

Number of vertices $n = 8$.

Adjacencies of Graph

1. vertex 1 adjacent to 6 7 8
2. vertex 2 adjacent to 6 7 8
3. vertex 3 adjacent to 6 7 8
4. vertex 4 adjacent to 6 7 8
5. vertex 5 adjacent to 6 7 8
6. vertex 6 adjacent to 1 2 3 4 5 7 8
7. vertex 7 adjacent to 1 2 3 4 5 6 8
8. vertex 8 adjacent to 1 2 3 4 5 6 7

Size of automorphism group of the graph=720

Full group: $|Aut(polytope)| = 92160$

Restricted group: $|Aut(G) \times switch| = 92160$

Number of orbits for the full group : 2

List of orbits of facets for the full group: Total number of orbits = 2 Total number of facets = 64

1. Inequality 1 with incidence 96 and stabilizer of size 1536. Orbit size is 60 nature: 3-cycle inequality, $C=[3, 6, 7]$ $F=[3, 6]$

$(1,6) : 0$	$(1,7) : 0$	$(1,8) : 0$	$(2,6) : 0$	$(2,7) : 0$	$(2,8) : 0$
$(3,6) : -1$	$(3,7) : 1$	$(3,8) : 0$	$(4,6) : 0$	$(4,7) : 0$	$(4,8) : 0$
$(5,6) : 0$	$(5,7) : 0$	$(5,8) : 0$	$(6,7) : 1$	$(6,8) : 0$	$(7,8) : 0$

2. Inequality 2 with incidence 96 and stabilizer of size 23040. Orbit size is 4 nature: 3-cycle inequality, $C=[6, 8, 7]$ $F=[6, 8]$

$(1,6) : 0$	$(1,7) : 0$	$(1,8) : 0$	$(2,6) : 0$	$(2,7) : 0$	$(2,8) : 0$
$(3,6) : 0$	$(3,7) : 0$	$(3,8) : 0$	$(4,6) : 0$	$(4,7) : 0$	$(4,8) : 0$
$(5,6) : 0$	$(5,7) : 0$	$(5,8) : 0$	$(6,7) : 1$	$(6,8) : -1$	$(7,8) : 1$