

Rank-43 over GF(64)

January 15, 2021

The equation

The equation of the surface is :

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

(0, 0, 1, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0)

The point rank of the equation over GF(64) is 532561

General information

Number of lines	6
Number of points	4289
Number of singular points	1
Number of Eckardt points	2
Number of double points	3
Number of single points	378
Number of points off lines	3906
Number of Hesse planes	0
Number of axes	0
Type of points on lines	65^6
Type of lines on points	$3^2, 2^3, 1^{378}, 0^{3906}$

Singular Points

The surface has 1 singular points:

$$0 : P_1 = \mathbf{P}(0, 1, 0, 0) = \mathbf{P}(0, 1, 0, 0)$$

The 6 Lines

The lines and their Pluecker coordinates are:

$$\begin{aligned} \ell_0 &= \left[\begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{array} \right]_{4097} = \left[\begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{array} \right]_{4097} = \mathbf{Pl}(0, 0, 1, 0, 1, 0)_{4352} \\ \ell_1 &= \left[\begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & \epsilon^{21} \end{array} \right]_{4153} = \left[\begin{array}{cccc} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 57 \end{array} \right]_{4153} = \mathbf{Pl}(0, 0, 56, 0, 1, 0)_{11337} \end{aligned}$$

$$\begin{aligned}
\ell_2 &= \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & \epsilon^{42} \end{bmatrix}_{4152} = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 56 \end{bmatrix}_{4152} = \mathbf{Pl}(0, 0, 57, 0, 1, 0)_{11464} \\
\ell_3 &= \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{bmatrix}_{17043457} = \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{bmatrix}_{17043457} = \mathbf{Pl}(0, 0, 0, 1, 0, 1)_{278529} \\
\ell_4 &= \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & \epsilon^{21} \end{bmatrix}_{17043513} = \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 57 \end{bmatrix}_{17043513} = \mathbf{Pl}(0, 0, 0, 57, 0, 1)_{285641} \\
\ell_5 &= \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & \epsilon^{42} \end{bmatrix}_{17043512} = \begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 56 \end{bmatrix}_{17043512} = \mathbf{Pl}(0, 0, 0, 56, 0, 1)_{285514}
\end{aligned}$$

Rank of lines: (4097, 4153, 4152, 17043457, 17043513, 17043512)

Rank of points on Klein quadric: (4352, 11337, 11464, 278529, 285641, 285514)

Eckardt Points

The surface has 2 Eckardt points:

$$0 : P_0 = \mathbf{P}(1, 0, 0, 0) = \mathbf{P}(1, 0, 0, 0),$$

$$1 : P_1 = \mathbf{P}(0, 1, 0, 0) = \mathbf{P}(0, 1, 0, 0).$$

Double Points

The surface has 3 Double points:

The double points on the surface are:

$$P_{8258} = (0, 0, 1, 1) = \ell_0 \cap \ell_3$$

$$P_{233537} = (0, 0, 56, 1) = \ell_1 \cap \ell_4$$

$$P_{237633} = (0, 0, 57, 1) = \ell_2 \cap \ell_5$$

Single Points

The surface has 378 single points:

The single points on the surface are:

$$0 : P_{8259} = (1, 0, 1, 1) \text{ lies on line } \ell_0$$

$$1 : P_{8260} = (2, 0, 1, 1) \text{ lies on line } \ell_0$$

$$2 : P_{8261} = (3, 0, 1, 1) \text{ lies on line } \ell_0$$

$$3 : P_{8262} = (4, 0, 1, 1) \text{ lies on line } \ell_0$$

$$4 : P_{8263} = (5, 0, 1, 1) \text{ lies on line } \ell_0$$

$$5 : P_{8264} = (6, 0, 1, 1) \text{ lies on line } \ell_0$$

$$6 : P_{8265} = (7, 0, 1, 1) \text{ lies on line } \ell_0$$

$$7 : P_{8266} = (8, 0, 1, 1) \text{ lies on line } \ell_0$$

$$8 : P_{8267} = (9, 0, 1, 1) \text{ lies on line } \ell_0$$

$$9 : P_{8268} = (10, 0, 1, 1) \text{ lies on line } \ell_0$$

$$10 : P_{8269} = (11, 0, 1, 1) \text{ lies on line } \ell_0$$

$$11 : P_{8270} = (12, 0, 1, 1) \text{ lies on line } \ell_0$$

$$12 : P_{8271} = (13, 0, 1, 1) \text{ lies on line } \ell_0$$

$$13 : P_{8272} = (14, 0, 1, 1) \text{ lies on line } \ell_0$$

$$14 : P_{8273} = (15, 0, 1, 1) \text{ lies on line } \ell_0$$

$$15 : P_{8274} = (16, 0, 1, 1) \text{ lies on line } \ell_0$$

$$16 : P_{8275} = (17, 0, 1, 1) \text{ lies on line } \ell_0$$

$$17 : P_{8276} = (18, 0, 1, 1) \text{ lies on line } \ell_0$$

$$18 : P_{8277} = (19, 0, 1, 1) \text{ lies on line } \ell_0$$

$$19 : P_{8278} = (20, 0, 1, 1) \text{ lies on line } \ell_0$$

$$20 : P_{8279} = (21, 0, 1, 1) \text{ lies on line } \ell_0$$

$$21 : P_{8280} = (22, 0, 1, 1) \text{ lies on line } \ell_0$$

$$22 : P_{8281} = (23, 0, 1, 1) \text{ lies on line } \ell_0$$

$$23 : P_{8282} = (24, 0, 1, 1) \text{ lies on line } \ell_0$$

$$24 : P_{8283} = (25, 0, 1, 1) \text{ lies on line } \ell_0$$

$$25 : P_{8284} = (26, 0, 1, 1) \text{ lies on line } \ell_0$$

$$26 : P_{8285} = (27, 0, 1, 1) \text{ lies on line } \ell_0$$

$$27 : P_{8286} = (28, 0, 1, 1) \text{ lies on line } \ell_0$$

$$28 : P_{8287} = (29, 0, 1, 1) \text{ lies on line } \ell_0$$

$$29 : P_{8288} = (30, 0, 1, 1) \text{ lies on line } \ell_0$$

$$30 : P_{8289} = (31, 0, 1, 1) \text{ lies on line } \ell_0$$

$$31 : P_{8290} = (32, 0, 1, 1) \text{ lies on line } \ell_0$$

$$32 : P_{8291} = (33, 0, 1, 1) \text{ lies on line } \ell_0$$

$$33 : P_{8292} = (34, 0, 1, 1) \text{ lies on line } \ell_0$$

$$34 : P_{8293} = (35, 0, 1, 1) \text{ lies on line } \ell_0$$

$$35 : P_{8294} = (36, 0, 1, 1) \text{ lies on line } \ell_0$$

36 : $P_{8295} = (37, 0, 1, 1)$ lies on line ℓ_0
 37 : $P_{8296} = (38, 0, 1, 1)$ lies on line ℓ_0
 38 : $P_{8297} = (39, 0, 1, 1)$ lies on line ℓ_0
 39 : $P_{8298} = (40, 0, 1, 1)$ lies on line ℓ_0
 40 : $P_{8299} = (41, 0, 1, 1)$ lies on line ℓ_0
 41 : $P_{8300} = (42, 0, 1, 1)$ lies on line ℓ_0
 42 : $P_{8301} = (43, 0, 1, 1)$ lies on line ℓ_0
 43 : $P_{8302} = (44, 0, 1, 1)$ lies on line ℓ_0
 44 : $P_{8303} = (45, 0, 1, 1)$ lies on line ℓ_0
 45 : $P_{8304} = (46, 0, 1, 1)$ lies on line ℓ_0
 46 : $P_{8305} = (47, 0, 1, 1)$ lies on line ℓ_0
 47 : $P_{8306} = (48, 0, 1, 1)$ lies on line ℓ_0
 48 : $P_{8307} = (49, 0, 1, 1)$ lies on line ℓ_0
 49 : $P_{8308} = (50, 0, 1, 1)$ lies on line ℓ_0
 50 : $P_{8309} = (51, 0, 1, 1)$ lies on line ℓ_0
 51 : $P_{8310} = (52, 0, 1, 1)$ lies on line ℓ_0
 52 : $P_{8311} = (53, 0, 1, 1)$ lies on line ℓ_0
 53 : $P_{8312} = (54, 0, 1, 1)$ lies on line ℓ_0
 54 : $P_{8313} = (55, 0, 1, 1)$ lies on line ℓ_0
 55 : $P_{8314} = (56, 0, 1, 1)$ lies on line ℓ_0
 56 : $P_{8315} = (57, 0, 1, 1)$ lies on line ℓ_0
 57 : $P_{8316} = (58, 0, 1, 1)$ lies on line ℓ_0
 58 : $P_{8317} = (59, 0, 1, 1)$ lies on line ℓ_0
 59 : $P_{8318} = (60, 0, 1, 1)$ lies on line ℓ_0
 60 : $P_{8319} = (61, 0, 1, 1)$ lies on line ℓ_0
 61 : $P_{8320} = (62, 0, 1, 1)$ lies on line ℓ_0
 62 : $P_{8321} = (63, 0, 1, 1)$ lies on line ℓ_0
 63 : $P_{8322} = (0, 1, 1, 1)$ lies on line ℓ_3
 64 : $P_{8385} = (0, 2, 1, 1)$ lies on line ℓ_3
 65 : $P_{8449} = (0, 3, 1, 1)$ lies on line ℓ_3
 66 : $P_{8513} = (0, 4, 1, 1)$ lies on line ℓ_3
 67 : $P_{8577} = (0, 5, 1, 1)$ lies on line ℓ_3
 68 : $P_{8641} = (0, 6, 1, 1)$ lies on line ℓ_3
 69 : $P_{8705} = (0, 7, 1, 1)$ lies on line ℓ_3
 70 : $P_{8769} = (0, 8, 1, 1)$ lies on line ℓ_3
 71 : $P_{8833} = (0, 9, 1, 1)$ lies on line ℓ_3
 72 : $P_{8897} = (0, 10, 1, 1)$ lies on line ℓ_3
 73 : $P_{8961} = (0, 11, 1, 1)$ lies on line ℓ_3
 74 : $P_{9025} = (0, 12, 1, 1)$ lies on line ℓ_3
 75 : $P_{9089} = (0, 13, 1, 1)$ lies on line ℓ_3
 76 : $P_{9153} = (0, 14, 1, 1)$ lies on line ℓ_3
 77 : $P_{9217} = (0, 15, 1, 1)$ lies on line ℓ_3
 78 : $P_{9281} = (0, 16, 1, 1)$ lies on line ℓ_3
 79 : $P_{9345} = (0, 17, 1, 1)$ lies on line ℓ_3
 80 : $P_{9409} = (0, 18, 1, 1)$ lies on line ℓ_3
 81 : $P_{9473} = (0, 19, 1, 1)$ lies on line ℓ_3
 82 : $P_{9537} = (0, 20, 1, 1)$ lies on line ℓ_3
 83 : $P_{9601} = (0, 21, 1, 1)$ lies on line ℓ_3
 84 : $P_{9665} = (0, 22, 1, 1)$ lies on line ℓ_3
 85 : $P_{9729} = (0, 23, 1, 1)$ lies on line ℓ_3
 86 : $P_{9793} = (0, 24, 1, 1)$ lies on line ℓ_3
 87 : $P_{9857} = (0, 25, 1, 1)$ lies on line ℓ_3
 88 : $P_{9921} = (0, 26, 1, 1)$ lies on line ℓ_3
 89 : $P_{9985} = (0, 27, 1, 1)$ lies on line ℓ_3

90 : $P_{10049} = (0, 28, 1, 1)$ lies on line ℓ_3
 91 : $P_{10113} = (0, 29, 1, 1)$ lies on line ℓ_3
 92 : $P_{10177} = (0, 30, 1, 1)$ lies on line ℓ_3
 93 : $P_{10241} = (0, 31, 1, 1)$ lies on line ℓ_3
 94 : $P_{10305} = (0, 32, 1, 1)$ lies on line ℓ_3
 95 : $P_{10369} = (0, 33, 1, 1)$ lies on line ℓ_3
 96 : $P_{10433} = (0, 34, 1, 1)$ lies on line ℓ_3
 97 : $P_{10497} = (0, 35, 1, 1)$ lies on line ℓ_3
 98 : $P_{10561} = (0, 36, 1, 1)$ lies on line ℓ_3
 99 : $P_{10625} = (0, 37, 1, 1)$ lies on line ℓ_3
 100 : $P_{10689} = (0, 38, 1, 1)$ lies on line ℓ_3
 101 : $P_{10753} = (0, 39, 1, 1)$ lies on line ℓ_3
 102 : $P_{10817} = (0, 40, 1, 1)$ lies on line ℓ_3
 103 : $P_{10881} = (0, 41, 1, 1)$ lies on line ℓ_3
 104 : $P_{10945} = (0, 42, 1, 1)$ lies on line ℓ_3
 105 : $P_{11009} = (0, 43, 1, 1)$ lies on line ℓ_3
 106 : $P_{11073} = (0, 44, 1, 1)$ lies on line ℓ_3
 107 : $P_{11137} = (0, 45, 1, 1)$ lies on line ℓ_3
 108 : $P_{11201} = (0, 46, 1, 1)$ lies on line ℓ_3
 109 : $P_{11265} = (0, 47, 1, 1)$ lies on line ℓ_3
 110 : $P_{11329} = (0, 48, 1, 1)$ lies on line ℓ_3
 111 : $P_{11393} = (0, 49, 1, 1)$ lies on line ℓ_3
 112 : $P_{11457} = (0, 50, 1, 1)$ lies on line ℓ_3
 113 : $P_{11521} = (0, 51, 1, 1)$ lies on line ℓ_3
 114 : $P_{11585} = (0, 52, 1, 1)$ lies on line ℓ_3
 115 : $P_{11649} = (0, 53, 1, 1)$ lies on line ℓ_3
 116 : $P_{11713} = (0, 54, 1, 1)$ lies on line ℓ_3
 117 : $P_{11777} = (0, 55, 1, 1)$ lies on line ℓ_3
 118 : $P_{11841} = (0, 56, 1, 1)$ lies on line ℓ_3
 119 : $P_{11905} = (0, 57, 1, 1)$ lies on line ℓ_3
 120 : $P_{11969} = (0, 58, 1, 1)$ lies on line ℓ_3
 121 : $P_{12033} = (0, 59, 1, 1)$ lies on line ℓ_3
 122 : $P_{12097} = (0, 60, 1, 1)$ lies on line ℓ_3
 123 : $P_{12161} = (0, 61, 1, 1)$ lies on line ℓ_3
 124 : $P_{12225} = (0, 62, 1, 1)$ lies on line ℓ_3
 125 : $P_{12289} = (0, 63, 1, 1)$ lies on line ℓ_3
 126 : $P_{233538} = (1, 0, 56, 1)$ lies on line ℓ_1
 127 : $P_{233539} = (2, 0, 56, 1)$ lies on line ℓ_1
 128 : $P_{233540} = (3, 0, 56, 1)$ lies on line ℓ_1
 129 : $P_{233541} = (4, 0, 56, 1)$ lies on line ℓ_1
 130 : $P_{233542} = (5, 0, 56, 1)$ lies on line ℓ_1
 131 : $P_{233543} = (6, 0, 56, 1)$ lies on line ℓ_1
 132 : $P_{233544} = (7, 0, 56, 1)$ lies on line ℓ_1
 133 : $P_{233545} = (8, 0, 56, 1)$ lies on line ℓ_1
 134 : $P_{233546} = (9, 0, 56, 1)$ lies on line ℓ_1
 135 : $P_{233547} = (10, 0, 56, 1)$ lies on line ℓ_1
 136 : $P_{233548} = (11, 0, 56, 1)$ lies on line ℓ_1
 137 : $P_{233549} = (12, 0, 56, 1)$ lies on line ℓ_1
 138 : $P_{233550} = (13, 0, 56, 1)$ lies on line ℓ_1
 139 : $P_{233551} = (14, 0, 56, 1)$ lies on line ℓ_1
 140 : $P_{233552} = (15, 0, 56, 1)$ lies on line ℓ_1
 141 : $P_{233553} = (16, 0, 56, 1)$ lies on line ℓ_1
 142 : $P_{233554} = (17, 0, 56, 1)$ lies on line ℓ_1
 143 : $P_{233555} = (18, 0, 56, 1)$ lies on line ℓ_1

144 : $P_{233556} = (19, 0, 56, 1)$ lies on line ℓ_1
 145 : $P_{233557} = (20, 0, 56, 1)$ lies on line ℓ_1
 146 : $P_{233558} = (21, 0, 56, 1)$ lies on line ℓ_1
 147 : $P_{233559} = (22, 0, 56, 1)$ lies on line ℓ_1
 148 : $P_{233560} = (23, 0, 56, 1)$ lies on line ℓ_1
 149 : $P_{233561} = (24, 0, 56, 1)$ lies on line ℓ_1
 150 : $P_{233562} = (25, 0, 56, 1)$ lies on line ℓ_1
 151 : $P_{233563} = (26, 0, 56, 1)$ lies on line ℓ_1
 152 : $P_{233564} = (27, 0, 56, 1)$ lies on line ℓ_1
 153 : $P_{233565} = (28, 0, 56, 1)$ lies on line ℓ_1
 154 : $P_{233566} = (29, 0, 56, 1)$ lies on line ℓ_1
 155 : $P_{233567} = (30, 0, 56, 1)$ lies on line ℓ_1
 156 : $P_{233568} = (31, 0, 56, 1)$ lies on line ℓ_1
 157 : $P_{233569} = (32, 0, 56, 1)$ lies on line ℓ_1
 158 : $P_{233570} = (33, 0, 56, 1)$ lies on line ℓ_1
 159 : $P_{233571} = (34, 0, 56, 1)$ lies on line ℓ_1
 160 : $P_{233572} = (35, 0, 56, 1)$ lies on line ℓ_1
 161 : $P_{233573} = (36, 0, 56, 1)$ lies on line ℓ_1
 162 : $P_{233574} = (37, 0, 56, 1)$ lies on line ℓ_1
 163 : $P_{233575} = (38, 0, 56, 1)$ lies on line ℓ_1
 164 : $P_{233576} = (39, 0, 56, 1)$ lies on line ℓ_1
 165 : $P_{233577} = (40, 0, 56, 1)$ lies on line ℓ_1
 166 : $P_{233578} = (41, 0, 56, 1)$ lies on line ℓ_1
 167 : $P_{233579} = (42, 0, 56, 1)$ lies on line ℓ_1
 168 : $P_{233580} = (43, 0, 56, 1)$ lies on line ℓ_1
 169 : $P_{233581} = (44, 0, 56, 1)$ lies on line ℓ_1
 170 : $P_{233582} = (45, 0, 56, 1)$ lies on line ℓ_1
 171 : $P_{233583} = (46, 0, 56, 1)$ lies on line ℓ_1
 172 : $P_{233584} = (47, 0, 56, 1)$ lies on line ℓ_1
 173 : $P_{233585} = (48, 0, 56, 1)$ lies on line ℓ_1
 174 : $P_{233586} = (49, 0, 56, 1)$ lies on line ℓ_1
 175 : $P_{233587} = (50, 0, 56, 1)$ lies on line ℓ_1
 176 : $P_{233588} = (51, 0, 56, 1)$ lies on line ℓ_1
 177 : $P_{233589} = (52, 0, 56, 1)$ lies on line ℓ_1
 178 : $P_{233590} = (53, 0, 56, 1)$ lies on line ℓ_1
 179 : $P_{233591} = (54, 0, 56, 1)$ lies on line ℓ_1
 180 : $P_{233592} = (55, 0, 56, 1)$ lies on line ℓ_1
 181 : $P_{233593} = (56, 0, 56, 1)$ lies on line ℓ_1
 182 : $P_{233594} = (57, 0, 56, 1)$ lies on line ℓ_1
 183 : $P_{233595} = (58, 0, 56, 1)$ lies on line ℓ_1
 184 : $P_{233596} = (59, 0, 56, 1)$ lies on line ℓ_1
 185 : $P_{233597} = (60, 0, 56, 1)$ lies on line ℓ_1
 186 : $P_{233598} = (61, 0, 56, 1)$ lies on line ℓ_1
 187 : $P_{233599} = (62, 0, 56, 1)$ lies on line ℓ_1
 188 : $P_{233600} = (63, 0, 56, 1)$ lies on line ℓ_1
 189 : $P_{233601} = (0, 1, 56, 1)$ lies on line ℓ_4
 190 : $P_{233665} = (0, 2, 56, 1)$ lies on line ℓ_4
 191 : $P_{233729} = (0, 3, 56, 1)$ lies on line ℓ_4
 192 : $P_{233793} = (0, 4, 56, 1)$ lies on line ℓ_4
 193 : $P_{233857} = (0, 5, 56, 1)$ lies on line ℓ_4
 194 : $P_{233921} = (0, 6, 56, 1)$ lies on line ℓ_4
 195 : $P_{233985} = (0, 7, 56, 1)$ lies on line ℓ_4
 196 : $P_{234049} = (0, 8, 56, 1)$ lies on line ℓ_4
 197 : $P_{234113} = (0, 9, 56, 1)$ lies on line ℓ_4

198 : $P_{234177} = (0, 10, 56, 1)$ lies on line ℓ_4
 199 : $P_{234241} = (0, 11, 56, 1)$ lies on line ℓ_4
 200 : $P_{234305} = (0, 12, 56, 1)$ lies on line ℓ_4
 201 : $P_{234369} = (0, 13, 56, 1)$ lies on line ℓ_4
 202 : $P_{234433} = (0, 14, 56, 1)$ lies on line ℓ_4
 203 : $P_{234497} = (0, 15, 56, 1)$ lies on line ℓ_4
 204 : $P_{234561} = (0, 16, 56, 1)$ lies on line ℓ_4
 205 : $P_{234625} = (0, 17, 56, 1)$ lies on line ℓ_4
 206 : $P_{234689} = (0, 18, 56, 1)$ lies on line ℓ_4
 207 : $P_{234753} = (0, 19, 56, 1)$ lies on line ℓ_4
 208 : $P_{234817} = (0, 20, 56, 1)$ lies on line ℓ_4
 209 : $P_{234881} = (0, 21, 56, 1)$ lies on line ℓ_4
 210 : $P_{234945} = (0, 22, 56, 1)$ lies on line ℓ_4
 211 : $P_{235009} = (0, 23, 56, 1)$ lies on line ℓ_4
 212 : $P_{235073} = (0, 24, 56, 1)$ lies on line ℓ_4
 213 : $P_{235137} = (0, 25, 56, 1)$ lies on line ℓ_4
 214 : $P_{235201} = (0, 26, 56, 1)$ lies on line ℓ_4
 215 : $P_{235265} = (0, 27, 56, 1)$ lies on line ℓ_4
 216 : $P_{235329} = (0, 28, 56, 1)$ lies on line ℓ_4
 217 : $P_{235393} = (0, 29, 56, 1)$ lies on line ℓ_4
 218 : $P_{235457} = (0, 30, 56, 1)$ lies on line ℓ_4
 219 : $P_{235521} = (0, 31, 56, 1)$ lies on line ℓ_4
 220 : $P_{235585} = (0, 32, 56, 1)$ lies on line ℓ_4
 221 : $P_{235649} = (0, 33, 56, 1)$ lies on line ℓ_4
 222 : $P_{235713} = (0, 34, 56, 1)$ lies on line ℓ_4
 223 : $P_{235777} = (0, 35, 56, 1)$ lies on line ℓ_4
 224 : $P_{235841} = (0, 36, 56, 1)$ lies on line ℓ_4
 225 : $P_{235905} = (0, 37, 56, 1)$ lies on line ℓ_4
 226 : $P_{235969} = (0, 38, 56, 1)$ lies on line ℓ_4
 227 : $P_{236033} = (0, 39, 56, 1)$ lies on line ℓ_4
 228 : $P_{236097} = (0, 40, 56, 1)$ lies on line ℓ_4
 229 : $P_{236161} = (0, 41, 56, 1)$ lies on line ℓ_4
 230 : $P_{236225} = (0, 42, 56, 1)$ lies on line ℓ_4
 231 : $P_{236289} = (0, 43, 56, 1)$ lies on line ℓ_4
 232 : $P_{236353} = (0, 44, 56, 1)$ lies on line ℓ_4
 233 : $P_{236417} = (0, 45, 56, 1)$ lies on line ℓ_4
 234 : $P_{236481} = (0, 46, 56, 1)$ lies on line ℓ_4
 235 : $P_{236545} = (0, 47, 56, 1)$ lies on line ℓ_4
 236 : $P_{236609} = (0, 48, 56, 1)$ lies on line ℓ_4
 237 : $P_{236673} = (0, 49, 56, 1)$ lies on line ℓ_4
 238 : $P_{236737} = (0, 50, 56, 1)$ lies on line ℓ_4
 239 : $P_{236801} = (0, 51, 56, 1)$ lies on line ℓ_4
 240 : $P_{236865} = (0, 52, 56, 1)$ lies on line ℓ_4
 241 : $P_{236929} = (0, 53, 56, 1)$ lies on line ℓ_4
 242 : $P_{236993} = (0, 54, 56, 1)$ lies on line ℓ_4
 243 : $P_{237057} = (0, 55, 56, 1)$ lies on line ℓ_4
 244 : $P_{237121} = (0, 56, 56, 1)$ lies on line ℓ_4
 245 : $P_{237185} = (0, 57, 56, 1)$ lies on line ℓ_4
 246 : $P_{237249} = (0, 58, 56, 1)$ lies on line ℓ_4
 247 : $P_{237313} = (0, 59, 56, 1)$ lies on line ℓ_4
 248 : $P_{237377} = (0, 60, 56, 1)$ lies on line ℓ_4
 249 : $P_{237441} = (0, 61, 56, 1)$ lies on line ℓ_4
 250 : $P_{237505} = (0, 62, 56, 1)$ lies on line ℓ_4
 251 : $P_{237569} = (0, 63, 56, 1)$ lies on line ℓ_4

360 : $P_{240577} = (0, 46, 57, 1)$ lies on line ℓ_5
 361 : $P_{240641} = (0, 47, 57, 1)$ lies on line ℓ_5
 362 : $P_{240705} = (0, 48, 57, 1)$ lies on line ℓ_5
 363 : $P_{240769} = (0, 49, 57, 1)$ lies on line ℓ_5
 364 : $P_{240833} = (0, 50, 57, 1)$ lies on line ℓ_5
 365 : $P_{240897} = (0, 51, 57, 1)$ lies on line ℓ_5
 366 : $P_{240961} = (0, 52, 57, 1)$ lies on line ℓ_5
 367 : $P_{241025} = (0, 53, 57, 1)$ lies on line ℓ_5
 368 : $P_{241089} = (0, 54, 57, 1)$ lies on line ℓ_5
 369 : $P_{241153} = (0, 55, 57, 1)$ lies on line ℓ_5

370 : $P_{241217} = (0, 56, 57, 1)$ lies on line ℓ_5
 371 : $P_{241281} = (0, 57, 57, 1)$ lies on line ℓ_5
 372 : $P_{241345} = (0, 58, 57, 1)$ lies on line ℓ_5
 373 : $P_{241409} = (0, 59, 57, 1)$ lies on line ℓ_5
 374 : $P_{241473} = (0, 60, 57, 1)$ lies on line ℓ_5
 375 : $P_{241537} = (0, 61, 57, 1)$ lies on line ℓ_5
 376 : $P_{241601} = (0, 62, 57, 1)$ lies on line ℓ_5
 377 : $P_{241665} = (0, 63, 57, 1)$ lies on line ℓ_5

The single points on the surface are:

Points on surface but on no line

The surface has 3906 points not on any line:
Too many to print.

Line Intersection Graph

	0	1	2	3	4	5
0	0	1	1	1	0	0
1	1	0	1	0	1	0
2	1	1	0	0	0	1
3	1	0	0	0	1	1
4	0	1	0	1	0	1
5	0	0	1	1	1	0

Neighbor sets in the line intersection graph:

Line 0 intersects

Line	ℓ_1	ℓ_2	ℓ_3
in point	P_0	P_0	P_{8258}

Line 1 intersects

Line	ℓ_0	ℓ_2	ℓ_4
in point	P_0	P_0	P_{233537}

Line 2 intersects

Line	ℓ_0	ℓ_1	ℓ_5
in point	P_0	P_0	P_{237633}

Line 3 intersects

Line	ℓ_0	ℓ_4	ℓ_5
in point	P_{8258}	P_1	P_1

Line 4 intersects

Line	ℓ_1	ℓ_3	ℓ_5
in point	P_{233537}	P_1	P_1

Line 5 intersects

Line	ℓ_2	ℓ_3	ℓ_4
in point	P_{237633}	P_1	P_1

The surface has 4289 points:
Too many to print.