

| instance | P_{pos} | | P_{ti} | | Branch-and-bound | |
|-----------------------|------------------|---------------|-----------------|---------------|------------------|---------------|
| | LB | UB | LB | UB | LB | UB |
| $(20, 10, 40, 1)_f$ | | 59.10 | | 59.10 | | 59.10 |
| $(20, 10, 40, 2)_f$ | | 57.24 | | 57.24 | | 57.24 |
| $(20, 10, 40, 3)_f$ | | 45.99 | | 45.99 | | 45.99 |
| $(20, 10, 40, 4)_f$ | | 33.96 | | 33.96 | | 33.96 |
| $(20, 10, 40, 5)_f$ | | 66.23 | | 66.23 | | 66.23 |
| $(40, 15, 80, 1)_f$ | | 133.78 | | 133.78 | | 133.78 |
| $(40, 15, 80, 2)_f$ | | 133.04 | | 133.04 | | 133.04 |
| $(40, 15, 80, 3)_f$ | | 91.39 | | 91.39 | | 91.39 |
| $(40, 15, 80, 4)_f$ | | 123.01 | | 123.01 | | 123.01 |
| $(40, 15, 80, 5)_f$ | | 95.69 | 95.52 | 95.69 | | 95.69 |
| $(80, 15, 120, 1)_f$ | 256.86 | 261.18 | 260.11 | 263.43 | | 261.18 |
| $(80, 15, 120, 2)_f$ | 210.56 | 219.13 | 217.40 | 217.90 | | 217.90 |
| $(80, 15, 120, 3)_f$ | 254.08 | 254.52 | 252.98 | 255.82 | | 254.52 |
| $(80, 15, 120, 4)_f$ | 299.54 | 301.04 | 301.00 | 301.04 | | 301.04 |
| $(80, 15, 120, 5)_f$ | 232.35 | 248.67 | 247.79 | 248.03 | | 248.03 |
| $(120, 20, 200, 1)_f$ | 377.40 | 461.13 | 389.49 | 504.52 | | 390.08 |
| $(120, 20, 200, 2)_f$ | 449.53 | 452.31 | 450.50 | 461.92 | | 452.15 |
| $(120, 20, 200, 3)_f$ | 220.85 | 471.47 | 387.15 | 490.99 | <i>388.53</i> | 388.57 |
| $(120, 20, 200, 4)_f$ | 408.78 | 422.60 | <i>418.59</i> | 426.74 | 418.71 | 419.43 |
| $(120, 20, 200, 5)_f$ | 378.07 | 452.93 | 443.92 | 449.55 | | 444.30 |
| $(200, 30, 300, 1)_f$ | 552.95 | 1021.99 | 0.00 | 884.04 | | 715.10 |
| $(200, 30, 300, 2)_f$ | 597.86 | 1097.33 | 0.00 | 933.98 | <i>810.24</i> | 811.38 |
| $(200, 30, 300, 3)_f$ | 409.67 | 1003.28 | 0.00 | 879.71 | | 734.17 |
| $(200, 30, 300, 4)_f$ | 437.46 | 1030.79 | 0.00 | 916.47 | | 750.36 |
| $(200, 30, 300, 5)_f$ | 554.74 | 964.09 | 0.00 | 912.18 | <i>746.31</i> | 747.57 |