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## Nata

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### Client:

LumCAT: 3-1882-L

Luminaire: 92.70.131.00

Report No: NT2018011005

Test No: GC2018011005

LampCAT: CITIZEN CLU038

Lamp flux(lm): 2870.0

Number of Lamps: 1

Length(mm): 74

Phm Type: C

Voltage(V): 34.8000

Current(A): 0.6400

Power (W): 22.2720

PF: 0.0000

Ballast type: DC

Width(mm): 74

Height(mm): 0

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## Photometric Results

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Lumens(lm): 2791.58, Efficiency(%): 97.27% , Luminous Efficacy(lm/W): 125.34

Central intensity(cd): 12907.970, Maximum intensity(cd): 12907.970

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

Beam Angle(50%Imax): [C0/180]Total=23.0

[C90/270]Total=23.0

Field angle(10%Imax): [C0/180]Total=43.0

[C90/270]Total=43.0

Maximum s/h(1/2): C0\_180=0.39 C90\_270=0.39

Maximum s/h(1/4): C0\_180=0.37 C90\_270=0.37

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 99.86%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 95.989%

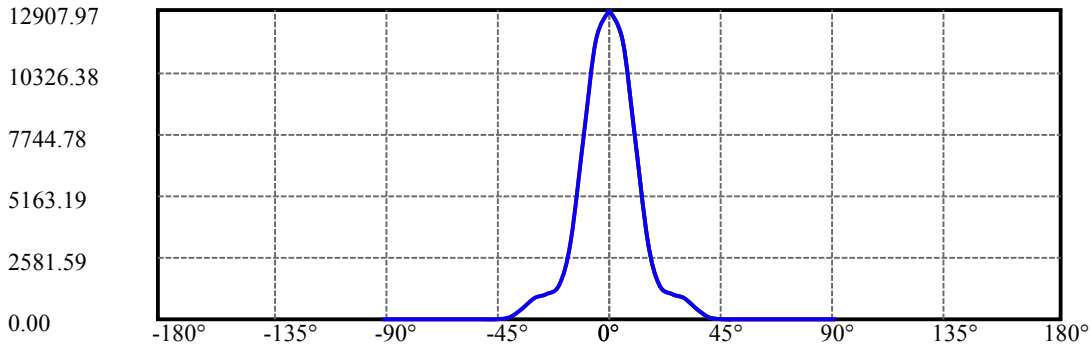
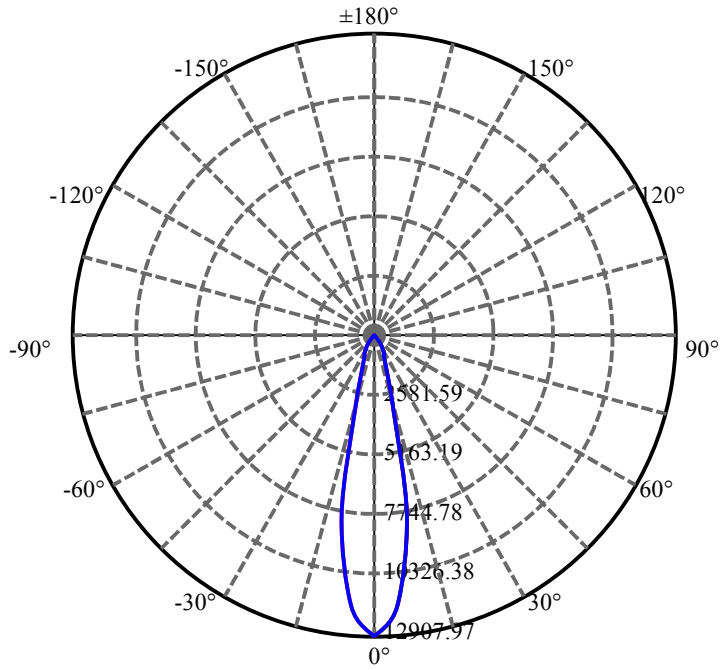
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	12907.973	77.192	77.192	2.690%	2.765%
5.0	11612.702	554.777	631.97	19.330%	22.638%
10.0	7848.359	747.031	1379	26.029%	49.399%
15.0	3303.246	468.626	1847.627	16.328%	66.186%
20.0	1410.979	264.522	2112.148	9.217%	75.661%
25.0	1018.378	235.910	2348.059	8.220%	84.112%
30.0	862.507	236.386	2584.445	8.236%	92.580%
35.0	371.934	116.935	2701.38	4.074%	96.769%
40.0	50.934	17.946	2719.326	.625%	97.412%
45.0	22.174	8.594	2727.921	.299%	97.719%
50.0	18.754	7.875	2735.795	.274%	98.002%
55.0	17.184	7.716	2743.511	.269%	98.278%
60.0	16.083	7.635	2751.146	.266%	98.551%
65.0	15.368	7.634	2758.78	.266%	98.825%
70.0	14.390	7.412	2766.192	.258%	99.090%
75.0	13.778	7.295	2773.487	.254%	99.352%
80.0	13.468	7.270	2780.758	.253%	99.612%
85.0	13.269	7.245	2788.003	.252%	99.872%
90.0	13.062	3.580	2791.583	.125%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2584.44	90.05%	92.58%
0-40	2719.33	94.75%	97.41%
0-60	2751.15	95.86%	98.55%
0-90	2788.00	97.14%	99.87%
0-120	2788.00	97.14%	99.87%
0-180	2791.58	97.27%	100.00%
60-90	44.49	1.55%	1.59%
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%
0-22.57	2233.27	77.81%	80.00%

ZONAL LUMEN SUMMARY

0-10	1379.00
10-20	733.15
20-30	472.30
30-40	134.88
40-50	16.47
50-60	15.35
60-70	15.05
70-80	14.57
80-90	7.25
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): —————

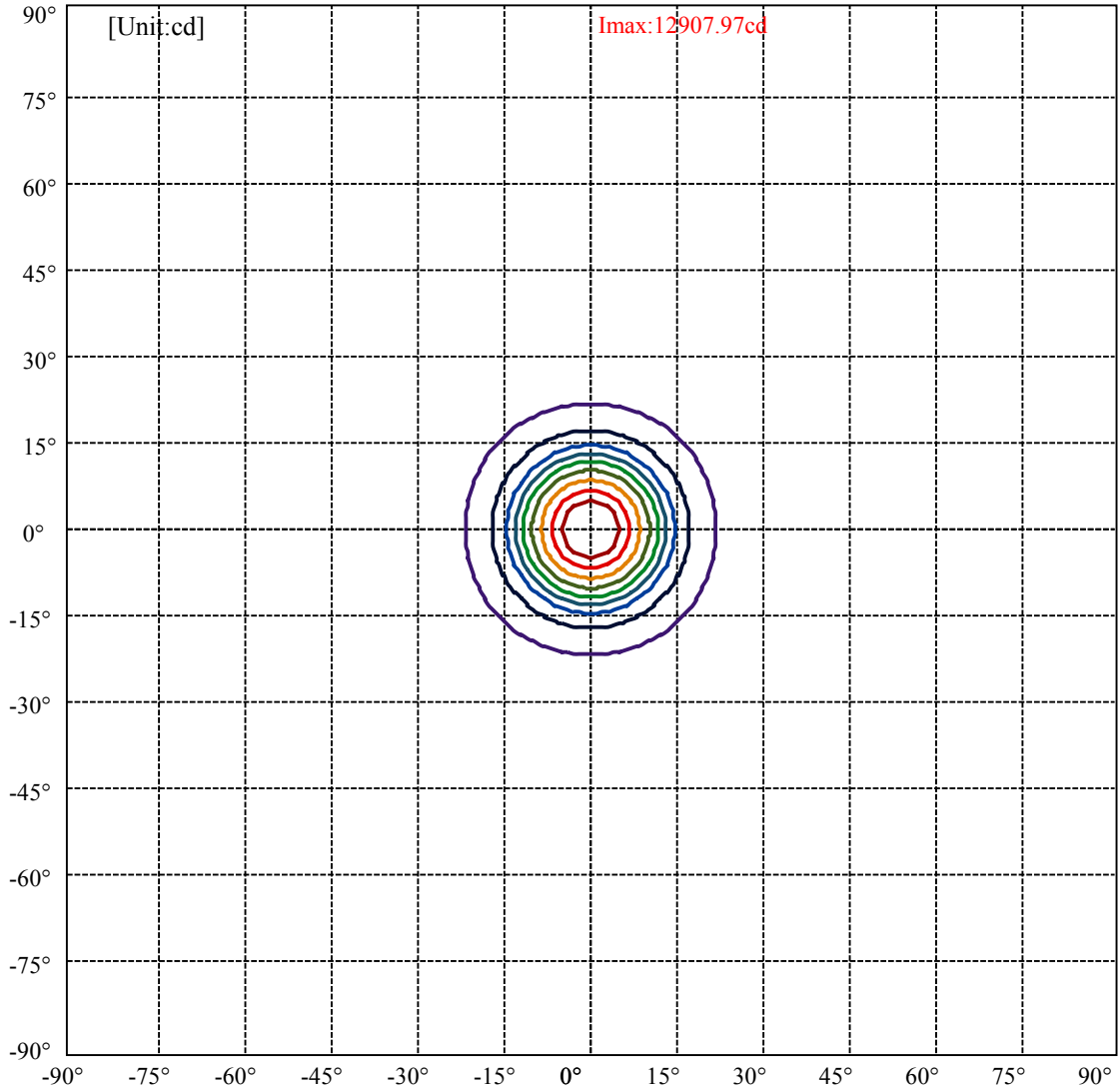
C0/C180: —————

C90/C270: —————

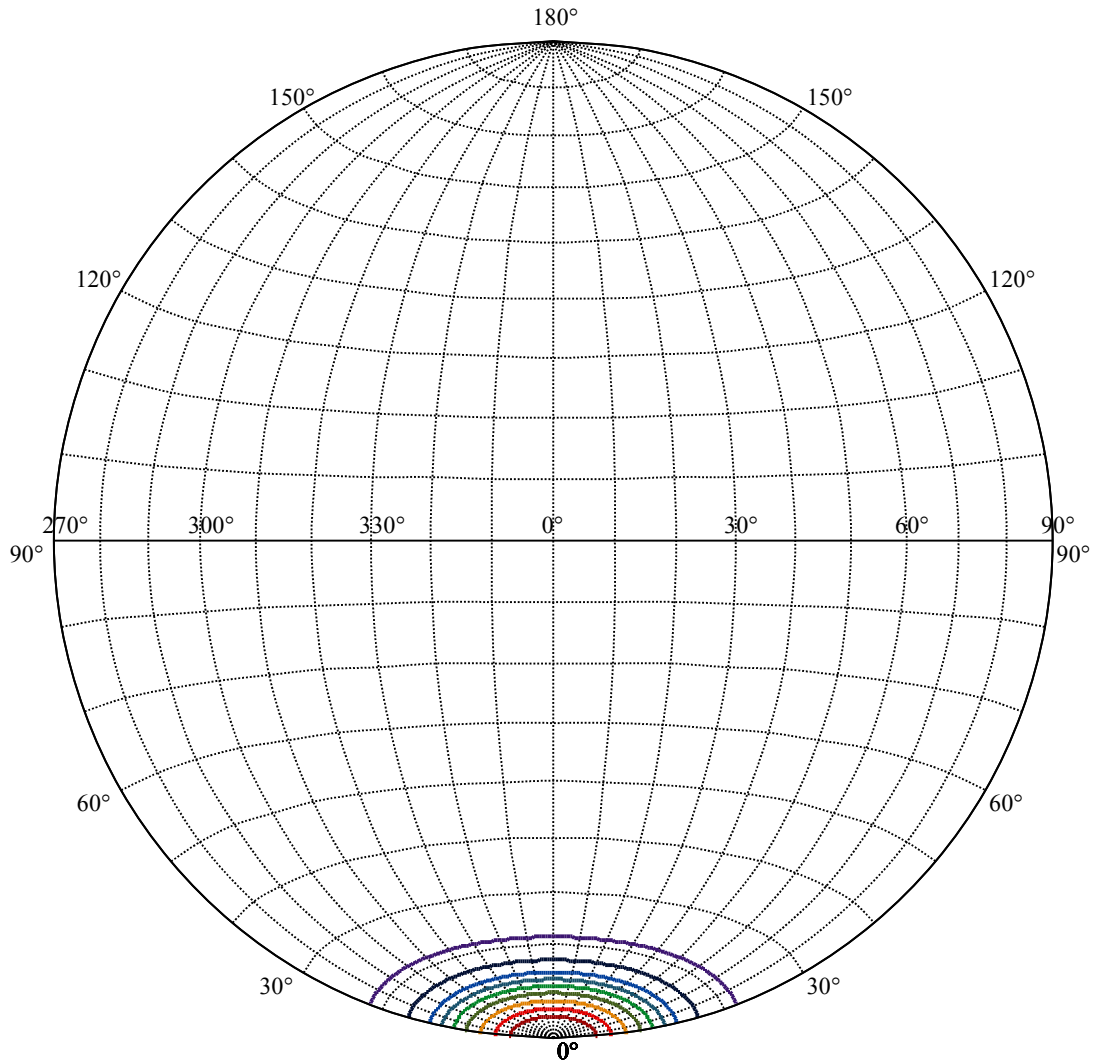
Field angle(10%Imax):C0/180Left:21.5 Right:21.5  
:C90/270Left:21.5 Right:21.5

Beam Angle(50%Imax):C0/180Left:11.5 Right:11.5  
:C90/270Left:11.5 Right:11.5





(10%Imax) 1290.8	—
(20%Imax) 2581.59	—
(30%Imax) 3872.39	—
(40%Imax) 5163.19	—
(50%Imax) 6453.99	—
(60%Imax) 7744.78	—
(70%Imax) 9035.58	—
(80%Imax) 10326.4	—
(90%Imax) 11617.2	—



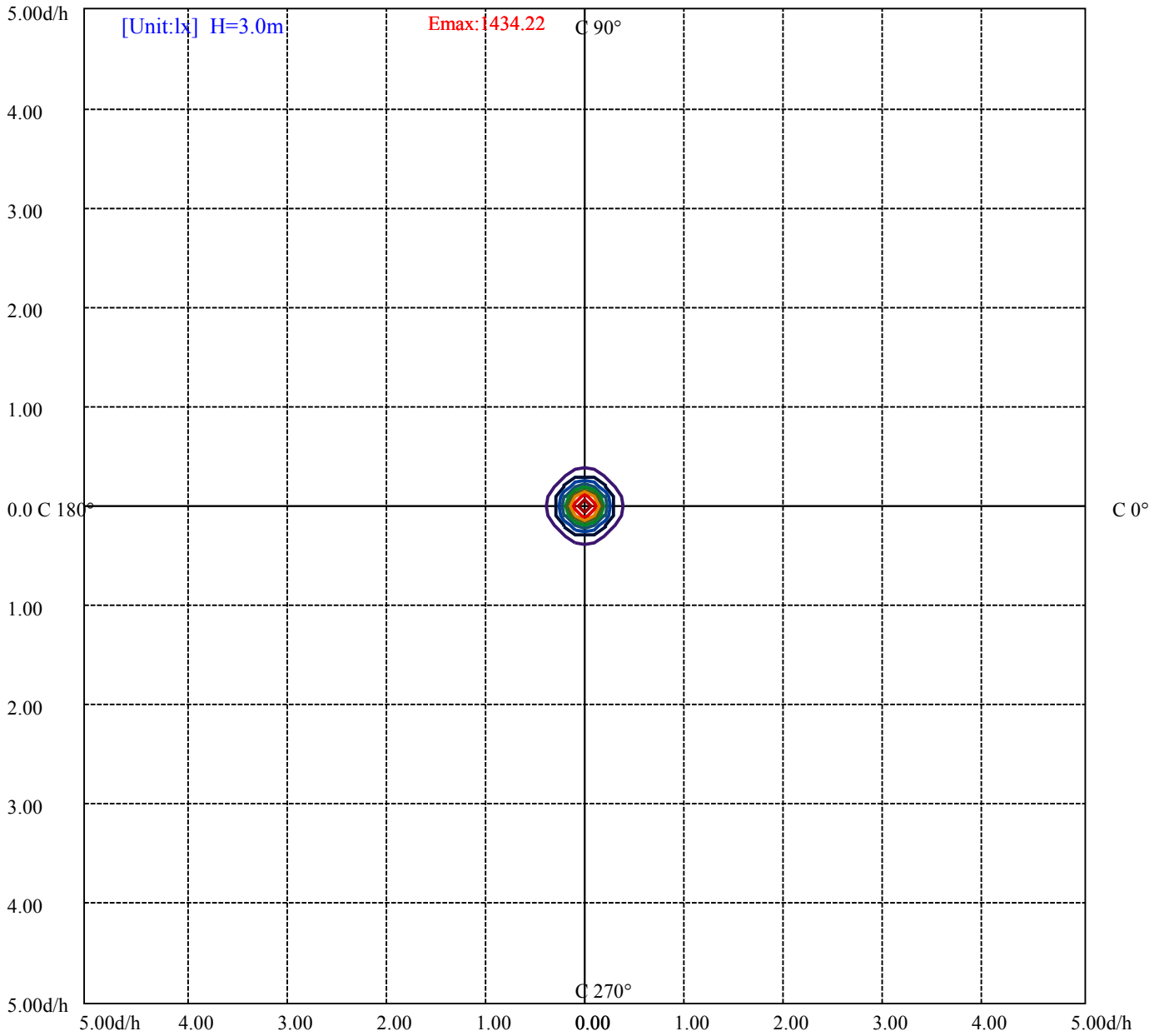
House

[Unit:cd]

Road

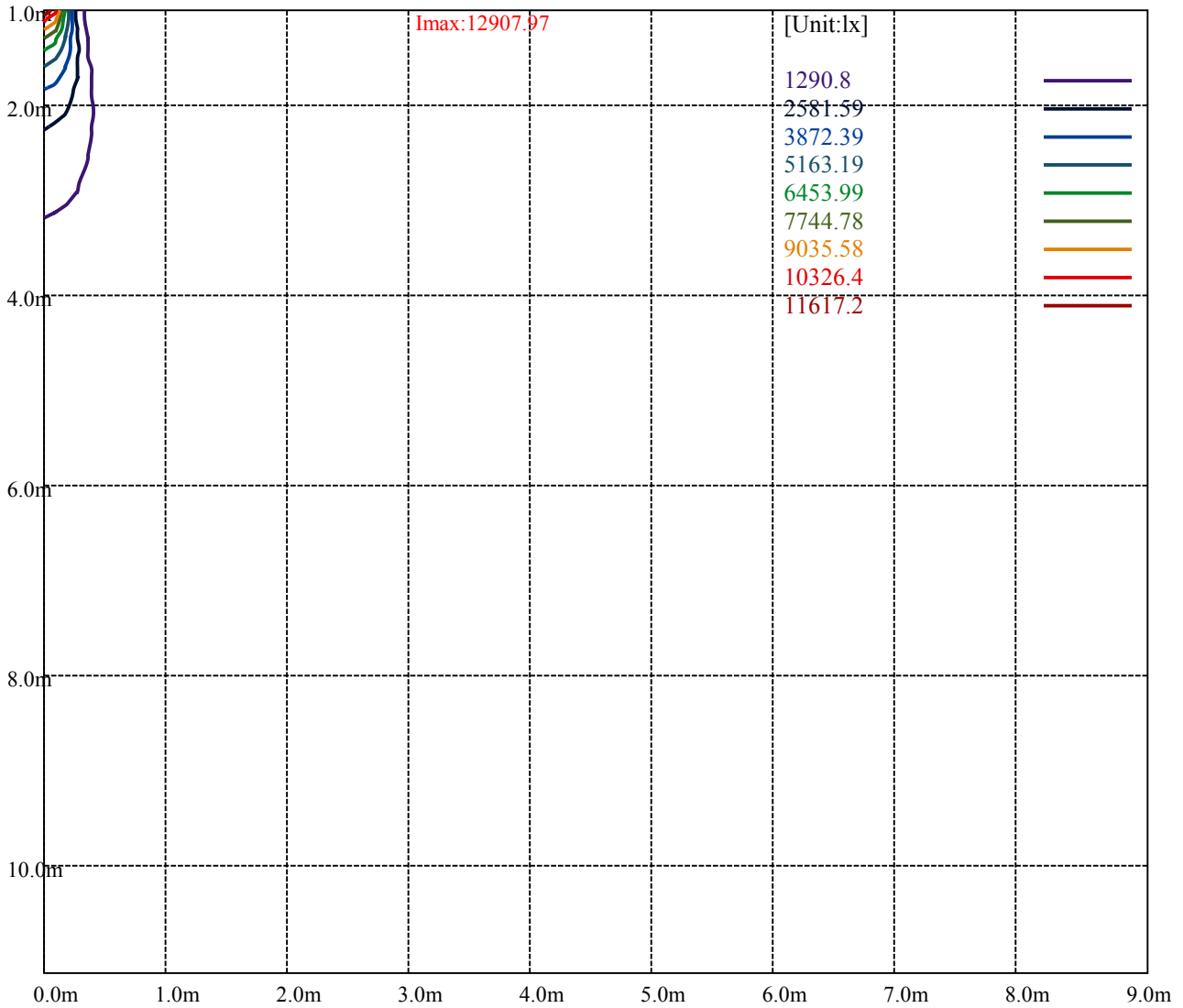
Imax:12907.97

(10%Imax)	1290.8	—
(20%Imax)	2581.59	—
(30%Imax)	3872.39	—
(40%Imax)	5163.19	—
(50%Imax)	6453.99	—
(60%Imax)	7744.78	—
(70%Imax)	9035.58	—
(80%Imax)	10326.4	—
(90%Imax)	11617.2	—



(10%Emax) 143.4211	—
(20%Emax) 286.8434	—
(30%Emax) 430.2644	—
(40%Emax) 573.6855	—
(50%Emax) 717.1078	—
(60%Emax) 860.5289	—
(70%Emax) 1003.95	—
(80%Emax) 1147.367	—
(90%Emax) 1290.789	—





Luminance Table

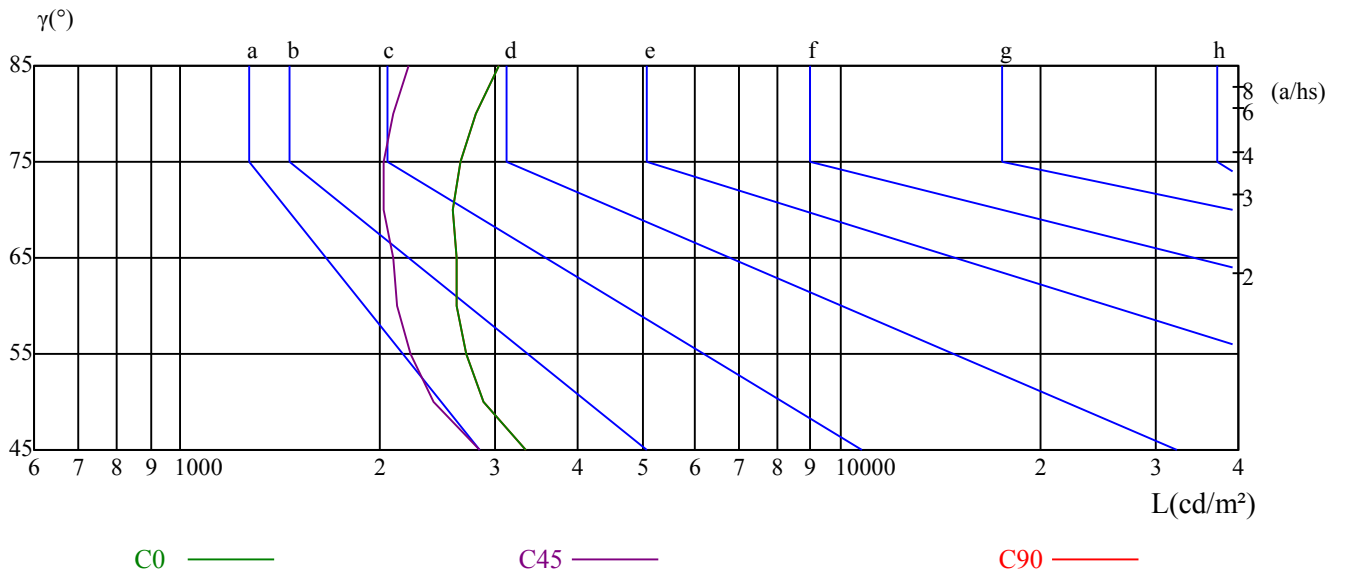
$\gamma$	45	50	55	60	65	70	75	80	85
C0	3337	2874	2705	2622	2619	2589	2647	2798	3026
C45	2845	2414	2236	2133	2093	2031	2034	2100	2210
C90	3337	2874	2705	2622	2619	2589	2647	2798	3026

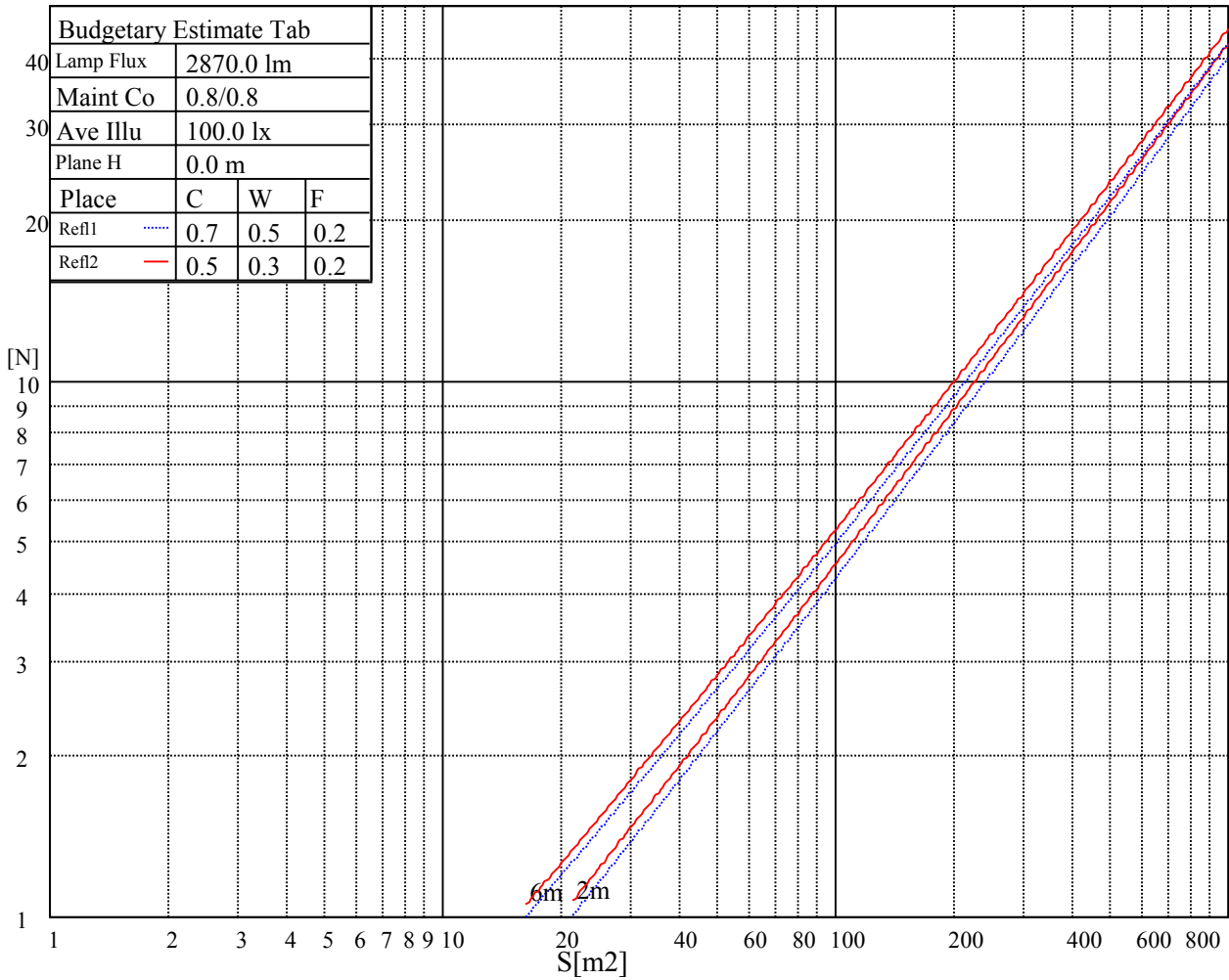
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6640	6640	6640	9721	9721	9721	27801	27801	27801

Glare Table

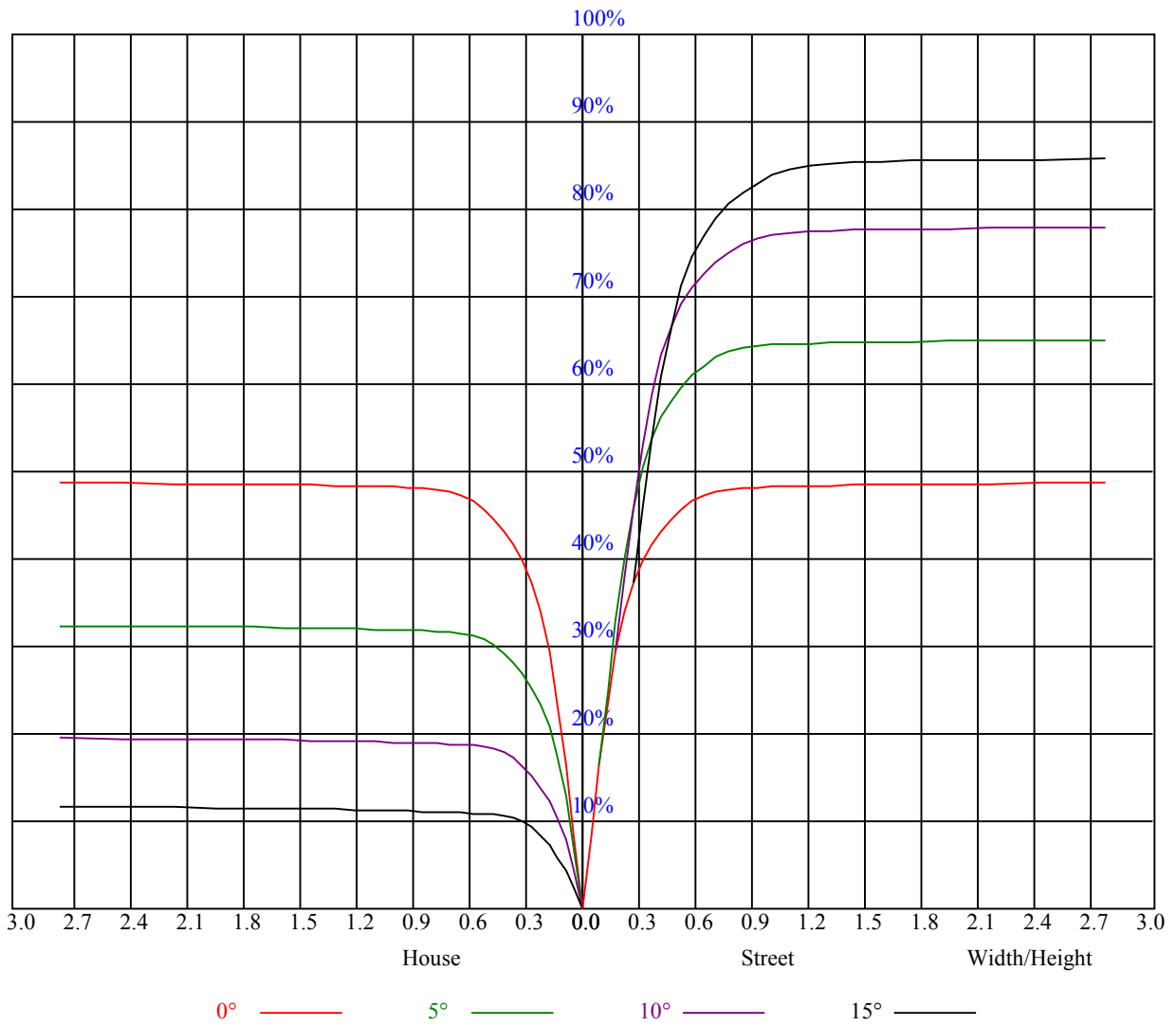
Glare	Quality	Service Values Illuminance(lx)							
		a	b	c	d	e	f	g	h
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

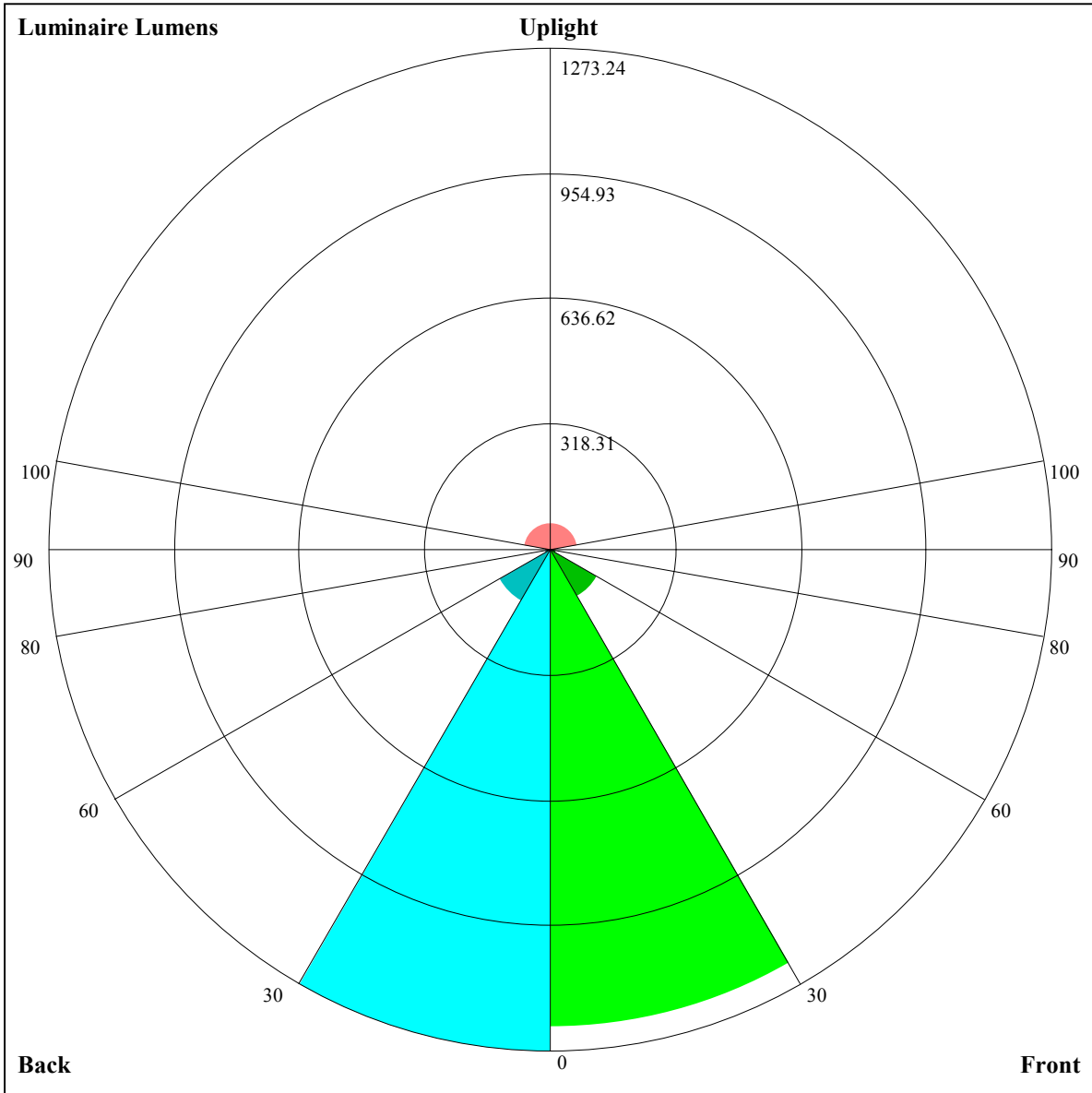
Luminance Limiting Curve





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	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	1.00
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	0.96	0.94	0.93	0.91
2	1.04	1.00	0.97	1.02	0.99	0.96	0.99	0.96	0.94	0.96	0.94	0.92	0.93	0.91	0.90	0.88
3	0.99	0.95	0.92	0.98	0.94	0.91	0.95	0.92	0.89	0.93	0.90	0.88	0.91	0.89	0.87	0.85
4	0.96	0.91	0.88	0.94	0.90	0.87	0.92	0.89	0.86	0.91	0.88	0.85	0.89	0.86	0.84	0.83
5	0.92	0.88	0.84	0.91	0.87	0.84	0.90	0.86	0.83	0.88	0.85	0.82	0.87	0.84	0.82	0.81
6	0.89	0.85	0.81	0.88	0.84	0.81	0.87	0.83	0.81	0.86	0.83	0.80	0.85	0.82	0.80	0.78
7	0.87	0.82	0.79	0.86	0.82	0.79	0.85	0.81	0.78	0.84	0.80	0.78	0.83	0.80	0.78	0.77
8	0.84	0.80	0.77	0.84	0.79	0.77	0.83	0.79	0.76	0.82	0.78	0.76	0.81	0.78	0.76	0.75
9	0.82	0.78	0.75	0.81	0.77	0.75	0.81	0.77	0.74	0.80	0.77	0.74	0.79	0.76	0.74	0.73
10	0.80	0.76	0.73	0.80	0.76	0.73	0.79	0.75	0.73	0.78	0.75	0.73	0.78	0.75	0.72	0.71





Luminaire Lumens:

FL=1210.29,FM=135.9,FH=14.77,FVH=7.23

BL=1273.24,BM=149.04,BH=14.96,BVH=7.25

UL=14.25,UH=67.82

BUG Rating:B3-U2-G0

Intensity data(cd)

<b>C/γ(°)</b>	<b>0.0</b>	<b>5.0</b>	<b>10.0</b>	<b>15.0</b>	<b>20.0</b>	<b>25.0</b>	<b>30.0</b>	<b>35.0</b>	<b>40.0</b>
<b>0.0</b>	12872.19	11864.65	7762.95	3275.86	1413.30	1025.15	894.67	386.50	31.00
<b>45.0</b>	12910.73	12084.88	8241.94	3385.97	1479.92	1037.81	894.67	442.65	44.60
<b>90.0</b>	12987.80	12327.13	8593.20	3673.36	1457.89	1030.33	884.59	419.20	43.82
<b>135.0</b>	12861.18	12552.86	9767.01	4784.40	1739.78	1086.81	915.59	543.96	159.99
<b>180.0</b>	12872.19	10857.12	7762.40	3166.29	1404.49	1004.94	857.39	363.37	33.14
<b>225.0</b>	12910.73	10947.97	7171.10	2949.92	1360.44	1005.44	863.67	317.62	39.09
<b>270.0</b>	12987.80	11369.15	7294.97	2962.03	1340.07	1001.48	848.97	313.27	29.95
<b>315.0</b>	12861.18	10897.86	6193.29	2228.13	1091.93	955.06	740.51	188.90	25.88
<b>360.0</b>	12872.19	11864.65	7762.95	3275.86	1413.30	1025.15	894.67	386.50	31.00
<b>C/γ(°)</b>	<b>45.0</b>	<b>50.0</b>	<b>55.0</b>	<b>60.0</b>	<b>65.0</b>	<b>70.0</b>	<b>75.0</b>	<b>80.0</b>	<b>85.0</b>
<b>0.0</b>	20.43	17.29	16.13	15.20	14.70	13.76	13.38	13.21	13.05
<b>45.0</b>	25.82	22.19	19.60	17.78	16.41	15.25	14.37	13.87	13.49
<b>90.0</b>	20.15	17.18	16.24	15.47	15.03	14.20	13.76	13.43	13.27
<b>135.0</b>	23.23	18.94	17.12	15.80	15.53	14.81	13.93	13.54	13.38
<b>180.0</b>	21.31	17.67	16.35	15.31	14.76	13.93	13.49	13.16	13.05
<b>225.0</b>	27.20	22.63	19.88	18.17	16.90	15.25	14.26	13.76	13.49
<b>270.0</b>	20.32	17.51	16.46	15.75	15.03	13.98	13.60	13.43	13.32
<b>315.0</b>	18.94	16.63	15.69	15.20	14.59	13.93	13.43	13.32	13.10
<b>360.0</b>	20.43	17.29	16.13	15.20	14.70	13.76	13.38	13.21	13.05
<b>C/γ(°)</b>	<b>90.0</b>								
<b>0.0</b>	12.83								
<b>45.0</b>	13.27								
<b>90.0</b>	13.16								
<b>135.0</b>	12.94								
<b>180.0</b>	12.88								
<b>225.0</b>	13.27								
<b>270.0</b>	13.16								
<b>315.0</b>	12.99								
<b>360.0</b>	12.83								