Rank-65687 over GF(16)

January 15, 2021

The equation

The equation of the surface is :

$$X_2^3 + X_0^2X_1 + X_0X_1^2 + X_0X_1X_2 = 0$$

(0, 0, 1, 0, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0)
The point rank of the equation over GF(16) is 554832405

General information

Number of lines	16
Number of points	257
Number of singular points	17
Number of Eckardt points	0
Number of double points	0
Number of single points	256
Number of points off lines	0
Number of Hesse planes	0
Number of axes	0
Type of points on lines	17^{16}
Type of lines on points	16, 1^{256}

Singular Points

The surface has 17 singular points:

0 : $P_3 = \mathbf{P}(0,0,0,1) = \mathbf{P}(0,0,0,1)$
1 : $P_4 = \mathbf{P}(1,1,1,1) = \mathbf{P}(1,1,1,1)$
2 : $P_{36} = \mathbf{P}(1,1,1,0) = \mathbf{P}(1,1,1,0)$
3 : $P_{819} = \mathbf{P}(\delta,\delta,\delta,1) = \mathbf{P}(2,2,2,1)$
4 : $P_{1092} = \mathbf{P}(\delta^{12},\delta^{12},\delta^{12},1) = \mathbf{P}(3,3,3,1)$
5 : $P_{1365} = \mathbf{P}(\delta^2,\delta^2,\delta^2,1) = \mathbf{P}(4,4,4,1)$
6 : $P_{1638} = \mathbf{P}(\delta^9,\delta^9,\delta^9,1) = \mathbf{P}(5,5,5,1)$
7 : $P_{1911} = \mathbf{P}(\delta^{13},\delta^{13},\delta^{13},1) = \mathbf{P}(6,6,6,1)$
8 : $P_{2184} = \mathbf{P}(\delta^7,\delta^7,\delta^7,1) = \mathbf{P}(7,7,7,1)$
9 : $P_{2457} = \mathbf{P}(\delta^3,\delta^3,\delta^3,1) = \mathbf{P}(8,8,8,1)$
10 : $P_{2730} = \mathbf{P}(\delta^4,\delta^4,\delta^4,1) = \mathbf{P}(9,9,9,1)$
11 : $P_{3003} = \mathbf{P}(\delta^{10},\delta^{10},\delta^{10},1) = \mathbf{P}(10,10,10,1)$
12 : $P_{3276} = \mathbf{P}(\delta^5,\delta^5,\delta^5,1) = \mathbf{P}(11,11,11,1)$
13 : $P_{3549} = \mathbf{P}(\delta^{14},\delta^{14},\delta^{14},1) = \mathbf{P}(12,12,12,1)$
14 : $P_{3822} = \mathbf{P}(\delta^{11},\delta^{11},\delta^{11},1) = \mathbf{P}(13,13,13,1)$
15 : $P_{4095} = \mathbf{P}(\delta^8,\delta^8,\delta^8,1) = \mathbf{P}(14,14,14,1)$
16 : $P_{4368} = \mathbf{P}(\delta^6,\delta^6,\delta^6,1) = \mathbf{P}(15,15,15,1)$

The 16 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \left[\begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{272} = \left[\begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{272} = \mathbf{Pl}(0,0,0,0,1,0)_{289}$$

$$\ell_1 = \left[\begin{array}{cccc} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{69904} = \left[\begin{array}{cccc} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{69904} = \mathbf{Pl}(0,0,0,1,0,0)_{33}$$

$$\ell_2 = \left[\begin{array}{cccc} 1 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{545} = \left[\begin{array}{cccc} 1 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{545} = \mathbf{Pl}(0,0,0,1,1,0)_{785}$$

$$\ell_3 = \left[\begin{array}{cccc} 1 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{4913} = \left[\begin{array}{cccc} 1 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{4913} = \mathbf{Pl}(0,1,0,1,1,0)_{801}$$

$$\ell_4 = \left[\begin{array}{cccc} 1 & \delta^{12} & \delta^{11} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{57875} = \left[\begin{array}{cccc} 1 & 3 & 13 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{57875} = \mathbf{Pl}(0,13,0,3,1,0)_{875}$$

$$\ell_5 = \left[\begin{array}{cccc} 1 & \delta^{6} & \delta^{5} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{52415} = \left[\begin{array}{cccc} 1 & 15 & 11 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{52415} = \mathbf{Pl}(0,11,0,15,1,0)_{1245}$$

$$\ell_6 = \left[\begin{array}{cccc} 1 & \delta^{12} & \delta^{10} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{44771} = \left[\begin{array}{cccc} 1 & 3 & 10 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{44771} = \mathbf{Pl}(0,10,0,3,1,0)_{872}$$

$$\ell_7 = \left[\begin{array}{cccc} 1 & \delta^{9} & \delta^{7} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{32213} = \left[\begin{array}{cccc} 1 & 5 & 7 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{32213} = \mathbf{Pl}(0,7,0,5,1,0)_{931}$$

$$\ell_8 = \left[\begin{array}{cccc} 1 & \delta^{3} & \delta^{14} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{54872} = \left[\begin{array}{cccc} 1 & 8 & 12 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{54872} = \mathbf{Pl}(0,12,0,8,1,0)_{1029}$$

$$\ell_9 = \left[\begin{array}{cccc} 1 & \delta^{9} & \delta^{5} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{49685} = \left[\begin{array}{cccc} 1 & 5 & 11 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{49685} = \mathbf{Pl}(0,11,0,5,1,0)_{935}$$

$$\ell_{10} = \left[\begin{array}{cccc} 1 & \delta^{9} & \delta^{14} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{54053} = \left[\begin{array}{cccc} 1 & 5 & 12 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{54053} = \mathbf{Pl}(0,12,0,5,1,0)_{936}$$

$$\ell_{11} = \left[\begin{array}{cccc} 1 & \delta^{6} & \delta^{11} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{61151} = \left[\begin{array}{cccc} 1 & 15 & 13 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{61151} = \mathbf{Pl}(0,13,0,15,1,0)_{1247}$$

$$\ell_{12} = \left[\begin{array}{cccc} 1 & \delta^{3} & \delta^{13} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{28664} = \left[\begin{array}{cccc} 1 & 8 & 6 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{28664} = \mathbf{Pl}(0,6,0,8,1,0)_{1023}$$

$$\ell_{13} = \left[\begin{array}{cccc} 1 & \delta^{12} & \delta^{7} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{31667} = \left[\begin{array}{cccc} 1 & 3 & 7 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{31667} = \mathbf{Pl}(0,7,0,3,1,0)_{869}$$

$$\ell_{14} = \left[\begin{array}{cccc} 1 & \delta^{6} & \delta^{13} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{30575} = \left[\begin{array}{cccc} 1 & 15 & 6 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{30575} = \mathbf{Pl}(0,6,0,15,1,0)_{1240}$$

$$\ell_{15} = \left[\begin{array}{cccc} 1 & \delta^{3} & \delta^{10} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{46136} = \left[\begin{array}{cccc} 1 & 8 & 10 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{46136} = \mathbf{Pl}(0,10,0,8,1,0)_{1027}$$

Rank of lines: (272, 69904, 545, 4913, 57875, 52415, 44771, 32213, 54872, 49685, 54053, 61151, 28664, 31667, 30575, 46136)
Rank of points on Klein quadric: (289, 33, 785, 801, 875, 1245, 872, 931, 1029, 935, 936, 1247, 1023, 869, 1240, 1027)

Eckardt Points

The surface has 0 Eckardt points:

Double Points

The surface has 0 Double points:
The double points on the surface are:

Single Points

The surface has 256 single points:
The single points on the surface are:

0 : $P_0 = (1,0,0,0)$ lies on line ℓ_0
1 : $P_1 = (0,1,0,0)$ lies on line ℓ_1
2 : $P_4 = (1,1,1,1)$ lies on line ℓ_3
3 : $P_5 = (1,1,0,0)$ lies on line ℓ_2
4 : $P_{36} = (1,1,1,0)$ lies on line ℓ_3
5 : $P_{60} = (9,2,1,0)$ lies on line ℓ_4
6 : $P_{61} = (10,2,1,0)$ lies on line ℓ_5
7 : $P_{94} = (11,4,1,0)$ lies on line ℓ_6
8 : $P_{97} = (14,4,1,0)$ lies on line ℓ_7
9 : $P_{165} = (2,9,1,0)$ lies on line ℓ_8
10 : $P_{173} = (10,9,1,0)$ lies on line ℓ_9
11 : $P_{181} = (2,10,1,0)$ lies on line ℓ_{10}
12 : $P_{188} = (9,10,1,0)$ lies on line ℓ_{11}
13 : $P_{199} = (4,11,1,0)$ lies on line ℓ_{12}
14 : $P_{209} = (14,11,1,0)$ lies on line ℓ_{13}
15 : $P_{247} = (4,14,1,0)$ lies on line ℓ_{14}
16 : $P_{254} = (11,14,1,0)$ lies on line ℓ_{15}
17 : $P_{275} = (1,0,0,1)$ lies on line ℓ_0
18 : $P_{276} = (2,0,0,1)$ lies on line ℓ_0
19 : $P_{277} = (3,0,0,1)$ lies on line ℓ_0
20 : $P_{278} = (4,0,0,1)$ lies on line ℓ_0
21 : $P_{279} = (5,0,0,1)$ lies on line ℓ_0
22 : $P_{280} = (6,0,0,1)$ lies on line ℓ_0
23 : $P_{281} = (7,0,0,1)$ lies on line ℓ_0
24 : $P_{282} = (8,0,0,1)$ lies on line ℓ_0
25 : $P_{283} = (9,0,0,1)$ lies on line ℓ_0
26 : $P_{284} = (10,0,0,1)$ lies on line ℓ_0
27 : $P_{285} = (11,0,0,1)$ lies on line ℓ_0
28 : $P_{286} = (12,0,0,1)$ lies on line ℓ_0
29 : $P_{287} = (13,0,0,1)$ lies on line ℓ_0
30 : $P_{288} = (14,0,0,1)$ lies on line ℓ_0
31 : $P_{289} = (15,0,0,1)$ lies on line ℓ_0
32 : $P_{290} = (0,1,0,1)$ lies on line ℓ_1
33 : $P_{291} = (1,1,0,1)$ lies on line ℓ_2
34 : $P_{306} = (0,2,0,1)$ lies on line ℓ_1
35 : $P_{308} = (2,2,0,1)$ lies on line ℓ_2
36 : $P_{322} = (0,3,0,1)$ lies on line ℓ_1
37 : $P_{325} = (3,3,0,1)$ lies on line ℓ_2
38 : $P_{338} = (0,4,0,1)$ lies on line ℓ_1
39 : $P_{342} = (4,4,0,1)$ lies on line ℓ_2
40 : $P_{354} = (0,5,0,1)$ lies on line ℓ_1
41 : $P_{359} = (5,5,0,1)$ lies on line ℓ_2
42 : $P_{370} = (0,6,0,1)$ lies on line ℓ_1
43 : $P_{376} = (6,6,0,1)$ lies on line ℓ_2
44 : $P_{386} = (0,7,0,1)$ lies on line ℓ_1
45 : $P_{393} = (7,7,0,1)$ lies on line ℓ_2
46 : $P_{402} = (0,8,0,1)$ lies on line ℓ_1
47 : $P_{410} = (8,8,0,1)$ lies on line ℓ_2
48 : $P_{418} = (0,9,0,1)$ lies on line ℓ_1
49 : $P_{427} = (9,9,0,1)$ lies on line ℓ_2
50 : $P_{434} = (0,10,0,1)$ lies on line ℓ_1
51 : $P_{444} = (10,10,0,1)$ lies on line ℓ_2
52 : $P_{450} = (0,11,0,1)$ lies on line ℓ_1
53 : $P_{461} = (11,11,0,1)$ lies on line ℓ_2
54 : $P_{466} = (0,12,0,1)$ lies on line ℓ_1
55 : $P_{478} = (12,12,0,1)$ lies on line ℓ_2
56 : $P_{482} = (0,13,0,1)$ lies on line ℓ_1
57 : $P_{495} = (13,13,0,1)$ lies on line ℓ_2
58 : $P_{498} = (0,14,0,1)$ lies on line ℓ_1
59 : $P_{512} = (14,14,0,1)$ lies on line ℓ_2
60 : $P_{514} = (0,15,0,1)$ lies on line ℓ_1
61 : $P_{529} = (15,15,0,1)$ lies on line ℓ_2
62 : $P_{570} = (9,2,1,1)$ lies on line ℓ_4
63 : $P_{571} = (10,2,1,1)$ lies on line ℓ_5
64 : $P_{604} = (11,4,1,1)$ lies on line ℓ_6
65 : $P_{607} = (14,4,1,1)$ lies on line ℓ_7
66 : $P_{675} = (2,9,1,1)$ lies on line ℓ_8
67 : $P_{683} = (10,9,1,1)$ lies on line ℓ_9
68 : $P_{691} = (2,10,1,1)$ lies on line ℓ_{10}
69 : $P_{698} = (9,10,1,1)$ lies on line ℓ_{11}
70 : $P_{709} = (4,11,1,1)$ lies on line ℓ_{12}
71 : $P_{719} = (14,11,1,1)$ lies on line ℓ_{13}
72 : $P_{757} = (4,14,1,1)$ lies on line ℓ_{14}
73 : $P_{764} = (11,14,1,1)$ lies on line ℓ_{15}
74 : $P_{819} = (2,2,2,1)$ lies on line ℓ_3
75 : $P_{860} = (11,4,2,1)$ lies on line ℓ_4
76 : $P_{862} = (13,4,2,1)$ lies on line ℓ_5
77 : $P_{873} = (8,5,2,1)$ lies on line ℓ_{14}
78 : $P_{880} = (15,5,2,1)$ lies on line ℓ_{15}
79 : $P_{918} = (5,8,2,1)$ lies on line ℓ_7
80 : $P_{928} = (15,8,2,1)$ lies on line ℓ_6
81 : $P_{965} = (4,11,2,1)$ lies on line ℓ_8

82 : $P_{974} = (13, 11, 2, 1)$ lies on line ℓ_9
83 : $P_{997} = (4, 13, 2, 1)$ lies on line ℓ_{10}
84 : $P_{1004} = (11, 13, 2, 1)$ lies on line ℓ_{11}
85 : $P_{1030} = (5, 15, 2, 1)$ lies on line ℓ_{13}
86 : $P_{1033} = (8, 15, 2, 1)$ lies on line ℓ_{12}
87 : $P_{1079} = (6, 2, 3, 1)$ lies on line ℓ_8
88 : $P_{1080} = (7, 2, 3, 1)$ lies on line ℓ_9
89 : $P_{1092} = (3, 3, 3, 1)$ lies on line ℓ_3
90 : $P_{1116} = (11, 4, 3, 1)$ lies on line ℓ_{13}
91 : $P_{1117} = (12, 4, 3, 1)$ lies on line ℓ_{12}
92 : $P_{1139} = (2, 6, 3, 1)$ lies on line ℓ_4
93 : $P_{1144} = (7, 6, 3, 1)$ lies on line ℓ_5
94 : $P_{1155} = (2, 7, 3, 1)$ lies on line ℓ_{11}
95 : $P_{1159} = (6, 7, 3, 1)$ lies on line ℓ_{10}
96 : $P_{1221} = (4, 11, 3, 1)$ lies on line ℓ_{15}
97 : $P_{1229} = (12, 11, 3, 1)$ lies on line ℓ_{14}
98 : $P_{1237} = (4, 12, 3, 1)$ lies on line ℓ_6
99 : $P_{1244} = (11, 12, 3, 1)$ lies on line ℓ_7
100 : $P_{1353} = (8, 3, 4, 1)$ lies on line ℓ_{10}
101 : $P_{1360} = (15, 3, 4, 1)$ lies on line ℓ_{11}
102 : $P_{1365} = (4, 4, 4, 1)$ lies on line ℓ_3
103 : $P_{1418} = (9, 7, 4, 1)$ lies on line ℓ_{12}
104 : $P_{1419} = (10, 7, 4, 1)$ lies on line ℓ_{13}
105 : $P_{1428} = (3, 8, 4, 1)$ lies on line ℓ_5
106 : $P_{1440} = (15, 8, 4, 1)$ lies on line ℓ_4
107 : $P_{1448} = (7, 9, 4, 1)$ lies on line ℓ_6
108 : $P_{1451} = (10, 9, 4, 1)$ lies on line ℓ_7
109 : $P_{1464} = (7, 10, 4, 1)$ lies on line ℓ_{15}
110 : $P_{1466} = (9, 10, 4, 1)$ lies on line ℓ_{14}
111 : $P_{1540} = (3, 15, 4, 1)$ lies on line ℓ_9
112 : $P_{1545} = (8, 15, 4, 1)$ lies on line ℓ_8
113 : $P_{1629} = (12, 4, 5, 1)$ lies on line ℓ_{15}
114 : $P_{1630} = (13, 4, 5, 1)$ lies on line ℓ_{14}
115 : $P_{1638} = (5, 5, 5, 1)$ lies on line ℓ_3
116 : $P_{1658} = (9, 6, 5, 1)$ lies on line ℓ_9
117 : $P_{1659} = (10, 6, 5, 1)$ lies on line ℓ_8
118 : $P_{1703} = (6, 9, 5, 1)$ lies on line ℓ_{11}
119 : $P_{1707} = (10, 9, 5, 1)$ lies on line ℓ_{10}
120 : $P_{1719} = (6, 10, 5, 1)$ lies on line ℓ_4
121 : $P_{1722} = (9, 10, 5, 1)$ lies on line ℓ_5
122 : $P_{1749} = (4, 12, 5, 1)$ lies on line ℓ_{13}
123 : $P_{1758} = (13, 12, 5, 1)$ lies on line ℓ_{12}
124 : $P_{1765} = (4, 13, 5, 1)$ lies on line ℓ_7
125 : $P_{1773} = (12, 13, 5, 1)$ lies on line ℓ_6
126 : $P_{1833} = (8, 1, 6, 1)$ lies on line ℓ_6
127 : $P_{1840} = (15, 1, 6, 1)$ lies on line ℓ_7
128 : $P_{1885} = (12, 4, 6, 1)$ lies on line ℓ_8
129 : $P_{1887} = (14, 4, 6, 1)$ lies on line ℓ_9
130 : $P_{1911} = (6, 6, 6, 1)$ lies on line ℓ_3
131 : $P_{1938} = (1, 8, 6, 1)$ lies on line ℓ_{12}
132 : $P_{1952} = (15, 8, 6, 1)$ lies on line ℓ_{13}
133 : $P_{2005} = (4, 12, 6, 1)$ lies on line ℓ_4
134 : $P_{2015} = (14, 12, 6, 1)$ lies on line ℓ_5
135 : $P_{2037} = (4, 14, 6, 1)$ lies on line ℓ_{11}
136 : $P_{2045} = (12, 14, 6, 1)$ lies on line ℓ_{10}
137 : $P_{2050} = (1, 15, 6, 1)$ lies on line ℓ_{14}
138 : $P_{2057} = (8, 15, 6, 1)$ lies on line ℓ_{15}
139 : $P_{2084} = (3, 1, 7, 1)$ lies on line ℓ_{15}
140 : $P_{2086} = (5, 1, 7, 1)$ lies on line ℓ_{14}
141 : $P_{2114} = (1, 3, 7, 1)$ lies on line ℓ_{13}
142 : $P_{2118} = (5, 3, 7, 1)$ lies on line ℓ_{12}
143 : $P_{2142} = (13, 4, 7, 1)$ lies on line ℓ_{11}
144 : $P_{2143} = (14, 4, 7, 1)$ lies on line ℓ_{10}
145 : $P_{2146} = (1, 5, 7, 1)$ lies on line ℓ_7
146 : $P_{2148} = (3, 5, 7, 1)$ lies on line ℓ_6
147 : $P_{2184} = (7, 7, 7, 1)$ lies on line ℓ_3
148 : $P_{2277} = (4, 13, 7, 1)$ lies on line ℓ_9
149 : $P_{2287} = (14, 13, 7, 1)$ lies on line ℓ_8
150 : $P_{2293} = (4, 14, 7, 1)$ lies on line ℓ_5
151 : $P_{2302} = (13, 14, 7, 1)$ lies on line ℓ_4
152 : $P_{2424} = (7, 6, 8, 1)$ lies on line ℓ_{11}
153 : $P_{2426} = (9, 6, 8, 1)$ lies on line ℓ_{10}
154 : $P_{2439} = (6, 7, 8, 1)$ lies on line ℓ_9
155 : $P_{2442} = (9, 7, 8, 1)$ lies on line ℓ_8
156 : $P_{2457} = (8, 8, 8, 1)$ lies on line ℓ_3
157 : $P_{2471} = (6, 9, 8, 1)$ lies on line ℓ_5
158 : $P_{2472} = (7, 9, 8, 1)$ lies on line ℓ_4
159 : $P_{2510} = (13, 11, 8, 1)$ lies on line ℓ_7
160 : $P_{2511} = (14, 11, 8, 1)$ lies on line ℓ_6
161 : $P_{2540} = (11, 13, 8, 1)$ lies on line ℓ_{14}
162 : $P_{2543} = (14, 13, 8, 1)$ lies on line ℓ_{15}
163 : $P_{2556} = (11, 14, 8, 1)$ lies on line ℓ_{12}
164 : $P_{2558} = (13, 14, 8, 1)$ lies on line ℓ_{13}
165 : $P_{2630} = (5, 3, 9, 1)$ lies on line ℓ_{15}
166 : $P_{2640} = (15, 3, 9, 1)$ lies on line ℓ_{14}
167 : $P_{2660} = (3, 5, 9, 1)$ lies on line ℓ_{13}
168 : $P_{2672} = (15, 5, 9, 1)$ lies on line ℓ_{12}
169 : $P_{2730} = (9, 9, 9, 1)$ lies on line ℓ_3
170 : $P_{2765} = (12, 11, 9, 1)$ lies on line ℓ_5
171 : $P_{2767} = (14, 11, 9, 1)$ lies on line ℓ_4
172 : $P_{2780} = (11, 12, 9, 1)$ lies on line ℓ_{10}
173 : $P_{2783} = (14, 12, 9, 1)$ lies on line ℓ_{11}
174 : $P_{2812} = (11, 14, 9, 1)$ lies on line ℓ_8
175 : $P_{2813} = (12, 14, 9, 1)$ lies on line ℓ_9
176 : $P_{2820} = (3, 15, 9, 1)$ lies on line ℓ_7
177 : $P_{2822} = (5, 15, 9, 1)$ lies on line ℓ_6
178 : $P_{2852} = (3, 1, 10, 1)$ lies on line ℓ_{12}
179 : $P_{2857} = (8, 1, 10, 1)$ lies on line ℓ_{13}
180 : $P_{2882} = (1, 3, 10, 1)$ lies on line ℓ_6
181 : $P_{2889} = (8, 3, 10, 1)$ lies on line ℓ_7
182 : $P_{2962} = (1, 8, 10, 1)$ lies on line ℓ_{15}
183 : $P_{2964} = (3, 8, 10, 1)$ lies on line ℓ_{14}
184 : $P_{3003} = (10, 10, 10, 1)$ lies on line ℓ_3
185 : $P_{3021} = (12, 11, 10, 1)$ lies on line ℓ_{11}
186 : $P_{3022} = (13, 11, 10, 1)$ lies on line ℓ_{10}
187 : $P_{3036} = (11, 12, 10, 1)$ lies on line ℓ_9
188 : $P_{3038} = (13, 12, 10, 1)$ lies on line ℓ_8
189 : $P_{3052} = (11, 13, 10, 1)$ lies on line ℓ_5

190 : $P_{3053} = (12, 13, 10, 1)$ lies on line ℓ_4
191 : $P_{3110} = (5, 1, 11, 1)$ lies on line ℓ_{11}
192 : $P_{3120} = (15, 1, 11, 1)$ lies on line ℓ_{10}
193 : $P_{3170} = (1, 5, 11, 1)$ lies on line ℓ_9
194 : $P_{3184} = (15, 5, 11, 1)$ lies on line ℓ_8
195 : $P_{3192} = (7, 6, 11, 1)$ lies on line ℓ_{14}
196 : $P_{3195} = (10, 6, 11, 1)$ lies on line ℓ_{15}
197 : $P_{3207} = (6, 7, 11, 1)$ lies on line ℓ_7
198 : $P_{3211} = (10, 7, 11, 1)$ lies on line ℓ_6
199 : $P_{3255} = (6, 10, 11, 1)$ lies on line ℓ_{13}
200 : $P_{3256} = (7, 10, 11, 1)$ lies on line ℓ_{12}
201 : $P_{3276} = (11, 11, 11, 1)$ lies on line ℓ_3
202 : $P_{3330} = (1, 15, 11, 1)$ lies on line ℓ_5
203 : $P_{3334} = (5, 15, 11, 1)$ lies on line ℓ_4
204 : $P_{3366} = (5, 1, 12, 1)$ lies on line ℓ_5
205 : $P_{3369} = (8, 1, 12, 1)$ lies on line ℓ_4
206 : $P_{3384} = (7, 2, 12, 1)$ lies on line ℓ_7
207 : $P_{3386} = (9, 2, 12, 1)$ lies on line ℓ_6
208 : $P_{3426} = (1, 5, 12, 1)$ lies on line ℓ_{10}
209 : $P_{3433} = (8, 5, 12, 1)$ lies on line ℓ_{11}
210 : $P_{3459} = (2, 7, 12, 1)$ lies on line ℓ_{14}
211 : $P_{3466} = (9, 7, 12, 1)$ lies on line ℓ_{15}
212 : $P_{3474} = (1, 8, 12, 1)$ lies on line ℓ_8
213 : $P_{3478} = (5, 8, 12, 1)$ lies on line ℓ_9
214 : $P_{3491} = (2, 9, 12, 1)$ lies on line ℓ_{12}
215 : $P_{3496} = (7, 9, 12, 1)$ lies on line ℓ_{13}
216 : $P_{3549} = (12, 12, 12, 1)$ lies on line ℓ_3
217 : $P_{3620} = (3, 1, 13, 1)$ lies on line ℓ_8
218 : $P_{3632} = (15, 1, 13, 1)$ lies on line ℓ_9
219 : $P_{3639} = (6, 2, 13, 1)$ lies on line ℓ_{12}
220 : $P_{3642} = (9, 2, 13, 1)$ lies on line ℓ_{13}
221 : $P_{3650} = (1, 3, 13, 1)$ lies on line ℓ_4
222 : $P_{3664} = (15, 3, 13, 1)$ lies on line ℓ_5
223 : $P_{3699} = (2, 6, 13, 1)$ lies on line ℓ_6
224 : $P_{3706} = (9, 6, 13, 1)$ lies on line ℓ_7
225 : $P_{3747} = (2, 9, 13, 1)$ lies on line ℓ_{15}
226 : $P_{3751} = (6, 9, 13, 1)$ lies on line ℓ_{14}
227 : $P_{3822} = (13, 13, 13, 1)$ lies on line ℓ_3
228 : $P_{3842} = (1, 15, 13, 1)$ lies on line ℓ_{11}
229 : $P_{3844} = (3, 15, 13, 1)$ lies on line ℓ_{10}
230 : $P_{3895} = (6, 2, 14, 1)$ lies on line ℓ_{15}
231 : $P_{3899} = (10, 2, 14, 1)$ lies on line ℓ_{14}
232 : $P_{3910} = (5, 3, 14, 1)$ lies on line ℓ_8
233 : $P_{3913} = (8, 3, 14, 1)$ lies on line ℓ_9
234 : $P_{3940} = (3, 5, 14, 1)$ lies on line ℓ_4
235 : $P_{3945} = (8, 5, 14, 1)$ lies on line ℓ_5
236 : $P_{3955} = (2, 6, 14, 1)$ lies on line ℓ_{13}
237 : $P_{3963} = (10, 6, 14, 1)$ lies on line ℓ_{12}
238 : $P_{3988} = (3, 8, 14, 1)$ lies on line ℓ_{11}
239 : $P_{3990} = (5, 8, 14, 1)$ lies on line ℓ_{10}
240 : $P_{4019} = (2, 10, 14, 1)$ lies on line ℓ_7
241 : $P_{4023} = (6, 10, 14, 1)$ lies on line ℓ_6
242 : $P_{4095} = (14, 14, 14, 1)$ lies on line ℓ_3
243 : $P_{4152} = (7, 2, 15, 1)$ lies on line ℓ_{10}
244 : $P_{4155} = (10, 2, 15, 1)$ lies on line ℓ_{11}
245 : $P_{4227} = (2, 7, 15, 1)$ lies on line ℓ_5
246 : $P_{4235} = (10, 7, 15, 1)$ lies on line ℓ_4
247 : $P_{4275} = (2, 10, 15, 1)$ lies on line ℓ_9
248 : $P_{4280} = (7, 10, 15, 1)$ lies on line ℓ_8
249 : $P_{4318} = (13, 12, 15, 1)$ lies on line ℓ_{15}
250 : $P_{4319} = (14, 12, 15, 1)$ lies on line ℓ_{14}
251 : $P_{4333} = (12, 13, 15, 1)$ lies on line ℓ_{13}
252 : $P_{4335} = (14, 13, 15, 1)$ lies on line ℓ_{12}
253 : $P_{4349} = (12, 14, 15, 1)$ lies on line ℓ_7
254 : $P_{4350} = (13, 14, 15, 1)$ lies on line ℓ_6
255 : $P_{4368} = (15, 15, 15, 1)$ lies on line ℓ_3

The single points on the surface are:

Points on surface but on no line

The surface has 0 points not on any line:
The points on the surface but not on lines are:

Line Intersection Graph

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1
3	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1
4	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1
11	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1
12	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1
13	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1
14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0

Neighbor sets in the line intersection graph:
Line 0 intersects

Line	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 1 intersects

Line	ℓ_0	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 2 intersects

Line	ℓ_0	ℓ_1	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 3 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 4 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 5 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 6 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 7 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 8 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 9 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 10 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 11 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 12 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{13}	ℓ_{14}	ℓ_{15}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 13 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{14}	ℓ_{15}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 14 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{15}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 15 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

The surface has 257 points:
The points on the surface are:

$0: P_0 = (1,0,0,0)$
$1: P_1 = (0,1,0,0)$
$2: P_3 = (0,0,0,1)$
$3: P_4 = (1,1,1,1)$
$4: P_5 = (1,1,0,0)$
$5: P_{36} = (1,1,1,0)$
$6: P_{60} = (9,2,1,0)$
$7: P_{61} = (10,2,1,0)$
$8: P_{94} = (11,4,1,0)$
$9: P_{97} = (14,4,1,0)$
$10: P_{165} = (2,9,1,0)$
$11: P_{173} = (10,9,1,0)$
$12: P_{181} = (2,10,1,0)$
$13: P_{188} = (9,10,1,0)$
$14: P_{199} = (4,11,1,0)$
$15: P_{209} = (14,11,1,0)$
$16: P_{247} = (4,14,1,0)$
$17: P_{254} = (11,14,1,0)$
$18: P_{275} = (1,0,0,1)$
$19: P_{276} = (2,0,0,1)$
$20: P_{277} = (3,0,0,1)$
$21: P_{278} = (4,0,0,1)$
$22: P_{279} = (5,0,0,1)$
$23: P_{280} = (6,0,0,1)$
$24: P_{281} = (7,0,0,1)$
$25: P_{282} = (8,0,0,1)$
$26: P_{283} = (9,0,0,1)$
$27: P_{284} = (10,0,0,1)$
$28: P_{285} = (11,0,0,1)$
$29: P_{286} = (12,0,0,1)$
$30: P_{287} = (13,0,0,1)$
$31: P_{288} = (14,0,0,1)$
$32: P_{289} = (15,0,0,1)$
$33: P_{290} = (0,1,0,1)$
$34: P_{291} = (1,1,0,1)$
$35: P_{306} = (0,2,0,1)$
$36: P_{308} = (2,2,0,1)$
$37: P_{322} = (0,3,0,1)$
$38: P_{325} = (3,3,0,1)$
$39: P_{338} = (0,4,0,1)$
$40: P_{342} = (4,4,0,1)$
$41: P_{354} = (0,5,0,1)$

42 : $P_{359} = (5, 5, 0, 1)$
43 : $P_{370} = (0, 6, 0, 1)$
44 : $P_{376} = (6, 6, 0, 1)$
45 : $P_{386} = (0, 7, 0, 1)$
46 : $P_{393} = (7, 7, 0, 1)$
47 : $P_{402} = (0, 8, 0, 1)$
48 : $P_{410} = (8, 8, 0, 1)$
49 : $P_{418} = (0, 9, 0, 1)$
50 : $P_{427} = (9, 9, 0, 1)$
51 : $P_{434} = (0, 10, 0, 1)$
52 : $P_{444} = (10, 10, 0, 1)$
53 : $P_{450} = (0, 11, 0, 1)$
54 : $P_{461} = (11, 11, 0, 1)$
55 : $P_{466} = (0, 12, 0, 1)$
56 : $P_{478} = (12, 12, 0, 1)$
57 : $P_{482} = (0, 13, 0, 1)$
58 : $P_{495} = (13, 13, 0, 1)$
59 : $P_{498} = (0, 14, 0, 1)$
60 : $P_{512} = (14, 14, 0, 1)$
61 : $P_{514} = (0, 15, 0, 1)$
62 : $P_{529} = (15, 15, 0, 1)$
63 : $P_{570} = (9, 2, 1, 1)$
64 : $P_{571} = (10, 2, 1, 1)$
65 : $P_{604} = (11, 4, 1, 1)$
66 : $P_{607} = (14, 4, 1, 1)$
67 : $P_{675} = (2, 9, 1, 1)$
68 : $P_{683} = (10, 9, 1, 1)$
69 : $P_{691} = (2, 10, 1, 1)$
70 : $P_{698} = (9, 10, 1, 1)$
71 : $P_{709} = (4, 11, 1, 1)$
72 : $P_{719} = (14, 11, 1, 1)$
73 : $P_{757} = (4, 14, 1, 1)$
74 : $P_{764} = (11, 14, 1, 1)$
75 : $P_{819} = (2, 2, 2, 1)$
76 : $P_{860} = (11, 4, 2, 1)$
77 : $P_{862} = (13, 4, 2, 1)$
78 : $P_{873} = (8, 5, 2, 1)$
79 : $P_{880} = (15, 5, 2, 1)$
80 : $P_{918} = (5, 8, 2, 1)$
81 : $P_{928} = (15, 8, 2, 1)$
82 : $P_{965} = (4, 11, 2, 1)$
83 : $P_{974} = (13, 11, 2, 1)$
84 : $P_{997} = (4, 13, 2, 1)$
85 : $P_{1004} = (11, 13, 2, 1)$
86 : $P_{1030} = (5, 15, 2, 1)$
87 : $P_{1033} = (8, 15, 2, 1)$
88 : $P_{1079} = (6, 2, 3, 1)$
89 : $P_{1080} = (7, 2, 3, 1)$
90 : $P_{1092} = (3, 3, 3, 1)$
91 : $P_{1116} = (11, 4, 3, 1)$
92 : $P_{1117} = (12, 4, 3, 1)$
93 : $P_{1139} = (2, 6, 3, 1)$
94 : $P_{1144} = (7, 6, 3, 1)$
95 : $P_{1155} = (2, 7, 3, 1)$
96 : $P_{1159} = (6, 7, 3, 1)$
97 : $P_{1221} = (4, 11, 3, 1)$
98 : $P_{1229} = (12, 11, 3, 1)$
99 : $P_{1237} = (4, 12, 3, 1)$
100 : $P_{1244} = (11, 12, 3, 1)$
101 : $P_{1353} = (8, 3, 4, 1)$
102 : $P_{1360} = (15, 3, 4, 1)$
103 : $P_{1365} = (4, 4, 4, 1)$
104 : $P_{1418} = (9, 7, 4, 1)$
105 : $P_{1419} = (10, 7, 4, 1)$
106 : $P_{1428} = (3, 8, 4, 1)$
107 : $P_{1440} = (15, 8, 4, 1)$
108 : $P_{1448} = (7, 9, 4, 1)$
109 : $P_{1451} = (10, 9, 4, 1)$
110 : $P_{1464} = (7, 10, 4, 1)$
111 : $P_{1466} = (9, 10, 4, 1)$
112 : $P_{1540} = (3, 15, 4, 1)$
113 : $P_{1545} = (8, 15, 4, 1)$
114 : $P_{1629} = (12, 4, 5, 1)$
115 : $P_{1630} = (13, 4, 5, 1)$
116 : $P_{1638} = (5, 5, 5, 1)$
117 : $P_{1658} = (9, 6, 5, 1)$
118 : $P_{1659} = (10, 6, 5, 1)$
119 : $P_{1703} = (6, 9, 5, 1)$
120 : $P_{1707} = (10, 9, 5, 1)$
121 : $P_{1719} = (6, 10, 5, 1)$
122 : $P_{1722} = (9, 10, 5, 1)$
123 : $P_{1749} = (4, 12, 5, 1)$
124 : $P_{1758} = (13, 12, 5, 1)$
125 : $P_{1765} = (4, 13, 5, 1)$
126 : $P_{1773} = (12, 13, 5, 1)$
127 : $P_{1833} = (8, 1, 6, 1)$
128 : $P_{1840} = (15, 1, 6, 1)$
129 : $P_{1885} = (12, 4, 6, 1)$
130 : $P_{1887} = (14, 4, 6, 1)$
131 : $P_{1911} = (6, 6, 6, 1)$
132 : $P_{1938} = (1, 8, 6, 1)$
133 : $P_{1952} = (15, 8, 6, 1)$
134 : $P_{2005} = (4, 12, 6, 1)$
135 : $P_{2015} = (14, 12, 6, 1)$
136 : $P_{2037} = (4, 14, 6, 1)$
137 : $P_{2045} = (12, 14, 6, 1)$
138 : $P_{2050} = (1, 15, 6, 1)$
139 : $P_{2057} = (8, 15, 6, 1)$
140 : $P_{2084} = (3, 1, 7, 1)$
141 : $P_{2086} = (5, 1, 7, 1)$
142 : $P_{2114} = (1, 3, 7, 1)$
143 : $P_{2118} = (5, 3, 7, 1)$
144 : $P_{2142} = (13, 4, 7, 1)$
145 : $P_{2143} = (14, 4, 7, 1)$
146 : $P_{2146} = (1, 5, 7, 1)$
147 : $P_{2148} = (3, 5, 7, 1)$
148 : $P_{2184} = (7, 7, 7, 1)$
149 : $P_{2277} = (4, 13, 7, 1)$
150 : $P_{2287} = (14, 13, 7, 1)$
151 : $P_{2293} = (4, 14, 7, 1)$
152 : $P_{2302} = (13, 14, 7, 1)$
153 : $P_{2424} = (7, 6, 8, 1)$
154 : $P_{2426} = (9, 6, 8, 1)$
155 : $P_{2439} = (6, 7, 8, 1)$
156 : $P_{2442} = (9, 7, 8, 1)$
157 : $P_{2457} = (8, 8, 8, 1)$
158 : $P_{2471} = (6, 9, 8, 1)$
159 : $P_{2472} = (7, 9, 8, 1)$
160 : $P_{2510} = (13, 11, 8, 1)$
161 : $P_{2511} = (14, 11, 8, 1)$
162 : $P_{2540} = (11, 13, 8, 1)$
163 : $P_{2543} = (14, 13, 8, 1)$
164 : $P_{2556} = (11, 14, 8, 1)$
165 : $P_{2558} = (13, 14, 8, 1)$
166 : $P_{2630} = (5, 3, 9, 1)$
167 : $P_{2640} = (15, 3, 9, 1)$
168 : $P_{2660} = (3, 5, 9, 1)$
169 : $P_{2672} = (15, 5, 9, 1)$
170 : $P_{2730} = (9, 9, 9, 1)$
171 : $P_{2765} = (12, 11, 9, 1)$
172 : $P_{2767} = (14, 11, 9, 1)$
173 : $P_{2780} = (11, 12, 9, 1)$
174 : $P_{2783} = (14, 12, 9, 1)$
175 : $P_{2812} = (11, 14, 9, 1)$
176 : $P_{2813} = (12, 14, 9, 1)$
177 : $P_{2820} = (3, 15, 9, 1)$
178 : $P_{2822} = (5, 15, 9, 1)$
179 : $P_{2852} = (3, 1, 10, 1)$
180 : $P_{2857} = (8, 1, 10, 1)$
181 : $P_{2882} = (1, 3, 10, 1)$
182 : $P_{2889} = (8, 3, 10, 1)$
183 : $P_{2962} = (1, 8, 10, 1)$
184 : $P_{2964} = (3, 8, 10, 1)$
185 : $P_{3003} = (10, 10, 10, 1)$
186 : $P_{3021} = (12, 11, 10, 1)$
187 : $P_{3022} = (13, 11, 10, 1)$
188 : $P_{3036} = (11, 12, 10, 1)$
189 : $P_{3038} = (13, 12, 10, 1)$
190 : $P_{3052} = (11, 13, 10, 1)$
191 : $P_{3053} = (12, 13, 10, 1)$
192 : $P_{3110} = (5, 1, 11, 1)$
193 : $P_{3120} = (15, 1, 11, 1)$
194 : $P_{3170} = (1, 5, 11, 1)$
195 : $P_{3184} = (15, 5, 11, 1)$
196 : $P_{3192} = (7, 6, 11, 1)$
197 : $P_{3195} = (10, 6, 11, 1)$
198 : $P_{3207} = (6, 7, 11, 1)$
199 : $P_{3211} = (10, 7, 11, 1)$
200 : $P_{3255} = (6, 10, 11, 1)$
201 : $P_{3256} = (7, 10, 11, 1)$
202 : $P_{3276} = (11, 11, 11, 1)$
203 : $P_{3330} = (1, 15, 11, 1)$

204 : $P_{3334} = (5, 15, 11, 1)$
205 : $P_{3366} = (5, 1, 12, 1)$
206 : $P_{3369} = (8, 1, 12, 1)$
207 : $P_{3384} = (7, 2, 12, 1)$
208 : $P_{3386} = (9, 2, 12, 1)$
209 : $P_{3426} = (1, 5, 12, 1)$
210 : $P_{3433} = (8, 5, 12, 1)$
211 : $P_{3459} = (2, 7, 12, 1)$
212 : $P_{3466} = (9, 7, 12, 1)$
213 : $P_{3474} = (1, 8, 12, 1)$
214 : $P_{3478} = (5, 8, 12, 1)$
215 : $P_{3491} = (2, 9, 12, 1)$
216 : $P_{3496} = (7, 9, 12, 1)$
217 : $P_{3549} = (12, 12, 12, 1)$
218 : $P_{3620} = (3, 1, 13, 1)$
219 : $P_{3632} = (15, 1, 13, 1)$
220 : $P_{3639} = (6, 2, 13, 1)$
221 : $P_{3642} = (9, 2, 13, 1)$
222 : $P_{3650} = (1, 3, 13, 1)$
223 : $P_{3664} = (15, 3, 13, 1)$
224 : $P_{3699} = (2, 6, 13, 1)$
225 : $P_{3706} = (9, 6, 13, 1)$
226 : $P_{3747} = (2, 9, 13, 1)$
227 : $P_{3751} = (6, 9, 13, 1)$
228 : $P_{3822} = (13, 13, 13, 1)$
229 : $P_{3842} = (1, 15, 13, 1)$
230 : $P_{3844} = (3, 15, 13, 1)$
231 : $P_{3895} = (6, 2, 14, 1)$
232 : $P_{3899} = (10, 2, 14, 1)$
233 : $P_{3910} = (5, 3, 14, 1)$
234 : $P_{3913} = (8, 3, 14, 1)$
235 : $P_{3940} = (3, 5, 14, 1)$
236 : $P_{3945} = (8, 5, 14, 1)$
237 : $P_{3955} = (2, 6, 14, 1)$
238 : $P_{3963} = (10, 6, 14, 1)$
239 : $P_{3988} = (3, 8, 14, 1)$
240 : $P_{3990} = (5, 8, 14, 1)$
241 : $P_{4019} = (2, 10, 14, 1)$
242 : $P_{4023} = (6, 10, 14, 1)$
243 : $P_{4095} = (14, 14, 14, 1)$
244 : $P_{4152} = (7, 2, 15, 1)$
245 : $P_{4155} = (10, 2, 15, 1)$
246 : $P_{4227} = (2, 7, 15, 1)$
247 : $P_{4235} = (10, 7, 15, 1)$
248 : $P_{4275} = (2, 10, 15, 1)$
249 : $P_{4280} = (7, 10, 15, 1)$
250 : $P_{4318} = (13, 12, 15, 1)$
251 : $P_{4319} = (14, 12, 15, 1)$
252 : $P_{4333} = (12, 13, 15, 1)$
253 : $P_{4335} = (14, 13, 15, 1)$
254 : $P_{4349} = (12, 14, 15, 1)$
255 : $P_{4350} = (13, 14, 15, 1)$
256 : $P_{4368} = (15, 15, 15, 1)$