

Rank-38 over GF(32)

January 15, 2021

The equation

The equation of the surface is :

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

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

The point rank of the equation over GF(32) is 34898

General information

Number of lines	33
Number of points	1057
Number of singular points	1
Number of Eckardt points	0
Number of double points	0
Number of single points	1056
Number of points off lines	0
Number of Hesse planes	0
Number of axes	0
Type of points on lines	33^{33}
Type of lines on points	$33, 1^{1056}$

Singular Points

The surface has 1 singular points:

$$0 : P_3 = \mathbf{P}(0, 0, 0, 1) = \mathbf{P}(0, 0, 0, 1)$$

The 33 Lines

The lines and their Pluecker coordinates are:

$$\begin{aligned} \ell_0 &= \left[\begin{array}{cccc} 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right]_{34880} = \left[\begin{array}{cccc} 1 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right]_{34880} = \mathbf{Pl}(0, 1, 0, 0, 1, 0)_{1121} \\ \ell_1 &= \left[\begin{array}{cccc} 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right]_{1082433} = \left[\begin{array}{cccc} 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array} \right]_{1082433} = \mathbf{Pl}(0, 1, 0, 1, 0, 0)_{97} \end{aligned}$$

$$\begin{aligned}
\ell_2 &= \begin{bmatrix} 1 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{35937} = \begin{bmatrix} 1 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{35937} = \mathbf{Pl}(0, 1, 0, 1, 1, 0)_{3137} \\
\ell_3 &= \begin{bmatrix} 1 & \eta^{30} & \eta^{12} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{493618} = \begin{bmatrix} 1 & 18 & 14 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{493618} = \mathbf{Pl}(0, 14, 0, 18, 1, 0)_{4221} \\
\ell_4 &= \begin{bmatrix} 1 & \eta^9 & \eta^{22} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{738842} = \begin{bmatrix} 1 & 26 & 21 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{738842} = \mathbf{Pl}(0, 21, 0, 26, 1, 0)_{4732} \\
\ell_5 &= \begin{bmatrix} 1 & \eta^3 & \eta^{16} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{922760} = \begin{bmatrix} 1 & 8 & 27 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{922760} = \mathbf{Pl}(0, 27, 0, 8, 1, 0)_{3604} \\
\ell_6 &= \begin{bmatrix} 1 & \eta^{18} & \eta^{13} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{951299} = \begin{bmatrix} 1 & 3 & 28 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{951299} = \mathbf{Pl}(0, 28, 0, 3, 1, 0)_{3290} \\
\ell_7 &= \begin{bmatrix} 1 & \eta^6 & \eta & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{79274} = \begin{bmatrix} 1 & 10 & 2 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{79274} = \mathbf{Pl}(0, 2, 0, 10, 1, 0)_{3705} \\
\ell_8 &= \begin{bmatrix} 1 & \eta^{29} & \eta^{24} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{1025289} = \begin{bmatrix} 1 & 9 & 30 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{1025289} = \mathbf{Pl}(0, 30, 0, 9, 1, 0)_{3670} \\
\ell_9 &= \begin{bmatrix} 1 & \eta^{14} & \eta^{26} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{809661} = \begin{bmatrix} 1 & 29 & 23 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{809661} = \mathbf{Pl}(0, 23, 0, 29, 1, 0)_{4923} \\
\ell_{10} &= \begin{bmatrix} 1 & \eta^{22} & \eta^{11} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{260021} = \begin{bmatrix} 1 & 21 & 7 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{260021} = \mathbf{Pl}(0, 7, 0, 21, 1, 0)_{4403} \\
\ell_{11} &= \begin{bmatrix} 1 & \eta^8 & \eta^{10} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{589805} = \begin{bmatrix} 1 & 13 & 17 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{589805} = \mathbf{Pl}(0, 17, 0, 13, 1, 0)_{3909} \\
\ell_{12} &= \begin{bmatrix} 1 & \eta^{16} & \eta^{20} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{435483} = \begin{bmatrix} 1 & 27 & 12 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{435483} = \mathbf{Pl}(0, 12, 0, 27, 1, 0)_{4786} \\
\ell_{13} &= \begin{bmatrix} 1 & \eta^{24} & \eta^4 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{573950} = \begin{bmatrix} 1 & 30 & 16 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{573950} = \mathbf{Pl}(0, 16, 0, 30, 1, 0)_{4979} \\
\ell_{14} &= \begin{bmatrix} 1 & \eta^{10} & \eta^{21} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{830801} = \begin{bmatrix} 1 & 17 & 24 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{830801} = \mathbf{Pl}(0, 24, 0, 17, 1, 0)_{4168} \\
\ell_{15} &= \begin{bmatrix} 1 & \eta^{23} & \eta^3 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{287503} = \begin{bmatrix} 1 & 15 & 8 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{287503} = \mathbf{Pl}(0, 8, 0, 15, 1, 0)_{4026} \\
\ell_{16} &= \begin{bmatrix} 1 & \eta & \eta^9 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{882594} = \begin{bmatrix} 1 & 2 & 26 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{882594} = \mathbf{Pl}(0, 26, 0, 2, 1, 0)_{3225} \\
\ell_{17} &= \begin{bmatrix} 1 & \eta^5 & \eta^{26} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{784293} = \begin{bmatrix} 1 & 5 & 23 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{784293} = \mathbf{Pl}(0, 23, 0, 5, 1, 0)_{3411} \\
\ell_{18} &= \begin{bmatrix} 1 & \eta^{12} & \eta^2 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{151150} = \begin{bmatrix} 1 & 14 & 4 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{151150} = \mathbf{Pl}(0, 4, 0, 14, 1, 0)_{3959} \\
\ell_{19} &= \begin{bmatrix} 1 & \eta^{27} & \eta^{17} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{655339} = \begin{bmatrix} 1 & 11 & 19 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{655339} = \mathbf{Pl}(0, 19, 0, 11, 1, 0)_{3785} \\
\ell_{20} &= \begin{bmatrix} 1 & \eta^4 & \eta^5 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{187088} = \begin{bmatrix} 1 & 16 & 5 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{187088} = \mathbf{Pl}(0, 5, 0, 16, 1, 0)_{4086} \\
\ell_{21} &= \begin{bmatrix} 1 & \eta^{28} & \eta^{21} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{836086} = \begin{bmatrix} 1 & 22 & 24 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{836086} = \mathbf{Pl}(0, 24, 0, 22, 1, 0)_{4483} \\
\ell_{22} &= \begin{bmatrix} 1 & \eta^{13} & \eta^{22} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{740956} = \begin{bmatrix} 1 & 28 & 21 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{740956} = \mathbf{Pl}(0, 21, 0, 28, 1, 0)_{4858}
\end{aligned}$$

$$\begin{aligned}
\ell_{23} &= \begin{bmatrix} 1 & \eta^{19} & \eta^{22} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{717702} = \begin{bmatrix} 1 & 6 & 21 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{717702} = \mathbf{Pl}(0, 21, 0, 6, 1, 0)_{3472} \\
\ell_{24} &= \begin{bmatrix} 1 & \eta^{21} & \eta^{26} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{804376} = \begin{bmatrix} 1 & 24 & 23 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{804376} = \mathbf{Pl}(0, 23, 0, 24, 1, 0)_{4608} \\
\ell_{25} &= \begin{bmatrix} 1 & \eta^{11} & \eta^{21} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{820231} = \begin{bmatrix} 1 & 7 & 24 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{820231} = \mathbf{Pl}(0, 24, 0, 7, 1, 0)_{3538} \\
\ell_{26} &= \begin{bmatrix} 1 & \eta^7 & \eta^{13} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{969268} = \begin{bmatrix} 1 & 20 & 28 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{969268} = \mathbf{Pl}(0, 28, 0, 20, 1, 0)_{4361} \\
\ell_{27} &= \begin{bmatrix} 1 & \eta^{20} & \eta^{11} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{250508} = \begin{bmatrix} 1 & 12 & 7 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{250508} = \mathbf{Pl}(0, 7, 0, 12, 1, 0)_{3836} \\
\ell_{28} &= \begin{bmatrix} 1 & \eta^{17} & \eta^8 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{460851} = \begin{bmatrix} 1 & 19 & 13 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{460851} = \mathbf{Pl}(0, 13, 0, 19, 1, 0)_{4283} \\
\ell_{29} &= \begin{bmatrix} 1 & \eta^{15} & \eta^6 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{372063} = \begin{bmatrix} 1 & 31 & 10 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{372063} = \mathbf{Pl}(0, 10, 0, 31, 1, 0)_{5036} \\
\ell_{30} &= \begin{bmatrix} 1 & \eta^{26} & \eta^{13} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{972439} = \begin{bmatrix} 1 & 23 & 28 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{972439} = \mathbf{Pl}(0, 28, 0, 23, 1, 0)_{4550} \\
\ell_{31} &= \begin{bmatrix} 1 & \eta^{25} & \eta^{11} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{264249} = \begin{bmatrix} 1 & 25 & 7 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{264249} = \mathbf{Pl}(0, 7, 0, 25, 1, 0)_{4655} \\
\ell_{32} &= \begin{bmatrix} 1 & \eta^2 & \eta^{18} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{106756} = \begin{bmatrix} 1 & 4 & 3 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{106756} = \mathbf{Pl}(0, 3, 0, 4, 1, 0)_{3328}
\end{aligned}$$

Rank of lines: (34880, 1082433, 35937, 493618, 738842, 922760, 951299, 79274, 1025289, 809661, 260021, 589805, 435483, 573950, 830801, 287503, 882594, 784293, 151150, 655339, 187088, 836086, 740956, 717702, 804376, 820231, 969268, 250508, 460851, 372063, 972439, 264249, 106756)

Rank of points on Klein quadric: (1121, 97, 3137, 4221, 4732, 3604, 3290, 3705, 3670, 4923, 4403, 3909, 4786, 4979, 4168, 4026, 3225, 3411, 3959, 3785, 4086, 4483, 4858, 3472, 4608, 3538, 4361, 3836, 4283, 5036, 4550, 4655, 3328)

Eckardt Points

The surface has 0 Eckardt points:

Double Points

The surface has 0 Double points:

The double points on the surface are:

Single Points

The surface has 1056 single points:

Too many to print.

Points on surface but on no line

The surface has 0 points not on any line:

The points on the surface but not on lines are:

Line Intersection Graph

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
3	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
4	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
11	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
12	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
13	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
14	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
15	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
16	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
17	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
18	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
19	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1	1
24	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1	1
25	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1
26	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1	1
27	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1	1
28	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1	1
29	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1	1
30	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1	1
31	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1
32	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0

Neighbor sets in the line intersection graph:

Line 0 intersects

Line	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 1 intersects

Line	ℓ_0	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 2 intersects

Line	ℓ_0	ℓ_1	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 3 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

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Line 30 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 31 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

Line 32 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}	ℓ_{17}	ℓ_{18}	ℓ_{19}	ℓ_{20}	ℓ_{21}	ℓ_{22}
in point	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3	P_3

The surface has 1057 points:

Too many to print.