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Nata

Client:

LumCAT: 4-2449-A

Luminaire: 92.70.230.00

Report No: GC2019091909

Voltage(V): 34.9800

Test No: GC2019100806

Current(A): 0.4270 Power (W): 15.0000

LampCAT: LUMILEDS LUXEON 3030 2D(ROUND LES) ARRAY 15W

Lamp flux(lm): 2008.8

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 104

Width(mm): 104

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1724.87, Efficiency(%): 85.87% , Luminous Efficacy(lm/W): 114.99

Central intensity(cd): 2104.594, Maximum intensity(cd): 2104.594

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=55.4

[C90/270]Total=55.4

Field angle(10%Imax): [C0/180]Total=79.8

[C90/270]Total=79.8

Maximum s/h(1/2): C0_180=0.87 C90_270=0.87

Maximum s/h(1/4): C0_180=0.84 C90_270=0.84

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 85.87%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 96.684%

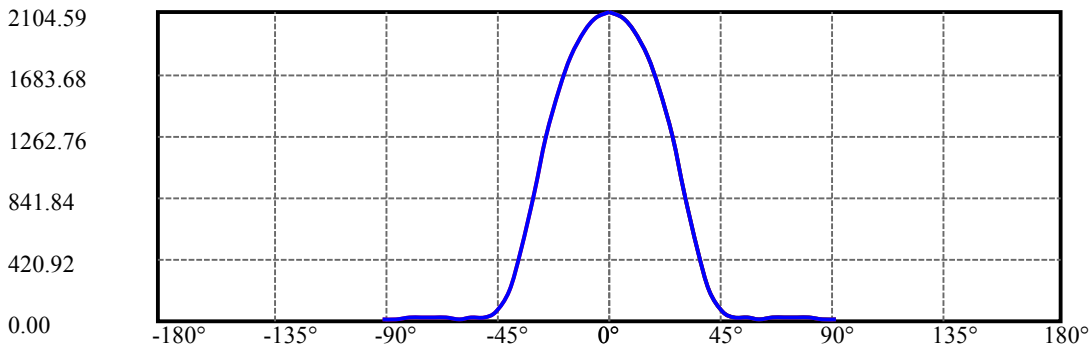
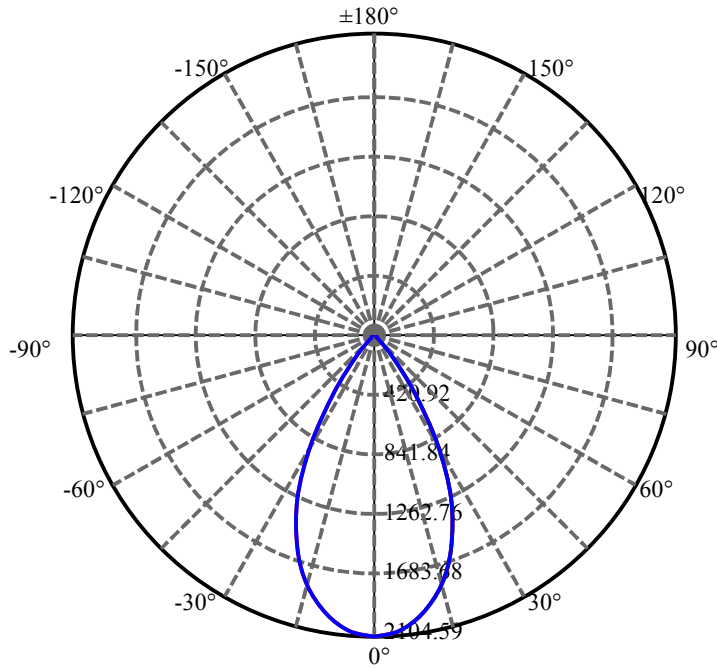
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2104.594	0.000	0	.000%	.000%
5.0	2067.328	49.874	49.874	2.483%	2.891%
10.0	1968.188	144.363	194.237	7.187%	11.261%
15.0	1807.523	223.973	418.21	11.150%	24.246%
20.0	1583.719	279.486	697.696	13.913%	40.449%
25.0	1255.999	297.834	995.53	14.827%	57.716%
30.0	879.877	270.297	1265.827	13.456%	73.387%
35.0	487.962	201.424	1467.25	10.027%	85.064%
40.0	207.042	115.956	1583.207	5.772%	91.787%
45.0	60.799	49.593	1632.8	2.469%	94.662%
50.0	21.994	16.730	1649.529	.833%	95.632%
55.0	19.709	9.067	1658.597	.451%	96.158%
60.0	19.540	9.072	1667.669	.452%	96.684%
65.0	19.645	9.526	1677.195	.474%	97.236%
70.0	19.891	10.011	1687.206	.498%	97.816%
75.0	20.109	10.456	1697.661	.520%	98.422%
80.0	20.116	10.763	1708.425	.536%	99.047%
85.0	16.172	9.860	1718.285	.491%	99.618%
90.0	7.882	6.586	1724.871	.328%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1265.83	63.01%	73.39%
0-40	1583.21	78.81%	91.79%
0-60	1667.67	83.02%	96.68%
0-90	1718.28	85.54%	99.62%
0-120	1718.28	85.54%	99.62%
0-180	1724.87	85.87%	100.00%
60-90	59.69	2.97%	3.46%
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%
0-32.83	1379.90	68.69%	80.00%

ZONAL LUMEN SUMMARY

0-10	194.24
10-20	503.46
20-30	568.13
30-40	317.38
40-50	66.32
50-60	18.14
60-70	19.54
70-80	21.22
80-90	9.86
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: —————

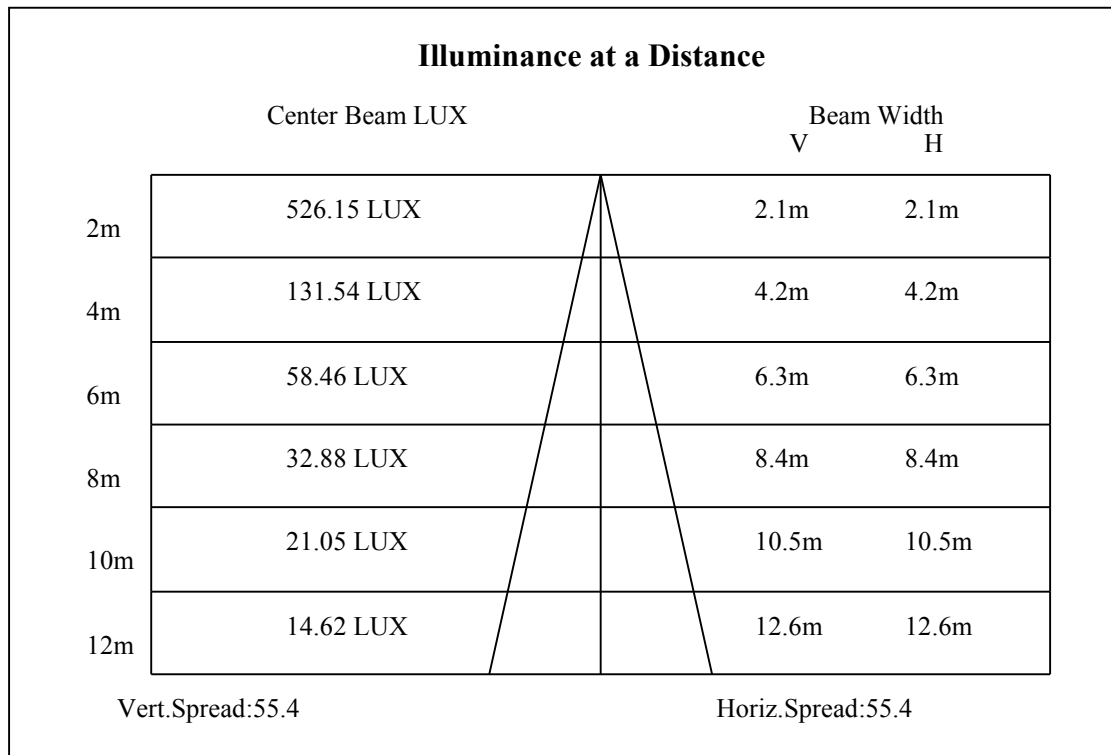
C90/C270: —————

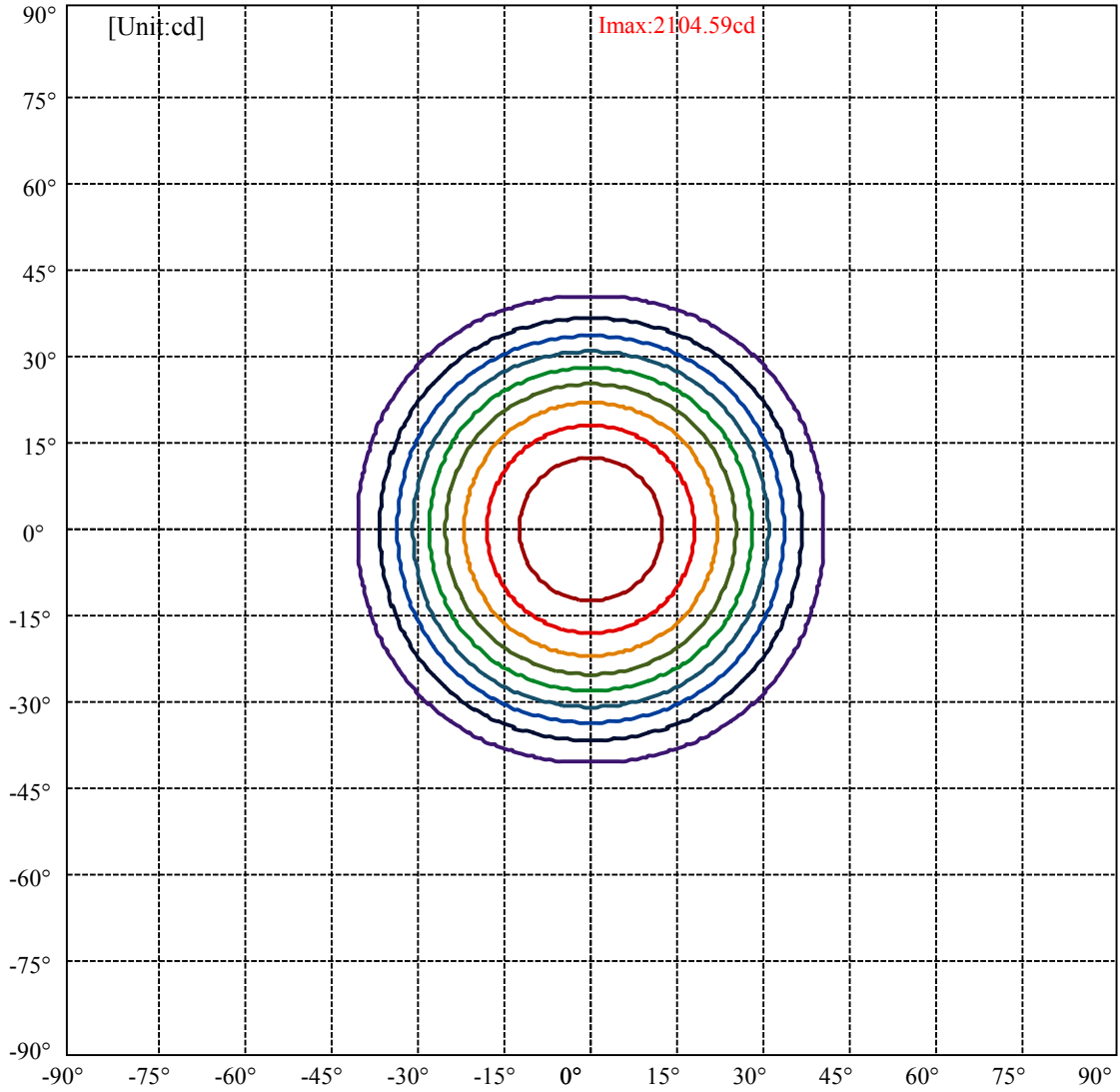
Field angle(10%Imax):C0/180Left:39.9 Right:39.9

:C90/270Left:39.9 Right:39.9

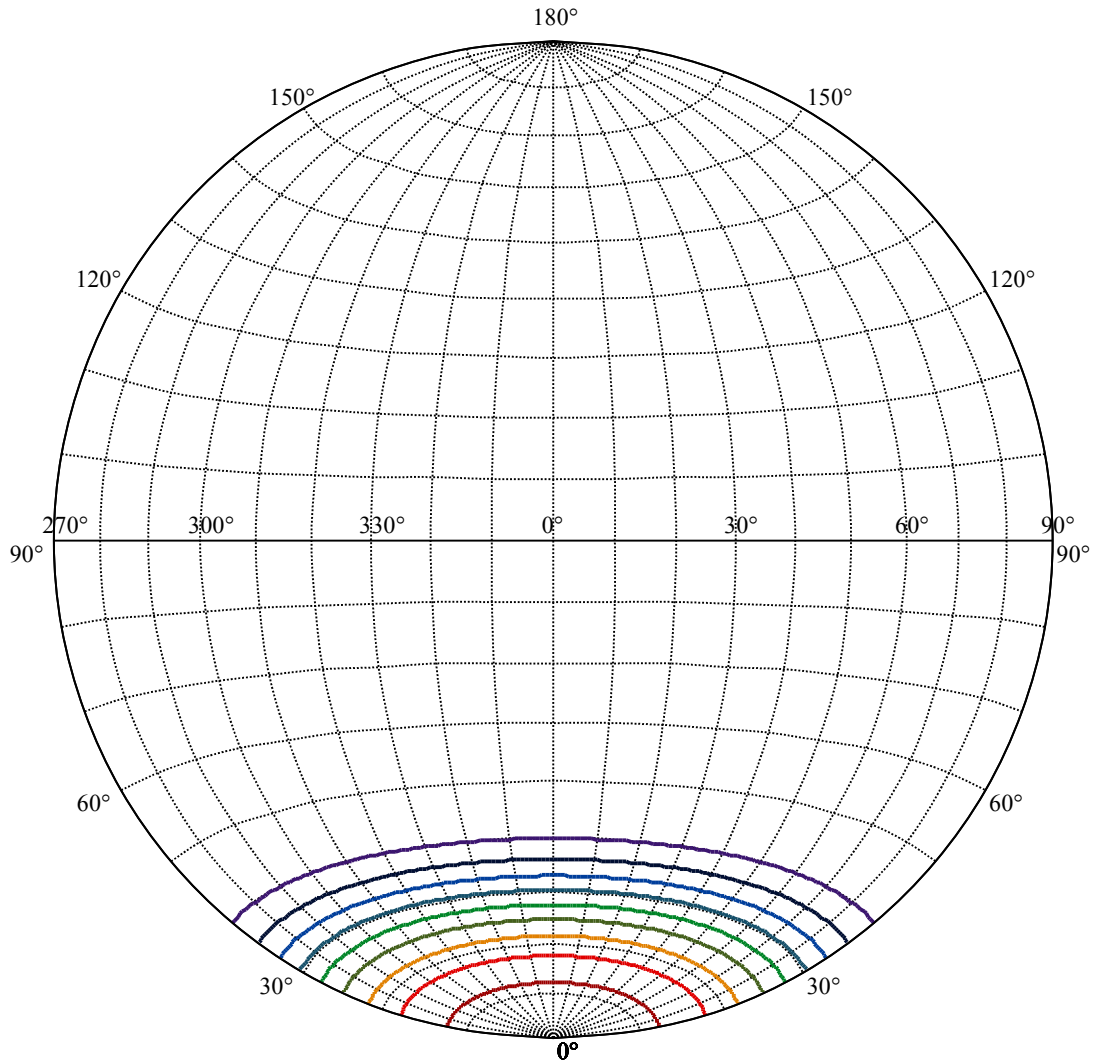
Beam Angle(50%Imax):C0/180Left:27.7 Right:27.7

:C90/270Left:27.7 Right:27.7





(10%Imax) 210.459	—
(20%Imax) 420.919	—
(30%Imax) 631.378	—
(40%Imax) 841.838	—
(50%Imax) 1052.3	—
(60%Imax) 1262.76	—
(70%Imax) 1473.22	—
(80%Imax) 1683.68	—
(90%Imax) 1894.13	—



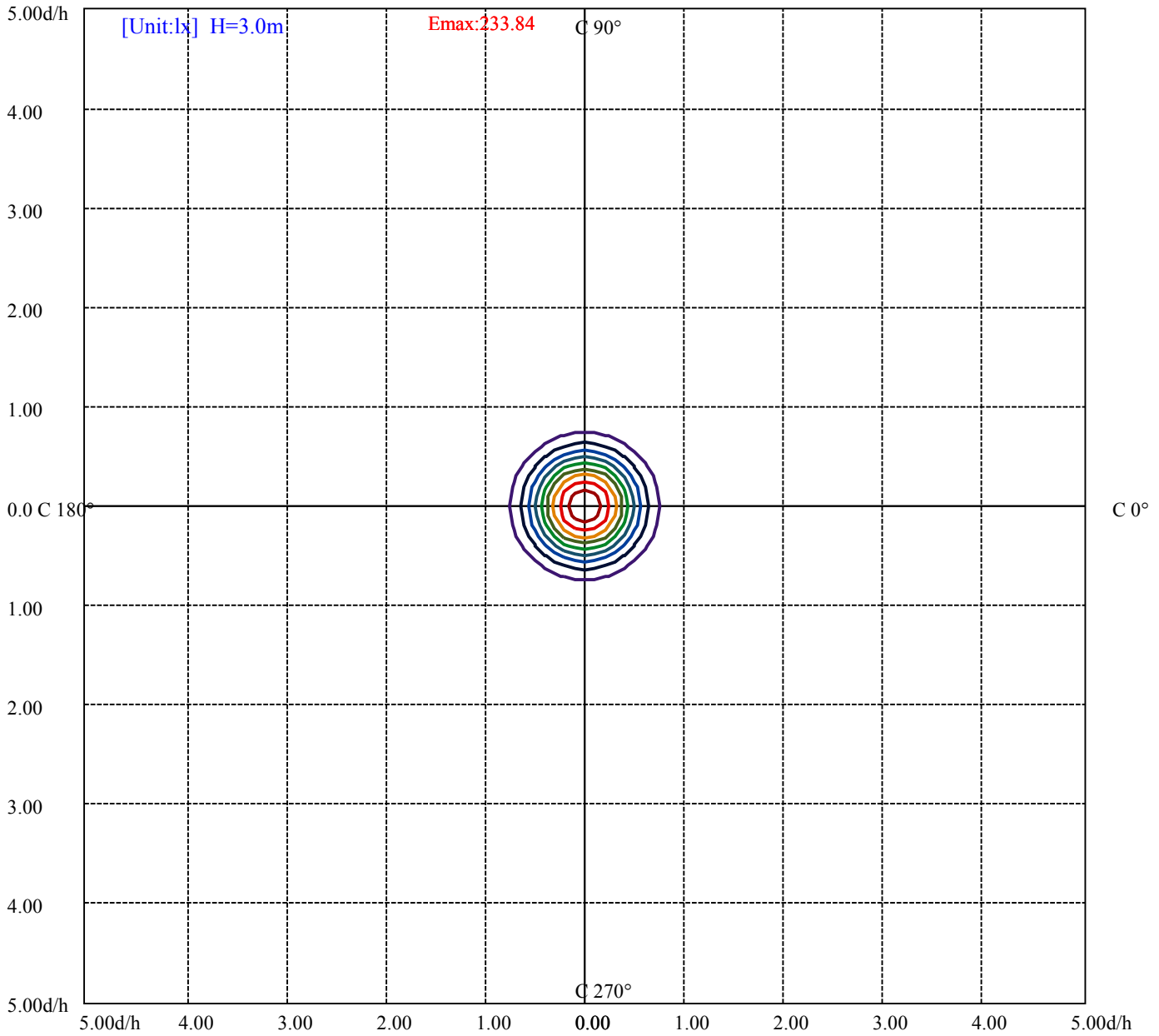
House

[Unit:cd]

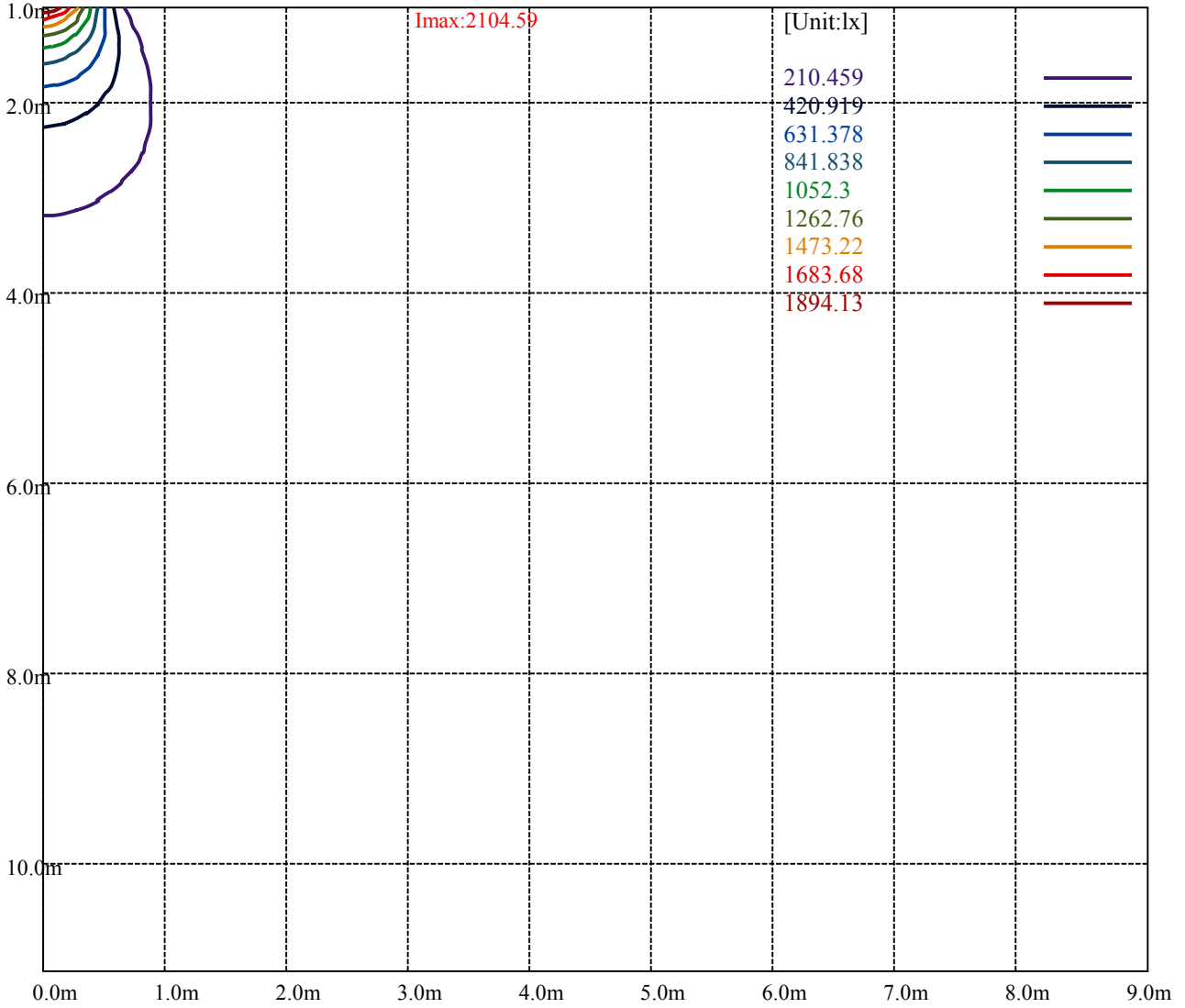
Road

Imax:2104.59

(10%Imax) 210.459	—
(20%Imax) 420.919	—
(30%Imax) 631.378	—
(40%Imax) 841.838	—
(50%Imax) 1052.3	—
(60%Imax) 1262.76	—
(70%Imax) 1473.22	—
(80%Imax) 1683.68	—
(90%Imax) 1894.13	—



- (10%E_{max}) 23.38433
- (20%E_{max}) 46.76878
- (30%E_{max}) 70.15311
- (40%E_{max}) 93.53745
- (50%E_{max}) 116.9222
- (60%E_{max}) 140.3067
- (70%E_{max}) 163.69
- (80%E_{max}) 187.0744
- (90%E_{max}) 210.4589



Luminance Table

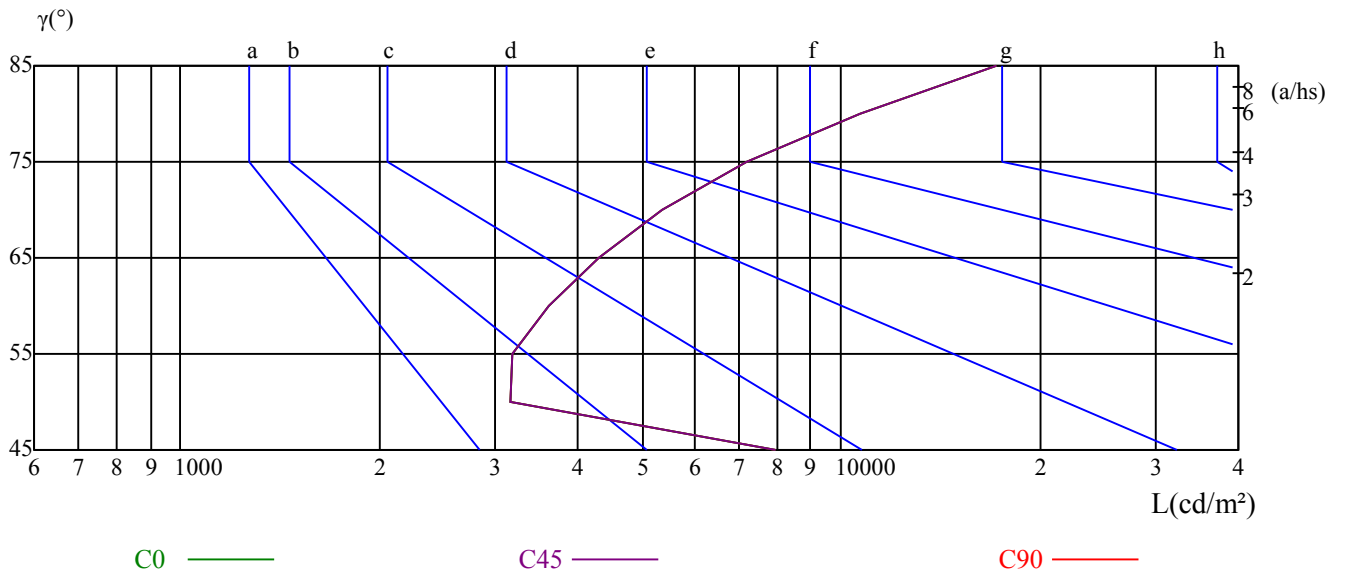
γ	45	50	55	60	65	70	75	80	85
C0	7950	3163	3177	3613	4298	5377	7183	10711	17155
C45	7950	3163	3177	3613	4298	5377	7183	10711	17155
C90	7950	3163	3177	3613	4298	5377	7183	10711	17155

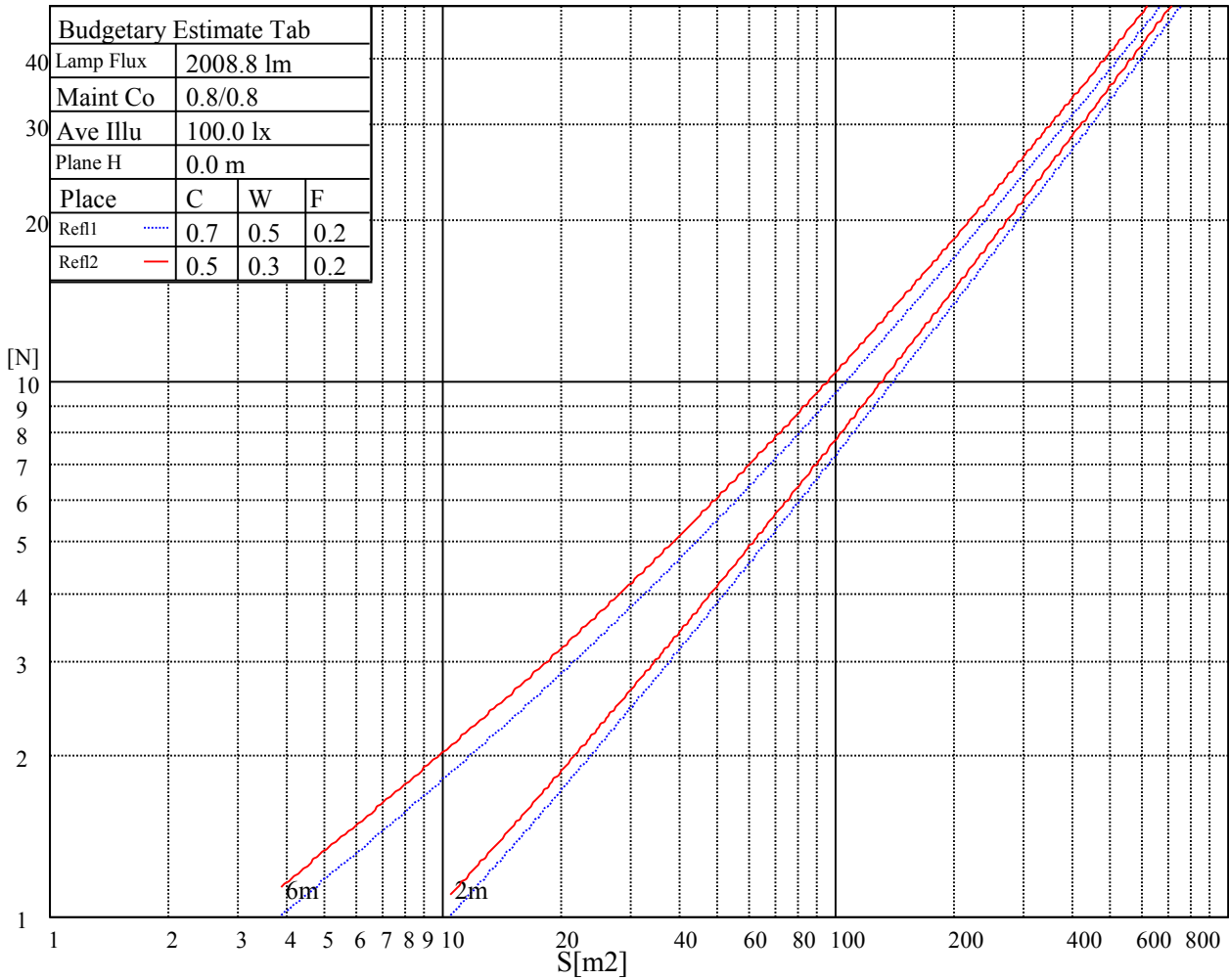
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4298	4298	4298	7183	7183	7183	17155	17155	17155

Glare Table

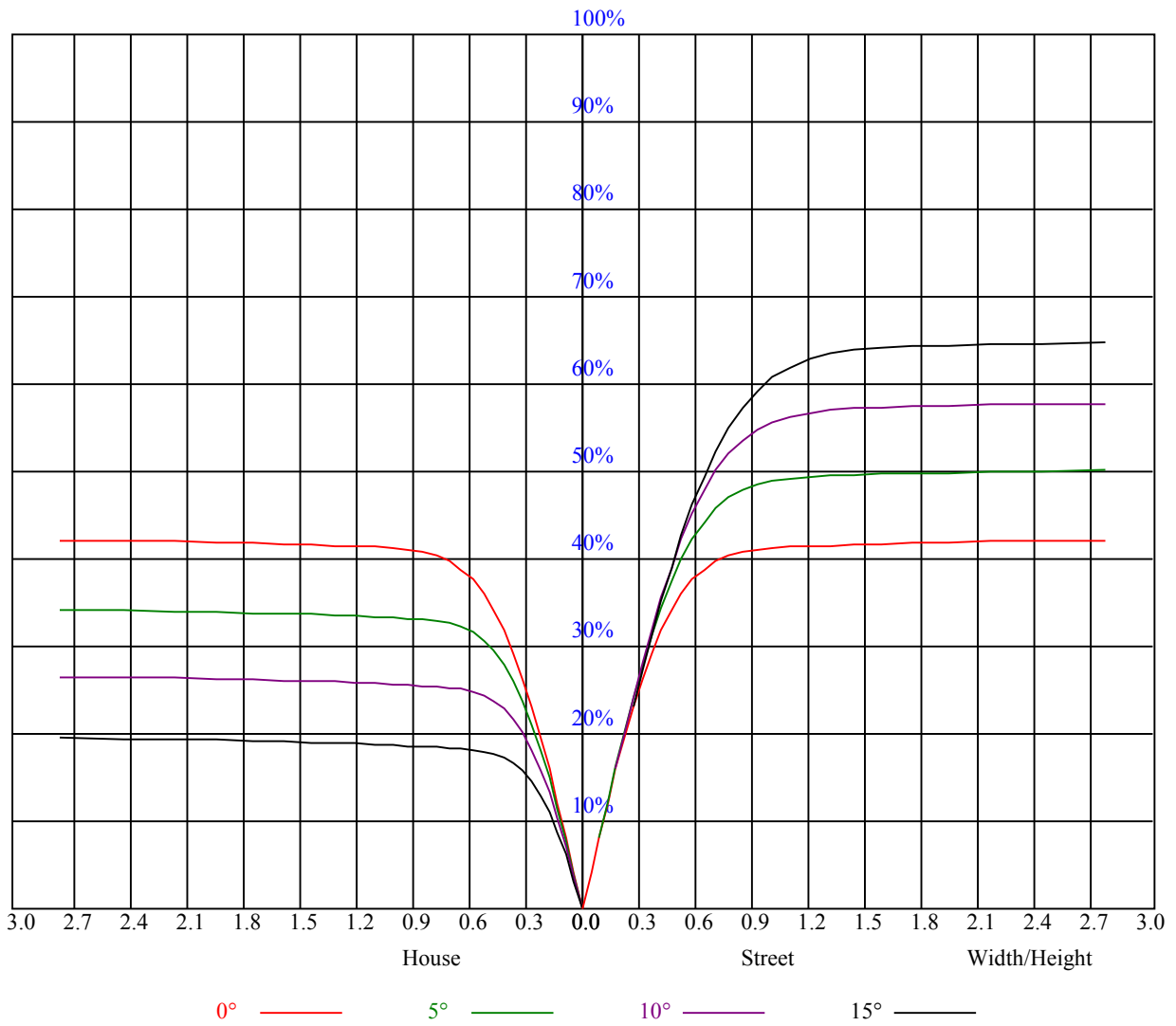
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

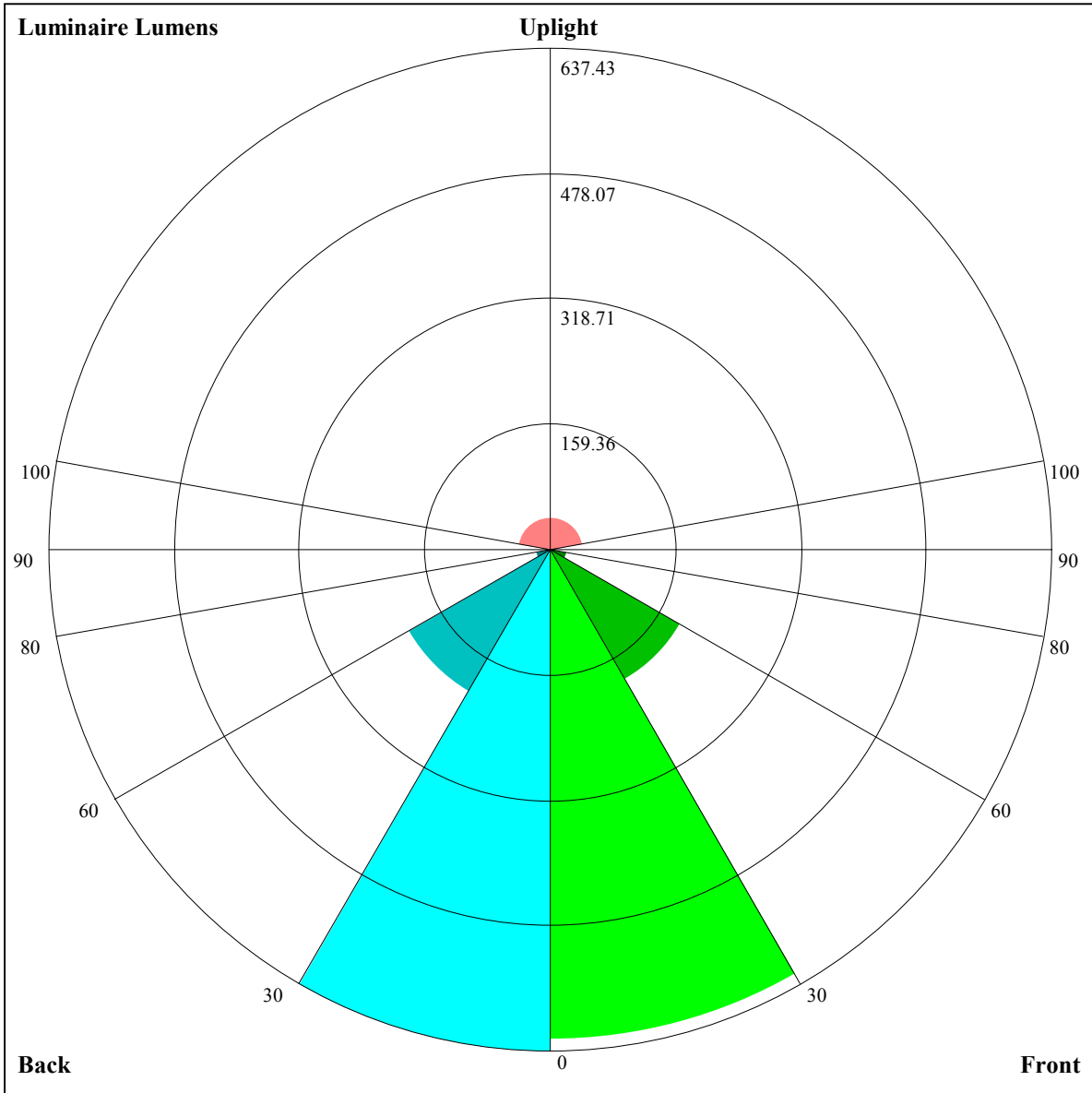
Luminance Limiting Curve





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	1.02	1.02	1.02	1.00	1.00	1.00	0.95	0.95	0.95	0.91	0.91	0.91	0.88	0.88	0.88	0.86
1	0.94	0.92	0.90	0.93	0.91	0.89	0.89	0.87	0.86	0.86	0.85	0.83	0.83	0.82	0.81	0.79
2	0.88	0.84	0.81	0.86	0.83	0.80	0.83	0.81	0.78	0.81	0.79	0.77	0.79	0.77	0.75	0.74
3	0.82	0.77	0.74	0.81	0.77	0.73	0.78	0.75	0.72	0.76	0.73	0.71	0.74	0.72	0.70	0.69
4	0.77	0.72	0.68	0.76	0.71	0.68	0.74	0.70	0.67	0.72	0.69	0.66	0.70	0.68	0.65	0.64
5	0.72	0.67	0.63	0.71	0.66	0.63	0.70	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.61	0.60
6	0.68	0.62	0.59	0.67	0.62	0.59	0.66	0.61	0.58	0.64	0.61	0.58	0.63	0.60	0.57	0.56
7	0.64	0.59	0.55	0.63	0.58	0.55	0.62	0.58	0.55	0.61	0.57	0.54	0.60	0.57	0.54	0.53
8	0.60	0.55	0.52	0.60	0.55	0.51	0.59	0.54	0.51	0.58	0.54	0.51	0.57	0.53	0.51	0.50
9	0.57	0.52	0.49	0.57	0.52	0.48	0.56	0.51	0.48	0.55	0.51	0.48	0.54	0.51	0.48	0.47
10	0.54	0.49	0.46	0.54	0.49	0.46	0.53	0.49	0.46	0.52	0.48	0.45	0.52	0.48	0.45	0.44





Luminaire Lumens:

FL=623.88,FM=189.44,FH=20.51,FVH=7.83

BL=637.43,BM=208.53,BH=20.16,BVH=8.85

UL=8.6,UH=40.92

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	2100.94	2051.44	1944.56	1765.13	1531.13	1165.50	772.88	406.69	143.78
45.0	2107.69	2094.75	2012.06	1879.88	1689.75	1396.69	1050.19	633.38	290.25
90.0	2108.25	2080.69	1978.88	1834.88	1644.75	1359.00	1005.19	592.99	254.08
135.0	2101.50	2090.25	2006.44	1872.56	1704.94	1430.44	1076.06	662.63	333.56
180.0	2100.94	2078.44	1979.44	1838.25	1653.75	1353.38	967.16	577.69	257.91
225.0	2107.69	2044.69	1932.75	1746.00	1469.25	1104.47	717.30	338.29	125.55
270.0	2108.25	2055.94	1959.75	1778.06	1517.06	1179.56	761.06	379.13	146.93
315.0	2101.50	2042.44	1931.63	1745.44	1459.13	1058.96	689.18	312.92	104.29
360.0	2100.94	2051.44	1944.56	1765.13	1531.13	1165.50	772.88	406.69	143.78
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	35.66	20.70	20.14	20.08	20.31	20.59	20.42	19.86	9.51
45.0	100.18	24.19	20.25	19.97	19.91	19.91	19.97	19.97	17.94
90.0	83.64	22.84	19.74	19.46	19.46	19.69	19.86	20.03	19.46
135.0	108.56	28.07	20.25	19.86	19.69	19.74	19.86	20.14	19.91
180.0	74.31	20.87	19.24	18.96	19.01	19.18	19.41	19.13	18.56
225.0	28.91	19.69	19.29	19.24	19.46	19.91	20.53	20.70	17.27
270.0	32.68	19.69	19.18	19.13	19.35	19.63	19.91	20.14	17.38
315.0	22.44	19.91	19.58	19.63	19.97	20.48	20.93	20.98	9.34
360.0	35.66	20.70	20.14	20.08	20.31	20.59	20.42	19.86	9.51
C/ γ (°)	90.0								
0.0	7.82								
45.0	7.88								
90.0	7.88								
135.0	8.04								
180.0	7.93								
225.0	7.88								
270.0	7.82								
315.0	7.82								
360.0	7.82								