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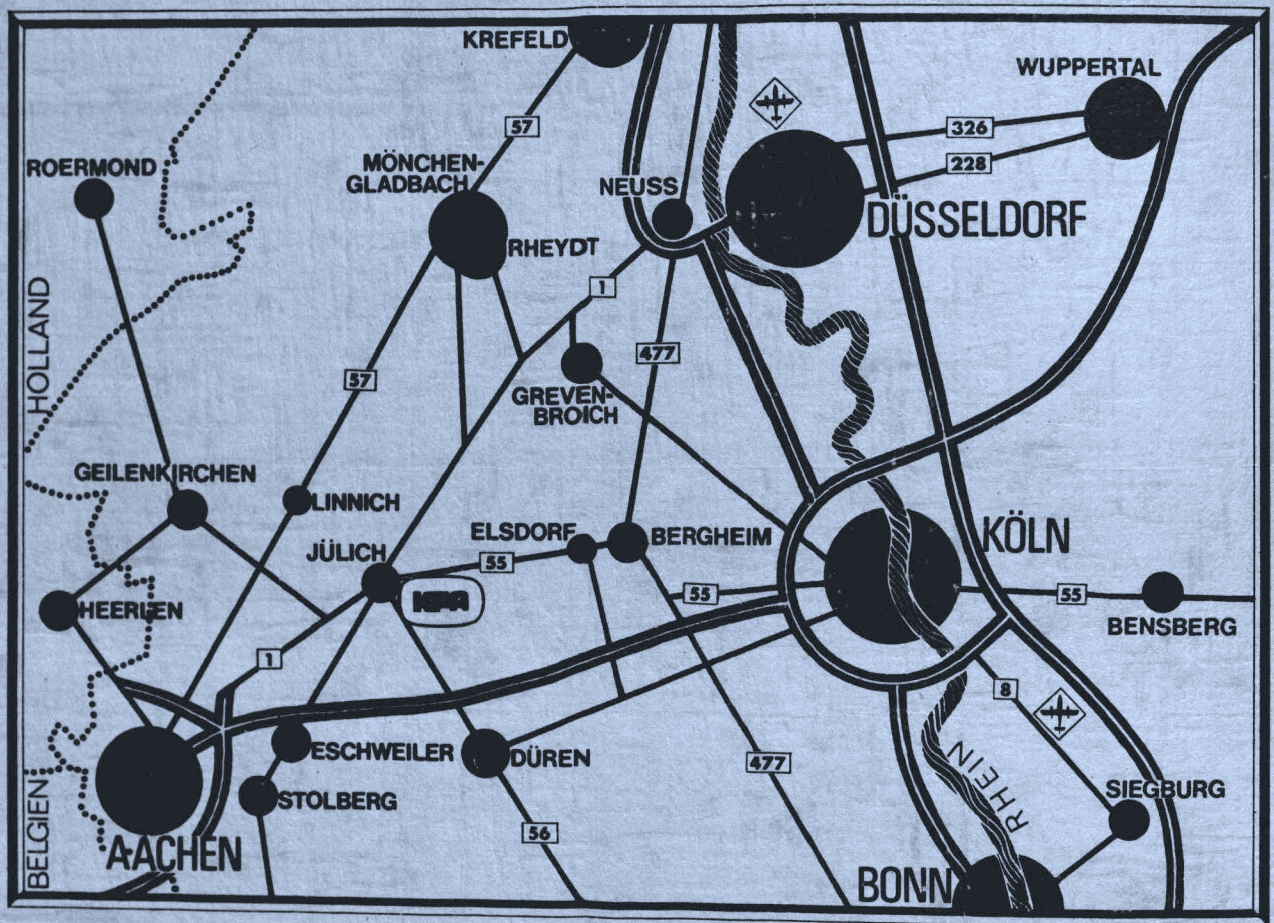
**Calculations of Shape and Stability  
of Menisci in Czochralski Growth  
with Tables to Determine Meniscus Heights,  
Maximum Heights and Capillary Constants**

by

W. Uelhoff and K. Mika

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## Abstract

The shape and stability of menisci occurring during Czochralski growth have been studied by means of numerical methods for the case of the free surface. The existence of minimal joining angles is shown, beyond which the growing crystal will separate from the melt. The dependence of the interface height on the joining angle for different crystal diameters was calculated. The maximum stable heights and the corresponding joining angles were determined as a function of crystal diameter. A method for measuring the capillary constant of the melt during Czochralski growth is proposed. Our results are compared with known analytical approximations. Limitations of the applications caused by a finite crucible radius or low  $g$  values are pointed out. For practical use the following functions have been tabulated: a) meniscus height in dependence on joining angle and crystal radius, b) the radius-height-ratio in dependence on radius and angle for the calculation of the capillary constant, c) the maximum stable height and the corresponding growth angle as a function of crystal radius.

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## 1. Introduction

For a quantitative description of the Czochralski method, in addition to the temperature gradient at the interface also the meniscus shape, and the interface height caused by both factors, are of special importance. The problem of temperature gradient has been reported elsewhere (see e.g. /1-3/). The purpose of this paper is to present calculations concerning the meniscus in Czochralski growth.

In addition to the theoretical aspects the meniscus also is of great practical use for the newly developed techniques of diameter control: In the weighing method /4, 5/ the weight of the melt enclosed by the meniscus appears as an essential quantity; when using the TV-method /6-8/, the crystal diameter has to be measured exactly at the interface height. For applying the laser method /9/, the slope along the meniscus is of importance.

Until now only a few analytical approximations for calculations of the interface height have been used for crystal growth /10-12/, but in the field of fluid mechanics the mathematical treatment of capillary phenomena has been well developed /13-15/. For detailed literature we refer to the review article of Finn /16/. Huh and Scriven /17/ give extensive tables of numerical results dealing with the problem of the rod-in-free-surface menisci. However, the presentation of their results seems not to be very appropriate for crystal growth purposes.

This is one of the reasons which motivated us to determine the numerical solution of the Euler-Laplace equation in order to obtain the solid-liquid interface height and the corresponding meniscus shape (part 2). In part 3 the problem of meniscus stability will be investigated with the aid of criteria of the calculus of variations. In this connection we want to mention the work of Padday and Pitt /18/ who treated the problem of stability based upon energy considerations of the meniscus. In part 4 we shall discuss our numerical results, which are presented in tables 1-3, and compare them with analytical approximations. In part 5 direct consequences for Czochralski growth will be considered.

## 2. The differential equation for the meniscus shape and a method for the numerical solution

The following assumptions will be made when determining the meniscus shape:

- a) The contact angle  $\beta$  (see fig. 1a) is assumed to be invariant with crystal orientation and at first to be zero (complete wetting). In the last part it will be shown, that the results immediately can be applied to the more general case of  $\beta$  not equal to zero but still independent of the orientation.
- b) The cylindrical crystal is vertically arranged. This implies rotational symmetry of the meniscus.
- c) The crucible diameter is large compared to the crystal diameter, that means we consider only the case of the free surface.

For a given height  $H$  of the interface above the melt level and for a given radius  $R$  of the crystal at the interface, the joining angle  $\alpha$  (fig 1b) determines whether the crystal will increase (fig. 1b) or decrease (fig. 1c) in diameter. Of special interest is the constant diameter growth (stationary growth), which occurs when the tangent of the meniscus end point at the height  $H$  is vertically directed ( $\alpha = 0^\circ$ , fig. 1d). Of further interest is the maximum height  $H_{\max}$  at which the crystal will melt off.

Under the assumptions made in a) - c) the differential equation governing the meniscus shape follows directly from the energy functional  $E$  using the methods of calculus of variations:

$$E = C \cdot \int_0^{\zeta_0} (2\rho \sqrt{1+\rho'^2} + \rho^2 \zeta) d\zeta, \quad (1)$$

where  $\zeta = 0$  corresponds to the free surface of the melt and where the dimensionless variables are defined by

$$\begin{aligned} z &= K \cdot \zeta, & r &= K \cdot \rho, & H &= K \cdot \zeta_0, & R &= K \cdot \rho_0, \\ z_{\perp} &= K \cdot \zeta_{\perp}, & r_{\perp} &= K \cdot \rho_{\perp}, \end{aligned} \quad (2)$$

$$K = \left( \frac{\sigma}{g \cdot d} \right)^{1/2}, \quad C = \pi \sigma K^2, \quad a = \sqrt{2} \cdot K \quad (3)$$

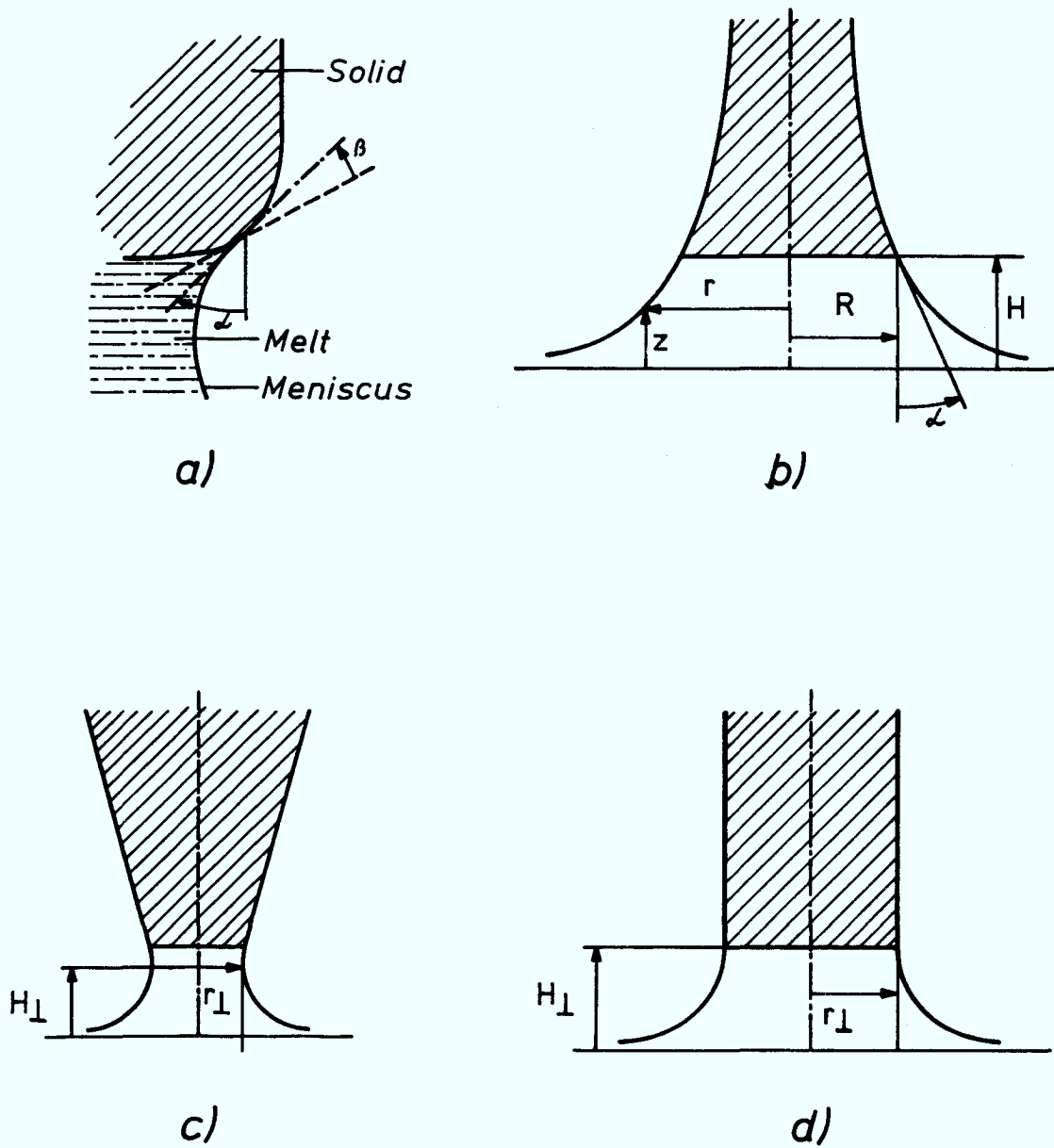


Fig. 1: Different crystal growth stages with the definitions of the physical quantities of interest.

- a) Definition of contact angle  $\beta$  and joining angle  $\alpha$   
( --- crystal tangent, - · - · - meniscus tangent).
- b) Stage of increasing crystal diameter
- c) Decreasing crystal diameter
- d) Stationary growth

where  $\sigma$  is the surface tension  
d is the density  
g is the gravitational acceleration  
a is the capillary constant.

For the meaning of  $z$ ,  $r$ ,  $H$  and  $R$  see fig. 1.

Although the scaling equations (2) have a very simple structure, one should notice here that the determination of  $K$  is not possible by measuring any meniscus quantities of equations (2) alone, since a system of equations of type (2) always leads to one more unknown variable than the number of equations. A method for the experimental determination of  $K$  or the capillary constant, respectively, during Czochralski growth will be described in part 5 making use of the results found in part 4.

From eq. (1) the first variation leads to the Euler-Laplace equation:

$$\frac{\rho''}{(1+\rho'^2)^{3/2}} - \frac{1}{\rho(1+\rho'^2)^{1/2}} - \zeta = 0 \quad . \quad (4)$$

The boundary conditions of eq. (4) read for our problem:

$$\rho(0) = \infty, \quad (5a)$$

$$\rho(\zeta_0) = \rho_0. \quad (5b)$$

Any numerical method for solving eq. (4) is difficult because of condition (5a). The solution for  $\rho \rightarrow \infty$  (asymptotic part of the solution), however, can be derived analytically [19]. Therefore, a hybrid method can be applied to solve the equation numerically up to a certain value of  $\zeta$ , where the asymptotic solution can be used within the wanted range of accuracy.

The asymptotic solution can be obtained after transforming from  $\rho(\zeta)$  to  $\zeta(\rho)$  with:

$$\frac{d\rho}{d\zeta} = \left(\frac{d\zeta}{d\rho}\right)^{-1}; \quad \frac{d^2\rho}{d\zeta^2} = - \left(\frac{d\zeta}{d\rho}\right)^{-3} \cdot \frac{d^2\zeta}{d\rho^2}.$$

This leads to the equation:

$$\zeta'' \frac{|\zeta'|^3}{\zeta'^3} \cdot \frac{1}{(1+\zeta'^2)^{3/2}} + \frac{1}{\rho} \frac{|\zeta'|}{(1+\zeta'^2)^{1/2}} + \zeta = 0. \quad (6)$$

For large  $\rho$  values we have  $\zeta'^2 \ll 1$  and  $\zeta' = -|\zeta'|$ .

We obtain the differential equation for the asymptotic solution (Nicolson approximation /19/):

$$\zeta'' + \frac{1}{\rho} \zeta' - \zeta = 0, \quad (7)$$

This is the differential equation of the modified Bessel function with the solution:

$$\zeta(\rho) = A \cdot K_0(\rho), \quad (8a)$$

which satisfies the boundary condition eq. (5a). A can be determined from the continuity of the first derivative at the connection point  $\xi_c$  (for the definition of  $\xi_c$  see below):

$$A = \frac{1}{\rho'(\xi_c) K_1(\rho(\xi_c))}. \quad (8b)$$

In that  $\zeta$  region where the asymptotic solution is not valid, a numerical solution was calculated under the following assumptions: The problem may be solved as initial value problem with  $\rho(\zeta_0) = \rho_0$  and  $\rho'(\zeta_0) = \operatorname{tg} \alpha$  if the total height  $\zeta_0$  is known in advance. Since this is not the case, an appropriate iteration technique was used.

The initial values  $\rho_0$  and  $\alpha$  are given. Then a trial value  $\zeta_T$  for  $\zeta_0$  is assumed. For this purpose eq. (4) is transformed by  $\xi = \zeta_T - \zeta$  and solved using a Runge-Kutta method. Since  $d^2\rho/d\xi^2$  is always positive in the feasible region  $\zeta > 0$ , the derivative

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\*  $K_0$  and  $K_1$  are modified Bessel functions of the second kind.

$d\rho/d\xi$  is monotonously increasing with  $\xi$ . That means the numerical integration will be interrupted if the derivative  $d\rho/d\xi$  exceeds a certain value  $\rho'_{RKmax}$ . We found that we had to stop the Runge-Kutta integration whenever the derivative  $d\rho/d\xi$  reached the value  $\rho'_{RKmax} = 200$ .

Starting with a certain trial value  $\zeta_T$  quite generally only the two cases can occur:

- a)  $d\rho/d\xi \leq \rho'_{RKmax}$  at  $\xi = \zeta_T$ ; in this case the assumed value  $\zeta_T$  has to be increased.
- b)  $d\rho/d\xi = \rho'_{RKmax}$  for a certain  $\xi = \xi_C$  with  $\xi_C < \zeta_T$ . This value of  $\xi_C$  defines the connection point between the numerical and the asymptotic solution. In this case the asymptotic solution is connected at  $\xi_C$  and the resulting total height  $\zeta_R$  is compared with  $\zeta_T$ . If  $(\zeta_R - \zeta_T) > 0$ ,  $\zeta_T$  has to be increased. The procedure will be stopped when  $|\zeta_R - \zeta_T|$  is less than the prescribed accuracy.

It should be mentioned that the accuracy of the described method is not only determined by the Runge-Kutta integration but essentially by the hybrid method itself, since the asymptotic solution is obtained by neglecting  $(d\zeta/d\rho)^2$  with respect to one. When integrating numerically up to the connection point  $\xi_C$ , at which the derivative reaches the value  $\rho'_{RKmax} = 200$ , this systematical error in our case was given by  $(1/\rho'_{RKmax})^2 = 2.5 \times 10^{-5}$ .

By this method we have calculated meniscus shapes  $\rho(\zeta) = f(\zeta, \alpha, \rho_0)$ . The results will be discussed in part 4. At this point we only want to show a special feature of the solutions: When varying the angle with constant  $\rho_0$ , we found an increase in the height  $\zeta_0$  for  $\alpha$  decreasing from  $90^\circ$ .  $\zeta_0$  reached a maximum value  $\zeta_{max}$  for a certain angle  $\alpha = \alpha_{min}$ . By further decreasing  $\alpha$ , the height  $\zeta_0$  also decreased. This means that for a given value  $\zeta_0 < \zeta_{max}$  two solutions  $\rho(\zeta) = g(\zeta, \zeta_0, \rho_0)$  exist. Fig. 2 shows an example for two meniscus shapes (curves 1 and 3) with the same  $\zeta_0$  but different  $\alpha$  values. Curve 2 is the meniscus shape with  $\zeta_0 = \zeta_{max}$ .

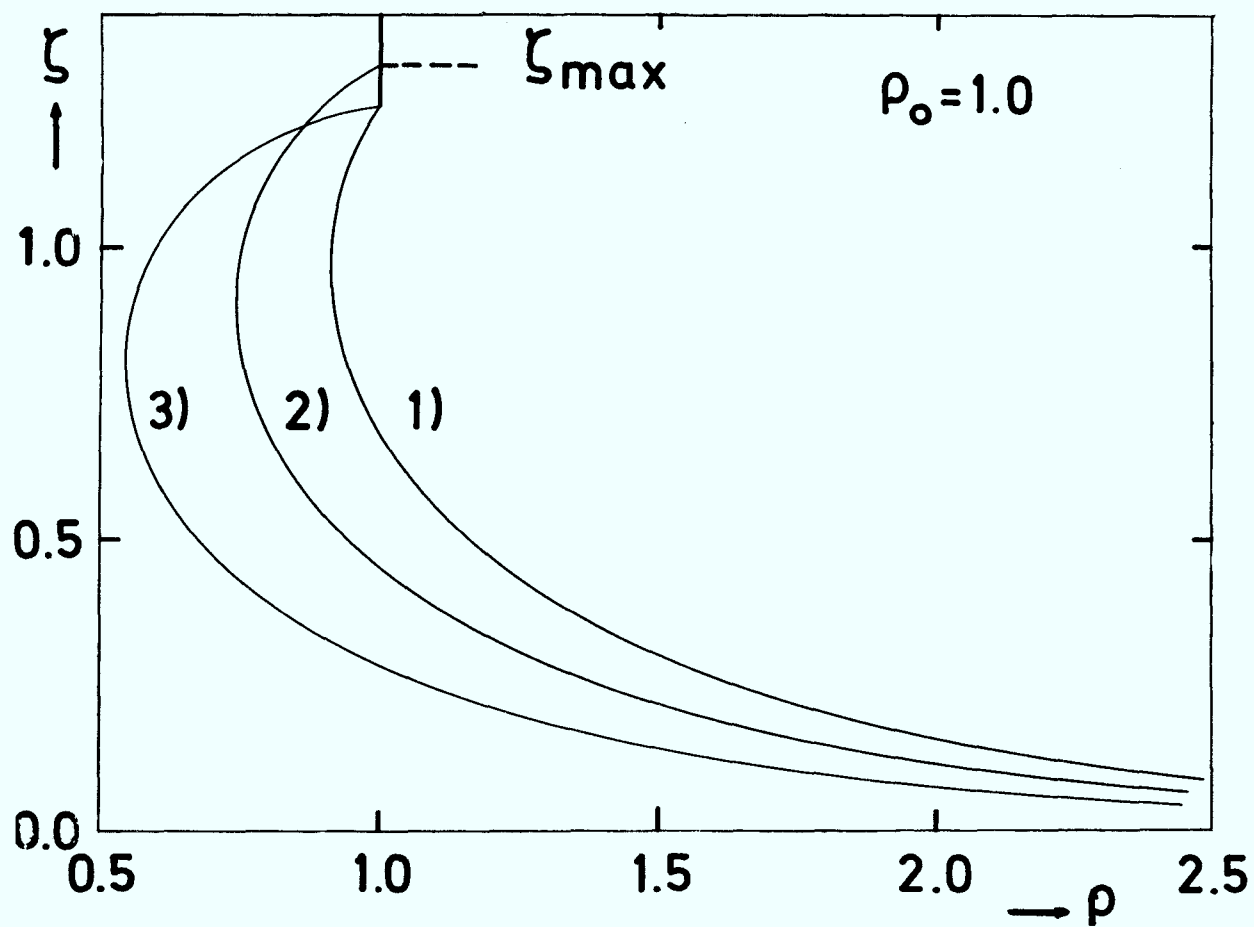


Fig. 2: Meniscus shapes for  $\rho_0 = 1.0$ . Curve 1: Stable meniscus ( $\zeta_0 = 1.244$ ,  $\alpha = -54.6^\circ$ ), curve 2: Meniscus with maximum height ( $\zeta_{\max} = 1.315$ ,  $\alpha_{\min} = -61.57^\circ$ ), curve 3: Same height as curve 1, but unstable with  $\alpha = 82.0^\circ$ .

### 3. The problem of stability

After having found two solutions for the same  $\zeta_0$  value, we must investigate their stability. From variational methods it is well known, that physically unstable solutions of the Euler equation may exist /22-24/. The first variation leading to the Euler equation only determines extremals, but does not give any information about their stability. In order to be sure that a minimal (or maximal) solution does exist, the following two conditions have to be satisfied /22-24/:

- a) The solution of the Jacobi differential equation must not have conjugate points.
- b) The Legendre condition has to be satisfied.

The Jacobi differential equation for  $\eta(x)$  reads quite generally:

$$\frac{d}{dx} \left[ f_{y'y'} \cdot \eta' + f_{yy'} \cdot \eta \right] - \left[ f_{yy} \cdot \eta + f_{yy'} \cdot \eta' \right] = 0, \quad (9)$$

where  $f(x, y, y')$  is the argument of the functional to be investigated. In eq. (9)  $y(x)$  is the solution of the Euler equation. Usually one solves eq. (9) as initial value problem with  $\eta(x_0) = 0$ ,  $\eta'(x_0) = 1$ . If this solution has a further zero (in addition to  $x_0$ ), then this is called a conjugate point with respect to  $x_0$ .

The Legendre condition is satisfied if:

$$f_{y'y'} > 0 \text{ (minimum)} \quad \text{or}$$

$$f_{y'y'} < 0 \text{ (maximum)}.$$

Discussing the two conditions for our problem we get from eq. (1):

$$f(\zeta, \rho, \rho') = C \cdot (2\rho\sqrt{1+\rho'^2} + \rho^2\zeta), \quad (10)$$

$$f_{\rho'\rho'} = C \cdot 2\rho / (1+\rho'^2)^{3/2} > 0, \quad (11)$$

and:

$$\eta'' - \frac{\rho'}{\rho} \left[ 2 + 3\rho \cdot \zeta \sqrt{1 + \rho'^2} \right] \eta' + \frac{1}{\rho^2} (1 + \rho'^2) \cdot \eta = 0, \quad (12)$$

where eq. (4) has been used to eliminate  $\rho''$  from eq. (12).

Looking at eq. (11), one sees that the Legendre condition is fulfilled indicating a minimum. In order to check condition (9), we have solved numerically the Jacobi equation (12). It turned out, that only in the range  $\alpha_{\min} < \alpha < 90^\circ$  the Jacobi condition also was satisfied. This critical angle  $\alpha_{\min}$  is a function of  $\rho_0$ . For  $\alpha < \alpha_{\min}$  the solution of eq. (12) showed conjugate points. This implies that the extremals obtained from the Euler equation are unstable in the range  $\alpha < \alpha_{\min}$ . Figs. 3a and 3b show solutions of the Jacobi equation for the case of  $\rho_0 = 1.0$  and different  $\alpha$  values. For this  $\rho_0$  the critical angle is:  $\alpha_{\min} = -61.57^\circ$ . For  $\alpha < \alpha_{\min}$  the occurrence of a second zero of  $\eta$  can be observed. Fig. 3b particularly illustrates the sharp transition of the solution when passing  $\alpha_{\min}$ . We shall call the height corresponding to  $\alpha_{\min}$  the maximal height  $\zeta_{\max}$ .

Concerning the stable menisci, it is evident from conditions a) and b), that the total energy is a minimum. In the case of unstable menisci, an interpretation of the energy relations is more complicated.

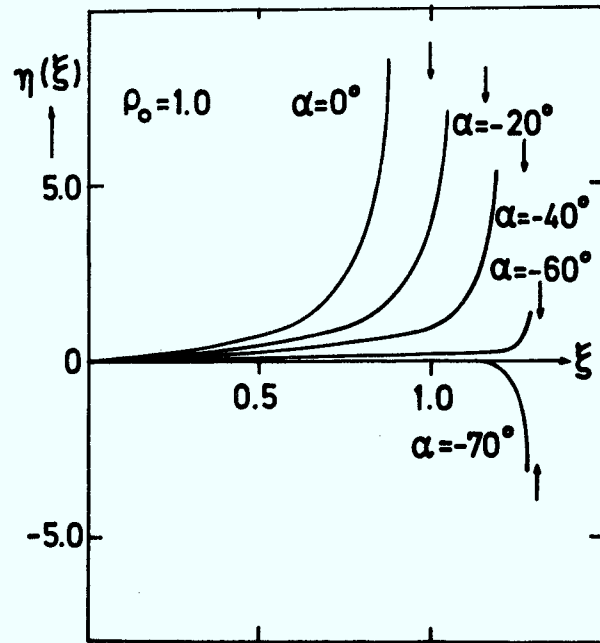


Fig. 3a: Solutions of the Jacobi equation for different angles  $\alpha$  ( $\alpha = -70^\circ$  belongs to an unstable meniscus). The arrows indicate the corresponding free surface values at  $\xi = \zeta_0$  ( $\xi$  stands for  $\zeta_0 - \zeta$ ).

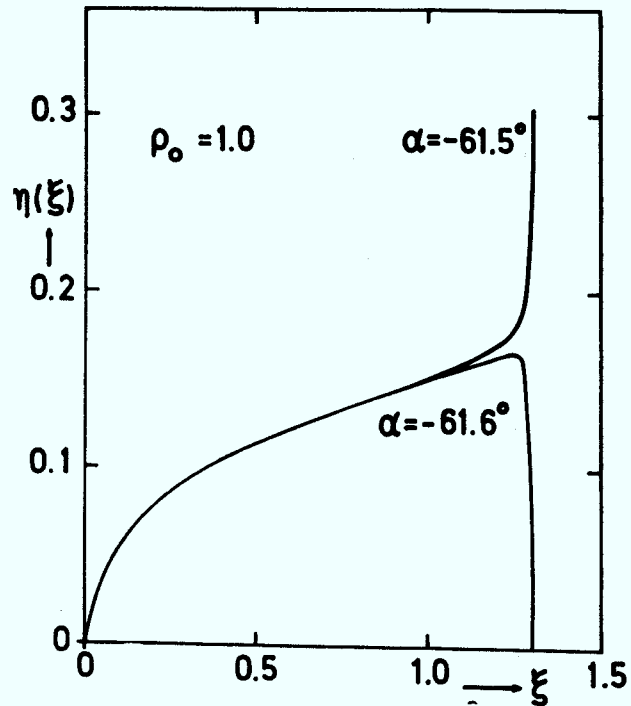


Fig. 3b: The same as fig. 3a. The two angles are very close to the break-off angle  $\alpha_{\min} = -61.57^\circ$ .

#### 4. Results and comparisons with analytical approximations

Figs. 4a and 4b show stable meniscus shapes calculated by the program described in part 2. The menisci in fig. 4a are associated with solid-liquid interface heights greater than the stationary height (range of joining angle:  $\alpha_{\min} \leq \alpha \leq 0^\circ$ ), whereas menisci in fig. 4b are associated with heights  $\zeta_{\perp} \geq \zeta_0 > 0$  (joining angle:  $0^\circ \leq \alpha < 90^\circ$ ). It can be seen that the solution for the stationary case represents an envelope for all other solutions in that any  $\rho(\zeta)$  is less than the value of  $\rho$  for the stationary shape at the same  $\zeta$ .

From these figures an interesting result follows when scanning the menisci optically for diameter control /9/. As is apparent from fig. 4a, the stable menisci (as well as the unstable ones, which are not drawn) cut the axis  $\rho_0 = 1.0$  in a second point below  $\zeta_{\perp}$ . Considering this point and its slope as initial conditions for our differential eq. (4), the solution is a part of the solution mentioned above due to uniqueness properties of the problem. Hence all menisci of the range  $0^\circ < \alpha < 90^\circ$  are continuations of corresponding menisci in the range  $-90^\circ < \alpha < 0^\circ$ , where  $\rho_0$  is assumed to be constant. This means that a measurement of the meniscus height or slope for any  $\rho > \rho_0$  generally does not lead to a unique value of the solid-liquid interface height. Only those menisci having a continuation in the region of instability will give a unique result.

Numerical values of the heights of menisci  $\zeta_0$  are listed as a function of the joining angle  $\alpha$  with crystal radius  $\rho_0$  as a parameter in table 1. Here  $\alpha$  is increased in increments of  $2^\circ$  and covers only the stable region. In a reduced table also values for the unstable region have been published in /32/. The range of radii  $\rho_0$  selected in this report extends over a region which seems important to us in view of Czochralski growth. So the minimum chosen  $\rho_0$  value of 0.01 corresponds to a crystal diameter of 0.07 mm for Ge, 0.12 mm for Si and 0.07 mm for Cu. These values seem to us the lowest diameters to occur in practical applications. The maximum value of  $\rho_0 = 5.40$  chosen by us corresponds to crystal diameters of 36.6 mm for Ge, 60.2 mm for

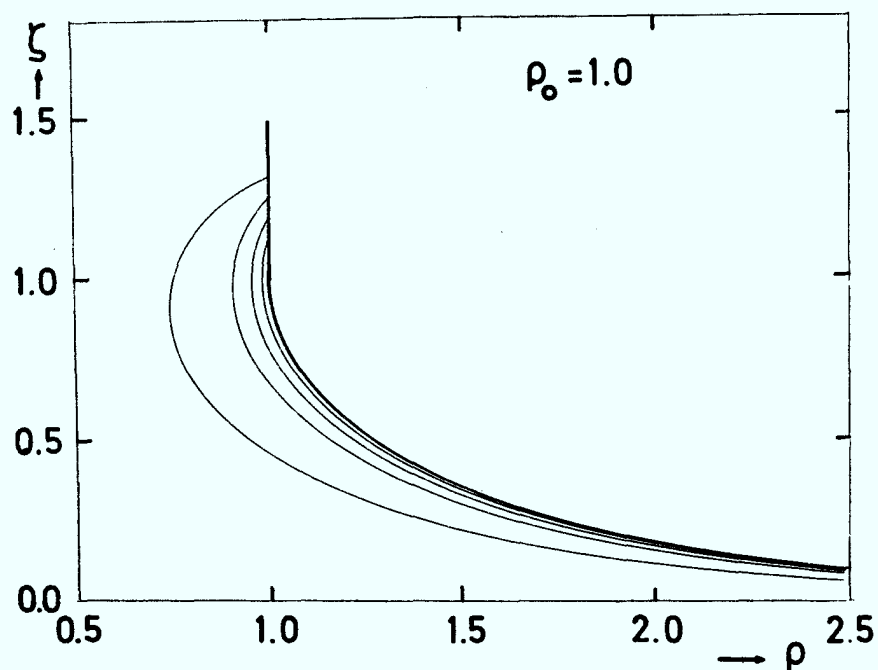


Fig. 4a: Meniscus shapes in the  $\zeta_0$  range with decreasing crystal diameter for different  $\zeta_0$  values ( $\zeta_{\perp} \leq \zeta_0 \leq \zeta_{\max}$ ).

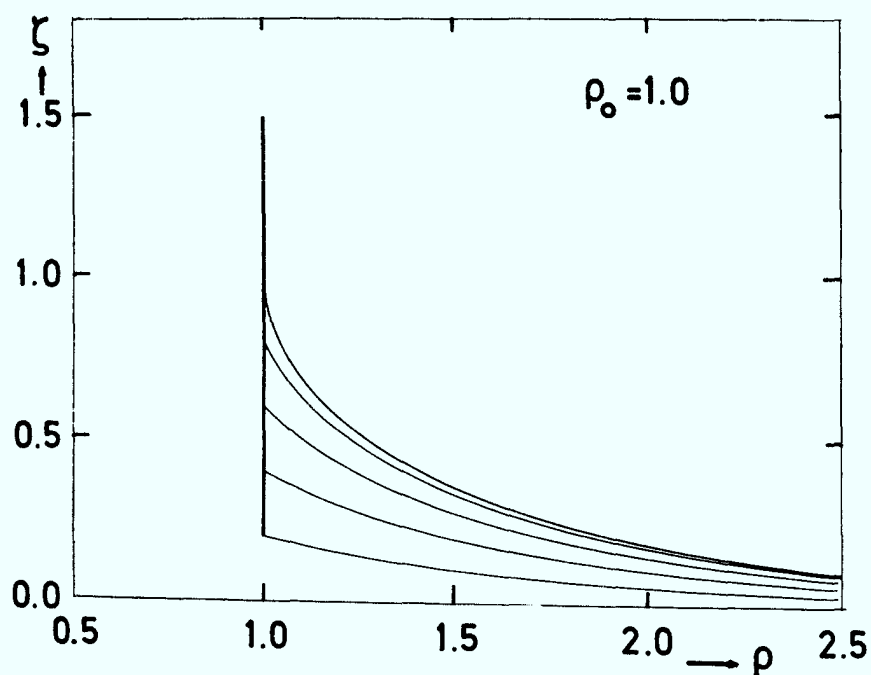


Fig. 4b: Meniscus shapes in the  $\zeta_0$  range with increasing crystal diameter ( $0 < \zeta_0 \leq \zeta_{\perp}$ ).

Si and 37.8 mm for Cu (the K values underlying these diameters according to eq. (2) are: 3.39 mm (Ge), 5.6 mm (Si) and 3.5 mm (Cu) /33/). The increments in  $\rho_0$  and  $\alpha$  were chosen in such a manner that for the physically relevant regions a linear interpolation always seems appropriate. In table 2 the maximum height  $\zeta_{\max}$  and its corresponding angle  $\alpha_{\min}$  are given. For the experimental determination of the capillary constant  $a = \sqrt{2} \cdot K$  during Czochralski growth the radius to height ratio  $\Omega = \rho_0 / \zeta_0$  will be needed, as shown in part 5. This function  $\Omega(\alpha, \rho_0)$  has been tabulated in table 3.

Especially important in crystal growth are the maximum height  $\zeta_{\max}$  and the stationary height  $\zeta_{\perp}$ , which are drawn in fig. 5a over a large range of  $\rho_0$  values (curve 1 and 2 respectively). From this picture it becomes clear that for very small radii (less than about 0.1), the difference between these two curves (curve 3) is at least an order of magnitude smaller than the heights themselves. This also is evident from fig. 5b, where  $\alpha_{\min}$  is plotted against the same  $\rho_0$  range as in fig. 5a; for  $\rho_0 = 0.1$  the difference between  $\alpha_{\min}$  and the stationary angle  $\alpha = 0^\circ$  is reduced to about  $20^\circ$  and slowly tends to zero with decreasing  $\rho_0$ .

Now we shall consider analytical approximations and compare them with our results. At first the expression of Tsivinskii /12/, which gives a relation between  $\zeta_0$ ,  $\alpha$  and  $\rho_0$ , will be discussed. A short re-derivation of this formula can be obtained in the following way.

We write for the second term of eq. (4):

$$\frac{1}{R_2} = \frac{1}{\rho \sqrt{1+\rho'^2}} \quad . \quad (13)$$

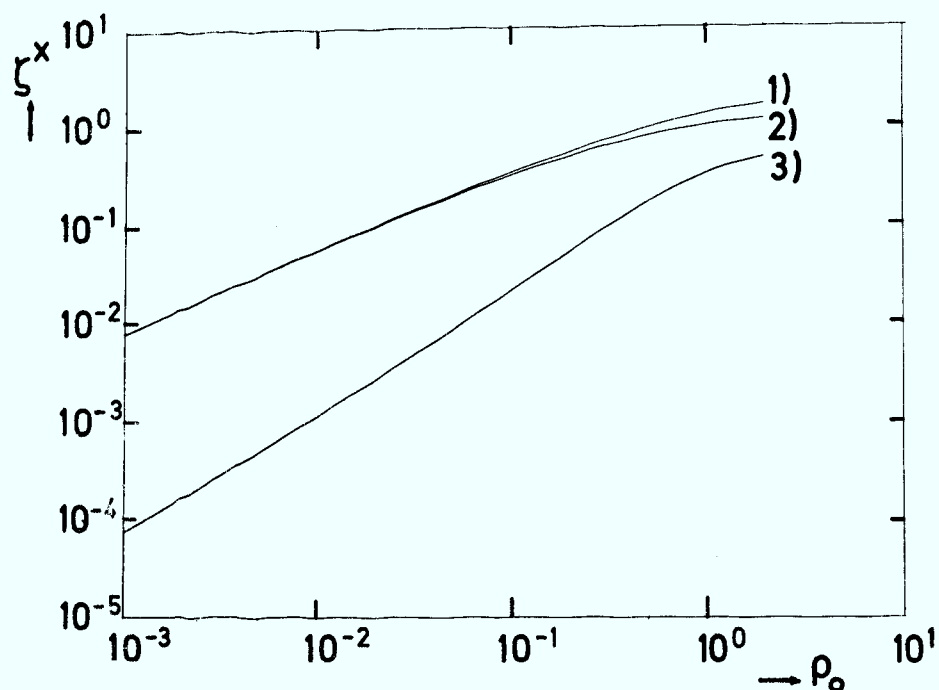


Fig. 5a: Different interface heights as a function of crystal radius.  $\zeta^x$  stands for the maximum height  $\zeta_{\max}$  (curve 1), the stationary height  $\zeta_{\perp}$  (curve 2) and the difference between these two heights (curve 3).

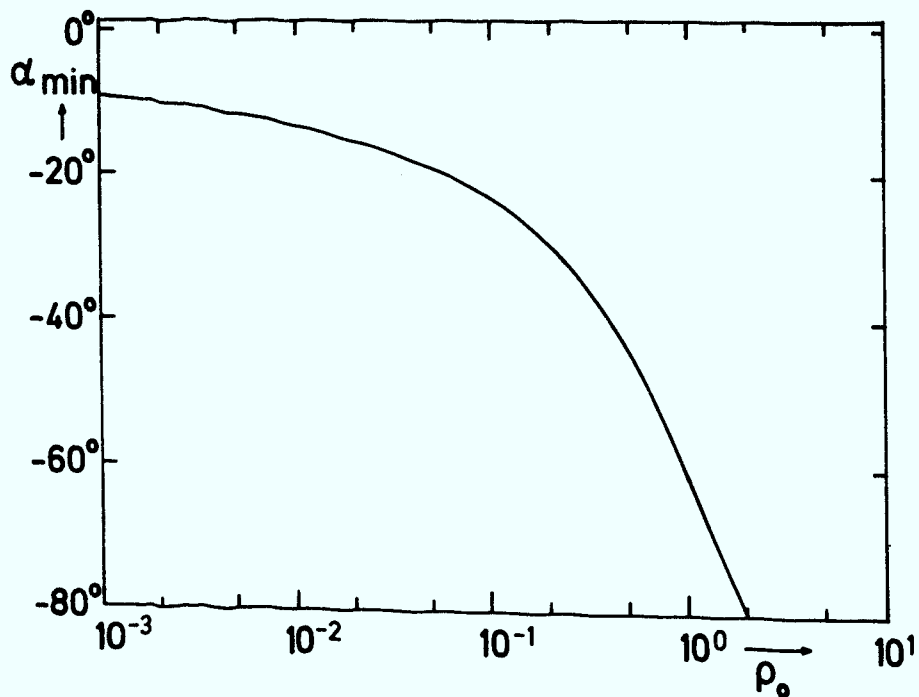


Fig. 5b: The break-off angle  $\alpha_{\min}$  as a function of the crystal radius.

A Taylor series expansion about  $\zeta = \zeta_0$  yields:

$$\frac{1}{R_2} = \left( \frac{1}{R_2} \right)_{\zeta_0} + \left( \frac{d}{d\zeta} \frac{1}{R_2} \right)_{\zeta_0} \cdot (\zeta - \zeta_0) + \dots \quad (14)$$

Following Tsivinskii, the first derivative in eq. (14) is approximated by the difference quotient between height  $\zeta_0$  and the free surface:

$$\left( \frac{d}{d\zeta} \frac{1}{R_2} \right)_{\zeta_0} \approx \frac{1}{\zeta_0} \left[ \left( \frac{1}{R_2} \right)_{\zeta_0} - \left( \frac{1}{R_2} \right)_0 \right]. \quad (15)$$

Inserting

$$\left( \frac{1}{R_2} \right)_{\zeta_0} = \frac{\cos \alpha}{\rho_0} \quad \text{and} \quad \left( \frac{1}{R_2} \right)_0 = 0$$

into eq. (15) one obtains the following approximation for eq. (14):

$$\frac{1}{R_2} \approx \frac{\cos \alpha}{\rho_0 \zeta_0} \cdot \zeta. \quad (16)$$

Now eq. (4) can be integrated once with the result:

$$\frac{\rho'}{\sqrt{1+\rho'^2}} \Big|_0^{\zeta_0} = \left[ 1 + \frac{\cos \alpha}{\rho_0 \zeta_0} \right] \frac{1}{2} \zeta_0^2.$$

With our definition of  $\alpha$ :  $\rho'(\zeta_0) = -\tan \alpha$  this yields:

$$\zeta_0(\alpha, \rho_0) = \sqrt{2} \cdot \sqrt{1 - \sin^2 \alpha + \frac{\cos^2 \alpha}{8\rho_0^2}} - \frac{\cos \alpha}{2\rho_0}. \quad (17)$$

This is the formula of Tsivinskii for the free surface.

The special case of the Tsivinskii approximation for  $\alpha = 0^\circ$  is derived by Gaulé and Pastore /11/:

$$\zeta_{\perp}(\rho_0) = \sqrt{2} \cdot \sqrt{1 + \frac{1}{8\rho_0^2}} - \frac{1}{2\rho_0} \quad (18)$$

(eq. (A 4) of /11/).

Near the stationary height ( $\sin\alpha \approx \alpha$ ) the approximation of Tsivinskii eq. (17) gives the following expression:

$$\zeta_0(\alpha, \rho_0) = \zeta_{\perp}(\rho_0) - \frac{1}{\sqrt{2} \cdot \sqrt{1 + \frac{1}{8\rho_0^2}}} \cdot \alpha. \quad (19)$$

Gaulé and Pastore also derive this formula for small  $\alpha$  values, but due to an inconsistency in the consideration of terms linear in  $\alpha$ , they obtain the result (eq. (6a) of /11/):

$$\zeta_0(\alpha, \rho_0) = \zeta_{\perp}(\rho_0) - \zeta_{\perp}(\rho_0) \cdot \alpha. \quad (20)$$

Figs. 6a and 6b show  $\zeta_0(\alpha, \rho_0)$  as a function of  $\alpha$  for different  $\rho_0$  values (fig. 6a for the exact case, fig. 6b for the Tsivinskii approximation). One observes that general agreement exists for large  $\rho_0$  values, and that for angles  $\alpha \geq 0^\circ$  both sets of curves show similar behaviour, namely decreasing to zero, as  $\alpha$  approaches  $90^\circ$ . In the range  $\alpha < 0^\circ$  we have a strikingly different behaviour in that the approximation does not show the effect of maximum height. Instead all curves tend to  $\zeta_0 = 2$  for  $\alpha = -90^\circ$ . This, however, is valid only in the limit  $\rho_0 \rightarrow \infty$ .

For understanding the range of validity the following considerations may be made. For  $\alpha$  values near  $90^\circ$  both approximations eqs. (14) and (15) are well justified. This means, on the other hand, that for  $\alpha$  tending to  $0^\circ$  and especially reaching negative values, approximation (15) gets progressively worse. Independently  $1/R_2$  of eq. (13) assumes its maximum value at  $\zeta = \zeta_{\perp}$  and is therefore always bounded by

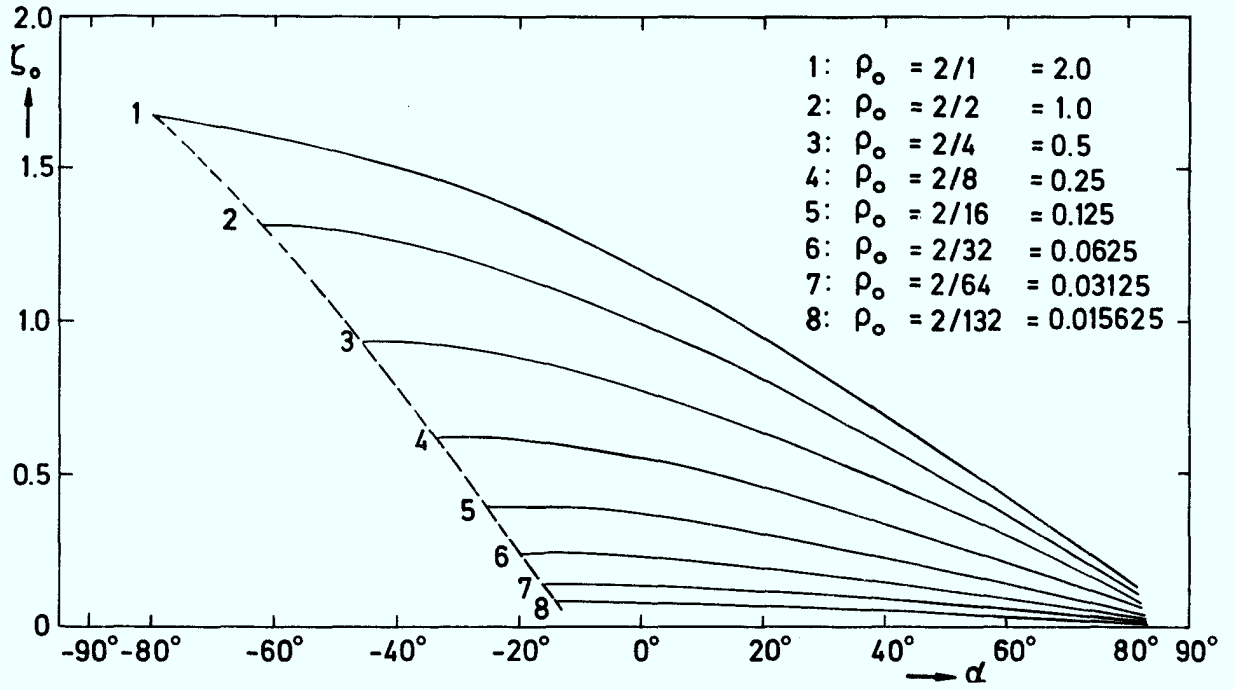


Fig. 6a: Interface height as a function of  $\alpha$ . The parameter  $\rho_0$  decreases geometrically. The dotted line gives  $\zeta_{\max}$ .

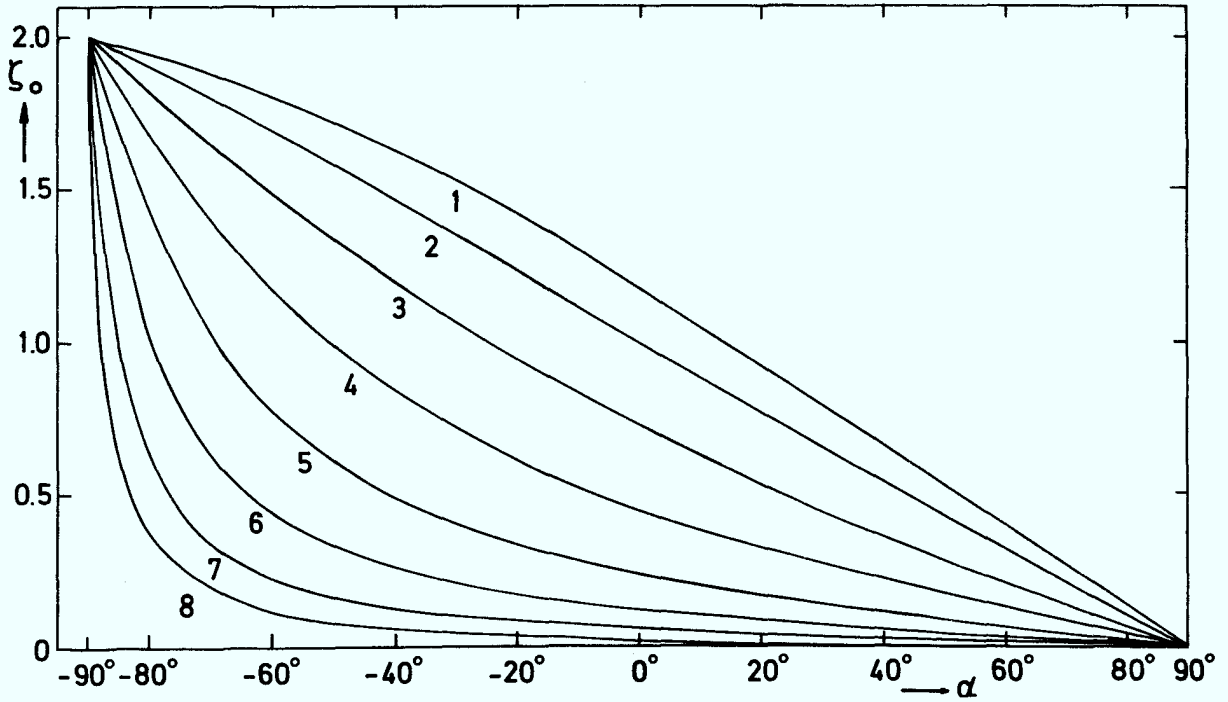


Fig. 6b: The same set of curves as in fig. 6a for the Tsivinskii approximation. For all curves,  $\zeta_{\max} = 2$  at  $\alpha = -90^\circ$ .

$$\frac{1}{R_2} \leq \frac{1}{\rho_{\perp}} , \quad (21)$$

so that for large  $\rho_{\perp}$  values ( $\rho_{\perp} \gg \zeta_0$ ), the term described by eq. (13) is negligible when solving eq. (4).

A further approximation is given by Ferguson (1912) /25/ and by Heywang (1956) /10/ based on the following concept. The rod or the crystal diameter  $\rho_0$  respectively may be large compared to the meniscus height  $\zeta_0$  (the maximum value of  $\zeta_0$  is equal to 2 for infinite  $\rho_0$ ). In this case the second term of the main differential eq. (4) may be replaced approximately by:

$$\frac{1}{\rho \sqrt{1+\rho'^2}} \approx \frac{\zeta}{\rho} \cdot \sqrt{1 - \frac{\zeta^2}{4}} . \quad (22)$$

Both authors set  $\rho = \rho_{\perp}$  on the right hand side of (22), which is justified since for  $\zeta \approx \zeta_{\perp}$ ,  $\rho(\zeta)$  changes only weakly because of  $\rho'(\zeta_{\perp}) = 0$ . With this approximation Ferguson obtains analytically the first integral of eq. (4); as a special result he gets an equation for the stationary height  $\zeta_{\perp}(\rho_{\perp})$ :

$$\frac{\zeta_{\perp}^2}{2} - 1 + \frac{4}{3\rho_{\perp}} \cdot \left[ 1 - \left( 1 - \frac{\zeta_{\perp}^2}{4} \right)^{3/2} \right] = 0 . \quad (23)$$

Heywang introduces into relation (22) a further, in our opinion not quite valid, simplification:

$$\sqrt{1 - \frac{\zeta^2}{4}} \approx 1 ,$$

which reduces eq. (22) to:

$$\frac{1}{\rho \sqrt{1+\rho'^2}} \approx \frac{\zeta}{\rho_{\perp}} , \quad (24)$$

from which he obtains the wanted analytical expression for  $\zeta_{\perp}$ :

$$\zeta_{\perp}(\rho_{\perp}) = \left[ \frac{2}{1 + \frac{1}{\rho_{\perp}}} \right]^{1/2} \quad (25)$$

The approximations of both authors, eqs. (23) and (25), show the same analytical behaviour for small values of  $\rho_{\perp}$ , namely:

$$\zeta_{\perp}(\rho_{\perp}) \approx \sqrt{2\rho_{\perp}} \quad (26)$$

and, as expected, they tend to  $\zeta_{\perp} = \sqrt{2}$  for infinite  $\rho_{\perp}$ .

With eq. (24) it is now possible to calculate the second integral of eq. (4) analytically in the same way as when solving the problem of the rod with infinite radius. In this case the meniscus shape is given by:

$$\rho(\zeta) = \frac{1}{\sqrt{1 + \frac{1}{\rho_{\perp}}}} \cdot \left[ \sqrt{2} - \sqrt{4-x^2} + \ln \frac{2+\sqrt{4-x^2}}{(1+\sqrt{2}) \cdot x} \right] + \rho_{\perp} \quad (27)$$

with

$$x = \sqrt{1 + \frac{1}{\rho_{\perp}}} \cdot \zeta,$$

For finding a solution through an arbitrary joining point  $(\zeta_0, \rho_0)$ , only an iteration with respect to  $\rho_{\perp}$  for the given  $\zeta = \zeta_0$  and  $\rho(\zeta_0) = \rho_0$  has to be made.

The approximations discussed above are valid for large  $\rho_0$ . For the case of small  $\rho_0$ , recently James /15/ has published an approximation for the meniscus shape. Especially for the height of the contact circle, which in terms of crystal growth is identical with the interface height, he finds (eq. (4) of /15/ written in our notation):

$$\zeta_0(\alpha, \rho_0) = \rho_0 \cdot \cos \alpha \left[ \ln \frac{4}{\rho_0(1+\sin \alpha)} - \gamma \right] \quad (28)$$

with the Euler constant  $\gamma = 0.57712 \dots$ . From this equation, the stationary case  $\alpha = 0^\circ$  leads to:

$$\zeta_{\perp}(\rho_{\perp}) = \rho_{\perp} \left( \ln \frac{4}{\rho_{\perp}} - \gamma \right), \quad (29)$$

with the limiting behaviour for  $\rho_{\perp} \rightarrow 0$ :

$$\zeta_{\perp}(\rho_{\perp}) \approx \rho_{\perp} \cdot \ln \frac{1}{\rho_{\perp}}, \quad (30)$$

which is in contrast to eq. (26).

In the following we shall compare the range of validity of the described approximations with our numerical results for some typical examples. First we shall discuss the solid-liquid interface height  $\zeta_0(\alpha, \rho_0)$  for different joining angles  $\alpha$ . This is plotted for  $\rho_0 = 1.0$  in fig. 7a and for  $\rho_0 = 0.01$  in fig. 7b. It is seen that both the Heywang and the James approximations show a maximum height for a certain angle  $\alpha_{\min} > -90^\circ$  (in contrast to Tsivinskii). There is general agreement for  $\rho_0 = 1.0$  (fig. 7a) for Heywang, whereas James shows stronger deviations, as expected for this large  $\rho_0$  value. The opposite situation is found for small  $\rho_0$  values ( $\rho_0 = 0.01$  in fig. 7b) where the excellent agreement between the James approximation and the numerical solution should be pointed out.

Of special interest for crystal growth is the dependence of the stationary height on the crystal radius. Therefore, the function  $\zeta_{\perp}(\rho_{\perp})$  is plotted in fig. 8a for all considered approximations including the numerical solution. Except for the approximation of James all other approximations are roughly valid over the whole range of  $\rho_0$ . For a more quantitative discussion the relative deviations from the exact solution  $\zeta_{\text{ex.}}$ :  $\Delta_r = (\zeta_{\text{app.}} - \zeta_{\text{ex.}})/\zeta_{\text{ex.}}$  are shown in fig. 8b. Again the high accuracy of the James solution can be observed for small  $\rho_0$  values. For large  $\rho_0$  ( $\rho_0 > 2$ ) the Ferguson approximation tends to  $\sqrt{2}$  most rapidly, whereas the other curves converge to this limit more slowly. The explanation of this property is found by considering the asymptotic behaviour:

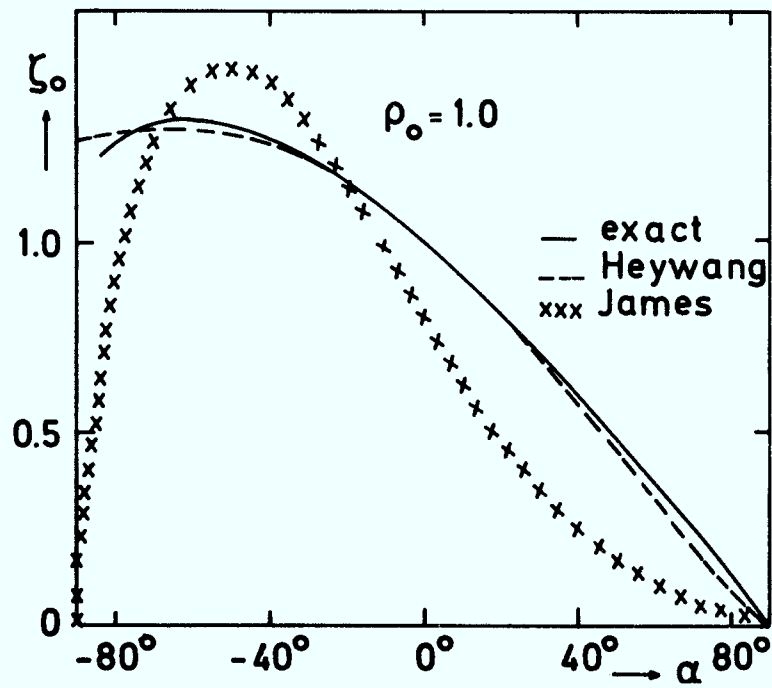


Fig. 7a: Interface height as a function of  $\alpha$ . Comparison of different approximations with the numerical result ( $\rho_0 = 1.0$ ).

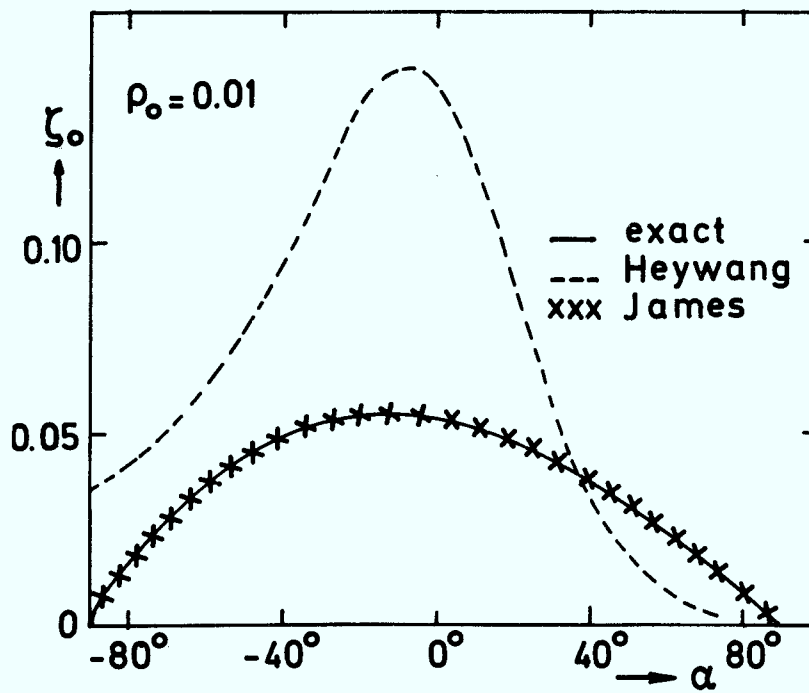


Fig. 7b: The same as fig. 7a, but with a small  $\rho_0$  value ( $\rho_0 = 0.01$ ).

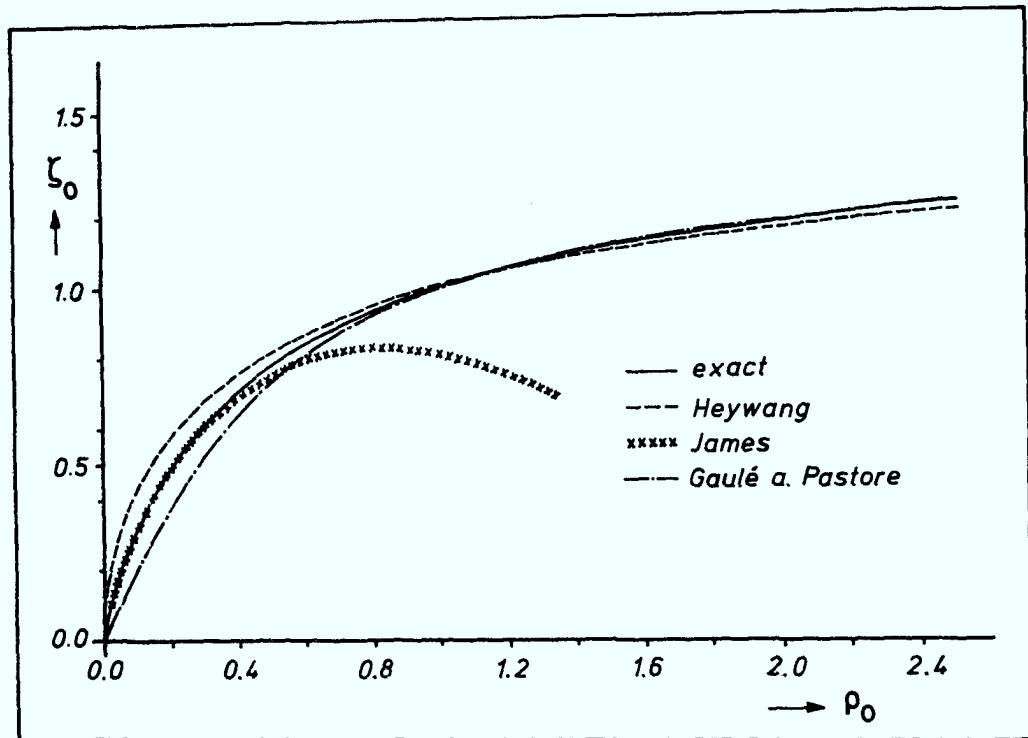


Fig. 8a: Interface height for stationary growth as a function of  $\rho_0$ , comparison of different approximations.

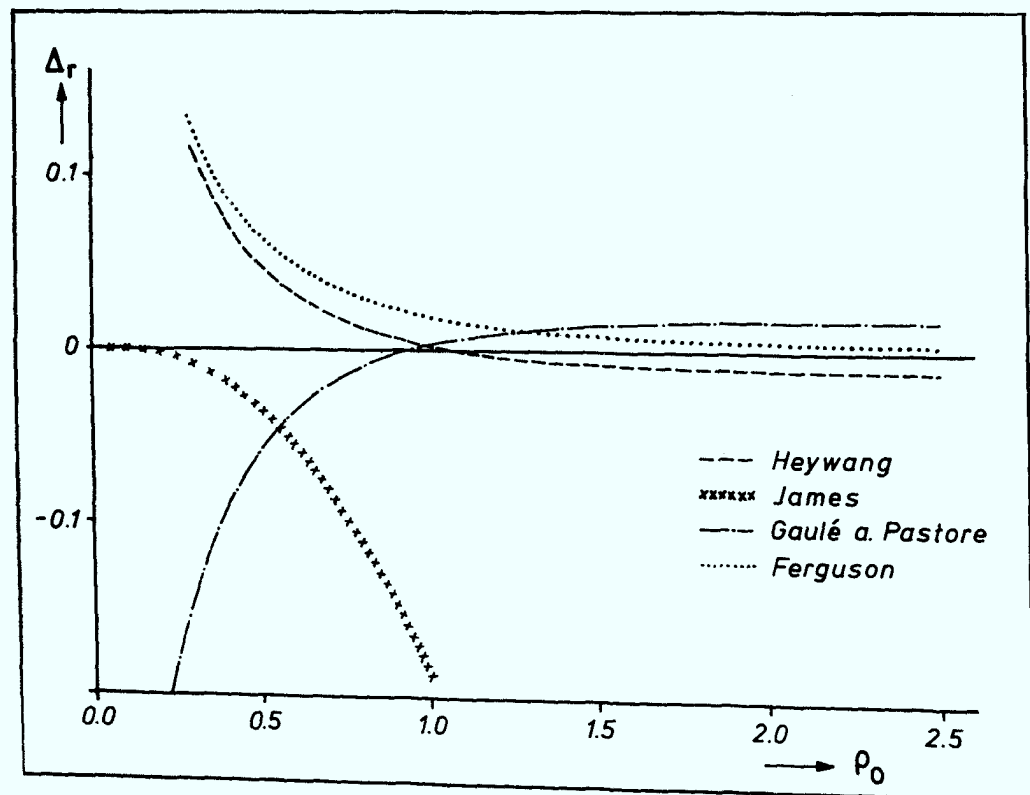


Fig. 8b: Relative deviations of the discussed approximations referred to the exact solution for the case of stationary growth.

$$\zeta_{\perp}(\rho_{\perp}) = \sqrt{2} \cdot (1 - a \cdot \frac{1}{\rho_{\perp}}) + O(\frac{1}{\rho_{\perp}^2}) \quad (31)$$

with  $a = \frac{1}{2}$  (Heywang),  $a = (2 - \sqrt{2})/3 = 0.432$  (Ferguson) and  $a = 2^{-3/2} = 0.354$  (Gaulé). Since only Ferguson is exact to this order, the other two approximations must necessarily behave as shown in fig. 8b.

## 5. Conclusions

In this final part we want to draw some conclusions regarding Czochralski growth, to give limitations of the applicability and to indicate possible extensions.

The existence of the break-off angle  $\alpha_{\min}$  has a definite effect for the necking-in process during crystal growth when it is necessary to reach neck diameters as small as possible. From our results one can conclude that during necking with a certain slope angle  $\alpha < 0^\circ$ , arbitrarily small diameters may not be reached. For  $\rho_0 = \rho_0(\alpha_{\min})$  (fig. 5b) the meniscus will break off. In order to obtain a rather thin neck diameter, one can proceed in two ways: Either the neck is pulled from the beginning with a constant, but small negative slope angle  $\alpha$ , such that in fig. 6a the corresponding line  $\alpha = \text{const}$  meets the wanted minimum diameter still in the stability region, or the process of necking-in is started with a strong negative  $\alpha$  value. In this case,  $\alpha$  has to be increased appropriately towards  $\alpha = 0^\circ$ , reaching it at the desired neck-diameter. The second possibility means that down to the minimum neck a curve is followed close to the dashed curve of fig. 6a.

The calculated meniscus shapes are also valid for the liquid encapsulation method. In this case one has to replace  $K$  of eqs. (2) by

$$K = \sqrt{\frac{\sigma_{lf}}{g(d_1 - d_f)}} \quad , \quad (32)$$

where

- $\sigma_{lf}$  is the interfacial tension between melt and encapsulating fluid,
- $d_1$  is the melt density,
- $d_f$  is the density of the encapsulating fluid.

A particular problem will arise if both densities are nearly equal since  $K$  will become large. The consequences of this case will be discussed below.

Until now we have assumed the contact angle  $\beta$  to be zero. As pointed out by Bardsley et al. /26/, this assumption is not at all valid for different materials. For the case that  $\beta$  is not equal to zero (fig. 1a), one has to distinguish between the joining angle  $\alpha$  and the growing angle  $\alpha^*$ :

$$\alpha = \alpha^* + \beta \quad . \quad (33)$$

For  $\beta$  independent of orientation and therefore of the azimuth angle, the meniscus shape is determined as before, however, using  $\alpha$  as defined by eq. (33).

The Czochralski method in principle offers the possibility, as already mentioned in part 2, to determine experimentally the capillary constant  $a = \sqrt{2} \cdot K$  and therefore the surface tension when the density of the melt is known. For this purpose the following procedure may be used. Knowing the solution of the Euler-Laplace equation (4) the scaling equations of type (2) can be written as:

$$R = K \cdot \rho_0 \quad (34a)$$

$$H = K \cdot \zeta_0(\alpha, \rho_0) \quad . \quad (34b)$$

When  $R$ ,  $H$  and  $\alpha$  are known values,  $K$  can be eliminated by calculating the ratio  $\Omega = R/H$ . Using table 3 one finds for this  $\Omega$  with the known value of  $\alpha$  the corresponding  $\rho_0$ . With eq. (34a) one finally finds  $K = R/\rho_0$ . The values of  $R$ ,  $H$  and  $\alpha$  may be determined experimentally either photographically or using a television method as in our case /7, 8/. - One should notice, however, that the meniscus will always exhibit a temperature gradient for the Czochralski method /2, 3/, such that  $K$  will be averaged over a certain temperature range.

For controlling the crystal diameter by the weighing method (see e.g. /4, 5/), it is important to know the force which results from the adhering meniscus. Calculating the weight,  $F_\sigma$ , of the melt below the meniscus one gets:

$$F_{\sigma} = K \cdot \sigma \left[ 2\pi\rho_0 \cos\alpha + \pi\rho_0^2 \zeta_0 + f \cdot v \right], \quad (35)$$

where  $f = \left(\frac{d_s}{d_l} - 1\right)$  with  $d_s$  the density of the solid and  $v$  the dimensionless volume caused by the nonplanar interface. For a convex form of the interface (seen from the crystal)  $v$  is positive (negative if the interface is concave). Formula (35) is not only valid for constant growth conditions, as are the corresponding expressions in /4/ and /5/, but also for nonstationary growth. When ignoring the last term of eq. (35),  $F_{\sigma}$  may be calculated using table 1. For  $\beta \neq 0^\circ$  the angle  $\alpha$  in eq. (35) is given by eq. (33).

In the foregoing we only considered menisci with plane interfaces. When additionally we assume the crystal edge at the interface to be rounded (fig. 1a), at least infinitesimally, then all angles  $\alpha$  required by the mathematical treatment will exist physically. Also in the case of nonplanar interfaces a physical limitation of the range of angles can be disregarded. This means, that all of our results are also applicable for convex or concave interfaces. Recent experimental observations, however, indicate that, though the stability criteria are fulfilled for the meniscus, a break-off may occur if the interface is so highly convex (into the crystal) that the interface height along the crystal axis greatly exceeds the meniscus height  $\zeta_0$ .

An important aspect we must now discuss concerns the second boundary condition, eq. (5b). In this connection two problems may arise which could invalidate the assumption of the free surface boundary condition so that our results would no longer be applicable.

1. Our results are valid if for the crystal radius  $R$  and the crucible radius  $R_c$  the condition

$$R \ll R_c \quad (36)$$

is fulfilled. If  $R_c$  is comparable to  $R$ , then the wetting angle at the crucible and the finite crucible radius must be taken into account. Theoretical investigations including the stationary rotation of the crystal-crucible system are presently under study.

2. In addition to the requirement (36) we must also require the Bond number to be much greater than 1. That is,

$$\frac{R^2 \cdot g \cdot d}{\sigma} \gg 1. \quad (37)$$

This may not be valid for low  $g$  values or for the liquid encapsulation method with  $d = d_l - d_f$  of eq. (32) (see e.g. /27/ for a discussion of the influence of  $g$  on the meniscus shape).

Although our results and also those of Heywang for instance are in principle independent of  $g$ , they are not valid for small  $g$  because the crucible boundary condition becomes important. For the mathematical treatment of the meniscus problem including low  $g$  values, it is more useful, instead of using the differential equation (4) with scaling equations (2), to solve the Laplace equation of the following form:

$$\frac{\rho''}{(1+\rho'^2)^{3/2}} - \frac{1}{\rho(1+\rho'^2)^{1/2}} - \epsilon^2 \zeta + \Pi = 0, \quad (38)$$

with

$$\rho = r/R_c, \quad \zeta = z/R_c, \quad \Pi = \frac{p}{\sigma} R_c, \quad \epsilon = \frac{R_T}{\sqrt{\frac{\sigma}{g \cdot d}}}. \quad (39)$$

The pressure term  $p$  or  $\Pi$  respectively is determined by the crucible boundary condition.

The generalization of  $\beta$  being dependent on the orientation as for example when growing Si /28/ or NaCl /29, 30/ is a much

more difficult problem. In these cases the crystal may develop facets so that the meniscus is not axisymmetric and the contact curve is not a plane curve but a complex spacial one. Similar difficulties arise when pulling crystals of nonaxisymmetric shape with the Stepanov method /31/ even for  $\beta$  independent of the orientation. In these cases one has to solve a partial differential equation satisfying complicated boundary conditions.

#### Acknowledgment

We want to thank Dr. H. Wenzl for his continuous interest.

#### Addendum

All numerical calculations were performed on the IBM/370-168 of the Zentralinstitut für Angewandte Mathematik of KFA Jülich and took about 9 hours computing time. On request the data are available on tape.

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0.0000

TABLE 1

Interface heights  $\zeta_0$  as a function of  
the angle  $\alpha$  and radius  $\rho_0$ .

$\zeta_0(\alpha, \rho_0)$

$\zeta_0(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 0.01    | 0.02    | 0.03    | 0.04    | 0.05    | 0.06    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.00165 | 0.00281 | 0.00380 | 0.00467 | 0.00546 | 0.00618 |
| 86                         | 0.00330 | 0.00563 | 0.00760 | 0.00934 | 0.01092 | 0.01236 |
| 84                         | 0.00494 | 0.00844 | 0.01139 | 0.01400 | 0.01636 | 0.01852 |
| 82                         | 0.00658 | 0.01124 | 0.01518 | 0.01866 | 0.02180 | 0.02468 |
| 80                         | 0.00821 | 0.01403 | 0.01895 | 0.02330 | 0.02723 | 0.03082 |
| 78                         | 0.00984 | 0.01681 | 0.02271 | 0.02792 | 0.03263 | 0.03694 |
| 76                         | 0.01146 | 0.01958 | 0.02645 | 0.03253 | 0.03801 | 0.04304 |
| 74                         | 0.01307 | 0.02233 | 0.03018 | 0.03711 | 0.04337 | 0.04911 |
| 72                         | 0.01467 | 0.02507 | 0.03388 | 0.04167 | 0.04870 | 0.05515 |
| 70                         | 0.01626 | 0.02779 | 0.03756 | 0.04619 | 0.05400 | 0.06115 |
| 68                         | 0.01783 | 0.03048 | 0.04121 | 0.05069 | 0.05926 | 0.06712 |
| 66                         | 0.01939 | 0.03316 | 0.04482 | 0.05515 | 0.06448 | 0.07304 |
| 64                         | 0.02093 | 0.03580 | 0.04841 | 0.05957 | 0.06966 | 0.07891 |
| 62                         | 0.02245 | 0.03842 | 0.05196 | 0.06395 | 0.07479 | 0.08474 |
| 60                         | 0.02396 | 0.04101 | 0.05547 | 0.06828 | 0.07987 | 0.09050 |
| 58                         | 0.02544 | 0.04356 | 0.05894 | 0.07257 | 0.08490 | 0.09621 |
| 56                         | 0.02691 | 0.04608 | 0.06237 | 0.07680 | 0.08986 | 0.10186 |
| 54                         | 0.02835 | 0.04857 | 0.06575 | 0.08098 | 0.09477 | 0.10743 |
| 52                         | 0.02976 | 0.05101 | 0.06908 | 0.08510 | 0.09961 | 0.11294 |
| 50                         | 0.03115 | 0.05342 | 0.07236 | 0.08916 | 0.10438 | 0.11837 |
| 48                         | 0.03252 | 0.05578 | 0.07558 | 0.09315 | 0.10908 | 0.12372 |
| 46                         | 0.03385 | 0.05810 | 0.07874 | 0.09708 | 0.11370 | 0.12899 |
| 44                         | 0.03516 | 0.06037 | 0.08185 | 0.10093 | 0.11825 | 0.13417 |
| 42                         | 0.03643 | 0.06259 | 0.08489 | 0.10471 | 0.12270 | 0.13926 |
| 40                         | 0.03768 | 0.06476 | 0.08787 | 0.10841 | 0.12707 | 0.14425 |
| 38                         | 0.03889 | 0.06688 | 0.09077 | 0.11204 | 0.13135 | 0.14914 |
| 36                         | 0.04007 | 0.06894 | 0.09361 | 0.11557 | 0.13554 | 0.15393 |
| 34                         | 0.04121 | 0.07094 | 0.09637 | 0.11902 | 0.13962 | 0.15861 |
| 32                         | 0.04231 | 0.07289 | 0.09906 | 0.12238 | 0.14361 | 0.16317 |
| 30                         | 0.04338 | 0.07477 | 0.10166 | 0.12565 | 0.14748 | 0.16762 |
| 28                         | 0.04441 | 0.07660 | 0.10419 | 0.12881 | 0.15125 | 0.17195 |
| 26                         | 0.04540 | 0.07835 | 0.10663 | 0.13188 | 0.15490 | 0.17615 |
| 24                         | 0.04635 | 0.08004 | 0.10898 | 0.13484 | 0.15843 | 0.18022 |
| 22                         | 0.04725 | 0.08166 | 0.11124 | 0.13770 | 0.16185 | 0.18416 |
| 20                         | 0.04812 | 0.08321 | 0.11341 | 0.14045 | 0.16513 | 0.18796 |
| 18                         | 0.04893 | 0.08469 | 0.11549 | 0.14308 | 0.16829 | 0.19161 |
| 16                         | 0.04971 | 0.08610 | 0.11747 | 0.14559 | 0.17131 | 0.19512 |
| 14                         | 0.05043 | 0.08742 | 0.11935 | 0.14799 | 0.17420 | 0.19848 |
| 12                         | 0.05111 | 0.08867 | 0.12112 | 0.15026 | 0.17694 | 0.20168 |
| 10                         | 0.05174 | 0.08984 | 0.12279 | 0.15240 | 0.17954 | 0.20471 |
| 8                          | 0.05233 | 0.09093 | 0.12435 | 0.15442 | 0.18199 | 0.20759 |
| 6                          | 0.05286 | 0.09193 | 0.12580 | 0.15630 | 0.18429 | 0.21029 |
| 4                          | 0.05334 | 0.09285 | 0.12714 | 0.15804 | 0.18643 | 0.21281 |
| 2                          | 0.05377 | 0.09368 | 0.12836 | 0.15964 | 0.18841 | 0.21516 |
| 0                          | 0.05414 | 0.09442 | 0.12946 | 0.16110 | 0.19022 | 0.21732 |

Table 1

| $\rho_0$<br>$\alpha$ | 0.01    | 0.02    | 0.03    | 0.04    | 0.05    | 0.06    |
|----------------------|---------|---------|---------|---------|---------|---------|
| -2                   | 0.05446 | 0.09507 | 0.13044 | 0.16242 | 0.19186 | 0.21929 |
| -4                   | 0.05473 | 0.09563 | 0.13130 | 0.16358 | 0.19333 | 0.22107 |
| -6                   | 0.05494 | 0.09609 | 0.13204 | 0.16459 | 0.19462 | 0.22265 |
| -8                   | 0.05510 | 0.09646 | 0.13264 | 0.16544 | 0.19573 | 0.22402 |
| -10                  | 0.05520 | 0.09674 | 0.13312 | 0.16614 | 0.19666 | 0.22519 |
| -12                  | 0.05524 | 0.09691 | 0.13346 | 0.16667 | 0.19739 | 0.22614 |
| -14                  |         | 0.09698 | 0.13366 | 0.16703 | 0.19793 | 0.22687 |
| -16                  |         |         | 0.13373 | 0.16722 | 0.19828 | 0.22738 |
| -18                  |         |         |         |         | 0.19841 | 0.22765 |
| -20                  |         |         |         |         |         |         |
| -22                  |         |         |         |         |         |         |
| -24                  |         |         |         |         |         |         |
| -26                  |         |         |         |         |         |         |
| -28                  |         |         |         |         |         |         |
| -30                  |         |         |         |         |         |         |
| -32                  |         |         |         |         |         |         |
| -34                  |         |         |         |         |         |         |
| -36                  |         |         |         |         |         |         |
| -38                  |         |         |         |         |         |         |
| -40                  |         |         |         |         |         |         |
| -42                  |         |         |         |         |         |         |
| -44                  |         |         |         |         |         |         |
| -46                  |         |         |         |         |         |         |
| -48                  |         |         |         |         |         |         |
| -50                  |         |         |         |         |         |         |
| -52                  |         |         |         |         |         |         |
| -54                  |         |         |         |         |         |         |
| -56                  |         |         |         |         |         |         |
| -58                  |         |         |         |         |         |         |
| -60                  |         |         |         |         |         |         |
| -62                  |         |         |         |         |         |         |
| -64                  |         |         |         |         |         |         |
| -66                  |         |         |         |         |         |         |
| -68                  |         |         |         |         |         |         |
| -70                  |         |         |         |         |         |         |
| -72                  |         |         |         |         |         |         |
| -74                  |         |         |         |         |         |         |
| -76                  |         |         |         |         |         |         |
| -78                  |         |         |         |         |         |         |
| -80                  |         |         |         |         |         |         |
| -82                  |         |         |         |         |         |         |
| -84                  |         |         |         |         |         |         |
| -86                  |         |         |         |         |         |         |
| -88                  |         |         |         |         |         |         |
| -90                  |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 0.07    | 0.08    | 0.09    | 0.10    | 0.11    | 0.12    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.00685 | 0.00747 | 0.00805 | 0.00860 | 0.00911 | 0.00960 |
| 86                         | 0.01369 | 0.01493 | 0.01609 | 0.01719 | 0.01822 | 0.01920 |
| 84                         | 0.02052 | 0.02239 | 0.02413 | 0.02577 | 0.02732 | 0.02879 |
| 82                         | 0.02734 | 0.02983 | 0.03215 | 0.03434 | 0.03641 | 0.03837 |
| 80                         | 0.03415 | 0.03725 | 0.04015 | 0.04289 | 0.04547 | 0.04792 |
| 78                         | 0.04093 | 0.04465 | 0.04814 | 0.05141 | 0.05451 | 0.05745 |
| 76                         | 0.04769 | 0.05203 | 0.05609 | 0.05991 | 0.06352 | 0.06695 |
| 74                         | 0.05442 | 0.05937 | 0.06401 | 0.06837 | 0.07250 | 0.07641 |
| 72                         | 0.06112 | 0.06668 | 0.07189 | 0.07680 | 0.08144 | 0.08584 |
| 70                         | 0.06778 | 0.07395 | 0.07973 | 0.08518 | 0.09033 | 0.09521 |
| 68                         | 0.07439 | 0.08117 | 0.08753 | 0.09352 | 0.09917 | 0.10454 |
| 66                         | 0.08096 | 0.08835 | 0.09527 | 0.10180 | 0.10796 | 0.11381 |
| 64                         | 0.08748 | 0.09547 | 0.10296 | 0.11002 | 0.11669 | 0.12302 |
| 62                         | 0.09395 | 0.10253 | 0.11059 | 0.11818 | 0.12536 | 0.13216 |
| 60                         | 0.10035 | 0.10954 | 0.11815 | 0.12627 | 0.13395 | 0.14123 |
| 58                         | 0.10669 | 0.11647 | 0.12565 | 0.13429 | 0.14247 | 0.15023 |
| 56                         | 0.11297 | 0.12334 | 0.13307 | 0.14224 | 0.15091 | 0.15914 |
| 54                         | 0.11917 | 0.13012 | 0.14040 | 0.15010 | 0.15926 | 0.16796 |
| 52                         | 0.12529 | 0.13683 | 0.14766 | 0.15787 | 0.16753 | 0.17670 |
| 50                         | 0.13134 | 0.14345 | 0.15482 | 0.16555 | 0.17569 | 0.18533 |
| 48                         | 0.13730 | 0.14998 | 0.16189 | 0.17313 | 0.18376 | 0.19386 |
| 46                         | 0.14317 | 0.15642 | 0.16886 | 0.18060 | 0.19172 | 0.20228 |
| 44                         | 0.14895 | 0.16276 | 0.17573 | 0.18797 | 0.19957 | 0.21058 |
| 42                         | 0.15462 | 0.16899 | 0.18249 | 0.19523 | 0.20730 | 0.21876 |
| 40                         | 0.16020 | 0.17511 | 0.18913 | 0.20236 | 0.21490 | 0.22682 |
| 38                         | 0.16566 | 0.18112 | 0.19565 | 0.20938 | 0.22238 | 0.23474 |
| 36                         | 0.17102 | 0.18701 | 0.20205 | 0.21626 | 0.22972 | 0.24252 |
| 34                         | 0.17625 | 0.19277 | 0.20832 | 0.22300 | 0.23692 | 0.25016 |
| 32                         | 0.18137 | 0.19841 | 0.21445 | 0.22961 | 0.24398 | 0.25765 |
| 30                         | 0.18636 | 0.20391 | 0.22044 | 0.23606 | 0.25088 | 0.26498 |
| 28                         | 0.19122 | 0.20928 | 0.22628 | 0.24237 | 0.25763 | 0.27215 |
| 26                         | 0.19594 | 0.21450 | 0.23198 | 0.24851 | 0.26421 | 0.27915 |
| 24                         | 0.20052 | 0.21956 | 0.23751 | 0.25449 | 0.27062 | 0.28597 |
| 22                         | 0.20496 | 0.22448 | 0.24288 | 0.26030 | 0.27685 | 0.29261 |
| 20                         | 0.20925 | 0.22923 | 0.24808 | 0.26594 | 0.28290 | 0.29906 |
| 18                         | 0.21338 | 0.23382 | 0.25311 | 0.27139 | 0.28876 | 0.30531 |
| 16                         | 0.21735 | 0.23824 | 0.25796 | 0.27665 | 0.29442 | 0.31136 |
| 14                         | 0.22116 | 0.24248 | 0.26262 | 0.28172 | 0.29988 | 0.31720 |
| 12                         | 0.22480 | 0.24654 | 0.26709 | 0.28658 | 0.30513 | 0.32282 |
| 10                         | 0.22826 | 0.25041 | 0.27136 | 0.29124 | 0.31016 | 0.32822 |
| 8                          | 0.23154 | 0.25409 | 0.27542 | 0.29568 | 0.31497 | 0.33338 |
| 6                          | 0.23463 | 0.25757 | 0.27927 | 0.29989 | 0.31954 | 0.33831 |
| 4                          | 0.23754 | 0.26084 | 0.28291 | 0.30388 | 0.32388 | 0.34298 |
| 2                          | 0.24024 | 0.26390 | 0.28632 | 0.30764 | 0.32797 | 0.34740 |
| 0                          | 0.24275 | 0.26675 | 0.28950 | 0.31115 | 0.33180 | 0.35155 |

Table 1

| $\rho_0$<br>$\alpha$ | 0.07    | 0.08    | 0.09    | 0.10    | 0.11    | 0.12    |
|----------------------|---------|---------|---------|---------|---------|---------|
| -2                   | 0.24505 | 0.26937 | 0.29244 | 0.31440 | 0.33537 | 0.35544 |
| -4                   | 0.24713 | 0.27176 | 0.29514 | 0.31741 | 0.33867 | 0.35904 |
| -6                   | 0.24900 | 0.27392 | 0.29758 | 0.32014 | 0.34170 | 0.36234 |
| -8                   | 0.25064 | 0.27583 | 0.29977 | 0.32260 | 0.34443 | 0.36535 |
| -10                  | 0.25205 | 0.27749 | 0.30169 | 0.32478 | 0.34687 | 0.36805 |
| -12                  | 0.25323 | 0.27890 | 0.30334 | 0.32667 | 0.34900 | 0.37043 |
| -14                  | 0.25416 | 0.28005 | 0.30470 | 0.32825 | 0.35082 | 0.37248 |
| -16                  | 0.25485 | 0.28092 | 0.30577 | 0.32954 | 0.35231 | 0.37420 |
| -18                  | 0.25528 | 0.28152 | 0.30655 | 0.33050 | 0.35347 | 0.37556 |
| -20                  | 0.25545 | 0.28184 | 0.30702 | 0.33114 | 0.35429 | 0.37656 |
| -22                  |         |         | 0.30718 | 0.33144 | 0.35475 | 0.37719 |
| -24                  |         |         |         |         |         | 0.37744 |
| -26                  |         |         |         |         |         |         |
| -28                  |         |         |         |         |         |         |
| -30                  |         |         |         |         |         |         |
| -32                  |         |         |         |         |         |         |
| -34                  |         |         |         |         |         |         |
| -36                  |         |         |         |         |         |         |
| -38                  |         |         |         |         |         |         |
| -40                  |         |         |         |         |         |         |
| -42                  |         |         |         |         |         |         |
| -44                  |         |         |         |         |         |         |
| -46                  |         |         |         |         |         |         |
| -48                  |         |         |         |         |         |         |
| -50                  |         |         |         |         |         |         |
| -52                  |         |         |         |         |         |         |
| -54                  |         |         |         |         |         |         |
| -56                  |         |         |         |         |         |         |
| -58                  |         |         |         |         |         |         |
| -60                  |         |         |         |         |         |         |
| -62                  |         |         |         |         |         |         |
| -64                  |         |         |         |         |         |         |
| -66                  |         |         |         |         |         |         |
| -68                  |         |         |         |         |         |         |
| -70                  |         |         |         |         |         |         |
| -72                  |         |         |         |         |         |         |
| -74                  |         |         |         |         |         |         |
| -76                  |         |         |         |         |         |         |
| -78                  |         |         |         |         |         |         |
| -80                  |         |         |         |         |         |         |
| -82                  |         |         |         |         |         |         |
| -84                  |         |         |         |         |         |         |
| -86                  |         |         |         |         |         |         |
| -88                  |         |         |         |         |         |         |
| -90                  |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\alpha \backslash \rho_0$ | 0.13    | 0.14    | 0.15    | 0.16    | 0.17    | 0.18    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.01007 | 0.01051 | 0.01094 | 0.01134 | 0.01173 | 0.01211 |
| 86                         | 0.02014 | 0.02102 | 0.02187 | 0.02268 | 0.02346 | 0.02421 |
| 84                         | 0.03019 | 0.03152 | 0.03279 | 0.03401 | 0.03518 | 0.03630 |
| 82                         | 0.04023 | 0.04201 | 0.04370 | 0.04532 | 0.04688 | 0.04837 |
| 80                         | 0.05025 | 0.05247 | 0.05459 | 0.05661 | 0.05856 | 0.06042 |
| 78                         | 0.06024 | 0.06290 | 0.06545 | 0.06788 | 0.07021 | 0.07244 |
| 76                         | 0.07021 | 0.07331 | 0.07627 | 0.07911 | 0.08182 | 0.08443 |
| 74                         | 0.08013 | 0.08368 | 0.08706 | 0.09030 | 0.09340 | 0.09638 |
| 72                         | 0.09002 | 0.09400 | 0.09781 | 0.10145 | 0.10494 | 0.10829 |
| 70                         | 0.09986 | 0.10428 | 0.10851 | 0.11255 | 0.11642 | 0.12014 |
| 68                         | 0.10964 | 0.11451 | 0.11915 | 0.12359 | 0.12785 | 0.13194 |
| 66                         | 0.11937 | 0.12467 | 0.12974 | 0.13458 | 0.13922 | 0.14368 |
| 64                         | 0.12904 | 0.13478 | 0.14026 | 0.14550 | 0.15053 | 0.15535 |
| 62                         | 0.13864 | 0.14481 | 0.15070 | 0.15635 | 0.16176 | 0.16695 |
| 60                         | 0.14816 | 0.15477 | 0.16108 | 0.16712 | 0.17291 | 0.17847 |
| 58                         | 0.15761 | 0.16465 | 0.17137 | 0.17781 | 0.18398 | 0.18990 |
| 56                         | 0.16697 | 0.17444 | 0.18158 | 0.18841 | 0.19496 | 0.20125 |
| 54                         | 0.17624 | 0.18414 | 0.19169 | 0.19891 | 0.20584 | 0.21249 |
| 52                         | 0.18542 | 0.19374 | 0.20170 | 0.20932 | 0.21662 | 0.22364 |
| 50                         | 0.19450 | 0.20325 | 0.21161 | 0.21962 | 0.22730 | 0.23467 |
| 48                         | 0.20347 | 0.21264 | 0.22141 | 0.22980 | 0.23785 | 0.24559 |
| 46                         | 0.21233 | 0.22192 | 0.23109 | 0.23987 | 0.24829 | 0.25639 |
| 44                         | 0.22107 | 0.23107 | 0.24064 | 0.24981 | 0.25861 | 0.26706 |
| 42                         | 0.22968 | 0.24010 | 0.25007 | 0.25962 | 0.26879 | 0.27759 |
| 40                         | 0.23817 | 0.24900 | 0.25936 | 0.26930 | 0.27883 | 0.28799 |
| 38                         | 0.24651 | 0.25776 | 0.26852 | 0.27883 | 0.28872 | 0.29823 |
| 36                         | 0.25472 | 0.26637 | 0.27752 | 0.28820 | 0.29846 | 0.30832 |
| 34                         | 0.26278 | 0.27483 | 0.28637 | 0.29743 | 0.30805 | 0.31825 |
| 32                         | 0.27068 | 0.28314 | 0.29506 | 0.30649 | 0.31746 | 0.32802 |
| 30                         | 0.27843 | 0.29127 | 0.30358 | 0.31537 | 0.32670 | 0.33760 |
| 28                         | 0.28600 | 0.29924 | 0.31192 | 0.32408 | 0.33576 | 0.34700 |
| 26                         | 0.29340 | 0.30703 | 0.32008 | 0.33261 | 0.34464 | 0.35621 |
| 24                         | 0.30062 | 0.31463 | 0.32806 | 0.34094 | 0.35332 | 0.36523 |
| 22                         | 0.30765 | 0.32204 | 0.33583 | 0.34907 | 0.36179 | 0.37404 |
| 20                         | 0.31449 | 0.32925 | 0.34340 | 0.35699 | 0.37005 | 0.38263 |
| 18                         | 0.32112 | 0.33626 | 0.35077 | 0.36470 | 0.37810 | 0.39100 |
| 16                         | 0.32755 | 0.34305 | 0.35791 | 0.37218 | 0.38592 | 0.39914 |
| 14                         | 0.33376 | 0.34961 | 0.36482 | 0.37944 | 0.39350 | 0.40704 |
| 12                         | 0.33974 | 0.35595 | 0.37150 | 0.38645 | 0.40084 | 0.41470 |
| 10                         | 0.34549 | 0.36205 | 0.37794 | 0.39321 | 0.40792 | 0.42209 |
| 8                          | 0.35100 | 0.36790 | 0.38412 | 0.39972 | 0.41474 | 0.42922 |
| 6                          | 0.35627 | 0.37350 | 0.39004 | 0.40596 | 0.42129 | 0.43608 |
| 4                          | 0.36128 | 0.37883 | 0.39569 | 0.41192 | 0.42756 | 0.44264 |
| 2                          | 0.36602 | 0.38389 | 0.40107 | 0.41760 | 0.43354 | 0.44892 |
| 0                          | 0.37049 | 0.38867 | 0.40615 | 0.42298 | 0.43921 | 0.45488 |

Table 1

| $\alpha \backslash \rho_0$ | 0.13    | 0.14    | 0.15    | 0.16    | 0.17    | 0.18    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| -2                         | 0.37468 | 0.39316 | 0.41093 | 0.42806 | 0.44458 | 0.46053 |
| -4                         | 0.37857 | 0.39734 | 0.41541 | 0.43282 | 0.44962 | 0.46585 |
| -6                         | 0.38216 | 0.40122 | 0.41956 | 0.43725 | 0.45433 | 0.47082 |
| -8                         | 0.38545 | 0.40477 | 0.42339 | 0.44135 | 0.45869 | 0.47545 |
| -10                        | 0.38841 | 0.40800 | 0.42687 | 0.44509 | 0.46269 | 0.47971 |
| -12                        | 0.39104 | 0.41088 | 0.43000 | 0.44847 | 0.46632 | 0.48359 |
| -14                        | 0.39332 | 0.41340 | 0.43277 | 0.45148 | 0.46957 | 0.48707 |
| -16                        | 0.39526 | 0.41556 | 0.43516 | 0.45410 | 0.47242 | 0.49016 |
| -18                        | 0.39683 | 0.41734 | 0.43716 | 0.45631 | 0.47485 | 0.49282 |
| -20                        | 0.39802 | 0.41873 | 0.43875 | 0.45811 | 0.47687 | 0.49504 |
| -22                        | 0.39883 | 0.41972 | 0.43993 | 0.45948 | 0.47844 | 0.49681 |
| -24                        | 0.39923 | 0.42029 | 0.44067 | 0.46041 | 0.47955 | 0.49811 |
| -26                        |         |         | 0.44097 | 0.46087 | 0.48018 | 0.49893 |
| -28                        |         |         |         |         |         | 0.49924 |
| -30                        |         |         |         |         |         |         |
| -32                        |         |         |         |         |         |         |
| -34                        |         |         |         |         |         |         |
| -36                        |         |         |         |         |         |         |
| -38                        |         |         |         |         |         |         |
| -40                        |         |         |         |         |         |         |
| -42                        |         |         |         |         |         |         |
| -44                        |         |         |         |         |         |         |
| -46                        |         |         |         |         |         |         |
| -48                        |         |         |         |         |         |         |
| -50                        |         |         |         |         |         |         |
| -52                        |         |         |         |         |         |         |
| -54                        |         |         |         |         |         |         |
| -56                        |         |         |         |         |         |         |
| -58                        |         |         |         |         |         |         |
| -60                        |         |         |         |         |         |         |
| -62                        |         |         |         |         |         |         |
| -64                        |         |         |         |         |         |         |
| -66                        |         |         |         |         |         |         |
| -68                        |         |         |         |         |         |         |
| -70                        |         |         |         |         |         |         |
| -72                        |         |         |         |         |         |         |
| -74                        |         |         |         |         |         |         |
| -76                        |         |         |         |         |         |         |
| -78                        |         |         |         |         |         |         |
| -80                        |         |         |         |         |         |         |
| -82                        |         |         |         |         |         |         |
| -84                        |         |         |         |         |         |         |
| -86                        |         |         |         |         |         |         |
| -88                        |         |         |         |         |         |         |
| -90                        |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\alpha \backslash \rho_0$ | 0.19    | 0.20    | 0.22    | 0.24    | 0.26    | 0.28    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.01246 | 0.01281 | 0.01346 | 0.01407 | 0.01464 | 0.01517 |
| 86                         | 0.02492 | 0.02561 | 0.02692 | 0.02813 | 0.02927 | 0.03034 |
| 84                         | 0.03737 | 0.03841 | 0.04036 | 0.04219 | 0.04389 | 0.04550 |
| 82                         | 0.04980 | 0.05118 | 0.05379 | 0.05622 | 0.05850 | 0.06063 |
| 80                         | 0.06221 | 0.06393 | 0.06720 | 0.07024 | 0.07308 | 0.07575 |
| 78                         | 0.07459 | 0.07666 | 0.08057 | 0.08422 | 0.08763 | 0.09083 |
| 76                         | 0.08694 | 0.08935 | 0.09391 | 0.09817 | 0.10215 | 0.10588 |
| 74                         | 0.09924 | 0.10200 | 0.10721 | 0.11208 | 0.11662 | 0.12089 |
| 72                         | 0.11151 | 0.11461 | 0.12047 | 0.12594 | 0.13105 | 0.13585 |
| 70                         | 0.12372 | 0.12716 | 0.13367 | 0.13975 | 0.14543 | 0.15076 |
| 68                         | 0.13587 | 0.13966 | 0.14682 | 0.15350 | 0.15974 | 0.16561 |
| 66                         | 0.14797 | 0.15209 | 0.15990 | 0.16718 | 0.17400 | 0.18039 |
| 64                         | 0.15999 | 0.16446 | 0.17292 | 0.18080 | 0.18818 | 0.19510 |
| 62                         | 0.17194 | 0.17675 | 0.18585 | 0.19434 | 0.20228 | 0.20974 |
| 60                         | 0.18382 | 0.18896 | 0.19871 | 0.20780 | 0.21630 | 0.22428 |
| 58                         | 0.19560 | 0.20109 | 0.21148 | 0.22116 | 0.23023 | 0.23874 |
| 56                         | 0.20730 | 0.21312 | 0.22415 | 0.23444 | 0.24407 | 0.25311 |
| 54                         | 0.21889 | 0.22505 | 0.23672 | 0.24761 | 0.25780 | 0.26737 |
| 52                         | 0.23039 | 0.23688 | 0.24919 | 0.26067 | 0.27142 | 0.28151 |
| 50                         | 0.24177 | 0.24860 | 0.26154 | 0.27362 | 0.28493 | 0.29555 |
| 48                         | 0.25303 | 0.26020 | 0.27378 | 0.28645 | 0.29832 | 0.30946 |
| 46                         | 0.26418 | 0.27168 | 0.28589 | 0.29915 | 0.31157 | 0.32324 |
| 44                         | 0.27519 | 0.28302 | 0.29786 | 0.31172 | 0.32469 | 0.33688 |
| 42                         | 0.28607 | 0.29423 | 0.30970 | 0.32414 | 0.33767 | 0.35038 |
| 40                         | 0.29680 | 0.30529 | 0.32139 | 0.33642 | 0.35050 | 0.36373 |
| 38                         | 0.30739 | 0.31621 | 0.33293 | 0.34854 | 0.36318 | 0.37693 |
| 36                         | 0.31782 | 0.32696 | 0.34431 | 0.36051 | 0.37569 | 0.38995 |
| 34                         | 0.32808 | 0.33755 | 0.35551 | 0.37230 | 0.38802 | 0.40281 |
| 32                         | 0.33818 | 0.34797 | 0.36655 | 0.38391 | 0.40018 | 0.41548 |
| 30                         | 0.34809 | 0.35821 | 0.37740 | 0.39534 | 0.41215 | 0.42797 |
| 28                         | 0.35783 | 0.36826 | 0.38806 | 0.40657 | 0.42393 | 0.44026 |
| 26                         | 0.36737 | 0.37812 | 0.39853 | 0.41761 | 0.43551 | 0.45234 |
| 24                         | 0.37670 | 0.38777 | 0.40878 | 0.42843 | 0.44687 | 0.46421 |
| 22                         | 0.38583 | 0.39722 | 0.41883 | 0.43904 | 0.45801 | 0.47587 |
| 20                         | 0.39475 | 0.40644 | 0.42865 | 0.44942 | 0.46893 | 0.48729 |
| 18                         | 0.40344 | 0.41544 | 0.43823 | 0.45957 | 0.47961 | 0.49847 |
| 16                         | 0.41189 | 0.42420 | 0.44758 | 0.46948 | 0.49004 | 0.50940 |
| 14                         | 0.42010 | 0.43271 | 0.45668 | 0.47913 | 0.50021 | 0.52007 |
| 12                         | 0.42807 | 0.44097 | 0.46552 | 0.48851 | 0.51012 | 0.53048 |
| 10                         | 0.43577 | 0.44897 | 0.47409 | 0.49763 | 0.51976 | 0.54061 |
| 8                          | 0.44320 | 0.45670 | 0.48238 | 0.50646 | 0.52910 | 0.55044 |
| 6                          | 0.45035 | 0.46414 | 0.49038 | 0.51499 | 0.53815 | 0.55998 |
| 4                          | 0.45721 | 0.47128 | 0.49808 | 0.52323 | 0.54689 | 0.56921 |
| 2                          | 0.46377 | 0.47812 | 0.50547 | 0.53114 | 0.55531 | 0.57811 |
| 0                          | 0.47002 | 0.48465 | 0.51253 | 0.53873 | 0.56339 | 0.58668 |

Table 1

| $\rho_0$<br>$\alpha$ | 0.19    | 0.20    | 0.22    | 0.24    | 0.26    | 0.28    |
|----------------------|---------|---------|---------|---------|---------|---------|
| -2                   | 0.47594 | 0.49085 | 0.51927 | 0.54597 | 0.57114 | 0.59490 |
| -4                   | 0.48153 | 0.49671 | 0.52565 | 0.55287 | 0.57852 | 0.60275 |
| -6                   | 0.48678 | 0.50222 | 0.53168 | 0.55939 | 0.58553 | 0.61023 |
| -8                   | 0.49166 | 0.50736 | 0.53733 | 0.56554 | 0.59216 | 0.61732 |
| -10                  | 0.49617 | 0.51213 | 0.54259 | 0.57129 | 0.59838 | 0.62401 |
| -12                  | 0.50030 | 0.51650 | 0.54745 | 0.57662 | 0.60418 | 0.63027 |
| -14                  | 0.50403 | 0.52047 | 0.55189 | 0.58154 | 0.60956 | 0.63609 |
| -16                  | 0.50735 | 0.52402 | 0.55591 | 0.58601 | 0.61448 | 0.64146 |
| -18                  | 0.51023 | 0.52713 | 0.55947 | 0.59002 | 0.61893 | 0.64635 |
| -20                  | 0.51267 | 0.52978 | 0.56256 | 0.59355 | 0.62290 | 0.65075 |
| -22                  | 0.51465 | 0.53197 | 0.56516 | 0.59658 | 0.62636 | 0.65463 |
| -24                  | 0.51614 | 0.53366 | 0.56726 | 0.59909 | 0.62928 | 0.65798 |
| -26                  | 0.51714 | 0.53485 | 0.56884 | 0.60106 | 0.63166 | 0.66076 |
| -28                  | 0.51762 | 0.53551 | 0.56986 | 0.60247 | 0.63346 | 0.66296 |
| -30                  |         |         | 0.57032 | 0.60328 | 0.63465 | 0.66454 |
| -32                  |         |         |         |         | 0.63522 | 0.66548 |
| -34                  |         |         |         |         |         |         |
| -36                  |         |         |         |         |         |         |
| -38                  |         |         |         |         |         |         |
| -40                  |         |         |         |         |         |         |
| -42                  |         |         |         |         |         |         |
| -44                  |         |         |         |         |         |         |
| -46                  |         |         |         |         |         |         |
| -48                  |         |         |         |         |         |         |
| -50                  |         |         |         |         |         |         |
| -52                  |         |         |         |         |         |         |
| -54                  |         |         |         |         |         |         |
| -56                  |         |         |         |         |         |         |
| -58                  |         |         |         |         |         |         |
| -60                  |         |         |         |         |         |         |
| -62                  |         |         |         |         |         |         |
| -64                  |         |         |         |         |         |         |
| -66                  |         |         |         |         |         |         |
| -68                  |         |         |         |         |         |         |
| -70                  |         |         |         |         |         |         |
| -72                  |         |         |         |         |         |         |
| -74                  |         |         |         |         |         |         |
| -76                  |         |         |         |         |         |         |
| -78                  |         |         |         |         |         |         |
| -80                  |         |         |         |         |         |         |
| -82                  |         |         |         |         |         |         |
| -84                  |         |         |         |         |         |         |
| -86                  |         |         |         |         |         |         |
| -88                  |         |         |         |         |         |         |
| -90                  |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\alpha \backslash \rho_0$ | 0.30    | 0.32    | 0.34    | 0.36    | 0.38    | 0.40    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.01568 | 0.01615 | 0.01660 | 0.01702 | 0.01743 | 0.01781 |
| 86                         | 0.03135 | 0.03229 | 0.03319 | 0.03404 | 0.03485 | 0.03561 |
| 84                         | 0.04700 | 0.04843 | 0.04977 | 0.05104 | 0.05225 | 0.05340 |
| 82                         | 0.06264 | 0.06454 | 0.06633 | 0.06803 | 0.06964 | 0.07118 |
| 80                         | 0.07826 | 0.08063 | 0.08287 | 0.08499 | 0.08701 | 0.08893 |
| 78                         | 0.09385 | 0.09669 | 0.09938 | 0.10193 | 0.10435 | 0.10665 |
| 76                         | 0.10940 | 0.11272 | 0.11585 | 0.11882 | 0.12164 | 0.12433 |
| 74                         | 0.12491 | 0.12870 | 0.13228 | 0.13568 | 0.13890 | 0.14197 |
| 72                         | 0.14037 | 0.14463 | 0.14866 | 0.15248 | 0.15611 | 0.15956 |
| 70                         | 0.15578 | 0.16051 | 0.16499 | 0.16924 | 0.17326 | 0.17710 |
| 68                         | 0.17113 | 0.17633 | 0.18126 | 0.18593 | 0.19036 | 0.19457 |
| 66                         | 0.18641 | 0.19209 | 0.19746 | 0.20255 | 0.20738 | 0.21198 |
| 64                         | 0.20162 | 0.20777 | 0.21359 | 0.21910 | 0.22434 | 0.22932 |
| 62                         | 0.21675 | 0.22338 | 0.22964 | 0.23557 | 0.24121 | 0.24657 |
| 60                         | 0.23180 | 0.23889 | 0.24560 | 0.25196 | 0.25800 | 0.26374 |
| 58                         | 0.24676 | 0.25432 | 0.26147 | 0.26825 | 0.27469 | 0.28082 |
| 56                         | 0.26162 | 0.26965 | 0.27725 | 0.28445 | 0.29129 | 0.29779 |
| 54                         | 0.27637 | 0.28488 | 0.29292 | 0.30054 | 0.30778 | 0.31466 |
| 52                         | 0.29102 | 0.29999 | 0.30848 | 0.31652 | 0.32416 | 0.33142 |
| 50                         | 0.30555 | 0.31499 | 0.32392 | 0.33238 | 0.34042 | 0.34806 |
| 48                         | 0.31995 | 0.32986 | 0.33923 | 0.34812 | 0.35655 | 0.36458 |
| 46                         | 0.33423 | 0.34460 | 0.35442 | 0.36372 | 0.37256 | 0.38096 |
| 44                         | 0.34836 | 0.35920 | 0.36946 | 0.37918 | 0.38842 | 0.39720 |
| 42                         | 0.36236 | 0.37366 | 0.38436 | 0.39450 | 0.40413 | 0.41330 |
| 40                         | 0.37620 | 0.38797 | 0.39911 | 0.40967 | 0.41970 | 0.42924 |
| 38                         | 0.38988 | 0.40212 | 0.41369 | 0.42467 | 0.43510 | 0.44502 |
| 36                         | 0.40340 | 0.41610 | 0.42811 | 0.43951 | 0.45033 | 0.46063 |
| 34                         | 0.41674 | 0.42990 | 0.44236 | 0.45417 | 0.46539 | 0.47607 |
| 32                         | 0.42990 | 0.44352 | 0.45642 | 0.46865 | 0.48026 | 0.49132 |
| 30                         | 0.44287 | 0.45696 | 0.47029 | 0.48293 | 0.49494 | 0.50637 |
| 28                         | 0.45565 | 0.47019 | 0.48396 | 0.49702 | 0.50943 | 0.52123 |
| 26                         | 0.46822 | 0.48322 | 0.49742 | 0.51090 | 0.52370 | 0.53588 |
| 24                         | 0.48057 | 0.49603 | 0.51067 | 0.52456 | 0.53776 | 0.55032 |
| 22                         | 0.49270 | 0.50862 | 0.52369 | 0.53799 | 0.55159 | 0.56452 |
| 20                         | 0.50460 | 0.52097 | 0.53648 | 0.55120 | 0.56518 | 0.57850 |
| 18                         | 0.51626 | 0.53309 | 0.54903 | 0.56416 | 0.57854 | 0.59223 |
| 16                         | 0.52767 | 0.54495 | 0.56133 | 0.57687 | 0.59164 | 0.60570 |
| 14                         | 0.53882 | 0.55655 | 0.57336 | 0.58931 | 0.60448 | 0.61892 |
| 12                         | 0.54970 | 0.56788 | 0.58512 | 0.60148 | 0.61704 | 0.63186 |
| 10                         | 0.56030 | 0.57893 | 0.59660 | 0.61337 | 0.62933 | 0.64452 |
| 8                          | 0.57061 | 0.58969 | 0.60778 | 0.62497 | 0.64131 | 0.65688 |
| 6                          | 0.58061 | 0.60014 | 0.61867 | 0.63626 | 0.65300 | 0.66894 |
| 4                          | 0.59031 | 0.61028 | 0.62923 | 0.64723 | 0.66436 | 0.68068 |
| 2                          | 0.59967 | 0.62009 | 0.63947 | 0.65788 | 0.67540 | 0.69210 |
| 0                          | 0.60870 | 0.62956 | 0.64937 | 0.66819 | 0.68610 | 0.70317 |

Table 1

| $\alpha \backslash \rho_0$ | 0.30    | 0.32    | 0.34    | 0.36    | 0.38    | 0.40    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| -2                         | 0.61738 | 0.63868 | 0.65891 | 0.67814 | 0.69644 | 0.71389 |
| -4                         | 0.62569 | 0.64743 | 0.66808 | 0.68772 | 0.70641 | 0.72424 |
| -6                         | 0.63362 | 0.65581 | 0.67688 | 0.69692 | 0.71600 | 0.73420 |
| -8                         | 0.64116 | 0.66378 | 0.68527 | 0.70572 | 0.72520 | 0.74378 |
| -10                        | 0.64830 | 0.67135 | 0.69326 | 0.71411 | 0.73398 | 0.75293 |
| -12                        | 0.65500 | 0.67848 | 0.70081 | 0.72207 | 0.74233 | 0.76166 |
| -14                        | 0.66126 | 0.68518 | 0.70792 | 0.72958 | 0.75023 | 0.76995 |
| -16                        | 0.66707 | 0.69140 | 0.71456 | 0.73663 | 0.75767 | 0.77776 |
| -18                        | 0.67239 | 0.69715 | 0.72072 | 0.74319 | 0.76463 | 0.78510 |
| -20                        | 0.67721 | 0.70239 | 0.72638 | 0.74924 | 0.77107 | 0.79193 |
| -22                        | 0.68152 | 0.70711 | 0.73150 | 0.75477 | 0.77699 | 0.79823 |
| -24                        | 0.68528 | 0.71128 | 0.73608 | 0.75975 | 0.78236 | 0.80398 |
| -26                        | 0.68847 | 0.71488 | 0.74008 | 0.76415 | 0.78715 | 0.80915 |
| -28                        | 0.69107 | 0.71788 | 0.74343 | 0.76794 | 0.79134 | 0.81372 |
| -30                        | 0.69304 | 0.72025 | 0.74625 | 0.77111 | 0.79489 | 0.81766 |
| -32                        | 0.69437 | 0.72197 | 0.74836 | 0.77361 | 0.79778 | 0.82094 |
| -34                        | 0.69502 | 0.72300 | 0.74977 | 0.77541 | 0.79998 | 0.82352 |
| -36                        |         |         | 0.75046 | 0.77649 | 0.80144 | 0.82537 |
| -38                        |         |         |         |         | 0.80213 | 0.82645 |
| -40                        |         |         |         |         |         |         |
| -42                        |         |         |         |         |         |         |
| -44                        |         |         |         |         |         |         |
| -46                        |         |         |         |         |         |         |
| -48                        |         |         |         |         |         |         |
| -50                        |         |         |         |         |         |         |
| -52                        |         |         |         |         |         |         |
| -54                        |         |         |         |         |         |         |
| -56                        |         |         |         |         |         |         |
| -58                        |         |         |         |         |         |         |
| -60                        |         |         |         |         |         |         |
| -62                        |         |         |         |         |         |         |
| -64                        |         |         |         |         |         |         |
| -66                        |         |         |         |         |         |         |
| -68                        |         |         |         |         |         |         |
| -70                        |         |         |         |         |         |         |
| -72                        |         |         |         |         |         |         |
| -74                        |         |         |         |         |         |         |
| -76                        |         |         |         |         |         |         |
| -78                        |         |         |         |         |         |         |
| -80                        |         |         |         |         |         |         |
| -82                        |         |         |         |         |         |         |
| -84                        |         |         |         |         |         |         |
| -86                        |         |         |         |         |         |         |
| -88                        |         |         |         |         |         |         |
| -90                        |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\alpha \backslash \rho_0$ | 0.42    | 0.44    | 0.46    | 0.48    | 0.50    | 0.52    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.01817 | 0.01852 | 0.01886 | 0.01917 | 0.01948 | 0.01977 |
| 86                         | 0.03634 | 0.03704 | 0.03771 | 0.03834 | 0.03895 | 0.03954 |
| 84                         | 0.05450 | 0.05555 | 0.05654 | 0.05750 | 0.05841 | 0.05929 |
| 82                         | 0.07264 | 0.07403 | 0.07536 | 0.07664 | 0.07786 | 0.07903 |
| 80                         | 0.09075 | 0.09249 | 0.09416 | 0.09575 | 0.09728 | 0.09874 |
| 78                         | 0.10884 | 0.11093 | 0.11292 | 0.11483 | 0.11666 | 0.11842 |
| 76                         | 0.12688 | 0.12932 | 0.13165 | 0.13388 | 0.13601 | 0.13806 |
| 74                         | 0.14489 | 0.14768 | 0.15034 | 0.15288 | 0.15532 | 0.15766 |
| 72                         | 0.16284 | 0.16598 | 0.16897 | 0.17184 | 0.17458 | 0.17721 |
| 70                         | 0.18075 | 0.18423 | 0.18755 | 0.19074 | 0.19378 | 0.19670 |
| 68                         | 0.19859 | 0.20242 | 0.20607 | 0.20957 | 0.21292 | 0.21614 |
| 66                         | 0.21636 | 0.22054 | 0.22453 | 0.22834 | 0.23200 | 0.23550 |
| 64                         | 0.23406 | 0.23858 | 0.24290 | 0.24704 | 0.25100 | 0.25479 |
| 62                         | 0.25168 | 0.25655 | 0.26120 | 0.26565 | 0.26992 | 0.27400 |
| 60                         | 0.26921 | 0.27443 | 0.27941 | 0.28418 | 0.28875 | 0.29313 |
| 58                         | 0.28665 | 0.29221 | 0.29753 | 0.30261 | 0.30748 | 0.31215 |
| 56                         | 0.30399 | 0.30990 | 0.31555 | 0.32095 | 0.32612 | 0.33108 |
| 54                         | 0.32122 | 0.32748 | 0.33346 | 0.33918 | 0.34465 | 0.34990 |
| 52                         | 0.33835 | 0.34495 | 0.35126 | 0.35729 | 0.36307 | 0.36861 |
| 50                         | 0.35535 | 0.36230 | 0.36894 | 0.37529 | 0.38137 | 0.38720 |
| 48                         | 0.37222 | 0.37952 | 0.38649 | 0.39315 | 0.39954 | 0.40566 |
| 46                         | 0.38897 | 0.39661 | 0.40391 | 0.41089 | 0.41758 | 0.42399 |
| 44                         | 0.40557 | 0.41356 | 0.42119 | 0.42848 | 0.43547 | 0.44217 |
| 42                         | 0.42203 | 0.43036 | 0.43832 | 0.44593 | 0.45322 | 0.46021 |
| 40                         | 0.43833 | 0.44701 | 0.45529 | 0.46322 | 0.47081 | 0.47809 |
| 38                         | 0.45447 | 0.46349 | 0.47211 | 0.48035 | 0.48824 | 0.49581 |
| 36                         | 0.47044 | 0.47981 | 0.48875 | 0.49731 | 0.50551 | 0.51336 |
| 34                         | 0.48624 | 0.49595 | 0.50522 | 0.51409 | 0.52259 | 0.53074 |
| 32                         | 0.50185 | 0.51190 | 0.52150 | 0.53069 | 0.53949 | 0.54792 |
| 30                         | 0.51727 | 0.52766 | 0.53760 | 0.54710 | 0.55620 | 0.56492 |
| 28                         | 0.53249 | 0.54323 | 0.55349 | 0.56330 | 0.57270 | 0.58172 |
| 26                         | 0.54750 | 0.55858 | 0.56917 | 0.57930 | 0.58900 | 0.59830 |
| 24                         | 0.56229 | 0.57371 | 0.58463 | 0.59508 | 0.60508 | 0.61467 |
| 22                         | 0.57686 | 0.58863 | 0.59987 | 0.61063 | 0.62094 | 0.63082 |
| 20                         | 0.59119 | 0.60330 | 0.61488 | 0.62595 | 0.63656 | 0.64673 |
| 18                         | 0.60528 | 0.61773 | 0.62964 | 0.64103 | 0.65194 | 0.66239 |
| 16                         | 0.61911 | 0.63191 | 0.64415 | 0.65585 | 0.66706 | 0.67781 |
| 14                         | 0.63269 | 0.64583 | 0.65839 | 0.67041 | 0.68192 | 0.69296 |
| 12                         | 0.64599 | 0.65947 | 0.67237 | 0.68470 | 0.69652 | 0.70785 |
| 10                         | 0.65900 | 0.67284 | 0.68606 | 0.69871 | 0.71083 | 0.72245 |
| 8                          | 0.67173 | 0.68590 | 0.69946 | 0.71242 | 0.72485 | 0.73676 |
| 6                          | 0.68415 | 0.69867 | 0.71255 | 0.72583 | 0.73856 | 0.75077 |
| 4                          | 0.69625 | 0.71111 | 0.72533 | 0.73893 | 0.75196 | 0.76446 |
| 2                          | 0.70802 | 0.72323 | 0.73778 | 0.75170 | 0.76504 | 0.77783 |
| 0                          | 0.71946 | 0.73501 | 0.74989 | 0.76413 | 0.77778 | 0.79087 |

Table 1

| $\alpha \backslash \rho_0$ | 0.42    | 0.44    | 0.46    | 0.48    | 0.50    | 0.52    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| -2                         | 0.73054 | 0.74644 | 0.76165 | 0.77622 | 0.79017 | 0.80355 |
| -4                         | 0.74125 | 0.75750 | 0.77305 | 0.78793 | 0.80220 | 0.81588 |
| -6                         | 0.75158 | 0.76818 | 0.78406 | 0.79927 | 0.81385 | 0.82782 |
| -8                         | 0.76151 | 0.77847 | 0.79469 | 0.81022 | 0.82510 | 0.83938 |
| -10                        | 0.77104 | 0.78834 | 0.80490 | 0.82076 | 0.83596 | 0.85054 |
| -12                        | 0.78013 | 0.79779 | 0.81469 | 0.83087 | 0.84639 | 0.86127 |
| -14                        | 0.78878 | 0.80679 | 0.82403 | 0.84055 | 0.85638 | 0.87158 |
| -16                        | 0.79697 | 0.81533 | 0.83292 | 0.84976 | 0.86592 | 0.88142 |
| -18                        | 0.80467 | 0.82339 | 0.84132 | 0.85850 | 0.87498 | 0.89080 |
| -20                        | 0.81187 | 0.83095 | 0.84923 | 0.86675 | 0.88355 | 0.89968 |
| -22                        | 0.81854 | 0.83798 | 0.85661 | 0.87447 | 0.89161 | 0.90806 |
| -24                        | 0.82466 | 0.84447 | 0.86345 | 0.88166 | 0.89912 | 0.91590 |
| -26                        | 0.83021 | 0.85039 | 0.86973 | 0.88828 | 0.90608 | 0.92318 |
| -28                        | 0.83516 | 0.85571 | 0.87541 | 0.89431 | 0.91245 | 0.92988 |
| -30                        | 0.83948 | 0.86040 | 0.88046 | 0.89972 | 0.91821 | 0.93597 |
| -32                        | 0.84314 | 0.86443 | 0.88486 | 0.90448 | 0.92332 | 0.94143 |
| -34                        | 0.84611 | 0.86778 | 0.88858 | 0.90856 | 0.92776 | 0.94621 |
| -36                        | 0.84834 | 0.87039 | 0.89157 | 0.91192 | 0.93148 | 0.95029 |
| -38                        | 0.84981 | 0.87225 | 0.89381 | 0.91453 | 0.93446 | 0.95363 |
| -40                        | 0.85046 | 0.87329 | 0.89524 | 0.91634 | 0.93665 | 0.95619 |
| -42                        |         |         | 0.89582 | 0.91731 | 0.93801 | 0.95793 |
| -44                        |         |         |         |         | 0.93848 | 0.95878 |
| -46                        |         |         |         |         |         |         |
| -48                        |         |         |         |         |         |         |
| -50                        |         |         |         |         |         |         |
| -52                        |         |         |         |         |         |         |
| -54                        |         |         |         |         |         |         |
| -56                        |         |         |         |         |         |         |
| -58                        |         |         |         |         |         |         |
| -60                        |         |         |         |         |         |         |
| -62                        |         |         |         |         |         |         |
| -64                        |         |         |         |         |         |         |
| -66                        |         |         |         |         |         |         |
| -68                        |         |         |         |         |         |         |
| -70                        |         |         |         |         |         |         |
| -72                        |         |         |         |         |         |         |
| -74                        |         |         |         |         |         |         |
| -76                        |         |         |         |         |         |         |
| -78                        |         |         |         |         |         |         |
| -80                        |         |         |         |         |         |         |
| -82                        |         |         |         |         |         |         |
| -84                        |         |         |         |         |         |         |
| -86                        |         |         |         |         |         |         |
| -88                        |         |         |         |         |         |         |
| -90                        |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 0.54    | 0.56    | 0.58    | 0.60    | 0.62    | 0.64    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.02005 | 0.02032 | 0.02058 | 0.02083 | 0.02107 | 0.02130 |
| 86                         | 0.04010 | 0.04064 | 0.04116 | 0.04166 | 0.04214 | 0.04260 |
| 84                         | 0.06013 | 0.06094 | 0.06172 | 0.06247 | 0.06319 | 0.06388 |
| 82                         | 0.08015 | 0.08123 | 0.08226 | 0.08326 | 0.08422 | 0.08515 |
| 80                         | 0.10014 | 0.10149 | 0.10278 | 0.10403 | 0.10523 | 0.10639 |
| 78                         | 0.12010 | 0.12172 | 0.12327 | 0.12477 | 0.12621 | 0.12760 |
| 76                         | 0.14002 | 0.14191 | 0.14372 | 0.14547 | 0.14715 | 0.14877 |
| 74                         | 0.15990 | 0.16206 | 0.16413 | 0.16613 | 0.16805 | 0.16990 |
| 72                         | 0.17973 | 0.18216 | 0.18449 | 0.18673 | 0.18890 | 0.19098 |
| 70                         | 0.19951 | 0.20220 | 0.20479 | 0.20729 | 0.20969 | 0.21200 |
| 68                         | 0.21922 | 0.22218 | 0.22503 | 0.22778 | 0.23042 | 0.23296 |
| 66                         | 0.23887 | 0.24210 | 0.24521 | 0.24820 | 0.25108 | 0.25386 |
| 64                         | 0.25844 | 0.26194 | 0.26530 | 0.26854 | 0.27166 | 0.27467 |
| 62                         | 0.27793 | 0.28169 | 0.28532 | 0.28881 | 0.29217 | 0.29540 |
| 60                         | 0.29733 | 0.30136 | 0.30525 | 0.30898 | 0.31258 | 0.31605 |
| 58                         | 0.31663 | 0.32094 | 0.32508 | 0.32906 | 0.33290 | 0.33660 |
| 56                         | 0.33584 | 0.34041 | 0.34481 | 0.34904 | 0.35312 | 0.35705 |
| 54                         | 0.35494 | 0.35978 | 0.36444 | 0.36892 | 0.37323 | 0.37739 |
| 52                         | 0.37393 | 0.37904 | 0.38395 | 0.38868 | 0.39323 | 0.39762 |
| 50                         | 0.39279 | 0.39817 | 0.40334 | 0.40831 | 0.41310 | 0.41772 |
| 48                         | 0.41153 | 0.41718 | 0.42260 | 0.42782 | 0.43285 | 0.43770 |
| 46                         | 0.43014 | 0.43605 | 0.44173 | 0.44720 | 0.45247 | 0.45754 |
| 44                         | 0.44860 | 0.45478 | 0.46072 | 0.46643 | 0.47194 | 0.47724 |
| 42                         | 0.46692 | 0.47336 | 0.47956 | 0.48552 | 0.49126 | 0.49680 |
| 40                         | 0.48508 | 0.49179 | 0.49824 | 0.50445 | 0.51043 | 0.51619 |
| 38                         | 0.50307 | 0.51005 | 0.51676 | 0.52321 | 0.52943 | 0.53542 |
| 36                         | 0.52090 | 0.52815 | 0.53511 | 0.54181 | 0.54827 | 0.55449 |
| 34                         | 0.53855 | 0.54606 | 0.55328 | 0.56023 | 0.56692 | 0.57337 |
| 32                         | 0.55602 | 0.56380 | 0.57127 | 0.57846 | 0.58539 | 0.59207 |
| 30                         | 0.57329 | 0.58133 | 0.58907 | 0.59651 | 0.60367 | 0.61058 |
| 28                         | 0.59037 | 0.59867 | 0.60666 | 0.61435 | 0.62175 | 0.62888 |
| 26                         | 0.60723 | 0.61580 | 0.62405 | 0.63198 | 0.63962 | 0.64698 |
| 24                         | 0.62388 | 0.63272 | 0.64122 | 0.64939 | 0.65727 | 0.66486 |
| 22                         | 0.64030 | 0.64941 | 0.65816 | 0.66659 | 0.67470 | 0.68252 |
| 20                         | 0.65649 | 0.66586 | 0.67487 | 0.68354 | 0.69189 | 0.69994 |
| 18                         | 0.67243 | 0.68207 | 0.69134 | 0.70026 | 0.70885 | 0.71712 |
| 16                         | 0.68812 | 0.69803 | 0.70756 | 0.71672 | 0.72555 | 0.73405 |
| 14                         | 0.70356 | 0.71373 | 0.72351 | 0.73293 | 0.74199 | 0.75072 |
| 12                         | 0.71872 | 0.72916 | 0.73920 | 0.74886 | 0.75816 | 0.76713 |
| 10                         | 0.73360 | 0.74431 | 0.75461 | 0.76452 | 0.77406 | 0.78325 |
| 8                          | 0.74819 | 0.75917 | 0.76973 | 0.77988 | 0.78966 | 0.79909 |
| 6                          | 0.76248 | 0.77373 | 0.78455 | 0.79495 | 0.80497 | 0.81463 |
| 4                          | 0.77646 | 0.78798 | 0.79905 | 0.80971 | 0.81997 | 0.82986 |
| 2                          | 0.79011 | 0.80190 | 0.81324 | 0.82415 | 0.83465 | 0.84477 |
| 0                          | 0.80343 | 0.81549 | 0.82709 | 0.83825 | 0.84900 | 0.85935 |

Table 1

| $\rho_0 \backslash \alpha$ | 0.54    | 0.56    | 0.58    | 0.60    | 0.62    | 0.64    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| -2                         | 0.81640 | 0.82874 | 0.84060 | 0.85201 | 0.86300 | 0.87359 |
| -4                         | 0.82901 | 0.84162 | 0.85375 | 0.86542 | 0.87665 | 0.88748 |
| -6                         | 0.84124 | 0.85413 | 0.86653 | 0.87846 | 0.88994 | 0.90100 |
| -8                         | 0.85309 | 0.86626 | 0.87893 | 0.89111 | 0.90284 | 0.91414 |
| -10                        | 0.86454 | 0.87799 | 0.89092 | 0.90337 | 0.91535 | 0.92689 |
| -12                        | 0.87557 | 0.88930 | 0.90251 | 0.91521 | 0.92745 | 0.93924 |
| -14                        | 0.88616 | 0.90018 | 0.91366 | 0.92663 | 0.93912 | 0.95116 |
| -16                        | 0.89631 | 0.91062 | 0.92437 | 0.93761 | 0.95036 | 0.96264 |
| -18                        | 0.90599 | 0.92058 | 0.93462 | 0.94813 | 0.96114 | 0.97367 |
| -20                        | 0.91518 | 0.93007 | 0.94439 | 0.95817 | 0.97145 | 0.98423 |
| -22                        | 0.92386 | 0.93905 | 0.95366 | 0.96772 | 0.98126 | 0.99431 |
| -24                        | 0.93201 | 0.94750 | 0.96240 | 0.97675 | 0.99056 | 1.00387 |
| -26                        | 0.93961 | 0.95541 | 0.97060 | 0.98523 | 0.99932 | 1.01290 |
| -28                        | 0.94663 | 0.96274 | 0.97824 | 0.99316 | 1.00753 | 1.02138 |
| -30                        | 0.95305 | 0.96948 | 0.98528 | 1.00050 | 1.01516 | 1.02928 |
| -32                        | 0.95884 | 0.97559 | 0.99170 | 1.00723 | 1.02218 | 1.03659 |
| -34                        | 0.96396 | 0.98104 | 0.99748 | 1.01331 | 1.02856 | 1.04326 |
| -36                        | 0.96839 | 0.98580 | 1.00257 | 1.01872 | 1.03428 | 1.04928 |
| -38                        | 0.97208 | 0.98984 | 1.00694 | 1.02342 | 1.03930 | 1.05460 |
| -40                        | 0.97500 | 0.99312 | 1.01056 | 1.02737 | 1.04358 | 1.05920 |
| -42                        | 0.97711 | 0.99559 | 1.01339 | 1.03054 | 1.04709 | 1.06304 |
| -44                        | 0.97835 | 0.99720 | 1.01537 | 1.03288 | 1.04977 | 1.06606 |
| -46                        |         | 0.99791 | 1.01646 | 1.03434 | 1.05160 | 1.06824 |
| -48                        |         |         |         | 1.03487 | 1.05250 | 1.06951 |
| -50                        |         |         |         |         |         |         |
| -52                        |         |         |         |         |         |         |
| -54                        |         |         |         |         |         |         |
| -56                        |         |         |         |         |         |         |
| -58                        |         |         |         |         |         |         |
| -60                        |         |         |         |         |         |         |
| -62                        |         |         |         |         |         |         |
| -64                        |         |         |         |         |         |         |
| -66                        |         |         |         |         |         |         |
| -68                        |         |         |         |         |         |         |
| -70                        |         |         |         |         |         |         |
| -72                        |         |         |         |         |         |         |
| -74                        |         |         |         |         |         |         |
| -76                        |         |         |         |         |         |         |
| -78                        |         |         |         |         |         |         |
| -80                        |         |         |         |         |         |         |
| -82                        |         |         |         |         |         |         |
| -84                        |         |         |         |         |         |         |
| -86                        |         |         |         |         |         |         |
| -88                        |         |         |         |         |         |         |
| -90                        |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 0.66    | 0.68    | 0.70    | 0.72    | 0.74    | 0.76    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.02153 | 0.02174 | 0.02195 | 0.02215 | 0.02235 | 0.02254 |
| 86                         | 0.04305 | 0.04348 | 0.04390 | 0.04430 | 0.04469 | 0.04507 |
| 84                         | 0.06456 | 0.06520 | 0.06583 | 0.06644 | 0.06702 | 0.06759 |
| 82                         | 0.08605 | 0.08691 | 0.08774 | 0.08855 | 0.08933 | 0.09009 |
| 80                         | 0.10751 | 0.10859 | 0.10963 | 0.11064 | 0.11162 | 0.11256 |
| 78                         | 0.12894 | 0.13024 | 0.13149 | 0.13270 | 0.13387 | 0.13501 |
| 76                         | 0.15034 | 0.15185 | 0.15331 | 0.15472 | 0.15609 | 0.15741 |
| 74                         | 0.17169 | 0.17342 | 0.17509 | 0.17670 | 0.17826 | 0.17977 |
| 72                         | 0.19299 | 0.19494 | 0.19681 | 0.19863 | 0.20038 | 0.20208 |
| 70                         | 0.21424 | 0.21640 | 0.21848 | 0.22050 | 0.22245 | 0.22433 |
| 68                         | 0.23542 | 0.23779 | 0.24009 | 0.24230 | 0.24445 | 0.24652 |
| 66                         | 0.25654 | 0.25912 | 0.26162 | 0.26404 | 0.26638 | 0.26864 |
| 64                         | 0.27757 | 0.28038 | 0.28308 | 0.28570 | 0.28824 | 0.29069 |
| 62                         | 0.29853 | 0.30155 | 0.30446 | 0.30728 | 0.31001 | 0.31265 |
| 60                         | 0.31940 | 0.32263 | 0.32575 | 0.32877 | 0.33169 | 0.33452 |
| 58                         | 0.34017 | 0.34362 | 0.34695 | 0.35017 | 0.35328 | 0.35629 |
| 56                         | 0.36084 | 0.36450 | 0.36804 | 0.37146 | 0.37477 | 0.37797 |
| 54                         | 0.38140 | 0.38528 | 0.38902 | 0.39264 | 0.39614 | 0.39953 |
| 52                         | 0.40185 | 0.40594 | 0.40989 | 0.41371 | 0.41740 | 0.42098 |
| 50                         | 0.42218 | 0.42648 | 0.43064 | 0.43466 | 0.43854 | 0.44230 |
| 48                         | 0.44238 | 0.44689 | 0.45126 | 0.45547 | 0.45955 | 0.46350 |
| 46                         | 0.46244 | 0.46717 | 0.47174 | 0.47615 | 0.48043 | 0.48456 |
| 44                         | 0.48236 | 0.48731 | 0.49208 | 0.49669 | 0.50116 | 0.50548 |
| 42                         | 0.50214 | 0.50729 | 0.51227 | 0.51708 | 0.52174 | 0.52624 |
| 40                         | 0.52175 | 0.52712 | 0.53230 | 0.53732 | 0.54216 | 0.54685 |
| 38                         | 0.54120 | 0.54678 | 0.55217 | 0.55738 | 0.56242 | 0.56730 |
| 36                         | 0.56049 | 0.56628 | 0.57187 | 0.57728 | 0.58251 | 0.58757 |
| 34                         | 0.57959 | 0.58560 | 0.59140 | 0.59700 | 0.60242 | 0.60767 |
| 32                         | 0.59851 | 0.60473 | 0.61073 | 0.61654 | 0.62215 | 0.62758 |
| 30                         | 0.61724 | 0.62367 | 0.62988 | 0.63588 | 0.64168 | 0.64729 |
| 28                         | 0.63576 | 0.64240 | 0.64882 | 0.65502 | 0.66101 | 0.66681 |
| 26                         | 0.65408 | 0.66093 | 0.66755 | 0.67395 | 0.68013 | 0.68612 |
| 24                         | 0.67218 | 0.67925 | 0.68607 | 0.69266 | 0.69904 | 0.70521 |
| 22                         | 0.69006 | 0.69733 | 0.70436 | 0.71115 | 0.71772 | 0.72407 |
| 20                         | 0.70770 | 0.71519 | 0.72242 | 0.72941 | 0.73617 | 0.74270 |
| 18                         | 0.72510 | 0.73280 | 0.74024 | 0.74742 | 0.75437 | 0.76109 |
| 16                         | 0.74225 | 0.75017 | 0.75781 | 0.76519 | 0.77233 | 0.77924 |
| 14                         | 0.75914 | 0.76727 | 0.77512 | 0.78270 | 0.79003 | 0.79712 |
| 12                         | 0.77577 | 0.78411 | 0.79216 | 0.79994 | 0.80746 | 0.81474 |
| 10                         | 0.79212 | 0.80067 | 0.80893 | 0.81691 | 0.82462 | 0.83208 |
| 8                          | 0.80817 | 0.81694 | 0.82541 | 0.83358 | 0.84149 | 0.84914 |
| 6                          | 0.82394 | 0.83292 | 0.84159 | 0.84997 | 0.85806 | 0.86590 |
| 4                          | 0.83939 | 0.84859 | 0.85747 | 0.86604 | 0.87434 | 0.88235 |
| 2                          | 0.85453 | 0.86394 | 0.87303 | 0.88181 | 0.89029 | 0.89850 |
| 0                          | 0.86933 | 0.87896 | 0.88826 | 0.89724 | 0.90592 | 0.91432 |

Table 1

| $\rho_0$<br>$\alpha$ | 0.66    | 0.68    | 0.70    | 0.72    | 0.74    | 0.76    |
|----------------------|---------|---------|---------|---------|---------|---------|
| -2                   | 0.88380 | 0.89365 | 0.90316 | 0.91234 | 0.92122 | 0.92980 |
| -4                   | 0.89792 | 0.90798 | 0.91770 | 0.92709 | 0.93616 | 0.94494 |
| -6                   | 0.91167 | 0.92196 | 0.93189 | 0.94148 | 0.95075 | 0.95971 |
| -8                   | 0.92504 | 0.93555 | 0.94570 | 0.95550 | 0.96497 | 0.97412 |
| -10                  | 0.93802 | 0.94876 | 0.95912 | 0.96913 | 0.97880 | 0.98815 |
| -12                  | 0.95060 | 0.96156 | 0.97214 | 0.98236 | 0.99223 | 1.00178 |
| -14                  | 0.96276 | 0.97395 | 0.98475 | 0.99518 | 1.00526 | 1.01500 |
| -16                  | 0.97448 | 0.98591 | 0.99693 | 1.00757 | 1.01786 | 1.02780 |
| -18                  | 0.98576 | 0.99741 | 1.00866 | 1.01953 | 1.03002 | 1.04017 |
| -20                  | 0.99656 | 1.00846 | 1.01993 | 1.03102 | 1.04173 | 1.05208 |
| -22                  | 1.00688 | 1.01902 | 1.03073 | 1.04203 | 1.05296 | 1.06352 |
| -24                  | 1.01670 | 1.02908 | 1.04102 | 1.05256 | 1.06370 | 1.07447 |
| -26                  | 1.02599 | 1.03862 | 1.05080 | 1.06257 | 1.07394 | 1.08492 |
| -28                  | 1.03473 | 1.04761 | 1.06004 | 1.07205 | 1.08364 | 1.09485 |
| -30                  | 1.04291 | 1.05605 | 1.06873 | 1.08097 | 1.09280 | 1.10423 |
| -32                  | 1.05048 | 1.06389 | 1.07683 | 1.08932 | 1.10138 | 1.11304 |
| -34                  | 1.05744 | 1.07112 | 1.08432 | 1.09706 | 1.10937 | 1.12127 |
| -36                  | 1.06374 | 1.07770 | 1.09117 | 1.10418 | 1.11674 | 1.12888 |
| -38                  | 1.06937 | 1.08361 | 1.09736 | 1.11063 | 1.12345 | 1.13585 |
| -40                  | 1.07427 | 1.08881 | 1.10285 | 1.11640 | 1.12949 | 1.14214 |
| -42                  | 1.07842 | 1.09327 | 1.10760 | 1.12144 | 1.13481 | 1.14773 |
| -44                  | 1.08178 | 1.09695 | 1.11159 | 1.12573 | 1.13938 | 1.15258 |
| -46                  | 1.08429 | 1.09979 | 1.11476 | 1.12921 | 1.14317 | 1.15665 |
| -48                  | 1.08592 | 1.10177 | 1.11707 | 1.13184 | 1.14611 | 1.15991 |
| -50                  | 1.08660 | 1.10281 | 1.11846 | 1.13358 | 1.14818 | 1.16229 |
| -52                  |         |         |         | 1.13436 | 1.14931 | 1.16376 |
| -54                  |         |         |         |         |         |         |
| -56                  |         |         |         |         |         |         |
| -58                  |         |         |         |         |         |         |
| -60                  |         |         |         |         |         |         |
| -62                  |         |         |         |         |         |         |
| -64                  |         |         |         |         |         |         |
| -66                  |         |         |         |         |         |         |
| -68                  |         |         |         |         |         |         |
| -70                  |         |         |         |         |         |         |
| -72                  |         |         |         |         |         |         |
| -74                  |         |         |         |         |         |         |
| -76                  |         |         |         |         |         |         |
| -78                  |         |         |         |         |         |         |
| -80                  |         |         |         |         |         |         |
| -82                  |         |         |         |         |         |         |
| -84                  |         |         |         |         |         |         |
| -86                  |         |         |         |         |         |         |
| -88                  |         |         |         |         |         |         |
| -90                  |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\alpha \backslash \rho_0$ | 0.78    | 0.80    | 0.82    | 0.84    | 0.86    | 0.88    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.02272 | 0.02290 | 0.02307 | 0.02324 | 0.02340 | 0.02356 |
| 86                         | 0.04544 | 0.04579 | 0.04613 | 0.04647 | 0.04679 | 0.04711 |
| 84                         | 0.06814 | 0.06867 | 0.06919 | 0.06969 | 0.07017 | 0.07065 |
| 82                         | 0.09082 | 0.09153 | 0.09222 | 0.09289 | 0.09354 | 0.09417 |
| 80                         | 0.11348 | 0.11437 | 0.11523 | 0.11606 | 0.11687 | 0.11766 |
| 78                         | 0.13610 | 0.13717 | 0.13820 | 0.13920 | 0.14018 | 0.14112 |
| 76                         | 0.15869 | 0.15993 | 0.16114 | 0.16231 | 0.16344 | 0.16454 |
| 74                         | 0.18124 | 0.18265 | 0.18403 | 0.18537 | 0.18666 | 0.18792 |
| 72                         | 0.20373 | 0.20532 | 0.20687 | 0.20837 | 0.20983 | 0.21125 |
| 70                         | 0.22616 | 0.22794 | 0.22966 | 0.23132 | 0.23294 | 0.23452 |
| 68                         | 0.24854 | 0.25048 | 0.25238 | 0.25421 | 0.25599 | 0.25772 |
| 66                         | 0.27084 | 0.27296 | 0.27502 | 0.27703 | 0.27897 | 0.28085 |
| 64                         | 0.29306 | 0.29537 | 0.29760 | 0.29976 | 0.30187 | 0.30391 |
| 62                         | 0.31521 | 0.31768 | 0.32009 | 0.32242 | 0.32468 | 0.32688 |
| 60                         | 0.33726 | 0.33991 | 0.34249 | 0.34498 | 0.34741 | 0.34976 |
| 58                         | 0.35921 | 0.36204 | 0.36479 | 0.36745 | 0.37004 | 0.37255 |
| 56                         | 0.38107 | 0.38407 | 0.38699 | 0.38982 | 0.39256 | 0.39523 |
| 54                         | 0.40281 | 0.40599 | 0.40908 | 0.41207 | 0.41498 | 0.41780 |
| 52                         | 0.42444 | 0.42780 | 0.43105 | 0.43421 | 0.43727 | 0.44025 |
| 50                         | 0.44595 | 0.44948 | 0.45290 | 0.45622 | 0.45945 | 0.46258 |
| 48                         | 0.46732 | 0.47103 | 0.47462 | 0.47811 | 0.48149 | 0.48477 |
| 46                         | 0.48856 | 0.49244 | 0.49621 | 0.49985 | 0.50340 | 0.50683 |
| 44                         | 0.50966 | 0.51372 | 0.51765 | 0.52146 | 0.52516 | 0.52875 |
| 42                         | 0.53061 | 0.53484 | 0.53893 | 0.54291 | 0.54677 | 0.55051 |
| 40                         | 0.55140 | 0.55580 | 0.56007 | 0.56420 | 0.56822 | 0.57212 |
| 38                         | 0.57202 | 0.57660 | 0.58103 | 0.58533 | 0.58951 | 0.59356 |
| 36                         | 0.59247 | 0.59722 | 0.60183 | 0.60629 | 0.61062 | 0.61483 |
| 34                         | 0.61275 | 0.61767 | 0.62244 | 0.62707 | 0.63156 | 0.63592 |
| 32                         | 0.63284 | 0.63793 | 0.64287 | 0.64766 | 0.65231 | 0.65682 |
| 30                         | 0.65273 | 0.65800 | 0.66310 | 0.66806 | 0.67286 | 0.67752 |
| 28                         | 0.67243 | 0.67786 | 0.68314 | 0.68825 | 0.69321 | 0.69803 |
| 26                         | 0.69191 | 0.69752 | 0.70296 | 0.70824 | 0.71335 | 0.71832 |
| 24                         | 0.71118 | 0.71696 | 0.72257 | 0.72800 | 0.73328 | 0.73840 |
| 22                         | 0.73022 | 0.73618 | 0.74195 | 0.74755 | 0.75298 | 0.75825 |
| 20                         | 0.74903 | 0.75516 | 0.76110 | 0.76686 | 0.77245 | 0.77787 |
| 18                         | 0.76760 | 0.77390 | 0.78001 | 0.78593 | 0.79167 | 0.79724 |
| 16                         | 0.78592 | 0.79239 | 0.79867 | 0.80475 | 0.81065 | 0.81637 |
| 14                         | 0.80398 | 0.81063 | 0.81707 | 0.82331 | 0.82937 | 0.83524 |
| 12                         | 0.82178 | 0.82860 | 0.83521 | 0.84161 | 0.84782 | 0.85385 |
| 10                         | 0.83930 | 0.84629 | 0.85307 | 0.85963 | 0.86600 | 0.87218 |
| 8                          | 0.85654 | 0.86370 | 0.87064 | 0.87737 | 0.88390 | 0.89023 |
| 6                          | 0.87348 | 0.88082 | 0.88792 | 0.89482 | 0.90150 | 0.90798 |
| 4                          | 0.89011 | 0.89763 | 0.90490 | 0.91196 | 0.91880 | 0.92543 |
| 2                          | 0.90644 | 0.91413 | 0.92157 | 0.92879 | 0.93579 | 0.94257 |
| 0                          | 0.92244 | 0.93030 | 0.93792 | 0.94530 | 0.95245 | 0.95939 |

Table 1

| $\rho_0$<br>$\alpha$ | 0.78    | 0.80    | 0.82    | 0.84    | 0.86    | 0.88    |
|----------------------|---------|---------|---------|---------|---------|---------|
| -2                   | 0.93810 | 0.94614 | 0.95393 | 0.96147 | 0.96879 | 0.97588 |
| -4                   | 0.95342 | 0.96164 | 0.96960 | 0.97731 | 0.98478 | 0.99203 |
| -6                   | 0.96839 | 0.97678 | 0.98491 | 0.99278 | 1.00042 | 1.00782 |
| -8                   | 0.98298 | 0.99155 | 0.99986 | 1.00790 | 1.01569 | 1.02325 |
| -10                  | 0.99719 | 1.00595 | 1.01442 | 1.02264 | 1.03059 | 1.03831 |
| -12                  | 1.01101 | 1.01995 | 1.02860 | 1.03698 | 1.04511 | 1.05298 |
| -14                  | 1.02443 | 1.03355 | 1.04238 | 1.05093 | 1.05922 | 1.06726 |
| -16                  | 1.03742 | 1.04673 | 1.05574 | 1.06446 | 1.07292 | 1.08112 |
| -18                  | 1.04998 | 1.05947 | 1.06866 | 1.07757 | 1.08619 | 1.09455 |
| -20                  | 1.06209 | 1.07177 | 1.08115 | 1.09023 | 1.09903 | 1.10755 |
| -22                  | 1.07373 | 1.08361 | 1.09317 | 1.10243 | 1.11140 | 1.12010 |
| -24                  | 1.08489 | 1.09496 | 1.10472 | 1.11416 | 1.12331 | 1.13218 |
| -26                  | 1.09555 | 1.10582 | 1.11577 | 1.12540 | 1.13473 | 1.14377 |
| -28                  | 1.10568 | 1.11616 | 1.12631 | 1.13613 | 1.14564 | 1.15486 |
| -30                  | 1.11528 | 1.12597 | 1.13632 | 1.14633 | 1.15603 | 1.16543 |
| -32                  | 1.12432 | 1.13522 | 1.14578 | 1.15599 | 1.16588 | 1.17547 |
| -34                  | 1.13277 | 1.14390 | 1.15466 | 1.16508 | 1.17517 | 1.18494 |
| -36                  | 1.14062 | 1.15197 | 1.16295 | 1.17358 | 1.18387 | 1.19384 |
| -38                  | 1.14782 | 1.15941 | 1.17061 | 1.18146 | 1.19196 | 1.20214 |
| -40                  | 1.15437 | 1.16619 | 1.17763 | 1.18870 | 1.19942 | 1.20980 |
| -42                  | 1.16022 | 1.17229 | 1.18397 | 1.19528 | 1.20622 | 1.21682 |
| -44                  | 1.16534 | 1.17767 | 1.18960 | 1.20115 | 1.21232 | 1.22315 |
| -46                  | 1.16969 | 1.18230 | 1.19449 | 1.20629 | 1.21771 | 1.22876 |
| -48                  | 1.17324 | 1.18613 | 1.19860 | 1.21066 | 1.22233 | 1.23363 |
| -50                  | 1.17593 | 1.18912 | 1.20188 | 1.21421 | 1.22615 | 1.23771 |
| -52                  | 1.17773 | 1.19123 | 1.20429 | 1.21692 | 1.22914 | 1.24097 |
| -54                  | 1.17857 | 1.19240 | 1.20578 | 1.21872 | 1.23124 | 1.24335 |
| -56                  |         |         | 1.20629 | 1.21956 | 1.23239 | 1.24481 |
| -58                  |         |         |         |         |         |         |
| -60                  |         |         |         |         |         |         |
| -62                  |         |         |         |         |         |         |
| -64                  |         |         |         |         |         |         |
| -66                  |         |         |         |         |         |         |
| -68                  |         |         |         |         |         |         |
| -70                  |         |         |         |         |         |         |
| -72                  |         |         |         |         |         |         |
| -74                  |         |         |         |         |         |         |
| -76                  |         |         |         |         |         |         |
| -78                  |         |         |         |         |         |         |
| -80                  |         |         |         |         |         |         |
| -82                  |         |         |         |         |         |         |
| -84                  |         |         |         |         |         |         |
| -86                  |         |         |         |         |         |         |
| -88                  |         |         |         |         |         |         |
| -90                  |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 0.90    | 0.92    | 0.94    | 0.96    | 0.98    | 1.00    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.02371 | 0.02386 | 0.02400 | 0.02414 | 0.02428 | 0.02442 |
| 86                         | 0.04741 | 0.04771 | 0.04800 | 0.04828 | 0.04856 | 0.04882 |
| 84                         | 0.07111 | 0.07155 | 0.07199 | 0.07241 | 0.07282 | 0.07322 |
| 82                         | 0.09478 | 0.09537 | 0.09595 | 0.09651 | 0.09706 | 0.09760 |
| 80                         | 0.11842 | 0.11917 | 0.11989 | 0.12059 | 0.12128 | 0.12195 |
| 78                         | 0.14204 | 0.14293 | 0.14380 | 0.14464 | 0.14546 | 0.14627 |
| 76                         | 0.16561 | 0.16665 | 0.16767 | 0.16865 | 0.16961 | 0.17054 |
| 74                         | 0.18914 | 0.19033 | 0.19149 | 0.19261 | 0.19371 | 0.19478 |
| 72                         | 0.21262 | 0.21396 | 0.21526 | 0.21653 | 0.21776 | 0.21896 |
| 70                         | 0.23604 | 0.23753 | 0.23897 | 0.24038 | 0.24175 | 0.24308 |
| 68                         | 0.25940 | 0.26103 | 0.26262 | 0.26417 | 0.26567 | 0.26714 |
| 66                         | 0.28268 | 0.28447 | 0.28620 | 0.28788 | 0.28952 | 0.29112 |
| 64                         | 0.30589 | 0.30782 | 0.30970 | 0.31152 | 0.31330 | 0.31503 |
| 62                         | 0.32902 | 0.33109 | 0.33311 | 0.33508 | 0.33699 | 0.33885 |
| 60                         | 0.35205 | 0.35427 | 0.35643 | 0.35854 | 0.36058 | 0.36258 |
| 58                         | 0.37498 | 0.37735 | 0.37966 | 0.38190 | 0.38408 | 0.38621 |
| 56                         | 0.39782 | 0.40033 | 0.40278 | 0.40516 | 0.40748 | 0.40973 |
| 54                         | 0.42054 | 0.42320 | 0.42579 | 0.42831 | 0.43076 | 0.43315 |
| 52                         | 0.44314 | 0.44595 | 0.44868 | 0.45134 | 0.45392 | 0.45644 |
| 50                         | 0.46562 | 0.46857 | 0.47145 | 0.47424 | 0.47696 | 0.47961 |
| 48                         | 0.48797 | 0.49107 | 0.49408 | 0.49702 | 0.49987 | 0.50265 |
| 46                         | 0.51018 | 0.51342 | 0.51658 | 0.51965 | 0.52264 | 0.52555 |
| 44                         | 0.53224 | 0.53563 | 0.53893 | 0.54214 | 0.54526 | 0.54830 |
| 42                         | 0.55415 | 0.55769 | 0.56113 | 0.56447 | 0.56773 | 0.57090 |
| 40                         | 0.57591 | 0.57959 | 0.58317 | 0.58665 | 0.59004 | 0.59333 |
| 38                         | 0.59750 | 0.60132 | 0.60504 | 0.60866 | 0.61218 | 0.61560 |
| 36                         | 0.61891 | 0.62288 | 0.62674 | 0.63050 | 0.63415 | 0.63770 |
| 34                         | 0.64015 | 0.64426 | 0.64826 | 0.65215 | 0.65593 | 0.65962 |
| 32                         | 0.66120 | 0.66545 | 0.66959 | 0.67362 | 0.67753 | 0.68134 |
| 30                         | 0.68205 | 0.68645 | 0.69073 | 0.69489 | 0.69893 | 0.70287 |
| 28                         | 0.70270 | 0.70725 | 0.71166 | 0.71596 | 0.72013 | 0.72420 |
| 26                         | 0.72314 | 0.72783 | 0.73238 | 0.73681 | 0.74112 | 0.74531 |
| 24                         | 0.74337 | 0.74820 | 0.75289 | 0.75745 | 0.76189 | 0.76621 |
| 22                         | 0.76337 | 0.76834 | 0.77317 | 0.77787 | 0.78244 | 0.78688 |
| 20                         | 0.78313 | 0.78825 | 0.79321 | 0.79805 | 0.80275 | 0.80732 |
| 18                         | 0.80266 | 0.80791 | 0.81302 | 0.81798 | 0.82281 | 0.82751 |
| 16                         | 0.82193 | 0.82733 | 0.83257 | 0.83767 | 0.84263 | 0.84746 |
| 14                         | 0.84095 | 0.84649 | 0.85187 | 0.85711 | 0.86219 | 0.86714 |
| 12                         | 0.85970 | 0.86538 | 0.87090 | 0.87627 | 0.88149 | 0.88657 |
| 10                         | 0.87818 | 0.88400 | 0.88966 | 0.89516 | 0.90051 | 0.90571 |
| 8                          | 0.89637 | 0.90234 | 0.90813 | 0.91377 | 0.91925 | 0.92458 |
| 6                          | 0.91427 | 0.92038 | 0.92632 | 0.93208 | 0.93769 | 0.94315 |
| 4                          | 0.93187 | 0.93812 | 0.94420 | 0.95010 | 0.95584 | 0.96142 |
| 2                          | 0.94916 | 0.95556 | 0.96177 | 0.96780 | 0.97367 | 0.97938 |
| 0                          | 0.96613 | 0.97267 | 0.97902 | 0.98519 | 0.99119 | 0.99702 |

Table 1

| $\rho_0 \backslash \alpha$ | 0.90    | 0.92    | 0.94    | 0.96    | 0.98    | 1.00    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| -2                         | 0.98276 | 0.98945 | 0.99594 | 1.00224 | 1.00837 | 1.01433 |
| -4                         | 0.99906 | 1.00589 | 1.01252 | 1.01896 | 1.02522 | 1.03131 |
| -6                         | 1.01501 | 1.02198 | 1.02875 | 1.03533 | 1.04172 | 1.04794 |
| -8                         | 1.03059 | 1.03771 | 1.04462 | 1.05134 | 1.05786 | 1.06420 |
| -10                        | 1.04580 | 1.05307 | 1.06012 | 1.06697 | 1.07363 | 1.08010 |
| -12                        | 1.06062 | 1.06804 | 1.07524 | 1.08223 | 1.08902 | 1.09562 |
| -14                        | 1.07505 | 1.08262 | 1.08996 | 1.09709 | 1.10402 | 1.11075 |
| -16                        | 1.08907 | 1.09678 | 1.10427 | 1.11155 | 1.11861 | 1.12548 |
| -18                        | 1.10266 | 1.11053 | 1.11817 | 1.12558 | 1.13279 | 1.13979 |
| -20                        | 1.11582 | 1.12384 | 1.13163 | 1.13919 | 1.14653 | 1.15367 |
| -22                        | 1.12853 | 1.13671 | 1.14465 | 1.15235 | 1.15984 | 1.16711 |
| -24                        | 1.14077 | 1.14911 | 1.15720 | 1.16506 | 1.17268 | 1.18009 |
| -26                        | 1.15253 | 1.16103 | 1.16928 | 1.17729 | 1.18506 | 1.19261 |
| -28                        | 1.16380 | 1.17246 | 1.18087 | 1.18903 | 1.19695 | 1.20465 |
| -30                        | 1.17454 | 1.18338 | 1.19195 | 1.20027 | 1.20834 | 1.21618 |
| -32                        | 1.18476 | 1.19376 | 1.20250 | 1.21098 | 1.21921 | 1.22720 |
| -34                        | 1.19442 | 1.20360 | 1.21251 | 1.22115 | 1.22954 | 1.23768 |
| -36                        | 1.20350 | 1.21287 | 1.22195 | 1.23076 | 1.23932 | 1.24762 |
| -38                        | 1.21199 | 1.22155 | 1.23081 | 1.23979 | 1.24851 | 1.25698 |
| -40                        | 1.21986 | 1.22961 | 1.23906 | 1.24822 | 1.25712 | 1.26575 |
| -42                        | 1.22708 | 1.23703 | 1.24667 | 1.25602 | 1.26510 | 1.27390 |
| -44                        | 1.23363 | 1.24378 | 1.25363 | 1.26317 | 1.27243 | 1.28142 |
| -46                        | 1.23947 | 1.24984 | 1.25989 | 1.26964 | 1.27910 | 1.28827 |
| -48                        | 1.24457 | 1.25517 | 1.26544 | 1.27540 | 1.28506 | 1.29442 |
| -50                        | 1.24890 | 1.25974 | 1.27024 | 1.28042 | 1.29029 | 1.29986 |
| -52                        | 1.25242 | 1.26351 | 1.27425 | 1.28466 | 1.29475 | 1.30454 |
| -54                        | 1.25508 | 1.26643 | 1.27743 | 1.28809 | 1.29841 | 1.30843 |
| -56                        | 1.25683 | 1.26847 | 1.27973 | 1.29065 | 1.30123 | 1.31148 |
| -58                        | 1.25762 | 1.26956 | 1.28112 | 1.29231 | 1.30315 | 1.31366 |
| -60                        |         |         |         | 1.29301 | 1.30414 | 1.31492 |
| -62                        |         |         |         |         |         |         |
| -64                        |         |         |         |         |         |         |
| -66                        |         |         |         |         |         |         |
| -68                        |         |         |         |         |         |         |
| -70                        |         |         |         |         |         |         |
| -72                        |         |         |         |         |         |         |
| -74                        |         |         |         |         |         |         |
| -76                        |         |         |         |         |         |         |
| -78                        |         |         |         |         |         |         |
| -80                        |         |         |         |         |         |         |
| -82                        |         |         |         |         |         |         |
| -84                        |         |         |         |         |         |         |
| -86                        |         |         |         |         |         |         |
| -88                        |         |         |         |         |         |         |
| -90                        |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 1.02    | 1.04    | 1.06    | 1.08    | 1.10    | 1.12    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.02455 | 0.02467 | 0.02480 | 0.02492 | 0.02503 | 0.02515 |
| 86                         | 0.04908 | 0.04934 | 0.04959 | 0.04983 | 0.05006 | 0.05029 |
| 84                         | 0.07361 | 0.07399 | 0.07436 | 0.07472 | 0.07508 | 0.07542 |
| 82                         | 0.09812 | 0.09862 | 0.09912 | 0.09960 | 0.10007 | 0.10053 |
| 80                         | 0.12260 | 0.12323 | 0.12385 | 0.12445 | 0.12504 | 0.12561 |
| 78                         | 0.14705 | 0.14781 | 0.14855 | 0.14927 | 0.14997 | 0.15066 |
| 76                         | 0.17145 | 0.17234 | 0.17320 | 0.17405 | 0.17487 | 0.17567 |
| 74                         | 0.19582 | 0.19683 | 0.19782 | 0.19878 | 0.19972 | 0.20063 |
| 72                         | 0.22013 | 0.22127 | 0.22238 | 0.22346 | 0.22451 | 0.22555 |
| 70                         | 0.24438 | 0.24564 | 0.24688 | 0.24808 | 0.24925 | 0.25040 |
| 68                         | 0.26856 | 0.26995 | 0.27131 | 0.27263 | 0.27392 | 0.27518 |
| 66                         | 0.29268 | 0.29419 | 0.29567 | 0.29711 | 0.29852 | 0.29989 |
| 64                         | 0.31671 | 0.31835 | 0.31995 | 0.32152 | 0.32304 | 0.32452 |
| 62                         | 0.34066 | 0.34243 | 0.34415 | 0.34583 | 0.34747 | 0.34907 |
| 60                         | 0.36452 | 0.36641 | 0.36826 | 0.37005 | 0.37181 | 0.37352 |
| 58                         | 0.38828 | 0.39030 | 0.39226 | 0.39418 | 0.39605 | 0.39787 |
| 56                         | 0.41193 | 0.41407 | 0.41616 | 0.41820 | 0.42018 | 0.42212 |
| 54                         | 0.43547 | 0.43774 | 0.43995 | 0.44210 | 0.44420 | 0.44625 |
| 52                         | 0.45890 | 0.46128 | 0.46361 | 0.46588 | 0.46810 | 0.47026 |
| 50                         | 0.48219 | 0.48470 | 0.48715 | 0.48954 | 0.49187 | 0.49415 |
| 48                         | 0.50535 | 0.50799 | 0.51056 | 0.51307 | 0.51551 | 0.51790 |
| 46                         | 0.52838 | 0.53114 | 0.53383 | 0.53645 | 0.53901 | 0.54150 |
| 44                         | 0.55126 | 0.55414 | 0.55695 | 0.55969 | 0.56236 | 0.56497 |
| 42                         | 0.57398 | 0.57699 | 0.57991 | 0.58277 | 0.58555 | 0.58827 |
| 40                         | 0.59654 | 0.59967 | 0.60272 | 0.60569 | 0.60859 | 0.61142 |
| 38                         | 0.61894 | 0.62219 | 0.62536 | 0.62844 | 0.63145 | 0.63439 |
| 36                         | 0.64116 | 0.64453 | 0.64782 | 0.65102 | 0.65414 | 0.65719 |
| 34                         | 0.66320 | 0.66669 | 0.67010 | 0.67341 | 0.67665 | 0.67980 |
| 32                         | 0.68505 | 0.68867 | 0.69219 | 0.69562 | 0.69896 | 0.70223 |
| 30                         | 0.70671 | 0.71044 | 0.71408 | 0.71762 | 0.72108 | 0.72445 |
| 28                         | 0.72816 | 0.73201 | 0.73577 | 0.73943 | 0.74300 | 0.74648 |
| 26                         | 0.74940 | 0.75337 | 0.75724 | 0.76102 | 0.76470 | 0.76828 |
| 24                         | 0.77042 | 0.77451 | 0.77850 | 0.78239 | 0.78618 | 0.78987 |
| 22                         | 0.79121 | 0.79542 | 0.79953 | 0.80353 | 0.80743 | 0.81123 |
| 20                         | 0.81177 | 0.81610 | 0.82032 | 0.82444 | 0.82845 | 0.83236 |
| 18                         | 0.83209 | 0.83654 | 0.84088 | 0.84510 | 0.84922 | 0.85324 |
| 16                         | 0.85215 | 0.85673 | 0.86118 | 0.86552 | 0.86975 | 0.87387 |
| 14                         | 0.87196 | 0.87665 | 0.88122 | 0.88567 | 0.89001 | 0.89424 |
| 12                         | 0.89151 | 0.89632 | 0.90100 | 0.90556 | 0.91001 | 0.91435 |
| 10                         | 0.91077 | 0.91570 | 0.92050 | 0.92518 | 0.92973 | 0.93418 |
| 8                          | 0.92976 | 0.93481 | 0.93972 | 0.94451 | 0.94917 | 0.95372 |
| 6                          | 0.94845 | 0.95362 | 0.95865 | 0.96355 | 0.96832 | 0.97298 |
| 4                          | 0.96685 | 0.97213 | 0.97728 | 0.98229 | 0.98717 | 0.99193 |
| 2                          | 0.98493 | 0.99033 | 0.99559 | 1.00072 | 1.00571 | 1.01057 |
| 0                          | 1.00269 | 1.00822 | 1.01359 | 1.01883 | 1.02393 | 1.02890 |

Table 1

| $\rho_0$<br>$\alpha$ | 1.02    | 1.04    | 1.06    | 1.08    | 1.10    | 1.12    |
|----------------------|---------|---------|---------|---------|---------|---------|
| -2                   | 1.02013 | 1.02577 | 1.03126 | 1.03661 | 1.04182 | 1.04690 |
| -4                   | 1.03723 | 1.04299 | 1.04860 | 1.05406 | 1.05938 | 1.06456 |
| -6                   | 1.05398 | 1.05986 | 1.06559 | 1.07116 | 1.07659 | 1.08188 |
| -8                   | 1.07037 | 1.07638 | 1.08222 | 1.08790 | 1.09344 | 1.09884 |
| -10                  | 1.08640 | 1.09252 | 1.09848 | 1.10428 | 1.10993 | 1.11543 |
| -12                  | 1.10204 | 1.10829 | 1.11436 | 1.12028 | 1.12604 | 1.13165 |
| -14                  | 1.11730 | 1.12367 | 1.12986 | 1.13589 | 1.14176 | 1.14748 |
| -16                  | 1.13215 | 1.13864 | 1.14496 | 1.15110 | 1.15709 | 1.16292 |
| -18                  | 1.14659 | 1.15321 | 1.15964 | 1.16591 | 1.17200 | 1.17794 |
| -20                  | 1.16060 | 1.16735 | 1.17390 | 1.18029 | 1.18650 | 1.19255 |
| -22                  | 1.17418 | 1.18105 | 1.18773 | 1.19423 | 1.20056 | 1.20672 |
| -24                  | 1.18730 | 1.19430 | 1.20111 | 1.20773 | 1.21418 | 1.22045 |
| -26                  | 1.19995 | 1.20708 | 1.21402 | 1.22077 | 1.22733 | 1.23372 |
| -28                  | 1.21212 | 1.21939 | 1.22646 | 1.23333 | 1.24002 | 1.24652 |
| -30                  | 1.22380 | 1.23120 | 1.23840 | 1.24540 | 1.25221 | 1.25884 |
| -32                  | 1.23496 | 1.24251 | 1.24984 | 1.25697 | 1.26391 | 1.27066 |
| -34                  | 1.24560 | 1.25328 | 1.26075 | 1.26802 | 1.27508 | 1.28196 |
| -36                  | 1.25568 | 1.26351 | 1.27113 | 1.27853 | 1.28572 | 1.29273 |
| -38                  | 1.26520 | 1.27318 | 1.28094 | 1.28848 | 1.29581 | 1.30295 |
| -40                  | 1.27413 | 1.28227 | 1.29018 | 1.29786 | 1.30533 | 1.31260 |
| -42                  | 1.28245 | 1.29075 | 1.29881 | 1.30665 | 1.31426 | 1.32167 |
| -44                  | 1.29014 | 1.29860 | 1.30683 | 1.31482 | 1.32258 | 1.33014 |
| -46                  | 1.29717 | 1.30581 | 1.31420 | 1.32235 | 1.33027 | 1.33797 |
| -48                  | 1.30351 | 1.31233 | 1.32090 | 1.32922 | 1.33730 | 1.34516 |
| -50                  | 1.30914 | 1.31815 | 1.32690 | 1.33540 | 1.34365 | 1.35167 |
| -52                  | 1.31403 | 1.32324 | 1.33218 | 1.34086 | 1.34929 | 1.35748 |
| -54                  | 1.31814 | 1.32755 | 1.33670 | 1.34557 | 1.35418 | 1.36255 |
| -56                  | 1.32142 | 1.33106 | 1.34042 | 1.34950 | 1.35831 | 1.36687 |
| -58                  | 1.32385 | 1.33373 | 1.34331 | 1.35260 | 1.36162 | 1.37038 |
| -60                  | 1.32537 | 1.33550 | 1.34532 | 1.35485 | 1.36409 | 1.37306 |
| -62                  | 1.32593 | 1.33633 | 1.34641 | 1.35618 | 1.36567 | 1.37487 |
| -64                  |         |         |         |         | 1.36630 | 1.37575 |
| -66                  |         |         |         |         |         |         |
| -68                  |         |         |         |         |         |         |
| -70                  |         |         |         |         |         |         |
| -72                  |         |         |         |         |         |         |
| -74                  |         |         |         |         |         |         |
| -76                  |         |         |         |         |         |         |
| -78                  |         |         |         |         |         |         |
| -80                  |         |         |         |         |         |         |
| -82                  |         |         |         |         |         |         |
| -84                  |         |         |         |         |         |         |
| -86                  |         |         |         |         |         |         |
| -88                  |         |         |         |         |         |         |
| -90                  |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 1.14    | 1.16    | 1.18    | 1.20    | 1.22    | 1.24    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.02526 | 0.02537 | 0.02548 | 0.02558 | 0.02568 | 0.02578 |
| 86                         | 0.05052 | 0.05073 | 0.05095 | 0.05116 | 0.05136 | 0.05156 |
| 84                         | 0.07576 | 0.07608 | 0.07640 | 0.07672 | 0.07702 | 0.07732 |
| 82                         | 0.10098 | 0.10141 | 0.10184 | 0.10226 | 0.10267 | 0.10307 |
| 80                         | 0.12617 | 0.12672 | 0.12725 | 0.12777 | 0.12828 | 0.12878 |
| 78                         | 0.15133 | 0.15199 | 0.15263 | 0.15326 | 0.15387 | 0.15447 |
| 76                         | 0.17645 | 0.17722 | 0.17797 | 0.17870 | 0.17941 | 0.18011 |
| 74                         | 0.20153 | 0.20240 | 0.20326 | 0.20409 | 0.20491 | 0.20570 |
| 72                         | 0.22655 | 0.22753 | 0.22849 | 0.22943 | 0.23035 | 0.23124 |
| 70                         | 0.25151 | 0.25260 | 0.25367 | 0.25471 | 0.25573 | 0.25672 |
| 68                         | 0.27641 | 0.27761 | 0.27878 | 0.27993 | 0.28104 | 0.28214 |
| 66                         | 0.30123 | 0.30254 | 0.30382 | 0.30506 | 0.30628 | 0.30748 |
| 64                         | 0.32597 | 0.32739 | 0.32877 | 0.33012 | 0.33144 | 0.33274 |
| 62                         | 0.35063 | 0.35215 | 0.35364 | 0.35510 | 0.35652 | 0.35791 |
| 60                         | 0.37519 | 0.37682 | 0.37842 | 0.37997 | 0.38149 | 0.38298 |
| 58                         | 0.39965 | 0.40139 | 0.40309 | 0.40475 | 0.40637 | 0.40796 |
| 56                         | 0.42401 | 0.42585 | 0.42766 | 0.42942 | 0.43114 | 0.43282 |
| 54                         | 0.44825 | 0.45020 | 0.45211 | 0.45397 | 0.45579 | 0.45757 |
| 52                         | 0.47237 | 0.47443 | 0.47644 | 0.47841 | 0.48033 | 0.48220 |
| 50                         | 0.49636 | 0.49853 | 0.50064 | 0.50271 | 0.50473 | 0.50670 |
| 48                         | 0.52022 | 0.52249 | 0.52471 | 0.52688 | 0.52900 | 0.53107 |
| 46                         | 0.54394 | 0.54632 | 0.54864 | 0.55091 | 0.55312 | 0.55529 |
| 44                         | 0.56751 | 0.56999 | 0.57242 | 0.57478 | 0.57710 | 0.57936 |
| 42                         | 0.59092 | 0.59351 | 0.59604 | 0.59850 | 0.60092 | 0.60327 |
| 40                         | 0.61417 | 0.61687 | 0.61949 | 0.62206 | 0.62457 | 0.62702 |
| 38                         | 0.63726 | 0.64005 | 0.64278 | 0.64545 | 0.64806 | 0.65060 |
| 36                         | 0.66016 | 0.66306 | 0.66589 | 0.66866 | 0.67136 | 0.67400 |
| 34                         | 0.68288 | 0.68589 | 0.68882 | 0.69169 | 0.69448 | 0.69722 |
| 32                         | 0.70541 | 0.70852 | 0.71155 | 0.71452 | 0.71741 | 0.72024 |
| 30                         | 0.72774 | 0.73096 | 0.73409 | 0.73715 | 0.74014 | 0.74306 |
| 28                         | 0.74987 | 0.75319 | 0.75642 | 0.75958 | 0.76266 | 0.76568 |
| 26                         | 0.77179 | 0.77520 | 0.77854 | 0.78179 | 0.78497 | 0.78808 |
| 24                         | 0.79348 | 0.79700 | 0.80043 | 0.80378 | 0.80706 | 0.81026 |
| 22                         | 0.81494 | 0.81856 | 0.82210 | 0.82555 | 0.82892 | 0.83221 |
| 20                         | 0.83617 | 0.83989 | 0.84353 | 0.84707 | 0.85054 | 0.85392 |
| 18                         | 0.85716 | 0.86098 | 0.86471 | 0.86835 | 0.87191 | 0.87539 |
| 16                         | 0.87789 | 0.88182 | 0.88564 | 0.88938 | 0.89303 | 0.89660 |
| 14                         | 0.89837 | 0.90239 | 0.90632 | 0.91015 | 0.91390 | 0.91755 |
| 12                         | 0.91858 | 0.92270 | 0.92672 | 0.93065 | 0.93449 | 0.93824 |
| 10                         | 0.93851 | 0.94273 | 0.94686 | 0.95088 | 0.95481 | 0.95865 |
| 8                          | 0.95816 | 0.96248 | 0.96670 | 0.97082 | 0.97484 | 0.97877 |
| 6                          | 0.97751 | 0.98194 | 0.98626 | 0.99047 | 0.99458 | 0.99860 |
| 4                          | 0.99657 | 1.00109 | 1.00551 | 1.00982 | 1.01402 | 1.01813 |
| 2                          | 1.01532 | 1.01994 | 1.02445 | 1.02886 | 1.03315 | 1.03735 |
| 0                          | 1.03375 | 1.03847 | 1.04308 | 1.04758 | 1.05197 | 1.05625 |

Table 1

| $\rho_0 \backslash \alpha$ | 1.14    | 1.16    | 1.18    | 1.20    | 1.22    | 1.24    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| -2                         | 1.05185 | 1.05667 | 1.06138 | 1.06597 | 1.07045 | 1.07483 |
| -4                         | 1.06961 | 1.07454 | 1.07934 | 1.08403 | 1.08860 | 1.09306 |
| -6                         | 1.08703 | 1.09206 | 1.09696 | 1.10174 | 1.10640 | 1.11096 |
| -8                         | 1.10410 | 1.10922 | 1.11422 | 1.11910 | 1.12385 | 1.12850 |
| -10                        | 1.12079 | 1.12602 | 1.13112 | 1.13609 | 1.14094 | 1.14567 |
| -12                        | 1.13712 | 1.14245 | 1.14764 | 1.15271 | 1.15765 | 1.16247 |
| -14                        | 1.15305 | 1.15848 | 1.16378 | 1.16894 | 1.17398 | 1.17889 |
| -16                        | 1.16859 | 1.17413 | 1.17952 | 1.18478 | 1.18991 | 1.19492 |
| -18                        | 1.18373 | 1.18936 | 1.19486 | 1.20022 | 1.20544 | 1.21054 |
| -20                        | 1.19844 | 1.20418 | 1.20978 | 1.21523 | 1.22055 | 1.22574 |
| -22                        | 1.21272 | 1.21857 | 1.22427 | 1.22982 | 1.23524 | 1.24052 |
| -24                        | 1.22656 | 1.23252 | 1.23832 | 1.24397 | 1.24949 | 1.25486 |
| -26                        | 1.23995 | 1.24601 | 1.25191 | 1.25767 | 1.26328 | 1.26876 |
| -28                        | 1.25286 | 1.25903 | 1.26504 | 1.27090 | 1.27662 | 1.28219 |
| -30                        | 1.26529 | 1.27158 | 1.27770 | 1.28366 | 1.28947 | 1.29514 |
| -32                        | 1.27723 | 1.28362 | 1.28985 | 1.29592 | 1.30184 | 1.30761 |
| -34                        | 1.28865 | 1.29516 | 1.30150 | 1.30768 | 1.31371 | 1.31957 |
| -36                        | 1.29954 | 1.30617 | 1.31263 | 1.31892 | 1.32505 | 1.33103 |
| -38                        | 1.30989 | 1.31664 | 1.32322 | 1.32962 | 1.33586 | 1.34194 |
| -40                        | 1.31967 | 1.32655 | 1.33325 | 1.33977 | 1.34613 | 1.35232 |
| -42                        | 1.32888 | 1.33589 | 1.34271 | 1.34935 | 1.35582 | 1.36213 |
| -44                        | 1.33748 | 1.34462 | 1.35158 | 1.35834 | 1.36493 | 1.37135 |
| -46                        | 1.34546 | 1.35274 | 1.35983 | 1.36673 | 1.37344 | 1.37998 |
| -48                        | 1.35280 | 1.36022 | 1.36745 | 1.37448 | 1.38132 | 1.38799 |
| -50                        | 1.35946 | 1.36704 | 1.37441 | 1.38158 | 1.38856 | 1.39536 |
| -52                        | 1.36543 | 1.37317 | 1.38069 | 1.38801 | 1.39513 | 1.40206 |
| -54                        | 1.37068 | 1.37858 | 1.38627 | 1.39374 | 1.40101 | 1.40808 |
| -56                        | 1.37518 | 1.38326 | 1.39111 | 1.39874 | 1.40616 | 1.41339 |
| -58                        | 1.37889 | 1.38715 | 1.39518 | 1.40298 | 1.41057 | 1.41795 |
| -60                        | 1.38177 | 1.39023 | 1.39845 | 1.40644 | 1.41420 | 1.42175 |
| -62                        | 1.38379 | 1.39246 | 1.40088 | 1.40906 | 1.41701 | 1.42474 |
| -64                        | 1.38491 | 1.39380 | 1.40244 | 1.41082 | 1.41897 | 1.42689 |
| -66                        |         |         | 1.40307 | 1.41168 | 1.42004 | 1.42816 |
| -68                        |         |         |         |         |         |         |
| -70                        |         |         |         |         |         |         |
| -72                        |         |         |         |         |         |         |
| -74                        |         |         |         |         |         |         |
| -76                        |         |         |         |         |         |         |
| -78                        |         |         |         |         |         |         |
| -80                        |         |         |         |         |         |         |
| -82                        |         |         |         |         |         |         |
| -84                        |         |         |         |         |         |         |
| -86                        |         |         |         |         |         |         |
| -88                        |         |         |         |         |         |         |
| -90                        |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 1.26    | 1.28    | 1.30    | 1.32    | 1.34    | 1.36    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.02588 | 0.02598 | 0.02607 | 0.02616 | 0.02625 | 0.02634 |
| 86                         | 0.05176 | 0.05195 | 0.05213 | 0.05232 | 0.05249 | 0.05267 |
| 84                         | 0.07762 | 0.07790 | 0.07818 | 0.07846 | 0.07873 | 0.07899 |
| 82                         | 0.10346 | 0.10384 | 0.10421 | 0.10458 | 0.10493 | 0.10529 |
| 80                         | 0.12927 | 0.12975 | 0.13021 | 0.13067 | 0.13112 | 0.13156 |
| 78                         | 0.15505 | 0.15562 | 0.15618 | 0.15673 | 0.15727 | 0.15779 |
| 76                         | 0.18079 | 0.18146 | 0.18211 | 0.18275 | 0.18337 | 0.18399 |
| 74                         | 0.20648 | 0.20724 | 0.20799 | 0.20872 | 0.20943 | 0.21013 |
| 72                         | 0.23212 | 0.23298 | 0.23382 | 0.23464 | 0.23544 | 0.23623 |
| 70                         | 0.25770 | 0.25865 | 0.25958 | 0.26049 | 0.26138 | 0.26226 |
| 68                         | 0.28321 | 0.28425 | 0.28528 | 0.28628 | 0.28726 | 0.28822 |
| 66                         | 0.30864 | 0.30978 | 0.31090 | 0.31199 | 0.31306 | 0.31411 |
| 64                         | 0.33400 | 0.33523 | 0.33644 | 0.33762 | 0.33878 | 0.33991 |
| 62                         | 0.35926 | 0.36059 | 0.36189 | 0.36316 | 0.36441 | 0.36563 |
| 60                         | 0.38444 | 0.38586 | 0.38725 | 0.38861 | 0.38994 | 0.39125 |
| 58                         | 0.40951 | 0.41102 | 0.41250 | 0.41396 | 0.41538 | 0.41677 |
| 56                         | 0.43447 | 0.43608 | 0.43765 | 0.43919 | 0.44070 | 0.44217 |
| 54                         | 0.45931 | 0.46101 | 0.46268 | 0.46431 | 0.46590 | 0.46746 |
| 52                         | 0.48404 | 0.48583 | 0.48759 | 0.48930 | 0.49099 | 0.49263 |
| 50                         | 0.50863 | 0.51052 | 0.51236 | 0.51417 | 0.51594 | 0.51767 |
| 48                         | 0.53309 | 0.53507 | 0.53700 | 0.53890 | 0.54075 | 0.54257 |
| 46                         | 0.55740 | 0.55947 | 0.56150 | 0.56348 | 0.56542 | 0.56732 |
| 44                         | 0.58157 | 0.58373 | 0.58585 | 0.58791 | 0.58994 | 0.59192 |
| 42                         | 0.60558 | 0.60783 | 0.61003 | 0.61219 | 0.61430 | 0.61636 |
| 40                         | 0.62942 | 0.63176 | 0.63406 | 0.63630 | 0.63849 | 0.64064 |
| 38                         | 0.65309 | 0.65553 | 0.65791 | 0.66023 | 0.66251 | 0.66474 |
| 36                         | 0.67658 | 0.67911 | 0.68158 | 0.68399 | 0.68635 | 0.68867 |
| 34                         | 0.69989 | 0.70251 | 0.70506 | 0.70756 | 0.71001 | 0.71240 |
| 32                         | 0.72301 | 0.72571 | 0.72835 | 0.73094 | 0.73347 | 0.73594 |
| 30                         | 0.74592 | 0.74871 | 0.75144 | 0.75411 | 0.75672 | 0.75928 |
| 28                         | 0.76863 | 0.77151 | 0.77432 | 0.77708 | 0.77977 | 0.78241 |
| 26                         | 0.79112 | 0.79409 | 0.79699 | 0.79983 | 0.80261 | 0.80532 |
| 24                         | 0.81339 | 0.81644 | 0.81943 | 0.82235 | 0.82521 | 0.82801 |
| 22                         | 0.83542 | 0.83857 | 0.84164 | 0.84465 | 0.84759 | 0.85047 |
| 20                         | 0.85722 | 0.86046 | 0.86361 | 0.86670 | 0.86973 | 0.87268 |
| 18                         | 0.87878 | 0.88210 | 0.88534 | 0.88851 | 0.89162 | 0.89465 |
| 16                         | 0.90008 | 0.90349 | 0.90682 | 0.91007 | 0.91325 | 0.91637 |
| 14                         | 0.92112 | 0.92462 | 0.92803 | 0.93136 | 0.93463 | 0.93782 |
| 12                         | 0.94190 | 0.94547 | 0.94897 | 0.95239 | 0.95573 | 0.95900 |
| 10                         | 0.96239 | 0.96606 | 0.96964 | 0.97314 | 0.97656 | 0.97991 |
| 8                          | 0.98260 | 0.98635 | 0.99002 | 0.99360 | 0.99710 | 1.00053 |
| 6                          | 1.00252 | 1.00636 | 1.01010 | 1.01377 | 1.01735 | 1.02085 |
| 4                          | 1.02214 | 1.02606 | 1.02989 | 1.03363 | 1.03729 | 1.04087 |
| 2                          | 1.04145 | 1.04545 | 1.04936 | 1.05319 | 1.05693 | 1.06058 |
| 0                          | 1.06044 | 1.06452 | 1.06852 | 1.07242 | 1.07624 | 1.07997 |

Table 1

| $\rho_0$<br>$\alpha$ | 1.26    | 1.28    | 1.30    | 1.32    | 1.34    | 1.36    |
|----------------------|---------|---------|---------|---------|---------|---------|
| -2                   | 1.07910 | 1.08327 | 1.08735 | 1.09133 | 1.09523 | 1.09904 |
| -4                   | 1.09742 | 1.10168 | 1.10584 | 1.10991 | 1.11388 | 1.11777 |
| -6                   | 1.11540 | 1.11975 | 1.12399 | 1.12814 | 1.13219 | 1.13615 |
| -8                   | 1.13303 | 1.13746 | 1.14178 | 1.14601 | 1.15014 | 1.15418 |
| -10                  | 1.15029 | 1.15481 | 1.15921 | 1.16352 | 1.16773 | 1.17184 |
| -12                  | 1.16718 | 1.17178 | 1.17627 | 1.18066 | 1.18495 | 1.18914 |
| -14                  | 1.18369 | 1.18837 | 1.19295 | 1.19742 | 1.20178 | 1.20605 |
| -16                  | 1.19980 | 1.20457 | 1.20923 | 1.21378 | 1.21822 | 1.22257 |
| -18                  | 1.21551 | 1.22037 | 1.22511 | 1.22974 | 1.23426 | 1.23869 |
| -20                  | 1.23081 | 1.23575 | 1.24058 | 1.24529 | 1.24989 | 1.25439 |
| -22                  | 1.24568 | 1.25071 | 1.25562 | 1.26041 | 1.26510 | 1.26968 |
| -24                  | 1.26011 | 1.26523 | 1.27023 | 1.27511 | 1.27987 | 1.28453 |
| -26                  | 1.27409 | 1.27930 | 1.28439 | 1.28935 | 1.29420 | 1.29893 |
| -28                  | 1.28762 | 1.29292 | 1.29809 | 1.30314 | 1.30807 | 1.31289 |
| -30                  | 1.30067 | 1.30606 | 1.31132 | 1.31646 | 1.32147 | 1.32637 |
| -32                  | 1.31323 | 1.31872 | 1.32407 | 1.32930 | 1.33440 | 1.33938 |
| -34                  | 1.32530 | 1.33088 | 1.33633 | 1.34164 | 1.34683 | 1.35189 |
| -36                  | 1.33685 | 1.34253 | 1.34807 | 1.35347 | 1.35875 | 1.36390 |
| -38                  | 1.34787 | 1.35365 | 1.35929 | 1.36479 | 1.37015 | 1.37539 |
| -40                  | 1.35835 | 1.36423 | 1.36997 | 1.37556 | 1.38102 | 1.38635 |
| -42                  | 1.36827 | 1.37425 | 1.38009 | 1.38578 | 1.39134 | 1.39676 |
| -44                  | 1.37761 | 1.38370 | 1.38964 | 1.39544 | 1.40109 | 1.40661 |
| -46                  | 1.38635 | 1.39256 | 1.39861 | 1.40451 | 1.41026 | 1.41587 |
| -48                  | 1.39448 | 1.40080 | 1.40697 | 1.41298 | 1.41883 | 1.42455 |
| -50                  | 1.40197 | 1.40842 | 1.41470 | 1.42082 | 1.42679 | 1.43260 |
| -52                  | 1.40881 | 1.41538 | 1.42178 | 1.42802 | 1.43410 | 1.44003 |
| -54                  | 1.41497 | 1.42167 | 1.42820 | 1.43456 | 1.44076 | 1.44680 |
| -56                  | 1.42042 | 1.42726 | 1.43392 | 1.44041 | 1.44673 | 1.45289 |
| -58                  | 1.42513 | 1.43212 | 1.43892 | 1.44555 | 1.45200 | 1.45829 |
| -60                  | 1.42909 | 1.43623 | 1.44318 | 1.44995 | 1.45654 | 1.46296 |
| -62                  | 1.43225 | 1.43956 | 1.44667 | 1.45359 | 1.46032 | 1.46689 |
| -64                  | 1.43458 | 1.44207 | 1.44935 | 1.45643 | 1.46332 | 1.47003 |
| -66                  | 1.43605 | 1.44372 | 1.45118 | 1.45843 | 1.46549 | 1.47236 |
| -68                  | 1.43661 | 1.44448 | 1.45213 | 1.45957 | 1.46681 | 1.47385 |
| -70                  |         |         |         |         |         | 1.47445 |
| -72                  |         |         |         |         |         |         |
| -74                  |         |         |         |         |         |         |
| -76                  |         |         |         |         |         |         |
| -78                  |         |         |         |         |         |         |
| -80                  |         |         |         |         |         |         |
| -82                  |         |         |         |         |         |         |
| -84                  |         |         |         |         |         |         |
| -86                  |         |         |         |         |         |         |
| -88                  |         |         |         |         |         |         |
| -90                  |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 1.38    | 1.40    | 1.42    | 1.44    | 1.46    | 1.48    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.02642 | 0.02651 | 0.02659 | 0.02667 | 0.02675 | 0.02683 |
| 86                         | 0.05284 | 0.05301 | 0.05317 | 0.05334 | 0.05349 | 0.05365 |
| 84                         | 0.07925 | 0.07950 | 0.07974 | 0.07999 | 0.08022 | 0.08046 |
| 82                         | 0.10563 | 0.10596 | 0.10629 | 0.10662 | 0.10693 | 0.10724 |
| 80                         | 0.13198 | 0.13240 | 0.13282 | 0.13322 | 0.13361 | 0.13400 |
| 78                         | 0.15831 | 0.15881 | 0.15930 | 0.15979 | 0.16026 | 0.16073 |
| 76                         | 0.18459 | 0.18517 | 0.18575 | 0.18631 | 0.18687 | 0.18741 |
| 74                         | 0.21082 | 0.21149 | 0.21215 | 0.21279 | 0.21342 | 0.21404 |
| 72                         | 0.23700 | 0.23775 | 0.23849 | 0.23921 | 0.23993 | 0.24062 |
| 70                         | 0.26311 | 0.26395 | 0.26477 | 0.26558 | 0.26636 | 0.26714 |
| 68                         | 0.28916 | 0.29008 | 0.29098 | 0.29187 | 0.29273 | 0.29358 |
| 66                         | 0.31513 | 0.31614 | 0.31712 | 0.31808 | 0.31903 | 0.31995 |
| 64                         | 0.34102 | 0.34211 | 0.34317 | 0.34422 | 0.34524 | 0.34624 |
| 62                         | 0.36682 | 0.36799 | 0.36914 | 0.37026 | 0.37136 | 0.37244 |
| 60                         | 0.39253 | 0.39378 | 0.39500 | 0.39621 | 0.39738 | 0.39854 |
| 58                         | 0.41813 | 0.41946 | 0.42077 | 0.42205 | 0.42330 | 0.42453 |
| 56                         | 0.44362 | 0.44503 | 0.44642 | 0.44778 | 0.44911 | 0.45042 |
| 54                         | 0.46899 | 0.47049 | 0.47196 | 0.47339 | 0.47480 | 0.47618 |
| 52                         | 0.49424 | 0.49582 | 0.49737 | 0.49888 | 0.50037 | 0.50182 |
| 50                         | 0.51936 | 0.52102 | 0.52265 | 0.52424 | 0.52580 | 0.52733 |
| 48                         | 0.54434 | 0.54608 | 0.54779 | 0.54946 | 0.55109 | 0.55270 |
| 46                         | 0.56918 | 0.57100 | 0.57278 | 0.57453 | 0.57624 | 0.57792 |
| 44                         | 0.59386 | 0.59576 | 0.59762 | 0.59945 | 0.60123 | 0.60299 |
| 42                         | 0.61839 | 0.62037 | 0.62230 | 0.62421 | 0.62607 | 0.62789 |
| 40                         | 0.64274 | 0.64480 | 0.64682 | 0.64880 | 0.65073 | 0.65263 |
| 38                         | 0.66693 | 0.66907 | 0.67116 | 0.67321 | 0.67522 | 0.67719 |
| 36                         | 0.69093 | 0.69315 | 0.69532 | 0.69745 | 0.69953 | 0.70157 |
| 34                         | 0.71475 | 0.71704 | 0.71929 | 0.72149 | 0.72365 | 0.72576 |
| 32                         | 0.73837 | 0.74074 | 0.74306 | 0.74534 | 0.74757 | 0.74976 |
| 30                         | 0.76178 | 0.76424 | 0.76664 | 0.76899 | 0.77129 | 0.77355 |
| 28                         | 0.78499 | 0.78752 | 0.79000 | 0.79242 | 0.79480 | 0.79712 |
| 26                         | 0.80798 | 0.81059 | 0.81314 | 0.81564 | 0.81808 | 0.82048 |
| 24                         | 0.83075 | 0.83343 | 0.83606 | 0.83863 | 0.84115 | 0.84361 |
| 22                         | 0.85328 | 0.85604 | 0.85874 | 0.86138 | 0.86397 | 0.86651 |
| 20                         | 0.87558 | 0.87841 | 0.88118 | 0.88390 | 0.88656 | 0.88917 |
| 18                         | 0.89762 | 0.90053 | 0.90338 | 0.90617 | 0.90890 | 0.91157 |
| 16                         | 0.91942 | 0.92240 | 0.92532 | 0.92818 | 0.93098 | 0.93372 |
| 14                         | 0.94094 | 0.94400 | 0.94700 | 0.94993 | 0.95280 | 0.95561 |
| 12                         | 0.96220 | 0.96534 | 0.96840 | 0.97140 | 0.97434 | 0.97722 |
| 10                         | 0.98318 | 0.98639 | 0.98953 | 0.99260 | 0.99561 | 0.99856 |
| 8                          | 1.00388 | 1.00716 | 1.01037 | 1.01351 | 1.01659 | 1.01960 |
| 6                          | 1.02428 | 1.02763 | 1.03091 | 1.03412 | 1.03727 | 1.04035 |
| 4                          | 1.04437 | 1.04780 | 1.05115 | 1.05443 | 1.05765 | 1.06080 |
| 2                          | 1.06416 | 1.06766 | 1.07108 | 1.07443 | 1.07772 | 1.08093 |
| 0                          | 1.08362 | 1.08720 | 1.09069 | 1.09411 | 1.09746 | 1.10074 |

Table 1

| $\rho_0 \backslash \alpha$ | 1.38    | 1.40    | 1.42    | 1.44    | 1.46    | 1.48    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| -2                         | 1.10276 | 1.10641 | 1.10997 | 1.11346 | 1.11688 | 1.12023 |
| -4                         | 1.12157 | 1.12528 | 1.12892 | 1.13248 | 1.13596 | 1.13937 |
| -6                         | 1.14002 | 1.14381 | 1.14752 | 1.15115 | 1.15470 | 1.15818 |
| -8                         | 1.15813 | 1.16199 | 1.16577 | 1.16946 | 1.17308 | 1.17662 |
| -10                        | 1.17587 | 1.17980 | 1.18365 | 1.18741 | 1.19110 | 1.19471 |
| -12                        | 1.19323 | 1.19724 | 1.20116 | 1.20499 | 1.20874 | 1.21242 |
| -14                        | 1.21022 | 1.21430 | 1.21829 | 1.22219 | 1.22601 | 1.22975 |
| -16                        | 1.22681 | 1.23097 | 1.23503 | 1.23900 | 1.24288 | 1.24669 |
| -18                        | 1.24301 | 1.24723 | 1.25136 | 1.25540 | 1.25936 | 1.26323 |
| -20                        | 1.25879 | 1.26309 | 1.26729 | 1.27140 | 1.27542 | 1.27936 |
| -22                        | 1.27415 | 1.27852 | 1.28279 | 1.28698 | 1.29106 | 1.29507 |
| -24                        | 1.28908 | 1.29352 | 1.29787 | 1.30212 | 1.30628 | 1.31035 |
| -26                        | 1.30356 | 1.30808 | 1.31250 | 1.31682 | 1.32105 | 1.32519 |
| -28                        | 1.31759 | 1.32219 | 1.32668 | 1.33108 | 1.33537 | 1.33957 |
| -30                        | 1.33115 | 1.33583 | 1.34040 | 1.34486 | 1.34923 | 1.35350 |
| -32                        | 1.34424 | 1.34899 | 1.35364 | 1.35818 | 1.36261 | 1.36695 |
| -34                        | 1.35684 | 1.36167 | 1.36639 | 1.37100 | 1.37551 | 1.37992 |
| -36                        | 1.36893 | 1.37384 | 1.37864 | 1.38333 | 1.38791 | 1.39239 |
| -38                        | 1.38050 | 1.38550 | 1.39038 | 1.39514 | 1.39980 | 1.40436 |
| -40                        | 1.39155 | 1.39663 | 1.40159 | 1.40643 | 1.41117 | 1.41580 |
| -42                        | 1.40205 | 1.40721 | 1.41226 | 1.41718 | 1.42200 | 1.42670 |
| -44                        | 1.41199 | 1.41724 | 1.42237 | 1.42738 | 1.43228 | 1.43706 |
| -46                        | 1.42135 | 1.42670 | 1.43191 | 1.43701 | 1.44199 | 1.44685 |
| -48                        | 1.43012 | 1.43556 | 1.44087 | 1.44605 | 1.45112 | 1.45606 |
| -50                        | 1.43828 | 1.44382 | 1.44922 | 1.45450 | 1.45965 | 1.46468 |
| -52                        | 1.44581 | 1.45145 | 1.45695 | 1.46232 | 1.46757 | 1.47269 |
| -54                        | 1.45269 | 1.45844 | 1.46404 | 1.46951 | 1.47485 | 1.48006 |
| -56                        | 1.45890 | 1.46476 | 1.47047 | 1.47604 | 1.48148 | 1.48679 |
| -58                        | 1.46442 | 1.47039 | 1.47622 | 1.48190 | 1.48744 | 1.49285 |
| -60                        | 1.46922 | 1.47531 | 1.48126 | 1.48705 | 1.49271 | 1.49822 |
| -62                        | 1.47328 | 1.47950 | 1.48557 | 1.49149 | 1.49726 | 1.50288 |
| -64                        | 1.47656 | 1.48293 | 1.48913 | 1.49517 | 1.50106 | 1.50681 |
| -66                        | 1.47905 | 1.48556 | 1.49190 | 1.49808 | 1.50410 | 1.50997 |
| -68                        | 1.48070 | 1.48737 | 1.49386 | 1.50018 | 1.50635 | 1.51235 |
| -70                        | 1.48148 | 1.48831 | 1.49497 | 1.50145 | 1.50776 | 1.51391 |
| -72                        |         |         |         |         | 1.50831 | 1.51461 |
| -74                        |         |         |         |         |         |         |
| -76                        |         |         |         |         |         |         |
| -78                        |         |         |         |         |         |         |
| -80                        |         |         |         |         |         |         |
| -82                        |         |         |         |         |         |         |
| -84                        |         |         |         |         |         |         |
| -86                        |         |         |         |         |         |         |
| -88                        |         |         |         |         |         |         |
| -90                        |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 1.50    | 1.52    | 1.54    | 1.56    | 1.58    | 1.60    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.02690 | 0.02698 | 0.02705 | 0.02712 | 0.02719 | 0.02726 |
| 86                         | 0.05380 | 0.05395 | 0.05410 | 0.05424 | 0.05438 | 0.05452 |
| 84                         | 0.08068 | 0.08091 | 0.08113 | 0.08134 | 0.08156 | 0.08176 |
| 82                         | 0.10755 | 0.10785 | 0.10814 | 0.10843 | 0.10871 | 0.10898 |
| 80                         | 0.13438 | 0.13476 | 0.13512 | 0.13548 | 0.13583 | 0.13618 |
| 78                         | 0.16118 | 0.16163 | 0.16207 | 0.16250 | 0.16292 | 0.16334 |
| 76                         | 0.18794 | 0.18846 | 0.18897 | 0.18948 | 0.18997 | 0.19045 |
| 74                         | 0.21465 | 0.21525 | 0.21583 | 0.21640 | 0.21697 | 0.21752 |
| 72                         | 0.24130 | 0.24197 | 0.24263 | 0.24328 | 0.24391 | 0.24453 |
| 70                         | 0.26790 | 0.26864 | 0.26937 | 0.27009 | 0.27079 | 0.27148 |
| 68                         | 0.29442 | 0.29524 | 0.29604 | 0.29682 | 0.29760 | 0.29835 |
| 66                         | 0.32086 | 0.32175 | 0.32263 | 0.32349 | 0.32433 | 0.32515 |
| 64                         | 0.34723 | 0.34819 | 0.34914 | 0.35006 | 0.35097 | 0.35187 |
| 62                         | 0.37350 | 0.37453 | 0.37555 | 0.37655 | 0.37753 | 0.37849 |
| 60                         | 0.39967 | 0.40078 | 0.40187 | 0.40294 | 0.40399 | 0.40502 |
| 58                         | 0.42574 | 0.42692 | 0.42808 | 0.42922 | 0.43034 | 0.43144 |
| 56                         | 0.45170 | 0.45295 | 0.45418 | 0.45539 | 0.45658 | 0.45774 |
| 54                         | 0.47754 | 0.47886 | 0.48017 | 0.48144 | 0.48270 | 0.48393 |
| 52                         | 0.50325 | 0.50465 | 0.50602 | 0.50737 | 0.50869 | 0.50999 |
| 50                         | 0.52883 | 0.53030 | 0.53174 | 0.53316 | 0.53455 | 0.53591 |
| 48                         | 0.55427 | 0.55581 | 0.55733 | 0.55881 | 0.56027 | 0.56170 |
| 46                         | 0.57956 | 0.58118 | 0.58276 | 0.58431 | 0.58584 | 0.58733 |
| 44                         | 0.60470 | 0.60639 | 0.60804 | 0.60966 | 0.61125 | 0.61281 |
| 42                         | 0.62968 | 0.63144 | 0.63316 | 0.63484 | 0.63650 | 0.63813 |
| 40                         | 0.65449 | 0.65632 | 0.65811 | 0.65986 | 0.66158 | 0.66327 |
| 38                         | 0.67913 | 0.68102 | 0.68288 | 0.68470 | 0.68649 | 0.68824 |
| 36                         | 0.70358 | 0.70554 | 0.70747 | 0.70935 | 0.71121 | 0.71302 |
| 34                         | 0.72784 | 0.72987 | 0.73186 | 0.73382 | 0.73573 | 0.73762 |
| 32                         | 0.75190 | 0.75400 | 0.75606 | 0.75808 | 0.76006 | 0.76201 |
| 30                         | 0.77576 | 0.77793 | 0.78006 | 0.78214 | 0.78419 | 0.78620 |
| 28                         | 0.79941 | 0.80164 | 0.80384 | 0.80599 | 0.80810 | 0.81017 |
| 26                         | 0.82283 | 0.82514 | 0.82740 | 0.82961 | 0.83179 | 0.83392 |
| 24                         | 0.84603 | 0.84840 | 0.85073 | 0.85301 | 0.85525 | 0.85744 |
| 22                         | 0.86900 | 0.87144 | 0.87383 | 0.87617 | 0.87847 | 0.88072 |
| 20                         | 0.89172 | 0.89423 | 0.89668 | 0.89909 | 0.90145 | 0.90377 |
| 18                         | 0.91420 | 0.91677 | 0.91929 | 0.92176 | 0.92418 | 0.92656 |
| 16                         | 0.93641 | 0.93905 | 0.94163 | 0.94417 | 0.94665 | 0.94909 |
| 14                         | 0.95837 | 0.96107 | 0.96371 | 0.96631 | 0.96885 | 0.97135 |
| 12                         | 0.98005 | 0.98281 | 0.98552 | 0.98818 | 0.99078 | 0.99334 |
| 10                         | 1.00144 | 1.00427 | 1.00705 | 1.00977 | 1.01243 | 1.01505 |
| 8                          | 1.02256 | 1.02545 | 1.02829 | 1.03107 | 1.03379 | 1.03647 |
| 6                          | 1.04337 | 1.04633 | 1.04923 | 1.05207 | 1.05485 | 1.05759 |
| 4                          | 1.06388 | 1.06690 | 1.06986 | 1.07276 | 1.07561 | 1.07840 |
| 2                          | 1.08408 | 1.08716 | 1.09019 | 1.09315 | 1.09605 | 1.09890 |
| 0                          | 1.10396 | 1.10710 | 1.11019 | 1.11321 | 1.11617 | 1.11908 |

Table 1

| $\rho_0 \backslash \alpha$ | 1.50    | 1.52    | 1.54    | 1.56    | 1.58    | 1.60    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| -2                         | 1.12350 | 1.12671 | 1.12986 | 1.13294 | 1.13596 | 1.13893 |
| -4                         | 1.14272 | 1.14599 | 1.14919 | 1.15234 | 1.15542 | 1.15844 |
| -6                         | 1.16158 | 1.16492 | 1.16818 | 1.17138 | 1.17452 | 1.17760 |
| -8                         | 1.18009 | 1.18349 | 1.18682 | 1.19008 | 1.19327 | 1.19641 |
| -10                        | 1.19824 | 1.20170 | 1.20509 | 1.20841 | 1.21166 | 1.21485 |
| -12                        | 1.21601 | 1.21953 | 1.22298 | 1.22636 | 1.22967 | 1.23292 |
| -14                        | 1.23341 | 1.23699 | 1.24050 | 1.24394 | 1.24731 | 1.25061 |
| -16                        | 1.25041 | 1.25406 | 1.25763 | 1.26112 | 1.26455 | 1.26791 |
| -18                        | 1.26701 | 1.27072 | 1.27435 | 1.27791 | 1.28139 | 1.28481 |
| -20                        | 1.28321 | 1.28698 | 1.29067 | 1.29428 | 1.29783 | 1.30130 |
| -22                        | 1.29898 | 1.30281 | 1.30657 | 1.31024 | 1.31384 | 1.31737 |
| -24                        | 1.31433 | 1.31822 | 1.32204 | 1.32577 | 1.32943 | 1.33301 |
| -26                        | 1.32923 | 1.33319 | 1.33707 | 1.34086 | 1.34458 | 1.34822 |
| -28                        | 1.34369 | 1.34771 | 1.35165 | 1.35550 | 1.35928 | 1.36297 |
| -30                        | 1.35768 | 1.36177 | 1.36577 | 1.36968 | 1.37352 | 1.37727 |
| -32                        | 1.37120 | 1.37535 | 1.37942 | 1.38339 | 1.38729 | 1.39110 |
| -34                        | 1.38424 | 1.38846 | 1.39258 | 1.39663 | 1.40058 | 1.40445 |
| -36                        | 1.39678 | 1.40106 | 1.40526 | 1.40936 | 1.41338 | 1.41731 |
| -38                        | 1.40881 | 1.41317 | 1.41743 | 1.42160 | 1.42568 | 1.42967 |
| -40                        | 1.42032 | 1.42475 | 1.42908 | 1.43331 | 1.43746 | 1.44151 |
| -42                        | 1.43130 | 1.43580 | 1.44020 | 1.44450 | 1.44871 | 1.45283 |
| -44                        | 1.44173 | 1.44630 | 1.45077 | 1.45514 | 1.45942 | 1.46360 |
| -46                        | 1.45160 | 1.45625 | 1.46079 | 1.46523 | 1.46957 | 1.47383 |
| -48                        | 1.46090 | 1.46562 | 1.47023 | 1.47475 | 1.47916 | 1.48348 |
| -50                        | 1.46960 | 1.47440 | 1.47909 | 1.48368 | 1.48817 | 1.49256 |
| -52                        | 1.47769 | 1.48257 | 1.48735 | 1.49201 | 1.49658 | 1.50104 |
| -54                        | 1.48515 | 1.49012 | 1.49498 | 1.49973 | 1.50437 | 1.50891 |
| -56                        | 1.49197 | 1.49704 | 1.50198 | 1.50681 | 1.51153 | 1.51615 |
| -58                        | 1.49813 | 1.50329 | 1.50832 | 1.51324 | 1.51805 | 1.52275 |
| -60                        | 1.50361 | 1.50886 | 1.51399 | 1.51900 | 1.52390 | 1.52868 |
| -62                        | 1.50838 | 1.51373 | 1.51897 | 1.52407 | 1.52906 | 1.53394 |
| -64                        | 1.51241 | 1.51788 | 1.52322 | 1.52843 | 1.53352 | 1.53849 |
| -66                        | 1.51570 | 1.52129 | 1.52673 | 1.53205 | 1.53724 | 1.54231 |
| -68                        | 1.51821 | 1.52391 | 1.52948 | 1.53492 | 1.54022 | 1.54539 |
| -70                        | 1.51990 | 1.52574 | 1.53144 | 1.53699 | 1.54241 | 1.54770 |
| -72                        | 1.52075 | 1.52674 | 1.53257 | 1.53825 | 1.54380 | 1.54921 |
| -74                        |         |         |         |         | 1.54435 | 1.54989 |
| -76                        |         |         |         |         |         |         |
| -78                        |         |         |         |         |         |         |
| -80                        |         |         |         |         |         |         |
| -82                        |         |         |         |         |         |         |
| -84                        |         |         |         |         |         |         |
| -86                        |         |         |         |         |         |         |
| -88                        |         |         |         |         |         |         |
| -90                        |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 1.62    | 1.64    | 1.66    | 1.68    | 1.70    | 1.72    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.02733 | 0.02740 | 0.02746 | 0.02753 | 0.02759 | 0.02765 |
| 86                         | 0.05466 | 0.05479 | 0.05492 | 0.05505 | 0.05518 | 0.05530 |
| 84                         | 0.08197 | 0.08217 | 0.08236 | 0.08256 | 0.08275 | 0.08293 |
| 82                         | 0.10926 | 0.10952 | 0.10979 | 0.11004 | 0.11030 | 0.11054 |
| 80                         | 0.13652 | 0.13685 | 0.13718 | 0.13750 | 0.13782 | 0.13813 |
| 78                         | 0.16374 | 0.16414 | 0.16454 | 0.16492 | 0.16530 | 0.16567 |
| 76                         | 0.19093 | 0.19139 | 0.19185 | 0.19230 | 0.19274 | 0.19318 |
| 74                         | 0.21806 | 0.21859 | 0.21912 | 0.21963 | 0.22014 | 0.22063 |
| 72                         | 0.24514 | 0.24574 | 0.24633 | 0.24690 | 0.24747 | 0.24803 |
| 70                         | 0.27215 | 0.27282 | 0.27347 | 0.27411 | 0.27474 | 0.27536 |
| 68                         | 0.29910 | 0.29983 | 0.30055 | 0.30125 | 0.30194 | 0.30262 |
| 66                         | 0.32596 | 0.32676 | 0.32754 | 0.32831 | 0.32907 | 0.32981 |
| 64                         | 0.35275 | 0.35361 | 0.35445 | 0.35529 | 0.35610 | 0.35691 |
| 62                         | 0.37944 | 0.38036 | 0.38127 | 0.38217 | 0.38305 | 0.38391 |
| 60                         | 0.40603 | 0.40702 | 0.40799 | 0.40895 | 0.40989 | 0.41082 |
| 58                         | 0.43251 | 0.43357 | 0.43461 | 0.43563 | 0.43663 | 0.43761 |
| 56                         | 0.45888 | 0.46001 | 0.46111 | 0.46219 | 0.46325 | 0.46430 |
| 54                         | 0.48514 | 0.48632 | 0.48749 | 0.48863 | 0.48975 | 0.49086 |
| 52                         | 0.51126 | 0.51251 | 0.51374 | 0.51494 | 0.51613 | 0.51729 |
| 50                         | 0.53725 | 0.53856 | 0.53985 | 0.54112 | 0.54237 | 0.54359 |
| 48                         | 0.56310 | 0.56448 | 0.56583 | 0.56716 | 0.56846 | 0.56974 |
| 46                         | 0.58880 | 0.59024 | 0.59165 | 0.59304 | 0.59441 | 0.59575 |
| 44                         | 0.61434 | 0.61584 | 0.61732 | 0.61877 | 0.62019 | 0.62159 |
| 42                         | 0.63972 | 0.64129 | 0.64282 | 0.64433 | 0.64582 | 0.64727 |
| 40                         | 0.66493 | 0.66656 | 0.66816 | 0.66973 | 0.67127 | 0.67278 |
| 38                         | 0.68996 | 0.69165 | 0.69331 | 0.69494 | 0.69654 | 0.69811 |
| 36                         | 0.71481 | 0.71656 | 0.71828 | 0.71997 | 0.72163 | 0.72326 |
| 34                         | 0.73946 | 0.74128 | 0.74306 | 0.74480 | 0.74652 | 0.74820 |
| 32                         | 0.76392 | 0.76579 | 0.76763 | 0.76944 | 0.77121 | 0.77295 |
| 30                         | 0.78817 | 0.79010 | 0.79200 | 0.79386 | 0.79569 | 0.79749 |
| 28                         | 0.81220 | 0.81419 | 0.81615 | 0.81807 | 0.81996 | 0.82181 |
| 26                         | 0.83601 | 0.83806 | 0.84008 | 0.84206 | 0.84400 | 0.84591 |
| 24                         | 0.85959 | 0.86170 | 0.86378 | 0.86581 | 0.86781 | 0.86978 |
| 22                         | 0.88294 | 0.88511 | 0.88724 | 0.88933 | 0.89139 | 0.89340 |
| 20                         | 0.90604 | 0.90827 | 0.91046 | 0.91261 | 0.91472 | 0.91679 |
| 18                         | 0.92889 | 0.93118 | 0.93342 | 0.93563 | 0.93779 | 0.93991 |
| 16                         | 0.95148 | 0.95382 | 0.95613 | 0.95838 | 0.96060 | 0.96278 |
| 14                         | 0.97380 | 0.97620 | 0.97856 | 0.98088 | 0.98315 | 0.98538 |
| 12                         | 0.99585 | 0.99831 | 1.00072 | 1.00309 | 1.00542 | 1.00770 |
| 10                         | 1.01761 | 1.02013 | 1.02260 | 1.02502 | 1.02740 | 1.02974 |
| 8                          | 1.03909 | 1.04166 | 1.04419 | 1.04666 | 1.04910 | 1.05148 |
| 6                          | 1.06027 | 1.06289 | 1.06547 | 1.06800 | 1.07049 | 1.07293 |
| 4                          | 1.08114 | 1.08382 | 1.08645 | 1.08904 | 1.09157 | 1.09406 |
| 2                          | 1.10169 | 1.10443 | 1.10712 | 1.10976 | 1.11234 | 1.11489 |
| 0                          | 1.12193 | 1.12472 | 1.12746 | 1.13015 | 1.13279 | 1.13538 |

Table 1

| $\rho_0$<br>$\alpha$ | 1.62    | 1.64    | 1.66    | 1.68    | 1.70    | 1.72    |
|----------------------|---------|---------|---------|---------|---------|---------|
| -2                   | 1.14183 | 1.14468 | 1.14747 | 1.15022 | 1.15291 | 1.15555 |
| -4                   | 1.16140 | 1.16430 | 1.16715 | 1.16994 | 1.17268 | 1.17537 |
| -6                   | 1.18061 | 1.18357 | 1.18647 | 1.18932 | 1.19211 | 1.19485 |
| -8                   | 1.19948 | 1.20249 | 1.20544 | 1.20834 | 1.21118 | 1.21397 |
| -10                  | 1.21797 | 1.22104 | 1.22405 | 1.22699 | 1.22989 | 1.23273 |
| -12                  | 1.23610 | 1.23922 | 1.24228 | 1.24528 | 1.24822 | 1.25111 |
| -14                  | 1.25384 | 1.25702 | 1.26013 | 1.26318 | 1.26617 | 1.26911 |
| -16                  | 1.27120 | 1.27442 | 1.27759 | 1.28069 | 1.28373 | 1.28672 |
| -18                  | 1.28815 | 1.29143 | 1.29465 | 1.29780 | 1.30089 | 1.30392 |
| -20                  | 1.30470 | 1.30803 | 1.31130 | 1.31450 | 1.31764 | 1.32072 |
| -22                  | 1.32082 | 1.32421 | 1.32753 | 1.33078 | 1.33398 | 1.33711 |
| -24                  | 1.33652 | 1.33996 | 1.34333 | 1.34664 | 1.34988 | 1.35306 |
| -26                  | 1.35178 | 1.35528 | 1.35870 | 1.36206 | 1.36535 | 1.36858 |
| -28                  | 1.36660 | 1.37015 | 1.37362 | 1.37703 | 1.38037 | 1.38365 |
| -30                  | 1.38095 | 1.38456 | 1.38809 | 1.39155 | 1.39494 | 1.39827 |
| -32                  | 1.39484 | 1.39850 | 1.40208 | 1.40560 | 1.40904 | 1.41242 |
| -34                  | 1.40825 | 1.41196 | 1.41560 | 1.41917 | 1.42266 | 1.42609 |
| -36                  | 1.42116 | 1.42494 | 1.42863 | 1.43225 | 1.43580 | 1.43927 |
| -38                  | 1.43358 | 1.43741 | 1.44116 | 1.44483 | 1.44843 | 1.45196 |
| -40                  | 1.44548 | 1.44937 | 1.45318 | 1.45691 | 1.46056 | 1.46414 |
| -42                  | 1.45686 | 1.46081 | 1.46467 | 1.46846 | 1.47217 | 1.47580 |
| -44                  | 1.46770 | 1.47171 | 1.47563 | 1.47947 | 1.48324 | 1.48693 |
| -46                  | 1.47798 | 1.48206 | 1.48604 | 1.48994 | 1.49377 | 1.49751 |
| -48                  | 1.48771 | 1.49184 | 1.49589 | 1.49985 | 1.50373 | 1.50753 |
| -50                  | 1.49685 | 1.50105 | 1.50516 | 1.50919 | 1.51313 | 1.51699 |
| -52                  | 1.50540 | 1.50967 | 1.51385 | 1.51794 | 1.52194 | 1.52586 |
| -54                  | 1.51335 | 1.51769 | 1.52193 | 1.52609 | 1.53016 | 1.53414 |
| -56                  | 1.52066 | 1.52508 | 1.52940 | 1.53362 | 1.53775 | 1.54180 |
| -58                  | 1.52734 | 1.53183 | 1.53622 | 1.54052 | 1.54472 | 1.54884 |
| -60                  | 1.53336 | 1.53793 | 1.54240 | 1.54677 | 1.55105 | 1.55523 |
| -62                  | 1.53870 | 1.54335 | 1.54790 | 1.55235 | 1.55671 | 1.56096 |
| -64                  | 1.54334 | 1.54808 | 1.55272 | 1.55725 | 1.56168 | 1.56602 |
| -66                  | 1.54726 | 1.55210 | 1.55683 | 1.56145 | 1.56596 | 1.57038 |
| -68                  | 1.55045 | 1.55538 | 1.56020 | 1.56491 | 1.56952 | 1.57402 |
| -70                  | 1.55286 | 1.55790 | 1.56283 | 1.56764 | 1.57233 | 1.57692 |
| -72                  | 1.55449 | 1.55964 | 1.56467 | 1.56958 | 1.57438 | 1.57907 |
| -74                  | 1.55529 | 1.56057 | 1.56571 | 1.57074 | 1.57564 | 1.58044 |
| -76                  |         |         |         |         | 1.57609 | 1.58099 |
| -78                  |         |         |         |         |         |         |
| -80                  |         |         |         |         |         |         |
| -82                  |         |         |         |         |         |         |
| -84                  |         |         |         |         |         |         |
| -86                  |         |         |         |         |         |         |
| -88                  |         |         |         |         |         |         |
| -90                  |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 1.74    | 1.76    | 1.78    | 1.80    | 1.82    | 1.84    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.02771 | 0.02778 | 0.02783 | 0.02789 | 0.02795 | 0.02801 |
| 86                         | 0.05542 | 0.05554 | 0.05566 | 0.05578 | 0.05589 | 0.05600 |
| 84                         | 0.08312 | 0.08330 | 0.08347 | 0.08365 | 0.08382 | 0.08399 |
| 82                         | 0.11079 | 0.11103 | 0.11126 | 0.11150 | 0.11172 | 0.11195 |
| 80                         | 0.13843 | 0.13873 | 0.13903 | 0.13932 | 0.13960 | 0.13988 |
| 78                         | 0.16604 | 0.16640 | 0.16675 | 0.16710 | 0.16744 | 0.16778 |
| 76                         | 0.19360 | 0.19402 | 0.19444 | 0.19484 | 0.19524 | 0.19563 |
| 74                         | 0.22112 | 0.22160 | 0.22207 | 0.22253 | 0.22299 | 0.22344 |
| 72                         | 0.24858 | 0.24912 | 0.24965 | 0.25017 | 0.25068 | 0.25118 |
| 70                         | 0.27597 | 0.27657 | 0.27716 | 0.27774 | 0.27830 | 0.27886 |
| 68                         | 0.30329 | 0.30395 | 0.30460 | 0.30523 | 0.30586 | 0.30647 |
| 66                         | 0.33054 | 0.33125 | 0.33196 | 0.33265 | 0.33333 | 0.33400 |
| 64                         | 0.35769 | 0.35847 | 0.35923 | 0.35998 | 0.36072 | 0.36144 |
| 62                         | 0.38476 | 0.38559 | 0.38641 | 0.38722 | 0.38801 | 0.38879 |
| 60                         | 0.41172 | 0.41262 | 0.41349 | 0.41435 | 0.41520 | 0.41604 |
| 58                         | 0.43858 | 0.43953 | 0.44046 | 0.44138 | 0.44229 | 0.44317 |
| 56                         | 0.46532 | 0.46633 | 0.46732 | 0.46830 | 0.46926 | 0.47020 |
| 54                         | 0.49194 | 0.49301 | 0.49406 | 0.49509 | 0.49610 | 0.49710 |
| 52                         | 0.51844 | 0.51956 | 0.52066 | 0.52175 | 0.52282 | 0.52387 |
| 50                         | 0.54479 | 0.54597 | 0.54713 | 0.54827 | 0.54939 | 0.55050 |
| 48                         | 0.57100 | 0.57224 | 0.57346 | 0.57465 | 0.57583 | 0.57698 |
| 46                         | 0.59706 | 0.59836 | 0.59963 | 0.60088 | 0.60211 | 0.60332 |
| 44                         | 0.62297 | 0.62432 | 0.62565 | 0.62695 | 0.62823 | 0.62949 |
| 42                         | 0.64871 | 0.65011 | 0.65149 | 0.65285 | 0.65419 | 0.65550 |
| 40                         | 0.67427 | 0.67573 | 0.67717 | 0.67858 | 0.67997 | 0.68134 |
| 38                         | 0.69966 | 0.70117 | 0.70267 | 0.70413 | 0.70557 | 0.70699 |
| 36                         | 0.72486 | 0.72643 | 0.72797 | 0.72949 | 0.73099 | 0.73245 |
| 34                         | 0.74986 | 0.75149 | 0.75309 | 0.75466 | 0.75620 | 0.75772 |
| 32                         | 0.77466 | 0.77634 | 0.77800 | 0.77962 | 0.78122 | 0.78279 |
| 30                         | 0.79926 | 0.80099 | 0.80270 | 0.80437 | 0.80602 | 0.80764 |
| 28                         | 0.82363 | 0.82542 | 0.82718 | 0.82891 | 0.83060 | 0.83227 |
| 26                         | 0.84778 | 0.84963 | 0.85144 | 0.85321 | 0.85496 | 0.85668 |
| 24                         | 0.87170 | 0.87360 | 0.87546 | 0.87729 | 0.87909 | 0.88085 |
| 22                         | 0.89539 | 0.89733 | 0.89925 | 0.90113 | 0.90297 | 0.90479 |
| 20                         | 0.91882 | 0.92082 | 0.92278 | 0.92471 | 0.92661 | 0.92847 |
| 18                         | 0.94200 | 0.94405 | 0.94607 | 0.94805 | 0.94999 | 0.95190 |
| 16                         | 0.96492 | 0.96702 | 0.96909 | 0.97112 | 0.97311 | 0.97507 |
| 14                         | 0.98757 | 0.98972 | 0.99184 | 0.99391 | 0.99596 | 0.99796 |
| 12                         | 1.00994 | 1.01215 | 1.01431 | 1.01644 | 1.01852 | 1.02058 |
| 10                         | 1.03203 | 1.03428 | 1.03650 | 1.03867 | 1.04081 | 1.04291 |
| 8                          | 1.05383 | 1.05613 | 1.05839 | 1.06061 | 1.06280 | 1.06494 |
| 6                          | 1.07532 | 1.07767 | 1.07998 | 1.08225 | 1.08448 | 1.08667 |
| 4                          | 1.09651 | 1.09891 | 1.10127 | 1.10358 | 1.10586 | 1.10809 |
| 2                          | 1.11738 | 1.11983 | 1.12223 | 1.12460 | 1.12692 | 1.12920 |
| 0                          | 1.13793 | 1.14042 | 1.14288 | 1.14529 | 1.14765 | 1.14998 |

Table 1

| $\rho_0 \backslash \alpha$ | 1.74    | 1.76    | 1.78    | 1.80    | 1.82    | 1.84    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| -2                         | 1.15814 | 1.16069 | 1.16319 | 1.16564 | 1.16805 | 1.17042 |
| -4                         | 1.17801 | 1.18061 | 1.18315 | 1.18565 | 1.18811 | 1.19052 |
| -6                         | 1.19754 | 1.20018 | 1.20277 | 1.20532 | 1.20782 | 1.21028 |
| -8                         | 1.21671 | 1.21940 | 1.22203 | 1.22463 | 1.22717 | 1.22967 |
| -10                        | 1.23551 | 1.23825 | 1.24093 | 1.24357 | 1.24616 | 1.24870 |
| -12                        | 1.25394 | 1.25672 | 1.25945 | 1.26213 | 1.26477 | 1.26735 |
| -14                        | 1.27199 | 1.27482 | 1.27759 | 1.28032 | 1.28299 | 1.28562 |
| -16                        | 1.28964 | 1.29252 | 1.29534 | 1.29811 | 1.30083 | 1.30350 |
| -18                        | 1.30690 | 1.30982 | 1.31269 | 1.31550 | 1.31826 | 1.32098 |
| -20                        | 1.32375 | 1.32671 | 1.32963 | 1.33248 | 1.33529 | 1.33805 |
| -22                        | 1.34018 | 1.34319 | 1.34615 | 1.34905 | 1.35190 | 1.35470 |
| -24                        | 1.35618 | 1.35924 | 1.36224 | 1.36519 | 1.36808 | 1.37092 |
| -26                        | 1.37175 | 1.37485 | 1.37790 | 1.38089 | 1.38383 | 1.38671 |
| -28                        | 1.38687 | 1.39002 | 1.39311 | 1.39615 | 1.39912 | 1.40205 |
| -30                        | 1.40153 | 1.40473 | 1.40787 | 1.41095 | 1.41397 | 1.41694 |
| -32                        | 1.41573 | 1.41897 | 1.42216 | 1.42528 | 1.42835 | 1.43136 |
| -34                        | 1.42945 | 1.43274 | 1.43597 | 1.43914 | 1.44225 | 1.44531 |
| -36                        | 1.44268 | 1.44603 | 1.44930 | 1.45252 | 1.45567 | 1.45877 |
| -38                        | 1.45542 | 1.45881 | 1.46214 | 1.46540 | 1.46860 | 1.47174 |
| -40                        | 1.46765 | 1.47109 | 1.47447 | 1.47777 | 1.48102 | 1.48420 |
| -42                        | 1.47936 | 1.48285 | 1.48628 | 1.48963 | 1.49292 | 1.49615 |
| -44                        | 1.49054 | 1.49408 | 1.49756 | 1.50096 | 1.50430 | 1.50757 |
| -46                        | 1.50118 | 1.50477 | 1.50830 | 1.51175 | 1.51514 | 1.51846 |
| -48                        | 1.51126 | 1.51491 | 1.51848 | 1.52199 | 1.52542 | 1.52879 |
| -50                        | 1.52077 | 1.52447 | 1.52810 | 1.53166 | 1.53515 | 1.53857 |
| -52                        | 1.52970 | 1.53346 | 1.53715 | 1.54076 | 1.54429 | 1.54776 |
| -54                        | 1.53804 | 1.54186 | 1.54560 | 1.54926 | 1.55285 | 1.55638 |
| -56                        | 1.54576 | 1.54964 | 1.55344 | 1.55717 | 1.56081 | 1.56439 |
| -58                        | 1.55286 | 1.55681 | 1.56067 | 1.56445 | 1.56816 | 1.57179 |
| -60                        | 1.55933 | 1.56333 | 1.56726 | 1.57110 | 1.57487 | 1.57855 |
| -62                        | 1.56513 | 1.56921 | 1.57320 | 1.57711 | 1.58093 | 1.58468 |
| -64                        | 1.57026 | 1.57441 | 1.57847 | 1.58244 | 1.58634 | 1.59015 |
| -66                        | 1.57470 | 1.57892 | 1.58306 | 1.58710 | 1.59106 | 1.59494 |
| -68                        | 1.57842 | 1.58273 | 1.58694 | 1.59106 | 1.59509 | 1.59904 |
| -70                        | 1.58142 | 1.58581 | 1.59010 | 1.59430 | 1.59841 | 1.60243 |
| -72                        | 1.58365 | 1.58813 | 1.59251 | 1.59680 | 1.60099 | 1.60509 |
| -74                        | 1.58512 | 1.58969 | 1.59416 | 1.59854 | 1.60281 | 1.60700 |
| -76                        | 1.58578 | 1.59045 | 1.59503 | 1.59949 | 1.60386 | 1.60813 |
| -78                        |         |         |         |         |         |         |
| -80                        |         |         |         |         |         |         |
| -82                        |         |         |         |         |         |         |
| -84                        |         |         |         |         |         |         |
| -86                        |         |         |         |         |         |         |
| -88                        |         |         |         |         |         |         |
| -90                        |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 1.86    | 1.88    | 1.90    | 1.92    | 1.94    | 1.96    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.02806 | 0.02811 | 0.02817 | 0.02822 | 0.02827 | 0.02832 |
| 86                         | 0.05611 | 0.05622 | 0.05633 | 0.05643 | 0.05654 | 0.05664 |
| 84                         | 0.08415 | 0.08432 | 0.08448 | 0.08463 | 0.08479 | 0.08494 |
| 82                         | 0.11217 | 0.11239 | 0.11260 | 0.11281 | 0.11302 | 0.11322 |
| 80                         | 0.14016 | 0.14043 | 0.14070 | 0.14096 | 0.14122 | 0.14147 |
| 78                         | 0.16811 | 0.16844 | 0.16876 | 0.16907 | 0.16938 | 0.16969 |
| 76                         | 0.19602 | 0.19640 | 0.19677 | 0.19714 | 0.19750 | 0.19786 |
| 74                         | 0.22388 | 0.22431 | 0.22474 | 0.22516 | 0.22557 | 0.22598 |
| 72                         | 0.25168 | 0.25216 | 0.25264 | 0.25312 | 0.25358 | 0.25404 |
| 70                         | 0.27941 | 0.27995 | 0.28049 | 0.28101 | 0.28153 | 0.28203 |
| 68                         | 0.30708 | 0.30767 | 0.30825 | 0.30883 | 0.30940 | 0.30995 |
| 66                         | 0.33466 | 0.33531 | 0.33594 | 0.33657 | 0.33719 | 0.33780 |
| 64                         | 0.36215 | 0.36286 | 0.36355 | 0.36422 | 0.36489 | 0.36555 |
| 62                         | 0.38956 | 0.39031 | 0.39105 | 0.39178 | 0.39250 | 0.39321 |
| 60                         | 0.41686 | 0.41766 | 0.41846 | 0.41924 | 0.42001 | 0.42076 |
| 58                         | 0.44405 | 0.44491 | 0.44575 | 0.44659 | 0.44740 | 0.44821 |
| 56                         | 0.47112 | 0.47204 | 0.47293 | 0.47382 | 0.47468 | 0.47554 |
| 54                         | 0.49808 | 0.49904 | 0.49999 | 0.50092 | 0.50184 | 0.50274 |
| 52                         | 0.52490 | 0.52591 | 0.52691 | 0.52790 | 0.52886 | 0.52982 |
| 50                         | 0.55158 | 0.55265 | 0.55370 | 0.55473 | 0.55575 | 0.55675 |
| 48                         | 0.57812 | 0.57924 | 0.58034 | 0.58142 | 0.58249 | 0.58354 |
| 46                         | 0.60451 | 0.60568 | 0.60683 | 0.60796 | 0.60907 | 0.61017 |
| 44                         | 0.63074 | 0.63196 | 0.63316 | 0.63434 | 0.63550 | 0.63664 |
| 42                         | 0.65679 | 0.65807 | 0.65932 | 0.66055 | 0.66175 | 0.66295 |
| 40                         | 0.68268 | 0.68400 | 0.68530 | 0.68658 | 0.68784 | 0.68907 |
| 38                         | 0.70838 | 0.70975 | 0.71110 | 0.71243 | 0.71373 | 0.71502 |
| 36                         | 0.73390 | 0.73532 | 0.73671 | 0.73809 | 0.73944 | 0.74077 |
| 34                         | 0.75921 | 0.76068 | 0.76213 | 0.76355 | 0.76495 | 0.76632 |
| 32                         | 0.78433 | 0.78585 | 0.78734 | 0.78881 | 0.79025 | 0.79167 |
| 30                         | 0.80923 | 0.81080 | 0.81234 | 0.81385 | 0.81534 | 0.81681 |
| 28                         | 0.83391 | 0.83553 | 0.83711 | 0.83868 | 0.84021 | 0.84172 |
| 26                         | 0.85837 | 0.86003 | 0.86166 | 0.86327 | 0.86485 | 0.86641 |
| 24                         | 0.88259 | 0.88430 | 0.88598 | 0.88763 | 0.88926 | 0.89086 |
| 22                         | 0.90657 | 0.90833 | 0.91006 | 0.91175 | 0.91342 | 0.91507 |
| 20                         | 0.93031 | 0.93211 | 0.93388 | 0.93562 | 0.93734 | 0.93902 |
| 18                         | 0.95378 | 0.95563 | 0.95745 | 0.95923 | 0.96099 | 0.96272 |
| 16                         | 0.97699 | 0.97889 | 0.98075 | 0.98258 | 0.98438 | 0.98615 |
| 14                         | 0.99993 | 1.00187 | 1.00378 | 1.00565 | 1.00750 | 1.00931 |
| 12                         | 1.02260 | 1.02458 | 1.02653 | 1.02845 | 1.03033 | 1.03219 |
| 10                         | 1.04497 | 1.04700 | 1.04899 | 1.05095 | 1.05288 | 1.05478 |
| 8                          | 1.06705 | 1.06912 | 1.07116 | 1.07316 | 1.07513 | 1.07707 |
| 6                          | 1.08883 | 1.09094 | 1.09302 | 1.09507 | 1.09708 | 1.09906 |
| 4                          | 1.11029 | 1.11245 | 1.11457 | 1.11666 | 1.11871 | 1.12073 |
| 2                          | 1.13144 | 1.13364 | 1.13581 | 1.13794 | 1.14003 | 1.14209 |
| 0                          | 1.15226 | 1.15451 | 1.15671 | 1.15888 | 1.16102 | 1.16312 |

Table 1

| $\rho_0$<br>$\alpha$ | 1.86    | 1.88    | 1.90    | 1.92    | 1.94    | 1.96    |
|----------------------|---------|---------|---------|---------|---------|---------|
| -2                   | 1.17275 | 1.17504 | 1.17729 | 1.17950 | 1.18167 | 1.18381 |
| -4                   | 1.19289 | 1.19522 | 1.19751 | 1.19977 | 1.20198 | 1.20415 |
| -6                   | 1.21269 | 1.21506 | 1.21739 | 1.21968 | 1.22194 | 1.22415 |
| -8                   | 1.23213 | 1.23454 | 1.23691 | 1.23924 | 1.24153 | 1.24379 |
| -10                  | 1.25120 | 1.25365 | 1.25606 | 1.25843 | 1.26076 | 1.26305 |
| -12                  | 1.26989 | 1.27239 | 1.27484 | 1.27725 | 1.27962 | 1.28195 |
| -14                  | 1.28820 | 1.29074 | 1.29323 | 1.29568 | 1.29809 | 1.30045 |
| -16                  | 1.30612 | 1.30870 | 1.31123 | 1.31372 | 1.31616 | 1.31857 |
| -18                  | 1.32364 | 1.32626 | 1.32883 | 1.33136 | 1.33384 | 1.33628 |
| -20                  | 1.34075 | 1.34341 | 1.34602 | 1.34858 | 1.35111 | 1.35358 |
| -22                  | 1.35744 | 1.36014 | 1.36279 | 1.36539 | 1.36795 | 1.37047 |
| -24                  | 1.37371 | 1.37645 | 1.37913 | 1.38178 | 1.38437 | 1.38692 |
| -26                  | 1.38954 | 1.39231 | 1.39504 | 1.39772 | 1.40036 | 1.40294 |
| -28                  | 1.40492 | 1.40774 | 1.41051 | 1.41322 | 1.41590 | 1.41852 |
| -30                  | 1.41985 | 1.42271 | 1.42551 | 1.42827 | 1.43098 | 1.43364 |
| -32                  | 1.43431 | 1.43721 | 1.44006 | 1.44285 | 1.44560 | 1.44830 |
| -34                  | 1.44830 | 1.45124 | 1.45413 | 1.45696 | 1.45975 | 1.46248 |
| -36                  | 1.46181 | 1.46479 | 1.46772 | 1.47059 | 1.47341 | 1.47619 |
| -38                  | 1.47482 | 1.47784 | 1.48081 | 1.48373 | 1.48659 | 1.48940 |
| -40                  | 1.48733 | 1.49039 | 1.49340 | 1.49636 | 1.49926 | 1.50210 |
| -42                  | 1.49932 | 1.50243 | 1.50548 | 1.50847 | 1.51141 | 1.51430 |
| -44                  | 1.51079 | 1.51394 | 1.51703 | 1.52007 | 1.52305 | 1.52597 |
| -46                  | 1.52172 | 1.52491 | 1.52805 | 1.53113 | 1.53415 | 1.53711 |
| -48                  | 1.53210 | 1.53534 | 1.53852 | 1.54164 | 1.54470 | 1.54771 |
| -50                  | 1.54192 | 1.54520 | 1.54843 | 1.55159 | 1.55470 | 1.55775 |
| -52                  | 1.55116 | 1.55450 | 1.55777 | 1.56098 | 1.56413 | 1.56722 |
| -54                  | 1.55983 | 1.56321 | 1.56653 | 1.56979 | 1.57298 | 1.57611 |
| -56                  | 1.56789 | 1.57133 | 1.57469 | 1.57800 | 1.58124 | 1.58442 |
| -58                  | 1.57534 | 1.57883 | 1.58225 | 1.58560 | 1.58889 | 1.59212 |
| -60                  | 1.58217 | 1.58571 | 1.58918 | 1.59259 | 1.59592 | 1.59920 |
| -62                  | 1.58835 | 1.59195 | 1.59548 | 1.59894 | 1.60233 | 1.60565 |
| -64                  | 1.59388 | 1.59754 | 1.60112 | 1.60464 | 1.60808 | 1.61146 |
| -66                  | 1.59874 | 1.60246 | 1.60610 | 1.60967 | 1.61317 | 1.61661 |
| -68                  | 1.60291 | 1.60669 | 1.61040 | 1.61403 | 1.61759 | 1.62108 |
| -70                  | 1.60637 | 1.61022 | 1.61399 | 1.61769 | 1.62131 | 1.62486 |
| -72                  | 1.60910 | 1.61303 | 1.61687 | 1.62064 | 1.62433 | 1.62794 |
| -74                  | 1.61109 | 1.61509 | 1.61901 | 1.62285 | 1.62661 | 1.63029 |
| -76                  | 1.61231 | 1.61640 | 1.62040 | 1.62431 | 1.62814 | 1.63190 |
| -78                  | 1.61274 | 1.61692 | 1.62100 | 1.62500 | 1.62891 | 1.63274 |
| -80                  |         |         |         |         |         |         |
| -82                  |         |         |         |         |         |         |
| -84                  |         |         |         |         |         |         |
| -86                  |         |         |         |         |         |         |
| -88                  |         |         |         |         |         |         |
| -90                  |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 1.98    | 2.00    | 2.10    | 2.20    | 2.30    | 2.40    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.02837 | 0.02842 | 0.02866 | 0.02888 | 0.02908 | 0.02927 |
| 86                         | 0.05674 | 0.05684 | 0.05731 | 0.05775 | 0.05816 | 0.05854 |
| 84                         | 0.08509 | 0.08524 | 0.08595 | 0.08661 | 0.08722 | 0.08779 |
| 82                         | 0.11342 | 0.11362 | 0.11456 | 0.11544 | 0.11626 | 0.11702 |
| 80                         | 0.14172 | 0.14197 | 0.14315 | 0.14424 | 0.14526 | 0.14622 |
| 78                         | 0.16999 | 0.17028 | 0.17170 | 0.17301 | 0.17423 | 0.17538 |
| 76                         | 0.19821 | 0.19855 | 0.20020 | 0.20173 | 0.20316 | 0.20449 |
| 74                         | 0.22638 | 0.22677 | 0.22865 | 0.23040 | 0.23203 | 0.23355 |
| 72                         | 0.25449 | 0.25493 | 0.25705 | 0.25901 | 0.26084 | 0.26255 |
| 70                         | 0.28253 | 0.28302 | 0.28537 | 0.28756 | 0.28959 | 0.29148 |
| 68                         | 0.31050 | 0.31104 | 0.31363 | 0.31602 | 0.31825 | 0.32034 |
| 66                         | 0.33839 | 0.33898 | 0.34180 | 0.34441 | 0.34684 | 0.34911 |
| 64                         | 0.36620 | 0.36683 | 0.36988 | 0.37270 | 0.37533 | 0.37779 |
| 62                         | 0.39390 | 0.39459 | 0.39786 | 0.40090 | 0.40373 | 0.40637 |
| 60                         | 0.42151 | 0.42224 | 0.42574 | 0.42900 | 0.43202 | 0.43485 |
| 58                         | 0.44900 | 0.44978 | 0.45351 | 0.45698 | 0.46020 | 0.46321 |
| 56                         | 0.47638 | 0.47721 | 0.48117 | 0.48484 | 0.48826 | 0.49145 |
| 54                         | 0.50363 | 0.50451 | 0.50869 | 0.51257 | 0.51618 | 0.51955 |
| 52                         | 0.53075 | 0.53168 | 0.53608 | 0.54017 | 0.54398 | 0.54753 |
| 50                         | 0.55773 | 0.55870 | 0.56333 | 0.56763 | 0.57163 | 0.57536 |
| 48                         | 0.58457 | 0.58559 | 0.59044 | 0.59494 | 0.59913 | 0.60303 |
| 46                         | 0.61125 | 0.61231 | 0.61738 | 0.62209 | 0.62647 | 0.63055 |
| 44                         | 0.63777 | 0.63888 | 0.64417 | 0.64907 | 0.65364 | 0.65790 |
| 42                         | 0.66412 | 0.66527 | 0.67078 | 0.67589 | 0.68064 | 0.68507 |
| 40                         | 0.69029 | 0.69149 | 0.69721 | 0.70252 | 0.70746 | 0.71206 |
| 38                         | 0.71628 | 0.71752 | 0.72346 | 0.72897 | 0.73409 | 0.73886 |
| 36                         | 0.74208 | 0.74337 | 0.74952 | 0.75522 | 0.76052 | 0.76547 |
| 34                         | 0.76768 | 0.76901 | 0.77537 | 0.78127 | 0.78675 | 0.79187 |
| 32                         | 0.79307 | 0.79445 | 0.80102 | 0.80711 | 0.81277 | 0.81805 |
| 30                         | 0.81825 | 0.81967 | 0.82645 | 0.83273 | 0.83857 | 0.84402 |
| 28                         | 0.84321 | 0.84467 | 0.85166 | 0.85813 | 0.86415 | 0.86975 |
| 26                         | 0.86794 | 0.86945 | 0.87663 | 0.88329 | 0.88948 | 0.89525 |
| 24                         | 0.89243 | 0.89398 | 0.90137 | 0.90822 | 0.91458 | 0.92051 |
| 22                         | 0.91668 | 0.91827 | 0.92587 | 0.93290 | 0.93943 | 0.94551 |
| 20                         | 0.94068 | 0.94232 | 0.95010 | 0.95732 | 0.96402 | 0.97026 |
| 18                         | 0.96442 | 0.96610 | 0.97408 | 0.98148 | 0.98835 | 0.99474 |
| 16                         | 0.98790 | 0.98961 | 0.99779 | 1.00537 | 1.01240 | 1.01895 |
| 14                         | 1.01110 | 1.01285 | 1.02123 | 1.02898 | 1.03617 | 1.04287 |
| 12                         | 1.03402 | 1.03581 | 1.04438 | 1.05230 | 1.05966 | 1.06651 |
| 10                         | 1.05664 | 1.05848 | 1.06723 | 1.07533 | 1.08285 | 1.08985 |
| 8                          | 1.07898 | 1.08085 | 1.08979 | 1.09806 | 1.10574 | 1.11288 |
| 6                          | 1.10100 | 1.10292 | 1.11204 | 1.12049 | 1.12832 | 1.13560 |
| 4                          | 1.12272 | 1.12467 | 1.13398 | 1.14259 | 1.15058 | 1.15801 |
| 2                          | 1.14411 | 1.14610 | 1.15560 | 1.16437 | 1.17251 | 1.18008 |
| 0                          | 1.16518 | 1.16721 | 1.17688 | 1.18582 | 1.19411 | 1.20182 |

Table 1

| $\rho_0$<br>$\alpha$ | 1.98    | 2.00    | 2.10    | 2.20    | 2.30    | 2.40    |
|----------------------|---------|---------|---------|---------|---------|---------|
| -2                   | 1.18591 | 1.18798 | 1.19783 | 1.20693 | 1.21537 | 1.22321 |
| -4                   | 1.20629 | 1.20840 | 1.21843 | 1.22769 | 1.23628 | 1.24426 |
| -6                   | 1.22633 | 1.22847 | 1.23867 | 1.24809 | 1.25683 | 1.26494 |
| -8                   | 1.24600 | 1.24818 | 1.25855 | 1.26814 | 1.27701 | 1.28526 |
| -10                  | 1.26531 | 1.26752 | 1.27807 | 1.28781 | 1.29682 | 1.30520 |
| -12                  | 1.28424 | 1.28649 | 1.29720 | 1.30710 | 1.31625 | 1.32476 |
| -14                  | 1.30278 | 1.30507 | 1.31595 | 1.32600 | 1.33530 | 1.34393 |
| -16                  | 1.32093 | 1.32325 | 1.33431 | 1.34450 | 1.35394 | 1.36270 |
| -18                  | 1.33868 | 1.34104 | 1.35226 | 1.36261 | 1.37218 | 1.38107 |
| -20                  | 1.35602 | 1.35841 | 1.36980 | 1.38030 | 1.39001 | 1.39902 |
| -22                  | 1.37294 | 1.37537 | 1.38692 | 1.39757 | 1.40741 | 1.41654 |
| -24                  | 1.38943 | 1.39189 | 1.40361 | 1.41441 | 1.42439 | 1.43364 |
| -26                  | 1.40549 | 1.40799 | 1.41987 | 1.43081 | 1.44093 | 1.45030 |
| -28                  | 1.42110 | 1.42363 | 1.43568 | 1.44677 | 1.45702 | 1.46651 |
| -30                  | 1.43626 | 1.43883 | 1.45104 | 1.46227 | 1.47265 | 1.48226 |
| -32                  | 1.45095 | 1.45355 | 1.46593 | 1.47732 | 1.48783 | 1.49756 |
| -34                  | 1.46517 | 1.46781 | 1.48035 | 1.49188 | 1.50253 | 1.51238 |
| -36                  | 1.47891 | 1.48159 | 1.49429 | 1.50597 | 1.51675 | 1.52671 |
| -38                  | 1.49216 | 1.49487 | 1.50774 | 1.51957 | 1.53048 | 1.54056 |
| -40                  | 1.50490 | 1.50765 | 1.52069 | 1.53267 | 1.54371 | 1.55392 |
| -42                  | 1.51713 | 1.51992 | 1.53313 | 1.54526 | 1.55643 | 1.56676 |
| -44                  | 1.52885 | 1.53167 | 1.54505 | 1.55733 | 1.56864 | 1.57909 |
| -46                  | 1.54002 | 1.54288 | 1.55644 | 1.56888 | 1.58032 | 1.59089 |
| -48                  | 1.55066 | 1.55356 | 1.56729 | 1.57988 | 1.59147 | 1.60216 |
| -50                  | 1.56074 | 1.56368 | 1.57759 | 1.59034 | 1.60207 | 1.61289 |
| -52                  | 1.57025 | 1.57323 | 1.58733 | 1.60025 | 1.61212 | 1.62306 |
| -54                  | 1.57919 | 1.58221 | 1.59650 | 1.60958 | 1.62160 | 1.63267 |
| -56                  | 1.58754 | 1.59060 | 1.60509 | 1.61834 | 1.63051 | 1.64171 |
| -58                  | 1.59528 | 1.59838 | 1.61308 | 1.62651 | 1.63883 | 1.65017 |
| -60                  | 1.60241 | 1.60556 | 1.62046 | 1.63407 | 1.64655 | 1.65804 |
| -62                  | 1.60891 | 1.61211 | 1.62722 | 1.64102 | 1.65367 | 1.66530 |
| -64                  | 1.61477 | 1.61802 | 1.63336 | 1.64735 | 1.66017 | 1.67195 |
| -66                  | 1.61997 | 1.62327 | 1.63885 | 1.65305 | 1.66604 | 1.67797 |
| -68                  | 1.62450 | 1.62785 | 1.64368 | 1.65809 | 1.67127 | 1.68336 |
| -70                  | 1.62834 | 1.63175 | 1.64784 | 1.66247 | 1.67584 | 1.68811 |
| -72                  | 1.63148 | 1.63495 | 1.65131 | 1.66618 | 1.67975 | 1.69219 |
| -74                  | 1.63390 | 1.63743 | 1.65408 | 1.66919 | 1.68298 | 1.69560 |
| -76                  | 1.63557 | 1.63917 | 1.65612 | 1.67150 | 1.68551 | 1.69833 |
| -78                  | 1.63649 | 1.64016 | 1.65744 | 1.67309 | 1.68734 | 1.70037 |
| -80                  |         |         | 1.65800 | 1.67394 | 1.68845 | 1.70169 |
| -82                  |         |         |         |         |         | 1.70229 |
| -84                  |         |         |         |         |         |         |
| -86                  |         |         |         |         |         |         |
| -88                  |         |         |         |         |         |         |
| -90                  |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 2.50    | 2.60    | 2.70    | 2.80    | 2.90    | 3.00    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.02945 | 0.02962 | 0.02978 | 0.02992 | 0.03006 | 0.03020 |
| 86                         | 0.05890 | 0.05923 | 0.05955 | 0.05984 | 0.06012 | 0.06039 |
| 84                         | 0.08833 | 0.08883 | 0.08930 | 0.08974 | 0.09016 | 0.09056 |
| 82                         | 0.11773 | 0.11840 | 0.11903 | 0.11962 | 0.12018 | 0.12071 |
| 80                         | 0.14711 | 0.14794 | 0.14873 | 0.14947 | 0.15016 | 0.15082 |
|                            |         |         |         |         |         |         |
| 78                         | 0.17644 | 0.17745 | 0.17839 | 0.17927 | 0.18011 | 0.18090 |
| 76                         | 0.20574 | 0.20690 | 0.20800 | 0.20903 | 0.21001 | 0.21093 |
| 74                         | 0.23497 | 0.23631 | 0.23756 | 0.23874 | 0.23985 | 0.24090 |
| 72                         | 0.26415 | 0.26565 | 0.26706 | 0.26838 | 0.26963 | 0.27081 |
| 70                         | 0.29326 | 0.29492 | 0.29648 | 0.29795 | 0.29934 | 0.30065 |
|                            |         |         |         |         |         |         |
| 68                         | 0.32229 | 0.32411 | 0.32583 | 0.32745 | 0.32897 | 0.33041 |
| 66                         | 0.35123 | 0.35322 | 0.35509 | 0.35685 | 0.35852 | 0.36008 |
| 64                         | 0.38009 | 0.38224 | 0.38426 | 0.38617 | 0.38796 | 0.38966 |
| 62                         | 0.40884 | 0.41116 | 0.41333 | 0.41538 | 0.41731 | 0.41913 |
| 60                         | 0.43749 | 0.43996 | 0.44229 | 0.44448 | 0.44655 | 0.44850 |
|                            |         |         |         |         |         |         |
| 58                         | 0.46602 | 0.46866 | 0.47113 | 0.47346 | 0.47566 | 0.47774 |
| 56                         | 0.49443 | 0.49722 | 0.49985 | 0.50232 | 0.50465 | 0.50686 |
| 54                         | 0.52271 | 0.52566 | 0.52844 | 0.53105 | 0.53351 | 0.53584 |
| 52                         | 0.55085 | 0.55396 | 0.55688 | 0.55963 | 0.56223 | 0.56468 |
| 50                         | 0.57884 | 0.58211 | 0.58518 | 0.58807 | 0.59079 | 0.59336 |
|                            |         |         |         |         |         |         |
| 48                         | 0.60668 | 0.61011 | 0.61332 | 0.61635 | 0.61920 | 0.62189 |
| 46                         | 0.63437 | 0.63794 | 0.64130 | 0.64446 | 0.64744 | 0.65026 |
| 44                         | 0.66188 | 0.66561 | 0.66911 | 0.67241 | 0.67551 | 0.67844 |
| 42                         | 0.68921 | 0.69310 | 0.69674 | 0.70017 | 0.70340 | 0.70645 |
| 40                         | 0.71637 | 0.72040 | 0.72418 | 0.72774 | 0.73110 | 0.73427 |
|                            |         |         |         |         |         |         |
| 38                         | 0.74333 | 0.74751 | 0.75143 | 0.75512 | 0.75860 | 0.76189 |
| 36                         | 0.77009 | 0.77442 | 0.77848 | 0.78230 | 0.78590 | 0.78930 |
| 34                         | 0.79664 | 0.80112 | 0.80532 | 0.80927 | 0.81299 | 0.81650 |
| 32                         | 0.82298 | 0.82760 | 0.83194 | 0.83601 | 0.83985 | 0.84348 |
| 30                         | 0.84910 | 0.85386 | 0.85833 | 0.86253 | 0.86649 | 0.87023 |
|                            |         |         |         |         |         |         |
| 28                         | 0.87499 | 0.87989 | 0.88449 | 0.88882 | 0.89289 | 0.89674 |
| 26                         | 0.90064 | 0.90568 | 0.91041 | 0.91486 | 0.91905 | 0.92300 |
| 24                         | 0.92604 | 0.93123 | 0.93609 | 0.94066 | 0.94496 | 0.94902 |
| 22                         | 0.95120 | 0.95652 | 0.96150 | 0.96619 | 0.97061 | 0.97477 |
| 20                         | 0.97609 | 0.98154 | 0.98666 | 0.99147 | 0.99599 | 1.00026 |
|                            |         |         |         |         |         |         |
| 18                         | 1.00071 | 1.00630 | 1.01154 | 1.01646 | 1.02110 | 1.02547 |
| 16                         | 1.02506 | 1.03078 | 1.03614 | 1.04118 | 1.04593 | 1.05040 |
| 14                         | 1.04913 | 1.05498 | 1.06046 | 1.06561 | 1.07046 | 1.07503 |
| 12                         | 1.07290 | 1.07888 | 1.08448 | 1.08975 | 1.09470 | 1.09937 |
| 10                         | 1.09638 | 1.10248 | 1.10820 | 1.11358 | 1.11863 | 1.12340 |
|                            |         |         |         |         |         |         |
| 8                          | 1.11955 | 1.12578 | 1.13161 | 1.13710 | 1.14225 | 1.14711 |
| 6                          | 1.14240 | 1.14875 | 1.15471 | 1.16030 | 1.16555 | 1.17051 |
| 4                          | 1.16493 | 1.17141 | 1.17747 | 1.18317 | 1.18852 | 1.19357 |
| 2                          | 1.18714 | 1.19373 | 1.19991 | 1.20571 | 1.21116 | 1.21630 |
| 0                          | 1.20900 | 1.21572 | 1.22200 | 1.22790 | 1.23345 | 1.23868 |

Table 1

| $\rho_0$<br>$\alpha$ | 2.50    | 2.60    | 2.70    | 2.80    | 2.90    | 3.00    |
|----------------------|---------|---------|---------|---------|---------|---------|
| -2                   | 1.23052 | 1.23735 | 1.24375 | 1.24975 | 1.25539 | 1.26070 |
| -4                   | 1.25169 | 1.25864 | 1.26514 | 1.27124 | 1.27697 | 1.28237 |
| -6                   | 1.27250 | 1.27956 | 1.28616 | 1.29236 | 1.29818 | 1.30367 |
| -8                   | 1.29294 | 1.30011 | 1.30682 | 1.31311 | 1.31902 | 1.32459 |
| -10                  | 1.31300 | 1.32028 | 1.32709 | 1.33348 | 1.33948 | 1.34513 |
| -12                  | 1.33268 | 1.34007 | 1.34698 | 1.35346 | 1.35955 | 1.36528 |
| -14                  | 1.35196 | 1.35946 | 1.36647 | 1.37305 | 1.37922 | 1.38503 |
| -16                  | 1.37085 | 1.37845 | 1.38556 | 1.39223 | 1.39848 | 1.40437 |
| -18                  | 1.38933 | 1.39704 | 1.40424 | 1.41100 | 1.41733 | 1.42329 |
| -20                  | 1.40739 | 1.41521 | 1.42251 | 1.42934 | 1.43576 | 1.44180 |
| -22                  | 1.42503 | 1.43295 | 1.44034 | 1.44727 | 1.45376 | 1.45987 |
| -24                  | 1.44224 | 1.45026 | 1.45774 | 1.46475 | 1.47133 | 1.47751 |
| -26                  | 1.45901 | 1.46712 | 1.47470 | 1.48180 | 1.48845 | 1.49471 |
| -28                  | 1.47533 | 1.48354 | 1.49121 | 1.49839 | 1.50512 | 1.51145 |
| -30                  | 1.49119 | 1.49951 | 1.50727 | 1.51453 | 1.52133 | 1.52773 |
| -32                  | 1.50659 | 1.51500 | 1.52285 | 1.53019 | 1.53707 | 1.54354 |
| -34                  | 1.52152 | 1.53003 | 1.53797 | 1.54539 | 1.55234 | 1.55887 |
| -36                  | 1.53596 | 1.54457 | 1.55260 | 1.56010 | 1.56713 | 1.57373 |
| -38                  | 1.54992 | 1.55862 | 1.56674 | 1.57432 | 1.58142 | 1.58809 |
| -40                  | 1.56338 | 1.57218 | 1.58038 | 1.58804 | 1.59522 | 1.60195 |
| -42                  | 1.57633 | 1.58523 | 1.59352 | 1.60126 | 1.60850 | 1.61530 |
| -44                  | 1.58877 | 1.59776 | 1.60614 | 1.61396 | 1.62128 | 1.62814 |
| -46                  | 1.60068 | 1.60977 | 1.61824 | 1.62614 | 1.63353 | 1.64046 |
| -48                  | 1.61206 | 1.62125 | 1.62980 | 1.63779 | 1.64525 | 1.65224 |
| -50                  | 1.62290 | 1.63219 | 1.64083 | 1.64889 | 1.65643 | 1.66349 |
| -52                  | 1.63319 | 1.64258 | 1.65131 | 1.65945 | 1.66706 | 1.67419 |
| -54                  | 1.64291 | 1.65241 | 1.66123 | 1.66946 | 1.67714 | 1.68434 |
| -56                  | 1.65207 | 1.66167 | 1.67059 | 1.67890 | 1.68666 | 1.69392 |
| -58                  | 1.66065 | 1.67035 | 1.67937 | 1.68776 | 1.69560 | 1.70293 |
| -60                  | 1.66864 | 1.67845 | 1.68756 | 1.69605 | 1.70396 | 1.71137 |
| -62                  | 1.67603 | 1.68595 | 1.69517 | 1.70374 | 1.71174 | 1.71921 |
| -64                  | 1.68281 | 1.69285 | 1.70217 | 1.71083 | 1.71891 | 1.72646 |
| -66                  | 1.68897 | 1.69913 | 1.70856 | 1.71732 | 1.72548 | 1.73310 |
| -68                  | 1.69450 | 1.70479 | 1.71432 | 1.72318 | 1.73143 | 1.73914 |
| -70                  | 1.69939 | 1.70981 | 1.71946 | 1.72842 | 1.73676 | 1.74455 |
| -72                  | 1.70363 | 1.71418 | 1.72395 | 1.73302 | 1.74145 | 1.74932 |
| -74                  | 1.70720 | 1.71790 | 1.72779 | 1.73697 | 1.74551 | 1.75346 |
| -76                  | 1.71010 | 1.72095 | 1.73097 | 1.74027 | 1.74890 | 1.75695 |
| -78                  | 1.71232 | 1.72332 | 1.73348 | 1.74289 | 1.75164 | 1.75978 |
| -80                  | 1.71383 | 1.72499 | 1.73530 | 1.74484 | 1.75370 | 1.76195 |
| -82                  | 1.71462 | 1.72597 | 1.73643 | 1.74610 | 1.75508 | 1.76343 |
| -84                  |         |         | 1.73684 | 1.74666 | 1.75577 | 1.76423 |
| -86                  |         |         |         |         |         |         |
| -88                  |         |         |         |         |         |         |
| -90                  |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 3.10    | 3.20    | 3.30    | 3.40    | 3.50    | 3.60    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.03032 | 0.03044 | 0.03055 | 0.03066 | 0.03076 | 0.03086 |
| 86                         | 0.06063 | 0.06087 | 0.06110 | 0.06131 | 0.06151 | 0.06171 |
| 84                         | 0.09093 | 0.09129 | 0.09162 | 0.09194 | 0.09225 | 0.09254 |
| 82                         | 0.12121 | 0.12168 | 0.12213 | 0.12255 | 0.12296 | 0.12335 |
| 80                         | 0.15145 | 0.15204 | 0.15260 | 0.15313 | 0.15364 | 0.15412 |
| 78                         | 0.18165 | 0.18236 | 0.18303 | 0.18367 | 0.18428 | 0.18486 |
| 76                         | 0.21180 | 0.21263 | 0.21341 | 0.21416 | 0.21487 | 0.21554 |
| 74                         | 0.24190 | 0.24284 | 0.24374 | 0.24459 | 0.24540 | 0.24617 |
| 72                         | 0.27193 | 0.27299 | 0.27400 | 0.27495 | 0.27586 | 0.27673 |
| 70                         | 0.30189 | 0.30307 | 0.30419 | 0.30525 | 0.30626 | 0.30722 |
| 68                         | 0.33178 | 0.33307 | 0.33429 | 0.33546 | 0.33657 | 0.33762 |
| 66                         | 0.36157 | 0.36298 | 0.36431 | 0.36558 | 0.36679 | 0.36794 |
| 64                         | 0.39127 | 0.39279 | 0.39423 | 0.39561 | 0.39691 | 0.39816 |
| 62                         | 0.42086 | 0.42250 | 0.42405 | 0.42552 | 0.42693 | 0.42826 |
| 60                         | 0.45034 | 0.45209 | 0.45375 | 0.45533 | 0.45683 | 0.45826 |
| 58                         | 0.47970 | 0.48157 | 0.48333 | 0.48501 | 0.48661 | 0.48813 |
| 56                         | 0.50894 | 0.51091 | 0.51279 | 0.51457 | 0.51626 | 0.51787 |
| 54                         | 0.53804 | 0.54012 | 0.54210 | 0.54398 | 0.54577 | 0.54747 |
| 52                         | 0.56699 | 0.56919 | 0.57127 | 0.57325 | 0.57513 | 0.57693 |
| 50                         | 0.59580 | 0.59810 | 0.60029 | 0.60236 | 0.60434 | 0.60622 |
| 48                         | 0.62444 | 0.62685 | 0.62914 | 0.63132 | 0.63339 | 0.63536 |
| 46                         | 0.65292 | 0.65544 | 0.65783 | 0.66010 | 0.66226 | 0.66432 |
| 44                         | 0.68122 | 0.68385 | 0.68634 | 0.68870 | 0.69096 | 0.69310 |
| 42                         | 0.70934 | 0.71207 | 0.71466 | 0.71712 | 0.71946 | 0.72169 |
| 40                         | 0.73726 | 0.74010 | 0.74279 | 0.74535 | 0.74778 | 0.75009 |
| 38                         | 0.76499 | 0.76793 | 0.77072 | 0.77337 | 0.77589 | 0.77829 |
| 36                         | 0.79251 | 0.79555 | 0.79844 | 0.80118 | 0.80379 | 0.80627 |
| 34                         | 0.81982 | 0.82296 | 0.82594 | 0.82878 | 0.83147 | 0.83403 |
| 32                         | 0.84690 | 0.85015 | 0.85322 | 0.85614 | 0.85892 | 0.86156 |
| 30                         | 0.87376 | 0.87710 | 0.88027 | 0.88328 | 0.88614 | 0.88886 |
| 28                         | 0.90037 | 0.90381 | 0.90707 | 0.91017 | 0.91311 | 0.91591 |
| 26                         | 0.92674 | 0.93028 | 0.93363 | 0.93681 | 0.93984 | 0.94272 |
| 24                         | 0.95286 | 0.95649 | 0.95993 | 0.96320 | 0.96630 | 0.96926 |
| 22                         | 0.97871 | 0.98243 | 0.98596 | 0.98931 | 0.99250 | 0.99553 |
| 20                         | 1.00429 | 1.00811 | 1.01173 | 1.01516 | 1.01842 | 1.02153 |
| 18                         | 1.02960 | 1.03351 | 1.03721 | 1.04072 | 1.04406 | 1.04724 |
| 16                         | 1.05462 | 1.05862 | 1.06241 | 1.06600 | 1.06942 | 1.07266 |
| 14                         | 1.07935 | 1.08344 | 1.08731 | 1.09098 | 1.09447 | 1.09779 |
| 12                         | 1.10378 | 1.10795 | 1.11190 | 1.11565 | 1.11922 | 1.12260 |
| 10                         | 1.12790 | 1.13216 | 1.13619 | 1.14002 | 1.14365 | 1.14710 |
| 8                          | 1.15170 | 1.15605 | 1.16016 | 1.16406 | 1.16776 | 1.17128 |
| 6                          | 1.17519 | 1.17961 | 1.18380 | 1.18777 | 1.19154 | 1.19513 |
| 4                          | 1.19833 | 1.20284 | 1.20710 | 1.21115 | 1.21499 | 1.21864 |
| 2                          | 1.22115 | 1.22573 | 1.23007 | 1.23418 | 1.23809 | 1.24181 |
| 0                          | 1.24361 | 1.24827 | 1.25268 | 1.25687 | 1.26084 | 1.26462 |

Table 1

| $\rho_0$<br>$\alpha$ | 3.10    | 3.20    | 3.30    | 3.40    | 3.50    | 3.60    |
|----------------------|---------|---------|---------|---------|---------|---------|
| -2                   | 1.26572 | 1.27046 | 1.27494 | 1.27919 | 1.28323 | 1.28707 |
| -4                   | 1.28746 | 1.29228 | 1.29683 | 1.30115 | 1.30525 | 1.30917 |
| -6                   | 1.30884 | 1.31373 | 1.31835 | 1.32274 | 1.32690 | 1.33089 |
| -8                   | 1.32984 | 1.33480 | 1.33949 | 1.34394 | 1.34816 | 1.35217 |
| -10                  | 1.35046 | 1.35549 | 1.36025 | 1.36476 | 1.36904 | 1.37310 |
| -12                  | 1.37068 | 1.37578 | 1.38060 | 1.38517 | 1.38951 | 1.39363 |
| -14                  | 1.39050 | 1.39567 | 1.40056 | 1.40519 | 1.40958 | 1.41375 |
| -16                  | 1.40991 | 1.41515 | 1.42010 | 1.42479 | 1.42924 | 1.43346 |
| -18                  | 1.42891 | 1.43421 | 1.43923 | 1.44397 | 1.44848 | 1.45275 |
| -20                  | 1.44749 | 1.45285 | 1.45793 | 1.46273 | 1.46728 | 1.47161 |
| -22                  | 1.46563 | 1.47106 | 1.47619 | 1.48105 | 1.48566 | 1.49003 |
| -24                  | 1.48334 | 1.48883 | 1.49402 | 1.49893 | 1.50359 | 1.50801 |
| -26                  | 1.50059 | 1.50615 | 1.51140 | 1.51636 | 1.52107 | 1.52553 |
| -28                  | 1.51740 | 1.52301 | 1.52832 | 1.53334 | 1.53809 | 1.54260 |
| -30                  | 1.53374 | 1.53942 | 1.54478 | 1.54985 | 1.55465 | 1.55920 |
| -32                  | 1.54962 | 1.55535 | 1.56076 | 1.56588 | 1.57073 | 1.57533 |
| -34                  | 1.56502 | 1.57081 | 1.57627 | 1.58144 | 1.58634 | 1.59098 |
| -36                  | 1.57993 | 1.58578 | 1.59130 | 1.59651 | 1.60145 | 1.60614 |
| -38                  | 1.59435 | 1.60026 | 1.60583 | 1.61109 | 1.61608 | 1.62080 |
| -40                  | 1.60828 | 1.61423 | 1.61986 | 1.62517 | 1.63020 | 1.63496 |
| -42                  | 1.62169 | 1.62770 | 1.63338 | 1.63874 | 1.64381 | 1.64862 |
| -44                  | 1.63459 | 1.64066 | 1.64638 | 1.65179 | 1.65690 | 1.66175 |
| -46                  | 1.64697 | 1.65309 | 1.65887 | 1.66432 | 1.66948 | 1.67436 |
| -48                  | 1.65881 | 1.66499 | 1.67082 | 1.67632 | 1.68152 | 1.68644 |
| -50                  | 1.67012 | 1.67635 | 1.68223 | 1.68777 | 1.69302 | 1.69798 |
| -52                  | 1.68088 | 1.68717 | 1.69310 | 1.69869 | 1.70397 | 1.70897 |
| -54                  | 1.69109 | 1.69743 | 1.70341 | 1.70905 | 1.71437 | 1.71942 |
| -56                  | 1.70073 | 1.70714 | 1.71316 | 1.71885 | 1.72422 | 1.72930 |
| -58                  | 1.70981 | 1.71627 | 1.72235 | 1.72808 | 1.73349 | 1.73861 |
| -60                  | 1.71830 | 1.72482 | 1.73095 | 1.73673 | 1.74219 | 1.74735 |
| -62                  | 1.72621 | 1.73279 | 1.73897 | 1.74480 | 1.75030 | 1.75550 |
| -64                  | 1.73353 | 1.74017 | 1.74641 | 1.75228 | 1.75783 | 1.76307 |
| -66                  | 1.74024 | 1.74694 | 1.75324 | 1.75916 | 1.76476 | 1.77004 |
| -68                  | 1.74635 | 1.75311 | 1.75946 | 1.76544 | 1.77108 | 1.77641 |
| -70                  | 1.75183 | 1.75865 | 1.76507 | 1.77110 | 1.77679 | 1.78216 |
| -72                  | 1.75668 | 1.76358 | 1.77005 | 1.77614 | 1.78188 | 1.78730 |
| -74                  | 1.76090 | 1.76787 | 1.77440 | 1.78055 | 1.78634 | 1.79181 |
| -76                  | 1.76447 | 1.77151 | 1.77812 | 1.78433 | 1.79017 | 1.79569 |
| -78                  | 1.76739 | 1.77451 | 1.78118 | 1.78745 | 1.79336 | 1.79893 |
| -80                  | 1.76964 | 1.77684 | 1.78359 | 1.78993 | 1.79589 | 1.80151 |
| -82                  | 1.77123 | 1.77851 | 1.78533 | 1.79174 | 1.79777 | 1.80345 |
| -84                  | 1.77213 | 1.77950 | 1.78640 | 1.79288 | 1.79898 | 1.80472 |
| -86                  |         |         | 1.78679 | 1.79335 | 1.79951 | 1.80531 |
| -88                  |         |         |         |         |         |         |
| -90                  |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 3.70    | 3.80    | 3.90    | 4.00    | 4.10    | 4.20    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.03095 | 0.03104 | 0.03112 | 0.03120 | 0.03128 | 0.03136 |
| 86                         | 0.06189 | 0.06207 | 0.06224 | 0.06240 | 0.06255 | 0.06270 |
| 84                         | 0.09282 | 0.09308 | 0.09333 | 0.09358 | 0.09381 | 0.09403 |
| 82                         | 0.12372 | 0.12407 | 0.12441 | 0.12473 | 0.12504 | 0.12534 |
| 80                         | 0.15458 | 0.15503 | 0.15545 | 0.15585 | 0.15624 | 0.15661 |
| 78                         | 0.18541 | 0.18594 | 0.18644 | 0.18693 | 0.18739 | 0.18783 |
| 76                         | 0.21619 | 0.21680 | 0.21739 | 0.21795 | 0.21849 | 0.21901 |
| 74                         | 0.24691 | 0.24761 | 0.24828 | 0.24892 | 0.24954 | 0.25013 |
| 72                         | 0.27756 | 0.27835 | 0.27910 | 0.27983 | 0.28052 | 0.28118 |
| 70                         | 0.30814 | 0.30901 | 0.30985 | 0.31065 | 0.31142 | 0.31216 |
| 68                         | 0.33863 | 0.33959 | 0.34051 | 0.34139 | 0.34224 | 0.34305 |
| 66                         | 0.36904 | 0.37008 | 0.37109 | 0.37204 | 0.37296 | 0.37384 |
| 64                         | 0.39934 | 0.40048 | 0.40156 | 0.40259 | 0.40359 | 0.40454 |
| 62                         | 0.42954 | 0.43076 | 0.43192 | 0.43304 | 0.43410 | 0.43513 |
| 60                         | 0.45962 | 0.46092 | 0.46217 | 0.46336 | 0.46450 | 0.46559 |
| 58                         | 0.48958 | 0.49097 | 0.49229 | 0.49356 | 0.49477 | 0.49594 |
| 56                         | 0.51941 | 0.52088 | 0.52228 | 0.52362 | 0.52491 | 0.52614 |
| 54                         | 0.54910 | 0.55065 | 0.55213 | 0.55355 | 0.55491 | 0.55621 |
| 52                         | 0.57864 | 0.58027 | 0.58183 | 0.58332 | 0.58475 | 0.58612 |
| 50                         | 0.60802 | 0.60973 | 0.61137 | 0.61294 | 0.61444 | 0.61587 |
| 48                         | 0.63724 | 0.63903 | 0.64074 | 0.64238 | 0.64395 | 0.64546 |
| 46                         | 0.66628 | 0.66815 | 0.66994 | 0.67166 | 0.67330 | 0.67487 |
| 44                         | 0.69515 | 0.69710 | 0.69896 | 0.70075 | 0.70245 | 0.70409 |
| 42                         | 0.72382 | 0.72585 | 0.72779 | 0.72964 | 0.73142 | 0.73312 |
| 40                         | 0.75230 | 0.75441 | 0.75642 | 0.75834 | 0.76019 | 0.76195 |
| 38                         | 0.78057 | 0.78276 | 0.78484 | 0.78683 | 0.78874 | 0.79057 |
| 36                         | 0.80863 | 0.81089 | 0.81305 | 0.81511 | 0.81708 | 0.81898 |
| 34                         | 0.83647 | 0.83880 | 0.84103 | 0.84316 | 0.84520 | 0.84715 |
| 32                         | 0.86408 | 0.86649 | 0.86878 | 0.87098 | 0.87308 | 0.87510 |
| 30                         | 0.89146 | 0.89393 | 0.89630 | 0.89856 | 0.90073 | 0.90280 |
| 28                         | 0.91858 | 0.92113 | 0.92357 | 0.92589 | 0.92812 | 0.93025 |
| 26                         | 0.94546 | 0.94808 | 0.95058 | 0.95297 | 0.95525 | 0.95745 |
| 24                         | 0.97207 | 0.97476 | 0.97733 | 0.97978 | 0.98213 | 0.98437 |
| 22                         | 0.99842 | 1.00117 | 1.00380 | 1.00632 | 1.00872 | 1.01103 |
| 20                         | 1.02449 | 1.02731 | 1.03000 | 1.03258 | 1.03504 | 1.03740 |
| 18                         | 1.05027 | 1.05316 | 1.05591 | 1.05855 | 1.06107 | 1.06348 |
| 16                         | 1.07576 | 1.07871 | 1.08153 | 1.08422 | 1.08680 | 1.08927 |
| 14                         | 1.10095 | 1.10396 | 1.10684 | 1.10959 | 1.11222 | 1.11474 |
| 12                         | 1.12583 | 1.12891 | 1.13184 | 1.13465 | 1.13734 | 1.13991 |
| 10                         | 1.15040 | 1.15353 | 1.15653 | 1.15939 | 1.16213 | 1.16475 |
| 8                          | 1.17464 | 1.17784 | 1.18089 | 1.18380 | 1.18659 | 1.18926 |
| 6                          | 1.19855 | 1.20180 | 1.20491 | 1.20788 | 1.21072 | 1.21344 |
| 4                          | 1.22212 | 1.22543 | 1.22860 | 1.23162 | 1.23450 | 1.23727 |
| 2                          | 1.24534 | 1.24871 | 1.25193 | 1.25500 | 1.25794 | 1.26075 |
| 0                          | 1.26821 | 1.27164 | 1.27490 | 1.27803 | 1.28101 | 1.28387 |

Table 1

| $\rho_0 \backslash \alpha$ | 3.70    | 3.80    | 3.90    | 4.00    | 4.10    | 4.20    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| -2                         | 1.29072 | 1.29420 | 1.29752 | 1.30069 | 1.30372 | 1.30662 |
| -4                         | 1.31285 | 1.31639 | 1.31976 | 1.32297 | 1.32605 | 1.32899 |
| -6                         | 1.33461 | 1.33820 | 1.34161 | 1.34488 | 1.34800 | 1.35098 |
| -8                         | 1.35599 | 1.35962 | 1.36309 | 1.36640 | 1.36956 | 1.37258 |
| -10                        | 1.37697 | 1.38065 | 1.38416 | 1.38752 | 1.39072 | 1.39378 |
| -12                        | 1.39755 | 1.40128 | 1.40484 | 1.40823 | 1.41148 | 1.41458 |
| -14                        | 1.41772 | 1.42150 | 1.42510 | 1.42854 | 1.43182 | 1.43496 |
| -16                        | 1.43748 | 1.44130 | 1.44495 | 1.44843 | 1.45175 | 1.45493 |
| -18                        | 1.45681 | 1.46068 | 1.46437 | 1.46789 | 1.47125 | 1.47446 |
| -20                        | 1.47572 | 1.47963 | 1.48336 | 1.48692 | 1.49031 | 1.49356 |
| -22                        | 1.49419 | 1.49814 | 1.50191 | 1.50550 | 1.50894 | 1.51222 |
| -24                        | 1.51221 | 1.51620 | 1.52001 | 1.52364 | 1.52711 | 1.53043 |
| -26                        | 1.52978 | 1.53381 | 1.53766 | 1.54133 | 1.54483 | 1.54818 |
| -28                        | 1.54689 | 1.55096 | 1.55485 | 1.55855 | 1.56209 | 1.56546 |
| -30                        | 1.56353 | 1.56765 | 1.57157 | 1.57530 | 1.57887 | 1.58228 |
| -32                        | 1.57970 | 1.58385 | 1.58781 | 1.59158 | 1.59518 | 1.59862 |
| -34                        | 1.59539 | 1.59958 | 1.60357 | 1.60737 | 1.61100 | 1.61447 |
| -36                        | 1.61059 | 1.61481 | 1.61884 | 1.62267 | 1.62633 | 1.62983 |
| -38                        | 1.62529 | 1.62955 | 1.63361 | 1.63748 | 1.64117 | 1.64469 |
| -40                        | 1.63949 | 1.64379 | 1.64788 | 1.65178 | 1.65549 | 1.65904 |
| -42                        | 1.65318 | 1.65751 | 1.66163 | 1.66556 | 1.66931 | 1.67288 |
| -44                        | 1.66635 | 1.67072 | 1.67487 | 1.67883 | 1.68260 | 1.68620 |
| -46                        | 1.67900 | 1.68340 | 1.68758 | 1.69157 | 1.69537 | 1.69900 |
| -48                        | 1.69111 | 1.69555 | 1.69976 | 1.70378 | 1.70761 | 1.71126 |
| -50                        | 1.70269 | 1.70716 | 1.71140 | 1.71545 | 1.71930 | 1.72298 |
| -52                        | 1.71372 | 1.71822 | 1.72250 | 1.72657 | 1.73045 | 1.73415 |
| -54                        | 1.72419 | 1.72873 | 1.73304 | 1.73714 | 1.74105 | 1.74477 |
| -56                        | 1.73411 | 1.73868 | 1.74302 | 1.74715 | 1.75108 | 1.75483 |
| -58                        | 1.74346 | 1.74806 | 1.75243 | 1.75659 | 1.76055 | 1.76432 |
| -60                        | 1.75224 | 1.75687 | 1.76127 | 1.76546 | 1.76944 | 1.77324 |
| -62                        | 1.76043 | 1.76510 | 1.76953 | 1.77375 | 1.77776 | 1.78158 |
| -64                        | 1.76803 | 1.77274 | 1.77720 | 1.78145 | 1.78549 | 1.78934 |
| -66                        | 1.77504 | 1.77978 | 1.78428 | 1.78855 | 1.79262 | 1.79650 |
| -68                        | 1.78145 | 1.78622 | 1.79076 | 1.79506 | 1.79916 | 1.80306 |
| -70                        | 1.78724 | 1.79206 | 1.79662 | 1.80096 | 1.80509 | 1.80901 |
| -72                        | 1.79242 | 1.79728 | 1.80188 | 1.80625 | 1.81040 | 1.81436 |
| -74                        | 1.79698 | 1.80187 | 1.80651 | 1.81091 | 1.81510 | 1.81908 |
| -76                        | 1.80090 | 1.80583 | 1.81051 | 1.81495 | 1.81917 | 1.82318 |
| -78                        | 1.80419 | 1.80916 | 1.81388 | 1.81835 | 1.82260 | 1.82665 |
| -80                        | 1.80682 | 1.81185 | 1.81660 | 1.82111 | 1.82540 | 1.82948 |
| -82                        | 1.80881 | 1.81388 | 1.81868 | 1.82323 | 1.82755 | 1.83166 |
| -84                        | 1.81013 | 1.81525 | 1.82010 | 1.82469 | 1.82905 | 1.83320 |
| -86                        | 1.81079 | 1.81596 | 1.82085 | 1.82549 | 1.82989 | 1.83408 |
| -88                        |         |         |         |         |         |         |
| -90                        |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 4.30    | 4.40    | 4.50    | 4.60    | 4.70    | 4.80    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.03143 | 0.03149 | 0.03156 | 0.03162 | 0.03168 | 0.03174 |
| 86                         | 0.06284 | 0.06298 | 0.06311 | 0.06324 | 0.06336 | 0.06348 |
| 84                         | 0.09424 | 0.09445 | 0.09465 | 0.09484 | 0.09502 | 0.09519 |
| 82                         | 0.12562 | 0.12589 | 0.12616 | 0.12641 | 0.12665 | 0.12689 |
| 80                         | 0.15696 | 0.15730 | 0.15763 | 0.15795 | 0.15825 | 0.15854 |
| 78                         | 0.18826 | 0.18867 | 0.18906 | 0.18944 | 0.18981 | 0.19016 |
| 76                         | 0.21951 | 0.21998 | 0.22044 | 0.22088 | 0.22131 | 0.22172 |
| 74                         | 0.25070 | 0.25124 | 0.25176 | 0.25227 | 0.25275 | 0.25322 |
| 72                         | 0.28182 | 0.28243 | 0.28302 | 0.28358 | 0.28413 | 0.28465 |
| 70                         | 0.31286 | 0.31354 | 0.31419 | 0.31482 | 0.31542 | 0.31600 |
| 68                         | 0.34382 | 0.34457 | 0.34528 | 0.34597 | 0.34663 | 0.34727 |
| 66                         | 0.37469 | 0.37550 | 0.37628 | 0.37703 | 0.37775 | 0.37845 |
| 64                         | 0.40545 | 0.40633 | 0.40717 | 0.40798 | 0.40876 | 0.40951 |
| 62                         | 0.43611 | 0.43705 | 0.43795 | 0.43883 | 0.43966 | 0.44047 |
| 60                         | 0.46664 | 0.46765 | 0.46862 | 0.46955 | 0.47045 | 0.47131 |
| 58                         | 0.49705 | 0.49812 | 0.49915 | 0.50014 | 0.50110 | 0.50202 |
| 56                         | 0.52733 | 0.52846 | 0.52955 | 0.53060 | 0.53161 | 0.53259 |
| 54                         | 0.55746 | 0.55866 | 0.55981 | 0.56092 | 0.56198 | 0.56301 |
| 52                         | 0.58743 | 0.58870 | 0.58991 | 0.59108 | 0.59220 | 0.59328 |
| 50                         | 0.61725 | 0.61858 | 0.61985 | 0.62107 | 0.62225 | 0.62339 |
| 48                         | 0.64690 | 0.64829 | 0.64962 | 0.65090 | 0.65213 | 0.65332 |
| 46                         | 0.67637 | 0.67782 | 0.67921 | 0.68055 | 0.68184 | 0.68307 |
| 44                         | 0.70566 | 0.70717 | 0.70862 | 0.71001 | 0.71135 | 0.71264 |
| 42                         | 0.73475 | 0.73632 | 0.73783 | 0.73927 | 0.74067 | 0.74201 |
| 40                         | 0.76365 | 0.76527 | 0.76683 | 0.76834 | 0.76978 | 0.77117 |
| 38                         | 0.79233 | 0.79401 | 0.79563 | 0.79718 | 0.79868 | 0.80012 |
| 36                         | 0.82079 | 0.82253 | 0.82420 | 0.82581 | 0.82736 | 0.82885 |
| 34                         | 0.84903 | 0.85083 | 0.85255 | 0.85421 | 0.85581 | 0.85735 |
| 32                         | 0.87703 | 0.87888 | 0.88066 | 0.88238 | 0.88402 | 0.88561 |
| 30                         | 0.90479 | 0.90670 | 0.90853 | 0.91029 | 0.91199 | 0.91362 |
| 28                         | 0.93230 | 0.93426 | 0.93615 | 0.93796 | 0.93970 | 0.94138 |
| 26                         | 0.95955 | 0.96156 | 0.96350 | 0.96536 | 0.96715 | 0.96888 |
| 24                         | 0.98653 | 0.98860 | 0.99059 | 0.99249 | 0.99433 | 0.99610 |
| 22                         | 1.01324 | 1.01536 | 1.01739 | 1.01935 | 1.02123 | 1.02304 |
| 20                         | 1.03966 | 1.04183 | 1.04392 | 1.04592 | 1.04785 | 1.04970 |
| 18                         | 1.06580 | 1.06802 | 1.07015 | 1.07220 | 1.07417 | 1.07606 |
| 16                         | 1.09163 | 1.09390 | 1.09608 | 1.09817 | 1.10018 | 1.10212 |
| 14                         | 1.11716 | 1.11947 | 1.12170 | 1.12384 | 1.12589 | 1.12787 |
| 12                         | 1.14237 | 1.14473 | 1.14700 | 1.14918 | 1.15128 | 1.15330 |
| 10                         | 1.16726 | 1.16967 | 1.17198 | 1.17421 | 1.17634 | 1.17840 |
| 8                          | 1.19182 | 1.19428 | 1.19663 | 1.19889 | 1.20107 | 1.20316 |
| 6                          | 1.21604 | 1.21854 | 1.22094 | 1.22324 | 1.22546 | 1.22759 |
| 4                          | 1.23992 | 1.24246 | 1.24490 | 1.24724 | 1.24949 | 1.25166 |
| 2                          | 1.26344 | 1.26602 | 1.26850 | 1.27088 | 1.27317 | 1.27537 |
| 0                          | 1.28660 | 1.28923 | 1.29174 | 1.29416 | 1.29649 | 1.29872 |

Table 1

| $\rho_0$<br>$\alpha$ | 4.30    | 4.40    | 4.50    | 4.60    | 4.70    | 4.80    |
|----------------------|---------|---------|---------|---------|---------|---------|
| -2                   | 1.30939 | 1.31206 | 1.31461 | 1.31707 | 1.31943 | 1.32169 |
| -4                   | 1.33181 | 1.33451 | 1.33710 | 1.33959 | 1.34199 | 1.34429 |
| -6                   | 1.35384 | 1.35658 | 1.35921 | 1.36173 | 1.36416 | 1.36649 |
| -8                   | 1.37548 | 1.37826 | 1.38092 | 1.38348 | 1.38594 | 1.38830 |
| -10                  | 1.39672 | 1.39953 | 1.40223 | 1.40482 | 1.40731 | 1.40970 |
| -12                  | 1.41755 | 1.42040 | 1.42313 | 1.42575 | 1.42827 | 1.43069 |
| -14                  | 1.43797 | 1.44085 | 1.44362 | 1.44627 | 1.44882 | 1.45127 |
| -16                  | 1.45797 | 1.46088 | 1.46368 | 1.46636 | 1.46894 | 1.47142 |
| -18                  | 1.47754 | 1.48049 | 1.48331 | 1.48602 | 1.48863 | 1.49113 |
| -20                  | 1.49667 | 1.49965 | 1.50250 | 1.50524 | 1.50788 | 1.51041 |
| -22                  | 1.51536 | 1.51837 | 1.52125 | 1.52402 | 1.52668 | 1.52923 |
| -24                  | 1.53360 | 1.53664 | 1.53955 | 1.54234 | 1.54503 | 1.54760 |
| -26                  | 1.55138 | 1.55445 | 1.55739 | 1.56021 | 1.56291 | 1.56551 |
| -28                  | 1.56870 | 1.57179 | 1.57476 | 1.57760 | 1.58033 | 1.58296 |
| -30                  | 1.58554 | 1.58866 | 1.59165 | 1.59452 | 1.59728 | 1.59992 |
| -32                  | 1.60190 | 1.60505 | 1.60807 | 1.61096 | 1.61374 | 1.61640 |
| -34                  | 1.61778 | 1.62096 | 1.62400 | 1.62691 | 1.62971 | 1.63240 |
| -36                  | 1.63317 | 1.63637 | 1.63943 | 1.64237 | 1.64519 | 1.64790 |
| -38                  | 1.64806 | 1.65128 | 1.65436 | 1.65732 | 1.66016 | 1.66289 |
| -40                  | 1.66243 | 1.66568 | 1.66879 | 1.67177 | 1.67463 | 1.67737 |
| -42                  | 1.67630 | 1.67957 | 1.68270 | 1.68570 | 1.68858 | 1.69134 |
| -44                  | 1.68965 | 1.69294 | 1.69609 | 1.69911 | 1.70201 | 1.70479 |
| -46                  | 1.70246 | 1.70578 | 1.70895 | 1.71199 | 1.71491 | 1.71771 |
| -48                  | 1.71475 | 1.71808 | 1.72128 | 1.72434 | 1.72727 | 1.73009 |
| -50                  | 1.72649 | 1.72985 | 1.73306 | 1.73614 | 1.73909 | 1.74193 |
| -52                  | 1.73769 | 1.74107 | 1.74430 | 1.74740 | 1.75037 | 1.75322 |
| -54                  | 1.74833 | 1.75173 | 1.75498 | 1.75810 | 1.76109 | 1.76395 |
| -56                  | 1.75841 | 1.76183 | 1.76511 | 1.76824 | 1.77125 | 1.77413 |
| -58                  | 1.76793 | 1.77137 | 1.77466 | 1.77782 | 1.78084 | 1.78373 |
| -60                  | 1.77687 | 1.78033 | 1.78365 | 1.78682 | 1.78986 | 1.79277 |
| -62                  | 1.78523 | 1.78872 | 1.79205 | 1.79524 | 1.79830 | 1.80122 |
| -64                  | 1.79301 | 1.79652 | 1.79987 | 1.80308 | 1.80615 | 1.80910 |
| -66                  | 1.80019 | 1.80372 | 1.80709 | 1.81032 | 1.81341 | 1.81637 |
| -68                  | 1.80678 | 1.81033 | 1.81372 | 1.81697 | 1.82008 | 1.82306 |
| -70                  | 1.81276 | 1.81633 | 1.81975 | 1.82301 | 1.82614 | 1.82914 |
| -72                  | 1.81813 | 1.82172 | 1.82516 | 1.82845 | 1.83159 | 1.83461 |
| -74                  | 1.82288 | 1.82650 | 1.82996 | 1.83327 | 1.83643 | 1.83946 |
| -76                  | 1.82700 | 1.83065 | 1.83413 | 1.83746 | 1.84065 | 1.84370 |
| -78                  | 1.83050 | 1.83417 | 1.83768 | 1.84103 | 1.84424 | 1.84731 |
| -80                  | 1.83336 | 1.83706 | 1.84059 | 1.84397 | 1.84720 | 1.85029 |
| -82                  | 1.83558 | 1.83931 | 1.84287 | 1.84627 | 1.84952 | 1.85263 |
| -84                  | 1.83715 | 1.84091 | 1.84449 | 1.84792 | 1.85120 | 1.85433 |
| -86                  | 1.83806 | 1.84185 | 1.84547 | 1.84892 | 1.85222 | 1.85538 |
| -88                  |         |         |         | 1.84927 | 1.85260 | 1.85578 |
| -90                  |         |         |         |         |         |         |

$\zeta_0(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 4.90    | 5.00    | 5.10    | 5.20    | 5.30    | 5.40    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 0.03180 | 0.03185 | 0.03191 | 0.03196 | 0.03201 | 0.03205 |
| 86                         | 0.06359 | 0.06370 | 0.06380 | 0.06391 | 0.06400 | 0.06410 |
| 84                         | 0.09536 | 0.09553 | 0.09569 | 0.09584 | 0.09599 | 0.09613 |
| 82                         | 0.12711 | 0.12733 | 0.12754 | 0.12774 | 0.12794 | 0.12813 |
| 80                         | 0.15882 | 0.15910 | 0.15936 | 0.15961 | 0.15986 | 0.16010 |
| 78                         | 0.19049 | 0.19082 | 0.19114 | 0.19144 | 0.19173 | 0.19202 |
| 76                         | 0.22211 | 0.22249 | 0.22286 | 0.22321 | 0.22356 | 0.22389 |
| 74                         | 0.25367 | 0.25410 | 0.25452 | 0.25493 | 0.25532 | 0.25570 |
| 72                         | 0.28516 | 0.28564 | 0.28611 | 0.28657 | 0.28701 | 0.28743 |
| 70                         | 0.31657 | 0.31711 | 0.31763 | 0.31813 | 0.31862 | 0.31909 |
| 68                         | 0.34789 | 0.34848 | 0.34906 | 0.34961 | 0.35014 | 0.35066 |
| 66                         | 0.37912 | 0.37976 | 0.38039 | 0.38099 | 0.38157 | 0.38214 |
| 64                         | 0.41024 | 0.41094 | 0.41161 | 0.41226 | 0.41289 | 0.41350 |
| 62                         | 0.44125 | 0.44200 | 0.44273 | 0.44343 | 0.44410 | 0.44476 |
| 60                         | 0.47214 | 0.47294 | 0.47372 | 0.47447 | 0.47519 | 0.47589 |
| 58                         | 0.50290 | 0.50376 | 0.50458 | 0.50538 | 0.50615 | 0.50689 |
| 56                         | 0.53352 | 0.53443 | 0.53530 | 0.53615 | 0.53696 | 0.53775 |
| 54                         | 0.56400 | 0.56496 | 0.56588 | 0.56677 | 0.56763 | 0.56846 |
| 52                         | 0.59432 | 0.59533 | 0.59630 | 0.59723 | 0.59814 | 0.59901 |
| 50                         | 0.62448 | 0.62553 | 0.62655 | 0.62753 | 0.62848 | 0.62940 |
| 48                         | 0.65446 | 0.65557 | 0.65663 | 0.65766 | 0.65865 | 0.65962 |
| 46                         | 0.68427 | 0.68542 | 0.68653 | 0.68761 | 0.68864 | 0.68964 |
| 44                         | 0.71388 | 0.71508 | 0.71624 | 0.71736 | 0.71844 | 0.71948 |
| 42                         | 0.74330 | 0.74455 | 0.74575 | 0.74691 | 0.74804 | 0.74912 |
| 40                         | 0.77251 | 0.77381 | 0.77506 | 0.77626 | 0.77742 | 0.77855 |
| 38                         | 0.80151 | 0.80285 | 0.80414 | 0.80539 | 0.80660 | 0.80776 |
| 36                         | 0.83029 | 0.83167 | 0.83301 | 0.83430 | 0.83554 | 0.83675 |
| 34                         | 0.85883 | 0.86026 | 0.86164 | 0.86297 | 0.86426 | 0.86550 |
| 32                         | 0.88714 | 0.88861 | 0.89003 | 0.89140 | 0.89273 | 0.89401 |
| 30                         | 0.91520 | 0.91671 | 0.91818 | 0.91959 | 0.92095 | 0.92227 |
| 28                         | 0.94300 | 0.94456 | 0.94606 | 0.94751 | 0.94892 | 0.95027 |
| 26                         | 0.97054 | 0.97214 | 0.97368 | 0.97517 | 0.97661 | 0.97800 |
| 24                         | 0.99780 | 0.99945 | 1.00103 | 1.00256 | 1.00404 | 1.00546 |
| 22                         | 1.02479 | 1.02647 | 1.02810 | 1.02966 | 1.03117 | 1.03264 |
| 20                         | 1.05149 | 1.05321 | 1.05487 | 1.05647 | 1.05802 | 1.05952 |
| 18                         | 1.07789 | 1.07965 | 1.08135 | 1.08299 | 1.08457 | 1.08610 |
| 16                         | 1.10399 | 1.10579 | 1.10752 | 1.10920 | 1.11081 | 1.11238 |
| 14                         | 1.12978 | 1.13161 | 1.13338 | 1.13509 | 1.13674 | 1.13833 |
| 12                         | 1.15524 | 1.15711 | 1.15892 | 1.16066 | 1.16234 | 1.16397 |
| 10                         | 1.18038 | 1.18229 | 1.18413 | 1.18590 | 1.18762 | 1.18927 |
| 8                          | 1.20518 | 1.20712 | 1.20900 | 1.21080 | 1.21255 | 1.21423 |
| 6                          | 1.22964 | 1.23162 | 1.23352 | 1.23536 | 1.23714 | 1.23885 |
| 4                          | 1.25375 | 1.25575 | 1.25769 | 1.25956 | 1.26137 | 1.26311 |
| 2                          | 1.27749 | 1.27953 | 1.28150 | 1.28340 | 1.28524 | 1.28701 |
| 0                          | 1.30087 | 1.30295 | 1.30495 | 1.30687 | 1.30873 | 1.31053 |

Table 1

| $\rho_0$<br>$\alpha$ | 4.90    | 5.00    | 5.10    | 5.20    | 5.30    | 5.40    |
|----------------------|---------|---------|---------|---------|---------|---------|
| -2                   | 1.32388 | 1.32598 | 1.32801 | 1.32997 | 1.33186 | 1.33368 |
| -4                   | 1.34650 | 1.34864 | 1.35069 | 1.35268 | 1.35459 | 1.35644 |
| -6                   | 1.36874 | 1.37090 | 1.37298 | 1.37499 | 1.37693 | 1.37881 |
| -8                   | 1.39057 | 1.39276 | 1.39488 | 1.39691 | 1.39888 | 1.40077 |
| -10                  | 1.41201 | 1.41422 | 1.41636 | 1.41842 | 1.42041 | 1.42233 |
| -12                  | 1.43303 | 1.43527 | 1.43743 | 1.43952 | 1.44153 | 1.44347 |
| -14                  | 1.45363 | 1.45590 | 1.45808 | 1.46019 | 1.46223 | 1.46419 |
| -16                  | 1.47380 | 1.47609 | 1.47831 | 1.48044 | 1.48249 | 1.48448 |
| -18                  | 1.49354 | 1.49586 | 1.49809 | 1.50025 | 1.50232 | 1.50433 |
| -20                  | 1.51284 | 1.51518 | 1.51744 | 1.51961 | 1.52171 | 1.52374 |
| -22                  | 1.53169 | 1.53405 | 1.53633 | 1.53853 | 1.54064 | 1.54269 |
| -24                  | 1.55008 | 1.55247 | 1.55477 | 1.55698 | 1.55912 | 1.56118 |
| -26                  | 1.56802 | 1.57042 | 1.57274 | 1.57498 | 1.57713 | 1.57921 |
| -28                  | 1.58548 | 1.58791 | 1.59024 | 1.59250 | 1.59467 | 1.59677 |
| -30                  | 1.60246 | 1.60491 | 1.60727 | 1.60954 | 1.61173 | 1.61384 |
| -32                  | 1.61897 | 1.62143 | 1.62381 | 1.62610 | 1.62831 | 1.63043 |
| -34                  | 1.63498 | 1.63747 | 1.63986 | 1.64216 | 1.64439 | 1.64653 |
| -36                  | 1.65050 | 1.65300 | 1.65541 | 1.65773 | 1.65997 | 1.66213 |
| -38                  | 1.66551 | 1.66803 | 1.67046 | 1.67279 | 1.67505 | 1.67722 |
| -40                  | 1.68001 | 1.68255 | 1.68499 | 1.68734 | 1.68961 | 1.69180 |
| -42                  | 1.69400 | 1.69655 | 1.69901 | 1.70138 | 1.70366 | 1.70586 |
| -44                  | 1.70746 | 1.71003 | 1.71250 | 1.71488 | 1.71718 | 1.71939 |
| -46                  | 1.72039 | 1.72298 | 1.72547 | 1.72786 | 1.73017 | 1.73239 |
| -48                  | 1.73279 | 1.73539 | 1.73789 | 1.74030 | 1.74262 | 1.74486 |
| -50                  | 1.74465 | 1.74726 | 1.74978 | 1.75220 | 1.75453 | 1.75678 |
| -52                  | 1.75595 | 1.75858 | 1.76111 | 1.76355 | 1.76589 | 1.76815 |
| -54                  | 1.76670 | 1.76935 | 1.77189 | 1.77434 | 1.77669 | 1.77897 |
| -56                  | 1.77689 | 1.77955 | 1.78211 | 1.78457 | 1.78694 | 1.78922 |
| -58                  | 1.78652 | 1.78919 | 1.79176 | 1.79423 | 1.79661 | 1.79890 |
| -60                  | 1.79557 | 1.79825 | 1.80083 | 1.80332 | 1.80571 | 1.80801 |
| -62                  | 1.80404 | 1.80674 | 1.80933 | 1.81183 | 1.81423 | 1.81655 |
| -64                  | 1.81192 | 1.81464 | 1.81724 | 1.81975 | 1.82217 | 1.82450 |
| -66                  | 1.81922 | 1.82194 | 1.82457 | 1.82709 | 1.82952 | 1.83185 |
| -68                  | 1.82591 | 1.82866 | 1.83129 | 1.83383 | 1.83627 | 1.83862 |
| -70                  | 1.83201 | 1.83477 | 1.83742 | 1.83996 | 1.84242 | 1.84478 |
| -72                  | 1.83750 | 1.84027 | 1.84293 | 1.84549 | 1.84796 | 1.85033 |
| -74                  | 1.84237 | 1.84516 | 1.84784 | 1.85041 | 1.85289 | 1.85527 |
| -76                  | 1.84662 | 1.84943 | 1.85212 | 1.85471 | 1.85720 | 1.85960 |
| -78                  | 1.85025 | 1.85308 | 1.85579 | 1.85839 | 1.86089 | 1.86330 |
| -80                  | 1.85325 | 1.85609 | 1.85882 | 1.86144 | 1.86396 | 1.86638 |
| -82                  | 1.85561 | 1.85847 | 1.86122 | 1.86385 | 1.86639 | 1.86883 |
| -84                  | 1.85733 | 1.86021 | 1.86298 | 1.86563 | 1.86818 | 1.87063 |
| -86                  | 1.85841 | 1.86131 | 1.86409 | 1.86676 | 1.86933 | 1.87180 |
| -88                  | 1.85883 | 1.86175 | 1.86456 | 1.86725 | 1.86984 | 1.87232 |
| -90                  |         |         |         |         |         |         |



T A B L E 2

Maximum interface height  $\zeta_{\max}$ , corresponding angle  $\alpha_{\min}$  and the radius-height-ratio  $\Omega_{\min}$  as a function of the radius  $\rho_0$

$$\zeta_{\max}(\rho_0)$$

$$\alpha_{\min}(\rho_0)$$

$$\Omega_{\min}(\rho_0)$$

Table 2

| $\rho_0$ | $\alpha_{\min}$ | $\zeta_{\max}$ | $\Omega_{\min}$ |
|----------|-----------------|----------------|-----------------|
| 0.01     | -12.4470        | 0.05524        | 0.1810          |
| 0.02     | -14.4952        | 0.09699        | 0.2062          |
| 0.03     | -16.0054        | 0.13373        | 0.2243          |
| 0.04     | -17.2656        | 0.16726        | 0.2391          |
| 0.05     | -18.3656        | 0.19842        | 0.2520          |
| 0.06     | -19.3907        | 0.22771        | 0.2635          |
| 0.07     | -20.3168        | 0.25545        | 0.2740          |
| 0.08     | -21.2033        | 0.28189        | 0.2838          |
| 0.09     | -22.0337        | 0.30718        | 0.2930          |
| 0.10     | -22.8086        | 0.33147        | 0.3017          |
| 0.11     | -23.5659        | 0.35486        | 0.3100          |
| 0.12     | -24.2836        | 0.37744        | 0.3179          |
| 0.13     | -24.9923        | 0.39928        | 0.3256          |
| 0.14     | -25.6760        | 0.42044        | 0.3330          |
| 0.15     | -26.3399        | 0.44097        | 0.3402          |
| 0.16     | -26.9749        | 0.46093        | 0.3471          |
| 0.17     | -27.6087        | 0.48034        | 0.3539          |
| 0.18     | -28.2233        | 0.49924        | 0.3605          |
| 0.19     | -28.8278        | 0.51767        | 0.3670          |
| 0.20     | -29.4022        | 0.53564        | 0.3734          |
| 0.22     | -30.5710        | 0.57034        | 0.3857          |
| 0.24     | -31.6806        | 0.60350        | 0.3977          |
| 0.26     | -32.7616        | 0.63527        | 0.4093          |
| 0.28     | -33.8237        | 0.66576        | 0.4206          |
| 0.30     | -34.8557        | 0.69508        | 0.4316          |
| 0.32     | -35.8411        | 0.72331        | 0.4424          |
| 0.34     | -36.8330        | 0.75052        | 0.4530          |
| 0.36     | -37.7905        | 0.77679        | 0.4634          |
| 0.38     | -38.7310        | 0.80218        | 0.4737          |
| 0.40     | -39.6456        | 0.82673        | 0.4838          |
| 0.42     | -40.5670        | 0.85049        | 0.4938          |
| 0.44     | -41.4579        | 0.87351        | 0.5037          |
| 0.46     | -42.3200        | 0.89583        | 0.5135          |
| 0.48     | -43.1905        | 0.91747        | 0.5232          |
| 0.50     | -44.0454        | 0.93848        | 0.5328          |
| 0.52     | -44.8698        | 0.95887        | 0.5423          |
| 0.54     | -45.6964        | 0.97868        | 0.5518          |
| 0.56     | -46.5047        | 0.99794        | 0.5612          |
| 0.58     | -47.3106        | 1.01666        | 0.5705          |
| 0.60     | -48.1020        | 1.03487        | 0.5798          |

Table 2

| $\rho_0$ | $\alpha_{\min}$ | $\zeta_{\max}$ | $\Omega_{\min}$ |
|----------|-----------------|----------------|-----------------|
| 0.62     | -48.8663        | 1.05259        | 0.5890          |
| 0.64     | -49.6255        | 1.06983        | 0.5982          |
| 0.66     | -50.3874        | 1.08662        | 0.6074          |
| 0.68     | -51.1251        | 1.10296        | 0.6165          |
| 0.70     | -51.8559        | 1.11889        | 0.6256          |
| 0.72     | -52.5854        | 1.13440        | 0.6347          |
| 0.74     | -53.2847        | 1.14952        | 0.6438          |
| 0.76     | -53.9898        | 1.16426        | 0.6528          |
| 0.78     | -54.6729        | 1.17862        | 0.6618          |
| 0.80     | -55.3524        | 1.19263        | 0.6708          |
| 0.82     | -56.0106        | 1.20629        | 0.6798          |
| 0.84     | -56.6743        | 1.21961        | 0.6887          |
| 0.86     | -57.3222        | 1.23261        | 0.6977          |
| 0.88     | -57.9602        | 1.24529        | 0.7067          |
| 0.90     | -58.5867        | 1.25766        | 0.7156          |
| 0.92     | -59.2004        | 1.26974        | 0.7246          |
| 0.94     | -59.8151        | 1.28152        | 0.7335          |
| 0.96     | -60.4020        | 1.29303        | 0.7424          |
| 0.98     | -60.9968        | 1.30426        | 0.7514          |
| 1.00     | -61.5655        | 1.31522        | 0.7603          |
| 1.02     | -62.1368        | 1.32593        | 0.7693          |
| 1.04     | -62.6913        | 1.33639        | 0.7782          |
| 1.06     | -63.2367        | 1.34660        | 0.7872          |
| 1.08     | -63.7802        | 1.35657        | 0.7961          |
| 1.10     | -64.3072        | 1.36631        | 0.8051          |
| 1.12     | -64.8318        | 1.37583        | 0.8141          |
| 1.14     | -65.3370        | 1.38512        | 0.8230          |
| 1.16     | -65.8393        | 1.39421        | 0.8320          |
| 1.18     | -66.3245        | 1.40308        | 0.8410          |
| 1.20     | -66.8181        | 1.41176        | 0.8500          |
| 1.22     | -67.2847        | 1.42023        | 0.8590          |
| 1.24     | -67.7427        | 1.42852        | 0.8680          |
| 1.26     | -68.2014        | 1.43661        | 0.8771          |
| 1.28     | -68.6509        | 1.44453        | 0.8861          |
| 1.30     | -69.0790        | 1.45227        | 0.8952          |
| 1.32     | -69.5070        | 1.45983        | 0.9042          |
| 1.34     | -69.9288        | 1.46723        | 0.9133          |
| 1.36     | -70.3361        | 1.47446        | 0.9224          |
| 1.38     | -70.7346        | 1.48154        | 0.9315          |
| 1.40     | -71.1320        | 1.48846        | 0.9406          |

Table 2

| $\rho_0$ | $\alpha_{\min}$ | $\zeta_{\max}$ | $\Omega_{\min}$ |
|----------|-----------------|----------------|-----------------|
| 1.42     | -71.5070        | 1.49522        | 0.9497          |
| 1.44     | -71.8852        | 1.50184        | 0.9588          |
| 1.46     | -72.2605        | 1.50832        | 0.9680          |
| 1.48     | -72.6124        | 1.51465        | 0.9771          |
| 1.50     | -72.9738        | 1.52085        | 0.9863          |
| 1.52     | -73.3153        | 1.52692        | 0.9955          |
| 1.54     | -73.6435        | 1.53286        | 1.0047          |
| 1.56     | -73.9730        | 1.53867        | 1.0139          |
| 1.58     | -74.2995        | 1.54436        | 1.0231          |
| 1.60     | -74.6166        | 1.54993        | 1.0323          |
| 1.62     | -74.9182        | 1.55538        | 1.0415          |
| 1.64     | -75.2230        | 1.56072        | 1.0508          |
| 1.66     | -75.5070        | 1.56595        | 1.0601          |
| 1.68     | -75.8014        | 1.57107        | 1.0693          |
| 1.70     | -76.0803        | 1.57609        | 1.0786          |
| 1.72     | -76.3482        | 1.58100        | 1.0879          |
| 1.74     | -76.6179        | 1.58581        | 1.0972          |
| 1.76     | -76.8797        | 1.59053        | 1.1066          |
| 1.78     | -77.1320        | 1.59515        | 1.1159          |
| 1.80     | -77.3753        | 1.59968        | 1.1252          |
| 1.82     | -77.6116        | 1.60412        | 1.1346          |
| 1.84     | -77.8550        | 1.60848        | 1.1439          |
| 1.86     | -78.0931        | 1.61274        | 1.1533          |
| 1.88     | -78.3131        | 1.61693        | 1.1627          |
| 1.90     | -78.5367        | 1.62103        | 1.1721          |
| 1.92     | -78.7445        | 1.62505        | 1.1815          |
| 1.94     | -78.9595        | 1.62900        | 1.1909          |
| 1.96     | -79.1645        | 1.63287        | 1.2003          |
| 1.98     | -79.3645        | 1.63667        | 1.2098          |
| 2.00     | -79.5599        | 1.64039        | 1.2192          |
| 2.10     | -80.4635        | 1.65802        | 1.2666          |
| 2.20     | -81.2704        | 1.67410        | 1.3141          |
| 2.30     | -81.9993        | 1.68881        | 1.3619          |
| 2.40     | -82.6392        | 1.70232        | 1.4098          |
| 2.50     | -83.2100        | 1.71475        | 1.4579          |
| 2.60     | -83.7128        | 1.72623        | 1.5062          |
| 2.70     | -84.1746        | 1.73685        | 1.5545          |
| 2.80     | -84.5878        | 1.74669        | 1.6030          |
| 2.90     | -84.9564        | 1.75585        | 1.6516          |
| 3.00     | -85.3026        | 1.76438        | 1.7003          |

Table 2

| $\rho_0$ | $\alpha_{\min}$ | $\zeta_{\max}$ | $\Omega_{\min}$ |
|----------|-----------------|----------------|-----------------|
| 3.10     | -85.6067        | 1.77235        | 1.7491          |
| 3.20     | -85.8895        | 1.77980        | 1.7979          |
| 3.30     | -86.1373        | 1.78679        | 1.8469          |
| 3.40     | -86.3654        | 1.79336        | 1.8959          |
| 3.50     | -86.5833        | 1.79954        | 1.9449          |
| 3.60     | -86.7779        | 1.80536        | 1.9941          |
| 3.70     | -86.9554        | 1.81086        | 2.0432          |
| 3.80     | -87.1211        | 1.81606        | 2.0924          |
| 3.90     | -87.2633        | 1.82099        | 2.1417          |
| 4.00     | -87.4095        | 1.82566        | 2.1910          |
| 4.10     | -87.5396        | 1.83009        | 2.2403          |
| 4.20     | -87.6601        | 1.83430        | 2.2897          |
| 4.30     | -87.7695        | 1.83832        | 2.3391          |
| 4.40     | -87.8678        | 1.84214        | 2.3885          |
| 4.50     | -87.9716        | 1.84579        | 2.4380          |
| 4.60     | -88.0505        | 1.84927        | 2.4875          |
| 4.70     | -88.1464        | 1.85260        | 2.5370          |
| 4.80     | -88.2299        | 1.85579        | 2.5865          |
| 4.90     | -88.2980        | 1.85884        | 2.6361          |
| 5.00     | -88.3669        | 1.86176        | 2.6856          |
| 5.10     | -88.4248        | 1.86457        | 2.7352          |
| 5.20     | -88.4903        | 1.86727        | 2.7848          |
| 5.30     | -88.5534        | 1.86986        | 2.8344          |
| 5.40     | -88.6161        | 1.87235        | 2.8841          |



Radius-height-ratios  $\Omega$  as function of  
the angle  $\alpha$  and radius  $\rho_0$

| TABLE 3                                                                             |                |                |                |                |                |
|-------------------------------------------------------------------------------------|----------------|----------------|----------------|----------------|----------------|
| Radius-height-ratios $\Omega$ as function of the angle $\alpha$ and radius $\rho_0$ |                |                |                |                |                |
| $\alpha$                                                                            | $\rho_0 = 0.1$ | $\rho_0 = 0.2$ | $\rho_0 = 0.3$ | $\rho_0 = 0.4$ | $\rho_0 = 0.5$ |
| 0                                                                                   | 0.1000         | 0.2000         | 0.3000         | 0.4000         | 0.5000         |
| 1                                                                                   | 0.0998         | 0.1996         | 0.2994         | 0.3992         | 0.4990         |
| 2                                                                                   | 0.0996         | 0.1992         | 0.2988         | 0.3984         | 0.4980         |
| 3                                                                                   | 0.0994         | 0.1988         | 0.2984         | 0.3980         | 0.4976         |
| 4                                                                                   | 0.0992         | 0.1984         | 0.2980         | 0.3976         | 0.4972         |
| 5                                                                                   | 0.0990         | 0.1980         | 0.2976         | 0.3972         | 0.4968         |
| 6                                                                                   | 0.0988         | 0.1976         | 0.2972         | 0.3968         | 0.4964         |
| 7                                                                                   | 0.0986         | 0.1972         | 0.2968         | 0.3964         | 0.4960         |
| 8                                                                                   | 0.0984         | 0.1968         | 0.2964         | 0.3960         | 0.4956         |
| 9                                                                                   | 0.0982         | 0.1964         | 0.2960         | 0.3956         | 0.4952         |
| 10                                                                                  | 0.0980         | 0.1960         | 0.2956         | 0.3952         | 0.4948         |
| 11                                                                                  | 0.0978         | 0.1956         | 0.2952         | 0.3948         | 0.4944         |
| 12                                                                                  | 0.0976         | 0.1952         | 0.2948         | 0.3944         | 0.4940         |
| 13                                                                                  | 0.0974         | 0.1948         | 0.2944         | 0.3940         | 0.4936         |
| 14                                                                                  | 0.0972         | 0.1944         | 0.2940         | 0.3936         | 0.4932         |
| 15                                                                                  | 0.0970         | 0.1940         | 0.2936         | 0.3932         | 0.4928         |
| 16                                                                                  | 0.0968         | 0.1936         | 0.2932         | 0.3928         | 0.4924         |
| 17                                                                                  | 0.0966         | 0.1932         | 0.2928         | 0.3924         | 0.4920         |
| 18                                                                                  | 0.0964         | 0.1928         | 0.2924         | 0.3920         | 0.4916         |
| 19                                                                                  | 0.0962         | 0.1924         | 0.2920         | 0.3916         | 0.4912         |
| 20                                                                                  | 0.0960         | 0.1920         | 0.2916         | 0.3912         | 0.4908         |
| 21                                                                                  | 0.0958         | 0.1916         | 0.2912         | 0.3908         | 0.4904         |
| 22                                                                                  | 0.0956         | 0.1912         | 0.2908         | 0.3904         | 0.4900         |
| 23                                                                                  | 0.0954         | 0.1908         | 0.2904         | 0.3900         | 0.4896         |
| 24                                                                                  | 0.0952         | 0.1904         | 0.2900         | 0.3896         | 0.4892         |
| 25                                                                                  | 0.0950         | 0.1900         | 0.2896         | 0.3892         | 0.4888         |
| 26                                                                                  | 0.0948         | 0.1896         | 0.2892         | 0.3888         | 0.4884         |
| 27                                                                                  | 0.0946         | 0.1892         | 0.2888         | 0.3884         | 0.4880         |
| 28                                                                                  | 0.0944         | 0.1888         | 0.2884         | 0.3880         | 0.4876         |
| 29                                                                                  | 0.0942         | 0.1884         | 0.2880         | 0.3876         | 0.4872         |
| 30                                                                                  | 0.0940         | 0.1880         | 0.2876         | 0.3872         | 0.4868         |
| 31                                                                                  | 0.0938         | 0.1876         | 0.2872         | 0.3868         | 0.4864         |
| 32                                                                                  | 0.0936         | 0.1872         | 0.2868         | 0.3864         | 0.4860         |
| 33                                                                                  | 0.0934         | 0.1868         | 0.2864         | 0.3860         | 0.4856         |
| 34                                                                                  | 0.0932         | 0.1864         | 0.2860         | 0.3856         | 0.4852         |
| 35                                                                                  | 0.0930         | 0.1860         | 0.2856         | 0.3852         | 0.4848         |
| 36                                                                                  | 0.0928         | 0.1856         | 0.2852         | 0.3848         | 0.4844         |
| 37                                                                                  | 0.0926         | 0.1852         | 0.2848         | 0.3844         | 0.4840         |
| 38                                                                                  | 0.0924         | 0.1848         | 0.2844         | 0.3840         | 0.4836         |
| 39                                                                                  | 0.0922         | 0.1844         | 0.2840         | 0.3836         | 0.4832         |
| 40                                                                                  | 0.0920         | 0.1840         | 0.2836         | 0.3832         | 0.4828         |
| 41                                                                                  | 0.0918         | 0.1836         | 0.2832         | 0.3828         | 0.4824         |
| 42                                                                                  | 0.0916         | 0.1832         | 0.2828         | 0.3824         | 0.4820         |
| 43                                                                                  | 0.0914         | 0.1828         | 0.2824         | 0.3820         | 0.4816         |
| 44                                                                                  | 0.0912         | 0.1824         | 0.2820         | 0.3816         | 0.4812         |
| 45                                                                                  | 0.0910         | 0.1820         | 0.2816         | 0.3812         | 0.4808         |
| 46                                                                                  | 0.0908         | 0.1816         | 0.2812         | 0.3808         | 0.4804         |
| 47                                                                                  | 0.0906         | 0.1812         | 0.2808         | 0.3804         | 0.4800         |
| 48                                                                                  | 0.0904         | 0.1808         | 0.2804         | 0.3800         | 0.4796         |
| 49                                                                                  | 0.0902         | 0.1804         | 0.2800         | 0.3796         | 0.4792         |
| 50                                                                                  | 0.0900         | 0.1800         | 0.2796         | 0.3792         | 0.4788         |

$\Omega(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 0.01   | 0.02   | 0.03   | 0.04   | 0.05   | 0.06   |
|----------------------------|--------|--------|--------|--------|--------|--------|
| 88                         | 6.0671 | 7.1058 | 7.8923 | 8.5607 | 9.1585 | 9.7085 |
| 86                         | 3.0348 | 3.5543 | 3.9476 | 4.2818 | 4.5807 | 4.8558 |
| 84                         | 2.0246 | 2.3710 | 2.6333 | 2.8562 | 3.0555 | 3.2389 |
| 82                         | 1.5199 | 1.7799 | 1.9767 | 2.1439 | 2.2934 | 2.4310 |
| 80                         | 1.2175 | 1.4256 | 1.5831 | 1.7169 | 1.8365 | 1.9466 |
| 78                         | 1.0161 | 1.1896 | 1.3210 | 1.4326 | 1.5323 | 1.6241 |
| 76                         | 0.8725 | 1.0214 | 1.1341 | 1.2297 | 1.3153 | 1.3940 |
| 74                         | 0.7651 | 0.8955 | 0.9941 | 1.0779 | 1.1528 | 1.2217 |
| 72                         | 0.6817 | 0.7977 | 0.8855 | 0.9600 | 1.0267 | 1.0879 |
| 70                         | 0.6151 | 0.7197 | 0.7988 | 0.8659 | 0.9259 | 0.9811 |
| 68                         | 0.5609 | 0.6561 | 0.7281 | 0.7891 | 0.8437 | 0.8939 |
| 66                         | 0.5158 | 0.6032 | 0.6693 | 0.7253 | 0.7754 | 0.8215 |
| 64                         | 0.4778 | 0.5586 | 0.6197 | 0.6715 | 0.7178 | 0.7603 |
| 62                         | 0.4454 | 0.5206 | 0.5774 | 0.6255 | 0.6685 | 0.7081 |
| 60                         | 0.4174 | 0.4877 | 0.5408 | 0.5858 | 0.6260 | 0.6630 |
| 58                         | 0.3930 | 0.4591 | 0.5090 | 0.5512 | 0.5890 | 0.6236 |
| 56                         | 0.3717 | 0.4340 | 0.4810 | 0.5208 | 0.5564 | 0.5891 |
| 54                         | 0.3528 | 0.4118 | 0.4563 | 0.4940 | 0.5276 | 0.5585 |
| 52                         | 0.3360 | 0.3921 | 0.4343 | 0.4700 | 0.5020 | 0.5313 |
| 50                         | 0.3210 | 0.3744 | 0.4146 | 0.4487 | 0.4790 | 0.5069 |
| 48                         | 0.3075 | 0.3586 | 0.3969 | 0.4294 | 0.4584 | 0.4850 |
| 46                         | 0.2954 | 0.3443 | 0.3810 | 0.4121 | 0.4397 | 0.4652 |
| 44                         | 0.2844 | 0.3313 | 0.3665 | 0.3963 | 0.4229 | 0.4472 |
| 42                         | 0.2745 | 0.3195 | 0.3534 | 0.3820 | 0.4075 | 0.4309 |
| 40                         | 0.2654 | 0.3088 | 0.3414 | 0.3690 | 0.3935 | 0.4160 |
| 38                         | 0.2571 | 0.2991 | 0.3305 | 0.3570 | 0.3806 | 0.4023 |
| 36                         | 0.2496 | 0.2901 | 0.3205 | 0.3461 | 0.3689 | 0.3898 |
| 34                         | 0.2427 | 0.2819 | 0.3113 | 0.3361 | 0.3581 | 0.3783 |
| 32                         | 0.2363 | 0.2744 | 0.3029 | 0.3268 | 0.3482 | 0.3677 |
| 30                         | 0.2305 | 0.2675 | 0.2951 | 0.3184 | 0.3390 | 0.3579 |
| 28                         | 0.2252 | 0.2611 | 0.2879 | 0.3105 | 0.3306 | 0.3489 |
| 26                         | 0.2203 | 0.2552 | 0.2814 | 0.3033 | 0.3228 | 0.3406 |
| 24                         | 0.2158 | 0.2499 | 0.2753 | 0.2966 | 0.3156 | 0.3329 |
| 22                         | 0.2116 | 0.2449 | 0.2697 | 0.2905 | 0.3089 | 0.3258 |
| 20                         | 0.2078 | 0.2403 | 0.2645 | 0.2848 | 0.3028 | 0.3192 |
| 18                         | 0.2044 | 0.2362 | 0.2598 | 0.2796 | 0.2971 | 0.3131 |
| 16                         | 0.2012 | 0.2323 | 0.2554 | 0.2747 | 0.2919 | 0.3075 |
| 14                         | 0.1983 | 0.2288 | 0.2514 | 0.2703 | 0.2870 | 0.3023 |
| 12                         | 0.1956 | 0.2255 | 0.2477 | 0.2662 | 0.2826 | 0.2975 |
| 10                         | 0.1933 | 0.2226 | 0.2443 | 0.2625 | 0.2785 | 0.2931 |
| 8                          | 0.1911 | 0.2200 | 0.2413 | 0.2590 | 0.2747 | 0.2890 |
| 6                          | 0.1892 | 0.2176 | 0.2385 | 0.2559 | 0.2713 | 0.2853 |
| 4                          | 0.1875 | 0.2154 | 0.2360 | 0.2531 | 0.2682 | 0.2819 |
| 2                          | 0.1860 | 0.2135 | 0.2337 | 0.2506 | 0.2654 | 0.2789 |
| 0                          | 0.1847 | 0.2118 | 0.2317 | 0.2483 | 0.2629 | 0.2761 |

Table 3

| $\rho_0 \backslash \alpha$ | 0.01   | 0.02   | 0.03   | 0.04   | 0.05   | 0.06   |
|----------------------------|--------|--------|--------|--------|--------|--------|
| -2                         | 0.1836 | 0.2104 | 0.2300 | 0.2463 | 0.2606 | 0.2736 |
| -4                         | 0.1827 | 0.2091 | 0.2285 | 0.2445 | 0.2586 | 0.2714 |
| -6                         | 0.1820 | 0.2081 | 0.2272 | 0.2430 | 0.2569 | 0.2695 |
| -8                         | 0.1815 | 0.2073 | 0.2262 | 0.2418 | 0.2555 | 0.2678 |
| -10                        | 0.1812 | 0.2067 | 0.2254 | 0.2408 | 0.2542 | 0.2664 |
| -12                        | 0.1810 | 0.2064 | 0.2248 | 0.2400 | 0.2533 | 0.2653 |
| -14                        |        | 0.2062 | 0.2244 | 0.2395 | 0.2526 | 0.2645 |
| -16                        |        |        | 0.2243 | 0.2392 | 0.2522 | 0.2639 |
| -18                        |        |        |        |        | 0.2520 | 0.2636 |
| -20                        |        |        |        |        |        |        |
| -22                        |        |        |        |        |        |        |
| -24                        |        |        |        |        |        |        |
| -26                        |        |        |        |        |        |        |
| -28                        |        |        |        |        |        |        |
| -30                        |        |        |        |        |        |        |
| -32                        |        |        |        |        |        |        |
| -34                        |        |        |        |        |        |        |
| -36                        |        |        |        |        |        |        |
| -38                        |        |        |        |        |        |        |
| -40                        |        |        |        |        |        |        |
| -42                        |        |        |        |        |        |        |
| -44                        |        |        |        |        |        |        |
| -46                        |        |        |        |        |        |        |
| -48                        |        |        |        |        |        |        |
| -50                        |        |        |        |        |        |        |
| -52                        |        |        |        |        |        |        |
| -54                        |        |        |        |        |        |        |
| -56                        |        |        |        |        |        |        |
| -58                        |        |        |        |        |        |        |
| -60                        |        |        |        |        |        |        |
| -62                        |        |        |        |        |        |        |
| -64                        |        |        |        |        |        |        |
| -66                        |        |        |        |        |        |        |
| -68                        |        |        |        |        |        |        |
| -70                        |        |        |        |        |        |        |
| -72                        |        |        |        |        |        |        |
| -74                        |        |        |        |        |        |        |
| -76                        |        |        |        |        |        |        |
| -78                        |        |        |        |        |        |        |
| -80                        |        |        |        |        |        |        |
| -82                        |        |        |        |        |        |        |
| -84                        |        |        |        |        |        |        |
| -86                        |        |        |        |        |        |        |
| -88                        |        |        |        |        |        |        |
| -90                        |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\alpha \backslash \rho_0$ | 0.07    | 0.08    | 0.09    | 0.10    | 0.11    | 0.12    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 10.2239 | 10.7129 | 11.1810 | 11.6320 | 12.0689 | 12.4939 |
| 86                         | 5.1135  | 5.3580  | 5.5921  | 5.8176  | 6.0361  | 6.2486  |
| 84                         | 3.4108  | 3.5738  | 3.7298  | 3.8802  | 4.0259  | 4.1676  |
| 82                         | 2.5599  | 2.6822  | 2.7992  | 2.9121  | 3.0213  | 3.1276  |
| 80                         | 2.0498  | 2.1477  | 2.2413  | 2.3316  | 2.4190  | 2.5041  |
| 78                         | 1.7101  | 1.7917  | 1.8697  | 1.9450  | 2.0178  | 2.0887  |
| 76                         | 1.4677  | 1.5377  | 1.6046  | 1.6691  | 1.7316  | 1.7924  |
| 74                         | 1.2863  | 1.3475  | 1.4061  | 1.4625  | 1.5172  | 1.5704  |
| 72                         | 1.1453  | 1.1998  | 1.2519  | 1.3021  | 1.3507  | 1.3980  |
| 70                         | 1.0328  | 1.0818  | 1.1288  | 1.1740  | 1.2177  | 1.2603  |
| 68                         | 0.9410  | 0.9856  | 1.0282  | 1.0693  | 1.1092  | 1.1479  |
| 66                         | 0.8646  | 0.9055  | 0.9446  | 0.9823  | 1.0189  | 1.0544  |
| 64                         | 0.8002  | 0.8380  | 0.8741  | 0.9089  | 0.9427  | 0.9754  |
| 62                         | 0.7451  | 0.7802  | 0.8138  | 0.8462  | 0.8775  | 0.9080  |
| 60                         | 0.6975  | 0.7304  | 0.7617  | 0.7919  | 0.8212  | 0.8497  |
| 58                         | 0.6561  | 0.6869  | 0.7163  | 0.7446  | 0.7721  | 0.7988  |
| 56                         | 0.6197  | 0.6486  | 0.6764  | 0.7031  | 0.7289  | 0.7541  |
| 54                         | 0.5874  | 0.6148  | 0.6410  | 0.6662  | 0.6907  | 0.7144  |
| 52                         | 0.5587  | 0.5847  | 0.6095  | 0.6334  | 0.6566  | 0.6791  |
| 50                         | 0.5330  | 0.5577  | 0.5813  | 0.6041  | 0.6261  | 0.6475  |
| 48                         | 0.5098  | 0.5334  | 0.5559  | 0.5776  | 0.5986  | 0.6190  |
| 46                         | 0.4889  | 0.5114  | 0.5330  | 0.5537  | 0.5738  | 0.5932  |
| 44                         | 0.4700  | 0.4915  | 0.5121  | 0.5320  | 0.5512  | 0.5699  |
| 42                         | 0.4527  | 0.4734  | 0.4932  | 0.5122  | 0.5306  | 0.5485  |
| 40                         | 0.4370  | 0.4568  | 0.4759  | 0.4942  | 0.5119  | 0.5291  |
| 38                         | 0.4225  | 0.4417  | 0.4600  | 0.4776  | 0.4947  | 0.5112  |
| 36                         | 0.4093  | 0.4278  | 0.4454  | 0.4624  | 0.4788  | 0.4948  |
| 34                         | 0.3971  | 0.4150  | 0.4320  | 0.4484  | 0.4643  | 0.4797  |
| 32                         | 0.3860  | 0.4032  | 0.4197  | 0.4355  | 0.4509  | 0.4657  |
| 30                         | 0.3756  | 0.3923  | 0.4083  | 0.4236  | 0.4384  | 0.4529  |
| 28                         | 0.3661  | 0.3823  | 0.3977  | 0.4126  | 0.4270  | 0.4409  |
| 26                         | 0.3572  | 0.3730  | 0.3880  | 0.4024  | 0.4163  | 0.4299  |
| 24                         | 0.3491  | 0.3644  | 0.3789  | 0.3929  | 0.4065  | 0.4196  |
| 22                         | 0.3415  | 0.3564  | 0.3705  | 0.3842  | 0.3973  | 0.4101  |
| 20                         | 0.3345  | 0.3490  | 0.3628  | 0.3760  | 0.3888  | 0.4013  |
| 18                         | 0.3281  | 0.3421  | 0.3556  | 0.3685  | 0.3809  | 0.3930  |
| 16                         | 0.3221  | 0.3358  | 0.3489  | 0.3615  | 0.3736  | 0.3854  |
| 14                         | 0.3165  | 0.3299  | 0.3427  | 0.3550  | 0.3668  | 0.3783  |
| 12                         | 0.3114  | 0.3245  | 0.3370  | 0.3489  | 0.3605  | 0.3717  |
| 10                         | 0.3067  | 0.3195  | 0.3317  | 0.3434  | 0.3547  | 0.3656  |
| 8                          | 0.3023  | 0.3148  | 0.3268  | 0.3382  | 0.3492  | 0.3600  |
| 6                          | 0.2983  | 0.3106  | 0.3223  | 0.3335  | 0.3442  | 0.3547  |
| 4                          | 0.2947  | 0.3067  | 0.3181  | 0.3291  | 0.3396  | 0.3499  |
| 2                          | 0.2914  | 0.3031  | 0.3143  | 0.3251  | 0.3354  | 0.3454  |
| 0                          | 0.2884  | 0.2999  | 0.3109  | 0.3214  | 0.3315  | 0.3413  |

Table 3

| $\alpha \backslash \rho_0$ | 0.07   | 0.08   | 0.09   | 0.10   | 0.11   | 0.12   |
|----------------------------|--------|--------|--------|--------|--------|--------|
| -2                         | 0.2857 | 0.2970 | 0.3077 | 0.3181 | 0.3280 | 0.3376 |
| -4                         | 0.2832 | 0.2944 | 0.3049 | 0.3151 | 0.3248 | 0.3342 |
| -6                         | 0.2811 | 0.2921 | 0.3024 | 0.3124 | 0.3219 | 0.3312 |
| -8                         | 0.2793 | 0.2900 | 0.3002 | 0.3100 | 0.3194 | 0.3285 |
| -10                        | 0.2777 | 0.2883 | 0.2983 | 0.3079 | 0.3171 | 0.3260 |
| -12                        | 0.2764 | 0.2868 | 0.2967 | 0.3061 | 0.3152 | 0.3239 |
| -14                        | 0.2754 | 0.2857 | 0.2954 | 0.3046 | 0.3135 | 0.3222 |
| -16                        | 0.2747 | 0.2848 | 0.2943 | 0.3035 | 0.3122 | 0.3207 |
| -18                        | 0.2742 | 0.2842 | 0.2936 | 0.3026 | 0.3112 | 0.3195 |
| -20                        | 0.2740 | 0.2839 | 0.2931 | 0.3020 | 0.3105 | 0.3187 |
| -22                        |        |        | 0.2930 | 0.3017 | 0.3101 | 0.3181 |
| -24                        |        |        |        |        |        | 0.3179 |
| -26                        |        |        |        |        |        |        |
| -28                        |        |        |        |        |        |        |
| -30                        |        |        |        |        |        |        |
| -32                        |        |        |        |        |        |        |
| -34                        |        |        |        |        |        |        |
| -36                        |        |        |        |        |        |        |
| -38                        |        |        |        |        |        |        |
| -40                        |        |        |        |        |        |        |
| -42                        |        |        |        |        |        |        |
| -44                        |        |        |        |        |        |        |
| -46                        |        |        |        |        |        |        |
| -48                        |        |        |        |        |        |        |
| -50                        |        |        |        |        |        |        |
| -52                        |        |        |        |        |        |        |
| -54                        |        |        |        |        |        |        |
| -56                        |        |        |        |        |        |        |
| -58                        |        |        |        |        |        |        |
| -60                        |        |        |        |        |        |        |
| -62                        |        |        |        |        |        |        |
| -64                        |        |        |        |        |        |        |
| -66                        |        |        |        |        |        |        |
| -68                        |        |        |        |        |        |        |
| -70                        |        |        |        |        |        |        |
| -72                        |        |        |        |        |        |        |
| -74                        |        |        |        |        |        |        |
| -76                        |        |        |        |        |        |        |
| -78                        |        |        |        |        |        |        |
| -80                        |        |        |        |        |        |        |
| -82                        |        |        |        |        |        |        |
| -84                        |        |        |        |        |        |        |
| -86                        |        |        |        |        |        |        |
| -88                        |        |        |        |        |        |        |
| -90                        |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\alpha \backslash \rho_0$ | 0.13    | 0.14    | 0.15    | 0.16    | 0.17    | 0.18    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 12.9087 | 13.3146 | 13.7127 | 14.1040 | 14.4891 | 14.8688 |
| 86                         | 6.4560  | 6.6590  | 6.8580  | 7.0537  | 7.2463  | 7.4361  |
| 84                         | 4.3058  | 4.4412  | 4.5739  | 4.7043  | 4.8327  | 4.9593  |
| 82                         | 3.2313  | 3.3328  | 3.4324  | 3.5302  | 3.6265  | 3.7214  |
| 80                         | 2.5870  | 2.6683  | 2.7479  | 2.8262  | 2.9032  | 2.9792  |
| 78                         | 2.1579  | 2.2256  | 2.2920  | 2.3572  | 2.4214  | 2.4848  |
| 76                         | 1.8517  | 1.9097  | 1.9666  | 2.0226  | 2.0776  | 2.1319  |
| 74                         | 1.6223  | 1.6731  | 1.7229  | 1.7719  | 1.8201  | 1.8676  |
| 72                         | 1.4442  | 1.4893  | 1.5336  | 1.5772  | 1.6200  | 1.6622  |
| 70                         | 1.3019  | 1.3425  | 1.3824  | 1.4216  | 1.4602  | 1.4982  |
| 68                         | 1.1857  | 1.2226  | 1.2589  | 1.2946  | 1.3296  | 1.3642  |
| 66                         | 1.0890  | 1.1229  | 1.1562  | 1.1889  | 1.2211  | 1.2528  |
| 64                         | 1.0075  | 1.0388  | 1.0695  | 1.0997  | 1.1294  | 1.1587  |
| 62                         | 0.9377  | 0.9668  | 0.9953  | 1.0234  | 1.0510  | 1.0782  |
| 60                         | 0.8774  | 0.9046  | 0.9312  | 0.9574  | 0.9832  | 1.0086  |
| 58                         | 0.8248  | 0.8503  | 0.8753  | 0.8999  | 0.9240  | 0.9478  |
| 56                         | 0.7786  | 0.8026  | 0.8261  | 0.8492  | 0.8720  | 0.8944  |
| 54                         | 0.7376  | 0.7603  | 0.7825  | 0.8044  | 0.8259  | 0.8471  |
| 52                         | 0.7011  | 0.7226  | 0.7437  | 0.7644  | 0.7848  | 0.8049  |
| 50                         | 0.6684  | 0.6888  | 0.7089  | 0.7286  | 0.7479  | 0.7670  |
| 48                         | 0.6389  | 0.6584  | 0.6775  | 0.6963  | 0.7147  | 0.7329  |
| 46                         | 0.6123  | 0.6309  | 0.6491  | 0.6670  | 0.6847  | 0.7021  |
| 44                         | 0.5881  | 0.6059  | 0.6233  | 0.6405  | 0.6574  | 0.6740  |
| 42                         | 0.5660  | 0.5831  | 0.5998  | 0.6163  | 0.6325  | 0.6484  |
| 40                         | 0.5458  | 0.5623  | 0.5783  | 0.5941  | 0.6097  | 0.6250  |
| 38                         | 0.5274  | 0.5431  | 0.5586  | 0.5738  | 0.5888  | 0.6036  |
| 36                         | 0.5104  | 0.5256  | 0.5405  | 0.5552  | 0.5696  | 0.5838  |
| 34                         | 0.4947  | 0.5094  | 0.5238  | 0.5379  | 0.5519  | 0.5656  |
| 32                         | 0.4803  | 0.4945  | 0.5084  | 0.5221  | 0.5355  | 0.5488  |
| 30                         | 0.4669  | 0.4807  | 0.4941  | 0.5073  | 0.5203  | 0.5332  |
| 28                         | 0.4545  | 0.4679  | 0.4809  | 0.4937  | 0.5063  | 0.5187  |
| 26                         | 0.4431  | 0.4560  | 0.4686  | 0.4811  | 0.4933  | 0.5053  |
| 24                         | 0.4324  | 0.4450  | 0.4572  | 0.4693  | 0.4812  | 0.4928  |
| 22                         | 0.4226  | 0.4347  | 0.4467  | 0.4584  | 0.4699  | 0.4812  |
| 20                         | 0.4134  | 0.4252  | 0.4368  | 0.4482  | 0.4594  | 0.4704  |
| 18                         | 0.4048  | 0.4164  | 0.4276  | 0.4387  | 0.4496  | 0.4604  |
| 16                         | 0.3969  | 0.4081  | 0.4191  | 0.4299  | 0.4405  | 0.4510  |
| 14                         | 0.3895  | 0.4004  | 0.4112  | 0.4217  | 0.4320  | 0.4422  |
| 12                         | 0.3827  | 0.3933  | 0.4038  | 0.4140  | 0.4241  | 0.4341  |
| 10                         | 0.3763  | 0.3867  | 0.3969  | 0.4069  | 0.4168  | 0.4265  |
| 8                          | 0.3704  | 0.3805  | 0.3905  | 0.4003  | 0.4099  | 0.4194  |
| 6                          | 0.3649  | 0.3748  | 0.3846  | 0.3941  | 0.4035  | 0.4128  |
| 4                          | 0.3598  | 0.3696  | 0.3791  | 0.3884  | 0.3976  | 0.4067  |
| 2                          | 0.3552  | 0.3647  | 0.3740  | 0.3831  | 0.3921  | 0.4010  |
| 0                          | 0.3509  | 0.3602  | 0.3693  | 0.3783  | 0.3870  | 0.3957  |

Table 3

| $\rho_0 \backslash \alpha$ | 0.13   | 0.14   | 0.15   | 0.16   | 0.17   | 0.18   |
|----------------------------|--------|--------|--------|--------|--------|--------|
| -2                         | 0.3470 | 0.3561 | 0.3650 | 0.3738 | 0.3824 | 0.3909 |
| -4                         | 0.3434 | 0.3523 | 0.3611 | 0.3697 | 0.3781 | 0.3864 |
| -6                         | 0.3402 | 0.3489 | 0.3575 | 0.3659 | 0.3742 | 0.3823 |
| -8                         | 0.3373 | 0.3459 | 0.3543 | 0.3625 | 0.3706 | 0.3786 |
| -10                        | 0.3347 | 0.3431 | 0.3514 | 0.3595 | 0.3674 | 0.3752 |
| -12                        | 0.3324 | 0.3407 | 0.3488 | 0.3568 | 0.3646 | 0.3722 |
| -14                        | 0.3305 | 0.3386 | 0.3466 | 0.3544 | 0.3620 | 0.3695 |
| -16                        | 0.3289 | 0.3369 | 0.3447 | 0.3523 | 0.3598 | 0.3672 |
| -18                        | 0.3276 | 0.3355 | 0.3431 | 0.3506 | 0.3580 | 0.3652 |
| -20                        | 0.3266 | 0.3343 | 0.3419 | 0.3493 | 0.3565 | 0.3636 |
| -22                        | 0.3260 | 0.3335 | 0.3410 | 0.3482 | 0.3553 | 0.3623 |
| -24                        | 0.3256 | 0.3331 | 0.3404 | 0.3475 | 0.3545 | 0.3614 |
| -26                        |        |        | 0.3402 | 0.3472 | 0.3540 | 0.3608 |
| -28                        |        |        |        |        |        | 0.3605 |
| -30                        |        |        |        |        |        |        |
| -32                        |        |        |        |        |        |        |
| -34                        |        |        |        |        |        |        |
| -36                        |        |        |        |        |        |        |
| -38                        |        |        |        |        |        |        |
| -40                        |        |        |        |        |        |        |
| -42                        |        |        |        |        |        |        |
| -44                        |        |        |        |        |        |        |
| -46                        |        |        |        |        |        |        |
| -48                        |        |        |        |        |        |        |
| -50                        |        |        |        |        |        |        |
| -52                        |        |        |        |        |        |        |
| -54                        |        |        |        |        |        |        |
| -56                        |        |        |        |        |        |        |
| -58                        |        |        |        |        |        |        |
| -60                        |        |        |        |        |        |        |
| -62                        |        |        |        |        |        |        |
| -64                        |        |        |        |        |        |        |
| -66                        |        |        |        |        |        |        |
| -68                        |        |        |        |        |        |        |
| -70                        |        |        |        |        |        |        |
| -72                        |        |        |        |        |        |        |
| -74                        |        |        |        |        |        |        |
| -76                        |        |        |        |        |        |        |
| -78                        |        |        |        |        |        |        |
| -80                        |        |        |        |        |        |        |
| -82                        |        |        |        |        |        |        |
| -84                        |        |        |        |        |        |        |
| -86                        |        |        |        |        |        |        |
| -88                        |        |        |        |        |        |        |
| -90                        |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 0.19    | 0.20    | 0.22    | 0.24    | 0.26    | 0.28    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 15.2435 | 15.6137 | 16.3423 | 17.0572 | 17.7604 | 18.4535 |
| 86                         | 7.6235  | 7.8086  | 8.1729  | 8.5304  | 8.8820  | 9.2285  |
| 84                         | 5.0842  | 5.2076  | 5.4505  | 5.6889  | 5.9233  | 6.1544  |
| 82                         | 3.8152  | 3.9077  | 4.0899  | 4.2687  | 4.4445  | 4.6179  |
| 80                         | 3.0542  | 3.1283  | 3.2740  | 3.4171  | 3.5577  | 3.6964  |
| 78                         | 2.5472  | 2.6090  | 2.7305  | 2.8497  | 2.9670  | 3.0826  |
| 76                         | 2.1855  | 2.2384  | 2.3426  | 2.4448  | 2.5453  | 2.6444  |
| 74                         | 1.9145  | 1.9608  | 2.0520  | 2.1414  | 2.2294  | 2.3161  |
| 72                         | 1.7039  | 1.7451  | 1.8262  | 1.9057  | 1.9839  | 2.0611  |
| 70                         | 1.5357  | 1.5728  | 1.6458  | 1.7174  | 1.7878  | 1.8573  |
| 68                         | 1.3983  | 1.4321  | 1.4984  | 1.5635  | 1.6276  | 1.6907  |
| 66                         | 1.2841  | 1.3150  | 1.3758  | 1.4355  | 1.4943  | 1.5522  |
| 64                         | 1.1875  | 1.2161  | 1.2723  | 1.3274  | 1.3817  | 1.4351  |
| 62                         | 1.1050  | 1.1315  | 1.1837  | 1.2350  | 1.2853  | 1.3350  |
| 60                         | 1.0336  | 1.0584  | 1.1072  | 1.1550  | 1.2020  | 1.2484  |
| 58                         | 0.9714  | 0.9946  | 1.0403  | 1.0852  | 1.1293  | 1.1728  |
| 56                         | 0.9166  | 0.9384  | 0.9815  | 1.0237  | 1.0653  | 1.1062  |
| 54                         | 0.8680  | 0.8887  | 0.9294  | 0.9693  | 1.0085  | 1.0473  |
| 52                         | 0.8247  | 0.8443  | 0.8829  | 0.9207  | 0.9579  | 0.9946  |
| 50                         | 0.7859  | 0.8045  | 0.8412  | 0.8771  | 0.9125  | 0.9474  |
| 48                         | 0.7509  | 0.7686  | 0.8036  | 0.8378  | 0.8716  | 0.9048  |
| 46                         | 0.7192  | 0.7362  | 0.7695  | 0.8023  | 0.8345  | 0.8662  |
| 44                         | 0.6904  | 0.7067  | 0.7386  | 0.7699  | 0.8008  | 0.8311  |
| 42                         | 0.6642  | 0.6797  | 0.7104  | 0.7404  | 0.7700  | 0.7991  |
| 40                         | 0.6402  | 0.6551  | 0.6845  | 0.7134  | 0.7418  | 0.7698  |
| 38                         | 0.6181  | 0.6325  | 0.6608  | 0.6886  | 0.7159  | 0.7429  |
| 36                         | 0.5978  | 0.6117  | 0.6390  | 0.6657  | 0.6921  | 0.7180  |
| 34                         | 0.5791  | 0.5925  | 0.6188  | 0.6446  | 0.6701  | 0.6951  |
| 32                         | 0.5618  | 0.5748  | 0.6002  | 0.6252  | 0.6497  | 0.6739  |
| 30                         | 0.5458  | 0.5583  | 0.5829  | 0.6071  | 0.6308  | 0.6543  |
| 28                         | 0.5310  | 0.5431  | 0.5669  | 0.5903  | 0.6133  | 0.6360  |
| 26                         | 0.5172  | 0.5289  | 0.5520  | 0.5747  | 0.5970  | 0.6190  |
| 24                         | 0.5044  | 0.5158  | 0.5382  | 0.5602  | 0.5818  | 0.6032  |
| 22                         | 0.4924  | 0.5035  | 0.5253  | 0.5466  | 0.5677  | 0.5884  |
| 20                         | 0.4813  | 0.4921  | 0.5132  | 0.5340  | 0.5544  | 0.5746  |
| 18                         | 0.4710  | 0.4814  | 0.5020  | 0.5222  | 0.5421  | 0.5617  |
| 16                         | 0.4613  | 0.4715  | 0.4915  | 0.5112  | 0.5306  | 0.5497  |
| 14                         | 0.4523  | 0.4622  | 0.4817  | 0.5009  | 0.5198  | 0.5384  |
| 12                         | 0.4439  | 0.4535  | 0.4726  | 0.4913  | 0.5097  | 0.5278  |
| 10                         | 0.4360  | 0.4455  | 0.4640  | 0.4823  | 0.5002  | 0.5179  |
| 8                          | 0.4287  | 0.4379  | 0.4561  | 0.4739  | 0.4914  | 0.5087  |
| 6                          | 0.4219  | 0.4309  | 0.4486  | 0.4660  | 0.4831  | 0.5000  |
| 4                          | 0.4156  | 0.4244  | 0.4417  | 0.4587  | 0.4754  | 0.4919  |
| 2                          | 0.4097  | 0.4183  | 0.4352  | 0.4519  | 0.4682  | 0.4843  |
| 0                          | 0.4042  | 0.4127  | 0.4292  | 0.4455  | 0.4615  | 0.4773  |

Table 3

| $\alpha \backslash \rho_0$ | 0.19   | 0.20   | 0.22   | 0.24   | 0.26   | 0.28   |
|----------------------------|--------|--------|--------|--------|--------|--------|
| -2                         | 0.3992 | 0.4075 | 0.4237 | 0.4396 | 0.4552 | 0.4707 |
| -4                         | 0.3946 | 0.4026 | 0.4185 | 0.4341 | 0.4494 | 0.4645 |
| -6                         | 0.3903 | 0.3982 | 0.4138 | 0.4290 | 0.4440 | 0.4588 |
| -8                         | 0.3864 | 0.3942 | 0.4094 | 0.4244 | 0.4391 | 0.4536 |
| -10                        | 0.3829 | 0.3905 | 0.4055 | 0.4201 | 0.4345 | 0.4487 |
| -12                        | 0.3798 | 0.3872 | 0.4019 | 0.4162 | 0.4303 | 0.4442 |
| -14                        | 0.3770 | 0.3843 | 0.3986 | 0.4127 | 0.4265 | 0.4402 |
| -16                        | 0.3745 | 0.3817 | 0.3957 | 0.4096 | 0.4231 | 0.4365 |
| -18                        | 0.3724 | 0.3794 | 0.3932 | 0.4068 | 0.4201 | 0.4332 |
| -20                        | 0.3706 | 0.3775 | 0.3911 | 0.4043 | 0.4174 | 0.4303 |
| -22                        | 0.3692 | 0.3760 | 0.3893 | 0.4023 | 0.4151 | 0.4277 |
| -24                        | 0.3681 | 0.3748 | 0.3878 | 0.4006 | 0.4132 | 0.4255 |
| -26                        | 0.3674 | 0.3739 | 0.3867 | 0.3993 | 0.4116 | 0.4238 |
| -28                        | 0.3671 | 0.3735 | 0.3861 | 0.3984 | 0.4104 | 0.4223 |
| -30                        |        |        | 0.3857 | 0.3978 | 0.4097 | 0.4213 |
| -32                        |        |        |        |        | 0.4093 | 0.4208 |
| -34                        |        |        |        |        |        |        |
| -36                        |        |        |        |        |        |        |
| -38                        |        |        |        |        |        |        |
| -40                        |        |        |        |        |        |        |
| -42                        |        |        |        |        |        |        |
| -44                        |        |        |        |        |        |        |
| -46                        |        |        |        |        |        |        |
| -48                        |        |        |        |        |        |        |
| -50                        |        |        |        |        |        |        |
| -52                        |        |        |        |        |        |        |
| -54                        |        |        |        |        |        |        |
| -56                        |        |        |        |        |        |        |
| -58                        |        |        |        |        |        |        |
| -60                        |        |        |        |        |        |        |
| -62                        |        |        |        |        |        |        |
| -64                        |        |        |        |        |        |        |
| -66                        |        |        |        |        |        |        |
| -68                        |        |        |        |        |        |        |
| -70                        |        |        |        |        |        |        |
| -72                        |        |        |        |        |        |        |
| -74                        |        |        |        |        |        |        |
| -76                        |        |        |        |        |        |        |
| -78                        |        |        |        |        |        |        |
| -80                        |        |        |        |        |        |        |
| -82                        |        |        |        |        |        |        |
| -84                        |        |        |        |        |        |        |
| -86                        |        |        |        |        |        |        |
| -88                        |        |        |        |        |        |        |
| -90                        |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\alpha \backslash \rho_0$ | 0.30    | 0.32    | 0.34    | 0.36    | 0.38    | 0.40    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 19.1378 | 19.8145 | 20.4843 | 21.1481 | 21.8065 | 22.4599 |
| 86                         | 9.5707  | 9.9091  | 10.2440 | 10.5759 | 10.9051 | 11.2319 |
| 84                         | 6.3825  | 6.6081  | 6.8314  | 7.0527  | 7.2722  | 7.4900  |
| 82                         | 4.7890  | 4.9582  | 5.1257  | 5.2917  | 5.4563  | 5.6198  |
| 80                         | 3.8334  | 3.9688  | 4.1028  | 4.2356  | 4.3673  | 4.4981  |
| 78                         | 3.1967  | 3.3095  | 3.4213  | 3.5320  | 3.6418  | 3.7507  |
| 76                         | 2.7423  | 2.8390  | 2.9348  | 3.0297  | 3.1239  | 3.2173  |
| 74                         | 2.4018  | 2.4864  | 2.5703  | 2.6533  | 2.7358  | 2.8175  |
| 72                         | 2.1372  | 2.2125  | 2.2870  | 2.3609  | 2.4342  | 2.5069  |
| 70                         | 1.9258  | 1.9936  | 2.0607  | 2.1272  | 2.1932  | 2.2587  |
| 68                         | 1.7531  | 1.8147  | 1.8758  | 1.9362  | 1.9962  | 2.0558  |
| 66                         | 1.6094  | 1.6659  | 1.7219  | 1.7773  | 1.8323  | 1.8870  |
| 64                         | 1.4879  | 1.5401  | 1.5918  | 1.6431  | 1.6939  | 1.7443  |
| 62                         | 1.3841  | 1.4326  | 1.4806  | 1.5282  | 1.5754  | 1.6223  |
| 60                         | 1.2942  | 1.3395  | 1.3843  | 1.4288  | 1.4729  | 1.5167  |
| 58                         | 1.2158  | 1.2583  | 1.3003  | 1.3420  | 1.3834  | 1.4244  |
| 56                         | 1.1467  | 1.1867  | 1.2263  | 1.2656  | 1.3046  | 1.3432  |
| 54                         | 1.0855  | 1.1233  | 1.1607  | 1.1978  | 1.2346  | 1.2712  |
| 52                         | 1.0309  | 1.0667  | 1.1022  | 1.1374  | 1.1723  | 1.2069  |
| 50                         | 0.9818  | 1.0159  | 1.0497  | 1.0831  | 1.1163  | 1.1492  |
| 48                         | 0.9376  | 0.9701  | 1.0023  | 1.0341  | 1.0658  | 1.0972  |
| 46                         | 0.8976  | 0.9286  | 0.9593  | 0.9898  | 1.0200  | 1.0500  |
| 44                         | 0.8612  | 0.8909  | 0.9203  | 0.9494  | 0.9783  | 1.0070  |
| 42                         | 0.8279  | 0.8564  | 0.8846  | 0.9125  | 0.9403  | 0.9678  |
| 40                         | 0.7975  | 0.8248  | 0.8519  | 0.8788  | 0.9054  | 0.9319  |
| 38                         | 0.7695  | 0.7958  | 0.8219  | 0.8477  | 0.8734  | 0.8988  |
| 36                         | 0.7437  | 0.7691  | 0.7942  | 0.8191  | 0.8438  | 0.8684  |
| 34                         | 0.7199  | 0.7444  | 0.7686  | 0.7927  | 0.8165  | 0.8402  |
| 32                         | 0.6978  | 0.7215  | 0.7449  | 0.7682  | 0.7912  | 0.8141  |
| 30                         | 0.6774  | 0.7003  | 0.7230  | 0.7455  | 0.7678  | 0.7899  |
| 28                         | 0.6584  | 0.6806  | 0.7025  | 0.7243  | 0.7459  | 0.7674  |
| 26                         | 0.6407  | 0.6622  | 0.6835  | 0.7046  | 0.7256  | 0.7464  |
| 24                         | 0.6243  | 0.6451  | 0.6658  | 0.6863  | 0.7066  | 0.7268  |
| 22                         | 0.6089  | 0.6291  | 0.6492  | 0.6691  | 0.6889  | 0.7086  |
| 20                         | 0.5945  | 0.6142  | 0.6338  | 0.6531  | 0.6723  | 0.6914  |
| 18                         | 0.5811  | 0.6003  | 0.6193  | 0.6381  | 0.6568  | 0.6754  |
| 16                         | 0.5685  | 0.5872  | 0.6057  | 0.6241  | 0.6423  | 0.6604  |
| 14                         | 0.5568  | 0.5750  | 0.5930  | 0.6109  | 0.6286  | 0.6463  |
| 12                         | 0.5458  | 0.5635  | 0.5811  | 0.5985  | 0.6158  | 0.6331  |
| 10                         | 0.5354  | 0.5527  | 0.5699  | 0.5869  | 0.6038  | 0.6206  |
| 8                          | 0.5258  | 0.5427  | 0.5594  | 0.5760  | 0.5925  | 0.6089  |
| 6                          | 0.5167  | 0.5332  | 0.5496  | 0.5658  | 0.5819  | 0.5980  |
| 4                          | 0.5082  | 0.5243  | 0.5403  | 0.5562  | 0.5720  | 0.5877  |
| 2                          | 0.5003  | 0.5160  | 0.5317  | 0.5472  | 0.5626  | 0.5780  |
| 0                          | 0.4929  | 0.5083  | 0.5236  | 0.5388  | 0.5539  | 0.5688  |

Table 3

| $\rho_0$<br>$\alpha$ | 0.30   | 0.32   | 0.34   | 0.36   | 0.38   | 0.40   |
|----------------------|--------|--------|--------|--------|--------|--------|
| -2                   | 0.4859 | 0.5010 | 0.5160 | 0.5309 | 0.5456 | 0.5603 |
| -4                   | 0.4795 | 0.4943 | 0.5089 | 0.5235 | 0.5379 | 0.5523 |
| -6                   | 0.4735 | 0.4880 | 0.5023 | 0.5166 | 0.5307 | 0.5448 |
| -8                   | 0.4679 | 0.4821 | 0.4962 | 0.5101 | 0.5240 | 0.5378 |
| -10                  | 0.4628 | 0.4766 | 0.4904 | 0.5041 | 0.5177 | 0.5313 |
| -12                  | 0.4580 | 0.4716 | 0.4851 | 0.4986 | 0.5119 | 0.5252 |
| -14                  | 0.4537 | 0.4670 | 0.4803 | 0.4934 | 0.5065 | 0.5195 |
| -16                  | 0.4497 | 0.4628 | 0.4758 | 0.4887 | 0.5015 | 0.5143 |
| -18                  | 0.4462 | 0.4590 | 0.4718 | 0.4844 | 0.4970 | 0.5095 |
| -20                  | 0.4430 | 0.4556 | 0.4681 | 0.4805 | 0.4928 | 0.5051 |
| -22                  | 0.4402 | 0.4525 | 0.4648 | 0.4770 | 0.4891 | 0.5011 |
| -24                  | 0.4378 | 0.4499 | 0.4619 | 0.4738 | 0.4857 | 0.4975 |
| -26                  | 0.4358 | 0.4476 | 0.4594 | 0.4711 | 0.4828 | 0.4944 |
| -28                  | 0.4341 | 0.4458 | 0.4573 | 0.4688 | 0.4802 | 0.4916 |
| -30                  | 0.4329 | 0.4443 | 0.4556 | 0.4669 | 0.4780 | 0.4892 |
| -32                  | 0.4320 | 0.4432 | 0.4543 | 0.4653 | 0.4763 | 0.4872 |
| -34                  | 0.4316 | 0.4426 | 0.4535 | 0.4643 | 0.4750 | 0.4857 |
| -36                  |        |        | 0.4531 | 0.4636 | 0.4742 | 0.4846 |
| -38                  |        |        |        |        | 0.4737 | 0.4840 |
| -40                  |        |        |        |        |        |        |
| -42                  |        |        |        |        |        |        |
| -44                  |        |        |        |        |        |        |
| -46                  |        |        |        |        |        |        |
| -48                  |        |        |        |        |        |        |
| -50                  |        |        |        |        |        |        |
| -52                  |        |        |        |        |        |        |
| -54                  |        |        |        |        |        |        |
| -56                  |        |        |        |        |        |        |
| -58                  |        |        |        |        |        |        |
| -60                  |        |        |        |        |        |        |
| -62                  |        |        |        |        |        |        |
| -64                  |        |        |        |        |        |        |
| -66                  |        |        |        |        |        |        |
| -68                  |        |        |        |        |        |        |
| -70                  |        |        |        |        |        |        |
| -72                  |        |        |        |        |        |        |
| -74                  |        |        |        |        |        |        |
| -76                  |        |        |        |        |        |        |
| -78                  |        |        |        |        |        |        |
| -80                  |        |        |        |        |        |        |
| -82                  |        |        |        |        |        |        |
| -84                  |        |        |        |        |        |        |
| -86                  |        |        |        |        |        |        |
| -88                  |        |        |        |        |        |        |
| -90                  |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 0.42    | 0.44    | 0.46    | 0.48    | 0.50    | 0.52    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 23.1089 | 23.7539 | 24.3952 | 25.0332 | 25.6680 | 26.3000 |
| 86                         | 11.5564 | 11.8789 | 12.1996 | 12.5186 | 12.8360 | 13.1520 |
| 84                         | 7.7064  | 7.9214  | 8.1353  | 8.3479  | 8.5596  | 8.7703  |
| 82                         | 5.7821  | 5.9434  | 6.1037  | 6.2633  | 6.4221  | 6.5801  |
| 80                         | 4.6280  | 4.7570  | 4.8854  | 5.0130  | 5.1401  | 5.2665  |
| 78                         | 3.8590  | 3.9666  | 4.0736  | 4.1800  | 4.2859  | 4.3913  |
| 76                         | 3.3101  | 3.4024  | 3.4941  | 3.5853  | 3.6761  | 3.7665  |
| 74                         | 2.8988  | 2.9795  | 3.0598  | 3.1397  | 3.2191  | 3.2983  |
| 72                         | 2.5791  | 2.6509  | 2.7223  | 2.7933  | 2.8640  | 2.9344  |
| 70                         | 2.3237  | 2.3883  | 2.4526  | 2.5166  | 2.5802  | 2.6436  |
| 68                         | 2.1150  | 2.1737  | 2.2322  | 2.2904  | 2.3483  | 2.4059  |
| 66                         | 1.9412  | 1.9951  | 2.0488  | 2.1021  | 2.1552  | 2.2080  |
| 64                         | 1.7944  | 1.8442  | 1.8938  | 1.9430  | 1.9921  | 2.0409  |
| 62                         | 1.6688  | 1.7151  | 1.7611  | 1.8069  | 1.8524  | 1.8978  |
| 60                         | 1.5601  | 1.6033  | 1.6463  | 1.6891  | 1.7316  | 1.7740  |
| 58                         | 1.4652  | 1.5057  | 1.5461  | 1.5862  | 1.6261  | 1.6658  |
| 56                         | 1.3816  | 1.4198  | 1.4578  | 1.4956  | 1.5332  | 1.5706  |
| 54                         | 1.3075  | 1.3436  | 1.3795  | 1.4152  | 1.4507  | 1.4861  |
| 52                         | 1.2413  | 1.2755  | 1.3096  | 1.3434  | 1.3771  | 1.4107  |
| 50                         | 1.1819  | 1.2145  | 1.2468  | 1.2790  | 1.3111  | 1.3430  |
| 48                         | 1.1284  | 1.1594  | 1.1902  | 1.2209  | 1.2514  | 1.2819  |
| 46                         | 1.0798  | 1.1094  | 1.1389  | 1.1682  | 1.1974  | 1.2265  |
| 44                         | 1.0356  | 1.0639  | 1.0921  | 1.1202  | 1.1482  | 1.1760  |
| 42                         | 0.9952  | 1.0224  | 1.0495  | 1.0764  | 1.1032  | 1.1299  |
| 40                         | 0.9582  | 0.9843  | 1.0103  | 1.0362  | 1.0620  | 1.0877  |
| 38                         | 0.9241  | 0.9493  | 0.9743  | 0.9993  | 1.0241  | 1.0488  |
| 36                         | 0.8928  | 0.9170  | 0.9412  | 0.9652  | 0.9891  | 1.0129  |
| 34                         | 0.8638  | 0.8872  | 0.9105  | 0.9337  | 0.9568  | 0.9798  |
| 32                         | 0.8369  | 0.8595  | 0.8821  | 0.9045  | 0.9268  | 0.9490  |
| 30                         | 0.8120  | 0.8339  | 0.8557  | 0.8774  | 0.8990  | 0.9205  |
| 28                         | 0.7887  | 0.8100  | 0.8311  | 0.8521  | 0.8730  | 0.8939  |
| 26                         | 0.7671  | 0.7877  | 0.8082  | 0.8286  | 0.8489  | 0.8691  |
| 24                         | 0.7469  | 0.7669  | 0.7868  | 0.8066  | 0.8263  | 0.8460  |
| 22                         | 0.7281  | 0.7475  | 0.7668  | 0.7861  | 0.8052  | 0.8243  |
| 20                         | 0.7104  | 0.7293  | 0.7481  | 0.7668  | 0.7855  | 0.8041  |
| 18                         | 0.6939  | 0.7123  | 0.7306  | 0.7488  | 0.7670  | 0.7850  |
| 16                         | 0.6784  | 0.6963  | 0.7141  | 0.7319  | 0.7496  | 0.7672  |
| 14                         | 0.6638  | 0.6813  | 0.6987  | 0.7160  | 0.7332  | 0.7504  |
| 12                         | 0.6502  | 0.6672  | 0.6841  | 0.7010  | 0.7179  | 0.7346  |
| 10                         | 0.6373  | 0.6539  | 0.6705  | 0.6870  | 0.7034  | 0.7198  |
| 8                          | 0.6252  | 0.6415  | 0.6576  | 0.6738  | 0.6898  | 0.7058  |
| 6                          | 0.6139  | 0.6298  | 0.6456  | 0.6613  | 0.6770  | 0.6926  |
| 4                          | 0.6032  | 0.6187  | 0.6342  | 0.6496  | 0.6649  | 0.6802  |
| 2                          | 0.5932  | 0.6084  | 0.6235  | 0.6385  | 0.6536  | 0.6685  |
| 0                          | 0.5838  | 0.5986  | 0.6134  | 0.6282  | 0.6429  | 0.6575  |

Table 3

| $\rho_0 \backslash \alpha$ | 0.42   | 0.44   | 0.46   | 0.48   | 0.50   | 0.52   |
|----------------------------|--------|--------|--------|--------|--------|--------|
| -2                         | 0.5749 | 0.5895 | 0.6040 | 0.6184 | 0.6328 | 0.6471 |
| -4                         | 0.5666 | 0.5809 | 0.5950 | 0.6092 | 0.6233 | 0.6374 |
| -6                         | 0.5588 | 0.5728 | 0.5867 | 0.6005 | 0.6144 | 0.6281 |
| -8                         | 0.5515 | 0.5652 | 0.5788 | 0.5924 | 0.6060 | 0.6195 |
| -10                        | 0.5447 | 0.5581 | 0.5715 | 0.5848 | 0.5981 | 0.6114 |
| -12                        | 0.5384 | 0.5515 | 0.5646 | 0.5777 | 0.5907 | 0.6038 |
| -14                        | 0.5325 | 0.5454 | 0.5582 | 0.5711 | 0.5839 | 0.5966 |
| -16                        | 0.5270 | 0.5397 | 0.5523 | 0.5649 | 0.5774 | 0.5900 |
| -18                        | 0.5220 | 0.5344 | 0.5468 | 0.5591 | 0.5714 | 0.5838 |
| -20                        | 0.5173 | 0.5295 | 0.5417 | 0.5538 | 0.5659 | 0.5780 |
| -22                        | 0.5131 | 0.5251 | 0.5370 | 0.5489 | 0.5608 | 0.5727 |
| -24                        | 0.5093 | 0.5210 | 0.5327 | 0.5444 | 0.5561 | 0.5677 |
| -26                        | 0.5059 | 0.5174 | 0.5289 | 0.5404 | 0.5518 | 0.5633 |
| -28                        | 0.5029 | 0.5142 | 0.5255 | 0.5367 | 0.5480 | 0.5592 |
| -30                        | 0.5003 | 0.5114 | 0.5224 | 0.5335 | 0.5445 | 0.5556 |
| -32                        | 0.4981 | 0.5090 | 0.5199 | 0.5307 | 0.5415 | 0.5523 |
| -34                        | 0.4964 | 0.5070 | 0.5177 | 0.5283 | 0.5389 | 0.5496 |
| -36                        | 0.4951 | 0.5055 | 0.5159 | 0.5264 | 0.5368 | 0.5472 |
| -38                        | 0.4942 | 0.5045 | 0.5146 | 0.5249 | 0.5351 | 0.5453 |
| -40                        | 0.4938 | 0.5038 | 0.5138 | 0.5238 | 0.5338 | 0.5438 |
| -42                        |        |        | 0.5135 | 0.5233 | 0.5331 | 0.5428 |
| -44                        |        |        |        |        | 0.5328 | 0.5423 |
| -46                        |        |        |        |        |        |        |
| -48                        |        |        |        |        |        |        |
| -50                        |        |        |        |        |        |        |
| -52                        |        |        |        |        |        |        |
| -54                        |        |        |        |        |        |        |
| -56                        |        |        |        |        |        |        |
| -58                        |        |        |        |        |        |        |
| -60                        |        |        |        |        |        |        |
| -62                        |        |        |        |        |        |        |
| -64                        |        |        |        |        |        |        |
| -66                        |        |        |        |        |        |        |
| -68                        |        |        |        |        |        |        |
| -70                        |        |        |        |        |        |        |
| -72                        |        |        |        |        |        |        |
| -74                        |        |        |        |        |        |        |
| -76                        |        |        |        |        |        |        |
| -78                        |        |        |        |        |        |        |
| -80                        |        |        |        |        |        |        |
| -82                        |        |        |        |        |        |        |
| -84                        |        |        |        |        |        |        |
| -86                        |        |        |        |        |        |        |
| -88                        |        |        |        |        |        |        |
| -90                        |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\alpha \backslash \rho_0$ | 0.54    | 0.56    | 0.58    | 0.60    | 0.62    | 0.64    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 26.9293 | 27.5562 | 28.1808 | 28.8033 | 29.4238 | 30.0424 |
| 86                         | 13.4667 | 13.7802 | 14.0925 | 14.4038 | 14.7141 | 15.0234 |
| 84                         | 8.9801  | 9.1891  | 9.3974  | 9.6049  | 9.8118  | 10.0180 |
| 82                         | 6.7375  | 6.8943  | 7.0505  | 7.2062  | 7.3614  | 7.5161  |
| 80                         | 5.3925  | 5.5179  | 5.6429  | 5.7675  | 5.8917  | 6.0155  |
| 78                         | 4.4963  | 4.6008  | 4.7050  | 4.8089  | 4.9124  | 5.0156  |
| 76                         | 3.8565  | 3.9462  | 4.0355  | 4.1246  | 4.2133  | 4.3018  |
| 74                         | 3.3771  | 3.4555  | 3.5337  | 3.6117  | 3.6894  | 3.7669  |
| 72                         | 3.0044  | 3.0743  | 3.1438  | 3.2131  | 3.2822  | 3.3511  |
| 70                         | 2.7066  | 2.7695  | 2.8321  | 2.8946  | 2.9568  | 3.0188  |
| 68                         | 2.4633  | 2.5204  | 2.5774  | 2.6342  | 2.6908  | 2.7472  |
| 66                         | 2.2607  | 2.3131  | 2.3654  | 2.4174  | 2.4694  | 2.5211  |
| 64                         | 2.0895  | 2.1379  | 2.1862  | 2.2343  | 2.2823  | 2.3301  |
| 62                         | 1.9430  | 1.9880  | 2.0328  | 2.0775  | 2.1221  | 2.1665  |
| 60                         | 1.8162  | 1.8582  | 1.9001  | 1.9419  | 1.9835  | 2.0250  |
| 58                         | 1.7054  | 1.7449  | 1.7842  | 1.8234  | 1.8624  | 1.9014  |
| 56                         | 1.6079  | 1.6451  | 1.6821  | 1.7190  | 1.7558  | 1.7925  |
| 54                         | 1.5214  | 1.5565  | 1.5915  | 1.6264  | 1.6612  | 1.6959  |
| 52                         | 1.4441  | 1.4774  | 1.5106  | 1.5437  | 1.5767  | 1.6096  |
| 50                         | 1.3748  | 1.4064  | 1.4380  | 1.4695  | 1.5008  | 1.5321  |
| 48                         | 1.3122  | 1.3424  | 1.3724  | 1.4024  | 1.4324  | 1.4622  |
| 46                         | 1.2554  | 1.2843  | 1.3130  | 1.3417  | 1.3703  | 1.3988  |
| 44                         | 1.2037  | 1.2314  | 1.2589  | 1.2864  | 1.3137  | 1.3410  |
| 42                         | 1.1565  | 1.1830  | 1.2094  | 1.2358  | 1.2621  | 1.2882  |
| 40                         | 1.1132  | 1.1387  | 1.1641  | 1.1894  | 1.2147  | 1.2399  |
| 38                         | 1.0734  | 1.0979  | 1.1224  | 1.1468  | 1.1711  | 1.1953  |
| 36                         | 1.0367  | 1.0603  | 1.0839  | 1.1074  | 1.1308  | 1.1542  |
| 34                         | 1.0027  | 1.0255  | 1.0483  | 1.0710  | 1.0936  | 1.1162  |
| 32                         | 0.9712  | 0.9933  | 1.0153  | 1.0372  | 1.0591  | 1.0809  |
| 30                         | 0.9419  | 0.9633  | 0.9846  | 1.0059  | 1.0271  | 1.0482  |
| 28                         | 0.9147  | 0.9354  | 0.9560  | 0.9766  | 0.9972  | 1.0177  |
| 26                         | 0.8893  | 0.9094  | 0.9294  | 0.9494  | 0.9693  | 0.9892  |
| 24                         | 0.8656  | 0.8851  | 0.9045  | 0.9239  | 0.9433  | 0.9626  |
| 22                         | 0.8434  | 0.8623  | 0.8812  | 0.9001  | 0.9189  | 0.9377  |
| 20                         | 0.8226  | 0.8410  | 0.8594  | 0.8778  | 0.8961  | 0.9144  |
| 18                         | 0.8031  | 0.8210  | 0.8389  | 0.8568  | 0.8747  | 0.8925  |
| 16                         | 0.7847  | 0.8023  | 0.8197  | 0.8371  | 0.8545  | 0.8719  |
| 14                         | 0.7675  | 0.7846  | 0.8016  | 0.8186  | 0.8356  | 0.8525  |
| 12                         | 0.7513  | 0.7680  | 0.7846  | 0.8012  | 0.8178  | 0.8343  |
| 10                         | 0.7361  | 0.7524  | 0.7686  | 0.7848  | 0.8010  | 0.8171  |
| 8                          | 0.7217  | 0.7376  | 0.7535  | 0.7693  | 0.7851  | 0.8009  |
| 6                          | 0.7082  | 0.7238  | 0.7393  | 0.7548  | 0.7702  | 0.7856  |
| 4                          | 0.6955  | 0.7107  | 0.7259  | 0.7410  | 0.7561  | 0.7712  |
| 2                          | 0.6834  | 0.6983  | 0.7132  | 0.7280  | 0.7428  | 0.7576  |
| 0                          | 0.6721  | 0.6867  | 0.7013  | 0.7158  | 0.7303  | 0.7448  |

Table 3

| $\alpha \backslash \rho_0$ | 0.54   | 0.56   | 0.58   | 0.60   | 0.62   | 0.64   |
|----------------------------|--------|--------|--------|--------|--------|--------|
| -2                         | 0.6614 | 0.6757 | 0.6900 | 0.7042 | 0.7184 | 0.7326 |
| -4                         | 0.6514 | 0.6654 | 0.6794 | 0.6933 | 0.7072 | 0.7211 |
| -6                         | 0.6419 | 0.6556 | 0.6693 | 0.6830 | 0.6967 | 0.7103 |
| -8                         | 0.6330 | 0.6465 | 0.6599 | 0.6733 | 0.6867 | 0.7001 |
| -10                        | 0.6246 | 0.6378 | 0.6510 | 0.6642 | 0.6773 | 0.6905 |
| -12                        | 0.6167 | 0.6297 | 0.6427 | 0.6556 | 0.6685 | 0.6814 |
| -14                        | 0.6094 | 0.6221 | 0.6348 | 0.6475 | 0.6602 | 0.6729 |
| -16                        | 0.6025 | 0.6150 | 0.6274 | 0.6399 | 0.6524 | 0.6648 |
| -18                        | 0.5960 | 0.6083 | 0.6206 | 0.6328 | 0.6451 | 0.6573 |
| -20                        | 0.5900 | 0.6021 | 0.6141 | 0.6262 | 0.6382 | 0.6503 |
| -22                        | 0.5845 | 0.5964 | 0.6082 | 0.6200 | 0.6318 | 0.6437 |
| -24                        | 0.5794 | 0.5910 | 0.6027 | 0.6143 | 0.6259 | 0.6375 |
| -26                        | 0.5747 | 0.5861 | 0.5976 | 0.6090 | 0.6204 | 0.6319 |
| -28                        | 0.5704 | 0.5817 | 0.5929 | 0.6041 | 0.6154 | 0.6266 |
| -30                        | 0.5666 | 0.5776 | 0.5887 | 0.5997 | 0.6107 | 0.6218 |
| -32                        | 0.5632 | 0.5740 | 0.5849 | 0.5957 | 0.6065 | 0.6174 |
| -34                        | 0.5602 | 0.5708 | 0.5815 | 0.5921 | 0.6028 | 0.6135 |
| -36                        | 0.5576 | 0.5681 | 0.5785 | 0.5890 | 0.5994 | 0.6099 |
| -38                        | 0.5555 | 0.5658 | 0.5760 | 0.5863 | 0.5966 | 0.6069 |
| -40                        | 0.5538 | 0.5639 | 0.5739 | 0.5840 | 0.5941 | 0.6042 |
| -42                        | 0.5526 | 0.5625 | 0.5723 | 0.5822 | 0.5921 | 0.6021 |
| -44                        | 0.5519 | 0.5616 | 0.5712 | 0.5809 | 0.5906 | 0.6003 |
| -46                        |        | 0.5612 | 0.5706 | 0.5801 | 0.5896 | 0.5991 |
| -48                        |        |        |        | 0.5798 | 0.5891 | 0.5984 |
| -50                        |        |        |        |        |        |        |
| -52                        |        |        |        |        |        |        |
| -54                        |        |        |        |        |        |        |
| -56                        |        |        |        |        |        |        |
| -58                        |        |        |        |        |        |        |
| -60                        |        |        |        |        |        |        |
| -62                        |        |        |        |        |        |        |
| -64                        |        |        |        |        |        |        |
| -66                        |        |        |        |        |        |        |
| -68                        |        |        |        |        |        |        |
| -70                        |        |        |        |        |        |        |
| -72                        |        |        |        |        |        |        |
| -74                        |        |        |        |        |        |        |
| -76                        |        |        |        |        |        |        |
| -78                        |        |        |        |        |        |        |
| -80                        |        |        |        |        |        |        |
| -82                        |        |        |        |        |        |        |
| -84                        |        |        |        |        |        |        |
| -86                        |        |        |        |        |        |        |
| -88                        |        |        |        |        |        |        |
| -90                        |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\alpha \backslash \rho_0$ | 0.66    | 0.68    | 0.70    | 0.72    | 0.74    | 0.76    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 30.6593 | 31.2746 | 31.8883 | 32.5006 | 33.1116 | 33.7212 |
| 86                         | 15.3319 | 15.6395 | 15.9464 | 16.2526 | 16.5581 | 16.8630 |
| 84                         | 10.2237 | 10.4289 | 10.6335 | 10.8376 | 11.0413 | 11.2446 |
| 82                         | 7.6704  | 7.8243  | 7.9778  | 8.1309  | 8.2837  | 8.4362  |
| 80                         | 6.1390  | 6.2621  | 6.3850  | 6.5075  | 6.6298  | 6.7518  |
| 78                         | 5.1185  | 5.2212  | 5.3236  | 5.4257  | 5.5277  | 5.6294  |
| 76                         | 4.3901  | 4.4781  | 4.5659  | 4.6535  | 4.7409  | 4.8281  |
| 74                         | 3.8441  | 3.9212  | 3.9980  | 4.0747  | 4.1512  | 4.2276  |
| 72                         | 3.4198  | 3.4883  | 3.5567  | 3.6249  | 3.6930  | 3.7609  |
| 70                         | 3.0807  | 3.1424  | 3.2039  | 3.2654  | 3.3266  | 3.3878  |
| 68                         | 2.8035  | 2.8596  | 2.9156  | 2.9715  | 3.0272  | 3.0829  |
| 66                         | 2.5728  | 2.6242  | 2.6756  | 2.7268  | 2.7780  | 2.8290  |
| 64                         | 2.3778  | 2.4253  | 2.4728  | 2.5201  | 2.5674  | 2.6145  |
| 62                         | 2.2108  | 2.2550  | 2.2991  | 2.3431  | 2.3870  | 2.4309  |
| 60                         | 2.0664  | 2.1077  | 2.1489  | 2.1900  | 2.2310  | 2.2719  |
| 58                         | 1.9402  | 1.9789  | 2.0176  | 2.0562  | 2.0947  | 2.1331  |
| 56                         | 1.8291  | 1.8656  | 1.9020  | 1.9383  | 1.9746  | 2.0107  |
| 54                         | 1.7304  | 1.7649  | 1.7994  | 1.8337  | 1.8680  | 1.9022  |
| 52                         | 1.6424  | 1.6751  | 1.7078  | 1.7403  | 1.7729  | 1.8053  |
| 50                         | 1.5633  | 1.5944  | 1.6255  | 1.6565  | 1.6874  | 1.7183  |
| 48                         | 1.4919  | 1.5216  | 1.5512  | 1.5808  | 1.6103  | 1.6397  |
| 46                         | 1.4272  | 1.4556  | 1.4839  | 1.5121  | 1.5403  | 1.5684  |
| 44                         | 1.3683  | 1.3954  | 1.4225  | 1.4496  | 1.4766  | 1.5035  |
| 42                         | 1.3144  | 1.3405  | 1.3665  | 1.3924  | 1.4183  | 1.4442  |
| 40                         | 1.2650  | 1.2900  | 1.3150  | 1.3400  | 1.3649  | 1.3898  |
| 38                         | 1.2195  | 1.2436  | 1.2677  | 1.2917  | 1.3157  | 1.3397  |
| 36                         | 1.1776  | 1.2008  | 1.2240  | 1.2472  | 1.2704  | 1.2935  |
| 34                         | 1.1387  | 1.1612  | 1.1836  | 1.2060  | 1.2284  | 1.2507  |
| 32                         | 1.1027  | 1.1245  | 1.1462  | 1.1678  | 1.1894  | 1.2110  |
| 30                         | 1.0693  | 1.0903  | 1.1113  | 1.1323  | 1.1532  | 1.1741  |
| 28                         | 1.0381  | 1.0585  | 1.0789  | 1.0992  | 1.1195  | 1.1398  |
| 26                         | 1.0091  | 1.0288  | 1.0486  | 1.0683  | 1.0880  | 1.1077  |
| 24                         | 0.9819  | 1.0011  | 1.0203  | 1.0395  | 1.0586  | 1.0777  |
| 22                         | 0.9564  | 0.9751  | 0.9938  | 1.0124  | 1.0310  | 1.0496  |
| 20                         | 0.9326  | 0.9508  | 0.9690  | 0.9871  | 1.0052  | 1.0233  |
| 18                         | 0.9102  | 0.9279  | 0.9456  | 0.9633  | 0.9809  | 0.9986  |
| 16                         | 0.8892  | 0.9065  | 0.9237  | 0.9409  | 0.9581  | 0.9753  |
| 14                         | 0.8694  | 0.8863  | 0.9031  | 0.9199  | 0.9367  | 0.9534  |
| 12                         | 0.8508  | 0.8672  | 0.8837  | 0.9001  | 0.9165  | 0.9328  |
| 10                         | 0.8332  | 0.8493  | 0.8653  | 0.8814  | 0.8974  | 0.9134  |
| 8                          | 0.8167  | 0.8324  | 0.8481  | 0.8637  | 0.8794  | 0.8950  |
| 6                          | 0.8010  | 0.8164  | 0.8318  | 0.8471  | 0.8624  | 0.8777  |
| 4                          | 0.7863  | 0.8013  | 0.8164  | 0.8314  | 0.8464  | 0.8613  |
| 2                          | 0.7724  | 0.7871  | 0.8018  | 0.8165  | 0.8312  | 0.8459  |
| 0                          | 0.7592  | 0.7736  | 0.7881  | 0.8025  | 0.8169  | 0.8312  |

Table 3

| $\rho_0 \backslash \alpha$ | 0.66   | 0.68   | 0.70   | 0.72   | 0.74   | 0.76   |
|----------------------------|--------|--------|--------|--------|--------|--------|
| -2                         | 0.7468 | 0.7609 | 0.7751 | 0.7892 | 0.8033 | 0.8174 |
| -4                         | 0.7350 | 0.7489 | 0.7628 | 0.7766 | 0.7905 | 0.8043 |
| -6                         | 0.7240 | 0.7376 | 0.7512 | 0.7648 | 0.7783 | 0.7919 |
| -8                         | 0.7135 | 0.7268 | 0.7402 | 0.7535 | 0.7669 | 0.7802 |
| -10                        | 0.7036 | 0.7167 | 0.7298 | 0.7429 | 0.7560 | 0.7691 |
| -12                        | 0.6943 | 0.7072 | 0.7201 | 0.7329 | 0.7458 | 0.7587 |
| -14                        | 0.6855 | 0.6982 | 0.7108 | 0.7235 | 0.7361 | 0.7488 |
| -16                        | 0.6773 | 0.6897 | 0.7022 | 0.7146 | 0.7270 | 0.7394 |
| -18                        | 0.6695 | 0.6818 | 0.6940 | 0.7062 | 0.7184 | 0.7307 |
| -20                        | 0.6623 | 0.6743 | 0.6863 | 0.6983 | 0.7104 | 0.7224 |
| -22                        | 0.6555 | 0.6673 | 0.6791 | 0.6910 | 0.7028 | 0.7146 |
| -24                        | 0.6492 | 0.6608 | 0.6724 | 0.6841 | 0.6957 | 0.7073 |
| -26                        | 0.6433 | 0.6547 | 0.6662 | 0.6776 | 0.6891 | 0.7005 |
| -28                        | 0.6378 | 0.6491 | 0.6604 | 0.6716 | 0.6829 | 0.6942 |
| -30                        | 0.6328 | 0.6439 | 0.6550 | 0.6661 | 0.6772 | 0.6883 |
| -32                        | 0.6283 | 0.6392 | 0.6501 | 0.6610 | 0.6719 | 0.6828 |
| -34                        | 0.6241 | 0.6349 | 0.6456 | 0.6563 | 0.6670 | 0.6778 |
| -36                        | 0.6205 | 0.6310 | 0.6415 | 0.6521 | 0.6626 | 0.6732 |
| -38                        | 0.6172 | 0.6275 | 0.6379 | 0.6483 | 0.6587 | 0.6691 |
| -40                        | 0.6144 | 0.6245 | 0.6347 | 0.6449 | 0.6552 | 0.6654 |
| -42                        | 0.6120 | 0.6220 | 0.6320 | 0.6420 | 0.6521 | 0.6622 |
| -44                        | 0.6101 | 0.6199 | 0.6297 | 0.6396 | 0.6495 | 0.6594 |
| -46                        | 0.6087 | 0.6183 | 0.6279 | 0.6376 | 0.6473 | 0.6571 |
| -48                        | 0.6078 | 0.6172 | 0.6266 | 0.6361 | 0.6457 | 0.6552 |
| -50                        | 0.6074 | 0.6166 | 0.6259 | 0.6352 | 0.6445 | 0.6539 |
| -52                        |        |        |        | 0.6347 | 0.6439 | 0.6531 |
| -54                        |        |        |        |        |        |        |
| -56                        |        |        |        |        |        |        |
| -58                        |        |        |        |        |        |        |
| -60                        |        |        |        |        |        |        |
| -62                        |        |        |        |        |        |        |
| -64                        |        |        |        |        |        |        |
| -66                        |        |        |        |        |        |        |
| -68                        |        |        |        |        |        |        |
| -70                        |        |        |        |        |        |        |
| -72                        |        |        |        |        |        |        |
| -74                        |        |        |        |        |        |        |
| -76                        |        |        |        |        |        |        |
| -78                        |        |        |        |        |        |        |
| -80                        |        |        |        |        |        |        |
| -82                        |        |        |        |        |        |        |
| -84                        |        |        |        |        |        |        |
| -86                        |        |        |        |        |        |        |
| -88                        |        |        |        |        |        |        |
| -90                        |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 0.78    | 0.80    | 0.82    | 0.84    | 0.86    | 0.88    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 34.3296 | 34.9369 | 35.5431 | 36.1482 | 36.7524 | 37.3556 |
| 86                         | 17.1672 | 17.4709 | 17.7740 | 18.0766 | 18.3787 | 18.6803 |
| 84                         | 11.4475 | 11.6499 | 11.8521 | 12.0538 | 12.2553 | 12.4564 |
| 82                         | 8.5884  | 8.7403  | 8.8919  | 9.0433  | 9.1944  | 9.3453  |
| 80                         | 6.8736  | 6.9951  | 7.1165  | 7.2376  | 7.3585  | 7.4793  |
| 78                         | 5.7309  | 5.8322  | 5.9334  | 6.0344  | 6.1352  | 6.2358  |
| 76                         | 4.9152  | 5.0021  | 5.0888  | 5.1754  | 5.2619  | 5.3482  |
| 74                         | 4.3038  | 4.3799  | 4.4558  | 4.5316  | 4.6073  | 4.6828  |
| 72                         | 3.8286  | 3.8963  | 3.9638  | 4.0312  | 4.0985  | 4.1657  |
| 70                         | 3.4488  | 3.5098  | 3.5706  | 3.6313  | 3.6919  | 3.7524  |
| 68                         | 3.1384  | 3.1938  | 3.2491  | 3.3044  | 3.3595  | 3.4146  |
| 66                         | 2.8800  | 2.9308  | 2.9816  | 3.0322  | 3.0828  | 3.1333  |
| 64                         | 2.6615  | 2.7085  | 2.7554  | 2.8022  | 2.8489  | 2.8956  |
| 62                         | 2.4746  | 2.5182  | 2.5618  | 2.6053  | 2.6488  | 2.6921  |
| 60                         | 2.3128  | 2.3535  | 2.3943  | 2.4349  | 2.4755  | 2.5160  |
| 58                         | 2.1714  | 2.2097  | 2.2479  | 2.2860  | 2.3241  | 2.3621  |
| 56                         | 2.0469  | 2.0829  | 2.1189  | 2.1549  | 2.1907  | 2.2266  |
| 54                         | 1.9364  | 1.9705  | 2.0045  | 2.0385  | 2.0724  | 2.1063  |
| 52                         | 1.8377  | 1.8700  | 1.9023  | 1.9346  | 1.9667  | 1.9989  |
| 50                         | 1.7491  | 1.7798  | 1.8105  | 1.8412  | 1.8718  | 1.9024  |
| 48                         | 1.6691  | 1.6984  | 1.7277  | 1.7569  | 1.7861  | 1.8153  |
| 46                         | 1.5965  | 1.6245  | 1.6525  | 1.6805  | 1.7084  | 1.7363  |
| 44                         | 1.5304  | 1.5573  | 1.5841  | 1.6109  | 1.6376  | 1.6643  |
| 42                         | 1.4700  | 1.4958  | 1.5215  | 1.5472  | 1.5729  | 1.5985  |
| 40                         | 1.4146  | 1.4394  | 1.4641  | 1.4888  | 1.5135  | 1.5381  |
| 38                         | 1.3636  | 1.3875  | 1.4113  | 1.4351  | 1.4588  | 1.4826  |
| 36                         | 1.3165  | 1.3395  | 1.3625  | 1.3855  | 1.4084  | 1.4313  |
| 34                         | 1.2730  | 1.2952  | 1.3174  | 1.3396  | 1.3617  | 1.3838  |
| 32                         | 1.2325  | 1.2541  | 1.2755  | 1.2970  | 1.3184  | 1.3398  |
| 30                         | 1.1950  | 1.2158  | 1.2366  | 1.2574  | 1.2781  | 1.2989  |
| 28                         | 1.1600  | 1.1802  | 1.2003  | 1.2205  | 1.2406  | 1.2607  |
| 26                         | 1.1273  | 1.1469  | 1.1665  | 1.1861  | 1.2056  | 1.2251  |
| 24                         | 1.0968  | 1.1158  | 1.1348  | 1.1538  | 1.1728  | 1.1918  |
| 22                         | 1.0682  | 1.0867  | 1.1052  | 1.1237  | 1.1421  | 1.1606  |
| 20                         | 1.0414  | 1.0594  | 1.0774  | 1.0954  | 1.1133  | 1.1313  |
| 18                         | 1.0162  | 1.0337  | 1.0513  | 1.0688  | 1.0863  | 1.1038  |
| 16                         | 0.9925  | 1.0096  | 1.0267  | 1.0438  | 1.0609  | 1.0779  |
| 14                         | 0.9702  | 0.9869  | 1.0036  | 1.0203  | 1.0369  | 1.0536  |
| 12                         | 0.9492  | 0.9655  | 0.9818  | 0.9981  | 1.0144  | 1.0306  |
| 10                         | 0.9294  | 0.9453  | 0.9612  | 0.9772  | 0.9931  | 1.0090  |
| 8                          | 0.9107  | 0.9262  | 0.9418  | 0.9574  | 0.9730  | 0.9885  |
| 6                          | 0.8930  | 0.9082  | 0.9235  | 0.9387  | 0.9540  | 0.9692  |
| 4                          | 0.8763  | 0.8912  | 0.9062  | 0.9211  | 0.9360  | 0.9509  |
| 2                          | 0.8605  | 0.8752  | 0.8898  | 0.9044  | 0.9190  | 0.9336  |
| 0                          | 0.8456  | 0.8599  | 0.8743  | 0.8886  | 0.9029  | 0.9172  |

Table 3

| $\rho_0 \backslash \alpha$ | 0.78   | 0.80   | 0.82   | 0.84   | 0.86   | 0.88   |
|----------------------------|--------|--------|--------|--------|--------|--------|
| -2                         | 0.8315 | 0.8455 | 0.8596 | 0.8737 | 0.8877 | 0.9018 |
| -4                         | 0.8181 | 0.8319 | 0.8457 | 0.8595 | 0.8733 | 0.8871 |
| -6                         | 0.8055 | 0.8190 | 0.8326 | 0.8461 | 0.8596 | 0.8732 |
| -8                         | 0.7935 | 0.8068 | 0.8201 | 0.8334 | 0.8467 | 0.8600 |
| -10                        | 0.7822 | 0.7953 | 0.8083 | 0.8214 | 0.8345 | 0.8475 |
| -12                        | 0.7715 | 0.7843 | 0.7972 | 0.8100 | 0.8229 | 0.8357 |
| -14                        | 0.7614 | 0.7740 | 0.7867 | 0.7993 | 0.8119 | 0.8245 |
| -16                        | 0.7519 | 0.7643 | 0.7767 | 0.7891 | 0.8015 | 0.8140 |
| -18                        | 0.7429 | 0.7551 | 0.7673 | 0.7795 | 0.7918 | 0.8040 |
| -20                        | 0.7344 | 0.7464 | 0.7584 | 0.7705 | 0.7825 | 0.7945 |
| -22                        | 0.7264 | 0.7383 | 0.7501 | 0.7620 | 0.7738 | 0.7857 |
| -24                        | 0.7190 | 0.7306 | 0.7423 | 0.7539 | 0.7656 | 0.7773 |
| -26                        | 0.7120 | 0.7234 | 0.7349 | 0.7464 | 0.7579 | 0.7694 |
| -28                        | 0.7054 | 0.7167 | 0.7280 | 0.7394 | 0.7507 | 0.7620 |
| -30                        | 0.6994 | 0.7105 | 0.7216 | 0.7328 | 0.7439 | 0.7551 |
| -32                        | 0.6938 | 0.7047 | 0.7157 | 0.7266 | 0.7376 | 0.7486 |
| -34                        | 0.6886 | 0.6994 | 0.7102 | 0.7210 | 0.7318 | 0.7426 |
| -36                        | 0.6838 | 0.6945 | 0.7051 | 0.7158 | 0.7264 | 0.7371 |
| -38                        | 0.6795 | 0.6900 | 0.7005 | 0.7110 | 0.7215 | 0.7320 |
| -40                        | 0.6757 | 0.6860 | 0.6963 | 0.7067 | 0.7170 | 0.7274 |
| -42                        | 0.6723 | 0.6824 | 0.6926 | 0.7028 | 0.7130 | 0.7232 |
| -44                        | 0.6693 | 0.6793 | 0.6893 | 0.6993 | 0.7094 | 0.7195 |
| -46                        | 0.6668 | 0.6766 | 0.6865 | 0.6963 | 0.7063 | 0.7162 |
| -48                        | 0.6648 | 0.6745 | 0.6841 | 0.6938 | 0.7036 | 0.7133 |
| -50                        | 0.6633 | 0.6728 | 0.6823 | 0.6918 | 0.7014 | 0.7110 |
| -52                        | 0.6623 | 0.6716 | 0.6809 | 0.6903 | 0.6997 | 0.7091 |
| -54                        | 0.6618 | 0.6709 | 0.6801 | 0.6892 | 0.6985 | 0.7078 |
| -56                        |        |        | 0.6798 | 0.6888 | 0.6978 | 0.7069 |
| -58                        |        |        |        |        |        |        |
| -60                        |        |        |        |        |        |        |
| -62                        |        |        |        |        |        |        |
| -64                        |        |        |        |        |        |        |
| -66                        |        |        |        |        |        |        |
| -68                        |        |        |        |        |        |        |
| -70                        |        |        |        |        |        |        |
| -72                        |        |        |        |        |        |        |
| -74                        |        |        |        |        |        |        |
| -76                        |        |        |        |        |        |        |
| -78                        |        |        |        |        |        |        |
| -80                        |        |        |        |        |        |        |
| -82                        |        |        |        |        |        |        |
| -84                        |        |        |        |        |        |        |
| -86                        |        |        |        |        |        |        |
| -88                        |        |        |        |        |        |        |
| -90                        |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\alpha \backslash \rho_0$ | 0.90    | 0.92    | 0.94    | 0.96    | 0.98    | 1.00    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 37.9579 | 38.5594 | 39.1601 | 39.7600 | 40.3591 | 40.9575 |
| 86                         | 18.9816 | 19.2823 | 19.5827 | 19.8826 | 20.1823 | 20.4815 |
| 84                         | 12.6572 | 12.8578 | 13.0581 | 13.2581 | 13.4578 | 13.6574 |
| 82                         | 9.4959  | 9.6464  | 9.7966  | 9.9467  | 10.0965 | 10.2462 |
| 80                         | 7.5998  | 7.7202  | 7.8405  | 7.9605  | 8.0805  | 8.2003  |
| 78                         | 6.3363  | 6.4367  | 6.5369  | 6.6370  | 6.7370  | 6.8369  |
| 76                         | 5.4344  | 5.5204  | 5.6064  | 5.6922  | 5.7780  | 5.8636  |
| 74                         | 4.7583  | 4.8336  | 4.9089  | 4.9840  | 5.0591  | 5.1341  |
| 72                         | 4.2329  | 4.2999  | 4.3668  | 4.4336  | 4.5004  | 4.5671  |
| 70                         | 3.8129  | 3.8732  | 3.9335  | 3.9937  | 4.0538  | 4.1139  |
| 68                         | 3.4696  | 3.5245  | 3.5793  | 3.6341  | 3.6888  | 3.7434  |
| 66                         | 3.1838  | 3.2341  | 3.2844  | 3.3347  | 3.3849  | 3.4350  |
| 64                         | 2.9422  | 2.9888  | 3.0352  | 3.0816  | 3.1280  | 3.1743  |
| 62                         | 2.7354  | 2.7787  | 2.8219  | 2.8650  | 2.9081  | 2.9512  |
| 60                         | 2.5565  | 2.5969  | 2.6372  | 2.6776  | 2.7178  | 2.7580  |
| 58                         | 2.4001  | 2.4380  | 2.4759  | 2.5137  | 2.5515  | 2.5893  |
| 56                         | 2.2624  | 2.2981  | 2.3338  | 2.3694  | 2.4050  | 2.4406  |
| 54                         | 2.1401  | 2.1739  | 2.2077  | 2.2414  | 2.2751  | 2.3087  |
| 52                         | 2.0310  | 2.0630  | 2.0950  | 2.1270  | 2.1589  | 2.1909  |
| 50                         | 1.9329  | 1.9634  | 1.9939  | 2.0243  | 2.0547  | 2.0850  |
| 48                         | 1.8444  | 1.8735  | 1.9025  | 1.9315  | 1.9605  | 1.9895  |
| 46                         | 1.7641  | 1.7919  | 1.8197  | 1.8474  | 1.8751  | 1.9028  |
| 44                         | 1.6910  | 1.7176  | 1.7442  | 1.7708  | 1.7973  | 1.8238  |
| 42                         | 1.6241  | 1.6497  | 1.6752  | 1.7007  | 1.7262  | 1.7516  |
| 40                         | 1.5627  | 1.5873  | 1.6119  | 1.6364  | 1.6609  | 1.6854  |
| 38                         | 1.5063  | 1.5300  | 1.5536  | 1.5772  | 1.6008  | 1.6244  |
| 36                         | 1.4542  | 1.4770  | 1.4998  | 1.5226  | 1.5454  | 1.5681  |
| 34                         | 1.4059  | 1.4280  | 1.4500  | 1.4720  | 1.4941  | 1.5160  |
| 32                         | 1.3612  | 1.3825  | 1.4038  | 1.4251  | 1.4464  | 1.4677  |
| 30                         | 1.3195  | 1.3402  | 1.3609  | 1.3815  | 1.4021  | 1.4227  |
| 28                         | 1.2808  | 1.3008  | 1.3209  | 1.3409  | 1.3609  | 1.3808  |
| 26                         | 1.2446  | 1.2640  | 1.2835  | 1.3029  | 1.3223  | 1.3417  |
| 24                         | 1.2107  | 1.2296  | 1.2485  | 1.2674  | 1.2863  | 1.3051  |
| 22                         | 1.1790  | 1.1974  | 1.2158  | 1.2341  | 1.2525  | 1.2708  |
| 20                         | 1.1492  | 1.1671  | 1.1851  | 1.2029  | 1.2208  | 1.2387  |
| 18                         | 1.1213  | 1.1387  | 1.1562  | 1.1736  | 1.1910  | 1.2084  |
| 16                         | 1.0950  | 1.1120  | 1.1290  | 1.1460  | 1.1630  | 1.1800  |
| 14                         | 1.0702  | 1.0868  | 1.1034  | 1.1201  | 1.1366  | 1.1532  |
| 12                         | 1.0469  | 1.0631  | 1.0793  | 1.0955  | 1.1118  | 1.1279  |
| 10                         | 1.0248  | 1.0407  | 1.0566  | 1.0724  | 1.0883  | 1.1041  |
| 8                          | 1.0041  | 1.0196  | 1.0351  | 1.0506  | 1.0661  | 1.0816  |
| 6                          | 0.9844  | 0.9996  | 1.0148  | 1.0300  | 1.0451  | 1.0603  |
| 4                          | 0.9658  | 0.9807  | 0.9956  | 1.0104  | 1.0253  | 1.0401  |
| 2                          | 0.9482  | 0.9628  | 0.9774  | 0.9919  | 1.0065  | 1.0211  |
| 0                          | 0.9316  | 0.9459  | 0.9602  | 0.9744  | 0.9887  | 1.0030  |

Table 3

| $\rho_0$<br>$\alpha$ | 0.90   | 0.92   | 0.94   | 0.96   | 0.98   | 1.00   |
|----------------------|--------|--------|--------|--------|--------|--------|
| -2                   | 0.9158 | 0.9298 | 0.9438 | 0.9578 | 0.9719 | 0.9859 |
| -4                   | 0.9008 | 0.9146 | 0.9284 | 0.9421 | 0.9559 | 0.9696 |
| -6                   | 0.8867 | 0.9002 | 0.9137 | 0.9272 | 0.9408 | 0.9543 |
| -8                   | 0.8733 | 0.8866 | 0.8999 | 0.9131 | 0.9264 | 0.9397 |
| -10                  | 0.8606 | 0.8736 | 0.8867 | 0.8997 | 0.9128 | 0.9258 |
| -12                  | 0.8486 | 0.8614 | 0.8742 | 0.8871 | 0.8999 | 0.9127 |
| -14                  | 0.8372 | 0.8498 | 0.8624 | 0.8750 | 0.8877 | 0.9003 |
| -16                  | 0.8264 | 0.8388 | 0.8512 | 0.8637 | 0.8761 | 0.8885 |
| -18                  | 0.8162 | 0.8284 | 0.8407 | 0.8529 | 0.8651 | 0.8774 |
| -20                  | 0.8066 | 0.8186 | 0.8307 | 0.8427 | 0.8547 | 0.8668 |
| -22                  | 0.7975 | 0.8094 | 0.8212 | 0.8331 | 0.8450 | 0.8568 |
| -24                  | 0.7889 | 0.8006 | 0.8123 | 0.8240 | 0.8357 | 0.8474 |
| -26                  | 0.7809 | 0.7924 | 0.8039 | 0.8154 | 0.8270 | 0.8385 |
| -28                  | 0.7733 | 0.7847 | 0.7960 | 0.8074 | 0.8188 | 0.8301 |
| -30                  | 0.7663 | 0.7774 | 0.7886 | 0.7998 | 0.8110 | 0.8223 |
| -32                  | 0.7596 | 0.7707 | 0.7817 | 0.7928 | 0.8038 | 0.8149 |
| -34                  | 0.7535 | 0.7644 | 0.7753 | 0.7861 | 0.7970 | 0.8080 |
| -36                  | 0.7478 | 0.7585 | 0.7693 | 0.7800 | 0.7908 | 0.8015 |
| -38                  | 0.7426 | 0.7531 | 0.7637 | 0.7743 | 0.7849 | 0.7956 |
| -40                  | 0.7378 | 0.7482 | 0.7586 | 0.7691 | 0.7796 | 0.7901 |
| -42                  | 0.7334 | 0.7437 | 0.7540 | 0.7643 | 0.7746 | 0.7850 |
| -44                  | 0.7296 | 0.7397 | 0.7498 | 0.7600 | 0.7702 | 0.7804 |
| -46                  | 0.7261 | 0.7361 | 0.7461 | 0.7561 | 0.7662 | 0.7762 |
| -48                  | 0.7231 | 0.7330 | 0.7428 | 0.7527 | 0.7626 | 0.7725 |
| -50                  | 0.7206 | 0.7303 | 0.7400 | 0.7498 | 0.7595 | 0.7693 |
| -52                  | 0.7186 | 0.7281 | 0.7377 | 0.7473 | 0.7569 | 0.7666 |
| -54                  | 0.7171 | 0.7265 | 0.7358 | 0.7453 | 0.7548 | 0.7643 |
| -56                  | 0.7161 | 0.7253 | 0.7345 | 0.7438 | 0.7531 | 0.7625 |
| -58                  | 0.7156 | 0.7247 | 0.7337 | 0.7429 | 0.7520 | 0.7612 |
| -60                  |        |        |        | 0.7424 | 0.7515 | 0.7605 |
| -62                  |        |        |        |        |        |        |
| -64                  |        |        |        |        |        |        |
| -66                  |        |        |        |        |        |        |
| -68                  |        |        |        |        |        |        |
| -70                  |        |        |        |        |        |        |
| -72                  |        |        |        |        |        |        |
| -74                  |        |        |        |        |        |        |
| -76                  |        |        |        |        |        |        |
| -78                  |        |        |        |        |        |        |
| -80                  |        |        |        |        |        |        |
| -82                  |        |        |        |        |        |        |
| -84                  |        |        |        |        |        |        |
| -86                  |        |        |        |        |        |        |
| -88                  |        |        |        |        |        |        |
| -90                  |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\alpha \backslash \rho_0$ | 1.02    | 1.04    | 1.06    | 1.08    | 1.10    | 1.12    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 41.5553 | 42.1524 | 42.7489 | 43.3448 | 43.9401 | 44.5349 |
| 86                         | 20.7804 | 21.0790 | 21.3773 | 21.6752 | 21.9729 | 22.2704 |
| 84                         | 13.8567 | 14.0558 | 14.2547 | 14.4534 | 14.6518 | 14.8502 |
| 82                         | 10.3957 | 10.5451 | 10.6943 | 10.8434 | 10.9923 | 11.1410 |
| 80                         | 8.3199  | 8.4394  | 8.5588  | 8.6781  | 8.7973  | 8.9164  |
| 78                         | 6.9367  | 7.0363  | 7.1358  | 7.2353  | 7.3346  | 7.4339  |
| 76                         | 5.9491  | 6.0346  | 6.1200  | 6.2052  | 6.2904  | 6.3755  |
| 74                         | 5.2090  | 5.2838  | 5.3585  | 5.4332  | 5.5078  | 5.5823  |
| 72                         | 4.6337  | 4.7002  | 4.7667  | 4.8331  | 4.8995  | 4.9657  |
| 70                         | 4.1739  | 4.2338  | 4.2937  | 4.3535  | 4.4132  | 4.4729  |
| 68                         | 3.7980  | 3.8525  | 3.9070  | 3.9614  | 4.0157  | 4.0701  |
| 66                         | 3.4851  | 3.5351  | 3.5850  | 3.6350  | 3.6848  | 3.7347  |
| 64                         | 3.2206  | 3.2668  | 3.3130  | 3.3591  | 3.4052  | 3.4512  |
| 62                         | 2.9942  | 3.0371  | 3.0800  | 3.1229  | 3.1657  | 3.2085  |
| 60                         | 2.7982  | 2.8383  | 2.8784  | 2.9185  | 2.9585  | 2.9985  |
| 58                         | 2.6270  | 2.6646  | 2.7023  | 2.7399  | 2.7774  | 2.8150  |
| 56                         | 2.4761  | 2.5116  | 2.5471  | 2.5825  | 2.6179  | 2.6533  |
| 54                         | 2.3423  | 2.3758  | 2.4094  | 2.4429  | 2.4764  | 2.5098  |
| 52                         | 2.2227  | 2.2546  | 2.2864  | 2.3182  | 2.3499  | 2.3816  |
| 50                         | 2.1153  | 2.1456  | 2.1759  | 2.2061  | 2.2364  | 2.2665  |
| 48                         | 2.0184  | 2.0473  | 2.0761  | 2.1050  | 2.1338  | 2.1626  |
| 46                         | 1.9304  | 1.9581  | 1.9857  | 2.0132  | 2.0408  | 2.0683  |
| 44                         | 1.8503  | 1.8768  | 1.9032  | 1.9297  | 1.9560  | 1.9824  |
| 42                         | 1.7771  | 1.8025  | 1.8279  | 1.8532  | 1.8786  | 1.9039  |
| 40                         | 1.7099  | 1.7343  | 1.7587  | 1.7831  | 1.8075  | 1.8318  |
| 38                         | 1.6480  | 1.6715  | 1.6950  | 1.7185  | 1.7420  | 1.7655  |
| 36                         | 1.5909  | 1.6136  | 1.6363  | 1.6589  | 1.6816  | 1.7042  |
| 34                         | 1.5380  | 1.5599  | 1.5819  | 1.6038  | 1.6257  | 1.6475  |
| 32                         | 1.4889  | 1.5102  | 1.5314  | 1.5526  | 1.5738  | 1.5949  |
| 30                         | 1.4433  | 1.4639  | 1.4844  | 1.5050  | 1.5255  | 1.5460  |
| 28                         | 1.4008  | 1.4207  | 1.4407  | 1.4606  | 1.4805  | 1.5004  |
| 26                         | 1.3611  | 1.3805  | 1.3998  | 1.4192  | 1.4385  | 1.4578  |
| 24                         | 1.3240  | 1.3428  | 1.3616  | 1.3804  | 1.3992  | 1.4179  |
| 22                         | 1.2892  | 1.3075  | 1.3258  | 1.3441  | 1.3624  | 1.3806  |
| 20                         | 1.2565  | 1.2744  | 1.2922  | 1.3100  | 1.3278  | 1.3456  |
| 18                         | 1.2258  | 1.2432  | 1.2606  | 1.2780  | 1.2953  | 1.3126  |
| 16                         | 1.1970  | 1.2139  | 1.2309  | 1.2478  | 1.2647  | 1.2816  |
| 14                         | 1.1698  | 1.1863  | 1.2029  | 1.2194  | 1.2359  | 1.2525  |
| 12                         | 1.1441  | 1.1603  | 1.1765  | 1.1926  | 1.2088  | 1.2249  |
| 10                         | 1.1199  | 1.1357  | 1.1515  | 1.1673  | 1.1831  | 1.1989  |
| 8                          | 1.0971  | 1.1125  | 1.1280  | 1.1434  | 1.1589  | 1.1743  |
| 6                          | 1.0754  | 1.0906  | 1.1057  | 1.1209  | 1.1360  | 1.1511  |
| 4                          | 1.0550  | 1.0698  | 1.0847  | 1.0995  | 1.1143  | 1.1291  |
| 2                          | 1.0356  | 1.0501  | 1.0647  | 1.0792  | 1.0938  | 1.1083  |
| 0                          | 1.0173  | 1.0315  | 1.0458  | 1.0600  | 1.0743  | 1.0885  |

Table 3

| $\rho_0$<br>$\alpha$ | 1.02   | 1.04   | 1.06   | 1.08   | 1.10   | 1.12   |
|----------------------|--------|--------|--------|--------|--------|--------|
| -2                   | 0.9999 | 1.0139 | 1.0279 | 1.0419 | 1.0558 | 1.0698 |
| -4                   | 0.9834 | 0.9971 | 1.0109 | 1.0246 | 1.0383 | 1.0521 |
| -6                   | 0.9678 | 0.9813 | 0.9948 | 1.0083 | 1.0218 | 1.0352 |
| -8                   | 0.9529 | 0.9662 | 0.9795 | 0.9927 | 1.0060 | 1.0193 |
| -10                  | 0.9389 | 0.9519 | 0.9650 | 0.9780 | 0.9911 | 1.0041 |
| -12                  | 0.9255 | 0.9384 | 0.9512 | 0.9640 | 0.9769 | 0.9897 |
| -14                  | 0.9129 | 0.9255 | 0.9382 | 0.9508 | 0.9634 | 0.9761 |
| -16                  | 0.9009 | 0.9134 | 0.9258 | 0.9382 | 0.9507 | 0.9631 |
| -18                  | 0.8896 | 0.9018 | 0.9141 | 0.9263 | 0.9386 | 0.9508 |
| -20                  | 0.8788 | 0.8909 | 0.9030 | 0.9150 | 0.9271 | 0.9392 |
| -22                  | 0.8687 | 0.8806 | 0.8925 | 0.9043 | 0.9162 | 0.9281 |
| -24                  | 0.8591 | 0.8708 | 0.8825 | 0.8942 | 0.9060 | 0.9177 |
| -26                  | 0.8500 | 0.8616 | 0.8731 | 0.8847 | 0.8963 | 0.9078 |
| -28                  | 0.8415 | 0.8529 | 0.8643 | 0.8757 | 0.8871 | 0.8985 |
| -30                  | 0.8335 | 0.8447 | 0.8559 | 0.8672 | 0.8784 | 0.8897 |
| -32                  | 0.8259 | 0.8370 | 0.8481 | 0.8592 | 0.8703 | 0.8814 |
| -34                  | 0.8189 | 0.8298 | 0.8408 | 0.8517 | 0.8627 | 0.8737 |
| -36                  | 0.8123 | 0.8231 | 0.8339 | 0.8447 | 0.8555 | 0.8664 |
| -38                  | 0.8062 | 0.8169 | 0.8275 | 0.8382 | 0.8489 | 0.8596 |
| -40                  | 0.8005 | 0.8111 | 0.8216 | 0.8321 | 0.8427 | 0.8533 |
| -42                  | 0.7954 | 0.8057 | 0.8161 | 0.8265 | 0.8370 | 0.8474 |
| -44                  | 0.7906 | 0.8009 | 0.8111 | 0.8214 | 0.8317 | 0.8420 |
| -46                  | 0.7863 | 0.7964 | 0.8066 | 0.8167 | 0.8269 | 0.8371 |
| -48                  | 0.7825 | 0.7925 | 0.8025 | 0.8125 | 0.8225 | 0.8326 |
| -50                  | 0.7791 | 0.7890 | 0.7988 | 0.8087 | 0.8187 | 0.8286 |
| -52                  | 0.7762 | 0.7860 | 0.7957 | 0.8055 | 0.8152 | 0.8251 |
| -54                  | 0.7738 | 0.7834 | 0.7930 | 0.8026 | 0.8123 | 0.8220 |
| -56                  | 0.7719 | 0.7813 | 0.7908 | 0.8003 | 0.8098 | 0.8194 |
| -58                  | 0.7705 | 0.7798 | 0.7891 | 0.7985 | 0.8079 | 0.8173 |
| -60                  | 0.7696 | 0.7787 | 0.7879 | 0.7971 | 0.8064 | 0.8157 |
| -62                  | 0.7693 | 0.7782 | 0.7873 | 0.7964 | 0.8055 | 0.8146 |
| -64                  |        |        |        |        | 0.8051 | 0.8141 |
| -66                  |        |        |        |        |        |        |
| -68                  |        |        |        |        |        |        |
| -70                  |        |        |        |        |        |        |
| -72                  |        |        |        |        |        |        |
| -74                  |        |        |        |        |        |        |
| -76                  |        |        |        |        |        |        |
| -78                  |        |        |        |        |        |        |
| -80                  |        |        |        |        |        |        |
| -82                  |        |        |        |        |        |        |
| -84                  |        |        |        |        |        |        |
| -86                  |        |        |        |        |        |        |
| -88                  |        |        |        |        |        |        |
| -90                  |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 1.14    | 1.16    | 1.18    | 1.20    | 1.22    | 1.24    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 45.1291 | 45.7228 | 46.3160 | 46.9088 | 47.5011 | 48.0929 |
| 86                         | 22.5675 | 22.8644 | 23.1610 | 23.4575 | 23.7536 | 24.0496 |
| 84                         | 15.0483 | 15.2463 | 15.4441 | 15.6417 | 15.8392 | 16.0365 |
| 82                         | 11.2897 | 11.4382 | 11.5866 | 11.7349 | 11.8830 | 12.0311 |
| 80                         | 9.0353  | 9.1542  | 9.2729  | 9.3916  | 9.5101  | 9.6286  |
| 78                         | 7.5330  | 7.6321  | 7.7311  | 7.8301  | 7.9289  | 8.0277  |
| 76                         | 6.4606  | 6.5456  | 6.6305  | 6.7153  | 6.8001  | 6.8848  |
| 74                         | 5.6567  | 5.7311  | 5.8055  | 5.8797  | 5.9540  | 6.0281  |
| 72                         | 5.0320  | 5.0981  | 5.1643  | 5.2303  | 5.2963  | 5.3623  |
| 70                         | 4.5326  | 4.5922  | 4.6517  | 4.7112  | 4.7707  | 4.8301  |
| 68                         | 4.1243  | 4.1785  | 4.2327  | 4.2869  | 4.3410  | 4.3950  |
| 66                         | 3.7845  | 3.8342  | 3.8839  | 3.9336  | 3.9832  | 4.0328  |
| 64                         | 3.4972  | 3.5432  | 3.5891  | 3.6350  | 3.6809  | 3.7267  |
| 62                         | 3.2513  | 3.2940  | 3.3367  | 3.3794  | 3.4220  | 3.4646  |
| 60                         | 3.0385  | 3.0784  | 3.1183  | 3.1581  | 3.1980  | 3.2378  |
| 58                         | 2.8525  | 2.8899  | 2.9274  | 2.9648  | 3.0022  | 3.0395  |
| 56                         | 2.6886  | 2.7239  | 2.7592  | 2.7945  | 2.8297  | 2.8649  |
| 54                         | 2.5432  | 2.5766  | 2.6100  | 2.6433  | 2.6767  | 2.7100  |
| 52                         | 2.4134  | 2.4450  | 2.4767  | 2.5083  | 2.5399  | 2.5715  |
| 50                         | 2.2967  | 2.3268  | 2.3570  | 2.3871  | 2.4171  | 2.4472  |
| 48                         | 2.1914  | 2.2201  | 2.2488  | 2.2776  | 2.3062  | 2.3349  |
| 46                         | 2.0958  | 2.1233  | 2.1508  | 2.1782  | 2.2057  | 2.2331  |
| 44                         | 2.0088  | 2.0351  | 2.0614  | 2.0877  | 2.1140  | 2.1403  |
| 42                         | 1.9292  | 1.9545  | 1.9797  | 2.0050  | 2.0302  | 2.0555  |
| 40                         | 1.8561  | 1.8805  | 1.9048  | 1.9291  | 1.9533  | 1.9776  |
| 38                         | 1.7889  | 1.8124  | 1.8358  | 1.8592  | 1.8826  | 1.9059  |
| 36                         | 1.7268  | 1.7495  | 1.7720  | 1.7946  | 1.8172  | 1.8398  |
| 34                         | 1.6694  | 1.6912  | 1.7131  | 1.7349  | 1.7567  | 1.7785  |
| 32                         | 1.6161  | 1.6372  | 1.6583  | 1.6795  | 1.7006  | 1.7217  |
| 30                         | 1.5665  | 1.5870  | 1.6074  | 1.6279  | 1.6483  | 1.6688  |
| 28                         | 1.5203  | 1.5401  | 1.5600  | 1.5798  | 1.5997  | 1.6195  |
| 26                         | 1.4771  | 1.4964  | 1.5157  | 1.5349  | 1.5542  | 1.5734  |
| 24                         | 1.4367  | 1.4555  | 1.4742  | 1.4929  | 1.5117  | 1.5304  |
| 22                         | 1.3989  | 1.4171  | 1.4354  | 1.4536  | 1.4718  | 1.4900  |
| 20                         | 1.3634  | 1.3811  | 1.3989  | 1.4166  | 1.4344  | 1.4521  |
| 18                         | 1.3300  | 1.3473  | 1.3646  | 1.3819  | 1.3992  | 1.4165  |
| 16                         | 1.2986  | 1.3155  | 1.3324  | 1.3492  | 1.3661  | 1.3830  |
| 14                         | 1.2690  | 1.2855  | 1.3020  | 1.3185  | 1.3349  | 1.3514  |
| 12                         | 1.2410  | 1.2572  | 1.2733  | 1.2894  | 1.3055  | 1.3216  |
| 10                         | 1.2147  | 1.2305  | 1.2462  | 1.2620  | 1.2777  | 1.2935  |
| 8                          | 1.1898  | 1.2052  | 1.2206  | 1.2361  | 1.2515  | 1.2669  |
| 6                          | 1.1662  | 1.1813  | 1.1964  | 1.2115  | 1.2266  | 1.2417  |
| 4                          | 1.1439  | 1.1587  | 1.1735  | 1.1883  | 1.2031  | 1.2179  |
| 2                          | 1.1228  | 1.1373  | 1.1518  | 1.1663  | 1.1809  | 1.1953  |
| 0                          | 1.1028  | 1.1170  | 1.1313  | 1.1455  | 1.1597  | 1.1740  |

Table 3

| $\rho_0 \backslash \alpha$ | 1.14   | 1.16   | 1.18   | 1.20   | 1.22   | 1.24   |
|----------------------------|--------|--------|--------|--------|--------|--------|
| -2                         | 1.0838 | 1.0978 | 1.1118 | 1.1257 | 1.1397 | 1.1537 |
| -4                         | 1.0658 | 1.0795 | 1.0933 | 1.1070 | 1.1207 | 1.1344 |
| -6                         | 1.0487 | 1.0622 | 1.0757 | 1.0892 | 1.1027 | 1.1161 |
| -8                         | 1.0325 | 1.0458 | 1.0590 | 1.0723 | 1.0856 | 1.0988 |
| -10                        | 1.0171 | 1.0302 | 1.0432 | 1.0563 | 1.0693 | 1.0823 |
| -12                        | 1.0025 | 1.0154 | 1.0282 | 1.0410 | 1.0539 | 1.0667 |
| -14                        | 0.9887 | 1.0013 | 1.0139 | 1.0266 | 1.0392 | 1.0518 |
| -16                        | 0.9755 | 0.9880 | 1.0004 | 1.0128 | 1.0253 | 1.0377 |
| -18                        | 0.9631 | 0.9753 | 0.9876 | 0.9998 | 1.0121 | 1.0243 |
| -20                        | 0.9512 | 0.9633 | 0.9754 | 0.9875 | 0.9995 | 1.0116 |
| -22                        | 0.9400 | 0.9519 | 0.9638 | 0.9758 | 0.9877 | 0.9996 |
| -24                        | 0.9294 | 0.9412 | 0.9529 | 0.9646 | 0.9764 | 0.9882 |
| -26                        | 0.9194 | 0.9310 | 0.9426 | 0.9541 | 0.9657 | 0.9773 |
| -28                        | 0.9099 | 0.9213 | 0.9328 | 0.9442 | 0.9556 | 0.9671 |
| -30                        | 0.9010 | 0.9122 | 0.9235 | 0.9348 | 0.9461 | 0.9574 |
| -32                        | 0.8926 | 0.9037 | 0.9148 | 0.9260 | 0.9371 | 0.9483 |
| -34                        | 0.8846 | 0.8956 | 0.9066 | 0.9176 | 0.9287 | 0.9397 |
| -36                        | 0.8772 | 0.8881 | 0.8990 | 0.9098 | 0.9207 | 0.9316 |
| -38                        | 0.8703 | 0.8810 | 0.8918 | 0.9025 | 0.9133 | 0.9240 |
| -40                        | 0.8638 | 0.8745 | 0.8850 | 0.8957 | 0.9063 | 0.9169 |
| -42                        | 0.8579 | 0.8683 | 0.8788 | 0.8893 | 0.8998 | 0.9103 |
| -44                        | 0.8523 | 0.8627 | 0.8731 | 0.8834 | 0.8938 | 0.9042 |
| -46                        | 0.8473 | 0.8575 | 0.8678 | 0.8780 | 0.8883 | 0.8986 |
| -48                        | 0.8427 | 0.8528 | 0.8629 | 0.8731 | 0.8832 | 0.8934 |
| -50                        | 0.8386 | 0.8486 | 0.8586 | 0.8686 | 0.8786 | 0.8887 |
| -52                        | 0.8349 | 0.8448 | 0.8546 | 0.8645 | 0.8745 | 0.8844 |
| -54                        | 0.8317 | 0.8414 | 0.8512 | 0.8610 | 0.8708 | 0.8806 |
| -56                        | 0.8290 | 0.8386 | 0.8482 | 0.8579 | 0.8676 | 0.8773 |
| -58                        | 0.8267 | 0.8363 | 0.8458 | 0.8553 | 0.8649 | 0.8745 |
| -60                        | 0.8250 | 0.8344 | 0.8438 | 0.8532 | 0.8627 | 0.8722 |
| -62                        | 0.8238 | 0.8331 | 0.8423 | 0.8516 | 0.8610 | 0.8703 |
| -64                        | 0.8232 | 0.8323 | 0.8414 | 0.8506 | 0.8598 | 0.8690 |
| -66                        |        |        | 0.8410 | 0.8500 | 0.8591 | 0.8683 |
| -68                        |        |        |        |        |        |        |
| -70                        |        |        |        |        |        |        |
| -72                        |        |        |        |        |        |        |
| -74                        |        |        |        |        |        |        |
| -76                        |        |        |        |        |        |        |
| -78                        |        |        |        |        |        |        |
| -80                        |        |        |        |        |        |        |
| -82                        |        |        |        |        |        |        |
| -84                        |        |        |        |        |        |        |
| -86                        |        |        |        |        |        |        |
| -88                        |        |        |        |        |        |        |
| -90                        |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\alpha \backslash \rho_0$ | 1.26    | 1.28    | 1.30    | 1.32    | 1.34    | 1.36    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 48.6844 | 49.2754 | 49.8660 | 50.4563 | 51.0462 | 51.6357 |
| 86                         | 24.3454 | 24.6409 | 24.9363 | 25.2314 | 25.5264 | 25.8212 |
| 84                         | 16.2338 | 16.4308 | 16.6278 | 16.8246 | 17.0213 | 17.2178 |
| 82                         | 12.1790 | 12.3269 | 12.4746 | 12.6223 | 12.7698 | 12.9173 |
| 80                         | 9.7470  | 9.8653  | 9.9836  | 10.1018 | 10.2198 | 10.3379 |
| 78                         | 8.1264  | 8.2250  | 8.3236  | 8.4221  | 8.5206  | 8.6190  |
| 76                         | 6.9694  | 7.0540  | 7.1386  | 7.2230  | 7.3075  | 7.3919  |
| 74                         | 6.1022  | 6.1763  | 6.2503  | 6.3243  | 6.3982  | 6.4721  |
| 72                         | 5.4282  | 5.4941  | 5.5599  | 5.6257  | 5.6915  | 5.7572  |
| 70                         | 4.8895  | 4.9488  | 5.0081  | 5.0673  | 5.1266  | 5.1858  |
| 68                         | 4.4490  | 4.5030  | 4.5570  | 4.6109  | 4.6648  | 4.7186  |
| 66                         | 4.0824  | 4.1319  | 4.1814  | 4.2309  | 4.2803  | 4.3297  |
| 64                         | 3.7725  | 3.8182  | 3.8640  | 3.9097  | 3.9554  | 4.0010  |
| 62                         | 3.5072  | 3.5497  | 3.5922  | 3.6347  | 3.6772  | 3.7196  |
| 60                         | 3.2775  | 3.3173  | 3.3570  | 3.3967  | 3.4364  | 3.4761  |
| 58                         | 3.0769  | 3.1142  | 3.1515  | 3.1888  | 3.2260  | 3.2632  |
| 56                         | 2.9001  | 2.9353  | 2.9704  | 3.0055  | 3.0406  | 3.0757  |
| 54                         | 2.7432  | 2.7765  | 2.8097  | 2.8429  | 2.8761  | 2.9093  |
| 52                         | 2.6031  | 2.6347  | 2.6662  | 2.6977  | 2.7292  | 2.7607  |
| 50                         | 2.4772  | 2.5073  | 2.5373  | 2.5673  | 2.5972  | 2.6272  |
| 48                         | 2.3636  | 2.3922  | 2.4208  | 2.4494  | 2.4780  | 2.5066  |
| 46                         | 2.2605  | 2.2879  | 2.3152  | 2.3426  | 2.3699  | 2.3972  |
| 44                         | 2.1665  | 2.1928  | 2.2190  | 2.2452  | 2.2714  | 2.2976  |
| 42                         | 2.0807  | 2.1059  | 2.1310  | 2.1562  | 2.1813  | 2.2065  |
| 40                         | 2.0018  | 2.0261  | 2.0503  | 2.0745  | 2.0987  | 2.1229  |
| 38                         | 1.9293  | 1.9526  | 1.9760  | 1.9993  | 2.0226  | 2.0459  |
| 36                         | 1.8623  | 1.8848  | 1.9073  | 1.9298  | 1.9523  | 1.9748  |
| 34                         | 1.8003  | 1.8221  | 1.8438  | 1.8656  | 1.8873  | 1.9090  |
| 32                         | 1.7427  | 1.7638  | 1.7849  | 1.8059  | 1.8269  | 1.8480  |
| 30                         | 1.6892  | 1.7096  | 1.7300  | 1.7504  | 1.7708  | 1.7912  |
| 28                         | 1.6393  | 1.6591  | 1.6789  | 1.6987  | 1.7184  | 1.7382  |
| 26                         | 1.5927  | 1.6119  | 1.6311  | 1.6504  | 1.6696  | 1.6888  |
| 24                         | 1.5491  | 1.5678  | 1.5865  | 1.6052  | 1.6238  | 1.6425  |
| 22                         | 1.5082  | 1.5264  | 1.5446  | 1.5628  | 1.5809  | 1.5991  |
| 20                         | 1.4699  | 1.4876  | 1.5053  | 1.5230  | 1.5407  | 1.5584  |
| 18                         | 1.4338  | 1.4511  | 1.4684  | 1.4856  | 1.5029  | 1.5201  |
| 16                         | 1.3999  | 1.4167  | 1.4336  | 1.4504  | 1.4673  | 1.4841  |
| 14                         | 1.3679  | 1.3844  | 1.4008  | 1.4173  | 1.4337  | 1.4502  |
| 12                         | 1.3377  | 1.3538  | 1.3699  | 1.3860  | 1.4021  | 1.4181  |
| 10                         | 1.3092  | 1.3250  | 1.3407  | 1.3564  | 1.3722  | 1.3879  |
| 8                          | 1.2823  | 1.2977  | 1.3131  | 1.3285  | 1.3439  | 1.3593  |
| 6                          | 1.2568  | 1.2719  | 1.2870  | 1.3021  | 1.3172  | 1.3322  |
| 4                          | 1.2327  | 1.2475  | 1.2623  | 1.2771  | 1.2918  | 1.3066  |
| 2                          | 1.2099  | 1.2243  | 1.2388  | 1.2533  | 1.2678  | 1.2823  |
| 0                          | 1.1882  | 1.2024  | 1.2166  | 1.2309  | 1.2451  | 1.2593  |

Table 3

| $\rho_0 \backslash \alpha$ | 1.26   | 1.28   | 1.30   | 1.32   | 1.34   | 1.36   |
|----------------------------|--------|--------|--------|--------|--------|--------|
| -2                         | 1.1676 | 1.1816 | 1.1956 | 1.2095 | 1.2235 | 1.2374 |
| -4                         | 1.1481 | 1.1619 | 1.1756 | 1.1893 | 1.2030 | 1.2167 |
| -6                         | 1.1296 | 1.1431 | 1.1566 | 1.1701 | 1.1835 | 1.1970 |
| -8                         | 1.1121 | 1.1253 | 1.1386 | 1.1518 | 1.1651 | 1.1783 |
| -10                        | 1.0954 | 1.1084 | 1.1215 | 1.1345 | 1.1475 | 1.1606 |
| -12                        | 1.0795 | 1.0924 | 1.1052 | 1.1180 | 1.1308 | 1.1437 |
| -14                        | 1.0645 | 1.0771 | 1.0897 | 1.1024 | 1.1150 | 1.1277 |
| -16                        | 1.0502 | 1.0626 | 1.0751 | 1.0875 | 1.1000 | 1.1124 |
| -18                        | 1.0366 | 1.0489 | 1.0611 | 1.0734 | 1.0857 | 1.0979 |
| -20                        | 1.0237 | 1.0358 | 1.0479 | 1.0600 | 1.0721 | 1.0842 |
| -22                        | 1.0115 | 1.0234 | 1.0353 | 1.0473 | 1.0592 | 1.0711 |
| -24                        | 0.9999 | 1.0117 | 1.0234 | 1.0352 | 1.0470 | 1.0588 |
| -26                        | 0.9889 | 1.0005 | 1.0122 | 1.0238 | 1.0354 | 1.0470 |
| -28                        | 0.9786 | 0.9900 | 1.0015 | 1.0129 | 1.0244 | 1.0359 |
| -30                        | 0.9687 | 0.9801 | 0.9914 | 1.0027 | 1.0140 | 1.0253 |
| -32                        | 0.9595 | 0.9706 | 0.9818 | 0.9930 | 1.0042 | 1.0154 |
| -34                        | 0.9507 | 0.9618 | 0.9728 | 0.9839 | 0.9949 | 1.0060 |
| -36                        | 0.9425 | 0.9534 | 0.9643 | 0.9753 | 0.9862 | 0.9971 |
| -38                        | 0.9348 | 0.9456 | 0.9564 | 0.9672 | 0.9780 | 0.9888 |
| -40                        | 0.9276 | 0.9383 | 0.9489 | 0.9596 | 0.9703 | 0.9810 |
| -42                        | 0.9209 | 0.9314 | 0.9420 | 0.9525 | 0.9631 | 0.9737 |
| -44                        | 0.9146 | 0.9251 | 0.9355 | 0.9459 | 0.9564 | 0.9669 |
| -46                        | 0.9089 | 0.9192 | 0.9295 | 0.9398 | 0.9502 | 0.9605 |
| -48                        | 0.9036 | 0.9138 | 0.9240 | 0.9342 | 0.9444 | 0.9547 |
| -50                        | 0.8987 | 0.9088 | 0.9189 | 0.9290 | 0.9392 | 0.9493 |
| -52                        | 0.8944 | 0.9043 | 0.9143 | 0.9244 | 0.9344 | 0.9444 |
| -54                        | 0.8905 | 0.9003 | 0.9102 | 0.9201 | 0.9301 | 0.9400 |
| -56                        | 0.8871 | 0.8968 | 0.9066 | 0.9164 | 0.9262 | 0.9361 |
| -58                        | 0.8841 | 0.8938 | 0.9035 | 0.9132 | 0.9229 | 0.9326 |
| -60                        | 0.8817 | 0.8912 | 0.9008 | 0.9104 | 0.9200 | 0.9296 |
| -62                        | 0.8797 | 0.8892 | 0.8986 | 0.9081 | 0.9176 | 0.9271 |
| -64                        | 0.8783 | 0.8876 | 0.8970 | 0.9063 | 0.9157 | 0.9251 |
| -66                        | 0.8774 | 0.8866 | 0.8958 | 0.9051 | 0.9144 | 0.9237 |
| -68                        | 0.8771 | 0.8861 | 0.8952 | 0.9044 | 0.9136 | 0.9228 |
| -70                        |        |        |        |        |        | 0.9224 |
| -72                        |        |        |        |        |        |        |
| -74                        |        |        |        |        |        |        |
| -76                        |        |        |        |        |        |        |
| -78                        |        |        |        |        |        |        |
| -80                        |        |        |        |        |        |        |
| -82                        |        |        |        |        |        |        |
| -84                        |        |        |        |        |        |        |
| -86                        |        |        |        |        |        |        |
| -88                        |        |        |        |        |        |        |
| -90                        |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\alpha \backslash \rho_0$ | 1.38    | 1.40    | 1.42    | 1.44    | 1.46    | 1.48    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 52.2249 | 52.8137 | 53.4023 | 53.9905 | 54.5784 | 55.1660 |
| 86                         | 26.1158 | 26.4103 | 26.7046 | 26.9987 | 27.2927 | 27.5866 |
| 84                         | 17.4143 | 17.6107 | 17.8069 | 18.0030 | 18.1991 | 18.3950 |
| 82                         | 13.0647 | 13.2120 | 13.3592 | 13.5063 | 13.6534 | 13.8004 |
| 80                         | 10.4558 | 10.5737 | 10.6915 | 10.8093 | 10.9270 | 11.0446 |
| 78                         | 8.7173  | 8.8156  | 8.9138  | 9.0120  | 9.1101  | 9.2082  |
| 76                         | 7.4762  | 7.5605  | 7.6447  | 7.7289  | 7.8131  | 7.8972  |
| 74                         | 6.5459  | 6.6197  | 6.6935  | 6.7672  | 6.8409  | 6.9145  |
| 72                         | 5.8229  | 5.8885  | 5.9541  | 6.0197  | 6.0852  | 6.1507  |
| 70                         | 5.2449  | 5.3040  | 5.3631  | 5.4222  | 5.4812  | 5.5402  |
| 68                         | 4.7725  | 4.8262  | 4.8800  | 4.9337  | 4.9874  | 5.0411  |
| 66                         | 4.3791  | 4.4285  | 4.4778  | 4.5271  | 4.5764  | 4.6257  |
| 64                         | 4.0467  | 4.0923  | 4.1378  | 4.1834  | 4.2289  | 4.2745  |
| 62                         | 3.7620  | 3.8044  | 3.8468  | 3.8892  | 3.9315  | 3.9738  |
| 60                         | 3.5157  | 3.5553  | 3.5949  | 3.6345  | 3.6740  | 3.7136  |
| 58                         | 3.3004  | 3.3376  | 3.3748  | 3.4119  | 3.4491  | 3.4862  |
| 56                         | 3.1108  | 3.1458  | 3.1809  | 3.2159  | 3.2509  | 3.2858  |
| 54                         | 2.9425  | 2.9756  | 3.0088  | 3.0419  | 3.0750  | 3.1081  |
| 52                         | 2.7921  | 2.8236  | 2.8550  | 2.8865  | 2.9179  | 2.9493  |
| 50                         | 2.6571  | 2.6870  | 2.7169  | 2.7468  | 2.7767  | 2.8066  |
| 48                         | 2.5352  | 2.5637  | 2.5922  | 2.6208  | 2.6493  | 2.6778  |
| 46                         | 2.4246  | 2.4518  | 2.4791  | 2.5064  | 2.5337  | 2.5609  |
| 44                         | 2.3238  | 2.3499  | 2.3761  | 2.4022  | 2.4283  | 2.4544  |
| 42                         | 2.2316  | 2.2567  | 2.2818  | 2.3069  | 2.3320  | 2.3571  |
| 40                         | 2.1470  | 2.1712  | 2.1954  | 2.2195  | 2.2436  | 2.2677  |
| 38                         | 2.0692  | 2.0925  | 2.1157  | 2.1390  | 2.1622  | 2.1855  |
| 36                         | 1.9973  | 2.0198  | 2.0422  | 2.0647  | 2.0871  | 2.1095  |
| 34                         | 1.9307  | 1.9525  | 1.9742  | 1.9959  | 2.0176  | 2.0392  |
| 32                         | 1.8690  | 1.8900  | 1.9110  | 1.9320  | 1.9530  | 1.9740  |
| 30                         | 1.8115  | 1.8319  | 1.8523  | 1.8726  | 1.8929  | 1.9133  |
| 28                         | 1.7580  | 1.7777  | 1.7975  | 1.8172  | 1.8370  | 1.8567  |
| 26                         | 1.7080  | 1.7271  | 1.7463  | 1.7655  | 1.7847  | 1.8038  |
| 24                         | 1.6611  | 1.6798  | 1.6985  | 1.7171  | 1.7357  | 1.7544  |
| 22                         | 1.6173  | 1.6354  | 1.6536  | 1.6717  | 1.6899  | 1.7080  |
| 20                         | 1.5761  | 1.5938  | 1.6115  | 1.6291  | 1.6468  | 1.6645  |
| 18                         | 1.5374  | 1.5546  | 1.5719  | 1.5891  | 1.6063  | 1.6236  |
| 16                         | 1.5009  | 1.5178  | 1.5346  | 1.5514  | 1.5682  | 1.5850  |
| 14                         | 1.4666  | 1.4831  | 1.4995  | 1.5159  | 1.5323  | 1.5487  |
| 12                         | 1.4342  | 1.4503  | 1.4663  | 1.4824  | 1.4985  | 1.5145  |
| 10                         | 1.4036  | 1.4193  | 1.4350  | 1.4507  | 1.4664  | 1.4821  |
| 8                          | 1.3747  | 1.3900  | 1.4054  | 1.4208  | 1.4362  | 1.4515  |
| 6                          | 1.3473  | 1.3624  | 1.3774  | 1.3925  | 1.4075  | 1.4226  |
| 4                          | 1.3214  | 1.3361  | 1.3509  | 1.3657  | 1.3804  | 1.3952  |
| 2                          | 1.2968  | 1.3113  | 1.3258  | 1.3402  | 1.3547  | 1.3692  |
| 0                          | 1.2735  | 1.2877  | 1.3019  | 1.3161  | 1.3303  | 1.3446  |

Table 3

| $\rho_0 \backslash \alpha$ | 1.38   | 1.40   | 1.42   | 1.44   | 1.46   | 1.48   |
|----------------------------|--------|--------|--------|--------|--------|--------|
| -2                         | 1.2514 | 1.2654 | 1.2793 | 1.2933 | 1.3072 | 1.3212 |
| -4                         | 1.2304 | 1.2441 | 1.2578 | 1.2716 | 1.2852 | 1.2990 |
| -6                         | 1.2105 | 1.2240 | 1.2374 | 1.2509 | 1.2644 | 1.2779 |
| -8                         | 1.1916 | 1.2048 | 1.2181 | 1.2313 | 1.2446 | 1.2578 |
| -10                        | 1.1736 | 1.1866 | 1.1997 | 1.2127 | 1.2258 | 1.2388 |
| -12                        | 1.1565 | 1.1694 | 1.1822 | 1.1950 | 1.2079 | 1.2207 |
| -14                        | 1.1403 | 1.1529 | 1.1656 | 1.1782 | 1.1909 | 1.2035 |
| -16                        | 1.1249 | 1.1373 | 1.1498 | 1.1622 | 1.1747 | 1.1872 |
| -18                        | 1.1102 | 1.1225 | 1.1348 | 1.1470 | 1.1593 | 1.1716 |
| -20                        | 1.0963 | 1.1084 | 1.1205 | 1.1326 | 1.1447 | 1.1568 |
| -22                        | 1.0831 | 1.0950 | 1.1070 | 1.1189 | 1.1308 | 1.1428 |
| -24                        | 1.0705 | 1.0823 | 1.0941 | 1.1059 | 1.1177 | 1.1295 |
| -26                        | 1.0586 | 1.0703 | 1.0819 | 1.0935 | 1.1052 | 1.1168 |
| -28                        | 1.0474 | 1.0589 | 1.0703 | 1.0818 | 1.0933 | 1.1048 |
| -30                        | 1.0367 | 1.0480 | 1.0594 | 1.0707 | 1.0821 | 1.0935 |
| -32                        | 1.0266 | 1.0378 | 1.0490 | 1.0603 | 1.0715 | 1.0827 |
| -34                        | 1.0171 | 1.0281 | 1.0392 | 1.0503 | 1.0614 | 1.0725 |
| -36                        | 1.0081 | 1.0190 | 1.0300 | 1.0410 | 1.0519 | 1.0629 |
| -38                        | 0.9996 | 1.0105 | 1.0213 | 1.0322 | 1.0430 | 1.0539 |
| -40                        | 0.9917 | 1.0024 | 1.0131 | 1.0239 | 1.0346 | 1.0454 |
| -42                        | 0.9843 | 0.9949 | 1.0055 | 1.0161 | 1.0267 | 1.0374 |
| -44                        | 0.9773 | 0.9878 | 0.9983 | 1.0088 | 1.0194 | 1.0299 |
| -46                        | 0.9709 | 0.9813 | 0.9917 | 1.0021 | 1.0125 | 1.0229 |
| -48                        | 0.9650 | 0.9752 | 0.9855 | 0.9958 | 1.0061 | 1.0164 |
| -50                        | 0.9595 | 0.9696 | 0.9798 | 0.9900 | 1.0002 | 1.0105 |
| -52                        | 0.9545 | 0.9646 | 0.9746 | 0.9847 | 0.9948 | 1.0050 |
| -54                        | 0.9500 | 0.9599 | 0.9699 | 0.9799 | 0.9899 | 1.0000 |
| -56                        | 0.9459 | 0.9558 | 0.9657 | 0.9756 | 0.9855 | 0.9954 |
| -58                        | 0.9423 | 0.9521 | 0.9619 | 0.9717 | 0.9815 | 0.9914 |
| -60                        | 0.9393 | 0.9489 | 0.9586 | 0.9684 | 0.9781 | 0.9878 |
| -62                        | 0.9367 | 0.9463 | 0.9559 | 0.9655 | 0.9751 | 0.9848 |
| -64                        | 0.9346 | 0.9441 | 0.9536 | 0.9631 | 0.9726 | 0.9822 |
| -66                        | 0.9330 | 0.9424 | 0.9518 | 0.9612 | 0.9707 | 0.9801 |
| -68                        | 0.9320 | 0.9413 | 0.9506 | 0.9599 | 0.9692 | 0.9786 |
| -70                        | 0.9315 | 0.9407 | 0.9499 | 0.9591 | 0.9683 | 0.9776 |
| -72                        |        |        |        |        | 0.9680 | 0.9772 |
| -74                        |        |        |        |        |        |        |
| -76                        |        |        |        |        |        |        |
| -78                        |        |        |        |        |        |        |
| -80                        |        |        |        |        |        |        |
| -82                        |        |        |        |        |        |        |
| -84                        |        |        |        |        |        |        |
| -86                        |        |        |        |        |        |        |
| -88                        |        |        |        |        |        |        |
| -90                        |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\alpha \backslash \rho_0$ | 1.50    | 1.52    | 1.54    | 1.56    | 1.58    | 1.60    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 55.7533 | 56.3404 | 56.9272 | 57.5137 | 58.1000 | 58.6860 |
| 86                         | 27.8803 | 28.1738 | 28.4673 | 28.7606 | 29.0537 | 29.3468 |
| 84                         | 18.5908 | 18.7866 | 18.9823 | 19.1778 | 19.3733 | 19.5687 |
| 82                         | 13.9473 | 14.0942 | 14.2410 | 14.3877 | 14.5344 | 14.6810 |
| 80                         | 11.1622 | 11.2797 | 11.3972 | 11.5146 | 11.6320 | 11.7493 |
| 78                         | 9.3062  | 9.4042  | 9.5022  | 9.6001  | 9.6979  | 9.7957  |
| 76                         | 7.9812  | 8.0653  | 8.1493  | 8.2332  | 8.3172  | 8.4010  |
| 74                         | 6.9881  | 7.0617  | 7.1352  | 7.2087  | 7.2822  | 7.3557  |
| 72                         | 6.2162  | 6.2817  | 6.3471  | 6.4125  | 6.4778  | 6.5432  |
| 70                         | 5.5992  | 5.6581  | 5.7171  | 5.7760  | 5.8348  | 5.8937  |
| 68                         | 5.0948  | 5.1484  | 5.2021  | 5.2556  | 5.3092  | 5.3628  |
| 66                         | 4.6749  | 4.7241  | 4.7733  | 4.8225  | 4.8716  | 4.9207  |
| 64                         | 4.3200  | 4.3654  | 4.4109  | 4.4563  | 4.5017  | 4.5471  |
| 62                         | 4.0161  | 4.0584  | 4.1006  | 4.1429  | 4.1851  | 4.2273  |
| 60                         | 3.7531  | 3.7926  | 3.8321  | 3.8716  | 3.9110  | 3.9504  |
| 58                         | 3.5233  | 3.5604  | 3.5974  | 3.6345  | 3.6715  | 3.7086  |
| 56                         | 3.3208  | 3.3558  | 3.3907  | 3.4256  | 3.4605  | 3.4954  |
| 54                         | 3.1411  | 3.1742  | 3.2072  | 3.2402  | 3.2733  | 3.3063  |
| 52                         | 2.9806  | 3.0120  | 3.0434  | 3.0747  | 3.1060  | 3.1373  |
| 50                         | 2.8364  | 2.8663  | 2.8961  | 2.9260  | 2.9558  | 2.9856  |
| 48                         | 2.7063  | 2.7347  | 2.7632  | 2.7916  | 2.8201  | 2.8485  |
| 46                         | 2.5882  | 2.6154  | 2.6426  | 2.6698  | 2.6970  | 2.7242  |
| 44                         | 2.4805  | 2.5066  | 2.5327  | 2.5588  | 2.5849  | 2.6109  |
| 42                         | 2.3822  | 2.4072  | 2.4323  | 2.4573  | 2.4823  | 2.5073  |
| 40                         | 2.2919  | 2.3160  | 2.3400  | 2.3641  | 2.3882  | 2.4123  |
| 38                         | 2.2087  | 2.2319  | 2.2552  | 2.2784  | 2.3016  | 2.3248  |
| 36                         | 2.1320  | 2.1544  | 2.1768  | 2.1992  | 2.2216  | 2.2440  |
| 34                         | 2.0609  | 2.0826  | 2.1042  | 2.1259  | 2.1475  | 2.1692  |
| 32                         | 1.9949  | 2.0159  | 2.0369  | 2.0578  | 2.0788  | 2.0997  |
| 30                         | 1.9336  | 1.9539  | 1.9742  | 1.9945  | 2.0148  | 2.0351  |
| 28                         | 1.8764  | 1.8961  | 1.9158  | 1.9355  | 1.9552  | 1.9749  |
| 26                         | 1.8230  | 1.8421  | 1.8613  | 1.8804  | 1.8995  | 1.9186  |
| 24                         | 1.7730  | 1.7916  | 1.8102  | 1.8288  | 1.8474  | 1.8660  |
| 22                         | 1.7261  | 1.7443  | 1.7624  | 1.7805  | 1.7986  | 1.8167  |
| 20                         | 1.6821  | 1.6998  | 1.7174  | 1.7351  | 1.7527  | 1.7704  |
| 18                         | 1.6408  | 1.6580  | 1.6752  | 1.6924  | 1.7096  | 1.7268  |
| 16                         | 1.6019  | 1.6187  | 1.6355  | 1.6523  | 1.6690  | 1.6858  |
| 14                         | 1.5652  | 1.5816  | 1.5980  | 1.6144  | 1.6308  | 1.6472  |
| 12                         | 1.5305  | 1.5466  | 1.5626  | 1.5787  | 1.5947  | 1.6107  |
| 10                         | 1.4978  | 1.5135  | 1.5292  | 1.5449  | 1.5606  | 1.5763  |
| 8                          | 1.4669  | 1.4823  | 1.4976  | 1.5130  | 1.5283  | 1.5437  |
| 6                          | 1.4376  | 1.4527  | 1.4677  | 1.4828  | 1.4978  | 1.5129  |
| 4                          | 1.4099  | 1.4247  | 1.4394  | 1.4542  | 1.4689  | 1.4837  |
| 2                          | 1.3837  | 1.3981  | 1.4126  | 1.4271  | 1.4415  | 1.4560  |
| 0                          | 1.3588  | 1.3729  | 1.3871  | 1.4014  | 1.4156  | 1.4298  |

Table 3

| $\alpha \backslash \rho_0$ | 1.50   | 1.52   | 1.54   | 1.56   | 1.58   | 1.60   |
|----------------------------|--------|--------|--------|--------|--------|--------|
| -2                         | 1.3351 | 1.3491 | 1.3630 | 1.3770 | 1.3909 | 1.4048 |
| -4                         | 1.3127 | 1.3264 | 1.3401 | 1.3538 | 1.3675 | 1.3812 |
| -6                         | 1.2913 | 1.3048 | 1.3183 | 1.3318 | 1.3452 | 1.3587 |
| -8                         | 1.2711 | 1.2843 | 1.2976 | 1.3108 | 1.3241 | 1.3373 |
| -10                        | 1.2518 | 1.2649 | 1.2779 | 1.2910 | 1.3040 | 1.3170 |
| -12                        | 1.2335 | 1.2464 | 1.2592 | 1.2720 | 1.2849 | 1.2977 |
| -14                        | 1.2161 | 1.2288 | 1.2414 | 1.2541 | 1.2667 | 1.2794 |
| -16                        | 1.1996 | 1.2121 | 1.2245 | 1.2370 | 1.2495 | 1.2619 |
| -18                        | 1.1839 | 1.1962 | 1.2085 | 1.2207 | 1.2330 | 1.2453 |
| -20                        | 1.1690 | 1.1811 | 1.1932 | 1.2053 | 1.2174 | 1.2295 |
| -22                        | 1.1547 | 1.1667 | 1.1787 | 1.1906 | 1.2026 | 1.2145 |
| -24                        | 1.1413 | 1.1531 | 1.1649 | 1.1767 | 1.1885 | 1.2003 |
| -26                        | 1.1285 | 1.1401 | 1.1518 | 1.1634 | 1.1751 | 1.1868 |
| -28                        | 1.1163 | 1.1278 | 1.1393 | 1.1509 | 1.1624 | 1.1739 |
| -30                        | 1.1048 | 1.1162 | 1.1276 | 1.1390 | 1.1503 | 1.1617 |
| -32                        | 1.0939 | 1.1052 | 1.1164 | 1.1277 | 1.1389 | 1.1502 |
| -34                        | 1.0836 | 1.0947 | 1.1059 | 1.1170 | 1.1281 | 1.1392 |
| -36                        | 1.0739 | 1.0849 | 1.0959 | 1.1069 | 1.1179 | 1.1289 |
| -38                        | 1.0647 | 1.0756 | 1.0865 | 1.0974 | 1.1082 | 1.1191 |
| -40                        | 1.0561 | 1.0669 | 1.0776 | 1.0884 | 1.0992 | 1.1100 |
| -42                        | 1.0480 | 1.0586 | 1.0693 | 1.0800 | 1.0906 | 1.1013 |
| -44                        | 1.0404 | 1.0510 | 1.0615 | 1.0721 | 1.0826 | 1.0932 |
| -46                        | 1.0333 | 1.0438 | 1.0542 | 1.0647 | 1.0751 | 1.0856 |
| -48                        | 1.0268 | 1.0371 | 1.0475 | 1.0578 | 1.0682 | 1.0785 |
| -50                        | 1.0207 | 1.0309 | 1.0412 | 1.0514 | 1.0617 | 1.0720 |
| -52                        | 1.0151 | 1.0252 | 1.0354 | 1.0456 | 1.0557 | 1.0659 |
| -54                        | 1.0100 | 1.0201 | 1.0301 | 1.0402 | 1.0503 | 1.0604 |
| -56                        | 1.0054 | 1.0153 | 1.0253 | 1.0353 | 1.0453 | 1.0553 |
| -58                        | 1.0013 | 1.0111 | 1.0210 | 1.0309 | 1.0408 | 1.0507 |
| -60                        | 0.9976 | 1.0074 | 1.0172 | 1.0270 | 1.0368 | 1.0466 |
| -62                        | 0.9944 | 1.0041 | 1.0139 | 1.0236 | 1.0333 | 1.0431 |
| -64                        | 0.9918 | 1.0014 | 1.0110 | 1.0206 | 1.0303 | 1.0400 |
| -66                        | 0.9896 | 0.9991 | 1.0087 | 1.0182 | 1.0278 | 1.0374 |
| -68                        | 0.9880 | 0.9974 | 1.0069 | 1.0163 | 1.0258 | 1.0353 |
| -70                        | 0.9869 | 0.9962 | 1.0056 | 1.0150 | 1.0244 | 1.0338 |
| -72                        | 0.9863 | 0.9956 | 1.0049 | 1.0141 | 1.0234 | 1.0328 |
| -74                        |        |        |        |        | 1.0231 | 1.0323 |
| -76                        |        |        |        |        |        |        |
| -78                        |        |        |        |        |        |        |
| -80                        |        |        |        |        |        |        |
| -82                        |        |        |        |        |        |        |
| -84                        |        |        |        |        |        |        |
| -86                        |        |        |        |        |        |        |
| -88                        |        |        |        |        |        |        |
| -90                        |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\alpha \backslash \rho_0$ | 1.62    | 1.64    | 1.66    | 1.68    | 1.70    | 1.72    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 59.2718 | 59.8574 | 60.4427 | 61.0278 | 61.6128 | 62.1975 |
| 86                         | 29.6397 | 29.9326 | 30.2253 | 30.5179 | 30.8103 | 31.1027 |
| 84                         | 19.7641 | 19.9593 | 20.1545 | 20.3496 | 20.5446 | 20.7396 |
| 82                         | 14.8275 | 14.9740 | 15.1204 | 15.2668 | 15.4131 | 15.5594 |
| 80                         | 11.8666 | 11.9838 | 12.1010 | 12.2182 | 12.3353 | 12.4523 |
| 78                         | 9.8935  | 9.9913  | 10.0890 | 10.1866 | 10.2843 | 10.3819 |
| 76                         | 8.4849  | 8.5687  | 8.6525  | 8.7363  | 8.8200  | 8.9037  |
| 74                         | 7.4291  | 7.5025  | 7.5758  | 7.6492  | 7.7225  | 7.7958  |
| 72                         | 6.6085  | 6.6738  | 6.7390  | 6.8042  | 6.8695  | 6.9347  |
| 70                         | 5.9525  | 6.0113  | 6.0701  | 6.1288  | 6.1876  | 6.2463  |
| 68                         | 5.4163  | 5.4698  | 5.5233  | 5.5767  | 5.6302  | 5.6836  |
| 66                         | 4.9699  | 5.0190  | 5.0680  | 5.1171  | 5.1661  | 5.2152  |
| 64                         | 4.5925  | 4.6379  | 4.6833  | 4.7286  | 4.7739  | 4.8192  |
| 62                         | 4.2695  | 4.3117  | 4.3538  | 4.3960  | 4.4381  | 4.4802  |
| 60                         | 3.9899  | 4.0293  | 4.0687  | 4.1081  | 4.1474  | 4.1868  |
| 58                         | 3.7456  | 3.7825  | 3.8195  | 3.8565  | 3.8935  | 3.9304  |
| 56                         | 3.5303  | 3.5652  | 3.6000  | 3.6349  | 3.6697  | 3.7045  |
| 54                         | 3.3393  | 3.3722  | 3.4052  | 3.4382  | 3.4711  | 3.5041  |
| 52                         | 3.1686  | 3.1999  | 3.2312  | 3.2625  | 3.2937  | 3.3250  |
| 50                         | 3.0154  | 3.0451  | 3.0749  | 3.1047  | 3.1344  | 3.1642  |
| 48                         | 2.8769  | 2.9053  | 2.9338  | 2.9621  | 2.9905  | 3.0189  |
| 46                         | 2.7514  | 2.7785  | 2.8057  | 2.8329  | 2.8600  | 2.8871  |
| 44                         | 2.6370  | 2.6630  | 2.6890  | 2.7151  | 2.7411  | 2.7671  |
| 42                         | 2.5323  | 2.5574  | 2.5823  | 2.6073  | 2.6323  | 2.6573  |
| 40                         | 2.4363  | 2.4604  | 2.4844  | 2.5085  | 2.5325  | 2.5565  |
| 38                         | 2.3479  | 2.3711  | 2.3943  | 2.4175  | 2.4406  | 2.4638  |
| 36                         | 2.2663  | 2.2887  | 2.3111  | 2.3334  | 2.3558  | 2.3781  |
| 34                         | 2.1908  | 2.2124  | 2.2340  | 2.2556  | 2.2772  | 2.2988  |
| 32                         | 2.1207  | 2.1416  | 2.1625  | 2.1834  | 2.2043  | 2.2252  |
| 30                         | 2.0554  | 2.0757  | 2.0960  | 2.1162  | 2.1365  | 2.1568  |
| 28                         | 1.9946  | 2.0143  | 2.0339  | 2.0536  | 2.0733  | 2.0929  |
| 26                         | 1.9378  | 1.9569  | 1.9760  | 1.9951  | 2.0142  | 2.0333  |
| 24                         | 1.8846  | 1.9032  | 1.9218  | 1.9404  | 1.9590  | 1.9775  |
| 22                         | 1.8348  | 1.8529  | 1.8710  | 1.8891  | 1.9071  | 1.9252  |
| 20                         | 1.7880  | 1.8056  | 1.8233  | 1.8409  | 1.8585  | 1.8761  |
| 18                         | 1.7440  | 1.7612  | 1.7784  | 1.7956  | 1.8128  | 1.8300  |
| 16                         | 1.7026  | 1.7194  | 1.7362  | 1.7529  | 1.7697  | 1.7865  |
| 14                         | 1.6636  | 1.6800  | 1.6964  | 1.7128  | 1.7291  | 1.7455  |
| 12                         | 1.6267  | 1.6428  | 1.6588  | 1.6748  | 1.6908  | 1.7069  |
| 10                         | 1.5920  | 1.6076  | 1.6233  | 1.6390  | 1.6547  | 1.6703  |
| 8                          | 1.5591  | 1.5744  | 1.5898  | 1.6051  | 1.6204  | 1.6358  |
| 6                          | 1.5279  | 1.5430  | 1.5580  | 1.5730  | 1.5881  | 1.6031  |
| 4                          | 1.4984  | 1.5132  | 1.5279  | 1.5427  | 1.5574  | 1.5721  |
| 2                          | 1.4705  | 1.4849  | 1.4994  | 1.5139  | 1.5283  | 1.5428  |
| 0                          | 1.4439  | 1.4581  | 1.4723  | 1.4865  | 1.5007  | 1.5149  |

Table 3

| $\rho_0 \backslash \alpha$ | 1.62   | 1.64   | 1.66   | 1.68   | 1.70   | 1.72   |
|----------------------------|--------|--------|--------|--------|--------|--------|
| -2                         | 1.4188 | 1.4327 | 1.4467 | 1.4606 | 1.4745 | 1.4885 |
| -4                         | 1.3949 | 1.4086 | 1.4223 | 1.4360 | 1.4497 | 1.4634 |
| -6                         | 1.3722 | 1.3856 | 1.3991 | 1.4126 | 1.4260 | 1.4395 |
| -8                         | 1.3506 | 1.3638 | 1.3771 | 1.3903 | 1.4036 | 1.4168 |
| -10                        | 1.3301 | 1.3431 | 1.3562 | 1.3692 | 1.3822 | 1.3953 |
| -12                        | 1.3106 | 1.3234 | 1.3363 | 1.3491 | 1.3619 | 1.3748 |
| -14                        | 1.2920 | 1.3047 | 1.3173 | 1.3300 | 1.3426 | 1.3553 |
| -16                        | 1.2744 | 1.2869 | 1.2993 | 1.3118 | 1.3243 | 1.3367 |
| -18                        | 1.2576 | 1.2699 | 1.2822 | 1.2945 | 1.3068 | 1.3191 |
| -20                        | 1.2417 | 1.2538 | 1.2659 | 1.2781 | 1.2902 | 1.3023 |
| -22                        | 1.2265 | 1.2385 | 1.2504 | 1.2624 | 1.2744 | 1.2864 |
| -24                        | 1.2121 | 1.2239 | 1.2357 | 1.2476 | 1.2594 | 1.2712 |
| -26                        | 1.1984 | 1.2101 | 1.2218 | 1.2334 | 1.2451 | 1.2568 |
| -28                        | 1.1854 | 1.1969 | 1.2085 | 1.2200 | 1.2316 | 1.2431 |
| -30                        | 1.1731 | 1.1845 | 1.1959 | 1.2073 | 1.2187 | 1.2301 |
| -32                        | 1.1614 | 1.1727 | 1.1840 | 1.1952 | 1.2065 | 1.2178 |
| -34                        | 1.1504 | 1.1615 | 1.1727 | 1.1838 | 1.1949 | 1.2061 |
| -36                        | 1.1399 | 1.1509 | 1.1620 | 1.1730 | 1.1840 | 1.1951 |
| -38                        | 1.1300 | 1.1409 | 1.1518 | 1.1628 | 1.1737 | 1.1846 |
| -40                        | 1.1207 | 1.1315 | 1.1423 | 1.1531 | 1.1639 | 1.1748 |
| -42                        | 1.1120 | 1.1227 | 1.1334 | 1.1441 | 1.1548 | 1.1655 |
| -44                        | 1.1038 | 1.1144 | 1.1249 | 1.1355 | 1.1461 | 1.1567 |
| -46                        | 1.0961 | 1.1066 | 1.1171 | 1.1276 | 1.1381 | 1.1486 |
| -48                        | 1.0889 | 1.0993 | 1.1097 | 1.1201 | 1.1305 | 1.1409 |
| -50                        | 1.0823 | 1.0926 | 1.1029 | 1.1132 | 1.1235 | 1.1338 |
| -52                        | 1.0761 | 1.0863 | 1.0965 | 1.1068 | 1.1170 | 1.1272 |
| -54                        | 1.0705 | 1.0806 | 1.0907 | 1.1009 | 1.1110 | 1.1212 |
| -56                        | 1.0653 | 1.0753 | 1.0854 | 1.0955 | 1.1055 | 1.1156 |
| -58                        | 1.0607 | 1.0706 | 1.0806 | 1.0905 | 1.1005 | 1.1105 |
| -60                        | 1.0565 | 1.0664 | 1.0763 | 1.0861 | 1.0960 | 1.1060 |
| -62                        | 1.0528 | 1.0626 | 1.0724 | 1.0822 | 1.0920 | 1.1019 |
| -64                        | 1.0497 | 1.0594 | 1.0691 | 1.0788 | 1.0886 | 1.0983 |
| -66                        | 1.0470 | 1.0566 | 1.0663 | 1.0759 | 1.0856 | 1.0953 |
| -68                        | 1.0449 | 1.0544 | 1.0640 | 1.0735 | 1.0831 | 1.0927 |
| -70                        | 1.0432 | 1.0527 | 1.0622 | 1.0717 | 1.0812 | 1.0907 |
| -72                        | 1.0421 | 1.0515 | 1.0609 | 1.0703 | 1.0798 | 1.0892 |
| -74                        | 1.0416 | 1.0509 | 1.0602 | 1.0696 | 1.0789 | 1.0883 |
| -76                        |        |        |        |        | 1.0786 | 1.0879 |
| -78                        |        |        |        |        |        |        |
| -80                        |        |        |        |        |        |        |
| -82                        |        |        |        |        |        |        |
| -84                        |        |        |        |        |        |        |
| -86                        |        |        |        |        |        |        |
| -88                        |        |        |        |        |        |        |
| -90                        |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\alpha \backslash \rho_0$ | 1.74    | 1.76    | 1.78    | 1.80    | 1.82    | 1.84    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 62.7820 | 63.3663 | 63.9504 | 64.5343 | 65.1181 | 65.7016 |
| 86                         | 31.3950 | 31.6872 | 31.9793 | 32.2713 | 32.5632 | 32.8551 |
| 84                         | 20.9345 | 21.1293 | 21.3241 | 21.5188 | 21.7135 | 21.9081 |
| 82                         | 15.7056 | 15.8518 | 15.9979 | 16.1440 | 16.2900 | 16.4360 |
| 80                         | 12.5694 | 12.6863 | 12.8033 | 12.9202 | 13.0371 | 13.1539 |
| 78                         | 10.4794 | 10.5769 | 10.6744 | 10.7719 | 10.8694 | 10.9668 |
| 76                         | 8.9874  | 9.0710  | 9.1546  | 9.2382  | 9.3218  | 9.4053  |
| 74                         | 7.8690  | 7.9423  | 8.0155  | 8.0887  | 8.1618  | 8.2350  |
| 72                         | 6.9998  | 7.0650  | 7.1301  | 7.1952  | 7.2603  | 7.3254  |
| 70                         | 6.3050  | 6.3637  | 6.4223  | 6.4810  | 6.5396  | 6.5982  |
| 68                         | 5.7370  | 5.7904  | 5.8438  | 5.8972  | 5.9505  | 6.0038  |
| 66                         | 5.2642  | 5.3132  | 5.3621  | 5.4111  | 5.4600  | 5.5090  |
| 64                         | 4.8645  | 4.9098  | 4.9550  | 5.0003  | 5.0455  | 5.0907  |
| 62                         | 4.5223  | 4.5644  | 4.6065  | 4.6485  | 4.6906  | 4.7326  |
| 60                         | 4.2261  | 4.2655  | 4.3048  | 4.3441  | 4.3834  | 4.4227  |
| 58                         | 3.9674  | 4.0043  | 4.0412  | 4.0781  | 4.1150  | 4.1519  |
| 56                         | 3.7393  | 3.7741  | 3.8089  | 3.8437  | 3.8785  | 3.9132  |
| 54                         | 3.5370  | 3.5699  | 3.6028  | 3.6357  | 3.6686  | 3.7015  |
| 52                         | 3.3562  | 3.3875  | 3.4187  | 3.4499  | 3.4811  | 3.5124  |
| 50                         | 3.1939  | 3.2236  | 3.2533  | 3.2830  | 3.3127  | 3.3424  |
| 48                         | 3.0473  | 3.0756  | 3.1040  | 3.1323  | 3.1607  | 3.1890  |
| 46                         | 2.9143  | 2.9414  | 2.9685  | 2.9956  | 3.0227  | 3.0498  |
| 44                         | 2.7931  | 2.8191  | 2.8451  | 2.8710  | 2.8970  | 2.9230  |
| 42                         | 2.6823  | 2.7072  | 2.7322  | 2.7571  | 2.7821  | 2.8070  |
| 40                         | 2.5806  | 2.6046  | 2.6286  | 2.6526  | 2.6766  | 2.7006  |
| 38                         | 2.4869  | 2.5101  | 2.5332  | 2.5563  | 2.5795  | 2.6026  |
| 36                         | 2.4005  | 2.4228  | 2.4451  | 2.4675  | 2.4898  | 2.5121  |
| 34                         | 2.3204  | 2.3420  | 2.3636  | 2.3852  | 2.4068  | 2.4283  |
| 32                         | 2.2461  | 2.2670  | 2.2879  | 2.3088  | 2.3297  | 2.3506  |
| 30                         | 2.1770  | 2.1973  | 2.2175  | 2.2378  | 2.2580  | 2.2782  |
| 28                         | 2.1126  | 2.1322  | 2.1519  | 2.1715  | 2.1912  | 2.2108  |
| 26                         | 2.0524  | 2.0715  | 2.0906  | 2.1097  | 2.1287  | 2.1478  |
| 24                         | 1.9961  | 2.0147  | 2.0332  | 2.0518  | 2.0703  | 2.0889  |
| 22                         | 1.9433  | 1.9614  | 1.9794  | 1.9975  | 2.0156  | 2.0336  |
| 20                         | 1.8937  | 1.9113  | 1.9290  | 1.9466  | 1.9642  | 1.9817  |
| 18                         | 1.8471  | 1.8643  | 1.8815  | 1.8986  | 1.9158  | 1.9330  |
| 16                         | 1.8033  | 1.8200  | 1.8368  | 1.8535  | 1.8703  | 1.8870  |
| 14                         | 1.7619  | 1.7783  | 1.7947  | 1.8110  | 1.8274  | 1.8438  |
| 12                         | 1.7229  | 1.7389  | 1.7549  | 1.7709  | 1.7869  | 1.8029  |
| 10                         | 1.6860  | 1.7017  | 1.7173  | 1.7330  | 1.7486  | 1.7643  |
| 8                          | 1.6511  | 1.6665  | 1.6818  | 1.6971  | 1.7125  | 1.7278  |
| 6                          | 1.6181  | 1.6332  | 1.6482  | 1.6632  | 1.6782  | 1.6932  |
| 4                          | 1.5869  | 1.6016  | 1.6163  | 1.6311  | 1.6458  | 1.6605  |
| 2                          | 1.5572  | 1.5717  | 1.5861  | 1.6006  | 1.6150  | 1.6295  |
| 0                          | 1.5291  | 1.5433  | 1.5575  | 1.5717  | 1.5858  | 1.6000  |

Table 3

| $\rho_0$<br>$\alpha$ | 1.74   | 1.76   | 1.78   | 1.80   | 1.82   | 1.84   |
|----------------------|--------|--------|--------|--------|--------|--------|
| -2                   | 1.5024 | 1.5163 | 1.5303 | 1.5442 | 1.5582 | 1.5721 |
| -4                   | 1.4771 | 1.4908 | 1.5044 | 1.5182 | 1.5318 | 1.5455 |
| -6                   | 1.4530 | 1.4664 | 1.4799 | 1.4934 | 1.5069 | 1.5203 |
| -8                   | 1.4301 | 1.4433 | 1.4566 | 1.4698 | 1.4831 | 1.4963 |
| -10                  | 1.4083 | 1.4214 | 1.4344 | 1.4474 | 1.4605 | 1.4735 |
| -12                  | 1.3876 | 1.4005 | 1.4133 | 1.4262 | 1.4390 | 1.4518 |
| -14                  | 1.3679 | 1.3806 | 1.3933 | 1.4059 | 1.4186 | 1.4312 |
| -16                  | 1.3492 | 1.3617 | 1.3742 | 1.3866 | 1.3991 | 1.4116 |
| -18                  | 1.3314 | 1.3437 | 1.3560 | 1.3683 | 1.3806 | 1.3929 |
| -20                  | 1.3145 | 1.3266 | 1.3387 | 1.3509 | 1.3630 | 1.3751 |
| -22                  | 1.2983 | 1.3103 | 1.3223 | 1.3343 | 1.3462 | 1.3582 |
| -24                  | 1.2830 | 1.2948 | 1.3067 | 1.3185 | 1.3303 | 1.3422 |
| -26                  | 1.2685 | 1.2801 | 1.2918 | 1.3035 | 1.3152 | 1.3269 |
| -28                  | 1.2546 | 1.2662 | 1.2777 | 1.2893 | 1.3008 | 1.3124 |
| -30                  | 1.2415 | 1.2529 | 1.2643 | 1.2757 | 1.2872 | 1.2986 |
| -32                  | 1.2290 | 1.2403 | 1.2516 | 1.2629 | 1.2742 | 1.2855 |
| -34                  | 1.2172 | 1.2284 | 1.2396 | 1.2507 | 1.2619 | 1.2731 |
| -36                  | 1.2061 | 1.2171 | 1.2282 | 1.2392 | 1.2503 | 1.2613 |
| -38                  | 1.1955 | 1.2065 | 1.2174 | 1.2283 | 1.2393 | 1.2502 |
| -40                  | 1.1856 | 1.1964 | 1.2072 | 1.2181 | 1.2289 | 1.2397 |
| -42                  | 1.1762 | 1.1869 | 1.1976 | 1.2084 | 1.2191 | 1.2298 |
| -44                  | 1.1674 | 1.1780 | 1.1886 | 1.1992 | 1.2099 | 1.2205 |
| -46                  | 1.1591 | 1.1696 | 1.1801 | 1.1907 | 1.2012 | 1.2118 |
| -48                  | 1.1514 | 1.1618 | 1.1722 | 1.1827 | 1.1931 | 1.2036 |
| -50                  | 1.1442 | 1.1545 | 1.1648 | 1.1752 | 1.1855 | 1.1959 |
| -52                  | 1.1375 | 1.1477 | 1.1580 | 1.1683 | 1.1785 | 1.1888 |
| -54                  | 1.1313 | 1.1415 | 1.1517 | 1.1618 | 1.1720 | 1.1822 |
| -56                  | 1.1257 | 1.1357 | 1.1458 | 1.1559 | 1.1661 | 1.1762 |
| -58                  | 1.1205 | 1.1305 | 1.1405 | 1.1506 | 1.1606 | 1.1706 |
| -60                  | 1.1159 | 1.1258 | 1.1357 | 1.1457 | 1.1557 | 1.1656 |
| -62                  | 1.1117 | 1.1216 | 1.1314 | 1.1413 | 1.1512 | 1.1611 |
| -64                  | 1.1081 | 1.1179 | 1.1277 | 1.1375 | 1.1473 | 1.1571 |
| -66                  | 1.1050 | 1.1147 | 1.1244 | 1.1341 | 1.1439 | 1.1537 |
| -68                  | 1.1024 | 1.1120 | 1.1217 | 1.1313 | 1.1410 | 1.1507 |
| -70                  | 1.1003 | 1.1098 | 1.1194 | 1.1290 | 1.1386 | 1.1483 |
| -72                  | 1.0987 | 1.1082 | 1.1177 | 1.1273 | 1.1368 | 1.1463 |
| -74                  | 1.0977 | 1.1071 | 1.1166 | 1.1260 | 1.1355 | 1.1450 |
| -76                  | 1.0972 | 1.1066 | 1.1160 | 1.1254 | 1.1348 | 1.1442 |
| -78                  |        |        |        |        |        |        |
| -80                  |        |        |        |        |        |        |
| -82                  |        |        |        |        |        |        |
| -84                  |        |        |        |        |        |        |
| -86                  |        |        |        |        |        |        |
| -88                  |        |        |        |        |        |        |
| -90                  |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 1.86    | 1.88    | 1.90    | 1.92    | 1.94    | 1.96    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 66.2850 | 66.8683 | 67.4513 | 68.0342 | 68.6170 | 69.1996 |
| 86                         | 33.1468 | 33.4384 | 33.7300 | 34.0215 | 34.3129 | 34.6043 |
| 84                         | 22.1026 | 22.2971 | 22.4915 | 22.6859 | 22.8802 | 23.0745 |
| 82                         | 16.5819 | 16.7278 | 16.8737 | 17.0195 | 17.1653 | 17.3111 |
| 80                         | 13.2707 | 13.3875 | 13.5042 | 13.6209 | 13.7376 | 13.8542 |
| 78                         | 11.0641 | 11.1615 | 11.2588 | 11.3561 | 11.4534 | 11.5506 |
| 76                         | 9.4889  | 9.5723  | 9.6558  | 9.7393  | 9.8227  | 9.9061  |
| 74                         | 8.3081  | 8.3812  | 8.4543  | 8.5274  | 8.6004  | 8.6735  |
| 72                         | 7.3904  | 7.4554  | 7.5204  | 7.5855  | 7.6504  | 7.7154  |
| 70                         | 6.6568  | 6.7154  | 6.7740  | 6.8325  | 6.8910  | 6.9495  |
| 68                         | 6.0571  | 6.1104  | 6.1637  | 6.2170  | 6.2703  | 6.3235  |
| 66                         | 5.5579  | 5.6068  | 5.6557  | 5.7046  | 5.7535  | 5.8023  |
| 64                         | 5.1359  | 5.1811  | 5.2263  | 5.2715  | 5.3167  | 5.3618  |
| 62                         | 4.7747  | 4.8167  | 4.8587  | 4.9007  | 4.9427  | 4.9846  |
| 60                         | 4.4620  | 4.5012  | 4.5405  | 4.5797  | 4.6190  | 4.6582  |
| 58                         | 4.1887  | 4.2256  | 4.2625  | 4.2993  | 4.3361  | 4.3729  |
| 56                         | 3.9480  | 3.9827  | 4.0175  | 4.0522  | 4.0869  | 4.1216  |
| 54                         | 3.7344  | 3.7672  | 3.8001  | 3.8329  | 3.8658  | 3.8986  |
| 52                         | 3.5435  | 3.5747  | 3.6059  | 3.6371  | 3.6682  | 3.6994  |
| 50                         | 3.3721  | 3.4018  | 3.4315  | 3.4611  | 3.4908  | 3.5204  |
| 48                         | 3.2173  | 3.2456  | 3.2739  | 3.3022  | 3.3305  | 3.3588  |
| 46                         | 3.0769  | 3.1040  | 3.1310  | 3.1581  | 3.1852  | 3.2122  |
| 44                         | 2.9489  | 2.9749  | 3.0008  | 3.0268  | 3.0527  | 3.0787  |
| 42                         | 2.8319  | 2.8569  | 2.8818  | 2.9067  | 2.9316  | 2.9565  |
| 40                         | 2.7246  | 2.7485  | 2.7725  | 2.7965  | 2.8204  | 2.8444  |
| 38                         | 2.6257  | 2.6488  | 2.6719  | 2.6950  | 2.7181  | 2.7412  |
| 36                         | 2.5344  | 2.5567  | 2.5790  | 2.6013  | 2.6236  | 2.6459  |
| 34                         | 2.4499  | 2.4715  | 2.4930  | 2.5146  | 2.5361  | 2.5577  |
| 32                         | 2.3715  | 2.3923  | 2.4132  | 2.4341  | 2.4549  | 2.4758  |
| 30                         | 2.2985  | 2.3187  | 2.3389  | 2.3591  | 2.3794  | 2.3996  |
| 28                         | 2.2304  | 2.2501  | 2.2697  | 2.2893  | 2.3089  | 2.3286  |
| 26                         | 2.1669  | 2.1860  | 2.2050  | 2.2241  | 2.2432  | 2.2622  |
| 24                         | 2.1074  | 2.1260  | 2.1445  | 2.1630  | 2.1816  | 2.2001  |
| 22                         | 2.0517  | 2.0697  | 2.0878  | 2.1058  | 2.1239  | 2.1419  |
| 20                         | 1.9993  | 2.0169  | 2.0345  | 2.0521  | 2.0697  | 2.0873  |
| 18                         | 1.9501  | 1.9673  | 1.9844  | 2.0016  | 2.0188  | 2.0359  |
| 16                         | 1.9038  | 1.9206  | 1.9373  | 1.9540  | 1.9708  | 1.9875  |
| 14                         | 1.8601  | 1.8765  | 1.8928  | 1.9092  | 1.9256  | 1.9419  |
| 12                         | 1.8189  | 1.8349  | 1.8509  | 1.8669  | 1.8829  | 1.8989  |
| 10                         | 1.7800  | 1.7956  | 1.8113  | 1.8269  | 1.8426  | 1.8582  |
| 8                          | 1.7431  | 1.7584  | 1.7738  | 1.7891  | 1.8044  | 1.8197  |
| 6                          | 1.7083  | 1.7233  | 1.7383  | 1.7533  | 1.7683  | 1.7833  |
| 4                          | 1.6752  | 1.6900  | 1.7047  | 1.7194  | 1.7341  | 1.7489  |
| 2                          | 1.6439  | 1.6584  | 1.6728  | 1.6873  | 1.7017  | 1.7162  |
| 0                          | 1.6142  | 1.6284  | 1.6426  | 1.6568  | 1.6709  | 1.6851  |

Table 3

| $\rho_0$<br>$\alpha$ | 1.86   | 1.88   | 1.90   | 1.92   | 1.94   | 1.96   |
|----------------------|--------|--------|--------|--------|--------|--------|
| -2                   | 1.5860 | 1.5999 | 1.6139 | 1.6278 | 1.6417 | 1.6557 |
| -4                   | 1.5592 | 1.5729 | 1.5866 | 1.6003 | 1.6140 | 1.6277 |
| -6                   | 1.5338 | 1.5472 | 1.5607 | 1.5742 | 1.5876 | 1.6011 |
| -8                   | 1.5096 | 1.5228 | 1.5361 | 1.5493 | 1.5626 | 1.5758 |
| -10                  | 1.4866 | 1.4996 | 1.5127 | 1.5257 | 1.5387 | 1.5518 |
| -12                  | 1.4647 | 1.4775 | 1.4904 | 1.5032 | 1.5161 | 1.5289 |
| -14                  | 1.4439 | 1.4565 | 1.4692 | 1.4818 | 1.4945 | 1.5072 |
| -16                  | 1.4241 | 1.4365 | 1.4490 | 1.4615 | 1.4740 | 1.4865 |
| -18                  | 1.4052 | 1.4175 | 1.4298 | 1.4421 | 1.4544 | 1.4668 |
| -20                  | 1.3873 | 1.3994 | 1.4116 | 1.4237 | 1.4359 | 1.4480 |
| -22                  | 1.3702 | 1.3822 | 1.3942 | 1.4062 | 1.4182 | 1.4302 |
| -24                  | 1.3540 | 1.3658 | 1.3777 | 1.3895 | 1.4014 | 1.4132 |
| -26                  | 1.3386 | 1.3503 | 1.3620 | 1.3737 | 1.3854 | 1.3971 |
| -28                  | 1.3239 | 1.3355 | 1.3470 | 1.3586 | 1.3702 | 1.3817 |
| -30                  | 1.3100 | 1.3214 | 1.3329 | 1.3443 | 1.3557 | 1.3672 |
| -32                  | 1.2968 | 1.3081 | 1.3194 | 1.3307 | 1.3420 | 1.3533 |
| -34                  | 1.2843 | 1.2954 | 1.3066 | 1.3178 | 1.3290 | 1.3402 |
| -36                  | 1.2724 | 1.2835 | 1.2945 | 1.3056 | 1.3167 | 1.3278 |
| -38                  | 1.2612 | 1.2721 | 1.2831 | 1.2940 | 1.3050 | 1.3160 |
| -40                  | 1.2506 | 1.2614 | 1.2723 | 1.2831 | 1.2940 | 1.3048 |
| -42                  | 1.2406 | 1.2513 | 1.2621 | 1.2728 | 1.2836 | 1.2943 |
| -44                  | 1.2311 | 1.2418 | 1.2524 | 1.2631 | 1.2738 | 1.2844 |
| -46                  | 1.2223 | 1.2329 | 1.2434 | 1.2540 | 1.2646 | 1.2751 |
| -48                  | 1.2140 | 1.2245 | 1.2350 | 1.2454 | 1.2559 | 1.2664 |
| -50                  | 1.2063 | 1.2167 | 1.2270 | 1.2374 | 1.2478 | 1.2582 |
| -52                  | 1.1991 | 1.2094 | 1.2197 | 1.2300 | 1.2403 | 1.2506 |
| -54                  | 1.1924 | 1.2027 | 1.2129 | 1.2231 | 1.2333 | 1.2436 |
| -56                  | 1.1863 | 1.1964 | 1.2066 | 1.2167 | 1.2269 | 1.2371 |
| -58                  | 1.1807 | 1.1908 | 1.2008 | 1.2109 | 1.2210 | 1.2311 |
| -60                  | 1.1756 | 1.1856 | 1.1956 | 1.2056 | 1.2156 | 1.2256 |
| -62                  | 1.1710 | 1.1809 | 1.1909 | 1.2008 | 1.2107 | 1.2207 |
| -64                  | 1.1670 | 1.1768 | 1.1867 | 1.1965 | 1.2064 | 1.2163 |
| -66                  | 1.1634 | 1.1732 | 1.1830 | 1.1928 | 1.2026 | 1.2124 |
| -68                  | 1.1604 | 1.1701 | 1.1798 | 1.1896 | 1.1993 | 1.2091 |
| -70                  | 1.1579 | 1.1675 | 1.1772 | 1.1869 | 1.1966 | 1.2063 |
| -72                  | 1.1559 | 1.1655 | 1.1751 | 1.1847 | 1.1943 | 1.2040 |
| -74                  | 1.1545 | 1.1640 | 1.1735 | 1.1831 | 1.1927 | 1.2022 |
| -76                  | 1.1536 | 1.1631 | 1.1726 | 1.1820 | 1.1915 | 1.2011 |
| -78                  | 1.1533 | 1.1627 | 1.1721 | 1.1815 | 1.1910 | 1.2004 |
| -80                  |        |        |        |        |        |        |
| -82                  |        |        |        |        |        |        |
| -84                  |        |        |        |        |        |        |
| -86                  |        |        |        |        |        |        |
| -88                  |        |        |        |        |        |        |
| -90                  |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\alpha \backslash \rho_0$ | 1.98    | 2.00    | 2.10    | 2.20    | 2.30    | 2.40    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 69.7820 | 70.3643 | 73.2738 | 76.1802 | 79.0837 | 81.9846 |
| 86                         | 34.8955 | 35.1867 | 36.6417 | 38.0950 | 39.5470 | 40.9977 |
| 84                         | 23.2687 | 23.4629 | 24.4330 | 25.4022 | 26.3703 | 27.3377 |
| 82                         | 17.4568 | 17.6024 | 18.3303 | 19.0574 | 19.7838 | 20.5095 |
| 80                         | 13.9708 | 14.0874 | 14.6699 | 15.2518 | 15.8332 | 16.4140 |
| 78                         | 11.6479 | 11.7451 | 12.2308 | 12.7159 | 13.2006 | 13.6849 |
| 76                         | 9.9895  | 10.0729 | 10.4894 | 10.9055 | 11.3212 | 11.7365 |
| 74                         | 8.7465  | 8.8195  | 9.1842  | 9.5485  | 9.9125  | 10.2761 |
| 72                         | 7.7803  | 7.8453  | 8.1697  | 8.4938  | 8.8176  | 9.1411  |
| 70                         | 7.0080  | 7.0665  | 7.3588  | 7.6507  | 7.9424  | 8.2338  |
| 68                         | 6.3767  | 6.4300  | 6.6959  | 6.9615  | 7.2269  | 7.4921  |
| 66                         | 5.8512  | 5.9000  | 6.1440  | 6.3878  | 6.6313  | 6.8747  |
| 64                         | 5.4069  | 5.4521  | 5.6776  | 5.9028  | 6.1279  | 6.3527  |
| 62                         | 5.0266  | 5.0686  | 5.2782  | 5.4876  | 5.6969  | 5.9059  |
| 60                         | 4.6974  | 4.7366  | 4.9325  | 5.1283  | 5.3238  | 5.5192  |
| 58                         | 4.4098  | 4.4466  | 4.6305  | 4.8142  | 4.9978  | 5.1813  |
| 56                         | 4.1563  | 4.1910  | 4.3644  | 4.5376  | 4.7106  | 4.8836  |
| 54                         | 3.9314  | 3.9642  | 4.1282  | 4.2921  | 4.4558  | 4.6193  |
| 52                         | 3.7305  | 3.7617  | 3.9173  | 4.0728  | 4.2281  | 4.3833  |
| 50                         | 3.5501  | 3.5797  | 3.7278  | 3.8758  | 4.0236  | 4.1713  |
| 48                         | 3.3871  | 3.4154  | 3.5567  | 3.6979  | 3.8389  | 3.9799  |
| 46                         | 3.2393  | 3.2663  | 3.4015  | 3.5365  | 3.6714  | 3.8062  |
| 44                         | 3.1046  | 3.1305  | 3.2600  | 3.3894  | 3.5188  | 3.6480  |
| 42                         | 2.9814  | 3.0063  | 3.1307  | 3.2550  | 3.3792  | 3.5033  |
| 40                         | 2.8684  | 2.8923  | 3.0120  | 3.1316  | 3.2511  | 3.3705  |
| 38                         | 2.7643  | 2.7874  | 2.9027  | 3.0180  | 3.1331  | 3.2482  |
| 36                         | 2.6682  | 2.6905  | 2.8018  | 2.9131  | 3.0242  | 3.1353  |
| 34                         | 2.5792  | 2.6007  | 2.7084  | 2.8159  | 2.9234  | 3.0308  |
| 32                         | 2.4966  | 2.5175  | 2.6217  | 2.7258  | 2.8298  | 2.9338  |
| 30                         | 2.4198  | 2.4400  | 2.5410  | 2.6419  | 2.7428  | 2.8435  |
| 28                         | 2.3482  | 2.3678  | 2.4658  | 2.5637  | 2.6616  | 2.7594  |
| 26                         | 2.2813  | 2.3003  | 2.3955  | 2.4907  | 2.5858  | 2.6808  |
| 24                         | 2.2186  | 2.2372  | 2.3298  | 2.4223  | 2.5148  | 2.6073  |
| 22                         | 2.1600  | 2.1780  | 2.2682  | 2.3582  | 2.4483  | 2.5383  |
| 20                         | 2.1048  | 2.1224  | 2.2103  | 2.2981  | 2.3858  | 2.4736  |
| 18                         | 2.0530  | 2.0702  | 2.1559  | 2.2415  | 2.3271  | 2.4127  |
| 16                         | 2.0043  | 2.0210  | 2.1046  | 2.1883  | 2.2718  | 2.3554  |
| 14                         | 1.9583  | 1.9746  | 2.0563  | 2.1380  | 2.2197  | 2.3013  |
| 12                         | 1.9149  | 1.9309  | 2.0108  | 2.0906  | 2.1705  | 2.2503  |
| 10                         | 1.8739  | 1.8895  | 1.9677  | 2.0459  | 2.1240  | 2.2021  |
| 8                          | 1.8351  | 1.8504  | 1.9270  | 2.0035  | 2.0801  | 2.1566  |
| 6                          | 1.7984  | 1.8134  | 1.8884  | 1.9634  | 2.0384  | 2.1134  |
| 4                          | 1.7636  | 1.7783  | 1.8519  | 1.9255  | 1.9990  | 2.0725  |
| 2                          | 1.7306  | 1.7450  | 1.8172  | 1.8894  | 1.9616  | 2.0338  |
| 0                          | 1.6993  | 1.7135  | 1.7844  | 1.8553  | 1.9261  | 1.9970  |

Table 3

| $\rho_0 \backslash \alpha$ | 1.98   | 2.00   | 2.10   | 2.20   | 2.30   | 2.40   |
|----------------------------|--------|--------|--------|--------|--------|--------|
| -2                         | 1.6696 | 1.6835 | 1.7532 | 1.8228 | 1.8924 | 1.9621 |
| -4                         | 1.6414 | 1.6551 | 1.7235 | 1.7920 | 1.8604 | 1.9289 |
| -6                         | 1.6146 | 1.6280 | 1.6954 | 1.7627 | 1.8300 | 1.8973 |
| -8                         | 1.5891 | 1.6023 | 1.6686 | 1.7348 | 1.8011 | 1.8673 |
| -10                        | 1.5648 | 1.5779 | 1.6431 | 1.7083 | 1.7736 | 1.8388 |
| -12                        | 1.5418 | 1.5546 | 1.6189 | 1.6831 | 1.7474 | 1.8117 |
| -14                        | 1.5198 | 1.5325 | 1.5958 | 1.6591 | 1.7225 | 1.7858 |
| -16                        | 1.4989 | 1.5114 | 1.5738 | 1.6363 | 1.6987 | 1.7612 |
| -18                        | 1.4791 | 1.4914 | 1.5530 | 1.6145 | 1.6762 | 1.7378 |
| -20                        | 1.4602 | 1.4723 | 1.5331 | 1.5939 | 1.6547 | 1.7155 |
| -22                        | 1.4422 | 1.4542 | 1.5141 | 1.5742 | 1.6342 | 1.6943 |
| -24                        | 1.4250 | 1.4369 | 1.4961 | 1.5554 | 1.6147 | 1.6741 |
| -26                        | 1.4088 | 1.4205 | 1.4790 | 1.5376 | 1.5962 | 1.6548 |
| -28                        | 1.3933 | 1.4049 | 1.4627 | 1.5206 | 1.5786 | 1.6365 |
| -30                        | 1.3786 | 1.3900 | 1.4472 | 1.5045 | 1.5618 | 1.6191 |
| -32                        | 1.3646 | 1.3759 | 1.4325 | 1.4892 | 1.5459 | 1.6026 |
| -34                        | 1.3514 | 1.3626 | 1.4186 | 1.4747 | 1.5308 | 1.5869 |
| -36                        | 1.3388 | 1.3499 | 1.4053 | 1.4608 | 1.5164 | 1.5720 |
| -38                        | 1.3269 | 1.3379 | 1.3928 | 1.4478 | 1.5028 | 1.5579 |
| -40                        | 1.3157 | 1.3266 | 1.3809 | 1.4354 | 1.4899 | 1.5445 |
| -42                        | 1.3051 | 1.3159 | 1.3698 | 1.4237 | 1.4777 | 1.5318 |
| -44                        | 1.2951 | 1.3058 | 1.3592 | 1.4127 | 1.4662 | 1.5199 |
| -46                        | 1.2857 | 1.2963 | 1.3492 | 1.4023 | 1.4554 | 1.5086 |
| -48                        | 1.2769 | 1.2874 | 1.3399 | 1.3925 | 1.4452 | 1.4980 |
| -50                        | 1.2686 | 1.2790 | 1.3311 | 1.3834 | 1.4356 | 1.4880 |
| -52                        | 1.2609 | 1.2713 | 1.3230 | 1.3748 | 1.4267 | 1.4787 |
| -54                        | 1.2538 | 1.2641 | 1.3154 | 1.3668 | 1.4184 | 1.4700 |
| -56                        | 1.2472 | 1.2574 | 1.3083 | 1.3594 | 1.4106 | 1.4619 |
| -58                        | 1.2412 | 1.2513 | 1.3019 | 1.3526 | 1.4034 | 1.4544 |
| -60                        | 1.2356 | 1.2457 | 1.2959 | 1.3463 | 1.3969 | 1.4475 |
| -62                        | 1.2306 | 1.2406 | 1.2905 | 1.3406 | 1.3909 | 1.4412 |
| -64                        | 1.2262 | 1.2361 | 1.2857 | 1.3355 | 1.3854 | 1.4354 |
| -66                        | 1.2222 | 1.2321 | 1.2814 | 1.3309 | 1.3805 | 1.4303 |
| -68                        | 1.2188 | 1.2286 | 1.2776 | 1.3268 | 1.3762 | 1.4257 |
| -70                        | 1.2160 | 1.2257 | 1.2744 | 1.3233 | 1.3724 | 1.4217 |
| -72                        | 1.2136 | 1.2233 | 1.2717 | 1.3204 | 1.3693 | 1.4183 |
| -74                        | 1.2118 | 1.2214 | 1.2696 | 1.3180 | 1.3666 | 1.4154 |
| -76                        | 1.2106 | 1.2201 | 1.2680 | 1.3162 | 1.3646 | 1.4131 |
| -78                        | 1.2099 | 1.2194 | 1.2670 | 1.3149 | 1.3631 | 1.4115 |
| -80                        |        |        | 1.2666 | 1.3143 | 1.3622 | 1.4104 |
| -82                        |        |        |        |        |        | 1.4099 |
| -84                        |        |        |        |        |        |        |
| -86                        |        |        |        |        |        |        |
| -88                        |        |        |        |        |        |        |
| -90                        |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\alpha \backslash \rho_0$ | 2.50    | 2.60    | 2.70    | 2.80    | 2.90    | 3.00    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | 84.8833 | 87.7800 | 90.6747 | 93.5677 | 96.4592 | 99.3492 |
| 86                         | 42.4472 | 43.8957 | 45.3433 | 46.7900 | 48.2359 | 49.6811 |
| 84                         | 28.3043 | 29.2702 | 30.2354 | 31.2001 | 32.1643 | 33.1280 |
| 82                         | 21.2347 | 21.9593 | 22.6835 | 23.4073 | 24.1306 | 24.8537 |
| 80                         | 16.9944 | 17.5744 | 18.1539 | 18.7332 | 19.3121 | 19.8908 |
| 78                         | 14.1687 | 14.6523 | 15.1355 | 15.6185 | 16.1012 | 16.5837 |
| 76                         | 12.1515 | 12.5662 | 12.9807 | 13.3949 | 13.8089 | 14.2227 |
| 74                         | 10.6395 | 11.0027 | 11.3656 | 11.7282 | 12.0907 | 12.4531 |
| 72                         | 9.4643  | 9.7874  | 10.1102 | 10.4329 | 10.7554 | 11.0777 |
| 70                         | 8.5250  | 8.8160  | 9.1068  | 9.3974  | 9.6879  | 9.9783  |
| 68                         | 7.7571  | 8.0219  | 8.2865  | 8.5510  | 8.8153  | 9.0796  |
| 66                         | 7.1178  | 7.3608  | 7.6036  | 7.8463  | 8.0889  | 8.3314  |
| 64                         | 6.5775  | 6.8020  | 7.0264  | 7.2507  | 7.4749  | 7.6990  |
| 62                         | 6.1149  | 6.3236  | 6.5323  | 6.7408  | 6.9493  | 7.1576  |
| 60                         | 5.7145  | 5.9096  | 6.1046  | 6.2995  | 6.4943  | 6.6890  |
| 58                         | 5.3646  | 5.5478  | 5.7309  | 5.9138  | 6.0968  | 6.2796  |
| 56                         | 5.0563  | 5.2290  | 5.4016  | 5.5741  | 5.7465  | 5.9188  |
| 54                         | 4.7828  | 4.9461  | 5.1094  | 5.2726  | 5.4357  | 5.5987  |
| 52                         | 4.5385  | 4.6935  | 4.8484  | 5.0033  | 5.1581  | 5.3128  |
| 50                         | 4.3190  | 4.4665  | 4.6140  | 4.7613  | 4.9087  | 5.0559  |
| 48                         | 4.1208  | 4.2615  | 4.4023  | 4.5429  | 4.6835  | 4.8240  |
| 46                         | 3.9410  | 4.0756  | 4.2102  | 4.3447  | 4.4792  | 4.6136  |
| 44                         | 3.7771  | 3.9062  | 4.0352  | 4.1642  | 4.2930  | 4.4219  |
| 42                         | 3.6273  | 3.7513  | 3.8752  | 3.9990  | 4.1228  | 4.2466  |
| 40                         | 3.4898  | 3.6091  | 3.7283  | 3.8475  | 3.9666  | 4.0857  |
| 38                         | 3.3633  | 3.4782  | 3.5931  | 3.7080  | 3.8228  | 3.9376  |
| 36                         | 3.2464  | 3.3574  | 3.4683  | 3.5792  | 3.6900  | 3.8008  |
| 34                         | 3.1382  | 3.2455  | 3.3527  | 3.4599  | 3.5671  | 3.6742  |
| 32                         | 3.0377  | 3.1416  | 3.2454  | 3.3492  | 3.4530  | 3.5567  |
| 30                         | 2.9443  | 3.0450  | 3.1456  | 3.2463  | 3.3468  | 3.4474  |
| 28                         | 2.8572  | 2.9549  | 3.0526  | 3.1503  | 3.2479  | 3.3455  |
| 26                         | 2.7758  | 2.8708  | 2.9657  | 3.0606  | 3.1554  | 3.2503  |
| 24                         | 2.6996  | 2.7920  | 2.8843  | 2.9766  | 3.0689  | 3.1612  |
| 22                         | 2.6283  | 2.7182  | 2.8081  | 2.8980  | 2.9878  | 3.0776  |
| 20                         | 2.5612  | 2.6489  | 2.7365  | 2.8241  | 2.9117  | 2.9992  |
| 18                         | 2.4982  | 2.5837  | 2.6692  | 2.7547  | 2.8401  | 2.9255  |
| 16                         | 2.4389  | 2.5224  | 2.6058  | 2.6892  | 2.7727  | 2.8561  |
| 14                         | 2.3829  | 2.4645  | 2.5461  | 2.6276  | 2.7091  | 2.7906  |
| 12                         | 2.3301  | 2.4099  | 2.4897  | 2.5694  | 2.6491  | 2.7288  |
| 10                         | 2.2802  | 2.3583  | 2.4364  | 2.5144  | 2.5925  | 2.6705  |
| 8                          | 2.2331  | 2.3095  | 2.3860  | 2.4624  | 2.5388  | 2.6153  |
| 6                          | 2.1884  | 2.2633  | 2.3383  | 2.4132  | 2.4881  | 2.5630  |
| 4                          | 2.1461  | 2.2196  | 2.2930  | 2.3665  | 2.4400  | 2.5135  |
| 2                          | 2.1059  | 2.1780  | 2.2502  | 2.3223  | 2.3944  | 2.4665  |
| 0                          | 2.0678  | 2.1387  | 2.2095  | 2.2803  | 2.3511  | 2.4219  |

Table 3

| $\frac{\rho_0}{\alpha}$ | 2.50   | 2.60   | 2.70   | 2.80   | 2.90   | 3.00   |
|-------------------------|--------|--------|--------|--------|--------|--------|
| -2                      | 2.0317 | 2.1013 | 2.1709 | 2.2404 | 2.3100 | 2.3796 |
| -4                      | 1.9973 | 2.0657 | 2.1341 | 2.2026 | 2.2710 | 2.3394 |
| -6                      | 1.9646 | 2.0319 | 2.0993 | 2.1666 | 2.2339 | 2.3012 |
| -8                      | 1.9336 | 1.9998 | 2.0661 | 2.1323 | 2.1986 | 2.2648 |
| -10                     | 1.9040 | 1.9693 | 2.0345 | 2.0998 | 2.1650 | 2.2303 |
| -12                     | 1.8759 | 1.9402 | 2.0045 | 2.0688 | 2.1331 | 2.1974 |
| -14                     | 1.8492 | 1.9125 | 1.9759 | 2.0393 | 2.1026 | 2.1660 |
| -16                     | 1.8237 | 1.8862 | 1.9487 | 2.0112 | 2.0737 | 2.1362 |
| -18                     | 1.7994 | 1.8611 | 1.9227 | 1.9844 | 2.0461 | 2.1078 |
| -20                     | 1.7763 | 1.8372 | 1.8981 | 1.9589 | 2.0198 | 2.0807 |
| -22                     | 1.7543 | 1.8144 | 1.8746 | 1.9347 | 1.9948 | 2.0550 |
| -24                     | 1.7334 | 1.7928 | 1.8522 | 1.9116 | 1.9710 | 2.0304 |
| -26                     | 1.7135 | 1.7722 | 1.8309 | 1.8896 | 1.9483 | 2.0071 |
| -28                     | 1.6945 | 1.7526 | 1.8106 | 1.8687 | 1.9268 | 1.9848 |
| -30                     | 1.6765 | 1.7339 | 1.7913 | 1.8488 | 1.9062 | 1.9637 |
| -32                     | 1.6594 | 1.7162 | 1.7730 | 1.8298 | 1.8867 | 1.9436 |
| -34                     | 1.6431 | 1.6993 | 1.7556 | 1.8118 | 1.8681 | 1.9245 |
| -36                     | 1.6276 | 1.6833 | 1.7390 | 1.7948 | 1.8505 | 1.9063 |
| -38                     | 1.6130 | 1.6681 | 1.7233 | 1.7786 | 1.8338 | 1.8891 |
| -40                     | 1.5991 | 1.6538 | 1.7085 | 1.7632 | 1.8179 | 1.8727 |
| -42                     | 1.5860 | 1.6401 | 1.6944 | 1.7486 | 1.8029 | 1.8572 |
| -44                     | 1.5736 | 1.6273 | 1.6811 | 1.7349 | 1.7887 | 1.8426 |
| -46                     | 1.5618 | 1.6151 | 1.6685 | 1.7219 | 1.7753 | 1.8288 |
| -48                     | 1.5508 | 1.6037 | 1.6566 | 1.7096 | 1.7626 | 1.8157 |
| -50                     | 1.5405 | 1.5929 | 1.6455 | 1.6981 | 1.7507 | 1.8034 |
| -52                     | 1.5308 | 1.5829 | 1.6351 | 1.6873 | 1.7396 | 1.7919 |
| -54                     | 1.5217 | 1.5735 | 1.6253 | 1.6772 | 1.7291 | 1.7811 |
| -56                     | 1.5133 | 1.5647 | 1.6162 | 1.6678 | 1.7194 | 1.7710 |
| -58                     | 1.5054 | 1.5566 | 1.6077 | 1.6590 | 1.7103 | 1.7617 |
| -60                     | 1.4982 | 1.5491 | 1.5999 | 1.6509 | 1.7019 | 1.7530 |
| -62                     | 1.4916 | 1.5421 | 1.5928 | 1.6434 | 1.6942 | 1.7450 |
| -64                     | 1.4856 | 1.5359 | 1.5862 | 1.6366 | 1.6871 | 1.7377 |
| -66                     | 1.4802 | 1.5302 | 1.5803 | 1.6305 | 1.6807 | 1.7310 |
| -68                     | 1.4754 | 1.5251 | 1.5750 | 1.6249 | 1.6749 | 1.7250 |
| -70                     | 1.4711 | 1.5206 | 1.5703 | 1.6200 | 1.6698 | 1.7197 |
| -72                     | 1.4675 | 1.5168 | 1.5662 | 1.6157 | 1.6653 | 1.7149 |
| -74                     | 1.4644 | 1.5135 | 1.5627 | 1.6120 | 1.6614 | 1.7109 |
| -76                     | 1.4619 | 1.5108 | 1.5598 | 1.6089 | 1.6582 | 1.7075 |
| -78                     | 1.4600 | 1.5087 | 1.5576 | 1.6065 | 1.6556 | 1.7048 |
| -80                     | 1.4587 | 1.5072 | 1.5559 | 1.6047 | 1.6537 | 1.7027 |
| -82                     | 1.4580 | 1.5064 | 1.5549 | 1.6036 | 1.6524 | 1.7012 |
| -84                     |        |        | 1.5545 | 1.6031 | 1.6517 | 1.7005 |
| -86                     |        |        |        |        |        |        |
| -88                     |        |        |        |        |        |        |
| -90                     |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 3.10    | 3.20    | 3.30    | 3.40    | 3.50    | 3.60    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | *****   | *****   | *****   | *****   | *****   | *****   |
| 86                         | 51.1257 | 52.5696 | 54.0130 | 55.4559 | 56.8983 | 58.3402 |
| 84                         | 34.0913 | 35.0542 | 36.0166 | 36.9788 | 37.9406 | 38.9021 |
| 82                         | 25.5764 | 26.2987 | 27.0208 | 27.7427 | 28.4643 | 29.1857 |
| 80                         | 20.4692 | 21.0473 | 21.6253 | 22.2030 | 22.7805 | 23.3579 |
| 78                         | 17.0659 | 17.5480 | 18.0298 | 18.5115 | 18.9931 | 19.4744 |
| 76                         | 14.6363 | 15.0498 | 15.4630 | 15.8762 | 16.2892 | 16.7020 |
| 74                         | 12.8153 | 13.1773 | 13.5391 | 13.9009 | 14.2625 | 14.6241 |
| 72                         | 11.3999 | 11.7219 | 12.0439 | 12.3657 | 12.6874 | 13.0090 |
| 70                         | 10.2685 | 10.5586 | 10.8486 | 11.1385 | 11.4283 | 11.7180 |
| 68                         | 9.3437  | 9.6077  | 9.8716  | 10.1354 | 10.3991 | 10.6628 |
| 66                         | 8.5737  | 8.8160  | 9.0582  | 9.3003  | 9.5423  | 9.7842  |
| 64                         | 7.9230  | 8.1469  | 8.3707  | 8.5944  | 8.8181  | 9.0417  |
| 62                         | 7.3659  | 7.5740  | 7.7821  | 7.9902  | 8.1981  | 8.4060  |
| 60                         | 6.8836  | 7.0782  | 7.2727  | 7.4671  | 7.6615  | 7.8558  |
| 58                         | 6.4623  | 6.6450  | 6.8276  | 7.0101  | 7.1926  | 7.3751  |
| 56                         | 6.0911  | 6.2633  | 6.4354  | 6.6075  | 6.7795  | 6.9515  |
| 54                         | 5.7617  | 5.9246  | 6.0874  | 6.2502  | 6.4130  | 6.5757  |
| 52                         | 5.4674  | 5.6220  | 5.7766  | 5.9311  | 6.0856  | 6.2400  |
| 50                         | 5.2031  | 5.3503  | 5.4974  | 5.6444  | 5.7914  | 5.9384  |
| 48                         | 4.9644  | 5.1049  | 5.2452  | 5.3856  | 5.5259  | 5.6661  |
| 46                         | 4.7479  | 4.8822  | 5.0165  | 5.1507  | 5.2849  | 5.4191  |
| 44                         | 4.5507  | 4.6794  | 4.8081  | 4.9368  | 5.0654  | 5.1940  |
| 42                         | 4.3703  | 4.4939  | 4.6176  | 4.7412  | 4.8647  | 4.9883  |
| 40                         | 4.2047  | 4.3237  | 4.4427  | 4.5616  | 4.6805  | 4.7994  |
| 38                         | 4.0523  | 4.1670  | 4.2817  | 4.3963  | 4.5110  | 4.6255  |
| 36                         | 3.9116  | 4.0224  | 4.1331  | 4.2437  | 4.3544  | 4.4650  |
| 34                         | 3.7813  | 3.8884  | 3.9954  | 4.1024  | 4.2094  | 4.3164  |
| 32                         | 3.6604  | 3.7641  | 3.8677  | 3.9713  | 4.0749  | 4.1784  |
| 30                         | 3.5479  | 3.6484  | 3.7489  | 3.8493  | 3.9497  | 4.0501  |
| 28                         | 3.4430  | 3.5406  | 3.6381  | 3.7356  | 3.8330  | 3.9305  |
| 26                         | 3.3451  | 3.4398  | 3.5346  | 3.6293  | 3.7240  | 3.8188  |
| 24                         | 3.2534  | 3.3456  | 3.4378  | 3.5299  | 3.6221  | 3.7142  |
| 22                         | 3.1674  | 3.2572  | 3.3470  | 3.4367  | 3.5265  | 3.6162  |
| 20                         | 3.0868  | 3.1743  | 3.2618  | 3.3492  | 3.4367  | 3.5241  |
| 18                         | 3.0109  | 3.0962  | 3.1816  | 3.2669  | 3.3523  | 3.4376  |
| 16                         | 2.9394  | 3.0228  | 3.1062  | 3.1895  | 3.2728  | 3.3561  |
| 14                         | 2.8721  | 2.9536  | 3.0350  | 3.1165  | 3.1979  | 3.2793  |
| 12                         | 2.8085  | 2.8882  | 2.9679  | 3.0475  | 3.1272  | 3.2068  |
| 10                         | 2.7485  | 2.8265  | 2.9044  | 2.9824  | 3.0604  | 3.1383  |
| 8                          | 2.6917  | 2.7681  | 2.8444  | 2.9208  | 2.9972  | 3.0736  |
| 6                          | 2.6379  | 2.7128  | 2.7876  | 2.8625  | 2.9374  | 3.0122  |
| 4                          | 2.5869  | 2.6604  | 2.7338  | 2.8073  | 2.8807  | 2.9541  |
| 2                          | 2.5386  | 2.6107  | 2.6828  | 2.7549  | 2.8269  | 2.8990  |
| 0                          | 2.4928  | 2.5635  | 2.6343  | 2.7051  | 2.7759  | 2.8467  |

Table 3

| $\alpha \backslash \rho_0$ | 3.10   | 3.20   | 3.30   | 3.40   | 3.50   | 3.60   |
|----------------------------|--------|--------|--------|--------|--------|--------|
| -2                         | 2.4492 | 2.5188 | 2.5884 | 2.6579 | 2.7275 | 2.7971 |
| -4                         | 2.4078 | 2.4762 | 2.5447 | 2.6131 | 2.6815 | 2.7499 |
| -6                         | 2.3685 | 2.4358 | 2.5031 | 2.5704 | 2.6377 | 2.7050 |
| -8                         | 2.3311 | 2.3974 | 2.4636 | 2.5299 | 2.5961 | 2.6624 |
| -10                        | 2.2955 | 2.3608 | 2.4260 | 2.4913 | 2.5565 | 2.6218 |
| -12                        | 2.2617 | 2.3259 | 2.3903 | 2.4546 | 2.5189 | 2.5832 |
| -14                        | 2.2294 | 2.2928 | 2.3562 | 2.4196 | 2.4830 | 2.5464 |
| -16                        | 2.1987 | 2.2612 | 2.3238 | 2.3863 | 2.4489 | 2.5114 |
| -18                        | 2.1695 | 2.2312 | 2.2929 | 2.3546 | 2.4163 | 2.4781 |
| -20                        | 2.1416 | 2.2026 | 2.2635 | 2.3244 | 2.3854 | 2.4463 |
| -22                        | 2.1151 | 2.1753 | 2.2355 | 2.2957 | 2.3559 | 2.4161 |
| -24                        | 2.0899 | 2.1493 | 2.2088 | 2.2683 | 2.3278 | 2.3873 |
| -26                        | 2.0659 | 2.1246 | 2.1834 | 2.2422 | 2.3010 | 2.3598 |
| -28                        | 2.0430 | 2.1011 | 2.1592 | 2.2174 | 2.2755 | 2.3337 |
| -30                        | 2.0212 | 2.0787 | 2.1362 | 2.1938 | 2.2513 | 2.3089 |
| -32                        | 2.0005 | 2.0574 | 2.1144 | 2.1713 | 2.2283 | 2.2852 |
| -34                        | 1.9808 | 2.0372 | 2.0935 | 2.1499 | 2.2063 | 2.2628 |
| -36                        | 1.9621 | 2.0179 | 2.0738 | 2.1296 | 2.1855 | 2.2414 |
| -38                        | 1.9444 | 1.9997 | 2.0550 | 2.1104 | 2.1657 | 2.2211 |
| -40                        | 1.9275 | 1.9824 | 2.0372 | 2.0921 | 2.1470 | 2.2019 |
| -42                        | 1.9116 | 1.9660 | 2.0204 | 2.0748 | 2.1292 | 2.1837 |
| -44                        | 1.8965 | 1.9504 | 2.0044 | 2.0584 | 2.1124 | 2.1664 |
| -46                        | 1.8822 | 1.9358 | 1.9893 | 2.0429 | 2.0965 | 2.1501 |
| -48                        | 1.8688 | 1.9219 | 1.9751 | 2.0283 | 2.0815 | 2.1347 |
| -50                        | 1.8561 | 1.9089 | 1.9617 | 2.0145 | 2.0673 | 2.1202 |
| -52                        | 1.8443 | 1.8967 | 1.9491 | 2.0015 | 2.0540 | 2.1065 |
| -54                        | 1.8331 | 1.8852 | 1.9373 | 1.9894 | 2.0416 | 2.0937 |
| -56                        | 1.8227 | 1.8745 | 1.9263 | 1.9781 | 2.0299 | 2.0818 |
| -58                        | 1.8131 | 1.8645 | 1.9160 | 1.9675 | 2.0190 | 2.0706 |
| -60                        | 1.8041 | 1.8553 | 1.9065 | 1.9577 | 2.0090 | 2.0603 |
| -62                        | 1.7958 | 1.8467 | 1.8977 | 1.9486 | 1.9997 | 2.0507 |
| -64                        | 1.7883 | 1.8389 | 1.8896 | 1.9403 | 1.9911 | 2.0419 |
| -66                        | 1.7814 | 1.8318 | 1.8822 | 1.9327 | 1.9833 | 2.0338 |
| -68                        | 1.7751 | 1.8253 | 1.8756 | 1.9259 | 1.9762 | 2.0266 |
| -70                        | 1.7696 | 1.8196 | 1.8696 | 1.9197 | 1.9698 | 2.0200 |
| -72                        | 1.7647 | 1.8145 | 1.8644 | 1.9143 | 1.9642 | 2.0142 |
| -74                        | 1.7605 | 1.8101 | 1.8598 | 1.9095 | 1.9593 | 2.0091 |
| -76                        | 1.7569 | 1.8064 | 1.8559 | 1.9055 | 1.9551 | 2.0048 |
| -78                        | 1.7540 | 1.8033 | 1.8527 | 1.9022 | 1.9516 | 2.0012 |
| -80                        | 1.7518 | 1.8010 | 1.8502 | 1.8995 | 1.9489 | 1.9983 |
| -82                        | 1.7502 | 1.7993 | 1.8484 | 1.8976 | 1.9469 | 1.9962 |
| -84                        | 1.7493 | 1.7983 | 1.8473 | 1.8964 | 1.9455 | 1.9948 |
| -86                        |        |        | 1.8469 | 1.8959 | 1.9450 | 1.9941 |
| -88                        |        |        |        |        |        |        |
| -90                        |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 3.70    | 3.80    | 3.90    | 4.00    | 4.10    | 4.20    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | *****   | *****   | *****   | *****   | *****   | *****   |
| 86                         | 59.7817 | 61.2228 | 62.6636 | 64.1040 | 65.5441 | 66.9839 |
| 84                         | 39.8634 | 40.8243 | 41.7851 | 42.7456 | 43.7059 | 44.6660 |
| 82                         | 29.9068 | 30.6278 | 31.3486 | 32.0692 | 32.7897 | 33.5100 |
| 80                         | 23.9351 | 24.5121 | 25.0890 | 25.6658 | 26.2424 | 26.8189 |
| 78                         | 19.9557 | 20.4368 | 20.9178 | 21.3987 | 21.8795 | 22.3601 |
| 76                         | 17.1148 | 17.5274 | 17.9400 | 18.3524 | 18.7648 | 19.1770 |
| 74                         | 14.9855 | 15.3468 | 15.7080 | 16.0692 | 16.4303 | 16.7913 |
| 72                         | 13.3305 | 13.6520 | 13.9733 | 14.2946 | 14.6159 | 14.9370 |
| 70                         | 12.0077 | 12.2972 | 12.5867 | 12.8762 | 13.1655 | 13.4548 |
| 68                         | 10.9263 | 11.1898 | 11.4533 | 11.7167 | 11.9800 | 12.2433 |
| 66                         | 10.0261 | 10.2679 | 10.5097 | 10.7514 | 10.9930 | 11.2347 |
| 64                         | 9.2652  | 9.4887  | 9.7122  | 9.9355  | 10.1589 | 10.3822 |
| 62                         | 8.6139  | 8.8217  | 9.0294  | 9.2371  | 9.4448  | 9.6524  |
| 60                         | 8.0501  | 8.2443  | 8.4385  | 8.6326  | 8.8267  | 9.0207  |
| 58                         | 7.5575  | 7.7398  | 7.9221  | 8.1044  | 8.2866  | 8.4688  |
| 56                         | 7.1235  | 7.2954  | 7.4672  | 7.6391  | 7.8109  | 7.9826  |
| 54                         | 6.7383  | 6.9010  | 7.0636  | 7.2261  | 7.3886  | 7.5511  |
| 52                         | 6.3944  | 6.5487  | 6.7030  | 6.8573  | 7.0115  | 7.1658  |
| 50                         | 6.0854  | 6.2323  | 6.3791  | 6.5260  | 6.6728  | 6.8196  |
| 48                         | 5.8063  | 5.9465  | 6.0867  | 6.2268  | 6.3669  | 6.5070  |
| 46                         | 5.5532  | 5.6873  | 5.8214  | 5.9554  | 6.0894  | 6.2234  |
| 44                         | 5.3226  | 5.4512  | 5.5797  | 5.7082  | 5.8367  | 5.9651  |
| 42                         | 5.1118  | 5.2352  | 5.3587  | 5.4821  | 5.6055  | 5.7289  |
| 40                         | 4.9183  | 5.0371  | 5.1559  | 5.2747  | 5.3934  | 5.5122  |
| 38                         | 4.7401  | 4.8546  | 4.9692  | 5.0837  | 5.1981  | 5.3126  |
| 36                         | 4.5756  | 4.6862  | 4.7968  | 4.9073  | 5.0178  | 5.1284  |
| 34                         | 4.4233  | 4.5303  | 4.6372  | 4.7441  | 4.8509  | 4.9578  |
| 32                         | 4.2820  | 4.3855  | 4.4890  | 4.5925  | 4.6960  | 4.7995  |
| 30                         | 4.1505  | 4.2509  | 4.3512  | 4.4516  | 4.5519  | 4.6522  |
| 28                         | 4.0279  | 4.1254  | 4.2228  | 4.3202  | 4.4175  | 4.5149  |
| 26                         | 3.9134  | 4.0081  | 4.1028  | 4.1974  | 4.2921  | 4.3867  |
| 24                         | 3.8063  | 3.8984  | 3.9905  | 4.0826  | 4.1746  | 4.2667  |
| 22                         | 3.7059  | 3.7956  | 3.8852  | 3.9749  | 4.0645  | 4.1542  |
| 20                         | 3.6116  | 3.6990  | 3.7864  | 3.8738  | 3.9612  | 4.0486  |
| 18                         | 3.5229  | 3.6082  | 3.6935  | 3.7788  | 3.8640  | 3.9493  |
| 16                         | 3.4394  | 3.5227  | 3.6060  | 3.6893  | 3.7725  | 3.8558  |
| 14                         | 3.3607  | 3.4421  | 3.5235  | 3.6049  | 3.6863  | 3.7677  |
| 12                         | 3.2865  | 3.3661  | 3.4457  | 3.5253  | 3.6049  | 3.6845  |
| 10                         | 3.2163  | 3.2942  | 3.3722  | 3.4501  | 3.5280  | 3.6059  |
| 8                          | 3.1499  | 3.2263  | 3.3026  | 3.3789  | 3.4553  | 3.5316  |
| 6                          | 3.0871  | 3.1619  | 3.2367  | 3.3116  | 3.3864  | 3.4612  |
| 4                          | 3.0275  | 3.1010  | 3.1744  | 3.2478  | 3.3212  | 3.3946  |
| 2                          | 2.9711  | 3.0431  | 3.1152  | 3.1873  | 3.2593  | 3.3314  |
| 0                          | 2.9175  | 2.9883  | 3.0590  | 3.1298  | 3.2006  | 3.2714  |

Table 3

| $\rho_0$<br>$\alpha$ | 3.70   | 3.80   | 3.90   | 4.00   | 4.10   | 4.20   |
|----------------------|--------|--------|--------|--------|--------|--------|
| -2                   | 2.8666 | 2.9362 | 3.0057 | 3.0753 | 3.1449 | 3.2144 |
| -4                   | 2.8183 | 2.8867 | 2.9551 | 3.0235 | 3.0919 | 3.1603 |
| -6                   | 2.7723 | 2.8396 | 2.9069 | 2.9742 | 3.0415 | 3.1088 |
| -8                   | 2.7286 | 2.7949 | 2.8611 | 2.9274 | 2.9937 | 3.0599 |
| -10                  | 2.6871 | 2.7523 | 2.8176 | 2.8828 | 2.9481 | 3.0134 |
| -12                  | 2.6475 | 2.7118 | 2.7761 | 2.8404 | 2.9048 | 2.9691 |
| -14                  | 2.6098 | 2.6732 | 2.7367 | 2.8001 | 2.8635 | 2.9269 |
| -16                  | 2.5739 | 2.6365 | 2.6991 | 2.7616 | 2.8242 | 2.8867 |
| -18                  | 2.5398 | 2.6015 | 2.6633 | 2.7250 | 2.7867 | 2.8485 |
| -20                  | 2.5072 | 2.5682 | 2.6292 | 2.6901 | 2.7511 | 2.8121 |
| -22                  | 2.4763 | 2.5365 | 2.5967 | 2.6569 | 2.7171 | 2.7774 |
| -24                  | 2.4467 | 2.5063 | 2.5658 | 2.6253 | 2.6848 | 2.7443 |
| -26                  | 2.4186 | 2.4775 | 2.5363 | 2.5952 | 2.6540 | 2.7129 |
| -28                  | 2.3919 | 2.4501 | 2.5083 | 2.5665 | 2.6247 | 2.6829 |
| -30                  | 2.3664 | 2.4240 | 2.4816 | 2.5392 | 2.5968 | 2.6544 |
| -32                  | 2.3422 | 2.3992 | 2.4562 | 2.5132 | 2.5702 | 2.6273 |
| -34                  | 2.3192 | 2.3756 | 2.4321 | 2.4885 | 2.5450 | 2.6015 |
| -36                  | 2.2973 | 2.3532 | 2.4091 | 2.4651 | 2.5210 | 2.5770 |
| -38                  | 2.2765 | 2.3319 | 2.3874 | 2.4428 | 2.4982 | 2.5537 |
| -40                  | 2.2568 | 2.3117 | 2.3667 | 2.4216 | 2.4766 | 2.5316 |
| -42                  | 2.2381 | 2.2926 | 2.3471 | 2.4016 | 2.4561 | 2.5106 |
| -44                  | 2.2204 | 2.2745 | 2.3285 | 2.3826 | 2.4367 | 2.4908 |
| -46                  | 2.2037 | 2.2573 | 2.3110 | 2.3647 | 2.4184 | 2.4720 |
| -48                  | 2.1879 | 2.2412 | 2.2944 | 2.3477 | 2.4010 | 2.4543 |
| -50                  | 2.1730 | 2.2259 | 2.2788 | 2.3317 | 2.3847 | 2.4376 |
| -52                  | 2.1590 | 2.2116 | 2.2641 | 2.3167 | 2.3693 | 2.4219 |
| -54                  | 2.1459 | 2.1981 | 2.2504 | 2.3026 | 2.3549 | 2.4072 |
| -56                  | 2.1337 | 2.1856 | 2.2375 | 2.2894 | 2.3414 | 2.3934 |
| -58                  | 2.1222 | 2.1738 | 2.2255 | 2.2771 | 2.3288 | 2.3805 |
| -60                  | 2.1116 | 2.1629 | 2.2143 | 2.2657 | 2.3171 | 2.3685 |
| -62                  | 2.1018 | 2.1529 | 2.2040 | 2.2551 | 2.3063 | 2.3574 |
| -64                  | 2.0927 | 2.1436 | 2.1945 | 2.2454 | 2.2963 | 2.3472 |
| -66                  | 2.0845 | 2.1351 | 2.1858 | 2.2364 | 2.2872 | 2.3379 |
| -68                  | 2.0770 | 2.1274 | 2.1778 | 2.2283 | 2.2788 | 2.3294 |
| -70                  | 2.0702 | 2.1205 | 2.1707 | 2.2210 | 2.2714 | 2.3217 |
| -72                  | 2.0642 | 2.1143 | 2.1644 | 2.2145 | 2.2647 | 2.3149 |
| -74                  | 2.0590 | 2.1089 | 2.1589 | 2.2088 | 2.2588 | 2.3099 |
| -76                  | 2.0545 | 2.1043 | 2.1541 | 2.2039 | 2.2538 | 2.3037 |
| -78                  | 2.0508 | 2.1004 | 2.1501 | 2.1998 | 2.2495 | 2.2993 |
| -80                  | 2.0478 | 2.0973 | 2.1469 | 2.1965 | 2.2461 | 2.2957 |
| -82                  | 2.0456 | 2.0950 | 2.1444 | 2.1939 | 2.2434 | 2.2930 |
| -84                  | 2.0441 | 2.0934 | 2.1427 | 2.1922 | 2.2416 | 2.2911 |
| -86                  | 2.0433 | 2.0926 | 2.1419 | 2.1912 | 2.2406 | 2.2900 |
| -88                  |        |        |        |        |        |        |
| -90                  |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 4.30    | 4.40    | 4.50    | 4.60    | 4.70    | 4.80    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | *****   | *****   | *****   | *****   | *****   | *****   |
| 86                         | 68.4234 | 69.8627 | 71.3017 | 72.7404 | 74.1790 | 75.6173 |
| 84                         | 45.6259 | 46.5856 | 47.5452 | 48.5046 | 49.4639 | 50.4230 |
| 82                         | 34.2302 | 34.9503 | 35.6702 | 36.3900 | 37.1097 | 37.8293 |
| 80                         | 27.3953 | 27.9716 | 28.5478 | 29.1239 | 29.6999 | 30.2758 |
| 78                         | 22.8407 | 23.3212 | 23.8016 | 24.2820 | 24.7623 | 25.2424 |
| 76                         | 19.5892 | 20.0014 | 20.4134 | 20.8254 | 21.2373 | 21.6492 |
| 74                         | 17.1522 | 17.5131 | 17.8739 | 18.2346 | 18.5953 | 18.9560 |
| 72                         | 15.2581 | 15.5792 | 15.9001 | 16.2211 | 16.5419 | 16.8628 |
| 70                         | 13.7441 | 14.0333 | 14.3224 | 14.6116 | 14.9006 | 15.1896 |
| 68                         | 12.5065 | 12.7697 | 13.0328 | 13.2959 | 13.5590 | 13.8220 |
| 66                         | 11.4762 | 11.7177 | 11.9592 | 12.2007 | 12.4421 | 12.6835 |
| 64                         | 10.6054 | 10.8287 | 11.0518 | 11.2750 | 11.4981 | 11.7212 |
| 62                         | 9.8600  | 10.0675 | 10.2750 | 10.4825 | 10.6900 | 10.8974 |
| 60                         | 9.2148  | 9.4087  | 9.6027  | 9.7966  | 9.9905  | 10.1844 |
| 58                         | 8.6510  | 8.8331  | 9.0153  | 9.1973  | 9.3794  | 9.5614  |
| 56                         | 8.1544  | 8.3260  | 8.4977  | 8.6694  | 8.8410  | 9.0126  |
| 54                         | 7.7136  | 7.8760  | 8.0385  | 8.2009  | 8.3632  | 8.5256  |
| 52                         | 7.3200  | 7.4741  | 7.6283  | 7.7824  | 7.9365  | 8.0906  |
| 50                         | 6.9664  | 7.1131  | 7.2598  | 7.4065  | 7.5532  | 7.6999  |
| 48                         | 6.6471  | 6.7871  | 6.9271  | 7.0671  | 7.2071  | 7.3471  |
| 46                         | 6.3574  | 6.4914  | 6.6253  | 6.7593  | 6.8932  | 7.0271  |
| 44                         | 6.0936  | 6.2220  | 6.3504  | 6.4788  | 6.6072  | 6.7355  |
| 42                         | 5.8523  | 5.9757  | 6.0990  | 6.2223  | 6.3456  | 6.4689  |
| 40                         | 5.6309  | 5.7496  | 5.8683  | 5.9870  | 6.1056  | 6.2243  |
| 38                         | 5.4270  | 5.5415  | 5.6559  | 5.7703  | 5.8847  | 5.9991  |
| 36                         | 5.2388  | 5.3493  | 5.4598  | 5.5703  | 5.6807  | 5.7912  |
| 34                         | 5.0646  | 5.1714  | 5.2783  | 5.3851  | 5.4919  | 5.5986  |
| 32                         | 4.9029  | 5.0063  | 5.1098  | 5.2132  | 5.3166  | 5.4200  |
| 30                         | 4.7525  | 4.8528  | 4.9530  | 5.0533  | 5.1536  | 5.2538  |
| 28                         | 4.6123  | 4.7096  | 4.8069  | 4.9043  | 5.0016  | 5.0989  |
| 26                         | 4.4813  | 4.5759  | 4.6705  | 4.7651  | 4.8596  | 4.9542  |
| 24                         | 4.3587  | 4.4508  | 4.5428  | 4.6348  | 4.7268  | 4.8188  |
| 22                         | 4.2438  | 4.3335  | 4.4231  | 4.5127  | 4.6023  | 4.6919  |
| 20                         | 4.1360  | 4.2233  | 4.3107  | 4.3980  | 4.4854  | 4.5727  |
| 18                         | 4.0345  | 4.1198  | 4.2050  | 4.2903  | 4.3755  | 4.4607  |
| 16                         | 3.9391  | 4.0223  | 4.1055  | 4.1888  | 4.2720  | 4.3552  |
| 14                         | 3.8490  | 3.9304  | 4.0118  | 4.0931  | 4.1745  | 4.2558  |
| 12                         | 3.7641  | 3.8437  | 3.9233  | 4.0028  | 4.0824  | 4.1620  |
| 10                         | 3.6838  | 3.7617  | 3.8396  | 3.9175  | 3.9954  | 4.0733  |
| 8                          | 3.6079  | 3.6842  | 3.7606  | 3.8369  | 3.9132  | 3.9895  |
| 6                          | 3.5361  | 3.6109  | 3.6857  | 3.7605  | 3.8353  | 3.9101  |
| 4                          | 3.4680  | 3.5414  | 3.6147  | 3.6881  | 3.7615  | 3.8349  |
| 2                          | 3.4034  | 3.4754  | 3.5475  | 3.6195  | 3.6916  | 3.7636  |
| 0                          | 3.3421  | 3.4129  | 3.4837  | 3.5544  | 3.6252  | 3.6959  |

Table 3

| $\rho_0$<br>$\alpha$ | 4.30   | 4.40   | 4.50   | 4.60   | 4.70   | 4.80   |
|----------------------|--------|--------|--------|--------|--------|--------|
| -2                   | 3.2840 | 3.3535 | 3.4231 | 3.4926 | 3.5622 | 3.6317 |
| -4                   | 3.2287 | 3.2971 | 3.3655 | 3.4339 | 3.5023 | 3.5707 |
| -6                   | 3.1762 | 3.2435 | 3.3108 | 3.3780 | 3.4453 | 3.5126 |
| -8                   | 3.1262 | 3.1924 | 3.2587 | 3.3250 | 3.3912 | 3.4575 |
| -10                  | 3.0786 | 3.1439 | 3.2092 | 3.2744 | 3.3397 | 3.4050 |
| -12                  | 3.0334 | 3.0977 | 3.1620 | 3.2264 | 3.2907 | 3.3550 |
| -14                  | 2.9903 | 3.0538 | 3.1172 | 3.1806 | 3.2440 | 3.3075 |
| -16                  | 2.9493 | 3.0119 | 3.0744 | 3.1370 | 3.1996 | 3.2622 |
| -18                  | 2.9102 | 2.9720 | 3.0337 | 3.0955 | 3.1573 | 3.2190 |
| -20                  | 2.8730 | 2.9340 | 2.9950 | 3.0560 | 3.1170 | 3.1780 |
| -22                  | 2.8376 | 2.8979 | 2.9581 | 3.0183 | 3.0786 | 3.1388 |
| -24                  | 2.8039 | 2.8634 | 2.9229 | 2.9825 | 3.0420 | 3.1016 |
| -26                  | 2.7717 | 2.8306 | 2.8895 | 2.9483 | 3.0072 | 3.0661 |
| -28                  | 2.7411 | 2.7994 | 2.8576 | 2.9158 | 2.9741 | 3.0323 |
| -30                  | 2.7120 | 2.7696 | 2.8272 | 2.8849 | 2.9425 | 3.0001 |
| -32                  | 2.6843 | 2.7413 | 2.7984 | 2.8554 | 2.9125 | 2.9696 |
| -34                  | 2.6580 | 2.7144 | 2.7709 | 2.8274 | 2.8840 | 2.9405 |
| -36                  | 2.6329 | 2.6889 | 2.7449 | 2.8008 | 2.8568 | 2.9128 |
| -38                  | 2.6091 | 2.6646 | 2.7201 | 2.7756 | 2.8310 | 2.8865 |
| -40                  | 2.5866 | 2.6416 | 2.6966 | 2.7516 | 2.8066 | 2.8616 |
| -42                  | 2.5652 | 2.6197 | 2.6743 | 2.7288 | 2.7834 | 2.8380 |
| -44                  | 2.5449 | 2.5990 | 2.6532 | 2.7073 | 2.7614 | 2.8156 |
| -46                  | 2.5258 | 2.5795 | 2.6332 | 2.6869 | 2.7407 | 2.7944 |
| -48                  | 2.5077 | 2.5610 | 2.6143 | 2.6677 | 2.7211 | 2.7744 |
| -50                  | 2.4906 | 2.5436 | 2.5966 | 2.6496 | 2.7026 | 2.7556 |
| -52                  | 2.4746 | 2.5272 | 2.5798 | 2.6325 | 2.6852 | 2.7378 |
| -54                  | 2.4595 | 2.5118 | 2.5641 | 2.6165 | 2.6688 | 2.7212 |
| -56                  | 2.4454 | 2.4974 | 2.5494 | 2.6014 | 2.6535 | 2.7056 |
| -58                  | 2.4322 | 2.4839 | 2.5357 | 2.5874 | 2.6392 | 2.6910 |
| -60                  | 2.4200 | 2.4714 | 2.5229 | 2.5744 | 2.6259 | 2.6774 |
| -62                  | 2.4087 | 2.4599 | 2.5111 | 2.5623 | 2.6136 | 2.6649 |
| -64                  | 2.3982 | 2.4492 | 2.5002 | 2.5512 | 2.6022 | 2.6533 |
| -66                  | 2.3886 | 2.4394 | 2.4902 | 2.5410 | 2.5918 | 2.6426 |
| -68                  | 2.3799 | 2.4305 | 2.4811 | 2.5317 | 2.5823 | 2.6329 |
| -70                  | 2.3721 | 2.4225 | 2.4729 | 2.5233 | 2.5737 | 2.6242 |
| -72                  | 2.3651 | 2.4153 | 2.4655 | 2.5158 | 2.5661 | 2.6164 |
| -74                  | 2.3589 | 2.4090 | 2.4591 | 2.5092 | 2.5593 | 2.6095 |
| -76                  | 2.3536 | 2.4035 | 2.4535 | 2.5035 | 2.5534 | 2.6035 |
| -78                  | 2.3491 | 2.3989 | 2.4487 | 2.4986 | 2.5485 | 2.5984 |
| -80                  | 2.3454 | 2.3951 | 2.4449 | 2.4946 | 2.5444 | 2.5942 |
| -82                  | 2.3426 | 2.3922 | 2.4418 | 2.4915 | 2.5412 | 2.5909 |
| -84                  | 2.3406 | 2.3901 | 2.4397 | 2.4893 | 2.5389 | 2.5885 |
| -86                  | 2.3394 | 2.3889 | 2.4384 | 2.4879 | 2.5375 | 2.5871 |
| -88                  |        |        |        | 2.4875 | 2.5370 | 2.5865 |
| -90                  |        |        |        |        |        |        |

$\Omega(\alpha, \rho_0)$

| $\rho_0 \backslash \alpha$ | 4.90    | 5.00    | 5.10    | 5.20    | 5.30    | 5.40    |
|----------------------------|---------|---------|---------|---------|---------|---------|
| 88                         | *****   | *****   | *****   | *****   | *****   | *****   |
| 86                         | 77.0555 | 78.4934 | 79.9312 | 81.3688 | 82.8062 | 84.2435 |
| 84                         | 51.3820 | 52.3409 | 53.2996 | 54.2582 | 55.2168 | 56.1752 |
| 82                         | 38.5488 | 39.2682 | 39.9875 | 40.7067 | 41.4258 | 42.1449 |
| 80                         | 30.8516 | 31.4274 | 32.0031 | 32.5788 | 33.1543 | 33.7298 |
|                            |         |         |         |         |         |         |
| 78                         | 25.7226 | 26.2027 | 26.6827 | 27.1626 | 27.6425 | 28.1224 |
| 76                         | 22.0610 | 22.4727 | 22.8844 | 23.2961 | 23.7077 | 24.1193 |
| 74                         | 19.3166 | 19.6771 | 20.0376 | 20.3981 | 20.7585 | 21.1189 |
| 72                         | 17.1836 | 17.5043 | 17.8251 | 18.1458 | 18.4664 | 18.7870 |
| 70                         | 15.4786 | 15.7676 | 16.0565 | 16.3454 | 16.6342 | 16.9231 |
|                            |         |         |         |         |         |         |
| 68                         | 14.0850 | 14.3479 | 14.6109 | 14.8738 | 15.1366 | 15.3995 |
| 66                         | 12.9248 | 13.1661 | 13.4074 | 13.6487 | 13.8899 | 14.1311 |
| 64                         | 11.9442 | 12.1673 | 12.3903 | 12.6132 | 12.8362 | 13.0591 |
| 62                         | 11.1048 | 11.3122 | 11.5195 | 11.7268 | 11.9341 | 12.1414 |
| 60                         | 10.3783 | 10.5721 | 10.7659 | 10.9597 | 11.1534 | 11.3472 |
|                            |         |         |         |         |         |         |
| 58                         | 9.7434  | 9.9254  | 10.1074 | 10.2894 | 10.4713 | 10.6532 |
| 56                         | 9.1842  | 9.3558  | 9.5273  | 9.6988  | 9.8703  | 10.0419 |
| 54                         | 8.6879  | 8.8502  | 9.0125  | 9.1748  | 9.3371  | 9.4993  |
| 52                         | 8.2447  | 8.3987  | 8.5528  | 8.7068  | 8.8608  | 9.0148  |
| 50                         | 7.8465  | 7.9932  | 8.1398  | 8.2864  | 8.4330  | 8.5796  |
|                            |         |         |         |         |         |         |
| 48                         | 7.4870  | 7.6270  | 7.7669  | 7.9068  | 8.0467  | 8.1866  |
| 46                         | 7.1609  | 7.2948  | 7.4286  | 7.5625  | 7.6963  | 7.8301  |
| 44                         | 6.8639  | 6.9922  | 7.1205  | 7.2488  | 7.3771  | 7.5054  |
| 42                         | 6.5922  | 6.7155  | 6.8387  | 6.9620  | 7.0852  | 7.2085  |
| 40                         | 6.3429  | 6.4616  | 6.5802  | 6.6988  | 6.8174  | 6.9360  |
|                            |         |         |         |         |         |         |
| 38                         | 6.1135  | 6.2278  | 6.3421  | 6.4565  | 6.5708  | 6.6851  |
| 36                         | 5.9016  | 6.0120  | 6.1224  | 6.2328  | 6.3432  | 6.4536  |
| 34                         | 5.7054  | 5.8122  | 5.9189  | 6.0257  | 6.1324  | 6.2392  |
| 32                         | 5.5234  | 5.6268  | 5.7301  | 5.8335  | 5.9368  | 6.0402  |
| 30                         | 5.3540  | 5.4543  | 5.5545  | 5.6547  | 5.7549  | 5.8551  |
|                            |         |         |         |         |         |         |
| 28                         | 5.1962  | 5.2935  | 5.3908  | 5.4881  | 5.5853  | 5.6826  |
| 26                         | 5.0487  | 5.1433  | 5.2379  | 5.3324  | 5.4269  | 5.5215  |
| 24                         | 4.9108  | 5.0028  | 5.0948  | 5.1867  | 5.2787  | 5.3707  |
| 22                         | 4.7815  | 4.8710  | 4.9606  | 5.0502  | 5.1398  | 5.2293  |
| 20                         | 4.6601  | 4.7474  | 4.8347  | 4.9220  | 5.0093  | 5.0967  |
|                            |         |         |         |         |         |         |
| 18                         | 4.5459  | 4.6311  | 4.7163  | 4.8015  | 4.8867  | 4.9719  |
| 16                         | 4.4384  | 4.5217  | 4.6049  | 4.6881  | 4.7713  | 4.8545  |
| 14                         | 4.3371  | 4.4185  | 4.4998  | 4.5811  | 4.6624  | 4.7438  |
| 12                         | 4.2415  | 4.3211  | 4.4007  | 4.4802  | 4.5597  | 4.6393  |
| 10                         | 4.1512  | 4.2291  | 4.3070  | 4.3848  | 4.4627  | 4.5406  |
|                            |         |         |         |         |         |         |
| 8                          | 4.0658  | 4.1421  | 4.2184  | 4.2947  | 4.3710  | 4.4473  |
| 6                          | 3.9849  | 4.0597  | 4.1345  | 4.2093  | 4.2841  | 4.3589  |
| 4                          | 3.9083  | 3.9817  | 4.0550  | 4.1284  | 4.2018  | 4.2752  |
| 2                          | 3.8356  | 3.9077  | 3.9797  | 4.0517  | 4.1238  | 4.1958  |
| 0                          | 3.7667  | 3.8375  | 3.9082  | 3.9790  | 4.0497  | 4.1205  |

Table 3

| $\alpha \backslash \rho_0$ | 4.90   | 5.00   | 5.10   | 5.20   | 5.30   | 5.40   |
|----------------------------|--------|--------|--------|--------|--------|--------|
| -2                         | 3.7012 | 3.7708 | 3.8403 | 3.9099 | 3.9794 | 4.0490 |
| -4                         | 3.6391 | 3.7074 | 3.7758 | 3.8442 | 3.9126 | 3.9810 |
| -6                         | 3.5799 | 3.6472 | 3.7145 | 3.7818 | 3.8491 | 3.9164 |
| -8                         | 3.5237 | 3.5900 | 3.6562 | 3.7225 | 3.7888 | 3.8550 |
| -10                        | 3.4702 | 3.5355 | 3.6008 | 3.6660 | 3.7313 | 3.7966 |
| -12                        | 3.4193 | 3.4837 | 3.5480 | 3.6123 | 3.6767 | 3.7410 |
| -14                        | 3.3709 | 3.4343 | 3.4977 | 3.5612 | 3.6246 | 3.6880 |
| -16                        | 3.3247 | 3.3873 | 3.4499 | 3.5125 | 3.5751 | 3.6376 |
| -18                        | 3.2808 | 3.3426 | 3.4043 | 3.4661 | 3.5279 | 3.5896 |
| -20                        | 3.2389 | 3.2999 | 3.3609 | 3.4219 | 3.4829 | 3.5439 |
| -22                        | 3.1991 | 3.2593 | 3.3196 | 3.3799 | 3.4401 | 3.5004 |
| -24                        | 3.1611 | 3.2207 | 3.2802 | 3.3398 | 3.3994 | 3.4589 |
| -26                        | 3.1250 | 3.1839 | 3.2427 | 3.3016 | 3.3605 | 3.4194 |
| -28                        | 3.0906 | 3.1488 | 3.2071 | 3.2653 | 3.3236 | 3.3818 |
| -30                        | 3.0578 | 3.1154 | 3.1731 | 3.2307 | 3.2884 | 3.3461 |
| -32                        | 3.0266 | 3.0837 | 3.1408 | 3.1978 | 3.2549 | 3.3120 |
| -34                        | 2.9970 | 3.0535 | 3.1100 | 3.1665 | 3.2231 | 3.2796 |
| -36                        | 2.9688 | 3.0248 | 3.0808 | 3.1368 | 3.1928 | 3.2488 |
| -38                        | 2.9420 | 2.9976 | 3.0531 | 3.1086 | 3.1641 | 3.2196 |
| -40                        | 2.9166 | 2.9717 | 3.0267 | 3.0818 | 3.1368 | 3.1919 |
| -42                        | 2.8926 | 2.9472 | 3.0017 | 3.0563 | 3.1110 | 3.1656 |
| -44                        | 2.8698 | 2.9239 | 2.9781 | 3.0323 | 3.0865 | 3.1406 |
| -46                        | 2.8482 | 2.9019 | 2.9557 | 3.0095 | 3.0633 | 3.1171 |
| -48                        | 2.8278 | 2.8812 | 2.9346 | 2.9880 | 3.0414 | 3.0948 |
| -50                        | 2.8086 | 2.8616 | 2.9147 | 2.9677 | 3.0208 | 3.0738 |
| -52                        | 2.7905 | 2.8432 | 2.8959 | 2.9486 | 3.0013 | 3.0540 |
| -54                        | 2.7735 | 2.8259 | 2.8783 | 2.9307 | 2.9831 | 3.0355 |
| -56                        | 2.7576 | 2.8097 | 2.8618 | 2.9139 | 2.9660 | 3.0181 |
| -58                        | 2.7428 | 2.7946 | 2.8464 | 2.8982 | 2.9500 | 3.0018 |
| -60                        | 2.7289 | 2.7805 | 2.8320 | 2.8836 | 2.9351 | 2.9867 |
| -62                        | 2.7161 | 2.7674 | 2.8187 | 2.8700 | 2.9213 | 2.9727 |
| -64                        | 2.7043 | 2.7554 | 2.8064 | 2.8575 | 2.9086 | 2.9597 |
| -66                        | 2.6935 | 2.7443 | 2.7952 | 2.8461 | 2.8969 | 2.9478 |
| -68                        | 2.6836 | 2.7343 | 2.7849 | 2.8356 | 2.8863 | 2.9370 |
| -70                        | 2.6747 | 2.7251 | 2.7756 | 2.8261 | 2.8767 | 2.9272 |
| -72                        | 2.6667 | 2.7170 | 2.7673 | 2.8177 | 2.8680 | 2.9184 |
| -74                        | 2.6596 | 2.7098 | 2.7600 | 2.8102 | 2.8604 | 2.9106 |
| -76                        | 2.6535 | 2.7035 | 2.7536 | 2.8037 | 2.8538 | 2.9038 |
| -78                        | 2.6483 | 2.6982 | 2.7482 | 2.7981 | 2.8481 | 2.8981 |
| -80                        | 2.6440 | 2.6938 | 2.7437 | 2.7935 | 2.8434 | 2.8933 |
| -82                        | 2.6406 | 2.6904 | 2.7401 | 2.7899 | 2.8397 | 2.8895 |
| -84                        | 2.6382 | 2.6879 | 2.7375 | 2.7873 | 2.8370 | 2.8867 |
| -86                        | 2.6367 | 2.6863 | 2.7359 | 2.7856 | 2.8352 | 2.8849 |
| -88                        | 2.6361 | 2.6856 | 2.7352 | 2.7849 | 2.8345 | 2.8841 |
| -90                        |        |        |        |        |        |        |