

# Rank-74053 over GF(16)

January 15, 2021

## The equation

The equation of the surface is :

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

( 0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 1, 0, 0, 0 )

The point rank of the equation over GF(16) is 303108389

## General information

Number of lines	10
Number of points	321
Number of singular points	1
Number of Eckardt points	2
Number of double points	9
Number of single points	141
Number of points off lines	168
Number of Hesse planes	0
Number of axes	0
Type of points on lines	$17^{10}$
Type of lines on points	$5, 3^2, 2^9, 1^{141}, 0^{168}$

## Singular Points

The surface has 1 singular points:

$$0 : P_2 = \mathbf{P}(0, 0, 1, 0) = \mathbf{P}(0, 0, 1, 0)$$

## The 10 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \left[ \begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{array} \right]_{256} = \left[ \begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{array} \right]_{256} = \mathbf{Pl}(0, 0, 1, 0, 0, 0)_2$$

$$\begin{aligned}
\ell_1 &= \begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{70160} = \begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{70160} = \mathbf{Pl}(0, 1, 0, 0, 0, 0)_1 \\
\ell_2 &= \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{4624} = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{4624} = \mathbf{Pl}(0, 1, 1, 0, 0, 0)_{18} \\
\ell_3 &= \begin{bmatrix} 1 & 1 & 0 & \delta^5 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{48577} = \begin{bmatrix} 1 & 1 & 0 & 11 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{48577} = \mathbf{Pl}(0, 11, 1, 0, 0, 1)_{4682} \\
\ell_4 &= \begin{bmatrix} 1 & 1 & 0 & \delta^{10} \\ 0 & 0 & 1 & 0 \end{bmatrix}_{44209} = \begin{bmatrix} 1 & 1 & 0 & 10 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{44209} = \mathbf{Pl}(0, 10, 1, 0, 0, 1)_{4681} \\
\ell_5 &= \begin{bmatrix} 1 & 0 & \delta^5 & 0 \\ 0 & 1 & 1 & \delta^5 \end{bmatrix}_{3180} = \begin{bmatrix} 1 & 0 & 11 & 0 \\ 0 & 1 & 1 & 11 \end{bmatrix}_{3180} = \mathbf{Pl}(10, 11, 10, 0, 1, 1)_{9120} \\
\ell_6 &= \begin{bmatrix} 1 & 0 & \delta^{10} & 0 \\ 0 & 1 & 1 & \delta^{10} \end{bmatrix}_{2891} = \begin{bmatrix} 1 & 0 & 10 & 0 \\ 0 & 1 & 1 & 10 \end{bmatrix}_{2891} = \mathbf{Pl}(11, 10, 11, 0, 1, 1)_{9136} \\
\ell_7 &= \begin{bmatrix} 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{69921} = \begin{bmatrix} 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{69921} = \mathbf{Pl}(0, 1, 0, 1, 0, 0)_{49} \\
\ell_8 &= \begin{bmatrix} 1 & 0 & \delta^5 & 1 \\ 0 & 1 & 1 & \delta^5 \end{bmatrix}_{7548} = \begin{bmatrix} 1 & 0 & 11 & 1 \\ 0 & 1 & 1 & 11 \end{bmatrix}_{7548} = \mathbf{Pl}(1, 1, 11, 10, 1, 1)_{12126} \\
\ell_9 &= \begin{bmatrix} 1 & 0 & \delta^{10} & 1 \\ 0 & 1 & 1 & \delta^{10} \end{bmatrix}_{7259} = \begin{bmatrix} 1 & 0 & 10 & 1 \\ 0 & 1 & 1 & 10 \end{bmatrix}_{7259} = \mathbf{Pl}(1, 1, 10, 11, 1, 1)_{11901}
\end{aligned}$$

Rank of lines: ( 256, 70160, 4624, 48577, 44209, 3180, 2891, 69921, 7548, 7259 )

Rank of points on Klein quadric: ( 2, 1, 18, 4682, 4681, 9120, 9136, 49, 12126, 11901 )

### Eckardt Points

The surface has 2 Eckardt points:

$$0 : P_{2993} = \mathbf{P}(0, \delta^{10}, \delta^{10}, 1) = \mathbf{P}(0, 10, 10, 1),$$

$$1 : P_{3265} = \mathbf{P}(0, \delta^5, \delta^5, 1) = \mathbf{P}(0, 11, 11, 1).$$

### Double Points

The surface has 9 Double points:

The double points on the surface are:

$$P_{29} = (10, 0, 1, 0) = \ell_0 \cap \ell_5$$

$$P_{30} = (11, 0, 1, 0) = \ell_0 \cap \ell_6$$

$$P_3 = (0, 0, 0, 1) = \ell_1 \cap \ell_7$$

$$P_{3090} = (1, 0, 11, 1) = \ell_2 \cap \ell_8$$

$$P_{2834} = (1, 0, 10, 1) = \ell_2 \cap \ell_9$$

$$P_{3259} = (10, 10, 11, 1) = \ell_3 \cap \ell_5$$

$$P_{699} = (10, 10, 1, 1) = \ell_3 \cap \ell_9$$

$$P_{3020} = (11, 11, 10, 1) = \ell_4 \cap \ell_6$$

$$P_{716} = (11, 11, 1, 1) = \ell_4 \cap \ell_8$$

### Single Points

The surface has 141 single points:

The single points on the surface are:

0 :  $P_0 = (1, 0, 0, 0)$  lies on line  $\ell_0$   
 1 :  $P_{20} = (1, 0, 1, 0)$  lies on line  $\ell_0$   
 2 :  $P_{21} = (2, 0, 1, 0)$  lies on line  $\ell_0$   
 3 :  $P_{22} = (3, 0, 1, 0)$  lies on line  $\ell_0$   
 4 :  $P_{23} = (4, 0, 1, 0)$  lies on line  $\ell_0$   
 5 :  $P_{24} = (5, 0, 1, 0)$  lies on line  $\ell_0$   
 6 :  $P_{25} = (6, 0, 1, 0)$  lies on line  $\ell_0$   
 7 :  $P_{26} = (7, 0, 1, 0)$  lies on line  $\ell_0$   
 8 :  $P_{27} = (8, 0, 1, 0)$  lies on line  $\ell_0$   
 9 :  $P_{28} = (9, 0, 1, 0)$  lies on line  $\ell_0$   
 10 :  $P_{31} = (12, 0, 1, 0)$  lies on line  $\ell_0$   
 11 :  $P_{32} = (13, 0, 1, 0)$  lies on line  $\ell_0$   
 12 :  $P_{33} = (14, 0, 1, 0)$  lies on line  $\ell_0$   
 13 :  $P_{34} = (15, 0, 1, 0)$  lies on line  $\ell_0$   
 14 :  $P_{35} = (0, 1, 1, 0)$  lies on line  $\ell_7$   
 15 :  $P_{180} = (1, 10, 1, 0)$  lies on line  $\ell_8$   
 16 :  $P_{196} = (1, 11, 1, 0)$  lies on line  $\ell_9$   
 17 :  $P_{275} = (1, 0, 0, 1)$  lies on line  $\ell_2$   
 18 :  $P_{300} = (10, 1, 0, 1)$  lies on line  $\ell_8$   
 19 :  $P_{301} = (11, 1, 0, 1)$  lies on line  $\ell_9$   
 20 :  $P_{444} = (10, 10, 0, 1)$  lies on line  $\ell_3$   
 21 :  $P_{445} = (11, 10, 0, 1)$  lies on line  $\ell_5$   
 22 :  $P_{460} = (10, 11, 0, 1)$  lies on line  $\ell_6$   
 23 :  $P_{461} = (11, 11, 0, 1)$  lies on line  $\ell_4$   
 24 :  $P_{530} = (0, 0, 1, 1)$  lies on line  $\ell_1$   
 25 :  $P_{531} = (1, 0, 1, 1)$  lies on line  $\ell_2$   
 26 :  $P_{546} = (0, 1, 1, 1)$  lies on line  $\ell_7$   
 27 :  $P_{690} = (1, 10, 1, 1)$  lies on line  $\ell_5$   
 28 :  $P_{706} = (1, 11, 1, 1)$  lies on line  $\ell_6$   
 29 :  $P_{785} = (0, 0, 2, 1)$  lies on line  $\ell_1$   
 30 :  $P_{786} = (1, 0, 2, 1)$  lies on line  $\ell_2$   
 31 :  $P_{817} = (0, 2, 2, 1)$  lies on line  $\ell_7$   
 32 :  $P_{951} = (6, 10, 2, 1)$  lies on line  $\ell_5$   
 33 :  $P_{955} = (10, 10, 2, 1)$  lies on line  $\ell_3$   
 34 :  $P_{966} = (5, 11, 2, 1)$  lies on line  $\ell_6$   
 35 :  $P_{972} = (11, 11, 2, 1)$  lies on line  $\ell_4$   
 36 :  $P_{985} = (8, 12, 2, 1)$  lies on line  $\ell_8$   
 37 :  $P_{1018} = (9, 14, 2, 1)$  lies on line  $\ell_9$   
 38 :  $P_{1041} = (0, 0, 3, 1)$  lies on line  $\ell_1$   
 39 :  $P_{1042} = (1, 0, 3, 1)$  lies on line  $\ell_2$   
 40 :  $P_{1089} = (0, 3, 3, 1)$  lies on line  $\ell_7$   
 41 :  $P_{1129} = (8, 5, 3, 1)$  lies on line  $\ell_9$   
 42 :  $P_{1146} = (9, 6, 3, 1)$  lies on line  $\ell_8$   
 43 :  $P_{1211} = (10, 10, 3, 1)$  lies on line  $\ell_3$   
 44 :  $P_{1213} = (12, 10, 3, 1)$  lies on line  $\ell_5$   
 45 :  $P_{1228} = (11, 11, 3, 1)$  lies on line  $\ell_4$   
 46 :  $P_{1231} = (14, 11, 3, 1)$  lies on line  $\ell_6$   
 47 :  $P_{1297} = (0, 0, 4, 1)$  lies on line  $\ell_1$   
 48 :  $P_{1298} = (1, 0, 4, 1)$  lies on line  $\ell_2$   
 49 :  $P_{1343} = (14, 2, 4, 1)$  lies on line  $\ell_8$   
 50 :  $P_{1361} = (0, 4, 4, 1)$  lies on line  $\ell_7$   
 51 :  $P_{1408} = (15, 6, 4, 1)$  lies on line  $\ell_9$   
 52 :  $P_{1465} = (8, 10, 4, 1)$  lies on line  $\ell_5$   
 53 :  $P_{1467} = (10, 10, 4, 1)$  lies on line  $\ell_3$

54 :  $P_{1484} = (11, 11, 4, 1)$  lies on line  $\ell_4$   
 55 :  $P_{1486} = (13, 11, 4, 1)$  lies on line  $\ell_6$   
 56 :  $P_{1553} = (0, 0, 5, 1)$  lies on line  $\ell_1$   
 57 :  $P_{1554} = (1, 0, 5, 1)$  lies on line  $\ell_2$   
 58 :  $P_{1633} = (0, 5, 5, 1)$  lies on line  $\ell_7$   
 59 :  $P_{1696} = (15, 8, 5, 1)$  lies on line  $\ell_8$   
 60 :  $P_{1715} = (2, 10, 5, 1)$  lies on line  $\ell_5$   
 61 :  $P_{1723} = (10, 10, 5, 1)$  lies on line  $\ell_3$   
 62 :  $P_{1735} = (6, 11, 5, 1)$  lies on line  $\ell_6$   
 63 :  $P_{1740} = (11, 11, 5, 1)$  lies on line  $\ell_4$   
 64 :  $P_{1775} = (14, 13, 5, 1)$  lies on line  $\ell_9$   
 65 :  $P_{1809} = (0, 0, 6, 1)$  lies on line  $\ell_1$   
 66 :  $P_{1810} = (1, 0, 6, 1)$  lies on line  $\ell_2$   
 67 :  $P_{1905} = (0, 6, 6, 1)$  lies on line  $\ell_7$   
 68 :  $P_{1966} = (13, 9, 6, 1)$  lies on line  $\ell_9$   
 69 :  $P_{1974} = (5, 10, 6, 1)$  lies on line  $\ell_5$   
 70 :  $P_{1979} = (10, 10, 6, 1)$  lies on line  $\ell_3$   
 71 :  $P_{1987} = (2, 11, 6, 1)$  lies on line  $\ell_6$   
 72 :  $P_{1996} = (11, 11, 6, 1)$  lies on line  $\ell_4$   
 73 :  $P_{2061} = (12, 15, 6, 1)$  lies on line  $\ell_8$   
 74 :  $P_{2065} = (0, 0, 7, 1)$  lies on line  $\ell_1$   
 75 :  $P_{2066} = (1, 0, 7, 1)$  lies on line  $\ell_2$   
 76 :  $P_{2109} = (12, 2, 7, 1)$  lies on line  $\ell_9$   
 77 :  $P_{2158} = (13, 5, 7, 1)$  lies on line  $\ell_8$   
 78 :  $P_{2177} = (0, 7, 7, 1)$  lies on line  $\ell_7$   
 79 :  $P_{2235} = (10, 10, 7, 1)$  lies on line  $\ell_3$   
 80 :  $P_{2240} = (15, 10, 7, 1)$  lies on line  $\ell_5$   
 81 :  $P_{2250} = (9, 11, 7, 1)$  lies on line  $\ell_6$   
 82 :  $P_{2252} = (11, 11, 7, 1)$  lies on line  $\ell_4$   
 83 :  $P_{2321} = (0, 0, 8, 1)$  lies on line  $\ell_1$   
 84 :  $P_{2322} = (1, 0, 8, 1)$  lies on line  $\ell_2$   
 85 :  $P_{2435} = (2, 7, 8, 1)$  lies on line  $\ell_8$   
 86 :  $P_{2449} = (0, 8, 8, 1)$  lies on line  $\ell_7$   
 87 :  $P_{2491} = (10, 10, 8, 1)$  lies on line  $\ell_3$   
 88 :  $P_{2494} = (13, 10, 8, 1)$  lies on line  $\ell_5$   
 89 :  $P_{2501} = (4, 11, 8, 1)$  lies on line  $\ell_6$   
 90 :  $P_{2508} = (11, 11, 8, 1)$  lies on line  $\ell_4$   
 91 :  $P_{2564} = (3, 15, 8, 1)$  lies on line  $\ell_9$   
 92 :  $P_{2577} = (0, 0, 9, 1)$  lies on line  $\ell_1$   
 93 :  $P_{2578} = (1, 0, 9, 1)$  lies on line  $\ell_2$   
 94 :  $P_{2643} = (2, 4, 9, 1)$  lies on line  $\ell_9$   
 95 :  $P_{2721} = (0, 9, 9, 1)$  lies on line  $\ell_7$   
 96 :  $P_{2744} = (7, 10, 9, 1)$  lies on line  $\ell_5$   
 97 :  $P_{2747} = (10, 10, 9, 1)$  lies on line  $\ell_3$   
 98 :  $P_{2764} = (11, 11, 9, 1)$  lies on line  $\ell_4$   
 99 :  $P_{2768} = (15, 11, 9, 1)$  lies on line  $\ell_6$   
 100 :  $P_{2788} = (3, 13, 9, 1)$  lies on line  $\ell_8$   
 101 :  $P_{2833} = (0, 0, 10, 1)$  lies on line  $\ell_1$   
 102 :  $P_{3003} = (10, 10, 10, 1)$  lies on line  $\ell_3$   
 103 :  $P_{3089} = (0, 0, 11, 1)$  lies on line  $\ell_1$   
 104 :  $P_{3276} = (11, 11, 11, 1)$  lies on line  $\ell_4$   
 105 :  $P_{3345} = (0, 0, 12, 1)$  lies on line  $\ell_1$   
 106 :  $P_{3346} = (1, 0, 12, 1)$  lies on line  $\ell_2$   
 107 :  $P_{3415} = (6, 4, 12, 1)$  lies on line  $\ell_8$

108 :  $P_{3480} = (7, 8, 12, 1)$  lies on line  $\ell_9$   
 109 :  $P_{3515} = (10, 10, 12, 1)$  lies on line  $\ell_3$   
 110 :  $P_{3519} = (14, 10, 12, 1)$  lies on line  $\ell_5$   
 111 :  $P_{3524} = (3, 11, 12, 1)$  lies on line  $\ell_6$   
 112 :  $P_{3532} = (11, 11, 12, 1)$  lies on line  $\ell_4$   
 113 :  $P_{3537} = (0, 12, 12, 1)$  lies on line  $\ell_7$   
 114 :  $P_{3601} = (0, 0, 13, 1)$  lies on line  $\ell_1$   
 115 :  $P_{3602} = (1, 0, 13, 1)$  lies on line  $\ell_2$   
 116 :  $P_{3655} = (6, 3, 13, 1)$  lies on line  $\ell_9$   
 117 :  $P_{3765} = (4, 10, 13, 1)$  lies on line  $\ell_5$   
 118 :  $P_{3771} = (10, 10, 13, 1)$  lies on line  $\ell_3$   
 119 :  $P_{3785} = (8, 11, 13, 1)$  lies on line  $\ell_6$   
 120 :  $P_{3788} = (11, 11, 13, 1)$  lies on line  $\ell_4$   
 121 :  $P_{3809} = (0, 13, 13, 1)$  lies on line  $\ell_7$   
 122 :  $P_{3832} = (7, 14, 13, 1)$  lies on line  $\ell_8$   
 123 :  $P_{3857} = (0, 0, 14, 1)$  lies on line  $\ell_1$   
 124 :  $P_{3858} = (1, 0, 14, 1)$  lies on line  $\ell_2$

125 :  $P_{3974} = (5, 7, 14, 1)$  lies on line  $\ell_9$   
 126 :  $P_{4005} = (4, 9, 14, 1)$  lies on line  $\ell_8$   
 127 :  $P_{4020} = (3, 10, 14, 1)$  lies on line  $\ell_5$   
 128 :  $P_{4027} = (10, 10, 14, 1)$  lies on line  $\ell_3$   
 129 :  $P_{4044} = (11, 11, 14, 1)$  lies on line  $\ell_4$   
 130 :  $P_{4045} = (12, 11, 14, 1)$  lies on line  $\ell_6$   
 131 :  $P_{4081} = (0, 14, 14, 1)$  lies on line  $\ell_7$   
 132 :  $P_{4113} = (0, 0, 15, 1)$  lies on line  $\ell_1$   
 133 :  $P_{4114} = (1, 0, 15, 1)$  lies on line  $\ell_2$   
 134 :  $P_{4166} = (5, 3, 15, 1)$  lies on line  $\ell_8$   
 135 :  $P_{4282} = (9, 10, 15, 1)$  lies on line  $\ell_5$   
 136 :  $P_{4283} = (10, 10, 15, 1)$  lies on line  $\ell_3$   
 137 :  $P_{4296} = (7, 11, 15, 1)$  lies on line  $\ell_6$   
 138 :  $P_{4300} = (11, 11, 15, 1)$  lies on line  $\ell_4$   
 139 :  $P_{4309} = (4, 12, 15, 1)$  lies on line  $\ell_9$   
 140 :  $P_{4353} = (0, 15, 15, 1)$  lies on line  $\ell_7$

The single points on the surface are:

#### Points on surface but on no line

The surface has 168 points not on any line:

The points on the surface but not on lines are:

0 : $P_{57} = (6, 2, 1, 0)$	27 : $P_{917} = (4, 8, 2, 1)$
1 : $P_{73} = (6, 3, 1, 0)$	28 : $P_{925} = (12, 8, 2, 1)$
2 : $P_{96} = (13, 4, 1, 0)$	29 : $P_{1001} = (8, 13, 2, 1)$
3 : $P_{112} = (13, 5, 1, 0)$	30 : $P_{1003} = (10, 13, 2, 1)$
4 : $P_{126} = (11, 6, 1, 0)$	31 : $P_{1022} = (13, 14, 2, 1)$
5 : $P_{142} = (11, 7, 1, 0)$	32 : $P_{1062} = (5, 1, 3, 1)$
6 : $P_{154} = (7, 8, 1, 0)$	33 : $P_{1064} = (7, 1, 3, 1)$
7 : $P_{170} = (7, 9, 1, 0)$	34 : $P_{1093} = (4, 3, 3, 1)$
8 : $P_{221} = (10, 12, 1, 0)$	35 : $P_{1127} = (6, 5, 3, 1)$
9 : $P_{237} = (10, 13, 1, 0)$	36 : $P_{1139} = (2, 6, 3, 1)$
10 : $P_{255} = (12, 14, 1, 0)$	37 : $P_{1157} = (4, 7, 3, 1)$
11 : $P_{271} = (12, 15, 1, 0)$	38 : $P_{1165} = (12, 7, 3, 1)$
12 : $P_{570} = (9, 2, 1, 1)$	39 : $P_{1175} = (6, 8, 3, 1)$
13 : $P_{571} = (10, 2, 1, 1)$	40 : $P_{1271} = (6, 14, 3, 1)$
14 : $P_{604} = (11, 4, 1, 1)$	41 : $P_{1277} = (12, 14, 3, 1)$
15 : $P_{607} = (14, 4, 1, 1)$	42 : $P_{1336} = (7, 2, 4, 1)$
16 : $P_{675} = (2, 9, 1, 1)$	43 : $P_{1369} = (8, 4, 4, 1)$
17 : $P_{683} = (10, 9, 1, 1)$	44 : $P_{1380} = (3, 5, 4, 1)$
18 : $P_{757} = (4, 14, 1, 1)$	45 : $P_{1392} = (15, 5, 4, 1)$
19 : $P_{764} = (11, 14, 1, 1)$	46 : $P_{1420} = (11, 7, 4, 1)$
20 : $P_{822} = (5, 2, 2, 1)$	47 : $P_{1424} = (15, 7, 4, 1)$
21 : $P_{841} = (8, 3, 2, 1)$	48 : $P_{1426} = (1, 8, 4, 1)$
22 : $P_{848} = (15, 3, 2, 1)$	49 : $P_{1436} = (11, 8, 4, 1)$
23 : $P_{866} = (1, 5, 2, 1)$	50 : $P_{1490} = (1, 12, 4, 1)$
24 : $P_{875} = (10, 5, 2, 1)$	51 : $P_{1491} = (2, 12, 4, 1)$
25 : $P_{898} = (1, 7, 2, 1)$	52 : $P_{1543} = (6, 15, 4, 1)$
26 : $P_{911} = (14, 7, 2, 1)$	53 : $P_{1546} = (9, 15, 4, 1)$

54 : $P_{1577} = (8, 1, 5, 1)$	108 : $P_{2980} = (3, 9, 10, 1)$
55 : $P_{1581} = (12, 1, 5, 1)$	109 : $P_{2991} = (14, 9, 10, 1)$
56 : $P_{1591} = (6, 2, 5, 1)$	110 : $P_{3036} = (11, 12, 10, 1)$
57 : $P_{1598} = (13, 2, 5, 1)$	111 : $P_{3040} = (15, 12, 10, 1)$
58 : $P_{1642} = (9, 5, 5, 1)$	112 : $P_{3046} = (5, 13, 10, 1)$
59 : $P_{1694} = (13, 8, 5, 1)$	113 : $P_{3052} = (11, 13, 10, 1)$
60 : $P_{1751} = (6, 12, 5, 1)$	114 : $P_{3058} = (1, 14, 10, 1)$
61 : $P_{1754} = (9, 12, 5, 1)$	115 : $P_{3065} = (8, 14, 10, 1)$
62 : $P_{1765} = (4, 13, 5, 1)$	116 : $P_{3109} = (4, 1, 11, 1)$
63 : $P_{1806} = (13, 15, 5, 1)$	117 : $P_{3119} = (14, 1, 11, 1)$
64 : $P_{1883} = (10, 4, 6, 1)$	118 : $P_{3122} = (1, 2, 11, 1)$
65 : $P_{1917} = (12, 6, 6, 1)$	119 : $P_{3136} = (15, 2, 11, 1)$
66 : $P_{1946} = (9, 8, 6, 1)$	120 : $P_{3162} = (9, 4, 11, 1)$
67 : $P_{1947} = (10, 8, 6, 1)$	121 : $P_{3168} = (15, 4, 11, 1)$
68 : $P_{1961} = (8, 9, 6, 1)$	122 : $P_{3188} = (3, 6, 11, 1)$
69 : $P_{2053} = (4, 15, 6, 1)$	123 : $P_{3195} = (10, 6, 11, 1)$
70 : $P_{2100} = (3, 2, 7, 1)$	124 : $P_{3209} = (8, 7, 11, 1)$
71 : $P_{2115} = (2, 3, 7, 1)$	125 : $P_{3211} = (10, 7, 11, 1)$
72 : $P_{2123} = (10, 3, 7, 1)$	126 : $P_{3234} = (1, 9, 11, 1)$
73 : $P_{2159} = (14, 5, 7, 1)$	127 : $P_{3238} = (5, 9, 11, 1)$
74 : $P_{2190} = (13, 7, 7, 1)$	128 : $P_{3286} = (5, 12, 11, 1)$
75 : $P_{2299} = (10, 14, 7, 1)$	129 : $P_{3294} = (13, 12, 11, 1)$
76 : $P_{2343} = (6, 1, 8, 1)$	130 : $P_{3309} = (12, 13, 11, 1)$
77 : $P_{2352} = (15, 1, 8, 1)$	131 : $P_{3312} = (15, 13, 11, 1)$
78 : $P_{2376} = (7, 3, 8, 1)$	132 : $P_{3315} = (2, 14, 11, 1)$
79 : $P_{2392} = (7, 4, 8, 1)$	133 : $P_{3318} = (5, 14, 11, 1)$
80 : $P_{2398} = (13, 4, 8, 1)$	134 : $P_{3388} = (11, 2, 12, 1)$
81 : $P_{2430} = (13, 6, 8, 1)$	135 : $P_{3414} = (5, 4, 12, 1)$
82 : $P_{2431} = (14, 6, 8, 1)$	136 : $P_{3429} = (4, 5, 12, 1)$
83 : $P_{2442} = (9, 7, 8, 1)$	137 : $P_{3436} = (11, 5, 12, 1)$
84 : $P_{2463} = (14, 8, 8, 1)$	138 : $P_{3475} = (2, 8, 12, 1)$
85 : $P_{2568} = (7, 15, 8, 1)$	139 : $P_{3544} = (7, 12, 12, 1)$
86 : $P_{2638} = (13, 3, 9, 1)$	140 : $P_{3658} = (9, 3, 13, 1)$
87 : $P_{2639} = (14, 3, 9, 1)$	141 : $P_{3756} = (11, 9, 13, 1)$
88 : $P_{2653} = (12, 4, 9, 1)$	142 : $P_{3815} = (6, 13, 13, 1)$
89 : $P_{2674} = (1, 6, 9, 1)$	143 : $P_{3840} = (15, 14, 13, 1)$
90 : $P_{2677} = (4, 6, 9, 1)$	144 : $P_{3852} = (11, 15, 13, 1)$
91 : $P_{2708} = (3, 8, 9, 1)$	145 : $P_{3855} = (14, 15, 13, 1)$
92 : $P_{2710} = (5, 8, 9, 1)$	146 : $P_{3906} = (1, 3, 14, 1)$
93 : $P_{2736} = (15, 9, 9, 1)$	147 : $P_{3916} = (11, 3, 14, 1)$
94 : $P_{2772} = (3, 12, 9, 1)$	148 : $P_{3939} = (2, 5, 14, 1)$
95 : $P_{2779} = (10, 12, 9, 1)$	149 : $P_{3944} = (7, 5, 14, 1)$
96 : $P_{2818} = (1, 15, 9, 1)$	150 : $P_{3958} = (5, 6, 14, 1)$
97 : $P_{2827} = (10, 15, 9, 1)$	151 : $P_{3964} = (11, 6, 14, 1)$
98 : $P_{2851} = (2, 1, 10, 1)$	152 : $P_{4007} = (6, 9, 14, 1)$
99 : $P_{2858} = (9, 1, 10, 1)$	153 : $P_{4066} = (1, 13, 14, 1)$
100 : $P_{2869} = (4, 2, 10, 1)$	154 : $P_{4074} = (9, 13, 14, 1)$
101 : $P_{2873} = (8, 2, 10, 1)$	155 : $P_{4084} = (3, 14, 14, 1)$
102 : $P_{2898} = (1, 4, 10, 1)$	156 : $P_{4102} = (5, 15, 14, 1)$
103 : $P_{2900} = (3, 4, 10, 1)$	157 : $P_{4105} = (8, 15, 14, 1)$
104 : $P_{2936} = (7, 6, 10, 1)$	158 : $P_{4132} = (3, 1, 15, 1)$
105 : $P_{2937} = (8, 6, 10, 1)$	159 : $P_{4142} = (13, 1, 15, 1)$
106 : $P_{2948} = (3, 7, 10, 1)$	160 : $P_{4173} = (12, 3, 15, 1)$
107 : $P_{2951} = (6, 7, 10, 1)$	161 : $P_{4205} = (12, 5, 15, 1)$

$162 : P_{4264} = (7, 9, 15, 1)$   
 $163 : P_{4269} = (12, 9, 15, 1)$   
 $164 : P_{4319} = (14, 12, 15, 1)$   
 $165 : P_{4323} = (2, 13, 15, 1)$

$166 : P_{4328} = (7, 13, 15, 1)$   
 $167 : P_{4355} = (2, 15, 15, 1)$

## Line Intersection Graph

	0	1	2	3	4	5	6	7	8	9
0	0	1	1	1	1	1	1	0	0	0
1	1	0	1	1	1	0	0	1	0	0
2	1	1	0	1	1	0	0	0	1	1
3	1	1	1	0	1	1	0	0	0	1
4	1	1	1	1	0	0	1	0	1	0
5	1	0	0	1	0	0	0	1	1	0
6	1	0	0	0	1	0	0	1	0	1
7	0	1	0	0	0	1	1	0	1	1
8	0	0	1	0	1	1	0	1	0	0
9	0	0	1	1	0	0	1	1	0	0

Neighbor sets in the line intersection graph:

Line 0 intersects

Line	$\ell_1$	$\ell_2$	$\ell_3$	$\ell_4$	$\ell_5$	$\ell_6$
in point	$P_2$	$P_2$	$P_2$	$P_2$	$P_{29}$	$P_{30}$

Line 1 intersects

Line	$\ell_0$	$\ell_2$	$\ell_3$	$\ell_4$	$\ell_7$
in point	$P_2$	$P_2$	$P_2$	$P_2$	$P_3$

Line 2 intersects

Line	$\ell_0$	$\ell_1$	$\ell_3$	$\ell_4$	$\ell_8$	$\ell_9$
in point	$P_2$	$P_2$	$P_2$	$P_2$	$P_{3090}$	$P_{2834}$

Line 3 intersects

Line	$\ell_0$	$\ell_1$	$\ell_2$	$\ell_4$	$\ell_5$	$\ell_9$
in point	$P_2$	$P_2$	$P_2$	$P_2$	$P_{3259}$	$P_{699}$

Line 4 intersects

Line	$\ell_0$	$\ell_1$	$\ell_2$	$\ell_3$	$\ell_6$	$\ell_8$
in point	$P_2$	$P_2$	$P_2$	$P_2$	$P_{3020}$	$P_{716}$

Line 5 intersects

Line	$\ell_0$	$\ell_3$	$\ell_7$	$\ell_8$
in point	$P_{29}$	$P_{3259}$	$P_{2993}$	$P_{2993}$

Line 6 intersects

Line	$\ell_0$	$\ell_4$	$\ell_7$	$\ell_9$
in point	$P_{30}$	$P_{3020}$	$P_{3265}$	$P_{3265}$

Line 7 intersects

Line	$\ell_1$	$\ell_5$	$\ell_6$	$\ell_8$	$\ell_9$
in point	$P_3$	$P_{2993}$	$P_{3265}$	$P_{2993}$	$P_{3265}$

Line 8 intersects

Line	$\ell_2$	$\ell_4$	$\ell_5$	$\ell_7$
in point	$P_{3090}$	$P_{716}$	$P_{2993}$	$P_{2993}$

Line 9 intersects

Line	$\ell_2$	$\ell_3$	$\ell_6$	$\ell_7$
in point	$P_{2834}$	$P_{699}$	$P_{3265}$	$P_{3265}$

The surface has 321 points:

The points on the surface are:

0 : $P_0 = (1, 0, 0, 0)$	54 : $P_{764} = (11, 14, 1, 1)$	108 : $P_{1465} = (8, 10, 4, 1)$
1 : $P_2 = (0, 0, 1, 0)$	55 : $P_{785} = (0, 0, 2, 1)$	109 : $P_{1467} = (10, 10, 4, 1)$
2 : $P_3 = (0, 0, 0, 1)$	56 : $P_{786} = (1, 0, 2, 1)$	110 : $P_{1484} = (11, 11, 4, 1)$
3 : $P_{20} = (1, 0, 1, 0)$	57 : $P_{817} = (0, 2, 2, 1)$	111 : $P_{1486} = (13, 11, 4, 1)$
4 : $P_{21} = (2, 0, 1, 0)$	58 : $P_{822} = (5, 2, 2, 1)$	112 : $P_{1490} = (1, 12, 4, 1)$
5 : $P_{22} = (3, 0, 1, 0)$	59 : $P_{841} = (8, 3, 2, 1)$	113 : $P_{1491} = (2, 12, 4, 1)$
6 : $P_{23} = (4, 0, 1, 0)$	60 : $P_{848} = (15, 3, 2, 1)$	114 : $P_{1543} = (6, 15, 4, 1)$
7 : $P_{24} = (5, 0, 1, 0)$	61 : $P_{866} = (1, 5, 2, 1)$	115 : $P_{1546} = (9, 15, 4, 1)$
8 : $P_{25} = (6, 0, 1, 0)$	62 : $P_{875} = (10, 5, 2, 1)$	116 : $P_{1553} = (0, 0, 5, 1)$
9 : $P_{26} = (7, 0, 1, 0)$	63 : $P_{898} = (1, 7, 2, 1)$	117 : $P_{1554} = (1, 0, 5, 1)$
10 : $P_{27} = (8, 0, 1, 0)$	64 : $P_{911} = (14, 7, 2, 1)$	118 : $P_{1577} = (8, 1, 5, 1)$
11 : $P_{28} = (9, 0, 1, 0)$	65 : $P_{917} = (4, 8, 2, 1)$	119 : $P_{1581} = (12, 1, 5, 1)$
12 : $P_{29} = (10, 0, 1, 0)$	66 : $P_{925} = (12, 8, 2, 1)$	120 : $P_{1591} = (6, 2, 5, 1)$
13 : $P_{30} = (11, 0, 1, 0)$	67 : $P_{951} = (6, 10, 2, 1)$	121 : $P_{1598} = (13, 2, 5, 1)$
14 : $P_{31} = (12, 0, 1, 0)$	68 : $P_{955} = (10, 10, 2, 1)$	122 : $P_{1633} = (0, 5, 5, 1)$
15 : $P_{32} = (13, 0, 1, 0)$	69 : $P_{966} = (5, 11, 2, 1)$	123 : $P_{1642} = (9, 5, 5, 1)$
16 : $P_{33} = (14, 0, 1, 0)$	70 : $P_{972} = (11, 11, 2, 1)$	124 : $P_{1694} = (13, 8, 5, 1)$
17 : $P_{34} = (15, 0, 1, 0)$	71 : $P_{985} = (8, 12, 2, 1)$	125 : $P_{1696} = (15, 8, 5, 1)$
18 : $P_{35} = (0, 1, 1, 0)$	72 : $P_{1001} = (8, 13, 2, 1)$	126 : $P_{1715} = (2, 10, 5, 1)$
19 : $P_{57} = (6, 2, 1, 0)$	73 : $P_{1003} = (10, 13, 2, 1)$	127 : $P_{1723} = (10, 10, 5, 1)$
20 : $P_{73} = (6, 3, 1, 0)$	74 : $P_{1018} = (9, 14, 2, 1)$	128 : $P_{1735} = (6, 11, 5, 1)$
21 : $P_{96} = (13, 4, 1, 0)$	75 : $P_{1022} = (13, 14, 2, 1)$	129 : $P_{1740} = (11, 11, 5, 1)$
22 : $P_{112} = (13, 5, 1, 0)$	76 : $P_{1041} = (0, 0, 3, 1)$	130 : $P_{1751} = (6, 12, 5, 1)$
23 : $P_{126} = (11, 6, 1, 0)$	77 : $P_{1042} = (1, 0, 3, 1)$	131 : $P_{1754} = (9, 12, 5, 1)$
24 : $P_{142} = (11, 7, 1, 0)$	78 : $P_{1062} = (5, 1, 3, 1)$	132 : $P_{1765} = (4, 13, 5, 1)$
25 : $P_{154} = (7, 8, 1, 0)$	79 : $P_{1064} = (7, 1, 3, 1)$	133 : $P_{1775} = (14, 13, 5, 1)$
26 : $P_{170} = (7, 9, 1, 0)$	80 : $P_{1089} = (0, 3, 3, 1)$	134 : $P_{1806} = (13, 15, 5, 1)$
27 : $P_{180} = (1, 10, 1, 0)$	81 : $P_{1093} = (4, 3, 3, 1)$	135 : $P_{1809} = (0, 0, 6, 1)$
28 : $P_{196} = (1, 11, 1, 0)$	82 : $P_{1127} = (6, 5, 3, 1)$	136 : $P_{1810} = (1, 0, 6, 1)$
29 : $P_{221} = (10, 12, 1, 0)$	83 : $P_{1129} = (8, 5, 3, 1)$	137 : $P_{1883} = (10, 4, 6, 1)$
30 : $P_{237} = (10, 13, 1, 0)$	84 : $P_{1139} = (2, 6, 3, 1)$	138 : $P_{1905} = (0, 6, 6, 1)$
31 : $P_{255} = (12, 14, 1, 0)$	85 : $P_{1146} = (9, 6, 3, 1)$	139 : $P_{1917} = (12, 6, 6, 1)$
32 : $P_{271} = (12, 15, 1, 0)$	86 : $P_{1157} = (4, 7, 3, 1)$	140 : $P_{1946} = (9, 8, 6, 1)$
33 : $P_{275} = (1, 0, 0, 1)$	87 : $P_{1165} = (12, 7, 3, 1)$	141 : $P_{1947} = (10, 8, 6, 1)$
34 : $P_{300} = (10, 1, 0, 1)$	88 : $P_{1175} = (6, 8, 3, 1)$	142 : $P_{1961} = (8, 9, 6, 1)$
35 : $P_{301} = (11, 1, 0, 1)$	89 : $P_{1211} = (10, 10, 3, 1)$	143 : $P_{1966} = (13, 9, 6, 1)$
36 : $P_{444} = (10, 10, 0, 1)$	90 : $P_{1213} = (12, 10, 3, 1)$	144 : $P_{1974} = (5, 10, 6, 1)$
37 : $P_{445} = (11, 10, 0, 1)$	91 : $P_{1228} = (11, 11, 3, 1)$	145 : $P_{1979} = (10, 10, 6, 1)$
38 : $P_{460} = (10, 11, 0, 1)$	92 : $P_{1231} = (14, 11, 3, 1)$	146 : $P_{1987} = (2, 11, 6, 1)$
39 : $P_{461} = (11, 11, 0, 1)$	93 : $P_{1271} = (6, 14, 3, 1)$	147 : $P_{1996} = (11, 11, 6, 1)$
40 : $P_{530} = (0, 0, 1, 1)$	94 : $P_{1277} = (12, 14, 3, 1)$	148 : $P_{2053} = (4, 15, 6, 1)$
41 : $P_{531} = (1, 0, 1, 1)$	95 : $P_{1297} = (0, 0, 4, 1)$	149 : $P_{2061} = (12, 15, 6, 1)$
42 : $P_{546} = (0, 1, 1, 1)$	96 : $P_{1298} = (1, 0, 4, 1)$	150 : $P_{2065} = (0, 0, 7, 1)$
43 : $P_{570} = (9, 2, 1, 1)$	97 : $P_{1336} = (7, 2, 4, 1)$	151 : $P_{2066} = (1, 0, 7, 1)$
44 : $P_{571} = (10, 2, 1, 1)$	98 : $P_{1343} = (14, 2, 4, 1)$	152 : $P_{2100} = (3, 2, 7, 1)$
45 : $P_{604} = (11, 4, 1, 1)$	99 : $P_{1361} = (0, 4, 4, 1)$	153 : $P_{2109} = (12, 2, 7, 1)$
46 : $P_{607} = (14, 4, 1, 1)$	100 : $P_{1369} = (8, 4, 4, 1)$	154 : $P_{2115} = (2, 3, 7, 1)$
47 : $P_{675} = (2, 9, 1, 1)$	101 : $P_{1380} = (3, 5, 4, 1)$	155 : $P_{2123} = (10, 3, 7, 1)$
48 : $P_{683} = (10, 9, 1, 1)$	102 : $P_{1392} = (15, 5, 4, 1)$	156 : $P_{2158} = (13, 5, 7, 1)$
49 : $P_{690} = (1, 10, 1, 1)$	103 : $P_{1408} = (15, 6, 4, 1)$	157 : $P_{2159} = (14, 5, 7, 1)$
50 : $P_{699} = (10, 10, 1, 1)$	104 : $P_{1420} = (11, 7, 4, 1)$	158 : $P_{2177} = (0, 7, 7, 1)$
51 : $P_{706} = (1, 11, 1, 1)$	105 : $P_{1424} = (15, 7, 4, 1)$	159 : $P_{2190} = (13, 7, 7, 1)$
52 : $P_{716} = (11, 11, 1, 1)$	106 : $P_{1426} = (1, 8, 4, 1)$	160 : $P_{2235} = (10, 10, 7, 1)$
53 : $P_{757} = (4, 14, 1, 1)$	107 : $P_{1436} = (11, 8, 4, 1)$	161 : $P_{2240} = (15, 10, 7, 1)$

162 : $P_{2250} = (9, 11, 7, 1)$	216 : $P_{2951} = (6, 7, 10, 1)$	270 : $P_{3756} = (11, 9, 13, 1)$
163 : $P_{2252} = (11, 11, 7, 1)$	217 : $P_{2980} = (3, 9, 10, 1)$	271 : $P_{3765} = (4, 10, 13, 1)$
164 : $P_{2299} = (10, 14, 7, 1)$	218 : $P_{2991} = (14, 9, 10, 1)$	272 : $P_{3771} = (10, 10, 13, 1)$
165 : $P_{2321} = (0, 0, 8, 1)$	219 : $P_{2993} = (0, 10, 10, 1)$	273 : $P_{3785} = (8, 11, 13, 1)$
166 : $P_{2322} = (1, 0, 8, 1)$	220 : $P_{3003} = (10, 10, 10, 1)$	274 : $P_{3788} = (11, 11, 13, 1)$
167 : $P_{2343} = (6, 1, 8, 1)$	221 : $P_{3020} = (11, 11, 10, 1)$	275 : $P_{3809} = (0, 13, 13, 1)$
168 : $P_{2352} = (15, 1, 8, 1)$	222 : $P_{3036} = (11, 12, 10, 1)$	276 : $P_{3815} = (6, 13, 13, 1)$
169 : $P_{2376} = (7, 3, 8, 1)$	223 : $P_{3040} = (15, 12, 10, 1)$	277 : $P_{3832} = (7, 14, 13, 1)$
170 : $P_{2392} = (7, 4, 8, 1)$	224 : $P_{3046} = (5, 13, 10, 1)$	278 : $P_{3840} = (15, 14, 13, 1)$
171 : $P_{2398} = (13, 4, 8, 1)$	225 : $P_{3052} = (11, 13, 10, 1)$	279 : $P_{3852} = (11, 15, 13, 1)$
172 : $P_{2430} = (13, 6, 8, 1)$	226 : $P_{3058} = (1, 14, 10, 1)$	280 : $P_{3855} = (14, 15, 13, 1)$
173 : $P_{2431} = (14, 6, 8, 1)$	227 : $P_{3065} = (8, 14, 10, 1)$	281 : $P_{3857} = (0, 0, 14, 1)$
174 : $P_{2435} = (2, 7, 8, 1)$	228 : $P_{3089} = (0, 0, 11, 1)$	282 : $P_{3858} = (1, 0, 14, 1)$
175 : $P_{2442} = (9, 7, 8, 1)$	229 : $P_{3090} = (1, 0, 11, 1)$	283 : $P_{3906} = (1, 3, 14, 1)$
176 : $P_{2449} = (0, 8, 8, 1)$	230 : $P_{3109} = (4, 1, 11, 1)$	284 : $P_{3916} = (11, 3, 14, 1)$
177 : $P_{2463} = (14, 8, 8, 1)$	231 : $P_{3119} = (14, 1, 11, 1)$	285 : $P_{3939} = (2, 5, 14, 1)$
178 : $P_{2491} = (10, 10, 8, 1)$	232 : $P_{3122} = (1, 2, 11, 1)$	286 : $P_{3944} = (7, 5, 14, 1)$
179 : $P_{2494} = (13, 10, 8, 1)$	233 : $P_{3136} = (15, 2, 11, 1)$	287 : $P_{3958} = (5, 6, 14, 1)$
180 : $P_{2501} = (4, 11, 8, 1)$	234 : $P_{3162} = (9, 4, 11, 1)$	288 : $P_{3964} = (11, 6, 14, 1)$
181 : $P_{2508} = (11, 11, 8, 1)$	235 : $P_{3168} = (15, 4, 11, 1)$	289 : $P_{3974} = (5, 7, 14, 1)$
182 : $P_{2564} = (3, 15, 8, 1)$	236 : $P_{3188} = (3, 6, 11, 1)$	290 : $P_{4005} = (4, 9, 14, 1)$
183 : $P_{2568} = (7, 15, 8, 1)$	237 : $P_{3195} = (10, 6, 11, 1)$	291 : $P_{4007} = (6, 9, 14, 1)$
184 : $P_{2577} = (0, 0, 9, 1)$	238 : $P_{3209} = (8, 7, 11, 1)$	292 : $P_{4020} = (3, 10, 14, 1)$
185 : $P_{2578} = (1, 0, 9, 1)$	239 : $P_{3211} = (10, 7, 11, 1)$	293 : $P_{4027} = (10, 10, 14, 1)$
186 : $P_{2638} = (13, 3, 9, 1)$	240 : $P_{3234} = (1, 9, 11, 1)$	294 : $P_{4044} = (11, 11, 14, 1)$
187 : $P_{2639} = (14, 3, 9, 1)$	241 : $P_{3238} = (5, 9, 11, 1)$	295 : $P_{4045} = (12, 11, 14, 1)$
188 : $P_{2643} = (2, 4, 9, 1)$	242 : $P_{3259} = (10, 10, 11, 1)$	296 : $P_{4066} = (1, 13, 14, 1)$
189 : $P_{2653} = (12, 4, 9, 1)$	243 : $P_{3265} = (0, 11, 11, 1)$	297 : $P_{4074} = (9, 13, 14, 1)$
190 : $P_{2674} = (1, 6, 9, 1)$	244 : $P_{3276} = (11, 11, 11, 1)$	298 : $P_{4081} = (0, 14, 14, 1)$
191 : $P_{2677} = (4, 6, 9, 1)$	245 : $P_{3286} = (5, 12, 11, 1)$	299 : $P_{4084} = (3, 14, 14, 1)$
192 : $P_{2708} = (3, 8, 9, 1)$	246 : $P_{3294} = (13, 12, 11, 1)$	300 : $P_{4102} = (5, 15, 14, 1)$
193 : $P_{2710} = (5, 8, 9, 1)$	247 : $P_{3309} = (12, 13, 11, 1)$	301 : $P_{4105} = (8, 15, 14, 1)$
194 : $P_{2721} = (0, 9, 9, 1)$	248 : $P_{3312} = (15, 13, 11, 1)$	302 : $P_{4113} = (0, 0, 15, 1)$
195 : $P_{2736} = (15, 9, 9, 1)$	249 : $P_{3315} = (2, 14, 11, 1)$	303 : $P_{4114} = (1, 0, 15, 1)$
196 : $P_{2744} = (7, 10, 9, 1)$	250 : $P_{3318} = (5, 14, 11, 1)$	304 : $P_{4132} = (3, 1, 15, 1)$
197 : $P_{2747} = (10, 10, 9, 1)$	251 : $P_{3345} = (0, 0, 12, 1)$	305 : $P_{4142} = (13, 1, 15, 1)$
198 : $P_{2764} = (11, 11, 9, 1)$	252 : $P_{3346} = (1, 0, 12, 1)$	306 : $P_{4166} = (5, 3, 15, 1)$
199 : $P_{2768} = (15, 11, 9, 1)$	253 : $P_{3388} = (11, 2, 12, 1)$	307 : $P_{4173} = (12, 3, 15, 1)$
200 : $P_{2772} = (3, 12, 9, 1)$	254 : $P_{3414} = (5, 4, 12, 1)$	308 : $P_{4205} = (12, 5, 15, 1)$
201 : $P_{2779} = (10, 12, 9, 1)$	255 : $P_{3415} = (6, 4, 12, 1)$	309 : $P_{4264} = (7, 9, 15, 1)$
202 : $P_{2788} = (3, 13, 9, 1)$	256 : $P_{3429} = (4, 5, 12, 1)$	310 : $P_{4269} = (12, 9, 15, 1)$
203 : $P_{2818} = (1, 15, 9, 1)$	257 : $P_{3436} = (11, 5, 12, 1)$	311 : $P_{4282} = (9, 10, 15, 1)$
204 : $P_{2827} = (10, 15, 9, 1)$	258 : $P_{3475} = (2, 8, 12, 1)$	312 : $P_{4283} = (10, 10, 15, 1)$
205 : $P_{2833} = (0, 0, 10, 1)$	259 : $P_{3480} = (7, 8, 12, 1)$	313 : $P_{4296} = (7, 11, 15, 1)$
206 : $P_{2834} = (1, 0, 10, 1)$	260 : $P_{3515} = (10, 10, 12, 1)$	314 : $P_{4300} = (11, 11, 15, 1)$
207 : $P_{2851} = (2, 1, 10, 1)$	261 : $P_{3519} = (14, 10, 12, 1)$	315 : $P_{4309} = (4, 12, 15, 1)$
208 : $P_{2858} = (9, 1, 10, 1)$	262 : $P_{3524} = (3, 11, 12, 1)$	316 : $P_{4319} = (14, 12, 15, 1)$
209 : $P_{2869} = (4, 2, 10, 1)$	263 : $P_{3532} = (11, 11, 12, 1)$	317 : $P_{4323} = (2, 13, 15, 1)$
210 : $P_{2873} = (8, 2, 10, 1)$	264 : $P_{3537} = (0, 12, 12, 1)$	318 : $P_{4328} = (7, 13, 15, 1)$
211 : $P_{2898} = (1, 4, 10, 1)$	265 : $P_{3544} = (7, 12, 12, 1)$	319 : $P_{4353} = (0, 15, 15, 1)$
212 : $P_{2900} = (3, 4, 10, 1)$	266 : $P_{3601} = (0, 0, 13, 1)$	320 : $P_{4355} = (2, 15, 15, 1)$
213 : $P_{2936} = (7, 6, 10, 1)$	267 : $P_{3602} = (1, 0, 13, 1)$	
214 : $P_{2937} = (8, 6, 10, 1)$	268 : $P_{3655} = (6, 3, 13, 1)$	
215 : $P_{2948} = (3, 7, 10, 1)$	269 : $P_{3658} = (9, 3, 13, 1)$	