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## Nata

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### Client:

LumCAT: 2-1779-L

Luminaire: 92.70.131.00

Report No: NT2018010912

Test No: GC2018010912

LampCAT: SEOUL SAWx15

Lamp flux(lm): 3105.0

Number of Lamps: 1

Length(mm): 64

Phm Type: C

Voltage(V): 34.6000

Current(A): 0.6400

Power (W): 22.1440

PF: 0.0000

Ballast type: DC

Width(mm): 64

Height(mm): 0

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## Photometric Results

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Lumens(lm): 3021.23, Efficiency(%): 97.30% , Luminous Efficacy(lm/W): 136.44

Central intensity(cd): 6085.384, Maximum intensity(cd): 6085.384

Angle of maximum intensity: C=0.0  $\gamma$ =0.0

Beam Angle(50%Imax): [C0/180]Total=39.6

[C90/270]Total=39.6

Field angle(10%Imax): [C0/180]Total=68.4

[C90/270]Total=68.4

Maximum s/h(1/2): C0\_180=0.66 C90\_270=0.66

Maximum s/h(1/4): C0\_180=0.63 C90\_270=0.63

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 98.38%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 97.386%

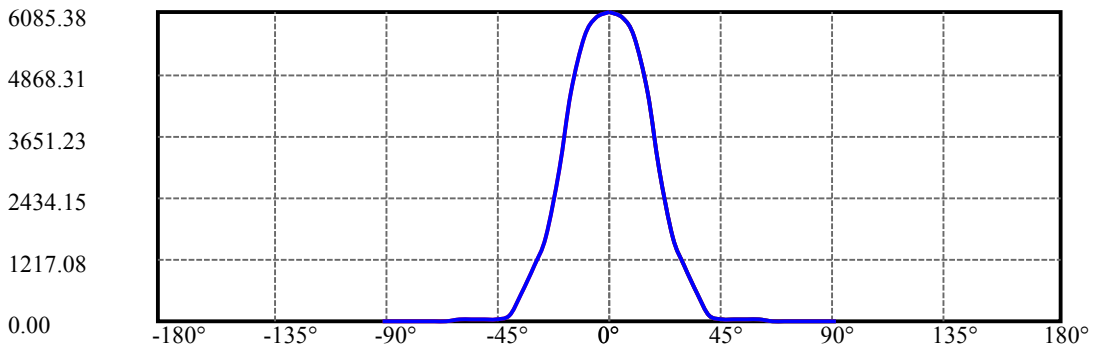
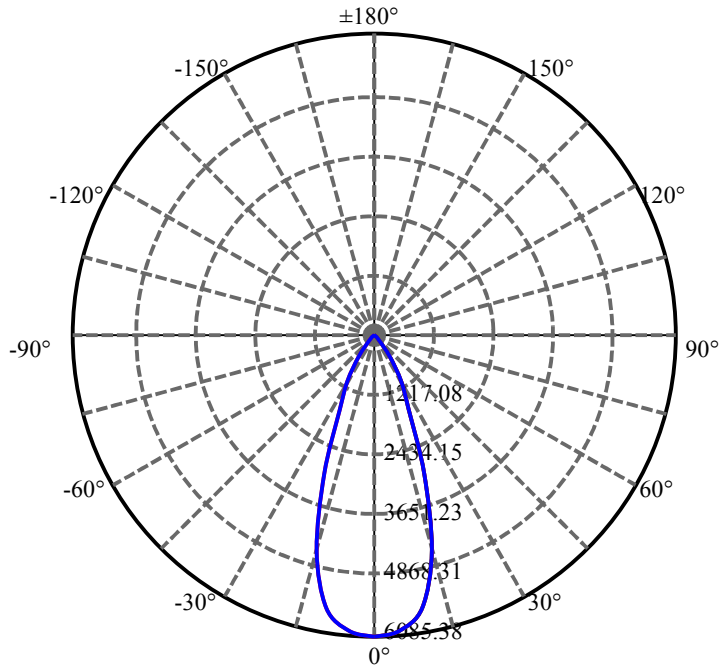
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6085.384	36.392	36.392	1.172%	1.205%
5.0	5990.343	286.179	322.57	9.217%	10.677%
10.0	5607.288	533.719	856.289	17.189%	28.342%
15.0	4510.977	639.965	1496.254	20.611%	49.525%
20.0	2975.454	557.820	2054.075	17.965%	67.988%
25.0	1676.399	388.343	2442.417	12.507%	80.842%
30.0	1091.679	299.195	2741.612	9.636%	90.745%
35.0	510.717	160.569	2902.181	5.171%	96.060%
40.0	100.967	35.574	2937.755	1.146%	97.237%
45.0	25.464	9.869	2947.625	.318%	97.564%
50.0	21.431	8.999	2956.623	.290%	97.862%
55.0	20.082	9.017	2965.64	.290%	98.160%
60.0	19.462	9.239	2974.879	.298%	98.466%
65.0	18.485	9.183	2984.062	.296%	98.770%
70.0	17.198	8.858	2992.921	.285%	99.063%
75.0	15.657	8.290	3001.21	.267%	99.337%
80.0	15.065	8.132	3009.342	.262%	99.607%
85.0	14.728	8.042	3017.384	.259%	99.873%
90.0	14.019	3.842	3021.226	.124%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2741.61	88.30%	90.75%
0-40	2937.76	94.61%	97.24%
0-60	2974.88	95.81%	98.47%
0-90	3017.38	97.18%	99.87%
0-120	3017.38	97.18%	99.87%
0-180	3021.23	97.30%	100.00%
60-90	51.74	1.67%	1.71%
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%
0-24.67	2416.98	77.84%	80.00%

ZONAL LUMEN SUMMARY

0-10	856.29
10-20	1197.79
20-30	687.54
30-40	196.14
40-50	18.87
50-60	18.26
60-70	18.04
70-80	16.42
80-90	8.04
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

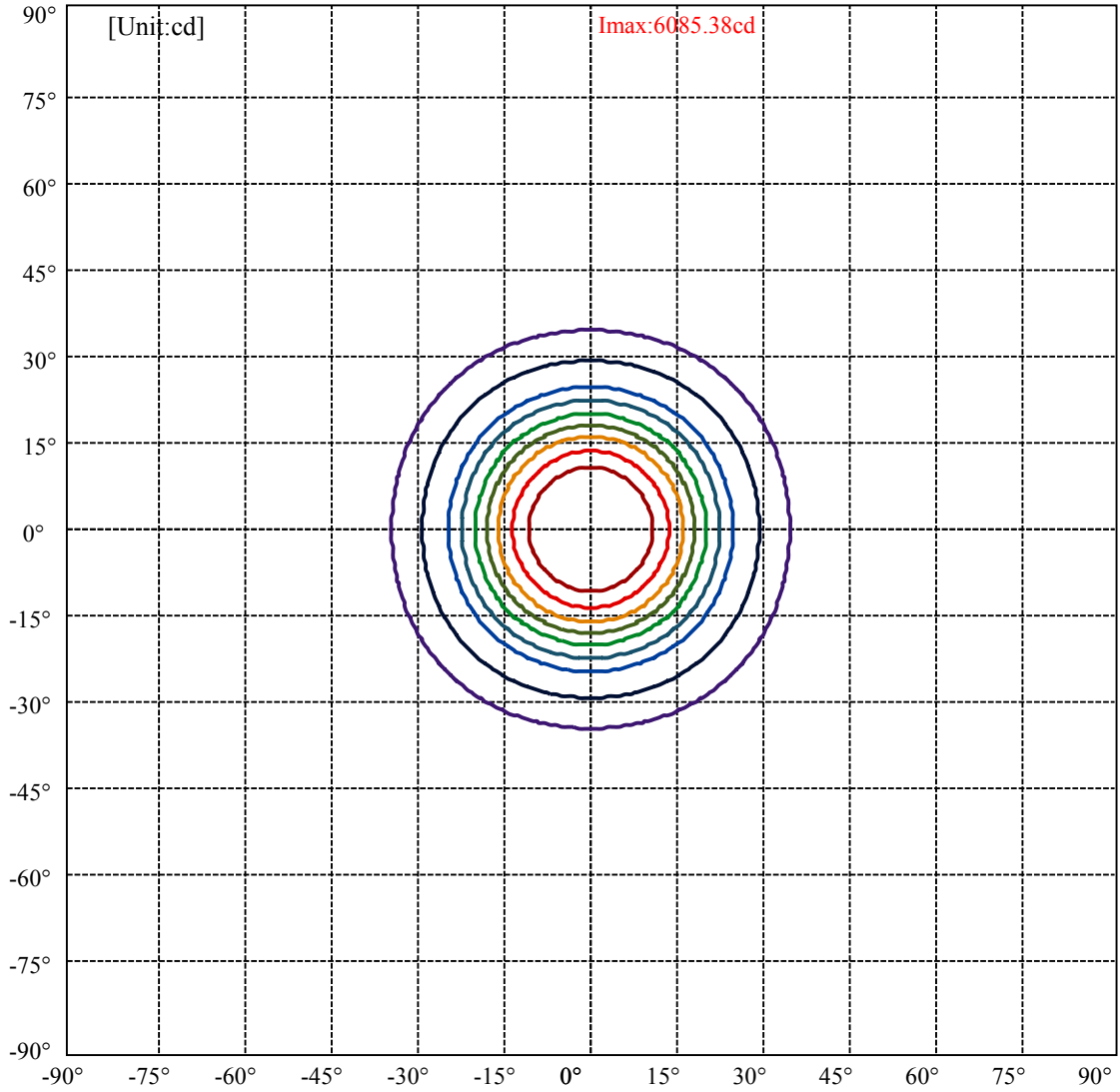


C0(Max): —————  
C0/C180: —————  
C90/C270: —————

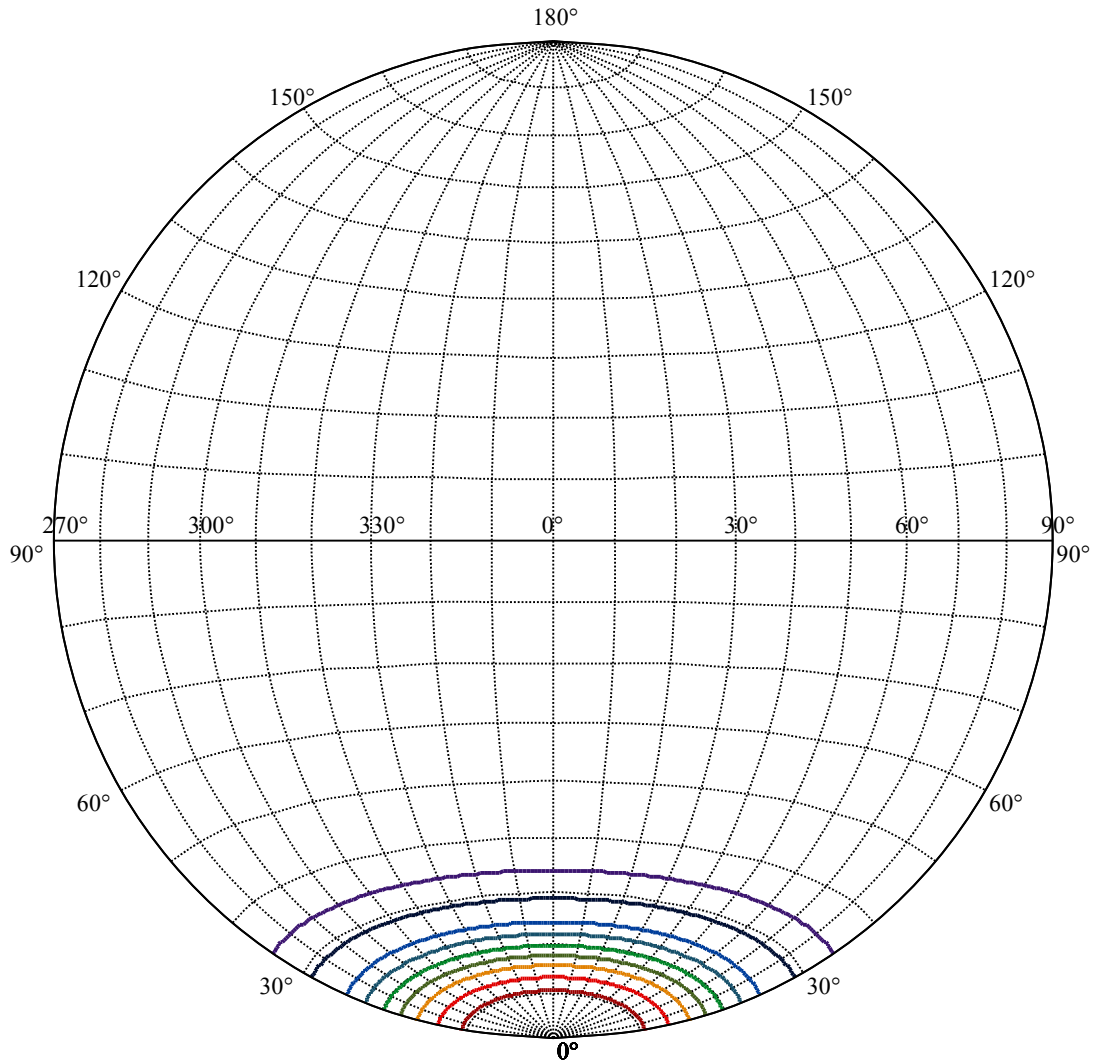
Field angle(10%Imax):C0/180Left:34.2 Right:34.2  
:C90/270Left:34.2 Right:34.2

Beam Angle(50%Imax):C0/180Left:19.8 Right:19.8  
:C90/270Left:19.8 Right:19.8





(10%I <sub>max</sub> ) 608.538	—
(20%I <sub>max</sub> ) 1217.08	—
(30%I <sub>max</sub> ) 1825.62	—
(40%I <sub>max</sub> ) 2434.15	—
(50%I <sub>max</sub> ) 3042.69	—
(60%I <sub>max</sub> ) 3651.23	—
(70%I <sub>max</sub> ) 4259.77	—
(80%I <sub>max</sub> ) 4868.31	—
(90%I <sub>max</sub> ) 5476.85	—



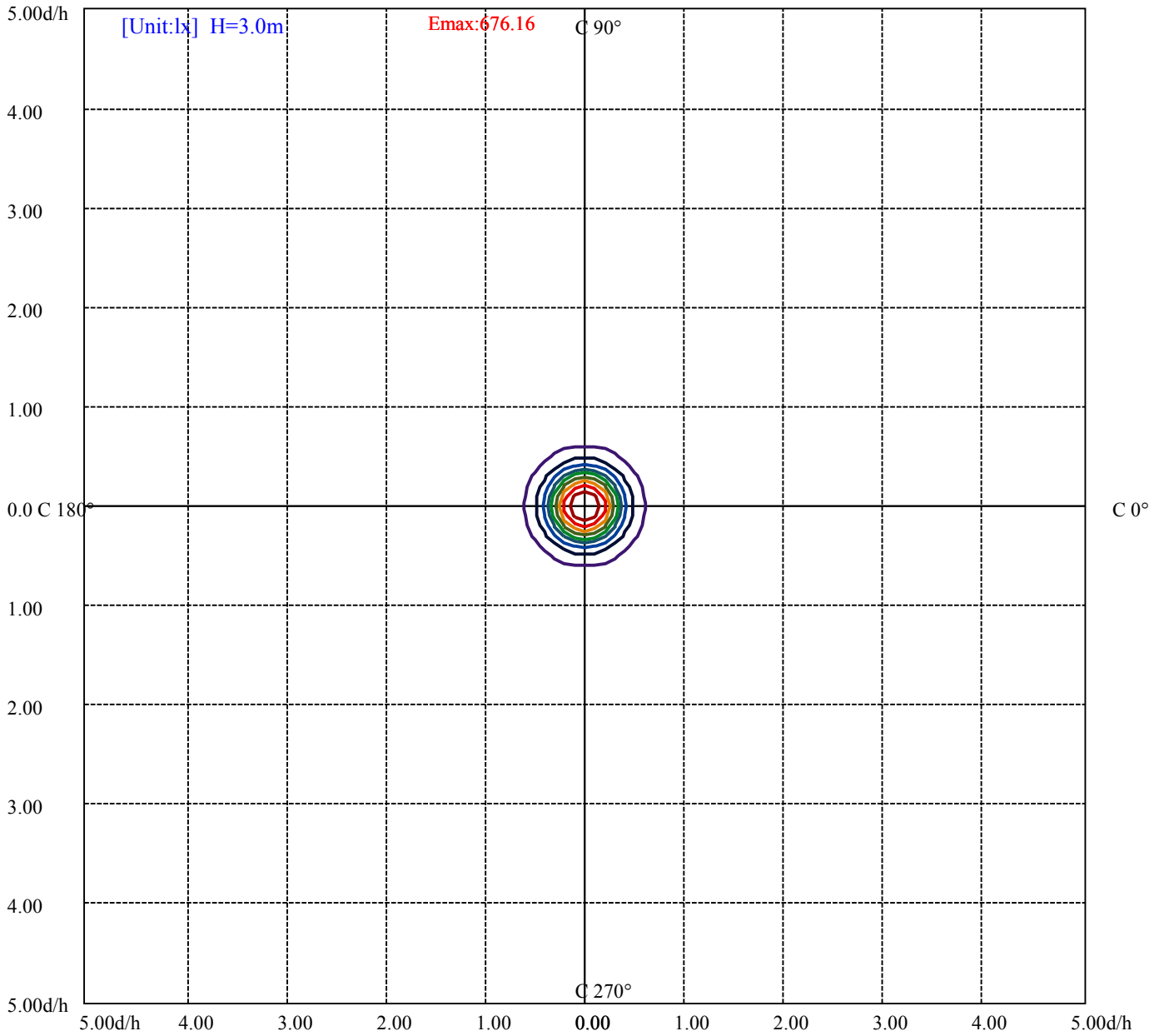
House

[Unit:cd]

Road

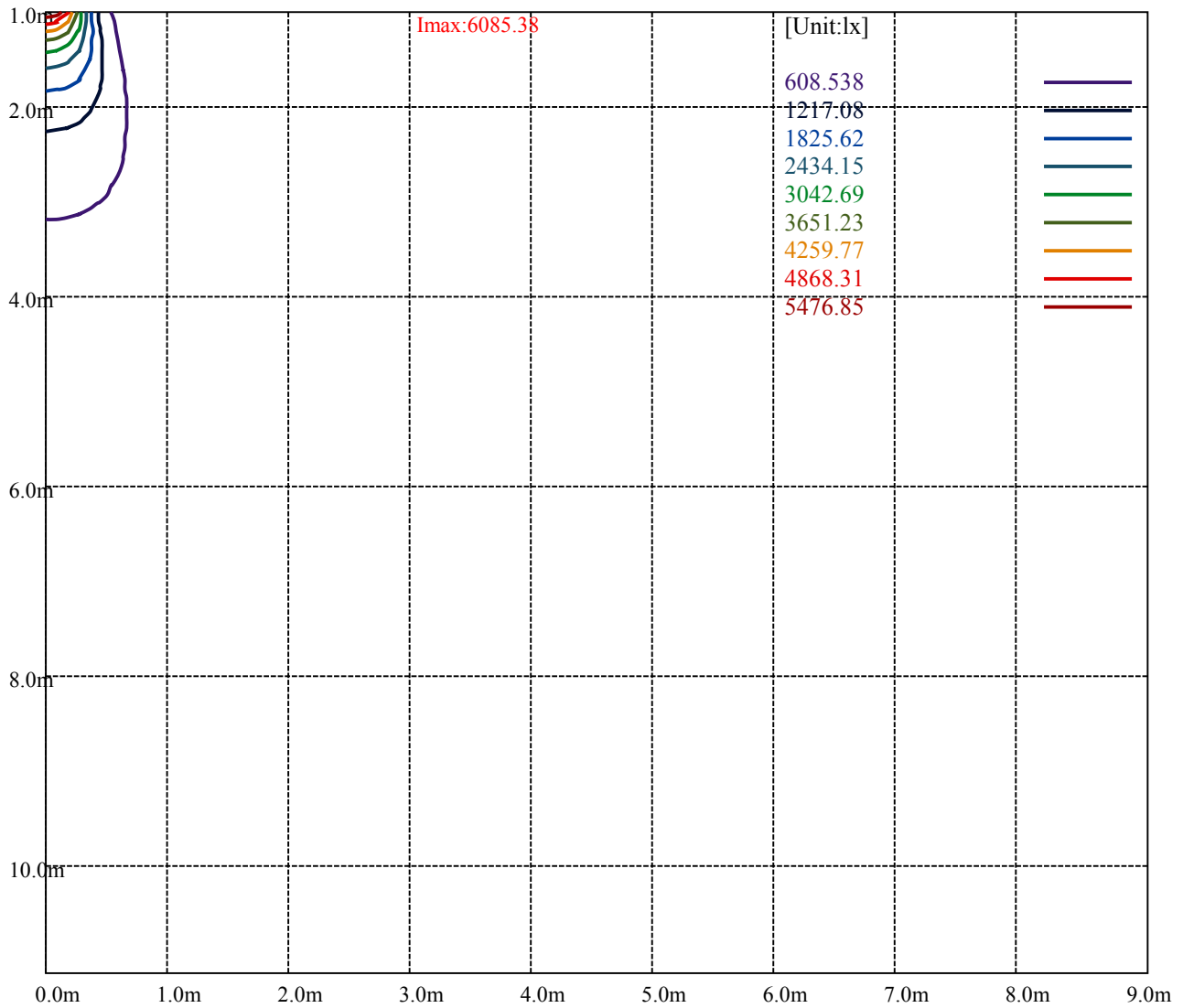
Imax:6085.38

(10%Imax)	608.538	—
(20%Imax)	1217.08	—
(30%Imax)	1825.62	—
(40%Imax)	2434.15	—
(50%Imax)	3042.69	—
(60%Imax)	3651.23	—
(70%Imax)	4259.77	—
(80%Imax)	4868.31	—
(90%Imax)	5476.85	—



- (10%Emax) 67.61533
- (20%Emax) 135.2311
- (30%Emax) 202.8456
- (40%Emax) 270.4611
- (50%Emax) 338.0767
- (60%Emax) 405.6922
- (70%Emax) 473.3078
- (80%Emax) 540.9222
- (90%Emax) 608.5378





Luminance Table

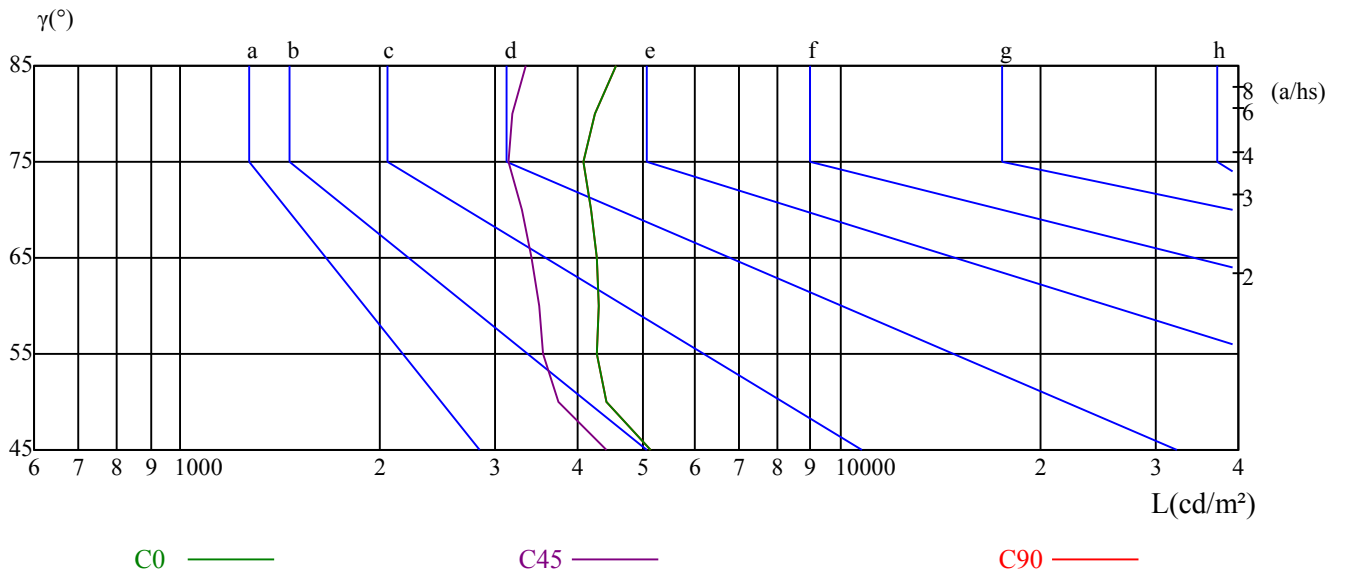
$\gamma$	45	50	55	60	65	70	75	80	85
C0	5162	4429	4265	4285	4258	4187	4075	4247	4565
C45	4408	3725	3532	3491	3409	3290	3135	3190	3336
C90	5162	4429	4265	4285	4258	4187	4075	4247	4565

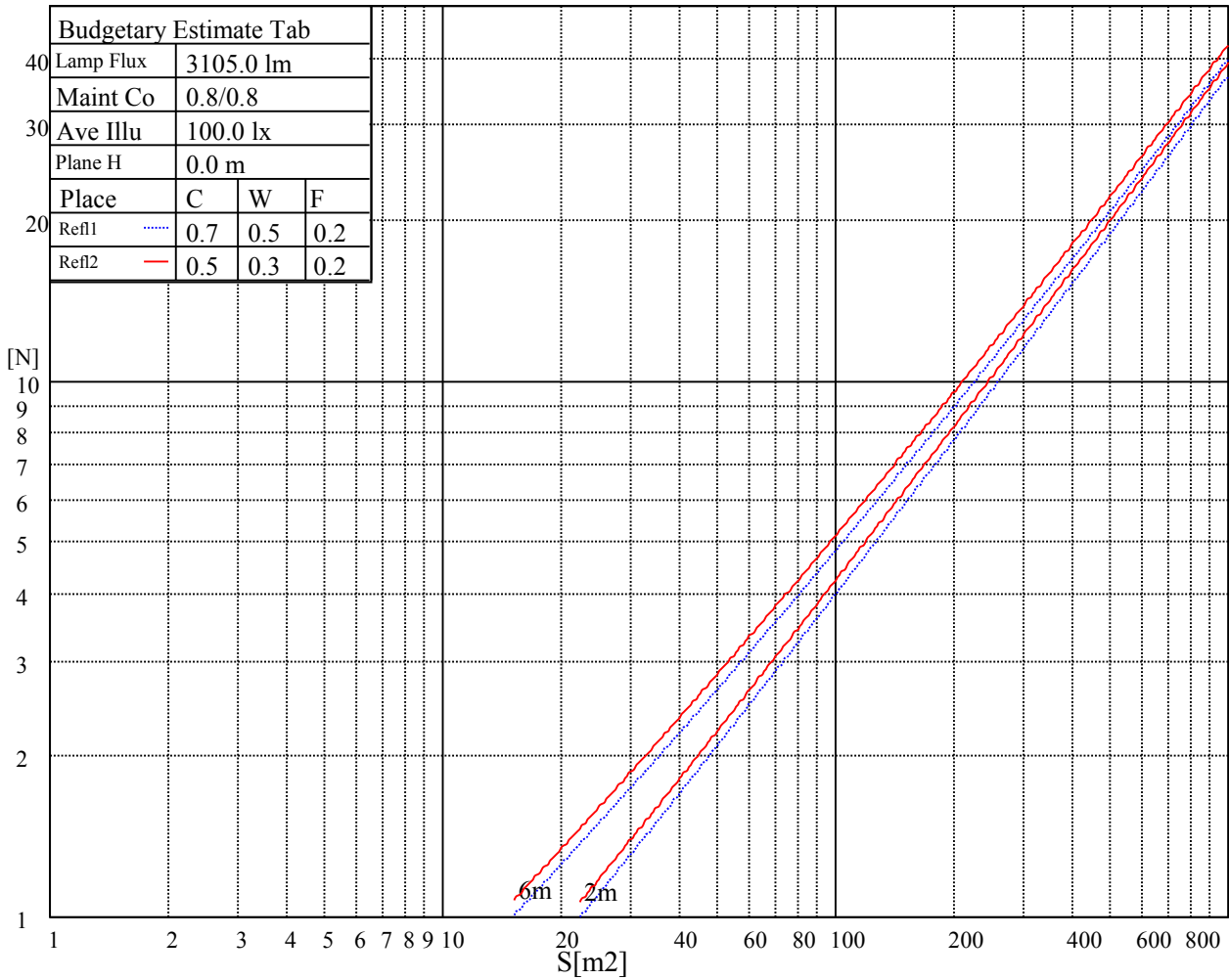
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
10679	10679	10679	14769	14769	14769	41255	41255	41255

Glare Table

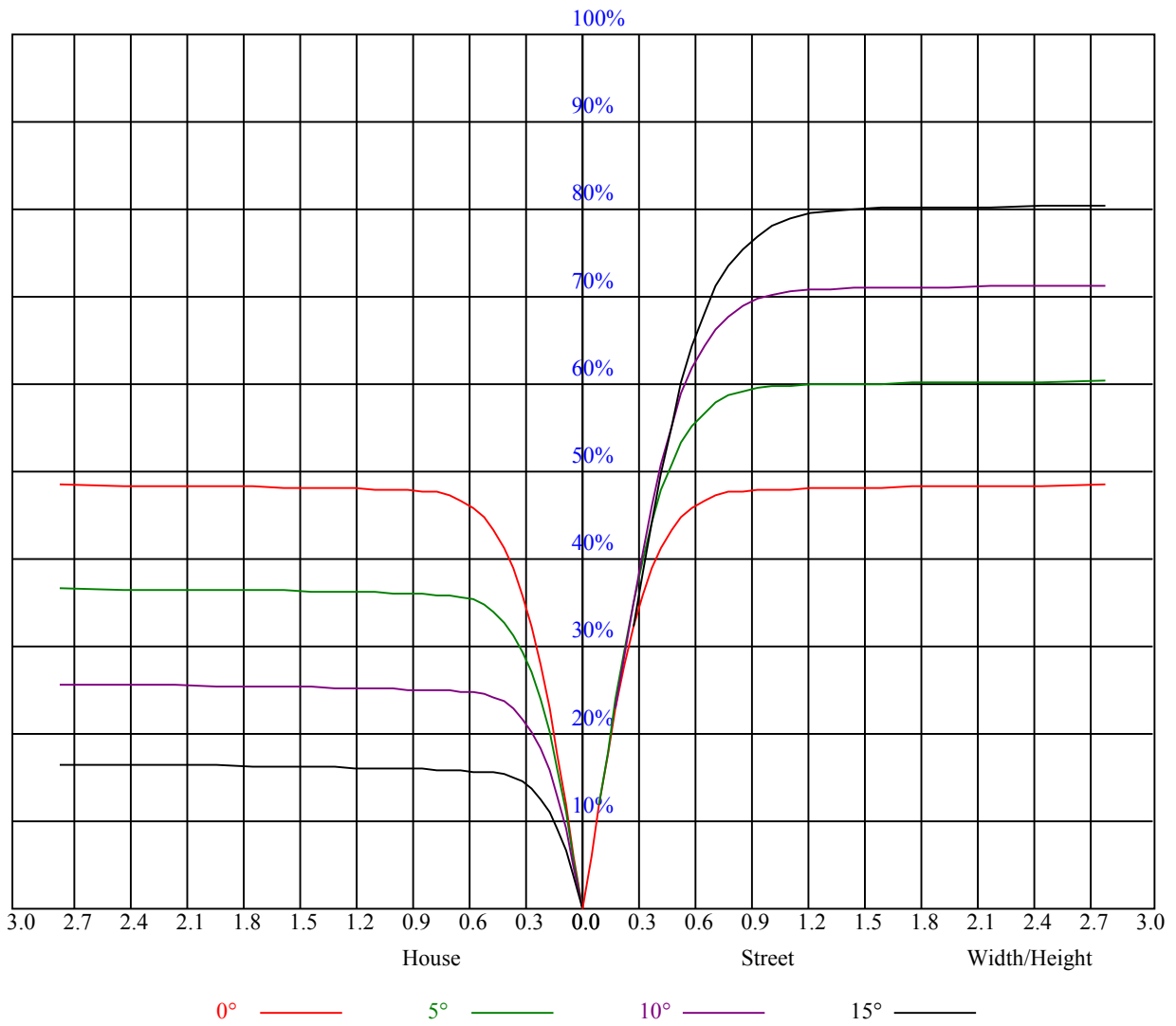
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

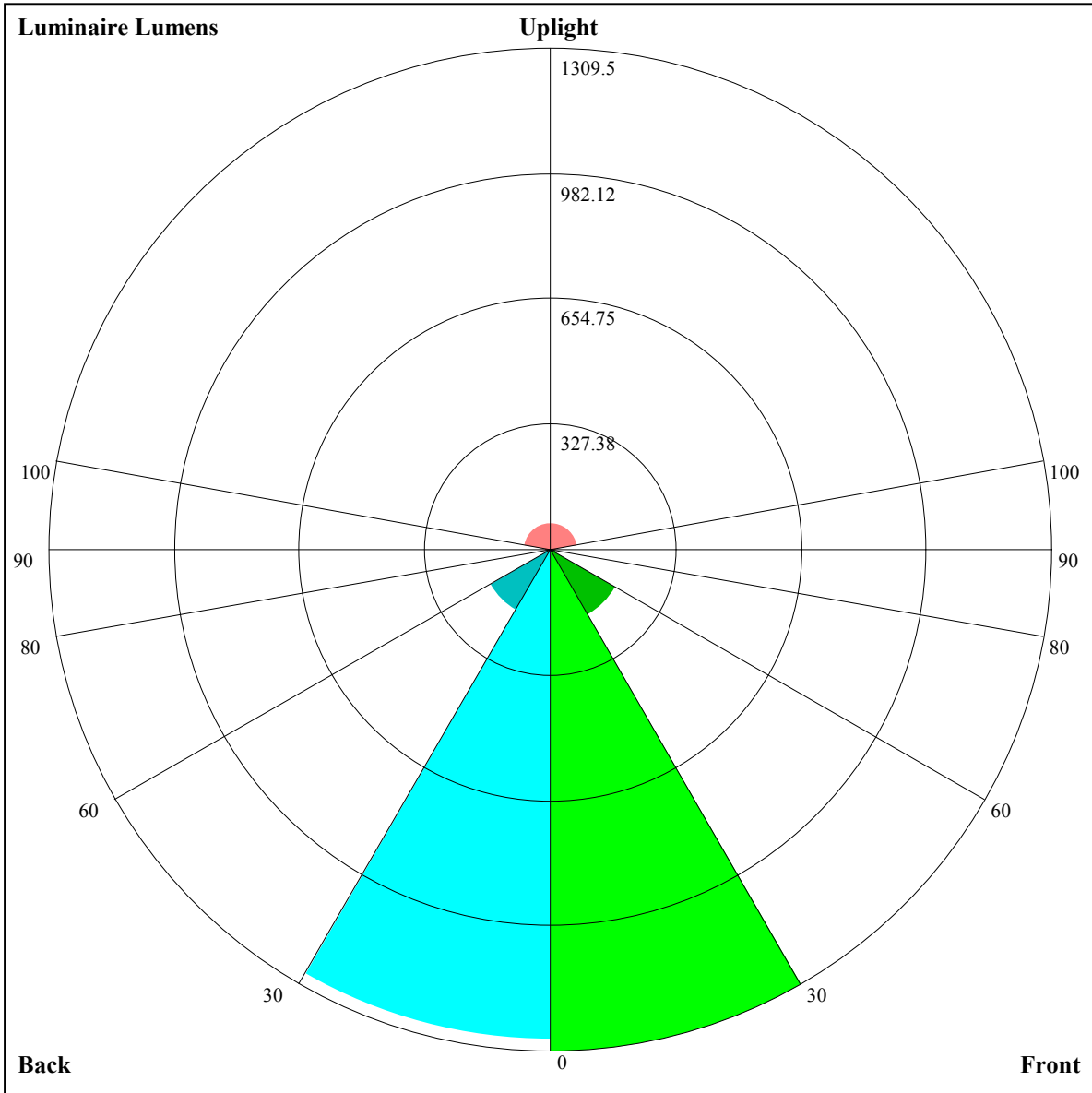
Luminance Limiting Curve





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	1.17	1.17	1.17	1.14	1.14	1.14	1.09	1.09	1.09	1.05	1.05	1.05	1.00	1.00	1.00	0.98
1	1.09	1.06	1.04	1.07	1.04	1.02	1.03	1.01	0.99	0.99	0.97	0.96	0.95	0.94	0.93	0.92
2	1.03	0.99	0.96	1.01	0.98	0.95	0.98	0.95	0.93	0.95	0.93	0.91	0.92	0.91	0.89	0.87
3	0.98	0.93	0.90	0.96	0.92	0.89	0.94	0.90	0.88	0.91	0.89	0.86	0.89	0.87	0.85	0.84
4	0.93	0.88	0.85	0.92	0.88	0.84	0.90	0.86	0.83	0.88	0.85	0.83	0.86	0.84	0.82	0.80
5	0.89	0.84	0.81	0.88	0.84	0.80	0.86	0.83	0.80	0.85	0.82	0.79	0.83	0.81	0.78	0.77
6	0.85	0.81	0.77	0.85	0.80	0.77	0.83	0.79	0.76	0.82	0.78	0.76	0.81	0.78	0.75	0.74
7	0.82	0.77	0.74	0.81	0.77	0.74	0.80	0.76	0.73	0.79	0.76	0.73	0.78	0.75	0.73	0.71
8	0.79	0.74	0.71	0.78	0.74	0.71	0.77	0.73	0.71	0.77	0.73	0.70	0.76	0.72	0.70	0.69
9	0.76	0.71	0.68	0.76	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.67
10	0.74	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.64





Luminaire Lumens:

FL=1309.5,FM=197.4,FH=17.73,FVH=7.98

BL=1279.21,BM=183.42,BH=17.28,BVH=7.99

UL=15.3,UH=72.79

BUG Rating:B3-U2-G0

Intensity data(cd)

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	6074.37	6017.66	5680.17	4694.11	3267.60	1982.03	1289.97	622.14	284.09
45.0	6074.92	6091.99	5735.78	4597.21	3088.66	1746.94	1153.98	534.60	89.63
90.0	6123.92	6196.05	5930.12	4559.22	2652.07	1364.85	946.20	436.32	48.17
135.0	6068.32	6205.96	6159.71	4991.41	2961.48	1494.23	1052.13	526.89	91.83
180.0	6074.37	5967.01	5461.59	4264.12	2688.40	1581.22	1059.01	443.48	59.79
225.0	6074.92	5773.21	5142.82	4191.99	2962.58	1788.78	1073.82	524.14	85.23
270.0	6123.92	5827.72	5283.76	4392.95	3296.23	1861.46	1160.04	566.53	89.69
315.0	6068.32	5843.14	5464.35	4396.80	2886.61	1591.68	998.28	431.64	59.30
360.0	6074.37	6017.66	5680.17	4694.11	3267.60	1982.03	1289.97	622.14	284.09

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	29.12	22.68	21.20	20.59	19.10	17.56	15.91	15.20	14.70
45.0	28.41	24.17	22.19	20.98	19.55	17.73	15.42	14.81	14.31
90.0	20.81	19.27	18.44	18.00	17.45	16.63	15.25	14.70	14.37
135.0	22.24	19.60	18.77	18.39	17.62	16.63	15.42	15.03	14.65
180.0	27.80	22.08	20.10	19.21	18.17	16.74	15.42	14.98	14.59
225.0	29.57	22.19	19.55	18.72	18.00	17.18	15.80	15.25	14.98
270.0	24.06	21.53	20.81	20.10	19.05	17.62	16.13	15.31	15.20
315.0	21.69	19.93	19.60	19.71	18.94	17.51	15.91	15.25	15.03
360.0	29.12	22.68	21.20	20.59	19.10	17.56	15.91	15.20	14.70

C/γ(°)	90.0
0.0	14.04
45.0	13.93
90.0	13.98
135.0	13.98
180.0	13.93
225.0	14.04
270.0	14.09
315.0	14.15
360.0	14.04