1 BLT set 1 over GF(25)

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

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

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

$P_3 = (0, 1, 17, 4, 17)$

$P_4 = (0, 1, 13, 2, 21)$

$P_5 = (0, 1, 13, 3, 9)$

$P_6 = (0, 1, 17, 1, 13)$

$P_7 = (0, 1, 14, 21, 12)$

$P_8 = (0, 1, 20, 5, 1)$

$P_9 = (0, 1, 16, 13, 6)$

$P_{10} = (0, 1, 23, 11, 10)$

$P_{11} = (0, 1, 15, 18, 7)$

$P_{12} = (0, 1, 5, 15, 3)$

$P_{13} = (0, 1, 15, 12, 23)$

$P_{14} = (0, 1, 16, 17, 24)$

$P_{15} = (0, 1, 14, 9, 18)$

$P_{16} = (0, 1, 5, 10, 2)$

$P_{17} = (0, 1, 7, 22, 20)$

$P_{18} = (0, 1, 9, 23, 8)$

$P_{19} = (0, 1, 10, 6, 14)$

$P_{20} = (0, 1, 21, 14, 19)$

$P_{21} = (0, 1, 10, 24, 16)$

$P_{22} = (0, 1, 23, 19, 15)$

$P_{23} = (0, 1, 20, 20, 4)$

$P_{24} = (0, 1, 21, 16, 11)$

$P_{25} = (0, 1, 9, 7, 22)$

$P_{26} = (0, 1, 7, 8, 5)$

Stabilizer of order 1622400 is generated by:

$$g_1 = \begin{pmatrix} 13 & 0 & 0 & 20 & 1 \\ 0 & 3 & 9 & 1 & 13 \\ 0 & 10 & 0 & 0 & 0 \\ 3 & 3 & 0 & 24 & 22 \\ 10 & 15 & 0 & 18 & 24 \end{pmatrix}, 0$$

with 2 fixed points

$$g_2 = \begin{pmatrix} 9 & 0 & 0 & 18 & 13 \\ 0 & 19 & 0 & 0 & 0 \\ 0 & 16 & 12 & 7 & 24 \\ 10 & 19 & 0 & 14 & 21 \\ 19 & 14 & 0 & 17 & 9 \end{pmatrix}, 1$$

with 6 fixed points

$$g_3 = \begin{pmatrix} 11 & 0 & 0 & 19 & 23 \\ 0 & 22 & 0 & 0 & 0 \\ 0 & 0 & 24 & 0 & 0 \\ 13 & 0 & 0 & 4 & 6 \\ 4 & 0 & 0 & 12 & 11 \end{pmatrix}, 1$$

with 36 fixed points

$$g_4 = \begin{pmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 4 & 0 & 0 & 0 \\ 0 & 0 & 4 & 0 & 0 \\ 0 & 0 & 0 & 4 & 0 \\ 0 & 0 & 0 & 0 & 4 \end{pmatrix}, 0$$

with 676 fixed points

$$g_5 = \begin{pmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 22 & 0 & 0 & 0 \\ 0 & 0 & 24 & 0 & 0 \\ 0 & 0 & 0 & 22 & 0 \\ 0 & 0 & 0 & 0 & 24 \end{pmatrix}, 1$$

with 36 fixed points

$$g_6 = \begin{pmatrix} 5 & 0 & 0 & 6 & 21 \\ 0 & 8 & 0 & 0 & 0 \\ 0 & 0 & 6 & 0 & 0 \\ 5 & 0 & 0 & 5 & 20 \\ 22 & 0 & 0 & 15 & 14 \end{pmatrix}, 1$$

with 26 fixed points

$$g_7 = \begin{pmatrix} 4 & 0 & 0 & 0 & 0 \\ 0 & 3 & 0 & 0 & 0 \\ 0 & 0 & 2 & 0 & 0 \\ 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 1 \end{pmatrix}, 0$$

with 4 fixed points

$$g_8 = \begin{pmatrix} 15 & 0 & 0 & 21 & 4 \\ 0 & 21 & 0 & 0 & 0 \\ 0 & 11 & 15 & 24 & 21 \\ 19 & 4 & 0 & 18 & 4 \\ 16 & 20 & 0 & 3 & 4 \end{pmatrix}, 1$$

with 4 fixed points

$$g_9 = \begin{pmatrix} 4 & 0 & 0 & 0 & 0 \\ 0 & 10 & 0 & 0 & 0 \\ 0 & 0 & 9 & 0 & 0 \\ 0 & 0 & 0 & 22 & 0 \\ 0 & 0 & 0 & 0 & 24 \end{pmatrix}, 1$$

with 4 fixed points The induced group has order 31200 and is generated by:

g_1 =(6)(5)(9, 24, 12, 20)(8, 10, 26, 23)(14, 17, 18, 22)(13, 16, 19, 25)(7, 11, 21, 15)(1, 4, 3, 2)

g_2 =(6)(1)(9, 11, 21, 25)(8, 20, 13, 16)(15, 17, 23, 19)(10, 26, 18, 12)(7, 24, 22, 14)(2, 4, 5, 3)

g_3 =(3)(2)(4)(6)(5)(1)(7, 8)(17, 19)(15, 23)(14, 16)(13, 22)(10, 11)(18, 25)(20, 24)(21, 26)(9, 12)

g_4 =(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)(1)

g_5 =(3)(2)(4)(6)(5)(1)(7, 8)(17, 19)(15, 23)(14, 16)(13, 22)(10, 11)(18, 25)(20, 24)(21, 26)(9, 12)

g_6 =(3)(2)(4)(6)(5)(1)(7, 8)(17, 19)(15, 23)(14, 16)(13, 22)(10, 11)(18, 25)(20, 24)(21, 26)(9, 12)

g_7 =(2)(1)(3, 5, 6, 4)(8, 16, 23, 12)(10, 17, 22, 26)(11, 19, 13, 21)(18, 24, 25, 20)(7, 14, 15, 9)

g_8 =(1)(3)(9, 19, 23, 25, 20, 14, 11, 22)(10, 18, 12, 16, 15, 13, 24, 17)(2, 21, 5, 8, 4, 26, 6, 7)

g_9 =(1)(2)(3, 9, 4, 15, 6, 14, 5, 7)(10, 18, 26, 20, 22, 25, 17, 24)(8, 11, 12, 21, 23, 13, 16, 19)

Kernel has order 52 and is generated by:

$$b_1 = \begin{pmatrix} 17 & 0 & 0 & 5 & 4 \\ 0 & 4 & 0 & 0 & 0 \\ 0 & 0 & 4 & 0 & 0 \\ 2 & 0 & 0 & 6 & 8 \\ 15 & 0 & 0 & 12 & 6 \end{pmatrix}, 0$$

$$b_2 = \begin{pmatrix} 10 & 0 & 0 & 23 & 22 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 11 & 0 & 0 & 23 & 5 \\ 14 & 0 & 0 & 23 & 23 \end{pmatrix}, 0$$

$$b_3 = \begin{pmatrix} 1 & 0 & 0 & 0 & 0 \\ 0 & 4 & 0 & 0 & 0 \\ 0 & 0 & 4 & 0 & 0 \\ 0 & 0 & 0 & 4 & 0 \\ 0 & 0 & 0 & 0 & 4 \end{pmatrix}, 0$$

The kernel has 651 orbits on the quadric.

The orbit length are $[26^{625}, 1^{26}]$

There are 1 orbits on the BLT set.

The orbit length are [26]

The orbits are:

$O_0 = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26\}$ (length 26)