

Test results for selected optimization problems

1 Performance plots

1.1 For all problems

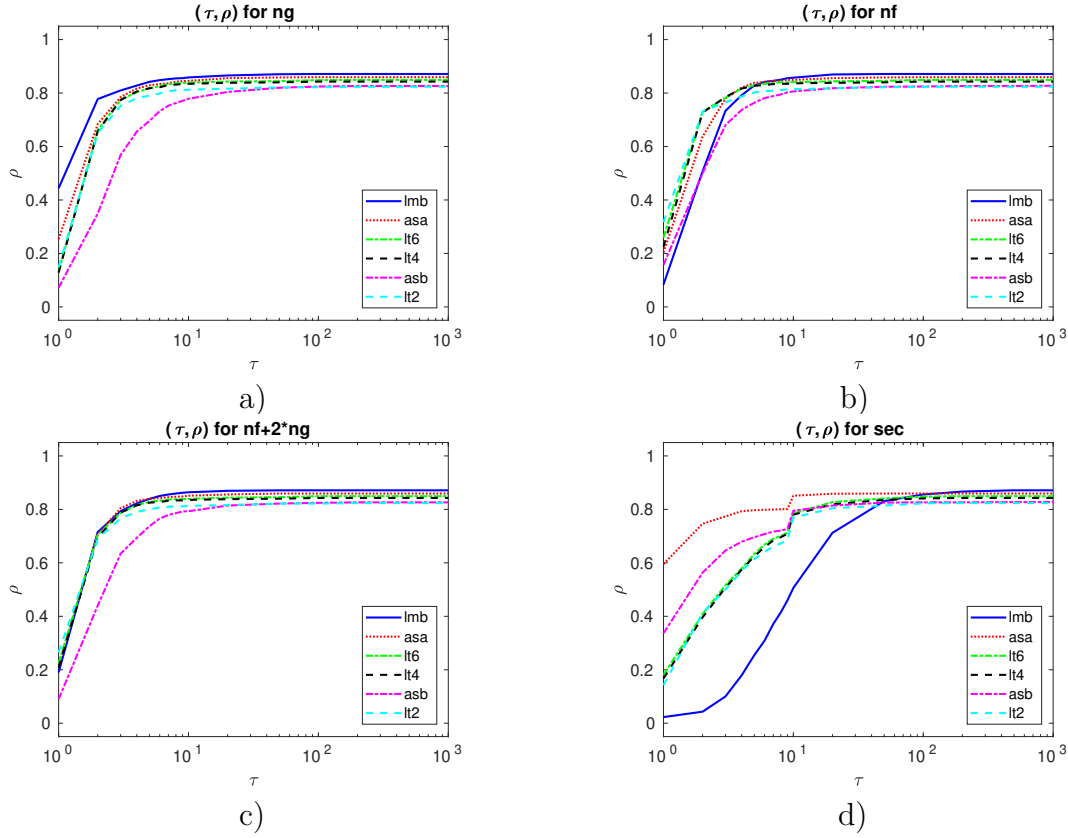


Figure 1: (a)-(e): Performance plots for $\text{ng}/(\text{best ng})$, $\text{nf}/(\text{best nf})$, $\text{nf2g}/(\text{best nf2g})$ and $\text{msec}/(\text{best msec})$, respectively. ρ designates the percentage of problems solved within a factor τ of the best solver. Problem solved by no solver are ignored.

1.2 For unconstrained problems

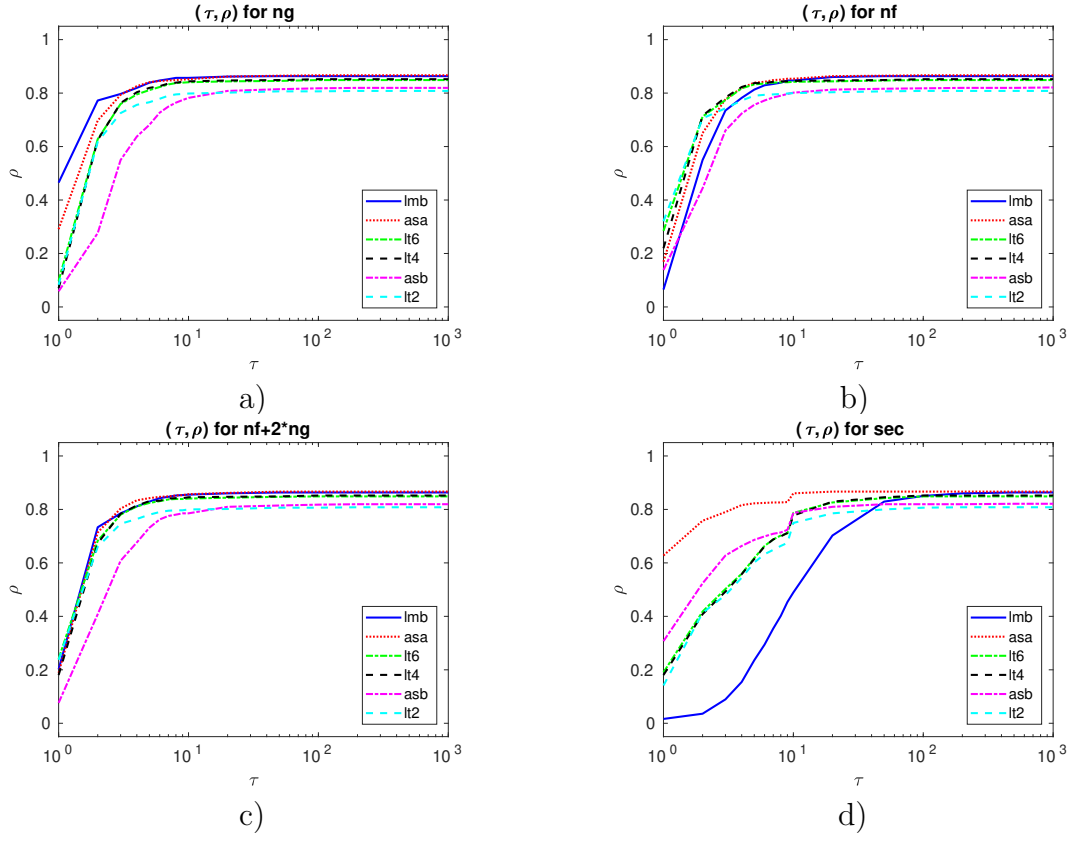


Figure 2: (a)-(e): Performance plots for $\text{ng}/(\text{best ng})$, $\text{nf}/(\text{best nf})$, $\text{nf2g}/(\text{best nf2g})$ and $\text{msec}/(\text{best msec})$, respectively. ρ designates the percentage of problems solved within a factor τ of the best solver. Problem solved by no solver are ignored.

1.3 For bound constrained problems

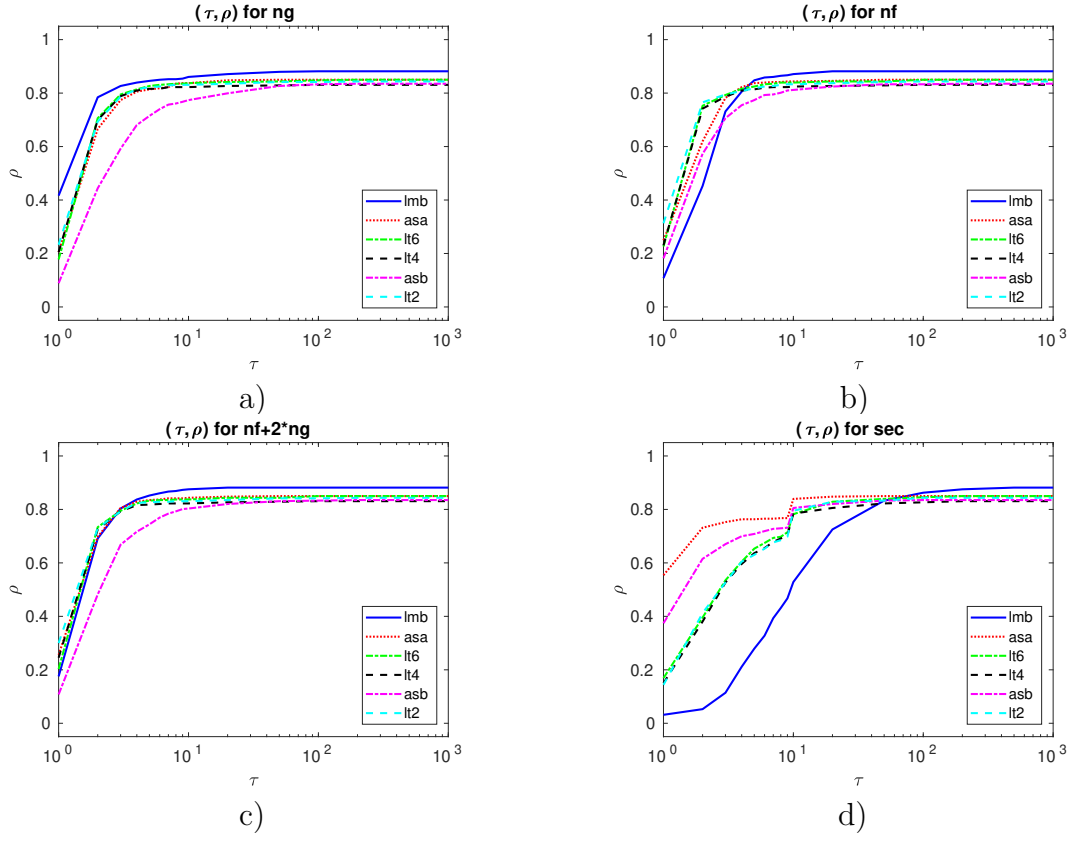


Figure 3: (a)-(e): Performance plots for $\text{ng}/(\text{best ng})$, $\text{nf}/(\text{best nf})$, $\text{nf}2\text{g}/(\text{best nf}2\text{g})$ and $\text{msec}/(\text{best msec})$, respectively. ρ designates the percentage of problems solved within a factor τ of the best solver. Problem solved by no solver are ignored.

2 Choices

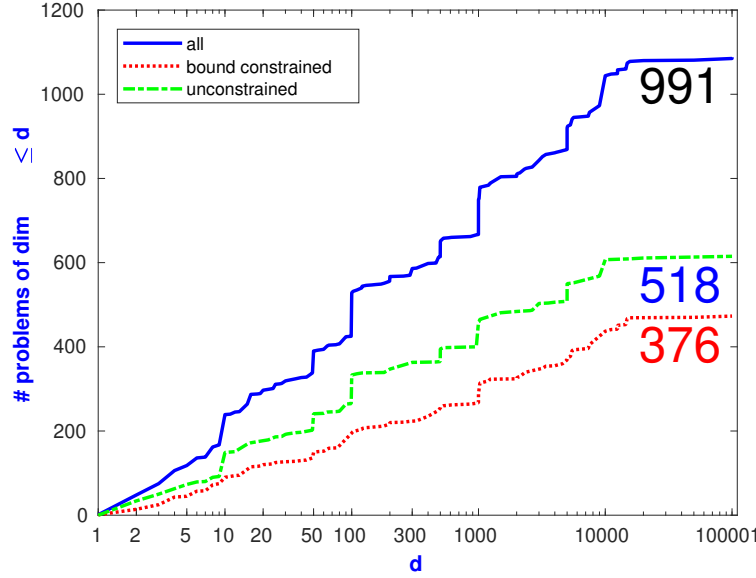


Figure 4: The number of problems with at most d variables solved by at least one solver.

2.1 Solvers compared

lmbopt3, asa, lt6, lt4, asabcp, lt2, CGdescent, lt7, lt1, SPG, lbfgsb, lt5, ll3, ll2 and ll1

2.2 Solver type, stopping tests and resdir

`nf`, `ng`, `sec`, `nact` and `resdir` denote the number of function evaluations, the number of gradients evaluations, the time in seconds, the number of active variables, and directory containing result files, respectively.

- `fist-order`
- gradient accuracy: $\|g(x_*)\|_\infty \leq 1e-06$
- $nf + 2 \cdot ng \leq 20 \cdot n + 10000$
- $sec \leq 300$
- `resdir`: `resG1 - 6resN - 20 * n + 10000 - resS300N`

2.3 Parameters used for problem selection

`name`, `dim` and `con` denote the name, the dimension, and the type of constraints of test problems, respectively.

- Selected range of `name`: A-Z
- Selected range of `dim`: [1,100001]
- Selected kind of `con`: unconstrained and bound constrained
- Sorted by `dim`, `name` and `nact` (DNE)
- Sorted in increasing order

3 Summarizing tables

For a given collection S of solvers, the strength of a solver $so \in S$ – relative to an ideal solver that matches on each problem the best solver – is measured, for any given cost measure c_s by the number, q_{so} defined by

$$q_{so} := \begin{cases} \frac{\min_{s \in S} c_s}{c_{so}}, & \text{if } so \text{ solved by the problem,} \\ 0, & \text{otherwise,} \end{cases}$$

called the **efficiency** of the solver so with respect to this cost measure. In the tables, efficiencies are given in percent. Larger efficiencies in the table imply a better average behavior; a zero efficiency indicates failure. All values are rounded (towards zero) to integers. Mean efficiencies are taken over the 991 problems tried by all solvers and solved by at least one of them, from a total of 1088 problems. In the following tables, #100 and !100 count the number of times we have for nf2g efficiency 100 % or unique efficiency 100 % . T_{mean} is defined by

$$T_{mean} := \frac{\sum \text{ solved}}{\# \text{ solved}} \quad (\text{in msec}).$$

In tables not recording efficiencies, a sign

- n indicates that `nf2g` ≥ 2010020 was reached.
- t indicates that `sec` ≥ 300 was reached.
- f indicates that the `algorithm` failed for other reasons.

In times, the (for some problems significant) setup time for CUTESt is not included. Although running times are reported the comparison of times is not very reliable for several reasons:

- (i) The times were obtained under different conditions (solver source code Fortran, C and Matlab).
- (ii) In unsuccessful runs, the actual running time depends a lot on when and why the solver was stopped.
- (iii) Function and gradient evaluation includes times for computing various statistics and the interface to CUTESt; cf. Figures 5.

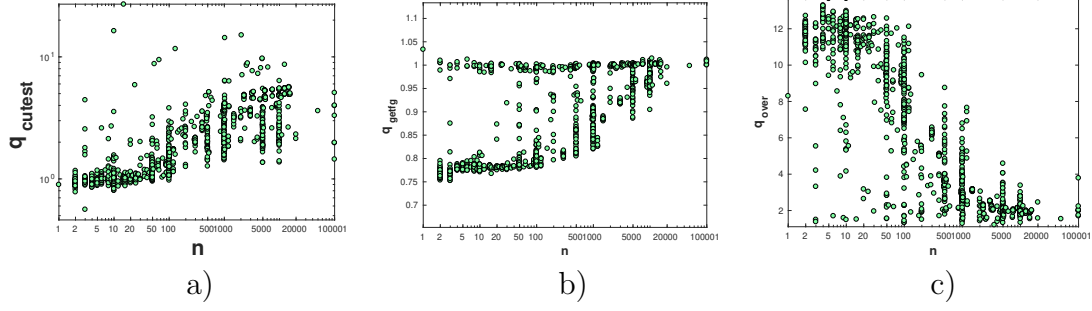


Figure 5: Comparison of $q_{cutest} := \frac{t_g(cutest)}{t_f(cutest)}$, $q_{getfg} := \frac{t_g(getfg)}{t_f(getfg)}$ and $q_{over} := \frac{t_{f2g}(getfg)}{t_{f2g}(cutest)}$ versus dimensions, respectively, where t_f and t_g are considered the time to compute f and g by `cutest` or `getfg` and $t_{f2g} := t_f + 2t_g$.

stopping test: $\ g\ _\infty \leq 1e-06$, $sec \leq 300$, $nf + 2 * ng \leq 20 * n + 10000$									mean efficiency in %			
991 of 1088 problems solved						# of anomalies			for cost measure			
dim $\in[1,100001]$												
solver		solved	#100	!100	T_{mean}	#n	#t	#f	nf2g	ng	nf	msec
<i>LMBOPT</i>	<i>lmb</i>	948	170	143	4544	92	48	0	58	69	42	11
<i>ASACG</i>	<i>asa</i>	935	155	26	1416	98	21	34	58	59	51	63
<i>LMBFG-EIG-MS</i>	<i>lt6</i>	924	108	48	2970	119	26	19	60	57	60	34
<i>LMBFG-EIG-curve-inf</i>	<i>lt4</i>	918	94	33	3330	118	25	27	60	56	59	34
<i>ASABCP</i>	<i>asb</i>	900	75	52	2404	142	25	21	41	36	44	46
<i>LMBFG-DDOGL</i>	<i>lt2</i>	896	113	52	2937	61	21	110	60	56	59	33
<i>CGdescent</i>	<i>cgd</i>	895	135	14	2559	77	17	99	54	56	47	55
<i>LMBFG-EIG-MS-2-2</i>	<i>lt7</i>	895	38	0	3390	112	21	60	50	45	57	34
<i>LMBFG-BWX-MS</i>	<i>lt1</i>	888	39	1	2694	56	21	123	51	45	58	32
<i>SPG</i>	<i>spg</i>	840	103	69	5901	182	58	8	34	34	31	9
<i>LBFGSB</i>	<i>lbf</i>	803	238	192	713	0	0	285	57	51	61	32
<i>LMBFG-EIG-inf-2</i>	<i>lt5</i>	753	85	25	3275	76	26	233	50	47	49	28
<i>LMBFGS-TR</i>	<i>ll3</i>	733	101	43	2904	242	92	21	48	44	48	36
<i>LMBFG-MTBT</i>	<i>ll2</i>	669	75	22	2257	55	14	350	45	41	46	26
<i>LMBFG-MT</i>	<i>ll1</i>	657	101	49	2677	57	14	360	45	39	48	32

3.1 Classified by constraints

stopping test: $\ g\ _{\infty} \leq 1e-06$, $sec \leq 300$, $nf + 2 * ng \leq 20 * n + 10000$													
558 of 615 problems without bounds solved									mean efficiency in %				
dim $\in[1,100001]$						# of anomalies			for cost measure				
solver		solved	#100	!100	T_{mean}	#n	#t	#f	nf2g	ng	nf	msec	
<i>ASACG</i>	<i>asa</i>	533	86	2	1331	53	16	13	61	63	53	64	
<i>LMBOPT</i>	<i>lmb</i>	531	112	110	3962	50	34	0	62	71	45	11	
<i>CGdescent</i>	<i>cgd</i>	530	86	2	1505	53	15	17	61	62	52	60	
<i>LMBFGS-TR</i>	<i>ll3</i>	525	51	31	2441	67	18	5	61	53	62	46	
<i>LMBFG-EIG-curve-inf</i>	<i>lt4</i>	524	37	18	3383	66	19	6	62	55	62	34	
<i>LMBFG-EIG-MS</i>	<i>lt6</i>	522	54	36	3055	68	21	4	63	56	63	34	
<i>LMBFG-EIG-inf-2</i>	<i>lt5</i>	514	38	18	3028	45	20	36	60	54	60	33	
<i>LMBFG-EIG-MS-2-2</i>	<i>lt7</i>	514	6	0	3104	64	16	21	55	46	62	36	
<i>ASABCP</i>	<i>asb</i>	505	46	45	2569	81	17	12	41	34	44	43	
<i>LMBFG-DDOGL</i>	<i>lt2</i>	497	56	32	2527	36	16	66	61	53	61	32	
<i>LMBFG-BWX-MS</i>	<i>lt1</i>	493	6	0	2588	30	17	75	54	46	60	32	
<i>LMBFG-MTBT</i>	<i>ll2</i>	484	33	16	2020	38	11	82	57	50	59	32	
<i>LMBFG-MT</i>	<i>ll1</i>	477	62	38	2589	38	11	89	57	49	62	41	
<i>SPG</i>	<i>spg</i>	463	39	35	4627	111	36	5	31	31	28	6	
<i>LBFGSB</i>	<i>lbf</i>	449	49	30	610	0	0	166	52	45	56	23	

stopping test: $\ g\ _{\infty} \leq 1e-06$, $sec \leq 300$, $nf + 2 * ng \leq 20 * n + 10000$													
433 of 473 problems with bounds solved									mean efficiency in %				
dim $\in[1,100001]$						# of anomalies			for cost measure				
solver		solved	#100	!100	T_{mean}	#n	#t	#f	nf2g	ng	nf	msec	
<i>LMBOPT</i>	<i>lmb</i>	417	58	33	5284	42	14	0	53	64	38	13	
<i>ASACG</i>	<i>asa</i>	402	69	24	1530	45	5	21	53	53	48	60	
<i>LMBFG-EIG-MS</i>	<i>lt6</i>	402	54	12	2859	51	5	15	57	56	55	34	
<i>LMBFG-DDOGL</i>	<i>lt2</i>	399	57	20	3447	25	5	44	59	57	57	34	
<i>ASABCP</i>	<i>asb</i>	395	29	7	2194	61	8	9	41	37	43	50	
<i>LMBFG-BWX-MS</i>	<i>lt1</i>	395	33	1	2826	26	4	48	47	43	55	32	
<i>LMBFG-EIG-curve-inf</i>	<i>lt4</i>	394	57	15	3259	52	6	21	57	56	55	34	
<i>LMBFG-EIG-MS-2-2</i>	<i>lt7</i>	381	32	0	3775	48	5	39	44	40	51	32	
<i>SPG</i>	<i>spg</i>	377	64	34	7466	71	22	3	38	38	36	12	
<i>CGdescent</i>	<i>cgd</i>	365	49	12	4089	24	2	82	44	45	40	50	
<i>LBFGSB</i>	<i>lbf</i>	354	189	162	843	0	0	119	64	60	67	43	
<i>LMBFG-EIG-inf-2</i>	<i>lt5</i>	239	47	7	3808	31	6	197	36	36	35	23	
<i>LMBFGS-TR</i>	<i>ll3</i>	208	50	12	4071	175	74	16	32	30	31	23	
<i>LMBFG-MTBT</i>	<i>ll2</i>	185	42	6	2878	17	3	268	30	29	30	18	
<i>LMBFG-MT</i>	<i>ll1</i>	180	39	11	2911	19	3	271	28	25	30	21	

3.2 Classified by time

stopping test: $\ g\ _{\infty} \leq 1e-06$, $sec \leq 300$, $nf + 2 * ng \leq 20 * n + 10000$												
838 of 838 problems solved									mean efficiency in %			
dim $\in[1,100001]$, best time ≤ 1 sec						# of anomalies			for cost measure			
solver		solved	#100	!100	T_{mean}	#n	#t	#f	nf2g	ng	nf	msec
<i>LMBOPT</i>	<i>lmb</i>	818	150	123	870	17	3	0	65	77	47	11
<i>ASACG</i>	<i>asa</i>	807	150	26	128	24	0	7	67	69	59	70
<i>LMBFG-EIG-MS</i>	<i>lt6</i>	794	89	35	373	40	1	3	67	63	66	37
<i>LMBFG-EIG-curve-inf</i>	<i>lt4</i>	789	86	28	598	40	0	9	66	63	65	36
<i>ASABCP</i>	<i>asb</i>	779	70	47	222	50	0	9	45	40	49	52
<i>CGdescent</i>	<i>cgd</i>	777	126	10	149	13	0	48	62	65	54	63
<i>LMBFG-DDOGL</i>	<i>lt2</i>	772	103	45	319	13	0	53	67	63	67	35
<i>LMBFG-EIG-MS-2-2</i>	<i>lt7</i>	769	38	0	540	41	0	28	56	50	64	37
<i>LMBFG-BWX-MS</i>	<i>lt1</i>	766	38	0	354	15	0	57	58	51	65	34
<i>SPG</i>	<i>spg</i>	738	100	66	1407	96	1	3	41	41	38	10
<i>LBFGSB</i>	<i>lbf</i>	705	178	136	236	0	0	133	63	56	68	32
<i>LMBFG-EIG-inf-2</i>	<i>lt5</i>	662	77	22	403	18	2	156	57	53	56	31
<i>LMBFGS-TR</i>	<i>ll3</i>	656	87	32	286	158	21	3	55	51	56	42
<i>LMBFG-MTBT</i>	<i>ll2</i>	608	68	19	245	4	0	226	53	48	54	29
<i>LMBFG-MT</i>	<i>ll1</i>	597	94	45	220	5	0	236	52	45	57	37

stopping test: $\ g\ _{\infty} \leq 1e-06$, $sec \leq 300$, $nf + 2 * ng \leq 20 * n + 10000$												
120 of 120 problems solved									mean efficiency in %			
dim $\in[1,100001]$, best time > 1 sec						# of anomalies			for cost measure			
solver		solved	#100	!100	T_{mean}	#n	#t	#f	nf2g	ng	nf	msec
<i>LMBOPT</i>	<i>lmb</i>	114	14	14	13165	4	2	0	61	77	42	24
<i>ASACG</i>	<i>asa</i>	111	2	0	4542	7	0	2	46	50	41	66
<i>LMBFG-EIG-curve-inf</i>	<i>lt4</i>	109	7	4	6308	10	1	0	65	63	64	44
<i>LMBFG-EIG-MS</i>	<i>lt6</i>	109	15	11	6194	9	1	1	67	64	66	45
<i>LMBFG-EIG-MS-2-2</i>	<i>lt7</i>	107	0	0	7757	9	1	3	52	46	62	43
<i>ASABCP</i>	<i>asb</i>	105	3	3	6282	10	3	2	44	42	45	51
<i>LMBFG-BWX-MS</i>	<i>lt1</i>	104	1	1	5838	5	1	10	53	47	62	45
<i>LMBFG-DDOGL</i>	<i>lt2</i>	104	5	3	7756	6	1	9	62	60	61	45
<i>SPG</i>	<i>spg</i>	99	2	2	35656	14	5	2	20	22	16	11
<i>CGdescent</i>	<i>cgd</i>	98	2	0	6444	5	0	17	39	43	35	49
<i>LBFGSB</i>	<i>lbf</i>	96	58	54	3769	0	0	24	74	72	74	62
<i>LMBFG-EIG-inf-2</i>	<i>lt5</i>	73	7	3	7463	8	1	38	46	44	45	31
<i>LMBFGS-TR</i>	<i>ll3</i>	62	9	7	12596	9	48	1	38	36	39	31
<i>LMBFG-MTBT</i>	<i>ll2</i>	50	6	3	7999	5	0	65	34	31	35	27
<i>LMBFG-MT</i>	<i>ll1</i>	49	5	3	8172	5	0	66	33	31	34	27

3.3 Classified by dimension

stopping test: $\ g\ _{\infty} \leq 1e-06$, $sec \leq 300$, $nf + 2 * ng \leq 20 * n + 10000$													
117 of 118 problems solved									mean efficiency in %				
dim $\in[1,5]$						# of anomalies			for cost measure				
solver		solved	#100	!100	T_{mean}	#n	#t	#f	nf2g	ng	nf	msec	
<i>LMBOPT</i>	<i>lmb</i>	115	22	17	179	3	0	0	62	74	47	10	
<i>ASACG</i>	<i>asa</i>	110	22	1	22	6	0	2	63	66	54	60	
<i>ASABCP</i>	<i>asb</i>	110	14	9	26	4	0	4	42	37	46	43	
<i>CGdescent</i>	<i>cgd</i>	107	22	1	27	2	0	9	60	63	51	58	
<i>LMBFG-EIG-curve-inf</i>	<i>lt4</i>	107	21	3	45	10	0	1	65	60	66	41	
<i>SPG</i>	<i>spg</i>	106	19	12	246	12	0	0	40	42	37	9	
<i>LMBFG-DDOGL</i>	<i>lt2</i>	106	17	4	50	6	0	6	65	59	66	32	
<i>LMBFG-EIG-MS</i>	<i>lt6</i>	106	20	6	33	12	0	0	65	60	66	35	
<i>LMBFG-BWX-MS</i>	<i>lt1</i>	105	12	0	41	8	0	5	58	51	66	35	
<i>LMBFG-EIG-MS-2-2</i>	<i>lt7</i>	105	12	0	35	8	0	5	57	50	64	41	
<i>LMBFG-EIG-inf-2</i>	<i>lt5</i>	103	23	6	36	5	0	10	63	58	64	41	
<i>LMBFG-MTBT</i>	<i>ll2</i>	100	11	2	37	0	0	18	59	53	62	28	
<i>LMBFGS-TR</i>	<i>ll3</i>	100	17	4	34	18	0	0	61	56	63	49	
<i>LBFGSB</i>	<i>lbf</i>	98	16	8	67	0	0	20	54	47	59	23	
<i>LMBFG-MT</i>	<i>ll1</i>	97	15	7	30	0	0	21	57	50	63	33	

stopping test: $\ g\ _{\infty} \leq 1e-06$, $sec \leq 300$, $nf + 2 * ng \leq 20 * n + 10000$													
112 of 121 problems solved									mean efficiency in %				
dim $\in[6,10]$						# of anomalies			for cost measure				
solver		solved	#100	!100	T_{mean}	#n	#t	#f	nf2g	ng	nf	msec	
<i>LMBOPT</i>	<i>lmb</i>	112	30	26	269	9	0	0	62	68	49	13	
<i>ASACG</i>	<i>asa</i>	107	24	2	30	6	0	8	63	62	57	60	
<i>CGdescent</i>	<i>cgd</i>	106	26	5	33	6	0	9	62	61	56	62	
<i>LMBFGS-TR</i>	<i>ll3</i>	97	8	2	80	22	0	2	48	45	48	42	
<i>LMBFG-EIG-MS</i>	<i>lt6</i>	94	12	6	104	26	0	1	50	47	49	34	
<i>LMBFG-MTBT</i>	<i>ll2</i>	93	10	1	45	4	0	24	50	46	52	34	
<i>ASABCP</i>	<i>asb</i>	90	8	4	59	31	0	0	28	24	32	34	
<i>LMBFG-EIG-curve-inf</i>	<i>lt4</i>	90	8	2	86	26	0	5	46	43	46	28	
<i>LMBFG-EIG-MS-2-2</i>	<i>lt7</i>	89	6	0	71	22	0	10	42	38	48	34	
<i>LMBFG-DDOGL</i>	<i>lt2</i>	88	11	5	42	1	0	32	50	47	50	30	
<i>LMBFG-MT</i>	<i>ll1</i>	87	17	9	34	4	0	30	48	41	53	39	
<i>SPG</i>	<i>spg</i>	85	18	12	328	35	0	1	34	32	33	7	
<i>LMBFG-BWX-MS</i>	<i>lt1</i>	85	6	0	67	1	0	35	42	38	47	30	
<i>LBFGSB</i>	<i>lbf</i>	84	14	8	61	0	0	37	45	38	50	22	
<i>LMBFG-EIG-inf-2</i>	<i>lt5</i>	81	8	2	66	6	0	34	44	42	44	28	

stopping test: $\ g\ _{\infty} \leq 1e-06$, $sec \leq 300$, $nf + 2 * ng \leq 20 * n + 10000$													
76 of 80 problems solved									mean efficiency in %				
dim $\in[11,30]$						# of anomalies			for cost measure				
solver		solved	#100	!100	T_{mean}	#n	#t	#f	nf2g	ng	nf	msec	
<i>LMBOPT</i>	<i>lmb</i>	74	16	13	320	6	0	0	70	80	49	11	
<i>LMBFG-EIG-MS</i>	<i>lt6</i>	74	3	3	503	6	0	0	63	56	61	46	
<i>LMBFG-EIG-curve-inf</i>	<i>lt4</i>	73	2	2	458	7	0	0	61	55	60	39	
<i>LMBFG-BWX-MS</i>	<i>lt1</i>	71	0	0	39	1	0	8	54	46	60	31	
<i>LMBFG-DDOGL</i>	<i>lt2</i>	71	4	4	30	1	0	8	64	56	63	37	
<i>LMBFG-EIG-MS-2-2</i>	<i>lt7</i>	71	0	0	475	6	0	3	52	45	58	39	
<i>ASABCP</i>	<i>asb</i>	70	2	2	29	7	0	3	38	32	42	41	
<i>ASACG</i>	<i>asa</i>	68	15	4	14	8	0	4	63	64	54	56	
<i>LBFGSB</i>	<i>lbj</i>	68	14	10	41	0	0	12	67	56	73	32	
<i>SPG</i>	<i>spg</i>	67	10	6	252	12	0	1	45	41	43	5	
<i>CGdescent</i>	<i>cgd</i>	65	5	2	17	6	0	9	48	50	40	52	
<i>LMBFG-EIG-inf-2</i>	<i>lt5</i>	61	2	0	576	2	0	17	53	48	52	33	
<i>LMBFGS-TR</i>	<i>ll3</i>	57	6	5	598	23	0	0	52	47	52	41	
<i>LMBFG-MT</i>	<i>ll1</i>	56	13	6	24	3	0	21	55	46	59	39	
<i>LMBFG-MTBT</i>	<i>ll2</i>	54	3	1	32	2	0	24	53	48	53	30	

stopping test: $\ g\ _{\infty} \leq 1e-06$, $sec \leq 300$, $nf + 2 * ng \leq 20 * n + 10000$													
195 of 209 problems solved									mean efficiency in %				
dim $\in[31,100]$						# of anomalies			for cost measure				
solver		solved	#100	!100	T_{mean}	#n	#t	#f	nf2g	ng	nf	msec	
<i>LMBOPT</i>	<i>lmb</i>	188	32	28	382	21	0	0	59	70	42	11	
<i>ASACG</i>	<i>asa</i>	184	26	3	100	19	0	6	58	61	49	61	
<i>LMBFG-EIG-MS</i>	<i>lt6</i>	184	19	7	125	23	0	2	61	58	60	39	
<i>CGdescent</i>	<i>cgd</i>	182	25	1	104	13	0	14	58	62	49	58	
<i>LMBFG-DDOGL</i>	<i>lt2</i>	182	26	13	95	9	0	18	63	60	62	42	
<i>LMBFG-EIG-curve-inf</i>	<i>lt4</i>	182	22	9	120	22	0	5	62	59	60	41	
<i>ASABCP</i>	<i>asb</i>	180	22	18	71	28	0	1	43	38	46	49	
<i>LMBFG-BWX-MS</i>	<i>lt1</i>	178	9	0	97	11	0	20	52	47	58	38	
<i>LMBFG-EIG-MS-2-2</i>	<i>lt7</i>	176	9	0	117	21	0	12	52	47	58	42	
<i>LBFGSB</i>	<i>lbj</i>	168	38	34	116	0	0	41	59	53	63	32	
<i>SPG</i>	<i>spg</i>	166	18	12	568	42	0	1	37	37	34	7	
<i>LMBFG-EIG-inf-2</i>	<i>lt5</i>	163	22	9	142	14	0	32	55	53	54	36	
<i>LMBFGS-TR</i>	<i>ll3</i>	152	18	6	85	55	0	2	51	48	51	47	
<i>LMBFG-MT</i>	<i>ll1</i>	143	15	8	56	13	0	53	50	43	54	42	
<i>LMBFG-MTBT</i>	<i>ll2</i>	142	18	5	73	14	0	53	49	45	50	32	

stopping test: $\ g\ _{\infty} \leq 1e-06$, $sec \leq 300$, $nf + 2 * ng \leq 20 * n + 10000$													
51 of 58 problems solved									mean efficiency in %				
dim \in [101,300]						# of anomalies			for cost measure				
solver		solved	#100	!100	T_{mean}	#n	#t	#f	nf2g	ng	nf	msec	
<i>ASACG</i>	<i>asa</i>	49	9	3	294	6	0	3	64	68	54	62	
<i>LMBFG-BWX-MS</i>	<i>lt1</i>	49	1	0	198	2	0	7	58	52	63	38	
<i>LMBFG-EIG-MS</i>	<i>lt6</i>	49	5	3	203	6	0	3	63	60	62	44	
<i>LMBFG-EIG-curve-inf</i>	<i>lt4</i>	48	4	1	215	8	0	2	62	59	61	41	
<i>LMBFG-EIG-MS-2-2</i>	<i>lt7</i>	48	1	0	200	6	0	4	57	51	62	42	
<i>LMBOPT</i>	<i>lmb</i>	47	6	5	907	11	0	0	56	67	39	10	
<i>ASABCP</i>	<i>asb</i>	47	3	2	182	7	0	4	38	34	41	50	
<i>LMBFG-DDOGL</i>	<i>lt2</i>	47	9	6	133	6	0	5	62	58	60	36	
<i>CGdescent</i>	<i>cgd</i>	43	6	0	348	6	0	9	54	58	45	46	
<i>SPG</i>	<i>spg</i>	39	9	7	1280	19	0	0	34	35	31	10	
<i>LMBFG-EIG-inf-2</i>	<i>lt5</i>	39	2	1	436	7	0	12	52	49	50	32	
<i>LBFGSB</i>	<i>lbj</i>	38	9	7	230	0	0	20	54	48	56	28	
<i>LMBFGS-TR</i>	<i>ll3</i>	38	6	3	115	18	0	2	53	50	51	45	
<i>LMBFG-MTBT</i>	<i>ll2</i>	37	4	2	140	2	0	19	52	48	51	35	
<i>LMBFG-MT</i>	<i>ll1</i>	36	4	1	91	3	0	19	49	43	51	45	

stopping test: $\ g\ _{\infty} \leq 1e-06$, $sec \leq 300$, $nf + 2 * ng \leq 20 * n + 10000$													
144 of 163 problems solved									mean efficiency in %				
dim \in [301,1000]						# of anomalies			for cost measure				
solver		solved	#100	!100	T_{mean}	#n	#t	#f	nf2g	ng	nf	msec	
<i>LMBFG-EIG-curve-inf</i>	<i>lt4</i>	137	14	7	2007	21	0	5	59	55	58	17	
<i>LMBFG-EIG-MS</i>	<i>lt6</i>	137	19	8	1721	21	0	5	61	56	60	19	
<i>ASACG</i>	<i>asa</i>	136	30	10	398	24	0	3	59	58	55	64	
<i>LMBOPT</i>	<i>lmb</i>	135	29	25	2206	28	0	0	56	66	40	6	
<i>CGdescent</i>	<i>cgd</i>	135	21	1	450	21	0	7	57	58	52	59	
<i>LMBFG-EIG-MS-2-2</i>	<i>lt7</i>	130	3	0	1946	23	0	10	49	42	56	16	
<i>LMBFG-DDOGL</i>	<i>lt2</i>	129	10	3	1676	17	0	17	58	54	57	17	
<i>ASABCP</i>	<i>asb</i>	128	11	8	353	32	0	3	44	39	47	56	
<i>LMBFG-BWX-MS</i>	<i>lt1</i>	127	3	0	1754	14	0	22	49	43	56	17	
<i>SPG</i>	<i>spg</i>	121	8	5	1437	40	0	2	34	35	31	9	
<i>LBFGSB</i>	<i>lbj</i>	107	28	23	252	0	0	56	52	46	55	22	
<i>LMBFGS-TR</i>	<i>ll3</i>	107	19	11	1169	51	0	5	45	41	46	26	
<i>LMBFG-EIG-inf-2</i>	<i>lt5</i>	107	9	1	2101	22	0	34	48	43	48	15	
<i>LMBFG-MTBT</i>	<i>ll2</i>	89	8	3	983	15	0	59	40	36	42	19	
<i>LMBFG-MT</i>	<i>ll1</i>	86	9	4	744	16	0	61	39	33	42	22	

stopping test: $\ g\ _{\infty} \leq 1e-06$, $sec \leq 300$, $nf + 2 * ng \leq 20 * n + 10000$													
81 of 94 problems solved									mean efficiency in %				
dim \in [1001,3000]						# of anomalies			for cost measure				
solver		solved	#100	!100	T_{mean}	#n	#t	#f	nf2g	ng	nf	msec	
<i>LMBFG-DDOGL</i>	<i>lt2</i>	79	12	8	5013	12	0	3	68	65	67	21	
<i>LMBFG-EIG-MS</i>	<i>lt6</i>	79	4	3	5545	13	0	2	66	64	65	20	
<i>LMBOPT</i>	<i>lmb</i>	78	5	5	6946	13	3	0	53	67	36	7	
<i>LMBFG-EIG-curve-inf</i>	<i>lt4</i>	78	5	4	6535	13	0	3	66	64	64	18	
<i>ASABCP</i>	<i>asb</i>	77	2	2	5247	16	0	1	42	40	43	51	
<i>LMBFG-BWX-MS</i>	<i>lt1</i>	77	0	0	4886	10	0	7	58	53	65	20	
<i>ASACG</i>	<i>asa</i>	76	4	1	1451	15	0	3	49	54	41	66	
<i>LMBFG-EIG-MS-2-2</i>	<i>lt7</i>	75	0	0	5860	14	0	5	53	48	59	18	
<i>CGdescent</i>	<i>cgd</i>	71	3	0	1565	12	0	11	47	54	40	52	
<i>SPG</i>	<i>spg</i>	71	7	7	4789	19	3	1	30	31	26	8	
<i>LBFGSB</i>	<i>lbj</i>	69	27	22	707	0	0	25	67	63	68	29	
<i>LMBFG-EIG-inf-2</i>	<i>lt5</i>	57	3	3	7208	11	0	26	50	47	49	14	
<i>LMBFGS-TR</i>	<i>ll3</i>	55	10	6	5245	36	0	3	50	47	50	20	
<i>LMBFG-MT</i>	<i>ll1</i>	51	10	6	6788	10	0	33	47	44	48	19	
<i>LMBFG-MTBT</i>	<i>ll2</i>	51	5	3	6918	10	0	33	46	44	46	14	

stopping test: $\ g\ _{\infty} \leq 1e-06$, $sec \leq 300$, $nf + 2 * ng \leq 20 * n + 10000$													
175 of 201 problems solved									mean efficiency in %				
dim \in [3001,10000]						# of anomalies			for cost measure				
solver		solved	#100	!100	T_{mean}	#n	#t	#f	nf2g	ng	nf	msec	
<i>ASACG</i>	<i>asa</i>	168	20	2	4467	14	15	4	52	53	47	69	
<i>LMBFG-EIG-curve-inf</i>	<i>lt4</i>	167	14	5	10091	11	18	5	60	58	59	40	
<i>LMBOPT</i>	<i>lmb</i>	165	26	22	17399	1	35	0	54	66	38	16	
<i>LMBFG-EIG-MS</i>	<i>lt6</i>	165	23	12	9000	12	19	5	60	57	59	40	
<i>LMBFG-EIG-MS-2-2</i>	<i>lt7</i>	165	4	0	9489	12	14	10	49	43	57	39	
<i>ASABCP</i>	<i>asb</i>	163	10	6	7967	17	17	4	42	39	45	42	
<i>LMBFG-BWX-MS</i>	<i>lt1</i>	161	5	1	8031	9	15	16	49	44	57	41	
<i>LMBFG-DDOGL</i>	<i>lt2</i>	159	19	8	9441	9	14	19	57	55	57	40	
<i>CGdescent</i>	<i>cgd</i>	154	20	2	8755	11	14	22	46	48	43	54	
<i>SPG</i>	<i>spg</i>	154	12	8	21369	3	42	2	27	28	25	12	
<i>LBFGSB</i>	<i>lbj</i>	138	64	57	2235	0	0	63	58	55	60	46	
<i>LMBFG-EIG-inf-2</i>	<i>lt5</i>	122	12	3	11329	9	20	50	44	41	44	28	
<i>LMBFGS-TR</i>	<i>ll3</i>	113	14	6	11832	19	63	6	40	38	41	30	
<i>LMBFG-MTBT</i>	<i>ll2</i>	92	11	3	9225	8	10	91	34	32	35	24	
<i>LMBFG-MT</i>	<i>ll1</i>	90	14	8	12552	8	10	93	34	30	36	27	

stopping test: $\ g\ _{\infty} \leq 1e-06$, $sec \leq 300$, $nf + 2 * ng \leq 20 * n + 10000$													
34 of 37 problems solved									mean efficiency in %				
dim \in [10001,50000]						# of anomalies			for cost measure				
solver		solved	#100	!100	T_{mean}	#n	#t	#f	nf2g	ng	nf	msec	
<i>ASACG</i>	<i>asa</i>	32	1	0	10263	0	4	1	42	46	36	53	
<i>LMBFG-BWX-MS</i>	<i>lt1</i>	32	1	0	13704	0	3	2	44	39	54	42	
<i>LMBFG-DDOGL</i>	<i>lt2</i>	32	3	1	14463	0	4	1	52	50	51	39	
<i>LMBFG-EIG-curve-inf</i>	<i>lt4</i>	32	2	0	14262	0	4	1	55	54	53	40	
<i>LMBFG-EIG-MS</i>	<i>lt6</i>	32	1	0	13574	0	4	1	56	54	54	41	
<i>LMBFG-EIG-MS-2-2</i>	<i>lt7</i>	32	1	0	19090	0	4	1	43	39	53	41	
<i>LMBOPT</i>	<i>lmb</i>	31	1	1	12985	0	6	0	54	71	35	23	
<i>LBFGSB</i>	<i>lbj</i>	31	26	23	4692	0	0	6	78	76	79	74	
<i>ASABCP</i>	<i>asb</i>	31	0	0	10817	0	6	0	43	41	45	52	
<i>SPG</i>	<i>spg</i>	28	0	0	33317	0	9	0	19	20	16	11	
<i>CGdescent</i>	<i>cgd</i>	27	3	2	25526	0	2	8	32	36	28	33	
<i>LMBFG-EIG-inf-2</i>	<i>lt5</i>	17	2	0	18906	0	3	17	33	32	32	25	
<i>LMBFGS-TR</i>	<i>ll3</i>	10	1	0	23601	0	26	1	21	19	21	18	
<i>LMBFG-MT</i>	<i>ll1</i>	9	2	0	22289	0	3	25	18	16	18	15	
<i>LMBFG-MTBT</i>	<i>ll2</i>	9	3	2	21776	0	3	25	20	19	20	16	

stopping test: $\ g\ _{\infty} \leq 1e-06$, $sec \leq 300$, $nf + 2 * ng \leq 20 * n + 10000$													
6 of 7 problems solved									mean efficiency in %				
dim \in [50001,100001]						# of anomalies			for cost measure				
solver		solved	#100	!100	T_{mean}	#n	#t	#f	nf2g	ng	nf	msec	
<i>ASACG</i>	<i>asa</i>	5	4	0	8312	0	2	0	64	62	64	52	
<i>CGdescent</i>	<i>cgd</i>	5	4	0	7904	0	1	1	64	62	64	58	
<i>ASABCP</i>	<i>asb</i>	4	3	1	12325	0	2	1	54	50	57	36	
<i>LMBFGS-TR</i>	<i>ll3</i>	4	2	0	19785	0	3	0	36	35	38	33	
<i>LMBFG-EIG-curve-inf</i>	<i>lt4</i>	4	2	0	13035	0	3	0	42	40	43	32	
<i>LMBFG-EIG-MS</i>	<i>lt6</i>	4	2	0	16793	0	3	0	37	36	38	29	
<i>LMBFG-EIG-MS-2-2</i>	<i>lt7</i>	4	2	0	22708	0	3	0	34	32	37	34	
<i>LMBOPT</i>	<i>lmb</i>	3	3	1	1903	0	4	0	42	42	39	26	
<i>SPG</i>	<i>spg</i>	3	2	0	1433	0	4	0	41	40	38	20	
<i>LMBFG-BWX-MS</i>	<i>lt1</i>	3	2	0	7270	0	3	1	30	29	31	20	
<i>LMBFG-DDOGL</i>	<i>lt2</i>	3	2	0	6787	0	3	1	31	30	31	25	
<i>LMBFG-EIG-inf-2</i>	<i>lt5</i>	3	2	0	14243	0	3	1	34	34	35	23	
<i>LBFGSB</i>	<i>lbj</i>	2	2	0	40	0	0	5	28	28	28	15	
<i>LMBFG-MT</i>	<i>ll1</i>	2	2	0	20	0	1	4	28	28	28	28	
<i>LMBFG-MTBT</i>	<i>ll2</i>	2	2	0	25	0	1	4	28	28	28	23	

3.4 Failure analysis

97 test problems unsolved by all solvers used for dim \in [1,100001]			
BROWNBS	PALMER7A	PALMER5E	PALMER5B
OSCIGRAD:10	OSCIPATH:10	STRATEC	SBRYBND:10
SCOSINE:10	SCURLY10:10	SCOND1LS	OSCIGRAD:15
OSCIGRAD:25	ANTWERP	NONMSQRT:49	HS110:50
Continued on next page			

SBRYBND:50	RAYBENDS	RAYBENDL:66	RAYBENDS:66
HYDC20LS	FLETCHBV:100	HS110:100	NONMSQRT:100
OSCIGRAD:100	SBRYBND:100	SCOSINE:100	SCURLY10:100
SCOND1LS:102	RAYBENDL:130	RAYBENDS:130	QR3DLS
GRIDGENA:170	DRCV1LQ	HS110:200	SPMSRTLS:499
PENALTY2:500	SBRYBND:500	SCOND1LS:502	MSQRTALS:529
MSQRTBLS:529	NONMSQRT:529	GRIDGENA	QR3DLS:610
LINVERSE:999	CURLY20	CHENHARK	FLETCHBV:1000
PENALTY2:1000	SBRYBND	SCOSINE	SCURLY10
SSCOSINE	SPMSRTLS:1000	SCOND1LS:1002	MSQRTALS:1024
MSQRTBLS:1024	NONMSQRT:1024	RAYBENDL:1026	RAYBENDS:1026
DRCV1LQ:1225	DRCV2LQ:1225	DRCV3LQ:1225	GRIDGENA:1226
RAYBENDL:2050	GRIDGENA:2114	EIGENALS:2550	GRIDGENA:3242
DRCV3LQ:4489	GRIDGENA:4610	MSQRTALS:4900	MSQRTBLS:4900
SPMSRTLS:4999	FLETCHBV:5000	FLETCHBV:5000	SBRYBND:5000
SCOSINE:5000	SPARSINE:5000	SSCOSINE:5000	SCOND1LS:5002
BRATUID:5003	GRIDGENA:6218	CURLY10:10000	CURLY20:10000
CURLY30:10000	FLETCHBV:10000	FLETCHBV:10000	NONCVXUN:10000
SCOSINE:10000	SCURLY10:10000	SPARSINE:10000	SPMSRTLS:10000
SSCOSINE:10000	DRCV3LQ:10816	ODNAMUR	GRIDGENA:12482
SSCOSINE:100000			

solver	dim $\in[1,100001]$	problem	error message	# same error
lmb	2	BROWNBS	nf2gmax reached	92
	2550	EIGENALS	secmax reached	48
asa	2	BROWNBS	cg: too many secant iterates	30
	2	MDHOLE	unrecognized exit flag	255
	2	OSCIGRAD	nf2gmax reached	98
	5	OSBORNEA	cg: function nan or inf	1
	100	SCOSINE	cg: Wolfe conditions never satisfied	1
	500	PENALTY2	cg: slope negative in line search	1
	3549	JIMACK	secmax reached	21
lt6	2	BROWNBS	nf2gmax reached	119
	10	HS110	line search failed	4
Continued on next page				

	10	NCVXBQP3	unknown	9
	170	GRIDGENA	TR radius too small	15
	4900	MSQRTALS	secmax reached	26
lt4	2	BROWNBS	nf2gmax reached	118
	2	DJTL	TR radius too small	23
	10	HS110	line search failed	4
	12	QUDLIN	unknown	4
	4900	MSQRTALS	secmax reached	25
asb	1	BQP1VAR	unknown	22
	2	AKIVA	nf2gmax reached	142
	2	BROWNBS	no descent direction	14
	5	OSBORNEA	nstepsize too small	6
	3549	JIMACK	secmax reached	25
lt2	2	BROWNBS	nf2gmax reached	61
	2	SIMBQP	unknown	11
	3	HATFLDFL	TR radius too small	106
	10	HS110	line search failed	4
	4900	MSQRTALS	secmax reached	21
cgd	2	BROWNBS	line search failed	84
	2	OSCIGRAD	nf2gmax reached	77
	5	OSBORNEA	function nan or inf	6
	100	HS110	Wolfe conditions never satisfied	3
	101	EXPLIN	slope negative in line search	6
	4900	MSQRTALS	secmax reached	17
	100001	DEGTRID	there is no data	1
lt7	2	BROWNBS	TR radius too small	56
	2	DJTL	nf2gmax reached	112
	10	HS110	line search failed	4
	12	QUDLIN	unknown	8
	4900	MSQRTALS	secmax reached	21
lt1	2	BROWNBS	nf2gmax reached	56
	3	BARD	Matrix must be positive definite.	30
	3	MEYER3	TR radius too small	89
	10	HS110	line search failed	4
	10	NCVXBQP3	unknown	10
	4900	MSQRTALS	secmax reached	21

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spg	1	BQP1VAR	unknown	29
	2	BROWNBS	nf2gmax reached	182
	2550	EIGENALS	secmax reached	58
lbf	1	BQP1VAR	unrecognized exit flag	159
	2	AKIVA	reduction of f too small	114
	2	BROWNBS	line search failed	64
lt5	2	BROWNBS	TR radius too small	229
	2	JENSMP	nf2gmax reached	76
	10	HS110	line search failed	4
	12	QUDLIN	unknown	3
	4900	MSQRTALS	secmax reached	26
ll3	2	BROWNBS	nf2gmax reached	242
	2	HS3MOD	unknown	7
	8	VIBRBEAM	stepsize too small	17
	10	HS110	line search failed	4
	4900	MSQRTALS	secmax reached	92
ll2	2	BROWNBS	line search failed	333
	2	HS3MOD	unknown	8
	3	HATFLDFL	there is a bug	6
	6	PALMER7A	nf2gmax reached	55
	170	GRIDGENA	stepsize too small	11
	4900	MSQRTALS	secmax reached	14
ll1	2	BROWNBS	line search failed	352
	2	SIMBQP	unknown	24
	3	HATFLDFL	there is a bug	8
	6	PALMER7A	nf2gmax reached	57
	4900	MSQRTALS	secmax reached	14

kind of anomalies	100 test problems unsolved by lmbopt3 for $\dim \in [1,100001]$		
n	BROWNBS	HIELOW	OSCIPATH:5
	PALMER7A	PALMER5E	PALMER5B
	OSCIGRAD:10	OSCIPATH:10	STRATEC
	Continued on next page		

	SBRYBND:10	SCOSINE:10	SCURLY10:10
	OSBORNEB	SCOND1LS	OSCIGRAD:15
	SINEALI:20	OSCIGRAD:25	ANTWERP
	RAYBENDL	NONMSQRT:49	HS110:50
	SBRYBND:50	SCOND1LS:52	RAYBENDS
	DECONVU	RAYBENDL:66	RAYBENDS:66
	HYDC20LS	BDEXP	EXTROSNB:100
	FLETCHBV:100	HS110:100	MOREBV:100
	NONMSQRT:100	OSCIGRAD:100	SBRYBND:100
	SCOSINE:100	SCURLY10:100	SPMSRTLS:100
	SCOND1LS:102	RAYBENDL:130	RAYBENDS:130
	QR3DLS	GRIDGENA:170	DRCV1LQ
	DRCV3LQ	LINVERSE:199	HS110:200
	PENALTY2:200	HADAMALS:256	SPMSRTLS:499
	PENALTY2:500	SBRYBND:500	SSBRYBND:500
	SCOND1LS:502	MSQRTALS:529	MSQRTBLS:529
	NONMSQRT:529	GRIDGENA	QR3DLS:610
	LINVERSE:999	BDEXP:1000	COSINE
	CURLY10	CURLY20	CURLY30
	CHENHARK	FLETCHBV3:1000	FLETCHBV:1000
	OSCIGRAD:1000	PENALTY2:1000	POWELLBC:1000
	SBRYBND	SCOSINE	SCURLY10
	SSBRYBND	SSCOSINE	SPMSRTLS:1000
	SCOND1LS:1002	BRATU1D:1003	MSQRTALS:1024
	MSQRTBLS:1024	NONMSQRT:1024	RAYBENDL:1026
	RAYBENDS:1026	DRCV1LQ:1225	DRCV2LQ:1225
	DRCV3LQ:1225	GRIDGENA:1226	RAYBENDL:2050
	GRIDGENA:2114	GRIDGENA:3242	
t	EIGENALS:2550	EIGENBLS:2550	EIGENCLS:2652
	JIMACK	DRCV1LQ:4489	DRCV2LQ:4489
	DRCV3LQ:4489	GRIDGENA:4610	MSQRTALS:4900
	MSQRTBLS:4900	SPMSRTLS:4999	FLETBV3M:5000
	FLETCHBV3:5000	FLETCHBV:5000	INDEFM:5000
	SBRYBND:5000	SCOSINE:5000	SPARSINE:5000
	SSCOSINE:5000	SCOND1LS:5002	BRATU1D:5003
	Continued on next page		

GRIDGENA:6218	COSINE:10000	CURLY10:10000
CURLY20:10000	CURLY30:10000	FLETBV3M:10000
FLETGBV2:10000	FLETGBV3:10000	FLETCHBV:10000
INDEFM:10000	NONCVXUN:10000	OSCIGRAD:10000
SCOSINE:10000	SCURLY10:10000	SPARSINE:10000
SPMSRTLS:10000	SSCOSINE:10000	DRCV1LQ:10816
DRCV2LQ:10816	DRCV3LQ:10816	ODNAMUR
GRIDGENA:12482	NLMSURF:15625	INDEFM:100000
OSCIGRAD:100000	SSCOSINE:100000	DEGTRID:100001

kind of anomalies	100 test problems unsolved by asa for dim $\in [1,100001]$		
n	OSCIGRAD:2	PFIT1LS	PFIT2LS
	PFIT3LS	PFIT4LS	OSCIPATH:5
	PALMER7A	PALMER5E	PALMER5A
	PALMER5B	OSCIGRAD:10	OSCIPATH:10
	OSBORNEB	OSCIGRAD:15	SINEALI:20
	ERRINROS:25	ERRINRSM:25	OSCIGRAD:25
	ANTWERP	X3PK	QR3DLS:40
	MSQRTALS:49	NONMSQRT:49	ERRINROS:50
	HS110:50	PROBPENL:50	SSBRYBND:50
	SCOND1LS:52	RAYBENDS	RAYBENDL:66
	HYDC20LS	FLETCHBV:100	MOREBV:100
	NONMSQRT:100	OSCIGRAD:100	PROBPENL:100
	SCURLY10:100	SSBRYBND:100	SSCOSINE:100
	SCOND1LS:102	NCB20:110	RAYBENDS:130
	QR3DLS	DRCV1LQ	LINVERSE:199
	SPMSRTLS:499	SBRYBND:500	SSBRYBND:500
	SCOND1LS:502	CLPLATEC:529	MSQRTALS:529
	MSQRTBLS:529	NONMSQRT:529	QR3DLS:610
	LINVERSE:999	COSINE	CURLY20
	CURLY30	CHENHARK	FLETGBV3:1000
	FLETCHBV:1000	POWELLBC:1000	SBRYBND
	Continued on next page		

	SCOSINE	SCURLY10	SSBRYBND
	SSCOSINE	SPMSRTLS:1000	TESTQUAD
	SCOND1LS:1002	CLPLATEC:1024	MSQRTALS:1024
	MSQRTBLS:1024	NONMSQRT:1024	RAYBENDL:1026
	RAYBENDS:1026	DRCV1LQ:1225	DRCV2LQ:1225
	DRCV3LQ:1225	LINVERSE:1999	RAYBENDL:2050
	RAYBENDS:2050	EIGENALS:2550	EIGENCLS:2652
	DRCV1LQ:4489	DRCV2LQ:4489	DRCV3LQ:4489
	SPMSRTLS:4999	CHENHARK:5000	FLETCHBV3:5000
	FLETCHBV:5000	NONCVXUN:5000	SBRYBND:5000
	SCOSINE:5000	SPARSINE:5000	SSCOSINE:5000
	SCOND1LS:5002	CLPLATEC:5041	
t	JIMACK	MSQRTALS:4900	MSQRTBLS:4900
	COSINE:10000	CURLY10:10000	CURLY20:10000
	CURLY30:10000	FLETCHBV3:10000	FLETCHBV:10000
	NONCVXUN:10000	SCOSINE:10000	SCURLY10:10000
	SPARSINE:10000	SPMSRTLS:10000	SSCOSINE:10000
	DRCV1LQ:10816	DRCV2LQ:10816	DRCV3LQ:10816
	ODNAMUR	SSCOSINE:100000	DEGTRID:100001
f	BROWNBS	MDHOLE	ALLINIT
	HATFLDB	HADAMALS	PSPDOC
	OSBORNEA	BIGGS3	MAXLIKA
	PALMER7E	PALMER2E	PALMER3E
	VIBRBEAM	RAYBENDL:10	RAYBENDS:10
	STRATEC	SBRYBND:10	SCOSINE:10
	SCURLY10:10	EXPQUAD:12	QRTQUAD:12
	SCOND1LS	BRATU1D:13	PARKCH
	CLPLATEA:16	CLPLATEB:16	CLPLATEC:16
	HADAMALS:16	LMSURF	NLMSURF:16
	NOBNDTOR:16	TORSION111:16	TORSION1:16
	TORSION2:16	TORSIONA:16	TORSIONB:16
	TORSIONC:16	TORSIOND:16	LINVERSE
	RAYBENDL:24	RAYBENDS:24	HATFLDC
	NONSCOMP	HADAMALS:36	RAYBENDL
	CLPLATEA	CLPLATEB	CLPLATEC
	Continued on next page		

LMSURF:49	NLSURF:49	BQPGABIM
BQPGASIM	NONSCOMP:50	SBRYBND:50
DECONVU	DECONVB	HADAMALS:64
LMSURF:64	MINSURF	NLSURF:64
RAYBENDS:66	BRATU1D	BIGGSB1:100
CLPLATEA:100	CLPLATEB:100	CLPLATEC:100
HADAMALS:100	HS110:100	NOBNDTOR:100
NONSCOMP:100	SBRYBND:100	SCOSINE:100
TORSIONA:100	TORSIONB:100	TORSION111:100
TORSION1:100	TORSION2:100	TORSIONC:100
TORSIOND:100	TORSION3:100	TORSION4:100
TORSIONE:100	TORSIONF:100	TORSION5:100
TORSION6:100	BRATU1D:103	EXPQUAD
QRTQUAD	LMSURF:121	NLSURF:121
RAYBENDL:130	HADAMALS:144	GRIDGENA:170
DRCV2LQ	DRCV3LQ	HADAMALS:196
HS110:200	HADAMALS:256	ODC:288
SSC:288	HADAMALS:324	HADAMALS:400
JNLBRNG1:400	JNLBRNGA:400	JNLBRNG2:400
JNLBRNGB:400	OBSTCLBL:400	OBSTCLBM:400
OBSTCLBU:400	OBSTCLAE:400	OBSTCLAL:400
NOBNDTOR:484	TORSIONA:484	TORSIONB:484
TORSION111:484	TORSION1:484	TORSION2:484
TORSIONC:484	TORSIOND:484	TORSION3:484
TORSION4:484	TORSIONE:484	TORSIONF:484
TORSION5:484	TORSION6:484	NONSCOMP:500
PENALTY2:500	BRATU1D:503	CLPLATEA:529
CLPLATEB:529	GRIDGENA	ODC
SSC	LMSURF:961	NLSURF:961
BIGGSB1:1000	JNLBRNG1:1000	JNLBRNGA:1000
JNLBRNG2:1000	JNLBRNGB:1000	NONSCOMP:1000
OBSTCLBL	OBSTCLBM	OBSTCLBU
OBSTCLAL	OBSTCLAE:1000	PENALTY2:1000
BRATU1D:1003	CLPLATEA:1024	CLPLATEB:1024
HADAMALS:1024	LMSURF:1024	NLSURF
Continued on next page		

NOBNDTOR:1024	TORSIONA:1024	TORSIONB:1024
TORSION111:1024	TORSION1:1024	TORSION2:1024
TORSIONC:1024	TORSIOND:1024	TORSION3:1024
TORSION4:1024	TORSIONE:1024	TORSIONF:1024
TORSION5:1024	TORSION6:1024	EXPQUAD:1200
QRTQUAD:1200	GRIDGENA:1226	BQPGAUSS
GRIDGENA:2114	JNLBRNG1:2300	JNLBRNGA:2300
JNLBRNGB:2300	JNLBRNG2:2300	OBSTCLBL:2300
OBSTCLBM:2300	OBSTCLBU:2300	OBSTCLAE:2300
OBSTCLAL:2300	ODC:2376	SSC:2376
JNLBRNG1:3200	JNLBRNGA:3200	JNLBRNG2:3200
JNLBRNGB:3200	OBSTCLBL:3200	OBSTCLBM:3200
OBSTCLBU:3200	OBSTCLAE:3200	OBSTCLAL:3200
GRIDGENA:3242	JNLBRNG1:3400	JNLBRNGA:3400
JNLBRNG2:3400	JNLBRNGB:3400	HADAMALS:4096
GRIDGENA:4610	BIGGSB1:5000	NONSCOMP:5000
QRTQUAD:5000	BRATU1D:5003	CLPLATEA:5041
CLPLATEB:5041	ODC:5184	SSC:5184
MINSURFO:5306	NOBNDTOR:5476	TORSIONA:5476
TORSIONB:5476	TORSION111:5476	TORSION1:5476
TORSION2:5476	TORSIONC:5476	TORSIOND:5476
TORSION3:5476	TORSION4:5476	TORSIONE:5476
TORSIONF:5476	TORSION5:5476	TORSION6:5476
LMSURF:5625	NLMSURF:5625	GRIDGENA:6218
ODC:7344	SSC:7344	JNLBRNG1:7500
JNLBRNGA:7500	JNLBRNG2:7500	JNLBRNGB:7500
OBSTCLBL:7500	OBSTCLBM:7500	OBSTCLBU:7500
OBSTCLAE	OBSTCLAL:7500	JNLBRNG1:10000
JNLBRNGA:10000	JNLBRNG2:10000	JNLBRNGB:10000
LMSURF:10000	NLMSURF:10000	NOBNDTOR:10000
NONSCOMP:10000	OBSTCLBL:10000	OBSTCLBM:10000
OBSTCLBU:10000	OBSTCLAE:10000	OBSTCLAL:10000
TORSIONA:10000	TORSIONB:10000	TORSION111:10000
TORSION1:10000	TORSION2:10000	TORSIONC:10000
TORSIOND:10000	TORSION3:10000	TORSION4:10000
	Continued on next page	

TORSIONE:10000	TORSIONF:10000	GRIDGENA:12482
JNLBRNG1:12500	JNLBRNGA:12500	JNLBRNG2:12500
JNLBRNGB:12500	OBSTCLBL:12500	OBSTCLBM:12500
OBSTCLBU:12500	OBSTCLAE:12500	OBSTCLAL:12500
ODC:14544	SSC:14544	NOBNDTOR:14884
TORSIONA:14884	TORSIONB:14884	TORSION111:14884
TORSION1:14884	TORSION2:14884	TORSIONC:14884
TORSIOND:14884	TORSION3:14884	TORSION4:14884
TORSIONE:14884	TORSIONF:14884	TORSION5:14884
TORSION6:14884	LMINSURF:15625	NLMSURF:15625

kind of anomalies	100 test problems unsolved by lt6 for dim $\in [1,100001]$		
n	BROWNBS	DJTL	JENSMP
	KOEBHELB	MEYER3	PFIT1LS
	PFIT2LS	PFIT3LS	PFIT4LS
	OSCIGRAD:5	OSCIPATH:5	OSBORNEA
	PALMER7A	PALMER1D	PALMER5E
	PALMER6C	PALMER7C	PALMER8C
	PALMER1C	PALMER1E	PALMER2C
	PALMER3C	PALMER4C	PALMER4E
	PALMER5A	PALMER7E	PALMER2E
	PALMER3E	VIBRBEAM	NONMSQRT
	PALMER5B	OSCIGRAD:10	OSCIPATH:10
	STRATEC	SBRYBND:10	SCOSINE:10
	SCURLY10:10	SSCOSINE:10	SCOND1LS
	OSCIGRAD:15	SINEALI:20	OSCIGRAD:25
	ANTWERP	X3PK	WATSON:31
	NONMSQRT:49	PROBPENL:50	SBRYBND:50
	SSBRYBND:50	SCOND1LS:52	RAYBENDS
	DECONVB	RAYBENDL:66	RAYBENDS:66
	HYDC20LS	BDEXP	COSINE:100
	FLETCHBV:100	NONMSQRT:100	OSCIGRAD:100
	Continued on next page		

	PROBPENL:100	SBRYBND:100	SCOSINE:100
	SCURLY10:100	SPMSRTLS:100	SSBRYBND:100
	SSCOSINE:100	SCOND1LS:102	RAYBENDL:130
	RAYBENDS:130	QR3DLS	DRCV1LQ
	LINVERSE:199	SPMSRTLS:499	SBRYBND:500
	SSBRYBND:500	SCOND1LS:502	MSQRTALS:529
	MSQRTBLS:529	NONMSQRT:529	QR3DLS:610
	LINVERSE:999	COSINE	CURLY20
	CURLY30	CHENHARK	FLETCHBV:1000
	NONCVXUN	OSCIGRAD:1000	SBRYBND
	SCOSINE	SCURLY10	SSCOSINE
	SPMSRTLS:1000	SCOND1LS:1002	MSQRTALS:1024
	MSQRTBLS:1024	NONMSQRT:1024	RAYBENDL:1026
	RAYBENDS:1026	DRCV1LQ:1225	DRCV2LQ:1225
	DRCV3LQ:1225	LINVERSE:1999	RAYBENDL:2050
	RAYBENDS:2050	EIGENALS:2550	DRCV1LQ:4489
	DRCV2LQ:4489	DRCV3LQ:4489	SPMSRTLS:4999
	NONCVXUN:5000	NONDIA:5000	QRTQUAD:5000
	SBRYBND:5000	SPARSINE:5000	SSCOSINE:5000
	SCOND1LS:5002	CLPLATEC:5041	
t	MSQRTALS:4900	MSQRTBLS:4900	FLETCHBV3:5000
	FLETCHBV:5000	INDEF:5000	SCOSINE:5000
	COSINE:10000	CURLY10:10000	CURLY20:10000
	CURLY30:10000	FLETCHBV3:10000	FLETCHBV:10000
	NONCVXUN:10000	OSCIGRAD:10000	SCOSINE:10000
	SCURLY10:10000	SPARSINE:10000	SPMSRTLS:10000
	SSCOSINE:10000	DRCV1LQ:10816	DRCV2LQ:10816
	DRCV3LQ:10816	ODNAMUR	OSCIGRAD:100000
	SSCOSINE:100000	DEGTRID:100001	
f	HS110	NCVXBQP3:10	QUDLIN
	TORSION3:16	TORSION4:16	HS110:50
	HS110:100	QUDLIN:120	GRIDGENA:170
	HS110:200	PENALTY3:200	BDEXP:500
	PENALTY2:500	GRIDGENA	BDEXP:1000
	INDEF	NCVXBQP3	PENALTY2:1000
	Continued on next page		

	QUDLIN:1200	GRIDGENA:1226	GRIDGENA:2114
	GRIDGENA:3242	JIMACK	GRIDGENA:4610
	BRATU1D:5003	GRIDGENA:6218	NCVXBQP3:10000
	GRIDGENA:12482		

kind of anomalies	100 test problems unsolved by lt4 for dim $\in [1,100001]$		
n	BROWNBS	JENSMP	KOEBHEL
	MEYER3	PFIT1LS	PFIT2LS
	PFIT3LS	PFIT4LS	OSCIPATH:5
	OSBORNEA	PALMER7A	PALMER1D
	PALMER5E	PALMER6C	PALMER6E
	PALMER7C	PALMER8C	PALMER1C
	PALMER1E	PALMER2C	PALMER3C
	PALMER4C	PALMER4E	PALMER5A
	PALMER7E	PALMER2E	PALMER3E
	VIBRBEAM	NONMSQRT	PALMER5B
	OSCIGRAD:10	OSCIPATH:10	PROBPENL:10
	SBRYBND:10	SCURLY10:10	SSCOSINE:10
	OSBORNEB	SCOND1LS	OSCIGRAD:15
	SINEALI:20	OSCIGRAD:25	ANTWERP
	X3PK	WATSON:31	NONMSQRT:49
	PROBPENL:50	SBRYBND:50	SSBRYBND:50
	SCOND1LS:52	RAYBENDS	DECONVB
	RAYBENDL:66	RAYBENDS:66	HYDC20LS
	COSINE:100	FLETCHBV:100	MOREBV:100
	NONMSQRT:100	OSCIGRAD:100	PROBPENL:100
	SBRYBND:100	SCOSINE:100	SCURLY10:100
	SSBRYBND:100	SSCOSINE:100	SCOND1LS:102
	RAYBENDL:130	RAYBENDS:130	QR3DLS
	DRCV1LQ	DRCV3LQ	LINVERSE:199
	PENALTY3:200	SPMSRTLS:499	SBRYBND:500
	SSBRYBND:500	SCOND1LS:502	MSQRTALS:529
	Continued on next page		

	MSQRTBLS:529	NONMSQRT:529	QR3DLS:610
	LINVERSE:999	COSINE	CURLY20
	CURLY30	CHENHARK	FLETCHBV:1000
	NONCVXUN	OSCIGRAD:1000	SBRYBND
	SCOSINE	SCURLY10	SSCOSINE
	SPMSRTLS:1000	SCOND1LS:1002	MSQRTALS:1024
	MSQRTBLS:1024	NONMSQRT:1024	RAYBENDL:1026
	RAYBENDS:1026	DRCV1LQ:1225	DRCV2LQ:1225
	DRCV3LQ:1225	LINVERSE:1999	RAYBENDL:2050
	RAYBENDS:2050	EIGENALS:2550	DRCV1LQ:4489
	DRCV2LQ:4489	DRCV3LQ:4489	SPMSRTLS:4999
	NONCVXUN:5000	QRTQUAD:5000	SBRYBND:5000
	SCOSINE:5000	SPARSINE:5000	SSCOSINE:5000
	CLPLATEC:5041		
t	MSQRTALS:4900	MSQRTBLS:4900	FLETCHBV3:5000
	FLETCHBV:5000	SCOND1LS:5002	COSINE:10000
	CURLY10:10000	CURLY20:10000	CURLY30:10000
	FLETCHBV3:10000	FLETCHBV:10000	NONCVXUN:10000
	OSCIGRAD:10000	SCOSINE:10000	SCURLY10:10000
	SPARSINE:10000	SPMSRTLS:10000	SSCOSINE:10000
	DRCV1LQ:10816	DRCV2LQ:10816	DRCV3LQ:10816
	ODNAMUR	OSCIGRAD:100000	SSCOSINE:100000
	DEGTRID:100001		
f	DJTL	S368:8	HS110
	NCVXBQP3:10	STRATEC	SCOSINE:10
	QUDLIN	HS110:50	NCVXBQP3:50
	NCVXBQP2:50	BDEXP	HS110:100
	GRIDGENA:170	HS110:200	BDEXP:500
	PENALTY2:500	GRIDGENA	BDEXP:1000
	INDEF	NCVXBQP3	PENALTY2:1000
	BRATU1D:1003	GRIDGENA:1226	GRIDGENA:2114
	GRIDGENA:3242	JIMACK	GRIDGENA:4610
	BRATU1D:5003	GRIDGENA:6218	NCVXBQP3:10000
	GRIDGENA:12482		

kind of anomalies	100 test problems unsolved by asabcp for $\dim \in [1,100001]$		
n	AKIVA	BARD	MEYER3
	HIMMELBF	BIGGS6	HEART6LS
	PALMER6A	PALMER7A	PALMER1A
	PALMER1D	PALMER5E	PALMER6C
	PALMER6E	PALMER7C	PALMER8C
	PALMER1C	PALMER1E	PALMER2C
	PALMER3C	PALMER4C	PALMER5A
	PALMER7E	PALMER2E	VIBRBEAM
	NONMSQRT	PALMER5B	INDEF:10
	OSCIGRAD:10	OSCIPATH:10	PROBPENL:10
	STRATEC	SBRYBND:10	SCOSINE:10
	SCURLY10:10	SSBRYBND:10	OSBORNEB
	OSCIGRAD:15	RAYBENDL:24	RAYBENDS:24
	OSCIGRAD:25	ANTWERP	X3PK
	RAYBENDL	NONMSQRT:49	HS110:50
	INDEF:50	PROBPENL:50	SBRYBND:50
	SSBRYBND:50	RAYBENDS	DECONVU
	RAYBENDL:66	RAYBENDS:66	HYDC20LS
	COSINE:100	CHENHARK:100	FLETCHBV3:100
	FLETCHBV:100	HS110:100	INDEF:100
	MOREBV:100	NONMSQRT:100	OSCIGRAD:100
	PROBPENL:100	SBRYBND:100	SCOSINE:100
	SCURLY10:100	SPMSRTLS:100	SSBRYBND:100
	SSCOSINE:100	RAYBENDL:130	RAYBENDS:130
	QR3DLS	DRCV1LQ	DRCV2LQ
	DRCV3LQ	HS110:200	SPMSRTLS:499
	BDEXP:500	GENROSE:500	PROBPENL:500
	SBRYBND:500	SSBRYBND:500	SCOND1LS:502
	MSQRTALS:529	MSQRTBLS:529	NONMSQRT:529
	GRIDGENA	QR3DLS:610	NLMSURF:961
	LINVERSE:999	BDEXP:1000	COSINE
	CURLY10	CURLY20	CHENHARK
	FLETCHBV3:1000	FLETCHBV:1000	FLETCHCR:1000
	INDEF	NONCVXUN	PENALTY2:1000
	Continued on next page		

	POWELLBC:1000	SBRYBND	SCOSINE
	SCURLY10	SSBRYBND	SSCOSINE
	SPMSRTLS:1000	SCOND1LS:1002	BRATU1D:1003
	LMINSURF:1024	MSQRTALS:1024	MSQRTBLS:1024
	NONMSQRT:1024	RAYBENDS:1026	DRCV1LQ:1225
	DRCV2LQ:1225	DRCV3LQ:1225	GRIDGENA:1226
	LINVERSE:1999	RAYBENDL:2050	RAYBENDS:2050
	GRIDGENA:2114	EIGENALS:2550	GRIDGENA:3242
	DRCV2LQ:4489	DRCV3LQ:4489	GRIDGENA:4610
	SPMSRTLS:4999	FLETCHBV3:5000	FLETCHBV:5000
	INDEF:5000	NONCVXUN:5000	NONDIA:5000
	SBRYBND:5000	SPARSINE:5000	SSCOSINE:5000
	SCOND1LS:5002	BRATU1D:5003	NLMSURF:5625
	GRIDGENA:6218		
t	JIMACK	MSQRTALS:4900	MSQRTBLS:4900
	COSINE:10000	CURLY10:10000	CURLY20:10000
	CURLY30:10000	FLETCHBV3:10000	FLETCHBV:10000
	LMINSURF:10000	NONCVXUN:10000	NONDIA:10000
	NLMSURF:10000	SCURLY10:10000	SPARSINE:10000
	SPMSRTLS:10000	SSCOSINE:10000	DRCV2LQ:10816
	DRCV3LQ:10816	ODNAMUR	GRIDGENA:12482
	LMINSURF:15625	NLMSURF:15625	INDEFM:100000
	SSCOSINE:100000		
f	BQP1VAR	BROWNBS	HS4
	OSCIGRAD:2	SIM2BQP	HIELOW
	SPECAN:3	HS45	OSBORNEA
	SPECAN:6	SPECAN:9	CVXBQP1:10
	HARKERP2:10	SCOND1LS	PARKCH
	MANCINO:30	CVXBQP1:50	CHARDIS0
	CVXBQP1	HARKERP2	SCOND1LS:102
	GRIDGENA:170	HOLMES	CHARDIS0:200
	POWELLBC:200	CHARDIS0:400	HARKERP2:500
	PENALTY2:500	CVXBQP1:1000	HARKERP2:1000
	OSCIGRAD:1000	RAYBENDL:1026	CHENHARK:5000
	HARKERP2:5000	SCOSINE:5000	CVXBQP1:10000
	Continued on next page		

HARKERP2:10000	OSCIGRAD:10000	SCOSINE:10000
OSCIGRAD:100000	DEGDIAG:100001	DEGTRID2:100001

kind of anomalies	100 test problems unsolved by lt2 for dim $\in [1,100001]$		
n	BROWNBS KOEBHELB PALMER5A RAYBENDS FLETCHBV:100 OSCIGRAD:100 DRCV1LQ PENALTY3:200 SBRYBND:500 MSQRTBLS:529 CURLY30 NONCVXUN SCOSINE SPMSRTLS:1000 NONMSQRT:1024 DRCV1LQ:1225 LINVERSE:1999 EIGENALS:2550 DRCV3LQ:4489 SBRYBND:5000 SSCOSINE:5000	DJTL PFIT3LS ANTWERP DECONVU MOREBV:100 SSBRYBND:100 DRCV3LQ POWELLBC:200 SSBRYBND:500 LINVERSE:999 CHENHARK OSCIGRAD:1000 SCURLY10 MSQRTALS:1024 RAYBENDL:1026 DRCV2LQ:1225 RAYBENDL:2050 DRCV1LQ:4489 SPMSRTLS:4999 SCOSINE:5000 SSCOSINE:100000	JENSMP OSBORNEA PROBPENL:50 DECONVB NONMSQRT:100 RAYBENDL:130 LINVERSE:199 SPMSRTLS:499 MSQRTALS:529 CURLY20 FLETCHBV:1000 SBRYBND SSCOSINE MSQRTBLS:1024 RAYBENDS:1026 DRCV3LQ:1225 RAYBENDS:2050 DRCV2LQ:4489 NONCVXUN:5000 SPARSINE:5000
t	MSQRTALS:4900 CURLY20:10000 FLETCHBV:10000 SCOSINE:10000 SPMSRTLS:10000 DRCV2LQ:10816 OSCIGRAD:100000	MSQRTBLS:4900 CURLY30:10000 NONCVXUN:10000 SCURLY10:10000 SSCOSINE:10000 DRCV3LQ:10816 SSCOSINE:100000	CURLY10:10000 FLETCHBV3:10000 OSCIGRAD:10000 SPARSINE:10000 DRCV1LQ:10816 ODNAMUR DEGTRID:100001
	Continued on next page		

f	SIMBQP	HATFLDFL	MEYER3
	PFIT1LS	PFIT2LS	PFIT4LS
	OSCIGRAD:5	BIGGS6	HEART6LS
	PALMER6A	PALMER7A	HEART8LS
	PALMER5E	PALMER6C	PALMER6E
	PALMER7C	PALMER8C	PALMER8E
	PALMER1C	PALMER1E	PALMER2C
	PALMER3C	PALMER4C	PALMER4E
	PALMER7E	PALMER2E	PALMER3E
	VIBRBEAM	NONMSQRT	PALMER5B
	HS110	NCVXBQP3:10	OSCIGRAD:10
	OSCIPATH:10	PROBPENL:10	STRATEC
	SBRYBND:10	SCOSINE:10	SCURLY10:10
	SSBRYBND:10	SSCOSINE:10	OSBORNEB
	QUDLIN	SCOND1LS	OSCIGRAD:15
	PARKCH	TORSION3:16	TORSION4:16
	SINEALI:20	RAYBENDS:24	OSCIGRAD:25
	X3PK	WATSON:31	POWELLSG:40
	NONMSQRT:49	HS110:50	NCVXBQP3:50
	SBRYBND:50	SCOND1LS:52	RAYBENDL:66
	RAYBENDS:66	POWELLSG:80	HYDC20LS
	COSINE:100	HS110:100	NONDIA:100
	PROBPENL:100	SBRYBND:100	SCOSINE:100
	SCURLY10:100	SSCOSINE:100	TORSION5:100
	TORSION6:100	SCOND1LS:102	QUDLIN:120
	RAYBENDS:130	QR3DLS	GRIDGENA:170
	HS110:200	BDEXP:500	NONDIA:500
	NONDQUAR:500	POWELLSG:500	PENALTY2:500
	SCOND1LS:502	NONMSQRT:529	GRIDGENA
	QR3DLS:610	BDEXP:1000	COSINE
	EG2	FLETCHBV3:1000	NONDIA
	NONDQUAR:1000	PENALTY2:1000	POWELLSG:1000
	SCOND1LS:1002	GRIDGENA:1226	GRIDGENA:2114
	GRIDGENA:3242	JIMACK	GRIDGENA:4610
	FLETCHBV3:5000	FLETCHBV:5000	INDEFM:5000
	Continued on next page		

NONDIA:5000	NONDQUAR:5000	POWELLSG:5000
TQUARTIC:5000	SCOND1LS:5002	BRATU1D:5003
GRIDGENA:6218	COSINE:10000	INDEFM:10000
NONDIA:10000	NONDQUAR:10000	NCVXBQP3:10000
POWELLSG:10000	TQUARTIC:10000	GRIDGENA:12482
INDEFM:100000		

kind of anomalies	100 test problems unsolved by CGdescent for $\dim \in [1,100001]$		
n	OSCIGRAD:2 PALMER5E OSCIGRAD:10 OSCIGRAD:15 ERRINRSM:25 NONMSQRT:49 SSBRYBND:50 MOREBV:100 SCURLY10:100 SCOND1LS:102 RAYBENDS:130 SPMSRTLS:499 SCOND1LS:502 NONMSQRT:529 CURLY30 FLETCHBV:1000 SCOSINE SSCOSINE SCOND1LS:1002 NONMSQRT:1024 DRCV2LQ:1225 RAYBENDS:2050 DRCV3LQ:4489 FLETCHBV:5000	OSCIPATH:5 PALMER5A OSCIPATH:10 SINEALI:20 OSCIGRAD:25 ERRINROS:50 HYDC20LS NONMSQRT:100 SSBRYBND:100 NCB20:110 QR3DLS SBRYBND:500 MSQRTALS:529 COSINE CHENHARK POWELLBC:1000 SCURLY10 SPMSRTLS:1000 MSQRTALS:1024 RAYBENDS:1026 DRCV3LQ:1225 EIGENALS:2550 SPMSRTLS:4999 NONCVXUN:5000	PALMER7A PALMER5B OSBORNEB ERRINROS:25 MSQRTALS:49 HS110:50 FLETCHBV:100 OSCIGRAD:100 SSCOSINE:100 RAYBENDL:130 DRCV1LQ SSBRYBND:500 MSQRTBLS:529 CURLY20 FLETCHBV3:1000 SBRYBND SSBRYBND TESTQUAD MSQRTBLS:1024 DRCV1LQ:1225 RAYBENDL:2050 EIGENCLS:2652 FLETCHBV3:5000 QRTQUAD:5000
	Continued on next page		

	SBRYBND:5000	SCOSINE:5000	SPARSINE:5000
	SSCOSINE:5000	SCOND1LS:5002	
t	MSQRTALS:4900	MSQRTBLS:4900	COSINE:10000
	CURLY10:10000	CURLY20:10000	CURLY30:10000
	FLETCHBV3:10000	FLETCHBV:10000	NONCVXUN:10000
	SCOSINE:10000	SCURLY10:10000	SPARSINE:10000
	SPMSRTL:10000	SSCOSINE:10000	DRCV3LQ:10816
	JNLBRNGB:12500	SSCOSINE:100000	
f	BROWNBS	CHEBYQAD:2	PFIT1LS
	PFIT2LS	PFIT3LS	PFIT4LS
	CHEBYQAD:4	CHEBYQAD:5	OSBORNEA
	CHEBYQAD:6	PALMER1E	PALMER7E
	VIBRBEAM	CHEBYQAD	STRATEC
	SBRYBND:10	SCOSINE:10	SCURLY10:10
	SCOND1LS	PARKCH	LINVERSE
	POWELLBC:20	RAYBENDL:24	RAYBENDS:24
	NONSCOMP	ANTWERP	X3PK
	WATSON:31	RAYBENDL	PROBPENL:50
	SBRYBND:50	SCOND1LS:52	RAYBENDS
	DECONVB	RAYBENDL:66	RAYBENDS:66
	CHEBYQAD:100	HS110:100	PROBPENL:100
	SBRYBND:100	SCOSINE:100	EXPLIN:101
	EXPLIN2:101	EXPLIN	EXPLIN2
	QRTQUAD	GRIDGENA:170	LINVERSE:199
	HS110:200	POWELLBC:200	JNLBRNGA:400
	PENALTY2:500	GRIDGENA	QR3DLS:610
	LINVERSE:999	INDEF	NONDIA
	PENALTY2:1000	BRATU1D:1003	RAYBENDL:1026
	EXPQUAD:1200	EXPLIN:1200	EXPLIN2:1200
	QRTQUAD:1200	GRIDGENA:1226	LINVERSE:1999
	BQPGAUSS	GRIDGENA:2114	JNLBRNGB:2300
	OBSTCLBL:3200	OBSTCLBM:3200	OBSTCLBU:3200
	GRIDGENA:3242	JIMACK	GRIDGENA:4610
	NONDIA:5000	BRATU1D:5003	TORSIONC:5476
	TORSIOND:5476	GRIDGENA:6218	JNLBRNGA:7500
	Continued on next page		

OBSTCLBL:7500	OBSTCLBM:7500	OBSTCLBU:7500
NOBNDTOR:10000	NONSCOMP:10000	NCVXBQP2:10000
OBSTCLAE:10000	OBSTCLAL:10000	TORSION3:10000
TORSION4:10000	ODNAMUR	GRIDGENA:12482
JNLBRNG1:12500	OBSTCLBL:12500	OBSTCLBM:12500
OBSTCLBU:12500	TORSION3:14884	TORSION4:14884
DEGTRID:100001		

kind of anomalies	100 test problems unsolved by lt7 for dim $\in [1,100001]$		
n	DJTL	JENSMP	KOEBHELB
	PFIT1LS	PFIT2LS	PFIT4LS
	OSCIPATH:5	OSBORNEA	PALMER7A
	PALMER6E	PALMER7C	PALMER8C
	PALMER1C	PALMER1E	PALMER2C
	PALMER3C	PALMER4C	PALMER4E
	PALMER5A	PALMER7E	PALMER2E
	PALMER3E	VIBRBEAM	NONMSQRT
	PALMER5B	OSCIGRAD:10	OSCIPATH:10
	PROBPENL:10	SCOSINE:10	SSCOSINE:10
	OSBORNEB	SCOND1LS	OSCIGRAD:15
	SINEALI:20	OSCIGRAD:25	X3PK
	WATSON:31	NONMSQRT:49	SBRYBND:50
	SSBRYBND:50	RAYBENDS	DECONVB
	HADAMALS:64	RAYBENDL:66	RAYBENDS:66
	HYDC20LS	BDEXP	COSINE:100
	FLETCHBV:100	MOREBV:100	OSCIGRAD:100
	SBRYBND:100	SCOSINE:100	SCURLY10:100
	SPMSRTLS:100	SSBRYBND:100	SSCOSINE:100
	RAYBENDL:130	RAYBENDS:130	QR3DLS
	DRCV1LQ	HADAMALS:196	LINVERSE:199
	NOBNDTOR:484	SPMSRTLS:499	SBRYBND:500
	SSBRYBND:500	SCOND1LS:502	MSQRTALS:529
	Continued on next page		

	MSQRTBLS:529	NONMSQRT:529	QR3DLS:610
	LINVERSE:999	COSINE	CURLY20
	CURLY30	CHENHARK	FLETCHBV3:1000
	FLETCHBV:1000	NONCVXUN	OSCIGRAD:1000
	SBRYBND	SCOSINE	SCURLY10
	SSCOSINE	SPMSRTLS:1000	MSQRTALS:1024
	MSQRTBLS:1024	NONMSQRT:1024	RAYBENDL:1026
	RAYBENDS:1026	DRCV1LQ:1225	DRCV2LQ:1225
	DRCV3LQ:1225	RAYBENDL:2050	RAYBENDS:2050
	OBSTCLBL:2300	OBSTCLBM:2300	OBSTCLBU:2300
	EIGENALS:2550	DRCV1LQ:4489	DRCV2LQ:4489
	DRCV3LQ:4489	SPMSRTLS:4999	FLETCHBV3:5000
	FLETCHBV:5000	NONCVXUN:5000	SBRYBND:5000
	SCOSINE:5000	SPARSINE:5000	SSCOSINE:5000
	CLPLATEC:5041		
t	MSQRTALS:4900	MSQRTBLS:4900	CURLY10:10000
	CURLY20:10000	CURLY30:10000	FLETCHBV3:10000
	FLETCHBV:10000	NONCVXUN:10000	OSCIGRAD:10000
	SCOSINE:10000	SCURLY10:10000	SPARSINE:10000
	SPMSRTLS:10000	SSCOSINE:10000	DRCV1LQ:10816
	DRCV2LQ:10816	DRCV3LQ:10816	ODNAMUR
	OSCIGRAD:100000	SSCOSINE:100000	DEGTRID:100001
f	BROWNBS	OSCIGRAD:2	BARD
	MEYER3	PFIT3LS	CHEBYQAD:7
	PALMER1D	PALMER5E	PALMER6C
	CHEBYQAD	HS110	STRATEC
	SBRYBND:10	SCURLY10:10	SSBRYBND:10
	QUDLIN	TORSION3:16	TORSION4:16
	CHEBYQAD:20	POWELLBC:20	ANTWERP
	BQPGABIM	BQPGASIM	HS110:50
	NCVXBQP3:50	NCVXBQP2:50	PROBPENL:50
	SCOND1LS:52	HS110:100	NONMSQRT:100
	PROBPENL:100	SROSENBR:100	TORSIONA:100
	TORSIONB:100	SCOND1LS:102	QUDLIN:120
	GRIDGENA:170	HS110:200	PENALTY3:200
	Continued on next page		

BDEXP:500	PENALTY2:500	GRIDGENA
BDEXP:1000	INDEF	NCVXBQP3
OBSTCLBL	OBSTCLBM	OBSTCLBU
PENALTY2:1000	TQUARTIC:1000	SCOND1LS:1002
BRATU1D:1003	QUDLIN:1200	GRIDGENA:1226
LINVERSE:1999	GRIDGENA:2114	GRIDGENA:3242
JIMACK	GRIDGENA:4610	NONDIA:5000
QRTQUAD:5000	SCOND1LS:5002	BRATU1D:5003
GRIDGENA:6218	COSINE:10000	NCVXBQP3:10000
TQUARTIC:10000	GRIDGENA:12482	

kind of anomalies	100 test problems unsolved by lt1 for dim $\in [1,100001]$		
n	BROWNBS KOEBHELB PFIT3LS ANTWERP RAYBENDS FLETCHBV:100 PROBPENL:100 RAYBENDS:130 SBRYBND:500 MSQRTBLS:529 NCVXBQP3 SCOSINE SPMSRTLS:1000 NONMSQRT:1024 DRCV1LQ:1225 RAYBENDL:2050 DRCV2LQ:4489 NONCVXUN:5000 SSCOSINE:5000	DJTL PFIT1LS OSBORNEA PROBPENL:50 DECONVB MOREBV:100 SPMSRTLS:100 DRCV1LQ SSBRYBND:500 CHENHARK OSCIGRAD:1000 SCURLY10 MSQRTALS:1024 RAYBENDL:1026 DRCV2LQ:1225 RAYBENDS:2050 DRCV3LQ:4489 SBRYBND:5000 CLPLATEC:5041	JENSMP PFIT2LS PALMER5A SSBRYBND:50 RAYBENDS:66 OSCIGRAD:100 SSBRYBND:100 SPMSRTLS:499 MSQRTALS:529 NONCVXUN SBRYBND SSCOSINE MSQRTBLS:1024 RAYBENDS:1026 DRCV3LQ:1225 DRCV1LQ:4489 SPMSRTLS:4999 SPARSINE:5000
t	MSQRTALS:4900	MSQRTBLS:4900	SCOSINE:5000
	Continued on next page		

	CURLY10:10000	CURLY20:10000	CURLY30:10000
	FLETGBV3:10000	FLETCHBV:10000	NONCVXUN:10000
	OSCIGRAD:10000	SCOSINE:10000	SCURLY10:10000
	SPARSINE:10000	SPMSRTLS:10000	SSCOSINE:10000
	DRCV1LQ:10816	DRCV2LQ:10816	DRCV3LQ:10816
	OSCIGRAD:100000	SSCOSINE:100000	DEGTRID:100001
f	BARD	MEYER3	PFIT4LS
	OSCIGRAD:5	OSCIPATH:5	BIGGS6
	HEART6LS	PALMER6A	PALMER7A
	PALMER1D	PALMER5E	PALMER6C
	PALMER6E	PALMER7C	PALMER8C
	PALMER8E	PALMER1C	PALMER1E
	PALMER2C	PALMER3C	PALMER4C
	PALMER4E	PALMER7E	PALMER2E
	PALMER3E	VIBRBEAM	NONMSQRT
	PALMER5B	COSINE:10	HS110
	NCVXBQP3:10	OSCIGRAD:10	OSCIPATH:10
	PENALTY2:10	SINEALI	STRATEC
	SBRYBND:10	SCOSINE:10	SCURLY10:10
	SSBRYBND:10	SSCOSINE:10	OSBORNEB
	QUDLIN	SCOND1LS	OSCIGRAD:15
	PARKCH	TORSION111:16	TORSION1:16
	TORSION2:16	SINEALI:20	RAYBENDS:24
	OSCIGRAD:25	X3PK	WATSON:31
	NONMSQRT:49	HS110:50	NCVXBQP3:50
	SBRYBND:50	SCOND1LS:52	DECONVU
	RAYBENDL:66	HYDC20LS	BDEXP
	COSINE:100	EXTROSNB:100	HS110:100
	NONDQUAR	NONMSQRT:100	PENALTY3:100
	POWELLSG:100	SBRYBND:100	SCOSINE:100
	SCURLY10:100	SSCOSINE:100	SCOND1LS:102
	QUDLIN:120	RAYBENDL:130	QR3DLS
	GRIDGENA:170	LINVERSE:199	HS110:200
	PENALTY3:200	BDEXP:500	NONDIA:500
	NONDQUAR:500	POWELLSG:500	PENALTY2:500
	Continued on next page		

SINQUAD:500	SCOND1LS:502	NONMSQRT:529
GRIDGENA	QR3DLS:610	LINVERSE:999
BDEXP:1000	COSINE	CURLY20
CURLY30	EG2	EXTROSNB:1000
FLETGBV3:1000	FLETGBV:1000	NONDIA
NONDQUAR:1000	PENALTY2:1000	SCOND1LS:1002
BRATU1D:1003	QUDLIN:1200	GRIDGENA:1226
LINVERSE:1999	MODBEALE:2000	GRIDGENA:2114
EIGENALS:2550	GRIDGENA:3242	JIMACK
GRIDGENA:4610	FLETGBV3:5000	FLETGBV:5000
INDEF:5000	NONDIA:5000	NONDQUAR:5000
QRTQUAD:5000	SCOND1LS:5002	BRATU1D:5003
GRIDGENA:6218	COSINE:10000	NONDIA:10000
NONDQUAR:10000	NCVXBQP3:10000	POWELLSG:10000
TQUARTIC:10000	ODNAMUR	GRIDGENA:12482
INDEFM:100000		

kind of anomalies	100 test problems unsolved by SPG for $\dim \in [1,100001]$		
n	BROWNBS	OSCIGRAD:2	PFIT2LS
	PFIT3LS	PFIT4LS	YFITU
	HIMMELBF	PENALTY2	EXTROSNB
	OSCIGRAD:5	OSCIPATH:5	OSBORNEA
	BIGGS6	PALMER7A	PALMER8A
	PALMER1D	PALMER5E	PALMER6C
	PALMER6E	PALMER7C	PALMER8C
	PALMER8E	PALMER1C	PALMER1E
	PALMER2C	PALMER3C	PALMER4C
	PALMER4E	PALMER7E	PALMER2E
	PALMER3E	VIBRBEAM	NONMSQRT
	PALMER5B	BRYBND	ERRINROS:10
	ERRINRSM:10	EXTROSNB:10	OSCIGRAD:10
	OSCIPATH:10	PROBPENL:10	RAYBENDS:10
	Continued on next page		

SBRYBND:10	SCOSINE:10	SCURLY10:10
SSBRYBND:10	SSCOSINE:10	OSBORNEB
SCOND1LS	WATSON:12	OSCIGRAD:15
RAYBENDL:24	RAYBENDS:24	ERRINROS:25
ERRINRSM:25	NONSCOMP	OSCIGRAD:25
ANTWERP	X3PK	WATSON:31
QR3DLS:40	RAYBENDL	NONMSQRT:49
ERRINROS:50	ERRINRSM:50	HS110:50
MOREBV:50	NCB20B:50	PENALTY3
PROBPENL:50	SBRYBND:50	SSBRYBND:50
SCOND1LS:52	RAYBENDS	DECONVU
RAYBENDL:66	RAYBENDS:66	BRATU1D
HYDC20LS	CURLY10:100	CURLY20:100
CURLY30:100	CHENHARK:100	EXTROSNB:100
FLETGBV3:100	FLETCHBV:100	FLETCHCR:100
HS110:100	MOREBV:100	NCB20B:100
NONCVXU2:100	NONMSQRT:100	NONSCOMP:100
OSCIGRAD:100	PENALTY3:100	SBRYBND:100
SCOSINE:100	SCURLY10:100	SPMSRTLS:100
SSBRYBND:100	SSCOSINE:100	SCOND1LS:102
BRATU1D:103	EIGENALS	EIGENBLS
NCB20:110	RAYBENDL:130	RAYBENDS:130
QR3DLS	GRIDGENA:170	DRCV1LQ
DRCV2LQ	DRCV3LQ	LINVERSE:199
BROWNAL:200	HS110:200	PENALTY2:200
POWELLBC:200	DIXMAANI:300	DIXMAANN:300
EIGENCLS	SPMSRTLS:499	GENROSE:500
PENALTY2:500	SBRYBND:500	SSBRYBND:500
SCOND1LS:502	MSQRTALS:529	MSQRTBLS:529
NONMSQRT:529	GRIDGENA	QR3DLS:610
NLMSURF:961	LINVERSE:999	BROWNAL:1000
BIGGSB1:1000	CURLY10	CURLY20
CURLY30	CHENHARK	DIXON3DQ:1000
EXTROSNB:1000	FLETGBV2:1000	FLETGBV3:1000
FLETCHBV:1000	FLETCHCR:1000	INDEFM
Continued on next page		

	NONCVXU2	NONCVXUN	OSCIGRAD:1000
	PENALTY2:1000	POWELLBC:1000	SBRYBND
	SCOSINE	SCURLY10	SPARSINE
	SSBRYBND	SSCOSINE	SPMSRTLS:1000
	TESTQUAD	SCOND1LS:1002	NCB20
	MSQRTALS:1024	MSQRTBLS:1024	NONMSQRT:1024
	NLMSURF	RAYBENDL:1026	RAYBENDS:1026
	EXPQUAD:1200	QRTQUAD:1200	DRCV1LQ:1225
	DRCV2LQ:1225	DRCV3LQ:1225	GRIDGENA:1226
	LINVERSE:1999	BQPGAUSS	RAYBENDL:2050
	RAYBENDS:2050	GRIDGENA:2114	GRIDGENA:3242
	QRTQUAD:5000	TESTQUAD:5000	
t	EIGENALS:2550	EIGENBLS:2550	EIGENCLS:2652
	JIMACK	DRCV1LQ:4489	DRCV2LQ:4489
	DRCV3LQ:4489	GRIDGENA:4610	MSQRTALS:4900
	MSQRTBLS:4900	SPMSRTLS:4999	BIGGSB1:5000
	CHENHARK:5000	FLETGBV3:5000	FLETGBV:5000
	NONCVXU2:5000	NONCVXUN:5000	SBRYBND:5000
	SCOSINE:5000	SPARSINE:5000	SSBRYBND:5000
	SSCOSINE:5000	SCOND1LS:5002	NLMSURF:5625
	GRIDGENA:6218	CURLY10:10000	CURLY20:10000
	CURLY30:10000	DIXON3DQ:10000	FLETGBV2:10000
	FLETGBV3:10000	FLETGBV:10000	JNLBRNGB:10000
	LMSURF:10000	NONCVXU2:10000	NONCVXUN:10000
	NLMSURF:10000	OSCIGRAD:10000	SCOSINE:10000
	SCURLY10:10000	SINQUAD:10000	SPARSINE:10000
	SPMSRTLS:10000	SSCOSINE:10000	TRIDIA:10000
	DRCV1LQ:10816	DRCV2LQ:10816	DRCV3LQ:10816
	ODNAMUR	GRIDGENA:12482	JNLBRNGB:12500
	ODC:14544	LMSURF:15625	NLMSURF:15625
	INDEFM:100000	OSCIGRAD:100000	SSCOSINE:100000
	DEGTRID:100001		
f	BQP1VAR	HS4	SIM2BQP
	SPECAN:3	HS45	SPECAN:6
	SPECAN:9	CVXBQP1:10	HARKERP2:10
	Continued on next page		

STRATEC	PARKCH	CVXBQP1:50
INDEF:50	CVXBQP1	HARKERP2
HOLMES	HARKERP2:500	BRATU1D:503
CVXBQP1:1000	HARKERP2:1000	INDEF
BRATU1D:1003	HARKERP2:5000	INDEF:5000
BRATU1D:5003	CVXBQP1:10000	HARKERP2:10000
DEGDIAG:100001	DEGTRID2:100001	

kind of anomalies	100 test problems unsolved by lbfgsb for dim $\in [1,100001]$		
f	BQP1VAR	AKIVA	BROWNBS
	CLIFF	HS4	MARATOSB
	MEXHAT	SIM2BQP	ZANGWIL2
	GROWTHLS	HIELOW	MEYER3
	PFIT3LS	SPECAN:3	YFIT
	YFITU	BROWNDEN	CHEBYQAD:4
	PALMER1B	PALMER2B	PALMER3B
	PALMER4B	PALMER1	PALMER3
	POWELLBC:4	CHEBYQAD:5	HS45
	OSCIPATH:5	OSBORNEA	CHEBYQAD:6
	PALMER6A	PALMER7A	PALMER8A
	PALMER1A	PALMER2A	PALMER3A
	PALMER4A	SPECAN:6	CHEBYQAD:7
	PALMER1D	CHEBYQAD:8	HEART8LS
	MAXLIKA	OSLBQP	PALMER5E
	PALMER7C	PALMER1C	PALMER3C
	PALMER4C	PALMER5A	VIBRBEAM
	CHEBYQAD:9	NONMSQRT	PALMER5B
	SPECAN:9	CHEBYQAD	CVXBQP1:10
	ERRINROS:10	ERRINRSM:10	HS110
	HARKERP2:10	INDEF:10	NCVXBQP1:10
	NCVXBQP2:10	NCVXBQP3:10	OSCIGRAD:10
	OSCIPATH:10	PROBPENL:10	SINEALI
	Continued on next page		

STRATEC	SBRYBND:10	SCOSINE:10
SCURLY10:10	SSBRYBND:10	SSCOSINE:10
OSBORNEB	QUDLIN	SCOND1LS
BRATU1D:13	OSCIGRAD:15	PARKCH
TORSION3:16	TORSION4:16	TORSION5:16
TORSION6:16	TORSIONE:16	TORSIONF:16
CHEBYQAD:20	SINEALI:20	ERRINROS:25
ERRINRSM:25	OSCIGRAD:25	ANTWERP
X3PK	HADAMALS:36	NONMSQRT:49
CHEBYQAD:50	CVXBQP1:50	ERRINROS:50
ERRINRSM:50	HS110:50	INDEF:50
NONSCOMP:50	NCVXBQP1:50	NCVXBQP2:50
PENALTY3	PROBPENL:50	SBRYBND:50
SSBRYBND:50	SCOND1LS:52	RAYBENDS
RAYBENDL:66	RAYBENDS:66	BRATU1D
HYDC20LS	CHAINWOO:100	COSINE:100
CURLY10:100	CURLY20:100	CURLY30:100
CHEBYQAD:100	CVXBQP1	EXTROSNB:100
FLETCHBV:100	HADAMALS:100	HARKERP2
HS110:100	INDEFM:100	INDEF:100
MOREBV:100	NONMSQRT:100	NONSCOMP:100
NCVXBQP3:100	NCVXBQP1:100	NCVXBQP2:100
OSCIGRAD:100	PENALTY2:100	PENALTY3:100
SBRYBND:100	SCOSINE:100	SCURLY10:100
SENSORS:100	SINEALI:100	SINQUAD:100
SSBRYBND:100	SSCOSINE:100	VARDIM:100
EXPLIN2:101	SCOND1LS:102	BRATU1D:103
EXPQUAD	EXPLIN	EXPLIN2
QRTQUAD	QUDLIN:120	RAYBENDL:130
RAYBENDS:130	HADAMALS:144	QR3DLS
GRIDGENA:170	HOLMES	NCB20B:180
DRCV1LQ	DRCV3LQ	HADAMALS:196
HS110:200	PENALTY2:200	PENALTY3:200
POWELLBC:200	VARDIM:200	HADAMALS:324
HADAMALS:400	SPMSRTLS:499	BDQRTIC:500
Continued on next page		

BDEXP:500	GENROSE:500	HARKERP2:500
NCB20B:500	PENALTY2:500	SBRYBND:500
SINQUAD:500	SSBRYBND:500	SCOND1LS:502
BRATU1D:503	MSQRTALS:529	MSQRTBLS:529
NONMSQRT:529	GRIDGENA	QR3DLS:610
LINVERSE:999	BDQRTIC:1000	BOX:1000
BDEXP:1000	COSINE	CURLY10
CURLY20	CURLY30	CHENHARK
CVXBQP1:1000	DIXON3DQ:1000	EXTROSNB:1000
FLETGBV3:1000	FLETCHBV:1000	FLETCHCR:1000
FREUROTH:1000	HARKERP2:1000	INDEFM
INDEF	NONCVXU2	NONCVXUN
NCB20B:1000	NONSCOMP:1000	NCVXBQP3
NCVXBQP2	NCVXBQP1	OSCIGRAD:1000
PENALTY2:1000	POWELLBC:1000	SBRYBND
SCOSINE	SCURLY10	SPARSINE
SSBRYBND	SSCOSINE	SCHMVETT:1000
SENSORS:1000	SINEALI:1000	SINQUAD:1000
SPMSRTLS:1000	TESTQUAD	SCOND1LS:1002
BRATU1D:1003	HADAMALS:1024	MSQRTALS:1024
MSQRTBLS:1024	NONMSQRT:1024	RAYBENDL:1026
RAYBENDS:1026	EXPQUAD:1200	EXPLIN:1200
EXPLIN2:1200	QRTQUAD:1200	QUDLIN:1200
DRCV1LQ:1225	DRCV2LQ:1225	DRCV3LQ:1225
GRIDGENA:1226	LINVERSE:1999	NCB20B:2000
BQPGAUSS	RAYBENDL:2050	RAYBENDS:2050
GRIDGENA:2114	EIGENALS:2550	EIGENBLS:2550
EIGENCLS:2652	GRIDGENA:3242	JIMACK
HADAMALS:4096	DRCV1LQ:4489	DRCV2LQ:4489
DRCV3LQ:4489	GRIDGENA:4610	MSQRTALS:4900
MSQRTBLS:4900	SPMSRTLS:4999	BDQRTIC:5000
BIGGSB1:5000	CRAGGLVY:5000	CHENHARK:5000
FLETGBV2:5000	FLETGBV3:5000	FLETCHBV:5000
HARKERP2:5000	INDEFM:5000	INDEF:5000
NCB20B:5000	NONCVXU2:5000	NONCVXUN:5000
Continued on next page		

NONDIA:5000	NONSCOMP:5000	QRTQUAD:5000
QUDLIN:5000	SBRYBND:5000	SCHMVETT:5000
SCOSINE:5000	SINQUAD:5000	SPARSINE:5000
SSBRYBND:5000	SSCOSINE:5000	TESTQUAD:5000
SCOND1LS:5002	BRATU1D:5003	NCB20:5010
NLMSURF:5625	GRIDGENA:6218	BOX
COSINE:10000	CURLY10:10000	CURLY20:10000
CURLY30:10000	CVXBQP1:10000	DIXON3DQ:10000
FLETGBV2:10000	FLETGBV3:10000	FLETCHBV:10000
HARKERP2:10000	INDEFM:10000	MCCORMCK:10000
NONCVXU2:10000	NONCVXUN:10000	NONDIA:10000
NLMSURF:10000	NCVXBQP3:10000	NCVXBQP2:10000
NCVXBQP1:10000	OSCIGRAD:10000	SCHMVETT:10000
SCOSINE:10000	SCURLY10:10000	SINQUAD:10000
SPARSINE:10000	SPMSRTLS:10000	SSCOSINE:10000
DRCV1LQ:10816	DRCV2LQ:10816	DRCV3LQ:10816
ODNAMUR	GRIDGENA:12482	NLMSURF:15625
BOX:100000	INDEFM:100000	OSCIGRAD:100000
SSCOSINE:100000	DEGTRID:100001	DEGDIAG:100001
DEGTRID2:100001		

kind of anomalies	100 test problems unsolved by lt5 for dim $\in [1,100001]$		
n	JENSMP	KOEBHELB	PFIT2LS
	PFIT4LS	OSBORNEA	PALMER7A
	PALMER7C	PALMER2C	PALMER4C
	PALMER5A	VIBRBEAM	SINEALI:20
	OSCIGRAD:25	SBRYBND:50	RAYBENDS
	RAYBENDL:66	RAYBENDS:66	HYDC20LS
	COSINE:100	FLETCHBV:100	MOREBV:100
	OSCIGRAD:100	SBRYBND:100	SCOSINE:100
	SCURLY10:100	SSBRYBND:100	SSCOSINE:100
	EXPLIN2:101	RAYBENDL:130	RAYBENDS:130
	Continued on next page		

	QR3DLS LINVERSE:199 SSBRYBND:500 NONMSQRT:529 CURLY20 FLETCHBV3:1000 NCVXBQP3 SBRYBND SSCOSINE MSQRTBLS:1024 RAYBENDS:1026 DRC3V3LQ:1225 EIGENALS:2550 DRC3V3LQ:4489 SBRYBND:5000 CLPLATEC:5041	DRC3V1LQ SPMSRTLS:499 MSQRTALS:529 QR3DLS:610 CURLY30 FLETCHBV:1000 NCVXBQP2 SCOSINE SPMSRTLS:1000 NONMSQRT:1024 DRC3V1LQ:1225 RAYBENDL:2050 DRC3V1LQ:4489 SPMSRTLS:4999 SPARSINE:5000	DRC3V3LQ SBRYBND:500 MSQRTBLS:529 COSINE CHENHARK NONCVXUN OSCIGRAD:1000 SCURLY10 MSQRTALS:1024 RAYBENDL:1026 DRC3V2LQ:1225 RAYBENDS:2050 DRC3V2LQ:4489 NONCVXUN:5000 SSCOSINE:5000
t	MSQRTALS:4900 FLETCHBV:5000 CURLY10:10000 FLETCHBV3:10000 NCVXBQP3:10000 SCOSINE:10000 SPMSRTLS:10000 DRC3V2LQ:10816 SSCOSINE:100000	MSQRTBLS:4900 SCOSINE:5000 CURLY20:10000 FLETCHBV:10000 NCVXBQP2:10000 SCURLY10:10000 SSCOSINE:10000 DRC3V3LQ:10816 DEGTRID:100001	FLETCHBV3:5000 COSINE:10000 CURLY30:10000 NONCVXUN:10000 OSCIGRAD:10000 SPARSINE:10000 DRC3V1LQ:10816 OSCIGRAD:100000
f	BROWNBS PFIT1LS HADAMALS OSCIPATH:5 PALMER3A CHEBYQAD:8 PALMER6E PALMER1E PALMER7E NONMSQRT	EG1 PFIT3LS CHEBYQAD:5 CHEBYQAD:6 CHEBYQAD:7 PALMER5E PALMER8C PALMER3C PALMER2E PALMER5B	MEYER3 HATFLDB OSCIGRAD:5 HART6 PALMER1D PALMER6C PALMER1C PALMER4E PALMER3E CHEBYQAD
	Continued on next page		

EXTROSNB:10	FREUROTH:10	HS110
MODBEALE:10	MCCORMCK	OSCIGRAD:10
OSCIPATH:10	PROBPENL:10	SINEALI
STRATEC	SBRYBND:10	SCOSINE:10
SCURLY10:10	SSCOSINE:10	OSBORNEB
EXPQUAD:12	QRTQUAD:12	QUDLIN
SCOND1LS	OSCIGRAD:15	HADAMALS:16
NOBNDTOR:16	TORSIONA:16	TORSIONB:16
LINVERSE	CHEBYQAD:20	POWELLBC:20
BIGGSB1	ERRINRSM:25	NONSCOMP
ANTWERP	X3PK	WATSON:31
HADAMALS:36	NONMSQRT:49	BQPGABIM
BQPGASIM	CHEBYQAD:50	HS110:50
NCVXBQP3:50	NCVXBQP2:50	PROBPENL:50
SCOND1LS:52	DECONVB	HADAMALS:64
BDEXP	CHEBYQAD:100	HADAMALS:100
HS110:100	INDEF:100	NONMSQRT:100
NOBNDTOR:100	NONSCOMP:100	PROBPENL:100
PENTDI:100	TORSIONA:100	TORSIONB:100
TORSION111:100	TORSION1:100	TORSION2:100
TORSIONC:100	TORSIOND:100	TORSION3:100
TORSION4:100	TORSIONE:100	TORSIONF:100
EXPLIN:101	SCOND1LS:102	EXPQUAD
EXPLIN	EXPLIN2	QRTQUAD
QUDLIN:120	HADAMALS:144	GRIDGENA:170
HADAMALS:196	HS110:200	HADAMALS:256
HADAMALS:324	HADAMALS:400	OBSTCLBL:400
OBSTCLBM:400	OBSTCLBU:400	NOBNDTOR:484
TORSIONA:484	TORSIONB:484	TORSION111:484
TORSION1:484	TORSION2:484	TORSIONC:484
TORSIOND:484	TORSION3:484	TORSION4:484
TORSIONE:484	TORSIONF:484	TORSION5:484
TORSION6:484	BDEXP:500	MCCORMCK:500
NONDIA:500	PENALTY2:500	SCOND1LS:502
GRIDGENA	LINVERSE:999	BDEXP:1000
Continued on next page		

EXTROSNB:1000	INDEF	MCCORMCK:1000
OBSTCLBL	OBSTCLBM	OBSTCLBU
PENALTY2:1000	SCOND1LS:1002	BRATU1D:1003
HADAMALS:1024	NOBNDTOR:1024	TORSIONA:1024
TORSIONB:1024	TORSION111:1024	TORSION1:1024
TORSION2:1024	TORSIONC:1024	TORSIOND:1024
TORSION3:1024	TORSION4:1024	TORSIONE:1024
TORSIONF:1024	TORSION5:1024	TORSION6:1024
EXPLIN:1200	EXPLIN2:1200	QUDLIN:1200
GRIDGENA:1226	LINVERSE:1999	GRIDGENA:2114
OBSTCLBL:2300	OBSTCLBM:2300	OBSTCLBU:2300
JNLBRNGB:3200	OBSTCLBL:3200	OBSTCLBM:3200
OBSTCLBU:3200	OBSTCLAE:3200	OBSTCLAL:3200
GRIDGENA:3242	JNLBRNGB:3400	JIMACK
HADAMALS:4096	GRIDGENA:4610	NONDIA:5000
QRTQUAD:5000	QUDLIN:5000	SCOND1LS:5002
BRATU1D:5003	NOBNDTOR:5476	TORSIONA:5476
TORSIONB:5476	TORSION111:5476	TORSION1:5476
TORSION2:5476	TORSIONC:5476	TORSIOND:5476
TORSION3:5476	TORSION4:5476	TORSIONE:5476
TORSIONF:5476	TORSION5:5476	TORSION6:5476
GRIDGENA:6218	JNLBRNG1:7500	OBSTCLBL:7500
OBSTCLBM:7500	OBSTCLBU:7500	NONSCOMP:10000
OBSTCLBL:10000	OBSTCLBM:10000	OBSTCLBU:10000
SINQUAD:10000	TQUARTIC:10000	TORSION111:10000
TORSION1:10000	TORSION2:10000	TORSIONC:10000
TORSIOND:10000	TORSION3:10000	TORSION4:10000
TORSIONE:10000	TORSIONF:10000	ODNAMUR
GRIDGENA:12482	JNLBRNGB:12500	OBSTCLBL:12500
OBSTCLBM:12500	OBSTCLBU:12500	TORSION111:14884
TORSION1:14884	TORSION2:14884	TORSIONC:14884
TORSIOND:14884	TORSION3:14884	TORSION4:14884
TORSIONE:14884	TORSIONF:14884	TORSION5:14884
TORSION6:14884	BOX:100000	

kind of anomalies	100 test problems unsolved by ll3 for dim $\in [1,100001]$		
n	BROWNBS EG1 KOEHBELB PFIT2LS CHEBYQAD:4 HADAMALS BIGGS6 PALMER7A HEART8LS PALMER7E PALMER5B OSCIGRAD:10 STRATEC SCURLY10:10 SCOND1LS NOBNDTOR:16 TORSION2:16 TORSIONC:16 TORSION4:16 SINEALI:20 OSCIGRAD:25 HADAMALS:36 BQPGABIM MCCORMCK:50 SBRYBND:50 DECONVB RAYBENDS:66 BIGGSB1:100 CHENHARK:100 HADAMALS:100 MOREBV:100 NONSCOMP:100 OSCIGRAD:100 SBRYBND:100	JENSMP HATFLDFL MEYER3 PFIT3LS HIMMELBF CHEBYQAD:5 CHEBYQAD:6 CHEBYQAD:7 PALMER5E CHEBYQAD:9 CHEBYQAD OSCIPATH:10 SBRYBND:10 OSBORNEB OSCIGRAD:15 TORSION111:16 TORSIONA:16 TORSIOND:16 LINVERSE BIGGSB1 ANTWERP RAYBENDL BQPGASIM NONSCOMP:50 SCOND1LS:52 HADAMALS:64 HYDC20LS COSINE:100 EXTROSNB:100 INDEFM:100 NONMSQRT:100 NCVXBQP3:100 PROBPENL:100 SCOSINE:100	BARD HS25 PFIT1LS PFIT4LS HATFLDB OSBORNEA HART6 CHEBYQAD:8 PALMER5A NONMSQRT MCCORMCK PROBPENL:10 SCOSINE:10 QRTQUAD:12 HADAMALS:16 TORSION1:16 TORSIONB:16 TORSION3:16 POWELLBC:20 NONSCOMP X3PK NONMSQRT:49 CHEBYQAD:50 PROBPENL:50 RAYBENDS RAYBENDL:66 BDEXP CHEBYQAD:100 FLETCHBV:100 INDEF:100 NOBNDTOR:100 NCVXBQP2:100 PENTDI:100 SCURLY10:100
	Continued on next page		

SPMSRTLS:100	SSBRYBND:100	SSCOSINE:100
TORSIONA:100	TORSIONB:100	TORSION111:100
TORSION1:100	TORSION2:100	TORSIONC:100
TORSIOND:100	TORSION3:100	TORSION4:100
TORSIONE:100	TORSIONF:100	TORSION5:100
TORSION6:100	EXPLIN:101	SCOND1LS:102
EXPQUAD	EXPLIN	EXPLIN2
QRTQUAD	QUDLIN:120	RAYBENDL:130
RAYBENDS:130	HADAMALS:144	QR3DLS
DRCV1LQ	DRCV3LQ	HADAMALS:196
LINVERSE:199	PENALTY3:200	POWELLBC:200
HADAMALS:256	HADAMALS:324	HADAMALS:400
JNLBRNGA:400	OBSTCLBL:400	OBSTCLBM:400
OBSTCLBU:400	NOBNDTOR:484	TORSIONA:484
TORSIONB:484	TORSION111:484	TORSION1:484
TORSION2:484	TORSIONC:484	TORSIOND:484
TORSION3:484	TORSION4:484	TORSIONE:484
TORSIONF:484	TORSION5:484	TORSION6:484
SPMSRTLS:499	NONSCOMP:500	SBRYBND:500
SCOND1LS:502	MSQRTALS:529	MSQRTBLS:529
NONMSQRT:529	QR3DLS:610	LINVERSE:999
BIGGSB1:1000	COSINE	CURLY20
CURLY30	CHENHARK	FLETCHBV3:1000
FLETCHBV:1000	INDEF	NONCVXUN
NONSCOMP:1000	NCVXBQP3	NCVXBQP2
OSCIGRAD:1000	OBSTCLBL	OBSTCLBM
OBSTCLBU	POWELLBC:1000	SBRYBND
SCOSINE	SCURLY10	SSCOSINE
SPMSRTLS:1000	SCOND1LS:1002	HADAMALS:1024
MSQRTALS:1024	MSQRTBLS:1024	NONMSQRT:1024
NOBNDTOR:1024	TORSIONA:1024	TORSIONB:1024
TORSION111:1024	TORSION1:1024	TORSION2:1024
TORSIONC:1024	TORSIOND:1024	TORSION3:1024
TORSION4:1024	TORSIONE:1024	TORSIONF:1024
TORSION5:1024	TORSION6:1024	RAYBENDL:1026
Continued on next page		

	RAYBENDS:1026	EXPLIN:1200	EXPLIN2:1200
	QRTQUAD:1200	QUDLIN:1200	DRCV1LQ:1225
	DRCV2LQ:1225	DRCV3LQ:1225	LINVERSE:1999
	BQPGAUSS	RAYBENDL:2050	RAYBENDS:2050
	OBSTCLBL:2300	OBSTCLBM:2300	OBSTCLBU:2300
	EIGENALS:2550	OBSTCLBL:3200	OBSTCLBM:3200
	OBSTCLBU:3200	JNLBRNGB:3400	DRCV1LQ:4489
	DRCV2LQ:4489	DRCV3LQ:4489	SPMSRTLS:4999
	BIGGSB1:5000	FLETCHBV3:5000	FLETCHBV:5000
	INDEF:5000	NONCVXUN:5000	QRTQUAD:5000
	QUDLIN:5000	SBRYBND:5000	SPARSINE:5000
	SSCOSINE:5000	SCOND1LS:5002	
t	MSQRTALS:4900	MSQRTBLS:4900	INDEFM:5000
	MINSURFO:5306	NOBNDTOR:5476	TORSIONA:5476
	TORSIONB:5476	TORSION111:5476	TORSION1:5476
	TORSION2:5476	TORSIONC:5476	TORSIOND:5476
	TORSION3:5476	TORSION4:5476	TORSIONE:5476
	TORSIONF:5476	TORSION5:5476	TORSION6:5476
	JNLBRNG1:7500	JNLBRNGB:7500	OBSTCLBL:7500
	OBSTCLBM:7500	OBSTCLBU:7500	OBSTCLAE
	OBSTCLAL:7500	COSINE:10000	CURLY10:10000
	CURLY20:10000	CURLY30:10000	FLETCHBV3:10000
	FLETCHBV:10000	JNLBRNG1:10000	JNLBRNGA:10000
	JNLBRNGB:10000	NONCVXUN:10000	NOBNDTOR:10000
	NONSCOMP:10000	NCVXBQP3:10000	NCVXBQP2:10000
	OSCIGRAD:10000	OBSTCLBL:10000	OBSTCLBM:10000
	OBSTCLBU:10000	OBSTCLAE:10000	OBSTCLAL:10000
	SCOSINE:10000	SCURLY10:10000	SPARSINE:10000
	SPMSRTLS:10000	SSCOSINE:10000	TORSIONA:10000
	TORSIONB:10000	TORSION111:10000	TORSION1:10000
	TORSION2:10000	TORSIONC:10000	TORSIOND:10000
	TORSION3:10000	TORSION4:10000	TORSIONE:10000
	TORSIONF:10000	TORSION5:10000	TORSION6:10000
	DRCV1LQ:10816	DRCV2LQ:10816	DRCV3LQ:10816
	ODNAMUR	JNLBRNG1:12500	JNLBRNG2:12500
	Continued on next page		

	JNLBRNGB:12500	OBSTCLBL:12500	OBSTCLBM:12500
	OBSTCLBU:12500	OBSTCLAE:12500	OBSTCLAL:12500
	NOBNDTOR:14884	TORSIONA:14884	TORSIONB:14884
	TORSION111:14884	TORSION1:14884	TORSION2:14884
	TORSIONC:14884	TORSIOND:14884	TORSION3:14884
	TORSION4:14884	TORSIONE:14884	TORSIONF:14884
	TORSION5:14884	TORSION6:14884	OSCIGRAD:100000
	SSCOSINE:100000	DEGTRID:100001	
f	HS3MOD	SIMBQP	S368:8
	VIBRBEAM	HS110	NCVXBQP3:10
	QUDLIN	HS110:50	NCVXBQP3:50
	NCVXBQP2:50	HS110:100	GRIDGENA:170
	HS110:200	BDEXP:500	PENALTY2:500
	GRIDGENA	BDEXP:1000	PENALTY2:1000
	BRATU1D:1003	GRIDGENA:1226	GRIDGENA:2114
	GRIDGENA:3242	JIMACK	GRIDGENA:4610
	SCOSINE:5000	BRATU1D:5003	GRIDGENA:6218
	GRIDGENA:12482		

kind of anomalies	100 test problems unsolved by ll2 for dim $\in [1,100001]$		
n	PALMER7A	PALMER5E	OSCIGRAD:10
	OSCIPATH:10	OSCIGRAD:15	OSCIGRAD:25
	NONMSQRT:49	SBRYBND:50	RAYBENDS
	RAYBENDS:66	HYDC20LS	EXTROSNB:100
	MOREBV:100	OSCIGRAD:100	SBRYBND:100
	SCOSINE:100	SCURLY10:100	SPMSRTL:100
	SSBRYBND:100	SSCOSINE:100	QR3DLS
	DRCV1LQ	SPMSRTL:499	SBRYBND:500
	SSBRYBND:500	MSQRTALS:529	MSQRTBLS:529
	NONMSQRT:529	QR3DLS:610	EXTROSNB:1000
	NONCVXUN	OSCIGRAD:1000	SBRYBND
	SCOSINE	SCURLY10	SSCOSINE
	Continued on next page		

	SPMSRTLS:1000	MSQRTALS:1024	MSQRTBLS:1024
	RAYBENDL:1026	RAYBENDS:1026	DRCV1LQ:1225
	DRCV2LQ:1225	DRCV3LQ:1225	RAYBENDL:2050
	RAYBENDS:2050	EIGENALS:2550	DRCV1LQ:4489
	DRCV2LQ:4489	DRCV3LQ:4489	SPMSRTLS:4999
	NONCVXUN:5000	SBRYBND:5000	SCOSINE:5000
	SPARSINE:5000		
t	MSQRTALS:4900	MSQRTBLS:4900	CURLY10:10000
	CURLY20:10000	CURLY30:10000	NONCVXUN:10000
	SCOSINE:10000	SCURLY10:10000	SPARSINE:10000
	SPMSRTLS:10000	DRCV1LQ:10816	DRCV2LQ:10816
	DRCV3LQ:10816	OSCIGRAD:100000	
f	BROWNBS	DJTL	HS3MOD
	SIMBQP	EG1	HATFLDFL
	HS25	KOEBHELB	MEYER3
	PFIT1LS	PFIT2LS	PFIT3LS
	PFIT4LS	CHEBYQAD:4	HATFLDB
	HADAMALS	PALMER1B	PALMER4
	CHEBYQAD:5	OSBORNEA	CHEBYQAD:6
	HART6	CHEBYQAD:7	PALMER1D
	CHEBYQAD:8	HEART8LS	PALMER6C
	PALMER7C	PALMER1C	PALMER1E
	PALMER5A	PALMER7E	S368:8
	VIBRBEAM	CHEBYQAD:9	NONMSQRT
	PALMER5B	CHEBYQAD	HS110
	MCCORMCK	NCVXBQP3:10	PROBPENL:10
	STRATEC	SBRYBND:10	SCOSINE:10
	SCURLY10:10	OSBORNEB	EXPQUAD:12
	QRTQUAD:12	QUDLIN	SCOND1LS
	PARKCH	HADAMALS:16	NOBNDTOR:16
	TORSION111:16	TORSION1:16	TORSION2:16
	TORSIONA:16	TORSIONB:16	TORSIONC:16
	TORSIOND:16	TORSION3:16	TORSION4:16
	LINVERSE	CHEBYQAD:20	POWELLBC:20
	SINEALI:20	BIGGSB1	NONSCOMP
	Continued on next page		

ANTWERP	X3PK	HADAMALS:36
RAYBENDL	BQPGABIM	BQPGASIM
CHEBYQAD:50	ERRINRSM:50	HS110:50
INDEF:50	MCCORMCK:50	NONSCOMP:50
NCVXBQP3:50	NCVXBQP2:50	PENALTY3
PROBPENL:50	SCOND1LS:52	DECONVB
HADAMALS:64	RAYBENDL:66	BRATU1D
ARGLINC:100	BDEXP	BIGGSB1:100
COSINE:100	CURLY10:100	CURLY20:100
CURLY30:100	CHEBYQAD:100	CHENHARK:100
FLETCHBV:100	HADAMALS:100	HS110:100
INDEF:100	MCCORMCK:100	NONMSQRT:100
NOBNDTOR:100	NONSCOMP:100	NCVXBQP3:100
NCVXBQP2:100	PENALTY2:100	PENALTY3:100
PROBPENL:100	PENTDI:100	TORSIONA:100
TORSIONB:100	TORSION111:100	TORSION1:100
TORSION2:100	TORSIONC:100	TORSIOND:100
TORSION3:100	TORSION4:100	TORSIONE:100
TORSIONF:100	TORSION5:100	TORSION6:100
EXPLIN:101	EXPLIN2:101	SCOND1LS:102
BRATU1D:103	EXPQUAD	EXPLIN
EXPLIN2	QRTQUAD	QUDLIN:120
RAYBENDL:130	RAYBENDS:130	HADAMALS:144
GRIDGENA:170	HADAMALS:196	LINVERSE:199
HS110:200	PENALTY2:200	PENALTY3:200
POWELLBC:200	HADAMALS:256	HADAMALS:324
HADAMALS:400	JNLBRNGA:400	OBSTCLBL:400
OBSTCLBM:400	OBSTCLBU:400	NOBNDTOR:484
TORSIONA:484	TORSIONB:484	TORSION111:484
TORSION1:484	TORSION2:484	TORSIONC:484
TORSIOND:484	TORSION3:484	TORSION4:484
TORSIONE:484	TORSIONF:484	TORSION5:484
TORSION6:484	BDQRTIC:500	BDEXP:500
MCCORMCK:500	NCB20B:500	NONSCOMP:500
PENALTY2:500	SINQUAD:500	SCOND1LS:502
Continued on next page		

BRATU1D:503	GRIDGENA	LINVERSE:999
BDQRTIC:1000	BOX:1000	BDEXP:1000
BIGGSB1:1000	COSINE	CURLY10
CURLY20	CURLY30	CHENHARK
EG2	FLETCBV3:1000	FLETCHBV:1000
FREUROTH:1000	INDEFM	INDEF
MCCORMCK:1000	NONDIA	NCB20B:1000
NONSCOMP:1000	NCVXBQP3	NCVXBQP2
OBSTCLBL	OBSTCLBM	OBSTCLBU
OBSTCLAL	OBSTCLAE:1000	PENALTY2:1000
POWELLBC:1000	SCOND1LS:1002	BRATU1D:1003
NCB20	HADAMALS:1024	NONMSQRT:1024
NOBNDTOR:1024	TORSIONA:1024	TORSIONB:1024
TORSION111:1024	TORSION1:1024	TORSION2:1024
TORSIONC:1024	TORSIOND:1024	TORSION3:1024
TORSION4:1024	TORSIONE:1024	TORSIONF:1024
TORSION5:1024	TORSION6:1024	EXPQUAD:1200
EXPLIN:1200	EXPLIN2:1200	QRTQUAD:1200
QUDLIN:1200	GRIDGENA:1226	LINVERSE:1999
NCB20B:2000	BQPGAUSS	GRIDGENA:2114
JNLBRNG1:2300	OBSTCLBL:2300	OBSTCLBM:2300
OBSTCLBU:2300	JNLBRNG1:3200	OBSTCLBL:3200
OBSTCLBM:3200	OBSTCLBU:3200	OBSTCLAE:3200
OBSTCLAL:3200	GRIDGENA:3242	JNLBRNGA:3400
JIMACK	CHAINWOO:4000	HADAMALS:4096
GRIDGENA:4610	BDQRTIC:5000	BIGGSB1:5000
CRAGGLVY:5000	CHENHARK:5000	FLETCBV3:5000
FLETCHBV:5000	FREUROTH:5000	INDEFM:5000
INDEF:5000	MCCORMCK:5000	NCB20B:5000
NONCVXU2:5000	NONSCOMP:5000	QRTQUAD:5000
QUDLIN:5000	SINQUAD:5000	SSCOSINE:5000
SCOND1LS:5002	BRATU1D:5003	NCB20:5010
MINSURFO:5306	NOBNDTOR:5476	TORSIONA:5476
TORSIONB:5476	TORSION111:5476	TORSION1:5476
TORSION2:5476	TORSIONC:5476	TORSIOND:5476
Continued on next page		

TORSION3:5476	TORSION4:5476	TORSIONE:5476
TORSIONF:5476	TORSION5:5476	TORSION6:5476
GRIDGENA:6218	JNLBRNG1:7500	JNLBRNGA:7500
JNLBRNGB:7500	OBSTCLBL:7500	OBSTCLBM:7500
OBSTCLBU:7500	OBSTCLAE	OBSTCLAL:7500
BOX	COSINE:10000	FLETGBV3:10000
FLETGBV:10000	INDEFM:10000	JNLBRNG1:10000
JNLBRNGA:10000	JNLBRNGB:10000	NONCVXU2:10000
NONDIA:10000	NOBNDTOR:10000	NONSCOMP:10000
NCVXBQP3:10000	NCVXBQP2:10000	OSCIGRAD:10000
OBSTCLBL:10000	OBSTCLBM:10000	OBSTCLBU:10000
OBSTCLAE:10000	OBSTCLAL:10000	SINQUAD:10000
SSCOSINE:10000	TORSIONA:10000	TORSIONB:10000
TORSION111:10000	TORSION1:10000	TORSION2:10000
TORSIONC:10000	TORSIOND:10000	TORSION3:10000
TORSION4:10000	TORSIONE:10000	TORSIONF:10000
TORSION5:10000	TORSION6:10000	ODNAMUR
GRIDGENA:12482	JNLBRNG1:12500	JNLBRNGA:12500
JNLBRNG2:12500	JNLBRNGB:12500	OBSTCLBL:12500
OBSTCLBM:12500	OBSTCLBU:12500	OBSTCLAE:12500
OBSTCLAL:12500	NOBNDTOR:14884	TORSIONA:14884
TORSIONB:14884	TORSION111:14884	TORSION1:14884
TORSION2:14884	TORSIONC:14884	TORSIOND:14884
TORSION3:14884	TORSION4:14884	TORSIONE:14884
TORSIONF:14884	TORSION5:14884	TORSION6:14884
BOX:100000	INDEFM:100000	SSCOSINE:100000
DEGTRID:100001		

kind of anomalies	100 test problems unsolved by ll1 for dim $\in [1,100001]$		
n	PALMER7A	PALMER5E	OSCIGRAD:10
	OSCIPATH:10	OSCIGRAD:15	SINEALI:20
	OSCIGRAD:25	NONMSQRT:49	SBRYBND:50
	Continued on next page		

	RAYBENDS	RAYBENDS:66	HYDC20LS
	EXTROSNB:100	MOREBV:100	OSCIGRAD:100
	SBRYBND:100	SCOSINE:100	SCURLY10:100
	SSBRYBND:100	SSCOSINE:100	QR3DLS
	DRCV1LQ	DRCV3LQ	SPMSRTLS:499
	SBRYBND:500	SSBRYBND:500	MSQRTALS:529
	MSQRTBLS:529	NONMSQRT:529	QR3DLS:610
	EXTROSNB:1000	NONCVXUN	OSCIGRAD:1000
	SBRYBND	SCOSINE	SCURLY10
	SSBRYBND	SSCOSINE	SPMSRTLS:1000
	MSQRTALS:1024	MSQRTBLS:1024	RAYBENDL:1026
	RAYBENDS:1026	DRCV1LQ:1225	DRCV2LQ:1225
	DRCV3LQ:1225	RAYBENDL:2050	RAYBENDS:2050
	EIGENALS:2550	DRCV1LQ:4489	DRCV2LQ:4489
	DRCV3LQ:4489	SPMSRTLS:4999	NONCVXUN:5000
	SBRYBND:5000	SCOSINE:5000	SPARSINE:5000
t	MSQRTALS:4900	MSQRTBLS:4900	CURLY10:10000
	CURLY20:10000	CURLY30:10000	NONCVXUN:10000
	SCOSINE:10000	SCURLY10:10000	SPARSINE:10000
	SPMSRTLS:10000	DRCV1LQ:10816	DRCV2LQ:10816
	DRCV3LQ:10816	OSCIGRAD:100000	
f	BROWNBS	DJTL	SIMBQP
	EG1	HATFLDFL	HIELOW
	HS25	KOEBHELB	MEYER3
	PFIT1LS	PFIT2LS	PFIT3LS
	PFIT4LS	CHEBYQAD:4	HATFLDB
	HADAMALS	PALMER1B	PALMER3B
	PALMER3	PALMER4	POWELLBC:4
	CHEBYQAD:5	OSBORNEA	BIGGS6
	CHEBYQAD:6	PALMER1A	PALMER2A
	PALMER3A	PALMER4A	CHEBYQAD:7
	PALMER1D	CHEBYQAD:8	HEART8LS
	OSLBQP	PALMER6C	PALMER7C
	PALMER1C	PALMER2C	PALMER5A
	PALMER7E	S368:8	VIBRBEAM
	Continued on next page		

CHEBYQAD:9	NONMSQRT	PALMER5B
CHEBYQAD	HS110	INDEF:10
MCCORMCK	NCVXBQP1:10	NCVXBQP2:10
NCVXBQP3:10	PROBPENL:10	POWELLBC:10
STRATEC	SBRYBND:10	SCOSINE:10
SCURLY10:10	OSBORNEB	EXPQUAD:12
QRTQUAD:12	QUDLIN	SCOND1LS
PARKCH	HADAMALS:16	NOBNDTOR:16
TORSION111:16	TORSION1:16	TORSION2:16
TORSIONA:16	TORSIONB:16	TORSIONC:16
TORSIOND:16	TORSION3:16	TORSION4:16
TORSION5:16	TORSION6:16	TORSIONE:16
TORSIONF:16	LINVERSE	CHEBYQAD:20
POWELLBC:20	BIGGSB1	NONSCOMP
ANTWERP	X3PK	HADAMALS:36
RAYBENDL	BQPGABIM	BQPGASIM
CHEBYQAD:50	ERRINROS:50	ERRINRSM:50
HS110:50	INDEF:50	NONSCOMP:50
NCVXBQP3:50	NCVXBQP1:50	NCVXBQP2:50
PENALTY3	PROBPENL:50	S368:50
SCOND1LS:52	DECONVB	HADAMALS:64
RAYBENDL:66	BRATU1D	ARGLINB:100
BDEXP	BIGGSB1:100	COSINE:100
CURLY10:100	CURLY20:100	CURLY30:100
CHEBYQAD:100	CHENHARK:100	FLETCHBV:100
HADAMALS:100	HS110:100	INDEFM:100
INDEF:100	MCCORMCK:100	NONMSQRT:100
NOBNDTOR:100	NONSCOMP:100	NCVXBQP3:100
NCVXBQP1:100	NCVXBQP2:100	PENALTY2:100
PENALTY3:100	PROBPENL:100	SINQUAD:100
S368:100	TORSIONA:100	TORSIONB:100
TORSION111:100	TORSION1:100	TORSION2:100
TORSIONC:100	TORSIOND:100	TORSION3:100
TORSION4:100	TORSIONE:100	TORSIONF:100
TORSION5:100	TORSION6:100	EXPLIN:101
Continued on next page		

EXPLIN2:101	SCOND1LS:102	BRATU1D:103
EXPQUAD	EXPLIN	EXPLIN2
QRTQUAD	QUDLIN:120	RAYBENDL:130
RAYBENDS:130	HADAMALS:144	GRIDGENA:170
HADAMALS:196	LINVERSE:199	HS110:200
PENALTY2:200	PENALTY3:200	POWELLBC:200
HADAMALS:256	HADAMALS:324	HADAMALS:400
JNLBRNG1:400	JNLBRNGA:400	OBSTCLBL:400
OBSTCLBM:400	OBSTCLBU:400	NOBNDTOR:484
TORSIONA:484	TORSIONB:484	TORSION111:484
TORSION1:484	TORSION2:484	TORSIONC:484
TORSIOND:484	TORSION3:484	TORSION4:484
TORSIONE:484	TORSIONF:484	TORSION5:484
TORSION6:484	BDQRTIC:500	BDEXP:500
FREUROTH:500	MCCORMCK:500	NCB20B:500
NONSCOMP:500	PENALTY2:500	SINQUAD:500
SCOND1LS:502	BRATU1D:503	GRIDGENA
LINVERSE:999	BDQRTIC:1000	BOX:1000
BDEXP:1000	BIGGSB1:1000	COSINE
CURLY10	CURLY20	CURLY30
CHENHARK	EG2	FLETCHBV3:1000
FLETCHBV:1000	INDEFM	INDEF
JNLBRNG1:1000	NONDIA	NCB20B:1000
NONSCOMP:1000	NCVXBQP3	NCVXBQP2
NCVXBQP1	OBSTCLBL	OBSTCLBM
OBSTCLBU	OBSTCLAL	OBSTCLAE:1000
PENALTY2:1000	POWELLBC:1000	SINQUAD:1000
SCOND1LS:1002	BRATU1D:1003	NCB20
HADAMALS:1024	NONMSQRT:1024	NOBNDTOR:1024
TORSIONA:1024	TORSIONB:1024	TORSION111:1024
TORSION1:1024	TORSION2:1024	TORSIONC:1024
TORSIOND:1024	TORSION3:1024	TORSION4:1024
TORSIONE:1024	TORSIONF:1024	TORSION5:1024
TORSION6:1024	EXPQUAD:1200	EXPLIN:1200
EXPLIN2:1200	QRTQUAD:1200	QUDLIN:1200
Continued on next page		

GRIDGENA:1226	LINVERSE:1999	NCB20B:2000
BQPGAUSS	GRIDGENA:2114	JNLBRNG1:2300
OBSTCLBL:2300	OBSTCLBM:2300	OBSTCLBU:2300
JNLBRNGA:3200	OBSTCLBL:3200	OBSTCLBM:3200
OBSTCLBU:3200	OBSTCLAE:3200	OBSTCLAL:3200
GRIDGENA:3242	JNLBRNG1:3400	HADAMALS:4096
GRIDGENA:4610	BDQRTIC:5000	BIGGSB1:5000
CRAGGLVY:5000	CHENHARK:5000	ENGVAL1:5000
FLETGBV3:5000	FLETCHBV:5000	INDEFM:5000
INDEF:5000	MCCORMCK:5000	NCB20B:5000
NONCVXU2:5000	NONSCOMP:5000	QRTQUAD:5000
QUIDLIN:5000	SINQUAD:5000	SSCOSINE:5000
SCOND1LS:5002	BRATU1D:5003	NCB20:5010
MINSURFO:5306	NOBNDTOR:5476	TORSIONA:5476
TORSIONB:5476	TORSION111:5476	TORSION1:5476
TORSION2:5476	TORSIONC:5476	TORSIOND:5476
TORSION3:5476	TORSION4:5476	TORSIONE:5476
TORSIONF:5476	TORSION5:5476	TORSION6:5476
GRIDGENA:6218	JNLBRNG1:7500	JNLBRNGA:7500
JNLBRNG2:7500	JNLBRNGB:7500	OBSTCLBL:7500
OBSTCLBM:7500	OBSTCLBU:7500	OBSTCLAE
OBSTCLAL:7500	BOX	COSINE:10000
FLETBV3M:10000	FLETGBV3:10000	FLETCHBV:10000
INDEFM:10000	JNLBRNG1:10000	JNLBRNGA:10000
JNLBRNG2:10000	JNLBRNGB:10000	MCCORMCK:10000
NONCVXU2:10000	NONDIA:10000	NOBNDTOR:10000
NONSCOMP:10000	NCVXBQP3:10000	NCVXBQP2:10000
NCVXBQP1:10000	OSCIGRAD:10000	OBSTCLBL:10000
OBSTCLBM:10000	OBSTCLBU:10000	OBSTCLAE:10000
OBSTCLAL:10000	SINQUAD:10000	SSCOSINE:10000
TORSIONA:10000	TORSIONB:10000	TORSION111:10000
TORSION1:10000	TORSION2:10000	TORSIONC:10000
TORSIOND:10000	TORSION3:10000	TORSION4:10000
TORSIONE:10000	TORSIONF:10000	TORSION5:10000
TORSION6:10000	ODNAMUR	GRIDGENA:12482
Continued on next page		

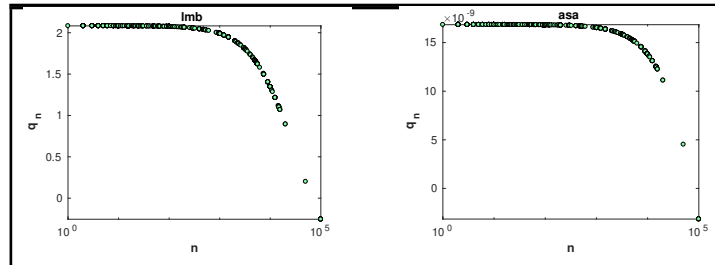
JNLBRNG1:12500	JNLBRNGA:12500	JNLBRNG2:12500
JNLBRNGB:12500	OBSTCLBL:12500	OBSTCLBM:12500
OBSTCLBU:12500	OBSTCLAE:12500	OBSTCLAL:12500
NOBNDTOR:14884	TORSIONA:14884	TORSIONB:14884
TORSION111:14884	TORSION1:14884	TORSION2:14884
TORSIONC:14884	TORSIOND:14884	TORSION3:14884
TORSION4:14884	TORSIONE:14884	TORSIONF:14884
TORSION5:14884	TORSION6:14884	BOX:100000
INDEFM:100000	SSCOSINE:100000	DEGTRID:100001

3.5 Timing analysis

$x_i \geq 0$, for $i = 1, 2, 3, 4$, are obtained by at least squares fit of

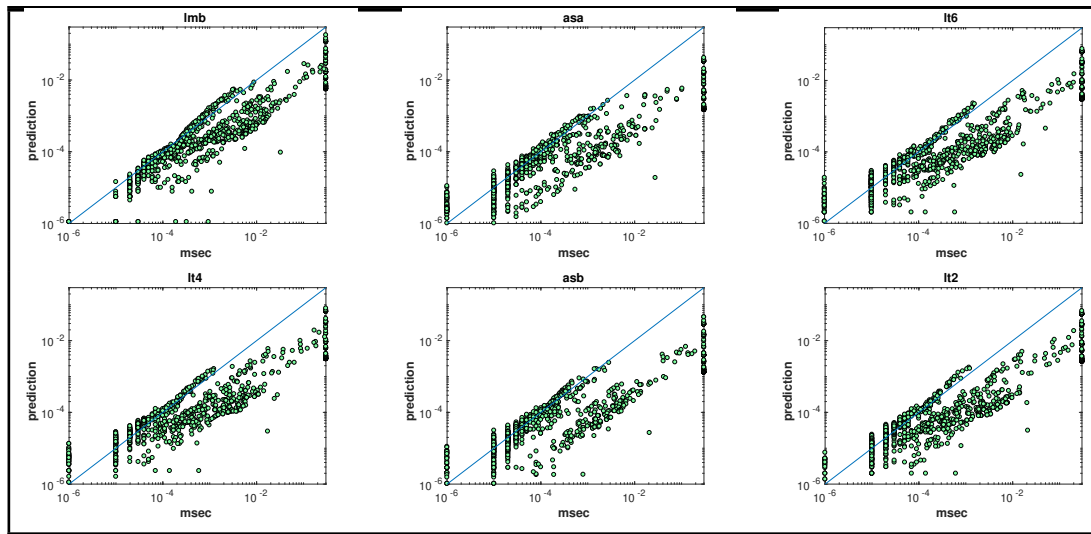
$$msec = (x_1 + x_2 * dim) * nf + (x_3 + x_4 * dim) * ng.$$

Comparison of $q_n := \frac{x_3 + dim * x_4}{x_1 + dim * x_2}$ versus dimension:



solver	x_1	x_2	x_3	x_4
lmb	1.113e-06	0	0	0
asa	7.1813e-08	2.2516e-12	2.2138e-07	0
lt6	2.7614e-07	0	3.142e-07	0
lt4	5.0217e-07	0	1.1292e-07	0
asb	1.2889e-07	7.7857e-13	1.2889e-07	7.7857e-13
lt2	4.2364e-07	0	9.5755e-08	0

Comparison of predicted time versus actual time used:



3.6 nf2g efficiency for accuracy 1e-06

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
BQP1VAR	1	1	3	100	100	100	100	100	100
AKIVA	2	—	64	81	72	91	100	—	84
BEALE	2	—	45	73	88	92	92	68	98
BRKMCC	2	—	24	100	89	71	71	57	71
CAMEL6	2	—	25	44	66	100	100	40	100
CLIFF	2	—	69	40	39	95	100	22	78
CUBE	2	—	63	42	42	55	55	100	53
CHEBYQAD:2	2	—	38	45	84	100	100	41	93
DENSCHNA	2	—	28	76	90	100	100	47	100
DENSCHNB	2	—	25	76	64	89	89	49	89
DENSCHNC	2	—	40	74	85	100	100	49	100
DENSCHNF	2	—	36	77	68	100	90	38	90
DJTL	2	—	201	63	16	—	—	4	—
ENGVAL1	2	—	24	65	80	96	96	38	96
EXPFIT	2	—	50	77	74	94	100	31	100
FREUROTH	2	—	43	55	100	78	78	55	67
HUMPS	2	—	107	48	35	79	91	21	76
HAIRY	2	—	47	40	48	81	76	28	100
HIMMELBB	2	—	21	47	55	95	95	33	95
HIMMELBG	2	—	32	86	91	84	91	44	84
HIMMELBH	2	—	21	72	68	95	95	41	95
HS1	2	—	63	64	53	61	66	100	61
HS5	2	—	21	40	72	81	81	47	81
HILBERTA:2	2	—	3	100	27	11	11	25	11
HIMMELP1	2	1	19	76	79	86	86	35	86
HS2	2	1	21	60	66	60	60	6	60
HS3MOD	2	1	4	22	100	25	25	12	25
HS3	2	1	4	25	100	40	40	44	40
HS4	2	2	3	100	100	100	100	100	100
JENSMP	2	—	6	2	4	—	—	4	—
LOGHAIRY	2	—	13	13	10	16	21	3	22

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
LOGROS	2	—	16	4	7	9	10	7	9
MARATOSB	2	—	528	13	7	17	16	100	16
MEXHAT	2	—	321	81	52	97	100	85	96
MODBEALE	2	—	45	73	88	92	92	68	98
MDHOLE	2	1	7	78	78	70	70	78	70
OSCIGRAD:2	2	—	4809	89	—	89	95	—	99
OSCIPATH:2	2	—	63	25	19	31	32	100	30
ROSENBR	2	—	63	64	50	61	66	100	61
S308	2	—	25	76	71	89	89	38	89
SINEVAL	2	—	47	96	100	96	96	98	96
SISSER	2	—	35	43	100	67	67	28	67
SNAIL	2	—	19	58	70	76	76	37	76
SENSORS:2	2	—	27	82	87	71	69	31	69
SIMBQP	2	1	4	44	100	40	40	44	40
SIM2BQP	2	2	3	100	100	100	100	100	100
ZANGWIL2	2	—	11	85	100	50	50	37	50
BARD	3	—	174	63	100	72	62	—	52
BOX3	3	—	23	68	100	82	82	38	82
BOX2	3	1	107	88	95	42	35	70	80
DENSCHND	3	—	84	93	90	100	93	8	75
DENSCHNE	3	—	22	42	81	79	79	41	79
ENGVAL2	3	—	84	87	79	69	84	60	67
EG1	3	1	51	41	63	61	55	45	56
GROWTHLS	3	—	104	72	52	100	95	23	85
GULF	3	—	4	14	100	2	1	1	1
HATFLDD	3	—	71	54	100	56	53	54	52
HATFLDE	3	—	74	95	56	100	100	39	100
HATFLDFL	3	—	405	53	63	100	71	88	—
HELIX	3	—	43	88	100	70	70	28	70
HIELOW	3	—	74	—	85	100	93	—	67
HS25	3	—	20	100	57	5	7	14	8
KOEBHELB	3	—	6	2	3	—	—	1	—

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
MEYER3	3	—	274	6	9	—	—	—	—
PFIT1LS	3	—	52	100	—	—	—	37	—
PFIT2LS	3	—	52	100	—	—	—	34	—
PFIT3LS	3	—	52	100	—	—	—	33	—
PFIT4LS	3	—	52	100	—	—	—	33	—
SCHMVETT	3	—	18	34	33	27	27	22	26
SENSORS:3	3	—	87	71	87	90	90	21	90
SPECAN:3	3	3	3	100	100	100	100	100	100
WEEDS	3	1	19	18	8	26	26	7	26
YFIT	3	—	150	33	67	41	49	21	47
YFITU	3	—	308	69	67	85	100	43	97
ALLINITU	4	—	30	52	86	97	97	45	97
ALLINIT	4	2	41	47	80	100	100	44	100
BROWNDEN	4	—	72	90	100	85	85	62	85
CRAGGLVY	4	—	131	77	85	98	98	43	94
CHAINWOO:4	4	—	98	68	100	90	98	57	92
CHEBYQAD:4	4	—	35	54	32	73	73	32	92
HATFLDA	4	—	67	46	58	100	100	20	100
HIMMELBF	4	—	244	100	83	62	42	—	75
HS38	4	—	100	78	98	92	100	58	94
HILBERTA:4	4	—	16	100	84	22	22	20	22
HATFLDB	4	1	64	51	59	48	61	29	71
HADAMALS	4	3	32	60	86	64	62	37	86
KOWOSB	4	—	144	60	73	52	66	42	41
MSQRTALS	4	—	63	75	100	97	97	32	97
MODBEALE:4	4	—	80	100	78	78	70	68	73
PENALTY2	4	—	399	13	24	26	30	100	34
POWELLSG	4	—	115	100	96	96	71	41	91
PALMER1B	4	—	118	36	30	60	100	24	88
PALMER2B	4	—	91	21	24	41	96	21	78
PALMER3B	4	—	103	35	25	100	100	27	99
PALMER4B	4	—	108	36	35	80	96	26	84

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
PALMER5D	4	—	21	100	88	22	20	12	19
PENALTY1:4	4	—	306	45	77	78	75	100	85
PSPDOC	4	1	25	100	78	68	68	52	68
PALMER1	4	1	75	47	24	65	26	41	100
PALMER2	4	1	69	64	58	87	91	34	58
PALMER3	4	1	63	36	68	82	83	34	73
PALMER4	4	1	59	100	60	65	65	35	1
POWELLBC:4	4	4	4	50	100	100	100	11	100
SINEALI:4	4	—	115	100	36	42	49	49	46
WOODS:4	4	—	90	100	88	83	90	53	85
CHEBYQAD:5	5	2	41	33	55	67	71	28	100
EXTROSNB	5	—	301	61	79	93	96	47	89
GENHUMPS:5	5	—	236	97	70	93	77	48	87
GENROSE:5	5	—	111	54	62	81	50	39	82
HILBERTB	5	—	18	86	95	95	95	55	95
HILBERTA:5	5	—	23	92	100	16	20	19	18
HS45	5	5	3	100	100	100	100	100	100
OSCIGRAD:5	5	—	513	11	9	—	7	100	—
OSCIPATH:5	5	—	2625	—	—	—	—	100	27
OSBORNEA	5	5	405	100	—	—	—	—	—
SINQUAD	5	—	50	81	78	100	76	54	83
TQUARTIC	5	—	51	82	75	94	88	31	100
BIGGS6	6	—	400	5	81	20	13	—	—
BIGGS5	6	1	216	43	94	100	65	34	85
BIGGS3	6	3	69	64	78	91	91	18	95
CHEBYQAD:6	6	2	53	78	85	57	55	46	100
EIGENALS:6	6	—	92	84	71	84	88	43	100
EIGENBLS:6	6	—	97	87	63	96	100	34	74
HEART6LS	6	—	83	2	3	2	2	—	—
HILBERTA:6	6	—	23	92	100	16	16	26	16
HART6	6	2	48	62	65	77	48	59	96
PALMER6A	6	—	237	13	14	13	9	—	—

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
PALMER8A	6	—	282	17	49	94	47	7	100
PALMER1A	6	—	230	14	22	20	17	—	38
PALMER2A	6	—	429	40	59	41	39	23	76
PALMER3A	6	—	490	27	40	62	40	16	68
PALMER4A	6	—	332	31	41	56	53	4	94
PALMER5C	6	—	27	93	100	53	52	23	56
SPECAN:6	6	6	3	100	100	100	100	100	100
CHEBYQAD:7	7	1	104	100	97	65	62	68	78
PALMER1D	7	—	33	100	60	—	—	—	4
AIRCRFTB	8	3	216	51	43	86	53	18	91
CHEBYQAD:8	8	2	90	86	94	52	55	100	69
HEART8LS	8	—	524	19	10	76	100	45	—
MAXLIKA	8	7	16	44	73	36	36	16	36
OSLBQP	8	7	4	44	57	100	100	44	100
PALMER6C	8	—	37	100	51	—	—	—	—
PALMER6E	8	—	70	6	100	1	—	—	—
PALMER7C	8	—	37	100	51	—	—	—	—
PALMER8C	8	—	37	100	71	—	—	—	—
PALMER8E	8	—	84	10	100	1	2	1	—
PALMER1C	8	—	37	100	45	—	—	—	—
PALMER1E	8	—	1161	47	90	—	—	—	—
PALMER2C	8	—	37	100	47	—	—	—	—
PALMER3C	8	—	37	100	65	—	—	—	—
PALMER4C	8	—	37	100	65	—	—	—	—
PALMER4E	8	—	684	58	21	—	—	12	—
PALMER5A	8	—	85	100	—	—	—	—	—
POWELLSG:8	8	—	203	86	100	68	53	58	40
PALMER7E	8	1	85	100	—	—	—	—	—
PALMER2E	8	1	1092	61	—	—	—	—	—
PALMER3E	8	1	1047	59	—	—	—	13	—

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
S368:8	8	6	27	57	75	44	—	18	44
VIBRBEAM	8	—	2681	100	—	—	—	—	—
CHEBYQAD:9	9	2	87	100	89	42	41	42	44
MSQRTBLS	9	—	94	83	82	94	92	43	89
NONMSQRT	9	—	833	20	100	—	—	—	—
SPECAN:9	9	9	3	100	100	100	100	100	100
ARGLINA:10	10	—	7	78	100	58	58	78	58
ARGLINB:10	10	—	7	54	100	54	54	29	54
ARGLINC:10	10	—	7	54	100	50	50	29	50
BROWNAL	10	—	74	100	99	67	67	77	67
BRYBND	10	—	83	100	31	30	38	28	20
BOXPOWER:10	10	—	21	100	49	46	46	58	46
BOX:10	10	—	41	100	87	79	79	57	79
BROYDN7D:10	10	—	94	59	82	100	90	34	90
CHNROSNB	10	—	192	66	85	88	94	40	86
CHNRSNBM	10	—	222	58	95	96	86	45	95
CHARDIS0:10	10	—	4	44	100	40	40	33	40
COSINE:10	10	—	124	99	100	83	69	34	68
CRAGGLVY:10	10	—	132	73	97	99	99	47	99
CHEBYQAD	10	2	3	100	5	2	2	1	3
CHENHARK:10	10	3	47	67	59	77	77	44	77
CVXBQP1:10	10	10	3	100	100	100	100	100	100
DIXON3DQ	10	—	45	100	96	54	49	25	57
DQDRTIC	10	—	23	92	100	38	40	37	44
DQRTIC:10	10	—	82	62	76	99	99	50	99
ERRINROS:10	10	—	319	69	86	83	56	44	91
ERRINRSM:10	10	—	690	91	89	57	47	53	88
EXTROSNB:10	10	—	1731	27	54	51	50	100	61
FLETBV3M	10	—	33	52	70	89	69	7	65
FLETCBV2	10	—	47	96	100	73	73	8	73
FLETCBV3	10	—	40	15	38	60	57	4	100

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
FLETCHBV	10	—	112	20	45	100	96	8	75
FLETCHCR	10	—	213	51	84	93	90	29	95
FREUROTH:10	10	—	75	86	100	82	77	54	71
GENHUMPS:10	10	—	480	63	65	100	92	18	85
GENROSE:10	10	—	210	59	81	91	68	46	95
HS110	10	—	28	28	80	—	—	29	—
HILBERTA:10	10	—	3	100	13	2	1	1	3
HILBERTB:10	10	—	18	86	95	95	95	55	95
HARKERP2:10	10	10	3	100	100	100	100	100	100
INDEFM:10	10	—	147	17	99	97	61	52	95
INDEF:10	10	10	51	53	96	68	68	—	68
MOREBV	10	—	71	86	100	51	56	38	59
MANCINO:10	10	—	22	76	81	85	85	67	85
MODBEALE:10	10	—	135	100	84	17	23	51	22
MCCORMCK	10	1	36	61	67	40	40	43	47
NONCVXU2:10	10	—	75	77	79	100	83	37	83
NONCVXUN:10	10	—	72	99	91	90	90	49	91
NONDIA:10	10	—	99	75	76	93	91	70	74
NCVXBQP1:10	10	10	7	12	25	54	54	10	54
NCVXBQP2:10	10	10	7	13	27	64	64	10	64
NCVXBQP3:10	10	10	7	13	21	7	—	9	7
POWER	10	—	66	55	88	99	99	30	99
PENALTY1:10	10	—	243	58	64	78	78	100	75
PENALTY2:10	10	—	1469	76	81	100	95	44	91
PROBPENL:10	10	4	37	10	4	1	—	—	3
POWELLBC:10	10	7	17	14	23	100	100	13	100
RAYBENDL:10	10	4	90	68	100	92	80	7	86
RAYBENDS:10	10	4	87	100	37	56	51	4	57
SINEALI	10	—	511	42	14	14	14	24	16
SROSENBR	10	—	159	68	88	49	48	100	76

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
SCHMVETT:10	10	—	90	87	100	89	88	40	92
SENSORS:10	10	—	57	84	51	81	75	25	86
SPARSINE:10	10	—	53	100	84	47	56	50	48
SPARSQUR:10	10	—	34	38	100	51	51	27	51
SSBRYBND:10	10	—	737	81	100	8	46	—	—
SSCOSINE:10	10	—	365	100	77	—	—	8	—
TOINTGSS	10	—	125	91	96	81	79	16	100
TQUARTIC:10	10	—	82	73	100	95	95	43	93
TRIDIA:10	10	—	45	100	96	54	45	32	45
VARDIM	10	—	13	100	19	15	15	9	15
VAREIGVL:10	10	—	45	76	82	98	92	65	98
OSBORNEB	11	—	3847	—	—	100	—	—	—
EXPQUAD:12	12	4	111	83	94	62	62	60	78
QRTQUAD:12	12	3	168	100	75	38	44	27	35
QUDLIN	12	12	13	87	62	42	42	13	42
WATSON:12	12	—	238	80	100	73	37	8	41
BRATU1D:13	13	2	64	100	86	63	80	31	75
DIXMAANA	15	—	18	72	95	95	95	55	95
DIXMAANB	15	—	16	64	84	84	84	48	84
DIXMAANC	15	—	18	62	78	95	95	55	95
DIXMAAND	15	—	22	76	81	88	88	67	88
DIXMAANE	15	—	58	89	57	95	88	25	95
DIXMAANF	15	—	61	94	73	100	98	29	95
DIXMAANG	15	—	58	89	67	91	94	33	100
DIXMAANH	15	—	57	88	66	93	92	31	89
DIXMAANI	15	—	113	100	60	85	72	26	84
DIXMAANJ	15	—	121	98	62	95	86	28	98

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANK	15	—	114	86	57	84	93	24	90
DIXMAANL	15	—	108	96	55	86	86	24	81
DIXMAANM	15	—	93	100	51	62	70	19	72
DIXMAANN	15	—	106	94	59	81	80	19	95
DIXMAANO	15	—	112	96	54	97	82	19	90
DIXMAANP	15	—	121	79	63	92	84	27	100
PARKCH	15	—	642	100	—	9	11	—	—
CLPLATEA:16	16	4	81	93	100	94	91	42	95
CLPLATEB:16	16	4	80	95	94	96	100	45	98
CLPLATEC:16	16	4	69	100	85	53	53	33	53
FMINSURF	16	—	63	97	76	94	97	41	94
FMINSRF2:16	16	—	78	81	76	95	80	46	94
HADAMALS:16	16	8	102	59	94	47	58	44	62
LMINSURF	16	12	36	72	88	88	88	19	88
NLMSURF:16	16	12	43	60	83	88	83	6	74
NOBNDTOR:16	16	13	15	38	42	20	20	42	29
POWELLSG:16	16	—	312	82	47	64	46	100	50
TORSION111:16	16	14	22	100	100	45	45	92	79
TORSION1:16	16	14	22	100	100	45	45	92	79
TORSION2:16	16	14	22	100	100	45	45	92	79
TORSIONA:16	16	14	22	85	100	69	71	92	79
TORSIONB:16	16	14	22	85	100	69	71	92	79
TORSIONC:16	16	14	18	82	82	72	78	86	95
TORSIOND:16	16	14	18	82	82	72	78	86	95
TORSION3:16	16	16	4	33	57	13	22	22	17
TORSION4:16	16	16	4	33	57	13	22	22	17
TORSION5:16	16	16	4	33	100	80	80	44	80
TORSION6:16	16	16	4	33	100	80	80	44	80
TORSIONE:16	16	16	4	44	100	29	29	44	29
TORSIONF:16	16	16	4	44	100	29	29	44	29
CHARDIS0:18	18	—	4	44	100	40	40	33	40

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
LINVERSE	19	8	240	93	100	50	66	50	34
CHEBYQAD:20	20	3	127	34	100	70	74	27	81
MANCINO:20	20	—	27	73	87	87	87	56	87
NONDIA:20	20	—	141	77	96	89	94	82	72
POWELLSG:20	20	—	312	57	52	46	39	100	29
POWER:20	20	—	78	55	65	99	99	26	99
POWELLBC:20	20	13	87	45	74	41	41	30	50
SINEALI:20	20	—	436	—	—	—	—	46	—
TRIDIA:20	20	—	85	100	83	56	45	42	49
NCB20B	21	—	165	74	32	67	35	69	54
NCB20B:22	22	—	207	100	32	29	27	78	25
RAYBENDL:24	24	4	753	34	—	65	82	—	66
RAYBENDS:24	24	4	2343	32	—	66	57	—	—
BIGGSB1	25	3	120	100	38	54	62	39	54
CHNROSNB:25	25	—	383	61	48	100	91	40	95
CHNRSNBM:25	25	—	548	63	60	87	97	35	95
ERRINROS:25	25	—	394	74	—	87	100	26	96
ERRINRSM:25	25	—	948	99	—	30	49	23	83
HATFLDC	25	12	45	80	65	92	92	27	92
NONSCOMP	25	12	225	27	68	54	69	28	74
OSCIPATH:25	25	—	181	71	81	99	97	59	96
QUARTC	25	—	39	25	100	41	41	21	41
SPMSRTL	28	—	155	73	65	89	84	54	100
X3PK	30	1	6749	100	—	—	—	—	—
EIGENCLS:30	30	—	411	75	67	75	87	41	100
MANCINO:30	30	—	30	81	86	94	94	—	94
NONDIA:30	30	—	146	100	77	66	66	78	80
POWER:30	30	—	3	100	2	4	4	1	4
TRIDIA	30	—	133	100	82	59	59	47	63
WATSON:31	31	—	1681	100	28	—	—	25	—

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
EDENSCH	36	—	66	78	67	94	89	48	100
HADAMALS:36	36	24	192	49	100	59	92	41	80
LIARWHD	36	—	72	72	70	99	99	57	99
POWELLSG:36	36	—	333	74	44	32	45	100	26
CHARDIS0:40	40	—	4	44	100	40	40	33	40
POWELLSG:40	40	—	333	60	45	40	43	100	—
QR3DLS:40	40	1	4683	92	—	65	67	100	80
RAYBENDL	44	4	4824	—	—	55	70	—	100
CLPLATEA	49	7	138	69	55	97	100	39	86
CLPLATEB	49	7	135	75	56	99	98	37	97
CLPLATEC	49	7	288	100	71	53	62	57	59
FMINSRF2:49	49	—	137	90	87	96	94	56	100
FMINSURF:49	49	—	110	88	75	98	87	16	91
LMINSURF:49	49	24	96	67	72	100	100	10	94
MSQRTALS:49	49	—	651	76	—	89	77	57	100
MSQRTBLS:49	49	—	460	67	50	78	82	47	100
NLMSURF:49	49	24	370	75	58	97	86	25	97
ARGLINA:50	50	—	7	78	100	54	54	78	54
ARGLINB:50	50	—	7	54	100	41	41	10	41
ARGLINC:50	50	—	7	54	100	41	41	11	41
BROYDN7D:50	50	—	275	75	56	95	98	52	96
BRYBND:50	50	—	66	74	84	99	99	59	99
BQPGABIM	50	26	117	80	98	71	68	80	60
BQPGASIM	50	27	105	92	88	56	53	100	71
CHNROSNB:50	50	—	651	63	56	89	97	42	88
CHNRSNBM:50	50	—	933	67	84	92	91	52	91
CRAGGLVY:50	50	—	247	71	72	96	96	65	100
CHEBYQAD:50	50	6	192	46	15	98	100	29	89
CVXBQP1:50	50	50	3	100	100	100	100	100	100
DQDRTIC:50	50	—	23	92	100	18	31	38	47
DQRTIC:50	50	—	43	20	100	41	41	21	41

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
ENGVAL1:50	50	—	22	100	29	37	37	24	37
ERRINROS:50	50	—	415	65	—	93	97	24	90
ERRINRSM:50	50	—	836	100	8	26	47	22	90
FREUROTH:50	50	—	79	95	88	100	100	56	96
HILBERTB:50	50	—	3	100	16	14	14	9	14
INDEFM:50	50	—	199	66	73	99	100	11	99
INDEF:50	50	50	53	29	95	25	25	—	25
MANCINO:50	50	—	30	61	77	81	81	56	81
MOREBV:50	50	—	1539	52	100	29	37	18	27
MCCORMCK:50	50	1	42	71	75	42	47	58	58
NCB20B:50	50	—	1006	100	23	45	45	67	46
NONDIA:50	50	—	132	100	66	48	56	85	46
NONSCOMP:50	50	25	198	45	68	74	76	38	74
NCVXBQP3:50	50	49	25	16	48	19	—	21	19
NCVXBQP1:50	50	50	7	8	25	50	50	8	50
NCVXBQP2:50	50	50	7	5	18	6	—	6	6
PENALTY3	50	—	447	20	27	38	33	100	42
PENALTY1:50	50	—	234	62	76	100	93	93	89
PENALTY2:50	50	—	324	92	44	65	65	100	56
POWER:50	50	—	91	58	85	100	100	21	100
PROBPENL:50	50	—	1066	100	—	—	—	—	—
PENTDI:50	50	37	28	82	88	100	100	67	100
SINQUAD:50	50	—	91	98	73	88	100	80	68
SPARSINE:50	50	—	469	100	58	78	79	83	86
SPARSQUR:50	50	—	24	21	100	36	36	17	36
SROSENBR:50	50	—	177	61	86	47	57	100	70
SSBRYBND:50	50	—	6559	100	—	—	—	—	71
S368:50	50	32	9	15	20	100	100	6	100
TOINTGOR	50	—	393	86	76	99	98	68	97
TOINTPSP	50	—	336	83	51	97	92	41	99

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
TOINTQOR	50	—	113	100	80	85	86	49	91
TOINTGSS:50	50	—	135	86	70	100	89	56	99
TQUARTIC:50	50	—	125	100	56	62	89	56	69
TRIDIA:50	50	—	213	100	82	74	71	55	73
VAREIGVL	50	—	63	27	80	98	98	60	98
VARDIM:50	50	—	101	59	100	68	68	47	68
SCOND1LS:52	52	2	3318	—	—	—	—	100	—
CHARDIS0:60	60	—	4	44	100	40	40	33	40
POWELLSG:60	60	—	333	68	47	32	32	100	18
DECONVU	61	10	3630	—	34	44	88	—	—
DECONVB	61	41	318	42	66	—	—	32	—
FMINSRF2	64	—	162	75	83	88	92	51	98
FMINSURF:64	64	—	135	78	85	88	100	48	99
HADAMALS:64	64	34	159	34	90	46	58	48	62
LMINSURF:64	64	28	127	55	82	100	93	13	91
MINSURF	64	28	82	70	90	96	95	8	95
NLMSURF:64	64	28	471	69	68	98	89	18	94
POWER:75	75	—	105	60	71	96	96	20	96
BRATU1D	77	2	866	77	56	84	97	87	100
POWELLSG:80	80	—	333	68	41	37	28	100	—
DIXMAANA:90	90	—	15	71	100	94	94	45	94
DIXMAANB:90	90	—	16	64	84	84	84	48	84
DIXMAANC:90	90	—	19	66	83	86	86	58	86
DIXMAAND:90	90	—	19	66	70	76	76	58	76
DIXMAANE:90	90	—	142	86	67	90	93	20	94
DIXMAANF:90	90	—	138	80	69	78	77	21	86
DIXMAANG:90	90	—	142	82	74	99	96	33	96
DIXMAANH:90	90	—	140	74	73	81	100	46	97
DIXMAANI:90	90	—	529	100	72	73	63	35	76

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANJ:90	90	—	593	99	82	81	99	30	99
DIXMAANK:90	90	—	585	90	87	76	79	29	95
DIXMAANL:90	90	—	545	92	85	75	100	46	77
DIXMAANM:90	90	—	501	100	76	62	55	24	75
DIXMAANN:90	90	—	612	80	62	85	100	36	85
DIXMAANO:90	90	—	618	71	65	72	77	27	69
DIXMAANP:90	90	—	690	87	70	100	98	44	97
NONDIA:90	90	—	166	100	39	35	36	81	28
ARGLINA:100	100	—	7	78	100	54	54	78	54
ARGLINB:100	100	—	13	100	38	48	48	33	36
ARGLINC:100	100	—	24	55	33	30	30	47	30
ARWHEAD:100	100	—	48	74	64	84	79	55	66
BDQRTIC	100	—	133	92	45	100	85	51	72
BOXPOWER:100	100	—	27	96	100	49	49	69	49
BOX:100	100	—	70	100	76	68	68	61	68
BROWNAL:100	100	—	81	100	72	28	29	100	21
BROYDN7D:100	100	—	411	74	70	99	99	59	94
BRYBND:100	100	—	64	67	77	100	100	58	100
BDEXP	100	2	315	—	100	—	—	3	27
BIGGSB1:100	100	3	714	61	38	79	92	50	96
CHARDIS0	100	—	4	44	100	40	40	—	40
CHAINWOO:100	100	—	624	27	59	52	50	100	50
COSINE:100	100	—	928	9	36	—	—	—	—
CRAGGLVY:100	100	—	235	65	59	91	85	51	100
CURLY10:100	100	—	2640	58	61	71	74	100	71
CURLY20:100	100	—	2352	78	30	59	59	100	60
CURLY30:100	100	—	2022	82	23	50	49	100	51
CHEBYQAD:100	100	4	293	42	5	100	98	29	87
CLPLATEA:100	100	10	181	82	64	89	97	31	85
CLPLATEB:100	100	10	205	85	79	99	94	61	100
CLPLATEC:100	100	10	705	100	93	73	50	25	49

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
CHENHARK:100	100	30	5420	58	100	78	82	—	67
CVXBQP1	100	100	3	100	100	100	100	100	100
DIXON3DQ:100	100	—	405	100	81	39	43	17	42
DQDRTIC:100	100	—	23	92	100	62	62	55	62
DQRTIC:100	100	—	51	25	100	46	46	24	46
ENGVAL1:100	100	—	57	74	70	93	89	58	98
EXTROSNB:100	100	—	2337	—	23	48	43	100	25
FLETBV3M:100	100	—	81	49	91	91	90	22	100
FLETGBV2:100	100	—	660	100	88	74	88	21	89
FLETGBV3:100	100	—	402	5	4	86	89	—	100
FLETCHCR:100	100	—	1706	56	68	96	96	42	99
FREUROTH:100	100	—	83	87	69	97	97	59	95
GENHUMPS:100	100	—	874	77	47	85	87	19	79
GENROSE:100	100	—	1711	56	70	97	94	40	97
HADAMALS:100	100	76	306	41	31	82	100	53	73
HARKERP2	100	100	3	100	100	100	100	100	100
INDEFM:100	100	—	13	1	1	5	4	2	5
INDEF:100	100	100	13	7	25	6	6	—	6
LIARWHD:100	100	—	85	88	83	100	100	79	97
MANCINO:100	100	—	33	46	77	79	79	48	79
MOREBV:100	100	—	11645	—	—	100	—	—	—
MSQRTALS:100	100	—	1173	42	34	92	93	87	98
MSQRTBLS:100	100	—	1784	46	45	82	88	84	100
MCCORMCK:100	100	1	42	71	75	59	60	48	81
NONDQUAR	100	—	566	100	47	48	55	10	49
NCB20B:100	100	—	2856	91	29	82	83	100	92
NONCVXU2:100	100	—	1430	69	96	92	78	46	100
NONCVXUN:100	100	—	536	80	95	79	92	53	65
NONDIA:100	100	—	198	100	29	39	42	89	—

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
NOBNDTOR:100	100	49	87	52	55	52	60	64	69
NONSCOMP:100	100	50	213	58	89	85	51	40	82
NCVXBQP3:100	100	98	42	24	72	38	38	22	37
NCVXBQP1:100	100	100	6	5	21	43	43	7	43
NCVXBQP2:100	100	100	13	9	35	13	13	13	12
OSCIPTH:100	100	—	180	71	79	73	72	54	85
PENALTY1:100	100	—	152	49	58	70	66	58	69
PENALTY2:100	100	—	249	64	43	94	91	55	100
PENALTY3:100	100	—	897	21	28	33	33	100	44
POWELLSG:100	100	—	333	55	50	37	36	100	18
POWER:100	100	—	112	58	85	100	100	19	100
PROBPENL:100	100	—	9	1	—	—	—	—	—
PENTDI:100	100	74	24	51	80	32	34	53	65
QUARTC:100	100	—	51	25	100	46	46	24	46
SCHMVETT:100	100	—	153	58	76	98	92	8	97
SENSORS:100	100	—	79	38	76	93	87	45	100
SINEALI:100	100	—	210	54	35	96	88	41	96
SINQUAD:100	100	—	79	88	81	75	100	54	57
SPARSINE:100	100	—	820	100	69	88	89	90	92
SPARSQUR:100	100	—	27	30	100	39	39	18	39
SPMSRTLS:100	100	—	960	—	66	—	96	—	78
SROSENBR:100	100	—	183	53	100	42	49	79	49
SSBRYBND:100	100	—	9583	100	—	—	—	—	—
SSCOSINE:100	100	—	3535	100	—	—	—	—	—
S368:100	100	73	10	16	16	100	100	4	100
TOINTGSS:100	100	—	101	74	64	98	84	41	100
TQUARTIC:100	100	—	207	71	75	95	58	84	90
TRIDIA:100	100	—	341	100	82	65	65	49	64

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
TORSIONA:100	100	54	72	40	61	56	60	59	63
TORSIONB:100	100	54	72	40	61	56	60	59	63
TORSION111:100	100	58	66	41	60	65	60	54	84
TORSION1:100	100	58	66	41	60	65	60	54	84
TORSION2:100	100	58	66	41	60	65	60	54	84
TORSIONC:100	100	67	54	65	66	57	47	56	63
TORSIOND:100	100	67	54	65	66	57	47	56	63
TORSION3:100	100	71	51	55	64	43	46	61	73
TORSION4:100	100	71	51	55	64	43	46	61	73
TORSIONE:100	100	84	36	61	72	51	41	48	56
TORSIONF:100	100	84	36	61	72	51	41	48	56
TORSION5:100	100	86	17	27	37	35	77	23	50
TORSION6:100	100	86	17	27	37	35	77	23	50
VARDIM:100	100	—	122	62	100	74	74	49	78
VAREIGVL:100	100	—	70	13	80	96	99	67	100
WOODS:100	100	—	198	100	45	38	41	75	39
EXPLIN:101	101	95	156	53	94	49	58	39	63
EXPLIN2:101	101	101	6	50	86	27	27	67	27
BRATU1D:103	103	2	1084	53	52	100	88	79	92
EIGENALS	110	—	4212	83	87	99	89	56	91
EIGENBLS	110	—	2141	59	100	92	84	51	98
NCB20:110	110	—	633	100	—	20	30	19	21
EXPQUAD	120	7	214	69	100	88	73	22	94
EXPLIN	120	70	557	61	75	98	100	49	88
EXPLIN2	120	101	215	28	100	54	64	78	53
QRTQUAD	120	5	332	100	83	64	65	39	53
QUDLIN:120	120	120	13	87	62	18	22	13	22
FMINSRF2:121	121	—	214	96	95	100	99	61	96
FMINSURF:121	121	—	165	84	87	94	93	51	98
LMINSURF:121	121	40	170	69	79	100	100	15	100
NLMSURF:121	121	40	907	75	63	96	91	27	100

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
HADAMALS:144	144	79	202	29	70	59	77	45	50
HOLMES	180	180	3	100	100	100	100	100	100
NCB20B:180	180	—	1239	74	42	95	92	100	89
DRCV2LQ	196	96	4633	92	93	90	96	—	100
DRCV3LQ	196	96	9829	—	100	88	—	—	—
HADAMALS:196	196	161	311	40	66	60	79	43	53
LINVERSE:199	199	89	2268	—	—	—	—	53	—
ARGLINA:200	200	—	7	78	100	50	50	78	50
ARGLINB:200	200	—	24	83	86	83	83	15	83
ARGLINC:200	200	—	12	9	43	52	52	6	52
BROWNAL:200	200	—	108	100	96	25	21	88	19
CHARDIS0:200	200	—	4	44	100	40	40	—	40
MODBEALE:200	200	—	384	40	60	22	22	100	20
PENALTY2:200	200	—	521	—	54	95	98	70	100
PENALTY3:200	200	—	708	8	10	—	—	21	—
POWELLBC:200	200	104	2761	62	30	100	35	—	—
VARDIM:200	200	—	120	60	100	62	62	43	62
HADAMALS:256	256	135	417	—	83	60	89	51	81
ODC:288	288	148	465	52	35	77	73	30	68
SSC:288	288	148	383	88	82	98	99	45	100
DIXMAANA:300	300	—	15	88	100	94	94	50	94
DIXMAANB:300	300	—	16	64	84	84	84	48	84
DIXMAANC:300	300	—	19	66	83	86	86	58	86
DIXMAAND:300	300	—	22	76	81	88	88	67	88
DIXMAANE:300	300	—	248	90	73	86	90	18	93
DIXMAANF:300	300	—	215	68	68	91	90	31	82

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANG:300	300	—	211	78	69	88	88	40	100
DIXMAANH:300	300	—	219	74	71	94	96	44	94
DIXMAANI:300	300	—	1781	100	64	76	95	38	85
DIXMAANJ:300	300	—	1245	78	73	86	100	53	90
DIXMAANK:300	300	—	1147	74	69	82	88	43	84
DIXMAANL:300	300	—	941	60	67	75	67	26	100
DIXMAANM:300	300	—	1761	100	63	86	76	36	80
DIXMAANN:300	300	—	1745	86	92	82	80	50	88
DIXMAANO:300	300	—	1702	84	87	81	82	31	85
DIXMAANP:300	300	—	1634	87	84	69	69	41	100
HADAMALS:324	324	256	499	46	100	88	73	46	94
CHARDIS0:400	400	—	4	31	100	40	40	—	40
HADAMALS:400	400	306	494	29	47	91	100	43	71
JNLBRNG1:400	400	253	272	89	59	99	100	88	96
JNLBRNGA:400	400	253	317	91	71	100	91	52	74
JNLBRNG2:400	400	278	285	75	78	97	93	71	98
JNLBRNGB:400	400	302	405	96	84	97	96	43	99
OBSTCLBL:400	400	263	28	60	100	30	30	67	47
OBSTCLBM:400	400	263	28	60	100	30	30	67	47
OBSTCLBU:400	400	263	28	60	100	30	30	67	47
OBSTCLAE:400	400	398	9	100	47	29	29	75	29
OBSTCLAL:400	400	398	9	100	47	29	29	75	29
EIGENCLS	462	—	7023	56	56	93	86	74	73
NOBNDTOR:484	484	143	192	59	55	100	91	30	83
TORSIONA:484	484	161	150	55	56	74	73	54	83
TORSIONB:484	484	161	150	55	56	74	73	54	83
TORSION111:484	484	186	150	55	42	82	78	30	77
TORSION1:484	484	186	150	55	42	82	78	30	77
TORSION2:484	484	186	150	55	42	82	78	30	77
TORSIONC:484	484	254	93	41	52	60	45	58	64
TORSIOND:484	484	254	93	41	52	60	45	58	64
TORSION3:484	484	267	90	38	46	46	55	65	57

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
TORSION4:484	484	267	90	38	46	46	55	65	57
TORSIONE:484	484	362	63	36	51	59	53	66	67
TORSIONF:484	484	362	63	36	51	59	53	66	67
TORSION5:484	484	368	60	34	48	52	48	65	49
TORSION6:484	484	368	60	34	48	52	48	65	49
ARWHEAD:500	500	—	68	91	100	79	76	84	83
BDQRTIC:500	500	—	147	100	32	74	55	88	54
BROYDN7D:500	500	—	523	69	74	97	95	58	96
BRYBND:500	500	—	63	68	76	98	98	57	98
BDEXP:500	500	2	1514	17	100	—	—	—	—
CRAGGLVY:500	500	—	276	80	65	95	96	68	97
DQRTIC	500	—	59	23	100	43	43	23	43
DQDRTIC:500	500	—	23	92	100	51	51	51	51
FREUROTH:500	500	—	84	82	88	63	48	64	67
GENHUMPS:500	500	—	873	62	51	92	86	45	83
GENROSE:500	500	—	8254	56	92	97	95	—	99
HARKERP2:500	500	500	3	100	100	100	100	100	100
LIARWHD:500	500	—	101	100	64	99	100	57	86
MOREBV:500	500	—	1407	86	52	94	90	81	89
MCCORMCK:500	500	1	51	77	91	65	67	49	82
NCB20B:500	500	—	1251	100	41	90	89	99	93
NONDIA:500	500	—	371	100	31	39	47	85	—
NONDQUAR:500	500	—	551	100	50	57	41	14	—
NONSCOMP:500	500	250	229	24	86	85	61	90	100
OSCIPATH:500	500	—	182	79	82	86	85	63	95
PENALTY1:500	500	—	169	70	77	100	97	65	98
POWELLSG:500	500	—	333	48	44	36	35	100	—
POWER:500	500	—	239	84	87	94	100	19	95
PROBPENL:500	500	—	7	78	100	50	50	—	50
PENTDI:500	500	376	24	73	86	86	86	53	86

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
QUARTC:500	500	—	59	23	100	43	43	23	43
SCHMVETT:500	500	—	156	19	67	98	96	81	100
SINQUAD:500	500	—	110	100	71	56	48	52	48
SROSENBR:500	500	—	286	63	100	74	65	95	81
TOINTGSS:500	500	—	109	93	81	100	86	47	98
TQUARTIC:500	500	—	321	100	67	65	88	15	67
TRIDIA:500	500	—	857	100	81	64	69	53	60
VAREIGVL:500	500	—	73	78	84	100	96	66	100
BRATU1D:503	503	2	6081	66	39	100	89	32	85
CLPLATEA:529	529	23	507	74	70	92	98	52	98
CLPLATEB:529	529	23	369	69	65	86	100	16	85
CLPLATEC:529	529	23	981	50	—	12	14	91	12
ODC	864	164	530	78	61	92	100	7	96
SSC	864	164	371	84	67	93	93	55	99
FMINSRF2:961	961	—	258	41	83	95	97	29	94
FMINSURF:961	961	—	315	100	75	83	85	30	87
LMINSURF:961	961	120	593	55	72	98	100	11	98
NLMSURF:961	961	120	4062	88	64	94	94	—	90
ARWHEAD:1000	1000	—	63	73	98	65	78	75	88
BDQRTIC:1000	1000	—	177	97	39	54	47	100	49
BOXPOWER:1000	1000	—	32	100	76	41	43	59	41
BOX:1000	1000	—	95	100	67	48	62	57	44
BROWNAL:1000	1000	—	102	100	94	57	56	62	49

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
BROYDN7D:1000	1000	—	526	69	71	100	99	45	91
BRYBND:1000	1000	—	63	68	76	98	98	57	98
BDEXP:1000	1000	2	3017	—	100	—	—	—	—
BIGGSB1:1000	1000	3	5541	59	37	70	57	57	91
CHAINWOO	1000	—	925	100	81	74	75	98	76
CURLY10	1000	—	25867	—	94	100	91	—	91
CURLY30	1000	—	28092	—	—	—	—	100	—
CHARDIS0:1000	1000	—	4	31	100	40	40	19	40
CRAGGLVY:1000	1000	—	265	72	63	98	91	54	100
CVXBQP1:1000	1000	1000	3	100	100	100	100	100	100
DIXON3DQ:1000	1000	—	4005	100	80	36	42	21	47
DQDRTIC:1000	1000	—	23	92	100	39	41	51	40
DQRTIC:1000	1000	—	63	27	100	44	44	24	44
EG2	1000	—	171	51	27	27	25	100	—
ENGVAL1:1000	1000	—	58	61	79	88	84	48	88
EXTROSNB:1000	1000	—	1881	12	18	38	33	100	8
FLETBV3M:1000	1000	—	52	10	100	59	55	16	57
FLETGBV2:1000	1000	—	4009	100	44	62	61	47	67
FLETGBV3:1000	1000	—	14177	—	—	100	52	—	—
FLETCHCR:1000	1000	—	16588	56	96	99	96	—	99
FREUROTH:1000	1000	—	76	77	80	100	62	58	100
GENHUMPS	1000	—	979	82	61	89	84	35	87
HARKERP2:1000	1000	1000	3	100	100	100	100	100	100
INDEFM	1000	—	381	100	56	68	90	4	62
INDEF	1000	1000	53	35	100	17	21	—	20
JNLBRNG1:1000	1000	366	278	77	62	100	93	79	89
JNLBRNGA:1000	1000	385	329	70	60	100	99	49	98
JNLBRNG2:1000	1000	524	501	68	53	99	100	62	98

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
JNLBRNGB:1000	1000	560	1255	84	64	93	100	76	97
LIARWHD:1000	1000	—	110	100	83	72	77	64	73
MOREBV:1000	1000	—	1352	60	46	92	100	69	95
MCCORMCK:1000	1000	1	48	73	81	76	55	39	84
NONCVXU2	1000	—	5628	94	100	73	48	28	62
NONCVXUN	1000	—	10021	90	100	—	—	—	—
NONDIA	1000	—	564	59	27	42	44	100	—
NCB20B:1000	1000	—	1263	97	41	83	81	100	83
NONDQUAR:1000	1000	—	599	100	79	74	47	40	—
NONSCOMP:1000	1000	500	255	100	90	93	67	83	82
NCVXBQP3	1000	983	104	12	100	69	57	47	20
NCVXBQP2	1000	993	37	18	46	28	27	16	29
NCVXBQP1	1000	1000	4	3	14	25	25	4	25
OSCIGRAD:1000	1000	—	1486	—	100	—	—	—	—
OBSTCLBL	1000	680	117	64	69	56	66	61	68
OBSTCLBM	1000	680	117	64	69	56	66	61	68
OBSTCLBU	1000	680	117	64	69	56	66	61	68
OBSTCLAL	1000	696	72	44	100	73	73	77	65
OBSTCLAE:1000	1000	696	72	44	100	73	73	77	65
PENALTY1:1000	1000	—	147	67	81	97	100	66	86
POWELLSG:1000	1000	—	351	47	36	35	32	100	—
POWER:1000	1000	—	330	86	87	95	98	24	95
POWELLBC:1000	1000	501	10798	—	—	100	92	—	90
PENTDI	1000	751	24	73	86	96	96	57	96
QUARTC:1000	1000	—	63	27	100	44	44	24	44
SPARSINE	1000	—	13980	100	71	79	78	78	82
SPARSQUR	1000	—	31	27	100	42	42	18	42
SSBRYBND	1000	—	22532	—	—	99	95	—	99

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
SCHMVETT:1000	1000	—	156	34	71	84	93	33	93
SENSORS:1000	1000	—	111	69	57	100	92	36	73
SINEALI:1000	1000	—	191	73	38	99	96	53	100
SINQUAD:1000	1000	—	144	95	78	99	90	63	79
SROSENBR:1000	1000	—	359	96	100	70	95	95	89
TESTQUAD	1000	—	3704	100	—	27	29	84	29
TOINTGSS:1000	1000	—	99	76	78	100	97	13	99
TQUARTIC:1000	1000	—	258	100	38	47	70	17	55
TRIDIA:1000	1000	—	1237	100	80	57	67	56	69
VAREIGVL:1000	1000	—	73	78	84	100	95	66	100
WOODS:1000	1000	—	366	100	83	66	56	61	54
BRATU1D:1003	1003	1003	18312	—	—	91	—	—	100
NCB20	1010	—	481	100	3	44	48	15	59
CLPLATEA:1024	1024	32	758	67	61	87	86	52	85
CLPLATEB:1024	1024	32	492	77	78	93	94	45	93
CLPLATEC:1024	1024	32	1188	33	—	6	6	100	7
FMINSRF2:1024	1024	—	275	83	82	97	96	17	100
FMINSURF:1024	1024	—	348	85	87	94	90	21	92
HADAMALS:1024	1024	801	583	27	35	100	74	25	74
LMINSURF:1024	1024	124	622	66	69	94	96	—	100
NLMSURF	1024	124	4152	85	62	95	94	49	96
NOBNDTOR:1024	1024	235	237	59	43	74	71	33	72
TORSIONA:1024	1024	281	201	58	43	72	80	50	68
TORSIONB:1024	1024	281	201	58	43	72	80	50	68
TORSION111:1024	1024	323	207	56	39	86	88	53	73
TORSION1:1024	1024	323	207	56	39	86	88	53	73

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
TORSION2:1024	1024	323	207	56	39	86	88	53	73
TORSIONC:1024	1024	493	117	41	44	76	57	41	69
TORSIOND:1024	1024	493	117	41	44	76	57	41	69
TORSION3:1024	1024	515	123	44	36	66	65	61	64
TORSION4:1024	1024	515	123	44	36	66	65	61	64
TORSIONE:1024	1024	761	78	39	43	49	34	55	52
TORSIONF:1024	1024	761	78	39	43	49	34	55	52
TORSION5:1024	1024	768	75	35	41	48	55	74	47
TORSION6:1024	1024	768	75	35	41	48	55	74	47
EXPQUAD:1200	1200	81	938	36	81	83	86	67	100
EXPLIN:1200	1200	1150	544	63	73	87	97	59	100
EXPLIN2:1200	1200	1181	197	25	100	53	70	59	56
QRTQUAD:1200	1200	50	1524	100	23	25	45	47	29
QUDLIN:1200	1200	1200	13	52	43	10	12	12	22
DIXMAANA:1500	1500	—	15	88	100	94	94	71	94
DIXMAANB:1500	1500	—	16	64	84	84	84	48	84
DIXMAANC:1500	1500	—	19	66	83	86	86	58	86
DIXMAAND:1500	1500	—	22	76	81	88	88	67	88
DIXMAANE:1500	1500	—	459	82	64	82	86	30	84
DIXMAANF:1500	1500	—	444	83	81	96	95	44	93
DIXMAANG:1500	1500	—	417	80	86	97	95	35	93
DIXMAANH:1500	1500	—	387	83	73	98	84	42	91
DIXMAANI:1500	1500	—	4638	77	51	82	88	74	90
DIXMAANJ:1500	1500	—	2365	70	96	92	94	74	100
DIXMAANK:1500	1500	—	1392	60	47	58	100	40	77
DIXMAANL:1500	1500	—	952	52	44	94	97	31	100

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANM:1500	1500	—	4338	75	48	81	78	78	93
DIXMAANN:1500	1500	—	2478	70	82	100	87	48	96
DIXMAANO:1500	1500	—	2127	68	79	93	97	39	100
DIXMAANP:1500	1500	—	1963	62	67	100	92	49	93
LINVERSE:1999	1999	785	42455	100	—	—	—	—	—
CHARDIS0:2000	2000	—	4	31	100	40	40	19	40
EDENSCH:2000	2000	—	72	78	68	96	91	63	100
MODBEALE:2000	2000	—	417	50	54	21	24	100	23
NCB20B:2000	2000	—	1150	94	45	98	99	88	100
BQPGAUSS	2003	134	11100	24	30	67	89	66	77
RAYBENDS:2050	2050	4	9611	100	—	—	—	—	—
JNLBRNG1:2300	2300	809	317	69	53	91	84	75	100
JNLBRNGA:2300	2300	847	342	67	51	86	100	62	93
JNLBRNGB:2300	2300	1052	1749	80	57	93	98	70	98
JNLBRNG2:2300	2300	1077	584	77	52	94	93	65	98
OBSTCLBL:2300	2300	993	210	60	63	70	77	71	84
OBSTCLBM:2300	2300	993	210	60	63	70	77	71	84
OBSTCLBU:2300	2300	993	210	60	63	70	77	71	84
OBSTCLAE:2300	2300	1276	147	50	58	84	91	38	96
OBSTCLAL:2300	2300	1276	147	50	58	84	91	38	96
ODC:2376	2376	206	525	77	51	86	95	23	95
SSC:2376	2376	206	352	100	69	93	96	34	98
EIGENBLS:2550	2550	—	18518	—	62	66	64	32	70
EIGENCLS:2652	2652	—	37918	—	—	86	62	78	88
DIXMAANA:3000	3000	—	15	88	100	94	94	71	94
DIXMAANB:3000	3000	—	16	64	84	84	84	48	84
DIXMAANC:3000	3000	—	19	66	83	86	86	58	86
DIXMAAND:3000	3000	—	22	67	81	88	88	67	88
DIXMAANE:3000	3000	—	630	85	58	88	99	38	98

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANF:3000	3000	—	570	86	96	95	98	39	96
DIXMAANG:3000	3000	—	517	87	86	100	96	38	98
DIXMAANH:3000	3000	—	495	86	89	97	87	40	84
DIXMAANI:3000	3000	—	3465	64	42	92	100	70	97
DIXMAANJ:3000	3000	—	780	17	40	84	79	39	95
DIXMAANK:3000	3000	—	689	47	34	96	94	31	94
DIXMAANL:3000	3000	—	771	31	46	66	76	39	64
DIXMAANM:3000	3000	—	3514	58	50	96	100	65	81
DIXMAANN:3000	3000	—	2879	71	84	89	87	45	94
DIXMAANO:3000	3000	—	2326	71	78	89	100	49	94
DIXMAANP:3000	3000	—	1828	68	38	90	90	43	100
JNLBRNG1:3200	3200	1130	342	71	60	90	93	58	100
JNLBRNGA:3200	3200	1168	426	69	59	98	98	67	100
JNLBRNG2:3200	3200	1400	723	62	51	100	100	72	99
JNLBRNGB:3200	3200	1446	2067	83	59	64	66	57	99
OBSTCLBL:3200	3200	1252	174	54	58	69	84	64	68
OBSTCLBM:3200	3200	1252	174	54	58	69	84	64	68
OBSTCLBU:3200	3200	1252	174	54	58	69	84	64	68
OBSTCLAE:3200	3200	1813	195	53	63	86	95	60	99
OBSTCLAL:3200	3200	1813	195	53	63	86	95	60	99
JNLBRNG1:3400	3400	1195	330	56	57	74	84	64	98
JNLBRNGA:3400	3400	1233	435	73	57	97	99	62	98
JNLBRNG2:3400	3400	1500	689	67	62	100	95	69	97
JNLBRNGB:3400	3400	1545	2148	79	48	63	69	61	55
CHAINWOO:4000	4000	—	994	55	56	100	95	76	96
CHARDIS0:4000	4000	—	4	31	100	40	40	19	40
WOODS:4000	4000	—	349	100	47	38	58	58	67
HADAMALS:4096	4096	3282	795	17	11	100	97	19	76
DRCV1LQ:4489	4489	520	31051	—	—	—	—	40	—

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
ARWHEAD:5000	5000	—	83	100	83	58	59	71	48
BDQRTIC:5000	5000	—	168	100	36	22	24	68	27
BROYDN7D:5000	5000	—	607	49	75	97	100	48	100
BRYBND:5000	5000	—	63	66	76	98	98	57	98
BIGGSB1:5000	5000	3	21382	66	57	56	45	46	100
BDEXP:5000	5000	5000	3	100	100	100	100	100	100
CRAGGLVY:5000	5000	—	283	76	57	94	98	50	100
CHENHARK:5000	5000	2010	21847	87	—	42	100	—	42
DQDRTIC:5000	5000	—	23	92	100	40	29	51	44
DQRTIC:5000	5000	—	71	23	100	43	43	24	43
ENGVAL1:5000	5000	—	60	79	75	95	95	49	95
FLETBV3M:5000	5000	—	89	—	100	75	71	47	70
FLETGBV2:5000	5000	—	18263	91	55	75	64	60	100
FREUROTH:5000	5000	—	89	86	94	99	100	66	100
GENHUMPS:5000	5000	—	923	73	64	99	100	81	85
HARKERP2:5000	5000	5000	3	100	100	100	100	100	100
INDEFM:5000	5000	—	247	—	100	39	37	9	—
INDEF:5000	5000	5000	56	48	100	—	22	—	10
LIARWHD:5000	5000	—	109	100	77	48	48	57	96
MOREBV:5000	5000	—	1358	60	46	100	95	84	94
MCCORMCK:5000	5000	1	51	73	78	82	82	38	84
NCB20B:5000	5000	—	1248	46	28	94	88	100	94
NONCVXU2:5000	5000	—	21305	100	90	51	57	42	58
NONCVXUN:5000	5000	—	44454	100	—	—	—	—	—
NONDIA:5000	5000	—	1220	100	35	—	50	—	—

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
NONDQUAR:5000	5000	—	612	100	64	49	59	41	—
NONSCOMP:5000	5000	2500	228	69	80	86	97	99	100
POWELLSG:5000	5000	—	351	70	44	32	41	100	—
POWER:5000	5000	—	732	87	88	96	96	33	95
PENTDI:5000	5000	3751	24	73	86	86	86	62	71
QUARTC:5000	5000	—	71	23	100	43	43	24	43
QRTQUAD:5000	5000	549	2556	100	8	—	—	7	4
QUDLIN:5000	5000	5000	13	72	48	20	1	43	21
SCHMVETT:5000	5000	—	151	16	56	90	88	5	90
SINQUAD:5000	5000	—	137	79	84	100	85	52	96
SPARSQUR:5000	5000	—	35	24	100	37	37	15	37
SROSENBR:5000	5000	—	399	100	64	53	56	73	37
SSBRYBND:5000	5000	—	24904	85	53	97	98	47	100
TESTQUAD:5000	5000	—	4960	100	14	26	29	72	45
TOINTGSS:5000	5000	—	107	92	91	84	95	24	99
TQUARTIC:5000	5000	—	583	100	52	85	54	96	—
TRIDIA:5000	5000	—	2829	100	80	64	52	54	63
VAREIGVL:5000	5000	—	73	78	84	100	95	66	100
NCB20:5010	5010	—	505	80	11	80	80	25	100
CLPLATEA:5041	5041	71	1988	84	54	91	97	48	96
CLPLATEB:5041	5041	71	999	82	67	90	94	60	91
CLPLATEC:5041	5041	71	2856	18	—	—	—	97	3
ODC:5184	5184	284	606	63	49	97	96	19	95
SSC:5184	5184	284	381	100	60	81	79	38	76
MINSURFO:5306	5306	1762	2499	74	63	36	39	38	37
NOBNDTOR:5476	5476	801	528	60	41	80	74	58	69

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
TORSIONA:5476	5476	1096	441	59	28	63	59	61	72
TORSIONB:5476	5476	1096	441	59	28	63	59	61	72
TORSION111:5476	5476	1219	483	60	29	79	79	53	71
TORSION1:5476	5476	1219	483	60	29	79	79	53	71
TORSION2:5476	5476	1219	483	60	29	79	79	53	71
TORSIONC:5476	5476	2328	279	59	63	66	61	54	48
TORSIOND:5476	5476	2328	279	59	63	66	61	54	48
TORSION3:5476	5476	2386	264	59	56	55	63	63	42
TORSION4:5476	5476	2386	264	59	56	55	63	63	42
TORSIONE:5476	5476	3782	162	54	74	44	50	50	50
TORSIONF:5476	5476	3782	162	54	74	44	50	50	50
TORSION5:5476	5476	3805	159	49	35	54	55	84	54
TORSION6:5476	5476	3805	159	49	35	54	55	84	54
FMINSRF2:5625	5625	—	525	83	82	100	95	20	97
FMINSURF:5625	5625	—	535	84	84	99	96	21	100
LMINSURF:5625	5625	296	1579	59	63	100	100	4	98
NLMSURF:5625	5625	296	15218	72	74	100	97	—	99
ODC:7344	7344	344	704	74	45	97	96	17	100
SSC:7344	7344	344	515	92	68	91	87	42	99
JNLBRNG1:7500	7500	2605	576	54	44	58	64	62	64
JNLBRNGA:7500	7500	2676	654	59	46	68	63	55	72
JNLBRNG2:7500	7500	3171	1281	63	48	93	94	70	93
JNLBRNGB:7500	7500	3395	3813	83	53	56	65	58	54
OBSTCLBL:7500	7500	2859	303	54	55	76	81	60	74
OBSTCLBM:7500	7500	2859	303	54	55	76	81	60	74
OBSTCLBU:7500	7500	2859	303	54	55	76	81	60	74
OBSTCLAE	7500	3819	291	53	42	67	73	51	83
OBSTCLAL:7500	7500	3819	291	53	42	67	73	51	83
DIXMAANA:9000	9000	—	15	88	100	94	94	71	94
DIXMAANB:9000	9000	—	16	64	84	84	84	67	84
DIXMAANC:9000	9000	—	19	66	83	86	86	58	86

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAAND:9000	9000	—	22	67	81	88	88	67	88
DIXMAANE:9000	9000	—	956	83	64	100	94	51	99
DIXMAANF:9000	9000	—	759	79	87	96	95	38	97
DIXMAANG:9000	9000	—	760	84	86	95	100	33	91
DIXMAANH:9000	9000	—	750	87	87	100	97	33	97
DIXMAANI:9000	9000	—	1384	34	33	100	90	32	70
DIXMAANJ:9000	9000	—	685	46	67	83	71	42	100
DIXMAANK:9000	9000	—	582	24	62	100	80	36	79
DIXMAANL:9000	9000	—	651	25	74	100	86	41	87
DIXMAANM:9000	9000	—	1364	33	23	81	72	32	76
DIXMAANN:9000	9000	—	1767	45	82	98	90	46	89
DIXMAANO:9000	9000	—	1566	36	60	75	82	34	65
DIXMAANP:9000	9000	—	2166	63	72	98	91	34	90
BOXPOWER	10000	—	27	37	100	27	29	69	34
BOX	10000	—	128	100	63	40	26	82	27
BROYDN7D:10000	10000	—	589	39	74	100	98	46	94
BRYBND:10000	10000	—	63	66	76	98	98	57	98
CHAINWOO:10000	10000	—	1029	64	41	77	84	100	89
CVXBQP1:10000	10000	10000	3	100	100	100	100	100	100
DIXON3DQ:10000	10000	—	40009	100	80	52	50	65	58
FLETBV3M:10000	10000	—	74	—	100	96	81	30	86
FLETCBV2:10000	10000	—	27618	—	55	73	62	100	80
FMINSRF2:10000	10000	—	662	85	80	97	97	41	96
FMINSURF:10000	10000	—	656	84	80	98	98	36	97
HARKERP2:10000	10000	10000	3	100	100	100	100	100	100
INDEFM:10000	10000	—	579	—	40	100	45	9	—

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
JNLBRNG1:10000	10000	3443	837	65	55	64	60	63	55
JNLBRNGA:10000	10000	3568	855	58	35	60	60	56	57
JNLBRNG2:10000	10000	4209	1668	70	47	92	91	63	99
JNLBRNGB:10000	10000	4484	4926	80	55	59	52	65	39
LIARWHD:10000	10000	—	112	100	75	61	38	64	57
LMINSURF:10000	10000	396	2224	56	64	97	98	—	96
MCCORMCK:10000	10000	1	53	42	88	100	100	45	100
NONCVXU2:10000	10000	—	28906	98	100	70	68	59	78
NONDIA:10000	10000	—	307	16	6	11	53	—	—
NONDQUAR:10000	10000	—	842	100	73	65	76	71	—
NLMSURF:10000	10000	396	21993	61	74	93	92	—	98
NOBNDTOR:10000	10000	1299	630	57	29	63	65	53	71
NONSCOMP:10000	10000	5000	237	82	100	81	89	95	86
NCVXBQP3:10000	10000	9808	182	25	64	93	100	40	49
NCVXBQP2:10000	10000	9934	126	21	56	99	100	35	94
NCVXBQP1:10000	10000	10000	4	1	14	22	22	4	22
OSCIGRAD:10000	10000	—	5459	—	100	—	—	—	—
OBSTCLBL:10000	10000	3896	336	61	45	70	68	64	74
OBSTCLBM:10000	10000	3896	336	61	45	70	68	64	74
OBSTCLBU:10000	10000	3896	336	61	45	70	68	64	74
OBSTCLAE:10000	10000	5061	354	54	47	78	82	43	78
OBSTCLAL:10000	10000	5061	354	54	47	78	82	43	78
POWELLSG:10000	10000	—	351	38	44	29	39	100	—
POWER:10000	10000	—	994	84	85	98	98	37	98
QUARTC:10000	10000	—	75	18	100	43	43	24	43
SCHMVETT:10000	10000	—	171	10	75	98	87	2	93
SINQUAD:10000	10000	—	184	100	87	93	81	80	75
SPARSQUR:10000	10000	—	39	26	100	53	53	15	53

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
SROSENB:10000	10000	—	240	43	22	27	26	100	25
TOINTGSS:10000	10000	—	108	100	96	79	73	19	82
TQUARTIC:10000	10000	—	812	100	62	72	73	2	—
TRIDIA:10000	10000	—	4021	100	80	53	70	52	55
TORSIONA:10000	10000	1839	591	60	42	63	59	32	89
TORSIONB:10000	10000	1839	591	60	42	63	59	32	89
TORSION111:10000	10000	2013	540	53	26	43	44	24	44
TORSION1:10000	10000	2013	540	53	26	43	44	24	44
TORSION2:10000	10000	2013	540	53	26	43	44	24	44
TORSIONC:10000	10000	4105	360	62	31	59	59	62	48
TORSIOND:10000	10000	4105	360	62	31	59	59	62	48
TORSION3:10000	10000	4189	366	57	65	54	65	59	39
TORSION4:10000	10000	4189	366	57	65	54	65	59	39
TORSIONE:10000	10000	6685	192	53	55	48	42	49	33
TORSIONF:10000	10000	6685	192	53	55	48	42	49	33
TORSION5:10000	10000	6720	210	56	63	50	45	50	37
TORSION6:10000	10000	6720	210	56	63	50	45	50	37
WOODS:10000	10000	—	540	83	59	100	95	77	78
DRCV1LQ:10816	10816	816	31560	—	—	—	—	72	—
JNLBRNG1:12500	12500	4277	975	62	50	49	56	27	57
JNLBRNGA:12500	12500	4469	1077	61	38	70	55	70	71
JNLBRNG2:12500	12500	5197	2010	71	44	83	85	60	84
JNLBRNGB:12500	12500	5630	6039	87	43	52	52	72	38
OBSTCLBL:12500	12500	4623	354	63	52	57	56	53	69
OBSTCLBM:12500	12500	4623	354	63	52	57	56	53	69
OBSTCLBU:12500	12500	4623	354	63	52	57	56	53	69

problem	dim	nact	nf+2*ng best	nf+2*ng efficiency for solver					
				lmb	asa	lt6	lt4	asb	lt2
OBSTCLAE:12500	12500	6481	390	52	40	60	78	50	82
OBSTCLAL:12500	12500	6481	390	52	40	60	78	50	82
ODC:14544	14544	544	1235	77	45	72	70	12	91
SSC:14544	14544	544	896	93	66	94	95	40	80
NOBNDTOR:14884	14884	1758	777	57	19	55	50	53	74
TORSIONA:14884	14884	2618	654	54	25	64	51	52	45
TORSIONB:14884	14884	2618	654	54	25	64	51	52	45
TORSION111:14884	14884	2830	624	55	16	55	41	52	32
TORSION1:14884	14884	2830	624	55	16	55	41	52	32
TORSION2:14884	14884	2830	624	55	16	55	41	52	32
TORSIONC:14884	14884	6034	417	57	44	46	56	38	39
TORSIOND:14884	14884	6034	417	57	44	46	56	38	39
TORSION3:14884	14884	6137	435	70	45	61	61	57	42
TORSION4:14884	14884	6137	435	70	45	61	61	57	42
TORSIONE:14884	14884	9868	264	62	64	53	48	64	39
TORSIONF:14884	14884	9868	264	62	64	53	48	64	39
TORSION5:14884	14884	9914	264	51	41	45	54	61	34
TORSION6:14884	14884	9914	264	51	41	45	54	61	34
FMINSRF2:15625	15625	—	774	86	79	97	97	43	98
FMINSURF:15625	15625	—	774	85	79	99	100	47	100
LMSURF:15625	15625	496	2838	60	63	99	98	—	97
NLMSURF:15625	15625	496	30635	—	57	94	90	—	100
BOXPOWER:20000	20000	—	30	64	100	65	65	63	39
MODBEALE:20000	20000	—	762	100	90	45	42	68	40
MCCORMCK:50000	50000	1	54	65	84	100	100	27	100
BOX:100000	100000	—	201	100	50	25	15	82	21
INDEFM:100000	100000	—	898	—	100	39	81	—	—
OSCIGRAD:100000	100000	—	2578	—	100	—	—	—	—
DEGTRID:100001	100001	1	6609	—	—	—	—	100	—
DEGDIAG:100001	100001	100001	3	100	100	100	100	100	100
DEGTRID2:100001	100001	100001	3	100	100	100	100	100	100

3.7 Time in milliseconds, 1e-06

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
BQP1VAR	1	1	3	190	10	1	10	50	10
AKIVA	2	—	64	490	10	10	10	—	10
BEALE	2	—	45	110	10	10	10	20	10
BRKMCC	2	—	24	30	1	10	1	10	10
CAMEL6	2	—	25	40	1	1	10	10	10
CLIFF	2	—	69	100	10	10	20	20	30
CUBE	2	—	63	150	10	20	10	20	20
CHEBYQAD:2	2	—	38	70	10	10	10	10	10
DENSCHNA	2	—	28	50	1	10	10	1	20
DENSCHNB	2	—	25	30	1	10	1	10	10
DENSCHNC	2	—	40	40	10	10	10	1	10
DENSCHNF	2	—	36	40	10	10	10	20	10
DJTL	2	—	201	290	70	—	—	360	—
ENGVAL1	2	—	24	30	10	10	1	1	10
EXPFIT	2	—	50	50	10	10	10	10	20
FREUROTH	2	—	43	40	1	10	10	10	20
HUMPS	2	—	107	260	10	20	20	30	20
HAIRY	2	—	47	90	20	10	10	10	20
HIMMELBB	2	—	21	30	10	10	10	1	1
HIMMELBG	2	—	32	30	1	10	10	20	20
HIMMELBH	2	—	21	30	10	10	1	1	10
HS1	2	—	63	70	20	20	10	10	20
HS5	2	—	21	50	10	10	10	10	10
HILBERTA:2	2	—	3	1	1	10	1	10	10
HIMMELP1	2	1	19	30	1	10	10	20	1
HS2	2	1	21	30	1	10	10	20	20
HS3MOD	2	1	4	20	1	10	1	1	10
HS3	2	1	4	20	1	1	1	1	10
HS4	2	2	3	1	1	10	1	10	1
JENSMP	2	—	6	280	10	—	—	20	—
LOGHAIRY	2	—	13	80	10	20	20	30	20

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
LOGROS	2	—	16	350	10	20	20	30	20
MARATOSB	2	—	528	2310	480	500	540	40	460
MEXHAT	2	—	321	370	40	40	40	40	50
MODBEALE	2	—	45	50	10	10	20	10	10
MDHOLE	2	1	7	20	10	10	1	1	1
OSCIGRAD:2	2	—	4809	2280	—	820	810	—	790
OSCIPATH:2	2	—	63	250	30	30	20	10	50
ROSENBR	2	—	63	60	10	20	20	10	10
S308	2	—	25	40	10	10	1	1	10
SINEVAL	2	—	47	30	1	10	10	10	10
SISSER	2	—	35	50	1	10	10	10	20
SNAIL	2	—	19	30	1	10	1	10	1
SENSORS:2	2	—	27	40	1	10	20	10	10
SIMBQP	2	1	4	20	10	10	10	10	10
SIM2BQP	2	2	3	10	1	1	10	1	1
ZANGWIL2	2	—	11	20	10	10	10	10	10
BARD	3	—	174	190	10	50	50	—	100
BOX3	3	—	23	30	10	10	10	10	10
BOX2	3	1	107	70	10	30	70	20	20
DENSCHND	3	—	84	60	10	10	10	90	20
DENSCHNE	3	—	22	40	1	10	10	10	10
ENGVAL2	3	—	84	50	10	20	10	10	20
EG1	3	1	51	90	10	10	10	10	20
GROWTHLS	3	—	104	90	20	20	20	40	20
GULF	3	—	4	30	1	40	80	400	60
HATFLDD	3	—	71	70	10	20	20	20	20
HATFLDE	3	—	74	40	10	10	10	20	10
HATFLDFL	3	—	405	420	50	60	150	30	—
HELIX	3	—	43	40	10	20	10	20	10
HIELOW	3	—	74	—	40	50	60	—	70
HS25	3	—	20	20	10	70	70	10	40
KOEBHELB	3	—	6	280	20	—	—	30	—

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
MEYER3	3	—	274	1880	170	—	—	—	—
PFIT1LS	3	—	52	30	—	—	—	10	—
PFIT2LS	3	—	52	30	—	—	—	20	—
PFIT3LS	3	—	52	30	—	—	—	10	—
PFIT4LS	3	—	52	60	—	—	—	20	—
SCHMVETT	3	—	18	40	1	10	20	10	20
SENSORS:3	3	—	87	60	10	20	10	20	20
SPECAN:3	3	3	3	10	1	1	10	10	10
WEEDS	3	1	19	90	20	10	10	10	10
YFIT	3	—	150	290	20	60	40	40	40
YFITU	3	—	308	310	40	80	50	50	60
ALLINITU	4	—	30	40	20	10	1	10	10
ALLINIT	4	2	41	60	1	10	1	10	1
BROWNDEN	4	—	72	60	1	20	20	10	20
CRAGGLVY	4	—	131	120	20	20	20	20	20
CHAINWOO:4	4	—	98	110	10	10	10	20	10
CHEBYQAD:4	4	—	35	40	1	10	10	10	10
HATFLDA	4	—	67	100	10	10	10	20	20
HIMMELBF	4	—	244	210	20	70	120	—	40
HS38	4	—	100	80	10	10	20	20	20
HILBERTA:4	4	—	16	30	10	10	10	10	10
HATFLDB	4	1	64	100	10	20	10	10	20
HADAMALS	4	3	32	40	10	10	10	1	10
KOWOSB	4	—	144	210	20	50	40	20	50
MSQRTALS	4	—	63	50	10	1	10	20	10
MODBEALE:4	4	—	80	40	10	20	10	10	10
PENALTY2	4	—	399	1260	100	270	250	40	210
POWELLSG	4	—	115	70	10	20	20	10	20
PALMER1B	4	—	118	230	30	40	20	40	40
PALMER2B	4	—	91	260	30	40	20	30	30
PALMER3B	4	—	103	220	60	10	20	30	30
PALMER4B	4	—	108	230	20	20	20	30	30

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
PALMER5D	4	—	21	30	10	10	10	20	20
PENALTY1:4	4	—	306	380	30	70	90	20	40
PSPDOC	4	1	25	20	20	1	10	10	10
PALMER1	4	1	75	110	20	20	60	20	20
PALMER2	4	1	69	80	1	20	10	30	20
PALMER3	4	1	63	160	10	30	10	20	20
PALMER4	4	1	59	40	10	20	20	20	690
POWELLBC:4	4	4	4	20	1	10	1	10	10
SINEALI:4	4	—	115	90	20	30	30	10	30
WOODS:4	4	—	90	50	20	10	10	20	20
CHEBYQAD:5	5	2	41	90	10	10	20	10	10
EXTROSNB	5	—	301	300	20	50	50	40	40
GENHUMPS:5	5	—	236	190	30	40	60	40	60
GENROSE:5	5	—	111	170	10	20	40	30	10
HILBERTB	5	—	18	20	10	10	1	10	1
HILBERTA:5	5	—	23	20	1	20	20	10	20
HS45	5	5	3	10	1	1	1	1	10
OSCIGRAD:5	5	—	513	1860	360	—	1230	40	—
OSCIPATH:5	5	—	2625	—	—	—	—	230	1170
OSBORNEA	5	5	405	270	—	—	—	—	—
SINQUAD	5	—	50	40	10	1	10	10	10
TQUARTIC	5	—	51	40	10	10	10	10	10
BIGGS6	6	—	400	3020	40	360	580	—	—
BIGGS5	6	1	216	300	20	30	70	40	20
BIGGS3	6	3	69	70	10	10	10	40	10
CHEBYQAD:6	6	2	53	50	10	20	20	10	20
EIGENALS:6	6	—	92	110	10	20	10	20	10
EIGENBLS:6	6	—	97	70	10	20	10	20	10
HEART6LS	6	—	83	1470	220	570	720	—	—
HILBERTA:6	6	—	23	10	10	20	20	10	20
HART6	6	2	48	50	10	10	10	10	10
PALMER6A	6	—	237	830	120	300	460	—	—

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
PALMER8A	6	—	282	780	50	50	140	250	50
PALMER1A	6	—	230	770	70	240	240	—	120
PALMER2A	6	—	429	480	60	220	250	150	110
PALMER3A	6	—	490	750	80	160	260	210	130
PALMER4A	6	—	332	510	50	120	120	460	60
PALMER5C	6	—	27	30	1	10	10	10	10
SPECAN:6	6	6	3	1	10	1	10	1	1
CHEBYQAD:7	7	1	104	100	10	40	40	20	20
PALMER1D	7	—	33	20	20	—	—	—	180
AIRCRFTB	8	3	216	260	40	30	90	90	30
CHEBYQAD:8	8	2	90	90	10	30	20	10	20
HEART8LS	8	—	524	1130	350	150	130	110	—
MAXLIKA	8	7	16	80	10	10	10	20	20
OSLBQP	8	7	4	20	1	1	1	1	1
PALMER6C	8	—	37	30	10	—	—	—	—
PALMER6E	8	—	70	520	10	990	—	—	—
PALMER7C	8	—	37	30	10	—	—	—	—
PALMER8C	8	—	37	20	10	—	—	—	—
PALMER8E	8	—	84	410	10	1100	740	370	—
PALMER1C	8	—	37	30	10	—	—	—	—
PALMER1E	8	—	1161	960	90	—	—	—	—
PALMER2C	8	—	37	30	10	—	—	—	—
PALMER3C	8	—	37	20	1	—	—	—	—
PALMER4C	8	—	37	30	1	—	—	—	—
PALMER4E	8	—	684	510	220	—	—	330	—
PALMER5A	8	—	85	40	—	—	—	—	—
POWELLSG:8	8	—	203	150	10	40	90	30	70
PALMER7E	8	1	85	60	—	—	—	—	—
PALMER2E	8	1	1092	720	—	—	—	—	—
PALMER3E	8	1	1047	710	—	—	—	450	—

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
S368:8	8	6	27	40	10	20	—	20	20
VIBRBEAM	8	—	2681	1180	—	—	—	—	—
CHEBYQAD:9	9	2	87	60	10	60	50	10	50
MSQRTBLS	9	—	94	70	20	10	20	10	20
NONMSQRT	9	—	833	1660	60	—	—	—	—
SPECAN:9	9	9	3	10	10	10	10	1	10
ARGLINA:10	10	—	7	10	1	1	10	10	1
ARGLINB:10	10	—	7	10	1	10	10	10	1
ARGLINC:10	10	—	7	20	1	10	10	10	10
BROWNAL	10	—	74	40	10	10	10	10	20
BRYBND	10	—	83	50	20	40	30	30	60
BOXPOWER:10	10	—	21	20	10	1	1	10	10
BOX:10	10	—	41	20	1	10	10	10	10
BROYDN7D:10	10	—	94	110	10	10	20	20	20
CHNROSNB	10	—	192	230	20	30	30	20	30
CHNRSNBM	10	—	222	260	20	30	40	30	30
CHARDIS0:10	10	—	4	20	1	1	1	1	10
COSINE:10	10	—	124	140	10	30	80	10	30
CRAGGLVY:10	10	—	132	150	10	10	20	40	20
CHEBYQAD	10	2	3	1	1	30	30	20	20
CHENHARK:10	10	3	47	60	10	10	10	10	10
CVXBQP1:10	10	10	3	1	1	1	1	10	1
DIXON3DQ	10	—	45	30	10	10	10	10	20
DQDRTIC	10	—	23	30	10	10	10	10	20
DQRTIC:10	10	—	82	120	10	10	10	20	20
ERRINROS:10	10	—	319	360	30	80	150	50	50
ERRINRSM:10	10	—	690	430	50	240	290	90	130
EXTROSNB:10	10	—	1731	2540	210	620	630	120	400
FLETBV3M	10	—	33	60	10	20	20	30	20
FLETGBV2	10	—	47	30	10	10	10	40	20
FLETGBV3	10	—	40	250	10	10	20	90	20

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
FLETCHBV	10	—	112	390	20	20	20	130	20
FLETCHCR	10	—	213	280	20	30	30	50	30
FREUROTH:10	10	—	75	50	10	10	20	10	20
GENHUMPS:10	10	—	480	440	90	120	130	220	100
GENROSE:10	10	—	210	280	30	40	70	30	30
HS110	10	—	28	100	1	—	—	80	—
HILBERTA:10	10	—	3	10	1	20	40	20	30
HILBERTB:10	10	—	18	20	10	10	10	10	10
HARKERP2:10	10	10	3	1	1	1	1	1	10
INDEFM:10	10	—	147	510	10	20	50	20	30
INDEF:10	10	10	51	90	20	10	20	—	20
MOREBV	10	—	71	70	10	20	20	10	20
MANCINO:10	10	—	22	30	1	10	10	1	20
MODBEALE:10	10	—	135	80	20	160	110	10	100
MCCORMCK	10	1	36	50	10	10	20	10	10
NONCVXU2:10	10	—	75	90	10	10	10	10	20
NONCVXUN:10	10	—	72	50	1	20	10	10	10
NONDIA:10	10	—	99	130	10	10	10	10	20
NCVXBQP1:10	10	10	7	80	1	10	10	10	1
NCVXBQP2:10	10	10	7	70	10	10	10	10	1
NCVXBQP3:10	10	10	7	80	10	10	—	1	20
POWER	10	—	66	90	10	10	10	20	10
PENALTY1:10	10	—	243	290	40	50	40	10	40
PENALTY2:10	10	—	1469	930	120	260	300	230	260
PROBPENL:10	10	4	37	370	60	760	—	—	180
POWELLBC:10	10	7	17	160	10	1	10	1	20
RAYBENDL:10	10	4	90	110	10	20	20	110	20
RAYBENDS:10	10	4	87	70	20	20	30	210	20
SINEALI	10	—	511	550	240	650	670	180	430
SROSENBR	10	—	159	200	20	50	50	10	30

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
SCHMVETT:10	10	—	90	50	10	10	10	10	20
SENSORS:10	10	—	57	50	10	10	10	20	10
SPARSINE:10	10	—	53	40	10	20	10	10	10
SPARSQUR:10	10	—	34	80	20	10	10	10	10
SSBRYBND:10	10	—	737	510	60	1430	300	—	—
SSCOSINE:10	10	—	365	240	30	—	—	290	—
TOINTGSS	10	—	125	90	20	20	20	50	20
TQUARTIC:10	10	—	82	70	20	10	10	20	20
TRIDIA:10	10	—	45	30	10	20	20	10	10
VARDIM	10	—	13	20	1	20	10	20	10
VAREIGVL:10	10	—	45	30	1	1	1	1	10
OSBORNEB	11	—	3847	—	—	730	—	—	—
EXPQUAD:12	12	4	111	70	10	30	30	20	20
QRTQUAD:12	12	3	168	170	10	130	70	30	90
QUDLIN	12	12	13	20	10	10	1	10	10
WATSON:12	12	—	238	210	20	60	120	210	80
BRATU1D:13	13	2	64	40	1	20	10	20	10
DIXMAANA	15	—	18	20	1	10	10	10	10
DIXMAANB	15	—	16	20	10	1	10	10	10
DIXMAANC	15	—	18	20	1	1	1	10	1
DIXMAAND	15	—	22	30	1	1	1	1	10
DIXMAANE	15	—	58	40	10	10	10	20	10
DIXMAANF	15	—	61	40	1	10	10	30	10
DIXMAANG	15	—	58	40	10	10	10	10	10
DIXMAANH	15	—	57	40	10	10	10	10	20
DIXMAANI	15	—	113	50	10	20	30	30	20
DIXMAANJ	15	—	121	60	20	20	30	30	10

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANK	15	—	114	70	20	10	20	30	10
DIXMAANL	15	—	108	60	20	20	20	30	20
DIXMAANM	15	—	93	50	20	20	10	30	20
DIXMAANN	15	—	106	50	10	30	30	40	20
DIXMAANO	15	—	112	60	10	10	10	50	20
DIXMAANP	15	—	121	70	10	20	20	30	20
PARKCH	15	—	642	5810	—	33090	29770	—	—
CLPLATEA:16	16	4	81	50	10	10	10	10	10
CLPLATEB:16	16	4	80	40	10	1	10	10	10
CLPLATEC:16	16	4	69	40	10	20	20	30	30
FMINSURF	16	—	63	50	10	10	10	10	10
FMINSRF2:16	16	—	78	60	10	10	20	10	10
HADAMALS:16	16	8	102	180	10	30	30	10	30
LMINSURF	16	12	36	60	10	1	10	10	10
NLMSURF:16	16	12	43	50	10	10	10	60	20
NOBNDTOR:16	16	13	15	40	10	10	20	10	10
POWELLSG:16	16	—	312	280	40	110	150	20	70
TORSION111:16	16	14	22	30	10	10	10	1	10
TORSION1:16	16	14	22	30	10	10	10	1	10
TORSION2:16	16	14	22	30	1	10	10	10	1
TORSIONA:16	16	14	22	60	10	1	1	1	1
TORSIONB:16	16	14	22	30	10	1	1	1	10
TORSIONC:16	16	14	18	20	10	1	1	1	10
TORSIOND:16	16	14	18	30	20	10	1	10	10
TORSION3:16	16	16	4	20	1	20	1	1	10
TORSION4:16	16	16	4	10	1	10	10	10	1
TORSION5:16	16	16	4	20	1	1	1	10	1
TORSION6:16	16	16	4	20	1	1	10	1	1
TORSIONE:16	16	16	4	10	1	1	10	10	10
TORSIONF:16	16	16	4	20	1	10	1	10	10
CHARDIS0:18	18	—	4	10	10	1	1	1	10

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
LINVERSE	19	8	240	210	10	150	100	40	160
CHEBYQAD:20	20	3	127	300	20	40	40	50	30
MANCINO:20	20	—	27	30	1	10	10	20	10
NONDIA:20	20	—	141	130	10	20	20	20	20
POWELLSG:20	20	—	312	280	50	170	210	20	150
POWER:20	20	—	78	150	10	10	10	20	20
POWELLBC:20	20	13	87	190	10	40	50	20	20
SINEALI:20	20	—	436	—	—	—	—	70	—
TRIDIA:20	20	—	85	50	10	20	30	20	20
NCB20B	21	—	165	170	40	40	70	10	40
NCB20B:22	22	—	207	490	50	110	150	10	90
RAYBENDL:24	24	4	753	1620	—	220	200	—	180
RAYBENDS:24	24	4	2343	5340	—	660	840	—	—
BIGGSB1	25	3	120	130	20	60	40	30	30
CHNROSNB:25	25	—	383	540	60	50	110	50	50
CHNRSNBM:25	25	—	548	690	70	140	130	120	90
ERRINROS:25	25	—	394	380	—	80	100	80	50
ERRINRSM:25	25	—	948	540	—	520	390	270	180
HATFLDC	25	12	45	30	10	10	10	20	10
NONSCOMP	25	12	225	470	20	70	70	60	60
OSCIPATH:25	25	—	181	160	10	30	40	20	50
QUARTC	25	—	39	80	1	1	20	10	10
SPMSRTL	28	—	155	140	20	20	30	20	20
X3PK	30	1	6749	2840	—	—	—	—	—
EIGENCLS:30	30	—	411	330	50	80	90	70	40
MANCINO:30	30	—	30	30	10	1	10	—	20
NONDIA:30	30	—	146	80	10	30	30	20	20
POWER:30	30	—	3	10	20	10	10	30	10
TRIDIA	30	—	133	60	20	30	30	20	20
WATSON:31	31	—	1681	710	430	—	—	390	—

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
EDENSCH	36	—	66	40	10	10	10	10	10
HADAMALS:36	36	24	192	320	20	100	40	20	40
LIARWHD	36	—	72	60	10	10	10	10	10
POWELLSG:36	36	—	333	270	50	180	190	30	170
CHARDIS0:40	40	—	4	10	1	1	1	10	10
POWELLSG:40	40	—	333	360	50	180	190	30	—
QR3DLS:40	40	1	4683	1750	—	1000	1080	290	640
RAYBENDL	44	4	4824	—	—	1360	1200	—	510
CLPLATEA	49	7	138	130	10	20	20	20	20
CLPLATEB	49	7	135	90	20	20	20	20	20
CLPLATEC	49	7	288	150	30	60	100	20	50
FMINSRF2:49	49	—	137	80	20	20	20	30	20
FMINSURF:49	49	—	110	50	10	10	20	70	20
LMINSURF:49	49	24	96	80	20	10	30	90	10
MSQRTALS:49	49	—	651	400	—	140	180	90	90
MSQRTBLS:49	49	—	460	330	70	120	110	70	60
NLMSURF:49	49	24	370	340	40	60	80	150	40
ARGLINA:50	50	—	7	10	10	10	1	10	10
ARGLINB:50	50	—	7	20	1	10	1	10	1
ARGLINC:50	50	—	7	20	1	10	10	20	10
BROYDN7D:50	50	—	275	240	40	30	30	30	40
BRYBND:50	50	—	66	40	10	10	10	10	10
BQPGABIM	50	26	117	190	10	30	30	10	40
BQPGASIM	50	27	105	80	20	40	50	20	20
CHNROSNB:50	50	—	651	450	90	150	150	110	120
CHNRSNBM:50	50	—	933	680	90	180	200	140	160
CRAGGLVY:50	50	—	247	240	40	30	40	30	30
CHEBYQAD:50	50	6	192	470	360	120	90	200	100
CVXBQP1:50	50	50	3	10	1	1	1	10	1
DQDRTIC:50	50	—	23	20	1	30	10	1	10
DQRTIC:50	50	—	43	150	10	10	10	20	20

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
ENGVAL1:50	50	—	22	30	1	10	1	20	10
ERRINROS:50	50	—	415	350	—	80	60	120	70
ERRINRSM:50	50	—	836	470	700	560	300	260	160
FREUROTH:50	50	—	79	40	10	10	10	10	20
HILBERTB:50	50	—	3	10	1	10	10	10	10
INDEFM:50	50	—	199	270	20	40	30	120	30
INDEF:50	50	50	53	160	1	80	70	—	50
MANCINO:50	50	—	30	80	10	20	20	10	30
MOREBV:50	50	—	1539	960	110	710	580	460	580
MCCORMCK:50	50	1	42	40	10	20	20	10	20
NCB20B:50	50	—	1006	420	310	370	330	140	270
NONDIA:50	50	—	132	90	10	40	40	10	40
NONSCOMP:50	50	25	198	290	20	50	40	30	30
NCVXBQP3:50	50	49	25	180	1	20	—	10	20
NCVXBQP1:50	50	50	7	80	10	10	1	10	1
NCVXBQP2:50	50	50	7	170	10	10	—	10	20
PENALTY3	50	—	447	1210	230	370	450	80	270
PENALTY1:50	50	—	234	270	30	30	50	20	30
PENALTY2:50	50	—	324	250	60	70	70	20	100
POWER:50	50	—	91	90	10	10	10	30	10
PROBPENL:50	50	—	1066	590	—	—	—	—	—
PENTDI:50	50	37	28	30	10	1	1	10	10
SINQUAD:50	50	—	91	50	20	30	20	20	30
SPARSINE:50	50	—	469	250	60	70	100	30	60
SPARSQUR:50	50	—	24	50	1	10	20	20	20
SROSENBR:50	50	—	177	220	20	90	40	20	30
SSBRYBND:50	50	—	6559	2120	—	—	—	—	1060
S368:50	50	32	9	50	10	1	1	30	1
TOINTGOR	50	—	393	270	40	60	60	40	40
TOINTPSP	50	—	336	270	60	50	80	40	40

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
TOINTQOR	50	—	113	60	10	20	20	10	20
TOINTGSS:50	50	—	135	90	20	10	20	20	20
TQUARTIC:50	50	—	125	80	20	30	20	20	30
TRIDIA:50	50	—	213	110	20	30	40	30	30
VAREIGVL	50	—	63	130	1	10	1	10	10
VARDIM:50	50	—	101	90	20	20	20	20	20
SCOND1LS:52	52	2	3318	—	—	—	—	250	—
CHARDIS0:60	60	—	4	20	1	1	1	10	1
POWELLSG:60	60	—	333	260	50	200	250	20	250
DECONVU	61	10	3630	—	670	1130	650	—	—
DECONVB	61	41	318	450	40	—	—	60	—
FMINSRF2	64	—	162	120	20	20	20	30	30
FMINSURF:64	64	—	135	90	10	30	20	20	20
HADAMALS:64	64	34	159	340	10	60	80	20	40
LMINSURF:64	64	28	127	160	10	10	20	80	30
MINSURF	64	28	82	50	10	10	10	70	10
NLMSURF:64	64	28	471	320	40	70	120	200	50
POWER:75	75	—	105	100	20	10	10	30	20
BRATU1D	77	2	866	460	100	160	160	70	150
POWELLSG:80	80	—	333	260	60	190	240	20	—
DIXMAANA:90	90	—	15	30	1	10	1	10	10
DIXMAANB:90	90	—	16	20	10	1	10	10	10
DIXMAANC:90	90	—	19	30	1	10	1	1	10
DIXMAAND:90	90	—	19	20	1	10	1	1	10
DIXMAANE:90	90	—	142	80	20	30	20	50	20
DIXMAANF:90	90	—	138	90	20	20	30	40	30
DIXMAANG:90	90	—	142	90	30	20	20	30	30
DIXMAANH:90	90	—	140	110	20	30	20	30	20
DIXMAANI:90	90	—	529	270	40	140	140	100	110

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANJ:90	90	—	593	320	60	80	110	160	80
DIXMAANK:90	90	—	585	330	50	150	180	160	80
DIXMAANL:90	90	—	545	290	40	150	80	70	80
DIXMAANM:90	90	—	501	360	40	140	160	180	70
DIXMAANN:90	90	—	612	330	80	80	70	160	120
DIXMAANO:90	90	—	618	370	80	190	170	180	150
DIXMAANP:90	90	—	690	370	90	140	150	150	70
NONDIA:90	90	—	166	100	30	80	70	20	80
ARGLINA:100	100	—	7	20	1	1	10	10	10
ARGLINB:100	100	—	13	30	10	10	10	10	40
ARGLINC:100	100	—	24	40	20	10	10	10	90
ARWHEAD:100	100	—	48	40	10	10	10	1	10
BDQRTIC	100	—	133	70	30	20	30	30	20
BOXPOWER:100	100	—	27	20	10	10	10	10	20
BOX:100	100	—	70	40	10	10	10	10	10
BROWNAL:100	100	—	81	50	10	40	50	20	50
BROYDN7D:100	100	—	411	330	60	40	90	50	60
BRYBND:100	100	—	64	60	10	10	10	10	20
BDEXP	100	2	315	—	30	—	—	660	250
BIGGSB1:100	100	3	714	670	110	190	200	120	140
CHARDIS0	100	—	4	20	1	1	1	—	1
CHAINWOO:100	100	—	624	880	80	240	220	40	200
COSINE:100	100	—	928	3270	190	—	—	—	—
CRAGGLVY:100	100	—	235	250	40	30	40	40	40
CURLY10:100	100	—	2640	1570	290	460	500	190	410
CURLY20:100	100	—	2352	1070	550	530	560	170	450
CURLY30:100	100	—	2022	880	610	540	580	170	450
CHEBYQAD:100	100	4	293	1460	4800	360	380	720	400
CLPLATEA:100	100	10	181	130	30	30	30	40	20
CLPLATEB:100	100	10	205	160	20	20	30	20	20
CLPLATEC:100	100	10	705	330	50	190	240	190	210

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
CHENHARK:100	100	30	5420	3130	330	940	920	—	860
CVXBQP1	100	100	3	10	1	20	1	1	10
DIXON3DQ:100	100	—	405	240	30	220	170	190	140
DQDRTIC:100	100	—	23	20	10	10	10	10	10
DQRTIC:100	100	—	51	120	10	20	10	20	20
ENGVAL1:100	100	—	57	40	10	20	10	1	10
EXTROSNB:100	100	—	2337	—	690	1050	1180	180	1220
FLETBV3M:100	100	—	81	180	10	20	20	40	20
FLETGBV2:100	100	—	660	390	70	170	130	250	100
FLETGBV3:100	100	—	402	3880	760	170	110	—	70
FLETCHCR:100	100	—	1706	1250	190	360	400	260	240
FREUROTH:100	100	—	83	40	10	20	20	10	10
GENHUMPS:100	100	—	874	580	150	220	230	290	170
GENROSE:100	100	—	1711	1320	180	340	380	280	270
HADAMALS:100	100	76	306	490	90	100	60	40	60
HARKERP2	100	100	3	1	10	10	1	1	1
INDEFM:100	100	—	13	3100	80	60	110	70	40
INDEF:100	100	100	13	200	1	90	90	—	60
LIARWHD:100	100	—	85	40	10	10	10	10	10
MANCINO:100	100	—	33	250	50	120	80	60	90
MOREBV:100	100	—	11645	—	—	1440	—	—	—
MSQRTALS:100	100	—	1173	1210	290	230	220	120	190
MSQRTBLS:100	100	—	1784	1370	330	340	320	160	230
MCCORMCK:100	100	1	42	40	1	10	20	10	10
NONDQUAR	100	—	566	300	80	240	230	380	200
NCB20B:100	100	—	2856	1200	830	500	570	230	400
NONCVXU2:100	100	—	1430	810	120	240	280	220	230
NONCVXUN:100	100	—	536	350	40	140	140	50	140
NONDIA:100	100	—	198	180	50	80	130	20	—

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
NOBNDTOR:100	100	49	87	160	10	30	40	20	20
NONSCOMP:100	100	50	213	260	20	40	130	30	50
NCVXBQP3:100	100	98	42	230	10	30	30	20	20
NCVXBQP1:100	100	100	6	130	1	10	1	10	1
NCVXBQP2:100	100	100	13	180	1	20	30	10	30
OSCIPTH:100	100	—	180	180	20	50	40	30	20
PENALTY1:100	100	—	152	230	20	40	40	30	30
PENALTY2:100	100	—	249	260	40	30	30	30	30
PENALTY3:100	100	—	897	3810	1090	1360	1500	270	880
POWELLSG:100	100	—	333	370	50	190	230	20	220
POWER:100	100	—	112	130	20	10	20	40	20
PROBPENL:100	100	—	9	1370	—	—	—	—	—
PENTDI:100	100	74	24	30	1	10	20	10	10
QUARTC:100	100	—	51	150	20	20	10	20	20
SCHMVETT:100	100	—	153	210	20	30	30	170	20
SENSORS:100	100	—	79	640	150	180	250	190	160
SINEALI:100	100	—	210	260	50	30	30	50	40
SINQUAD:100	100	—	79	50	20	20	30	10	30
SPARSINE:100	100	—	820	380	90	190	210	60	160
SPARSQUR:100	100	—	27	50	1	10	10	10	20
SPMSRTLS:100	100	—	960	—	100	—	200	—	180
SROSENBR:100	100	—	183	220	20	140	80	10	50
SSBRYBND:100	100	—	9583	3110	—	—	—	—	—
SSCOSINE:100	100	—	3535	1200	—	—	—	—	—
S368:100	100	73	10	130	30	10	10	70	10
TOINTGSS:100	100	—	101	100	20	10	20	20	20
TQUARTIC:100	100	—	207	210	20	30	110	20	60
TRIDIA:100	100	—	341	220	20	70	120	40	60

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
TORSIONA:100	100	54	72	160	20	30	20	10	20
TORSIONB:100	100	54	72	180	10	30	30	1	20
TORSION111:100	100	58	66	150	20	10	20	10	10
TORSION1:100	100	58	66	180	10	20	20	10	10
TORSION2:100	100	58	66	160	10	20	20	10	20
TORSIONC:100	100	67	54	60	10	20	20	10	20
TORSIOND:100	100	67	54	60	10	30	10	10	20
TORSION3:100	100	71	51	70	20	20	30	20	10
TORSION4:100	100	71	51	50	10	30	30	1	10
TORSIONE:100	100	84	36	50	10	20	20	20	10
TORSIONF:100	100	84	36	40	10	20	20	10	20
TORSION5:100	100	86	17	50	10	10	10	10	10
TORSION6:100	100	86	17	50	10	10	1	10	10
VARDIM:100	100	—	122	120	10	20	20	20	30
VAREIGVL:100	100	—	70	270	10	10	10	10	10
WOODS:100	100	—	198	140	30	130	150	20	90
EXPLIN:101	101	95	156	220	20	100	60	20	30
EXPLIN2:101	101	101	6	30	10	1	1	10	10
BRATU1D:103	103	2	1084	880	150	180	210	100	180
EIGENALS	110	—	4212	1880	420	630	710	470	550
EIGENBLS	110	—	2141	1320	190	320	420	290	290
NCB20:110	110	—	633	330	—	450	350	260	390
EXPQUAD	120	7	214	260	20	40	70	90	40
EXPLIN	120	70	557	540	70	170	170	80	140
EXPLIN2	120	101	215	470	30	120	80	20	100
QRTQUAD	120	5	332	270	40	170	150	60	170
QUDLIN:120	120	120	13	20	10	20	20	1	10
FMINSRF2:121	121	—	214	180	20	30	30	20	50
FMINSURF:121	121	—	165	170	20	40	30	20	30
LMINSURF:121	121	40	170	170	10	20	20	130	20
NLMSURF:121	121	40	907	500	90	170	200	260	150

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
HADAMALS:144	144	79	202	480	40	60	40	30	60
HOLMES	180	180	3	10	1	1	10	1	10
NCB20B:180	180	—	1239	760	320	280	270	160	260
DRCV2LQ	196	96	4633	1790	350	700	700	—	560
DRCV3LQ	196	96	9829	—	710	1550	—	—	—
HADAMALS:196	196	161	311	530	60	150	120	60	150
LINVERSE:199	199	89	2268	—	—	—	—	320	—
ARGLINA:200	200	—	7	10	10	1	1	1	10
ARGLINB:200	200	—	24	40	1	10	10	40	20
ARGLINC:200	200	—	12	150	10	10	10	30	10
BROWNAL:200	200	—	108	110	20	130	190	20	150
CHARDIS0:200	200	—	4	20	1	10	1	—	10
MODBEALE:200	200	—	384	440	70	380	350	30	270
PENALTY2:200	200	—	521	—	70	70	100	80	70
PENALTY3:200	200	—	708	20800	8280	—	—	2860	—
POWELLBC:200	200	104	2761	2520	1610	1130	3060	—	—
VARDIM:200	200	—	120	150	20	20	20	30	30
HADAMALS:256	256	135	417	—	70	190	160	80	140
ODC:288	288	148	465	450	130	100	120	150	110
SSC:288	288	148	383	280	40	70	100	70	50
DIXMAANA:300	300	—	15	20	1	1	10	10	10
DIXMAANB:300	300	—	16	30	10	1	1	1	10
DIXMAANC:300	300	—	19	40	10	1	1	1	1
DIXMAAND:300	300	—	22	30	10	1	1	10	10
DIXMAANE:300	300	—	248	240	30	60	40	140	40
DIXMAANF:300	300	—	215	250	40	30	30	70	30

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANG:300	300	—	211	210	20	30	30	40	30
DIXMAANH:300	300	—	219	210	40	30	30	50	30
DIXMAANI:300	300	—	1781	710	190	360	300	350	270
DIXMAANJ:300	300	—	1245	660	150	270	210	210	220
DIXMAANK:300	300	—	1147	610	140	220	210	230	230
DIXMAANL:300	300	—	941	730	120	220	240	300	180
DIXMAANM:300	300	—	1761	700	220	340	360	360	290
DIXMAANN:300	300	—	1745	820	160	320	360	280	280
DIXMAANO:300	300	—	1702	790	170	330	340	400	290
DIXMAANP:300	300	—	1634	790	160	390	370	310	250
HADAMALS:324	324	256	499	790	70	170	210	150	170
CHARDIS0:400	400	—	4	30	10	10	10	—	10
HADAMALS:400	400	306	494	1200	170	440	470	170	520
JNLBRNG1:400	400	253	272	210	40	130	140	20	120
JNLBRNGA:400	400	253	317	250	40	170	190	60	270
JNLBRNG2:400	400	278	285	320	30	160	220	30	140
JNLBRNGB:400	400	302	405	290	30	210	270	100	190
OBSTCLBL:400	400	263	28	40	10	50	50	10	10
OBSTCLBM:400	400	263	28	50	10	50	40	1	10
OBSTCLBU:400	400	263	28	40	10	50	40	10	20
OBSTCLAE:400	400	398	9	20	10	10	1	1	10
OBSTCLAL:400	400	398	9	20	10	1	10	10	10
EIGENCLS	462	—	7023	8160	2540	6930	7550	1410	7740
NOBNDTOR:484	484	143	192	430	40	120	200	80	160
TORSIONA:484	484	161	150	390	40	220	200	20	120
TORSIONB:484	484	161	150	330	40	220	200	20	130
TORSION111:484	484	186	150	350	50	190	200	50	130
TORSION1:484	484	186	150	340	50	180	180	50	150
TORSION2:484	484	186	150	350	40	180	210	50	130
TORSIONC:484	484	254	93	270	30	140	200	10	110
TORSIOND:484	484	254	93	270	30	140	220	10	110
TORSION3:484	484	267	90	260	40	180	150	30	100

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
TORSION4:484	484	267	90	280	30	210	160	20	110
TORSIONE:484	484	362	63	230	30	90	100	10	60
TORSIONF:484	484	362	63	240	20	80	100	20	50
TORSION5:484	484	368	60	250	20	90	110	1	70
TORSION6:484	484	368	60	210	30	90	110	1	70
ARWHEAD:500	500	—	68	110	20	40	20	1	40
BDQRTIC:500	500	—	147	130	40	110	170	10	130
BROYDN7D:500	500	—	523	580	100	410	450	170	380
BRYBND:500	500	—	63	90	10	20	30	10	30
BDEXP:500	500	2	1514	7660	190	—	—	—	—
CRAGGLVY:500	500	—	276	320	40	170	200	40	160
DQRTIC	500	—	59	260	10	50	50	20	50
DQDRTIC:500	500	—	23	20	10	10	10	10	10
FREUROTH:500	500	—	84	110	20	100	200	10	60
GENHUMPS:500	500	—	873	1150	180	680	890	200	620
GENROSE:500	500	—	8254	8840	800	6480	7310	—	4700
HARKERP2:500	500	500	3	10	10	1	1	1	1
LIARWHD:500	500	—	101	160	20	40	40	20	50
MOREBV:500	500	—	1407	700	190	800	820	170	750
MCCORMCK:500	500	1	51	70	10	40	40	10	30
NCB20B:500	500	—	1251	810	580	1300	1320	230	1440
NONDIA:500	500	—	371	330	100	710	620	40	—
NONDQUAR:500	500	—	551	400	90	680	900	330	—
NONSCOMP:500	500	250	229	930	30	180	300	30	120
OSCIPATH:500	500	—	182	210	20	120	120	30	90
PENALTY1:500	500	—	169	290	20	90	90	20	70
POWELLSG:500	500	—	333	400	70	690	820	20	—
POWER:500	500	—	239	230	30	130	100	100	120
PROBPENL:500	500	—	7	20	1	1	1	—	10
PENTDI:500	500	376	24	40	1	10	10	1	10

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
QUARTC:500	500	—	59	280	10	50	60	20	50
SCHMVETT:500	500	—	156	630	40	80	90	20	80
SINQUAD:500	500	—	110	150	20	110	170	20	130
SROSENBR:500	500	—	286	450	20	320	320	20	180
TOINTGSS:500	500	—	109	150	10	50	90	20	60
TQUARTIC:500	500	—	321	370	40	420	350	240	260
TRIDIA:500	500	—	857	400	80	1040	1130	170	840
VAREIGVL:500	500	—	73	100	10	30	30	10	30
BRATU1D:503	503	2	6081	4530	1340	3820	4430	1530	4010
CLPLATEA:529	529	23	507	440	80	360	310	120	210
CLPLATEB:529	529	23	369	350	60	290	270	240	330
CLPLATEC:529	529	23	981	870	—	6930	5850	140	5870
ODC	864	164	530	1410	160	480	440	1010	420
SSC	864	164	371	850	90	340	460	150	280
FMINSRF2:961	961	—	258	1150	40	210	200	110	180
FMINSURF:961	961	—	315	570	60	280	270	160	220
LMINSURF:961	961	120	593	1950	120	430	420	610	390
NLMSURF:961	961	120	4062	8020	800	2980	2940	—	2890
ARWHEAD:1000	1000	—	63	200	10	60	110	10	40
BDQRTIC:1000	1000	—	177	430	70	240	290	20	250
BOXPOWER:1000	1000	—	32	60	10	50	40	10	50
BOX:1000	1000	—	95	210	20	130	110	30	140
BROWNAL:1000	1000	—	102	600	210	630	620	300	740

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
BROYDN7D:1000	1000	—	526	1780	180	510	530	260	570
BRYBND:1000	1000	—	63	240	10	40	40	20	50
BDEXP:1000	1000	2	3017	—	490	—	—	—	—
BIGGSB1:1000	1000	3	5541	17600	1160	5520	7340	810	3770
CHAINWOO	1000	—	925	1590	150	960	960	150	760
CURLY10	1000	—	25867	—	2690	16070	17630	—	15910
CURLY30	1000	—	28092	—	—	—	—	2830	—
CHARDIS0:1000	1000	—	4	160	20	70	70	80	70
CRAGGLVY:1000	1000	—	265	720	70	340	290	90	190
CVXBP1:1000	1000	1000	3	10	1	1	10	1	1
DIXON3DQ:1000	1000	—	4005	6000	380	6910	6420	1390	4630
DQDRTIC:1000	1000	—	23	60	1	20	40	1	50
DQRTIC:1000	1000	—	63	530	10	70	90	40	70
EG2	1000	—	171	600	80	590	600	20	—
ENGVAL1:1000	1000	—	58	190	10	30	30	20	100
EXTROSNB:1000	1000	—	1881	23410	1050	4740	5660	220	13490
FLETBV3M:1000	1000	—	52	980	10	80	100	50	80
FLETBVB2:1000	1000	—	4009	7330	1010	5110	5500	960	3960
FLETBVB3:1000	1000	—	14177	—	—	18100	37230	—	—
FLETCHCR:1000	1000	—	16588	46010	1900	14500	16290	—	11240
FREUROTH:1000	1000	—	76	200	20	50	160	20	40
GENHUMPS	1000	—	979	2120	220	970	1120	360	900
HARKERP2:1000	1000	1000	3	10	10	1	10	1	20
INDEFM	1000	—	381	750	120	620	410	1380	620
INDEF	1000	1000	53	360	10	430	370	—	410
JNLBRNG1:1000	1000	366	278	770	70	210	260	50	280
JNLBRNGA:1000	1000	385	329	930	70	250	230	80	190
JNLBRNG2:1000	1000	524	501	1430	140	440	390	140	420

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
JNLBRNGB:1000	1000	560	1255	2700	230	1030	900	210	840
LIARWHD:1000	1000	—	110	220	10	130	100	30	90
MOREBV:1000	1000	—	1352	3640	260	880	850	220	780
MCCORMCK:1000	1000	1	48	140	10	40	70	30	70
NONCVXU2	1000	—	5628	11220	840	6160	9240	2210	6310
NONCVXUN	1000	—	10021	20200	1420	—	—	—	—
NONDIA	1000	—	564	1610	220	1080	1090	70	—
NCB20B:1000	1000	—	1263	3390	1020	1980	2260	360	1920
NONDQUAR:1000	1000	—	599	970	80	700	1000	200	—
NONSCOMP:1000	1000	500	255	460	40	270	380	30	270
NCVXBQP3	1000	983	104	1770	20	120	220	30	360
NCVXBQP2	1000	993	37	540	20	130	110	20	60
NCVXBQP1	1000	1000	4	390	10	1	1	10	10
OSCIGRAD:1000	1000	—	1486	—	160	—	—	—	—
OBSTCLBL	1000	680	117	410	20	240	180	20	150
OBSTCLBM	1000	680	117	390	30	240	200	30	190
OBSTCLBU	1000	680	117	440	20	210	170	30	130
OBSTCLAL	1000	696	72	360	20	90	90	10	80
OBSTCLAE:1000	1000	696	72	400	10	90	80	10	90
PENALTY1:1000	1000	—	147	410	20	100	110	20	100
POWELLSG:1000	1000	—	351	1230	100	990	830	30	—
POWER:1000	1000	—	330	680	40	220	210	180	200
POWELLBC:1000	1000	501	10798	—	—	44560	50550	—	53700
PENTDI	1000	751	24	60	1	10	1	10	20
QUARTC:1000	1000	—	63	420	1	70	70	30	80
SPARSINE	1000	—	13980	24280	2140	13120	14210	1750	10960
SPARSQUR	1000	—	31	220	10	30	30	30	40
SSBRYBND	1000	—	22532	—	—	17490	17820	—	14900

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
SCHMVETT:1000	1000	—	156	830	60	260	220	80	150
SENSORS:1000	1000	—	111	32520	27590	15110	17270	20690	21040
SINEALI:1000	1000	—	191	520	80	120	120	50	120
SINQUAD:1000	1000	—	144	350	30	80	110	30	130
SROSENBR:1000	1000	—	359	590	40	440	260	40	260
TESTQUAD	1000	—	3704	5470	—	8090	7380	340	6290
TOINTGSS:1000	1000	—	99	290	30	60	70	140	80
TQUARTIC:1000	1000	—	258	500	70	530	400	180	320
TRIDIA:1000	1000	—	1237	1900	130	1310	1020	220	960
VAREIGVL:1000	1000	—	73	200	10	50	30	20	40
WOODS:1000	1000	—	366	670	50	410	540	90	410
BRATU1D:1003	1003	1003	18312	—	—	16650	—	—	13220
NCB20	1010	—	481	1300	5350	1440	1550	830	1030
CLPLATEA:1024	1024	32	758	2370	160	710	630	220	640
CLPLATEB:1024	1024	32	492	1440	100	460	370	170	420
CLPLATEC:1024	1024	32	1188	7570	—	16330	15570	160	11420
FMINSRF2:1024	1024	—	275	780	50	280	200	240	160
FMINSURF:1024	1024	—	348	910	50	320	370	220	400
HADAMALS:1024	1024	801	583	5680	670	1000	1190	580	1130
LMINSURF:1024	1024	124	622	1960	120	520	580	—	610
NLMSURF	1024	124	4152	10210	880	3270	3030	900	2930
NOBNDTOR:1024	1024	235	237	1000	90	420	420	100	340
TORSIONA:1024	1024	281	201	940	90	340	390	50	320
TORSIONB:1024	1024	281	201	990	90	340	400	50	410
TORSION111:1024	1024	323	207	950	90	330	330	70	310
TORSION1:1024	1024	323	207	890	100	310	320	60	330

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
TORSION2:1024	1024	323	207	1000	100	290	310	60	340
TORSIONC:1024	1024	493	117	720	50	160	280	30	160
TORSIOND:1024	1024	493	117	740	50	170	260	40	180
TORSION3:1024	1024	515	123	800	60	250	250	40	260
TORSION4:1024	1024	515	123	760	60	250	260	20	190
TORSIONE:1024	1024	761	78	540	40	180	360	20	160
TORSIONF:1024	1024	761	78	630	40	200	300	10	140
TORSION5:1024	1024	768	75	670	40	220	170	20	140
TORSION6:1024	1024	768	75	610	40	180	170	20	160
EXPQUAD:1200	1200	81	938	5510	130	1130	1310	200	760
EXPLIN:1200	1200	1150	544	1750	70	610	470	130	350
EXPLIN2:1200	1200	1181	197	1640	20	370	260	40	250
QRTQUAD:1200	1200	50	1524	3170	660	5190	3370	360	4130
QUDLIN:1200	1200	1200	13	60	10	50	70	20	40
DIXMAANA:1500	1500	—	15	80	10	10	1	10	20
DIXMAANB:1500	1500	—	16	70	10	10	20	10	20
DIXMAANC:1500	1500	—	19	70	1	10	10	10	30
DIXMAAND:1500	1500	—	22	70	1	1	10	1	30
DIXMAANE:1500	1500	—	459	1170	80	420	400	240	390
DIXMAANF:1500	1500	—	444	1260	80	430	330	200	400
DIXMAANG:1500	1500	—	417	1230	70	400	350	200	330
DIXMAANH:1500	1500	—	387	1090	80	350	350	170	310
DIXMAANI:1500	1500	—	4638	12320	920	4060	4130	780	3330
DIXMAANJ:1500	1500	—	2365	6870	320	2250	2190	450	1550
DIXMAANK:1500	1500	—	1392	4870	420	2000	1210	480	1480
DIXMAANL:1500	1500	—	952	3850	310	810	810	430	660

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANM:1500	1500	—	4338	11670	950	4610	4310	720	3050
DIXMAANN:1500	1500	—	2478	7260	430	1790	2510	680	1780
DIXMAANO:1500	1500	—	2127	6430	380	1810	2010	700	1380
DIXMAANP:1500	1500	—	1963	6590	420	1460	1780	560	1520
LINVERSE:1999	1999	785	42455	125770	—	—	—	—	—
CHARDIS0:2000	2000	—	4	420	50	140	140	190	140
EDENSCH:2000	2000	—	72	310	20	60	80	20	40
MODBEALE:2000	2000	—	417	2500	210	2730	2710	140	2080
NCB20B:2000	2000	—	1150	4050	1520	2370	2490	630	2310
BQPGAUSS	2003	134	11100	103220	6900	17580	13770	2330	15000
RAYBENDS:2050	2050	4	9611	68010	—	—	—	—	—
JNLBRNG1:2300	2300	809	317	1520	180	550	670	160	360
JNLBRNGA:2300	2300	847	342	1560	160	550	420	170	500
JNLBRNGB:2300	2300	1052	1749	6390	690	2050	1990	530	1800
JNLBRNG2:2300	2300	1077	584	2360	270	780	880	240	690
OBSTCLBL:2300	2300	993	210	1150	100	490	500	100	320
OBSTCLBM:2300	2300	993	210	1110	100	480	490	100	340
OBSTCLBU:2300	2300	993	210	990	90	520	460	100	340
OBSTCLAE:2300	2300	1276	147	840	70	240	220	90	180
OBSTCLAL:2300	2300	1276	147	820	70	210	210	110	180
ODC:2376	2376	206	525	2330	360	790	820	640	700
SSC:2376	2376	206	352	1190	180	570	600	390	550
EIGENBLS:2550	2550	—	18518	—	79540	115390	121600	193830	105590
EIGENCLS:2652	2652	—	37918	—	—	197420	285380	168010	187250
DIXMAANA:3000	3000	—	15	90	10	30	10	10	20
DIXMAANB:3000	3000	—	16	210	10	20	50	20	80
DIXMAANC:3000	3000	—	19	130	1	60	50	20	50
DIXMAAND:3000	3000	—	22	220	1	10	20	30	130
DIXMAANE:3000	3000	—	630	2260	180	790	740	1220	630

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANF:3000	3000	—	570	1990	120	820	790	1020	720
DIXMAANG:3000	3000	—	517	1810	120	520	600	1050	600
DIXMAANH:3000	3000	—	495	1700	120	750	710	920	640
DIXMAANI:3000	3000	—	3465	15850	1200	4190	3910	3350	3450
DIXMAANJ:3000	3000	—	780	13960	370	980	1180	1390	830
DIXMAANK:3000	3000	—	689	4280	400	850	780	1550	730
DIXMAANL:3000	3000	—	771	7350	330	1170	1160	1490	1210
DIXMAANM:3000	3000	—	3514	17490	1050	4080	3770	3600	4140
DIXMAANN:3000	3000	—	2879	11940	650	3540	3920	4220	2950
DIXMAANO:3000	3000	—	2326	9600	580	2740	2710	3170	2490
DIXMAANP:3000	3000	—	1828	7880	920	2200	2270	2860	1810
JNLBRNG1:3200	3200	1130	342	2100	370	660	910	670	620
JNLBRNGA:3200	3200	1168	426	2580	440	710	780	690	740
JNLBRNG2:3200	3200	1400	723	4820	810	1410	1330	1160	1140
JNLBRNGB:3200	3200	1446	2067	9500	1790	7030	6760	3710	3000
OBSTCLBL:3200	3200	1252	174	1360	210	580	500	330	550
OBSTCLBM:3200	3200	1252	174	1470	200	620	520	340	510
OBSTCLBU:3200	3200	1252	174	1350	210	640	460	340	500
OBSTCLAE:3200	3200	1813	195	1550	210	520	420	410	330
OBSTCLAL:3200	3200	1813	195	1520	210	510	420	380	370
JNLBRNG1:3400	3400	1195	330	2730	410	1110	760	630	650
JNLBRNGA:3400	3400	1233	435	2380	570	930	750	900	680
JNLBRNG2:3400	3400	1500	689	4380	660	1120	1300	1180	1260
JNLBRNGB:3400	3400	1545	2148	10940	2540	7430	6870	3830	7280
CHAINWOO:4000	4000	—	994	7610	1010	1770	1940	1460	1460
CHARDIS0:4000	4000	—	4	1100	220	590	590	800	610
WOODS:4000	4000	—	349	1370	370	1400	940	630	650
HADAMALS:4096	4096	3282	795	41640	28900	3930	3980	13610	5140
DRCV1LQ:4489	4489	520	31051	—	—	—	—	123090	—

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
ARWHEAD:5000	5000	—	83	500	80	240	220	190	340
BDQRTIC:5000	5000	—	168	990	460	1420	1350	380	1140
BROYDN7D:5000	5000	—	607	8780	1550	2020	1980	2880	1870
BRYBND:5000	5000	—	63	650	100	160	150	200	160
BIGGSB1:5000	5000	3	21382	156280	16880	68480	85210	39110	30350
BDEXP:5000	5000	5000	3	10	10	10	10	1	10
CRAGGLVY:5000	5000	—	283	2270	580	900	630	980	560
CHENHARK:5000	5000	2010	21847	112130	—	92120	36710	—	71140
DQDRTIC:5000	5000	—	23	220	20	130	180	80	150
DQRTIC:5000	5000	—	71	1280	50	250	240	350	210
ENGVAL1:5000	5000	—	60	460	60	100	120	180	150
FLETBV3M:5000	5000	—	89	—	140	420	410	380	530
FLETGBV2:5000	5000	—	18263	103580	27570	63730	87430	40980	48210
FREUROTH:5000	5000	—	89	670	90	190	170	310	190
GENHUMPS:5000	5000	—	923	6390	1560	2400	2610	1410	2260
HARKERP2:5000	5000	5000	3	320	40	50	60	50	50
INDEFM:5000	5000	—	247	—	320	1810	2240	5770	—
INDEF:5000	5000	5000	56	790	80	—	880	—	1820
LIARWHD:5000	5000	—	109	610	120	530	580	370	230
MOREBV:5000	5000	—	1358	9630	1730	2600	2700	1780	2110
MCCORMCK:5000	5000	1	51	520	90	150	140	280	150
NCB20B:5000	5000	—	1248	21720	10600	5260	5430	3710	4920
NONCVXU2:5000	5000	—	21305	117180	28890	96930	86880	81690	73820
NONCVXUN:5000	5000	—	44454	243250	—	—	—	—	—
NONDIA:5000	5000	—	1220	5280	2670	—	4980	—	—

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
NONDQUAR:5000	5000	—	612	2600	660	2010	2120	1890	—
NONSCOMP:5000	5000	2500	228	1570	230	470	520	430	450
POWELLSG:5000	5000	—	351	1950	570	3250	3060	440	—
POWER:5000	5000	—	732	3190	530	2060	2050	2260	1680
PENTDI:5000	5000	3751	24	180	30	120	40	80	80
QUARTC:5000	5000	—	71	1240	50	270	270	420	270
QRTQUAD:5000	5000	549	2556	12000	16600	—	—	40900	77770
QUDLIN:5000	5000	5000	13	110	20	140	170050	40	180
SCHMVETT:5000	5000	—	151	6770	460	440	480	5670	450
SINQUAD:5000	5000	—	137	1180	220	490	670	590	380
SPARSQUR:5000	5000	—	35	910	40	210	190	480	250
SROSENBR:5000	5000	—	399	1580	440	1800	1360	660	1530
SSBRYBND:5000	5000	—	24904	159780	49810	57700	58460	78770	50940
TESTQUAD:5000	5000	—	4960	18080	16630	25870	23650	5350	12470
TOINTGSS:5000	5000	—	107	730	120	260	230	710	260
TQUARTIC:5000	5000	—	583	2580	840	1730	3010	800	—
TRIDIA:5000	5000	—	2829	10780	1890	8120	9180	4410	6680
VAREIGVL:5000	5000	—	73	670	100	170	180	190	170
NCB20:5010	5010	—	505	5190	11040	2650	2730	5840	2000
CLPLATEA:5041	5041	71	1988	12560	2780	4820	4680	5790	3950
CLPLATEB:5041	5041	71	999	7050	1140	2320	2270	2410	2070
CLPLATEC:5041	5041	71	2856	84120	—	—	—	3980	202180
ODC:5184	5184	284	606	6520	1410	1850	1870	7060	1710
SSC:5184	5184	284	381	2630	650	1420	1570	2290	1380
MINSURFO:5306	5306	1762	2499	21260	4890	23490	21960	13020	22190
NOBNDTOR:5476	5476	801	528	5970	1520	2180	2410	1640	2320

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
TORSIONA:5476	5476	1096	441	5370	2380	2510	2360	1410	1870
TORSIONB:5476	5476	1096	441	5390	2410	2530	2360	1460	1880
TORSION111:5476	5476	1219	483	5460	2420	1860	1840	1730	2010
TORSION1:5476	5476	1219	483	5540	2430	1840	1820	1720	2000
TORSION2:5476	5476	1219	483	5470	2430	1870	1810	1660	2010
TORSIONC:5476	5476	2328	279	3180	600	1520	1680	1130	1900
TORSIOND:5476	5476	2328	279	3280	600	1480	1720	1100	1940
TORSION3:5476	5476	2386	264	3020	630	1740	1490	800	1940
TORSION4:5476	5476	2386	264	3020	630	1740	1520	810	1940
TORSIONE:5476	5476	3782	162	2000	350	1360	1250	670	1060
TORSIONF:5476	5476	3782	162	1980	350	1350	1260	690	1070
TORSION5:5476	5476	3805	159	1900	730	910	1060	430	860
TORSION6:5476	5476	3805	159	2030	720	910	1030	420	840
FMINSRF2:5625	5625	—	525	3580	720	1180	1280	3730	1100
FMINSURF:5625	5625	—	535	3710	750	1290	1310	3730	1110
LMINSURF:5625	5625	296	1579	14830	1950	3230	3300	50100	3170
NLMSURF:5625	5625	296	15218	118310	15780	33520	34750	—	29950
ODC:7344	7344	344	704	7460	2370	2680	2660	11590	2470
SSC:7344	7344	344	515	4470	1040	2200	2640	3580	1930
JNLBRNG1:7500	7500	2605	576	8460	2260	4170	3890	2340	3450
JNLBRNGA:7500	7500	2676	654	8270	1860	3480	3920	2740	2920
JNLBRNG2:7500	7500	3171	1281	14820	3690	5810	5120	4460	4500
JNLBRNGB:7500	7500	3395	3813	32110	8890	24640	21170	14000	25140
OBSTCLBL:7500	7500	2859	303	4520	1070	1830	1410	1240	1400
OBSTCLBM:7500	7500	2859	303	4470	1080	1800	1400	1250	1410
OBSTCLBU:7500	7500	2859	303	4570	1070	1820	1360	1270	1420
OBSTCLAE	7500	3819	291	4330	1210	1580	1520	1410	1310
OBSTCLAL:7500	7500	3819	291	4270	1220	1570	1530	1420	1310
DIXMAANA:9000	9000	—	15	160	30	40	40	80	70
DIXMAANB:9000	9000	—	16	310	30	30	30	70	70
DIXMAANC:9000	9000	—	19	260	50	30	50	100	90

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAAND:9000	9000	—	22	360	40	50	60	190	110
DIXMAANE:9000	9000	—	956	7360	1960	2650	3220	4090	2540
DIXMAANF:9000	9000	—	759	6150	1480	2330	2540	4250	1970
DIXMAANG:9000	9000	—	760	5800	1500	2240	2200	5190	2110
DIXMAANH:9000	9000	—	750	5520	1480	2100	2230	4930	1970
DIXMAANI:9000	9000	—	1384	24800	5480	3970	4410	8920	4960
DIXMAANJ:9000	9000	—	685	9500	1710	2330	2820	3420	1770
DIXMAANK:9000	9000	—	582	14970	1570	1640	2020	3580	1870
DIXMAANL:9000	9000	—	651	16260	1440	1720	1980	3470	1850
DIXMAANM:9000	9000	—	1364	25990	7690	4930	5630	8760	4460
DIXMAANN:9000	9000	—	1767	24170	3520	5090	5930	7910	5000
DIXMAANO:9000	9000	—	1566	26040	4270	6060	5870	9400	5960
DIXMAANP:9000	9000	—	2166	20780	4960	6400	6570	13220	6050
BOXPOWER	10000	—	27	500	40	260	240	90	230
BOX	10000	—	128	1160	530	1190	2010	450	1860
BROYDN7D:10000	10000	—	589	14610	2880	2710	2830	4390	2850
BRYBND:10000	10000	—	63	880	250	220	230	380	260
CHAINWOO:10000	10000	—	1029	12170	5940	4860	4630	2610	3950
CVXBQP1:10000	10000	10000	3	10	10	10	1	1	10
DIXON3DQ:10000	10000	—	40009	228330	50220	202920	216690	98500	157750
FLETBV3M:10000	10000	—	74	—	230	330	420	780	440
FLETCBV2:10000	10000	—	27618	—	101900	150670	182010	72590	122330
FMINSRF2:10000	10000	—	662	6240	2050	2540	2570	4230	2440
FMINSURF:10000	10000	—	656	6050	2120	2500	2700	4840	2440
HARKERP2:10000	10000	10000	3	940	170	180	170	180	170
INDEFM:10000	10000	—	579	—	4230	2700	5930	20250	—

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
JNLBRNG1:10000	10000	3443	837	12440	3690	7120	7270	4160	7690
JNLBRNGA:10000	10000	3568	855	13860	5150	6810	6670	4660	7220
JNLBRNG2:10000	10000	4209	1668	21340	5890	7520	8290	8070	8910
JNLBRNGB:10000	10000	4484	4926	50160	12710	40460	46570	21120	61400
LIARWHD:10000	10000	—	112	840	290	510	1130	440	630
LMINSURF:10000	10000	396	2224	30580	4340	8280	8720	—	8230
MCCORMCK:10000	10000	1	53	1200	190	180	210	380	230
NONCVXU2:10000	10000	—	28906	228000	79200	161880	168480	137670	134760
NONDIA:10000	10000	—	307	12320	7660	8820	2030	—	—
NONDQUAR:10000	10000	—	842	4880	1620	3680	3260	2190	—
NLMSURF:10000	10000	396	21993	276080	36060	90780	90600	—	77710
NOBNDTOR:10000	10000	1299	630	11040	5810	5240	5170	3720	4380
NONSCOMP:10000	10000	5000	237	1990	320	930	880	630	790
NCVXBQP3:10000	10000	9808	182	4700	480	660	660	990	1170
NCVXBQP2:10000	10000	9934	126	3960	360	400	440	830	440
NCVXBQP1:10000	10000	10000	4	1950	70	40	50	260	100
OSCIGRAD:10000	10000	—	5459	—	9350	—	—	—	—
OBSTCLBL:10000	10000	3896	336	5510	2100	2520	2890	1610	2140
OBSTCLBM:10000	10000	3896	336	5540	2060	2520	2850	1620	2170
OBSTCLBU:10000	10000	3896	336	5520	2090	2550	2810	1610	2120
OBSTCLAE:10000	10000	5061	354	6250	2270	2260	1930	2610	1900
OBSTCLAL:10000	10000	5061	354	6180	2250	2280	1930	2550	1880
POWELLSG:10000	10000	—	351	5160	1070	3530	2540	670	—
POWER:10000	10000	—	994	6110	1320	2370	2240	3650	2120
QUARTC:10000	10000	—	75	2520	100	320	470	600	420
SCHMVETT:10000	10000	—	171	17020	710	820	980	22110	840
SINQUAD:10000	10000	—	184	1820	610	770	920	710	1060
SPARSQUR:10000	10000	—	39	1440	100	250	250	770	310

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
SROSENB:10000	10000	—	240	3520	1480	2810	2950	450	2410
TOINTGSS:10000	10000	—	108	910	280	500	620	1480	500
TQUARTIC:10000	10000	—	812	5330	2050	3920	4280	91020	—
TRIDIA:10000	10000	—	4021	22480	5160	18990	14400	11240	16240
TORSIONA:10000	10000	1839	591	10220	3820	4910	5480	5870	3120
TORSIONB:10000	10000	1839	591	10160	3800	4940	5530	5840	3190
TORSION111:10000	10000	2013	540	9710	5200	6670	6170	6560	6190
TORSION1:10000	10000	2013	540	9860	5240	6590	6140	6500	6270
TORSION2:10000	10000	2013	540	9780	5290	6630	6190	6590	6250
TORSIONC:10000	10000	4105	360	5870	3540	3770	3840	1900	4110
TORSIOND:10000	10000	4105	360	5830	3500	3620	3720	1900	3970
TORSION3:10000	10000	4189	366	6020	1420	3710	2960	1860	4780
TORSION4:10000	10000	4189	366	6040	1410	3840	3040	1870	4800
TORSIONE:10000	10000	6685	192	3510	1090	2190	2460	1280	3270
TORSIONF:10000	10000	6685	192	3470	1080	2270	2460	1280	3200
TORSION5:10000	10000	6720	210	3680	920	2370	2550	1380	2810
TORSION6:10000	10000	6720	210	3590	910	2380	2500	1430	2800
WOODS:10000	10000	—	540	4260	1460	1620	1640	1490	1920
DRCV1LQ:10816	10816	816	31560	—	—	—	—	139220	—
JNLBRNG1:12500	12500	4277	975	16690	7020	13010	10380	13350	9760
JNLBRNGA:12500	12500	4469	1077	18530	8210	8920	10470	5590	7590
JNLBRNG2:12500	12500	5197	2010	28450	11950	13460	12250	12240	13840
JNLBRNGB:12500	12500	5630	6039	64100	34460	62680	63960	28600	92540
OBSTCLBL:12500	12500	4623	354	5980	2600	4180	4220	2540	3270
OBSTCLBM:12500	12500	4623	354	5940	2620	4240	4240	2520	3430
OBSTCLBU:12500	12500	4623	354	6000	2610	4230	4340	2560	3430

problem	dim	nact	nf+2*ng best	time in milliseconds for solver					
				lmb	asa	lt6	lt4	asb	lt2
OBSTCLAE:12500	12500	6481	390	7770	4330	4020	3210	2860	2830
OBSTCLAL:12500	12500	6481	390	8200	4300	4010	3190	2890	2890
ODC:14544	14544	544	1235	16950	7810	9070	9640	41630	7090
SSC:14544	14544	544	896	9810	3210	5710	5780	9490	6250
NOBNDTOR:14884	14884	1758	777	15870	16740	9890	10520	5720	7170
TORSIONA:14884	14884	2618	654	14910	10760	7190	9130	5080	9590
TORSIONB:14884	14884	2618	654	14880	10740	7090	9080	5090	9780
TORSION111:14884	14884	2830	624	13800	16690	7990	11010	4760	14210
TORSION1:14884	14884	2830	624	14680	16640	8050	11030	4740	14290
TORSION2:14884	14884	2830	624	13810	16530	8010	11010	4730	13980
TORSIONC:14884	14884	6034	417	9070	4540	6800	5700	4620	7780
TORSIOND:14884	14884	6034	417	9600	4570	7000	5920	4670	7850
TORSION3:14884	14884	6137	435	7540	4020	5340	5180	3100	7510
TORSION4:14884	14884	6137	435	7480	4020	5350	5240	3130	7490
TORSIONE:14884	14884	9868	264	5010	1870	4080	4460	1710	4720
TORSIONF:14884	14884	9868	264	4970	1860	4070	4570	1690	4740
TORSION5:14884	14884	9914	264	6040	2760	4350	3800	1740	5570
TORSION6:14884	14884	9914	264	5940	2740	4320	3660	1770	5540
FMINSRF2:15625	15625	—	774	8220	3980	4170	4110	6590	4080
FMINSURF:15625	15625	—	774	8410	3950	4120	4210	5930	3850
LMINSURF:15625	15625	496	2838	43530	8900	13730	15110	—	14200
NLMSURF:15625	15625	496	30635	—	103110	176160	185930	—	153910
BOXPOWER:20000	20000	—	30	540	80	140	170	180	410
MODBEALE:20000	20000	—	762	8180	4260	12430	14310	5220	12430
MCCORMCK:50000	50000	1	54	1650	540	570	540	1370	800
BOX:100000	100000	—	201	5650	4910	17000	28020	2780	20310
INDEFM:100000	100000	—	898	—	12710	50120	24070	—	—
OSCIGRAD:100000	100000	—	2578	—	23870	—	—	—	—
DEGTRID:100001	100001	1	6609	—	—	—	—	46360	—
DEGDIAG:100001	100001	100001	3	30	40	30	30	110	20
DEGTRID2:100001	100001	100001	3	30	30	20	20	50	30

3.8 Effort $n_f + 2n_g$ for accuracy 1e-06

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
BQP1VAR	1	1	3	3	3	3	3	3	3
AKIVA	2	—	64	79	89	70	64	—	76
BEALE	2	—	45	62	51	49	49	66	46
BRKMCC	2	—	24	24	27	34	34	42	34
CAMEL6	2	—	25	57	38	25	25	63	25
CLIFF	2	—	69	174	179	73	69	318	88
CUBE	2	—	63	149	149	114	114	63	119
CHEBYQAD:2	2	—	38	85	45	38	38	93	41
DENSCHNA	2	—	28	37	31	28	28	60	28
DENSCHNB	2	—	25	33	39	28	28	51	28
DENSCHNC	2	—	40	54	47	40	40	81	40
DENSCHNF	2	—	36	47	53	36	40	96	40
DJTL	2	—	201	317	1228	—	—	5457	—
ENGVAL1	2	—	24	37	30	25	25	63	25
EXPFIT	2	—	50	65	68	53	50	159	50
FREUROTH	2	—	43	78	43	55	55	78	64
HUMPS	2	—	107	225	305	135	118	504	141
HAIRY	2	—	47	118	98	58	62	165	47
HIMMELBB	2	—	21	45	38	22	22	63	22
HIMMELBG	2	—	32	37	35	38	35	72	38
HIMMELBH	2	—	21	29	31	22	22	51	22
HS1	2	—	63	98	118	104	95	63	103
HS5	2	—	21	53	29	26	26	45	26
HILBERTA:2	2	—	3	3	11	28	28	12	28
HIMMELP1	2	1	19	25	24	22	22	54	22
HS2	2	1	21	35	32	35	35	345	35
HS3MOD	2	1	4	18	4	16	16	33	16
HS3	2	1	4	16	4	10	10	9	10
HS4	2	2	3	3	3	3	3	3	3
JENSMP	2	—	6	253	152	—	—	165	—
LOGHAIRY	2	—	13	104	127	81	63	447	59

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
LOGROS	2	—	16	420	226	182	161	222	188
MARATOSB	2	—	528	4190	7146	3169	3324	528	3209
MEXHAT	2	—	321	398	613	330	321	378	335
MODBEALE	2	—	45	62	51	49	49	66	46
MDHOLE	2	1	7	9	9	10	10	9	10
OSCIGRAD:2	2	—	4809	5401	—	5382	5072	—	4846
OSCIPATH:2	2	—	63	257	340	202	199	63	209
ROSENBR	2	—	63	98	125	104	95	63	103
S308	2	—	25	33	35	28	28	66	28
SINEVAL	2	—	47	49	47	49	49	48	49
SISSER	2	—	35	81	35	52	52	126	52
SNAIL	2	—	19	33	27	25	25	51	25
SENSORS:2	2	—	27	33	31	38	39	87	39
SIMBQP	2	1	4	9	4	10	10	9	10
SIM2BQP	2	2	3	3	3	3	3	3	3
ZANGWIL2	2	—	11	13	11	22	22	30	22
BARD	3	—	174	277	174	242	282	—	332
BOX3	3	—	23	34	23	28	28	60	28
BOX2	3	1	107	121	113	257	303	153	133
DENSCHND	3	—	84	90	93	84	90	1098	112
DENSCHNE	3	—	22	52	27	28	28	54	28
ENGVAL2	3	—	84	97	107	122	100	141	126
EG1	3	1	51	125	81	83	92	114	91
GROWTHLS	3	—	104	144	200	104	110	462	123
GULF	3	—	4	28	4	182	316	4551	423
HATFLDD	3	—	71	132	71	127	135	132	137
HATFLDE	3	—	74	78	131	74	74	192	74
HATFLDFL	3	—	405	762	638	405	571	459	—
HELIX	3	—	43	49	43	61	61	153	61
HIELOW	3	—	74	—	87	74	80	—	110
HS25	3	—	20	20	35	386	274	147	237
KOEBHELB	3	—	6	393	195	—	—	480	—

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
MEYER3	3	—	274	4350	3180	—	—	—	—
PFIT1LS	3	—	52	52	—	—	—	141	—
PFIT2LS	3	—	52	52	—	—	—	153	—
PFIT3LS	3	—	52	52	—	—	—	156	—
PFIT4LS	3	—	52	52	—	—	—	159	—
SCHMVETT	3	—	18	53	54	66	66	81	69
SENSORS:3	3	—	87	123	100	97	97	408	97
SPECAN:3	3	3	3	3	3	3	3	3	3
WEEDS	3	1	19	107	252	72	72	273	72
YFIT	3	—	150	452	225	364	308	723	317
YFITU	3	—	308	445	461	364	308	723	317
ALLINITU	4	—	30	58	35	31	31	66	31
ALLINIT	4	2	41	87	51	41	41	93	41
BROWNDEN	4	—	72	80	72	85	85	117	85
CRAGGLVY	4	—	131	171	155	134	133	306	140
CHAINWOO:4	4	—	98	145	98	109	100	171	106
CHEBYQAD:4	4	—	35	65	108	48	48	108	38
HATFLDA	4	—	67	145	115	67	67	336	67
HIMMELBF	4	—	244	244	293	391	582	—	325
HS38	4	—	100	129	102	109	100	171	106
HILBERTA:4	4	—	16	16	19	73	73	81	73
HATFLDB	4	1	64	126	109	133	105	222	90
HADAMALS	4	3	32	53	37	50	52	87	37
KOWOSB	4	—	144	242	198	276	217	339	350
MSQRTALS	4	—	63	84	63	65	65	198	65
MODBEALE:4	4	—	80	80	103	103	115	117	109
PENALTY2	4	—	399	2966	1649	1538	1311	399	1164
POWELLSG	4	—	115	115	120	120	162	282	127
PALMER1B	4	—	118	328	388	196	118	486	134
PALMER2B	4	—	91	441	376	221	95	432	116
PALMER3B	4	—	103	295	408	103	103	387	104
PALMER4B	4	—	108	301	309	135	113	414	129

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
PALMER5D	4	—	21	21	24	94	107	180	110
PENALTY1:4	4	—	306	673	397	391	410	306	358
PSPDOC	4	1	25	25	32	37	37	48	37
PALMER1	4	1	75	161	317	116	287	183	75
PALMER2	4	1	69	107	119	79	76	201	119
PALMER3	4	1	63	176	93	77	76	183	86
PALMER4	4	1	59	59	98	91	91	171	7074
POWELLBC:4	4	4	4	8	4	4	4	36	4
SINEALI:4	4	—	115	115	320	272	236	237	252
WOODS:4	4	—	90	90	102	109	100	171	106
CHEBYQAD:5	5	2	41	124	74	61	58	147	41
EXTROSNB	5	—	301	496	381	322	312	645	340
GENHUMPS:5	5	—	236	243	336	254	305	495	272
GENROSE:5	5	—	111	204	178	137	224	282	135
HILBERTB	5	—	18	21	19	19	19	33	19
HILBERTA:5	5	—	23	25	23	148	117	123	125
HS45	5	5	3	3	3	3	3	3	3
OSCIGRAD:5	5	—	513	4823	5555	—	7257	513	—
OSCIPATH:5	5	—	2625	—	—	—	—	2625	9900
OSBORNEA	5	5	405	405	—	—	—	—	—
SINQUAD	5	—	50	62	64	50	66	93	60
TQUARTIC	5	—	51	62	68	54	58	162	51
BIGGS6	6	—	400	7626	494	1981	3057	—	—
BIGGS5	6	1	216	508	229	216	334	633	255
BIGGS3	6	3	69	107	88	76	76	378	73
CHEBYQAD:6	6	2	53	68	62	93	97	114	53
EIGENALS:6	6	—	92	110	129	109	105	216	92
EIGENBLS:6	6	—	97	112	155	101	97	288	131
HEART6LS	6	—	83	3732	3316	3888	4189	—	—
HILBERTA:6	6	—	23	25	23	147	142	90	144
HART6	6	2	48	77	74	62	100	81	50
PALMER6A	6	—	237	1888	1688	1777	2512	—	—

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
PALMER8A	6	—	282	1668	573	301	596	3834	282
PALMER1A	6	—	230	1697	1036	1136	1354	—	601
PALMER2A	6	—	429	1060	727	1052	1107	1893	561
PALMER3A	6	—	490	1797	1240	796	1226	3129	717
PALMER4A	6	—	332	1075	808	590	632	8190	352
PALMER5C	6	—	27	29	27	51	52	117	48
SPECAN:6	6	6	3	3	3	3	3	3	3
CHEBYQAD:7	7	1	104	104	107	160	169	153	133
PALMER1D	7	—	33	33	55	—	—	—	832
AIRCRFTB	8	3	216	423	508	250	409	1203	237
CHEBYQAD:8	8	2	90	105	96	172	163	90	130
HEART8LS	8	—	524	2778	5090	688	524	1161	—
MAXLIKA	8	7	16	36	22	44	44	99	44
OSLBQP	8	7	4	9	7	4	4	9	4
PALMER6C	8	—	37	37	72	—	—	—	—
PALMER6E	8	—	70	1229	70	6263	—	—	—
PALMER7C	8	—	37	37	72	—	—	—	—
PALMER8C	8	—	37	37	52	—	—	—	—
PALMER8E	8	—	84	865	84	6432	3899	5979	—
PALMER1C	8	—	37	37	83	—	—	—	—
PALMER1E	8	—	1161	2483	1295	—	—	—	—
PALMER2C	8	—	37	37	78	—	—	—	—
PALMER3C	8	—	37	37	57	—	—	—	—
PALMER4C	8	—	37	37	57	—	—	—	—
PALMER4E	8	—	684	1174	3271	—	—	5508	—
PALMER5A	8	—	85	85	—	—	—	—	—
POWELLSG:8	8	—	203	235	203	300	381	351	507
PALMER7E	8	1	85	85	—	—	—	—	—
PALMER2E	8	1	1092	1801	—	—	—	—	—
PALMER3E	8	1	1047	1778	—	—	—	8166	—

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
S368:8	8	6	27	47	36	61	—	153	61
VIBRBEAM	8	—	2681	2681	—	—	—	—	—
CHEBYQAD:9	9	2	87	87	98	209	211	207	200
MSQRTBLS	9	—	94	113	114	100	102	219	106
NONMSQRT	9	—	833	4248	833	—	—	—	—
SPECAN:9	9	9	3	3	3	3	3	3	3
ARGLINA:10	10	—	7	9	7	12	12	9	12
ARGLINB:10	10	—	7	13	7	13	13	24	13
ARGLINC:10	10	—	7	13	7	14	14	24	14
BROWNAL	10	—	74	74	75	110	110	96	110
BRYBND	10	—	83	83	269	273	220	297	416
BOXPOWER:10	10	—	21	21	43	46	46	36	46
BOX:10	10	—	41	41	47	52	52	72	52
BROYDN7D:10	10	—	94	160	114	94	104	276	104
CHNROSNB	10	—	192	290	225	217	205	477	224
CHNRSNBM	10	—	222	382	234	231	257	498	233
CHARDIS0:10	10	—	4	9	4	10	10	12	10
COSINE:10	10	—	124	125	124	150	181	366	183
CRAGGLVY:10	10	—	132	180	136	133	133	279	133
CHEBYQAD	10	2	3	3	63	162	152	312	111
CHENHARK:10	10	3	47	70	79	61	61	108	61
CVXBQP1:10	10	10	3	3	3	3	3	3	3
DIXON3DQ	10	—	45	45	47	84	91	177	79
DQDRTIC	10	—	23	25	23	61	58	63	52
DQRTIC:10	10	—	82	133	108	83	83	165	83
ERRINROS:10	10	—	319	461	370	384	571	726	349
ERRINRSM:10	10	—	690	761	777	1215	1479	1305	786
EXTROSNB:10	10	—	1731	6484	3234	3406	3472	1731	2836
FLETBV3M	10	—	33	63	47	37	48	468	51
FLETBV2	10	—	47	49	47	64	64	576	64
FLETBV3	10	—	40	261	104	67	70	1017	40

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
FLETCHBV	10	—	112	551	250	112	117	1461	149
FLETCHCR	10	—	213	414	253	229	237	741	224
FREUROTH:10	10	—	75	87	75	91	98	138	105
GENHUMPS:10	10	—	480	764	736	480	524	2691	564
GENROSE:10	10	—	210	356	259	232	310	459	220
HS110	10	—	28	100	35	—	—	96	—
HILBERTA:10	10	—	3	3	23	164	204	228	113
HILBERTB:10	10	—	18	21	19	19	19	33	19
HARKERP2:10	10	10	3	3	3	3	3	3	3
INDEFM:10	10	—	147	846	148	152	240	282	154
INDEF:10	10	10	51	96	53	75	75	—	75
MOREBV	10	—	71	83	71	140	126	186	120
MANCINO:10	10	—	22	29	27	26	26	33	26
MODBEALE:10	10	—	135	135	161	773	592	264	612
MCCORMCK	10	1	36	59	54	90	90	84	77
NONCVXU2:10	10	—	75	98	95	75	90	204	90
NONCVXUN:10	10	—	72	73	79	80	80	147	79
NONDIA:10	10	—	99	132	130	106	109	141	133
NCVXBQP1:10	10	10	7	57	28	13	13	72	13
NCVXBQP2:10	10	10	7	52	26	11	11	72	11
NCVXBQP3:10	10	10	7	52	33	106	—	81	106
POWER	10	—	66	120	75	67	67	222	67
PENALTY1:10	10	—	243	420	378	313	311	243	324
PENALTY2:10	10	—	1469	1929	1824	1469	1546	3330	1623
PROBPENL:10	10	4	37	376	831	4268	—	—	1187
POWELLBC:10	10	7	17	121	73	17	17	129	17
RAYBENDL:10	10	4	90	133	90	98	113	1206	105
RAYBENDS:10	10	4	87	87	233	154	169	1953	152
SINEALI	10	—	511	1215	3666	3726	3625	2148	3124
SROSENBR	10	—	159	234	181	325	330	159	210

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
SCHMVETT:10	10	—	90	104	90	101	102	225	98
SENSORS:10	10	—	57	68	111	70	76	225	66
SPARSINE:10	10	—	53	53	63	113	95	105	111
SPARSQUR:10	10	—	34	89	34	67	67	126	67
SSBRYBND:10	10	—	737	908	737	9650	1612	—	—
SSCOSINE:10	10	—	365	365	477	—	—	4803	—
TOINTGSS	10	—	125	138	130	154	158	771	125
TQUARTIC:10	10	—	82	113	82	86	86	189	88
TRIDIA:10	10	—	45	45	47	83	99	141	100
VARDIM	10	—	13	13	67	89	89	144	89
VAREIGVL:10	10	—	45	59	55	46	49	69	46
OSBORNEB	11	—	3847	—	—	3847	—	—	—
EXPQUAD:12	12	4	111	133	118	180	179	186	143
QRTQUAD:12	12	3	168	168	224	441	383	618	485
QUDLIN	12	12	13	15	21	31	31	99	31
WATSON:12	12	—	238	297	238	324	641	3081	577
BRATU1D:13	13	2	64	64	74	102	80	204	85
DIXMAANA	15	—	18	25	19	19	19	33	19
DIXMAANB	15	—	16	25	19	19	19	33	19
DIXMAANC	15	—	18	29	23	19	19	33	19
DIXMAAND	15	—	22	29	27	25	25	33	25
DIXMAANE	15	—	58	65	101	61	66	228	61
DIXMAANF	15	—	61	65	83	61	62	207	64
DIXMAANG	15	—	58	65	87	64	62	177	58
DIXMAANH	15	—	57	65	87	61	62	183	64
DIXMAANI	15	—	113	113	187	133	158	429	135
DIXMAANJ	15	—	121	124	195	128	140	429	124

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANK	15	—	114	133	199	136	123	468	127
DIXMAANL	15	—	108	113	195	126	125	456	134
DIXMAANM	15	—	93	93	183	149	133	480	130
DIXMAANN	15	—	106	113	179	131	133	570	112
DIXMAANO	15	—	112	117	207	115	136	597	124
DIXMAANP	15	—	121	153	191	131	144	453	121
PARKCH	15	—	642	642	—	6787	6106	—	—
CLPLATEA:16	16	4	81	87	81	86	89	195	85
CLPLATEB:16	16	4	80	84	85	83	80	177	82
CLPLATEC:16	16	4	69	69	81	131	131	207	131
FMINSURF	16	—	63	65	83	67	65	153	67
FMINSRF2:16	16	—	78	96	103	82	98	168	83
HADAMALS:16	16	8	102	172	109	216	176	231	165
LMINSURF	16	12	36	50	41	41	41	192	41
NLMSURF:16	16	12	43	72	52	49	52	735	58
NOBNDTOR:16	16	13	15	39	36	75	76	36	52
POWELLSG:16	16	—	312	382	663	486	678	312	628
TORSION111:16	16	14	22	22	22	49	49	24	28
TORSION1:16	16	14	22	22	22	49	49	24	28
TORSION2:16	16	14	22	22	22	49	49	24	28
TORSIONA:16	16	14	22	26	22	32	31	24	28
TORSIONB:16	16	14	22	26	22	32	31	24	28
TORSIONC:16	16	14	18	22	22	25	23	21	19
TORSIOND:16	16	14	18	22	22	25	23	21	19
TORSION3:16	16	16	4	12	7	30	18	18	23
TORSION4:16	16	16	4	12	7	30	18	18	23
TORSION5:16	16	16	4	12	4	5	5	9	5
TORSION6:16	16	16	4	12	4	5	5	9	5
TORSIONE:16	16	16	4	9	4	14	14	9	14
TORSIONF:16	16	16	4	9	4	14	14	9	14
CHARDIS0:18	18	—	4	9	4	10	10	12	10

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
LINVERSE	19	8	240	258	240	477	365	483	709
CHEBYQAD:20	20	3	127	372	127	182	171	474	156
MANCINO:20	20	—	27	37	31	31	31	48	31
NONDIA:20	20	—	141	183	147	158	150	171	195
POWELLSG:20	20	—	312	552	599	677	799	312	1089
POWER:20	20	—	78	142	120	79	79	300	79
POWELLBC:20	20	13	87	193	117	211	213	288	174
SINEALI:20	20	—	436	—	—	—	—	948	—
TRIDIA:20	20	—	85	85	102	152	191	204	173
NCB20B	21	—	165	224	510	247	478	240	306
NCB20B:22	22	—	207	207	651	706	753	264	833
RAYBENDL:24	24	4	753	2217	—	1152	920	—	1145
RAYBENDS:24	24	4	2343	7268	—	3570	4110	—	—
BIGGSB1	25	3	120	120	312	221	194	309	222
CHNROSNB:25	25	—	383	629	795	383	421	948	403
CHNRSNBM:25	25	—	548	871	920	632	563	1572	574
ERRINROS:25	25	—	394	533	—	452	394	1533	410
ERRINRSM:25	25	—	948	955	—	3111	1922	4074	1148
HATFLDC	25	12	45	56	69	49	49	165	49
NONSCOMP	25	12	225	822	333	416	328	810	304
OSCIPATH:25	25	—	181	254	224	182	187	306	189
QUARTC	25	—	39	154	39	94	94	183	94
SPMSRTL	28	—	155	211	239	175	184	285	155
X3PK	30	1	6749	6749	—	—	—	—	—
EIGENCLS:30	30	—	411	550	613	545	475	996	411
MANCINO:30	30	—	30	37	35	32	32	—	32
NONDIA:30	30	—	146	146	190	220	220	186	182
POWER:30	30	—	3	3	128	79	79	315	79
TRIDIA	30	—	133	133	162	224	225	282	211
WATSON:31	31	—	1681	1681	5959	—	—	6621	—

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
EDENSCH	36	—	66	85	99	70	74	138	66
HADAMALS:36	36	24	192	394	192	324	209	468	241
LIARWHD	36	—	72	100	103	73	73	126	73
POWELLSG:36	36	—	333	448	755	1049	741	333	1262
CHARDIS0:40	40	—	4	9	4	10	10	12	10
POWELLSG:40	40	—	333	559	739	837	780	333	—
QR3DLS:40	40	1	4683	5101	—	7155	6959	4683	5834
RAYBENDL	44	4	4824	—	—	8754	6928	—	4824
CLPLATEA	49	7	138	200	249	143	138	351	160
CLPLATEB	49	7	135	181	241	137	138	363	139
CLPLATEC	49	7	288	288	405	543	463	504	487
FMINSRF2:49	49	—	137	153	158	142	146	246	137
FMINSURF:49	49	—	110	125	146	112	127	690	121
LMINSURF:49	49	24	96	143	133	96	96	930	102
MSQRTALS:49	49	—	651	853	—	733	844	1149	651
MSQRTBLS:49	49	—	460	691	912	590	562	972	460
NLMSURF:49	49	24	370	496	639	381	429	1494	382
ARGLINA:50	50	—	7	9	7	13	13	9	13
ARGLINB:50	50	—	7	13	7	17	17	72	17
ARGLINC:50	50	—	7	13	7	17	17	63	17
BROYDN7D:50	50	—	275	365	491	290	282	531	287
BRYBND:50	50	—	66	89	79	67	67	111	67
BQPGABIM	50	26	117	147	120	165	171	147	195
BQPGASIM	50	27	105	114	119	188	198	105	148
CHNROSNB:50	50	—	651	1041	1163	730	672	1551	739
CHNRSNBM:50	50	—	933	1402	1115	1013	1030	1782	1025
CRAGGLVY:50	50	—	247	348	341	256	258	381	247
CHEBYQAD:50	50	6	192	417	1288	196	192	663	215
CVXBQP1:50	50	50	3	3	3	3	3	3	3
DQDRTIC:50	50	—	23	25	23	128	75	60	49
DQRTIC:50	50	—	43	212	43	104	104	201	104

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
ENGVAL1:50	50	—	22	22	77	60	60	90	60
ERRINROS:50	50	—	415	642	—	445	429	1707	460
ERRINRSM:50	50	—	836	836	10100	3182	1784	3717	929
FREUROTH:50	50	—	79	83	90	79	79	141	82
HILBERTB:50	50	—	3	3	19	22	22	33	22
INDEFM:50	50	—	199	300	274	202	199	1782	201
INDEF:50	50	50	53	185	56	216	216	—	216
MANCINO:50	50	—	30	49	39	37	37	54	37
MOREBV:50	50	—	1539	2960	1539	5333	4167	8469	5708
MCCORMCK:50	50	1	42	59	56	101	90	72	73
NCB20B:50	50	—	1006	1006	4291	2245	2228	1500	2179
NONDIA:50	50	—	132	132	199	273	236	156	284
NONSCOMP:50	50	25	198	441	293	266	260	528	269
NCVXBQP3:50	50	49	25	154	52	129	—	117	129
NCVXBQP1:50	50	50	7	88	28	14	14	90	14
NCVXBQP2:50	50	50	7	153	38	118	—	108	118
PENALTY3	50	—	447	2240	1641	1179	1342	447	1055
PENALTY1:50	50	—	234	379	309	234	251	252	263
PENALTY2:50	50	—	324	353	733	497	500	324	575
POWER:50	50	—	91	158	107	91	91	429	91
PROBPENL:50	50	—	1066	1066	—	—	—	—	—
PENTDI:50	50	37	28	34	32	28	28	42	28
SINQUAD:50	50	—	91	93	124	104	91	114	133
SPARSINE:50	50	—	469	469	813	600	596	564	545
SPARSQUR:50	50	—	24	117	24	67	67	141	67
SROSENBR:50	50	—	177	292	205	373	311	177	252
SSBRYBND:50	50	—	6559	6559	—	—	—	—	9292
S368:50	50	32	9	59	46	9	9	153	9
TOINTGOR	50	—	393	458	517	396	401	576	407
TOINTPSP	50	—	336	404	653	347	365	825	339

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
TOINTQOR	50	—	113	113	142	133	132	231	124
TOINTGSS:50	50	—	135	157	194	135	152	243	136
TQUARTIC:50	50	—	125	125	225	201	141	225	182
TRIDIA:50	50	—	213	213	259	286	299	390	292
VAREIGVL	50	—	63	233	79	64	64	105	64
VARDIM:50	50	—	101	172	101	148	148	213	148
SCOND1LS:52	52	2	3318	—	—	—	—	3318	—
CHARDIS0:60	60	—	4	9	4	10	10	12	10
POWELLSG:60	60	—	333	490	711	1026	1029	333	1871
DECONVU	61	10	3630	—	10590	8236	4113	—	—
DECONVB	61	41	318	752	483	—	—	993	—
FMINSRF2	64	—	162	217	195	184	177	318	166
FMINSURF:64	64	—	135	172	159	153	135	282	136
HADAMALS:64	64	34	159	472	177	343	274	333	255
LMINSURF:64	64	28	127	229	155	127	136	1005	139
MINSURF	64	28	82	117	91	85	86	1014	86
NLMSURF:64	64	28	471	683	696	482	527	2673	503
POWER:75	75	—	105	175	147	109	109	525	109
BRATU1D	77	2	866	1131	1546	1035	889	999	870
POWELLSG:80	80	—	333	488	811	900	1196	333	—
DIXMAANA:90	90	—	15	21	15	16	16	33	16
DIXMAANB:90	90	—	16	25	19	19	19	33	19
DIXMAANC:90	90	—	19	29	23	22	22	33	22
DIXMAAND:90	90	—	19	29	27	25	25	33	25
DIXMAANE:90	90	—	142	165	213	158	153	696	151
DIXMAANF:90	90	—	138	172	199	176	179	642	160
DIXMAANG:90	90	—	142	173	191	144	148	435	148
DIXMAANH:90	90	—	140	189	191	172	140	303	145
DIXMAANI:90	90	—	529	529	738	723	846	1533	697

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANJ:90	90	—	593	600	724	729	602	1950	596
DIXMAANK:90	90	—	585	653	676	769	738	1986	617
DIXMAANL:90	90	—	545	592	643	730	545	1197	710
DIXMAANM:90	90	—	501	501	655	802	915	2103	669
DIXMAANN:90	90	—	612	761	984	720	612	1680	724
DIXMAANO:90	90	—	618	867	952	853	806	2316	900
DIXMAANP:90	90	—	690	792	979	690	705	1566	713
NONDIA:90	90	—	166	166	430	473	458	204	589
ARGLINA:100	100	—	7	9	7	13	13	9	13
ARGLINB:100	100	—	13	13	34	27	27	39	36
ARGLINC:100	100	—	24	44	73	79	79	51	79
ARWHEAD:100	100	—	48	65	75	57	61	87	73
BDQRTIC	100	—	133	144	296	133	157	261	184
BOXPOWER:100	100	—	27	28	27	55	55	39	55
BOX:100	100	—	70	70	92	103	103	114	103
BROWNAL:100	100	—	81	81	112	293	283	81	379
BROYDN7D:100	100	—	411	557	586	415	416	702	435
BRYBND:100	100	—	64	96	83	64	64	111	64
BDEXP	100	2	315	—	315	—	—	10440	1152
BIGGSB1:100	100	3	714	1162	1877	904	772	1422	746
CHARDIS0	100	—	4	9	4	10	10	—	10
CHAINWOO:100	100	—	624	2277	1049	1207	1239	624	1250
COSINE:100	100	—	928	9790	2591	—	—	—	—
CRAGGLVY:100	100	—	235	361	401	257	275	465	235
CURLY10:100	100	—	2640	4548	4314	3726	3551	2640	3720
CURLY20:100	100	—	2352	3012	7841	4001	3995	2352	3951
CURLY30:100	100	—	2022	2452	8826	4006	4146	2022	3933
CHEBYQAD:100	100	4	293	704	5527	293	299	1008	338
CLPLATEA:100	100	10	181	221	281	203	186	576	214
CLPLATEB:100	100	10	205	242	261	208	218	336	205
CLPLATEC:100	100	10	705	705	757	964	1419	2853	1453

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
CHENHARK:100	100	30	5420	9383	5420	6982	6593	—	8110
CVXBQP1	100	100	3	3	3	3	3	3	3
DIXON3DQ:100	100	—	405	405	497	1029	933	2454	955
DQDRTIC:100	100	—	23	25	23	37	37	42	37
DQRTIC:100	100	—	51	201	51	112	112	216	112
ENGVAL1:100	100	—	57	77	82	61	64	99	58
EXTROSNB:100	100	—	2337	—	10090	4860	5434	2337	9314
FLETBV3M:100	100	—	81	167	89	89	90	369	81
FLETGBV2:100	100	—	660	660	747	897	747	3207	740
FLETGBV3:100	100	—	402	8261	10167	469	454	—	402
FLETCHCR:100	100	—	1706	3070	2505	1782	1785	4086	1718
FREUROTH:100	100	—	83	95	120	86	86	141	87
GENHUMPS:100	100	—	874	1128	1852	1024	1004	4560	1108
GENROSE:100	100	—	1711	3052	2444	1756	1813	4302	1758
HADAMALS:100	100	76	306	741	980	372	306	579	421
HARKERP2	100	100	3	3	3	3	3	3	3
INDEFM:100	100	—	13	5780	935	262	306	786	257
INDEF:100	100	100	13	180	51	228	228	—	236
LIARWHD:100	100	—	85	97	103	85	85	108	88
MANCINO:100	100	—	33	71	43	42	42	69	42
MOREBV:100	100	—	11645	—	—	11645	—	—	—
MSQRTALS:100	100	—	1173	2785	3471	1276	1257	1356	1200
MSQRTBLS:100	100	—	1784	3858	3951	2164	2026	2127	1784
MCCORMCK:100	100	1	42	59	56	71	70	87	52
NONDQUAR	100	—	566	566	1198	1191	1025	5745	1152
NCB20B:100	100	—	2856	3126	9868	3475	3441	2856	3095
NONCVXU2:100	100	—	1430	2070	1483	1549	1829	3132	1430
NONCVXUN:100	100	—	536	671	567	676	581	1011	831
NONDIA:100	100	—	198	198	674	510	466	222	—

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
NOBNDTOR:100	100	49	87	168	157	166	145	135	126
NONSCOMP:100	100	50	213	367	240	252	418	537	260
NCVXBQP3:100	100	98	42	175	58	111	111	192	115
NCVXBQP1:100	100	100	6	119	28	14	14	90	14
NCVXBQP2:100	100	100	13	141	37	98	98	99	106
OSCIPTH:100	100	—	180	253	228	245	251	333	213
PENALTY1:100	100	—	152	313	264	217	232	261	221
PENALTY2:100	100	—	249	392	585	265	275	456	249
PENALTY3:100	100	—	897	4316	3205	2686	2758	897	2061
POWELLSG:100	100	—	333	601	671	910	920	333	1821
POWER:100	100	—	112	193	131	112	112	591	112
PROBPENL:100	100	—	9	2968	—	—	—	—	—
PENTDI:100	100	74	24	47	30	74	71	45	37
QUARTC:100	100	—	51	201	51	112	112	216	112
SCHMVETT:100	100	—	153	262	201	156	167	1860	158
SENSORS:100	100	—	79	209	104	85	91	177	79
SINEALI:100	100	—	210	389	595	219	239	516	218
SINQUAD:100	100	—	79	90	97	106	79	147	139
SPARSINE:100	100	—	820	820	1191	936	921	909	889
SPARSQUR:100	100	—	27	89	27	70	70	153	70
SPMSRTLS:100	100	—	960	—	1449	—	1004	—	1234
SROSENBR:100	100	—	183	348	183	435	371	231	375
SSBRYBND:100	100	—	9583	9583	—	—	—	—	—
SSCOSINE:100	100	—	3535	3535	—	—	—	—	—
S368:100	100	73	10	63	63	10	10	231	10
TOINTGSS:100	100	—	101	137	157	103	120	249	101
TQUARTIC:100	100	—	207	292	277	218	354	246	231
TRIDIA:100	100	—	341	341	417	527	527	696	529

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
TORSIONA:100	100	54	72	180	118	128	121	123	114
TORSIONB:100	100	54	72	180	118	128	121	123	114
TORSION111:100	100	58	66	162	110	102	110	123	79
TORSION1:100	100	58	66	162	110	102	110	123	79
TORSION2:100	100	58	66	162	110	102	110	123	79
TORSIONC:100	100	67	54	83	82	95	114	96	86
TORSIOND:100	100	67	54	83	82	95	114	96	86
TORSION3:100	100	71	51	92	80	118	111	84	70
TORSION4:100	100	71	51	92	80	118	111	84	70
TORSIONE:100	100	84	36	59	50	71	87	75	64
TORSIONF:100	100	84	36	59	50	71	87	75	64
TORSION5:100	100	86	17	62	46	49	22	75	34
TORSION6:100	100	86	17	62	46	49	22	75	34
VARDIM:100	100	—	122	198	122	165	165	249	157
VAREIGVL:100	100	—	70	521	87	73	71	105	70
WOODS:100	100	—	198	198	439	526	480	264	502
EXPLIN:101	101	95	156	292	166	318	268	405	246
EXPLIN2:101	101	101	6	12	7	22	22	9	22
BRATU1D:103	103	2	1084	2057	2095	1084	1231	1371	1180
EIGENALS	110	—	4212	5098	4854	4266	4721	7536	4618
EIGENBLS	110	—	2141	3648	2141	2327	2552	4167	2183
NCB20:110	110	—	633	633	—	3151	2141	3285	2954
EXPQUAD	120	7	214	310	214	244	292	960	227
EXPLIN	120	70	557	906	742	566	557	1143	633
EXPLIN2	120	101	215	764	215	400	334	276	402
QRTQUAD	120	5	332	332	398	515	513	858	628
QUDLIN:120	120	120	13	15	21	71	60	99	58
FMINSRF2:121	121	—	214	222	226	214	216	348	223
FMINSURF:121	121	—	165	197	190	176	177	324	169
LMINSURF:121	121	40	170	247	216	170	170	1161	170
NLMSURF:121	121	40	907	1206	1436	946	999	3366	907

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
HADAMALS:144	144	79	202	707	287	343	264	453	404
HOLMES	180	180	3	3	3	3	3	3	3
NCB20B:180	180	—	1239	1684	2953	1298	1350	1239	1392
DRCV2LQ	196	96	4633	5010	4966	5139	4831	—	4633
DRCV3LQ	196	96	9829	—	9829	11140	—	—	—
HADAMALS:196	196	161	311	782	468	516	392	723	590
LINVERSE:199	199	89	2268	—	—	—	—	4284	—
ARGLINA:200	200	—	7	9	7	14	14	9	14
ARGLINB:200	200	—	24	29	28	29	29	156	29
ARGLINC:200	200	—	12	139	28	23	23	195	23
BROWNAL:200	200	—	108	108	112	436	504	123	559
CHARDIS0:200	200	—	4	9	4	10	10	—	10
MODBEALE:200	200	—	384	963	644	1748	1734	384	1875
PENALTY2:200	200	—	521	—	957	550	533	741	521
PENALTY3:200	200	—	708	8685	6757	—	—	3321	—
POWELLBC:200	200	104	2761	4422	9133	2761	7849	—	—
VARDIM:200	200	—	120	201	120	194	194	282	194
HADAMALS:256	256	135	417	—	502	694	466	816	513
ODC:288	288	148	465	902	1317	606	633	1560	681
SSC:288	288	148	383	436	469	390	388	858	383
DIXMAANA:300	300	—	15	17	15	16	16	30	16
DIXMAANB:300	300	—	16	25	19	19	19	33	19
DIXMAANC:300	300	—	19	29	23	22	22	33	22
DIXMAAND:300	300	—	22	29	27	25	25	33	25
DIXMAANE:300	300	—	248	277	342	289	276	1407	268
DIXMAANF:300	300	—	215	317	315	236	238	699	263

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANG:300	300	—	211	269	304	239	240	522	211
DIXMAANH:300	300	—	219	296	308	233	228	501	232
DIXMAANI:300	300	—	1781	1781	2794	2336	1871	4665	2101
DIXMAANJ:300	300	—	1245	1604	1703	1452	1248	2334	1382
DIXMAANK:300	300	—	1147	1553	1671	1397	1298	2685	1369
DIXMAANL:300	300	—	941	1581	1400	1248	1407	3642	941
DIXMAANM:300	300	—	1761	1761	2787	2049	2318	4920	2195
DIXMAANN:300	300	—	1745	2028	1904	2140	2172	3516	1986
DIXMAANO:300	300	—	1702	2016	1952	2099	2083	5538	1998
DIXMAANP:300	300	—	1634	1868	1948	2378	2372	3945	1634
HADAMALS:324	324	256	499	1080	499	564	681	1083	533
CHARDIS0:400	400	—	4	13	4	10	10	—	10
HADAMALS:400	400	306	494	1704	1061	545	494	1149	691
JNLBRNG1:400	400	253	272	306	459	274	272	309	282
JNLBRNGA:400	400	253	317	350	444	317	347	609	430
JNLBRNG2:400	400	278	285	381	366	295	307	399	291
JNLBRNGB:400	400	302	405	423	484	417	424	942	409
OBSTCLBL:400	400	263	28	47	28	93	93	42	59
OBSTCLBM:400	400	263	28	47	28	93	93	42	59
OBSTCLBU:400	400	263	28	47	28	93	93	42	59
OBSTCLAE:400	400	398	9	9	19	31	31	12	31
OBSTCLAL:400	400	398	9	9	19	31	31	12	31
EIGENCLS	462	—	7023	12496	12459	7572	8164	9492	9683
NOBNDTOR:484	484	143	192	326	347	192	211	630	232
TORSIONA:484	484	161	150	275	268	202	206	279	180
TORSIONB:484	484	161	150	275	268	202	206	279	180
TORSION111:484	484	186	150	271	359	184	192	495	196
TORSION1:484	484	186	150	271	359	184	192	495	196
TORSION2:484	484	186	150	271	359	184	192	495	196
TORSIONC:484	484	254	93	227	178	154	205	159	145
TORSIOND:484	484	254	93	227	178	154	205	159	145
TORSION3:484	484	267	90	236	194	196	165	138	159

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
TORSION4:484	484	267	90	236	194	196	165	138	159
TORSIONE:484	484	362	63	174	124	107	119	96	94
TORSIONF:484	484	362	63	174	124	107	119	96	94
TORSION5:484	484	368	60	178	126	116	126	93	123
TORSION6:484	484	368	60	178	126	116	126	93	123
ARWHEAD:500	500	—	68	75	68	86	89	81	82
BDQRTIC:500	500	—	147	147	457	200	267	168	270
BROYDN7D:500	500	—	523	757	711	538	550	906	542
BRYBND:500	500	—	63	92	83	64	64	111	64
BDEXP:500	500	2	1514	8872	1514	—	—	—	—
CRAGGLVY:500	500	—	276	346	426	290	289	408	286
DQRTIC	500	—	59	258	59	136	136	252	136
DQDRTIC:500	500	—	23	25	23	45	45	45	45
FREUROTH:500	500	—	84	102	96	133	174	132	125
GENHUMPS:500	500	—	873	1410	1721	953	1016	1947	1056
GENROSE:500	500	—	8254	14811	8937	8466	8661	—	8309
HARKERP2:500	500	500	3	3	3	3	3	3	3
LIARWHD:500	500	—	101	101	158	102	101	177	118
MOREBV:500	500	—	1407	1636	2687	1489	1559	1740	1575
MCCORMCK:500	500	1	51	66	56	79	76	105	62
NCB20B:500	500	—	1251	1251	3052	1390	1408	1266	1342
NONDIA:500	500	—	371	371	1191	950	784	438	—
NONDQUAR:500	500	—	551	551	1096	965	1339	3894	—
NONSCOMP:500	500	250	229	939	266	269	376	255	229
OSCIPATH:500	500	—	182	231	223	211	213	288	191
PENALTY1:500	500	—	169	240	220	169	175	261	172
POWELLSG:500	500	—	333	688	763	933	965	333	—
POWER:500	500	—	239	284	275	255	239	1248	251
PROBPENL:500	500	—	7	9	7	14	14	—	14
PENTDI:500	500	376	24	33	28	28	28	45	28

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
QUARTC:500	500	—	59	258	59	136	136	252	136
SCHMVETT:500	500	—	156	827	232	159	162	192	156
SINQUAD:500	500	—	110	110	155	195	228	210	229
SROSENBR:500	500	—	286	453	286	384	443	300	352
TOINTGSS:500	500	—	109	117	134	109	127	234	111
TQUARTIC:500	500	—	321	321	481	494	365	2211	482
TRIDIA:500	500	—	857	857	1062	1329	1239	1605	1422
VAREIGVL:500	500	—	73	93	87	73	76	111	73
BRATU1D:503	503	2	6081	9151	15486	6081	6828	18921	7164
CLPLATEA:529	529	23	507	683	729	552	515	984	520
CLPLATEB:529	529	23	369	533	565	428	369	2280	433
CLPLATEC:529	529	23	981	1972	—	8267	6998	1080	8013
ODC	864	164	530	682	865	576	530	8076	551
SSC	864	164	371	440	556	397	398	669	374
FMINSRF2:961	961	—	258	626	310	271	266	879	274
FMINSURF:961	961	—	315	315	422	379	369	1056	364
LMINSURF:961	961	120	593	1084	826	607	593	5325	606
NLMSURF:961	961	120	4062	4602	6339	4301	4332	—	4527
ARWHEAD:1000	1000	—	63	86	64	97	81	84	72
BDQRTIC:1000	1000	—	177	183	459	326	377	177	359
BOXPOWER:1000	1000	—	32	32	42	78	75	54	79
BOX:1000	1000	—	95	95	141	199	154	168	216
BROWNAL:1000	1000	—	102	102	108	180	183	165	208

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
BROYDN7D:1000	1000	—	526	767	736	526	533	1167	581
BRYBND:1000	1000	—	63	92	83	64	64	111	64
BDEXP:1000	1000	2	3017	—	3017	—	—	—	—
BIGGSB1:1000	1000	3	5541	9440	14979	7917	9805	9648	6091
CHAINWOO	1000	—	925	925	1140	1243	1227	942	1214
CURLY10	1000	—	25867	—	27410	25995	28550	—	28516
CURLY30	1000	—	28092	—	—	—	—	28092	—
CHARDIS0:1000	1000	—	4	13	4	10	10	21	10
CRAGGLVY:1000	1000	—	265	369	423	271	290	489	265
CVXBP1:1000	1000	1000	3	3	3	3	3	3	3
DIXON3DQ:1000	1000	—	4005	4005	4997	11134	9539	18696	8544
DQDRTIC:1000	1000	—	23	25	23	59	56	45	57
DQRTIC:1000	1000	—	63	235	63	144	144	261	144
EG2	1000	—	171	338	622	632	687	171	—
ENGVAL1:1000	1000	—	58	95	73	66	69	120	66
EXTROSNB:1000	1000	—	1881	15544	10534	4970	5656	1881	22235
FLETBV3M:1000	1000	—	52	540	52	88	95	333	92
FLETBVB2:1000	1000	—	4009	4009	9207	6471	6615	8457	6002
FLETBVB3:1000	1000	—	14177	—	—	14177	27070	—	—
FLETCHCR:1000	1000	—	16588	29416	17254	16834	17191	—	16692
FREUROTH:1000	1000	—	76	99	95	76	123	132	76
GENHUMPS	1000	—	979	1187	1614	1097	1159	2826	1120
HARKERP2:1000	1000	1000	3	3	3	3	3	3	3
INDEFM	1000	—	381	381	685	558	425	8712	615
INDEF	1000	1000	53	150	53	305	248	—	271
JNLBRNG1:1000	1000	366	278	361	452	278	298	351	311
JNLBRNGA:1000	1000	385	329	470	548	329	333	678	335
JNLBRNG2:1000	1000	524	501	737	941	505	501	810	510

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
JNLBRNGB:1000	1000	560	1255	1494	1976	1347	1258	1662	1292
LIARWHD:1000	1000	—	110	110	133	152	143	171	150
MOREBV:1000	1000	—	1352	2252	2925	1468	1352	1956	1426
MCCORMCK:1000	1000	1	48	66	59	63	87	123	57
NONCVXU2	1000	—	5628	6017	5628	7723	11726	19884	9108
NONCVXUN	1000	—	10021	11180	10021	—	—	—	—
NONDIA	1000	—	564	957	2052	1340	1284	564	—
NCB20B:1000	1000	—	1263	1306	3101	1514	1567	1263	1522
NONDQUAR:1000	1000	—	599	599	755	807	1265	1494	—
NONSCOMP:1000	1000	500	255	255	282	274	379	309	311
NCVXBQP3	1000	983	104	835	104	151	183	222	514
NCVXBQP2	1000	993	37	207	80	132	136	225	129
NCVXBQP1	1000	1000	4	154	28	16	16	90	16
OSCIGRAD:1000	1000	—	1486	—	1486	—	—	—	—
OBSTCLBL	1000	680	117	183	170	209	178	192	173
OBSTCLBM	1000	680	117	183	170	209	178	192	173
OBSTCLBU	1000	680	117	183	170	209	178	192	173
OBSTCLAL	1000	696	72	164	72	99	99	93	111
OBSTCLAE:1000	1000	696	72	164	72	99	99	93	111
PENALTY1:1000	1000	—	147	220	182	151	147	222	170
POWELLSG:1000	1000	—	351	742	967	1002	1103	351	—
POWER:1000	1000	—	330	382	379	348	337	1401	349
POWELLBC:1000	1000	501	10798	—	—	10829	11715	—	11934
PENTDI	1000	751	24	33	28	25	25	42	25
QUARTC:1000	1000	—	63	235	63	144	144	261	144
SPARSINE	1000	—	13980	13980	19749	17808	17993	17973	16964
SPARSQUR	1000	—	31	114	31	73	73	171	73
SSBRYBND	1000	—	22532	—	—	22765	23653	—	22862

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
SCHMVETT:1000	1000	—	156	459	219	185	168	471	168
SENSORS:1000	1000	—	111	160	196	111	121	312	152
SINEALI:1000	1000	—	191	260	501	192	200	363	191
SINQUAD:1000	1000	—	144	152	184	145	160	228	182
SROSENBR:1000	1000	—	359	373	359	513	378	378	402
TESTQUAD	1000	—	3704	3704	—	13949	12890	4428	12773
TOINTGSS:1000	1000	—	99	130	127	99	102	741	100
TQUARTIC:1000	1000	—	258	258	679	547	370	1494	467
TRIDIA:1000	1000	—	1237	1237	1542	2163	1836	2202	1789
VAREIGVL:1000	1000	—	73	93	87	73	77	111	73
WOODS:1000	1000	—	366	366	439	557	658	600	675
BRATU1D:1003	1003	1003	18312	—	—	20170	—	—	18312
NCB20	1010	—	481	481	17300	1094	1005	3267	816
CLPLATEA:1024	1024	32	758	1138	1241	870	880	1470	892
CLPLATEB:1024	1024	32	492	637	633	529	524	1086	527
CLPLATEC:1024	1024	32	1188	3652	—	21337	19564	1188	17484
FMINSRF2:1024	1024	—	275	332	334	283	285	1647	275
FMINSURF:1024	1024	—	348	410	402	370	388	1641	377
HADAMALS:1024	1024	801	583	2167	1670	583	786	2322	785
LMINSURF:1024	1024	124	622	940	895	662	649	—	622
NLMSURF	1024	124	4152	4857	6702	4388	4408	8388	4318
NOBNDTOR:1024	1024	235	237	402	545	319	336	720	327
TORSIONA:1024	1024	281	201	349	463	278	252	405	295
TORSIONB:1024	1024	281	201	349	463	278	252	405	295
TORSION111:1024	1024	323	207	367	533	242	235	387	285
TORSION1:1024	1024	323	207	367	533	242	235	387	285

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
TORSION2:1024	1024	323	207	367	533	242	235	387	285
TORSIONC:1024	1024	493	117	288	267	153	204	285	169
TORSIOND:1024	1024	493	117	288	267	153	204	285	169
TORSION3:1024	1024	515	123	282	342	185	188	201	193
TORSION4:1024	1024	515	123	282	342	185	188	201	193
TORSIONE:1024	1024	761	78	202	181	160	230	141	149
TORSIONF:1024	1024	761	78	202	181	160	230	141	149
TORSION5:1024	1024	768	75	213	183	157	137	102	158
TORSION6:1024	1024	768	75	213	183	157	137	102	158
EXPQUAD:1200	1200	81	938	2579	1158	1126	1087	1410	938
EXPLIN:1200	1200	1150	544	859	742	623	561	921	544
EXPLIN2:1200	1200	1181	197	784	197	374	282	336	354
QRTQUAD:1200	1200	50	1524	1524	6677	6114	3415	3267	5252
QUDLIN:1200	1200	1200	13	25	30	135	108	105	58
DIXMAANA:1500	1500	—	15	17	15	16	16	21	16
DIXMAANB:1500	1500	—	16	25	19	19	19	33	19
DIXMAANC:1500	1500	—	19	29	23	22	22	33	22
DIXMAAND:1500	1500	—	22	29	27	25	25	33	25
DIXMAANE:1500	1500	—	459	560	717	557	536	1542	544
DIXMAANF:1500	1500	—	444	536	548	461	465	1017	478
DIXMAANG:1500	1500	—	417	521	483	431	440	1182	446
DIXMAANH:1500	1500	—	387	469	528	395	460	912	427
DIXMAANI:1500	1500	—	4638	6020	9162	5665	5298	6300	5164
DIXMAANJ:1500	1500	—	2365	3357	2451	2575	2529	3192	2375
DIXMAANK:1500	1500	—	1392	2325	2951	2387	1392	3441	1806
DIXMAANL:1500	1500	—	952	1823	2187	1010	979	3117	952

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANM:1500	1500	—	4338	5751	9097	5348	5554	5595	4646
DIXMAANN:1500	1500	—	2478	3549	3004	2478	2843	5181	2589
DIXMAANO:1500	1500	—	2127	3136	2688	2290	2189	5430	2127
DIXMAANP:1500	1500	—	1963	3184	2944	1963	2138	4038	2119
LINVERSE:1999	1999	785	42455	42455	—	—	—	—	—
CHARDIS0:2000	2000	—	4	13	4	10	10	21	10
EDENSCH:2000	2000	—	72	92	106	75	79	114	72
MODBEALE:2000	2000	—	417	826	771	1968	1770	417	1828
NCB20B:2000	2000	—	1150	1220	2560	1176	1156	1308	1150
BQPGAUSS	2003	134	11100	45980	37467	16618	12508	16749	14450
RAYBENDS:2050	2050	4	9611	9611	—	—	—	—	—
JNLBRNG1:2300	2300	809	317	457	596	348	378	423	317
JNLBRNGA:2300	2300	847	342	511	671	396	342	549	369
JNLBRNGB:2300	2300	1052	1749	2175	3057	1878	1792	2484	1790
JNLBRNG2:2300	2300	1077	584	762	1119	623	625	903	597
OBSTCLBL:2300	2300	993	210	349	334	299	273	297	250
OBSTCLBM:2300	2300	993	210	349	334	299	273	297	250
OBSTCLBU:2300	2300	993	210	349	334	299	273	297	250
OBSTCLAE:2300	2300	1276	147	295	253	176	162	390	153
OBSTCLAL:2300	2300	1276	147	295	253	176	162	390	153
ODC:2376	2376	206	525	679	1033	608	554	2247	551
SSC:2376	2376	206	352	352	507	379	367	1047	360
EIGENBLS:2550	2550	—	18518	—	30065	27925	29084	57663	26567
EIGENCLS:2652	2652	—	37918	—	—	44261	60749	48654	43316
DIXMAANA:3000	3000	—	15	17	15	16	16	21	16
DIXMAANB:3000	3000	—	16	25	19	19	19	33	19
DIXMAANC:3000	3000	—	19	29	23	22	22	33	22
DIXMAAND:3000	3000	—	22	33	27	25	25	33	25
DIXMAANE:3000	3000	—	630	741	1087	715	638	1668	645

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANF:3000	3000	—	570	661	592	598	580	1452	591
DIXMAANG:3000	3000	—	517	593	600	517	537	1353	527
DIXMAANH:3000	3000	—	495	573	556	508	569	1242	591
DIXMAANI:3000	3000	—	3465	5413	8162	3768	3465	4980	3556
DIXMAANJ:3000	3000	—	780	4717	1952	932	984	1983	821
DIXMAANK:3000	3000	—	689	1465	2015	714	731	2238	732
DIXMAANL:3000	3000	—	771	2513	1680	1169	1021	1995	1198
DIXMAANM:3000	3000	—	3514	6101	7072	3679	3514	5406	4338
DIXMAANN:3000	3000	—	2879	4077	3412	3220	3326	6420	3049
DIXMAANO:3000	3000	—	2326	3285	2972	2603	2329	4785	2484
DIXMAANP:3000	3000	—	1828	2669	4812	2042	2020	4266	1828
JNLBRNG1:3200	3200	1130	342	480	567	378	368	591	342
JNLBRNGA:3200	3200	1168	426	618	724	433	435	639	426
JNLBRNG2:3200	3200	1400	723	1161	1422	723	723	1008	729
JNLBRNGB:3200	3200	1446	2067	2485	3524	3247	3149	3624	2084
OBSTCLBL:3200	3200	1252	174	320	298	254	208	270	256
OBSTCLBM:3200	3200	1252	174	320	298	254	208	270	256
OBSTCLBU:3200	3200	1252	174	320	298	254	208	270	256
OBSTCLAE:3200	3200	1813	195	370	311	228	205	327	196
OBSTCLAL:3200	3200	1813	195	370	311	228	205	327	196
JNLBRNG1:3400	3400	1195	330	593	577	446	395	519	337
JNLBRNGA:3400	3400	1233	435	593	764	448	441	699	444
JNLBRNG2:3400	3400	1500	689	1028	1115	689	728	1005	707
JNLBRNGB:3400	3400	1545	2148	2710	4498	3387	3118	3549	3882
CHAINWOO:4000	4000	—	994	1811	1762	994	1041	1302	1040
CHARDIS0:4000	4000	—	4	13	4	10	10	21	10
WOODS:4000	4000	—	349	349	750	916	601	597	524
HADAMALS:4096	4096	3282	795	4670	7325	795	817	4272	1050
DRCV1LQ:4489	4489	520	31051	—	—	—	—	77085	—

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
ARWHEAD:5000	5000	—	83	83	100	144	140	117	172
BDQRTIC:5000	5000	—	168	168	466	765	711	246	615
BROYDN7D:5000	5000	—	607	1243	814	628	609	1257	608
BRYBND:5000	5000	—	63	96	83	64	64	111	64
BIGGSB1:5000	5000	3	21382	32608	37586	38398	47927	46506	21382
BDEXP:5000	5000	5000	3	3	3	3	3	3	3
CRAGGLVY:5000	5000	—	283	372	493	302	290	564	283
CHENHARK:5000	5000	2010	21847	25190	—	52586	21847	—	51585
DQDRTIC:5000	5000	—	23	25	23	58	80	45	52
DQRTIC:5000	5000	—	71	311	71	165	165	297	165
ENGVAL1:5000	5000	—	60	76	80	63	63	123	63
FLETBV3M:5000	5000	—	89	—	89	119	125	189	128
FLETGBV2:5000	5000	—	18263	20005	33497	24454	28598	30381	18263
FREUROTH:5000	5000	—	89	103	95	90	89	135	89
GENHUMPS:5000	5000	—	923	1261	1446	931	923	1137	1081
HARKERP2:5000	5000	5000	3	3	3	3	3	3	3
INDEFM:5000	5000	—	247	—	247	626	673	2760	—
INDEF:5000	5000	5000	56	116	56	—	249	—	543
LIARWHD:5000	5000	—	109	109	141	227	226	192	113
MOREBV:5000	5000	—	1358	2252	2927	1358	1429	1611	1448
MCCORMCK:5000	5000	1	51	70	65	62	62	135	61
NCB20B:5000	5000	—	1248	2687	4447	1327	1426	1248	1334
NONCVXU2:5000	5000	—	21305	21305	23699	41714	37700	50736	36818
NONCVXUN:5000	5000	—	44454	44454	—	—	—	—	—
NONDIA:5000	5000	—	1220	1220	3453	—	2433	—	—

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
NONDQUAR:5000	5000	—	612	612	952	1239	1046	1488	—
NONSCOMP:5000	5000	2500	228	332	285	264	236	231	228
POWELLSG:5000	5000	—	351	504	803	1082	865	351	—
POWER:5000	5000	—	732	841	828	759	760	2187	769
PENTDI:5000	5000	3751	24	33	28	28	28	39	34
QUARTC:5000	5000	—	71	311	71	165	165	297	165
QRTQUAD:5000	5000	549	2556	2556	32853	—	—	39315	61274
QUDLIN:5000	5000	5000	13	18	27	64	94086	30	61
SCHMVETT:5000	5000	—	151	945	271	167	171	2871	167
SINQUAD:5000	5000	—	137	173	164	137	161	261	143
SPARSQUR:5000	5000	—	35	143	35	94	94	231	94
SROSENBR:5000	5000	—	399	399	624	754	710	549	1087
SSBRYBND:5000	5000	—	24904	29275	47365	25562	25293	53169	24904
TESTQUAD:5000	5000	—	4960	4960	35467	18835	17025	6846	10963
TOINTGSS:5000	5000	—	107	116	118	127	113	438	108
TQUARTIC:5000	5000	—	583	583	1123	686	1079	609	—
TRIDIA:5000	5000	—	2829	2829	3537	4428	5441	5199	4496
VAREIGVL:5000	5000	—	73	93	87	73	77	111	73
NCB20:5010	5010	—	505	630	4474	633	631	2049	505
CLPLATEA:5041	5041	71	1988	2378	3697	2190	2047	4134	2080
CLPLATEB:5041	5041	71	999	1214	1497	1107	1060	1656	1095
CLPLATEC:5041	5041	71	2856	15872	—	—	—	2949	107876
ODC:5184	5184	284	606	963	1225	627	629	3219	638
SSC:5184	5184	284	381	381	637	469	481	1002	504
MINSURFO:5306	5306	1762	2499	3374	3937	6897	6449	6552	6803
NOBNDTOR:5476	5476	801	528	880	1280	662	717	918	767

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
TORSIONA:5476	5476	1096	441	742	1600	704	751	726	611
TORSIONB:5476	5476	1096	441	742	1600	704	751	726	611
TORSION111:5476	5476	1219	483	811	1693	613	608	903	680
TORSION1:5476	5476	1219	483	811	1693	613	608	903	680
TORSION2:5476	5476	1219	483	811	1693	613	608	903	680
TORSIONC:5476	5476	2328	279	471	444	422	459	516	581
TORSIOND:5476	5476	2328	279	471	444	422	459	516	581
TORSION3:5476	5476	2386	264	451	470	478	416	420	626
TORSION4:5476	5476	2386	264	451	470	478	416	420	626
TORSIONE:5476	5476	3782	162	302	218	367	326	324	321
TORSIONF:5476	5476	3782	162	302	218	367	326	324	321
TORSION5:5476	5476	3805	159	323	457	292	287	189	292
TORSION6:5476	5476	3805	159	323	457	292	287	189	292
FMINSRF2:5625	5625	—	525	630	637	525	554	2637	542
FMINSURF:5625	5625	—	535	640	638	540	558	2571	536
LMINSURF:5625	5625	296	1579	2662	2501	1579	1581	37182	1612
NLMSURF:5625	5625	296	15218	21249	20488	15218	15631	—	15377
ODC:7344	7344	344	704	947	1573	729	731	4143	704
SSC:7344	7344	344	515	560	755	569	592	1227	518
JNLBRNG1:7500	7500	2605	576	1060	1309	992	903	936	906
JNLBRNGA:7500	7500	2676	654	1112	1428	959	1040	1182	913
JNLBRNG2:7500	7500	3171	1281	2022	2680	1375	1360	1842	1379
JNLBRNGB:7500	7500	3395	3813	4572	7179	6779	5886	6549	7052
OBSTCLBL:7500	7500	2859	303	556	553	401	373	501	409
OBSTCLBM:7500	7500	2859	303	556	553	401	373	501	409
OBSTCLBU:7500	7500	2859	303	556	553	401	373	501	409
OBSTCLAE	7500	3819	291	549	695	434	396	576	349
OBSTCLAL:7500	7500	3819	291	549	695	434	396	576	349
DIXMAANA:9000	9000	—	15	17	15	16	16	21	16
DIXMAANB:9000	9000	—	16	25	19	19	19	24	19
DIXMAANC:9000	9000	—	19	29	23	22	22	33	22

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAAND:9000	9000	—	22	33	27	25	25	33	25
DIXMAANE:9000	9000	—	956	1145	1492	956	1016	1887	962
DIXMAANF:9000	9000	—	759	957	876	788	797	1977	781
DIXMAANG:9000	9000	—	760	905	879	804	760	2319	837
DIXMAANH:9000	9000	—	750	863	860	750	770	2268	770
DIXMAANI:9000	9000	—	1384	4089	4252	1384	1530	4377	1988
DIXMAANJ:9000	9000	—	685	1501	1030	828	963	1650	685
DIXMAANK:9000	9000	—	582	2388	943	582	727	1638	741
DIXMAANL:9000	9000	—	651	2570	875	651	753	1593	745
DIXMAANM:9000	9000	—	1364	4089	5972	1680	1897	4320	1804
DIXMAANN:9000	9000	—	1767	3916	2147	1806	1971	3861	1988
DIXMAANO:9000	9000	—	1566	4313	2603	2102	1911	4557	2418
DIXMAANP:9000	9000	—	2166	3417	3015	2219	2368	6441	2411
BOXPOWER	10000	—	27	73	27	99	93	39	79
BOX	10000	—	128	128	202	322	500	156	472
BROYDN7D:10000	10000	—	589	1518	795	589	600	1269	624
BRYBND:10000	10000	—	63	96	83	64	64	111	64
CHAINWOO:10000	10000	—	1029	1614	2532	1334	1218	1029	1159
CVXBQP1:10000	10000	10000	3	3	3	3	3	3	3
DIXON3DQ:10000	10000	—	40009	40009	50002	76220	80550	61317	69474
FLETBV3M:10000	10000	—	74	—	74	77	91	243	86
FLETCBV2:10000	10000	—	27618	—	50022	37579	44517	27618	34378
FMINSRF2:10000	10000	—	662	783	823	684	686	1599	689
FMINSURF:10000	10000	—	656	783	823	667	671	1824	677
HARKERP2:10000	10000	10000	3	3	3	3	3	3	3
INDEFM:10000	10000	—	579	—	1433	579	1277	6510	—

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
JNLBRNG1:10000	10000	3443	837	1296	1520	1304	1389	1323	1517
JNLBRNGA:10000	10000	3568	855	1477	2415	1434	1431	1518	1505
JNLBRNG2:10000	10000	4209	1668	2395	3572	1812	1827	2649	1687
JNLBRNGB:10000	10000	4484	4926	6148	9024	8343	9412	7560	12696
LIARWHD:10000	10000	—	112	112	150	185	298	174	195
LMINSURF:10000	10000	396	2224	4000	3491	2289	2268	—	2310
MCCORMCK:10000	10000	1	53	125	60	53	53	117	53
NONCVXU2:10000	10000	—	28906	29540	28906	41448	42259	49392	36896
NONDIA:10000	10000	—	307	1873	5248	2888	575	—	—
NONDQUAR:10000	10000	—	842	842	1146	1287	1105	1191	—
NLMSURF:10000	10000	396	21993	35968	29544	23680	23879	—	22470
NOBNDTOR:10000	10000	1299	630	1101	2172	993	962	1197	882
NONSCOMP:10000	10000	5000	237	290	237	291	265	249	276
NCVXBQP3:10000	10000	9808	182	721	285	196	182	453	369
NCVXBQP2:10000	10000	9934	126	609	226	127	126	363	134
NCVXBQP1:10000	10000	10000	4	268	28	18	18	90	18
OSCIGRAD:10000	10000	—	5459	—	5459	—	—	—	—
OBSTCLBL:10000	10000	3896	336	555	750	480	496	525	454
OBSTCLBM:10000	10000	3896	336	555	750	480	496	525	454
OBSTCLBU:10000	10000	3896	336	555	750	480	496	525	454
OBSTCLAE:10000	10000	5061	354	660	747	456	430	825	453
OBSTCLAL:10000	10000	5061	354	660	747	456	430	825	453
POWELLSG:10000	10000	—	351	931	797	1218	906	351	—
POWER:10000	10000	—	994	1177	1176	1012	1017	2676	1012
QUARTC:10000	10000	—	75	417	75	173	173	315	173
SCHMVETT:10000	10000	—	171	1798	229	174	196	7110	183
SINQUAD:10000	10000	—	184	184	211	197	228	231	245
SPARSQUR:10000	10000	—	39	149	39	73	73	255	73

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
SROSENB:10000	10000	—	240	562	1080	881	935	240	963
TOINTGSS:10000	10000	—	108	108	113	136	147	567	131
TQUARTIC:10000	10000	—	812	812	1306	1129	1114	48666	—
TRIDIA:10000	10000	—	4021	4021	5017	7560	5711	7788	7336
TORSIONA:10000	10000	1839	591	993	1409	935	997	1860	666
TORSIONB:10000	10000	1839	591	993	1409	935	997	1860	666
TORSION111:10000	10000	2013	540	1017	2103	1263	1226	2232	1230
TORSION1:10000	10000	2013	540	1017	2103	1263	1226	2232	1230
TORSION2:10000	10000	2013	540	1017	2103	1263	1226	2232	1230
TORSIONC:10000	10000	4105	360	582	1173	615	613	579	752
TORSIOND:10000	10000	4105	360	582	1173	615	613	579	752
TORSION3:10000	10000	4189	366	641	566	676	562	618	928
TORSION4:10000	10000	4189	366	641	566	676	562	618	928
TORSIONE:10000	10000	6685	192	361	351	399	456	390	587
TORSIONF:10000	10000	6685	192	361	351	399	456	390	587
TORSION5:10000	10000	6720	210	378	334	416	470	423	568
TORSION6:10000	10000	6720	210	378	334	416	470	423	568
WOODS:10000	10000	—	540	652	910	540	571	705	690
DRCV1LQ:10816	10816	816	31560	—	—	—	—	44034	—
JNLBRNG1:12500	12500	4277	975	1577	1949	1981	1739	3654	1709
JNLBRNGA:12500	12500	4469	1077	1774	2853	1531	1953	1548	1518
JNLBRNG2:12500	12500	5197	2010	2821	4614	2422	2376	3327	2407
JNLBRNGB:12500	12500	5630	6039	6906	13960	11550	11723	8424	15928
OBSTCLBL:12500	12500	4623	354	558	684	618	632	672	510
OBSTCLBM:12500	12500	4623	354	558	684	618	632	672	510
OBSTCLBU:12500	12500	4623	354	558	684	618	632	672	510

problem	dim	nact	nf+2*ng best	nf+2*ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
OBSTCLAE:12500	12500	6481	390	745	977	652	503	774	476
OBSTCLAL:12500	12500	6481	390	745	977	652	503	774	476
ODC:14544	14544	544	1235	1609	2725	1705	1768	10491	1355
SSC:14544	14544	544	896	960	1359	949	939	2241	1123
NOBNDTOR:14884	14884	1758	777	1356	4025	1413	1552	1461	1043
TORSIONA:14884	14884	2618	654	1217	2600	1014	1290	1269	1454
TORSIONB:14884	14884	2618	654	1217	2600	1014	1290	1269	1454
TORSION111:14884	14884	2830	624	1137	3913	1130	1509	1194	1970
TORSION1:14884	14884	2830	624	1137	3913	1130	1509	1194	1970
TORSION2:14884	14884	2830	624	1137	3913	1130	1509	1194	1970
TORSIONC:14884	14884	6034	417	726	945	903	741	1095	1059
TORSIOND:14884	14884	6034	417	726	945	903	741	1095	1059
TORSION3:14884	14884	6137	435	619	962	716	712	765	1028
TORSION4:14884	14884	6137	435	619	962	716	712	765	1028
TORSIONE:14884	14884	9868	264	423	411	501	545	414	677
TORSIONF:14884	14884	9868	264	423	411	501	545	414	677
TORSION5:14884	14884	9914	264	521	640	587	493	435	783
TORSION6:14884	14884	9914	264	521	640	587	493	435	783
FMINSRF2:15625	15625	—	774	897	985	794	794	1803	791
FMINSURF:15625	15625	—	774	913	985	779	774	1644	777
LMSURF:15625	15625	496	2838	4699	4533	2854	2900	—	2917
NLMSURF:15625	15625	496	30635	—	53588	32574	33995	—	30635
BOXPOWER:20000	20000	—	30	47	30	46	46	48	76
MODBEALE:20000	20000	—	762	762	849	1704	1803	1113	1885
MCCORMCK:50000	50000	1	54	83	64	54	54	198	54
BOX:100000	100000	—	201	201	403	804	1309	246	952
INDEFM:100000	100000	—	898	—	898	2276	1107	—	—
OSCIGRAD:100000	100000	—	2578	—	2578	—	—	—	—
DEGTRID:100001	100001	1	6609	—	—	—	—	6609	—
DEGDIAG:100001	100001	100001	3	3	3	3	3	3	3
DEGTRID2:100001	100001	100001	3	3	3	3	3	3	3

3.9 Number of gradients evaluations, accuracy 1e-06

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
BQP1VAR	1	1	3	1	1	1	1	1	1
AKIVA	2	—	64	17	26	22	20	—	24
BEALE	2	—	45	15	13	16	16	22	15
BRKMCC	2	—	24	5	7	11	11	14	11
CAMEL6	2	—	25	12	10	8	8	21	8
CLIFF	2	—	69	43	55	24	22	106	29
CUBE	2	—	63	33	40	37	37	21	39
CHEBYQAD:2	2	—	38	18	12	12	12	31	13
DENSCHNA	2	—	28	9	8	9	9	20	9
DENSCHNB	2	—	25	8	10	9	9	17	9
DENSCHNC	2	—	40	12	12	13	13	27	13
DENSCHNF	2	—	36	11	15	11	12	32	12
DJTL	2	—	201	62	395	—	—	1819	—
ENGVAL1	2	—	24	9	8	8	8	21	8
EXPFIT	2	—	50	15	20	17	16	53	16
FREUROTH	2	—	43	17	11	18	18	26	21
HUMPS	2	—	107	48	87	44	38	168	46
HAIRY	2	—	47	26	27	18	19	55	14
HIMMELBB	2	—	21	11	11	7	7	21	7
HIMMELBG	2	—	32	9	9	12	11	24	12
HIMMELBH	2	—	21	7	8	7	7	17	7
HS1	2	—	63	23	32	34	31	21	33
HS5	2	—	21	10	8	8	8	15	8
HILBERTA:2	2	—	3	1	3	9	9	4	9
HIMMELP1	2	1	19	6	7	7	7	18	7
HS2	2	1	21	8	9	11	11	115	11
HS3MOD	2	1	4	4	1	5	5	11	5
HS3	2	1	4	3	1	3	3	3	3
HS4	2	2	3	1	1	1	1	1	1
JENSMP	2	—	6	60	45	—	—	55	—
LOGHAIRY	2	—	13	24	37	25	20	149	18

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
LOGROS	2	—	16	95	64	59	52	74	61
MARATOSB	2	—	528	984	2159	1017	1072	176	1052
MEXHAT	2	—	321	96	185	109	105	126	109
MODBEALE	2	—	45	15	13	16	16	22	15
MDHOLE	2	1	7	2	3	3	3	3	3
OSCIGRAD:2	2	—	4809	1295	—	1719	1611	—	1560
OSCIPATH:2	2	—	63	58	97	66	65	21	68
ROSENBR	2	—	63	23	34	34	31	21	33
S308	2	—	25	8	9	9	9	22	9
SINEVAL	2	—	47	12	13	16	16	16	16
SISSER	2	—	35	20	9	17	17	42	17
SNAIL	2	—	19	8	7	8	8	17	8
SENSORS:2	2	—	27	8	9	12	12	29	12
SIMBQP	2	1	4	2	1	3	3	3	3
SIM2BQP	2	2	3	1	1	1	1	1	1
ZANGWIL2	2	—	11	3	3	6	6	10	6
BARD	3	—	174	68	46	69	81	—	97
BOX3	3	—	23	8	6	9	9	20	9
BOX2	3	1	107	30	29	80	89	51	40
DENSCHND	3	—	84	22	24	27	29	366	35
DENSCHNE	3	—	22	12	7	9	9	18	9
ENGVAL2	3	—	84	23	27	39	33	47	41
EG1	3	1	51	28	22	26	29	38	28
GROWTHLS	3	—	104	33	59	33	35	154	39
GULF	3	—	4	7	1	59	100	1517	134
HATFLDD	3	—	71	32	18	41	43	44	45
HATFLDE	3	—	74	19	36	24	24	64	24
HATFLDFL	3	—	405	172	179	127	183	153	—
HELIX	3	—	43	12	11	20	20	51	20
HIELOW	3	—	74	—	25	24	26	—	35
HS25	3	—	20	5	11	119	88	49	76
KOEBHELB	3	—	6	92	58	—	—	160	—

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
MEYER3	3	—	274	971	941	—	—	—	—
PFIT1LS	3	—	52	13	—	—	—	47	—
PFIT2LS	3	—	52	13	—	—	—	51	—
PFIT3LS	3	—	52	13	—	—	—	52	—
PFIT4LS	3	—	52	13	—	—	—	53	—
SCHMVETT	3	—	18	13	15	21	21	27	22
SENSORS:3	3	—	87	30	27	32	32	136	32
SPECAN:3	3	3	3	1	1	1	1	1	1
WEEDS	3	1	19	24	68	21	21	91	21
YFIT	3	—	150	103	65	115	100	241	103
YFITU	3	—	308	105	128	115	100	241	103
ALLINITU	4	—	30	12	9	10	10	22	10
ALLINIT	4	2	41	21	15	13	13	31	13
BROWNDEN	4	—	72	19	19	27	27	39	27
CRAGGLVY	4	—	131	41	41	44	44	102	46
CHAINWOO:4	4	—	98	34	26	35	33	57	35
CHEBYQAD:4	4	—	35	14	31	15	15	36	12
HATFLDA	4	—	67	35	32	22	22	112	22
HIMMELBF	4	—	244	56	84	125	181	—	104
HS38	4	—	100	30	27	35	33	57	35
HILBERTA:4	4	—	16	4	5	24	24	27	24
HATFLDB	4	1	64	30	30	40	33	74	28
HADAMALS	4	3	32	12	11	16	17	29	12
KOWOSB	4	—	144	54	53	85	69	113	110
MSQRTALS	4	—	63	20	16	21	21	66	21
MODBEALE:4	4	—	80	19	27	34	38	39	36
PENALTY2	4	—	399	674	451	500	413	133	373
POWELLSG	4	—	115	27	31	39	53	94	42
PALMER1B	4	—	118	78	112	61	37	162	44
PALMER2B	4	—	91	101	109	70	31	144	38
PALMER3B	4	—	103	69	117	33	33	129	34
PALMER4B	4	—	108	70	89	42	36	138	42

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
PALMER5D	4	—	21	5	7	30	34	60	34
PENALTY1:4	4	—	306	152	107	125	132	102	115
PSPDOC	4	1	25	6	9	12	12	16	12
PALMER1	4	1	75	35	93	35	88	61	23
PALMER2	4	1	69	24	33	24	23	67	36
PALMER3	4	1	63	40	26	23	23	61	25
PALMER4	4	1	59	14	26	28	27	57	2268
POWELLBC:4	4	4	4	2	1	1	1	12	1
SINEALI:4	4	—	115	25	85	88	78	79	82
WOODS:4	4	—	90	21	27	35	33	57	35
CHEBYQAD:5	5	2	41	28	22	19	18	49	13
EXTROSNB	5	—	301	115	98	103	101	215	112
GENHUMPS:5	5	—	236	57	92	82	97	165	87
GENROSE:5	5	—	111	45	48	45	70	94	44
HILBERTB	5	—	18	5	5	6	6	11	6
HILBERTA:5	5	—	23	6	6	46	37	41	41
HS45	5	5	3	1	1	1	1	1	1
OSCIGRAD:5	5	—	513	1093	1559	—	2255	171	—
OSCIPATH:5	5	—	2625	—	—	—	—	875	3201
OSBORNEA	5	5	405	88	—	—	—	—	—
SINQUAD	5	—	50	14	17	16	21	31	19
TQUARTIC	5	—	51	15	18	17	18	54	16
BIGGS6	6	—	400	1729	131	624	949	—	—
BIGGS5	6	1	216	120	60	70	104	211	83
BIGGS3	6	3	69	25	26	25	25	126	24
CHEBYQAD:6	6	2	53	15	18	29	30	38	17
EIGENALS:6	6	—	92	26	34	35	34	72	30
EIGENBLS:6	6	—	97	26	41	33	32	96	43
HEART6LS	6	—	83	851	908	1250	1313	—	—
HILBERTA:6	6	—	23	6	6	48	44	30	47
HART6	6	2	48	18	22	20	31	27	16
PALMER6A	6	—	237	439	451	564	784	—	—

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
PALMER8A	6	—	282	385	155	95	182	1278	92
PALMER1A	6	—	230	377	282	360	428	—	197
PALMER2A	6	—	429	247	202	327	344	631	181
PALMER3A	6	—	490	419	326	256	384	1043	233
PALMER4A	6	—	332	250	213	186	198	2730	115
PALMER5C	6	—	27	7	7	15	15	39	14
SPECAN:6	6	6	3	1	1	1	1	1	1
CHEBYQAD:7	7	1	104	24	31	51	53	51	41
PALMER1D	7	—	33	8	18	—	—	—	267
AIRCRFTB	8	3	216	96	137	81	128	401	77
CHEBYQAD:8	8	2	90	23	25	54	51	30	40
HEART8LS	8	—	524	628	1388	221	169	387	—
MAXLIKA	8	7	16	9	7	1	1	33	1
OSLBQP	8	7	4	2	2	1	1	3	1
PALMER6C	8	—	37	9	24	—	—	—	—
PALMER6E	8	—	70	294	16	1966	—	—	—
PALMER7C	8	—	37	9	24	—	—	—	—
PALMER8C	8	—	37	9	17	—	—	—	—
PALMER8E	8	—	84	208	22	2015	1219	1993	—
PALMER1C	8	—	37	9	28	—	—	—	—
PALMER1E	8	—	1161	584	344	—	—	—	—
PALMER2C	8	—	37	9	26	—	—	—	—
PALMER3C	8	—	37	9	19	—	—	—	—
PALMER4C	8	—	37	9	19	—	—	—	—
PALMER4E	8	—	684	280	885	—	—	1836	—
PALMER5A	8	—	85	20	—	—	—	—	—
POWELLSG:8	8	—	203	58	51	95	121	117	164
PALMER7E	8	1	85	21	—	—	—	—	—
PALMER2E	8	1	1092	429	—	—	—	—	—
PALMER3E	8	1	1047	422	—	—	—	2722	—

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
S368:8	8	6	27	11	11	10	—	51	10
VIBRBEAM	8	—	2681	609	—	—	—	—	—
CHEBYQAD:9	9	2	87	20	28	67	66	69	63
MSQRTBLS	9	—	94	27	29	33	33	73	35
NONMSQRT	9	—	833	970	222	—	—	—	—
SPECAN:9	9	9	3	1	1	1	1	1	1
ARGLINA:10	10	—	7	2	2	3	3	3	3
ARGLINB:10	10	—	7	3	2	3	3	8	3
ARGLINC:10	10	—	7	3	2	3	3	8	3
BROWNAL	10	—	74	18	19	36	36	32	36
BRYBND	10	—	83	19	69	85	68	99	136
BOXPOWER:10	10	—	21	5	13	15	15	12	15
BOX:10	10	—	41	10	12	17	17	24	17
BROYDN7D:10	10	—	94	38	29	31	34	92	34
CHNROSNB	10	—	192	69	57	71	67	159	74
CHNRSNBM	10	—	222	91	59	75	83	166	76
CHARDIS0:10	10	—	4	2	1	3	3	4	3
COSINE:10	10	—	124	30	33	47	56	122	58
CRAGGLVY:10	10	—	132	43	35	44	44	93	44
CHEBYQAD	10	2	3	1	17	51	47	104	35
CHENHARK:10	10	3	47	16	22	20	20	36	20
CVXBQP1:10	10	10	3	1	1	1	1	1	1
DIXON3DQ	10	—	45	11	15	27	29	59	26
DQDRTIC	10	—	23	6	6	20	19	21	17
DQRTIC:10	10	—	82	32	29	26	26	55	26
ERRINROS:10	10	—	319	107	97	123	178	242	115
ERRINRSM:10	10	—	690	175	203	385	463	435	258
EXTROSNB:10	10	—	1731	1545	839	1076	1091	577	924
FLETBV3M	10	—	33	15	13	8	12	156	13
FLETGBV2	10	—	47	12	12	21	21	192	21
FLETGBV3	10	—	40	59	28	17	18	339	8

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
FLETCHBV	10	—	112	124	69	30	33	487	42
FLETCHCR	10	—	213	98	64	75	77	247	73
FREUROTH:10	10	—	75	21	20	29	31	46	33
GENHUMPS:10	10	—	480	172	195	153	168	897	181
GENROSE:10	10	—	210	80	69	75	98	153	72
HS110	10	—	28	18	10	—	—	32	—
HILBERTA:10	10	—	3	1	6	51	65	76	37
HILBERTB:10	10	—	18	5	5	6	6	11	6
HARKERP2:10	10	10	3	1	1	1	1	1	1
INDEFM:10	10	—	147	185	40	45	75	94	47
INDEF:10	10	10	51	23	17	1	1	—	1
MOREBV	10	—	71	20	18	45	41	62	39
MANCINO:10	10	—	22	7	7	8	8	11	8
MODBEALE:10	10	—	135	33	42	252	190	88	202
MCCORMCK	10	1	36	14	15	28	28	28	25
NONCVXU2:10	10	—	75	24	25	24	29	68	29
NONCVXUN:10	10	—	72	17	20	26	26	49	26
NONDIA:10	10	—	99	30	33	35	36	47	44
NCVXBQP1:10	10	10	7	14	8	1	1	24	1
NCVXBQP2:10	10	10	7	13	8	1	1	24	1
NCVXBQP3:10	10	10	7	13	10	8	—	27	8
POWER	10	—	66	27	21	22	22	74	22
PENALTY1:10	10	—	243	95	102	102	100	81	106
PENALTY2:10	10	—	1469	439	486	468	494	1110	521
PROBPENL:10	10	4	37	80	252	1372	—	—	389
POWELLBC:10	10	7	17	27	20	1	1	43	1
RAYBENDL:10	10	4	90	32	24	32	37	402	34
RAYBENDS:10	10	4	87	19	62	48	55	651	50
SINEALI	10	—	511	282	948	1196	1156	716	1027
SROSENBR	10	—	159	56	46	105	106	53	69

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
SCHMVETT:10	10	—	90	25	24	33	33	75	32
SENSORS:10	10	—	57	16	31	21	23	75	20
SPARSINE:10	10	—	53	13	16	37	31	35	36
SPARSQUR:10	10	—	34	22	10	22	22	42	22
SSBRYBND:10	10	—	737	215	201	3109	518	—	—
SSCOSINE:10	10	—	365	83	136	—	—	1601	—
TOINTGSS	10	—	125	33	34	50	50	257	41
TQUARTIC:10	10	—	82	27	21	28	28	63	29
TRIDIA:10	10	—	45	11	15	27	32	47	33
VARDIM	10	—	13	3	17	29	29	48	29
VAREIGVL:10	10	—	45	14	14	15	16	23	15
OSBORNEB	11	—	3847	—	—	1213	—	—	—
EXPQUAD:12	12	4	111	30	33	54	55	62	44
QRTQUAD:12	12	3	168	34	57	137	119	206	154
QUDLIN	12	12	13	3	7	7	7	33	7
WATSON:12	12	—	238	70	61	104	200	1027	189
BRATU1D:13	13	2	64	15	20	33	26	68	28
DIXMAANA	15	—	18	6	5	6	6	11	6
DIXMAANB	15	—	16	6	5	6	6	11	6
DIXMAANC	15	—	18	7	6	6	6	11	6
DIXMAAND	15	—	22	7	7	8	8	11	8
DIXMAANE	15	—	58	16	33	20	21	76	20
DIXMAANF	15	—	61	16	21	20	20	69	21
DIXMAANG	15	—	58	16	22	21	20	59	19
DIXMAANH	15	—	57	16	22	20	20	61	21
DIXMAANI	15	—	113	28	47	43	50	143	44
DIXMAANJ	15	—	121	31	49	42	44	143	41

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANK	15	—	114	33	50	45	40	156	42
DIXMAANL	15	—	108	28	49	41	40	152	44
DIXMAANM	15	—	93	23	58	48	43	160	43
DIXMAANN	15	—	106	28	45	42	43	190	37
DIXMAANO	15	—	112	29	52	38	45	199	41
DIXMAANP	15	—	121	38	48	43	47	151	40
PARKCH	15	—	642	151	—	2216	1992	—	—
CLPLATEA:16	16	4	81	21	21	28	29	65	28
CLPLATEB:16	16	4	80	20	22	27	26	59	27
CLPLATEC:16	16	4	69	17	21	43	43	69	43
FMINSURF	16	—	63	15	21	22	21	51	22
FMINSRF2:16	16	—	78	23	26	27	31	56	27
HADAMALS:16	16	8	102	39	32	70	57	77	54
LMINSURF	16	12	36	12	11	12	12	64	12
NLMSURF:16	16	12	43	17	14	14	15	245	17
NOBNDTOR:16	16	13	15	9	10	23	23	12	17
POWELLSG:16	16	—	312	94	167	152	219	104	208
TORSION111:16	16	14	22	5	7	15	15	8	9
TORSION1:16	16	14	22	5	7	15	15	8	9
TORSION2:16	16	14	22	5	7	15	15	8	9
TORSIONA:16	16	14	22	6	7	10	10	8	9
TORSIONB:16	16	14	22	6	7	10	10	8	9
TORSIONC:16	16	14	18	5	7	8	7	7	6
TORSIOND:16	16	14	18	5	7	8	7	7	6
TORSION3:16	16	16	4	3	2	9	5	6	7
TORSION4:16	16	16	4	3	2	9	5	6	7
TORSION5:16	16	16	4	2	1	1	1	3	1
TORSION6:16	16	16	4	2	1	1	1	3	1
TORSIONE:16	16	16	4	2	1	4	4	3	4
TORSIONF:16	16	16	4	2	1	4	4	3	4
CHARDIS0:18	18	—	4	2	1	3	3	4	3

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
LINVERSE	19	8	240	59	65	152	116	161	226
CHEBYQAD:20	20	3	127	85	35	57	55	158	49
MANCINO:20	20	—	27	9	8	9	9	16	9
NONDIA:20	20	—	141	43	38	52	49	57	64
POWELLSG:20	20	—	312	135	150	214	258	104	362
POWER:20	20	—	78	32	32	26	26	100	26
POWELLBC:20	20	13	87	44	31	64	66	96	53
SINEALI:20	20	—	436	—	—	—	—	316	—
TRIDIA:20	20	—	85	21	37	50	61	68	57
NCB20B	21	—	165	54	156	77	156	80	100
NCB20B:22	22	—	207	50	211	231	244	88	274
RAYBENDL:24	24	4	753	512	—	376	301	—	377
RAYBENDS:24	24	4	2343	1671	—	1166	1329	—	—
BIGGSB1	25	3	120	28	92	71	60	103	69
CHNROSNB:25	25	—	383	152	199	127	137	316	133
CHNRSNBM:25	25	—	548	213	234	207	183	524	190
ERRINROS:25	25	—	394	128	—	144	127	511	135
ERRINRSM:25	25	—	948	219	—	991	606	1358	371
HATFLDC	25	12	45	13	19	16	16	55	16
NONSCOMP	25	12	225	178	85	131	104	270	97
OSCIPATH:25	25	—	181	60	60	60	60	102	62
QUARTC	25	—	39	37	10	29	29	61	29
SPMSRTL	28	—	155	52	61	57	60	95	51
X3PK	30	1	6749	1677	—	—	—	—	—
EIGENCLS:30	30	—	411	132	155	179	157	332	135
MANCINO:30	30	—	30	9	9	9	9	—	9
NONDIA:30	30	—	146	35	49	71	71	62	59
POWER:30	30	—	3	1	33	26	26	105	26
TRIDIA	30	—	133	33	61	74	74	94	70
WATSON:31	31	—	1681	405	1538	—	—	2207	—

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
EDENSCH	36	—	66	21	28	22	23	46	21
HADAMALS:36	36	24	192	90	57	101	66	156	76
LIARWHD	36	—	72	24	26	24	24	42	24
POWELLSG:36	36	—	333	110	190	344	233	111	418
CHARDIS0:40	40	—	4	2	1	3	3	4	3
POWELLSG:40	40	—	333	137	185	270	250	111	—
QR3DLS:40	40	1	4683	1258	—	2343	2267	1561	1938
RAYBENDL	44	4	4824	—	—	2841	2234	—	1604
CLPLATEA	49	7	138	49	63	47	45	117	53
CLPLATEB	49	7	135	45	61	45	45	121	46
CLPLATEC	49	7	288	72	102	180	151	168	161
FMINSRF2:49	49	—	137	38	40	47	47	82	45
FMINSURF:49	49	—	110	31	37	37	41	230	40
LMINSURF:49	49	24	96	35	34	30	30	310	32
MSQRTALS:49	49	—	651	210	—	243	276	383	216
MSQRTBLS:49	49	—	460	171	229	196	185	324	152
NLMSURF:49	49	24	370	121	170	124	138	498	124
ARGLINA:50	50	—	7	2	2	3	3	3	3
ARGLINB:50	50	—	7	3	2	3	3	24	3
ARGLINC:50	50	—	7	3	2	3	3	21	3
BROYDN7D:50	50	—	275	88	133	96	93	177	95
BRYBND:50	50	—	66	21	20	22	22	37	22
BQPGABIM	50	26	117	35	38	53	54	49	61
BQPGASIM	50	27	105	27	34	60	62	35	47
CHNROSNB:50	50	—	651	254	291	242	222	517	245
CHNRSNBM:50	50	—	933	342	291	336	340	594	341
CRAGGLVY:50	50	—	247	86	94	85	85	127	82
CHEBYQAD:50	50	6	192	95	357	64	62	221	69
CVXBQP1:50	50	50	3	1	1	1	1	1	1
DQDRTIC:50	50	—	23	6	6	38	23	20	16
DQRTIC:50	50	—	43	47	11	32	32	67	32

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
ENGVAL1:50	50	—	22	3	22	19	19	30	19
ERRINROS:50	50	—	415	155	—	146	141	569	152
ERRINRSM:50	50	—	836	194	2728	1010	578	1239	307
FREUROTH:50	50	—	79	20	25	25	25	47	26
HILBERTB:50	50	—	3	1	5	7	7	11	7
INDEFM:50	50	—	199	70	78	65	64	594	65
INDEF:50	50	50	53	45	17	71	71	—	71
MANCINO:50	50	—	30	11	10	10	10	18	10
MOREBV:50	50	—	1539	740	484	1756	1371	2823	1899
MCCORMCK:50	50	1	42	14	16	31	28	24	23
NCB20B:50	50	—	1006	250	1364	739	733	500	719
NONDIA:50	50	—	132	32	51	90	74	52	90
NONSCOMP:50	50	25	198	98	74	82	81	176	85
NCVXBQP3:50	50	49	25	37	16	16	—	39	16
NCVXBQP1:50	50	50	7	21	8	1	1	30	1
NCVXBQP2:50	50	50	7	37	11	12	—	36	12
PENALTY3	50	—	447	513	443	378	421	149	344
PENALTY1:50	50	—	234	84	85	74	80	84	86
PENALTY2:50	50	—	324	81	198	161	163	108	184
POWER:50	50	—	91	38	27	30	30	143	30
PROBPENL:50	50	—	1066	237	—	—	—	—	—
PENTDI:50	50	37	28	8	9	9	9	14	9
SINQUAD:50	50	—	91	22	38	33	28	38	42
SPARSINE:50	50	—	469	117	261	198	195	188	181
SPARSQUR:50	50	—	24	28	6	22	22	47	22
SROSENBR:50	50	—	177	69	53	118	102	59	83
SSBRYBND:50	50	—	6559	1632	—	—	—	—	3085
S368:50	50	32	9	14	14	1	1	51	1
TOINTGOR	50	—	393	114	150	130	131	192	134
TOINTPSP	50	—	336	95	188	114	117	275	110

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
TOINTQOR	50	—	113	28	53	43	42	77	40
TOINTGSS:50	50	—	135	38	53	44	49	81	43
TQUARTIC:50	50	—	125	30	60	62	44	75	58
TRIDIA:50	50	—	213	53	100	95	99	130	97
VAREIGVL	50	—	63	58	20	21	21	35	21
VARDIM:50	50	—	101	42	29	48	48	71	48
SCOND1LS:52	52	2	3318	—	—	—	—	1106	—
CHARDIS0:60	60	—	4	2	1	3	3	4	3
POWELLSG:60	60	—	333	120	179	331	321	111	620
DECONVU	61	10	3630	—	2652	2698	1347	—	—
DECONVB	61	41	318	173	129	—	—	331	—
FMINSRF2	64	—	162	53	49	61	58	106	55
FMINSURF:64	64	—	135	42	40	50	44	94	45
HADAMALS:64	64	34	159	108	54	110	88	111	83
LMINSURF:64	64	28	127	54	40	42	44	335	46
MINSURF	64	28	82	28	24	28	28	338	28
NLMSURF:64	64	28	471	167	185	159	173	891	167
POWER:75	75	—	105	41	37	36	36	175	36
BRATU1D	77	2	866	279	438	344	293	333	289
POWELLSG:80	80	—	333	120	203	287	388	111	—
DIXMAANA:90	90	—	15	5	4	5	5	11	5
DIXMAANB:90	90	—	16	6	5	6	6	11	6
DIXMAANC:90	90	—	19	7	6	7	7	11	7
DIXMAAND:90	90	—	19	7	7	8	8	11	8
DIXMAANE:90	90	—	142	41	76	52	50	232	50
DIXMAANF:90	90	—	138	43	50	58	58	214	53
DIXMAANG:90	90	—	142	43	48	47	47	145	49
DIXMAANH:90	90	—	140	47	48	56	46	101	48
DIXMAANI:90	90	—	529	132	276	239	278	511	231

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANJ:90	90	—	593	150	181	242	197	650	198
DIXMAANK:90	90	—	585	163	169	254	240	662	205
DIXMAANL:90	90	—	545	148	161	241	179	399	236
DIXMAANM:90	90	—	501	125	254	264	302	701	222
DIXMAANN:90	90	—	612	190	246	239	203	560	240
DIXMAANO:90	90	—	618	216	238	280	266	772	299
DIXMAANP:90	90	—	690	198	245	228	231	522	237
NONDIA:90	90	—	166	40	113	153	148	68	189
ARGLINA:100	100	—	7	2	2	3	3	3	3
ARGLINB:100	100	—	13	3	11	6	6	13	9
ARGLINC:100	100	—	24	9	24	23	23	17	23
ARWHEAD:100	100	—	48	15	19	17	18	29	22
BDQRTIC	100	—	133	35	91	43	50	87	59
BOXPOWER:100	100	—	27	6	8	18	18	13	18
BOX:100	100	—	70	17	24	34	34	38	34
BROWNAL:100	100	—	81	20	30	93	89	27	124
BROYDN7D:100	100	—	411	136	161	138	137	234	144
BRYBND:100	100	—	64	23	21	21	21	37	21
BDEXP	100	2	315	—	102	—	—	3480	380
BIGGSB1:100	100	3	714	282	633	297	255	474	244
CHARDIS0	100	—	4	2	1	3	3	—	3
CHAINWOO:100	100	—	624	550	280	396	404	208	413
COSINE:100	100	—	928	2427	757	—	—	—	—
CRAGGLVY:100	100	—	235	89	111	85	90	155	78
CURLY10:100	100	—	2640	1117	1284	1234	1170	880	1237
CURLY20:100	100	—	2352	740	2322	1322	1317	784	1313
CURLY30:100	100	—	2022	603	2749	1322	1365	674	1307
CHEBYQAD:100	100	4	293	158	1479	96	96	336	109
CLPLATEA:100	100	10	181	55	71	67	61	192	71
CLPLATEB:100	100	10	205	60	66	69	72	112	68
CLPLATEC:100	100	10	705	176	190	319	466	951	484

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
CHENHARK:100	100	30	5420	2338	1985	2302	2168	—	2696
CVXBP1	100	100	3	1	1	1	1	1	1
DIXON3DQ:100	100	—	405	101	195	339	310	818	318
DQDRTIC:100	100	—	23	6	6	12	12	14	12
DQRTIC:100	100	—	51	47	13	34	34	72	34
ENGVAL1:100	100	—	57	18	24	19	20	33	18
EXTROSNB:100	100	—	2337	—	2577	1526	1700	779	3030
FLETBV3M:100	100	—	81	36	25	25	23	123	22
FLETBVB2:100	100	—	660	165	187	297	248	1069	246
FLETBVB3:100	100	—	402	1951	2632	146	141	—	124
FLETCHCR:100	100	—	1706	735	629	587	586	1362	569
FREUROTH:100	100	—	83	22	35	27	27	47	27
GENHUMPS:100	100	—	874	262	467	338	329	1520	368
GENROSE:100	100	—	1711	726	627	578	590	1434	579
HADAMALS:100	100	76	306	171	273	120	99	193	137
HARKERP2	100	100	3	1	1	1	1	1	1
INDEFM:100	100	—	13	1300	261	85	99	262	83
INDEF:100	100	100	13	43	16	75	75	—	78
LIARWHD:100	100	—	85	23	26	28	28	36	29
MANCINO:100	100	—	33	16	11	11	11	23	11
MOREBV:100	100	—	11645	—	—	3838	—	—	—
MSQRTALS:100	100	—	1173	693	869	422	414	452	399
MSQRTBLS:100	100	—	1784	960	989	717	668	709	594
MCCORMCK:100	100	1	42	14	16	21	21	29	16
NONDQUAR	100	—	566	139	301	381	331	1915	377
NCB20B:100	100	—	2856	780	3341	1146	1127	952	1028
NONCVXU2:100	100	—	1430	516	393	512	604	1044	474
NONCVXUN:100	100	—	536	166	151	223	191	337	276
NONDIA:100	100	—	198	47	178	161	149	74	—

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
NOBNDTOR:100	100	49	87	39	49	52	45	45	39
NONSCOMP:100	100	50	213	82	62	80	130	179	83
NCVXBQP3:100	100	98	42	41	18	8	8	64	9
NCVXBQP1:100	100	100	6	28	8	1	1	30	1
NCVXBQP2:100	100	100	13	33	10	5	5	33	7
OSCIPTH:100	100	—	180	61	62	79	81	111	70
PENALTY1:100	100	—	152	73	71	69	74	87	71
PENALTY2:100	100	—	249	94	177	88	91	152	82
PENALTY3:100	100	—	897	996	884	853	861	299	667
POWELLSG:100	100	—	333	148	168	297	285	111	605
POWER:100	100	—	112	47	33	37	37	197	37
PROBPENL:100	100	—	9	681	—	—	—	—	—
PENTDI:100	100	74	24	11	9	23	22	15	12
QUARTC:100	100	—	51	47	13	34	34	72	34
SCHMVETT:100	100	—	153	64	56	50	53	620	51
SENSORS:100	100	—	79	48	30	25	26	59	23
SINEALI:100	100	—	210	91	192	71	77	172	71
SINQUAD:100	100	—	79	21	28	32	24	49	43
SPARSINE:100	100	—	820	205	382	307	301	303	295
SPARSQUR:100	100	—	27	22	7	23	23	51	23
SPMSRTLS:100	100	—	960	—	368	—	331	—	409
SROSENBR:100	100	—	183	83	46	133	112	77	124
SSBRYBND:100	100	—	9583	2390	—	—	—	—	—
SSCOSINE:100	100	—	3535	878	—	—	—	—	—
S368:100	100	73	10	15	19	1	1	77	1
TOINTGSS:100	100	—	101	32	42	34	39	83	33
TQUARTIC:100	100	—	207	69	74	71	106	82	75
TRIDIA:100	100	—	341	85	163	175	171	232	176

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
TORSIONA:100	100	54	72	42	35	40	38	41	35
TORSIONB:100	100	54	72	42	35	40	38	41	35
TORSION111:100	100	58	66	38	36	32	34	41	25
TORSION1:100	100	58	66	38	36	32	34	41	25
TORSION2:100	100	58	66	38	36	32	34	41	25
TORSIONC:100	100	67	54	20	24	30	35	32	28
TORSIOND:100	100	67	54	20	24	30	35	32	28
TORSION3:100	100	71	51	22	24	38	35	28	23
TORSION4:100	100	71	51	22	24	38	35	28	23
TORSIONE:100	100	84	36	14	15	22	26	25	21
TORSIONF:100	100	84	36	14	15	22	26	25	21
TORSION5:100	100	86	17	15	14	15	7	25	11
TORSION6:100	100	86	17	15	14	15	7	25	11
VARDIM:100	100	—	122	48	35	52	52	83	51
VAREIGVL:100	100	—	70	130	22	24	23	35	23
WOODS:100	100	—	198	47	112	170	152	88	165
EXPLIN:101	101	95	156	60	42	99	83	135	75
EXPLIN2:101	101	101	6	2	2	5	5	3	5
BRATU1D:103	103	2	1084	487	601	359	408	457	393
EIGENALS	110	—	4212	1262	1220	1408	1557	2512	1537
EIGENBLS	110	—	2141	902	538	773	844	1389	727
NCB20:110	110	—	633	153	—	1039	704	1095	980
EXPQUAD	120	7	214	70	55	75	91	320	69
EXPLIN	120	70	557	199	212	179	175	381	198
EXPLIN2	120	101	215	172	59	124	104	92	123
QRTQUAD	120	5	332	69	113	157	163	286	196
QUDLIN:120	120	120	13	3	7	18	14	33	14
FMINSRF2:121	121	—	214	55	57	71	71	116	74
FMINSURF:121	121	—	165	49	48	58	58	108	56
LMINSURF:121	121	40	170	61	55	55	55	387	55
NLMSURF:121	121	40	907	298	381	311	329	1122	299

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
HADAMALS:144	144	79	202	159	95	111	86	151	131
HOLMES	180	180	3	1	1	1	1	1	1
NCB20B:180	180	—	1239	420	958	426	443	413	460
DRCV2LQ	196	96	4633	1252	1287	1695	1590	—	1542
DRCV3LQ	196	96	9829	—	2525	3671	—	—	—
HADAMALS:196	196	161	311	178	143	168	127	241	189
LINVERSE:199	199	89	2268	—	—	—	—	1428	—
ARGLINA:200	200	—	7	2	2	3	3	3	3
ARGLINB:200	200	—	24	6	9	6	6	52	6
ARGLINC:200	200	—	12	28	9	4	4	65	4
BROWNAL:200	200	—	108	25	30	139	156	41	177
CHARDIS0:200	200	—	4	2	1	3	3	—	3
MODBEALE:200	200	—	384	240	162	554	557	128	619
PENALTY2:200	200	—	521	—	367	183	177	247	173
PENALTY3:200	200	—	708	2010	1840	—	—	1107	—
POWELLBC:200	200	104	2761	1011	2616	865	2319	—	—
VARDIM:200	200	—	120	49	34	63	63	94	63
HADAMALS:256	256	135	417	—	151	229	151	272	164
ODC:288	288	148	465	225	330	201	209	520	226
SSC:288	288	148	383	109	125	129	127	286	127
DIXMAANA:300	300	—	15	4	4	5	5	10	5
DIXMAANB:300	300	—	16	6	5	6	6	11	6
DIXMAANC:300	300	—	19	7	6	7	7	11	7
DIXMAAND:300	300	—	22	7	7	8	8	11	8
DIXMAANE:300	300	—	248	69	130	94	90	469	88
DIXMAANF:300	300	—	215	79	79	78	77	233	87

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANG:300	300	—	211	67	76	79	79	174	70
DIXMAANH:300	300	—	219	74	77	77	75	167	76
DIXMAANI:300	300	—	1781	445	1109	773	619	1555	698
DIXMAANJ:300	300	—	1245	401	426	480	413	778	459
DIXMAANK:300	300	—	1147	388	418	463	430	895	455
DIXMAANL:300	300	—	941	395	351	413	464	1214	313
DIXMAANM:300	300	—	1761	440	1111	676	764	1640	730
DIXMAANN:300	300	—	1745	507	476	709	713	1172	660
DIXMAANO:300	300	—	1702	504	488	694	686	1846	664
DIXMAANP:300	300	—	1634	467	487	781	781	1315	542
HADAMALS:324	324	256	499	244	160	184	220	361	172
CHARDIS0:400	400	—	4	3	1	3	3	—	3
HADAMALS:400	400	306	494	393	320	178	159	383	225
JNLBRNG1:400	400	253	272	76	173	90	89	103	93
JNLBRNGA:400	400	253	317	86	164	103	112	203	141
JNLBRNG2:400	400	278	285	92	120	96	98	133	96
JNLBRNGB:400	400	302	405	104	188	138	138	314	135
OBSTCLBL:400	400	263	28	11	9	28	27	14	18
OBSTCLBM:400	400	263	28	11	9	28	27	14	18
OBSTCLBU:400	400	263	28	11	9	28	27	14	18
OBSTCLAE:400	400	398	9	2	7	8	8	4	8
OBSTCLAL:400	400	398	9	2	7	8	8	4	8
EIGENCLS	462	—	7023	3082	3119	2501	2694	3164	3221
NOBNDTOR:484	484	143	192	78	93	62	67	210	73
TORSIONA:484	484	161	150	66	73	64	64	93	56
TORSIONB:484	484	161	150	66	73	64	64	93	56
TORSION111:484	484	186	150	64	115	60	60	165	60
TORSION1:484	484	186	150	64	115	60	60	165	60
TORSION2:484	484	186	150	64	115	60	60	165	60
TORSIONC:484	484	254	93	53	53	49	64	53	44
TORSIOND:484	484	254	93	53	53	49	64	53	44
TORSION3:484	484	267	90	56	58	61	52	46	49

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
TORSION4:484	484	267	90	56	58	61	52	46	49
TORSIONE:484	484	362	63	41	40	34	37	32	30
TORSIONF:484	484	362	63	41	40	34	37	32	30
TORSION5:484	484	368	60	43	40	36	39	31	40
TORSION6:484	484	368	60	43	40	36	39	31	40
ARWHEAD:500	500	—	68	16	18	26	27	27	25
BDQRTIC:500	500	—	147	35	153	64	86	56	88
BROYDN7D:500	500	—	523	186	201	179	181	302	180
BRYBND:500	500	—	63	22	21	21	21	37	21
BDEXP:500	500	2	1514	1831	504	—	—	—	—
CRAGGLVY:500	500	—	276	85	121	96	95	136	95
DQRTIC	500	—	59	62	15	41	41	84	41
DQDRTIC:500	500	—	23	6	6	14	14	15	14
FREUROTH:500	500	—	84	21	28	40	53	44	38
GENHUMPS:500	500	—	873	325	440	315	331	649	350
GENROSE:500	500	—	8254	3542	2254	2792	2826	—	2746
HARKERP2:500	500	500	3	1	1	1	1	1	1
LIARWHD:500	500	—	101	23	47	33	33	59	39
MOREBV:500	500	—	1407	409	1068	494	517	580	524
MCCORMCK:500	500	1	51	15	16	23	22	35	19
NCB20B:500	500	—	1251	311	983	460	464	422	445
NONDIA:500	500	—	371	86	327	300	250	146	—
NONDQUAR:500	500	—	551	135	275	314	433	1298	—
NONSCOMP:500	500	250	229	195	74	82	116	85	71
OSCIPATH:500	500	—	182	56	61	68	68	96	62
PENALTY1:500	500	—	169	56	60	54	56	87	56
POWELLSG:500	500	—	333	169	193	296	302	111	—
POWER:500	500	—	239	70	69	84	79	416	83
PROBPENL:500	500	—	7	2	2	3	3	—	3
PENTDI:500	500	376	24	7	8	9	9	15	9

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
QUARTC:500	500	—	59	62	15	41	41	84	41
SCHMVETT:500	500	—	156	201	69	51	52	64	50
SINQUAD:500	500	—	110	26	45	62	69	70	74
SROSENBR:500	500	—	286	106	72	126	142	100	116
TOINTGSS:500	500	—	109	28	39	34	40	78	35
TQUARTIC:500	500	—	321	75	123	155	113	737	155
TRIDIA:500	500	—	857	214	421	441	403	535	473
VAREIGVL:500	500	—	73	23	22	24	25	37	24
BRATU1D:503	503	2	6081	2157	6170	2015	2254	6307	2386
CLPLATEA:529	529	23	507	170	183	183	171	328	173
CLPLATEB:529	529	23	369	132	142	142	121	760	144
CLPLATEC:529	529	23	981	493	—	2728	2310	360	2670
ODC	864	164	530	170	217	191	176	2692	183
SSC	864	164	371	110	193	131	130	223	124
FMINSRF2:961	961	—	258	156	78	89	87	293	91
FMINSURF:961	961	—	315	78	106	125	121	352	120
LMINSURF:961	961	120	593	261	208	200	195	1775	200
NLMSURF:961	961	120	4062	1143	1627	1424	1436	—	1507
ARWHEAD:1000	1000	—	63	17	17	28	24	28	21
BDQRTIC:1000	1000	—	177	43	150	106	122	59	115
BOXPOWER:1000	1000	—	32	7	12	23	22	18	24
BOX:1000	1000	—	95	23	40	66	51	56	71
BROWNAL:1000	1000	—	102	24	30	57	57	55	66

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
BROYDN7D:1000	1000	—	526	187	212	175	177	389	193
BRYBND:1000	1000	—	63	22	21	21	21	37	21
BDEXP:1000	1000	2	3017	—	1005	—	—	—	—
BIGGSB1:1000	1000	3	5541	2303	5961	2619	3233	3216	2025
CHAINWOO	1000	—	925	229	306	409	400	314	403
CURLY10	1000	—	25867	—	8801	8622	9464	—	9500
CURLY30	1000	—	28092	—	—	—	—	9364	—
CHARDIS0:1000	1000	—	4	3	1	3	3	7	3
CRAGGLVY:1000	1000	—	265	90	125	90	94	163	88
CVXBP1:1000	1000	1000	3	1	1	1	1	1	1
DIXON3DQ:1000	1000	—	4005	1001	1995	3685	3135	6232	2843
DQDRTIC:1000	1000	—	23	6	6	18	17	15	18
DQRTIC:1000	1000	—	63	53	16	43	43	87	43
EG2	1000	—	171	82	195	208	223	57	—
ENGVAL1:1000	1000	—	58	20	21	20	21	40	20
EXTROSNB:1000	1000	—	1881	3748	2677	1563	1768	627	7286
FLETBV3M:1000	1000	—	52	116	15	23	26	111	25
FLETBVB2:1000	1000	—	4009	1002	3679	2136	2173	2819	1999
FLETBVB3:1000	1000	—	14177	—	—	4680	8940	—	—
FLETCHCR:1000	1000	—	16588	7048	4327	5555	5614	—	5521
FREUROTH:1000	1000	—	76	23	28	23	37	44	23
GENHUMPS	1000	—	979	272	411	362	379	942	372
HARKERP2:1000	1000	1000	3	1	1	1	1	1	1
INDEFM	1000	—	381	90	194	179	139	2904	199
INDEF	1000	1000	53	35	16	101	82	—	88
JNLBRNG1:1000	1000	366	278	88	159	92	98	117	103
JNLBRNGA:1000	1000	385	329	114	198	109	109	226	111
JNLBRNG2:1000	1000	524	501	181	303	166	166	270	169

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
JNLBRNGB:1000	1000	560	1255	369	742	447	416	554	429
LIARWHD:1000	1000	—	110	25	35	48	46	57	48
MOREBV:1000	1000	—	1352	563	1165	488	449	652	475
MCCORMCK:1000	1000	1	48	15	18	19	26	41	17
NONCVXU2	1000	—	5628	1502	1512	2554	3869	6628	3032
NONCVXUN	1000	—	10021	2787	2904	—	—	—	—
NONDIA	1000	—	564	218	569	422	409	188	—
NCB20B:1000	1000	—	1263	319	956	500	515	421	505
NONDQUAR:1000	1000	—	599	146	190	255	407	498	—
NONSCOMP:1000	1000	500	255	56	72	84	114	103	97
NCVXBQP3	1000	983	104	184	34	20	30	74	123
NCVXBQP2	1000	993	37	47	25	14	15	75	13
NCVXBQP1	1000	1000	4	34	8	1	1	30	1
OSCIGRAD:1000	1000	—	1486	—	473	—	—	—	—
OBSTCLBL	1000	680	117	44	54	65	56	64	54
OBSTCLBM	1000	680	117	44	54	65	56	64	54
OBSTCLBU	1000	680	117	44	54	65	56	64	54
OBSTCLAL	1000	696	72	38	21	31	31	31	34
OBSTCLAE:1000	1000	696	72	38	21	31	31	31	34
PENALTY1:1000	1000	—	147	51	48	48	47	74	54
POWELLSG:1000	1000	—	351	182	244	319	360	117	—
POWER:1000	1000	—	330	95	95	114	111	467	115
POWELLBC:1000	1000	501	10798	—	—	3570	3853	—	3948
PENTDI	1000	751	24	7	8	8	8	14	8
QUARTC:1000	1000	—	63	53	16	43	43	87	43
SPARSINE	1000	—	13980	3495	7701	5883	5910	5991	5646
SPARSQUR	1000	—	31	26	8	24	24	57	24
SSBRYBND	1000	—	22532	—	—	7529	7812	—	7609

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
SCHMVETT:1000	1000	—	156	109	65	59	52	157	53
SENSORS:1000	1000	—	111	37	59	32	35	104	44
SINEALI:1000	1000	—	191	63	163	62	64	121	61
SINQUAD:1000	1000	—	144	34	55	46	51	76	58
SROSENBR:1000	1000	—	359	88	91	164	125	126	131
TESTQUAD	1000	—	3704	926	—	4611	4263	1476	4256
TOINTGSS:1000	1000	—	99	31	35	32	33	247	32
TQUARTIC:1000	1000	—	258	61	178	175	117	498	149
TRIDIA:1000	1000	—	1237	309	613	715	610	734	595
VAREIGVL:1000	1000	—	73	23	22	24	25	37	24
WOODS:1000	1000	—	366	88	114	181	215	200	223
BRATU1D:1003	1003	1003	18312	—	—	6664	—	—	6091
NCB20	1010	—	481	117	6416	361	328	1089	270
CLPLATEA:1024	1024	32	758	283	311	287	290	490	296
CLPLATEB:1024	1024	32	492	158	159	174	174	362	175
CLPLATEC:1024	1024	32	1188	913	—	7045	6444	396	5825
FMINSRF2:1024	1024	—	275	82	84	94	94	549	91
FMINSURF:1024	1024	—	348	102	101	123	127	547	125
HADAMALS:1024	1024	801	583	499	498	191	258	774	258
LMINSURF:1024	1024	124	622	230	225	220	213	—	207
NLMSURF	1024	124	4152	1206	1777	1457	1463	2796	1438
NOBNDTOR:1024	1024	235	237	96	171	102	108	240	105
TORSIONA:1024	1024	281	201	84	131	90	80	135	95
TORSIONB:1024	1024	281	201	84	131	90	80	135	95
TORSION111:1024	1024	323	207	87	160	79	75	129	90
TORSION1:1024	1024	323	207	87	160	79	75	129	90

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
TORSION2:1024	1024	323	207	87	160	79	75	129	90
TORSIONC:1024	1024	493	117	67	80	50	64	95	53
TORSIOND:1024	1024	493	117	67	80	50	64	95	53
TORSION3:1024	1024	515	123	66	104	58	59	67	60
TORSION4:1024	1024	515	123	66	104	58	59	67	60
TORSIONE:1024	1024	761	78	48	56	51	69	47	47
TORSIONF:1024	1024	761	78	48	56	51	69	47	47
TORSION5:1024	1024	768	75	50	57	49	42	34	47
TORSION6:1024	1024	768	75	50	57	49	42	34	47
EXPQUAD:1200	1200	81	938	576	358	346	332	470	297
EXPLIN:1200	1200	1150	544	194	213	197	177	307	170
EXPLIN2:1200	1200	1181	197	176	58	116	86	112	109
QRTQUAD:1200	1200	50	1524	307	2075	2001	1096	1089	1670
QUDLIN:1200	1200	1200	13	4	10	38	28	35	12
DIXMAANA:1500	1500	—	15	4	4	5	5	7	5
DIXMAANB:1500	1500	—	16	6	5	6	6	11	6
DIXMAANC:1500	1500	—	19	7	6	7	7	11	7
DIXMAAND:1500	1500	—	22	7	7	8	8	11	8
DIXMAANE:1500	1500	—	459	139	283	184	177	514	180
DIXMAANF:1500	1500	—	444	133	137	153	154	339	158
DIXMAANG:1500	1500	—	417	130	122	143	145	394	148
DIXMAANH:1500	1500	—	387	117	133	131	152	304	142
DIXMAANI:1500	1500	—	4638	1504	3661	1876	1744	2100	1717
DIXMAANJ:1500	1500	—	2365	839	614	850	834	1064	790
DIXMAANK:1500	1500	—	1392	581	739	790	459	1147	601
DIXMAANL:1500	1500	—	952	455	548	335	323	1039	317

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANM:1500	1500	—	4338	1437	3635	1764	1832	1865	1546
DIXMAANN:1500	1500	—	2478	887	751	819	937	1727	861
DIXMAANO:1500	1500	—	2127	784	672	755	725	1810	707
DIXMAANP:1500	1500	—	1963	796	736	649	700	1346	705
LINVERSE:1999	1999	785	42455	9681	—	—	—	—	—
CHARDIS0:2000	2000	—	4	3	1	3	3	7	3
EDENSCH:2000	2000	—	72	22	32	23	24	38	22
MODBEALE:2000	2000	—	417	206	194	636	563	139	603
NCB20B:2000	2000	—	1150	294	838	391	381	436	382
BQPGAUSS	2003	134	11100	10336	10926	5436	4084	5583	4799
RAYBENDS:2050	2050	4	9611	2018	—	—	—	—	—
JNLBRNG1:2300	2300	809	317	111	189	114	122	141	105
JNLBRNGA:2300	2300	847	342	121	239	130	113	183	122
JNLBRNGB:2300	2300	1052	1749	536	1040	622	592	828	595
JNLBRNG2:2300	2300	1077	584	186	414	206	205	301	198
OBSTCLBL:2300	2300	993	210	84	103	96	86	99	81
OBSTCLBM:2300	2300	993	210	84	103	96	86	99	81
OBSTCLBU:2300	2300	993	210	84	103	96	86	99	81
OBSTCLAE:2300	2300	1276	147	71	79	58	53	130	50
OBSTCLAL:2300	2300	1276	147	71	79	58	53	130	50
ODC:2376	2376	206	525	169	259	202	183	749	183
SSC:2376	2376	206	352	88	174	125	121	349	119
EIGENBLS:2550	2550	—	18518	—	7519	9258	9629	19221	8848
EIGENCLS:2652	2652	—	37918	—	—	14634	20020	16218	14422
DIXMAANA:3000	3000	—	15	4	4	5	5	7	5
DIXMAANB:3000	3000	—	16	6	5	6	6	11	6
DIXMAANC:3000	3000	—	19	7	6	7	7	11	7
DIXMAAND:3000	3000	—	22	8	7	8	8	11	8
DIXMAANE:3000	3000	—	630	185	431	236	210	556	214

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANF:3000	3000	—	570	165	149	197	191	484	196
DIXMAANG:3000	3000	—	517	148	151	171	177	451	175
DIXMAANH:3000	3000	—	495	143	140	168	189	414	196
DIXMAANI:3000	3000	—	3465	1353	3261	1246	1141	1660	1184
DIXMAANJ:3000	3000	—	780	1179	489	308	324	661	272
DIXMAANK:3000	3000	—	689	366	505	236	242	746	243
DIXMAANL:3000	3000	—	771	627	421	388	339	665	398
DIXMAANM:3000	3000	—	3514	1525	2825	1213	1163	1802	1444
DIXMAANN:3000	3000	—	2879	1019	853	1062	1092	2140	1014
DIXMAANO:3000	3000	—	2326	821	743	863	766	1595	826
DIXMAANP:3000	3000	—	1828	667	1203	675	663	1422	608
JNLBRNG1:3200	3200	1130	342	116	179	124	120	197	113
JNLBRNGA:3200	3200	1168	426	149	251	143	144	213	141
JNLBRNG2:3200	3200	1400	723	284	500	239	239	336	242
JNLBRNGB:3200	3200	1446	2067	614	1350	1064	1030	1208	693
OBSTCLBL:3200	3200	1252	174	76	99	81	66	90	80
OBSTCLBM:3200	3200	1252	174	76	99	81	66	90	80
OBSTCLBU:3200	3200	1252	174	76	99	81	66	90	80
OBSTCLAE:3200	3200	1813	195	90	104	73	67	109	65
OBSTCLAL:3200	3200	1813	195	90	104	73	67	109	65
JNLBRNG1:3400	3400	1195	330	143	177	146	130	173	110
JNLBRNGA:3400	3400	1233	435	142	206	147	146	233	147
JNLBRNG2:3400	3400	1500	689	252	411	229	241	335	235
JNLBRNGB:3400	3400	1545	2148	671	1566	1110	1015	1183	1284
CHAINWOO:4000	4000	—	994	440	469	325	337	434	344
CHARDIS0:4000	4000	—	4	3	1	3	3	7	3
WOODS:4000	4000	—	349	84	190	298	194	199	172
HADAMALS:4096	4096	3282	795	1065	2208	261	268	1424	344
DRCV1LQ:4489	4489	520	31051	—	—	—	—	25695	—

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
ARWHEAD:5000	5000	—	83	18	28	45	44	39	53
BDQRTIC:5000	5000	—	168	37	162	251	234	82	201
BROYDN7D:5000	5000	—	607	301	234	209	202	419	202
BRYBND:5000	5000	—	63	23	21	21	21	37	21
BIGGSB1:5000	5000	3	21382	8071	13033	12709	15799	15502	7115
BDEXP:5000	5000	5000	3	1	1	1	1	1	1
CRAGGLVY:5000	5000	—	283	88	147	99	94	188	94
CHENHARK:5000	5000	2010	21847	6105	—	17397	7198	—	17155
DQDRTIC:5000	5000	—	23	6	6	18	24	15	16
DQRTIC:5000	5000	—	71	73	18	49	49	99	49
ENGVAL1:5000	5000	—	60	18	25	19	19	41	19
FLETBV3M:5000	5000	—	89	—	25	34	36	63	37
FLETGBV2:5000	5000	—	18263	5001	13395	8054	9397	10127	6077
FREUROTH:5000	5000	—	89	22	28	27	27	45	27
GENHUMPS:5000	5000	—	923	291	368	306	303	379	358
HARKERP2:5000	5000	5000	3	1	1	1	1	1	1
INDEFM:5000	5000	—	247	—	75	203	213	920	—
INDEF:5000	5000	5000	56	28	17	—	82	—	174
LIARWHD:5000	5000	—	109	25	37	73	71	64	37
MOREBV:5000	5000	—	1358	563	1167	451	471	537	482
MCCORMCK:5000	5000	1	51	16	20	18	18	45	18
NCB20B:5000	5000	—	1248	654	1537	438	473	416	443
NONCVXU2:5000	5000	—	21305	5314	6455	13814	12466	16912	12261
NONCVXUN:5000	5000	—	44454	10931	—	—	—	—	—
NONDIA:5000	5000	—	1220	284	1005	—	769	—	—

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
NONDQUAR:5000	5000	—	612	148	239	404	338	496	—
NONSCOMP:5000	5000	2500	228	74	77	84	71	77	71
POWELLSG:5000	5000	—	351	123	201	346	264	117	—
POWER:5000	5000	—	732	210	207	251	249	729	255
PENTDI:5000	5000	3751	24	7	8	9	9	13	11
QUARTC:5000	5000	—	71	73	18	49	49	99	49
QRTQUAD:5000	5000	549	2556	544	11658	—	—	13105	20316
QUDLIN:5000	5000	5000	13	3	9	13	31329	10	12
SCHMVETT:5000	5000	—	151	217	80	53	54	957	53
SINQUAD:5000	5000	—	137	39	52	43	50	87	45
SPARSQUR:5000	5000	—	35	33	9	31	31	77	31
SROSENB:5000	5000	—	399	96	159	241	224	183	358
SSBRYBND:5000	5000	—	24904	7318	15416	8475	8369	17723	8290
TESTQUAD:5000	5000	—	4960	1240	14183	6238	5630	2282	3652
TOINTGSS:5000	5000	—	107	27	32	40	37	146	35
TQUARTIC:5000	5000	—	583	134	292	217	335	203	—
TRIDIA:5000	5000	—	2829	707	1411	1466	1801	1733	1496
VAREIGVL:5000	5000	—	73	23	22	24	25	37	24
NCB20:5010	5010	—	505	150	1524	205	203	683	163
CLPLATEA:5041	5041	71	1988	592	925	722	675	1378	692
CLPLATEB:5041	5041	71	999	302	375	367	352	552	364
CLPLATEC:5041	5041	71	2856	3968	—	—	—	983	35929
ODC:5184	5184	284	606	240	307	208	208	1073	212
SSC:5184	5184	284	381	95	220	155	158	334	167
MINSURFO:5306	5306	1762	2499	835	1044	2261	2114	2184	2236
NOBNDTOR:5476	5476	801	528	213	375	219	236	306	253

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
TORSIONA:5476	5476	1096	441	178	451	230	246	242	200
TORSIONB:5476	5476	1096	441	178	451	230	246	242	200
TORSION111:5476	5476	1219	483	195	496	201	198	301	224
TORSION1:5476	5476	1219	483	195	496	201	198	301	224
TORSION2:5476	5476	1219	483	195	496	201	198	301	224
TORSIONC:5476	5476	2328	279	110	131	136	149	172	188
TORSIOND:5476	5476	2328	279	110	131	136	149	172	188
TORSION3:5476	5476	2386	264	108	137	156	136	140	206
TORSION4:5476	5476	2386	264	108	137	156	136	140	206
TORSIONE:5476	5476	3782	162	72	66	117	102	108	101
TORSIONF:5476	5476	3782	162	72	66	117	102	108	101
TORSION5:5476	5476	3805	159	75	140	95	92	63	95
TORSION6:5476	5476	3805	159	75	140	95	92	63	95
FMINSRF2:5625	5625	—	525	156	160	173	183	879	180
FMINSURF:5625	5625	—	535	158	160	177	184	857	178
LMINSURF:5625	5625	296	1579	654	627	525	526	12394	537
NLMSURF:5625	5625	296	15218	5282	5388	5035	5164	—	5118
ODC:7344	7344	344	704	236	394	242	243	1381	234
SSC:7344	7344	344	515	140	260	188	191	409	172
JNLBRNG1:7500	7500	2605	576	253	382	322	296	312	298
JNLBRNGA:7500	7500	2676	654	269	451	316	341	394	303
JNLBRNG2:7500	7500	3171	1281	496	863	452	449	614	458
JNLBRNGB:7500	7500	3395	3813	1128	2402	2236	1937	2183	2337
OBSTCLBL:7500	7500	2859	303	132	173	129	121	167	131
OBSTCLBM:7500	7500	2859	303	132	173	129	121	167	131
OBSTCLBU:7500	7500	2859	303	132	173	129	121	167	131
OBSTCLAE	7500	3819	291	131	212	144	128	192	114
OBSTCLAL:7500	7500	3819	291	131	212	144	128	192	114
DIXMAANA:9000	9000	—	15	4	4	5	5	7	5
DIXMAANB:9000	9000	—	16	6	5	6	6	8	6
DIXMAANC:9000	9000	—	19	7	6	7	7	11	7

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAAND:9000	9000	—	22	8	7	8	8	11	8
DIXMAANE:9000	9000	—	956	286	593	315	332	629	318
DIXMAANF:9000	9000	—	759	239	220	260	261	659	259
DIXMAANG:9000	9000	—	760	226	221	265	251	773	278
DIXMAANH:9000	9000	—	750	215	216	248	253	756	256
DIXMAANI:9000	9000	—	1384	1022	1697	458	504	1459	661
DIXMAANJ:9000	9000	—	685	375	259	273	318	550	227
DIXMAANK:9000	9000	—	582	597	237	192	241	546	246
DIXMAANL:9000	9000	—	651	642	220	216	249	531	247
DIXMAANM:9000	9000	—	1364	1022	2385	553	621	1440	599
DIXMAANN:9000	9000	—	1767	979	537	595	647	1287	660
DIXMAANO:9000	9000	—	1566	1078	651	690	628	1519	803
DIXMAANP:9000	9000	—	2166	854	754	730	781	2147	800
BOXPOWER	10000	—	27	17	8	31	29	13	26
BOX	10000	—	128	30	60	105	163	52	152
BROYDN7D:10000	10000	—	589	366	228	196	199	423	207
BRYBND:10000	10000	—	63	23	21	21	21	37	21
CHAINWOO:10000	10000	—	1029	396	657	440	398	343	383
CVXBQP1:10000	10000	10000	3	1	1	1	1	1	1
DIXON3DQ:10000	10000	—	40009	10002	19997	25087	26480	20439	23131
FLETBV3M:10000	10000	—	74	—	22	20	24	81	23
FLETCBV2:10000	10000	—	27618	—	20005	12372	14630	9206	11448
FMINSRF2:10000	10000	—	662	193	206	227	227	533	229
FMINSURF:10000	10000	—	656	193	206	221	221	608	225
HARKERP2:10000	10000	10000	3	1	1	1	1	1	1
INDEFM:10000	10000	—	579	—	455	185	413	2170	—

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
JNLBRNG1:10000	10000	3443	837	315	429	428	455	441	500
JNLBRNGA:10000	10000	3568	855	356	739	472	471	506	497
JNLBRNG2:10000	10000	4209	1668	586	1324	602	604	883	561
JNLBRNGB:10000	10000	4484	4926	1521	3142	2739	3077	2520	4209
LIARWHD:10000	10000	—	112	26	42	60	94	58	64
LMINSURF:10000	10000	396	2224	986	874	762	754	—	769
MCCORMCK:10000	10000	1	53	29	19	15	15	39	15
NONCVXU2:10000	10000	—	28906	7341	7618	13751	13977	16464	12287
NONDIA:10000	10000	—	307	435	1939	936	175	—	—
NONDQUAR:10000	10000	—	842	205	290	415	358	397	—
NLMSURF:10000	10000	396	21993	8958	7504	7838	7901	—	7480
NOBNDTOR:10000	10000	1299	630	265	666	328	314	399	293
NONSCOMP:10000	10000	5000	237	63	60	88	81	83	87
NCVXBQP3:10000	10000	9808	182	157	91	36	31	151	86
NCVXBQP2:10000	10000	9934	126	129	77	13	13	121	15
NCVXBQP1:10000	10000	10000	4	54	8	1	1	30	1
OSCIGRAD:10000	10000	—	5459	—	1737	—	—	—	—
OBSTCLBL:10000	10000	3896	336	134	236	157	160	175	149
OBSTCLBM:10000	10000	3896	336	134	236	157	160	175	149
OBSTCLBU:10000	10000	3896	336	134	236	157	160	175	149
OBSTCLAE:10000	10000	5061	354	157	223	150	142	275	149
OBSTCLAL:10000	10000	5061	354	157	223	150	142	275	149
POWELLSG:10000	10000	—	351	230	202	386	293	117	—
POWER:10000	10000	—	994	294	294	334	335	892	335
QUARTC:10000	10000	—	75	98	19	51	51	105	51
SCHMVETT:10000	10000	—	171	414	71	55	61	2370	58
SINQUAD:10000	10000	—	184	39	68	63	72	77	78
SPARSQUR:10000	10000	—	39	35	10	24	24	85	24

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
SROSENB:10000	10000	—	240	132	274	280	298	80	316
TOINTGSS:10000	10000	—	108	26	31	44	47	189	43
TQUARTIC:10000	10000	—	812	190	340	357	345	16222	—
TRIDIA:10000	10000	—	4021	1005	2003	2505	1889	2596	2443
TORSIONA:10000	10000	1839	591	239	407	306	325	620	220
TORSIONB:10000	10000	1839	591	239	407	306	325	620	220
TORSION111:10000	10000	2013	540	245	593	414	403	744	407
TORSION1:10000	10000	2013	540	245	593	414	403	744	407
TORSION2:10000	10000	2013	540	245	593	414	403	744	407
TORSIONC:10000	10000	4105	360	138	343	202	197	193	245
TORSIOND:10000	10000	4105	360	138	343	202	197	193	245
TORSION3:10000	10000	4189	366	151	164	220	185	206	305
TORSION4:10000	10000	4189	366	151	164	220	185	206	305
TORSIONE:10000	10000	6685	192	83	104	129	147	130	190
TORSIONF:10000	10000	6685	192	83	104	129	147	130	190
TORSION5:10000	10000	6720	210	88	100	135	151	141	184
TORSION6:10000	10000	6720	210	88	100	135	151	141	184
WOODS:10000	10000	—	540	158	232	177	187	235	228
DRCV1LQ:10816	10816	816	31560	—	—	—	—	14678	—
JNLBRNG1:12500	12500	4277	975	383	533	643	570	1218	563
JNLBRNGA:12500	12500	4469	1077	427	856	502	641	516	503
JNLBRNG2:12500	12500	5197	2010	691	1461	799	783	1109	799
JNLBRNGB:12500	12500	5630	6039	1708	4425	3815	3860	2808	5293
OBSTCLBL:12500	12500	4623	354	135	205	203	204	224	169
OBSTCLBM:12500	12500	4623	354	135	205	203	204	224	169
OBSTCLBU:12500	12500	4623	354	135	205	203	204	224	169

problem	dim	nact	nf+2*ng best	ng for solver					
				lmb	asa	lt6	lt4	asb	lt2
OBSTCLAE:12500	12500	6481	390	179	296	213	163	258	157
OBSTCLAL:12500	12500	6481	390	179	296	213	163	258	157
ODC:14544	14544	544	1235	401	682	567	588	3497	451
SSC:14544	14544	544	896	240	540	312	309	747	373
NOBNDTOR:14884	14884	1758	777	327	1132	467	511	487	346
TORSIONA:14884	14884	2618	654	292	745	335	423	423	482
TORSIONB:14884	14884	2618	654	292	745	335	423	423	482
TORSION111:14884	14884	2830	624	275	1123	371	494	398	650
TORSION1:14884	14884	2830	624	275	1123	371	494	398	650
TORSION2:14884	14884	2830	624	275	1123	371	494	398	650
TORSIONC:14884	14884	6034	417	172	277	299	241	365	351
TORSIOND:14884	14884	6034	417	172	277	299	241	365	351
TORSION3:14884	14884	6137	435	145	274	236	235	255	341
TORSION4:14884	14884	6137	435	145	274	236	235	255	341
TORSIONE:14884	14884	9868	264	99	124	164	177	138	220
TORSIONF:14884	14884	9868	264	99	124	164	177	138	220
TORSION5:14884	14884	9914	264	122	194	191	159	145	257
TORSION6:14884	14884	9914	264	122	194	191	159	145	257
FMINSRF2:15625	15625	—	774	222	247	263	263	601	263
FMINSURF:15625	15625	—	774	226	247	258	256	548	258
LMINSURF:15625	15625	496	2838	1157	1135	951	964	—	972
NLMSURF:15625	15625	496	30635	—	13667	10777	11235	—	10198
BOXPOWER:20000	20000	—	30	10	9	15	15	16	25
MODBEALE:20000	20000	—	762	190	219	554	576	371	624
MCCORMCK:50000	50000	1	54	19	20	15	15	66	15
BOX:100000	100000	—	201	46	117	245	395	82	292
INDEFM:100000	100000	—	898	—	266	738	354	—	—
OSCIGRAD:100000	100000	—	2578	—	835	—	—	—	—
DEGTRID:100001	100001	1	6609	—	—	—	—	2203	—
DEGDIAG:100001	100001	100001	3	1	1	1	1	1	1
DEGTRID2:100001	100001	100001	3	1	1	1	1	1	1

3.10 Number of functions evaluations, accuracy 1e-06

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
BQP1VAR	1	1	3	1	1	1	1	1	1
AKIVA	2	—	64	45	37	26	24	—	28
BEALE	2	—	45	32	25	17	17	22	16
BRKMCC	2	—	24	14	13	12	12	14	12
CAMEL6	2	—	25	33	18	9	9	21	9
CLIFF	2	—	69	88	69	25	25	106	30
CUBE	2	—	63	83	69	40	40	21	41
CHEBYQAD:2	2	—	38	49	21	14	14	31	15
DENSCHNA	2	—	28	19	15	10	10	20	10
DENSCHNB	2	—	25	17	19	10	10	17	10
DENSCHNC	2	—	40	30	23	14	14	27	14
DENSCHNF	2	—	36	25	23	14	16	32	16
DJTL	2	—	201	193	438	—	—	1819	—
ENGVAL1	2	—	24	19	14	9	9	21	9
EXPFIT	2	—	50	35	28	19	18	53	18
FREUROTH	2	—	43	44	21	19	19	26	22
HUMPS	2	—	107	129	131	47	42	168	49
HAIRY	2	—	47	66	44	22	24	55	19
HIMMELBB	2	—	21	23	16	8	8	21	8
HIMMELBG	2	—	32	19	17	14	13	24	14
HIMMELBH	2	—	21	15	15	8	8	17	8
HS1	2	—	63	52	54	36	33	21	37
HS5	2	—	21	33	13	10	10	15	10
HILBERTA:2	2	—	3	1	5	10	10	4	10
HIMMELP1	2	1	19	13	10	8	8	18	8
HS2	2	1	21	19	14	13	13	115	13
HS3MOD	2	1	4	10	2	6	6	11	6
HS3	2	1	4	10	2	4	4	3	4
HS4	2	2	3	1	1	1	1	1	1
JENSMP	2	—	6	133	62	—	—	55	—
LOGHAIRY	2	—	13	56	53	31	23	149	23

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
LOGROS	2	—	16	230	98	64	57	74	66
MARATOSB	2	—	528	2222	2828	1135	1180	176	1105
MEXHAT	2	—	321	206	243	112	111	126	117
MODBEALE	2	—	45	32	25	17	17	22	16
MDHOLE	2	1	7	5	3	4	4	3	4
OSCIGRAD:2	2	—	4809	2811	—	1944	1850	—	1726
OSCIPATH:2	2	—	63	141	146	70	69	21	73
ROSENBR	2	—	63	52	57	36	33	21	37
S308	2	—	25	17	17	10	10	22	10
SINEVAL	2	—	47	25	21	17	17	16	17
SISSER	2	—	35	41	17	18	18	42	18
SNAIL	2	—	19	17	13	9	9	17	9
SENSORS:2	2	—	27	17	13	14	15	29	15
SIMBQP	2	1	4	5	2	4	4	3	4
SIM2BQP	2	2	3	1	1	1	1	1	1
ZANGWIL2	2	—	11	7	5	10	10	10	10
BARD	3	—	174	141	82	104	120	—	138
BOX3	3	—	23	18	11	10	10	20	10
BOX2	3	1	107	61	55	97	125	51	53
DENSCHND	3	—	84	46	45	30	32	366	42
DENSCHNE	3	—	22	28	13	10	10	18	10
ENGVAL2	3	—	84	51	53	44	34	47	44
EG1	3	1	51	69	37	31	34	38	35
GROWTHLS	3	—	104	78	82	38	40	154	45
GULF	3	—	4	14	2	64	116	1517	155
HATFLDD	3	—	71	68	35	45	49	44	47
HATFLDE	3	—	74	40	59	26	26	64	26
HATFLDFL	3	—	405	418	280	151	205	153	—
HELIX	3	—	43	25	21	21	21	51	21
HIELOW	3	—	74	—	37	26	28	—	40
HS25	3	—	20	10	13	148	98	49	85
KOEBHELB	3	—	6	209	79	—	—	160	—

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
MEYER3	3	—	274	2408	1298	—	—	—	—
PFIT1LS	3	—	52	26	—	—	—	47	—
PFIT2LS	3	—	52	26	—	—	—	51	—
PFIT3LS	3	—	52	26	—	—	—	52	—
PFIT4LS	3	—	52	26	—	—	—	53	—
SCHMVETT	3	—	18	27	24	24	24	27	25
SENSORS:3	3	—	87	63	46	33	33	136	33
SPECAN:3	3	3	3	1	1	1	1	1	1
WEEDS	3	1	19	59	116	30	30	91	30
YFIT	3	—	150	246	95	134	108	241	111
YFITU	3	—	308	235	205	134	108	241	111
ALLINITU	4	—	30	34	17	11	11	22	11
ALLINIT	4	2	41	45	21	15	15	31	15
BROWNDEN	4	—	72	42	34	31	31	39	31
CRAGGLVY	4	—	131	89	73	46	45	102	48
CHAINWOO:4	4	—	98	77	46	39	34	57	36
CHEBYQAD:4	4	—	35	37	46	18	18	36	14
HATFLDA	4	—	67	75	51	23	23	112	23
HIMMELBF	4	—	244	132	125	141	220	—	117
HS38	4	—	100	69	48	39	34	57	36
HILBERTA:4	4	—	16	8	9	25	25	27	25
HATFLDB	4	1	64	66	49	53	39	74	34
HADAMALS	4	3	32	29	15	18	18	29	13
KOWOSB	4	—	144	134	92	106	79	113	130
MSQRTALS	4	—	63	44	31	23	23	66	23
MODBEALE:4	4	—	80	42	49	35	39	39	37
PENALTY2	4	—	399	1618	747	538	485	133	418
POWELLSG	4	—	115	61	58	42	56	94	43
PALMER1B	4	—	118	172	164	74	44	162	46
PALMER2B	4	—	91	239	158	81	33	144	40
PALMER3B	4	—	103	157	174	37	37	129	36
PALMER4B	4	—	108	161	131	51	41	138	45

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
PALMER5D	4	—	21	11	10	34	39	60	42
PENALTY1:4	4	—	306	369	183	141	146	102	128
PSPDOC	4	1	25	13	14	13	13	16	13
PALMER1	4	1	75	91	131	46	111	61	29
PALMER2	4	1	69	59	53	31	30	67	47
PALMER3	4	1	63	96	41	31	30	61	36
PALMER4	4	1	59	31	46	35	37	57	2538
POWELLBC:4	4	4	4	4	2	2	2	12	2
SINEALI:4	4	—	115	65	150	96	80	79	88
WOODS:4	4	—	90	48	48	39	34	57	36
CHEBYQAD:5	5	2	41	68	30	23	22	49	15
EXTROSNB	5	—	301	266	185	116	110	215	116
GENHUMPS:5	5	—	236	129	152	90	111	165	98
GENROSE:5	5	—	111	114	82	47	84	94	47
HILBERTB	5	—	18	11	9	7	7	11	7
HILBERTA:5	5	—	23	13	11	56	43	41	43
HS45	5	5	3	1	1	1	1	1	1
OSCIGRAD:5	5	—	513	2637	2437	—	2747	171	—
OSCIPATH:5	5	—	2625	—	—	—	—	875	3498
OSBORNEA	5	5	405	229	—	—	—	—	—
SINQUAD	5	—	50	34	30	18	24	31	22
TQUARTIC	5	—	51	32	32	20	22	54	19
BIGGS6	6	—	400	4168	232	733	1159	—	—
BIGGS5	6	1	216	268	109	76	126	211	89
BIGGS3	6	3	69	57	36	26	26	126	25
CHEBYQAD:6	6	2	53	38	26	35	37	38	19
EIGENALS:6	6	—	92	58	61	39	37	72	32
EIGENBLS:6	6	—	97	60	73	35	33	96	45
HEART6LS	6	—	83	2030	1500	1388	1563	—	—
HILBERTA:6	6	—	23	13	11	51	54	30	50
HART6	6	2	48	41	30	22	38	27	18
PALMER6A	6	—	237	1010	786	649	944	—	—

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
PALMER8A	6	—	282	898	263	111	232	1278	98
PALMER1A	6	—	230	943	472	416	498	—	207
PALMER2A	6	—	429	566	323	398	419	631	199
PALMER3A	6	—	490	959	588	284	458	1043	251
PALMER4A	6	—	332	575	382	218	236	2730	122
PALMER5C	6	—	27	15	13	21	22	39	20
SPECAN:6	6	6	3	1	1	1	1	1	1
CHEBYQAD:7	7	1	104	56	45	58	63	51	51
PALMER1D	7	—	33	17	19	—	—	—	298
AIRCRFTB	8	3	216	231	234	88	153	401	83
CHEBYQAD:8	8	2	90	59	46	64	61	30	50
HEART8LS	8	—	524	1522	2314	246	186	387	—
MAXLIKA	8	7	16	18	8	42	42	33	42
OSLBQP	8	7	4	5	3	2	2	3	2
PALMER6C	8	—	37	19	24	—	—	—	—
PALMER6E	8	—	70	641	38	2331	—	—	—
PALMER7C	8	—	37	19	24	—	—	—	—
PALMER8C	8	—	37	19	18	—	—	—	—
PALMER8E	8	—	84	449	40	2402	1461	1993	—
PALMER1C	8	—	37	19	27	—	—	—	—
PALMER1E	8	—	1161	1315	607	—	—	—	—
PALMER2C	8	—	37	19	26	—	—	—	—
PALMER3C	8	—	37	19	19	—	—	—	—
PALMER4C	8	—	37	19	19	—	—	—	—
PALMER4E	8	—	684	614	1501	—	—	1836	—
PALMER5A	8	—	85	45	—	—	—	—	—
POWELLSG:8	8	—	203	119	101	110	139	117	179
PALMER7E	8	1	85	43	—	—	—	—	—
PALMER2E	8	1	1092	943	—	—	—	—	—
PALMER3E	8	1	1047	934	—	—	—	2722	—

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
S368:8	8	6	27	25	14	41	—	51	41
VIBRBEAM	8	—	2681	1463	—	—	—	—	—
CHEBYQAD:9	9	2	87	47	42	75	79	69	74
MSQRTBLS	9	—	94	59	56	34	36	73	36
NONMSQRT	9	—	833	2308	389	—	—	—	—
SPECAN:9	9	9	3	1	1	1	1	1	1
ARGLINA:10	10	—	7	5	3	6	6	3	6
ARGLINB:10	10	—	7	7	3	7	7	8	7
ARGLINC:10	10	—	7	7	3	8	8	8	8
BROWNAL	10	—	74	38	37	38	38	32	38
BRYBND	10	—	83	45	131	103	84	99	144
BOXPOWER:10	10	—	21	11	17	16	16	12	16
BOX:10	10	—	41	21	23	18	18	24	18
BROYDN7D:10	10	—	94	84	56	32	36	92	36
CHNROSNB	10	—	192	152	111	75	71	159	76
CHNRSNBM	10	—	222	200	116	81	91	166	81
CHARDIS0:10	10	—	4	5	2	4	4	4	4
COSINE:10	10	—	124	65	58	56	69	122	67
CRAGGLVY:10	10	—	132	94	66	45	45	93	45
CHEBYQAD	10	2	3	1	29	60	58	104	41
CHENHARK:10	10	3	47	38	35	21	21	36	21
CVXBQP1:10	10	10	3	1	1	1	1	1	1
DIXON3DQ	10	—	45	23	17	30	33	59	27
DQDRTIC	10	—	23	13	11	21	20	21	18
DQRTIC:10	10	—	82	69	50	31	31	55	31
ERRINROS:10	10	—	319	247	176	138	215	242	119
ERRINRSM:10	10	—	690	411	371	445	553	435	270
EXTROSNB:10	10	—	1731	3394	1556	1254	1290	577	988
FLETBV3M	10	—	33	33	21	21	24	156	25
FLETBVB2	10	—	47	25	23	22	22	192	22
FLETBVB3	10	—	40	143	48	33	34	339	24

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
FLETCHBV	10	—	112	303	112	52	51	487	65
FLETCHCR	10	—	213	218	125	79	83	247	78
FREUROTH:10	10	—	75	45	35	33	36	46	39
GENHUMPS:10	10	—	480	420	346	174	188	897	202
GENROSE:10	10	—	210	196	121	82	114	153	76
HS110	10	—	28	64	15	—	—	32	—
HILBERTA:10	10	—	3	1	11	62	74	76	39
HILBERTB:10	10	—	18	11	9	7	7	11	7
HARKERP2:10	10	10	3	1	1	1	1	1	1
INDEFM:10	10	—	147	476	68	62	90	94	60
INDEF:10	10	10	51	50	19	73	73	—	73
MOREBV	10	—	71	43	35	50	44	62	42
MANCINO:10	10	—	22	15	13	10	10	11	10
MODBEALE:10	10	—	135	69	77	269	212	88	208
MCCORMCK	10	1	36	31	24	34	34	28	27
NONCVXU2:10	10	—	75	50	45	27	32	68	32
NONCVXUN:10	10	—	72	39	39	28	28	49	27
NONDIA:10	10	—	99	72	64	36	37	47	45
NCVXBQP1:10	10	10	7	29	12	11	11	24	11
NCVXBQP2:10	10	10	7	26	10	9	9	24	9
NCVXBQP3:10	10	10	7	26	13	90	—	27	90
POWER	10	—	66	66	33	23	23	74	23
PENALTY1:10	10	—	243	230	174	109	111	81	112
PENALTY2:10	10	—	1469	1051	852	533	558	1110	581
PROBPENL:10	10	4	37	216	327	1524	—	—	409
POWELLBC:10	10	7	17	67	33	15	15	43	15
RAYBENDL:10	10	4	90	69	42	34	39	402	37
RAYBENDS:10	10	4	87	49	109	58	59	651	52
SINEALI	10	—	511	651	1770	1334	1313	716	1070
SROSENBR	10	—	159	122	89	115	118	53	72

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
SCHMVETT:10	10	—	90	54	42	35	36	75	34
SENSORS:10	10	—	57	36	49	28	30	75	26
SPARSINE:10	10	—	53	27	31	39	33	35	39
SPARSQUR:10	10	—	34	45	14	23	23	42	23
SSBRYBND:10	10	—	737	478	335	3432	576	—	—
SSCOSINE:10	10	—	365	199	205	—	—	1601	—
TOINTGSS	10	—	125	72	62	54	58	257	43
TQUARTIC:10	10	—	82	59	40	30	30	63	30
TRIDIA:10	10	—	45	23	17	29	35	47	34
VARDIM	10	—	13	7	33	31	31	48	31
VAREIGVL:10	10	—	45	31	27	16	17	23	16
OSBORNEB	11	—	3847	—	—	1421	—	—	—
EXPQUAD:12	12	4	111	73	52	72	69	62	55
QRTQUAD:12	12	3	168	100	110	167	145	206	177
QUDLIN	12	12	13	9	7	17	17	33	17
WATSON:12	12	—	238	157	116	116	241	1027	199
BRATU1D:13	13	2	64	34	34	36	28	68	29
DIXMAANA	15	—	18	13	9	7	7	11	7
DIXMAANB	15	—	16	13	9	7	7	11	7
DIXMAANC	15	—	18	15	11	7	7	11	7
DIXMAAND	15	—	22	15	13	9	9	11	9
DIXMAANE	15	—	58	33	35	21	24	76	21
DIXMAANF	15	—	61	33	41	21	22	69	22
DIXMAANG	15	—	58	33	43	22	22	59	20
DIXMAANH	15	—	57	33	43	21	22	61	22
DIXMAANI	15	—	113	57	93	47	58	143	47
DIXMAANJ	15	—	121	62	97	44	52	143	42

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANK	15	—	114	67	99	46	43	156	43
DIXMAANL	15	—	108	57	97	44	45	152	46
DIXMAANM	15	—	93	47	67	53	47	160	44
DIXMAANN	15	—	106	57	89	47	47	190	38
DIXMAANO	15	—	112	59	103	39	46	199	42
DIXMAANP	15	—	121	77	95	45	50	151	41
PARKCH	15	—	642	340	—	2355	2122	—	—
CLPLATEA:16	16	4	81	45	39	30	31	65	29
CLPLATEB:16	16	4	80	44	41	29	28	59	28
CLPLATEC:16	16	4	69	35	39	45	45	69	45
FMINSURF	16	—	63	35	41	23	23	51	23
FMINSRF2:16	16	—	78	50	51	28	36	56	29
HADAMALS:16	16	8	102	94	45	76	62	77	57
LMINSURF	16	12	36	26	19	17	17	64	17
NLMSURF:16	16	12	43	38	24	21	22	245	24
NOBNDTOR:16	16	13	15	21	16	29	30	12	18
POWELLSG:16	16	—	312	194	329	182	240	104	212
TORSION111:16	16	14	22	12	8	19	19	8	10
TORSION1:16	16	14	22	12	8	19	19	8	10
TORSION2:16	16	14	22	12	8	19	19	8	10
TORSIONA:16	16	14	22	14	8	12	11	8	10
TORSIONB:16	16	14	22	14	8	12	11	8	10
TORSIONC:16	16	14	18	12	8	9	9	7	7
TORSIOND:16	16	14	18	12	8	9	9	7	7
TORSION3:16	16	16	4	6	3	12	8	6	9
TORSION4:16	16	16	4	6	3	12	8	6	9
TORSION5:16	16	16	4	8	2	3	3	3	3
TORSION6:16	16	16	4	8	2	3	3	3	3
TORSIONE:16	16	16	4	5	2	6	6	3	6
TORSIONF:16	16	16	4	5	2	6	6	3	6
CHARDIS0:18	18	—	4	5	2	4	4	4	4

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
LINVERSE	19	8	240	140	110	173	133	161	257
CHEBYQAD:20	20	3	127	202	57	68	61	158	58
MANCINO:20	20	—	27	19	15	13	13	16	13
NONDIA:20	20	—	141	97	71	54	52	57	67
POWELLSG:20	20	—	312	282	299	249	283	104	365
POWER:20	20	—	78	78	56	27	27	100	27
POWELLBC:20	20	13	87	105	55	83	81	96	68
SINEALI:20	20	—	436	—	—	—	—	316	—
TRIDIA:20	20	—	85	43	28	52	69	68	59
NCB20B	21	—	165	116	198	93	166	80	106
NCB20B:22	22	—	207	107	229	244	265	88	285
RAYBENDL:24	24	4	753	1193	—	400	318	—	391
RAYBENDS:24	24	4	2343	3926	—	1238	1452	—	—
BIGGSB1	25	3	120	64	128	79	74	103	84
CHNROSNB:25	25	—	383	325	397	129	147	316	137
CHNRSNBM:25	25	—	548	445	452	218	197	524	194
ERRINROS:25	25	—	394	277	—	164	140	511	140
ERRINRSM:25	25	—	948	517	—	1129	710	1358	406
HATFLDC	25	12	45	30	31	17	17	55	17
NONSCOMP	25	12	225	466	163	154	120	270	110
OSCIPATH:25	25	—	181	134	104	62	67	102	65
QUARTC	25	—	39	80	19	36	36	61	36
SPMSRTL	28	—	155	107	117	61	64	95	53
X3PK	30	1	6749	3395	—	—	—	—	—
EIGENCLS:30	30	—	411	286	303	187	161	332	141
MANCINO:30	30	—	30	19	17	14	14	—	14
NONDIA:30	30	—	146	76	92	78	78	62	64
POWER:30	30	—	3	1	62	27	27	105	27
TRIDIA	30	—	133	67	40	76	77	94	71
WATSON:31	31	—	1681	871	2883	—	—	2207	—

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
EDENSCH	36	—	66	43	43	26	28	46	24
HADAMALS:36	36	24	192	214	78	122	77	156	89
LIARWHD	36	—	72	52	51	25	25	42	25
POWELLSG:36	36	—	333	228	375	361	275	111	426
CHARDIS0:40	40	—	4	5	2	4	4	4	4
POWELLSG:40	40	—	333	285	369	297	280	111	—
QR3DLS:40	40	1	4683	2585	—	2469	2425	1561	1958
RAYBENDL	44	4	4824	—	—	3072	2460	—	1616
CLPLATEA	49	7	138	102	123	49	48	117	54
CLPLATEB	49	7	135	91	119	47	48	121	47
CLPLATEC	49	7	288	144	201	183	161	168	165
FMINSRF2:49	49	—	137	77	78	48	52	82	47
FMINSURF:49	49	—	110	63	72	38	45	230	41
LMINSURF:49	49	24	96	73	65	36	36	310	38
MSQRTALS:49	49	—	651	433	—	247	292	383	219
MSQRTBLS:49	49	—	460	349	454	198	192	324	156
NLMSURF:49	49	24	370	254	299	133	153	498	134
ARGLINA:50	50	—	7	5	3	7	7	3	7
ARGLINB:50	50	—	7	7	3	11	11	24	11
ARGLINC:50	50	—	7	7	3	11	11	21	11
BROYDN7D:50	50	—	275	189	225	98	96	177	97
BRYBND:50	50	—	66	47	39	23	23	37	23
BQPGABIM	50	26	117	77	44	59	63	49	73
BQPGASIM	50	27	105	60	51	68	74	35	54
CHNROSNB:50	50	—	651	533	581	246	228	517	249
CHNRSNBM:50	50	—	933	718	533	341	350	594	343
CRAGGLVY:50	50	—	247	176	153	86	88	127	83
CHEBYQAD:50	50	6	192	227	574	68	68	221	77
CVXBQP1:50	50	50	3	1	1	1	1	1	1
DQDRTIC:50	50	—	23	13	11	52	29	20	17
DQRTIC:50	50	—	43	118	21	40	40	67	40

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
ENGVAL1:50	50	—	22	16	33	22	22	30	22
ERRINROS:50	50	—	415	332	—	153	147	569	156
ERRINRSM:50	50	—	836	448	4644	1162	628	1239	315
FREUROTH:50	50	—	79	43	40	29	29	47	30
HILBERTB:50	50	—	3	1	9	8	8	11	8
INDEFM:50	50	—	199	160	118	72	71	594	71
INDEF:50	50	50	53	95	22	74	74	—	74
MANCINO:50	50	—	30	27	19	17	17	18	17
MOREBV:50	50	—	1539	1480	571	1821	1425	2823	1910
MCCORMCK:50	50	1	42	31	24	39	34	24	27
NCB20B:50	50	—	1006	506	1563	767	762	500	741
NONDIA:50	50	—	132	68	97	93	88	52	104
NONSCOMP:50	50	25	198	245	145	102	98	176	99
NCVXBQP3:50	50	49	25	80	20	97	—	39	97
NCVXBQP1:50	50	50	7	46	12	12	12	30	12
NCVXBQP2:50	50	50	7	79	16	94	—	36	94
PENALTY3	50	—	447	1214	755	423	500	149	367
PENALTY1:50	50	—	234	211	139	86	91	84	91
PENALTY2:50	50	—	324	191	337	175	174	108	207
POWER:50	50	—	91	82	53	31	31	143	31
PROBPENL:50	50	—	1066	592	—	—	—	—	—
PENTDI:50	50	37	28	18	14	10	10	14	10
SINQUAD:50	50	—	91	49	48	38	35	38	49
SPARSINE:50	50	—	469	235	291	204	206	188	183
SPARSQUR:50	50	—	24	61	12	23	23	47	23
SROSENBR:50	50	—	177	154	99	137	107	59	86
SSBRYBND:50	50	—	6559	3295	—	—	—	—	3122
S368:50	50	32	9	31	18	7	7	51	7
TOINTGOR	50	—	393	230	217	136	139	192	139
TOINTPSP	50	—	336	214	277	119	131	275	119

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
TOINTQOR	50	—	113	57	36	47	48	77	44
TOINTGSS:50	50	—	135	81	88	47	54	81	50
TQUARTIC:50	50	—	125	65	105	77	53	75	66
TRIDIA:50	50	—	213	107	59	96	101	130	98
VAREIGVL	50	—	63	117	39	22	22	35	22
VARDIM:50	50	—	101	88	43	52	52	71	52
SCOND1LS:52	52	2	3318	—	—	—	—	1106	—
CHARDIS0:60	60	—	4	5	2	4	4	4	4
POWELLSG:60	60	—	333	250	353	364	387	111	631
DECONVU	61	10	3630	—	5286	2840	1419	—	—
DECONVB	61	41	318	406	225	—	—	331	—
FMINSRF2	64	—	162	111	97	62	61	106	56
FMINSURF:64	64	—	135	88	79	53	47	94	46
HADAMALS:64	64	34	159	256	69	123	98	111	89
LMINSURF:64	64	28	127	121	75	43	48	335	47
MINSURF	64	28	82	61	43	29	30	338	30
NLMSURF:64	64	28	471	349	326	164	181	891	169
POWER:75	75	—	105	93	73	37	37	175	37
BRATU1D	77	2	866	573	670	347	303	333	292
POWELLSG:80	80	—	333	248	405	326	420	111	—
DIXMAANA:90	90	—	15	11	7	6	6	11	6
DIXMAANB:90	90	—	16	13	9	7	7	11	7
DIXMAANC:90	90	—	19	15	11	8	8	11	8
DIXMAAND:90	90	—	19	15	13	9	9	11	9
DIXMAANE:90	90	—	142	83	61	54	53	232	51
DIXMAANF:90	90	—	138	86	99	60	63	214	54
DIXMAANG:90	90	—	142	87	95	50	54	145	50
DIXMAANH:90	90	—	140	95	95	60	48	101	49
DIXMAANI:90	90	—	529	265	186	245	290	511	235

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANJ:90	90	—	593	300	362	245	208	650	200
DIXMAANK:90	90	—	585	327	338	261	258	662	207
DIXMAANL:90	90	—	545	296	321	248	187	399	238
DIXMAANM:90	90	—	501	251	147	274	311	701	225
DIXMAANN:90	90	—	612	381	492	242	206	560	244
DIXMAANO:90	90	—	618	435	476	293	274	772	302
DIXMAANP:90	90	—	690	396	489	234	243	522	239
NONDIA:90	90	—	166	86	204	167	162	68	211
ARGLINA:100	100	—	7	5	3	7	7	3	7
ARGLINB:100	100	—	13	7	12	15	15	13	18
ARGLINC:100	100	—	24	26	25	33	33	17	33
ARWHEAD:100	100	—	48	35	37	23	25	29	29
BDQRTIC	100	—	133	74	114	47	57	87	66
BOXPOWER:100	100	—	27	16	11	19	19	13	19
BOX:100	100	—	70	36	44	35	35	38	35
BROWNAL:100	100	—	81	41	52	107	105	27	131
BROYDN7D:100	100	—	411	285	264	139	142	234	147
BRYBND:100	100	—	64	50	41	22	22	37	22
BDEXP	100	2	315	—	111	—	—	3480	392
BIGGSB1:100	100	3	714	598	611	310	262	474	258
CHARDIS0	100	—	4	5	2	4	4	—	4
CHAINWOO:100	100	—	624	1177	489	415	431	208	424
COSINE:100	100	—	928	4936	1077	—	—	—	—
CRAGGLVY:100	100	—	235	183	179	87	95	155	79
CURLY10:100	100	—	2640	2314	1746	1258	1211	880	1246
CURLY20:100	100	—	2352	1532	3197	1357	1361	784	1325
CURLY30:100	100	—	2022	1246	3328	1362	1416	674	1319
CHEBYQAD:100	100	4	293	388	2569	101	107	336	120
CLPLATEA:100	100	10	181	111	139	69	64	192	72
CLPLATEB:100	100	10	205	122	129	70	74	112	69
CLPLATEC:100	100	10	705	353	377	326	487	951	485

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
CHENHARK:100	100	30	5420	4707	1450	2378	2257	—	2718
CVXBQP1	100	100	3	1	1	1	1	1	1
DIXON3DQ:100	100	—	405	203	107	351	313	818	319
DQDRTIC:100	100	—	23	13	11	13	13	14	13
DQRTIC:100	100	—	51	107	25	44	44	72	44
ENGVAL1:100	100	—	57	41	34	23	24	33	22
EXTROSNB:100	100	—	2337	—	4936	1808	2034	779	3254
FLETBV3M:100	100	—	81	95	39	39	44	123	37
FLETGBV2:100	100	—	660	330	373	303	251	1069	248
FLETGBV3:100	100	—	402	4359	4903	177	172	—	154
FLETCHCR:100	100	—	1706	1600	1247	608	613	1362	580
FREUROTH:100	100	—	83	51	50	32	32	47	33
GENHUMPS:100	100	—	874	604	918	348	346	1520	372
GENROSE:100	100	—	1711	1600	1190	600	633	1434	600
HADAMALS:100	100	76	306	399	434	132	108	193	147
HARKERP2	100	100	3	1	1	1	1	1	1
INDEFM:100	100	—	13	3180	413	92	108	262	91
INDEF:100	100	100	13	94	19	78	78	—	80
LIARWHD:100	100	—	85	51	51	29	29	36	30
MANCINO:100	100	—	33	39	21	20	20	23	20
MOREBV:100	100	—	11645	—	—	3969	—	—	—
MSQRTALS:100	100	—	1173	1399	1733	432	429	452	402
MSQRTBLS:100	100	—	1784	1938	1973	730	690	709	596
MCCORMCK:100	100	1	42	31	24	29	28	29	20
NONDQUAR	100	—	566	288	596	429	363	1915	398
NCB20B:100	100	—	2856	1566	3186	1183	1187	952	1039
NONCVXU2:100	100	—	1430	1038	697	525	621	1044	482
NONCVXUN:100	100	—	536	339	265	230	199	337	279
NONDIA:100	100	—	198	104	318	188	168	74	—

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
NOBNDTOR:100	100	49	87	90	59	62	55	45	48
NONSCOMP:100	100	50	213	203	116	92	158	179	94
NCVXBQP3:100	100	98	42	93	22	95	95	64	97
NCVXBQP1:100	100	100	6	63	12	12	12	30	12
NCVXBQP2:100	100	100	13	75	17	88	88	33	92
OSCIPTH:100	100	—	180	131	104	87	89	111	73
PENALTY1:100	100	—	152	167	122	79	84	87	79
PENALTY2:100	100	—	249	204	231	89	93	152	85
PENALTY3:100	100	—	897	2324	1437	980	1036	299	727
POWELLSG:100	100	—	333	305	335	316	350	111	611
POWER:100	100	—	112	99	65	38	38	197	38
PROBPENL:100	100	—	9	1606	—	—	—	—	—
PENTDI:100	100	74	24	25	12	28	27	15	13
QUARTC:100	100	—	51	107	25	44	44	72	44
SCHMVETT:100	100	—	153	134	89	56	61	620	56
SENSORS:100	100	—	79	113	44	35	39	59	33
SINEALI:100	100	—	210	207	211	77	85	172	76
SINQUAD:100	100	—	79	48	41	42	31	49	53
SPARSINE:100	100	—	820	410	427	322	319	303	299
SPARSQUR:100	100	—	27	45	13	24	24	51	24
SPMSRTLS:100	100	—	960	—	713	—	342	—	416
SROSENBR:100	100	—	183	182	91	169	147	77	127
SSBRYBND:100	100	—	9583	4803	—	—	—	—	—
SSCOSINE:100	100	—	3535	1779	—	—	—	—	—
S368:100	100	73	10	33	25	8	8	77	8
TOINTGSS:100	100	—	101	73	73	35	42	83	35
TQUARTIC:100	100	—	207	154	129	76	142	82	81
TRIDIA:100	100	—	341	171	91	177	185	232	177

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
TORSIONA:100	100	54	72	96	48	48	45	41	44
TORSIONB:100	100	54	72	96	48	48	45	41	44
TORSION111:100	100	58	66	86	38	38	42	41	29
TORSION1:100	100	58	66	86	38	38	42	41	29
TORSION2:100	100	58	66	86	38	38	42	41	29
TORSIONC:100	100	67	54	43	34	35	44	32	30
TORSIOND:100	100	67	54	43	34	35	44	32	30
TORSION3:100	100	71	51	48	32	42	41	28	24
TORSION4:100	100	71	51	48	32	42	41	28	24
TORSIONE:100	100	84	36	31	20	27	35	25	22
TORSIONF:100	100	84	36	31	20	27	35	25	22
TORSION5:100	100	86	17	32	18	19	8	25	12
TORSION6:100	100	86	17	32	18	19	8	25	12
VARDIM:100	100	—	122	102	52	61	61	83	55
VAREIGVL:100	100	—	70	261	43	25	25	35	24
WOODS:100	100	—	198	104	215	186	176	88	172
EXPLIN:101	101	95	156	172	82	120	102	135	96
EXPLIN2:101	101	101	6	8	3	12	12	3	12
BRATU1D:103	103	2	1084	1083	893	366	415	457	394
EIGENALS	110	—	4212	2574	2414	1450	1607	2512	1544
EIGENBLS	110	—	2141	1844	1065	781	864	1389	729
NCB20:110	110	—	633	327	—	1073	733	1095	994
EXPQUAD	120	7	214	170	104	94	110	320	89
EXPLIN	120	70	557	508	318	208	207	381	237
EXPLIN2	120	101	215	420	97	152	126	92	156
QRTQUAD	120	5	332	194	172	201	187	286	236
QUDLIN:120	120	120	13	9	7	35	32	33	30
FMINSRF2:121	121	—	214	112	112	72	74	116	75
FMINSURF:121	121	—	165	99	94	60	61	108	57
LMINSURF:121	121	40	170	125	106	60	60	387	60
NLMSURF:121	121	40	907	610	674	324	341	1122	309

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
HADAMALS:144	144	79	202	389	97	121	92	151	142
HOLMES	180	180	3	1	1	1	1	1	1
NCB20B:180	180	—	1239	844	1037	446	464	413	472
DRCV2LQ	196	96	4633	2506	2392	1749	1651	—	1549
DRCV3LQ	196	96	9829	—	4779	3798	—	—	—
HADAMALS:196	196	161	311	426	182	180	138	241	212
LINVERSE:199	199	89	2268	—	—	—	—	1428	—
ARGLINA:200	200	—	7	5	3	8	8	3	8
ARGLINB:200	200	—	24	17	10	17	17	52	17
ARGLINC:200	200	—	12	83	10	15	15	65	15
BROWNAL:200	200	—	108	58	52	158	192	41	205
CHARDIS0:200	200	—	4	5	2	4	4	—	4
MODBEALE:200	200	—	384	483	320	640	620	128	637
PENALTY2:200	200	—	521	—	223	184	179	247	175
PENALTY3:200	200	—	708	4665	3077	—	—	1107	—
POWELLBC:200	200	104	2761	2400	3901	1031	3211	—	—
VARDIM:200	200	—	120	103	52	68	68	94	68
HADAMALS:256	256	135	417	—	200	236	164	272	185
ODC:288	288	148	465	452	657	204	215	520	229
SSC:288	288	148	383	218	219	132	134	286	129
DIXMAANA:300	300	—	15	9	7	6	6	10	6
DIXMAANB:300	300	—	16	13	9	7	7	11	7
DIXMAANC:300	300	—	19	15	11	8	8	11	8
DIXMAAND:300	300	—	22	15	13	9	9	11	9
DIXMAANE:300	300	—	248	139	82	101	96	469	92
DIXMAANF:300	300	—	215	159	157	80	84	233	89

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANG:300	300	—	211	135	152	81	82	174	71
DIXMAANH:300	300	—	219	148	154	79	78	167	80
DIXMAANI:300	300	—	1781	891	576	790	633	1555	705
DIXMAANJ:300	300	—	1245	802	851	492	422	778	464
DIXMAANK:300	300	—	1147	777	835	471	438	895	459
DIXMAANL:300	300	—	941	791	698	422	479	1214	315
DIXMAANM:300	300	—	1761	881	565	697	790	1640	735
DIXMAANN:300	300	—	1745	1014	952	722	746	1172	666
DIXMAANO:300	300	—	1702	1008	976	711	711	1846	670
DIXMAANP:300	300	—	1634	934	974	816	810	1315	550
HADAMALS:324	324	256	499	592	179	196	241	361	189
CHARDIS0:400	400	—	4	7	2	4	4	—	4
HADAMALS:400	400	306	494	918	421	189	176	383	241
JNLBRNG1:400	400	253	272	154	113	94	94	103	96
JNLBRNGA:400	400	253	317	178	116	111	123	203	148
JNLBRNG2:400	400	278	285	197	126	103	111	133	99
JNLBRNGB:400	400	302	405	215	108	141	148	314	139
OBSTCLBL:400	400	263	28	25	10	37	39	14	23
OBSTCLBM:400	400	263	28	25	10	37	39	14	23
OBSTCLBU:400	400	263	28	25	10	37	39	14	23
OBSTCLAE:400	400	398	9	5	5	15	15	4	15
OBSTCLAL:400	400	398	9	5	5	15	15	4	15
EIGENCLS	462	—	7023	6332	6221	2570	2776	3164	3241
NOBNDTOR:484	484	143	192	170	161	68	77	210	86
TORSIONA:484	484	161	150	143	122	74	78	93	68
TORSIONB:484	484	161	150	143	122	74	78	93	68
TORSION111:484	484	186	150	143	129	64	72	165	76
TORSION1:484	484	186	150	143	129	64	72	165	76
TORSION2:484	484	186	150	143	129	64	72	165	76
TORSIONC:484	484	254	93	121	72	56	77	53	57
TORSIOND:484	484	254	93	121	72	56	77	53	57
TORSION3:484	484	267	90	124	78	74	61	46	61

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
TORSION4:484	484	267	90	124	78	74	61	46	61
TORSIONE:484	484	362	63	92	44	39	45	32	34
TORSIONF:484	484	362	63	92	44	39	45	32	34
TORSION5:484	484	368	60	92	46	44	48	31	43
TORSION6:484	484	368	60	92	46	44	48	31	43
ARWHEAD:500	500	—	68	43	32	34	35	27	32
BDQRTIC:500	500	—	147	77	151	72	95	56	94
BROYDN7D:500	500	—	523	385	309	180	188	302	182
BRYBND:500	500	—	63	48	41	22	22	37	22
BDEXP:500	500	2	1514	5210	506	—	—	—	—
CRAGGLVY:500	500	—	276	176	184	98	99	136	96
DQRTIC	500	—	59	134	29	54	54	84	54
DQDRTIC:500	500	—	23	13	11	17	17	15	17
FREUROTH:500	500	—	84	60	40	53	68	44	49
GENHUMPS:500	500	—	873	760	841	323	354	649	356
GENROSE:500	500	—	8254	7727	4429	2882	3009	—	2817
HARKERP2:500	500	500	3	1	1	1	1	1	1
LIARWHD:500	500	—	101	55	64	36	35	59	40
MOREBV:500	500	—	1407	818	551	501	525	580	527
MCCORMCK:500	500	1	51	36	24	33	32	35	24
NCB20B:500	500	—	1251	629	1086	470	480	422	452
NONDIA:500	500	—	371	199	537	350	284	146	—
NONDQUAR:500	500	—	551	281	546	337	473	1298	—
NONSCOMP:500	500	250	229	549	118	105	144	85	87
OSCIPATH:500	500	—	182	119	101	75	77	96	67
PENALTY1:500	500	—	169	128	100	61	63	87	60
POWELLSG:500	500	—	333	350	377	341	361	111	—
POWER:500	500	—	239	144	137	87	81	416	85
PROBPENL:500	500	—	7	5	3	8	8	—	8
PENTDI:500	500	376	24	19	12	10	10	15	10

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
QUARTC:500	500	—	59	134	29	54	54	84	54
SCHMVETT:500	500	—	156	425	94	57	58	64	56
SINQUAD:500	500	—	110	58	65	71	90	70	81
SROSENBR:500	500	—	286	241	142	132	159	100	120
TOINTGSS:500	500	—	109	61	56	41	47	78	41
TQUARTIC:500	500	—	321	171	235	184	139	737	172
TRIDIA:500	500	—	857	429	220	447	433	535	476
VAREIGVL:500	500	—	73	47	43	25	26	37	25
BRATU1D:503	503	2	6081	4837	3146	2051	2320	6307	2392
CLPLATEA:529	529	23	507	343	363	186	173	328	174
CLPLATEB:529	529	23	369	269	281	144	127	760	145
CLPLATEC:529	529	23	981	986	—	2811	2378	360	2673
ODC	864	164	530	342	431	194	178	2692	185
SSC	864	164	371	220	170	135	138	223	126
FMINSRF2:961	961	—	258	314	154	93	92	293	92
FMINSURF:961	961	—	315	159	210	129	127	352	124
LMINSURF:961	961	120	593	562	410	207	203	1775	206
NLMSURF:961	961	120	4062	2316	3085	1453	1460	—	1513
ARWHEAD:1000	1000	—	63	52	30	41	33	28	30
BDQRTIC:1000	1000	—	177	97	159	114	133	59	129
BOXPOWER:1000	1000	—	32	18	18	32	31	18	31
BOX:1000	1000	—	95	49	61	67	52	56	74
BROWNAL:1000	1000	—	102	54	48	66	69	55	76

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
BROYDN7D:1000	1000	—	526	393	312	176	179	389	195
BRYBND:1000	1000	—	63	48	41	22	22	37	22
BDEXP:1000	1000	2	3017	—	1007	—	—	—	—
BIGGSB1:1000	1000	3	5541	4834	3057	2679	3339	3216	2041
CHAINWOO	1000	—	925	467	528	425	427	314	408
CURLY10	1000	—	25867	—	9808	8751	9622	—	9516
CURLY30	1000	—	28092	—	—	—	—	9364	—
CHARDIS0:1000	1000	—	4	7	2	4	4	7	4
CRAGGLVY:1000	1000	—	265	189	173	91	102	163	89
CVXBP1:1000	1000	1000	3	1	1	1	1	1	1
DIXON3DQ:1000	1000	—	4005	2003	1007	3764	3269	6232	2858
DQDRTIC:1000	1000	—	23	13	11	23	22	15	21
DQRTIC:1000	1000	—	63	129	31	58	58	87	58
EG2	1000	—	171	174	232	216	241	57	—
ENGVAL1:1000	1000	—	58	55	31	26	27	40	26
EXTROSNB:1000	1000	—	1881	8048	5180	1844	2120	627	7663
FLETBV3M:1000	1000	—	52	308	22	42	43	111	42
FLETBVB2:1000	1000	—	4009	2005	1849	2199	2269	2819	2004
FLETBVB3:1000	1000	—	14177	—	—	4817	9190	—	—
FLETCHCR:1000	1000	—	16588	15320	8600	5724	5963	—	5650
FREUROTH:1000	1000	—	76	53	39	30	49	44	30
GENHUMPS	1000	—	979	643	792	373	401	942	376
HARKERP2:1000	1000	1000	3	1	1	1	1	1	1
INDEFM	1000	—	381	201	297	200	147	2904	217
INDEF	1000	1000	53	80	21	103	84	—	95
JNLBRNG1:1000	1000	366	278	185	134	94	102	117	105
JNLBRNGA:1000	1000	385	329	242	152	111	115	226	113
JNLBRNG2:1000	1000	524	501	375	335	173	169	270	172

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
JNLBRNGB:1000	1000	560	1255	756	492	453	426	554	434
LIARWHD:1000	1000	—	110	60	63	56	51	57	54
MOREBV:1000	1000	—	1352	1126	595	492	454	652	476
MCCORMCK:1000	1000	1	48	36	23	25	35	41	23
NONCVXU2	1000	—	5628	3013	2604	2615	3988	6628	3044
NONCVXUN	1000	—	10021	5606	4213	—	—	—	—
NONDIA	1000	—	564	521	914	496	466	188	—
NCB20B:1000	1000	—	1263	668	1189	514	537	421	512
NONDQUAR:1000	1000	—	599	307	375	297	451	498	—
NONSCOMP:1000	1000	500	255	143	138	106	151	103	117
NCVXBQP3	1000	983	104	467	36	111	123	74	268
NCVXBQP2	1000	993	37	113	30	104	106	75	103
NCVXBQP1	1000	1000	4	86	12	14	14	30	14
OSCIGRAD:1000	1000	—	1486	—	540	—	—	—	—
OBSTCLBL	1000	680	117	95	62	79	66	64	65
OBSTCLBM	1000	680	117	95	62	79	66	64	65
OBSTCLBU	1000	680	117	95	62	79	66	64	65
OBSTCLAL	1000	696	72	88	30	37	37	31	43
OBSTCLAE:1000	1000	696	72	88	30	37	37	31	43
PENALTY1:1000	1000	—	147	118	86	55	53	74	62
POWELLSG:1000	1000	—	351	378	479	364	383	117	—
POWER:1000	1000	—	330	192	189	120	115	467	119
POWELLBC:1000	1000	501	10798	—	—	3689	4009	—	4038
PENTDI	1000	751	24	19	12	9	9	14	9
QUARTC:1000	1000	—	63	129	31	58	58	87	58
SPARSINE	1000	—	13980	6990	4347	6042	6173	5991	5672
SPARSQUR	1000	—	31	62	15	25	25	57	25
SSBRYBND	1000	—	22532	—	—	7707	8029	—	7644

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
SCHMVETT:1000	1000	—	156	241	89	67	64	157	62
SENSORS:1000	1000	—	111	86	78	47	51	104	64
SINEALI:1000	1000	—	191	134	175	68	72	121	69
SINQUAD:1000	1000	—	144	84	74	53	58	76	66
SROSENBR:1000	1000	—	359	197	177	185	128	126	140
TESTQUAD	1000	—	3704	1852	—	4727	4364	1476	4261
TOINTGSS:1000	1000	—	99	68	57	35	36	247	36
TQUARTIC:1000	1000	—	258	136	323	197	136	498	169
TRIDIA:1000	1000	—	1237	619	316	733	616	734	599
VAREIGVL:1000	1000	—	73	47	43	25	27	37	25
WOODS:1000	1000	—	366	190	211	195	228	200	229
BRATU1D:1003	1003	1003	18312	—	—	6842	—	—	6130
NCB20	1010	—	481	247	4468	372	349	1089	276
CLPLATEA:1024	1024	32	758	572	619	296	300	490	300
CLPLATEB:1024	1024	32	492	321	315	181	176	362	177
CLPLATEC:1024	1024	32	1188	1826	—	7247	6676	396	5834
FMINSRF2:1024	1024	—	275	168	166	95	97	549	93
FMINSURF:1024	1024	—	348	206	200	124	134	547	127
HADAMALS:1024	1024	801	583	1169	674	201	270	774	269
LMINSURF:1024	1024	124	622	480	445	222	223	—	208
NLMSURF	1024	124	4152	2445	3148	1474	1482	2796	1442
NOBNDTOR:1024	1024	235	237	210	203	115	120	240	117
TORSIONA:1024	1024	281	201	181	201	98	92	135	105
TORSIONB:1024	1024	281	201	181	201	98	92	135	105
TORSION111:1024	1024	323	207	193	213	84	85	129	105
TORSION1:1024	1024	323	207	193	213	84	85	129	105

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
TORSION2:1024	1024	323	207	193	213	84	85	129	105
TORSIONC:1024	1024	493	117	154	107	53	76	95	63
TORSIOND:1024	1024	493	117	154	107	53	76	95	63
TORSION3:1024	1024	515	123	150	134	69	70	67	73
TORSION4:1024	1024	515	123	150	134	69	70	67	73
TORSIONE:1024	1024	761	78	106	69	58	92	47	55
TORSIONF:1024	1024	761	78	106	69	58	92	47	55
TORSION5:1024	1024	768	75	113	69	59	53	34	64
TORSION6:1024	1024	768	75	113	69	59	53	34	64
EXPQUAD:1200	1200	81	938	1427	442	434	423	470	344
EXPLIN:1200	1200	1150	544	471	316	229	207	307	204
EXPLIN2:1200	1200	1181	197	432	81	142	110	112	136
QRTQUAD:1200	1200	50	1524	910	2527	2112	1223	1089	1912
QUDLIN:1200	1200	1200	13	17	10	59	52	35	34
DIXMAANA:1500	1500	—	15	9	7	6	6	7	6
DIXMAANB:1500	1500	—	16	13	9	7	7	11	7
DIXMAANC:1500	1500	—	19	15	11	8	8	11	8
DIXMAAND:1500	1500	—	22	15	13	9	9	11	9
DIXMAANE:1500	1500	—	459	282	151	189	182	514	184
DIXMAANF:1500	1500	—	444	270	274	155	157	339	162
DIXMAANG:1500	1500	—	417	261	239	145	150	394	150
DIXMAANH:1500	1500	—	387	235	262	133	156	304	143
DIXMAANI:1500	1500	—	4638	3012	1840	1913	1810	2100	1730
DIXMAANJ:1500	1500	—	2365	1679	1223	875	861	1064	795
DIXMAANK:1500	1500	—	1392	1163	1473	807	474	1147	604
DIXMAANL:1500	1500	—	952	913	1091	340	333	1039	318

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANM:1500	1500	—	4338	2877	1827	1820	1890	1865	1554
DIXMAANN:1500	1500	—	2478	1775	1502	840	969	1727	867
DIXMAANO:1500	1500	—	2127	1568	1344	780	739	1810	713
DIXMAANP:1500	1500	—	1963	1592	1472	665	738	1346	709
LINVERSE:1999	1999	785	42455	23093	—	—	—	—	—
CHARDIS0:2000	2000	—	4	7	2	4	4	7	4
EDENSCH:2000	2000	—	72	48	42	29	31	38	28
MODBEALE:2000	2000	—	417	414	383	696	644	139	622
NCB20B:2000	2000	—	1150	632	884	394	394	436	386
BQPGAUSS	2003	134	11100	25308	15615	5746	4340	5583	4852
RAYBENDS:2050	2050	4	9611	5575	—	—	—	—	—
JNLBRNG1:2300	2300	809	317	235	218	120	134	141	107
JNLBRNGA:2300	2300	847	342	269	193	136	116	183	125
JNLBRNGB:2300	2300	1052	1749	1103	977	634	608	828	600
JNLBRNG2:2300	2300	1077	584	390	291	211	215	301	201
OBSTCLBL:2300	2300	993	210	181	128	107	101	99	88
OBSTCLBM:2300	2300	993	210	181	128	107	101	99	88
OBSTCLBU:2300	2300	993	210	181	128	107	101	99	88
OBSTCLAE:2300	2300	1276	147	153	95	60	56	130	53
OBSTCLAL:2300	2300	1276	147	153	95	60	56	130	53
ODC:2376	2376	206	525	341	515	204	188	749	185
SSC:2376	2376	206	352	176	159	129	125	349	122
EIGENBLS:2550	2550	—	18518	—	15027	9409	9826	19221	8871
EIGENCLS:2652	2652	—	37918	—	—	14993	20709	16218	14472
DIXMAANA:3000	3000	—	15	9	7	6	6	7	6
DIXMAANB:3000	3000	—	16	13	9	7	7	11	7
DIXMAANC:3000	3000	—	19	15	11	8	8	11	8
DIXMAAND:3000	3000	—	22	17	13	9	9	11	9
DIXMAANE:3000	3000	—	630	371	225	243	218	556	217

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAANF:3000	3000	—	570	331	294	204	198	484	199
DIXMAANG:3000	3000	—	517	297	298	175	183	451	177
DIXMAANH:3000	3000	—	495	287	276	172	191	414	199
DIXMAANI:3000	3000	—	3465	2707	1640	1276	1183	1660	1188
DIXMAANJ:3000	3000	—	780	2359	974	316	336	661	277
DIXMAANK:3000	3000	—	689	733	1005	242	247	746	246
DIXMAANL:3000	3000	—	771	1259	838	393	343	665	402
DIXMAANM:3000	3000	—	3514	3051	1422	1253	1188	1802	1450
DIXMAANN:3000	3000	—	2879	2039	1706	1096	1142	2140	1021
DIXMAANO:3000	3000	—	2326	1643	1486	877	797	1595	832
DIXMAANP:3000	3000	—	1828	1335	2406	692	694	1422	612
JNLBRNG1:3200	3200	1130	342	248	209	130	128	197	116
JNLBRNGA:3200	3200	1168	426	320	222	147	147	213	144
JNLBRNG2:3200	3200	1400	723	593	422	245	245	336	245
JNLBRNGB:3200	3200	1446	2067	1257	824	1119	1089	1208	698
OBSTCLBL:3200	3200	1252	174	168	100	92	76	90	96
OBSTCLBM:3200	3200	1252	174	168	100	92	76	90	96
OBSTCLBU:3200	3200	1252	174	168	100	92	76	90	96
OBSTCLAE:3200	3200	1813	195	190	103	82	71	109	66
OBSTCLAL:3200	3200	1813	195	190	103	82	71	109	66
JNLBRNG1:3400	3400	1195	330	307	223	154	135	173	117
JNLBRNGA:3400	3400	1233	435	309	352	154	149	233	150
JNLBRNG2:3400	3400	1500	689	524	293	231	246	335	237
JNLBRNGB:3400	3400	1545	2148	1368	1366	1167	1088	1183	1314
CHAINWOO:4000	4000	—	994	931	824	344	367	434	352
CHARDIS0:4000	4000	—	4	7	2	4	4	7	4
WOODS:4000	4000	—	349	181	370	320	213	199	180
HADAMALS:4096	4096	3282	795	2540	2909	273	281	1424	362
DRCV1LQ:4489	4489	520	31051	—	—	—	—	25695	—

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
ARWHEAD:5000	5000	—	83	47	44	54	52	39	66
BDQRTIC:5000	5000	—	168	94	142	263	243	82	213
BROYDN7D:5000	5000	—	607	641	346	210	205	419	204
BRYBND:5000	5000	—	63	50	41	22	22	37	22
BIGGSB1:5000	5000	3	21382	16466	11520	12980	16329	15502	7152
BDEXP:5000	5000	5000	3	1	1	1	1	1	1
CRAGGLVY:5000	5000	—	283	196	199	104	102	188	95
CHENHARK:5000	5000	2010	21847	12980	—	17792	7451	—	17275
DQDRTIC:5000	5000	—	23	13	11	22	32	15	20
DQRTIC:5000	5000	—	71	165	35	67	67	99	67
ENGVAL1:5000	5000	—	60	40	30	25	25	41	25
FLETBV3M:5000	5000	—	89	—	39	51	53	63	54
FLETGBV2:5000	5000	—	18263	10003	6707	8346	9804	10127	6109
FREUROTH:5000	5000	—	89	59	39	36	35	45	35
GENHUMPS:5000	5000	—	923	679	710	319	317	379	365
HARKERP2:5000	5000	5000	3	1	1	1	1	1	1
INDEFM:5000	5000	—	247	—	97	220	247	920	—
INDEF:5000	5000	5000	56	60	22	—	85	—	195
LIARWHD:5000	5000	—	109	59	67	81	84	64	39
MOREBV:5000	5000	—	1358	1126	593	456	487	537	484
MCCORMCK:5000	5000	1	51	38	25	26	26	45	25
NCB20B:5000	5000	—	1248	1379	1373	451	480	416	448
NONCVXU2:5000	5000	—	21305	10677	10789	14086	12768	16912	12296
NONCVXUN:5000	5000	—	44454	22592	—	—	—	—	—
NONDIA:5000	5000	—	1220	652	1443	—	895	—	—

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
NONDQUAR:5000	5000	—	612	316	474	431	370	496	—
NONSCOMP:5000	5000	2500	228	184	131	96	94	77	86
POWELLSG:5000	5000	—	351	258	401	390	337	117	—
POWER:5000	5000	—	732	421	414	257	262	729	259
PENTDI:5000	5000	3751	24	19	12	10	10	13	12
QUARTC:5000	5000	—	71	165	35	67	67	99	67
QRTQUAD:5000	5000	549	2556	1468	9537	—	—	13105	20642
QUDLIN:5000	5000	5000	13	12	9	38	31428	10	37
SCHMVETT:5000	5000	—	151	511	111	61	63	957	61
SINQUAD:5000	5000	—	137	95	60	51	61	87	53
SPARSQUR:5000	5000	—	35	77	17	32	32	77	32
SROSENBR:5000	5000	—	399	207	306	272	262	183	371
SSBRYBND:5000	5000	—	24904	14639	16533	8612	8555	17723	8324
TESTQUAD:5000	5000	—	4960	2480	7101	6359	5765	2282	3659
TOINTGSS:5000	5000	—	107	62	54	47	39	146	38
TQUARTIC:5000	5000	—	583	315	539	252	409	203	—
TRIDIA:5000	5000	—	2829	1415	715	1496	1839	1733	1504
VAREIGVL:5000	5000	—	73	47	43	25	27	37	25
NCB20:5010	5010	—	505	330	1426	223	225	683	179
CLPLATEA:5041	5041	71	1988	1194	1847	746	697	1378	696
CLPLATEB:5041	5041	71	999	610	747	373	356	552	367
CLPLATEC:5041	5041	71	2856	7936	—	—	—	983	36018
ODC:5184	5184	284	606	483	611	211	213	1073	214
SSC:5184	5184	284	381	191	197	159	165	334	170
MINSURFO:5306	5306	1762	2499	1704	1849	2375	2221	2184	2331
NOBNDTOR:5476	5476	801	528	454	530	224	245	306	261

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
TORSIONA:5476	5476	1096	441	386	698	244	259	242	211
TORSIONB:5476	5476	1096	441	386	698	244	259	242	211
TORSION111:5476	5476	1219	483	421	701	211	212	301	232
TORSION1:5476	5476	1219	483	421	701	211	212	301	232
TORSION2:5476	5476	1219	483	421	701	211	212	301	232
TORSIONC:5476	5476	2328	279	251	182	150	161	172	205
TORSIOND:5476	5476	2328	279	251	182	150	161	172	205
TORSION3:5476	5476	2386	264	235	196	166	144	140	214
TORSION4:5476	5476	2386	264	235	196	166	144	140	214
TORSIONE:5476	5476	3782	162	158	86	133	122	108	119
TORSIONF:5476	5476	3782	162	158	86	133	122	108	119
TORSION5:5476	5476	3805	159	173	177	102	103	63	102
TORSION6:5476	5476	3805	159	173	177	102	103	63	102
FMINSRF2:5625	5625	—	525	318	317	179	188	879	182
FMINSURF:5625	5625	—	535	324	318	186	190	857	180
LMINSURF:5625	5625	296	1579	1354	1247	529	529	12394	538
NLMSURF:5625	5625	296	15218	10685	9712	5148	5303	—	5141
ODC:7344	7344	344	704	475	785	245	245	1381	236
SSC:7344	7344	344	515	280	235	193	210	409	174
JNLBRNG1:7500	7500	2605	576	554	545	348	311	312	310
JNLBRNGA:7500	7500	2676	654	574	526	327	358	394	307
JNLBRNG2:7500	7500	3171	1281	1030	954	471	462	614	463
JNLBRNGB:7500	7500	3395	3813	2316	2375	2307	2012	2183	2378
OBSTCLBL:7500	7500	2859	303	292	207	143	131	167	147
OBSTCLBM:7500	7500	2859	303	292	207	143	131	167	147
OBSTCLBU:7500	7500	2859	303	292	207	143	131	167	147
OBSTCLAE	7500	3819	291	287	271	146	140	192	121
OBSTCLAL:7500	7500	3819	291	287	271	146	140	192	121
DIXMAANA:9000	9000	—	15	9	7	6	6	7	6
DIXMAANB:9000	9000	—	16	13	9	7	7	8	7
DIXMAANC:9000	9000	—	19	15	11	8	8	11	8

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
DIXMAAND:9000	9000	—	22	17	13	9	9	11	9
DIXMAANE:9000	9000	—	956	573	306	326	352	629	326
DIXMAANF:9000	9000	—	759	479	436	268	275	659	263
DIXMAANG:9000	9000	—	760	453	437	274	258	773	281
DIXMAANH:9000	9000	—	750	433	428	254	264	756	258
DIXMAANI:9000	9000	—	1384	2045	858	468	522	1459	666
DIXMAANJ:9000	9000	—	685	751	512	282	327	550	231
DIXMAANK:9000	9000	—	582	1194	469	198	245	546	249
DIXMAANL:9000	9000	—	651	1286	435	219	255	531	251
DIXMAANM:9000	9000	—	1364	2045	1202	574	655	1440	606
DIXMAANN:9000	9000	—	1767	1958	1073	616	677	1287	668
DIXMAANO:9000	9000	—	1566	2157	1301	722	655	1519	812
DIXMAANP:9000	9000	—	2166	1709	1507	759	806	2147	811
BOXPOWER	10000	—	27	39	11	37	35	13	27
BOX	10000	—	128	68	82	112	174	52	168
BROYDN7D:10000	10000	—	589	786	339	197	202	423	210
BRYBND:10000	10000	—	63	50	41	22	22	37	22
CHAINWOO:10000	10000	—	1029	822	1218	454	422	343	393
CVXBQP1:10000	10000	10000	3	1	1	1	1	1	1
DIXON3DQ:10000	10000	—	40009	20005	10008	26046	27590	20439	23212
FLETBV3M:10000	10000	—	74	—	30	37	43	81	40
FLETCBV2:10000	10000	—	27618	—	10012	12835	15257	9206	11482
FMINSRF2:10000	10000	—	662	397	411	230	232	533	231
FMINSURF:10000	10000	—	656	397	411	225	229	608	227
HARKERP2:10000	10000	10000	3	1	1	1	1	1	1
INDEFM:10000	10000	—	579	—	523	209	451	2170	—

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
JNLBRNG1:10000	10000	3443	837	666	662	448	479	441	517
JNLBRNGA:10000	10000	3568	855	765	937	490	489	506	511
JNLBRNG2:10000	10000	4209	1668	1223	924	608	619	883	565
JNLBRNGB:10000	10000	4484	4926	3106	2740	2865	3258	2520	4278
LIARWHD:10000	10000	—	112	60	66	65	110	58	67
LMINSURF:10000	10000	396	2224	2028	1743	765	760	—	772
MCCORMCK:10000	10000	1	53	67	22	23	23	39	23
NONCVXU2:10000	10000	—	28906	14858	13670	13946	14305	16464	12322
NONDIA:10000	10000	—	307	1003	1370	1016	225	—	—
NONDQUAR:10000	10000	—	842	432	566	457	389	397	—
NLMSURF:10000	10000	396	21993	18052	14536	8004	8077	—	7510
NOBNDTOR:10000	10000	1299	630	571	840	337	334	399	296
NONSCOMP:10000	10000	5000	237	164	117	115	103	83	102
NCVXBQP3:10000	10000	9808	182	407	103	124	120	151	197
NCVXBQP2:10000	10000	9934	126	351	72	101	100	121	104
NCVXBQP1:10000	10000	10000	4	160	12	16	16	30	16
OSCIGRAD:10000	10000	—	5459	—	1985	—	—	—	—
OBSTCLBL:10000	10000	3896	336	287	278	166	176	175	156
OBSTCLBM:10000	10000	3896	336	287	278	166	176	175	156
OBSTCLBU:10000	10000	3896	336	287	278	166	176	175	156
OBSTCLAE:10000	10000	5061	354	346	301	156	146	275	155
OBSTCLAL:10000	10000	5061	354	346	301	156	146	275	155
POWELLSG:10000	10000	—	351	471	393	446	320	117	—
POWER:10000	10000	—	994	589	588	344	347	892	342
QUARTC:10000	10000	—	75	221	37	71	71	105	71
SCHMVETT:10000	10000	—	171	970	87	64	74	2370	67
SINQUAD:10000	10000	—	184	106	75	71	84	77	89
SPARSQUR:10000	10000	—	39	79	19	25	25	85	25

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
SROSENB:10000	10000	—	240	298	532	321	339	80	331
TOINTGSS:10000	10000	—	108	56	51	48	53	189	45
TQUARTIC:10000	10000	—	812	432	626	415	424	16222	—
TRIDIA:10000	10000	—	4021	2011	1011	2550	1933	2596	2450
TORSIONA:10000	10000	1839	591	515	595	323	347	620	226
TORSIONB:10000	10000	1839	591	515	595	323	347	620	226
TORSION111:10000	10000	2013	540	527	917	435	420	744	416
TORSION1:10000	10000	2013	540	527	917	435	420	744	416
TORSION2:10000	10000	2013	540	527	917	435	420	744	416
TORSIONC:10000	10000	4105	360	306	487	211	219	193	262
TORSIOND:10000	10000	4105	360	306	487	211	219	193	262
TORSION3:10000	10000	4189	366	339	238	236	192	206	318
TORSION4:10000	10000	4189	366	339	238	236	192	206	318
TORSIONE:10000	10000	6685	192	195	143	141	162	130	207
TORSIONF:10000	10000	6685	192	195	143	141	162	130	207
TORSION5:10000	10000	6720	210	202	134	146	168	141	200
TORSION6:10000	10000	6720	210	202	134	146	168	141	200
WOODS:10000	10000	—	540	336	446	186	197	235	234
DRCV1LQ:10816	10816	816	31560	—	—	—	—	14678	—
JNLBRNG1:12500	12500	4277	975	811	883	695	599	1218	583
JNLBRNGA:12500	12500	4469	1077	920	1141	527	671	516	512
JNLBRNG2:12500	12500	5197	2010	1439	1692	824	810	1109	809
JNLBRNGB:12500	12500	5630	6039	3490	5110	3920	4003	2808	5342
OBSTCLBL:12500	12500	4623	354	288	274	212	224	224	172
OBSTCLBM:12500	12500	4623	354	288	274	212	224	224	172
OBSTCLBU:12500	12500	4623	354	288	274	212	224	224	172

problem	dim	nact	nf+2*ng best	nf for solver					
				lmb	asa	lt6	lt4	asb	lt2
OBSTCLAE:12500	12500	6481	390	387	385	226	177	258	162
OBSTCLAL:12500	12500	6481	390	387	385	226	177	258	162
ODC:14544	14544	544	1235	807	1361	571	592	3497	453
SSC:14544	14544	544	896	480	279	325	321	747	377
NOBNDTOR:14884	14884	1758	777	702	1761	479	530	487	351
TORSIONA:14884	14884	2618	654	633	1110	344	444	423	490
TORSIONB:14884	14884	2618	654	633	1110	344	444	423	490
TORSION111:14884	14884	2830	624	587	1667	388	521	398	670
TORSION1:14884	14884	2830	624	587	1667	388	521	398	670
TORSION2:14884	14884	2830	624	587	1667	388	521	398	670
TORSIONC:14884	14884	6034	417	382	391	305	259	365	357
TORSIOND:14884	14884	6034	417	382	391	305	259	365	357
TORSION3:14884	14884	6137	435	329	414	244	242	255	346
TORSION4:14884	14884	6137	435	329	414	244	242	255	346
TORSIONE:14884	14884	9868	264	225	163	173	191	138	237
TORSIONF:14884	14884	9868	264	225	163	173	191	138	237
TORSION5:14884	14884	9914	264	277	252	205	175	145	269
TORSION6:14884	14884	9914	264	277	252	205	175	145	269
FMINSRF2:15625	15625	—	774	453	491	268	268	601	265
FMINSURF:15625	15625	—	774	461	491	263	262	548	261
LMSURF:15625	15625	496	2838	2385	2263	952	972	—	973
NLMSURF:15625	15625	496	30635	—	26254	11020	11525	—	10239
BOXPOWER:20000	20000	—	30	27	12	16	16	16	26
MODBEALE:20000	20000	—	762	382	411	596	651	371	637
MCCORMCK:50000	50000	1	54	45	24	24	24	66	24
BOX:100000	100000	—	201	109	169	314	519	82	368
INDEFM:100000	100000	—	898	—	366	800	399	—	—
OSCIGRAD:100000	100000	—	2578	—	908	—	—	—	—
DEGTRID:100001	100001	1	6609	—	—	—	—	2203	—
DEGDIAG:100001	100001	100001	3	1	1	1	1	1	1
DEGTRID2:100001	100001	100001	3	1	1	1	1	1	1