E 00	1.55E-01	.170	6.77E 01	17
1.2000	1.36E 00	1.50E-01	.168	6.78E 01	17
1.2100	1.33E 00	1.58E-01	.164	6.85E 01	17
1.2200	1.28E 00	1.51E-01	.159	6.93E 01	17
1.2300	1.24E 00	1.48E-01	.154	7.01E 01	17
1.2400	1.20E 00	1.43E-01	.149	7.09E 01	17
1.2500	1.17E 00	1.44E-01	.145	7.16E 01	17
1.2600	1.16E 00	1.51E-01	.144	7.18E 01	17
1.2700	1.17E 00	1.54E-01	.145	7.15E 01	17
1.2800	1.22E 00	1.69E-01	.152	7.05E 01	17
1.2900	1.32E 00	1.82E-01	.163	6.87E 01	17
1.3000	1.47E 00	1.90E-01	.183	6.57E 01	17

TABLE A-2. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
1.3100	1.71E 00	2.29E-01	.212	6.13E 01	17
1.3200	2.06E 00	2.80E-01	.256	5.55E 01	17
1.3300	2.54E 00	3.36E-01	.315	4.84E 01	17
1.3400	3.09E 00	3.89E-01	.383	4.14E 01	17
1.3500	3.60E 00	4.34E-01	.446	3.58E 01	17
1.3600	4.11E 00	4.75E-01	.509	3.09E 01	17
1.3700	4.95E 00	6.32E-01	.614	2.43E 01	17
1.3800	7.12E 00	1.01E 00	.883	1.31E 01	17
1.3900	1.26E 01	2.24E 00	1.561	2.75E 00	16
1.4000	2.01E 01	3.50E 00	2.492	3.22E-01	13
1.4100	2.56E 01	5.70E 00	3.174	6.71E-02	14
1.4200	2.96E 01	5.64E 00	3.668	2.15E-02	14
1.4300	3.19E 01	5.27E 00	3.952	1.12E-02	14
1.4400	3.18E 01	5.64E 00	3.947	1.13E-02	14
1.4500	3.16E 01	5.65E 00	3.922	1.20E-02	14
1.4600	3.07E 01	5.51E 00	3.813	1.54E-02	14
1.4700	2.84E 01	5.36E 00	3.521	3.01E-02	14
1.4800	2.56E 01	5.28E 00	3.171	6.75E-02	14
1.4900	2.32E 01	4.43E 00	2.883	1.31E-01	13
1.5000	2.03E 01	4.06E 00	2.518	3.03E-01	13
1.5100	1.87E 01	2.73E 00	2.322	4.76E-01	13
1.5200	1.58E 01	2.95E 00	1.960	1.10E 00	15
1.5300	1.40E 01	2.73E 00	1.738	1.83E 00	15
1.5400	1.28E 01	2.09E 00	1.586	2.59E 00	16
1.5500	1.13E 01	1.72E 00	1.407	3.92E 00	19
1.5600	1.05E 01	1.54E 00	1.304	4.97E 00	19
1.5700	9.58E 00	1.44E 00	1.188	6.48E 00	20
1.5800	8.95E 00	1.41E 00	1.110	7.76E 00	20
1.5900	8.39E 00	1.41E 00	1.041	9.10E 00	20
1.6000	7.87E 00	1.40E 00	.977	1.05E 01	20
1.6100	7.54E 00	1.45E 00	.936	1.16E 01	20
1.6200	7.21E 00	1.44E 00	.894	1.28E 01	20
1.6300	6.93E 00	1.46E 00	.859	1.38E 01	20
1.6400	6.73E 00	1.49E 00	.834	1.46E 01	20
1.6500	6.61E 00	1.48E 00	.819	1.52E 01	20
1.6600	6.46E 00	1.50E 00	.801	1.58E 01	20
1.6700	6.39E 00	1.47E 00	.793	1.61E 01	20
1.6800	6.42E 00	1.52E 00	.796	1.60E 01	20
1.6900	6.45E 00	1.49E 00	.800	1.58E 01	20
1.7000	6.51E 00	1.50E 00	.807	1.56E 01	20
1.7100	6.72E 00	1.53E 00	.834	1.47E 01	20
1.7200	7.03E 00	1.55E 00	.872	1.34E 01	20
1.7300	7.39E 00	1.55E 00	.917	1.21E 01	20

TABLE A-2. (continued)

LAMBDA (UM)	ALPHA	SD	OD	%T	NO.
1.7400	7.87E 00	1.59E 00	.976	1.06E 01	20
1.7500	8.46E 00	1.62E 00	1.050	8.91E 00	20
1.7600	9.05E 00	1.61E 00	1.122	7.54E 00	20
1.7700	9.57E 00	1.63E 00	1.187	6.50E 00	20
1.7800	9.94E 00	1.60E 00	1.233	5.85E 00	20
1.7900	1.01E 01	1.58E 00	1.248	5.65E 00	20
1.8000	1.02E 01	1.58E 00	1.262	5.47E 00	20
1.8100	1.02E 01	1.64E 00	1.262	5.47E 00	19
1.8200	1.04E 01	1.67E 00	1.288	5.16E 00	19
1.8300	1.08E 01	1.74E 00	1.339	4.58E 00	19
1.8400	1.16E 01	2.04E 00	1.445	3.59E 00	18
1.8500	1.42E 01	2.68E 00	1.760	1.74E 00	14
1.8600	1.92E 01	4.20E 00	2.388	4.09E-01	12
1.8700	2.69E 01	7.56E 00	3.339	4.58E-02	13
1.8800	3.71E 01	9.81E 00	4.601	2.51E-03	18
1.8900	6.29E 01	1.07E 01	7.804	1.57E-06	20
1.9000	9.76E 01	1.72E 01	12.104	7.88E-11	17
1.9100	1.16E 02	1.77E 01	14.418	3.82E-13	17
1.9200	1.22E 02	2.00E 01	15.138	7.28E-14	17
1.9300	1.22E 02	1.87E 01	15.163	6.87E-14	17
1.9400	1.17E 02	1.83E 01	14.535	2.92E-13	17
1.9500	1.08E 02	1.69E 01	13.374	4.23E-12	17
1.9600	9.83E 01	1.58E 01	12.193	6.41E-11	17
1.9700	8.78E 01	1.46E 01	10.890	1.29E-09	17
1.9800	7.71E 01	1.31E 01	9.560	2.75E-08	18
1.9900	6.86E 01	1.17E 01	8.511	3.08E-07	18
2.0000	6.17E 01	1.00E 01	7.660	2.19E-06	17
2.0100	5.51E 01	9.76E 00	6.841	1.44E-05	17
2.0200	4.92E 01	8.77E 00	6.100	7.94E-05	17
2.0300	4.39E 01	8.19E 00	5.449	3.56E-04	17
2.0400	3.95E 01	7.83E 00	4.905	1.24E-03	17
2.0500	3.61E 01	7.65E 00	4.476	3.34E-03	16
2.0600	3.26E 01	7.54E 00	4.042	9.08E-03	16
2.0700	2.94E 01	7.07E 00	3.651	2.23E-02	16
2.0800	2.68E 01	6.94E 00	3.327	4.71E-02	16
2.0900	2.44E 01	6.77E 00	3.026	9.43E-02	16
2.1000	2.30E 01	6.16E 00	2.859	1.38E-01	15
2.1100	2.13E 01	5.90E 00	2.641	2.28E-01	15
2.1200	1.97E 01	5.94E 00	2.448	3.56E-01	15
2.1300	1.84E 01	5.91E 00	2.283	5.21E-01	15
2.1400	1.73E 01	5.96E 00	2.147	7.12E-01	15
2.1500	1.65E 01	6.36E 00	2.044	9.04E-01	15
2.1600	1.58E 01	6.28E 00	1.956	1.11E 00	15

TABLE A-2. (continued)

LAMBDA (UM)	ALPHA	SD	OD	%T	NO.
2.1700	1.54E 01	6.09E 00	1.905	1.24E 00	15
2.1800	1.48E 01	6.19E 00	1.837	1.46E 00	15
2.1900	1.47E 01	6.05E 00	1.821	1.51E 00	15
2.2000	1.44E 01	5.51E 00	1.781	1.65E 00	15
2.2100	1.47E 01	5.76E 00	1.828	1.48E 00	15
2.2200	1.50E 01	5.48E 00	1.860	1.38E 00	15
2.2300	1.53E 01	5.55E 00	1.901	1.26E 00	15
2.2400	1.58E 01	5.31E 00	1.964	1.09E 00	15
2.2500	1.64E 01	5.16E 00	2.035	9.22E-01	15
2.2600	1.69E 01	5.67E 00	2.103	7.90E-01	15
2.2700	1.76E 01	6.02E 00	2.189	6.47E-01	15
2.2800	1.88E 01	5.86E 00	2.335	4.62E-01	15
2.2900	2.01E 01	5.69E 00	2.493	3.22E-01	15
2.3000	2.19E 01	4.98E 00	2.722	1.89E-01	15
2.3100	2.37E 01	5.32E 00	2.936	1.16E-01	15
2.3200	2.51E 01	6.27E 00	3.114	7.69E-02	15
2.3300	2.62E 01	7.18E 00	3.255	5.56E-02	16
2.3500	3.06E 01	7.96E 00	3.795	1.60E-02	16
2.3600	3.29E 01	7.38E 00	4.087	8.18E-03	17
2.3700	3.57E 01	7.45E 00	4.431	3.71E-03	17
2.3800	3.87E 01	7.91E 00	4.803	1.57E-03	17
2.3900	4.19E 01	8.32E 00	5.203	6.26E-04	17
2.4000	4.24E 01	9.90E 00	5.255	5.56E-04	21
2.4100	4.64E 01	1.03E 01	5.753	1.77E-04	21
2.4200	5.07E 01	1.09E 01	6.283	5.21E-05	21
2.4300	5.54E 01	1.12E 01	6.871	1.34E-05	21
2.4400	6.11E 01	1.12E 01	7.582	2.62E-06	21
2.4500	6.57E 01	1.23E 01	8.148	7.11E-07	21
2.4600	7.46E 01	1.09E 01	9.259	5.51E-08	21
2.4700	7.89E 01	1.32E 01	9.793	1.61E-08	22
2.4800	8.49E 01	1.43E 01	10.528	2.97E-09	23
2.4900	9.26E 01	1.35E 01	11.481	3.30E-10	23
2.5000	9.69E 01	1.35E 01	12.021	9.54E-11	23
2.5126	1.12E 02	1.01E 01	13.940	1.15E-12	8
2.5253	1.20E 02	1.20E 01	14.858	1.39E-13	8
2.5381	1.25E 02	1.12E 01	15.458	3.48E-14	8
2.5510	1.27E 02	1.20E 01	15.718	1.91E-14	8
2.5641	1.28E 02	1.09E 01	15.835	1.46E-14	8
2.5773	1.22E 02	1.25E 01	15.133	7.36E-14	8
2.5907	1.31E 02	1.15E 01	16.194	6.39E-15	8
2.6042	1.44E 02	1.42E 01	17.813	1.54E-16	8
2.6178	1.68E 02	1.60E 01	20.902	1.25E-19	8
2.6316	1.96E 02	2.25E 01	24.351	4.46E-23	8

TABLE A-2. (continued)

LAMBDA (UM)	ALPHA	SD	OD	%T	NO.
2.6455	2.37E 02	1.53E 01	29.346	4.51E-28	8
2.6596	2.77E 02	1.74E 01	34.393	4.04E-33	8
2.6738	3.84E 02	4.86E 01	47.606	2.48E-46	8
2.6882	5.93E 02	9.24E 01	73.544	2.86E-72	8
2.7027	1.10E 03	4.09E 02	>100	----	8
2.7174	2.07E 03	5.00E 02	>100	----	8
2.7322	2.36E 03	4.88E 02	>100	----	8
2.7473	2.39E 03	4.99E 02	>100	----	8
2.7624	2.49E 03	6.33E 02	>100	----	8
2.7778	2.46E 03	5.50E 02	>100	----	8
2.7933	2.51E 03	6.06E 02	>100	----	8
2.8090	2.79E 03	6.46E 02	>100	----	8
2.8249 to 3.2051	Measurements were not possible in this region				
3.2258	2.01E 03	2.37E 02	>100	----	8
3.2468	1.92E 03	2.43E 02	>100	----	8
3.2680	1.80E 03	2.60E 02	>100	----	8
3.2895	1.70E 03	2.08E 02	>100	----	8
3.3113	1.53E 03	2.58E 02	>100	----	8
3.3333	1.42E 03	2.45E 02	>100	----	8
3.3557	1.28E 03	1.95E 02	>100	----	8
3.3784	1.13E 03	1.65E 02	>100	----	8
3.4014	9.25E 02	6.61E 01	>100	----	8
3.4247	7.11E 02	7.03E 01	88.161	6.90E-87	8
3.4483	5.67E 02	4.15E 01	70.348	4.49E-69	8
3.4722	4.58E 02	3.85E 01	56.792	1.61E-55	8
3.4965	3.75E 02	3.36E 01	46.552	2.80E-45	8
3.5211	3.08E 02	3.27E 01	38.257	5.54E-37	8
3.5461	2.43E 02	3.26E 01	30.181	6.59E-29	8
3.5714	1.95E 02	2.15E 01	24.215	6.09E-23	8
3.5971	1.63E 02	2.05E 01	20.270	5.37E-19	8
3.6496	1.25E 02	9.80E 00	15.529	2.96E-14	8
3.6765	1.13E 02	1.11E 01	14.035	9.23E-13	8
3.7037	9.48E 01	9.18E 00	11.762	1.73E-10	8
3.7594	8.42E 01	7.95E 00	10.441	3.62E-09	8
3.7879	7.95E 01	9.28E 00	9.858	1.39E-08	8
3.8168	7.38E 01	9.42E 00	9.151	7.06E-08	8
3.8462	7.07E 01	1.11E 01	8.769	1.70E-07	8
3.8760	7.77E 01	1.46E 01	9.645	2.27E-08	8
3.9063	8.21E 01	1.46E 01	10.187	6.50E-09	8
3.9370	8.98E 01	1.62E 01	11.146	7.15E-10	8
3.9683	9.89E 01	1.74E 01	12.267	5.41E-11	8

TABLE A-2. (continued)

LAMBDA(µM)	ALPHA	SD	OD	%T	NO.
4.0000	1.06E 02	1.75E 01	13.110	7.75E-12	8
4.0323	1.16E 02	2.13E 01	14.357	4.39E-13	8
4.0650	1.26E 02	2.31E 01	15.625	2.37E-14	8
4.1322	1.51E 02	2.16E 01	18.791	1.62E-17	8
4.2017	1.88E 02	2.88E 01	23.332	4.65E-22	8
4.2373	2.01E 02	4.11E 01	24.914	1.22E-23	8
4.2735	2.13E 02	4.63E 01	26.445	3.59E-25	8
4.3103	2.34E 02	3.96E 01	28.983	1.04E-27	8
4.3478	2.65E 02	3.83E 01	32.873	1.34E-31	8
4.3860	2.92E 02	3.20E 01	36.172	6.73E-35	8
4.4248	3.14E 02	3.47E 01	38.898	1.27E-37	8
4.4643	3.44E 02	3.84E 01	42.624	2.37E-41	8
4.5045	3.71E 02	3.73E 01	46.007	9.85E-45	8
4.5455	4.04E 02	3.88E 01	50.169	6.77E-49	8
4.5872	4.31E 02	3.65E 01	53.504	3.13E-52	8
4.6296	4.56E 02	4.02E 01	56.598	2.52E-55	8
4.6729	4.77E 02	4.04E 01	59.115	7.68E-58	8
4.7170	4.83E 02	4.05E 01	59.900	1.26E-58	8
4.7619	4.73E 02	3.55E 01	58.695	2.02E-57	8
4.8077	4.63E 02	4.36E 01	57.439	3.64E-56	8
4.8544	4.42E 02	3.99E 01	54.866	1.36E-53	8
4.9020	4.16E 02	4.96E 01	51.647	2.25E-50	8
4.9505	3.89E 02	4.79E 01	48.260	5.49E-47	8
5.0000	3.52E 02	4.51E 01	43.657	2.20E-42	8
5.0251	3.30E 02	3.67E 01	40.897	1.27E-39	8
5.0505	3.18E 02	3.48E 01	39.397	4.01E-38	8
5.0761	3.00E 02	3.74E 01	37.257	5.53E-36	8
5.1020	2.91E 02	3.54E 01	36.080	8.31E-35	8
5.1282	2.80E 02	3.82E 01	34.707	1.97E-33	8
5.1546	2.69E 02	3.85E 01	33.388	4.09E-32	8
5.1813	2.64E 02	3.62E 01	32.755	1.76E-31	8
5.2083	2.52E 02	3.66E 01	31.292	5.11E-30	8
5.2356	2.44E 02	3.68E 01	30.316	4.83E-29	8
5.2632	2.43E 02	3.92E 01	30.176	6.67E-29	8
5.2910	2.45E 02	4.04E 01	30.356	4.41E-29	8
5.3191	2.40E 02	3.91E 01	29.741	1.81E-28	8
5.3476	2.32E 02	3.95E 01	28.828	1.49E-27	8
5.3763	2.40E 02	4.04E 01	29.714	1.93E-28	8
5.4054	2.42E 02	4.12E 01	30.037	9.18E-29	8
5.4348	2.46E 02	3.93E 01	30.554	2.79E-29	8
5.4645	2.46E 02	3.52E 01	30.536	2.91E-29	8
5.4945	2.64E 02	3.73E 01	32.746	1.79E-31	8
5.5249	2.80E 02	3.79E 01	34.782	1.65E-33	8
5.5556	2.93E 02	4.15E 01	36.355	4.42E-35	8

TABLE A-2. (continued)

LAMBDA (UM)	ALPHA	SD	OD	%T	NO.
5.5866	3.14E 02	3.93E 01	38.904	1.25E-37	8
5.6180	3.57E 02	3.81E 01	44.275	5.31E-43	8
5.6497	3.99E 02	4.86E 01	49.477	3.33E-48	8
5.6818	4.64E 02	3.09E 01	57.525	2.98E-56	8
5.7143	5.28E 02	3.72E 01	65.521	3.01E-64	8
5.7471	6.23E 02	3.82E 01	77.313	4.86E-76	8
5.7803	7.76E 02	6.83E 01	96.283	5.21E-95	8
5.8140	9.77E 02	8.52E 01	>100	----	8
5.8480	1.53E 03	4.60E 02	>100	----	8
5.8824	1.94E 03	6.25E 02	>100	----	8
5.9172	2.05E 03	6.29E 02	>100	----	8
5.9524	2.11E 03	5.97E 02	>100	----	8
5.9880	2.07E 03	5.31E 02	>100	----	8
6.0241	2.13E 03	5.41E 02	>100	----	8
6.0606	2.07E 03	4.76E 02	>100	----	8
6.0976	2.12E 03	4.81E 02	>100	----	8
6.1350	2.03E 03	4.80E 02	>100	----	8
6.1728	1.94E 03	4.81E 02	>100	----	8
6.2112	1.91E 03	4.83E 02	>100	----	8
6.2500	1.67E 03	3.88E 02	>100	----	8
6.2893	1.55E 03	3.55E 02	>100	----	8
6.3291	1.42E 03	3.25E 02	>100	----	8
6.3694	1.19E 03	1.07E 02	>100	----	8
6.4103	1.08E 03	1.34E 02	>100	----	8
6.4516	9.77E 02	9.65E 01	>100	----	8
6.4935	8.82E 02	1.07E 02	>100	----	8
6.5359	8.29E 02	1.00E 02	>100	----	8
6.5789	7.99E 02	7.60E 01	>100	----	8
6.6225	7.68E 02	8.11E 01	95.229	5.90E-94	8
6.6667	7.47E 02	6.54E 01	92.614	2.43E-91	8
6.7114	7.44E 02	7.70E 01	92.237	5.79E-91	8
6.7568	7.33E 02	6.66E 01	90.955	1.11E-89	8
6.8027	7.12E 02	7.00E 01	88.293	5.09E-87	8
6.8493	6.99E 02	6.46E 01	86.710	1.95E-85	8
6.8966	6.98E 02	6.62E 01	86.588	2.58E-85	8
6.9444	6.76E 02	6.18E 01	83.864	1.37E-82	8
6.9930	6.78E 02	5.91E 01	84.138	7.27E-83	8
7.0423	6.80E 02	5.85E 01	84.350	4.46E-83	8
7.0922	6.81E 02	5.05E 01	84.488	3.25E-83	8
7.1429	6.85E 02	5.42E 01	84.986	1.03E-83	8
7.1942	6.83E 02	5.81E 01	84.771	1.69E-83	8
7.2464	6.91E 02	5.25E 01	85.724	1.89E-84	8
7.2993	6.97E 02	6.01E 01	86.496	3.19E-85	8
7.3529	7.06E 02	5.40E 01	87.580	2.63E-86	8

TABLE A-2. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
7.4074	6.93E 02	5.41E 01	85.931	1.17E-84	8
7.4627	6.88E 02	5.30E 01	85.315	4.84E-84	8
7.5188	6.75E 02	5.66E 01	83.765	1.72E-82	8
7.5758	6.72E 02	5.43E 01	83.374	4.23E-82	8
7.6336	6.67E 02	5.32E 01	82.718	1.91E-81	8
7.6923	6.60E 02	5.05E 01	81.933	1.17E-80	8
7.7519	6.53E 02	5.37E 01	81.038	9.15E-80	8
7.8125	6.41E 02	5.16E 01	79.535	2.92E-78	8
7.8740	6.35E 02	5.46E 01	78.803	1.58E-77	8
7.9365	6.31E 02	5.59E 01	78.276	5.29E-77	8
8.0000	6.27E 02	5.43E 01	77.745	1.80E-76	8
8.0645	6.23E 02	5.54E 01	77.346	4.51E-76	8
8.1301	6.23E 02	5.73E 01	77.276	5.29E-76	8
8.1967	6.22E 02	5.70E 01	77.216	6.07E-76	8
8.2645	6.21E 02	5.54E 01	77.066	8.59E-76	8
8.3333	6.21E 02	5.43E 01	77.014	9.68E-76	8
8.4034	6.22E 02	5.54E 01	77.112	7.73E-76	8
8.4746	6.24E 02	5.42E 01	77.434	3.69E-76	8
8.5470	6.22E 02	5.45E 01	77.189	6.46E-76	8
8.6207	6.23E 02	5.12E 01	77.223	5.98E-76	8
8.6957	6.24E 02	5.52E 01	77.366	4.30E-76	8
8.7719	6.23E 02	5.55E 01	77.320	4.79E-76	8
8.8496	6.22E 02	5.37E 01	77.138	7.28E-76	8
8.9286	6.22E 02	5.38E 01	77.146	7.14E-76	8
9.0090	6.16E 02	5.36E 01	76.441	3.62E-75	8
9.0909	6.13E 02	5.49E 01	76.104	7.86E-75	8
9.1743	6.14E 02	5.30E 01	76.192	6.42E-75	8
9.2593	6.20E 02	5.28E 01	76.878	1.32E-75	8
9.3458	6.24E 02	5.52E 01	77.351	4.45E-76	8
9.4340	6.29E 02	5.49E 01	78.050	8.91E-77	8
9.5238	6.37E 02	5.81E 01	79.056	8.79E-78	8
9.6154	6.49E 02	5.92E 01	80.563	2.73E-79	8
9.7087	6.70E 02	5.95E 01	83.057	8.76E-82	8
9.8039	6.87E 02	5.84E 01	85.199	6.32E-84	8
9.9010	7.11E 02	5.64E 01	88.214	6.10E-87	8
10.0000	7.36E 02	5.65E 01	91.298	5.04E-90	8
10.1010	7.74E 02	6.22E 01	95.975	1.06E-94	8
10.2041	8.60E 02	7.72E 01	>100	----	8
10.3093	8.65E 02	7.72E 01	>100	----	8
10.4167	9.23E 02	7.05E 01	>100	----	8
10.5263	1.00E 03	8.49E 01	>100	----	8
10.6383	1.09E 03	8.51E 01	>100	----	8
10.7527	1.18E 03	8.94E 01	>100	----	8
10.8696	1.37E 03	3.32E 02	>100	----	8

TABLE A-2. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
10.9890	1.57E 03	4.71E 02	>100	----	8
11.1111	1.77E 03	5.10E 02	>100	----	8
11.2360	1.87E 03	4.57E 02	>100	----	8
11.3636	2.06E 03	4.70E 02	>100	----	8
11.4943	2.14E 03	5.08E 02	>100	----	8
11.6279	2.22E 03	4.48E 02	>100	----	8
11.7647	2.24E 03	4.26E 02	>100	----	8
11.9048	2.36E 03	4.84E 02	>100	----	8
12.0482	2.40E 03	5.26E 02	>100	----	8
12.1951	2.40E 03	5.03E 02	>100	----	8
12.3457	2.38E 03	3.66E 02	>100	----	8
12.5000	2.38E 03	3.19E 02	>100	----	8
12.6582	2.37E 03	3.21E 02	>100	----	8
12.8205	2.35E 03	3.49E 02	>100	----	8
12.9870	2.38E 03	3.58E 02	>100	----	8
13.1579	2.44E 03	4.69E 02	>100	----	8
13.3333	2.41E 03	4.41E 02	>100	----	8
13.5135	2.35E 03	4.05E 02	>100	----	8
13.6986	2.35E 03	3.65E 02	>100	----	8
13.8889	2.30E 03	3.55E 02	>100	----	8
14.0845	2.26E 03	2.98E 02	>100	----	8
14.2857	2.22E 03	2.91E 02	>100	----	8
14.4928	2.20E 03	3.40E 02	>100	----	8
14.7059	2.19E 03	2.98E 02	>100	----	8
14.9254	2.30E 03	3.28E 02	>100	----	8
15.1515	2.34E 03	4.16E 02	>100	----	8

TABLE A-3. LENS

LAMBDA(μM)	ALPHA	SD	OD	%T	NO.
0.2000 to 0.2950	>2.64E+01	--------	>4.000	<1.00E-02	--
0.2950	>2.64E+01	--------	>4.000	<1.00E-02	--
0.3000	2.18E+01	5.84E-01	3.310	4.89E-02	8
0.3050	2.13E+01	1.78E+00	3.228	5.91E-02	16
0.3100	1.37E+01	1.09E+00	2.075	8.41E-01	17
0.3150	8.23E+00	5.89E-01	1.250	5.64E+00	17
0.3200	7.44E+00	5.65E-01	1.128	7.45E+00	18
0.3250	7.93E+00	5.77E-01	1.203	6.27E+00	18
0.3300	9.01E+00	6.49E-01	1.370	4.30E+00	18
0.3350	1.05E+01	7.46E-01	1.599	2.52E+00	18
0.3400	1.23E+01	8.84E-01	1.864	1.37E+00	18
0.3450	1.41E+01	1.02E+00	2.143	7.20E-01	18
0.3500	1.58E+01	1.25E+00	2.395	4.02E-01	18
0.3550	1.76E+01	2.24E+00	2.668	2.15E-01	18
0.3600	1.81E+01	1.68E+00	2.744	1.80E-01	18
0.3650	1.81E+01	1.38E+00	2.752	1.77E-01	18
0.3700	1.81E+01	1.45E+00	2.748	1.79E-01	18
0.3750	1.80E+01	2.45E+00	2.726	1.88E-01	18
0.3800	1.66E+01	1.58E+00	2.516	3.05E-01	18
0.3850	1.48E+01	1.13E+00	2.242	5.73E-01	18
0.3900	1.28E+01	9.49E-01	1.934	1.16E+00	18
0.3950	1.06E+01	7.68E-01	1.609	2.46E+00	18
0.4000	8.35E+00	6.64E-01	1.267	5.41E+00	18
0.4050	6.21E+00	6.18E-01	0.943	1.14E+01	18
0.4100	4.46E+00	5.98E-01	0.677	2.11E+01	18
0.4150	2.92E+00	3.16E-01	0.444	3.60E+01	18
0.4200	1.92E+00	2.27E-01	0.291	5.12E+01	18
0.4250	1.18E+00	2.59E-01	0.179	6.62E+01	20
0.4300	7.85E-01	2.03E-01	0.119	7.60E+01	20
0.4350	5.45E-01	1.68E-01	0.083	8.27E+01	20
0.4400	4.16E-01	1.61E-01	0.063	8.65E+01	20
0.4450	3.41E-01	1.54E-01	0.052	8.88E+01	20
0.4500	3.25E-01	1.44E-01	0.049	8.93E+01	18
0.4550	3.01E-01	1.41E-01	0.046	9.00E+01	18
0.4600	2.87E-01	1.41E-01	0.044	9.05E+01	18
0.4650	2.75E-01	1.40E-01	0.042	9.08E+01	18
0.4700	2.67E-01	1.38E-01	0.040	9.11E+01	18
0.4750	2.59E-01	1.39E-01	0.039	9.13E+01	18
0.4800	2.68E-01	1.39E-01	0.041	9.10E+01	18
0.4850	2.48E-01	1.38E-01	0.038	9.17E+01	18
0.4900	2.41E-01	1.35E-01	0.037	9.19E+01	18
0.4950	2.37E-01	1.35E-01	0.036	9.21E+01	18

TABLE A-3. (continued)

LAMBDA (UM)	ALPHA	SD	OD	%T	NO.
0.5000	2.30E-01	1.34E-01	0.035	9.23E+01	18
0.5050	2.27E-01	1.34E-01	0.034	9.24E+01	18
0.5100	2.21E-01	1.33E-01	0.034	9.26E+01	18
0.5150	2.18E-01	1.33E-01	0.033	9.27E+01	18
0.5200	2.14E-01	1.33E-01	0.033	9.28E+01	18
0.5250	2.12E-01	1.32E-01	0.032	9.29E+01	18
0.5300	2.09E-01	1.31E-01	0.032	9.30E+01	18
0.5350	2.05E-01	1.32E-01	0.031	9.31E+01	18
0.5400	2.03E-01	1.34E-01	0.031	9.31E+01	18
0.5450	2.01E-01	1.35E-01	0.030	9.32E+01	18
0.5500	1.96E-01	1.34E-01	0.030	9.34E+01	18
0.5550	1.94E-01	1.33E-01	0.029	9.35E+01	18
0.5600	1.91E-01	1.31E-01	0.029	9.35E+01	18
0.5650	1.90E-01	1.27E-01	0.029	9.36E+01	18
0.5700	1.89E-01	1.24E-01	0.029	9.36E+01	18
0.5750	1.89E-01	1.22E-01	0.029	9.36E+01	18
0.5800	1.89E-01	1.24E-01	0.029	9.36E+01	18
0.5850	1.85E-01	1.26E-01	0.028	9.37E+01	18
0.5900	1.82E-01	1.30E-01	0.028	9.38E+01	18
0.5950	1.77E-01	1.34E-01	0.027	9.40E+01	18
0.6000	1.73E-01	1.38E-01	0.026	9.41E+01	18
0.6050	1.73E-01	1.41E-01	0.026	9.42E+01	18
0.6100	1.71E-01	1.40E-01	0.026	9.42E+01	18
0.6150	1.68E-01	1.37E-01	0.026	9.43E+01	18
0.6200	1.67E-01	1.31E-01	0.025	9.44E+01	18
0.6250	1.65E-01	1.27E-01	0.025	9.44E+01	18
0.6300	1.62E-01	1.25E-01	0.025	9.45E+01	18
0.6350	1.62E-01	1.20E-01	0.025	9.45E+01	18
0.6400	1.71E-01	1.15E-01	0.026	9.42E+01	17
0.6450	1.60E-01	1.18E-01	0.024	9.45E+01	18
0.6500	1.59E-01	1.18E-01	0.024	9.46E+01	18
0.6550	1.59E-01	1.15E-01	0.024	9.46E+01	18
0.6600	1.58E-01	1.15E-01	0.024	9.46E+01	18
0.6650	1.57E-01	1.15E-01	0.024	9.47E+01	18
0.6700	1.55E-01	1.14E-01	0.024	9.47E+01	18
0.6750	1.56E-01	1.15E-01	0.024	9.47E+01	18
0.6800	1.53E-01	1.14E-01	0.023	9.48E+01	18
0.6850	1.52E-01	1.14E-01	0.023	9.48E+01	18
0.6900	1.50E-01	1.13E-01	0.023	9.49E+01	18
0.6950	1.48E-01	1.13E-01	0.023	9.49E+01	18
0.7000	1.49E-01	1.13E-01	0.023	9.49E+01	18
0.7050	1.47E-01	1.14E-01	0.022	9.50E+01	18
0.7100	1.46E-01	1.13E-01	0.022	9.50E+01	18

TABLE A-3. (continued)

LAMBDA(µM)	ALPHA	SD	OD	%T	NO.
0.7150	1.46E-01	1.15E-01	0.022	9.50E+01	18
0.7200	1.48E-01	1.15E-01	0.022	9.50E+01	18
0.7250	1.48E-01	1.13E-01	0.022	9.50E+01	18
0.7300	1.49E-01	1.13E-01	0.023	9.49E+01	18
0.7350	1.48E-01	1.14E-01	0.022	9.50E+01	18
0.7400	1.48E-01	1.15E-01	0.022	9.50E+01	18
0.7450	1.48E-01	1.14E-01	0.022	9.50E+01	18
0.7500	1.47E-01	1.15E-01	0.022	9.50E+01	18
0.7550	1.46E-01	1.14E-01	0.022	9.50E+01	18
0.7600	1.46E-01	1.14E-01	0.022	9.50E+01	18
0.7650	1.44E-01	1.17E-01	0.022	9.51E+01	18
0.7700	1.42E-01	1.17E-01	0.022	9.52E+01	18
0.7750	1.42E-01	1.17E-01	0.022	9.52E+01	18
0.7800	1.42E-01	1.16E-01	0.021	9.52E+01	18
0.7850	1.41E-01	1.16E-01	0.021	9.52E+01	18
0.7900	1.41E-01	1.17E-01	0.021	9.52E+01	18
0.7950	1.39E-01	1.17E-01	0.021	9.53E+01	18
0.8000	1.46E-01	1.17E-01	0.022	9.50E+01	18
0.8100	1.40E-01	1.06E-01	0.021	9.52E+01	18
0.8200	1.41E-01	1.06E-01	0.021	9.52E+01	18
0.8300	1.43E-01	1.06E-01	0.022	9.51E+01	18
0.8400	1.45E-01	1.05E-01	0.022	9.51E+01	18
0.8500	1.47E-01	1.07E-01	0.022	9.50E+01	18
0.8600	1.51E-01	1.05E-01	0.023	9.49E+01	18
0.8700	1.55E-01	1.06E-01	0.023	9.47E+01	18
0.8800	1.58E-01	1.04E-01	0.024	9.46E+01	18
0.8900	1.62E-01	1.04E-01	0.025	9.45E+01	18
0.9000	1.66E-01	1.02E-01	0.025	9.44E+01	18
0.9100	1.71E-01	1.03E-01	0.026	9.42E+01	18
0.9200	1.75E-01	1.01E-01	0.027	9.41E+01	18
0.9300	1.90E-01	1.05E-01	0.029	9.36E+01	18
0.9400	2.22E-01	1.05E-01	0.034	9.25E+01	18
0.9500	2.70E-01	1.10E-01	0.041	9.10E+01	18
0.9600	3.23E-01	1.15E-01	0.049	8.93E+01	18
0.9700	3.27E-01	1.11E-01	0.050	8.92E+01	18
0.9800	3.29E-01	1.17E-01	0.050	8.91E+01	18
0.9900	3.15E-01	1.17E-01	0.048	8.96E+01	18
1.0000	2.96E-01	1.17E-01	0.045	9.02E+01	18
1.0100	2.71E-01	1.13E-01	0.041	9.09E+01	18
1.0200	2.48E-01	1.06E-01	0.038	9.17E+01	18
1.0300	2.26E-01	1.05E-01	0.034	9.24E+01	18
1.0400	2.10E-01	1.03E-01	0.032	9.29E+01	18
1.0500	1.97E-01	1.06E-01	0.030	9.33E+01	18
1.0600	1.89E-01	1.03E-01	0.029	9.36E+01	18

TABLE A-3. (continued)

LAMBDA(µM)	ALPHA	SD	OD	%T	NO.
1.0700	1.82E-01	1.03E-01	0.028	9.38E+01	18
1.0800	1.86E-01	1.03E-01	0.028	9.37E+01	18
1.0900	1.94E-01	1.05E-01	0.029	9.34E+01	18
1.1000	2.07E-01	1.04E-01	0.031	9.30E+01	18
1.1100	2.24E-01	1.03E-01	0.034	9.25E+01	18
1.1200	2.53E-01	9.56E-02	0.038	9.15E+01	18
1.1300	3.20E-01	9.32E-02	0.049	8.94E+01	18
1.1400	4.67E-01	9.38E-02	0.071	8.49E+01	18
1.1500	6.23E-01	1.07E-01	0.095	8.04E+01	20
1.1600	6.94E-01	1.09E-01	0.105	7.85E+01	20
1.1700	7.42E-01	1.07E-01	0.113	7.72E+01	20
1.1800	7.72E-01	1.09E-01	0.117	7.64E+01	20
1.1900	7.78E-01	1.09E-01	0.118	7.62E+01	20
1.2000	7.56E-01	1.12E-01	0.115	7.68E+01	20
1.2100	7.22E-01	1.13E-01	0.109	7.77E+01	20
1.2200	6.94E-01	1.12E-01	0.105	7.85E+01	20
1.2300	6.75E-01	1.12E-01	0.102	7.89E+01	20
1.2400	6.58E-01	1.14E-01	0.100	7.95E+01	20
1.2500	6.40E-01	1.12E-01	0.097	7.99E+01	20
1.2600	6.35E-01	1.13E-01	0.096	8.01E+01	20
1.2700	6.48E-01	1.17E-01	0.098	7.98E+01	20
1.2800	6.64E-01	1.14E-01	0.101	7.93E+01	20
1.2900	6.97E-01	1.18E-01	0.106	7.84E+01	20
1.3000	7.61E-01	1.14E-01	0.115	7.67E+01	20
1.3100	8.42E-01	1.24E-01	0.128	7.45E+01	20
1.3200	1.00E+00	1.56E-01	0.152	7.05E+01	20
1.3300	1.21E+00	2.08E-01	0.183	6.56E+01	20
1.3400	1.44E+00	2.76E-01	0.219	6.04E+01	20
1.3500	1.67E+00	3.47E-01	0.254	5.57E+01	20
1.3600	1.90E+00	4.15E-01	0.288	5.16E+01	20
1.3700	2.25E+00	5.23E-01	0.342	4.55E+01	20
1.3800	2.90E+00	7.51E-01	0.439	3.64E+01	20
1.3900	4.49E+00	1.43E+00	0.682	2.08E+01	20
1.4000	7.48E+00	9.22E-01	1.134	7.34E+00	20
1.4100	1.02E+01	1.37E+00	1.553	2.80E+00	20
1.4200	1.21E+01	1.70E+00	1.829	1.48E+00	20
1.4300	1.32E+01	1.97E+00	1.998	1.00E+00	20
1.4400	1.38E+01	2.36E+00	2.096	8.03E-01	20
1.4500	1.40E+01	2.63E+00	2.120	7.59E-01	20
1.4600	1.38E+01	2.20E+00	2.089	8.15E-01	20
1.4700	1.31E+01	1.85E+00	1.983	1.04E+00	20
1.4800	1.22E+01	1.63E+00	1.844	1.43E+00	20
1.4900	1.11E+01	1.40E+00	1.687	2.06E+00	20
1.5000	1.01E+01	1.26E+00	1.530	2.95E+00	20

TABLE A-3. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
1.5100	9.05E+00	1.05E+00	1.373	4.24E+00	20
1.5200	8.18E+00	9.53E-01	1.241	5.74E+00	20
1.5300	7.38E+00	8.47E-01	1.120	7.58E+00	20
1.5400	6.74E+00	8.39E-01	1.022	9.50E+00	20
1.5500	6.06E+00	6.67E-01	0.919	1.21E+01	20
1.5600	5.56E+00	6.06E-01	0.844	1.43E+01	20
1.5700	5.18E+00	5.71E-01	0.785	1.64E+01	20
1.5800	4.83E+00	5.29E-01	0.732	1.85E+01	20
1.5900	4.56E+00	5.49E-01	0.691	2.03E+01	20
1.6000	4.28E+00	4.94E-01	0.649	2.25E+01	20
1.6100	4.05E+00	4.63E-01	0.614	2.43E+01	20
1.6200	3.88E+00	4.36E-01	0.589	2.58E+01	20
1.6300	3.73E+00	4.18E-01	0.566	2.72E+01	20
1.6400	3.61E+00	4.03E-01	0.547	2.84E+01	20
1.6500	3.51E+00	3.89E-01	0.532	2.94E+01	20
1.6600	3.50E+00	3.82E-01	0.531	2.94E+01	20
1.6700	3.57E+00	3.70E-01	0.542	2.87E+01	20
1.6800	3.71E+00	3.77E-01	0.562	2.74E+01	20
1.6900	3.87E+00	4.60E-01	0.587	2.59E+01	20
1.7000	3.90E+00	4.33E-01	0.591	2.56E+01	20
1.7100	3.95E+00	4.24E-01	0.599	2.52E+01	20
1.7200	4.12E+00	4.43E-01	0.625	2.37E+01	20
1.7300	4.26E+00	4.38E-01	0.646	2.26E+01	20
1.7400	4.42E+00	4.62E-01	0.671	2.13E+01	20
1.7500	4.55E+00	4.96E-01	0.690	2.04E+01	20
1.7600	4.71E+00	5.31E-01	0.714	1.93E+01	20
1.7700	4.87E+00	5.61E-01	0.739	1.82E+01	20
1.7800	5.07E+00	5.43E-01	0.769	1.70E+01	20
1.7900	5.10E+00	5.85E-01	0.774	1.68E+01	20
1.8000	5.11E+00	5.56E-01	0.775	1.68E+01	20
1.8100	5.08E+00	5.47E-01	0.770	1.69E+01	20
1.8200	5.07E+00	5.47E-01	0.769	1.70E+01	20
1.8300	5.12E+00	5.51E-01	0.777	1.67E+01	20
1.8400	5.30E+00	5.60E-01	0.804	1.57E+01	0
1.8500	5.77E+00	6.24E-01	0.875	1.34E+01	0
1.8600	6.87E+00	8.02E-01	1.042	9.09E+00	0
1.8700	9.76E+00	1.91E+00	1.480	3.31E+00	0
1.8800	1.49E+01	2.46E+00	2.264	5.44E-01	19
1.8900	1.89E+01	2.63E+00	2.872	1.34E-01	17
1.9000	1.95E+01	2.91E+00	2.965	1.08E-01	11
1.9100	1.93E+01	2.69E+00	2.933	1.17E-01	5
1.9200	>2.00E+01	-------	>3.000	<1.00E-01	--
1.9300	>2.00E+01	-------	>3.000	<1.00E-01	--
1.9400	>2.00E+01	-------	>3.000	<1.00E-01	--

TABLE A-3. (continued)

LAMBDA (μM)	ALPHA	SD	OD	%T	NO.
1.9500	>2.00E+01	-------	>3.000	<1.00E-01	--
1.9600	>2.00E+01	-------	>3.000	<1.00E-01	--
1.9700	1.89E+01	3.38E+00	2.862	1.37E-01	4
1.9800	1.89E+01	3.02E+00	2.872	1.34E-01	4
1.9900	1.86E+01	2.70E+00	2.816	1.53E-01	4
2.0000	1.87E+01	3.30E+00	2.841	1.44E-01	5
2.0100	1.86E+01	3.60E+00	2.823	1.50E-01	5
2.0200	1.80E+01	3.48E+00	2.728	1.87E-01	5
2.0300	1.80E+01	3.47E+00	2.723	1.89E-01	5
2.0400	1.91E+01	3.42E+00	2.891	1.29E-01	8
2.0500	1.92E+01	3.02E+00	2.905	1.24E-01	15
2.0600	1.81E+01	2.82E+00	2.738	1.83E-01	17
2.0700	1.73E+01	2.36E+00	2.628	2.36E-01	18
2.0800	1.65E+01	2.24E+00	2.509	3.09E-01	18
2.0900	1.59E+01	2.16E+00	2.410	3.89E-01	18
2.1000	1.51E+01	1.92E+00	2.294	5.08E-01	18
2.1100	1.45E+01	1.83E+00	2.195	6.38E-01	18
2.1200	1.42E+01	1.74E+00	2.155	7.00E-01	18
2.1300	1.39E+01	1.72E+00	2.106	7.84E-01	18
2.1400	1.39E+01	1.76E+00	2.108	7.80E-01	18
2.1500	1.39E+01	1.77E+00	2.114	7.68E-01	18
2.1600	1.40E+01	1.76E+00	2.124	7.50E-01	18
2.1700	1.40E+01	1.72E+00	2.119	7.60E-01	18
2.1800	1.37E+01	1.81E+00	2.083	8.26E-01	18
2.1900	1.38E+01	1.95E+00	2.094	8.06E-01	19
2.2000	1.31E+01	1.69E+00	1.988	1.03E+00	19
2.2100	1.28E+01	1.67E+00	1.938	1.15E+00	19
2.2200	1.25E+01	1.57E+00	1.890	1.29E+00	19
2.2300	1.24E+01	1.47E+00	1.886	1.30E+00	19
2.2400	1.26E+01	1.47E+00	1.918	1.21E+00	19
2.2500	1.33E+01	1.57E+00	2.011	9.75E-01	19
2.2600	1.39E+01	1.67E+00	2.110	7.76E-01	18
2.2700	1.46E+01	1.82E+00	2.220	6.03E-01	18
2.2800	1.52E+01	1.91E+00	2.302	4.99E-01	18
2.2900	1.58E+01	1.98E+00	2.399	3.99E-01	18
2.3000	1.60E+01	2.05E+00	2.424	3.77E-01	18
2.3100	1.65E+01	2.14E+00	2.498	3.18E-01	18
2.3200	1.69E+01	2.65E+00	2.560	2.77E-01	17
2.3300	1.71E+01	2.56E+00	2.598	2.52E-01	16
2.3400	1.75E+01	3.06E+00	2.660	2.19E-01	15
2.3500	1.75E+01	2.91E+00	2.657	2.20E-01	13
2.3600	1.80E+01	3.12E+00	2.730	1.87E-01	12
2.3700	1.84E+01	3.21E+00	2.798	1.59E-01	12
2.3800	1.89E+01	3.50E+00	2.862	1.38E-01	10

TABLE A-3. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
2.3900	1.80E+01	3.00E+00	2.724	1.89E-01	8
2.4000	1.94E+01	3.21E+00	2.938	1.15E-01	8
2.4100	1.99E+01	4.07E+00	3.015	9.65E-02	5
2.4200 to 2.4900	>2.00E+01	-------	>3.000	<1.00E-01	--
2.4900	>2.00E+01	-------	>3.000	<1.00E-01	--

TABLE A-4. VITREOUS HUMOR

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
.2000	3.83E 01	1.40E 01	19.195	6.39E-18	10
.2050	2.98E 01	8.61E 00	14.932	1.17E-13	10
.2100	2.19E 01	4.81E 00	10.972	1.07E-09	10
.2150	1.69E 01	2.39E 00	8.455	3.51E-07	11
.2200	1.40E 01	1.50E 00	7.010	9.76E-06	11
.2250	1.24E 01	1.07E 00	6.225	5.95E-05	11
.2300	1.12E 01	7.95E-01	5.631	2.34E-04	11
.2350	1.12E 01	2.16E 00	5.612	2.44E-04	11
.2400	1.34E 01	3.69E 00	6.701	1.99E-05	11
.2450	1.73E 01	5.91E 00	8.660	2.19E-07	11
.2500	2.23E 01	9.13E 00	11.194	6.40E-10	11
.2550	2.96E 01	1.30E 01	14.861	1.38E-13	10
.2600	3.48E 01	1.59E 01	17.462	3.45E-16	10
.2650	3.88E 01	1.54E 01	19.456	3.50E-18	9
.2700	3.65E 01	1.42E 01	18.283	5.21E-17	9
.2750	2.88E 01	1.20E 01	14.454	3.52E-13	10
.2800	2.14E 01	8.42E 00	10.729	1.87E-09	11
.2850	1.36E 01	4.44E 00	6.813	1.54E-05	12
.2900	7.80E 00	2.08E 00	3.914	1.22E-02	12
.2950	4.20E 00	4.64E-01	2.106	7.83E-01	11
.3000	2.96E 00	5.57E-01	1.482	3.29E 00	12
.3050	1.50E 00	4.68E-01	.751	1.78E 01	12
.3100	6.92E-01	2.89E-01	.347	4.50E 01	12
.3150	3.90E-01	1.75E-01	.196	6.37E 01	12
.3200	2.88E-01	1.26E-01	.144	7.17E 01	12
.3250	2.50E-01	1.09E-01	.125	7.49E 01	12
.3300	2.33E-01	1.03E-01	.117	7.64E 01	12
.3350	2.16E-01	9.12E-02	.109	7.79E 01	12
.3400	2.01E-01	7.46E-02	.101	7.93E 01	12
.3450	1.88E-01	6.45E-02	.094	8.05E 01	12
.3500	1.76E-01	6.23E-02	.088	8.16E 01	12
.3550	1.73E-01	5.50E-02	.087	8.19E 01	12
.3600	1.60E-01	5.24E-02	.080	8.31E 01	12
.3650	1.49E-01	4.92E-02	.075	8.42E 01	12
.3700	1.38E-01	4.50E-02	.069	8.52E 01	12
.3750	1.27E-01	4.40E-02	.064	8.64E 01	12
.3800	1.15E-01	4.22E-02	.058	8.76E 01	12
.3850	1.07E-01	4.03E-02	.053	8.84E 01	12
.3900	1.01E-01	3.92E-02	.050	8.90E 01	12
.3950	9.26E-02	4.07E-02	.046	8.99E 01	12
.4000	8.47E-02	3.90E-02	.042	9.07E 01	12
.4050	8.00E-02	3.92E-02	.040	9.12E 01	12
.4100	7.56E-02	3.79E-02	.038	9.16E 01	12

TABLE A-4. (continued)

LAMBDA(μM)	ALPHA	SD	OD	%T	NO.
.4150	7.23E-02	3.50E-02	.036	9.20E 01	12
.4200	6.84E-02	3.38E-02	.034	9.24E 01	12
.4250	6.69E-02	3.36E-02	.034	9.26E 01	12
.4300	6.44E-02	3.15E-02	.032	9.28E 01	12
.4350	6.40E-02	3.16E-02	.032	9.29E 01	12
.4400	6.18E-02	3.24E-02	.031	9.31E 01	12
.4450	6.16E-02	2.99E-02	.031	9.31E 01	12
.4500	6.20E-02	3.02E-02	.031	9.31E 01	12
.4550	5.87E-02	3.10E-02	.029	9.34E 01	12
.4600	5.82E-02	2.89E-02	.029	9.35E 01	12
.4650	5.75E-02	2.85E-02	.029	9.36E 01	12
.4700	5.79E-02	2.97E-02	.029	9.35E 01	12
.4750	5.64E-02	2.92E-02	.028	9.37E 01	12
.4800	5.65E-02	2.81E-02	.028	9.37E 01	12
.4850	5.59E-02	2.77E-02	.028	9.38E 01	12
.4900	5.41E-02	2.77E-02	.027	9.39E 01	12
.4950	5.37E-02	2.69E-02	.027	9.40E 01	12
.5000	5.24E-02	2.74E-02	.026	9.41E 01	12
.5050	5.18E-02	2.61E-02	.026	9.42E 01	12
.5100	5.11E-02	2.58E-02	.026	9.43E 01	12
.5150	5.06E-02	2.50E-02	.025	9.43E 01	12
.5200	4.96E-02	2.58E-02	.025	9.44E 01	12
.5250	4.79E-02	2.53E-02	.024	9.46E 01	12
.5300	4.73E-02	2.50E-02	.024	9.47E 01	12
.5350	4.67E-02	2.54E-02	.023	9.47E 01	12
.5400	4.55E-02	2.41E-02	.023	9.49E 01	12
.5450	4.60E-02	2.35E-02	.023	9.48E 01	12
.5500	4.51E-02	2.39E-02	.023	9.49E 01	12
.5550	4.42E-02	2.40E-02	.022	9.50E 01	12
.5600	4.47E-02	2.30E-02	.022	9.50E 01	12
.5650	4.55E-02	1.92E-02	.023	9.49E 01	12
.5700	4.36E-02	2.15E-02	.022	9.51E 01	12
.5750	4.17E-02	2.09E-02	.021	9.53E 01	12
.5800	4.48E-02	2.15E-02	.022	9.50E 01	12
.5850	4.76E-02	2.36E-02	.024	9.47E 01	12
.5900	4.29E-02	2.29E-02	.021	9.52E 01	12
.5950	4.32E-02	2.19E-02	.022	9.51E 01	12
.6000	4.21E-02	2.31E-02	.021	9.53E 01	12
.6050	4.20E-02	2.23E-02	.021	9.53E 01	12
.6100	4.27E-02	2.05E-02	.021	9.52E 01	12
.6150	4.12E-02	2.18E-02	.021	9.54E 01	12
.6200	4.02E-02	2.22E-02	.020	9.55E 01	12
.6250	4.13E-02	2.13E-02	.021	9.53E 01	12
.6300	4.10E-02	2.23E-02	.021	9.54E 01	12

TABLE A-4. (continued)

LAMBDA(µM)	ALPHA	SD	OD	%T	NO.
.6350	3.97E-02	2.29E-02	.020	9.55E 01	12
.6400	4.09E-02	2.16E-02	.020	9.54E 01	12
.6450	4.26E-02	2.13E-02	.021	9.52E 01	12
.6500	4.02E-02	2.22E-02	.020	9.55E 01	12
.6550	3.94E-02	2.34E-02	.020	9.55E 01	12
.6600	3.98E-02	2.25E-02	.020	9.55E 01	12
.6650	4.08E-02	2.13E-02	.020	9.54E 01	12
.6700	4.12E-02	1.98E-02	.021	9.53E 01	12
.6750	4.06E-02	2.11E-02	.020	9.54E 01	12
.6800	4.13E-02	1.93E-02	.021	9.53E 01	12
.6850	4.08E-02	1.97E-02	.020	9.54E 01	12
.6900	4.13E-02	2.02E-02	.021	9.53E 01	12
.6950	4.18E-02	1.98E-02	.021	9.53E 01	12
.7000	4.23E-02	2.06E-02	.021	9.52E 01	12
.7050	4.27E-02	2.07E-02	.021	9.52E 01	12
.7100	4.43E-02	2.08E-02	.022	9.50E 01	12
.7150	4.53E-02	2.13E-02	.023	9.49E 01	12
.7200	4.71E-02	2.16E-02	.024	9.47E 01	12
.7250	4.94E-02	2.16E-02	.025	9.45E 01	12
.7300	5.47E-02	2.18E-02	.027	9.39E 01	12
.7350	5.81E-02	2.13E-02	.029	9.35E 01	12
.7400	6.07E-02	1.89E-02	.030	9.32E 01	12
.7450	6.14E-02	1.69E-02	.031	9.32E 01	12
.7500	6.16E-02	1.68E-02	.031	9.31E 01	12
.7550	6.26E-02	1.71E-02	.031	9.30E 01	12
.7600	6.10E-02	1.66E-02	.031	9.32E 01	12
.7650	6.04E-02	1.70E-02	.030	9.33E 01	12
.7700	6.07E-02	1.67E-02	.030	9.32E 01	12
.7750	5.96E-02	1.72E-02	.030	9.34E 01	12
.7800	5.88E-02	1.83E-02	.030	9.34E 01	12
.7850	5.74E-02	1.69E-02	.029	9.36E 01	12
.7900	5.55E-02	1.81E-02	.028	9.38E 01	12
.7950	5.44E-02	1.82E-02	.027	9.39E 01	12
.8000	5.44E-02	1.74E-02	.027	9.39E 01	12
.8100	5.68E-02	2.93E-02	.029	9.36E 01	17
.8200	6.14E-02	3.08E-02	.031	9.32E 01	17
.8300	7.12E-02	3.20E-02	.036	9.21E 01	17
.8400	7.43E-02	3.26E-02	.037	9.18E 01	17
.8500	7.79E-02	3.14E-02	.039	9.14E 01	17
.8600	8.07E-02	3.19E-02	.040	9.11E 01	17
.8700	8.34E-02	3.20E-02	.042	9.08E 01	17
.8800	8.76E-02	3.05E-02	.044	9.04E 01	17
.8900	9.23E-02	2.92E-02	.046	8.99E 01	17
.9000	1.01E-01	3.04E-02	.051	8.89E 01	17

TABLE A-4. (continued)

LAMBDA(μM)	ALPHA	SD	OD	%T	NO.
.9100	1.09E-01	2.93E-02	.055	8.81E 01	17
.9200	1.32E-01	2.96E-02	.066	8.59E 01	17
.9300	1.81E-01	2.90E-02	.091	8.11E 01	17
.9400	2.61E-01	3.30E-02	.131	7.40E 01	17
.9500	3.87E-01	4.16E-02	.194	6.39E 01	17
.9600	5.00E-01	4.35E-02	.251	5.61E 01	17
.9700	5.11E-01	4.74E-02	.256	5.54E 01	17
.9800	5.03E-01	4.14E-02	.252	5.59E 01	17
.9900	4.61E-01	4.20E-02	.231	5.87E 01	17
1.0000	4.17E-01	3.73E-02	.209	6.18E 01	17
1.0100	3.89E-01	3.83E-02	.195	6.38E 01	17
1.0200	3.54E-01	7.58E-02	.177	6.65E 01	17
1.0300	3.01E-01	7.24E-02	.151	7.06E 01	17
1.0400	2.63E-01	7.14E-02	.132	7.38E 01	17
1.0500	2.38E-01	6.83E-02	.120	7.59E 01	17
1.0600	2.23E-01	6.41E-02	.112	7.73E 01	17
1.0700	2.27E-01	8.22E-02	.114	7.69E 01	17
1.0800	2.36E-01	7.97E-02	.118	7.62E 01	17
1.0900	2.57E-01	8.15E-02	.129	7.43E 01	17
1.1000	2.85E-01	8.10E-02	.143	7.19E 01	17
1.1100	3.20E-01	7.75E-02	.160	6.91E 01	17
1.1200	3.65E-01	7.21E-02	.183	6.56E 01	17
1.1300	4.89E-01	9.51E-02	.245	5.69E 01	17
1.1400	8.12E-01	9.92E-02	.407	3.91E 01	17
1.1500	1.17E 00	6.63E-02	.586	2.59E 01	17
1.1600	1.30E 00	8.36E-02	.653	2.23E 01	17
1.1700	1.32E 00	7.78E-02	.660	2.19E 01	17
1.1800	1.34E 00	1.14E-01	.673	2.12E 01	17
1.1900	1.34E 00	6.13E-02	.673	2.12E 01	17
1.2000	1.33E 00	6.98E-02	.666	2.16E 01	17
1.2100	1.29E 00	7.03E-02	.648	2.25E 01	17
1.2200	1.25E 00	7.21E-02	.628	2.35E 01	17
1.2300	1.22E 00	7.52E-02	.610	2.46E 01	17
1.2400	1.18E 00	7.28E-02	.592	2.56E 01	17
1.2500	1.15E 00	7.33E-02	.575	2.66E 01	17
1.2600	1.14E 00	7.66E-02	.569	2.70E 01	17
1.2700	1.15E 00	8.25E-02	.574	2.66E 01	17
1.2800	1.19E 00	7.12E-02	.596	2.53E 01	17
1.2900	1.29E 00	9.14E-02	.645	2.26E 01	17
1.3000	1.42E 00	6.97E-02	.713	1.93E 01	17
1.3100	1.65E 00	9.95E-02	.829	1.48E 01	17
1.3200	1.97E 00	8.94E-02	.989	1.03E 01	17
1.3300	2.43E 00	1.13E-01	1.219	6.04E 00	17
1.3400	2.94E 00	1.20E-01	1.472	3.37E 00	17
1.3500	3.29E 00	5.08E-01	1.651	2.24E 00	18

TABLE A-4. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
1.3600	3.76E 00	4.91E-01	1.888	1.29E 00	18
1.3700	4.34E 00	8.27E-01	2.175	6.68E-01	18
1.3800	6.25E 00	8.97E-01	3.136	7.31E-02	18
1.3900	1.09E 01	1.28E 00	5.489	3.24E-04	18
1.4000	1.53E 01	2.40E 00	7.664	2.17E-06	17
1.4100	2.11E 01	4.57E 00	10.586	2.60E-09	14
1.4200	2.74E 01	2.63E 00	13.724	1.89E-12	11
1.4300	2.94E 01	3.08E 00	14.746	1.80E-13	11
1.4400	3.02E 01	3.33E 00	15.154	7.01E-14	11
1.4500	2.99E 01	3.83E 00	14.995	1.01E-13	11
1.4600	2.94E 01	3.78E 00	14.743	1.81E-13	11
1.4700	2.75E 01	3.83E 00	13.814	1.53E-12	11
1.4800	2.45E 01	4.01E 00	12.294	5.08E-11	11
1.4900	2.17E 01	3.98E 00	10.862	1.37E-09	11
1.5000	1.81E 01	4.06E 00	9.082	8.29E-08	13
1.5100	1.57E 01	3.67E 00	7.858	1.39E-06	14
1.5200	1.45E 01	2.48E 00	7.285	5.19E-06	16
1.5300	1.28E 01	2.40E 00	6.417	3.83E-05	17
1.5400	1.14E 01	2.25E 00	5.715	1.93E-04	17
1.5500	1.02E 01	2.27E 00	5.130	7.42E-04	17
1.5600	9.89E 00	8.82E-01	4.962	1.09E-03	17
1.5700	9.02E 00	8.21E-01	4.521	3.01E-03	17
1.5800	8.32E 00	8.16E-01	4.172	6.73E-03	17
1.5900	7.71E 00	7.33E-01	3.865	1.37E-02	17
1.6000	7.23E 00	6.78E-01	3.625	2.37E-02	17
1.6100	6.83E 00	6.25E-01	3.423	3.77E-02	17
1.6200	6.66E 00	4.08E-01	3.342	4.56E-02	17
1.6300	6.24E 00	6.68E-01	3.128	7.44E-02	17
1.6400	6.01E 00	6.77E-01	3.013	9.70E-02	17
1.6500	5.83E 00	6.67E-01	2.922	1.20E-01	17
1.6600	5.69E 00	6.93E-01	2.852	1.40E-01	17
1.6700	5.61E 00	6.64E-01	2.815	1.53E-01	17
1.6800	5.61E 00	6.56E-01	2.812	1.54E-01	17
1.6900	5.63E 00	6.75E-01	2.825	1.49E-01	17
1.7000	5.71E 00	6.83E-01	2.863	1.37E-01	17
1.7100	5.84E 00	7.11E-01	2.929	1.18E-01	17
1.7200	6.09E 00	6.64E-01	3.054	8.82E-02	17
1.7300	6.41E 00	6.88E-01	3.214	6.11E-02	17
1.7400	6.85E 00	6.99E-01	3.436	3.67E-02	17
1.7500	7.42E 00	6.69E-01	3.719	1.91E-02	17
1.7600	8.06E 00	7.37E-01	4.043	9.05E-03	17
1.7700	8.80E 00	1.08E 00	4.412	3.87E-03	17
1.7800	8.96E 00	7.39E-01	4.491	3.23E-03	16
1.7900	9.09E 00	7.44E-01	4.560	2.76E-03	16

TABLE A-4. (continued)

LAMBDA(µM)	ALPHA	SD	OD	%T	NO.
1.8000	8.81E 00	1.64E 00	4.419	3.81E-03	17
1.8100	8.85E 00	1.57E 00	4.440	3.63E-03	17
1.8200	8.98E 00	1.53E 00	4.504	3.13E-03	17
1.8300	9.21E 00	1.59E 00	4.621	2.39E-03	17
1.8400	9.89E 00	1.79E 00	4.960	1.10E-03	17
1.8500	1.11E 01	1.77E 00	5.575	2.66E-04	17
1.8600	1.36E 01	2.16E 00	6.838	1.45E-05	17
1.8700	1.85E 01	3.07E 00	9.263	5.46E-08	17
1.8800	3.37E 01	6.64E 00	16.884	1.31E-15	15
1.8900	5.94E 01	1.77E 01	29.804	1.57E-28	14
1.9000	8.19E 01	3.18E 01	41.072	8.48E-40	14
1.9100	1.07E 02	2.70E 01	53.907	1.24E-52	12
1.9200	1.18E 02	2.55E 01	59.266	5.41E-58	11
1.9300	1.17E 02	2.65E 01	58.678	2.10E-57	11
1.9400	1.08E 02	2.58E 01	54.016	9.65E-53	12
1.9500	9.97E 01	2.46E 01	50.002	9.95E-49	12
1.9600	9.20E 01	2.04E 01	46.123	7.54E-45	12
1.9700	8.37E 01	1.75E 01	41.994	1.01E-40	12
1.9800	7.78E 01	1.17E 01	39.034	9.24E-38	12
1.9900	6.88E 01	1.14E 01	34.503	3.14E-33	12
2.0000	6.42E 01	8.45E 00	32.179	6.62E-31	11
2.0100	5.70E 01	8.59E 00	28.572	2.68E-27	13
2.0200	5.32E 01	8.17E 00	26.693	2.03E-25	13
2.0300	4.83E 01	8.13E 00	24.218	6.05E-23	13
2.0400	4.24E 01	8.01E 00	21.258	5.52E-20	14
2.0500	3.83E 01	7.58E 00	19.214	6.11E-18	14
2.0600	3.52E 01	7.34E 00	17.675	2.12E-16	14
2.0700	3.19E 01	6.95E 00	16.014	9.68E-15	14
2.0800	2.94E 01	6.86E 00	14.754	1.76E-13	14
2.0900	2.83E 01	5.59E 00	14.213	6.13E-13	13
2.1000	2.58E 01	5.27E 00	12.954	1.11E-11	13
2.1100	2.40E 01	5.14E 00	12.023	9.49E-11	13
2.1200	2.25E 01	5.03E 00	11.262	5.47E-10	13
2.1300	2.11E 01	4.95E 00	10.604	2.49E-09	13
2.1400	2.07E 01	5.86E 00	10.389	4.08E-09	13
2.1500	1.90E 01	4.83E 00	9.545	2.85E-08	13
2.1600	1.83E 01	4.68E 00	9.188	6.48E-08	13
2.1700	1.78E 01	4.64E 00	8.906	1.24E-07	13
2.1800	1.74E 01	4.54E 00	8.727	1.88E-07	13
2.1900	1.71E 01	4.48E 00	8.579	2.63E-07	13
2.2000	1.70E 01	4.41E 00	8.522	3.01E-07	13
2.2100	1.70E 01	4.23E 00	8.545	2.85E-07	13
2.2200	1.72E 01	4.20E 00	8.606	2.48E-07	13
2.2300	1.75E 01	4.08E 00	8.756	1.75E-07	13
2.2400	1.75E 01	3.96E 00	8.764	1.72E-07	13

TABLE A-4. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
2.2500	1.85E 01	3.88E 00	9.262	5.47E-08	13
2.2600	1.92E 01	3.77E 00	9.649	2.24E-08	13
2.2700	2.00E 01	3.69E 00	10.052	8.87E-09	13
2.2800	2.12E 01	3.54E 00	10.608	2.46E-09	13
2.2900	2.24E 01	3.42E 00	11.236	5.81E-10	13
2.3000	2.39E 01	2.99E 00	11.993	1.02E-10	13
2.3100	2.53E 01	3.39E 00	12.700	2.00E-11	13
2.3200	2.70E 01	3.88E 00	13.557	2.77E-12	13
2.3300	2.79E 01	5.19E 00	13.972	1.07E-12	14
2.3400	3.02E 01	4.98E 00	15.129	7.44E-14	14
2.3500	3.27E 01	5.09E 00	16.397	4.01E-15	14
2.3600	3.55E 01	5.00E 00	17.807	1.56E-16	14
2.3700	3.85E 01	5.07E 00	19.287	5.17E-18	13
2.3800	4.17E 01	4.81E 00	20.922	1.20E-19	13
2.3900	4.56E 01	5.43E 00	22.880	1.32E-21	13
2.4000	4.80E 01	4.63E 00	24.074	8.43E-23	13
2.4100	5.13E 01	5.32E 00	25.715	1.93E-24	13
2.4200	5.63E 01	4.75E 00	28.215	6.10E-27	13
2.4300	6.00E 01	5.15E 00	30.094	8.05E-29	13
2.4400	6.64E 01	8.14E 00	33.293	5.10E-32	12
2.4500	7.04E 01	6.40E 00	35.321	4.78E-34	12
2.4600	7.42E 01	6.98E 00	37.213	6.12E-36	12
2.4700	7.91E 01	9.01E 00	39.683	2.07E-38	12
2.4800	8.33E 01	1.13E 01	41.752	1.77E-40	12
2.4900	8.88E 01	1.30E 01	44.516	3.05E-43	12
2.5000	8.98E 01	1.70E 01	45.024	9.47E-44	12
2.5126	1.24E 02	2.15E 01	62.431	3.70E-61	9
2.5253	1.28E 02	2.14E 01	64.029	9.35E-63	9
2.5381	1.30E 02	2.14E 01	65.106	7.83E-64	9
2.5510	1.33E 02	2.08E 01	66.721	1.90E-65	9
2.5641	1.52E 02	3.19E 01	76.033	9.26E-75	12
2.5773	1.57E 02	2.94E 01	78.771	1.69E-77	12
2.5907	1.65E 02	2.61E 01	82.726	1.88E-81	12
2.6042	1.75E 02	2.48E 01	87.751	1.78E-86	12
2.6178	1.91E 02	2.52E 01	95.820	1.51E-94	12
2.6316	2.14E 02	2.55E 01	>100	----	12
2.6455	2.50E 02	3.28E 01	>100	----	12
2.6596	3.39E 02	6.16E 01	>100	----	12
2.6738	4.83E 02	9.78E 01	>100	----	12
2.6882	6.15E 02	9.94E 01	>100	----	10
2.7027	9.90E 02	2.62E 02	>100	----	10
2.7174	1.57E 03	4.28E 02	>100	----	6
2.7322	>2.00E 03	-------	>100	----	--
to					
3.2468	"	"	>100	----	--

TABLE A-4. (continued)

LAMBDA (UM)	ALPHA	SD	OD	%T	NO.
3.2680	1.76E 03	2.81E 02	>100	----	6
3.2895	1.55E 03	3.53E 02	>100	----	7
3.3113	1.27E 03	2.38E 02	>100	----	8
3.3333	1.01E 03	1.20E 02	>100	----	9
3.3557	8.55E 02	9.59E 01	>100	----	10
3.3784	7.26E 02	7.93E 01	>100	----	10
3.4014	6.09E 02	5.46E 01	>100	----	11
3.4247	5.12E 02	6.37E 01	>100	----	11
3.4483	4.33E 02	5.87E 01	>100	----	11
3.4722	3.68E 02	4.88E 01	>100	----	11
3.4965	3.07E 02	4.34E 01	>100	----	12
3.5211	2.58E 02	4.15E 01	>100	----	12
3.5461	2.22E 02	3.74E 01	>100	----	12
3.5714	1.93E 02	3.08E 01	96.751	1.77E-95	12
3.5971	1.70E 02	2.55E 01	85.224	5.98E-84	12
3.6232	1.52E 02	2.13E 01	76.337	4.60E-75	12
3.6496	1.38E 02	1.88E 01	69.212	6.14E-68	12
3.6765	1.27E 02	1.80E 01	63.689	2.05E-62	12
3.7037	1.19E 02	1.87E 01	59.654	2.22E-58	12
3.7313	1.12E 02	1.89E 01	56.055	8.81E-55	12
3.7594	1.08E 02	1.76E 01	53.967	1.08E-52	12
3.7879	1.04E 02	1.71E 01	52.132	7.38E-51	12
3.8168	1.04E 02	1.64E 01	52.210	6.17E-51	12
3.8462	1.08E 02	1.69E 01	53.921	1.20E-52	12
3.8760	1.14E 02	1.89E 01	56.943	1.14E-55	12
3.9063	1.20E 02	1.88E 01	60.026	9.42E-59	12
3.9370	1.27E 02	1.93E 01	63.925	1.19E-62	12
3.9683	1.35E 02	1.95E 01	67.543	2.86E-66	12
4.0000	1.43E 02	2.04E 01	71.581	2.63E-70	12
4.0323	1.51E 02	2.20E 01	75.793	1.61E-74	12
4.0650	1.59E 02	2.21E 01	79.639	2.30E-78	12
4.0984	1.69E 02	1.97E 01	84.621	2.39E-83	12
4.1322	1.85E 02	2.11E 01	92.605	2.48E-91	12
4.1667	2.10E 02	2.74E 01	>100	----	12
4.2017	2.52E 02	2.80E 01	>100	----	12
4.2373	2.94E 02	3.13E 01	>100	----	12
4.2735	2.95E 02	2.53E 01	>100	----	12
4.3103	2.95E 02	2.43E 01	>100	----	12
4.3478	2.99E 02	2.45E 01	>100	----	12
4.3860	3.08E 02	2.78E 01	>100	----	12
4.4248	3.29E 02	2.79E 01	>100	----	12
4.4643	3.48E 02	2.87E 01	>100	----	12
4.5045	3.75E 02	3.09E 01	>100	----	12
4.5455	4.00E 02	3.15E 01	>100	----	12

TABLE A-4. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
4.5872	4.19E 02	3.39E 01	>100	----	12
4.6296	4.41E 02	4.20E 01	>100	----	12
4.6729	4.43E 02	3.67E 01	>100	----	12
4.7170	4.38E 02	3.77E 01	>100	----	12
4.7619	4.34E 02	3.85E 01	>100	----	12
4.8077	4.17E 02	3.58E 01	>100	----	12
4.8544	3.96E 02	3.46E 01	>100	----	12
4.9020	3.70E 02	3.55E 01	>100	----	12
4.9505	3.45E 02	3.61E 01	>100	----	12
5.0000	3.25E 02	3.67E 01	>100	----	12
5.0251	3.09E 02	4.13E 01	>100	----	12
5.0505	3.01E 02	4.05E 01	>100	----	12
5.0761	2.92E 02	3.83E 01	>100	----	12
5.1282	2.80E 02	3.51E 01	>100	----	12
5.1546	2.74E 02	3.27E 01	>100	----	12
5.1813	2.71E 02	3.22E 01	>100	----	12
5.2083	2.67E 02	3.01E 01	>100	----	12
5.2356	2.64E 02	3.00E 01	>100	----	12
5.2632	2.61E 02	2.91E 01	>100	----	12
5.2910	2.60E 02	2.67E 01	>100	----	12
5.3191	2.61E 02	2.65E 01	>100	----	12
5.3476	2.63E 02	2.71E 01	>100	----	12
5.3763	2.65E 02	2.66E 01	>100	----	12
5.4054	2.70E 02	2.56E 01	>100	----	12
5.4348	2.77E 02	2.66E 01	>100	----	12
5.4645	2.85E 02	2.65E 01	>100	----	12
5.4945	2.96E 02	2.63E 01	>100	----	12
5.5249	3.13E 02	2.71E 01	>100	----	12
5.5556	3.37E 02	2.74E 01	>100	----	12
5.5866	3.63E 02	3.09E 01	>100	----	12
5.6180	3.94E 02	4.02E 01	>100	----	12
5.6497	4.42E 02	4.37E 01	>100	----	12
5.6818	4.94E 02	5.10E 01	>100	----	11
5.7143	5.72E 02	7.46E 01	>100	----	11
5.7471	6.57E 02	6.70E 01	>100	----	10
5.7803	7.77E 02	9.94E 01	>100	----	10
5.8140	1.03E 03	2.34E 02	>100	----	10
5.8480	1.43E 03	3.01E 02	>100	----	9
5.8824	1.76E 03	3.36E 02	>100	----	5
5.9172	2.39E 03	4.22E 02	>100	----	2
5.9880	2.47E 03	4.72E 02	>100	----	2
6.0976	2.25E 03	4.07E 02	>100	----	3
6.1350	2.06E 03	3.64E 02	>100	----	5
6.1728	1.79E 03	2.10E 02	>100	----	5

TABLE A-4. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
6.2112	1.56E 03	1.82E 02	>100	----	6
6.2500	1.47E 03	3.22E 02	>100	----	8
6.2893	1.19E 03	1.58E 02	>100	----	8
6.3291	1.11E 03	2.32E 02	>100	----	10
6.3694	9.14E 02	1.07E 02	>100	----	10
6.4103	8.21E 02	7.32E 01	>100	----	10
6.4516	7.79E 02	6.70E 01	>100	----	10
6.4935	7.38E 02	5.26E 01	>100	----	10
6.5359	7.25E 02	5.49E 01	>100	----	10
6.5789	7.10E 02	5.86E 01	>100	----	10
6.6225	7.00E 02	5.91E 01	>100	----	10
6.6667	6.90E 02	5.77E 01	>100	----	10
6.7114	6.78E 02	5.61E 01	>100	----	10
6.7568	6.67E 02	5.21E 01	>100	----	10
6.8027	6.57E 02	4.98E 01	>100	----	10
6.8493	6.53E 02	4.99E 01	>100	----	10
6.8966	6.47E 02	4.75E 01	>100	----	10
6.9444	6.43E 02	4.49E 01	>100	----	10
6.9930	6.40E 02	4.58E 01	>100	----	10
7.0423	6.42E 02	4.59E 01	>100	----	10
7.0922	6.44E 02	4.61E 01	>100	----	10
7.1429	6.45E 02	4.56E 01	>100	----	10
7.1942	6.46E 02	4.64E 01	>100	----	10
7.2464	6.47E 02	4.87E 01	>100	----	10
7.2993	6.47E 02	4.92E 01	>100	----	10
7.3529	6.48E 02	4.91E 01	>100	----	10
7.4074	6.39E 02	5.08E 01	>100	----	10
7.4627	6.33E 02	5.26E 01	>100	----	10
7.5188	6.30E 02	5.38E 01	>100	----	10
7.5758	6.26E 02	5.35E 01	>100	----	10
7.6336	6.20E 02	5.57E 01	>100	----	10
7.6923	6.16E 02	5.51E 01	>100	----	10
7.7519	6.12E 02	5.48E 01	>100	----	10
7.8125	6.10E 02	5.37E 01	>100	----	10
7.8740	6.06E 02	5.32E 01	>100	----	10
7.9365	6.05E 02	4.99E 01	>100	----	10
8.0000	6.05E 02	4.84E 01	>100	----	10
8.0645	6.02E 02	4.67E 01	>100	----	10
8.1301	6.02E 02	4.10E 01	>100	----	10
8.1967	6.03E 02	3.88E 01	>100	----	10
8.2645	6.02E 02	3.97E 01	>100	----	10
8.3333	6.01E 02	3.91E 01	>100	----	10
8.4034	6.02E 02	4.12E 01	>100	----	10
8.4746	6.09E 02	4.63E 01	>100	----	10
8.5470	6.07E 02	4.86E 01	>100	----	10

TABLE A-4. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
8.6207	6.08E 02	5.29E 01	>100	----	10
8.6957	6.09E 02	5.40E 01	>100	----	10
8.7719	6.12E 02	5.48E 01	>100	----	10
8.8496	6.09E 02	5.48E 01	>100	----	10
8.9286	6.11E 02	5.77E 01	>100	----	10
9.0090	6.08E 02	5.82E 01	>100	----	10
9.0909	6.08E 02	5.95E 01	>100	----	10
9.1743	6.12E 02	5.90E 01	>100	----	10
9.2593	6.17E 02	5.67E 01	>100	----	10
9.3458	6.22E 02	5.34E 01	>100	----	10
9.4340	6.29E 02	5.10E 01	>100	----	10
9.5238	6.37E 02	4.75E 01	>100	----	10
9.6154	6.48E 02	4.24E 01	>100	----	10
9.7087	6.64E 02	3.67E 01	>100	----	10
9.8039	6.83E 02	3.82E 01	>100	----	10
9.9010	7.01E 02	4.09E 01	>100	----	10
10.0000	7.24E 02	4.05E 01	>100	----	10
10.1010	7.50E 02	4.20E 01	>100	----	10
10.2041	7.88E 02	6.29E 01	>100	----	10
10.3093	8.39E 02	8.74E 01	>100	----	10
10.4167	9.04E 02	1.26E 02	>100	----	10
10.5263	9.59E 02	1.07E 02	>100	----	10
10.6383	1.03E 03	1.19E 02	>100	----	9
10.7527	1.14E 03	1.54E 02	>100	----	9
10.8696	1.26E 03	1.86E 02	>100	----	9
10.9890	1.41E 03	2.47E 02	>100	----	9
11.1111	1.67E 03	4.83E 02	>100	----	9
11.2360	1.59E 03	1.39E 02	>100	----	8
11.3636	1.83E 03	1.75E 02	>100	----	6
11.4943	2.19E 03	2.93E 02	>100	----	6
11.6279	2.54E 03	1.34E 02	>100	----	6
11.7647	>2.70E 03	-------	>100	----	4
			>100	----	--
to 15.0000	"	"	>100	"	--

TABLE A-5. DISTILLED WATER

LAMBDA (UM)	ALPHA	SD	OD	%T	NO.
.2000	4.13E-01	3.03E-01	.332	4.66E 01	14
.2050	3.04E-01	2.14E-01	.244	5.70E 01	14
.2100	2.53E-01	1.79E-01	.204	6.26E 01	14
.2150	2.36E-01	1.44E-01	.189	6.47E 01	14
.2200	2.12E-01	1.09E-01	.170	6.76E 01	14
.2250	1.83E-01	9.04E-02	.147	7.13E 01	14
.2300	1.47E-01	7.23E-02	.118	7.62E 01	14
.2350	1.00E-01	5.43E-02	.081	8.31E 01	14
.2400	8.69E-02	4.66E-02	.070	8.52E 01	14
.2450	7.98E-02	4.30E-02	.064	8.63E 01	14
.2500	7.14E-02	4.27E-02	.057	8.76E 01	14
.2550	6.47E-02	3.88E-02	.052	8.87E 01	14
.2600	7.34E-02	3.57E-02	.059	8.73E 01	14
.2650	8.67E-02	4.13E-02	.070	8.52E 01	14
.2700	1.02E-01	5.05E-02	.082	8.28E 01	14
.2750	1.12E-01	5.86E-02	.090	8.13E 01	14
.2800	1.18E-01	6.32E-02	.095	8.04E 01	14
.2850	1.12E-01	5.95E-02	.090	8.13E 01	14
.2900	1.07E-01	5.99E-02	.086	8.20E 01	14
.2950	8.98E-02	4.82E-02	.072	8.47E 01	14
.3000	8.31E-02	4.58E-02	.067	8.57E 01	14
.3050	5.71E-02	2.67E-02	.046	9.00E 01	14
.3100	6.00E-02	4.80E-02	.048	8.95E 01	14
.3150	3.56E-02	2.62E-02	.029	9.36E 01	14
.3200	2.37E-02	1.82E-02	.019	9.57E 01	14
.3250	2.09E-02	1.81E-02	.017	9.62E 01	14
.3300	2.11E-02	2.17E-02	.017	9.62E 01	14
.3350	1.67E-02	1.76E-02	.013	9.70E 01	14
.3400	1.81E-02	2.16E-02	.015	9.67E 01	14
.3450	1.68E-02	2.10E-02	.013	9.69E 01	14
.3500	5.46E-03	4.53E-03	.004	9.90E 01	14
.3550	4.95E-03	4.13E-03	.004	9.91E 01	14
.3600	3.92E-03	3.50E-03	.003	9.93E 01	14
.3650	3.86E-03	3.42E-03	.003	9.93E 01	14
.3700	3.41E-03	3.22E-03	.003	9.94E 01	14
.3750	3.96E-03	3.53E-03	.003	9.93E 01	14
.3800	3.75E-03	3.45E-03	.003	9.93E 01	14
.3850	3.80E-03	3.52E-03	.003	9.93E 01	14
.3900	3.58E-03	3.39E-03	.003	9.93E 01	14
.3950	3.49E-03	3.35E-03	.003	9.94E 01	14
.4000	3.36E-03	3.23E-03	.003	9.94E 01	14
.4050	3.32E-03	3.27E-03	.003	9.94E 01	14
.4100	3.05E-03	3.13E-03	.002	9.94E 01	14

TABLE A-5. (continued)

LAMBDA (UM)	ALPHA	SD	OD	%T	NO.
.4150	3.09E-03	3.14E-03	.002	9.94E 01	14
.4200	2.70E-03	2.98E-03	.002	9.95E 01	14
.4250	2.38E-03	2.81E-03	.002	9.96E 01	14
.4300	2.09E-03	2.73E-03	.002	9.96E 01	14
.4350	2.29E-03	2.84E-03	.002	9.96E 01	14
.4400	1.92E-03	2.75E-03	.002	9.96E 01	14
.4450	1.97E-03	2.62E-03	.002	9.96E 01	14
.4500	1.93E-03	2.59E-03	.002	9.96E 01	14
.4550	1.71E-03	2.30E-03	.001	9.97E 01	14
.4600	1.42E-03	2.19E-03	.001	9.97E 01	14
.4650	1.37E-03	2.07E-03	.001	9.97E 01	14
.4700	1.87E-03	2.53E-03	.002	9.97E 01	14
.4750	1.33E-03	2.34E-03	.001	9.98E 01	14
.4800	1.50E-03	2.29E-03	.001	9.97E 01	14
.4850	1.69E-03	2.34E-03	.001	9.97E 01	14
.4900	1.69E-03	2.28E-03	.001	9.97E 01	14
.4950	1.84E-03	2.42E-03	.001	9.97E 01	14
.5000	1.83E-03	2.36E-03	.001	9.97E 01	14
.5050	1.52E-03	2.41E-03	.001	9.97E 01	14
.5100	1.63E-03	2.16E-03	.001	9.97E 01	14
.5150	1.47E-03	2.33E-03	.001	9.97E 01	14
.5200	1.44E-03	2.25E-03	.001	9.97E 01	14
.5250	1.21E-03	2.19E-03	.001	9.98E 01	14
.5300	1.34E-03	2.40E-03	.001	9.98E 01	14
.5350	1.48E-03	2.36E-03	.001	9.97E 01	14
.5400	1.76E-03	2.70E-03	.001	9.97E 01	14
.5450	1.30E-03	2.23E-03	.001	9.98E 01	14
.5500	1.68E-03	2.45E-03	.001	9.97E 01	14
.5550	2.20E-03	2.63E-03	.002	9.96E 01	14
.5600	1.57E-03	2.47E-03	.001	9.97E 01	14
.5650	1.97E-03	2.61E-03	.002	9.96E 01	14
.5700	1.74E-03	2.12E-03	.001	9.97E 01	14
.5750	1.98E-03	2.14E-03	.002	9.96E 01	14
.5800	1.49E-03	1.81E-03	.001	9.97E 01	14
.5850	1.89E-03	1.92E-03	.002	9.97E 01	14
.5900	3.05E-03	2.48E-03	.002	9.94E 01	14
.5950	7.22E-03	1.41E-02	.006	9.87E 01	14
.6000	4.31E-03	2.69E-03	.003	9.92E 01	14
.6050	4.60E-03	2.66E-03	.004	9.92E 01	14
.6100	4.23E-03	1.83E-03	.003	9.92E 01	12
.6150	3.28E-03	2.76E-03	.003	9.94E 01	14
.6200	3.86E-03	2.16E-03	.003	9.93E 01	14
.6250	3.66E-03	2.16E-03	.003	9.93E 01	14

TABLE A-5. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
.6300	3.89E-03	2.22E-03	.003	9.93E 01	14
.6350	3.64E-03	1.98E-03	.003	9.93E 01	14
.6400	3.82E-03	1.91E-03	.003	9.93E 01	14
.6450	4.10E-03	2.00E-03	.003	9.92E 01	14
.6500	4.19E-03	2.13E-03	.003	9.92E 01	14
.6550	7.85E-03	1.40E-02	.006	9.86E 01	14
.6600	4.87E-03	1.88E-03	.004	9.91E 01	14
.6650	5.43E-03	2.11E-03	.004	9.90E 01	14
.6700	5.25E-03	2.10E-03	.004	9.90E 01	14
.6750	5.33E-03	2.01E-03	.004	9.90E 01	14
.6800	5.61E-03	2.05E-03	.005	9.90E 01	14
.6850	5.98E-03	2.05E-03	.005	9.89E 01	14
.6900	6.39E-03	2.07E-03	.005	9.88E 01	14
.6950	6.43E-03	1.93E-03	.005	9.88E 01	14
.7000	6.89E-03	1.85E-03	.006	9.87E 01	14
.7050	7.62E-03	1.68E-03	.006	9.86E 01	14
.7100	8.73E-03	1.79E-03	.007	9.84E 01	14
.7150	1.02E-02	1.73E-03	.008	9.81E 01	14
.7200	1.27E-02	1.64E-03	.010	9.77E 01	14
.7250	1.56E-02	1.64E-03	.013	9.72E 01	14
.7300	2.01E-02	1.06E-03	.016	9.64E 01	14
.7350	2.56E-02	1.28E-03	.021	9.54E 01	14
.7400	2.82E-02	1.87E-03	.023	9.49E 01	14
.7450	2.85E-02	1.98E-03	.023	9.49E 01	14
.7500	2.81E-02	2.08E-03	.023	9.49E 01	14
.7550	2.77E-02	1.81E-03	.022	9.50E 01	14
.7600	2.75E-02	1.99E-03	.022	9.50E 01	14
.7650	2.72E-02	2.11E-03	.022	9.51E 01	14
.7700	2.66E-02	1.88E-03	.021	9.52E 01	14
.7750	2.62E-02	2.38E-03	.021	9.53E 01	14
.7800	2.52E-02	1.84E-03	.020	9.54E 01	14
.7850	2.36E-02	1.85E-03	.019	9.57E 01	14
.7900	2.24E-02	1.71E-03	.018	9.59E 01	14
.7950	2.12E-02	1.47E-03	.017	9.62E 01	14
.8000	2.00E-02	2.49E-03	.016	9.64E 01	14
.8100	2.90E-02	3.63E-03	.023	9.48E 01	19
.8200	3.23E-02	2.93E-03	.026	9.42E 01	19
.8300	4.36E-02	2.76E-03	.035	9.23E 01	19
.8400	4.81E-02	2.86E-03	.039	9.15E 01	19
.8500	5.03E-02	2.94E-03	.040	9.11E 01	19
.8600	5.24E-02	2.85E-03	.042	9.08E 01	19
.8700	5.64E-02	2.28E-03	.045	9.01E 01	19
.8800	6.21E-02	2.24E-03	.050	8.91E 01	19
.8900	6.74E-02	2.31E-03	.054	8.83E 01	19

TABLE A-5. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
.9000	7.20E-02	3.54E-03	.058	8.75E 01	19
.9100	8.75E-02	1.62E-02	.070	8.51E 01	17
.9200	1.09E-01	2.08E-02	.088	8.17E 01	17
.9300	1.57E-01	1.74E-02	.126	7.48E 01	17
.9400	2.33E-01	2.18E-02	.187	6.50E 01	17
.9500	3.52E-01	2.27E-02	.283	5.21E 01	17
.9600	5.11E-01	2.24E-02	.411	3.88E 01	17
.9700	5.27E-01	1.76E-02	.424	3.77E 01	17
.9800	5.15E-01	1.75E-02	.414	3.86E 01	17
.9900	4.73E-01	1.82E-02	.380	4.17E 01	17
1.0000	4.13E-01	1.61E-02	.332	4.65E 01	17
1.0100	3.60E-01	2.30E-02	.289	5.14E 01	17
1.0200	2.96E-01	1.47E-02	.238	5.78E 01	17
1.0300	2.44E-01	1.49E-02	.196	6.37E 01	17
1.0400	2.04E-01	1.81E-02	.164	6.85E 01	17
1.0500	1.79E-01	1.97E-02	.144	7.18E 01	17
1.0600	1.63E-01	2.28E-02	.131	7.40E 01	17
1.0700	1.66E-01	2.20E-02	.134	7.35E 01	17
1.0800	1.74E-01	2.10E-02	.140	7.24E 01	17
1.0900	2.01E-01	1.94E-02	.161	6.89E 01	17
1.1000	2.26E-01	2.33E-02	.181	6.59E 01	17
1.1100	2.61E-01	2.73E-02	.209	6.17E 01	17
1.1200	3.05E-01	1.97E-02	.245	5.68E 01	17
1.1300	4.27E-01	1.15E-02	.343	4.54E 01	17
1.1400	7.57E-01	1.79E-02	.608	2.47E 01	17
1.1500	1.13E 00	2.68E-02	.910	1.23E 01	17
1.1600	1.25E 00	2.50E-02	1.004	9.91E 00	17
1.1700	1.26E 00	2.61E-02	1.015	9.66E 00	17
1.1800	1.27E 00	2.50E-02	1.023	9.48E 00	17
1.1900	1.28E 00	2.50E-02	1.032	9.29E 00	17
1.2000	1.27E 00	2.86E-02	1.017	9.63E 00	17
1.2100	1.22E 00	1.58E-02	.977	1.05E 01	13
1.2200	1.19E 00	2.74E-02	.959	1.10E 01	17
1.2300	1.15E 00	2.78E-02	.925	1.19E 01	17
1.2400	1.12E 00	2.41E-02	.897	1.27E 01	17
1.2500	1.08E 00	2.46E-02	.871	1.35E 01	17
1.2600	1.07E 00	1.89E-02	.863	1.37E 01	17
1.2700	1.09E 00	1.86E-02	.875	1.34E 01	17
1.2800	1.14E 00	1.91E-02	.912	1.22E 01	17
1.2900	1.23E 00	2.19E-02	.990	1.02E 01	17
1.3000	1.38E 00	2.93E-02	1.108	7.79E 00	17
1.3100	1.59E 00	8.03E-02	1.278	5.28E 00	17
1.3200	2.03E 00	1.73E-01	1.631	2.34E 00	16
1.3300	2.51E 00	2.13E-01	2.019	9.58E-01	16
1.3400	3.06E 00	2.61E-01	2.462	3.45E-01	16

TABLE A-5. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
1.3500	3.48E 00	4.71E-01	2.799	1.59E-01	17
1.3600	4.10E 00	4.35E-01	3.295	5.07E-02	17
1.3700	5.46E 00	9.78E-01	4.388	4.09E-03	17
1.3800	7.18E 00	8.83E-01	5.770	1.70E-04	12
1.3900	1.21E 01	1.66E 00	9.689	2.05E-08	12
1.4000	1.91E 01	1.98E 00	15.345	4.51E-14	12
1.4100	2.51E 01	2.61E 00	20.206	6.22E-19	11
1.4200	2.87E 01	3.05E 00	23.044	9.03E-22	11
1.4300	3.03E 01	3.72E 00	24.347	4.50E-23	10
1.4400	3.13E 01	3.21E 00	25.112	7.72E-24	11
1.4500	3.09E 01	3.88E 00	24.850	1.41E-23	11
1.4600	3.04E 01	3.09E 00	24.401	3.97E-23	11
1.4700	2.76E 01	3.24E 00	22.206	6.23E-21	11
1.4800	2.54E 01	2.56E 00	20.409	3.90E-19	11
1.4900	2.24E 01	2.28E 00	18.033	9.27E-17	11
1.5000	1.98E 01	1.93E 00	15.888	1.30E-14	11
1.5100	1.75E 01	1.60E 00	14.077	8.37E-13	12
1.5200	1.56E 01	1.41E 00	12.549	2.83E-11	12
1.5300	1.38E 01	1.25E 00	11.122	7.55E-10	12
1.5400	1.23E 01	1.13E 00	9.921	1.20E-08	12
1.5500	1.12E 01	1.32E 00	8.979	1.05E-07	12
1.5600	1.01E 01	1.16E 00	8.092	8.10E-07	12
1.5700	9.19E 00	1.09E 00	7.387	4.10E-06	12
1.5800	8.41E 00	8.71E-01	6.758	1.74E-05	12
1.5900	7.83E 00	8.41E-01	6.295	5.07E-05	12
1.6000	7.36E 00	8.25E-01	5.916	1.21E-04	12
1.6100	6.99E 00	8.65E-01	5.614	2.43E-04	12
1.6200	6.63E 00	7.95E-01	5.331	4.67E-04	12
1.6300	6.40E 00	8.46E-01	5.142	7.22E-04	12
1.6400	6.17E 00	7.90E-01	4.956	1.11E-03	12
1.6500	5.99E 00	7.55E-01	4.814	1.53E-03	12
1.6600	5.90E 00	7.98E-01	4.742	1.81E-03	12
1.6700	5.83E 00	7.91E-01	4.681	2.09E-03	12
1.6800	5.81E 00	7.88E-01	4.669	2.14E-03	12
1.6900	5.86E 00	8.04E-01	4.708	1.96E-03	12
1.7000	5.97E 00	8.15E-01	4.794	1.61E-03	14
1.7100	6.13E 00	8.33E-01	4.922	1.20E-03	14
1.7200	6.36E 00	8.23E-01	5.109	7.79E-04	14
1.7300	6.72E 00	8.90E-01	5.402	3.97E-04	14
1.7400	7.19E 00	9.16E-01	5.776	1.68E-04	14
1.7500	7.79E 00	9.67E-01	6.255	5.56E-05	14
1.7600	8.44E 00	9.81E-01	6.781	1.66E-05	14
1.7700	9.01E 00	9.96E-01	7.241	5.74E-06	14
1.7800	9.42E 00	9.67E-01	7.566	2.71E-06	14
1.7900	9.58E 00	9.56E-01	7.693	2.03E-06	14
1.8000	9.59E 00	9.55E-01	7.705	1.97E-06	15

TABLE A-5. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
1.8100	9.62E 00	9.43E-01	7.727	1.88E-06	15
1.8200	9.75E 00	1.02E 00	7.837	1.45E-06	15
1.8300	1.00E 01	1.04E 00	8.058	8.75E-07	15
1.8400	1.07E 01	1.10E 00	8.616	2.42E-07	15
1.8500	1.22E 01	1.35E 00	9.790	1.62E-08	15
1.8600	1.56E 01	1.50E 00	12.502	3.15E-11	15
1.8700	2.35E 01	2.69E 00	18.899	1.26E-17	15
1.8800	3.82E 01	7.88E 00	30.716	1.92E-29	15
1.8900	6.48E 01	1.50E 01	52.024	9.46E-51	11
1.9000	1.03E 02	1.84E 01	83.073	8.45E-82	8
1.9100	1.11E 02	3.25E 01	89.193	6.42E-88	7
1.9200	1.16E 02	3.27E 01	93.496	3.19E-92	7
1.9300	1.15E 02	3.29E 01	92.576	2.66E-91	7
1.9400	1.28E 02	3.21E 00	>100	----	5
1.9500	1.05E 02	2.12E 01	84.728	1.87E-83	7
1.9600	9.89E 01	1.52E 01	79.449	3.56E-78	8
1.9700	9.03E 01	1.27E 01	72.588	2.58E-71	8
1.9800	8.68E 01	1.89E 00	69.765	1.72E-68	6
1.9900	7.51E 01	5.25E 00	60.345	4.52E-59	8
2.0000	6.82E 01	3.84E 00	54.819	1.52E-53	8
2.0100	6.19E 01	3.00E 00	49.718	1.91E-48	8
2.0200	5.50E 01	3.42E 00	44.152	7.04E-43	9
2.0300	5.00E 01	3.08E 00	40.201	6.30E-39	9
2.0400	4.59E 01	2.72E 00	36.895	1.27E-35	10
2.0500	4.19E 01	2.32E 00	33.691	2.04E-32	10
2.0600	4.00E 01	3.15E 00	32.168	6.79E-31	12
2.0700	3.69E 01	3.75E 00	29.625	2.37E-28	12
2.0800	3.44E 01	3.10E 00	27.639	2.30E-26	12
2.0900	3.10E 01	3.04E 00	24.879	1.32E-23	16
2.1000	2.86E 01	2.42E 00	22.987	1.03E-21	16
2.1100	2.69E 01	2.17E 00	21.642	2.28E-20	16
2.1200	2.52E 01	2.05E 00	20.249	5.64E-19	16
2.1300	2.38E 01	2.01E 00	19.154	7.01E-18	16
2.1400	2.28E 01	1.89E 00	18.336	4.61E-17	16
2.1500	2.21E 01	1.70E 00	17.758	1.75E-16	16
2.1600	2.12E 01	1.75E 00	17.006	9.87E-16	16
2.1700	2.06E 01	1.73E 00	16.525	2.99E-15	16
2.1800	2.02E 01	1.64E 00	16.224	5.97E-15	16
2.1900	1.99E 01	1.63E 00	15.969	1.07E-14	16
2.2000	1.98E 01	1.57E 00	15.904	1.25E-14	16
2.2100	1.98E 01	1.63E 00	15.871	1.35E-14	16
2.2200	2.00E 01	1.62E 00	16.041	9.10E-15	16
2.2300	2.02E 01	1.71E 00	16.193	6.41E-15	16
2.2400	2.06E 01	1.73E 00	16.516	3.05E-15	16

TABLE A-5. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
2.2500	2.11E 01	1.70E 00	16.988	1.03E-15	16
2.2600	2.19E 01	1.76E 00	17.577	2.65E-16	16
2.2700	2.27E 01	1.37E 00	18.271	5.35E-17	16
2.2800	2.38E 01	1.89E 00	19.126	7.48E-18	16
2.2900	2.48E 01	2.21E 00	19.899	1.26E-18	16
2.3000	2.63E 01	2.28E 00	21.097	8.00E-20	16
2.3100	2.78E 01	2.48E 00	22.367	4.30E-21	16
2.3200	3.04E 01	2.40E 00	24.428	3.73E-23	16
2.3300	3.21E 01	3.03E 00	25.762	1.73E-24	14
2.3400	3.42E 01	4.50E 00	27.486	3.27E-26	14
2.3500	3.73E 01	3.99E 00	29.993	1.02E-28	14
2.3600	3.77E 01	4.19E 00	30.272	5.35E-29	13
2.3700	3.96E 01	3.77E 00	31.845	1.43E-30	12
2.3800	4.32E 01	5.27E 00	34.689	2.05E-33	12
2.3900	4.57E 01	3.90E 00	36.699	2.00E-35	10
2.4000	4.97E 01	4.11E 00	39.908	1.24E-38	10
2.4100	5.42E 01	2.91E 00	43.513	3.07E-42	8
2.4200	5.86E 01	2.57E 00	47.064	8.62E-46	8
2.4300	6.22E 01	4.36E 00	49.946	1.13E-48	8
2.4400	6.97E 01	1.84E 00	55.967	1.08E-54	8
2.4500	7.37E 01	2.15E 00	59.205	6.23E-58	8
2.4600	7.71E 01	6.77E 00	61.924	1.19E-60	8
2.4700	8.39E 01	6.40E 00	67.443	3.60E-66	8
2.4800	8.64E 01	1.19E 01	69.405	3.94E-68	8
2.4900	9.81E 01	2.16E 00	78.805	1.57E-77	6
2.5000	9.79E 01	7.94E 00	78.630	2.34E-77	7
2.5126	1.14E 02	1.09E 01	91.913	1.22E-90	15
2.5253	1.18E 02	1.13E 01	94.799	1.59E-93	15
2.5381	1.20E 02	1.19E 01	96.357	4.39E-95	15
2.5510	1.21E 02	1.18E 01	96.947	1.13E-95	15
2.5641	1.22E 02	1.20E 01	97.878	1.32E-96	15
2.5773	1.25E 02	1.20E 01	>100	----	15
2.5907	1.32E 02	1.28E 01	>100	----	15
2.6040	1.41E 02	1.34E 01	>100	----	15
2.6180	1.54E 02	1.63E 01	>100	----	15
2.6316	1.72E 02	1.84E 01	>100	----	15
2.6460	1.94E 02	2.11E 01	>100	----	15
2.6596	2.35E 02	2.76E 01	>100	----	15
2.6738	3.17E 02	3.56E 01	>100	----	15
2.6882	4.13E 02	4.99E 01	>100	----	15
2.7027	6.10E 02	1.35E 02	>100	----	15
2.7174	1.05E 03	2.28E 02	>100	----	15
2.7322	1.99E 03	4.54E 02	>100	----	12
2.7473	3.22E 03	7.72E 02	>100	----	10
2.7624	4.88E 03	2.03E 03	>100	----	15

TABLE A-5. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
2.7778	5.41E 03	2.31E 03	>100	----	11
2.7933	5.65E 03	2.13E 03	>100	----	11
2.8090	5.99E 03	1.79E 03	>100	----	11
2.8249	6.80E 03	1.13E 03	>100	----	9
2.8409	8.07E 03	1.35E 03	>100	----	9
2.8571	1.06E 04	4.19E 02	>100	----	9
2.8736	1.21E 04	6.41E 02	>100	----	9
2.8902	1.48E 04	1.01E 03	>100	----	9
2.9070	1.61E 04	1.49E 03	>100	----	11
2.9240	1.71E 04	1.66E 03	>100	----	11
2.9412	1.77E 04	2.17E 03	>100	----	13
2.9586	1.71E 04	2.58E 03	>100	----	13
2.9762	1.64E 04	2.55E 03	>100	----	13
2.9940	1.49E 04	2.09E 03	>100	----	15
3.0120	1.31E 04	2.27E 03	>100	----	13
3.0303	1.21E 04	2.72E 03	>100	----	13
3.0488	1.00E 04	2.38E 03	>100	----	11
3.0675	9.00E 03	1.99E 03	>100	----	11
3.0864	8.20E 03	2.16E 03	>100	----	11
3.1056	6.92E 03	2.08E 03	>100	----	11
3.1250	5.83E 03	1.64E 03	>100	----	11
3.1447	8.09E 03	2.06E 03	>100	----	12
3.1646	6.38E 03	1.04E 03	>100	----	12
3.1847	4.93E 03	4.87E 02	>100	----	10
3.2051	4.07E 03	3.66E 02	>100	----	10
3.2258	3.46E 03	4.75E 02	>100	----	12
3.2468	2.73E 03	3.52E 02	>100	----	12
3.2680	2.26E 03	2.03E 02	>100	----	10
3.2895	1.89E 03	1.59E 02	>100	----	12
3.3113	1.64E 03	1.74E 02	>100	----	15
3.3333	1.31E 03	1.04E 02	>100	----	15
3.3557	1.06E 03	1.07E 02	>100	----	15
3.3784	8.92E 02	6.69E 01	>100	----	15
3.4014	7.39E 02	6.64E 01	>100	----	15
3.4247	6.20E 02	6.01E 01	>100	----	15
3.4483	5.30E 02	5.02E 01	>100	----	15
3.4722	4.51E 02	3.90E 01	>100	----	15
3.4965	3.79E 02	3.06E 01	>100	----	15
3.5211	3.33E 02	5.01E 01	>100	----	15
3.5461	2.79E 02	2.56E 01	>100	----	15
3.5714	2.38E 02	1.96E 01	>100	----	15
3.5971	2.09E 02	1.85E 01	>100	----	15
3.6232	1.82E 02	1.58E 01	>100	----	15
3.6496	1.65E 02	1.40E 01	>100	----	15

TABLE A-5. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
3.6765	1.50E 02	1.31E 01	>100	----	15
3.7037	1.39E 02	1.28E 01	>100	----	15
3.7313	1.31E 02	1.18E 01	>100	----	15
3.7594	1.26E 02	1.16E 01	>100	----	15
3.7879	1.23E 02	1.08E 01	98.924	1.19E-97	15
3.8168	1.22E 02	1.03E 01	98.297	5.05E-97	15
3.8462	1.24E 02	1.20E 01	>100	----	15
3.8760	1.27E 02	1.21E 01	>100	----	15
3.9063	1.32E 02	1.29E 01	>100	----	15
3.9370	1.38E 02	1.33E 01	>100	----	15
3.9683	1.46E 02	1.44E 01	>100	----	15
4.0000	1.54E 02	1.50E 01	>100	----	15
4.0323	1.64E 02	1.59E 01	>100	----	15
4.0650	1.74E 02	1.59E 01	>100	----	15
4.0984	1.85E 02	1.66E 01	>100	----	15
4.1322	1.97E 02	1.77E 01	>100	----	15
4.1667	2.10E 02	1.91E 01	>100	----	15
4.2017	2.34E 02	2.58E 01	>100	----	15
4.2373	2.78E 02	2.78E 01	>100	----	15
4.2735	2.87E 02	2.73E 01	>100	----	15
4.3103	2.94E 02	2.73E 01	>100	----	14
4.3478	3.03E 02	2.51E 01	>100	----	15
4.3860	3.24E 02	2.81E 01	>100	----	15
4.4248	3.43E 02	2.78E 01	>100	----	15
4.4643	3.67E 02	3.12E 01	>100	----	15
4.5045	3.96E 02	3.24E 01	>100	----	15
4.5455	4.21E 02	3.37E 01	>100	----	15
4.5872	4.47E 02	4.20E 01	>100	----	15
4.6296	4.67E 02	4.29E 01	>100	----	15
4.6729	4.83E 02	5.22E 01	>100	----	15
4.7170	4.81E 02	4.74E 01	>100	----	15
4.7619	4.72E 02	4.26E 01	>100	----	15
4.8077	4.58E 02	3.72E 01	>100	----	15
4.8544	4.33E 02	3.45E 01	>100	----	15
4.9020	4.12E 02	3.09E 01	>100	----	15
4.9505	3.84E 02	2.94E 01	>100	----	15
5.0000	3.57E 02	2.77E 01	>100	----	15
5.0251	3.51E 02	4.60E 01	>100	----	15
5.0505	3.33E 02	2.98E 01	>100	----	15
5.0761	3.17E 02	2.56E 01	>100	----	15
5.1020	3.07E 02	2.30E 01	>100	----	15
5.1282	2.95E 02	2.35E 01	>100	----	15
5.1546	2.86E 02	2.42E 01	>100	----	15
5.1813	2.81E 02	2.29E 01	>100	----	15

TABLE A-5. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
5.2083	2.74E 02	2.27E 01	>100	----	15
5.2356	2.70E 02	2.26E 01	>100	----	15
5.2632	2.67E 02	2.19E 01	>100	----	15
5.2910	2.66E 02	2.24E 01	>100	----	15
5.3191	2.65E 02	2.24E 01	>100	----	15
5.3476	2.66E 02	2.21E 01	>100	----	15
5.3763	2.68E 02	2.29E 01	>100	----	15
5.4054	2.72E 02	2.34E 01	>100	----	15
5.4348	2.78E 02	2.35E 01	>100	----	15
5.4645	2.84E 02	2.41E 01	>100	----	15
5.4945	2.94E 02	2.48E 01	>100	----	15
5.5249	3.06E 02	2.57E 01	>100	----	15
5.5556	3.21E 02	2.78E 01	>100	----	15
5.5866	3.41E 02	2.87E 01	>100	----	15
5.6180	3.71E 02	3.60E 01	>100	----	15
5.6497	4.10E 02	4.25E 01	>100	----	15
5.6818	4.55E 02	5.01E 01	>100	----	15
5.7143	5.16E 02	5.86E 01	>100	----	15
5.7471	5.99E 02	5.90E 01	>100	----	15
5.7803	7.14E 02	8.39E 01	>100	----	15
5.8140	8.30E 02	1.20E 02	>100	----	12
5.8480	1.05E 03	9.77E 01	>100	----	15
5.8824	1.57E 03	1.82E 02	>100	----	15
5.9172	1.79E 03	8.29E 01	>100	----	12
5.9524	2.45E 03	5.79E 01	>100	----	12
5.9880	2.57E 03	4.18E 02	>100	----	12
6.0606	2.85E 03	6.95E 02	>100	----	11
6.0976	2.80E 03	6.64E 02	>100	----	11
6.1350	2.87E 03	5.81E 02	>100	----	12
6.1728	2.43E 03	3.63E 02	>100	----	12
6.2112	2.10E 03	2.44E 02	>100	----	15
6.2500	1.73E 03	2.77E 02	>100	----	15
6.2893	1.35E 03	1.03E 02	>100	----	15
6.3291	1.12E 03	1.16E 02	>100	----	15
6.3694	9.96E 02	8.63E 01	>100	----	15
6.4103	9.08E 02	9.52E 01	>100	----	15
6.4516	8.50E 02	8.12E 01	>100	----	15
6.4935	7.95E 02	7.40E 01	>100	----	14
6.5359	7.57E 02	7.51E 01	>100	----	15
6.5789	7.36E 02	6.85E 01	>100	----	15
6.6225	7.23E 02	6.37E 01	>100	----	15
6.6667	7.18E 02	6.34E 01	>100	----	15
6.7114	7.02E 02	6.05E 01	>100	----	15
6.7568	6.94E 02	6.16E 01	>100	----	15
6.8027	6.79E 02	5.74E 01	>100	----	15
6.8493	6.70E 02	5.52E 01	>100	----	15

TABLE A-5. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
6.8966	6.65E 02	5.53E 01	>100	----	15
6.9444	6.60E 02	5.53E 01	>100	----	15
6.9930	6.57E 02	5.55E 01	>100	----	15
7.0423	6.50E 02	5.39E 01	>100	----	15
7.0922	6.46E 02	5.33E 01	>100	----	15
7.1429	6.41E 02	5.29E 01	>100	----	15
7.1942	6.38E 02	5.29E 01	>100	----	15
7.2464	6.36E 02	5.22E 01	>100	----	15
7.3529	6.31E 02	5.31E 01	>100	----	15
7.4074	6.32E 02	5.37E 01	>100	----	15
7.4627	6.30E 02	5.33E 01	>100	----	15
7.5188	6.28E 02	5.31E 01	>100	----	15
7.5758	6.25E 02	5.17E 01	>100	----	15
7.6336	6.20E 02	5.00E 01	>100	----	15
7.6923	6.20E 02	5.15E 01	>100	----	15
7.7519	6.18E 02	5.19E 01	>100	----	15
7.8125	6.17E 02	5.24E 01	>100	----	15
7.9365	6.13E 02	5.34E 01	>100	----	15
8.0000	6.09E 02	5.23E 01	>100	----	15
8.0645	6.08E 02	5.00E 01	>100	----	15
8.1301	6.04E 02	5.14E 01	>100	----	15
8.1967	6.01E 02	5.04E 01	>100	----	15
8.2645	5.96E 02	4.93E 01	>100	----	15
8.3333	5.92E 02	4.92E 01	>100	----	15
8.4034	5.97E 02	4.95E 01	>100	----	15
8.4746	5.94E 02	4.84E 01	>100	----	15
8.5470	5.92E 02	4.85E 01	>100	----	15
8.6207	5.87E 02	4.39E 01	>100	----	15
8.7719	5.79E 02	4.62E 01	>100	----	15
8.9286	5.85E 02	5.66E 01	>100	----	15
9.0090	5.67E 02	4.96E 01	>100	----	15
9.0909	5.69E 02	4.63E 01	>100	----	12
9.1743	5.73E 02	4.97E 01	>100	----	12
9.2593	5.74E 02	5.16E 01	>100	----	12
9.3458	5.76E 02	5.29E 01	>100	----	12
9.4340	5.79E 02	5.37E 01	>100	----	11
9.5238	5.82E 02	5.03E 01	>100	----	11
9.6154	6.04E 02	5.84E 01	>100	----	10
9.7087	6.31E 02	5.39E 01	>100	----	10
9.8039	6.37E 02	5.76E 01	>100	----	8
9.9010	6.41E 02	5.37E 01	>100	----	7
10.0000	6.42E 02	5.89E 01	>100	----	6
10.1010	6.69E 02	5.93E 01	>100	----	6
10.2041	6 82E 02	5.59E 01	>100	----	4
10.3093	7.27E 02	6.47E 01	>100	----	4

TABLE A-5. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
10.4167	7.73E 02	6.89E 01	>100	----	4
10.5263	8.46E 02	7.67E 01	>100	----	4
10.6383	9.24E 02	7.83E 01	>100	----	4
10.7527	9.75E 02	8.95E 01	>100	----	4
10.8696	9.90E 02	9.03E 01	>100	----	4
10.9890	1.06E 03	9.20E 01	>100	----	4
11.1111	1.20E 03	1.02E 02	>100	----	4
11.2360	1.35E 03	1.13E 02	>100	----	4
11.3636	1.49E 03	1.13E 02	>100	----	4
11.4943	1.50E 03	1.23E 02	>100	----	4
11.6279	1.61E 03	1.37E 02	>100	----	4
11.7647	1.85E 03	1.43E 02	>100	----	4
11.9048	1.91E 03	1.60E 02	>100	----	4
12.0482	2.02E 03	1.85E 02	>100	----	4
12.1951	2.31E 03	2.08E 02	>100	----	3
12.3457	>2.50E 03	-------	>100	----	--
to					
15.0000	"	"	>100	"	"

TABLE A-6. PHYSIOLOGICAL SALINE

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
.2000	4.19E 00	2.65E 00	3.366	4.30E-02	15
.2050	1.12E 00	5.04E-01	.896	1.27E 01	17
.2100	2.52E-01	1.09E-01	.202	6.27E 01	21
.2150	1.67E-01	8.43E-02	.134	7.35E 01	21
.2200	1.40E-01	7.15E-02	.112	7.72E 01	21
.2250	1.16E-01	5.65E-02	.093	8.07E 01	21
.2300	9.95E-02	5.21E-02	.080	8.32E 01	21
.2350	7.56E-02	4.25E-02	.061	8.69E 01	21
.2400	6.81E-02	3.77E-02	.055	8.82E 01	21
.2450	6.69E-02	3.89E-02	.054	8.84E 01	21
.2500	6.36E-02	3.47E-02	.051	8.89E 01	21
.2550	6.26E-02	3.67E-02	.050	8.91E 01	21
.2600	6.38E-02	3.42E-02	.051	8.89E 01	21
.2650	6.84E-02	3.33E-02	.055	8.81E 01	21
.2700	7.49E-02	3.54E-02	.060	8.71E 01	21
.2750	7.77E-02	3.50E-02	.062	8.66E 01	21
.2800	7.79E-02	3.41E-02	.063	8.66E 01	21
.2850	7.51E-02	3.49E-02	.060	8.70E 01	21
.2900	7.01E-02	3.21E-02	.056	8.78E 01	21
.2950	6.26E-02	3.10E-02	.050	8.91E 01	21
.3000	5.48E-02	2.66E-02	.044	9.04E 01	21
.3050	4.41E-02	2.63E-02	.035	9.22E 01	21
.3100	3.23E-02	2.62E-02	.026	9.42E 01	21
.3150	2.49E-02	2.60E-02	.020	9.55E 01	21
.3200	2.11E-02	2.58E-02	.017	9.62E 01	21
.3250	2.15E-02	2.68E-02	.017	9.61E 01	20
.3300	2.15E-02	2.87E-02	.017	9.61E 01	21
.3350	1.91E-02	2.65E-02	.015	9.65E 01	21
.3400	1.16E-02	1.44E-02	.009	9.79E 01	20
.3450	6.95E-03	8.89E-03	.006	9.87E 01	21
.3500	4.01E-03	4.37E-03	.003	9.93E 01	20
.3550	4.00E-03	3.90E-03	.003	9.93E 01	20
.3600	2.72E-03	3.00E-03	.002	9.95E 01	20
.3650	3.14E-03	3.14E-03	.003	9.94E 01	19
.3700	2.36E-03	2.63E-03	.002	9.96E 01	20
.3750	2.89E-03	3.28E-03	.002	9.95E 01	20
.3800	2.60E-03	2.79E-03	.002	9.95E 01	21
.3850	2.84E-03	3.01E-03	.002	9.95E 01	20
.3900	2.50E-03	2.96E-03	.002	9.95E 01	20
.3950	2.83E-03	2.67E-03	.002	9.95E 01	19
.4000	2.60E-03	2.90E-03	.002	9.95E 01	20
.4050	2.67E-03	2.80E-03	.002	9.95E 01	20
.4100	2.56E-03	2.74E-03	.002	9.95E 01	20

TABLE A-6. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
.4150	2.65E-03	2.79E-03	.002	9.95E 01	20
.4200	2.44E-03	2.62E-03	.002	9.95E 01	20
.4250	2.49E-03	2.41E-03	.002	9.95E 01	20
.4300	2.19E-03	2.19E-03	.002	9.96E 01	20
.4350	2.43E-03	2.43E-03	.002	9.96E 01	20
.4400	2.58E-03	2.17E-03	.002	9.95E 01	18
.4450	2.51E-03	2.06E-03	.002	9.95E 01	17
.4500	2.00E-03	2.08E-03	.002	9.96E 01	21
.4550	2.11E-03	1.72E-03	.002	9.96E 01	18
.4600	1.90E-03	1.65E-03	.002	9.96E 01	18
.4650	1.33E-03	1.64E-03	.001	9.98E 01	19
.4700	2.24E-03	1.67E-03	.002	9.96E 01	18
.4750	1.76E-03	1.78E-03	.001	9.97E 01	19
.4800	1.64E-03	1.48E-03	.001	9.97E 01	19
.4850	1.82E-03	1.81E-03	.001	9.97E 01	19
.4900	1.96E-03	1.44E-03	.002	9.96E 01	18
.4950	2.09E-03	1.64E-03	.002	9.96E 01	19
.5000	2.02E-03	1.72E-03	.002	9.96E 01	18
.5050	1.87E-03	1.70E-03	.002	9.97E 01	20
.5100	1.93E-03	1.75E-03	.002	9.96E 01	20
.5150	2.24E-03	1.71E-03	.002	9.96E 01	20
.5200	2.06E-03	1.52E-03	.002	9.96E 01	20
.5250	1.87E-03	1.65E-03	.002	9.97E 01	20
.5300	2.12E-03	1.78E-03	.002	9.96E 01	21
.5350	2.31E-03	1.62E-03	.002	9.96E 01	20
.5400	2.56E-03	2.23E-03	.002	9.95E 01	20
.5450	1.98E-03	1.53E-03	.002	9.96E 01	20
.5500	2.27E-03	2.07E-03	.002	9.96E 01	19
.5550	2.67E-03	2.04E-03	.002	9.95E 01	19
.5600	2.49E-03	1.83E-03	.002	9.95E 01	21
.5650	2.77E-03	2.13E-03	.002	9.95E 01	21
.5700	2.38E-03	1.69E-03	.002	9.96E 01	21
.5750	2.48E-03	1.54E-03	.002	9.95E 01	21
.5800	2.11E-03	1.38E-03	.002	9.96E 01	21
.5850	2.58E-03	1.30E-03	.002	9.95E 01	21
.5900	2.83E-03	1.42E-03	.002	9.95E 01	21
.5950	3.59E-03	2.02E-03	.003	9.93E 01	21
.6000	4.52E-03	1.86E-03	.004	9.92E 01	20
.6050	4.51E-03	1.61E-03	.004	9.92E 01	20
.6100	4.44E-03	1.46E-03	.004	9.92E 01	20
.6150	4.79E-03	1.67E-03	.004	9.91E 01	20
.6200	4.60E-03	1.38E-03	.004	9.92E 01	20
.6250	4.57E-03	1.26E-03	.004	9.92E 01	20

TABLE A-6. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
.6300	4.78E-03	1.64E-03	.004	9.91E 01	21
.6350	4.60E-03	1.30E-03	.004	9.92E 01	21
.6400	4.74E-03	1.45E-03	.004	9.91E 01	21
.6450	4.88E-03	1.40E-03	.004	9.91E 01	21
.6500	4.88E-03	1.60E-03	.004	9.91E 01	18
.6550	5.19E-03	1.32E-03	.004	9.90E 01	21
.6600	5.43E-03	1.38E-03	.004	9.90E 01	21
.6650	5.80E-03	1.52E-03	.005	9.89E 01	21
.6700	6.05E-03	1.57E-03	.005	9.89E 01	21
.6750	5.99E-03	1.37E-03	.005	9.89E 01	21
.6800	6.23E-03	1.55E-03	.005	9.89E 01	21
.6850	6.33E-03	1.13E-03	.005	9.88E 01	21
.6900	6.83E-03	1.38E-03	.005	9.87E 01	21
.6950	7.07E-03	1.26E-03	.006	9.87E 01	21
.7000	7.63E-03	1.08E-03	.006	9.86E 01	21
.7050	8.45E-03	1.34E-03	.007	9.84E 01	21
.7100	9.82E-03	1.64E-03	.008	9.82E 01	21
.7150	1.17E-02	1.45E-03	.009	9.79E 01	21
.7200	1.43E-02	1.18E-03	.011	9.74E 01	21
.7250	1.72E-02	1.06E-03	.014	9.69E 01	21
.7300	2.09E-02	1.42E-03	.017	9.62E 01	21
.7350	2.66E-02	1.33E-03	.021	9.52E 01	21
.7400	2.95E-02	1.45E-03	.024	9.47E 01	21
.7450	3.00E-02	1.53E-03	.024	9.46E 01	21
.7500	2.98E-02	1.54E-03	.024	9.46E 01	21
.7550	2.96E-02	1.42E-03	.024	9.47E 01	21
.7600	2.95E-02	1.40E-03	.024	9.47E 01	21
.7650	2.93E-02	1.27E-03	.024	9.47E 01	21
.7700	2.88E-02	1.32E-03	.023	9.48E 01	21
.7750	2.84E-02	1.60E-03	.023	9.49E 01	21
.7800	2.73E-02	1.34E-03	.022	9.51E 01	21
.7850	2.60E-02	1.47E-03	.021	9.53E 01	21
.7900	2.49E-02	1.44E-03	.020	9.55E 01	21
.7950	2.32E-02	2.04E-03	.019	9.58E 01	21
.8000	2.31E-02	1.55E-03	.019	9.58E 01	21
.8100	1.95E-02	1.16E-02	.016	9.65E 01	14
.8200	2.27E-02	1.25E-02	.018	9.59E 01	14
.8300	3.27E-02	1.38E-02	.026	9.41E 01	14
.8400	3.80E-02	1.32E-02	.031	9.32E 01	14
.8500	4.08E-02	1.24E-02	.033	9.27E 01	14
.8600	4.42E-02	1.19E-02	.035	9.22E 01	14
.8700	4.74E-02	1.30E-02	.038	9.16E 01	14
.8800	5.35E-02	1.31E-02	.043	9.06E 01	14
.8900	5.83E-02	1.30E-02	.047	8.98E 01	14

TABLE A-6. (continued)

LAMBDA(μM)	ALPHA	SD	OD	%T	NO.
.9000	6.42E-02	1.28E-02	.052	8.88E 01	14
.9100	7.32E-02	1.40E-02	.059	8.73E 01	14
.9200	9.27E-02	1.32E-02	.074	8.42E 01	14
.9300	1.36E-01	1.38E-02	.109	7.78E 01	14
.9400	2.09E-01	1.48E-02	.168	6.79E 01	14
.9500	3.36E-01	1.73E-02	.270	5.37E 01	14
.9600	4.70E-01	1.65E-02	.378	4.19E 01	14
.9700	4.88E-01	1.46E-02	.392	4.06E 01	14
.9800	4.78E-01	1.49E-02	.384	4.13E 01	14
.9900	4.43E-01	2.14E-02	.356	4.40E 01	14
1.0000	3.88E-01	1.31E-02	.311	4.88E 01	14
1.0100	3.31E-01	1.68E-02	.266	5.42E 01	14
1.0200	2.77E-01	1.44E-02	.222	5.99E 01	14
1.0300	2.26E-01	1.45E-02	.182	6.58E 01	14
1.0400	1.87E-01	1.51E-02	.150	7.08E 01	14
1.0500	1.55E-01	1.68E-02	.125	7.51E 01	14
1.0600	1.47E-01	1.58E-02	.118	7.63E 01	14
1.0700	1.46E-01	1.79E-02	.118	7.63E 01	14
1.0800	1.55E-01	1.75E-02	.125	7.51E 01	14
1.0900	1.76E-01	1.76E-02	.141	7.23E 01	14
1.1000	2.07E-01	2.90E-02	.167	6.82E 01	14
1.1100	3.01E-01	8.72E-02	.242	5.73E 01	12
1.1200	3.52E-01	9.25E-02	.283	5.21E 01	12
1.1300	4.65E-01	7.65E-02	.374	4.23E 01	12
1.1400	7.99E-01	8.01E-02	.642	2.28E 01	12
1.1500	1.14E 00	6.24E-02	.915	1.22E 01	11
1.1600	1.29E 00	7.11E-02	1.039	9.15E 00	8
1.1700	1.31E 00	6.83E-02	1.055	8.82E 00	8
1.1800	1.33E 00	7.52E-02	1.067	8.57E 00	8
1.1900	1.35E 00	6.97E-02	1.081	8.29E 00	8
1.2000	1.33E 00	6.79E-02	1.067	8.58E 00	8
1.2100	1.30E 00	7.19E-02	1.042	9.08E 00	8
1.2200	1.24E 00	8.03E-02	.994	1.01E 01	10
1.2300	1.19E 00	7.01E-02	.956	1.11E 01	12
1.2400	1.15E 00	6.00E-02	.921	1.20E 01	12
1.2500	1.12E 00	6.99E-02	.899	1.26E 01	12
1.2600	1.11E 00	7.49E-02	.889	1.29E 01	12
1.2700	1.12E 00	7.10E-02	.899	1.26E 01	12
1.2800	1.17E 00	8.52E-02	.938	1.15E 01	12
1.2900	1.28E 00	8.05E-02	1.031	9.32E 00	8
1.3000	1.43E 00	8.26E-02	1.153	7.04E 00	8
1.3100	1.66E 00	9.28E-02	1.334	4.63E 00	8
1.3200	1.97E 00	8.49E-02	1.582	2.62E 00	8
1.3300	2.42E 00	9.38E-02	1.945	1.14E 00	8
1.3400	2.92E 00	9.94E-02	2.348	4.49E-01	8

TABLE A-6. (continued)

LAMBDA (UM)	ALPHA	SD	OD	%T	NO.
1.3500	3.38E 00	7.82E-02	2.712	1.94E-01	8
1.3600	3.50E 00	8.85E-01	2.813	1.54E-01	9
1.3700	4.56E 00	1.09E-01	3.667	2.16E-02	8
1.3800	6.41E 00	2.19E-01	5.146	7.14E-04	8
1.3900	1.07E 01	4.34E-01	8.558	2.76E-07	8
1.4000	1.57E 01	2.47E 00	12.643	2.27E-11	8
1.4100	2.36E 01	4.81E-01	18.940	1.15E-17	6
1.4200	2.80E 01	8.05E-01	22.486	3.27E-21	6
1.4300	3.01E 01	1.32E 00	24.184	6.55E-23	6
1.4400	3.14E 01	1.33E 00	25.224	5.97E-24	6
1.4500	3.14E 01	1.40E 00	25.259	5.51E-24	6
1.4600	3.10E 01	1.14E 00	24.937	1.16E-23	6
1.4700	2.90E 01	9.95E-01	23.286	5.18E-22	6
1.4800	2.63E 01	6.77E-01	21.115	7.67E-20	6
1.4900	2.34E 01	3.52E-01	18.768	1.71E-17	6
1.5000	2.05E 01	2.83E-01	16.488	3.25E-15	6
1.5100	1.81E 01	1.96E-01	14.557	2.78E-13	6
1.5200	1.53E 01	1.89E 00	12.271	5.36E-11	7
1.5300	1.34E 01	1.39E 00	10.748	1.79E-09	8
1.5400	1.20E 01	8.01E-01	9.621	2.39E-08	8
1.5500	1.08E 01	5.35E-01	8.691	2.04E-07	8
1.5600	9.82E 00	3.54E-01	7.893	1.28E-06	8
1.5700	8.94E 00	2.80E-01	7.182	6.58E-06	8
1.5800	8.26E 00	2.21E-01	6.633	2.33E-05	8
1.5900	7.68E 00	1.61E-01	6.171	6.75E-05	8
1.6000	7.20E 00	1.17E-01	5.782	1.65E-04	8
1.6100	6.80E 00	1.16E-01	5.466	3.42E-04	8
1.6200	6.47E 00	1.05E-01	5.198	6.33E-04	8
1.6300	6.21E 00	9.01E-02	4.990	1.02E-03	8
1.6400	6.00E 00	8.95E-02	4.818	1.52E-03	8
1.6500	5.82E 00	9.25E-02	4.672	2.13E-03	8
1.6600	5.69E 00	9.70E-02	4.575	2.66E-03	8
1.6700	5.62E 00	1.01E-01	4.518	3.03E-03	8
1.6800	5.59E 00	1.01E-01	4.489	3.24E-03	8
1.6900	5.63E 00	1.20E-01	4.522	3.01E-03	8
1.7000	5.69E 00	1.12E-01	4.571	2.69E-03	8
1.7100	5.84E 00	1.14E-01	4.694	2.02E-03	8
1.7200	6.05E 00	1.23E-01	4.859	1.38E-03	8
1.7300	6.37E 00	1.19E-01	5.115	7.67E-04	8
1.7400	6.80E 00	1.54E-01	5.465	3.43E-04	8
1.7500	7.36E 00	1.48E-01	5.910	1.23E-04	8
1.7600	7.93E 00	1.87E-01	6.375	4.22E-05	8
1.7700	8.50E 00	2.45E-01	6.828	1.49E-05	8
1.7800	8.92E 00	2.51E-01	7.166	6.82E-06	8

TABLE A-6. (continued)

LAMBDA (UM)	ALPHA	SD	OD	%T	NO.
1.7900	9.11E 00	2.56E-01	7.317	4.82E-06	8
1.8000	8.66E 00	2.06E 00	6.959	1.10E-05	12
1.8100	9.25E 00	3.87E-01	7.436	3.67E-06	12
1.8200	9.33E 00	3.96E-01	7.495	3.20E-06	12
1.8300	9.56E 00	4.10E-01	7.682	2.08E-06	12
1.8400	1.02E 01	5.04E-01	8.160	6.92E-07	12
1.8500	1.14E 01	8.27E-01	9.198	6.34E-08	12
1.8600	1.42E 01	1.59E 00	11.402	3.96E-10	12
1.8700	2.20E 01	2.10E 00	17.693	2.03E-16	10
1.8800	3.76E 01	4.42E 00	30.189	6.47E-29	10
1.8900	6.97E 01	6.62E 00	55.996	1.01E-54	8
1.9000	1.08E 02	6.96E 00	86.566	2.71E-85	6
1.9100	1.27E 02	9.84E 00	>100	----	6
1.9200	1.41E 02	1.83E 01	>100	----	6
1.9300	1.38E 02	1.93E 01	>100	----	6
1.9400	1.29E 02	1.07E 01	>100	----	6
1.9500	1.19E 02	4.71E 00	95.780	1.66E-94	6
1.9600	1.08E 02	1.65E 00	87.086	8.20E-86	6
1.9700	9.81E 01	1.64E 00	78.820	1.52E-77	6
1.9800	8.80E 01	1.83E 00	70.730	1.86E-69	6
1.9900	7.79E 01	3.05E 00	62.586	2.60E-61	7
2.0000	7.02E 01	2.70E 00	56.386	4.11E-55	7
2.0100	6.35E 01	1.73E 00	51.048	8.95E-50	7
2.0200	5.75E 01	1.35E 00	46.205	6.23E-45	7
2.0300	5.25E 01	1.34E 00	42.175	6.68E-41	8
2.0400	4.81E 01	1.43E 00	38.659	2.19E-37	8
2.0500	4.39E 01	1.13E 00	35.257	5.53E-34	8
2.0600	4.01E 01	9.55E-01	32.197	6.35E-31	8
2.0700	3.63E 01	1.41E 00	29.188	6.49E-28	9
2.0800	3.33E 01	1.20E 00	26.759	1.74E-25	10
2.0900	3.09E 01	7.69E-01	24.855	1.40E-23	10
2.1000	2.86E 01	7.00E-01	23.018	9.60E-22	10
2.1100	2.67E 01	6.81E-01	21.439	3.64E-20	10
2.1200	2.52E 01	5.51E-01	20.210	6.17E-19	10
2.1300	2.38E 01	5.50E-01	19.134	7.34E-18	10
2.1400	2.26E 01	5.33E-01	18.183	6.56E-17	10
2.1500	2.17E 01	4.96E-01	17.404	3.94E-16	10
2.1600	2.09E 01	5.13E-01	16.811	1.55E-15	10
2.1700	2.03E 01	4.58E-01	16.307	4.94E-15	10
2.1800	1.99E 01	5.41E-01	15.987	1.03E-14	10
2.1900	1.96E 01	5.06E-01	15.727	1.87E-14	10
2.2000	1.95E 01	5.03E-01	15.644	2.27E-14	10
2.2100	1.94E 01	5.14E-01	15.611	2.45E-14	10
2.2200	1.95E 01	5.27E-01	15.690	2.04E-14	10
2.2300	1.98E 01	5.58E-01	15.900	1.26E-14	10

TABLE A-6. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
2.2400	2.02E 01	5.46E-01	16.235	5.82E-15	10
2.2500	2.08E 01	5.88E-01	16.679	2.09E-15	10
2.2600	2.14E 01	6.52E-01	17.202	6.28E-16	10
2.2700	2.23E 01	6.60E-01	17.926	1.19E-16	10
2.2800	2.33E 01	7.34E-01	18.727	1.87E-17	10
2.2900	2.45E 01	7.77E-01	19.682	2.08E-18	10
2.3000	2.60E 01	7.94E-01	20.851	1.41E-19	10
2.3100	2.76E 01	9.23E-01	22.149	7.09E-21	10
2.3200	2.93E 01	1.04E 00	23.515	3.06E-22	10
2.3300	3.12E 01	1.14E 00	25.089	8.15E-24	10
2.3400	3.30E 01	1.78E 00	26.486	3.27E-25	10
2.3500	3.61E 01	1.69E 00	29.041	9.09E-28	10
2.3600	3.83E 01	1.83E 00	30.785	1.64E-29	10
2.3700	4.07E 01	2.36E 00	32.716	1.92E-31	9
2.3800	4.40E 01	3.79E 00	35.385	4.12E-34	9
2.3900	4.80E 01	1.73E 00	38.531	2.95E-37	8
2.4000	5.12E 01	1.74E 00	41.153	7.03E-40	8
2.4100	5.45E 01	1.77E 00	43.790	1.62E-42	7
2.4200	5.76E 01	2.53E 00	46.248	5.65E-45	7
2.4300	6.18E 01	2.74E 00	49.684	2.07E-48	7
2.4400	6.65E 01	2.89E 00	53.453	3.52E-52	7
2.4500	7.25E 01	3.26E 00	58.218	6.06E-57	7
2.4600	7.76E 01	3.21E 00	62.362	4.34E-61	7
2.4700	8.37E 01	3.51E 00	67.272	5.34E-66	6
2.4800	8.94E 01	3.13E 00	71.818	1.52E-70	6
2.4900	9.50E 01	2.14E 00	76.302	4.99E-75	6
2.5000	9.90E 01	9.17E-01	79.533	2.93E-78	6
2.5126	1.08E 02	7.95E 00	87.089	8.14E-86	13
2.5253	1.12E 02	9.16E 00	89.828	1.49E-88	13
2.5381	1.11E 02	1.20E 01	89.034	9.25E-88	13
2.5510	1.16E 02	9.56E 00	92.871	1.35E-91	13
2.5641	1.17E 02	9.26E 00	93.853	1.40E-92	13
2.5773	1.19E 02	7.77E 00	95.500	3.17E-94	13
2.5907	1.24E 02	8.40E 00	>100	----	13
2.6042	1.31E 02	8.66E 00	>100	----	13
2.6178	1.40E 02	1.00E 01	>100	----	13
2.6316	1.53E 02	1.27E 01	>100	----	13
2.6455	1.69E 02	1.36E 01	>100	----	13
2.6596	1.99E 02	2.03E 01	>100	----	13
2.6738	2.62E 02	3.72E 01	>100	----	13
2.6882	3.22E 02	6.82E 01	>100	----	13
2.7027	4.23E 02	5.27E 01	>100	----	11
2.7174	7.40E 02	8.02E 01	>100	----	11
2.7320	1.87E 03	2.74E 02	>100	----	4
2.7470	2.75E 03	3.64E 02	>100	----	4
2.7620	3.30E 03	3.75E 02	>100	----	4

TABLE A-6. (continued)

LAMBDA(μM)	ALPHA	SD	OD	%T	NO.
2.7780	3.77E 03	3.84E 02	>100	----	4
2.7930	4.25E 03	3.80E 02	>100	----	4
2.8090	4.71E 03	4.30E 02	>100	----	4
2.8250	5.31E 03	3.51E 02	>100	----	4
2.8410	5.63E 03	5.32E 02	>100	----	4
2.8570	6.07E 03	5.21E 02	>100	----	4
2.8740	6.57E 03	4.40E 02	>100	----	4
2.8900	6.84E 03	4.84E 02	>100	----	4
2.9070	7.04E 03	5.05E 02	>100	----	4
2.9240	7.20E 03	5.50E 02	>100	----	4
2.9410	7.26E 03	5.56E 02	>100	----	4
2.9590	7.16E 03	4.81E 02	>100	----	4
2.9760	6.98E 03	4.49E 02	>100	----	4
2.9940	6.53E 03	5.44E 02	>100	----	4
3.0120	6.31E 03	4.49E 02	>100	----	4
3.0300	5.98E 03	5.72E 02	>100	----	4
3.0490	5.71E 03	5.82E 02	>100	----	4
3.0670	5.40E 03	4.67E 02	>100	----	4
3.0860	5.00E 03	7.33E 02	>100	----	4
3.1060	4.56E 03	5.39E 02	>100	----	4
3.1250	4.16E 03	4.91E 02	>100	----	4
3.1450	3.52E 03	5.46E 02	>100	----	4
3.1650	3.31E 03	4.19E 02	>100	----	4
3.1850	2.83E 03	4.33E 02	>100	----	4
3.2050	2.44E 03	3.83E 02	>100	----	4
3.2260	2.10E 03	3.27E 02	>100	----	4
3.2470	1.77E 03	4.50E 02	>100	----	4
3.2680	1.59E 03	2.92E 02	>100	----	4
3.2895	1.47E 03	1.64E 02	>100	----	14
3.3113	1.26E 03	1.45E 02	>100	----	14
3.3333	1.10E 03	1.21E 02	>100	----	14
3.3557	9.55E 02	6.64E 01	>100	----	14
3.3784	8.33E 02	7.14E 01	>100	----	15
3.4014	7.14E 02	4.76E 01	>100	----	15
3.4247	6.14E 02	2.25E 01	>100	----	11
3.4483	5.29E 02	1.58E 01	>100	----	12
3.4722	4.36E 02	2.26E 01	>100	----	12
3.4965	3.81E 02	2.22E 01	>100	----	12
3.5211	3.28E 02	2.11E 01	>100	----	12
3.5461	2.64E 02	2.96E 01	>100	----	12
3.5714	2.33E 02	2.45E 01	>100	----	12
3.5971	2.11E 02	2.19E 01	>100	----	12
3.6232	1.95E 02	1.93E 01	>100	----	12
3.6496	1.82E 02	1.93E 01	>100	----	12
3.6765	1.71E 02	1.91E 01	>100	----	12

TABLE A-6. (continued)

LAMBDA(μM)	ALPHA	SD	OD	%T	NO.
3.7037	1.64E 02	2.15E 01	>100	----	12
3.7313	1.57E 02	2.22E 01	>100	----	12
3.7594	1.53E 02	2.17E 01	>100	----	12
3.7879	1.49E 02	2.05E 01	>100	----	12
3.8168	1.50E 02	2.11E 01	>100	----	12
3.8462	1.53E 02	2.28E 01	>100	----	12
3.8760	1.54E 02	2.19E 01	>100	----	12
3.9063	1.57E 02	2.18E 01	>100	----	12
3.9370	1.61E 02	2.13E 01	>100	----	12
3.9683	1.67E 02	2.03E 01	>100	----	12
4.0000	1.74E 02	2.05E 01	>100	----	12
4.0323	1.80E 02	2.02E 01	>100	----	12
4.0650	1.89E 02	2.07E 01	>100	----	12
4.0984	1.96E 02	1.95E 01	>100	----	12
4.1322	2.04E 02	1.97E 01	>100	----	12
4.1667	2.14E 02	2.11E 01	>100	----	12
4.2017	2.52E 02	2.64E 01	>100	----	12
4.2373	2.73E 02	2.32E 01	>100	----	12
4.2735	2.88E 02	2.25E 01	>100	----	12
4.3103	2.95E 02	2.20E 01	>100	----	12
4.3478	3.09E 02	2.22E 01	>100	----	12
4.3860	3.25E 02	2.13E 01	>100	----	12
4.4248	3.41E 02	2.31E 01	>100	----	12
4.4643	3.61E 02	2.14E 01	>100	----	12
4.5045	3.83E 02	2.17E 01	>100	----	12
4.5455	4.02E 02	2.44E 01	>100	----	12
4.5872	4.20E 02	2.95E 01	>100	----	12
4.6296	4.66E 02	2.53E 01	>100	----	12
4.6729	4.82E 02	3.11E 01	>100	----	12
4.7170	4.81E 02	2.54E 01	>100	----	12
4.7619	4.76E 02	2.25E 01	>100	----	12
4.8077	4.60E 02	2.17E 01	>100	----	12
4.8544	4.42E 02	2.14E 01	>100	----	12
4.9020	4.22E 02	2.71E 01	>100	----	12
4.9505	3.94E 02	3.08E 01	>100	----	12
5.0000	3.29E 02	2.13E 01	>100	----	12
5.0251	3.21E 02	1.88E 01	>100	----	12
5.0505	3.15E 02	1.97E 01	>100	----	12
5.0761	3.02E 02	1.81E 01	>100	----	12
5.1020	2.97E 02	1.94E 01	>100	----	12
5.1282	2.90E 02	2.07E 01	>100	----	12
5.1546	2.82E 02	1.94E 01	>100	----	12
5.1813	2.79E 02	2.14E 01	>100	----	12
5.2083	2.70E 02	2.81E 01	>100	----	12
5.2356	2.66E 02	2.87E 01	>100	----	12
5.2632	2.66E 02	2.90E 01	>100	----	12

TABLE A-6. (continued)

LAMBDA (UM)	ALPHA	SD	OD	%T	NO.
5.2910	2.68E 02	2.11E 01	>100	----	12
5.3191	2.66E 02	2.06E 01	>100	----	12
5.3476	2.65E 02	1.94E 01	>100	----	12
5.3763	2.70E 02	2.12E 01	>100	----	12
5.4054	2.68E 02	1.83E 01	>100	----	12
5.4348	2.77E 02	2.05E 01	>100	----	12
5.4645	2.80E 02	1.92E 01	>100	----	12
5.4945	2.86E 02	1.75E 01	>100	----	12
5.5249	2.93E 02	1.68E 01	>100	----	12
5.5556	3.04E 02	1.71E 01	>100	----	12
5.5866	3.21E 02	1.87E 01	>100	----	12
5.6180	3.41E 02	1.77E 01	>100	----	12
5.6497	3.72E 02	2.06E 01	>100	----	12
5.6818	4.51E 02	3.28E 01	>100	----	12
5.7143	5.10E 02	3.56E 01	>100	----	11
5.7471	5.78E 02	2.97E 01	>100	----	11
5.7803	6.60E 02	3.29E 01	>100	----	10
5.8140	7.67E 02	5.42E 01	>100	----	10
5.8480	9.62E 02	4.57E 01	>100	----	10
5.8824	1.23E 03	7.32E 01	>100	----	10
5.9172	1.40E 03	9.50E 01	>100	----	10
5.9524	1.71E 03	1.77E 02	>100	----	10
5.9880	1.99E 03	2.89E 02	>100	----	10
6.0241	2.19E 03	2.85E 02	>100	----	9
6.0606	2.27E 03	2.80E 02	>100	----	9
6.0976	2.28E 03	3.36E 02	>100	----	9
6.1350	2.27E 03	4.01E 02	>100	----	10
6.1728	1.90E 03	2.60E 02	>100	----	10
6.2112	1.63E 03	1.95E 02	>100	----	10
6.2500	1.32E 03	1.26E 02	>100	----	10
6.2893	1.14E 03	1.07E 02	>100	----	10
6.3291	1.02E 03	6.15E 01	>100	----	10
6.3694	8.96E 02	5.44E 01	>100	----	11
6.4103	7.99E 02	5.03E 01	>100	----	11
6.4516	7.79E 02	4.57E 01	>100	----	11
6.4935	7.27E 02	3.51E 01	>100	----	11
6.5359	7.13E 02	3.46E 01	>100	----	11
6.5789	6.93E 02	2.64E 01	>100	----	11
6.6225	6.79E 02	3.13E 01	>100	----	11
6.6667	6.74E 02	3.79E 01	>100	----	11
6.7114	6.61E 02	2.55E 01	>100	----	11
6.7568	6.64E 02	2.31E 01	>100	----	11
6.8027	6.50E 02	2.58E 01	>100	----	11
6.8493	6.46E 02	2.04E 01	>100	----	11
6.8966	6.38E 02	2.04E 01	>100	----	11
6.9444	6.33E 02	2.26E 01	>100	----	11

TABLE A-6. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
6.9930	6.25E 02	2.17E 01	>100	----	11
7.0423	6.17E 02	2.30E 01	>100	----	11
7.0922	6.23E 02	2.14E 01	>100	----	11
7.1429	6.15E 02	2.23E 01	>100	----	11
7.1942	6.10E 02	2.48E 01	>100	----	11
7.2464	6.06E 02	2.53E 01	>100	----	11
7.2993	6.03E 02	2.07E 01	>100	----	11
7.3529	6.10E 02	2.22E 01	>100	----	11
7.4074	6.08E 02	1.91E 01	>100	----	11
7.4627	6.02E 02	2.37E 01	>100	----	11
7.5188	6.01E 02	2.00E 01	>100	----	11
7.5758	5.97E 02	2.03E 01	>100	----	11
7.6336	5.95E 02	2.09E 01	>100	----	11
7.6923	6.02E 02	1.81E 01	>100	----	11
7.7519	5.98E 02	2.10E 01	>100	----	11
7.8125	6.00E 02	1.80E 01	>100	----	11
7.8740	5.98E 02	1.83E 01	>100	----	11
7.9365	6.00E 02	1.25E 01	>100	----	11
8.0000	5.99E 02	1.58E 01	>100	----	11
8.0645	5.97E 02	1.72E 01	>100	----	11
8.1301	5.96E 02	1.74E 01	>100	----	11
8.1967	5.97E 02	2.00E 01	>100	----	11
8.2645	5.90E 02	2.09E 01	>100	----	11
8.3333	5.84E 02	2.04E 01	>100	----	11
8.4034	5.70E 02	2.40E 01	>100	----	11
8.4746	5.85E 02	2.45E 01	>100	----	11
8.5470	5.75E 02	2.23E 01	>100	----	11
8.6207	5.75E 02	2.99E 01	>100	----	11
8.6957	5.81E 02	3.12E 01	>100	----	11
8.7719	5.81E 02	2.93E 01	>100	----	11
8.8496	5.79E 02	3.42E 01	>100	----	11
8.9286	5.63E 02	3.29E 01	>100	----	10
9.0090	5.64E 02	3.94E 01	>100	----	10
9.0909	5.48E 02	4.35E 01	>100	----	10
9.1743	5.79E 02	1.02E 02	>100	----	10
9.2593	5.6[illegible]E 02	5.91E 01	>100	----	10
9.3458	5.68E 02	6.22E 01	>100	----	10
9.4340	5.21E 02	6.89E 01	>100	----	10
9.5238	5.30E 02	5.39E 01	>100	----	10
9.6154	6.05E 02	7.71E 01	>100	----	10
9.7087	7.32E 02	7.87E 01	>100	----	10
9.8039	7.26E 02	7.66E 01	>100	----	10
9.9010	8.05E 02	1.41E 02	>100	----	10

TABLE A-6. (continued)

LAMBDA(UM)	ALPHA	SD	OD	%T	NO.
10.0000	8.99E 02	1.43E 02	>100	----	10
10.1010	1.02E 03	2.18E 02	>100	----	10
10.2041	1.38E 03	4.57E 02	>100	----	10
10.3093	1.70E 03	6.22E 02	>100	----	7
10.4167	>2.00E 03	------	>100	----	--
to					
15.0000	"	"	>100	"	"

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