

PG No. 34 $D_3(1)$ 32 (312 setting) [trigonal]

Table 1: Representation matrices

Irrep.												
A_1	1 :	$\begin{bmatrix} 1 \end{bmatrix}$	$3^+_{001} :$	$\begin{bmatrix} 1 \end{bmatrix}$	$3^-_{001} :$	$\begin{bmatrix} 1 \end{bmatrix}$	$2_{1-10} :$	$\begin{bmatrix} 1 \end{bmatrix}$	$2_{120} :$	$\begin{bmatrix} 1 \end{bmatrix}$	$2_{210} :$	$\begin{bmatrix} 1 \end{bmatrix}$
A_2	1 :	$\begin{bmatrix} 1 \end{bmatrix}$	$3^+_{001} :$	$\begin{bmatrix} 1 \end{bmatrix}$	$3^-_{001} :$	$\begin{bmatrix} 1 \end{bmatrix}$	$2_{1-10} :$	$\begin{bmatrix} -1 \end{bmatrix}$	$2_{120} :$	$\begin{bmatrix} -1 \end{bmatrix}$	$2_{210} :$	$\begin{bmatrix} -1 \end{bmatrix}$
E	1 :	$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$	$3^+_{001} :$	$\begin{bmatrix} -\frac{1}{2} & -\frac{\sqrt{3}}{2} \\ \frac{\sqrt{3}}{2} & -\frac{1}{2} \end{bmatrix}$	$3^-_{001} :$	$\begin{bmatrix} -\frac{1}{2} & \frac{\sqrt{3}}{2} \\ -\frac{\sqrt{3}}{2} & -\frac{1}{2} \end{bmatrix}$	$2_{1-10} :$	$\begin{bmatrix} \frac{1}{2} & -\frac{\sqrt{3}}{2} \\ -\frac{\sqrt{3}}{2} & -\frac{1}{2} \end{bmatrix}$	$2_{120} :$	$\begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix}$	$2_{210} :$	$\begin{bmatrix} \frac{1}{2} & \frac{\sqrt{3}}{2} \\ \frac{\sqrt{3}}{2} & -\frac{1}{2} \end{bmatrix}$