Rank-10566 over GF(64)

January 15, 2021

The equation

The equation of the surface is :

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

(0, 0, 0, 0, 0, 0, 1, 0, 1, 0, 0, 1, 0, 1, 0, 0, 0, 0, 0, 0)
The point rank of the equation over $GF(64)$ is 1090785352

General information

Number of lines	27
Number of points	4545
Number of singular points	0
Number of Eckardt points	45
Number of double points	0
Number of single points	1620
Number of points off lines	2880
Number of Hesse planes	40
Number of axes	240
Type of points on lines	65^{27}
Type of lines on points	$3^{45}, 1^{1620}, 0^{2880}$

Singular Points

The surface has 0 singular points:

The 27 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = a_1 = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 1 & 0 \end{bmatrix}_1 = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 1 & 0 \end{bmatrix}_1 = \mathbf{Pl}(1,0,1,0,0,0)_3$$

$$\ell_1 = a_2 = \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17043520} = \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17043520} = \mathbf{Pl}(0,0,0,1,0,0)_{129}$$

$$\ell_2 = a_3 = \begin{bmatrix} 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{bmatrix}_{8258} = \begin{bmatrix} 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{bmatrix}_{8258} = \mathbf{Pl}(0,0,1,1,1,1)_{544578}$$

$$\ell_3 = a_4 = \begin{bmatrix} 1 & \epsilon^{21} & 0 & 0 \\ 0 & 0 & 1 & \epsilon^{42} \end{bmatrix}_{241329} = \begin{bmatrix} 1 & 57 & 0 & 0 \\ 0 & 0 & 1 & 56 \end{bmatrix}_{241329} = \mathbf{Pl}(0,0,57,56,57,1)_{15228170}$$

$$\ell_4 = a_5 = \begin{bmatrix} 1 & \epsilon^{42} & 0 & 0 \\ 0 & 0 & 1 & \epsilon^{21} \end{bmatrix}_{237169} = \begin{bmatrix} 1 & 56 & 0 & 0 \\ 0 & 0 & 1 & 57 \end{bmatrix}_{237169} = \mathbf{Pl}(0,0,56,57,56,1)_{14965963}$$

$$\ell_5 = a_6 = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{270400} = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{270400} = \mathbf{Pl}(0,1,1,0,0,0)_{66}$$

$$\ell_6 = b_1 = \begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17047616} = \begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17047616} = \mathbf{Pl}(0,1,0,0,0,0)_1$$

$$\ell_7 = b_2 = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 1 & 1 & 0 \end{bmatrix}_{266305} = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 1 & 1 & 0 \end{bmatrix}_{266305} = \mathbf{Pl}(1,1,1,1,0,0)_{256}$$

$$\ell_8 = b_3 = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 0 & 1 \end{bmatrix}_{270529} = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 0 & 1 \end{bmatrix}_{270529} = \mathbf{Pl}(1,1,0,1,1,1)_{540609}$$

$$\ell_9 = b_4 = \begin{bmatrix} 1 & 0 & \epsilon^{21} & 1 \\ 0 & 1 & 0 & \epsilon^{42} \end{bmatrix}_{507065} = \begin{bmatrix} 1 & 0 & 57 & 1 \\ 0 & 1 & 0 & 56 \end{bmatrix}_{507065} = \mathbf{Pl}(57,56,0,56,57,1)_{15220610}$$

$$\ell_{10} = b_5 = \begin{bmatrix} 1 & 0 & \epsilon^{42} & 1 \\ 0 & 1 & 0 & \epsilon^{21} \end{bmatrix}_{502968} = \begin{bmatrix} 1 & 0 & 56 & 1 \\ 0 & 1 & 0 & 57 \end{bmatrix}_{502968} = \mathbf{Pl}(56,57,0,57,56,1)_{14958592}$$

$$\ell_{11} = b_6 = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \end{bmatrix}_0 = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \end{bmatrix}_0 = \mathbf{Pl}(1,0,0,0,0,0)_0$$

$$\ell_{12} = c_{12} = \begin{bmatrix} 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17043585} = \begin{bmatrix} 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17043585} = \mathbf{Pl}(0,1,0,1,0,0)_{193}$$

$$\ell_{13} = c_{13} = \begin{bmatrix} 1 & 1 & 0 & 1 \\ 0 & 0 & 1 & 1 \end{bmatrix}_{274562} = \begin{bmatrix} 1 & 1 & 0 & 1 \\ 0 & 0 & 1 & 1 \end{bmatrix}_{274562} = \mathbf{Pl}(0,1,1,1,1,1)_{544642}$$

$$\ell_{14} = c_{14} = \begin{bmatrix} 1 & \epsilon^{21} & 0 & 1 \\ 0 & 0 & 1 & \epsilon^{42} \end{bmatrix}_{507633} = \begin{bmatrix} 1 & 57 & 0 & 1 \\ 0 & 0 & 1 & 56 \end{bmatrix}_{507633} = \mathbf{Pl}(0,56,57,56,57,1)_{15228289}$$

$$\ell_{15} = c_{15} = \begin{bmatrix} 1 & \epsilon^{42} & 0 & 1 \\ 0 & 0 & 1 & \epsilon^{21} \end{bmatrix}_{503473} = \begin{bmatrix} 1 & 56 & 0 & 1 \\ 0 & 0 & 1 & 57 \end{bmatrix}_{503473} = \mathbf{Pl}(0,57,56,57,56,1)_{14966083}$$

$$\ell_{16} = c_{16} = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{4096} = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}_{4096} = \mathbf{Pl}(0,0,1,0,0,0)_2$$

$$\ell_{17} = c_{23} = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 0 & 1 \end{bmatrix}_{4225} = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 0 & 1 \end{bmatrix}_{4225} = \mathbf{Pl}(1,1,0,0,1,1)_{536577}$$

$$\ell_{18} = c_{24} = \begin{bmatrix} 1 & 0 & \epsilon^{21} & 0 \\ 0 & 1 & 0 & \epsilon^{42} \end{bmatrix}_{240761} = \begin{bmatrix} 1 & 0 & 57 & 0 \\ 0 & 1 & 0 & 56 \end{bmatrix}_{240761} = \mathbf{Pl}(57,56,0,0,57,1)_{15213113}$$

$$\ell_{19} = c_{25} = \begin{bmatrix} 1 & 0 & \epsilon^{42} & 0 \\ 0 & 1 & 0 & \epsilon^{21} \end{bmatrix}_{236664} = \begin{bmatrix} 1 & 0 & 56 & 0 \\ 0 & 1 & 0 & 57 \end{bmatrix}_{236664} = \mathbf{Pl}(56,57,0,0,56,1)_{14951032}$$

$$\ell_{20} = c_{26} = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 1 & 0 & 0 \end{bmatrix}_{266304} = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 1 & 0 & 0 \end{bmatrix}_{266304} = \mathbf{Pl}(1,0,0,1,0,0)_{130}$$

$$\ell_{21} = c_{34} = \begin{bmatrix} 1 & 0 & \epsilon^{42} & 0 \\ 0 & 1 & 1 & \epsilon^{21} \end{bmatrix}_{236665} = \begin{bmatrix} 1 & 0 & 56 & 0 \\ 0 & 1 & 1 & 57 \end{bmatrix}_{236665} = \mathbf{Pl}(56,57,56,0,56,1)_{14954560}$$

$$\ell_{22} = c_{35} = \begin{bmatrix} 1 & 0 & \epsilon^{21} & 0 \\ 0 & 1 & 1 & \epsilon^{42} \end{bmatrix}_{240762} = \begin{bmatrix} 1 & 0 & 57 & 0 \\ 0 & 1 & 1 & 56 \end{bmatrix}_{240762} = \mathbf{Pl}(57,56,57,0,57,1)_{15216704}$$

$$\ell_{23} = c_{36} = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{270530} = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{270530} = \mathbf{Pl}(1,0,1,1,1,1)_{544579}$$

$$\ell_{24} = c_{45} = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{4226} = \begin{bmatrix} 1 & 0 & 1 & 0 \\ 0 & 1 & 1 & 1 \end{bmatrix}_{4226} = \mathbf{Pl}(1,1,1,0,1,1)_{536640}$$

$$\ell_{25} = c_{46} = \begin{bmatrix} 1 & 0 & \epsilon^{21} & 1 \\ 0 & 1 & 1 & \epsilon^{42} \end{bmatrix}_{507066} = \begin{bmatrix} 1 & 0 & 57 & 1 \\ 0 & 1 & 1 & 56 \end{bmatrix}_{507066} = \mathbf{Pl}(57,0,57,56,57,1)_{15228227}$$

$$\ell_{26} = c_{56} = \begin{bmatrix} 1 & 0 & \epsilon^{42} & 1 \\ 0 & 1 & 1 & \epsilon^{21} \end{bmatrix}_{502969} = \begin{bmatrix} 1 & 0 & 56 & 1 \\ 0 & 1 & 1 & 57 \end{bmatrix}_{502969} = \mathbf{Pl}(56,0,56,57,56,1)_{14966019}$$

Rank of lines: (1, 17043520, 8258, 241329, 237169, 270400, 17047616, 266305, 270529, 507065, 502968, 0, 17043585, 274562, 507633, 503473, 4096, 4225, 240761, 236664, 266304, 236665, 240762, 270530, 4226, 507066, 502969)

Rank of points on Klein quadric: (3, 129, 544578, 15228170, 14965963, 66, 1, 256, 540609, 15220610, 14958592, 0, 193, 544642, 15228289, 14966083, 2, 536577, 15213113, 14951032, 130, 14954560, 15216704, 544579, 536640, 15228227, 14966019)

Eckardt Points

The surface has 45 Eckardt points:

$0 : E_{16} = a_1 \cap b_6 \cap c_{16} = P_0 = \mathbf{P}(1,0,0,0) = \mathbf{P}(1,0,0,0),$

$1 : E_{26} = a_2 \cap b_6 \cap c_{26} = P_1 = \mathbf{P}(0,1,0,0) = \mathbf{P}(0,1,0,0),$

$2 : E_{61} = a_6 \cap b_1 \cap c_{16} = P_2 = \mathbf{P}(0,0,1,0) = \mathbf{P}(0,0,1,0),$

$3 : E_{21} = a_2 \cap b_1 \cap c_{12} = P_3 = \mathbf{P}(0,0,0,1) = \mathbf{P}(0,0,0,1),$

$4 : E_{32} = a_3 \cap b_2 \cap c_{23} = P_4 = \mathbf{P}(1,1,1,1) = \mathbf{P}(1,1,1,1),$

$5 : E_{36} = a_3 \cap b_6 \cap c_{36} = P_5 = \mathbf{P}(1,1,0,0) = \mathbf{P}(1,1,0,0),$

$6 : E_{46} = a_4 \cap b_6 \cap c_{46} = P_{60} = \mathbf{P}(\epsilon^{42},1,0,0) = \mathbf{P}(56,1,0,0),$

$7 : E_{56} = a_5 \cap b_6 \cap c_{56} = P_{61} = \mathbf{P}(\epsilon^{21},1,0,0) = \mathbf{P}(57,1,0,0),$

$8 : E_{16,23,45} = c_{16} \cap c_{23} \cap c_{45} = P_{68} = \mathbf{P}(1,0,1,0) = \mathbf{P}(1,0,1,0),$

$9 : E_{16,24,35} = c_{16} \cap c_{24} \cap c_{35} = P_{123} = \mathbf{P}(\epsilon^{42},0,1,0) = \mathbf{P}(56,0,1,0),$

$10 : E_{16,25,34} = c_{16} \cap c_{25} \cap c_{34} = P_{124} = \mathbf{P}(\epsilon^{21},0,1,0) = \mathbf{P}(57,0,1,0),$

$11 : E_{12} = a_1 \cap b_2 \cap c_{12} = P_{131} = \mathbf{P}(0,1,1,0) = \mathbf{P}(0,1,1,0),$

$12 : E_{13} = a_1 \cap b_3 \cap c_{13} = P_{132} = \mathbf{P}(1,1,1,0) = \mathbf{P}(1,1,1,0),$

$13 : E_{14} = a_1 \cap b_4 \cap c_{14} = P_{187} = \mathbf{P}(\epsilon^{42},1,1,0) = \mathbf{P}(56,1,1,0),$

$14 : E_{15} = a_1 \cap b_5 \cap c_{15} = P_{188} = \mathbf{P}(\epsilon^{21},1,1,0) = \mathbf{P}(57,1,1,0),$

$15 : E_{62} = a_6 \cap b_2 \cap c_{26} = P_{4163} = \mathbf{P}(1,0,0,1) = \mathbf{P}(1,0,0,1),$

$16 : E_{23} = a_2 \cap b_3 \cap c_{23} = P_{4226} = \mathbf{P}(0,1,0,1) = \mathbf{P}(0,1,0,1),$

$17 : E_{13,26,45} = c_{13} \cap c_{26} \cap c_{45} = P_{4227} = \mathbf{P}(1,1,0,1) = \mathbf{P}(1,1,0,1),$

$18 : E_{25} = a_2 \cap b_5 \cap c_{25} = P_{7746} = \mathbf{P}(0,\epsilon^{42},0,1) = \mathbf{P}(0,56,0,1),$

$19 : E_{15,26,34} = c_{15} \cap c_{26} \cap c_{34} = P_{7747} = \mathbf{P}(1,\epsilon^{42},0,1) = \mathbf{P}(1,56,0,1),$

$20 : E_{24} = a_2 \cap b_4 \cap c_{24} = P_{7810} = \mathbf{P}(0,\epsilon^{21},0,1) = \mathbf{P}(0,57,0,1),$

$21 : E_{14,26,35} = c_{14} \cap c_{26} \cap c_{35} = P_{7811} = \mathbf{P}(1,\epsilon^{21},0,1) = \mathbf{P}(1,57,0,1),$

$22 : E_{31} = a_3 \cap b_1 \cap c_{13} = P_{8258} = \mathbf{P}(0,0,1,1) = \mathbf{P}(0,0,1,1),$

$23 : E_{63} = a_6 \cap b_3 \cap c_{36} = P_{8259} = \mathbf{P}(1,0,1,1) = \mathbf{P}(1,0,1,1),$

$24 : E_{12,36,45} = c_{12} \cap c_{36} \cap c_{45} = P_{8322} = \mathbf{P}(0,1,1,1) = \mathbf{P}(0,1,1,1),$

$25 : E_{34} = a_3 \cap b_4 \cap c_{34} = P_{11897} = \mathbf{P}(\epsilon^{42},\epsilon^{42},1,1) = \mathbf{P}(56,56,1,1),$

$26 : E_{14,25,36} = c_{14} \cap c_{25} \cap c_{36} = P_{11898} = \mathbf{P}(\epsilon^{21},\epsilon^{42},1,1) = \mathbf{P}(57,56,1,1),$

$27 : E_{15,24,36} = c_{15} \cap c_{24} \cap c_{36} = P_{11961} = \mathbf{P}(\epsilon^{42},\epsilon^{21},1,1) = \mathbf{P}(56,57,1,1),$

$28 : E_{35} = a_3 \cap b_5 \cap c_{35} = P_{11962} = \mathbf{P}(\epsilon^{21},\epsilon^{21},1,1) = \mathbf{P}(57,57,1,1),$

$29 : E_{51} = a_5 \cap b_1 \cap c_{15} = P_{233537} = \mathbf{P}(0,0,\epsilon^{42},1) = \mathbf{P}(0,0,56,1),$

$30 : E_{65} = a_6 \cap b_5 \cap c_{56} = P_{233538} = \mathbf{P}(1,0,\epsilon^{42},1) = \mathbf{P}(1,0,56,1),$

$31 : E_{14,23,56} = c_{14} \cap c_{23} \cap c_{56} = P_{233657} = \mathbf{P}(\epsilon^{42},1,\epsilon^{42},1) = \mathbf{P}(56,1,56,1),$

$32 : E_{54} = a_5 \cap b_4 \cap c_{45} = P_{233658} = \mathbf{P}(\epsilon^{21},1,\epsilon^{42},1) = \mathbf{P}(57,1,56,1),$

$33 : E_{12,34,56} = c_{12} \cap c_{34} \cap c_{56} = P_{237121} = \mathbf{P}(0, \epsilon^{42}, \epsilon^{42}, 1) = \mathbf{P}(0, 56, 56, 1),$
$34 : E_{52} = a_5 \cap b_2 \cap c_{25} = P_{237122} = \mathbf{P}(1, \epsilon^{42}, \epsilon^{42}, 1) = \mathbf{P}(1, 56, 56, 1),$
$35 : E_{53} = a_5 \cap b_3 \cap c_{35} = P_{237241} = \mathbf{P}(\epsilon^{42}, \epsilon^{21}, \epsilon^{42}, 1) = \mathbf{P}(56, 57, 56, 1),$
$36 : E_{13,24,56} = c_{13} \cap c_{24} \cap c_{56} = P_{237242} = \mathbf{P}(\epsilon^{21}, \epsilon^{21}, \epsilon^{42}, 1) = \mathbf{P}(57, 57, 56, 1),$
$37 : E_{41} = a_4 \cap b_1 \cap c_{14} = P_{237633} = \mathbf{P}(0, 0, \epsilon^{21}, 1) = \mathbf{P}(0, 0, 57, 1),$
$38 : E_{64} = a_6 \cap b_4 \cap c_{46} = P_{237634} = \mathbf{P}(1, 0, \epsilon^{21}, 1) = \mathbf{P}(1, 0, 57, 1),$
$39 : E_{45} = a_4 \cap b_5 \cap c_{45} = P_{237753} = \mathbf{P}(\epsilon^{42}, 1, \epsilon^{21}, 1) = \mathbf{P}(56, 1, 57, 1),$
$40 : E_{15,23,46} = c_{15} \cap c_{23} \cap c_{46} = P_{237754} = \mathbf{P}(\epsilon^{21}, 1, \epsilon^{21}, 1) = \mathbf{P}(57, 1, 57, 1),$
$41 : E_{13,25,46} = c_{13} \cap c_{25} \cap c_{46} = P_{241273} = \mathbf{P}(\epsilon^{42}, \epsilon^{42}, \epsilon^{21}, 1) = \mathbf{P}(56, 56, 57, 1),$
$42 : E_{43} = a_4 \cap b_3 \cap c_{34} = P_{241274} = \mathbf{P}(\epsilon^{21}, \epsilon^{42}, \epsilon^{21}, 1) = \mathbf{P}(57, 56, 57, 1),$
$43 : E_{12,35,46} = c_{12} \cap c_{35} \cap c_{46} = P_{241281} = \mathbf{P}(0, \epsilon^{21}, \epsilon^{21}, 1) = \mathbf{P}(0, 57, 57, 1),$
$44 : E_{42} = a_4 \cap b_2 \cap c_{24} = P_{241282} = \mathbf{P}(1, \epsilon^{21}, \epsilon^{21}, 1) = \mathbf{P}(1, 57, 57, 1).$

Double Points

The surface has 0 Double points:
The double points on the surface are:

Single Points

The surface has 1620 single points:
Too many to print.

Points on surface but on no line

The surface has 2880 points not on any line:
Too many to print.

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
		a_1	a_2	a_3	a_4	a_5	a_6	b_1	b_2	b_3	b_4	b_5	b_6	c_{12}	c_{13}	c_{14}	c_{15}	c_{16}	c_{23}	c_{24}	c_{25}	c_{26}	c_{34}	c_{35}	c_{36}	c_{45}	c_{46}	c_{56}
0	a_1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
1	a_2	0	0	0	0	0	0	1	0	1	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0	0	0
2	a_3	0	0	0	0	0	0	1	1	0	1	1	1	0	1	0	0	0	1	0	0	0	1	1	1	0	0	0
3	a_4	0	0	0	0	0	0	1	1	1	0	1	1	0	0	1	0	0	0	1	0	0	1	0	0	1	1	0
4	a_5	0	0	0	0	0	0	1	1	1	1	0	1	0	0	0	1	0	0	0	1	0	0	1	0	1	0	1
5	a_6	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	1
6	b_1	0	1	1	1	1	1	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
7	b_2	1	0	1	1	1	1	0	0	0	0	0	0	1	0	0	0	0	1	1	1	1	0	0	0	0	0	0
8	b_3	1	1	0	1	1	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	1	1	0	0	0
9	b_4	1	1	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	1	1	0
10	b_5	1	1	1	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	0	1
11	b_6	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	1	1
12	c_{12}	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1
13	c_{13}	1	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	1	1
14	c_{14}	1	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	1	1	0	0	1
15	c_{15}	1	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	1	1	0	1	1	0	1	0	1	0
16	c_{16}	1	0	0	0	0	1	1	0	0	0	0	1	0	0	0	0	0	1	1	1	0	1	1	0	1	0	0
17	c_{23}	0	1	1	0	0	0	0	1	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	1	1
18	c_{24}	0	1	0	1	0	0	0	1	0	1	0	0	0	1	0	1	1	0	0	0	0	0	1	1	0	0	1
19	c_{25}	0	1	0	0	1	0	0	1	0	0	1	0	0	1	1	0	1	0	0	0	0	1	0	1	0	1	0
20	c_{26}	0	1	0	0	0	1	0	1	0	0	0	1	0	1	1	1	0	0	0	0	0	1	1	0	1	0	0
21	c_{34}	0	0	1	1	0	0	0	0	1	1	0	0	1	0	0	1	1	0	0	1	1	0	0	0	0	0	1
22	c_{35}	0	0	1	0	1	0	0	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	0	0	0	1	0
23	c_{36}	0	0	1	0	0	1	0	0	1	0	0	1	1	0	1	1	0	0	1	1	0	0	0	0	1	0	0
24	c_{45}	0	0	0	1	1	0	0	0	0	1	1	0	1	1	0	0	1	1	0	0	1	0	0	1	0	0	0
25	c_{46}	0	0	0	1	0	1	0	0	0	1	0	1	1	1	0	1	0	1	0	1	0	0	1	0	0	0	0
26	c_{56}	0	0	0	0	1	1	0	0	0	0	1	1	1	1	1	0	0	1	1	0	0	1	0	0	0	0	0

Neighbor sets in the line intersection graph:

Line 0 intersects

Line	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}
in point	P_{131}	P_{132}	P_{187}	P_{188}	P_0	P_{131}	P_{132}	P_{187}	P_{188}	P_0

Line 1 intersects

Line	ℓ_6	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{17}	ℓ_{18}	ℓ_{19}	ℓ_{20}
in point	P_3	P_{4226}	P_{7810}	P_{7746}	P_1	P_3	P_{4226}	P_{7810}	P_{7746}	P_1

Line 2 intersects

Line	ℓ_6	ℓ_7	ℓ_9	ℓ_{10}	ℓ_{11}	ℓ_{13}	ℓ_{17}	ℓ_{21}	ℓ_{22}	ℓ_{23}
in point	P_{8258}	P_4	P_{11897}	P_{11962}	P_5	P_{8258}	P_4	P_{11897}	P_{11962}	P_5

Line 3 intersects

Line	ℓ_6	ℓ_7	ℓ_8	ℓ_{10}	ℓ_{11}	ℓ_{14}	ℓ_{18}	ℓ_{21}	ℓ_{24}	ℓ_{25}
in point	P_{237633}	P_{241282}	P_{241274}	P_{237753}	P_{60}	P_{237633}	P_{241282}	P_{241274}	P_{237753}	P_{60}

Line 4 intersects

Line	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{11}	ℓ_{15}	ℓ_{19}	ℓ_{22}	ℓ_{24}	ℓ_{26}
in point	P_{233537}	P_{237122}	P_{237241}	P_{233658}	P_{61}	P_{233537}	P_{237122}	P_{237241}	P_{233658}	P_{61}

Line 5 intersects

Line	ℓ_6	ℓ_7	ℓ_8	ℓ_9	ℓ_{10}	ℓ_{16}	ℓ_{20}	ℓ_{23}	ℓ_{25}	ℓ_{26}
in point	P_2	P_{4163}	P_{8259}	P_{237634}	P_{233538}	P_2	P_{4163}	P_{8259}	P_{237634}	P_{233538}

Line 6 intersects

Line	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{16}
in point	P_3	P_{8258}	P_{237633}	P_{233537}	P_2	P_3	P_{8258}	P_{237633}	P_{233537}	P_2

Line 7 intersects

Line	ℓ_0	ℓ_2	ℓ_3	ℓ_4	ℓ_5	ℓ_{12}	ℓ_{17}	ℓ_{18}	ℓ_{19}	ℓ_{20}
in point	P_{131}	P_4	P_{241282}	P_{237122}	P_{4163}	P_{131}	P_4	P_{241282}	P_{237122}	P_{4163}

Line 8 intersects

Line	ℓ_0	ℓ_1	ℓ_3	ℓ_4	ℓ_5	ℓ_{13}	ℓ_{17}	ℓ_{21}	ℓ_{22}	ℓ_{23}
in point	P_{132}	P_{4226}	P_{241274}	P_{237241}	P_{8259}	P_{132}	P_{4226}	P_{241274}	P_{237241}	P_{8259}

Line 9 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_4	ℓ_5	ℓ_{14}	ℓ_{18}	ℓ_{21}	ℓ_{24}	ℓ_{25}
in point	P_{187}	P_{7810}	P_{11897}	P_{233658}	P_{237634}	P_{187}	P_{7810}	P_{11897}	P_{233658}	P_{237634}

Line 10 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_5	ℓ_{15}	ℓ_{19}	ℓ_{22}	ℓ_{24}	ℓ_{26}
in point	P_{188}	P_{7746}	P_{11962}	P_{237753}	P_{233538}	P_{188}	P_{7746}	P_{11962}	P_{237753}	P_{233538}

Line 11 intersects

Line	ℓ_0	ℓ_1	ℓ_2	ℓ_3	ℓ_4	ℓ_{16}	ℓ_{20}	ℓ_{23}	ℓ_{25}	ℓ_{26}
in point	P_0	P_1	P_5	P_{60}	P_{61}	P_0	P_1	P_5	P_{60}	P_{61}

Line 12 intersects

Line	ℓ_0	ℓ_1	ℓ_6	ℓ_7	ℓ_{21}	ℓ_{22}	ℓ_{23}	ℓ_{24}	ℓ_{25}	ℓ_{26}
in point	P_{131}	P_3	P_3	P_{131}	P_{237121}	P_{241281}	P_{8322}	P_{8322}	P_{241281}	P_{237121}

Line 13 intersects

Line	ℓ_0	ℓ_2	ℓ_6	ℓ_8	ℓ_{18}	ℓ_{19}	ℓ_{20}	ℓ_{24}	ℓ_{25}	ℓ_{26}
in point	P_{132}	P_{8258}	P_{8258}	P_{132}	P_{237242}	P_{241273}	P_{4227}	P_{4227}	P_{241273}	P_{237242}

Line 14 intersects

Line	ℓ_0	ℓ_3	ℓ_6	ℓ_9	ℓ_{17}	ℓ_{19}	ℓ_{20}	ℓ_{22}	ℓ_{23}	ℓ_{26}
in point	P_{187}	P_{237633}	P_{237633}	P_{187}	P_{233657}	P_{11898}	P_{7811}	P_{7811}	P_{11898}	P_{233657}

Line 15 intersects

Line	ℓ_0	ℓ_4	ℓ_6	ℓ_{10}	ℓ_{17}	ℓ_{18}	ℓ_{20}	ℓ_{21}	ℓ_{23}	ℓ_{25}
in point	P_{188}	P_{233537}	P_{233537}	P_{188}	P_{237754}	P_{11961}	P_{7747}	P_{7747}	P_{11961}	P_{237754}

Line 16 intersects

Line	ℓ_0	ℓ_5	ℓ_6	ℓ_{11}	ℓ_{17}	ℓ_{18}	ℓ_{19}	ℓ_{21}	ℓ_{22}	ℓ_{24}
in point	P_0	P_2	P_2	P_0	P_{68}	P_{123}	P_{124}	P_{124}	P_{123}	P_{68}

Line 17 intersects

Line	ℓ_1	ℓ_2	ℓ_7	ℓ_8	ℓ_{14}	ℓ_{15}	ℓ_{16}	ℓ_{24}	ℓ_{25}	ℓ_{26}
in point	P_{4226}	P_4	P_4	P_{4226}	P_{233657}	P_{237754}	P_{68}	P_{68}	P_{237754}	P_{233657}

Line 18 intersects

Line	ℓ_1	ℓ_3	ℓ_7	ℓ_9	ℓ_{13}	ℓ_{15}	ℓ_{16}	ℓ_{22}	ℓ_{23}	ℓ_{26}
in point	P_{7810}	P_{241282}	P_{241282}	P_{7810}	P_{237242}	P_{11961}	P_{123}	P_{123}	P_{11961}	P_{237242}

Line 19 intersects

Line	ℓ_1	ℓ_4	ℓ_7	ℓ_{10}	ℓ_{13}	ℓ_{14}	ℓ_{16}	ℓ_{21}	ℓ_{23}	ℓ_{25}
in point	P_{7746}	P_{237122}	P_{237122}	P_{7746}	P_{241273}	P_{11898}	P_{124}	P_{124}	P_{11898}	P_{241273}

Line 20 intersects

Line	ℓ_1	ℓ_5	ℓ_7	ℓ_{11}	ℓ_{13}	ℓ_{14}	ℓ_{15}	ℓ_{21}	ℓ_{22}	ℓ_{24}
in point	P_1	P_{4163}	P_{4163}	P_1	P_{4227}	P_{7811}	P_{7747}	P_{7747}	P_{7811}	P_{4227}

Line 21 intersects

Line	ℓ_2	ℓ_3	ℓ_8	ℓ_9	ℓ_{12}	ℓ_{15}	ℓ_{16}	ℓ_{19}	ℓ_{20}	ℓ_{26}
in point	P_{11897}	P_{241274}	P_{241274}	P_{11897}	P_{237121}	P_{7747}	P_{124}	P_{124}	P_{7747}	P_{237121}

Line 22 intersects

Line	ℓ_2	ℓ_4	ℓ_8	ℓ_{10}	ℓ_{12}	ℓ_{14}	ℓ_{16}	ℓ_{18}	ℓ_{20}	ℓ_{25}
in point	P_{11962}	P_{237241}	P_{237241}	P_{11962}	P_{241281}	P_{7811}	P_{123}	P_{123}	P_{7811}	P_{241281}

Line 23 intersects

Line	ℓ_2	ℓ_5	ℓ_8	ℓ_{11}	ℓ_{12}	ℓ_{14}	ℓ_{15}	ℓ_{18}	ℓ_{19}	ℓ_{24}
in point	P_5	P_{8259}	P_{8259}	P_5	P_{8322}	P_{11898}	P_{11961}	P_{11961}	P_{11898}	P_{8322}

Line 24 intersects

Line	ℓ_3	ℓ_4	ℓ_9	ℓ_{10}	ℓ_{12}	ℓ_{13}	ℓ_{16}	ℓ_{17}	ℓ_{20}	ℓ_{23}
in point	P_{237753}	P_{233658}	P_{233658}	P_{237753}	P_{8322}	P_{4227}	P_{68}	P_{68}	P_{4227}	P_{8322}

Line 25 intersects

Line	ℓ_3	ℓ_5	ℓ_9	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{15}	ℓ_{17}	ℓ_{19}	ℓ_{22}
in point	P_{60}	P_{237634}	P_{237634}	P_{60}	P_{241281}	P_{241273}	P_{237754}	P_{237754}	P_{241273}	P_{241281}

Line 26 intersects

Line	ℓ_4	ℓ_5	ℓ_{10}	ℓ_{11}	ℓ_{12}	ℓ_{13}	ℓ_{14}	ℓ_{17}	ℓ_{18}	ℓ_{21}
in point	P_{61}	P_{233538}	P_{233538}	P_{61}	P_{237121}	P_{237242}	P_{233657}	P_{233657}	P_{237242}	P_{237121}

The surface has 4545 points:
Too many to print.