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## Nata

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Client:

LumCAT: CT01D03538AF

Luminaire:

Report No: GC2019091909

Voltage(V): 220.6000

Test No: NATA07

Current(A): 0.0180

LampCAT: CREE CXA1304

Power (W): 2.9800

Lamp flux(lm): 231.0

PF: 0.7290

Number of Lamps: 1

Ballast type: AC

Length(mm): 33

Width(mm): 33

Phm Type: C

Height(mm): 0

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## Photometric Results

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Lumens(lm): 215.90, Efficiency(%): 93.46% , Luminous Efficacy(lm/W): 72.45

Central intensity(cd): 437.294, Maximum intensity(cd): 437.294

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

Beam Angle(50%Imax): [C0/180]Total=36.0

[C90/270]Total=36.0

Field angle(10%Imax): [C0/180]Total=64.8

[C90/270]Total=64.8

Maximum s/h(1/2): C0\_180=0.59 C90\_270=0.59

Maximum s/h(1/4): C0\_180=0.60 C90\_270=0.60

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 93.46%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 91.165%

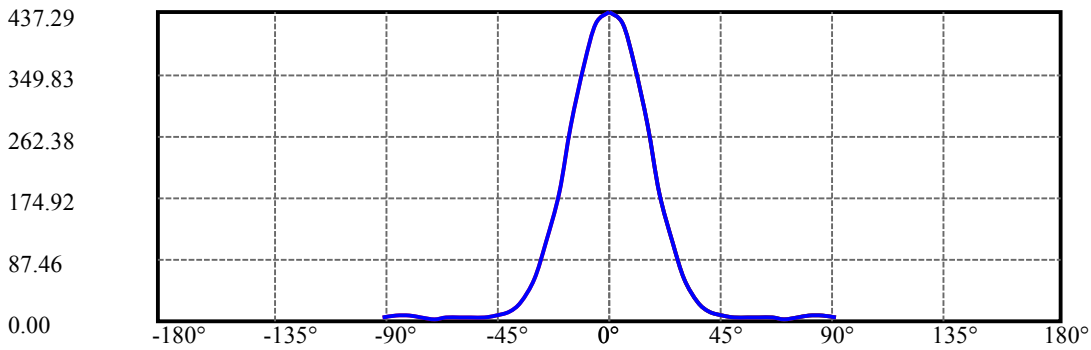
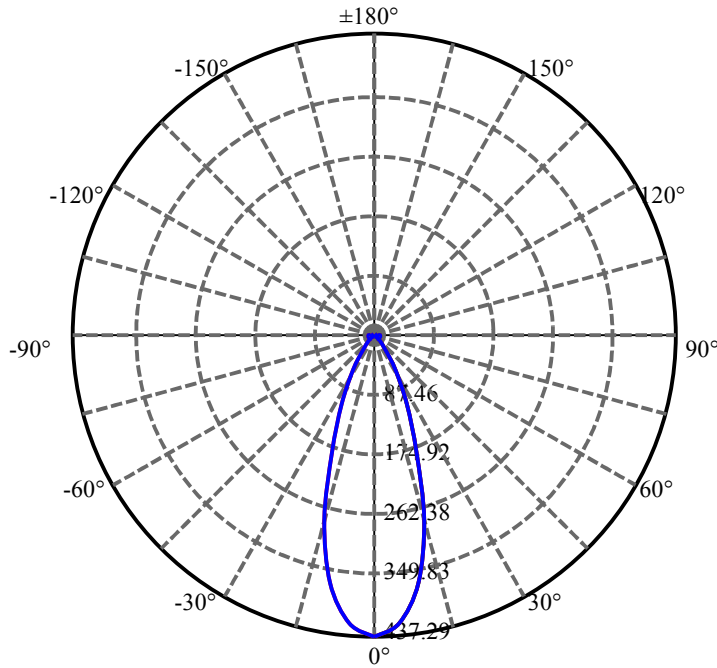
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	437.294	0.000	0	.000%	.000%
5.0	420.287	10.252	10.252	4.438%	4.749%
10.0	365.229	28.100	38.352	12.165%	17.764%
15.0	276.738	38.081	76.434	16.485%	35.402%
20.0	181.495	37.765	114.198	16.348%	52.894%
25.0	110.040	30.577	144.775	13.237%	67.056%
30.0	58.857	21.374	166.149	9.253%	76.956%
35.0	27.007	12.644	178.793	5.474%	82.813%
40.0	12.529	6.596	185.389	2.856%	85.868%
45.0	7.227	3.658	189.047	1.584%	87.562%
50.0	5.969	2.666	191.714	1.154%	88.797%
55.0	5.824	2.564	194.278	1.110%	89.985%
60.0	5.197	2.547	196.825	1.103%	91.165%
65.0	4.316	2.313	199.138	1.001%	92.236%
70.0	3.956	2.094	201.232	.907%	93.206%
75.0	5.667	2.515	203.747	1.089%	94.371%
80.0	8.904	3.899	207.646	1.688%	96.177%
85.0	8.434	4.711	212.357	2.039%	98.359%
90.0	4.507	3.543	215.9	1.534%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	166.15	71.93%	76.96%
0-40	185.39	80.26%	85.87%
0-60	196.83	85.21%	91.16%
0-90	212.36	91.93%	98.36%
0-120	212.36	91.93%	98.36%
0-180	215.90	93.46%	100.00%
60-90	18.08	7.83%	8.37%
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%
0-32.60	172.72	74.77%	80.00%

ZONAL LUMEN SUMMARY

0-10	38.35
10-20	75.85
20-30	51.95
30-40	19.24
40-50	6.32
50-60	5.11
60-70	4.41
70-80	6.41
80-90	4.71
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



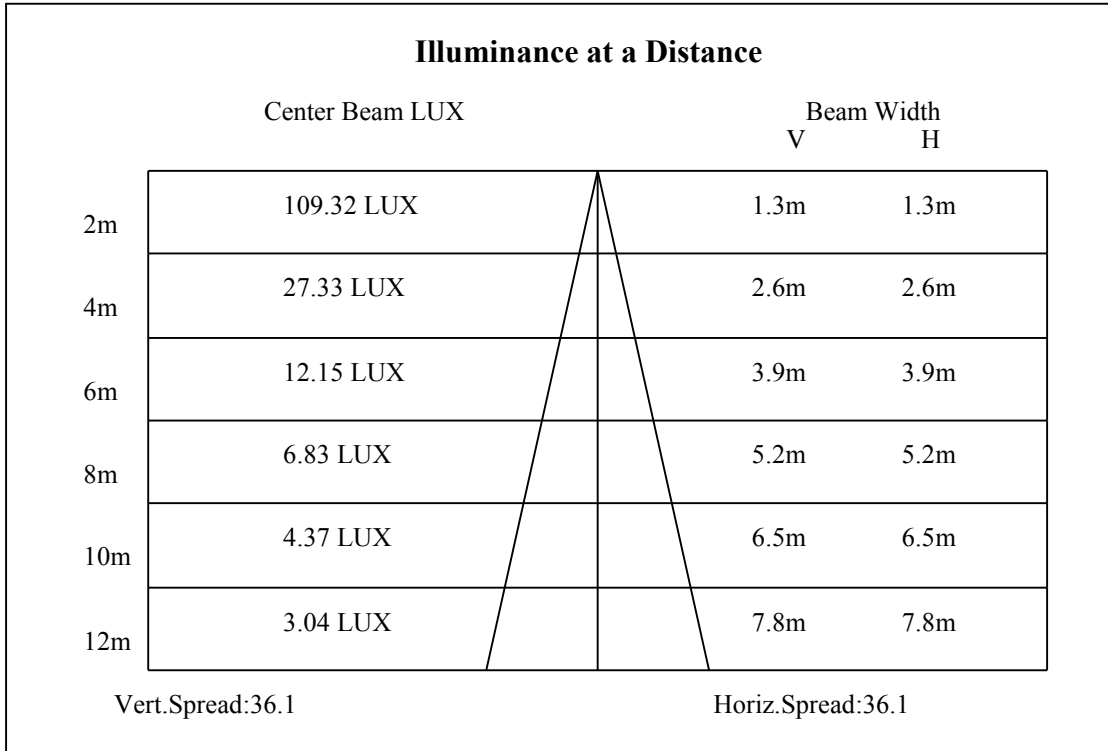
C0(Max): —————

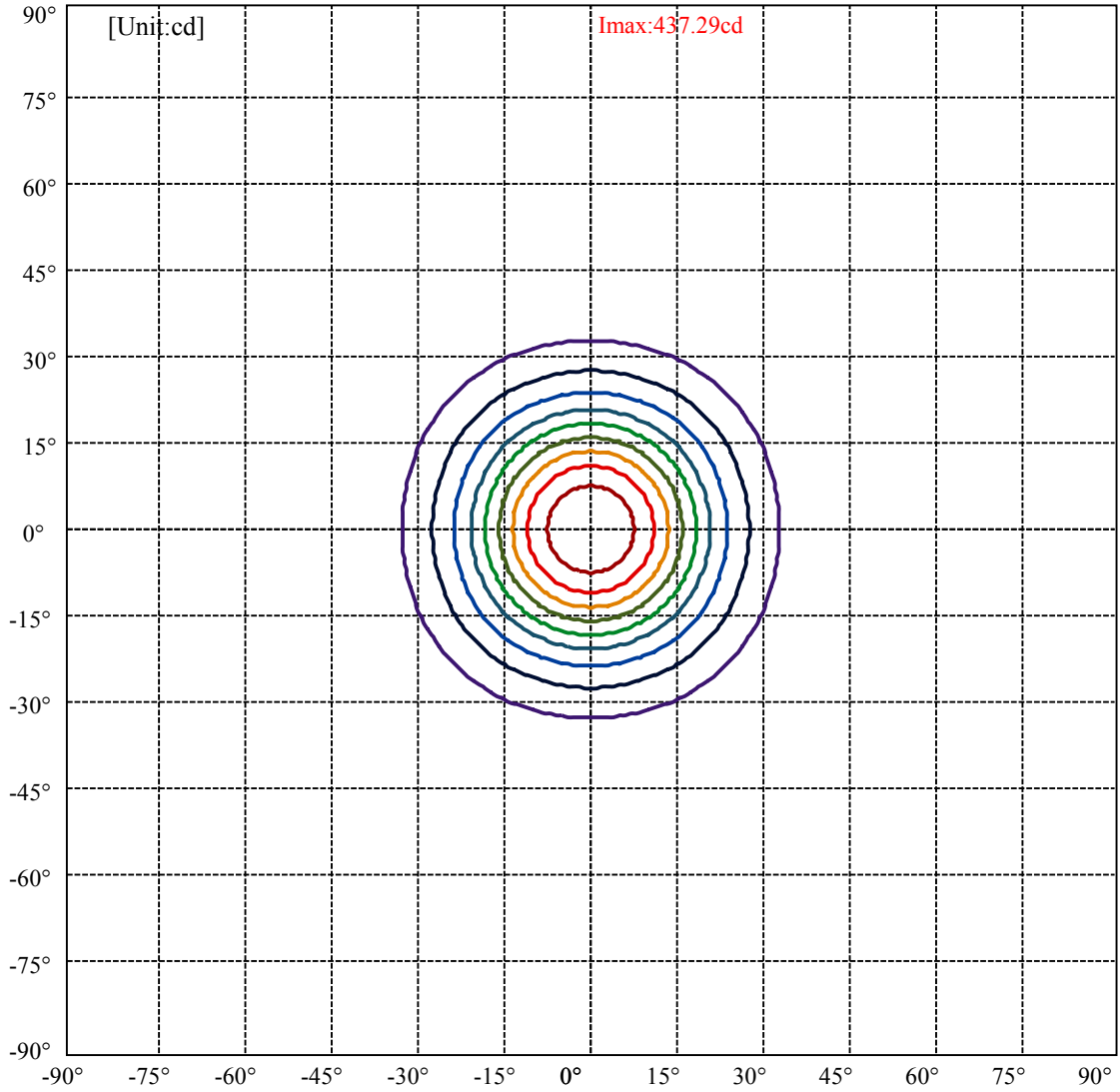
C0/C180: —————

C90/C270: —————

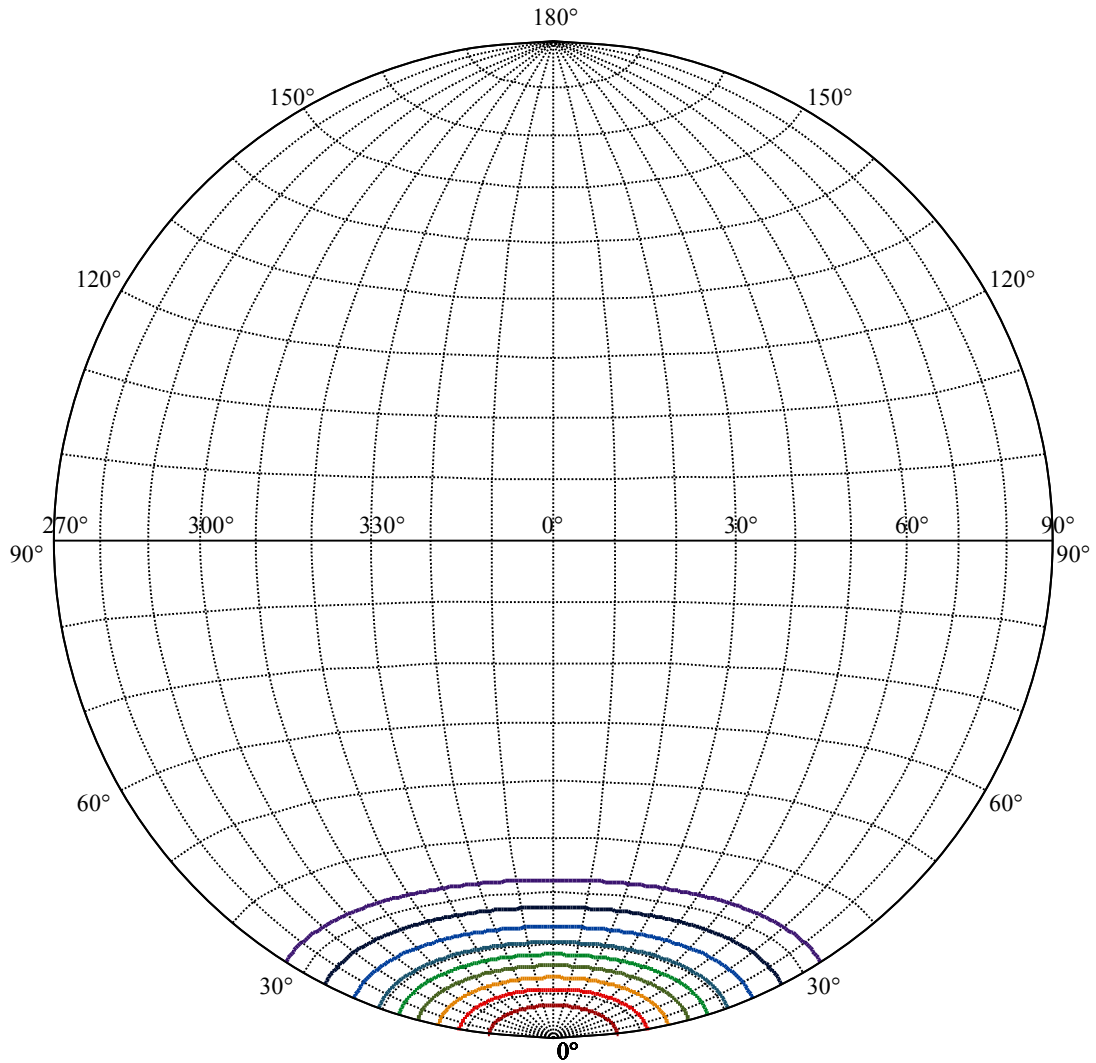
Field angle(10%Imax):C0/180Left:32.4 Right:32.4  
:C90/270Left:32.4 Right:32.4

Beam Angle(50%Imax):C0/180Left:18.0 Right:18.0  
:C90/270Left:18.0 Right:18.0





(10%Imax)	43.7293	—
(20%Imax)	87.4587	—
(30%Imax)	131.188	—
(40%Imax)	174.917	—
(50%Imax)	218.647	—
(60%Imax)	262.376	—
(70%Imax)	306.105	—
(80%Imax)	349.835	—
(90%Imax)	393.564	—



House

[Unit:cd]

Road

**I<sub>max</sub>:437.29**

(10%I<sub>max</sub>) 43.7293

(20%I<sub>max</sub>) 87.4587

(30%I<sub>max</sub>) 131.188

(40%I<sub>max</sub>) 174.917

(50%I<sub>max</sub>) 218.647

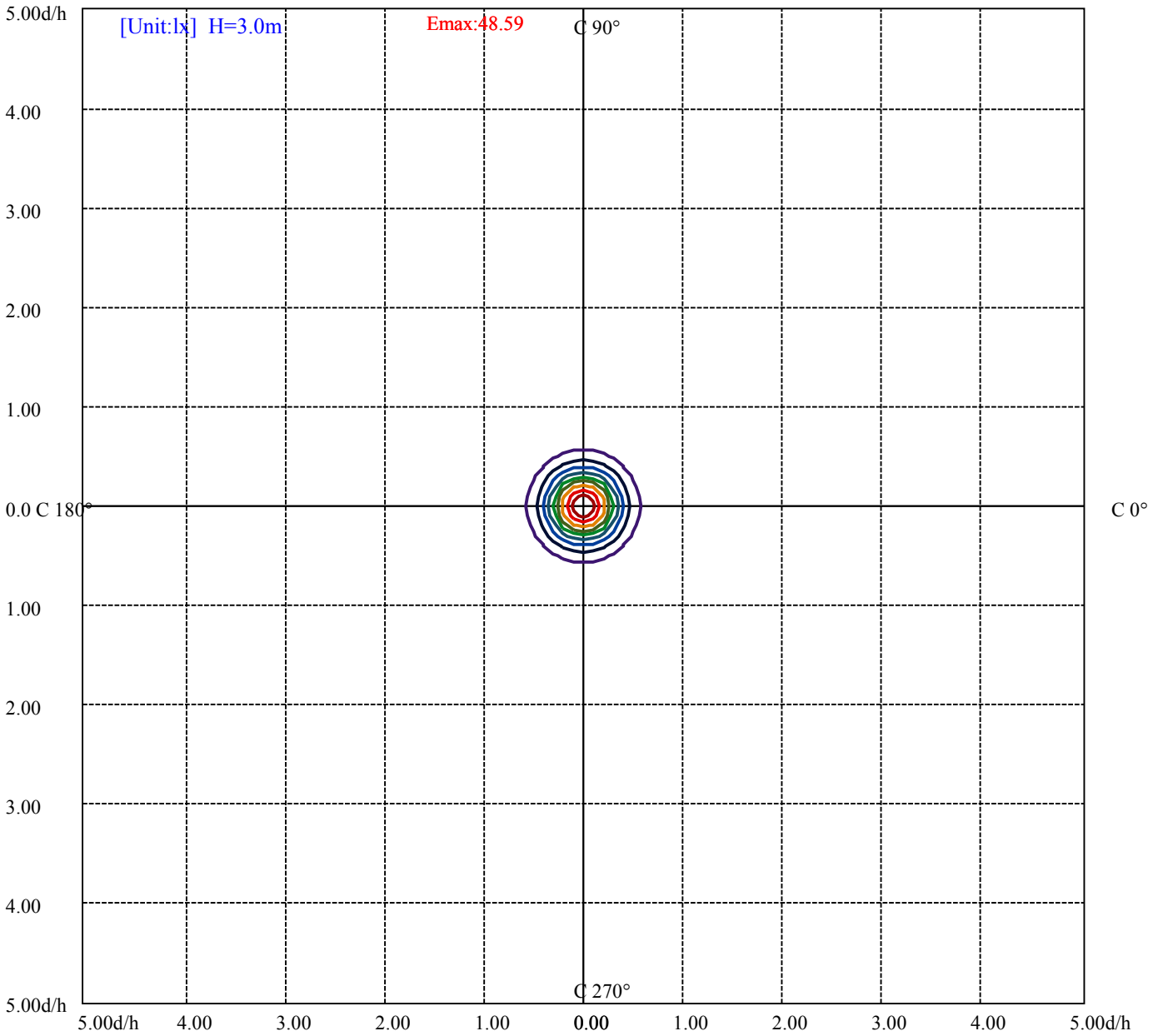
(60%I<sub>max</sub>) 262.376

(70%I<sub>max</sub>) 306.105

(80%I<sub>max</sub>) 349.835

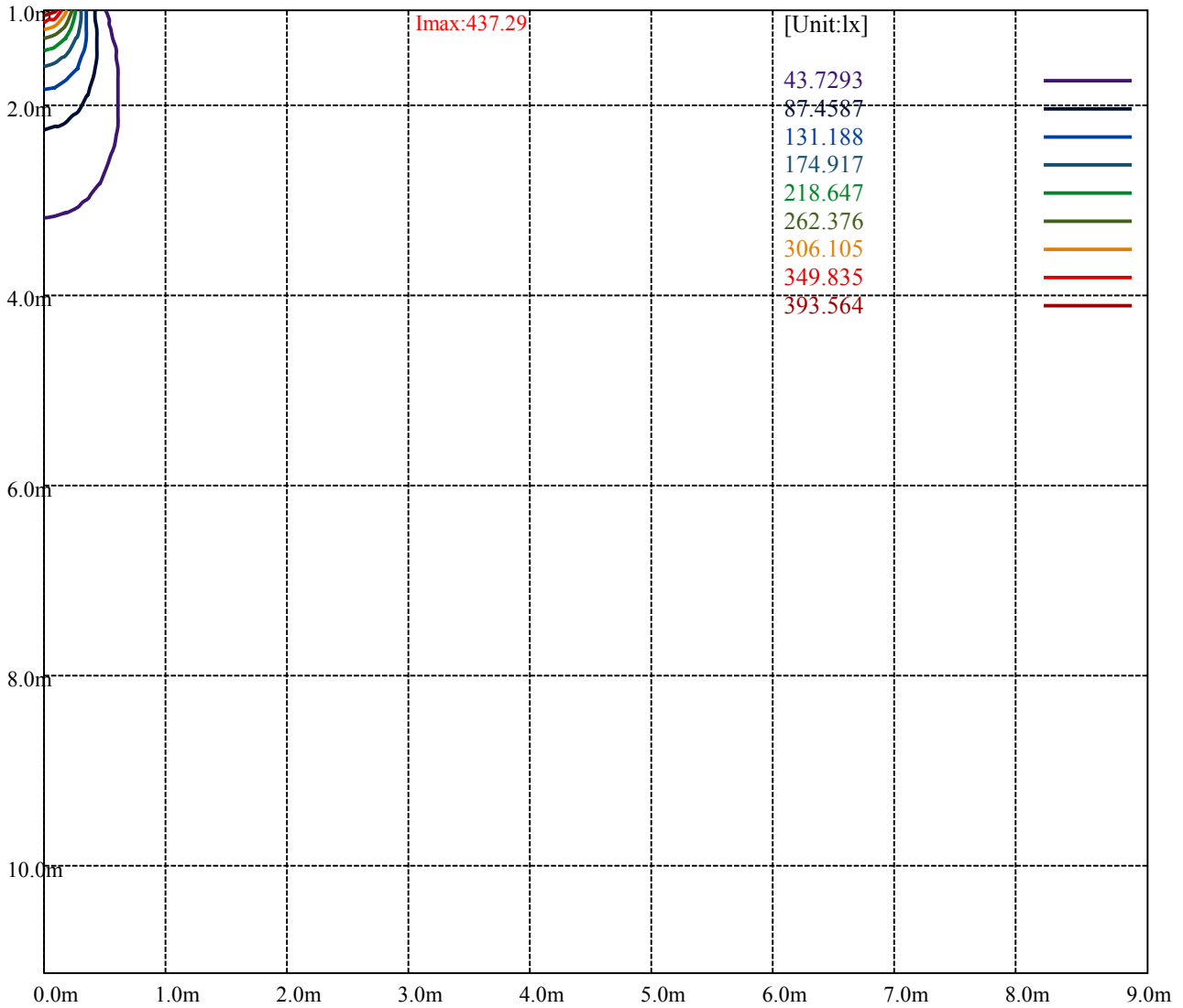
(90%I<sub>max</sub>) 393.564





- (10%Emax) 4.858811
- (20%Emax) 9.717623
- (30%Emax) 14.57644
- (40%Emax) 19.43522
- (50%Emax) 24.294
- (60%Emax) 29.15289
- (70%Emax) 34.01167
- (80%Emax) 38.87045
- (90%Emax) 43.72933





Luminance Table

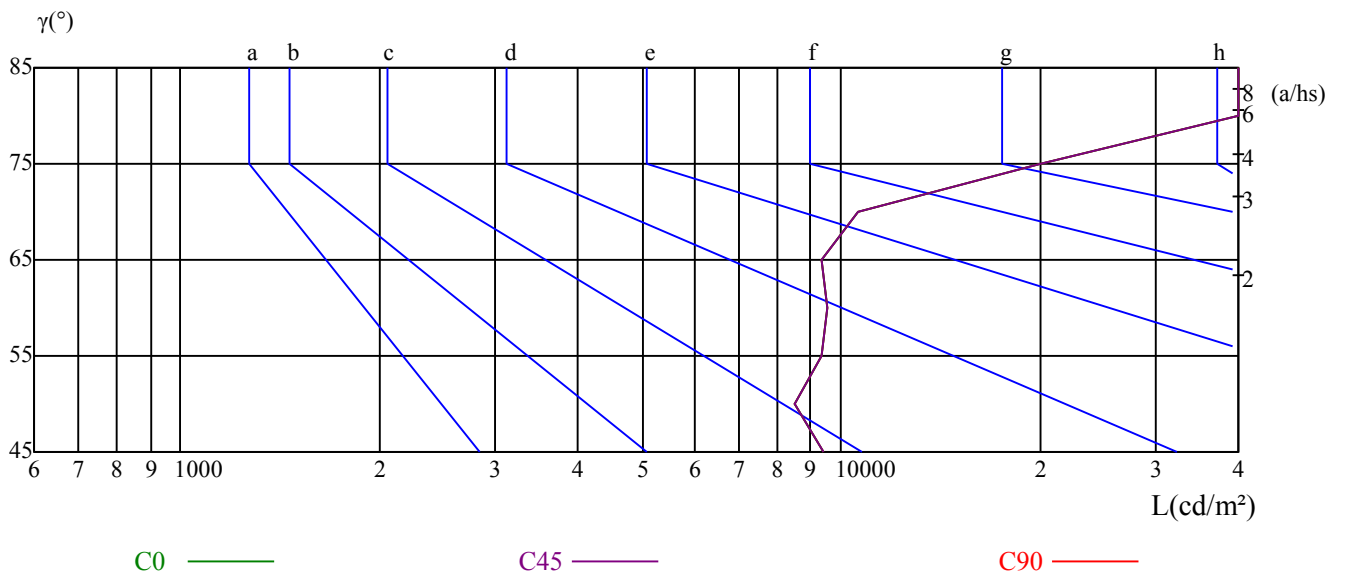
$\gamma$	45	50	55	60	65	70	75	80	85
C0	9386	8527	9323	9545	9377	10621	20106	47084	88859
C45	9386	8527	9323	9545	9377	10621	20106	47084	88859
C90	9386	8527	9323	9545	9377	10621	20106	47084	88859

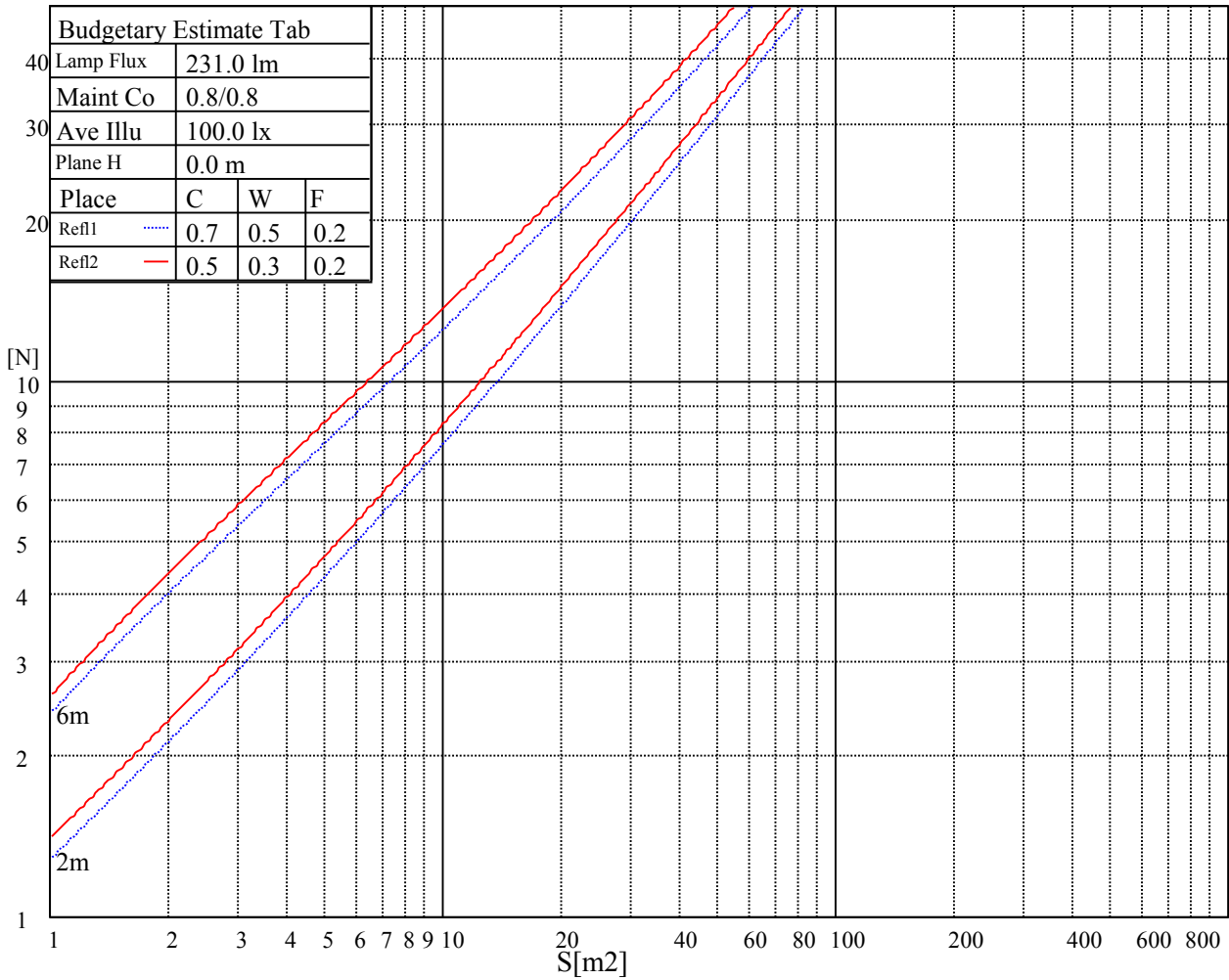
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
9377	9377	9377	20106	20106	20106	88859	88859	88859

Glare Table

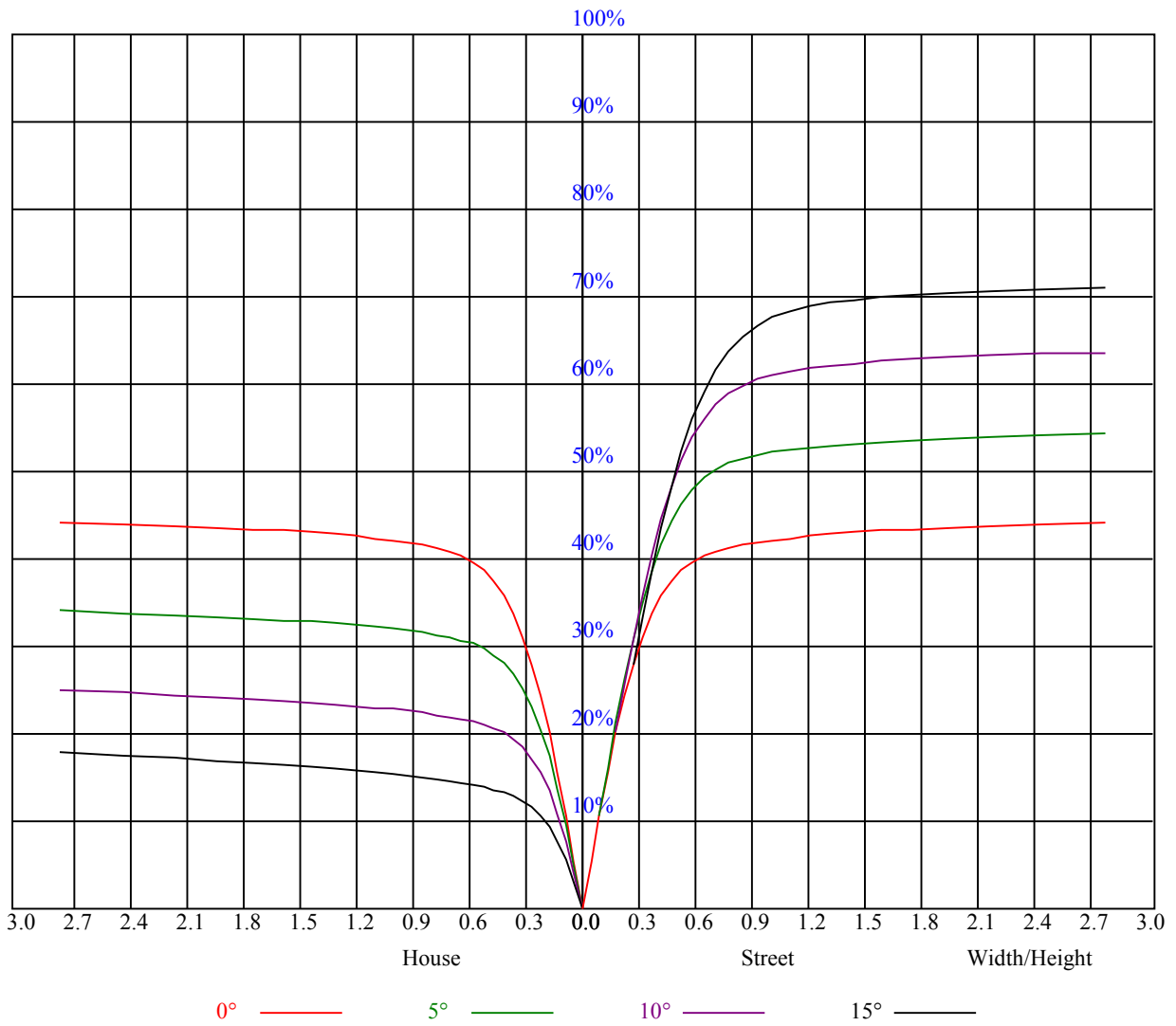
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

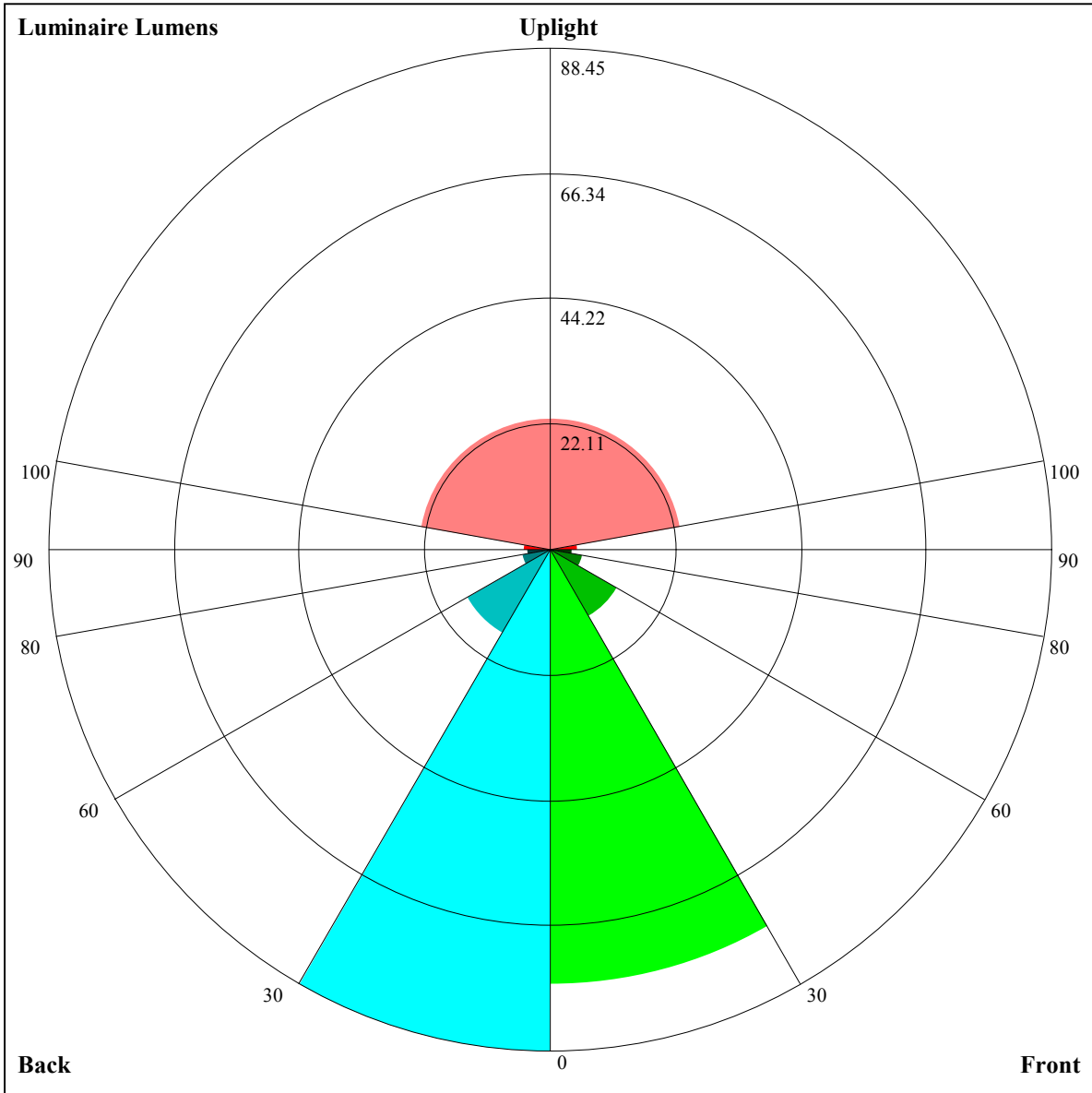
Luminance Limiting Curve





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	1.11	1.11	1.11	1.09	1.09	1.09	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.93
1	1.01	0.98	0.96	0.99	0.97	0.94	0.95	0.93	0.91	0.92	0.90	0.88	0.89	0.87	0.86	0.84
2	0.94	0.90	0.86	0.92	0.88	0.85	0.89	0.86	0.83	0.86	0.84	0.81	0.84	0.82	0.80	0.78
3	0.88	0.83	0.79	0.87	0.82	0.78	0.84	0.80	0.77	0.82	0.79	0.76	0.80	0.77	0.75	0.73
4	0.83	0.78	0.73	0.82	0.77	0.73	0.80	0.75	0.72	0.78	0.74	0.71	0.76	0.73	0.70	0.69
5	0.78	0.73	0.69	0.77	0.72	0.69	0.76	0.71	0.68	0.74	0.70	0.67	0.73	0.69	0.67	0.65
6	0.74	0.69	0.65	0.74	0.68	0.65	0.72	0.68	0.64	0.71	0.67	0.64	0.70	0.66	0.63	0.62
7	0.71	0.65	0.62	0.70	0.65	0.61	0.69	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.60	0.59
8	0.68	0.62	0.59	0.67	0.62	0.58	0.66	0.61	0.58	0.65	0.61	0.58	0.64	0.60	0.58	0.56
9	0.65	0.59	0.56	0.64	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.55	0.62	0.58	0.55	0.54
10	0.62	0.57	0.53	0.61	0.57	0.53	0.61	0.56	0.53	0.60	0.56	0.53	0.59	0.56	0.53	0.52





Luminaire Lumens:

FL=76.58,FM=13.68,FH=5.68,FVH=4.05

BL=88.45,BM=17.18,BH=5.21,BVH=4.29

UL=4.92,UH=23.4

BUG Rating:B0-U2-G0

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	423.48	396.24	321.58	221.90	131.69	75.87	37.12	15.64	7.84
45.0	432.85	407.00	338.42	243.25	140.93	87.75	45.75	20.05	9.23
90.0	440.27	400.04	316.42	207.05	126.17	71.18	30.81	13.97	8.12
135.0	452.57	438.37	382.73	289.56	198.56	109.74	61.30	27.15	11.55
180.0	423.48	420.65	390.48	317.17	228.68	144.31	79.35	37.49	16.43
225.0	432.85	425.66	392.94	319.95	206.45	133.22	77.22	37.03	17.35
270.0	440.27	445.89	418.23	351.97	245.24	155.22	90.49	42.32	20.23
315.0	452.57	428.44	361.02	263.06	174.24	103.02	48.82	22.41	9.47
360.0	423.48	396.24	321.58	221.90	131.69	75.87	37.12	15.64	7.84
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	6.13	5.80	5.71	4.69	3.99	4.32	7.10	12.39	7.47
45.0	6.31	5.71	5.75	4.92	4.18	3.81	5.34	9.14	6.96
90.0	6.40	6.26	6.08	4.64	3.99	3.90	7.84	10.35	8.03
135.0	6.31	5.61	5.57	5.24	4.32	3.67	4.87	8.58	10.44
180.0	8.40	6.17	5.71	5.71	4.59	3.99	3.71	5.52	9.70
225.0	8.03	6.08	5.89	5.61	4.59	3.99	5.01	7.70	7.56
270.0	10.16	6.36	6.13	5.94	4.59	4.22	4.55	7.56	9.70
315.0	6.08	5.75	5.75	4.83	4.27	3.76	6.91	9.98	7.61
360.0	6.13	5.80	5.71	4.69	3.99	4.32	7.10	12.39	7.47
C/ $\gamma$ (°)	90.0								
0.0	4.27								
45.0	3.67								
90.0	4.45								
135.0	5.80								
180.0	5.66								
225.0	4.97								
270.0	5.99								
315.0	1.25								
360.0	4.27								