Number of vertices $n = 8$.
Adjacencies of Graph

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

Size of automorphism group of the graph=48
Full group: $|Aut(polytope)| = 6144$
Restricted group: $|Aut(G) \times switch| = 6144$
Number of orbits for the full group : 3
List of orbits of facets for the full group: Total number of orbits = 3 Total number of facets = 200

1. Inequality 1 with incidence 64 and stabilizer of size 128. Orbit size is 48 nature: 4-cycle inequality, C=[3, 7, 8, 4] F=[3, 7]

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

2. Inequality 2 with incidence 64 and stabilizer of size 256. Orbit size is 24 nature: edge inequality e=[2, 6]

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

3. Inequality 3 with incidence 24 and stabilizer of size 48. Orbit size is 128 nature: 6-cycle inequality, C=[1, 2, 3, 7, 8, 5] F=[1, 2]

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