Rank-76308 over GF(16)

January 15, 2021

The equation

The equation of the surface is :

$$X_0^3 + X_0^2X_1 + X_1^2X_3 + X_1X_2^2 + X_0X_3^2 + X_0X_1X_2 = 0$$

(1, 0, 0, 0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 1, 0, 0, 1, 0, 0, 0)
The point rank of the equation over GF(16) is 286396694

General information

Number of lines	16
Number of points	337
Number of singular points	2
Number of Eckardt points	3
Number of double points	29
Number of single points	195
Number of points off lines	108
Number of Hesse planes	0
Number of axes	0
Type of points on lines	17^{16}
Type of lines on points	5^2, 3^3, 2^{29}, 1^{195}, 0^{108}

Singular Points

The surface has 2 singular points:

$0: \ P_{2834} = \mathbf{P}(1, 0, \delta^{10}, 1) = \mathbf{P}(1, 0, 10, 1)$
$1: \ P_{3090} = \mathbf{P}(1, 0, \delta^{5}, 1) = \mathbf{P}(1, 0, 11, 1)$

The 16 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{70160} = \begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{70160} = \mathbf{Pl}(0, 1, 0, 0, 0, 0)_1$$

$$\ell_1 = \left[\begin{array}{cccc} 1 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{array}\right]_{4624} = \left[\begin{array}{cccc} 1 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{array}\right]_{4624} = \mathbf{Pl}(0,1,1,0,0,0)_{18}$$

$$\ell_2 = \left[\begin{array}{cccc} 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{array}\right]_{530} = \left[\begin{array}{cccc} 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{array}\right]_{530} = \mathbf{Pl}(0,0,1,1,1,1)_{9426}$$

$$\ell_3 = \left[\begin{array}{cccc} 1 & 1 & 0 & 1 \\ 0 & 0 & 1 & 1 \end{array}\right]_{4898} = \left[\begin{array}{cccc} 1 & 1 & 0 & 1 \\ 0 & 0 & 1 & 1 \end{array}\right]_{4898} = \mathbf{Pl}(0,1,1,1,1,1)_{9442}$$

$$\ell_4 = \left[\begin{array}{cccc} 1 & 0 & \delta^5 & 1 \\ 0 & 1 & \delta^{13} & \delta^{11} \end{array}\right]_{7585} = \left[\begin{array}{cccc} 1 & 0 & 11 & 1 \\ 0 & 1 & 6 & 13 \end{array}\right]_{7585} = \mathbf{Pl}(8,3,11,10,15,1)_{69133}$$

$$\ell_5 = \left[\begin{array}{cccc} 1 & 0 & \delta^5 & 1 \\ 0 & 1 & \delta^{14} & \delta^{13} \end{array}\right]_{7479} = \left[\begin{array}{cccc} 1 & 0 & 11 & 1 \\ 0 & 1 & 12 & 6 \end{array}\right]_{7479} = \mathbf{Pl}(8,3,11,10,14,1)_{65203}$$

$$\ell_6 = \left[\begin{array}{cccc} 1 & \delta^5 & 0 & \delta^2 \\ 0 & 0 & 1 & \delta^{10} \end{array}\right]_{20741} = \left[\begin{array}{cccc} 1 & 11 & 0 & 4 \\ 0 & 0 & 1 & 10 \end{array}\right]_{20741} = \mathbf{Pl}(0,3,11,10,11,1)_{50554}$$

$$\ell_7 = \left[\begin{array}{cccc} 1 & \delta^5 & 0 & \delta^8 \\ 0 & 0 & 1 & \delta^{10} \end{array}\right]_{64421} = \left[\begin{array}{cccc} 1 & 11 & 0 & 14 \\ 0 & 0 & 1 & 10 \end{array}\right]_{64421} = \mathbf{Pl}(0,8,11,10,11,1)_{50559}$$

$$\ell_8 = \left[\begin{array}{cccc} 1 & 0 & \delta^5 & 1 \\ 0 & 1 & \delta^{11} & \delta^7 \end{array}\right]_{7496} = \left[\begin{array}{cccc} 1 & 0 & 11 & 1 \\ 0 & 1 & 13 & 7 \end{array}\right]_{7496} = \mathbf{Pl}(3,8,11,10,4,1)_{24383}$$

$$\ell_9 = \left[\begin{array}{cccc} 1 & 0 & \delta^5 & 1 \\ 0 & 1 & \delta^7 & \delta^{14} \end{array}\right]_{7570} = \left[\begin{array}{cccc} 1 & 0 & 11 & 1 \\ 0 & 1 & 7 & 12 \end{array}\right]_{7570} = \mathbf{Pl}(3,8,11,10,5,1)_{28403}$$

$$\ell_{10} = \left[\begin{array}{cccc} 1 & 0 & \delta^{10} & 1 \\ 0 & 1 & \delta^{14} & \delta^{13} \end{array}\right]_{7206} = \left[\begin{array}{cccc} 1 & 0 & 10 & 1 \\ 0 & 1 & 12 & 6 \end{array}\right]_{7206} = \mathbf{Pl}(5,15,10,11,8,1)_{40540}$$

$$\ell_{11} = \left[\begin{array}{cccc} 1 & 0 & \delta^{10} & 1 \\ 0 & 1 & \delta^7 & \delta^{14} \end{array}\right]_{7297} = \left[\begin{array}{cccc} 1 & 0 & 10 & 1 \\ 0 & 1 & 7 & 12 \end{array}\right]_{7297} = \mathbf{Pl}(5,15,10,11,9,1)_{44485}$$

$$\ell_{12} = \left[\begin{array}{cccc} 1 & \delta^{10} & 0 & \delta \\ 0 & 0 & 1 & \delta^5 \end{array}\right]_{11733} = \left[\begin{array}{cccc} 1 & 10 & 0 & 2 \\ 0 & 0 & 1 & 11 \end{array}\right]_{11733} = \mathbf{Pl}(0,15,10,11,10,1)_{46455}$$

$$\ell_{13} = \left[\begin{array}{cccc} 1 & \delta^{10} & 0 & \delta^4 \\ 0 & 0 & 1 & \delta^5 \end{array}\right]_{42309} = \left[\begin{array}{cccc} 1 & 10 & 0 & 9 \\ 0 & 0 & 1 & 11 \end{array}\right]_{42309} = \mathbf{Pl}(0,5,10,11,10,1)_{46445}$$

$$\ell_{14} = \left[\begin{array}{cccc} 1 & 0 & \delta^{10} & 1 \\ 0 & 1 & \delta^{13} & \delta^{11} \end{array}\right]_{7312} = \left[\begin{array}{cccc} 1 & 0 & 10 & 1 \\ 0 & 1 & 6 & 13 \end{array}\right]_{7312} = \mathbf{Pl}(15,5,10,11,2,1)_{15950}$$

$$\ell_{15} = \left[\begin{array}{cccc} 1 & 0 & \delta^{10} & 1 \\ 0 & 1 & \delta^{11} & \delta^7 \end{array}\right]_{7223} = \left[\begin{array}{cccc} 1 & 0 & 10 & 1 \\ 0 & 1 & 13 & 7 \end{array}\right]_{7223} = \mathbf{Pl}(15,5,10,11,3,1)_{20000}$$

Rank of lines: (70160, 4624, 530, 4898, 7585, 7479, 20741, 64421, 7496, 7570, 7206, 7297, 11733, 42309, 7312, 7223)
Rank of points on Klein quadric: (1, 18, 9426, 9442, 69133, 65203, 50554, 50559, 24383, 28403, 40540, 44485, 46455, 46445, 15950, 20000)

Eckardt Points

The surface has 3 Eckardt points:
$0 : P_{530} = \mathbf{P}(0,0,1,1) = \mathbf{P}(0,0,1,1)$,
$1 : P_{2833} = \mathbf{P}(0,0,\delta^{10},1) = \mathbf{P}(0,0,10,1)$,
$2 : P_{3089} = \mathbf{P}(0,0,\delta^5,1) = \mathbf{P}(0,0,11,1)$.

Double Points

The surface has 29 Double points:
The double points on the surface are:

$P_{2} = (0,0,1,0) = \ell_0 \cap \ell_1$
$P_{767} = (14,14,1,1) = \ell_2 \cap \ell_5$
$P_{597} = (4,4,1,1) = \ell_2 \cap \ell_8$
$P_{682} = (9,9,1,1) = \ell_2 \cap \ell_{11}$
$P_{563} = (2,2,1,1) = \ell_2 \cap \ell_{14}$
$P_{1075} = (2,2,3,1) = \ell_3 \cap \ell_4$
$P_{2474} = (9,9,8,1) = \ell_3 \cap \ell_9$
$P_{4351} = (14,14,15,1) = \ell_3 \cap \ell_{10}$
$P_{1621} = (4,4,5,1) = \ell_3 \cap \ell_{15}$
$P_{761} = (8,14,1,1) = \ell_4 \cap \ell_6$
$P_{856} = (7,4,2,1) = \ell_4 \cap \ell_{12}$
$P_{1441} = (0,9,4,1) = \ell_4 \cap \ell_{14}$
$P_{1086} = (13,2,3,1) = \ell_5 \cap \ell_6$
$P_{849} = (0,4,2,1) = \ell_5 \cap \ell_{10}$
$P_{1446} = (5,9,4,1) = \ell_5 \cap \ell_{13}$
$P_{852} = (3,4,2,1) = \ell_6 \cap \ell_{11}$
$P_{1453} = (12,9,4,1) = \ell_6 \cap \ell_{15}$
$P_{2477} = (12,9,8,1) = \ell_7 \cap \ell_8$
$P_{596} = (3,4,1,1) = \ell_7 \cap \ell_9$
$P_{3902} = (13,2,14,1) = \ell_7 \cap \ell_{10}$
$P_{2809} = (8,14,9,1) = \ell_7 \cap \ell_{14}$
$P_{3904} = (15,2,14,1) = \ell_8 \cap \ell_{12}$
$P_{2801} = (0,14,9,1) = \ell_8 \cap \ell_{15}$
$P_{3889} = (0,2,14,1) = \ell_9 \cap \ell_{11}$
$P_{2807} = (6,14,9,1) = \ell_9 \cap \ell_{13}$
$P_{678} = (5,9,1,1) = \ell_{10} \cap \ell_{12}$
$P_{4343} = (6,14,15,1) = \ell_{11} \cap \ell_{12}$
$P_{1624} = (7,4,5,1) = \ell_{13} \cap \ell_{14}$
$P_{576} = (15,2,1,1) = \ell_{13} \cap \ell_{15}$

Single Points

The surface has 195 single points:
The single points on the surface are:

0 : $P_{3} = (0,0,0,1)$ lies on line ℓ_0
1 : $P_{4} = (1,1,1,1)$ lies on line ℓ_2
2 : $P_{5} = (1,1,0,0)$ lies on line ℓ_2
3 : $P_{36} = (1,1,1,0)$ lies on line ℓ_3
4 : $P_{120} = (5,6,1,0)$ lies on line ℓ_4
5 : $P_{128} = (13,6,1,0)$ lies on line ℓ_5
6 : $P_{129} = (14,6,1,0)$ lies on line ℓ_6
7 : $P_{135} = (4,7,1,0)$ lies on line ℓ_7
8 : $P_{143} = (12,7,1,0)$ lies on line ℓ_8
9 : $P_{146} = (15,7,1,0)$ lies on line ℓ_9
10 : $P_{214} = (3,12,1,0)$ lies on line ℓ_{10}
11 : $P_{217} = (6,12,1,0)$ lies on line ℓ_{11}
12 : $P_{220} = (9,12,1,0)$ lies on line ℓ_{12}
13 : $P_{229} = (2,13,1,0)$ lies on line ℓ_{13}
14 : $P_{234} = (7,13,1,0)$ lies on line ℓ_{14}
15 : $P_{235} = (8,13,1,0)$ lies on line ℓ_{15}
16 : $P_{275} = (1,0,0,1)$ lies on line ℓ_1
17 : $P_{291} = (1,1,0,1)$ lies on line ℓ_3
18 : $P_{329} = (7,3,0,1)$ lies on line ℓ_7
19 : $P_{330} = (8,3,0,1)$ lies on line ℓ_8
20 : $P_{334} = (12,3,0,1)$ lies on line ℓ_9
21 : $P_{360} = (6,5,0,1)$ lies on line ℓ_{10}
22 : $P_{366} = (12,5,0,1)$ lies on line ℓ_{12}
23 : $P_{369} = (15,5,0,1)$ lies on line ℓ_{11}
24 : $P_{405} = (3,8,0,1)$ lies on line ℓ_5
25 : $P_{408} = (6,8,0,1)$ lies on line ℓ_6
26 : $P_{415} = (13,8,0,1)$ lies on line ℓ_4
27 : $P_{519} = (5,15,0,1)$ lies on line ℓ_{14}
28 : $P_{521} = (7,15,0,1)$ lies on line ℓ_{15}
29 : $P_{527} = (13,15,0,1)$ lies on line ℓ_{13}
30 : $P_{531} = (1,0,1,1)$ lies on line ℓ_1
31 : $P_{580} = (3,3,1,1)$ lies on line ℓ_2
32 : $P_{614} = (5,5,1,1)$ lies on line ℓ_2
33 : $P_{631} = (6,6,1,1)$ lies on line ℓ_2
34 : $P_{648} = (7,7,1,1)$ lies on line ℓ_2
35 : $P_{665} = (8,8,1,1)$ lies on line ℓ_2
36 : $P_{699} = (10,10,1,1)$ lies on line ℓ_2
37 : $P_{716} = (11,11,1,1)$ lies on line ℓ_2
38 : $P_{733} = (12,12,1,1)$ lies on line ℓ_2
39 : $P_{750} = (13,13,1,1)$ lies on line ℓ_2
40 : $P_{784} = (15,15,1,1)$ lies on line ℓ_2
41 : $P_{785} = (0,0,2,1)$ lies on line ℓ_0
42 : $P_{786} = (1,0,2,1)$ lies on line ℓ_1
43 : $P_{836} = (3,3,2,1)$ lies on line ℓ_3
44 : $P_{986} = (9,12,2,1)$ lies on line ℓ_{13}
45 : $P_{988} = (11,12,2,1)$ lies on line ℓ_{14}
46 : $P_{991} = (14,12,2,1)$ lies on line ℓ_{15}
47 : $P_{1002} = (9,13,2,1)$ lies on line ℓ_8
48 : $P_{1004} = (11,13,2,1)$ lies on line ℓ_9
49 : $P_{1008} = (15,13,2,1)$ lies on line ℓ_7
50 : $P_{1041} = (0,0,3,1)$ lies on line ℓ_0
51 : $P_{1042} = (1,0,3,1)$ lies on line ℓ_1
52 : $P_{1063} = (6,1,3,1)$ lies on line ℓ_{15}
53 : $P_{1068} = (11,1,3,1)$ lies on line ℓ_{13}
54 : $P_{1069} = (12,1,3,1)$ lies on line ℓ_{14}
55 : $P_{1172} = (3,8,3,1)$ lies on line ℓ_{10}
56 : $P_{1174} = (5,8,3,1)$ lies on line ℓ_{11}
57 : $P_{1183} = (14,8,3,1)$ lies on line ℓ_{12}
58 : $P_{1205} = (4,10,3,1)$ lies on line ℓ_9
59 : $P_{1206} = (5,10,3,1)$ lies on line ℓ_8
60 : $P_{1212} = (11,10,3,1)$ lies on line ℓ_7
61 : $P_{1297} = (0,0,4,1)$ lies on line ℓ_0
62 : $P_{1298} = (1,0,4,1)$ lies on line ℓ_1
63 : $P_{1382} = (5,5,4,1)$ lies on line ℓ_3

64 : $P_{1395} = (2, 6, 4, 1)$ lies on line ℓ_9
65 : $P_{1403} = (10, 6, 4, 1)$ lies on line ℓ_8
66 : $P_{1407} = (14, 6, 4, 1)$ lies on line ℓ_7
67 : $P_{1412} = (3, 7, 4, 1)$ lies on line ℓ_{12}
68 : $P_{1419} = (10, 7, 4, 1)$ lies on line ℓ_{10}
69 : $P_{1423} = (14, 7, 4, 1)$ lies on line ℓ_{11}
70 : $P_{1553} = (0, 0, 5, 1)$ lies on line ℓ_0
71 : $P_{1554} = (1, 0, 5, 1)$ lies on line ℓ_1
72 : $P_{1575} = (6, 1, 5, 1)$ lies on line ℓ_8
73 : $P_{1579} = (10, 1, 5, 1)$ lies on line ℓ_7
74 : $P_{1582} = (13, 1, 5, 1)$ lies on line ℓ_9
75 : $P_{1737} = (8, 11, 5, 1)$ lies on line ℓ_{11}
76 : $P_{1738} = (9, 11, 5, 1)$ lies on line ℓ_{10}
77 : $P_{1739} = (10, 11, 5, 1)$ lies on line ℓ_{12}
78 : $P_{1795} = (2, 15, 5, 1)$ lies on line ℓ_6
79 : $P_{1798} = (5, 15, 5, 1)$ lies on line ℓ_4
80 : $P_{1801} = (8, 15, 5, 1)$ lies on line ℓ_5
81 : $P_{1809} = (0, 0, 6, 1)$ lies on line ℓ_0
82 : $P_{1810} = (1, 0, 6, 1)$ lies on line ℓ_1
83 : $P_{1895} = (6, 5, 6, 1)$ lies on line ℓ_5
84 : $P_{1898} = (9, 5, 6, 1)$ lies on line ℓ_6
85 : $P_{1899} = (10, 5, 6, 1)$ lies on line ℓ_4
86 : $P_{1907} = (2, 6, 6, 1)$ lies on line ℓ_{11}
87 : $P_{1913} = (8, 6, 6, 1)$ lies on line ℓ_{12}
88 : $P_{1917} = (12, 6, 6, 1)$ lies on line ℓ_{10}
89 : $P_{1928} = (7, 7, 6, 1)$ lies on line ℓ_3
90 : $P_{1942} = (5, 8, 6, 1)$ lies on line ℓ_9
91 : $P_{1943} = (6, 8, 6, 1)$ lies on line ℓ_7
92 : $P_{1948} = (11, 8, 6, 1)$ lies on line ℓ_8
93 : $P_{1970} = (1, 10, 6, 1)$ lies on line ℓ_{13}
94 : $P_{1974} = (5, 10, 6, 1)$ lies on line ℓ_{15}
95 : $P_{1983} = (14, 10, 6, 1)$ lies on line ℓ_{14}
96 : $P_{2065} = (0, 0, 7, 1)$ lies on line ℓ_0
97 : $P_{2066} = (1, 0, 7, 1)$ lies on line ℓ_1
98 : $P_{2120} = (7, 3, 7, 1)$ lies on line ℓ_6
99 : $P_{2124} = (11, 3, 7, 1)$ lies on line ℓ_5
100 : $P_{2128} = (15, 3, 7, 1)$ lies on line ℓ_4
101 : $P_{2167} = (6, 6, 7, 1)$ lies on line ℓ_3
102 : $P_{2180} = (3, 7, 7, 1)$ lies on line ℓ_{13}
103 : $P_{2186} = (9, 7, 7, 1)$ lies on line ℓ_{14}
104 : $P_{2190} = (13, 7, 7, 1)$ lies on line ℓ_{15}
105 : $P_{2226} = (1, 10, 7, 1)$ lies on line ℓ_{12}
106 : $P_{2229} = (4, 10, 7, 1)$ lies on line ℓ_{11}
107 : $P_{2240} = (15, 10, 7, 1)$ lies on line ℓ_{10}
108 : $P_{2307} = (2, 15, 7, 1)$ lies on line ℓ_7
109 : $P_{2312} = (7, 15, 7, 1)$ lies on line ℓ_8
110 : $P_{2315} = (10, 15, 7, 1)$ lies on line ℓ_9
111 : $P_{2321} = (0, 0, 8, 1)$ lies on line ℓ_0
112 : $P_{2322} = (1, 0, 8, 1)$ lies on line ℓ_1
113 : $P_{2344} = (7, 1, 8, 1)$ lies on line ℓ_{10}
114 : $P_{2348} = (11, 1, 8, 1)$ lies on line ℓ_{12}
115 : $P_{2350} = (13, 1, 8, 1)$ lies on line ℓ_{11}
116 : $P_{2373} = (4, 3, 8, 1)$ lies on line ℓ_{13}
117 : $P_{2377} = (8, 3, 8, 1)$ lies on line ℓ_{15}
118 : $P_{2384} = (15, 3, 8, 1)$ lies on line ℓ_{14}
119 : $P_{2492} = (11, 10, 8, 1)$ lies on line ℓ_6
120 : $P_{2495} = (14, 10, 8, 1)$ lies on line ℓ_4
121 : $P_{2496} = (15, 10, 8, 1)$ lies on line ℓ_5
122 : $P_{2577} = (0, 0, 9, 1)$ lies on line ℓ_0
123 : $P_{2578} = (1, 0, 9, 1)$ lies on line ℓ_1
124 : $P_{2713} = (8, 8, 9, 1)$ lies on line ℓ_3
125 : $P_{2771} = (2, 12, 9, 1)$ lies on line ℓ_5
126 : $P_{2774} = (5, 12, 9, 1)$ lies on line ℓ_6
127 : $P_{2780} = (11, 12, 9, 1)$ lies on line ℓ_4
128 : $P_{2787} = (2, 13, 9, 1)$ lies on line ℓ_{12}
129 : $P_{2789} = (4, 13, 9, 1)$ lies on line ℓ_{10}
130 : $P_{2796} = (11, 13, 9, 1)$ lies on line ℓ_{11}
131 : $P_{2933} = (4, 6, 10, 1)$ lies on line ℓ_4
132 : $P_{2941} = (12, 6, 10, 1)$ lies on line ℓ_5
133 : $P_{2943} = (14, 6, 10, 1)$ lies on line ℓ_6
134 : $P_{2949} = (4, 7, 10, 1)$ lies on line ℓ_7
135 : $P_{2958} = (13, 7, 10, 1)$ lies on line ℓ_8
136 : $P_{2959} = (14, 7, 10, 1)$ lies on line ℓ_9
137 : $P_{3020} = (11, 11, 10, 1)$ lies on line ℓ_3
138 : $P_{3259} = (10, 10, 11, 1)$ lies on line ℓ_3
139 : $P_{3283} = (2, 12, 11, 1)$ lies on line ℓ_{10}
140 : $P_{3288} = (7, 12, 11, 1)$ lies on line ℓ_{11}
141 : $P_{3290} = (9, 12, 11, 1)$ lies on line ℓ_{12}
142 : $P_{3299} = (2, 13, 11, 1)$ lies on line ℓ_{13}
143 : $P_{3303} = (6, 13, 11, 1)$ lies on line ℓ_{14}
144 : $P_{3306} = (9, 13, 11, 1)$ lies on line ℓ_{15}
145 : $P_{3345} = (0, 0, 12, 1)$ lies on line ℓ_0
146 : $P_{3346} = (1, 0, 12, 1)$ lies on line ℓ_1
147 : $P_{3397} = (4, 3, 12, 1)$ lies on line ℓ_{12}
148 : $P_{3404} = (11, 3, 12, 1)$ lies on line ℓ_{10}
149 : $P_{3405} = (12, 3, 12, 1)$ lies on line ℓ_{11}
150 : $P_{3428} = (3, 5, 12, 1)$ lies on line ℓ_{15}
151 : $P_{3435} = (10, 5, 12, 1)$ lies on line ℓ_{14}
152 : $P_{3437} = (12, 5, 12, 1)$ lies on line ℓ_{13}
153 : $P_{3522} = (1, 11, 12, 1)$ lies on line ℓ_6
154 : $P_{3524} = (3, 11, 12, 1)$ lies on line ℓ_4
155 : $P_{3530} = (9, 11, 12, 1)$ lies on line ℓ_5
156 : $P_{3542} = (5, 12, 12, 1)$ lies on line ℓ_7
157 : $P_{3544} = (7, 12, 12, 1)$ lies on line ℓ_9
158 : $P_{3551} = (14, 12, 12, 1)$ lies on line ℓ_8
159 : $P_{3566} = (13, 13, 12, 1)$ lies on line ℓ_3
160 : $P_{3601} = (0, 0, 13, 1)$ lies on line ℓ_0
161 : $P_{3602} = (1, 0, 13, 1)$ lies on line ℓ_1
162 : $P_{3740} = (11, 8, 13, 1)$ lies on line ℓ_{15}
163 : $P_{3742} = (13, 8, 13, 1)$ lies on line ℓ_{14}
164 : $P_{3743} = (14, 8, 13, 1)$ lies on line ℓ_{13}
165 : $P_{3778} = (1, 11, 13, 1)$ lies on line ℓ_7
166 : $P_{3779} = (2, 11, 13, 1)$ lies on line ℓ_8
167 : $P_{3785} = (8, 11, 13, 1)$ lies on line ℓ_9
168 : $P_{3805} = (12, 12, 13, 1)$ lies on line ℓ_3
169 : $P_{3813} = (4, 13, 13, 1)$ lies on line ℓ_5
170 : $P_{3815} = (6, 13, 13, 1)$ lies on line ℓ_4
171 : $P_{3824} = (15, 13, 13, 1)$ lies on line ℓ_6

172 : $P_{3849} = (8, 15, 13, 1)$ lies on line ℓ_{10}
173 : $P_{3851} = (10, 15, 13, 1)$ lies on line ℓ_{11}
174 : $P_{3854} = (13, 15, 13, 1)$ lies on line ℓ_{12}
175 : $P_{3857} = (0, 0, 14, 1)$ lies on line ℓ_0
176 : $P_{3858} = (1, 0, 14, 1)$ lies on line ℓ_1
177 : $P_{3957} = (4, 6, 14, 1)$ lies on line ℓ_{14}
178 : $P_{3961} = (8, 6, 14, 1)$ lies on line ℓ_{13}
179 : $P_{3963} = (10, 6, 14, 1)$ lies on line ℓ_{15}
180 : $P_{3973} = (4, 7, 14, 1)$ lies on line ℓ_6
181 : $P_{3978} = (9, 7, 14, 1)$ lies on line ℓ_4
182 : $P_{3979} = (10, 7, 14, 1)$ lies on line ℓ_5
183 : $P_{4112} = (15, 15, 14, 1)$ lies on line ℓ_3
184 : $P_{4113} = (0, 0, 15, 1)$ lies on line ℓ_0
185 : $P_{4114} = (1, 0, 15, 1)$ lies on line ℓ_1
186 : $P_{4136} = (7, 1, 15, 1)$ lies on line ℓ_5
187 : $P_{4139} = (10, 1, 15, 1)$ lies on line ℓ_6
188 : $P_{4141} = (12, 1, 15, 1)$ lies on line ℓ_4
189 : $P_{4196} = (3, 5, 15, 1)$ lies on line ℓ_8
190 : $P_{4202} = (9, 5, 15, 1)$ lies on line ℓ_7
191 : $P_{4208} = (15, 5, 15, 1)$ lies on line ℓ_9
192 : $P_{4291} = (2, 11, 15, 1)$ lies on line ℓ_{15}
193 : $P_{4292} = (3, 11, 15, 1)$ lies on line ℓ_{14}
194 : $P_{4299} = (10, 11, 15, 1)$ lies on line ℓ_{13}

The single points on the surface are:

Points on surface but on no line

The surface has 108 points not on any line:
The points on the surface but not on lines are:

0 : $P_1 = (0, 1, 0, 0)$
1 : $P_{316} = (10, 2, 0, 1)$
2 : $P_{349} = (11, 4, 0, 1)$
3 : $P_{385} = (15, 6, 0, 1)$
4 : $P_{391} = (5, 7, 0, 1)$
5 : $P_{428} = (10, 9, 0, 1)$
6 : $P_{474} = (8, 12, 0, 1)$
7 : $P_{485} = (3, 13, 0, 1)$
8 : $P_{509} = (11, 14, 0, 1)$
9 : $P_{546} = (0, 1, 1, 1)$
10 : $P_{591} = (14, 3, 1, 1)$
11 : $P_{611} = (2, 5, 1, 1)$
12 : $P_{638} = (13, 6, 1, 1)$
13 : $P_{653} = (12, 7, 1, 1)$
14 : $P_{661} = (4, 8, 1, 1)$
15 : $P_{727} = (6, 12, 1, 1)$
16 : $P_{744} = (7, 13, 1, 1)$
17 : $P_{778} = (9, 15, 1, 1)$
18 : $P_{824} = (7, 2, 2, 1)$
19 : $P_{846} = (13, 3, 2, 1)$
20 : $P_{898} = (1, 7, 2, 1)$
21 : $P_{1039} = (14, 15, 2, 1)$
22 : $P_{1095} = (6, 3, 3, 1)$
23 : $P_{1119} = (14, 4, 3, 1)$
24 : $P_{1121} = (0, 5, 3, 1)$
25 : $P_{1123} = (2, 5, 3, 1)$
26 : $P_{1128} = (7, 5, 3, 1)$
27 : $P_{1154} = (1, 7, 3, 1)$
28 : $P_{1252} = (3, 13, 3, 1)$
29 : $P_{1278} = (13, 14, 3, 1)$
30 : $P_{1293} = (12, 15, 3, 1)$
31 : $P_{1347} = (2, 3, 4, 1)$
32 : $P_{1373} = (12, 4, 4, 1)$
33 : $P_{1384} = (7, 5, 4, 1)$
34 : $P_{1490} = (1, 12, 4, 1)$
35 : $P_{1592} = (7, 2, 5, 1)$
36 : $P_{1607} = (6, 3, 5, 1)$
37 : $P_{1646} = (13, 5, 5, 1)$
38 : $P_{1670} = (5, 7, 5, 1)$
39 : $P_{1681} = (0, 8, 5, 1)$
40 : $P_{1685} = (4, 8, 5, 1)$
41 : $P_{1693} = (12, 8, 5, 1)$
42 : $P_{1699} = (2, 9, 5, 1)$
43 : $P_{1746} = (1, 12, 5, 1)$
44 : $P_{1850} = (9, 2, 6, 1)$
45 : $P_{1859} = (2, 3, 6, 1)$
46 : $P_{1932} = (11, 7, 6, 1)$
47 : $P_{2017} = (0, 13, 6, 1)$
48 : $P_{2024} = (7, 13, 6, 1)$
49 : $P_{2027} = (10, 13, 6, 1)$
50 : $P_{2045} = (12, 14, 6, 1)$
51 : $P_{2142} = (13, 4, 7, 1)$
52 : $P_{2172} = (11, 6, 7, 1)$
53 : $P_{2202} = (9, 8, 7, 1)$
54 : $P_{2211} = (2, 9, 7, 1)$
55 : $P_{2257} = (0, 12, 7, 1)$
56 : $P_{2263} = (6, 12, 7, 1)$
57 : $P_{2267} = (10, 12, 7, 1)$
58 : $P_{2397} = (12, 4, 8, 1)$
59 : $P_{2414} = (13, 5, 8, 1)$
60 : $P_{2418} = (1, 6, 8, 1)$
61 : $P_{2456} = (7, 8, 8, 1)$
62 : $P_{2521} = (8, 12, 8, 1)$
63 : $P_{2549} = (4, 14, 8, 1)$

64 : $P_{2561} = (0, 15, 8, 1)$
65 : $P_{2567} = (6, 15, 8, 1)$
66 : $P_{2570} = (9, 15, 8, 1)$
67 : $P_{2661} = (4, 5, 9, 1)$
68 : $P_{2674} = (1, 6, 9, 1)$
69 : $P_{2717} = (12, 8, 9, 1)$
70 : $P_{2727} = (6, 9, 9, 1)$
71 : $P_{2875} = (10, 2, 10, 1)$
72 : $P_{2910} = (13, 4, 10, 1)$
73 : $P_{2987} = (10, 9, 10, 1)$
74 : $P_{3009} = (0, 11, 10, 1)$
75 : $P_{3069} = (12, 14, 10, 1)$
76 : $P_{3127} = (6, 2, 11, 1)$
77 : $P_{3164} = (11, 4, 11, 1)$
78 : $P_{3240} = (7, 9, 11, 1)$
79 : $P_{3249} = (0, 10, 11, 1)$
80 : $P_{3324} = (11, 14, 11, 1)$
81 : $P_{3441} = (0, 6, 12, 1)$
82 : $P_{3452} = (11, 6, 12, 1)$
83 : $P_{3454} = (13, 6, 12, 1)$
84 : $P_{3496} = (7, 9, 12, 1)$
85 : $P_{3563} = (10, 13, 12, 1)$
86 : $P_{3573} = (4, 14, 12, 1)$
87 : $P_{3599} = (14, 15, 12, 1)$
88 : $P_{3639} = (6, 2, 13, 1)$
89 : $P_{3679} = (14, 4, 13, 1)$
90 : $P_{3685} = (4, 5, 13, 1)$
91 : $P_{3713} = (0, 7, 13, 1)$
92 : $P_{3724} = (11, 7, 13, 1)$
93 : $P_{3725} = (12, 7, 13, 1)$
94 : $P_{3803} = (10, 12, 13, 1)$
95 : $P_{3994} = (9, 8, 14, 1)$
96 : $P_{4066} = (1, 13, 14, 1)$
97 : $P_{4094} = (13, 14, 14, 1)$
98 : $P_{4103} = (6, 15, 14, 1)$
99 : $P_{4154} = (9, 2, 15, 1)$
100 : $P_{4161} = (0, 3, 15, 1)$
101 : $P_{4174} = (13, 3, 15, 1)$
102 : $P_{4175} = (14, 3, 15, 1)$
103 : $P_{4224} = (15, 6, 15, 1)$
104 : $P_{4248} = (7, 8, 15, 1)$
105 : $P_{4263} = (6, 9, 15, 1)$
106 : $P_{4322} = (1, 13, 15, 1)$
107 : $P_{4365} = (12, 15, 15, 1)$

Line Intersection Graph

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

Neighbor sets in the line intersection graph:
Line 0 intersects

Line	ℓ_1	ℓ_2	ℓ_3	ℓ_6	ℓ_7	ℓ_{12}	ℓ_{13}
in point	P_2	P_{530}	P_{530}	P_{3089}	P_{3089}	P_{2833}	P_{2833}

Line 1 intersects

Line	ℓ_0	ℓ_4	ℓ_5	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{14}	ℓ_{15}
in point	P_2	P_{3090}	P_{3090}	P_{3090}	P_{3090}	P_{2834}	P_{2834}	P_{2834}	P_{2834}

Line 2 intersects

Line	ℓ_0	ℓ_3	ℓ_5	ℓ_8	ℓ_{11}	ℓ_{14}
in point	P_{530}	P_{530}	P_{767}	P_{597}	P_{682}	P_{563}

Line 3 intersects

Line	ℓ_0	ℓ_2	ℓ_4	ℓ_9	ℓ_{10}	ℓ_{15}
in point	P_{530}	P_{530}	P_{1075}	P_{2474}	P_{4351}	P_{1621}

Line 4 intersects

Line	ℓ_1	ℓ_3	ℓ_5	ℓ_6	ℓ_8	ℓ_9	ℓ_{12}	ℓ_{14}
in point	P_{3090}	P_{1075}	P_{3090}	P_{761}	P_{3090}	P_{3090}	P_{856}	P_{1441}

Line 5 intersects

Line	ℓ_1	ℓ_2	ℓ_4	ℓ_6	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{13}
in point	P_{3090}	P_{767}	P_{3090}	P_{1086}	P_{3090}	P_{3090}	P_{849}	P_{1446}

Line 6 intersects

Line	ℓ_0	ℓ_4	ℓ_5	ℓ_7	ℓ_{11}	ℓ_{15}
in point	P_{3089}	P_{761}	P_{1086}	P_{3089}	P_{852}	P_{1453}

Line 7 intersects

Line	ℓ_0	ℓ_6	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{14}
in point	P_{3089}	P_{3089}	P_{2477}	P_{596}	P_{3902}	P_{2809}

Line 8 intersects

Line	ℓ_1	ℓ_2	ℓ_4	ℓ_5	ℓ_7	ℓ_9	ℓ_{12}	ℓ_{15}
in point	P_{3090}	P_{597}	P_{3090}	P_{3090}	P_{2477}	P_{3090}	P_{3904}	P_{2801}

Line 9 intersects

Line	ℓ_1	ℓ_3	ℓ_4	ℓ_5	ℓ_7	ℓ_8	ℓ_{11}	ℓ_{13}
in point	P_{3090}	P_{2474}	P_{3090}	P_{3090}	P_{596}	P_{3090}	P_{3889}	P_{2807}

Line 10 intersects

Line	ℓ_1	ℓ_3	ℓ_5	ℓ_7	ℓ_{11}	ℓ_{12}	ℓ_{14}	ℓ_{15}
in point	P_{2834}	P_{4351}	P_{849}	P_{3902}	P_{2834}	P_{678}	P_{2834}	P_{2834}

Line 11 intersects

Line	ℓ_1	ℓ_2	ℓ_6	ℓ_9	ℓ_{10}	ℓ_{12}	ℓ_{14}	ℓ_{15}
in point	P_{2834}	P_{682}	P_{852}	P_{3889}	P_{2834}	P_{4343}	P_{2834}	P_{2834}

Line 12 intersects

Line	ℓ_0	ℓ_4	ℓ_8	ℓ_{10}	ℓ_{11}	ℓ_{13}
in point	P_{2833}	P_{856}	P_{3904}	P_{678}	P_{4343}	P_{2833}

Line 13 intersects

Line	ℓ_0	ℓ_5	ℓ_9	ℓ_{12}	ℓ_{14}	ℓ_{15}
in point	P_{2833}	P_{1446}	P_{2807}	P_{2833}	P_{1624}	P_{576}

Line 14 intersects

Line	ℓ_1	ℓ_2	ℓ_4	ℓ_7	ℓ_{10}	ℓ_{11}	ℓ_{13}	ℓ_{15}
in point	P_{2834}	P_{563}	P_{1441}	P_{2809}	P_{2834}	P_{2834}	P_{1624}	P_{2834}

Line 15 intersects

Line	ℓ_1	ℓ_3	ℓ_6	ℓ_8	ℓ_{10}	ℓ_{11}	ℓ_{13}	ℓ_{14}
in point	P_{2834}	P_{1621}	P_{1453}	P_{2801}	P_{2834}	P_{2834}	P_{576}	P_{2834}

The surface has 337 points:
The points on the surface are:

0 : $P_{1} = (0, 1, 0, 0)$
1 : $P_{2} = (0, 0, 1, 0)$
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 : $P_{120} = (5, 6, 1, 0)$
7 : $P_{128} = (13, 6, 1, 0)$
8 : $P_{129} = (14, 6, 1, 0)$
9 : $P_{135} = (4, 7, 1, 0)$
10 : $P_{143} = (12, 7, 1, 0)$
11 : $P_{146} = (15, 7, 1, 0)$
12 : $P_{214} = (3, 12, 1, 0)$
13 : $P_{217} = (6, 12, 1, 0)$
14 : $P_{220} = (9, 12, 1, 0)$
15 : $P_{229} = (2, 13, 1, 0)$
16 : $P_{234} = (7, 13, 1, 0)$
17 : $P_{235} = (8, 13, 1, 0)$
18 : $P_{275} = (1, 0, 0, 1)$
19 : $P_{291} = (1, 1, 0, 1)$
20 : $P_{316} = (10, 2, 0, 1)$
21 : $P_{329} = (7, 3, 0, 1)$
22 : $P_{330} = (8, 3, 0, 1)$
23 : $P_{334} = (12, 3, 0, 1)$
24 : $P_{349} = (11, 4, 0, 1)$
25 : $P_{360} = (6, 5, 0, 1)$
26 : $P_{366} = (12, 5, 0, 1)$
27 : $P_{369} = (15, 5, 0, 1)$
28 : $P_{385} = (15, 6, 0, 1)$
29 : $P_{391} = (5, 7, 0, 1)$
30 : $P_{405} = (3, 8, 0, 1)$
31 : $P_{408} = (6, 8, 0, 1)$
32 : $P_{415} = (13, 8, 0, 1)$
33 : $P_{428} = (10, 9, 0, 1)$
34 : $P_{474} = (8, 12, 0, 1)$
35 : $P_{485} = (3, 13, 0, 1)$
36 : $P_{509} = (11, 14, 0, 1)$
37 : $P_{519} = (5, 15, 0, 1)$
38 : $P_{521} = (7, 15, 0, 1)$
39 : $P_{527} = (13, 15, 0, 1)$
40 : $P_{530} = (0, 0, 1, 1)$
41 : $P_{531} = (1, 0, 1, 1)$
42 : $P_{546} = (0, 1, 1, 1)$
43 : $P_{563} = (2, 2, 1, 1)$
44 : $P_{576} = (15, 2, 1, 1)$
45 : $P_{580} = (3, 3, 1, 1)$
46 : $P_{591} = (14, 3, 1, 1)$
47 : $P_{596} = (3, 4, 1, 1)$
48 : $P_{597} = (4, 4, 1, 1)$
49 : $P_{611} = (2, 5, 1, 1)$
50 : $P_{614} = (5, 5, 1, 1)$
51 : $P_{631} = (6, 6, 1, 1)$
52 : $P_{638} = (13, 6, 1, 1)$
53 : $P_{648} = (7, 7, 1, 1)$
54 : $P_{653} = (12, 7, 1, 1)$
55 : $P_{661} = (4, 8, 1, 1)$
56 : $P_{665} = (8, 8, 1, 1)$
57 : $P_{678} = (5, 9, 1, 1)$
58 : $P_{682} = (9, 9, 1, 1)$
59 : $P_{699} = (10, 10, 1, 1)$
60 : $P_{716} = (11, 11, 1, 1)$
61 : $P_{727} = (6, 12, 1, 1)$
62 : $P_{733} = (12, 12, 1, 1)$
63 : $P_{744} = (7, 13, 1, 1)$
64 : $P_{750} = (13, 13, 1, 1)$
65 : $P_{761} = (8, 14, 1, 1)$
66 : $P_{767} = (14, 14, 1, 1)$
67 : $P_{778} = (9, 15, 1, 1)$
68 : $P_{784} = (15, 15, 1, 1)$
69 : $P_{785} = (0, 0, 2, 1)$
70 : $P_{786} = (1, 0, 2, 1)$
71 : $P_{824} = (7, 2, 2, 1)$
72 : $P_{836} = (3, 3, 2, 1)$
73 : $P_{846} = (13, 3, 2, 1)$
74 : $P_{849} = (0, 4, 2, 1)$
75 : $P_{852} = (3, 4, 2, 1)$
76 : $P_{856} = (7, 4, 2, 1)$
77 : $P_{898} = (1, 7, 2, 1)$
78 : $P_{986} = (9, 12, 2, 1)$
79 : $P_{988} = (11, 12, 2, 1)$
80 : $P_{991} = (14, 12, 2, 1)$
81 : $P_{1002} = (9, 13, 2, 1)$
82 : $P_{1004} = (11, 13, 2, 1)$
83 : $P_{1008} = (15, 13, 2, 1)$
84 : $P_{1039} = (14, 15, 2, 1)$
85 : $P_{1041} = (0, 0, 3, 1)$
86 : $P_{1042} = (1, 0, 3, 1)$
87 : $P_{1063} = (6, 1, 3, 1)$
88 : $P_{1068} = (11, 1, 3, 1)$
89 : $P_{1069} = (12, 1, 3, 1)$
90 : $P_{1075} = (2, 2, 3, 1)$
91 : $P_{1086} = (13, 2, 3, 1)$
92 : $P_{1095} = (6, 3, 3, 1)$
93 : $P_{1119} = (14, 4, 3, 1)$
94 : $P_{1121} = (0, 5, 3, 1)$
95 : $P_{1123} = (2, 5, 3, 1)$
96 : $P_{1128} = (7, 5, 3, 1)$
97 : $P_{1154} = (1, 7, 3, 1)$
98 : $P_{1172} = (3, 8, 3, 1)$
99 : $P_{1174} = (5, 8, 3, 1)$
100 : $P_{1183} = (14, 8, 3, 1)$
101 : $P_{1205} = (4, 10, 3, 1)$
102 : $P_{1206} = (5, 10, 3, 1)$
103 : $P_{1212} = (11, 10, 3, 1)$
104 : $P_{1252} = (3, 13, 3, 1)$
105 : $P_{1278} = (13, 14, 3, 1)$
106 : $P_{1293} = (12, 15, 3, 1)$
107 : $P_{1297} = (0, 0, 4, 1)$
108 : $P_{1298} = (1, 0, 4, 1)$
109 : $P_{1347} = (2, 3, 4, 1)$
110 : $P_{1373} = (12, 4, 4, 1)$
111 : $P_{1382} = (5, 5, 4, 1)$
112 : $P_{1384} = (7, 5, 4, 1)$
113 : $P_{1395} = (2, 6, 4, 1)$
114 : $P_{1403} = (10, 6, 4, 1)$
115 : $P_{1407} = (14, 6, 4, 1)$
116 : $P_{1412} = (3, 7, 4, 1)$
117 : $P_{1419} = (10, 7, 4, 1)$
118 : $P_{1423} = (14, 7, 4, 1)$
119 : $P_{1441} = (0, 9, 4, 1)$
120 : $P_{1446} = (5, 9, 4, 1)$
121 : $P_{1453} = (12, 9, 4, 1)$
122 : $P_{1490} = (1, 12, 4, 1)$
123 : $P_{1553} = (0, 0, 5, 1)$
124 : $P_{1554} = (1, 0, 5, 1)$
125 : $P_{1575} = (6, 1, 5, 1)$
126 : $P_{1579} = (10, 1, 5, 1)$
127 : $P_{1582} = (13, 1, 5, 1)$
128 : $P_{1592} = (7, 2, 5, 1)$
129 : $P_{1607} = (6, 3, 5, 1)$
130 : $P_{1621} = (4, 4, 5, 1)$
131 : $P_{1624} = (7, 4, 5, 1)$
132 : $P_{1646} = (13, 5, 5, 1)$
133 : $P_{1670} = (5, 7, 5, 1)$
134 : $P_{1681} = (0, 8, 5, 1)$
135 : $P_{1685} = (4, 8, 5, 1)$
136 : $P_{1693} = (12, 8, 5, 1)$
137 : $P_{1699} = (2, 9, 5, 1)$
138 : $P_{1737} = (8, 11, 5, 1)$
139 : $P_{1738} = (9, 11, 5, 1)$
140 : $P_{1739} = (10, 11, 5, 1)$
141 : $P_{1746} = (1, 12, 5, 1)$
142 : $P_{1795} = (2, 15, 5, 1)$
143 : $P_{1798} = (5, 15, 5, 1)$
144 : $P_{1801} = (8, 15, 5, 1)$
145 : $P_{1809} = (0, 0, 6, 1)$
146 : $P_{1810} = (1, 0, 6, 1)$
147 : $P_{1850} = (9, 2, 6, 1)$
148 : $P_{1859} = (2, 3, 6, 1)$
149 : $P_{1895} = (6, 5, 6, 1)$
150 : $P_{1898} = (9, 5, 6, 1)$
151 : $P_{1899} = (10, 5, 6, 1)$
152 : $P_{1907} = (2, 6, 6, 1)$
153 : $P_{1913} = (8, 6, 6, 1)$
154 : $P_{1917} = (12, 6, 6, 1)$
155 : $P_{1928} = (7, 7, 6, 1)$
156 : $P_{1932} = (11, 7, 6, 1)$
157 : $P_{1942} = (5, 8, 6, 1)$
158 : $P_{1943} = (6, 8, 6, 1)$
159 : $P_{1948} = (11, 8, 6, 1)$
160 : $P_{1970} = (1, 10, 6, 1)$
161 : $P_{1974} = (5, 10, 6, 1)$

$162: P_{1983} = (14, 10, 6, 1)$
$163: P_{2017} = (0, 13, 6, 1)$
$164: P_{2024} = (7, 13, 6, 1)$
$165: P_{2027} = (10, 13, 6, 1)$
$166: P_{2045} = (12, 14, 6, 1)$
$167: P_{2065} = (0, 0, 7, 1)$
$168: P_{2066} = (1, 0, 7, 1)$
$169: P_{2120} = (7, 3, 7, 1)$
$170: P_{2124} = (11, 3, 7, 1)$
$171: P_{2128} = (15, 3, 7, 1)$
$172: P_{2142} = (13, 4, 7, 1)$
$173: P_{2167} = (6, 6, 7, 1)$
$174: P_{2172} = (11, 6, 7, 1)$
$175: P_{2180} = (3, 7, 7, 1)$
$176: P_{2186} = (9, 7, 7, 1)$
$177: P_{2190} = (13, 7, 7, 1)$
$178: P_{2202} = (9, 8, 7, 1)$
$179: P_{2211} = (2, 9, 7, 1)$
$180: P_{2226} = (1, 10, 7, 1)$
$181: P_{2229} = (4, 10, 7, 1)$
$182: P_{2240} = (15, 10, 7, 1)$
$183: P_{2257} = (0, 12, 7, 1)$
$184: P_{2263} = (6, 12, 7, 1)$
$185: P_{2267} = (10, 12, 7, 1)$
$186: P_{2307} = (2, 15, 7, 1)$
$187: P_{2312} = (7, 15, 7, 1)$
$188: P_{2315} = (10, 15, 7, 1)$
$189: P_{2321} = (0, 0, 8, 1)$
$190: P_{2322} = (1, 0, 8, 1)$
$191: P_{2344} = (7, 1, 8, 1)$
$192: P_{2348} = (11, 1, 8, 1)$
$193: P_{2350} = (13, 1, 8, 1)$
$194: P_{2373} = (4, 3, 8, 1)$
$195: P_{2377} = (8, 3, 8, 1)$
$196: P_{2384} = (15, 3, 8, 1)$
$197: P_{2397} = (12, 4, 8, 1)$
$198: P_{2414} = (13, 5, 8, 1)$
$199: P_{2418} = (1, 6, 8, 1)$
$200: P_{2456} = (7, 8, 8, 1)$
$201: P_{2474} = (9, 9, 8, 1)$
$202: P_{2477} = (12, 9, 8, 1)$
$203: P_{2492} = (11, 10, 8, 1)$
$204: P_{2495} = (14, 10, 8, 1)$
$205: P_{2496} = (15, 10, 8, 1)$
$206: P_{2521} = (8, 12, 8, 1)$
$207: P_{2549} = (4, 14, 8, 1)$
$208: P_{2561} = (0, 15, 8, 1)$
$209: P_{2567} = (6, 15, 8, 1)$
$210: P_{2570} = (9, 15, 8, 1)$
$211: P_{2577} = (0, 0, 9, 1)$
$212: P_{2578} = (1, 0, 9, 1)$
$213: P_{2661} = (4, 5, 9, 1)$
$214: P_{2674} = (1, 6, 9, 1)$
$215: P_{2713} = (8, 8, 9, 1)$
$216: P_{2717} = (12, 8, 9, 1)$
$217: P_{2727} = (6, 9, 9, 1)$
$218: P_{2771} = (2, 12, 9, 1)$
$219: P_{2774} = (5, 12, 9, 1)$
$220: P_{2780} = (11, 12, 9, 1)$
$221: P_{2787} = (2, 13, 9, 1)$
$222: P_{2789} = (4, 13, 9, 1)$
$223: P_{2796} = (11, 13, 9, 1)$
$224: P_{2801} = (0, 14, 9, 1)$
$225: P_{2807} = (6, 14, 9, 1)$
$226: P_{2809} = (8, 14, 9, 1)$
$227: P_{2833} = (0, 0, 10, 1)$
$228: P_{2834} = (1, 0, 10, 1)$
$229: P_{2875} = (10, 2, 10, 1)$
$230: P_{2910} = (13, 4, 10, 1)$
$231: P_{2933} = (4, 6, 10, 1)$
$232: P_{2941} = (12, 6, 10, 1)$
$233: P_{2943} = (14, 6, 10, 1)$
$234: P_{2949} = (4, 7, 10, 1)$
$235: P_{2958} = (13, 7, 10, 1)$
$236: P_{2959} = (14, 7, 10, 1)$
$237: P_{2987} = (10, 9, 10, 1)$
$238: P_{3009} = (0, 11, 10, 1)$
$239: P_{3020} = (11, 11, 10, 1)$
$240: P_{3069} = (12, 14, 10, 1)$
$241: P_{3089} = (0, 0, 11, 1)$
$242: P_{3090} = (1, 0, 11, 1)$
$243: P_{3127} = (6, 2, 11, 1)$
$244: P_{3164} = (11, 4, 11, 1)$
$245: P_{3240} = (7, 9, 11, 1)$
$246: P_{3249} = (0, 10, 11, 1)$
$247: P_{3259} = (10, 10, 11, 1)$
$248: P_{3283} = (2, 12, 11, 1)$
$249: P_{3288} = (7, 12, 11, 1)$
$250: P_{3290} = (9, 12, 11, 1)$
$251: P_{3299} = (2, 13, 11, 1)$
$252: P_{3303} = (6, 13, 11, 1)$
$253: P_{3306} = (9, 13, 11, 1)$
$254: P_{3324} = (11, 14, 11, 1)$
$255: P_{3345} = (0, 0, 12, 1)$
$256: P_{3346} = (1, 0, 12, 1)$
$257: P_{3397} = (4, 3, 12, 1)$
$258: P_{3404} = (11, 3, 12, 1)$
$259: P_{3405} = (12, 3, 12, 1)$
$260: P_{3428} = (3, 5, 12, 1)$
$261: P_{3435} = (10, 5, 12, 1)$
$262: P_{3437} = (12, 5, 12, 1)$
$263: P_{3441} = (0, 6, 12, 1)$
$264: P_{3452} = (11, 6, 12, 1)$
$265: P_{3454} = (13, 6, 12, 1)$
$266: P_{3496} = (7, 9, 12, 1)$
$267: P_{3522} = (1, 11, 12, 1)$
$268: P_{3524} = (3, 11, 12, 1)$
$269: P_{3530} = (9, 11, 12, 1)$
$270: P_{3542} = (5, 12, 12, 1)$
$271: P_{3544} = (7, 12, 12, 1)$
$272: P_{3551} = (14, 12, 12, 1)$
$273: P_{3563} = (10, 13, 12, 1)$
$274: P_{3566} = (13, 13, 12, 1)$
$275: P_{3573} = (4, 14, 12, 1)$
$276: P_{3599} = (14, 15, 12, 1)$
$277: P_{3601} = (0, 0, 13, 1)$
$278: P_{3602} = (1, 0, 13, 1)$
$279: P_{3639} = (6, 2, 13, 1)$
$280: P_{3679} = (14, 4, 13, 1)$
$281: P_{3685} = (4, 5, 13, 1)$
$282: P_{3713} = (0, 7, 13, 1)$
$283: P_{3724} = (11, 7, 13, 1)$
$284: P_{3725} = (12, 7, 13, 1)$
$285: P_{3740} = (11, 8, 13, 1)$
$286: P_{3742} = (13, 8, 13, 1)$
$287: P_{3743} = (14, 8, 13, 1)$
$288: P_{3778} = (1, 11, 13, 1)$
$289: P_{3779} = (2, 11, 13, 1)$
$290: P_{3785} = (8, 11, 13, 1)$
$291: P_{3803} = (10, 12, 13, 1)$
$292: P_{3805} = (12, 12, 13, 1)$
$293: P_{3813} = (4, 13, 13, 1)$
$294: P_{3815} = (6, 13, 13, 1)$
$295: P_{3824} = (15, 13, 13, 1)$
$296: P_{3849} = (8, 15, 13, 1)$
$297: P_{3851} = (10, 15, 13, 1)$
$298: P_{3854} = (13, 15, 13, 1)$
$299: P_{3857} = (0, 0, 14, 1)$
$300: P_{3858} = (1, 0, 14, 1)$
$301: P_{3889} = (0, 2, 14, 1)$
$302: P_{3902} = (13, 2, 14, 1)$
$303: P_{3904} = (15, 2, 14, 1)$
$304: P_{3957} = (4, 6, 14, 1)$
$305: P_{3961} = (8, 6, 14, 1)$
$306: P_{3963} = (10, 6, 14, 1)$
$307: P_{3973} = (4, 7, 14, 1)$
$308: P_{3978} = (9, 7, 14, 1)$
$309: P_{3979} = (10, 7, 14, 1)$
$310: P_{3994} = (9, 8, 14, 1)$
$311: P_{4066} = (1, 13, 14, 1)$
$312: P_{4094} = (13, 14, 14, 1)$
$313: P_{4103} = (6, 15, 14, 1)$
$314: P_{4112} = (15, 15, 14, 1)$
$315: P_{4113} = (0, 0, 15, 1)$
$316: P_{4114} = (1, 0, 15, 1)$
$317: P_{4136} = (7, 1, 15, 1)$
$318: P_{4139} = (10, 1, 15, 1)$
$319: P_{4141} = (12, 1, 15, 1)$
$320: P_{4154} = (9, 2, 15, 1)$
$321: P_{4161} = (0, 3, 15, 1)$
$322: P_{4174} = (13, 3, 15, 1)$
$323: P_{4175} = (14, 3, 15, 1)$

$324: P_{4196} = (3, 5, 15, 1)$
$325: P_{4202} = (9, 5, 15, 1)$
$326: P_{4208} = (15, 5, 15, 1)$
$327: P_{4224} = (15, 6, 15, 1)$
$328: P_{4248} = (7, 8, 15, 1)$
$329: P_{4263} = (6, 9, 15, 1)$
$330: P_{4291} = (2, 11, 15, 1)$
$331: P_{4292} = (3, 11, 15, 1)$
$332: P_{4299} = (10, 11, 15, 1)$
$333: P_{4322} = (1, 13, 15, 1)$
$334: P_{4343} = (6, 14, 15, 1)$
$335: P_{4351} = (14, 14, 15, 1)$
$336: P_{4365} = (12, 15, 15, 1)$