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Nata

Client:

LumCAT: 2-1650-A

Luminaire: 92.70.129.00+92.70.148.00

Report No: NT2018031204

Voltage(V): 36.3700

Test No: nata-0100

Current(A): 0.5000

LampCAT: CREE CXA1816

Power (W): 18.1850

Lamp flux(lm): 1744.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 70

Width(mm): 70

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1495.87, Efficiency(%): 85.77% , Luminous Efficacy(lm/W): 82.26

Central intensity(cd): 9659.370, Maximum intensity(cd): 9659.370

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=17.2

[C90/270]Total=17.2

Field angle(10%Imax): [C0/180]Total=37.0

[C90/270]Total=37.0

Maximum s/h(1/2): C0_180=0.29 C90_270=0.29

Maximum s/h(1/4): C0_180=0.31 C90_270=0.31

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 89.00%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 94.629%

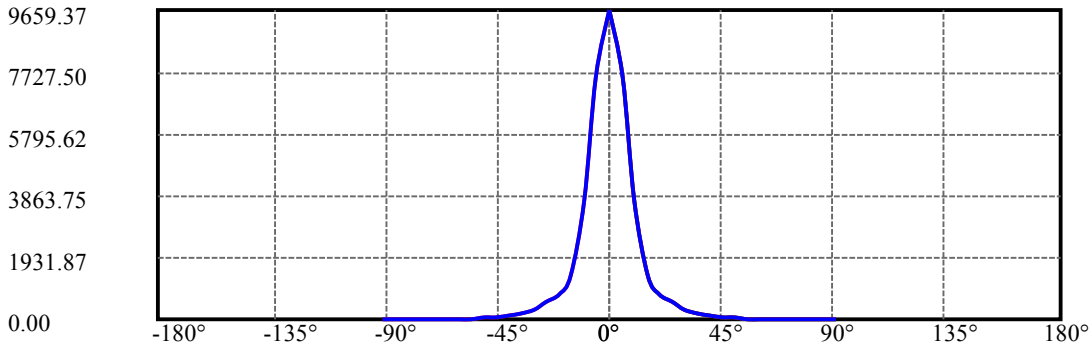
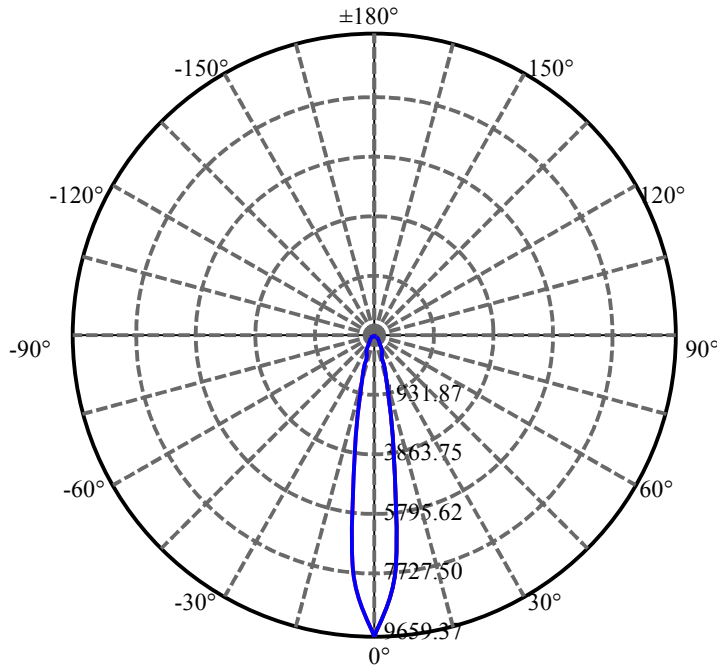
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9659.370	57.765	57.765	3.312%	3.862%
5.0	7589.387	362.570	420.335	20.790%	28.100%
10.0	3705.846	352.734	773.069	20.226%	51.680%
15.0	1358.400	192.714	965.783	11.050%	64.563%
20.0	802.055	150.364	1116.147	8.622%	74.616%
25.0	515.644	119.451	1235.598	6.849%	82.601%
30.0	324.709	88.993	1324.59	5.103%	88.550%
35.0	187.061	58.812	1383.402	3.372%	92.482%
40.0	110.326	38.872	1422.274	2.229%	95.080%
45.0	60.610	23.492	1445.766	1.347%	96.651%
50.0	30.350	12.744	1458.51	.731%	97.503%
55.0	13.214	5.933	1464.443	.340%	97.899%
60.0	9.263	4.397	1468.84	.252%	98.193%
65.0	9.105	4.523	1473.363	.259%	98.496%
70.0	8.988	4.630	1477.993	.265%	98.805%
75.0	9.752	5.163	1483.156	.296%	99.150%
80.0	11.865	6.405	1489.561	.367%	99.579%
85.0	8.548	4.667	1494.228	.268%	99.891%
90.0	5.974	1.637	1495.865	.094%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1324.59	75.95%	88.55%
0-40	1422.27	81.55%	95.08%
0-60	1468.84	84.22%	98.19%
0-90	1494.23	85.68%	99.89%
0-120	1494.23	85.68%	99.89%
0-180	1495.87	85.77%	100.00%
60-90	29.79	1.71%	1.99%
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%
0-23.37	1196.69	68.62%	80.00%

ZONAL LUMEN SUMMARY

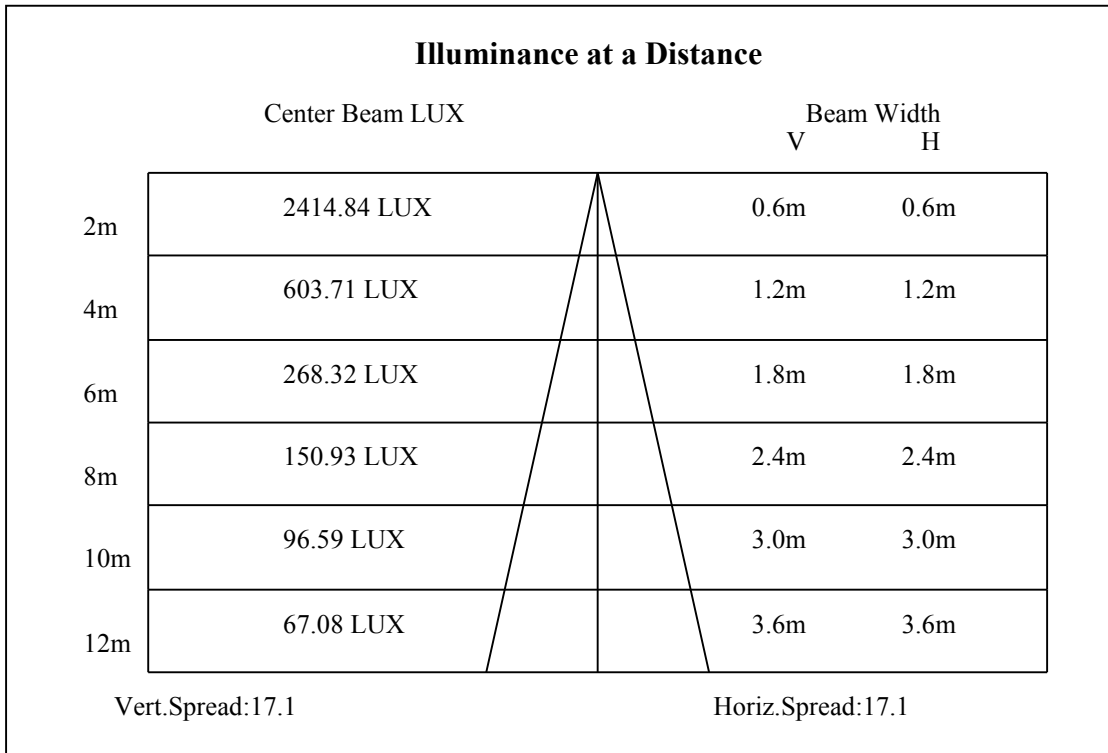
0-10	773.07
10-20	343.08
20-30	208.44
30-40	97.68
40-50	36.24
50-60	10.33
60-70	9.15
70-80	11.57
80-90	4.67
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

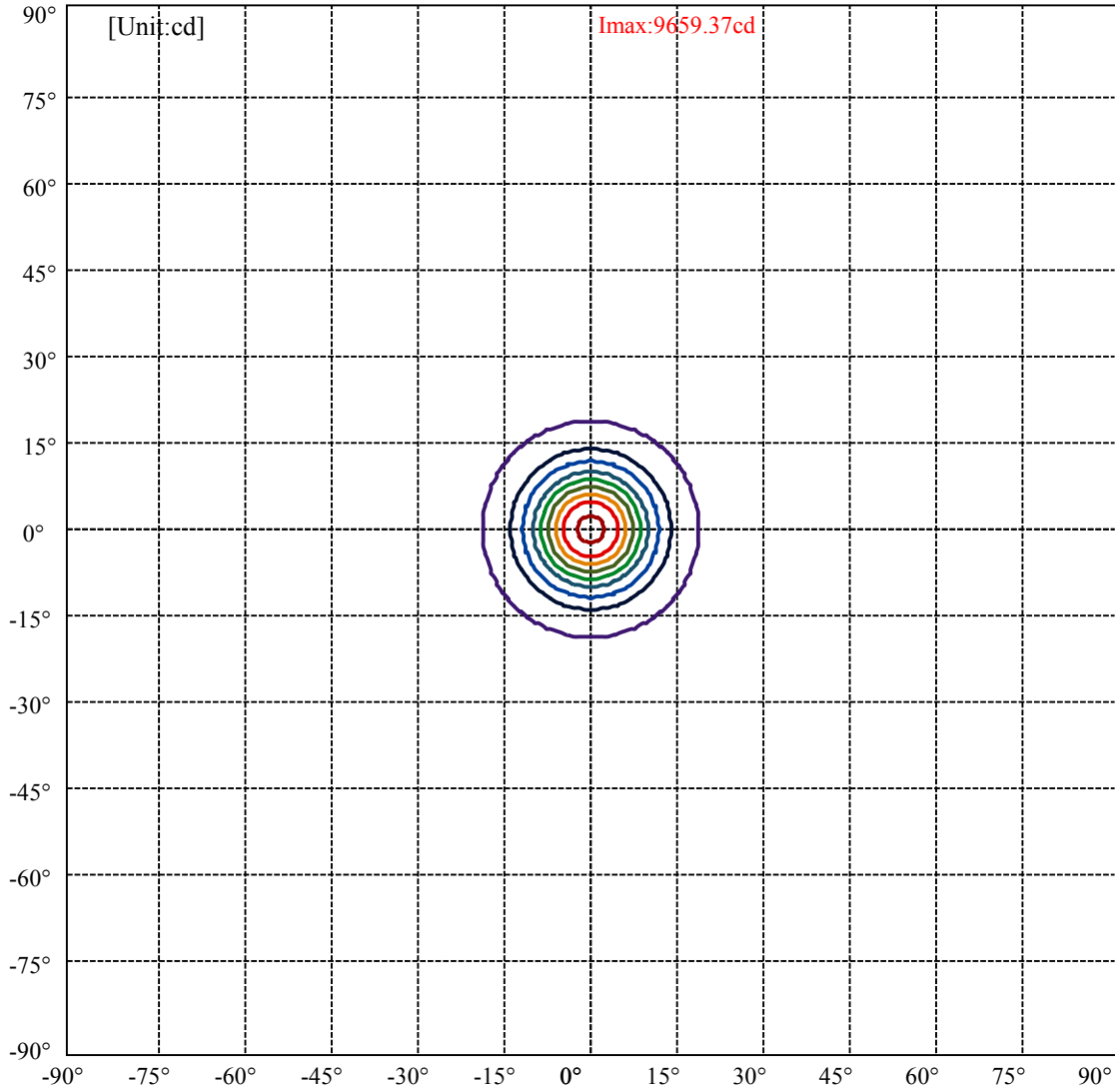


C0(Max): —————
C0/C180: —————
C90/C270: —————

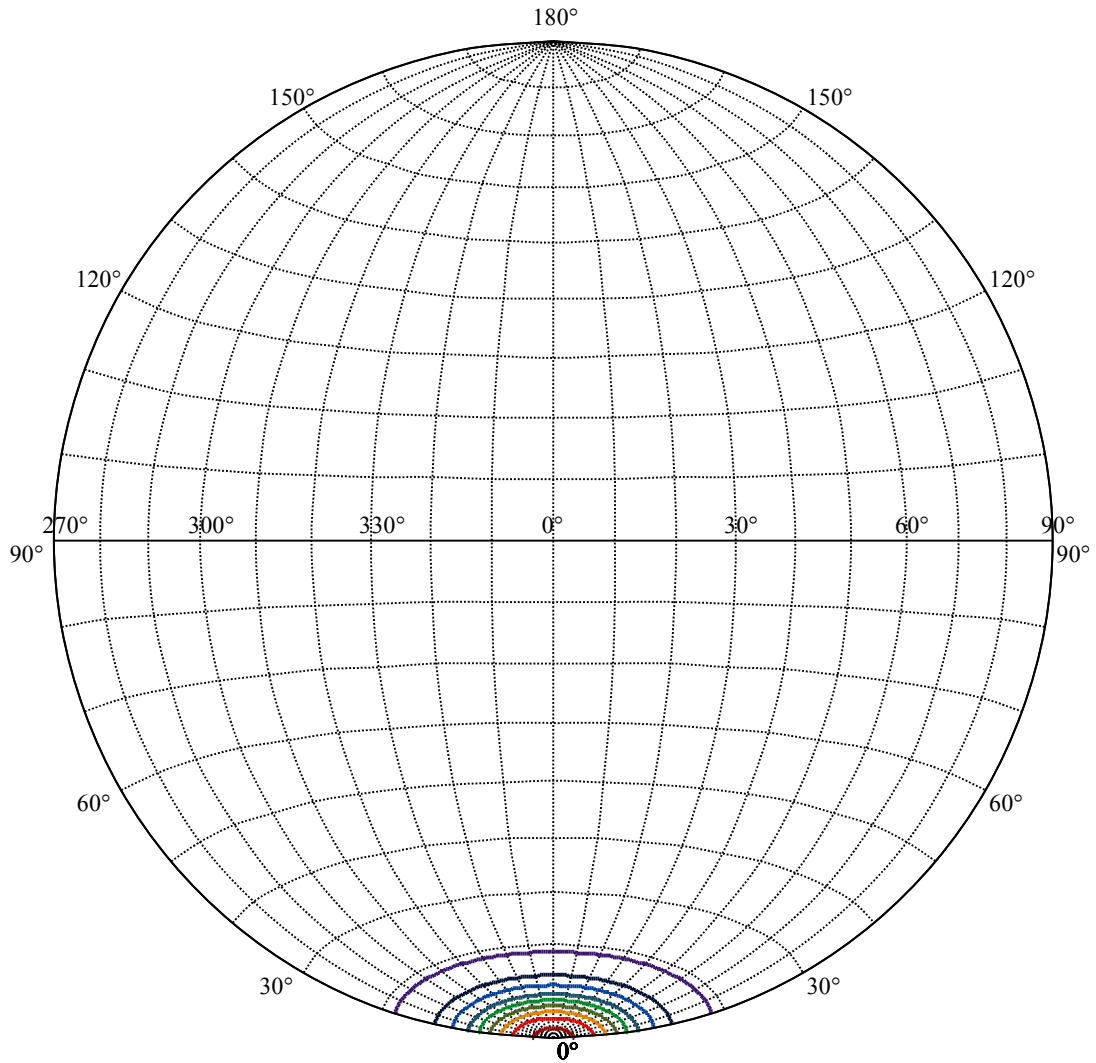
Field angle(10%Imax):C0/180Left:18.5 Right:18.5
:C90/270Left:18.5 Right:18.5

Beam Angle(50%Imax):C0/180Left:8.6 Right:8.6
:C90/270Left:8.6 Right:8.6





(10%Imax) 965.937	—
(20%Imax) 1931.87	—
(30%Imax) 2897.81	—
(40%Imax) 3863.75	—
(50%Imax) 4829.69	—
(60%Imax) 5795.62	—
(70%Imax) 6761.56	—
(80%Imax) 7727.5	—
(90%Imax) 8693.43	—



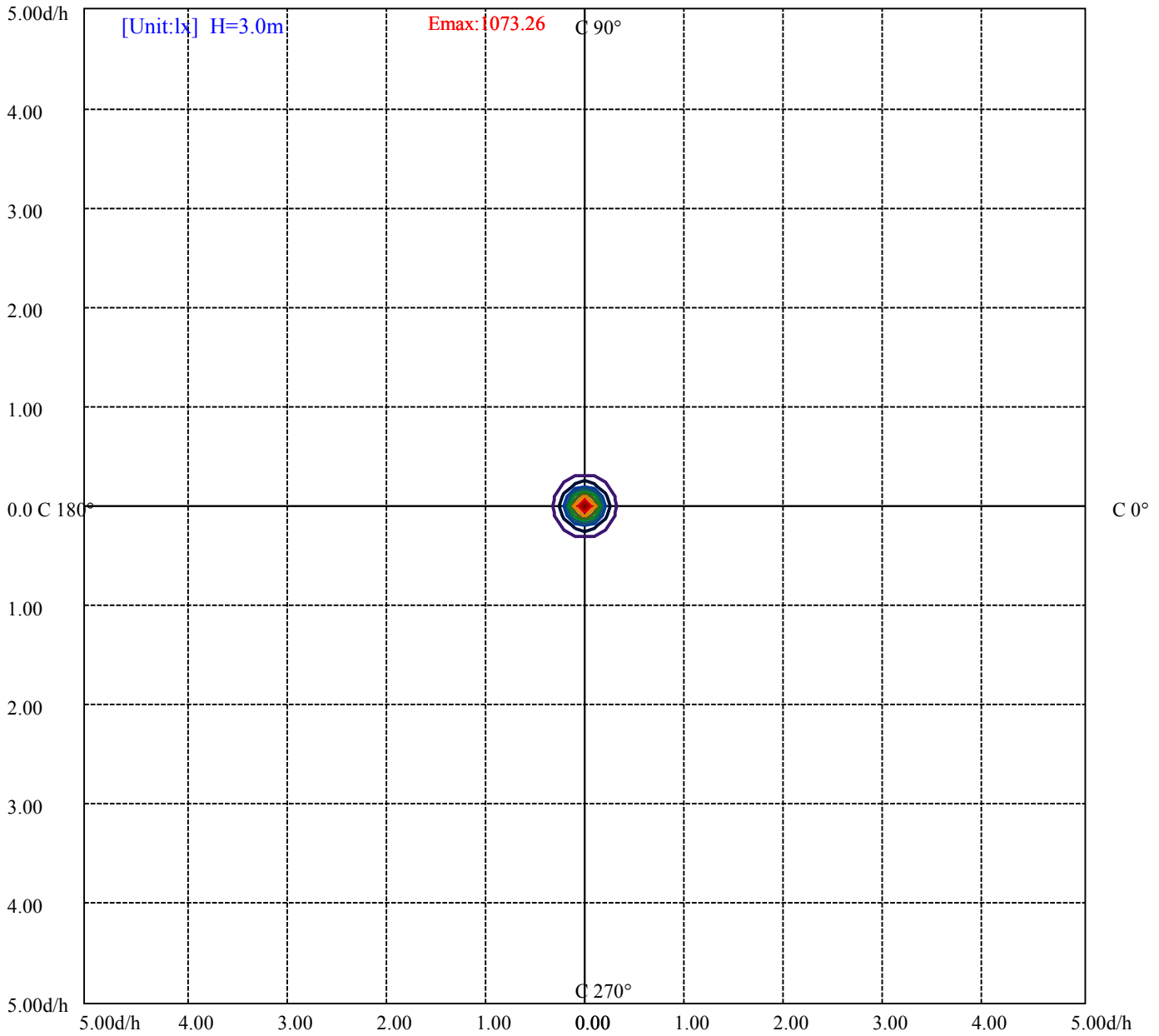
House

[Unit:cd]

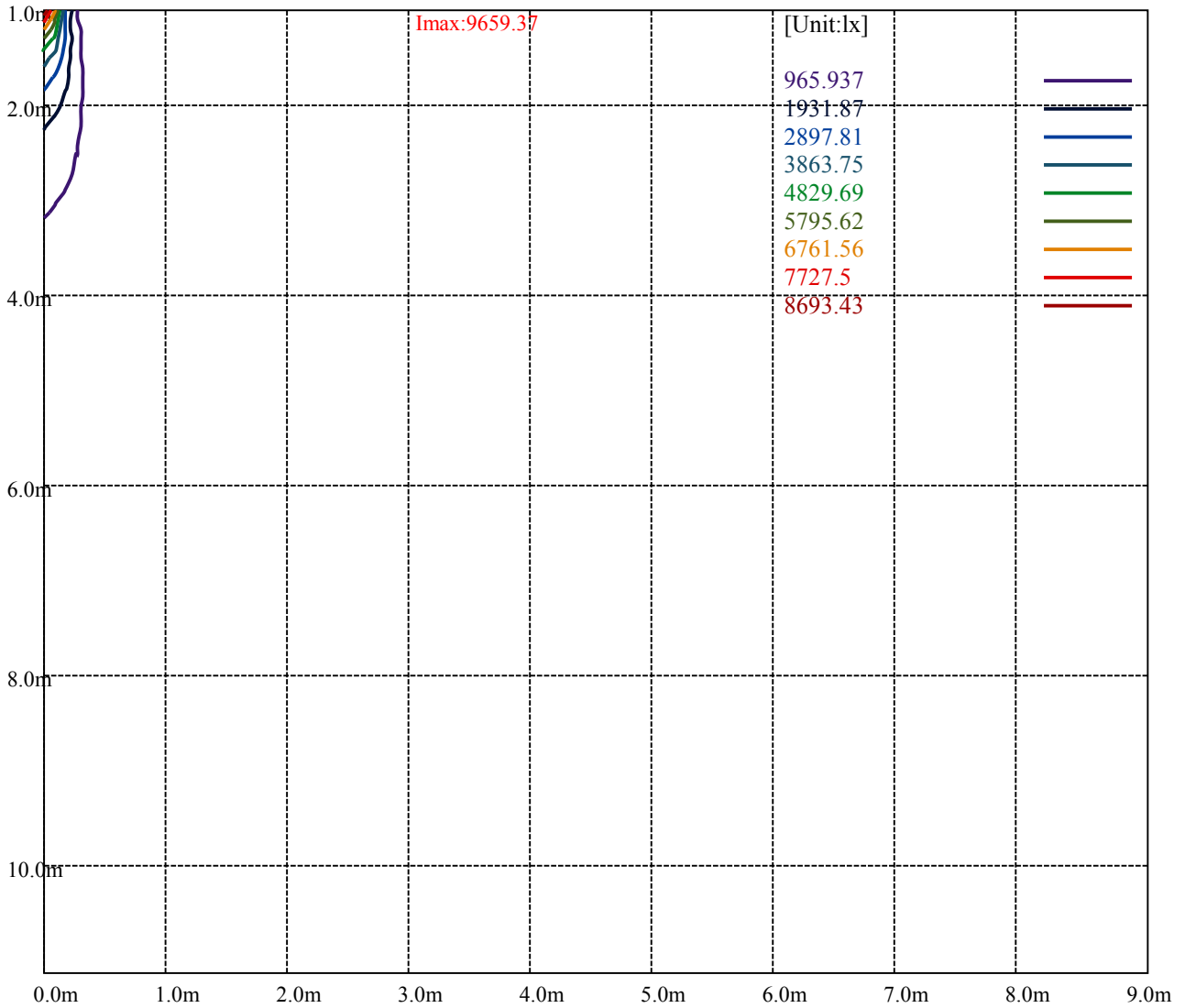
Road

Imax:9659.37

(10%Imax)	965.937	—
(20%Imax)	1931.87	—
(30%Imax)	2897.81	—
(40%Imax)	3863.75	—
(50%Imax)	4829.69	—
(60%Imax)	5795.62	—
(70%Imax)	6761.56	—
(80%Imax)	7727.5	—
(90%Imax)	8693.43	—



(10%Emax) 107.3257	—
(20%Emax) 214.6511	—
(30%Emax) 321.9767	—
(40%Emax) 429.3022	—
(50%Emax) 536.6277	—
(60%Emax) 643.9534	—
(70%Emax) 751.28	—
(80%Emax) 858.6056	—
(90%Emax) 965.9311	—



Luminance Table

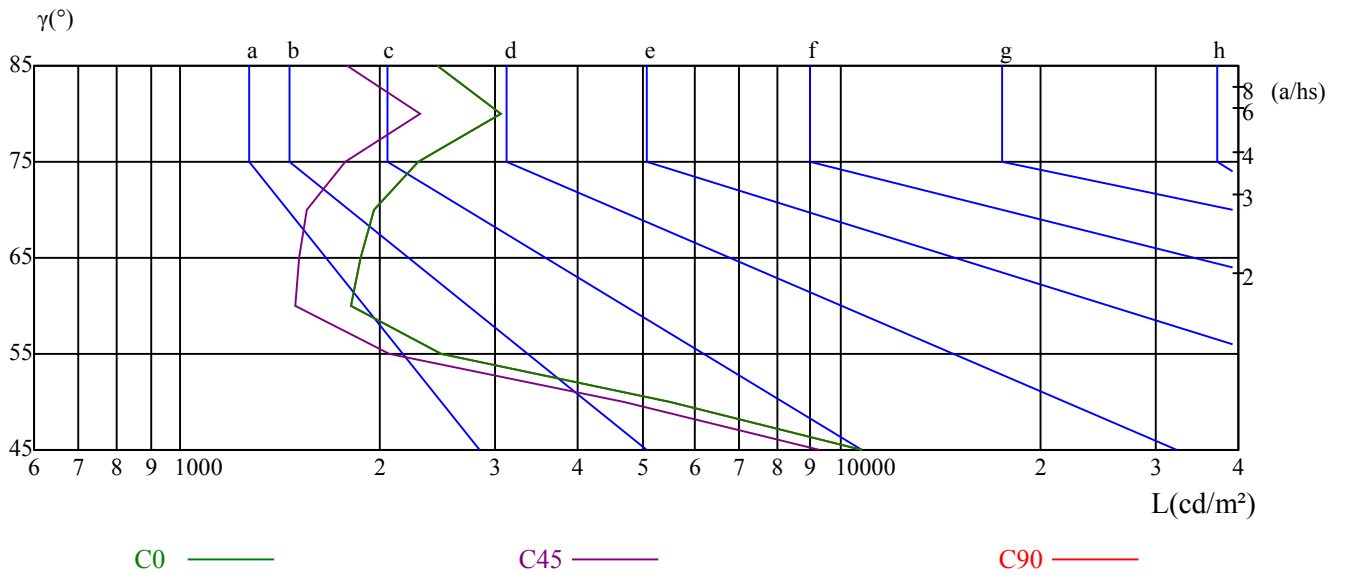
γ	45	50	55	60	65	70	75	80	85
C0	10741	5509	2477	1810	1873	1967	2298	3055	2445
C45	9261	4679	2072	1489	1513	1558	1781	2308	1793
C90	10741	5509	2477	1810	1873	1967	2298	3055	2445

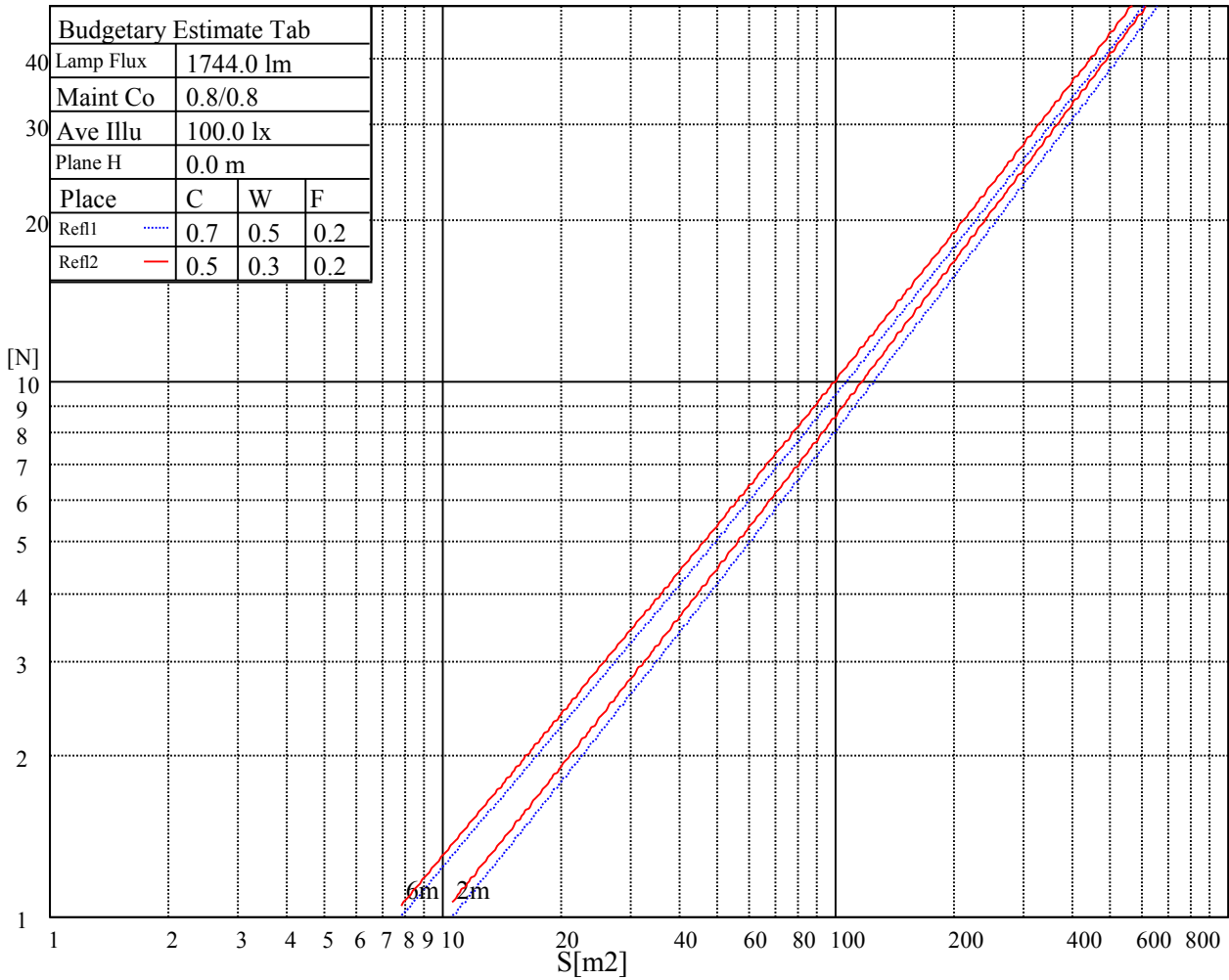
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4397	4397	4397	7689	7689	7689	20015	20015	20015

Glare Table

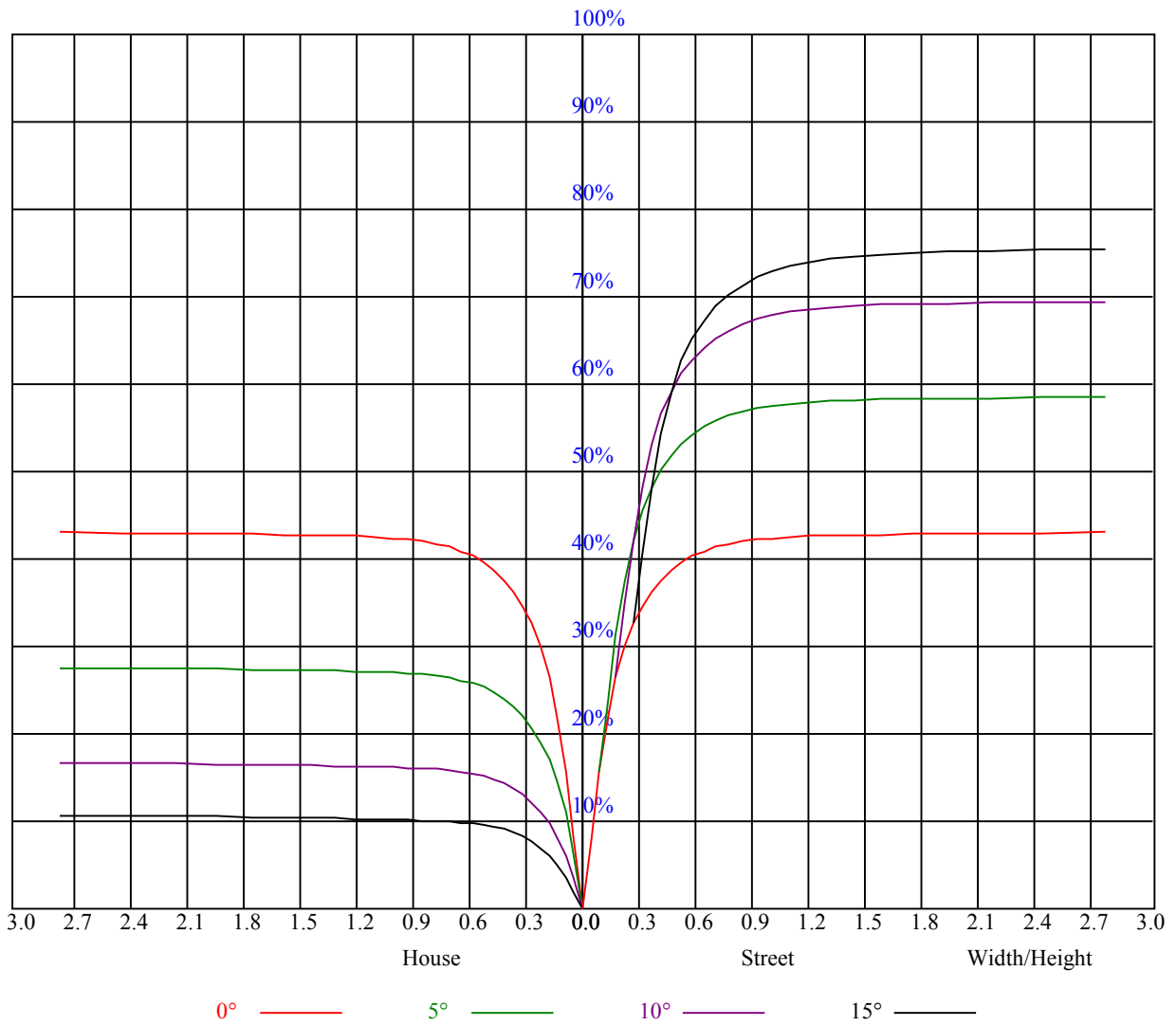
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

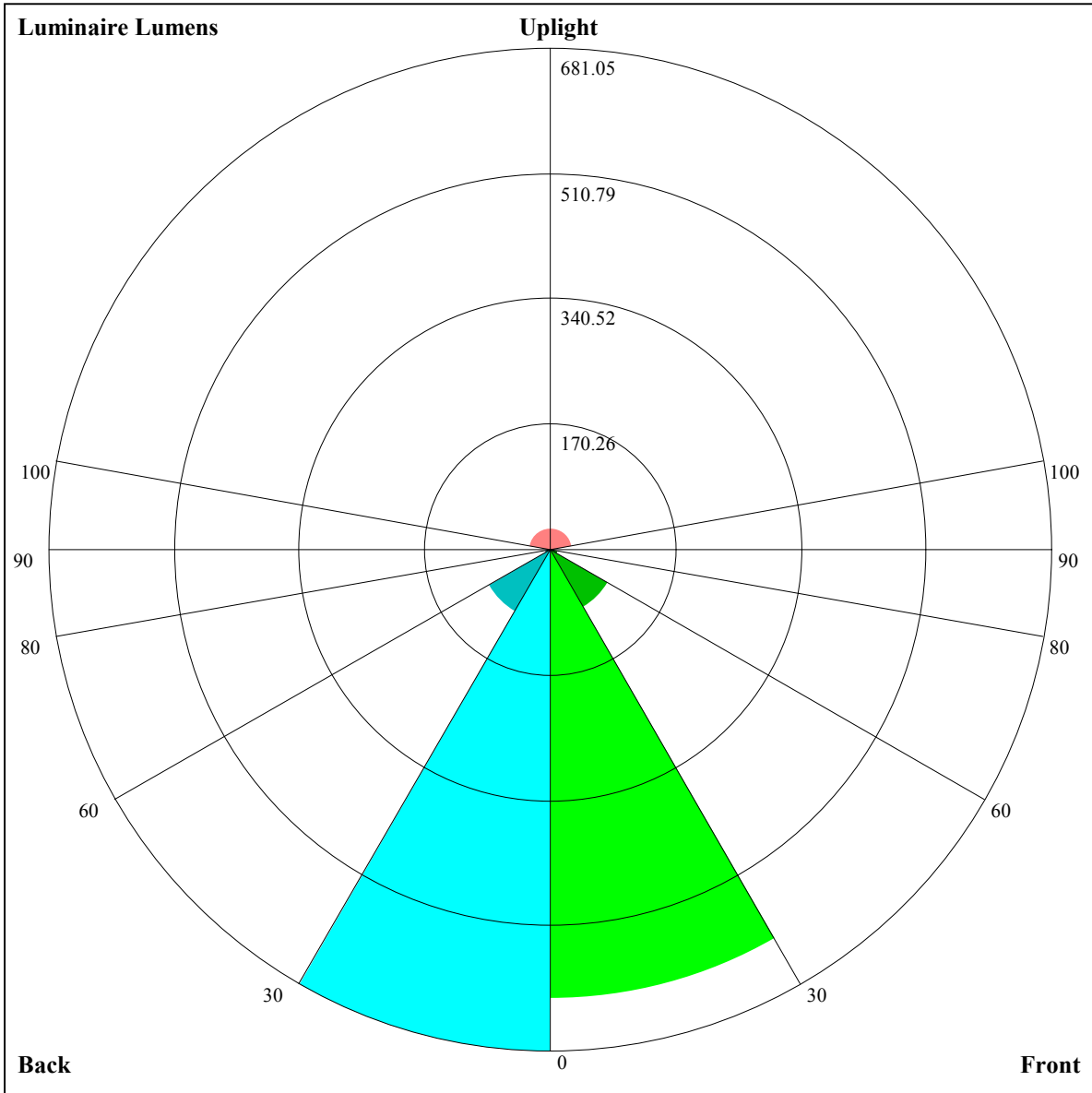
Luminance Limiting Curve





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	1.06	1.06	1.06	1.03	1.03	1.03	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.89
1	0.96	0.93	0.90	0.94	0.91	0.89	0.90	0.88	0.86	0.87	0.85	0.83	0.84	0.82	0.81	0.79
2	0.91	0.87	0.84	0.89	0.86	0.83	0.86	0.84	0.81	0.84	0.82	0.79	0.81	0.79	0.78	0.76
3	0.87	0.83	0.79	0.86	0.82	0.79	0.83	0.80	0.77	0.81	0.79	0.76	0.79	0.77	0.75	0.74
4	0.83	0.79	0.76	0.82	0.78	0.75	0.81	0.77	0.74	0.79	0.76	0.74	0.77	0.75	0.73	0.71
5	0.80	0.76	0.73	0.79	0.75	0.72	0.78	0.74	0.72	0.77	0.74	0.71	0.75	0.73	0.71	0.69
6	0.78	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.71	0.69	0.73	0.71	0.69	0.68
7	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
8	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.64
9	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.69	0.66	0.64	0.63
10	0.69	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.68	0.65	0.63	0.67	0.64	0.62	0.62





Luminaire Lumens:

FL=610.45,FM=90.43,FH=10.14,FVH=4.87

BL=681.05,BM=98.47,BH=9.57,BVH=4.71

UL=6.52,UH=31.02

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	9863.90	7181.56	3512.60	1338.42	759.78	510.37	314.37	178.71	107.47
45.0	9621.66	6776.89	2987.91	1212.89	751.52	470.73	287.39	167.37	101.08
90.0	9500.53	6736.70	2920.19	1070.35	717.83	466.33	282.93	165.72	96.90
135.0	9651.39	8180.83	4541.60	1569.11	850.07	541.20	351.81	196.06	114.57
180.0	9863.90	8059.16	3645.83	1286.12	821.55	523.04	331.55	188.62	110.88
225.0	9621.66	8488.60	4477.74	1640.68	880.30	556.57	367.12	211.64	121.73
270.0	9500.53	8348.20	4435.89	1666.01	900.17	569.28	362.27	216.10	127.13
315.0	9651.39	6943.16	3125.00	1083.62	735.22	487.63	300.22	172.27	102.85
360.0	9863.90	7181.56	3512.60	1338.42	759.78	510.37	314.37	178.71	107.47

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	58.58	28.68	12.72	9.30	9.19	9.03	8.48	8.42	8.37
45.0	54.40	26.76	11.34	9.25	9.14	9.08	15.53	20.21	8.48
90.0	50.82	24.39	11.12	9.03	8.92	8.86	8.86	8.53	8.15
135.0	66.18	33.14	14.09	9.03	8.92	8.75	8.75	9.19	8.64
180.0	64.20	31.99	13.43	9.14	8.97	8.75	9.14	13.54	8.81
225.0	65.35	35.07	15.75	9.41	9.19	9.08	8.92	8.81	8.26
270.0	70.53	36.56	15.75	9.47	9.25	9.14	9.25	17.23	8.86
315.0	54.84	26.21	11.51	9.47	9.25	9.19	9.08	8.97	8.81
360.0	58.58	28.68	12.72	9.30	9.19	9.03	8.48	8.42	8.37

C/γ(°)	90.0
0.0	5.89
45.0	6.06
90.0	6.00
135.0	5.95
180.0	5.89
225.0	6.00
270.0	6.06
315.0	5.95
360.0	5.89