

Test report: 2024000276

Test type	Measurement of the luminaire light distribution in C-Gamma
Test date	05/11/2024
Laboratory	MILAB S.r.l.s. - Viale della Resistenza, 48 - 20094 Corsico (MI)
Operator	Manuel O

The measurement have been performed in the following laboratory ambient conditions

Temperature	24.7
Relative humidity	60
Air turbulence	0.02

Used instruments

Photgoniometer	Model: Photoglobe P4FASC S.N: 2407-71
Photgoniometer classification	Type 4 according to EN 13032-1 Type C according to IES LM 75-19

Applied standards

Photometric measurement	EN 13032-1; EN 13032-4; IES LM 79-08; IES LM 79-19
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Tested luminaire data

Luminaire name	ANOOR / PARETE SOFFITTO
Manufacturer	Foscarini S.p.A.
Luminaire dimensions (mm)	110 x 480 x 0
Luminous area dimensions (mm)	110 x 250
Type of light source	26.5W LED
Correlated Colour Temperature (CCT)	2631
Colour Rendering Index (CRI)	93
Total luminous flux of the light source (lm)	2205.6
Output luminous flux of the luminaire (lm)	2205.6
Source power (W)	25.9
Power included ballast (W)	26.5

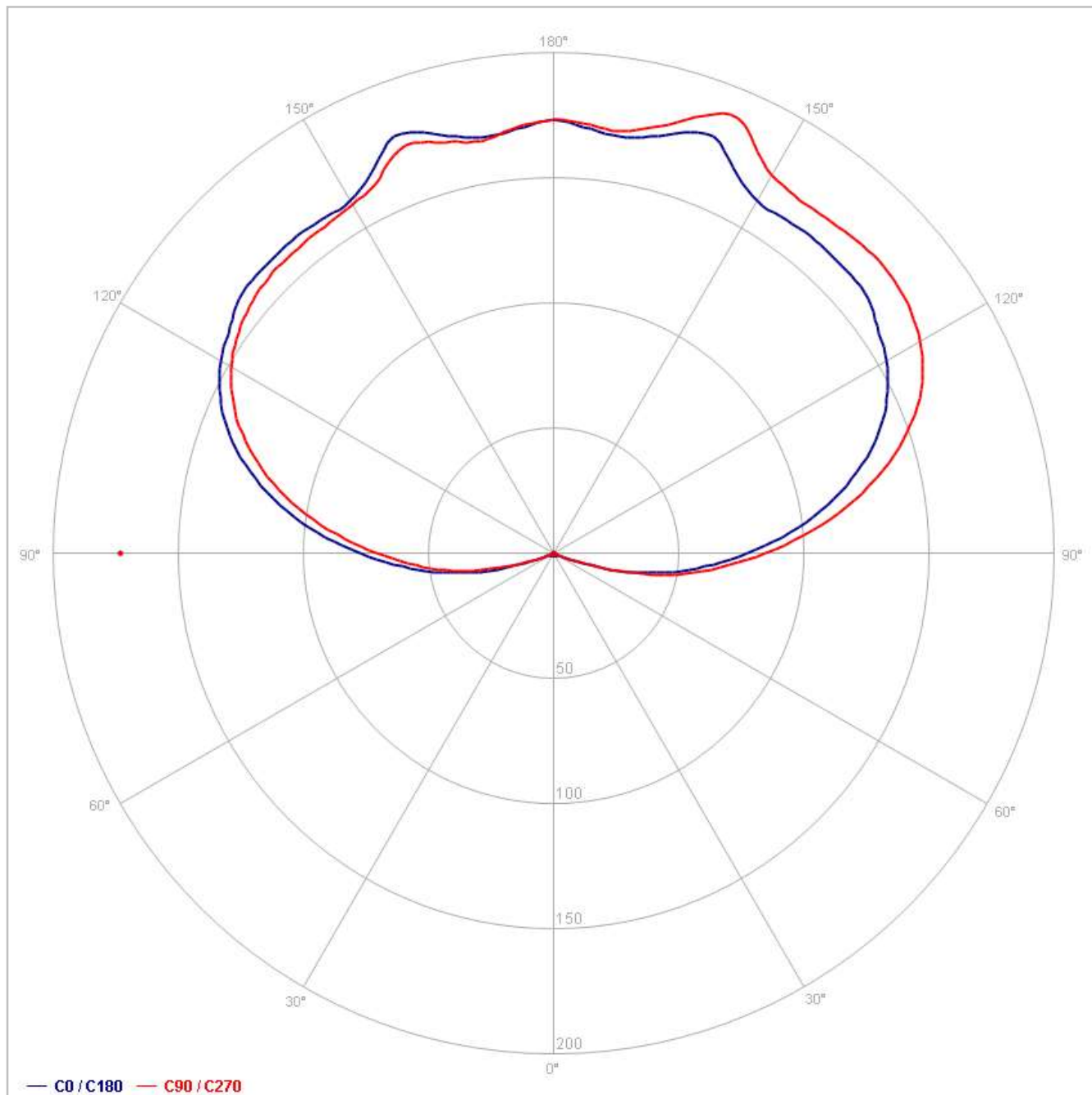
Luminaire efficiency

Light Output Ratio of luminaire (LOR)	100
Downward Flux Fraction (DFF)	10.18
Upward Flux Fraction (UFF)	89.82

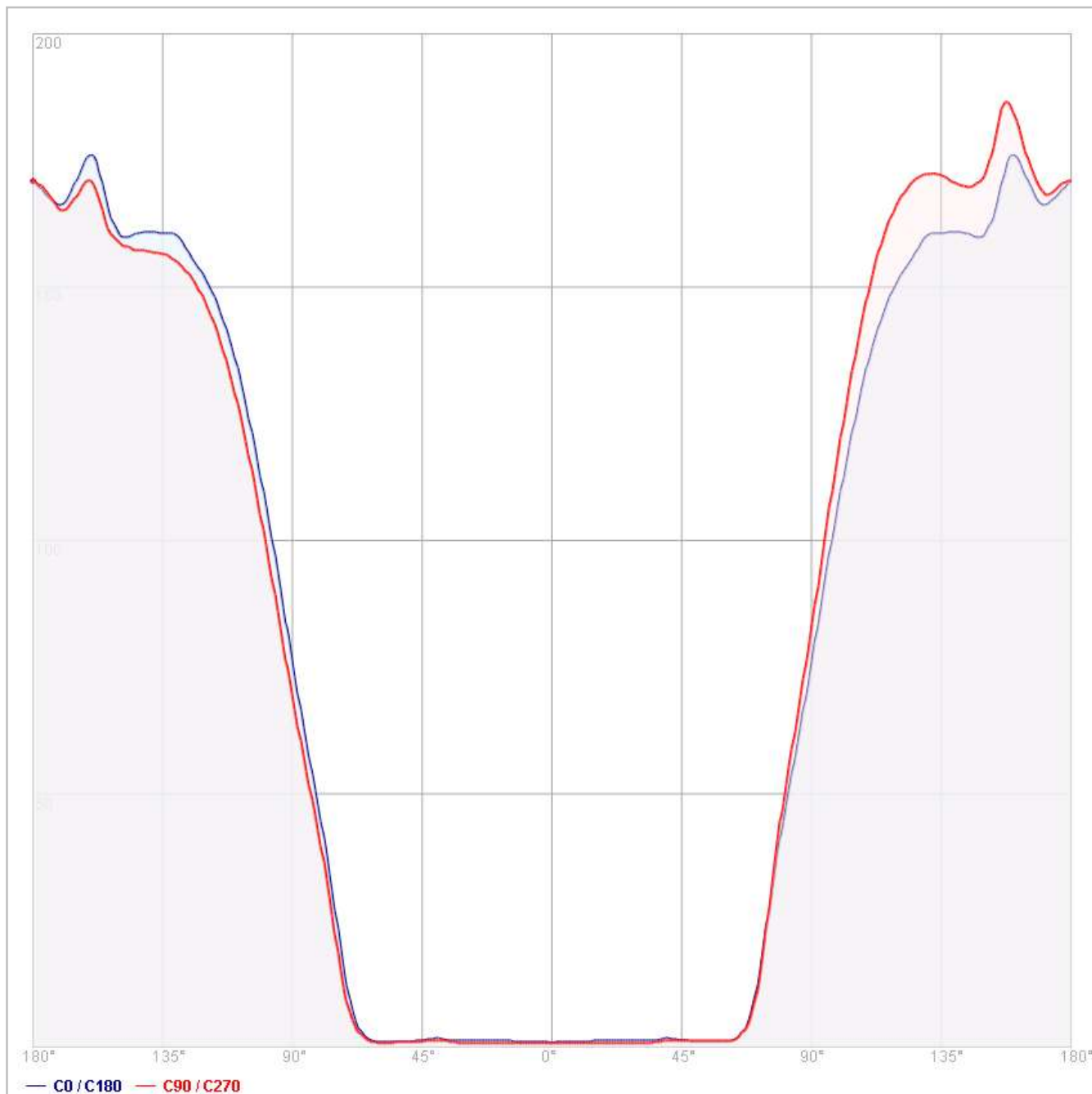
Luminaire efficacy

LED module efficacy (lm/W)	85.16
System light efficacy (lm/W)	83.23
Luminaire light efficacy (lm/W)	83.23

Photometric Polar Diagram



Photometric Cartesian Diagram



Light Emission Photo



Light intensities distribution values (cd/klm)

Gamma	C0°	C10°	C20°	C30°	C40°	C50°	C60°	C70°	C80°	C90°	C100°	C110°
0°	0	0	0	0	0	0	0	0	0	0	0	0
1°	0	0	0	0	0	0	0	0	0	0	0	0
2°	0	0	0	0	0	0	0	0	0	0	0	0
3°	0	0	0	0	0	0	0	0	0	0	0	0
4°	0	0	0	0	0	0	0	0	0	0	0	0
5°	0	0	0	0	0	0	0	0	0	0	0	0
6°	0	0	0	0	0	0	0	0	0	0	0	0
7°	0	0	0	0	0	0	0	0	0	0	0	0
8°	0	0	0	0	0	0	0	0	0	0	0	0
9°	0	0	0	0	0	0	0	0	0	0	0	0
10°	0.99	0.99	0.99	1	1.05	1.11	1.18	1.1	0.96	0.85	0.96	1.1
11°	1.02	1.01	1	0.99	1.01	1.08	1.17	1.13	0.97	0.85	0.97	1.13
12°	1.06	1.05	1.03	1	0.98	1.04	1.15	1.16	0.99	0.85	0.99	1.16
13°	1.12	1.11	1.08	1.03	0.98	1.01	1.12	1.19	1	0.85	1	1.19
14°	1.18	1.17	1.14	1.07	1	0.98	1.09	1.2	1.01	0.85	1.01	1.2
15°	1.24	1.24	1.2	1.12	1.03	0.97	1.06	1.2	1.02	0.85	1.02	1.2
16°	1.29	1.31	1.28	1.18	1.07	0.97	1.03	1.19	1.04	0.85	1.04	1.19
17°	1.34	1.39	1.36	1.24	1.11	0.99	1	1.18	1.06	0.85	1.06	1.18
18°	1.39	1.49	1.46	1.31	1.16	1.01	0.97	1.16	1.07	0.85	1.07	1.16
19°	1.41	1.56	1.56	1.39	1.22	1.05	0.96	1.13	1.09	0.85	1.09	1.13
20°	1.4	1.56	1.62	1.48	1.28	1.09	0.96	1.11	1.1	0.85	1.1	1.11
21°	1.37	1.5	1.61	1.58	1.35	1.13	0.96	1.09	1.11	0.85	1.11	1.09
22°	1.32	1.42	1.55	1.64	1.42	1.17	0.97	1.07	1.12	0.85	1.12	1.07
23°	1.27	1.33	1.47	1.63	1.5	1.22	0.99	1.05	1.13	0.85	1.13	1.05
24°	1.23	1.26	1.38	1.57	1.59	1.27	1.02	1.03	1.12	0.85	1.12	1.03
25°	1.21	1.21	1.3	1.48	1.65	1.32	1.05	1	1.11	0.85	1.11	1
26°	1.19	1.18	1.25	1.38	1.65	1.38	1.08	0.97	1.11	0.85	1.11	0.97
27°	1.18	1.17	1.21	1.28	1.6	1.44	1.11	0.93	1.11	0.85	1.11	0.93
28°	1.18	1.17	1.19	1.21	1.53	1.51	1.14	0.89	1.12	0.85	1.12	0.89
29°	1.18	1.17	1.18	1.17	1.46	1.56	1.18	0.86	1.12	0.85	1.12	0.86
30°	1.18	1.17	1.17	1.15	1.39	1.57	1.21	0.85	1.1	0.85	1.1	0.85
31°	1.19	1.18	1.17	1.15	1.33	1.56	1.24	0.86	1.08	0.85	1.08	0.86
32°	1.2	1.19	1.18	1.15	1.27	1.54	1.26	0.88	1.05	0.85	1.05	0.88
33°	1.22	1.21	1.19	1.15	1.24	1.53	1.28	0.88	1.02	0.85	1.02	0.88
34°	1.26	1.24	1.2	1.16	1.24	1.52	1.3	0.87	1	0.85	1	0.87
35°	1.32	1.29	1.21	1.16	1.25	1.51	1.32	0.86	0.98	0.91	0.98	0.86
36°	1.41	1.37	1.23	1.14	1.26	1.5	1.34	0.86	0.97	1.02	0.97	0.86
37°	1.52	1.47	1.28	1.1	1.25	1.5	1.36	0.87	0.94	1.12	0.94	0.87
38°	1.65	1.62	1.35	1.05	1.23	1.5	1.38	0.89	0.89	1.19	0.89	0.89
39°	1.71	1.77	1.44	1	1.21	1.5	1.4	0.91	0.83	1.23	0.83	0.91
40°	1.69	1.82	1.56	0.97	1.18	1.47	1.43	0.94	0.79	1.26	0.79	0.94
41°	1.63	1.79	1.71	0.98	1.14	1.41	1.45	0.97	0.76	1.28	0.76	0.97
42°	1.54	1.7	1.78	1.03	1.1	1.34	1.47	1	0.74	1.29	0.74	1
43°	1.44	1.59	1.77	1.11	1.05	1.26	1.48	1.02	0.73	1.29	0.73	1.02
44°	1.35	1.47	1.71	1.22	1	1.19	1.49	1.03	0.72	1.29	0.72	1.03
45°	1.28	1.37	1.62	1.38	0.96	1.12	1.49	1.05	0.72	1.29	0.72	1.05

46°	1.22	1.29	1.52	1.58	0.93	1.06	1.49	1.07	0.73	1.29	0.73	1.07
47°	1.17	1.23	1.42	1.7	0.92	1.01	1.49	1.09	0.74	1.29	0.74	1.09
48°	1.13	1.18	1.31	1.73	0.94	0.96	1.49	1.11	0.74	1.29	0.74	1.11
49°	1.11	1.14	1.2	1.69	0.98	0.91	1.49	1.13	0.74	1.29	0.74	1.13
50°	1.1	1.12	1.1	1.62	1.04	0.88	1.49	1.15	0.74	1.29	0.74	1.15
51°	1.11	1.11	1.02	1.54	1.11	0.86	1.49	1.17	0.73	1.29	0.73	1.17
52°	1.13	1.11	0.94	1.45	1.2	0.85	1.49	1.18	0.72	1.29	0.72	1.18
53°	1.15	1.12	0.88	1.37	1.31	0.85	1.49	1.18	0.72	1.29	0.72	1.18
54°	1.15	1.14	0.86	1.28	1.44	0.85	1.49	1.17	0.72	1.29	0.72	1.17
55°	1.12	1.14	0.86	1.2	1.6	0.85	1.49	1.17	0.72	1.29	0.72	1.17
56°	1.08	1.11	0.89	1.12	1.7	0.86	1.48	1.18	0.72	1.29	0.72	1.18
57°	1.04	1.06	0.93	1.04	1.73	0.87	1.46	1.2	0.72	1.29	0.72	1.2
58°	0.99	1	0.99	0.99	1.7	0.87	1.42	1.23	0.72	1.29	0.72	1.23
59°	0.98	0.94	1.06	0.97	1.67	0.88	1.37	1.26	0.73	1.28	0.73	1.26
60°	1.02	0.91	1.12	1	1.68	0.95	1.35	1.31	0.77	1.26	0.77	1.31
61°	1.12	1	1.19	1.11	1.74	1.11	1.42	1.4	0.88	1.26	0.88	1.4
62°	1.29	1.22	1.32	1.3	1.87	1.37	1.56	1.59	1.07	1.28	1.07	1.59
63°	1.56	1.51	1.56	1.58	2.09	1.7	1.76	1.92	1.35	1.51	1.35	1.92
64°	1.92	1.88	1.96	1.96	2.4	2.06	2.09	2.38	1.72	1.93	1.72	2.38
65°	2.39	2.47	2.48	2.44	2.84	2.57	2.57	2.92	2.23	2.45	2.23	2.92
66°	3.04	3.19	3.11	3.12	3.49	3.25	3.26	3.59	2.89	3.02	2.89	3.59
67°	3.99	4.1	4	4.07	4.36	4.15	4.15	4.42	3.79	3.87	3.79	4.42
68°	5.4	5.39	5.22	5.36	5.53	5.4	5.39	5.62	4.94	4.98	4.94	5.62
69°	7.19	7.16	6.9	7.13	7.17	7.12	7.03	7.21	6.6	6.63	6.6	7.21
70°	9.46	9.5	9.2	9.48	9.41	9.49	9.26	9.47	8.83	8.75	8.83	9.47
71°	12.33	12.57	12.17	12.44	12.31	12.48	12.13	12.35	11.71	11.61	11.71	12.35
72°	15.75	16.17	15.82	16.03	15.91	16.1	15.63	15.91	15.2	15.09	15.2	15.91
73°	19.57	20.11	19.98	20.06	20.03	20.22	19.64	19.98	19.23	19.15	19.23	19.98
74°	23.45	24.17	24.24	24.31	24.43	24.68	24	24.39	23.66	23.62	23.66	24.39
75°	27.25	28.31	28.54	28.62	28.93	29.23	28.48	28.98	28.23	28.18	28.23	28.98
76°	30.96	32.41	32.74	32.81	33.31	33.71	32.96	33.49	32.77	32.74	32.77	33.49
77°	34.64	36.39	36.78	36.81	37.53	38.01	37.23	37.83	37.1	37.12	37.1	37.83
78°	38.35	40.1	40.57	40.64	41.54	42.05	41.25	41.88	41.2	41.33	41.2	41.88
79°	41.83	43.63	44.16	44.3	45.29	45.86	45.03	45.7	45.11	45.28	45.11	45.7
80°	45.06	46.86	47.57	47.8	48.87	49.45	48.63	49.36	48.89	49	48.89	49.36
81°	48.18	50.01	50.85	51.18	52.38	52.93	52.14	52.92	52.54	52.59	52.54	52.92
82°	51.29	53.13	54.11	54.5	55.85	56.4	55.58	56.42	56.09	56.12	56.09	56.42
83°	54.45	56.27	57.36	57.83	59.28	59.9	58.99	59.89	59.59	59.61	59.59	59.89
84°	57.61	59.46	60.63	61.04	62.68	63.41	62.41	63.33	63.07	63.07	63.07	63.33
85°	60.76	62.71	63.94	64.36	66.1	66.91	65.85	66.77	66.56	66.58	66.56	66.77
86°	63.95	65.92	67.23	67.67	69.55	70.41	69.27	70.21	70.06	70.14	70.06	70.21
87°	67.21	69.17	70.58	70.99	73.06	73.92	72.74	73.7	73.56	73.77	73.56	73.7
88°	70.53	72.44	73.89	74.37	76.68	77.47	76.26	77.24	77.07	77.45	77.07	77.24
89°	73.88	75.77	77.21	77.82	80.24	81	79.76	80.82	80.64	81.11	80.64	80.82
90°	77.33	79.08	80.66	81.35	83.75	84.54	83.27	84.44	84.27	84.73	84.27	84.44
91°	80.87	82.55	84.1	84.92	87.32	88.14	86.9	88.07	88.01	88.45	88.01	88.07
92°	84.43	86.15	87.63	88.46	91.03	91.78	90.64	91.73	91.83	92.28	91.83	91.73
93°	87.96	89.69	91.14	91.95	94.71	95.45	94.43	95.44	95.65	96.15	95.65	95.44
94°	91.46	93.19	94.64	95.42	98.36	99.13	98.14	99.17	99.46	100.03	99.46	99.17

95°	94.91	96.71	98.12	98.95	101.97	102.76	101.74	102.88	103.24	103.85	103.24	102.88
96°	98.27	100.21	101.57	102.37	105.55	106.34	105.36	106.56	107	107.62	107	106.56
97°	101.53	103.59	104.95	105.76	109.11	109.92	109	110.22	110.72	111.27	110.72	110.22
98°	104.74	106.92	108.26	109.12	112.63	113.46	112.62	113.8	114.39	114.82	114.39	113.8
99°	107.87	110.12	111.53	112.46	116.04	116.93	116.15	117.29	117.98	118.36	117.98	117.29
100°	110.95	113.27	114.81	115.76	119.32	120.27	119.53	120.7	121.49	121.9	121.49	120.7
101°	114.01	116.35	117.92	118.97	122.54	123.48	122.82	124.04	124.9	125.38	124.9	124.04
102°	117.03	119.37	120.97	122.11	125.73	126.6	126.05	127.32	128.25	128.8	128.25	127.32
103°	119.97	122.3	123.99	125.21	128.84	129.63	129.18	130.55	131.52	132.14	131.52	130.55
104°	122.8	125.17	126.82	128.16	131.8	132.6	132.22	133.64	134.71	135.41	134.71	133.64
105°	125.54	127.97	129.57	131.01	134.61	135.51	135.18	136.62	137.78	138.5	137.78	136.62
106°	128.22	130.63	132.24	133.78	137.28	138.3	138.07	139.48	140.72	141.41	140.72	139.48
107°	130.81	133.16	134.83	136.46	139.86	140.97	140.87	142.24	143.48	144.21	143.48	142.24
108°	133.33	135.57	137.33	139.09	142.29	143.49	143.53	144.88	146.09	146.94	146.09	144.88
109°	135.67	137.87	139.71	141.64	144.59	145.87	146.03	147.39	148.59	149.57	148.59	147.39
110°	137.85	140.06	141.89	144.13	146.75	148.12	148.37	149.74	151	152.11	151	149.74
111°	139.9	142.17	144.02	146.56	148.77	150.23	150.59	151.96	153.31	154.47	153.31	151.96
112°	141.81	144.14	146.05	148.85	150.71	152.21	152.64	154.08	155.51	156.68	155.51	154.08
113°	143.61	145.98	147.91	151.03	152.63	154.03	154.53	156.1	157.56	158.73	157.56	156.1
114°	145.28	147.7	149.65	153.07	154.46	155.7	156.3	157.97	159.45	160.66	159.45	157.97
115°	146.86	149.29	151.29	155	156.22	157.22	157.95	159.69	161.15	162.4	161.15	159.69
116°	148.39	150.75	152.81	156.82	157.87	158.67	159.5	161.28	162.69	163.97	162.69	161.28
117°	149.86	152.1	154.21	158.43	159.42	160.07	160.93	162.74	164.1	165.42	164.1	162.74
118°	151.23	153.34	155.56	159.83	160.9	161.35	162.22	164.08	165.42	166.79	165.42	164.08
119°	152.41	154.5	156.9	161.04	162.22	162.52	163.36	165.32	166.65	168	166.65	165.32
120°	153.43	155.59	158.25	162.03	163.41	163.56	164.37	166.48	167.78	169.06	167.78	166.48
121°	154.38	156.63	159.65	162.81	164.5	164.45	165.33	167.53	168.79	170.01	168.79	167.53
122°	155.27	157.6	161.05	163.45	165.43	165.24	166.28	168.43	169.69	170.9	169.69	168.43
123°	156.07	158.55	162.42	164.05	166.2	165.93	167.1	169.2	170.48	171.7	170.48	169.2
124°	156.89	159.54	163.54	164.7	166.83	166.54	167.8	169.87	171.17	172.42	171.17	169.87
125°	157.8	160.6	164.31	165.38	167.34	167.09	168.4	170.43	171.77	173.02	171.77	170.43
126°	158.79	161.72	164.83	166	167.77	167.58	168.94	170.87	172.29	173.52	172.29	170.87
127°	159.82	162.87	165.18	166.53	168.15	168	169.41	171.23	172.75	173.9	172.75	171.23
128°	160.85	163.73	165.38	167.01	168.44	168.36	169.8	171.56	173.14	174.18	173.14	171.56
129°	161.65	164.27	165.51	167.47	168.6	168.65	170.07	171.82	173.42	174.37	173.42	171.82
130°	162.19	164.51	165.66	167.84	168.65	168.86	170.24	171.99	173.59	174.49	173.59	171.99
131°	162.5	164.54	165.87	167.98	168.6	168.97	170.3	172.05	173.62	174.57	173.62	172.05
132°	162.61	164.42	166.07	167.95	168.47	168.94	170.27	172.01	173.57	174.62	173.57	172.01
133°	162.6	164.32	166.22	167.84	168.26	168.81	170.16	171.93	173.47	174.56	173.47	171.93
134°	162.61	164.3	166.29	167.68	167.98	168.65	169.99	171.83	173.31	174.4	173.31	171.83
135°	162.67	164.34	166.31	167.5	167.65	168.46	169.81	171.66	173.04	174.17	173.04	171.66
136°	162.72	164.39	166.2	167.31	167.28	168.24	169.62	171.41	172.72	173.89	172.72	171.41
137°	162.76	164.45	166	167.04	166.86	167.97	169.35	171.13	172.43	173.59	172.43	171.13
138°	162.82	164.43	165.69	166.67	166.44	167.65	169.03	170.84	172.15	173.27	172.15	170.84
139°	162.87	164.25	165.3	166.24	166.13	167.36	168.76	170.53	171.82	172.98	171.82	170.53
140°	162.9	164	164.89	165.83	165.97	167.19	168.55	170.17	171.49	172.72	171.49	170.17
141°	162.89	163.7	164.58	165.46	165.91	167.1	168.42	169.88	171.22	172.48	171.22	169.88
142°	162.82	163.37	164.42	165.12	165.86	166.99	168.38	169.72	171.01	172.24	171.01	169.72
143°	162.72	163.08	164.29	164.87	165.81	166.85	168.39	169.65	170.87	172.03	170.87	169.65

144°	162.56	162.83	164.16	164.78	165.81	166.81	168.45	169.63	170.8	171.85	170.8	169.63
145°	162.38	162.63	164.04	164.85	165.92	166.95	168.52	169.69	170.82	171.9	170.82	169.69
146°	162.17	162.49	164.02	165.05	166.17	167.23	168.59	169.88	170.95	172.16	170.95	169.88
147°	161.94	162.45	164.19	165.35	166.52	167.59	168.78	170.13	171.23	172.52	171.23	170.13
148°	161.73	162.68	164.56	165.75	166.93	168.03	169.21	170.37	171.74	172.94	171.74	170.37
149°	161.9	163.28	165.12	166.33	167.39	168.68	169.89	170.86	172.59	173.54	172.59	170.86
150°	162.45	164.19	165.87	167.29	167.96	169.61	170.8	171.82	173.73	174.31	173.73	171.82
151°	163.3	165.37	166.9	168.69	168.75	171	171.96	173.25	175.11	175.65	175.11	173.25
152°	164.38	166.77	168.25	170.45	170.03	172.99	173.59	175.15	176.83	177.5	176.83	175.15
153°	165.79	168.46	169.96	172.5	171.95	175.48	175.7	177.47	179.18	179.79	179.18	177.47
154°	167.7	170.48	172.02	174.89	174.54	178.02	178.33	180.07	181.87	182.38	181.87	180.07
155°	169.96	172.73	174.23	177.37	177.23	180.15	181.18	182.63	184.33	185	184.33	182.63
156°	172.32	175.03	176.39	179.27	179.56	181.91	183.43	184.73	186.33	187.57	186.33	184.73
157°	174.71	177.29	178.33	180.57	181.36	183.34	184.88	186.26	187.52	188.86	187.52	186.26
158°	176.96	179.17	179.66	181.29	182.43	184.12	185.46	186.81	187.88	188.88	187.88	186.81
159°	178.14	180.06	180.22	181.38	182.62	184	185.13	186.46	187.37	188.05	187.37	186.46
160°	178.3	179.97	180.02	180.87	182.04	183.11	184.11	185.41	186.23	186.69	186.23	185.41
161°	177.77	179.2	179.21	179.87	180.94	181.73	182.69	183.89	184.69	185.02	184.69	183.89
162°	176.78	178	177.96	178.53	179.5	180.05	181.06	182.12	182.92	183.17	182.92	182.12
163°	175.49	176.56	176.59	177.06	177.88	178.3	179.38	180.2	181.04	181.22	181.04	180.2
164°	174.16	175.12	175.24	175.62	176.22	176.66	177.71	178.36	179.14	179.21	179.14	178.36
165°	172.92	173.76	173.94	174.23	174.61	175.17	176.13	176.68	177.38	177.4	177.38	176.68
166°	171.76	172.49	172.68	172.93	173.23	173.87	174.66	175.2	175.78	175.81	175.78	175.2
167°	170.65	171.3	171.49	171.76	172.08	172.75	173.35	173.87	174.36	174.42	174.36	173.87
168°	169.59	170.22	170.49	170.8	171.09	171.74	172.22	172.7	173.09	173.17	173.09	172.7
169°	168.81	169.4	169.74	170.05	170.22	170.76	171.23	171.68	171.98	172.04	171.98	171.68
170°	168.39	168.86	169.2	169.47	169.51	169.73	170.33	170.82	171.01	170.98	171.01	170.82
171°	168.31	168.61	168.88	169.09	169.05	169.06	169.58	170.18	170.42	170.43	170.42	170.18
172°	168.53	168.66	168.83	168.97	168.94	168.91	169.33	169.89	170.21	170.37	170.21	169.89
173°	168.91	168.94	169.05	169.17	169.19	169.23	169.57	170.03	170.38	170.64	170.38	170.03
174°	169.44	169.43	169.51	169.75	169.7	169.79	170.09	170.48	170.83	171.12	170.83	170.48
175°	170.03	170.02	170.1	170.35	170.36	170.47	170.72	171.05	171.36	171.65	171.36	171.05
176°	170.68	170.68	170.75	170.97	171.02	171.14	171.37	171.64	171.91	172.18	171.91	171.64
177°	171.34	171.34	171.4	171.57	171.63	171.74	171.93	172.14	172.36	172.58	172.36	172.14
178°	171.98	171.98	172.03	172.14	172.19	172.27	172.4	172.54	172.69	172.85	172.69	172.54
179°	172.61	172.61	172.64	172.69	172.72	172.76	172.82	172.89	172.97	173.05	172.97	172.89
180°	173.24	173.24	173.24	173.24	173.24	173.24	173.24	173.24	173.24	173.24	173.24	173.24
Gamma	C120°	C130°	C140°	C150°	C160°	C170°	C180°	C190°	C200°	C210°	C220°	C230°
0°	0	0	0	0	0	0	0	0	0	0	0	0
1°	0	0	0	0	0	0	0	0	0	0	0	0
2°	0	0	0	0	0	0	0	0	0	0	0	0
3°	0	0	0	0	0	0	0	0	0	0	0	0
4°	0	0	0	0	0	0	0	0	0	0	0	0
5°	0	0	0	0	0	0	0	0	0	0	0	0
6°	0	0	0	0	0	0	0	0	0	0	0	0
7°	0	0	0	0	0	0	0	0	0	0	0	0
8°	0	0	0	0	0	0	0	0	0	0	0	0
9°	0	0	0	0	0	0	0	0	0	0	0	0
10°	1.18	1.11	1.05	1	0.99	0.99	0.99	0.99	0.99	1	1.04	1.1

11°	1.17	1.08	1.01	0.99	1	1.01	1.02	1.01	1	0.99	1	1.07
12°	1.15	1.04	0.98	1	1.03	1.05	1.06	1.05	1.03	1	0.98	1.04
13°	1.12	1.01	0.98	1.03	1.08	1.11	1.12	1.1	1.07	1.02	0.98	1.01
14°	1.09	0.98	1	1.07	1.14	1.17	1.18	1.17	1.13	1.06	0.99	0.98
15°	1.06	0.97	1.03	1.12	1.2	1.24	1.24	1.25	1.19	1.11	1.02	0.97
16°	1.03	0.97	1.07	1.18	1.28	1.31	1.29	1.34	1.26	1.17	1.06	0.97
17°	1	0.99	1.11	1.24	1.36	1.39	1.34	1.44	1.34	1.22	1.11	0.99
18°	0.97	1.01	1.16	1.31	1.46	1.49	1.39	1.55	1.44	1.27	1.16	1.02
19°	0.96	1.05	1.22	1.39	1.56	1.56	1.41	1.61	1.55	1.31	1.2	1.05
20°	0.96	1.09	1.28	1.48	1.62	1.56	1.4	1.6	1.63	1.36	1.24	1.08
21°	0.96	1.13	1.35	1.58	1.61	1.5	1.37	1.55	1.67	1.41	1.28	1.12
22°	0.97	1.17	1.42	1.64	1.55	1.42	1.32	1.47	1.66	1.44	1.33	1.16
23°	0.99	1.22	1.5	1.63	1.47	1.33	1.27	1.39	1.63	1.47	1.37	1.2
24°	1.02	1.27	1.59	1.57	1.38	1.26	1.23	1.31	1.59	1.49	1.41	1.24
25°	1.05	1.32	1.65	1.48	1.3	1.21	1.21	1.26	1.55	1.5	1.44	1.28
26°	1.08	1.38	1.65	1.38	1.25	1.18	1.19	1.23	1.5	1.5	1.46	1.31
27°	1.11	1.44	1.6	1.28	1.21	1.17	1.18	1.21	1.45	1.5	1.48	1.34
28°	1.14	1.51	1.53	1.21	1.19	1.17	1.18	1.2	1.39	1.48	1.49	1.37
29°	1.18	1.56	1.46	1.17	1.18	1.17	1.18	1.19	1.34	1.45	1.5	1.4
30°	1.21	1.57	1.39	1.15	1.17	1.17	1.18	1.19	1.29	1.41	1.5	1.43
31°	1.24	1.56	1.33	1.15	1.17	1.18	1.19	1.19	1.25	1.36	1.5	1.46
32°	1.26	1.54	1.27	1.15	1.18	1.19	1.2	1.2	1.21	1.31	1.48	1.48
33°	1.28	1.53	1.24	1.15	1.19	1.21	1.22	1.21	1.16	1.27	1.42	1.49
34°	1.3	1.52	1.24	1.16	1.2	1.24	1.26	1.24	1.1	1.22	1.34	1.5
35°	1.32	1.51	1.25	1.16	1.21	1.29	1.32	1.29	1.04	1.15	1.25	1.51
36°	1.34	1.5	1.26	1.14	1.23	1.37	1.41	1.37	1	1.07	1.16	1.51
37°	1.36	1.5	1.25	1.1	1.28	1.52	1.52	1.52	1	1	1.08	1.51
38°	1.38	1.5	1.23	1.05	1.35	1.67	1.65	1.67	1.05	0.95	1.01	1.51
39°	1.4	1.5	1.21	1	1.44	1.81	1.71	1.81	1.15	0.92	0.95	1.5
40°	1.43	1.47	1.18	0.97	1.56	1.85	1.69	1.85	1.29	0.92	0.91	1.47
41°	1.45	1.41	1.14	0.98	1.71	1.8	1.63	1.8	1.5	0.95	0.88	1.42
42°	1.47	1.34	1.1	1.03	1.78	1.71	1.54	1.69	1.64	1.01	0.87	1.34
43°	1.48	1.26	1.05	1.11	1.77	1.59	1.44	1.57	1.68	1.1	0.87	1.25
44°	1.49	1.19	1	1.22	1.71	1.47	1.35	1.45	1.65	1.22	0.87	1.15
45°	1.49	1.12	0.96	1.38	1.62	1.37	1.28	1.35	1.58	1.38	0.87	1.07
46°	1.49	1.06	0.93	1.58	1.52	1.29	1.22	1.27	1.49	1.57	0.88	1.01
47°	1.49	1.01	0.92	1.7	1.42	1.23	1.17	1.21	1.4	1.67	0.9	0.96
48°	1.49	0.96	0.94	1.73	1.31	1.18	1.13	1.17	1.29	1.68	0.95	0.92
49°	1.49	0.91	0.98	1.69	1.2	1.14	1.11	1.13	1.19	1.62	1.04	0.89
50°	1.49	0.88	1.04	1.62	1.1	1.12	1.1	1.11	1.09	1.53	1.17	0.87
51°	1.49	0.86	1.11	1.54	1.02	1.11	1.11	1.1	1	1.44	1.32	0.87
52°	1.49	0.85	1.2	1.45	0.94	1.11	1.13	1.1	0.93	1.35	1.46	0.88
53°	1.49	0.85	1.31	1.37	0.88	1.12	1.15	1.11	0.88	1.26	1.57	0.89
54°	1.49	0.85	1.44	1.28	0.86	1.14	1.15	1.13	0.85	1.18	1.66	0.93
55°	1.49	0.85	1.6	1.2	0.86	1.14	1.12	1.13	0.85	1.1	1.72	1
56°	1.48	0.86	1.7	1.12	0.89	1.11	1.08	1.1	0.88	1.01	1.69	1.03
57°	1.46	0.87	1.73	1.04	0.93	1.06	1.04	1.05	0.93	0.91	1.63	1
58°	1.42	0.87	1.7	0.99	0.99	1	0.99	0.99	0.98	0.85	1.59	0.97
59°	1.37	0.88	1.67	0.97	1.06	0.94	0.98	0.93	1.03	0.84	1.56	0.95

60°	1.35	0.95	1.68	1	1.12	0.91	1.02	0.9	1.09	0.9	1.55	0.97
61°	1.42	1.11	1.74	1.11	1.19	1	1.12	0.99	1.17	1.05	1.64	1.05
62°	1.56	1.37	1.87	1.3	1.32	1.22	1.29	1.22	1.31	1.28	1.81	1.23
63°	1.76	1.7	2.09	1.58	1.56	1.51	1.56	1.53	1.53	1.56	2.05	1.52
64°	2.09	2.06	2.4	1.96	1.96	1.88	1.92	1.88	1.9	1.88	2.32	1.92
65°	2.57	2.57	2.84	2.44	2.48	2.47	2.39	2.35	2.41	2.34	2.67	2.47
66°	3.26	3.25	3.49	3.12	3.11	3.19	3.04	2.99	3.07	3	3.26	3.17
67°	4.15	4.15	4.36	4.07	4	4.1	3.99	3.89	3.95	3.9	4.07	4.07
68°	5.39	5.4	5.53	5.36	5.22	5.39	5.4	5.17	5.08	5.07	5.16	5.24
69°	7.03	7.12	7.17	7.13	6.9	7.16	7.19	6.95	6.65	6.72	6.67	6.74
70°	9.26	9.49	9.41	9.48	9.2	9.5	9.46	9.26	8.78	8.9	8.65	8.75
71°	12.13	12.48	12.31	12.44	12.17	12.57	12.33	12.13	11.49	11.54	11.14	11.26
72°	15.63	16.1	15.91	16.03	15.82	16.17	15.75	15.44	14.74	14.56	14.18	14.25
73°	19.64	20.22	20.03	20.06	19.98	20.11	19.57	19.07	18.45	18.01	17.58	17.63
74°	24	24.68	24.43	24.31	24.24	24.17	23.45	22.91	22.26	21.67	21.22	21.27
75°	28.48	29.23	28.93	28.62	28.54	28.31	27.25	26.85	26.13	25.41	25	24.99
76°	32.96	33.71	33.31	32.81	32.74	32.41	30.96	30.76	29.84	29.06	28.69	28.64
77°	37.23	38.01	37.53	36.81	36.78	36.39	34.64	34.47	33.42	32.52	32.22	32.12
78°	41.25	42.05	41.54	40.64	40.57	40.1	38.35	37.95	36.83	35.79	35.57	35.4
79°	45.03	45.86	45.29	44.3	44.16	43.63	41.83	41.23	40.09	38.89	38.75	38.5
80°	48.63	49.45	48.87	47.8	47.57	46.86	45.06	44.36	43.28	41.84	41.81	41.48
81°	52.14	52.93	52.38	51.18	50.85	50.01	48.18	47.42	46.3	44.74	44.77	44.43
82°	55.58	56.4	55.85	54.5	54.11	53.13	51.29	50.44	49.29	47.62	47.69	47.39
83°	58.99	59.9	59.28	57.83	57.36	56.27	54.45	53.48	52.3	50.58	50.65	50.32
84°	62.41	63.41	62.68	61.04	60.63	59.46	57.61	56.5	55.3	53.54	53.6	53.21
85°	65.85	66.91	66.1	64.36	63.94	62.71	60.76	59.63	58.34	56.5	56.53	56.09
86°	69.27	70.41	69.55	67.7	67.23	65.92	63.95	62.72	61.4	59.43	59.49	59.02
87°	72.74	73.92	73.06	71.05	70.58	69.17	67.21	65.89	64.49	62.45	62.52	62
88°	76.26	77.47	76.68	74.42	73.89	72.44	70.53	69.11	67.6	65.44	65.56	65.04
89°	79.76	81	80.24	77.81	77.21	75.77	73.88	72.37	70.76	68.53	68.65	68.11
90°	83.27	84.54	83.75	81.28	80.66	79.08	77.33	75.64	73.98	71.67	71.82	71.22
91°	86.9	88.14	87.32	84.86	84.1	82.55	80.87	78.97	77.28	74.87	75.06	74.4
92°	90.64	91.78	91.03	88.41	87.63	86.15	84.43	82.35	80.58	78.13	78.33	77.67
93°	94.43	95.45	94.71	91.92	91.14	89.69	87.96	85.73	83.88	81.42	81.63	80.97
94°	98.14	99.13	98.36	95.41	94.64	93.19	91.46	89.16	87.21	84.69	84.93	84.21
95°	101.74	102.76	101.97	98.94	98.12	96.71	94.91	92.55	90.51	87.91	88.19	87.38
96°	105.36	106.34	105.55	102.36	101.57	100.21	98.27	95.88	93.76	91.19	91.41	90.53
97°	109	109.92	109.11	105.76	104.95	103.59	101.53	99.17	96.98	94.44	94.62	93.7
98°	112.62	113.46	112.63	109.12	108.26	106.92	104.74	102.39	100.18	97.58	97.82	96.81
99°	116.15	116.93	116.04	112.46	111.53	110.12	107.87	105.54	103.29	100.62	100.97	99.83
100°	119.53	120.27	119.32	115.76	114.81	113.27	110.95	108.7	106.28	103.65	104.03	102.81
101°	122.82	123.48	122.54	118.97	117.92	116.35	114.01	111.75	109.2	106.66	107.02	105.75
102°	126.05	126.6	125.73	122.11	120.97	119.37	117.03	114.71	112.08	109.59	109.97	108.62
103°	129.18	129.63	128.84	125.21	123.99	122.3	119.97	117.6	114.87	112.47	112.84	111.41
104°	132.22	132.6	131.8	128.16	126.82	125.17	122.8	120.44	117.63	115.2	115.6	114.13
105°	135.18	135.51	134.61	131.01	129.57	127.97	125.54	123.21	120.33	117.87	118.24	116.82
106°	138.07	138.3	137.28	133.78	132.24	130.63	128.22	125.81	122.96	120.43	120.74	119.42
107°	140.87	140.97	139.86	136.46	134.83	133.16	130.81	128.25	125.46	122.88	123.11	121.92
108°	143.53	143.49	142.29	139.09	137.33	135.57	133.33	130.58	127.87	125.35	125.44	124.29

109°	146.03	145.87	144.59	141.64	139.71	137.87	135.67	132.85	130.23	127.78	127.7	126.56
110°	148.37	148.12	146.75	144.13	141.89	140.06	137.85	135.01	132.5	130.16	129.84	128.78
111°	150.59	150.23	148.77	146.56	144.02	142.17	139.9	137.05	134.66	132.49	131.87	130.88
112°	152.64	152.21	150.71	148.85	146.05	144.14	141.81	138.99	136.63	134.73	133.84	132.83
113°	154.53	154.03	152.63	151.03	147.91	145.98	143.61	140.85	138.38	136.91	135.79	134.63
114°	156.3	155.7	154.46	153.07	149.65	147.7	145.28	142.61	140.06	139.03	137.67	136.29
115°	157.95	157.22	156.22	155	151.29	149.29	146.86	144.26	141.7	141.06	139.5	137.87
116°	159.5	158.67	157.87	156.82	152.81	150.75	148.39	145.82	143.22	142.98	141.23	139.43
117°	160.93	160.07	159.42	158.43	154.21	152.1	149.86	147.27	144.62	144.66	142.8	140.97
118°	162.22	161.35	160.9	159.83	155.56	153.34	151.23	148.58	146	146.11	144.19	142.35
119°	163.36	162.52	162.22	161.04	156.9	154.5	152.41	149.75	147.42	147.41	145.51	143.58
120°	164.37	163.56	163.41	162.03	158.25	155.59	153.43	150.81	148.88	148.58	146.81	144.73
121°	165.33	164.45	164.5	162.81	159.65	156.63	154.38	151.78	150.34	149.6	148.04	145.83
122°	166.28	165.24	165.43	163.45	161.05	157.6	155.27	152.72	151.77	150.45	149.16	146.88
123°	167.1	165.93	166.2	164.05	162.42	158.55	156.07	153.72	153.15	151.2	150.18	147.87
124°	167.8	166.54	166.83	164.7	163.54	159.54	156.89	154.82	154.37	151.95	151.07	148.79
125°	168.4	167.09	167.34	165.38	164.31	160.6	157.8	156.01	155.36	152.74	151.82	149.63
126°	168.94	167.58	167.77	166	164.83	161.72	158.79	157.22	156.12	153.58	152.46	150.42
127°	169.41	168	168.15	166.53	165.18	162.87	159.82	158.37	156.69	154.38	153.03	151.15
128°	169.8	168.36	168.44	167.01	165.38	163.73	160.85	159.22	157.12	155.1	153.51	151.83
129°	170.07	168.65	168.6	167.47	165.51	164.27	161.65	159.79	157.48	155.75	153.89	152.47
130°	170.24	168.86	168.65	167.84	165.66	164.51	162.19	160.13	157.81	156.36	154.23	153.02
131°	170.3	168.97	168.6	167.98	165.87	164.54	162.5	160.28	158.16	156.88	154.56	153.52
132°	170.27	168.94	168.47	167.95	166.07	164.42	162.61	160.32	158.5	157.24	154.87	153.96
133°	170.16	168.81	168.26	167.84	166.22	164.32	162.6	160.39	158.78	157.43	155.16	154.3
134°	169.99	168.65	167.98	167.68	166.29	164.3	162.61	160.52	158.99	157.48	155.38	154.55
135°	169.81	168.46	167.65	167.5	166.31	164.34	162.67	160.68	159.17	157.45	155.52	154.71
136°	169.62	168.24	167.28	167.31	166.2	164.39	162.72	160.86	159.27	157.41	155.61	154.82
137°	169.35	167.97	166.86	167.04	166	164.45	162.76	161.04	159.32	157.41	155.7	154.91
138°	169.03	167.65	166.44	166.67	165.69	164.43	162.82	161.17	159.29	157.43	155.84	155.04
139°	168.76	167.36	166.13	166.24	165.3	164.36	162.87	161.26	159.19	157.45	156.02	155.19
140°	168.55	167.19	165.97	165.83	164.89	164.11	162.9	161.25	159.08	157.48	156.24	155.42
141°	168.42	167.1	165.91	165.46	164.58	163.78	162.89	161.19	159.03	157.54	156.49	155.71
142°	168.38	166.99	165.86	165.12	164.42	163.43	162.82	161.13	159.08	157.65	156.7	155.98
143°	168.39	166.85	165.81	164.87	164.29	163.11	162.72	161.15	159.22	157.77	156.86	156.19
144°	168.45	166.81	165.81	164.78	164.16	162.85	162.56	161.27	159.43	157.96	157.05	156.49
145°	168.52	166.95	165.92	164.85	164.04	162.64	162.38	161.44	159.69	158.23	157.34	156.91
146°	168.59	167.23	166.17	165.05	164.02	162.5	162.17	161.63	160.01	158.64	157.74	157.36
147°	168.78	167.59	166.52	165.35	164.19	162.46	161.94	161.81	160.4	159.15	158.18	157.76
148°	169.21	168.03	166.93	165.75	164.56	162.68	161.73	161.97	160.89	159.75	158.67	158.14
149°	169.89	168.68	167.39	166.33	165.12	163.28	161.9	162.14	161.44	160.44	159.3	158.72
150°	170.8	169.61	167.96	167.29	165.87	164.19	162.45	162.37	162.04	161.3	160.12	159.55
151°	171.96	171	168.75	168.69	166.9	165.37	163.3	162.69	162.69	162.34	161.15	160.48
152°	173.59	172.99	170.03	170.45	168.25	166.77	164.38	163.21	163.52	163.55	162.54	161.49
153°	175.7	175.48	171.95	172.5	169.96	168.46	165.79	164.22	164.72	165.03	164.34	162.77
154°	178.33	178.02	174.54	174.89	172.02	170.48	167.7	165.97	166.3	166.82	166.44	164.58
155°	181.18	180.15	177.23	177.37	174.23	172.73	169.96	168.29	168.1	168.81	168.39	166.86
156°	183.43	181.91	179.56	179.27	176.39	175.03	172.32	170.91	169.98	170.6	170.05	169.05
157°	184.88	183.34	181.36	180.57	178.33	177.29	174.71	173.56	171.82	172.16	171.45	170.9

158°	185.46	184.12	182.43	181.29	179.66	179.17	176.96	175.78	173.23	173.28	172.56	172.16
159°	185.13	184	182.62	181.38	180.22	180.06	178.14	176.91	174.03	173.87	173.21	172.72
160°	184.11	183.11	182.04	180.87	180.02	179.97	178.3	177.05	174.24	173.97	173.33	172.72
161°	182.69	181.73	180.94	179.87	179.21	179.2	177.77	176.49	173.97	173.68	172.97	172.35
162°	181.06	180.05	179.5	178.53	177.96	178	176.78	175.48	173.34	173.01	172.28	171.66
163°	179.38	178.3	177.88	177.06	176.59	176.56	175.49	174.24	172.53	172.09	171.4	170.8
164°	177.71	176.66	176.22	175.62	175.24	175.12	174.16	173.02	171.69	171.08	170.4	169.94
165°	176.13	175.17	174.61	174.23	173.94	173.76	172.92	171.9	170.88	170.11	169.35	169.14
166°	174.66	173.87	173.23	172.93	172.68	172.49	171.76	170.9	170.13	169.23	168.41	168.35
167°	173.35	172.75	172.08	171.76	171.49	171.3	170.65	169.99	169.41	168.51	167.67	167.51
168°	172.22	171.74	171.09	170.8	170.49	170.22	169.59	169.14	168.76	167.97	167.17	166.78
169°	171.23	170.76	170.22	170.05	169.74	169.4	168.81	168.5	168.26	167.64	166.92	166.4
170°	170.33	169.73	169.51	169.47	169.2	168.86	168.39	168.16	168.02	167.57	166.95	166.39
171°	169.58	169.06	169.05	169.09	168.88	168.61	168.31	168.16	168.09	167.75	167.23	166.74
172°	169.33	168.91	168.94	168.97	168.83	168.66	168.53	168.43	168.39	168.1	167.72	167.36
173°	169.57	169.23	169.19	169.17	169.05	168.94	168.91	168.83	168.81	168.59	168.35	168.15
174°	170.09	169.79	169.7	169.53	169.51	169.43	169.44	169.35	169.34	169.11	169.1	169.01
175°	170.72	170.47	170.36	170.14	170.1	170.02	170.03	169.96	169.97	169.83	169.92	169.9
176°	171.37	171.14	171.02	170.81	170.75	170.68	170.68	170.63	170.65	170.58	170.69	170.72
177°	171.93	171.74	171.63	171.46	171.4	171.34	171.34	171.3	171.32	171.29	171.38	171.43
178°	172.4	172.27	172.19	172.07	172.03	171.98	171.98	171.96	171.97	171.96	172.02	172.06
179°	172.82	172.76	172.72	172.66	172.64	172.61	172.61	172.6	172.61	172.6	172.63	172.65
180°	173.24	173.24	173.24	173.24	173.24	173.24	173.24	173.24	173.24	173.24	173.24	173.24
Gamma	C240°	C250°	C260°	C270°	C280°	C290°	C300°	C310°	C320°	C330°	C340°	C350°
0°	0	0	0	0	0	0	0	0	0	0	0	0
1°	0	0	0	0	0	0	0	0	0	0	0	0
2°	0	0	0	0	0	0	0	0	0	0	0	0
3°	0	0	0	0	0	0	0	0	0	0	0	0
4°	0	0	0	0	0	0	0	0	0	0	0	0
5°	0	0	0	0	0	0	0	0	0	0	0	0
6°	0	0	0	0	0	0	0	0	0	0	0	0
7°	0	0	0	0	0	0	0	0	0	0	0	0
8°	0	0	0	0	0	0	0	0	0	0	0	0
9°	0	0	0	0	0	0	0	0	0	0	0	0
10°	1.18	1.1	0.96	0.85	0.96	1.1	1.18	1.1	1.04	1	0.99	0.99
11°	1.17	1.13	0.97	0.85	0.97	1.13	1.17	1.07	1	0.99	1	1.01
12°	1.15	1.16	0.98	0.85	0.98	1.16	1.15	1.04	0.98	1	1.03	1.05
13°	1.12	1.19	1	0.85	1	1.19	1.12	1.01	0.98	1.02	1.07	1.1
14°	1.09	1.2	1.02	0.85	1.02	1.2	1.09	0.98	0.99	1.06	1.13	1.17
15°	1.06	1.2	1.03	0.85	1.03	1.2	1.06	0.97	1.02	1.11	1.19	1.25
16°	1.03	1.18	1.04	0.85	1.04	1.18	1.03	0.97	1.06	1.17	1.26	1.34
17°	0.99	1.15	1.05	0.85	1.05	1.15	0.99	0.99	1.11	1.22	1.34	1.44
18°	0.94	1.11	1.06	0.85	1.06	1.11	0.94	1.02	1.16	1.27	1.44	1.55
19°	0.9	1.07	1.07	0.85	1.07	1.07	0.9	1.05	1.2	1.31	1.55	1.61
20°	0.88	1.03	1.07	0.85	1.07	1.03	0.88	1.08	1.24	1.36	1.63	1.6
21°	0.87	0.98	1.07	0.85	1.07	0.98	0.87	1.12	1.28	1.41	1.67	1.55
22°	0.87	0.93	1.07	0.85	1.07	0.93	0.87	1.16	1.33	1.44	1.66	1.47
23°	0.88	0.88	1.07	0.85	1.07	0.88	0.88	1.2	1.37	1.47	1.63	1.39
24°	0.9	0.84	1.07	0.85	1.07	0.84	0.9	1.24	1.41	1.49	1.59	1.31

25°	0.93	0.81	1.07	0.85	1.07	0.81	0.93	1.28	1.44	1.5	1.55	1.26
26°	0.97	0.79	1.07	0.85	1.07	0.79	0.97	1.31	1.46	1.5	1.5	1.23
27°	1.01	0.77	1.06	0.85	1.06	0.77	1.01	1.34	1.48	1.5	1.45	1.21
28°	1.06	0.75	1.05	0.85	1.05	0.75	1.06	1.37	1.49	1.48	1.39	1.2
29°	1.12	0.74	1.04	0.85	1.04	0.74	1.12	1.4	1.5	1.45	1.34	1.19
30°	1.17	0.74	1.03	0.85	1.03	0.74	1.17	1.43	1.5	1.41	1.29	1.19
31°	1.22	0.74	1.02	0.85	1.02	0.74	1.22	1.46	1.5	1.36	1.25	1.19
32°	1.25	0.75	1.01	0.85	1.01	0.75	1.25	1.48	1.48	1.31	1.21	1.2
33°	1.27	0.76	0.99	0.91	0.99	0.76	1.27	1.49	1.42	1.27	1.16	1.21
34°	1.28	0.78	0.98	1.02	0.98	0.78	1.28	1.5	1.34	1.22	1.1	1.24
35°	1.29	0.79	0.95	1.12	0.95	0.79	1.29	1.51	1.25	1.15	1.04	1.29
36°	1.31	0.8	0.9	1.19	0.9	0.8	1.31	1.51	1.16	1.07	1	1.37
37°	1.33	0.82	0.84	1.23	0.84	0.82	1.33	1.51	1.08	1	1	1.46
38°	1.34	0.84	0.8	1.26	0.8	0.84	1.34	1.51	1.01	0.95	1.05	1.61
39°	1.36	0.86	0.77	1.28	0.77	0.86	1.36	1.5	0.95	0.92	1.15	1.77
40°	1.39	0.88	0.75	1.29	0.75	0.88	1.39	1.47	0.91	0.92	1.29	1.82
41°	1.42	0.87	0.74	1.29	0.74	0.87	1.42	1.42	0.88	0.95	1.5	1.78
42°	1.44	0.83	0.73	1.29	0.73	0.83	1.44	1.34	0.87	1.01	1.64	1.68
43°	1.45	0.79	0.72	1.25	0.72	0.79	1.45	1.25	0.87	1.1	1.68	1.56
44°	1.44	0.76	0.68	1.17	0.68	0.76	1.44	1.15	0.87	1.22	1.65	1.45
45°	1.43	0.74	0.64	1.1	0.64	0.74	1.43	1.07	0.87	1.38	1.58	1.35
46°	1.41	0.72	0.62	1.05	0.62	0.72	1.41	1.01	0.88	1.57	1.49	1.27
47°	1.4	0.72	0.63	1.01	0.63	0.72	1.4	0.96	0.9	1.67	1.4	1.21
48°	1.38	0.73	0.69	0.99	0.69	0.73	1.38	0.92	0.95	1.68	1.29	1.17
49°	1.36	0.74	0.76	0.98	0.76	0.74	1.36	0.89	1.04	1.62	1.19	1.13
50°	1.34	0.77	0.82	0.97	0.82	0.77	1.34	0.87	1.17	1.53	1.09	1.11
51°	1.32	0.85	0.86	0.97	0.86	0.85	1.32	0.87	1.32	1.44	1	1.1
52°	1.3	0.97	0.88	0.97	0.88	0.97	1.3	0.88	1.46	1.35	0.93	1.1
53°	1.28	1.07	0.89	0.95	0.89	1.07	1.28	0.89	1.57	1.26	0.88	1.11
54°	1.26	1.14	0.89	0.92	0.89	1.14	1.26	0.93	1.66	1.18	0.85	1.13
55°	1.23	1.19	0.89	0.88	0.89	1.19	1.23	1	1.72	1.1	0.85	1.13
56°	1.21	1.23	0.89	0.84	0.89	1.23	1.21	1.03	1.69	1.01	0.88	1.1
57°	1.19	1.26	0.89	0.81	0.89	1.26	1.19	1	1.63	0.91	0.93	1.05
58°	1.17	1.27	0.88	0.79	0.88	1.27	1.17	0.97	1.59	0.85	0.98	0.99
59°	1.2	1.23	0.9	0.79	0.9	1.23	1.2	0.95	1.56	0.84	1.03	0.93
60°	1.28	1.23	0.97	0.81	0.97	1.23	1.28	0.97	1.55	0.9	1.09	0.9
61°	1.37	1.34	1.06	0.93	1.06	1.34	1.37	1.05	1.64	1.05	1.17	0.99
62°	1.52	1.54	1.13	1.14	1.13	1.54	1.52	1.23	1.81	1.28	1.31	1.22
63°	1.76	1.78	1.27	1.37	1.27	1.78	1.76	1.52	2.05	1.56	1.53	1.53
64°	2.08	2.11	1.54	1.6	1.54	2.11	2.08	1.92	2.32	1.88	1.9	1.88
65°	2.48	2.55	1.95	1.98	1.95	2.55	2.48	2.47	2.67	2.34	2.41	2.35
66°	3.04	3.15	2.5	2.51	2.5	3.15	3.04	3.17	3.26	3	3.07	2.99
67°	3.77	3.91	3.25	3.22	3.25	3.91	3.77	4.07	4.07	3.9	3.95	3.89
68°	4.8	4.97	4.22	4.07	4.22	4.97	4.8	5.24	5.16	5.07	5.08	5.17
69°	6.2	6.33	5.57	5.33	5.57	6.33	6.2	6.74	6.67	6.72	6.65	6.95
70°	8.1	8.23	7.33	6.96	7.33	8.23	8.1	8.75	8.65	8.9	8.78	9.26
71°	10.52	10.63	9.62	9.17	9.62	10.63	10.52	11.26	11.14	11.54	11.49	12.13
72°	13.44	13.54	12.43	11.88	12.43	13.54	13.44	14.25	14.18	14.56	14.74	15.44
73°	16.75	16.82	15.71	15.14	15.71	16.82	16.75	17.63	17.58	18.01	18.45	19.07

74°	20.33	20.33	19.34	18.83	19.34	20.33	20.33	21.27	21.22	21.67	22.26	22.91
75°	23.93	23.95	23.08	22.61	23.08	23.95	23.93	24.99	25	25.41	26.13	26.85
76°	27.46	27.53	26.8	26.39	26.8	27.53	27.46	28.64	28.69	29.06	29.84	30.76
77°	30.84	31.01	30.36	30.06	30.36	31.01	30.84	32.12	32.22	32.52	33.42	34.47
78°	34.05	34.3	33.74	33.62	33.74	34.3	34.05	35.4	35.57	35.79	36.83	37.95
79°	37.11	37.42	36.9	36.99	36.9	37.42	37.11	38.5	38.75	38.89	40.09	41.23
80°	40.05	40.44	39.86	40.2	39.86	40.44	40.05	41.48	41.81	41.84	43.28	44.36
81°	42.92	43.39	42.77	43.3	42.77	43.39	42.92	44.43	44.77	44.74	46.3	47.42
82°	45.74	46.27	45.71	46.33	45.71	46.27	45.74	47.39	47.69	47.62	49.29	50.44
83°	48.55	49.14	48.68	49.29	48.68	49.14	48.55	50.32	50.65	50.58	52.3	53.48
84°	51.41	52.02	51.68	52.2	51.68	52.02	51.41	53.21	53.6	53.54	55.3	56.5
85°	54.33	54.92	54.66	55.15	54.66	54.92	54.33	56.09	56.53	56.5	58.34	59.63
86°	57.28	57.81	57.6	58.15	57.6	57.81	57.28	59.02	59.49	59.36	61.4	62.72
87°	60.26	60.77	60.56	61.2	60.56	60.77	60.26	62	62.52	62.32	64.49	65.89
88°	63.26	63.8	63.56	64.29	63.56	63.8	63.26	65.04	65.56	65.33	67.6	69.11
89°	66.28	66.88	66.65	67.41	66.65	66.88	66.28	68.11	68.65	68.46	70.76	72.37
90°	69.34	70	69.8	70.55	69.8	70	69.34	71.22	71.82	71.64	73.98	75.64
91°	72.45	73.15	73.06	73.78	73.06	73.15	72.45	74.4	75.06	74.85	77.28	78.97
92°	75.63	76.33	76.41	77.09	76.41	76.33	75.63	77.67	78.33	78.12	80.58	82.35
93°	78.86	79.58	79.72	80.43	79.72	79.58	78.86	80.97	81.63	81.42	83.88	85.73
94°	82.1	82.85	82.97	83.78	82.97	82.85	82.1	84.21	84.93	84.69	87.21	89.16
95°	85.33	86.06	86.25	87.15	86.25	86.06	85.33	87.38	88.19	87.91	90.51	92.55
96°	88.53	89.23	89.57	90.53	89.57	89.23	88.53	90.53	91.41	91.19	93.76	95.88
97°	91.69	92.38	92.85	93.82	92.85	92.38	91.69	93.7	94.62	94.44	96.98	99.17
98°	94.85	95.51	96.08	97.01	96.08	95.51	94.85	96.81	97.82	97.58	100.18	102.39
99°	97.96	98.61	99.25	100.2	99.25	98.61	97.96	99.83	100.97	100.62	103.29	105.54
100°	100.97	101.69	102.37	103.42	102.37	101.69	100.97	102.81	104.03	103.65	106.28	108.7
101°	103.95	104.75	105.44	106.55	105.44	104.75	103.95	105.75	107.02	106.66	109.2	111.75
102°	106.93	107.73	108.44	109.6	108.44	107.73	106.93	108.62	109.97	109.59	112.08	114.71
103°	109.86	110.61	111.31	112.56	111.31	110.61	109.86	111.41	112.84	112.47	114.87	117.6
104°	112.72	113.4	114.08	115.44	114.08	113.4	112.72	114.13	115.6	115.2	117.63	120.44
105°	115.46	116.13	116.82	118.25	116.82	116.13	115.46	116.82	118.24	117.87	120.33	123.21
106°	118.1	118.76	119.53	121.01	119.53	118.76	118.1	119.42	120.74	120.43	122.96	125.81
107°	120.67	121.31	122.15	123.67	122.15	121.31	120.67	121.92	123.11	122.88	125.46	128.25
108°	123.14	123.8	124.68	126.24	124.68	123.8	123.14	124.29	125.44	125.35	127.87	130.58
109°	125.49	126.23	127.09	128.67	127.09	126.23	125.49	126.56	127.7	127.78	130.23	132.85
110°	127.71	128.54	129.39	130.98	129.39	128.54	127.71	128.78	129.84	130.16	132.5	135.01
111°	129.82	130.74	131.6	133.21	131.6	130.74	129.82	130.88	131.87	132.49	134.66	137.05
112°	131.81	132.82	133.71	135.39	133.71	132.82	131.81	132.83	133.84	134.73	136.63	138.99
113°	133.72	134.78	135.68	137.45	135.68	134.78	133.72	134.63	135.79	136.91	138.38	140.85
114°	135.59	136.59	137.52	139.42	137.52	136.59	135.59	136.29	137.67	139.03	140.06	142.61
115°	137.38	138.28	139.28	141.25	139.28	138.28	137.38	137.87	139.5	141.06	141.7	144.26
116°	139.03	139.89	140.96	142.96	140.96	139.89	139.03	139.43	141.23	142.98	143.22	145.82
117°	140.54	141.41	142.55	144.57	142.55	141.41	140.54	140.97	142.8	144.66	144.62	147.27
118°	141.95	142.8	144.04	146.11	144.04	142.8	141.95	142.35	144.19	146.11	146	148.58
119°	143.28	144.11	145.4	147.5	145.4	144.11	143.28	143.58	145.51	147.41	147.42	149.75
120°	144.54	145.39	146.66	148.74	146.66	145.39	144.54	144.73	146.81	148.58	148.88	150.81
121°	145.72	146.59	147.83	149.91	147.83	146.59	145.72	145.83	148.04	149.6	150.34	151.78
122°	146.82	147.67	148.93	151.03	148.93	147.67	146.82	146.88	149.16	150.45	151.77	152.72

123°	147.82	148.64	149.96	152.06	149.96	148.64	147.82	147.87	150.18	151.2	153.15	153.72
124°	148.74	149.54	150.89	153	150.89	149.54	148.74	148.79	151.07	151.95	154.37	154.82
125°	149.63	150.39	151.7	153.82	151.7	150.39	149.63	149.63	151.82	152.74	155.36	156.01
126°	150.5	151.23	152.42	154.55	152.42	151.23	150.5	150.42	152.46	153.58	156.12	157.22
127°	151.31	151.98	153.09	155.22	153.09	151.98	151.31	151.15	153.03	154.38	156.69	158.37
128°	152.09	152.64	153.72	155.85	153.72	152.64	152.09	151.83	153.51	155.1	157.12	159.22
129°	152.8	153.25	154.33	156.42	154.33	153.25	152.8	152.47	153.89	155.75	157.48	159.79
130°	153.44	153.85	154.9	156.94	154.9	153.85	153.44	153.02	154.23	156.36	157.81	160.13
131°	153.97	154.38	155.41	157.4	155.41	154.38	153.97	153.52	154.56	156.88	158.16	160.28
132°	154.4	154.81	155.84	157.8	155.84	154.81	154.4	153.96	154.87	157.24	158.5	160.32
133°	154.75	155.15	156.16	158.12	156.16	155.15	154.75	154.3	155.16	157.43	158.78	160.39
134°	155.05	155.43	156.39	158.38	156.39	155.43	155.05	154.55	155.38	157.48	158.99	160.52
135°	155.3	155.67	156.56	158.57	156.56	155.67	155.3	154.71	155.52	157.45	159.17	160.68
136°	155.5	155.9	156.72	158.71	156.72	155.9	155.5	154.82	155.61	157.41	159.27	160.86
137°	155.6	156.1	156.9	158.79	156.9	156.1	155.6	154.91	155.7	157.41	159.32	161.04
138°	155.64	156.24	157.07	158.82	157.07	156.24	155.64	155.04	155.84	157.43	159.29	161.17
139°	155.66	156.26	157.22	158.91	157.22	156.26	155.66	155.19	156.02	157.45	159.19	161.21
140°	155.67	156.18	157.32	159.07	157.32	156.18	155.67	155.42	156.24	157.48	159.08	161.2
141°	155.73	156.13	157.33	159.19	157.33	156.13	155.73	155.8	156.49	157.54	159.03	161.15
142°	155.87	156.21	157.32	159.26	157.32	156.21	155.87	156.07	156.7	157.65	159.08	161.1
143°	156.07	156.41	157.39	159.25	157.39	156.41	156.07	156.26	156.86	157.77	159.22	161.13
144°	156.3	156.67	157.54	159.18	157.54	156.67	156.3	156.54	157.05	157.96	159.43	161.25
145°	156.55	156.95	157.8	159.33	157.8	156.95	156.55	156.94	157.34	158.23	159.69	161.43
146°	156.86	157.22	158.12	159.7	158.12	157.22	156.86	157.38	157.74	158.64	160.01	161.62
147°	157.26	157.57	158.42	159.96	158.42	157.57	157.26	157.77	158.18	159.15	160.4	161.8
148°	157.79	158.05	158.73	160.05	158.73	158.05	157.79	158.14	158.67	159.75	160.89	161.97
149°	158.43	158.67	159.18	160.28	159.18	158.67	158.43	158.72	159.3	160.44	161.44	162.14
150°	159.15	159.39	159.8	160.68	159.8	159.39	159.15	159.55	160.12	161.3	162.04	162.37
151°	160.01	160.26	160.63	161.22	160.63	160.26	160.01	160.48	161.15	162.34	162.69	162.69
152°	161.17	161.31	161.59	161.85	161.59	161.31	161.17	161.49	162.54	163.55	163.52	163.21
153°	162.6	162.56	162.62	162.62	162.62	162.56	162.6	162.77	164.34	165.03	164.72	164.22
154°	164.3	164.13	163.84	163.5	163.84	164.13	164.3	164.58	166.44	166.82	166.3	165.97
155°	166.26	166	165.58	165.09	165.58	166	166.26	166.86	168.39	168.81	168.1	168.29
156°	168.39	168.01	167.63	167.36	167.63	168.01	168.39	169.05	170.05	170.6	169.98	170.91
157°	170.52	169.97	169.47	169.46	169.47	169.97	170.52	170.9	171.45	172.16	171.82	173.56
158°	172.14	171.53	170.98	171.2	170.98	171.53	172.14	172.16	172.56	173.28	173.23	175.78
159°	172.93	172.66	172.06	172.37	172.06	172.66	172.93	172.72	173.21	173.87	174.03	176.91
160°	173.01	173.05	172.68	173.04	172.68	173.05	173.01	172.72	173.33	173.97	174.24	177.05
161°	172.61	172.78	172.67	173.07	172.67	172.78	172.61	172.35	172.97	173.68	173.97	176.49
162°	171.9	172.09	172.17	172.57	172.17	172.09	171.9	171.66	172.28	173.01	173.34	175.48
163°	171.05	171.14	171.39	171.75	171.39	171.14	171.05	170.8	171.4	172.09	172.53	174.24
164°	170.16	170.16	170.5	170.74	170.5	170.16	170.16	169.94	170.4	171.08	171.69	173.02
165°	169.3	169.25	169.69	169.87	169.69	169.25	169.3	169.14	169.35	170.11	170.88	171.9
166°	168.5	168.46	168.97	169.17	168.97	168.46	168.5	168.35	168.41	169.23	170.13	170.9
167°	167.74	167.76	168.28	168.46	168.28	167.76	167.74	167.51	167.67	168.51	169.41	169.99
168°	166.99	167.17	167.62	167.68	167.62	167.17	166.99	166.78	167.17	167.97	168.76	169.14
169°	166.41	166.75	167.18	167.23	167.18	166.75	166.41	166.4	166.92	167.64	168.26	168.5
170°	166.32	166.65	167.01	167.13	167.01	166.65	166.32	166.39	166.95	167.57	168.02	168.16
171°	166.7	166.98	167.31	167.51	167.31	166.98	166.7	166.74	167.23	167.75	168.09	168.16



172°	167.37	167.65	168.01	168.28	168.01	167.65	167.37	167.36	167.72	168.1	168.39	168.43
173°	168.2	168.47	168.85	169.14	168.85	168.47	168.2	168.15	168.35	168.59	168.81	168.83
174°	169.09	169.35	169.71	169.99	169.71	169.35	169.09	169.01	169.1	169.34	169.34	169.35
175°	169.98	170.21	170.51	170.77	170.51	170.21	169.98	169.9	169.92	170.05	169.97	169.96
176°	170.81	171	171.24	171.47	171.24	171	170.81	170.72	170.69	170.74	170.65	170.63
177°	171.51	171.66	171.85	172.03	171.85	171.66	171.51	171.43	171.38	171.4	171.32	171.3
178°	172.12	172.22	172.35	172.48	172.35	172.22	172.12	172.06	172.02	172.03	171.97	171.96
179°	172.68	172.73	172.8	172.86	172.8	172.73	172.68	172.65	172.63	172.64	172.61	172.6
180°	173.24	173.24	173.24	173.24	173.24	173.24	173.24	173.24	173.24	173.24	173.24	173.24