Conductivity function for Aluminium 99% commercial pure (Alcoa), as fabricated

Data from Cern Library: From R.L.Powell, W.J. Hall and H.M.Roder/ 1958

$$Temp := \begin{pmatrix} 4 \\ 6 \\ 8 \\ 10 \\ 20 \\ 25 \\ 30 \\ 35 \\ 40 \\ 50 \\ 60 \\ 70 \\ 80 \\ 100 \\ 140 \\ 200 \\ 300 \end{pmatrix} \quad [K] \qquad Al1 := \begin{pmatrix} 55 \\ 83 \\ 112 \\ 140 \\ 280 \\ 330 \\ 360 \\ 380 \\ 390 \\ 370 \\ 340 \\ 310 \\ 280 \\ 250 \\ 225 \\ 210 \\ 210 \end{pmatrix} \quad [watt/mK]$$

$$X^{\langle 0 \rangle} := Temp$$

$$X^{\langle 1 \rangle} := Al1$$

$$WRITEPRN(\text{"KAl1.prn"}) := X$$

$$kAl1(T) := linterp(Temp, Al1, T)$$

$$kAl1(137) = 226.87 \ watt/mK$$

Thermal conductivityof aluminium alloys: AL 6063-T5
Alcoa, 0.4% Si, 0.7% Mg, 98.5% Al as fabricated

Data from Cern Library: From R.L.Powell, W.J. Hall and H.M.Roder/ 1958

$$Temp := \begin{pmatrix} 4 \\ 6 \\ 8 \\ 10 \\ 20 \\ 25 \\ 30 \\ 35 \\ 40 \\ 50 \\ 60 \\ 70 \\ 80 \\ 100 \\ 140 \\ 200 \\ 300 \end{pmatrix} [K] \qquad Al6063 := \begin{pmatrix} 34 \\ 51 \\ 69 \\ 86 \\ 170 \\ 200 \\ 230 \\ 260 \\ 270 \\ 280 \\ 270 \\ 250 \\ 230 \\ 210 \\ 200 \\ 200 \\ 200 \end{pmatrix} [watt/mK]$$

$X^{\langle 0 \rangle} := Temp$

$X^{\langle 1 \rangle} := Al6063$

WRITEPRN("KAl6063.prn") := X

$kAl6063(T) := linterp(Temp, Al6063, T)$

$kAl6063(137) = 200.75$ watt/mK