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Nata

Client:

LumCAT: 2-2010-M

Luminaire: 92.70.129.00

Report No: GC2019091909

Test No: NATA07

LampCAT: CREE CXA1830

Lamp flux(lm): 1602.0

Number of Lamps: 1

Length(mm): 70

Phm Type: C

Voltage(V): 220.4000

Current(A): 0.0700

Power (W): 14.2400

PF: 0.9190

Ballast type: AC

Width(mm): 70

Height(mm): 0

Photometric Results

Lumens(lm): 1408.61, Efficiency(%): 87.93% , Luminous Efficacy(lm/W): 98.92

Central intensity(cd): 1419.698, Maximum intensity(cd): 1419.698

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=64.6

[C90/270]Total=64.6

Field angle(10%Imax): [C0/180]Total=85.2

[C90/270]Total=85.2

Maximum s/h(1/2): C0_180=1.00 C90_270=1.00

Maximum s/h(1/4): C0_180=0.95 C90_270=0.95

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 87.93%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 99.587%

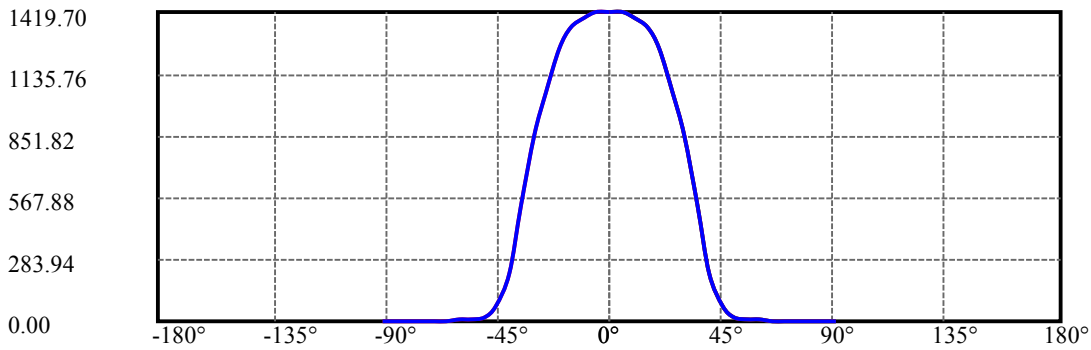
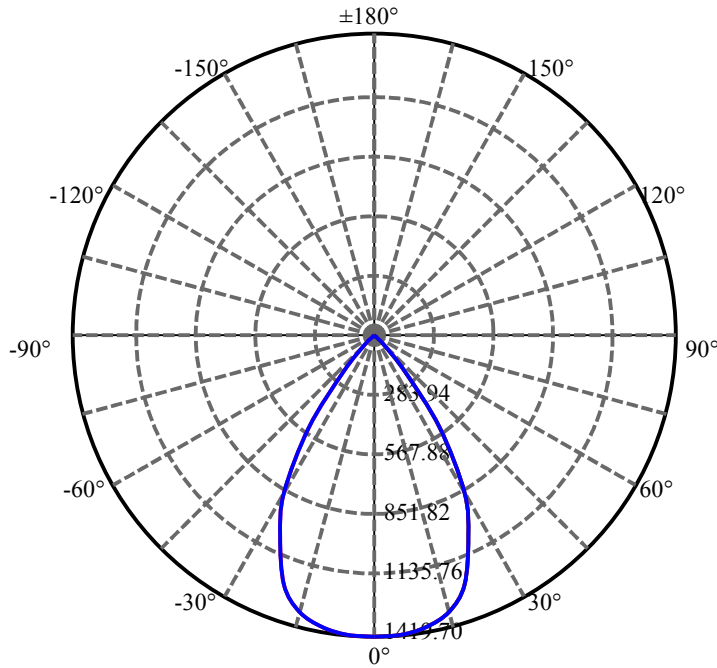
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1419.699	0.000	0	.000%	.000%
5.0	1416.392	33.905	33.905	2.116%	2.407%
10.0	1396.033	100.609	134.514	6.280%	9.549%
15.0	1345.569	162.630	297.144	10.152%	21.095%
20.0	1251.081	214.000	511.144	13.358%	36.287%
25.0	1049.464	241.285	752.429	15.061%	53.416%
30.0	858.485	241.452	993.881	15.072%	70.557%
35.0	529.445	204.382	1198.264	12.758%	85.067%
40.0	221.564	125.300	1323.564	7.821%	93.962%
45.0	67.198	53.467	1377.031	3.337%	97.758%
50.0	17.366	17.087	1394.118	1.067%	98.971%
55.0	8.643	5.655	1399.773	.353%	99.372%
60.0	4.449	3.026	1402.799	.189%	99.587%
65.0	2.390	1.662	1404.462	.104%	99.705%
70.0	1.497	0.984	1405.446	.061%	99.775%
75.0	1.375	0.750	1406.196	.047%	99.828%
80.0	1.398	0.742	1406.938	.046%	99.881%
85.0	1.456	0.775	1407.714	.048%	99.936%
90.0	1.827	0.899	1408.613	.056%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	993.88	62.04%	70.56%
0-40	1323.56	82.62%	93.96%
0-60	1402.80	87.57%	99.59%
0-90	1407.71	87.87%	99.94%
0-120	1407.71	87.87%	99.94%
0-180	1408.61	87.93%	100.00%
60-90	7.94	0.50%	0.56%
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%
0-33.25	1126.89	70.34%	80.00%

ZONAL LUMEN SUMMARY

0-10	134.51
10-20	376.63
20-30	482.74
30-40	329.68
40-50	70.55
50-60	8.68
60-70	2.65
70-80	1.49
80-90	0.78
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



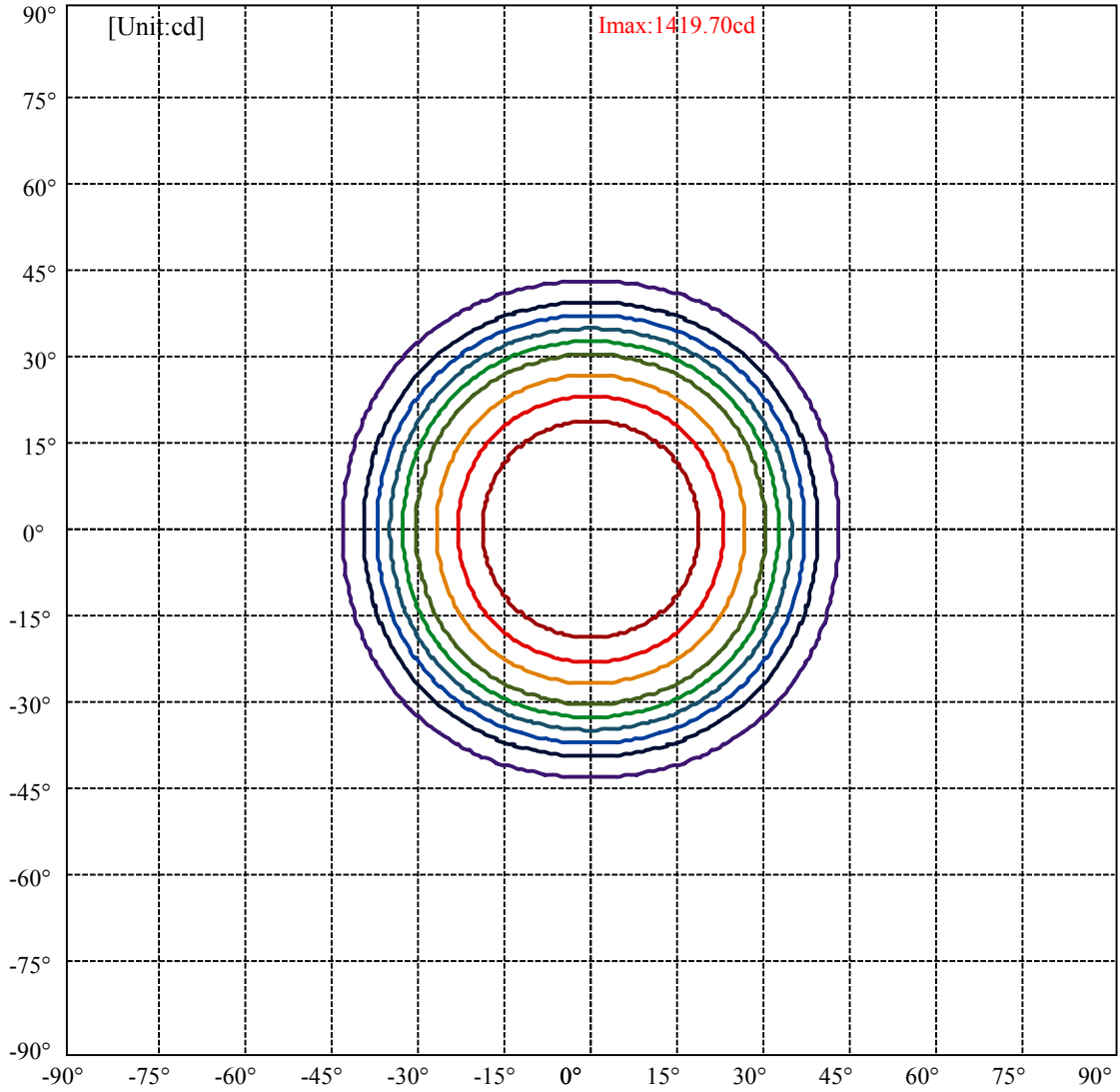
C0(Max): ———

C0/C180: ———

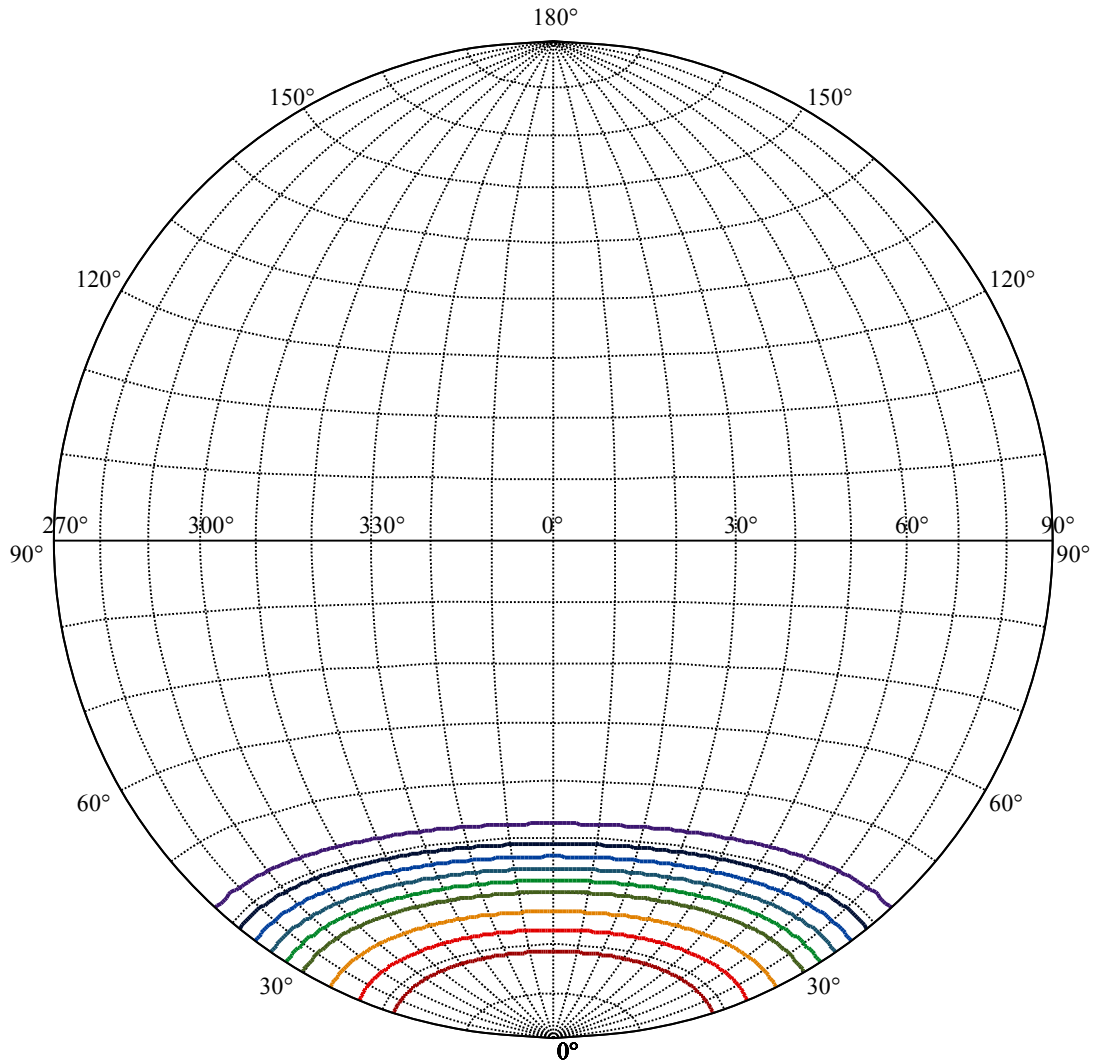
C90/C270: ———

Field angle(10%Imax):C0/180Left:42.6 Right:42.6
:C90/270Left:42.6 Right:42.6

Beam Angle(50%Imax):C0/180Left:32.3 Right:32.3
:C90/270Left:32.3 Right:32.3



(10%Imax) 141.97	—
(20%Imax) 283.94	—
(30%Imax) 425.91	—
(40%Imax) 567.879	—
(50%Imax) 709.849	—
(60%Imax) 851.819	—
(70%Imax) 993.789	—
(80%Imax) 1135.76	—
(90%Imax) 1277.73	—



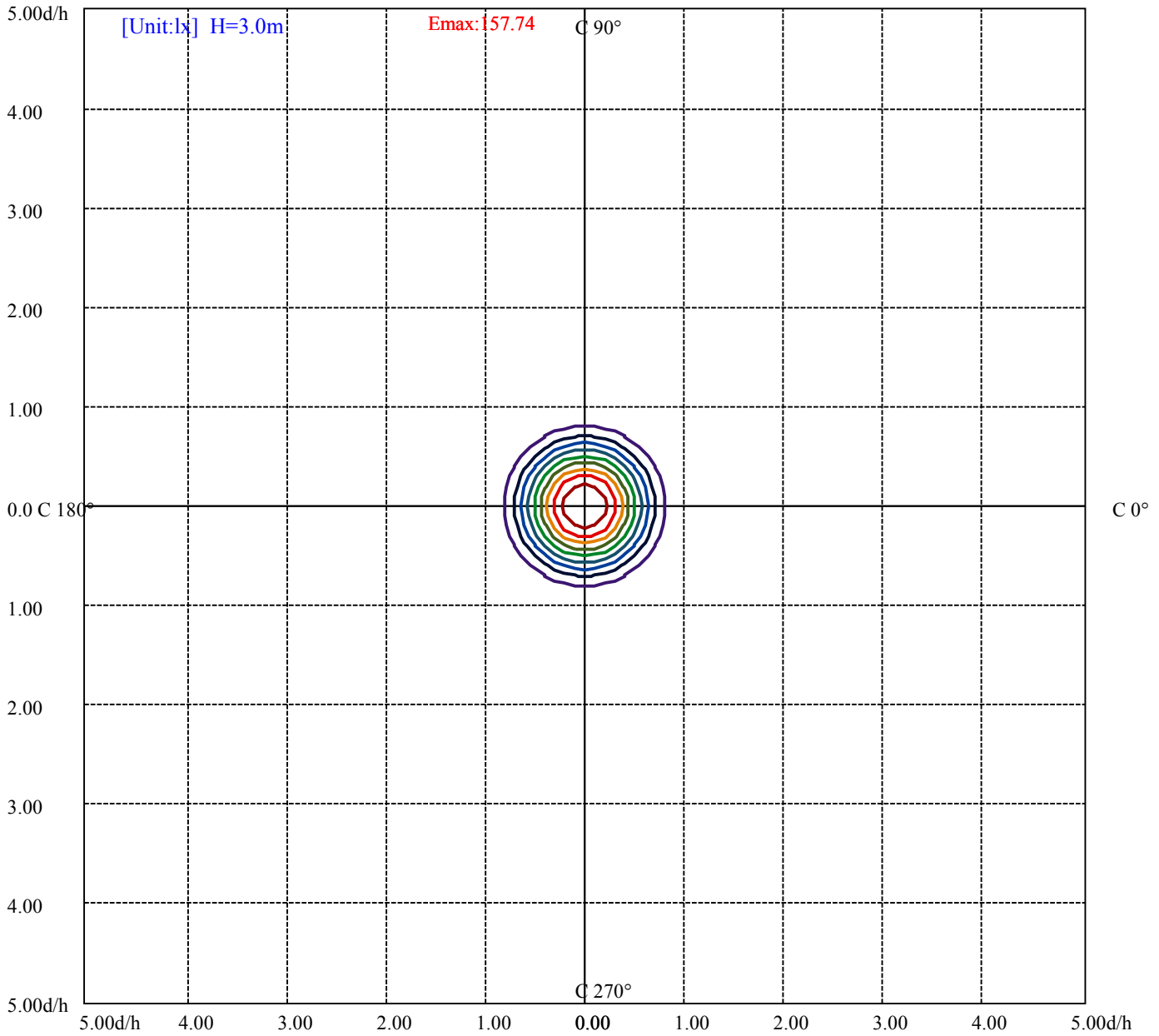
House

[Unit:cd]

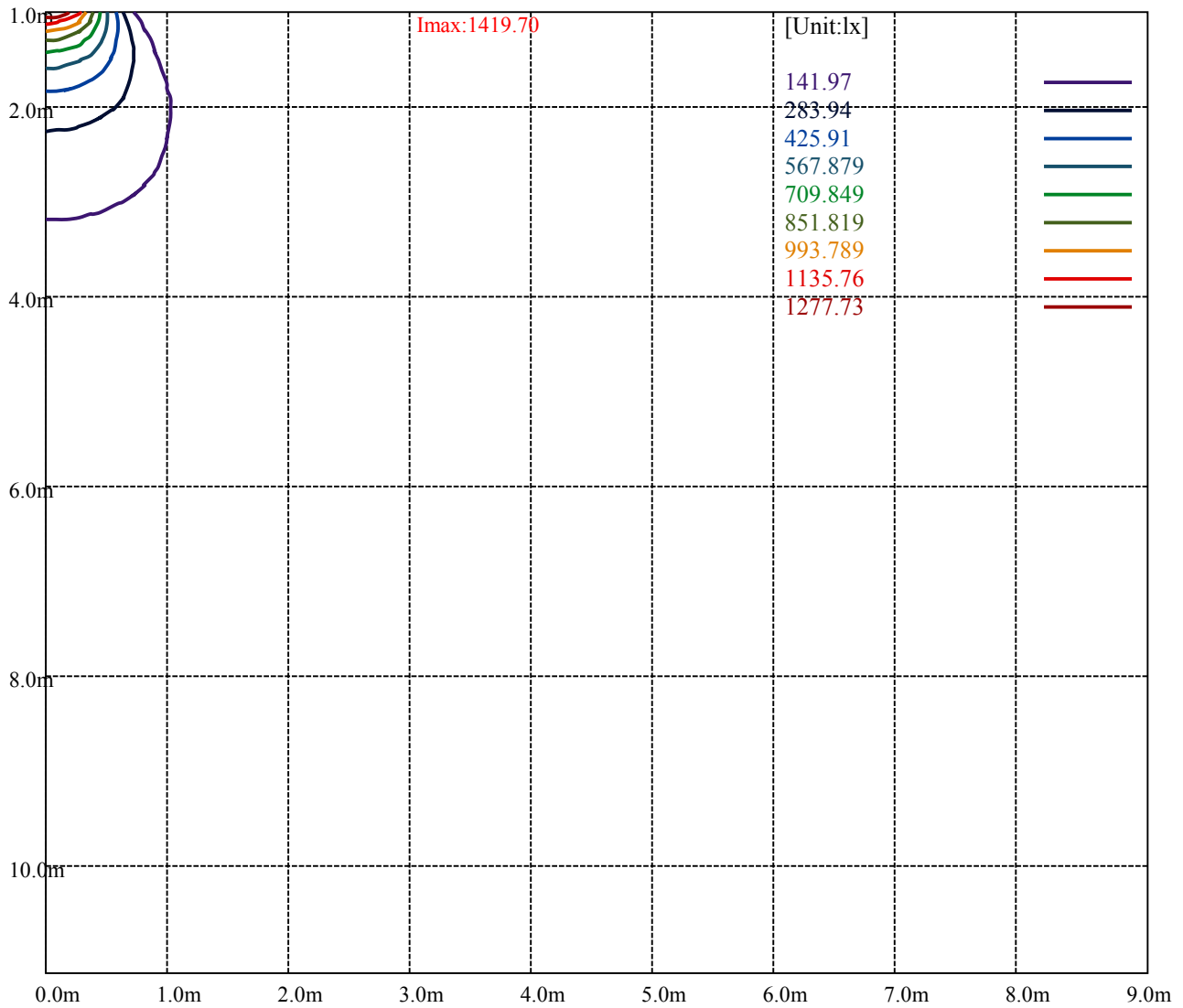
Road

I_{max}:1419.70

(10%I _{max}) 141.97	—
(20%I _{max}) 283.94	—
(30%I _{max}) 425.91	—
(40%I _{max}) 567.879	—
(50%I _{max}) 709.849	—
(60%I _{max}) 851.819	—
(70%I _{max}) 993.789	—
(80%I _{max}) 1135.76	—
(90%I _{max}) 1277.73	—



(10%Emax) 15.77444	—
(20%Emax) 31.54889	—
(30%Emax) 47.32333	—
(40%Emax) 63.09767	—
(50%Emax) 78.87211	—
(60%Emax) 94.64655	—
(70%Emax) 110.421	—
(80%Emax) 126.1956	—
(90%Emax) 141.97	—



Luminance Table

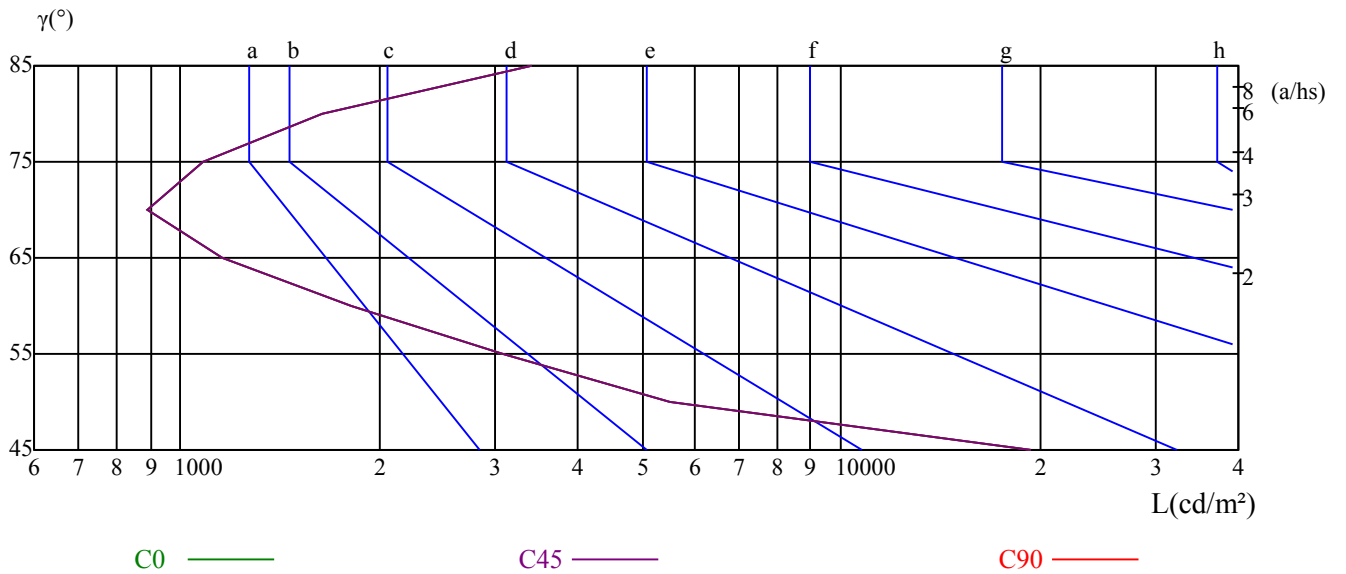
γ	45	50	55	60	65	70	75	80	85
C0	19394	5514	3075	1816	1154	893	1084	1643	3409
C45	19394	5514	3075	1816	1154	893	1084	1643	3409
C90	19394	5514	3075	1816	1154	893	1084	1643	3409

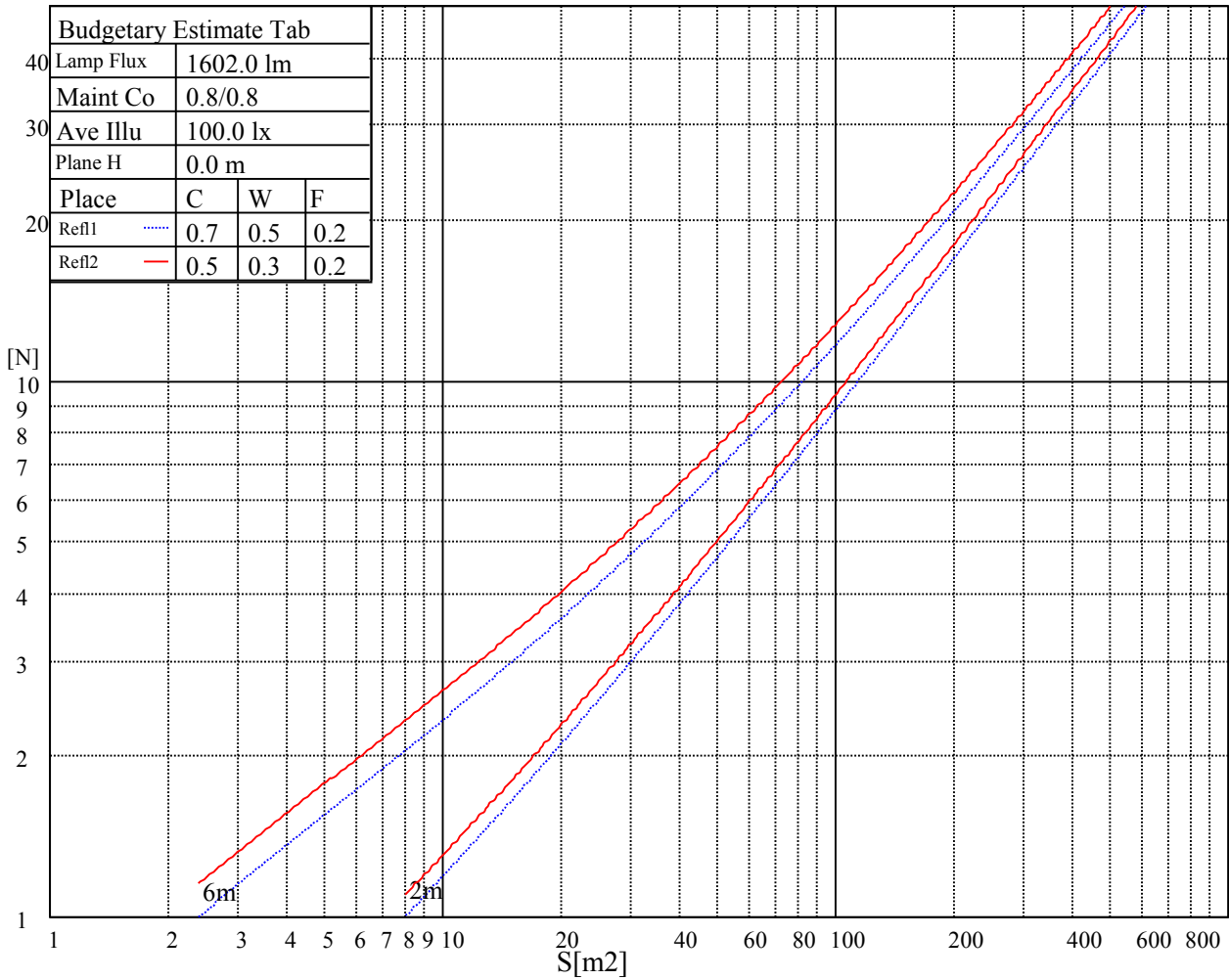
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1154	1154	1154	1084	1084	1084	3409	3409	3409

Glare Table

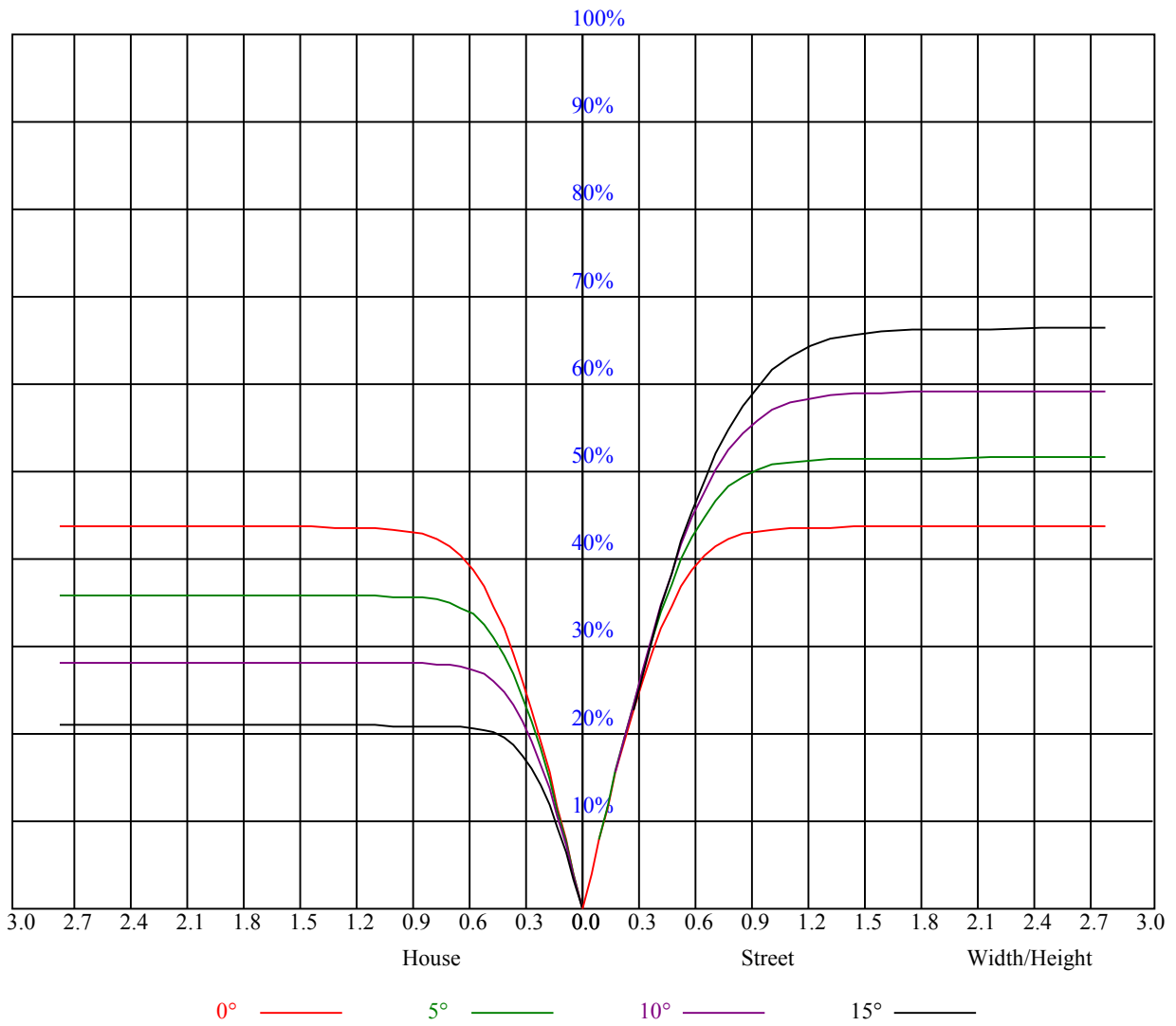
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

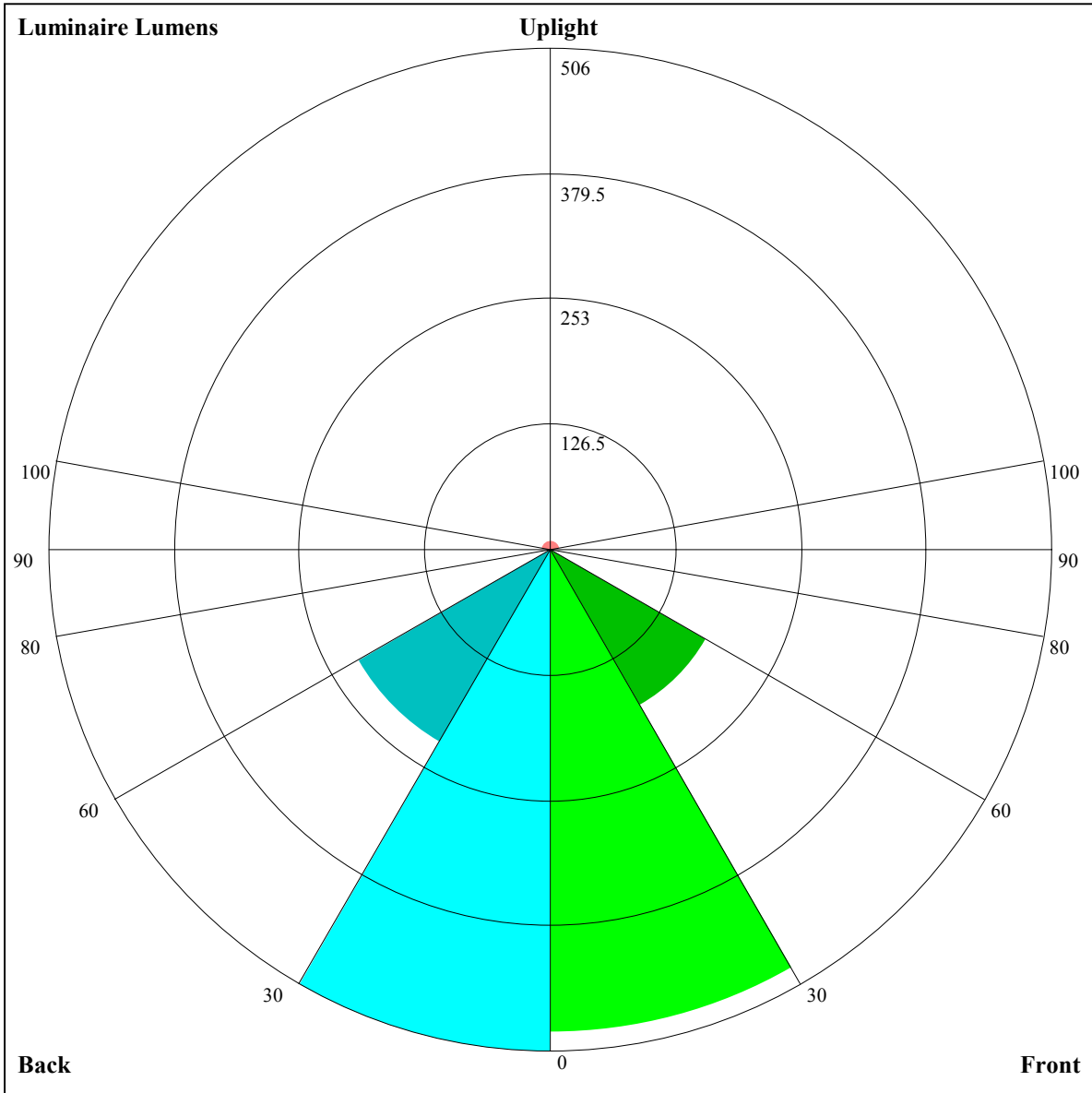
Luminance Limiting Curve





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	1.05	1.05	1.05	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.88
1	0.97	0.95	0.93	0.95	0.93	0.92	0.92	0.90	0.89	0.89	0.87	0.86	0.86	0.85	0.84	0.82
2	0.91	0.87	0.84	0.89	0.86	0.83	0.86	0.84	0.81	0.84	0.81	0.80	0.81	0.79	0.78	0.76
3	0.84	0.80	0.77	0.83	0.79	0.76	0.81	0.77	0.75	0.79	0.76	0.74	0.77	0.74	0.72	0.71
4	0.79	0.74	0.70	0.78	0.73	0.70	0.76	0.72	0.69	0.74	0.71	0.68	0.73	0.70	0.67	0.66
5	0.74	0.69	0.65	0.73	0.68	0.64	0.71	0.67	0.64	0.70	0.66	0.63	0.68	0.65	0.63	0.61
6	0.69	0.64	0.60	0.68	0.63	0.60	0.67	0.63	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.57
7	0.65	0.60	0.56	0.64	0.59	0.56	0.63	0.59	0.55	0.62	0.58	0.55	0.61	0.58	0.55	0.54
8	0.61	0.56	0.52	0.61	0.56	0.52	0.60	0.55	0.52	0.59	0.55	0.52	0.58	0.54	0.51	0.50
9	0.58	0.52	0.49	0.57	0.52	0.49	0.56	0.52	0.49	0.55	0.51	0.48	0.55	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	0.53	0.48	0.45	0.52	0.48	0.45	0.44





Luminaire Lumens:
FL=487.96,FM=181.79,FH=1.94,FVH=0.91
BL=506,BM=223.5,BH=2.18,BVH=0.82
UL=1.99,UH=9.49

BUG Rating:B2-U1-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	1419.99	1405.60	1373.59	1305.84	1189.36	889.83	766.12	357.12	83.99
45.0	1421.38	1416.28	1400.04	1363.38	1282.17	1162.91	951.31	669.18	302.60
90.0	1419.99	1415.81	1397.25	1347.60	1262.22	1103.05	882.73	569.14	198.05
135.0	1417.67	1422.31	1417.67	1380.55	1315.12	1193.08	975.91	734.15	414.43
180.0	1419.99	1424.17	1419.52	1389.83	1310.01	1184.72	964.77	691.46	328.12
225.0	1421.38	1419.52	1390.29	1326.25	1208.85	903.38	781.90	375.59	88.26
270.0	1419.52	1417.67	1400.04	1344.35	1256.65	1078.92	842.27	501.67	281.25
315.0	1417.67	1409.78	1369.87	1306.76	1184.26	879.81	702.87	337.26	75.82
360.0	1419.99	1405.60	1373.59	1305.84	1189.36	889.83	766.12	357.12	83.99
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	28.31	12.62	6.59	3.29	1.72	1.35	1.25	1.30	1.30
45.0	55.64	21.44	9.88	5.29	2.97	1.53	1.48	1.72	1.86
90.0	46.59	18.33	8.63	4.64	2.51	1.48	1.53	1.53	1.86
135.0	260.83	25.29	12.76	6.03	3.39	1.76	1.30	1.30	1.25
180.0	64.45	24.04	12.39	5.85	3.11	1.76	1.35	1.30	1.35
225.0	26.68	11.74	6.22	3.43	1.76	1.44	1.48	1.44	1.39
270.0	32.20	13.55	7.10	3.99	2.13	1.39	1.39	1.44	1.44
315.0	22.88	11.93	5.57	3.06	1.53	1.25	1.21	1.16	1.21
360.0	28.31	12.62	6.59	3.29	1.72	1.35	1.25	1.30	1.30
C/ γ (°)	90.0								
0.0	1.90								
45.0	2.64								
90.0	3.02								
135.0	1.25								
180.0	1.30								
225.0	1.30								
270.0	1.58								
315.0	1.62								
360.0	1.90								