

Performance of SDPNAL+ on $\theta+$, FAP, QAP, BIQ, RCP, and extended-BIQ problems.

For the descriptions of the problems, please refer to:

- [1] L.Q. Yang, D.F. Sun, and K.C. Toh, SDPNAL+: a majorized semismooth Newton-CG augmented Lagrangian method for semidefinite programming with nonnegative constraints, *Mathematical Programming Computation*, 7 (2015), pp. 331-366. arXiv:1406.0942.
- [2] D.F. Sun, K.C. Toh and L.Q. Yang, A convergent 3-block semi-proximal alternating direction method of multipliers for conic programming with 4-type constraints, *SIAM J. Optimization*, 25 (2015), pp. 882-915. arXiv:1404.5378.

Computer: Intel Xeon CPU E5-2680v3 @2.50 GHz with 12 cores, RAM=128GB

$$\text{err}_1 = \frac{\|b-Ax\|}{1+\|b\|}, \quad \text{err}_3 = \frac{\|c-z-A^T y\|}{1+\|c\|}, \quad \text{err}_5 = \frac{|c^T x - b^T y|}{1+|b^T y|+|c^T x|}.$$

Under the column “it.”, the numbers in the format of “a | b | c” denote (a) the total number of ADMM+ iterations used, (b) the total number of semismooth Newton systems solved, and (c) the total number of PSQMR steps taken to solve the semismooth Newton systems. The numbers under the column “time” is in the format of “hours:minutes:seconds”.

problem	n m ; p	it.	primal obj	dual obj	err ₁ /err ₃ /err ₅	time
18-Dec-2017						
theta6	300 4375; 0	311 0 0	6.29614807 1	6.29618722 1	1.1-14 9.0-7 3.1-6	05
theta62	300 13390; 0	174 0 0	2.93779373 1	2.93779445 1	7.8-16 9.0-7 1.2-7	03
theta8	400 7905; 0	335 0 0	7.34074288 1	7.34078852 1	2.1-15 9.1-7 3.1-6	08
theta82	400 23872; 0	192 0 0	3.40643425 1	3.40643477 1	1.1-15 9.4-7 7.6-8	05
theta83	400 39862; 0	178 0 0	2.01671035 1	2.01671073 1	7.2-16 9.4-7 9.0-8	05
theta10	500 12470; 0	347 0 0	8.31485497 1	8.31490690 1	4.8-15 9.9-7 3.1-6	12
theta102	500 37467; 0	160 0 0	3.80662517 1	3.80662422 1	1.1-16 9.6-7 1.2-7	06
theta103	500 62516; 0	159 0 0	2.23774186 1	2.23774210 1	1.4-15 9.6-7 5.2-8	06
theta104	500 87245; 0	153 0 0	1.32826067 1	1.32826101 1	7.8-16 9.8-7 1.2-7	06
theta12	600 17979; 0	365 0 0	9.20917048 1	9.20908059 1	4.4-16 9.9-7 4.9-6	20
theta123	600 90020; 0	150 0 0	2.44951466 1	2.44951498 1	4.4-16 9.5-7 6.5-8	09
theta162	800 127600; 0	144 0 0	3.67113706 1	3.67113740 1	1.1-16 9.9-7 4.5-8	16
MANN-a27	378 703; 0	368 16 108	1.32762891 2	1.32762891 2	1.6-10 9.9-7 8.8-10	08
johnson8-4-4	70 561; 0	142 0 0	1.40000604 1	1.40000171 1	7.2-16 9.0-7 1.5-6	00
johnson16-2-4	120 1681; 0	102 0 0	8.00005122 0	7.99999656 0	0.6-16 4.2-7 3.2-6	00
san200-0.7-1	200 5971; 0	500 11 72	3.00000042 1	2.99999952 1	1.1-7 2.5-7 1.5-7	03
sanr200-0.7	200 6033; 0	197 0 0	2.36332829 1	2.36332918 1	1.3-15 9.4-7 1.8-7	01
c-fat200-1	200 18367; 0	227 0 0	1.19998584 1	1.19999714 1	2.1-15 6.4-7 4.5-6	02
hamming-6-4	64 1313; 0	65 0 0	3.99998581 0	3.99999741 0	3.3-16 4.4-7 1.3-6	00
hamming-8-4	256 11777; 0	119 0 0	1.60001567 1	1.60000100 1	5.6-16 3.2-7 4.4-6	01
hamming-9-8	512 2305; 0	350 5 14	2.24000016 2	2.23999916 2	5.2-8 4.0-7 2.2-7	11
hamming-10-2	1024 23041; 0	367 17 45	8.53321735 1	8.53333898 1	2.4-9 6.6-7 7.1-6	56
hamming-7-5-6	128 1793; 0	529 0 0	3.59993265 1	3.60000239 1	1.5-14 5.8-7 9.6-6	02
hamming-8-3-4	256 16129; 0	225 0 0	2.56000091 1	2.56000143 1	6.1-16 6.2-7 9.9-8	03
hamming-9-5-6	512 53761; 0	445 0 0	5.86681676 1	5.86666801 1	1.4-13 1.4-7 1.3-5	20
brock200-1	200 5067; 0	181 0 0	2.71967107 1	2.71967217 1	6.1-16 9.3-7 2.0-7	01
brock200-4	200 6812; 0	161 0 0	2.11210684 1	2.11210715 1	0.9-15 9.1-7 7.1-8	01
brock400-1	400 20078; 0	181 0 0	3.93309068 1	3.93309405 1	1.1-15 9.3-7 4.2-7	05

problem	n m ; p	it.	primal obj	dual obj	err ₁ /err ₃ /err ₅	time
keller4	171 5101; 0	342 14 218	1.34660288 1	1.34658886 1	1.2-10 8.8-7 5.0-6	02
p-hat300-1	300 33918; 0	401 14 433	1.00202070 1	1.00202064 1	6.6-8 9.7-7 2.5-8	08
G43	1000 9991; 0	667 29 312	2.79733047 2	2.79736187 2	3.2-14 9.9-7 5.6-6	1:51
G44	1000 9991; 0	644 29 317	2.79749881 2	2.79746054 2	2.9-14 9.6-7 6.8-6	1:48
G45	1000 9991; 0	674 29 313	2.79314578 2	2.79317638 2	3.4-14 9.6-7 5.5-6	1:55
G46	1000 9991; 0	697 29 316	2.79034727 2	2.79032265 2	1.2-14 9.1-7 4.4-6	2:16
G47	1000 9991; 0	641 30 327	2.80894400 2	2.80891507 2	5.0-15 9.7-7 5.1-6	2:07
G51	1000 5910; 0	1999 91 8710	3.49001711 2	3.49000106 2	4.5-7 1.0-6 2.3-6	9:37
G52	1000 5917; 0	3825 121 12407	3.48392859 2	3.48386427 2	1.0-6 1.0-6 9.2-6	17:15
G53	1000 5915; 0	5646 220 29497	3.48214900 2	3.48211648 2	4.8-7 1.0-6 4.7-6	26:33
G54	1000 5917; 0	2000 89 8546	3.41000891 2	3.41000002 2	1.8-7 1.0-6 1.3-6	9:09
1dc.64	64 544; 0	299 0 0	1.00001300 1	9.99999635 0	0.9-15 5.1-7 6.4-6	00
1et.64	64 265; 0	210 0 0	1.87999303 1	1.88000304 1	1.2-15 9.5-7 2.6-6	00
1tc.64	64 193; 0	335 0 0	2.00000926 1	1.99999672 1	3.3-16 9.3-7 3.1-6	00
1dc.128	128 1472; 0	1136 80 3029	1.66783594 1	1.66783058 1	4.3-11 8.2-7 1.6-6	07
1et.128	128 673; 0	347 0 0	2.92305764 1	2.92309129 1	2.0-15 8.8-7 5.7-6	01
1tc.128	128 513; 0	351 12 109	3.79999870 1	3.80000399 1	1.5-7 7.8-7 6.9-7	01
1zc.128	128 1121; 0	158 0 0	2.06665114 1	2.06666795 1	4.4-16 5.8-7 4.0-6	00
1dc.256	256 3840; 0	800 37 617	3.00000000 1	2.99999998 1	8.4-11 8.3-10 3.5-9	09
1et.256	256 1665; 0	841 46 650	5.44652724 1	5.44649865 1	5.5-12 9.5-7 2.6-6	09
1tc.256	256 1313; 0	1147 73 2731	6.32415861 1	6.32403284 1	2.3-14 9.7-7 9.9-6	15
1zc.256	256 2817; 0	251 0 0	3.73337178 1	3.73333014 1	1.3-15 9.1-7 5.5-6	02
1dc.512	512 9728; 0	803 33 816	5.26948696 1	5.26951311 1	3.5-15 9.9-7 2.5-6	41
1et.512	512 4033; 0	1145 65 1752	1.03550236 2	1.03549117 2	2.5-13 7.5-7 5.4-6	56
1tc.512	512 3265; 0	1504 56 1796	1.12534670 2	1.12533859 2	4.4-13 1.0-6 3.6-6	1:12
2dc.512	512 54896; 0	1222 119 4521	1.13838236 1	1.13834895 1	2.2-15 1.0-6 1.4-5	1:35
1zc.512	512 6913; 0	458 0 0	6.79982625 1	6.80000433 1	3.3-15 7.5-7 1.3-5	14
1dc.1024	1024 24064; 0	1045 33 972	9.55518106 1	9.55511808 1	1.7-15 9.8-7 3.3-6	3:35
1et.1024	1024 9601; 0	939 45 1133	1.82072733 2	1.82071558 2	4.9-13 9.1-7 3.2-6	3:09
1tc.1024	1024 7937; 0	1860 73 2839	2.04207144 2	2.04204216 2	4.0-13 1.0-6 7.2-6	6:48
1zc.1024	1024 16641; 0	498 19 97	1.27999180 2	1.28000121 2	4.1-11 8.8-7 3.7-6	1:16
2dc.1024	1024 169163; 0	1130 113 4689	1.77105146 1	1.77100007 1	4.3-10 9.9-7 1.4-5	7:56
1dc.2048	2048 58368; 0	2473 104 7814	1.74255476 2	1.74257479 2	3.5-14 1.0-6 5.7-6	1:02:33
1et.2048	2048 22529; 0	1957 91 3492	3.38173084 2	3.38165347 2	1.4-13 1.0-6 1.1-5	38:33
1tc.2048	2048 18945; 0	3251 165 13473	3.70483666 2	3.70488997 2	9.5-7 9.4-7 7.2-6	1:31:13
1zc.2048	2048 39425; 0	500 27 339	2.37400000 2	2.37400083 2	6.4-11 9.9-7 1.7-7	8:36
2dc.2048	2048 504452; 0	1163 78 1790	2.87879022 1	2.87868229 1	1.1-10 9.8-7 1.8-5	26:57
fap01	52 52; 0	478 10 20	3.28895997-2	3.28836140-2	1.8-12 1.2-7 5.6-6	02
fap02	61 61; 0	801 33 66	6.87014812-4	6.93019982-4	1.8-7 9.9-7 6.0-6	02
fap03	65 65; 0	517 20 40	4.93835421-2	4.93690029-2	1.5-7 4.0-7 1.3-5	01
fap04	81 81; 0	577 20 40	1.74844451-1	1.74827063-1	1.0-15 1.7-7 1.3-5	02
fap05	84 84; 0	875 27 54	3.08330362-1	3.08299453-1	9.0-8 3.0-7 1.9-5	02
fap06	93 93; 0	585 6 12	4.59381380-1	4.59376464-1	1.5-7 3.9-7 2.6-6	02
fap07	98 98; 0	661 20 40	2.11769452 0	2.11770558 0	1.8-7 4.4-7 2.1-6	02
fap08	120 120; 0	523 13 26	2.43627281 0	2.43627729 0	6.7-8 1.6-7 7.6-7	02
fap09	174 174; 0	478 13 26	1.07978585 1	1.07977957 1	8.3-8 6.7-7 2.8-6	03

problem	n m ; p	it.	primal obj	dual obj	err ₁ /err ₃ /err ₅	time
fap10	183 183; 0	903 40 80	9.65169324-3	9.71492537-3	6.5-8 7.5-7 6.2-5	06
fap11	252 252; 0	1159 55 110	2.98473021-2	2.98355305-2	2.3-7 6.7-7 1.1-5	12
fap12	369 369; 0	1398 70 140	2.73273516-1	2.73427661-1	1.2-7 1.0-6 9.9-5	28
fap25	2118 2118; 0	2366 140 371	1.28785459 1	1.28808115 1	2.3-15 1.0-6 8.5-5	44:33
fap36	4110 4110; 0	2244 130 266	6.98612310 1	6.98609816 1	3.1-15 9.8-7 1.8-6	3:33:41
bur26a	676 1051; 0	8348 289 15067	5.42653120 6	5.42669094 6	4.2-12 1.0-6 1.5-5	13:24
bur26b	676 1051; 0	6344 226 13758	3.81759745 6	3.81767589 6	7.6-7 1.0-6 1.0-5	10:34
bur26c	676 1051; 0	17554 624 34099	5.42688435 6	5.42709124 6	6.3-13 1.0-6 1.9-5	27:23
bur26d	676 1051; 0	10297 502 31889	3.82088848 6	3.82098057 6	7.8-7 1.0-6 1.2-5	18:22
bur26e	676 1051; 0	10529 403 21294	5.38699512 6	5.38715831 6	8.7-7 8.5-7 1.5-5	16:12
bur26f	676 1051; 0	8159 263 13953	3.78212310 6	3.78220029 6	1.6-9 1.0-6 1.0-5	12:21
bur26g	676 1051; 0	7733 316 15672	1.01172729 7	1.01173197 7	6.7-13 8.8-7 2.3-6	11:23
bur26h	676 1051; 0	7629 365 16542	7.09870583 6	7.09882104 6	9.2-7 5.6-7 8.1-6	11:32
chr12a	144 232; 0	1550 57 1565	9.55198266 3	9.55198648 3	1.4-7 5.9-9 2.0-7	08
chr12b	144 232; 0	1760 56 1470	9.74200972 3	9.74202118 3	5.6-7 1.3-8 5.9-7	08
chr12c	144 232; 0	3750 219 9937	1.11559946 4	1.11559944 4	5.0-7 5.5-9 1.1-8	22
chr15a	225 358; 0	5842 614 31614	9.89599445 3	9.89545161 3	6.4-8 1.0-6 2.7-5	1:25
chr15b	225 358; 0	2157 112 4995	7.99001021 3	7.99027522 3	1.7-8 1.2-8 1.7-5	23
chr15c	225 358; 0	1410 128 6418	9.50399890 3	9.50716513 3	8.8-7 5.7-7 1.7-4	20
chr18a	324 511; 0	7533 301 16769	1.10979764 4	1.10973145 4	7.8-7 8.0-8 3.0-5	2:13
chr18b	324 511; 0	1085 52 1069	1.53399031 3	1.53400852 3	2.9-15 9.9-7 5.9-6	20
chr20a	400 628; 0	6850 292 14151	2.19200276 3	2.19205966 3	4.9-8 9.3-8 1.3-5	3:19
chr20b	400 628; 0	3337 115 6141	2.29799873 3	2.29799959 3	5.3-7 2.5-8 1.9-7	1:37
chr20c	400 628; 0	5055 139 6338	1.41543729 4	1.41427931 4	6.7-7 8.7-7 4.1-4	2:01
chr22a	484 757; 0	5805 261 12843	6.15609984 3	6.15936156 3	9.3-7 1.0-6 2.6-4	4:20
chr22b	484 757; 0	5600 219 11299	6.19400483 3	6.19404681 3	2.1-8 1.7-7 3.4-6	4:11
chr25a	625 973; 0	4317 173 8906	3.79598439 3	3.79615172 3	4.0-8 7.2-8 2.2-5	6:03
els19	361 568; 0	3550 115 5823	1.72147452 7	1.72159318 7	2.8-8 8.0-7 3.4-5	1:23
esc16a	256 406; 0	1323 82 1885	6.32749823 1	6.32824214 1	8.4-7 9.7-7 5.8-5	16
esc16b	256 406; 0	1868 144 3775	2.89973002 2	2.89988258 2	9.9-7 1.0-6 2.6-5	24
esc16c	256 406; 0	4431 355 12245	1.53961929 2	1.53982301 2	9.3-7 1.0-6 6.6-5	1:05
esc16d	256 406; 0	258 0 0	1.29999714 1	1.30000146 1	2.1-15 9.9-7 1.6-6	02
esc16e	256 406; 0	274 0 0	2.63367372 1	2.63368202 1	2.4-15 9.5-7 1.5-6	02
esc16g	256 406; 0	396 11 100	2.47388179 1	2.47403317 1	2.1-7 8.6-7 3.0-5	04
esc16h	256 406; 0	942 45 1161	9.76185706 2	9.76210653 2	8.9-7 9.9-7 1.3-5	10
esc16i	256 406; 0	635 20 110	1.13748551 1	1.13749606 1	1.8-15 9.9-7 4.4-6	06
esc16j	256 406; 0	400 6 54	7.79379104 0	7.79365517 0	9.4-7 8.0-7 8.2-6	04
esc32a	1024 1582; 0	1505 85 1209	1.03320578 2	1.03320670 2	9.3-7 9.4-7 4.4-7	5:33
esc32b	1024 1582; 0	1873 81 2695	1.31853208 2	1.31875122 2	8.9-7 8.2-7 8.3-5	7:44
esc32c	1024 1582; 0	1549 80 2637	6.15160021 2	6.15172456 2	4.1-7 1.0-6 1.0-5	5:31
esc32d	1024 1582; 0	459 10 57	1.90227375 2	1.90227158 2	4.6-7 9.6-7 5.7-7	1:07
esc32e	1024 1582; 0	828 52 426	1.90007986 0	1.89991250 0	6.7-11 8.5-7 3.5-5	2:29
esc32g	1024 1582; 0	369 13 43	5.83359305 0	5.83328412 0	4.4-10 7.8-7 2.4-5	1:05
esc32h	1024 1582; 0	4901 252 8103	4.24325640 2	4.24372745 2	5.8-7 1.0-6 5.5-5	17:56
had12	144 232; 0	1549 109 6653	1.65197532 3	1.65197141 3	8.9-7 5.9-7 1.2-6	11
had14	196 313; 0	2700 349 25176	2.72395802 3	2.72395778 3	4.5-7 1.0-6 4.3-8	41

problem	n m ; p	it.	primal obj	dual obj	err ₁ /err ₃ /err ₅	time
had16	256 406; 0	2975 258 12758	3.72005484 3	3.71991195 3	2.9-8 5.8-7 1.9-5	48
had18	324 511; 0	8573 507 34897	5.35780053 3	5.35806889 3	7.0-14 1.0-6 2.5-5	3:28
had20	400 628; 0	5221 224 14668	6.92179087 3	6.92207900 3	2.3-10 1.0-6 2.1-5	3:01
kra30a	900 1393; 0	3413 151 9079	8.67884636 4	8.68132146 4	9.3-7 7.8-7 1.4-4	11:23
kra30b	900 1393; 0	2016 99 6066	8.77894600 4	8.78238592 4	5.2-7 1.0-6 2.0-4	7:16
kra32	1024 1582; 0	3449 152 9001	8.57301031 4	8.57548858 4	1.0-6 1.0-6 1.4-4	16:48
lipa20a	400 628; 0	800 47 1093	3.68300002 3	3.68298428 3	8.9-8 4.0-7 2.1-6	24
lipa20b	400 628; 0	1096 46 1260	2.70774784 4	2.70748382 4	1.6-9 6.5-7 4.9-5	29
lipa30a	900 1393; 0	2510 87 2170	1.31779999 4	1.31780013 4	2.8-7 1.9-8 5.4-8	5:36
lipa30b	900 1393; 0	451 28 735	1.51425999 5	1.51426010 5	1.8-8 3.9-8 3.4-8	1:24
lipa40a	1600 2458; 0	2800 136 9001	3.15380002 4	3.15380954 4	3.8-7 6.6-8 1.5-6	35:41
lipa40b	1600 2458; 0	601 26 689	4.76580986 5	4.76582618 5	5.8-7 1.4-7 1.7-6	7:14
nug12	144 232; 0	1182 112 6033	5.67786572 2	5.67888015 2	3.3-7 9.9-7 8.9-5	10
nug14	196 313; 0	3208 264 12808	1.01000297 3	1.01006834 3	2.5-8 1.0-6 3.2-5	35
nug15	225 358; 0	2211 195 10360	1.14032049 3	1.14044341 3	5.2-7 1.0-6 5.4-5	32
nug16a	256 406; 0	4192 351 18617	1.59896562 3	1.59913457 3	9.7-7 9.8-7 5.3-5	1:13
nug16b	256 406; 0	1465 118 5968	1.21795616 3	1.21811074 3	7.6-7 1.0-6 6.3-5	25
nug17	289 457; 0	2353 180 9092	1.70688518 3	1.70700620 3	7.8-7 9.8-7 3.5-5	49
nug18	324 511; 0	2333 105 5104	1.89318061 3	1.89336496 3	9.9-7 1.0-6 4.9-5	46
nug20	400 628; 0	2282 100 5068	2.50591133 3	2.50613814 3	3.3-13 1.0-6 4.5-5	1:15
nug21	441 691; 0	2692 131 7318	2.38146454 3	2.38171197 3	2.5-7 1.0-6 5.2-5	1:55
nug22	484 757; 0	3288 154 8725	3.52769737 3	3.52820962 3	9.6-7 9.6-7 7.3-5	2:45
nug24	576 898; 0	2139 109 6256	3.40000992 3	3.40055140 3	1.0-6 9.8-7 8.0-5	3:06
nug25	625 973; 0	2280 93 4906	3.62522330 3	3.62556355 3	8.9-7 7.5-7 4.7-5	3:21
nug27	729 1132; 0	3175 157 8917	5.12850803 3	5.12910839 3	8.5-7 1.0-6 5.9-5	7:08
nug28	784 1216; 0	3119 141 8209	5.02452715 3	5.02515242 3	9.0-7 9.5-7 6.2-5	8:00
nug30	900 1393; 0	2364 106 5663	5.94857597 3	5.94904513 3	6.1-13 1.0-6 3.9-5	7:48
rou12	144 232; 0	5300 340 15648	2.35528011 5	2.35526433 5	6.2-7 5.2-7 3.4-6	34
rou15	225 358; 0	1910 124 5290	3.50184301 5	3.50201376 5	4.5-7 1.0-6 2.4-5	24
rou20	400 628; 0	1402 46 1766	6.95051000 5	6.95117671 5	1.0-6 9.7-7 4.8-5	42
scr12	144 232; 0	710 20 502	3.14100272 4	3.14100463 4	9.3-7 6.2-7 3.0-7	04
scr15	225 358; 0	701 30 891	5.11400181 4	5.11401757 4	1.9-7 3.8-7 1.5-6	07
scr20	400 628; 0	2734 131 6367	1.06752967 5	1.06780216 5	8.0-7 1.0-6 1.3-4	1:32
ste36a	1296 1996; 0	5020 185 11400	9.25546394 3	9.25752451 3	6.5-7 1.0-6 1.1-4	37:52
ste36b	1296 1996; 0	6980 284 18929	1.56567632 4	1.56645793 4	8.4-7 1.0-6 2.5-4	57:26
ste36c	1296 1996; 0	5265 155 9188	8.13076271 6	8.13308259 6	4.4-7 1.0-6 1.4-4	35:03
tai12a	144 232; 0	601 25 777	2.24416033 5	2.24413180 5	1.7-7 7.0-7 6.4-6	03
tai12b	144 232; 0	2474 149 4635	3.94649320 7	3.94649317 7	1.5-7 6.7-7 4.2-9	13
tai15a	225 358; 0	1476 92 3690	3.77067469 5	3.77084945 5	9.0-7 1.0-6 2.3-5	18
tai15b	225 358; 0	5358 340 12683	5.18235425 7	5.18410503 7	1.0-6 1.0-6 1.7-4	1:03
tai17a	289 457; 0	1753 105 4488	4.76482587 5	4.76505470 5	1.8-7 9.6-7 2.4-5	34
tai20a	400 628; 0	1457 77 3717	6.71542348 5	6.71610033 5	3.8-7 1.0-6 5.0-5	53
tai20b	400 628; 0	7575 276 12178	1.22451104 8	1.22484792 8	4.3-12 4.9-7 1.4-4	3:26
tai25a	625 973; 0	1431 71 3091	1.11339157 6	1.11519957 6	9.0-7 9.8-7 8.1-4	2:18
tai25b	625 973; 0	13663 747 47759	3.37786828 8	3.37922549 8	5.4-7 1.0-6 2.0-4	22:58
tai30a	900 1393; 0	1812 72 2929	1.70678741 6	1.70683360 6	3.4-7 1.0-6 1.4-5	5:43

problem	n m ; p	it.	primal obj	dual obj	err ₁ /err ₃ /err ₅	time
tai30b	900 1393; 0	11647 531 33725	5.98995791 8	5.99139374 8	2.4-12 1.0-6 1.2-4	38:48
tai35a	1225 1888; 0	1498 56 2452	2.21654340 6	2.21660227 6	3.3-7 9.5-7 1.3-5	10:05
tai35b	1225 1888; 0	9560 450 29743	2.69614861 8	2.69695844 8	7.1-7 1.0-6 1.5-4	1:13:37
tai40a	1600 2458; 0	2192 91 5411	2.84313475 6	2.84323984 6	4.8-7 1.0-6 1.8-5	33:02
tai40b	1600 2458; 0	6182 239 13364	6.09084553 8	6.09182365 8	6.6-7 1.0-6 8.0-5	1:16:00
tho30	900 1393; 0	2636 115 6531	1.43546584 5	1.43562029 5	7.9-7 1.0-6 5.4-5	9:02
tho40	1600 2458; 0	2761 136 8158	2.26471910 5	2.26497945 5	7.5-7 1.0-6 5.7-5	40:29
be100.1	101 101; 0	1135 51 647	-2.00213406 4	-2.00213044 4	2.1-10 9.9-7 9.0-7	05
be100.2	101 101; 0	1060 68 775	-1.79887195 4	-1.79887873 4	4.6-7 9.8-7 1.9-6	05
be100.3	101 101; 0	1282 52 581	-1.82311267 4	-1.82310723 4	1.6-7 8.9-7 1.5-6	05
be100.4	101 101; 0	1167 37 420	-1.98417728 4	-1.98418118 4	9.8-7 9.5-7 9.8-7	04
be100.5	101 101; 0	1095 36 373	-1.68887151 4	-1.68887176 4	2.4-7 9.7-7 7.2-8	04
be100.6	101 101; 0	1317 49 519	-1.81482254 4	-1.81481972 4	2.2-14 1.0-6 7.8-7	04
be100.7	101 101; 0	1104 34 402	-1.97008911 4	-1.97008875 4	7.7-7 9.9-7 9.2-8	04
be100.8	101 101; 0	993 34 361	-1.99463979 4	-1.99463609 4	4.6-11 8.7-7 9.3-7	03
be100.9	101 101; 0	1100 70 666	-1.42633687 4	-1.42633673 4	2.9-7 4.2-7 5.1-8	04
be100.10	101 101; 0	820 40 391	-1.64084914 4	-1.64084789 4	2.3-7 9.7-7 3.8-7	03
be120.3.1	121 121; 0	1310 50 594	-1.38035594 4	-1.38035435 4	7.1-14 9.3-7 5.7-7	05
be120.3.2	121 121; 0	1272 60 767	-1.36266740 4	-1.36266866 4	7.9-7 1.0-6 4.6-7	05
be120.3.3	121 121; 0	1182 51 593	-1.29880142 4	-1.29879860 4	8.3-7 9.2-7 1.1-6	05
be120.3.4	121 121; 0	1200 53 623	-1.45112350 4	-1.45112525 4	5.9-15 1.0-6 6.0-7	05
be120.3.5	121 121; 0	1250 50 550	-1.19918838 4	-1.19918848 4	3.4-7 9.8-7 4.3-8	05
be120.3.6	121 121; 0	1240 49 614	-1.34320930 4	-1.34320978 4	8.7-7 9.8-7 1.8-7	05
be120.3.7	121 121; 0	1897 90 1085	-1.45641022 4	-1.45640951 4	1.5-8 1.0-6 2.4-7	08
be120.3.8	121 121; 0	1601 69 872	-1.53030517 4	-1.53030199 4	9.9-7 9.4-7 1.0-6	06
be120.3.9	121 121; 0	1807 67 699	-1.12413223 4	-1.12413219 4	2.0-15 1.0-6 1.7-8	07
be120.3.10	121 121; 0	1250 35 363	-1.29308529 4	-1.29308382 4	2.1-7 8.2-7 5.7-7	05
be120.8.1	121 121; 0	1205 50 498	-2.01940307 4	-2.01939785 4	1.0-6 3.5-7 1.3-6	05
be120.8.2	121 121; 0	1598 66 653	-2.00741429 4	-2.00741170 4	4.8-12 9.4-7 6.4-7	06
be120.8.3	121 121; 0	1124 35 351	-2.05058532 4	-2.05058926 4	4.7-7 8.8-7 9.6-7	04
be120.8.4	121 121; 0	1183 78 952	-2.17798686 4	-2.17798050 4	6.3-7 9.6-7 1.5-6	05
be120.8.5	121 121; 0	1260 81 1001	-2.13162636 4	-2.13162988 4	4.6-7 4.7-7 8.2-7	06
be120.8.6	121 121; 0	1237 37 391	-1.96769880 4	-1.96769345 4	1.5-7 9.5-7 1.4-6	05
be120.8.7	121 121; 0	1100 47 501	-2.37323793 4	-2.37323453 4	3.6-7 6.9-7 7.2-7	04
be120.8.8	121 121; 0	1119 35 334	-2.12047971 4	-2.12047632 4	8.5-7 9.6-7 8.0-7	04
be120.8.9	121 121; 0	1107 34 336	-1.92844386 4	-1.92844314 4	1.2-7 9.9-7 1.9-7	04
be120.8.10	121 121; 0	1064 68 869	-2.00240023 4	-2.00241063 4	1.7-7 9.9-7 2.6-6	05
be150.3.1	151 151; 0	1381 79 1092	-1.98491585 4	-1.98492600 4	5.6-15 1.0-6 2.6-6	08
be150.3.2	151 151; 0	1347 109 1482	-1.88648731 4	-1.88649187 4	4.2-7 1.0-6 1.2-6	08
be150.3.3	151 151; 0	1250 44 596	-1.80437035 4	-1.80436903 4	2.2-7 7.9-7 3.7-7	07
be150.3.4	151 151; 0	1323 108 1608	-2.06527137 4	-2.06527239 4	7.0-7 1.0-6 2.5-7	08
be150.3.5	151 151; 0	1351 54 626	-1.77686297 4	-1.77686546 4	7.7-15 1.0-6 7.0-7	07
be150.3.6	151 151; 0	1314 72 774	-1.80507620 4	-1.80507240 4	8.9-7 8.7-7 1.1-6	07
be150.3.7	151 151; 0	1480 65 789	-1.91012187 4	-1.91012580 4	9.0-7 1.0-6 1.0-6	08
be150.3.8	151 151; 0	1494 72 837	-1.96980853 4	-1.96980278 4	3.9-15 1.0-6 1.5-6	08
be150.3.9	151 151; 0	1167 39 357	-1.41033529 4	-1.41033803 4	6.3-15 1.0-6 9.7-7	06

problem	n m ; p	it.	primal obj	dual obj	err ₁ /err ₃ /err ₅	time
be150.3.10	151 151; 0	1547 72 828	-1.92309757 4	-1.92309042 4	7.6-7 9.9-7 1.9-6	08
be150.8.1	151 151; 0	1362 75 887	-2.91437414 4	-2.91437499 4	7.9-7 1.0-6 1.4-7	07
be150.8.2	151 151; 0	1373 60 638	-2.88210203 4	-2.88210990 4	8.8-7 8.6-7 1.4-6	07
be150.8.3	151 151; 0	1400 66 778	-3.10603053 4	-3.10603331 4	3.1-7 8.6-7 4.5-7	08
be150.8.4	151 151; 0	1382 52 617	-2.87291694 4	-2.87292543 4	5.1-7 5.4-7 1.5-6	07
be150.8.5	151 151; 0	1315 85 1050	-2.94821363 4	-2.94820540 4	8.3-7 7.3-7 1.4-6	08
be150.8.6	151 151; 0	1319 52 535	-3.14371068 4	-3.14371932 4	9.9-7 9.7-7 1.4-6	07
be150.8.7	151 151; 0	1599 75 971	-3.32521840 4	-3.32520923 4	3.1-7 1.0-6 1.4-6	10
be150.8.8	151 151; 0	1250 92 1020	-3.16000138 4	-3.16001121 4	5.7-7 9.0-7 1.6-6	08
be150.8.9	151 151; 0	1357 102 1189	-2.71107454 4	-2.71107379 4	9.8-7 5.6-7 1.4-7	09
be150.8.10	151 151; 0	1349 51 637	-3.00478608 4	-3.00479482 4	7.9-8 9.0-7 1.5-6	07
be200.3.1	201 201; 0	1353 67 809	-2.77161581 4	-2.77160828 4	8.9-7 8.0-7 1.4-6	11
be200.3.2	201 201; 0	1400 103 1326	-2.67607773 4	-2.67609260 4	2.2-7 1.0-6 2.8-6	12
be200.3.3	201 201; 0	1507 120 1617	-2.94787025 4	-2.94786816 4	8.7-7 8.8-7 3.5-7	14
be200.3.4	201 201; 0	1549 117 1576	-2.91062673 4	-2.91063222 4	8.7-7 9.6-7 9.4-7	14
be200.3.5	201 201; 0	1550 118 1672	-2.80730203 4	-2.80728404 4	6.5-7 7.8-7 3.2-6	14
be200.3.6	201 201; 0	1465 83 1034	-2.79283599 4	-2.79283174 4	1.3-13 1.0-6 7.6-7	12
be200.3.7	201 201; 0	1617 82 1255	-3.16203407 4	-3.16203958 4	8.7-7 9.4-7 8.7-7	13
be200.3.8	201 201; 0	1550 84 1082	-2.92442082 4	-2.92442238 4	3.5-7 8.6-7 2.7-7	12
be200.3.9	201 201; 0	1514 119 1494	-2.64370264 4	-2.64371757 4	5.8-15 1.0-6 2.8-6	13
be200.3.10	201 201; 0	1550 79 991	-2.57606780 4	-2.57606687 4	1.4-7 3.0-7 1.8-7	12
be200.8.1	201 201; 0	1700 131 1748	-5.08694234 4	-5.08696186 4	2.5-14 1.0-6 1.9-6	15
be200.8.2	201 201; 0	1445 72 846	-4.43362271 4	-4.43361133 4	9.6-7 7.2-7 1.3-6	11
be200.8.3	201 201; 0	1383 103 1289	-4.62539184 4	-4.62538685 4	9.1-7 4.2-7 5.4-7	13
be200.8.4	201 201; 0	1250 97 1333	-4.66212434 4	-4.66212038 4	1.6-7 7.8-7 4.2-7	11
be200.8.5	201 201; 0	1344 110 1464	-4.42710475 4	-4.42711698 4	7.2-7 2.6-7 1.4-6	12
be200.8.6	201 201; 0	1566 92 1247	-5.12188173 4	-5.12192720 4	2.3-9 1.0-6 4.4-6	13
be200.8.7	201 201; 0	1550 81 977	-4.93528072 4	-4.93528556 4	2.1-7 6.5-7 4.9-7	12
be200.8.8	201 201; 0	1394 70 914	-4.76892705 4	-4.76892596 4	1.4-7 1.0-6 1.2-7	11
be200.8.9	201 201; 0	1550 92 1172	-4.54954767 4	-4.54956670 4	3.8-7 9.4-7 2.1-6	13
be200.8.10	201 201; 0	1426 70 844	-4.57431966 4	-4.57430672 4	9.6-7 9.1-7 1.4-6	11
be250.1	251 251; 0	1700 96 1535	-2.51194392 4	-2.51194229 4	2.7-7 1.0-6 3.2-7	19
be250.2	251 251; 0	1850 97 1390	-2.36814836 4	-2.36815311 4	1.3-7 6.4-7 1.0-6	21
be250.3	251 251; 0	1700 98 1421	-2.40000135 4	-2.39998445 4	7.2-7 9.1-7 3.5-6	19
be250.4	251 251; 0	2036 111 1634	-2.57203854 4	-2.57203294 4	3.6-7 9.9-7 1.1-6	23
be250.5	251 251; 0	1596 86 1189	-2.23747057 4	-2.23746771 4	2.0-12 9.6-7 6.4-7	18
be250.6	251 251; 0	1809 85 1209	-2.40187068 4	-2.40187213 4	2.6-7 1.0-6 3.0-7	20
be250.7	251 251; 0	1700 98 1540	-2.51189545 4	-2.51188553 4	1.6-7 1.0-6 2.0-6	19
be250.8	251 251; 0	1699 89 1307	-2.50202417 4	-2.50203413 4	5.1-7 9.8-7 2.0-6	18
be250.9	251 251; 0	2056 107 1565	-2.13971129 4	-2.13969867 4	1.0-6 8.0-7 2.9-6	23
be250.10	251 251; 0	1779 90 1330	-2.43552591 4	-2.43548271 4	9.7-7 9.8-7 8.9-6	19
bqp50-1	51 51; 0	1560 108 1052	-2.14391826 3	-2.14391441 3	2.3-7 1.0-6 9.0-7	03
bqp50-2	51 51; 0	1698 69 676	-3.74251408 3	-3.74251651 3	4.6-7 1.0-6 3.2-7	03
bqp50-3	51 51; 0	1197 40 383	-4.63726782 3	-4.63723125 3	1.0-6 9.4-7 3.9-6	02
bqp50-4	51 51; 0	3458 131 1174	-3.58397384 3	-3.58397161 3	7.9-11 1.0-6 3.1-7	06
bqp50-5	51 51; 0	1170 43 389	-4.07760862 3	-4.07760447 3	1.7-7 9.3-7 5.1-7	02

problem	n m ; p	it.	primal obj	dual obj	err ₁ /err ₃ /err ₅	time
bqp50-6	51 51; 0	1264 56 517	-3.71104368 3	-3.71104819 3	3.4-15 1.0-6 6.1-7	02
bqp50-7	51 51; 0	934 20 164	-4.64970549 3	-4.64970194 3	9.9-7 6.2-7 3.8-7	01
bqp50-8	51 51; 0	1064 40 388	-4.26923437 3	-4.26923892 3	3.2-9 9.8-7 5.3-7	02
bqp50-9	51 51; 0	827 45 422	-3.92165610 3	-3.92165059 3	9.0-7 9.0-7 7.0-7	01
bqp50-10	51 51; 0	1067 34 295	-3.62637730 3	-3.62636927 3	6.2-7 9.7-7 1.1-6	02
bqp100-1	101 101; 0	1149 36 403	-8.38040054 3	-8.38036916 3	6.7-7 9.6-7 1.9-6	03
bqp100-2	101 101; 0	1559 75 938	-1.14892556 4	-1.14892713 4	4.6-15 1.0-6 6.8-7	05
bqp100-3	101 101; 0	1307 57 778	-1.31531896 4	-1.31531640 4	4.5-10 1.0-6 9.7-7	04
bqp100-4	101 101; 0	1359 55 658	-1.07318894 4	-1.07318860 4	4.6-15 9.4-7 1.5-7	04
bqp100-5	101 101; 0	1612 63 682	-9.48703949 3	-9.48700958 3	1.9-15 1.0-6 1.6-6	05
bqp100-6	101 101; 0	1176 40 451	-1.08247778 4	-1.08247455 4	4.0-7 1.0-6 1.5-6	04
bqp100-7	101 101; 0	1353 53 646	-1.06891755 4	-1.06891674 4	1.0-6 4.6-7 3.8-7	04
bqp100-8	101 101; 0	1439 53 690	-1.17700268 4	-1.17700391 4	9.6-7 9.3-7 5.2-7	04
bqp100-9	101 101; 0	1513 78 1129	-1.17332554 4	-1.17332527 4	4.0-15 1.0-6 1.2-7	05
bqp100-10	101 101; 0	1400 54 694	-1.29802725 4	-1.29802317 4	3.2-7 5.4-7 1.6-6	04
bqp250-1	251 251; 0	1850 98 1568	-4.76630799 4	-4.76629235 4	3.3-7 7.0-7 1.6-6	20
bqp250-2	251 251; 0	1850 100 1651	-4.72223555 4	-4.72223208 4	2.2-7 5.0-7 3.7-7	21
bqp250-3	251 251; 0	1672 91 1423	-5.10766215 4	-5.10765699 4	1.8-7 1.0-6 5.0-7	18
bqp250-4	251 251; 0	1884 100 1498	-4.33126499 4	-4.33125112 4	9.3-7 9.6-7 1.6-6	21
bqp250-5	251 251; 0	2150 121 2175	-5.00043295 4	-5.00040683 4	1.4-7 9.2-7 2.6-6	24
bqp250-6	251 251; 0	1758 86 1144	-4.36686677 4	-4.36686400 4	8.4-7 1.0-6 3.2-7	19
bqp250-7	251 251; 0	1946 112 1820	-4.89217975 4	-4.89216489 4	9.8-7 9.9-7 1.5-6	21
bqp250-8	251 251; 0	1584 81 1096	-3.87794764 4	-3.87795206 4	8.8-7 8.5-7 5.7-7	17
bqp250-9	251 251; 0	1738 85 1351	-5.14977662 4	-5.14978513 4	9.7-7 7.6-7 8.3-7	19
bqp250-10	251 251; 0	1550 83 1092	-4.30144424 4	-4.30143705 4	2.1-7 5.9-7 8.4-7	17
bqp500-1	501 501; 0	2264 140 1913	-1.25963885 5	-1.25964103 5	4.3-7 1.0-6 8.7-7	1:31
bqp500-2	501 501; 0	2388 153 2479	-1.36011017 5	-1.36010201 5	8.1-15 1.0-6 3.0-6	1:37
bqp500-3	501 501; 0	2318 149 2211	-1.38452767 5	-1.38452895 5	4.9-7 1.0-6 4.6-7	1:32
bqp500-4	501 501; 0	2142 121 1664	-1.39328602 5	-1.39328383 5	9.0-7 1.0-6 7.9-7	1:21
bqp500-5	501 501; 0	2450 152 2302	-1.34092065 5	-1.34091649 5	1.2-7 6.7-7 1.5-6	1:40
bqp500-6	501 501; 0	2285 142 2242	-1.30764029 5	-1.30764548 5	1.1-7 6.3-7 2.0-6	1:36
bqp500-7	501 501; 0	2788 175 2684	-1.31491143 5	-1.31491605 5	9.0-7 8.3-7 1.8-6	1:53
bqp500-8	501 501; 0	2208 123 1856	-1.33490133 5	-1.33489188 5	7.2-7 9.9-7 3.5-6	1:24
bqp500-9	501 501; 0	1978 132 1893	-1.30289244 5	-1.30287954 5	8.8-7 3.0-7 5.0-6	1:21
bqp500-10	501 501; 0	2450 163 2387	-1.38534309 5	-1.38533944 5	2.9-7 6.4-7 1.3-6	1:39
gka1a	51 51; 0	1457 61 624	-3.53744228 3	-3.53745162 3	9.5-8 8.6-7 1.3-6	02
gka2a	61 61; 0	1100 39 374	-6.17178332 3	-6.17178657 3	5.1-7 3.9-7 2.6-7	02
gka3a	71 71; 0	1027 38 430	-6.38601559 3	-6.38600561 3	8.2-7 3.1-7 7.8-7	02
gka4a	81 81; 0	1190 41 482	-8.88097001 3	-8.88095565 3	4.4-7 4.3-7 8.1-7	03
gka5a	51 51; 0	1000 37 326	-5.89704279 3	-5.89704233 3	3.1-7 9.0-7 3.9-8	01
gka6a	31 31; 0	642 12 76	-4.10319775 3	-4.10320402 3	1.9-7 4.7-7 7.6-7	01
gka7a	31 31; 0	962 24 182	-4.63860928 3	-4.63860642 3	4.8-8 9.6-7 3.1-7	01
gka8a	101 101; 0	1431 74 1020	-1.11971666 4	-1.11972000 4	4.7-7 1.0-6 1.5-6	04
gka1b	21 21; 0	370 4 10	-1.32999998 2	-1.32999983 2	1.6-9 2.3-8 5.7-8	00
gka2b	31 31; 0	1169 45 206	-1.21302490 2	-1.21304057 2	7.1-7 5.8-7 6.4-6	02
gka3b	41 41; 0	370 4 11	-1.18000038 2	-1.17999636 2	2.9-8 4.6-7 1.7-6	00

problem	n m ; p	it.	primal obj	dual obj	err ₁ /err ₃ /err ₅	time
gka4b	51 51; 0	351 8 23	-1.28999990 2	-1.28999752 2	3.0-7 3.3-7 9.2-7	00
gka5b	61 61; 0	351 5 15	-1.49999963 2	-1.50001534 2	1.4-7 1.8-7 5.2-6	00
gka6b	71 71; 0	350 5 20	-1.45999958 2	-1.46000564 2	1.7-8 5.9-7 2.1-6	01
gka7b	81 81; 0	726 10 37	-1.60354525 2	-1.60355081 2	5.2-7 8.5-7 1.7-6	01
gka8b	91 91; 0	757 10 33	-1.44998822 2	-1.45016744 2	8.6-7 8.3-7 6.2-5	02
gka9b	101 101; 0	900 20 68	-1.36999327 2	-1.36987925 2	9.9-13 5.4-7 4.1-5	02
gka10b	126 126; 0	1215 51 307	-1.55563432 2	-1.55563803 2	2.8-7 9.3-7 1.2-6	04
gka1c	41 41; 0	1287 45 419	-5.11382895 3	-5.11383082 3	2.2-11 9.7-7 1.8-7	02
gka2c	51 51; 0	1073 38 427	-6.31998892 3	-6.31999888 3	3.4-7 6.9-7 7.9-7	02
gka3c	61 61; 0	950 28 277	-6.81389595 3	-6.81388884 3	7.9-8 4.1-7 5.2-7	01
gka4c	71 71; 0	1205 38 406	-7.56500887 3	-7.56499749 3	1.7-15 1.0-6 7.5-7	02
gka5c	81 81; 0	1286 53 689	-7.57623310 3	-7.57622550 3	2.0-11 9.9-7 5.0-7	03
gka6c	91 91; 0	1507 52 660	-5.96195112 3	-5.96194630 3	8.6-7 1.0-6 4.0-7	04
gka7c	101 101; 0	1775 65 783	-7.31645643 3	-7.31645980 3	1.7-7 1.0-6 2.3-7	05
gka1d	101 101; 0	1430 51 714	-6.52842496 3	-6.52842707 3	4.5-7 8.9-7 1.6-7	04
gka2d	101 101; 0	1130 72 732	-6.99070502 3	-6.99069171 3	4.0-7 8.5-7 9.5-7	04
gka3d	101 101; 0	1250 53 587	-9.73430862 3	-9.73430191 3	5.5-7 9.5-7 3.4-7	04
gka4d	101 101; 0	1285 51 541	-1.12784366 4	-1.12784077 4	1.4-11 9.9-7 1.3-6	04
gka5d	101 101; 0	950 59 639	-1.23988540 4	-1.23988560 4	1.9-7 8.1-7 8.2-8	03
gka6d	101 101; 0	1085 40 420	-1.49293950 4	-1.49293684 4	9.9-7 8.1-7 8.9-7	03
gka7d	101 101; 0	1100 34 352	-1.53758415 4	-1.53758109 4	7.6-7 7.8-7 9.9-7	03
gka8d	101 101; 0	1623 123 1328	-1.70053516 4	-1.70053542 4	2.0-13 9.9-7 7.6-8	06
gka9d	101 101; 0	895 33 326	-1.65338695 4	-1.65338695 4	5.0-7 9.8-7 1.9-9	03
gka10d	101 101; 0	1138 51 589	-2.01085873 4	-2.01085948 4	8.2-12 9.7-7 1.9-7	03
gka1e	201 201; 0	1822 98 1511	-1.70697973 4	-1.70697808 4	9.2-7 9.0-7 4.8-7	15
gka2e	201 201; 0	1550 87 1164	-2.49176022 4	-2.49175813 4	3.9-7 8.9-7 4.2-7	13
gka3e	201 201; 0	1771 88 1053	-2.68988060 4	-2.68987020 4	3.2-7 9.9-7 1.9-6	14
gka4e	201 201; 0	1720 96 1269	-3.72251299 4	-3.72249836 4	1.4-8 1.0-6 2.0-6	13
gka5e	201 201; 0	1841 90 1087	-3.80025073 4	-3.80023290 4	1.0-6 6.3-7 2.3-6	14
gka1f	501 501; 0	2750 181 2766	-6.55590022 4	-6.55591560 4	1.9-7 6.3-7 1.2-6	1:54
gka2f	501 501; 0	2450 150 2007	-1.07931780 5	-1.07931208 5	3.6-7 4.2-7 2.7-6	1:43
gka3f	501 501; 0	2434 148 2104	-1.50151153 5	-1.50150153 5	1.0-14 1.0-6 3.3-6	1:36
gka4f	501 501; 0	2450 156 2216	-1.87087836 5	-1.87087082 5	3.7-7 7.6-7 2.0-6	1:38
gka5f	501 501; 0	2099 127 1685	-2.06914643 5	-2.06915261 5	6.5-7 1.0-6 1.5-6	1:22
soybean-small.2	47 48; 0	356 0 0	-2.81363798 3	-2.81363653 3	9.9-7 7.7-7 2.6-7	01
soybean-small.3	47 48; 0	127 0 0	-2.96753983 3	-2.96754133 3	1.7-7 4.1-7 2.5-7	00
soybean-small.4	47 48; 0	510 5 20	-3.00972597 3	-3.00972507 3	6.5-7 8.2-7 1.5-7	01
soybean-small.5	47 48; 0	237 0 0	-3.03220503 3	-3.03220419 3	4.1-7 9.2-7 1.4-7	00
soybean-small.6	47 48; 0	401 10 37	-3.05012983 3	-3.05012744 3	8.7-7 8.7-8 3.9-7	01
soybean-small.7	47 48; 0	437 10 29	-3.06675467 3	-3.06675299 3	6.7-7 9.1-7 2.7-7	01
soybean-small.8	47 48; 0	838 40 133	-3.08051649 3	-3.08051346 3	9.8-7 9.2-7 4.9-7	02
soybean-small.9	47 48; 0	505 15 43	-3.09259267 3	-3.09258935 3	9.8-7 8.9-7 5.4-7	01
soybean-small.10	47 48; 0	344 10 29	-3.10322729 3	-3.10322263 3	8.6-7 9.7-7 7.5-7	01
soybean-small.11	47 48; 0	467 10 30	-3.11173559 3	-3.11173240 3	9.9-7 3.4-7 5.1-7	01
soybean-large.2	307 308; 0	1087 13 65	-1.03875802 4	-1.03875776 4	4.0-7 9.9-7 1.2-7	11
soybean-large.3	307 308; 0	1176 14 70	-1.12751964 4	-1.12751939 4	5.0-7 9.6-7 1.1-7	15

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soybean-large.4	307 308; 0	1208 21 98	-1.18046323 4	-1.18046263 4	7.9-7 9.4-7 2.6-7	13
soybean-large.5	307 308; 0	497 5 25	-1.22194245 4	-1.22194192 4	9.6-7 9.9-7 2.2-7	06
soybean-large.6	307 308; 0	352 11 55	-1.25833274 4	-1.25833215 4	9.3-7 9.8-7 2.3-7	04
soybean-large.7	307 308; 0	790 10 42	-1.28447315 4	-1.28447276 4	7.0-7 9.9-7 1.5-7	09
soybean-large.8	307 308; 0	839 16 63	-1.30828333 4	-1.30828303 4	4.0-7 6.6-7 1.2-7	11
soybean-large.9	307 308; 0	881 16 63	-1.32983183 4	-1.32983114 4	9.1-7 9.9-7 2.6-7	11
soybean-large.10	307 308; 0	313 0 0	-1.34817462 4	-1.34817443 4	9.7-7 9.7-7 7.0-8	04
soybean-large.11	307 308; 0	782 10 42	-1.36196849 4	-1.36196763 4	1.0-14 9.7-7 3.2-7	09
spambase-small.2	300 301; 0	602 6 37	-9.25856555 7	-9.25855213 7	9.8-7 3.0-7 7.2-7	06
spambase-small.3	300 301; 0	400 11 51	-1.07417370 8	-1.07417475 8	2.5-9 9.1-7 4.9-7	04
spambase-small.4	300 301; 0	1640 15 49	-1.10832007 8	-1.10831961 8	1.0-6 8.3-7 2.1-7	17
spambase-small.5	300 301; 0	565 10 45	-1.12412408 8	-1.12412228 8	1.7-7 8.4-7 8.0-7	06
spambase-small.6	300 301; 0	966 11 46	-1.13338459 8	-1.13338448 8	4.8-7 9.9-7 4.9-8	11
spambase-small.7	300 301; 0	724 10 40	-1.14083147 8	-1.14083063 8	9.9-7 9.3-7 3.7-7	08
spambase-small.8	300 301; 0	1048 30 121	-1.14666784 8	-1.14666739 8	6.0-7 6.7-7 2.0-7	14
spambase-small.9	300 301; 0	715 20 69	-1.15154174 8	-1.15153765 8	9.9-7 8.1-7 1.8-6	09
spambase-small.10	300 301; 0	1023 30 97	-1.15530322 8	-1.15530392 8	9.8-7 9.5-7 3.0-7	13
spambase-small.11	300 301; 0	1217 40 122	-1.15801236 8	-1.15801410 8	9.8-7 6.4-7 7.5-7	16
spambase-medium.2	900 901; 0	576 0 0	-4.85230450 8	-4.85234460 8	7.4-14 5.5-7 4.1-6	57
spambase-medium.3	900 901; 0	1096 10 60	-5.76054544 8	-5.76054052 8	6.0-7 9.9-7 4.3-7	1:45
spambase-medium.4	900 901; 0	2150 37 216	-6.25148361 8	-6.25147806 8	3.6-9 9.1-7 4.4-7	3:36
spambase-medium.5	900 901; 0	1901 28 127	-6.45167806 8	-6.45167416 8	6.2-7 1.0-6 3.0-7	3:24
spambase-medium.6	900 901; 0	1475 26 128	-6.55737805 8	-6.55737254 8	9.4-7 9.7-7 4.2-7	2:40
spambase-medium.7	900 901; 0	1710 37 179	-6.63067423 8	-6.63067274 8	6.2-7 9.6-7 1.1-7	3:10
spambase-medium.8	900 901; 0	1988 39 168	-6.68460916 8	-6.68461206 8	8.6-7 9.9-7 2.2-7	3:40
spambase-medium.9	900 901; 0	1349 31 146	-6.72424301 8	-6.72421033 8	8.3-7 8.0-7 2.4-6	2:31
spambase-medium.10	900 901; 0	1771 50 234	-6.75466602 8	-6.75469500 8	1.3-7 1.0-6 2.1-6	3:20
spambase-medium.11	900 901; 0	1655 41 178	-6.78070443 8	-6.78072694 8	3.4-7 1.0-6 1.7-6	3:03
spambase-large.2	1500 1501; 0	590 12 67	-9.55452065 8	-9.55447770 8	8.9-7 9.9-7 2.2-6	3:54
spambase-large.3	1500 1501; 0	1254 11 63	-1.19059127 9	-1.19058570 9	7.0-7 1.0-6 2.3-6	8:01
spambase-large.4	1500 1501; 0	2643 32 168	-1.28689948 9	-1.28689964 9	4.7-7 1.0-6 6.1-8	17:21
spambase-large.5	1500 1501; 0	7230 100 250	-1.32385436 9	-1.32385632 9	5.3-9 3.3-7 7.4-7	43:05
spambase-large.6	1500 1501; 0	4373 81 415	-1.35384928 9	-1.35383020 9	9.4-7 9.1-7 7.0-6	30:17
spambase-large.7	1500 1501; 0	2309 53 254	-1.37076936 9	-1.37078376 9	2.3-7 9.7-7 5.3-6	16:43
spambase-large.8	1500 1501; 0	2465 53 256	-1.38311018 9	-1.38309946 9	7.0-7 1.0-6 3.9-6	17:28
spambase-large.9	1500 1501; 0	3048 61 275	-1.39140285 9	-1.39141497 9	4.6-7 9.1-7 4.4-6	21:55
spambase-large.10	1500 1501; 0	1780 36 142	-1.39693105 9	-1.39692860 9	3.5-7 9.7-7 8.8-7	12:24
spambase-large.11	1500 1501; 0	3352 102 449	-1.40163880 9	-1.40165298 9	1.8-7 9.9-7 5.1-6	23:18
abalone-small.2	200 201; 0	409 10 49	-2.50511358 4	-2.50511263 4	6.7-7 9.5-7 1.9-7	02
abalone-small.3	200 201; 0	233 0 0	-2.54726282 4	-2.54726204 4	5.9-15 9.9-7 1.5-7	01
abalone-small.4	200 201; 0	359 0 0	-2.56537079 4	-2.56536841 4	9.4-7 9.8-7 4.6-7	02
abalone-small.5	200 201; 0	578 11 41	-2.57428863 4	-2.57428767 4	9.0-7 9.2-7 1.9-7	04
abalone-small.6	200 201; 0	488 11 44	-2.57921244 4	-2.57921180 4	7.6-7 9.2-7 1.2-7	03
abalone-small.7	200 201; 0	640 11 44	-2.58186928 4	-2.58187069 4	9.1-7 8.9-7 2.7-7	04
abalone-small.8	200 201; 0	837 21 78	-2.58346525 4	-2.58346574 4	8.3-7 9.0-7 9.5-8	05
abalone-small.9	200 201; 0	1026 31 116	-2.58461952 4	-2.58462025 4	8.2-7 2.4-7 1.4-7	07

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abalone-small.10	200 201; 0	1146 41 151	-2.58566420 4	-2.58566335 4	8.6-14 9.9-7 1.6-7	08
abalone-small.11	200 201; 0	928 21 72	-2.58647335 4	-2.58647442 4	9.3-7 9.5-7 2.1-7	06
abalone-medium.2	400 401; 0	543 11 54	-5.45538518 4	-5.45538149 4	9.9-7 4.7-7 3.4-7	10
abalone-medium.3	400 401; 0	907 11 49	-5.56615673 4	-5.56615468 4	9.4-7 8.3-7 1.8-7	19
abalone-medium.4	400 401; 0	458 11 45	-5.61299024 4	-5.61298996 4	3.5-14 9.9-7 2.5-8	09
abalone-medium.5	400 401; 0	708 10 40	-5.63472556 4	-5.63472635 4	2.5-14 9.9-7 6.9-8	13
abalone-medium.6	400 401; 0	603 10 38	-5.64713401 4	-5.64713250 4	1.0-13 7.0-7 1.3-7	12
abalone-medium.7	400 401; 0	843 13 51	-5.65476959 4	-5.65476435 4	9.9-7 7.0-7 4.6-7	17
abalone-medium.8	400 401; 0	699 10 38	-5.65992604 4	-5.65993032 4	8.1-7 7.4-7 3.8-7	14
abalone-medium.9	400 401; 0	899 20 74	-5.66328758 4	-5.66328400 4	9.4-7 9.8-7 3.2-7	18
abalone-medium.10	400 401; 0	950 25 97	-5.66549834 4	-5.66549500 4	1.4-8 9.7-7 2.9-7	20
abalone-medium.11	400 401; 0	974 30 121	-5.66751144 4	-5.66750534 4	8.6-7 9.6-7 5.4-7	21
abalone-large.2	1000 1001; 0	681 11 54	-1.30642474 5	-1.30642298 5	3.1-7 6.1-7 6.7-7	1:29
abalone-large.3	1000 1001; 0	708 11 53	-1.33354495 5	-1.33354424 5	7.5-7 9.5-7 2.6-7	1:29
abalone-large.4	1000 1001; 0	634 11 50	-1.34437130 5	-1.34437212 5	5.0-14 5.0-7 3.1-7	1:25
abalone-large.5	1000 1001; 0	787 11 44	-1.34950172 5	-1.34950179 5	2.3-13 3.8-7 2.5-8	1:45
abalone-large.6	1000 1001; 0	861 20 87	-1.35247557 5	-1.35247480 5	7.0-7 2.2-7 2.9-7	1:57
abalone-large.7	1000 1001; 0	933 21 90	-1.35438716 5	-1.35438706 5	9.3-7 3.8-7 3.8-8	2:08
abalone-large.8	1000 1001; 0	881 21 86	-1.35575698 5	-1.35575586 5	8.2-7 3.9-7 4.1-7	2:01
abalone-large.9	1000 1001; 0	1153 20 78	-1.35664392 5	-1.35664324 5	5.0-13 9.9-7 2.5-7	2:36
abalone-large.10	1000 1001; 0	1380 31 131	-1.35722295 5	-1.35722216 5	8.7-7 2.2-7 2.9-7	3:11
abalone-large.11	1000 1001; 0	1429 32 127	-1.35770862 5	-1.35770903 5	9.9-7 9.7-7 1.5-7	3:18
segment-small.2	400 401; 0	1804 24 148	-1.82058998 7	-1.82059012 7	4.9-15 1.0-6 3.7-8	28
segment-small.3	400 401; 0	2224 31 153	-1.94644403 7	-1.94644294 7	6.4-7 9.3-7 2.8-7	42
segment-small.4	400 401; 0	1183 25 114	-2.00012793 7	-2.00012720 7	8.5-7 4.7-7 1.8-7	24
segment-small.5	400 401; 0	2327 51 202	-2.03419789 7	-2.03419640 7	9.7-7 9.9-7 3.7-7	51
segment-small.6	400 401; 0	2240 34 139	-2.05995380 7	-2.05995227 7	9.3-7 1.0-6 3.7-7	52
segment-small.7	400 401; 0	1201 26 104	-2.08095376 7	-2.08095263 7	9.3-7 1.0-6 2.7-7	27
segment-small.8	400 401; 0	1305 31 124	-2.09777512 7	-2.09777398 7	9.9-7 8.4-7 2.7-7	31
segment-small.9	400 401; 0	986 25 98	-2.11129209 7	-2.11129115 7	7.4-7 9.9-7 2.2-7	23
segment-small.10	400 401; 0	1240 30 114	-2.12250154 7	-2.12250054 7	7.2-7 8.9-7 2.3-7	32
segment-small.11	400 401; 0	1264 60 233	-2.13168876 7	-2.13168771 7	7.5-7 7.1-7 2.5-7	37
segment-medium.2	700 701; 0	771 17 97	-3.21827040 7	-3.21827886 7	3.4-14 7.6-7 1.3-6	46
segment-medium.3	700 701; 0	825 11 65	-3.53523861 7	-3.53523389 7	7.4-7 9.8-7 6.7-7	47
segment-medium.4	700 701; 0	1681 26 141	-3.70114183 7	-3.70113960 7	5.1-7 9.6-7 3.0-7	1:43
segment-medium.5	700 701; 0	2409 28 141	-3.78602055 7	-3.78601867 7	9.9-7 6.9-7 2.5-7	2:29
segment-medium.6	700 701; 0	2656 56 245	-3.84997196 7	-3.84996987 7	4.3-7 8.3-7 2.7-7	3:01
segment-medium.7	700 701; 0	3051 63 236	-3.89903228 7	-3.89902967 7	9.6-7 9.1-7 3.4-7	3:38
segment-medium.8	700 701; 0	2279 50 206	-3.93883207 7	-3.93882920 7	2.6-7 9.7-7 3.6-7	2:38
segment-medium.9	700 701; 0	1947 36 158	-3.97399558 7	-3.97399295 7	7.4-7 9.1-7 3.3-7	2:15
segment-medium.10	700 701; 0	1608 30 115	-4.00489950 7	-4.00489783 7	6.4-7 9.7-7 2.1-7	1:48
segment-medium.11	700 701; 0	1394 32 115	-4.03153654 7	-4.03153327 7	1.0-6 7.6-7 4.1-7	1:36
segment-large.2	1000 1001; 0	1095 14 83	-4.58628013 7	-4.58628945 7	9.6-15 9.8-7 1.0-6	2:16
segment-large.3	1000 1001; 0	451 0 0	-5.01873557 7	-5.01873928 7	7.7-15 9.9-7 3.7-7	53
segment-large.4	1000 1001; 0	1865 22 122	-5.24109288 7	-5.24109005 7	4.5-7 8.8-7 2.7-7	4:07
segment-large.5	1000 1001; 0	2283 29 154	-5.35954924 7	-5.35954649 7	1.0-6 1.0-6 2.6-7	5:07

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segment-large.6	1000 1001; 0	2672 41 220	-5.44822781 7	-5.44822500 7	2.4-7 8.9-7 2.6-7	6:19
segment-large.7	1000 1001; 0	3050 70 298	-5.51943666 7	-5.51943573 7	2.8-11 1.0-6 8.4-8	7:28
segment-large.8	1000 1001; 0	2510 50 236	-5.57918855 7	-5.57918673 7	2.1-7 8.7-7 1.6-7	6:04
segment-large.9	1000 1001; 0	2714 31 144	-5.62919051 7	-5.62918711 7	6.9-7 8.4-7 3.0-7	6:46
segment-large.10	1000 1001; 0	1372 27 115	-5.67154193 7	-5.67154255 7	7.7-7 9.9-7 5.5-8	3:16
segment-large.11	1000 1001; 0	2071 36 156	-5.70767446 7	-5.70767308 7	2.0-7 1.0-6 1.2-7	5:06
housing.2	506 507; 0	1300 30 133	-1.65438057 8	-1.65438038 8	6.4-9 6.3-7 6.0-8	34
housing.3	506 507; 0	790 14 60	-1.68189337 8	-1.68189524 8	3.8-15 8.4-7 5.6-7	21
housing.4	506 507; 0	793 11 44	-1.69406436 8	-1.69406452 8	2.3-12 9.3-7 4.6-8	21
housing.5	506 507; 0	529 11 42	-1.69819007 8	-1.69819099 8	8.6-10 9.4-7 2.7-7	15
housing.6	506 507; 0	502 10 38	-1.70087555 8	-1.70087483 8	9.1-7 9.2-7 2.1-7	15
housing.7	506 507; 0	558 10 38	-1.70246637 8	-1.70246532 8	9.6-7 5.8-7 3.1-7	17
housing.8	506 507; 0	582 10 34	-1.70367293 8	-1.70367185 8	9.6-7 6.6-7 3.2-7	19
housing.9	506 507; 0	704 10 36	-1.70457743 8	-1.70457768 8	9.9-7 8.3-7 7.4-8	22
housing.10	506 507; 0	808 21 70	-1.70527358 8	-1.70527253 8	9.9-7 7.5-7 3.1-7	27
housing.11	506 507; 0	695 20 76	-1.70586703 8	-1.70586616 8	9.3-7 6.6-7 2.6-7	24
ext-be100.1	101 101;14850	3550 536 31297	-1.95406981 4	-1.95407137 4	2.9-7 1.0-6 4.0-7	58
ext-be100.2	101 101;14850	2200 280 16786	-1.74937341 4	-1.74937732 4	5.4-7 6.3-7 1.1-6	33
ext-be100.3	101 101;14850	3070 454 25762	-1.76818807 4	-1.76818774 4	7.0-7 9.3-7 9.4-8	46
ext-be100.4	101 101;14850	2292 308 17857	-1.93202899 4	-1.93202145 4	8.2-7 8.9-7 2.0-6	34
ext-be100.5	101 101;14850	1734 207 11727	-1.62531065 4	-1.62531225 4	3.3-7 1.0-6 4.9-7	24
ext-be100.6	101 101;14850	2018 270 15115	-1.75793766 4	-1.75794521 4	1.5-7 1.0-6 2.1-6	29
ext-be100.7	101 101;14850	2891 400 23704	-1.89201448 4	-1.89201004 4	7.2-7 1.0-6 1.2-6	43
ext-be100.8	101 101;14850	2734 411 21820	-1.91440307 4	-1.91440121 4	4.1-7 1.0-6 4.9-7	40
ext-be100.9	101 101;14850	2184 323 16333	-1.38098461 4	-1.38098146 4	8.6-7 1.0-6 1.1-6	32
ext-be100.10	101 101;14850	1571 183 10201	-1.57241372 4	-1.57241270 4	5.1-7 1.0-6 3.3-7	21
ext-be120.3.1	121 121;21420	3400 499 27901	-1.33433750 4	-1.33433360 4	2.2-7 1.0-6 1.5-6	1:06
ext-be120.3.2	121 121;21420	2500 343 19334	-1.31635278 4	-1.31634854 4	2.3-7 1.0-6 1.6-6	48
ext-be120.3.3	121 121;21420	2024 265 14703	-1.26096727 4	-1.26096603 4	7.2-7 1.0-6 4.9-7	38
ext-be120.3.4	121 121;21420	3700 600 32449	-1.40395385 4	-1.40395238 4	9.8-7 1.0-6 5.2-7	1:19
ext-be120.3.5	121 121;21420	2501 361 19757	-1.15584819 4	-1.15584601 4	6.4-7 9.9-7 9.4-7	49
ext-be120.3.6	121 121;21420	3250 462 25570	-1.30222576 4	-1.30222213 4	5.5-7 9.9-7 1.4-6	1:02
ext-be120.3.7	121 121;21420	3701 588 33219	-1.41283630 4	-1.41283187 4	5.1-7 9.9-7 1.6-6	1:16
ext-be120.3.8	121 121;21420	2781 399 22835	-1.48122424 4	-1.48121897 4	3.7-7 1.0-6 1.8-6	54
ext-be120.3.9	121 121;21420	2050 256 14087	-1.08238523 4	-1.08238903 4	3.5-7 8.5-7 1.8-6	36
ext-be120.3.10	121 121;21420	2620 360 20721	-1.24128160 4	-1.24127789 4	1.0-6 8.6-7 1.5-6	50
ext-be120.8.1	121 121;21420	1823 219 12190	-1.93896237 4	-1.93896499 4	1.0-6 9.6-7 6.8-7	32
ext-be120.8.2	121 121;21420	2449 328 18051	-1.93510166 4	-1.93510317 4	7.9-7 1.0-6 3.9-7	45
ext-be120.8.3	121 121;21420	2323 315 17269	-1.97909539 4	-1.97909541 4	8.9-7 1.0-6 7.3-9	43
ext-be120.8.4	121 121;21420	3042 456 24787	-2.10631401 4	-2.10630808 4	1.9-7 1.0-6 1.4-6	59
ext-be120.8.5	121 121;21420	3090 434 24849	-2.06773224 4	-2.06772422 4	7.4-7 1.0-6 1.9-6	59
ext-be120.8.6	121 121;21420	2051 283 14786	-1.89540642 4	-1.89541135 4	4.3-7 9.9-7 1.3-6	38
ext-be120.8.7	121 121;21420	2801 386 22069	-2.27769606 4	-2.27770259 4	6.3-7 9.4-7 1.4-6	53
ext-be120.8.8	121 121;21420	2582 377 20818	-2.03563149 4	-2.03563643 4	2.4-7 8.9-7 1.2-6	49
ext-be120.8.9	121 121;21420	2050 265 14331	-1.86846471 4	-1.86846431 4	1.7-7 1.0-6 1.1-7	37
ext-be120.8.10	121 121;21420	1991 263 14960	-1.93803596 4	-1.93802740 4	1.4-7 1.0-6 2.2-6	37

problem	n	$m; p$	it.	primal obj	dual obj	err ₁ /err ₃ /err ₅	time
ext-be150.3.1	151	151;33525	2880 410 23108	-1.92019655 4	-1.92019035 4	3.5-7 1.0-6 1.6-6	1:23
ext-be150.3.2	151	151;33525	2200 290 16198	-1.82000231 4	-1.82000625 4	3.0-7 9.4-7 1.1-6	1:01
ext-be150.3.3	151	151;33525	2922 414 23320	-1.75098222 4	-1.75097654 4	9.6-7 1.0-6 1.6-6	1:23
ext-be150.3.4	151	151;33525	3400 510 28930	-2.00795812 4	-2.00795152 4	1.6-7 9.9-7 1.6-6	1:41
ext-be150.3.5	151	151;33525	2500 371 19968	-1.72160915 4	-1.72160856 4	3.9-7 1.0-6 1.7-7	1:13
ext-be150.3.6	151	151;33525	2070 264 14427	-1.73854496 4	-1.73854735 4	1.4-7 1.0-6 6.9-7	56
ext-be150.3.7	151	151;33525	3700 544 30387	-1.83845450 4	-1.83846609 4	2.7-7 1.0-6 3.2-6	1:47
ext-be150.3.8	151	151;33525	2368 315 17548	-1.89086395 4	-1.89085919 4	6.5-7 1.0-6 1.3-6	1:06
ext-be150.3.9	151	151;33525	1911 258 12696	-1.36094909 4	-1.36094856 4	8.6-7 9.9-7 1.9-7	51
ext-be150.3.10	151	151;33525	2470 334 18385	-1.85218558 4	-1.85217982 4	7.9-7 1.0-6 1.6-6	1:09
ext-be150.8.1	151	151;33525	2200 276 14999	-2.80513169 4	-2.80512729 4	9.9-7 9.8-7 7.8-7	59
ext-be150.8.2	151	151;33525	2051 278 14079	-2.77959391 4	-2.77958357 4	5.3-7 9.9-7 1.9-6	55
ext-be150.8.3	151	151;33525	2871 419 22577	-3.02020670 4	-3.02020211 4	4.0-7 1.0-6 7.6-7	1:23
ext-be150.8.4	151	151;33525	3167 463 23723	-2.76850367 4	-2.76850057 4	6.1-7 1.0-6 5.6-7	1:29
ext-be150.8.5	151	151;33525	2650 355 19911	-2.86334861 4	-2.86334888 4	1.6-7 1.0-6 4.7-8	1:14
ext-be150.8.6	151	151;33525	2200 283 15563	-3.01931053 4	-3.01931049 4	1.9-7 9.6-7 7.0-9	1:00
ext-be150.8.7	151	151;33525	2801 368 21638	-3.20854559 4	-3.20854163 4	9.0-7 9.5-7 6.2-7	1:20
ext-be150.8.8	151	151;33525	2800 391 20790	-3.04918822 4	-3.04919348 4	1.5-7 1.0-6 8.6-7	1:20
ext-be150.8.9	151	151;33525	2491 333 18224	-2.63144415 4	-2.63143503 4	8.7-7 9.7-7 1.7-6	1:09
ext-be150.8.10	151	151;33525	2067 237 13757	-2.91252280 4	-2.91252220 4	8.0-7 9.7-7 1.0-7	54
ext-be200.3.1	201	201;59700	2351 310 16175	-2.67725229 4	-2.67725792 4	7.8-7 8.8-7 1.1-6	1:40
ext-be200.3.2	201	201;59700	3305 471 25651	-2.59944074 4	-2.59943527 4	9.4-7 8.9-7 1.1-6	2:35
ext-be200.3.3	201	201;59700	3231 481 26210	-2.86442917 4	-2.86441849 4	2.7-7 1.0-6 1.9-6	2:32
ext-be200.3.4	201	201;59700	3551 491 27605	-2.82326764 4	-2.82326824 4	5.0-7 1.0-6 1.0-7	2:42
ext-be200.3.5	201	201;59700	2500 346 18173	-2.71698877 4	-2.71699919 4	2.4-7 1.0-6 1.9-6	1:51
ext-be200.3.6	201	201;59700	2521 336 17851	-2.70594931 4	-2.70594518 4	4.2-7 9.8-7 7.6-7	1:50
ext-be200.3.7	201	201;59700	3700 592 32204	-3.08044945 4	-3.08045465 4	2.7-7 1.0-6 8.4-7	3:02
ext-be200.3.8	201	201;59700	3323 496 25682	-2.82682646 4	-2.82683534 4	3.7-7 1.0-6 1.6-6	2:32
ext-be200.3.9	201	201;59700	2889 423 21707	-2.56474468 4	-2.56474054 4	1.0-6 1.0-6 8.1-7	2:11
ext-be200.3.10	201	201;59700	2909 401 21546	-2.49627121 4	-2.49627111 4	5.7-7 1.0-6 2.1-8	2:14
ext-be200.8.1	201	201;59700	2990 461 23741	-4.95597873 4	-4.95596294 4	3.5-7 9.9-7 1.6-6	2:20
ext-be200.8.2	201	201;59700	2509 323 17507	-4.28172596 4	-4.28173312 4	9.6-7 1.0-6 8.4-7	1:52
ext-be200.8.3	201	201;59700	3550 526 27116	-4.49800659 4	-4.49800430 4	1.2-7 1.0-6 2.6-7	2:42
ext-be200.8.4	201	201;59700	3037 405 22303	-4.51061909 4	-4.51063315 4	1.6-7 1.0-6 1.6-6	2:14
ext-be200.8.5	201	201;59700	2831 395 21220	-4.30189116 4	-4.30189116 4	5.1-7 9.9-7 8.2-10	2:06
ext-be200.8.6	201	201;59700	3550 549 30917	-5.00116485 4	-5.00114050 4	1.7-7 1.0-6 2.4-6	2:53
ext-be200.8.7	201	201;59700	3250 482 26454	-4.80695679 4	-4.80696664 4	1.4-7 1.0-6 1.0-6	2:32
ext-be200.8.8	201	201;59700	2960 429 22763	-4.62646674 4	-4.62647463 4	5.2-7 9.9-7 8.5-7	2:15
ext-be200.8.9	201	201;59700	2950 438 23009	-4.42545647 4	-4.42545746 4	1.4-7 1.0-6 1.1-7	2:16
ext-be200.8.10	201	201;59700	2951 408 21579	-4.42300257 4	-4.42299153 4	6.5-7 9.9-7 1.2-6	2:11
ext-be250.1	251	251;93375	4157 674 36201	-2.43464197 4	-2.43464286 4	3.3-7 1.0-6 1.8-7	5:05
ext-be250.2	251	251;93375	4930 696 40962	-2.29141931 4	-2.29141863 4	2.0-7 1.0-6 1.5-7	5:57
ext-be250.3	251	251;93375	5577 888 46743	-2.32027654 4	-2.32028090 4	5.3-7 9.5-7 9.4-7	6:36
ext-be250.4	251	251;93375	4247 648 36786	-2.49165266 4	-2.49166281 4	5.8-7 9.8-7 2.0-6	5:08
ext-be250.5	251	251;93375	4380 494 31198	-2.16230346 4	-2.16230140 4	7.7-7 1.0-6 4.8-7	4:44
ext-be250.6	251	251;93375	4831 672 37902	-2.31972675 4	-2.31972096 4	3.5-7 1.0-6 1.2-6	5:36

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ext-be250.7	251 251;93375	4432 705 37669	-2.43126177 4	-2.43125778 4	4.1-7 1.0-6 8.2-7	5:13
ext-be250.8	251 251;93375	3100 450 23874	-2.42032475 4	-2.42032432 4	5.8-7 9.2-7 8.9-8	3:28
ext-be250.9	251 251;93375	2921 423 21848	-2.05761221 4	-2.05761305 4	1.4-7 1.0-6 2.0-7	3:18
ext-be250.10	251 251;93375	3145 460 24785	-2.35799092 4	-2.35798598 4	7.1-7 1.0-6 1.0-6	3:38
ext-bqp50-1	51 51;3675	445 22 1761	-2.09800128 3	-2.09800098 3	9.5-7 9.5-7 7.3-8	02
ext-bqp50-2	51 51;3675	537 0 1096	-3.70200055 3	-3.70199991 3	9.9-7 3.5-7 8.6-8	02
ext-bqp50-3	51 51;3675	329 0 219	-4.62599463 3	-4.62599339 3	9.3-7 1.9-7 1.3-7	01
ext-bqp50-4	51 51;3675	373 16 1395	-3.54400011 3	-3.54399971 3	9.9-7 4.0-7 5.7-8	02
ext-bqp50-5	51 51;3675	573 26 2587	-4.01199982 3	-4.01199899 3	9.9-7 4.3-7 1.0-7	03
ext-bqp50-6	51 51;3675	547 21 1385	-3.69300002 3	-3.69299952 3	9.8-7 1.6-7 6.8-8	02
ext-bqp50-7	51 51;3675	1005 31 3853	-4.52000000 3	-4.51999975 3	9.9-7 6.4-8 2.7-8	04
ext-bqp50-8	51 51;3675	539 0 834	-4.21600081 3	-4.21603248 3	4.0-7 7.9-7 3.8-6	02
ext-bqp50-9	51 51;3675	510 0 620	-3.78000077 3	-3.78002794 3	1.2-7 6.6-7 3.6-6	02
ext-bqp50-10	51 51;3675	986 34 3153	-3.50700012 3	-3.50699997 3	9.8-7 9.5-9 2.2-8	04
ext-bqp100-1	101 101;14850	3097 442 25853	-8.03666042 3	-8.03666420 3	9.5-7 1.0-6 2.3-7	48
ext-bqp100-2	101 101;14850	4637 738 33239	-1.10359959 4	-1.10359382 4	7.7-7 6.0-7 2.6-6	1:08
ext-bqp100-3	101 101;14850	777 42 2114	-1.27229982 4	-1.27229694 4	8.3-7 2.1-7 1.1-6	08
ext-bqp100-4	101 101;14850	654 15 1309	-1.03679972 4	-1.03679915 4	5.1-7 9.7-7 2.8-7	06
ext-bqp100-5	101 101;14850	1246 122 6456	-9.08300150 3	-9.08304673 3	7.7-7 3.9-7 2.5-6	16
ext-bqp100-6	101 101;14850	3100 450 27541	-1.03415237 4	-1.03415481 4	4.2-7 8.9-7 1.2-6	50
ext-bqp100-7	101 101;14850	5200 841 49573	-1.01594253 4	-1.01594278 4	6.8-7 1.0-6 1.2-7	1:28
ext-bqp100-8	101 101;14850	879 37 2799	-1.14350042 4	-1.14350013 4	7.5-7 8.5-7 1.3-7	09
ext-bqp100-9	101 101;14850	700 42 1909	-1.14549950 4	-1.14549987 4	1.7-7 1.8-7 1.6-7	07
ext-bqp100-10	101 101;14850	961 44 3174	-1.25649983 4	-1.25649624 4	7.9-7 2.4-7 1.4-6	10
ext-bqp250-1	251 251;93375	5527 790 46026	-4.62427622 4	-4.62429230 4	5.8-7 1.0-6 1.7-6	6:14
ext-bqp250-2	251 251;93375	3260 476 25338	-4.55843984 4	-4.55844673 4	2.9-7 1.0-6 7.6-7	3:41
ext-bqp250-3	251 251;93375	4001 586 33414	-4.94557894 4	-4.94558404 4	3.0-7 9.9-7 5.2-7	4:41
ext-bqp250-4	251 251;93375	3400 490 26754	-4.20082188 4	-4.20082065 4	3.3-7 7.1-7 1.5-7	3:51
ext-bqp250-5	251 251;93375	3701 493 29114	-4.84302152 4	-4.84301796 4	5.9-7 9.0-7 3.7-7	4:11
ext-bqp250-6	251 251;93375	3329 487 25682	-4.22406350 4	-4.22406826 4	2.6-7 1.0-6 5.6-7	3:44
ext-bqp250-7	251 251;93375	3383 437 25574	-4.73766723 4	-4.73765973 4	1.0-6 9.8-7 7.9-7	3:45
ext-bqp250-8	251 251;93375	3952 659 30849	-3.74646737 4	-3.74647049 4	4.9-7 9.9-7 4.2-7	4:29
ext-bqp250-9	251 251;93375	3270 431 23859	-4.96951014 4	-4.96951510 4	1.4-7 9.9-7 5.0-7	3:34
ext-bqp250-10	251 251;93375	2801 397 20862	-4.15004128 4	-4.15005775 4	7.0-7 8.0-7 2.0-6	3:05
ext-bqp500-1	501 501;374250	5724 855 43914	-1.22595336 5	-1.22595078 5	2.4-7 1.0-6 1.1-6	29:50
ext-bqp500-2	501 501;374250	6053 839 46337	-1.32727856 5	-1.32727635 5	1.0-6 9.0-7 8.3-7	31:39
ext-bqp500-3	501 501;374250	8210 721 54728	-1.34793595 5	-1.34793185 5	1.0-6 1.0-6 1.5-6	37:57
ext-bqp500-4	501 501;374250	6750 948 53346	-1.35482557 5	-1.35482199 5	1.0-6 1.0-6 1.3-6	35:47
ext-bqp500-5	501 501;374250	7621 712 50562	-1.30298958 5	-1.30299519 5	3.5-7 8.6-7 2.2-6	35:31
ext-bqp500-6	501 501;374250	7750 1142 62600	-1.27203954 5	-1.27204050 5	1.8-7 1.0-6 3.7-7	41:41
ext-bqp500-7	501 501;374250	5849 837 44850	-1.27936913 5	-1.27936615 5	6.0-7 1.0-6 1.2-6	30:37
ext-bqp500-8	501 501;374250	8390 1292 71481	-1.29567616 5	-1.29567322 5	9.5-7 1.0-6 1.1-6	47:06
ext-bqp500-9	501 501;374250	8302 747 53415	-1.26715619 5	-1.26715336 5	7.4-7 1.0-6 1.1-6	38:00
ext-bqp500-10	501 501;374250	7323 719 50042	-1.34976045 5	-1.34975809 5	5.5-7 1.0-6 8.7-7	36:04
ext-gka1a	51 51;3675	870 15 1843	-3.41400221 3	-3.41400272 3	9.9-7 2.8-8 7.5-8	03
ext-gka2a	61 61;5310	387 0 208	-6.06299926 3	-6.06301956 3	6.4-7 7.3-7 1.7-6	01

problem	n	$m; p$	it.	primal obj	dual obj	err ₁ /err ₃ /err ₅	time
ext-gka3a	71	71;7245	5547 862 55792	-6.04722405 3	-6.04722762 3	7.4-7 1.0-6 3.0-7	54
ext-gka4a	81	81;9480	1000 31 2757	-8.59799922 3	-8.59799950 3	9.7-7 3.6-8 1.7-8	07
ext-gka5a	51	51;3675	979 48 3353	-5.73700020 3	-5.73700837 3	5.3-7 1.5-7 7.1-7	04
ext-gka6a	31	31;1305	344 0 56	-3.98000359 3	-3.97999998 3	6.7-7 9.5-8 4.5-7	01
ext-gka7a	31	31;1305	237 0 198	-4.54100607 3	-4.54100556 3	8.9-7 6.9-8 5.6-8	00
ext-gka8a	101	101;14850	497 0 318	-1.11090009 4	-1.11090383 4	7.0-7 3.3-7 1.7-6	04
ext-gka1b	21	21; 570	162 0 30	-1.32999927 2	-1.33000154 2	2.4-7 9.9-7 8.5-7	00
ext-gka2b	31	31;1305	774 15 1213	-1.21000490 2	-1.20999830 2	2.1-7 9.1-7 2.7-6	01
ext-gka3b	41	41;2340	525 0 373	-1.17998119 2	-1.17999886 2	5.4-7 4.2-7 7.5-6	01
ext-gka4b	51	51;3675	483 0 244	-1.28998076 2	-1.29000006 2	3.2-7 1.2-7 7.5-6	01
ext-gka5b	61	61;5310	420 0 56	-1.49998008 2	-1.49999923 2	4.1-7 4.7-7 6.4-6	01
ext-gka6b	71	71;7245	538 0 411	-1.45997840 2	-1.45999884 2	3.9-7 2.6-7 7.0-6	02
ext-gka7b	81	81;9480	704 15 1015	-1.59999822 2	-1.59999961 2	8.7-8 9.6-7 4.3-7	05
ext-gka8b	91	91;12015	703 15 1002	-1.44997395 2	-1.45000011 2	5.8-7 3.6-8 9.0-6	05
ext-gka9b	101	101;14850	1082 45 2207	-1.36997366 2	-1.37000007 2	6.9-7 2.5-9 9.6-6	10
ext-gka10b	126	126;23250	19599 1077 88692	-1.54751378 2	-1.54731654 2	1.7-6 3.3-6 6.4-5	4:49
ext-gka1c	41	41;2340	376 0 30	-5.05799974 3	-5.05800511 3	8.3-7 2.7-7 5.3-7	01
ext-gka2c	51	51;3675	402 0 29	-6.21300184 3	-6.21300488 3	6.9-7 2.6-7 2.4-7	01
ext-gka3c	61	61;5310	737 15 1636	-6.66499920 3	-6.66502956 3	3.2-7 4.7-7 2.3-6	03
ext-gka4c	71	71;7245	818 35 2472	-7.39799811 3	-7.39800101 3	9.8-7 1.0-7 2.0-7	05
ext-gka5c	81	81;9480	579 0 1183	-7.36200580 3	-7.36200135 3	5.4-7 8.2-8 3.0-7	04
ext-gka6c	91	91;12015	970 31 2926	-5.82400071 3	-5.82399310 3	4.5-7 1.5-7 6.5-7	08
ext-gka7c	101	101;14850	574 0 1059	-7.22500048 3	-7.22494506 3	2.0-7 6.6-7 3.8-6	05
ext-gka1d	101	101;14850	990 46 3419	-6.33299947 3	-6.33302377 3	6.8-7 3.1-7 1.9-6	11
ext-gka2d	101	101;14850	1844 236 13442	-6.72129515 3	-6.72129516 3	4.6-7 1.0-6 3.3-10	28
ext-gka3d	101	101;14850	3243 497 27216	-9.36069299 3	-9.36068763 3	1.0-6 9.7-7 2.9-7	52
ext-gka4d	101	101;14850	2405 341 18849	-1.08761136 4	-1.08761017 4	7.0-7 1.0-6 5.4-7	37
ext-gka5d	101	101;14850	2200 286 15989	-1.19657500 4	-1.19657656 4	7.5-7 8.9-7 6.5-7	33
ext-gka6d	101	101;14850	3950 610 33736	-1.43919786 4	-1.43919798 4	6.0-7 8.3-7 4.1-8	1:04
ext-gka7d	101	101;14850	2800 394 22400	-1.48242866 4	-1.48242545 4	4.2-7 1.0-6 1.1-6	44
ext-gka8d	101	101;14850	3237 483 27675	-1.64885119 4	-1.64884731 4	7.6-7 1.0-6 1.2-6	52
ext-gka9d	101	101;14850	2316 300 17299	-1.59885934 4	-1.59885837 4	7.4-7 9.6-7 3.0-7	35
ext-gka10d	101	101;14850	2553 360 19878	-1.94447218 4	-1.94447456 4	5.5-7 1.0-6 6.1-7	39
ext-gka1e	201	201;59700	8249 1400 82060	-1.65549835 4	-1.65549423 4	4.7-7 1.0-6 1.2-6	7:06
ext-gka2e	201	201;59700	2051 287 15098	-2.40405145 4	-2.40405250 4	8.8-7 9.8-7 2.2-7	1:31
ext-gka3e	201	201;59700	2801 399 20701	-2.60250700 4	-2.60251117 4	5.9-7 9.4-7 8.0-7	2:01
ext-gka4e	201	201;59700	2782 411 22840	-3.61559299 4	-3.61558365 4	3.6-7 1.0-6 1.3-6	2:09
ext-gka5e	201	201;59700	3278 471 25792	-3.66285310 4	-3.66285327 4	7.8-7 1.0-6 2.3-8	2:27
ext-gka1f	501	501;374250	6920 976 53511	-6.38466267 4	-6.38465296 4	1.0-6 1.0-6 7.6-7	37:06
ext-gka2f	501	501;374250	6430 899 51337	-1.05205571 5	-1.05205056 5	1.2-7 1.0-6 2.5-6	35:33
ext-gka3f	501	501;374250	4763 437 32224	-1.46096233 5	-1.46096175 5	1.9-7 1.0-6 2.0-7	23:11
ext-gka4f	501	501;374250	4985 660 39057	-1.82012806 5	-1.82012263 5	5.1-7 1.0-6 1.5-6	26:10
ext-gka5f	501	501;374250	5763 835 45763	-2.02133909 5	-2.02133699 5	2.4-7 1.0-6 5.2-7	30:40

Performance of SDPNAL+ on θ , rank-1 tensor approximation problems.

problem	n	$m; p$	it.	primal obj	dual obj	err ₁ /err ₃ /err ₅	time
18-Dec-2017							
theta6	300	4375; 0	300 7 182	6.34770820 1	6.34770816 1	1.7-7 6.5-7 3.6-9	06
theta62	300	13390; 0	213 7 352	2.96412520 1	2.96412502 1	8.2-8 2.9-7 3.0-8	05
theta8	400	7905; 0	300 8 233	7.39535634 1	7.39535659 1	7.2-8 7.2-8 1.6-8	09
theta82	400	23872; 0	209 4 154	3.43668900 1	3.43668926 1	9.4-8 1.4-7 3.7-8	07
theta83	400	39862; 0	194 5 218	2.03018850 1	2.03018909 1	4.6-7 2.4-7 1.4-7	08
theta10	500	12470; 0	200 17 596	8.38059698 1	8.38059739 1	1.5-7 5.1-7 2.4-8	14
theta102	500	37467; 0	200 6 324	3.83905448 1	3.83905466 1	9.9-8 7.8-8 2.4-8	13
theta103	500	62516; 0	313 3 218	2.25285723 1	2.25285697 1	3.1-9 8.8-7 5.8-8	17
theta104	500	87245; 0	196 5 312	1.33361409 1	1.33361402 1	6.6-8 6.1-8 2.5-8	13
theta12	600	17979; 0	400 15 427	9.28016870 1	9.28016816 1	1.7-7 5.0-7 2.9-8	31
theta123	600	90020; 0	299 3 222	2.46686750 1	2.46686491 1	2.7-8 7.1-7 5.1-7	24
theta162	800	127600; 0	306 3 211	3.70097399 1	3.70097376 1	2.4-8 9.7-7 3.1-8	45
MANN-a27	378	703; 0	300 20 242	1.32762892 2	1.32762891 2	1.8-7 5.1-7 4.6-9	08
johnson8-4-4	70	561; 0	168 0 0	1.39999197 1	1.39999975 1	1.3-7 1.4-7 2.7-6	00
johnson16-2-4	120	1681; 0	107 0 0	8.00023634 0	7.99999805 0	8.3-7 2.3-7 1.4-5	00
san200-0.7-1	200	5971; 0	300 20 684	2.99999764 1	3.00000008 1	4.0-7 3.9-7 4.0-7	03
sanr200-0.7	200	6033; 0	211 6 309	2.38361593 1	2.38361618 1	5.8-7 6.5-7 5.3-8	02
c-fat200-1	200	18367; 0	504 1 15	1.20000861 1	1.19999718 1	5.5-10 4.6-7 4.6-6	04
hamming-6-4	64	1313; 0	67 0 0	5.33333891 0	5.33332860 0	7.8-7 3.6-7 8.8-7	00
hamming-8-4	256	11777; 0	162 0 0	1.59997026 1	1.59999976 1	2.5-7 8.3-8 8.9-6	02
hamming-9-8	512	2305; 0	200 9 63	2.24000100 2	2.23999999 2	3.5-7 1.4-7 2.2-7	07
hamming-10-2	1024	23041; 0	200 7 22	1.02400000 2	1.02400056 2	1.3-9 6.1-7 2.7-7	41
hamming-7-5-6	128	1793; 0	300 4 8	4.26666667 1	4.26666665 1	1.1-10 3.1-9 1.7-9	01
hamming-8-3-4	256	16129; 0	350 1 2	2.55999975 1	2.55999999 1	6.9-7 1.6-7 4.7-8	05
hamming-9-5-6	512	53761; 0	200 10 24	8.53333332 1	8.53333316 1	2.3-9 1.0-7 9.1-9	09
brock200-1	200	5067; 0	236 6 238	2.74566427 1	2.74566432 1	1.0-7 4.8-7 8.2-9	02
brock200-4	200	6812; 0	216 5 188	2.12934753 1	2.12934784 1	1.3-7 6.6-7 7.2-8	02
brock400-1	400	20078; 0	226 4 93	3.97019234 1	3.97018953 1	7.6-7 5.3-7 3.5-7	07
keller4	171	5101; 0	312 7 281	1.40122389 1	1.40122407 1	1.6-7 2.3-7 6.5-8	02
p-hat300-1	300	33918; 0	265 34 3108	1.00679744 1	1.00679639 1	8.8-7 4.1-7 5.0-7	18
G43	1000	9991; 0	200 19 546	2.80624612 2	2.80624521 2	6.5-7 9.1-7 1.6-7	42
G44	1000	9991; 0	200 21 629	2.80583214 2	2.80583209 2	4.9-8 5.2-8 9.0-9	48
G45	1000	9991; 0	200 19 577	2.80184964 2	2.80185087 2	4.1-7 7.1-7 2.2-7	45
G46	1000	9991; 0	200 26 805	2.79836960 2	2.79836949 2	5.0-8 5.4-8 2.0-8	52
G47	1000	9991; 0	200 21 606	2.81894092 2	2.81893969 2	3.6-7 1.8-7 2.2-7	46
G51	1000	5910; 0	1203 198 25782	3.49000141 2	3.48999953 2	2.2-7 8.8-7 2.7-7	14:14
G52	1000	5917; 0	4782 416 43574	3.48396245 2	3.48388078 2	5.0-13 1.0-6 1.2-5	31:16
G53	1000	5915; 0	3854 279 32395	3.48354271 2	3.48350106 2	7.4-12 1.0-6 6.0-6	21:02
G54	1000	5917; 0	200 110 11507	3.40999978 2	3.40999985 2	4.0-7 9.8-7 9.9-9	5:04
1dc.64	64	544; 0	300 27 1845	1.00000000 1	1.00000052 1	1.2-7 8.2-7 2.5-7	02
1et.64	64	265; 0	1144 18 447	1.87999998 1	1.88000000 1	5.0-8 3.0-7 3.9-9	03
1tc.64	64	193; 0	385 6 79	2.00000003 1	1.99999879 1	1.7-7 7.2-7 3.0-7	01

problem	n m ; p	it.	primal obj	dual obj	err ₁ /err ₃ /err ₅	time
1dc.128	128 1472; 0	1314 365 31416	1.68421504 1	1.68419406 1	8.2-8 1.0-6 6.1-6	28
1et.128	128 673; 0	300 4 30	2.92308411 1	2.92308878 1	8.7-7 5.7-7 7.8-7	01
1tc.128	128 513; 0	300 8 61	3.80000070 1	3.80000023 1	2.5-7 1.5-7 6.1-8	01
1zc.128	128 1121; 0	238 4 26	2.06666672 1	2.06666711 1	5.0-8 2.3-7 9.1-8	01
1dc.256	256 3840; 0	1010 53 3195	3.00000000 1	2.99999852 1	5.9-10 5.8-8 2.4-7	16
1et.256	256 1665; 0	726 79 8116	5.51146990 1	5.51142581 1	9.7-7 8.2-7 4.0-6	25
1tc.256	256 1313; 0	653 169 13721	6.33993607 1	6.33998649 1	8.5-7 6.6-7 3.9-6	34
1zc.256	256 2817; 0	388 1 6	3.79992141 1	3.79999892 1	6.9-7 2.1-7 1.0-5	04
1dc.512	512 9728; 0	1598 216 19413	5.30310721 1	5.30307002 1	2.0-14 1.0-6 3.5-6	3:54
1et.512	512 4033; 0	200 76 7229	1.04424111 2	1.04424021 2	1.4-7 7.6-7 4.3-7	1:04
1tc.512	512 3265; 0	617 203 19007	1.13400319 2	1.13400188 2	8.4-7 4.1-7 5.7-7	3:03
2dc.512	512 54896; 0	400 206 17057	1.17678128 1	1.17678093 1	9.1-7 4.5-7 1.4-7	3:49
1zc.512	512 6913; 0	200 11 227	6.87499810 1	6.87500048 1	1.2-7 1.4-7 1.7-7	11
1dc.1024	1024 24064; 0	300 107 8648	9.59854572 1	9.59849210 1	6.4-7 8.8-7 2.8-6	5:35
1et.1024	1024 9601; 0	400 146 15093	1.84226660 2	1.84226079 2	4.3-7 9.8-7 1.6-6	10:03
1tc.1024	1024 7937; 0	1075 193 18090	2.06306541 2	2.06304619 2	2.8-7 1.0-6 4.6-6	14:11
1zc.1024	1024 16641; 0	200 11 278	1.28667671 2	1.28666654 2	9.2-7 2.9-7 3.9-6	50
2dc.1024	1024 169163; 0	1087 213 17341	1.86398781 1	1.86383440 1	9.7-7 9.6-7 4.0-5	19:15
1dc.2048	2048 58368; 0	202 109 9882	1.74731349 2	1.74729613 2	8.0-7 4.7-7 5.0-6	28:54
1et.2048	2048 22529; 0	400 154 16701	3.42032597 2	3.42029491 2	9.9-7 5.3-7 4.5-6	51:51
1tc.2048	2048 18945; 0	1731 215 23525	3.74649968 2	3.74644385 2	2.5-12 1.0-6 7.4-6	1:33:40
1zc.2048	2048 39425; 0	200 20 680	2.37400251 2	2.37400007 2	2.2-7 1.0-7 5.1-7	7:08
2dc.2048	2048 504452; 0	1200 333 29041	3.06749033 1	3.06731851 1	9.9-7 8.1-7 2.8-5	2:18:13
nonsym(5,4)	125 3374; 0	300 8 136	3.06438903 0	3.06440395 0	3.1-7 2.1-7 2.1-6	01
nonsym(6,4)	216 9260; 0	300 15 269	3.07677838 0	3.07677636 0	7.7-8 1.9-8 2.8-7	02
nonsym(7,4)	343 21951; 0	300 11 207	5.07407707 0	5.07408594 0	6.5-8 4.9-8 8.0-7	05
nonsym(8,4)	512 46655; 0	200 10 272	5.74082888 0	5.74084716 0	1.0-7 6.5-8 1.5-6	10
nonsym(9,4)	729 91124; 0	200 18 749	1.06613332 0	1.06613570 0	2.8-8 4.2-8 7.6-7	34
nonsym(10,4)	1000 166374; 0	200 23 953	1.69471512 0	1.69471616 0	1.3-7 1.0-8 2.4-7	1:15
nonsym(11,4)	1331 287495; 0	200 21 1018	2.91348748 0	2.91354169 0	2.1-7 2.7-7 7.9-6	2:32
nonsym(3,5)	81 1295; 0	300 13 464	1.01163255 0	1.01162528 0	1.4-7 4.1-7 2.4-6	01
nonsym(4,5)	256 9999; 0	300 12 266	1.51740960 0	1.51737384 0	2.0-7 7.3-7 8.9-6	03
nonsym(5,5)	625 50624; 0	200 18 717	3.08257413 0	3.08257479 0	1.2-7 4.6-9 9.2-8	22
nonsym(6,5)	1296 194480; 0	200 19 901	3.09572642 0	3.09582504 0	7.6-7 4.8-7 1.4-5	2:10
sym-rd(3,20)	231 10625; 0	144 17 514	1.52149864 0	1.52153702 0	1.0-7 6.7-7 9.5-6	02
sym-rd(3,25)	351 23750; 0	237 5 97	1.62974610 0	1.62976212 0	1.9-7 3.9-7 3.8-6	04
sym-rd(3,30)	496 46375; 0	300 7 299	1.82416328 0	1.82418748 0	4.4-7 6.1-7 5.2-6	12
sym-rd(3,35)	666 82250; 0	200 13 789	1.82999302 0	1.82990484 0	5.0-7 8.6-7 1.9-5	27
sym-rd(3,40)	861 135750; 0	200 12 659	1.99315268 0	1.99316344 0	4.9-7 7.7-7 2.2-6	51
sym-rd(3,45)	1081 211875; 0	200 16 1132	2.14077029 0	2.14074377 0	5.1-7 8.1-7 5.0-6	1:45
sym-rd(3,50)	1326 316250; 0	200 17 1375	2.06949929 0	2.06949810 0	9.4-8 2.1-7 2.3-7	3:28
sym-rd(4,20)	210 8854; 0	300 8 211	8.60612296 0	8.60610339 0	4.4-7 1.6-7 1.1-6	02
sym-rd(4,25)	325 20474; 0	236 13 586	8.56184228 0	8.56183970 0	6.6-8 7.4-9 1.4-7	06
sym-rd(4,30)	465 40919; 0	183 13 687	9.56021209 0	9.56021118 0	4.1-7 6.7-8 4.6-8	12
sym-rd(4,35)	630 73814; 0	181 16 929	1.09833258 1	1.09833116 1	6.6-7 3.5-8 6.2-7	27
sym-rd(4,40)	820 123409; 0	280 25 879	1.15471511 1	1.15471528 1	5.3-8 2.9-8 6.9-8	1:09

problem	$n \mid m; p$	it.	primal obj	dual obj	err ₁ /err ₃ /err ₅	time
sym-rd(4,45)	1035 194579; 0	278 22 463	1.18424676 1	1.18424653 1	8.8-7 6.0-9 9.1-8	1:46
sym-rd(4,50)	1275 292824; 0	178 22 419	1.30418152 1	1.30413439 1	3.9-8 9.8-7 1.7-5	2:01
sym-rd(5,5)	56 461; 0	176 4 57	1.95250572 0	1.95250652 0	2.5-7 7.5-8 1.6-7	00
sym-rd(5,10)	286 8007; 0	256 5 114	2.98125341 0	2.98120768 0	3.4-7 3.3-7 6.6-6	03
sym-rd(5,15)	816 54263; 0	196 12 717	3.49345476 0	3.49342086 0	5.4-7 1.4-7 4.2-6	37
sym-rd(5,20)	1771 230229; 0	200 19 1825	4.17921825 0	4.17915661 0	1.9-7 7.9-8 6.6-6	7:20
sym-rd(6,5)	35 209; 0	149 1 17	1.31674335 1	1.31674491 1	1.3-7 6.2-7 5.7-7	00
sym-rd(6,10)	220 5004; 0	265 8 296	2.27372986 1	2.27376895 1	6.5-8 6.3-7 8.4-6	02
sym-rd(6,15)	680 38759; 0	200 19 1596	2.70986956 1	2.70985587 1	1.2-7 6.8-8 2.5-6	42
sym-rd(6,20)	1540 177099; 0	185 19 1538	3.15083518 1	3.15083257 1	3.4-7 4.4-7 4.1-7	4:18
nsym-rd([10,10,10])	100 3024; 0	300 8 158	2.44205183 0	2.44203324 0	7.8-7 4.3-7 3.2-6	01
nsym-rd([15,15,15])	225 14399; 0	300 7 135	2.48379296 0	2.48377853 0	2.8-7 2.2-7 2.4-6	02
nsym-rd([20,20,20])	400 44099; 0	300 13 853	3.47771547 0	3.47770355 0	2.5-7 2.3-7 1.5-6	11
nsym-rd([20,25,25])	500 68249; 0	200 15 816	2.78569244 0	2.78568563 0	8.8-8 5.7-8 1.0-6	15
nsym-rd([25,20,25])	500 68249; 0	200 13 804	2.77557107 0	2.77557957 0	1.4-7 1.1-7 1.3-6	16
nsym-rd([25,25,20])	500 68249; 0	200 11 485	2.87657208 0	2.87657025 0	1.2-7 1.6-8 2.7-7	13
nsym-rd([25,25,25])	625 105624; 0	200 29 1901	2.83000321 0	2.83000352 0	4.7-7 1.3-8 4.7-8	45
nsym-rd([30,30,30])	900 216224; 0	200 24 1097	3.03775633 0	3.03772212 0	3.6-7 1.8-7 4.8-6	1:17
nsym-rd([35,35,35])	1225 396899; 0	200 16 1409	3.07047626 0	3.07047439 0	4.0-8 3.5-7 2.6-7	3:00
nsym-rd([40,40,40])	1600 672399; 0	200 11 463	3.87873709 0	3.87858276 0	7.2-7 5.2-7 1.8-5	3:25
nsym-rd([5,5,5,5])	125 3374; 0	300 7 171	1.89465071 0	1.89464917 0	1.1-7 3.5-8 3.2-7	01
nsym-rd([6,6,6,6])	216 9260; 0	300 7 160	2.68232792 0	2.68231191 0	3.5-7 4.7-7 2.5-6	02
nsym-rd([7,7,7,7])	343 21951; 0	300 9 229	3.33236961 0	3.33237123 0	3.1-7 1.1-7 2.1-7	04
nsym-rd([8,8,8,8])	512 46655; 0	200 10 378	2.83768775 0	2.83768916 0	5.9-8 3.3-8 2.1-7	12
nsym-rd([9,9,9,9])	729 91124; 0	200 11 524	3.10894864 0	3.10889718 0	3.0-7 3.0-7 7.1-6	26
nonsym(12,4)	1728 474551; 0	200 24 1315	5.92162007 0	5.92161079 0	2.2-7 1.9-8 7.2-7	5:05
nonsym(13,4)	2197 753570; 0	200 25 1380	7.27450830 0	7.27451240 0	3.5-7 7.4-9 2.6-7	9:45
nonsym(14,4)	2744 1157624; 0	200 27 1345	9.68805618 0	9.68798781 0	4.9-8 6.7-8 3.4-6	16:07
nonsym(15,4)	3375 1727999; 0	200 31 1310	1.33829117 1	1.33826378 1	9.5-8 1.8-7 9.9-6	27:53
nonsym(7,5)	2401 614655; 0	200 23 1177	5.10582814 0	5.10579196 0	6.6-8 7.3-8 3.2-6	11:00
nonsym(8,5)	4096 1679615; 0	200 24 1323	5.77854856 0	5.77843768 0	4.5-8 1.5-7 8.8-6	45:07
nonsym(18,4)	5832 5000210; 0	200 40 1715	1.53963248 1	1.53954202 1	4.5-8 3.9-7 2.8-5	2:05:43
nonsym(20,4)	8000 9260999; 0	200 37 1737	1.77231033 1	1.77228255 1	6.3-7 8.9-8 7.6-6	5:31:18
nonsym(21,4)	9261 12326390; 0	200 36 1802	2.03462992 1	2.03447634 1	2.6-7 3.9-7 3.7-5	7:09:53