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