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## NATA

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Client:

LumCAT: 1654-S

Luminaire: 92.70.046.00

Report No: nt0100

Voltage(V): 34.1900

Test No: GC2020010812

Current(A): 0.3070

LampCAT: LUMINUS CLM-9-AA40

Power (W): 10.5000

Lamp flux(lm): 1288.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 0

Width(mm): 0

Phm Type: C

Height(mm): 0

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## Photometric Results

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Lumens(lm): 1110.22, Efficiency(%): 86.20% , Luminous Efficacy(lm/W): 105.74

Central intensity(cd): 3099.656, Maximum intensity(cd): 3099.656

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

Beam Angle(50%Imax): [C0/180]Total=28.8

[C90/270]Total=28.8

Field angle(10%Imax): [C0/180]Total=62.8

[C90/270]Total=62.8

Maximum s/h(1/2): C0\_180=0.48 C90\_270=0.48

Maximum s/h(1/4): C0\_180=0.51 C90\_270=0.51

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 86.20%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 97.968%

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Equipment: GMS1980  
Temperature(°C): 25.0

Date: 2020/1/8  
Humidity(%): 65.0%

Operator: NT07  
Distance(m): 7.50

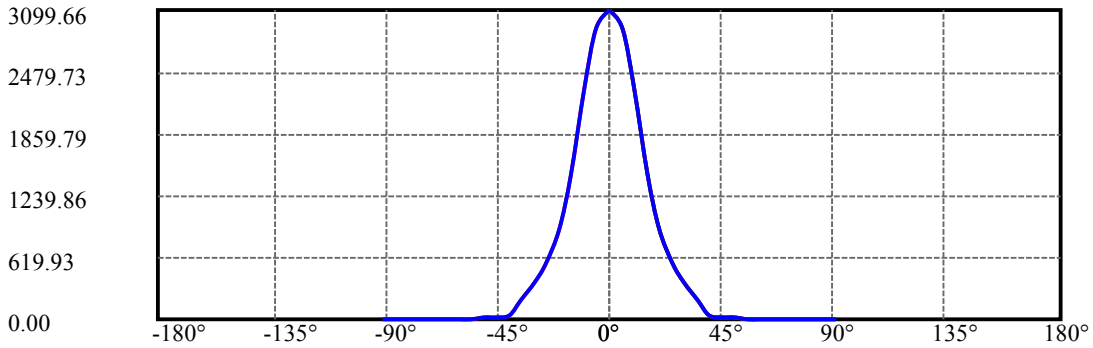
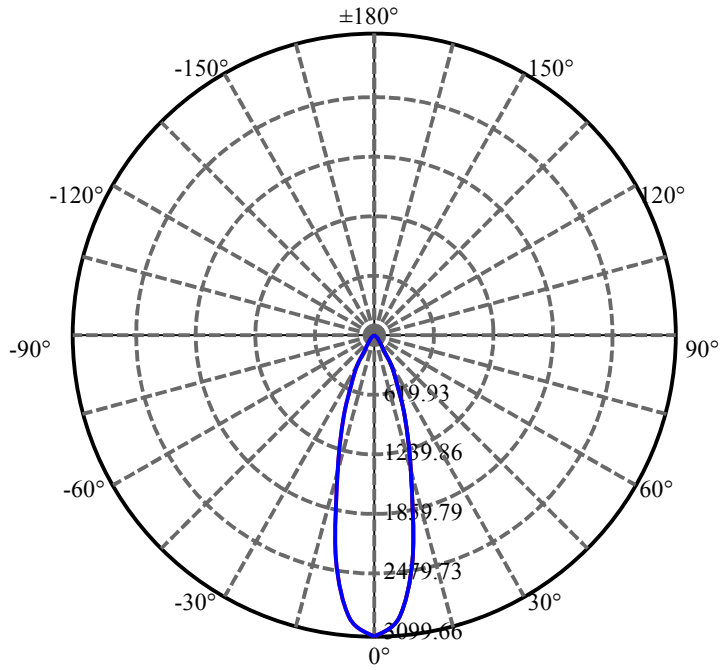
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3099.656	0.000	0	.000%	.000%
5.0	2912.203	71.870	71.87	5.580%	6.474%
10.0	2315.602	187.015	258.885	14.520%	23.318%
15.0	1436.288	222.560	481.445	17.279%	43.365%
20.0	898.024	192.380	673.825	14.936%	60.693%
25.0	567.253	153.681	827.505	11.932%	74.535%
30.0	358.826	117.196	944.701	9.099%	85.092%
35.0	187.720	80.483	1025.184	6.249%	92.341%
40.0	46.259	39.038	1064.222	3.031%	95.857%
45.0	13.704	11.103	1075.324	.862%	96.857%
50.0	9.661	4.721	1080.045	.367%	97.282%
55.0	8.325	3.911	1083.956	.304%	97.635%
60.0	7.685	3.701	1087.657	.287%	97.968%
65.0	7.158	3.608	1091.265	.280%	98.293%
70.0	6.722	3.514	1094.78	.273%	98.609%
75.0	7.545	3.729	1098.509	.290%	98.945%
80.0	7.952	4.147	1102.655	.322%	99.319%
85.0	7.453	4.186	1106.841	.325%	99.696%
90.0	4.880	3.377	1110.218	.262%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	944.70	73.35%	85.09%
0-40	1064.22	82.63%	95.86%
0-60	1087.66	84.45%	97.97%
0-90	1106.84	85.93%	99.70%
0-120	1106.84	85.93%	99.70%
0-180	1110.22	86.20%	100.00%
60-90	22.89	1.78%	2.06%
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%
0-27.59	888.17	68.96%	80.00%

ZONAL LUMEN SUMMARY

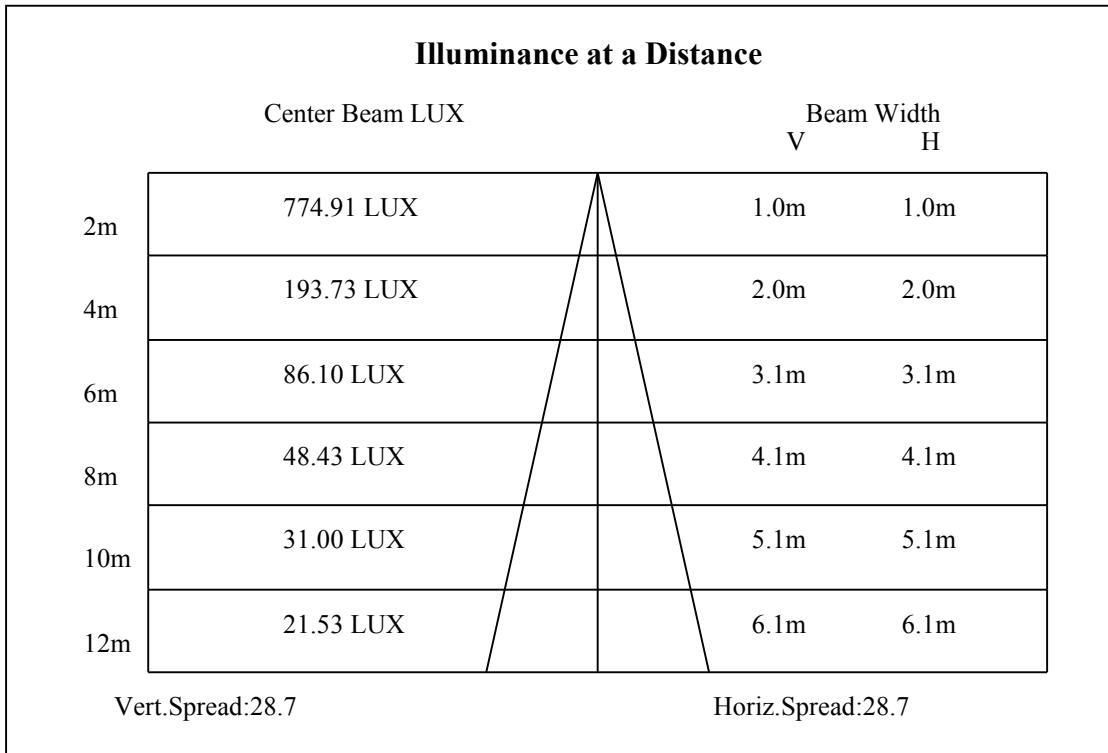
0-10	258.89
10-20	414.94
20-30	270.88
30-40	119.52
40-50	15.82
50-60	7.61
60-70	7.12
70-80	7.88
80-90	4.19
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

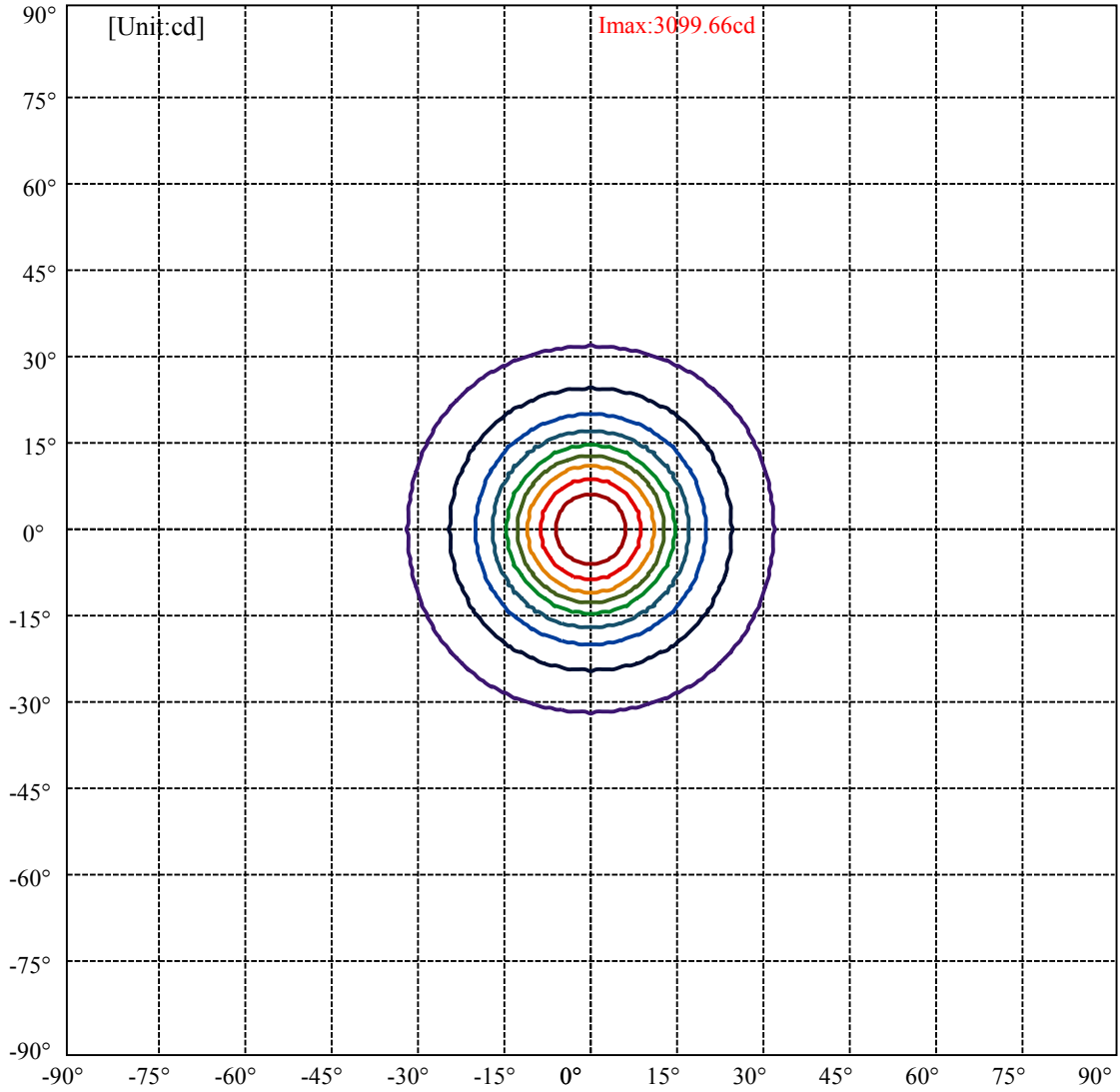


C0(Max): ———  
C0/C180: ———  
C90/C270: ———

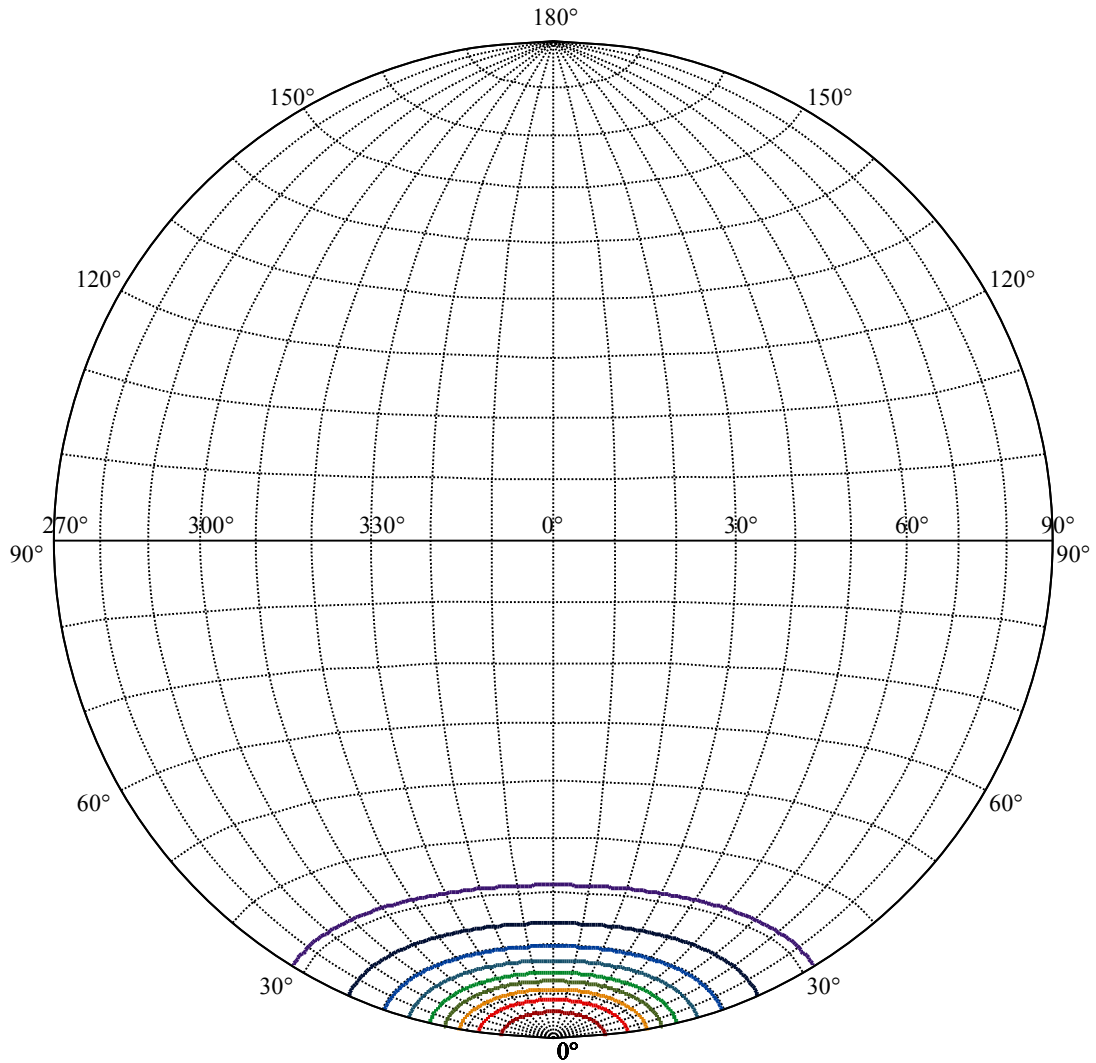
Field angle(10%Imax):C0/180Left:31.4 Right:31.4  
:C90/270Left:31.4 Right:31.4

Beam Angle(50%Imax):C0/180Left:14.4 Right:14.4  
:C90/270Left:14.4 Right:14.4





(10%Imax) 309.966	—
(20%Imax) 619.931	—
(30%Imax) 929.897	—
(40%Imax) 1239.86	—
(50%Imax) 1549.83	—
(60%Imax) 1859.79	—
(70%Imax) 2169.76	—
(80%Imax) 2479.73	—
(90%Imax) 2789.69	—



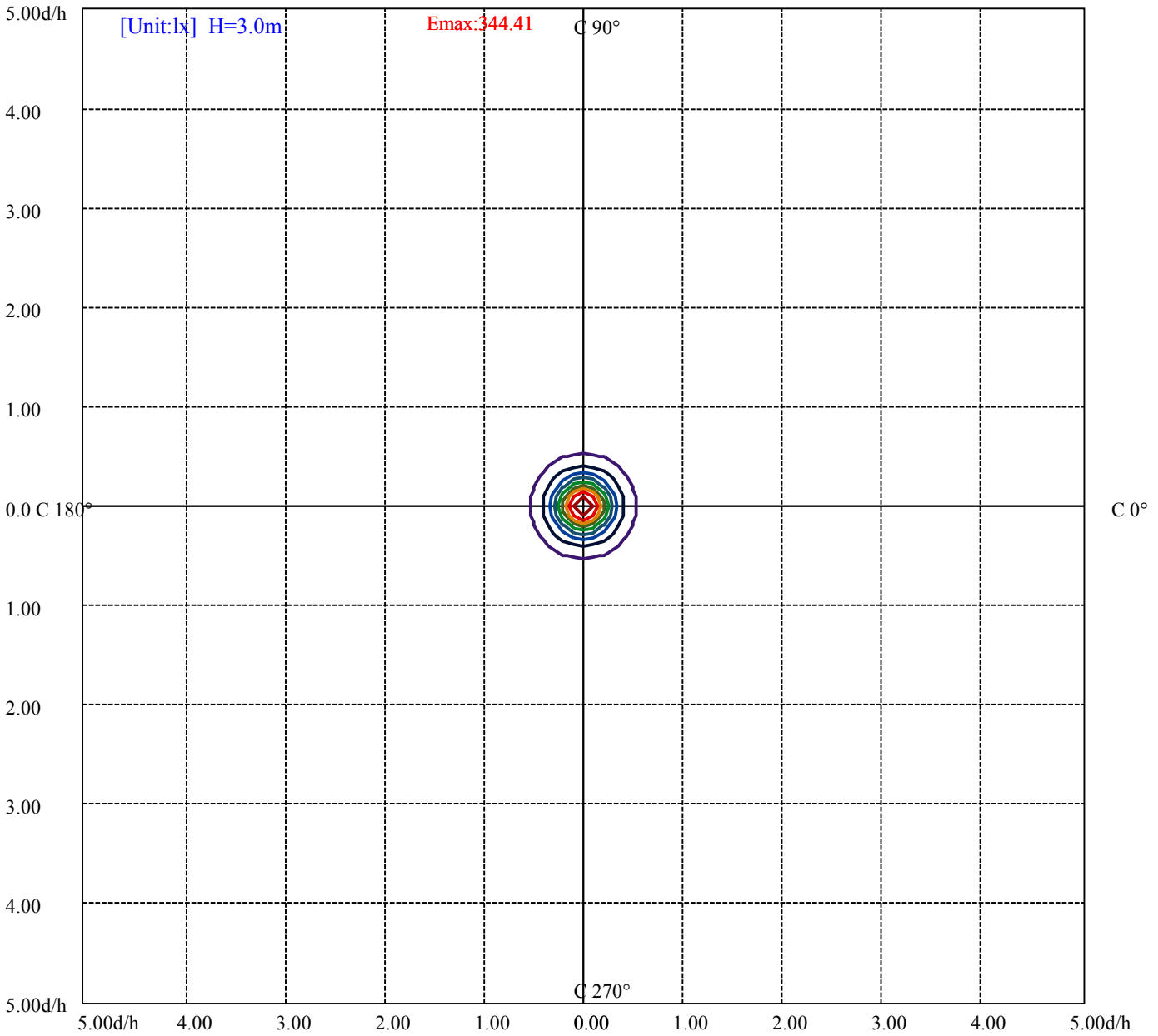
House

[Unit:cd]

Road

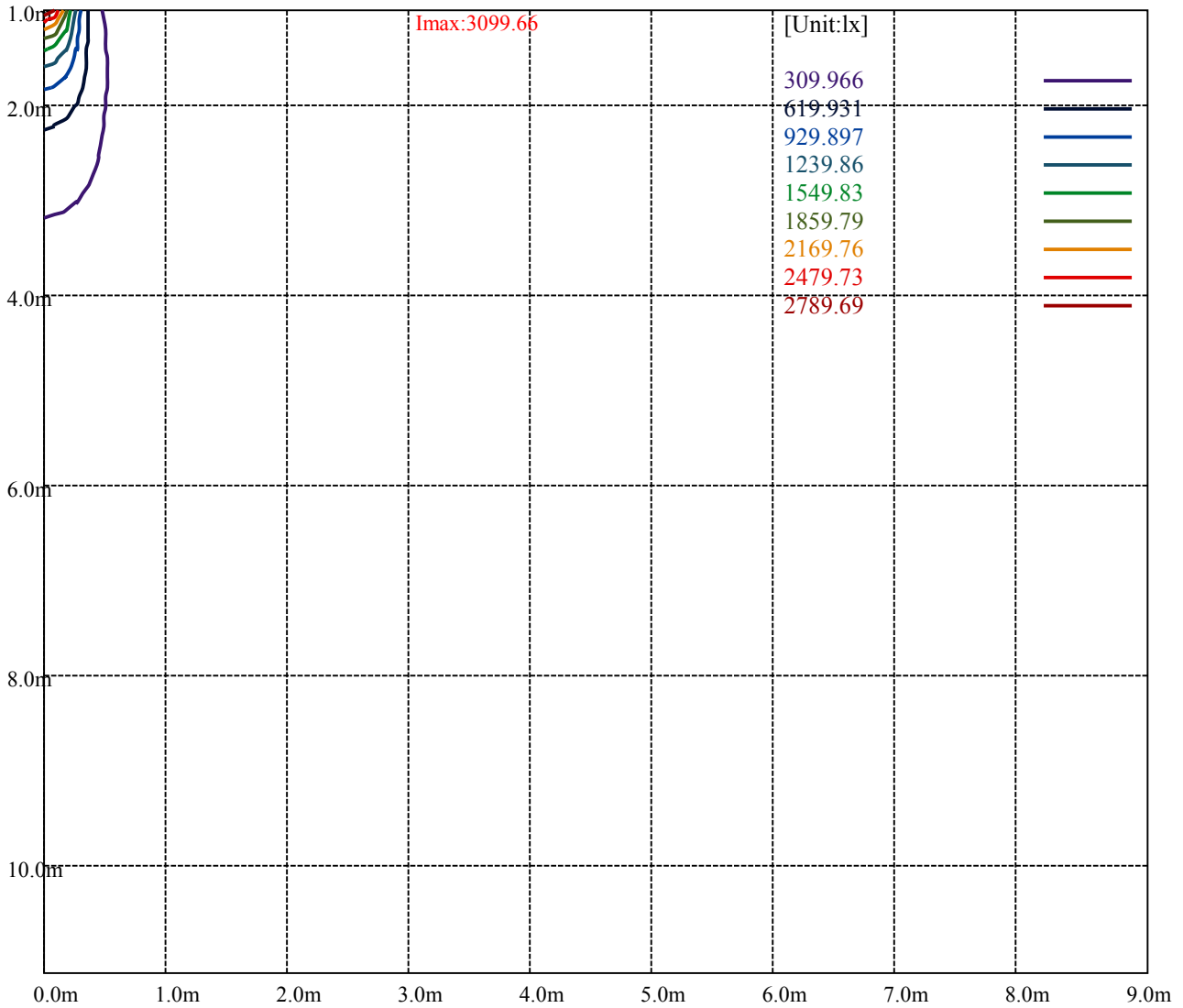
**Imax:3099.66**

(10%Imax) 309.966	—
(20%Imax) 619.931	—
(30%Imax) 929.897	—
(40%Imax) 1239.86	—
(50%Imax) 1549.83	—
(60%Imax) 1859.79	—
(70%Imax) 2169.76	—
(80%Imax) 2479.73	—
(90%Imax) 2789.69	—



- (10%Emax) 34.44056
- (20%Emax) 68.88111
- (30%Emax) 103.3217
- (40%Emax) 137.7622
- (50%Emax) 172.2033
- (60%Emax) 206.6433
- (70%Emax) 241.0844
- (80%Emax) 275.5244
- (90%Emax) 309.9655





Luminance Table

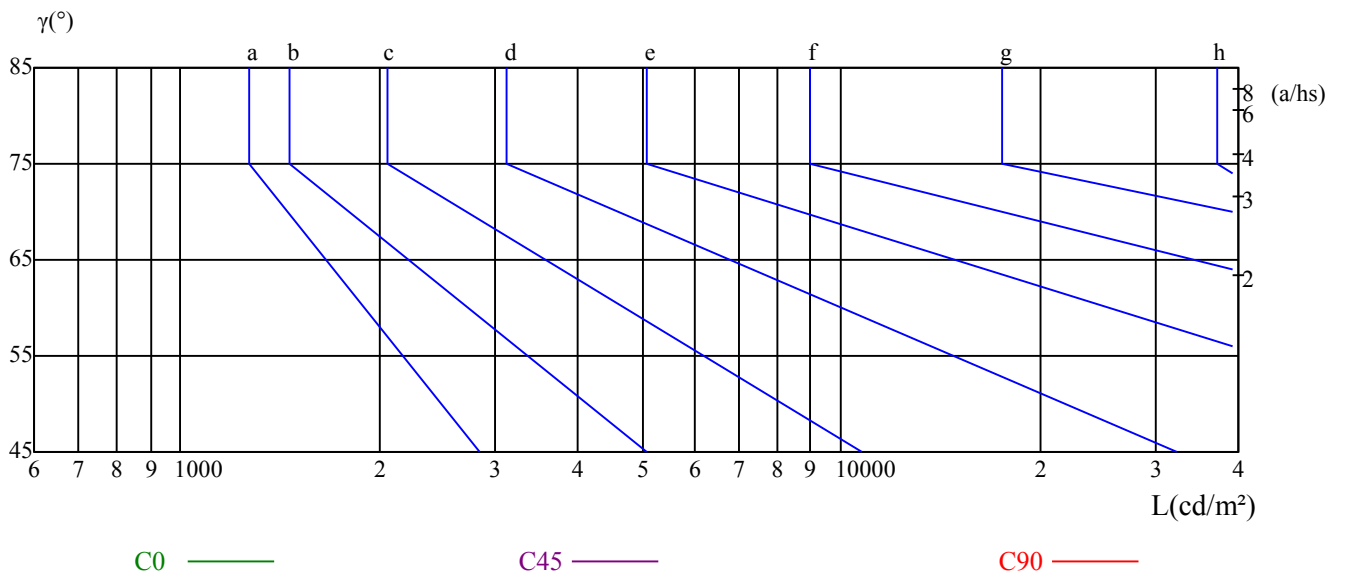
$\gamma$	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

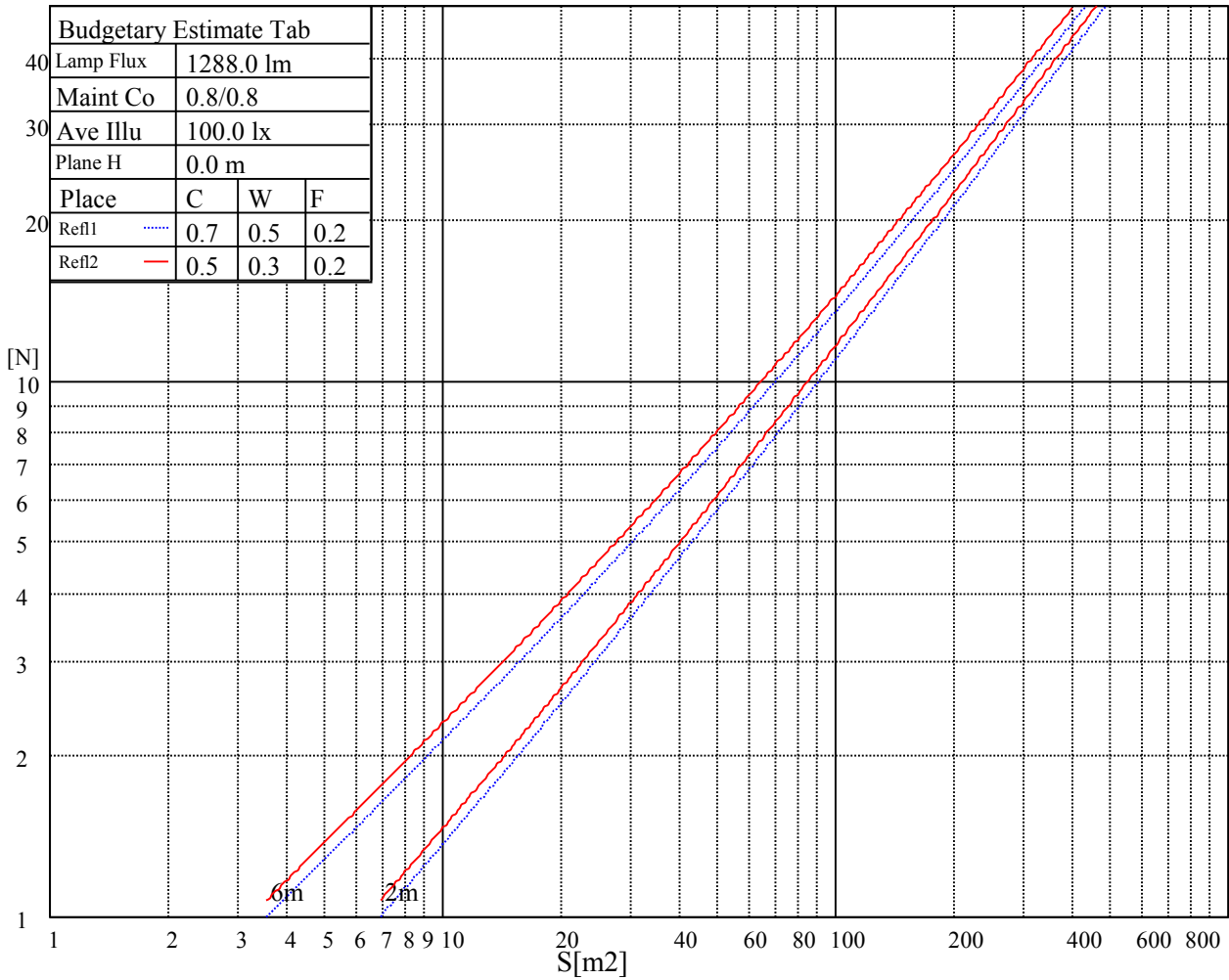
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

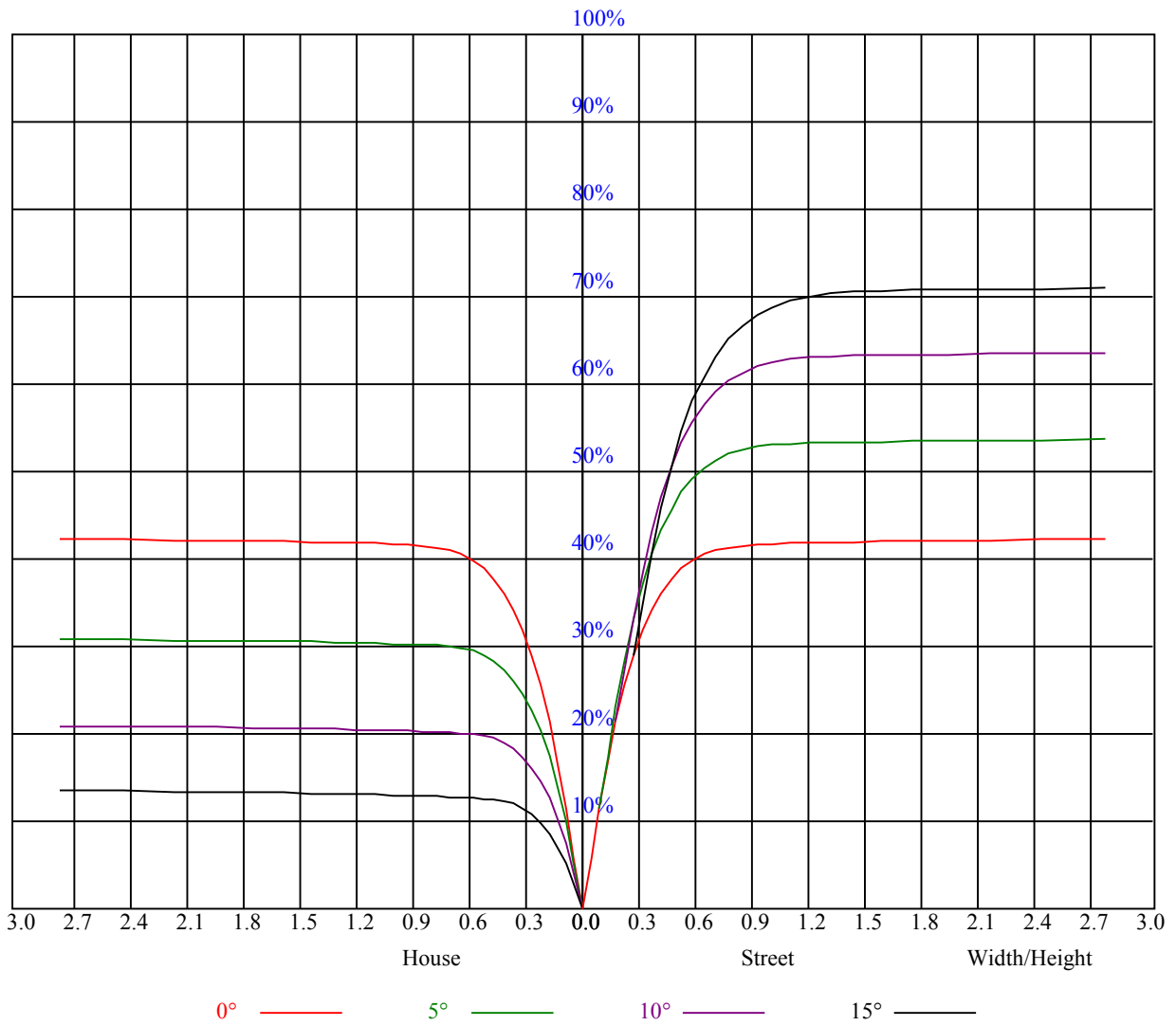
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

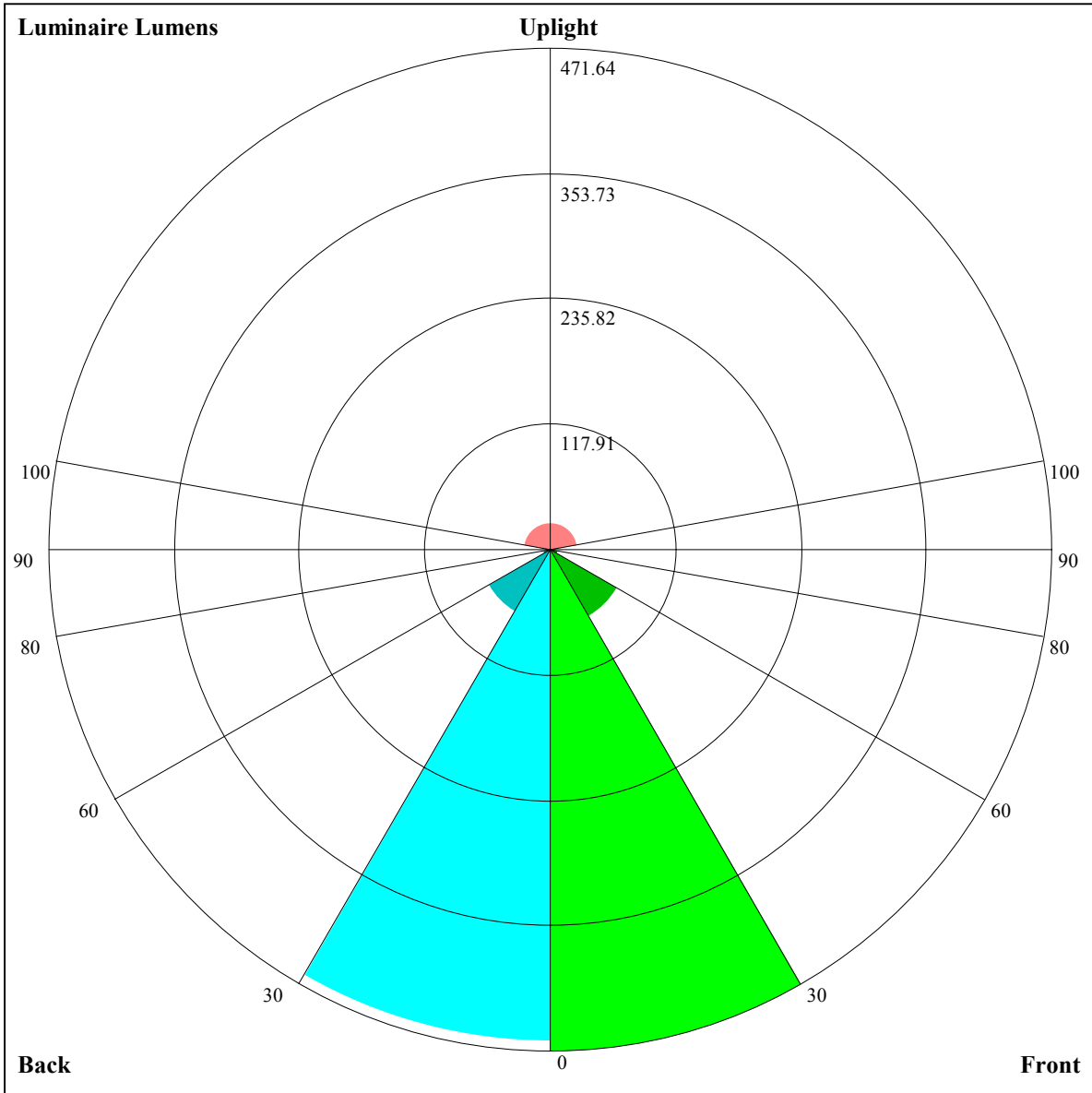
Luminance Limiting Curve





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	1.03	1.03	1.03	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.86
1	0.96	0.94	0.92	0.94	0.92	0.91	0.91	0.89	0.88	0.87	0.86	0.85	0.85	0.84	0.83	0.81
2	0.90	0.87	0.85	0.89	0.86	0.84	0.86	0.84	0.82	0.84	0.82	0.80	0.81	0.80	0.79	0.77
3	0.86	0.82	0.79	0.84	0.81	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.78	0.76	0.75	0.73
4	0.81	0.77	0.74	0.80	0.76	0.74	0.78	0.75	0.73	0.77	0.74	0.72	0.75	0.73	0.71	0.70
5	0.77	0.73	0.70	0.77	0.73	0.70	0.75	0.72	0.69	0.74	0.71	0.68	0.72	0.70	0.68	0.67
6	0.74	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.64
7	0.71	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.62	0.67	0.64	0.62	0.61
8	0.68	0.63	0.60	0.67	0.63	0.60	0.66	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.60	0.59
9	0.65	0.61	0.58	0.65	0.61	0.58	0.64	0.60	0.58	0.63	0.60	0.57	0.62	0.59	0.57	0.56
10	0.63	0.58	0.56	0.62	0.58	0.55	0.62	0.58	0.55	0.61	0.58	0.55	0.60	0.57	0.55	0.54





Luminaire Lumens:

FL=471.64,FM=72.47,FH=7.97,FVH=4.06

BL=462.47,BM=67.85,BH=7.24,BVH=3.61

UL=5.32,UH=25.34

BUG Rating:B1-U2-G0

NATA 1654-S

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	3095.44	2941.31	2382.19	1585.69	941.06	598.50	401.63	199.29	54.90
45.0	3082.50	3063.38	2660.63	1728.56	1024.88	628.31	423.00	291.38	75.09
90.0	3124.69	3074.06	2531.81	1667.81	960.64	582.36	378.62	191.19	56.81
135.0	3096.00	3067.88	2585.81	1710.00	1032.19	621.56	411.75	293.06	67.73
180.0	3095.44	2865.38	2183.06	1271.25	848.42	547.82	327.54	134.61	29.36
225.0	3082.50	2730.38	2040.19	1105.76	800.04	536.68	319.50	129.71	23.46
270.0	3124.69	2799.56	2117.25	1328.63	808.88	540.56	324.56	144.56	33.36
315.0	3096.00	2755.69	2023.88	1092.60	768.09	482.23	284.01	117.96	29.36
360.0	3095.44	2941.31	2382.19	1585.69	941.06	598.50	401.63	199.29	54.90
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	14.51	10.29	8.44	7.71	7.37	6.92	6.92	9.84	8.16
45.0	18.23	10.52	8.66	7.88	7.26	6.75	6.30	6.13	6.53
90.0	15.98	9.79	8.44	7.71	7.03	6.47	6.08	5.85	6.08
135.0	16.03	10.07	8.10	7.43	6.86	6.53	6.24	6.02	6.53
180.0	8.89	7.59	6.86	6.53	6.36	6.13	5.91	6.19	5.12
225.0	9.56	8.10	7.43	7.09	6.86	6.58	7.14	6.92	7.88
270.0	13.28	10.41	9.34	8.61	7.88	7.26	10.58	12.38	9.73
315.0	13.16	10.52	9.34	8.55	7.65	7.14	11.19	10.29	9.62
360.0	14.51	10.29	8.44	7.71	7.37	6.92	6.92	9.84	8.16
C/ $\gamma$ (°)	90.0								
0.0	4.84								
45.0	4.95								
90.0	4.89								
135.0	4.89								
180.0	4.78								
225.0	4.95								
270.0	4.89								
315.0	4.84								
360.0	4.84								