1 BLT set 3 over GF(23)

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

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

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

$P_3 = (0, 1, 9, 22, 9)$

$P_4 = (0, 1, 8, 11, 16)$

$P_5 = (0, 1, 1, 15, 3)$

$P_6 = (0, 1, 4, 7, 6)$

$P_7 = (1, 10, 14, 20, 1)$

$P_8 = (1, 22, 21, 4, 5)$

$P_9 = (1, 16, 4, 6, 16)$

$P_{10} = (1, 21, 19, 15, 4)$

$P_{11} = (1, 16, 9, 17, 5)$

$P_{12} = (1, 8, 2, 11, 11)$

$P_{13} = (1, 7, 21, 10, 22)$

$P_{14} = (1, 7, 20, 4, 5)$

$P_{15} = (1, 14, 17, 15, 4)$

$P_{16} = (1, 2, 6, 13, 22)$

$P_{17} = (1, 1, 3, 3, 14)$

$P_{18} = (1, 3, 2, 17, 5)$

$P_{19} = (1, 20, 7, 20, 1)$

$P_{20} = (1, 15, 22, 19, 8)$

$P_{21} = (1, 9, 2, 6, 16)$

$P_{22} = (1, 7, 21, 22, 10)$

$P_{23} = (1, 13, 16, 7, 3)$

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

Stabilizer of order 1152 is generated by:

$$g_1 = \begin{pmatrix} 12 & 0 & 0 & 18 & 1 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 1 & 1 & 15 & 3 \\ 11 & 3 & 0 & 17 & 1 \\ 14 & 15 & 0 & 2 & 17 \end{pmatrix}$$

$$g_2 = \begin{pmatrix} 11 & 0 & 0 & 18 & 1 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 11 & 0 & 0 & 6 & 22 \\ 14 & 0 & 0 & 21 & 6 \end{pmatrix}$$

$$g_3 = \begin{pmatrix} 19 & 0 & 0 & 12 & 16 \\ 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 \\ 8 & 0 & 0 & 14 & 2 \\ 6 & 0 & 0 & 4 & 14 \end{pmatrix}$$

$$g_4 = \begin{pmatrix} 12 & 0 & 0 & 18 & 1 \\ 0 & 1 & 9 & 22 & 9 \\ 0 & 0 & 1 & 0 & 0 \\ 11 & 0 & 9 & 17 & 1 \\ 14 & 0 & 22 & 2 & 17 \end{pmatrix}$$

$$g_5 = \begin{pmatrix} 11 & 0 & 0 & 5 & 22 \\ 0 & 0 & 3 & 0 & 0 \\ 0 & 8 & 0 & 0 & 0 \\ 12 & 0 & 0 & 6 & 22 \\ 9 & 0 & 0 & 21 & 6 \end{pmatrix}$$

$$g_6 = \begin{pmatrix} 20 & 20 & 0 & 9 & 17 \\ 7 & 2 & 3 & 2 & 7 \\ 0 & 8 & 0 & 0 & 0 \\ 20 & 10 & 0 & 1 & 14 \\ 16 & 16 & 0 & 20 & 1 \end{pmatrix}$$

$$g_7 = \begin{pmatrix} 14 & 22 & 0 & 6 & 2 \\ 0 & 1 & 0 & 0 & 0 \\ 22 & 8 & 1 & 4 & 15 \\ 3 & 18 & 0 & 15 & 4 \\ 1 & 12 & 0 & 4 & 17 \end{pmatrix}$$

Induced action on the BLT-set:

The induced group has order 1152 and is generated by:

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

g_2 =(7, 9, 12)(8, 11, 10)(13, 16, 17)(14, 18, 15)(19, 21, 24)(20, 23, 22)

g_3 =(8, 10)(9, 12)(14, 15)(16, 17)(20, 22)(21, 24)

g_4 =(1, 3)(5, 6)(7, 20, 9, 23, 12, 22)(8, 16, 11, 17, 10, 13)(14, 21, 18, 24, 15, 19)

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

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

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

Kernel has order 1 and is generated by:

There are 1 orbits on the BLT set.

The orbit length are [24]

The orbits are:

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