$$K^2_{130} = \begin{bmatrix} \frac{-4\,U}{t} & -4 & \frac{2\,\sqrt{2}\,U}{t} & 0 \\ -4 & \frac{-3\,U}{t} & -\left(\frac{\sqrt{2}\,U^2}{t^2}\right) & \frac{3\,\sqrt{2}\,U}{t} \\ \frac{2\,\sqrt{2}\,U}{t} & -\left(\frac{\sqrt{2}\,U^2}{t^2}\right) & 0 & -4-\frac{U^2}{t^2} \\ 0 & \frac{3\,\sqrt{2}\,U}{t} & -4-\frac{U^2}{t^2} & \frac{-2\,U}{t} \end{bmatrix}$$