Rank-65695 over GF(16)

January 15, 2021

The equation

The equation of the surface is :

$$X_2^3 + X_3^3 + X_0^2X_1 + X_0X_1^2 + X_0X_1X_2 = 0$$

(0, 0, 1, 1, 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 554836501

General information

Number of lines	15
Number of points	337
Number of singular points	1
Number of Eckardt points	3
Number of double points	27
Number of single points	186
Number of points off lines	120
Number of Hesse planes	0
Number of axes	0
Type of points on lines	17^{15}
Type of lines on points	6, 3^3, 2^{27}, 1^{186}, 0^{120}

Singular Points

The surface has 1 singular points:

$0: \ P_{36} = \mathbf{P}(1,1,1,0) = \mathbf{P}(1,1,1,0)$

The 15 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \left[\begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{array}\right]_{257} = \left[\begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{array}\right]_{257} = \mathbf{Pl}(0,0,1,0,1,0)_{320}$$

$$\ell_1 = \left[\begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & \delta^5 \end{array}\right]_{267} = \left[\begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 11 \end{array}\right]_{267} = \mathbf{Pl}(0,0,10,0,1,0)_{599}$$

$$\ell_2 = \left[\begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & \delta^{10} \end{array}\right]_{266} = \left[\begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 10 \end{array}\right]_{266} = \mathbf{Pl}(0,0,11,0,1,0)_{630}$$

$$\ell_3 = \left[\begin{array}{cccc} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{array}\right]_{69889} = \left[\begin{array}{cccc} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{array}\right]_{69889} = \mathbf{Pl}(0,0,0,1,0,1)_{5121}$$

$$\ell_4 = \left[\begin{array}{cccc} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & \delta^5 \end{array}\right]_{69899} = \left[\begin{array}{cccc} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 11 \end{array}\right]_{69899} = \mathbf{Pl}(0,0,0,11,0,1)_{5431}$$

$$\ell_5 = \left[\begin{array}{cccc} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & \delta^{10} \end{array}\right]_{69898} = \left[\begin{array}{cccc} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 10 \end{array}\right]_{69898} = \mathbf{Pl}(0,0,0,10,0,1)_{5400}$$

$$\ell_6 = \left[\begin{array}{cccc} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 1 \end{array}\right]_{4658} = \left[\begin{array}{cccc} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 1 \end{array}\right]_{4658} = \mathbf{Pl}(1,0,1,1,1,1)_{9427}$$

$$\ell_7 = \left[\begin{array}{cccc} 1 & 0 & 1 & \delta^5 \\ 0 & 1 & 1 & \delta^5 \end{array}\right]_{48498} = \left[\begin{array}{cccc} 1 & 0 & 1 & 11 \\ 0 & 1 & 1 & 11 \end{array}\right]_{48498} = \mathbf{Pl}(10,0,10,11,11,1)_{50515}$$

$$\ell_8 = \left[\begin{array}{cccc} 1 & 0 & 1 & \delta^{10} \\ 0 & 1 & 1 & \delta^{10} \end{array}\right]_{44114} = \left[\begin{array}{cccc} 1 & 0 & 1 & 10 \\ 0 & 1 & 1 & 10 \end{array}\right]_{44114} = \mathbf{Pl}(11,0,11,10,10,1)_{46467}$$

$$\ell_9 = \left[\begin{array}{cccc} 1 & 0 & \delta^{10} & \delta^{10} \\ 0 & 1 & \delta^5 & \delta^{10} \end{array}\right]_{46581} = \left[\begin{array}{cccc} 1 & 0 & 10 & 10 \\ 0 & 1 & 11 & 10 \end{array}\right]_{46581} = \mathbf{Pl}(1,1,1,1,1,1)_{10011}$$

$$\ell_{10} = \left[\begin{array}{cccc} 1 & 0 & \delta^5 & \delta^5 \\ 0 & 1 & \delta^{10} & \delta^5 \end{array}\right]_{51237} = \left[\begin{array}{cccc} 1 & 0 & 11 & 11 \\ 0 & 1 & 10 & 11 \end{array}\right]_{51237} = \mathbf{Pl}(1,1,1,1,1,1)_{10026}$$

$$\ell_{11} = \left[\begin{array}{cccc} 1 & 0 & \delta^5 & \delta^{10} \\ 0 & 1 & \delta^{10} & \delta^{10} \end{array}\right]_{46853} = \left[\begin{array}{cccc} 1 & 0 & 11 & 10 \\ 0 & 1 & 10 & 10 \end{array}\right]_{46853} = \mathbf{Pl}(10,11,10,11,11,1)_{52725}$$

$$\ell_{12} = \left[\begin{array}{cccc} 1 & 0 & \delta^{10} & 1 \\ 0 & 1 & \delta^5 & 1 \end{array}\right]_{7125} = \left[\begin{array}{cccc} 1 & 0 & 10 & 1 \\ 0 & 1 & 11 & 1 \end{array}\right]_{7125} = \mathbf{Pl}(10,11,10,11,11,1)_{52710}$$

$$\ell_{13} = \left[\begin{array}{cccc} 1 & 0 & \delta^{10} & \delta^5 \\ 0 & 1 & \delta^5 & \delta^5 \end{array}\right]_{50965} = \left[\begin{array}{cccc} 1 & 0 & 10 & 11 \\ 0 & 1 & 11 & 11 \end{array}\right]_{50965} = \mathbf{Pl}(11,10,11,10,10,1)_{48841}$$

$$\ell_{14} = \left[\begin{array}{cccc} 1 & 0 & \delta^5 & 1 \\ 0 & 1 & \delta^{10} & 1 \end{array}\right]_{7397} = \left[\begin{array}{cccc} 1 & 0 & 11 & 1 \\ 0 & 1 & 10 & 1 \end{array}\right]_{7397} = \mathbf{Pl}(11,10,11,10,10,1)_{48856}$$

Rank of lines: (257, 267, 266, 69889, 69899, 69898, 4658, 48498, 44114, 46581, 51237, 46853, 7125, 50965, 7397)
Rank of points on Klein quadric: (320, 599, 630, 5121, 5431, 5400, 9427, 50515, 46467, 10011, 10026, 52725, 52710, 48841, 48856)

Eckardt Points

The surface has 3 Eckardt points:
$0 : P_0 = \mathbf{P}(1,0,0,0) = \mathbf{P}(1,0,0,0)$,
$1 : P_1 = \mathbf{P}(0,1,0,0) = \mathbf{P}(0,1,0,0)$,
$2 : P_5 = \mathbf{P}(1,1,0,0) = \mathbf{P}(1,1,0,0)$.

Double Points

The surface has 27 Double points:
The double points on the surface are:

$P_{530} = (0,0,1,1) = \ell_0 \cap \ell_3$
$P_{531} = (1,0,1,1) = \ell_0 \cap \ell_6$
$P_{541} = (11,0,1,1) = \ell_0 \cap \ell_9$
$P_{540} = (10,0,1,1) = \ell_0 \cap \ell_{10}$
$P_{2833} = (0,0,10,1) = \ell_1 \cap \ell_4$
$P_{2843} = (10,0,10,1) = \ell_1 \cap \ell_7$
$P_{2844} = (11,0,10,1) = \ell_1 \cap \ell_{11}$
$P_{2834} = (1,0,10,1) = \ell_1 \cap \ell_{12}$
$P_{3089} = (0,0,11,1) = \ell_2 \cap \ell_5$
$P_{3100} = (11,0,11,1) = \ell_2 \cap \ell_8$
$P_{3099} = (10,0,11,1) = \ell_2 \cap \ell_{13}$
$P_{3090} = (1,0,11,1) = \ell_2 \cap \ell_{14}$
$P_{546} = (0,1,1,1) = \ell_3 \cap \ell_6$
$P_{705} = (0,11,1,1) = \ell_3 \cap \ell_{11}$
$P_{689} = (0,10,1,1) = \ell_3 \cap \ell_{13}$
$P_{2993} = (0,10,10,1) = \ell_4 \cap \ell_7$
$P_{3009} = (0,11,10,1) = \ell_4 \cap \ell_9$
$P_{2849} = (0,1,10,1) = \ell_4 \cap \ell_{14}$
$P_{3265} = (0,11,11,1) = \ell_5 \cap \ell_8$
$P_{3249} = (0,10,11,1) = \ell_5 \cap \ell_{10}$
$P_{3105} = (0,1,11,1) = \ell_5 \cap \ell_{12}$
$P_{715} = (10,11,1,1) = \ell_6 \cap \ell_{12}$
$P_{700} = (11,10,1,1) = \ell_6 \cap \ell_{14}$
$P_{3010} = (1,11,10,1) = \ell_7 \cap \ell_{10}$
$P_{2860} = (11,1,10,1) = \ell_7 \cap \ell_{13}$
$P_{3250} = (1,10,11,1) = \ell_8 \cap \ell_9$
$P_{3115} = (10,1,11,1) = \ell_8 \cap \ell_{11}$

Single Points

The surface has 186 single points:
The single points on the surface are:

0 : $P_{300} = (10,1,0,1)$ lies on line ℓ_9
1 : $P_{301} = (11,1,0,1)$ lies on line ℓ_{10}
2 : $P_{435} = (1,10,0,1)$ lies on line ℓ_{11}
3 : $P_{445} = (11,10,0,1)$ lies on line ℓ_{12}
4 : $P_{451} = (1,11,0,1)$ lies on line ℓ_{13}
5 : $P_{460} = (10,11,0,1)$ lies on line ℓ_{14}
6 : $P_{532} = (2,0,1,1)$ lies on line ℓ_0
7 : $P_{533} = (3,0,1,1)$ lies on line ℓ_0
8 : $P_{534} = (4,0,1,1)$ lies on line ℓ_0
9 : $P_{535} = (5,0,1,1)$ lies on line ℓ_0
10 : $P_{536} = (6,0,1,1)$ lies on line ℓ_0
11 : $P_{537} = (7,0,1,1)$ lies on line ℓ_0
12 : $P_{538} = (8,0,1,1)$ lies on line ℓ_0
13 : $P_{539} = (9,0,1,1)$ lies on line ℓ_0
14 : $P_{542} = (12,0,1,1)$ lies on line ℓ_0
15 : $P_{543} = (13,0,1,1)$ lies on line ℓ_0
16 : $P_{544} = (14,0,1,1)$ lies on line ℓ_0
17 : $P_{545} = (15,0,1,1)$ lies on line ℓ_0
18 : $P_{561} = (0,2,1,1)$ lies on line ℓ_3
19 : $P_{564} = (3,2,1,1)$ lies on line ℓ_6
20 : $P_{577} = (0,3,1,1)$ lies on line ℓ_3
21 : $P_{579} = (2,3,1,1)$ lies on line ℓ_6
22 : $P_{593} = (0,4,1,1)$ lies on line ℓ_3
23 : $P_{598} = (5,4,1,1)$ lies on line ℓ_6
24 : $P_{609} = (0,5,1,1)$ lies on line ℓ_3
25 : $P_{613} = (4,5,1,1)$ lies on line ℓ_6
26 : $P_{625} = (0,6,1,1)$ lies on line ℓ_3
27 : $P_{632} = (7,6,1,1)$ lies on line ℓ_6
28 : $P_{641} = (0,7,1,1)$ lies on line ℓ_3
29 : $P_{647} = (6,7,1,1)$ lies on line ℓ_6
30 : $P_{657} = (0,8,1,1)$ lies on line ℓ_3
31 : $P_{666} = (9,8,1,1)$ lies on line ℓ_6
32 : $P_{673} = (0,9,1,1)$ lies on line ℓ_3
33 : $P_{681} = (8,9,1,1)$ lies on line ℓ_6
34 : $P_{721} = (0,12,1,1)$ lies on line ℓ_3
35 : $P_{734} = (13,12,1,1)$ lies on line ℓ_6
36 : $P_{737} = (0,13,1,1)$ lies on line ℓ_3
37 : $P_{749} = (12,13,1,1)$ lies on line ℓ_6
38 : $P_{753} = (0,14,1,1)$ lies on line ℓ_3
39 : $P_{768} = (15,14,1,1)$ lies on line ℓ_6
40 : $P_{769} = (0,15,1,1)$ lies on line ℓ_3
41 : $P_{783} = (14,15,1,1)$ lies on line ℓ_6
42 : $P_{841} = (8,3,2,1)$ lies on line ℓ_9
43 : $P_{842} = (9,3,2,1)$ lies on line ℓ_{10}
44 : $P_{916} = (3,8,2,1)$ lies on line ℓ_{11}
45 : $P_{922} = (9,8,2,1)$ lies on line ℓ_{12}
46 : $P_{932} = (3,9,2,1)$ lies on line ℓ_{13}
47 : $P_{937} = (8,9,2,1)$ lies on line ℓ_{14}
48 : $P_{1081} = (8,2,3,1)$ lies on line ℓ_{10}
49 : $P_{1082} = (9,2,3,1)$ lies on line ℓ_9
50 : $P_{1171} = (2,8,3,1)$ lies on line ℓ_{13}
51 : $P_{1178} = (9,8,3,1)$ lies on line ℓ_{14}
52 : $P_{1187} = (2,9,3,1)$ lies on line ℓ_{11}
53 : $P_{1193} = (8,9,3,1)$ lies on line ℓ_{12}
54 : $P_{1391} = (14,5,4,1)$ lies on line ℓ_9
55 : $P_{1392} = (15,5,4,1)$ lies on line ℓ_{10}
56 : $P_{1526} = (5,14,4,1)$ lies on line ℓ_{11}
57 : $P_{1536} = (15,14,4,1)$ lies on line ℓ_{12}
58 : $P_{1542} = (5,15,4,1)$ lies on line ℓ_{13}
59 : $P_{1551} = (14,15,4,1)$ lies on line ℓ_{14}
60 : $P_{1631} = (14,4,5,1)$ lies on line ℓ_{10}
61 : $P_{1632} = (15,4,5,1)$ lies on line ℓ_9
62 : $P_{1781} = (4,14,5,1)$ lies on line ℓ_{13}
63 : $P_{1792} = (15,14,5,1)$ lies on line ℓ_{14}
64 : $P_{1797} = (4,15,5,1)$ lies on line ℓ_{11}
65 : $P_{1807} = (14,15,5,1)$ lies on line ℓ_{12}

66 : $P_{1933} = (12, 7, 6, 1)$ lies on line ℓ_9
67 : $P_{1934} = (13, 7, 6, 1)$ lies on line ℓ_{10}
68 : $P_{2008} = (7, 12, 6, 1)$ lies on line ℓ_{11}
69 : $P_{2014} = (13, 12, 6, 1)$ lies on line ℓ_{12}
70 : $P_{2024} = (7, 13, 6, 1)$ lies on line ℓ_{13}
71 : $P_{2029} = (12, 13, 6, 1)$ lies on line ℓ_{14}
72 : $P_{2173} = (12, 6, 7, 1)$ lies on line ℓ_{10}
73 : $P_{2174} = (13, 6, 7, 1)$ lies on line ℓ_9
74 : $P_{2263} = (6, 12, 7, 1)$ lies on line ℓ_{13}
75 : $P_{2270} = (13, 12, 7, 1)$ lies on line ℓ_{14}
76 : $P_{2279} = (6, 13, 7, 1)$ lies on line ℓ_{11}
77 : $P_{2285} = (12, 13, 7, 1)$ lies on line ℓ_{12}
78 : $P_{2356} = (3, 2, 8, 1)$ lies on line ℓ_{12}
79 : $P_{2362} = (9, 2, 8, 1)$ lies on line ℓ_{11}
80 : $P_{2371} = (2, 3, 8, 1)$ lies on line ℓ_{14}
81 : $P_{2378} = (9, 3, 8, 1)$ lies on line ℓ_{13}
82 : $P_{2467} = (2, 9, 8, 1)$ lies on line ℓ_9
83 : $P_{2468} = (3, 9, 8, 1)$ lies on line ℓ_{10}
84 : $P_{2612} = (3, 2, 9, 1)$ lies on line ℓ_{14}
85 : $P_{2617} = (8, 2, 9, 1)$ lies on line ℓ_{13}
86 : $P_{2627} = (2, 3, 9, 1)$ lies on line ℓ_{12}
87 : $P_{2633} = (8, 3, 9, 1)$ lies on line ℓ_{11}
88 : $P_{2707} = (2, 8, 9, 1)$ lies on line ℓ_{10}
89 : $P_{2708} = (3, 8, 9, 1)$ lies on line ℓ_9
90 : $P_{2835} = (2, 0, 10, 1)$ lies on line ℓ_1
91 : $P_{2836} = (3, 0, 10, 1)$ lies on line ℓ_1
92 : $P_{2837} = (4, 0, 10, 1)$ lies on line ℓ_1
93 : $P_{2838} = (5, 0, 10, 1)$ lies on line ℓ_1
94 : $P_{2839} = (6, 0, 10, 1)$ lies on line ℓ_1
95 : $P_{2840} = (7, 0, 10, 1)$ lies on line ℓ_1
96 : $P_{2841} = (8, 0, 10, 1)$ lies on line ℓ_1
97 : $P_{2842} = (9, 0, 10, 1)$ lies on line ℓ_1
98 : $P_{2845} = (12, 0, 10, 1)$ lies on line ℓ_1
99 : $P_{2846} = (13, 0, 10, 1)$ lies on line ℓ_1
100 : $P_{2847} = (14, 0, 10, 1)$ lies on line ℓ_1
101 : $P_{2848} = (15, 0, 10, 1)$ lies on line ℓ_1
102 : $P_{2865} = (0, 2, 10, 1)$ lies on line ℓ_4
103 : $P_{2873} = (8, 2, 10, 1)$ lies on line ℓ_7
104 : $P_{2881} = (0, 3, 10, 1)$ lies on line ℓ_4
105 : $P_{2890} = (9, 3, 10, 1)$ lies on line ℓ_7
106 : $P_{2897} = (0, 4, 10, 1)$ lies on line ℓ_4
107 : $P_{2911} = (14, 4, 10, 1)$ lies on line ℓ_7
108 : $P_{2913} = (0, 5, 10, 1)$ lies on line ℓ_4
109 : $P_{2928} = (15, 5, 10, 1)$ lies on line ℓ_7
110 : $P_{2929} = (0, 6, 10, 1)$ lies on line ℓ_4
111 : $P_{2941} = (12, 6, 10, 1)$ lies on line ℓ_7
112 : $P_{2945} = (0, 7, 10, 1)$ lies on line ℓ_4
113 : $P_{2958} = (13, 7, 10, 1)$ lies on line ℓ_7
114 : $P_{2961} = (0, 8, 10, 1)$ lies on line ℓ_4
115 : $P_{2963} = (2, 8, 10, 1)$ lies on line ℓ_7
116 : $P_{2977} = (0, 9, 10, 1)$ lies on line ℓ_4
117 : $P_{2980} = (3, 9, 10, 1)$ lies on line ℓ_7
118 : $P_{3025} = (0, 12, 10, 1)$ lies on line ℓ_4
119 : $P_{3031} = (6, 12, 10, 1)$ lies on line ℓ_7
120 : $P_{3041} = (0, 13, 10, 1)$ lies on line ℓ_4
121 : $P_{3048} = (7, 13, 10, 1)$ lies on line ℓ_7
122 : $P_{3057} = (0, 14, 10, 1)$ lies on line ℓ_4
123 : $P_{3061} = (4, 14, 10, 1)$ lies on line ℓ_7
124 : $P_{3073} = (0, 15, 10, 1)$ lies on line ℓ_4
125 : $P_{3078} = (5, 15, 10, 1)$ lies on line ℓ_7
126 : $P_{3091} = (2, 0, 11, 1)$ lies on line ℓ_2
127 : $P_{3092} = (3, 0, 11, 1)$ lies on line ℓ_2
128 : $P_{3093} = (4, 0, 11, 1)$ lies on line ℓ_2
129 : $P_{3094} = (5, 0, 11, 1)$ lies on line ℓ_2
130 : $P_{3095} = (6, 0, 11, 1)$ lies on line ℓ_2
131 : $P_{3096} = (7, 0, 11, 1)$ lies on line ℓ_2
132 : $P_{3097} = (8, 0, 11, 1)$ lies on line ℓ_2
133 : $P_{3098} = (9, 0, 11, 1)$ lies on line ℓ_2
134 : $P_{3101} = (12, 0, 11, 1)$ lies on line ℓ_2
135 : $P_{3102} = (13, 0, 11, 1)$ lies on line ℓ_2
136 : $P_{3103} = (14, 0, 11, 1)$ lies on line ℓ_2
137 : $P_{3104} = (15, 0, 11, 1)$ lies on line ℓ_2
138 : $P_{3121} = (0, 2, 11, 1)$ lies on line ℓ_5
139 : $P_{3130} = (9, 2, 11, 1)$ lies on line ℓ_8
140 : $P_{3137} = (0, 3, 11, 1)$ lies on line ℓ_5
141 : $P_{3145} = (8, 3, 11, 1)$ lies on line ℓ_8
142 : $P_{3153} = (0, 4, 11, 1)$ lies on line ℓ_5
143 : $P_{3168} = (15, 4, 11, 1)$ lies on line ℓ_8
144 : $P_{3169} = (0, 5, 11, 1)$ lies on line ℓ_5
145 : $P_{3183} = (14, 5, 11, 1)$ lies on line ℓ_8
146 : $P_{3185} = (0, 6, 11, 1)$ lies on line ℓ_5
147 : $P_{3198} = (13, 6, 11, 1)$ lies on line ℓ_8
148 : $P_{3201} = (0, 7, 11, 1)$ lies on line ℓ_5
149 : $P_{3213} = (12, 7, 11, 1)$ lies on line ℓ_8
150 : $P_{3217} = (0, 8, 11, 1)$ lies on line ℓ_5
151 : $P_{3220} = (3, 8, 11, 1)$ lies on line ℓ_8
152 : $P_{3233} = (0, 9, 11, 1)$ lies on line ℓ_5
153 : $P_{3235} = (2, 9, 11, 1)$ lies on line ℓ_8
154 : $P_{3281} = (0, 12, 11, 1)$ lies on line ℓ_5
155 : $P_{3288} = (7, 12, 11, 1)$ lies on line ℓ_8
156 : $P_{3297} = (0, 13, 11, 1)$ lies on line ℓ_5
157 : $P_{3303} = (6, 13, 11, 1)$ lies on line ℓ_8
158 : $P_{3313} = (0, 14, 11, 1)$ lies on line ℓ_5
159 : $P_{3318} = (5, 14, 11, 1)$ lies on line ℓ_8
160 : $P_{3329} = (0, 15, 11, 1)$ lies on line ℓ_5
161 : $P_{3333} = (4, 15, 11, 1)$ lies on line ℓ_8
162 : $P_{3448} = (7, 6, 12, 1)$ lies on line ℓ_{12}
163 : $P_{3454} = (13, 6, 12, 1)$ lies on line ℓ_{11}
164 : $P_{3463} = (6, 7, 12, 1)$ lies on line ℓ_{14}
165 : $P_{3470} = (13, 7, 12, 1)$ lies on line ℓ_{13}
166 : $P_{3559} = (6, 13, 12, 1)$ lies on line ℓ_9
167 : $P_{3560} = (7, 13, 12, 1)$ lies on line ℓ_{10}
168 : $P_{3704} = (7, 6, 13, 1)$ lies on line ℓ_{14}
169 : $P_{3709} = (12, 6, 13, 1)$ lies on line ℓ_{13}
170 : $P_{3719} = (6, 7, 13, 1)$ lies on line ℓ_{12}
171 : $P_{3725} = (12, 7, 13, 1)$ lies on line ℓ_{11}
172 : $P_{3799} = (6, 12, 13, 1)$ lies on line ℓ_{10}
173 : $P_{3800} = (7, 12, 13, 1)$ lies on line ℓ_9

174 : $P_{3926} = (5, 4, 14, 1)$ lies on line ℓ_{12}
175 : $P_{3936} = (15, 4, 14, 1)$ lies on line ℓ_{11}
176 : $P_{3941} = (4, 5, 14, 1)$ lies on line ℓ_{14}
177 : $P_{3952} = (15, 5, 14, 1)$ lies on line ℓ_{13}
178 : $P_{4101} = (4, 15, 14, 1)$ lies on line ℓ_{9}
179 : $P_{4102} = (5, 15, 14, 1)$ lies on line ℓ_{10}
180 : $P_{4182} = (5, 4, 15, 1)$ lies on line ℓ_{14}
181 : $P_{4191} = (14, 4, 15, 1)$ lies on line ℓ_{13}
182 : $P_{4197} = (4, 5, 15, 1)$ lies on line ℓ_{12}
183 : $P_{4207} = (14, 5, 15, 1)$ lies on line ℓ_{11}
184 : $P_{4341} = (4, 14, 15, 1)$ lies on line ℓ_{10}
185 : $P_{4342} = (5, 14, 15, 1)$ lies on line ℓ_{9}

The single points on the surface are:

Points on surface but on no line

The surface has 120 points not on any line:
The points on the surface but not on lines are:

0 : $P_{60} = (9, 2, 1, 0)$
1 : $P_{61} = (10, 2, 1, 0)$
2 : $P_{94} = (11, 4, 1, 0)$
3 : $P_{97} = (14, 4, 1, 0)$
4 : $P_{165} = (2, 9, 1, 0)$
5 : $P_{173} = (10, 9, 1, 0)$
6 : $P_{181} = (2, 10, 1, 0)$
7 : $P_{188} = (9, 10, 1, 0)$
8 : $P_{199} = (4, 11, 1, 0)$
9 : $P_{209} = (14, 11, 1, 0)$
10 : $P_{247} = (4, 14, 1, 0)$
11 : $P_{254} = (11, 14, 1, 0)$
12 : $P_{814} = (13, 1, 2, 1)$
13 : $P_{815} = (14, 1, 2, 1)$
14 : $P_{822} = (5, 2, 2, 1)$
15 : $P_{867} = (2, 5, 2, 1)$
16 : $P_{870} = (5, 5, 2, 1)$
17 : $P_{994} = (1, 13, 2, 1)$
18 : $P_{1007} = (14, 13, 2, 1)$
19 : $P_{1010} = (1, 14, 2, 1)$
20 : $P_{1022} = (13, 14, 2, 1)$
21 : $P_{1095} = (6, 3, 3, 1)$
22 : $P_{1115} = (10, 4, 3, 1)$
23 : $P_{1118} = (13, 4, 3, 1)$
24 : $P_{1140} = (3, 6, 3, 1)$
25 : $P_{1143} = (6, 6, 3, 1)$
26 : $P_{1205} = (4, 10, 3, 1)$
27 : $P_{1214} = (13, 10, 3, 1)$
28 : $P_{1253} = (4, 13, 3, 1)$
29 : $P_{1259} = (10, 13, 3, 1)$
30 : $P_{1315} = (2, 1, 4, 1)$
31 : $P_{1320} = (7, 1, 4, 1)$
32 : $P_{1330} = (1, 2, 4, 1)$
33 : $P_{1336} = (7, 2, 4, 1)$
34 : $P_{1369} = (8, 4, 4, 1)$
35 : $P_{1410} = (1, 7, 4, 1)$
36 : $P_{1411} = (2, 7, 4, 1)$
37 : $P_{1429} = (4, 8, 4, 1)$
38 : $P_{1433} = (8, 8, 4, 1)$
39 : $P_{1646} = (13, 5, 5, 1)$
40 : $P_{1674} = (9, 7, 5, 1)$
41 : $P_{1676} = (11, 7, 5, 1)$
42 : $P_{1704} = (7, 9, 5, 1)$
43 : $P_{1708} = (11, 9, 5, 1)$
44 : $P_{1736} = (7, 11, 5, 1)$
45 : $P_{1738} = (9, 11, 5, 1)$
46 : $P_{1766} = (5, 13, 5, 1)$
47 : $P_{1774} = (13, 13, 5, 1)$
48 : $P_{1877} = (4, 4, 6, 1)$
49 : $P_{1879} = (6, 4, 6, 1)$
50 : $P_{1897} = (8, 5, 6, 1)$
51 : $P_{1900} = (11, 5, 6, 1)$
52 : $P_{1909} = (4, 6, 6, 1)$
53 : $P_{1942} = (5, 8, 6, 1)$
54 : $P_{1948} = (11, 8, 6, 1)$
55 : $P_{1990} = (5, 11, 6, 1)$
56 : $P_{1993} = (8, 11, 6, 1)$
57 : $P_{2124} = (11, 3, 7, 1)$
58 : $P_{2128} = (15, 3, 7, 1)$
59 : $P_{2191} = (14, 7, 7, 1)$
60 : $P_{2244} = (3, 11, 7, 1)$
61 : $P_{2256} = (15, 11, 7, 1)$
62 : $P_{2296} = (7, 14, 7, 1)$
63 : $P_{2303} = (14, 14, 7, 1)$
64 : $P_{2308} = (3, 15, 7, 1)$
65 : $P_{2316} = (11, 15, 7, 1)$
66 : $P_{2440} = (7, 7, 8, 1)$
67 : $P_{2441} = (8, 7, 8, 1)$
68 : $P_{2456} = (7, 8, 8, 1)$
69 : $P_{2493} = (12, 10, 8, 1)$
70 : $P_{2495} = (14, 10, 8, 1)$
71 : $P_{2523} = (10, 12, 8, 1)$
72 : $P_{2527} = (14, 12, 8, 1)$
73 : $P_{2555} = (10, 14, 8, 1)$

74 : $P_{2557} = (12, 14, 8, 1)$
75 : $P_{2597} = (4, 1, 9, 1)$
76 : $P_{2605} = (12, 1, 9, 1)$
77 : $P_{2642} = (1, 4, 9, 1)$
78 : $P_{2653} = (12, 4, 9, 1)$
79 : $P_{2736} = (15, 9, 9, 1)$
80 : $P_{2770} = (1, 12, 9, 1)$
81 : $P_{2773} = (4, 12, 9, 1)$
82 : $P_{2826} = (9, 15, 9, 1)$
83 : $P_{2832} = (15, 15, 9, 1)$
84 : $P_{3379} = (2, 2, 12, 1)$
85 : $P_{3389} = (12, 2, 12, 1)$
86 : $P_{3398} = (5, 3, 12, 1)$
87 : $P_{3403} = (10, 3, 12, 1)$
88 : $P_{3428} = (3, 5, 12, 1)$
89 : $P_{3435} = (10, 5, 12, 1)$
90 : $P_{3508} = (3, 10, 12, 1)$
91 : $P_{3510} = (5, 10, 12, 1)$
92 : $P_{3539} = (2, 12, 12, 1)$
93 : $P_{3739} = (10, 8, 13, 1)$
94 : $P_{3744} = (15, 8, 13, 1)$
95 : $P_{3754} = (9, 9, 13, 1)$
96 : $P_{3758} = (13, 9, 13, 1)$
97 : $P_{3769} = (8, 10, 13, 1)$
98 : $P_{3776} = (15, 10, 13, 1)$
99 : $P_{3818} = (9, 13, 13, 1)$
100 : $P_{3849} = (8, 15, 13, 1)$
101 : $P_{3851} = (10, 15, 13, 1)$
102 : $P_{3879} = (6, 1, 14, 1)$
103 : $P_{3882} = (9, 1, 14, 1)$
104 : $P_{3908} = (3, 3, 14, 1)$
105 : $P_{3919} = (14, 3, 14, 1)$
106 : $P_{3954} = (1, 6, 14, 1)$
107 : $P_{3962} = (9, 6, 14, 1)$
108 : $P_{4002} = (1, 9, 14, 1)$
109 : $P_{4007} = (6, 9, 14, 1)$
110 : $P_{4084} = (3, 14, 14, 1)$
111 : $P_{4151} = (6, 2, 15, 1)$
112 : $P_{4156} = (11, 2, 15, 1)$
113 : $P_{4211} = (2, 6, 15, 1)$
114 : $P_{4220} = (11, 6, 15, 1)$
115 : $P_{4291} = (2, 11, 15, 1)$
116 : $P_{4295} = (6, 11, 15, 1)$
117 : $P_{4317} = (12, 12, 15, 1)$
118 : $P_{4320} = (15, 12, 15, 1)$
119 : $P_{4365} = (12, 15, 15, 1)$

Line Intersection Graph

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

Neighbor sets in the line intersection graph:
Line 0 intersects

Line	ℓ_1	ℓ_2	ℓ_3	ℓ_6	ℓ_9	ℓ_{10}
in point	P_0	P_0	P_{530}	P_{531}	P_{541}	P_{540}

Line 1 intersects

Line	ℓ_0	ℓ_2	ℓ_4	ℓ_7	ℓ_{11}	ℓ_{12}
in point	P_0	P_0	P_{2833}	P_{2843}	P_{2844}	P_{2834}

Line 2 intersects

Line	ℓ_0	ℓ_1	ℓ_5	ℓ_8	ℓ_{13}	ℓ_{14}
in point	P_0	P_0	P_{3089}	P_{3100}	P_{3099}	P_{3090}

Line 3 intersects

Line	ℓ_0	ℓ_4	ℓ_5	ℓ_6	ℓ_{11}	ℓ_{13}
in point	P_{530}	P_1	P_1	P_{546}	P_{705}	P_{689}

Line 4 intersects

Line	ℓ_1	ℓ_3	ℓ_5	ℓ_7	ℓ_9	ℓ_{14}
in point	P_{2833}	P_1	P_1	P_{2993}	P_{3009}	P_{2849}

Line 5 intersects

Line	ℓ_2	ℓ_3	ℓ_4	ℓ_8	ℓ_{10}	ℓ_{12}
in point	P_{3089}	P_1	P_1	P_{3265}	P_{3249}	P_{3105}

Line 6 intersects

Line	ℓ_0	ℓ_3	ℓ_7	ℓ_8	ℓ_{12}	ℓ_{14}
in point	P_{531}	P_{546}	P_5	P_5	P_{715}	P_{700}

Line 7 intersects

Line	ℓ_1	ℓ_4	ℓ_6	ℓ_8	ℓ_{10}	ℓ_{13}
in point	P_{2843}	P_{2993}	P_5	P_5	P_{3010}	P_{2860}

Line 8 intersects

Line	ℓ_2	ℓ_5	ℓ_6	ℓ_7	ℓ_9	ℓ_{11}
in point	P_{3100}	P_{3265}	P_5	P_5	P_{3250}	P_{3115}

Line 9 intersects

Line	ℓ_0	ℓ_4	ℓ_8	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}
in point	P_{541}	P_{3009}	P_{3250}	P_{36}	P_{36}	P_{36}	P_{36}	P_{36}

Line 10 intersects

Line	ℓ_0	ℓ_5	ℓ_7	ℓ_9	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}
in point	P_{540}	P_{3249}	P_{3010}	P_{36}	P_{36}	P_{36}	P_{36}	P_{36}

Line 11 intersects

Line	ℓ_1	ℓ_3	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{12}	ℓ_{13}	ℓ_{14}
in point	P_{2844}	P_{705}	P_{3115}	P_{36}	P_{36}	P_{36}	P_{36}	P_{36}

Line 12 intersects

Line	ℓ_1	ℓ_5	ℓ_6	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{13}	ℓ_{14}
in point	P_{2834}	P_{3105}	P_{715}	P_{36}	P_{36}	P_{36}	P_{36}	P_{36}

Line 13 intersects

Line	ℓ_2	ℓ_3	ℓ_7	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{14}
in point	P_{3099}	P_{689}	P_{2860}	P_{36}	P_{36}	P_{36}	P_{36}	P_{36}

Line 14 intersects

Line	ℓ_2	ℓ_4	ℓ_6	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}
in point	P_{3090}	P_{2849}	P_{700}	P_{36}	P_{36}	P_{36}	P_{36}	P_{36}

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

$0: P_0 = (1,0,0,0)$
$1: P_1 = (0,1,0,0)$
$2: P_5 = (1,1,0,0)$
$3: P_{36} = (1,1,1,0)$
$4: P_{60} = (9,2,1,0)$
$5: P_{61} = (10,2,1,0)$
$6: P_{94} = (11,4,1,0)$
$7: P_{97} = (14,4,1,0)$
$8: P_{165} = (2,9,1,0)$
$9: P_{173} = (10,9,1,0)$
$10: P_{181} = (2,10,1,0)$
$11: P_{188} = (9,10,1,0)$
$12: P_{199} = (4,11,1,0)$
$13: P_{209} = (14,11,1,0)$
$14: P_{247} = (4,14,1,0)$
$15: P_{254} = (11,14,1,0)$
$16: P_{300} = (10,1,0,1)$
$17: P_{301} = (11,1,0,1)$
$18: P_{435} = (1,10,0,1)$
$19: P_{445} = (11,10,0,1)$
$20: P_{451} = (1,11,0,1)$
$21: P_{460} = (10,11,0,1)$
$22: P_{530} = (0,0,1,1)$
$23: P_{531} = (1,0,1,1)$
$24: P_{532} = (2,0,1,1)$
$25: P_{533} = (3,0,1,1)$
$26: P_{534} = (4,0,1,1)$
$27: P_{535} = (5,0,1,1)$
$28: P_{536} = (6,0,1,1)$
$29: P_{537} = (7,0,1,1)$

30 : $P_{538} = (8, 0, 1, 1)$
31 : $P_{539} = (9, 0, 1, 1)$
32 : $P_{540} = (10, 0, 1, 1)$
33 : $P_{541} = (11, 0, 1, 1)$
34 : $P_{542} = (12, 0, 1, 1)$
35 : $P_{543} = (13, 0, 1, 1)$
36 : $P_{544} = (14, 0, 1, 1)$
37 : $P_{545} = (15, 0, 1, 1)$
38 : $P_{546} = (0, 1, 1, 1)$
39 : $P_{561} = (0, 2, 1, 1)$
40 : $P_{564} = (3, 2, 1, 1)$
41 : $P_{577} = (0, 3, 1, 1)$
42 : $P_{579} = (2, 3, 1, 1)$
43 : $P_{593} = (0, 4, 1, 1)$
44 : $P_{598} = (5, 4, 1, 1)$
45 : $P_{609} = (0, 5, 1, 1)$
46 : $P_{613} = (4, 5, 1, 1)$
47 : $P_{625} = (0, 6, 1, 1)$
48 : $P_{632} = (7, 6, 1, 1)$
49 : $P_{641} = (0, 7, 1, 1)$
50 : $P_{647} = (6, 7, 1, 1)$
51 : $P_{657} = (0, 8, 1, 1)$
52 : $P_{666} = (9, 8, 1, 1)$
53 : $P_{673} = (0, 9, 1, 1)$
54 : $P_{681} = (8, 9, 1, 1)$
55 : $P_{689} = (0, 10, 1, 1)$
56 : $P_{700} = (11, 10, 1, 1)$
57 : $P_{705} = (0, 11, 1, 1)$
58 : $P_{715} = (10, 11, 1, 1)$
59 : $P_{721} = (0, 12, 1, 1)$
60 : $P_{734} = (13, 12, 1, 1)$
61 : $P_{737} = (0, 13, 1, 1)$
62 : $P_{749} = (12, 13, 1, 1)$
63 : $P_{753} = (0, 14, 1, 1)$
64 : $P_{768} = (15, 14, 1, 1)$
65 : $P_{769} = (0, 15, 1, 1)$
66 : $P_{783} = (14, 15, 1, 1)$
67 : $P_{814} = (13, 1, 2, 1)$
68 : $P_{815} = (14, 1, 2, 1)$
69 : $P_{822} = (5, 2, 2, 1)$
70 : $P_{841} = (8, 3, 2, 1)$
71 : $P_{842} = (9, 3, 2, 1)$
72 : $P_{867} = (2, 5, 2, 1)$
73 : $P_{870} = (5, 5, 2, 1)$
74 : $P_{916} = (3, 8, 2, 1)$
75 : $P_{922} = (9, 8, 2, 1)$
76 : $P_{932} = (3, 9, 2, 1)$
77 : $P_{937} = (8, 9, 2, 1)$
78 : $P_{994} = (1, 13, 2, 1)$
79 : $P_{1007} = (14, 13, 2, 1)$
80 : $P_{1010} = (1, 14, 2, 1)$
81 : $P_{1022} = (13, 14, 2, 1)$
82 : $P_{1081} = (8, 2, 3, 1)$
83 : $P_{1082} = (9, 2, 3, 1)$
84 : $P_{1095} = (6, 3, 3, 1)$
85 : $P_{1115} = (10, 4, 3, 1)$
86 : $P_{1118} = (13, 4, 3, 1)$
87 : $P_{1140} = (3, 6, 3, 1)$
88 : $P_{1143} = (6, 6, 3, 1)$
89 : $P_{1171} = (2, 8, 3, 1)$
90 : $P_{1178} = (9, 8, 3, 1)$
91 : $P_{1187} = (2, 9, 3, 1)$
92 : $P_{1193} = (8, 9, 3, 1)$
93 : $P_{1205} = (4, 10, 3, 1)$
94 : $P_{1214} = (13, 10, 3, 1)$
95 : $P_{1253} = (4, 13, 3, 1)$
96 : $P_{1259} = (10, 13, 3, 1)$
97 : $P_{1315} = (2, 1, 4, 1)$
98 : $P_{1320} = (7, 1, 4, 1)$
99 : $P_{1330} = (1, 2, 4, 1)$
100 : $P_{1336} = (7, 2, 4, 1)$
101 : $P_{1369} = (8, 4, 4, 1)$
102 : $P_{1391} = (14, 5, 4, 1)$
103 : $P_{1392} = (15, 5, 4, 1)$
104 : $P_{1410} = (1, 7, 4, 1)$
105 : $P_{1411} = (2, 7, 4, 1)$
106 : $P_{1429} = (4, 8, 4, 1)$
107 : $P_{1433} = (8, 8, 4, 1)$
108 : $P_{1526} = (5, 14, 4, 1)$
109 : $P_{1536} = (15, 14, 4, 1)$
110 : $P_{1542} = (5, 15, 4, 1)$
111 : $P_{1551} = (14, 15, 4, 1)$
112 : $P_{1631} = (14, 4, 5, 1)$
113 : $P_{1632} = (15, 4, 5, 1)$
114 : $P_{1646} = (13, 5, 5, 1)$
115 : $P_{1674} = (9, 7, 5, 1)$
116 : $P_{1676} = (11, 7, 5, 1)$
117 : $P_{1704} = (7, 9, 5, 1)$
118 : $P_{1708} = (11, 9, 5, 1)$
119 : $P_{1736} = (7, 11, 5, 1)$
120 : $P_{1738} = (9, 11, 5, 1)$
121 : $P_{1766} = (5, 13, 5, 1)$
122 : $P_{1774} = (13, 13, 5, 1)$
123 : $P_{1781} = (4, 14, 5, 1)$
124 : $P_{1792} = (15, 14, 5, 1)$
125 : $P_{1797} = (4, 15, 5, 1)$
126 : $P_{1807} = (14, 15, 5, 1)$
127 : $P_{1877} = (4, 4, 6, 1)$
128 : $P_{1879} = (6, 4, 6, 1)$
129 : $P_{1897} = (8, 5, 6, 1)$
130 : $P_{1900} = (11, 5, 6, 1)$
131 : $P_{1909} = (4, 6, 6, 1)$
132 : $P_{1933} = (12, 7, 6, 1)$
133 : $P_{1934} = (13, 7, 6, 1)$
134 : $P_{1942} = (5, 8, 6, 1)$
135 : $P_{1948} = (11, 8, 6, 1)$
136 : $P_{1990} = (5, 11, 6, 1)$
137 : $P_{1993} = (8, 11, 6, 1)$
138 : $P_{2008} = (7, 12, 6, 1)$
139 : $P_{2014} = (13, 12, 6, 1)$
140 : $P_{2024} = (7, 13, 6, 1)$
141 : $P_{2029} = (12, 13, 6, 1)$
142 : $P_{2124} = (11, 3, 7, 1)$
143 : $P_{2128} = (15, 3, 7, 1)$
144 : $P_{2173} = (12, 6, 7, 1)$
145 : $P_{2174} = (13, 6, 7, 1)$
146 : $P_{2191} = (14, 7, 7, 1)$
147 : $P_{2244} = (3, 11, 7, 1)$
148 : $P_{2256} = (15, 11, 7, 1)$
149 : $P_{2263} = (6, 12, 7, 1)$
150 : $P_{2270} = (13, 12, 7, 1)$
151 : $P_{2279} = (6, 13, 7, 1)$
152 : $P_{2285} = (12, 13, 7, 1)$
153 : $P_{2296} = (7, 14, 7, 1)$
154 : $P_{2303} = (14, 14, 7, 1)$
155 : $P_{2308} = (3, 15, 7, 1)$
156 : $P_{2316} = (11, 15, 7, 1)$
157 : $P_{2356} = (3, 2, 8, 1)$
158 : $P_{2362} = (9, 2, 8, 1)$
159 : $P_{2371} = (2, 3, 8, 1)$
160 : $P_{2378} = (9, 3, 8, 1)$
161 : $P_{2440} = (7, 7, 8, 1)$
162 : $P_{2441} = (8, 7, 8, 1)$
163 : $P_{2456} = (7, 8, 8, 1)$
164 : $P_{2467} = (2, 9, 8, 1)$
165 : $P_{2468} = (3, 9, 8, 1)$
166 : $P_{2493} = (12, 10, 8, 1)$
167 : $P_{2495} = (14, 10, 8, 1)$
168 : $P_{2523} = (10, 12, 8, 1)$
169 : $P_{2527} = (14, 12, 8, 1)$
170 : $P_{2555} = (10, 14, 8, 1)$
171 : $P_{2557} = (12, 14, 8, 1)$
172 : $P_{2597} = (4, 1, 9, 1)$
173 : $P_{2605} = (12, 1, 9, 1)$
174 : $P_{2612} = (3, 2, 9, 1)$
175 : $P_{2617} = (8, 2, 9, 1)$
176 : $P_{2627} = (2, 3, 9, 1)$
177 : $P_{2633} = (8, 3, 9, 1)$
178 : $P_{2642} = (1, 4, 9, 1)$
179 : $P_{2653} = (12, 4, 9, 1)$
180 : $P_{2707} = (2, 8, 9, 1)$
181 : $P_{2708} = (3, 8, 9, 1)$
182 : $P_{2736} = (15, 9, 9, 1)$
183 : $P_{2770} = (1, 12, 9, 1)$
184 : $P_{2773} = (4, 12, 9, 1)$
185 : $P_{2826} = (9, 15, 9, 1)$
186 : $P_{2832} = (15, 15, 9, 1)$
187 : $P_{2833} = (0, 0, 10, 1)$
188 : $P_{2834} = (1, 0, 10, 1)$
189 : $P_{2835} = (2, 0, 10, 1)$
190 : $P_{2836} = (3, 0, 10, 1)$
191 : $P_{2837} = (4, 0, 10, 1)$

192 : $P_{2838} = (5, 0, 10, 1)$
193 : $P_{2839} = (6, 0, 10, 1)$
194 : $P_{2840} = (7, 0, 10, 1)$
195 : $P_{2841} = (8, 0, 10, 1)$
196 : $P_{2842} = (9, 0, 10, 1)$
197 : $P_{2843} = (10, 0, 10, 1)$
198 : $P_{2844} = (11, 0, 10, 1)$
199 : $P_{2845} = (12, 0, 10, 1)$
200 : $P_{2846} = (13, 0, 10, 1)$
201 : $P_{2847} = (14, 0, 10, 1)$
202 : $P_{2848} = (15, 0, 10, 1)$
203 : $P_{2849} = (0, 1, 10, 1)$
204 : $P_{2860} = (11, 1, 10, 1)$
205 : $P_{2865} = (0, 2, 10, 1)$
206 : $P_{2873} = (8, 2, 10, 1)$
207 : $P_{2881} = (0, 3, 10, 1)$
208 : $P_{2890} = (9, 3, 10, 1)$
209 : $P_{2897} = (0, 4, 10, 1)$
210 : $P_{2911} = (14, 4, 10, 1)$
211 : $P_{2913} = (0, 5, 10, 1)$
212 : $P_{2928} = (15, 5, 10, 1)$
213 : $P_{2929} = (0, 6, 10, 1)$
214 : $P_{2941} = (12, 6, 10, 1)$
215 : $P_{2945} = (0, 7, 10, 1)$
216 : $P_{2958} = (13, 7, 10, 1)$
217 : $P_{2961} = (0, 8, 10, 1)$
218 : $P_{2963} = (2, 8, 10, 1)$
219 : $P_{2977} = (0, 9, 10, 1)$
220 : $P_{2980} = (3, 9, 10, 1)$
221 : $P_{2993} = (0, 10, 10, 1)$
222 : $P_{3009} = (0, 11, 10, 1)$
223 : $P_{3010} = (1, 11, 10, 1)$
224 : $P_{3025} = (0, 12, 10, 1)$
225 : $P_{3031} = (6, 12, 10, 1)$
226 : $P_{3041} = (0, 13, 10, 1)$
227 : $P_{3048} = (7, 13, 10, 1)$
228 : $P_{3057} = (0, 14, 10, 1)$
229 : $P_{3061} = (4, 14, 10, 1)$
230 : $P_{3073} = (0, 15, 10, 1)$
231 : $P_{3078} = (5, 15, 10, 1)$
232 : $P_{3089} = (0, 0, 11, 1)$
233 : $P_{3090} = (1, 0, 11, 1)$
234 : $P_{3091} = (2, 0, 11, 1)$
235 : $P_{3092} = (3, 0, 11, 1)$
236 : $P_{3093} = (4, 0, 11, 1)$
237 : $P_{3094} = (5, 0, 11, 1)$
238 : $P_{3095} = (6, 0, 11, 1)$
239 : $P_{3096} = (7, 0, 11, 1)$
240 : $P_{3097} = (8, 0, 11, 1)$
241 : $P_{3098} = (9, 0, 11, 1)$
242 : $P_{3099} = (10, 0, 11, 1)$
243 : $P_{3100} = (11, 0, 11, 1)$
244 : $P_{3101} = (12, 0, 11, 1)$
245 : $P_{3102} = (13, 0, 11, 1)$
246 : $P_{3103} = (14, 0, 11, 1)$
247 : $P_{3104} = (15, 0, 11, 1)$
248 : $P_{3105} = (0, 1, 11, 1)$
249 : $P_{3115} = (10, 1, 11, 1)$
250 : $P_{3121} = (0, 2, 11, 1)$
251 : $P_{3130} = (9, 2, 11, 1)$
252 : $P_{3137} = (0, 3, 11, 1)$
253 : $P_{3145} = (8, 3, 11, 1)$
254 : $P_{3153} = (0, 4, 11, 1)$
255 : $P_{3168} = (15, 4, 11, 1)$
256 : $P_{3169} = (0, 5, 11, 1)$
257 : $P_{3183} = (14, 5, 11, 1)$
258 : $P_{3185} = (0, 6, 11, 1)$
259 : $P_{3198} = (13, 6, 11, 1)$
260 : $P_{3201} = (0, 7, 11, 1)$
261 : $P_{3213} = (12, 7, 11, 1)$
262 : $P_{3217} = (0, 8, 11, 1)$
263 : $P_{3220} = (3, 8, 11, 1)$
264 : $P_{3233} = (0, 9, 11, 1)$
265 : $P_{3235} = (2, 9, 11, 1)$
266 : $P_{3249} = (0, 10, 11, 1)$
267 : $P_{3250} = (1, 10, 11, 1)$
268 : $P_{3265} = (0, 11, 11, 1)$
269 : $P_{3281} = (0, 12, 11, 1)$
270 : $P_{3288} = (7, 12, 11, 1)$
271 : $P_{3297} = (0, 13, 11, 1)$
272 : $P_{3303} = (6, 13, 11, 1)$
273 : $P_{3313} = (0, 14, 11, 1)$
274 : $P_{3318} = (5, 14, 11, 1)$
275 : $P_{3329} = (0, 15, 11, 1)$
276 : $P_{3333} = (4, 15, 11, 1)$
277 : $P_{3379} = (2, 2, 12, 1)$
278 : $P_{3389} = (12, 2, 12, 1)$
279 : $P_{3398} = (5, 3, 12, 1)$
280 : $P_{3403} = (10, 3, 12, 1)$
281 : $P_{3428} = (3, 5, 12, 1)$
282 : $P_{3435} = (10, 5, 12, 1)$
283 : $P_{3448} = (7, 6, 12, 1)$
284 : $P_{3454} = (13, 6, 12, 1)$
285 : $P_{3463} = (6, 7, 12, 1)$
286 : $P_{3470} = (13, 7, 12, 1)$
287 : $P_{3508} = (3, 10, 12, 1)$
288 : $P_{3510} = (5, 10, 12, 1)$
289 : $P_{3539} = (2, 12, 12, 1)$
290 : $P_{3559} = (6, 13, 12, 1)$
291 : $P_{3560} = (7, 13, 12, 1)$
292 : $P_{3704} = (7, 6, 13, 1)$
293 : $P_{3709} = (12, 6, 13, 1)$
294 : $P_{3719} = (6, 7, 13, 1)$
295 : $P_{3725} = (12, 7, 13, 1)$
296 : $P_{3739} = (10, 8, 13, 1)$
297 : $P_{3744} = (15, 8, 13, 1)$
298 : $P_{3754} = (9, 9, 13, 1)$
299 : $P_{3758} = (13, 9, 13, 1)$
300 : $P_{3769} = (8, 10, 13, 1)$
301 : $P_{3776} = (15, 10, 13, 1)$
302 : $P_{3799} = (6, 12, 13, 1)$
303 : $P_{3800} = (7, 12, 13, 1)$
304 : $P_{3818} = (9, 13, 13, 1)$
305 : $P_{3849} = (8, 15, 13, 1)$
306 : $P_{3851} = (10, 15, 13, 1)$
307 : $P_{3879} = (6, 1, 14, 1)$
308 : $P_{3882} = (9, 1, 14, 1)$
309 : $P_{3908} = (3, 3, 14, 1)$
310 : $P_{3919} = (14, 3, 14, 1)$
311 : $P_{3926} = (5, 4, 14, 1)$
312 : $P_{3936} = (15, 4, 14, 1)$
313 : $P_{3941} = (4, 5, 14, 1)$
314 : $P_{3952} = (15, 5, 14, 1)$
315 : $P_{3954} = (1, 6, 14, 1)$
316 : $P_{3962} = (9, 6, 14, 1)$
317 : $P_{4002} = (1, 9, 14, 1)$
318 : $P_{4007} = (6, 9, 14, 1)$
319 : $P_{4084} = (3, 14, 14, 1)$
320 : $P_{4101} = (4, 15, 14, 1)$
321 : $P_{4102} = (5, 15, 14, 1)$
322 : $P_{4151} = (6, 2, 15, 1)$
323 : $P_{4156} = (11, 2, 15, 1)$
324 : $P_{4182} = (5, 4, 15, 1)$
325 : $P_{4191} = (14, 4, 15, 1)$
326 : $P_{4197} = (4, 5, 15, 1)$
327 : $P_{4207} = (14, 5, 15, 1)$
328 : $P_{4211} = (2, 6, 15, 1)$
329 : $P_{4220} = (11, 6, 15, 1)$
330 : $P_{4291} = (2, 11, 15, 1)$
331 : $P_{4295} = (6, 11, 15, 1)$
332 : $P_{4317} = (12, 12, 15, 1)$
333 : $P_{4320} = (15, 12, 15, 1)$
334 : $P_{4341} = (4, 14, 15, 1)$
335 : $P_{4342} = (5, 14, 15, 1)$
336 : $P_{4365} = (12, 15, 15, 1)$