Number of vertices $n = 10$.
Adjacencies of Graph

1. vertex 1 adjacent to 2 5 6

2. vertex 2 adjacent to 1 3 7

3. vertex 3 adjacent to 2 4 8

4. vertex 4 adjacent to 3 5 9

5. vertex 5 adjacent to 1 4 10

6. vertex 6 adjacent to 1 7 10

7. vertex 7 adjacent to 2 6 8

8. vertex 8 adjacent to 3 7 9

9. vertex 9 adjacent to 4 8 10

10. vertex 10 adjacent to 5 6 9

Size of automorphism group of the graph=20
    Full group: $|Aut(polytope)| = 10240$
    Restricted group: $|Aut(G) \times switch| = 10240$
    Number of orbits for the full group : 5
    List of orbits of facets for the full group: Total number of orbits = 5 Total number of facets = 742

1. Inequality 1 with incidence 256 and stabilizer of size 1024. Orbit size is 10 nature: edge inequality e=[4, 9]

(1,2) : 0	(1,5) : 0	(1,6) : 0	(2,3) : 0	(2,7) : 0	(3,4) : 0
(3,8) : 0	(4,5) : 0	(4,9) : 1	(5,10) : 0	(6,7) : 0	(6,10) : 0
(7,8) : 0	(8,9) : 0	(9,10) : 0			

2. Inequality 2 with incidence 256 and stabilizer of size 256. Orbit size is 40 nature: 4-cycle inequality, C=[1, 5, 10, 6] F=[1, 5]

(1,2) : 0	(1,5) : -1	(1,6) : 1	(2,3) : 0	(2,7) : 0	(3,4) : 0
(3,8) : 0	(4,5) : 0	(4,9) : 0	(5,10) : 1	(6,7) : 0	(6,10) : 1
(7,8) : 0	(8,9) : 0	(9,10) : 0			

1

3. Inequality 3 with incidence 256 and stabilizer of size 512. Orbit size is 20 nature: edge inequality e=[9, 10]

(1,2) : 0	(1,5) : 0	(1,6) : 0	(2,3) : 0	(2,7) : 0	(3,4) : 0
(3,8) : 0	(4,5) : 0	(4,9) : 0	(5,10) : 0	(6,7) : 0	(6,10) : 0
(7,8) : 0	(8,9) : 0	(9,10) : 1			

4. Inequality 4 with incidence 160 and stabilizer of size 320. Orbit size is 32 nature: 5-cycle inequality, C=[8, 9, 10, 6, 7] F=[8, 9]

(1,2) : 0	(1,5) : 0	(1,6) : 0	(2,3) : 0	(2,7) : 0	(3,4) : 0
(3,8) : 0	(4,5) : 0	(4,9) : 0	(5,10) : 0	(6,7) : 1	(6,10) : 1
(7,8) : 1	(8,9) : -1	(9,10) : 1			

5. Inequality 5 with incidence 56 and stabilizer of size 16. Orbit size is 640 nature: 7-cycle inequality, C=[1, 2, 7, 8, 9, 4, 5] F=[1, 2]

(1,2) : -1	(1,5) : 1	(1,6) : 0	(2,3) : 0	(2,7) : 1	(3,4) : 0
(3,8) : 0	(4,5) : 1	(4,9) : 1	(5,10) : 0	(6,7) : 0	(6,10) : 0
(7,8) : 1	(8,9) : 1	(9,10) : 0			