

HEUMAN'S LAMBDA FUNCTION  $\Lambda_0(\varphi|\alpha)$

Table 17.8

$$\Lambda_0(\varphi|\alpha) = \frac{F(\varphi|90^\circ - \alpha)}{K'(\alpha)} + \frac{2}{\pi} K(\alpha) Z(\varphi|90^\circ - \alpha) = \frac{2}{\pi} \{K(\alpha)E(\varphi|90^\circ - \alpha) - [K(\alpha) - E(\alpha)]F(\varphi|90^\circ - \alpha)\}$$

| $\alpha \setminus \varphi$ | 35°   | 40°   | 45°   | 50°   | 55°   | 60°   |
|----------------------------|---|---|---|---|---|---|
| 0°                         | 0.573576  | 0.642788  | 0.707107  | 0.766044  | 0.819152  | 0.866025  |
| 2                          | 0.573402  | 0.642592  | 0.706891  | 0.765811  | 0.818903  | 0.865762  |
| 4                          | 0.572878  | 0.642006  | 0.706247  | 0.765113  | 0.818157  | 0.864975  |
| 6                          | 0.572009  | 0.641032  | 0.705177  | 0.763956  | 0.816922  | 0.863674  |
| 8                          | 0.570795  | 0.639674  | 0.703687  | 0.762347  | 0.815210  | 0.861876  |
| 10                         | 0.569244  | 0.637940  | 0.701786  | 0.760298  | 0.813034  | 0.859602  |
| 12                         | 0.567360  | 0.635836  | 0.699484  | 0.757822  | 0.810416  | 0.856877  |
| 14                         | 0.565150  | 0.633373  | 0.696794  | 0.754937  | 0.807375  | 0.853731  |
| 16                         | 0.562623  | 0.630561  | 0.693729  | 0.751660  | 0.803935  | 0.850194  |
| 18                         | 0.559789  | 0.627412  | 0.690306  | 0.748011  | 0.800123  | 0.846297  |
| 20                         | 0.556657  | 0.623939  | 0.686540  | 0.744012  | 0.795963  | 0.842073  |
| 22                         | 0.553238  | 0.620157  | 0.682450  | 0.739683  | 0.791483  | 0.837553  |
| 24                         | 0.549546  | 0.616080  | 0.678054  | 0.735049  | 0.786709  | 0.832766  |
| 26                         | 0.545591  | 0.611725  | 0.673372  | 0.730130  | 0.781667  | 0.827743  |
| 28                         | 0.541389  | 0.607107  | 0.668422  | 0.724951  | 0.776384  | 0.822510  |
| 30                         | 0.536953  | 0.602244  | 0.663225  | 0.719533  | 0.770883  | 0.817093  |
| 32                         | 0.532297  | 0.597153  | 0.657801  | 0.713900  | 0.765190  | 0.811517  |
| 34                         | 0.527437  | 0.591851  | 0.652170  | 0.708073  | 0.759326  | 0.805804  |
| 36                         | 0.522388  | 0.586356  | 0.646351  | 0.702074  | 0.753314  | 0.799976  |
| 38                         | 0.517165  | 0.580687  | 0.640365  | 0.695923  | 0.747177  | 0.794052  |
| 40                         | 0.511786  | 0.574862  | 0.634231  | 0.689642  | 0.740932  | 0.788051  |
| 42                         | 0.506266  | 0.568898  | 0.627970  | 0.683251  | 0.734602  | 0.781992  |
| 44                         | 0.500622  | 0.562815  | 0.621600  | 0.676769  | 0.728203  | 0.775891  |
| 46                         | 0.494873  | 0.556632  | 0.615142  | 0.670217  | 0.721756  | 0.769764  |
| 48                         | 0.489034  | 0.550366  | 0.608615  | 0.663613  | 0.715277  | 0.763627  |
| 50                         | 0.483125  | 0.544038  | 0.602038  | 0.656976  | 0.708785  | 0.757496  |
| 52                         | 0.477164  | 0.537668  | 0.595432  | 0.650326  | 0.702298  | 0.751385  |
| 54                         | 0.471170  | 0.531275  | 0.588817  | 0.643682  | 0.695832  | 0.745310  |
| 56                         | 0.465163  | 0.524879  | 0.582212  | 0.637064  | 0.689405  | 0.739286  |
| 58                         | 0.459163  | 0.518502  | 0.575640  | 0.630491  | 0.683037  | 0.733329  |
| 60                         | 0.453192  | 0.512167  | 0.569122  | 0.623985  | 0.676745  | 0.727455  |
| 62                         | 0.447272  | 0.505895  | 0.562680  | 0.617567  | 0.670549  | 0.721680  |
| 64                         | 0.441428  | 0.499711  | 0.556339  | 0.611258  | 0.664469  | 0.716024  |
| 66                         | 0.435683  | 0.493642  | 0.550124  | 0.605085  | 0.658528  | 0.710504  |
| 68                         | 0.430065  | 0.487715  | 0.544062  | 0.599072  | 0.652749  | 0.705142  |
| 70                         | 0.424604  | 0.481959  | 0.538183  | 0.593247  | 0.647159  | 0.699961  |
| 72                         | 0.419332  | 0.476408  | 0.532519  | 0.587641  | 0.641784  | 0.694985  |
| 74                         | 0.414284  | 0.471098  | 0.527106  | 0.582290  | 0.636659  | 0.690244  |
| 76                         | 0.409500  | 0.466070  | 0.521985  | 0.577231  | 0.631818  | 0.685770  |
| 78                         | 0.405026  | 0.461371  | 0.517202  | 0.572511  | 0.627303  | 0.681601  |
| 80                         | 0.400915  | 0.457055  | 0.512813  | 0.568181  | 0.623166  | 0.677782  |
| 82                         | 0.397229  | 0.453189  | 0.508883  | 0.564307  | 0.619464  | 0.674368  |
| 84                         | 0.394049  | 0.449853  | 0.505494  | 0.560967  | 0.616276  | 0.671427  |
| 86                         | 0.391477  | 0.447157  | 0.502754  | 0.558268  | 0.613700  | 0.669053  |
| 88                         | 0.389662  | 0.445255  | 0.500823  | 0.556366  | 0.611884  | 0.667379  |
| 90                         | 0.388889<br>$\left[ \begin{smallmatrix} (-4)1 \\ 6 \end{smallmatrix} \right]$ | 0.444444<br>$\left[ \begin{smallmatrix} (-4)1 \\ 6 \end{smallmatrix} \right]$ | 0.500000<br>$\left[ \begin{smallmatrix} (-4)1 \\ 6 \end{smallmatrix} \right]$ | 0.555556<br>$\left[ \begin{smallmatrix} (-4)1 \\ 6 \end{smallmatrix} \right]$ | 0.611111<br>$\left[ \begin{smallmatrix} (-4)1 \\ 6 \end{smallmatrix} \right]$ | 0.666667<br>$\left[ \begin{smallmatrix} (-4)1 \\ 6 \end{smallmatrix} \right]$ |
| 5                          | 0.572487  | 0.641567  | 0.705765  | 0.764592  | 0.817600  | 0.864388  |
| 15                         | 0.563926  | 0.632010  | 0.695307  | 0.753346  | 0.805703  | 0.852010  |
| 25                         | 0.547600  | 0.613936  | 0.675748  | 0.732623  | 0.784220  | 0.830282  |
| 35                         | 0.524935  | 0.589127  | 0.649283  | 0.705094  | 0.756337  | 0.802903  |
| 45                         | 0.497760  | 0.559735  | 0.618381  | 0.673501  | 0.724985  | 0.772830  |
| 55                         | 0.468167  | 0.528076  | 0.585512  | 0.640369  | 0.692612  | 0.742291  |
| 65                         | 0.438541  | 0.496661  | 0.553214  | 0.608153  | 0.661480  | 0.713246  |
| 75                         | 0.411857  | 0.468546  | 0.524506  | 0.579721  | 0.634200  | 0.687972  |
| 85                         | 0.392679  | 0.448417  | 0.504034  | 0.559529  | 0.614903  | 0.670162  |