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Supporting information for article:

Soft-X-ray refractive index by reconciling total-electron-yield with specular reflection: experimental determination of the optical constants of graphite

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Table S1 Soft X-ray optical constants for HOPG

The optical constants n , k have been determined across the carbon 1s absorption edge (250 eV – 360 eV) by reconciling total electron yield measurements with spectra of specular reflection. The depth-dependence of secondary electron creation was explicitly considered as described in the paper.

Results are given for soft X-ray light incident with p -geometry and s -geometry, respectively. At energies below 250 eV and above 360 eV using a density of carbon of 2.25 g/cm³ the optical constants are those from Henke *et al.* (1993; http://henke.lbl.gov/optical_constants).

p -geometry

Energy (eV)	n_p	k_p
50.56	0.881671	0.042585
51.38	0.885366	0.040572
52.21	0.888968	0.038655
53.06	0.892515	0.036828
53.92	0.895977	0.035200
54.79	0.899268	0.033732
55.67	0.902389	0.032324
56.57	0.905380	0.030975
57.49	0.908251	0.029682
58.42	0.911010	0.028444
59.36	0.913656	0.027257
60.32	0.916175	0.026120
61.30	0.918563	0.024976
62.29	0.920910	0.023755
63.30	0.923257	0.022594
64.32	0.925561	0.021489
65.36	0.927813	0.020439
66.42	0.930011	0.019439
67.49	0.932153	0.018489
68.59	0.934238	0.017585
69.70	0.936267	0.016726
70.82	0.938240	0.015908
71.97	0.940157	0.015130
73.13	0.942020	0.014391
74.32	0.943830	0.013687
75.52	0.945588	0.013018
76.74	0.947295	0.012382
77.98	0.948952	0.011776
79.24	0.950561	0.011201
80.52	0.952122	0.010653
81.83	0.953637	0.010132
83.15	0.955106	0.009637
84.49	0.956532	0.009166
85.86	0.957916	0.008718
87.25	0.959257	0.008292
88.66	0.960559	0.007886
90.09	0.961821	0.007501

91.55	0.963045	0.007134
93.03	0.964232	0.006785
94.54	0.965383	0.006454
96.07	0.966499	0.006138
97.62	0.967581	0.005838
99.20	0.968630	0.005553
100.80	0.969647	0.005281
102.43	0.970633	0.005023
104.09	0.971589	0.004777
105.77	0.972515	0.004544
107.48	0.973413	0.004322
109.22	0.974284	0.004111
110.99	0.975127	0.003910
112.78	0.975945	0.003718
114.61	0.976738	0.003537
116.46	0.977506	0.003364
118.35	0.978251	0.003199
120.26	0.978972	0.003043
122.21	0.979672	0.002894
124.18	0.980350	0.002753
126.19	0.981007	0.002618
128.23	0.981643	0.002490
130.31	0.982259	0.002368
132.41	0.982854	0.002253
134.56	0.983432	0.002137
136.73	0.983994	0.002028
138.94	0.984541	0.001924
141.19	0.985072	0.001825
143.47	0.985587	0.001732
145.79	0.986087	0.001643
148.15	0.986573	0.001559
150.55	0.987044	0.001479
152.98	0.987501	0.001403
155.46	0.987945	0.001331
157.97	0.988376	0.001263
160.53	0.988794	0.001198
163.12	0.989200	0.001137
165.76	0.989595	0.001079
168.44	0.989978	0.001023
171.17	0.990351	0.000971
173.94	0.990713	0.000921
176.75	0.991064	0.000874
179.61	0.991406	0.000829
182.51	0.991739	0.000787
185.47	0.992061	0.000746
188.47	0.992375	0.000703
191.51	0.992684	0.000662
194.61	0.992987	0.000623
197.76	0.993284	0.000587
200.96	0.993576	0.000553
204.21	0.993862	0.000520
207.51	0.994143	0.000490
210.87	0.994420	0.000461
214.28	0.994693	0.000434
217.74	0.994963	0.000409
221.27	0.995232	0.000385

224.84	0.995499	0.000364
228.48	0.995766	0.000343
232.18	0.996034	0.000324
235.93	0.996306	0.000306
239.75	0.996583	0.000289
243.63	0.996869	0.000273
247.57	0.997166	0.000257
250.03	0.997358	0.000246
250.03	0.997358	0.000246
250.53	0.997398	0.000244
251.03	0.997437	0.000241
251.54	0.997478	0.000238
252.03	0.997518	0.000235
252.53	0.997560	0.000232
253.04	0.997602	0.000229
253.53	0.997644	0.000226
254.04	0.997688	0.000223
254.53	0.997731	0.000220
255.04	0.997775	0.000217
255.53	0.997819	0.000215
256.03	0.997865	0.000211
256.54	0.997912	0.000209
257.03	0.997957	0.000206
257.53	0.998004	0.000203
258.03	0.998052	0.000201
258.53	0.998101	0.000198
259.03	0.998150	0.000196
259.53	0.998200	0.000193
260.04	0.998252	0.000190
260.53	0.998303	0.000188
261.03	0.998356	0.000185
261.54	0.998410	0.000183
262.03	0.998465	0.000180
262.53	0.998521	0.000178
263.03	0.998579	0.000176
263.53	0.998637	0.000174
264.03	0.998697	0.000171
264.54	0.998759	0.000169
265.03	0.998821	0.000167
265.53	0.998885	0.000164
266.03	0.998952	0.000162
266.53	0.999019	0.000160
267.03	0.999089	0.000158
267.54	0.999161	0.000156
268.04	0.999236	0.000153
268.53	0.999312	0.000151
269.03	0.999391	0.000149
269.54	0.999474	0.000147
270.04	0.999559	0.000145
270.53	0.999644	0.000143
271.03	0.999742	0.000129
271.53	0.999844	0.000140
272.03	0.999941	0.000138
272.53	1.000046	0.000136
273.03	1.000156	0.000134
273.53	1.000272	0.000133

274.04	1.000396	0.000131
274.54	1.000527	0.000129
275.04	1.000665	0.000128
275.53	1.000811	0.000126
276.03	1.000970	0.000125
276.54	1.001140	0.000124
277.03	1.001324	0.000122
277.54	1.001525	0.000122
278.03	1.001742	0.000121
278.54	1.001984	0.000120
279.04	1.002254	0.000120
279.53	1.002551	0.000121
280.04	1.002900	0.000120
280.14	1.002968	0.000120
280.24	1.003045	0.000120
280.34	1.003125	0.000121
280.44	1.003206	0.000122
280.53	1.003289	0.000122
280.63	1.003375	0.000123
280.74	1.003466	0.000124
280.83	1.003557	0.000124
280.94	1.003653	0.000126
281.04	1.003753	0.000127
281.14	1.003855	0.000128
281.24	1.003962	0.000130
281.34	1.004072	0.000132
281.44	1.004187	0.000133
281.54	1.004307	0.000136
281.63	1.004432	0.000138
281.74	1.004563	0.000142
281.84	1.004699	0.000145
281.94	1.004841	0.000149
282.04	1.004992	0.000153
282.13	1.005134	0.000158
282.24	1.005313	0.000165
282.33	1.005485	0.000173
282.44	1.005669	0.000181
282.53	1.005861	0.000190
282.64	1.006067	0.000201
282.74	1.006284	0.000215
282.83	1.006510	0.000233
282.94	1.006759	0.000249
283.03	1.007008	0.000269
283.14	1.007291	0.000290
283.23	1.007571	0.000312
283.33	1.007894	0.000334
283.43	1.008238	0.000354
283.53	1.008612	0.000373
283.64	1.009040	0.000390
283.73	1.009499	0.000407
283.84	1.010039	0.000423
283.94	1.010671	0.000447
284.04	1.011382	0.000482
284.14	1.012218	0.000537
284.24	1.013261	0.000638
284.34	1.014536	0.000875

284.44	1.016050	0.001368
284.53	1.017739	0.002140
284.64	1.019727	0.003332
284.74	1.021900	0.005169
284.84	1.024140	0.007992
284.93	1.025892	0.011979
285.04	1.026438	0.017583
285.14	1.024637	0.023954
285.23	1.020582	0.028935
285.34	1.015233	0.032047
285.44	1.010149	0.033198
285.54	1.004680	0.034503
285.64	0.998832	0.033619
285.74	0.993423	0.031042
285.84	0.989241	0.026724
285.94	0.987056	0.021414
286.04	0.987059	0.016360
286.14	0.988706	0.012550
286.24	0.990852	0.010599
286.34	0.992545	0.009815
286.44	0.993630	0.009373
286.54	0.994419	0.009006
286.64	0.995007	0.008693
286.74	0.995539	0.008397
286.84	0.996034	0.008160
286.94	0.996504	0.008028
287.04	0.996872	0.008022
287.13	0.997104	0.008092
287.24	0.997214	0.008092
287.34	0.997310	0.008011
287.44	0.997416	0.007954
287.54	0.997482	0.007930
287.64	0.997497	0.007863
287.74	0.997525	0.007736
287.84	0.997588	0.007623
287.93	0.997659	0.007526
288.04	0.997728	0.007448
288.14	0.997788	0.007368
288.24	0.997855	0.007297
288.34	0.997920	0.007244
288.44	0.997966	0.007214
288.54	0.997986	0.007175
288.64	0.997995	0.007118
288.73	0.998017	0.007035
288.84	0.998050	0.006969
288.93	0.998087	0.006889
289.04	0.998138	0.006826
289.14	0.998185	0.006767
289.24	0.998237	0.006709
289.33	0.998291	0.006660
289.44	0.998345	0.006616
289.53	0.998398	0.006570
289.63	0.998456	0.006528
289.73	0.998519	0.006491
289.84	0.998587	0.006455
289.94	0.998657	0.006435

290.04	0.998724	0.006410
290.13	0.998804	0.006386
290.24	0.998891	0.006382
290.34	0.998972	0.006387
290.44	0.999057	0.006392
290.54	0.999148	0.006408
290.64	0.999237	0.006436
290.73	0.999328	0.006466
290.84	0.999433	0.006500
290.94	0.999551	0.006546
291.04	0.999682	0.006618
291.14	0.999842	0.006710
291.24	1.000011	0.006872
291.34	1.000198	0.007091
291.44	1.000339	0.007441
291.54	1.000330	0.007921
291.64	1.000115	0.008401
291.74	0.999692	0.008771
291.84	0.999186	0.008843
291.94	0.998787	0.008668
292.04	0.998616	0.008416
292.14	0.998613	0.008256
292.24	0.998645	0.008250
292.34	0.998589	0.008322
292.44	0.998585	0.008249
292.54	0.998552	0.008448
292.64	0.998407	0.008487
292.74	0.998290	0.008516
292.84	0.998174	0.008534
292.94	0.998068	0.008539
293.04	0.997963	0.008555
293.14	0.997854	0.008547
293.24	0.997756	0.008548
293.34	0.997655	0.008535
293.44	0.997567	0.008521
293.54	0.997485	0.008516
293.64	0.997398	0.008518
293.74	0.997312	0.008514
293.84	0.997225	0.008519
293.94	0.997134	0.008527
294.04	0.997036	0.008537
294.14	0.996929	0.008549
294.24	0.996813	0.008554
294.34	0.996693	0.008555
294.43	0.996562	0.008560
294.54	0.996413	0.008547
294.64	0.996266	0.008514
294.74	0.996109	0.008482
294.84	0.995953	0.008416
294.94	0.995807	0.008343
295.04	0.995667	0.008254
295.14	0.995530	0.008171
295.24	0.995404	0.008049
295.34	0.995287	0.007951
295.44	0.995176	0.007821
295.54	0.995083	0.007698

295.64	0.994997	0.007569
295.74	0.994924	0.007442
295.84	0.994853	0.007321
295.94	0.994787	0.007193
296.04	0.994726	0.007067
296.14	0.994669	0.006935
296.24	0.994621	0.006799
296.34	0.994577	0.006667
296.44	0.994540	0.006523
296.54	0.994511	0.006381
296.64	0.994488	0.006245
296.74	0.994473	0.006100
296.84	0.994473	0.005953
296.94	0.994489	0.005813
297.04	0.994506	0.005687
297.14	0.994524	0.005553
297.24	0.994553	0.005423
297.34	0.994591	0.005293
297.44	0.994643	0.005167
297.53	0.994707	0.005057
297.64	0.994773	0.004962
297.74	0.994837	0.004872
297.84	0.994905	0.004791
297.94	0.994972	0.004722
298.04	0.995034	0.004661
298.14	0.995094	0.004601
298.24	0.995153	0.004548
298.34	0.995209	0.004503
298.44	0.995257	0.004458
298.54	0.995303	0.004411
298.64	0.995350	0.004362
298.74	0.995400	0.004314
298.84	0.995452	0.004272
298.94	0.995499	0.004233
299.04	0.995547	0.004192
299.14	0.995597	0.004153
299.24	0.995646	0.004119
299.34	0.995696	0.004083
299.44	0.995747	0.004050
299.54	0.995800	0.004022
299.64	0.995847	0.004000
299.74	0.995892	0.003970
299.84	0.995941	0.003944
299.94	0.995991	0.003918
300.04	0.996047	0.003897
300.54	0.996280	0.003837
301.04	0.996508	0.003796
301.54	0.996733	0.003809
302.04	0.996947	0.003868
302.54	0.997122	0.004009
303.04	0.997219	0.004193
303.54	0.997210	0.004393
304.04	0.997112	0.004507
304.54	0.997021	0.004496
305.04	0.997022	0.004428
305.54	0.997107	0.004424

306.04	0.997211	0.004511
306.54	0.997263	0.004704
307.04	0.997203	0.004940
307.54	0.997022	0.005146
308.04	0.996762	0.005256
308.54	0.996480	0.005264
309.04	0.996222	0.005159
309.54	0.996029	0.005000
310.04	0.995901	0.004823
310.54	0.995817	0.004650
311.04	0.995759	0.004481
311.54	0.995733	0.004290
312.04	0.995770	0.004092
312.55	0.995864	0.003945
313.04	0.995990	0.003844
313.54	0.996124	0.003831
314.04	0.996228	0.003872
314.54	0.996275	0.003967
315.05	0.996254	0.004065
315.54	0.996176	0.004147
316.04	0.996043	0.004195
316.56	0.995876	0.004168
317.04	0.995730	0.004073
317.54	0.995619	0.003923
318.04	0.995566	0.003747
318.54	0.995569	0.003574
319.04	0.995613	0.003429
319.54	0.995680	0.003315
320.04	0.995755	0.003235
320.54	0.995822	0.003184
321.04	0.995877	0.003144
321.54	0.995926	0.003108
322.04	0.995968	0.003080
322.55	0.996007	0.003049
323.04	0.996047	0.003021
323.54	0.996086	0.003002
324.04	0.996123	0.002985
324.53	0.996156	0.002976
325.04	0.996187	0.002970
325.54	0.996213	0.002967
326.04	0.996233	0.002967
326.54	0.996247	0.002965
327.04	0.996260	0.002962
327.54	0.996272	0.002960
328.05	0.996282	0.002959
328.54	0.996289	0.002959
329.04	0.996295	0.002959
329.54	0.996297	0.002964
330.04	0.996293	0.002968
330.54	0.996284	0.002971
331.04	0.996271	0.002970
331.54	0.996254	0.002969
332.04	0.996233	0.002962
332.54	0.996210	0.002949
333.04	0.996185	0.002932
333.54	0.996162	0.002908

334.05	0.996138	0.002881
334.55	0.996117	0.002843
335.04	0.996105	0.002804
335.54	0.996095	0.002767
336.04	0.996089	0.002725
336.54	0.996089	0.002681
337.04	0.996096	0.002641
337.54	0.996105	0.002606
338.05	0.996113	0.002575
338.54	0.996123	0.002542
339.04	0.996134	0.002516
339.54	0.996143	0.002489
340.05	0.996153	0.002463
340.55	0.996160	0.002439
341.05	0.996168	0.002413
341.55	0.996174	0.002390
342.04	0.996179	0.002361
342.55	0.996187	0.002331
343.04	0.996196	0.002304
343.54	0.996206	0.002274
344.05	0.996219	0.002243
344.54	0.996235	0.002212
345.05	0.996253	0.002185
345.55	0.996272	0.002157
346.04	0.996294	0.002131
346.54	0.996318	0.002112
347.04	0.996340	0.002093
347.54	0.996362	0.002077
348.04	0.996384	0.002060
348.55	0.996405	0.002051
349.05	0.996422	0.002038
349.54	0.996439	0.002027
350.05	0.996456	0.002015
350.55	0.996473	0.002003
351.05	0.996489	0.001992
351.55	0.996506	0.001981
352.05	0.996526	0.001969
352.55	0.996543	0.001966
353.04	0.996558	0.001956
353.54	0.996575	0.001952
354.05	0.996590	0.001947
354.55	0.996603	0.001945
355.06	0.996615	0.001940
355.54	0.996625	0.001937
356.05	0.996635	0.001934
356.55	0.996644	0.001931
357.04	0.996649	0.001928
357.54	0.996655	0.001922
358.04	0.996662	0.001915
358.55	0.996669	0.001910
359.05	0.996672	0.001905
359.54	0.996676	0.001894
360.04	0.996683	0.001885
360.05	0.996683	0.001885
363.85	0.996736	0.001822
369.74	0.996816	0.001730

375.72	0.996890	0.001643
381.80	0.996962	0.001556
387.97	0.997034	0.001472
394.25	0.997106	0.001392
400.62	0.997178	0.001316
407.10	0.997249	0.001245
413.69	0.997320	0.001177
420.38	0.997389	0.001114
427.18	0.997458	0.001053
434.09	0.997526	0.000996
441.11	0.997592	0.000942
448.24	0.997658	0.000891
455.49	0.997722	0.000842
462.86	0.997785	0.000797
470.35	0.997847	0.000753
477.95	0.997908	0.000713
485.68	0.997967	0.000674
493.54	0.998025	0.000637
501.52	0.998082	0.000602
509.63	0.998138	0.000569
517.88	0.998192	0.000537
526.25	0.998245	0.000508
534.77	0.998297	0.000480
543.42	0.998348	0.000453
552.20	0.998397	0.000428
561.14	0.998445	0.000405
570.21	0.998492	0.000383
579.43	0.998538	0.000362
588.81	0.998582	0.000342
598.33	0.998625	0.000323
608.01	0.998667	0.000305
617.84	0.998708	0.000288
627.83	0.998748	0.000272
637.99	0.998786	0.000257
648.31	0.998824	0.000243
658.79	0.998860	0.000230
669.45	0.998896	0.000217
680.28	0.998930	0.000205
691.28	0.998963	0.000195
702.46	0.998995	0.000184
713.82	0.999026	0.000174
725.37	0.999056	0.000164
737.10	0.999085	0.000154
749.02	0.999114	0.000145
761.14	0.999142	0.000137
773.45	0.999169	0.000129
785.96	0.999195	0.000122
798.67	0.999221	0.000114
811.59	0.999245	0.000108
824.72	0.999269	0.000102
838.06	0.999292	0.000096
851.61	0.999315	0.000090
865.38	0.999337	0.000085
879.38	0.999358	0.000080
893.60	0.999379	0.000075
908.06	0.999398	0.000071

922.75	0.999418	0.000067
937.67	0.999436	0.000063
952.84	0.999454	0.000059
968.25	0.999472	0.000056
983.91	0.999489	0.000052
999.82	0.999505	0.000049

***s*-geometry**

Energy (eV)	n_p	k_p
50.56	0.879542	0.042585
51.38	0.883303	0.040572
52.21	0.886968	0.038655
53.06	0.890575	0.036828
53.92	0.894096	0.035200
54.79	0.897444	0.033732
55.67	0.900621	0.032324
56.57	0.903664	0.030975
57.49	0.906588	0.029682
58.42	0.909396	0.028444
59.36	0.912091	0.027257
60.32	0.914657	0.026120
61.30	0.917091	0.024976
62.29	0.919482	0.023755
63.30	0.921871	0.022594
64.32	0.924216	0.021489
65.36	0.926509	0.020439
66.42	0.928746	0.019439
67.49	0.930925	0.018489
68.59	0.933047	0.017585
69.70	0.935110	0.016726
70.82	0.937117	0.015908
71.97	0.939067	0.015130
73.13	0.940962	0.014391
74.32	0.942803	0.013687
75.52	0.944591	0.013018
76.74	0.946327	0.012382
77.98	0.948012	0.011776
79.24	0.949647	0.011201
80.52	0.951235	0.010653
81.83	0.952775	0.010132
83.15	0.954269	0.009637
84.49	0.955719	0.009166
85.86	0.957125	0.008718
87.25	0.958489	0.008292
88.66	0.959812	0.007886
90.09	0.961095	0.007501
91.55	0.962339	0.007134
93.03	0.963546	0.006785
94.54	0.964716	0.006454
96.07	0.965850	0.006138

97.62	0.966950	0.005838
99.20	0.968016	0.005553
100.80	0.969049	0.005281
102.43	0.970051	0.005023
104.09	0.971022	0.004777
105.77	0.971963	0.004544
107.48	0.972876	0.004322
109.22	0.973760	0.004111
110.99	0.974617	0.003910
112.78	0.975448	0.003718
114.61	0.976253	0.003537
116.46	0.977034	0.003364
118.35	0.977790	0.003199
120.26	0.978523	0.003043
122.21	0.979233	0.002894
124.18	0.979921	0.002753
126.19	0.980588	0.002618
128.23	0.981234	0.002490
130.31	0.981859	0.002368
132.41	0.982464	0.002253
134.56	0.983050	0.002137
136.73	0.983621	0.002028
138.94	0.984175	0.001924
141.19	0.984714	0.001825
143.47	0.985236	0.001732
145.79	0.985743	0.001643
148.15	0.986235	0.001559
150.55	0.986713	0.001479
152.98	0.987176	0.001403
155.46	0.987626	0.001331
157.97	0.988062	0.001263
160.53	0.988485	0.001198
163.12	0.988896	0.001137
165.76	0.989295	0.001079
168.44	0.989682	0.001023
171.17	0.990058	0.000971
173.94	0.990424	0.000921
176.75	0.990778	0.000874
179.61	0.991123	0.000829
182.51	0.991457	0.000787
185.47	0.991781	0.000746
188.47	0.992096	0.000703
191.51	0.992407	0.000662
194.61	0.992710	0.000623
197.76	0.993007	0.000587
200.96	0.993298	0.000553
204.21	0.993582	0.000520
207.51	0.993861	0.000490
210.87	0.994135	0.000461
214.28	0.994405	0.000434
217.74	0.994670	0.000409
221.27	0.994932	0.000385
224.84	0.995191	0.000364
228.48	0.995448	0.000343
232.18	0.995704	0.000324
235.93	0.995960	0.000306

239.75	0.996218	0.000289
243.63	0.996479	0.000273
247.57	0.996744	0.000257
250.03	0.996910	0.000246
250.03	0.996910	0.000246
250.53	0.996943	0.000242
251.03	0.996976	0.000238
251.54	0.997012	0.000234
252.03	0.997046	0.000229
252.53	0.997082	0.000225
253.04	0.997118	0.000221
253.53	0.997154	0.000217
254.04	0.997192	0.000213
254.53	0.997229	0.000209
255.04	0.997267	0.000206
255.53	0.997304	0.000203
256.03	0.997342	0.000199
256.54	0.997381	0.000196
257.03	0.997419	0.000193
257.53	0.997458	0.000189
258.03	0.997498	0.000186
258.53	0.997538	0.000183
259.03	0.997578	0.000180
259.53	0.997619	0.000177
260.04	0.997660	0.000174
260.53	0.997701	0.000172
261.03	0.997743	0.000168
261.54	0.997786	0.000166
262.03	0.997829	0.000163
262.53	0.997872	0.000160
263.03	0.997917	0.000157
263.53	0.997961	0.000155
264.03	0.998006	0.000152
264.54	0.998052	0.000150
265.03	0.998098	0.000147
265.53	0.998146	0.000145
266.03	0.998194	0.000142
266.53	0.998242	0.000140
267.03	0.998292	0.000137
267.54	0.998343	0.000135
268.04	0.998394	0.000132
268.53	0.998446	0.000130
269.03	0.998500	0.000127
269.54	0.998554	0.000125
270.04	0.998609	0.000123
270.53	0.998662	0.000120
271.03	0.998728	0.000103
271.53	0.998794	0.000117
272.03	0.998851	0.000114
272.53	0.998913	0.000112
273.03	0.998977	0.000110
273.53	0.999043	0.000109
274.04	0.999112	0.000106
274.54	0.999182	0.000104
275.04	0.999255	0.000102
275.53	0.999330	0.000100

276.03	0.999408	0.000099
276.54	0.999489	0.000097
277.03	0.999573	0.000095
277.54	0.999661	0.000094
278.03	0.999752	0.000092
278.54	0.999848	0.000091
279.04	0.999949	0.000089
279.53	1.000053	0.000089
280.04	1.000168	0.000088
280.14	1.000189	0.000089
280.24	1.000212	0.000088
280.34	1.000237	0.000088
280.44	1.000261	0.000089
280.53	1.000285	0.000089
280.63	1.000309	0.000089
280.74	1.000335	0.000090
280.83	1.000360	0.000090
280.94	1.000386	0.000090
281.04	1.000412	0.000091
281.14	1.000439	0.000092
281.24	1.000466	0.000093
281.34	1.000493	0.000094
281.44	1.000521	0.000095
281.54	1.000549	0.000096
281.63	1.000577	0.000098
281.74	1.000606	0.000100
281.84	1.000636	0.000101
281.94	1.000666	0.000104
282.04	1.000697	0.000107
282.13	1.000725	0.000111
282.24	1.000759	0.000114
282.33	1.000791	0.000119
282.44	1.000824	0.000124
282.53	1.000855	0.000131
282.64	1.000887	0.000138
282.74	1.000919	0.000147
282.83	1.000950	0.000156
282.94	1.000980	0.000168
283.03	1.001007	0.000178
283.14	1.001034	0.000190
283.23	1.001056	0.000200
283.33	1.001077	0.000208
283.43	1.001097	0.000213
283.53	1.001116	0.000212
283.64	1.001137	0.000209
283.73	1.001161	0.000201
283.84	1.001190	0.000191
283.94	1.001223	0.000182
284.04	1.001258	0.000171
284.14	1.001298	0.000160
284.24	1.001342	0.000152
284.34	1.001390	0.000144
284.44	1.001442	0.000141
284.53	1.001494	0.000142
284.64	1.001551	0.000145
284.74	1.001607	0.000156

284.84	1.001665	0.000173
284.93	1.001714	0.000200
285.04	1.001752	0.000232
285.14	1.001779	0.000255
285.23	1.001802	0.000265
285.34	1.001828	0.000269
285.44	1.001860	0.000263
285.54	1.001896	0.000264
285.64	1.001931	0.000256
285.74	1.001975	0.000245
285.84	1.002024	0.000234
285.94	1.002079	0.000226
286.04	1.002136	0.000219
286.14	1.002195	0.000213
286.24	1.002259	0.000205
286.34	1.002331	0.000198
286.44	1.002407	0.000196
286.54	1.002490	0.000197
286.64	1.002575	0.000202
286.74	1.002672	0.000213
286.84	1.002775	0.000240
286.94	1.002873	0.000289
287.04	1.002945	0.000351
287.13	1.003001	0.000399
287.24	1.003060	0.000431
287.34	1.003130	0.000463
287.44	1.003202	0.000507
287.54	1.003272	0.000554
287.64	1.003337	0.000615
287.74	1.003380	0.000682
287.84	1.003402	0.000733
287.93	1.003420	0.000756
288.04	1.003453	0.000760
288.14	1.003497	0.000764
288.24	1.003547	0.000762
288.34	1.003610	0.000754
288.44	1.003681	0.000753
288.54	1.003756	0.000750
288.64	1.003835	0.000742
288.73	1.003926	0.000728
288.84	1.004035	0.000716
288.93	1.004152	0.000711
289.04	1.004282	0.000714
289.14	1.004416	0.000725
289.24	1.004556	0.000742
289.33	1.004699	0.000765
289.44	1.004849	0.000793
289.53	1.005000	0.000822
289.63	1.005159	0.000854
289.73	1.005327	0.000887
289.84	1.005508	0.000923
289.94	1.005703	0.000965
290.04	1.005902	0.001011
290.13	1.006116	0.001057
290.24	1.006356	0.001108
290.34	1.006611	0.001164

290.44	1.006900	0.001225
290.54	1.007223	0.001298
290.64	1.007587	0.001391
290.73	1.007997	0.001506
290.84	1.008494	0.001651
290.94	1.009068	0.001849
291.04	1.009750	0.002161
291.14	1.010565	0.002664
291.24	1.011415	0.003433
291.34	1.012323	0.004584
291.44	1.012981	0.006238
291.54	1.012995	0.008529
291.64	1.011934	0.010944
291.74	1.009854	0.012617
291.84	1.007456	0.012899
291.94	1.005586	0.011981
292.04	1.004858	0.010670
292.14	1.004974	0.009868
292.24	1.005244	0.009828
292.34	1.005199	0.010154
292.44	1.004990	0.010312
292.54	1.004665	0.010642
292.64	1.004215	0.010777
292.74	1.003771	0.010875
292.84	1.003290	0.010924
292.94	1.002801	0.010884
293.04	1.002341	0.010785
293.14	1.001891	0.010600
293.24	1.001514	0.010382
293.34	1.001162	0.010114
293.44	1.000881	0.009791
293.54	1.000683	0.009457
293.64	1.000559	0.009129
293.74	1.000501	0.008828
293.84	1.000485	0.008575
293.94	1.000496	0.008351
294.04	1.000537	0.008157
294.14	1.000588	0.008010
294.24	1.000644	0.007880
294.34	1.000718	0.007772
294.43	1.000796	0.007708
294.54	1.000867	0.007673
294.64	1.000928	0.007658
294.74	1.000973	0.007671
294.84	1.000999	0.007687
294.94	1.001008	0.007716
295.04	1.001002	0.007736
295.14	1.000988	0.007755
295.24	1.000971	0.007761
295.34	1.000958	0.007768
295.44	1.000952	0.007768
295.54	1.000952	0.007782
295.64	1.000954	0.007798
295.74	1.000960	0.007820
295.84	1.000967	0.007859
295.94	1.000974	0.007903

296.04	1.000973	0.007972
296.14	1.000953	0.008051
296.24	1.000917	0.008127
296.34	1.000867	0.008204
296.44	1.000807	0.008274
296.54	1.000737	0.008343
296.64	1.000665	0.008402
296.74	1.000584	0.008459
296.84	1.000496	0.008510
296.94	1.000405	0.008547
297.04	1.000308	0.008587
297.14	1.000215	0.008610
297.24	1.000122	0.008636
297.34	1.000023	0.008661
297.44	0.999920	0.008672
297.53	0.999821	0.008676
297.64	0.999719	0.008673
297.74	0.999625	0.008660
297.84	0.999536	0.008648
297.94	0.999450	0.008636
298.04	0.999358	0.008621
298.14	0.999271	0.008588
298.24	0.999197	0.008555
298.34	0.999125	0.008528
298.44	0.999053	0.008495
298.54	0.998988	0.008453
298.64	0.998932	0.008414
298.74	0.998882	0.008376
298.84	0.998837	0.008341
298.94	0.998795	0.008309
299.04	0.998756	0.008278
299.14	0.998721	0.008248
299.24	0.998689	0.008224
299.34	0.998656	0.008201
299.44	0.998627	0.008176
299.54	0.998605	0.008156
299.64	0.998578	0.008151
299.74	0.998551	0.008134
299.84	0.998528	0.008127
299.94	0.998505	0.008120
300.04	0.998479	0.008124
300.54	0.998311	0.008133
301.04	0.998114	0.008149
301.54	0.997937	0.008130
302.04	0.997738	0.008217
302.54	0.997478	0.008262
303.04	0.997164	0.008331
303.54	0.996751	0.008338
304.04	0.996336	0.008166
304.54	0.996012	0.007909
305.04	0.995814	0.007616
305.54	0.995717	0.007405
306.04	0.995633	0.007302
306.54	0.995485	0.007282
307.04	0.995233	0.007272
307.54	0.994892	0.007178

308.04	0.994543	0.006960
308.54	0.994244	0.006669
309.04	0.993997	0.006330
309.54	0.993793	0.005968
310.04	0.993644	0.005565
310.54	0.993570	0.005142
311.04	0.993546	0.004752
311.54	0.993569	0.004332
312.04	0.993664	0.003926
312.55	0.993859	0.003523
313.04	0.994111	0.003261
313.54	0.994352	0.003075
314.04	0.994562	0.002942
314.54	0.994745	0.002817
315.05	0.994932	0.002708
315.54	0.995109	0.002622
316.04	0.995286	0.002553
316.56	0.995463	0.002506
317.04	0.995620	0.002478
317.54	0.995774	0.002468
318.04	0.995915	0.002473
318.54	0.996045	0.002491
319.04	0.996163	0.002520
319.54	0.996268	0.002562
320.04	0.996353	0.002611
320.54	0.996424	0.002654
321.04	0.996489	0.002698
321.54	0.996547	0.002745
322.04	0.996600	0.002793
322.55	0.996653	0.002847
323.04	0.996691	0.002920
323.54	0.996712	0.002990
324.04	0.996723	0.003062
324.53	0.996714	0.003145
325.04	0.996680	0.003214
325.54	0.996636	0.003272
326.04	0.996578	0.003322
326.54	0.996510	0.003349
327.04	0.996441	0.003359
327.54	0.996374	0.003357
328.05	0.996311	0.003343
328.54	0.996254	0.003322
329.04	0.996200	0.003294
329.54	0.996149	0.003263
330.04	0.996101	0.003225
330.54	0.996055	0.003184
331.04	0.996011	0.003135
331.54	0.995974	0.003077
332.04	0.995943	0.003018
332.54	0.995916	0.002955
333.04	0.995896	0.002884
333.54	0.995888	0.002814
334.05	0.995883	0.002750
334.55	0.995885	0.002675
335.04	0.995898	0.002608
335.54	0.995914	0.002546

336.04	0.995933	0.002483
336.54	0.995960	0.002420
337.04	0.995995	0.002363
337.54	0.996034	0.002315
338.05	0.996074	0.002274
338.54	0.996116	0.002235
339.04	0.996159	0.002205
339.54	0.996201	0.002179
340.05	0.996244	0.002157
340.55	0.996286	0.002141
341.05	0.996327	0.002129
341.55	0.996365	0.002124
342.04	0.996399	0.002122
342.55	0.996430	0.002124
343.04	0.996456	0.002128
343.54	0.996478	0.002134
344.05	0.996494	0.002143
344.54	0.996505	0.002147
345.05	0.996513	0.002152
345.55	0.996516	0.002154
346.04	0.996518	0.002151
346.54	0.996520	0.002148
347.04	0.996519	0.002140
347.54	0.996518	0.002129
348.04	0.996521	0.002115
348.55	0.996524	0.002102
349.05	0.996529	0.002085
349.54	0.996535	0.002071
350.05	0.996543	0.002054
350.55	0.996553	0.002040
351.05	0.996561	0.002028
351.55	0.996569	0.002014
352.05	0.996579	0.001998
352.55	0.996588	0.001988
353.04	0.996596	0.001970
353.54	0.996608	0.001955
354.05	0.996621	0.001940
354.55	0.996635	0.001927
355.06	0.996651	0.001913
355.54	0.996668	0.001902
356.05	0.996685	0.001894
356.55	0.996702	0.001888
357.04	0.996717	0.001884
357.54	0.996731	0.001880
358.04	0.996745	0.001879
358.55	0.996757	0.001880
359.05	0.996764	0.001884
359.54	0.996769	0.001882
360.04	0.996770	0.001885
360.05	0.996770	0.001885
363.85	0.996800	0.001822
369.74	0.996868	0.001730
375.72	0.996936	0.001643
381.80	0.997002	0.001556
387.97	0.997070	0.001472
394.25	0.997138	0.001392

400.62	0.997207	0.001316
407.10	0.997276	0.001245
413.69	0.997344	0.001177
420.38	0.997411	0.001114
427.18	0.997478	0.001053
434.09	0.997544	0.000996
441.11	0.997609	0.000942
448.24	0.997674	0.000891
455.49	0.997737	0.000842
462.86	0.997799	0.000797
470.35	0.997860	0.000753
477.95	0.997919	0.000713
485.68	0.997977	0.000674
493.54	0.998035	0.000637
501.52	0.998091	0.000602
509.63	0.998146	0.000569
517.88	0.998200	0.000537
526.25	0.998252	0.000508
534.77	0.998304	0.000480
543.42	0.998354	0.000453
552.20	0.998403	0.000428
561.14	0.998450	0.000405
570.21	0.998497	0.000383
579.43	0.998542	0.000362
588.81	0.998586	0.000342
598.33	0.998629	0.000323
608.01	0.998671	0.000305
617.84	0.998712	0.000288
627.83	0.998751	0.000272
637.99	0.998789	0.000257
648.31	0.998827	0.000243
658.79	0.998863	0.000230
669.45	0.998898	0.000217
680.28	0.998932	0.000205
691.28	0.998965	0.000195
702.46	0.998997	0.000184
713.82	0.999028	0.000174
725.37	0.999058	0.000164
737.10	0.999087	0.000154
749.02	0.999115	0.000145
761.14	0.999143	0.000137
773.45	0.999170	0.000129
785.96	0.999196	0.000122
798.67	0.999222	0.000114
811.59	0.999246	0.000108
824.72	0.999270	0.000102
838.06	0.999293	0.000096
851.61	0.999316	0.000090
865.38	0.999338	0.000085
879.38	0.999359	0.000080
893.60	0.999379	0.000075
908.06	0.999399	0.000071
922.75	0.999418	0.000067
937.67	0.999437	0.000063
952.84	0.999455	0.000059
968.25	0.999472	0.000056

983.91	0.999489	0.000052
999.82	0.999506	0.000049