$$K_{50}^{2} = \left[\begin{array}{cccccccccccc}
\frac{-17\,U}{4\,t} & \frac{16\,\mathbf{i}\,(\mathbf{i}+\sqrt{3})\,t^2+(-13-\mathbf{i}\,\sqrt{3})\,U^2}{24\,t^2} & \frac{-3\,\mathbf{i}-\sqrt{3}}{6} & \frac{\frac{3}{4}\,\mathbf{i}\,U}{t} & \frac{-\mathbf{i}\,\sqrt{3}\,U}{t} & \frac{(-\mathbf{i}+\sqrt{3})\,U^2}{4\,t^2} & \frac{-\mathbf{i}}{2}\,(-\mathbf{i}+\sqrt{3}) & \frac{\frac{-\mathbf{i}}{4}\,\sqrt{3}\,U}{t} & \frac{(-1-3\,\mathbf{i}\,\sqrt{3})\,U}{2\,\sqrt{2}\,t} & \frac{4\,\mathbf{i}\,(\mathbf{i}+\sqrt{3})\,t^2+(-1-\mathbf{i}\,\sqrt{3})\,U^2}{6\,\sqrt{2}\,t^2} & \frac{-((3\,\mathbf{i}+2\,\sqrt{3})\,U)}{4\,t} & \frac{8\,(-3\,\mathbf{i}+\sqrt{3})\,t^2-(3\,\mathbf{i}+\sqrt{3})\,U^2}{8\,t^2} \\
\frac{-16\,\mathbf{i}\,(-\mathbf{i}+\sqrt{3})\,t^2+\mathbf{i}\,(13\,\mathbf{i}+\sqrt{3})\,U^2}{24\,t^2} & \frac{-11\,U}{4\,t} & \frac{(3\,\mathbf{i}+4\,\sqrt{3})\,U}{12\,t} & -\mathbf{i}+\frac{1}{\sqrt{3}} & 0 & \frac{-2\,U}{\sqrt{3}\,t} & \frac{-3\,U}{4\,t} & -1+\mathbf{i}\,\sqrt{3} & \frac{(4+4\,\mathbf{i}\,\sqrt{3})\,t^2+(1-\mathbf{i}\,\sqrt{3})\,U^2}{3\,\sqrt{2}\,t^2} & \frac{\frac{-\mathbf{i}}{2}\,(-\mathbf{i}+\sqrt{3})\,U}{\sqrt{2}\,t} & \frac{-16\,(3\,\mathbf{i}+\sqrt{3})\,t^2+(-3\,\mathbf{i}+\sqrt{3})\,U^2}{24\,t^2} & \frac{-((6\,\mathbf{i}+5\,\sqrt{3})\,U)}{12\,t} \\
\frac{3\,\mathbf{i}-\sqrt{3}}{6} & \frac{(-3\,\mathbf{i}+4\,\sqrt{3})\,U}{12\,t} & \frac{-15\,U}{4\,t} & \frac{-24\,t^2+(3-\mathbf{i}\,\sqrt{3})\,U^2}{8\,t^2} & 0 & \frac{-3\,U}{2\,t} & \frac{\frac{-3}{4}\,\mathbf{i}\,U}{t} & \frac{-\left(8\,\sqrt{3}\,t^2+(3\,\mathbf{i}+\sqrt{3})\,U^2\right)}{8\,t^2} & \frac{-(\sqrt{2}\,(-3\,\mathbf{i}+\sqrt{3}))}{3} & \frac{(-3\,\mathbf{i}+\sqrt{3})\,U}{3\,\sqrt{2}\,t} & \frac{\mathbf{i}}{2}\,(\mathbf{i}+\sqrt{3}) & \frac{\frac{3}{4}\,\mathbf{i}\,\sqrt{3}\,U}{t} \\
\frac{\frac{-3}{4}\,\mathbf{i}\,U}{t} & \mathbf{i}+\frac{1}{\sqrt{3}} & \frac{-24\,t^2+(3+\mathbf{i}\,\sqrt{3})\,U^2}{8\,t^2} & \frac{-9\,U}{4\,t} & 0 & 0 & \frac{8\,\sqrt{3}\,t^2-(-3\,\mathbf{i}+\sqrt{3})\,U^2}{8\,t^2} & \frac{\sqrt{3}\,U}{4\,t} & \frac{3\,(\mathbf{i}+\sqrt{3})\,U}{2\,\sqrt{2}\,t} & \frac{-(\sqrt{2}\,(3\,\mathbf{i}+\sqrt{3}))}{3} & \frac{-3\,U}{4\,t} & 0 \\
\frac{\mathbf{i}\,\sqrt{3}\,U}{t} & 0 & 0 & 0 & \frac{-5\,U}{t} & 2\,\mathbf{i}-2\,\sqrt{3} & 0 & 0 & \frac{-3\,U}{\sqrt{2}\,t} & 0 & \frac{-\mathbf{i}\,U}{t} & 0 \\
\frac{(\mathbf{i}+\sqrt{3})\,U^2}{4\,t^2} & \frac{-2\,U}{\sqrt{3}\,t} & \frac{-3\,U}{2\,t} & 0 & -2\,(\mathbf{i}+\sqrt{3}) & \frac{-5\,U}{t} & \frac{\sqrt{3}\,U}{2\,t} & 0 & \frac{-((\mathbf{i}+\sqrt{3})\,U^2)}{2\,\sqrt{2}\,t^2} & \frac{-((-9\,\mathbf{i}+\sqrt{3})\,U)}{6\,\sqrt{2}\,t} & \frac{(3+\mathbf{i}\,\sqrt{3})\,U^2}{4\,t^2} & \frac{-(U+\mathbf{i}\,\sqrt{3}\,U)}{2\,t} \\
\frac{\mathbf{i}}{2}\,(\mathbf{i}+\sqrt{3}) & \frac{-3\,U}{4\,t} & \frac{\frac{3}{4}\,\mathbf{i}\,U}{t} & \frac{8\,\sqrt{3}\,t^2-(3\,\mathbf{i}+\sqrt{3})\,U^2}{8\,t^2} & 0 & \frac{\sqrt{3}\,U}{2\,t} & \frac{-15\,U}{4\,t} & \frac{8\,t^2+U^2-3\,\mathbf{i}\,\sqrt{3}\,U^2}{8\,t^2} & \mathbf{i}\,\sqrt{2}\,(\mathbf{i}+\sqrt{3}) & 0 & \frac{3\,\mathbf{i}-\sqrt{3}}{2} & \frac{-3\,\sqrt{3}\,U}{4\,t} \\
\frac{\frac{1}{4}\,\sqrt{3}\,U}{t} & -1-\mathbf{i}\,\sqrt{3} & \frac{-\left(8\,\sqrt{3}\,t^2+(-3\,\mathbf{i}+\sqrt{3})\,U^2\right)}{8\,t^2} & \frac{\sqrt{3}\,U}{4\,t} & 0 & 0 & \frac{8\,t^2+U^2+3\,\mathbf{i}\,\sqrt{3}\,U^2}{8\,t^2} & \frac{-15\,U}{4\,t} & \frac{\frac{-\mathbf{i}}{2}\,(-3\,\mathbf{i}+\sqrt{3})\,U}{\sqrt{2}\,t} & \sqrt{2}+\mathbf{i}\,\sqrt{6} & \frac{\sqrt{3}\,U}{4\,t} & 0 \\
\frac{(-1+3\,\mathbf{i}\,\sqrt{3})\,U}{2\,\sqrt{2}\,t} & \frac{(4-4\,\mathbf{i}\,\sqrt{3})\,t^2+(1+\mathbf{i}\,\sqrt{3})\,U^2}{3\,\sqrt{2}\,t^2} & \frac{-(\sqrt{2}\,(3\,\mathbf{i}+\sqrt{3}))}{3} & \frac{3\,(-\mathbf{i}+\sqrt{3})\,U}{2\,\sqrt{2}\,t} & \frac{-3\,U}{\sqrt{2}\,t} & \frac{-((-\mathbf{i}+\sqrt{3})\,U^2)}{2\,\sqrt{2}\,t^2} & -\sqrt{2}-\mathbf{i}\,\sqrt{6} & \frac{\frac{1}{2}\,(3\,\mathbf{i}+\sqrt{3})\,U}{\sqrt{2}\,t} & \frac{-5\,U}{2\,t} & \frac{(8-8\,\mathbf{i}\,\sqrt{3})\,t^2+(-7-\mathbf{i}\,\sqrt{3})\,U^2}{12\,t^2} & \frac{-((3\,\mathbf{i}+\sqrt{3})\,U)}{2\,\sqrt{2}\,t} & 0 \\
\frac{(-4-4\,\mathbf{i}\,\sqrt{3})\,t^2+\mathbf{i}\,(\mathbf{i}+\sqrt{3})\,U^2}{6\,\sqrt{2}\,t^2} & \frac{\mathbf{i}}{2}\,\frac{(\mathbf{i}+\sqrt{3})\,U}{\sqrt{2}\,t} & \frac{(3\,\mathbf{i}+\sqrt{3})\,U}{3\,\sqrt{2}\,t} & \frac{-(\sqrt{2}\,(-3\,\mathbf{i}+\sqrt{3}))}{3} & 0 & \frac{-((9\,\mathbf{i}+\sqrt{3})\,U)}{6\,\sqrt{2}\,t} & 0 & \sqrt{2}-\mathbf{i}\,\sqrt{6} & \frac{(8+8\,\mathbf{i}\,\sqrt{3})\,t^2+\mathbf{i}\,(7\,\mathbf{i}+\sqrt{3})\,U^2}{12\,t^2} & \frac{-5\,U}{2\,t} & \frac{-4\,(3\,\mathbf{i}+\sqrt{3})\,t^2+(-3\,\mathbf{i}+\sqrt{3})\,U^2}{6\,\sqrt{2}\,t^2} & \frac{(-3\,\mathbf{i}+5\,\sqrt{3})\,U}{6\,\sqrt{2}\,t} \\
\frac{(3\,\mathbf{i}-2\,\sqrt{3})\,U}{4\,t} & \frac{-16\,(-3\,\mathbf{i}+\sqrt{3})\,t^2+(3\,\mathbf{i}+\sqrt{3})\,U^2}{24\,t^2} & \frac{-\mathbf{i}}{2}\,(-\mathbf{i}+\sqrt{3}) & \frac{-3\,U}{4\,t} & \frac{\mathbf{i}\,U}{t} & \frac{(3-\mathbf{i}\,\sqrt{3})\,U^2}{4\,t^2} & \frac{-3\,\mathbf{i}-\sqrt{3}}{2} & \frac{\sqrt{3}\,U}{4\,t} & \frac{-((-3\,\mathbf{i}+\sqrt{3})\,U)}{2\,\sqrt{2}\,t^2} & \frac{-5\,U}{2\,t} & \frac{-4\,(-3\,\mathbf{i}+\sqrt{3})\,t^2+(3\,\mathbf{i}+\sqrt{3})\,U^2}{6\,\sqrt{2}\,t^2} & \frac{8\,\mathbf{i}\,(\mathbf{i}+\sqrt{3})\,t^2+(-5-\mathbf{i}\,\sqrt{3})\,U^2}{8\,t^2} \\
\frac{8\,(3\,\mathbf{i}+\sqrt{3})\,t^2-(-3\,\mathbf{i}+\sqrt{3})\,U^2}{8\,t^2} & \frac{(6\,\mathbf{i}-5\,\sqrt{3})\,U}{12\,t} & \frac{\frac{-3}{4}\,\mathbf{i}\,\sqrt{3}\,U}{t} & 0 & 0 & \frac{\mathbf{i}}{2}\,\frac{(\mathbf{i}+\sqrt{3})\,U}{t} & \frac{-3\,\sqrt{3}\,U}{4\,t} & 0 & 0 & \frac{(3\,\mathbf{i}+5\,\sqrt{3})\,U}{6\,\sqrt{2}\,t} & \frac{(-8-8\,\mathbf{i}\,\sqrt{3})\,t^2+\mathbf{i}\,(5\,\mathbf{i}+\sqrt{3})\,U^2}{8\,t^2} & \frac{-17\,U}{4\,t}
\end{array}\right]$$