that the maximum transverse sound speed is more likely to be important in the determination of $\kappa$. No data on the frequency spectrum of cadmium selenide are available. Values of the maximum transverse and longitudinal sound speeds were estimated using an equation presented by Slack (8) involving the elastic constants $c_{66}$, $c_{44}$, $c_{11}$, and $c_{33}$. This formula is applicable only in the low temperature ($\leq 1$ K) long phonon wavelength limit, but still should give a rough estimate of the values encountered at higher temperatures. Application of this formula using the elastic constant data of Berlincourt, et al. (21) resulted in values of $1.52 \times 10^5$ cm/sec for the transverse modes of both the $c_{\perp}$ and $c_{\parallel}$ samples, $2.60 \times 10^5$ cm/sec for the longitudinal modes of the parallel oriented crystals, and $3.57 \times 10^5$ cm/sec for the longitudinal modes of the perpendicular orientation. These values are in reasonable agreement with the measured velocities if the appropriate sound speed associated with $c_{\perp}$ crystals is that due to the transverse modes. Use of the averaging of phonon velocities suggested by Slack (8) results in an average mode velocity of $1.60 \times 10^5$ cm/sec, i.e., one more characteristic of transverse than longitudinal mode conduction. Use of this value would yield a Debye cutoff temperature of 142 K.

In applying the Callaway theory the measured values of sound speed were used, with the appropriate Debye temperatures. The value of $A$ was initially calculated from the theoretical expression from Klemens (30) for isotope scattering as modified for compounds by Holland (1).

$$A = \frac{V\Gamma}{4\pi v^3}$$  \hspace{1cm} (3-1)