No. 18　D_3　312　(312 setting)　[trigonal] (axial)

表 1　rank 0

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
1	A_1	A1	–	–	$\mathbb{G}_0^{(h,A_1)}$	Gh(0,A1,,)	C_0

表 2　rank 1

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
2	A_2	A2	–	–	$\mathbb{G}_1^{(h,A_2)}$	Gh(1,A2,,)	C_0
3	E	E	–	0	$\mathbb{G}_{1,0}^{(h,E)}$	Gh(1,E,,0)	$-S_1$
4	E	E	–	1	$\mathbb{G}_{1,1}^{(h,E)}$	Gh(1,E,,1)	C_1

表 3　rank 2

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
5	A_1	A1	–	–	$\mathbb{G}_2^{(h,A_1)}$	Gh(2,A1,,)	C_0
6	E	E	1	0	$\mathbb{G}_{2,0}^{(h,E,1)}$	Gh(2,E,1,0)	C_1
7	E	E	1	1	$\mathbb{G}_{2,1}^{(h,E,1)}$	Gh(2,E,1,1)	S_1
8	E	E	2	0	$\mathbb{G}_{2,0}^{(h,E,2)}$	Gh(2,E,2,0)	C_2
9	E	E	2	1	$\mathbb{G}_{2,1}^{(h,E,2)}$	Gh(2,E,2,1)	$-S_2$

表 4　rank 3

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
10	A_1	A1	–	–	$\mathbb{G}_3^{(h,A_1)}$	Gh(3,A1,,)	S_3
11	A_2	A2	1	–	$\mathbb{G}_3^{(h,A_2,1)}$	Gh(3,A2,1,)	C_0
12	A_2	A2	2	–	$\mathbb{G}_3^{(h,A_2,2)}$	Gh(3,A2,2,)	C_3
13	E	E	1	0	$\mathbb{G}_{3,0}^{(h,E,1)}$	Gh(3,E,1,0)	$-S_1$
14	E	E	1	1	$\mathbb{G}_{3,1}^{(h,E,1)}$	Gh(3,E,1,1)	C_1
15	E	E	2	0	$\mathbb{G}_{3,0}^{(h,E,2)}$	Gh(3,E,2,0)	S_2
16	E	E	2	1	$\mathbb{G}_{3,1}^{(h,E,2)}$	Gh(3,E,2,1)	C_2

表 5　rank 4

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
17	A_1	A1	1	–	$\mathbb{G}_4^{(h,A_1,1)}$	Gh(4,A1,1,)	C_0
18	A_1	A1	2	–	$\mathbb{G}_4^{(h,A_1,2)}$	Gh(4,A1,2,)	C_3
19	A_2	A2	–	–	$\mathbb{G}_4^{(h,A_2)}$	Gh(4,A2,,)	S_3
20	E	E	1	0	$\mathbb{G}_{4,0}^{(h,E,1)}$	Gh(4,E,1,0)	C_1
21	E	E	1	1	$\mathbb{G}_{4,1}^{(h,E,1)}$	Gh(4,E,1,1)	S_1
22	E	E	2	0	$\mathbb{G}_{4,0}^{(h,E,2)}$	Gh(4,E,2,0)	C_4
23	E	E	2	1	$\mathbb{G}_{4,1}^{(h,E,2)}$	Gh(4,E,2,1)	S_4
24	E	E	3	0	$\mathbb{G}_{4,0}^{(h,E,3)}$	Gh(4,E,3,0)	C_2
25	E	E	3	1	$\mathbb{G}_{4,1}^{(h,E,3)}$	Gh(4,E,3,1)	$-S_2$

表6 rank 5

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
26	A_1	A1	—	—	$\mathbb{G}_5^{(h,A_1)}$	Gh(5,A1,,)	S_3
27	A_2	A2	1	—	$\mathbb{G}_5^{(h,A_2,1)}$	Gh(5,A2,1,)	C_0
28	A_2	A2	2	—	$\mathbb{G}_5^{(h,A_2,2)}$	Gh(5,A2,2,)	C_3
29	E	E	1	0	$\mathbb{G}_{5,0}^{(h,E,1)}$	Gh(5,E,1,0)	S_5
30	E	E	1	1	$\mathbb{G}_{5,1}^{(h,E,1)}$	Gh(5,E,1,1)	C_5
31	E	E	2	0	$\mathbb{G}_{5,0}^{(h,E,2)}$	Gh(5,E,2,0)	$-S_1$
32	E	E	2	1	$\mathbb{G}_{5,1}^{(h,E,2)}$	Gh(5,E,2,1)	C_1
33	E	E	3	0	$\mathbb{G}_{5,0}^{(h,E,3)}$	Gh(5,E,3,0)	$-S_4$
34	E	E	3	1	$\mathbb{G}_{5,1}^{(h,E,3)}$	Gh(5,E,3,1)	C_4
35	E	E	4	0	$\mathbb{G}_{5,0}^{(h,E,4)}$	Gh(5,E,4,0)	S_2
36	E	E	4	1	$\mathbb{G}_{5,1}^{(h,E,4)}$	Gh(5,E,4,1)	C_2

表7 rank 6

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
37	A_1	A1	1	—	$\mathbb{G}_6^{(h,A_1,1)}$	Gh(6,A1,1,)	C_0
38	A_1	A1	2	—	$\mathbb{G}_6^{(h,A_1,2)}$	Gh(6,A1,2,)	C_6
39	A_1	A1	3	—	$\mathbb{G}_6^{(h,A_1,3)}$	Gh(6,A1,3,)	C_3
40	A_2	A2	1	—	$\mathbb{G}_6^{(h,A_2,1)}$	Gh(6,A2,1,)	S_6
41	A_2	A2	2	—	$\mathbb{G}_6^{(h,A_2,2)}$	Gh(6,A2,2,)	S_3
42	E	E	1	0	$\mathbb{G}_{6,0}^{(h,E,1)}$	Gh(6,E,1,0)	C_5
43	E	E	1	1	$\mathbb{G}_{6,1}^{(h,E,1)}$	Gh(6,E,1,1)	$-S_5$
44	E	E	2	0	$\mathbb{G}_{6,0}^{(h,E,2)}$	Gh(6,E,2,0)	C_1
45	E	E	2	1	$\mathbb{G}_{6,1}^{(h,E,2)}$	Gh(6,E,2,1)	S_1
46	E	E	3	0	$\mathbb{G}_{6,0}^{(h,E,3)}$	Gh(6,E,3,0)	C_4
47	E	E	3	1	$\mathbb{G}_{6,1}^{(h,E,3)}$	Gh(6,E,3,1)	S_4
48	E	E	4	0	$\mathbb{G}_{6,0}^{(h,E,4)}$	Gh(6,E,4,0)	C_2
49	E	E	4	1	$\mathbb{G}_{6,1}^{(h,E,4)}$	Gh(6,E,4,1)	$-S_2$

表 8 rank 7

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
50	A_1	A1	1	–	$\mathbb{G}_7^{(h,A_1,1)}$	Gh(7, A1, 1,)	S_6
51	A_1	A1	2	–	$\mathbb{G}_7^{(h,A_1,2)}$	Gh(7, A1, 2,)	S_3
52	A_2	A2	1	–	$\mathbb{G}_7^{(h,A_2,1)}$	Gh(7, A2, 1,)	C_0
53	A_2	A2	2	–	$\mathbb{G}_7^{(h,A_2,2)}$	Gh(7, A2, 2,)	C_6
54	A_2	A2	3	–	$\mathbb{G}_7^{(h,A_2,3)}$	Gh(7, A2, 3,)	C_3
55	E	E	1	0	$\mathbb{G}_{7,0}^{(h,E,1)}$	Gh(7, E, 1, 0)	$-S_7$
56	E	E	1	1	$\mathbb{G}_{7,1}^{(h,E,1)}$	Gh(7, E, 1, 1)	C_7
57	E	E	2	0	$\mathbb{G}_{7,0}^{(h,E,2)}$	Gh(7, E, 2, 0)	S_5
58	E	E	2	1	$\mathbb{G}_{7,1}^{(h,E,2)}$	Gh(7, E, 2, 1)	C_5
59	E	E	3	0	$\mathbb{G}_{7,0}^{(h,E,3)}$	Gh(7, E, 3, 0)	$-S_1$
60	E	E	3	1	$\mathbb{G}_{7,1}^{(h,E,3)}$	Gh(7, E, 3, 1)	C_1
61	E	E	4	0	$\mathbb{G}_{7,0}^{(h,E,4)}$	Gh(7, E, 4, 0)	$-S_4$
62	E	E	4	1	$\mathbb{G}_{7,1}^{(h,E,4)}$	Gh(7, E, 4, 1)	C_4
63	E	E	5	0	$\mathbb{G}_{7,0}^{(h,E,5)}$	Gh(7, E, 5, 0)	S_2
64	E	E	5	1	$\mathbb{G}_{7,1}^{(h,E,5)}$	Gh(7, E, 5, 1)	C_2

表 9 rank 8

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
65	A_1	A1	1	–	$\mathbb{G}_8^{(h,A_1,1)}$	Gh(8, A1, 1,)	C_0
66	A_1	A1	2	–	$\mathbb{G}_8^{(h,A_1,2)}$	Gh(8, A1, 2,)	C_6
67	A_1	A1	3	–	$\mathbb{G}_8^{(h,A_1,3)}$	Gh(8, A1, 3,)	C_3
68	A_2	A2	1	–	$\mathbb{G}_8^{(h,A_2,1)}$	Gh(8, A2, 1,)	S_6
69	A_2	A2	2	–	$\mathbb{G}_8^{(h,A_2,2)}$	Gh(8, A2, 2,)	S_3
70	E	E	1	0	$\mathbb{G}_{8,0}^{(h,E,1)}$	Gh(8, E, 1, 0)	C_7
71	E	E	1	1	$\mathbb{G}_{8,1}^{(h,E,1)}$	Gh(8, E, 1, 1)	S_7
72	E	E	2	0	$\mathbb{G}_{8,0}^{(h,E,2)}$	Gh(8, E, 2, 0)	C_5
73	E	E	2	1	$\mathbb{G}_{8,1}^{(h,E,2)}$	Gh(8, E, 2, 1)	$-S_5$
74	E	E	3	0	$\mathbb{G}_{8,0}^{(h,E,3)}$	Gh(8, E, 3, 0)	C_1
75	E	E	3	1	$\mathbb{G}_{8,1}^{(h,E,3)}$	Gh(8, E, 3, 1)	S_1
76	E	E	4	0	$\mathbb{G}_{8,0}^{(h,E,4)}$	Gh(8, E, 4, 0)	C_8
77	E	E	4	1	$\mathbb{G}_{8,1}^{(h,E,4)}$	Gh(8, E, 4, 1)	$-S_8$
78	E	E	5	0	$\mathbb{G}_{8,0}^{(h,E,5)}$	Gh(8, E, 5, 0)	C_4
79	E	E	5	1	$\mathbb{G}_{8,1}^{(h,E,5)}$	Gh(8, E, 5, 1)	S_4
80	E	E	6	0	$\mathbb{G}_{8,0}^{(h,E,6)}$	Gh(8, E, 6, 0)	C_2
81	E	E	6	1	$\mathbb{G}_{8,1}^{(h,E,6)}$	Gh(8, E, 6, 1)	$-S_2$

表 10 rank 9

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
82	A_1	A1	1	—	$\mathbb{G}_9^{(h,A_1,1)}$	Gh(9,A1,1,)	S_6
83	A_1	A1	2	—	$\mathbb{G}_9^{(h,A_1,2)}$	Gh(9,A1,2,)	S_9
84	A_1	A1	3	—	$\mathbb{G}_9^{(h,A_1,3)}$	Gh(9,A1,3,)	S_3
85	A_2	A2	1	—	$\mathbb{G}_9^{(h,A_2,1)}$	Gh(9,A2,1,)	C_0
86	A_2	A2	2	—	$\mathbb{G}_9^{(h,A_2,2)}$	Gh(9,A2,2,)	C_6
87	A_2	A2	3	—	$\mathbb{G}_9^{(h,A_2,3)}$	Gh(9,A2,3,)	C_9
88	A_2	A2	4	—	$\mathbb{G}_9^{(h,A_2,4)}$	Gh(9,A2,4,)	C_3
89	E	E	1	0	$\mathbb{G}_{9,0}^{(h,E,1)}$	Gh(9,E,1,0)	$-S_7$
90	E	E	1	1	$\mathbb{G}_{9,1}^{(h,E,1)}$	Gh(9,E,1,1)	C_7
91	E	E	2	0	$\mathbb{G}_{9,0}^{(h,E,2)}$	Gh(9,E,2,0)	S_5
92	E	E	2	1	$\mathbb{G}_{9,1}^{(h,E,2)}$	Gh(9,E,2,1)	C_5
93	E	E	3	0	$\mathbb{G}_{9,0}^{(h,E,3)}$	Gh(9,E,3,0)	$-S_1$
94	E	E	3	1	$\mathbb{G}_{9,1}^{(h,E,3)}$	Gh(9,E,3,1)	C_1
95	E	E	4	0	$\mathbb{G}_{9,0}^{(h,E,4)}$	Gh(9,E,4,0)	S_8
96	E	E	4	1	$\mathbb{G}_{9,1}^{(h,E,4)}$	Gh(9,E,4,1)	C_8
97	E	E	5	0	$\mathbb{G}_{9,0}^{(h,E,5)}$	Gh(9,E,5,0)	$-S_4$
98	E	E	5	1	$\mathbb{G}_{9,1}^{(h,E,5)}$	Gh(9,E,5,1)	C_4
99	E	E	6	0	$\mathbb{G}_{9,0}^{(h,E,6)}$	Gh(9,E,6,0)	S_2
100	E	E	6	1	$\mathbb{G}_{9,1}^{(h,E,6)}$	Gh(9,E,6,1)	C_2

表 11 rank 10

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
101	A_1	A1	1	—	$\mathbb{G}_{10}^{(h,A_1,1)}$	Gh(10,A1,1,)	C_0
102	A_1	A1	2	—	$\mathbb{G}_{10}^{(h,A_1,2)}$	Gh(10,A1,2,)	C_6
103	A_1	A1	3	—	$\mathbb{G}_{10}^{(h,A_1,3)}$	Gh(10,A1,3,)	C_9
104	A_1	A1	4	—	$\mathbb{G}_{10}^{(h,A_1,4)}$	Gh(10,A1,4,)	C_3
105	A_2	A2	1	—	$\mathbb{G}_{10}^{(h,A_2,1)}$	Gh(10,A2,1,)	S_6
106	A_2	A2	2	—	$\mathbb{G}_{10}^{(h,A_2,2)}$	Gh(10,A2,2,)	S_9
107	A_2	A2	3	—	$\mathbb{G}_{10}^{(h,A_2,3)}$	Gh(10,A2,3,)	S_3
108	E	E	1	0	$\mathbb{G}_{10,0}^{(h,E,1)}$	Gh(10,E,1,0)	C_7
109	E	E	1	1	$\mathbb{G}_{10,1}^{(h,E,1)}$	Gh(10,E,1,1)	S_7
110	E	E	2	0	$\mathbb{G}_{10,0}^{(h,E,2)}$	Gh(10,E,2,0)	C_5
111	E	E	2	1	$\mathbb{G}_{10,1}^{(h,E,2)}$	Gh(10,E,2,1)	$-S_5$
112	E	E	3	0	$\mathbb{G}_{10,0}^{(h,E,3)}$	Gh(10,E,3,0)	C_1
113	E	E	3	1	$\mathbb{G}_{10,1}^{(h,E,3)}$	Gh(10,E,3,1)	S_1
114	E	E	4	0	$\mathbb{G}_{10,0}^{(h,E,4)}$	Gh(10,E,4,0)	C_{10}
115	E	E	4	1	$\mathbb{G}_{10,1}^{(h,E,4)}$	Gh(10,E,4,1)	S_{10}
116	E	E	5	0	$\mathbb{G}_{10,0}^{(h,E,5)}$	Gh(10,E,5,0)	C_8
117	E	E	5	1	$\mathbb{G}_{10,1}^{(h,E,5)}$	Gh(10,E,5,1)	$-S_8$
118	E	E	6	0	$\mathbb{G}_{10,0}^{(h,E,6)}$	Gh(10,E,6,0)	C_4
119	E	E	6	1	$\mathbb{G}_{10,1}^{(h,E,6)}$	Gh(10,E,6,1)	S_4
120	E	E	7	0	$\mathbb{G}_{10,0}^{(h,E,7)}$	Gh(10,E,7,0)	C_2
121	E	E	7	1	$\mathbb{G}_{10,1}^{(h,E,7)}$	Gh(10,E,7,1)	$-S_2$

表 12 rank 11

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
122	A_1	A1	1	$-$	$\mathbb{G}_{11}^{(h,A_1,1)}$	Gh(11, A1, 1,)	S_6
123	A_1	A1	2	$-$	$\mathbb{G}_{11}^{(h,A_1,2)}$	Gh(11, A1, 2,)	S_9
124	A_1	A1	3	$-$	$\mathbb{G}_{11}^{(h,A_1,3)}$	Gh(11, A1, 3,)	S_3
125	A_2	A2	1	$-$	$\mathbb{G}_{11}^{(h,A_2,1)}$	Gh(11, A2, 1,)	C_0
126	A_2	A2	2	$-$	$\mathbb{G}_{11}^{(h,A_2,2)}$	Gh(11, A2, 2,)	C_6
127	A_2	A2	3	$-$	$\mathbb{G}_{11}^{(h,A_2,3)}$	Gh(11, A2, 3,)	C_9
128	A_2	A2	4	$-$	$\mathbb{G}_{11}^{(h,A_2,4)}$	Gh(11, A2, 4,)	C_3
129	E	E	1	0	$\mathbb{G}_{11,0}^{(h,E,1)}$	Gh(11, E, 1, 0)	S_{11}
130	E	E	1	1	$\mathbb{G}_{11,1}^{(h,E,1)}$	Gh(11, E, 1, 1)	C_{11}
131	E	E	2	0	$\mathbb{G}_{11,0}^{(h,E,2)}$	Gh(11, E, 2, 0)	$-S_7$
132	E	E	2	1	$\mathbb{G}_{11,1}^{(h,E,2)}$	Gh(11, E, 2, 1)	C_7
133	E	E	3	0	$\mathbb{G}_{11,0}^{(h,E,3)}$	Gh(11, E, 3, 0)	S_5
134	E	E	3	1	$\mathbb{G}_{11,1}^{(h,E,3)}$	Gh(11, E, 3, 1)	C_5
135	E	E	4	0	$\mathbb{G}_{11,0}^{(h,E,4)}$	Gh(11, E, 4, 0)	$-S_1$
136	E	E	4	1	$\mathbb{G}_{11,1}^{(h,E,4)}$	Gh(11, E, 4, 1)	C_1
137	E	E	5	0	$\mathbb{G}_{11,0}^{(h,E,5)}$	Gh(11, E, 5, 0)	$-S_{10}$
138	E	E	5	1	$\mathbb{G}_{11,1}^{(h,E,5)}$	Gh(11, E, 5, 1)	C_{10}
139	E	E	6	0	$\mathbb{G}_{11,0}^{(h,E,6)}$	Gh(11, E, 6, 0)	S_8
140	E	E	6	1	$\mathbb{G}_{11,1}^{(h,E,6)}$	Gh(11, E, 6, 1)	C_8
141	E	E	7	0	$\mathbb{G}_{11,0}^{(h,E,7)}$	Gh(11, E, 7, 0)	$-S_4$
142	E	E	7	1	$\mathbb{G}_{11,1}^{(h,E,7)}$	Gh(11, E, 7, 1)	C_4
143	E	E	8	0	$\mathbb{G}_{11,0}^{(h,E,8)}$	Gh(11, E, 8, 0)	S_2
144	E	E	8	1	$\mathbb{G}_{11,1}^{(h,E,8)}$	Gh(11, E, 8, 1)	C_2