

Rank-65871 over GF(64)

January 15, 2021

The equation

The equation of the surface is :

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

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

The point rank of the equation over GF(64) is 1091051589

General information

Number of lines	4
Number of points	4161
Number of singular points	2
Number of Eckardt points	0
Number of double points	4
Number of single points	252
Number of points off lines	3905
Number of Hesse planes	0
Number of axes	0
Type of points on lines	65^4
Type of lines on points	$2^4, 1^{252}, 0^{3905}$

Singular Points

The surface has 2 singular points:

$$0 : P_{4163} = \mathbf{P}(1, 0, 0, 1) = \mathbf{P}(1, 0, 0, 1)$$

$$1 : P_{4227} = \mathbf{P}(1, 1, 0, 1) = \mathbf{P}(1, 1, 0, 1)$$

The 4 Lines

The lines and their Pluecker coordinates are:

$$\ell_0 = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \end{bmatrix}_0 = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \end{bmatrix}_0 = \mathbf{PI}(1, 0, 0, 0, 0, 0)_0$$

$$\begin{aligned}
\ell_1 &= \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 1 & 0 & 0 \end{bmatrix}_{266304} = \begin{bmatrix} 1 & 0 & 0 & 1 \\ 0 & 1 & 0 & 0 \end{bmatrix}_{266304} = \mathbf{PI}(1, 0, 0, 1, 0, 0)_{130} \\
\ell_2 &= \begin{bmatrix} 1 & \epsilon^{21} & 0 & 0 \\ 0 & 0 & 1 & 1 \end{bmatrix}_{241274} = \begin{bmatrix} 1 & 57 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{bmatrix}_{241274} = \mathbf{PI}(0, 0, 1, 1, 56, 1)_{14958978} \\
\ell_3 &= \begin{bmatrix} 1 & \epsilon^{42} & 0 & 0 \\ 0 & 0 & 1 & 1 \end{bmatrix}_{237113} = \begin{bmatrix} 1 & 56 & 0 & 0 \\ 0 & 0 & 1 & 1 \end{bmatrix}_{237113} = \mathbf{PI}(0, 0, 1, 1, 57, 1)_{15221058}
\end{aligned}$$

Rank of lines: (0, 266304, 241274, 237113)

Rank of points on Klein quadric: (0, 130, 14958978, 15221058)

Eckardt Points

The surface has 0 Eckardt points:

Double Points

The surface has 4 Double points:

The double points on the surface are:

$$P_1 = (0, 1, 0, 0) = \ell_0 \cap \ell_1$$

$$P_{60} = (56, 1, 0, 0) = \ell_0 \cap \ell_2$$

$$P_{61} = (57, 1, 0, 0) = \ell_0 \cap \ell_3$$

$$P_{8258} = (0, 0, 1, 1) = \ell_2 \cap \ell_3$$

Single Points

The surface has 252 single points:

The single points on the surface are:

0 : $P_0 = (1, 0, 0, 0)$ lies on line ℓ_0
 1 : $P_5 = (1, 1, 0, 0)$ lies on line ℓ_0
 2 : $P_6 = (2, 1, 0, 0)$ lies on line ℓ_0
 3 : $P_7 = (3, 1, 0, 0)$ lies on line ℓ_0
 4 : $P_8 = (4, 1, 0, 0)$ lies on line ℓ_0
 5 : $P_9 = (5, 1, 0, 0)$ lies on line ℓ_0
 6 : $P_{10} = (6, 1, 0, 0)$ lies on line ℓ_0
 7 : $P_{11} = (7, 1, 0, 0)$ lies on line ℓ_0
 8 : $P_{12} = (8, 1, 0, 0)$ lies on line ℓ_0
 9 : $P_{13} = (9, 1, 0, 0)$ lies on line ℓ_0
 10 : $P_{14} = (10, 1, 0, 0)$ lies on line ℓ_0
 11 : $P_{15} = (11, 1, 0, 0)$ lies on line ℓ_0
 12 : $P_{16} = (12, 1, 0, 0)$ lies on line ℓ_0
 13 : $P_{17} = (13, 1, 0, 0)$ lies on line ℓ_0
 14 : $P_{18} = (14, 1, 0, 0)$ lies on line ℓ_0
 15 : $P_{19} = (15, 1, 0, 0)$ lies on line ℓ_0
 16 : $P_{20} = (16, 1, 0, 0)$ lies on line ℓ_0
 17 : $P_{21} = (17, 1, 0, 0)$ lies on line ℓ_0
 18 : $P_{22} = (18, 1, 0, 0)$ lies on line ℓ_0
 19 : $P_{23} = (19, 1, 0, 0)$ lies on line ℓ_0
 20 : $P_{24} = (20, 1, 0, 0)$ lies on line ℓ_0
 21 : $P_{25} = (21, 1, 0, 0)$ lies on line ℓ_0

22 : $P_{26} = (22, 1, 0, 0)$ lies on line ℓ_0
 23 : $P_{27} = (23, 1, 0, 0)$ lies on line ℓ_0
 24 : $P_{28} = (24, 1, 0, 0)$ lies on line ℓ_0
 25 : $P_{29} = (25, 1, 0, 0)$ lies on line ℓ_0
 26 : $P_{30} = (26, 1, 0, 0)$ lies on line ℓ_0
 27 : $P_{31} = (27, 1, 0, 0)$ lies on line ℓ_0
 28 : $P_{32} = (28, 1, 0, 0)$ lies on line ℓ_0
 29 : $P_{33} = (29, 1, 0, 0)$ lies on line ℓ_0
 30 : $P_{34} = (30, 1, 0, 0)$ lies on line ℓ_0
 31 : $P_{35} = (31, 1, 0, 0)$ lies on line ℓ_0
 32 : $P_{36} = (32, 1, 0, 0)$ lies on line ℓ_0
 33 : $P_{37} = (33, 1, 0, 0)$ lies on line ℓ_0
 34 : $P_{38} = (34, 1, 0, 0)$ lies on line ℓ_0
 35 : $P_{39} = (35, 1, 0, 0)$ lies on line ℓ_0
 36 : $P_{40} = (36, 1, 0, 0)$ lies on line ℓ_0
 37 : $P_{41} = (37, 1, 0, 0)$ lies on line ℓ_0
 38 : $P_{42} = (38, 1, 0, 0)$ lies on line ℓ_0
 39 : $P_{43} = (39, 1, 0, 0)$ lies on line ℓ_0
 40 : $P_{44} = (40, 1, 0, 0)$ lies on line ℓ_0
 41 : $P_{45} = (41, 1, 0, 0)$ lies on line ℓ_0
 42 : $P_{46} = (42, 1, 0, 0)$ lies on line ℓ_0
 43 : $P_{47} = (43, 1, 0, 0)$ lies on line ℓ_0

44 : $P_{48} = (44, 1, 0, 0)$ lies on line ℓ_0
 45 : $P_{49} = (45, 1, 0, 0)$ lies on line ℓ_0
 46 : $P_{50} = (46, 1, 0, 0)$ lies on line ℓ_0
 47 : $P_{51} = (47, 1, 0, 0)$ lies on line ℓ_0
 48 : $P_{52} = (48, 1, 0, 0)$ lies on line ℓ_0
 49 : $P_{53} = (49, 1, 0, 0)$ lies on line ℓ_0
 50 : $P_{54} = (50, 1, 0, 0)$ lies on line ℓ_0
 51 : $P_{55} = (51, 1, 0, 0)$ lies on line ℓ_0
 52 : $P_{56} = (52, 1, 0, 0)$ lies on line ℓ_0
 53 : $P_{57} = (53, 1, 0, 0)$ lies on line ℓ_0
 54 : $P_{58} = (54, 1, 0, 0)$ lies on line ℓ_0
 55 : $P_{59} = (55, 1, 0, 0)$ lies on line ℓ_0
 56 : $P_{62} = (58, 1, 0, 0)$ lies on line ℓ_0
 57 : $P_{63} = (59, 1, 0, 0)$ lies on line ℓ_0
 58 : $P_{64} = (60, 1, 0, 0)$ lies on line ℓ_0
 59 : $P_{65} = (61, 1, 0, 0)$ lies on line ℓ_0
 60 : $P_{66} = (62, 1, 0, 0)$ lies on line ℓ_0
 61 : $P_{67} = (63, 1, 0, 0)$ lies on line ℓ_0
 62 : $P_{4163} = (1, 0, 0, 1)$ lies on line ℓ_1
 63 : $P_{4227} = (1, 1, 0, 1)$ lies on line ℓ_1
 64 : $P_{4291} = (1, 2, 0, 1)$ lies on line ℓ_1
 65 : $P_{4355} = (1, 3, 0, 1)$ lies on line ℓ_1
 66 : $P_{4419} = (1, 4, 0, 1)$ lies on line ℓ_1
 67 : $P_{4483} = (1, 5, 0, 1)$ lies on line ℓ_1
 68 : $P_{4547} = (1, 6, 0, 1)$ lies on line ℓ_1
 69 : $P_{4611} = (1, 7, 0, 1)$ lies on line ℓ_1
 70 : $P_{4675} = (1, 8, 0, 1)$ lies on line ℓ_1
 71 : $P_{4739} = (1, 9, 0, 1)$ lies on line ℓ_1
 72 : $P_{4803} = (1, 10, 0, 1)$ lies on line ℓ_1
 73 : $P_{4867} = (1, 11, 0, 1)$ lies on line ℓ_1
 74 : $P_{4931} = (1, 12, 0, 1)$ lies on line ℓ_1
 75 : $P_{4995} = (1, 13, 0, 1)$ lies on line ℓ_1
 76 : $P_{5059} = (1, 14, 0, 1)$ lies on line ℓ_1
 77 : $P_{5123} = (1, 15, 0, 1)$ lies on line ℓ_1
 78 : $P_{5187} = (1, 16, 0, 1)$ lies on line ℓ_1
 79 : $P_{5251} = (1, 17, 0, 1)$ lies on line ℓ_1
 80 : $P_{5315} = (1, 18, 0, 1)$ lies on line ℓ_1
 81 : $P_{5379} = (1, 19, 0, 1)$ lies on line ℓ_1
 82 : $P_{5443} = (1, 20, 0, 1)$ lies on line ℓ_1
 83 : $P_{5507} = (1, 21, 0, 1)$ lies on line ℓ_1
 84 : $P_{5571} = (1, 22, 0, 1)$ lies on line ℓ_1
 85 : $P_{5635} = (1, 23, 0, 1)$ lies on line ℓ_1
 86 : $P_{5699} = (1, 24, 0, 1)$ lies on line ℓ_1
 87 : $P_{5763} = (1, 25, 0, 1)$ lies on line ℓ_1
 88 : $P_{5827} = (1, 26, 0, 1)$ lies on line ℓ_1
 89 : $P_{5891} = (1, 27, 0, 1)$ lies on line ℓ_1
 90 : $P_{5955} = (1, 28, 0, 1)$ lies on line ℓ_1
 91 : $P_{6019} = (1, 29, 0, 1)$ lies on line ℓ_1
 92 : $P_{6083} = (1, 30, 0, 1)$ lies on line ℓ_1
 93 : $P_{6147} = (1, 31, 0, 1)$ lies on line ℓ_1
 94 : $P_{6211} = (1, 32, 0, 1)$ lies on line ℓ_1
 95 : $P_{6275} = (1, 33, 0, 1)$ lies on line ℓ_1
 96 : $P_{6339} = (1, 34, 0, 1)$ lies on line ℓ_1
 97 : $P_{6403} = (1, 35, 0, 1)$ lies on line ℓ_1

98 : $P_{6467} = (1, 36, 0, 1)$ lies on line ℓ_1
 99 : $P_{6531} = (1, 37, 0, 1)$ lies on line ℓ_1
 100 : $P_{6595} = (1, 38, 0, 1)$ lies on line ℓ_1
 101 : $P_{6659} = (1, 39, 0, 1)$ lies on line ℓ_1
 102 : $P_{6723} = (1, 40, 0, 1)$ lies on line ℓ_1
 103 : $P_{6787} = (1, 41, 0, 1)$ lies on line ℓ_1
 104 : $P_{6851} = (1, 42, 0, 1)$ lies on line ℓ_1
 105 : $P_{6915} = (1, 43, 0, 1)$ lies on line ℓ_1
 106 : $P_{6979} = (1, 44, 0, 1)$ lies on line ℓ_1
 107 : $P_{7043} = (1, 45, 0, 1)$ lies on line ℓ_1
 108 : $P_{7107} = (1, 46, 0, 1)$ lies on line ℓ_1
 109 : $P_{7171} = (1, 47, 0, 1)$ lies on line ℓ_1
 110 : $P_{7235} = (1, 48, 0, 1)$ lies on line ℓ_1
 111 : $P_{7299} = (1, 49, 0, 1)$ lies on line ℓ_1
 112 : $P_{7363} = (1, 50, 0, 1)$ lies on line ℓ_1
 113 : $P_{7427} = (1, 51, 0, 1)$ lies on line ℓ_1
 114 : $P_{7491} = (1, 52, 0, 1)$ lies on line ℓ_1
 115 : $P_{7555} = (1, 53, 0, 1)$ lies on line ℓ_1
 116 : $P_{7619} = (1, 54, 0, 1)$ lies on line ℓ_1
 117 : $P_{7683} = (1, 55, 0, 1)$ lies on line ℓ_1
 118 : $P_{7747} = (1, 56, 0, 1)$ lies on line ℓ_1
 119 : $P_{7811} = (1, 57, 0, 1)$ lies on line ℓ_1
 120 : $P_{7875} = (1, 58, 0, 1)$ lies on line ℓ_1
 121 : $P_{7939} = (1, 59, 0, 1)$ lies on line ℓ_1
 122 : $P_{8003} = (1, 60, 0, 1)$ lies on line ℓ_1
 123 : $P_{8067} = (1, 61, 0, 1)$ lies on line ℓ_1
 124 : $P_{8131} = (1, 62, 0, 1)$ lies on line ℓ_1
 125 : $P_{8195} = (1, 63, 0, 1)$ lies on line ℓ_1
 126 : $P_{8377} = (56, 1, 1, 1)$ lies on line ℓ_2
 127 : $P_{8378} = (57, 1, 1, 1)$ lies on line ℓ_3
 128 : $P_{8402} = (17, 2, 1, 1)$ lies on line ℓ_2
 129 : $P_{8404} = (19, 2, 1, 1)$ lies on line ℓ_3
 130 : $P_{8490} = (41, 3, 1, 1)$ lies on line ℓ_2
 131 : $P_{8491} = (42, 3, 1, 1)$ lies on line ℓ_3
 132 : $P_{8547} = (34, 4, 1, 1)$ lies on line ℓ_2
 133 : $P_{8551} = (38, 4, 1, 1)$ lies on line ℓ_3
 134 : $P_{8603} = (26, 5, 1, 1)$ lies on line ℓ_2
 135 : $P_{8608} = (31, 5, 1, 1)$ lies on line ℓ_3
 136 : $P_{8692} = (51, 6, 1, 1)$ lies on line ℓ_2
 137 : $P_{8694} = (53, 6, 1, 1)$ lies on line ℓ_3
 138 : $P_{8716} = (11, 7, 1, 1)$ lies on line ℓ_2
 139 : $P_{8717} = (12, 7, 1, 1)$ lies on line ℓ_3
 140 : $P_{8806} = (37, 8, 1, 1)$ lies on line ℓ_2
 141 : $P_{8814} = (45, 8, 1, 1)$ lies on line ℓ_3
 142 : $P_{8853} = (20, 9, 1, 1)$ lies on line ℓ_3
 143 : $P_{8862} = (29, 9, 1, 1)$ lies on line ℓ_2
 144 : $P_{8949} = (52, 10, 1, 1)$ lies on line ℓ_2
 145 : $P_{8959} = (62, 10, 1, 1)$ lies on line ℓ_3
 146 : $P_{8968} = (7, 11, 1, 1)$ lies on line ℓ_3
 147 : $P_{8973} = (12, 11, 1, 1)$ lies on line ℓ_2
 148 : $P_{9032} = (7, 12, 1, 1)$ lies on line ℓ_2
 149 : $P_{9036} = (11, 12, 1, 1)$ lies on line ℓ_3
 150 : $P_{9139} = (50, 13, 1, 1)$ lies on line ℓ_3
 151 : $P_{9152} = (63, 13, 1, 1)$ lies on line ℓ_2

152 : $P_{9175} = (22, 14, 1, 1)$ lies on line ℓ_2
 153 : $P_{9177} = (24, 14, 1, 1)$ lies on line ℓ_3
 154 : $P_{9250} = (33, 15, 1, 1)$ lies on line ℓ_3
 155 : $P_{9263} = (46, 15, 1, 1)$ lies on line ℓ_2
 156 : $P_{9324} = (43, 16, 1, 1)$ lies on line ℓ_2
 157 : $P_{9340} = (59, 16, 1, 1)$ lies on line ℓ_3
 158 : $P_{9347} = (2, 17, 1, 1)$ lies on line ℓ_3
 159 : $P_{9364} = (19, 17, 1, 1)$ lies on line ℓ_2
 160 : $P_{9449} = (40, 18, 1, 1)$ lies on line ℓ_3
 161 : $P_{9467} = (58, 18, 1, 1)$ lies on line ℓ_2
 162 : $P_{9475} = (2, 19, 1, 1)$ lies on line ℓ_2
 163 : $P_{9490} = (17, 19, 1, 1)$ lies on line ℓ_3
 164 : $P_{9546} = (9, 20, 1, 1)$ lies on line ℓ_2
 165 : $P_{9566} = (29, 20, 1, 1)$ lies on line ℓ_3
 166 : $P_{9637} = (36, 21, 1, 1)$ lies on line ℓ_3
 167 : $P_{9650} = (49, 21, 1, 1)$ lies on line ℓ_2
 168 : $P_{9679} = (14, 22, 1, 1)$ lies on line ℓ_3
 169 : $P_{9689} = (24, 22, 1, 1)$ lies on line ℓ_2
 170 : $P_{9761} = (32, 23, 1, 1)$ lies on line ℓ_2
 171 : $P_{9784} = (55, 23, 1, 1)$ lies on line ℓ_3
 172 : $P_{9807} = (14, 24, 1, 1)$ lies on line ℓ_2
 173 : $P_{9815} = (22, 24, 1, 1)$ lies on line ℓ_3
 174 : $P_{9904} = (47, 25, 1, 1)$ lies on line ℓ_3
 175 : $P_{9911} = (54, 25, 1, 1)$ lies on line ℓ_2
 176 : $P_{9926} = (5, 26, 1, 1)$ lies on line ℓ_3
 177 : $P_{9952} = (31, 26, 1, 1)$ lies on line ℓ_2
 178 : $P_{10024} = (39, 27, 1, 1)$ lies on line ℓ_2
 179 : $P_{10045} = (60, 27, 1, 1)$ lies on line ℓ_3
 180 : $P_{10093} = (44, 28, 1, 1)$ lies on line ℓ_2
 181 : $P_{10097} = (48, 28, 1, 1)$ lies on line ℓ_3
 182 : $P_{10122} = (9, 29, 1, 1)$ lies on line ℓ_3
 183 : $P_{10133} = (20, 29, 1, 1)$ lies on line ℓ_2
 184 : $P_{10212} = (35, 30, 1, 1)$ lies on line ℓ_3
 185 : $P_{10238} = (61, 30, 1, 1)$ lies on line ℓ_2
 186 : $P_{10246} = (5, 31, 1, 1)$ lies on line ℓ_2
 187 : $P_{10267} = (26, 31, 1, 1)$ lies on line ℓ_3
 188 : $P_{10328} = (23, 32, 1, 1)$ lies on line ℓ_3
 189 : $P_{10360} = (55, 32, 1, 1)$ lies on line ℓ_2
 190 : $P_{10384} = (15, 33, 1, 1)$ lies on line ℓ_2
 191 : $P_{10415} = (46, 33, 1, 1)$ lies on line ℓ_3
 192 : $P_{10437} = (4, 34, 1, 1)$ lies on line ℓ_3
 193 : $P_{10471} = (38, 34, 1, 1)$ lies on line ℓ_2
 194 : $P_{10527} = (30, 35, 1, 1)$ lies on line ℓ_2
 195 : $P_{10558} = (61, 35, 1, 1)$ lies on line ℓ_3
 196 : $P_{10582} = (21, 36, 1, 1)$ lies on line ℓ_2
 197 : $P_{10610} = (49, 36, 1, 1)$ lies on line ℓ_3
 198 : $P_{10633} = (8, 37, 1, 1)$ lies on line ℓ_3
 199 : $P_{10670} = (45, 37, 1, 1)$ lies on line ℓ_2
 200 : $P_{10693} = (4, 38, 1, 1)$ lies on line ℓ_2
 201 : $P_{10723} = (34, 38, 1, 1)$ lies on line ℓ_3
 202 : $P_{10780} = (27, 39, 1, 1)$ lies on line ℓ_3

203 : $P_{10813} = (60, 39, 1, 1)$ lies on line ℓ_2
 204 : $P_{10835} = (18, 40, 1, 1)$ lies on line ℓ_2
 205 : $P_{10875} = (58, 40, 1, 1)$ lies on line ℓ_3
 206 : $P_{10884} = (3, 41, 1, 1)$ lies on line ℓ_3
 207 : $P_{10923} = (42, 41, 1, 1)$ lies on line ℓ_2
 208 : $P_{10948} = (3, 42, 1, 1)$ lies on line ℓ_2
 209 : $P_{10986} = (41, 42, 1, 1)$ lies on line ℓ_3
 210 : $P_{11025} = (16, 43, 1, 1)$ lies on line ℓ_3
 211 : $P_{11068} = (59, 43, 1, 1)$ lies on line ℓ_2
 212 : $P_{11101} = (28, 44, 1, 1)$ lies on line ℓ_3
 213 : $P_{11121} = (48, 44, 1, 1)$ lies on line ℓ_2
 214 : $P_{11145} = (8, 45, 1, 1)$ lies on line ℓ_2
 215 : $P_{11174} = (37, 45, 1, 1)$ lies on line ℓ_3
 216 : $P_{11216} = (15, 46, 1, 1)$ lies on line ℓ_3
 217 : $P_{11234} = (33, 46, 1, 1)$ lies on line ℓ_2
 218 : $P_{11290} = (25, 47, 1, 1)$ lies on line ℓ_2
 219 : $P_{11319} = (54, 47, 1, 1)$ lies on line ℓ_3
 220 : $P_{11357} = (28, 48, 1, 1)$ lies on line ℓ_2
 221 : $P_{11373} = (44, 48, 1, 1)$ lies on line ℓ_3
 222 : $P_{11414} = (21, 49, 1, 1)$ lies on line ℓ_3
 223 : $P_{11429} = (36, 49, 1, 1)$ lies on line ℓ_2
 224 : $P_{11470} = (13, 50, 1, 1)$ lies on line ℓ_2
 225 : $P_{11520} = (63, 50, 1, 1)$ lies on line ℓ_3
 226 : $P_{11527} = (6, 51, 1, 1)$ lies on line ℓ_3
 227 : $P_{11574} = (53, 51, 1, 1)$ lies on line ℓ_2
 228 : $P_{11595} = (10, 52, 1, 1)$ lies on line ℓ_3
 229 : $P_{11647} = (62, 52, 1, 1)$ lies on line ℓ_2
 230 : $P_{11655} = (6, 53, 1, 1)$ lies on line ℓ_2
 231 : $P_{11700} = (51, 53, 1, 1)$ lies on line ℓ_3
 232 : $P_{11738} = (25, 54, 1, 1)$ lies on line ℓ_3
 233 : $P_{11760} = (47, 54, 1, 1)$ lies on line ℓ_2
 234 : $P_{11800} = (23, 55, 1, 1)$ lies on line ℓ_2
 235 : $P_{11809} = (32, 55, 1, 1)$ lies on line ℓ_3
 236 : $P_{11842} = (1, 56, 1, 1)$ lies on line ℓ_3
 237 : $P_{11898} = (57, 56, 1, 1)$ lies on line ℓ_2
 238 : $P_{11906} = (1, 57, 1, 1)$ lies on line ℓ_2
 239 : $P_{11961} = (56, 57, 1, 1)$ lies on line ℓ_3
 240 : $P_{11987} = (18, 58, 1, 1)$ lies on line ℓ_3
 241 : $P_{12009} = (40, 58, 1, 1)$ lies on line ℓ_2
 242 : $P_{12049} = (16, 59, 1, 1)$ lies on line ℓ_2
 243 : $P_{12076} = (43, 59, 1, 1)$ lies on line ℓ_3
 244 : $P_{12124} = (27, 60, 1, 1)$ lies on line ℓ_2
 245 : $P_{12136} = (39, 60, 1, 1)$ lies on line ℓ_3
 246 : $P_{12191} = (30, 61, 1, 1)$ lies on line ℓ_3
 247 : $P_{12196} = (35, 61, 1, 1)$ lies on line ℓ_2
 248 : $P_{12235} = (10, 62, 1, 1)$ lies on line ℓ_2
 249 : $P_{12277} = (52, 62, 1, 1)$ lies on line ℓ_3
 250 : $P_{12302} = (13, 63, 1, 1)$ lies on line ℓ_3
 251 : $P_{12339} = (50, 63, 1, 1)$ lies on line ℓ_2

The single points on the surface are:

Points on surface but on no line

The surface has 3905 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_1	P_{60}	P_{61}

Line 1 intersects

Line	ℓ_0
in point	P_1

Line 2 intersects

Line	ℓ_0	ℓ_3
in point	P_{60}	P_{8258}

Line 3 intersects

Line	ℓ_0	ℓ_2
in point	P_{61}	P_{8258}

The surface has 4161 points:

Too many to print.