

Number of vertices $n = 8$.

Adjacencies of Graph

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

Size of automorphism group of the graph=240

Full group: $|Aut(polytope)| = 30720$

Restricted group: $|Aut(G) \times switch| = 30720$

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 = 120

1. Inequality 1 with incidence 96 and stabilizer of size 768. Orbit size is 40

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

2. Inequality 2 with incidence 64 and stabilizer of size 384. Orbit size is 80

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