

CLKH results for MOM instances

Keld Helsgaun
Roskilde University, Denmark
December 2013

The paper “M. Mestria, L. S. Ochi, and S. de Lima Martins: [GRASP with path relinking for the symmetric Euclidean clustered traveling salesman problem](#). Computers & Operations Research, Vol. 40, Issue 12, pp. 3218–3229 (2013)” provides a suite of test instances for the Euclidean CTSP. These instances have been converted to [GTSPLIB format](#). The current best tour costs found by CLKH are reported below.

Type 1 - Small

Name	Cost
5eil51	437
10eil51	440
15eil51	437
5berlin52	7991
10berlin52	7896
15berlin52	8049
5st70	695
10st70	691
15st70	692
5eil76	559
10eil76	561
15eil76	565
5pr76	108590
10pr76	109538
15pr76	110678
10rat99	1238
25rat99	1269
50rat99	1249
25kroA100	21917
50kroA100	21453
10kroB100	22440
50kroB100	22355
25eil101	663
50eil101	644
25lin105	14438
50lin105	14379
75lin105	14521

Type 1 - Large

<u>Name</u>	<u>Cost</u>
10gil262	2449
25gil262	2457
50gil262	2431
10a280	2663
25a280	2741
50a280	2757
10lin318	42984
25lin318	43374
50lin318	43119
10pr439	109550
25pr439	113086
50pr439	110664
10pcb442	53319
50pcb442	53889
25pcb442	54671
50rat783	9298
100rat783	9298
150rat783	9311
50pr1002	269713
100pr1002	270231
150pr1002	267059
50vm1084	254976
100vm1084	252877
150vm1084	252455
50pcb1173	61338
100pcb1173	61684
150pcb1173	61311
50nrw1379	59368
100nrw1379	59752
150nrw1379	59625

Type 2 - Large

<u>Name</u>	<u>Cost</u>
10C1k.0	12139627
10C1k.1	11979825
10C1k.2	12267700
10C1k.3	11889407
10C1k.4	12271364
10C1k.5	11772045
10C1k.6	11387266
10C1k.7	11213543
10C1k.8	11629771
10C1k.9	11837338

Type 3 - Large

<u>Name</u>	<u>Cost</u>
6i300	774
6i350	894
6i400	885
6i450	945
6i500	1063
20i550	1419
20i600	1475
20i650	1545
20i700	1625
25i750	1694
25i850	1882
25i900	1949
30i950	2072
30i1000	2144

Type 4 - Large

<u>Name</u>	<u>Cost</u>
4i200a	21640
4i200h	10737
4i200x1	10894
4i200x2	10894
4i200z	10894
4i400a	29667
4i400h	15362
4i400x1	15156
4i400x2	15156
4i400z	15156
8i600a	52268
8i600h	18552
8i600x1	18891
8i600x2	18891
8i600z	18891
8i1000a	66066
8i1000h	24372
8i1000x1	24372
8i1000x2	24372
8i1000z	23826
10i1400a	88379
10i1400h	28276
10i1400x1	28276
10i1400x2	28231
10i1400z	28231
10i2000a	105364
10i2000h	33708
10i2000x1	33792
10i2000x2	33509
10i2000z	33509
20i2400a	163820
20i2400h	37884
20i2400x1	37506
20i2400x2	37506
20i2400z	37823
20i3000a	182520
20i3000h	42144
20i3000x1	41673
20i3000x2	41673
20i3000z	42109

Type 5 - Small

<u>Name</u>	<u>Cost</u>
5i30-17	5193
7i30-17	7940
10i30-17	6772
5i45-18	6879
7i45-18	7478
10i45-18	8258
5i60-21	7824
7i60-21	8623
10i60-21	9317
5i65-21	7680
7i65-21	8732
10i65-21	9740
5i70-21	7793
7i70-21	9013
10i70-21	9746
5i75-22	7302
10i75-22	9180
5i90-33	6676
5i120-46	7554
10i90-33	8609
10i120-46	9729

Type 5 - Large

<u>Name</u>	<u>Cost</u>
5i300-108	8410
10i300-109	9593
15i300-110	11678
20i300-111	13539
25i300-112	14586
5i400-205	7936
10i400-206	10754
15i400-207	12449
20i400-208	14410
25i400-209	15517
5i500-304	7900
10i500-305	11345
15i500-306	13018
20i500-307	14326
25i500-308	15947
10i1000-407	11605
20i1000-408	15167
50i1000-409	21746
100i1000-410	27877
150i1000-411	32039
10i1500-503	11116
20i1500-504	15698
50i1500-505	22900
100i1500-506	29799
150i1500-507	34068
20i2000-602	16176
50i2000-603	23420
100i2000-604	30529
150i2000-605	35448
200i2000-606	38973
20i2500-706	16693
50i2500-707	23351
100i2500-708	30893
150i2500-709	36322
200i2500-710	41135
20i3000-801	16960
50i3000-802	23571
100i3000-803	32750
150i3000-804	36901
200i3000-805	41825

Type 6 - Small

Name	Cost
4eil51-2x2	429
9eil51-3x3	445
12eil51-3x4	441
16eil51-4x4	438
20eil51-4x5	441
25eil51-5x5	437
4berlin52-2x2	8232
6berlin52-2x3	8236
8berlin52-2x4	8412
10berlin52-2x5	9267
6st70-2x3	706
9st70-3x3	703
12st70-3x4	701
16st70-4x4	714
20st70-4x5	718
4eil76-2x2	557
9eil76-3x3	560
12eil76-3x4	562
16eil76-4x4	562
20eil76-4x5	562
25eil76-5x5	557
4pr76-2x2	112071
6pr76-2x3	112573
9pr76-3x3	109123
12pr76-3x4	109164
15pr76-3x5	115960
18pr76-3x6	117406
25rat99-5x5	1377
42rat99-6x7	1318
28kroA100-4x7	25372
30kroB100-5x6	25244
35kroB100-5x5	24626
9eil101-3x3	659
25eil101-5x5	671
36eil101-6x6	658
2lin105-2x1	14627
16lin105-4x4	16516

Type 6 - Large

Name	Cost
9gil262-3x3	2531
25gil262-5x5	2564
49gil262-7x7	2588
9a280-3x3	2769
25a280-5x5	2942
42a280-6x7	2805
9lin318-3x3	43979
25lin318-5x5	44902
49lin318-7x7	43772
9pr439-3x3	112817
18pr439-3x6	117645
20pr439-4x5	115890
9pcb442-3x3	53437
25pcb442-5x5	53935
36pcb442-6x6	55269
49rat783-7x7	9536
100rat783-10x10	10015
144rat783-12x12	9908
36pr1002-6x6	281859
42pr1002-6x7	284686
49pr1002-7x7	278441
49vm1084-7x7	257631
72vm1084-8x9	267918
81vm1084-9x9	266125
49pcb1173-7x7	61600
100prb1173-10x10	63382
144pcb1173-12x12	62142
10nrw1379-2x5	58783
12nrw1379-2x6	59129
12nrw1379-3x4	58439