Rank-76308 over GF(64)

January 15, 2021

The equation

The equation of the surface is :

$$X_0^3 + X_0^2X_1 + X_1^2X_3 + X_1X_2^2 + X_0X_3^2 + X_0X_1X_2 = 0$$

(1, 0, 0, 0, 1, 0, 0, 0, 0, 1, 0, 1, 0, 1, 0, 0, 1, 0, 0, 0)
The point rank of the equation over GF(64) is 1107562566

General information

Number of lines	4
Number of points	4161
Number of singular points	2
Number of Eckardt points	1
Number of double points	1
Number of single points	255
Number of points off lines	3904
Number of Hesse planes	0
Number of axes	0
Type of points on lines	65^4
Type of lines on points	3, 2, 1^{255}, 0^{3904}

Singular Points

The surface has 2 singular points:

$0:\ P_{233538} = \mathbf{P}(1, 0, \epsilon^{42}, 1) = \mathbf{P}(1, 0, 56, 1)$
$1:\ P_{237634} = \mathbf{P}(1, 0, \epsilon^{21}, 1) = \mathbf{P}(1, 0, 57, 1)$

The 4 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17047616} = \begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17047616} = \mathbf{Pl}(0, 1, 0, 0, 0, 0)_1$$

$$\ell_1 = \left[\begin{array}{cccc} 1 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{array}\right]_{270400} = \left[\begin{array}{cccc} 1 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{array}\right]_{270400} = \mathbf{Pl}(0,1,1,0,0,0)_{66}$$

$$\ell_2 = \left[\begin{array}{cccc} 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{array}\right]_{8258} = \left[\begin{array}{cccc} 1 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{array}\right]_{8258} = \mathbf{Pl}(0,0,1,1,1,1)_{544578}$$

$$\ell_3 = \left[\begin{array}{cccc} 1 & 1 & 0 & 1 \\ 0 & 0 & 1 & 1 \end{array}\right]_{274562} = \left[\begin{array}{cccc} 1 & 1 & 0 & 1 \\ 0 & 0 & 1 & 1 \end{array}\right]_{274562} = \mathbf{Pl}(0,1,1,1,1,1)_{544642}$$

Rank of lines: (17047616, 270400, 8258, 274562)
Rank of points on Klein quadric: (1, 66, 544578, 544642)

Eckardt Points

The surface has 1 Eckardt points:
$0 : P_{8258} = \mathbf{P}(0,0,1,1) = \mathbf{P}(0,0,1,1)$.

Double Points

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

$P_2 = (0,0,1,0) = \ell_0 \cap \ell_1$

Single Points

The surface has 255 single points:
The single points on the surface are:

$0 : P_3 = (0,0,0,1)$ lies on line ℓ_0
$1 : P_4 = (1,1,1,1)$ lies on line ℓ_2
$2 : P_5 = (1,1,0,0)$ lies on line ℓ_2
$3 : P_{132} = (1,1,1,0)$ lies on line ℓ_3
$4 : P_{4163} = (1,0,0,1)$ lies on line ℓ_1
$5 : P_{4227} = (1,1,0,1)$ lies on line ℓ_3
$6 : P_{8259} = (1,0,1,1)$ lies on line ℓ_1
$7 : P_{8387} = (2,2,1,1)$ lies on line ℓ_2
$8 : P_{8452} = (3,3,1,1)$ lies on line ℓ_2
$9 : P_{8517} = (4,4,1,1)$ lies on line ℓ_2
$10 : P_{8582} = (5,5,1,1)$ lies on line ℓ_2
$11 : P_{8647} = (6,6,1,1)$ lies on line ℓ_2
$12 : P_{8712} = (7,7,1,1)$ lies on line ℓ_2
$13 : P_{8777} = (8,8,1,1)$ lies on line ℓ_2
$14 : P_{8842} = (9,9,1,1)$ lies on line ℓ_2
$15 : P_{8907} = (10,10,1,1)$ lies on line ℓ_2
$16 : P_{8972} = (11,11,1,1)$ lies on line ℓ_2
$17 : P_{9037} = (12,12,1,1)$ lies on line ℓ_2
$18 : P_{9102} = (13,13,1,1)$ lies on line ℓ_2
$19 : P_{9167} = (14,14,1,1)$ lies on line ℓ_2
$20 : P_{9232} = (15,15,1,1)$ lies on line ℓ_2
$21 : P_{9297} = (16,16,1,1)$ lies on line ℓ_2
$22 : P_{9362} = (17,17,1,1)$ lies on line ℓ_2
$23 : P_{9427} = (18,18,1,1)$ lies on line ℓ_2
$24 : P_{9492} = (19,19,1,1)$ lies on line ℓ_2
$25 : P_{9557} = (20,20,1,1)$ lies on line ℓ_2
$26 : P_{9622} = (21,21,1,1)$ lies on line ℓ_2
$27 : P_{9687} = (22,22,1,1)$ lies on line ℓ_2
$28 : P_{9752} = (23,23,1,1)$ lies on line ℓ_2
$29 : P_{9817} = (24,24,1,1)$ lies on line ℓ_2
$30 : P_{9882} = (25,25,1,1)$ lies on line ℓ_2
$31 : P_{9947} = (26,26,1,1)$ lies on line ℓ_2
$32 : P_{10012} = (27,27,1,1)$ lies on line ℓ_2
$33 : P_{10077} = (28,28,1,1)$ lies on line ℓ_2
$34 : P_{10142} = (29,29,1,1)$ lies on line ℓ_2
$35 : P_{10207} = (30,30,1,1)$ lies on line ℓ_2
$36 : P_{10272} = (31,31,1,1)$ lies on line ℓ_2
$37 : P_{10337} = (32,32,1,1)$ lies on line ℓ_2
$38 : P_{10402} = (33,33,1,1)$ lies on line ℓ_2
$39 : P_{10467} = (34,34,1,1)$ lies on line ℓ_2
$40 : P_{10532} = (35,35,1,1)$ lies on line ℓ_2
$41 : P_{10597} = (36,36,1,1)$ lies on line ℓ_2
$42 : P_{10662} = (37,37,1,1)$ lies on line ℓ_2
$43 : P_{10727} = (38,38,1,1)$ lies on line ℓ_2
$44 : P_{10792} = (39,39,1,1)$ lies on line ℓ_2
$45 : P_{10857} = (40,40,1,1)$ lies on line ℓ_2

46 : $P_{10922} = (41, 41, 1, 1)$ lies on line ℓ_2
47 : $P_{10987} = (42, 42, 1, 1)$ lies on line ℓ_2
48 : $P_{11052} = (43, 43, 1, 1)$ lies on line ℓ_2
49 : $P_{11117} = (44, 44, 1, 1)$ lies on line ℓ_2
50 : $P_{11182} = (45, 45, 1, 1)$ lies on line ℓ_2
51 : $P_{11247} = (46, 46, 1, 1)$ lies on line ℓ_2
52 : $P_{11312} = (47, 47, 1, 1)$ lies on line ℓ_2
53 : $P_{11377} = (48, 48, 1, 1)$ lies on line ℓ_2
54 : $P_{11442} = (49, 49, 1, 1)$ lies on line ℓ_2
55 : $P_{11507} = (50, 50, 1, 1)$ lies on line ℓ_2
56 : $P_{11572} = (51, 51, 1, 1)$ lies on line ℓ_2
57 : $P_{11637} = (52, 52, 1, 1)$ lies on line ℓ_2
58 : $P_{11702} = (53, 53, 1, 1)$ lies on line ℓ_2
59 : $P_{11767} = (54, 54, 1, 1)$ lies on line ℓ_2
60 : $P_{11832} = (55, 55, 1, 1)$ lies on line ℓ_2
61 : $P_{11897} = (56, 56, 1, 1)$ lies on line ℓ_2
62 : $P_{11962} = (57, 57, 1, 1)$ lies on line ℓ_2
63 : $P_{12027} = (58, 58, 1, 1)$ lies on line ℓ_2
64 : $P_{12092} = (59, 59, 1, 1)$ lies on line ℓ_2
65 : $P_{12157} = (60, 60, 1, 1)$ lies on line ℓ_2
66 : $P_{12222} = (61, 61, 1, 1)$ lies on line ℓ_2
67 : $P_{12287} = (62, 62, 1, 1)$ lies on line ℓ_2
68 : $P_{12352} = (63, 63, 1, 1)$ lies on line ℓ_2
69 : $P_{12353} = (0, 0, 2, 1)$ lies on line ℓ_0
70 : $P_{12354} = (1, 0, 2, 1)$ lies on line ℓ_1
71 : $P_{12548} = (3, 3, 2, 1)$ lies on line ℓ_3
72 : $P_{16449} = (0, 0, 3, 1)$ lies on line ℓ_0
73 : $P_{16450} = (1, 0, 3, 1)$ lies on line ℓ_1
74 : $P_{16579} = (2, 2, 3, 1)$ lies on line ℓ_3
75 : $P_{20545} = (0, 0, 4, 1)$ lies on line ℓ_0
76 : $P_{20546} = (1, 0, 4, 1)$ lies on line ℓ_1
77 : $P_{20870} = (5, 5, 4, 1)$ lies on line ℓ_3
78 : $P_{24641} = (0, 0, 5, 1)$ lies on line ℓ_0
79 : $P_{24642} = (1, 0, 5, 1)$ lies on line ℓ_1
80 : $P_{24901} = (4, 4, 5, 1)$ lies on line ℓ_3
81 : $P_{28737} = (0, 0, 6, 1)$ lies on line ℓ_0
82 : $P_{28738} = (1, 0, 6, 1)$ lies on line ℓ_1
83 : $P_{29192} = (7, 7, 6, 1)$ lies on line ℓ_3
84 : $P_{32833} = (0, 0, 7, 1)$ lies on line ℓ_0
85 : $P_{32834} = (1, 0, 7, 1)$ lies on line ℓ_1
86 : $P_{33223} = (6, 6, 7, 1)$ lies on line ℓ_3
87 : $P_{36929} = (0, 0, 8, 1)$ lies on line ℓ_0
88 : $P_{36930} = (1, 0, 8, 1)$ lies on line ℓ_1
89 : $P_{37514} = (9, 9, 8, 1)$ lies on line ℓ_3
90 : $P_{41025} = (0, 0, 9, 1)$ lies on line ℓ_0
91 : $P_{41026} = (1, 0, 9, 1)$ lies on line ℓ_1
92 : $P_{41545} = (8, 8, 9, 1)$ lies on line ℓ_3
93 : $P_{45121} = (0, 0, 10, 1)$ lies on line ℓ_0
94 : $P_{45122} = (1, 0, 10, 1)$ lies on line ℓ_1
95 : $P_{45836} = (11, 11, 10, 1)$ lies on line ℓ_3
96 : $P_{49217} = (0, 0, 11, 1)$ lies on line ℓ_0
97 : $P_{49218} = (1, 0, 11, 1)$ lies on line ℓ_1
98 : $P_{49867} = (10, 10, 11, 1)$ lies on line ℓ_3
99 : $P_{53313} = (0, 0, 12, 1)$ lies on line ℓ_0
100 : $P_{53314} = (1, 0, 12, 1)$ lies on line ℓ_1
101 : $P_{54158} = (13, 13, 12, 1)$ lies on line ℓ_3
102 : $P_{57409} = (0, 0, 13, 1)$ lies on line ℓ_0
103 : $P_{57410} = (1, 0, 13, 1)$ lies on line ℓ_1
104 : $P_{58189} = (12, 12, 13, 1)$ lies on line ℓ_3
105 : $P_{61505} = (0, 0, 14, 1)$ lies on line ℓ_0
106 : $P_{61506} = (1, 0, 14, 1)$ lies on line ℓ_1
107 : $P_{62480} = (15, 15, 14, 1)$ lies on line ℓ_3
108 : $P_{65601} = (0, 0, 15, 1)$ lies on line ℓ_0
109 : $P_{65602} = (1, 0, 15, 1)$ lies on line ℓ_1
110 : $P_{66511} = (14, 14, 15, 1)$ lies on line ℓ_3
111 : $P_{69697} = (0, 0, 16, 1)$ lies on line ℓ_0
112 : $P_{69698} = (1, 0, 16, 1)$ lies on line ℓ_1
113 : $P_{70802} = (17, 17, 16, 1)$ lies on line ℓ_3
114 : $P_{73793} = (0, 0, 17, 1)$ lies on line ℓ_0
115 : $P_{73794} = (1, 0, 17, 1)$ lies on line ℓ_1
116 : $P_{74833} = (16, 16, 17, 1)$ lies on line ℓ_3
117 : $P_{77889} = (0, 0, 18, 1)$ lies on line ℓ_0
118 : $P_{77890} = (1, 0, 18, 1)$ lies on line ℓ_1
119 : $P_{79124} = (19, 19, 18, 1)$ lies on line ℓ_3
120 : $P_{81985} = (0, 0, 19, 1)$ lies on line ℓ_0
121 : $P_{81986} = (1, 0, 19, 1)$ lies on line ℓ_1
122 : $P_{83155} = (18, 18, 19, 1)$ lies on line ℓ_3
123 : $P_{86081} = (0, 0, 20, 1)$ lies on line ℓ_0
124 : $P_{86082} = (1, 0, 20, 1)$ lies on line ℓ_1
125 : $P_{87446} = (21, 21, 20, 1)$ lies on line ℓ_3
126 : $P_{90177} = (0, 0, 21, 1)$ lies on line ℓ_0
127 : $P_{90178} = (1, 0, 21, 1)$ lies on line ℓ_1
128 : $P_{91477} = (20, 20, 21, 1)$ lies on line ℓ_3
129 : $P_{94273} = (0, 0, 22, 1)$ lies on line ℓ_0
130 : $P_{94274} = (1, 0, 22, 1)$ lies on line ℓ_1
131 : $P_{95768} = (23, 23, 22, 1)$ lies on line ℓ_3
132 : $P_{98369} = (0, 0, 23, 1)$ lies on line ℓ_0
133 : $P_{98370} = (1, 0, 23, 1)$ lies on line ℓ_1
134 : $P_{99799} = (22, 22, 23, 1)$ lies on line ℓ_3
135 : $P_{102465} = (0, 0, 24, 1)$ lies on line ℓ_0
136 : $P_{102466} = (1, 0, 24, 1)$ lies on line ℓ_1
137 : $P_{104090} = (25, 25, 24, 1)$ lies on line ℓ_3
138 : $P_{106561} = (0, 0, 25, 1)$ lies on line ℓ_0
139 : $P_{106562} = (1, 0, 25, 1)$ lies on line ℓ_1
140 : $P_{108121} = (24, 24, 25, 1)$ lies on line ℓ_3
141 : $P_{110657} = (0, 0, 26, 1)$ lies on line ℓ_0
142 : $P_{110658} = (1, 0, 26, 1)$ lies on line ℓ_1
143 : $P_{112412} = (27, 27, 26, 1)$ lies on line ℓ_3
144 : $P_{114753} = (0, 0, 27, 1)$ lies on line ℓ_0
145 : $P_{114754} = (1, 0, 27, 1)$ lies on line ℓ_1
146 : $P_{116443} = (26, 26, 27, 1)$ lies on line ℓ_3
147 : $P_{118849} = (0, 0, 28, 1)$ lies on line ℓ_0
148 : $P_{118850} = (1, 0, 28, 1)$ lies on line ℓ_1
149 : $P_{120734} = (29, 29, 28, 1)$ lies on line ℓ_3
150 : $P_{122945} = (0, 0, 29, 1)$ lies on line ℓ_0
151 : $P_{122946} = (1, 0, 29, 1)$ lies on line ℓ_1
152 : $P_{124765} = (28, 28, 29, 1)$ lies on line ℓ_3
153 : $P_{127041} = (0, 0, 30, 1)$ lies on line ℓ_0

154 : $P_{127042} = (1, 0, 30, 1)$ lies on line ℓ_1
155 : $P_{129056} = (31, 31, 30, 1)$ lies on line ℓ_3
156 : $P_{131137} = (0, 0, 31, 1)$ lies on line ℓ_0
157 : $P_{131138} = (1, 0, 31, 1)$ lies on line ℓ_1
158 : $P_{133087} = (30, 30, 31, 1)$ lies on line ℓ_3
159 : $P_{135233} = (0, 0, 32, 1)$ lies on line ℓ_0
160 : $P_{135234} = (1, 0, 32, 1)$ lies on line ℓ_1
161 : $P_{137378} = (33, 33, 32, 1)$ lies on line ℓ_3
162 : $P_{139329} = (0, 0, 33, 1)$ lies on line ℓ_0
163 : $P_{139330} = (1, 0, 33, 1)$ lies on line ℓ_1
164 : $P_{141409} = (32, 32, 33, 1)$ lies on line ℓ_3
165 : $P_{143425} = (0, 0, 34, 1)$ lies on line ℓ_0
166 : $P_{143426} = (1, 0, 34, 1)$ lies on line ℓ_1
167 : $P_{145700} = (35, 35, 34, 1)$ lies on line ℓ_3
168 : $P_{147521} = (0, 0, 35, 1)$ lies on line ℓ_0
169 : $P_{147522} = (1, 0, 35, 1)$ lies on line ℓ_1
170 : $P_{149731} = (34, 34, 35, 1)$ lies on line ℓ_3
171 : $P_{151617} = (0, 0, 36, 1)$ lies on line ℓ_0
172 : $P_{151618} = (1, 0, 36, 1)$ lies on line ℓ_1
173 : $P_{154022} = (37, 37, 36, 1)$ lies on line ℓ_3
174 : $P_{155713} = (0, 0, 37, 1)$ lies on line ℓ_0
175 : $P_{155714} = (1, 0, 37, 1)$ lies on line ℓ_1
176 : $P_{158053} = (36, 36, 37, 1)$ lies on line ℓ_3
177 : $P_{159809} = (0, 0, 38, 1)$ lies on line ℓ_0
178 : $P_{159810} = (1, 0, 38, 1)$ lies on line ℓ_1
179 : $P_{162344} = (39, 39, 38, 1)$ lies on line ℓ_3
180 : $P_{163905} = (0, 0, 39, 1)$ lies on line ℓ_0
181 : $P_{163906} = (1, 0, 39, 1)$ lies on line ℓ_1
182 : $P_{166375} = (38, 38, 39, 1)$ lies on line ℓ_3
183 : $P_{168001} = (0, 0, 40, 1)$ lies on line ℓ_0
184 : $P_{168002} = (1, 0, 40, 1)$ lies on line ℓ_1
185 : $P_{170666} = (41, 41, 40, 1)$ lies on line ℓ_3
186 : $P_{172097} = (0, 0, 41, 1)$ lies on line ℓ_0
187 : $P_{172098} = (1, 0, 41, 1)$ lies on line ℓ_1
188 : $P_{174697} = (40, 40, 41, 1)$ lies on line ℓ_3
189 : $P_{176193} = (0, 0, 42, 1)$ lies on line ℓ_0
190 : $P_{176194} = (1, 0, 42, 1)$ lies on line ℓ_1
191 : $P_{178988} = (43, 43, 42, 1)$ lies on line ℓ_3
192 : $P_{180289} = (0, 0, 43, 1)$ lies on line ℓ_0
193 : $P_{180290} = (1, 0, 43, 1)$ lies on line ℓ_1
194 : $P_{183019} = (42, 42, 43, 1)$ lies on line ℓ_3
195 : $P_{184385} = (0, 0, 44, 1)$ lies on line ℓ_0
196 : $P_{184386} = (1, 0, 44, 1)$ lies on line ℓ_1
197 : $P_{187310} = (45, 45, 44, 1)$ lies on line ℓ_3
198 : $P_{188481} = (0, 0, 45, 1)$ lies on line ℓ_0
199 : $P_{188482} = (1, 0, 45, 1)$ lies on line ℓ_1
200 : $P_{191341} = (44, 44, 45, 1)$ lies on line ℓ_3
201 : $P_{192577} = (0, 0, 46, 1)$ lies on line ℓ_0
202 : $P_{192578} = (1, 0, 46, 1)$ lies on line ℓ_1
203 : $P_{195632} = (47, 47, 46, 1)$ lies on line ℓ_3
204 : $P_{196673} = (0, 0, 47, 1)$ lies on line ℓ_0
205 : $P_{196674} = (1, 0, 47, 1)$ lies on line ℓ_1
206 : $P_{199663} = (46, 46, 47, 1)$ lies on line ℓ_3
207 : $P_{200769} = (0, 0, 48, 1)$ lies on line ℓ_0
208 : $P_{200770} = (1, 0, 48, 1)$ lies on line ℓ_1
209 : $P_{203954} = (49, 49, 48, 1)$ lies on line ℓ_3
210 : $P_{204865} = (0, 0, 49, 1)$ lies on line ℓ_0
211 : $P_{204866} = (1, 0, 49, 1)$ lies on line ℓ_1
212 : $P_{207985} = (48, 48, 49, 1)$ lies on line ℓ_3
213 : $P_{208961} = (0, 0, 50, 1)$ lies on line ℓ_0
214 : $P_{208962} = (1, 0, 50, 1)$ lies on line ℓ_1
215 : $P_{212276} = (51, 51, 50, 1)$ lies on line ℓ_3
216 : $P_{213057} = (0, 0, 51, 1)$ lies on line ℓ_0
217 : $P_{213058} = (1, 0, 51, 1)$ lies on line ℓ_1
218 : $P_{216307} = (50, 50, 51, 1)$ lies on line ℓ_3
219 : $P_{217153} = (0, 0, 52, 1)$ lies on line ℓ_0
220 : $P_{217154} = (1, 0, 52, 1)$ lies on line ℓ_1
221 : $P_{220598} = (53, 53, 52, 1)$ lies on line ℓ_3
222 : $P_{221249} = (0, 0, 53, 1)$ lies on line ℓ_0
223 : $P_{221250} = (1, 0, 53, 1)$ lies on line ℓ_1
224 : $P_{224629} = (52, 52, 53, 1)$ lies on line ℓ_3
225 : $P_{225345} = (0, 0, 54, 1)$ lies on line ℓ_0
226 : $P_{225346} = (1, 0, 54, 1)$ lies on line ℓ_1
227 : $P_{228920} = (55, 55, 54, 1)$ lies on line ℓ_3
228 : $P_{229441} = (0, 0, 55, 1)$ lies on line ℓ_0
229 : $P_{229442} = (1, 0, 55, 1)$ lies on line ℓ_1
230 : $P_{232951} = (54, 54, 55, 1)$ lies on line ℓ_3
231 : $P_{233537} = (0, 0, 56, 1)$ lies on line ℓ_0
232 : $P_{233538} = (1, 0, 56, 1)$ lies on line ℓ_1
233 : $P_{237242} = (57, 57, 56, 1)$ lies on line ℓ_3
234 : $P_{237633} = (0, 0, 57, 1)$ lies on line ℓ_0
235 : $P_{237634} = (1, 0, 57, 1)$ lies on line ℓ_1
236 : $P_{241273} = (56, 56, 57, 1)$ lies on line ℓ_3
237 : $P_{241729} = (0, 0, 58, 1)$ lies on line ℓ_0
238 : $P_{241730} = (1, 0, 58, 1)$ lies on line ℓ_1
239 : $P_{245564} = (59, 59, 58, 1)$ lies on line ℓ_3
240 : $P_{245825} = (0, 0, 59, 1)$ lies on line ℓ_0
241 : $P_{245826} = (1, 0, 59, 1)$ lies on line ℓ_1
242 : $P_{249595} = (58, 58, 59, 1)$ lies on line ℓ_3
243 : $P_{249921} = (0, 0, 60, 1)$ lies on line ℓ_0
244 : $P_{249922} = (1, 0, 60, 1)$ lies on line ℓ_1
245 : $P_{253886} = (61, 61, 60, 1)$ lies on line ℓ_3
246 : $P_{254017} = (0, 0, 61, 1)$ lies on line ℓ_0
247 : $P_{254018} = (1, 0, 61, 1)$ lies on line ℓ_1
248 : $P_{257917} = (60, 60, 61, 1)$ lies on line ℓ_3
249 : $P_{258113} = (0, 0, 62, 1)$ lies on line ℓ_0
250 : $P_{258114} = (1, 0, 62, 1)$ lies on line ℓ_1
251 : $P_{262208} = (63, 63, 62, 1)$ lies on line ℓ_3
252 : $P_{262209} = (0, 0, 63, 1)$ lies on line ℓ_0
253 : $P_{262210} = (1, 0, 63, 1)$ lies on line ℓ_1
254 : $P_{266239} = (62, 62, 63, 1)$ lies on line ℓ_3

The single points on the surface are:

Points on surface but on no line

The surface has 3904 points not on any line:
Too many to print.

Line Intersection Graph

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

Neighbor sets in the line intersection graph:
Line 0 intersects

Line	ℓ_1	ℓ_2	ℓ_3
in point	P_2	P_{8258}	P_{8258}

Line 1 intersects

Line	ℓ_0
in point	P_2

Line 2 intersects

Line	ℓ_0	ℓ_3
in point	P_{8258}	P_{8258}

Line 3 intersects

Line	ℓ_0	ℓ_2
in point	P_{8258}	P_{8258}

The surface has 4161 points:
Too many to print.