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3.4 $\mu$

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# The Efficiency Factors $Q_{ext}$ and $Q_{scat}$ of the Core-Mantle Grains in the Infrared Region 2–3.4 $\mu$

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The absence of detectable "dirty ices" absorption in the infrared spectrum of $\mu$ *Cep* (DANIELSON and WOOLF 1965) may perhaps be an argument in favor of interstellar extinction's being caused by core-mantle grains. To discuss the possibility of reddening of $\mu$ *Cep* by these particles, the corresponding efficiency factors are needed.

According to GÜTTLER's theory (1952) the efficiency factors $Q_{ext}$, $Q_{scat}$ and albedo $A$ were computed by help of the computer Minsk. These results are tabelled for different combinations of sizes of the graphite core and dielectric mantle as well as for different values of the refractive indices of the mantle.

The efficiency factors $Q_{ext}$ and $Q_{scat}$ are given by GÜTTLER (1952)

$$Q_{ext} = \frac{2}{x^2} \sum_{l=1}^{\infty} (2l+1)\,\mathrm{Re}\,[a_1 + b_1]; \qquad Q_{scat} = \frac{2}{x^2} \sum_{l=1}^{\infty} (2l+1)\,(|a_1|^2 + |b_1|^2)\,, \quad (1)$$

where

$$a_l = \frac{\begin{vmatrix} k_1\psi_l(k_1R_0) & -k_2\psi_l(k_2R_0) & -k_2\chi_l(k_2R_0) & 0 \\ \psi_l'(k_1R_0) & -\psi_l'(k_2R_0) & -\chi_l'(k_2R_0) & 0 \\ 0 & k_2\psi_l(k_2R) & k_2\chi_l(k_2R) & k_3\psi_l(k_3R) \\ 0 & \psi_l'(k_2R) & \chi_l'(k_2R) & \psi_l'(k_3R) \end{vmatrix}}{\begin{vmatrix} k_1\psi_l(k_1R_0) & -k_2\psi_l(k_2R_0) & -k_2\chi_l(k_2R_0) & 0 \\ \psi_l'(k_1R_0) & -\psi_l'(k_2R_0) & -\chi_l'(k_2R_0) & 0 \\ 0 & k_2\psi_l(k_2R) & k_2\chi_l(k_2R) & k_3\xi_l(k_3R) \\ 0 & \psi_l'(k_2R) & \chi_l'(k_2R) & \xi_l'(k_3R) \end{vmatrix}}$$

$$b_l = \frac{\begin{vmatrix} \psi_l(k_1R_0) & -\psi_l(k_2R_0) & -\chi_l(k_2R_0) & 0 \\ k_1\psi_l'(k_1R_0) & -k_2\psi_l'(k_2R_0) & -k_2\chi_l'(k_2R_0) & 0 \\ 0 & \psi_l(k_2R) & \chi_l(k_2R) & \psi_l(k_3R) \\ 0 & k_2\psi_l'(k_2R) & k_2\chi_l'(k_2R) & k_3\psi_l'(k_3R) \end{vmatrix}}{\begin{vmatrix} \psi_l(k_1R_0) & -\psi_l(k_2R_0) & -\chi_l(k_2R_0) & 0 \\ k_1\psi_l'(k_1R_0) & -k_2\psi_l'(k_2R_0) & -k_2\chi_l'(k_2R_0) & 0 \\ 0 & \psi_l(k_2R) & \chi_l(k_2R) & \xi_l(k_3R) \\ 0 & k_2\psi_l'(k_2R) & k_2\chi_l'(k_2R) & k_3\xi_l'(k_3R) \end{vmatrix}}$$

with

$$\psi_l(t) = \sqrt{\frac{\pi t}{2}}\, \mathcal{J}_{l+1/2}(t)\,, \quad \chi_l(t) = -\sqrt{\frac{\pi t}{2}}\, N_{l+1/2}(t) = C_n\,, \quad \xi_l(t) = \psi_l(t) + i\chi_l(t)\,,$$

$\mathcal{J}(t)$, $N(t)$ denote the Bessel, resp. Neumann functions.

$k_1 = M_1\,\dfrac{2\pi}{\lambda}\,, \quad k_2 = M_2\,\dfrac{2\pi}{\lambda}\,, \quad k_3 = \dfrac{2\pi}{\lambda}\,, \quad M_1$ = refractive index of the core, $M_2$ = refractive index of the mantle, $R_0$ = radius of the core, $R$ = radius of the particle. Since for most of the computed cases the value of $\dfrac{2\pi R}{\lambda} \leq 1$, the 1st term in (1) was taken only. To compute the refractive indices of the graphite core as a function of the wavelength the formula

$$M^2 = 4 - 10\,i\lambda \tag{2}$$

according to WICKRAMASINGHE and GUILLAME (1965) was used.

**References**

DANIELSON R. E. and WOOLF N. J., 1965, ApJ. 141, 116.
GÜTTLER A., 1952, Ann. Physik 11, 65.
WICKRAMASINGHE N. C., GUILLAUME C., 1965, Nature 207, 366.

| $R$ microns | Wave-length = 2.00 microns | | | $M_1 = 3.49 - 2.86\,i$ | | | $M_2 = 1.10$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .02368 | .00013 | 0.005 | | | | | | |
| 0.075 | .01104 | .00014 | 0.013 | .05281 | .00107 | 0.020 | | | |
| 0.100 | .00645 | .00022 | 0.034 | .03141 | .00096 | 0.031 | .11706 | .00621 | 0.053 |
| 0.150 | .00350 | .00067 | 0.192 | .01542 | .00137 | 0.089 | .05837 | .00503 | 0.086 |
| 0.200 | .00339 | .00176 | 0.520 | .01066 | .00255 | 0.239 | .03702 | .00588 | 0.159 |
| 0.250 | .00488 | .00381 | 0.781 | .01004 | .00471 | 0.470 | .02865 | .00812 | 0.283 |
| 0.300 | .00782 | .00706 | 0.903 | .01187 | .00808 | 0.680 | .02635 | .01169 | 0.444 |
| 0.350 | .01215 | .01158 | 0.953 | .01556 | .01271 | 0.816 | .02759 | .01654 | 0.600 |
| 0.400 | .01771 | .01726 | 0.975 | .02070 | .01847 | 0.892 | .03113 | .02247 | 0.722 |
| 0.450 | .02416 | .02381 | 0.985 | .02685 | .02506 | 0.933 | .03612 | .02915 | 0.807 |
| 0.500 | .03116 | .03087 | 0.991 | .03360 | .03213 | 0.956 | .04194 | .03621 | 0.863 |
| 0.550 | .03844 | .03819 | 0.994 | .04065 | .03943 | 0.970 | .04818 | .04339 | 0.901 |
| 0.600 | .04589 | .04568 | 0.996 | .04790 | .04687 | 0.978 | .05470 | .05064 | 0.926 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .16292 | .01877 | 0.115 | | | | | | |
| 0.200 | .10235 | .01661 | 0.162 | .49848 | .11946 | 0.240 | | | |
| 0.250 | .07469 | .01775 | 0.238 | .35890 | .10063 | 0.280 | 1.1413 | .43792 | 0.384 |
| 0.300 | .06180 | .02100 | 0.340 | .27981 | .09238 | 0.330 | .89213 | .37075 | 0.416 |
| 0.350 | .05665 | .02582 | 0.456 | .23277 | .09009 | 0.387 | .72666 | .32552 | 0.448 |
| 0.400 | .05597 | .03176 | 0.567 | .20357 | .09100 | 0.447 | .61190 | .29379 | 0.480 |
| 0.450 | .05791 | .03836 | 0.662 | .18463 | .09336 | 0.506 | .52827 | .26982 | 0.511 |
| 0.500 | .06131 | .04519 | 0.737 | .17170 | .09612 | 0.560 | .46435 | .25020 | 0.539 |
| 0.550 | .06551 | .05199 | 0.794 | .16240 | .09876 | 0.608 | .41356 | .23319 | 0.564 |
| 0.600 | .07021 | .05873 | 0.836 | .15557 | .10124 | 0.651 | .37227 | .21823 | 0.586 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 1.9611 | .99656 | 0.508 | | | | | | |
| 0.350 | 1.5890 | .84070 | 0.529 | 2.4496 | 1.4389 | 0.587 | | | |
| 0.400 | 1.3155 | .72079 | 0.548 | 1.9997 | 1.1996 | 0.600 | 2.4485 | 1.5571 | 0.636 |
| 0.450 | 1.1088 | .62601 | 0.565 | 1.6587 | 1.0119 | 0.610 | 2.0121 | 1.2946 | 0.643 |
| 0.500 | .94793 | .54868 | 0.579 | 1.3951 | .86202 | 0.618 | 1.6779 | 1.0882 | 0.649 |
| 0.550 | .81980 | .48412 | 0.591 | 1.1875 | .74028 | 0.623 | 1.4170 | .92313 | 0.651 |
| 0.600 | .71611 | .42972 | 0.600 | 1.0216 | .64035 | 0.627 | 1.2099 | .78919 | 0.652 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.2296 | 1.4912 | 0.669 | | | | | | |
| 0.500 | 1.8531 | 1.2476 | 0.673 | 1.9740 | 1.3675 | 0.693 | | | |
| 0.550 | 1.5604 | 1.0540 | 0.675 | 1.6619 | 1.1555 | 0.695 | 1.7385 | 1.2358 | 0.711 |
| 0.600 | 1.3286 | .89758 | 0.676 | 1.4149 | .98428 | 0.696 | 1.4818 | 1.0551 | 0.712 |

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| $R$ microns | Wave-length = 2.00 microns | | | $M_1 = 3.49-2.86\,i$ | | | $M_2 = 1.33$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .03211 | .00028 | 0.009 | | | | | | |
| 0.075 | .01658 | .00060 | 0.036 | .06921 | .00200 | 0.029 | | | |
| 0.100 | .01083 | .00140 | 0.129 | .04624 | .00291 | 0.063 | .14525 | .00971 | 0.067 |
| 0.150 | .01035 | .00585 | 0.566 | .02954 | .00783 | 0.265 | .09251 | .01546 | 0.167 |
| 0.200 | .01996 | .01724 | 0.864 | .03321 | .01987 | 0.598 | .07821 | .02911 | 0.372 |
| 0.250 | .04168 | .03979 | 0.955 | .05249 | .04318 | 0.823 | .08933 | .05451 | 0.610 |
| 0.300 | .07843 | .07700 | 0.982 | .08821 | .08116 | 0.920 | .12132 | .09475 | 0.781 |
| 0.350 | .13099 | .12985 | 0.991 | .14029 | .13469 | 0.960 | .17149 | .15024 | 0.876 |
| 0.400 | .19659 | .19567 | 0.995 | .20551 | .20093 | 0.978 | .23516 | .21770 | 0.926 |
| 0.450 | .27035 | .26959 | 0.997 | .27875 | .27496 | 0.986 | .30647 | .29190 | 0.952 |
| 0.500 | .34982 | .34919 | 0.998 | .35750 | .35434 | 0.991 | .38274 | .37046 | 0.968 |
| 0.550 | .43905 | .43852 | 0.999 | .44589 | .44324 | 0.994 | .46832 | .45786 | 0.978 |
| 0.600 | .54543 | .54499 | 0.999 | .55144 | .54918 | 0.996 | .57102 | .56203 | 0.984 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .22362 | .03599 | 0.161 | | | | | | |
| 0.200 | .17904 | .05200 | 0.290 | .66413 | .19411 | 0.292 | | | |
| 0.250 | .17335 | .08088 | 0.467 | .60822 | .23736 | 0.390 | 1.4901 | .63979 | 0.429 |
| 0.300 | 19660 | .12504 | 0.636 | .59343 | .29339 | 0.494 | 1.4398 | .71619 | 0.497 |
| 0.350 | .24166 | .18391 | 0.761 | .60797 | .35949 | 0.591 | 1.3848 | .77102 | 0.557 |
| 0.400 | .30105 | .25321 | 0.841 | .63718 | .42785 | 0.671 | 1.3238 | .80232 | 0.606 |
| 0.450 | .36740 | .32714 | 0.890 | .66989 | .49121 | 0.733 | 1.2566 | .81058 | 0.645 |
| 0.500 | .43773 | .40343 | 0.922 | .70335 | .54884 | 0.780 | 1.1903 | .80429 | 0.676 |
| 0.550 | .51677 | .48720 | 0.943 | .74449 | .60907 | 0.818 | 1.1381 | .79885 | 0.702 |
| 0.600 | .61290 | .58713 | 0.958 | .80360 | .68375 | 0.851 | 1.1122 | .81051 | 0.729 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 2.4105 | 1.2967 | 0.538 | | | | | | |
| 0.350 | 2.2452 | 1.2972 | 0.578 | 2.7802 | 1.6807 | 0.605 | | | |
| 0.400 | 2.0329 | 1.2340 | 0.607 | 2.4425 | 1.5278 | 0.626 | 2.6372 | 1.7032 | 0.646 |
| 0.450 | 1.8134 | 1.1370 | 0.627 | 2.1100 | 1.3442 | 0.637 | 2.2582 | 1.4816 | 0.656 |
| 0.500 | 1.6116 | 1.0306 | 0.640 | 1.8153 | 1.1626 | 0.640 | 1.9239 | 1.2654 | 0.658 |
| 0.550 | 1.4432 | .93478 | 0.648 | 1.5695 | 1.0008 | 0.638 | 1.6419 | 1.0702 | 0.652 |
| 0.600 | 1.3173 | .86498 | 0.657 | 1.3751 | .86994 | 0.633 | 1.4112 | .90368 | 0.640 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 500$ | | |
| 0.450 | 2.3392 | 1.5780 | 0.675 | | | | | | |
| 0.500 | 1.9982 | 1.3559 | 0.679 | 2.0438 | 1.4224 | 0.696 | | | |
| 0.550 | 1.7064 | 1.1509 | 0.674 | 1.7570 | 1.2227 | 0.696 | 1.7865 | 1.2724 | 0.712 |
| 0.600 | 1.4611 | .96882 | 0.663 | 1.5118 | 1.0405 | 0.688 | 1.5490 | 1.0989 | 0.709 |

| $R$ microns | Wave-length = 2.00 microns | | | $M_1 = 3.49-2.86\,i$ | | | $M_2 = 1.42$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{scat}$ | $A$ | $Q_{ext}$ | $Q_{scat}$ | $A$ | $Q_{ext}$ | $Q_{scat}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .03504 | .00034 | 0.010 | | | | | | |
| 0.075 | .01874 | .00084 | 0.045 | .07484 | .00235 | 0.031 | | | |
| 0.100 | .01275 | .00206 | 0.162 | .05198 | .00381 | 0.073 | .15464 | .01095 | 0.071 |
| 0.150 | .01419 | .00900 | 0.635 | .03631 | .01145 | 0.315 | .10689 | .02041 | 0.191 |
| 0.200 | .03029 | .02708 | 0.894 | .04610 | .03045 | 0.661 | .09898 | .04197 | 0.424 |
| 0.250 | .06575 | .06347 | 0.965 | .07914 | .06793 | 0.858 | .12428 | .08266 | 0.665 |
| 0.300 | .12603 | .12427 | 0.986 | .13857 | .12988 | 0.937 | .18063 | .14801 | 0.819 |
| 0.350 | .21235 | .21092 | 0.993 | .22455 | .21749 | 0.969 | .26518 | .23850 | 0.899 |
| 0.400 | .31930 | .31812 | 0.996 | .33109 | .32524 | 0.982 | .37005 | .34773 | 0.940 |
| 0.450 | .43934 | .43837 | 0.998 | .45034 | .44546 | 0.989 | .48649 | .46764 | 0.961 |
| 0.500 | .57416 | .57335 | 0.999 | .58402 | .57992 | 0.993 | .61629 | .60024 | 0.974 |
| 0.550 | .74003 | .73935 | 0.999 | .74861 | .74514 | 0.995 | .77654 | .76271 | 0.982 |
| 0.600 | .94474 | .94416 | 0.999 | .95211 | .94913 | 0.997 | .97575 | .96373 | 0.988 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .24640 | .04278 | 0.174 | | | | | | |
| 0.200 | .21389 | .06924 | 0.324 | .72463 | .22141 | 0.306 | | | |
| 0.250 | .22509 | .11590 | 0.515 | .71716 | .29792 | 0.415 | 1.6100 | .70795 | 0.440 |
| 0.300 | .27473 | .18759 | 0.683 | .74708 | .39336 | 0.527 | 1.6527 | .84839 | 0.513 |
| 0.350 | .35532 | .28317 | 0.797 | .80430 | .50189 | 0.624 | 1.6527 | .94851 | 0.574 |
| 0.400 | .45551 | .39455 | 0.866 | .87050 | .60963 | 0.700 | 1.6128 | 1.0016 | 0.621 |
| 0.450 | .56494 | .51283 | 0.908 | .93387 | .70684 | 0.757 | 1.5464 | 1.0145 | 0.656 |
| 0.500 | .68568 | .64063 | 0.934 | 1.0007 | .80056 | 0.800 | 1.4800 | 1.0109 | 0.683 |
| 0.550 | .83584 | .79639 | 0.953 | 1.0937 | .91486 | 0.836 | 1.4448 | 1.0244 | 0.709 |
| 0.600 | 1.0249 | .99014 | 0.966 | 1.2259 | 1.0657 | 0.869 | 1.4583 | 1.0791 | 0.740 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 2.5476 | 1.3853 | 0.544 | | | | | | |
| 0.350 | 2.4471 | 1.4311 | 0.585 | 2.8693 | 1.7421 | 0.607 | | | |
| 0.400 | 2.2411 | 1.3712 | 0.612 | 2.5522 | 1.6005 | 0.627 | 2.6846 | 1.7363 | 0.647 |
| 0.450 | 2.0019 | 1.2556 | 0.627 | 2.2082 | 1.4014 | 0.635 | 2.3132 | 1.5147 | 0.655 |
| 0.500 | 1.7801 | 1.1286 | 0.634 | 1.8952 | 1.1972 | 0.632 | 1.9706 | 1.2839 | 0.652 |
| 0.550 | 1.6064 | 1.0255 | 0.638 | 1.6378 | 1.0187 | 0.622 | 1.6778 | 1.0711 | 0.638 |
| 0.600 | 1.4956 | .97126 | 0.649 | 1.4456 | .88633 | 0.613 | 1.4411 | .89251 | 0.619 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.3663 | 1.5962 | 0.675 | | | | | | |
| 0.500 | 2.0301 | 1.3718 | 0.676 | 2.0612 | 1.4332 | 0.695 | | | |
| 0.550 | 1.7335 | 1.1548 | 0.666 | 1.7784 | 1.2310 | 0.692 | 1.7986 | 1.2792 | 0.711 |
| 0.600 | 1.4809 | .95844 | 0.647 | 1.5303 | 1.0388 | 0.679 | 1.5646 | 1.1032 | 0.705 |

| $R$ microns | Wave-length = 2.00 microns | | | $M_1 = 3.49-2.86\,i$ | | | $M_2 = 1.50$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .03745 | .00040 | 0.011 | | | | | | |
| 0.075 | .02059 | .00106 | 0.052 | .07944 | .00265 | 0.033 | | | |
| 0.100 | .01448 | .00272 | 0.188 | .05692 | .00464 | 0.082 | .16223 | .01196 | 0.074 |
| 0.150 | .01801 | .01221 | 0.678 | .04271 | .01502 | 0.352 | .11978 | .02501 | 0.209 |
| 0.200 | .04095 | .03729 | 0.911 | .05908 | .04129 | 0.699 | .11903 | .05472 | 0.460 |
| 0.250 | .09114 | .08849 | 0.971 | .10694 | .09391 | 0.878 | .15980 | .11162 | 0.699 |
| 0.300 | .17699 | .17489 | 0.988 | .19215 | .18182 | 0.946 | .24274 | .20407 | 0.841 |
| 0.350 | .30001 | .29829 | 0.994 | .31499 | .30645 | 0.973 | .36464 | .33235 | 0.911 |
| 0.400 | .45179 | .45035 | 0.997 | .46625 | .45908 | 0.985 | .51388 | .48646 | 0.947 |
| 0.450 | .62444 | .62324 | 0.998 | .63775 | .63170 | 0.991 | .68132 | .65788 | 0.966 |
| 0.500 | .83272 | .83171 | 0.999 | .84438 | .83926 | 0.994 | .88238 | .86215 | 0.977 |
| 0.550 | 1.1100 | 1.1092 | 0.999 | 1.1199 | 1.1155 | 0.996 | 1.1517 | 1.1341 | 0.985 |
| 0.600 | 1.4249 | 1.4242 | 0.999 | 1.4332 | 1.4294 | 0.997 | 1.4591 | 1.4437 | 0.989 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .26582 | .04866 | 0.183 | | | | | | |
| 0.200 | .24623 | .08552 | 0.347 | .77571 | .24428 | 0.315 | | | |
| 0.250 | .27604 | .15078 | 0.546 | .81634 | .35272 | 0.432 | 1.7084 | .76291 | 0.447 |
| 0.300 | .35462 | .25185 | 0.710 | .89328 | .48771 | 0.546 | 1.8342 | .95860 | 0.523 |
| 0.350 | .47365 | .38661 | 0.816 | .99445 | .63813 | 0.642 | 1.8803 | 1.0942 | 0.582 |
| 0.400 | .61729 | .54245 | 0.879 | 1.0967 | .78290 | 0.714 | 1.8515 | 1.1578 | 0.625 |
| 0.450 | .77490 | .70993 | 0.916 | 1.1916 | .91336 | 0.767 | 1.7809 | 1.1677 | 0.656 |
| 0.500 | .96297 | .90586 | 0.941 | 1.3041 | 1.0538 | 0.808 | 1.7210 | 1.1701 | 0.680 |
| 0.550 | 1.2176 | 1.1669 | 0.958 | 1.4756 | 1.2481 | 0.846 | 1.7207 | 1.2187 | 0.708 |
| 0.600 | 1.5104 | 1.4657 | 0.970 | 1.6885 | 1.4847 | 0.879 | 1.7817 | 1.3281 | 0.745 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 2.6542 | 1.4523 | 0.547 | | | | | | |
| 0.350 | 2.6001 | 1.5277 | 0.588 | 2.9349 | 1.7851 | 0.608 | | | |
| 0.400 | 2.3889 | 1.4591 | 0.611 | 2.6278 | 1.6447 | 0.626 | 2.7186 | 1.7578 | 0.647 |
| 0.450 | 2.1267 | 1.3191 | 0.620 | 2.2687 | 1.4255 | 0.628 | 2.3494 | 1.5310 | 0.652 |
| 0.500 | 1.8899 | 1.1737 | 0.621 | 1.9393 | 1.1990 | 0.618 | 1.9972 | 1.2835 | 0.643 |
| 0.550 | 1.7234 | 1.0747 | 0.624 | 1.6766 | 1.0092 | 0.602 | 1.6950 | 1.0538 | 0.622 |
| 0.600 | 1.6402 | 1.0515 | 0.641 | 1.4966 | .88699 | 0.593 | 1.4571 | .86831 | 0.596 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.3854 | 1.6072 | 0.674 | | | | | | |
| 0.500 | 2.0509 | 1.3773 | 0.672 | 2.0735 | 1.4394 | 0.694 | | | |
| 0.550 | 1.7486 | 1.1471 | 0.656 | 1.7925 | 1.2322 | 0.687 | 1.8073 | 1.2828 | 0.710 |
| 0.600 | 1.4897 | .93705 | 0.629 | 1.5408 | 1.0292 | 0.668 | 1.5751 | 1.1026 | 0.700 |

| $R$ microns | Wave-length = 2.00 microns | | | $M_1 = 3.49-2.86\,i$ | | | $M_2 = 1.70$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .04256 | .00053 | 0.012 | | | | | | |
| 0.075 | .02479 | .00165 | 0.067 | .08922 | .00335 | 0.038 | | | |
| 0.100 | .01877 | .00452 | 0.241 | .06824 | .00675 | 0.099 | .17828 | .01419 | 0.080 |
| 0.150 | .02872 | .02141 | 0.746 | .05947 | .02495 | 0.420 | .15128 | .03682 | 0.243 |
| 0.200 | .07234 | .06751 | 0.933 | .09625 | .07286 | 0.757 | .17356 | .09030 | 0.520 |
| 0.250 | .16838 | .16468 | 0.978 | .19044 | .17233 | 0.905 | .26333 | .19680 | 0.747 |
| 0.300 | .33557 | .33250 | 0.991 | .35775 | .34258 | 0.958 | .43115 | .37439 | 0.868 |
| 0.350 | .57643 | .57378 | 0.995 | .59875 | .58559 | 0.978 | .67219 | .62226 | 0.926 |
| 0.400 | .87928 | .87699 | 0.997 | .90038 | .88892 | 0.987 | .96935 | .92510 | 0.954 |
| 0.450 | 1.2792 | 1.2772 | 0.998 | 1.2975 | 1.2876 | 0.992 | 1.3571 | 1.3176 | 0.971 |
| 0.500 | 1.8959 | 1.8942 | 0.999 | 1.9107 | 1.9020 | 0.995 | 1.9572 | 1.9215 | 0.982 |
| 0.550 | 2.5323 | 2.5309 | 0.999 | 2.5437 | 2.5360 | 0.997 | 2.5767 | 2.5452 | 0.988 |
| 0.600 | 2.6570 | 2.6557 | 0.999 | 2.6661 | 2.6592 | 0.997 | 2.6912 | 2.6640 | 0.990 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .31030 | .06230 | 0.201 | | | | | | |
| 0.200 | .32955 | .12803 | 0.388 | .89169 | .29493 | 0.331 | | | |
| 0.250 | .41857 | .24874 | 0.594 | 1.0648 | .48646 | 0.457 | 1.9230 | .87783 | 0.456 |
| 0.300 | .58946 | .44019 | 0.747 | 1.2785 | .72822 | 0.570 | 2.2416 | 1.1915 | 0.532 |
| 0.350 | .82954 | .69558 | 0.839 | 1.5005 | .98530 | 0.657 | 2.3694 | 1.3774 | 0.581 |
| 0.400 | 1.1150 | .99392 | 0.891 | 1.6991 | 1.2208 | 0.718 | 2.3306 | 1.4218 | 0.610 |
| 0.450 | 1.4799 | 1.3692 | 0.925 | 1.9238 | 1.4744 | 0.766 | 2.2548 | 1.4155 | 0.628 |
| 0.500 | 2.0472 | 1.9445 | 0.950 | 2.3003 | 1.8733 | 0.814 | 2.2878 | 1.4995 | 0.655 |
| 0.550 | 2.6321 | 2.5408 | 0.965 | 2.7057 | 2.3215 | 0.858 | 2.4202 | 1.7055 | 0.705 |
| 0.600 | 2.7302 | 2.6525 | 0.972 | 2.7379 | 2.4155 | 0.882 | 2.3967 | 1.8000 | 0.751 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 2.8687 | 1.5785 | 0.550 | | | | | | |
| 0.350 | 2.8863 | 1.6840 | 0.583 | 3.0570 | 1.8554 | 0.607 | | | |
| 0.400 | 2.6261 | 1.5533 | 0.591 | 2.7489 | 1.6892 | 0.614 | 2.7788 | 1.7873 | 0.643 |
| 0.450 | 2.3028 | 1.3382 | 0.581 | 2.3420 | 1.4027 | 0.599 | 2.4023 | 1.5300 | 0.637 |
| 0.500 | 2.0699 | 1.1790 | 0.570 | 1.9824 | 1.1239 | 0.567 | 2.0218 | 1.2308 | 0.609 |
| 0.550 | 1.9871 | 1.1680 | 0.588 | 1.7459 | .94566 | 0.542 | 1.7054 | .96443 | 0.566 |
| 0.600 | 1.9526 | 1.2493 | 0.640 | 1.6414 | .91858 | 0.560 | 1.4954 | .79899 | 0.534 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.4189 | 1.6190 | 0.669 | | | | | | |
| 0.500 | 2.0807 | 1.3635 | 0.655 | 2.0951 | 1.4439 | 0.689 | | | |
| 0.550 | 1.7607 | 1.0922 | 0.620 | 1.8132 | 1.2158 | 0.671 | 1.8227 | 1.2841 | 0.704 |
| 0.600 | 1.4924 | .85268 | 0.571 | 1.5495 | .97895 | 0.632 | 1.5912 | 1.0865 | 0.683 |

**9**

| R microns | Wave-length = 2.00 microns | | | $M_1 = 3.49-2.86\,i$ | | | $M_2 = 1.90$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .04638 | .00064 | 0.014 | | | | | | |
| 0.075 | .02822 | .00225 | 0.080 | .09668 | .00394 | 0.041 | | | |
| 0.100 | .02270 | .00642 | 0.283 | .07770 | .00875 | 0.113 | .19067 | .01598 | 0.084 |
| 0.150 | .04023 | .03157 | 0.785 | .07621 | .03551 | 0.466 | .18027 | .04829 | 0.268 |
| 0.200 | .10819 | .10219 | 0.945 | .13749 | .10846 | 0.789 | .23076 | .12844 | 0.557 |
| 0.250 | .26034 | .25549 | 0.981 | .28864 | .26482 | 0.917 | .38132 | .29413 | 0.771 |
| 0.300 | .53084 | .52657 | 0.992 | .56024 | .53908 | 0.962 | .65683 | .57758 | 0.879 |
| 0.350 | .93037 | .92650 | 0.996 | .95997 | .94062 | 0.980 | 1.0565 | .98258 | 0.930 |
| 0.400 | 1.5016 | 1.4982 | 0.998 | 1.5285 | 1.5108 | 0.988 | 1.6148 | 1.5453 | 0.957 |
| 0.450 | 2.5363 | 2.5332 | 0.999 | 2.5574 | 2.5411 | 0.994 | 2.6213 | 2.5546 | 0.975 |
| 0.500 | 3.6232 | 3.6204 | 0.999 | 3.6373 | 3.6226 | 0.996 | 3.6729 | 3.6126 | 0.984 |
| 0.550 | 3.4462 | 3.4436 | 0.999 | 3.4560 | 3.4428 | 0.996 | 3.4792 | 3.4270 | 0.985 |
| 0.600 | 2.9783 | 2.9757 | 0.999 | 2.9837 | 2.9706 | 0.996 | 2.9929 | 2.9428 | 0.983 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .34843 | .07406 | 0.213 | | | | | | |
| 0.200 | .41179 | .17003 | 0.413 | .99142 | .33612 | 0.339 | | | |
| 0.250 | .57358 | .35416 | 0.617 | 1.3012 | .60583 | 0.466 | 2.0986 | .96372 | 0.459 |
| 0.300 | .86012 | .65340 | 0.760 | 1.6591 | .94671 | 0.571 | 2.5713 | 1.3532 | 0.526 |
| 0.350 | 1.2570 | 1.0593 | 0.843 | 1.9986 | 1.2913 | 0.646 | 2.7183 | 1.5219 | 0.560 |
| 0.400 | 1.7884 | 1.5970 | 0.893 | 2.3349 | 1.6356 | 0.700 | 2.6459 | 1.5080 | 0.570 |
| 0.450 | 2.7349 | 2.5452 | 0.931 | 2.9224 | 2.2176 | 0.759 | 2.6664 | 1.5650 | 0.587 |
| 0.500 | 3.7129 | 3.5404 | 0.954 | 3.5488 | 2.9058 | 0.819 | 2.8677 | 1.8538 | 0.646 |
| 0.550 | 3.4975 | 3.3528 | 0.959 | 3.2936 | 2.7809 | 0.844 | 2.7300 | 1.9311 | 0.707 |
| 0.600 | 2.9823 | 2.8481 | 0.955 | 2.7003 | 2.2749 | 0.842 | 2.2580 | 1.6649 | 0.737 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 3.0262 | 1.6577 | 0.548 | | | | | | |
| 0.350 | 3.0620 | 1.7388 | 0.568 | 3.1368 | 1.8866 | 0.601 | | | |
| 0.400 | 2.7262 | 1.5102 | 0.554 | 2.8032 | 1.6642 | 0.594 | 2.8150 | 1.7913 | 0.636 |
| 0.450 | 2.3827 | 1.2464 | 0.523 | 2.3486 | 1.3011 | 0.554 | 2.4191 | 1.4855 | 0.614 |
| 0.500 | 2.2573 | 1.1886 | 0.527 | 2.0023 | 1.0090 | 0.504 | 2.0126 | 1.1299 | 0.561 |
| 0.550 | 2.2275 | 1.3201 | 0.593 | 1.8630 | .94506 | 0.507 | 1.7154 | .86307 | 0.503 |
| 0.600 | 1.9991 | 1.3246 | 0.663 | 1.7875 | 1.0389 | 0.581 | 1.5830 | .80455 | 0.508 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.4382 | 1.6141 | 0.662 | | | | | | |
| 0.500 | 2.0886 | 1.3199 | 0.632 | 2.1077 | 1.4368 | 0.682 | | | |
| 0.550 | 1.7519 | 1.0036 | 0.573 | 1.8193 | 1.1775 | 0.647 | 1.8320 | 1.2768 | 0.697 |
| 0.600 | 1.4989 | .76578 | 0.511 | 1.5430 | .90266 | 0.585 | 1.5969 | 1.0536 | 0.660 |

**10**

| $R$ microns | Wave-length = 2.20 microns | | | $M_1 = 3.63-3.03\,i$ | | | $M_2 = 1.10$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .01981 | .00009 | 0.004 | | | | | | |
| 0.075 | .00922 | .00000 | 0.010 | .04384 | .00073 | 0.017 | | | |
| 0.100 | .00536 | .00015 | 0.028 | .02601 | .00066 | 0.025 | .09590 | .00424 | 0.044 |
| 0.150 | .00282 | .00047 | 0.165 | .01260 | .00094 | 0.075 | .04742 | .00344 | 0.073 |
| 0.200 | .00258 | .00123 | 0.477 | .00848 | .00177 | 0.209 | .02964 | .00404 | 0.136 |
| 0.250 | .00358 | .00269 | 0.753 | .00771 | .00332 | 0.430 | .02247 | .00565 | 0.252 |
| 0.300 | .00570 | .00507 | 0.890 | .00890 | .00578 | 0.649 | .02026 | .00828 | 0.409 |
| 0.350 | .00896 | .00849 | 0.947 | .01163 | .00928 | 0.798 | .02098 | .01197 | 0.570 |
| 0.400 | .01332 | .01295 | 0.972 | .01565 | .01381 | 0.883 | .02372 | .01666 | 0.703 |
| 0.450 | .01861 | .01832 | 0.984 | .02071 | .01923 | 0.929 | .02789 | .02220 | 0.796 |
| 0.500 | .02459 | .02435 | 0.990 | .02651 | .02529 | 0.954 | .03302 | .02833 | 0.858 |
| 0.550 | .03099 | .03079 | 0.993 | .03275 | .03174 | 0.969 | .03870 | .03477 | 0.899 |
| 0.600 | .03761 | .03744 | 0.995 | .03923 | .03837 | 0.978 | .04467 | .04134 | 0.925 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .13084 | .01272 | 0.097 | | | | | | |
| 0.200 | .08128 | .01128 | 0.139 | .38904 | .07989 | 0.205 | | | |
| 0.250 | .05850 | .01217 | 0.208 | .27711 | .06747 | 0.243 | .88609 | .29885 | 0.337 |
| 0.300 | .04773 | .01463 | 0.307 | .21410 | .06253 | 0.292 | .68851 | .25467 | 0.370 |
| 0.350 | .04333 | .01838 | 0.424 | .17709 | .06201 | 0.350 | .55970 | .22641 | 0.405 |
| 0.400 | .04277 | .02320 | 0.542 | .15479 | .06411 | 0.414 | .47253 | .20822 | 0.441 |
| 0.450 | .04463 | .02882 | 0.646 | .14118 | .06767 | 0.479 | .41093 | .19594 | 0.477 |
| 0.500 | .04800 | .03495 | 0.728 | .13280 | .07189 | 0.541 | .36535 | .18688 | 0.512 |
| 0.550 | .05225 | .04129 | 0.790 | .12757 | .07621 | 0.597 | .33006 | .17944 | 0.544 |
| 0.600 | .05698 | .04765 | 0.836 | .12427 | .08036 | 0.647 | .30169 | .17281 | 0.573 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 1.6126 | .75292 | 0.467 | | | | | | |
| 0.350 | 1.3161 | .64585 | 0.491 | 2.2763 | 1.2743 | 0.560 | | | |
| 0.400 | 1.0998 | .56447 | 0.513 | 1.8870 | 1.0854 | 0.575 | 2.5266 | 1.5619 | 0.618 |
| 0.450 | .93764 | .50110 | 0.534 | 1.5873 | .93436 | 0.589 | 2.1028 | 1.3203 | 0.628 |
| 0.500 | .81217 | .44976 | 0.554 | 1.3526 | .81183 | 0.600 | 1.7725 | 1.1267 | 0.636 |
| 0.550 | .71211 | .40659 | 0.571 | 1.1654 | .71053 | 0.610 | 1.5110 | .96931 | 0.642 |
| 0.600 | .63037 | .36932 | 0.586 | 1.0134 | .62551 | 0.617 | 1.3009 | .83968 | 0.645 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.4371 | 1.6005 | 0.657 | | | | | | |
| 0.500 | 2.0419 | 1.3536 | 0.663 | 2.2186 | 1.5180 | 0.684 | | | |
| 0.550 | 1.7313 | 1.1552 | 0.667 | 1.8772 | 1.2918 | 0.688 | 1.9818 | 1.3967 | 0.705 |
| 0.600 | 1.4832 | .99334 | 0.670 | 1.6054 | 1.1083 | 0.690 | 1.6949 | 1.1987 | 0.707 |

**11**

| $R$ microns | Wave-length = 2.20 microns | | | $M_1 = 3.63\text{--}3.03\,i$ | | | $M_2 = 1.33$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .02690 | .00019 | 0.007 | | | | | | |
| 0.075 | .01381 | .00041 | 0.030 | .05739 | .00137 | 0.024 | | | |
| 0.100 | .00884 | .00096 | 0.108 | .03801 | .00199 | 0.052 | .11853 | .00662 | 0.056 |
| 0.150 | .00773 | .00401 | 0.519 | .02324 | .00536 | 0.231 | .07354 | .01052 | 0.143 |
| 0.200 | .01412 | .01188 | 0.842 | .02453 | .01367 | 0.557 | .05958 | .01987 | 0.334 |
| 0.250 | .02924 | .02770 | 0.948 | .03751 | .02999 | 0.800 | .06545 | .03761 | 0.575 |
| 0.300 | .05566 | .05451 | 0.979 | .06299 | .05734 | 0.910 | .08762 | .06655 | 0.760 |
| 0.350 | .09510 | .09419 | 0.990 | .10202 | .09755 | 0.956 | .12510 | .10831 | 0.866 |
| 0.400 | .14714 | .14639 | 0.995 | .15385 | .15019 | 0.976 | .17604 | .16222 | 0.922 |
| 0.450 | .20892 | .20830 | 0.997 | .21542 | .21236 | 0.986 | .23673 | .22513 | 0.951 |
| 0.500 | .27676 | .27625 | 0.998 | .28292 | .28035 | 0.991 | .30304 | .29320 | 0.968 |
| 0.550 | .34930 | .34887 | 0.999 | .35500 | .35281 | 0.994 | .37355 | .36512 | 0.977 |
| 0.600 | .42986 | .42949 | 0.999 | .43501 | .43314 | 0.996 | .45174 | .44447 | 0.984 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .17688 | .02427 | 0.137 | | | | | | |
| 0.200 | 13712 | .03511 | 0.256 | .50798 | .12925 | 0.254 | | | |
| 0.250 | .12850 | .05516 | 0.429 | .45313 | .15879 | 0.350 | 1.1442 | .43991 | 0.384 |
| 0.300 | .14314 | .08692 | 0.607 | .43573 | .20005 | 0.459 | 1.1029 | .50533 | 0.458 |
| 0.350 | .17667 | .13151 | 0.744 | .44770 | .25340 | 0.566 | 1.0771 | .56755 | 0.527 |
| 0.400 | .22510 | .18768 | 0.834 | .47901 | .31520 | 0.658 | 1.0610 | .62366 | 0.588 |
| 0.450 | .28338 | .25177 | 0.888 | .51995 | .37964 | 0.730 | 1.0456 | .66796 | 0.639 |
| 0.500 | .34671 | .31965 | 0.922 | .56347 | .44180 | 0.784 | 1.0267 | .69794 | 0.680 |
| 0.550 | .41354 | .39015 | 0.943 | .60804 | .50130 | 0.824 | 1.0068 | .71756 | 0.713 |
| 0.600 | .48762 | .46719 | 0.958 | .65853 | .56383 | 0.856 | .99421 | .73675 | 0.741 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 2.0185 | 1.0127 | 0.502 | | | | | | |
| 0.350 | 1.9536 | 1.0751 | 0.550 | 2.6703 | 1.5528 | 0.581 | | | |
| 0.400 | 1.8487 | 1.0902 | 0.590 | 2.4579 | 1.4996 | 0.610 | 2.7902 | 1.7616 | 0.631 |
| 0.450 | 1.7214 | 1.0682 | 0.621 | 2.2072 | 1.3909 | 0.630 | 2.4642 | 1.5956 | 0.648 |
| 0.500 | 1.5863 | 1.0210 | 0.644 | 1.9575 | 1.2580 | 0.643 | 2.1486 | 1.4097 | 0.656 |
| 0.550 | 1.4575 | .96286 | 0.661 | 1.7304 | 1.1227 | 0.649 | 1.8662 | 1.2277 | 0.658 |
| 0.600 | 1.3473 | .90835 | 0.674 | 1.5368 | .99984 | 0.651 | 1.6249 | 1.0626 | 0.654 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.5946 | 1.7252 | 0.665 | | | | | | |
| 0.500 | 2.2559 | 1.5197 | 0.674 | 2.3164 | 1.5968 | 0.689 | | | |
| 0.550 | 1.9526 | 1.3188 | 0.675 | 2.0124 | 1.3954 | 0.693 | 2.0473 | 1.4492 | 0.708 |
| 0.600 | 1.6904 | 1.1338 | 0.671 | 1.7467 | 1.2068 | 0.691 | 1.7876 | 1.2670 | 0.709 |

| $R$ microns | Wave-length = 2.20 microns | | | $M_1 = 3.63-3.03\,i$ | | | $M_2 = 1.42$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .02939 | .00024 | 0.008 | | | | | | |
| 0.075 | .01559 | .00057 | 0.037 | .06205 | .00161 | 0.026 | | | |
| 0.100 | .01034 | .00141 | 0.136 | .04264 | .00261 | 0.061 | .12605 | .00746 | 0.059 |
| 0.150 | .01044 | .00616 | 0.590 | .02825 | .00782 | 0.277 | .08440 | .01385 | 0.164 |
| 0.200 | .02120 | .01859 | 0.877 | .03354 | .02086 | 0.622 | .07438 | .02856 | 0.384 |
| 0.250 | .04579 | .04396 | 0.960 | .05591 | .04695 | 0.840 | .08975 | .05678 | 0.633 |
| 0.300 | .08894 | .08753 | 0.984 | .09821 | .09133 | 0.930 | .12912 | .10356 | 0.802 |
| 0.350 | .15369 | .15255 | 0.993 | .16270 | .15713 | 0.966 | .19253 | .17170 | 0.892 |
| 0.400 | .23899 | .23805 | 0.996 | .24788 | .24324 | 0.981 | .27711 | .25963 | 0.937 |
| 0.450 | .33951 | .33872 | 0.998 | .34814 | .34422 | 0.989 | .37635 | .36147 | 0.960 |
| 0.500 | .45011 | .44944 | 0.999 | .45822 | .45488 | 0.993 | .48462 | .47185 | 0.974 |
| 0.550 | .57351 | .57295 | 0.999 | .58088 | .57803 | 0.995 | .60478 | .59375 | 0.982 |
| 0.600 | .72264 | .72215 | 0.999 | .72915 | .72671 | 0.997 | .75023 | .74061 | 0.987 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .19402 | .02882 | 0.149 | | | | | | |
| 0.200 | .16208 | .04664 | 0.288 | .55119 | .14729 | 0.267 | | | |
| 0.250 | .16458 | .07880 | 0.479 | .52968 | .19932 | 0.376 | 1.2344 | .48849 | 0.396 |
| 0.300 | .19777 | .13011 | 0.658 | .54478 | .26932 | 0.494 | 1.2714 | .60649 | 0.477 |
| 0.350 | .25840 | .20267 | 0.784 | .59237 | .35771 | 0.604 | 1.3064 | .71754 | 0.549 |
| 0.400 | .34106 | .29389 | 0.862 | .66083 | .45780 | 0.693 | 1.3315 | .81218 | 0.610 |
| 0.450 | .43751 | .39699 | 0.907 | .73684 | .55935 | 0.759 | 1.3386 | .88103 | 0.658 |
| 0.500 | .54141 | .50626 | 0.935 | .81282 | .65616 | 0.807 | 1.3299 | .92466 | 0.695 |
| 0.550 | .65587 | .62506 | 0.953 | .89387 | .75396 | 0.843 | 1.3205 | .95747 | 0.725 |
| 0.600 | .79487 | .76760 | 0.966 | .99650 | .87012 | 0.873 | 1.3324 | 1.0032 | 0.753 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 2.1493 | 1.0943 | 0.509 | | | | | | |
| 0.350 | 2.1744 | 1.2198 | 0.561 | 2.7838 | 1.6300 | 0.586 | | | |
| 0.400 | 2.1089 | 1.2656 | 0.600 | 2.6184 | 1.6094 | 0.615 | 2.8597 | 1.8110 | 0.633 |
| 0.450 | 1.9833 | 1.2460 | 0.628 | 2.3681 | 1.4976 | 0.632 | 2.5521 | 1.6551 | 0.649 |
| 0.500 | 1.8328 | 1.1859 | 0.647 | 2.0993 | 1.3445 | 0.640 | 2.2293 | 1.4574 | 0.654 |
| 0.550 | 1.6891 | 1.1140 | 0.660 | 1.8520 | 1.1869 | 0.641 | 1.9323 | 1.2561 | 0.650 |
| 0.600 | 1.5778 | 1.0583 | 0.671 | 1.6476 | 1.0500 | 0.637 | 1.6787 | 1.0733 | 0.639 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.6344 | 1.7537 | 0.666 | | | | | | |
| 0.500 | 2.3049 | 1.5506 | 0.673 | 2.3409 | 1.6138 | 0.689 | | | |
| 0.550 | 1.9967 | 1.3387 | 0.670 | 2.0433 | 1.4126 | 0.691 | 2.0637 | 1.4500 | 0.707 |
| 0.600 | 1.7252 | 1.1382 | 0.660 | 1.7748 | 1.2148 | 0.684 | 1.8092 | 1.2772 | 0.706 |

**13**

| R microns | Wave-length = 2.20 microns | | | $M_1 = 3.63\text{--}3.03\,i$ | | | $M_2 = 1.50$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .03144 | .00027 | 0.009 | | | | | | |
| 0.075 | .01712 | .00073 | 0.042 | .06587 | .00182 | 0.028 | | | |
| 0.100 | .01169 | .00186 | 0.159 | .04662 | .00318 | 0.068 | .13213 | .00815 | 0.062 |
| 0.150 | .01312 | .00833 | 0.635 | .03294 | .01024 | 0.311 | .09408 | .01696 | 0.180 |
| 0.200 | .02847 | .02550 | 0.896 | .04254 | .02818 | 0.663 | .08856 | .03713 | 0.419 |
| 0.250 | .06313 | .06101 | 0.966 | .07496 | .06463 | 0.862 | .11425 | .07639 | 0.669 |
| 0.300 | .12433 | .12267 | 0.987 | .13545 | .12735 | 0.940 | .17234 | .14232 | 0.826 |
| 0.350 | .21664 | .21527 | 0.994 | .22766 | .22097 | 0.971 | .26402 | .23906 | 0.905 |
| 0.400 | .33805 | .33691 | 0.997 | .34904 | .34338 | 0.984 | .38503 | .36374 | 0.945 |
| 0.450 | .48067 | .47969 | 0.998 | .49129 | .48646 | 0.990 | .52595 | .50758 | 0.965 |
| 0.500 | .64056 | .63973 | 0.999 | .65041 | .64627 | 0.994 | .68240 | .66647 | 0.977 |
| 0.550 | .83196 | .83126 | 0.999 | .84072 | .83717 | 0.996 | .86910 | .85517 | 0.984 |
| 0.600 | 1.0811 | 1.0805 | 0.999 | 1.0887 | 1.0856 | 0.997 | 1.1131 | 1.1008 | 0.989 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .20858 | .03275 | 0.157 | | | | | | |
| 0.200 | .18509 | .05748 | 0.311 | .58763 | .16241 | 0.276 | | | |
| 0.250 | .19985 | .10224 | 0.512 | .59944 | .23616 | 0.394 | 1.3091 | .52814 | 0.403 |
| 0.300 | .25339 | .17440 | 0.688 | .64943 | .33557 | 0.517 | 1.4194 | .69395 | 0.489 |
| 0.350 | .34363 | .27708 | 0.806 | .73544 | .46026 | 0.626 | 1.5128 | .84984 | 0.562 |
| 0.400 | .46321 | .40583 | 0.876 | .84271 | .59917 | 0.711 | 1.5744 | .97670 | 0.620 |
| 0.450 | .60057 | .55053 | 0.917 | .95414 | .73730 | 0.773 | 1.5976 | 1.0620 | 0.665 |
| 0.500 | .75076 | .70673 | 0.941 | 1.0654 | .87061 | 0.817 | 1.5961 | 1.1141 | 0.698 |
| 0.550 | .92917 | .89001 | 0.958 | 1.1959 | 1.0187 | 0.852 | 1.6042 | 1.1645 | 0.726 |
| 0.600 | 1.1637 | 1.1285 | 0.970 | 1.3766 | 1.2139 | 0.882 | 1.6585 | 1.2532 | 0.756 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 2.2536 | 1.1582 | 0.514 | | | | | | |
| 0.350 | 2.3526 | 1.3331 | 0.567 | 2.8700 | 1.6868 | 0.588 | | | |
| 0.400 | 2.3129 | 1.3965 | 0.604 | 2.7361 | 1.6852 | 0.616 | 2.9106 | 1.8453 | 0.634 |
| 0.450 | 2.1787 | 1.3678 | 0.628 | 2.4777 | 1.5614 | 0.630 | 2.6126 | 1.6912 | 0.647 |
| 0.500 | 2.0088 | 1.2884 | 0.641 | 2.1875 | 1.3842 | 0.633 | 2.2795 | 1.4778 | 0.648 |
| 0.550 | 1.8553 | 1.2049 | 0.649 | 1.9233 | 1.2054 | 0.627 | 1.9683 | 1.2564 | 0.638 |
| 0.600 | 1.7558 | 1.1593 | 0.660 | 1.7166 | 1.0617 | 0.618 | 1.7058 | 1.0586 | 0.621 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.6630 | 1.7724 | 0.666 | | | | | | |
| 0.500 | 2.3379 | 1.5668 | 0.670 | 2.3584 | 1.6245 | 0.689 | | | |
| 0.550 | 2.0230 | 1.3419 | 0.663 | 2.0640 | 1.4201 | 0.688 | 2.0755 | 1.4665 | 0.707 |
| 0.600 | 1.7425 | 1.1256 | 0.646 | 1.7915 | 1.2117 | 0.676 | 1.8239 | 1.2808 | 0.702 |

**14**

| $R$ microns | Wave-length = 2.20 microns | | | $M_1 = 3.63-3.03\,i$ | | | $M_2 = 1.70$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .03583 | .00036 | 0.010 | | | | | | |
| 0.075 | .02063 | .00113 | 0.055 | .07404 | .00230 | 0.031 | | | |
| 0.100 | .01501 | .00308 | 0.205 | .05576 | .00461 | 0.083 | .14502 | .00967 | 0.067 |
| 0.150 | .02054 | .01453 | 0.708 | .04512 | .01693 | 0.375 | .11762 | .02490 | 0.212 |
| 0.200 | .04966 | .04578 | 0.922 | .06799 | .04934 | 0.726 | .12668 | .06089 | 0.481 |
| 0.250 | .11523 | .11233 | 0.975 | .13150 | .11739 | 0.893 | .18484 | .13356 | 0.723 |
| 0.300 | .23334 | .23096 | 0.990 | .24941 | .23777 | 0.953 | .30232 | .25931 | 0.858 |
| 0.350 | .41373 | .41168 | 0.995 | .43023 | .42016 | 0.977 | .48436 | .44670 | 0.922 |
| 0.400 | .65162 | .64983 | 0.997 | .66817 | .65930 | 0.987 | .72219 | .68862 | 0.954 |
| 0.450 | .94064 | .93908 | 0.998 | .95625 | .94844 | 0.992 | 1.0070 | .97692 | 0.970 |
| 0.500 | 1.3235 | 1.3222 | 0.999 | 1.3373 | 1.3304 | 0.995 | 1.3816 | 1.3545 | 0.980 |
| 0.550 | 1.8950 | 1.8938 | 0.999 | 1.9064 | 1.9002 | 0.997 | 1.9421 | 1.9174 | 0.987 |
| 0.600 | 2.4909 | 2.4899 | 1.000 | 2.5000 | 2.4945 | 0.998 | 2.5267 | 2.5047 | 0.991 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .24181 | .04186 | 0.173 | | | | | | |
| 0.200 | .24391 | .08571 | 0.351 | .67032 | .19603 | 0.292 | | | |
| 0.250 | .29768 | .16782 | 0.564 | .77524 | .32727 | 0.422 | 1.4747 | .61295 | 0.416 |
| 0.300 | .41629 | .30421 | 0.731 | .93169 | .51028 | 0.548 | 1.7704 | .89268 | 0.504 |
| 0.350 | .60100 | .50099 | 0.834 | 1.1345 | .73835 | 0.651 | 2.0077 | 1.1486 | 0.572 |
| 0.400 | .83771 | .74715 | 0.892 | 1.3539 | .98314 | 0.726 | 2.1382 | 1.3261 | 0.620 |
| 0.450 | 1.1143 | 1.0317 | 0.926 | 1.5726 | 1.2253 | 0.779 | 2.1773 | 1.4199 | 0.652 |
| 0.500 | 1.4739 | 1.3976 | 0.948 | 1.8396 | 1.5094 | 0.820 | 2.2124 | 1.4982 | 0.677 |
| 0.550 | 2.0130 | 1.9418 | 0.965 | 2.2507 | 1.9344 | 0.859 | 2.3500 | 1.6695 | 0.710 |
| 0.600 | 2.5747 | 2.5107 | 0.975 | 2.6863 | 2.3979 | 0.893 | 2.5549 | 1.9294 | 0.755 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 2.4724 | 1.2858 | 0.520 | | | | | | |
| 0.350 | 2.7223 | 1.5505 | 0.570 | 3.0384 | 1.7897 | 0.589 | | | |
| 0.400 | 2.7012 | 1.6104 | 0.596 | 2.9470 | 1.7990 | 0.610 | 3.0047 | 1.9006 | 0.633 |
| 0.450 | 2.5093 | 1.5168 | 0.604 | 2.6428 | 1.6151 | 0.611 | 2.7108 | 1.7281 | 0.638 |
| 0.500 | 2.2921 | 1.3790 | 0.602 | 2.2943 | 1.3646 | 0.595 | 2.3417 | 1.4597 | 0.623 |
| 0.550 | 2.1640 | 1.3075 | 0.604 | 2.0111 | 1.1482 | 0.571 | 1.9972 | 1.1841 | 0.593 |
| 0.600 | 2.1571 | 1.3639 | 0.632 | 1.8501 | 1.0423 | 0.563 | 1.7344 | .96785 | 0.558 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.7144 | 1.7989 | 0.663 | | | | | | |
| 0.500 | 2.3887 | 1.5723 | 0.658 | 2.3896 | 1.6374 | 0.685 | | | |
| 0.550 | 2.0515 | 1.3039 | 0.636 | 2.0958 | 1.4146 | 0.675 | 2.0967 | 1.4730 | 0.703 |
| 0.600 | 1.7507 | 1.0456 | 0.597 | 1.8092 | 1.1713 | 0.647 | 1.8470 | 1.2718 | 0.689 |

**15**

| R microns | Wave-length $= 2.20$ microns | | | $M_1 = 3.63\text{–}3.03\,i$ | | | $M_2 = 1.90$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .03918 | .00044 | 0.011 | | | | | | |
| 0.075 | .02352 | .00154 | 0.065 | .08034 | .00270 | 0.034 | | | |
| 0.100 | .01804 | .00437 | 0.242 | .06344 | .00598 | 0.094 | .15500 | .01089 | 0.070 |
| 0.150 | .02843 | .02133 | 0.750 | .05715 | .02400 | 0.420 | .13916 | .03259 | 0.234 |
| 0.200 | .07353 | .06876 | 0.935 | .09584 | .07292 | 0.761 | .16619 | .08616 | 0.518 |
| 0.250 | .17627 | .17253 | 0.979 | .19693 | .17871 | 0.907 | .26417 | .19817 | 0.750 |
| 0.300 | .36536 | .36213 | 0.991 | .38658 | .37073 | 0.959 | .45615 | .39751 | 0.871 |
| 0.350 | .65935 | .65643 | 0.996 | .68161 | .66716 | 0.979 | .75439 | .70010 | 0.928 |
| 0.400 | 1.0614 | 1.0588 | 0.997 | 1.0835 | 1.0702 | 0.988 | 1.1554 | 1.1045 | 0.956 |
| 0.450 | 1.6407 | 1.6383 | 0.999 | 1.6607 | 1.6484 | 0.993 | 1.7249 | 1.6766 | 0.972 |
| 0.500 | 2.6590 | 2.6568 | 0.999 | 2.6749 | 2.6636 | 0.996 | 2.7236 | 2.6771 | 0.983 |
| 0.550 | 3.6223 | 3.6204 | 0.999 | 3.6337 | 3.6234 | 0.997 | 3.6640 | 3.6219 | 0.988 |
| 0.600 | 3.4890 | 3.4871 | 0.999 | 3.4974 | 3.4880 | 0.997 | 3.5191 | 3.4822 | 0.990 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .27024 | .04974 | 0.184 | | | | | | |
| 0.200 | .30155 | .11358 | 0.377 | .74156 | .22364 | 0.302 | | | |
| 0.250 | .40329 | .23828 | 0.591 | .94538 | .41113 | 0.435 | 1.6137 | .67899 | 0.421 |
| 0.300 | .60366 | .45172 | 0.748 | 1.2245 | .68106 | 0.556 | 2.0817 | 1.0522 | 0.505 |
| 0.350 | .90878 | .76471 | 0.841 | 1.5592 | 1.0137 | 0.650 | 2.4314 | 1.3666 | 0.562 |
| 0.400 | 1.3061 | 1.1679 | 0.894 | 1.9060 | 1.3647 | 0.716 | 2.5798 | 1.5337 | 0.595 |
| 0.450 | 1.8560 | 1.7214 | 0.927 | 2.3158 | 1.7734 | 0.766 | 2.6356 | 1.6161 | 0.613 |
| 0.500 | 2.8130 | 2.6795 | 0.953 | 3.0117 | 2.4609 | 0.817 | 2.8347 | 1.8284 | 0.645 |
| 0.550 | 3.7060 | 3.5843 | 0.967 | 3.6602 | 3.1554 | 0.862 | 3.1261 | 2.1985 | 0.703 |
| 0.600 | 3.5459 | 3.4425 | 0.971 | 3.4596 | 3.0453 | 0.880 | 2.9741 | 2.2269 | 0.749 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 2.6431 | 1.3755 | 0.520 | | | | | | |
| 0.350 | 2.9920 | 1.6782 | 0.561 | 3.1576 | 1.8502 | 0.586 | | | |
| 0.400 | 2.9300 | 1.6723 | 0.571 | 3.0694 | 1.8285 | 0.596 | 3.0660 | 1.9244 | 0.628 |
| 0.450 | 2.6634 | 1.4852 | 0.558 | 2.6995 | 1.5567 | 0.577 | 2.7567 | 1.7089 | 0.620 |
| 0.500 | 2.4662 | 1.3411 | 0.544 | 2.3129 | 1.2420 | 0.537 | 2.3461 | 1.3722 | 0.585 |
| 0.550 | 2.4689 | 1.4112 | 0.572 | 2.0841 | 1.0623 | 0.510 | 1.9890 | 1.0571 | 0.531 |
| 0.600 | 2.4419 | 1.5527 | 0.636 | 2.0294 | 1.1027 | 0.543 | 1.7845 | .89276 | 0.500 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.7460 | 1.8043 | 0.657 | | | | | | |
| 0.500 | 2.4090 | 1.5405 | 0.640 | 2.4084 | 1.6358 | 0.679 | | | |
| 0.550 | 2.0462 | 1.2191 | 0.596 | 2.1080 | 1.3827 | 0.656 | 2.1096 | 1.4691 | 0.696 |
| 0.600 | 1.7410 | .93222 | 0.535 | 1.8042 | 1.0960 | 0.607 | 1.8564 | 1.2430 | 0.670 |

**16**

| $R$ microns | Wave-length = 2.40 microns | | | $M_1 = 3.76 - 3.19\,i$ | | | $M_2 = 1.10$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .01679 | .00006 | 0.004 | | | | | | |
| 0.075 | .00781 | .00007 | 0.009 | .03696 | .00052 | 0.014 | | | |
| 0.100 | .00452 | .00011 | 0.024 | .02188 | .00047 | 0.021 | .08004 | .00299 | 0.037 |
| 0.150 | .00232 | .00033 | 0.142 | .01050 | .00067 | 0.064 | .03932 | .00243 | 0.062 |
| 0.200 | .00202 | .00088 | 0.436 | .00691 | .00126 | 0.183 | .02428 | .00287 | 0.118 |
| 0.250 | .00269 | .00195 | 0.724 | .00608 | .00239 | 0.394 | .01808 | .00405 | 0.224 |
| 0.300 | .00424 | .00372 | 0.876 | .00684 | .00423 | 0.618 | .01597 | .00600 | 0.376 |
| 0.350 | .00672 | .00632 | 0.941 | .00885 | .00689 | 0.779 | .01630 | .00882 | 0.541 |
| 0.400 | .01012 | .00982 | 0.970 | .01198 | .01045 | 0.872 | .01837 | .01251 | 0.681 |
| 0.450 | .01441 | .01416 | 0.983 | .01607 | .01484 | 0.923 | .02174 | .01703 | 0.783 |
| 0.500 | .01943 | .01923 | 0.989 | .02095 | .01994 | 0.952 | .02610 | .02221 | 0.851 |
| 0.550 | .02499 | .02482 | 0.993 | .02640 | .02555 | 0.968 | .03113 | .02787 | 0.895 |
| 0.600 | .03088 | .03073 | 0.995 | .03219 | .03147 | 0.978 | .03656 | .03379 | 0.924 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .10749 | .00892 | 0.083 | | | | | | |
| 0.200 | .06617 | .00793 | 0.120 | .31195 | .05530 | 0.177 | | | |
| 0.250 | .04704 | .00861 | 0.183 | .22008 | .04677 | 0.213 | .70155 | .20758 | 0.296 |
| 0.300 | .03785 | .01048 | 0.277 | .16850 | .04363 | 0.259 | .54070 | .17740 | 0.328 |
| 0.350 | .03397 | .01337 | 0.394 | .13834 | .04379 | 0.317 | .43722 | .15893 | 0.364 |
| 0.400 | .03334 | .01720 | 0.516 | .12042 | .04606 | 0.383 | .36842 | .14808 | 0.402 |
| 0.450 | .03487 | .02185 | 0.627 | .10990 | .04969 | 0.452 | .32103 | .14190 | 0.442 |
| 0.500 | .03788 | .02713 | 0.716 | .10399 | .05412 | 0.520 | .28716 | .13840 | 0.482 |
| 0.550 | .04185 | .03281 | 0.784 | .10097 | .05890 | 0.583 | .26196 | .13628 | 0.520 |
| 0.600 | .04639 | .03868 | 0.834 | .09972 | .06372 | 0.639 | .24241 | .13471 | 0.556 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 1.3020 | .55249 | 0.424 | | | | | | |
| 0.350 | 1.0627 | .47837 | 0.450 | 1.9938 | 1.0529 | 0.528 | | | |
| 0.400 | .89066 | .42340 | 0.475 | 1.6705 | .91212 | 0.546 | 2.4551 | 1.4658 | 0.597 |
| 0.450 | .76381 | .38199 | 0.500 | 1.4205 | .79891 | 0.562 | 2.0701 | 1.2604 | 0.609 |
| 0.500 | .66729 | .34954 | 0.524 | 1.2242 | .70669 | 0.577 | 1.7651 | 1.0927 | 0.619 |
| 0.550 | .59137 | .32284 | 0.546 | 1.0668 | .62992 | 0.590 | 1.5203 | .95419 | 0.628 |
| 0.600 | .52980 | .29988 | 0.566 | .93813 | .56467 | 0.602 | 1.3213 | .83839 | 0.635 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.5505 | 1.6384 | 0.642 | | | | | | |
| 0.500 | 2.1579 | 1.4032 | 0.650 | 2.4190 | 1.6306 | 0.674 | | | |
| 0.550 | 1.8449 | 1.2112 | 0.657 | 2.0598 | 1.3994 | 0.679 | 2.2074 | 1.5396 | 0.697 |
| 0.600 | 1.5920 | 1.0527 | 0.661 | 1.7712 | 1.2100 | 0.683 | 1.8956 | 1.3289 | 0.701 |

**17**

| $R$ microns | Wave-length = 2.40 microns | | | $M_1 = 3.76\text{--}3.19\,i$ | | | $M_2 = 1.33$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .02284 | .00014 | 0.006 | | | | | | |
| 0.075 | .01167 | .00029 | 0.025 | .04835 | .00097 | 0.020 | | | |
| 0.100 | .00735 | .00068 | 0.092 | .03181 | .00141 | 0.044 | .09862 | .00467 | 0.047 |
| 0.150 | .00597 | .00284 | 0.476 | .01878 | .00379 | 0.202 | .05993 | .00740 | 0.123 |
| 0.200 | .01031 | .00844 | 0.819 | .01872 | .00969 | 0.518 | .04681 | .01401 | 0.299 |
| 0.250 | .02109 | .01982 | 0.940 | .02760 | .02142 | 0.776 | .04948 | .02671 | 0.540 |
| 0.300 | .04037 | .03942 | 0.977 | .04602 | .04141 | 0.900 | .06491 | .04781 | 0.737 |
| 0.350 | .07000 | .06926 | 0.989 | .07527 | .07163 | 0.952 | .09275 | .07921 | 0.854 |
| 0.400 | .11070 | .11009 | 0.995 | .11580 | .11282 | 0.974 | .13260 | .12148 | 0.916 |
| 0.450 | .16139 | .16088 | 0.997 | .16640 | .16390 | 0.985 | .18276 | .17339 | 0.949 |
| 0.500 | .21948 | .21905 | 0.998 | .22435 | .22223 | 0.991 | .24018 | .23219 | 0.967 |
| 0.550 | .28223 | .28187 | 0.999 | .28688 | .28507 | 0.994 | .30192 | .29504 | 0.977 |
| 0.600 | .34895 | .34864 | 0.999 | .35328 | .35173 | 0.996 | .36729 | .36132 | 0.984 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .14356 | .01696 | 0.118 | | | | | | |
| 0.200 | .10829 | .02454 | 0.227 | .40017 | .08904 | 0.223 | | | |
| 0.250 | .09839 | .03879 | 0.394 | .34795 | .10946 | 0.315 | .89149 | .30560 | 0.343 |
| 0.300 | .10716 | .06189 | 0.578 | .32822 | .13939 | 0.425 | .84651 | .35473 | 0.419 |
| 0.350 | .13156 | .09543 | 0.725 | .33480 | .18028 | 0.538 | .82555 | .40793 | 0.494 |
| 0.400 | .16956 | .13971 | 0.824 | .36095 | .23111 | 0.640 | .82352 | .46461 | 0.564 |
| 0.450 | .21840 | .19315 | 0.884 | .40000 | .28875 | 0.722 | .83168 | .52015 | 0.625 |
| 0.500 | .27438 | .25269 | 0.921 | .44560 | .34893 | 0.783 | .84204 | .56935 | 0.676 |
| 0.550 | .33423 | .31541 | 0.944 | .49325 | .40830 | 0.828 | .85036 | .60964 | 0.717 |
| 0.600 | .39722 | .38074 | 0.959 | .54221 | .46680 | 0.861 | .85760 | .64309 | 0.750 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 1.6336 | .75590 | 0.463 | | | | | | |
| 0.350 | 1.6063 | .83255 | 0.518 | 2.3955 | 1.3273 | 0.554 | | | |
| 0.400 | 1.5627 | .88454 | 0.566 | 2.2950 | 1.3535 | 0.590 | 2.7841 | 1.7081 | 0.614 |
| 0.450 | 1.5057 | .91287 | 0.606 | 2.1432 | 1.3232 | 0.617 | 2.5488 | 1.6194 | 0.635 |
| 0.500 | 1.4375 | .91857 | 0.639 | 1.9679 | 1.2556 | 0.638 | 2.2879 | 1.4875 | 0.650 |
| 0.550 | 1.3626 | .90593 | 0.665 | 1.7897 | 1.1677 | 0.652 | 2.0333 | 1.3394 | 0.659 |
| 0.600 | 1.2885 | .88299 | 0.685 | 1.6231 | 1.0741 | 0.662 | 1.8015 | 1.1924 | 0.662 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.7661 | 1.8063 | 0.653 | | | | | | |
| 0.500 | 2.4615 | 1.6399 | 0.666 | 2.5542 | 1.7397 | 0.681 | | | |
| 0.550 | 2.1686 | 1.4597 | 0.673 | 2.2503 | 1.5500 | 0.689 | 2.2960 | 1.6120 | 0.702 |
| 0.600 | 1.9037 | 1.2837 | 0.674 | 1.9744 | 1.3639 | 0.691 | 2.0225 | 1.4283 | 0.706 |

| $R$ microns | Wave-length = 2.40 microns | | | $M_1 = 3.76-3.19\,i$ | | | $M_2 = 1.42$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .02498 | .00017 | 0.007 | | | | | | |
| 0.075 | .01317 | .00041 | 0.031 | .05228 | .00114 | 0.022 | | | |
| 0.100 | .00856 | .00001 | 0.116 | .03563 | .00184 | 0.052 | .10479 | .00526 | 0.050 |
| 0.150 | .00795 | .00435 | 0.547 | .02261 | .00552 | 0.244 | .06841 | .00973 | 0.142 |
| 0.200 | .01534 | .01316 | 0.858 | .02524 | .01474 | 0.584 | .05774 | .02008 | 0.348 |
| 0.250 | .03281 | .03130 | 0.954 | .04070 | .03338 | 0.820 | .06693 | .04016 | 0.600 |
| 0.300 | .06413 | .06299 | 0.982 | .07120 | .06563 | 0.922 | .09462 | .07409 | 0.783 |
| 0.350 | .11264 | .11172 | 0.992 | .11942 | .11494 | 0.962 | .14177 | .12515 | 0.883 |
| 0.400 | .17945 | .17869 | 0.996 | .18618 | .18244 | 0.980 | .20820 | .19427 | 0.933 |
| 0.450 | .26239 | .26174 | 0.998 | .26907 | .26589 | 0.988 | .29080 | .27890 | 0.959 |
| 0.500 | .35677 | .35622 | 0.998 | .36327 | .36054 | 0.992 | .38433 | .37404 | 0.973 |
| 0.550 | .45928 | .45881 | 0.999 | .46543 | .46308 | 0.995 | .48527 | .47632 | 0.982 |
| 0.600 | .57306 | .57266 | 0.999 | .57870 | .57667 | 0.996 | .59687 | .58904 | 0.987 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .15689 | .02012 | 0.128 | | | | | | |
| 0.200 | .12684 | .03252 | 0.256 | .43201 | .10133 | 0.235 | | | |
| 0.250 | .12439 | .05524 | 0.444 | .40299 | .13718 | 0.340 | .95808 | .33957 | 0.354 |
| 0.300 | .14624 | .09233 | 0.631 | .40618 | .18758 | 0.462 | .97276 | .42779 | 0.440 |
| 0.350 | .19084 | .14677 | 0.769 | .43990 | .25527 | 0.580 | 1.0039 | .52236 | 0.520 |
| 0.400 | .25615 | .21896 | 0.855 | .49779 | .33847 | 0.680 | 1.0462 | .61937 | 0.592 |
| 0.450 | .33775 | .30573 | 0.905 | .57082 | .43131 | 0.756 | 1.0891 | .70969 | 0.652 |
| 0.500 | .42951 | .40160 | 0.935 | .64982 | .52640 | 0.810 | 1.1236 | .78524 | 0.699 |
| 0.550 | .52759 | .50307 | 0.954 | .73026 | .62003 | 0.849 | 1.1490 | .84522 | 0.736 |
| 0.600 | .63543 | .61371 | 0.966 | .81664 | .71713 | 0.878 | 1.1746 | .89919 | 0.766 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 1.7436 | .82211 | 0.471 | | | | | | |
| 0.350 | 1.8088 | .96214 | 0.532 | 2.5177 | 1.4084 | 0.559 | | | |
| 0.400 | 1.8262 | 1.0614 | 0.581 | 2.4912 | 1.4872 | 0.597 | 2.8754 | 1.7726 | 0.616 |
| 0.450 | 1.7982 | 1.1156 | 0.620 | 2.3640 | 1.4748 | 0.624 | 2.6767 | 1.7091 | 0.638 |
| 0.500 | 1.7346 | 1.1278 | 0.650 | 2.1813 | 1.3997 | 0.642 | 2.4162 | 1.5736 | 0.651 |
| 0.550 | 1.6520 | 1.1104 | 0.672 | 1.9829 | 1.2925 | 0.652 | 2.1460 | 1.4077 | 0.656 |
| 0.600 | 1.5709 | 1.0824 | 0.689 | 1.7971 | 1.1793 | 0.656 | 1.8964 | 1.2397 | 0.654 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.8224 | 1.8474 | 0.655 | | | | | | |
| 0.500 | 2.5353 | 1.6909 | 0.667 | 2.5886 | 1.7649 | 0.682 | | | |
| 0.550 | 2.2389 | 1.5026 | 0.671 | 2.2949 | 1.5793 | 0.688 | 2.3183 | 1.6280 | 0.702 |
| 0.600 | 1.9627 | 1.3105 | 0.668 | 2.0168 | 1.3854 | 0.687 | 2.0523 | 1.4461 | 0.705 |

| R microns | Wave-length = 2.40 microns | | | $M_1 = 3.76-3.19\,i$ | | | $M_2 = 1.50$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .02674 | .00019 | 0.007 | | | | | | |
| 0.075 | .01446 | .00051 | 0.036 | .05550 | .00129 | 0.023 | | | |
| 0.100 | .00965 | .00131 | 0.136 | .03892 | .00225 | 0.058 | .10978 | .00575 | 0.052 |
| 0.150 | .00989 | .00588 | 0.594 | .02618 | .00721 | 0.276 | .07593 | .01190 | 0.157 |
| 0.200 | .02046 | .01801 | 0.880 | .03170 | .01987 | 0.627 | .06815 | .02605 | 0.382 |
| 0.250 | .04500 | .04327 | 0.962 | .05417 | .04577 | 0.845 | .08438 | .05385 | 0.638 |
| 0.300 | .08925 | .08791 | 0.985 | .09765 | .09114 | 0.933 | .12535 | .10145 | 0.809 |
| 0.350 | .15822 | .15713 | 0.993 | .16646 | .16113 | 0.968 | .19352 | .17380 | 0.898 |
| 0.400 | .25349 | .25256 | 0.996 | .26179 | .25727 | 0.983 | .28887 | .27206 | 0.942 |
| 0.450 | .37137 | .37058 | 0.998 | .37966 | .37577 | 0.990 | .40657 | .39199 | 0.964 |
| 0.500 | .50537 | .50468 | 0.999 | .51339 | .51002 | 0.993 | .53936 | .52662 | 0.976 |
| 0.550 | .65435 | .65377 | 0.999 | .66183 | .65891 | 0.996 | .68598 | .67479 | 0.984 |
| 0.600 | .83144 | .83093 | 0.999 | .83817 | .83563 | o.997 | .85987 | .84998 | 0.989 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .16819 | .02284 | 0.136 | | | | | | |
| 0.200 | .14384 | .04001 | 0.278 | .45878 | .11163 | 0.243 | | | |
| 0.250 | .14962 | .07147 | 0.478 | .45298 | .16236 | 0.358 | 1.0134 | .36743 | 0.363 |
| 0.300 | .18578 | .12342 | 0.664 | .48095 | .23381 | 0.486 | 1.0850 | .49197 | 0.453 |
| 0.350 | .25245 | .20037 | 0.794 | .54443 | .32970 | 0.606 | 1.1690 | .62689 | 0.536 |
| 0.400 | .34751 | .30271 | 0.871 | .63664 | .44694 | 0.702 | 1.2560 | .76260 | 0.607 |
| 0.450 | .46440 | .42521 | 0.916 | .74539 | .57605 | 0.773 | 1.3313 | .88395 | 0.664 |
| 0.500 | .59479 | .56019 | 0.942 | .85902 | .70672 | 0.823 | 1.3863 | .98075 | 0.707 |
| 0.550 | .73724 | .70645 | 0.958 | .97636 | .83808 | 0.858 | 1.4280 | 1.0580 | 0.741 |
| 0.600 | .90562 | .87797 | 0.969 | 1.1135 | .98641 | 0.886 | 1.4800 | 1.1386 | 0.769 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 1.8328 | .87483 | 0.477 | | | | | | |
| 0.350 | 1.9792 | 1.0689 | 0.540 | 2.6128 | 1.4702 | 0.563 | | | |
| 0.400 | 2.0484 | 1.2063 | 0.589 | 2.6431 | 1.5871 | 0.600 | 2.9438 | 1.8193 | 0.618 |
| 0.450 | 2.0392 | 1.2754 | 0.625 | 2.5277 | 1.5804 | 0.625 | 2.7690 | 1.7696 | 0.639 |
| 0.500 | 1.9710 | 1.2837 | 0.651 | 2.3297 | 1.4889 | 0.639 | 2.5022 | 1.6235 | 0.649 |
| 0.550 | 1.8769 | 1.2554 | 0.669 | 2.1090 | 1.3582 | 0.644 | 2.2147 | 1.4367 | 0.649 |
| 0.600 | 1.7934 | 1.2241 | 0.683 | 1.9081 | 1.2270 | 0.643 | 1.9491 | 1.2481 | 0.640 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.8636 | 1.8758 | 0.655 | | | | | | |
| 0.500 | 2.5864 | 1.7223 | 0.666 | 2.6134 | 1.7816 | 0.682 | | | |
| 0.550 | 2.2835 | 1.5221 | 0.667 | 2.3255 | 1.5956 | 0.686 | 2.3345 | 1.6383 | 0.702 |
| 0.600 | 1.9956 | 1.3128 | 0.658 | 2.0432 | 1.3917 | 0.681 | 2.0727 | 1.4551 | 0.702 |

| $R$ microns | Wave-length = 2.40 microns | | | $M_1 = 3.76 - 3.19\,i$ | | | $M_2 = 1.70$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .03055 | .00026 | 0.008 | | | | | | |
| 0.075 | .01744 | .00080 | 0.046 | .06242 | .00163 | 0.026 | | | |
| 0.100 | .01230 | .00217 | 0.177 | .04647 | .00326 | 0.070 | .12036 | .00681 | 0.057 |
| 0.150 | .01523 | .01021 | 0.670 | .03536 | .01189 | 0.336 | .09414 | .01743 | 0.185 |
| 0.200 | .03529 | .03211 | 0.910 | .04980 | .03456 | 0.694 | .09584 | .04249 | 0.443 |
| 0.250 | .08128 | .07895 | 0.971 | .09370 | .08240 | 0.879 | .13411 | .09341 | 0.696 |
| 0.300 | .16578 | .16389 | 0.989 | .17772 | .16856 | 0.948 | .21682 | .18331 | 0.845 |
| 0.350 | .29982 | .29821 | 0.995 | .31204 | .30418 | 0.975 | .35198 | .32292 | 0.917 |
| 0.400 | .48622 | .48481 | 0.997 | .49883 | .49189 | 0.986 | .53988 | .51399 | 0.952 |
| 0.450 | .71776 | .71651 | 0.998 | .73034 | .72416 | 0.992 | .77111 | .74779 | 0.970 |
| 0.500 | .99459 | .99349 | 0.999 | 1.0064 | 1.0009 | 0.995 | 1.0447 | 1.0237 | 0.980 |
| 0.550 | 1.3622 | 1.3612 | 0.999 | 1.3727 | 1.3678 | 0.996 | 1.4066 | 1.3874 | 0.986 |
| 0.600 | 1.8943 | 1.8935 | 1.000 | 1.9032 | 1.8988 | 0.998 | 1.9312 | 1.9136 | 0.991 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .19388 | .02916 | 0.150 | | | | | | |
| 0.200 | .18694 | .05942 | 0.318 | .51938 | .13455 | 0.259 | | | |
| 0.250 | .21891 | .11662 | 0.533 | .57872 | .22483 | 0.388 | 1.1369 | .42761 | 0.376 |
| 0.300 | .30059 | .21403 | 0.712 | .68345 | .35707 | 0.522 | 1.3579 | .64279 | 0.473 |
| 0.350 | .43788 | .36152 | 0.826 | .84105 | .53691 | 0.638 | 1.5888 | .88172 | 0.555 |
| 0.400 | .62784 | .55884 | 0.890 | 1.0394 | .75437 | 0.726 | 1.7922 | 1.1090 | 0.619 |
| 0.450 | .85789 | .79491 | 0.927 | 1.2554 | .98791 | 0.787 | 1.9377 | 1.2893 | 0.665 |
| 0.500 | 1.1256 | 1.0677 | 0.949 | 1.4836 | 1.2311 | 0.830 | 2.0363 | 1.4228 | 0.699 |
| 0.550 | 1.4772 | 1.4232 | 0.963 | 1.7725 | 1.5303 | 0.863 | 2.1531 | 1.5658 | 0.727 |
| 0.600 | 1.9874 | 1.9367 | 0.975 | 2.1956 | 1.9622 | 0.894 | 2.3675 | 1.8018 | 0.761 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 2.0245 | .98379 | 0.486 | | | | | | |
| 0.350 | 2.3581 | 1.2941 | 0.549 | 2.8059 | 1.5891 | 0.566 | | | |
| 0.400 | 2.5289 | 1.4944 | 0.591 | 2.9408 | 1.7653 | 0.600 | 3.0753 | 1.9019 | 0.618 |
| 0.450 | 2.5230 | 1.5539 | 0.616 | 2.8161 | 1.7322 | 0.615 | 2.9319 | 1.8576 | 0.634 |
| 0.500 | 2.4106 | 1.5123 | 0.627 | 2.5538 | 1.5679 | 0.614 | 2.6303 | 1.6614 | 0.632 |
| 0.550 | 2.2931 | 1.4507 | 0.633 | 2.2771 | 1.3692 | 0.601 | 2.2928 | 1.4091 | 0.615 |
| 0.600 | 2.2583 | 1.4577 | 0.646 | 2.0711 | 1.2180 | 0.588 | 1.9980 | 1.1733 | 0.587 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.9397 | 1.9217 | 0.654 | | | | | | |
| 0.500 | 2.6711 | 1.7565 | 0.658 | 2.6585 | 1.8061 | 0.679 | | | |
| 0.550 | 2.3424 | 1.5124 | 0.646 | 2.3748 | 1.6062 | 0.676 | 2.3636 | 1.6518 | 0.699 |
| 0.600 | 2.0232 | 1.2524 | 0.619 | 2.0761 | 1.3668 | 0.658 | 2.1058 | 1.4560 | 0.691 |

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| $R$ microns | Wave-length = 2.40 microns | | | $M_1 = 3.76\text{--}3.19\,i$ | | | $M_2 = 1.90$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .03350 | .00032 | 0.009 | | | | | | |
| 0.075 | .01992 | .00109 | 0.055 | .06782 | .00192 | 0.028 | | | |
| 0.100 | .01472 | .00308 | 0.209 | .05284 | .00422 | 0.080 | .12860 | .00768 | 0.060 |
| 0.150 | .02087 | .01493 | 0.716 | .04436 | .01681 | 0.379 | .11073 | .02278 | 0.206 |
| 0.200 | .05182 | .04793 | 0.925 | .06937 | .05079 | 0.732 | .12423 | .05987 | 0.482 |
| 0.250 | .12320 | .12023 | 0.976 | .13881 | .12443 | 0.896 | .18926 | .13765 | 0.727 |
| 0.300 | .25707 | .25456 | 0.990 | .27268 | .26045 | 0.955 | .32364 | .27888 | 0.862 |
| 0.350 | .47346 | .47121 | 0.995 | .48994 | .47893 | 0.978 | .54375 | .50287 | 0.925 |
| 0.400 | .77957 | .77750 | 0.997 | .79678 | .78660 | 0.987 | .85276 | .81450 | 0.955 |
| 0.450 | 1.1814 | 1.1796 | 0.998 | 1.1983 | 1.1889 | 0.992 | 1.2531 | 1.2169 | 0.971 |
| 0.500 | 1.7710 | 1.7693 | 0.999 | 1.7862 | 1.7775 | 0.995 | 1.8351 | 1.8006 | 0.981 |
| 0.550 | 2.7626 | 2.7610 | 0.999 | 2.7750 | 2.7668 | 0.997 | 2.8127 | 2.7795 | 0.988 |
| 0.600 | 3.6217 | 3.6203 | 1.000 | 3.6310 | 3.6235 | 0.998 | 3.6564 | 3.6262 | 0.992 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .21579 | .03463 | 0.160 | | | | | | |
| 0.200 | .22885 | .07854 | 0.343 | .57149 | .15345 | 0.269 | | | |
| 0.250 | .29294 | .16486 | 0.563 | .70066 | .28297 | 0.404 | 1.2416 | .47537 | 0.383 |
| 0.300 | .43146 | .31650 | 0.734 | .89680 | .48110 | 0.536 | 1.6108 | .77220 | 0.479 |
| 0.350 | .65840 | .55102 | 0.837 | 1.1688 | .75417 | 0.645 | 1.9884 | 1.1006 | 0.553 |
| 0.400 | .97157 | .86919 | 0.895 | 1.4937 | 1.0812 | 0.724 | 2.2862 | 1.3841 | 0.605 |
| 0.450 | 1.3680 | 1.2694 | 0.928 | 1.8497 | 1.4394 | 0.778 | 2.4725 | 1.5791 | 0.639 |
| 0.500 | 1.9355 | 1.8388 | 0.950 | 2.3153 | 1.9000 | 0.821 | 2.6480 | 1.7593 | 0.664 |
| 0.550 | 2.8834 | 2.7876 | 0.967 | 3.0739 | 2.6512 | 0.862 | 2.9928 | 2.1041 | 0.703 |
| 0.600 | 3.6956 | 3.6082 | 0.976 | 3.7170 | 3.3290 | 0.896 | 3.3459 | 2.5242 | 0.754 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 2.1796 | 1.0650 | 0.489 | | | | | | |
| 0.350 | 2.6671 | 1.4557 | 0.546 | 2.9506 | 1.6684 | 0.565 | | | |
| 0.400 | 2.8826 | 1.6590 | 0.576 | 3.1432 | 1.8569 | 0.591 | 3.1663 | 1.9484 | 0.615 |
| 0.450 | 2.8202 | 1.6438 | 0.583 | 2.9660 | 1.7501 | 0.590 | 3.0252 | 1.8772 | 0.621 |
| 0.500 | 2.6581 | 1.5326 | 0.577 | 2.6276 | 1.4918 | 0.568 | 2.6724 | 1.6075 | 0.602 |
| 0.550 | 2.6031 | 1.5101 | 0.580 | 2.3377 | 1.2560 | 0.537 | 2.2919 | 1.2876 | 0.562 |
| 0.600 | 2.7002 | 1.6743 | 0.620 | 2.2203 | 1.1868 | 0.535 | 2.0130 | 1.0458 | 0.520 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.9895 | 1.9416 | 0.649 | | | | | | |
| 0.500 | 2.7136 | 1.7443 | 0.643 | 2.6870 | 1.8126 | 0.675 | | | |
| 0.550 | 2.3513 | 1.4419 | 0.613 | 2.3978 | 1.5846 | 0.661 | 2.3819 | 1.6526 | 0.694 |
| 0.600 | 2.0083 | 1.1323 | 0.564 | 2.0772 | 1.2985 | 0.625 | 2.1211 | 1.4332 | 0.676 |

22

| $R$ microns | Wave-length $= 2.60$ microns | | | $M_1 = 3.89$–$3.34\,i$ | | | $M_2 = 1.10$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .01441 | .00005 | 0.003 | | | | | | |
| 0.075 | .00669 | .00005 | 0.007 | .03157 | .00038 | 0.012 | | | |
| 0.100 | .00386 | .00008 | 0.020 | .01866 | .00034 | 0.018 | .06782 | .00217 | 0.032 |
| 0.150 | .00195 | .00024 | 0.124 | .00889 | .00049 | 0.055 | .03314 | .00176 | 0.053 |
| 0.200 | .00162 | .00065 | 0.399 | .00574 | .00093 | 0.161 | .02026 | .00209 | 0.103 |
| 0.250 | .00208 | .00144 | 0.695 | .00490 | .00177 | 0.361 | .01485 | .00297 | 0.200 |
| 0.300 | .00323 | .00278 | 0.861 | .00537 | .00315 | 0.587 | .01287 | .00445 | 0.346 |
| 0.350 | .00511 | .00478 | 0.934 | .00686 | .00520 | 0.758 | .01292 | .00661 | 0.512 |
| 0.400 | .00779 | .00753 | 0.966 | .00929 | .00799 | 0.860 | .01445 | .00952 | 0.659 |
| 0.450 | .01124 | .01103 | 0.981 | .01258 | .01154 | 0.917 | .01714 | .01317 | 0.768 |
| 0.500 | .01541 | .01524 | 0.989 | .01663 | .01577 | 0.948 | .02077 | .01749 | 0.842 |
| 0.550 | .02016 | .02002 | 0.993 | .02130 | .02058 | 0.966 | .02511 | .02236 | 0.891 |
| 0.600 | .02534 | .02522 | 0.995 | .02641 | .02580 | 0.977 | .02995 | .02761 | 0.922 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .08994 | .00644 | 0.072 | | | | | | |
| 0.200 | .05495 | .00573 | 0.104 | .25584 | .03945 | 0.154 | | | |
| 0.250 | .03866 | .00626 | 0.162 | .17900 | .03339 | 0.187 | .56762 | .14750 | 0.260 |
| 0.300 | .03071 | .00768 | 0.250 | .13589 | .03129 | 0.230 | .43380 | .12618 | 0.291 |
| 0.350 | .02721 | .00992 | 0.365 | .11068 | .03169 | 0.286 | .34848 | .11361 | 0.326 |
| 0.400 | .02648 | .01296 | 0.489 | .09577 | .03378 | 0.353 | .29237 | .10684 | 0.365 |
| 0.450 | .02765 | .01675 | 0.606 | .08717 | .03705 | 0.425 | .25440 | .10377 | 0.408 |
| 0.500 | .03018 | .02119 | 0.702 | .08263 | .04115 | 0.498 | .22800 | .10299 | 0.452 |
| 0.550 | .03370 | .02613 | 0.776 | .08074 | .04576 | 0.567 | .20913 | .10350 | 0.495 |
| 0.600 | .03787 | .03141 | 0.830 | .08055 | .05060 | 0.628 | .19518 | .10463 | 0.536 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 1.0542 | .40335 | 0.383 | | | | | | |
| 0.350 | .85691 | .35084 | 0.409 | 1.6865 | .83178 | 0.493 | | | |
| 0.400 | .71707 | .31295 | 0.436 | 1.4200 | .72886 | 0.513 | 2.2609 | 1.2941 | 0.572 |
| 0.450 | .61573 | .28556 | 0.464 | 1.2151 | .64660 | 0.532 | 1.9274 | 1.1300 | 0.586 |
| 0.500 | .54013 | .26518 | 0.491 | 1.0552 | .58027 | 0.550 | 1.6604 | .99411 | 0.599 |
| 0.550 | .48193 | .24928 | 0.517 | .92773 | .52550 | 0.566 | 1.4445 | .88080 | 0.610 |
| 0.600 | .43565 | .23613 | 0.542 | .82381 | .47904 | 0.581 | 1.2674 | .78503 | 0.619 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.5470 | 1.5930 | 0.625 | | | | | | |
| 0.500 | 2.1779 | 1.3828 | 0.635 | 2.5491 | 1.6878 | 0.662 | | | |
| 0.550 | 1.8792 | 1.2083 | 0.643 | 2.1873 | 1.4627 | 0.669 | 2.3985 | 1.6521 | 0.689 |
| 0.600 | 1.6351 | 1.0624 | 0.650 | 1.8933 | 1.2760 | 0.674 | 2.0703 | 1.4356 | 0.693 |

| $R$ microns | Wave-length = 2.60 microns | | | $M_1 = 3.89\text{–}3.34\,i$ | | | $M_2 = 1.33$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .01962 | .00010 | 0.005 | | | | | | |
| 0.075 | .00999 | .00021 | 0.021 | .04127 | .00071 | 0.017 | | | |
| 0.100 | .00622 | .00049 | 0.079 | .02701 | .00103 | 0.038 | .08335 | .00339 | 0.041 |
| 0.150 | .00474 | .00207 | 0.436 | .01550 | .00275 | 0.178 | .04981 | .00535 | 0.108 |
| 0.200 | .00774 | .00616 | 0.796 | .01468 | .00706 | 0.481 | .03771 | .01016 | 0.269 |
| 0.250 | .01559 | .01452 | 0.932 | .02085 | .01567 | 0.751 | .03843 | .01945 | 0.506 |
| 0.300 | .02989 | .02911 | 0.974 | .03436 | .03053 | 0.888 | .04924 | .03511 | 0.713 |
| 0.350 | .05234 | .05172 | 0.988 | .05644 | .05343 | 0.947 | .07000 | .05887 | 0.841 |
| 0.400 | .08404 | .08354 | 0.994 | .08799 | .08553 | 0.972 | .10093 | .09182 | 0.910 |
| 0.450 | .12502 | .12460 | 0.997 | .12890 | .12684 | 0.984 | .14155 | .13389 | 0.946 |
| 0.500 | .17395 | .17360 | 0.998 | .17779 | .17603 | 0.990 | .19020 | .18364 | 0.965 |
| 0.550 | .22860 | .22829 | 0.999 | .23234 | .23083 | 0.993 | .24441 | .23873 | 0.977 |
| 0.600 | .28694 | .28667 | 0.999 | .29053 | .28922 | 0.995 | .30206 | .29711 | 0.984 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .11894 | .01221 | 0.103 | | | | | | |
| 0.200 | .08768 | .01766 | 0.201 | .32327 | .06323 | 0.196 | | | |
| 0.250 | .07742 | .02803 | 0.362 | .27461 | .07766 | 0.283 | .70924 | .21651 | 0.305 |
| 0.300 | .08231 | .04510 | 0.548 | .25384 | .09951 | 0.392 | .66033 | .25207 | 0.382 |
| 0.350 | .09994 | .07045 | 0.705 | .25571 | .13046 | 0.510 | .63735 | .29358 | 0.461 |
| 0.400 | .12928 | .10501 | 0.812 | .27541 | .17073 | 0.620 | .63630 | .34204 | 0.538 |
| 0.450 | .16900 | .14850 | 0.879 | .30856 | .21907 | 0.710 | .65047 | .39507 | 0.607 |
| 0.500 | .21691 | .19928 | 0.919 | .35068 | .27291 | 0.778 | .67271 | .44859 | 0.667 |
| 0.550 | .27020 | .25485 | 0.943 | .39749 | .32907 | 0.828 | .69707 | .49862 | 0.715 |
| 0.600 | .32660 | .31312 | 0.959 | .44605 | .38524 | 0.864 | .72034 | .54312 | 0.754 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 1.3129 | .55557 | 0.423 | | | | | | |
| 0.350 | 1.2899 | .62378 | 0.484 | 2.0508 | 1.0725 | 0.523 | | | |
| 0.400 | 1.2687 | .68263 | 0.538 | 2.0168 | 1.1393 | 0.565 | 2.6237 | 1.5538 | 0.592 |
| 0.450 | 1.2482 | .73173 | 0.586 | 1.9436 | 1.1649 | 0.599 | 2.4881 | 1.5412 | 0.619 |
| 0.500 | 1.2246 | .76834 | 0.627 | 1.8439 | 1.1566 | 0.627 | 2.3058 | 1.4757 | 0.640 |
| 0.550 | 1.1951 | .79067 | 0.662 | 1.7287 | 1.1224 | 0.649 | 2.1055 | 1.3787 | 0.655 |
| 0.600 | 1.1605 | .79991 | 0.689 | 1.6087 | 1.0712 | 0.666 | 1.0072 | 1.2671 | 0.664 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.8200 | 1.8007 | 0.639 | | | | | | |
| 0.500 | 2.5801 | 1.6925 | 0.656 | 2.7300 | 1.8319 | 0.671 | | | |
| 0.550 | 2.3242 | 1.5518 | 0.668 | 2.4490 | 1.6705 | 0.682 | 2.5171 | 1.7492 | 0.695 |
| 0.600 | 2.0767 | 1.3999 | 0.674 | 2.1791 | 1.4994 | 0.688 | 2.2426 | 1.5740 | 0.702 |

| $R$ microns | Wave-length = 2.60 microns | | | $M_1 = 3.89 - 3.34\,i$ | | | $M_2 = 1.42$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .02147 | .00012 | 0.006 | | | | | | |
| 0.075 | .01127 | .00030 | 0.026 | .04463 | .00083 | 0.019 | | | |
| 0.100 | .00721 | .00072 | 0.100 | .03022 | .00134 | 0.044 | .08851 | .00381 | 0.043 |
| 0.150 | .00622 | .00316 | 0.508 | .01852 | .00400 | 0.216 | .05660 | .00704 | 0.124 |
| 0.200 | .01141 | .00957 | 0.839 | .01954 | .01071 | 0.548 | .04604 | .01453 | 0.316 |
| 0.250 | .02411 | .02285 | 0.948 | .03043 | .02433 | 0.800 | .05132 | .02915 | 0.568 |
| 0.300 | .04724 | .04629 | 0.980 | .05277 | .04817 | 0.913 | .07101 | .05418 | 0.763 |
| 0.350 | .08381 | .08306 | 0.991 | .08904 | .08536 | 0.959 | .10618 | .09266 | 0.873 |
| 0.400 | .13579 | .13517 | 0.995 | .14095 | .13790 | 0.978 | .15776 | .14647 | 0.928 |
| 0.450 | .20304 | .20251 | 0.997 | .20821 | .20561 | 0.988 | .22496 | .21530 | 0.957 |
| 0.500 | .28294 | .28248 | 0.998 | .28808 | .28584 | 0.992 | .30468 | .29630 | 0.972 |
| 0.550 | .37165 | .37125 | 0.999 | .37666 | .37471 | 0.995 | .39279 | .38546 | 0.981 |
| 0.600 | .46718 | .46684 | 0.999 | .47194 | .47024 | 0.996 | .48722 | .48077 | 0.987 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .12959 | .01447 | 0.112 | | | | | | |
| 0.200 | .10190 | .02335 | 0.229 | .34742 | .07187 | 0.207 | | | |
| 0.250 | .09673 | .03979 | 0.411 | .31529 | .09711 | 0.308 | .75880 | .24045 | 0.317 |
| 0.300 | .11096 | .06704 | 0.604 | .31071 | .13365 | 0.430 | .75392 | .30421 | 0.403 |
| 0.350 | .14360 | .10801 | 0.752 | .33265 | .18460 | 0.555 | .77130 | .37764 | 0.490 |
| 0.400 | .19420 | .16431 | 0.846 | .37757 | .25060 | 0.664 | .80884 | .46090 | 0.570 |
| 0.450 | .26099 | .23527 | 0.901 | .44029 | .32932 | 0.748 | .85903 | .54910 | 0.639 |
| 0.500 | .34014 | .31768 | 0.934 | .51414 | .41587 | 0.809 | .91247 | .63478 | 0.696 |
| 0.550 | .42706 | .40726 | 0.954 | .59278 | .50493 | 0.852 | .96201 | .71183 | 0.740 |
| 0.600 | .51954 | .50196 | 0.966 | .67367 | .59440 | 0.882 | 1.0066 | .77953 | 0.774 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 1.4001 | .60595 | 0.433 | | | | | | |
| 0.350 | 1.4573 | .72805 | 0.500 | 2.1658 | 1.1468 | 0.529 | | | |
| 0.400 | 1.5006 | .83610 | 0.557 | 2.2204 | 1.2760 | 0.575 | 2.7293 | 1.6271 | 0.596 |
| 0.450 | 1.5249 | .92377 | 0.606 | 2.1970 | 1.3395 | 0.610 | 2.6523 | 1.6567 | 0.625 |
| 0.500 | 1.5264 | .98501 | 0.645 | 2.1123 | 1.3438 | 0.636 | 2.4865 | 1.6021 | 0.644 |
| 0.550 | 1.5061 | 1.0187 | 0.676 | 1.9896 | 1.3035 | 0.655 | 2.2773 | 1.4949 | 0.656 |
| 0.600 | 1.4720 | 1.0312 | 0.701 | 1.8527 | 1.2372 | 0.668 | 2.0599 | 1.3637 | 0.662 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.8941 | 1.8547 | 0.641 | | | | | | |
| 0.500 | 2.6848 | 1.7675 | 0.658 | 2.7771 | 1.8670 | 0.672 | | | |
| 0.550 | 2.4309 | 1.6245 | 0.668 | 2.5129 | 1.7158 | 0.683 | 2.5474 | 1.7718 | 0.696 |
| 0.600 | 2.1718 | 1.4580 | 0.671 | 2.2425 | 1.5394 | 0.686 | 2.2839 | 1.6020 | 0.701 |

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| $R$ microns | Wave-length = 2.60 microns | | | $M_1 = 3.89-3.34\,i$ | | | $M_2 = 1.50$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .02300 | .00014 | 0.006 | | | | | | |
| 0.075 | .01237 | .00037 | 0.030 | .04738 | .00094 | 0.020 | | | |
| 0.100 | .00810 | .00095 | 0.118 | .03298 | .00163 | 0.049 | .09268 | .00417 | 0.045 |
| 0.150 | .00768 | .00426 | 0.555 | .02131 | .00523 | 0.245 | .06261 | .00860 | 0.137 |
| 0.200 | .01513 | .01307 | 0.863 | .02432 | .01440 | 0.592 | .05391 | .01880 | 0.349 |
| 0.250 | .03292 | .03148 | 0.956 | .04022 | .03325 | 0.827 | .06412 | .03897 | 0.608 |
| 0.300 | .06546 | .06436 | 0.983 | .07198 | .06665 | 0.926 | .09337 | .07392 | 0.792 |
| 0.350 | .11729 | .11639 | 0.992 | .12358 | .11925 | 0.965 | .14415 | .12825 | 0.890 |
| 0.400 | .19133 | .19058 | 0.996 | .19766 | .19400 | 0.981 | .21822 | .20472 | 0.938 |
| 0.450 | .28715 | .28650 | 0.998 | .29357 | .29040 | 0.989 | .31431 | .30259 | 0.963 |
| 0.500 | .40058 | .40002 | 0.999 | .40699 | .40423 | 0.993 | .42761 | .41732 | 0.976 |
| 0.550 | .52671 | .52622 | 0.999 | .53292 | .53050 | 0.995 | .55285 | .54375 | 0.984 |
| 0.600 | .66628 | .66585 | 0.999 | .67209 | .66997 | 0.997 | .69074 | .68267 | 0.988 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .13859 | .01641 | 0.118 | | | | | | |
| 0.200 | .11486 | .02868 | 0.250 | .36768 | .07909 | 0.215 | | | |
| 0.250 | .11533 | .05136 | 0.445 | .35207 | .11476 | 0.326 | .80000 | .26011 | 0.325 |
| 0.300 | .13975 | .08934 | 0.639 | .36500 | .16634 | 0.456 | .83739 | .35027 | 0.418 |
| 0.350 | .18873 | .14706 | 0.779 | .40902 | .23843 | 0.583 | .89668 | .45557 | 0.508 |
| 0.400 | .26255 | .22690 | 0.864 | .48162 | .33186 | 0.689 | .97511 | .57413 | 0.589 |
| 0.450 | .35874 | .32756 | 0.913 | .57627 | .44276 | 0.768 | 1.0625 | .69715 | 0.656 |
| 0.500 | .47152 | .44392 | 0.941 | .68360 | .56338 | 0.824 | 1.1462 | .81298 | 0.709 |
| 0.550 | .59507 | .57045 | 0.959 | .79592 | .68679 | 0.863 | 1.2193 | .91429 | 0.750 |
| 0.600 | .73007 | .70794 | 0.970 | .91413 | .81414 | 0.891 | 1.2864 | 1.0052 | 0.781 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 1.4712 | .64647 | 0.439 | | | | | | |
| 0.350 | 1.6015 | .81638 | 0.510 | 2.2570 | 1.2046 | 0.534 | | | |
| 0.400 | 1.7052 | .96886 | 0.568 | 2.3850 | 1.3837 | 0.580 | 2.8101 | 1.6819 | 0.599 |
| 0.450 | 1.7692 | 1.0888 | 0.615 | 2.3987 | 1.4734 | 0.614 | 2.7761 | 1.7403 | 0.627 |
| 0.500 | 1.7884 | 1.1662 | 0.652 | 2.3179 | 1.4789 | 0.638 | 2.6164 | 1.6865 | 0.645 |
| 0.550 | 1.7702 | 1.2027 | 0.679 | 2.1799 | 1.4234 | 0.653 | 2.3925 | 1.5626 | 0.653 |
| 0.600 | 1.7338 | 1.2135 | 0.700 | 2.0236 | 1.3375 | 0.661 | 2.1547 | 1.4088 | 0.654 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.9493 | 1.8934 | 0.642 | | | | | | |
| 0.500 | 2.7599 | 1.8178 | 0.659 | 2.8116 | 1.8913 | 0.673 | | | |
| 0.550 | 2.5025 | 1.6666 | 0.666 | 2.5576 | 1.7441 | 0.682 | 2.5695 | 1.7870 | 0.695 |
| 0.600 | 2.2300 | 1.4827 | 0.665 | 2.2836 | 1.5590 | 0.683 | 2.3125 | 1.6184 | 0.700 |

| $R$ microns | Wave-length = 2.60 microns | | | $M_1 = 3.89\text{–}3.34\,i$ | | | $M_2 = 1.70$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .02632 | .00019 | 0.007 | | | | | | |
| 0.075 | .01493 | .00058 | 0.039 | .05332 | .00119 | 0.022 | | | |
| 0.100 | .01028 | .00158 | 0.153 | .03932 | .00236 | 0.060 | .10153 | .00494 | 0.049 |
| 0.150 | .01165 | .00738 | 0.634 | .02845 | .00859 | 0.302 | .07709 | .01257 | 0.163 |
| 0.200 | .02583 | .02317 | 0.897 | .03761 | .02492 | 0.663 | .07469 | .03054 | 0.409 |
| 0.250 | .05891 | .05699 | 0.967 | .06867 | .05943 | 0.865 | .10023 | .06714 | 0.670 |
| 0.300 | .12042 | .11890 | 0.987 | .12955 | .12217 | 0.943 | .15926 | .13248 | 0.832 |
| 0.350 | .22031 | .21903 | 0.994 | .22951 | .22326 | 0.973 | .25945 | .23652 | 0.912 |
| 0.400 | .36481 | .36368 | 0.997 | .37437 | .36887 | 0.985 | .40539 | .38506 | 0.950 |
| 0.450 | .55235 | .55135 | 0.998 | .56221 | .55728 | 0.991 | .59403 | .57569 | 0.969 |
| 0.500 | .77627 | .77537 | 0.999 | .78604 | .78161 | 0.994 | .81749 | .80083 | 0.980 |
| 0.550 | 1.0426 | 1.0418 | 0.999 | 1.0518 | 1.0478 | 0.996 | 1.0813 | 1.0661 | 0.986 |
| 0.600 | 1.3962 | 1.3955 | 0.999 | 1.4045 | 1.4009 | 0.997 | 1.4308 | 1.4169 | 0.990 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .15901 | .02093 | 0.132 | | | | | | |
| 0.200 | .14747 | .04246 | 0.288 | .41338 | .09517 | 0.230 | | | |
| 0.250 | .16594 | .08333 | 0.502 | .44408 | .15847 | 0.357 | .89199 | .30272 | 0.339 |
| 0.300 | .22251 | .15388 | 0.692 | .51146 | .25361 | 0.496 | 1.0421 | .46002 | 0.441 |
| 0.350 | .32354 | .26383 | 0.815 | .62620 | .38945 | 0.622 | 1.2238 | .65244 | 0.533 |
| 0.400 | .47168 | .41811 | 0.886 | .78705 | .56661 | 0.720 | 1.4224 | .86705 | 0.610 |
| 0.450 | .66174 | .61286 | 0.926 | .98114 | .77435 | 0.789 | 1.6114 | 1.0777 | 0.669 |
| 0.500 | .88405 | .83910 | 0.949 | 1.1924 | .99752 | 0.837 | 1.7702 | 1.2612 | 0.712 |
| 0.550 | 1.1435 | 1.1019 | 0.964 | 1.4242 | 1.2389 | 0.870 | 1.9096 | 1.4228 | 0.745 |
| 0.600 | 1.4857 | 1.4467 | 0.974 | 1.7229 | 1.5439 | 0.896 | 2.0829 | 1.6114 | 0.774 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 1.6262 | .73164 | 0.450 | | | | | | |
| 0.350 | 1.9357 | 1.0128 | 0.523 | 2.4472 | 1.3204 | 0.540 | | | |
| 0.400 | 2.1866 | 1.2641 | 0.578 | 2.7306 | 1.5964 | 0.585 | 2.9704 | 1.7844 | 0.601 |
| 0.450 | 2.3275 | 1.4364 | 0.617 | 2.7999 | 1.7130 | 0.612 | 3.0109 | 1.8828 | 0.625 |
| 0.500 | 2.3555 | 1.5133 | 0.642 | 2.6871 | 1.6772 | 0.624 | 2.8369 | 1.7991 | 0.634 |
| 0.550 | 2.3174 | 1.5240 | 0.658 | 2.4843 | 1.5513 | 0.624 | 2.5569 | 1.6089 | 0.629 |
| 0.600 | 2.2874 | 1.5315 | 0.670 | 2.2826 | 1.4098 | 0.618 | 2.2658 | 1.3889 | 0.613 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 3.0543 | 1.9609 | 0.642 | | | | | | |
| 0.500 | 2.8924 | 1.8905 | 0.654 | 2.8755 | 1.9308 | 0.671 | | | |
| 0.550 | 2.6108 | 1.6998 | 0.651 | 2.6334 | 1.7774 | 0.675 | 2.6098 | 1.8099 | 0.694 |
| 0.600 | 2.2973 | 1.4595 | 0.635 | 2.3417 | 1.5578 | 0.665 | 2.3604 | 1.6328 | 0.692 |

**27**

| $R$ microns | Wave-length = 2.60 microns | | | $M_1 = 3.89{-}3.34\,i$ | | | $M_2 = 1.90$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .02894 | .00023 | 0.008 | | | | | | |
| 0.075 | .01708 | .00079 | 0.046 | .05799 | .00140 | 0.024 | | | |
| 0.100 | .01226 | .00223 | 0.182 | .04471 | .00306 | 0.069 | .10844 | .00557 | 0.051 |
| 0.150 | .01580 | .01077 | 0.681 | .03539 | .01212 | 0.342 | .09024 | .01641 | 0.182 |
| 0.200 | .03765 | .03442 | 0.914 | .05184 | .03645 | 0.703 | .09580 | .04287 | 0.447 |
| 0.250 | .08860 | .08619 | 0.973 | .10076 | .08912 | 0.885 | .13979 | .09835 | 0.704 |
| 0.300 | .18511 | .18311 | 0.989 | .19690 | .18721 | 0.951 | .23519 | .20006 | 0.851 |
| 0.350 | .34491 | .34315 | 0.995 | .35722 | .34863 | 0.976 | .39724 | .36569 | 0.921 |
| 0.400 | .57970 | .57808 | 0.997 | .59280 | .58490 | 0.987 | .63530 | .60598 | 0.954 |
| 0.450 | .89077 | .88927 | 0.998 | .90431 | .89695 | 0.992 | .94811 | .92047 | 0.971 |
| 0.500 | 1.2929 | 1.2915 | 0.999 | 1.3060 | 1.2992 | 0.995 | 1.3484 | 1.3222 | 0.981 |
| 0.550 | 1.8930 | 1.8918 | 0.999 | 1.9049 | 1.8985 | 0.997 | 1.9427 | 1.9176 | 0.987 |
| 0.600 | 2.8503 | 2.8492 | 1.000 | 2.8601 | 2.8541 | 0.998 | 2.8899 | 2.8656 | 0.992 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .17638 | .02484 | 0.141 | | | | | | |
| 0.200 | .17895 | .05599 | 0.313 | .45253 | .10845 | 0.240 | | | |
| 0.250 | .21942 | .11727 | 0.534 | .53297 | .19929 | 0.374 | .97032 | .33682 | 0.347 |
| 0.300 | .31577 | .22629 | 0.717 | .66580 | .34224 | 0.514 | 1.2352 | .55708 | 0.451 |
| 0.350 | .48234 | .40028 | 0.830 | .86882 | .55145 | 0.635 | 1.5518 | .83508 | 0.538 |
| 0.400 | .72570 | .64821 | 0.893 | 1.1398 | .82595 | 0.725 | 1.8771 | 1.1369 | 0.606 |
| 0.450 | 1.0408 | .96661 | 0.929 | 1.4584 | 1.1473 | 0.787 | 2.1580 | 1.4111 | 0.654 |
| 0.500 | 1.4375 | 1.3657 | 0.950 | 1.8234 | 1.5127 | 0.830 | 2.3882 | 1.6416 | 0.687 |
| 0.550 | 2.0207 | 1.9499 | 0.965 | 2.3309 | 2.0141 | 0.864 | 2.6651 | 1.9105 | 0.717 |
| 0.600 | 2.9464 | 2.8763 | 0.976 | 3.1184 | 2.7961 | 0.897 | 3.1208 | 2.3601 | 0.756 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 1.7541 | .79704 | 0.454 | | | | | | |
| 0.350 | 2.2270 | 1.1688 | 0.525 | 2.5955 | 1.4029 | 0.541 | | | |
| 0.400 | 2.5963 | 1.4819 | 0.571 | 2.9928 | 1.7347 | 0.580 | 3.0871 | 1.8500 | 0.599 |
| 0.450 | 2.7574 | 1.6439 | 0.596 | 3.0628 | 1.8218 | 0.595 | 3.1646 | 1.9499 | 0.616 |
| 0.500 | 2.7422 | 1.6597 | 0.605 | 2.8726 | 1.6943 | 0.590 | 2.9454 | 1.8006 | 0.611 |
| 0.550 | 2.6934 | 1.6368 | 0.608 | 2.6031 | 1.4847 | 0.570 | 2.5987 | 1.5252 | 0.587 |
| 0.600 | 2.7674 | 1.7281 | 0.624 | 2.4182 | 1.3388 | 0.554 | 2.2781 | 1.2532 | 0.550 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 3.1263 | 1.9981 | 0.639 | | | | | | |
| 0.500 | 2.9692 | 1.9070 | 0.642 | 2.9175 | 1.9484 | 0.668 | | | |
| 0.550 | 2.6494 | 1.6564 | 0.625 | 2.6739 | 1.7714 | 0.662 | 2.6357 | 1.8173 | 0.689 |
| 0.600 | 2.2944 | 1.3514 | 0.589 | 2.3563 | 1.5033 | 0.638 | 2.3850 | 1.6189 | 0.679 |

| $R$ microns | Wave-length = 2.80 microns | | | $M_1 = 4.02\text{--}3.48\,i$ | | | $M_2 = 1.10$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{\text{ext}}$ | $Q_{\text{kctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .01250 | .00003 | 0.003 | | | | | | |
| 0.075 | .00580 | .00004 | 0.006 | .02728 | .00028 | 0.010 | | | |
| 0.100 | .00334 | .00006 | 0.017 | .01611 | .00025 | 0.016 | .05823 | .00161 | 0.028 |
| 0.150 | .00166 | .00018 | 0.109 | .00762 | .00036 | 0.048 | .02833 | .00131 | 0.046 |
| 0.200 | .00133 | .00049 | 0.366 | .00484 | .00069 | 0.143 | .01718 | .00156 | 0.091 |
| 0.250 | .00164 | .00109 | 0.666 | .00403 | .00133 | 0.330 | .01242 | .00222 | 0.179 |
| 0.300 | .00250 | .00211 | 0.845 | .00430 | .00239 | 0.557 | .01057 | .00336 | 0.318 |
| 0.350 | .00396 | .00367 | 0.927 | .00541 | .00399 | 0.737 | .01044 | .00504 | 0.483 |
| 0.400 | .00606 | .00584 | 0.963 | .00730 | .00619 | 0.848 | .01155 | .00734 | 0.636 |
| 0.450 | .00885 | .00867 | 0.980 | .00995 | .00905 | 0.910 | .01368 | .01029 | 0.752 |
| 0.500 | .01229 | .01214 | 0.988 | .01329 | .01255 | 0.945 | .01666 | .01387 | 0.833 |
| 0.550 | .01631 | .01619 | 0.992 | .01724 | .01662 | 0.964 | .02035 | .01800 | 0.885 |
| 0.600 | .02082 | .02071 | 0.995 | .02169 | .02116 | 0.976 | .02458 | .02259 | 0.919 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .07643 | .00476 | 0.062 | | | | | | |
| 0.200 | .04641 | .00425 | 0.091 | .21382 | .02889 | 0.135 | | | |
| 0.250 | .03235 | .00466 | 0.144 | .14854 | .02446 | 0.165 | .46861 | .10727 | 0.229 |
| 0.300 | .02540 | .00575 | 0.227 | .11191 | .02301 | 0.206 | .35532 | .09179 | 0.258 |
| 0.350 | .02222 | .00750 | 0.338 | .09044 | .02346 | 0.259 | .28350 | .08292 | 0.292 |
| 0.400 | .02140 | .00991 | 0.463 | .07772 | .02526 | 0.325 | .23657 | .07851 | 0.332 |
| 0.450 | .02224 | .01298 | 0.584 | .07042 | .02807 | 0.399 | .20514 | .07704 | 0.376 |
| 0.500 | .02431 | .01668 | 0.686 | .06667 | .03166 | 0.475 | .18369 | .07751 | 0.422 |
| 0.550 | .02732 | .02091 | 0.765 | .06532 | .03582 | 0.548 | .16884 | .07918 | 0.469 |
| 0.600 | .03103 | .02555 | 0.823 | .06560 | .04035 | 0.615 | .15838 | .08152 | 0.515 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | .86441 | .29677 | 0.343 | | | | | | |
| 0.350 | .69832 | .25863 | 0.370 | 1.4074 | .64252 | 0.457 | | | |
| 0.400 | .58202 | .23179 | 0.398 | 1.1852 | .56683 | 0.478 | 2.0005 | 1.0896 | 0.545 |
| 0.450 | .49889 | .21317 | 0.427 | 1.0162 | .50717 | 0.499 | 1.7182 | .96281 | 0.560 |
| 0.500 | .43795 | .20015 | 0.457 | .88586 | .45999 | 0.519 | 1.4915 | .85740 | 0.575 |
| 0.550 | .39203 | .19079 | 0.487 | .78318 | .42188 | 0.539 | 1.3080 | .76934 | 0.588 |
| 0.600 | .35639 | .18370 | 0.515 | .70041 | .39012 | 0.557 | 1.1572 | .69475 | 0.600 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.4311 | 1.4727 | 0.606 | | | | | | |
| 0.500 | 2.0997 | 1.2952 | 0.617 | 2.5888 | 1.6779 | 0.648 | | | |
| 0.550 | 1.8282 | 1.1456 | 0.627 | 2.2406 | 1.4697 | 0.656 | 2.5359 | 1.7209 | 0.679 |
| 0.600 | 1.6042 | 1.0191 | 0.635 | 1.9538 | 1.2947 | 0.663 | 2.2024 | 1.5070 | 0.684 |

| $R$ microns | Wave-length = 2.80 microns | | | $M_1 = 4.02-3.48\,i$ | | | $M_2 = 1.33$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .01703 | .00007 | 0.004 | | | | | | |
| 0.075 | .00864 | .00016 | 0.018 | .03565 | .00053 | 0.015 | | | |
| 0.100 | .00533 | .00037 | 0.069 | .02324 | .00076 | 0.033 | .07143 | .00251 | 0.035 |
| 0.150 | .00384 | .00154 | 0.401 | .01302 | .00205 | 0.157 | .04210 | .00397 | 0.094 |
| 0.200 | .00595 | .00459 | 0.773 | .01179 | .00526 | 0.446 | .03103 | .00754 | 0.243 |
| 0.250 | .01178 | .01087 | 0.923 | .01612 | .01171 | 0.727 | .03056 | .01449 | 0.474 |
| 0.300 | .02257 | .02190 | 0.970 | .02619 | .02295 | 0.876 | .03819 | .02630 | 0.689 |
| 0.350 | .03975 | .03923 | 0.987 | .04302 | .04049 | 0.941 | .05378 | .04448 | 0.827 |
| 0.400 | .06452 | .06410 | 0.993 | .06763 | .06558 | 0.970 | .07780 | .07022 | 0.902 |
| 0.450 | .09742 | .09707 | 0.996 | .10047 | .09875 | 0.983 | .11039 | .10402 | 0.942 |
| 0.500 | .13805 | .13775 | 0.998 | .14108 | .13961 | 0.990 | .15087 | .14541 | 0.964 |
| 0.550 | .18505 | .18479 | 0.999 | .18805 | .18678 | 0.993 | .19770 | .19296 | 0.976 |
| 0.600 | .23653 | .23630 | 0.999 | .23947 | .23836 | 0.995 | .24888 | .24473 | 0.983 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .10027 | .00901 | 0.090 | | | | | | |
| 0.200 | .07249 | .01303 | 0.180 | .26676 | .04612 | 0.173 | | | |
| 0.250 | .06238 | .02074 | 0.332 | .22201 | .05656 | 0.255 | .57637 | .15685 | 0.272 |
| 0.300 | .06471 | .03357 | 0.519 | .20121 | .07275 | 0.362 | .52581 | .18253 | 0.347 |
| 0.350 | .07745 | .05293 | 0.683 | .19968 | .09625 | 0.482 | .50032 | .21403 | 0.428 |
| 0.400 | .09998 | .07990 | 0.799 | .21369 | .12776 | 0.598 | .49642 | .25296 | 0.510 |
| 0.450 | .13181 | .11489 | 0.872 | .24029 | .16712 | 0.695 | .50912 | .29852 | 0.586 |
| 0.500 | .17184 | .15730 | 0.915 | .27659 | .21311 | 0.770 | .53304 | .34834 | 0.654 |
| 0.550 | .21824 | .20556 | 0.942 | .31942 | .26357 | 0.825 | .56296 | .39923 | 0.709 |
| 0.600 | .26881 | .25765 | 0.958 | .36577 | .31610 | 0.864 | .59467 | .44821 | 0.754 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 1.0637 | .40921 | 0.385 | | | | | | |
| 0.350 | 1.0340 | .46331 | 0.448 | 1.7146 | .83902 | 0.489 | | | |
| 0.400 | 1.0162 | .51573 | 0.507 | 1.7054 | .91504 | 0.537 | 2.3593 | 1.3393 | 0.568 |
| 0.450 | 1.0086 | .56700 | 0.562 | 1.6760 | .96704 | 0.577 | 2.3019 | 1.3811 | 0.600 |
| 0.500 | 1.0063 | .61463 | 0.611 | 1.6300 | .99665 | 0.611 | 2.1972 | 1.3752 | 0.626 |
| 0.550 | 1.0044 | .65528 | 0.652 | 1.5701 | 1.0052 | 0.640 | 2.0635 | 1.3336 | 0.646 |
| 0.600 | .99938 | .68668 | 0.687 | 1.5000 | .99530 | 0.664 | 1.9163 | 1.2682 | 0.662 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.7460 | 1.7064 | 0.621 | | | | | | |
| 0.500 | 2.5867 | 1.6632 | 0.643 | 2.8178 | 1.8567 | 0.659 | | | |
| 0.550 | 2.3901 | 1.5752 | 0.659 | 2.5833 | 1.7394 | 0.673 | 2.6910 | 1.8466 | 0.686 |
| 0.600 | 2.1815 | 1.4622 | 0.670 | 2.3391 | 1.5975 | 0.683 | 2.4324 | 1.6926 | 0.696 |

| $R$ microns | Wave-length = 2.80 microns | | | $M_1 = 4.02\text{-}3.48\,i$ | | | $M_2 = 1.42$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .01865 | .00009 | 0.005 | | | | | | |
| 0.075 | .00975 | .00022 | 0.023 | .03855 | .00062 | 0.016 | | | |
| 0.100 | .00616 | .00054 | 0.087 | .02597 | .00001 | 0.038 | .07581 | .00283 | 0.037 |
| 0.150 | .00499 | .00235 | 0.471 | .01545 | .00297 | 0.192 | .04767 | .00521 | 0.109 |
| 0.200 | .00870 | .00713 | 0.820 | .01550 | .00796 | 0.514 | .03755 | .01076 | 0.287 |
| 0.250 | .01811 | .01705 | 0.941 | .02330 | .01813 | 0.778 | .04032 | .02165 | 0.537 |
| 0.300 | .03549 | .03470 | 0.978 | .03993 | .03607 | 0.903 | .05450 | .04043 | 0.742 |
| 0.350 | .06337 | .06274 | 0.990 | .06748 | .06442 | 0.955 | .08094 | .06973 | 0.862 |
| 0.400 | .10385 | .10333 | 0.995 | .10787 | .10534 | 0.977 | .12094 | .11163 | 0.923 |
| 0.450 | .15785 | .15741 | 0.997 | .16188 | .15972 | 0.987 | .17490 | .16696 | 0.955 |
| 0.500 | .22445 | .22407 | 0.998 | .22851 | .22664 | 0.992 | .24157 | .23466 | 0.971 |
| 0.550 | .30104 | .30071 | 0.999 | .30509 | .30346 | 0.995 | .31805 | .31198 | 0.981 |
| 0.600 | .38460 | .38431 | 0.999 | .38855 | .38711 | 0.996 | .40116 | .39580 | 0.987 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .10898 | .01067 | 0.098 | | | | | | |
| 0.200 | .08369 | .01720 | 0.206 | .28559 | .05235 | 0.183 | | | |
| 0.250 | .07711 | .02937 | 0.381 | .25290 | .07057 | 0.279 | .61394 | .17402 | 0.283 |
| 0.300 | .08622 | .04974 | 0.577 | .24369 | .09745 | 0.400 | .59587 | .22005 | 0.369 |
| 0.350 | .11018 | .08085 | 0.734 | .25693 | .13589 | 0.529 | .60060 | .27543 | 0.459 |
| 0.400 | .14915 | .12467 | 0.836 | .29043 | .18739 | 0.645 | .62744 | .34212 | 0.545 |
| 0.450 | .20282 | .18182 | 0.896 | .34136 | .25168 | 0.737 | .67192 | .41848 | 0.623 |
| 0.500 | .26936 | .25102 | 0.932 | .40568 | .32637 | 0.805 | .72725 | .50001 | 0.688 |
| 0.550 | .34548 | .32927 | 0.953 | .47838 | .40745 | 0.852 | .78615 | .58094 | 0.739 |
| 0.600 | .42775 | .41332 | 0.966 | .55507 | .49106 | 0.885 | .84339 | .65685 | 0.779 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 1.1312 | .44668 | 0.395 | | | | | | |
| 0.350 | 1.1659 | .54307 | 0.466 | 1.8138 | .90125 | 0.497 | | | |
| 0.400 | 1.2050 | .63843 | 0.530 | 1.8926 | 1.0381 | 0.549 | 2.4677 | 1.4130 | 0.573 |
| 0.450 | 1.2445 | .72968 | 0.586 | 1.9271 | 1.1385 | 0.591 | 2.4868 | 1.5098 | 0.607 |
| 0.500 | 1.2780 | .81070 | 0.634 | 1.9175 | 1.1984 | 0.625 | 2.4198 | 1.5321 | 0.633 |
| 0.550 | 1.2997 | .87566 | 0.674 | 1.8701 | 1.2191 | 0.652 | 2.2925 | 1.4948 | 0.652 |
| 0.600 | 1.3080 | .92235 | 0.705 | 1.7962 | 1.2074 | 0.672 | 2.1333 | 1.4179 | 0.665 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.8349 | 1.7703 | 0.624 | | | | | | |
| 0.500 | 2.7230 | 1.7615 | 0.647 | 2.8793 | 1.9025 | 0.661 | | | |
| 0.550 | 2.5394 | 1.6814 | 0.662 | 2.6714 | 1.8038 | 0.675 | 2.7314 | 1.8772 | 0.687 |
| 0.600 | 2.3234 | 1.5590 | 0.671 | 2.4309 | 1.6612 | 0.683 | 2.4891 | 1.7336 | 0.696 |

| R microns | Wave-length = 2.80 microns | | | $M_1 = 4.02-3.48\,i$ | | | $M_2 = 1.50$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .01998 | .00011 | 0.005 | | | | | | |
| 0.075 | .01071 | .00028 | 0.026 | .04093 | .00070 | 0.017 | | | |
| 0.100 | .00691 | .00071 | 0.102 | .02832 | .00121 | 0.043 | .07935 | .00309 | 0.039 |
| 0.150 | .00611 | .00317 | 0.518 | .01769 | .00388 | 0.219 | .05258 | .00636 | 0.121 |
| 0.200 | .01147 | .00971 | 0.846 | .01913 | .01069 | 0.558 | .04367 | .01391 | 0.319 |
| 0.250 | .02464 | .02342 | 0.951 | .03058 | .02472 | 0.808 | .04996 | .02887 | 0.578 |
| 0.300 | .04899 | .04807 | 0.981 | .05418 | .04973 | 0.918 | .07114 | .05499 | 0.773 |
| 0.350 | .08834 | .08760 | 0.992 | .09326 | .08967 | 0.962 | .10927 | .09619 | 0.880 |
| 0.400 | .14587 | .14525 | 0.996 | .15077 | .14775 | 0.980 | .16664 | .15560 | 0.934 |
| 0.450 | .22284 | .22231 | 0.998 | .22782 | .22523 | 0.989 | .24389 | .23433 | 0.961 |
| 0.500 | .31765 | .31718 | 0.999 | .32271 | .32043 | 0.993 | .33897 | .33055 | 0.975 |
| 0.550 | .42630 | .42589 | 0.999 | .43135 | .42934 | 0.995 | .44750 | .44002 | 0.983 |
| 0.600 | .54535 | .54499 | 0.999 | .55024 | .54846 | 0.997 | .56587 | .55920 | 0.988 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .11632 | .01210 | 0.104 | | | | | | |
| 0.200 | .09385 | .02110 | 0.225 | .30135 | .05756 | 0.191 | | | |
| 0.250 | .09121 | .03782 | 0.415 | .28070 | .08325 | 0.297 | .64512 | .18811 | 0.292 |
| 0.300 | .10769 | .06609 | 0.614 | .28401 | .12104 | 0.426 | .65827 | .25323 | 0.385 |
| 0.350 | .14380 | .10975 | 0.763 | .31349 | .17521 | 0.559 | .69463 | .33263 | 0.479 |
| 0.400 | .20069 | .17177 | 0.856 | .36846 | .24809 | 0.673 | .75473 | .42809 | 0.567 |
| 0.450 | .27817 | .25296 | 0.909 | .44597 | .33914 | 0.760 | .83342 | .53636 | 0.644 |
| 0.500 | .37344 | .35110 | 0.940 | .54046 | .44435 | 0.822 | .92151 | .64992 | 0.705 |
| 0.550 | .48160 | .46161 | 0.959 | .64482 | .55757 | 0.865 | 1.0093 | .76004 | 0.753 |
| 0.600 | .59873 | .58074 | 0.970 | .75415 | .67430 | 0.894 | 1.0919 | .86184 | 0.789 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 1.1865 | .47694 | 0.402 | | | | | | |
| 0.350 | 1.2808 | .61158 | 0.477 | 1.8934 | .95036 | 0.502 | | | |
| 0.400 | 1.3757 | .74775 | 0.544 | 2.0485 | 1.1387 | 0.556 | 2.5521 | 1.4692 | 0.576 |
| 0.450 | 1.4617 | .87669 | 0.600 | 2.1379 | 1.2788 | 0.598 | 2.6317 | 1.6078 | 0.611 |
| 0.500 | 1.5282 | .98697 | 0.646 | 2.1552 | 1.3593 | 0.631 | 2.5898 | 1.6469 | 0.636 |
| 0.550 | 1.5687 | 1.0701 | 0.682 | 2.1106 | 1.3817 | 0.655 | 2.4595 | 1.6041 | 0.652 |
| 0.600 | 1.5853 | 1.1258 | 0.710 | 2.0253 | 1.3594 | 0.671 | 2.2824 | 1.5088 | 0.661 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.9022 | 1.8173 | 0.626 | | | | | | |
| 0.500 | 2.8242 | 1.8314 | 0.648 | 2.9248 | 1.9351 | 0.662 | | | |
| 0.550 | 2.6452 | 1.7509 | 0.662 | 2.7346 | 1.8469 | 0.675 | 2.7610 | 1.8985 | 0.688 |
| 0.600 | 2.4172 | 1.6138 | 0.668 | 2.4930 | 1.6987 | 0.681 | 2.5290 | 1.7596 | 0.696 |

| $R$ microns | Wave-length = 2.80 microns | | | $M_1 = 4.02\text{--}3.48\,i$ | | | $M_2 = 1.70$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .02291 | .00014 | 0.006 | | | | | | |
| 0.075 | .01293 | .00043 | 0.034 | .04608 | .00088 | 0.019 | | | |
| 0.100 | .00873 | .00117 | 0.134 | .03374 | .00176 | 0.052 | .08687 | .00367 | 0.042 |
| 0.150 | .00914 | .00547 | 0.598 | .02339 | .00636 | 0.272 | .06437 | .00929 | 0.144 |
| 0.200 | .01940 | .01714 | 0.884 | .02916 | .01842 | 0.632 | .05971 | .02251 | 0.377 |
| 0.250 | .04374 | .04213 | 0.963 | .05161 | .04389 | 0.850 | .07691 | .04945 | 0.643 |
| 0.300 | .08936 | .08810 | 0.986 | .09652 | .09045 | 0.937 | .11971 | .09783 | 0.817 |
| 0.350 | .16451 | .16346 | 0.994 | .17158 | .16650 | 0.970 | .19451 | .17602 | 0.905 |
| 0.400 | .27614 | .27522 | 0.997 | .28345 | .27901 | 0.984 | .30710 | .29083 | 0.947 |
| 0.450 | .42665 | .42583 | 0.998 | .43429 | .43031 | 0.991 | .45890 | .44425 | 0.968 |
| 0.500 | .61229 | .61156 | 0.999 | .62013 | .61653 | 0.994 | .64527 | .63192 | 0.979 |
| 0.550 | .82846 | .82779 | 0.999 | .83617 | .83292 | 0.996 | .86090 | .84870 | 0.986 |
| 0.600 | 1.0856 | 1.0850 | 0.999 | 1.0929 | 1.0900 | 0.997 | 1.1161 | 1.1050 | 0.990 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .13293 | .01541 | 0.116 | | | | | | |
| 0.200 | .11924 | .03114 | 0.261 | .33675 | .06915 | 0.205 | | | |
| 0.250 | .12922 | .06105 | 0.472 | .34981 | .11459 | 0.328 | .71467 | .21868 | 0.306 |
| 0.300 | .16879 | .11308 | 0.670 | .39200 | .18383 | 0.469 | .81138 | .33264 | 0.410 |
| 0.350 | .24335 | .19556 | 0.804 | .47351 | .28550 | 0.603 | .94198 | .47921 | 0.509 |
| 0.400 | .35743 | .31496 | 0.881 | .59760 | .42441 | 0.710 | 1.1049 | .65764 | 0.595 |
| 0.450 | .51112 | .47251 | 0.924 | .75989 | .59819 | 0.787 | 1.2871 | .85614 | 0.665 |
| 0.500 | .69838 | .66286 | 0.949 | .94895 | .79681 | 0.840 | 1.4683 | 1.0549 | 0.718 |
| 0.550 | .91294 | .88006 | 0.964 | 1.1548 | 1.0107 | 0.875 | 1.6356 | 1.2394 | 0.758 |
| 0.600 | 1.1649 | 1.1342 | 0.974 | 1.3868 | 1.2489 | 0.901 | 1.8015 | 1.4192 | 0.788 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 1.3077 | .54110 | 0.414 | | | | | | |
| 0.350 | 1.5527 | .76814 | 0.495 | 2.0623 | 1.0509 | 0.510 | | | |
| 0.400 | 1.7975 | 1.0065 | 0.560 | 2.3920 | 1.3502 | 0.564 | 2.7240 | 1.5788 | 0.580 |
| 0.450 | 2.0016 | 1.2223 | 0.611 | 2.5969 | 1.5644 | 0.602 | 2.9234 | 1.7921 | 0.613 |
| 0.500 | 2.1357 | 1.3839 | 0.648 | 2.6441 | 1.6564 | 0.626 | 2.9101 | 1.8376 | 0.631 |
| 0.550 | 2.1983 | 1.4815 | 0.674 | 2.5655 | 1.6387 | 0.639 | 2.7396 | 1.7457 | 0.637 |
| 0.600 | 2.2222 | 1.5379 | 0.692 | 2.4270 | 1.5581 | 0.642 | 2.4988 | 1.5794 | 0.632 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 3.0335 | 1.9038 | 0.628 | | | | | | |
| 0.500 | 3.0128 | 1.9476 | 0.646 | 3.0110 | 1.9918 | 0.662 | | | |
| 0.550 | 2.8227 | 1.8409 | 0.652 | 2.8467 | 1.9100 | 0.671 | 2.8160 | 1.9334 | 0.687 |
| 0.600 | 2.5497 | 1.6473 | 0.646 | 2.5896 | 1.7313 | 0.669 | 2.5981 | 1.7924 | 0.690 |

| R microns | Wave-length = 2.80 microns | | | $M_1 = 4.02 - 3.48\,i$ | | | $M_2 = 1.90$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .02524 | .00017 | 0.007 | | | | | | |
| 0.075 | .01481 | .00059 | 0.040 | .05016 | .00104 | 0.021 | | | |
| 0.100 | .01038 | .00165 | 0.159 | .03835 | .00228 | 0.059 | .09275 | .00413 | 0.045 |
| 0.150 | .01229 | .00796 | 0.648 | .02889 | .00896 | 0.310 | .07504 | .01211 | 0.161 |
| 0.200 | .02809 | .02536 | 0.903 | .03981 | .02684 | 0.674 | .07586 | .03150 | 0.415 |
| 0.250 | .06535 | .06334 | 0.969 | .07507 | .06545 | 0.872 | .10611 | .07206 | 0.679 |
| 0.300 | .13629 | .13467 | 0.988 | .14545 | .13759 | 0.946 | .17501 | .14672 | 0.838 |
| 0.350 | .25544 | .25403 | 0.994 | .26480 | .25795 | 0.974 | .29511 | .27015 | 0.915 |
| 0.400 | .43538 | .43410 | 0.997 | .44535 | .43911 | 0.986 | .47757 | .45464 | 0.952 |
| 0.450 | .68137 | .68018 | 0.998 | .69195 | .68614 | 0.992 | .72608 | .70453 | 0.970 |
| 0.500 | .99361 | .99251 | 0.999 | 1.0044 | .99898 | 0.995 | 1.0392 | 1.0188 | 0.980 |
| 0.550 | 1.3976 | 1.3965 | 0.999 | 1.4080 | 1.4029 | 0.996 | 1.4414 | 1.4220 | 0.986 |
| 0.600 | 2.0069 | 2.0060 | 1.000 | 2.0163 | 2.0115 | 0.998 | 2.0462 | 2.0274 | 0.991 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .14703 | .01828 | 0.124 | | | | | | |
| 0.200 | .14357 | .04097 | 0.285 | .36696 | .07872 | 0.215 | | | |
| 0.250 | .16899 | .08557 | 0.506 | .41615 | .14383 | 0.346 | .77388 | .24324 | 0.314 |
| 0.300 | .23684 | .16534 | 0.698 | .50511 | .24763 | 0.490 | .95658 | .40374 | 0.422 |
| 0.350 | .35928 | .29493 | 0.821 | .65191 | .40450 | 0.620 | 1.1951 | .61996 | 0.519 |
| 0.400 | .54596 | .48596 | 0.890 | .86380 | .62226 | 0.720 | 1.4783 | .88499 | 0.599 |
| 0.450 | .79836 | .74125 | 0.928 | 1.1337 | .89567 | 0.790 | 1.7752 | 1.1710 | 0.660 |
| 0.500 | 1.1126 | 1.0577 | 0.951 | 1.4475 | 1.2116 | 0.837 | 2.0528 | 1.4442 | 0.704 |
| 0.550 | 1.5115 | 1.4581 | 0.955 | 1.8213 | 1.5845 | 0.870 | 2.3223 | 1.7085 | 0.736 |
| 0.600 | 2.1076 | 2.0547 | 0.975 | 2.3596 | 2.1169 | 0.897 | 2.6796 | 2.0521 | 0.766 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 1.4087 | .59113 | 0.420 | | | | | | |
| 0.350 | 1.7983 | .89913 | 0.500 | 2.1973 | 1.1255 | 0.512 | | | |
| 0.400 | 2.1887 | 1.2235 | 0.559 | 2.6729 | 1.5057 | 0.563 | 2.8539 | 1.6541 | 0.580 |
| 0.450 | 2.4858 | 1.4898 | 0.599 | 2.9485 | 1.7459 | 0.592 | 3.1338 | 1.9032 | 0.607 |
| 0.500 | 2.6393 | 1.6456 | 0.624 | 2.9646 | 1.7860 | 0.602 | 3.1059 | 1.9097 | 0.615 |
| 0.550 | 2.6880 | 1.7091 | 0.636 | 2.8076 | 1.6775 | 0.597 | 2.8632 | 1.7311 | 0.605 |
| 0.600 | 2.7482 | 1.7763 | 0.646 | 2.6232 | 1.5333 | 0.585 | 2.5562 | 1.4822 | 0.580 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 3.1274 | 1.9575 | 0.626 | | | | | | |
| 0.500 | 3.1345 | 1.9999 | 0.638 | 3.0699 | 2.0228 | 0.659 | | | |
| 0.550 | 2.9101 | 1.8390 | 0.632 | 2.9132 | 1.9260 | 0.661 | 2.8525 | 1.9495 | 0.683 |
| 0.600 | 2.5814 | 1.5710 | 0.609 | 2.6283 | 1.6990 | 0.646 | 2.6371 | 1.7913 | 0.679 |

| R microns | Wave-length = 3.00 microns | | | $M_1 = 4.14\text{--}3.62\,i$ | | | $M_2 = 1.10$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .01094 | .00003 | 0.002 | | | | | | |
| 0.075 | .00507 | .00003 | 0.006 | .02381 | .00022 | 0.009 | | | |
| 0.100 | .00292 | .00004 | 0.015 | .01404 | .00019 | 0.014 | .05054 | .00122 | 0.024 |
| 0.150 | .00143 | .00014 | 0.096 | .00661 | .00028 | 0.042 | .02450 | .00099 | 0.041 |
| 0.200 | .00111 | .00037 | 0.336 | .00415 | .00053 | 0.128 | .01476 | .00118 | 0.080 |
| 0.250 | .00131 | .00084 | 0.637 | .00337 | .00102 | 0.303 | .01054 | .00170 | 0.161 |
| 0.300 | .00197 | .00163 | 0.829 | .00350 | .00185 | 0.527 | .00882 | .00258 | 0.292 |
| 0.350 | .00311 | .00285 | 0.919 | .00433 | .00310 | 0.715 | .00857 | .00390 | 0.455 |
| 0.400 | .00478 | .00458 | 0.959 | .00582 | .00486 | 0.835 | .00937 | .00573 | 0.612 |
| 0.450 | .00703 | .00687 | 0.978 | .00794 | .00717 | 0.903 | .01104 | .00812 | 0.736 |
| 0.500 | .00986 | .00973 | 0.987 | .01069 | .01006 | 0.941 | .01348 | .01108 | 0.822 |
| 0.550 | .01325 | .01314 | 0.992 | .01402 | .01349 | 0.962 | .01658 | .01456 | 0.878 |
| 0.600 | .01713 | .01704 | 0.995 | .01785 | .01739 | 0.975 | .02024 | .01852 | 0.915 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .06578 | .00360 | 0.055 | | | | | | |
| 0.200 | .03974 | .00321 | 0.081 | .18152 | .02164 | 0.119 | | | |
| 0.250 | .02749 | .00353 | 0.129 | .12535 | .01833 | 0.146 | .39376 | .07972 | 0.202 |
| 0.300 | .02135 | .00439 | 0.206 | .09380 | .01728 | 0.184 | .29646 | .06820 | 0.230 |
| 0.350 | .01845 | .00577 | 0.313 | .07525 | .01772 | 0.235 | .23501 | .06176 | 0.263 |
| 0.400 | .01758 | .00769 | 0.438 | .06420 | .01923 | 0.299 | .19498 | .05877 | 0.301 |
| 0.450 | .01814 | .01019 | 0.562 | .05784 | .02159 | 0.373 | .16832 | .05814 | 0.345 |
| 0.500 | .01979 | .01324 | 0.669 | .05458 | .02466 | 0.452 | .15032 | .05912 | 0.393 |
| 0.550 | .02233 | .01682 | 0.753 | .05348 | .02829 | 0.529 | .13812 | .06119 | 0.443 |
| 0.600 | .02555 | .02085 | 0.816 | .05391 | .03236 | 0.600 | .12987 | .06396 | 0.493 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | .72003 | .22130 | 0.307 | | | | | | |
| 0.350 | .57774 | .19295 | 0.334 | 1.1749 | .49294 | 0.420 | | | |
| 0.400 | .47905 | .17343 | 0.362 | .98661 | .43639 | 0.442 | 1.7280 | .88881 | 0.514 |
| 0.450 | .40920 | .16038 | 0.392 | .84499 | .39255 | 0.465 | 1.4893 | .79191 | 0.532 |
| 0.500 | .35866 | .15184 | 0.423 | .73711 | .35871 | 0.487 | 1.2985 | .71159 | 0.548 |
| 0.550 | .32123 | .14634 | 0.456 | .65333 | .33216 | 0.508 | 1.1448 | .64497 | 0.563 |
| 0.600 | .29285 | .14278 | 0.488 | .58681 | .31074 | 0.530 | 1.0192 | .58893 | 0.578 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.2331 | 1.3028 | 0.583 | | | | | | |
| 0.500 | 1.9442 | 1.1587 | 0.596 | 2.5327 | 1.6005 | 0.632 | | | |
| 0.550 | 1.7059 | 1.0362 | 0.607 | 2.2109 | 1.4173 | 0.641 | 2.6022 | 1.7351 | 0.667 |
| 0.600 | 1.5082 | .93183 | 0.618 | 1.9429 | 1.2610 | 0.649 | 2.2760 | 1.5326 | 0.573 |

| $R$ microns | Wave-length = 3.00 microns | | | $M_1 = 4.14-3.62\,i$ | | | $M_2 = 1.33$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .01492 | .00006 | 0.004 | | | | | | |
| 0.075 | .00755 | .00012 | 0.016 | .03109 | .00040 | 0.013 | | | |
| 0.100 | .00462 | .00028 | 0.060 | .02020 | .00058 | 0.029 | .06189 | .00191 | 0.031 |
| 0.150 | .00318 | .00117 | 0.368 | .01110 | .00155 | 0.140 | .03607 | .00301 | 0.083 |
| 0.200 | .00467 | .00350 | 0.749 | .00965 | .00400 | 0.414 | .02598 | .00571 | 0.220 |
| 0.250 | .00907 | .00829 | 0.914 | .01272 | .00892 | 0.702 | .02479 | .01100 | 0.444 |
| 0.300 | .01734 | .01677 | 0.967 | .02032 | .01755 | 0.864 | .03020 | .02006 | 0.664 |
| 0.350 | .03066 | .03021 | 0.986 | .03331 | .03116 | 0.935 | .04203 | .03414 | 0.812 |
| 0.400 | .05014 | .04978 | 0.993 | .05263 | .05089 | 0.967 | .06077 | .05437 | 0.895 |
| 0.450 | .07654 | .07624 | 0.996 | .07897 | .07751 | 0.982 | .08685 | .08149 | 0.938 |
| 0.500 | .10999 | .10974 | 0.998 | .11241 | .11116 | 0.989 | .12019 | .11560 | 0.962 |
| 0.550 | .14988 | .14966 | 0.999 | .15229 | .15121 | 0.993 | .16002 | .15603 | 0.975 |
| 0.600 | .19489 | .19470 | 0.999 | .19728 | .19634 | 0.995 | .20493 | .20143 | 0.983 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .08573 | .00680 | 0.079 | | | | | | |
| 0.200 | .06097 | .00982 | 0.161 | .22404 | .03442 | 0.154 | | | |
| 0.250 | .05126 | .01567 | 0.306 | .18315 | .04214 | 0.230 | .47752 | .11611 | 0.243 |
| 0.300 | .05193 | .02547 | 0.491 | .16297 | .05434 | 0.333 | .42728 | .13487 | 0.316 |
| 0.350 | .06114 | .04043 | 0.661 | .15919 | .07236 | 0.455 | .40031 | .15871 | 0.396 |
| 0.400 | .07848 | .06160 | 0.785 | .16873 | .09703 | 0.575 | .39329 | .18932 | 0.481 |
| 0.450 | .10384 | .08968 | 0.864 | .18948 | .12871 | 0.679 | .40233 | .22677 | 0.564 |
| 0.500 | .13683 | .12468 | 0.911 | .21961 | .16703 | 0.761 | .42349 | .26994 | 0.637 |
| 0.550 | .17643 | .16583 | 0.940 | .25702 | .21082 | 0.820 | .45284 | .31683 | 0.700 |
| 0.600 | .22107 | .21172 | 0.958 | .29937 | .25830 | 0.863 | .48667 | .36496 | 0.750 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | .87414 | .30463 | 0.348 | | | | | | |
| 0.350 | .83688 | .34576 | 0.413 | 1.4244 | .64741 | 0.455 | | | |
| 0.400 | .81615 | .38843 | 0.476 | 1.4165 | .71656 | 0.506 | 2.0548 | 1.1102 | 0.540 |
| 0.450 | .81010 | .43401 | 0.536 | 1.4036 | .77334 | 0.551 | 2.0419 | 1.1788 | 0.577 |
| 0.500 | .81469 | .48117 | 0.591 | 1.3858 | .81972 | 0.592 | 1.9940 | 1.2126 | 0.608 |
| 0.550 | .82508 | .52720 | 0.639 | 1.3619 | .85307 | 0.626 | 1.9195 | 1.2166 | 0.634 |
| 0.600 | .83683 | .56917 | 0.680 | 1.3308 | .87288 | 0.656 | 1.8268 | 1.1959 | 0.655 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.5641 | 1.5426 | 0.602 | | | | | | |
| 0.500 | 2.4803 | 1.5556 | 0.627 | 2.8029 | 1.8070 | 0.645 | | | |
| 0.550 | 2.3511 | 1.5223 | 0.647 | 2.6312 | 1.7428 | 0.662 | 2.7972 | 1.8905 | 0.676 |
| 0.600 | 2.1962 | 1.4564 | 0.663 | 2.4314 | 1.6423 | 0.675 | 2.5727 | 1.7703 | 0.688 |

| $R$ microns | Wave-length = 3.00 microns | | | $M_1 = 4.14\text{--}3.62\,i$ | | | $M_2 = 1.42$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .01634 | .00007 | 0.004 | | | | | | |
| 0.075 | .00852 | .00017 | 0.020 | .03362 | .00047 | 0.014 | | | |
| 0.100 | .00533 | .00041 | 0.077 | .02256 | .00076 | 0.034 | .06566 | .00215 | 0.033 |
| 0.150 | .00408 | .00178 | 0.437 | .01310 | .00226 | 0.172 | .04072 | .00394 | 0.097 |
| 0.200 | .00677 | .00541 | 0.799 | .01255 | .00604 | 0.481 | .03119 | .00814 | 0.261 |
| 0.250 | .01388 | .01296 | 0.934 | .01821 | .01378 | 0.757 | .03236 | .01640 | 0.507 |
| 0.300 | .02715 | .02647 | 0.975 | .03078 | .02749 | 0.893 | .04267 | .03074 | 0.721 |
| 0.350 | .04866 | .04813 | 0.989 | .05197 | .04938 | 0.950 | .06276 | .05332 | 0.850 |
| 0.400 | .08038 | .07994 | 0.995 | .08357 | .08144 | 0.975 | .09392 | .08613 | 0.917 |
| 0.450 | .12362 | .12324 | 0.997 | .12680 | .12499 | 0.986 | .13706 | .13044 | 0.952 |
| 0.500 | .17853 | .17821 | 0.998 | .18175 | .18019 | 0.991 | .19208 | .18632 | 0.970 |
| 0.550 | .24382 | .24354 | 0.999 | .24707 | .24569 | 0.994 | .25745 | .25238 | 0.980 |
| 0.600 | .31707 | .31682 | 0.999 | .32030 | .31909 | 0.996 | .33061 | .32612 | 0.986 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .09298 | .00804 | 0.086 | | | | | | |
| 0.200 | .06999 | .01295 | 0.185 | .23908 | .03903 | 0.163 | | | |
| 0.250 | .06277 | .02214 | 0.353 | .20720 | .05248 | 0.253 | .50658 | .12867 | 0.254 |
| 0.300 | .06842 | .03762 | 0.550 | .19543 | .07261 | 0.372 | .48061 | .16231 | 0.338 |
| 0.350 | .08611 | .06155 | 0.715 | .20260 | .10188 | 0.503 | .47614 | .20395 | 0.428 |
| 0.400 | .11618 | .09580 | 0.825 | .22709 | .14201 | 0.625 | .49282 | .25609 | 0.520 |
| 0.450 | .15899 | .14158 | 0.891 | .26734 | .19370 | 0.725 | .52794 | .31883 | 0.604 |
| 0.500 | .21399 | .19881 | 0.929 | .32113 | .25621 | 0.798 | .57716 | .39012 | 0.676 |
| 0.550 | .27935 | .26592 | 0.952 | .38525 | .32724 | 0.849 | .63507 | .46617 | 0.734 |
| 0.600 | .35226 | .34029 | 0.966 | .45587 | .40351 | 0.885 | .69623 | .54255 | 0.779 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | .92635 | .33246 | 0.359 | | | | | | |
| 0.350 | .93917 | .40573 | 0.432 | 1.5059 | .69703 | 0.463 | | | |
| 0.400 | .96458 | .48297 | 0.501 | 1.5761 | .81911 | 0.520 | 2.1562 | 1.1775 | 0.546 |
| 0.450 | 1.0006 | .56398 | 0.564 | 1.6283 | .92514 | 0.568 | 2.2277 | 1.3060 | 0.586 |
| 0.500 | 1.0423 | .64518 | 0.619 | 1.6583 | 1.0102 | 0.609 | 2.2351 | 1.3818 | 0.618 |
| 0.550 | 1.0832 | .72122 | 0.666 | 1.6637 | 1.0701 | 0.643 | 2.1867 | 1.4066 | 0.643 |
| 0.600 | 1.1179 | .78718 | 0.704 | 1.6454 | 1.1034 | 0.671 | 2.0968 | 1.3886 | 0.662 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.6608 | 1.6108 | 0.605 | | | | | | |
| 0.500 | 2.6409 | 1.6707 | 0.633 | 2.8776 | 1.8621 | 0.647 | | | |
| 0.550 | 2.5407 | 1.6587 | 0.653 | 2.7456 | 1.8271 | 0.665 | 2.8491 | 1.9300 | 0.677 |
| 0.600 | 2.3888 | 1.5934 | 0.667 | 2.5575 | 1.7334 | 0.678 | 2.6486 | 1.8269 | 0.690 |

**37**

| $R$ microns | Wave-length = 3.00 microns | | | $M_1 = 4.14-3.62\,i$ | | | $M_2 = 1.50$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .01752 | .00008 | 0.005 | | | | | | |
| 0.075 | .00935 | .00021 | 0.023 | .03570 | .00053 | 0.015 | | | |
| 0.100 | .00596 | .00054 | 0.090 | .02459 | .00092 | 0.037 | .06870 | .00234 | 0.034 |
| 0.150 | .00496 | .00240 | 0.484 | .01493 | .00294 | 0.197 | .04481 | .00481 | 0.107 |
| 0.200 | .00889 | .00736 | 0.828 | .01538 | .00810 | 0.526 | .03606 | .01051 | 0.291 |
| 0.250 | .01882 | .01777 | 0.945 | .02375 | .01874 | 0.789 | .03978 | .02183 | 0.549 |
| 0.300 | .03735 | .03657 | 0.979 | .04157 | .03780 | 0.909 | .05531 | .04170 | 0.754 |
| 0.350 | .06760 | .06697 | 0.991 | .07152 | .06851 | 0.958 | .08426 | .07332 | 0.870 |
| 0.400 | .11252 | .11200 | 0.995 | .11638 | .11386 | 0.978 | .12885 | .11968 | 0.929 |
| 0.450 | .17408 | .17363 | 0.997 | .17799 | .17583 | 0.988 | .19057 | .18266 | 0.958 |
| 0.500 | .25236 | .25197 | 0.998 | .25636 | .25447 | 0.993 | .26918 | .26222 | 0.974 |
| 0.550 | .34519 | .34485 | 0.999 | .34926 | .34758 | 0.995 | .36223 | .35603 | 0.983 |
| 0.600 | .44907 | .44876 | 0.999 | .45311 | .45161 | 0.997 | .46599 | .46044 | 0.988 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .09908 | .00911 | 0.092 | | | | | | |
| 0.200 | .07813 | .01586 | 0.203 | .25162 | .04288 | 0.170 | | | |
| 0.250 | .07372 | .02845 | 0.386 | .22873 | .06182 | 0.270 | .53065 | .13898 | 0.262 |
| 0.300 | .08478 | .04987 | 0.588 | .22606 | .08999 | 0.398 | .52798 | .18655 | 0.353 |
| 0.350 | .11161 | .08330 | 0.746 | .24524 | .13107 | 0.534 | .54710 | .24611 | 0.450 |
| 0.400 | .15551 | .13163 | 0.846 | .28617 | .18770 | 0.656 | .58956 | .32069 | 0.544 |
| 0.450 | .21732 | .19660 | 0.905 | .34781 | .26094 | 0.750 | .65326 | .41014 | 0.628 |
| 0.500 | .29629 | .27796 | 0.938 | .42738 | .34947 | 0.818 | .73278 | .51092 | 0.697 |
| 0.550 | .38952 | .37311 | 0.958 | .52020 | .44952 | 0.864 | .82063 | .61681 | 0.752 |
| 0.600 | .49297 | .47817 | 0.970 | .62092 | .55627 | 0.896 | .90963 | .72136 | 0.793 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | .96918 | .35496 | 0.366 | | | | | | |
| 0.350 | 1.0286 | .45755 | 0.445 | 1.5718 | .73647 | 0.469 | | | |
| 0.400 | 1.1004 | .56843 | 0.517 | 1.7113 | .90461 | 0.529 | 2.2362 | 1.2298 | 0.550 |
| 0.450 | 1.1799 | .68464 | 0.580 | 1.8236 | 1.0542 | 0.578 | 2.3776 | 1.4066 | 0.592 |
| 0.500 | 1.2593 | .79897 | 0.634 | 1.8961 | 1.1724 | 0.618 | 2.4290 | 1.5138 | 0.623 |
| 0.550 | 1.3294 | .90243 | 0.679 | 1.9238 | 1.2510 | 0.650 | 2.3958 | 1.5491 | 0.647 |
| 0.600 | 1.3840 | .98824 | 0.714 | 1.9105 | 1.2889 | 0.675 | 2.2999 | 1.5241 | 0.663 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.7351 | 1.6622 | 0.608 | | | | | | |
| 0.500 | 2.7640 | 1.7563 | 0.635 | 2.9337 | 1.9024 | 0.648 | | | |
| 0.550 | 2.6819 | 1.7555 | 0.655 | 2.8298 | 1.8864 | 0.667 | 2.8875 | 1.9581 | 0.678 |
| 0.600 | 2.5252 | 1.6828 | 0.666 | 2.6464 | 1.7927 | 0.677 | 2.7032 | 1.8648 | 0.690 |

| $R$ microns | Wave-length = 3.00 microns | | | $M_1 = 4.14$–$3.62\,i$ | | | $M_2 = 1.70$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .02011 | .00011 | 0.005 | | | | | | |
| 0.075 | .01130 | .00033 | 0.029 | .04021 | .00067 | 0.017 | | | |
| 0.100 | .00751 | .00089 | 0.118 | .02926 | .00133 | 0.046 | .07517 | .00278 | 0.037 |
| 0.150 | .00733 | .00414 | 0.565 | .01957 | .00481 | 0.246 | .05459 | .00702 | 0.129 |
| 0.200 | .01489 | .01295 | 0.869 | .02312 | .01390 | 0.601 | .04874 | .01695 | 0.348 |
| 0.250 | .03317 | .03180 | 0.959 | .03964 | .03310 | 0.835 | .06038 | .03721 | 0.616 |
| 0.300 | .06761 | .06656 | 0.984 | .07336 | .06828 | 0.931 | .09190 | .07368 | 0.802 |
| 0.350 | .12486 | .12399 | 0.993 | .13042 | .12622 | 0.968 | .14837 | .13317 | 0.898 |
| 0.400 | .21138 | .21063 | 0.996 | .21707 | .21342 | 0.983 | .23536 | .22212 | 0.944 |
| 0.450 | .33136 | .33069 | 0.998 | .33731 | .33406 | 0.990 | .35640 | .34453 | 0.967 |
| 0.500 | .48454 | .48393 | 0.999 | .49075 | .48780 | 0.994 | .51061 | .49979 | 0.979 |
| 0.550 | .66656 | .66601 | 0.999 | .67288 | .67020 | 0.996 | .69306 | .68313 | 0.986 |
| 0.600 | .87538 | .87488 | 0.999 | .88158 | .87914 | 0.997 | .90134 | .89221 | 0.990 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .11286 | .01160 | 0.103 | | | | | | |
| 0.200 | .09836 | .02336 | 0.237 | .27970 | .05144 | 0.184 | | | |
| 0.250 | .10298 | .04573 | 0.444 | .28192 | .08482 | 0.301 | .58423 | .16133 | 0.276 |
| 0.300 | .13093 | .08481 | 0.648 | .30745 | .13607 | 0.443 | .64386 | .24457 | 0.380 |
| 0.350 | .18643 | .14740 | 0.791 | .36493 | .21260 | 0.583 | .73362 | .35456 | 0.483 |
| 0.400 | .27416 | .23983 | 0.875 | .45878 | .32021 | 0.698 | .85734 | .49535 | 0.578 |
| 0.450 | .39676 | .36575 | 0.922 | .58923 | .46084 | 0.782 | 1.0114 | .66430 | 0.657 |
| 0.500 | .55244 | .52396 | 0.948 | .75089 | .63052 | 0.840 | 1.1839 | .85069 | 0.719 |
| 0.550 | .73541 | .70904 | 0.964 | .93443 | .82072 | 0.878 | 1.3597 | 1.0397 | 0.765 |
| 0.600 | .94271 | .91815 | 0.974 | 1.1348 | 1.0266 | 0.905 | 1.5315 | 1.2233 | 0.799 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 1.0632 | .40285 | 0.379 | | | | | | |
| 0.350 | 1.2422 | .57750 | 0.465 | 1.7129 | .81832 | 0.478 | | | |
| 0.400 | 1.4440 | .77729 | 0.538 | 2.0186 | 1.0916 | 0.541 | 2.4021 | 1.3341 | 0.555 |
| 0.450 | 1.6473 | .98625 | 0.599 | 2.2763 | 1.3387 | 0.588 | 2.6942 | 1.6084 | 0.597 |
| 0.500 | 1.8264 | 1.1804 | 0.646 | 2.4370 | 1.5164 | 0.622 | 2.8262 | 1.7639 | 0.624 |
| 0.550 | 1.9618 | 1.3380 | 0.682 | 2.4867 | 1.6042 | 0.645 | 2.7941 | 1.7863 | 0.639 |
| 0.600 | 2.0529 | 1.4536 | 0.708 | 2.4493 | 1.6128 | 0.658 | 2.6484 | 1.7063 | 0.644 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.8835 | 1.7602 | 0.610 | | | | | | |
| 0.500 | 3.0051 | 1.9118 | 0.636 | 3.0423 | 1.9756 | 0.649 | | | |
| 0.550 | 2.9400 | 1.9094 | 0.649 | 2.9857 | 1.9840 | 0.664 | 2.9601 | 2.0068 | 0.678 |
| 0.600 | 2.7467 | 1.7906 | 0.652 | 2.7961 | 1.8695 | 0.669 | 2.8008 | 1.9212 | 0.686 |

| $R$ microns | Wave-length = 3.00 microns | | | $M_1 = 4.14-3.62\,i$ | | | $M_2 = 1.90$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .02218 | .00013 | 0.006 | | | | | | |
| 0.075 | .01296 | .00045 | 0.035 | .04379 | .00079 | 0.018 | | | |
| 0.100 | .00891 | .00125 | 0.141 | .03326 | .00173 | 0.052 | .08024 | .00313 | 0.039 |
| 0.150 | .00978 | .00601 | 0.615 | .02404 | .00677 | 0.282 | .06342 | .00914 | 0.144 |
| 0.200 | .02144 | .01910 | 0.891 | .03128 | .02020 | 0.646 | .06141 | .02367 | 0.385 |
| 0.250 | .04927 | .04758 | 0.966 | .05723 | .04913 | 0.859 | .08248 | .05399 | 0.655 |
| 0.300 | .10244 | .10109 | 0.987 | .10971 | .10322 | 0.941 | .13310 | .10986 | 0.825 |
| 0.350 | .19242 | .19127 | 0.994 | .19969 | .19411 | 0.972 | .22314 | .20297 | 0.910 |
| 0.400 | .33080 | .32976 | 0.997 | .33846 | .33343 | 0.985 | .36314 | .34484 | 0.950 |
| 0.450 | .52534 | .52438 | 0.998 | .53355 | .52889 | 0.991 | .55994 | .54286 | 0.969 |
| 0.500 | .77733 | .77643 | 0.999 | .78598 | .78161 | 0.994 | .81375 | .79758 | 0.980 |
| 0.550 | 1.0893 | 1.0884 | 0.999 | 1.0980 | 1.0939 | 0.996 | 1.1260 | 1.1106 | 0.986 |
| 0.600 | 1.4968 | 1.4960 | 0.999 | 1.5052 | 1.5013 | 0.997 | 1.5320 | 1.5172 | 0.990 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .12452 | .01375 | 0.110 | | | | | | |
| 0.200 | .11763 | .03068 | 0.261 | .30356 | .05850 | 0.193 | | | |
| 0.250 | .13331 | .06386 | 0.479 | .33263 | .10624 | 0.319 | .62975 | .17930 | 0.285 |
| 0.300 | .18175 | .12334 | 0.679 | .39198 | .18276 | 0.466 | .75357 | .29673 | 0.394 |
| 0.350 | .27255 | .22092 | 0.811 | .49734 | .30041 | 0.604 | .92538 | .46014 | 0.497 |
| 0.400 | .41534 | .36788 | 0.886 | .65855 | .46933 | 0.713 | 1.1483 | .67410 | 0.587 |
| 0.450 | .61571 | .57093 | 0.927 | .87710 | .69246 | 0.789 | 1.4121 | .93003 | 0.659 |
| 0.500 | .87224 | .82936 | 0.951 | 1.1448 | .96296 | 0.841 | 1.6926 | 1.2054 | 0.712 |
| 0.550 | 1.1849 | 1.1435 | 0.965 | 1.4550 | 1.2744 | 0.876 | 1.9716 | 1.4803 | 0.751 |
| 0.600 | 1.5879 | 1.5474 | 0.975 | 1.8378 | 1.6557 | 0.901 | 2.2737 | 1.7745 | 0.780 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | 1.1420 | .44046 | 0.386 | | | | | | |
| 0.350 | 1.4384 | .68049 | 0.473 | 1.8276 | .88045 | 0.482 | | | |
| 0.400 | 1.7778 | .96455 | 0.543 | 2.2821 | 1.2391 | 0.543 | 2.5310 | 1.4092 | 0.557 |
| 0.450 | 2.1064 | 1.2535 | 0.595 | 2.6614 | 1.5529 | 0.583 | 2.9396 | 1.7472 | 0.594 |
| 0.500 | 2.3665 | 1.4951 | 0.632 | 2.8620 | 1.7367 | 0.607 | 3.1076 | 1.9047 | 0.613 |
| 0.550 | 2.5336 | 1.6625 | 0.656 | 2.8723 | 1.7683 | 0.616 | 3.0270 | 1.8622 | 0.615 |
| 0.600 | 2.6472 | 1.7782 | 0.672 | 2.7716 | 1.6999 | 0.613 | 2.8000 | 1.6893 | 0.603 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.9931 | 1.8256 | 0.610 | | | | | | |
| 0.500 | 3.1737 | 2.0010 | 0.630 | 3.1190 | 2.0203 | 0.648 | | | |
| 0.550 | 3.0928 | 1.9613 | 0.634 | 3.0860 | 2.0275 | 0.657 | 3.0098 | 2.0334 | 0.676 |
| 0.600 | 2.8394 | 1.7669 | 0.622 | 2.8720 | 1.8695 | 0.651 | 2.8601 | 1.9376 | 0.677 |

| $R$ microns | Wave-length = 3.20 microns | | | $M_1 = 4.26-3.76\,i$ | | | $M_2 = 1.10$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .00965 | .00002 | 0.002 | | | | | | |
| 0.075 | .00447 | .00002 | 0.005 | .02096 | .00017 | 0.008 | | | |
| 0.100 | .00257 | .00003 | 0.013 | .01235 | .00015 | 0.012 | .04430 | .00095 | 0.021 |
| 0.150 | .00125 | .00011 | 0.086 | .00579 | .00021 | 0.037 | .02142 | .00077 | 0.036 |
| 0.200 | .00094 | .00029 | 0.309 | .00359 | .00041 | 0.114 | .01282 | .00092 | 0.071 |
| 0.250 | .00107 | .00065 | 0.609 | .00286 | .00080 | 0.278 | .00907 | .00132 | 0.145 |
| 0.300 | .00157 | .00128 | 0.813 | .00290 | .00144 | 0.499 | .00747 | .00201 | 0.269 |
| 0.350 | .00247 | .00225 | 0.911 | .00352 | .00244 | 0.693 | .00714 | .00306 | 0.429 |
| 0.400 | .00381 | .00364 | 0.955 | .00469 | .00385 | 0.821 | .00770 | .00453 | 0.589 |
| 0.450 | .00564 | .00550 | 0.976 | .00641 | .00573 | 0.895 | .00902 | .00648 | 0.718 |
| 0.500 | .00798 | .00786 | 0.986 | .00867 | .00812 | 0.936 | .01101 | .00892 | 0.810 |
| 0.550 | .01082 | .01073 | 0.991 | .01146 | .01100 | 0.959 | .01361 | .01185 | 0.871 |
| 0.600 | .01414 | .01406 | 0.994 | .01474 | .01434 | 0.973 | .01674 | .01524 | 0.911 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .05726 | .00277 | 0.048 | | | | | | |
| 0.200 | .03444 | .00248 | 0.072 | .15616 | .01653 | 0.106 | | | |
| 0.250 | .02366 | .00273 | 0.115 | .10728 | .01401 | 0.131 | .33576 | .06045 | 0.180 |
| 0.300 | .01820 | .00341 | 0.187 | .07980 | .01324 | 0.166 | .25123 | .05171 | 0.206 |
| 0.350 | .01556 | .00450 | 0.289 | .06359 | .01363 | 0.214 | .19798 | .04690 | 0.237 |
| 0.400 | .01465 | .00605 | 0.413 | .05388 | .01488 | 0.276 | .16335 | .04481 | 0.274 |
| 0.450 | .01499 | .00808 | 0.539 | .04823 | .01685 | 0.349 | .14031 | .04461 | 0.318 |
| 0.500 | .01630 | .01061 | 0.651 | .04531 | .01944 | 0.429 | .12485 | .04574 | 0.366 |
| 0.550 | .01840 | .01363 | 0.740 | .04432 | .02256 | 0.509 | .11449 | .04785 | 0.418 |
| 0.600 | .02116 | .01709 | 0.807 | .04472 | .02613 | 0.584 | .10768 | .05064 | 0.470 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | .60889 | .16765 | 0.275 | | | | | | |
| 0.350 | .48533 | .14615 | 0.301 | .98855 | .37935 | 0.384 | | | |
| 0.400 | .40024 | .13160 | 0.329 | .82630 | .33634 | 0.407 | 1.4768 | .71292 | 0.483 |
| 0.450 | .34043 | .12219 | 0.359 | .70558 | .30352 | 0.430 | 1.2732 | .63845 | 0 501 |
| 0.500 | .29753 | .11642 | 0.391 | .61463 | .27879 | 0.454 | 1.1117 | .57724 | 0.519 |
| 0.550 | .26615 | .11317 | 0.425 | .54490 | .26002 | 0.477 | .98277 | .52710 | 0.536 |
| 0.600 | .24278 | .11161 | 0.460 | .49035 | .24549 | 0.501 | .87832 | .48554 | 0.553 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 1.9942 | 1.1147 | 0.559 | | | | | | |
| 0.500 | 1.7455 | 1.0002 | 0.573 | 2.3945 | 1.4700 | 0.614 | | | |
| 0.550 | 1.5401 | .90243 | 0.586 | 2.1065 | 1.3149 | 0.624 | 2.5896 | 1.6923 | 0.653 |
| 0.600 | 1.3696 | .81907 | 0.598 | 1.8643 | 1.1811 | 0.634 | 2.2815 | 1.5084 | 0.661 |

**41**

| R microns | Wave-length = 3.20 microns | | | M₁ = 4.26-3.76 i | | | M₂ = 1.33 | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .01318 | .00004 | 0.003 | | | | | | |
| 0.075 | .00666 | .00009 | 0.014 | .02737 | .00031 | 0.011 | | | |
| 0.100 | .00404 | .00022 | 0.053 | .01773 | .00045 | 0.025 | .05418 | .00147 | 0.027 |
| 0.150 | .00267 | .00090 | 0.339 | .00959 | .00120 | 0.125 | .03128 | .00232 | 0.074 |
| 0.200 | .00373 | .00271 | 0.725 | .00803 | .00309 | 0.385 | .02209 | .00441 | 0.200 |
| 0.250 | .00711 | .00643 | 0.904 | .01022 | .00691 | 0.677 | .02048 | .00850 | 0.415 |
| 0.300 | .01354 | .01304 | 0.963 | .01604 | .01364 | 0.850 | .02431 | .01555 | 0.640 |
| 0.350 | .02398 | .02360 | 0.984 | .02618 | .02432 | 0.929 | .03338 | .02659 | 0.797 |
| 0.400 | .03943 | .03912 | 0.992 | .04147 | .03997 | 0.964 | .04811 | .04263 | 0.886 |
| 0.450 | .06068 | .06042 | 0.996 | .06265 | .06140 | 0.980 | .06902 | .06445 | 0.934 |
| 0.500 | .08815 | .08793 | 0.998 | .09009 | .08903 | 0.988 | .09636 | .09246 | 0.959 |
| 0.550 | .12169 | .12150 | 0.998 | .12364 | .12272 | 0.993 | .12988 | .12649 | 0.974 |
| 0.600 | .16059 | .16042 | 0.999 | .16254 | .16173 | 0.995 | .16876 | .16578 | 0.982 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .07421 | .00522 | 0.070 | | | | | | |
| 0.200 | .05204 | .00755 | 0.145 | .19102 | .02623 | 0.137 | | | |
| 0.250 | .04287 | .01206 | 0.281 | .15376 | .03206 | 0.209 | .40225 | .08773 | 0.218 |
| 0.300 | .04244 | .01966 | 0.463 | .13453 | .04141 | 0.308 | .35369 | .10167 | 0.287 |
| 0.350 | .04910 | .03136 | 0.639 | .12935 | .05538 | 0.428 | .32634 | .11985 | 0.367 |
| 0.400 | .06250 | .04812 | 0.770 | .13554 | .07482 | 0.552 | .31695 | .14385 | 0.454 |
| 0.450 | .08273 | .07070 | 0.855 | .15150 | .10027 | 0.662 | .32227 | .17411 | 0.540 |
| 0.500 | .10974 | .09944 | 0.906 | .17601 | .13184 | 0.749 | .33937 | .21029 | 0.620 |
| 0.550 | .14310 | .13414 | 0.937 | .20779 | .16906 | 0.814 | .36541 | .25133 | 0.688 |
| 0.600 | .18186 | .17395 | 0.956 | .24523 | .21082 | 0.860 | .39755 | .29555 | 0.743 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | .72947 | .23015 | 0.315 | | | | | | |
| 0.350 | .68694 | .26108 | 0.380 | 1.1881 | .49904 | 0.420 | | | |
| 0.400 | .66249 | .29466 | 0.445 | 1.1729 | .55625 | 0.474 | 1.7589 | .89914 | 0.511 |
| 0.450 | .65423 | .33259 | 0.508 | 1.1619 | .60853 | 0.524 | 1.7627 | .97349 | 0.552 |
| 0.500 | .65889 | .37451 | 0.568 | 1.1547 | .65675 | 0.569 | 1.7462 | 1.0260 | 0.588 |
| 0.550 | .67254 | .41873 | 0.623 | 1.1488 | .69968 | 0.609 | 1.7123 | 1.0581 | 0.618 |
| 0.600 | .69118 | .46290 | 0.670 | 1.1414 | .73532 | 0.644 | 1.6636 | 1.0710 | 0.644 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.3159 | 1.3424 | 0.580 | | | | | | |
| 0.500 | 2.2870 | 1.3930 | 0.609 | 2.6903 | 1.6913 | 0.629 | | | |
| 0.550 | 2.2171 | 1.4042 | 0.633 | 2.5850 | 1.6790 | 0.650 | 2.8220 | 1.8742 | 0.664 |
| 0.600 | 2.1180 | 1.3833 | 0.653 | 2.4405 | 1.6251 | 0.666 | 2.6463 | 1.7968 | 0.679 |

| $R$ microns | Wave-length = 3.20 microns | | | $M_1 = 4.26-3.76\,i$ | | | $M_2 = 1.42$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .01443 | .00005 | 0.004 | | | | | | |
| 0.075 | .00751 | .00013 | 0.017 | .02959 | .00037 | 0.012 | | | |
| 0.100 | .00466 | .00032 | 0.068 | .01979 | .00059 | 0.030 | .05746 | .00166 | 0.029 |
| 0.150 | .00340 | .00138 | 0.405 | .01126 | .00174 | 0.155 | .03523 | .00304 | 0.086 |
| 0.200 | .00537 | .00418 | 0.779 | .01035 | .00467 | 0.451 | .02634 | .00627 | 0.238 |
| 0.250 | .01083 | .01003 | 0.926 | .01450 | .01065 | 0.735 | .02646 | .01265 | 0.478 |
| 0.300 | .02111 | .02053 | 0.972 | .02414 | .02130 | 0.883 | .03402 | .02377 | 0.699 |
| 0.350 | .03792 | .03746 | 0.988 | .04063 | .03841 | 0.945 | .04945 | .04140 | 0.837 |
| 0.400 | .06297 | .06259 | 0.994 | .06555 | .06373 | 0.972 | .07390 | .06728 | 0.911 |
| 0.450 | .09767 | .09735 | 0.997 | .10022 | .09869 | 0.985 | .10843 | .10283 | 0.948 |
| 0.500 | .14272 | .14244 | 0.998 | .14529 | .14397 | 0.991 | .15354 | .14869 | 0.968 |
| 0.550 | .19776 | .19752 | 0.999 | .20037 | .19921 | 0.994 | .20872 | .20444 | 0.980 |
| 0.600 | .26133 | .26112 | 0.999 | .26397 | .26294 | 0.996 | .27236 | .26856 | 0.986 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .08035 | .00618 | 0.077 | | | | | | |
| 0.200 | .05946 | .00994 | 0.167 | .20327 | .02971 | 0.146 | | | |
| 0.250 | .05204 | .01700 | 0.327 | .17290 | .03986 | 0.231 | .42520 | .09712 | 0.228 |
| 0.300 | .05535 | .02897 | 0.523 | .15989 | .05519 | 0.345 | .39510 | .12212 | 0.309 |
| 0.350 | .06849 | .04760 | 0.695 | .16291 | .07777 | 0.477 | .38463 | .15370 | 0.400 |
| 0.400 | .09181 | .07459 | 0.812 | .18061 | .10920 | 0.605 | .39334 | .19428 | 0.494 |
| 0.450 | .12593 | .11129 | 0.884 | .21204 | .15059 | 0.710 | .41943 | .24478 | 0.584 |
| 0.500 | .17100 | .15827 | 0.926 | .25607 | .20212 | 0.789 | .46018 | .30463 | 0.662 |
| 0.550 | .22627 | .21502 | 0.950 | .31090 | .26279 | 0.845 | .51200 | .37183 | 0.726 |
| 0.600 | .28994 | .27989 | 0.965 | .37385 | .33047 | 0.884 | .57068 | .44320 | 0.777 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | .77025 | .25100 | 0.326 | | | | | | |
| 0.350 | .76639 | .30622 | 0.400 | 1.2538 | .53774 | 0.429 | | | |
| 0.400 | .77814 | .36674 | 0.471 | 1.3035 | .63821 | 0.490 | 1.8481 | .95689 | 0.518 |
| 0.450 | .80463 | .43390 | 0.539 | 1.3511 | .73386 | 0.543 | 1.9340 | 1.0887 | 0.563 |
| 0.500 | .84270 | .50633 | 0.601 | 1.3930 | .82196 | 0.590 | 1.9816 | 1.1894 | 0.600 |
| 0.550 | .88743 | .58061 | 0.654 | 1.4248 | .89815 | 0.630 | 1.9894 | 1.2551 | 0.631 |
| 0.600 | .93335 | .65231 | 0.699 | 1.4428 | .95821 | 0.664 | 1.9609 | 1.2857 | 0.656 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.4125 | 1.4093 | 0.584 | | | | | | |
| 0.500 | 2.4589 | 1.5147 | 0.616 | 2.7746 | 1.7526 | 0.632 | | | |
| 0.550 | 2.4345 | 1.5603 | 0.641 | 2.7228 | 1.7802 | 0.654 | 2.8855 | 1.9221 | 0.666 |
| 0.600 | 2.3535 | 1.5533 | 0.660 | 2.6020 | 1.7435 | 0.670 | 2.7439 | 1.8701 | 0.682 |

| R microns | Wave-length = 3.20 microns | | | $M_1 = 4.26 - 3.76\,i$ | | | $M_2 = 1.50$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .01548 | .00006 | 0.004 | | | | | | |
| 0.075 | .00825 | .00016 | 0.020 | .03143 | .00041 | 0.013 | | | |
| 0.100 | .00521 | .00042 | 0.080 | .02156 | .00071 | 0.033 | .06011 | .00181 | 0.030 |
| 0.150 | .00410 | .00185 | 0.452 | .01279 | .00227 | 0.177 | .03869 | .00371 | 0.096 |
| 0.200 | .00701 | .00568 | 0.810 | .01259 | .00624 | 0.496 | .03030 | .00809 | 0.267 |
| 0.250 | .01463 | .01373 | 0.938 | .01880 | .01446 | 0.769 | .03230 | .01681 | 0.520 |
| 0.300 | .02896 | .02828 | 0.977 | .03245 | .02922 | 0.900 | .04381 | .03216 | 0.734 |
| 0.350 | .05250 | .05197 | 0.990 | .05570 | .05313 | 0.954 | .06605 | .05676 | 0.859 |
| 0.400 | .08786 | .08742 | 0.995 | .09096 | .08883 | 0.977 | .10094 | .09321 | 0.923 |
| 0.450 | .13715 | .13677 | 0.997 | .14026 | .13844 | 0.987 | .15026 | .14362 | 0.956 |
| 0.500 | .20134 | .20101 | 0.998 | .20453 | .20294 | 0.992 | .21473 | .20889 | 0.973 |
| 0.550 | .27976 | .27947 | 0.999 | .28303 | .28161 | 0.995 | .29344 | .28825 | 0.982 |
| 0.600 | .37006 | .36980 | 0.999 | .37338 | .37211 | 0.997 | .38390 | .37923 | 0.988 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .08552 | .00700 | 0.082 | | | | | | |
| 0.200 | .06612 | .01216 | 0.184 | .21348 | .03262 | 0.153 | | | |
| 0.250 | .06073 | .02182 | 0.359 | .18997 | .04688 | 0.247 | .44417 | .10481 | 0.236 |
| 0.300 | .06807 | .03831 | 0.563 | .18369 | .06827 | 0.372 | .43175 | .14016 | 0.325 |
| 0.350 | .08818 | .06424 | 0.729 | .19569 | .09981 | 0.510 | .43896 | .18517 | 0.422 |
| 0.400 | .12222 | .10218 | 0.836 | .22598 | .14401 | 0.637 | .46738 | .24305 | 0.520 |
| 0.450 | .17145 | .15416 | 0.899 | .27437 | .20256 | 0.738 | .51634 | .31505 | 0.610 |
| 0.500 | .23621 | .22096 | 0.935 | .33977 | .27565 | 0.811 | .58303 | .40014 | 0.686 |
| 0.550 | .31528 | .30163 | 0.957 | .41961 | .36158 | 0.862 | .66264 | .49492 | 0.747 |
| 0.600 | .40588 | .39355 | 0.970 | .50996 | .45691 | 0.896 | .74925 | .59433 | 0.793 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | .80370 | .26786 | 0.333 | | | | | | |
| 0.350 | .83588 | .34528 | 0.413 | 1.3069 | .56863 | 0.435 | | | |
| 0.400 | .88434 | .43228 | 0.489 | 1.4153 | .70734 | 0.500 | 1.9190 | 1.0021 | 0.522 |
| 0.450 | .94757 | .52917 | 0.558 | 1.5190 | .84334 | 0.555 | 2.0753 | 1.1821 | 0.570 |
| 0.500 | 1.0211 | .63275 | 0.620 | 1.6083 | .96853 | 0.602 | 2.1783 | 1.3230 | 0.607 |
| 0.550 | 1.0980 | .73694 | 0.671 | 1.6748 | 1.0738 | 0.641 | 2.2192 | 1.4137 | 0.637 |
| 0.600 | 1.1707 | .83467 | 0.713 | 1.7132 | 1.1523 | 0.673 | 2.2017 | 1.4526 | 0.660 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.4876 | 1.4604 | 0.587 | | | | | | |
| 0.500 | 2.5942 | 1.6083 | 0.620 | 2.8387 | 1.7983 | 0.633 | | | |
| 0.550 | 2.6038 | 1.6779 | 0.644 | 2.8269 | 1.8542 | 0.656 | 2.9329 | 1.9569 | 0.667 |
| 0.600 | 2.5311 | 1.6752 | 0.662 | 2.7205 | 1.8259 | 0.671 | 2.8154 | 1.9214 | 0.682 |

| R microns | Wave-length = 3.20 microns | | | $M_1 = 4.26-3.76\,i$ | | | $M_2 = 1.70$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .01779 | .00008 | 0.005 | | | | | | |
| 0.075 | .00996 | .00025 | 0.025 | .03541 | .00052 | 0.015 | | | |
| 0.100 | .00653 | .00069 | 0.105 | .02565 | .00103 | 0.040 | .06574 | .00214 | 0.033 |
| 0.150 | .00599 | .00319 | 0.532 | .01664 | .00371 | 0.223 | .04695 | .00540 | 0.115 |
| 0.200 | .01166 | .00996 | 0.855 | .01870 | .01069 | 0.575 | .04053 | .01301 | 0.321 |
| 0.250 | .02563 | .02445 | 0.954 | .03106 | .02543 | 0.819 | .04837 | .02853 | 0.590 |
| 0.300 | .05207 | .05117 | 0.983 | .05678 | .05246 | 0.924 | .07193 | .05651 | 0.786 |
| 0.350 | .09627 | .09554 | 0.992 | .10074 | .09720 | 0.965 | .11511 | .10238 | 0.889 |
| 0.400 | .16383 | .16320 | 0.996 | .16832 | .16529 | 0.982 | .18275 | .17177 | 0.940 |
| 0.450 | .25936 | .25880 | 0.998 | .26404 | .26135 | 0.990 | .27901 | .26923 | 0.965 |
| 0.500 | .38479 | .38429 | 0.999 | .38970 | .38727 | 0.994 | .40539 | .39651 | 0.978 |
| 0.550 | .53826 | .53780 | 0.999 | .54337 | .54114 | 0.996 | .55963 | .55147 | 0.985 |
| 0.600 | .71581 | .71539 | 0.999 | .72098 | .71894 | 0.997 | .73741 | .72987 | 0.990 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .09714 | .00890 | 0.092 | | | | | | |
| 0.200 | .08260 | .01787 | 0.216 | .23624 | .03908 | 0.165 | | | |
| 0.250 | .08377 | .03494 | 0.417 | .23188 | .06413 | 0.277 | .48629 | .12148 | 0.250 |
| 0.300 | .10367 | .06480 | 0.625 | .24643 | .10278 | 0.417 | .52101 | .18325 | 0.352 |
| 0.350 | .14544 | .11294 | 0.777 | .28690 | .16106 | 0.561 | .58113 | .26607 | 0.458 |
| 0.400 | .21322 | .18494 | 0.867 | .35756 | .24450 | 0.684 | .67196 | .37528 | 0.558 |
| 0.450 | .31055 | .28520 | 0.918 | .46053 | .35677 | 0.775 | .79451 | .51260 | 0.645 |
| 0.500 | .43833 | .41514 | 0.947 | .59451 | .49778 | 0.837 | .94375 | .67421 | 0.714 |
| 0.550 | .59367 | .57220 | 0.964 | .75400 | .66290 | 0.879 | 1.1093 | .85068 | 0.767 |
| 0.600 | .77169 | .75170 | 0.974 | .93189 | .84545 | 0.907 | 1.2801 | 1.0313 | 0.806 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | .87717 | .30380 | 0.346 | | | | | | |
| 0.350 | 1.0023 | .43618 | 0.435 | 1.4216 | .63318 | 0.445 | | | |
| 0.400 | 1.1558 | .59486 | 0.515 | 1.6737 | .86192 | 0.515 | 2.0679 | 1.0941 | 0.529 |
| 0.450 | 1.3290 | .77496 | 0.583 | 1.9234 | 1.0968 | 0.570 | 2.3840 | 1.3781 | 0.578 |
| 0.500 | 1.5073 | .96379 | 0.639 | 2.1323 | 1.3073 | 0.613 | 2.6084 | 1.5990 | 0.613 |
| 0.550 | 1.6725 | 1.1434 | 0.684 | 2.2715 | 1.4653 | 0.645 | 2.7028 | 1.7206 | 0.637 |
| 0.600 | 1.8106 | 1.2988 | 0.717 | 2.3336 | 1.5578 | 0.668 | 2.6747 | 1.7397 | 0.650 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.6404 | 1.5605 | 0.591 | | | | | | |
| 0.500 | 2.8708 | 1.7895 | 0.623 | 2.9651 | 1.8841 | 0.635 | | | |
| 0.550 | 2.9363 | 1.8896 | 0.644 | 3.0275 | 1.9859 | 0.656 | 3.0240 | 2.0196 | 0.668 |
| 0.600 | 2.8529 | 1.8645 | 0.654 | 2.9339 | 1.9542 | 0.666 | 2.9476 | 2.0056 | 0.680 |

| R microns | Wave-length = 3.20 microns | | | $M_1$ = 4.26–3.76 $i$ | | | $M_2$ = 1.90 | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .01966 | .00010 | 0.005 | | | | | | |
| 0.075 | .01145 | .00035 | 0.030 | .03859 | .00061 | 0.016 | | | |
| 0.100 | .00774 | .00097 | 0.125 | .02916 | .00134 | 0.046 | .07017 | .00242 | 0.034 |
| 0.150 | .00793 | .00463 | 0.583 | .02033 | .00521 | 0.256 | .05439 | .00703 | 0.129 |
| 0.200 | .01669 | .01466 | 0.878 | .02510 | .01550 | 0.618 | .05069 | .01813 | 0.358 |
| 0.250 | .03788 | .03643 | 0.962 | .04452 | .03760 | 0.845 | .06548 | .04125 | 0.630 |
| 0.300 | .07844 | .07730 | 0.985 | .08435 | .07888 | 0.935 | .10329 | .08382 | 0.811 |
| 0.350 | .14737 | .14641 | 0.993 | .15314 | .14851 | 0.970 | .17170 | .15505 | 0.903 |
| 0.400 | .25456 | .25370 | 0.997 | .26054 | .25643 | 0.984 | .27978 | .26488 | 0.947 |
| 0.450 | .40838 | .40760 | 0.998 | .41479 | .41100 | 0.991 | .43532 | .42153 | 0.968 |
| 0.500 | .61278 | .61205 | 0.999 | .61963 | .61609 | 0.994 | .64156 | .62856 | 0.980 |
| 0.550 | .86738 | .86669 | 0.999 | .87454 | .87119 | 0.996 | .89740 | .88503 | 0.986 |
| 0.600 | 1.1789 | 1.1782 | 0.999 | 1.1861 | 1.1829 | 0.997 | 1.2089 | 1.1971 | 0.990 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .10697 | .01055 | 0.099 | | | | | | |
| 0.200 | .09820 | .02343 | 0.239 | .25551 | .04441 | 0.174 | | | |
| 0.250 | .10746 | .04863 | 0.453 | .27157 | .08017 | 0.295 | .52198 | .13489 | 0.258 |
| 0.300 | .14248 | .09381 | 0.658 | .31101 | .13759 | 0.442 | .60517 | .22200 | 0.367 |
| 0.350 | .21062 | .16828 | 0.799 | .38684 | .22670 | 0.586 | .72690 | .34513 | 0.475 |
| 0.400 | .32031 | .28194 | 0.880 | .50856 | .35721 | 0.702 | .89504 | .51231 | 0.572 |
| 0.450 | .47856 | .44273 | 0.925 | .68141 | .53552 | 0.786 | 1.1103 | .72493 | 0.653 |
| 0.500 | .68765 | .65354 | 0.950 | .90378 | .76124 | 0.842 | 1.3619 | .97352 | 0.715 |
| 0.550 | .94533 | .91252 | 0.965 | 1.1685 | 1.0280 | 0.880 | 1.6319 | 1.2407 | 0.760 |
| 0.600 | 1.2567 | 1.2249 | 0.975 | 1.4766 | 1.3366 | 0.905 | 1.9137 | 1.5183 | 0.793 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | .93878 | .33212 | 0.354 | | | | | | |
| 0.350 | 1.1560 | .51517 | 0.446 | 1.5155 | .68281 | 0.451 | | | |
| 0.400 | 1.4251 | .74553 | 0.523 | 1.9016 | .98875 | 0.520 | 2.1857 | 1.1621 | 0.532 |
| 0.450 | 1.7223 | 1.0087 | 0.586 | 2.2909 | 1.3066 | 0.570 | 2.6360 | 1.5241 | 0.578 |
| 0.500 | 2.0108 | 1.2739 | 0.634 | 2.5969 | 1.5706 | 0.605 | 2.9472 | 1.7874 | 0.606 |
| 0.550 | 2.2535 | 1.5055 | 0.668 | 2.7617 | 1.7275 | 0.626 | 3.0434 | 1.8858 | 0.620 |
| 0.600 | 2.4408 | 1.6887 | 0.692 | 2.7925 | 1.7723 | 0.635 | 2.9514 | 1.8287 | 0.620 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.7563 | 1.6306 | 0.592 | | | | | | |
| 0.500 | 3.0770 | 1.9079 | 0.620 | 3.0569 | 1.9401 | 0.635 | | | |
| 0.550 | 3.1605 | 1.9989 | 0.632 | 3.1653 | 2.0593 | 0.651 | 3.0881 | 2.0575 | 0.666 |
| 0.600 | 3.0293 | 1.9106 | 0.631 | 3.0595 | 1.9955 | 0.652 | 3.0331 | 2.0435 | 0.674 |

| $R$ microns | Wave-length $= 3.40$ microns | | | $M_1 = 4.37-3.89\,i$ | | | $M_2 = 1.10$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .00858 | .00002 | 0.002 | | | | | | |
| 0.075 | .00397 | .00002 | 0.004 | .01859 | .00013 | 0.007 | | | |
| 0.100 | .00228 | .00003 | 0.012 | .01094 | .00012 | 0.011 | .03915 | .00074 | 0.019 |
| 0.150 | .00110 | .00008 | 0.077 | .00511 | .00017 | 0.033 | .01888 | .00060 | 0.032 |
| 0.200 | .00080 | .00023 | 0.284 | .00314 | .00032 | 0.103 | .01125 | .00072 | 0.064 |
| 0.250 | .00089 | .00052 | 0.582 | .00245 | .00063 | 0.256 | .00788 | .00104 | 0.132 |
| 0.300 | .00128 | .00102 | 0.796 | .00243 | .00115 | 0.472 | .00641 | .00159 | 0.248 |
| 0.350 | .00199 | .00180 | 0.902 | .00290 | .00195 | 0.671 | .00602 | .00244 | 0.404 |
| 0.400 | .00307 | .00292 | 0.951 | .00383 | .00309 | 0.806 | .00642 | .00363 | 0.565 |
| 0.450 | .00457 | .00445 | 0.974 | .00522 | .00463 | 0.886 | .00745 | .00522 | 0.700 |
| 0.500 | .00650 | .00640 | 0.985 | .00709 | .00660 | 0.931 | .00908 | .00724 | 0.797 |
| 0.550 | .00889 | .00881 | 0.991 | .00943 | .00902 | 0.957 | .01124 | .00970 | 0.863 |
| 0.600 | .01172 | .01165 | 0.994 | .01223 | .01188 | 0.971 | .01391 | .01260 | 0.906 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .05030 | .00217 | 0.043 | | | | | | |
| 0.200 | .03014 | .00194 | 0.064 | .13586 | .01285 | 0.095 | | | |
| 0.250 | .02059 | .00214 | 0.104 | .09293 | .01089 | 0.117 | .29005 | .04665 | 0.161 |
| 0.300 | .01571 | .00268 | 0.171 | .06876 | .01031 | 0.150 | .21586 | .03989 | 0.185 |
| 0.350 | .01328 | .00356 | 0.268 | .05446 | .01065 | 0.196 | .16920 | .03623 | 0.214 |
| 0.400 | .01237 | .00482 | 0.389 | .04583 | .01169 | 0.255 | .13886 | .03472 | 0.250 |
| 0.450 | .01254 | .00648 | 0.517 | .04076 | .01333 | 0.327 | .11868 | .03474 | 0.293 |
| 0.500 | .01356 | .00858 | 0.633 | .03809 | .01550 | 0.407 | .10515 | .03587 | 0.341 |
| 0.550 | .01529 | .01111 | 0.727 | .03713 | .01816 | 0.489 | .09614 | .03785 | 0.394 |
| 0.600 | .01764 | .01407 | 0.798 | .03745 | .02125 | 0.567 | .09030 | .04046 | 0.448 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | .52236 | .12896 | 0.247 | | | | | | |
| 0.350 | .41378 | .11237 | 0.272 | .84136 | .29415 | 0.350 | | | |
| 0.400 | .33941 | .10130 | 0.298 | .69949 | .26090 | 0.373 | 1.2612 | .56786 | 0.450 |
| 0.450 | .28737 | .09434 | 0.328 | .59489 | .23588 | 0.397 | 1.0851 | .50997 | 0.470 |
| 0.500 | .25025 | .09033 | 0.361 | .51679 | .21744 | 0.421 | .94680 | .46290 | 0.489 |
| 0.550 | .22332 | .08842 | 0.396 | .45752 | .20390 | 0.446 | .83735 | .42492 | 0.507 |
| 0.600 | .20353 | .08797 | 0.432 | .41175 | .19390 | 0.471 | .74963 | .39404 | 0.526 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 1.7500 | .93178 | 0.532 | | | | | | |
| 0.500 | 1.5358 | .84125 | 0.548 | 2.2007 | 1.3065 | 0.594 | | | |
| 0.550 | 1.3594 | .76412 | 0.562 | 1.9476 | 1.1786 | 0.605 | 2.5013 | 1.5967 | 0.638 |
| 0.600 | 1.2136 | .69864 | 0.576 | 1.7338 | 1.0676 | 0.615 | 2.2192 | 1.4357 | 0.647 |

| $R$ microns | Wave-length = 3.40 microns | | | $M_1 = 4.37-3.89\,i$ | | | $M_2 = 1.33$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .01171 | .00003 | 0.003 | | | | | | |
| 0.075 | .00591 | .00007 | 0.012 | .02427 | .00024 | 0.010 | | | |
| 0.100 | .00357 | .00017 | 0.047 | .01568 | .00035 | 0.022 | .04782 | .00115 | 0.024 |
| 0.150 | .00228 | .00071 | 0.312 | .00836 | .00094 | 0.113 | .02740 | .00182 | 0.066 |
| 0.200 | .00303 | .00213 | 0.701 | .00679 | .00243 | 0.358 | .01901 | .00345 | 0.182 |
| 0.250 | .00566 | .00506 | 0.894 | .00834 | .00544 | 0.652 | .01717 | .00667 | 0.389 |
| 0.300 | .01072 | .01029 | 0.959 | .01285 | .01075 | 0.836 | .01988 | .01224 | 0.615 |
| 0.350 | .01901 | .01868 | 0.982 | .02085 | .01924 | 0.922 | .02689 | .02099 | 0.781 |
| 0.400 | .03137 | .03111 | 0.991 | .03306 | .03176 | 0.961 | .03856 | .03382 | 0.877 |
| 0.450 | .04857 | .04835 | 0.995 | .05019 | .04911 | 0.979 | .05542 | .05147 | 0.929 |
| 0.500 | .07114 | .07095 | 0.997 | .07273 | .07181 | 0.987 | .07784 | .07448 | 0.957 |
| 0.550 | .09922 | .09906 | 0.998 | .10081 | .10002 | 0.992 | .10590 | .10298 | 0.972 |
| 0.600 | .13253 | .13239 | 0.999 | .13413 | .13343 | 0.995 | .13922 | .13666 | 0.982 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .06490 | .00408 | 0.063 | | | | | | |
| 0.200 | .04497 | .00589 | 0.131 | .16492 | .02034 | 0.123 | | | |
| 0.250 | .03637 | .00943 | 0.259 | .13097 | .02482 | 0.190 | .34380 | .06748 | 0.196 |
| 0.300 | .03524 | .01541 | 0.437 | .11286 | .03209 | 0.284 | .29759 | .07801 | 0.262 |
| 0.350 | .04004 | .02468 | 0.616 | .10687 | .04307 | 0.403 | .27062 | .09205 | 0.340 |
| 0.400 | .05046 | .03806 | 0.754 | .11061 | .05851 | 0.529 | .25966 | .11094 | 0.427 |
| 0.450 | .06664 | .05631 | 0.845 | .12277 | .07902 | 0.644 | .26189 | .13530 | 0.517 |
| 0.500 | .08873 | .07991 | 0.901 | .14253 | .10495 | 0.736 | .27499 | .16518 | 0.601 |
| 0.550 | .11665 | .10898 | 0.934 | .16910 | .13624 | 0.806 | .29690 | .20016 | 0.674 |
| 0.600 | .14991 | .14315 | 0.955 | .20147 | .17233 | 0.855 | .32558 | .23925 | 0.735 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | .61806 | .17649 | 0.286 | | | | | | |
| 0.350 | .57254 | .19983 | 0.349 | 1.0007 | .38669 | 0.386 | | | |
| 0.400 | .54523 | .22600 | 0.415 | .97656 | .43205 | 0.442 | 1.4973 | .71971 | 0.481 |
| 0.450 | .53409 | .25674 | 0.481 | .96191 | .47603 | 0.495 | 1.5010 | .78833 | 0.525 |
| 0.500 | .53636 | .29223 | 0.545 | .95599 | .52000 | 0.544 | 1.4963 | .84454 | 0.564 |
| 0.550 | .54896 | .33164 | 0.604 | .95654 | .56333 | 0.589 | 1.4839 | .88901 | 0.599 |
| 0.600 | .56868 | .37339 | 0.657 | .96047 | .60431 | 0.629 | 1.4637 | .92135 | 0.629 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.0444 | 1.1355 | 0.555 | | | | | | |
| 0.500 | 2.0460 | 1.2041 | 0.589 | 2.5025 | 1.5276 | 0.610 | | | |
| 0.550 | 2.0174 | 1.2437 | 0.616 | 2.4535 | 1.5566 | 0.634 | 2.7621 | 1.7970 | 0.651 |
| 0.600 | 1.9640 | 1.2573 | 0.640 | 2.3640 | 1.5462 | 0.654 | 2.6420 | 1.7649 | 0.668 |

| $R$ microns | Wave-length = 3.40 microns | | | $M_1 = 4.37-3.89\,i$ | | | $M_2 = 1.42$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .01284 | .00004 | 0.003 | | | | | | |
| 0.075 | .00667 | .00010 | 0.015 | .02624 | .00029 | 0.011 | | | |
| 0.100 | .00411 | .00025 | 0.060 | .01750 | .00046 | 0.026 | .05070 | .00130 | 0.026 |
| 0.150 | .00287 | .00108 | 0.376 | .00978 | .00137 | 0.140 | .03078 | .00238 | 0.077 |
| 0.200 | .00433 | .00328 | 0.758 | .00866 | .00366 | 0.422 | .02254 | .00491 | 0.218 |
| 0.250 | .00858 | .00788 | 0.918 | .01173 | .00836 | 0.713 | .02198 | .00991 | 0.451 |
| 0.300 | .01666 | .01615 | 0.969 | .01922 | .01675 | 0.872 | .02756 | .01865 | 0.677 |
| 0.350 | .02995 | .02955 | 0.987 | .03221 | .03029 | 0.940 | .03955 | .03258 | 0.824 |
| 0.400 | .04992 | .04959 | 0.993 | .05204 | .05047 | 0.970 | .05889 | .05321 | 0.904 |
| 0.450 | .07791 | .07763 | 0.996 | .07998 | .07866 | 0.984 | .08665 | .08186 | 0.945 |
| 0.500 | .11484 | .11460 | 0.998 | .11692 | .11578 | 0.990 | .12359 | .11945 | 0.966 |
| 0.550 | .16093 | .16073 | 0.999 | .16305 | .16205 | 0.994 | .16980 | .16616 | 0.979 |
| 0.600 | .21553 | .21535 | 0.999 | .21769 | .21680 | 0.996 | .22453 | .22129 | 0.986 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .07016 | .00483 | 0.069 | | | | | | |
| 0.200 | .05116 | .00775 | 0.152 | .17508 | .02302 | 0.131 | | | |
| 0.250 | .04382 | .01327 | 0.303 | .14650 | .03081 | 0.210 | .36226 | .07463 | 0.206 |
| 0.300 | .04551 | .02266 | 0.498 | .13305 | .04269 | 0.321 | .33033 | .09354 | 0.283 |
| 0.350 | .05533 | .03734 | 0.675 | .13328 | .06032 | 0.453 | .31618 | .11777 | 0.372 |
| 0.400 | .07356 | .05881 | 0.799 | .14593 | .08516 | 0.584 | .31909 | .14951 | 0.469 |
| 0.450 | .10084 | .08836 | 0.876 | .17037 | .11838 | 0.695 | .33768 | .18992 | 0.562 |
| 0.500 | .13767 | .12686 | 0.921 | .20605 | .16062 | 0.779 | .37016 | .23926 | 0.646 |
| 0.550 | .18397 | .17444 | 0.948 | .25208 | .21170 | 0.840 | .41428 | .29671 | 0.716 |
| 0.600 | .23883 | .23031 | 0.964 | .30685 | .27050 | 0.882 | .46713 | .36040 | 0.772 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | .65033 | .19231 | 0.296 | | | | | | |
| 0.350 | .63480 | .23409 | 0.369 | 1.0533 | .41668 | 0.396 | | | |
| 0.400 | .63561 | .28106 | 0.442 | 1.0816 | .49634 | 0.459 | 1.5727 | .76736 | 0.488 |
| 0.450 | .65222 | .33517 | 0.514 | 1.1163 | .57644 | 0.516 | 1.6502 | .88679 | 0.537 |
| 0.500 | .68264 | .39639 | 0.581 | 1.1549 | .65637 | 0.568 | 1.7095 | .99055 | 0.579 |
| 0.550 | .72352 | .46299 | 0.640 | 1.1940 | .73339 | 0.614 | 1.7466 | 1.0745 | 0.615 |
| 0.600 | .77059 | .53195 | 0.690 | 1.2291 | .80359 | 0.654 | 1.7594 | 1.1354 | 0.645 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.1346 | 1.1967 | 0.561 | | | | | | |
| 0.500 | 2.2152 | 1.3221 | 0.597 | 2.5907 | 1.5908 | 0.614 | | | |
| 0.550 | 2.2442 | 1.4053 | 0.626 | 2.6069 | 1.6682 | 0.640 | 2.8351 | 1.8515 | 0.653 |
| 0.600 | 2.2245 | 1.4456 | 0.650 | 2.5549 | 1.6861 | 0.660 | 2.7605 | 1.8537 | 0.672 |

| $R$ microns | Wave-length = 3.40 microns | | | $M_1 = 4.37-3.89\,i$ | | | $M_2 = 1.50$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{ext}$ | $Q_{sctr}$ | $A$ | $Q_{ect}$ | $Q_{sctr}$ | $A$ | $Q_{ext}$ | $Q_{sctr}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .01377 | .00005 | 0.004 | | | | | | |
| 0.075 | .00732 | .00013 | 0.018 | .02787 | .00032 | 0.012 | | | |
| 0.100 | .00458 | .00033 | 0.071 | .01906 | .00056 | 0.029 | .05303 | .00142 | 0.027 |
| 0.150 | .00345 | .00145 | 0.422 | .01108 | .00178 | 0.161 | .03375 | .00290 | 0.086 |
| 0.200 | .00563 | .00445 | 0.791 | .01048 | .00489 | 0.467 | .02581 | .00633 | 0.245 |
| 0.250 | .01156 | .01076 | 0.931 | .01513 | .01133 | 0.749 | .02665 | .01315 | 0.493 |
| 0.300 | .02279 | .02220 | 0.974 | .02573 | .02292 | 0.891 | .03528 | .02519 | 0.714 |
| 0.350 | .04135 | .04089 | 0.989 | .04400 | .04178 | 0.950 | .05255 | .04456 | 0.848 |
| 0.400 | .06944 | .06906 | 0.995 | .07197 | .07014 | 0.975 | .08010 | .07350 | 0.918 |
| 0.450 | .10907 | .10875 | 0.997 | .11159 | .11003 | 0.986 | .11965 | .11401 | 0.953 |
| 0.500 | .16162 | .16134 | 0.998 | .16419 | .16283 | 0.992 | .17237 | .16743 | 0.971 |
| 0.550 | .22733 | .22708 | 0.999 | .22997 | .22877 | 0.995 | .23837 | .23397 | 0.982 |
| 0.600 | .30507 | .30484 | 0.999 | .30777 | .30669 | 0.996 | .31635 | .31239 | 0.988 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .07458 | .00547 | 0.073 | | | | | | |
| 0.200 | .05670 | .00948 | 0.167 | .18353 | .02526 | 0.138 | | | |
| 0.250 | .05083 | .01701 | 0.335 | .16029 | .03620 | 0.226 | .37750 | .08048 | 0.213 |
| 0.300 | .05558 | .02990 | 0.538 | .15190 | .05271 | 0.347 | .35922 | .10720 | 0.298 |
| 0.350 | .07078 | .05028 | 0.710 | .15892 | .07725 | 0.486 | .35845 | .14163 | 0.395 |
| 0.400 | .09739 | .08034 | 0.825 | .18130 | .11204 | 0.618 | .37644 | .18671 | 0.496 |
| 0.450 | .13670 | .12207 | 0.893 | .21914 | .15888 | 0.725 | .41304 | .24419 | 0.591 |
| 0.500 | .18959 | .17674 | 0.932 | .27226 | .21875 | 0.803 | .46689 | .31439 | 0.673 |
| 0.550 | .25592 | .24445 | 0.955 | .33953 | .29126 | 0.858 | .53527 | .39590 | 0.740 |
| 0.600 | .33421 | .32384 | 0.969 | .41856 | .37451 | 0.895 | .61413 | .48562 | 0.791 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | .67677 | .20511 | 0.303 | | | | | | |
| 0.350 | .68918 | .26372 | 0.383 | 1.0958 | .44067 | 0.402 | | | |
| 0.400 | .71857 | .33120 | 0.461 | 1.1719 | .55089 | 0.470 | 1.6329 | .80491 | 0.493 |
| 0.450 | .76478 | .40931 | 0.535 | 1.2546 | .66531 | 0.530 | 1.7749 | .96787 | 0.545 |
| 0.500 | .82572 | .49735 | 0.602 | 1.3382 | .78026 | 0.583 | 1.8924 | 1.1136 | 0.588 |
| 0.550 | .89698 | .59215 | 0.660 | 1.4159 | .88962 | 0.628 | 1.9736 | 1.2315 | 0.624 |
| 0.600 | .97259 | .68861 | 0.708 | 1.4807 | .98628 | 0.666 | 2.0132 | 1.3138 | 0.653 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.2054 | 1.2440 | 0.564 | | | | | | |
| 0.500 | 2.3514 | 1.4153 | 0.602 | 2.6585 | 1.6385 | 0.616 | | | |
| 0.550 | 2.4274 | 1.5327 | 0.631 | 2.7256 | 1.7524 | 0.643 | 2.8902 | 1.8917 | 0.655 |
| 0.600 | 2.4316 | 1.5904 | 0.654 | 2.7003 | 1.7890 | 0.663 | 2.8492 | 1.9180 | 0.673 |

| $R$ microns | Wave-length = 3.40 microns | | | $M_1 = 4.37 - 3.89\,i$ | | | $M_2 = 1.70$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .01584 | .00007 | 0.004 | | | | | | |
| 0.075 | .00885 | .00020 | 0.023 | .03141 | .00041 | 0.013 | | | |
| 0.100 | .00574 | .00054 | 0.094 | .02266 | .00081 | 0.036 | .05798 | .00168 | 0.029 |
| 0.150 | .00498 | .00250 | 0.502 | .01433 | .00290 | 0.203 | .04082 | .00422 | 0.103 |
| 0.200 | .00928 | .00779 | 0.840 | .01538 | .00836 | 0.543 | .03421 | .01016 | 0.297 |
| 0.250 | .02013 | .01910 | 0.949 | .02475 | .01986 | 0.802 | .03943 | .02224 | 0.564 |
| 0.300 | .04074 | .03997 | 0.981 | .04467 | .04095 | 0.917 | .05727 | .04404 | 0.769 |
| 0.350 | .07533 | .07470 | 0.992 | .07898 | .07596 | 0.962 | .09069 | .07989 | 0.881 |
| 0.400 | .12857 | .12804 | 0.996 | .13218 | .12962 | 0.981 | .14376 | .13453 | 0.936 |
| 0.450 | .20488 | .20441 | 0.998 | .20860 | .20635 | 0.989 | .22050 | .21234 | 0.963 |
| 0.500 | .30718 | .30676 | 0.999 | .31109 | .30906 | 0.993 | .32355 | .31617 | 0.977 |
| 0.550 | .43572 | .43533 | 0.999 | .43983 | .43797 | 0.996 | .45289 | .44611 | 0.985 |
| 0.600 | .58789 | .58754 | 0.999 | .59214 | .59043 | 0.997 | .60561 | .59934 | 0.990 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .08453 | .00695 | 0.082 | | | | | | |
| 0.200 | .07035 | .01391 | 0.198 | .20231 | .03022 | 0.149 | | | |
| 0.250 | .06932 | .02715 | 0.392 | .19397 | .04939 | 0.255 | .41122 | .09314 | 0.227 |
| 0.300 | .08355 | .05035 | 0.603 | .20123 | .07903 | 0.393 | .42921 | .13976 | 0.326 |
| 0.350 | .11534 | .08787 | 0.762 | .22969 | .12402 | 0.540 | .46842 | .20277 | 0.433 |
| 0.400 | .16813 | .14446 | 0.859 | .28299 | .18918 | 0.668 | .53402 | .28739 | 0.538 |
| 0.450 | .24549 | .22444 | 0.914 | .36381 | .27855 | 0.766 | .62879 | .39700 | 0.631 |
| 0.500 | .34965 | .33050 | 0.945 | .47298 | .39406 | 0.833 | .75169 | .53165 | 0.707 |
| 0.550 | .48013 | .46245 | 0.963 | .60831 | .53431 | 0.878 | .89733 | .68697 | 0.766 |
| 0.600 | .63364 | .61718 | 0.974 | .76468 | .69466 | 0.908 | 1.0571 | .85499 | 0.809 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | .73482 | .23237 | 0.316 | | | | | | |
| 0.350 | .81926 | .33277 | 0.406 | 1.1880 | .49097 | 0.413 | | | |
| 0.400 | .93102 | .45626 | 0.490 | 1.3826 | .67427 | 0.488 | 1.7606 | .88203 | 0.501 |
| 0.450 | 1.0679 | .60335 | 0.565 | 1.5953 | .87672 | 0.550 | 2.0539 | 1.1429 | 0.556 |
| 0.500 | 1.2235 | .76930 | 0.629 | 1.8030 | 1.0818 | 0.600 | 2.3112 | 1.3833 | 0.599 |
| 0.550 | 1.3865 | .94353 | 0.681 | 1.9811 | 1.2678 | 0.640 | 2.4889 | 1.5669 | 0.630 |
| 0.600 | 1.5428 | 1.1124 | 0.721 | 2.1108 | 1.4152 | 0.670 | 2.5673 | 1.6719 | 0.651 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.3513 | 1.3385 | 0.569 | | | | | | |
| 0.500 | 2.6393 | 1.6040 | 0.608 | 2.7944 | 1.7305 | 0.619 | | | |
| 0.550 | 2.8098 | 1.7825 | 0.634 | 2.9626 | 1.9111 | 0.645 | 2.9978 | 1.9665 | 0.656 |
| 0.600 | 2.8429 | 1.8514 | 0.651 | 2.9784 | 1.9680 | 0.661 | 3.0184 | 2.0310 | 0.673 |

| $R$ microns | Wave-length = 3.40 microns | | | $M_1 = 4.37 - 3.89\,i$ | | | $M_2 = 1.90$ | | |
|---|---|---|---|---|---|---|---|---|---|
| | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ | $Q_{\text{ext}}$ | $Q_{\text{sctr}}$ | $A$ |
| | $R_0 = 0.030$ | | | $R_0 = 0.050$ | | | $R_0 = 0.075$ | | |
| 0.050 | .01753 | .00008 | 0.005 | | | | | | |
| 0.075 | .01018 | .00027 | 0.027 | .03425 | .00048 | 0.014 | | | |
| 0.100 | .00679 | .00076 | 0.112 | .02576 | .00105 | 0.041 | .06187 | .00190 | 0.031 |
| 0.150 | .00654 | .00362 | 0.553 | .01742 | .00407 | 0.234 | .04717 | .00549 | 0.116 |
| 0.200 | .01322 | .01144 | 0.865 | .02049 | .01209 | 0.590 | .04251 | .01413 | 0.332 |
| 0.250 | .02963 | .02837 | 0.958 | .03525 | .02927 | 0.830 | .05294 | .03206 | 0.606 |
| 0.300 | .06107 | .06009 | 0.984 | .06596 | .06130 | 0.929 | .08159 | .06503 | 0.797 |
| 0.350 | .11462 | .11381 | 0.993 | .11930 | .11540 | 0.967 | .13428 | .12031 | 0.896 |
| 0.400 | .19846 | .19775 | 0.996 | .20322 | .19979 | 0.983 | .21848 | .20613 | 0.943 |
| 0.450 | .32047 | .31982 | 0.998 | .32552 | .32239 | 0.990 | .34166 | .33036 | 0.967 |
| 0.500 | .48608 | .48548 | 0.999 | .49151 | .48860 | 0.994 | .50882 | .49823 | 0.979 |
| 0.550 | .69660 | .69603 | 0.999 | .70238 | .69963 | 0.996 | .72077 | .71071 | 0.986 |
| 0.600 | .95187 | .95133 | 0.999 | .95784 | .95524 | 0.997 | .97685 | .96723 | 0.990 |
| | $R_0 = 0.100$ | | | $R_0 = 0.150$ | | | $R_0 = 0.200$ | | |
| 0.150 | .09291 | .00823 | 0.089 | | | | | | |
| 0.200 | .08320 | .01821 | 0.219 | .21814 | .03432 | 0.157 | | | |
| 0.250 | .08819 | .03769 | 0.427 | .22566 | .06162 | 0.273 | .43971 | .10332 | 0.235 |
| 0.300 | .11378 | .07258 | 0.638 | .25157 | .10547 | 0.419 | .49485 | .16898 | 0.341 |
| 0.350 | .16555 | .13023 | 0.787 | .30645 | .17384 | 0.567 | .58048 | .26246 | 0.452 |
| 0.400 | .25049 | .21891 | 0.874 | .39853 | .27517 | 0.690 | .70515 | .39200 | 0.556 |
| 0.450 | .37554 | .34637 | 0.922 | .53402 | .41666 | 0.780 | .87408 | .56293 | 0.644 |
| 0.500 | .54510 | .51754 | 0.949 | .71523 | .60165 | 0.841 | 1.0852 | .77405 | 0.713 |
| 0.550 | .75923 | .73284 | 0.965 | .93904 | .82784 | 0.882 | 1.3283 | 1.0161 | 0.765 |
| 0.600 | 1.0165 | .99101 | 0.975 | 1.2006 | 1.0907 | 0.908 | 1.5910 | 1.2769 | 0.803 |
| | $R_0 = 0.250$ | | | $R_0 = 0.300$ | | | $R_0 = 0.350$ | | |
| 0.300 | .78350 | .25387 | 0.324 | | | | | | |
| 0.350 | .93957 | .39304 | 0.418 | 1.2638 | .52989 | 0.419 | | | |
| 0.400 | 1.1434 | .57391 | 0.502 | 1.5710 | .77772 | 0.495 | 1.8627 | .94004 | 0.505 |
| 0.450 | 1.3874 | .79455 | 0.573 | 1.9169 | 1.0615 | 0.554 | 2.2896 | 1.2800 | 0.559 |
| 0.500 | 1.6543 | 1.0416 | 0.630 | 2.2476 | 1.3433 | 0.598 | 2.6668 | 1.5895 | 0.596 |
| 0.550 | 1.9174 | 1.2908 | 0.673 | 2.5061 | 1.5752 | 0.629 | 2.9031 | 1.7962 | 0.619 |
| 0.600 | 2.1527 | 1.5179 | 0.705 | 2.6603 | 1.7241 | 0.648 | 2.9647 | 1.8650 | 0.629 |
| | $R_0 = 0.400$ | | | $R_0 = 0.450$ | | | $R_0 = 0.500$ | | |
| 0.450 | 2.4641 | 1.4066 | 0.571 | | | | | | |
| 0.500 | 2.8648 | 1.7381 | 0.607 | 2.8956 | 1.7934 | 0.619 | | | |
| 0.550 | 3.0942 | 1.9403 | 0.627 | 3.1346 | 2.0112 | 0.642 | 3.0752 | 2.0146 | 0.655 |
| 0.600 | 3.1118 | 1.9738 | 0.634 | 3.1610 | 2.0557 | 0.650 | 2.1337 | 2.0930 | 0.668 |