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## Nata

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### Client:

LumCAT: 4-2204-L

Luminaire: 92.70.131.00

Report No: NT2018010918

Test No: GC2018010918

LampCAT: SEOUL SAWx15

Lamp flux(lm): 3105.0

Number of Lamps: 1

Length(mm): 102

Phm Type: C

Voltage(V): 34.6000

Current(A): 0.6400

Power (W): 22.1140

PF: 0.0000

Ballast type: DC

Width(mm): 102

Height(mm): 0

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## Photometric Results

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Lumens(lm): 3034.12, Efficiency(%): 97.72% , Luminous Efficacy(lm/W): 137.20

Central intensity(cd): 6518.815, Maximum intensity(cd): 6518.815

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

Beam Angle(50%Imax): [C0/180]Total=38.2

[C90/270]Total=38.2

Field angle(10%Imax): [C0/180]Total=68.6

[C90/270]Total=68.6

Maximum s/h(1/2): C0\_180=0.63 C90\_270=0.63

Maximum s/h(1/4): C0\_180=0.62 C90\_270=0.62

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 98.88%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 97.388%

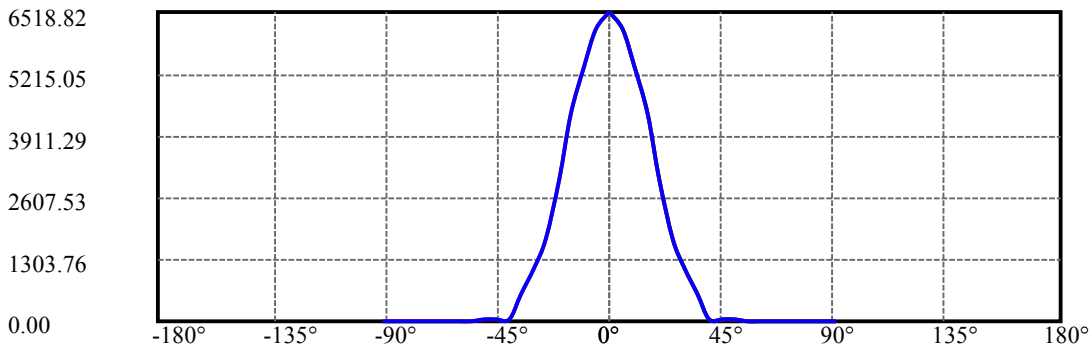
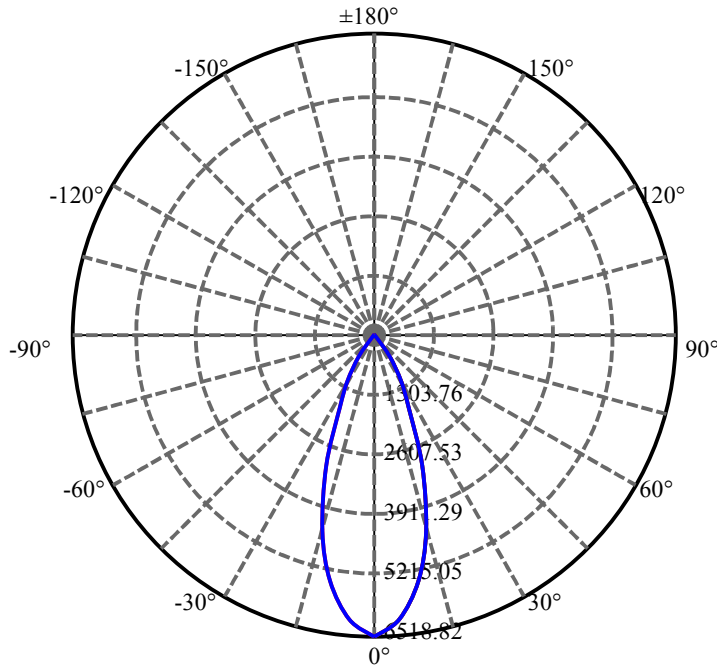
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6518.815	38.984	38.984	1.256%	1.285%
5.0	6174.300	294.967	333.951	9.500%	11.007%
10.0	5392.774	513.301	847.251	16.531%	27.924%
15.0	4389.647	622.752	1470.004	20.056%	48.449%
20.0	3001.881	562.775	2032.778	18.125%	66.997%
25.0	1743.705	403.934	2436.713	13.009%	80.310%
30.0	1152.592	315.889	2752.602	10.174%	90.722%
35.0	571.630	179.720	2932.322	5.788%	96.645%
40.0	59.144	20.839	2953.16	.671%	97.332%
45.0	27.260	10.566	2963.726	.340%	97.680%
50.0	21.789	9.149	2972.875	.295%	97.981%
55.0	19.091	8.572	2981.447	.276%	98.264%
60.0	18.079	8.582	2990.029	.276%	98.547%
65.0	17.047	8.469	2998.498	.273%	98.826%
70.0	15.746	8.111	3006.608	.261%	99.093%
75.0	14.982	7.932	3014.541	.255%	99.355%
80.0	14.562	7.861	3022.402	.253%	99.614%
85.0	14.411	7.869	3030.271	.253%	99.873%
90.0	14.046	3.850	3034.12	.124%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2752.60	88.65%	90.72%
0-40	2953.16	95.11%	97.33%
0-60	2990.03	96.30%	98.55%
0-90	3030.27	97.59%	99.87%
0-120	3030.27	97.59%	99.87%
0-180	3034.12	97.72%	100.00%
60-90	48.82	1.57%	1.61%
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%
0-24.88	2427.30	78.17%	80.00%

ZONAL LUMEN SUMMARY

0-10	847.25
10-20	1185.53
20-30	719.82
30-40	200.56
40-50	19.71
50-60	17.15
60-70	16.58
70-80	15.79
80-90	7.87
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: —————

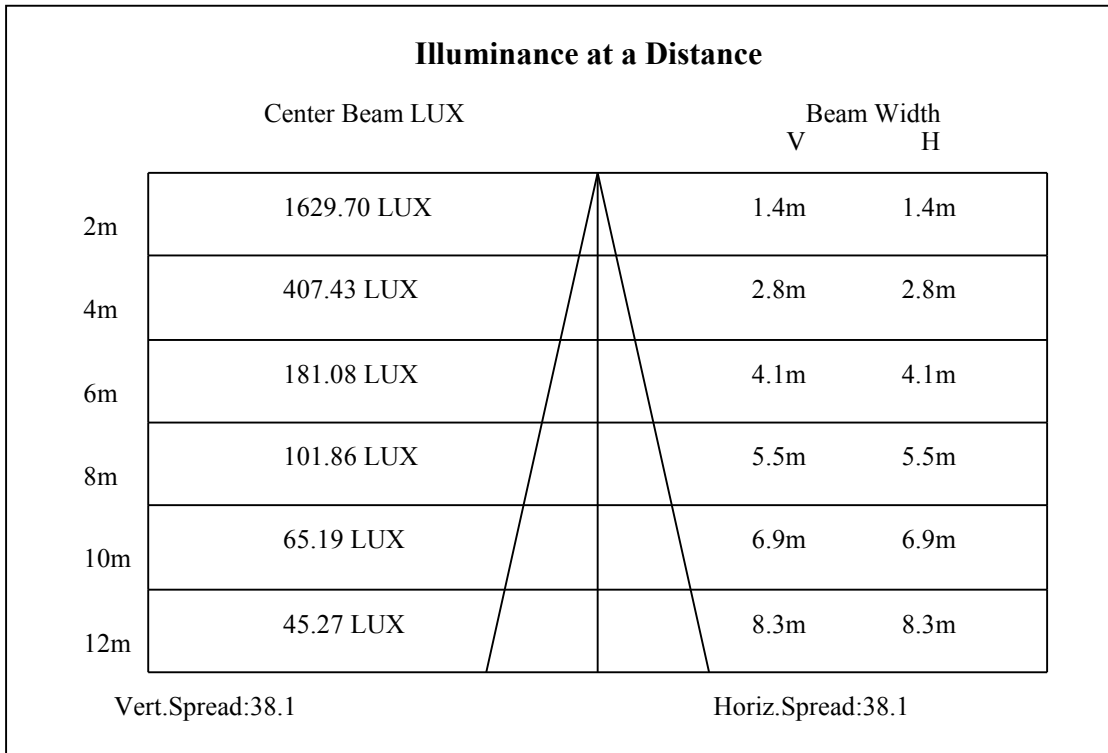
C90/C270: —————

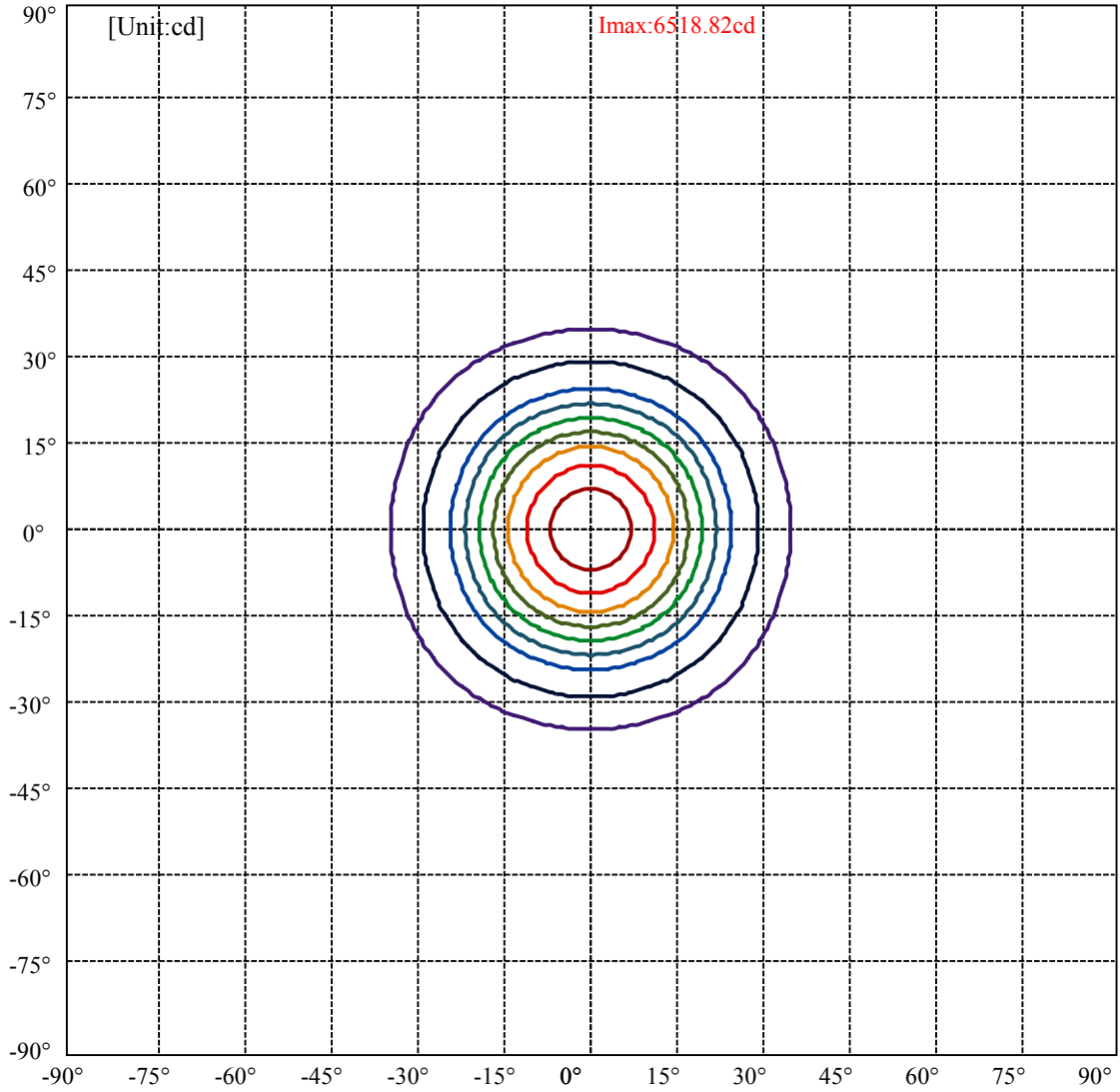
Field angle(10%Imax):C0/180Left:34.3 Right:34.3

:C90/270Left:34.3 Right:34.3

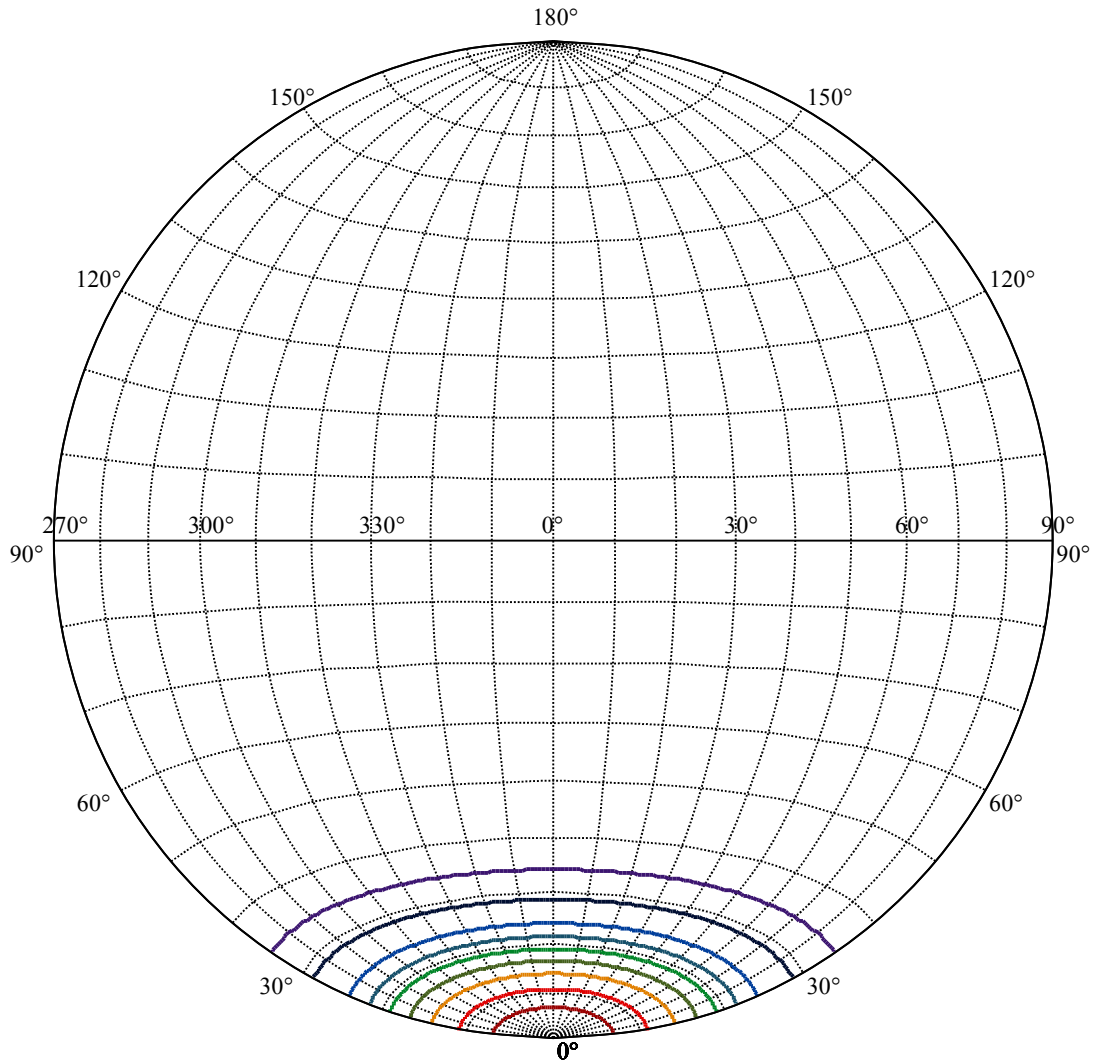
Beam Angle(50%Imax):C0/180Left:19.1 Right:19.1

:C90/270Left:19.1 Right:19.1





(10%Imax) 651.882	—
(20%Imax) 1303.76	—
(30%Imax) 1955.64	—
(40%Imax) 2607.53	—
(50%Imax) 3259.41	—
(60%Imax) 3911.29	—
(70%Imax) 4563.17	—
(80%Imax) 5215.05	—
(90%Imax) 5866.93	—



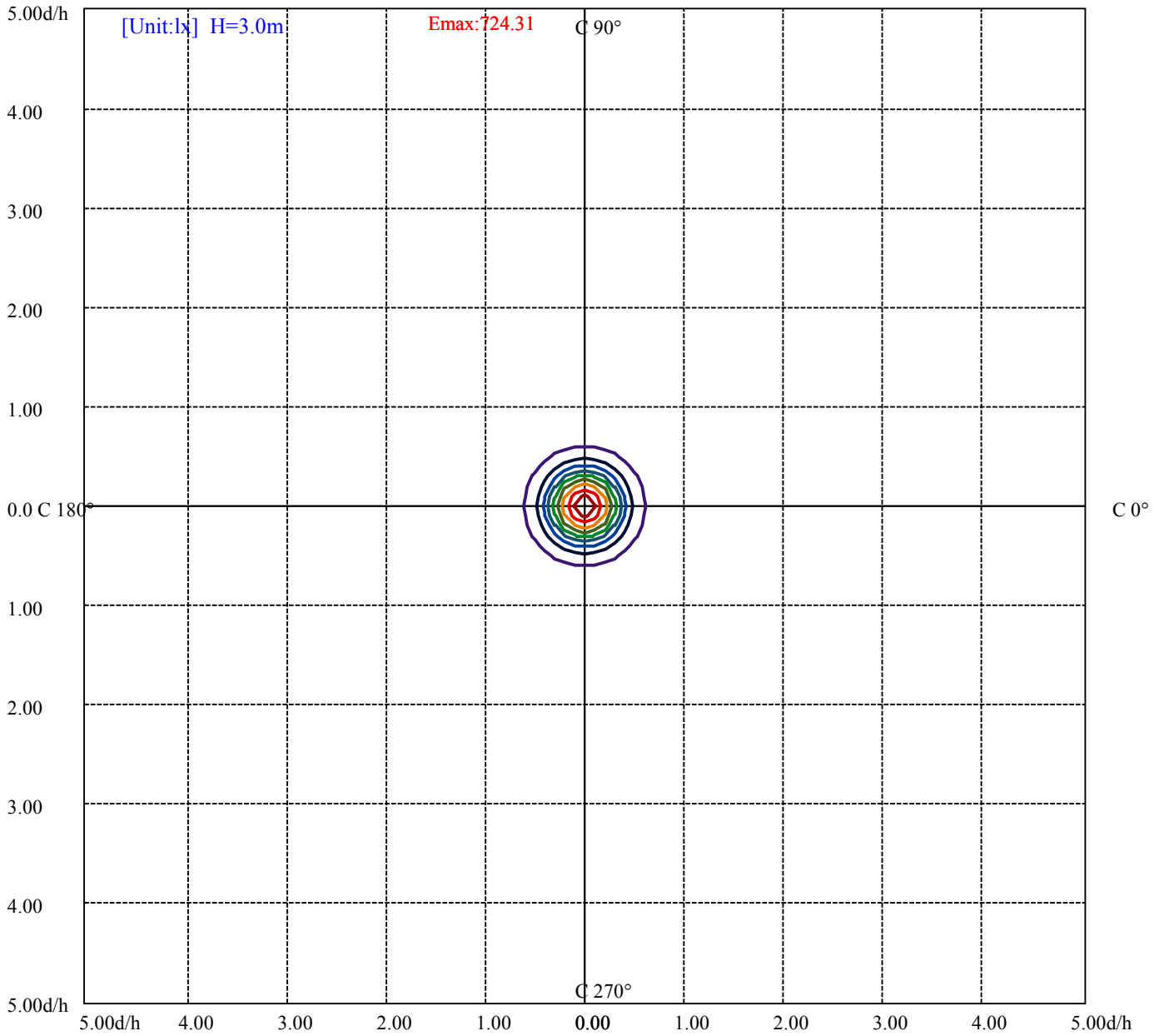
House

[Unit:cd]

Road

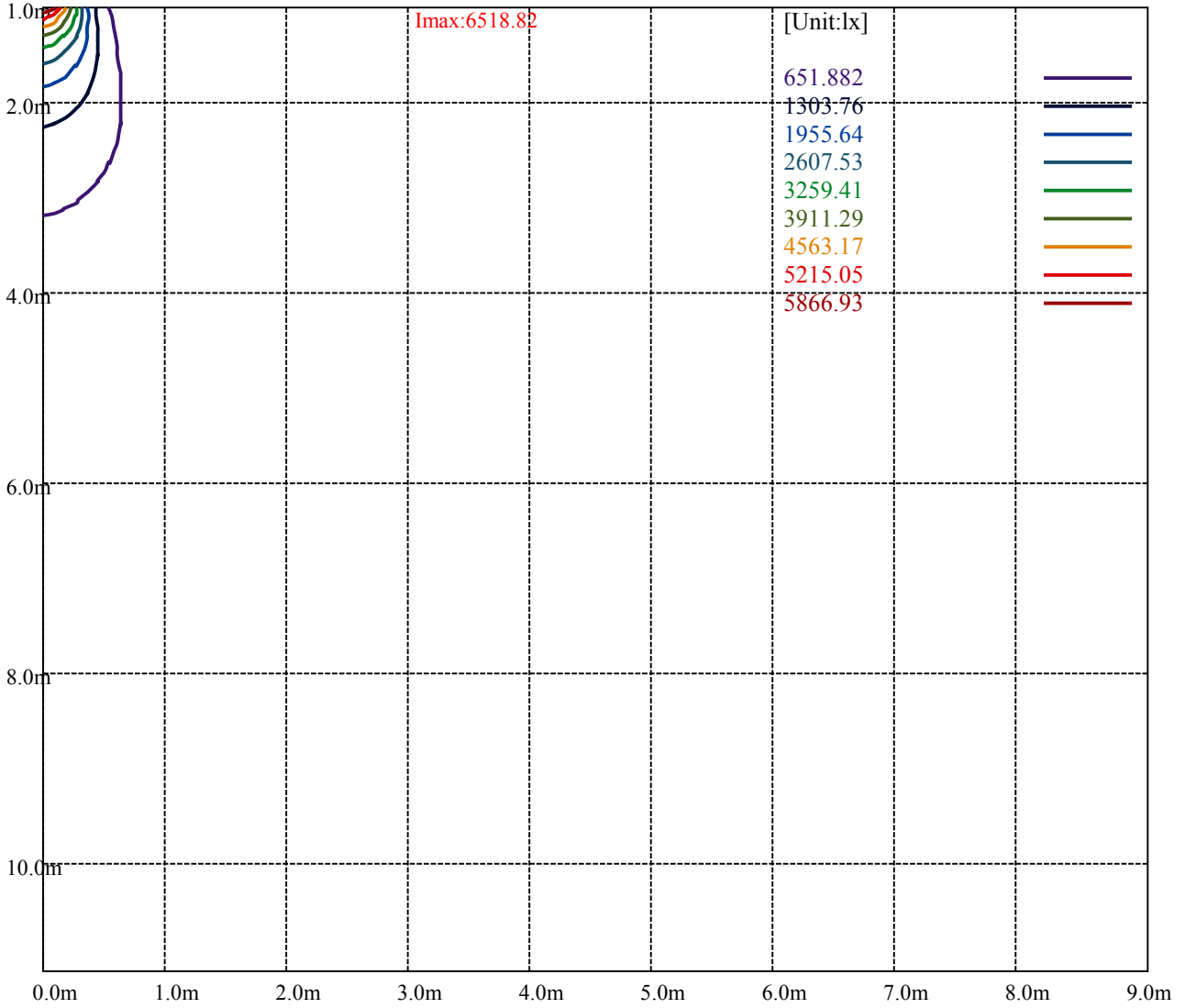
**Imax:6518.82**

(10%Imax) 651.882	—
(20%Imax) 1303.76	—
(30%Imax) 1955.64	—
(40%Imax) 2607.53	—
(50%Imax) 3259.41	—
(60%Imax) 3911.29	—
(70%Imax) 4563.17	—
(80%Imax) 5215.05	—
(90%Imax) 5866.93	—



(10%Emax) 72.43111	—
(20%Emax) 144.8622	—
(30%Emax) 217.2933	—
(40%Emax) 289.7245	—
(50%Emax) 362.1555	—
(60%Emax) 434.5867	—
(70%Emax) 507.0178	—
(80%Emax) 579.4489	—
(90%Emax) 651.88	—





Luminance Table

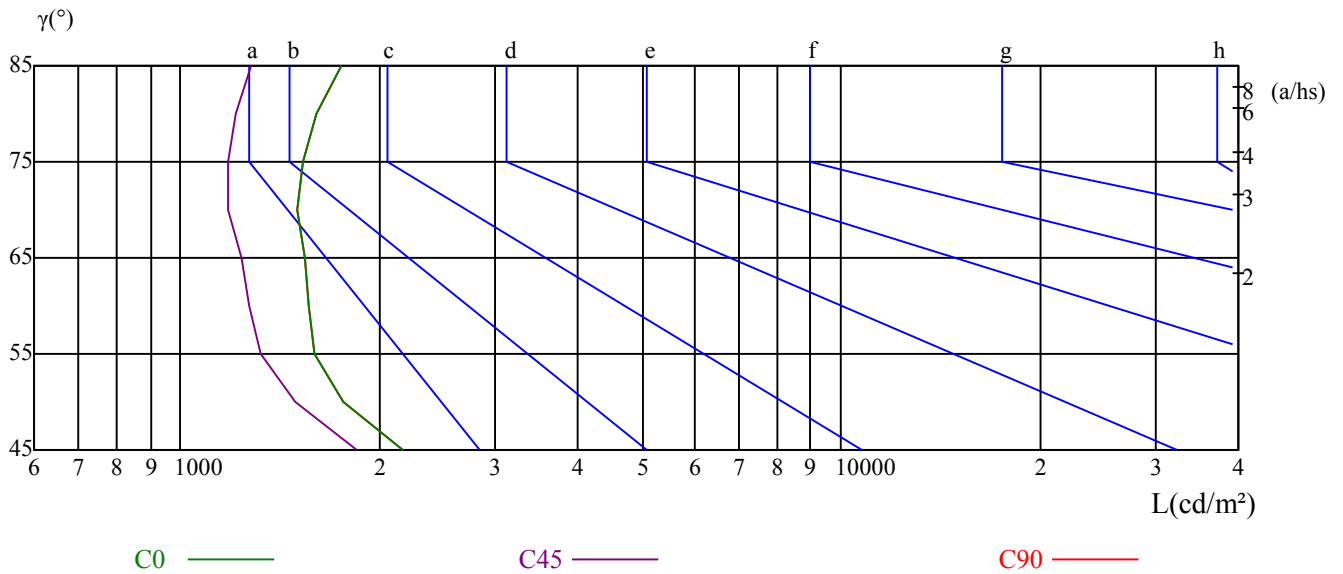
$\gamma$	45	50	55	60	65	70	75	80	85
C0	2172	1770	1593	1564	1542	1505	1531	1611	1753
C45	1854	1488	1319	1273	1234	1182	1177	1210	1281
C90	2172	1770	1593	1564	1542	1505	1531	1611	1753

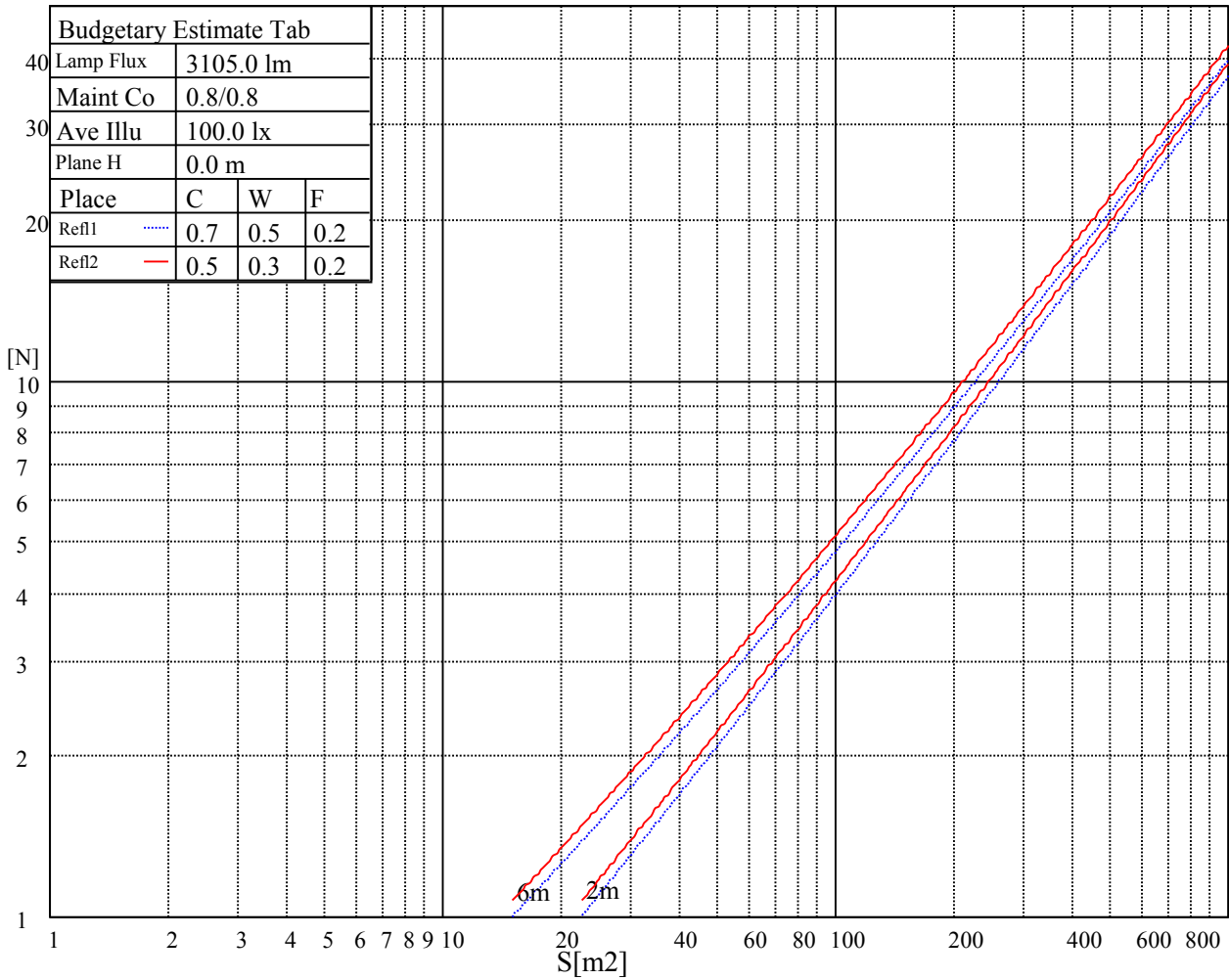
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3877	3877	3877	5564	5564	5564	15893	15893	15893

Glare Table

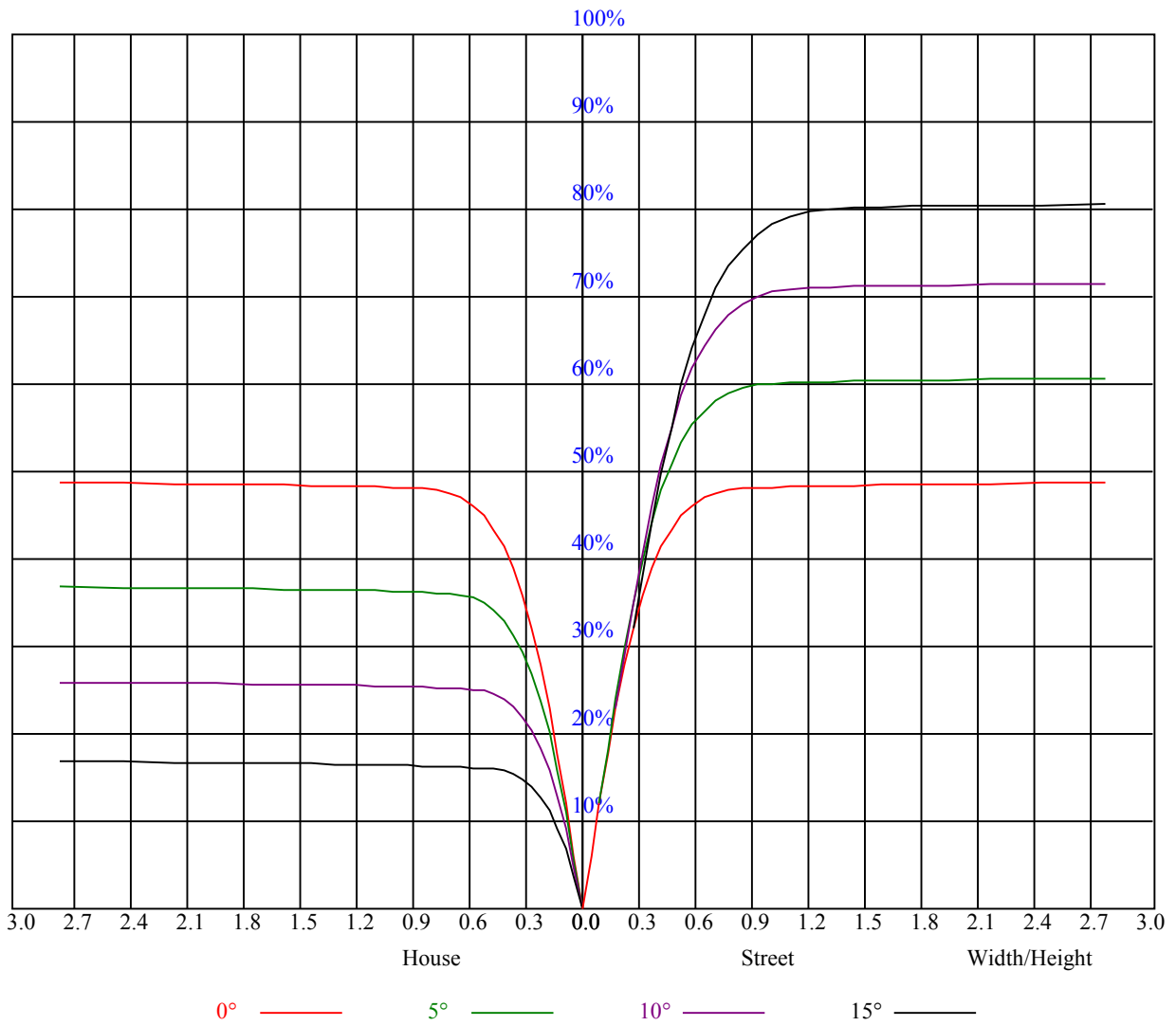
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

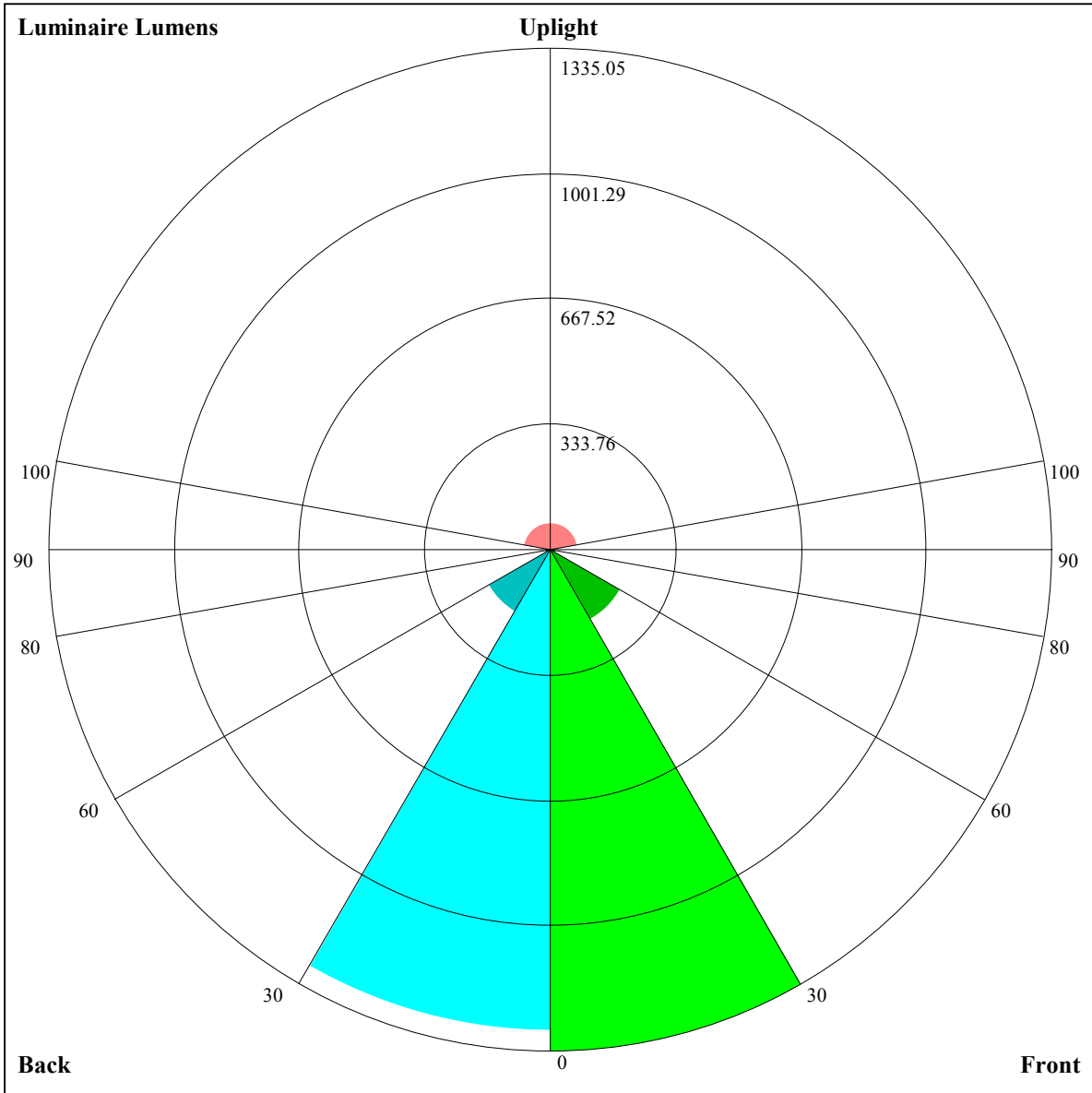
Luminance Limiting Curve





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	1.18	1.18	1.18	1.15	1.15	1.15	1.10	1.10	1.10	1.05	1.05	1.05	1.01	1.01	1.01	0.99
1	1.09	1.07	1.04	1.07	1.05	1.03	1.03	1.01	0.99	0.99	0.98	0.96	0.96	0.95	0.94	0.92
2	1.03	0.99	0.96	1.01	0.98	0.95	0.98	0.96	0.93	0.95	0.93	0.91	0.93	0.91	0.89	0.88
3	0.98	0.94	0.90	0.97	0.93	0.89	0.94	0.91	0.88	0.92	0.89	0.87	0.90	0.87	0.85	0.84
4	0.93	0.89	0.85	0.92	0.88	0.85	0.90	0.87	0.84	0.88	0.85	0.83	0.87	0.84	0.82	0.80
5	0.89	0.84	0.81	0.88	0.84	0.80	0.87	0.83	0.80	0.85	0.82	0.79	0.84	0.81	0.78	0.77
6	0.86	0.81	0.77	0.85	0.80	0.77	0.83	0.79	0.76	0.82	0.79	0.76	0.81	0.78	0.75	0.74
7	0.82	0.77	0.74	0.82	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	0.79	0.74	0.71	0.78	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	0.66
10	0.74	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.72	0.68	0.65	0.71	0.68	0.65	0.64





Luminaire Lumens:

FL=1335.05,FM=214.54,FH=16.51,FVH=7.84

BL=1279.3,BM=189.16,BH=16.23,BVH=7.81

UL=15.33,UH=72.93

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	6481.24	6392.60	5764.96	4672.09	3064.44	1655.55	1160.04	737.76	117.99
45.0	6536.85	6240.64	5491.88	4550.41	3313.84	2054.70	1340.07	676.64	68.77
90.0	6526.39	6093.64	5301.93	4299.90	3076.55	1884.58	1063.58	548.80	62.27
135.0	6530.79	6127.78	5355.34	4553.71	3036.36	1619.21	1123.70	581.40	41.95
180.0	6481.24	5831.57	4900.57	3915.06	2533.14	1451.29	1045.47	356.38	32.43
225.0	6536.85	6063.36	5207.78	4284.49	2937.81	1745.29	1071.62	467.76	46.19
270.0	6526.39	6338.64	5554.09	4477.74	3269.80	2011.21	1324.11	700.87	64.42
315.0	6530.79	6306.16	5565.65	4363.77	2783.10	1527.82	1092.15	503.44	39.15
360.0	6481.24	6392.60	5764.96	4672.09	3064.44	1655.55	1160.04	737.76	117.99

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	25.60	21.31	19.21	18.77	17.84	16.19	15.09	14.65	14.31
45.0	31.60	23.12	19.66	18.66	17.56	15.86	14.98	14.53	14.26
90.0	31.49	23.34	19.55	18.33	17.12	15.64	14.87	14.42	14.15
135.0	24.28	20.92	18.83	17.95	17.12	15.69	14.98	14.59	14.26
180.0	22.74	19.93	18.00	17.18	16.24	15.36	14.81	14.42	14.42
225.0	27.20	21.58	18.94	17.95	16.79	15.58	14.92	14.48	14.48
270.0	31.33	23.40	19.66	17.84	16.63	15.75	14.98	14.53	14.53
315.0	23.84	20.70	18.88	17.95	17.07	15.91	15.25	14.87	14.87
360.0	25.60	21.31	19.21	18.77	17.84	16.19	15.09	14.65	14.31

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