

| Instance | Omega | Tolerance | Obj. LR (UB) | Time LR | Gap LR | Improvement (LR to Naïve) |
|----------|-------|-----------|--------------|---------|--------|---------------------------|
| 1 | 100 | 0.01 | 8555.92441 | 4201 | 29.16% | -4.63% |
| | 100 | 0.05 | 12116.5303 | 3403 | 41.79% | -1.37% |
| 2 | 100 | 0.01 | 8628.11967 | 4201 | 31.04% | -4.64% |
| | 100 | 0.05 | 12348.8062 | 2801 | 45.22% | -2.91% |
| 3 | 100 | 0.01 | 8134.94675 | 4202 | 31.45% | -8.33% |
| | 100 | 0.05 | 11804.228 | 3083 | 44.18% | -1.05% |
| 4 | 100 | 0.01 | 8411.37701 | 4203 | 31.11% | -5.46% |
| | 100 | 0.05 | 12013.0469 | 4283 | 44.04% | 0.35% |
| 5 | 100 | 0.01 | 8356.76287 | 4202 | 29.21% | -4.07% |
| | 100 | 0.05 | 12094.3522 | 4334 | 43.02% | 0.96% |
| 6 | 100 | 0.01 | 8420.27628 | 4202 | 29.90% | -5.06% |
| | 100 | 0.05 | 12157.4762 | 2671 | 44.05% | -4.73% |
| 7 | 100 | 0.01 | 8472.46036 | 4201 | 31.25% | -3.81% |
| | 100 | 0.05 | 11918.5625 | 3683 | 42.91% | -0.36% |
| 8 | 100 | 0.01 | 8714.49395 | 4201 | 30.10% | -7.06% |
| | 100 | 0.05 | 12404.1714 | 4410 | 44.22% | -3.78% |
| 9 | 100 | 0.01 | 8413.2984 | 4202 | 30.48% | -5.44% |
| | 100 | 0.05 | 12011.3876 | 3615 | 44.36% | -2.04% |
| 10 | 100 | 0.01 | 8299.37802 | 4201 | 31.61% | -6.52% |
| | 100 | 0.05 | 12077.2917 | 4341 | 44.66% | -2.20% |
| 11 | 100 | 0.01 | 8555.92441 | 4201 | 29.16% | -4.63% |
| | 100 | 0.05 | 12116.5303 | 3395 | 41.79% | -1.50% |
| 12 | 100 | 0.01 | 8628.11967 | 4201 | 31.04% | -4.64% |
| | 100 | 0.05 | 12348.8062 | 2798 | 45.22% | -2.91% |
| 13 | 100 | 0.01 | 8134.94675 | 4202 | 31.45% | -8.33% |
| | 100 | 0.05 | 11804.228 | 3079 | 44.18% | -1.05% |
| 14 | 100 | 0.01 | 8419.41412 | 4201 | 31.18% | -5.68% |
| | 100 | 0.05 | 12013.0469 | 4287 | 44.04% | 0.35% |
| 15 | 100 | 0.01 | 8356.76287 | 4201 | 29.21% | -4.07% |
| | 100 | 0.05 | 12067.4825 | 4334 | 42.89% | 1.25% |
| 16 | 100 | 0.01 | 8420.27628 | 4202 | 29.90% | -5.06% |
| | 100 | 0.05 | 12157.4762 | 2665 | 44.05% | -4.66% |
| 17 | 100 | 0.01 | 8507.46005 | 4201 | 31.53% | -4.75% |
| | 100 | 0.05 | 11918.5625 | 3665 | 42.91% | -0.36% |
| 18 | 100 | 0.01 | 8714.49395 | 4201 | 30.10% | -7.06% |
| | 100 | 0.05 | 12404.1714 | 4407 | 44.22% | -3.78% |
| 19 | 100 | 0.01 | 8430.3034 | 4201 | 30.62% | -5.92% |
| | 100 | 0.05 | 12011.3876 | 3619 | 44.36% | -2.04% |
| 20 | 100 | 0.01 | 8299.37802 | 4201 | 31.61% | -6.52% |
| | 100 | 0.05 | 12077.2917 | 4339 | 44.66% | -2.12% |
| 1 | 600 | 0.01 | 9547.37912 | 4208 | 48.20% | 6.73% |
| | 600 | 0.05 | 12855.3912 | 4201 | 58.09% | 12.62% |
| 2 | 600 | 0.01 | 9434.34928 | 4209 | 49.58% | 2.72% |
| | 600 | 0.05 | 12744.4974 | 4201 | 57.22% | 10.64% |
| 3 | 600 | 0.01 | 9428.08295 | 4209 | 48.60% | 2.34% |

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|----|-----|------|------------|------|--------|--------|
| | 600 | 0.05 | 12755.2186 | 4202 | 56.99% | 8.35% |
| 4 | 600 | 0.01 | 9607.79297 | 4209 | 48.64% | 3.05% |
| | 600 | 0.05 | 12910.1781 | 4202 | 56.62% | 11.20% |
| 5 | 600 | 0.01 | 9470.30209 | 4209 | 48.36% | 3.99% |
| | 600 | 0.05 | 12762.5931 | 4204 | 57.35% | 7.87% |
| 6 | 600 | 0.01 | 9633.74767 | 4208 | 47.43% | 5.85% |
| | 600 | 0.05 | 12938.8551 | 4202 | 55.91% | 10.12% |
| 7 | 600 | 0.01 | 9616.2447 | 4209 | 47.46% | 3.48% |
| | 600 | 0.05 | 12890.3555 | 4203 | 56.27% | 10.36% |
| 8 | 600 | 0.01 | 9453.45747 | 4210 | 49.01% | 4.49% |
| | 600 | 0.05 | 12751.5665 | 4202 | 56.81% | 11.19% |
| 9 | 600 | 0.01 | 9578.07997 | 4209 | 47.92% | 5.38% |
| | 600 | 0.05 | 12876.4404 | 4201 | 56.73% | 10.34% |
| 10 | 600 | 0.01 | 9514.89601 | 4209 | 47.88% | 4.96% |
| | 600 | 0.05 | 12815.8733 | 4203 | 56.63% | 9.93% |
| 11 | 600 | 0.01 | 9520.13251 | 4209 | 48.95% | 1.89% |
| | 600 | 0.05 | 12817.0775 | 4203 | 56.31% | 9.28% |
| 12 | 600 | 0.01 | 9468.00546 | 4209 | 45.20% | 6.88% |
| | 600 | 0.05 | 12784.1502 | 4201 | 57.09% | 6.03% |
| 13 | 600 | 0.01 | 9436.07284 | 4209 | 49.74% | 5.01% |
| | 600 | 0.05 | 12739.6943 | 4203 | 58.58% | 9.34% |
| 14 | 600 | 0.01 | 9723.84499 | 4209 | 45.97% | 8.70% |
| | 600 | 0.05 | 13030.7699 | 4202 | 55.49% | 10.32% |
| 15 | 600 | 0.01 | 9495.71117 | 4209 | 48.53% | 1.33% |
| | 600 | 0.05 | 12840.732 | 4203 | 55.94% | 8.63% |
| 16 | 600 | 0.01 | 9694.84706 | 4209 | 47.73% | 1.69% |
| | 600 | 0.05 | 12958.8238 | 4201 | 55.51% | 8.79% |
| 17 | 600 | 0.01 | 9447.56995 | 4209 | 49.48% | 5.77% |
| | 600 | 0.05 | 12766.4747 | 4202 | 56.81% | 10.24% |
| 18 | 600 | 0.01 | 9598.85209 | 4208 | 47.86% | 3.72% |
| | 600 | 0.05 | 12895.4197 | 4203 | 56.38% | 8.59% |
| 19 | 600 | 0.01 | 9576.94522 | 4209 | 49.09% | 3.20% |
| | 600 | 0.05 | 12891.7697 | 4203 | 57.08% | 8.02% |
| 20 | 600 | 0.01 | 9503.34239 | 4208 | 47.58% | 7.01% |
| | 600 | 0.05 | 12824.6756 | 4202 | 57.41% | 8.82% |
| 1 | 900 | 0.01 | 9739.61801 | 4218 | 49.07% | 9.54% |
| | 900 | 0.05 | 13072.9796 | 4203 | 57.35% | 14.54% |
| 2 | 900 | 0.01 | 9777.81155 | 4217 | 48.32% | 10.15% |
| | 900 | 0.05 | 13090.4822 | 4203 | 57.08% | 14.14% |
| 3 | 900 | 0.01 | 9814.29444 | 4216 | 47.70% | 12.37% |
| | 900 | 0.05 | 13159.788 | 4206 | 57.13% | 14.86% |
| 4 | 900 | 0.01 | 9882.68038 | 4216 | 48.26% | 12.86% |
| | 900 | 0.05 | 13171.3658 | 4203 | 56.86% | 16.31% |
| 5 | 900 | 0.01 | 9712.59807 | 4219 | 48.15% | 8.60% |
| | 900 | 0.05 | 13030.0048 | 4204 | 56.61% | 13.53% |
| 6 | 900 | 0.01 | 9730.22108 | 4215 | 48.28% | 8.62% |

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|----|------|------|------------|------|--------|--------|
| | 900 | 0.05 | 13061.8071 | 4203 | 58.27% | 10.89% |
| 7 | 900 | 0.01 | 9677.65564 | 4215 | 48.95% | 10.02% |
| | 900 | 0.05 | 13005.7602 | 4204 | 57.44% | 13.49% |
| 8 | 900 | 0.01 | 9668.30043 | 4216 | 48.10% | 11.35% |
| | 900 | 0.05 | 12976.7367 | 4209 | 56.94% | 13.12% |
| 9 | 900 | 0.01 | 9752.19262 | 4218 | 49.12% | 12.74% |
| | 900 | 0.05 | 13061.4249 | 4206 | 57.05% | 12.39% |
| 10 | 900 | 0.01 | 9613.12192 | 4217 | 48.46% | 9.63% |
| | 900 | 0.05 | 12926.5762 | 4203 | 56.46% | 14.27% |
| 11 | 900 | 0.01 | 9739.3258 | 4215 | 48.70% | 8.13% |
| | 900 | 0.05 | 13056.6749 | 4204 | 57.02% | 12.21% |
| 12 | 900 | 0.01 | 9797.84295 | 4219 | 48.24% | 11.38% |
| | 900 | 0.05 | 13131.6148 | 4208 | 56.92% | 13.88% |
| 13 | 900 | 0.01 | 9870.16734 | 4217 | 48.63% | 8.23% |
| | 900 | 0.05 | 13187.451 | 4209 | 57.24% | 11.95% |
| 14 | 900 | 0.01 | 9686.51711 | 4215 | 48.90% | 8.55% |
| | 900 | 0.05 | 13033.2506 | 4203 | 58.11% | 10.04% |
| 15 | 900 | 0.01 | 9550.52053 | 4217 | 49.48% | 9.94% |
| | 900 | 0.05 | 12863.8583 | 4206 | 58.04% | 14.00% |
| 16 | 900 | 0.01 | 9770.83249 | 4217 | 47.88% | 8.83% |
| | 900 | 0.05 | 13104.8745 | 4203 | 56.78% | 14.70% |
| 17 | 900 | 0.01 | 9651.55246 | 4223 | 49.76% | 6.34% |
| | 900 | 0.05 | 12979.2233 | 4204 | 57.83% | 11.75% |
| 18 | 900 | 0.01 | 9702.39552 | 4219 | 48.47% | 7.75% |
| | 900 | 0.05 | 13025.0603 | 4203 | 57.43% | 14.25% |
| 19 | 900 | 0.01 | 9741.66974 | 4217 | 49.40% | 9.28% |
| | 900 | 0.05 | 13069.6693 | 4203 | 57.18% | 15.24% |
| 20 | 900 | 0.01 | 9749.49964 | 4217 | 47.77% | 7.52% |
| | 900 | 0.05 | 13073.6349 | 4205 | 56.81% | 12.09% |
| 1 | 1500 | 0.01 | 9909.32182 | 4240 | 49.26% | 17.45% |
| | 1500 | 0.05 | 13228.1762 | 4213 | 57.85% | 18.62% |
| 2 | 1500 | 0.01 | 9803.20423 | 4235 | 50.19% | 23.63% |
| | 1500 | 0.05 | 13157.8606 | 4217 | 57.30% | 27.44% |
| 3 | 1500 | 0.01 | 9815.30729 | 4234 | 49.08% | 20.19% |
| | 1500 | 0.05 | 13143.1657 | 4208 | 57.08% | 24.02% |
| 4 | 1500 | 0.01 | 9868.96684 | 4236 | 49.05% | 23.16% |
| | 1500 | 0.05 | 13205.3985 | 4209 | 56.97% | 23.05% |
| 5 | 1500 | 0.01 | 9868.558 | 4243 | 49.31% | 21.73% |
| | 1500 | 0.05 | 13200.8499 | 4212 | 57.17% | 22.79% |
| 6 | 1500 | 0.01 | 9896.55283 | 4232 | 49.26% | 17.41% |
| | 1500 | 0.05 | 13240.3032 | 4208 | 58.84% | 25.58% |
| 7 | 1500 | 0.01 | 9769.51874 | 4230 | 49.02% | 19.36% |
| | 1500 | 0.05 | 13105.1439 | 4209 | 57.76% | 25.65% |
| 8 | 1500 | 0.01 | 9845.5699 | 4234 | 48.82% | 22.39% |
| | 1500 | 0.05 | 13178.2595 | 4232 | 57.60% | 22.16% |
| 9 | 1500 | 0.01 | 9784.07705 | 4238 | 49.79% | 19.86% |

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|----|------|------|------------|------|--------|--------|
| | 1500 | 0.05 | 13123.9853 | 4206 | 57.25% | 23.72% |
| 10 | 1500 | 0.01 | 9942.87933 | 4231 | 48.70% | 50.16% |
| | 1500 | 0.05 | 13288.8438 | 4207 | 57.64% | 22.79% |
| 11 | 1500 | 0.01 | 9876.28958 | 4234 | 49.34% | 20.35% |
| | 1500 | 0.05 | 13214.6169 | 4206 | 57.54% | 23.98% |
| 12 | 1500 | 0.01 | 9872.73771 | 4234 | 49.12% | 20.59% |
| | 1500 | 0.05 | 13214.8834 | 4206 | 57.19% | 22.96% |
| 13 | 1500 | 0.01 | 9908.12783 | 4233 | 49.36% | 22.38% |
| | 1500 | 0.05 | 13265.1459 | 4208 | 57.49% | 24.57% |
| 14 | 1500 | 0.01 | 9882.49996 | 4237 | 48.84% | 17.01% |
| | 1500 | 0.05 | 13210.4316 | 4205 | 58.67% | 27.39% |
| 15 | 1500 | 0.01 | 9838.22219 | 4235 | 49.78% | 20.36% |
| | 1500 | 0.05 | 13183.6089 | 4209 | 59.06% | 20.30% |
| 16 | 1500 | 0.01 | 9919.88581 | 4232 | 49.08% | 20.29% |
| | 1500 | 0.05 | 13263.8726 | 4209 | 57.30% | 31.17% |
| 17 | 1500 | 0.01 | 9875.76181 | 4236 | 49.30% | 17.81% |
| | 1500 | 0.05 | 13225.7491 | 4213 | 58.61% | 23.22% |
| 18 | 1500 | 0.01 | 9831.38969 | 4235 | 50.01% | 17.31% |
| | 1500 | 0.05 | 13171.6556 | 4207 | 57.90% | 23.90% |
| 19 | 1500 | 0.01 | 9876.56 | 4234 | 49.12% | 19.64% |
| | 1500 | 0.05 | 13222.1066 | 4211 | 57.68% | 22.43% |
| 20 | 1500 | 0.01 | 9714.80229 | 4234 | 50.36% | 15.18% |
| | 1500 | 0.05 | 13068.7188 | 4209 | 56.80% | 34.03% |