84^{th} Eigenvector

$$\boldsymbol{N_e \;=\; 3 \qquad s = \frac{1}{2} \qquad m_s = \frac{1}{2}}$$

Irred. Representation : $\boldsymbol{\Gamma_{5,2}}$

$$E_{84} \;=\; \frac{1}{2}\left(-J - 2t + U + 10W - \sqrt{A_7}\right)$$

$$\begin{aligned}
|\Psi_{84}\rangle \;&=\; |3, \frac{1}{2}, \frac{1}{2}, \Gamma_{5,2}\rangle \\
&=\; C_{84,1}\left(|020u\rangle - |02u0\rangle - |0u02\rangle + |0u20\rangle - |200u\rangle + |20u0\rangle + |u002\rangle - |u020\rangle\right) \\
&+\; C_{84,2}\left(|0duu\rangle - |d0uu\rangle - |uu0d\rangle + |uud0\rangle\right) \\
&+\; C_{84,3}\left(|0udu\rangle + |0uud\rangle - |du0u\rangle + |duu0\rangle - |u0du\rangle - |u0ud\rangle - |ud0u\rangle + |udu0\rangle\right)
\end{aligned}$$

$$\begin{aligned}
C_{84-1} \;&=\; \frac{1}{2}\sqrt{\frac{3}{2}}t \\
C_{84-2} \;&=\; \frac{J + 2t + U - 2W + \sqrt{A_7}}{2\sqrt{6}} \\
C_{84-3} \;&=\; -\frac{J + 2t + U - 2W + \sqrt{A_7}}{4\sqrt{6}} \\
N_{84} \;&=\; 2\sqrt{2C_{84,1}^2 + C_{84,2}^2 + 2C_{84,3}^2}
\end{aligned}$$