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Nata

LumCAT: 2-2078-M
Luminaire: 92.70.131.00
Report No: NATA0100
Test No: GC2019092507
LampCAT: OSRAM OPTO SOLERIQ S15
Lamp flux(lm): 1643.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 34.5600
Current(A): 0.4470
Power (W): 15.4500
PF: 0.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 1297.81
Efficiency(%): 78.99%
Lumens(lm)/Power(W): 84.00
Central intensity(cd): 4320.703
Maximum intensity(cd): 4320.703
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=32.7
[C90/270]Total=32.7
Field angle(10%Imax): [C0/180]Total=49.3
[C90/270]Total=49.3
Maximum s/h(1/2): C0_180=0.55 C90_270=0.55
Maximum s/h(1/4): C0_180=0.51 C90_270=0.51
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 78.99%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.503%

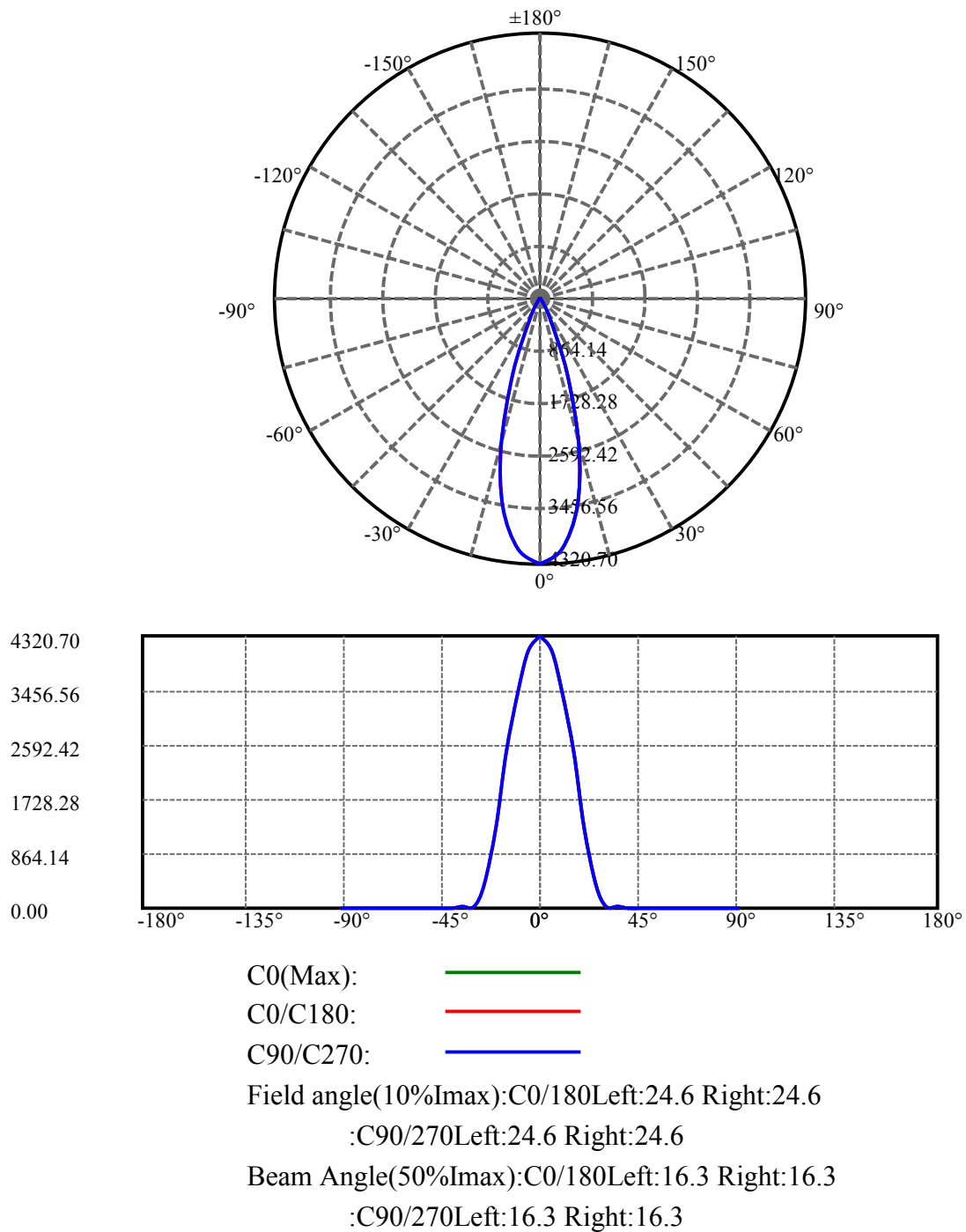
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4320.703	0.000	0	.000%	.000%
5.0	4091.977	100.571	100.571	6.121%	7.749%
10.0	3434.555	269.248	369.819	16.388%	28.496%
15.0	2476.758	350.655	720.474	21.342%	55.514%
20.0	1294.327	310.790	1031.264	18.916%	79.462%
25.0	364.409	173.971	1205.235	10.589%	92.867%
30.0	28.673	49.745	1254.98	3.028%	96.700%
35.0	14.358	6.337	1261.317	.386%	97.188%
40.0	10.434	4.136	1265.453	.252%	97.506%
45.0	8.445	3.496	1268.949	.213%	97.776%
50.0	7.453	3.212	1272.161	.196%	98.023%
55.0	6.884	3.117	1275.278	.190%	98.264%
60.0	6.567	3.109	1278.387	.189%	98.503%
65.0	6.342	3.138	1281.526	.191%	98.745%
70.0	6.244	3.187	1284.712	.194%	98.990%
75.0	6.138	3.236	1287.949	.197%	99.240%
80.0	6.103	3.275	1291.224	.199%	99.492%
85.0	6.026	3.296	1294.52	.201%	99.746%
90.0	6.005	3.294	1297.814	.200%	100.000%

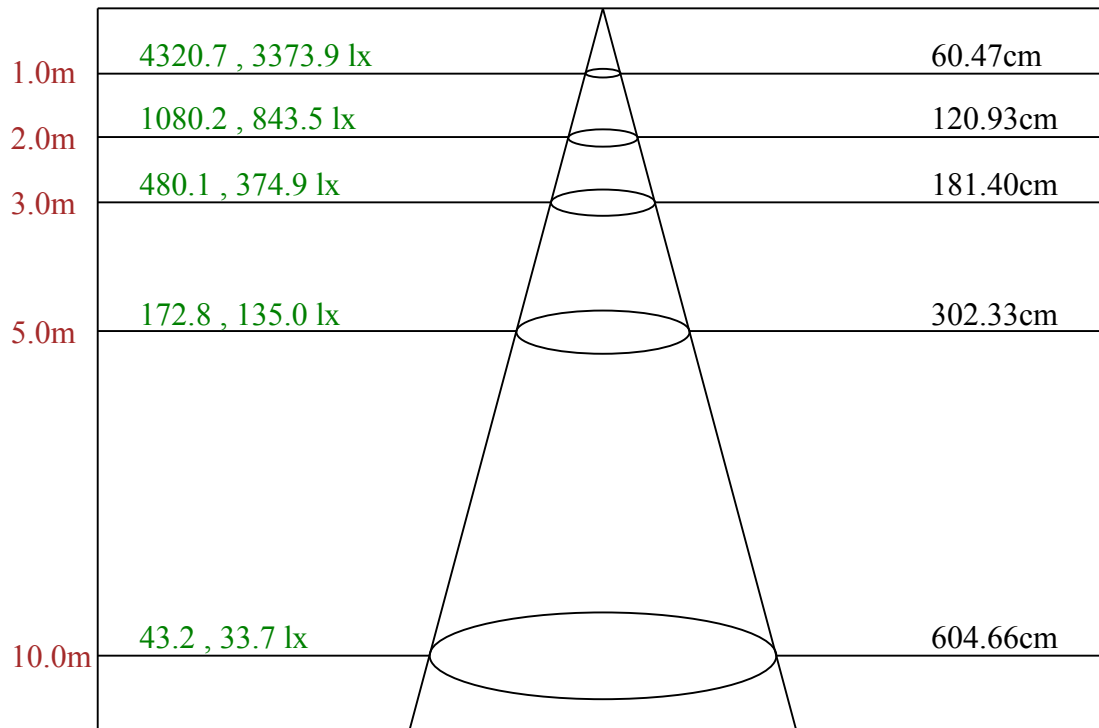
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1254.98	76.38%	96.70%
0-40	1265.45	77.02%	97.51%
0-60	1278.39	77.81%	98.50%
0-90	1294.52	78.79%	99.75%
0-120	1294.52	78.79%	99.75%
0-180	1297.81	78.99%	100.00%
60-90	19.24	1.17%	1.48%
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%
0-20.20	1038.25	63.19%	80.00%

ZONAL LUMEN SUMMARY

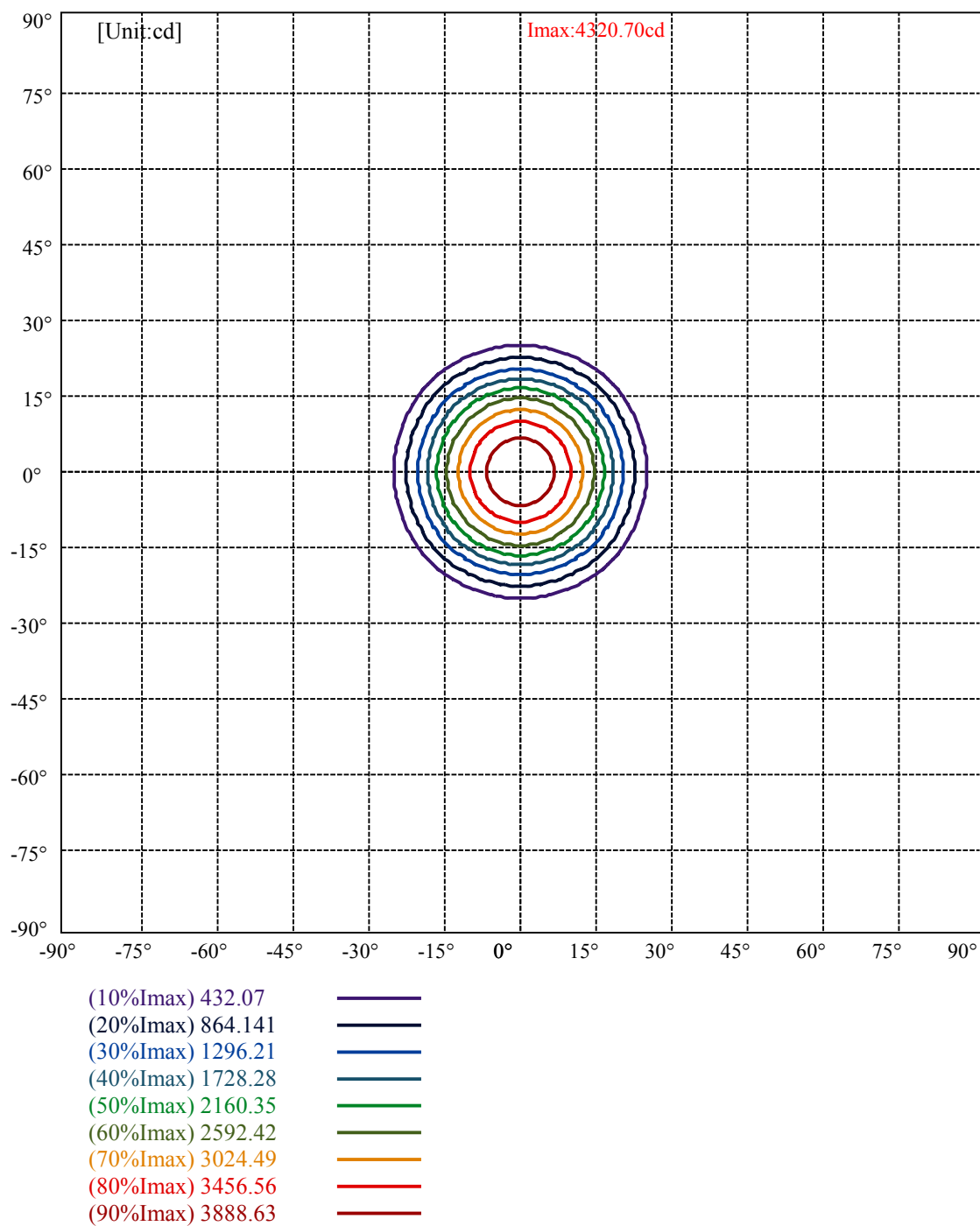
0-10	369.82
10-20	661.45
20-30	223.72
30-40	10.47
40-50	6.71
50-60	6.23
60-70	6.33
70-80	6.51
80-90	3.30
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

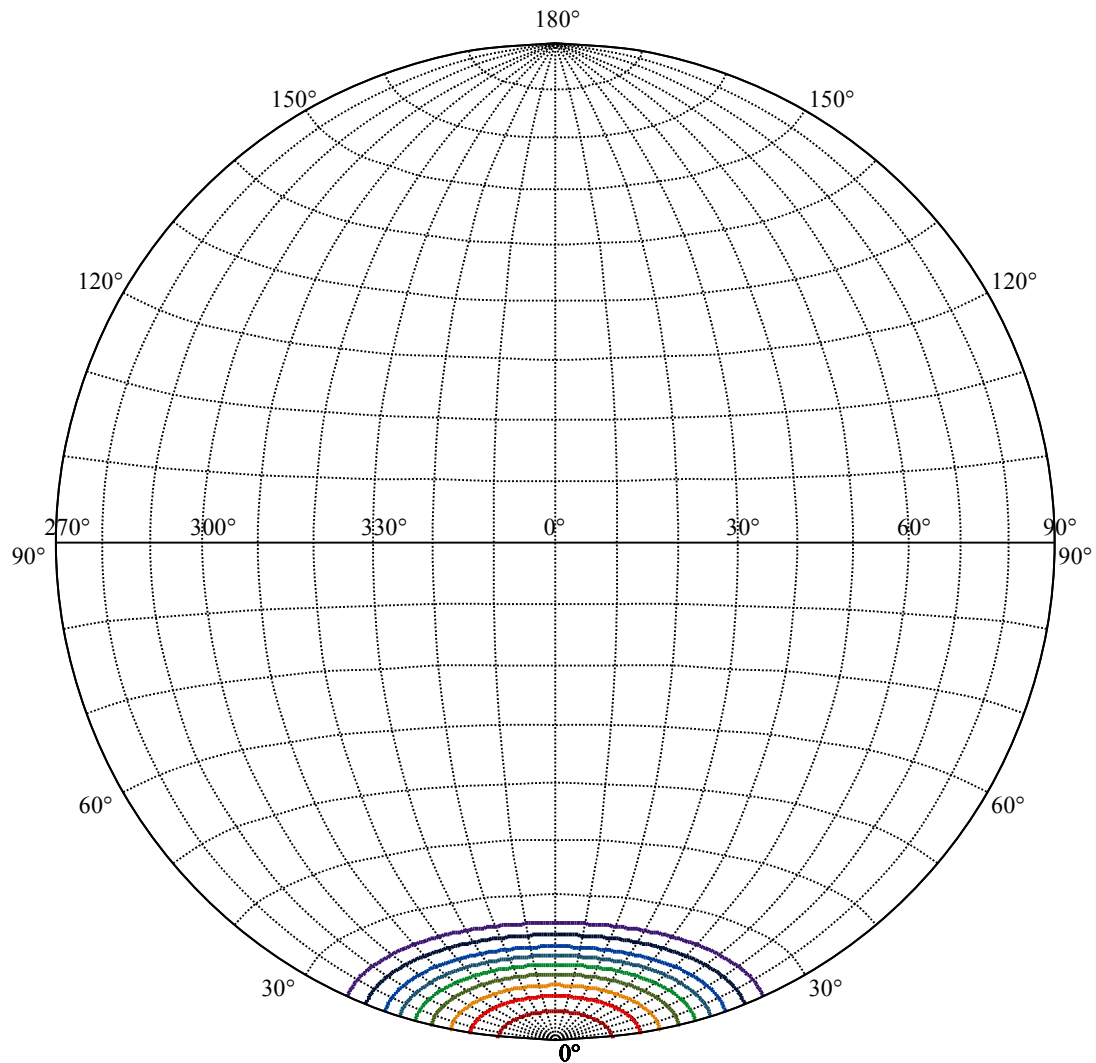




Max , Ave

Beam angle of C0 plane 33.64





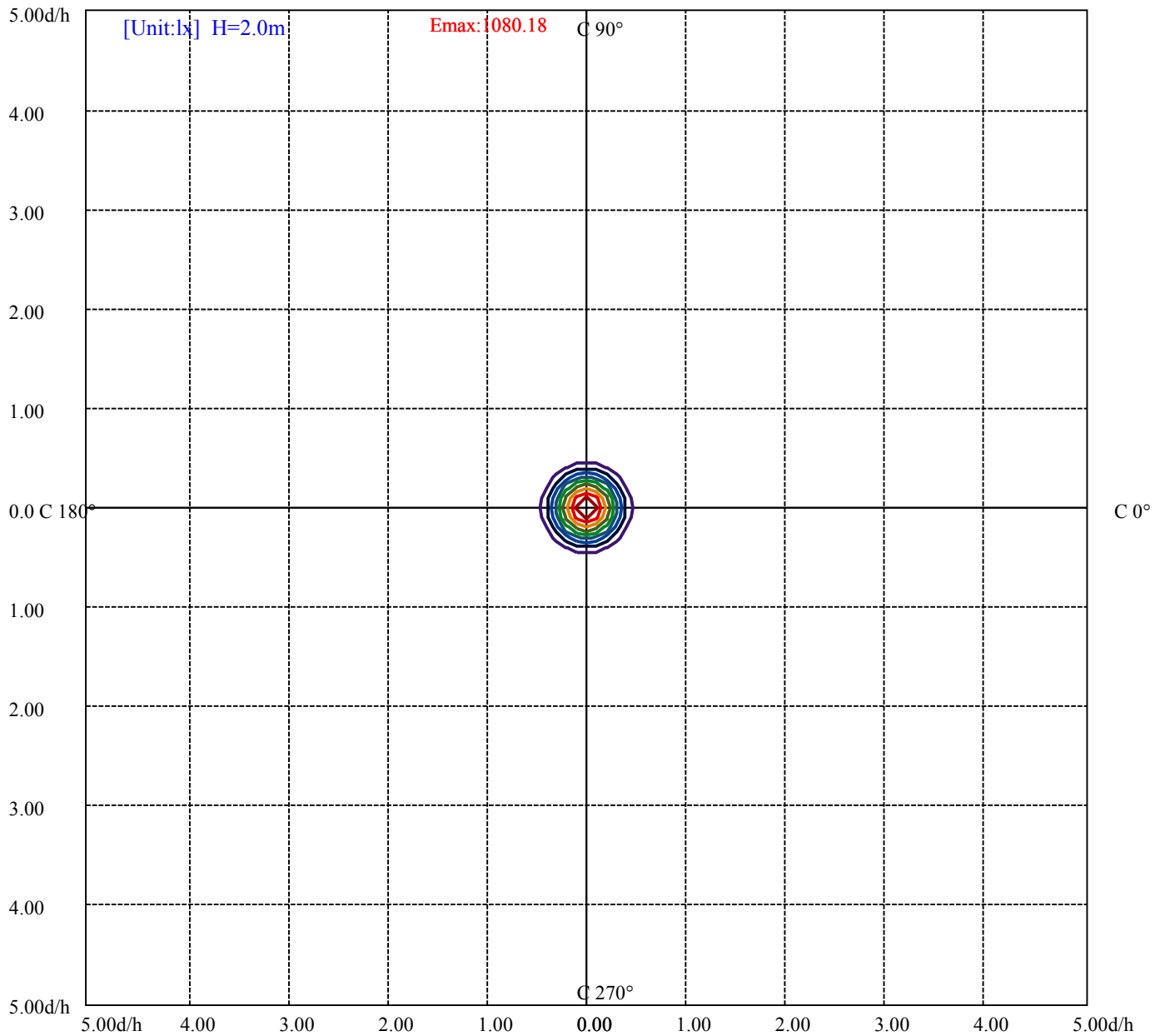
House

[Unit:cd]

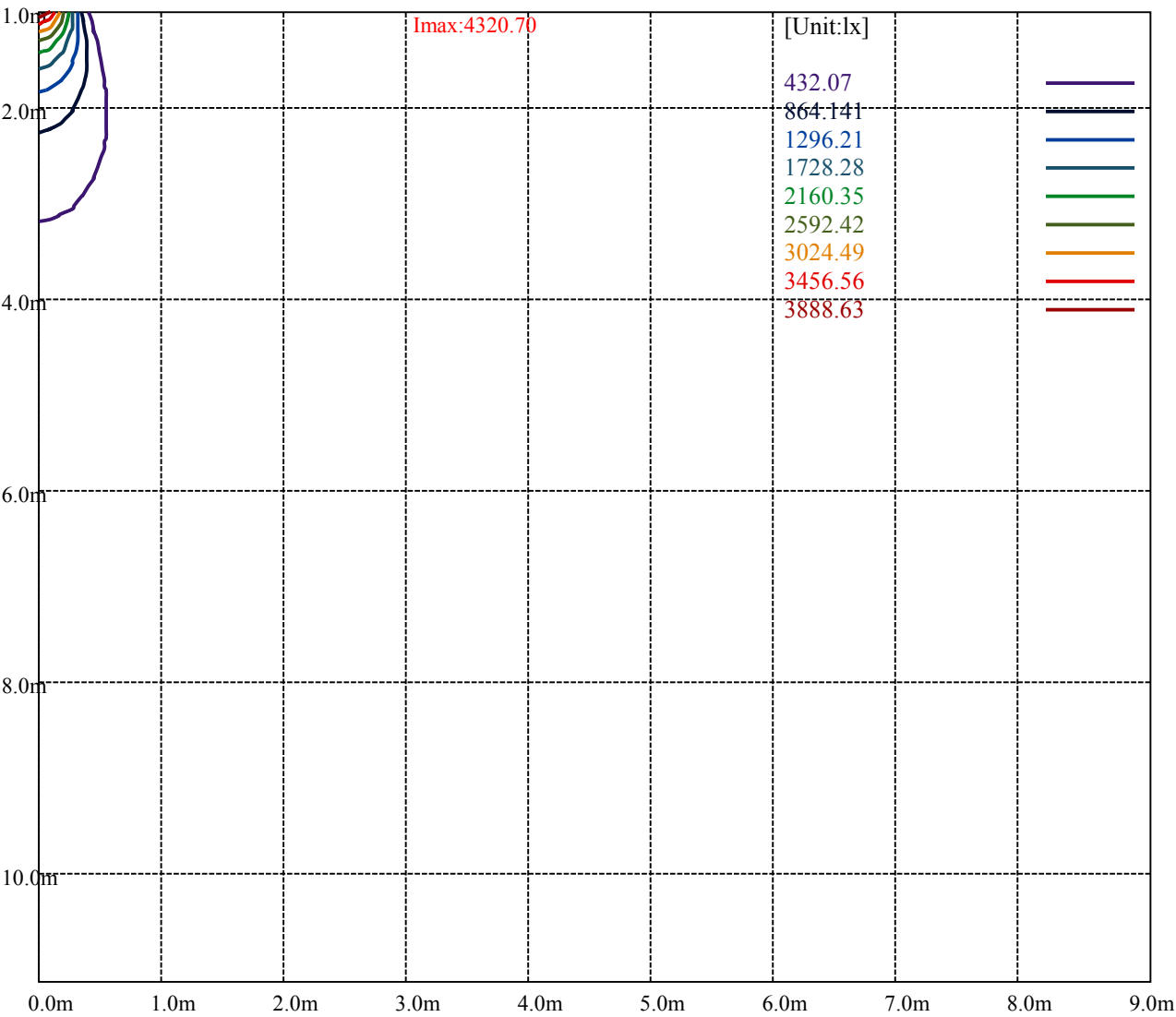
Road

Imax:4320.70

(10%Imax)	432.07	—
(20%Imax)	864.141	—
(30%Imax)	1296.21	—
(40%Imax)	1728.28	—
(50%Imax)	2160.35	—
(60%Imax)	2592.42	—
(70%Imax)	3024.49	—
(80%Imax)	3456.56	—
(90%Imax)	3888.63	—



(10%Emax)	108.0175	—
(20%Emax)	216.0347	—
(30%Emax)	324.0525	—
(40%Emax)	432.07	—
(50%Emax)	540.0875	—
(60%Emax)	648.105	—
(70%Emax)	756.1225	—
(80%Emax)	864.14	—
(90%Emax)	972.1575	—



Luminance Table

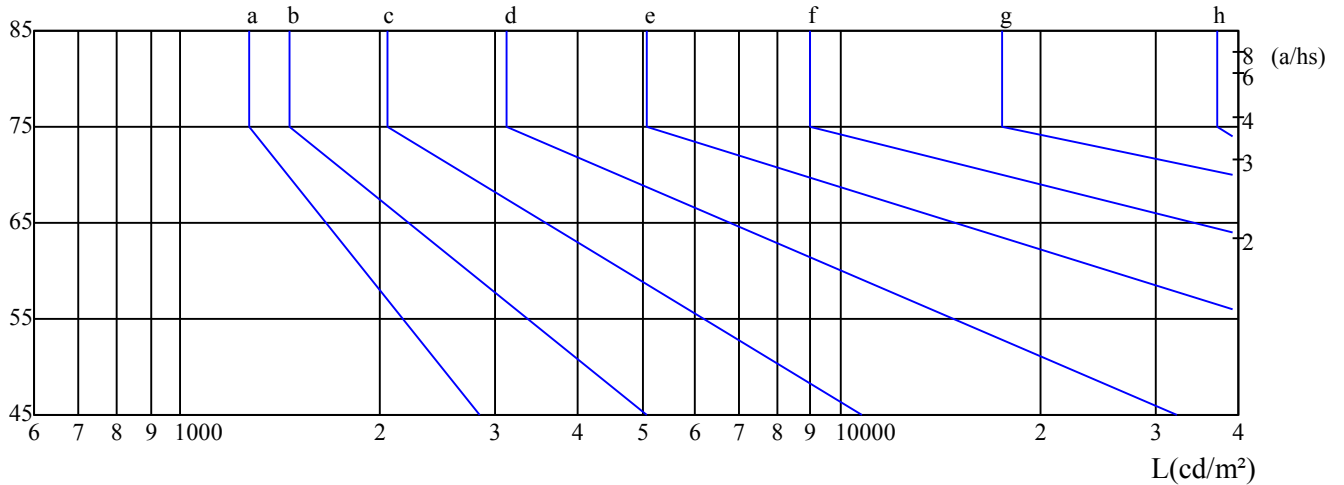
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

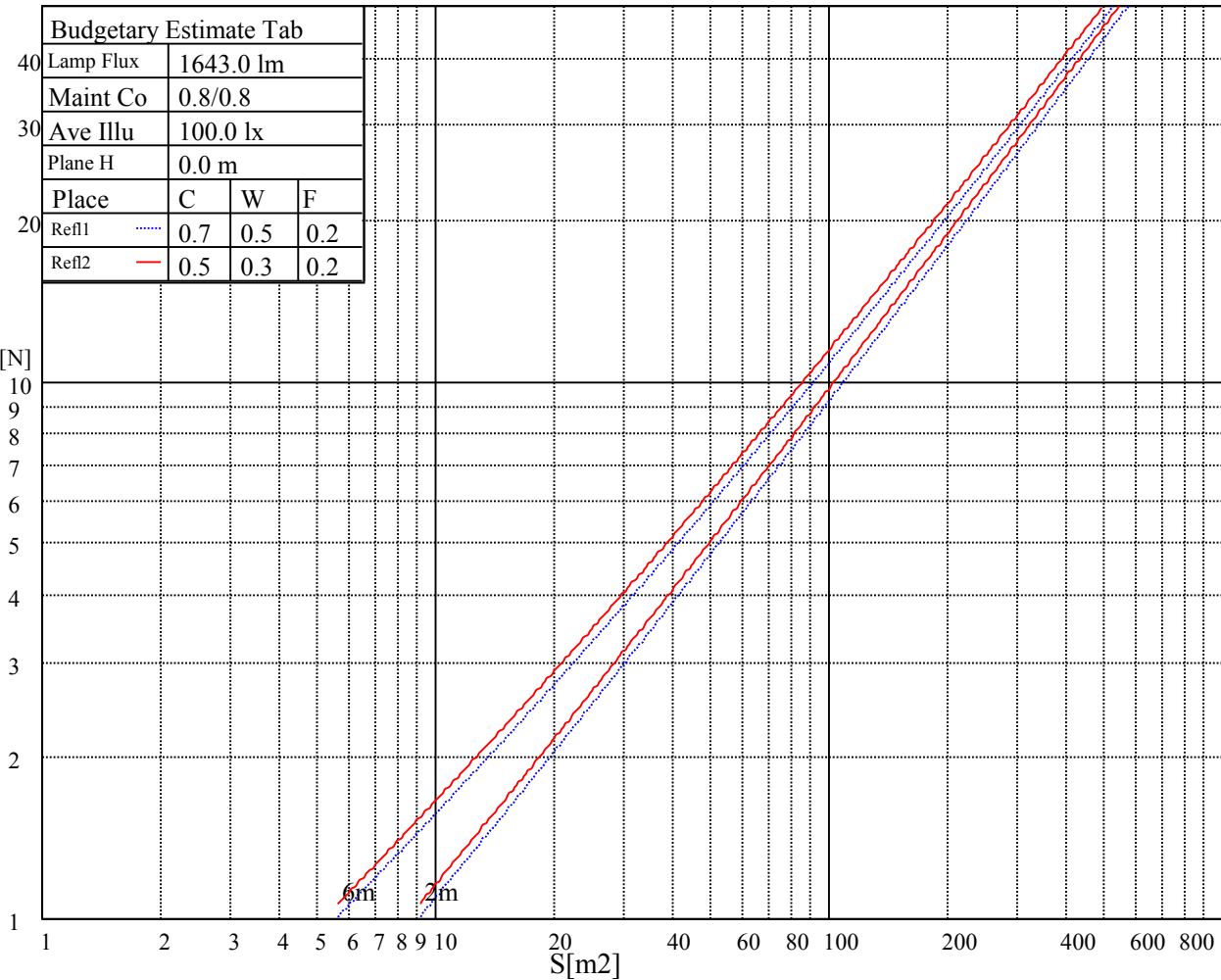
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

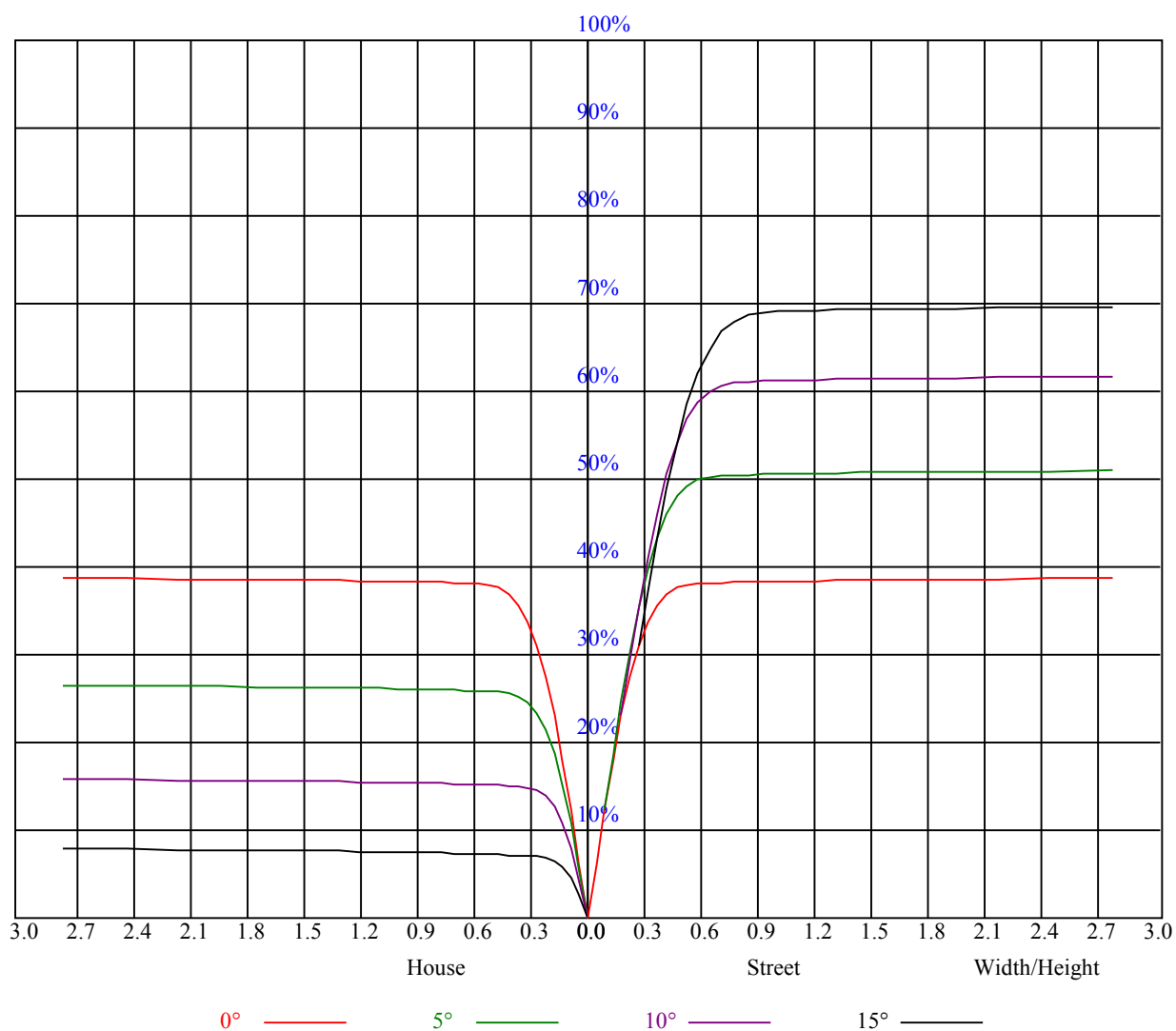
C0 ———

C45 ———

C90 ———



RHOC	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	0.94	0.94	0.94	0.92	0.92	0.92	0.88	0.88	0.88	0.84	0.84	0.84	0.81	0.81	0.81	0.79
1	0.89	0.87	0.86	0.87	0.86	0.84	0.84	0.83	0.82	0.81	0.80	0.79	0.78	0.78	0.77	0.76
2	0.84	0.82	0.80	0.83	0.81	0.79	0.81	0.79	0.77	0.78	0.77	0.75	0.76	0.75	0.74	0.73
3	0.81	0.78	0.75	0.80	0.77	0.75	0.78	0.75	0.73	0.76	0.74	0.72	0.74	0.73	0.71	0.70
4	0.77	0.74	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.73	0.71	0.69	0.72	0.70	0.69	0.68
5	0.74	0.71	0.68	0.74	0.70	0.68	0.72	0.70	0.68	0.71	0.69	0.67	0.70	0.68	0.66	0.65
6	0.72	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.69	0.67	0.65	0.68	0.66	0.64	0.63
7	0.69	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.67	0.64	0.63	0.66	0.64	0.62	0.61
8	0.67	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.65	0.62	0.61	0.64	0.62	0.60	0.60
9	0.65	0.61	0.59	0.64	0.61	0.59	0.64	0.61	0.59	0.63	0.61	0.59	0.63	0.60	0.59	0.58
10	0.63	0.60	0.57	0.63	0.59	0.57	0.62	0.59	0.57	0.62	0.59	0.57	0.61	0.59	0.57	0.56



Intensity data(cd)										Appendix Page: 14 Total:14	
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	4318.88	4121.44	3493.13	2629.13	1474.31	397.13	33.41	14.96	10.58		
45.0	4321.69	4109.63	3471.19	2530.13	1418.06	369.00	31.05	14.74	10.52		
90.0	4314.94	4011.75	3286.13	2255.06	1087.65	275.12	24.36	13.22	9.84		
135.0	4327.31	4113.00	3474.00	2482.31	1509.19	389.25	29.08	14.63	10.58		
180.0	4318.88	4068.56	3357.56	2417.63	1069.31	340.54	25.59	13.73	10.29		
225.0	4321.69	4057.88	3399.19	2394.56	1116.28	320.51	25.76	14.12	10.41		
270.0	4314.94	4159.69	3603.38	2671.88	1589.06	522.56	33.69	15.41	11.03		
315.0	4327.31	4093.88	3391.88	2433.38	1090.74	301.16	26.44	14.06	10.24		
360.0	4318.88	4121.44	3493.13	2629.13	1474.31	397.13	33.41	14.96	10.58		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	8.55	7.54	6.92	6.58	6.41	6.30	6.19	6.13	6.08		
45.0	8.49	7.43	6.86	6.53	6.30	6.19	6.08	6.02	5.96		
90.0	8.21	7.31	6.81	6.53	6.36	6.24	6.13	6.13	6.08		
135.0	8.49	7.54	6.98	6.64	6.36	6.24	6.19	6.13	6.08		
180.0	8.38	7.48	6.92	6.64	6.36	6.30	6.13	6.13	6.02		
225.0	8.38	7.37	6.81	6.53	6.24	6.19	6.08	6.02	5.96		
270.0	8.72	7.54	6.92	6.58	6.36	6.24	6.19	6.13	6.02		
315.0	8.33	7.43	6.86	6.53	6.36	6.24	6.13	6.13	6.02		
360.0	8.55	7.54	6.92	6.58	6.41	6.30	6.19	6.13	6.08		
C/γ(°)	90.0										
0.0	6.08										
45.0	5.91										
90.0	6.02										
135.0	6.08										
180.0	6.02										
225.0	5.91										
270.0	6.02										
315.0	6.02										
360.0	6.08										