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## NATA

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Client:

LumCAT: CT01D03636AH

Luminaire:

Report No:

Voltage(V): 35.5200

Test No: GC2019041504

Current(A): 0.2350

LampCAT: CITIZEN CLU028

Power (W): 8.9870

Lamp flux(lm): 1280.3

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 36

Width(mm): 36

Phm Type: C

Height(mm): 0

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## Photometric Results

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Lumens(lm): 1012.05, Efficiency(%): 79.05% , Luminous Efficacy(lm/W): 112.61

Central intensity(cd): 1551.516, Maximum intensity(cd): 1551.516

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

Beam Angle(50%Imax): [C0/180]Total=39.4

[C90/270]Total=39.4

Field angle(10%Imax): [C0/180]Total=76.6

[C90/270]Total=76.6

Maximum s/h(1/2): C0\_180=0.63 C90\_270=0.63

Maximum s/h(1/4): C0\_180=0.65 C90\_270=0.65

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 79.05%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 90.207%

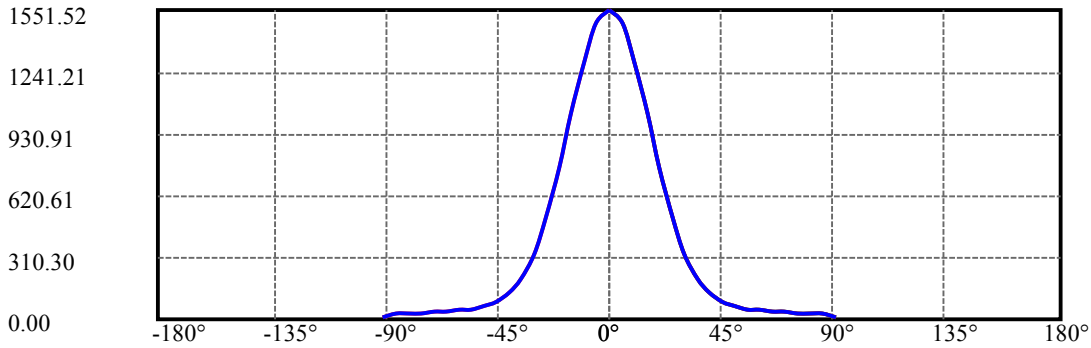
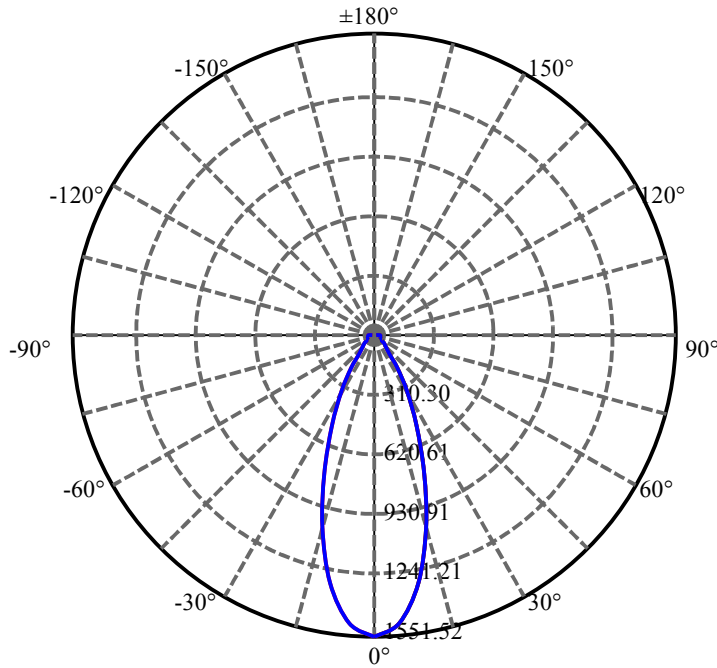
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1551.516	0.000	0	.000%	.000%
5.0	1484.086	36.290	36.29	2.834%	3.586%
10.0	1295.367	99.430	135.72	7.766%	13.410%
15.0	1027.202	137.773	273.493	10.761%	27.024%
20.0	761.316	147.399	420.892	11.513%	41.588%
25.0	508.050	133.133	554.025	10.398%	54.743%
30.0	326.805	105.652	659.676	8.252%	65.182%
35.0	201.178	77.749	737.426	6.073%	72.865%
40.0	130.598	55.354	792.78	4.324%	78.334%
45.0	88.812	40.626	833.406	3.173%	82.349%
50.0	65.447	31.170	864.576	2.435%	85.429%
55.0	52.636	25.675	890.251	2.005%	87.965%
60.0	45.506	22.685	912.936	1.772%	90.207%
65.0	40.092	20.809	933.745	1.625%	92.263%
70.0	35.684	19.187	952.932	1.499%	94.159%
75.0	30.959	17.419	970.352	1.361%	95.880%
80.0	30.178	16.358	986.71	1.278%	97.497%
85.0	27.169	15.583	1002.293	1.217%	99.036%
90.0	8.452	9.753	1012.046	.762%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	659.68	51.52%	65.18%
0-40	792.78	61.92%	78.33%
0-60	912.94	71.31%	90.21%
0-90	1002.29	78.29%	99.04%
0-120	1002.29	78.29%	99.04%
0-180	1012.05	79.05%	100.00%
60-90	112.04	8.75%	11.07%
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%
0-42.07	809.64	63.24%	80.00%

ZONAL LUMEN SUMMARY

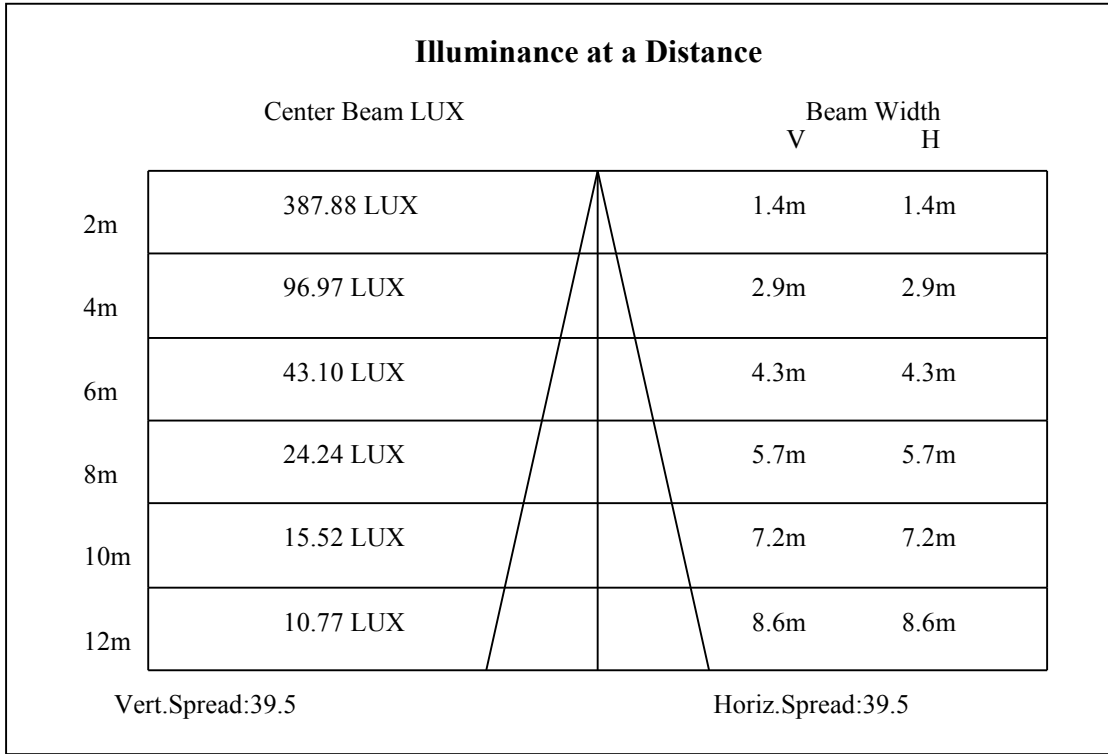
0-10	135.72
10-20	285.17
20-30	238.78
30-40	133.10
40-50	71.80
50-60	48.36
60-70	40.00
70-80	33.78
80-90	15.58
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

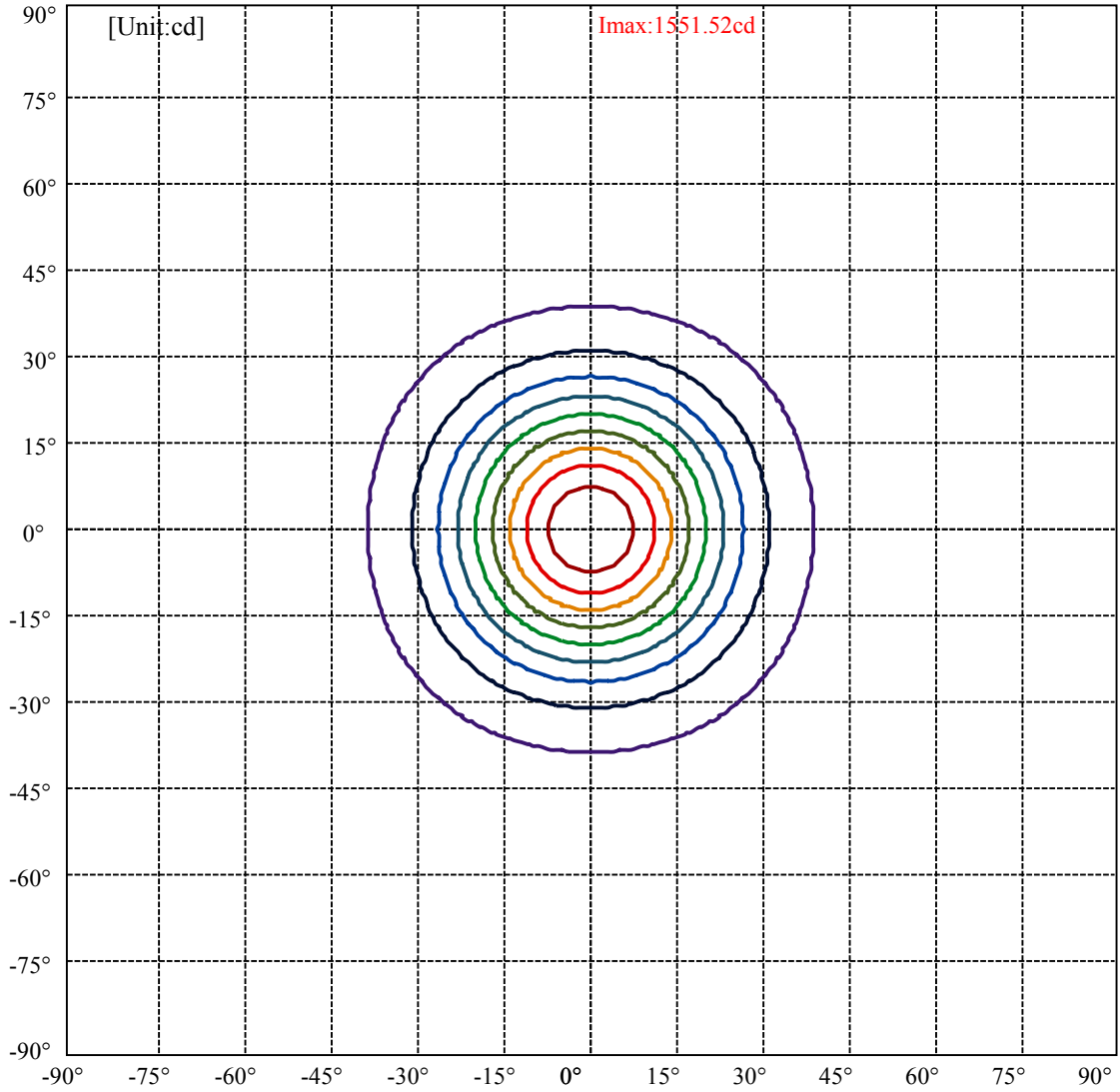


C0(Max): —————  
C0/C180: —————  
C90/C270: —————

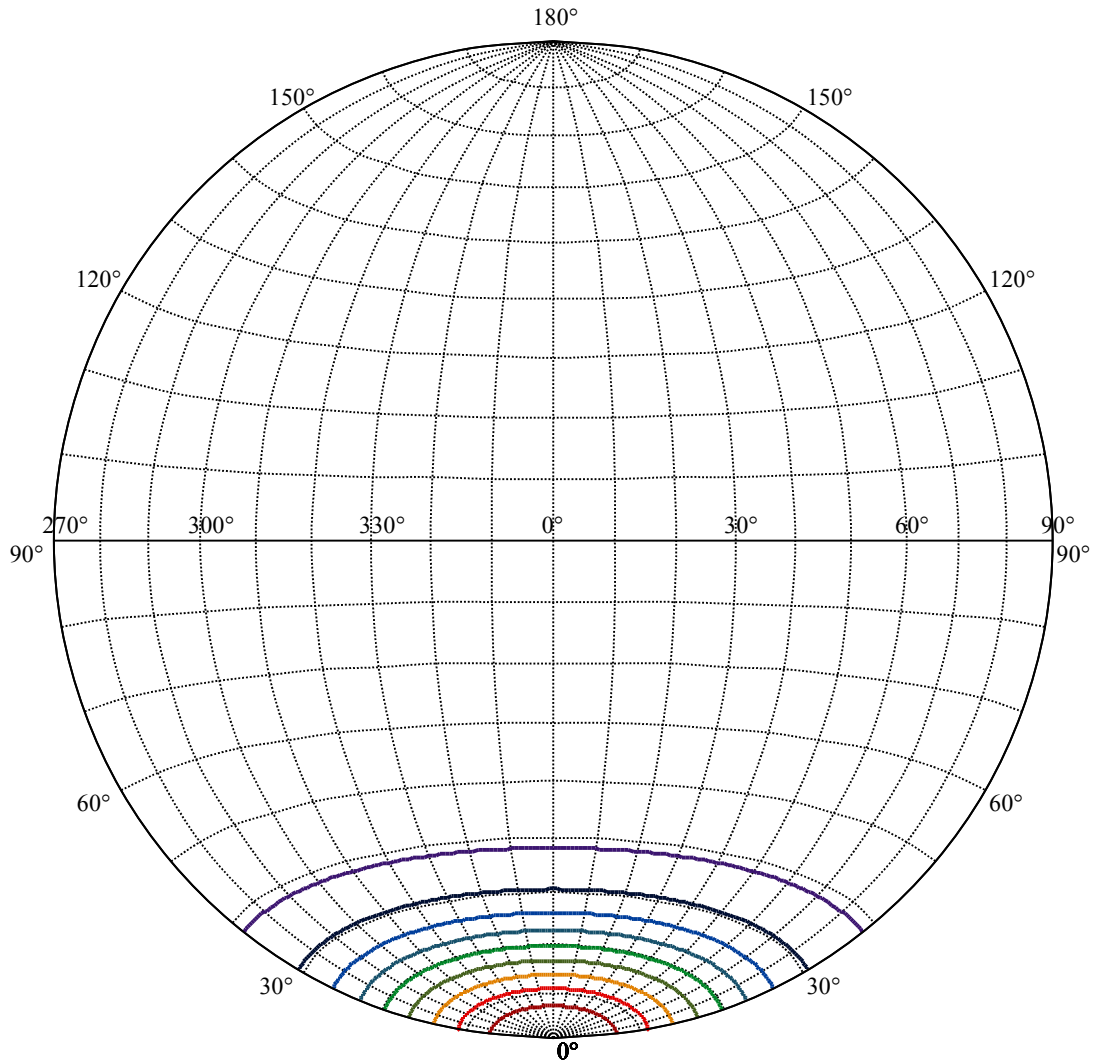
Field angle(10%Imax):C0/180Left:38.3 Right:38.3  
:C90/270Left:38.3 Right:38.3

Beam Angle(50%Imax):C0/180Left:19.7 Right:19.7  
:C90/270Left:19.7 Right:19.7





(10%Imax) 155.152	—
(20%Imax) 310.303	—
(30%Imax) 465.455	—
(40%Imax) 620.606	—
(50%Imax) 775.758	—
(60%Imax) 930.909	—
(70%Imax) 1086.06	—
(80%Imax) 1241.21	—
(90%Imax) 1396.36	—



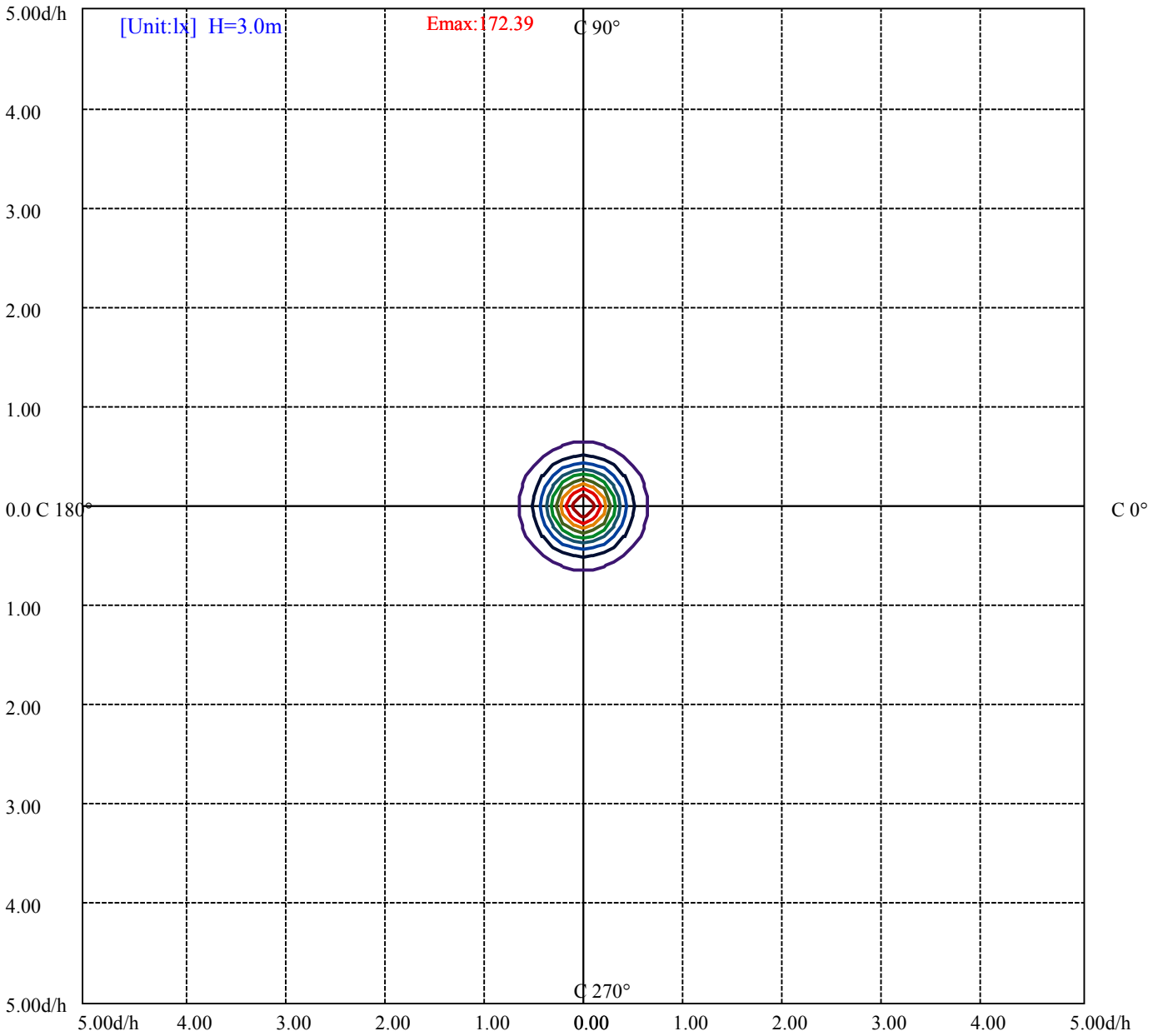
House

[Unit:cd]

Road

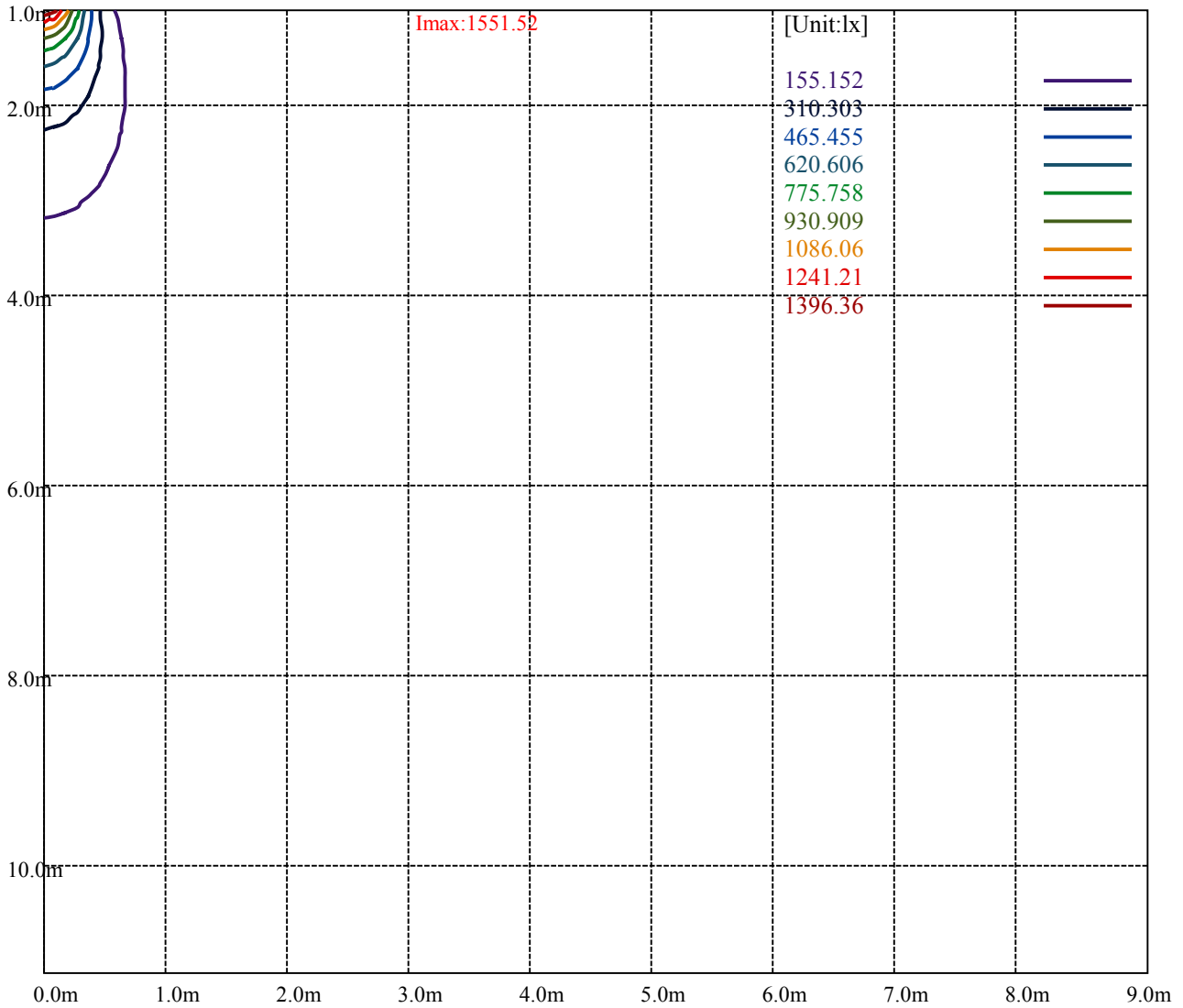
**Imax:1551.52**

(10%Imax)	155.152	—
(20%Imax)	310.303	—
(30%Imax)	465.455	—
(40%Imax)	620.606	—
(50%Imax)	775.758	—
(60%Imax)	930.909	—
(70%Imax)	1086.06	—
(80%Imax)	1241.21	—
(90%Imax)	1396.36	—



- (10%Emax) 17.239
- (20%Emax) 34.47811
- (30%Emax) 51.71711
- (40%Emax) 68.95611
- (50%Emax) 86.19522
- (60%Emax) 103.4342
- (70%Emax) 120.6733
- (80%Emax) 137.9122
- (90%Emax) 155.1511





Luminance Table

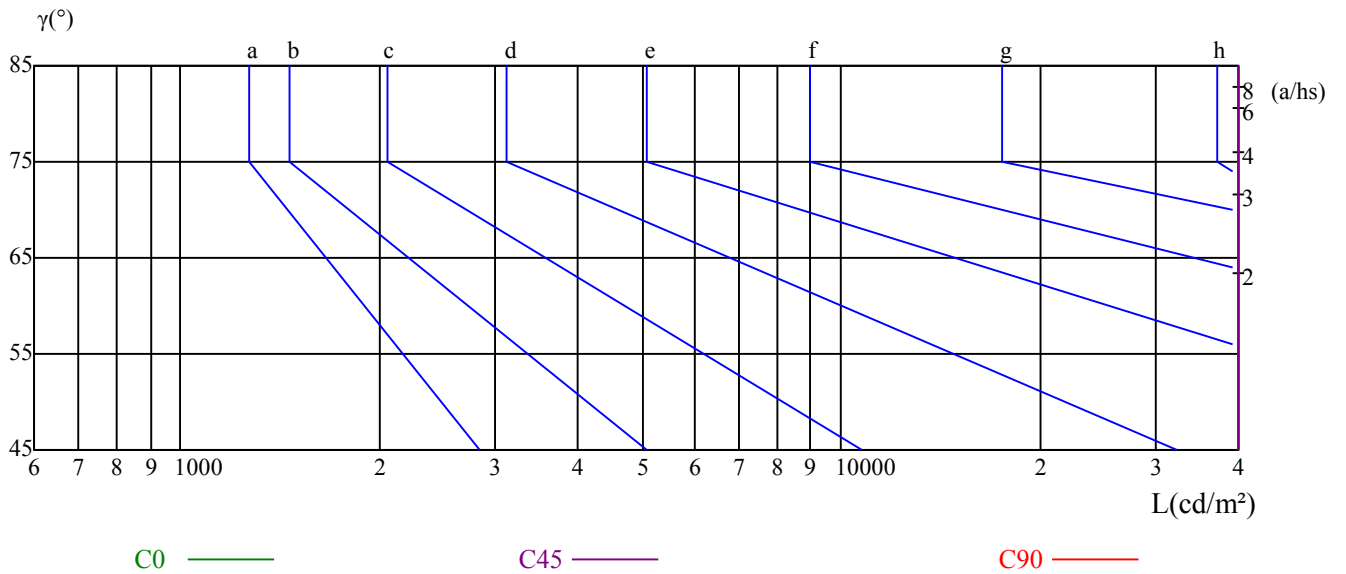
$\gamma$	45	50	55	60	65	70	75	80	85
C0	96913	78563	70809	70226	73199	80503	92295	134096	240530
C45	96913	78563	70809	70226	73199	80503	92295	134096	240530
C90	96913	78563	70809	70226	73199	80503	92295	134096	240530

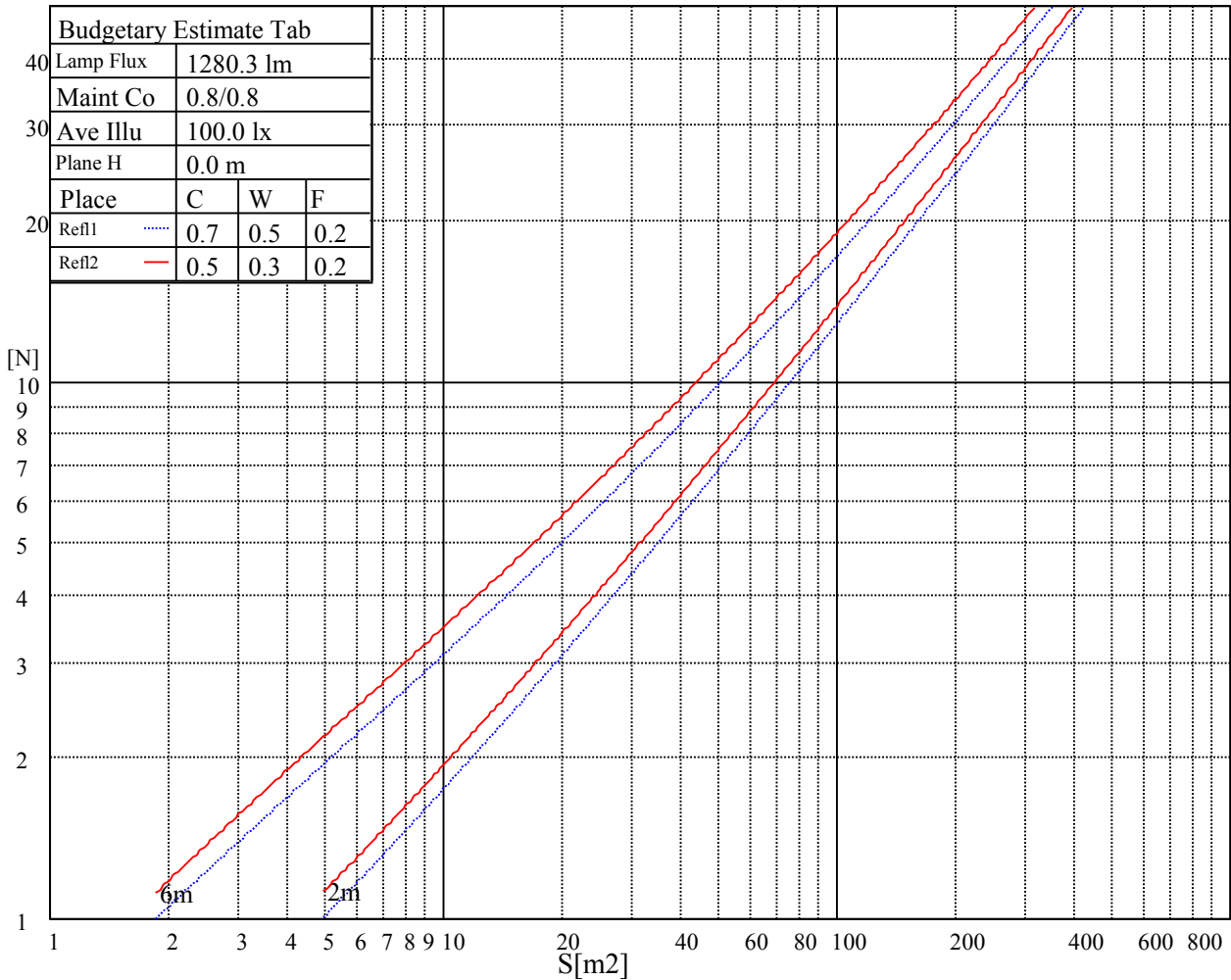
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
73199	73199	73199	92295	92295	92295	240530	240530	240530

Glare Table

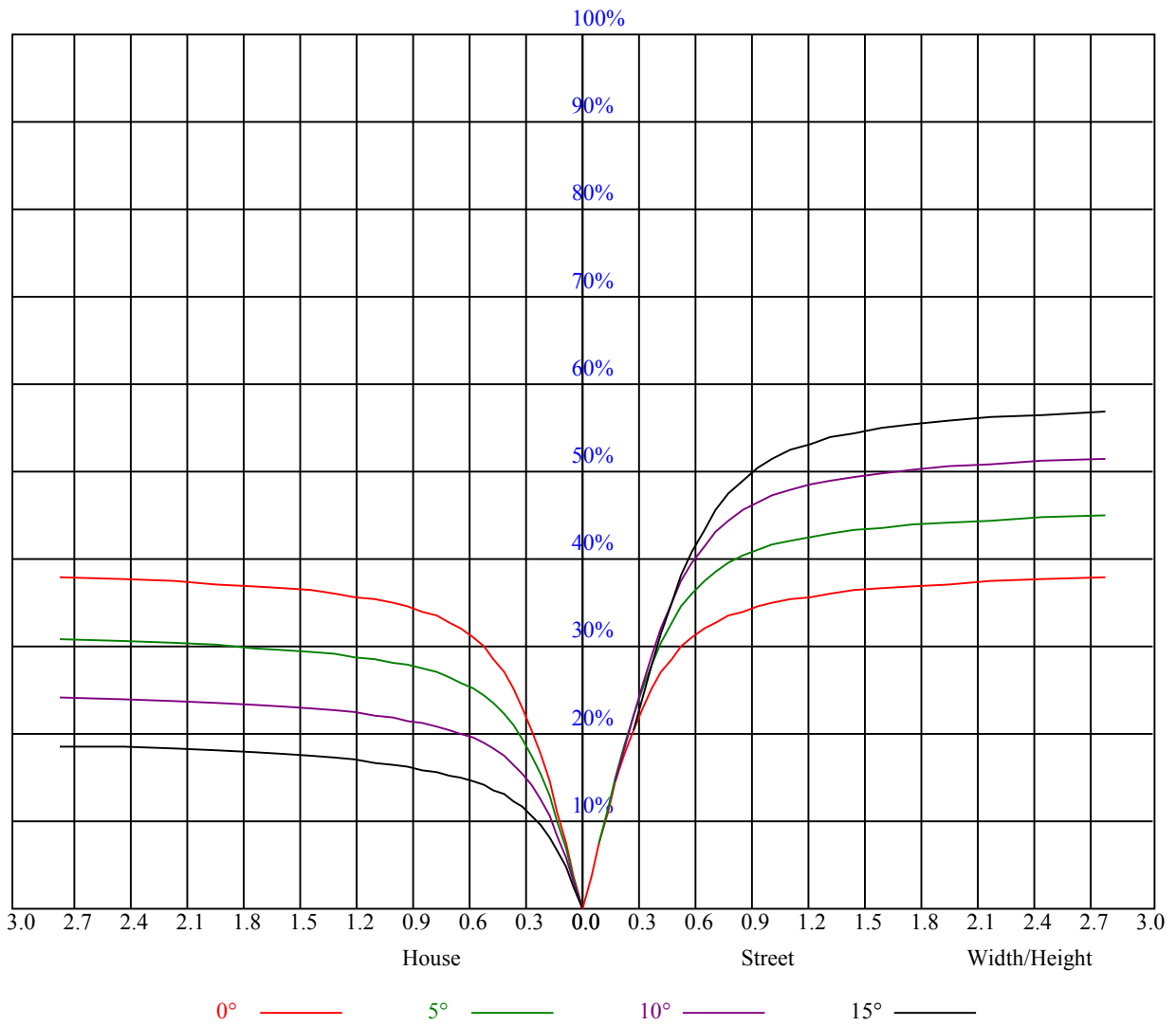
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

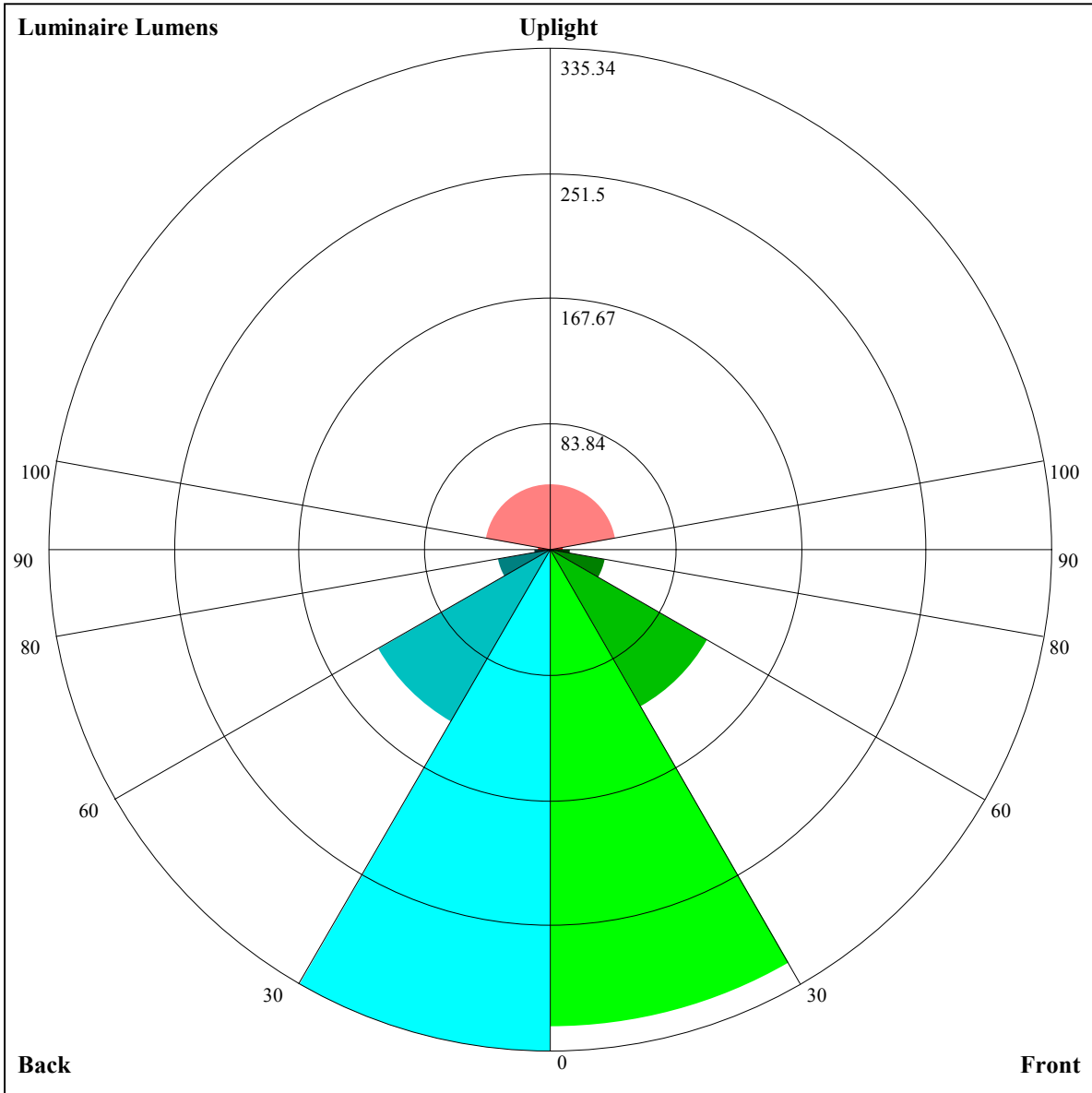
Luminance Limiting Curve





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	0.94	0.94	0.94	0.92	0.92	0.92	0.88	0.88	0.88	0.84	0.84	0.84	0.81	0.81	0.81	0.79
1	0.85	0.83	0.80	0.84	0.81	0.79	0.80	0.78	0.77	0.77	0.76	0.74	0.75	0.73	0.72	0.71
2	0.78	0.74	0.71	0.77	0.73	0.70	0.74	0.71	0.69	0.72	0.69	0.67	0.70	0.68	0.66	0.64
3	0.72	0.68	0.64	0.71	0.67	0.63	0.69	0.65	0.62	0.67	0.64	0.61	0.65	0.63	0.60	0.59
4	0.67	0.62	0.58	0.66	0.62	0.58	0.64	0.60	0.57	0.63	0.59	0.57	0.61	0.58	0.56	0.55
5	0.63	0.58	0.54	0.62	0.57	0.54	0.61	0.56	0.53	0.59	0.55	0.53	0.58	0.55	0.52	0.51
6	0.59	0.54	0.50	0.58	0.53	0.50	0.57	0.53	0.50	0.56	0.52	0.49	0.55	0.51	0.49	0.48
7	0.56	0.50	0.47	0.55	0.50	0.47	0.54	0.50	0.46	0.53	0.49	0.46	0.52	0.49	0.46	0.45
8	0.52	0.47	0.44	0.52	0.47	0.44	0.51	0.47	0.44	0.50	0.46	0.44	0.49	0.46	0.43	0.42
9	0.50	0.45	0.42	0.49	0.45	0.41	0.49	0.44	0.41	0.48	0.44	0.41	0.47	0.44	0.41	0.40
10	0.47	0.43	0.39	0.47	0.42	0.39	0.46	0.42	0.39	0.46	0.42	0.39	0.45	0.41	0.39	0.38





Luminaire Lumens:  
FL=319.78,FM=121.58,FH=37.53,FVH=13.28  
BL=335.34,BM=132.95,BH=35.94,BVH=11.7  
UL=9.22,UH=43.88

BUG Rating:B1-U2-G1

NATA CT01D03636AH

Intensity data(cd)

C/ $\gamma$ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	1554.75	1495.69	1302.75	1018.13	745.31	480.94	291.38	174.49	113.06
45.0	1559.25	1436.06	1204.88	897.19	612.00	398.25	285.75	142.14	102.26
90.0	1540.69	1388.81	1112.63	859.61	589.61	368.89	225.56	143.21	98.66
135.0	1551.38	1467.00	1259.44	1008.00	708.75	461.81	289.69	181.18	119.14
180.0	1554.75	1483.88	1302.75	1050.02	771.47	514.58	322.43	211.95	138.49
225.0	1559.25	1545.75	1409.63	1110.94	914.46	647.83	427.84	266.06	169.99
270.0	1540.69	1553.63	1438.88	1210.50	950.06	666.56	442.69	290.25	175.78
315.0	1551.38	1501.88	1332.00	1063.24	798.86	525.54	329.12	200.14	127.41
360.0	1554.75	1495.69	1302.75	1018.13	745.31	480.94	291.38	174.49	113.06

C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	81.73	62.72	53.49	47.76	42.41	37.97	32.96	36.00	37.07
45.0	73.52	57.38	49.78	45.34	40.61	35.61	30.49	31.33	25.82
90.0	68.68	56.25	47.42	41.79	36.84	31.56	27.23	26.44	21.60
135.0	79.59	59.29	48.32	41.96	37.41	33.19	29.31	28.91	24.58
180.0	91.97	65.70	51.41	43.48	37.52	33.41	29.98	30.54	24.08
225.0	111.99	75.99	56.70	46.91	41.01	37.24	31.39	28.91	27.84
270.0	114.53	80.44	60.58	49.78	42.75	38.31	33.36	29.64	27.90
315.0	88.48	65.81	53.38	47.03	42.19	38.19	32.96	29.64	28.46
360.0	81.73	62.72	53.49	47.76	42.41	37.97	32.96	36.00	37.07

C/ $\gamma$ (°)	90.0
0.0	14.63
45.0	5.40
90.0	4.22
135.0	4.22
180.0	4.11
225.0	6.64
270.0	13.95
315.0	14.46
360.0	14.63