Rank-65843 over GF(16)

January 15, 2021

The equation

The equation of the surface is :

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

(0, 0, 0, 0, 1, 1, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0)
The point rank of the equation over GF(16) is 287445269

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 : $P_2 = \mathbf{P}(0,0,1,0) = \mathbf{P}(0,0,1,0)$
1 : $P_3 = \mathbf{P}(0,0,0,1) = \mathbf{P}(0,0,0,1)$
2 : $P_{530} = \mathbf{P}(0,0,1,1) = \mathbf{P}(0,0,1,1)$
3 : $P_{785} = \mathbf{P}(0,0,\delta,1) = \mathbf{P}(0,0,2,1)$
4 : $P_{1041} = \mathbf{P}(0,0,\delta^{12},1) = \mathbf{P}(0,0,3,1)$
5 : $P_{1297} = \mathbf{P}(0,0,\delta^{2},1) = \mathbf{P}(0,0,4,1)$
6 : $P_{1553} = \mathbf{P}(0,0,\delta^{9},1) = \mathbf{P}(0,0,5,1)$
7 : $P_{1809} = \mathbf{P}(0,0,\delta^{13},1) = \mathbf{P}(0,0,6,1)$
8 : $P_{2065} = \mathbf{P}(0,0,\delta^{7},1) = \mathbf{P}(0,0,7,1)$
9 : $P_{2321} = \mathbf{P}(0,0,\delta^{3},1) = \mathbf{P}(0,0,8,1)$
10 : $P_{2577} = \mathbf{P}(0,0,\delta^{4},1) = \mathbf{P}(0,0,9,1)$
11 : $P_{2833} = \mathbf{P}(0,0,\delta^{10},1) = \mathbf{P}(0,0,10,1)$
12 : $P_{3089} = \mathbf{P}(0,0,\delta^{5},1) = \mathbf{P}(0,0,11,1)$
13 : $P_{3345} = \mathbf{P}(0,0,\delta^{14},1) = \mathbf{P}(0,0,12,1)$
14 : $P_{3601} = \mathbf{P}(0,0,\delta^{11},1) = \mathbf{P}(0,0,13,1)$
15 : $P_{3857} = \mathbf{P}(0,0,\delta^{8},1) = \mathbf{P}(0,0,14,1)$
16 : $P_{4113} = \mathbf{P}(0,0,\delta^{6},1) = \mathbf{P}(0,0,15,1)$

The 16 Lines

The lines and their Pluecker coordinates are:

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

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

$$\ell_2 = \left[\begin{array}{cccc} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{70160} = \left[\begin{array}{cccc} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{70160} = \mathbf{Pl}(0,1,0,0,0,0)_{1}$$

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

$$\ell_4 = \left[\begin{array}{cccc} 1 & \delta^{4} & \delta^{6} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{68249} = \left[\begin{array}{cccc} 1 & 9 & 15 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{68249} = \mathbf{Pl}(0,15,0,9,1,0)_{1063}$$

$$\ell_5 = \left[\begin{array}{cccc} 1 & \delta^{3} & \delta^{5} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{50504} = \left[\begin{array}{cccc} 1 & 8 & 11 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{50504} = \mathbf{Pl}(0,11,0,8,1,0)_{1028}$$

$$\ell_6 = \left[\begin{array}{cccc} 1 & \delta^{12} & \delta^{5} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{49139} = \left[\begin{array}{cccc} 1 & 3 & 11 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{49139} = \mathbf{Pl}(0,11,0,3,1,0)_{873}$$

$$\ell_7 = \left[\begin{array}{cccc} 1 & \delta & \delta^{9} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{22658} = \left[\begin{array}{cccc} 1 & 2 & 5 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{22658} = \mathbf{Pl}(0,5,0,2,1,0)_{836}$$

$$\ell_8 = \left[\begin{array}{cccc} 1 & \delta^{13} & \delta^{3} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{36854} = \left[\begin{array}{cccc} 1 & 6 & 8 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{36854} = \mathbf{Pl}(0,8,0,6,1,0)_{963}$$

$$\ell_9 = \left[\begin{array}{cccc} 1 & \delta^{7} & \delta^{12} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{15287} = \left[\begin{array}{cccc} 1 & 7 & 3 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{15287} = \mathbf{Pl}(0,3,0,7,1,0)_{989}$$

$$\ell_{10} = \left[\begin{array}{cccc} 1 & \delta^{11} & \delta^{6} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{69341} = \left[\begin{array}{cccc} 1 & 13 & 15 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{69341} = \mathbf{Pl}(0,15,0,13,1,0)_{1187}$$

$$\ell_{11} = \left[\begin{array}{cccc} 1 & \delta^{14} & \delta^{9} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{25388} = \left[\begin{array}{cccc} 1 & 12 & 5 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{25388} = \mathbf{Pl}(0,5,0,12,1,0)_{1146}$$

$$\ell_{12} = \left[\begin{array}{cccc} 1 & \delta^{2} & \delta^{3} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{36308} = \left[\begin{array}{cccc} 1 & 4 & 8 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{36308} = \mathbf{Pl}(0,8,0,4,1,0)_{901}$$

$$\ell_{13} = \left[\begin{array}{cccc} 1 & \delta^{9} & \delta^{10} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{45317} = \left[\begin{array}{cccc} 1 & 5 & 10 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{45317} = \mathbf{Pl}(0,10,0,5,1,0)_{934}$$

$$\ell_{14} = \left[\begin{array}{cccc} 1 & \delta^{8} & \delta^{12} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{17198} = \left[\begin{array}{cccc} 1 & 14 & 3 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{17198} = \mathbf{Pl}(0,3,0,14,1,0)_{1206}$$

$$\ell_{15} = \left[\begin{array}{cccc} 1 & \delta^{6} & \delta^{10} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{48047} = \left[\begin{array}{cccc} 1 & 15 & 10 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{48047} = \mathbf{Pl}(0,10,0,15,1,0)_{1244}$$

Rank of lines: (272, 69904, 70160, 4913, 68249, 50504, 49139, 22658, 36854, 15287, 69341, 25388, 36308, 45317, 17198, 48047)
Rank of points on Klein quadric: (289, 33, 1, 801, 1063, 1028, 873, 836, 963, 989, 1187, 1146, 901, 934, 1206, 1244)

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 : $P_2 = (0,0,1,0)$ lies on line ℓ_2
3 : $P_4 = (1,1,1,1)$ lies on line ℓ_3
4 : $P_{36} = (1,1,1,0)$ lies on line ℓ_3
5 : $P_{120} = (5,6,1,0)$ lies on line ℓ_4
6 : $P_{125} = (10,6,1,0)$ lies on line ℓ_5
7 : $P_{141} = (10,7,1,0)$ lies on line ℓ_6
8 : $P_{146} = (15,7,1,0)$ lies on line ℓ_7
9 : $P_{182} = (3,10,1,0)$ lies on line ℓ_8
10 : $P_{187} = (8,10,1,0)$ lies on line ℓ_9
11 : $P_{200} = (5,11,1,0)$ lies on line ℓ_{10}
12 : $P_{210} = (15,11,1,0)$ lies on line ℓ_{11}
13 : $P_{214} = (3,12,1,0)$ lies on line ℓ_{12}
14 : $P_{222} = (11,12,1,0)$ lies on line ℓ_{13}
15 : $P_{235} = (8,13,1,0)$ lies on line ℓ_{14}
16 : $P_{238} = (11,13,1,0)$ 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 : $P_{306} = (0,2,0,1)$ lies on line ℓ_1
34 : $P_{322} = (0,3,0,1)$ lies on line ℓ_1
35 : $P_{338} = (0,4,0,1)$ lies on line ℓ_1
36 : $P_{354} = (0,5,0,1)$ lies on line ℓ_1
37 : $P_{370} = (0,6,0,1)$ lies on line ℓ_1
38 : $P_{386} = (0,7,0,1)$ lies on line ℓ_1
39 : $P_{402} = (0,8,0,1)$ lies on line ℓ_1
40 : $P_{418} = (0,9,0,1)$ lies on line ℓ_1
41 : $P_{434} = (0,10,0,1)$ lies on line ℓ_1
42 : $P_{450} = (0,11,0,1)$ lies on line ℓ_1
43 : $P_{466} = (0,12,0,1)$ lies on line ℓ_1
44 : $P_{482} = (0,13,0,1)$ lies on line ℓ_1
45 : $P_{498} = (0,14,0,1)$ lies on line ℓ_1
46 : $P_{514} = (0,15,0,1)$ lies on line ℓ_1
47 : $P_{530} = (0,0,1,1)$ lies on line ℓ_2
48 : $P_{630} = (5,6,1,1)$ lies on line ℓ_4
49 : $P_{635} = (10,6,1,1)$ lies on line ℓ_5
50 : $P_{651} = (10,7,1,1)$ lies on line ℓ_6
51 : $P_{656} = (15,7,1,1)$ lies on line ℓ_7
52 : $P_{692} = (3,10,1,1)$ lies on line ℓ_8
53 : $P_{697} = (8,10,1,1)$ lies on line ℓ_9
54 : $P_{710} = (5,11,1,1)$ lies on line ℓ_{10}
55 : $P_{720} = (15,11,1,1)$ lies on line ℓ_{11}
56 : $P_{724} = (3,12,1,1)$ lies on line ℓ_{12}
57 : $P_{732} = (11,12,1,1)$ lies on line ℓ_{13}
58 : $P_{745} = (8,13,1,1)$ lies on line ℓ_{14}
59 : $P_{748} = (11,13,1,1)$ lies on line ℓ_{15}
60 : $P_{785} = (0,0,2,1)$ lies on line ℓ_2
61 : $P_{807} = (6,1,2,1)$ lies on line ℓ_{12}
62 : $P_{816} = (15,1,2,1)$ lies on line ℓ_{13}
63 : $P_{819} = (2,2,2,1)$ lies on line ℓ_3
64 : $P_{842} = (9,3,2,1)$ lies on line ℓ_{14}
65 : $P_{848} = (15,3,2,1)$ lies on line ℓ_{15}
66 : $P_{987} = (10,12,2,1)$ lies on line ℓ_4
67 : $P_{990} = (13,12,2,1)$ lies on line ℓ_5
68 : $P_{999} = (6,13,2,1)$ lies on line ℓ_8
69 : $P_{1002} = (9,13,2,1)$ lies on line ℓ_9
70 : $P_{1016} = (7,14,2,1)$ lies on line ℓ_7
71 : $P_{1022} = (13,14,2,1)$ lies on line ℓ_6
72 : $P_{1032} = (7,15,2,1)$ lies on line ℓ_{11}
73 : $P_{1035} = (10,15,2,1)$ lies on line ℓ_{10}
74 : $P_{1041} = (0,0,3,1)$ lies on line ℓ_2
75 : $P_{1092} = (3,3,3,1)$ lies on line ℓ_3
76 : $P_{1113} = (8,4,3,1)$ lies on line ℓ_{11}
77 : $P_{1120} = (15,4,3,1)$ lies on line ℓ_{10}
78 : $P_{1154} = (1,7,3,1)$ lies on line ℓ_9
79 : $P_{1158} = (5,7,3,1)$ lies on line ℓ_8
80 : $P_{1192} = (7,9,3,1)$ lies on line ℓ_6
81 : $P_{1193} = (8,9,3,1)$ lies on line ℓ_7

82 : $P_{1208} = (7, 10, 3, 1)$ lies on line ℓ_5
83 : $P_{1216} = (15, 10, 3, 1)$ lies on line ℓ_4
84 : $P_{1253} = (4, 13, 3, 1)$ lies on line ℓ_{13}
85 : $P_{1254} = (5, 13, 3, 1)$ lies on line ℓ_{12}
86 : $P_{1266} = (1, 14, 3, 1)$ lies on line ℓ_{14}
87 : $P_{1269} = (4, 14, 3, 1)$ lies on line ℓ_{15}
88 : $P_{1297} = (0, 0, 4, 1)$ lies on line ℓ_2
89 : $P_{1316} = (3, 1, 4, 1)$ lies on line ℓ_5
90 : $P_{1326} = (13, 1, 4, 1)$ lies on line ℓ_4
91 : $P_{1336} = (7, 2, 4, 1)$ lies on line ℓ_{13}
92 : $P_{1341} = (12, 2, 4, 1)$ lies on line ℓ_{12}
93 : $P_{1356} = (11, 3, 4, 1)$ lies on line ℓ_9
94 : $P_{1357} = (12, 3, 4, 1)$ lies on line ℓ_8
95 : $P_{1365} = (4, 4, 4, 1)$ lies on line ℓ_3
96 : $P_{1380} = (3, 5, 4, 1)$ lies on line ℓ_6
97 : $P_{1391} = (14, 5, 4, 1)$ lies on line ℓ_7
98 : $P_{1400} = (7, 6, 4, 1)$ lies on line ℓ_{15}
99 : $P_{1404} = (11, 6, 4, 1)$ lies on line ℓ_{14}
100 : $P_{1422} = (13, 7, 4, 1)$ lies on line ℓ_{10}
101 : $P_{1423} = (14, 7, 4, 1)$ lies on line ℓ_{11}
102 : $P_{1553} = (0, 0, 5, 1)$ lies on line ℓ_2
103 : $P_{1586} = (1, 2, 5, 1)$ lies on line ℓ_7
104 : $P_{1594} = (9, 2, 5, 1)$ lies on line ℓ_6
105 : $P_{1638} = (5, 5, 5, 1)$ lies on line ℓ_3
106 : $P_{1673} = (8, 7, 5, 1)$ lies on line ℓ_4
107 : $P_{1674} = (9, 7, 5, 1)$ lies on line ℓ_5
108 : $P_{1700} = (3, 9, 5, 1)$ lies on line ℓ_9
109 : $P_{1712} = (15, 9, 5, 1)$ lies on line ℓ_8
110 : $P_{1732} = (3, 11, 5, 1)$ lies on line ℓ_{14}
111 : $P_{1741} = (12, 11, 5, 1)$ lies on line ℓ_{15}
112 : $P_{1746} = (1, 12, 5, 1)$ lies on line ℓ_{11}
113 : $P_{1753} = (8, 12, 5, 1)$ lies on line ℓ_{10}
114 : $P_{1789} = (12, 14, 5, 1)$ lies on line ℓ_{13}
115 : $P_{1792} = (15, 14, 5, 1)$ lies on line ℓ_{12}
116 : $P_{1809} = (0, 0, 6, 1)$ lies on line ℓ_2
117 : $P_{1865} = (8, 3, 6, 1)$ lies on line ℓ_{13}
118 : $P_{1867} = (10, 3, 6, 1)$ lies on line ℓ_{12}
119 : $P_{1891} = (2, 5, 6, 1)$ lies on line ℓ_{14}
120 : $P_{1897} = (8, 5, 6, 1)$ lies on line ℓ_{15}
121 : $P_{1911} = (6, 6, 6, 1)$ lies on line ℓ_3
122 : $P_{1944} = (7, 8, 6, 1)$ lies on line ℓ_{10}
123 : $P_{1946} = (9, 8, 6, 1)$ lies on line ℓ_{11}
124 : $P_{1994} = (9, 11, 6, 1)$ lies on line ℓ_7
125 : $P_{1999} = (14, 11, 6, 1)$ lies on line ℓ_6
126 : $P_{2024} = (7, 13, 6, 1)$ lies on line ℓ_4
127 : $P_{2031} = (14, 13, 6, 1)$ lies on line ℓ_5
128 : $P_{2035} = (2, 14, 6, 1)$ lies on line ℓ_9
129 : $P_{2043} = (10, 14, 6, 1)$ lies on line ℓ_8
130 : $P_{2065} = (0, 0, 7, 1)$ lies on line ℓ_2
131 : $P_{2115} = (2, 3, 7, 1)$ lies on line ℓ_{10}
132 : $P_{2119} = (6, 3, 7, 1)$ lies on line ℓ_{11}
133 : $P_{2138} = (9, 4, 7, 1)$ lies on line ℓ_8
134 : $P_{2139} = (10, 4, 7, 1)$ lies on line ℓ_9
135 : $P_{2184} = (7, 7, 7, 1)$ lies on line ℓ_3
136 : $P_{2196} = (3, 8, 7, 1)$ lies on line ℓ_{15}
137 : $P_{2203} = (10, 8, 7, 1)$ lies on line ℓ_{14}
138 : $P_{2243} = (2, 11, 7, 1)$ lies on line ℓ_4
139 : $P_{2245} = (4, 11, 7, 1)$ lies on line ℓ_5
140 : $P_{2261} = (4, 12, 7, 1)$ lies on line ℓ_6
141 : $P_{2263} = (6, 12, 7, 1)$ lies on line ℓ_7
142 : $P_{2308} = (3, 15, 7, 1)$ lies on line ℓ_{13}
143 : $P_{2314} = (9, 15, 7, 1)$ lies on line ℓ_{12}
144 : $P_{2321} = (0, 0, 8, 1)$ lies on line ℓ_2
145 : $P_{2356} = (3, 2, 8, 1)$ lies on line ℓ_4
146 : $P_{2359} = (6, 2, 8, 1)$ lies on line ℓ_5
147 : $P_{2386} = (1, 4, 8, 1)$ lies on line ℓ_{12}
148 : $P_{2399} = (14, 4, 8, 1)$ lies on line ℓ_{13}
149 : $P_{2418} = (1, 6, 8, 1)$ lies on line ℓ_8
150 : $P_{2432} = (15, 6, 8, 1)$ lies on line ℓ_9
151 : $P_{2457} = (8, 8, 8, 1)$ lies on line ℓ_3
152 : $P_{2486} = (5, 10, 8, 1)$ lies on line ℓ_7
153 : $P_{2487} = (6, 10, 8, 1)$ lies on line ℓ_6
154 : $P_{2527} = (14, 12, 8, 1)$ lies on line ℓ_{15}
155 : $P_{2528} = (15, 12, 8, 1)$ lies on line ℓ_{14}
156 : $P_{2548} = (3, 14, 8, 1)$ lies on line ℓ_{10}
157 : $P_{2550} = (5, 14, 8, 1)$ lies on line ℓ_{11}
158 : $P_{2577} = (0, 0, 9, 1)$ lies on line ℓ_2
159 : $P_{2598} = (5, 1, 9, 1)$ lies on line ℓ_{15}
160 : $P_{2600} = (7, 1, 9, 1)$ lies on line ℓ_{14}
161 : $P_{2647} = (6, 4, 9, 1)$ lies on line ℓ_4
162 : $P_{2653} = (12, 4, 9, 1)$ lies on line ℓ_5
163 : $P_{2663} = (6, 5, 9, 1)$ lies on line ℓ_{10}
164 : $P_{2667} = (10, 5, 9, 1)$ lies on line ℓ_{11}
165 : $P_{2707} = (2, 8, 9, 1)$ lies on line ℓ_{12}
166 : $P_{2710} = (5, 8, 9, 1)$ lies on line ℓ_{13}
167 : $P_{2730} = (9, 9, 9, 1)$ lies on line ℓ_3
168 : $P_{2771} = (2, 12, 9, 1)$ lies on line ℓ_8
169 : $P_{2776} = (7, 12, 9, 1)$ lies on line ℓ_9
170 : $P_{2795} = (10, 13, 9, 1)$ lies on line ℓ_7
171 : $P_{2797} = (12, 13, 9, 1)$ lies on line ℓ_6
172 : $P_{2833} = (0, 0, 10, 1)$ lies on line ℓ_2
173 : $P_{2851} = (2, 1, 10, 1)$ lies on line ℓ_{11}
174 : $P_{2858} = (9, 1, 10, 1)$ lies on line ℓ_{10}
175 : $P_{2899} = (2, 4, 10, 1)$ lies on line ℓ_7
176 : $P_{2908} = (11, 4, 10, 1)$ lies on line ℓ_6
177 : $P_{2914} = (1, 5, 10, 1)$ lies on line ℓ_{13}
178 : $P_{2920} = (7, 5, 10, 1)$ lies on line ℓ_{12}
179 : $P_{3003} = (10, 10, 10, 1)$ lies on line ℓ_3
180 : $P_{3015} = (6, 11, 10, 1)$ lies on line ℓ_9
181 : $P_{3016} = (7, 11, 10, 1)$ lies on line ℓ_8
182 : $P_{3066} = (9, 14, 10, 1)$ lies on line ℓ_4
183 : $P_{3068} = (11, 14, 10, 1)$ lies on line ℓ_5
184 : $P_{3074} = (1, 15, 10, 1)$ lies on line ℓ_{15}
185 : $P_{3079} = (6, 15, 10, 1)$ lies on line ℓ_{14}
186 : $P_{3089} = (0, 0, 11, 1)$ lies on line ℓ_2
187 : $P_{3109} = (4, 1, 11, 1)$ lies on line ℓ_8
188 : $P_{3119} = (14, 1, 11, 1)$ lies on line ℓ_9
189 : $P_{3131} = (10, 2, 11, 1)$ lies on line ℓ_{15}

190 : $P_{3135} = (14, 2, 11, 1)$ lies on line ℓ_{14}
191 : $P_{3138} = (1, 3, 11, 1)$ lies on line ℓ_6
192 : $P_{3150} = (13, 3, 11, 1)$ lies on line ℓ_7
193 : $P_{3218} = (1, 8, 11, 1)$ lies on line ℓ_5
194 : $P_{3229} = (12, 8, 11, 1)$ lies on line ℓ_4
195 : $P_{3237} = (4, 9, 11, 1)$ lies on line ℓ_{12}
196 : $P_{3243} = (10, 9, 11, 1)$ lies on line ℓ_{13}
197 : $P_{3261} = (12, 10, 11, 1)$ lies on line ℓ_{10}
198 : $P_{3262} = (13, 10, 11, 1)$ lies on line ℓ_{11}
199 : $P_{3276} = (11, 11, 11, 1)$ lies on line ℓ_3
200 : $P_{3345} = (0, 0, 12, 1)$ lies on line ℓ_2
201 : $P_{3398} = (5, 3, 12, 1)$ lies on line ℓ_5
202 : $P_{3407} = (14, 3, 12, 1)$ lies on line ℓ_4
203 : $P_{3429} = (4, 5, 12, 1)$ lies on line ℓ_9
204 : $P_{3438} = (13, 5, 12, 1)$ lies on line ℓ_8
205 : $P_{3450} = (9, 6, 12, 1)$ lies on line ℓ_{13}
206 : $P_{3454} = (13, 6, 12, 1)$ lies on line ℓ_{12}
207 : $P_{3500} = (11, 9, 12, 1)$ lies on line ℓ_{11}
208 : $P_{3503} = (14, 9, 12, 1)$ lies on line ℓ_{10}
209 : $P_{3509} = (4, 10, 12, 1)$ lies on line ℓ_{14}
210 : $P_{3514} = (9, 10, 12, 1)$ lies on line ℓ_{15}
211 : $P_{3549} = (12, 12, 12, 1)$ lies on line ℓ_3
212 : $P_{3590} = (5, 15, 12, 1)$ lies on line ℓ_6
213 : $P_{3596} = (11, 15, 12, 1)$ lies on line ℓ_7
214 : $P_{3601} = (0, 0, 13, 1)$ lies on line ℓ_2
215 : $P_{3637} = (4, 2, 13, 1)$ lies on line ℓ_{11}
216 : $P_{3644} = (11, 2, 13, 1)$ lies on line ℓ_{10}
217 : $P_{3692} = (11, 5, 13, 1)$ lies on line ℓ_4
218 : $P_{3696} = (15, 5, 13, 1)$ lies on line ℓ_5
219 : $P_{3715} = (2, 7, 13, 1)$ lies on line ℓ_{15}
220 : $P_{3725} = (12, 7, 13, 1)$ lies on line ℓ_{14}
221 : $P_{3733} = (4, 8, 13, 1)$ lies on line ℓ_7
222 : $P_{3744} = (15, 8, 13, 1)$ lies on line ℓ_6
223 : $P_{3763} = (2, 10, 13, 1)$ lies on line ℓ_{13}
224 : $P_{3775} = (14, 10, 13, 1)$ lies on line ℓ_{12}
225 : $P_{3822} = (13, 13, 13, 1)$ lies on line ℓ_3
226 : $P_{3853} = (12, 15, 13, 1)$ lies on line ℓ_9
227 : $P_{3855} = (14, 15, 13, 1)$ lies on line ℓ_8
228 : $P_{3857} = (0, 0, 14, 1)$ lies on line ℓ_2
229 : $P_{3881} = (8, 1, 14, 1)$ lies on line ℓ_6
230 : $P_{3885} = (12, 1, 14, 1)$ lies on line ℓ_7
231 : $P_{3957} = (4, 6, 14, 1)$ lies on line ℓ_{10}
232 : $P_{3965} = (12, 6, 14, 1)$ lies on line ℓ_{11}
233 : $P_{3975} = (6, 7, 14, 1)$ lies on line ℓ_{13}
234 : $P_{3980} = (11, 7, 14, 1)$ lies on line ℓ_{12}
235 : $P_{3996} = (11, 8, 14, 1)$ lies on line ℓ_8
236 : $P_{3998} = (13, 8, 14, 1)$ lies on line ℓ_9
237 : $P_{4007} = (6, 9, 14, 1)$ lies on line ℓ_{15}
238 : $P_{4014} = (13, 9, 14, 1)$ lies on line ℓ_{14}
239 : $P_{4095} = (14, 14, 14, 1)$ lies on line ℓ_3
240 : $P_{4101} = (4, 15, 14, 1)$ lies on line ℓ_4
241 : $P_{4105} = (8, 15, 14, 1)$ lies on line ℓ_5
242 : $P_{4113} = (0, 0, 15, 1)$ lies on line ℓ_2
243 : $P_{4150} = (5, 2, 15, 1)$ lies on line ℓ_9
244 : $P_{4153} = (8, 2, 15, 1)$ lies on line ℓ_8
245 : $P_{4182} = (5, 4, 15, 1)$ lies on line ℓ_{14}
246 : $P_{4190} = (13, 4, 15, 1)$ lies on line ℓ_{15}
247 : $P_{4211} = (2, 6, 15, 1)$ lies on line ℓ_6
248 : $P_{4212} = (3, 6, 15, 1)$ lies on line ℓ_7
249 : $P_{4258} = (1, 9, 15, 1)$ lies on line ℓ_4
250 : $P_{4259} = (2, 9, 15, 1)$ lies on line ℓ_5
251 : $P_{4297} = (8, 11, 15, 1)$ lies on line ℓ_{12}
252 : $P_{4302} = (13, 11, 15, 1)$ lies on line ℓ_{13}
253 : $P_{4322} = (1, 13, 15, 1)$ lies on line ℓ_{10}
254 : $P_{4324} = (3, 13, 15, 1)$ lies on line ℓ_{11}
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:

$0: P_0 = (1,0,0,0)$
$1: P_1 = (0,1,0,0)$
$2: P_2 = (0,0,1,0)$
$3: P_3 = (0,0,0,1)$
$4: P_4 = (1,1,1,1)$
$5: P_{36} = (1,1,1,0)$
$6: P_{120} = (5,6,1,0)$
$7: P_{125} = (10,6,1,0)$
$8: P_{141} = (10,7,1,0)$
$9: P_{146} = (15,7,1,0)$
$10: P_{182} = (3,10,1,0)$
$11: P_{187} = (8,10,1,0)$
$12: P_{200} = (5,11,1,0)$
$13: P_{210} = (15,11,1,0)$
$14: P_{214} = (3,12,1,0)$
$15: P_{222} = (11,12,1,0)$
$16: P_{235} = (8,13,1,0)$
$17: P_{238} = (11,13,1,0)$
$18: P_{275} = (1,0,0,1)$
$19: P_{276} = (2,0,0,1)$
$20: P_{277} = (3,0,0,1)$
$21: P_{278} = (4,0,0,1)$
$22: P_{279} = (5,0,0,1)$
$23: P_{280} = (6,0,0,1)$
$24: P_{281} = (7,0,0,1)$
$25: P_{282} = (8,0,0,1)$
$26: P_{283} = (9,0,0,1)$
$27: P_{284} = (10,0,0,1)$
$28: P_{285} = (11,0,0,1)$
$29: P_{286} = (12,0,0,1)$
$30: P_{287} = (13,0,0,1)$
$31: P_{288} = (14,0,0,1)$
$32: P_{289} = (15,0,0,1)$
$33: P_{290} = (0,1,0,1)$
$34: P_{306} = (0,2,0,1)$
$35: P_{322} = (0,3,0,1)$
$36: P_{338} = (0,4,0,1)$
$37: P_{354} = (0,5,0,1)$
$38: P_{370} = (0,6,0,1)$
$39: P_{386} = (0,7,0,1)$
$40: P_{402} = (0,8,0,1)$
$41: P_{418} = (0,9,0,1)$

42 : $P_{434} = (0, 10, 0, 1)$
43 : $P_{450} = (0, 11, 0, 1)$
44 : $P_{466} = (0, 12, 0, 1)$
45 : $P_{482} = (0, 13, 0, 1)$
46 : $P_{498} = (0, 14, 0, 1)$
47 : $P_{514} = (0, 15, 0, 1)$
48 : $P_{530} = (0, 0, 1, 1)$
49 : $P_{630} = (5, 6, 1, 1)$
50 : $P_{635} = (10, 6, 1, 1)$
51 : $P_{651} = (10, 7, 1, 1)$
52 : $P_{656} = (15, 7, 1, 1)$
53 : $P_{692} = (3, 10, 1, 1)$
54 : $P_{697} = (8, 10, 1, 1)$
55 : $P_{710} = (5, 11, 1, 1)$
56 : $P_{720} = (15, 11, 1, 1)$
57 : $P_{724} = (3, 12, 1, 1)$
58 : $P_{732} = (11, 12, 1, 1)$
59 : $P_{745} = (8, 13, 1, 1)$
60 : $P_{748} = (11, 13, 1, 1)$
61 : $P_{785} = (0, 0, 2, 1)$
62 : $P_{807} = (6, 1, 2, 1)$
63 : $P_{816} = (15, 1, 2, 1)$
64 : $P_{819} = (2, 2, 2, 1)$
65 : $P_{842} = (9, 3, 2, 1)$
66 : $P_{848} = (15, 3, 2, 1)$
67 : $P_{987} = (10, 12, 2, 1)$
68 : $P_{990} = (13, 12, 2, 1)$
69 : $P_{999} = (6, 13, 2, 1)$
70 : $P_{1002} = (9, 13, 2, 1)$
71 : $P_{1016} = (7, 14, 2, 1)$
72 : $P_{1022} = (13, 14, 2, 1)$
73 : $P_{1032} = (7, 15, 2, 1)$
74 : $P_{1035} = (10, 15, 2, 1)$
75 : $P_{1041} = (0, 0, 3, 1)$
76 : $P_{1092} = (3, 3, 3, 1)$
77 : $P_{1113} = (8, 4, 3, 1)$
78 : $P_{1120} = (15, 4, 3, 1)$
79 : $P_{1154} = (1, 7, 3, 1)$
80 : $P_{1158} = (5, 7, 3, 1)$
81 : $P_{1192} = (7, 9, 3, 1)$
82 : $P_{1193} = (8, 9, 3, 1)$
83 : $P_{1208} = (7, 10, 3, 1)$
84 : $P_{1216} = (15, 10, 3, 1)$
85 : $P_{1253} = (4, 13, 3, 1)$
86 : $P_{1254} = (5, 13, 3, 1)$
87 : $P_{1266} = (1, 14, 3, 1)$
88 : $P_{1269} = (4, 14, 3, 1)$
89 : $P_{1297} = (0, 0, 4, 1)$
90 : $P_{1316} = (3, 1, 4, 1)$
91 : $P_{1326} = (13, 1, 4, 1)$
92 : $P_{1336} = (7, 2, 4, 1)$
93 : $P_{1341} = (12, 2, 4, 1)$
94 : $P_{1356} = (11, 3, 4, 1)$
95 : $P_{1357} = (12, 3, 4, 1)$
96 : $P_{1365} = (4, 4, 4, 1)$
97 : $P_{1380} = (3, 5, 4, 1)$
98 : $P_{1391} = (14, 5, 4, 1)$
99 : $P_{1400} = (7, 6, 4, 1)$
100 : $P_{1404} = (11, 6, 4, 1)$
101 : $P_{1422} = (13, 7, 4, 1)$
102 : $P_{1423} = (14, 7, 4, 1)$
103 : $P_{1553} = (0, 0, 5, 1)$
104 : $P_{1586} = (1, 2, 5, 1)$
105 : $P_{1594} = (9, 2, 5, 1)$
106 : $P_{1638} = (5, 5, 5, 1)$
107 : $P_{1673} = (8, 7, 5, 1)$
108 : $P_{1674} = (9, 7, 5, 1)$
109 : $P_{1700} = (3, 9, 5, 1)$
110 : $P_{1712} = (15, 9, 5, 1)$
111 : $P_{1732} = (3, 11, 5, 1)$
112 : $P_{1741} = (12, 11, 5, 1)$
113 : $P_{1746} = (1, 12, 5, 1)$
114 : $P_{1753} = (8, 12, 5, 1)$
115 : $P_{1789} = (12, 14, 5, 1)$
116 : $P_{1792} = (15, 14, 5, 1)$
117 : $P_{1809} = (0, 0, 6, 1)$
118 : $P_{1865} = (8, 3, 6, 1)$
119 : $P_{1867} = (10, 3, 6, 1)$
120 : $P_{1891} = (2, 5, 6, 1)$
121 : $P_{1897} = (8, 5, 6, 1)$
122 : $P_{1911} = (6, 6, 6, 1)$
123 : $P_{1944} = (7, 8, 6, 1)$
124 : $P_{1946} = (9, 8, 6, 1)$
125 : $P_{1994} = (9, 11, 6, 1)$
126 : $P_{1999} = (14, 11, 6, 1)$
127 : $P_{2024} = (7, 13, 6, 1)$
128 : $P_{2031} = (14, 13, 6, 1)$
129 : $P_{2035} = (2, 14, 6, 1)$
130 : $P_{2043} = (10, 14, 6, 1)$
131 : $P_{2065} = (0, 0, 7, 1)$
132 : $P_{2115} = (2, 3, 7, 1)$
133 : $P_{2119} = (6, 3, 7, 1)$
134 : $P_{2138} = (9, 4, 7, 1)$
135 : $P_{2139} = (10, 4, 7, 1)$
136 : $P_{2184} = (7, 7, 7, 1)$
137 : $P_{2196} = (3, 8, 7, 1)$
138 : $P_{2203} = (10, 8, 7, 1)$
139 : $P_{2243} = (2, 11, 7, 1)$
140 : $P_{2245} = (4, 11, 7, 1)$
141 : $P_{2261} = (4, 12, 7, 1)$
142 : $P_{2263} = (6, 12, 7, 1)$
143 : $P_{2308} = (3, 15, 7, 1)$
144 : $P_{2314} = (9, 15, 7, 1)$
145 : $P_{2321} = (0, 0, 8, 1)$
146 : $P_{2356} = (3, 2, 8, 1)$
147 : $P_{2359} = (6, 2, 8, 1)$
148 : $P_{2386} = (1, 4, 8, 1)$
149 : $P_{2399} = (14, 4, 8, 1)$
150 : $P_{2418} = (1, 6, 8, 1)$
151 : $P_{2432} = (15, 6, 8, 1)$
152 : $P_{2457} = (8, 8, 8, 1)$
153 : $P_{2486} = (5, 10, 8, 1)$
154 : $P_{2487} = (6, 10, 8, 1)$
155 : $P_{2527} = (14, 12, 8, 1)$
156 : $P_{2528} = (15, 12, 8, 1)$
157 : $P_{2548} = (3, 14, 8, 1)$
158 : $P_{2550} = (5, 14, 8, 1)$
159 : $P_{2577} = (0, 0, 9, 1)$
160 : $P_{2598} = (5, 1, 9, 1)$
161 : $P_{2600} = (7, 1, 9, 1)$
162 : $P_{2647} = (6, 4, 9, 1)$
163 : $P_{2653} = (12, 4, 9, 1)$
164 : $P_{2663} = (6, 5, 9, 1)$
165 : $P_{2667} = (10, 5, 9, 1)$
166 : $P_{2707} = (2, 8, 9, 1)$
167 : $P_{2710} = (5, 8, 9, 1)$
168 : $P_{2730} = (9, 9, 9, 1)$
169 : $P_{2771} = (2, 12, 9, 1)$
170 : $P_{2776} = (7, 12, 9, 1)$
171 : $P_{2795} = (10, 13, 9, 1)$
172 : $P_{2797} = (12, 13, 9, 1)$
173 : $P_{2833} = (0, 0, 10, 1)$
174 : $P_{2851} = (2, 1, 10, 1)$
175 : $P_{2858} = (9, 1, 10, 1)$
176 : $P_{2899} = (2, 4, 10, 1)$
177 : $P_{2908} = (11, 4, 10, 1)$
178 : $P_{2914} = (1, 5, 10, 1)$
179 : $P_{2920} = (7, 5, 10, 1)$
180 : $P_{3003} = (10, 10, 10, 1)$
181 : $P_{3015} = (6, 11, 10, 1)$
182 : $P_{3016} = (7, 11, 10, 1)$
183 : $P_{3066} = (9, 14, 10, 1)$
184 : $P_{3068} = (11, 14, 10, 1)$
185 : $P_{3074} = (1, 15, 10, 1)$
186 : $P_{3079} = (6, 15, 10, 1)$
187 : $P_{3089} = (0, 0, 11, 1)$
188 : $P_{3109} = (4, 1, 11, 1)$
189 : $P_{3119} = (14, 1, 11, 1)$
190 : $P_{3131} = (10, 2, 11, 1)$
191 : $P_{3135} = (14, 2, 11, 1)$
192 : $P_{3138} = (1, 3, 11, 1)$
193 : $P_{3150} = (13, 3, 11, 1)$
194 : $P_{3218} = (1, 8, 11, 1)$
195 : $P_{3229} = (12, 8, 11, 1)$
196 : $P_{3237} = (4, 9, 11, 1)$
197 : $P_{3243} = (10, 9, 11, 1)$
198 : $P_{3261} = (12, 10, 11, 1)$
199 : $P_{3262} = (13, 10, 11, 1)$
200 : $P_{3276} = (11, 11, 11, 1)$
201 : $P_{3345} = (0, 0, 12, 1)$
202 : $P_{3398} = (5, 3, 12, 1)$
203 : $P_{3407} = (14, 3, 12, 1)$

$204: P_{3429} = (4, 5, 12, 1)$
$205: P_{3438} = (13, 5, 12, 1)$
$206: P_{3450} = (9, 6, 12, 1)$
$207: P_{3454} = (13, 6, 12, 1)$
$208: P_{3500} = (11, 9, 12, 1)$
$209: P_{3503} = (14, 9, 12, 1)$
$210: P_{3509} = (4, 10, 12, 1)$
$211: P_{3514} = (9, 10, 12, 1)$
$212: P_{3549} = (12, 12, 12, 1)$
$213: P_{3590} = (5, 15, 12, 1)$
$214: P_{3596} = (11, 15, 12, 1)$
$215: P_{3601} = (0, 0, 13, 1)$
$216: P_{3637} = (4, 2, 13, 1)$
$217: P_{3644} = (11, 2, 13, 1)$
$218: P_{3692} = (11, 5, 13, 1)$
$219: P_{3696} = (15, 5, 13, 1)$
$220: P_{3715} = (2, 7, 13, 1)$
$221: P_{3725} = (12, 7, 13, 1)$
$222: P_{3733} = (4, 8, 13, 1)$
$223: P_{3744} = (15, 8, 13, 1)$
$224: P_{3763} = (2, 10, 13, 1)$
$225: P_{3775} = (14, 10, 13, 1)$
$226: P_{3822} = (13, 13, 13, 1)$
$227: P_{3853} = (12, 15, 13, 1)$
$228: P_{3855} = (14, 15, 13, 1)$
$229: P_{3857} = (0, 0, 14, 1)$
$230: P_{3881} = (8, 1, 14, 1)$
$231: P_{3885} = (12, 1, 14, 1)$
$232: P_{3957} = (4, 6, 14, 1)$
$233: P_{3965} = (12, 6, 14, 1)$
$234: P_{3975} = (6, 7, 14, 1)$
$235: P_{3980} = (11, 7, 14, 1)$
$236: P_{3996} = (11, 8, 14, 1)$
$237: P_{3998} = (13, 8, 14, 1)$
$238: P_{4007} = (6, 9, 14, 1)$
$239: P_{4014} = (13, 9, 14, 1)$
$240: P_{4095} = (14, 14, 14, 1)$
$241: P_{4101} = (4, 15, 14, 1)$
$242: P_{4105} = (8, 15, 14, 1)$
$243: P_{4113} = (0, 0, 15, 1)$
$244: P_{4150} = (5, 2, 15, 1)$
$245: P_{4153} = (8, 2, 15, 1)$
$246: P_{4182} = (5, 4, 15, 1)$
$247: P_{4190} = (13, 4, 15, 1)$
$248: P_{4211} = (2, 6, 15, 1)$
$249: P_{4212} = (3, 6, 15, 1)$
$250: P_{4258} = (1, 9, 15, 1)$
$251: P_{4259} = (2, 9, 15, 1)$
$252: P_{4297} = (8, 11, 15, 1)$
$253: P_{4302} = (13, 11, 15, 1)$
$254: P_{4322} = (1, 13, 15, 1)$
$255: P_{4324} = (3, 13, 15, 1)$
$256: P_{4368} = (15, 15, 15, 1)$