$$
K^1_{112} \quad = \quad \left[\begin{array}{cccccccccccc}
-\mathbf{i}\,\sqrt{3} & \frac{\mathbf{i}}{2}\,\frac{\left(3\,\mathbf{i}+\sqrt{3}\right)\,U}{t} & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\
\frac{\left(3+\mathbf{i}\,\sqrt{3}\right)\,U}{2\,t} & \frac{\mathbf{i}}{2}\,\sqrt{3} & 0 & \sqrt{\frac{3}{2}} & 0 & 0 & 0 & 0 & \frac{3\,\mathbf{i}}{\sqrt{2}} & 0 & 0 & \frac{\sqrt{3}}{2} \\
0 & 0 & 0 & 0 & \frac{-1-\mathbf{i}\,\sqrt{3}}{\sqrt{2}} & 0 & \frac{-1-\mathbf{i}\,\sqrt{3}}{\sqrt{2}} & 0 & 0 & \frac{1+\mathbf{i}\,\sqrt{3}}{\sqrt{2}} & 0 & 0 \\
0 & -\sqrt{\frac{3}{2}} & 0 & 0 & -\left(\frac{U}{t}\right) & 0 & 0 & \frac{1+\mathbf{i}\,\sqrt{3}}{\sqrt{2}} & -1 & \frac{U+\mathbf{i}\,\sqrt{3}\,U}{2\,t} & 0 & -\mathbf{i}\,\sqrt{\frac{3}{2}} \\
0 & 0 & \frac{1-\mathbf{i}\,\sqrt{3}}{\sqrt{2}} & \frac{U}{t} & 0 & 0 & \frac{1+\mathbf{i}\,\sqrt{3}}{2} & 0 & \frac{U-\mathbf{i}\,\sqrt{3}\,U}{2\,t} & \frac{1-\mathbf{i}\,\sqrt{3}}{2} & \frac{-1-\mathbf{i}\,\sqrt{3}}{\sqrt{2}} & 0 \\
0 & 0 & 0 & 0 & 0 & -\mathbf{i}\,\sqrt{3} & \frac{\mathbf{i}}{2}\,\frac{\left(\mathbf{i}+\sqrt{3}\right)\,U}{t} & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & \frac{1-\mathbf{i}\,\sqrt{3}}{\sqrt{2}} & 0 & \frac{\mathbf{i}}{2}\,\left(\mathbf{i}+\sqrt{3}\right) & \frac{U+\mathbf{i}\,\sqrt{3}\,U}{2\,t} & 0 & \frac{\mathbf{i}\,\left(\mathbf{i}+\sqrt{3}\right)\,U}{\sqrt{2}\,t} & 0 & \frac{-\mathbf{i}}{2}\,\left(-\mathbf{i}+\sqrt{3}\right) & \sqrt{2} & 0 \\
0 & 0 & 0 & \frac{\mathbf{i}\,\left(\mathbf{i}+\sqrt{3}\right)}{\sqrt{2}} & 0 & 0 & \frac{\left(1+\mathbf{i}\,\sqrt{3}\right)\,U}{\sqrt{2}\,t} & 0 & 0 & 0 & 0 & 1-\mathbf{i}\,\sqrt{3} \\
0 & \frac{3\,\mathbf{i}}{\sqrt{2}} & 0 & 1 & \frac{-\left(U+\mathbf{i}\,\sqrt{3}\,U\right)}{2\,t} & 0 & 0 & 0 & 0 & -\left(\frac{U}{t}\right) & 0 & \frac{1}{\sqrt{2}} \\
0 & 0 & \frac{\mathbf{i}\,\left(\mathbf{i}+\sqrt{3}\right)}{\sqrt{2}} & \frac{\mathbf{i}}{2}\,\frac{\left(\mathbf{i}+\sqrt{3}\right)\,U}{t} & \frac{-\mathbf{i}}{2}\,\left(-\mathbf{i}+\sqrt{3}\right) & 0 & \frac{1-\mathbf{i}\,\sqrt{3}}{2} & 0 & \frac{U}{t} & 0 & \frac{1-\mathbf{i}\,\sqrt{3}}{\sqrt{2}} & 0 \\
0 & 0 & 0 & 0 & \frac{1-\mathbf{i}\,\sqrt{3}}{\sqrt{2}} & 0 & -\sqrt{2} & 0 & 0 & \frac{-1-\mathbf{i}\,\sqrt{3}}{\sqrt{2}} & \mathbf{i}\,\sqrt{3} & \frac{-\left(U+\mathbf{i}\,\sqrt{3}\,U\right)}{2\,t} \\
0 & \frac{-\sqrt{3}}{2} & 0 & -\mathbf{i}\,\sqrt{\frac{3}{2}} & 0 & 0 & 0 & -1-\mathbf{i}\,\sqrt{3} & -\left(\frac{1}{\sqrt{2}}\right) & 0 & \frac{U-\mathbf{i}\,\sqrt{3}\,U}{2\,t} & \frac{\mathbf{i}}{2}\,\sqrt{3}
\end{array}\right]
$$