



NATA LIGHTING CO.,LTD.
www.nata.cn
Email:info@nata.com
Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: 1-0812-S
Luminaire: 92.70.208.00
Report No: NATA0100
Test No: GC2019103003
LampCAT: OSRAM 5050
Lamp flux(lm): 878.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 34.0000
Current(A): 0.2970
Power (W): 10.1000
PF: 0.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 710.90
Efficiency(%): 80.97%
Lumens(lm)/Power(W): 70.39
Central intensity(cd): 539.318
Maximum intensity(cd): 541.466
Angle of maximum intensity: C=0.0 γ =5.0
Beam Angle(50%Imax): [C0/180]Total=73.6
[C90/270]Total=73.6
Field angle(10%Imax): [C0/180]Total=92.2
[C90/270]Total=92.2
Maximum s/h(1/2): C0_180=1.17 C90_270=1.17
Maximum s/h(1/4): C0_180=1.07 C90_270=1.07
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 80.97%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.884%

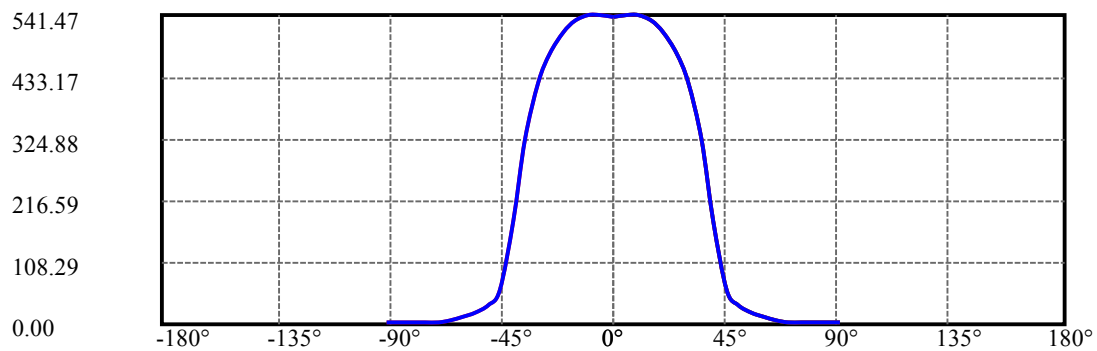
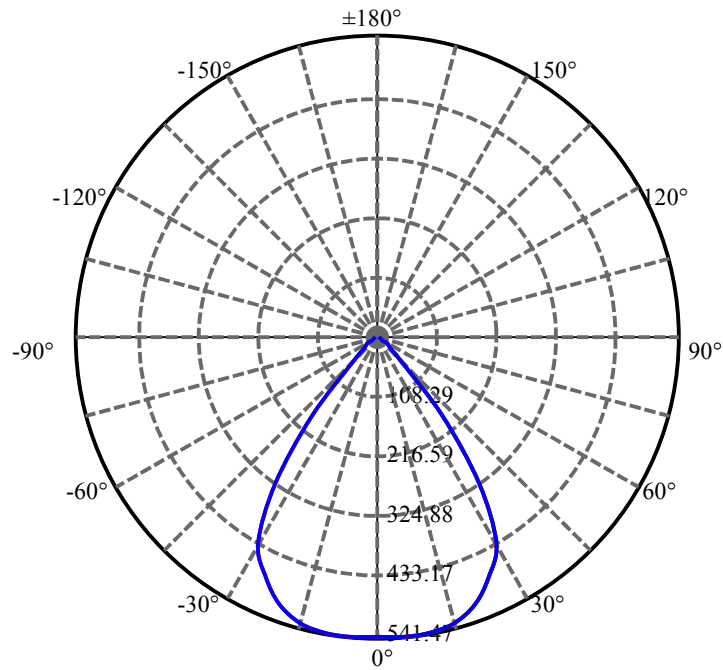
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	539.318	0.000	0	.000%	.000%
5.0	541.466	12.920	12.92	1.472%	1.817%
10.0	540.664	38.711	51.632	4.409%	7.263%
15.0	532.424	63.655	115.287	7.250%	16.217%
20.0	511.952	86.071	201.358	9.803%	28.324%
25.0	475.569	103.573	304.931	11.796%	42.893%
30.0	425.345	114.011	418.942	12.985%	58.931%
35.0	321.342	109.955	528.897	12.523%	74.398%
40.0	182.514	84.065	612.961	9.575%	86.223%
45.0	59.875	44.880	657.842	5.112%	92.536%
50.0	33.659	18.900	676.741	2.153%	95.195%
55.0	19.909	11.647	688.389	1.327%	96.833%
60.0	12.407	7.470	695.858	.851%	97.884%
65.0	7.566	4.855	700.714	.553%	98.567%
70.0	4.845	3.142	703.856	.358%	99.009%
75.0	3.410	2.158	706.014	.246%	99.312%
80.0	2.985	1.711	707.725	.195%	99.553%
85.0	2.907	1.601	709.326	.182%	99.778%
90.0	2.851	1.577	710.903	.180%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	418.94	47.72%	58.93%
0-40	612.96	69.81%	86.22%
0-60	695.86	79.25%	97.88%
0-90	709.33	80.79%	99.78%
0-120	709.33	80.79%	99.78%
0-180	710.90	80.97%	100.00%
60-90	20.94	2.38%	2.95%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-37.37	568.72	64.77%	80.00%

ZONAL LUMEN SUMMARY

0-10	51.63
10-20	149.73
20-30	217.58
30-40	194.02
40-50	63.78
50-60	19.12
60-70	8.00
70-80	3.87
80-90	1.60
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



C0(Max): —————

C0/C180: —————

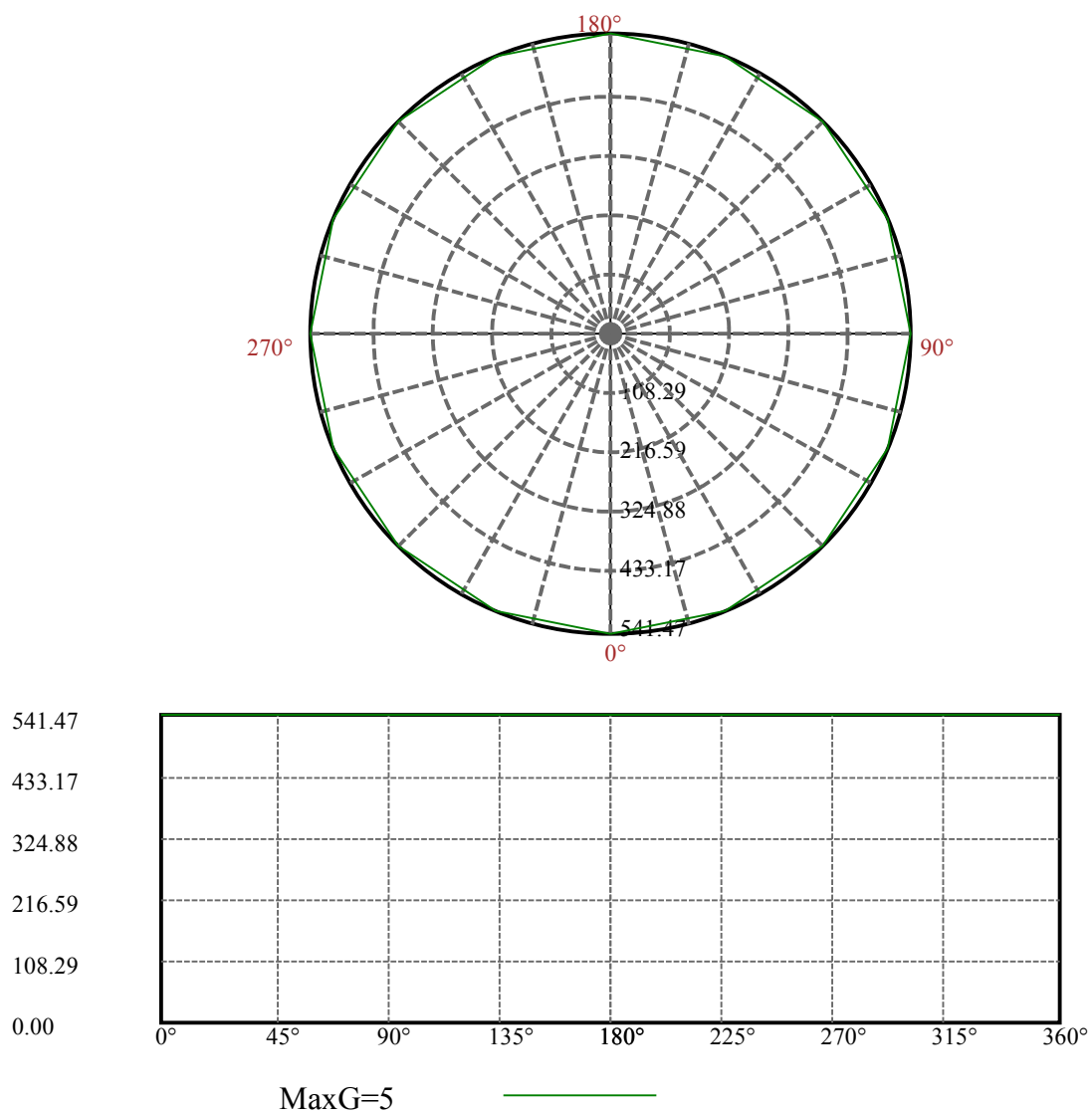
C90/C270: —————

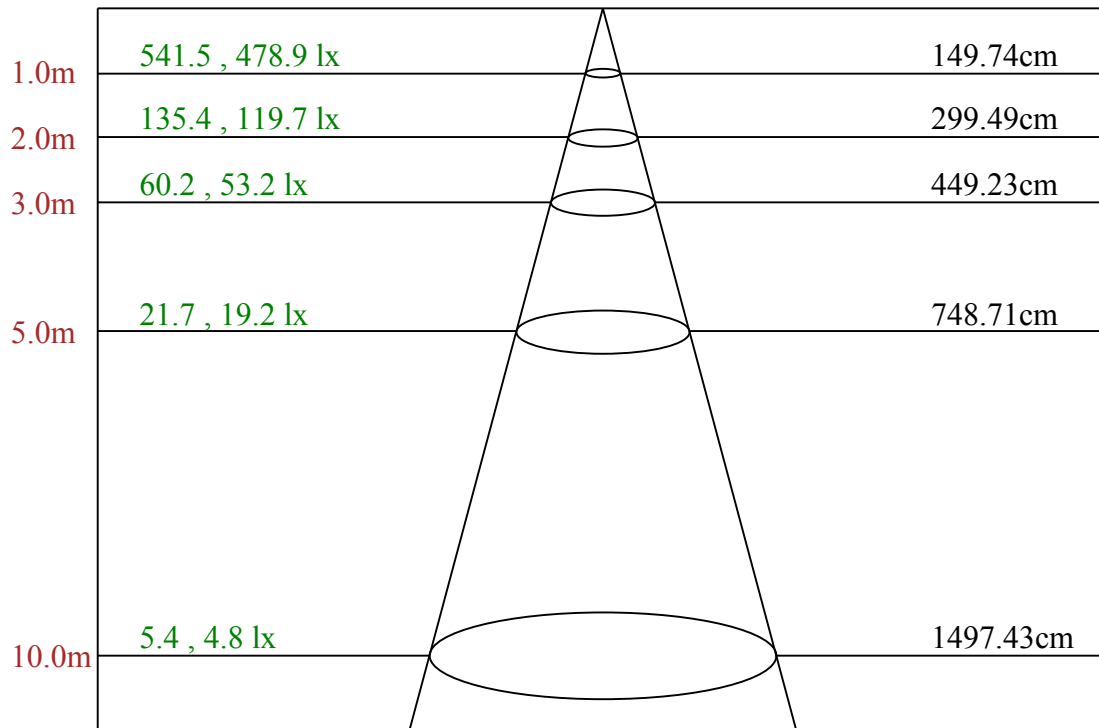
Field angle(10%Imax):C0/180Left:51.1 Right:41.1

:C90/270Left:51.1 Right:41.1

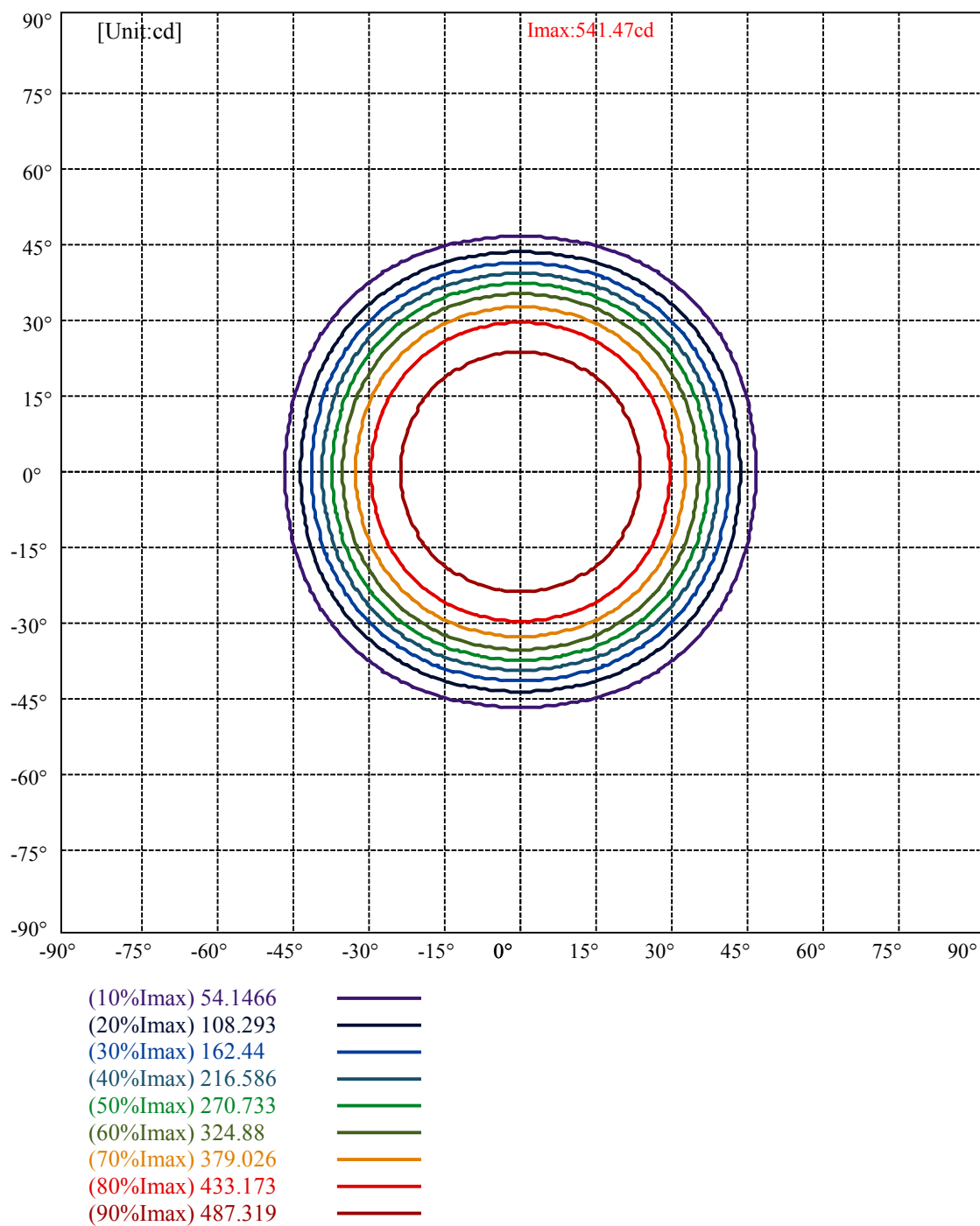
Beam Angle(50%Imax):C0/180Left:41.8 Right:31.8

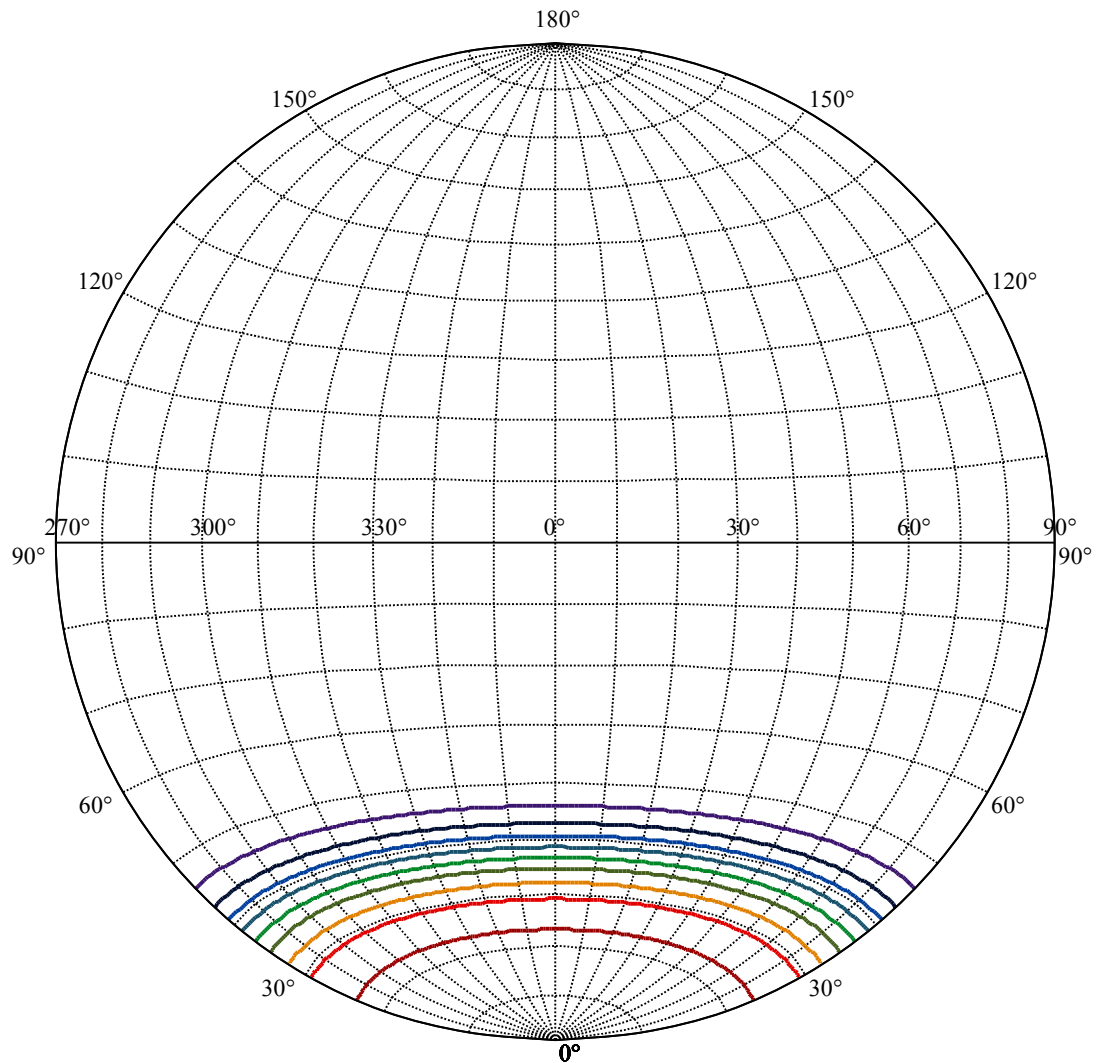
:C90/270Left:41.8 Right:31.8





Max , Ave Beam angle of C0 plane 73.65





House

[Unit:cd]

Road

Imax:541.47

(10%Imax) 54.1466

(20%Imax) 108.293

(30%Imax) 162.44

(40%Imax) 216.586

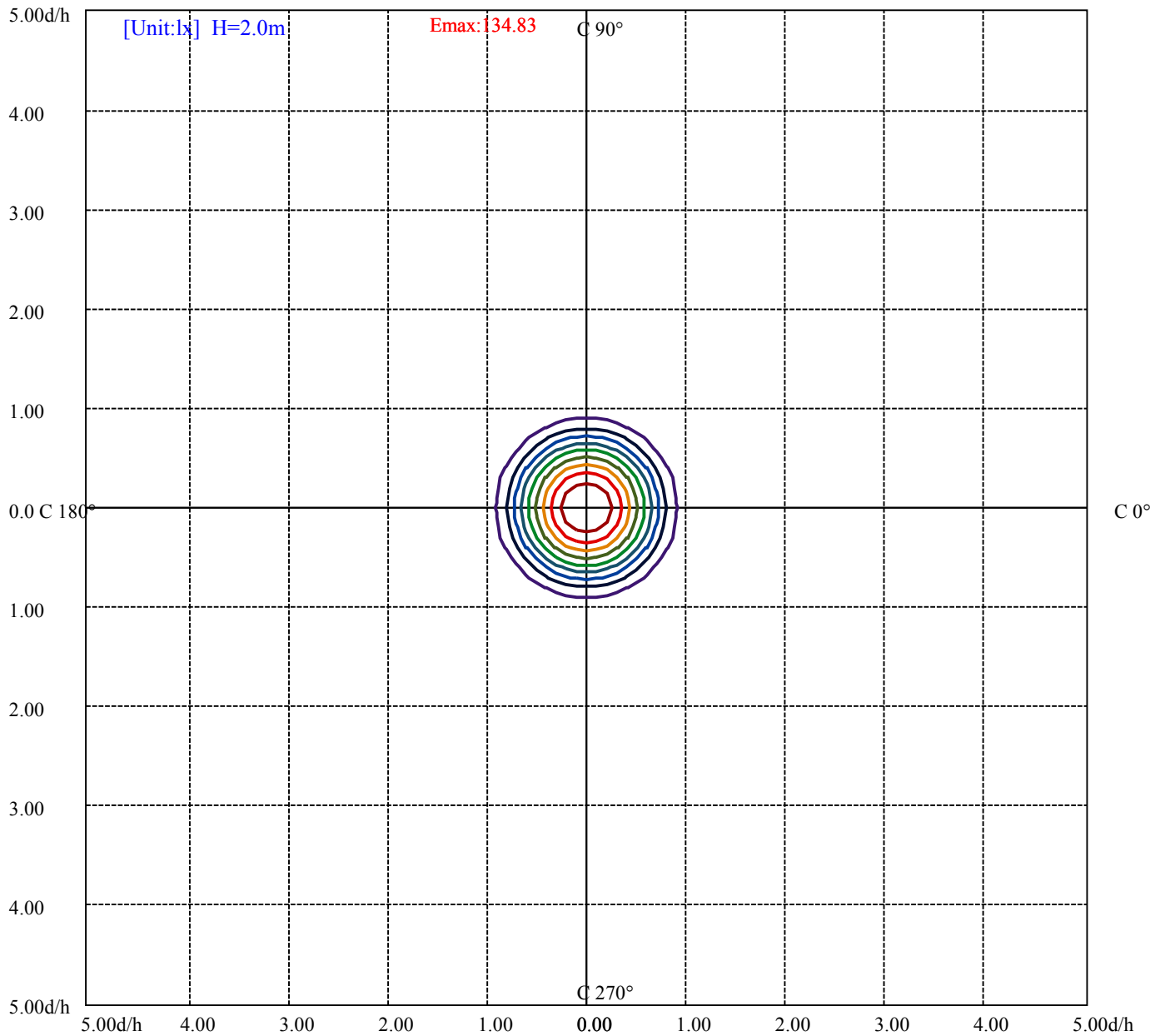
(50%Imax) 270.733

(60%Imax) 324.88

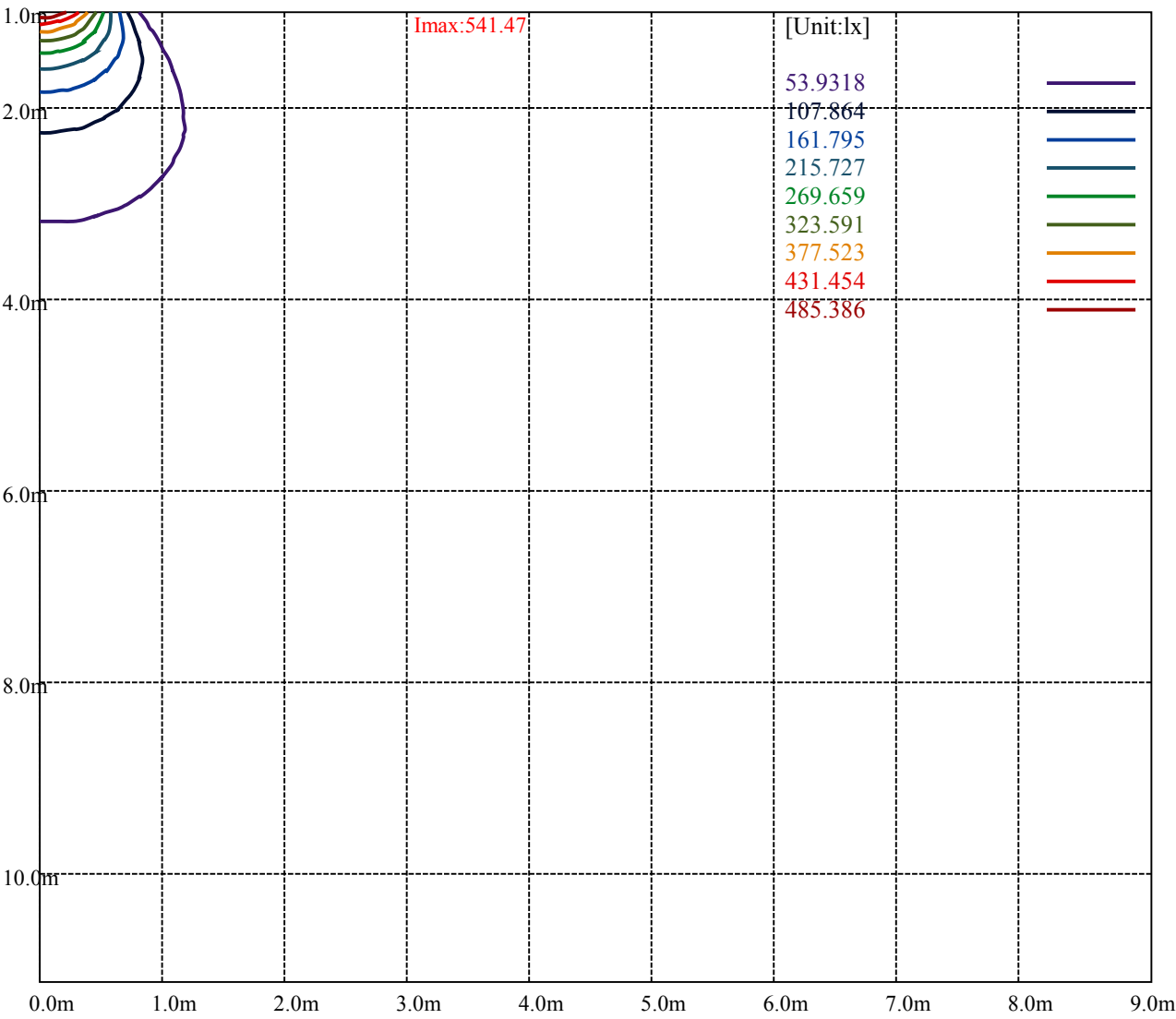
(70%Imax) 379.026

(80%Imax) 433.173

(90%Imax) 487.319



(10%Emax) 13.48295	—
(20%Emax) 26.966	—
(30%Emax) 40.44875	—
(40%Emax) 53.93175	—
(50%Emax) 67.41475	—
(60%Emax) 80.89775	—
(70%Emax) 94.38075	—
(80%Emax) 107.8635	—
(90%Emax) 121.3465	—



Luminance Table

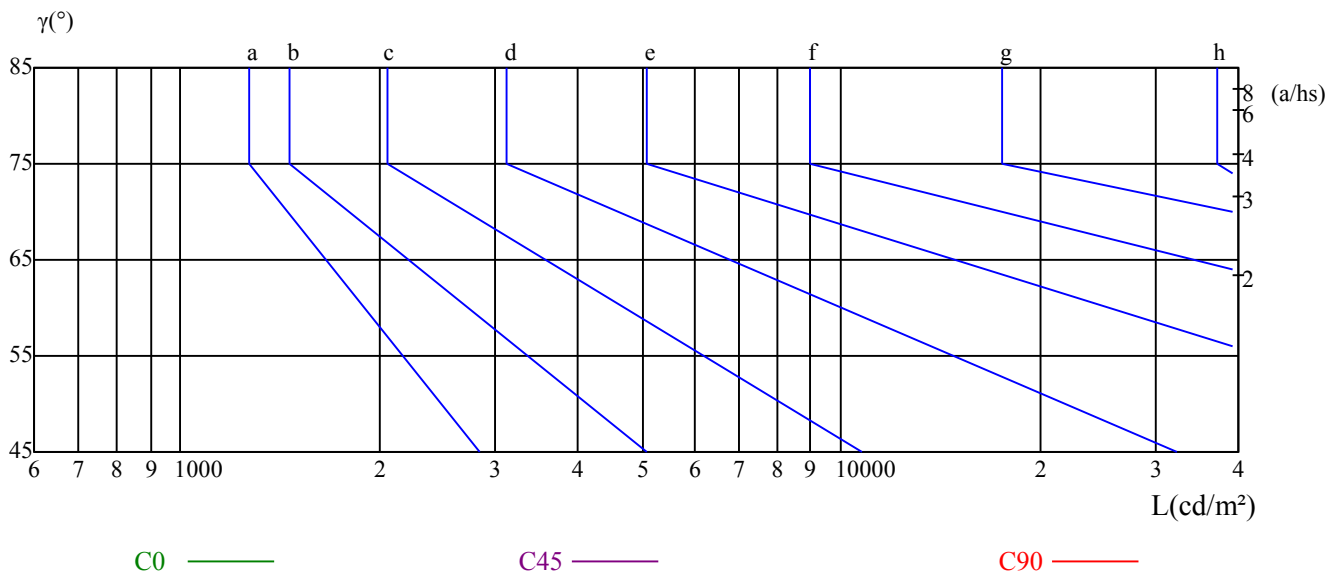
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

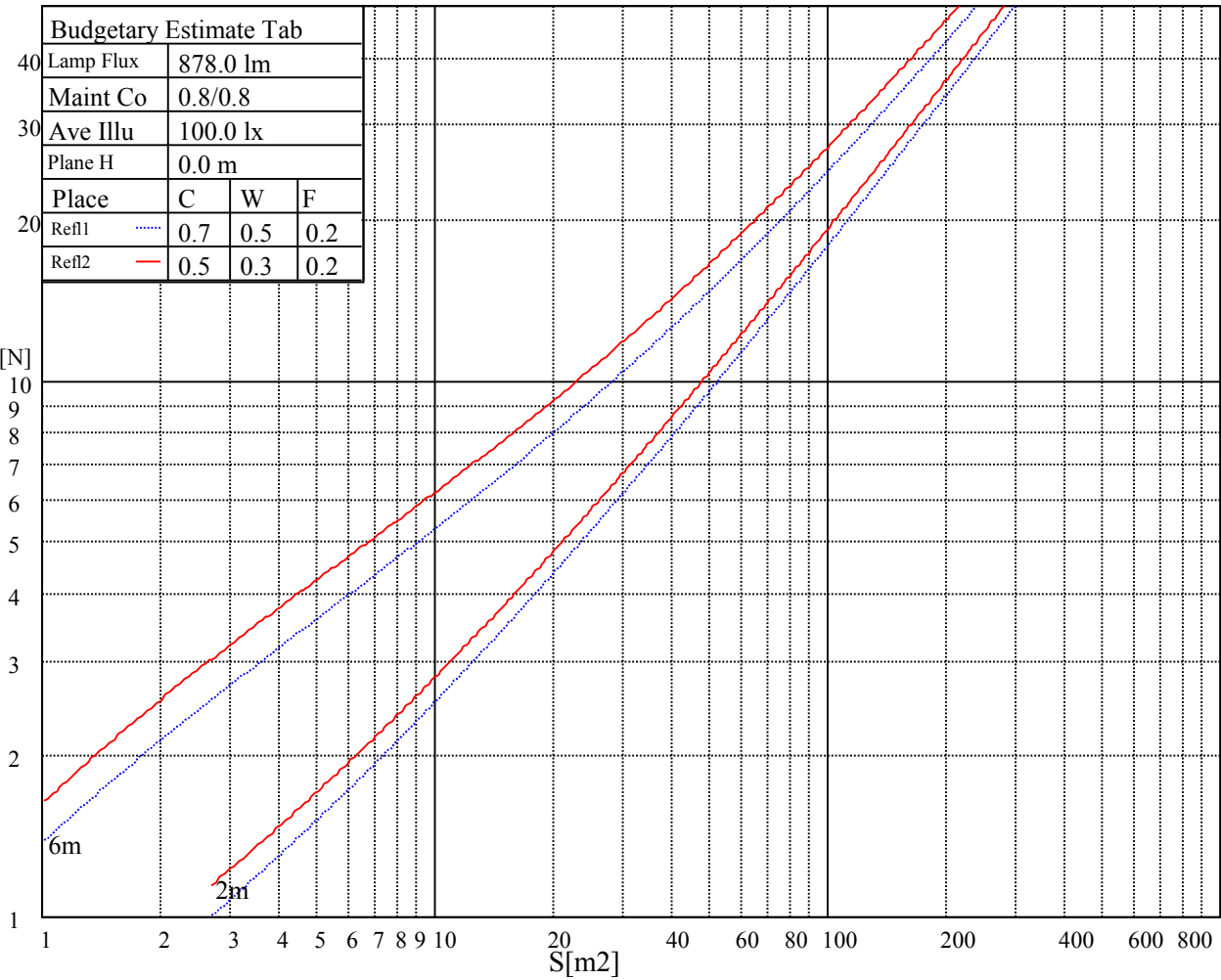
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

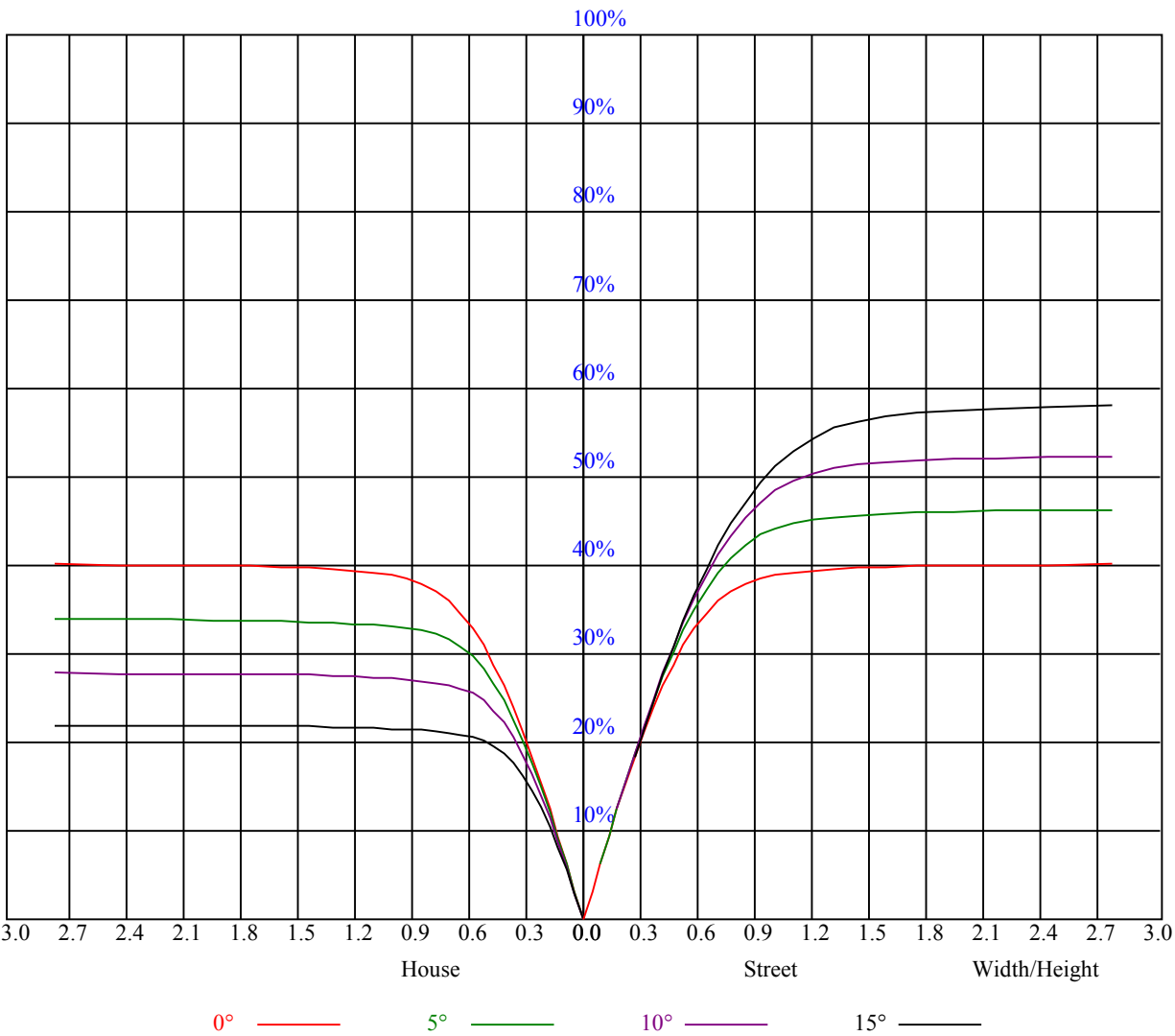
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve





RHOCC	80			70			50			30			10			0
RHOW	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR	COEFFICIENTS OF UTILIZATION RHOFC=20 CU															
0	0.96	0.96	0.96	0.94	0.94	0.94	0.90	0.90	0.90	0.86	0.86	0.86	0.83	0.83	0.83	0.81
1	0.89	0.87	0.85	0.87	0.85	0.83	0.84	0.82	0.81	0.81	0.79	0.78	0.78	0.77	0.76	0.74
2	0.82	0.78	0.75	0.80	0.77	0.74	0.78	0.75	0.73	0.75	0.73	0.71	0.73	0.71	0.70	0.68
3	0.75	0.71	0.67	0.74	0.70	0.67	0.72	0.69	0.66	0.70	0.67	0.65	0.68	0.66	0.64	0.62
4	0.70	0.65	0.61	0.69	0.64	0.61	0.67	0.63	0.60	0.65	0.62	0.59	0.64	0.61	0.58	0.57
5	0.65	0.59	0.56	0.64	0.59	0.55	0.62	0.58	0.55	0.61	0.57	0.54	0.60	0.56	0.54	0.53
6	0.60	0.55	0.51	0.59	0.54	0.51	0.58	0.54	0.50	0.57	0.53	0.50	0.56	0.52	0.50	0.48
7	0.56	0.51	0.47	0.55	0.50	0.47	0.54	0.50	0.46	0.53	0.49	0.46	0.52	0.49	0.46	0.45
8	0.52	0.47	0.43	0.52	0.47	0.43	0.51	0.46	0.43	0.50	0.46	0.43	0.49	0.45	0.43	0.41
9	0.49	0.44	0.40	0.48	0.43	0.40	0.48	0.43	0.40	0.47	0.43	0.40	0.46	0.42	0.40	0.38
10	0.46	0.41	0.37	0.45	0.41	0.37	0.45	0.40	0.37	0.44	0.40	0.37	0.43	0.40	0.37	0.36



Intensity data(cd)

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C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	544.56	538.93	530.55	528.47	509.79	471.54	415.18	305.89	179.61
22.5	537.36	537.36	538.93	531.23	512.33	487.97	443.93	359.78	210.09
45.0	538.31	534.88	536.79	532.01	516.66	487.69	454.11	391.67	252.62
67.5	540.39	534.71	536.57	532.80	515.19	486.96	439.43	350.33	210.99
90.0	538.31	535.73	538.14	530.83	506.53	469.18	412.93	294.53	164.31
112.5	536.51	540.23	543.26	534.77	516.26	491.23	445.50	357.86	227.87
135.0	537.53	544.73	542.87	531.79	514.80	484.59	445.22	382.05	207.11
157.5	541.58	546.36	542.03	531.51	513.68	479.25	426.83	320.51	184.61
180.0	544.56	545.63	539.16	527.40	509.57	459.96	395.33	236.64	138.60
202.5	537.36	546.69	545.06	534.83	512.61	469.63	417.77	287.83	147.54
225.0	538.31	546.98	546.69	538.54	516.83	481.11	441.17	369.39	194.23
247.5	540.39	547.88	544.56	531.45	504.23	460.29	398.14	251.04	129.83
270.0	538.31	546.47	543.54	531.28	504.84	457.03	395.10	259.48	136.97
292.5	536.51	544.22	541.58	531.06	505.35	461.08	408.71	285.02	143.10
315.0	537.53	538.43	543.66	537.47	520.03	483.81	446.74	384.36	220.50
337.5	541.58	534.26	537.24	533.36	512.55	477.79	419.46	305.10	172.24
360.0	544.56	538.93	530.55	528.47	509.79	471.54	415.18	305.89	179.61

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	53.66	32.68	18.23	11.08	6.86	4.56	3.32	2.98	2.98
22.5	78.41	38.87	22.50	13.95	8.27	5.29	3.49	2.98	2.93
45.0	80.33	39.60	23.18	15.30	9.00	5.34	3.71	3.04	2.87
67.5	75.26	38.81	23.29	13.95	8.78	5.51	3.60	2.98	2.87
90.0	49.44	32.51	18.68	11.36	7.20	4.73	3.32	2.93	2.87
112.5	80.21	39.43	23.34	14.68	8.83	5.63	3.71	3.04	2.93
135.0	70.65	37.07	22.73	14.79	8.83	5.29	3.66	3.09	2.93
157.5	59.23	34.43	20.19	12.43	7.76	5.06	3.49	3.04	2.98
180.0	41.06	26.61	15.81	9.79	6.13	4.22	3.21	2.98	2.93
202.5	48.99	30.26	18.06	11.36	6.92	4.50	3.21	2.93	2.87
225.0	62.55	34.76	21.49	13.44	8.16	4.95	3.49	2.98	2.87
247.5	43.76	27.90	16.82	10.29	6.41	4.28	3.15	2.93	2.87
270.0	41.85	26.83	16.03	9.79	6.13	4.33	3.15	2.93	2.87
292.5	48.15	29.81	17.55	10.35	6.64	4.39	3.21	2.93	2.87
315.0	70.99	36.90	22.33	14.63	8.33	5.01	3.60	3.04	2.93
337.5	53.44	32.06	18.34	11.31	6.81	4.44	3.26	2.98	2.98
360.0	53.66	32.68	18.23	11.08	6.86	4.56	3.32	2.98	2.98

C/γ(°)	90.0
0.0	2.87
22.5	2.81
45.0	2.81
67.5	2.87
90.0	2.81
112.5	2.87
135.0	2.87
157.5	2.87
180.0	2.87
202.5	2.81
225.0	2.81
247.5	2.81
270.0	2.87
292.5	2.87
315.0	2.87
337.5	2.93
360.0	2.87