

MSG No. 228.138  $Fd'3'c'$  [ Type III, cubic ]

\* symmetry operation

Table 1: Symmetry operations for 3d polar vector.

No.	tag	matrix (polar)	det	TR
1	$\{1 0\}$	$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}$	1	1
2	$\{4^+_{100}  \frac{1}{4} \frac{1}{2} \frac{1}{4}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{1}{4} \\ 0 & 0 & -1 & \frac{1}{2} \\ 0 & 1 & 0 & \frac{1}{4} \end{bmatrix}$	1	1
3	$\{4^-_{100}  \frac{1}{4} \frac{1}{4} \frac{1}{2}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{1}{4} \\ 0 & 0 & 1 & \frac{1}{4} \\ 0 & -1 & 0 & \frac{1}{2} \end{bmatrix}$	1	1
4	$\{4^+_{010}  \frac{1}{4} \frac{1}{4} \frac{1}{2}\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{1}{4} \\ 0 & 1 & 0 & \frac{1}{4} \\ -1 & 0 & 0 & \frac{1}{2} \end{bmatrix}$	1	1
5	$\{4^-_{010}  \frac{1}{2} \frac{1}{4} \frac{1}{4}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{1}{2} \\ 0 & 1 & 0 & \frac{1}{4} \\ 1 & 0 & 0 & \frac{1}{4} \end{bmatrix}$	1	1
6	$\{4^+_{001}  \frac{1}{2} \frac{1}{4} \frac{1}{4}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{1}{2} \\ 1 & 0 & 0 & \frac{1}{4} \\ 0 & 0 & 1 & \frac{1}{4} \end{bmatrix}$	1	1
7	$\{4^-_{001}  \frac{1}{4} \frac{1}{2} \frac{1}{4}\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{1}{4} \\ -1 & 0 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & \frac{1}{4} \end{bmatrix}$	1	1
8	$\{2_{100}  0 \frac{1}{4} \frac{1}{4}\}$	$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & -1 & 0 & \frac{1}{4} \\ 0 & 0 & -1 & \frac{1}{4} \end{bmatrix}$	1	1
9	$\{2_{010}  \frac{1}{4} 0 \frac{1}{4}\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{1}{4} \\ 0 & 1 & 0 & 0 \\ 0 & 0 & -1 & \frac{1}{4} \end{bmatrix}$	1	1
10	$\{2_{001}  \frac{1}{4} \frac{1}{4} 0\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{1}{4} \\ 0 & -1 & 0 & \frac{1}{4} \\ 0 & 0 & 1 & 0 \end{bmatrix}$	1	1
11	$\{2_{110}  \frac{1}{4} \frac{1}{4} \frac{1}{2}\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{1}{4} \\ 1 & 0 & 0 & \frac{1}{4} \\ 0 & 0 & -1 & \frac{1}{2} \end{bmatrix}$	1	1
12	$\{2_{1-10}  \frac{1}{2} \frac{1}{2} \frac{1}{2}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{1}{2} \\ -1 & 0 & 0 & \frac{1}{2} \\ 0 & 0 & -1 & \frac{1}{2} \end{bmatrix}$	1	1
13	$\{2_{011}  \frac{1}{2} \frac{1}{4} \frac{1}{4}\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & \frac{1}{4} \\ 0 & 1 & 0 & \frac{1}{4} \end{bmatrix}$	1	1

continued ...

Table 1

No.	tag	matrix (polar)	det	TR
14	$\{2_{01-1}  \frac{1}{2} \frac{1}{2} \frac{1}{2}\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{1}{2} \\ 0 & 0 & -1 & \frac{1}{2} \\ 0 & -1 & 0 & \frac{1}{2} \end{bmatrix}$	1	1
15	$\{2_{101}  \frac{1}{4} \frac{1}{2} \frac{1}{4}\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{1}{4} \\ 0 & -1 & 0 & \frac{1}{2} \\ 1 & 0 & 0 & \frac{1}{4} \end{bmatrix}$	1	1
16	$\{2_{-101}  \frac{1}{2} \frac{1}{2} \frac{1}{2}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{1}{2} \\ 0 & -1 & 0 & \frac{1}{2} \\ -1 & 0 & 0 & \frac{1}{2} \end{bmatrix}$	1	1
17	$\{3^+_{111}  0\}$	$\begin{bmatrix} 0 & 0 & 1 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \end{bmatrix}$	1	1
18	$\{3^-_{111}  0\}$	$\begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 1 & 0 & 0 & 0 \end{bmatrix}$	1	1
19	$\{3^-_{-1-1-1}  \frac{1}{4} 0 \frac{1}{4}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{1}{4} \\ 0 & 0 & 1 & 0 \\ -1 & 0 & 0 & \frac{1}{4} \end{bmatrix}$	1	1
20	$\{3^+_{1-1-1}  \frac{1}{4} \frac{1}{4} 0\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{1}{4} \\ -1 & 0 & 0 & \frac{1}{4} \\ 0 & 1 & 0 & 0 \end{bmatrix}$	1	1
21	$\{3^-_{-11-1}  \frac{1}{4} \frac{1}{4} 0\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{1}{4} \\ 0 & 0 & -1 & \frac{1}{4} \\ 1 & 0 & 0 & 0 \end{bmatrix}$	1	1
22	$\{3^+_{-11-1}  0 \frac{1}{4} \frac{1}{4}\}$	$\begin{bmatrix} 0 & 0 & 1 & 0 \\ -1 & 0 & 0 & \frac{1}{4} \\ 0 & -1 & 0 & \frac{1}{4} \end{bmatrix}$	1	1
23	$\{3^-_{-1-11}  0 \frac{1}{4} \frac{1}{4}\}$	$\begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & -1 & \frac{1}{4} \\ -1 & 0 & 0 & \frac{1}{4} \end{bmatrix}$	1	1
24	$\{3^+_{-1-11}  \frac{1}{4} 0 \frac{1}{4}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{1}{4} \\ 1 & 0 & 0 & 0 \\ 0 & -1 & 0 & \frac{1}{4} \end{bmatrix}$	1	1
25	$\{-1'  0\}$	$\begin{bmatrix} -1 & 0 & 0 & 0 \\ 0 & -1 & 0 & 0 \\ 0 & 0 & -1 & 0 \end{bmatrix}$	-1	-1
26	$\{-4^+_{100}'  \frac{1}{4} \frac{1}{2} \frac{1}{4}\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{1}{4} \\ 0 & 0 & 1 & \frac{1}{2} \\ 0 & -1 & 0 & \frac{1}{4} \end{bmatrix}$	-1	-1
27	$\{-4^-_{100}'  \frac{1}{4} \frac{1}{4} \frac{1}{2}\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{1}{4} \\ 0 & 0 & -1 & \frac{1}{4} \\ 0 & 1 & 0 & \frac{1}{2} \end{bmatrix}$	-1	-1

continued ...

Table 1

No.	tag	matrix (polar)	det	TR
28	$\{-4_{010}^+  \frac{1}{4} \frac{1}{4} \frac{1}{2}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{1}{4} \\ 0 & -1 & 0 & \frac{1}{4} \\ 1 & 0 & 0 & \frac{1}{2} \end{bmatrix}$	-1	-1
29	$\{-4_{010}^-  \frac{1}{2} \frac{1}{4} \frac{1}{4}\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{1}{2} \\ 0 & -1 & 0 & \frac{1}{4} \\ -1 & 0 & 0 & \frac{1}{4} \end{bmatrix}$	-1	-1
30	$\{-4_{001}^+  \frac{1}{2} \frac{1}{4} \frac{1}{4}\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{1}{2} \\ -1 & 0 & 0 & \frac{1}{4} \\ 0 & 0 & -1 & \frac{1}{4} \end{bmatrix}$	-1	-1
31	$\{-4_{001}^-  \frac{1}{4} \frac{1}{2} \frac{1}{4}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{1}{4} \\ 1 & 0 & 0 & \frac{1}{2} \\ 0 & 0 & -1 & \frac{1}{4} \end{bmatrix}$	-1	-1
32	$\{\text{m}_{100}'  0 \frac{1}{4} \frac{1}{4}\}$	$\begin{bmatrix} -1 & 0 & 0 & 0 \\ 0 & 1 & 0 & \frac{1}{4} \\ 0 & 0 & 1 & \frac{1}{4} \end{bmatrix}$	-1	-1
33	$\{\text{m}_{010}'  \frac{1}{4} 0 \frac{1}{4}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{1}{4} \\ 0 & -1 & 0 & 0 \\ 0 & 0 & 1 & \frac{1}{4} \end{bmatrix}$	-1	-1
34	$\{\text{m}_{001}'  \frac{1}{4} \frac{1}{4} 0\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{1}{4} \\ 0 & 1 & 0 & \frac{1}{4} \\ 0 & 0 & -1 & 0 \end{bmatrix}$	-1	-1
35	$\{\text{m}_{110}'  \frac{1}{4} \frac{1}{4} \frac{1}{2}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{1}{4} \\ -1 & 0 & 0 & \frac{1}{4} \\ 0 & 0 & 1 & \frac{1}{2} \end{bmatrix}$	-1	-1
36	$\{\text{m}_{1-10}'  \frac{1}{2} \frac{1}{2} \frac{1}{2}\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{1}{2} \\ 1 & 0 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & \frac{1}{2} \end{bmatrix}$	-1	-1
37	$\{\text{m}_{011}'  \frac{1}{2} \frac{1}{4} \frac{1}{4}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{1}{2} \\ 0 & 0 & -1 & \frac{1}{4} \\ 0 & -1 & 0 & \frac{1}{4} \end{bmatrix}$	-1	-1
38	$\{\text{m}_{01-1}'  \frac{1}{2} \frac{1}{2} \frac{1}{2}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & \frac{1}{2} \\ 0 & 1 & 0 & \frac{1}{2} \end{bmatrix}$	-1	-1
39	$\{\text{m}_{101}'  \frac{1}{4} \frac{1}{2} \frac{1}{4}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{1}{4} \\ 0 & 1 & 0 & \frac{1}{2} \\ -1 & 0 & 0 & \frac{1}{4} \end{bmatrix}$	-1	-1
40	$\{\text{m}_{-101}'  \frac{1}{2} \frac{1}{2} \frac{1}{2}\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{1}{2} \\ 0 & 1 & 0 & \frac{1}{2} \\ 1 & 0 & 0 & \frac{1}{2} \end{bmatrix}$	-1	-1
41	$\{-3_{111}^+  0\}$	$\begin{bmatrix} 0 & 0 & -1 & 0 \\ -1 & 0 & 0 & 0 \\ 0 & -1 & 0 & 0 \end{bmatrix}$	-1	-1

continued ...

Table 1

No.	tag	matrix (polar)	det	TR
42	$\{-3^-_{111}' 0\}$	$\begin{bmatrix} 0 & -1 & 0 & 0 \\ 0 & 0 & -1 & 0 \\ -1 & 0 & 0 & 0 \end{bmatrix}$	-1	-1
43	$\{-3^-_{1-1-1}' \frac{1}{4}0\frac{1}{4}\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{1}{4} \\ 0 & 0 & -1 & 0 \\ 1 & 0 & 0 & \frac{1}{4} \end{bmatrix}$	-1	-1
44	$\{-3^+_{1-1-1}' \frac{1}{4}\frac{1}{4}0\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{1}{4} \\ 1 & 0 & 0 & \frac{1}{4} \\ 0 & -1 & 0 & 0 \end{bmatrix}$	-1	-1
45	$\{-3^-_{-11-1}' \frac{1}{4}\frac{1}{4}0\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{1}{4} \\ 0 & 0 & 1 & \frac{1}{4} \\ -1 & 0 & 0 & 0 \end{bmatrix}$	-1	-1
46	$\{-3^+_{-11-1}' 0\frac{1}{4}\frac{1}{4}\}$	$\begin{bmatrix} 0 & 0 & -1 & 0 \\ 1 & 0 & 0 & \frac{1}{4} \\ 0 & 1 & 0 & \frac{1}{4} \end{bmatrix}$	-1	-1
47	$\{-3^-_{-1-11}' 0\frac{1}{4}\frac{1}{4}\}$	$\begin{bmatrix} 0 & -1 & 0 & 0 \\ 0 & 0 & 1 & \frac{1}{4} \\ 1 & 0 & 0 & \frac{1}{4} \end{bmatrix}$	-1	-1
48	$\{-3^+_{-1-11}' \frac{1}{4}0\frac{1}{4}\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{1}{4} \\ -1 & 0 & 0 & 0 \\ 0 & 1 & 0 & \frac{1}{4} \end{bmatrix}$	-1	-1
49	$\{1 0\frac{1}{2}\frac{1}{2}\}$	$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & \frac{1}{2} \end{bmatrix}$	1	1
50	$\{4^+_{100} \frac{1}{4}0\frac{3}{4}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{1}{4} \\ 0 & 0 & -1 & 0 \\ 0 & 1 & 0 & \frac{3}{4} \end{bmatrix}$	1	1
51	$\{4^-_{100} \frac{1}{4}\frac{3}{4}0\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{1}{4} \\ 0 & 0 & 1 & \frac{3}{4} \\ 0 & -1 & 0 & 0 \end{bmatrix}$	1	1
52	$\{4^+_{010} \frac{1}{4}\frac{3}{4}0\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{1}{4} \\ 0 & 1 & 0 & \frac{3}{4} \\ -1 & 0 & 0 & 0 \end{bmatrix}$	1	1
53	$\{4^-_{010} \frac{1}{2}\frac{3}{4}\frac{3}{4}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{1}{2} \\ 0 & 1 & 0 & \frac{3}{4} \\ 1 & 0 & 0 & \frac{3}{4} \end{bmatrix}$	1	1
54	$\{4^+_{001} \frac{1}{2}\frac{3}{4}\frac{3}{4}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{1}{2} \\ 1 & 0 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & \frac{3}{4} \end{bmatrix}$	1	1
55	$\{4^-_{001} \frac{1}{4}0\frac{3}{4}\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{1}{4} \\ -1 & 0 & 0 & 0 \\ 0 & 0 & 1 & \frac{3}{4} \end{bmatrix}$	1	1

continued ...

Table 1

No.	tag	matrix (polar)	det	TR
56	$\{2_{100} 0\frac{3}{4}\frac{3}{4}\}$	$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & -1 & 0 & \frac{3}{4} \\ 0 & 0 & -1 & \frac{3}{4} \end{bmatrix}$	1	1
57	$\{2_{010} \frac{1}{4}\frac{1}{2}\frac{3}{4}\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{1}{4} \\ 0 & 1 & 0 & \frac{1}{2} \\ 0 & 0 & -1 & \frac{3}{4} \end{bmatrix}$	1	1
58	$\{2_{001} \frac{1}{4}\frac{3}{4}\frac{1}{2}\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{1}{4} \\ 0 & -1 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & \frac{1}{2} \end{bmatrix}$	1	1
59	$\{2_{110} \frac{1}{4}\frac{3}{4}0\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{1}{4} \\ 1 & 0 & 0 & \frac{3}{4} \\ 0 & 0 & -1 & 0 \end{bmatrix}$	1	1
60	$\{2_{1-10} \frac{1}{2}00\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{1}{2} \\ -1 & 0 & 0 & 0 \\ 0 & 0 & -1 & 0 \end{bmatrix}$	1	1
61	$\{2_{011} \frac{1}{2}\frac{3}{4}\frac{3}{4}\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & \frac{3}{4} \\ 0 & 1 & 0 & \frac{3}{4} \end{bmatrix}$	1	1
62	$\{2_{01-1} \frac{1}{2}00\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{1}{2} \\ 0 & 0 & -1 & 0 \\ 0 & -1 & 0 & 0 \end{bmatrix}$	1	1
63	$\{2_{101} \frac{1}{4}0\frac{3}{4}\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{1}{4} \\ 0 & -1 & 0 & 0 \\ 1 & 0 & 0 & \frac{3}{4} \end{bmatrix}$	1	1
64	$\{2_{-101} \frac{1}{2}00\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{1}{2} \\ 0 & -1 & 0 & 0 \\ -1 & 0 & 0 & 0 \end{bmatrix}$	1	1
65	$\{3^+_{111} 0\frac{1}{2}\frac{1}{2}\}$	$\begin{bmatrix} 0 & 0 & 1 & 0 \\ 1 & 0 & 0 & \frac{1}{2} \\ 0 & 1 & 0 & \frac{1}{2} \end{bmatrix}$	1	1
66	$\{3^-_{111} 0\frac{1}{2}\frac{1}{2}\}$	$\begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & \frac{1}{2} \\ 1 & 0 & 0 & \frac{1}{2} \end{bmatrix}$	1	1
67	$\{3^-_{1-1-1} \frac{1}{4}\frac{1}{2}\frac{3}{4}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{1}{4} \\ 0 & 0 & 1 & \frac{1}{2} \\ -1 & 0 & 0 & \frac{3}{4} \end{bmatrix}$	1	1
68	$\{3^+_{1-1-1} \frac{1}{4}\frac{3}{4}\frac{1}{2}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{1}{4} \\ -1 & 0 & 0 & \frac{3}{4} \\ 0 & 1 & 0 & \frac{1}{2} \end{bmatrix}$	1	1
69	$\{3^-_{-11-1} \frac{1}{4}\frac{3}{4}\frac{1}{2}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{1}{4} \\ 0 & 0 & -1 & \frac{3}{4} \\ 1 & 0 & 0 & \frac{1}{2} \end{bmatrix}$	1	1

continued ...

Table 1

No.	tag	matrix (polar)	det	TR
70	$\{3^+_{-11-1} 0\frac{3}{4}\frac{3}{4}\}$	$\begin{bmatrix} 0 & 0 & 1 & 0 \\ -1 & 0 & 0 & \frac{3}{4} \\ 0 & -1 & 0 & \frac{3}{4} \end{bmatrix}$	1	1
71	$\{3^-_{-1-11} 0\frac{3}{4}\frac{3}{4}\}$	$\begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & -1 & \frac{3}{4} \\ -1 & 0 & 0 & \frac{3}{4} \end{bmatrix}$	1	1
72	$\{3^+_{-1-11} 1\frac{1}{4}\frac{1}{2}\frac{3}{4}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{1}{4} \\ 1 & 0 & 0 & \frac{1}{2} \\ 0 & -1 & 0 & \frac{3}{4} \end{bmatrix}$	1	1
73	$\{-1' 0\frac{1}{2}\frac{1}{2}\}$	$\begin{bmatrix} -1 & 0 & 0 & 0 \\ 0 & -1 & 0 & \frac{1}{2} \\ 0 & 0 & -1 & \frac{1}{2} \end{bmatrix}$	-1	-1
74	$\{-4^+_{100}' 1\frac{1}{4}0\frac{3}{4}\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{1}{4} \\ 0 & 0 & 1 & 0 \\ 0 & -1 & 0 & \frac{3}{4} \end{bmatrix}$	-1	-1
75	$\{-4^-_{100}' 1\frac{1}{4}\frac{3}{4}0\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{1}{4} \\ 0 & 0 & -1 & \frac{3}{4} \\ 0 & 1 & 0 & 0 \end{bmatrix}$	-1	-1
76	$\{-4^+_{010}' 1\frac{1}{4}\frac{3}{4}0\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{1}{4} \\ 0 & -1 & 0 & \frac{3}{4} \\ 1 & 0 & 0 & 0 \end{bmatrix}$	-1	-1
77	$\{-4^-_{010}' 1\frac{1}{2}\frac{3}{4}\frac{3}{4}\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{1}{2} \\ 0 & -1 & 0 & \frac{3}{4} \\ -1 & 0 & 0 & \frac{3}{4} \end{bmatrix}$	-1	-1
78	$\{-4^+_{001}' 1\frac{1}{2}\frac{3}{4}\frac{3}{4}\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{1}{2} \\ -1 & 0 & 0 & \frac{3}{4} \\ 0 & 0 & -1 & \frac{3}{4} \end{bmatrix}$	-1	-1
79	$\{-4^-_{001}' 1\frac{1}{4}0\frac{3}{4}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{1}{4} \\ 1 & 0 & 0 & 0 \\ 0 & 0 & -1 & \frac{3}{4} \end{bmatrix}$	-1	-1
80	$\{\text{m}_{100}' 0\frac{3}{4}\frac{3}{4}\}$	$\begin{bmatrix} -1 & 0 & 0 & 0 \\ 0 & 1 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & \frac{3}{4} \end{bmatrix}$	-1	-1
81	$\{\text{m}_{010}' 1\frac{1}{4}\frac{1}{2}\frac{3}{4}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{1}{4} \\ 0 & -1 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & \frac{3}{4} \end{bmatrix}$	-1	-1
82	$\{\text{m}_{001}' 1\frac{1}{4}\frac{3}{4}\frac{1}{2}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{1}{4} \\ 0 & 1 & 0 & \frac{3}{4} \\ 0 & 0 & -1 & \frac{1}{2} \end{bmatrix}$	-1	-1
83	$\{\text{m}_{110}' 1\frac{1}{4}\frac{3}{4}0\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{1}{4} \\ -1 & 0 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & 0 \end{bmatrix}$	-1	-1

continued ...

Table 1

No.	tag	matrix (polar)	det	TR
84	$\{m_{1-10}' \frac{1}{2}00\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{1}{2} \\ 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}$	-1	-1
85	$\{m_{011}' \frac{1}{2}\frac{3}{4}\frac{3}{4}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{1}{2} \\ 0 & 0 & -1 & \frac{3}{4} \\ 0 & -1 & 0 & \frac{3}{4} \end{bmatrix}$	-1	-1
86	$\{m_{01-1}' \frac{1}{2}00\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \end{bmatrix}$	-1	-1
87	$\{m_{101}' \frac{1}{4}0\frac{3}{4}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{1}{4} \\ 0 & 1 & 0 & 0 \\ -1 & 0 & 0 & \frac{3}{4} \end{bmatrix}$	-1	-1
88	$\{m_{-101}' \frac{1}{2}00\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{1}{2} \\ 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \end{bmatrix}$	-1	-1
89	$\{-3_{111}' 0\frac{1}{2}\frac{1}{2}\}$	$\begin{bmatrix} 0 & 0 & -1 & 0 \\ -1 & 0 & 0 & \frac{1}{2} \\ 0 & -1 & 0 & \frac{1}{2} \end{bmatrix}$	-1	-1
90	$\{-3_{111}' 0\frac{1}{2}\frac{1}{2}\}$	$\begin{bmatrix} 0 & -1 & 0 & 0 \\ 0 & 0 & -1 & \frac{1}{2} \\ -1 & 0 & 0 & \frac{1}{2} \end{bmatrix}$	-1	-1
91	$\{-3_{-1-1-1}' \frac{1}{4}\frac{1}{2}\frac{3}{4}\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{1}{4} \\ 0 & 0 & -1 & \frac{1}{2} \\ 1 & 0 & 0 & \frac{3}{4} \end{bmatrix}$	-1	-1
92	$\{-3_{1-1-1}' \frac{1}{4}\frac{3}{4}\frac{1}{2}\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{1}{4} \\ 1 & 0 & 0 & \frac{3}{4} \\ 0 & -1 & 0 & \frac{1}{2} \end{bmatrix}$	-1	-1
93	$\{-3_{-11-1}' \frac{1}{4}\frac{3}{4}\frac{1}{2}\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{1}{4} \\ 0 & 0 & 1 & \frac{3}{4} \\ -1 & 0 & 0 & \frac{1}{2} \end{bmatrix}$	-1	-1
94	$\{-3_{-11-1}' 0\frac{3}{4}\frac{3}{4}\}$	$\begin{bmatrix} 0 & 0 & -1 & 0 \\ 1 & 0 & 0 & \frac{3}{4} \\ 0 & 1 & 0 & \frac{3}{4} \end{bmatrix}$	-1	-1
95	$\{-3_{-1-11}' 0\frac{3}{4}\frac{3}{4}\}$	$\begin{bmatrix} 0 & -1 & 0 & 0 \\ 0 & 0 & 1 & \frac{3}{4} \\ 1 & 0 & 0 & \frac{3}{4} \end{bmatrix}$	-1	-1
96	$\{-3_{-1-11}' \frac{1}{4}\frac{1}{2}\frac{3}{4}\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{1}{4} \\ -1 & 0 & 0 & \frac{1}{2} \\ 0 & 1 & 0 & \frac{3}{4} \end{bmatrix}$	-1	-1
97	$\{1 \frac{1}{2}0\frac{1}{2}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{1}{2} \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & \frac{1}{2} \end{bmatrix}$	1	1

continued ...

Table 1

No.	tag	matrix (polar)	det	TR
98	$\{4^+_{100}   \frac{3}{4} \frac{1}{2} \frac{3}{4}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{3}{4} \\ 0 & 0 & -1 & \frac{1}{2} \\ 0 & 1 & 0 & \frac{3}{4} \end{bmatrix}$	1	1
99	$\{4^-_{100}   \frac{3}{4} \frac{1}{2} 0\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & \frac{1}{4} \\ 0 & -1 & 0 & 0 \end{bmatrix}$	1	1
100	$\{4^+_{010}   \frac{3}{4} \frac{1}{2} 0\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{3}{4} \\ 0 & 1 & 0 & \frac{1}{4} \\ -1 & 0 & 0 & 0 \end{bmatrix}$	1	1
101	$\{4^-_{010}   0 \frac{1}{4} \frac{3}{4}\}$	$\begin{bmatrix} 0 & 0 & -1 & 0 \\ 0 & 1 & 0 & \frac{1}{4} \\ 1 & 0 & 0 & \frac{3}{4} \end{bmatrix}$	1	1
102	$\{4^+_{001}   0 \frac{1}{4} \frac{3}{4}\}$	$\begin{bmatrix} 0 & -1 & 0 & 0 \\ 1 & 0 & 0 & \frac{1}{4} \\ 0 & 0 & 1 & \frac{3}{4} \end{bmatrix}$	1	1
103	$\{4^-_{001}   \frac{3}{4} \frac{1}{2} \frac{3}{4}\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{3}{4} \\ -1 & 0 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & \frac{3}{4} \end{bmatrix}$	1	1
104	$\{2_{100}   \frac{1}{2} \frac{1}{4} \frac{3}{4}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{1}{2} \\ 0 & -1 & 0 & \frac{1}{4} \\ 0 & 0 & -1 & \frac{3}{4} \end{bmatrix}$	1	1
105	$\{2_{010}   \frac{3}{4} 0 \frac{3}{4}\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{3}{4} \\ 0 & 1 & 0 & 0 \\ 0 & 0 & -1 & \frac{3}{4} \end{bmatrix}$	1	1
106	$\{2_{001}   \frac{3}{4} \frac{1}{4} \frac{1}{2}\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{3}{4} \\ 0 & -1 & 0 & \frac{1}{4} \\ 0 & 0 & 1 & \frac{1}{2} \end{bmatrix}$	1	1
107	$\{2_{110}   \frac{3}{4} \frac{1}{4} 0\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{3}{4} \\ 1 & 0 & 0 & \frac{1}{4} \\ 0 & 0 & -1 & 0 \end{bmatrix}$	1	1
108	$\{2_{1-10}   0 \frac{1}{2} 0\}$	$\begin{bmatrix} 0 & -1 & 0 & 0 \\ -1 & 0 & 0 & \frac{1}{2} \\ 0 & 0 & -1 & 0 \end{bmatrix}$	1	1
109	$\{2_{011}   0 \frac{1}{4} \frac{3}{4}\}$	$\begin{bmatrix} -1 & 0 & 0 & 0 \\ 0 & 0 & 1 & \frac{1}{4} \\ 0 & 1 & 0 & \frac{3}{4} \end{bmatrix}$	1	1
110	$\{2_{01-1}   0 \frac{1}{2} 0\}$	$\begin{bmatrix} -1 & 0 & 0 & 0 \\ 0 & 0 & -1 & \frac{1}{2} \\ 0 & -1 & 0 & 0 \end{bmatrix}$	1	1
111	$\{2_{101}   \frac{3}{4} \frac{1}{2} \frac{3}{4}\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{3}{4} \\ 0 & -1 & 0 & \frac{1}{2} \\ 1 & 0 & 0 & \frac{3}{4} \end{bmatrix}$	1	1

continued ...

Table 1

No.	tag	matrix (polar)	det	TR
112	$\{2_{-101} 0\frac{1}{2}0\}$	$\begin{bmatrix} 0 & 0 & -1 & 0 \\ 0 & -1 & 0 & \frac{1}{2} \\ -1 & 0 & 0 & 0 \end{bmatrix}$	1	1
113	$\{3^+_{111} \frac{1}{2}0\frac{1}{2}\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{1}{2} \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & \frac{1}{2} \end{bmatrix}$	1	1
114	$\{3^-_{111} \frac{1}{2}0\frac{1}{2}\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & 0 \\ 1 & 0 & 0 & \frac{1}{2} \end{bmatrix}$	1	1
115	$\{3^-_{1-1-1} \frac{3}{4}0\frac{3}{4}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & 0 \\ -1 & 0 & 0 & \frac{3}{4} \end{bmatrix}$	1	1
116	$\{3^+_{1-1-1} \frac{3}{4}\frac{1}{4}\frac{1}{2}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{3}{4} \\ -1 & 0 & 0 & \frac{1}{4} \\ 0 & 1 & 0 & \frac{1}{2} \end{bmatrix}$	1	1
117	$\{3^-_{-11-1} \frac{3}{4}\frac{1}{4}\frac{1}{2}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{3}{4} \\ 0 & 0 & -1 & \frac{1}{4} \\ 1 & 0 & 0 & \frac{1}{2} \end{bmatrix}$	1	1
118	$\{3^+_{-11-1} \frac{1}{2}\frac{1}{4}\frac{3}{4}\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{1}{2} \\ -1 & 0 & 0 & \frac{1}{4} \\ 0 & -1 & 0 & \frac{3}{4} \end{bmatrix}$	1	1
119	$\{3^-_{-1-11} \frac{1}{2}\frac{1}{4}\frac{3}{4}\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{1}{2} \\ 0 & 0 & -1 & \frac{1}{4} \\ -1 & 0 & 0 & \frac{3}{4} \end{bmatrix}$	1	1
120	$\{3^+_{-1-11} \frac{3}{4}0\frac{3}{4}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{3}{4} \\ 1 & 0 & 0 & 0 \\ 0 & -1 & 0 & \frac{3}{4} \end{bmatrix}$	1	1
121	$\{-1' \frac{1}{2}0\frac{1}{2}\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{1}{2} \\ 0 & -1 & 0 & 0 \\ 0 & 0 & -1 & \frac{1}{2} \end{bmatrix}$	-1	-1
122	$\{-4^+_{100}' \frac{3}{4}\frac{1}{2}\frac{3}{4}\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & \frac{1}{2} \\ 0 & -1 & 0 & \frac{3}{4} \end{bmatrix}$	-1	-1
123	$\{-4^-_{100}' \frac{3}{4}\frac{1}{4}0\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{3}{4} \\ 0 & 0 & -1 & \frac{1}{4} \\ 0 & 1 & 0 & 0 \end{bmatrix}$	-1	-1
124	$\{-4^+_{010}' \frac{3}{4}\frac{1}{4}0\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{3}{4} \\ 0 & -1 & 0 & \frac{1}{4} \\ 1 & 0 & 0 & 0 \end{bmatrix}$	-1	-1
125	$\{-4^-_{010}' 0\frac{1}{4}\frac{3}{4}\}$	$\begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & -1 & 0 & \frac{1}{4} \\ -1 & 0 & 0 & \frac{3}{4} \end{bmatrix}$	-1	-1

continued ...

Table 1

No.	tag	matrix (polar)	det	TR
126	$\{-4_{001}^+ 0\frac{1}{4}\frac{3}{4}\}$	$\begin{bmatrix} 0 & 1 & 0 & 0 \\ -1 & 0 & 0 & \frac{1}{4} \\ 0 & 0 & -1 & \frac{3}{4} \end{bmatrix}$	-1	-1
127	$\{-4_{001}^- \frac{3}{4}\frac{1}{2}\frac{3}{4}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{3}{4} \\ 1 & 0 & 0 & \frac{1}{2} \\ 0 & 0 & -1 & \frac{3}{4} \end{bmatrix}$	-1	-1
128	$\{m_{100}' \frac{1}{2}\frac{1}{4}\frac{3}{4}\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{1}{2} \\ 0 & 1 & 0 & \frac{1}{4} \\ 0 & 0 & 1 & \frac{3}{4} \end{bmatrix}$	-1	-1
129	$\{m_{010}' \frac{3}{4}0\frac{3}{4}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{3}{4} \\ 0 & -1 & 0 & 0 \\ 0 & 0 & 1 & \frac{3}{4} \end{bmatrix}$	-1	-1
130	$\{m_{001}' \frac{3}{4}\frac{1}{4}\frac{1}{2}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{3}{4} \\ 0 & 1 & 0 & \frac{1}{4} \\ 0 & 0 & -1 & \frac{1}{2} \end{bmatrix}$	-1	-1
131	$\{m_{110}' \frac{3}{4}\frac{1}{4}0\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{3}{4} \\ -1 & 0 & 0 & \frac{1}{4} \\ 0 & 0 & 1 & 0 \end{bmatrix}$	-1	-1
132	$\{m_{1-10}' 0\frac{1}{2}0\}$	$\begin{bmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & 0 \end{bmatrix}$	-1	-1
133	$\{m_{011}' 0\frac{1}{4}\frac{3}{4}\}$	$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & -1 & \frac{1}{4} \\ 0 & -1 & 0 & \frac{3}{4} \end{bmatrix}$	-1	-1
134	$\{m_{01-1}' 0\frac{1}{2}0\}$	$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & \frac{1}{2} \\ 0 & 1 & 0 & 0 \end{bmatrix}$	-1	-1
135	$\{m_{101}' \frac{3}{4}\frac{1}{2}\frac{3}{4}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{3}{4} \\ 0 & 1 & 0 & \frac{1}{2} \\ -1 & 0 & 0 & \frac{3}{4} \end{bmatrix}$	-1	-1
136	$\{m_{-101}' 0\frac{1}{2}0\}$	$\begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & \frac{1}{2} \\ 1 & 0 & 0 & 0 \end{bmatrix}$	-1	-1
137	$\{-3_{111}^+ \frac{1}{2}0\frac{1}{2}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{1}{2} \\ -1 & 0 & 0 & 0 \\ 0 & -1 & 0 & \frac{1}{2} \end{bmatrix}$	-1	-1
138	$\{-3_{111}^- \frac{1}{2}0\frac{1}{2}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{1}{2} \\ 0 & 0 & -1 & 0 \\ -1 & 0 & 0 & \frac{1}{2} \end{bmatrix}$	-1	-1
139	$\{-3_{1-1-1}^- \frac{3}{4}0\frac{3}{4}\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{3}{4} \\ 0 & 0 & -1 & 0 \\ 1 & 0 & 0 & \frac{3}{4} \end{bmatrix}$	-1	-1

continued ...

Table 1

No.	tag	matrix (polar)	det	TR
140	$\{-3_{1-1-1}^+  \frac{3}{4} \frac{1}{4} \frac{1}{2}\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{3}{4} \\ 1 & 0 & 0 & \frac{1}{4} \\ 0 & -1 & 0 & \frac{1}{2} \end{bmatrix}$	-1	-1
141	$\{-3_{-11-1}^-  \frac{3}{4} \frac{1}{4} \frac{1}{2}\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & \frac{1}{4} \\ -1 & 0 & 0 & \frac{1}{2} \end{bmatrix}$	-1	-1
142	$\{-3_{-11-1}^+  \frac{1}{2} \frac{1}{4} \frac{3}{4}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{1}{2} \\ 1 & 0 & 0 & \frac{1}{4} \\ 0 & 1 & 0 & \frac{3}{4} \end{bmatrix}$	-1	-1
143	$\{-3_{-1-11}^-  \frac{1}{2} \frac{1}{4} \frac{3}{4}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & \frac{1}{4} \\ 1 & 0 & 0 & \frac{3}{4} \end{bmatrix}$	-1	-1
144	$\{-3_{-1-11}^+  \frac{3}{4} 0 \frac{3}{4}\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{3}{4} \\ -1 & 0 & 0 & 0 \\ 0 & 1 & 0 & \frac{3}{4} \end{bmatrix}$	-1	-1
145	$\{1  \frac{1}{2} \frac{1}{2} 0\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{1}{2} \\ 0 & 1 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & 0 \end{bmatrix}$	1	1
146	$\{4_{100}^+  \frac{3}{4} 0 \frac{1}{4}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{3}{4} \\ 0 & 0 & -1 & 0 \\ 0 & 1 & 0 & \frac{1}{4} \end{bmatrix}$	1	1
147	$\{4_{100}^-  \frac{3}{4} \frac{3}{4} \frac{1}{2}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & \frac{3}{4} \\ 0 & -1 & 0 & \frac{1}{2} \end{bmatrix}$	1	1
148	$\{4_{010}^+  \frac{3}{4} \frac{3}{4} \frac{1}{2}\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{3}{4} \\ 0 & 1 & 0 & \frac{3}{4} \\ -1 & 0 & 0 & \frac{1}{2} \end{bmatrix}$	1	1
149	$\{4_{010}^-  0 \frac{3}{4} \frac{1}{4}\}$	$\begin{bmatrix} 0 & 0 & -1 & 0 \\ 0 & 1 & 0 & \frac{3}{4} \\ 1 & 0 & 0 & \frac{1}{4} \end{bmatrix}$	1	1
150	$\{4_{001}^+  0 \frac{3}{4} \frac{1}{4}\}$	$\begin{bmatrix} 0 & -1 & 0 & 0 \\ 1 & 0 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & \frac{1}{4} \end{bmatrix}$	1	1
151	$\{4_{001}^-  \frac{3}{4} 0 \frac{1}{4}\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{3}{4} \\ -1 & 0 & 0 & 0 \\ 0 & 0 & 1 & \frac{1}{4} \end{bmatrix}$	1	1
152	$\{2_{100}  \frac{1}{2} \frac{3}{4} \frac{1}{4}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{1}{2} \\ 0 & -1 & 0 & \frac{3}{4} \\ 0 & 0 & -1 & \frac{1}{4} \end{bmatrix}$	1	1
153	$\{2_{010}  \frac{3}{4} \frac{1}{2} \frac{1}{4}\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{3}{4} \\ 0 & 1 & 0 & \frac{1}{2} \\ 0 & 0 & -1 & \frac{1}{4} \end{bmatrix}$	1	1

continued ...

Table 1

No.	tag	matrix (polar)	det	TR
154	$\{2_{001} \frac{3}{4}\frac{3}{4}0\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{3}{4} \\ 0 & -1 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & 0 \end{bmatrix}$	1	1
155	$\{2_{110} \frac{3}{4}\frac{3}{4}\frac{1}{2}\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{3}{4} \\ 1 & 0 & 0 & \frac{3}{4} \\ 0 & 0 & -1 & \frac{1}{2} \end{bmatrix}$	1	1
156	$\{2_{1-10} 00\frac{1}{2}\}$	$\begin{bmatrix} 0 & -1 & 0 & 0 \\ -1 & 0 & 0 & 0 \\ 0 & 0 & -1 & \frac{1}{2} \end{bmatrix}$	1	1
157	$\{2_{011} 0\frac{3}{4}\frac{1}{4}\}$	$\begin{bmatrix} -1 & 0 & 0 & 0 \\ 0 & 0 & 1 & \frac{3}{4} \\ 0 & 1 & 0 & \frac{1}{4} \end{bmatrix}$	1	1
158	$\{2_{01-1} 00\frac{1}{2}\}$	$\begin{bmatrix} -1 & 0 & 0 & 0 \\ 0 & 0 & -1 & 0 \\ 0 & -1 & 0 & \frac{1}{2} \end{bmatrix}$	1	1
159	$\{2_{101} \frac{3}{4}0\frac{1}{4}\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{3}{4} \\ 0 & -1 & 0 & 0 \\ 1 & 0 & 0 & \frac{1}{4} \end{bmatrix}$	1	1
160	$\{2_{-101} 00\frac{1}{2}\}$	$\begin{bmatrix} 0 & 0 & -1 & 0 \\ 0 & -1 & 0 & 0 \\ -1 & 0 & 0 & \frac{1}{2} \end{bmatrix}$	1	1
161	$\{3^+_{111} \frac{1}{2}\frac{1}{2}0\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{1}{2} \\ 1 & 0 & 0 & \frac{1}{2} \\ 0 & 1 & 0 & 0 \end{bmatrix}$	1	1
162	$\{3^-_{111} \frac{1}{2}\frac{1}{2}0\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & \frac{1}{2} \\ 1 & 0 & 0 & 0 \end{bmatrix}$	1	1
163	$\{3^-_{1-1-1} \frac{3}{4}\frac{1}{2}\frac{1}{4}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & \frac{1}{2} \\ -1 & 0 & 0 & \frac{1}{4} \end{bmatrix}$	1	1
164	$\{3^+_{1-1-1} \frac{3}{4}\frac{3}{4}0\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{3}{4} \\ -1 & 0 & 0 & \frac{3}{4} \\ 0 & 1 & 0 & 0 \end{bmatrix}$	1	1
165	$\{3^-_{-11-1} \frac{3}{4}\frac{3}{4}0\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{3}{4} \\ 0 & 0 & -1 & \frac{3}{4} \\ 1 & 0 & 0 & 0 \end{bmatrix}$	1	1
166	$\{3^+_{-11-1} \frac{1}{2}\frac{3}{4}\frac{1}{4}\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{1}{2} \\ -1 & 0 & 0 & \frac{3}{4} \\ 0 & -1 & 0 & \frac{1}{4} \end{bmatrix}$	1	1
167	$\{3^-_{-1-11} \frac{1}{2}\frac{3}{4}\frac{1}{4}\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{1}{2} \\ 0 & 0 & -1 & \frac{3}{4} \\ -1 & 0 & 0 & \frac{1}{4} \end{bmatrix}$	1	1

continued ...

Table 1

No.	tag	matrix (polar)	det	TR
168	$\{3^+_{-1-11}   \frac{3}{4} \frac{1}{2} \frac{1}{4}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{3}{4} \\ 1 & 0 & 0 & \frac{1}{2} \\ 0 & -1 & 0 & \frac{1}{4} \end{bmatrix}$	1	1
169	$\{-1'   \frac{1}{2} \frac{1}{2} 0\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{1}{2} \\ 0 & -1 & 0 & \frac{1}{2} \\ 0 & 0 & -1 & 0 \end{bmatrix}$	-1	-1
170	$\{-4^+_{100}'   \frac{3}{4} 0 \frac{1}{4}\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & 0 \\ 0 & -1 & 0 & \frac{1}{4} \end{bmatrix}$	-1	-1
171	$\{-4^-_{100}'   \frac{3}{4} \frac{3}{4} \frac{1}{2}\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{3}{4} \\ 0 & 0 & -1 & \frac{3}{4} \\ 0 & 1 & 0 & \frac{1}{2} \end{bmatrix}$	-1	-1
172	$\{-4^+_{010}'   \frac{3}{4} \frac{3}{4} \frac{1}{2}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{3}{4} \\ 0 & -1 & 0 & \frac{3}{4} \\ 1 & 0 & 0 & \frac{1}{2} \end{bmatrix}$	-1	-1
173	$\{-4^-_{010}'   0 \frac{3}{4} \frac{1}{4}\}$	$\begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & -1 & 0 & \frac{3}{4} \\ -1 & 0 & 0 & \frac{1}{4} \end{bmatrix}$	-1	-1
174	$\{-4^+_{001}'   0 \frac{3}{4} \frac{1}{4}\}$	$\begin{bmatrix} 0 & 1 & 0 & 0 \\ -1 & 0 & 0 & \frac{3}{4} \\ 0 & 0 & -1 & \frac{1}{4} \end{bmatrix}$	-1	-1
175	$\{-4^-_{001}'   \frac{3}{4} 0 \frac{1}{4}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{3}{4} \\ 1 & 0 & 0 & 0 \\ 0 & 0 & -1 & \frac{1}{4} \end{bmatrix}$	-1	-1
176	$\{\text{m}_{100}'   \frac{1}{2} \frac{3}{4} \frac{1}{4}\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{1}{2} \\ 0 & 1 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & \frac{1}{4} \end{bmatrix}$	-1	-1
177	$\{\text{m}_{010}'   \frac{3}{4} \frac{1}{2} \frac{1}{4}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{3}{4} \\ 0 & -1 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & \frac{1}{4} \end{bmatrix}$	-1	-1
178	$\{\text{m}_{001}'   \frac{3}{4} \frac{3}{4} 0\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{3}{4} \\ 0 & 1 & 0 & \frac{3}{4} \\ 0 & 0 & -1 & 0 \end{bmatrix}$	-1	-1
179	$\{\text{m}_{110}'   \frac{3}{4} \frac{3}{4} \frac{1}{2}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{3}{4} \\ -1 & 0 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & \frac{1}{2} \end{bmatrix}$	-1	-1
180	$\{\text{m}_{1-10}'   0 0 \frac{1}{2}\}$	$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & \frac{1}{2} \end{bmatrix}$	-1	-1
181	$\{\text{m}_{011}'   0 \frac{3}{4} \frac{1}{4}\}$	$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & -1 & \frac{3}{4} \\ 0 & -1 & 0 & \frac{1}{4} \end{bmatrix}$	-1	-1

continued ...

Table 1

No.	tag	matrix (polar)	det	TR
182	$\{m_{01-1}' 00\frac{1}{2}\}$	$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & \frac{1}{2} \end{bmatrix}$	-1	-1
183	$\{m_{101}' \frac{3}{4}0\frac{1}{4}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{3}{4} \\ 0 & 1 & 0 & 0 \\ -1 & 0 & 0 & \frac{1}{4} \end{bmatrix}$	-1	-1
184	$\{m_{-101}' 00\frac{1}{2}\}$	$\begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & \frac{1}{2} \end{bmatrix}$	-1	-1
185	$\{-3_{111}' \frac{1}{2}\frac{1}{2}0\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{1}{2} \\ -1 & 0 & 0 & \frac{1}{2} \\ 0 & -1 & 0 & 0 \end{bmatrix}$	-1	-1
186	$\{-3_{111}' \frac{1}{2}\frac{1}{2}0\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{1}{2} \\ 0 & 0 & -1 & \frac{1}{2} \\ -1 & 0 & 0 & 0 \end{bmatrix}$	-1	-1
187	$\{-3_{-1-1-1}' \frac{3}{4}\frac{1}{2}\frac{1}{4}\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{3}{4} \\ 0 & 0 & -1 & \frac{1}{2} \\ 1 & 0 & 0 & \frac{1}{4} \end{bmatrix}$	-1	-1
188	$\{-3_{1-1-1}' \frac{3}{4}\frac{3}{4}0\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{3}{4} \\ 1 & 0 & 0 & \frac{3}{4} \\ 0 & -1 & 0 & 0 \end{bmatrix}$	-1	-1
189	$\{-3_{-11-1}' \frac{3}{4}\frac{3}{4}0\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & \frac{3}{4} \\ -1 & 0 & 0 & 0 \end{bmatrix}$	-1	-1
190	$\{-3_{-11-1}' \frac{1}{2}\frac{3}{4}\frac{1}{4}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{1}{2} \\ 1 & 0 & 0 & \frac{3}{4} \\ 0 & 1 & 0 & \frac{1}{4} \end{bmatrix}$	-1	-1
191	$\{-3_{-1-11}' \frac{1}{2}\frac{3}{4}\frac{1}{4}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & \frac{3}{4} \\ 1 & 0 & 0 & \frac{1}{4} \end{bmatrix}$	-1	-1
192	$\{-3_{-1-11}' \frac{3}{4}\frac{1}{2}\frac{1}{4}\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{3}{4} \\ -1 & 0 & 0 & \frac{1}{2} \\ 0 & 1 & 0 & \frac{1}{4} \end{bmatrix}$	-1	-1