Rank-65609 over GF(32)

January 15, 2021

The equation

The equation of the surface is :

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

(0, 1, 1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0)
The point rank of the equation over GF(32) is -2112845755

General information

Number of lines	2
Number of points	1057
Number of singular points	1
Number of Eckardt points	0
Number of double points	1
Number of single points	64
Number of points off lines	992
Number of Hesse planes	0
Number of axes	0
Type of points on lines	33^2
Type of lines on points	$2, 1^{64}, 0^{992}$

Singular Points

The surface has 1 singular points:

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

The 2 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \begin{bmatrix} 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{1082433} = \begin{bmatrix} 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{1082433} = \mathbf{Pl}(0,1,0,1,0,0)_{97}$$

$$\ell_1 = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 0 \end{bmatrix}_{34882} = \begin{bmatrix} 1 & 0 & 1 & 1 \\ 0 & 1 & 1 & 0 \end{bmatrix}_{34882} = \mathbf{Pl}(1,1,1,1,0,1)_{38818}$$

Rank of lines: (1082433, 34882)
Rank of points on Klein quadric: (97, 38818)

Eckardt Points

The surface has 0 Eckardt points:

Double Points

The surface has 1 Double points:
The double points on the surface are:

$P_{67} = (0,1,1,0) = \ell_0 \cap \ell_1$

Single Points

The surface has 64 single points:
The single points on the surface are:

0 : $P_3 = (0,0,0,1)$ lies on line ℓ_0
1 : $P_{1091} = (1,1,0,1)$ lies on line ℓ_1
2 : $P_{2083} = (1,0,1,1)$ lies on line ℓ_1
3 : $P_{2114} = (0,1,1,1)$ lies on line ℓ_0
4 : $P_{3169} = (0,2,2,1)$ lies on line ℓ_0
5 : $P_{3202} = (1,3,2,1)$ lies on line ℓ_1
6 : $P_{4194} = (1,2,3,1)$ lies on line ℓ_1
7 : $P_{4225} = (0,3,3,1)$ lies on line ℓ_0
8 : $P_{5281} = (0,4,4,1)$ lies on line ℓ_0
9 : $P_{5314} = (1,5,4,1)$ lies on line ℓ_1
10 : $P_{6306} = (1,4,5,1)$ lies on line ℓ_1
11 : $P_{6337} = (0,5,5,1)$ lies on line ℓ_0
12 : $P_{7393} = (0,6,6,1)$ lies on line ℓ_0
13 : $P_{7426} = (1,7,6,1)$ lies on line ℓ_1
14 : $P_{8418} = (1,6,7,1)$ lies on line ℓ_1
15 : $P_{8449} = (0,7,7,1)$ lies on line ℓ_0
16 : $P_{9505} = (0,8,8,1)$ lies on line ℓ_0
17 : $P_{9538} = (1,9,8,1)$ lies on line ℓ_1
18 : $P_{10530} = (1,8,9,1)$ lies on line ℓ_1
19 : $P_{10561} = (0,9,9,1)$ lies on line ℓ_0
20 : $P_{11617} = (0,10,10,1)$ lies on line ℓ_0
21 : $P_{11650} = (1,11,10,1)$ lies on line ℓ_1
22 : $P_{12642} = (1,10,11,1)$ lies on line ℓ_1
23 : $P_{12673} = (0,11,11,1)$ lies on line ℓ_0
24 : $P_{13729} = (0,12,12,1)$ lies on line ℓ_0
25 : $P_{13762} = (1,13,12,1)$ lies on line ℓ_1
26 : $P_{14754} = (1,12,13,1)$ lies on line ℓ_1
27 : $P_{14785} = (0,13,13,1)$ lies on line ℓ_0
28 : $P_{15841} = (0,14,14,1)$ lies on line ℓ_0
29 : $P_{15874} = (1,15,14,1)$ lies on line ℓ_1
30 : $P_{16866} = (1,14,15,1)$ lies on line ℓ_1
31 : $P_{16897} = (0,15,15,1)$ lies on line ℓ_0
32 : $P_{17953} = (0,16,16,1)$ lies on line ℓ_0
33 : $P_{17986} = (1,17,16,1)$ lies on line ℓ_1
34 : $P_{18978} = (1,16,17,1)$ lies on line ℓ_1
35 : $P_{19009} = (0,17,17,1)$ lies on line ℓ_0
36 : $P_{20065} = (0,18,18,1)$ lies on line ℓ_0
37 : $P_{20098} = (1,19,18,1)$ lies on line ℓ_1
38 : $P_{21090} = (1,18,19,1)$ lies on line ℓ_1
39 : $P_{21121} = (0,19,19,1)$ lies on line ℓ_0
40 : $P_{22177} = (0,20,20,1)$ lies on line ℓ_0
41 : $P_{22210} = (1,21,20,1)$ lies on line ℓ_1
42 : $P_{23202} = (1,20,21,1)$ lies on line ℓ_1
43 : $P_{23233} = (0,21,21,1)$ lies on line ℓ_0
44 : $P_{24289} = (0,22,22,1)$ lies on line ℓ_0
45 : $P_{24322} = (1,23,22,1)$ lies on line ℓ_1
46 : $P_{25314} = (1,22,23,1)$ lies on line ℓ_1
47 : $P_{25345} = (0,23,23,1)$ lies on line ℓ_0
48 : $P_{26401} = (0,24,24,1)$ lies on line ℓ_0
49 : $P_{26434} = (1,25,24,1)$ lies on line ℓ_1
50 : $P_{27426} = (1,24,25,1)$ lies on line ℓ_1
51 : $P_{27457} = (0,25,25,1)$ lies on line ℓ_0
52 : $P_{28513} = (0,26,26,1)$ lies on line ℓ_0
53 : $P_{28546} = (1,27,26,1)$ lies on line ℓ_1
54 : $P_{29538} = (1,26,27,1)$ lies on line ℓ_1
55 : $P_{29569} = (0,27,27,1)$ lies on line ℓ_0
56 : $P_{30625} = (0,28,28,1)$ lies on line ℓ_0
57 : $P_{30658} = (1,29,28,1)$ lies on line ℓ_1
58 : $P_{31650} = (1,28,29,1)$ lies on line ℓ_1
59 : $P_{31681} = (0,29,29,1)$ lies on line ℓ_0
60 : $P_{32737} = (0,30,30,1)$ lies on line ℓ_0
61 : $P_{32770} = (1,31,30,1)$ lies on line ℓ_1
62 : $P_{33762} = (1,30,31,1)$ lies on line ℓ_1
63 : $P_{33793} = (0,31,31,1)$ lies on line ℓ_0

The single points on the surface are:

Points on surface but on no line

The surface has 992 points not on any line:
The points on the surface but not on lines are:

$0: P_0 = (1,0,0,0)$
$1: P_4 = (1,1,1,1)$
$2: P_{121} = (22,2,1,0)$
$3: P_{156} = (25,3,1,0)$
$4: P_{188} = (25,4,1,0)$
$5: P_{201} = (6,5,1,0)$
$6: P_{253} = (26,6,1,0)$
$7: P_{284} = (25,7,1,0)$
$8: P_{319} = (28,8,1,0)$
$9: P_{338} = (15,9,1,0)$
$10: P_{378} = (23,10,1,0)$
$11: P_{418} = (31,11,1,0)$
$12: P_{448} = (29,12,1,0)$
$13: P_{471} = (20,13,1,0)$
$14: P_{507} = (24,14,1,0)$
$15: P_{533} = (18,15,1,0)$
$16: P_{553} = (6,16,1,0)$
$17: P_{599} = (20,17,1,0)$
$18: P_{622} = (11,18,1,0)$
$19: P_{664} = (21,19,1,0)$
$20: P_{678} = (3,20,1,0)$
$21: P_{713} = (6,21,1,0)$
$22: P_{756} = (17,22,1,0)$
$23: P_{800} = (29,23,1,0)$
$24: P_{825} = (22,24,1,0)$
$25: P_{847} = (12,25,1,0)$
$26: P_{889} = (22,26,1,0)$
$27: P_{928} = (29,27,1,0)$
$28: P_{951} = (20,28,1,0)$
$29: P_{968} = (5,29,1,0)$
$30: P_{1002} = (7,30,1,0)$
$31: P_{1036} = (9,31,1,0)$
$32: P_{1141} = (19,2,0,1)$
$33: P_{1165} = (11,3,0,1)$
$34: P_{1194} = (8,4,0,1)$
$35: P_{1233} = (15,5,0,1)$
$36: P_{1278} = (28,6,0,1)$
$37: P_{1284} = (2,7,0,1)$
$38: P_{1326} = (12,8,0,1)$
$39: P_{1368} = (22,9,0,1)$
$40: P_{1404} = (26,10,0,1)$
$41: P_{1435} = (25,11,0,1)$
$42: P_{1460} = (18,12,0,1)$
$43: P_{1488} = (14,13,0,1)$
$44: P_{1509} = (3,14,0,1)$
$45: P_{1544} = (6,15,0,1)$
$46: P_{1580} = (10,16,0,1)$
$47: P_{1633} = (31,17,0,1)$
$48: P_{1663} = (29,18,0,1)$
$49: P_{1683} = (17,19,0,1)$
$50: P_{1721} = (23,20,0,1)$
$51: P_{1734} = (4,21,0,1)$
$52: P_{1769} = (7,22,0,1)$
$53: P_{1807} = (13,23,0,1)$
$54: P_{1853} = (27,24,0,1)$
$55: P_{1879} = (21,25,0,1)$
$56: P_{1899} = (9,26,0,1)$
$57: P_{1952} = (30,27,0,1)$
$58: P_{1970} = (16,28,0,1)$
$59: P_{2010} = (24,29,0,1)$
$60: P_{2023} = (5,30,0,1)$
$61: P_{2070} = (20,31,0,1)$
$62: P_{2174} = (29,2,1,1)$
$63: P_{2176} = (31,2,1,1)$
$64: P_{2189} = (12,3,1,1)$
$65: P_{2192} = (15,3,1,1)$
$66: P_{2227} = (18,4,1,1)$
$67: P_{2231} = (22,4,1,1)$
$68: P_{2267} = (26,5,1,1)$
$69: P_{2272} = (31,5,1,1)$
$70: P_{2329} = (24,7,1,1)$
$71: P_{2336} = (31,7,1,1)$
$72: P_{2389} = (20,9,1,1)$
$73: P_{2398} = (29,9,1,1)$
$74: P_{2455} = (22,11,1,1)$
$75: P_{2462} = (29,11,1,1)$
$76: P_{2470} = (5,12,1,1)$
$77: P_{2474} = (9,12,1,1)$
$78: P_{2503} = (6,13,1,1)$
$79: P_{2508} = (11,13,1,1)$
$80: P_{2583} = (22,15,1,1)$
$81: P_{2586} = (25,15,1,1)$
$82: P_{2602} = (9,16,1,1)$
$83: P_{2618} = (25,16,1,1)$
$84: P_{2628} = (3,17,1,1)$
$85: P_{2643} = (18,17,1,1)$
$86: P_{2663} = (6,18,1,1)$
$87: P_{2677} = (20,18,1,1)$
$88: P_{2760} = (7,21,1,1)$
$89: P_{2771} = (18,21,1,1)$

$90: P_{2828} = (11, 23, 1, 1)$
$91: P_{2845} = (28, 23, 1, 1)$
$92: P_{2864} = (15, 24, 1, 1)$
$93: P_{2872} = (23, 24, 1, 1)$
$94: P_{2924} = (11, 26, 1, 1)$
$95: P_{2930} = (17, 26, 1, 1)$
$96: P_{2960} = (15, 27, 1, 1)$
$97: P_{2965} = (20, 27, 1, 1)$
$98: P_{2986} = (9, 28, 1, 1)$
$99: P_{2998} = (21, 28, 1, 1)$
$100: P_{3079} = (6, 31, 1, 1)$
$101: P_{3098} = (25, 31, 1, 1)$
$102: P_{3124} = (19, 0, 2, 1)$
$103: P_{3166} = (29, 1, 2, 1)$
$104: P_{3168} = (31, 1, 2, 1)$
$105: P_{3173} = (4, 2, 2, 1)$
$106: P_{3208} = (7, 3, 2, 1)$
$107: P_{3282} = (17, 5, 2, 1)$
$108: P_{3292} = (27, 5, 2, 1)$
$109: P_{3352} = (23, 7, 2, 1)$
$110: P_{3354} = (25, 7, 2, 1)$
$111: P_{3595} = (10, 15, 2, 1)$
$112: P_{3605} = (20, 15, 2, 1)$
$113: P_{3733} = (20, 19, 2, 1)$
$114: P_{3736} = (23, 19, 2, 1)$
$115: P_{3768} = (23, 20, 2, 1)$
$116: P_{3771} = (26, 20, 2, 1)$
$117: P_{3846} = (5, 23, 2, 1)$
$118: P_{3855} = (14, 23, 2, 1)$
$119: P_{3939} = (2, 26, 2, 1)$
$120: P_{3956} = (19, 26, 2, 1)$
$121: P_{4010} = (9, 28, 2, 1)$
$122: P_{4021} = (20, 28, 2, 1)$
$123: P_{4140} = (11, 0, 3, 1)$
$124: P_{4173} = (12, 1, 3, 1)$
$125: P_{4176} = (15, 1, 3, 1)$
$126: P_{4200} = (7, 2, 3, 1)$
$127: P_{4230} = (5, 3, 3, 1)$
$128: P_{4261} = (4, 4, 3, 1)$
$129: P_{4265} = (8, 4, 3, 1)$
$130: P_{4426} = (9, 9, 3, 1)$
$131: P_{4435} = (18, 9, 3, 1)$
$132: P_{4495} = (14, 11, 3, 1)$
$133: P_{4500} = (19, 11, 3, 1)$
$134: P_{4592} = (15, 14, 3, 1)$
$135: P_{4606} = (29, 14, 3, 1)$
$136: P_{4624} = (15, 15, 3, 1)$
$137: P_{4639} = (30, 15, 3, 1)$
$138: P_{4780} = (11, 20, 3, 1)$
$139: P_{4787} = (18, 20, 3, 1)$
$140: P_{4810} = (9, 21, 3, 1)$
$141: P_{4820} = (19, 21, 3, 1)$
$142: P_{4902} = (5, 24, 3, 1)$
$143: P_{4905} = (8, 24, 3, 1)$
$144: P_{4998} = (5, 27, 3, 1)$
$145: P_{5006} = (13, 27, 3, 1)$
$146: P_{5033} = (8, 28, 3, 1)$
$147: P_{5034} = (9, 28, 3, 1)$
$148: P_{5073} = (16, 29, 3, 1)$
$149: P_{5075} = (18, 29, 3, 1)$
$150: P_{5108} = (19, 30, 3, 1)$
$151: P_{5109} = (20, 30, 3, 1)$
$152: P_{5161} = (8, 0, 4, 1)$
$153: P_{5203} = (18, 1, 4, 1)$
$154: P_{5207} = (22, 1, 4, 1)$
$155: P_{5253} = (4, 3, 4, 1)$
$156: P_{5257} = (8, 3, 4, 1)$
$157: P_{5297} = (16, 4, 4, 1)$
$158: P_{5334} = (21, 5, 4, 1)$
$159: P_{5433} = (24, 8, 4, 1)$
$160: P_{5438} = (29, 8, 4, 1)$
$161: P_{5699} = (2, 17, 4, 1)$
$162: P_{5709} = (12, 17, 4, 1)$
$163: P_{5831} = (6, 21, 4, 1)$
$164: P_{5849} = (24, 21, 4, 1)$
$165: P_{5900} = (11, 23, 4, 1)$
$166: P_{5918} = (29, 23, 4, 1)$
$167: P_{5938} = (17, 24, 4, 1)$
$168: P_{5951} = (30, 24, 4, 1)$
$169: P_{6084} = (3, 29, 4, 1)$
$170: P_{6105} = (24, 29, 4, 1)$
$171: P_{6159} = (14, 31, 4, 1)$
$172: P_{6174} = (29, 31, 4, 1)$
$173: P_{6192} = (15, 0, 5, 1)$
$174: P_{6235} = (26, 1, 5, 1)$
$175: P_{6240} = (31, 1, 5, 1)$
$176: P_{6258} = (17, 2, 5, 1)$
$177: P_{6268} = (27, 2, 5, 1)$
$178: P_{6326} = (21, 4, 5, 1)$
$179: P_{6354} = (17, 5, 5, 1)$
$180: P_{6411} = (10, 7, 5, 1)$
$181: P_{6418} = (17, 7, 5, 1)$
$182: P_{6538} = (9, 11, 5, 1)$
$183: P_{6540} = (11, 11, 5, 1)$
$184: P_{6665} = (8, 15, 5, 1)$
$185: P_{6687} = (30, 15, 5, 1)$
$186: P_{6699} = (10, 16, 5, 1)$
$187: P_{6705} = (16, 16, 5, 1)$
$188: P_{6793} = (8, 19, 5, 1)$
$189: P_{6814} = (29, 19, 5, 1)$
$190: P_{6890} = (9, 22, 5, 1)$
$191: P_{6894} = (13, 22, 5, 1)$
$192: P_{6923} = (10, 23, 5, 1)$
$193: P_{6924} = (11, 23, 5, 1)$
$194: P_{7081} = (8, 28, 5, 1)$
$195: P_{7084} = (11, 28, 5, 1)$
$196: P_{7114} = (9, 29, 5, 1)$
$197: P_{7120} = (15, 29, 5, 1)$

198 : $P_{7159} = (22, 30, 5, 1)$
199 : $P_{7168} = (31, 30, 5, 1)$
200 : $P_{7188} = (19, 31, 5, 1)$
201 : $P_{7200} = (31, 31, 5, 1)$
202 : $P_{7229} = (28, 0, 6, 1)$
203 : $P_{7413} = (20, 6, 6, 1)$
204 : $P_{7444} = (19, 7, 6, 1)$
205 : $P_{7535} = (14, 10, 6, 1)$
206 : $P_{7544} = (23, 10, 6, 1)$
207 : $P_{7587} = (2, 12, 6, 1)$
208 : $P_{7600} = (15, 12, 6, 1)$
209 : $P_{7655} = (6, 14, 6, 1)$
210 : $P_{7656} = (7, 14, 6, 1)$
211 : $P_{7706} = (25, 15, 6, 1)$
212 : $P_{7711} = (30, 15, 6, 1)$
213 : $P_{7843} = (2, 20, 6, 1)$
214 : $P_{7862} = (21, 20, 6, 1)$
215 : $P_{7944} = (7, 23, 6, 1)$
216 : $P_{7963} = (26, 23, 6, 1)$
217 : $P_{7971} = (2, 24, 6, 1)$
218 : $P_{7993} = (24, 24, 6, 1)$
219 : $P_{8008} = (7, 25, 6, 1)$
220 : $P_{8028} = (27, 25, 6, 1)$
221 : $P_{8042} = (9, 26, 6, 1)$
222 : $P_{8064} = (31, 26, 6, 1)$
223 : $P_{8077} = (12, 27, 6, 1)$
224 : $P_{8093} = (28, 27, 6, 1)$
225 : $P_{8105} = (8, 28, 6, 1)$
226 : $P_{8107} = (10, 28, 6, 1)$
227 : $P_{8227} = (2, 0, 7, 1)$
228 : $P_{8281} = (24, 1, 7, 1)$
229 : $P_{8288} = (31, 1, 7, 1)$
230 : $P_{8312} = (23, 2, 7, 1)$
231 : $P_{8314} = (25, 2, 7, 1)$
232 : $P_{8395} = (10, 5, 7, 1)$
233 : $P_{8402} = (17, 5, 7, 1)$
234 : $P_{8436} = (19, 6, 7, 1)$
235 : $P_{8470} = (21, 7, 7, 1)$
236 : $P_{8492} = (11, 8, 7, 1)$
237 : $P_{8503} = (22, 8, 7, 1)$
238 : $P_{8528} = (15, 9, 7, 1)$
239 : $P_{8534} = (21, 9, 7, 1)$
240 : $P_{8547} = (2, 10, 7, 1)$
241 : $P_{8562} = (17, 10, 7, 1)$
242 : $P_{8639} = (30, 12, 7, 1)$
243 : $P_{8640} = (31, 12, 7, 1)$
244 : $P_{8666} = (25, 13, 7, 1)$
245 : $P_{8672} = (31, 13, 7, 1)$
246 : $P_{8694} = (21, 14, 7, 1)$
247 : $P_{8699} = (26, 14, 7, 1)$
248 : $P_{8722} = (17, 15, 7, 1)$
249 : $P_{8730} = (25, 15, 7, 1)$
250 : $P_{8749} = (12, 16, 7, 1)$
251 : $P_{8756} = (19, 16, 7, 1)$
252 : $P_{8869} = (4, 20, 7, 1)$
253 : $P_{8872} = (7, 20, 7, 1)$
254 : $P_{8948} = (19, 22, 7, 1)$
255 : $P_{8959} = (30, 22, 7, 1)$
256 : $P_{9075} = (18, 26, 7, 1)$
257 : $P_{9087} = (30, 26, 7, 1)$
258 : $P_{9158} = (5, 29, 7, 1)$
259 : $P_{9181} = (28, 29, 7, 1)$
260 : $P_{9198} = (13, 30, 7, 1)$
261 : $P_{9214} = (29, 30, 7, 1)$
262 : $P_{9220} = (3, 31, 7, 1)$
263 : $P_{9237} = (20, 31, 7, 1)$
264 : $P_{9261} = (12, 0, 8, 1)$
265 : $P_{9401} = (24, 4, 8, 1)$
266 : $P_{9406} = (29, 4, 8, 1)$
267 : $P_{9484} = (11, 7, 8, 1)$
268 : $P_{9495} = (22, 7, 8, 1)$
269 : $P_{9515} = (10, 8, 8, 1)$
270 : $P_{9540} = (3, 9, 8, 1)$
271 : $P_{9576} = (7, 10, 8, 1)$
272 : $P_{9598} = (29, 10, 8, 1)$
273 : $P_{9613} = (12, 11, 8, 1)$
274 : $P_{9631} = (30, 11, 8, 1)$
275 : $P_{9639} = (6, 12, 8, 1)$
276 : $P_{9642} = (9, 12, 8, 1)$
277 : $P_{9699} = (2, 14, 8, 1)$
278 : $P_{9726} = (29, 14, 8, 1)$
279 : $P_{9803} = (10, 17, 8, 1)$
280 : $P_{9815} = (22, 17, 8, 1)$
281 : $P_{9827} = (2, 18, 8, 1)$
282 : $P_{9831} = (6, 18, 8, 1)$
283 : $P_{9877} = (20, 19, 8, 1)$
284 : $P_{9881} = (24, 19, 8, 1)$
285 : $P_{9975} = (22, 22, 8, 1)$
286 : $P_{9976} = (23, 22, 8, 1)$
287 : $P_{10002} = (17, 23, 8, 1)$
288 : $P_{10009} = (24, 23, 8, 1)$
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695 : $P_{23863} = (22, 8, 22, 1)$
696 : $P_{23864} = (23, 8, 22, 1)$
697 : $P_{23883} = (10, 9, 22, 1)$
698 : $P_{23902} = (29, 9, 22, 1)$
699 : $P_{24102} = (5, 16, 22, 1)$
700 : $P_{24104} = (7, 16, 22, 1)$
701 : $P_{24140} = (11, 17, 22, 1)$
702 : $P_{24160} = (31, 17, 22, 1)$
703 : $P_{24201} = (8, 19, 22, 1)$
704 : $P_{24214} = (21, 19, 22, 1)$
705 : $P_{24274} = (17, 21, 22, 1)$
706 : $P_{24280} = (23, 21, 22, 1)$
707 : $P_{24314} = (25, 22, 22, 1)$
708 : $P_{24335} = (14, 23, 22, 1)$
709 : $P_{24398} = (13, 25, 22, 1)$
710 : $P_{24409} = (24, 25, 22, 1)$
711 : $P_{24494} = (13, 28, 22, 1)$
712 : $P_{24509} = (28, 28, 22, 1)$
713 : $P_{24529} = (16, 29, 22, 1)$
714 : $P_{24536} = (23, 29, 22, 1)$
715 : $P_{24622} = (13, 0, 23, 1)$
716 : $P_{24652} = (11, 1, 23, 1)$
717 : $P_{24669} = (28, 1, 23, 1)$
718 : $P_{24678} = (5, 2, 23, 1)$
719 : $P_{24687} = (14, 2, 23, 1)$
720 : $P_{24748} = (11, 4, 23, 1)$
721 : $P_{24766} = (29, 4, 23, 1)$
722 : $P_{24779} = (10, 5, 23, 1)$
723 : $P_{24780} = (11, 5, 23, 1)$
724 : $P_{24808} = (7, 6, 23, 1)$
725 : $P_{24827} = (26, 6, 23, 1)$
726 : $P_{24882} = (17, 8, 23, 1)$
727 : $P_{24889} = (24, 8, 23, 1)$
728 : $P_{24900} = (3, 9, 23, 1)$
729 : $P_{24926} = (29, 9, 23, 1)$
730 : $P_{24933} = (4, 10, 23, 1)$
731 : $P_{24935} = (6, 10, 23, 1)$
732 : $P_{24973} = (12, 11, 23, 1)$
733 : $P_{24986} = (25, 11, 23, 1)$
734 : $P_{25046} = (21, 13, 23, 1)$
735 : $P_{25054} = (29, 13, 23, 1)$
736 : $P_{25163} = (10, 17, 23, 1)$
737 : $P_{25168} = (15, 17, 23, 1)$

738 : $P_{25220} = (3, 19, 23, 1)$
739 : $P_{25230} = (13, 19, 23, 1)$
740 : $P_{25259} = (10, 20, 23, 1)$
741 : $P_{25263} = (14, 20, 23, 1)$
742 : $P_{25327} = (14, 22, 23, 1)$
743 : $P_{25369} = (24, 23, 23, 1)$
744 : $P_{25432} = (23, 25, 23, 1)$
745 : $P_{25436} = (27, 25, 23, 1)$
746 : $P_{25444} = (3, 26, 23, 1)$
747 : $P_{25460} = (19, 26, 23, 1)$
748 : $P_{25587} = (18, 30, 23, 1)$
749 : $P_{25589} = (20, 30, 23, 1)$
750 : $P_{25610} = (9, 31, 23, 1)$
751 : $P_{25625} = (24, 31, 23, 1)$
752 : $P_{25660} = (27, 0, 24, 1)$
753 : $P_{25680} = (15, 1, 24, 1)$
754 : $P_{25688} = (23, 1, 24, 1)$
755 : $P_{25734} = (5, 3, 24, 1)$
756 : $P_{25737} = (8, 3, 24, 1)$
757 : $P_{25778} = (17, 4, 24, 1)$
758 : $P_{25791} = (30, 4, 24, 1)$
759 : $P_{25827} = (2, 6, 24, 1)$
760 : $P_{25849} = (24, 6, 24, 1)$
761 : $P_{25894} = (5, 8, 24, 1)$
762 : $P_{25916} = (27, 8, 24, 1)$
763 : $P_{25960} = (7, 10, 24, 1)$
764 : $P_{25965} = (12, 10, 24, 1)$
765 : $P_{25990} = (5, 11, 24, 1)$
766 : $P_{26007} = (22, 11, 24, 1)$
767 : $P_{26031} = (14, 12, 24, 1)$
768 : $P_{26048} = (31, 12, 24, 1)$
769 : $P_{26097} = (16, 14, 24, 1)$
770 : $P_{26101} = (20, 14, 24, 1)$
771 : $P_{26119} = (6, 15, 24, 1)$
772 : $P_{26139} = (26, 15, 24, 1)$
773 : $P_{26160} = (15, 16, 24, 1)$
774 : $P_{26167} = (22, 16, 24, 1)$
775 : $P_{26191} = (14, 17, 24, 1)$
776 : $P_{26192} = (15, 17, 24, 1)$
777 : $P_{26216} = (7, 18, 24, 1)$
778 : $P_{26220} = (11, 18, 24, 1)$
779 : $P_{26250} = (9, 19, 24, 1)$
780 : $P_{26270} = (29, 19, 24, 1)$
781 : $P_{26276} = (3, 20, 24, 1)$
782 : $P_{26294} = (21, 20, 24, 1)$
783 : $P_{26408} = (7, 24, 24, 1)$
784 : $P_{26463} = (30, 25, 24, 1)$
785 : $P_{26519} = (22, 27, 24, 1)$
786 : $P_{26525} = (28, 27, 24, 1)$
787 : $P_{26575} = (14, 29, 24, 1)$
788 : $P_{26591} = (30, 29, 24, 1)$
789 : $P_{26678} = (21, 0, 25, 1)$
790 : $P_{26856} = (7, 6, 25, 1)$
791 : $P_{26876} = (27, 6, 25, 1)$
792 : $P_{26923} = (10, 8, 25, 1)$
793 : $P_{26941} = (28, 8, 25, 1)$
794 : $P_{27001} = (24, 10, 25, 1)$
795 : $P_{27002} = (25, 10, 25, 1)$
796 : $P_{27023} = (14, 11, 25, 1)$
797 : $P_{27031} = (22, 11, 25, 1)$
798 : $P_{27056} = (15, 12, 25, 1)$
799 : $P_{27059} = (18, 12, 25, 1)$
800 : $P_{27090} = (17, 13, 25, 1)$
801 : $P_{27094} = (21, 13, 25, 1)$
802 : $P_{27212} = (11, 17, 25, 1)$
803 : $P_{27228} = (27, 17, 25, 1)$
804 : $P_{27337} = (8, 21, 25, 1)$
805 : $P_{27348} = (19, 21, 25, 1)$
806 : $P_{27374} = (13, 22, 25, 1)$
807 : $P_{27385} = (24, 22, 25, 1)$
808 : $P_{27416} = (23, 23, 25, 1)$
809 : $P_{27420} = (27, 23, 25, 1)$
810 : $P_{27455} = (30, 24, 25, 1)$
811 : $P_{27463} = (6, 25, 25, 1)$
812 : $P_{27565} = (12, 28, 25, 1)$
813 : $P_{27577} = (24, 28, 25, 1)$
814 : $P_{27690} = (9, 0, 26, 1)$
815 : $P_{27724} = (11, 1, 26, 1)$
816 : $P_{27730} = (17, 1, 26, 1)$
817 : $P_{27747} = (2, 2, 26, 1)$
818 : $P_{27764} = (19, 2, 26, 1)$
819 : $P_{27882} = (9, 6, 26, 1)$
820 : $P_{27904} = (31, 6, 26, 1)$
821 : $P_{27923} = (18, 7, 26, 1)$
822 : $P_{27935} = (30, 7, 26, 1)$
823 : $P_{27979} = (10, 9, 26, 1)$
824 : $P_{27999} = (30, 9, 26, 1)$
825 : $P_{28012} = (11, 10, 26, 1)$
826 : $P_{28021} = (20, 10, 26, 1)$
827 : $P_{28044} = (11, 11, 26, 1)$
828 : $P_{28047} = (14, 11, 26, 1)$
829 : $P_{28100} = (3, 13, 26, 1)$
830 : $P_{28113} = (16, 13, 26, 1)$
831 : $P_{28135} = (6, 14, 26, 1)$
832 : $P_{28159} = (30, 14, 26, 1)$
833 : $P_{28275} = (18, 18, 26, 1)$
834 : $P_{28288} = (31, 18, 26, 1)$
835 : $P_{28325} = (4, 20, 26, 1)$
836 : $P_{28352} = (31, 20, 26, 1)$
837 : $P_{28371} = (18, 21, 26, 1)$
838 : $P_{28372} = (19, 21, 26, 1)$
839 : $P_{28420} = (3, 23, 26, 1)$
840 : $P_{28436} = (19, 23, 26, 1)$
841 : $P_{28516} = (3, 26, 26, 1)$
842 : $P_{28569} = (24, 27, 26, 1)$
843 : $P_{28735} = (30, 0, 27, 1)$
844 : $P_{28752} = (15, 1, 27, 1)$
845 : $P_{28757} = (20, 1, 27, 1)$

$846: P_{28806} = (5, 3, 27, 1)$
$847: P_{28814} = (13, 3, 27, 1)$
$848: P_{28909} = (12, 6, 27, 1)$
$849: P_{28925} = (28, 6, 27, 1)$
$850: P_{29063} = (6, 11, 27, 1)$
$851: P_{29065} = (8, 11, 27, 1)$
$852: P_{29116} = (27, 12, 27, 1)$
$853: P_{29119} = (30, 12, 27, 1)$
$854: P_{29383} = (6, 21, 27, 1)$
$855: P_{29395} = (18, 21, 27, 1)$
$856: P_{29495} = (22, 24, 27, 1)$
$857: P_{29501} = (28, 24, 27, 1)$
$858: P_{29561} = (24, 26, 27, 1)$
$859: P_{29571} = (2, 27, 27, 1)$
$860: P_{29604} = (3, 28, 27, 1)$
$861: P_{29611} = (10, 28, 27, 1)$
$862: P_{29671} = (6, 30, 27, 1)$
$863: P_{29693} = (28, 30, 27, 1)$
$864: P_{29745} = (16, 0, 28, 1)$
$865: P_{29770} = (9, 1, 28, 1)$
$866: P_{29782} = (21, 1, 28, 1)$
$867: P_{29802} = (9, 2, 28, 1)$
$868: P_{29813} = (20, 2, 28, 1)$
$869: P_{29833} = (8, 3, 28, 1)$
$870: P_{29834} = (9, 3, 28, 1)$
$871: P_{29897} = (8, 5, 28, 1)$
$872: P_{29900} = (11, 5, 28, 1)$
$873: P_{29929} = (8, 6, 28, 1)$
$874: P_{29931} = (10, 6, 28, 1)$
$875: P_{29987} = (2, 8, 28, 1)$
$876: P_{30010} = (25, 8, 28, 1)$
$877: P_{30034} = (17, 9, 28, 1)$
$878: P_{30039} = (22, 9, 28, 1)$
$879: P_{30139} = (26, 12, 28, 1)$
$880: P_{30143} = (30, 12, 28, 1)$
$881: P_{30183} = (6, 14, 28, 1)$
$882: P_{30208} = (31, 14, 28, 1)$
$883: P_{30227} = (18, 15, 28, 1)$
$884: P_{30232} = (23, 15, 28, 1)$
$885: P_{30248} = (7, 16, 28, 1)$
$886: P_{30261} = (20, 16, 28, 1)$
$887: P_{30325} = (20, 18, 28, 1)$
$888: P_{30331} = (26, 18, 28, 1)$
$889: P_{30342} = (5, 19, 28, 1)$
$890: P_{30360} = (23, 19, 28, 1)$
$891: P_{30446} = (13, 22, 28, 1)$
$892: P_{30461} = (28, 22, 28, 1)$
$893: P_{30541} = (12, 25, 28, 1)$
$894: P_{30553} = (24, 25, 28, 1)$
$895: P_{30596} = (3, 27, 28, 1)$
$896: P_{30603} = (10, 27, 28, 1)$
$897: P_{30648} = (23, 28, 28, 1)$
$898: P_{30667} = (10, 29, 28, 1)$
$899: P_{30705} = (16, 30, 28, 1)$
$900: P_{30715} = (26, 30, 28, 1)$
$901: P_{30777} = (24, 0, 29, 1)$
$902: P_{30865} = (16, 3, 29, 1)$
$903: P_{30867} = (18, 3, 29, 1)$
$904: P_{30884} = (3, 4, 29, 1)$
$905: P_{30905} = (24, 4, 29, 1)$
$906: P_{30922} = (9, 5, 29, 1)$
$907: P_{30928} = (15, 5, 29, 1)$
$908: P_{30982} = (5, 7, 29, 1)$
$909: P_{31005} = (28, 7, 29, 1)$
$910: P_{31337} = (8, 18, 29, 1)$
$911: P_{31349} = (20, 18, 29, 1)$
$912: P_{31389} = (28, 19, 29, 1)$
$913: P_{31390} = (29, 19, 29, 1)$
$914: P_{31397} = (4, 20, 29, 1)$
$915: P_{31421} = (28, 20, 29, 1)$
$916: P_{31441} = (16, 21, 29, 1)$
$917: P_{31446} = (21, 21, 29, 1)$
$918: P_{31473} = (16, 22, 29, 1)$
$919: P_{31480} = (23, 22, 29, 1)$
$920: P_{31535} = (14, 24, 29, 1)$
$921: P_{31551} = (30, 24, 29, 1)$
$922: P_{31659} = (10, 28, 29, 1)$
$923: P_{31703} = (22, 29, 29, 1)$
$924: P_{31720} = (7, 30, 29, 1)$
$925: P_{31732} = (19, 30, 29, 1)$
$926: P_{31782} = (5, 0, 30, 1)$
$927: P_{31892} = (19, 3, 30, 1)$
$928: P_{31893} = (20, 3, 30, 1)$
$929: P_{31959} = (22, 5, 30, 1)$
$930: P_{31968} = (31, 5, 30, 1)$
$931: P_{32014} = (13, 7, 30, 1)$
$932: P_{32030} = (29, 7, 30, 1)$
$933: P_{32039} = (6, 8, 30, 1)$
$934: P_{32046} = (13, 8, 30, 1)$
$935: P_{32101} = (4, 10, 30, 1)$
$936: P_{32119} = (22, 10, 30, 1)$
$937: P_{32250} = (25, 14, 30, 1)$
$938: P_{32253} = (28, 14, 30, 1)$
$939: P_{32270} = (13, 15, 30, 1)$
$940: P_{32279} = (22, 15, 30, 1)$
$941: P_{32358} = (5, 18, 30, 1)$
$942: P_{32363} = (10, 18, 30, 1)$
$943: P_{32391} = (6, 19, 30, 1)$
$944: P_{32408} = (23, 19, 30, 1)$
$945: P_{32437} = (20, 20, 30, 1)$
$946: P_{32438} = (21, 20, 30, 1)$
$947: P_{32452} = (3, 21, 30, 1)$
$948: P_{32477} = (28, 21, 30, 1)$
$949: P_{32531} = (18, 23, 30, 1)$
$950: P_{32533} = (20, 23, 30, 1)$
$951: P_{32647} = (6, 27, 30, 1)$
$952: P_{32669} = (28, 27, 30, 1)$
$953: P_{32689} = (16, 28, 30, 1)$

954 : $P_{32699} = (26, 28, 30, 1)$
955 : $P_{32712} = (7, 29, 30, 1)$
956 : $P_{32724} = (19, 29, 30, 1)$
957 : $P_{32756} = (19, 30, 30, 1)$
958 : $P_{32781} = (12, 31, 30, 1)$
959 : $P_{32821} = (20, 0, 31, 1)$
960 : $P_{32839} = (6, 1, 31, 1)$
961 : $P_{32858} = (25, 1, 31, 1)$
962 : $P_{32943} = (14, 4, 31, 1)$
963 : $P_{32958} = (29, 4, 31, 1)$
964 : $P_{32980} = (19, 5, 31, 1)$
965 : $P_{32992} = (31, 5, 31, 1)$
966 : $P_{33028} = (3, 7, 31, 1)$
967 : $P_{33045} = (20, 7, 31, 1)$
968 : $P_{33092} = (3, 9, 31, 1)$
969 : $P_{33120} = (31, 9, 31, 1)$
970 : $P_{33164} = (11, 11, 31, 1)$
971 : $P_{33165} = (12, 11, 31, 1)$
972 : $P_{33200} = (15, 12, 31, 1)$
973 : $P_{33216} = (31, 12, 31, 1)$
974 : $P_{33252} = (3, 14, 31, 1)$
975 : $P_{33257} = (8, 14, 31, 1)$
976 : $P_{33283} = (2, 15, 31, 1)$
977 : $P_{33303} = (22, 15, 31, 1)$
978 : $P_{33355} = (10, 17, 31, 1)$
979 : $P_{33364} = (19, 17, 31, 1)$
980 : $P_{33381} = (4, 18, 31, 1)$
981 : $P_{33402} = (25, 18, 31, 1)$
982 : $P_{33434} = (25, 19, 31, 1)$
983 : $P_{33436} = (27, 19, 31, 1)$
984 : $P_{33447} = (6, 20, 31, 1)$
985 : $P_{33460} = (19, 20, 31, 1)$
986 : $P_{33479} = (6, 21, 31, 1)$
987 : $P_{33485} = (12, 21, 31, 1)$
988 : $P_{33546} = (9, 23, 31, 1)$
989 : $P_{33561} = (24, 23, 31, 1)$
990 : $P_{33773} = (12, 30, 31, 1)$
991 : $P_{33811} = (18, 31, 31, 1)$

Line Intersection Graph

	0	1
0	0	1
1	1	0

Neighbor sets in the line intersection graph:
Line 0 intersects

Line	ℓ_1
in point	P_{67}

Line 1 intersects

Line	ℓ_0
in point	P_{67}

The surface has 1057 points:
Too many to print.