1 BLT set 5 over GF(67)

Points on the quadric $x_0^2 + x_1x_2 + x_3x_4$:

$P_1 = (0, 1, 0, 0, 0)$

$P_2 = (0, 0, 1, 0, 0)$

$P_3 = (0, 1, 33, 66, 33)$

$P_4 = (0, 1, 25, 33, 50)$

$P_5 = (0, 1, 15, 25, 53)$

$P_6 = (1, 65, 17, 40, 36)$

$P_7 = (1, 3, 61, 21, 4)$

$P_8 = (1, 54, 49, 17, 65)$

$P_9 = (1, 2, 3, 48, 18)$

$P_{10} = (1, 33, 14, 13, 52)$

$P_{11} = (1, 22, 4, 3, 15)$

$P_{12} = (1, 34, 28, 30, 33)$

$P_{13} = (1, 6, 64, 1, 17)$

$P_{14} = (1, 39, 47, 53, 64)$

$P_{15} = (1, 12, 50, 10, 27)$

$P_{16} = (1, 36, 54, 40, 10)$

$P_{17} = (1, 24, 4, 24, 49)$

$P_{18} = (1, 47, 6, 59, 27)$

$P_{19} = (1, 20, 43, 35, 29)$

$P_{20} = (1, 16, 15, 24, 43)$

$P_{21} = (1, 35, 23, 15, 49)$

$P_{22} = (1, 42, 11, 34, 12)$

$P_{23} = (1, 53, 2, 38, 6)$

$P_{24} = (1, 24, 15, 45, 56)$

$P_{25} = (1, 59, 39, 25, 58)$

$P_{26} = (1, 38, 50, 59, 45)$

$P_{27} = (1, 45, 45, 6, 42)$

$P_{28} = (1, 59, 47, 12, 48)$

$P_{29} = (1, 32, 48, 12, 45)$

$P_{30} = (1, 43, 30, 42, 57)$

$P_{31} = (1, 55, 14, 58, 41)$

$P_{32} = (1, 43, 46, 35, 43)$

$P_{33} = (1, 56, 17, 62, 3)$

$P_{34} = (1, 7, 34, 56, 40)$

$P_{35} = (1, 52, 18, 23, 35)$

$P_{36} = (1, 32, 34, 17, 66)$

$P_{37} = (1, 16, 19, 33, 7)$

$P_{38} = (1, 16, 56, 35, 5)$

$P_{39} = (1, 62, 64, 6, 42)$

$P_{40} = (1, 18, 57, 45, 1)$

$P_{41} = (1, 41, 20, 62, 57)$

$P_{42} = (1, 37, 35, 40, 48)$

$P_{43} = (1, 39, 62, 7, 66)$

$P_{44} = (1, 23, 37, 30, 52)$

$P_{45} = (1, 52, 42, 6, 49)$

$P_{46} = (1, 10, 19, 45, 30)$

$P_{47} = (1, 34, 11, 49, 32)$

$P_{48} = (1, 39, 4, 57, 9)$

$P_{49} = (1, 5, 3, 47, 41)$

$P_{50} = (1, 62, 10, 34, 31)$

$P_{51} = (1, 32, 63, 15, 4)$

$P_{52} = (1, 25, 19, 35, 40)$

$P_{53} = (1, 37, 62, 6, 53)$

$P_{54} = (1, 37, 36, 38, 9)$

$P_{55} = (1, 29, 10, 12, 26)$

$P_{56} = (1, 63, 42, 58, 41)$

$P_{57} = (1, 64, 56, 57, 57)$

$P_{58} = (1, 28, 66, 8, 62)$

$P_{59} = (1, 60, 47, 46, 45)$

$P_{60} = (1, 14, 6, 25, 10)$

$P_{61} = (1, 17, 29, 18, 47)$

$P_{62} = (1, 27, 43, 28, 59)$

$P_{63} = (0, 1, 64, 43, 25)$

$P_{64} = (1, 42, 11, 58, 44)$

$P_{65} = (1, 50, 12, 30, 9)$

$P_{66} = (1, 56, 14, 14, 54)$

$P_{67} = (1, 14, 49, 16, 45)$

$P_{68} = (1, 50, 3, 33, 34)$

Stabilizer of order 68 is generated by:

$$g_1 = \begin{pmatrix} 19 & 0 & 6 & 41 & 19 \\ 3 & 1 & 1 & 18 & 59 \\ 0 & 65 & 1 & 2 & 1 \\ 43 & 1 & 59 & 57 & 30 \\ 54 & 2 & 18 & 54 & 57 \end{pmatrix}$$

with 68 fixed points

$$g_2 = \begin{pmatrix} 49 & 7 & 2 & 37 & 9 \\ 33 & 14 & 10 & 7 & 35 \\ 30 & 17 & 29 & 54 & 35 \\ 19 & 4 & 26 & 2 & 2 \\ 8 & 17 & 12 & 0 & 39 \end{pmatrix}$$

with 0 fixed points The induced group has order 68 and is generated by:

g_1 =(2, 3)(4, 33)(5, 8)(6, 24)(7, 14)(9, 59)(10, 31)(11, 13)(12, 44)(15, 63)(16, 26)(17, 20)(18, 60)(19, 62)(21, 38)(22, 61)(23, 56)(25, 68)(28, 55)(29, 39)(30, 43)(32, 45)(34, 50)(35, 36)(37,

54)(40, 48)(41, 66)(42, 64)(46, 58)(47, 57)(49, 52)(51, 67)(53, 65)(1, 27)

g_2 =(2, 30, 58, 17)(3, 31, 42, 66)(4, 67, 35, 6)(5, 32, 33, 40)(7, 12, 60, 13)(8, 26, 43, 29)(9, 56, 18, 25)(10, 54, 59, 49)(11, 63, 39, 41)(15, 23, 19, 45)(16, 34, 27, 61)(20, 51, 62, 37)(21, 44, 50, 48)(22, 57, 36, 46)(24, 65, 68, 38)(28, 52, 53, 47)(1, 14, 64, 55)

Kernel has order 1 and is generated by:

There are 1 orbits on the BLT set.

The orbit length are [68]

The orbits are:

$O_0 = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34,$

(length 68)