

MSG No. 203.28 $Fd'3'$ [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	{2 ₁₀₀ 0 ₄ ³ ₄ ³ }	$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & -1 & 0 & \frac{3}{4} \\ 0 & 0 & -1 & \frac{3}{4} \end{bmatrix}$	1	1
3	{2 ₀₁₀ ₄ ³ ₄ ³ }	$\begin{bmatrix} -1 & 0 & 0 & \frac{3}{4} \\ 0 & 1 & 0 & 0 \\ 0 & 0 & -1 & \frac{3}{4} \end{bmatrix}$	1	1
4	{2 ₀₀₁ ₄ ³ ₄ ³ 0}	$\begin{bmatrix} -1 & 0 & 0 & \frac{3}{4} \\ 0 & -1 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & 0 \end{bmatrix}$	1	1
5	{3 ₁₁₁ ⁺ 0}	$\begin{bmatrix} 0 & 0 & 1 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \end{bmatrix}$	1	1
6	{3 ₁₁₁ ⁻ 0}	$\begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 1 & 0 & 0 & 0 \end{bmatrix}$	1	1
7	{3 ₁₋₁₋₁ ⁻ ₄ ³ ₄ ³ 0}	$\begin{bmatrix} 0 & -1 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & 0 \\ -1 & 0 & 0 & \frac{3}{4} \end{bmatrix}$	1	1
8	{3 ₁₋₁₋₁ ⁺ ₄ ³ ₄ ³ 0}	$\begin{bmatrix} 0 & 0 & -1 & \frac{3}{4} \\ -1 & 0 & 0 & \frac{3}{4} \\ 0 & 1 & 0 & 0 \end{bmatrix}$	1	1
9	{3 ₋₁₁₋₁ ⁻ ₄ ³ ₄ ³ 0}	$\begin{bmatrix} 0 & -1 & 0 & \frac{3}{4} \\ 0 & 0 & -1 & \frac{3}{4} \\ 1 & 0 & 0 & 0 \end{bmatrix}$	1	1
10	{3 ₋₁₁₋₁ ⁺ 0 ₄ ³ ₄ ³ }	$\begin{bmatrix} 0 & 0 & 1 & 0 \\ -1 & 0 & 0 & \frac{3}{4} \\ 0 & -1 & 0 & \frac{3}{4} \end{bmatrix}$	1	1
11	{3 ₋₁₋₁₁ ⁻ 0 ₄ ³ ₄ ³ }	$\begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & -1 & \frac{3}{4} \\ -1 & 0 & 0 & \frac{3}{4} \end{bmatrix}$	1	1
12	{3 ₋₁₋₁₁ ⁺ ₄ ³ ₄ ³ 0}	$\begin{bmatrix} 0 & 0 & -1 & \frac{3}{4} \\ 1 & 0 & 0 & 0 \\ 0 & -1 & 0 & \frac{3}{4} \end{bmatrix}$	1	1
13	{-1' 0}	$\begin{bmatrix} -1 & 0 & 0 & 0 \\ 0 & -1 & 0 & 0 \\ 0 & 0 & -1 & 0 \end{bmatrix}$	-1	-1

continued ...

Table 1

No.	tag	matrix (polar)	det	TR
14	$\{m_{100}' 0\frac{1}{4}\frac{1}{4}\}$	$\begin{bmatrix} -1 & 0 & 0 & 0 \\ 0 & 1 & 0 & \frac{1}{4} \\ 0 & 0 & 1 & \frac{1}{4} \end{bmatrix}$	-1	-1
15	$\{m_{010}' \frac{1}{4}0\frac{1}{4}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{1}{4} \\ 0 & -1 & 0 & 0 \\ 0 & 0 & 1 & \frac{1}{4} \end{bmatrix}$	-1	-1
16	$\{m_{001}' \frac{1}{4}\frac{1}{4}0\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{1}{4} \\ 0 & 1 & 0 & \frac{1}{4} \\ 0 & 0 & -1 & 0 \end{bmatrix}$	-1	-1
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	$\{1 0\frac{1}{2}\frac{1}{2}\}$	$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & \frac{1}{2} \end{bmatrix}$	1	1
26	$\{2_{100} 0\frac{1}{4}\frac{1}{4}\}$	$\begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & -1 & 0 & \frac{1}{4} \\ 0 & 0 & -1 & \frac{1}{4} \end{bmatrix}$	1	1
27	$\{2_{010} \frac{3}{4}\frac{1}{2}\frac{1}{4}\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{3}{4} \\ 0 & 1 & 0 & \frac{1}{2} \\ 0 & 0 & -1 & \frac{1}{4} \end{bmatrix}$	1	1

continued ...

Table 1

No.	tag	matrix (polar)	det	TR
28	$\{2_{001} \frac{3}{4}\frac{1}{4}\frac{1}{2}\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{3}{4} \\ 0 & -1 & 0 & \frac{1}{4} \\ 0 & 0 & 1 & \frac{1}{2} \end{bmatrix}$	1	1
29	$\{3^+_{111} 0\frac{1}{2}\frac{1}{2}\}$	$\begin{bmatrix} 0 & 0 & 1 & 0 \\ 1 & 0 & 0 & \frac{1}{2} \\ 0 & 1 & 0 & \frac{1}{2} \end{bmatrix}$	1	1
30	$\{3^-_{111} 0\frac{1}{2}\frac{1}{2}\}$	$\begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & \frac{1}{2} \\ 1 & 0 & 0 & \frac{1}{2} \end{bmatrix}$	1	1
31	$\{3^-_{1-1-1} \frac{3}{4}\frac{1}{2}\frac{1}{4}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & \frac{1}{2} \\ -1 & 0 & 0 & \frac{1}{4} \end{bmatrix}$	1	1
32	$\{3^+_{1-1-1} \frac{3}{4}\frac{1}{4}\frac{1}{2}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{3}{4} \\ -1 & 0 & 0 & \frac{1}{4} \\ 0 & 1 & 0 & \frac{1}{2} \end{bmatrix}$	1	1
33	$\{3^-_{-11-1} \frac{3}{4}\frac{1}{4}\frac{1}{2}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{3}{4} \\ 0 & 0 & -1 & \frac{1}{4} \\ 1 & 0 & 0 & \frac{1}{2} \end{bmatrix}$	1	1
34	$\{3^+_{-11-1} 0\frac{1}{4}\frac{1}{4}\}$	$\begin{bmatrix} 0 & 0 & 1 & 0 \\ -1 & 0 & 0 & \frac{1}{4} \\ 0 & -1 & 0 & \frac{1}{4} \end{bmatrix}$	1	1
35	$\{3^-_{-1-11} 0\frac{1}{4}\frac{1}{4}\}$	$\begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & -1 & \frac{1}{4} \\ -1 & 0 & 0 & \frac{1}{4} \end{bmatrix}$	1	1
36	$\{3^+_{-1-11} \frac{3}{4}\frac{1}{2}\frac{1}{4}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{3}{4} \\ 1 & 0 & 0 & \frac{1}{2} \\ 0 & -1 & 0 & \frac{1}{4} \end{bmatrix}$	1	1
37	$\{-1' 0\frac{1}{2}\frac{1}{2}\}$	$\begin{bmatrix} -1 & 0 & 0 & 0 \\ 0 & -1 & 0 & \frac{1}{2} \\ 0 & 0 & -1 & \frac{1}{2} \end{bmatrix}$	-1	-1
38	$\{\text{m}_{100}' 0\frac{3}{4}\frac{3}{4}\}$	$\begin{bmatrix} -1 & 0 & 0 & 0 \\ 0 & 1 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & \frac{3}{4} \end{bmatrix}$	-1	-1
39	$\{\text{m}_{010}' \frac{1}{4}\frac{1}{2}\frac{3}{4}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{1}{4} \\ 0 & -1 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & \frac{3}{4} \end{bmatrix}$	-1	-1
40	$\{\text{m}_{001}' \frac{1}{4}\frac{3}{4}\frac{1}{2}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{1}{4} \\ 0 & 1 & 0 & \frac{3}{4} \\ 0 & 0 & -1 & \frac{1}{2} \end{bmatrix}$	-1	-1
41	$\{-3^+_{111}' 0\frac{1}{2}\frac{1}{2}\}$	$\begin{bmatrix} 0 & 0 & -1 & 0 \\ -1 & 0 & 0 & \frac{1}{2} \\ 0 & -1 & 0 & \frac{1}{2} \end{bmatrix}$	-1	-1

continued ...

Table 1

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

continued ...

Table 1

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

continued ...

Table 1

No.	tag	matrix (polar)	det	TR
70	$\{-3_{-11-1}^+ \frac{1}{2} \frac{1}{4} \frac{3}{4}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{1}{2} \\ 1 & 0 & 0 & \frac{1}{4} \\ 0 & 1 & 0 & \frac{3}{4} \end{bmatrix}$	-1	-1
71	$\{-3_{-1-11}^- \frac{1}{2} \frac{1}{4} \frac{3}{4}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & \frac{1}{4} \\ 1 & 0 & 0 & \frac{3}{4} \end{bmatrix}$	-1	-1
72	$\{-3_{-1-11}^+ \frac{3}{4} 0 \frac{3}{4}\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{3}{4} \\ -1 & 0 & 0 & 0 \\ 0 & 1 & 0 & \frac{3}{4} \end{bmatrix}$	-1	-1
73	$\{1 \frac{1}{2} \frac{1}{2} 0\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{1}{2} \\ 0 & 1 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & 0 \end{bmatrix}$	1	1
74	$\{2_{100} \frac{1}{2} \frac{1}{4} \frac{3}{4}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{1}{2} \\ 0 & -1 & 0 & \frac{1}{4} \\ 0 & 0 & -1 & \frac{3}{4} \end{bmatrix}$	1	1
75	$\{2_{010} \frac{1}{4} \frac{1}{2} \frac{3}{4}\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{1}{4} \\ 0 & 1 & 0 & \frac{1}{2} \\ 0 & 0 & -1 & \frac{3}{4} \end{bmatrix}$	1	1
76	$\{2_{001} \frac{1}{4} \frac{1}{4} 0\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{1}{4} \\ 0 & -1 & 0 & \frac{1}{4} \\ 0 & 0 & 1 & 0 \end{bmatrix}$	1	1
77	$\{3_{111}^+ \frac{1}{2} \frac{1}{2} 0\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{1}{2} \\ 1 & 0 & 0 & \frac{1}{2} \\ 0 & 1 & 0 & 0 \end{bmatrix}$	1	1
78	$\{3_{111}^- \frac{1}{2} \frac{1}{2} 0\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & \frac{1}{2} \\ 1 & 0 & 0 & 0 \end{bmatrix}$	1	1
79	$\{3_{-1-1-1}^- \frac{1}{4} \frac{1}{2} \frac{3}{4}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{1}{4} \\ 0 & 0 & 1 & \frac{1}{2} \\ -1 & 0 & 0 & \frac{3}{4} \end{bmatrix}$	1	1
80	$\{3_{-1-1-1}^+ \frac{1}{4} \frac{1}{4} 0\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{1}{4} \\ -1 & 0 & 0 & \frac{1}{4} \\ 0 & 1 & 0 & 0 \end{bmatrix}$	1	1
81	$\{3_{-11-1}^- \frac{1}{4} \frac{1}{4} 0\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{1}{4} \\ 0 & 0 & -1 & \frac{1}{4} \\ 1 & 0 & 0 & 0 \end{bmatrix}$	1	1
82	$\{3_{-11-1}^+ \frac{1}{2} \frac{1}{4} \frac{3}{4}\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{1}{2} \\ -1 & 0 & 0 & \frac{1}{4} \\ 0 & -1 & 0 & \frac{3}{4} \end{bmatrix}$	1	1
83	$\{3_{-1-11}^- \frac{1}{2} \frac{1}{4} \frac{3}{4}\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{1}{2} \\ 0 & 0 & -1 & \frac{1}{4} \\ -1 & 0 & 0 & \frac{3}{4} \end{bmatrix}$	1	1

continued ...

Table 1

No.	tag	matrix (polar)	det	TR
84	$\{3^+_{-1-11} \frac{1}{4} \frac{1}{2} \frac{3}{4}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{1}{4} \\ 1 & 0 & 0 & \frac{1}{2} \\ 0 & -1 & 0 & \frac{3}{4} \end{bmatrix}$	1	1
85	$\{-1' \frac{1}{2} \frac{1}{2} 0\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{1}{2} \\ 0 & -1 & 0 & \frac{1}{2} \\ 0 & 0 & -1 & 0 \end{bmatrix}$	-1	-1
86	$\{m_{100}' \frac{1}{2} \frac{3}{4} \frac{1}{4}\}$	$\begin{bmatrix} -1 & 0 & 0 & \frac{1}{2} \\ 0 & 1 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & \frac{1}{4} \end{bmatrix}$	-1	-1
87	$\{m_{010}' \frac{3}{4} \frac{1}{2} \frac{1}{4}\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{3}{4} \\ 0 & -1 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & \frac{1}{4} \end{bmatrix}$	-1	-1
88	$\{m_{001}' \frac{3}{4} \frac{3}{4} 0\}$	$\begin{bmatrix} 1 & 0 & 0 & \frac{3}{4} \\ 0 & 1 & 0 & \frac{3}{4} \\ 0 & 0 & -1 & 0 \end{bmatrix}$	-1	-1
89	$\{-3^+_{111}' \frac{1}{2} \frac{1}{2} 0\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{1}{2} \\ -1 & 0 & 0 & \frac{1}{2} \\ 0 & -1 & 0 & 0 \end{bmatrix}$	-1	-1
90	$\{-3^-_{111}' \frac{1}{2} \frac{1}{2} 0\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{1}{2} \\ 0 & 0 & -1 & \frac{1}{2} \\ -1 & 0 & 0 & 0 \end{bmatrix}$	-1	-1
91	$\{-3^-_{1-1-1} \frac{3}{4} \frac{1}{2} \frac{1}{4}\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{3}{4} \\ 0 & 0 & -1 & \frac{1}{2} \\ 1 & 0 & 0 & \frac{1}{4} \end{bmatrix}$	-1	-1
92	$\{-3^+_{1-1-1} \frac{3}{4} \frac{3}{4} 0\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{3}{4} \\ 1 & 0 & 0 & \frac{3}{4} \\ 0 & -1 & 0 & 0 \end{bmatrix}$	-1	-1
93	$\{-3^-_{-11-1} \frac{3}{4} \frac{3}{4} 0\}$	$\begin{bmatrix} 0 & 1 & 0 & \frac{3}{4} \\ 0 & 0 & 1 & \frac{3}{4} \\ -1 & 0 & 0 & 0 \end{bmatrix}$	-1	-1
94	$\{-3^+_{-11-1} \frac{1}{2} \frac{3}{4} \frac{1}{4}\}$	$\begin{bmatrix} 0 & 0 & -1 & \frac{1}{2} \\ 1 & 0 & 0 & \frac{3}{4} \\ 0 & 1 & 0 & \frac{1}{4} \end{bmatrix}$	-1	-1
95	$\{-3^-_{-1-11} \frac{1}{2} \frac{3}{4} \frac{1}{4}\}$	$\begin{bmatrix} 0 & -1 & 0 & \frac{1}{2} \\ 0 & 0 & 1 & \frac{3}{4} \\ 1 & 0 & 0 & \frac{1}{4} \end{bmatrix}$	-1	-1
96	$\{-3^+_{-1-11} \frac{3}{4} \frac{1}{2} \frac{1}{4}\}$	$\begin{bmatrix} 0 & 0 & 1 & \frac{3}{4} \\ -1 & 0 & 0 & \frac{1}{2} \\ 0 & 1 & 0 & \frac{1}{4} \end{bmatrix}$	-1	-1