

THE SUBGROUP LATTICE OF $M_{22} : 2$

THOMAS CONNOR AND DIMITRI LEEMANS

Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
1	$M_{22} : 2$	887040	1	2, 3 (22), 5 (77), 7 (231), 8 (330), 15 (616), 17 (672)	
2	M_{22}	443520	1	4 (22), 6 (77), 9 (352), 10 (231), 16 (330), 24 (616), 28 (672)	1
3	$L_3(4) : 2$	40320	22	4, 11 (21), 12 (21), 25 (56), 47 (120), 84 (280)	1
4	$L_3(4)$	20160	22	19 (21), 20 (21), 44 (112), 45 (56), 76 (240), 77 (120), 133 (280)	2, 3
5	$2^4 : S_6$	11520	77	6, 13 (6), 11 (6), 18 (10), 22 (15), 23 (15), 26 (16), 25 (16)	1
6	$2^4 : A_6$	5760	77	19 (6), 21 (6), 30 (10), 33 (15), 34 (15), 46 (16), 45 (16)	2, 5
7	$2^4 : A_5 : 2 : 2$	3840	231	10, 12, 14, 22 (5), 29 (6), 35 (10)	1
8	$2^3 : L_2(7) \times 2$	2688	330	16, 35 (7), 36 (7), 47 (8), 48 (8), 49 (8)	1
9	A_7	2520	352	44 (7), 76 (15), 78 (15), 102 (21), 134 (35)	2
10	$2^4 : A_5 : 2$	1920	231	20, 34 (5), 50 (6), 58 (10), 102 (32)	2, 7
11	$2^4 : A_5 : 2$	1920	462	19, 37 (5), 51 (6), 59 (10), 103 (16), 104 (16)	3, 5

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Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
12	$2^4 : A_5 : 2$	1920	231	20, 37 (5), 52 (6), 60 (10), 104 (32)	3 (2), 7
13	$2^4 : A_5 : 2$	1920	462	21, 38 (5), 51 (6), 61 (10), 103 (16)	5
14	$2^4 : A_5 : 2$	1920	231	20, 39 (5), 53 (6), 62 (10)	7
15	$A_6 : 2 : 2$	1440	616	24, 27, 26, 84 (10), 217 (36), 222 (45)	1
16	$2^3 : L_2(7)$	1344	330	58 (7), 63 (7), 77 (8), 78 (8), 79 (8)	2, 8
17	$L_2(11) : 2$	1320	672	28, 106 (12), 296 (55), 297 (55), 325 (66)	1
18	$2^4 : S_3 : S_3 : 2$	1152	770	31, 32, 30, 87 (9), 135 (16)	5
19	$2^4 : A_5$	960	462	64 (5), 80 (6), 107 (10), 184 (16), 185 (32), 186 (16)	4, 6, 11
20	$2^4 : A_5$	960	231	64 (5), 81 (6), 108 (10), 187 (32), 184 (32)	4 (2), 10, 12, 14
21	$2^4 : A_5$	960	462	65 (5), 80 (6), 109 (10), 186 (16)	6, 13
22	$D_8 \times D_8 : 2 : S_3$	768	1155	37, 34, 39, 57 (3), 66 (4), 67 (4), 59 (4)	5, 7
23	$2^{1+4} \cdot 2^2 : S_3$	768	1155	40, 41, 36, 42, 38, 33, 43, 57 (3), 61 (4)	5
24	M_{10}	720	616	46, 133 (10), 326 (36), 330 (45)	2, 15
25	$A_6 : 2$	720	1232	45, 104 (6), 103 (6), 135 (10), 190 (15), 191 (15)	3, 5
26	$A_6 : 2$	720	616	46, 103 (12), 135 (10), 192 (30)	5 (2), 15
27	$A_6 : 2$	720	616	46, 136 (10), 325 (36), 331 (45)	15
28	$L_2(11)$	660	672	185 (22), 189 (12), 405 (55)	2, 17
29	$2^4 : 5 : 2 \cdot 2 \times 2$	640	1386	50, 53, 52, 88 (5), 217 (16)	7
30	$2^4 : 3 : S_3 \cdot 2$	576	770	54, 139 (9), 218 (16)	6, 18
31	$2^4 : S_3 : S_3$	576	770	55 (2), 54, 61 (6), 85 (8)	18

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Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
32	$2^4 : S_3 : S_3$	576	770	56 (2), 54, 59 (6), 219 (16)	18
33	$2^{1+4} : 2 : S_3$	384	1155	65, 63, 68, 89 (3), 109 (4)	6, 23
34	$2^3 \cdot 2 : 2 : 2 : S_3$	384	1155	64, 89 (3), 110 (4), 111 (4), 107 (4)	6, 10, 22
35	$D_8 \times 2 : 2 \times 2 : S_3$	384	2310	67, 60, 62, 69, 58, 70, 71, 90 (3), 112 (4)	7, 8
36	$2^{1+4} \times 2 : S_3$	384	1155	72, 63, 73, 90 (3), 112 (8), 113 (4)	8 (2), 23
37	$2 \times 4 : 2 : 2 : 2 : S_3$	384	1155	64, 91 (3), 114 (4), 115 (4), 116 (4)	11 (2), 12, 22
38	$2^{1+4} : 2 : S_3$	384	1155	74, 72, 65, 92 (3), 117 (4)	13 (2), 23
39	$2 \times 4 : 2 : 2 : 2 : 3 : 2$	384	1155	64, 93, 118 (4), 119 (4), 120 (4), 121 (8)	14, 22
40	$2^{1+4} \times 2 : S_3$	384	1155	68, 74, 73, 94 (3), 122 (4), 123 (8)	23
41	$2^{1+4} \cdot 2 : S_3$	384	1155	68, 72, 75, 95 (3), 124 (4)	23
42	$2^{1+4} \cdot 2 : S_3$	384	1155	74, 63, 75, 96 (3), 125 (4)	23
43	$2^{1+4} \cdot (2 \times 6)$	384	1155	65, 73, 75, 97, 126 (4)	23
44	A_6	360	2464	185 (6), 187 (6), 220 (10), 298 (15), 299 (15)	4, 9
45	A_6	360	1232	184 (6), 186 (6), 218 (10), 300 (15), 301 (15)	4, 6, 25
46	A_6	360	616	186 (12), 218 (10), 302 (30)	6 (2), 24, 26, 27
47	$L_2(7) \times 2$	336	2640	77, 191 (7), 190 (7), 216 (8)	3, 8
48	$L_2(7) \times 2$	336	2640	78, 193 (7), 194 (7), 216 (8)	8
49	$2^3 : 7 : 3 \times 2$	336	2640	79, 105, 195 (7), 216 (8)	8
50	$2^4 : 5 : 2 \cdot 2$	320	1386	81, 140 (5), 326 (16)	10, 29
51	$2^4 : 5 : 2 \cdot 2$	320	2772	80, 141 (5), 327 (16)	11, 13
52	$2^4 : 5 : 2 \cdot 2$	320	1386	81, 142 (5), 327 (16)	12, 29
53	$2^4 : 5 : 2 \times 2$	320	1386	81, 82, 83, 143 (5), 325 (16)	14, 29

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Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
54	$A_4 \times 2 \times 2 : S_3$	288	770	86, 109 (6), 107 (6), 134 (8)	30, 31, 32
55	$A_4 \times 2 \times 2 : S_3$	288	1540	86, 117, 126 (3), 137 (4), 138 (4)	31
56	$2^4 : 3 : S_3$	288	1540	86, 114, 119 (3), 328 (16)	32
57	$2^{1+4} \cdot 2^3$	256	3465	90, 87, 98, 99, 88, 92, 97, 96, 93, 100, 101, 91, 94, 95, 89	22, 23
58	$2^3 \cdot 2 : 2 : S_3$	192	2310	127, 108, 110, 144 (3), 196 (4)	10, 16, 35
59	$2 \times 4 : 2 : 2 : S_3$	192	4620	114, 119, 107, 145 (3), 191 (4)	11, 22, 32
60	$D_8 \times 2 : 2 : S_3$	192	2310	116, 108, 128, 146 (3), 190 (4)	12, 35
61	$D_8 \times 2^2 : S_3$	192	4620	126, 113, 117, 125, 124, 122, 109, 147 (3), 197 (4)	13, 23, 31
62	$2^5 : S_3$	192	2310	129, 108, 120, 143 (3), 193 (8), 198 (4)	14, 35
63	$2^{1+4} : S_3$	192	1155	130, 144 (3), 196 (8), 199 (4)	16 (2), 33, 36, 42
64	$Q_8 \times 2 : 2 : 2 : 3$	192	1155	148, 200 (4), 201 (8), 202 (4), 203 (4)	19 (2), 20, 34, 37, 39
65	$2^{1+4} : 6$	192	1155	130, 149, 204 (4)	21 (2), 33, 38, 43
66	$D_8 \times 2 : 2 : S_3$	192	4620	118, 111, 115, 150 (3), 191 (4)	22
67	$2^5 : S_3$	192	2310	116, 110, 120, 151 (3), 192 (4), 191 (8)	22 (2), 35
68	$2^{1+4} \cdot S_3$	192	1155	130, 152 (3), 205 (4), 206 (8)	33, 40, 41
69	$D_8 \times 2 : 2 : S_3$	192	2310	110, 129, 128, 153 (3), 207 (4)	35
70	$D_8 \times 2 : 2 : S_3$	192	2310	116, 129, 127, 153 (3), 208 (4)	35
71	$2^4 : 3 : 2 \times 2$	192	2310	127, 120, 128, 151, 195 (4)	35
72	$2^{1+4} : S_3$	192	1155	130, 154 (3), 208 (8), 209 (4)	36, 38, 41
73	$2^{1+4} : 6$	192	1155	130, 155, 195 (8), 210 (8), 211 (4)	36, 40, 43
74	$2^{1+4} : S_3$	192	1155	130, 156 (3), 212 (4), 213 (8)	38, 40, 42

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Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
75	$2^{1+4} \cdot 6$	192	1155	130, 157, 214 (4)	41, 42, 43
76	$L_2(7)$	168	5280	298 (7), 299 (7), 324 (8)	4, 9
77	$L_2(7)$	168	2640	300 (7), 301 (7), 324 (8)	4, 16, 47
78	$L_2(7)$	168	2640	303 (7), 299 (7), 324 (8)	9 (2), 16, 48
79	$2^3 : 7 : 3$	168	2640	188, 304 (7), 324 (8)	16, 49
80	$2^4 : 5 : 2$	160	2772	131, 223 (5), 420 (16)	19, 21, 51
81	$2^4 : 5 : 2$	160	1386	132, 224 (5), 420 (16)	20, 50, 52, 53
82	$2^4 : 5 \times 2$	160	1386	132, 225, 421 (16)	53
83	$2^4 : 5 : 2$	160	1386	132, 226 (5), 422 (16)	53
84	$3 : S_3 \cdot 2 \cdot 2 : 2$	144	6160	133, 136, 135, 332 (9)	3, 15
85	$2^2 : S_3 \times S_3$	144	6160	137, 138, 134, 197 (3), 215 (3), 219 (4)	31
86	$A_4 \times 2 \times 2 : 3$	144	770	204 (2), 200 (2), 221 (8)	54, 55 (2), 56 (2)
87	$2^{1+4} : 2^2$	128	3465	158, 159, 160, 161, 147, 139, 145	18 (2), 57
88	$2 \times 4 \cdot 2 : 2 : 2 \times 2$	128	3465	143, 162, 163, 142, 164, 160, 140	29 (2), 57
89	$2^{1+4} \cdot 2^2$	128	3465	144, 165, 140, 152, 148, 139, 149	33, 34, 57
90	$2^{1+4} : 2^2$	128	3465	143, 166 (2), 153 (2), 167 (2), 151 (2), 158, 146, 168, 144, 154, 155	35 (2), 36, 57
91	$2^{1+4} \cdot 2^2$	128	3465	146, 141, 142, 145, 148, 169, 170	37, 57
92	$2^{1+4} : 2^2$	128	3465	147, 171, 149, 154, 141, 156, 162	38, 57
93	$D_8 : D_8 : 2$	128	1155	143 (3), 172 (3), 173 (3), 174 (6), 175 (3), 176 (6), 177 (3), 147 (3), 148	39, 57 (3)
94	$2^{1+4} \cdot 2^2$	128	3465	155, 178 (2), 179 (2), 170, 164, 152, 172, 150 (2), 180 (2), 161, 156	40, 57
95	$2^{1+4} \cdot 2^2$	128	3465	175, 181, 160, 169, 154, 157, 152	41, 57
96	$2^{1+4} \cdot 2^2$	128	3465	173, 182, 142, 159, 144, 157, 156	42, 57

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Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
97	$2^{1+4} \cdot 2^2$	128	1155	155, 183 (3), 163 (3), 157, 177 (3), 145 (3), 149	43, 57 (3)
98	$2 \times 4 \cdot 2 : 2 \cdot 2 : 2$	128	3465	168, 181, 164, 182, 177, 141, 139	57
99	$2^{1+4} \cdot 2^2$	128	3465	146, 181, 183, 140, 161, 171, 173	57
100	$2^{1+4} \cdot 2^2$	128	3465	158, 162, 183, 182, 170, 175, 165	57
101	$D_8 \times 2 : 2 \cdot 2 : 2$	128	3465	168, 171, 163, 159, 172, 169, 165	57
102	$A_5 : 2$	120	7392	187, 298 (5), 326 (6), 405 (10)	9, 10
103	S_5	120	7392	186, 305 (5), 327 (6), 406 (10)	11, 13, 25, 26
104	$A_5 : 2$	120	7392	184, 306 (5), 327 (6), 406 (10)	11, 12, 25
105	$2^3 : 7 \times 2$	112	2640	188, 333, 404 (8)	49
106	$11 : 5 : 2$	110	8064	189, 323, 421 (11)	17
107	$2^4 : S_3$	96	4620	200, 223 (3), 298 (8), 301 (4)	19, 34, 54, 59
108	$2^4 : S_3$	96	2310	203, 224 (3), 300 (4), 299 (8)	20, 58, 60, 62
109	$2^4 : S_3$	96	4620	199, 204, 205, 223 (3), 307 (4)	21, 33, 54, 61
110	$2^4 : S_3$	96	2310	203, 227 (3), 301 (8), 302 (4)	34 (2), 58, 67, 69
111	$4^2 : S_3$	96	4620	202, 228 (3), 301 (4)	34, 66
112	$2^4 : S_3$	96	9240	195, 208, 207, 192, 198, 196, 190, 229 (3), 308 (4)	35, 36
113	$2^4 : S_3$	96	4620	194 (2), 215 (2), 199, 209, 211, 230 (3), 308 (4)	36, 61
114	$2^4 : S_3$	96	1540	200, 231 (3), 306 (12)	37 (3), 56, 59 (3)
115	$4^2 : S_3$	96	4620	202, 232 (3), 306 (4)	37, 66
116	$2^4 : S_3$	96	2310	203, 233 (3), 306 (8), 305 (4)	37 (2), 60, 67, 70
117	$2^4 : S_3$	96	1540	209 (3), 212 (3), 204, 234 (3), 309 (4)	38 (3), 55, 61 (3)
118	$4^2 : 3 : 2$	96	4620	202, 235, 310 (4)	39, 66
119	$2^4 : 3 : 2$	96	4620	200, 231, 310 (4)	39, 56, 59
120	$2^4 : 3 \times 2$	96	2310	203, 225, 311 (8), 310 (8), 312 (4)	39 (2), 62, 67, 71

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<i>continued from previous page</i>					
Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
121	$4^2 : 3 : 2$	96	9240	201, 236, 310 (4)	39
122	$2^4 : S_3$	96	4620	211, 212, 205, 237 (3), 313 (4)	40, 61
123	$Q_8 \times 2 : S_3$	96	9240	210, 213, 206, 238 (3), 313 (4)	40
124	$2^2 \times 4 : S_3$	96	4620	205, 209, 214, 239 (3), 314 (4)	41, 61
125	$2^2 \times 4 : S_3$	96	4620	199, 212, 214, 240 (3), 296 (4)	42, 61
126	$D_8 \times A_4$	96	4620	211, 204, 214, 234, 315 (4)	43, 55, 61
127	$2^4 : 3 : 2$	96	2310	203, 227, 304 (4)	58, 70, 71
128	$2^4 : 3 : 2$	96	2310	203, 233, 316 (4)	60, 69, 71
129	$2^4 : S_3$	96	2310	203, 226 (3), 317 (4), 297 (8)	62, 69, 70
130	$2^{1+4} : 3$	96	1155	241, 304 (8), 318 (8), 319 (4)	63, 65, 68, 72, 73, 74, 75
131	$2^4 : 5$	80	2772	334, 472 (16)	80
132	$2^4 : 5$	80	1386	335, 472 (16)	81, 82, 83
133	M_9	72	6160	220 (2), 218, 424 (9)	4, 24, 84
134	$A_4 : S_3$	72	6160	221, 298 (6), 303 (3), 307 (3), 329 (4)	9 (2), 54, 85
135	$S_3 \times S_3 : 2$	72	6160	218, 219 (2), 425 (9)	18 (2), 25 (2), 26, 84
136	$3 : S_3 \cdot 2 \cdot 2$	72	6160	218, 426 (9)	27, 84
137	$2 \times 6 : S_3$	72	6160	221, 320, 315 (3), 328 (4)	55, 85
138	$A_4 \times S_3$	72	6160	221, 309, 321 (3), 328 (4)	55, 85
139	$2 \times 4 : 2 : 2 : 2$	64	3465	223, 242, 243	30 (2), 87, 89, 98
140	$2 \times 4 : 2 : 2 : 2$	64	3465	224, 242, 244	50 (2), 88, 89, 99
141	$2^3 \cdot 2 : 2 \cdot 2$	64	3465	245, 246, 223	51 (4), 91, 92, 98
142	$2 \times 4 : 2 : 2 : 2$	64	3465	224, 246, 247	52 (2), 88, 91, 96
143	$D_8 \times 2 : 2 \times 2$	64	3465	248 (2), 249, 250, 230 (2), 251 (2), 252, 253, 254 (2), 225, 226, 224	53 (2), 62 (2), 88, 90, 93
144	$2^{1+4} : 2$	64	3465	227 (2), 255 (2), 241, 224, 243	58 (2), 63, 89, 90, 96
145	$2^{1+4} : 2$	64	3465	231 (2), 247, 256 (2), 223, 257	59 (4), 87, 91, 97
146	$2^{1+4} : 2$	64	3465	233 (2), 258 (2), 257, 245, 224	60 (2), 90, 91, 99

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Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
147	$D_8 \times D_8$	64	3465	230 (2), 259, 260 (2), 249, 240 (2), 239 (2), 237 (2), 234 (2), 223	61 (4), 87, 92, 93
148	$Q_8 \times 2 : 2 : 2$	64	1155	224 (3), 261 (6), 262 (3), 223 (3)	64, 89 (3), 91 (3), 93
149	$2^{1+4} : 2$	64	1155	223 (3), 244 (3), 241	65, 89 (3), 92 (3), 97
150	$2^{1+4} : 2$	64	6930	235, 263, 232, 264, 228, 265, 266	66 (2), 94
151	$D_8 \times 2^2 : 2$	64	2310	267 (3), 268 (3), 269 (3), 229 (3), 225, 233, 227	67 (3), 71, 90 (3)
152	$2^{1+4} \cdot 2$	64	3465	241, 228 (2), 242, 262, 270 (2)	68, 89, 94, 95
153	$2^{1+4} : 2$	64	6930	233, 271, 272, 227, 273, 274, 226	69, 70, 90
154	$2^{1+4} : 2$	64	3465	267 (2), 245, 271 (2), 249, 241	72, 90, 92, 95
155	$2^{1+4} \times 2$	64	1155	273 (6), 250 (3), 257 (3), 275 (6), 266 (6), 229 (6), 241	73, 90 (3), 94 (3), 97
156	$2^{1+4} : 2$	64	3465	241, 246, 265 (2), 276 (2), 259	74, 92, 94, 96
157	$2^{1+4} \cdot 2$	64	1155	241, 247 (3), 277 (3)	75, 95 (3), 96 (3), 97
158	$2^{1+4} : 2$	64	3465	269 (2), 243, 272 (2), 249, 257	87, 90, 100
159	$D_8 \times 2 : 2 \cdot 2$	64	3465	243, 247, 259	87, 96, 101
160	$2 \times 4 : 2 : 2 : 2$	64	3465	249, 242, 247	87, 88, 95
161	$2^{1+4} : 2$	64	3465	257, 278 (2), 242, 259, 263 (2)	87, 94, 99
162	$8 : 2 : 2 : 2$	64	3465	249, 244, 246	88, 92, 100
163	$2^4 \cdot 2 : 2$	64	3465	279 (2), 256 (2), 247, 250, 244	88, 97, 101
164	$2 \times 4 \cdot 2 : 2 \times 2$	64	3465	250, 264 (2), 280 (2), 246, 242	88, 94, 98
165	$2 \times 4 : 2 : 2 \cdot 2$	64	3465	243, 244, 262	89, 100, 101
166	$2^{1+4} : 2$	64	6930	267, 252, 273, 258, 255, 269, 274	90
167	$D_8 \times 2^2 \cdot 2$	64	6930	268, 258, 253, 272, 229, 271, 255	90
168	$D_8 \times 2^2 \cdot 2$	64	3465	268 (2), 274 (2), 250, 245, 243	90, 98, 101
169	$2 \times 4 : 2 : 2 \cdot 2$	64	3465	245, 247, 262	91, 95, 101
170	$2^{1+4} \cdot 2$	64	3465	257, 232 (2), 246, 281 (2), 262	91, 94, 100

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<i>continued from previous page</i>					
Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
171	$2 \times 4 : 2 : 2 : 2$	64	3465	259, 244, 245	92, 99, 101
172	$D_8 \times 2 : 2 : 2$	64	3465	248 (2), 282 (2), 237 (2), 283 (2), 250, 262, 284, 235, 285, 259, 286	93, 94, 101
173	$2 \times 4 : 2 \cdot 2 : 2$	64	3465	226 (2), 287 (2), 288 (2), 240 (2), 224, 277, 282 (2), 289 (2), 259	93, 96, 99
174	$D_8 : D_8$	64	6930	252, 290 (2), 279, 287, 230, 260, 288, 254, 291, 292, 261, 237, 284, 282	93
175	$2 \times 4 : 2 \cdot 2 : 2$	64	3465	254 (2), 289 (2), 291 (2), 292 (2), 249, 277, 239 (2), 262, 285 (2)	93, 95, 100
176	$2 \times 4 : 2 : 2 : 2$	64	6930	253, 236, 287, 260, 251, 293, 240, 290, 248, 283, 261, 292, 289, 286, 239	93
177	$2 \times 4 : 2 : 2 : 2$	64	3465	234, 293, 288 (2), 231, 279, 251 (2), 223, 277, 283 (2), 291 (2), 250	93, 97, 98
178	$2^{1+4} \cdot 2$	64	6930	266, 278, 276, 264, 270, 281, 286	94
179	$D_8 \cdot (2 \times 4)$	64	6930	275, 232, 280, 228, 285, 278, 276	94
180	$Q_8 \cdot 2^3$	64	6930	222 (2), 294 (2), 238 (2), 295 (2), 275, 281, 280, 270, 284, 263, 265	94
181	$D_8 \times 2 \cdot 2 \cdot 2$	64	3465	277, 242, 245	95, 98, 99
182	$D_8 \times 2 \cdot 2 \cdot 2$	64	3465	277, 246, 243	96, 98, 100
183	$2^{1+4} \cdot 2$	64	3465	257, 244, 256 (2), 293 (2), 277	97, 99, 100
184	A_5	60	7392	407 (5), 420 (6), 467 (10)	19, 20, 45, 104
185	A_5	60	14784	408 (5), 420 (6), 467 (10)	19, 28, 44
186	A_5	60	7392	409 (5), 420 (6), 467 (10)	19, 21, 45, 46, 103

continued on next page

<i>continued from previous page</i>					
Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
187	A_5	60	7392	410 (5), 420 (6), 467 (10)	20, 44 (2), 102
188	$2^3 : 7$	56	2640	427, 466 (8)	79, 105
189	$11 : 5$	55	8064	419, 472 (11)	28, 106
190	$2^3 : S_3$	48	9240	305, 316, 300, 336 (3), 406 (4)	25 (2), 47 (2), 60, 112
191	$2^3 : S_3$	48	18480	306, 310, 301, 336 (3), 406 (4)	25, 47, 59, 66, 67
192	$2^3 : S_3$	48	9240	302, 305, 312, 337 (3), 406 (4)	26 (2), 67, 112
193	$2^3 : S_3$	48	18480	299, 311, 297, 338 (3), 411 (4)	48, 62
194	$2^3 : S_3$	48	9240	303, 321, 322, 338 (3), 411 (4)	48 (2), 113
195	$A_4 \times 2 \times 2$	48	9240	304, 316, 312, 333, 412 (4)	49 (2), 71, 73, 112
196	$2^3 : S_3$	48	9240	302, 304, 300, 339 (3), 405 (4)	58, 63, 112
197	$D_8 \times S_3$	48	18480	309, 314, 313, 308, 307, 315, 296, 340 (3)	61, 85
198	$2^3 : S_3$	48	9240	312, 317, 300, 341 (3), 411 (4)	62, 112
199	$2^3 : S_3$	48	4620	303 (2), 319, 342 (3), 405 (4)	63, 109, 113, 125
200	$2^4 : 3$	48	1540	334, 407 (12), 410 (8)	64 (3), 86, 107 (3), 114, 119 (3)
201	$4^2 : 3$	48	9240	343, 407 (4)	64, 121
202	$4^2 : 3$	48	4620	344, 407 (4)	64, 111, 115, 118
203	$2^4 : 3$	48	2310	335, 407 (8), 408 (8), 409 (4)	64 (2), 108, 110, 116, 120, 127, 128, 129
204	$A_4 \times 2 \times 2$	48	1540	319 (3), 334, 413 (4)	65 (3), 86, 109 (3), 117, 126 (3)
205	$2^3 \cdot S_3$	48	4620	319, 345 (3), 414 (4)	68, 109, 122, 124
206	$Q_8 \cdot S_3$	48	9240	318, 346 (3), 414 (4)	68, 123
207	$2^3 : S_3$	48	9240	317, 316, 302, 347 (3), 411 (4)	69, 112
208	$2^3 : S_3$	48	9240	317, 304, 305, 348 (3), 415 (4)	70, 72, 112
209	$2^3 : S_3$	48	4620	320, 319, 322, 349 (3), 415 (4)	72, 113, 117, 124
210	$Q_8 : 6$	48	9240	318, 350, 412 (4)	73, 123
211	$A_4 \times 2 \times 2$	48	4620	319, 321 (2), 351, 412 (4)	73, 113, 122, 126

continued on next page

<i>continued from previous page</i>					
Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
212	$2^3 : S_3$	48	4620	322 (2), 319, 352 (3), 416 (4)	74, 117, 122, 125
213	$Q_8 : S_3$	48	9240	318, 353 (3), 416 (4)	74, 123
214	$A_4 \times 2 \cdot 2$	48	4620	319, 354, 417 (4)	75, 124, 125, 126
215	$2^3 : S_3$	48	9240	320, 321, 303, 340 (3), 406 (4)	85 (2), 113
216	$7 : 3 \times 2$	42	21120	324, 404, 468 (7)	47, 48, 49
217	$D_{10} \cdot 2 \times 2$	40	22176	325, 326, 327, 428 (5)	15, 29
218	$3 : S_3 \cdot 2$	36	6160	329, 473 (9)	30 (2), 45 (2), 46, 133, 135, 136
219	$S_3 \times S_3$	36	12320	328 (2), 329, 406 (6)	32, 85 (2), 135
220	$3 : S_3 \cdot 2$	36	12320	329, 474 (9)	44 (2), 133
221	$A_4 \times 3$	36	6160	413, 418, 410 (2), 423 (4)	86, 134, 137, 138
222	$Q_8 : 2^2$	32	13860	337, 330, 355, 332, 356, 331, 357	15 (2), 180
223	$D_8 \times 2 : 2$	32	3465	334, 342 (2), 358, 359, 345 (2)	80 (4), 107 (4), 109 (4), 139, 141, 145, 147, 148, 149, 177
224	$D_8 \times 2 : 2$	32	3465	335, 360 (2), 361, 342 (2), 359	81 (2), 108 (2), 140, 142, 143, 144, 146, 148, 173
225	2^5	32	231	362 (15), 363 (15), 335	82 (6), 120 (10), 143 (15), 151 (10)
226	$D_8 \times 2 : 2$	32	3465	335, 364 (2), 365 (2), 366, 367	83 (2), 129 (2), 143, 153 (2), 173 (2)
227	$D_8 \times 2 : 2$	32	2310	335, 368 (3), 339 (3)	110 (3), 127, 144 (3), 151, 153 (3)
228	$D_8 : 4$	32	6930	344, 369, 370	111 (2), 150, 152, 179
229	$D_8 \times 2^2$	32	6930	363, 337 (2), 339, 371, 336 (2), 348, 341 (2), 347 (2), 372, 333, 373	112 (4), 151, 155, 167
230	$D_8 \times 2^2$	32	6930	340 (4), 338 (4), 374, 375, 362, 364, 349, 351, 342	113 (2), 143, 147, 174
231	$D_8 \times 2 : 2$	32	1155	334, 376 (3), 377 (3)	114 (4), 119 (4), 145 (6), 177 (3)
232	$D_8 : 4$	32	6930	344, 378, 379	115 (2), 150, 170, 179
233	$D_8 \times 2 : 2$	32	2310	335, 380 (3), 372 (3)	116 (3), 128, 146 (3), 151, 153 (3)
234	$D_8 \times 2^2$	32	1155	349 (6), 354, 351, 352 (6), 334	117 (4), 126 (4), 147 (6), 177 (3)

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<i>continued from previous page</i>					
Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
235	$D_8 \times 2 : 2$	32	1155	381 (3), 382 (3), 344	118 (4), 150 (6), 172 (3)
236	$2 \times 4 : 2 : 2$	32	2310	383 (3), 384 (3), 343	121 (4), 176 (3)
237	$2^3 \cdot 2 : 2$	32	6930	375, 385, 382, 386, 352, 345, 351	122 (2), 147, 172, 174
238	$Q_8 \cdot 2^2$	32	13860	356, 387, 388, 355, 353, 346, 350	123 (2), 180
239	$D_8 \times 4$	32	6930	374, 389, 386, 384, 349, 354, 345	124 (2), 147, 175, 176
240	$2^3 \cdot 2 : 2$	32	6930	364, 384, 367, 385, 342, 354, 352	125 (2), 147, 173, 176
241	2^{1+4}	32	1155	339 (6), 359 (3), 370 (6)	130, 144 (3), 149, 152 (3), 154 (3), 155, 156 (3), 157
242	$8 : 2 : 2$	32	3465	359, 369 (2)	139, 140, 152, 160, 161, 164, 181
243	$D_8 \times 2 \cdot 2$	32	3465	368 (2), 359	139, 144, 158, 159, 165, 168, 182
244	$D_8 \times 2 \cdot 2$	32	3465	358 (2), 359	140, 149, 162, 163, 165, 171, 183
245	$D_8 \times 2 \cdot 2$	32	3465	380 (2), 359	141, 146, 154, 168, 169, 171, 181
246	$8 : 2 : 2$	32	3465	359, 378 (2)	141, 142, 156, 162, 164, 170, 182
247	$2^3 \cdot 2 : 2$	32	3465	376 (2), 359	142, 145, 157, 159, 160, 163, 169
248	$2 \times 4 : 2 : 2$	32	6930	363, 386, 381, 364, 383, 375, 360	143, 172, 176
249	$D_8 \times 2 : 2$	32	3465	362, 386 (2), 367, 359, 349 (2)	143, 147, 154, 158, 160, 162, 175
250	$D_8 \times 2^2$	32	3465	341 (4), 390 (4), 381, 391, 351, 377, 366, 359, 363	143, 155, 163, 164, 168, 172, 177
251	$D_8 \times 2 : 2$	32	6930	363, 392, 383, 365, 377, 349, 342	143, 176, 177
252	$2 \times 4 : 2 : 2$	32	3465	362, 375 (2), 366, 392 (2), 361	143, 166 (2), 174 (2)
253	$2^4 \cdot 2$	32	3465	363, 374 (2), 383 (2), 367, 361	143, 167 (2), 176 (2)
254	$2^4 \cdot 2$	32	6930	362, 391, 365, 386, 360, 374, 392	143, 174, 175
255	$2 \times 4 : 2 : 2$	32	6930	339, 361, 368	144, 166, 167
256	$2 \times 4 : 2 : 2$	32	6930	377, 358, 376	145, 163, 183
257	2^{1+4}	32	3465	336 (4), 372 (2), 379 (2), 393 (4), 377 (2), 359	145, 146, 155, 158, 161, 170, 183

continued on next page

<i>continued from previous page</i>					
Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
258	$2 \times 4 : 2 : 2$	32	6930	372, 380, 361	146, 166, 167
259	$4^2 : 2$	32	3465	364 (2), 389, 382, 359, 352 (2)	147, 156, 159, 161, 171, 172, 173
260	$D_8 \times 2 : 2$	32	6930	374, 385, 375, 384, 349, 358, 352	147, 174, 176
261	$2 \times 4 : 2 : 2$	32	6930	360, 394, 342, 358, 361, 345, 343	148, 174, 176
262	$4^2 : 2$	32	3465	360 (2), 345 (2), 359, 344, 394	148, 152, 165, 169, 170, 172, 175
263	$Q_8 : 2^2$	32	6930	382, 388 (2), 379, 357 (2), 369	150, 161, 180
264	$8 : 2 : 2$	32	6930	381, 378, 369	150, 164, 178
265	$Q_8 : 2^2$	32	6930	382, 353 (2), 378, 370, 331 (2)	150, 156, 180
266	2^{1+4}	32	6930	336 (2), 373 (2), 395 (2), 390 (2), 347 (2), 396 (2), 370, 379, 381	150, 155, 178
267	$D_8 \times 2 : 2$	32	6930	362, 380, 397 (2), 348 (2), 339	151, 154, 166
268	$2^4 \cdot 2$	32	6930	363, 397 (2), 380, 371 (2), 368	151, 167, 168
269	$D_8 \times 2 : 2$	32	6930	362, 372, 397 (2), 373 (2), 368	151, 158, 166
270	$Q_8 \cdot 2^2$	32	6930	370, 346 (2), 369, 330 (2), 394	152, 178, 180
271	$2 \times 4 : 2 : 2$	32	6930	339, 380, 367	153, 154, 167
272	$2 \times 4 : 2 : 2$	32	6930	372, 368, 367	153, 158, 167
273	2^{1+4}	32	6930	348 (2), 395 (2), 393 (2), 398 (2), 339, 372, 347 (2), 366, 390 (2)	153, 155, 166
274	$D_8 \times 2 \cdot 2$	32	6930	380, 368, 366	153, 166, 168
275	$D_8 : 2^2$	32	6930	337, 379, 393 (2), 391, 341 (2), 395 (2), 398, 371 (2), 396, 350, 370	155, 179, 180
276	$D_8 : 4$	32	6930	370, 378, 389	156, 178, 179
277	$2 \times 4 \cdot 2 : 2$	32	3465	365 (2), 399 (2), 359, 376, 354	157, 173, 175, 177, 181, 182, 183
278	$D_8 : 4$	32	6930	379, 369, 389	161, 178, 179
279	$2^3 \cdot 2 \times 2$	32	3465	376, 400 (2), 358, 351, 392 (2)	163 (2), 174 (2), 177

continued on next page

<i>continued from previous page</i>					
Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
280	$8 : 2 \times 2$	32	6930	391, 401 (2), 378, 355 (2), 369	164, 179, 180
281	$Q_8 \cdot 2^2$	32	6930	332 (2), 387 (2), 379, 378, 394	170, 178, 180
282	$D_8 \times 2 : 2$	32	6930	366, 360, 382, 400, 385, 364, 399	172, 173, 174
283	$2^2 \times 4 : 2$	32	6930	377, 381, 345, 400, 352, 383, 399	172, 176, 177
284	$D_8 : 2^2$	32	3465	356 (4), 402 (4), 375 (2), 400 (2), 382, 391, 394	172, 174 (2), 180 (2)
285	$2 \times 4 \cdot 2 : 2$	32	3465	386 (2), 399 (2), 391, 344, 389	172, 175 (2), 179 (2)
286	$2 \times 4 : 2 : 2$	32	3465	381, 394, 385 (2), 383 (2), 389	172, 176 (2), 178 (2)
287	$2^2 \times 4 : 2$	32	6930	400, 365, 364, 384, 385, 403, 361	173, 174, 176
288	$D_8 \times 2 : 2$	32	6930	342, 400, 376, 366, 352, 403, 365	173, 174, 177
289	$2 \times 4 : 2 \cdot 2$	32	6930	367, 384, 365, 403, 360, 399, 389	173, 175, 176
290	$D_8 \times 4$	32	6930	385, 392, 375, 403, 400, 343, 374	174 (2), 176
291	$2 \times 4 \cdot 2 : 2$	32	6930	345, 391, 349, 403, 376, 399, 392	174, 175, 177
292	$2 \times 4 \cdot 2 : 2$	32	6930	392, 384, 374, 403, 386, 394, 399	174, 175, 176
293	$2 \times 4 : 2 : 2$	32	3465	358, 383 (2), 377, 403 (2), 354	176 (2), 177, 183 (2)
294	$Q_8 \cdot 2^2$	32	13860	396, 346, 332, 401, 357, 353, 402	180
295	$Q_8 \cdot 2^2$	32	13860	402, 387, 388, 401, 331, 330, 398	180
296	D_{24}	24	18480	417, 416, 405, 429 (3)	17 (2), 125, 197
297	$2^2 : S_3$	24	18480	408, 429 (3), 469 (4)	17 (2), 129, 193
298	$2^2 : S_3$	24	36960	410, 430 (3), 467 (4)	44, 76, 102, 107, 134
299	$2^2 : S_3$	24	18480	408, 430 (3), 467 (4)	44 (2), 76 (2), 78, 108, 193
300	$2^2 : S_3$	24	9240	409, 431 (3), 467 (4)	45 (2), 77 (2), 108, 190, 196, 198
301	$2^2 : S_3$	24	18480	407, 431 (3), 467 (4)	45, 77, 107, 110, 111, 191
302	$2^2 : S_3$	24	9240	409, 432 (3), 467 (4)	46 (2), 110, 192, 196, 207

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<i>continued from previous page</i>					
Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
303	$2^2 : S_3$	24	9240	418, 430 (3), 467 (4)	78 (2), 134 (2), 194, 199, 215
304	$A_4 \times 2$	24	9240	409, 427, 470 (4)	79 (2), 127, 130, 195, 196, 208
305	$2^2 : S_3$	24	9240	409, 433 (3), 471 (4)	103 (4), 116, 190, 192, 208
306	$2^2 : S_3$	24	18480	407, 434 (3), 471 (4)	104 (2), 114, 115, 116, 191
307	$2^2 : S_3$	24	18480	414, 413, 405, 430 (3)	109, 134, 197
308	$S_3 \times 2^2$	24	18480	415, 406 (2), 412, 411 (2), 405, 435 (3)	112 (2), 113, 197
309	$S_3 \times 2^2$	24	6160	415 (3), 416 (3), 413, 436 (3)	117, 138, 197 (3)
310	$A_4 \times 2$	24	18480	407, 437, 468 (4)	118, 119, 120, 121 (2), 191
311	$A_4 \times 2$	24	18480	408, 438, 468 (4)	120, 193
312	$A_4 \times 2$	24	9240	409, 439, 468 (4)	120, 192, 195, 198
313	$2^2 : S_3$	24	18480	414, 412, 416, 440 (3)	122, 123 (2), 197
314	$S_3 \times 4$	24	18480	417, 414, 415, 441 (3)	124, 197
315	$D_8 \times 3$	24	18480	417, 413, 412, 442	126, 137, 197
316	$A_4 \times 2$	24	9240	409, 443, 468 (4)	128, 190, 195, 207
317	$2^2 : S_3$	24	9240	409, 444 (3), 469 (4)	129, 198, 207, 208
318	$Q_8 : 3$	24	9240	445, 470 (4)	130, 206, 210, 213
319	$A_4 \times 2$	24	4620	418, 446, 470 (4)	130, 199, 204, 205, 209, 211, 212, 214
320	$2^2 : S_3$	24	1540	418, 442 (3), 471 (4)	137 (4), 209 (3), 215 (6)
321	$A_4 \times 2$	24	9240	418, 436, 468 (4)	138 (2), 194, 211, 215
322	$2^2 : S_3$	24	4620	418, 447 (3), 469 (4)	194 (2), 209, 212 (2)
323	D_{22}	22	8064	419, 487 (11)	106
324	$7 : 3$	21	21120	466, 486 (7)	76 (2), 77, 78, 79, 216
325	D_{20}	20	22176	421, 422, 420, 475 (5)	17 (2), 27, 53, 217
326	$D_{10} \cdot 2$	20	22176	420, 474 (5)	24, 50, 102 (2), 217
327	$D_{10} \cdot 2$	20	22176	420, 476 (5)	51 (2), 52, 103 (2), 104 (2), 217
328	$S_3 \times 3$	18	24640	423, 471, 468 (3)	56, 137, 138, 219
329	$3 : S_3$	18	6160	423, 467 (12)	134 (4), 218, 219 (2), 220 (2)
330	$Q_8 : 2$	16	13860	432, 448, 424	24 (2), 222, 270, 295
331	D_{16}	16	13860	432, 426, 449	27 (2), 222, 265, 295
332	$D_8 \cdot 2$	16	13860	425, 424, 426	84 (4), 222, 281, 294
333	2^4	16	330	443 (7), 439 (7), 427	105 (8), 195 (28), 229 (21)

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<i>continued from previous page</i>					
Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
334	2^4	16	77	446 (15)	131 (36), 200 (20), 204 (20), 223 (45), 231 (15), 234 (15)
335	2^4	16	231	450 (15)	132 (6), 203 (10), 224 (15), 225, 226 (15), 227 (10), 233 (10)
336	$D_8 \times 2$	16	13860	425, 451, 437, 434, 433, 431, 443	190 (2), 191 (4), 229, 257, 266
337	$D_8 \times 2$	16	6930	425, 452, 439 (2), 433 (2), 432	192 (4), 222 (2), 229 (2), 275
338	$D_8 \times 2$	16	27720	438, 441, 429, 453, 430, 436, 447	193 (2), 194, 230
339	$D_8 \times 2$	16	6930	432 (2), 431 (2), 450, 427, 454	196 (4), 227, 229, 241, 255, 267, 271, 273
340	$D_8 \times 2$	16	27720	435, 429, 440, 441, 442, 430, 436	197 (2), 215, 230
341	$D_8 \times 2$	16	13860	455, 431, 434, 444, 439, 452, 456	198 (2), 229, 250, 275
342	$D_8 \times 2$	16	6930	450, 430 (4), 457, 446	199 (2), 223, 224, 230, 240, 251, 261, 288
343	4^2	16	2310	457 (3)	201 (4), 236, 261 (3), 290 (3)
344	4^2	16	1155	458 (3)	202 (4), 228 (6), 232 (6), 235, 262 (3), 285 (3)
345	$2 \times 4 : 2$	16	6930	446, 457, 458	205 (2), 223, 237, 239, 261, 262, 283, 291
346	Q_{16}	16	13860	424, 448, 445	206 (2), 238, 270, 294
347	$D_8 \times 2$	16	13860	433, 451, 432, 443, 459, 444, 455	207 (2), 229, 266, 273
348	$D_8 \times 2$	16	6930	433 (2), 460, 427, 459, 444 (2)	208 (4), 229, 267 (2), 273 (2)
349	$D_8 \times 2$	16	6930	442 (2), 461, 447 (2), 456, 446	209 (2), 230, 234, 239, 249, 251, 260, 291
350	$Q_8 \times 2$	16	2310	452 (3), 462 (3), 445	210 (4), 238 (6), 275 (3)
351	2^4	16	1155	436 (8), 456 (3), 463 (3), 446	211 (4), 230 (6), 234, 237 (6), 250 (3), 279 (3)

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<i>continued from previous page</i>					
Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
352	$D_8 \times 2$	16	6930	447 (4), 461, 463, 446	212 (2), 234, 237, 240, 259, 260, 283, 288
353	$Q_8 : 2$	16	13860	449, 426, 445	213 (2), 238, 265, 294
354	$2^2 \times 4$	16	1155	461 (6), 446	214 (4), 234, 239 (6), 240 (6), 277 (3), 293 (3)
355	$8 : 2$	16	13860	452, 426, 448	222, 238, 280
356	$D_8 : 2$	16	13860	440 (2), 428 (2), 449, 424, 452	222, 238, 284
357	D_{16}	16	13860	425, 448, 449	222, 263, 294
358	$2 \times 4 : 2$	16	3465	446, 457 (2)	223, 244 (2), 256 (2), 260 (2), 261 (2), 279, 293
359	$D_8 \times 2$	16	3465	431 (4), 450, 458, 446	223, 224, 241, 242, 243, 244, 245, 246, 247, 249, 250, 257, 259, 262, 277
360	$2 \times 4 : 2$	16	6930	450, 458, 457	224, 248, 254, 261, 262, 282, 289
361	$2 \times 4 : 2$	16	3465	450, 457 (2)	224, 252, 253, 255 (2), 258 (2), 261 (2), 287 (2)
362	2^4	16	3465	438 (4), 456 (2), 459 (4), 435 (4), 450	225, 230 (2), 249, 252, 254 (2), 267 (2), 269 (2)
363	2^4	16	3465	435 (8), 437, 456, 439 (2), 459 (2), 450	225, 229 (2), 248 (2), 250, 251 (2), 253, 268 (2)
364	$D_8 \times 2$	16	6930	429 (4), 463, 450, 461	226, 230, 240, 248, 259, 282, 287
365	$2 \times 4 : 2$	16	6930	450, 464, 461	226, 251, 254, 277, 287, 288, 289
366	$D_8 \times 2$	16	3465	444 (4), 463, 464, 450	226, 250, 252, 273 (2), 274 (2), 282 (2), 288 (2)
367	$2 \times 4 : 2$	16	3465	450, 461 (2)	226, 240 (2), 249, 253, 271 (2), 272 (2), 289 (2)
368	$2 \times 4 : 2$	16	6930	450, 454 (2)	227, 243, 255, 268, 269, 272, 274
369	$8 : 2$	16	6930	458, 448 (2)	228, 242, 263, 264, 270, 278, 280

continued on next page

<i>continued from previous page</i>					
Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
370	$D_8 : 2$	16	6930	431 (2), 454 (2), 458, 445, 432	228, 241, 265, 266, 270, 275, 276
371	$2^2 \times 4$	16	6930	451 (2), 452 (2), 460, 439, 454	229, 268 (2), 275 (2)
372	$D_8 \times 2$	16	6930	450, 460, 433 (2), 434 (2), 443	229, 233, 257, 258, 269, 272, 273
373	$D_8 \times 2$	16	6930	459, 454, 455 (2), 425 (2), 443	229, 266 (2), 269 (2)
374	$2^2 \times 4$	16	6930	441 (4), 461, 456, 457	230, 239, 253, 254, 260, 290, 292
375	$D_8 \times 2$	16	6930	440 (2), 456, 463, 453 (2), 457	230, 237, 248, 252, 260, 284, 290
376	$2 \times 4 : 2$	16	3465	446, 464 (2)	231, 247 (2), 256 (2), 277, 279, 288 (2), 291 (2)
377	$D_8 \times 2$	16	3465	434 (4), 437, 464, 446	231, 250, 251 (2), 256 (2), 257 (2), 283 (2), 293
378	$8 : 2$	16	6930	458, 426 (2)	232, 246, 264, 265, 276, 280, 281
379	$D_8 : 2$	16	6930	434 (2), 451 (2), 425, 462, 458	232, 257, 263, 266, 275, 278, 281
380	$2 \times 4 : 2$	16	6930	450, 460 (2)	233, 245, 258, 267, 268, 271, 274
381	$D_8 \times 2$	16	3465	455 (4), 463, 458, 437	235, 248 (2), 250, 264 (2), 266 (2), 283 (2), 286
382	$D_8 \times 2$	16	3465	449 (4), 463 (2), 458	235, 237 (2), 259, 263 (2), 265 (2), 282 (2), 284
383	$2 \times 4 : 2$	16	6930	437, 461, 457	236, 248, 251, 253, 283, 286, 293
384	$2 \times 4 \cdot 2$	16	6930	461 (2), 457	236, 239, 240, 260, 287, 289, 292
385	$2 \times 4 : 2$	16	6930	463, 457, 461	237, 240, 260, 282, 286, 287, 290
386	$2 \times 4 : 2$	16	6930	456, 458, 461	237, 239, 248, 249, 254, 285, 292
387	Q_{16}	16	13860	426, 424, 462	238, 281, 295
388	$Q_8 : 2$	16	13860	449, 448, 462	238, 263, 295
389	4^2	16	3465	461 (2), 458	239 (2), 259, 276 (2), 278 (2), 285, 286, 289 (2)

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<i>continued from previous page</i>					
Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
390	$D_8 \times 2$	16	13860	455, 465, 434, 463, 459, 431, 444	250, 266, 273
391	$2^2 \times 4$	16	3465	452 (2), 465 (2), 464, 458, 456	250, 254 (2), 275 (2), 280 (2), 284, 285, 291 (2)
392	$2 \times 4 : 2$	16	6930	456, 457, 464	251, 252, 254, 279, 290, 291, 292
393	$D_8 : 2$	16	13860	464, 460, 431, 462, 434, 451, 433	257, 273, 275
394	$Q_8 \times 2$	16	3465	424 (4), 457 (2), 458	261 (2), 262, 270 (2), 281 (2), 284, 286, 292 (2)
395	$D_8 : 2$	16	13860	444, 451, 433, 465, 454, 462, 455	266, 273, 275
396	$D_8 : 2$	16	6930	425, 451 (2), 455 (2), 465, 445	266 (2), 275, 294 (2)
397	$2 \times 4 : 2$	16	13860	459, 454, 460	267, 268, 269
398	$D_8 : 2$	16	6930	460 (2), 444 (2), 432, 462, 465	273 (2), 275, 295 (2)
399	$2 \times 4 \cdot 2$	16	6930	458, 464, 461	277, 282, 283, 285, 289, 291, 292
400	$2^2 \times 4$	16	6930	428 (4), 463, 464, 457	279, 282, 283, 284, 287, 288, 290
401	2×8	16	13860	448, 465, 426	280, 294, 295
402	$D_8 : 2$	16	13860	449, 424, 428 (2), 453 (2), 465	284, 294, 295
403	$2 \times 4 \cdot 2$	16	6930	464, 461, 457	287, 288, 289, 290, 291, 292, 293
404	14	14	21120	466, 488	105, 216
405	D_{12}	12	18480	470, 467 (2), 477 (3)	28 (2), 102 (4), 196 (2), 199, 296, 307, 308
406	D_{12}	12	36960	468, 471, 467, 478 (3)	103 (2), 104 (2), 190, 191 (2), 192, 215, 219 (2), 308
407	A_4	12	18480	479, 486 (4)	184 (2), 200, 201 (2), 202, 203, 301, 306, 310
408	A_4	12	18480	477, 486 (4)	185 (4), 203, 297, 299, 311
409	A_4	12	9240	480, 486 (4)	186 (4), 203, 300, 302, 304, 305, 312, 316, 317

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<i>continued from previous page</i>					
Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
410	A_4	12	12320	481, 486 (4)	187 (3), 200, 221, 298 (3)
411	D_{12}	12	36960	469, 468, 467, 482 (3)	193 (2), 194, 198, 207, 308
412	2×6	12	18480	468 (2), 470, 483	195 (2), 210 (2), 211, 308, 313, 315
413	2×6	12	6160	470 (3), 481	204, 221, 307 (3), 309, 315 (3)
414	Q_{12}	12	18480	470, 474 (3)	205, 206 (2), 307, 313, 314
415	D_{12}	12	18480	471, 470, 469, 482 (3)	208 (2), 209, 308, 309, 314
416	D_{12}	12	18480	469 (2), 470, 475 (3)	212, 213 (2), 296, 309, 313
417	12	12	18480	470, 484	214, 296, 314, 315
418	A_4	12	1540	481, 486 (4)	221 (4), 303 (6), 319 (3), 320, 321 (6), 322 (3)
419	11	11	8064	490	189, 323
420	D_{10}	10	22176	472, 489 (5)	80 (2), 81, 184 (2), 185 (4), 186 (2), 187 (2), 325, 326, 327
421	10	10	22176	472, 487	82, 106 (4), 325
422	D_{10}	10	22176	472, 487 (5)	83, 325
423	3^2	9	6160	486 (4)	221 (4), 328 (4), 329
424	Q_8	8	13860	473, 474 (2)	133 (4), 330, 332, 346, 356, 387, 394, 402
425	D_8	8	6930	478 (2), 473	135 (8), 332 (2), 336 (2), 337, 357 (2), 373 (2), 379, 396
426	8	8	13860	473	136 (4), 331, 332, 353, 355, 378, 387, 401
427	2^3	8	330	480 (7)	188 (8), 304 (28), 333, 339 (21), 348 (21)
428	2×4	8	27720	476, 475, 474	217 (4), 356, 400, 402
429	D_8	8	27720	477, 484, 475	296 (2), 297 (2), 338, 340, 364
430	D_8	8	27720	481, 474, 477	298 (4), 299 (2), 303, 307 (2), 338, 340, 342

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<i>continued from previous page</i>					
Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
431	D_8	8	13860	480, 479, 473	300 (2), 301 (4), 336, 339, 341, 359, 370, 390, 393
432	D_8	8	6930	480 (2), 473	302 (4), 330 (2), 331 (2), 337, 339 (2), 347 (2), 370, 398
433	D_8	8	13860	478, 476, 480	305 (2), 336, 337, 347, 348, 372, 393, 395
434	D_8	8	13860	478, 476, 479	306 (4), 336, 341, 372, 377, 379, 390, 393
435	2^3	8	13860	478 (2), 477, 483, 482 (3)	308 (4), 340 (2), 362, 363 (2)
436	2^3	8	9240	475 (3), 482 (3), 481	309 (2), 321, 338 (3), 340 (3), 351
437	2^3	8	1155	478 (6), 479	310 (16), 336 (12), 363 (3), 377 (3), 381 (3), 383 (6)
438	2^3	8	4620	485 (3), 482 (3), 477	311 (4), 338 (6), 362 (3)
439	2^3	8	2310	478 (3), 483 (3), 480	312 (4), 333, 337 (6), 341 (6), 363 (3), 371 (3)
440	D_8	8	13860	475, 474, 483	313 (4), 340 (2), 356 (2), 375
441	2×4	8	27720	482, 484, 474	314 (2), 338, 340, 374
442	D_8	8	4620	483, 484, 481	315 (4), 320, 340 (6), 349 (3)
443	2^3	8	2310	478 (6), 480	316 (4), 333, 336 (6), 347 (6), 372 (3), 373 (3)
444	D_8	8	13860	480, 476, 485	317 (2), 341, 347, 348, 366, 390, 395, 398
445	Q_8	8	2310	473 (3)	318 (4), 346 (6), 350, 353 (6), 370 (3), 396 (3)
446	2^3	8	1155	481 (4), 479 (3)	319 (4), 334, 342 (6), 345 (6), 349 (6), 351, 352 (6), 354, 358 (3), 359 (3), 376 (3), 377 (3)

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<i>continued from previous page</i>					
Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
447	D_8	8	13860	481, 484, 485	322, 338 (2), 349, 352 (2)
448	8	8	13860	473	330, 346, 355, 357, 369, 388, 401
449	D_8	8	13860	475 (2), 473	331, 353, 356, 357, 382, 388, 402
450	2^3	8	3465	479, 477 (4), 480 (2)	335, 339 (2), 342 (2), 359, 360 (2), 361, 362, 363, 364 (2), 365 (2), 366, 367, 368 (2), 372 (2), 380 (2)
451	2×4	8	13860	476, 473, 478	336, 347, 371, 379, 393, 395, 396
452	2×4	8	6930	476, 473, 483	337, 341 (2), 350, 355 (2), 356 (2), 371 (2), 391
453	D_8	8	13860	475, 485, 474	338 (2), 375, 402 (2)
454	2×4	8	6930	473 (2), 480	339, 368 (2), 370 (2), 371, 373, 395 (2), 397 (2)
455	D_8	8	13860	478, 473, 485	341, 347, 373, 381, 390, 395, 396
456	2^3	8	3465	482 (4), 485, 479, 483	341 (4), 349 (2), 351, 362 (2), 363, 374 (2), 375 (2), 386 (2), 391, 392 (2)
457	2×4	8	6930	474 (2), 479	342, 343, 345, 358, 360, 361, 374, 375, 383, 384, 385, 392, 394, 400, 403
458	2×4	8	3465	473 (2), 479	344, 345 (2), 359, 360 (2), 369 (2), 370 (2), 378 (2), 379 (2), 381, 382, 386 (2), 389, 391, 394, 399 (2)
459	2^3	8	6930	482 (4), 480, 478, 485	347 (2), 348, 362 (2), 363, 373, 390 (2), 397 (2)
460	2×4	8	6930	480, 476 (2)	348, 371, 372, 380 (2), 393 (2), 397 (2), 398 (2)

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<i>continued from previous page</i>					
Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
461	2×4	8	6930	479, 484 (2)	349, 352, 354, 364, 365, 367, 374, 383, 384 (2), 385, 386, 389, 399, 403
462	Q_8	8	6930	476 (2), 473	350, 379, 387 (2), 388 (2), 393 (2), 395 (2), 398
463	2^3	8	3465	475 (4), 485 (2), 479	351, 352 (2), 364 (2), 366, 375 (2), 381, 382 (2), 385 (2), 390 (4), 400 (2)
464	2×4	8	3465	476 (2), 479	365 (2), 366, 376 (2), 377, 391, 392 (2), 393 (4), 399 (2), 400 (2), 403 (2)
465	2×4	8	6930	485, 473, 476	390 (2), 391, 395 (2), 396, 398, 401 (2), 402 (2)
466	7	7	21120	490	188, 324, 404
467	S_3	6	36960	486, 489 (3)	184 (2), 185 (4), 186 (2), 187 (2), 298 (4), 299 (2), 300, 301 (2), 302, 303, 329 (2), 405, 406, 411
468	6	6	36960	486, 488	216 (4), 310 (2), 311 (2), 312, 316, 321, 328 (2), 406, 411, 412
469	S_3	6	18480	486, 487 (3)	297 (4), 317 (2), 322, 411 (2), 415, 416 (2)
470	6	6	18480	486, 489	304 (2), 318 (2), 319, 405, 412, 413, 414, 415, 416, 417
471	S_3	6	6160	486, 488 (3)	305 (6), 306 (12), 320, 328 (4), 406 (6), 415 (3)
472	5	5	22176	490	131 (2), 132, 189 (4), 420, 421, 422
473	4	4	6930	489	218 (8), 424 (2), 425, 426 (2), 431 (2), 432, 445, 448 (2), 449 (2), 451 (2), 452, 454 (2), 455 (2), 458, 462, 465

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<i>continued from previous page</i>					
Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
474	4	4	13860	489	220 (8), 326 (8), 414 (4), 424 (2), 428 (2), 430 (2), 440, 441 (2), 453, 457
475	2^2	4	13860	489, 487 (2)	325 (8), 416 (4), 428 (2), 429 (2), 436 (2), 440, 449 (2), 453, 463
476	4	4	6930	489	327 (16), 428 (4), 433 (2), 434 (2), 444 (2), 451 (2), 452, 460 (2), 462 (2), 464, 465
477	2^2	4	4620	489 (3)	405 (12), 408 (4), 429 (6), 430 (6), 435 (3), 438, 450 (3)
478	2^2	4	6930	489, 488 (2)	406 (16), 425 (2), 433 (2), 434 (2), 435 (4), 437, 439, 443 (2), 451 (2), 455 (2), 459
479	2^2	4	1155	489 (3)	407 (16), 431 (12), 434 (12), 437, 446 (3), 450 (3), 456 (3), 457 (6), 458 (3), 461 (6), 463 (3), 464 (3)
480	2^2	4	2310	489 (3)	409 (4), 427, 431 (6), 432 (6), 433 (6), 439, 443, 444 (6), 450 (3), 454 (3), 459 (3), 460 (3)
481	2^2	4	1540	489 (3)	410 (8), 413 (4), 418, 430 (18), 436 (6), 442 (3), 446 (3), 447 (9)
482	2^2	4	13860	489, 487, 488	411 (8), 415 (4), 435 (3), 436 (2), 438, 441 (2), 456, 459 (2)
483	2^2	4	1155	488 (2), 489	412 (16), 435 (12), 439 (6), 440 (12), 442 (4), 452 (6), 456 (3)
484	4	4	4620	489	417 (4), 429 (6), 441 (6), 442, 447 (3), 461 (3)
485	2^2	4	3465	487 (2), 489	438 (4), 444 (4), 447 (4), 453 (4), 455 (4), 456, 459 (2), 463 (2), 465 (2)

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Nr.	Structure	Order	Length	Maximal Subgroups	Minimal Overgroups
486	3	3	6160	490	324 (24), 407 (12), 408 (12), 409 (6), 410 (8), 418, 423 (4), 467 (6), 468 (6), 469 (3), 470 (3), 471
487	2	2	1386	490	323 (64), 421 (16), 422 (80), 469 (40), 475 (20), 482 (10), 485 (5)
488	2	2	330	490	404 (64), 468 (112), 471 (56), 478 (42), 482 (42), 483 (7)
489	2	2	1155	490	420 (96), 467 (96), 470 (16), 473 (6), 474 (12), 475 (12), 476 (6), 477 (12), 478 (6), 479 (3), 480 (6), 481 (4), 482 (12), 483, 484 (4), 485 (3)
490	1	1	1		419 (8064), 466 (21120), 472 (22176), 486 (6160), 487 (1386), 488 (330), 489 (1155)

TABLE 1. Subgroup lattice of $M_{22} : 2$

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