Rank-65865 over GF(64)

January 15, 2021

The equation

The equation of the surface is :

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

(0, 1, 1, 0, 0, 0, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 0, 0)
The point rank of the equation over GF(64) is 1090789509

General information

Number of lines	6
Number of points	4289
Number of singular points	1
Number of Eckardt points	1
Number of double points	6
Number of single points	375
Number of points off lines	3907
Number of Hesse planes	0
Number of axes	0
Type of points on lines	65^6
Type of lines on points	$3, 2^6, 1^{375}, 0^{3907}$

Singular Points

The surface has 1 singular points:

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

The 6 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \begin{bmatrix} 0 & 1 & \epsilon^9 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17046575} = \begin{bmatrix} 0 & 1 & 47 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17046575} = \mathbf{Pl}(0,47,0,1,0,0)_{239}$$

$$\ell_1 = \begin{bmatrix} 1 & 0 & \epsilon^{18} & \epsilon^{54} \\ 0 & 1 & \epsilon^9 & \epsilon^{27} \end{bmatrix}_{2711802} = \begin{bmatrix} 1 & 0 & 11 & 10 \\ 0 & 1 & 47 & 46 \end{bmatrix}_{2711802} = \mathbf{Pl}(37, 11, 46, 36, 47, 1)_{12784632}$$

$$\ell_2 = \begin{bmatrix} 1 & 0 & \epsilon^{36} & \epsilon^{45} \\ 0 & 1 & \epsilon^{18} & \epsilon^{54} \end{bmatrix}_{10003695} = \begin{bmatrix} 1 & 0 & 36 & 37 \\ 0 & 1 & 11 & 10 \end{bmatrix}_{10003695} = \mathbf{Pl}(46, 36, 10, 47, 11, 1)_{3210720}$$

$$\ell_3 = \begin{bmatrix} 0 & 1 & \epsilon^{18} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17044235} = \begin{bmatrix} 0 & 1 & 11 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17044235} = \mathbf{Pl}(0, 11, 0, 1, 0, 0)_{203}$$

$$\ell_4 = \begin{bmatrix} 0 & 1 & \epsilon^{36} & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17045860} = \begin{bmatrix} 0 & 1 & 36 & 0 \\ 0 & 0 & 0 & 1 \end{bmatrix}_{17045860} = \mathbf{Pl}(0, 36, 0, 1, 0, 0)_{228}$$

$$\ell_5 = \begin{bmatrix} 1 & 0 & \epsilon^9 & \epsilon^{27} \\ 0 & 1 & \epsilon^{36} & \epsilon^{45} \end{bmatrix}_{12447955} = \begin{bmatrix} 1 & 0 & 47 & 46 \\ 0 & 1 & 36 & 37 \end{bmatrix}_{12447955} = \mathbf{Pl}(10, 47, 37, 11, 36, 1)_{9868839}$$

Rank of lines: (17046575, 2711802, 10003695, 17044235, 17045860, 12447955)
Rank of points on Klein quadric: (239, 12784632, 3210720, 203, 228, 9868839)

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 6 Double points:
The double points on the surface are:

$P_{158017} = (0, 36, 37, 1) = \ell_0 \cap \ell_1$ $P_{51567} = (46, 36, 11, 1) = \ell_2 \cap \ell_5$
$P_{197414} = (37, 11, 47, 1) = \ell_1 \cap \ell_2$ $P_{45825} = (0, 11, 10, 1) = \ell_4 \cap \ell_5$
$P_{154635} = (10, 47, 36, 1) = \ell_1 \cap \ell_5$
$P_{195585} = (0, 47, 46, 1) = \ell_2 \cap \ell_3$

Single Points

The surface has 375 single points:
The single points on the surface are:

$0 : P_{707} = (0, 10, 1, 0)$ lies on line ℓ_0
$1 : P_{781} = (10, 11, 1, 0)$ lies on line ℓ_1
$2 : P_{2408} = (37, 36, 1, 0)$ lies on line ℓ_2
$3 : P_{2435} = (0, 37, 1, 0)$ lies on line ℓ_3
$4 : P_{3011} = (0, 46, 1, 0)$ lies on line ℓ_4
$5 : P_{3121} = (46, 47, 1, 0)$ lies on line ℓ_5
$6 : P_{4813} = (11, 10, 0, 1)$ lies on line ℓ_5
$7 : P_{6566} = (36, 37, 0, 1)$ lies on line ℓ_1
$8 : P_{7153} = (47, 46, 0, 1)$ lies on line ℓ_2
$9 : P_{8897} = (0, 10, 1, 1)$ lies on line ℓ_0
$10 : P_{8907} = (10, 10, 1, 1)$ lies on line ℓ_2
$11 : P_{10625} = (0, 37, 1, 1)$ lies on line ℓ_3
$12 : P_{10662} = (37, 37, 1, 1)$ lies on line ℓ_5
$13 : P_{11201} = (0, 46, 1, 1)$ lies on line ℓ_4
$14 : P_{11247} = (46, 46, 1, 1)$ lies on line ℓ_1
$15 : P_{12805} = (4, 7, 2, 1)$ lies on line ℓ_2
$16 : P_{13633} = (0, 20, 2, 1)$ lies on line ℓ_0
$17 : P_{15105} = (0, 43, 2, 1)$ lies on line ℓ_3
$18 : P_{15665} = (48, 51, 2, 1)$ lies on line ℓ_1
$19 : P_{15799} = (54, 53, 2, 1)$ lies on line ℓ_5
$20 : P_{16257} = (0, 61, 2, 1)$ lies on line ℓ_4
$21 : P_{17345} = (0, 14, 3, 1)$ lies on line ℓ_3
$22 : P_{17665} = (0, 19, 3, 1)$ lies on line ℓ_4
$23 : P_{18137} = (24, 26, 3, 1)$ lies on line ℓ_5
$24 : P_{18369} = (0, 30, 3, 1)$ lies on line ℓ_0
$25 : P_{18722} = (33, 35, 3, 1)$ lies on line ℓ_2
$26 : P_{20091} = (58, 56, 3, 1)$ lies on line ℓ_1
$27 : P_{21133} = (12, 9, 4, 1)$ lies on line ℓ_1
$28 : P_{21905} = (16, 21, 4, 1)$ lies on line ℓ_5
$29 : P_{22273} = (0, 27, 4, 1)$ lies on line ℓ_4

$30 : P_{22425} = (24, 29, 4, 1)$ lies on line ℓ_2
$31 : P_{23105} = (0, 40, 4, 1)$ lies on line ℓ_0
$32 : P_{24065} = (0, 55, 4, 1)$ lies on line ℓ_3
$33 : P_{24775} = (6, 2, 5, 1)$ lies on line ℓ_1
$34 : P_{25793} = (0, 18, 5, 1)$ lies on line ℓ_3
$35 : P_{26817} = (0, 34, 5, 1)$ lies on line ℓ_0
$36 : P_{28033} = (0, 53, 5, 1)$ lies on line ℓ_4
$37 : P_{28350} = (61, 57, 5, 1)$ lies on line ℓ_2
$38 : P_{28415} = (62, 58, 5, 1)$ lies on line ℓ_5
$39 : P_{30529} = (0, 28, 6, 1)$ lies on line ℓ_3
$40 : P_{30745} = (24, 31, 6, 1)$ lies on line ℓ_1
$41 : P_{31169} = (0, 38, 6, 1)$ lies on line ℓ_4
$42 : P_{31470} = (45, 42, 6, 1)$ lies on line ℓ_5
$43 : P_{32116} = (51, 52, 6, 1)$ lies on line ℓ_2
$44 : P_{32577} = (0, 60, 6, 1)$ lies on line ℓ_0
$45 : P_{33156} = (3, 5, 7, 1)$ lies on line ℓ_5
$46 : P_{33345} = (0, 8, 7, 1)$ lies on line ℓ_4
$47 : P_{33879} = (22, 16, 7, 1)$ lies on line ℓ_2
$48 : P_{34131} = (18, 20, 7, 1)$ lies on line ℓ_1
$49 : P_{36289} = (0, 54, 7, 1)$ lies on line ℓ_0
$50 : P_{36481} = (0, 57, 7, 1)$ lies on line ℓ_3
$51 : P_{37889} = (0, 15, 8, 1)$ lies on line ℓ_3
$52 : P_{38742} = (21, 28, 8, 1)$ lies on line ℓ_1
$53 : P_{39585} = (32, 41, 8, 1)$ lies on line ℓ_2
$54 : P_{40065} = (0, 49, 8, 1)$ lies on line ℓ_0
$55 : P_{40318} = (61, 52, 8, 1)$ lies on line ℓ_5
$56 : P_{40385} = (0, 54, 8, 1)$ lies on line ℓ_4
$57 : P_{41862} = (5, 13, 9, 1)$ lies on line ℓ_2
$58 : P_{42528} = (31, 23, 9, 1)$ lies on line ℓ_1
$59 : P_{42561} = (0, 24, 9, 1)$ lies on line ℓ_4
$60 : P_{42772} = (19, 27, 9, 1)$ lies on line ℓ_5
$61 : P_{43713} = (0, 42, 9, 1)$ lies on line ℓ_3
$62 : P_{44801} = (0, 59, 9, 1)$ lies on line ℓ_0
$63 : P_{45132} = (11, 0, 10, 1)$ lies on line ℓ_2
$64 : P_{45762} = (1, 10, 10, 1)$ lies on line ℓ_1
$65 : P_{47425} = (0, 36, 10, 1)$ lies on line ℓ_3
$66 : P_{47489} = (0, 37, 10, 1)$ lies on line ℓ_0
$67 : P_{49281} = (0, 1, 11, 1)$ lies on line ℓ_3
$68 : P_{49292} = (11, 1, 11, 1)$ lies on line ℓ_1
$69 : P_{51585} = (0, 37, 11, 1)$ lies on line ℓ_4
$70 : P_{52225} = (0, 47, 11, 1)$ lies on line ℓ_0
$71 : P_{54913} = (0, 25, 12, 1)$ lies on line ℓ_0
$72 : P_{55000} = (23, 26, 12, 1)$ lies on line ℓ_2
$73 : P_{56103} = (38, 43, 12, 1)$ lies on line ℓ_5
$74 : P_{56193} = (0, 45, 12, 1)$ lies on line ℓ_4
$75 : P_{56446} = (61, 48, 12, 1)$ lies on line ℓ_1
$76 : P_{56897} = (0, 56, 12, 1)$ lies on line ℓ_3
$77 : P_{57601} = (0, 3, 13, 1)$ lies on line ℓ_4
$78 : P_{57673} = (8, 4, 13, 1)$ lies on line ℓ_5
$79 : P_{58625} = (0, 19, 13, 1)$ lies on line ℓ_0
$80 : P_{59265} = (0, 29, 13, 1)$ lies on line ℓ_3
$81 : P_{61240} = (55, 59, 13, 1)$ lies on line ℓ_1
$82 : P_{61427} = (50, 62, 13, 1)$ lies on line ℓ_2
$83 : P_{62337} = (0, 13, 14, 1)$ lies on line ℓ_0

$84 : P_{62529} = (0, 16, 14, 1)$ lies on line ℓ_4
$85 : P_{62721} = (0, 19, 14, 1)$ lies on line ℓ_3
$86 : P_{62812} = (27, 20, 14, 1)$ lies on line ℓ_5
$87 : P_{63978} = (41, 38, 14, 1)$ lies on line ℓ_1
$88 : P_{64829} = (60, 51, 14, 1)$ lies on line ℓ_2
$89 : P_{66049} = (0, 7, 15, 1)$ lies on line ℓ_0
$90 : P_{67098} = (25, 23, 15, 1)$ lies on line ℓ_2
$91 : P_{68516} = (35, 45, 15, 1)$ lies on line ℓ_1
$92 : P_{69057} = (0, 54, 15, 1)$ lies on line ℓ_3
$93 : P_{69430} = (53, 59, 15, 1)$ lies on line ℓ_5
$94 : P_{69569} = (0, 62, 15, 1)$ lies on line ℓ_4
$95 : P_{69889} = (0, 3, 16, 1)$ lies on line ℓ_0
$96 : P_{70529} = (0, 13, 16, 1)$ lies on line ℓ_4
$97 : P_{71175} = (6, 23, 16, 1)$ lies on line ℓ_5
$98 : P_{71617} = (0, 30, 16, 1)$ lies on line ℓ_3
$99 : P_{71794} = (49, 32, 16, 1)$ lies on line ℓ_2
$100 : P_{73192} = (39, 54, 16, 1)$ lies on line ℓ_1
$101 : P_{74069} = (20, 4, 17, 1)$ lies on line ℓ_2
$102 : P_{74369} = (0, 9, 17, 1)$ lies on line ℓ_0
$103 : P_{76033} = (0, 35, 17, 1)$ lies on line ℓ_4
$104 : P_{77417} = (40, 56, 17, 1)$ lies on line ℓ_5
$105 : P_{77569} = (0, 59, 17, 1)$ lies on line ℓ_3
$106 : P_{77742} = (45, 61, 17, 1)$ lies on line ℓ_1
$107 : P_{78491} = (26, 9, 18, 1)$ lies on line ℓ_2
$108 : P_{79361} = (0, 23, 18, 1)$ lies on line ℓ_0
$109 : P_{79988} = (51, 32, 18, 1)$ lies on line ℓ_1
$110 : P_{80508} = (59, 40, 18, 1)$ lies on line ℓ_5
$111 : P_{80961} = (0, 48, 18, 1)$ lies on line ℓ_4
$112 : P_{81281} = (0, 53, 18, 1)$ lies on line ℓ_3
$113 : P_{82454} = (21, 7, 19, 1)$ lies on line ℓ_5
$114 : P_{83009} = (0, 16, 19, 1)$ lies on line ℓ_3
$115 : P_{83841} = (0, 29, 19, 1)$ lies on line ℓ_0
$116 : P_{83905} = (0, 30, 19, 1)$ lies on line ℓ_4
$117 : P_{84794} = (57, 43, 19, 1)$ lies on line ℓ_1
$118 : P_{84928} = (63, 45, 19, 1)$ lies on line ℓ_2
$119 : P_{86622} = (29, 8, 20, 1)$ lies on line ℓ_5
$120 : P_{87303} = (6, 19, 20, 1)$ lies on line ℓ_2
$121 : P_{87489} = (0, 22, 20, 1)$ lies on line ℓ_4
$122 : P_{87760} = (15, 26, 20, 1)$ lies on line ℓ_1
$123 : P_{88705} = (0, 41, 20, 1)$ lies on line ℓ_3
$124 : P_{88833} = (0, 43, 20, 1)$ lies on line ℓ_0
$125 : P_{90945} = (0, 12, 21, 1)$ lies on line ℓ_3
$126 : P_{91270} = (5, 17, 21, 1)$ lies on line ℓ_1
$127 : P_{92289} = (0, 33, 21, 1)$ lies on line ℓ_0
$128 : P_{92724} = (51, 39, 21, 1)$ lies on line ℓ_5
$129 : P_{93732} = (35, 55, 21, 1)$ lies on line ℓ_2
$130 : P_{93761} = (0, 56, 21, 1)$ lies on line ℓ_4
$131 : P_{94401} = (0, 2, 22, 1)$ lies on line ℓ_3
$132 : P_{95068} = (27, 12, 22, 1)$ lies on line ℓ_1
$133 : P_{97025} = (0, 43, 22, 1)$ lies on line ℓ_4
$134 : P_{97825} = (32, 55, 22, 1)$ lies on line ℓ_5
$135 : P_{98030} = (45, 58, 22, 1)$ lies on line ℓ_2
$136 : P_{98305} = (0, 63, 22, 1)$ lies on line ℓ_0
$137 : P_{98689} = (0, 5, 23, 1)$ lies on line ℓ_4

138 : $P_{98834} = (17, 7, 23, 1)$ lies on line ℓ_1
139 : $P_{99919} = (14, 24, 23, 1)$ lies on line ℓ_5
140 : $P_{100297} = (8, 30, 23, 1)$ lies on line ℓ_2
141 : $P_{100865} = (0, 39, 23, 1)$ lies on line ℓ_3
142 : $P_{101761} = (0, 53, 23, 1)$ lies on line ℓ_0
143 : $P_{103447} = (22, 15, 24, 1)$ lies on line ℓ_1
144 : $P_{103553} = (0, 17, 24, 1)$ lies on line ℓ_3
145 : $P_{105023} = (62, 39, 24, 1)$ lies on line ℓ_2
146 : $P_{105137} = (48, 41, 24, 1)$ lies on line ℓ_5
147 : $P_{105665} = (0, 50, 24, 1)$ lies on line ℓ_0
148 : $P_{106241} = (0, 59, 24, 1)$ lies on line ℓ_4
149 : $P_{106780} = (27, 3, 25, 1)$ lies on line ℓ_2
150 : $P_{106845} = (28, 4, 25, 1)$ lies on line ℓ_1
151 : $P_{106975} = (30, 6, 25, 1)$ lies on line ℓ_5
152 : $P_{107905} = (0, 21, 25, 1)$ lies on line ℓ_4
153 : $P_{109889} = (0, 52, 25, 1)$ lies on line ℓ_3
154 : $P_{110145} = (0, 56, 25, 1)$ lies on line ℓ_0
155 : $P_{111041} = (0, 6, 26, 1)$ lies on line ℓ_4
156 : $P_{111574} = (21, 14, 26, 1)$ lies on line ℓ_2
157 : $P_{112078} = (13, 22, 26, 1)$ lies on line ℓ_5
158 : $P_{112259} = (2, 25, 26, 1)$ lies on line ℓ_1
159 : $P_{113089} = (0, 38, 26, 1)$ lies on line ℓ_0
160 : $P_{114369} = (0, 58, 26, 1)$ lies on line ℓ_3
161 : $P_{115913} = (8, 18, 27, 1)$ lies on line ℓ_1
162 : $P_{116737} = (0, 31, 27, 1)$ lies on line ℓ_3
163 : $P_{117313} = (0, 40, 27, 1)$ lies on line ℓ_4
164 : $P_{117489} = (48, 42, 27, 1)$ lies on line ℓ_2
165 : $P_{117569} = (0, 44, 27, 1)$ lies on line ℓ_0
166 : $P_{118436} = (35, 57, 27, 1)$ lies on line ℓ_5
167 : $P_{120138} = (9, 20, 28, 1)$ lies on line ℓ_2
168 : $P_{120513} = (0, 26, 28, 1)$ lies on line ℓ_0
169 : $P_{120897} = (0, 32, 28, 1)$ lies on line ℓ_4
170 : $P_{121151} = (62, 35, 28, 1)$ lies on line ℓ_1
171 : $P_{121281} = (0, 38, 28, 1)$ lies on line ℓ_3
172 : $P_{122348} = (43, 54, 28, 1)$ lies on line ℓ_5
173 : $P_{123137} = (0, 3, 29, 1)$ lies on line ℓ_3
174 : $P_{123841} = (0, 14, 29, 1)$ lies on line ℓ_4
175 : $P_{123969} = (0, 16, 29, 1)$ lies on line ℓ_0
176 : $P_{124550} = (5, 25, 29, 1)$ lies on line ℓ_5
177 : $P_{125557} = (52, 40, 29, 1)$ lies on line ℓ_1
178 : $P_{126061} = (44, 48, 29, 1)$ lies on line ℓ_2
179 : $P_{127639} = (22, 9, 30, 1)$ lies on line ℓ_5
180 : $P_{127873} = (0, 13, 30, 1)$ lies on line ℓ_3
181 : $P_{127937} = (0, 14, 30, 1)$ lies on line ℓ_0
182 : $P_{128897} = (0, 29, 30, 1)$ lies on line ℓ_4
183 : $P_{130475} = (42, 53, 30, 1)$ lies on line ℓ_1
184 : $P_{130979} = (34, 61, 30, 1)$ lies on line ℓ_2
185 : $P_{131393} = (0, 4, 31, 1)$ lies on line ℓ_0
186 : $P_{132744} = (7, 25, 31, 1)$ lies on line ℓ_2
187 : $P_{133625} = (56, 38, 31, 1)$ lies on line ℓ_5
188 : $P_{133697} = (0, 40, 31, 1)$ lies on line ℓ_3
189 : $P_{134401} = (0, 51, 31, 1)$ lies on line ℓ_4
190 : $P_{135137} = (32, 62, 31, 1)$ lies on line ℓ_1
191 : $P_{135459} = (34, 3, 32, 1)$ lies on line ℓ_1

192 : $P_{135617} = (0, 6, 32, 1)$ lies on line ℓ_0
193 : $P_{136897} = (0, 26, 32, 1)$ lies on line ℓ_4
194 : $P_{138322} = (17, 48, 32, 1)$ lies on line ℓ_5
195 : $P_{138452} = (19, 50, 32, 1)$ lies on line ℓ_2
196 : $P_{139073} = (0, 60, 32, 1)$ lies on line ℓ_3
197 : $P_{139881} = (40, 8, 33, 1)$ lies on line ℓ_1
198 : $P_{140097} = (0, 12, 33, 1)$ lies on line ℓ_0
199 : $P_{140791} = (54, 22, 33, 1)$ lies on line ℓ_2
200 : $P_{140929} = (0, 25, 33, 1)$ lies on line ℓ_3
201 : $P_{141376} = (63, 31, 33, 1)$ lies on line ℓ_5
202 : $P_{142657} = (0, 52, 33, 1)$ lies on line ℓ_4
203 : $P_{144429} = (44, 15, 34, 1)$ lies on line ℓ_5
204 : $P_{144577} = (0, 18, 34, 1)$ lies on line ℓ_0
205 : $P_{144823} = (54, 21, 34, 1)$ lies on line ℓ_1
206 : $P_{144897} = (0, 23, 34, 1)$ lies on line ℓ_3
207 : $P_{145209} = (56, 27, 34, 1)$ lies on line ℓ_2
208 : $P_{145921} = (0, 39, 34, 1)$ lies on line ℓ_4
209 : $P_{148097} = (0, 9, 35, 1)$ lies on line ℓ_4
210 : $P_{149057} = (0, 24, 35, 1)$ lies on line ℓ_0
211 : $P_{149501} = (60, 30, 35, 1)$ lies on line ℓ_1
212 : $P_{149571} = (2, 32, 35, 1)$ lies on line ℓ_5
213 : $P_{150721} = (0, 50, 35, 1)$ lies on line ℓ_3
214 : $P_{151582} = (29, 63, 35, 1)$ lies on line ℓ_2
215 : $P_{151681} = (0, 1, 36, 1)$ lies on line ℓ_4
216 : $P_{151717} = (36, 1, 36, 1)$ lies on line ℓ_2
217 : $P_{152321} = (0, 11, 36, 1)$ lies on line ℓ_3
218 : $P_{154561} = (0, 46, 36, 1)$ lies on line ℓ_0
219 : $P_{155749} = (36, 0, 37, 1)$ lies on line ℓ_5
220 : $P_{158082} = (1, 37, 37, 1)$ lies on line ℓ_2
221 : $P_{158657} = (0, 46, 37, 1)$ lies on line ℓ_3
222 : $P_{158721} = (0, 47, 37, 1)$ lies on line ℓ_4
223 : $P_{160888} = (55, 16, 38, 1)$ lies on line ℓ_5
224 : $P_{161857} = (0, 32, 38, 1)$ lies on line ℓ_3
225 : $P_{162384} = (15, 40, 38, 1)$ lies on line ℓ_2
226 : $P_{163487} = (30, 57, 38, 1)$ lies on line ℓ_1
227 : $P_{163521} = (0, 58, 38, 1)$ lies on line ℓ_0
228 : $P_{163649} = (0, 60, 38, 1)$ lies on line ℓ_4
229 : $P_{164225} = (0, 5, 39, 1)$ lies on line ℓ_3
230 : $P_{164715} = (42, 12, 39, 1)$ lies on line ℓ_2
231 : $P_{165057} = (0, 18, 39, 1)$ lies on line ℓ_4
232 : $P_{166977} = (0, 48, 39, 1)$ lies on line ℓ_0
233 : $P_{167125} = (20, 50, 39, 1)$ lies on line ℓ_1
234 : $P_{167962} = (25, 63, 39, 1)$ lies on line ℓ_5
235 : $P_{168936} = (39, 14, 40, 1)$ lies on line ℓ_5
236 : $P_{170817} = (0, 44, 40, 1)$ lies on line ℓ_4
237 : $P_{171265} = (0, 51, 40, 1)$ lies on line ℓ_3
238 : $P_{171421} = (28, 53, 40, 1)$ lies on line ℓ_2
239 : $P_{171521} = (0, 55, 40, 1)$ lies on line ℓ_0
240 : $P_{171732} = (19, 58, 40, 1)$ lies on line ℓ_1
241 : $P_{172225} = (0, 2, 41, 1)$ lies on line ℓ_4
242 : $P_{173242} = (57, 17, 41, 1)$ lies on line ℓ_2
243 : $P_{173505} = (0, 22, 41, 1)$ lies on line ℓ_3
244 : $P_{174218} = (9, 33, 41, 1)$ lies on line ℓ_5
245 : $P_{175258} = (25, 49, 41, 1)$ lies on line ℓ_1

$246 : P_{176001} = (0, 61, 41, 1)$ lies on line ℓ_0
$247 : P_{177281} = (0, 17, 42, 1)$ lies on line ℓ_4
$248 : P_{177729} = (0, 24, 42, 1)$ lies on line ℓ_3
$249 : P_{178040} = (55, 28, 42, 1)$ lies on line ℓ_2
$250 : P_{178433} = (0, 35, 42, 1)$ lies on line ℓ_0
$251 : P_{179016} = (7, 44, 42, 1)$ lies on line ℓ_1
$252 : P_{179355} = (26, 49, 42, 1)$ lies on line ℓ_5
$253 : P_{182261} = (52, 30, 43, 1)$ lies on line ℓ_5
$254 : P_{182798} = (13, 39, 43, 1)$ lies on line ℓ_1
$255 : P_{182913} = (0, 41, 43, 1)$ lies on line ℓ_0
$256 : P_{183891} = (18, 56, 43, 1)$ lies on line ℓ_2
$257 : P_{184193} = (0, 61, 43, 1)$ lies on line ℓ_3
$258 : P_{184321} = (0, 63, 43, 1)$ lies on line ℓ_4
$259 : P_{184641} = (0, 4, 44, 1)$ lies on line ℓ_3
$260 : P_{184812} = (43, 6, 44, 1)$ lies on line ℓ_2
$261 : P_{185533} = (60, 17, 44, 1)$ lies on line ℓ_5
$262 : P_{185852} = (59, 22, 44, 1)$ lies on line ℓ_1
$263 : P_{186369} = (0, 31, 44, 1)$ lies on line ℓ_0
$264 : P_{187905} = (0, 55, 44, 1)$ lies on line ℓ_4
$265 : P_{189825} = (0, 21, 45, 1)$ lies on line ℓ_0
$266 : P_{190081} = (0, 25, 45, 1)$ lies on line ℓ_4
$267 : P_{190386} = (49, 29, 45, 1)$ lies on line ℓ_1
$268 : P_{190593} = (0, 33, 45, 1)$ lies on line ℓ_3
$269 : P_{190671} = (14, 34, 45, 1)$ lies on line ℓ_2
$270 : P_{192467} = (18, 62, 45, 1)$ lies on line ℓ_5
$271 : P_{192624} = (47, 0, 46, 1)$ lies on line ℓ_1
$272 : P_{193217} = (0, 10, 46, 1)$ lies on line ℓ_4
$273 : P_{193281} = (0, 11, 46, 1)$ lies on line ℓ_0
$274 : P_{195522} = (1, 46, 46, 1)$ lies on line ℓ_5
$275 : P_{196737} = (0, 1, 47, 1)$ lies on line ℓ_0
$276 : P_{196784} = (47, 1, 47, 1)$ lies on line ℓ_5
$277 : P_{197313} = (0, 10, 47, 1)$ lies on line ℓ_3
$278 : P_{198977} = (0, 36, 47, 1)$ lies on line ℓ_4
$279 : P_{201089} = (0, 5, 48, 1)$ lies on line ℓ_0
$280 : P_{201826} = (33, 16, 48, 1)$ lies on line ℓ_1
$281 : P_{202241} = (0, 23, 48, 1)$ lies on line ℓ_4
$282 : P_{202945} = (0, 34, 48, 1)$ lies on line ℓ_3
$283 : P_{203677} = (28, 45, 48, 1)$ lies on line ℓ_5
$284 : P_{204622} = (13, 60, 48, 1)$ lies on line ℓ_2
$285 : P_{205043} = (50, 2, 49, 1)$ lies on line ℓ_5
$286 : P_{205313} = (0, 7, 49, 1)$ lies on line ℓ_3
$287 : P_{205825} = (0, 15, 49, 1)$ lies on line ℓ_0
$288 : P_{206441} = (40, 24, 49, 1)$ lies on line ℓ_2
$289 : P_{206636} = (43, 27, 49, 1)$ lies on line ℓ_1
$290 : P_{208513} = (0, 57, 49, 1)$ lies on line ℓ_4
$291 : P_{209398} = (53, 6, 50, 1)$ lies on line ℓ_1
$292 : P_{209537} = (0, 9, 50, 1)$ lies on line ℓ_3
$293 : P_{210049} = (0, 17, 50, 1)$ lies on line ℓ_0
$294 : P_{210146} = (33, 18, 50, 1)$ lies on line ℓ_5
$295 : P_{210343} = (38, 21, 50, 1)$ lies on line ℓ_2
$296 : P_{211649} = (0, 42, 50, 1)$ lies on line ℓ_4
$297 : P_{213313} = (0, 4, 51, 1)$ lies on line ℓ_4
$298 : P_{213952} = (63, 13, 51, 1)$ lies on line ℓ_1
$299 : P_{214785} = (0, 27, 51, 1)$ lies on line ℓ_0

$300 : P_{215873} = (0, 44, 51, 1)$ lies on line ℓ_3
$301 : P_{216196} = (3, 49, 51, 1)$ lies on line ℓ_2
$302 : P_{216976} = (15, 61, 51, 1)$ lies on line ℓ_5
$303 : P_{217921} = (0, 12, 52, 1)$ lies on line ℓ_4
$304 : P_{218171} = (58, 15, 52, 1)$ lies on line ℓ_2
$305 : P_{218497} = (0, 21, 52, 1)$ lies on line ℓ_3
$306 : P_{220033} = (0, 45, 52, 1)$ lies on line ℓ_0
$307 : P_{220360} = (7, 50, 52, 1)$ lies on line ℓ_5
$308 : P_{221002} = (9, 60, 52, 1)$ lies on line ℓ_1
$309 : P_{223146} = (41, 29, 53, 1)$ lies on line ℓ_5
$310 : P_{223425} = (0, 34, 53, 1)$ lies on line ℓ_4
$311 : P_{223745} = (0, 39, 53, 1)$ lies on line ℓ_0
$312 : P_{224032} = (31, 43, 53, 1)$ lies on line ℓ_2
$313 : P_{224321} = (0, 48, 53, 1)$ lies on line ℓ_3
$314 : P_{224772} = (3, 55, 53, 1)$ lies on line ℓ_1
$315 : P_{226235} = (58, 13, 54, 1)$ lies on line ℓ_5
$316 : P_{227794} = (17, 38, 54, 1)$ lies on line ℓ_2
$317 : P_{228062} = (29, 42, 54, 1)$ lies on line ℓ_1
$318 : P_{228481} = (0, 49, 54, 1)$ lies on line ℓ_4
$319 : P_{228993} = (0, 57, 54, 1)$ lies on line ℓ_0
$320 : P_{229313} = (0, 62, 54, 1)$ lies on line ℓ_3
$321 : P_{229621} = (52, 2, 55, 1)$ lies on line ℓ_2
$322 : P_{231169} = (0, 27, 55, 1)$ lies on line ℓ_3
$323 : P_{231425} = (0, 31, 55, 1)$ lies on line ℓ_4
$324 : P_{231576} = (23, 33, 55, 1)$ lies on line ℓ_1
$325 : P_{231637} = (20, 34, 55, 1)$ lies on line ℓ_5
$326 : P_{232705} = (0, 51, 55, 1)$ lies on line ℓ_0
$327 : P_{234795} = (42, 19, 56, 1)$ lies on line ℓ_5
$328 : P_{235649} = (0, 33, 56, 1)$ lies on line ℓ_4
$329 : P_{236177} = (16, 41, 56, 1)$ lies on line ℓ_1
$330 : P_{236417} = (0, 45, 56, 1)$ lies on line ℓ_3
$331 : P_{236865} = (0, 52, 56, 1)$ lies on line ℓ_0
$332 : P_{237315} = (2, 59, 56, 1)$ lies on line ℓ_2
$333 : P_{238145} = (0, 8, 57, 1)$ lies on line ℓ_3
$334 : P_{238593} = (0, 15, 57, 1)$ lies on line ℓ_4
$335 : P_{239656} = (39, 31, 57, 1)$ lies on line ℓ_2
$336 : P_{239835} = (26, 34, 57, 1)$ lies on line ℓ_1
$337 : P_{241477} = (4, 60, 57, 1)$ lies on line ℓ_5
$338 : P_{241601} = (0, 62, 57, 1)$ lies on line ℓ_0
$339 : P_{242113} = (0, 6, 58, 1)$ lies on line ℓ_3
$340 : P_{242922} = (41, 18, 58, 1)$ lies on line ℓ_2
$341 : P_{243521} = (0, 28, 58, 1)$ lies on line ℓ_4
$342 : P_{243777} = (0, 32, 58, 1)$ lies on line ℓ_0
$343 : P_{244568} = (23, 44, 58, 1)$ lies on line ℓ_5
$344 : P_{245765} = (4, 63, 58, 1)$ lies on line ℓ_1
$345 : P_{246074} = (57, 3, 59, 1)$ lies on line ℓ_5
$346 : P_{248065} = (0, 35, 59, 1)$ lies on line ℓ_3
$347 : P_{248513} = (0, 42, 59, 1)$ lies on line ℓ_0
$348 : P_{249025} = (0, 50, 59, 1)$ lies on line ℓ_4
$349 : P_{249167} = (14, 52, 59, 1)$ lies on line ℓ_1
$350 : P_{249293} = (12, 54, 59, 1)$ lies on line ℓ_2
$351 : P_{250297} = (56, 5, 60, 1)$ lies on line ℓ_1
$352 : P_{250486} = (53, 8, 60, 1)$ lies on line ℓ_2
$353 : P_{250738} = (49, 12, 60, 1)$ lies on line ℓ_5

354 : $P_{251585} = (0, 26, 60, 1)$ lies on line ℓ_3
355 : $P_{251713} = (0, 28, 60, 1)$ lies on line ℓ_0
356 : $P_{253633} = (0, 58, 60, 1)$ lies on line ℓ_4
357 : $P_{254963} = (50, 14, 61, 1)$ lies on line ℓ_1
358 : $P_{255297} = (0, 20, 61, 1)$ lies on line ℓ_4
359 : $P_{255425} = (0, 22, 61, 1)$ lies on line ℓ_0
360 : $P_{256288} = (31, 35, 61, 1)$ lies on line ℓ_5
361 : $P_{256849} = (16, 44, 61, 1)$ lies on line ℓ_2
362 : $P_{258049} = (0, 63, 61, 1)$ lies on line ℓ_3
363 : $P_{258561} = (0, 7, 62, 1)$ lies on line ℓ_4
364 : $P_{258625} = (0, 8, 62, 1)$ lies on line ℓ_0

365 : $P_{259373} = (44, 19, 62, 1)$ lies on line ℓ_1
366 : $P_{260255} = (30, 33, 62, 1)$ lies on line ℓ_2
367 : $P_{261249} = (0, 49, 62, 1)$ lies on line ℓ_3
368 : $P_{261389} = (12, 51, 62, 1)$ lies on line ℓ_5
369 : $P_{262337} = (0, 2, 63, 1)$ lies on line ℓ_0
370 : $P_{262588} = (59, 5, 63, 1)$ lies on line ℓ_2
371 : $P_{263489} = (0, 20, 63, 1)$ lies on line ℓ_3
372 : $P_{263783} = (38, 24, 63, 1)$ lies on line ℓ_1
373 : $P_{264035} = (34, 28, 63, 1)$ lies on line ℓ_5
374 : $P_{264833} = (0, 41, 63, 1)$ lies on line ℓ_4

The single points on the surface are:

Points on surface but on no line

The surface has 3907 points not on any line:
Too many to print.

Line Intersection Graph

```
 |0 1 2 3 4 5
 ----------
0|0 1 0 1 1 0
1|1 0 1 0 0 1
2|0 1 0 1 0 1
3|1 0 1 0 1 0
4|1 0 0 1 0 1
5|0 1 1 0 1 0
```

Neighbor sets in the line intersection graph:
Line 0 intersects

Line	ℓ_1	ℓ_3	ℓ_4
in point	P_{158017}	P_3	P_3

Line 1 intersects

Line	ℓ_0	ℓ_2	ℓ_5
in point	P_{158017}	P_{197414}	P_{154635}

Line 2 intersects

Line	ℓ_1	ℓ_3	ℓ_5
in point	P_{197414}	P_{195585}	P_{51567}

Line 3 intersects

Line	ℓ_0	ℓ_2	ℓ_4
in point	P_3	P_{195585}	P_3

Line 4 intersects

Line	ℓ_0	ℓ_3	ℓ_5
in point	P_3	P_3	P_{45825}

Line 5 intersects

Line	ℓ_1	ℓ_2	ℓ_4
in point	P_{154635}	P_{51567}	P_{45825}

The surface has 4289 points:
Too many to print.