

# No. 28 $T$ 23 [ cubic ] (polar)

表 1 rank 0

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
1	$A$	$A$	—	—	$\mathbb{Q}_0^{(h,A)}$	$\text{Qh}(0, A, , )$	$C_0$

表 2 rank 1

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
2	$T$	$T$	—	0	$\mathbb{Q}_{1,0}^{(h,T)}$	$\text{Qh}(1, T, , 0)$	$C_1$
3	$T$	$T$	—	1	$\mathbb{Q}_{1,1}^{(h,T)}$	$\text{Qh}(1, T, , 1)$	$S_1$
4	$T$	$T$	—	2	$\mathbb{Q}_{1,2}^{(h,T)}$	$\text{Qh}(1, T, , 2)$	$C_0$

表 3 rank 2

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
5	$E$	$E$	—	0	$\mathbb{Q}_{2,0}^{(h,E)}$	$\text{Qh}(2, E, , 0)$	$C_0$
6	$E$	$E$	—	1	$\mathbb{Q}_{2,1}^{(h,E)}$	$\text{Qh}(2, E, , 1)$	$C_2$
7	$T$	$T$	—	0	$\mathbb{Q}_{2,0}^{(h,T)}$	$\text{Qh}(2, T, , 0)$	$S_1$
8	$T$	$T$	—	1	$\mathbb{Q}_{2,1}^{(h,T)}$	$\text{Qh}(2, T, , 1)$	$C_1$
9	$T$	$T$	—	2	$\mathbb{Q}_{2,2}^{(h,T)}$	$\text{Qh}(2, T, , 2)$	$S_2$

表 4 rank 3

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
10	$A$	$A$	—	—	$\mathbb{Q}_3^{(h,A)}$	$\text{Qh}(3, A, , )$	$S_2$
11	$T$	$T$	1	0	$\mathbb{Q}_{3,0}^{(h,T,1)}$	$\text{Qh}(3, T, 1, 0)$	$-\frac{\sqrt{6}C_1}{4} + \frac{\sqrt{10}C_3}{4}$
12	$T$	$T$	1	1	$\mathbb{Q}_{3,1}^{(h,T,1)}$	$\text{Qh}(3, T, 1, 1)$	$-\frac{\sqrt{6}S_1}{4} - \frac{\sqrt{10}S_3}{4}$
13	$T$	$T$	1	2	$\mathbb{Q}_{3,2}^{(h,T,1)}$	$\text{Qh}(3, T, 1, 2)$	$C_0$
14	$T$	$T$	2	0	$\mathbb{Q}_{3,0}^{(h,T,2)}$	$\text{Qh}(3, T, 2, 0)$	$-\frac{\sqrt{10}C_1}{4} - \frac{\sqrt{6}C_3}{4}$
15	$T$	$T$	2	1	$\mathbb{Q}_{3,1}^{(h,T,2)}$	$\text{Qh}(3, T, 2, 1)$	$\frac{\sqrt{10}S_1}{4} - \frac{\sqrt{6}S_3}{4}$
16	$T$	$T$	2	2	$\mathbb{Q}_{3,2}^{(h,T,2)}$	$\text{Qh}(3, T, 2, 2)$	$C_2$

表 5 rank 4

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
17	$A$	$A$	—	—	$\mathbb{Q}_4^{(h,A)}$	$\text{Qh}(4, A, , )$	$\frac{\sqrt{21}C_0}{6} + \frac{\sqrt{15}C_4}{6}$
18	$E$	$E$	—	0	$\mathbb{Q}_{4,0}^{(h,E)}$	$\text{Qh}(4, E, , 0)$	$\frac{\sqrt{15}C_0}{6} - \frac{\sqrt{21}C_4}{6}$
19	$E$	$E$	—	1	$\mathbb{Q}_{4,1}^{(h,E)}$	$\text{Qh}(4, E, , 1)$	$-C_2$
20	$T$	$T$	1	0	$\mathbb{Q}_{4,0}^{(h,T,1)}$	$\text{Qh}(4, T, 1, 0)$	$-\frac{\sqrt{14}S_1}{4} - \frac{\sqrt{2}S_3}{4}$
21	$T$	$T$	1	1	$\mathbb{Q}_{4,1}^{(h,T,1)}$	$\text{Qh}(4, T, 1, 1)$	$\frac{\sqrt{14}C_1}{4} - \frac{\sqrt{2}C_3}{4}$
22	$T$	$T$	1	2	$\mathbb{Q}_{4,2}^{(h,T,1)}$	$\text{Qh}(4, T, 1, 2)$	$S_4$
23	$T$	$T$	2	0	$\mathbb{Q}_{4,0}^{(h,T,2)}$	$\text{Qh}(4, T, 2, 0)$	$-\frac{\sqrt{2}S_1}{4} + \frac{\sqrt{14}S_3}{4}$
24	$T$	$T$	2	1	$\mathbb{Q}_{4,1}^{(h,T,2)}$	$\text{Qh}(4, T, 2, 1)$	$-\frac{\sqrt{2}C_1}{4} - \frac{\sqrt{14}C_3}{4}$
25	$T$	$T$	2	2	$\mathbb{Q}_{4,2}^{(h,T,2)}$	$\text{Qh}(4, T, 2, 2)$	$S_2$

表 6 rank 5

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
26	$E$	$E$	—	0	$Q_{5,0}^{(h,E)}$	$Qh(5, E, , 0)$	$S_4$
27	$E$	$E$	—	1	$Q_{5,1}^{(h,E)}$	$Qh(5, E, , 1)$	$-S_2$
28	$T$	$T$	1	0	$Q_{5,0}^{(h,T,1)}$	$Qh(5, T, 1, 0)$	$\frac{\sqrt{15}C_1}{8} - \frac{\sqrt{70}C_3}{16} + \frac{3\sqrt{14}C_5}{16}$
29	$T$	$T$	1	1	$Q_{5,1}^{(h,T,1)}$	$Qh(5, T, 1, 1)$	$\frac{\sqrt{15}S_1}{8} + \frac{\sqrt{70}S_3}{16} + \frac{3\sqrt{14}S_5}{16}$
30	$T$	$T$	1	2	$Q_{5,2}^{(h,T,1)}$	$Qh(5, T, 1, 2)$	$C_0$
31	$T$	$T$	2	0	$Q_{5,0}^{(h,T,2)}$	$Qh(5, T, 2, 0)$	$\frac{\sqrt{21}C_1}{8} + \frac{9\sqrt{2}C_3}{16} + \frac{\sqrt{10}C_5}{16}$
32	$T$	$T$	2	1	$Q_{5,1}^{(h,T,2)}$	$Qh(5, T, 2, 1)$	$\frac{\sqrt{21}S_1}{8} - \frac{9\sqrt{2}S_3}{16} + \frac{\sqrt{10}S_5}{16}$
33	$T$	$T$	2	2	$Q_{5,2}^{(h,T,2)}$	$Qh(5, T, 2, 2)$	$C_4$
34	$T$	$T$	3	0	$Q_{5,0}^{(h,T,3)}$	$Qh(5, T, 3, 0)$	$\frac{\sqrt{7}C_1}{4} - \frac{\sqrt{6}C_3}{8} - \frac{\sqrt{30}C_5}{8}$
35	$T$	$T$	3	1	$Q_{5,1}^{(h,T,3)}$	$Qh(5, T, 3, 1)$	$-\frac{\sqrt{7}S_1}{4} - \frac{\sqrt{6}S_3}{8} + \frac{\sqrt{30}S_5}{8}$
36	$T$	$T$	3	2	$Q_{5,2}^{(h,T,3)}$	$Qh(5, T, 3, 2)$	$C_2$

表 7 rank 6

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
37	$A$	$A$	1	—	$Q_6^{(h,A,1)}$	$Qh(6, A, 1, )$	$\frac{\sqrt{2}C_0}{4} - \frac{\sqrt{14}C_4}{4}$
38	$A$	$A$	2	—	$Q_6^{(h,A,2)}$	$Qh(6, A, 2, )$	$\frac{\sqrt{11}C_2}{4} - \frac{\sqrt{5}C_6}{4}$
39	$E$	$E$	—	0	$Q_{6,0}^{(h,E)}$	$Qh(6, E, , 0)$	$\frac{\sqrt{2}(\sqrt{7}C_0+C_4)}{4}$
40	$E$	$E$	—	1	$Q_{6,1}^{(h,E)}$	$Qh(6, E, , 1)$	$\frac{\sqrt{5}C_2}{4} + \frac{\sqrt{11}C_6}{4}$
41	$T$	$T$	1	0	$Q_{6,0}^{(h,T,1)}$	$Qh(6, T, 1, 0)$	$\frac{\sqrt{3}S_1}{4} - \frac{\sqrt{30}S_3}{8} - \frac{\sqrt{22}S_5}{8}$
42	$T$	$T$	1	1	$Q_{6,1}^{(h,T,1)}$	$Qh(6, T, 1, 1)$	$-\frac{\sqrt{3}C_1}{4} - \frac{\sqrt{30}C_3}{8} + \frac{\sqrt{22}C_5}{8}$
43	$T$	$T$	1	2	$Q_{6,2}^{(h,T,1)}$	$Qh(6, T, 1, 2)$	$S_4$
44	$T$	$T$	2	0	$Q_{6,0}^{(h,T,2)}$	$Qh(6, T, 2, 0)$	$\frac{3\sqrt{22}S_1}{16} + \frac{\sqrt{55}S_3}{16} + \frac{\sqrt{3}S_5}{16}$
45	$T$	$T$	2	1	$Q_{6,1}^{(h,T,2)}$	$Qh(6, T, 2, 1)$	$\frac{3\sqrt{22}C_1}{16} - \frac{\sqrt{55}C_3}{16} + \frac{\sqrt{3}C_5}{16}$
46	$T$	$T$	2	2	$Q_{6,2}^{(h,T,2)}$	$Qh(6, T, 2, 2)$	$S_6$
47	$T$	$T$	3	0	$Q_{6,0}^{(h,T,3)}$	$Qh(6, T, 3, 0)$	$\frac{\sqrt{10}S_1}{16} - \frac{9S_3}{16} + \frac{\sqrt{165}S_5}{16}$
48	$T$	$T$	3	1	$Q_{6,1}^{(h,T,3)}$	$Qh(6, T, 3, 1)$	$\frac{\sqrt{10}C_1}{16} + \frac{9C_3}{16} + \frac{\sqrt{165}C_5}{16}$
49	$T$	$T$	3	2	$Q_{6,2}^{(h,T,3)}$	$Qh(6, T, 3, 2)$	$S_2$

表 8 rank 7

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
50	$A$	$A$	—	—	$Q_7^{(h,A)}$	$Qh(7, A, , )$	$\frac{\sqrt{78}S_2}{12} + \frac{\sqrt{66}S_6}{12}$
51	$E$	$E$	—	0	$Q_{7,0}^{(h,E)}$	$Qh(7, E, , 0)$	$S_4$
52	$E$	$E$	—	1	$Q_{7,1}^{(h,E)}$	$Qh(7, E, , 1)$	$\frac{\sqrt{66}S_2}{12} - \frac{\sqrt{78}S_6}{12}$
53	$T$	$T$	1	0	$Q_{7,0}^{(h,T,1)}$	$Qh(7, T, 1, 0)$	$-\frac{5\sqrt{7}C_1}{32} + \frac{3\sqrt{21}C_3}{32} - \frac{\sqrt{231}C_5}{32} + \frac{\sqrt{429}C_7}{32}$
54	$T$	$T$	1	1	$Q_{7,1}^{(h,T,1)}$	$Qh(7, T, 1, 1)$	$-\frac{5\sqrt{7}S_1}{32} - \frac{3\sqrt{21}S_3}{32} - \frac{\sqrt{231}S_5}{32} - \frac{\sqrt{429}S_7}{32}$
55	$T$	$T$	1	2	$Q_{7,2}^{(h,T,1)}$	$Qh(7, T, 1, 2)$	$C_0$
56	$T$	$T$	2	0	$Q_{7,0}^{(h,T,2)}$	$Qh(7, T, 2, 0)$	$-\frac{3\sqrt{33}C_1}{32} - \frac{\sqrt{11}C_3}{32} + \frac{25C_5}{32} + \frac{\sqrt{91}C_7}{32}$
57	$T$	$T$	2	1	$Q_{7,1}^{(h,T,2)}$	$Qh(7, T, 2, 1)$	$-\frac{3\sqrt{33}S_1}{32} + \frac{\sqrt{11}S_3}{32} + \frac{25S_5}{32} - \frac{\sqrt{91}S_7}{32}$
58	$T$	$T$	2	2	$Q_{7,2}^{(h,T,2)}$	$Qh(7, T, 2, 2)$	$C_4$
59	$T$	$T$	3	0	$Q_{7,0}^{(h,T,3)}$	$Qh(7, T, 3, 0)$	$-\frac{\sqrt{858}C_1}{64} - \frac{3\sqrt{286}C_3}{64} - \frac{5\sqrt{26}C_5}{64} - \frac{\sqrt{14}C_7}{64}$
60	$T$	$T$	3	1	$Q_{7,1}^{(h,T,3)}$	$Qh(7, T, 3, 1)$	$\frac{\sqrt{858}S_1}{64} - \frac{3\sqrt{286}S_3}{64} + \frac{5\sqrt{26}S_5}{64} - \frac{\sqrt{14}S_7}{64}$
61	$T$	$T$	3	2	$Q_{7,2}^{(h,T,3)}$	$Qh(7, T, 3, 2)$	$C_6$
62	$T$	$T$	4	0	$Q_{7,0}^{(h,T,4)}$	$Qh(7, T, 4, 0)$	$-\frac{15\sqrt{6}C_1}{64} + \frac{19\sqrt{2}C_3}{64} - \frac{\sqrt{22}C_5}{64} - \frac{\sqrt{2002}C_7}{64}$
63	$T$	$T$	4	1	$Q_{7,1}^{(h,T,4)}$	$Qh(7, T, 4, 1)$	$\frac{15\sqrt{6}S_1}{64} + \frac{19\sqrt{2}S_3}{64} + \frac{\sqrt{22}S_5}{64} - \frac{\sqrt{2002}S_7}{64}$
64	$T$	$T$	4	2	$Q_{7,2}^{(h,T,4)}$	$Qh(7, T, 4, 2)$	$C_2$

表 9 rank 8

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
65	$A$	$A$	—	—	$Q_8^{(h,A)}$	$Qh(8, A, , )$	$\frac{\sqrt{33}C_0}{8} + \frac{\sqrt{21}C_4}{12} + \frac{\sqrt{195}C_8}{24}$
66	$E$	$E$	1	0	$Q_{8,0}^{(h,E,1)}$	$Qh(8, E, 1, 0)$	$-\frac{\sqrt{286}C_0}{32} + \frac{\sqrt{182}C_4}{16} + \frac{\sqrt{10}C_8}{32}$
67	$E$	$E$	1	1	$Q_{8,1}^{(h,E,1)}$	$Qh(8, E, 1, 1)$	$C_6$
68	$E$	$E$	2	0	$Q_{8,0}^{(h,E,2)}$	$Qh(8, E, 2, 0)$	$-\frac{\sqrt{210}C_0}{32} - \frac{\sqrt{330}C_4}{48} + \frac{\sqrt{6006}C_8}{96}$
69	$E$	$E$	2	1	$Q_{8,1}^{(h,E,2)}$	$Qh(8, E, 2, 1)$	$C_2$
70	$T$	$T$	1	0	$Q_{8,0}^{(h,T,1)}$	$Qh(8, T, 1, 0)$	$-\frac{\sqrt{715}S_1}{32} - \frac{\sqrt{273}S_3}{32} - \frac{\sqrt{35}S_5}{32} - \frac{S_7}{32}$
71	$T$	$T$	1	1	$Q_{8,1}^{(h,T,1)}$	$Qh(8, T, 1, 1)$	$\frac{\sqrt{715}C_1}{32} - \frac{\sqrt{273}C_3}{32} + \frac{\sqrt{35}C_5}{32} - \frac{C_7}{32}$
72	$T$	$T$	1	2	$Q_{8,2}^{(h,T,1)}$	$Qh(8, T, 1, 2)$	$S_8$
73	$T$	$T$	2	0	$Q_{8,0}^{(h,T,2)}$	$Qh(8, T, 2, 0)$	$-\frac{\sqrt{77}S_1}{32} + \frac{5\sqrt{15}S_3}{32} - \frac{3\sqrt{13}S_5}{32} - \frac{\sqrt{455}S_7}{32}$
74	$T$	$T$	2	1	$Q_{8,1}^{(h,T,2)}$	$Qh(8, T, 2, 1)$	$\frac{\sqrt{77}C_1}{32} + \frac{5\sqrt{15}C_3}{32} + \frac{3\sqrt{13}C_5}{32} - \frac{\sqrt{455}C_7}{32}$
75	$T$	$T$	2	2	$Q_{8,2}^{(h,T,2)}$	$Qh(8, T, 2, 2)$	$S_4$
76	$T$	$T$	3	0	$Q_{8,0}^{(h,T,3)}$	$Qh(8, T, 3, 0)$	$-\frac{\sqrt{858}S_1}{64} + \frac{\sqrt{910}S_3}{64} + \frac{7\sqrt{42}S_5}{64} + \frac{3\sqrt{30}S_7}{64}$
77	$T$	$T$	3	1	$Q_{8,1}^{(h,T,3)}$	$Qh(8, T, 3, 1)$	$-\frac{\sqrt{858}C_1}{64} - \frac{\sqrt{910}C_3}{64} + \frac{7\sqrt{42}C_5}{64} - \frac{3\sqrt{30}C_7}{64}$
78	$T$	$T$	3	2	$Q_{8,2}^{(h,T,3)}$	$Qh(8, T, 3, 2)$	$S_6$
79	$T$	$T$	4	0	$Q_{8,0}^{(h,T,4)}$	$Qh(8, T, 4, 0)$	$-\frac{\sqrt{70}S_1}{64} + \frac{3\sqrt{66}S_3}{64} - \frac{\sqrt{1430}S_5}{64} + \frac{\sqrt{2002}S_7}{64}$
80	$T$	$T$	4	1	$Q_{8,1}^{(h,T,4)}$	$Qh(8, T, 4, 1)$	$-\frac{\sqrt{70}C_1}{64} - \frac{3\sqrt{66}C_3}{64} - \frac{\sqrt{1430}C_5}{64} - \frac{\sqrt{2002}C_7}{64}$
81	$T$	$T$	4	2	$Q_{8,2}^{(h,T,4)}$	$Qh(8, T, 4, 2)$	$S_2$

表 10 rank 9

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
82	$A$	$A$	1	—	$Q_9^{(h,A,1)}$	$Qh(9, A, 1, )$	$\frac{\sqrt{102}S_4}{12} - \frac{\sqrt{42}S_8}{12}$
83	$A$	$A$	2	—	$Q_9^{(h,A,2)}$	$Qh(9, A, 2, )$	$\frac{\sqrt{3}S_2}{4} - \frac{\sqrt{13}S_6}{4}$
84	$E$	$E$	—	0	$Q_{9,0}^{(h,E)}$	$Qh(9, E, , 0)$	$\frac{\sqrt{42}S_4}{12} + \frac{\sqrt{102}S_8}{12}$
85	$E$	$E$	—	1	$Q_{9,1}^{(h,E)}$	$Qh(9, E, , 1)$	$-\frac{\sqrt{13}S_2}{4} - \frac{\sqrt{3}S_6}{4}$
86	$T$	$T$	1	0	$Q_{9,0}^{(h,T,1)}$	$Qh(9, T, 1, 0)$	$\frac{21\sqrt{5}C_1}{128} - \frac{\sqrt{2310}C_3}{128} + \frac{3\sqrt{286}C_5}{128} - \frac{3\sqrt{1430}C_7}{256} + \frac{\sqrt{24310}C_9}{256}$
87	$T$	$T$	1	1	$Q_{9,1}^{(h,T,1)}$	$Qh(9, T, 1, 1)$	$\frac{21\sqrt{5}S_1}{128} + \frac{\sqrt{2310}S_3}{128} + \frac{3\sqrt{286}S_5}{128} + \frac{3\sqrt{1430}S_7}{256} + \frac{\sqrt{24310}S_9}{256}$
88	$T$	$T$	1	2	$Q_{9,2}^{(h,T,1)}$	$Qh(9, T, 1, 2)$	$C_0$
89	$T$	$T$	2	0	$Q_{9,0}^{(h,T,2)}$	$Qh(9, T, 2, 0)$	$\frac{\sqrt{2431}C_1}{128} + \frac{\sqrt{9282}C_3}{128} + \frac{5\sqrt{170}C_5}{128} + \frac{7\sqrt{34}C_7}{256} + \frac{3\sqrt{2}C_9}{256}$
90	$T$	$T$	2	1	$Q_{9,1}^{(h,T,2)}$	$Qh(9, T, 2, 1)$	$\frac{\sqrt{2431}S_1}{128} - \frac{\sqrt{9282}S_3}{128} + \frac{5\sqrt{170}S_5}{128} - \frac{7\sqrt{34}S_7}{256} + \frac{3\sqrt{2}S_9}{256}$
91	$T$	$T$	2	2	$Q_{9,2}^{(h,T,2)}$	$Qh(9, T, 2, 2)$	$C_8$
92	$T$	$T$	3	0	$Q_{9,0}^{(h,T,3)}$	$Qh(9, T, 3, 0)$	$\frac{\sqrt{1001}C_1}{64} - \frac{\sqrt{78}C_3}{64} - \frac{3\sqrt{70}C_5}{64} + \frac{23\sqrt{14}C_7}{128} + \frac{3\sqrt{238}C_9}{128}$
93	$T$	$T$	3	1	$Q_{9,1}^{(h,T,3)}$	$Qh(9, T, 3, 1)$	$\frac{\sqrt{1001}S_1}{64} + \frac{\sqrt{78}S_3}{64} - \frac{3\sqrt{70}S_5}{64} - \frac{23\sqrt{14}S_7}{128} + \frac{3\sqrt{238}S_9}{128}$
94	$T$	$T$	3	2	$Q_{9,2}^{(h,T,3)}$	$Qh(9, T, 3, 2)$	$C_4$
95	$T$	$T$	4	0	$Q_{9,0}^{(h,T,4)}$	$Qh(9, T, 4, 0)$	$\frac{\sqrt{858}C_1}{64} + \frac{\sqrt{91}C_3}{32} - \frac{5\sqrt{15}C_5}{32} - \frac{21\sqrt{3}C_7}{64} - \frac{\sqrt{51}C_9}{64}$
96	$T$	$T$	4	1	$Q_{9,1}^{(h,T,4)}$	$Qh(9, T, 4, 1)$	$-\frac{\sqrt{858}S_1}{64} + \frac{\sqrt{91}S_3}{32} + \frac{5\sqrt{15}S_5}{32} - \frac{21\sqrt{3}S_7}{64} + \frac{\sqrt{51}S_9}{64}$
97	$T$	$T$	4	2	$Q_{9,2}^{(h,T,4)}$	$Qh(9, T, 4, 2)$	$C_6$
98	$T$	$T$	5	0	$Q_{9,0}^{(h,T,5)}$	$Qh(9, T, 5, 0)$	$\frac{7\sqrt{22}C_1}{64} - \frac{3\sqrt{21}C_3}{32} + \frac{\sqrt{65}C_5}{32} + \frac{\sqrt{13}C_7}{64} - \frac{3\sqrt{221}C_9}{64}$
99	$T$	$T$	5	1	$Q_{9,1}^{(h,T,5)}$	$Qh(9, T, 5, 1)$	$-\frac{7\sqrt{22}S_1}{64} - \frac{3\sqrt{21}S_3}{32} - \frac{\sqrt{65}S_5}{32} + \frac{\sqrt{13}S_7}{64} + \frac{3\sqrt{221}S_9}{64}$
100	$T$	$T$	5	2	$Q_{9,2}^{(h,T,5)}$	$Qh(9, T, 5, 2)$	$C_2$

表 11 rank 10

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
101	$A$	$A$	1	—	$Q_{10}^{(h,A,1)}$	$Qh(10, A, 1, )$	$\frac{\sqrt{390}C_0}{48} - \frac{\sqrt{22}C_4}{8} - \frac{\sqrt{1122}C_8}{48}$
102	$A$	$A$	2	—	$Q_{10}^{(h,A,2)}$	$Qh(10, A, 2, )$	$-\frac{\sqrt{85}C_{10}}{16} + \frac{\sqrt{1482}C_2}{48} + \frac{\sqrt{57}C_6}{48}$
103	$E$	$E$	1	0	$Q_{10,0}^{(h,E,1)}$	$Qh(10, E, 1, 0)$	$\frac{11\sqrt{420189}C_0}{8988} + \frac{\sqrt{827645}C_4}{1498} - \frac{\sqrt{146055}C_8}{8988}$
104	$E$	$E$	1	1	$Q_{10,1}^{(h,E,1)}$	$Qh(10, E, 1, 1)$	$\frac{\sqrt{370006}C_{10}}{749} + \frac{\sqrt{190995}C_2}{749}$
105	$E$	$E$	2	0	$Q_{10,0}^{(h,E,2)}$	$Qh(10, E, 2, 0)$	$\frac{3\sqrt{3213210}C_0}{11984} - \frac{83\sqrt{1498}C_4}{5992} + \frac{31\sqrt{76398}C_8}{11984}$
106	$E$	$E$	2	1	$Q_{10,1}^{(h,E,2)}$	$Qh(10, E, 2, 1)$	$\frac{\sqrt{1209635}C_{10}}{11984} - \frac{19\sqrt{58422}C_2}{35952} + \frac{\sqrt{2247}C_6}{48}$
107	$T$	$T$	1	0	$Q_{10,0}^{(h,T,1)}$	$Qh(10, T, 1, 0)$	$\frac{\sqrt{221}S_1}{32} - \frac{\sqrt{102}S_3}{32} - \frac{\sqrt{510}S_5}{32} - \frac{11\sqrt{6}S_7}{64} - \frac{\sqrt{38}S_9}{64}$
108	$T$	$T$	1	1	$Q_{10,1}^{(h,T,1)}$	$Qh(10, T, 1, 1)$	$-\frac{\sqrt{221}C_1}{32} - \frac{\sqrt{102}C_3}{32} + \frac{\sqrt{510}C_5}{32} - \frac{11\sqrt{6}C_7}{64} + \frac{\sqrt{38}C_9}{64}$
109	$T$	$T$	1	2	$Q_{10,2}^{(h,T,1)}$	$Qh(10, T, 1, 2)$	$S_8$
110	$T$	$T$	2	0	$Q_{10,0}^{(h,T,2)}$	$Qh(10, T, 2, 0)$	$\frac{\sqrt{39}S_1}{32} - \frac{11\sqrt{2}S_3}{32} + \frac{5\sqrt{10}S_5}{32} - \frac{\sqrt{34}S_7}{64} - \frac{\sqrt{1938}S_9}{64}$
111	$T$	$T$	2	1	$Q_{10,1}^{(h,T,2)}$	$Qh(10, T, 2, 1)$	$-\frac{\sqrt{39}C_1}{32} - \frac{11\sqrt{2}C_3}{32} - \frac{5\sqrt{10}C_5}{32} - \frac{\sqrt{34}C_7}{64} + \frac{\sqrt{1938}C_9}{64}$
112	$T$	$T$	2	2	$Q_{10,2}^{(h,T,2)}$	$Qh(10, T, 2, 2)$	$S_4$
113	$T$	$T$	3	0	$Q_{10,0}^{(h,T,3)}$	$Qh(10, T, 3, 0)$	$\frac{\sqrt{41990}S_1}{256} + \frac{\sqrt{4845}S_3}{128} + \frac{\sqrt{969}S_5}{128} + \frac{\sqrt{285}S_7}{256} + \frac{\sqrt{5}S_9}{256}$
114	$T$	$T$	3	1	$Q_{10,1}^{(h,T,3)}$	$Qh(10, T, 3, 1)$	$\frac{\sqrt{41990}C_1}{256} - \frac{\sqrt{4845}C_3}{128} + \frac{\sqrt{969}C_5}{128} - \frac{\sqrt{285}C_7}{256} + \frac{\sqrt{5}C_9}{256}$
115	$T$	$T$	3	2	$Q_{10,2}^{(h,T,3)}$	$Qh(10, T, 3, 2)$	$S_{10}$
116	$T$	$T$	4	0	$Q_{10,0}^{(h,T,4)}$	$Qh(10, T, 4, 0)$	$\frac{9\sqrt{78}S_1}{256} - \frac{69S_3}{128} - \frac{\sqrt{5}S_5}{128} + \frac{43\sqrt{17}S_7}{256} + \frac{3\sqrt{969}S_9}{256}$
117	$T$	$T$	4	1	$Q_{10,1}^{(h,T,4)}$	$Qh(10, T, 4, 1)$	$\frac{9\sqrt{78}C_1}{256} + \frac{69C_3}{128} - \frac{\sqrt{5}C_5}{128} - \frac{43\sqrt{17}C_7}{256} + \frac{3\sqrt{969}C_9}{256}$
118	$T$	$T$	4	2	$Q_{10,2}^{(h,T,4)}$	$Qh(10, T, 4, 2)$	$S_6$
119	$T$	$T$	5	0	$Q_{10,0}^{(h,T,5)}$	$Qh(10, T, 5, 0)$	$\frac{7\sqrt{3}S_1}{128} - \frac{7\sqrt{26}S_3}{128} + \frac{5\sqrt{130}S_5}{128} - \frac{7\sqrt{442}S_7}{256} + \frac{\sqrt{25194}S_9}{256}$
120	$T$	$T$	5	1	$Q_{10,1}^{(h,T,5)}$	$Qh(10, T, 5, 1)$	$\frac{7\sqrt{3}C_1}{128} + \frac{7\sqrt{26}C_3}{128} + \frac{5\sqrt{130}C_5}{128} + \frac{7\sqrt{442}C_7}{256} + \frac{\sqrt{25194}C_9}{256}$
121	$T$	$T$	5	2	$Q_{10,2}^{(h,T,5)}$	$Qh(10, T, 5, 2)$	$S_2$

表 12 rank 11

No.	irrep.	(tag)	mul.	comp.	harmonics	(tag)	definition
122	$A$	$A$	—	—	$\mathbb{Q}_{11}^{(h,A)}$	$\text{Qh}(11, A, , )$	$\frac{\sqrt{798}S_{10}}{48} + \frac{\sqrt{255}S_2}{24} + \frac{3\sqrt{6}S_6}{16}$
123	$E$	$E$	1	0	$\mathbb{Q}_{11,0}^{(h,E,1)}$	$\text{Qh}(11, E, 1, 0)$	$S_8$
124	$E$	$E$	1	1	$\mathbb{Q}_{11,1}^{(h,E,1)}$	$\text{Qh}(11, E, 1, 1)$	$-\frac{\sqrt{210}S_{10}}{96} + \frac{\sqrt{969}S_2}{48} - \frac{\sqrt{570}S_6}{32}$
125	$E$	$E$	2	0	$\mathbb{Q}_{11,0}^{(h,E,2)}$	$\text{Qh}(11, E, 2, 0)$	$S_4$
126	$E$	$E$	2	1	$\mathbb{Q}_{11,1}^{(h,E,2)}$	$\text{Qh}(11, E, 2, 1)$	$-\frac{\sqrt{646}S_{10}}{32} + \frac{\sqrt{35}S_2}{16} + \frac{\sqrt{238}S_6}{32}$
127	$T$	$T$	1	0	$\mathbb{Q}_{11,0}^{(h,T,1)}$	$\text{Qh}(11, T, 1, 0)$	$-\frac{21\sqrt{66}C_1}{512} + \frac{\sqrt{88179}C_{11}}{512} + \frac{\sqrt{30030}C_3}{512} - \frac{15\sqrt{143}C_5}{512} + \frac{\sqrt{36465}C_7}{512} - \frac{\sqrt{46189}C_9}{512}$
128	$T$	$T$	1	1	$\mathbb{Q}_{11,1}^{(h,T,1)}$	$\text{Qh}(11, T, 1, 1)$	$-\frac{21\sqrt{66}S_1}{512} - \frac{\sqrt{88179}S_{11}}{512} - \frac{\sqrt{30030}S_3}{512} - \frac{15\sqrt{143}S_5}{512} - \frac{\sqrt{36465}S_7}{512} - \frac{\sqrt{46189}S_9}{512}$
129	$T$	$T$	1	2	$\mathbb{Q}_{11,2}^{(h,T,1)}$	$\text{Qh}(11, T, 1, 2)$	$C_0$
130	$T$	$T$	2	0	$\mathbb{Q}_{11,0}^{(h,T,2)}$	$\text{Qh}(11, T, 2, 0)$	$-\frac{\sqrt{41990}C_1}{512} + \frac{\sqrt{385}C_{11}}{512} - \frac{3\sqrt{4522}C_3}{512} + \frac{3\sqrt{4845}C_5}{512} + \frac{77\sqrt{19}C_7}{512} + \frac{39\sqrt{15}C_9}{512}$
131	$T$	$T$	2	1	$\mathbb{Q}_{11,1}^{(h,T,2)}$	$\text{Qh}(11, T, 2, 1)$	$-\frac{\sqrt{41990}S_1}{512} - \frac{\sqrt{385}S_{11}}{512} + \frac{3\sqrt{4522}S_3}{512} + \frac{3\sqrt{4845}S_5}{512} - \frac{77\sqrt{19}S_7}{512} + \frac{39\sqrt{15}S_9}{512}$
132	$T$	$T$	2	2	$\mathbb{Q}_{11,2}^{(h,T,2)}$	$\text{Qh}(11, T, 2, 2)$	$C_8$
133	$T$	$T$	3	0	$\mathbb{Q}_{11,0}^{(h,T,3)}$	$\text{Qh}(11, T, 3, 0)$	$-\frac{5\sqrt{546}C_1}{256} + \frac{\sqrt{10659}C_{11}}{256} + \frac{11\sqrt{30}C_3}{256} + \frac{13\sqrt{7}C_5}{256} - \frac{3\sqrt{1785}C_7}{256} + \frac{3\sqrt{2261}C_9}{256}$
134	$T$	$T$	3	1	$\mathbb{Q}_{11,1}^{(h,T,3)}$	$\text{Qh}(11, T, 3, 1)$	$-\frac{5\sqrt{546}S_1}{256} - \frac{\sqrt{10659}S_{11}}{256} - \frac{11\sqrt{30}S_3}{256} + \frac{13\sqrt{7}S_5}{256} + \frac{3\sqrt{1785}S_7}{256} + \frac{3\sqrt{2261}S_9}{256}$
135	$T$	$T$	3	2	$\mathbb{Q}_{11,2}^{(h,T,3)}$	$\text{Qh}(11, T, 3, 2)$	$C_4$
136	$T$	$T$	4	0	$\mathbb{Q}_{11,0}^{(h,T,4)}$	$\text{Qh}(11, T, 4, 0)$	$-\frac{\sqrt{29393}C_1}{512} - \frac{\sqrt{22}C_{11}}{1024} - \frac{9\sqrt{1615}C_3}{512} - \frac{5\sqrt{13566}C_5}{1024} - \frac{7\sqrt{1330}C_7}{1024} - \frac{9\sqrt{42}C_9}{1024}$
137	$T$	$T$	4	1	$\mathbb{Q}_{11,1}^{(h,T,4)}$	$\text{Qh}(11, T, 4, 1)$	$\frac{\sqrt{29393}S_1}{512} - \frac{\sqrt{22}S_{11}}{1024} - \frac{9\sqrt{1615}S_3}{512} + \frac{5\sqrt{13566}S_5}{1024} - \frac{7\sqrt{1330}S_7}{1024} + \frac{9\sqrt{42}S_9}{1024}$
138	$T$	$T$	4	2	$\mathbb{Q}_{11,2}^{(h,T,4)}$	$\text{Qh}(11, T, 4, 2)$	$C_{10}$
139	$T$	$T$	5	0	$\mathbb{Q}_{11,0}^{(h,T,5)}$	$\text{Qh}(11, T, 5, 0)$	$-\frac{15\sqrt{221}C_1}{512} - \frac{3\sqrt{2926}C_{11}}{1024} - \frac{\sqrt{595}C_3}{512} + \frac{53\sqrt{102}C_5}{1024} - \frac{105\sqrt{10}C_7}{1024} - \frac{61\sqrt{114}C_9}{1024}$
140	$T$	$T$	5	1	$\mathbb{Q}_{11,1}^{(h,T,5)}$	$\text{Qh}(11, T, 5, 1)$	$\frac{15\sqrt{221}S_1}{512} - \frac{3\sqrt{2926}S_{11}}{1024} - \frac{\sqrt{595}S_3}{512} - \frac{53\sqrt{102}S_5}{1024} - \frac{105\sqrt{10}S_7}{1024} + \frac{61\sqrt{114}S_9}{1024}$
141	$T$	$T$	5	2	$\mathbb{Q}_{11,2}^{(h,T,5)}$	$\text{Qh}(11, T, 5, 2)$	$C_6$
142	$T$	$T$	6	0	$\mathbb{Q}_{11,0}^{(h,T,6)}$	$\text{Qh}(11, T, 6, 0)$	$-\frac{21\sqrt{130}C_1}{512} - \frac{\sqrt{124355}C_{11}}{512} + \frac{57\sqrt{14}C_3}{512} - \frac{41\sqrt{15}C_5}{512} + \frac{17\sqrt{17}C_7}{512} + \frac{\sqrt{4845}C_9}{512}$
143	$T$	$T$	6	1	$\mathbb{Q}_{11,1}^{(h,T,6)}$	$\text{Qh}(11, T, 6, 1)$	$\frac{21\sqrt{130}S_1}{512} - \frac{\sqrt{124355}S_{11}}{512} + \frac{57\sqrt{14}S_3}{512} + \frac{41\sqrt{15}S_5}{512} + \frac{17\sqrt{17}S_7}{512} - \frac{\sqrt{4845}S_9}{512}$
144	$T$	$T$	6	2	$\mathbb{Q}_{11,2}^{(h,T,6)}$	$\text{Qh}(11, T, 6, 2)$	$C_2$