Rank-73753 over GF(64)

January 15, 2021

The equation

The equation of the surface is :

$$X_1^3 + X_2^3 + X_0^2X_1 + X_0X_3^2 + X_0X_1X_2 = 0$$

(0, 1, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 1, 0, 0, 0)
The point rank of the equation over GF(64) is 1107566725

General information

Number of lines	5
Number of points	4289
Number of singular points	0
Number of Eckardt points	1
Number of double points	2
Number of single points	318
Number of points off lines	3968
Number of Hesse planes	0
Number of axes	0
Type of points on lines	65^5
Type of lines on points	$3, 2^2, 1^{318}, 0^{3968}$

Singular Points

The surface has 0 singular points:

The 5 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \left[\begin{array}{cccc} 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{17043585} = \left[\begin{array}{cccc} 0 & 1 & 1 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{17043585} = \mathbf{Pl}(0,1,0,1,0,0)_{193}$$

$$\ell_1 = \left[\begin{array}{cccc} 0 & 1 & \epsilon^{21} & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{17047225} = \left[\begin{array}{cccc} 0 & 1 & 57 & 0 \\ 0 & 0 & 0 & 1 \end{array}\right]_{17047225} = \mathbf{Pl}(0,57,0,1,0,0)_{249}$$

$$\ell_2 = \begin{bmatrix} 1 & 0 & \epsilon^{21} & 1 \\ 0 & 1 & 1 & \epsilon^{21} \end{bmatrix}_{507130} = \begin{bmatrix} 1 & 0 & 57 & 1 \\ 0 & 1 & 1 & 57 \end{bmatrix}_{507130} = \mathbf{Pl}(1,1,57,56,1,1)_{774780}$$

$$\ell_3 = \begin{bmatrix} 0 & 1 & \epsilon^{42} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17047160} = \begin{bmatrix} 0 & 1 & 56 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17047160} = \mathbf{Pl}(0,56,0,1,0,0)_{248}$$

$$\ell_4 = \begin{bmatrix} 1 & 0 & \epsilon^{42} & 1 \\ 0 & 1 & 1 & \epsilon^{42} \end{bmatrix}_{502905} = \begin{bmatrix} 1 & 0 & 56 & 1 \\ 0 & 1 & 1 & 56 \end{bmatrix}_{502905} = \mathbf{Pl}(1,1,56,57,1,1)_{770811}$$

Rank of lines: (17043585, 17047225, 507130, 17047160, 502905)
Rank of points on Klein quadric: (193, 249, 774780, 248, 770811)

Eckardt Points

The surface has 1 Eckardt points:
$0 : P_3 = \mathbf{P}(0,0,0,1) = \mathbf{P}(0,0,0,1)$.

Double Points

The surface has 2 Double points:
The double points on the surface are:

$P_{237121} = (0,56,56,1) = \ell_0 \cap \ell_2$
$P_{241281} = (0,57,57,1) = \ell_0 \cap \ell_4$

Single Points

The surface has 318 single points:
The single points on the surface are:

$0 : P_{131} = (0,1,1,0)$ lies on line ℓ_0
$1 : P_{3651} = (0,56,1,0)$ lies on line ℓ_1
$2 : P_{3652} = (1,56,1,0)$ lies on line ℓ_2
$3 : P_{3715} = (0,57,1,0)$ lies on line ℓ_3
$4 : P_{3716} = (1,57,1,0)$ lies on line ℓ_4
$5 : P_{4282} = (56,1,0,1)$ lies on line ℓ_2
$6 : P_{4283} = (57,1,0,1)$ lies on line ℓ_4
$7 : P_{8322} = (0,1,1,1)$ lies on line ℓ_0
$8 : P_{11841} = (0,56,1,1)$ lies on line ℓ_1
$9 : P_{11897} = (56,56,1,1)$ lies on line ℓ_4
$10 : P_{11905} = (0,57,1,1)$ lies on line ℓ_3
$11 : P_{11962} = (57,57,1,1)$ lies on line ℓ_2
$12 : P_{12481} = (0,2,2,1)$ lies on line ℓ_0
$13 : P_{13435} = (58,16,2,1)$ lies on line ℓ_2
$14 : P_{13441} = (0,17,2,1)$ lies on line ℓ_1
$15 : P_{13564} = (59,18,2,1)$ lies on line ℓ_4
$16 : P_{13569} = (0,19,2,1)$ lies on line ℓ_3
$17 : P_{16641} = (0,3,3,1)$ lies on line ℓ_0
$18 : P_{19068} = (59,40,3,1)$ lies on line ℓ_2
$19 : P_{19073} = (0,41,3,1)$ lies on line ℓ_1
$20 : P_{19137} = (0,42,3,1)$ lies on line ℓ_3
$21 : P_{19259} = (58,43,3,1)$ lies on line ℓ_4
$22 : P_{20801} = (0,4,4,1)$ lies on line ℓ_0
$23 : P_{22721} = (0,34,4,1)$ lies on line ℓ_1
$24 : P_{22845} = (60,35,4,1)$ lies on line ℓ_2
$25 : P_{22977} = (0,38,4,1)$ lies on line ℓ_3
$26 : P_{23102} = (61,39,4,1)$ lies on line ℓ_4
$27 : P_{24961} = (0,5,5,1)$ lies on line ℓ_0
$28 : P_{26305} = (0,26,5,1)$ lies on line ℓ_1
$29 : P_{26430} = (61,27,5,1)$ lies on line ℓ_2
$30 : P_{26621} = (60,30,5,1)$ lies on line ℓ_4
$31 : P_{26625} = (0,31,5,1)$ lies on line ℓ_3
$32 : P_{29121} = (0,6,6,1)$ lies on line ℓ_0
$33 : P_{31999} = (62,50,6,1)$ lies on line ℓ_2
$34 : P_{32001} = (0,51,6,1)$ lies on line ℓ_1
$35 : P_{32128} = (63,52,6,1)$ lies on line ℓ_4
$36 : P_{32129} = (0,53,6,1)$ lies on line ℓ_3
$37 : P_{33281} = (0,7,7,1)$ lies on line ℓ_0
$38 : P_{33536} = (63,10,7,1)$ lies on line ℓ_2
$39 : P_{33537} = (0,11,7,1)$ lies on line ℓ_1
$40 : P_{33601} = (0,12,7,1)$ lies on line ℓ_3
$41 : P_{33727} = (62,13,7,1)$ lies on line ℓ_4
$42 : P_{37441} = (0,8,8,1)$ lies on line ℓ_0
$43 : P_{39281} = (48,36,8,1)$ lies on line ℓ_2

44 : $P_{39297} = (0, 37, 8, 1)$ lies on line ℓ_1
45 : $P_{39794} = (49, 44, 8, 1)$ lies on line ℓ_4
46 : $P_{39809} = (0, 45, 8, 1)$ lies on line ℓ_3
47 : $P_{41601} = (0, 9, 9, 1)$ lies on line ℓ_0
48 : $P_{42305} = (0, 20, 9, 1)$ lies on line ℓ_3
49 : $P_{42417} = (48, 21, 9, 1)$ lies on line ℓ_4
50 : $P_{42866} = (49, 28, 9, 1)$ lies on line ℓ_2
51 : $P_{42881} = (0, 29, 9, 1)$ lies on line ℓ_1
52 : $P_{45761} = (0, 10, 10, 1)$ lies on line ℓ_0
53 : $P_{48449} = (0, 52, 10, 1)$ lies on line ℓ_1
54 : $P_{48563} = (50, 53, 10, 1)$ lies on line ℓ_2
55 : $P_{49089} = (0, 62, 10, 1)$ lies on line ℓ_3
56 : $P_{49204} = (51, 63, 10, 1)$ lies on line ℓ_4
57 : $P_{49651} = (50, 6, 11, 1)$ lies on line ℓ_4
58 : $P_{49665} = (0, 7, 11, 1)$ lies on line ℓ_3
59 : $P_{49921} = (0, 11, 11, 1)$ lies on line ℓ_0
60 : $P_{49985} = (0, 12, 11, 1)$ lies on line ℓ_1
61 : $P_{50100} = (51, 13, 11, 1)$ lies on line ℓ_2
62 : $P_{53749} = (52, 6, 12, 1)$ lies on line ℓ_2
63 : $P_{53761} = (0, 7, 12, 1)$ lies on line ℓ_1
64 : $P_{54006} = (53, 10, 12, 1)$ lies on line ℓ_4
65 : $P_{54017} = (0, 11, 12, 1)$ lies on line ℓ_3
66 : $P_{54081} = (0, 12, 12, 1)$ lies on line ℓ_0
67 : $P_{58241} = (0, 13, 13, 1)$ lies on line ℓ_0
68 : $P_{60609} = (0, 50, 13, 1)$ lies on line ℓ_3
69 : $P_{60725} = (52, 51, 13, 1)$ lies on line ℓ_4
70 : $P_{61430} = (53, 62, 13, 1)$ lies on line ℓ_2
71 : $P_{61441} = (0, 63, 13, 1)$ lies on line ℓ_1
72 : $P_{62401} = (0, 14, 14, 1)$ lies on line ℓ_0
73 : $P_{62913} = (0, 22, 14, 1)$ lies on line ℓ_1
74 : $P_{63031} = (54, 23, 14, 1)$ lies on line ℓ_2
75 : $P_{63041} = (0, 24, 14, 1)$ lies on line ℓ_3
76 : $P_{63160} = (55, 25, 14, 1)$ lies on line ℓ_4
77 : $P_{66561} = (0, 15, 15, 1)$ lies on line ℓ_0
78 : $P_{67703} = (54, 32, 15, 1)$ lies on line ℓ_4
79 : $P_{67713} = (0, 33, 15, 1)$ lies on line ℓ_3
80 : $P_{68545} = (0, 46, 15, 1)$ lies on line ℓ_1
81 : $P_{68664} = (55, 47, 15, 1)$ lies on line ℓ_2
82 : $P_{70721} = (0, 16, 16, 1)$ lies on line ℓ_0
83 : $P_{72425} = (40, 42, 16, 1)$ lies on line ℓ_2
84 : $P_{72449} = (0, 43, 16, 1)$ lies on line ℓ_1
85 : $P_{73450} = (41, 58, 16, 1)$ lies on line ℓ_4
86 : $P_{73473} = (0, 59, 16, 1)$ lies on line ℓ_3
87 : $P_{73921} = (0, 2, 17, 1)$ lies on line ℓ_3
88 : $P_{74025} = (40, 3, 17, 1)$ lies on line ℓ_4
89 : $P_{74881} = (0, 17, 17, 1)$ lies on line ℓ_0
90 : $P_{74986} = (41, 18, 17, 1)$ lies on line ℓ_2
91 : $P_{75009} = (0, 19, 17, 1)$ lies on line ℓ_1
92 : $P_{79041} = (0, 18, 18, 1)$ lies on line ℓ_0
93 : $P_{80449} = (0, 40, 18, 1)$ lies on line ℓ_3
94 : $P_{80556} = (43, 41, 18, 1)$ lies on line ℓ_4
95 : $P_{81601} = (0, 58, 18, 1)$ lies on line ℓ_1
96 : $P_{81707} = (42, 59, 18, 1)$ lies on line ℓ_2
97 : $P_{82113} = (0, 2, 19, 1)$ lies on line ℓ_1
98 : $P_{82220} = (43, 3, 19, 1)$ lies on line ℓ_2
99 : $P_{83051} = (42, 16, 19, 1)$ lies on line ℓ_4
100 : $P_{83073} = (0, 17, 19, 1)$ lies on line ℓ_3
101 : $P_{83201} = (0, 19, 19, 1)$ lies on line ℓ_0
102 : $P_{86637} = (44, 8, 20, 1)$ lies on line ℓ_2
103 : $P_{86657} = (0, 9, 20, 1)$ lies on line ℓ_1
104 : $P_{87361} = (0, 20, 20, 1)$ lies on line ℓ_0
105 : $P_{87918} = (45, 28, 20, 1)$ lies on line ℓ_4
106 : $P_{87937} = (0, 29, 20, 1)$ lies on line ℓ_3
107 : $P_{91521} = (0, 21, 21, 1)$ lies on line ℓ_0
108 : $P_{92481} = (0, 36, 21, 1)$ lies on line ℓ_3
109 : $P_{92589} = (44, 37, 21, 1)$ lies on line ℓ_4
110 : $P_{93294} = (45, 48, 21, 1)$ lies on line ℓ_2
111 : $P_{93313} = (0, 49, 21, 1)$ lies on line ℓ_1
112 : $P_{95169} = (0, 14, 22, 1)$ lies on line ℓ_3
113 : $P_{95280} = (47, 15, 22, 1)$ lies on line ℓ_4
114 : $P_{95681} = (0, 22, 22, 1)$ lies on line ℓ_0
115 : $P_{95809} = (0, 24, 22, 1)$ lies on line ℓ_1
116 : $P_{95919} = (46, 25, 22, 1)$ lies on line ℓ_2
117 : $P_{99841} = (0, 23, 23, 1)$ lies on line ℓ_0
118 : $P_{100417} = (0, 32, 23, 1)$ lies on line ℓ_1
119 : $P_{100528} = (47, 33, 23, 1)$ lies on line ℓ_2
120 : $P_{101871} = (46, 54, 23, 1)$ lies on line ℓ_4
121 : $P_{101889} = (0, 55, 23, 1)$ lies on line ℓ_3
122 : $P_{103361} = (0, 14, 24, 1)$ lies on line ℓ_1
123 : $P_{103457} = (32, 15, 24, 1)$ lies on line ℓ_2
124 : $P_{103873} = (0, 22, 24, 1)$ lies on line ℓ_3
125 : $P_{103970} = (33, 23, 24, 1)$ lies on line ℓ_4
126 : $P_{104001} = (0, 24, 24, 1)$ lies on line ℓ_0
127 : $P_{108161} = (0, 25, 25, 1)$ lies on line ℓ_0
128 : $P_{109537} = (32, 46, 25, 1)$ lies on line ℓ_4
129 : $P_{109569} = (0, 47, 25, 1)$ lies on line ℓ_3
130 : $P_{110017} = (0, 54, 25, 1)$ lies on line ℓ_1
131 : $P_{110114} = (33, 55, 25, 1)$ lies on line ℓ_2
132 : $P_{110948} = (35, 4, 26, 1)$ lies on line ℓ_4
133 : $P_{110977} = (0, 5, 26, 1)$ lies on line ℓ_3
134 : $P_{112321} = (0, 26, 26, 1)$ lies on line ℓ_0
135 : $P_{112611} = (34, 30, 26, 1)$ lies on line ℓ_2
136 : $P_{112641} = (0, 31, 26, 1)$ lies on line ℓ_1
137 : $P_{116481} = (0, 27, 27, 1)$ lies on line ℓ_0
138 : $P_{117220} = (35, 38, 27, 1)$ lies on line ℓ_2
139 : $P_{117249} = (0, 39, 27, 1)$ lies on line ℓ_1
140 : $P_{118593} = (0, 60, 27, 1)$ lies on line ℓ_3
141 : $P_{118691} = (34, 61, 27, 1)$ lies on line ℓ_4
142 : $P_{120641} = (0, 28, 28, 1)$ lies on line ℓ_0
143 : $P_{121665} = (0, 44, 28, 1)$ lies on line ℓ_1
144 : $P_{121765} = (36, 45, 28, 1)$ lies on line ℓ_2
145 : $P_{121921} = (0, 48, 28, 1)$ lies on line ℓ_3
146 : $P_{122022} = (37, 49, 28, 1)$ lies on line ℓ_4
147 : $P_{123493} = (36, 8, 29, 1)$ lies on line ℓ_4
148 : $P_{123521} = (0, 9, 29, 1)$ lies on line ℓ_3
149 : $P_{124225} = (0, 20, 29, 1)$ lies on line ℓ_1
150 : $P_{124326} = (37, 21, 29, 1)$ lies on line ℓ_2
151 : $P_{124801} = (0, 29, 29, 1)$ lies on line ℓ_0

152 : $P_{128961} = (0, 30, 30, 1)$ lies on line ℓ_0
153 : $P_{129256} = (39, 34, 30, 1)$ lies on line ℓ_4
154 : $P_{129281} = (0, 35, 30, 1)$ lies on line ℓ_3
155 : $P_{130919} = (38, 60, 30, 1)$ lies on line ℓ_2
156 : $P_{130945} = (0, 61, 30, 1)$ lies on line ℓ_1
157 : $P_{131432} = (39, 4, 31, 1)$ lies on line ℓ_2
158 : $P_{131457} = (0, 5, 31, 1)$ lies on line ℓ_1
159 : $P_{132801} = (0, 26, 31, 1)$ lies on line ℓ_3
160 : $P_{132903} = (38, 27, 31, 1)$ lies on line ℓ_4
161 : $P_{133121} = (0, 31, 31, 1)$ lies on line ℓ_0
162 : $P_{136666} = (25, 22, 32, 1)$ lies on line ℓ_4
163 : $P_{136705} = (0, 23, 32, 1)$ lies on line ℓ_3
164 : $P_{137281} = (0, 32, 32, 1)$ lies on line ℓ_0
165 : $P_{138713} = (24, 54, 32, 1)$ lies on line ℓ_2
166 : $P_{138753} = (0, 55, 32, 1)$ lies on line ℓ_1
167 : $P_{140250} = (25, 14, 33, 1)$ lies on line ℓ_2
168 : $P_{140289} = (0, 15, 33, 1)$ lies on line ℓ_1
169 : $P_{141441} = (0, 33, 33, 1)$ lies on line ℓ_0
170 : $P_{142273} = (0, 46, 33, 1)$ lies on line ℓ_3
171 : $P_{142361} = (24, 47, 33, 1)$ lies on line ℓ_4
172 : $P_{143681} = (0, 4, 34, 1)$ lies on line ℓ_3
173 : $P_{143772} = (27, 5, 34, 1)$ lies on line ℓ_4
174 : $P_{145601} = (0, 34, 34, 1)$ lies on line ℓ_0
175 : $P_{145857} = (0, 38, 34, 1)$ lies on line ℓ_1
176 : $P_{145947} = (26, 39, 34, 1)$ lies on line ℓ_2
177 : $P_{149441} = (0, 30, 35, 1)$ lies on line ℓ_1
178 : $P_{149532} = (27, 31, 35, 1)$ lies on line ℓ_2
179 : $P_{149761} = (0, 35, 35, 1)$ lies on line ℓ_0
180 : $P_{151387} = (26, 60, 35, 1)$ lies on line ℓ_4
181 : $P_{151425} = (0, 61, 35, 1)$ lies on line ℓ_3
182 : $P_{152925} = (28, 20, 36, 1)$ lies on line ℓ_2
183 : $P_{152961} = (0, 21, 36, 1)$ lies on line ℓ_1
184 : $P_{153921} = (0, 36, 36, 1)$ lies on line ℓ_0
185 : $P_{154718} = (29, 48, 36, 1)$ lies on line ℓ_4
186 : $P_{154753} = (0, 49, 36, 1)$ lies on line ℓ_3
187 : $P_{156225} = (0, 8, 37, 1)$ lies on line ℓ_3
188 : $P_{156317} = (28, 9, 37, 1)$ lies on line ℓ_4
189 : $P_{158081} = (0, 37, 37, 1)$ lies on line ℓ_0
190 : $P_{158558} = (29, 44, 37, 1)$ lies on line ℓ_2
191 : $P_{158593} = (0, 45, 37, 1)$ lies on line ℓ_1
192 : $P_{160065} = (0, 4, 38, 1)$ lies on line ℓ_1
193 : $P_{160159} = (30, 5, 38, 1)$ lies on line ℓ_2
194 : $P_{161985} = (0, 34, 38, 1)$ lies on line ℓ_3
195 : $P_{162080} = (31, 35, 38, 1)$ lies on line ℓ_4
196 : $P_{162241} = (0, 38, 38, 1)$ lies on line ℓ_0
197 : $P_{165599} = (30, 26, 39, 1)$ lies on line ℓ_4
198 : $P_{165633} = (0, 27, 39, 1)$ lies on line ℓ_3
199 : $P_{166401} = (0, 39, 39, 1)$ lies on line ℓ_0
200 : $P_{167745} = (0, 60, 39, 1)$ lies on line ℓ_1
201 : $P_{167840} = (31, 61, 39, 1)$ lies on line ℓ_2
202 : $P_{169153} = (0, 18, 40, 1)$ lies on line ℓ_1
203 : $P_{169233} = (16, 19, 40, 1)$ lies on line ℓ_2
204 : $P_{170561} = (0, 40, 40, 1)$ lies on line ℓ_0
205 : $P_{171713} = (0, 58, 40, 1)$ lies on line ℓ_3
206 : $P_{171794} = (17, 59, 40, 1)$ lies on line ℓ_4
207 : $P_{172241} = (16, 2, 41, 1)$ lies on line ℓ_4
208 : $P_{172289} = (0, 3, 41, 1)$ lies on line ℓ_3
209 : $P_{174721} = (0, 41, 41, 1)$ lies on line ℓ_0
210 : $P_{174785} = (0, 42, 41, 1)$ lies on line ℓ_1
211 : $P_{174866} = (17, 43, 41, 1)$ lies on line ℓ_2
212 : $P_{176339} = (18, 2, 42, 1)$ lies on line ℓ_2
213 : $P_{176385} = (0, 3, 42, 1)$ lies on line ℓ_1
214 : $P_{178772} = (19, 40, 42, 1)$ lies on line ℓ_4
215 : $P_{178817} = (0, 41, 42, 1)$ lies on line ℓ_3
216 : $P_{178881} = (0, 42, 42, 1)$ lies on line ℓ_0
217 : $P_{181313} = (0, 16, 43, 1)$ lies on line ℓ_3
218 : $P_{181395} = (18, 17, 43, 1)$ lies on line ℓ_4
219 : $P_{183041} = (0, 43, 43, 1)$ lies on line ℓ_0
220 : $P_{184020} = (19, 58, 43, 1)$ lies on line ℓ_2
221 : $P_{184065} = (0, 59, 43, 1)$ lies on line ℓ_1
222 : $P_{186177} = (0, 28, 44, 1)$ lies on line ℓ_3
223 : $P_{186262} = (21, 29, 44, 1)$ lies on line ℓ_4
224 : $P_{187201} = (0, 44, 44, 1)$ lies on line ℓ_0
225 : $P_{187457} = (0, 48, 44, 1)$ lies on line ℓ_1
226 : $P_{187541} = (20, 49, 44, 1)$ lies on line ℓ_2
227 : $P_{188993} = (0, 8, 45, 1)$ lies on line ℓ_1
228 : $P_{189078} = (21, 9, 45, 1)$ lies on line ℓ_2
229 : $P_{190805} = (20, 36, 45, 1)$ lies on line ℓ_4
230 : $P_{190849} = (0, 37, 45, 1)$ lies on line ℓ_3
231 : $P_{191361} = (0, 45, 45, 1)$ lies on line ℓ_0
232 : $P_{193496} = (23, 14, 46, 1)$ lies on line ℓ_4
233 : $P_{193537} = (0, 15, 46, 1)$ lies on line ℓ_3
234 : $P_{194647} = (22, 32, 46, 1)$ lies on line ℓ_2
235 : $P_{194689} = (0, 33, 46, 1)$ lies on line ℓ_1
236 : $P_{195521} = (0, 46, 46, 1)$ lies on line ℓ_0
237 : $P_{198232} = (23, 24, 47, 1)$ lies on line ℓ_2
238 : $P_{198273} = (0, 25, 47, 1)$ lies on line ℓ_1
239 : $P_{199681} = (0, 47, 47, 1)$ lies on line ℓ_0
240 : $P_{200129} = (0, 54, 47, 1)$ lies on line ℓ_3
241 : $P_{200215} = (22, 55, 47, 1)$ lies on line ℓ_4
242 : $P_{202561} = (0, 28, 48, 1)$ lies on line ℓ_1
243 : $P_{202633} = (8, 29, 48, 1)$ lies on line ℓ_2
244 : $P_{203585} = (0, 44, 48, 1)$ lies on line ℓ_3
245 : $P_{203658} = (9, 45, 48, 1)$ lies on line ℓ_4
246 : $P_{203841} = (0, 48, 48, 1)$ lies on line ℓ_0
247 : $P_{206153} = (8, 20, 49, 1)$ lies on line ℓ_4
248 : $P_{206209} = (0, 21, 49, 1)$ lies on line ℓ_3
249 : $P_{207169} = (0, 36, 49, 1)$ lies on line ℓ_1
250 : $P_{207242} = (9, 37, 49, 1)$ lies on line ℓ_2
251 : $P_{208001} = (0, 49, 49, 1)$ lies on line ℓ_0
252 : $P_{209739} = (10, 12, 50, 1)$ lies on line ℓ_2
253 : $P_{209793} = (0, 13, 50, 1)$ lies on line ℓ_1
254 : $P_{212161} = (0, 50, 50, 1)$ lies on line ℓ_0
255 : $P_{212940} = (11, 62, 50, 1)$ lies on line ℓ_4
256 : $P_{212993} = (0, 63, 50, 1)$ lies on line ℓ_3
257 : $P_{213441} = (0, 6, 51, 1)$ lies on line ℓ_3
258 : $P_{213515} = (10, 7, 51, 1)$ lies on line ℓ_4
259 : $P_{216321} = (0, 51, 51, 1)$ lies on line ℓ_0

260 : $P_{216396} = (11, 52, 51, 1)$ lies on line ℓ_2
261 : $P_{216449} = (0, 53, 51, 1)$ lies on line ℓ_1
262 : $P_{217793} = (0, 10, 52, 1)$ lies on line ℓ_3
263 : $P_{217870} = (13, 11, 52, 1)$ lies on line ℓ_4
264 : $P_{220481} = (0, 52, 52, 1)$ lies on line ℓ_0
265 : $P_{221121} = (0, 62, 52, 1)$ lies on line ℓ_1
266 : $P_{221197} = (12, 63, 52, 1)$ lies on line ℓ_2
267 : $P_{221633} = (0, 6, 53, 1)$ lies on line ℓ_1
268 : $P_{221710} = (13, 7, 53, 1)$ lies on line ℓ_2
269 : $P_{224461} = (12, 50, 53, 1)$ lies on line ℓ_4
270 : $P_{224513} = (0, 51, 53, 1)$ lies on line ℓ_3
271 : $P_{224641} = (0, 53, 53, 1)$ lies on line ℓ_0
272 : $P_{226896} = (15, 24, 54, 1)$ lies on line ℓ_4
273 : $P_{226945} = (0, 25, 54, 1)$ lies on line ℓ_3
274 : $P_{228303} = (14, 46, 54, 1)$ lies on line ℓ_2
275 : $P_{228353} = (0, 47, 54, 1)$ lies on line ℓ_1
276 : $P_{228801} = (0, 54, 54, 1)$ lies on line ℓ_0
277 : $P_{230864} = (15, 22, 55, 1)$ lies on line ℓ_2
278 : $P_{230913} = (0, 23, 55, 1)$ lies on line ℓ_1
279 : $P_{231489} = (0, 32, 55, 1)$ lies on line ℓ_3
280 : $P_{231567} = (14, 33, 55, 1)$ lies on line ℓ_4
281 : $P_{232961} = (0, 55, 55, 1)$ lies on line ℓ_0
282 : $P_{233538} = (1, 0, 56, 1)$ lies on line ℓ_4
283 : $P_{233601} = (0, 1, 56, 1)$ lies on line ℓ_3
284 : $P_{237185} = (0, 57, 56, 1)$ lies on line ℓ_1
285 : $P_{237634} = (1, 0, 57, 1)$ lies on line ℓ_2
286 : $P_{237697} = (0, 1, 57, 1)$ lies on line ℓ_1
287 : $P_{241217} = (0, 56, 57, 1)$ lies on line ℓ_3
288 : $P_{242881} = (0, 18, 58, 1)$ lies on line ℓ_3
289 : $P_{242948} = (3, 19, 58, 1)$ lies on line ℓ_4
290 : $P_{244289} = (0, 40, 58, 1)$ lies on line ℓ_1
291 : $P_{244355} = (2, 41, 58, 1)$ lies on line ℓ_2
292 : $P_{245441} = (0, 58, 58, 1)$ lies on line ℓ_0
293 : $P_{246849} = (0, 16, 59, 1)$ lies on line ℓ_1
294 : $P_{246916} = (3, 17, 59, 1)$ lies on line ℓ_2
295 : $P_{248515} = (2, 42, 59, 1)$ lies on line ℓ_4
296 : $P_{248577} = (0, 43, 59, 1)$ lies on line ℓ_3
297 : $P_{249601} = (0, 59, 59, 1)$ lies on line ℓ_0
298 : $P_{251589} = (4, 26, 60, 1)$ lies on line ℓ_2
299 : $P_{251649} = (0, 27, 60, 1)$ lies on line ℓ_1
300 : $P_{252358} = (5, 38, 60, 1)$ lies on line ℓ_4
301 : $P_{252417} = (0, 39, 60, 1)$ lies on line ℓ_3
302 : $P_{253761} = (0, 60, 60, 1)$ lies on line ℓ_0
303 : $P_{255937} = (0, 30, 61, 1)$ lies on line ℓ_3
304 : $P_{256005} = (4, 31, 61, 1)$ lies on line ℓ_4
305 : $P_{256198} = (5, 34, 61, 1)$ lies on line ℓ_2
306 : $P_{256257} = (0, 35, 61, 1)$ lies on line ℓ_1
307 : $P_{257921} = (0, 61, 61, 1)$ lies on line ℓ_0
308 : $P_{258753} = (0, 10, 62, 1)$ lies on line ℓ_1
309 : $P_{258823} = (6, 11, 62, 1)$ lies on line ℓ_2
310 : $P_{261441} = (0, 52, 62, 1)$ lies on line ℓ_3
311 : $P_{261512} = (7, 53, 62, 1)$ lies on line ℓ_4
312 : $P_{262081} = (0, 62, 62, 1)$ lies on line ℓ_0
313 : $P_{262983} = (6, 12, 63, 1)$ lies on line ℓ_4
314 : $P_{263041} = (0, 13, 63, 1)$ lies on line ℓ_3
315 : $P_{265409} = (0, 50, 63, 1)$ lies on line ℓ_1
316 : $P_{265480} = (7, 51, 63, 1)$ lies on line ℓ_2
317 : $P_{266241} = (0, 63, 63, 1)$ lies on line ℓ_0

The single points on the surface are:

Points on surface but on no line

The surface has 3968 points not on any line:
Too many to print.

Line Intersection Graph

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

Neighbor sets in the line intersection graph:
Line 0 intersects

Line	ℓ_1	ℓ_2	ℓ_3	ℓ_4
in point	P_3	P_{237121}	P_3	P_{241281}

Line 1 intersects

Line	ℓ_0	ℓ_3
in point	P_3	P_3

Line 2 intersects

Line	ℓ_0
in point	P_{237121}

Line 3 intersects

Line	ℓ_0	ℓ_1
in point	P_3	P_3

Line 4 intersects

Line	ℓ_0
in point	P_{241281}

The surface has 4289 points:
Too many to print.