$$K^2_{111} = \begin{bmatrix} \frac{-9\,U}{2\,t} & \frac{\left(1-\mathbf{i}\sqrt{3}\right)\left(8\,t^2-U^2\right)}{4\,t^2} & \frac{U^2}{\sqrt{2}\,t^2} & \frac{\sqrt{2}\,U-\mathbf{i}\sqrt{6}\,U}{4\,t} \\ \frac{\left(1+\mathbf{i}\sqrt{3}\right)\left(8\,t^2-U^2\right)}{4\,t^2} & \frac{-17\,U}{2\,t} & \frac{\frac{-3\,\mathbf{i}}{2}\left(-\mathbf{i}+\sqrt{3}\right)U}{\sqrt{2}\,t} & 0 \\ \frac{U^2}{\sqrt{2}\,t^2} & \frac{\frac{3\,\mathbf{i}}{2}\left(\mathbf{i}+\sqrt{3}\right)U}{\sqrt{2}\,t} & \frac{-6\,U}{t} & 2-2\,\mathbf{i}\sqrt{3} \\ \frac{\sqrt{2}\,U+\mathbf{i}\sqrt{6}\,U}{4\,t} & 0 & 2+2\,\mathbf{i}\sqrt{3} & \frac{-8\,U}{t} \end{bmatrix}$$