Number of vertices $n = 7$.
Adjacencies of Graph

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

Size of automorphism group of the graph=20
Full group: $|Aut(polytope)| = 1280$
Restricted group: $|Aut(G) \times switch| = 1280$
Number of orbits for the full group : 6
List of orbits of facets for the full group: Total number of orbits = 6 Total number of facets = 780

1. Inequality 1 with incidence 48 and stabilizer of size 32. Orbit size is 40
   nature: 3-cycle inequality, C=[2, 7, 1] F=[2, 7]

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

2. Inequality 2 with incidence 48 and stabilizer of size 64. Orbit size is 20
   nature: 3-cycle inequality, C=[1, 6, 7] F=[1, 6]

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

3. Inequality 3 with incidence 21 and stabilizer of size 20. Orbit size is 64
   nature: Hypermetric, b=[1, -1, 1, -1, -1, 1, 1]

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

4. Inequality 4 with incidence 20 and stabilizer of size 80. Orbit size is 16
   nature: 5-cycle inequality, C=[4, 5, 1, 2, 3] F=[4, 5]

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

5. Inequality 5 with incidence 19 and stabilizer of size 4. Orbit size is 320
   nature: unknown

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

6. Inequality 6 with incidence 18 and stabilizer of size 4. Orbit size is 320
   nature: unknown

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