

SG No. 187 D_{3h}^1 $P\bar{6}m2$ [hexagonal]

* generator : $\{3_{001}^+|0\}$, $\{m_{001}|0\}$, $\{m_{110}|0\}$

* symmetry operation $+ [0, 0, 0]$

Table 1: Symmetry operations for 3d polar vector.

No.	tag	matrix (polar)	det
1	$\{1 0\}$	$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}$	1
2	$\{3_{001}^+ 0\}$	$\begin{bmatrix} 0 & -1 & 0 & 0 \\ 1 & -1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}$	1
3	$\{3_{001}^- 0\}$	$\begin{bmatrix} -1 & 1 & 0 & 0 \\ -1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}$	1
4	$\{m_{001} 0\}$	$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & -1 & 0 \end{bmatrix}$	-1
5	$\{-6_{001}^- 0\}$	$\begin{bmatrix} 0 & -1 & 0 & 0 \\ 1 & -1 & 0 & 0 \\ 0 & 0 & -1 & 0 \end{bmatrix}$	-1
6	$\{-6_{001}^+ 0\}$	$\begin{bmatrix} -1 & 1 & 0 & 0 \\ -1 & 0 & 0 & 0 \\ 0 & 0 & -1 & 0 \end{bmatrix}$	-1
7	$\{m_{110} 0\}$	$\begin{bmatrix} 0 & -1 & 0 & 0 \\ -1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}$	-1
8	$\{m_{100} 0\}$	$\begin{bmatrix} -1 & 1 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}$	-1
9	$\{m_{010} 0\}$	$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 1 & -1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}$	-1
10	$\{2_{1-10} 0\}$	$\begin{bmatrix} 0 & -1 & 0 & 0 \\ -1 & 0 & 0 & 0 \\ 0 & 0 & -1 & 0 \end{bmatrix}$	1
11	$\{2_{120} 0\}$	$\begin{bmatrix} -1 & 1 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & -1 & 0 \end{bmatrix}$	1
12	$\{2_{210} 0\}$	$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 1 & -1 & 0 & 0 \\ 0 & 0 & -1 & 0 \end{bmatrix}$	1