

Rank-264 over GF(32)

January 15, 2021

The equation

The equation of the surface is :

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

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

The point rank of the equation over GF(32) is -2078210002

General information

Number of lines	5
Number of points	1121
Number of singular points	0
Number of Eckardt points	2
Number of double points	0
Number of single points	159
Number of points off lines	960
Number of Hesse planes	0
Number of axes	0
Type of points on lines	3^5
Type of lines on points	$3^2, 1^{159}, 0^{960}$

Singular Points

The surface has 0 singular points:

The 5 Lines

The lines and their Pluecker coordinates are:

$$\begin{aligned} \ell_0 &= \left[\begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{array} \right]_{1025} = \left[\begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{array} \right]_{1025} = \mathbf{Pl}(0, 0, 1, 0, 1, 0)_{1152} \\ \ell_1 &= \left[\begin{array}{cccc} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{array} \right]_{1082369} = \left[\begin{array}{cccc} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{array} \right]_{1082369} = \mathbf{Pl}(0, 0, 0, 1, 0, 1)_{36865} \end{aligned}$$

$$\begin{aligned}\ell_2 &= \begin{bmatrix} 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{bmatrix}_{2082} = \begin{bmatrix} 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{bmatrix}_{2082} = \mathbf{PI}(0, 0, 1, 1, 1, 1)_{70562} \\ \ell_3 &= \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{1090} = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{1090} = \mathbf{PI}(1, 1, 1, 0, 1, 1)_{68640} \\ \ell_4 &= \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{33857} = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{33857} = \mathbf{PI}(1, 1, 1, 1, 1, 0)_{5058}\end{aligned}$$

Rank of lines: (1025, 1082369, 2082, 1090, 33857)

Rank of points on Klein quadric: (1152, 36865, 70562, 68640, 5058)

Eckardt Points

The surface has 2 Eckardt points:

$$0 : P_{2082} = \mathbf{P}(0, 0, 1, 1) = \mathbf{P}(0, 0, 1, 1),$$

$$1 : P_{2114} = \mathbf{P}(0, 1, 1, 1) = \mathbf{P}(0, 1, 1, 1).$$

Double Points

The surface has 0 Double points:

The double points on the surface are:

Single Points

The surface has 159 single points:

The single points on the surface are:

- | | |
|---|---|
| 0 : $P_0 = (1, 0, 0, 0)$ lies on line ℓ_0 | 23 : $P_{2098} = (16, 0, 1, 1)$ lies on line ℓ_0 |
| 1 : $P_1 = (0, 1, 0, 0)$ lies on line ℓ_1 | 24 : $P_{2099} = (17, 0, 1, 1)$ lies on line ℓ_0 |
| 2 : $P_4 = (1, 1, 1, 1)$ lies on line ℓ_2 | 25 : $P_{2100} = (18, 0, 1, 1)$ lies on line ℓ_0 |
| 3 : $P_5 = (1, 1, 0, 0)$ lies on line ℓ_2 | 26 : $P_{2101} = (19, 0, 1, 1)$ lies on line ℓ_0 |
| 4 : $P_{36} = (1, 0, 1, 0)$ lies on line ℓ_3 | 27 : $P_{2102} = (20, 0, 1, 1)$ lies on line ℓ_0 |
| 5 : $P_{68} = (1, 1, 1, 0)$ lies on line ℓ_4 | 28 : $P_{2103} = (21, 0, 1, 1)$ lies on line ℓ_0 |
| 6 : $P_{1059} = (1, 0, 0, 1)$ lies on line ℓ_4 | 29 : $P_{2104} = (22, 0, 1, 1)$ lies on line ℓ_0 |
| 7 : $P_{1091} = (1, 1, 0, 1)$ lies on line ℓ_3 | 30 : $P_{2105} = (23, 0, 1, 1)$ lies on line ℓ_0 |
| 8 : $P_{2083} = (1, 0, 1, 1)$ lies on line ℓ_0 | 31 : $P_{2106} = (24, 0, 1, 1)$ lies on line ℓ_0 |
| 9 : $P_{2084} = (2, 0, 1, 1)$ lies on line ℓ_0 | 32 : $P_{2107} = (25, 0, 1, 1)$ lies on line ℓ_0 |
| 10 : $P_{2085} = (3, 0, 1, 1)$ lies on line ℓ_0 | 33 : $P_{2108} = (26, 0, 1, 1)$ lies on line ℓ_0 |
| 11 : $P_{2086} = (4, 0, 1, 1)$ lies on line ℓ_0 | 34 : $P_{2109} = (27, 0, 1, 1)$ lies on line ℓ_0 |
| 12 : $P_{2087} = (5, 0, 1, 1)$ lies on line ℓ_0 | 35 : $P_{2110} = (28, 0, 1, 1)$ lies on line ℓ_0 |
| 13 : $P_{2088} = (6, 0, 1, 1)$ lies on line ℓ_0 | 36 : $P_{2111} = (29, 0, 1, 1)$ lies on line ℓ_0 |
| 14 : $P_{2089} = (7, 0, 1, 1)$ lies on line ℓ_0 | 37 : $P_{2112} = (30, 0, 1, 1)$ lies on line ℓ_0 |
| 15 : $P_{2090} = (8, 0, 1, 1)$ lies on line ℓ_0 | 38 : $P_{2113} = (31, 0, 1, 1)$ lies on line ℓ_0 |
| 16 : $P_{2091} = (9, 0, 1, 1)$ lies on line ℓ_0 | 39 : $P_{2145} = (0, 2, 1, 1)$ lies on line ℓ_1 |
| 17 : $P_{2092} = (10, 0, 1, 1)$ lies on line ℓ_0 | 40 : $P_{2147} = (2, 2, 1, 1)$ lies on line ℓ_2 |
| 18 : $P_{2093} = (11, 0, 1, 1)$ lies on line ℓ_0 | 41 : $P_{2177} = (0, 3, 1, 1)$ lies on line ℓ_1 |
| 19 : $P_{2094} = (12, 0, 1, 1)$ lies on line ℓ_0 | 42 : $P_{2180} = (3, 3, 1, 1)$ lies on line ℓ_2 |
| 20 : $P_{2095} = (13, 0, 1, 1)$ lies on line ℓ_0 | 43 : $P_{2209} = (0, 4, 1, 1)$ lies on line ℓ_1 |
| 21 : $P_{2096} = (14, 0, 1, 1)$ lies on line ℓ_0 | 44 : $P_{2213} = (4, 4, 1, 1)$ lies on line ℓ_2 |
| 22 : $P_{2097} = (15, 0, 1, 1)$ lies on line ℓ_0 | 45 : $P_{2241} = (0, 5, 1, 1)$ lies on line ℓ_1 |

- 46 : $P_{2246} = (5, 5, 1, 1)$ lies on line ℓ_2
 47 : $P_{2273} = (0, 6, 1, 1)$ lies on line ℓ_1
 48 : $P_{2279} = (6, 6, 1, 1)$ lies on line ℓ_2
 49 : $P_{2305} = (0, 7, 1, 1)$ lies on line ℓ_1
 50 : $P_{2312} = (7, 7, 1, 1)$ lies on line ℓ_2
 51 : $P_{2337} = (0, 8, 1, 1)$ lies on line ℓ_1
 52 : $P_{2345} = (8, 8, 1, 1)$ lies on line ℓ_2
 53 : $P_{2369} = (0, 9, 1, 1)$ lies on line ℓ_1
 54 : $P_{2378} = (9, 9, 1, 1)$ lies on line ℓ_2
 55 : $P_{2401} = (0, 10, 1, 1)$ lies on line ℓ_1
 56 : $P_{2411} = (10, 10, 1, 1)$ lies on line ℓ_2
 57 : $P_{2433} = (0, 11, 1, 1)$ lies on line ℓ_1
 58 : $P_{2444} = (11, 11, 1, 1)$ lies on line ℓ_2
 59 : $P_{2465} = (0, 12, 1, 1)$ lies on line ℓ_1
 60 : $P_{2477} = (12, 12, 1, 1)$ lies on line ℓ_2
 61 : $P_{2497} = (0, 13, 1, 1)$ lies on line ℓ_1
 62 : $P_{2510} = (13, 13, 1, 1)$ lies on line ℓ_2
 63 : $P_{2529} = (0, 14, 1, 1)$ lies on line ℓ_1
 64 : $P_{2543} = (14, 14, 1, 1)$ lies on line ℓ_2
 65 : $P_{2561} = (0, 15, 1, 1)$ lies on line ℓ_1
 66 : $P_{2576} = (15, 15, 1, 1)$ lies on line ℓ_2
 67 : $P_{2593} = (0, 16, 1, 1)$ lies on line ℓ_1
 68 : $P_{2609} = (16, 16, 1, 1)$ lies on line ℓ_2
 69 : $P_{2625} = (0, 17, 1, 1)$ lies on line ℓ_1
 70 : $P_{2642} = (17, 17, 1, 1)$ lies on line ℓ_2
 71 : $P_{2657} = (0, 18, 1, 1)$ lies on line ℓ_1
 72 : $P_{2675} = (18, 18, 1, 1)$ lies on line ℓ_2
 73 : $P_{2689} = (0, 19, 1, 1)$ lies on line ℓ_1
 74 : $P_{2708} = (19, 19, 1, 1)$ lies on line ℓ_2
 75 : $P_{2721} = (0, 20, 1, 1)$ lies on line ℓ_1
 76 : $P_{2741} = (20, 20, 1, 1)$ lies on line ℓ_2
 77 : $P_{2753} = (0, 21, 1, 1)$ lies on line ℓ_1
 78 : $P_{2774} = (21, 21, 1, 1)$ lies on line ℓ_2
 79 : $P_{2785} = (0, 22, 1, 1)$ lies on line ℓ_1
 80 : $P_{2807} = (22, 22, 1, 1)$ lies on line ℓ_2
 81 : $P_{2817} = (0, 23, 1, 1)$ lies on line ℓ_1
 82 : $P_{2840} = (23, 23, 1, 1)$ lies on line ℓ_2
 83 : $P_{2849} = (0, 24, 1, 1)$ lies on line ℓ_1
 84 : $P_{2873} = (24, 24, 1, 1)$ lies on line ℓ_2
 85 : $P_{2881} = (0, 25, 1, 1)$ lies on line ℓ_1
 86 : $P_{2906} = (25, 25, 1, 1)$ lies on line ℓ_2
 87 : $P_{2913} = (0, 26, 1, 1)$ lies on line ℓ_1
 88 : $P_{2939} = (26, 26, 1, 1)$ lies on line ℓ_2
 89 : $P_{2945} = (0, 27, 1, 1)$ lies on line ℓ_1
 90 : $P_{2972} = (27, 27, 1, 1)$ lies on line ℓ_2
 91 : $P_{2977} = (0, 28, 1, 1)$ lies on line ℓ_1
 92 : $P_{3005} = (28, 28, 1, 1)$ lies on line ℓ_2
 93 : $P_{3009} = (0, 29, 1, 1)$ lies on line ℓ_1
 94 : $P_{3038} = (29, 29, 1, 1)$ lies on line ℓ_2
 95 : $P_{3041} = (0, 30, 1, 1)$ lies on line ℓ_1
 96 : $P_{3071} = (30, 30, 1, 1)$ lies on line ℓ_2
 97 : $P_{3073} = (0, 31, 1, 1)$ lies on line ℓ_1
 98 : $P_{3104} = (31, 31, 1, 1)$ lies on line ℓ_2
 99 : $P_{3140} = (3, 1, 2, 1)$ lies on line ℓ_3
 100 : $P_{3172} = (3, 2, 2, 1)$ lies on line ℓ_4
 101 : $P_{4163} = (2, 1, 3, 1)$ lies on line ℓ_3
 102 : $P_{4227} = (2, 3, 3, 1)$ lies on line ℓ_4
 103 : $P_{5190} = (5, 1, 4, 1)$ lies on line ℓ_3
 104 : $P_{5286} = (5, 4, 4, 1)$ lies on line ℓ_4
 105 : $P_{6213} = (4, 1, 5, 1)$ lies on line ℓ_3
 106 : $P_{6341} = (4, 5, 5, 1)$ lies on line ℓ_4
 107 : $P_{7240} = (7, 1, 6, 1)$ lies on line ℓ_3
 108 : $P_{7400} = (7, 6, 6, 1)$ lies on line ℓ_4
 109 : $P_{8263} = (6, 1, 7, 1)$ lies on line ℓ_3
 110 : $P_{8455} = (6, 7, 7, 1)$ lies on line ℓ_4
 111 : $P_{9290} = (9, 1, 8, 1)$ lies on line ℓ_3
 112 : $P_{9514} = (9, 8, 8, 1)$ lies on line ℓ_4
 113 : $P_{10313} = (8, 1, 9, 1)$ lies on line ℓ_3
 114 : $P_{10569} = (8, 9, 9, 1)$ lies on line ℓ_4
 115 : $P_{11340} = (11, 1, 10, 1)$ lies on line ℓ_3
 116 : $P_{11628} = (11, 10, 10, 1)$ lies on line ℓ_4
 117 : $P_{12363} = (10, 1, 11, 1)$ lies on line ℓ_3
 118 : $P_{12683} = (10, 11, 11, 1)$ lies on line ℓ_4
 119 : $P_{13390} = (13, 1, 12, 1)$ lies on line ℓ_3
 120 : $P_{13742} = (13, 12, 12, 1)$ lies on line ℓ_4
 121 : $P_{14413} = (12, 1, 13, 1)$ lies on line ℓ_3
 122 : $P_{14797} = (12, 13, 13, 1)$ lies on line ℓ_4
 123 : $P_{15440} = (15, 1, 14, 1)$ lies on line ℓ_3
 124 : $P_{15856} = (15, 14, 14, 1)$ lies on line ℓ_4
 125 : $P_{16463} = (14, 1, 15, 1)$ lies on line ℓ_3
 126 : $P_{16911} = (14, 15, 15, 1)$ lies on line ℓ_4
 127 : $P_{17490} = (17, 1, 16, 1)$ lies on line ℓ_3
 128 : $P_{17970} = (17, 16, 16, 1)$ lies on line ℓ_4
 129 : $P_{18513} = (16, 1, 17, 1)$ lies on line ℓ_3
 130 : $P_{19025} = (16, 17, 17, 1)$ lies on line ℓ_4
 131 : $P_{19540} = (19, 1, 18, 1)$ lies on line ℓ_3
 132 : $P_{20084} = (19, 18, 18, 1)$ lies on line ℓ_4
 133 : $P_{20563} = (18, 1, 19, 1)$ lies on line ℓ_3
 134 : $P_{21139} = (18, 19, 19, 1)$ lies on line ℓ_4
 135 : $P_{21590} = (21, 1, 20, 1)$ lies on line ℓ_3
 136 : $P_{22198} = (21, 20, 20, 1)$ lies on line ℓ_4
 137 : $P_{22613} = (20, 1, 21, 1)$ lies on line ℓ_3
 138 : $P_{23253} = (20, 21, 21, 1)$ lies on line ℓ_4
 139 : $P_{23640} = (23, 1, 22, 1)$ lies on line ℓ_3
 140 : $P_{24312} = (23, 22, 22, 1)$ lies on line ℓ_4
 141 : $P_{24663} = (22, 1, 23, 1)$ lies on line ℓ_3
 142 : $P_{25367} = (22, 23, 23, 1)$ lies on line ℓ_4
 143 : $P_{25690} = (25, 1, 24, 1)$ lies on line ℓ_3
 144 : $P_{26426} = (25, 24, 24, 1)$ lies on line ℓ_4
 145 : $P_{26713} = (24, 1, 25, 1)$ lies on line ℓ_3
 146 : $P_{27481} = (24, 25, 25, 1)$ lies on line ℓ_4
 147 : $P_{27740} = (27, 1, 26, 1)$ lies on line ℓ_3
 148 : $P_{28540} = (27, 26, 26, 1)$ lies on line ℓ_4
 149 : $P_{28763} = (26, 1, 27, 1)$ lies on line ℓ_3
 150 : $P_{29595} = (26, 27, 27, 1)$ lies on line ℓ_4
 151 : $P_{29790} = (29, 1, 28, 1)$ lies on line ℓ_3
 152 : $P_{30654} = (29, 28, 28, 1)$ lies on line ℓ_4
 153 : $P_{30813} = (28, 1, 29, 1)$ lies on line ℓ_3

154 : $P_{31709} = (28, 29, 29, 1)$ lies on line ℓ_4
155 : $P_{31840} = (31, 1, 30, 1)$ lies on line ℓ_3
156 : $P_{32768} = (31, 30, 30, 1)$ lies on line ℓ_4

157 : $P_{32863} = (30, 1, 31, 1)$ lies on line ℓ_3
158 : $P_{33823} = (30, 31, 31, 1)$ lies on line ℓ_4

The single points on the surface are:

Points on surface but on no line

The surface has 960 points not on any line:

The points on the surface but not on lines are:

0 : $P_{105} = (6, 2, 1, 0)$	41 : $P_{3154} = (17, 1, 2, 1)$
1 : $P_{124} = (25, 2, 1, 0)$	42 : $P_{3176} = (7, 2, 2, 1)$
2 : $P_{169} = (6, 4, 1, 0)$	43 : $P_{3231} = (30, 3, 2, 1)$
3 : $P_{183} = (20, 4, 1, 0)$	44 : $P_{3244} = (11, 4, 2, 1)$
4 : $P_{243} = (16, 6, 1, 0)$	45 : $P_{3254} = (21, 4, 2, 1)$
5 : $P_{254} = (27, 6, 1, 0)$	46 : $P_{3272} = (7, 5, 2, 1)$
6 : $P_{473} = (22, 13, 1, 0)$	47 : $P_{3283} = (18, 5, 2, 1)$
7 : $P_{480} = (29, 13, 1, 0)$	48 : $P_{3596} = (11, 15, 2, 1)$
8 : $P_{567} = (20, 16, 1, 0)$	49 : $P_{3613} = (28, 15, 2, 1)$
9 : $P_{576} = (29, 16, 1, 0)$	50 : $P_{3621} = (4, 16, 2, 1)$
10 : $P_{677} = (2, 20, 1, 0)$	51 : $P_{3634} = (17, 16, 2, 1)$
11 : $P_{688} = (13, 20, 1, 0)$	52 : $P_{3662} = (13, 17, 2, 1)$
12 : $P_{741} = (2, 22, 1, 0)$	53 : $P_{3670} = (21, 17, 2, 1)$
13 : $P_{755} = (16, 22, 1, 0)$	54 : $P_{3727} = (14, 19, 2, 1)$
14 : $P_{839} = (4, 25, 1, 0)$	55 : $P_{3741} = (28, 19, 2, 1)$
15 : $P_{848} = (13, 25, 1, 0)$	56 : $P_{3747} = (2, 20, 2, 1)$
16 : $P_{921} = (22, 27, 1, 0)$	57 : $P_{3749} = (4, 20, 2, 1)$
17 : $P_{924} = (25, 27, 1, 0)$	58 : $P_{3811} = (2, 22, 2, 1)$
18 : $P_{967} = (4, 29, 1, 0)$	59 : $P_{3819} = (10, 22, 2, 1)$
19 : $P_{990} = (27, 29, 1, 0)$	60 : $P_{3856} = (15, 23, 2, 1)$
20 : $P_{1128} = (6, 2, 0, 1)$	61 : $P_{3859} = (18, 23, 2, 1)$
21 : $P_{1147} = (25, 2, 0, 1)$	62 : $P_{3888} = (15, 24, 2, 1)$
22 : $P_{1192} = (6, 4, 0, 1)$	63 : $P_{3897} = (24, 24, 2, 1)$
23 : $P_{1206} = (20, 4, 0, 1)$	64 : $P_{4011} = (10, 28, 2, 1)$
24 : $P_{1266} = (16, 6, 0, 1)$	65 : $P_{4014} = (13, 28, 2, 1)$
25 : $P_{1277} = (27, 6, 0, 1)$	66 : $P_{4047} = (14, 29, 2, 1)$
26 : $P_{1496} = (22, 13, 0, 1)$	67 : $P_{4063} = (30, 29, 2, 1)$
27 : $P_{1503} = (29, 13, 0, 1)$	68 : $P_{4153} = (24, 0, 3, 1)$
28 : $P_{1590} = (20, 16, 0, 1)$	69 : $P_{4191} = (30, 1, 3, 1)$
29 : $P_{1599} = (29, 16, 0, 1)$	70 : $P_{4210} = (17, 2, 3, 1)$
30 : $P_{1700} = (2, 20, 0, 1)$	71 : $P_{4232} = (7, 3, 3, 1)$
31 : $P_{1711} = (13, 20, 0, 1)$	72 : $P_{4264} = (7, 4, 3, 1)$
32 : $P_{1764} = (2, 22, 0, 1)$	73 : $P_{4285} = (28, 4, 3, 1)$
33 : $P_{1778} = (16, 22, 0, 1)$	74 : $P_{4362} = (9, 7, 3, 1)$
34 : $P_{1862} = (4, 25, 0, 1)$	75 : $P_{4379} = (26, 7, 3, 1)$
35 : $P_{1871} = (13, 25, 0, 1)$	76 : $P_{4435} = (18, 9, 3, 1)$
36 : $P_{1944} = (22, 27, 0, 1)$	77 : $P_{4436} = (19, 9, 3, 1)$
37 : $P_{1947} = (25, 27, 0, 1)$	78 : $P_{4586} = (9, 14, 3, 1)$
38 : $P_{1990} = (4, 29, 0, 1)$	79 : $P_{4602} = (25, 14, 3, 1)$
39 : $P_{2013} = (27, 29, 0, 1)$	80 : $P_{4752} = (15, 19, 3, 1)$
40 : $P_{3129} = (24, 0, 2, 1)$	81 : $P_{4754} = (17, 19, 3, 1)$

82 : $P_{4876} = (11, 23, 3, 1)$	136 : $P_{6537} = (8, 11, 5, 1)$
83 : $P_{4890} = (25, 23, 3, 1)$	137 : $P_{6538} = (9, 11, 5, 1)$
84 : $P_{4921} = (24, 24, 3, 1)$	138 : $P_{6710} = (21, 16, 5, 1)$
85 : $P_{4925} = (28, 24, 3, 1)$	139 : $P_{6712} = (23, 16, 5, 1)$
86 : $P_{4966} = (5, 26, 3, 1)$	140 : $P_{6770} = (17, 18, 5, 1)$
87 : $P_{4980} = (19, 26, 3, 1)$	141 : $P_{6772} = (19, 18, 5, 1)$
88 : $P_{4999} = (6, 27, 3, 1)$	142 : $P_{6852} = (3, 21, 5, 1)$
89 : $P_{5011} = (18, 27, 3, 1)$	143 : $P_{6860} = (11, 21, 5, 1)$
90 : $P_{5036} = (11, 28, 3, 1)$	144 : $P_{6884} = (3, 22, 5, 1)$
91 : $P_{5040} = (15, 28, 3, 1)$	145 : $P_{6901} = (20, 22, 5, 1)$
92 : $P_{5063} = (6, 29, 3, 1)$	146 : $P_{6928} = (15, 23, 5, 1)$
93 : $P_{5083} = (26, 29, 3, 1)$	147 : $P_{6944} = (31, 23, 5, 1)$
94 : $P_{5126} = (5, 31, 3, 1)$	148 : $P_{6951} = (6, 24, 5, 1)$
95 : $P_{5151} = (30, 31, 3, 1)$	149 : $P_{6960} = (15, 24, 5, 1)$
96 : $P_{5160} = (7, 0, 4, 1)$	150 : $P_{7143} = (6, 30, 5, 1)$
97 : $P_{5197} = (12, 1, 4, 1)$	151 : $P_{7148} = (11, 30, 5, 1)$
98 : $P_{5302} = (21, 4, 4, 1)$	152 : $P_{7231} = (30, 0, 6, 1)$
99 : $P_{5332} = (19, 5, 4, 1)$	153 : $P_{7242} = (9, 1, 6, 1)$
100 : $P_{5384} = (7, 7, 4, 1)$	154 : $P_{7271} = (6, 2, 6, 1)$
101 : $P_{5408} = (31, 7, 4, 1)$	155 : $P_{7281} = (16, 2, 6, 1)$
102 : $P_{5432} = (23, 8, 4, 1)$	156 : $P_{7335} = (6, 4, 6, 1)$
103 : $P_{5439} = (30, 8, 4, 1)$	157 : $P_{7350} = (21, 4, 6, 1)$
104 : $P_{5564} = (27, 12, 4, 1)$	158 : $P_{7412} = (19, 6, 6, 1)$
105 : $P_{5565} = (28, 12, 4, 1)$	159 : $P_{7435} = (10, 7, 6, 1)$
106 : $P_{5581} = (12, 13, 4, 1)$	160 : $P_{7466} = (9, 8, 6, 1)$
107 : $P_{5585} = (16, 13, 4, 1)$	161 : $P_{7477} = (20, 8, 6, 1)$
108 : $P_{5680} = (15, 16, 4, 1)$	162 : $P_{7571} = (18, 11, 6, 1)$
109 : $P_{5693} = (28, 16, 4, 1)$	163 : $P_{7579} = (26, 11, 6, 1)$
110 : $P_{5706} = (9, 17, 4, 1)$	164 : $P_{7627} = (10, 13, 6, 1)$
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889 : $P_{31608} = (23, 26, 29, 1)$	943 : $P_{33127} = (6, 10, 31, 1)$
890 : $P_{31626} = (9, 27, 29, 1)$	944 : $P_{33191} = (6, 12, 31, 1)$
891 : $P_{31634} = (17, 27, 29, 1)$	945 : $P_{33208} = (23, 12, 31, 1)$

946 : $P_{33227} = (10, 13, 31, 1)$
 947 : $P_{33241} = (24, 13, 31, 1)$
 948 : $P_{33352} = (7, 17, 31, 1)$
 949 : $P_{33362} = (17, 17, 31, 1)$
 950 : $P_{33421} = (12, 19, 31, 1)$
 951 : $P_{33436} = (27, 19, 31, 1)$
 952 : $P_{33484} = (11, 21, 31, 1)$
 953 : $P_{33497} = (24, 21, 31, 1)$

954 : $P_{33512} = (7, 22, 31, 1)$
 955 : $P_{33523} = (18, 22, 31, 1)$
 956 : $P_{33688} = (23, 27, 31, 1)$
 957 : $P_{33693} = (28, 27, 31, 1)$
 958 : $P_{33772} = (11, 30, 31, 1)$
 959 : $P_{33805} = (12, 31, 31, 1)$

Line Intersection Graph

	0	1	2	3	4
0	0	1	1	0	0
1	1	0	1	1	1
2	1	1	0	0	0
3	0	1	0	0	1
4	0	1	0	1	0

Neighbor sets in the line intersection graph:

Line 0 intersects

Line	ℓ_1	ℓ_2
in point	P_{2082}	P_{2082}

Line 1 intersects

Line	ℓ_0	ℓ_2	ℓ_3	ℓ_4
in point	P_{2082}	P_{2082}	P_{2114}	P_{2114}

Line 2 intersects

Line	ℓ_0	ℓ_1
in point	P_{2082}	P_{2082}

Line 3 intersects

Line	ℓ_1	ℓ_4
in point	P_{2114}	P_{2114}

Line 4 intersects

Line	ℓ_1	ℓ_3
in point	P_{2114}	P_{2114}

The surface has 1121 points:

Too many to print.