Number of vertices $n = 12$.
Adjacencies of Graph

1. vertex 1 adjacent to 2 6 7

2. vertex 2 adjacent to 1 3 8

3. vertex 3 adjacent to 2 4 9

4. vertex 4 adjacent to 3 5 10

5. vertex 5 adjacent to 4 6 11

6. vertex 6 adjacent to 1 5 12

7. vertex 7 adjacent to 1 8 12

8. vertex 8 adjacent to 2 7 9

9. vertex 9 adjacent to 3 8 10

10. vertex 10 adjacent to 4 9 11

11. vertex 11 adjacent to 5 10 12

12. vertex 12 adjacent to 6 7 11

Size of automorphism group of the graph=24
    Full group: $|Aut(polytope)| = 49152$
    Restricted group: $|Aut(G) \times switch| = 49152$
    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 $= 2452$

1. Inequality 1 with incidence 1024 and stabilizer of size 1024. Orbit size
   is 48

(1,2) : 0	(1,6) : 1	(1,7) : 1	(2,3) : 0	(2,8) : 0	(3,4) : 0
(3,9) : 0	(4,5) : 0	(4,10) : 0	(5,6) : 0	(5,11) : 0	(6,12) : 1
(7,8) : 0	(7,12) : -1	(8,9) : 0	(9,10) : 0	(10,11) : 0	(11,12) : 0

1

2. Inequality 2 with incidence 1024 and stabilizer of size 2048. Orbit size is 24

(1,2) : 0	(1,6) : 0	(1,7) : 0	(2,3) : 0	(2,8) : 0	(3,4) : 0
(3,9) : 0	(4,5) : 0	(4,10) : 0	(5,6) : 0	(5,11) : 0	(6,12) : 0
(7,8) : 1	(7,12) : 0	(8,9) : 0	(9,10) : 0	(10,11) : 0	(11,12) : 0

3. Inequality 3 with incidence 1024 and stabilizer of size 4096. Orbit size is 12

(1,2) : 0	(1,6) : 0	(1,7) : 0	(2,3) : 0	(2,8) : 0	(3,4) : 0
(3,9) : 1	(4,5) : 0	(4,10) : 0	(5,6) : 0	(5,11) : 0	(6,12) : 0
(7,8) : 0	(7,12) : 0	(8,9) : 0	(9,10) : 0	(10,11) : 0	(11,12) : 0

4. Inequality 4 with incidence 384 and stabilizer of size 768. Orbit size is 64

(1,2) : 0	(1,6) : 0	(1,7) : 0	(2,3) : 0	(2,8) : 0	(3,4) : 0
(3,9) : 0	(4,5) : 0	(4,10) : 0	(5,6) : 0	(5,11) : 0	(6,12) : 0
(7,8) : -1	(7,12) : 1	(8,9) : 1	(9,10) : 1	(10,11) : 1	(11,12) : 1

5. Inequality 5 with incidence 128 and stabilizer of size 32. Orbit size is 1536

(1,2) : 1	(1,6) : 1	(1,7) : 0	(2,3) : 1	(2,8) : 0	(3,4) : 0
(3,9) : 1	(4,5) : 0	(4,10) : 0	(5,6) : 1	(5,11) : -1	(6,12) : 0
(7,8) : 0	(7,12) : 0	(8,9) : 0	(9,10) : 1	(10,11) : 1	(11,12) : 0

6. Inequality 6 with incidence 128 and stabilizer of size 64. Orbit size is 768

(1,2) : 0	(1,6) : 0	(1,7) : 0	(2,3) : 0	(2,8) : 0	(3,4) : 1
(3,9) : 1	(4,5) : -1	(4,10) : 0	(5,6) : 1	(5,11) : 0	(6,12) : 1
(7,8) : 1	(7,12) : 1	(8,9) : 1	(9,10) : 0	(10,11) : 0	(11,12) : 0