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Nata

Client:

LumCAT: 3-2115-N

Luminaire: 92.70.131.00

Report No: nata0100

Test No: GC2018041601

LampCAT: CITIZEN CLU038

Lamp flux(lm): 2449.1

Number of Lamps: 1

Length(mm): 81

Phm Type: C

Voltage(V): 36.6000

Current(A): 0.6000

Power (W): 21.9600

PF: 0.0000

Ballast type: DC

Width(mm): 81

Height(mm): 0

Photometric Results

Lumens(lm): 2207.42, Efficiency(%): 90.13% , Luminous Efficacy(lm/W): 100.52

Central intensity(cd): 13415.870, Maximum intensity(cd): 13415.870

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=16.4

[C90/270]Total=16.4

Field angle(10%Imax): [C0/180]Total=40.8

[C90/270]Total=40.8

Maximum s/h(1/2): C0_180=0.28 C90_270=0.28

Maximum s/h(1/4): C0_180=0.32 C90_270=0.32

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 90.13%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.143%

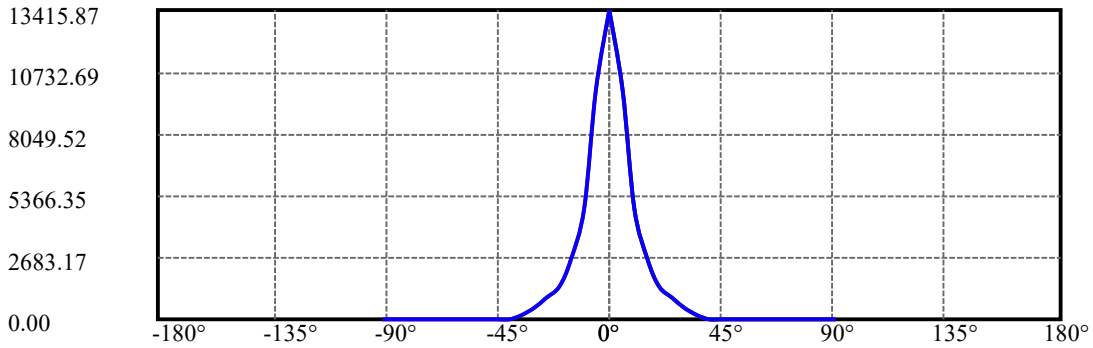
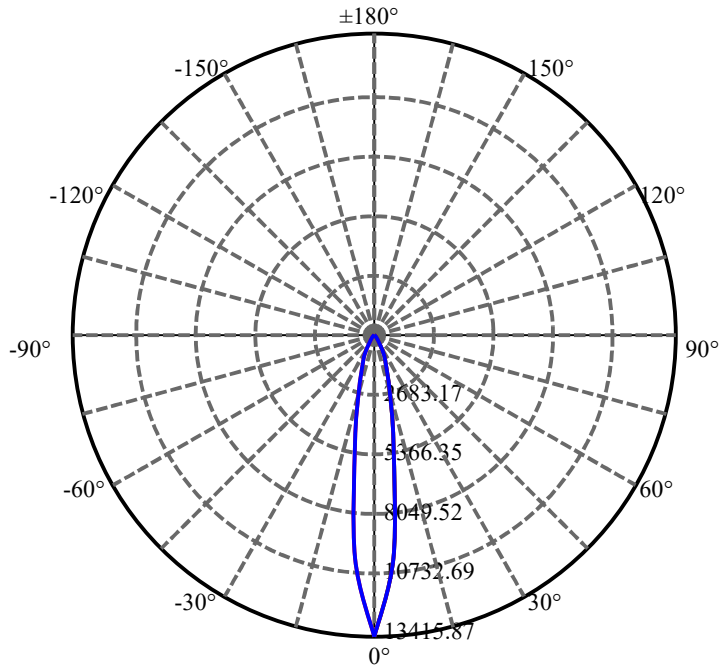
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	13415.868	0.000	0	.000%	.000%
5.0	9912.974	278.890	278.89	11.387%	12.634%
10.0	4851.914	528.187	807.076	21.566%	36.562%
15.0	2555.030	439.375	1246.451	17.940%	56.466%
20.0	1377.408	324.088	1570.539	13.233%	71.148%
25.0	931.602	242.173	1812.712	9.888%	82.119%
30.0	524.619	184.286	1996.998	7.525%	90.468%
35.0	151.384	99.546	2096.544	4.065%	94.977%
40.0	39.049	31.772	2128.316	1.297%	96.417%
45.0	25.250	11.905	2140.222	.486%	96.956%
50.0	20.742	9.294	2149.515	.379%	97.377%
55.0	18.554	8.544	2158.06	.349%	97.764%
60.0	17.666	8.372	2166.432	.342%	98.143%
65.0	16.950	8.415	2174.847	.344%	98.524%
70.0	14.342	7.924	2182.771	.324%	98.883%
75.0	12.801	7.095	2189.865	.290%	99.205%
80.0	11.445	6.487	2196.353	.265%	99.499%
85.0	10.110	5.857	2202.21	.239%	99.764%
90.0	8.912	5.208	2207.418	.213%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1997.00	81.54%	90.47%
0-40	2128.32	86.90%	96.42%
0-60	2166.43	88.46%	98.14%
0-90	2202.21	89.92%	99.76%
0-120	2202.21	89.92%	99.76%
0-180	2207.42	90.13%	100.00%
60-90	44.15	1.80%	2.00%
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%
0-24.03	1765.94	72.11%	80.00%

ZONAL LUMEN SUMMARY

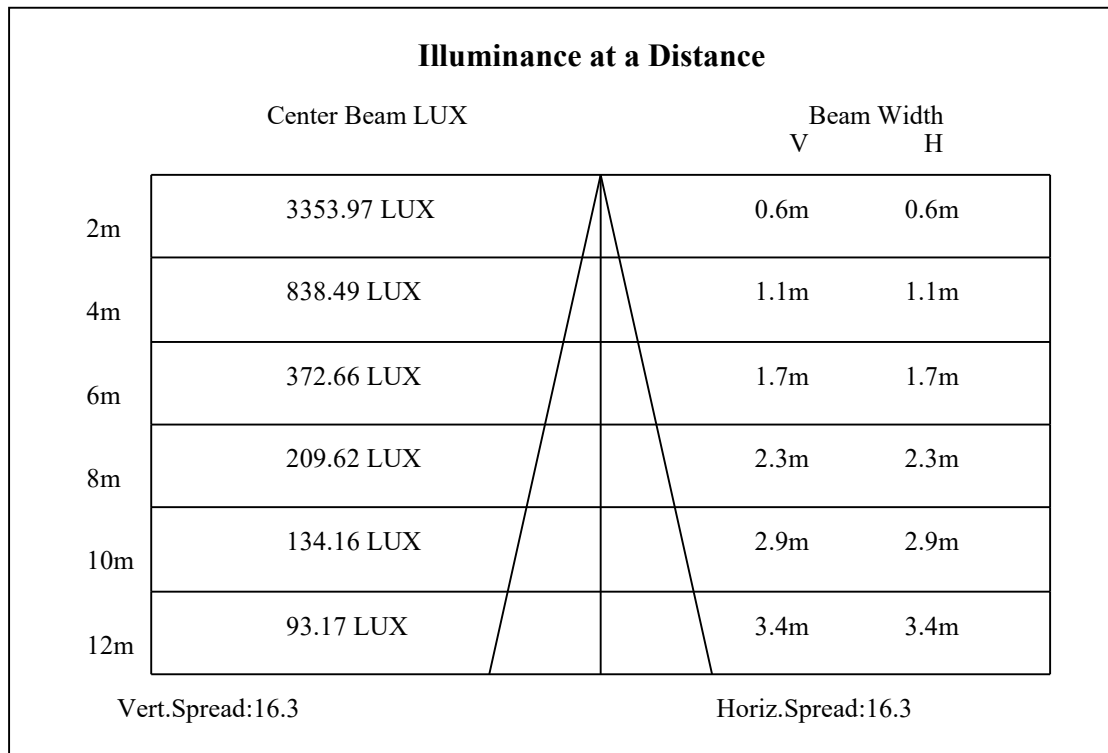
0-10	807.08
10-20	763.46
20-30	426.46
30-40	131.32
40-50	21.20
50-60	16.92
60-70	16.34
70-80	13.58
80-90	5.86
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

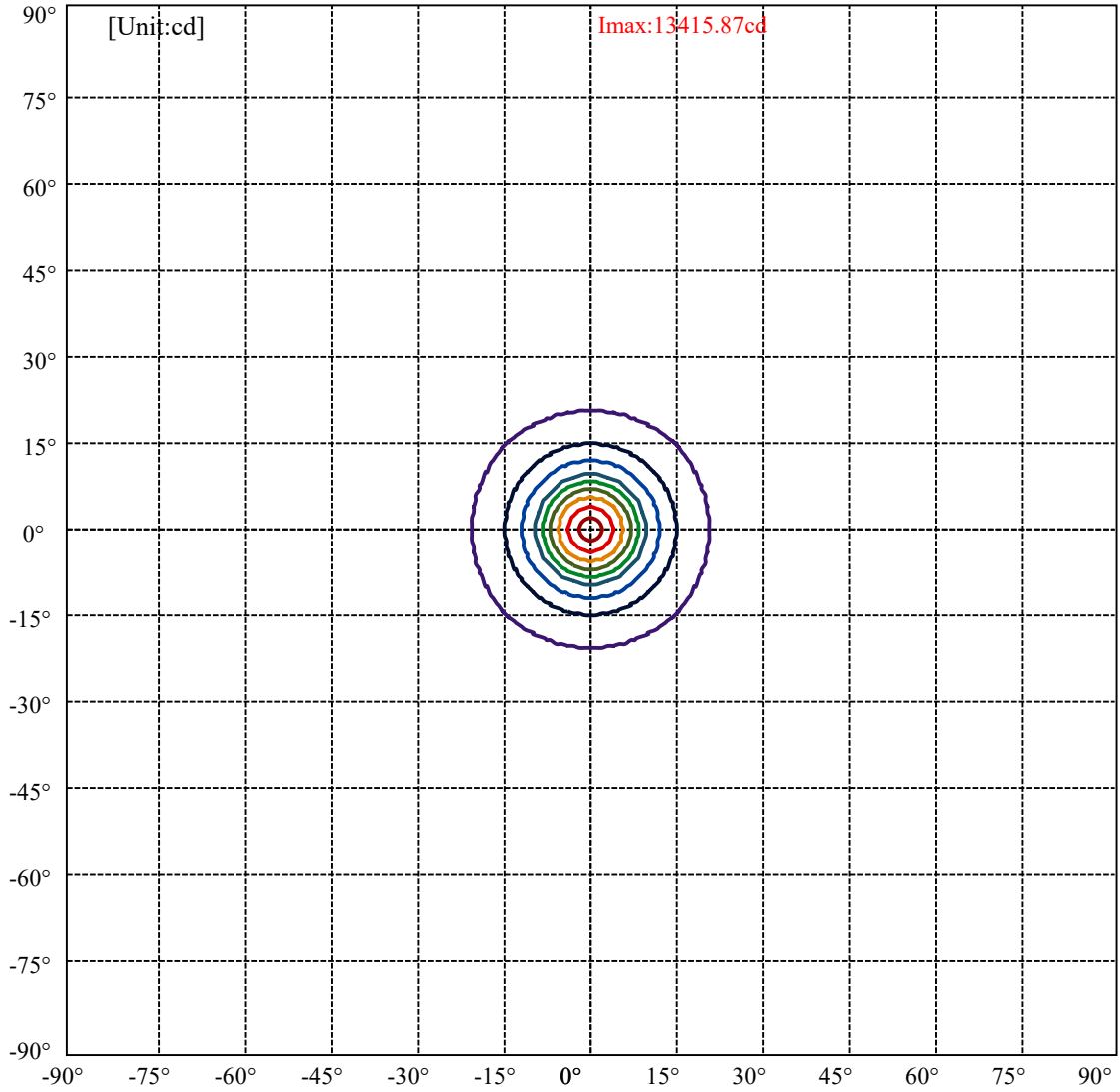


C0(Max): —————
C0/C180: —————
C90/C270: —————

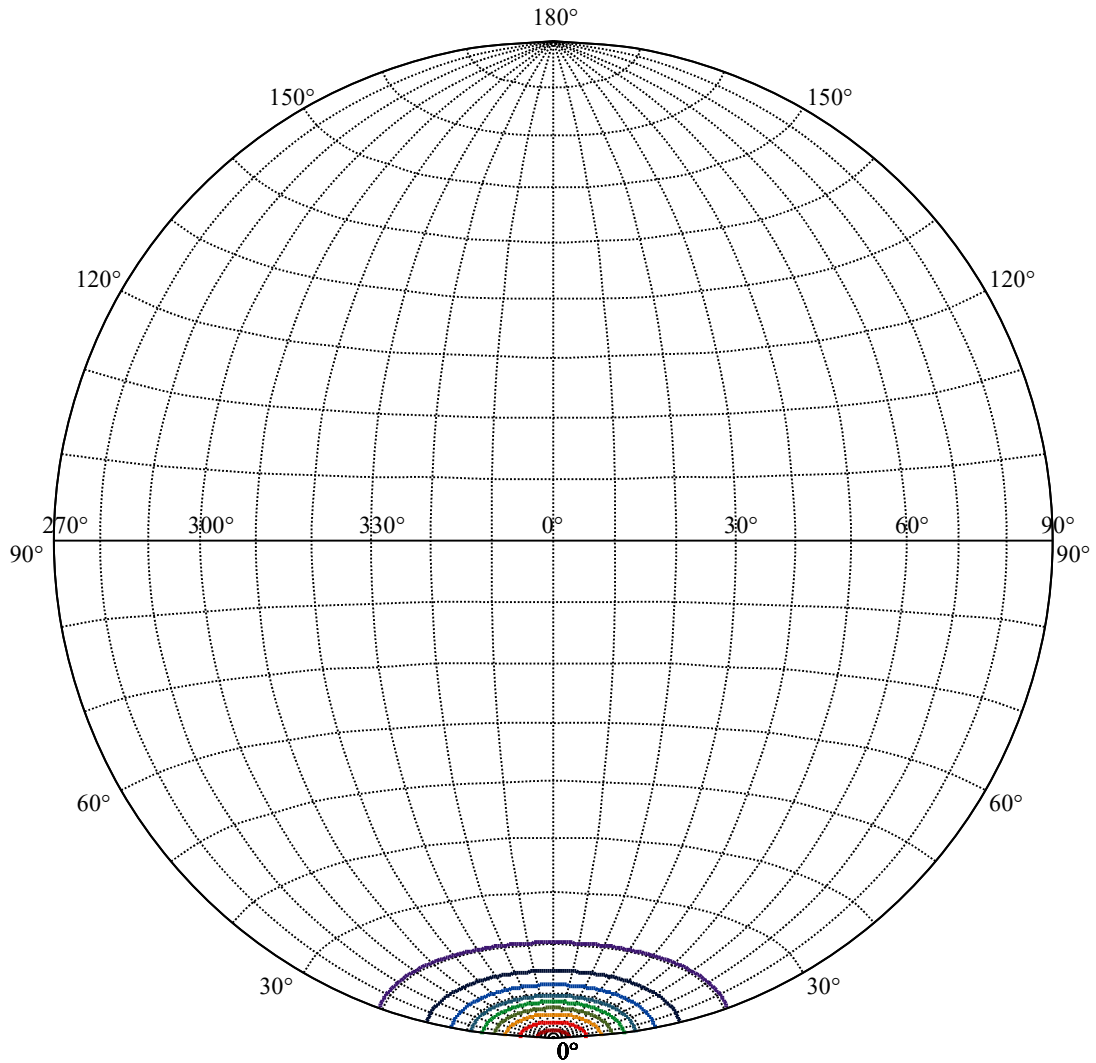
Field angle(10%Imax):C0/180Left:20.4 Right:20.4
:C90/270Left:20.4 Right:20.4

Beam Angle(50%Imax):C0/180Left:8.2 Right:8.2
:C90/270Left:8.2 Right:8.2





(10%I _{max}) 1341.59	—
(20%I _{max}) 2683.17	—
(30%I _{max}) 4024.76	—
(40%I _{max}) 5366.35	—
(50%I _{max}) 6707.93	—
(60%I _{max}) 8049.52	—
(70%I _{max}) 9391.11	—
(80%I _{max}) 10732.7	—
(90%I _{max}) 12074.3	—



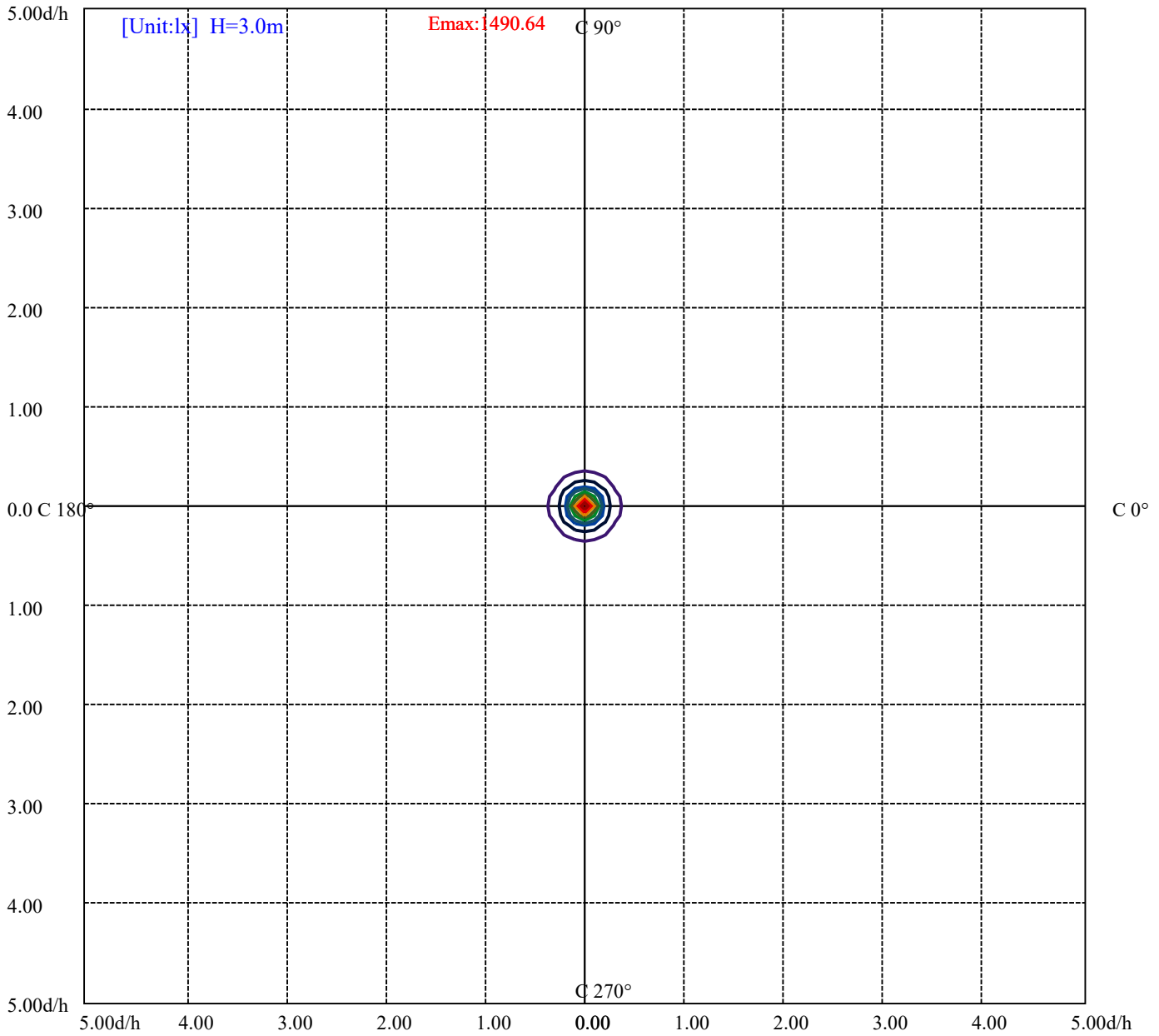
House

[Unit:cd]

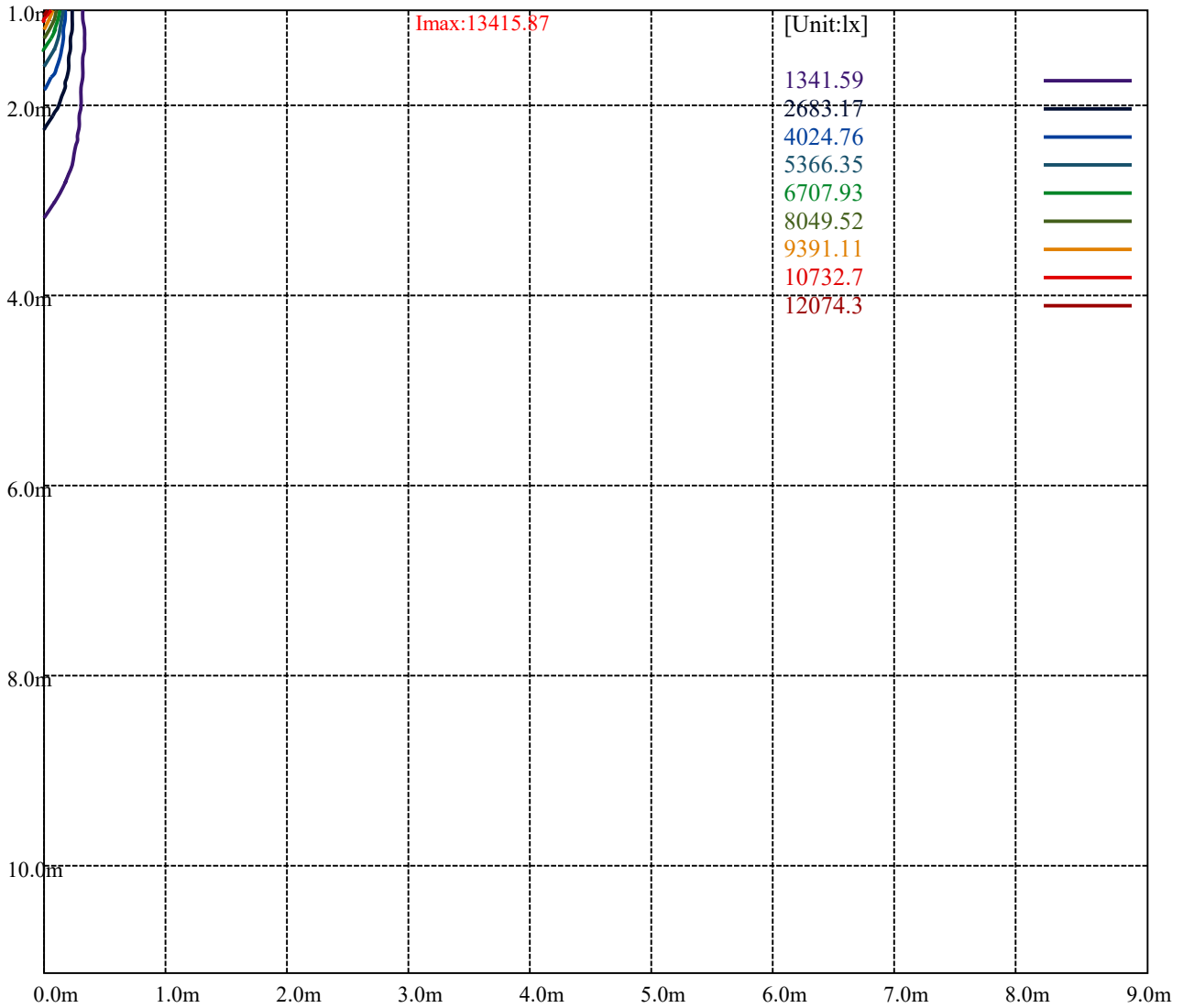
Road

Imax:13415.87

(10%Imax) 1341.59	—
(20%Imax) 2683.17	—
(30%Imax) 4024.76	—
(40%Imax) 5366.35	—
(50%Imax) 6707.93	—
(60%Imax) 8049.52	—
(70%Imax) 9391.11	—
(80%Imax) 10732.7	—
(90%Imax) 12074.3	—



(10%Emax) 149.0644	—
(20%Emax) 298.1278	—
(30%Emax) 447.1922	—
(40%Emax) 596.2556	—
(50%Emax) 745.32	—
(60%Emax) 894.3845	—
(70%Emax) 1043.448	—
(80%Emax) 1192.511	—
(90%Emax) 1341.578	—



Luminance Table

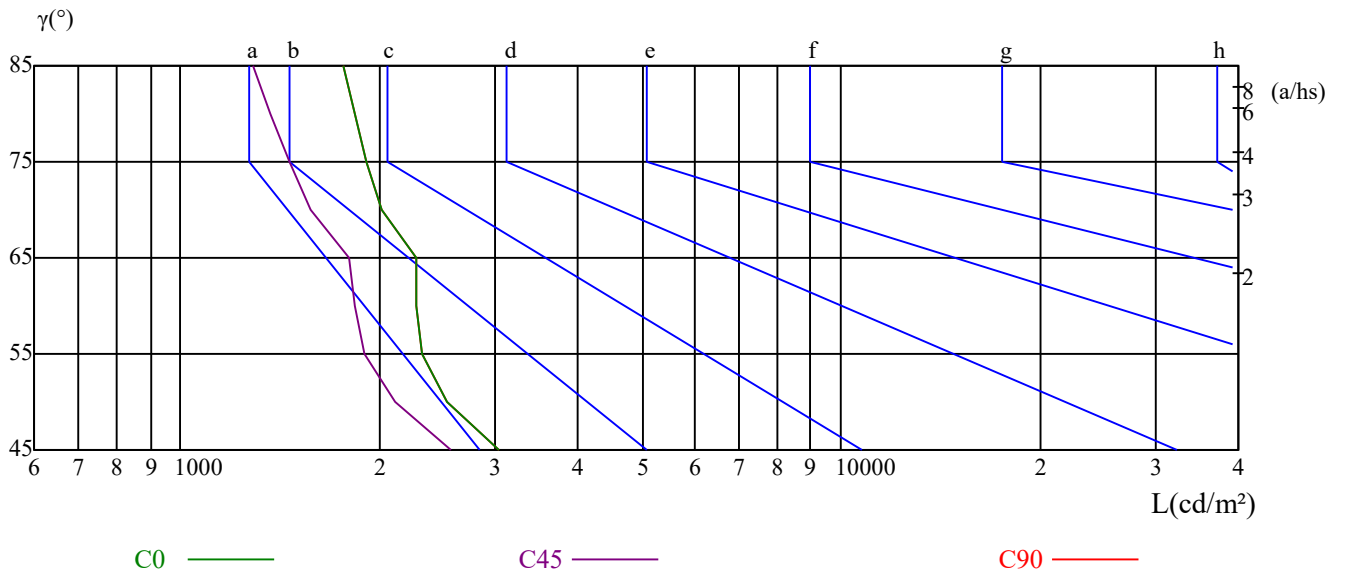
γ	45	50	55	60	65	70	75	80	85
C0	3040	2533	2316	2274	2269	2016	1909	1833	1762
C45	2570	2109	1899	1835	1800	1570	1458	1369	1284
C90	3040	2533	2316	2274	2269	2016	1909	1833	1762

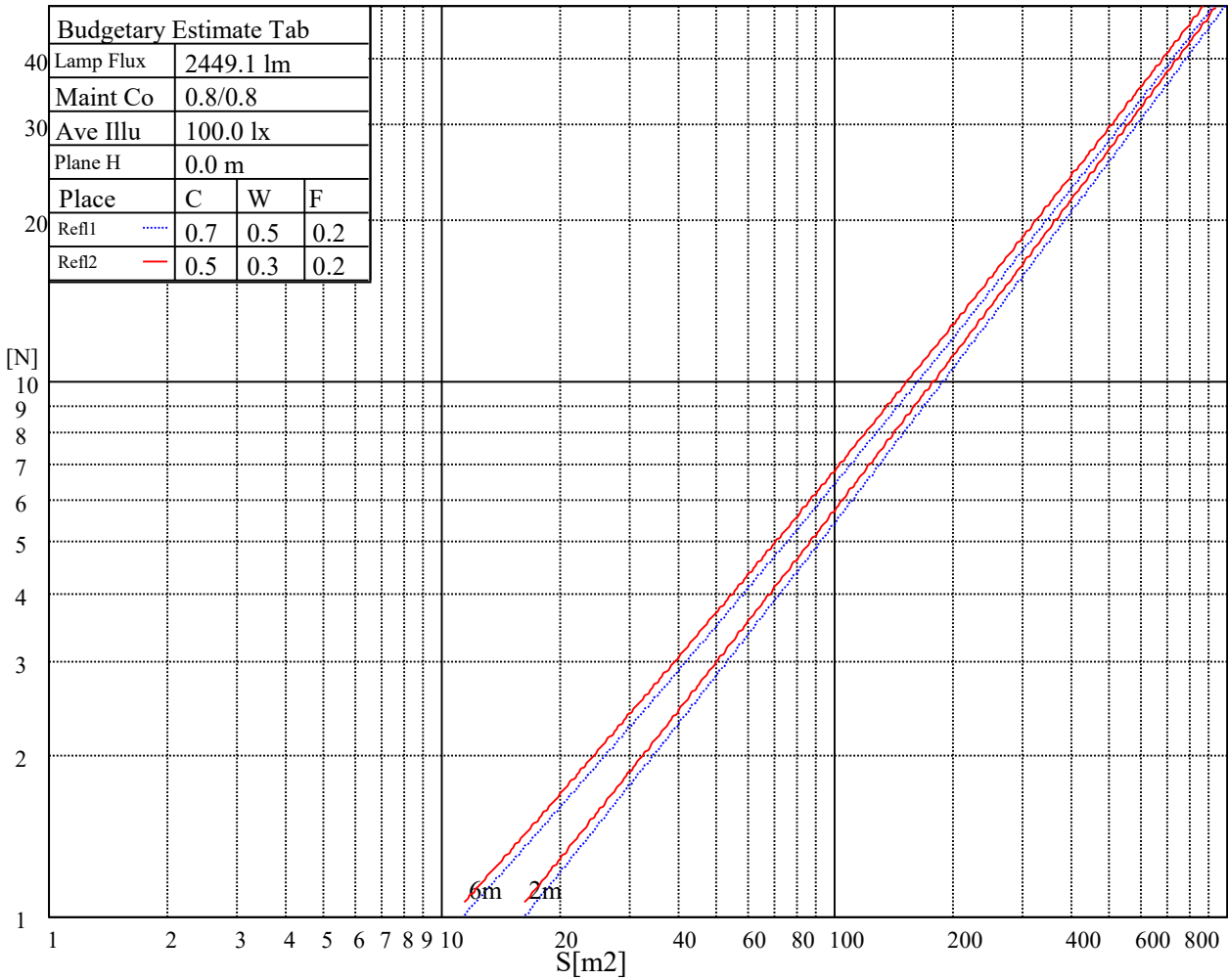
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6113	6113	6113	7538	7538	7538	17680	17680	17680

Glare Table

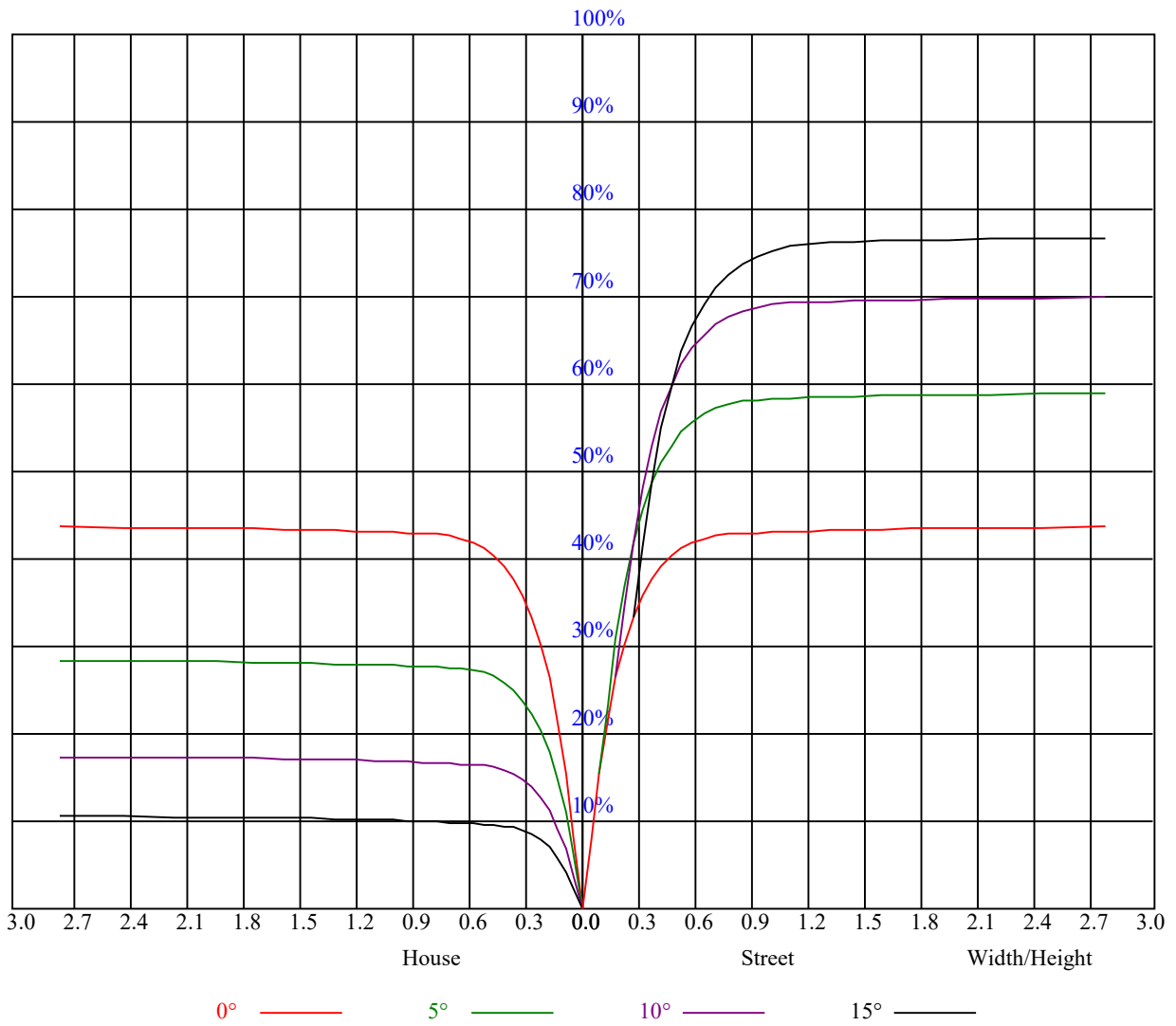
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

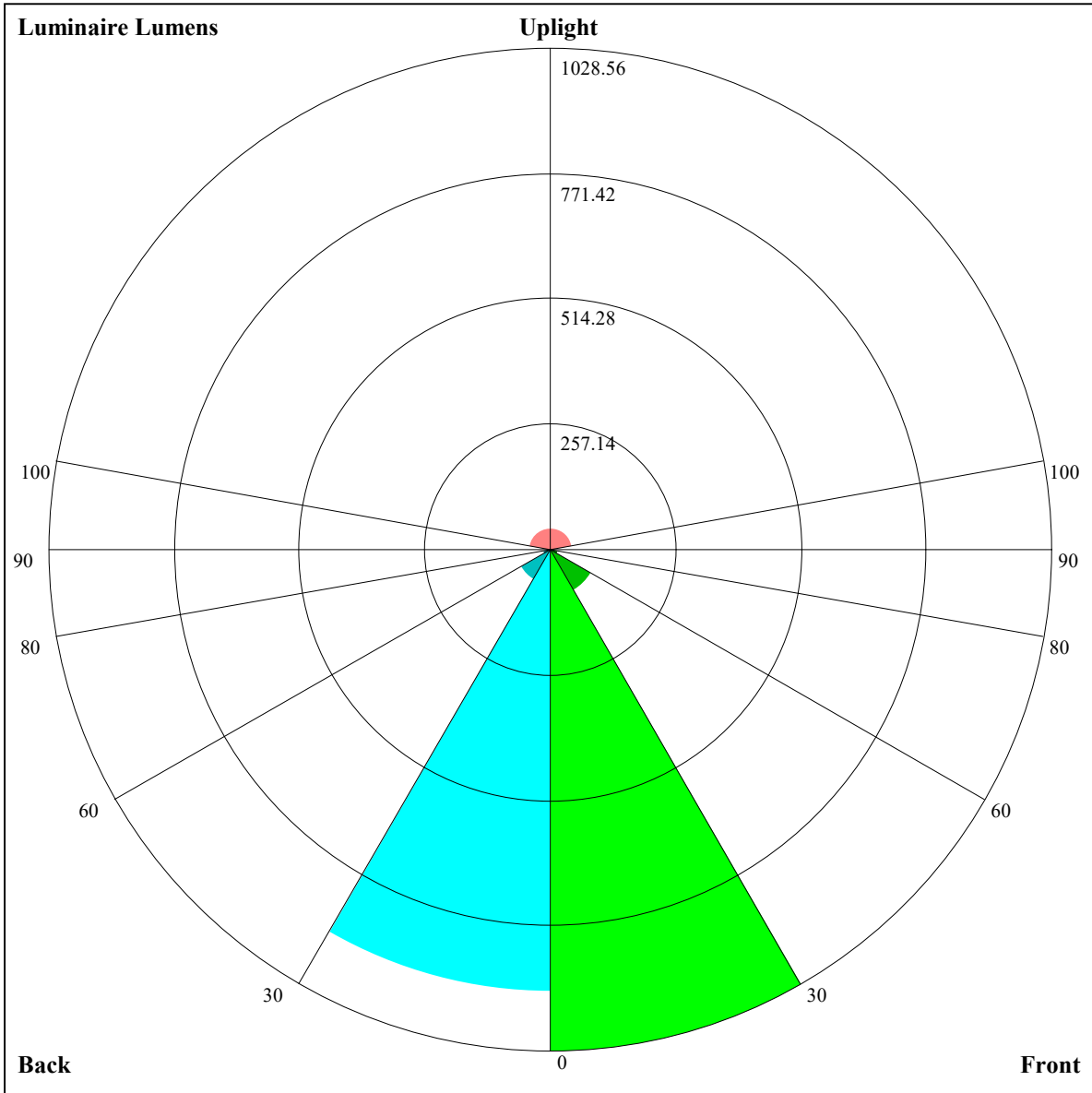
Luminance Limiting Curve





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





Luminaire Lumens:

FL=1028.56,FM=96.46,FH=15.13,FVH=5.58

BL=907.13,BM=71.79,BH=14.68,BVH=5.46

UL=9.72,UH=46.27

BUG Rating:B2-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	13428.26	11985.78	5841.48	2895.97	1689.68	1067.54	661.78	280.79	47.13
45.0	13356.68	11121.39	5467.10	2791.36	1512.40	955.78	597.36	286.29	46.41
90.0	13296.12	8611.37	4121.52	2193.45	1241.52	859.60	411.82	66.78	34.96
135.0	13582.41	9486.22	4723.84	2840.91	1360.99	899.07	478.99	68.10	36.12
180.0	13428.26	8232.03	3968.47	2160.41	1093.97	853.21	412.92	59.13	33.14
225.0	13356.68	8369.67	4221.17	2161.51	1088.74	864.17	438.14	61.39	32.70
270.0	13296.12	11137.91	5252.38	2824.39	1575.16	994.32	599.56	281.89	41.24
315.0	13582.41	10359.41	5219.35	2572.24	1456.79	959.14	596.37	106.70	40.69
360.0	13428.26	11985.78	5841.48	2895.97	1689.68	1067.54	661.78	280.79	47.13
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	27.80	21.91	18.99	18.22	17.95	15.20	13.38	11.95	10.46
45.0	28.68	22.68	19.99	18.33	17.34	14.81	12.99	11.56	10.08
90.0	23.95	20.21	18.33	17.51	16.52	13.76	12.33	11.01	9.86
135.0	24.17	20.10	18.22	17.56	16.79	14.15	12.83	11.45	10.02
180.0	23.29	20.10	18.39	17.67	16.30	13.82	12.33	11.07	9.91
225.0	23.56	20.04	18.28	17.51	16.63	13.93	12.55	11.07	9.86
270.0	25.38	20.43	18.00	17.12	16.96	14.42	12.77	11.56	10.19
315.0	25.16	20.48	18.22	17.40	17.12	14.65	13.21	11.89	10.52
360.0	27.80	21.91	18.99	18.22	17.95	15.20	13.38	11.95	10.46
C/ γ (°)	90.0								
0.0	9.19								
45.0	8.81								
90.0	8.81								
135.0	8.86								
180.0	8.97								
225.0	8.81								
270.0	8.81								
315.0	9.03								
360.0	9.19								