Datebase of new binary $[72, 36, 12]$ self-dual codes

October 25, 2023

Table 1: New $[72, 36, 12]_2$ self-dual codes from $\mathcal{G}_1$

$\mathcal{C}_i$	$\mathbf{a}$	Type	$W_{72,k}$	(α, β, γ)	$|Aut|$
1	$(0, 1, 1, \omega^3, \omega, \omega^2, \omega^3, \omega, \omega^3, \omega^3, \omega, \omega^5)$	I	1	$(139, 0, -)$	$2^2 \cdot 3$
2	$(0, \omega, \omega, \omega^3, \omega^3, \omega^4, \omega^6, \omega^5, \omega^5, \omega^6, \omega^3, \omega^2)$	I	1	$(301, 0, -)$	$2^2 \cdot 3$
3	$(0, \omega, \omega, \omega^3, 1, \omega^5, \omega^6, \omega^4, \omega^5, \omega^6, 1, \omega^2)$	I	1	$(313, 0, -)$	$2^2 \cdot 3$
4	$(0, 1, 1, \omega^3, \omega^2, \omega^5, \omega^6, \omega^3, \omega^2, \omega^6, \omega^6, \omega^3)$	I	1	$(127, 6, -)$	$2^3 \cdot 3$
5	$(0, 0, 1, \omega, \omega^2, \omega, \omega^6, \omega^4, \omega^6, \omega^6, \omega^2, \omega^3)$	I	1	$(175, 6, -)$	$2^2 \cdot 3$
6	$(0, 0, 1, \omega, \omega, \omega^4, \omega^3, 0, \omega^3, \omega^6, \omega, 1)$	I	1	$(199, 6, -)$	$2^2 \cdot 3$
7	$(0, \omega, \omega, \omega^3, 1, \omega^2, \omega^5, \omega^6, \omega^2, \omega^5, 0, \omega^4)$	I	1	$(289, 6, -)$	$2^2 \cdot 3$
8	$(0, 0, 1, \omega, \omega^3, \omega^4, \omega, 0, \omega^3, \omega^6, \omega, 1)$	I	1	$(331, 6, -)$	$2^3 \cdot 3$
9	$(0, 0, 1, \omega, \omega^2, 1, \omega^6, \omega^6, \omega^2, \omega^5, \omega^6, 1)$	I	1	$(199, 12, -)$	$2^3 \cdot 3$
10	$(0, 0, 1, \omega, \omega^4, \omega^3, \omega^5, \omega^6, \omega^4, \omega^5, \omega^5, \omega^3)$	I	1	$(343, 12, -)$	$2^3 \cdot 3$
11	$(0, 1, 1, \omega^3, \omega^5, \omega^2, \omega^4, \omega, \omega^5, \omega^3, \omega^4, \omega^5)$	I	1	$(391, 12, -)$	$2^3 \cdot 3$
12	$(0, 0, 1, \omega, 0, \omega, 1, \omega^4, \omega, \omega^6, \omega^3, \omega^3)$	I	1	$(231, 18, -)$	$2^3 \cdot 3$

Table 2: New $[72, 36, 12]_2$ self-dual codes from $\mathcal{G}_2$

$\mathcal{C}_i$	$\mathbf{a}$	Type	$W_{72,k}$	(α, β, γ)	$|Aut|$
13	$(0, 0, \omega^5, \omega^3, \omega^6, \omega, \omega^5, \omega, \omega^4, \omega^5, \omega^2, \omega)$	I	1	$(313, 12, -)$	$2^3 \cdot 3$
14	$(0, 0, \omega, \omega^6, \omega^4, \omega^6, \omega^6, \omega^2, \omega, \omega^4, \omega^6, \omega^6)$	I	1	$(441, 12, -)$	$2^3 \cdot 3$
15	$(0, 0, \omega^2, \omega^4, \omega^3, \omega^5, \omega^3, \omega, \omega^5, \omega, \omega, 1)$	I	1	$(219, 18, -)$	$2^3 \cdot 3$
16	$(0, 0, \omega^6, \omega^4, \omega^2, \omega^5, \omega, \omega^3, \omega^3, \omega^6, \omega^2, \omega)$	I	1	$(303, 24, -)$	$2^3 \cdot 3$

Table 3: New $[72, 36, 12]_2$ self-dual codes from $\mathcal{G}_3$

$\mathcal{C}_i$	$\mathbf{a}$	Type	$W_{72,k}$	(α, β, γ)	$|Aut|$
17	$(0,0,1,\omega,\omega^3,\omega^2,\omega,\omega,\omega^5,\omega^4,\omega^4,\omega)$	I	1	$(123, 0, -)$	$2^3 \cdot 3$
18	$(0,0,1,\omega,\omega,\omega^2,\omega^3,\omega,\omega^3,\omega^4,\omega,\omega)$	I	1	$(151, 0, -)$	$2^3 \cdot 3$
19	$(0,1,1,\omega^3,\omega,\omega^2,\omega^3,\omega,\omega^3,\omega^3,\omega,\omega^5)$	I	1	$(163, 0, -)$	$2^3 \cdot 3$
20	$(0,0,\omega,\omega^6,\omega,1,\omega,\omega,\omega^3,\omega,0,\omega^2)$	I	1	$(187, 0, -)$	$2^3 \cdot 3$
21	$(0,1,\omega,\omega^2,\omega^2,\omega^3,1,\omega^3,\omega^4,\omega,1,\omega^4)$	I	1	$(223, 0, -)$	$2^3 \cdot 3$
22	$(0,0,\omega,\omega^6,\omega,\omega^5,\omega,\omega^2,\omega^3,1,0,\omega^5)$	I	1	$(253, 0, -)$	$2^3 \cdot 3$
23	$(0,1,1,\omega^3,\omega,\omega^6,\omega^3,\omega^3,\omega^3,\omega^5,\omega,\omega^3)$	I	1	$(115, 6, -)$	$2^3 \cdot 3$
24	$(0,0,1,\omega,\omega^2,\omega^4,\omega^6,0,\omega^4,\omega^6,\omega^5,1)$	I	1	$(153, 6, -)$	$2^3 \cdot 3$
25	$(0,1,1,\omega^3,\omega,\omega,\omega^3,\omega^2,\omega^3,\omega^4,\omega,\omega)$	I	1	$(187, 6, -)$	$2^3 \cdot 3$
26	$(0,0,1,\omega,\omega,\omega^4,\omega^3,0,\omega^3,\omega^6,\omega,1)$	I	1	$(211, 6, -)$	$2^3 \cdot 3$
27	$(0,0,1,\omega,1,1,0,\omega^5,\omega^2,\omega^2,\omega^6,0)$	I	1	$(273, 6, -)$	$2^3 \cdot 3$
28	$(0,1,0,\omega^4,\omega,\omega^5,\omega^6,\omega^3,\omega,\omega^6,\omega^2,\omega^4)$	I	1	$(307, 6, -)$	$2^3 \cdot 3$
29	$(0,0,\omega,1,\omega^2,\omega^3,0,\omega,1,\omega,\omega^5,\omega^3)$	I	1	$(319, 6, -)$	$2^3 \cdot 3$
35	$(0,1,\omega,\omega^2,0,\omega^6,\omega^5,1,\omega^5,\omega^6,\omega,\omega^6)$	I	1	$(373, 6, -)$	$2^3 \cdot 3$
30	$(0,0,\omega,\omega^6,1,\omega^6,\omega^4,1,\omega,1,\omega^5,1)$	I	1	$(189, 12, -)$	$2^3 \cdot 3$
31	$(0,1,\omega,\omega^2,\omega^3,\omega^6,\omega^3,\omega^4,\omega^4,\omega^2,\omega^6,\omega)$	I	1	$(195, 12, -)$	$2^3 \cdot 3$
32	$(1,1,1,\omega,1,\omega^3,\omega^3,\omega^4,\omega^3,\omega^6,0,\omega^3)$	I	1	$(219, 12, -)$	$2^3 \cdot 3$
33	$(0,0,1,\omega,\omega,\omega^3,\omega^3,\omega^6,\omega^3,\omega^5,\omega,\omega^3)$	I	1	$(235, 12, -)$	$2^3 \cdot 3$
34	$(1,1,1,\omega,\omega^4,1,\omega^6,\omega^5,\omega^5,\omega,\omega^6,\omega^5)$	I	1	$(247, 12, -)$	$2^3 \cdot 3$
35	$(0,0,0,\omega^6,1,\omega,\omega^6,\omega^6,\omega,\omega^2,\omega^5,\omega^4)$	I	1	$(249, 12, -)$	$2^3 \cdot 3$
36	$(0,0,\omega^2,\omega^5,\omega^6,0,\omega^4,\omega^4,\omega^6,\omega,\omega,\omega)$	I	1	$(303, 12, -)$	$2^3 \cdot 3$
37	$(0,0,0,\omega^3,0,\omega^6,\omega,0,\omega,\omega^6,1,\omega^3)$	I	1	$(351, 12, -)$	$2^3 \cdot 3$
38	$(0,0,\omega^3,0,\omega,0,\omega^5,\omega,\omega^2,\omega,\omega,1)$	I	1	$(363, 12, -)$	$2^3 \cdot 3$
39	$(0,1,0,\omega,0,\omega^3,\omega^3,\omega^6,\omega^6,\omega^5,\omega^5,\omega)$	I	1	$(399, 12, -)$	$2^3 \cdot 3$
40	$(0,0,\omega,\omega^6,\omega^2,\omega^2,\omega^5,\omega,\omega^5,\omega^4,\omega^5,\omega^6)$	I	1	$(435, 12, -)$	$2^3 \cdot 3$
41	$(0,1,1,\omega^3,\omega^3,1,\omega,\omega^5,\omega^5,1,\omega^4,\omega^6)$	I	1	$(183, 18, -)$	$2^3 \cdot 3$
42	$(0,1,1,\omega^3,\omega,1,\omega^3,\omega^6,\omega^6,1,\omega^2,\omega^5)$	I	1	$(375, 18, -)$	$2^3 \cdot 3$
43	$(0,1,\omega,\omega^2,\omega^6,\omega^5,\omega^6,\omega^2,\omega^6,\omega^6,\omega^4,\omega^3)$	I	1	$(505, 24, -)$	$2^3 \cdot 3$
44	$(0,0,1,\omega,\omega^3,\omega,\omega,\omega^2,\omega^5,\omega^3,\omega^4,\omega^5)$	I	1	$(399, 30, -)$	$2^3 \cdot 3$

Table 4: New $[72, 36, 12]_2$ self-dual codes from $\mathcal{G}_4$

$\mathcal{C}_i$	$\mathbf{a}$	Type	$W_{72,k}$	(α, β, γ)	$|Aut|$
45	$(0,1,1,\omega^3,\omega^3,1,\omega^5,\omega,\omega^6,\omega^3,\omega^5,\omega^2)$	I	1	$(137, 0, -)$	$2^2 \cdot 3$
46	$(0,0,\omega,\omega^5,\omega,\omega^4,\omega^3,\omega^2,\omega^3,\omega^4,\omega^5,\omega^6)$	I	1	$(167, 0, -)$	$2^2 \cdot 3$
47	$(0,1,\omega^3,\omega^6,\omega^5,1,\omega^3,0,\omega^3,\omega^6,\omega^4,\omega^3)$	I	1	$(173, 0, -)$	$2^2 \cdot 3$
48	$(0,1,\omega^3,\omega^6,\omega^2,\omega^4,\omega^3,\omega^2,\omega^2,0,\omega^4,1)$	I	1	$(179, 0, -)$	$2^2 \cdot 3$
49	$(0,1,\omega^3,\omega^6,\omega,\omega^4,\omega^4,\omega^5,\omega^6,\omega^6,0,\omega^3)$	I	1	$(197, 0, -)$	$2^2 \cdot 3$
50	$(0,0,\omega,\omega^5,\omega^2,\omega^6,\omega,0,\omega^6,\omega^3,\omega^2,\omega^6)$	I	1	$(141, 3, -)$	$2^2 \cdot 3$
51	$(0,1,\omega,\omega^4,\omega,0,\omega^3,\omega,\omega^5,\omega^5,\omega^3,\omega^2)$	I	1	$(155, 3, -)$	$2^2 \cdot 3$
52	$(0,1,\omega,\omega^4,0,1,\omega^4,\omega^2,\omega^3,\omega^2,\omega,\omega)$	I	1	$(165, 3, -)$	$2^3 \cdot 3$
53	$(0,1,\omega^3,\omega^6,1,\omega^2,\omega^6,\omega^6,\omega^3,\omega^3,\omega^4,\omega^6)$	I	1	$(257, 3, -)$	$2^2 \cdot 3$
54	$(0,1,\omega^3,\omega^6,\omega^4,0,\omega,1,\omega^3,\omega^6,\omega^4,\omega^3)$	I	1	$(329, 3, -)$	$2^2 \cdot 3$

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Table 5: New $[72,36,12]_2$ self-dual codes from $\mathcal{G}_5$

$\mathcal{C}_i$	$\mathbf{a}$	Type	$W_{72,k}$	(α,β,γ)	$|Aut|$
55	$(0,1,\omega,\omega^4,\omega^2,\omega,\omega^4,\omega^6,0,\omega^5,\omega^6,\omega^3)$	I	1	$(223,6,-)$	$2^3\cdot 3$
56	$(0,0,\omega^5,\omega,\omega^3,0,\omega^5,\omega,\omega,\omega^4,\omega^4,0)$	I	1	$(229,6,-)$	$2^3\cdot 3$
57	$(0,0,\omega^5,\omega,1,\omega^3,\omega^5,\omega,\omega,\omega^4,\omega^2,\omega^3)$	I	1	$(301,6,-)$	$2^3\cdot 3$
58	$(0,0,\omega^3,\omega^4,\omega,\omega^5,\omega^6,\omega^5,1,\omega^4,\omega^4,\omega)$	I	1	$(339,6,-)$	$2^3\cdot 3$
59	$(0,0,\omega^5,\omega,\omega^3,1,\omega,\omega^5,\omega,\omega^5,\omega^5,1)$	I	1	$(361,6,-)$	$2^3\cdot 3$
60	$(0,1,\omega,\omega^5,\omega^4,\omega^2,\omega,\omega^4,\omega^5,\omega,\omega,\omega^2)$	I	1	$(165,12,-)$	$2^3\cdot 3$
61	$(0,0,\omega,\omega,\omega^4,\omega^5,\omega,0,1,\omega^5,\omega^6,1)$	I	1	$(279,12,-)$	$2^3\cdot 3$
62	$(0,1,\omega^3,\omega,\omega^4,\omega^2,\omega^3,1,1,\omega^2,\omega^6,1)$	I	1	$(309,12,-)$	$2^3\cdot 3$
63	$(0,1,\omega,\omega,\omega^3,1,\omega,\omega^4,\omega^5,\omega^5,\omega^5,1)$	I	1	$(325,12,-)$	$2^3\cdot 3$
64	$(0,1,\omega,\omega,\omega^5,\omega^3,1,0,\omega^3,\omega^2,\omega^3,1)$	I	1	$(339,12,-)$	$2^3\cdot 3$
65	$(0,0,\omega^6,\omega^3,\omega^3,\omega^2,\omega,\omega^6,\omega,\omega^4,\omega^3,0)$	I	1	$(345,12,-)$	$2^3\cdot 3$
66	$(0,1,\omega,1,\omega^6,1,\omega^6,\omega,\omega^2,\omega^3,\omega^6,\omega)$	I	1	$(213,18,-)$	$2^3\cdot 3$
67	$(0,1,\omega,\omega^2,0,\omega^6,\omega^5,\omega^6,1,\omega^2,\omega^5,\omega^3)$	I	1	$(247,18,-)$	$2^3\cdot 3$
68	$(0,1,\omega,\omega^5,1,\omega^5,\omega^5,\omega^6,1,\omega^5,\omega^4,1)$	I	1	$(295,18,-)$	$2^3\cdot 3$
69	$(0,1,\omega,1,\omega^3,\omega^3,\omega^5,\omega^6,1,1,\omega^2,\omega^6)$	I	1	$(319,18,-)$	$2^3\cdot 3$
70	$(0,0,\omega^3,\omega,\omega^3,0,\omega^6,\omega^5,1,\omega,\omega^5,\omega^6)$	I	1	$(463,24,-)$	$2^3\cdot 3$
71	$(0,0,\omega^6,1,\omega,\omega,\omega^3,\omega^5,1,\omega^5,\omega,\omega^6)$	I	1	$(535,36,-)$	$2^3\cdot 3$

Table 6: New $[72,36,12]_2$ self-dual codes from $\mathcal{G}_6$

$\mathcal{C}_i$	$\mathbf{a}$	Type	$W_{72,k}$	(α,β,γ)	$|Aut|$
72	$(0,0,0,\omega,\omega,\omega^6,1,\omega^2,\omega,\omega^2,\omega^2,\omega^3)$	I	1	$(133,0,-)$	$2^3\cdot 3$
73	$(1,\omega,\omega,\omega,\omega^3,\omega^4,\omega,\omega^5,\omega^6,\omega^3,\omega,\omega^4)$	I	1	$(136,0,-)$	$2^2\cdot 3$
74	$(1,\omega,\omega^2,\omega^3,\omega^6,\omega^5,\omega^4,\omega^6,\omega^6,\omega^6,\omega^5,\omega^3)$	I	1	$(142,0,-)$	$2^2\cdot 3$
75	$(0,0,0,1,\omega,\omega^2,1,\omega,\omega,\omega^2,\omega^5,\omega^2)$	I	1	$(193,0,-)$	$2^2\cdot 3$
76	$(0,1,\omega,\omega,\omega^4,\omega^6,\omega^4,\omega^5,\omega^4,\omega,\omega^6,\omega^3)$	I	1	$(292,0,-)$	$2^2\cdot 3$
77	$(0,0,1,\omega,\omega^3,\omega^5,\omega^3,\omega^4,\omega^5,1,\omega^6,0)$	I	1	$(304,0,-)$	$2^2\cdot 3$
78	$(0,0,1,\omega,\omega,\omega^2,\omega^2,\omega^4,\omega^3,\omega^4,\omega^5,\omega^2)$	I	1	$(349,0,-)$	$2^3\cdot 3$
79	$(\omega,\omega,\omega^2,\omega^6,\omega^6,\omega^3,\omega^2,\omega^6,\omega^5,\omega^6,\omega^4,\omega^3)$	I	1	$(129,6,-)$	$2^3\cdot 3$
80	$(0,0,0,\omega,\omega^6,\omega,\omega^2,\omega^6,\omega^6,\omega^3,\omega^5,\omega^2)$	I	1	$(202,6,-)$	$2^2\cdot 3$
81	$(0,0,0,\omega,\omega^3,\omega,1,\omega,\omega^5,1,\omega^2,\omega^3)$	I	1	$(208,6,-)$	$2^2\cdot 3$
82	$(0,\omega,0,\omega^3,\omega^6,\omega^3,\omega^3,\omega^6,\omega^2,\omega^6,\omega^4,\omega^5)$	I	1	$(214,6,-)$	$2^2\cdot 3$
83	$(0,1,0,\omega,\omega^2,\omega^6,\omega^3,\omega^2,\omega^2,\omega^2,\omega^4,\omega)$	I	1	$(220,6,-)$	$2^2\cdot 3$
84	$(0,0,1,\omega,\omega^3,\omega^5,\omega^3,\omega^3,\omega^5,\omega^2,1,\omega^2)$	I	1	$(238,6,-)$	$2^2\cdot 3$
85	$(0,1,1,\omega^3,\omega^5,\omega^4,\omega^5,\omega,\omega^5,\omega^5,\omega^2,\omega)$	I	1	$(256,6,-)$	$2^2\cdot 3$
86	$(0,1,\omega,\omega,\omega^4,\omega^6,\omega,\omega^4,\omega,\omega^3,\omega,\omega^2)$	I	1	$(274,6,-)$	$2^2\cdot 3$
87	$(0,\omega,0,\omega^5,\omega^5,\omega^5,1,\omega^3,\omega^6,\omega^2,\omega^2,\omega^3)$	I	1	$(292,6,-)$	$2^2\cdot 3$
88	$(0,\omega,1,1,\omega^2,\omega^5,\omega^5,\omega^4,\omega,\omega^4,\omega,\omega^5)$	I	1	$(304,6,-)$	$2^2\cdot 3$
89	$(0,1,1,\omega,\omega^5,\omega^5,\omega^3,1,\omega^3,\omega^4,1,\omega^6)$	I	1	$(346,6,-)$	$2^2\cdot 3$
90	$(0,1,0,\omega,\omega^5,\omega,1,\omega^3,\omega,\omega^3,\omega^5,\omega^3)$	I	1	$(352,6,-)$	$2^2\cdot 3$
91	$(0,\omega,1,\omega,\omega^3,\omega^3,\omega^2,\omega^4,\omega^4,1,\omega^5,\omega)$	I	1	$(381,6,-)$	$2^3\cdot 3$
92	$(0,0,0,\omega^3,\omega^3,\omega^5,\omega,\omega^3,\omega^5,\omega^3,\omega^5,\omega^2)$	I	1	$(237,12,-)$	$2^3\cdot 3$
93	$(0,0,0,\omega,\omega,\omega^5,\omega,\omega^2,\omega^5,\omega^2,\omega^2,\omega^5)$	I	1	$(337,12,-)$	$2^3\cdot 3$
94	$(1,1,1,\omega^3,\omega^3,\omega^4,\omega^3,\omega^6,\omega^4,\omega^6,\omega^6,\omega^4)$	I	1	$(409,12,-)$	$2^3\cdot 3$
95	$(1,\omega,\omega,\omega^2,\omega^6,\omega^2,\omega^6,\omega,\omega^5,\omega^6,\omega^4,\omega^4)$	I	1	$(280,18,-)$	$2^2\cdot 3$
96	$(\omega,\omega,\omega,\omega^4,\omega^4,\omega^5,\omega^4,\omega^2,\omega^6,\omega^2,\omega^2,\omega^3)$	II	3	$(-,-,114)$	$2^4\cdot 3^2\cdot 7$

Table 7: New $[72, 36, 12]_2$ self-dual codes from $\mathcal{G}_7$

$\mathcal{C}_i$	$\mathbf{a}$	Type	$W_{72,k}$	(α, β, γ)	$|Aut|$
97	$(0, 1, \omega, \omega^2, 0, \omega^3, \omega, \omega^2, \omega^4, 0, \omega^2, 1)$	I	1	$(140, 0, -)$	$2^3 \cdot 3$
98	$(0, 0, \omega, \omega^6, 1, \omega^2, \omega^3, \omega^3, \omega^6, \omega^5, \omega, \omega^3)$	I	1	$(263, 0, -)$	$2^2 \cdot 3$
99	$(0, 1, \omega, \omega^4, 0, \omega^3, \omega^3, \omega^3, \omega^4, 1, \omega^4, \omega^4)$	I	1	$(290, 0, -)$	$2^2 \cdot 3$
100	$(0, 0, 1, \omega, 1, \omega^4, \omega^2, \omega^2, \omega^3, \omega, \omega^3, \omega^5)$	I	1	$(293, 0, -)$	$2^2 \cdot 3$
101	$(1, \omega, \omega, \omega^4, 1, \omega, \omega^3, \omega^6, \omega^3, \omega^4, 1, \omega^5)$	I	1	$(302, 0, -)$	$2^3 \cdot 3$
102	$(0, 1, \omega^3, \omega^6, 1, \omega^3, \omega, \omega^6, \omega^5, \omega^3, \omega^4, 1)$	I	1	$(358, 0, -)$	$2^3 \cdot 3$
103	$(0, 1, 1, \omega^3, \omega, \omega^2, \omega^6, \omega^2, \omega^4, \omega^3, \omega, \omega)$	I	1	$(140, 3, -)$	$2^3 \cdot 3$
104	$(0, 1, \omega^3, \omega^6, 0, \omega, \omega^3, \omega^2, 1, \omega^5, \omega^4, \omega^3)$	I	1	$(152, 3, -)$	$2^2 \cdot 3$
105	$(1, \omega, \omega^3, \omega^3, \omega, \omega^4, \omega^6, \omega^4, \omega^4, \omega^3, \omega^2, \omega^2)$	I	1	$(158, 3, -)$	$2^3 \cdot 3$
106	$(0, \omega, \omega^2, \omega^3, \omega, \omega^2, \omega^5, \omega, \omega^5, \omega^2, \omega^5, \omega^3)$	I	1	$(166, 3, -)$	$2^2 \cdot 3$
107	$(0, \omega, \omega^2, \omega^3, 0, \omega^6, \omega^6, \omega^3, 1, \omega, \omega^4, \omega)$	I	1	$(174, 3, -)$	$2^2 \cdot 3$
108	$(\omega, \omega^2, \omega^4, \omega^3, \omega, \omega^6, \omega^6, \omega^6, \omega^3, \omega^3, \omega^4, \omega^3)$	I	1	$(188, 3, -)$	$2^3 \cdot 3$
109	$(0, 0, \omega, \omega^5, 0, \omega, \omega^2, \omega^6, 1, 1, \omega^2, \omega^3)$	I	1	$(235, 3, -)$	$2^2 \cdot 3$
110	$(0, 1, \omega, \omega^2, 0, \omega^2, \omega^2, \omega^6, \omega^3, \omega^5, \omega^2, \omega^3)$	I	1	$(243, 3, -)$	$2^2 \cdot 3$
111	$(1, 1, \omega, \omega^5, 1, \omega, \omega^5, \omega^5, \omega^4, \omega^5, \omega^3, \omega^6)$	I	1	$(277, 3, -)$	$2^2 \cdot 3$
112	$(1, \omega, \omega^3, \omega^3, 1, \omega^4, \omega^3, \omega^3, 1, \omega^5, \omega^5, \omega^2)$	I	1	$(278, 3, -)$	$2^3 \cdot 3$
113	$(0, 0, 0, \omega^3, 0, \omega, \omega^4, \omega^3, \omega^4, \omega^5, 1, \omega^6)$	I	1	$(283, 3, -)$	$2^2 \cdot 3$
114	$(0, 1, \omega, \omega^2, 1, \omega^4, \omega^2, \omega^4, \omega^2, \omega^3, \omega^3, \omega^5)$	I	1	$(287, 3, -)$	$2^2 \cdot 3$
115	$(\omega, \omega, \omega^2, \omega^3, \omega^3, \omega^4, \omega^6, \omega^6, \omega^2, \omega^6, \omega^5, \omega^6)$	I	1	$(289, 3, -)$	$2^2 \cdot 3$
116	$(0, \omega, \omega^2, \omega^6, \omega, \omega^2, \omega^2, \omega^6, \omega^3, \omega^2, \omega^5, \omega^6)$	I	1	$(290, 3, -)$	$2^2 \cdot 3$
117	$(0, 0, \omega, \omega^6, 0, \omega^6, \omega, \omega, \omega^4, 0, \omega^3, \omega^4)$	I	1	$(293, 3, -)$	$2^3 \cdot 3$
118	$(0, 1, 1, \omega^3, 0, \omega^5, \omega^2, \omega^2, \omega^3, \omega^5, \omega^6, \omega^2)$	I	1	$(300, 3, -)$	$2^2 \cdot 3$
119	$(0, 0, \omega, \omega^5, 1, \omega^4, \omega, \omega^4, \omega^4, \omega^3, \omega^6, \omega^5)$	I	1	$(301, 3, -)$	$2^2 \cdot 3$
120	$(0, 0, \omega, \omega^6, 1, \omega, \omega, \omega^2, \omega^3, \omega, \omega^5, \omega^6)$	I	1	$(302, 3, -)$	$2^2 \cdot 3$
121	$(0, 1, \omega^3, \omega^6, 0, \omega^3, \omega^2, \omega, \omega^4, \omega^5, \omega^3, 1)$	I	1	$(306, 3, -)$	$2^2 \cdot 3$
122	$(0, 0, 1, \omega, 0, 0, \omega, \omega^6, \omega^5, \omega^6, \omega^3, \omega^2)$	I	1	$(309, 3, -)$	$2^2 \cdot 3$
123	$(1, \omega, \omega^3, \omega^6, \omega^2, \omega^3, \omega^3, \omega^5, \omega^3, \omega^3, \omega, \omega^6)$	I	1	$(311, 3, -)$	$2^2 \cdot 3$
124	$(\omega, \omega, \omega, \omega^5, \omega, \omega^3, \omega^5, \omega^6, \omega^6, \omega^6, \omega, \omega^6)$	I	1	$(314, 3, -)$	$2^2 \cdot 3$
125	$(0, 1, 1, \omega^3, 0, \omega^6, \omega^6, \omega^5, 0, \omega^3, \omega^6, \omega^3)$	I	1	$(318, 3, -)$	$2^3 \cdot 3$
126	$(0, \omega^3, \omega^3, \omega^5, 1, \omega^2, \omega^5, \omega^5, \omega^3, \omega, \omega^3, 1)$	I	1	$(321, 3, -)$	$2^2 \cdot 3$
127	$(1, \omega, \omega^3, \omega^3, \omega, \omega^6, \omega^5, \omega^5, \omega^4, \omega^6, \omega^6, \omega^3)$	I	1	$(354, 3, -)$	$2^3 \cdot 3$
128	$(1, \omega, \omega^3, \omega^3, 1, \omega^2, \omega^6, \omega^5, \omega^6, 1, \omega^6, \omega^2)$	I	1	$(372, 3, -)$	$2^3 \cdot 3$
129	$(0, \omega, \omega, \omega^3, 0, \omega^4, \omega^5, \omega^4, 0, \omega^5, \omega^5, \omega^6)$	I	1	$(376, 3, -)$	$2^3 \cdot 3$
130	$(0, 1, \omega^3, \omega^5, 0, \omega, \omega, \omega^3, \omega, \omega^3, \omega^6, \omega^3)$	I	1	$(248, 6, -)$	$2^2 \cdot 3$
131	$(0, \omega, \omega, \omega^3, 0, \omega^2, \omega^4, \omega^6, \omega^2, \omega^2, 0, \omega^6)$	I	1	$(272, 6, -)$	$2^3 \cdot 3$
132	$(0, 0, \omega, \omega^6, 0, \omega^3, \omega^3, \omega^6, \omega^6, \omega^4, \omega^5, \omega^5)$	I	1	$(298, 6, -)$	$2^2 \cdot 3$
133	$(0, \omega, \omega^2, \omega^3, 1, \omega, \omega^3, \omega^3, 1, \omega^5, \omega^5, \omega^4)$	I	1	$(320, 6, -)$	$2^3 \cdot 3$
134	$(0, 0, \omega, \omega^6, 0, 1, \omega^6, 1, 1, \omega^4, 1, \omega^6)$	I	1	$(326, 6, -)$	$2^2 \cdot 3$
135	$(0, 1, 1, \omega^3, 0, 1, \omega^5, 1, \omega^5, \omega^4, \omega^2, 0)$	I	1	$(328, 6, -)$	$2^3 \cdot 3$
136	$(0, \omega, \omega, \omega^3, \omega, \omega^5, \omega^5, \omega^6, \omega^6, \omega^4, \omega^6, \omega^3)$	I	1	$(338, 6, -)$	$2^3 \cdot 3$
137	$(0, \omega, \omega, \omega^3, 1, \omega^3, \omega^3, \omega^4, \omega^5, 1, \omega^5, \omega^2)$	I	1	$(354, 6, -)$	$2^3 \cdot 3$
138	$(1, 1, \omega, \omega^5, 1, \omega^4, \omega^4, \omega, \omega^2, \omega^2, \omega, \omega^6)$	I	1	$(230, 9, -)$	$2^2 \cdot 3$
139	$(0, \omega, \omega, \omega^3, 0, \omega^2, \omega^4, \omega^6, \omega^6, \omega^6, 1, \omega^2)$	I	1	$(252, 9, -)$	$2^2 \cdot 3$
140	$(0, 1, \omega, \omega^4, 0, 1, \omega^6, \omega^5, \omega^6, \omega^2, 1, \omega^5)$	I	1	$(334, 12, -)$	$2^2 \cdot 3$
141	$(0, 0, 0, \omega^3, 1, 1, 1, \omega^4, \omega^6, \omega, \omega^4, \omega^2)$	I	1	$(358, 12, -)$	$2^2 \cdot 3$
142	$(0, \omega^3, \omega^3, \omega^5, \omega^2, \omega^3, \omega^2, \omega^4, \omega^2, \omega^5, \omega, \omega)$	I	1	$(192, 15, -)$	$2^3 \cdot 3$
143	$(0, 0, \omega, \omega^5, 0, \omega^4, \omega^6, 0, \omega^6, \omega^4, \omega^6, 1)$	I	1	$(236, 15, -)$	$2^3 \cdot 3$
144	$(0, \omega, \omega, \omega^3, \omega, \omega^2, \omega, \omega^3, \omega^5, \omega^5, \omega^3, \omega^4)$	I	1	$(240, 15, -)$	$2^2 \cdot 3$
145	$(1, \omega, \omega, \omega^4, 1, \omega, \omega^3, \omega^6, \omega^6, \omega^2, \omega^6, \omega^5)$	I	1	$(338, 15, -)$	$2^2 \cdot 3$

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Table 8: New $[72, 36, 12]_2$ self-dual codes from $\mathcal{G}_7$

$\mathcal{C}_i$	$\mathbf{a}$	Type	$W_{72,k}$	(α, β, γ)	$|Aut|$
146	$(0, 1, \omega, \omega^4, 0, \omega^3, \omega^3, \omega^3, \omega^5, 0, \omega^5, \omega^5)$	I	1	$(356, 15, -)$	$2^3 \cdot 3$
147	$(0, 1, \omega, \omega^4, \omega^4, \omega^6, \omega^6, \omega^6, \omega^3, \omega^2, \omega^3, \omega^3)$	I	1	$(360, 15, -)$	$2^3 \cdot 3$
148	$(0, \omega, \omega, \omega^6, 0, \omega^4, \omega^3, \omega^4, \omega^6, \omega^6, \omega^4, 1)$	I	1	$(372, 15, -)$	$2^3 \cdot 3$
149	$(0, \omega^3, \omega^3, \omega^5, 1, \omega^4, \omega^2, \omega^4, \omega^2, \omega^2, 1, \omega)$	I	1	$(380, 15, -)$	$2^3 \cdot 3$
150	$(1, \omega, \omega, \omega^4, \omega^2, \omega^3, \omega^2, \omega^4, \omega^2, \omega^5, \omega, \omega)$	I	1	$(212, 18, -)$	$2^3 \cdot 3$
151	$(1, \omega, \omega, \omega^4, \omega, \omega^6, \omega^5, \omega^6, \omega^3, \omega^3, \omega^4, \omega^6)$	I	1	$(320, 18, -)$	$2^3 \cdot 3$
152	$(0, 1, \omega^3, \omega^6, 0, \omega^6, \omega^6, \omega^6, \omega^3, \omega^3, \omega^3, 0)$	I	1	$(304, 24, -)$	$2^3 \cdot 3$

Table 9: New $[72, 36, 12]_2$ self-dual codes from $\mathcal{G}_8$

$\mathcal{C}_i$	$\mathbf{a}$	Type	$W_{72,k}$	(α,β,γ)	$|Aut|$
153	$(0,0,\omega,\omega^4,\omega^3,\omega^6,0,1,\omega^4,\omega^6,\omega,\omega^3)$	I	1	$(102,0,-)$	$2^2 \cdot 3$
154	$(0,\omega,0,\omega,\omega^3,\omega^4,0,\omega^3,\omega^2,\omega^6,1,\omega^5)$	I	1	$(105,0,-)$	$2^2 \cdot 3$
155	$(0,1,\omega,\omega^5,\omega,\omega,1,\omega^4,\omega,\omega^3,\omega^6,\omega^4)$	I	1	$(108,0,-)$	$2^2 \cdot 3$
156	$(0,\omega,1,\omega^4,\omega^2,\omega,1,\omega^4,\omega^4,\omega^6,1,\omega^5)$	I	1	$(109,0,-)$	$2^2 \cdot 3$
157	$(0,1,1,\omega,\omega^5,\omega^6,\omega^2,\omega^4,\omega^4,\omega^6,\omega^5,\omega^5)$	I	1	$(115,0,-)$	$2^2 \cdot 3$
158	$(0,\omega,\omega^3,\omega^6,\omega^6,\omega^3,1,1,1,\omega,\omega^6,\omega^6)$	I	1	$(118,0,-)$	$2^2 \cdot 3$
159	$(0,1,\omega,\omega^5,\omega^6,\omega^4,1,1,\omega^2,\omega^3,\omega^2,\omega^6)$	I	1	$(124,0,-)$	$2^2 \cdot 3$
160	$(0,0,1,\omega^3,\omega^2,\omega^3,1,1,\omega^4,\omega,\omega^4,\omega^4)$	I	1	$(130,0,-)$	$2^2 \cdot 3$
161	$(0,0,1,0,1,\omega,1,\omega^2,\omega^2,\omega^4,\omega^5,\omega^3)$	I	1	$(145,0,-)$	$2^2 \cdot 3$
162	$(0,0,\omega,1,\omega,\omega^2,0,\omega^4,\omega^2,\omega^6,\omega^6,\omega^4)$	I	1	$(148,0,-)$	$2^2 \cdot 3$
163	$(0,0,0,1,\omega,\omega^3,0,1,\omega^5,\omega,\omega^4,\omega^3)$	I	1	$(310,0,-)$	$2^2 \cdot 3$
164	$(0,0,\omega,\omega^3,\omega^4,\omega^5,1,\omega^3,\omega^5,\omega^6,\omega^5,\omega^4)$	I	1	$(316,0,-)$	$2^2 \cdot 3$
165	$(0,0,0,\omega,\omega^4,\omega^5,1,\omega^3,\omega,\omega^3,\omega^5,\omega^4)$	I	1	$(322,0,-)$	$2^2 \cdot 3$
166	$(0,0,0,\omega,\omega^4,\omega^5,0,1,\omega^3,\omega^2,\omega^6,1)$	I	1	$(328,0,-)$	$2^2 \cdot 3$
167	$(0,0,1,\omega,0,\omega,0,\omega^2,0,\omega^4,\omega^5,\omega^6)$	I	1	$(334,0,-)$	$2^2 \cdot 3$
168	$(0,0,1,\omega,\omega^6,1,0,1,\omega^6,1,\omega^5,\omega^2)$	I	1	$(337,0,-)$	$2^2 \cdot 3$
169	$(0,\omega,1,\omega^5,\omega^2,\omega^3,\omega,\omega,\omega^2,\omega^5,\omega,\omega^3)$	I	1	$(340,0,-)$	$2^2 \cdot 3$
170	$(0,\omega,\omega^2,\omega^6,\omega^4,\omega^6,0,\omega^2,\omega^3,\omega^5,\omega^6,\omega^2)$	I	1	$(346,0,-)$	$2^2 \cdot 3$
171	$(0,0,\omega,\omega^2,\omega^3,\omega^2,1,1,\omega^6,\omega^4,\omega^4,\omega^6)$	I	1	$(361,0,-)$	$2^3 \cdot 3$
172	$(0,1,\omega,0,\omega^3,\omega^6,0,\omega^4,1,\omega^3,\omega^6,\omega^6)$	I	1	$(364,0,-)$	$2^2 \cdot 3$
173	$(0,\omega,\omega,\omega^3,\omega^3,\omega^4,\omega,\omega^3,\omega^4,\omega^6,\omega^3,\omega^4)$	I	1	$(367,0,-)$	$2^2 \cdot 3$
174	$(0,0,1,\omega^3,1,\omega^3,0,\omega,0,\omega,\omega^6,\omega^2)$	I	1	$(369,0,-)$	$2^2 \cdot 3$
175	$(0,0,\omega,1,\omega^4,\omega^5,0,\omega^6,1,\omega^6,\omega^5,\omega^6)$	I	1	$(370,0,-)$	$2^2 \cdot 3$
176	$(0,0,\omega,\omega^3,\omega^3,\omega^5,0,\omega^3,\omega^5,\omega^6,\omega^3,\omega^4)$	I	1	$(373,0,-)$	$2^2 \cdot 3$
177	$(0,\omega^3,0,\omega^5,\omega^3,\omega^6,\omega^2,\omega^3,\omega^3,\omega^4,\omega^2,\omega^6)$	I	1	$(388,0,-)$	$2^2 \cdot 3$
178	$(0,1,\omega^3,\omega^4,\omega^6,\omega,0,\omega^4,0,\omega^6,\omega^2,\omega^6)$	I	1	$(397,0,-)$	$2^3 \cdot 3$
179	$(0,1,\omega^3,0,\omega^6,\omega,0,\omega,\omega^3,\omega^3,\omega^3,\omega^6)$	I	1	$(126,3,-)$	$2^2 \cdot 3$
180	$(0,1,\omega^3,\omega^3,1,\omega^2,1,\omega^2,\omega^4,\omega^6,\omega^5,\omega^2)$	I	1	$(129,3,-)$	$2^2 \cdot 3$
181	$(0,0,\omega,\omega^4,\omega^2,\omega^3,0,\omega^4,0,\omega^4,\omega^6,\omega^5)$	I	1	$(135,3,-)$	$2^2 \cdot 3$
182	$(0,1,\omega^3,\omega^2,\omega^4,\omega^3,1,1,\omega^2,\omega^2,\omega^6,\omega^5)$	I	1	$(144,3,-)$	$2^2 \cdot 3$
183	$(0,0,1,\omega,1,\omega^4,0,\omega^3,\omega,\omega^5,\omega^6,\omega^4)$	I	1	$(147,3,-)$	$2^2 \cdot 3$
184	$(0,1,\omega^3,\omega^2,\omega^4,\omega^3,0,\omega,\omega^3,\omega^6,1,\omega^5)$	I	1	$(150,3,-)$	$2^2 \cdot 3$
185	$(0,1,\omega,\omega^3,\omega^3,\omega^6,\omega^3,\omega^4,\omega^6,\omega^4,\omega^4,\omega^5)$	I	1	$(151,3,-)$	$2^2 \cdot 3$
186	$(0,0,\omega,1,\omega,\omega^2,1,\omega^2,\omega^4,\omega^3,1,\omega^6)$	I	1	$(153,3,-)$	$2^2 \cdot 3$
187	$(0,1,\omega^3,\omega^2,\omega^2,\omega,1,\omega^4,\omega^3,\omega,\omega,\omega^6)$	I	1	$(154,3,-)$	$2^2 \cdot 3$
188	$(0,1,1,0,\omega,\omega^3,1,\omega,\omega^2,\omega^2,\omega^2,\omega^5)$	I	1	$(156,3,-)$	$2^2 \cdot 3$
189	$(0,0,\omega,\omega^2,\omega^5,\omega^2,0,1,1,\omega,0,\omega^4)$	I	1	$(157,3,-)$	$2^2 \cdot 3$
190	$(0,0,\omega^3,\omega,\omega^3,\omega^5,0,\omega,\omega^2,\omega^5,\omega,\omega^5)$	I	1	$(159,3,-)$	$2^2 \cdot 3$
191	$(0,\omega,\omega^2,\omega^2,\omega^5,\omega^5,1,\omega,\omega^2,\omega^4,\omega^4,\omega^2)$	I	1	$(160,3,-)$	$2^2 \cdot 3$
192	$(0,0,1,0,\omega^3,\omega^6,1,\omega^2,\omega^2,1,\omega^3,\omega^6)$	I	1	$(162,3,-)$	$2^2 \cdot 3$
193	$(0,1,\omega,\omega^5,\omega^3,\omega^3,0,\omega^3,1,\omega^2,\omega^2,\omega^5)$	I	1	$(163,3,-)$	$2^2 \cdot 3$
194	$(0,0,0,\omega^3,\omega,\omega^6,0,1,\omega^4,\omega^4,\omega^3,\omega^5)$	I	1	$(168,3,-)$	$2^2 \cdot 3$
195	$(0,\omega,\omega^4,\omega^4,\omega^6,\omega^5,1,\omega^2,1,\omega^3,1,\omega^5)$	I	1	$(169,3,-)$	$2^2 \cdot 3$
196	$(0,0,0,\omega,\omega^2,\omega^5,0,\omega^5,\omega^5,1,\omega^2,\omega^6)$	I	1	$(171,3,-)$	$2^2 \cdot 3$
197	$(0,0,\omega,1,\omega^6,\omega^4,1,\omega^5,\omega^3,\omega,\omega^3,\omega^6)$	I	1	$(175,3,-)$	$2^2 \cdot 3$
198	$(0,0,0,\omega,1,\omega^3,1,\omega^3,\omega,\omega^6,1,\omega^6)$	I	1	$(177,3,-)$	$2^2 \cdot 3$
199	$(0,0,1,\omega^3,\omega^4,\omega^3,0,1,\omega^2,1,\omega^6,\omega^5)$	I	1	$(181,3,-)$	$2^2 \cdot 3$
200	$(0,0,1,\omega^3,\omega,\omega^2,1,\omega^3,\omega^4,\omega^3,\omega^6,\omega^5)$	I	1	$(186,3,-)$	$2^2 \cdot 3$
201	$(0,1,\omega,\omega^6,\omega^6,\omega^3,\omega,\omega^3,\omega^2,\omega^2,\omega^5,\omega^5)$	I	1	$(187,3,-)$	$2^2 \cdot 3$
202	$(0,0,0,\omega,\omega^3,\omega^4,1,\omega^2,\omega,\omega,\omega^6,\omega^4)$	I	1	$(189,3,-)$	$2^2 \cdot 3$

Table 10: New $[72, 36, 12]_2$ self-dual codes from $\mathcal{G}_8$

$\mathcal{C}_i$	$\mathbf{a}$	Type	$W_{72,k}$	(α, β, γ)	$|Aut|$
203	$(0, 1, 1, \omega^3, 0, \omega^6, 0, 1, \omega^2, \omega^4, \omega^3, \omega^5)$	I	1	$(193, 3, -)$	$2^2 \cdot 3$
204	$(0, 0, 0, 1, \omega^3, \omega, 1, \omega^2, \omega^3, \omega^6, \omega^4, \omega^2)$	I	1	$(195, 3, -)$	$2^2 \cdot 3$
205	$(0, 0, \omega, \omega^2, \omega^5, \omega^2, 0, 1, \omega^6, \omega^5, 0, \omega^5)$	I	1	$(199, 3, -)$	$2^2 \cdot 3$
206	$(0, 0, 1, 0, 1, \omega, \omega, \omega^4, \omega^3, \omega^5, \omega^4, \omega^6)$	I	1	$(216, 3, -)$	$2^2 \cdot 3$
207	$(0, 0, 0, \omega, \omega^3, \omega^6, \omega, \omega^2, \omega^3, \omega^3, \omega^4, \omega^6)$	I	1	$(234, 3, -)$	$2^2 \cdot 3$
208	$(0, 0, 0, \omega, 1, \omega^3, 0, \omega^3, \omega^2, \omega^5, \omega^5, \omega^4)$	I	1	$(249, 3, -)$	$2^2 \cdot 3$
209	$(0, 0, 1, 1, 0, \omega, 0, 1, \omega^6, \omega^4, \omega^2, \omega^6)$	I	1	$(255, 3, -)$	$2^2 \cdot 3$
210	$(0, 0, 1, \omega, \omega^6, 1, 0, \omega^2, \omega^4, \omega^5, \omega^4, \omega^6)$	I	1	$(285, 3, -)$	$2^2 \cdot 3$
211	$(0, 0, \omega, 0, \omega^3, \omega^3, 0, \omega^2, \omega^4, \omega^4, \omega^2, \omega^3)$	I	1	$(291, 3, -)$	$2^2 \cdot 3$
212	$(0, 1, 1, \omega^3, 0, \omega^6, 0, \omega^2, 1, \omega^3, \omega^4, \omega^5)$	I	1	$(292, 3, -)$	$2^2 \cdot 3$
213	$(0, 0, \omega, \omega, \omega^6, \omega, 1, \omega^4, \omega^6, \omega^4, \omega^6, \omega^5)$	I	1	$(298, 3, -)$	$2^2 \cdot 3$
214	$(0, 0, \omega^3, \omega, \omega^5, \omega^3, 1, \omega^3, \omega^4, 1, \omega^4, \omega^5)$	I	1	$(303, 3, -)$	$2^2 \cdot 3$
215	$(0, 1, \omega^3, 0, \omega^3, \omega^4, 0, \omega^4, \omega^4, \omega, 1, \omega^6)$	I	1	$(304, 3, -)$	$2^2 \cdot 3$
216	$(0, 0, 1, \omega^3, 0, \omega^3, 0, \omega^2, \omega, \omega^4, \omega^5, \omega^5)$	I	1	$(307, 3, -)$	$2^2 \cdot 3$
217	$(0, 0, 0, \omega, 1, \omega^5, 0, \omega^2, \omega^3, \omega^4, \omega^3, \omega^5)$	I	1	$(310, 3, -)$	$2^2 \cdot 3$
218	$(0, 1, 0, \omega, \omega^2, \omega^4, \omega^2, \omega^3, \omega^2, \omega^3, \omega^6, \omega^6)$	I	1	$(312, 3, -)$	$2^2 \cdot 3$
219	$(0, 0, 1, \omega, \omega^5, \omega^5, 0, \omega^5, \omega, \omega^6, \omega^5, \omega^6)$	I	1	$(315, 3, -)$	$2^2 \cdot 3$
220	$(0, 1, \omega, \omega^5, \omega^3, \omega^4, \omega^2, \omega^5, \omega^5, \omega^5, \omega^4, \omega^6)$	I	1	$(325, 3, -)$	$2^2 \cdot 3$
221	$(0, 1, \omega^3, \omega^4, 1, \omega^4, 0, \omega^5, \omega^2, \omega^3, \omega^5, \omega^6)$	I	1	$(327, 3, -)$	$2^2 \cdot 3$
222	$(0, \omega, 1, 1, \omega^4, \omega^2, 1, \omega, 1, \omega^5, 1, \omega^6)$	I	1	$(328, 3, -)$	$2^2 \cdot 3$
223	$(0, 1, \omega^3, \omega^6, \omega^4, \omega^5, 1, \omega^4, \omega^6, \omega^6, \omega^5, \omega^5)$	I	1	$(330, 3, -)$	$2^2 \cdot 3$
224	$(0, 0, \omega, 1, \omega^3, \omega^4, 0, \omega^3, \omega^4, \omega^4, 1, \omega^6)$	I	1	$(331, 3, -)$	$2^2 \cdot 3$
225	$(0, 0, \omega, \omega^4, 0, \omega^5, 1, \omega^4, \omega^4, \omega, \omega^4, \omega^5)$	I	1	$(333, 3, -)$	$2^2 \cdot 3$
226	$(0, 1, \omega, \omega^5, \omega^3, 1, 0, \omega^2, \omega^4, \omega, 1, \omega^4)$	I	1	$(337, 3, -)$	$2^2 \cdot 3$
227	$(0, 1, \omega, \omega^2, 1, \omega^6, 0, \omega^3, \omega^2, \omega^6, \omega^5, \omega^5)$	I	1	$(343, 3, -)$	$2^2 \cdot 3$
228	$(0, \omega, 1, \omega^3, \omega^2, \omega^6, 1, \omega^3, \omega, \omega^2, \omega, \omega^4)$	I	1	$(345, 3, -)$	$2^2 \cdot 3$
229	$(0, 1, \omega^3, 0, \omega, \omega, 1, \omega^3, \omega^3, \omega^2, \omega^3, \omega^6)$	I	1	$(351, 3, -)$	$2^2 \cdot 3$
230	$(0, \omega, \omega, \omega, \omega^5, \omega^6, 0, \omega^2, \omega^3, \omega^2, \omega^2, \omega^4)$	I	1	$(357, 3, -)$	$2^2 \cdot 3$
231	$(0, 1, \omega^3, 0, \omega, \omega^5, 0, \omega^2, \omega^2, 1, \omega^3, \omega^2)$	I	1	$(363, 3, -)$	$2^2 \cdot 3$
232	$(0, 0, \omega, \omega^3, \omega^5, \omega^4, \omega^2, \omega^4, \omega^4, \omega^4, \omega^2, \omega^5)$	I	1	$(111, 6, -)$	$2^3 \cdot 3$
233	$(0, \omega, \omega^3, \omega^6, \omega^2, \omega^3, 1, \omega^3, \omega^5, \omega^4, \omega^2, \omega^6)$	I	1	$(117, 6, -)$	$2^2 \cdot 3$
234	$(0, \omega, \omega^6, \omega^3, \omega^3, \omega^4, 1, \omega^4, \omega^3, \omega^4, \omega^5, \omega^6)$	I	1	$(120, 6, -)$	$2^2 \cdot 3$
235	$(0, 1, 1, \omega, \omega^2, \omega^4, 1, \omega^4, \omega^3, \omega^5, \omega^5, \omega^6)$	I	1	$(126, 6, -)$	$2^2 \cdot 3$
236	$(0, 0, 1, \omega, \omega^4, \omega^3, 0, \omega, 1, \omega^2, \omega^5, \omega^5)$	I	1	$(135, 6, -)$	$2^2 \cdot 3$
237	$(0, 0, \omega^3, 1, \omega^4, \omega^3, 0, \omega^2, \omega, \omega^2, \omega, \omega^4)$	I	1	$(138, 6, -)$	$2^2 \cdot 3$
238	$(0, 1, 0, \omega^3, \omega^4, \omega^3, 0, \omega, 1, \omega^5, \omega^5, \omega^6)$	I	1	$(139, 6, -)$	$2^3 \cdot 3$
239	$(0, 0, \omega, \omega^5, \omega^3, \omega^4, 0, \omega^5, \omega^5, 1, \omega^6, \omega^6)$	I	1	$(141, 6, -)$	$2^2 \cdot 3$
240	$(0, 0, \omega^3, \omega^2, \omega^2, \omega^5, 0, \omega^2, 1, \omega^3, \omega^6, \omega^4)$	I	1	$(144, 6, -)$	$2^2 \cdot 3$
241	$(0, 0, 1, \omega, \omega^2, \omega^5, 0, \omega^3, \omega^4, 1, \omega, \omega^5)$	I	1	$(147, 6, -)$	$2^2 \cdot 3$
242	$(0, 0, \omega, \omega^2, \omega, \omega^3, 0, \omega^2, \omega^6, \omega^3, \omega^5, \omega^3)$	I	1	$(150, 6, -)$	$2^2 \cdot 3$
243	$(0, \omega, \omega^4, \omega, \omega^3, \omega^2, 1, \omega, 1, \omega, \omega^4, \omega^4)$	I	1	$(154, 6, -)$	$2^2 \cdot 3$
244	$(0, \omega, 0, \omega^2, 1, \omega^4, \omega, \omega^5, \omega^2, \omega^5, \omega^3, \omega^6)$	I	1	$(157, 6, -)$	$2^2 \cdot 3$
245	$(0, 0, 0, \omega, \omega^6, \omega^5, 0, \omega, \omega^4, \omega^2, \omega^5, \omega^4)$	I	1	$(160, 6, -)$	$2^2 \cdot 3$
246	$(0, 0, 1, \omega^3, 0, \omega^4, 1, \omega, \omega^5, \omega, \omega^4, \omega^6)$	I	1	$(166, 6, -)$	$2^2 \cdot 3$
247	$(0, 1, \omega^3, 0, \omega^2, \omega^4, 1, \omega^2, \omega^3, \omega^3, \omega^3, \omega^5)$	I	1	$(172, 6, -)$	$2^2 \cdot 3$
248	$(0, 1, 1, \omega, \omega^6, \omega, 0, \omega, 0, \omega^2, \omega^2, \omega^4)$	I	1	$(178, 6, -)$	$2^2 \cdot 3$
249	$(0, \omega, 0, \omega^4, \omega^4, \omega^6, 1, 1, \omega^2, \omega^5, \omega^3, \omega^4)$	I	1	$(184, 6, -)$	$2^2 \cdot 3$
250	$(0, 0, \omega, \omega, \omega, \omega^6, 0, 0, \omega^2, \omega^3, \omega^6, \omega^2)$	I	1	$(190, 6, -)$	$2^2 \cdot 3$
251	$(0, 0, 1, \omega, \omega^5, \omega^3, 1, \omega^2, \omega^3, \omega, \omega^2, \omega^4)$	I	1	$(196, 6, -)$	$2^2 \cdot 3$
252	$(0, 0, \omega, \omega^3, \omega^2, \omega^3, \omega^2, \omega^2, \omega^3, \omega^5, \omega^4, \omega^6)$	I	1	$(232, 6, -)$	$2^2 \cdot 3$

Table 11: New $[72, 36, 12]_2$ self-dual
codes from $\mathcal{G}_8$

$\mathcal{C}_i$	$\mathbf{a}$	Type	$W_{72,k}$	(α, β, γ)	$|Aut|$
253	$(0,0,1,\omega,\omega^6,1,0,\omega^4,\omega^5,\omega^5,\omega^6,\omega^6)$	I	1	$(280,6,-)$	$2^2 \cdot 3$
254	$(0,0,1,\omega^3,\omega^4,\omega,\omega,\omega^4,\omega^6,\omega^4,\omega^5,\omega^5)$	I	1	$(286,6,-)$	$2^2 \cdot 3$
255	$(0,0,1,1,\omega^3,\omega,1,\omega^2,\omega^2,\omega^4,\omega,\omega^6)$	I	1	$(303,6,-)$	$2^2 \cdot 3$
256	$(0,0,0,1,\omega,\omega^2,0,1,\omega^4,\omega^6,\omega^4,\omega)$	I	1	$(309,6,-)$	$2^2 \cdot 3$
257	$(0,1,1,\omega^3,\omega^2,\omega^3,\omega,\omega^4,\omega^4,\omega^2,\omega^2,\omega^5)$	I	1	$(310,6,-)$	$2^2 \cdot 3$
258	$(0,0,\omega,\omega^6,\omega^6,\omega^5,0,1,\omega^5,\omega^4,1,\omega^6)$	I	1	$(313,6,-)$	$2^2 \cdot 3$
259	$(0,0,\omega,0,\omega^4,\omega^6,\omega,\omega^2,\omega^3,\omega^4,\omega^5,\omega^2)$	I	1	$(316,6,-)$	$2^2 \cdot 3$
260	$(0,0,1,\omega^3,\omega^2,\omega^6,1,\omega,1,\omega^2,\omega,\omega^4)$	I	1	$(318,6,-)$	$2^2 \cdot 3$
261	$(0,0,0,1,\omega,\omega^3,0,\omega^2,\omega^2,\omega^2,\omega^4,\omega^3)$	I	1	$(321,6,-)$	$2^2 \cdot 3$
262	$(0,0,\omega,\omega^6,0,\omega^5,0,1,1,\omega^2,\omega^4,\omega^3)$	I	1	$(322,6,-)$	$2^2 \cdot 3$
263	$(0,0,\omega,\omega,\omega^2,\omega^3,0,\omega,1,\omega^4,1,\omega)$	I	1	$(325,6,-)$	$2^3 \cdot 3$
264	$(0,0,0,\omega,\omega^2,\omega^3,0,\omega^2,\omega^3,\omega^4,\omega,\omega^5)$	I	1	$(327,6,-)$	$2^2 \cdot 3$
265	$(0,0,\omega^3,\omega^2,\omega^3,\omega^6,\omega,\omega^3,\omega^3,\omega^5,\omega,\omega^5)$	I	1	$(334,6,-)$	$2^2 \cdot 3$
266	$(0,0,1,1,\omega^3,\omega^3,\omega^2,\omega^3,\omega^6,\omega^3,\omega^5,\omega^5)$	I	1	$(340,6,-)$	$2^2 \cdot 3$
267	$(0,0,\omega,0,\omega^3,\omega,0,\omega,\omega,\omega^6,\omega^3,\omega^2)$	I	1	$(345,6,-)$	$2^2 \cdot 3$
268	$(0,0,0,\omega,\omega,\omega,\omega,\omega^2,\omega^4,\omega^6,\omega^6,\omega^3)$	I	1	$(349,6,-)$	$2^3 \cdot 3$
269	$(0,1,\omega^3,0,\omega,\omega^2,\omega^2,\omega^5,\omega^3,\omega^5,\omega^6,\omega^5)$	I	1	$(351,6,-)$	$2^2 \cdot 3$
270	$(0,0,1,\omega,\omega^2,\omega^5,0,\omega^3,\omega^5,1,\omega,\omega^4)$	I	1	$(357,6,-)$	$2^2 \cdot 3$
271	$(0,0,\omega,\omega^2,\omega,\omega^6,0,\omega^5,\omega^2,\omega,\omega^4,\omega^5)$	I	1	$(358,6,-)$	$2^2 \cdot 3$
272	$(0,1,0,\omega,\omega^6,\omega,0,\omega^2,\omega^2,\omega^2,\omega^6,\omega^2)$	I	1	$(363,6,-)$	$2^3 \cdot 3$
273	$(0,0,\omega,\omega^6,\omega^6,\omega^5,0,\omega,\omega,\omega,\omega^2,\omega)$	I	1	$(367,6,-)$	$2^2 \cdot 3$
274	$(0,0,\omega^3,1,\omega^6,\omega^5,0,\omega^3,0,\omega^5,\omega,\omega^5)$	I	1	$(369,6,-)$	$2^3 \cdot 3$
275	$(0,0,0,1,\omega,\omega^3,0,\omega,\omega^2,\omega^2,\omega^6,\omega^4)$	I	1	$(370,6,-)$	$2^2 \cdot 3$
276	$(0,\omega,\omega^3,1,\omega^3,\omega^4,1,\omega^4,\omega,\omega^5,\omega^3,\omega^6)$	I	1	$(375,6,-)$	$2^2 \cdot 3$
277	$(0,1,0,\omega^3,\omega^5,\omega^3,1,1,\omega,\omega^6,\omega^3,\omega^3)$	I	1	$(379,6,-)$	$2^3 \cdot 3$
278	$(0,0,1,\omega,\omega^6,\omega^3,\omega^2,\omega^2,\omega^3,\omega^6,\omega^5,\omega^6)$	I	1	$(382,6,-)$	$2^2 \cdot 3$
279	$(0,1,\omega,\omega^5,1,\omega^2,0,\omega^4,1,\omega^3,\omega,\omega^4)$	I	1	$(384,6,-)$	$2^2 \cdot 3$
280	$(0,1,\omega,\omega^4,\omega^6,\omega^6,1,1,\omega^4,\omega^4,1,\omega^6,\omega^4)$	I	1	$(385,6,-)$	$2^2 \cdot 3$
281	$(0,0,1,\omega,\omega^4,\omega^2,0,\omega^2,0,\omega^3,\omega^2,\omega^3)$	I	1	$(387,6,-)$	$2^3 \cdot 3$
282	$(0,\omega,0,\omega^2,\omega^2,\omega^5,0,\omega^3,\omega^3,0,\omega^3,\omega^5)$	I	1	$(397,6,-)$	$2^2 \cdot 3$
283	$(0,\omega,1,\omega,1,\omega^2,1,\omega^2,1,\omega^3,\omega^6,\omega^5)$	I	1	$(399,6,-)$	$2^2 \cdot 3$
284	$(0,0,1,\omega,\omega^4,\omega^2,0,\omega^3,\omega^5,\omega^3,0,\omega^5)$	I	1	$(417,6,-)$	$2^3 \cdot 3$
285	$(0,0,\omega,\omega^2,\omega^5,\omega^2,\omega,\omega^2,\omega^4,\omega^4,\omega^2,\omega^4)$	I	1	$(423,6,-)$	$2^2 \cdot 3$
286	$(0,\omega,\omega^2,\omega^2,\omega^2,\omega^3,\omega,\omega^4,\omega^5,\omega^6,\omega^5,\omega^6)$	I	1	$(426,6,-)$	$2^2 \cdot 3$
287	$(0,\omega,1,\omega^2,\omega^2,\omega^2,0,\omega^2,\omega^4,\omega^6,\omega^2,\omega^6)$	I	1	$(438,6,-)$	$2^2 \cdot 3$
288	$(0,\omega,1,\omega,1,\omega^6,0,\omega^3,0,\omega^3,\omega^3,\omega^5)$	I	1	$(447,6,-)$	$2^2 \cdot 3$
289	$(0,\omega,\omega^3,\omega^5,\omega^3,\omega^3,\omega^3,\omega^5,\omega^4,\omega^5,\omega^5,\omega^6)$	I	1	$(144,9,-)$	$2^2 \cdot 3$
290	$(0,1,\omega,\omega^4,\omega^6,\omega^6,1,1,\omega^4,\omega^4,\omega^3,\omega^5)$	I	1	$(153,9,-)$	$2^2 \cdot 3$
291	$(0,\omega,\omega^3,\omega^5,\omega^4,\omega^3,1,\omega,\omega^2,\omega^6,\omega^5,\omega^5)$	I	1	$(159,9,-)$	$2^2 \cdot 3$
292	$(0,\omega,\omega^5,0,\omega^3,\omega^6,\omega,\omega^2,\omega^5,\omega^6,\omega^6,\omega^3)$	I	1	$(162,9,-)$	$2^2 \cdot 3$
293	$(0,0,\omega,\omega^2,1,\omega^6,1,\omega,\omega^3,\omega^3,\omega^3,\omega^3)$	I	1	$(171,9,-)$	$2^2 \cdot 3$
294	$(0,1,0,\omega,\omega^5,\omega^3,1,\omega^2,\omega^5,\omega^6,\omega^5,\omega^4)$	I	1	$(175,9,-)$	$2^2 \cdot 3$
295	$(0,1,1,\omega,0,\omega^2,\omega^2,\omega^3,\omega^5,\omega^6,\omega^6,\omega^5)$	I	1	$(177,9,-)$	$2^2 \cdot 3$
296	$(0,0,\omega^3,1,\omega^3,\omega^5,1,\omega,\omega^3,\omega^3,1,\omega^6)$	I	1	$(180,9,-)$	$2^2 \cdot 3$
297	$(0,1,\omega^3,\omega^3,\omega^5,\omega^2,\omega,\omega^3,\omega^3,\omega^4,\omega,\omega^6)$	I	1	$(183,9,-)$	$2^2 \cdot 3$
298	$(0,0,\omega,\omega^5,\omega^4,\omega^5,\omega^2,\omega^3,\omega^3,\omega^5,\omega^6,\omega^3)$	I	1	$(186,9,-)$	$2^2 \cdot 3$
299	$(0,\omega,1,\omega^4,1,\omega^6,1,\omega^2,\omega^3,\omega^2,\omega^6,\omega^5)$	I	1	$(187,9,-)$	$2^2 \cdot 3$
300	$(0,0,\omega^3,1,\omega^4,\omega^5,1,\omega,\omega^3,\omega,\omega^6,\omega^6)$	I	1	$(189,9,-)$	$2^2 \cdot 3$
301	$(0,0,\omega,\omega,\omega^3,\omega^3,0,\omega^3,\omega^5,\omega^2,\omega^2,\omega^6)$	I	1	$(195,9,-)$	$2^2 \cdot 3$
302	$(0,0,1,0,\omega,\omega^4,1,\omega^3,\omega,\omega^2,\omega^3,\omega^3)$	I	1	$(198,9,-)$	$2^2 \cdot 3$

Table 12: New $[72, 36, 12]_2$ self-dual codes from $\mathcal{G}_8$

$\mathcal{C}_i$	$\mathbf{a}$	Type	$W_{72,k}$	(α, β, γ)	$|Aut|$
303	$(0, 1, \omega^3, \omega^5, \omega, \omega^5, 0, \omega, \omega, \omega^4, \omega^6, \omega)$	I	1	$(201, 9, -)$	$2^2 \cdot 3$
304	$(0, 0, \omega^3, 0, \omega^3, \omega^6, 0, 1, \omega^4, \omega^6, \omega^5, 1)$	I	1	$(202, 9, -)$	$2^2 \cdot 3$
305	$(0, 0, \omega, 1, \omega, \omega^2, 1, \omega, \omega, \omega^3, 1, \omega^5)$	I	1	$(204, 9, -)$	$2^2 \cdot 3$
306	$(0, 1, 1, \omega, \omega, \omega^2, 0, \omega^4, \omega^3, 1, \omega^2, \omega^6)$	I	1	$(207, 9, -)$	$2^2 \cdot 3$
307	$(0, 1, \omega, \omega^5, \omega^5, \omega^5, \omega, \omega^3, \omega^2, \omega^2, \omega^3, \omega^5)$	I	1	$(211, 9, -)$	$2^2 \cdot 3$
308	$(0, 0, \omega, \omega^4, \omega^3, \omega^4, 1, \omega^2, \omega^3, \omega^2, \omega^6, \omega^5)$	I	1	$(214, 9, -)$	$2^2 \cdot 3$
309	$(0, 0, \omega, 0, \omega^2, \omega^3, \omega^2, \omega^2, \omega^3, \omega^6, \omega^5, \omega^6)$	I	1	$(216, 9, -)$	$2^2 \cdot 3$
310	$(0, \omega, 1, 1, \omega^4, \omega^2, 1, \omega^3, \omega^2, \omega^6, \omega^6, \omega^5)$	I	1	$(217, 9, -)$	$2^2 \cdot 3$
311	$(0, 0, 1, 0, \omega^3, \omega^2, 1, \omega^2, \omega^3, \omega^6, \omega, \omega^4)$	I	1	$(219, 9, -)$	$2^2 \cdot 3$
312	$(0, 1, 1, \omega^3, \omega^4, \omega^3, 1, \omega^2, \omega^5, \omega^2, \omega^4, \omega^5)$	I	1	$(220, 9, -)$	$2^2 \cdot 3$
313	$(0, 1, \omega, \omega^5, \omega^5, \omega^3, 1, \omega, 1, \omega^2, \omega^2, \omega^3)$	I	1	$(222, 9, -)$	$2^2 \cdot 3$
314	$(0, 0, \omega, \omega^3, \omega, \omega^2, \omega, \omega^2, \omega^2, \omega^4, \omega^5, \omega^6)$	I	1	$(223, 9, -)$	$2^3 \cdot 3$
315	$(0, 0, \omega, 0, \omega^5, \omega^5, 1, \omega^3, \omega^3, \omega^3, \omega^2, \omega^6)$	I	1	$(228, 9, -)$	$2^2 \cdot 3$
316	$(0, 1, 1, \omega, 1, \omega^2, \omega^2, \omega^5, \omega^4, \omega^3, \omega^6, \omega^6)$	I	1	$(229, 9, -)$	$2^2 \cdot 3$
317	$(0, 0, 1, \omega, \omega^3, \omega^6, \omega, \omega^2, \omega^4, \omega^6, \omega^5, \omega^4)$	I	1	$(231, 9, -)$	$2^2 \cdot 3$
318	$(0, 1, \omega, \omega^6, \omega^6, \omega^3, 0, \omega, \omega^6, \omega^2, \omega^2, \omega^4)$	I	1	$(232, 9, -)$	$2^2 \cdot 3$
319	$(0, 1, \omega^3, \omega^2, \omega, \omega, \omega^2, \omega^6, \omega^3, \omega^5, \omega^5, \omega^6)$	I	1	$(235, 9, -)$	$2^2 \cdot 3$
320	$(0, 0, 0, \omega^3, \omega, \omega^6, \omega, \omega^2, \omega^5, \omega^2, \omega^6, \omega^6)$	I	1	$(237, 9, -)$	$2^2 \cdot 3$
321	$(0, 0, \omega, \omega^4, \omega^5, \omega^5, \omega, \omega^4, \omega^2, \omega^2, \omega^4, \omega^5)$	I	1	$(238, 9, -)$	$2^2 \cdot 3$
322	$(0, 0, 1, \omega, 0, \omega^4, 1, \omega, \omega^3, \omega^2, \omega^3, \omega^3)$	I	1	$(243, 9, -)$	$2^3 \cdot 3$
323	$(0, 1, \omega^3, \omega, \omega^2, \omega^2, 1, \omega, \omega^3, \omega^6, \omega, \omega^4)$	I	1	$(253, 9, -)$	$2^2 \cdot 3$
324	$(0, 1, \omega, \omega^6, \omega^5, \omega^6, 1, \omega^2, \omega^3, \omega^5, \omega^5, \omega^3)$	I	1	$(289, 9, -)$	$2^2 \cdot 3$
325	$(0, 0, \omega, \omega^4, \omega^3, \omega^4, \omega, \omega, \omega, \omega^3, \omega^5, \omega^4)$	I	1	$(292, 9, -)$	$2^2 \cdot 3$
326	$(0, 0, 1, \omega^3, \omega^2, \omega^5, 1, \omega, \omega^5, \omega^6, \omega^5, \omega^4)$	I	1	$(294, 9, -)$	$2^2 \cdot 3$
327	$(0, 0, \omega, \omega^2, \omega^3, \omega^3, 1, \omega^2, \omega^2, \omega^3, \omega, \omega^5)$	I	1	$(298, 9, -)$	$2^2 \cdot 3$
328	$(0, \omega, \omega^2, \omega^2, \omega^3, \omega^5, 1, 1, \omega^2, \omega^5, \omega, \omega^4)$	I	1	$(301, 9, -)$	$2^2 \cdot 3$
329	$(0, 0, 1, \omega, \omega^6, \omega^5, 0, 1, \omega^3, 1, \omega^4, \omega^6)$	I	1	$(303, 9, -)$	$2^2 \cdot 3$
330	$(0, 0, 1, \omega, \omega^4, \omega, \omega^3, \omega^4, \omega^5, \omega^5, \omega^6, \omega^4)$	I	1	$(310, 9, -)$	$2^2 \cdot 3$
331	$(0, 0, \omega, 0, \omega^2, \omega^3, 1, \omega, \omega^2, \omega^5, 1, \omega^6)$	I	1	$(312, 9, -)$	$2^2 \cdot 3$
332	$(0, 0, \omega, \omega^4, 1, \omega^5, 1, \omega, \omega^2, \omega^2, \omega^4, \omega^4)$	I	1	$(313, 9, -)$	$2^2 \cdot 3$
333	$(0, 1, \omega^3, \omega^6, \omega^3, \omega^5, 0, \omega^2, \omega^3, 1, \omega, \omega^4)$	I	1	$(316, 9, -)$	$2^2 \cdot 3$
334	$(0, 0, \omega, \omega^2, \omega^5, \omega^2, 1, \omega, \omega^5, \omega^4, \omega^3, \omega^6)$	I	1	$(319, 9, -)$	$2^2 \cdot 3$
335	$(0, \omega, \omega, \omega, 1, \omega^5, \omega^2, \omega^5, \omega^3, \omega^6, \omega^6, \omega^6)$	I	1	$(321, 9, -)$	$2^2 \cdot 3$
336	$(0, \omega, \omega, \omega^2, 1, \omega^6, \omega, \omega^3, \omega^4, \omega^2, \omega^2, \omega^4)$	I	1	$(322, 9, -)$	$2^2 \cdot 3$
337	$(0, 0, \omega, \omega, \omega^3, \omega, 0, 1, 1, \omega^3, \omega^2, \omega^5)$	I	1	$(325, 9, -)$	$2^2 \cdot 3$
338	$(0, 1, 1, \omega^3, \omega^5, \omega^4, 0, 1, \omega^3, \omega^2, 0, \omega^6)$	I	1	$(330, 9, -)$	$2^2 \cdot 3$
339	$(0, 0, \omega^3, 1, \omega^3, \omega^5, 0, \omega^3, \omega^2, \omega^4, 0, \omega^4)$	I	1	$(333, 9, -)$	$2^2 \cdot 3$
340	$(0, 1, 1, \omega^3, 1, \omega^3, 0, 1, \omega, \omega^6, \omega^5, 1)$	I	1	$(334, 9, -)$	$2^2 \cdot 3$
341	$(0, 1, \omega^3, \omega^5, 0, \omega^6, 0, \omega^3, \omega^2, \omega^6, \omega^6, \omega^4)$	I	1	$(337, 9, -)$	$2^2 \cdot 3$
342	$(0, 1, \omega, \omega^5, \omega^5, \omega^3, \omega, \omega^4, \omega^3, \omega^5, \omega^2, \omega^6)$	I	1	$(339, 9, -)$	$2^2 \cdot 3$
343	$(0, \omega, \omega^2, \omega, \omega^4, \omega^5, 1, \omega, \omega^5, 1, \omega^6, \omega^2)$	I	1	$(348, 9, -)$	$2^2 \cdot 3$
344	$(0, 1, 1, 0, \omega, \omega^3, 0, 1, \omega^3, \omega^6, \omega, \omega^6)$	I	1	$(351, 9, -)$	$2^2 \cdot 3$
345	$(0, 1, \omega^3, \omega^2, \omega, \omega^4, 1, 1, \omega^5, \omega^4, \omega^6, \omega^5)$	I	1	$(358, 9, -)$	$2^2 \cdot 3$
346	$(0, \omega, \omega^3, \omega^5, \omega, \omega^6, 1, \omega, \omega^5, \omega^6, \omega^6, \omega^2)$	I	1	$(361, 9, -)$	$2^2 \cdot 3$
347	$(0, \omega, \omega, 0, \omega^3, \omega^5, \omega, \omega^3, \omega^6, \omega^6, \omega^3, \omega^5)$	I	1	$(363, 9, -)$	$2^2 \cdot 3$
348	$(0, 0, \omega, \omega^4, \omega, \omega^3, \omega, \omega^4, \omega^2, \omega^5, \omega^2, \omega^5)$	I	1	$(366, 9, -)$	$2^2 \cdot 3$
349	$(0, \omega, \omega^3, 1, \omega^6, \omega^3, 0, \omega^3, \omega^6, \omega^3, \omega^5, \omega^6)$	I	1	$(372, 9, -)$	$2^2 \cdot 3$
350	$(0, 1, 1, \omega, 1, \omega, 0, \omega^3, 0, \omega^3, \omega^6, \omega^6)$	I	1	$(373, 9, -)$	$2^2 \cdot 3$
351	$(0, 1, \omega, 1, \omega^3, 1, \omega^2, \omega^4, \omega^3, \omega^6, \omega^3, \omega^4)$	I	1	$(123, 12, -)$	$2^3 \cdot 3$
352	$(0, \omega, \omega^3, 1, \omega^2, \omega^3, 1, \omega^4, 1, \omega^5, \omega, \omega^6)$	I	1	$(138, 12, -)$	$2^2 \cdot 3$

Table 13: New $[72, 36, 12]_2$ self-dual codes from $\mathcal{G}_8$

$\mathcal{C}_i$	$\mathbf{a}$	Type	$W_{72,k}$	(α, β, γ)	$|Aut|$
353	$(0, 1, \omega^3, \omega, 0, \omega^5, \omega, \omega, \omega^2, \omega^5, \omega^4, \omega^3)$	I	1	$(150, 12, -)$	$2^2 \cdot 3$
354	$(0, \omega, \omega, \omega^5, \omega^2, \omega^4, \omega^2, \omega^4, \omega^5, \omega^3, \omega^5, \omega^6)$	I	1	$(159, 12, -)$	$2^2 \cdot 3$
355	$(0, \omega, \omega^2, \omega^5, 1, \omega^5, 0, \omega^3, \omega, \omega^2, \omega^2, \omega^5)$	I	1	$(168, 12, -)$	$2^2 \cdot 3$
356	$(0, 1, \omega, \omega^6, 0, \omega^3, 1, \omega^2, \omega, \omega^2, \omega, \omega^6)$	I	1	$(174, 12, -)$	$2^2 \cdot 3$
357	$(0, 1, 0, \omega, \omega^3, \omega, \omega, \omega^2, \omega^4, \omega^6, \omega^6, \omega^3)$	I	1	$(177, 12, -)$	$2^3 \cdot 3$
358	$(0, \omega, \omega^3, \omega^5, \omega, \omega^6, 1, 1, \omega^3, \omega, \omega^4, \omega^5)$	I	1	$(178, 12, -)$	$2^2 \cdot 3$
359	$(0, \omega, \omega^3, \omega^2, \omega^2, \omega^4, 0, \omega, \omega^6, \omega^4, 0, \omega^5)$	I	1	$(180, 12, -)$	$2^2 \cdot 3$
360	$(0, 1, \omega^3, \omega^3, \omega^5, \omega^4, 1, \omega^4, 1, \omega^6, \omega^5, \omega^6)$	I	1	$(183, 12, -)$	$2^3 \cdot 3$
361	$(0, 0, 1, \omega^3, \omega^5, \omega^6, 0, \omega^4, \omega^2, \omega, \omega^2, \omega^6)$	I	1	$(184, 12, -)$	$2^2 \cdot 3$
362	$(0, 0, 1, \omega, \omega^2, \omega, 1, \omega^2, \omega^3, 1, \omega^5, \omega^2)$	I	1	$(187, 12, -)$	$2^2 \cdot 3$
363	$(0, 0, 1, \omega, \omega^2, \omega^5, 0, \omega, \omega, 1, \omega^3, \omega^3)$	I	1	$(193, 12, -)$	$2^2 \cdot 3$
364	$(0, \omega, \omega^5, \omega, \omega^6, \omega, 1, \omega, \omega^5, \omega^2, \omega^4, \omega^5)$	I	1	$(196, 12, -)$	$2^2 \cdot 3$
365	$(0, 0, 0, \omega, \omega^4, \omega, 0, \omega^2, \omega^5, \omega^6, \omega, \omega^3)$	I	1	$(198, 12, -)$	$2^3 \cdot 3$
366	$(0, 0, \omega^3, 1, \omega, \omega^6, \omega^2, \omega^3, \omega^3, \omega^3, \omega^2, \omega^5)$	I	1	$(204, 12, -)$	$2^3 \cdot 3$
367	$(0, \omega, 1, \omega^4, \omega^6, \omega^2, \omega, \omega^3, \omega^2, \omega^5, \omega, \omega^6)$	I	1	$(205, 12, -)$	$2^2 \cdot 3$
368	$(0, 0, 0, \omega^3, \omega^4, \omega, \omega^2, \omega^4, \omega^2, \omega^2, \omega^4)$	I	1	$(210, 12, -)$	$2^2 \cdot 3$
369	$(0, 0, \omega, \omega^4, \omega, \omega^2, 1, \omega, \omega, \omega^3, \omega, \omega^3)$	I	1	$(211, 12, -)$	$2^2 \cdot 3$
370	$(0, 0, \omega, \omega^3, 1, \omega^6, \omega, \omega^3, \omega^5, \omega^4, \omega^5, \omega^3)$	I	1	$(213, 12, -)$	$2^3 \cdot 3$
371	$(0, \omega, 0, \omega^4, \omega, \omega^6, 1, 1, \omega^5, \omega^4, \omega^4, \omega^6)$	I	1	$(214, 12, -)$	$2^2 \cdot 3$
372	$(0, 0, 0, \omega, \omega^4, \omega^3, 0, 1, \omega, 0, 1, \omega^2)$	I	1	$(216, 12, -)$	$2^2 \cdot 3$
373	$(0, \omega, 1, \omega^4, \omega^6, \omega^2, 1, 1, \omega, \omega, \omega^5, \omega)$	I	1	$(217, 12, -)$	$2^2 \cdot 3$
374	$(0, 1, \omega^3, \omega^5, \omega^2, \omega^5, 0, \omega, \omega^4, \omega^5, 1, \omega^6)$	I	1	$(220, 12, -)$	$2^2 \cdot 3$
375	$(0, 0, \omega^3, \omega, \omega^6, \omega^6, 0, \omega^2, \omega^5, \omega^5, \omega, \omega^4)$	I	1	$(222, 12, -)$	$2^2 \cdot 3$
376	$(0, 0, \omega, 0, 1, \omega^2, 0, \omega^3, \omega^5, \omega^6, \omega, \omega^6)$	I	1	$(225, 12, -)$	$2^2 \cdot 3$
377	$(0, 1, \omega, \omega^5, \omega^2, \omega, 1, 1, \omega, \omega^3, \omega^4, \omega^2)$	I	1	$(226, 12, -)$	$2^2 \cdot 3$
378	$(0, 0, 1, \omega, \omega^4, \omega^2, 0, \omega, 0, \omega^3, \omega, \omega^3)$	I	1	$(229, 12, -)$	$2^3 \cdot 3$
379	$(0, 0, \omega, \omega^6, 1, \omega^5, 1, 1, \omega^4, \omega, \omega^3, \omega^5)$	I	1	$(232, 12, -)$	$2^2 \cdot 3$
380	$(0, 0, 0, 1, \omega, \omega^5, 1, \omega, 1, \omega^4, \omega^4, \omega^5)$	I	1	$(270, 12, -)$	$2^2 \cdot 3$
381	$(0, 0, 0, \omega^3, \omega^3, \omega^6, 0, \omega, \omega, 1, \omega, \omega^5)$	I	1	$(288, 12, -)$	$2^2 \cdot 3$
382	$(0, 0, 1, 1, 1, \omega, 1, \omega^4, \omega^3, \omega, \omega^3, \omega^5)$	I	1	$(289, 12, -)$	$2^2 \cdot 3$
383	$(0, 0, 1, 1, \omega^3, \omega^3, 1, \omega^5, \omega^2, \omega^2, \omega, \omega^6)$	I	1	$(310, 12, -)$	$2^2 \cdot 3$
384	$(0, 0, 1, 1, \omega, \omega^5, 0, 1, \omega^3, \omega, \omega, \omega^4)$	I	1	$(312, 12, -)$	$2^2 \cdot 3$
385	$(0, 0, 0, \omega, \omega^6, \omega^3, 0, 1, \omega^3, \omega^4, \omega^3, \omega)$	I	1	$(316, 12, -)$	$2^2 \cdot 3$
386	$(0, 0, \omega^3, 1, \omega^6, \omega^5, 1, \omega, 1, \omega^5, 1, \omega^6)$	I	1	$(322, 12, -)$	$2^2 \cdot 3$
387	$(0, 0, \omega, \omega^2, \omega, \omega^6, 1, \omega^4, \omega^6, \omega^2, \omega^3, \omega^6)$	I	1	$(328, 12, -)$	$2^2 \cdot 3$
388	$(0, 0, 1, \omega^3, 1, \omega^5, 0, \omega^3, \omega, \omega^2, \omega^3, \omega^3)$	I	1	$(331, 12, -)$	$2^2 \cdot 3$
389	$(0, 0, \omega, \omega^6, \omega^3, \omega^5, 1, \omega^6, \omega, \omega, \omega^3, \omega^6)$	I	1	$(346, 12, -)$	$2^2 \cdot 3$
390	$(0, 1, \omega, \omega^6, 1, \omega^2, 0, \omega^5, \omega^2, \omega^3, \omega^5, \omega^6)$	I	1	$(349, 12, -)$	$2^2 \cdot 3$
391	$(0, 0, 1, \omega, 0, \omega, 0, 1, 0, \omega^3, \omega^2, \omega^4)$	I	1	$(352, 12, -)$	$2^2 \cdot 3$
392	$(0, 0, \omega, \omega^2, \omega, \omega^5, \omega^2, \omega^2, \omega^3, \omega^2, \omega^4, \omega^3)$	I	1	$(361, 12, -)$	$2^2 \cdot 3$
393	$(0, 1, \omega, \omega^2, \omega^4, 1, 0, \omega, 0, \omega^4, \omega, \omega^5)$	I	1	$(364, 12, -)$	$2^2 \cdot 3$
394	$(0, 0, 0, 1, \omega^3, \omega, 0, \omega^3, \omega^4, \omega^6, \omega^4, \omega^5)$	I	1	$(370, 12, -)$	$2^2 \cdot 3$
395	$(0, 0, 1, \omega^3, 1, \omega^5, 1, \omega^4, \omega^6, \omega^2, \omega^2, \omega^5)$	I	1	$(372, 12, -)$	$2^2 \cdot 3$
396	$(0, 1, \omega, \omega, \omega^5, \omega^5, 0, \omega^4, 1, \omega^4, \omega^5, \omega^4)$	I	1	$(376, 12, -)$	$2^2 \cdot 3$
397	$(0, 0, 1, \omega, \omega^2, \omega^5, 0, 1, \omega^4, 1, 0, \omega^5)$	I	1	$(381, 12, -)$	$2^3 \cdot 3$
398	$(0, 0, \omega, \omega, \omega^5, \omega^5, 0, 1, \omega^6, \omega^6, \omega^6, \omega^6)$	I	1	$(382, 12, -)$	$2^2 \cdot 3$
399	$(0, 0, \omega, 0, 1, \omega^6, 0, 1, \omega^5, \omega^3, 1, \omega^3)$	I	1	$(384, 12, -)$	$2^2 \cdot 3$
400	$(0, 0, \omega^3, \omega, \omega^3, \omega^3, \omega, \omega^3, \omega^2, \omega^5, \omega^6, \omega^5)$	I	1	$(385, 12, -)$	$2^2 \cdot 3$
401	$(0, 0, 0, \omega, \omega^6, \omega, 0, \omega^2, \omega^4, 1, \omega, \omega^6)$	I	1	$(387, 12, -)$	$2^3 \cdot 3$

Table 14: New $[72, 36, 12]_2$ self-dual codes from $\mathcal{G}_8$

$\mathcal{C}_i$	$\mathbf{a}$	Type	$W_{72,k}$	(α, β, γ)	$|Aut|$
402	$(0, 0, 0, \omega^3, \omega^3, \omega^3, 1, \omega^6, \omega^3, \omega^6, \omega^6, \omega^6)$	I	1	$(390, 12, -)$	$2^3 \cdot 3$
403	$(0, 1, 0, \omega, \omega^5, \omega^3, 0, \omega, 1, 1, 1, \omega^6)$	I	1	$(396, 12, -)$	$2^2 \cdot 3$
404	$(0, 0, \omega, \omega^5, 1, \omega^3, \omega^2, \omega^4, \omega^6, \omega^3, \omega^6, \omega^5)$	I	1	$(397, 12, -)$	$2^2 \cdot 3$
405	$(0, 1, \omega^3, \omega^5, 1, \omega^4, 0, \omega, \omega^2, \omega, \omega^6, \omega)$	I	1	$(400, 12, -)$	$2^2 \cdot 3$
406	$(0, 1, \omega, 1, \omega^5, 1, \omega^3, \omega^5, \omega^6, \omega^4, \omega^6, \omega^5)$	I	1	$(402, 12, -)$	$2^3 \cdot 3$
407	$(0, 1, \omega^3, \omega^2, \omega^2, \omega^6, 0, \omega^2, \omega^3, \omega^3, \omega^2, \omega^4)$	I	1	$(406, 12, -)$	$2^2 \cdot 3$
408	$(0, 0, 1, \omega, \omega^3, \omega^6, 1, 1, 1, \omega^5, \omega^6, \omega^5)$	I	1	$(408, 12, -)$	$2^3 \cdot 3$
409	$(0, 0, \omega, \omega^3, \omega, \omega^5, 0, 1, \omega^3, \omega, 0, \omega^6)$	I	1	$(414, 12, -)$	$2^2 \cdot 3$
410	$(0, \omega, 1, \omega^5, 0, \omega^6, \omega, \omega^4, \omega^6, \omega^5, \omega^3, \omega^6)$	I	1	$(421, 12, -)$	$2^2 \cdot 3$
411	$(0, \omega, 1, \omega^2, \omega^3, \omega^4, \omega, \omega^2, \omega^5, \omega, \omega^6, \omega^6)$	I	1	$(423, 12, -)$	$2^2 \cdot 3$
412	$(0, \omega, \omega, \omega^5, \omega, \omega^3, \omega^3, \omega^3, \omega^4, \omega^5, \omega^3, \omega^6)$	I	1	$(427, 12, -)$	$2^2 \cdot 3$
413	$(0, 0, \omega, \omega^4, \omega, \omega^2, \omega, \omega^2, \omega^4, \omega^3, \omega^4, \omega^4)$	I	1	$(433, 12, -)$	$2^2 \cdot 3$
414	$(0, 0, 0, 0, \omega, \omega^3, \omega^3, \omega^3, \omega^4, \omega^4, \omega^6, \omega^6)$	I	1	$(438, 12, -)$	$2^2 \cdot 3$
415	$(0, \omega, \omega^4, \omega^5, 0, \omega^5, 0, \omega^2, \omega^3, \omega^2, \omega^3, \omega^6)$	I	1	$(444, 12, -)$	$2^2 \cdot 3$
416	$(0, 1, 0, 1, \omega^3, \omega^6, 0, \omega^4, \omega^5, \omega^4, \omega^5, \omega^5)$	I	1	$(450, 12, -)$	$2^2 \cdot 3$
417	$(0, 0, 1, 0, 1, \omega^3, \omega, \omega^3, \omega, \omega^3, \omega^2, \omega^4)$	I	1	$(456, 12, -)$	$2^2 \cdot 3$
418	$(0, 0, \omega, 0, \omega, \omega^5, 1, \omega, \omega^2, \omega^3, 1, \omega^3)$	I	1	$(459, 12, -)$	$2^2 \cdot 3$
419	$(0, 0, \omega, \omega^5, 0, \omega^5, \omega, \omega^2, \omega^5, \omega^6, \omega, \omega^6)$	I	1	$(522, 12, -)$	$2^2 \cdot 3$
420	$(0, \omega, \omega^2, \omega, \omega^3, \omega^5, 1, 1, 1, \omega^3, \omega^4, \omega^6)$	I	1	$(222, 15, -)$	$2^2 \cdot 3$
421	$(0, 0, \omega^3, \omega^5, \omega^6, \omega^3, \omega, \omega^3, \omega^2, \omega^6, \omega^6, \omega^4)$	I	1	$(225, 15, -)$	$2^2 \cdot 3$
422	$(0, 0, \omega, \omega, \omega^6, \omega^6, 0, \omega, \omega^4, 0, \omega^5, \omega)$	I	1	$(232, 15, -)$	$2^2 \cdot 3$
423	$(0, \omega, \omega, 0, \omega^5, \omega^6, 0, \omega^2, \omega^3, \omega^5, \omega^4, \omega^6)$	I	1	$(234, 15, -)$	$2^2 \cdot 3$
424	$(0, 1, \omega^3, \omega^2, \omega, \omega^3, \omega^2, \omega^3, \omega^4, \omega^3, \omega^3, \omega^5)$	I	1	$(243, 15, -)$	$2^2 \cdot 3$
425	$(0, 0, \omega, 1, \omega, \omega^6, \omega, \omega^2, \omega^3, \omega^4, \omega^3, \omega^6)$	I	1	$(249, 15, -)$	$2^2 \cdot 3$
426	$(0, 1, \omega^3, \omega^6, \omega^3, \omega^5, 1, \omega^3, \omega^4, \omega^5, \omega^4, \omega^5)$	I	1	$(250, 15, -)$	$2^2 \cdot 3$
427	$(0, 1, \omega, \omega, \omega^5, \omega^6, 1, \omega, \omega^3, 1, \omega^5, \omega^2)$	I	1	$(252, 15, -)$	$2^2 \cdot 3$
428	$(0, 1, \omega, \omega, \omega^2, 1, 0, 1, \omega^5, 1, \omega^5, \omega^6)$	I	1	$(255, 15, -)$	$2^2 \cdot 3$
429	$(0, 0, \omega, \omega^4, 0, \omega^3, 0, \omega^2, 1, 1, 1, \omega^3)$	I	1	$(258, 15, -)$	$2^2 \cdot 3$
430	$(0, 1, \omega, 1, \omega^3, \omega^5, 0, \omega^5, \omega^4, \omega^4, \omega^5, \omega^5)$	I	1	$(267, 15, -)$	$2^2 \cdot 3$
431	$(0, 0, \omega^3, \omega^2, \omega^3, \omega^6, \omega^3, \omega^4, \omega^3, \omega^4, \omega^5, \omega^5)$	I	1	$(304, 15, -)$	$2^2 \cdot 3$
432	$(0, \omega, \omega^3, \omega^3, \omega^6, \omega^6, 1, 1, \omega^2, \omega^5, \omega^6, \omega^6)$	I	1	$(309, 15, -)$	$2^2 \cdot 3$
433	$(0, 0, 1, \omega, \omega^3, 1, 0, 1, \omega^4, \omega^3, \omega^5, \omega^3)$	I	1	$(312, 15, -)$	$2^2 \cdot 3$
434	$(0, 1, 0, \omega, \omega^6, \omega^3, \omega, \omega^2, \omega^3, \omega, \omega^5, \omega^2)$	I	1	$(321, 15, -)$	$2^2 \cdot 3$
435	$(0, 1, \omega, \omega^2, \omega^3, \omega^6, 1, 1, \omega^4, \omega^3, \omega, \omega^5)$	I	1	$(322, 15, -)$	$2^2 \cdot 3$
436	$(0, 0, \omega, 1, \omega^3, \omega^2, 1, \omega, \omega^4, 1, \omega^4, \omega^5)$	I	1	$(327, 15, -)$	$2^2 \cdot 3$
437	$(0, \omega, 1, \omega, \omega, \omega^4, 1, \omega^5, \omega^4, \omega^2, \omega^5, \omega^5)$	I	1	$(330, 15, -)$	$2^2 \cdot 3$
438	$(0, \omega, \omega^5, 1, 1, \omega^3, \omega, \omega^2, \omega^4, \omega^2, \omega^5, \omega^2)$	I	1	$(333, 15, -)$	$2^2 \cdot 3$
439	$(0, 1, \omega, \omega^5, \omega^5, \omega^5, 0, \omega^3, \omega^6, \omega^4, 0, \omega^6)$	I	1	$(334, 15, -)$	$2^2 \cdot 3$
440	$(0, 1, \omega, 0, \omega^5, \omega^3, 0, \omega^2, \omega^5, \omega, 1, \omega^4)$	I	1	$(336, 15, -)$	$2^2 \cdot 3$
441	$(0, 0, \omega, 1, \omega, \omega^4, 0, \omega^4, \omega^3, \omega^6, 1, \omega^5)$	I	1	$(339, 15, -)$	$2^2 \cdot 3$
442	$(0, 0, \omega, \omega^5, \omega^3, \omega^4, 1, \omega^2, \omega^6, \omega^4, \omega, \omega^6)$	I	1	$(342, 15, -)$	$2^2 \cdot 3$
443	$(0, 1, 1, \omega, \omega, 1, 0, 1, \omega^4, \omega^6, \omega^5, \omega^6)$	I	1	$(357, 15, -)$	$2^2 \cdot 3$
444	$(0, 1, \omega, 1, \omega^5, 1, 0, \omega, \omega^5, 1, \omega^4, \omega^5)$	I	1	$(363, 15, -)$	$2^2 \cdot 3$
445	$(0, \omega, \omega^2, \omega^2, \omega^2, \omega^3, 1, 1, \omega^4, \omega^3, \omega^4, \omega^5)$	I	1	$(364, 15, -)$	$2^2 \cdot 3$
446	$(0, 0, 1, \omega^3, \omega^2, \omega^4, \omega, \omega^2, \omega^6, \omega^2, \omega^3, \omega^6)$	I	1	$(366, 15, -)$	$2^2 \cdot 3$
447	$(0, 1, \omega, \omega, \omega^5, \omega^6, 1, \omega, \omega^4, \omega^4, \omega, \omega^3)$	I	1	$(369, 15, -)$	$2^2 \cdot 3$
448	$(0, 0, \omega, \omega^4, \omega^6, \omega, 1, \omega^5, \omega^4, \omega, \omega^5, \omega^5)$	I	1	$(378, 15, -)$	$2^2 \cdot 3$
449	$(0, 0, \omega, \omega, \omega^6, \omega^6, 0, 1, \omega^2, \omega^2, \omega^2, \omega^2)$	I	1	$(379, 15, -)$	$2^2 \cdot 3$

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Table 15: New $[72, 36, 12]_2$ self-dual codes from $\mathcal{G}_8$

$\mathcal{C}_i$	$\mathbf{a}$	Type	$W_{72,k}$	(α, β, γ)	$|Aut|$
450	$(0, \omega, \omega^4, 1, \omega^6, \omega, \omega^3, \omega^4, \omega^6, \omega^3, \omega^5, \omega^5)$	I	1	$(387, 15, -)$	$2^2 \cdot 3$
451	$(0, 1, \omega^3, \omega^6, \omega^5, \omega^2, 1, \omega, \omega, \omega, \omega^2, \omega)$	I	1	$(390, 15, -)$	$2^2 \cdot 3$
452	$(0, \omega, \omega^3, \omega^5, \omega^5, \omega^3, 0, \omega, \omega^6, \omega, \omega^6, \omega^3)$	I	1	$(411, 15, -)$	$2^2 \cdot 3$
453	$(0, \omega, \omega^6, \omega, \omega^6, \omega^3, 1, \omega^2, \omega^4, \omega^4, 1, \omega^4)$	I	1	$(438, 15, -)$	$2^2 \cdot 3$
454	$(0, 1, \omega, \omega^3, \omega^2, \omega, \omega^2, \omega^6, \omega^5, \omega^3, \omega^5, \omega^6)$	I	1	$(192, 18, -)$	$2^3 \cdot 3$
455	$(0, 1, 0, 1, 1, \omega, 1, \omega^3, \omega^3, \omega^5, 1, \omega^6)$	I	1	$(201, 18, -)$	$2^2 \cdot 3$
456	$(0, 0, 1, 1, \omega^3, \omega^5, 1, \omega^3, \omega^3, \omega^3, 1, \omega^4)$	I	1	$(207, 18, -)$	$2^3 \cdot 3$
457	$(0, \omega, \omega, \omega^2, \omega^3, \omega^4, 1, \omega^3, \omega^3, \omega, \omega^4, \omega^6)$	I	1	$(226, 18, -)$	$2^2 \cdot 3$
458	$(0, 0, \omega, \omega, \omega^6, \omega^6, 1, \omega^2, \omega, \omega^5, \omega, \omega^3)$	I	1	$(244, 18, -)$	$2^2 \cdot 3$
459	$(0, 0, 1, \omega, \omega^6, \omega^4, 0, \omega^5, 1, 1, 1, \omega^5)$	I	1	$(265, 18, -)$	$2^3 \cdot 3$
460	$(0, 1, \omega^3, \omega^4, \omega^4, \omega, 1, \omega^2, \omega^4, \omega, \omega^5, \omega^5)$	I	1	$(268, 18, -)$	$2^2 \cdot 3$
461	$(0, 0, \omega, \omega^3, \omega^6, \omega, 0, \omega^2, 1, \omega, \omega^4, \omega^4)$	I	1	$(274, 18, -)$	$2^2 \cdot 3$
462	$(0, 1, \omega, \omega^5, 0, \omega^4, 0, \omega^6, \omega^2, \omega, \omega^6, \omega^6)$	I	1	$(283, 18, -)$	$2^2 \cdot 3$
463	$(0, 1, 0, \omega^3, \omega^5, \omega^6, 1, 1, \omega^3, \omega, \omega^3, \omega^3)$	I	1	$(286, 18, -)$	$2^2 \cdot 3$
464	$(0, 0, \omega, \omega^5, 1, \omega^3, 0, \omega, 1, \omega^3, \omega^6, \omega^3)$	I	1	$(289, 18, -)$	$2^2 \cdot 3$
465	$(0, 1, \omega, \omega, \omega^5, \omega^3, \omega, \omega^3, \omega^3, \omega^6, \omega^2, \omega^5)$	I	1	$(292, 18, -)$	$2^2 \cdot 3$
466	$(0, \omega, \omega, \omega, 1, \omega^3, 0, \omega, \omega^4, \omega^6, \omega^5, \omega^5)$	I	1	$(298, 18, -)$	$2^2 \cdot 3$
467	$(0, 1, \omega^3, \omega^2, \omega^5, \omega^6, 1, \omega^3, \omega^2, \omega^6, 1, \omega^5)$	I	1	$(310, 18, -)$	$2^2 \cdot 3$
468	$(0, 1, 1, \omega, 0, \omega^5, 1, \omega^5, \omega^2, \omega^2, \omega^6, \omega^5)$	I	1	$(316, 18, -)$	$2^2 \cdot 3$
469	$(0, 0, \omega, \omega, \omega, \omega^6, 0, \omega^2, \omega^4, \omega^3, 1, \omega^4)$	I	1	$(322, 18, -)$	$2^2 \cdot 3$
470	$(0, 1, \omega^3, \omega^6, \omega^5, \omega^2, 1, \omega^4, \omega^3, \omega, \omega^4, \omega^6)$	I	1	$(325, 18, -)$	$2^2 \cdot 3$
471	$(0, 1, \omega, \omega^2, \omega^5, \omega^3, 0, \omega^3, 0, \omega^3, \omega^2, \omega^4)$	I	1	$(328, 18, -)$	$2^2 \cdot 3$
472	$(0, \omega, \omega^3, \omega, \omega^3, \omega^3, 1, \omega^3, \omega^2, \omega^6, \omega^2, \omega^6)$	I	1	$(331, 18, -)$	$2^2 \cdot 3$
473	$(0, 1, \omega, \omega^2, \omega^3, 1, \omega, \omega^3, \omega^3, \omega^2, \omega^6, \omega^5)$	I	1	$(334, 18, -)$	$2^2 \cdot 3$
474	$(0, \omega, 0, \omega^5, \omega^6, \omega^6, \omega^3, \omega^4, \omega^5, \omega^4, \omega^6, \omega^6)$	I	1	$(364, 18, -)$	$2^2 \cdot 3$
475	$(0, 1, \omega, \omega^5, \omega^5, \omega^4, 1, \omega, \omega, \omega^6, \omega, \omega)$	I	1	$(391, 18, -)$	$2^3 \cdot 3$
476	$(0, 1, \omega^3, \omega^3, \omega, \omega^6, 0, \omega^5, 1, \omega, \omega^4, \omega^6)$	I	1	$(400, 18, -)$	$2^2 \cdot 3$
477	$(0, 0, 1, \omega^3, 0, \omega^3, \omega, \omega, \omega^2, \omega^5, \omega^2, \omega^5)$	I	1	$(412, 18, -)$	$2^2 \cdot 3$
478	$(0, \omega, \omega, \omega^3, 0, \omega^6, 1, \omega, \omega^3, \omega^3, \omega^5, \omega^3)$	I	1	$(429, 18, -)$	$2^2 \cdot 3$
479	$(0, \omega, 1, \omega, \omega^3, \omega^4, 0, \omega^2, 1, \omega^4, \omega^3, \omega^6)$	I	1	$(430, 18, -)$	$2^2 \cdot 3$
480	$(0, 1, 1, \omega^3, \omega^3, 1, 0, \omega, \omega, \omega^6, 1, \omega^2)$	I	1	$(456, 18, -)$	$2^2 \cdot 3$
481	$(0, \omega, \omega, \omega^6, \omega, \omega^6, 0, \omega^4, \omega^6, \omega^5, 0, \omega^5)$	I	1	$(510, 18, -)$	$2^2 \cdot 3$
482	$(0, 0, 1, \omega^3, 0, \omega^3, 1, \omega, 1, \omega, \omega^5, \omega^5)$	I	1	$(517, 18, -)$	$2^2 \cdot 3$
483	$(0, 0, \omega, \omega^6, \omega^4, \omega^6, \omega^3, \omega^5, \omega^4, \omega^6, \omega^5, \omega^6)$	I	1	$(267, 21, -)$	$2^2 \cdot 3$
484	$(0, \omega, 1, \omega^4, \omega^6, \omega^2, 0, \omega, \omega^6, \omega^3, \omega, \omega^3)$	I	1	$(273, 21, -)$	$2^2 \cdot 3$
485	$(0, 0, 1, 1, 0, \omega^3, 1, \omega, \omega^3, \omega^4, \omega^3, \omega^5)$	I	1	$(279, 21, -)$	$2^2 \cdot 3$
486	$(0, 1, \omega, 0, \omega^5, \omega^6, 1, 1, \omega, \omega, \omega^4, \omega^4)$	I	1	$(300, 21, -)$	$2^2 \cdot 3$
487	$(0, 1, \omega, 0, \omega^2, \omega^6, 0, 1, \omega^6, \omega^4, \omega^4, \omega^5)$	I	1	$(303, 21, -)$	$2^2 \cdot 3$
488	$(0, 0, \omega, \omega^4, \omega^5, \omega, \omega, \omega^2, \omega^2, \omega^4, \omega^3, \omega^5)$	I	1	$(309, 21, -)$	$2^2 \cdot 3$
489	$(0, 1, \omega, \omega, \omega, \omega^6, \omega^3, \omega^5, \omega^5, \omega^4, \omega^5, \omega^6)$	I	1	$(312, 21, -)$	$2^2 \cdot 3$
490	$(0, 0, 1, \omega^3, \omega^4, \omega^2, 0, 0, \omega^4, \omega, 0, \omega^6)$	I	1	$(321, 21, -)$	$2^2 \cdot 3$
491	$(0, 0, \omega, \omega^2, \omega^3, \omega^3, 1, \omega^4, \omega^2, \omega^5, \omega^6, \omega^4)$	I	1	$(325, 21, -)$	$2^2 \cdot 3$
491	$(0, 1, \omega, 0, \omega, \omega^3, \omega, \omega^4, \omega^6, \omega^2, \omega^3, \omega^6)$	I	1	$(330, 21, -)$	$2^2 \cdot 3$
492	$(0, 0, 1, \omega, \omega^3, 1, 0, 1, \omega^3, \omega^6, \omega, \omega^6)$	I	1	$(333, 21, -)$	$2^2 \cdot 3$
493	$(0, 1, \omega^3, 1, \omega^6, \omega^6, 0, \omega^2, \omega^4, \omega^4, \omega^3, \omega^6)$	I	1	$(336, 21, -)$	$2^2 \cdot 3$
494	$(0, 1, 1, \omega, 0, \omega, \omega, \omega^3, \omega^5, \omega^6, \omega^5, \omega^6)$	I	1	$(354, 21, -)$	$2^2 \cdot 3$
495	$(0, \omega, 0, \omega^4, 1, \omega^6, 1, \omega^4, \omega^2, \omega, \omega^4, \omega^4)$	I	1	$(447, 21, -)$	$2^2 \cdot 3$
496	$(0, 1, \omega, \omega^3, \omega^3, \omega^3, 0, \omega^2, 1, \omega, \omega^3, \omega^6)$	I	1	$(462, 21, -)$	$2^2 \cdot 3$
497	$(0, 1, \omega, \omega^3, 0, \omega^2, 1, \omega^4, \omega^5, \omega^3, \omega^3, \omega^6)$	I	1	$(234, 24, -)$	$2^2 \cdot 3$

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Table 16: New $[72, 36, 12]_2$ self-dual codes from $\mathcal{G}_8$

$\mathcal{C}_i$	$\mathbf{a}$	Type	$W_{72,k}$	(α, β, γ)	$|Aut|$
498	$(0, 1, \omega, 0, \omega, \omega^6, 1, \omega^3, \omega^6, \omega^3, \omega^5, \omega^4)$	I	1	$(237, 24, -)$	$2^2 \cdot 3$
499	$(0, \omega, \omega, \omega^2, 1, \omega^6, 1, 1, \omega^4, \omega^3, \omega^3, \omega^5)$	I	1	$(243, 24, -)$	$2^2 \cdot 3$
500	$(0, 0, \omega, \omega^5, \omega^3, \omega^4, 0, 1, 1, 1, \omega^3, \omega^3)$	I	1	$(267, 24, -)$	$2^2 \cdot 3$
501	$(0, 0, \omega, \omega^6, \omega^2, \omega^3, 0, \omega, \omega^5, \omega^4, 1, \omega^3)$	I	1	$(279, 24, -)$	$2^2 \cdot 3$
502	$(0, 0, 1, 0, \omega^3, \omega, 0, 1, \omega^4, \omega, \omega^5, \omega^3)$	I	1	$(301, 24, -)$	$2^2 \cdot 3$
503	$(0, 1, 0, \omega^3, \omega^5, \omega^3, 0, \omega^3, \omega^3, 1, 1, \omega^5)$	I	1	$(306, 24, -)$	$2^3 \cdot 3$
504	$(0, 1, \omega, \omega, \omega^4, \omega^3, \omega, \omega, \omega^3, \omega^6, \omega^2, \omega^5)$	I	1	$(318, 24, -)$	$2^2 \cdot 3$
505	$(0, 1, \omega, \omega, \omega^3, \omega^3, 1, \omega, \omega^3, \omega^6, 1, \omega^2)$	I	1	$(319, 24, -)$	$2^2 \cdot 3$
506	$(0, \omega^3, 0, \omega^5, \omega^2, \omega^6, 1, \omega^4, \omega^3, \omega^3, \omega^6, \omega^4)$	I	1	$(327, 24, -)$	$2^2 \cdot 3$
507	$(0, 1, 1, \omega^3, \omega^5, \omega^6, 0, \omega, \omega^2, \omega^5, \omega^6, \omega^2)$	I	1	$(330, 24, -)$	$2^2 \cdot 3$
508	$(0, 1, \omega, \omega^5, 1, \omega^6, \omega, \omega, \omega^2, \omega^2, \omega^4, \omega^5)$	I	1	$(346, 24, -)$	$2^2 \cdot 3$
509	$(0, 0, \omega, \omega^2, \omega^3, \omega^5, 0, \omega, \omega^2, 1, \omega^3, \omega^5)$	I	1	$(348, 24, -)$	$2^2 \cdot 3$
510	$(0, \omega, \omega^4, \omega, 1, \omega^5, 1, \omega, \omega^2, \omega^2, \omega^5, \omega^6)$	I	1	$(354, 24, -)$	$2^2 \cdot 3$
511	$(0, 1, \omega^3, \omega^2, \omega^6, \omega^6, \omega, \omega, \omega^3, \omega^2, \omega^3, \omega^3)$	I	1	$(366, 24, -)$	$2^2 \cdot 3$
512	$(0, 0, \omega, 0, 1, \omega^5, 0, \omega^5, \omega^4, \omega^6, \omega^2, \omega^6)$	I	1	$(375, 24, -)$	$2^2 \cdot 3$
513	$(0, 1, \omega, 1, \omega^3, 1, 1, \omega^2, \omega^4, \omega^2, 1, \omega^5)$	I	1	$(387, 24, -)$	$2^3 \cdot 3$
514	$(0, 0, 1, \omega^3, \omega^6, \omega^3, \omega^2, \omega^3, \omega^2, \omega^4, \omega^6, \omega^6)$	I	1	$(402, 24, -)$	$2^2 \cdot 3$
515	$(0, 1, \omega, \omega^3, \omega^6, \omega^2, 1, \omega, \omega, \omega^4, \omega, \omega^6)$	I	1	$(408, 24, -)$	$2^2 \cdot 3$
516	$(0, \omega, \omega^3, \omega, \omega^3, \omega^3, 1, \omega^3, \omega^5, \omega^4, \omega^5, \omega^4)$	I	1	$(433, 24, -)$	$2^2 \cdot 3$
517	$(0, 0, 1, \omega^3, 0, \omega^4, \omega, \omega^3, \omega^3, \omega^2, \omega^4, \omega^6)$	I	1	$(435, 24, -)$	$2^2 \cdot 3$
518	$(0, 0, 0, 1, \omega^3, 1, 1, \omega^3, \omega, \omega, \omega^5, \omega^5)$	I	1	$(450, 24, -)$	$2^3 \cdot 3$
519	$(0, 0, \omega, \omega^5, 0, \omega^5, 0, \omega, \omega^6, \omega, \omega^6, \omega^3)$	I	1	$(459, 24, -)$	$2^2 \cdot 3$
520	$(0, 1, \omega, \omega, \omega, \omega, 1, 1, \omega^2, \omega^2, \omega^5, \omega^5)$	I	1	$(466, 24, -)$	$2^2 \cdot 3$
521	$(0, 0, \omega, \omega^5, \omega, \omega^5, \omega, \omega^3, \omega^3, \omega^4, \omega^3, \omega^4)$	I	1	$(477, 24, -)$	$2^2 \cdot 3$
522	$(0, 0, \omega, \omega, \omega^5, \omega^5, 1, 1, 1, 1, \omega^2, \omega^6)$	I	1	$(480, 24, -)$	$2^2 \cdot 3$
523	$(0, 0, 0, 1, \omega, \omega^3, 0, 1, \omega, \omega^5, \omega^3, \omega^4)$	I	1	$(484, 24, -)$	$2^2 \cdot 3$
524	$(0, 0, \omega, 0, \omega, \omega^5, 0, \omega^4, \omega^6, \omega^5, \omega^6, \omega^5)$	I	1	$(489, 24, -)$	$2^2 \cdot 3$
525	$(0, 0, 1, 1, 0, \omega, \omega^2, \omega^2, \omega^2, \omega^3, \omega^3, \omega^5)$	I	1	$(493, 24, -)$	$2^2 \cdot 3$
526	$(0, \omega, \omega^3, \omega, \omega^3, \omega^6, 1, \omega^4, \omega^2, \omega^2, \omega^6, \omega^4)$	I	1	$(498, 24, -)$	$2^2 \cdot 3$
527	$(0, 1, 0, 1, 1, \omega, 0, \omega, \omega^6, \omega^2, \omega^6, \omega^2)$	I	1	$(535, 24, -)$	$2^2 \cdot 3$
528	$(0, \omega, 0, \omega, \omega^3, \omega^3, 1, \omega^3, 1, \omega^3, \omega^2, \omega^6)$	I	1	$(321, 27, -)$	$2^2 \cdot 3$
529	$(0, \omega, \omega^2, \omega^5, \omega, \omega^5, 1, \omega^5, \omega^2, \omega^6, \omega^6, \omega^5)$	I	1	$(351, 27, -)$	$2^2 \cdot 3$
530	$(0, \omega, \omega^2, \omega^5, 0, \omega^6, 1, 1, \omega^3, \omega^4, \omega^6, \omega^6)$	I	1	$(369, 27, -)$	$2^2 \cdot 3$
531	$(0, 0, 0, 1, 0, \omega^3, \omega, \omega^3, \omega^3, \omega, \omega^4, \omega^6)$	I	1	$(480, 27, -)$	$2^2 \cdot 3$
532	$(0, 0, \omega, \omega, \omega^5, \omega^5, \omega^3, \omega^3, \omega^3, \omega^3, \omega^4, \omega^5)$	I	1	$(501, 27, -)$	$2^2 \cdot 3$
533	$(0, 1, 1, 1, 1, \omega, \omega, \omega, \omega, \omega, \omega^2, \omega^5)$	I	1	$(540, 27, -)$	$2^2 \cdot 3$
534	$(0, 1, 0, \omega, \omega^2, \omega, 0, \omega^3, \omega, \omega^3, \omega^6, \omega^3)$	I	1	$(336, 30, -)$	$2^3 \cdot 3$
535	$(0, 0, \omega, \omega^6, \omega^3, \omega^3, \omega^3, \omega^3, \omega^3, \omega^6, \omega^6, \omega^6)$	I	1	$(360, 30, -)$	$2^3 \cdot 3$
536	$(0, 1, \omega^3, \omega^6, \omega^2, \omega^2, 0, \omega, \omega^4, \omega^5, \omega, \omega^5)$	I	1	$(372, 30, -)$	$2^2 \cdot 3$
537	$(0, \omega, \omega, \omega^6, \omega^2, \omega, \omega, \omega^3, \omega^2, \omega^3, \omega^3, \omega^5)$	I	1	$(387, 30, -)$	$2^2 \cdot 3$
538	$(0, 0, \omega, \omega^3, \omega^3, \omega^2, 1, 1, \omega^2, \omega^3, \omega^6, \omega^6)$	I	1	$(397, 30, -)$	$2^2 \cdot 3$
539	$(0, \omega, 1, \omega, 0, \omega^6, 0, \omega, \omega^5, 0, \omega^3, \omega^3)$	I	1	$(417, 30, -)$	$2^3 \cdot 3$
540	$(0, 1, 0, \omega^3, \omega^5, \omega^3, 0, \omega^5, \omega^2, \omega, \omega^3, \omega^6)$	I	1	$(433, 30, -)$	$2^3 \cdot 3$
541	$(0, \omega, 1, \omega^3, \omega^4, \omega^3, 0, \omega^3, 1, \omega^4, \omega^6, \omega^6)$	I	1	$(453, 30, -)$	$2^2 \cdot 3$
542	$(0, 1, \omega, \omega^2, \omega, \omega^5, \omega, \omega^6, \omega^2, \omega^3, \omega^4, \omega^6)$	I	1	$(477, 30, -)$	$2^2 \cdot 3$
543	$(0, \omega, \omega, \omega, \omega, \omega^3, 1, \omega, \omega, \omega^6, \omega^3, \omega^6)$	I	1	$(489, 30, -)$	$2^2 \cdot 3$
544	$(0, 0, 0, \omega^3, 1, \omega^3, 1, \omega, \omega, \omega^4, \omega^2, \omega^3)$	I	1	$(493, 30, -)$	$2^3 \cdot 3$
545	$(0, \omega, \omega^2, 0, \omega^3, \omega, 1, \omega, 1, \omega^5, \omega^4, \omega^6)$	I	1	$(513, 30, -)$	$2^2 \cdot 3$
546	$(0, \omega, \omega^2, \omega^5, \omega^2, \omega^6, 1, \omega^5, \omega^2, \omega, \omega^4, \omega^5)$	I	1	$(522, 30, -)$	$2^2 \cdot 3$
547	$(0, \omega, 0, \omega, 1, \omega^6, 0, \omega^4, \omega^2, \omega^4, \omega^2, \omega^6)$	I	1	$(565, 30, -)$	$2^2 \cdot 3$
548	$(0, 0, \omega, 0, \omega, \omega^5, 1, \omega^4, \omega^2, \omega^4, \omega^2, \omega^5)$	I	1	$(541, 33, -)$	$2^2 \cdot 3$
549	$(0, 0, 0, 1, \omega^3, \omega^2, 1, \omega^2, \omega^5, 1, \omega^3, \omega^5)$	II	3	$(-, -, 2238)$	$2^4 \cdot 3 \cdot 5$

Table 17: New $[72, 36, 12]_2$ self-dual codes from $\mathcal{G}_{10}$

$\mathcal{C}_i$	$\mathbf{a}$	Type	$W_{72,k}$	(α, β, γ)	$|Aut|$
550	$(0, 0, \omega^4, \omega, \omega^6, \omega^5, \omega, \omega^2, \omega^4, \omega^3, \omega^2, 0)$	I	1	$(84, 0, -)$	$2^3 \cdot 3^2$
551	$(0, 0, \omega^5, \omega, \omega^6, \omega^3, \omega, \omega^2, \omega, \omega^5, \omega, \omega^3)$	I	1	$(325, 0, -)$	$2^3 \cdot 3$
552	$(0, 0, \omega^4, \omega, \omega^6, \omega^5, \omega^4, \omega^6, \omega^2, \omega^5, \omega^6, \omega)$	I	1	$(162, 6, -)$	$2^3 \cdot 3$
553	$(0, 1, 1, \omega, \omega^5, \omega^6, \omega, \omega^2, \omega^3, \omega^3, \omega^6, \omega)$	I	1	$(163, 6, -)$	$2^3 \cdot 3$
554	$(1, 1, 1, \omega, 1, 0, \omega^6, \omega^3, \omega^5, \omega^6, \omega^4, 1)$	I	1	$(180, 6, -)$	$2^3 \cdot 3$
555	$(1, 1, 1, \omega, 1, \omega^2, \omega^3, \omega, 0, \omega^5, \omega^5, \omega^4)$	I	1	$(204, 6, -)$	$2^3 \cdot 3$
556	$(1, 1, 1, \omega, 1, \omega^3, \omega^4, \omega^3, \omega^2, 0, 0, 1)$	I	1	$(205, 6, -)$	$2^3 \cdot 3$
557	$(1, 1, 1, \omega, 1, \omega^2, \omega^2, \omega^6, \omega^5, 0, 0, 1)$	I	1	$(228, 6, -)$	$2^3 \cdot 3$
558	$(1, 1, 1, \omega, 1, \omega^2, \omega, \omega^6, \omega^4, \omega^4, 0, 0)$	I	1	$(246, 6, -)$	$2^3 \cdot 3$
559	$(1, 1, 1, \omega^3, 1, \omega^5, \omega^3, \omega^6, \omega^6, \omega^4, 0, 0)$	I	1	$(270, 6, -)$	$2^3 \cdot 3$
560	$(1, 1, 1, \omega, 1, \omega^2, \omega^2, \omega^5, \omega^3, 0, \omega, \omega^6)$	I	1	$(306, 6, -)$	$2^3 \cdot 3$
561	$(0, 1, 1, \omega^3, \omega, \omega, 1, \omega^6, \omega^3, \omega^6, \omega^6, \omega^6)$	I	1	$(330, 6, -)$	$2^3 \cdot 3$
562	$(1, 1, 1, \omega^3, 1, \omega^5, 1, \omega^6, \omega^3, \omega^2, 0, \omega^4)$	I	1	$(342, 6, -)$	$2^3 \cdot 3$
563	$(1, 1, 1, \omega, 1, \omega^6, 0, 1, \omega^6, 0, \omega^4, \omega^2)$	I	1	$(378, 6, -)$	$2^3 \cdot 3$
564	$(0, 0, \omega^6, \omega^3, \omega, 1, \omega, \omega^2, \omega^6, \omega, \omega^3, \omega^4)$	I	1	$(390, 6, -)$	$2^3 \cdot 3$
565	$(0, 0, \omega^4, \omega^4, \omega^6, \omega, \omega^5, \omega^2, \omega^6, \omega, \omega^2, \omega^4)$	I	1	$(396, 6, -)$	$2^3 \cdot 3$
566	$(0, 0, \omega^5, \omega^4, \omega^4, 1, \omega, \omega^6, 1, \omega^3, \omega^4, \omega^2)$	I	1	$(162, 12, -)$	$2^3 \cdot 3$
567	$(0, 0, \omega^5, \omega, \omega^6, \omega^3, \omega^3, \omega^5, \omega, \omega^4, 1, \omega^3)$	I	1	$(223, 12, -)$	$2^3 \cdot 3$
568	$(0, 0, \omega^5, \omega, \omega, \omega^6, \omega, \omega^5, \omega^5, \omega^6, \omega^4, \omega)$	I	1	$(240, 12, -)$	$2^3 \cdot 3$
569	$(1, 1, 1, \omega, 1, \omega^2, 1, 1, 0, \omega^6, \omega^2, \omega^4)$	I	1	$(264, 12, -)$	$2^3 \cdot 3$
570	$(0, 0, \omega^6, \omega^3, \omega, 1, \omega^5, \omega^6, 1, \omega^5, \omega, \omega)$	I	1	$(324, 12, -)$	$2^3 \cdot 3$
571	$(1, 1, 1, \omega, 1, \omega^6, \omega, 0, 0, \omega, \omega^5, 1)$	I	1	$(354, 12, -)$	$2^3 \cdot 3$
572	$(1, 1, 1, \omega, 1, 0, \omega^4, \omega^6, \omega, \omega^4, 0, \omega^2)$	I	1	$(378, 12, -)$	$2^3 \cdot 3$
573	$(1, 1, 1, \omega, 1, \omega^3, \omega^3, \omega, \omega^2, \omega^6, 1, 1)$	I	1	$(259, 18, -)$	$2^3 \cdot 3$
574	$(0, 1, 1, \omega^3, \omega, \omega, \omega^3, \omega^4, \omega^2, \omega^5, \omega^4, \omega)$	I	1	$(277, 18, -)$	$2^3 \cdot 3$
575	$(1, 1, 1, \omega, 1, \omega^3, \omega, 0, \omega^2, \omega^2, \omega^3, 1)$	I	1	$(409, 18, -)$	$2^3 \cdot 3$
576	$(0, 0, \omega^4, \omega^4, \omega^3, 1, \omega^4, \omega, \omega, \omega^5, \omega^2, \omega^4)$	I	1	$(336, 24, -)$	$2^3 \cdot 3$
577	$(0, 0, \omega^4, \omega, \omega^5, \omega^3, \omega, \omega^5, \omega^5, \omega^5, \omega^3, \omega^5)$	I	1	$(441, 24, -)$	$2^3 \cdot 3$
578	$(0, 0, \omega^6, \omega^3, \omega^2, \omega, \omega^3, \omega, 1, \omega^6, \omega^6, 1)$	I	1	$(339, 30, -)$	$2^3 \cdot 3$
579	$(0, 0, \omega^5, \omega^3, 1, 1, \omega^5, \omega^3, \omega^5, \omega^5, \omega^5, \omega^4)$	I	1	$(445, 36, -)$	$2^3 \cdot 3$
580	$(0, 0, \omega^5, \omega, \omega^3, 1, \omega^4, \omega, \omega^4, \omega^5, \omega^4, \omega^6)$	I	1	$(396, 42, -)$	$2^3 \cdot 3$

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Table 18: New $[72, 36, 12]_2$ self-dual codes from $\mathcal{G}_{11}$

$\mathcal{C}_i$	$\mathbf{a}$	Type	$W_{72,k}$	(α, β, γ)	$|Aut|$
581	$(0, 1, 0, \omega^2, \omega, \omega^6, \omega^3, \omega^5, \omega^5, \omega^2, \omega^4, \omega)$	I	1	$(127, 0, -)$	$2^3 \cdot 3$
582	$(0, 0, \omega^4, \omega^2, \omega, \omega^5, \omega^6, \omega, \omega^2, \omega^6, 1, 1)$	I	1	$(157, 0, -)$	$2^3 \cdot 3$
583	$(0, 0, \omega^3, \omega^6, \omega^5, \omega^6, \omega^5, \omega^2, 1, \omega, \omega^4, \omega^3)$	I	1	$(343, 0, -)$	$2^3 \cdot 3$
584	$(0, 0, \omega^4, \omega^5, \omega^2, \omega^6, 1, \omega, \omega^4, \omega, \omega, \omega^2)$	I	1	$(108, 6, -)$	$2^3 \cdot 3$
585	$(1, 1, 1, \omega, \omega, \omega^2, \omega^3, 0, \omega^3, \omega^5, 0, \omega^3)$	I	1	$(121, 6, -)$	$2^3 \cdot 3$
586	$(0, 1, 0, \omega, \omega, \omega^3, 1, \omega^5, \omega^2, \omega^6, \omega^2, 0)$	I	1	$(123, 6, -)$	$2^3 \cdot 3$
587	$(0, 0, \omega^4, 0, \omega^3, \omega^6, \omega, \omega^6, \omega^2, \omega^5, 1, \omega^2)$	I	1	$(132, 6, -)$	$2^3 \cdot 3$
588	$(0, 1, 0, \omega, \omega^6, \omega, \omega, 0, \omega^4, \omega^3, 1, \omega^3)$	I	1	$(133, 6, -)$	$2^3 \cdot 3$
589	$(1, 1, 1, \omega^3, \omega, \omega^5, \omega^3, \omega^2, \omega^6, \omega, \omega^5, 1)$	I	1	$(151, 6, -)$	$2^3 \cdot 3$
590	$(1, 1, 1, \omega^3, \omega^2, \omega^4, \omega^4, \omega^6, \omega^5, \omega, \omega^5, 0)$	I	1	$(156, 6, -)$	$2^3 \cdot 3$
591	$(0, 0, \omega^4, \omega^4, \omega^4, \omega^5, \omega, \omega^5, 1, \omega, \omega^5, 1)$	I	1	$(168, 6, -)$	$2^3 \cdot 3$
592	$(0, 0, \omega^4, \omega^6, \omega^6, 1, 0, \omega^3, \omega, \omega^2, \omega^2, \omega^5)$	I	1	$(174, 6, -)$	$2^3 \cdot 3$
593	$(0, 0, \omega^5, 1, 1, \omega^4, 1, \omega^4, \omega, \omega^5, \omega, 0)$	I	1	$(186, 6, -)$	$2^3 \cdot 3$
594	$(1, 1, 1, \omega, \omega, \omega^6, \omega^4, 1, \omega^6, \omega^3, \omega^3, \omega^5)$	I	1	$(189, 6, -)$	$2^3 \cdot 3$
595	$(0, 1, 0, \omega^4, 1, \omega, \omega^6, \omega^3, \omega, \omega^5, \omega, \omega^2)$	I	1	$(192, 6, -)$	$2^3 \cdot 3$
596	$(0, 0, \omega^5, 0, 1, \omega^3, \omega^6, \omega, \omega, \omega^4, \omega^2, \omega^3)$	I	1	$(198, 6, -)$	$2^3 \cdot 3$
597	$(0, 0, \omega^4, 0, 1, \omega, \omega^3, \omega^4, \omega^4, \omega^5, \omega^5, \omega^5)$	I	1	$(210, 6, -)$	$2^3 \cdot 3$
598	$(1, 1, 1, \omega, \omega^2, 0, \omega, 1, \omega^3, \omega^6, 0, \omega^3)$	I	1	$(216, 6, -)$	$2^3 \cdot 3$
599	$(1, 1, 1, \omega^5, \omega^2, \omega^3, \omega^6, \omega, 0, \omega^6, \omega^5, \omega^6)$	I	1	$(222, 6, -)$	$2^3 \cdot 3$
600	$(0, 1, 0, \omega, \omega^6, 0, \omega^5, \omega^6, \omega, \omega^6, \omega^2, \omega^4)$	I	1	$(240, 6, -)$	$2^3 \cdot 3$
601	$(0, 0, \omega^4, \omega^4, 1, \omega^6, \omega^2, \omega^3, \omega, 1, \omega^6, \omega^2)$	I	1	$(258, 6, -)$	$2^3 \cdot 3$
602	$(0, 0, \omega^4, 0, \omega^3, \omega^5, 0, \omega^3, \omega, \omega^3, \omega^6, \omega^2)$	I	1	$(264, 6, -)$	$2^3 \cdot 3$
603	$(1, 1, 1, \omega^3, \omega, \omega^2, \omega^4, \omega^3, \omega^2, \omega^6, \omega, \omega^3)$	I	1	$(282, 6, -)$	$2^3 \cdot 3$
604	$(0, 0, \omega^4, 0, \omega^4, 1, \omega, \omega^6, \omega^5, \omega, 0, \omega)$	I	1	$(288, 6, -)$	$2^3 \cdot 3$
605	$(0, 0, \omega^4, \omega, \omega, \omega^6, \omega^2, \omega^5, \omega^3, \omega, 1, 1)$	I	1	$(294, 6, -)$	$2^3 \cdot 3$
606	$(0, 1, 0, \omega^4, \omega^3, \omega, \omega^4, \omega^2, \omega, \omega^3, \omega^3, \omega^5)$	I	1	$(295, 6, -)$	$2^3 \cdot 3$
607	$(0, 0, \omega^4, \omega^3, \omega^3, \omega^6, \omega^2, 1, 1, \omega^3, \omega, \omega^5)$	I	1	$(300, 6, -)$	$2^3 \cdot 3$
608	$(0, 0, \omega^4, 0, \omega, \omega^2, \omega^6, \omega, 1, \omega, \omega^3, \omega^4)$	I	1	$(312, 6, -)$	$2^3 \cdot 3$
609	$(0, 0, \omega^3, \omega^6, \omega^2, \omega^5, \omega^2, 1, \omega^5, \omega, 0, \omega^2)$	I	1	$(324, 6, -)$	$2^3 \cdot 3$
610	$(1, 1, 1, \omega, \omega^5, 0, \omega^3, \omega^2, \omega, \omega^2, \omega^5, \omega^3)$	I	1	$(333, 6, -)$	$2^3 \cdot 3$
611	$(0, 0, \omega^5, \omega, 1, \omega, 1, \omega^4, \omega, \omega^2, \omega, \omega^2)$	I	1	$(336, 6, -)$	$2^3 \cdot 3$
612	$(0, 0, \omega^4, 0, \omega^4, \omega^6, \omega^4, \omega^3, \omega, \omega^3, \omega^4, \omega^4)$	I	1	$(337, 6, -)$	$2^3 \cdot 3$
613	$(0, 0, \omega^5, \omega^5, \omega, \omega^3, \omega^5, \omega^2, \omega^6, \omega, \omega^5, \omega^3)$	I	1	$(343, 6, -)$	$2^3 \cdot 3$
614	$(1, 1, 1, \omega^3, \omega^5, \omega, \omega^2, \omega^3, \omega^4, \omega^5, \omega^3, \omega^3)$	I	1	$(348, 6, -)$	$2^3 \cdot 3$
615	$(1, 1, 1, \omega, \omega, \omega^6, \omega^6, \omega, \omega^6, \omega^3, \omega^4, \omega)$	I	1	$(355, 6, -)$	$2^3 \cdot 3$
616	$(1, 1, 1, \omega, \omega^5, 0, \omega^5, \omega, \omega^3, \omega^5, \omega^4, \omega)$	I	1	$(360, 6, -)$	$2^3 \cdot 3$
617	$(0, 0, \omega^4, \omega^3, 0, \omega^4, \omega^3, \omega^4, 0, \omega, \omega^5, \omega)$	I	1	$(366, 6, -)$	$2^3 \cdot 3$
618	$(0, 0, \omega^4, 1, \omega^2, \omega^4, \omega, \omega^6, \omega^3, \omega^5, 0, \omega^5)$	I	1	$(372, 6, -)$	$2^3 \cdot 3$
619	$(0, 0, \omega^4, \omega, \omega, \omega^2, \omega^6, \omega, \omega^2, \omega^3, 1, \omega)$	I	1	$(391, 6, -)$	$2^3 \cdot 3$
620	$(1, 1, 1, \omega, \omega^3, \omega^6, \omega^2, \omega^5, \omega^2, 0, \omega^4, \omega^6)$	I	1	$(432, 6, -)$	$2^3 \cdot 3$
621	$(0, 1, 0, \omega, 1, 0, \omega^3, \omega^6, \omega, \omega^3, \omega^5, \omega^3)$	I	1	$(181, 12, -)$	$2^3 \cdot 3$
622	$(0, 1, 0, \omega, \omega^4, \omega^3, 1, \omega^3, \omega^6, \omega, \omega^4, \omega^2)$	I	1	$(186, 12, -)$	$2^3 \cdot 3$
623	$(0, 0, \omega^4, 1, 1, \omega^3, \omega^2, \omega^3, \omega, \omega^4, \omega^6, \omega)$	I	1	$(192, 12, -)$	$2^3 \cdot 3$
624	$(1, 1, 1, \omega, \omega^2, 0, \omega^3, 0, \omega^3, \omega^6, \omega^4, \omega^6)$	I	1	$(207, 12, -)$	$2^3 \cdot 3$
625	$(0, 0, \omega^4, 0, 1, \omega^4, 0, \omega^5, \omega, \omega^5, \omega^3, 1)$	I	1	$(228, 12, -)$	$2^3 \cdot 3$

Table 19: New $[72, 36, 12]_2$ self-dual codes from $\mathcal{G}_{11}$

$\mathcal{C}_i$	$\mathbf{a}$	Type	$W_{72,k}$	(α, β, γ)	$|Aut|$
626	$(0, 0, \omega^4, 1, \omega, \omega^4, \omega^3, \omega^2, 1, \omega^3, \omega, \omega^6)$	I	1	$(252, 12, -)$	$2^3 \cdot 3$
627	$(0, 0, \omega^5, \omega^2, \omega^2, \omega^3, \omega^5, \omega, \omega^6, 1, \omega^5, \omega^3)$	I	1	$(282, 12, -)$	$2^3 \cdot 3$
628	$(0, 1, 0, \omega, \omega^2, \omega^6, \omega, \omega^2, \omega^3, \omega, \omega^3, \omega^5)$	I	1	$(291, 12, -)$	$2^3 \cdot 3$
629	$(1, 1, 1, \omega^2, \omega, 0, \omega^4, \omega^3, \omega^2, \omega, \omega, \omega^5)$	I	1	$(306, 12, -)$	$2^3 \cdot 3$
630	$(1, 1, 1, \omega^3, \omega^4, 0, \omega^5, \omega, \omega^3, \omega, \omega^6, \omega^2)$	I	1	$(315, 12, -)$	$2^3 \cdot 3$
631	$(0, 0, \omega^4, 1, \omega, \omega^4, \omega^6, \omega, 1, \omega^3, \omega^3, \omega^2)$	I	1	$(318, 12, -)$	$2^3 \cdot 3$
632	$(1, 1, 1, \omega, \omega, \omega^4, 0, \omega^3, \omega^4, 0, \omega^5, \omega^2)$	I	1	$(327, 12, -)$	$2^3 \cdot 3$
633	$(0, 0, \omega^5, \omega^5, \omega^4, \omega^5, \omega, \omega^6, \omega^3, \omega^4, \omega^3, 1)$	I	1	$(330, 12, -)$	$2^3 \cdot 3$
634	$(1, 1, 1, \omega^5, 0, \omega^3, \omega, \omega^5, \omega, \omega^5, \omega^3, \omega^5)$	I	1	$(336, 12, -)$	$2^3 \cdot 3$
635	$(0, 0, \omega^5, \omega^6, 1, \omega^2, \omega, \omega^6, \omega, \omega^3, \omega^6, \omega^6)$	I	1	$(342, 12, -)$	$2^3 \cdot 3$
636	$(0, 0, \omega^4, \omega^3, \omega^3, 0, \omega^5, \omega^2, \omega, 0, \omega^3, \omega^6)$	I	1	$(355, 12, -)$	$2^3 \cdot 3$
637	$(0, 0, \omega^4, \omega^4, \omega^3, \omega^6, \omega^2, \omega^5, \omega^5, \omega, 1, 0)$	I	1	$(360, 12, -)$	$2^3 \cdot 3$
638	$(0, 0, \omega^3, \omega^6, \omega^3, \omega^6, \omega, \omega^6, \omega^2, \omega^5, 0, \omega^6)$	I	1	$(366, 12, -)$	$2^3 \cdot 3$
639	$(0, 0, \omega^5, \omega^3, 0, \omega^4, 1, \omega^4, 0, \omega^5, \omega, 1)$	I	1	$(367, 12, -)$	$2^3 \cdot 3$
640	$(1, 1, 1, \omega^5, \omega^5, \omega^2, \omega, \omega^5, 0, \omega^6, \omega^3, \omega^5)$	I	1	$(375, 12, -)$	$2^3 \cdot 3$
641	$(0, 0, \omega^4, \omega^5, 1, 0, \omega^6, \omega, \omega, 0, 1, \omega^6)$	I	1	$(405, 12, -)$	$2^3 \cdot 3$
642	$(1, 1, 1, \omega, \omega, \omega^6, \omega^5, \omega, 0, \omega^2, \omega^4, \omega)$	I	1	$(411, 12, -)$	$2^3 \cdot 3$
643	$(0, 0, \omega^4, \omega, 1, \omega^5, \omega^6, \omega, \omega, \omega^6, 1, \omega)$	I	1	$(429, 12, -)$	$2^3 \cdot 3$
644	$(0, 0, \omega^4, 1, \omega^3, \omega^4, \omega, 1, \omega^5, \omega^6, \omega^3, 1)$	I	1	$(222, 18, -)$	$2^3 \cdot 3$
645	$(0, 1, 0, \omega, 1, 0, \omega, \omega^4, \omega^3, \omega, \omega^6, \omega^3)$	I	1	$(225, 18, -)$	$2^3 \cdot 3$
646	$(0, 0, \omega^4, \omega, \omega^6, 1, \omega^3, \omega^4, \omega^2, \omega^3, 0, \omega^3)$	I	1	$(240, 18, -)$	$2^3 \cdot 3$
647	$(0, 0, \omega^5, \omega^2, \omega, \omega^6, \omega, \omega^6, 1, \omega^5, \omega^3, \omega^5)$	I	1	$(315, 24, -)$	$2^3 \cdot 3$

Table 20: New $[72, 36, 12]_2$ self-dual codes from $\mathcal{G}_{13}$

$\mathcal{C}_i$	$\mathbf{a}$	Type	$W_{72,k}$	(α, β, γ)	$|Aut|$
648	$(0, 0, 1, w, w^6, 1, w, w^6, w^6, w^6, w^2, w^6)$	I	1	$(369, 12, -)$	$2^3 \cdot 3$

Table 21: New $[72, 36, 12]_2$ self-dual codes from $\mathcal{G}_{14}$

$\mathcal{C}_i$	$\mathbf{a}$	Type	$W_{72,k}$	(α, β, γ)	$|Aut|$
649	$(0, \omega, \omega^2, \omega^3, 1, \omega^6, \omega, \omega^6, \omega^4, \omega^4, \omega^4, 1)$	I	1	$(169, 0, -)$	$2^3 \cdot 3$

Table 22: New $[72, 36, 12]_2$ self-dual codes from $\mathcal{G}_{15}$

$\mathcal{C}_i$	$\mathbf{a}$	Type	$W_{72,k}$	(α, β, γ)	$|Aut|$
650	$(0, 1, \omega^3, \omega^5, \omega^3, \omega, \omega, 0, \omega^5, \omega^5, \omega, \omega^6)$	I	1	$(149, 0, -)$	$2^2 \cdot 3$
651	$(0, 0, \omega, \omega^5, \omega, \omega^6, \omega^2, 0, \omega^5, \omega^3, \omega^4, \omega^6)$	I	1	$(127, 3, -)$	$2^2 \cdot 3$
652	$(0, 1, \omega^3, \omega^5, \omega, \omega^2, \omega^2, 1, \omega^3, \omega^5, \omega^3, 0)$	I	1	$(139, 3, -)$	$2^2 \cdot 3$
653	$(0, 0, 1, \omega, 0, \omega^6, 0, \omega, \omega^6, \omega^5, \omega^2, \omega^3)$	I	1	$(167, 3, -)$	$2^2 \cdot 3$
654	$(0, 1, \omega^3, \omega^5, \omega, \omega, \omega^6, \omega^4, \omega^5, \omega^4, \omega^4, 0)$	I	1	$(203, 3, -)$	$2^2 \cdot 3$
655	$(0, 0, \omega, \omega^6, \omega^5, \omega^6, \omega^3, \omega^2, \omega^3, \omega^6, \omega^5, \omega)$	I	1	$(317, 3, -)$	$2^3 \cdot 3$
656	$(0, 0, 1, \omega, 0, \omega^2, \omega^2, \omega^5, \omega^4, \omega^6, \omega^2, \omega)$	I	1	$(319, 3, -)$	$2^2 \cdot 3$
657	$(0, \omega, \omega^2, \omega^6, \omega, \omega^6, \omega^6, \omega^6, \omega, \omega^4, \omega^2, \omega^6)$	I	1	$(339, 3, -)$	$2^2 \cdot 3$
658	$(0, 1, \omega^3, \omega^5, \omega, \omega, \omega^6, \omega^4, \omega^3, \omega, \omega^3, \omega^6)$	I	1	$(331, 15, -)$	$2^2 \cdot 3$
659	$(0, \omega, \omega^2, \omega^3, \omega^2, \omega^3, \omega^5, \omega^3, \omega^5, \omega^4, 1, \omega^5)$	I	1	$(373, 15, -)$	$2^2 \cdot 3$