

Appendix to “Creeping motion of a sphere along the axis of a closed axisymmetric container.”

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The following tables give numerical results for Fig. 3 of the article, namely the values of the drag coefficient f_{zz}^T for a sphere translating along the axis of a closed cylindrical container. The value of f_{zz}^T is given in term of ε , the gap between the sphere and the nearest plane normalized by the sphere radius. The columns in the tables correspond to different values of R , the cylinder radius normalized by the sphere radius. Each table corresponds to a different value of L , the cylinder half-length normalized by the sphere radius.

ε	$R = 10$	$R = 15$	$R = 20$	$R = 25$	
5.0	1.3322475	1.3131999	1.3128777	1.3128773	
4.9	1.332427	1.313397	1.3130751	1.3130745	
4.8	1.3329663	1.313989	1.3136681	1.3136678	
4.7	1.3338683	1.3149785	1.3146594	1.3146589	
4.6	1.3351378	1.3163699	1.3160532	1.3160529	
4.5	1.3367813	1.3181694	1.3178558	1.3178556	
4.4	1.3388078	1.320385	1.3200753	1.3200759	
4.3	1.341228	1.3230269	1.3227216	1.3227219	
4.2	1.344055	1.3261072	1.3258069	1.3258064	
4.1	1.3473045	1.3296403	1.3293457	1.3293474	
4.0	1.3509945	1.3336433	1.3333549	1.3333574	
3.9	1.355146	1.3381358	1.3378542	1.3378576	
3.8	1.359783	1.3431403	1.342866	1.3428684	
3.7	1.364933	1.3486827	1.348416	1.348421	
3.6	1.3706272	1.3547926	1.354534	1.3545375	
3.5	1.376901	1.3615036	1.361254	1.3612688	
3.4	1.3837945	1.3688542	1.3686139	1.3686228	
3.3	1.3913534	1.376888	1.3766576	1.3766213	
3.2	1.3996295	1.3856551	1.3854258	1.3854564	
3.1	1.4086814	1.3952117	1.3950031	1.3950398	
3.0	1.4185763	1.4056233	1.4054427	1.4054825	
ε	$R = 30$	$R = 35$	$R = 40$	$R = 45$	$R = 50$
5.0	1.3128795	1.3129034	1.3129528	1.3130697	1.3134148
4.9	1.3130797	1.3130969	1.3131159	1.3132457	1.3135522
4.8	1.31367	1.3136906	1.3139624	1.3138909	1.3142932
4.7	1.3146623	1.314685	1.3147736	1.3149064	1.3152692
4.6	1.3160628	1.3160793	1.316153	1.3162628	1.3164874
4.5	1.3178641	1.3178863	1.317979	1.3180519	1.3184638
4.4	1.3200833	1.3201087	1.3199531	1.3203879	1.3206092
4.3	1.3227203	1.3227836	1.3228257	1.3232607	1.3234959
4.2	1.3258149	1.3259036	1.3260422	1.3261794	1.326566
4.1	1.3293675	1.3273173	1.3272688	1.3297684	1.3301588
4.0	1.3333797	1.3334894	1.333402	1.333941	1.3348821
3.9	1.3378825	1.3379715	1.3384176	1.3384609	1.3389241
3.8	1.3429011	1.3429576	1.3432772	1.3435566	1.3441046
3.7	1.3484516	1.3485889	1.3488265	1.3493053	1.3497472
3.6	1.3545544	1.354759	1.3548353	1.3553338	1.3559929
3.5	1.361325	1.3614488	1.3618074	1.3622249	1.3628517
3.4	1.3686502	1.3688844	1.369302	1.3697355	1.3703675
3.3	1.3767234	1.3771139	1.3774295	1.3781089	1.3787678
3.2	1.3855857	1.3858157	1.3864267	1.3866501	1.3875846
3.1	1.3951652	1.3948307	1.3961327	1.3965592	1.3982555
3.0	1.4063539	1.4065774	1.406631	1.4074954	1.4074979

Table 1: L= 6

ε	$R = 10$	$R = 15$	$R = 20$	$R = 25$	
7.0	1.2784693	1.2245857	1.2195885	1.219383	
6.8	1.2786498	1.2248663	1.2198807	1.2196757	
6.6	1.2791945	1.2257108	1.2207599	1.2205565	
6.4	1.2801137	1.2271274	1.2222338	1.2220331	
6.2	1.2814248	1.22913	1.2243157	1.2241187	
6.0	1.2831524	1.2317383	1.2270246	1.2268322	
5.8	1.2853291	1.2349789	1.2303858	1.230199	
5.6	1.2879958	1.2388851	1.2344314	1.2342511	
5.4	1.2912029	1.2434984	1.2392013	1.2390281	
5.2	1.2950113	1.2488694	1.2447446	1.2445792	
5.0	1.2994937	1.2550591	1.2511203	1.2509635	
4.8	1.3047365	1.2621412	1.2584002	1.2582524	
4.6	1.310842	1.2702039	1.2666704	1.2665317	
4.4	1.3179316	1.2793533	1.2760354	1.2759072	
4.2	1.3261494	1.2897172	1.2866195	1.2865038	
4.0	1.3356674	1.3014504	1.2985766	1.2984715	
3.8	1.3466921	1.3147413	1.3120935	1.312	
3.6	1.3594736	1.3298213	1.3273982	1.3273196	
3.4	1.3743172	1.3469769	1.3447756	1.3447125	
3.2	1.3916007	1.3665671	1.3645819	1.3645528	
3.0	1.4117975	1.3890438	1.3872659	1.3872905	
ε	$R = 30$	$R = 35$	$R = 40$	$R = 45$	$R = 50$
7.0	1.2193814	1.2193813	1.2193816	1.2193964	1.219409
6.8	1.2196742	1.2196731	1.2196713	1.219683	1.2197051
6.6	1.2205549	1.220555	1.2205536	1.2205672	1.2205038
6.4	1.2220316	1.2220307	1.2220329	1.222045	1.2220858
6.2	1.2241172	1.2241174	1.2241198	1.2241272	1.2241693
6.0	1.2268309	1.2268321	1.2268264	1.2270022	1.22688
5.8	1.2301978	1.2302054	1.2302251	1.2302304	1.2302742
5.6	1.2342496	1.234251	1.234279	1.2342809	1.2349952
5.4	1.2390262	1.2390335	1.2389682	1.239095	1.2391788
5.2	1.2445801	1.2445784	1.2447491	1.2446994	1.2447969
5.0	1.2509673	1.2509663	1.2510089	1.25106	1.2512255
4.8	1.2582546	1.258264	1.258327	1.2584156	1.2594405
4.6	1.2665368	1.2666331	1.266668	1.2667501	1.2668913
4.4	1.275913	1.2759468	1.2760626	1.2761641	1.2764278
4.2	1.2865174	1.2865736	1.2866437	1.2869464	1.28707
4.0	1.2984949	1.2983569	1.298775	1.2988779	1.2992938
3.8	1.3120733	1.3121269	1.3126245	1.3126725	1.3131871
3.6	1.3273831	1.3276254	1.3275944	1.3283175	1.3280261
3.4	1.3448066	1.3450599	1.3453507	1.3463681	1.3466401
3.2	1.3647661	1.365059	1.3652118	1.3664409	1.3692706
3.0	1.3874853	1.3880398	1.3882185	1.3880276	1.3908856

Table 2: L= 8

ε	$R = 10$	$R = 15$	$R = 20$	$R = 25$	
9.0	1.2661422	1.1864773	1.1708923	1.1688804	
8.7	1.2662354	1.1867335	1.1711974	1.1691927	
8.4	1.2665196	1.1875065	1.1721166	1.1701331	
8.1	1.2670093	1.1888101	1.1736615	1.171713	
7.8	1.2677287	1.1906673	1.175852	1.1739518	
7.5	1.2687134	1.1931115	1.1787168	1.1768773	
7.2	1.2700111	1.1961871	1.1822945	1.180527	
6.9	1.2716838	1.1999507	1.186635	1.1849497	
6.6	1.27381	1.2044731	1.1918011	1.1902068	
6.3	1.2764875	1.2098418	1.1978715	1.1963757	
6.0	1.2798376	1.2161639	1.2049435	1.2035518	
5.7	1.2840099	1.2235706	1.2131382	1.2118546	
5.4	1.2891884	1.2322233	1.2226062	1.2214336	
5.1	1.2956007	1.2423213	1.2335358	1.2324751	
4.8	1.3035288	1.2541133	1.2461645	1.2452156	
4.5	1.3133254	1.267913	1.2607983	1.2599565	
4.2	1.3254362	1.2841221	1.2778192	1.27709	
3.9	1.3404323	1.3032628	1.2977482	1.2970914	
3.6	1.3590596	1.3260288	1.3212676	1.3207397	
3.3	1.3823142	1.3533597	1.3493106	1.3489689	
3.0	1.4115623	1.3865676	1.3831949	1.3830521	
ε	$R = 30$	$R = 35$	$R = 40$	$R = 45$	$R = 50$
9.0	1.1687327	1.1687288	1.1687289	1.1687291	1.1687301
8.7	1.1690455	1.1690417	1.1690416	1.1690418	1.1690423
8.4	1.1699877	1.1699839	1.1699839	1.1699839	1.1699865
8.1	1.1715704	1.171567	1.1715668	1.1715668	1.1715705
7.8	1.1738131	1.1738096	1.1738097	1.1738102	1.1738223
7.5	1.1767434	1.1767401	1.176745	1.1767431	1.1767487
7.2	1.1803989	1.1803959	1.1803966	1.180399	1.1804102
6.9	1.1848282	1.1848253	1.1848264	1.1848373	1.1848464
6.6	1.1900926	1.1900901	1.1900926	1.1901059	1.1901155
6.3	1.196269	1.1962668	1.1962702	1.1962866	1.196303
6.0	1.2034536	1.2034631	1.2034654	1.203486	1.2036263
5.7	1.2117646	1.2117663	1.2117858	1.2118119	1.2118565
5.4	1.2213513	1.2213583	1.2213942	1.2214282	1.2211161
5.1	1.2324059	1.2324155	1.2324425	1.2324463	1.2326211
4.8	1.2451562	1.2451821	1.2450341	1.2453379	1.2455498
4.5	1.259921	1.2599451	1.260008	1.2601684	1.2607833
4.2	1.2770674	1.2771158	1.2772812	1.2773789	1.2778576
3.9	1.2971916	1.2971821	1.2974555	1.2977703	1.2981825
3.6	1.3207741	1.3209939	1.3212398	1.3219513	1.3243986
3.3	1.3490217	1.3493585	1.3496597	1.3513891	1.3506701
3.0	1.3832962	1.3839177	1.3840924	1.3883866	1.381051

Table 3: $L= 10$

ε	$R = 10$	$R = 15$	$R = 20$	$R = 25$	
14.0	1.263238	1.1640279	1.1262166	1.112397	
13.4	1.2632421	1.1641078	1.1264083	1.1126503	
12.9	1.2632555	1.1643536	1.1269897	1.1134155	
12.3	1.2632819	1.1647837	1.12798	1.1147087	
11.8	1.2633282	1.1654299	1.1294118	1.1165575	
11.2	1.2634063	1.1663392	1.1313322	1.1190018	
10.7	1.2635351	1.1675761	1.1338049	1.122096	
10.2	1.2637446	1.1692262	1.1369119	1.125911	
9.6	1.2640812	1.1714007	1.1407576	1.1305382	
9.1	1.2646154	1.1742425	1.1454733	1.1360944	
8.5	1.2654541	1.1779342	1.1512246	1.142729	
8.0	1.2667559	1.1827092	1.158221	1.1506344	
7.4	1.2687548	1.1888675	1.1667313	1.1600612	
6.8	1.2717919	1.1967975	1.1771053	1.1713411	
6.3	1.2763614	1.2070107	1.1898088	1.1849222	
5.8	1.2831755	1.2201944	1.2054773	1.201423	
5.2	1.2932668	1.2372993	1.2250061	1.2217246	
4.7	1.3081437	1.2596895	1.2497046	1.2471248	
4.1	1.3300651	1.2894202	1.2815717	1.2796264	
3.5	1.3625701	1.3297597	1.323838	1.323695	
3.0	1.4115836	1.3863375	1.3820139	1.3816109	
ε	$R = 30$	$R = 35$	$R = 40$	$R = 45$	$R = 50$
14.0	1.1081471	1.1070897	1.1068839	1.1068551	1.1068529
13.4	1.1084223	1.1073707	1.1071662	1.1071375	1.1071353
12.9	1.1092526	1.1082184	1.1080175	1.1079894	1.1079872
12.3	1.1106527	1.109647	1.1094519	1.1094247	1.1094226
11.8	1.1126475	1.1116806	1.1114935	1.1114675	1.1114655
11.2	1.1152737	1.114355	1.1141777	1.1141532	1.1141514
10.7	1.1185815	1.117719	1.1175532	1.1175304	1.1175288
10.2	1.1226368	1.1218373	1.1216843	1.1216635	1.1216621
9.6	1.1275258	1.1267943	1.1266551	1.1266358	1.1266349
9.1	1.1333591	1.132699	1.1325742	1.1325581	1.1325583
8.5	1.14028	1.1396932	1.1395831	1.1395693	1.1395707
8.0	1.1484746	1.1479611	1.1478669	1.1478557	1.1478214
7.4	1.1581877	1.15775	1.1576637	1.1576608	1.1576794
6.8	1.1697449	1.169373	1.1693075	1.1693092	1.1693339
6.3	1.1835897	1.183285	1.1832428	1.1832418	1.1833125
5.8	1.2003353	1.2000996	1.2000549	1.2000465	1.2002511
5.2	1.2208702	1.2206741	1.2207264	1.2207548	1.2209084
4.7	1.2465126	1.2464464	1.2465258	1.2466546	1.2468094
4.1	1.2792605	1.2793681	1.2794098	1.2797351	1.2804762
3.5	1.3224903	1.3226707	1.3226058	1.3228505	1.3241926
3.0	1.3813872	1.3823348	1.3832457	1.3839347	1.3882486

Table 4: $L= 15$

ε	$R = 10$	$R = 15$	$R = 20$	$R = 25$	
19.0	1.2632139	1.1624334	1.1184324	1.0963929	
18.2	1.263214	1.1624438	1.1184987	1.0965337	
17.4	1.2632141	1.1624774	1.1187036	1.0969626	
16.6	1.2632145	1.1625415	1.1190654	1.0976992	
15.8	1.2632155	1.1626501	1.1196158	1.0987773	
15.0	1.2632179	1.1628255	1.1204018	1.1002458	
14.2	1.2632236	1.1631025	1.1214892	1.102171	
13.4	1.2632366	1.1635336	1.1229658	1.1046394	
12.6	1.2632654	1.1641961	1.1249472	1.1077618	
11.8	1.2633272	1.1652032	1.1275845	1.1116794	
11.0	1.2634567	1.1667178	1.1310736	1.116573	
10.2	1.2637205	1.1689728	1.1356698	1.1226757	
9.4	1.2642479	1.1722983	1.1417084	1.1302933	
8.6	1.2652726	1.1771606	1.1496366	1.139837	
7.8	1.2672199	1.1842199	1.160065	1.1518749	
7.0	1.2708367	1.1944226	1.173853	1.167223	
6.2	1.2774038	1.2091569	1.1922749	1.1870999	
5.4	1.289064	1.2305441	1.2172716	1.2134373	
4.6	1.3098052	1.2619794	1.2522457	1.249535	
3.8	1.3462563	1.3098953	1.3027587	1.3014216	
3.0	1.4117012	1.3867299	1.3823599	1.3824691	
ε	$R = 30$	$R = 35$	$R = 40$	$R = 45$	$R = 50$
19.0	1.0856873	1.0809427	1.0790648	1.0784081	1.0782079
18.2	1.0858814	1.0811646	1.0792986	1.0786464	1.0784475
17.4	1.0864693	1.0818353	1.0800049	1.0793657	1.0791711
16.6	1.0874683	1.0829701	1.0811978	1.0805799	1.0803921
15.8	1.0889079	1.0845952	1.0829018	1.0823128	1.0821341
15.0	1.0908311	1.0867488	1.0851529	1.0845995	1.0844321
14.2	1.0932961	1.0894835	1.0880009	1.0874887	1.0873342
13.4	1.0963796	1.0928691	1.0915124	1.0910457	1.0909055
12.6	1.1001804	1.0969968	1.095775	1.0953568	1.0952317
11.8	1.1048258	1.1019856	1.100904	1.1005358	1.1004264
11.0	1.1104806	1.1079916	1.1070517	1.1067337	1.1066399
10.2	1.1173604	1.1152216	1.1144213	1.1141541	1.1140744
9.4	1.1257529	1.1239547	1.1232887	1.1230668	1.1230025
8.6	1.1360502	1.1345751	1.1340346	1.1338579	1.1338094
7.8	1.1488023	1.147626	1.1472037	1.1470694	1.1470402
7.0	1.1648089	1.1639031	1.1635671	1.1634988	1.1638032
6.2	1.1852774	1.1846095	1.1843905	1.1843897	1.1845184
5.4	1.2121512	1.2116665	1.2118267	1.2116491	1.2117802
4.6	1.2487266	1.2485256	1.2486176	1.2487851	1.2491461
3.8	1.3025083	1.3013893	1.3011433	1.3020547	1.3022928
3.0	1.3823579	1.3852813	1.3833722	1.3840284	1.3839891

Table 5: $L= 20$

ε	$R = 10$	$R = 15$	$R = 20$	$R = 25$	
24.0	1.2632139	1.1623593	1.1173898	1.0926448	
22.9	1.2632139	1.16236	1.1174045	1.0927008	
21.9	1.2632139	1.1623625	1.1174515	1.0928744	
20.9	1.2632139	1.1623681	1.1175403	1.0931827	
19.8	1.2632139	1.1623795	1.1176878	1.0936552	
18.8	1.2632139	1.1624022	1.1179215	1.0943365	
17.7	1.263214	1.1624459	1.1182829	1.0952886	
16.6	1.2632145	1.1625288	1.1188334	1.0965953	
15.6	1.2632159	1.162683	1.1196616	1.098368	
14.6	1.2632207	1.1629644	1.120894	1.1007527	
13.5	1.2632344	1.1634682	1.1227094	1.1039415	
12.4	1.2632742	1.1643542	1.1253585	1.108187	
11.4	1.263381	1.1658843	1.1291917	1.1138259	
10.3	1.2636564	1.16848	1.1346999	1.1213161	
9.3	1.2643412	1.1728107	1.1425799	1.1312987	
8.2	1.2659789	1.1799309	1.1538443	1.1447096	
7.2	1.2697124	1.1915111	1.1700302	1.1629929	
6.2	1.2779551	1.2102608	1.193628	1.1885292	
5.1	1.29556	1.2409147	1.2290585	1.2256884	
4.0	1.3327225	1.2926223	1.2852967	1.2833921	
3.0	1.409802	1.3874369	1.384103	1.3834692	
ε	$R = 30$	$R = 35$	$R = 40$	$R = 45$	$R = 50$
24.0	1.07823	1.070009	1.0655732	1.0633407	1.0622994
22.9	1.0783379	1.0701594	1.0657509	1.0635335	1.0624997
21.9	1.0786677	1.0706161	1.0662891	1.0641167	1.063105
20.9	1.0792382	1.0713963	1.0672029	1.0651038	1.0641283
19.8	1.0800813	1.072529	1.0685182	1.0665189	1.0655923
18.8	1.0812437	1.074057	1.0702731	1.068397	1.0675305
17.7	1.082789	1.0760378	1.0725198	1.0707865	1.0699894
16.6	1.0848006	1.0785473	1.0753272	1.0737523	1.0730315
15.6	1.0873864	1.0816837	1.0787858	1.0773801	1.0767403
14.6	1.0906849	1.0855738	1.0830138	1.0817832	1.0812266
13.5	1.0948751	1.0903827	1.0881672	1.0871125	1.0866386
12.4	1.1001907	1.0963286	1.0944547	1.093572	1.0931785
11.4	1.1069432	1.103706	1.1021617	1.1014422	1.1011243
10.3	1.1155592	1.1129245	1.1116894	1.1111203	1.1108724
9.3	1.1266448	1.1245722	1.1236182	1.1231881	1.1230008
8.2	1.1410882	1.1395346	1.1389031	1.1385196	1.1383935
7.2	1.1603236	1.1591942	1.1586367	1.1585671	1.1584638
6.2	1.1867062	1.1859798	1.1855691	1.1856029	1.1857916
5.1	1.2245959	1.2240766	1.2239981	1.2241926	1.2243626
4.0	1.282904	1.2830959	1.2855854	1.2827381	1.2836163
3.0	1.3838089	1.3837531	1.3837773	1.3838186	1.384562

Table 6: $L = 25$

ε	$R = 10$	$R = 15$	$R = 20$	$R = 25$	
29.0	1.263214	1.1623573	1.11728	1.0919024	
27.7	1.2632139	1.1623573	1.1172822	1.0919194	
26.4	1.2632136	1.1623574	1.1172899	1.0919735	
25.1	1.2632139	1.1623577	1.117306	1.0920748	
23.8	1.2632144	1.1623585	1.1173364	1.0922415	
22.5	1.2632126	1.1623605	1.1173917	1.0925026	
21.2	1.2632148	1.1623657	1.1174903	1.0929014	
19.9	1.2632159	1.162378	1.1176629	1.0935012	
18.6	1.2632141	1.1624068	1.1179603	1.0943922	
17.3	1.2632137	1.1624715	1.1184644	1.0957014	
16.0	1.2632145	1.162613	1.1193054	1.0976065	
14.7	1.2632193	1.1629133	1.1206873	1.1003543	
13.4	1.2632446	1.1635329	1.122921	1.1042878	
12.1	1.2632981	1.1647757	1.1264838	1.1098875	
10.8	1.2635088	1.1672014	1.1320951	1.117841	
9.5	1.2641597	1.1718221	1.1408549	1.1291656	
8.2	1.2660946	1.1803713	1.1544907	1.1454228	
6.9	1.2714677	1.1959771	1.1758718	1.1693151	
5.6	1.2855877	1.2244464	1.2103815	1.2062361	
4.3	1.3212981	1.2778333	1.2695651	1.2670362	
3.0	1.4163927	1.3887726	1.3849645	1.3845551	
ε	$R = 30$	$R = 35$	$R = 40$	$R = 45$	$R = 50$
29.0	1.0760701	1.0659136	1.0594958	1.0555855	1.0533112
27.7	1.0761184	1.0659998	1.0596154	1.0557296	1.0534711
26.4	1.0762684	1.0662639	1.0599796	1.0561666	1.0539551
25.1	1.0765357	1.0667231	1.0606046	1.0569114	1.0547766
23.8	1.0769477	1.0674072	1.0615183	1.0579891	1.0559587
22.5	1.0775454	1.0683594	1.0627614	1.0594366	1.0575352
21.2	1.0783864	1.0696391	1.0643892	1.0613044	1.0595527
19.9	1.079549	1.0713246	1.0664743	1.063659	1.0620735
18.6	1.0811373	1.0735176	1.069111	1.0665879	1.0651799
17.3	1.0832892	1.07635	1.0724215	1.0702052	1.0689806
16.0	1.0861866	1.0799928	1.0765651	1.0746617	1.0736212
14.7	1.0900711	1.0846715	1.0817541	1.0801606	1.0792992
13.4	1.0952676	1.0906901	1.0882771	1.0869816	1.0862893
12.1	1.1022241	1.09847	1.0965405	1.0955225	1.0949855
10.8	1.1115797	1.1086213	1.1071387	1.1063706	1.1059721
9.5	1.1242901	1.1220696	1.1209616	1.1204376	1.1201554
8.2	1.1418839	1.1403203	1.1395739	1.1392465	1.1390206
6.9	1.1670118	1.1662762	1.1655616	1.1653985	1.1653557
5.6	1.2048197	1.2042621	1.2041896	1.2040751	1.2044865
4.3	1.2668952	1.2669055	1.2670159	1.2672402	1.2675472
3.0	1.3827635	1.3839322	1.3837899	1.3826057	1.3869728

Table 7: $L= 30$

ε	$R = 10$	$R = 15$	$R = 20$	$R = 25$	
34.0	1.263213	1.1623572	1.1172711	1.0917764	
32.5	1.2632148	1.1623572	1.1172713	1.0917805	
30.9	1.2632148	1.1623572	1.1172722	1.0917941	
29.4	1.2632603	1.1623572	1.1172745	1.0918215	
27.8	1.2632227	1.1623573	1.1172794	1.0918711	
26.2	1.263221	1.1623574	1.1172903	1.0919574	
24.7	1.2632133	1.1623578	1.1173131	1.0921045	
23.1	1.2632384	1.1623592	1.1173599	1.0923507	
21.6	1.263218	1.1623636	1.1174538	1.0927569	
20.1	1.2632133	1.162376	1.1176378	1.0934173	
18.5	1.2632241	1.16241	1.1179903	1.0944752	
16.9	1.2632193	1.1625014	1.1186508	1.0961464	
15.4	1.2632171	1.1627245	1.1198598	1.0987516	
13.8	1.2632166	1.1632672	1.1220257	1.1027657	
12.3	1.263289	1.1645272	1.1258235	1.1088931	
10.8	1.263521	1.1673286	1.1323648	1.1182062	
9.2	1.2644399	1.1733462	1.1434866	1.1324075	
7.7	1.2677294	1.185879	1.1623036	1.1544483	
6.1	1.2785087	1.2114633	1.1950003	1.1901253	
4.5	1.3116839	1.2651389	1.2553279	1.2531345	
3.0	1.4116234	1.3890615	1.3856245	1.3845991	
ε	$R = 30$	$R = 35$	$R = 40$	$R = 45$	$R = 50$
34.0	1.0755126	1.0645222	1.0569829	1.0518683	1.0484856
32.5	1.0755306	1.0645646	1.057054	1.0519659	1.0486044
30.9	1.0755878	1.0646964	1.0572723	1.0522639	1.0489653
29.4	1.0756942	1.0649319	1.0576538	1.0527775	1.0495826
27.8	1.0758682	1.0652963	1.0582255	1.053533	1.0504804
26.2	1.0761388	1.0658273	1.0590276	1.0545686	1.0516939
24.7	1.0765488	1.0665782	1.0601148	1.0559365	1.0532714
23.1	1.0771601	1.0676215	1.06156	1.0577053	1.0552765
21.6	1.0780606	1.069054	1.0634584	1.0599644	1.0577926
20.1	1.079373	1.0710044	1.0659336	1.0628296	1.0609283
18.5	1.0812674	1.0736433	1.0691473	1.0664528	1.064828
16.9	1.0839792	1.0771985	1.0733136	1.0710366	1.0696858
15.4	1.0878348	1.0819787	1.0787236	1.0768589	1.0757711
13.8	1.0932929	1.0884138	1.085785	1.0843138	1.0834702
12.3	1.1010152	1.0971249	1.0950956	1.0939849	1.0933603
10.8	1.1119985	1.1090632	1.1075813	1.1067908	1.1063528
9.2	1.1278866	1.125791	1.1248313	1.1242405	1.1239837
7.7	1.1514362	1.1500907	1.149526	1.1491658	1.1490767
6.1	1.1884591	1.1876947	1.1875248	1.1873785	1.1874898
4.5	1.252585	1.2531189	1.252741	1.2526479	1.2528243
3.0	1.3848146	1.3821431	1.3727661	1.3779357	1.3809864

Table 8: $L = 35$

ε	$R = 10$	$R = 15$	$R = 20$	$R = 25$	
39.0	1.2633013	1.1623572	1.1172706	1.0917582	
37.2	1.2631994	1.1623572	1.1172706	1.091759	
35.4	1.2632119	1.1623572	1.1172707	1.0917618	
33.6	1.2573139	1.1623572	1.1172709	1.091768	
31.8	1.2632182	1.1623572	1.1172715	1.0917808	
30.0	1.2632181	1.1623572	1.1172733	1.091806	
28.2	1.2632085	1.1623573	1.1172778	1.0918546	
26.4	1.2632666	1.1623573	1.1172888	1.0919465	
24.6	1.2632148	1.162357	1.1173152	1.0921167	
22.8	1.2632164	1.1623635	1.1173758	1.0924257	
21.0	1.2631801	1.1623675	1.117511	1.0929758	
19.2	1.2632305	1.1623905	1.1178032	1.0939364	
17.4	1.263209	1.1624643	1.1184156	1.0955815	
15.6	1.2631579	1.1626851	1.1196619	1.0983482	
13.8	1.2632406	1.1632933	1.1221173	1.1029253	
12.0	1.2632961	1.1649104	1.1268324	1.1104042	
10.2	1.2637266	1.1689743	1.135661	1.1225667	
8.4	1.2656632	1.1787009	1.152008	1.1424962	
6.6	1.2736317	1.2011891	1.1830759	1.1766804	
4.8	1.3035126	1.2529346	1.243152	1.2406802	
3.0	1.413034	1.3897155	1.385318	1.3830832	
ε	$R = 30$	$R = 35$	$R = 40$	$R = 45$	$R = 50$
39.0	1.0753834	1.0640876	1.0560166	1.0501996	1.0460426
37.2	1.0753891	1.0641059	1.0560543	1.0502598	1.0461242
35.4	1.0754078	1.0641637	1.0561717	1.0504449	1.0463737
33.6	1.0754448	1.0642712	1.0563819	1.0507696	1.0468052
31.8	1.0755101	1.064446	1.0567082	1.0512588	1.0474435
30.0	1.0756205	1.0647163	1.0571853	1.0519493	1.0483242
28.2	1.0758033	1.0651236	1.0578625	1.052892	1.0494963
26.4	1.0761007	1.0657274	1.0588068	1.0541545	1.0510243
24.6	1.0765778	1.0666113	1.0601084	1.0558253	1.0529924
22.8	1.0773326	1.067892	1.061887	1.0580204	1.0555098
21.0	1.0785107	1.0697303	1.0643022	1.0608916	1.0587203
19.2	1.080326	1.072348	1.0675677	1.0646412	1.0628162
17.4	1.0830903	1.0760526	1.071975	1.0695456	1.0680624
15.6	1.0872584	1.0812778	1.0779331	1.0759952	1.0748364
13.8	1.0935024	1.0886535	1.0860406	1.0845679	1.0837042
12.0	1.1028449	1.0991479	1.0972265	1.0961744	1.0955689
10.2	1.1169607	1.1143485	1.1130444	1.1123345	1.1119664
8.4	1.1388094	1.1371662	1.1363815	1.1360258	1.1358209
6.6	1.1745453	1.1737312	1.1732231	1.1731836	1.1732095
4.8	1.2403862	1.239576	1.2394819	1.2488829	1.24016
3.0	1.3838835	1.3790545	1.369764	1.3692954	1.3632752

Table 9: $L=40$

ε	$R = 10$	$R = 15$	$R = 20$	$R = 25$	
44.0	1.2653706	1.1623573	1.1172705	1.091756	
42.0	1.2636363	1.1623572	1.1172705	1.0917562	
39.9	1.2632225	1.1623572	1.1172705	1.0917566	
37.9	1.2631744	1.1623575	1.1172706	1.0917578	
35.8	1.263212	1.1623572	1.1172706	1.0917607	
33.8	1.2629422	1.162357	1.1172708	1.0917672	
31.7	1.2631611	1.1623585	1.1172716	1.0917818	
29.6	1.2632083	1.1623559	1.1172739	1.0918132	
27.6	1.2632363	1.1623574	1.1172804	1.0918791	
25.6	1.2631931	1.1623575	1.1172985	1.0920142	
23.5	1.2632249	1.1623583	1.1173462	1.0922837	
21.4	1.262751	1.1623647	1.1174667	1.0928078	
19.4	1.2631411	1.1623856	1.1177593	1.0938021	
17.4	1.2632136	1.1624693	1.1184398	1.0956408	
15.3	1.2632724	1.1627508	1.1199646	1.0989618	
13.2	1.2631852	1.1636371	1.1232539	1.1048384	
11.2	1.2633978	1.1662868	1.1300889	1.1150958	
9.2	1.2644848	1.1736468	1.1439513	1.1330083	
7.1	1.2702721	1.1930246	1.1720608	1.1653127	
5.0	1.2971836	1.24355	1.232076	1.2291701	
3.0	1.4151897	1.3861952	1.3843487	1.3801174	
ε	$R = 30$	$R = 35$	$R = 40$	$R = 45$	$R = 50$
44.0	1.0753566	1.0639622	1.055668	1.0494913	1.0448677
42.0	1.0753581	1.0639692	1.0556861	1.0495253	1.0449196
39.9	1.0753635	1.0639919	1.0557434	1.0496311	1.0450798
37.9	1.0753749	1.0640362	1.0558495	1.0498209	1.0453616
35.8	1.075397	1.064113	1.0560216	1.050116	1.045788
33.8	1.0754382	1.0642405	1.0562866	1.0505489	1.046393
31.7	1.0755136	1.0644473	1.0566842	1.0511649	1.0472238
29.6	1.0756488	1.0647772	1.0572709	1.0520265	1.0483431
27.6	1.0758868	1.0652962	1.0581261	1.0532175	1.0498338
25.6	1.0762984	1.0661019	1.0593598	1.0548496	1.0518042
23.5	1.0769979	1.0673368	1.0611231	1.0570721	1.0543968
21.4	1.0781663	1.0692071	1.0636244	1.0600853	1.0578027
19.4	1.0800842	1.0720098	1.0671525	1.064164	1.0622832
17.4	1.0831846	1.0761747	1.0721161	1.069696	1.0682108
15.3	1.0881329	1.0823364	1.0791148	1.0772677	1.0761408
13.2	1.0959677	1.0914742	1.0890769	1.0877389	1.0869637
11.2	1.1083933	1.1052003	1.1035747	1.1026798	1.1021719
9.2	1.1285177	1.1264703	1.1254269	1.1250012	1.1247476
7.1	1.1628393	1.1618424	1.1608748	1.1609917	1.1610699
5.0	1.2284106	1.2280828	1.2279919	1.228198	1.2283375
3.0	1.3806455	1.3760939	1.3758432	1.3827683	1.3723708

Table 10: L= 45

ε	$R = 10$	$R = 15$	$R = 20$	$R = 25$	
49.0	1.2630344	1.1623572	1.1172705	1.0917558	
46.7	1.2618913	1.1623572	1.1172705	1.0917559	
44.4	1.2634191	1.1623565	1.1172705	1.0917559	
42.1	1.2644665	1.1623551	1.1172705	1.0917561	
39.8	1.2632371	1.1623571	1.1172705	1.0917567	
37.5	1.2629317	1.1623566	1.1172706	1.0917582	
35.2	1.2631994	1.1623586	1.1172706	1.0917621	
32.9	1.2631525	1.1623609	1.1172711	1.0917719	
30.6	1.2632498	1.1623576	1.1172725	1.0917957	
28.3	1.2632416	1.1623581	1.1172774	1.091851	
26.0	1.263161	1.1623532	1.1172929	1.0919759	
23.7	1.2632449	1.1623641	1.1173389	1.0922486	
21.4	1.2633075	1.1624883	1.117471	1.0928254	
19.1	1.2632173	1.1623937	1.1178266	1.0940063	
16.8	1.2606836	1.1625154	1.118739	1.0963517	
14.5	1.2631137	1.1629841	1.1209621	1.100874	
12.2	1.2633657	1.1646554	1.1261465	1.1093874	
9.9	1.2639405	1.1700783	1.1377166	1.1251654	
7.6	1.2678527	1.1864694	1.1632576	1.1554932	
5.3	1.2917695	1.2342466	1.2228511	1.2186804	
3.0	1.420776	1.5116177	1.3839042	1.3817233	
ε	$R = 30$	$R = 35$	$R = 40$	$R = 45$	$R = 50$
49.0	1.0753516	1.0639288	1.0555497	1.0492055	1.0443272
46.7	1.075352	1.0639312	1.0555576	1.0492232	1.0443581
44.4	1.0753533	1.0639393	1.0555833	1.0492792	1.0444543
42.1	1.0753565	1.063956	1.0556329	1.0493828	1.0446272
39.8	1.0753633	1.0639872	1.0557177	1.0495503	1.0448966
37.5	1.0753775	1.0640435	1.0558565	1.0498074	1.0452924
35.2	1.0754064	1.0641425	1.0560783	1.0501919	1.0458572
32.9	1.0754641	1.0643138	1.0564271	1.0507574	1.0466488
30.6	1.0755765	1.064605	1.056968	1.0515787	1.0477457
28.3	1.0757902	1.0650923	1.0577962	1.0527595	1.0492522
26.0	1.0761882	1.065894	1.0590487	1.0544419	1.0513081
23.7	1.0769127	1.0671922	1.060922	1.0568213	1.0541016
21.4	1.0782026	1.0692629	1.0636966	1.0601691	1.0578917
19.1	1.0804512	1.0725218	1.0677774	1.064871	1.0630458
16.8	1.0842963	1.0775996	1.0737632	1.0714947	1.070112
14.5	1.0907721	1.0854776	1.0825855	1.080932	1.0799531
12.2	1.1016182	1.097788	1.0958013	1.0947021	1.0940743
9.9	1.1200617	1.1174219	1.1163655	1.1157993	1.115385
7.6	1.1528116	1.1513168	1.1508301	1.1508099	1.1506505
5.3	1.217718	1.2172698	1.21705	1.21937	1.2176522
3.0	1.3786737	1.3762726	1.3718023	1.3383316	1.3636838

Table 11: L= 50