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## Nata

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Client:

LumCAT: CR01D020038BW

Luminaire:

Report No: GC2019091909

Voltage(V): 3.4000

Test No: GC20191016015

Current(A): 0.2990

LampCAT: CREE XPE2

Power (W): 1.0200

Lamp flux(lm): 96.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 20

Width(mm): 20

Phm Type: C

Height(mm): 0

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## Photometric Results

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Lumens(lm): 92.17, Efficiency(%): 96.01% , Luminous Efficacy(lm/W): 90.36

Central intensity(cd): 160.341, Maximum intensity(cd): 160.341

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

Beam Angle(50%Imax): [C0/180]Total=39.0

[C90/270]Total=39.0

Field angle(10%Imax): [C0/180]Total=73.8

[C90/270]Total=73.8

Maximum s/h(1/2): C0\_180=0.62 C90\_270=0.62

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(%): 96.01%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 95.582%

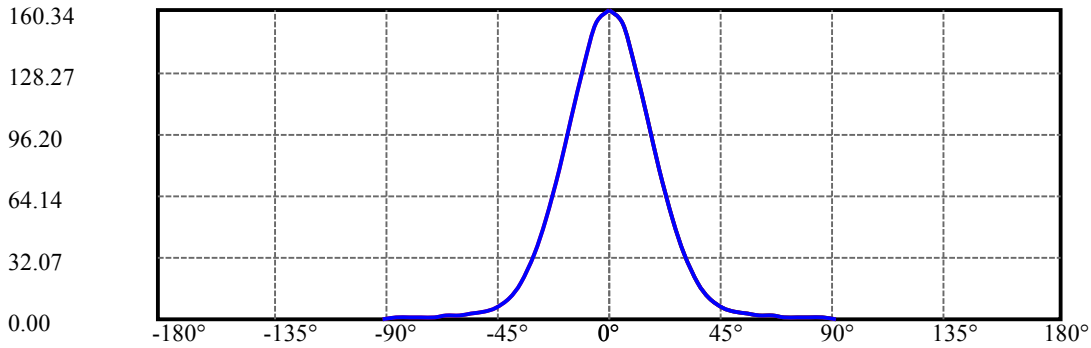
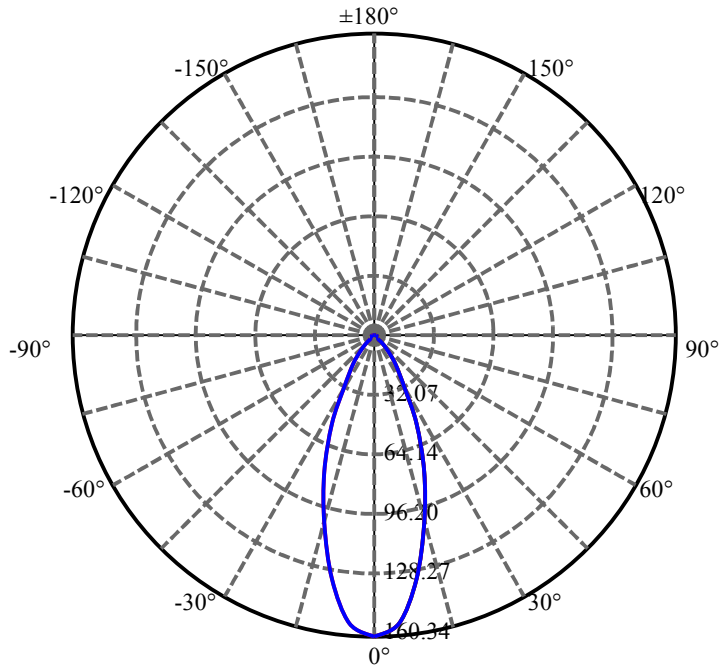
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	160.341	0.000	0	.000%	.000%
5.0	153.563	3.753	3.753	3.909%	4.071%
10.0	131.963	10.214	13.967	10.640%	15.153%
15.0	103.929	13.993	27.96	14.576%	30.335%
20.0	77.421	14.946	42.905	15.569%	46.550%
25.0	52.270	13.602	56.508	14.169%	61.308%
30.0	33.539	10.859	67.367	11.312%	73.089%
35.0	19.055	7.745	75.112	8.067%	81.492%
40.0	10.948	5.006	80.117	5.214%	86.923%
45.0	6.300	3.194	83.311	3.327%	90.388%
50.0	4.120	2.106	85.417	2.193%	92.672%
55.0	2.869	1.520	86.936	1.583%	94.321%
60.0	2.159	1.162	88.098	1.210%	95.582%
65.0	1.709	0.940	89.038	.979%	96.602%
70.0	1.427	0.794	89.832	.827%	97.463%
75.0	1.245	0.698	90.531	.727%	98.221%
80.0	1.167	0.645	91.176	.672%	98.921%
85.0	1.062	0.606	91.782	.631%	99.578%
90.0	0.359	0.389	92.171	.405%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	67.37	70.17%	73.09%
0-40	80.12	83.46%	86.92%
0-60	88.10	91.77%	95.58%
0-90	91.78	95.61%	99.58%
0-120	91.78	95.61%	99.58%
0-180	92.17	96.01%	100.00%
60-90	4.85	5.05%	5.26%
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%
0-34.11	73.74	76.81%	80.00%

ZONAL LUMEN SUMMARY

0-10	13.97
10-20	28.94
20-30	24.46
30-40	12.75
40-50	5.30
50-60	2.68
60-70	1.73
70-80	1.34
80-90	0.61
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: —————

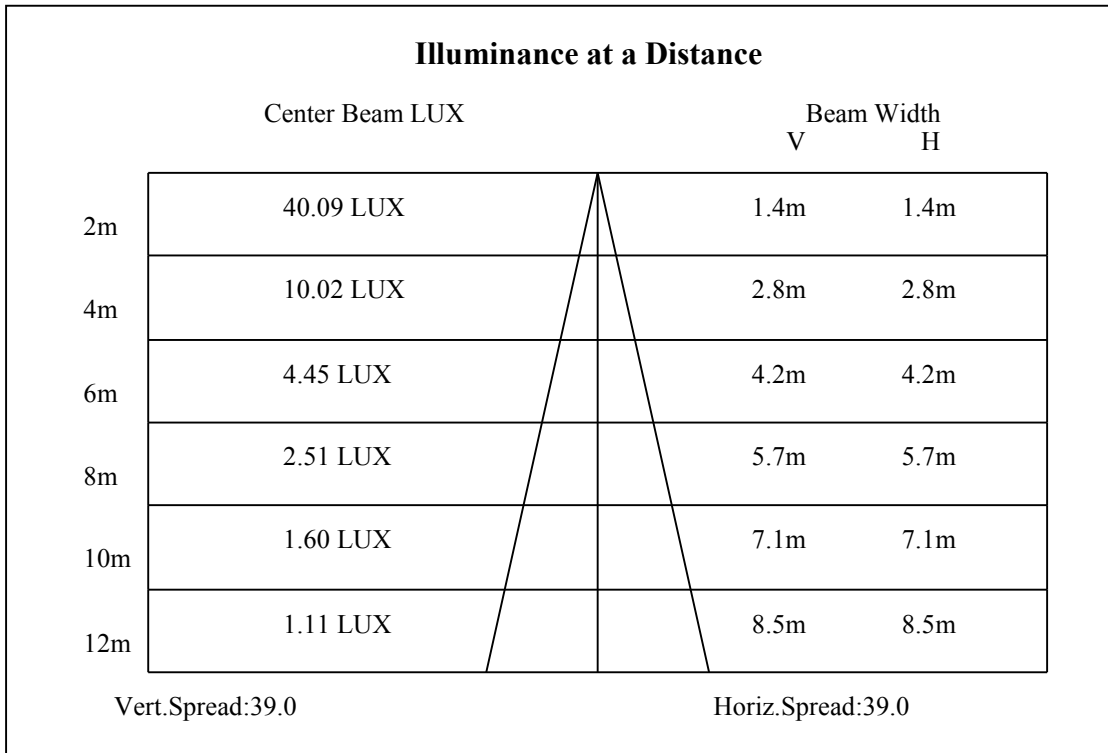
C90/C270: —————

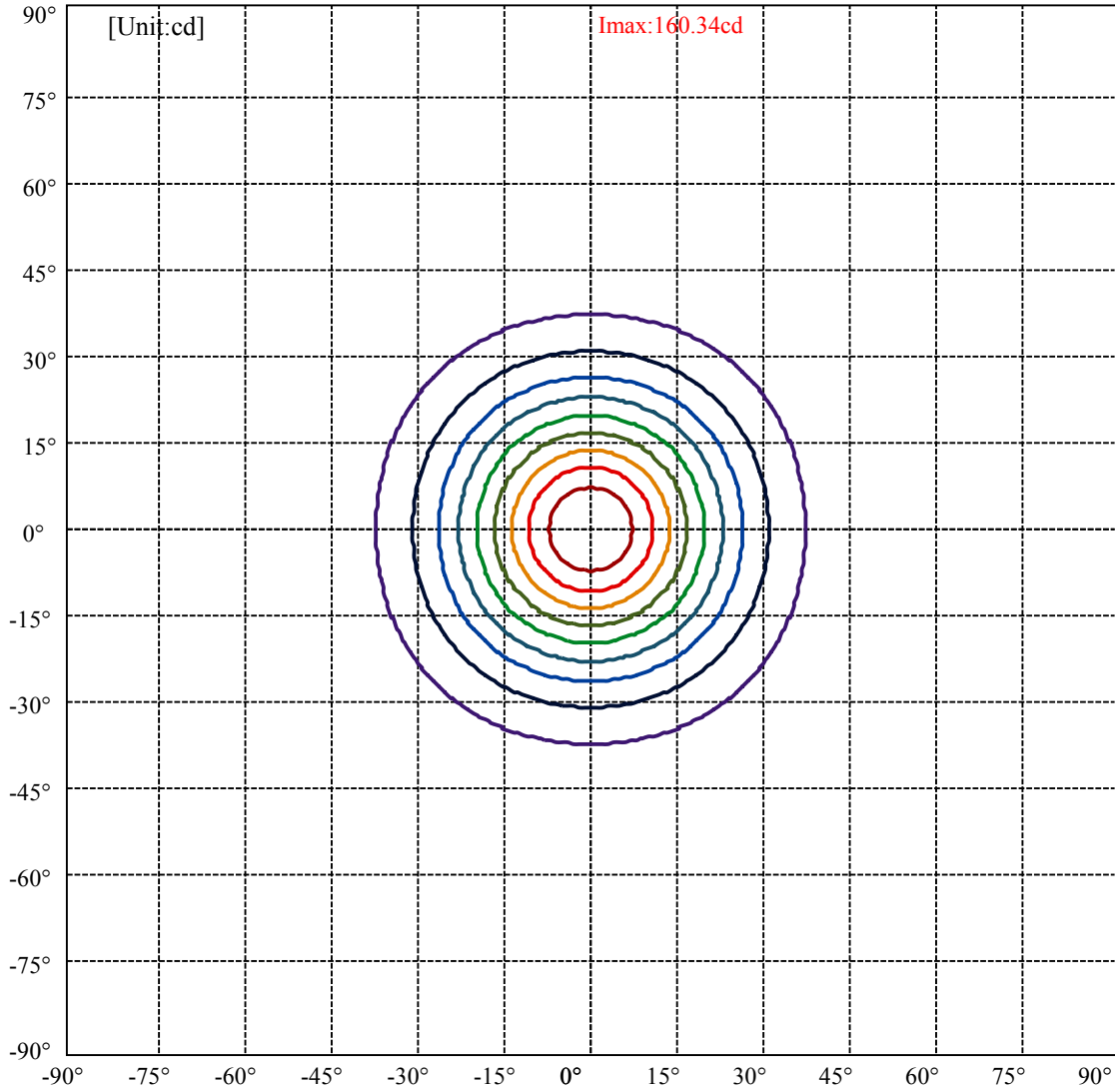
Field angle(10%Imax):C0/180Left:36.9 Right:36.9

:C90/270Left:36.9 Right:36.9

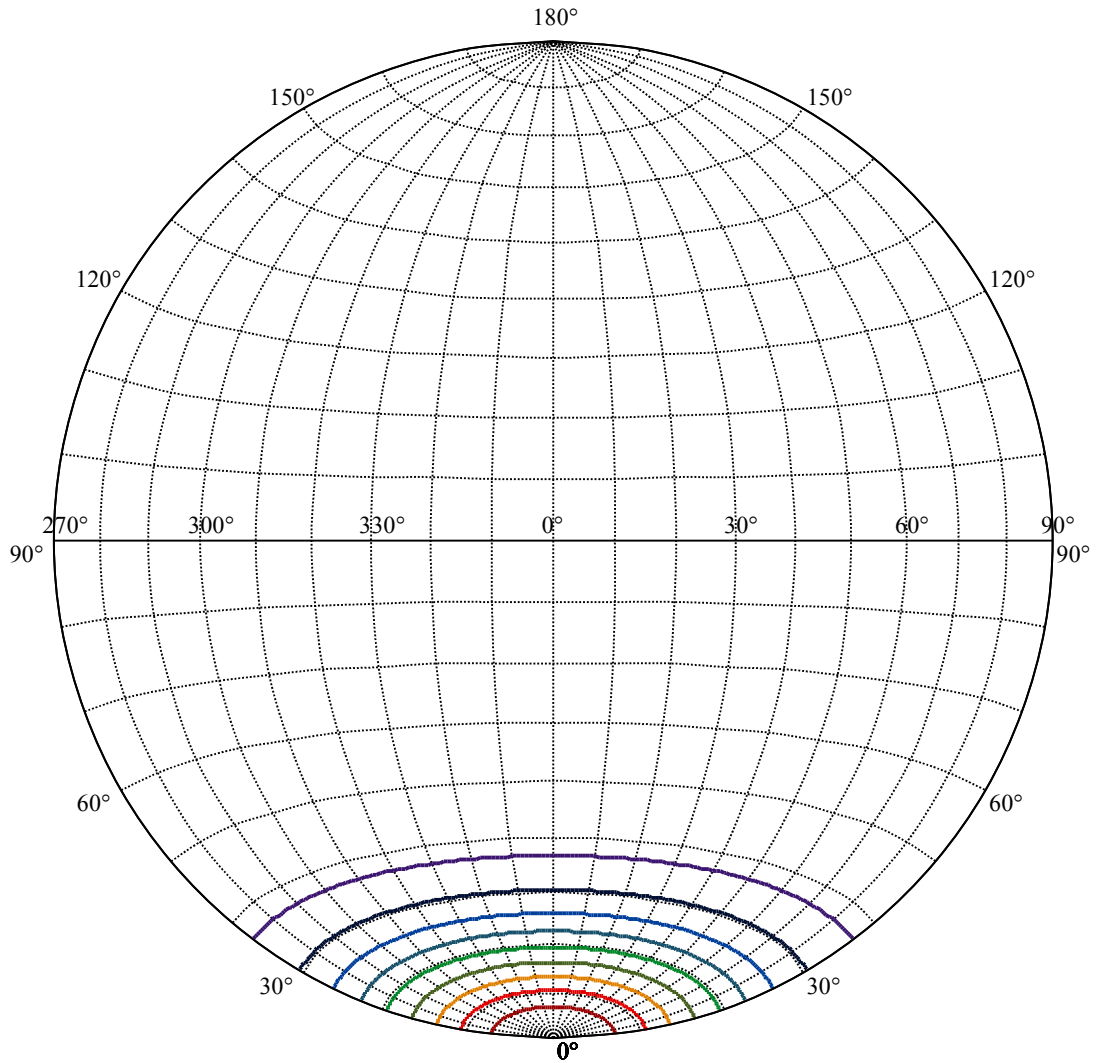
Beam Angle(50%Imax):C0/180Left:19.5 Right:19.5

:C90/270Left:19.5 Right:19.5





(10%Imax) 16.0341	—
(20%Imax) 32.0681	—
(30%Imax) 48.1022	—
(40%Imax) 64.1363	—
(50%Imax) 80.1703	—
(60%Imax) 96.2044	—
(70%Imax) 112.238	—
(80%Imax) 128.273	—
(90%Imax) 144.307	—



House

[Unit:cd]

Road

**Imax:160.34**

(10%Imax) 16.0341

(20%Imax) 32.0681

(30%Imax) 48.1022

(40%Imax) 64.1363

(50%Imax) 80.1703

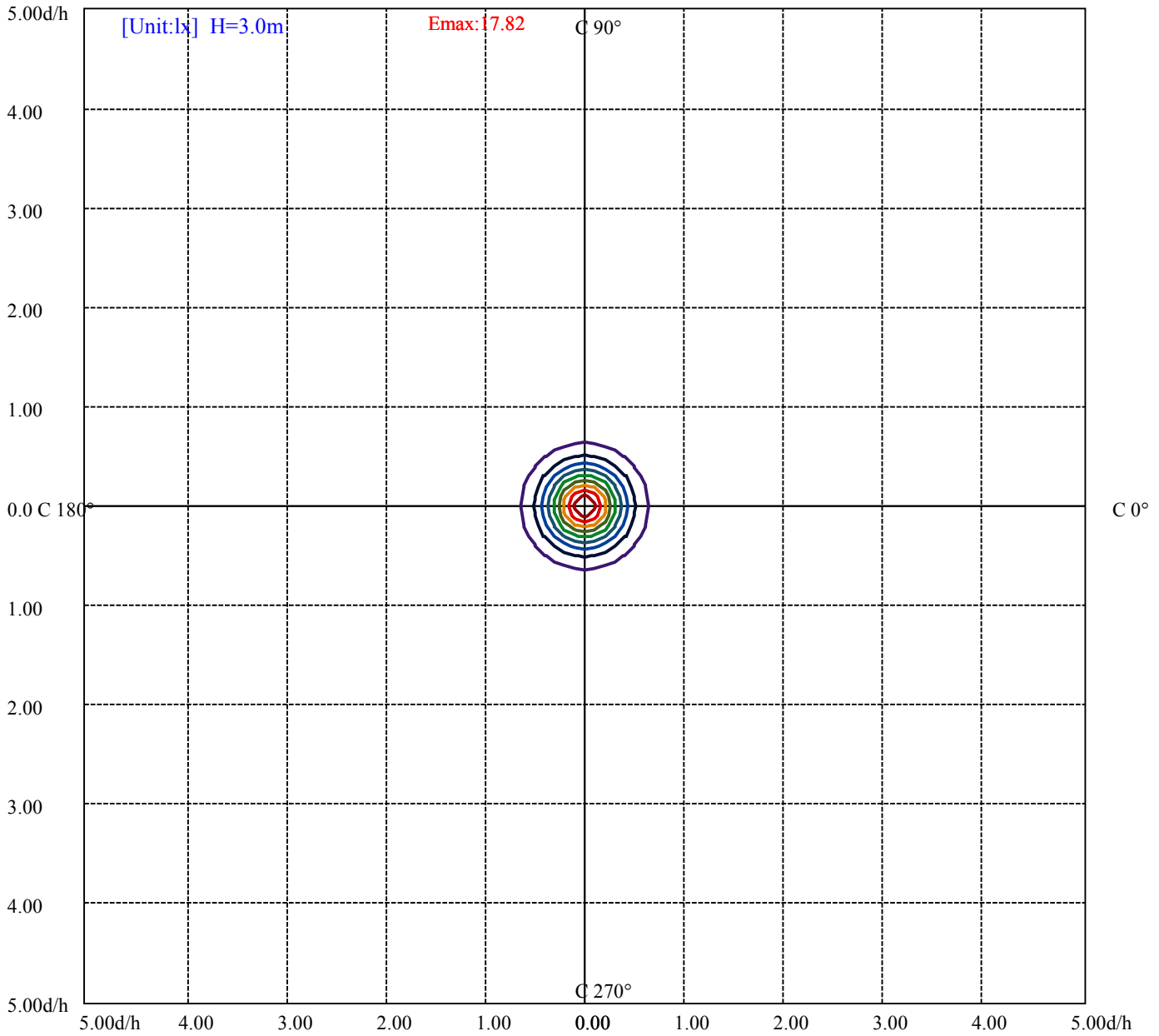
(60%Imax) 96.2044

(70%Imax) 112.238

(80%Imax) 128.273

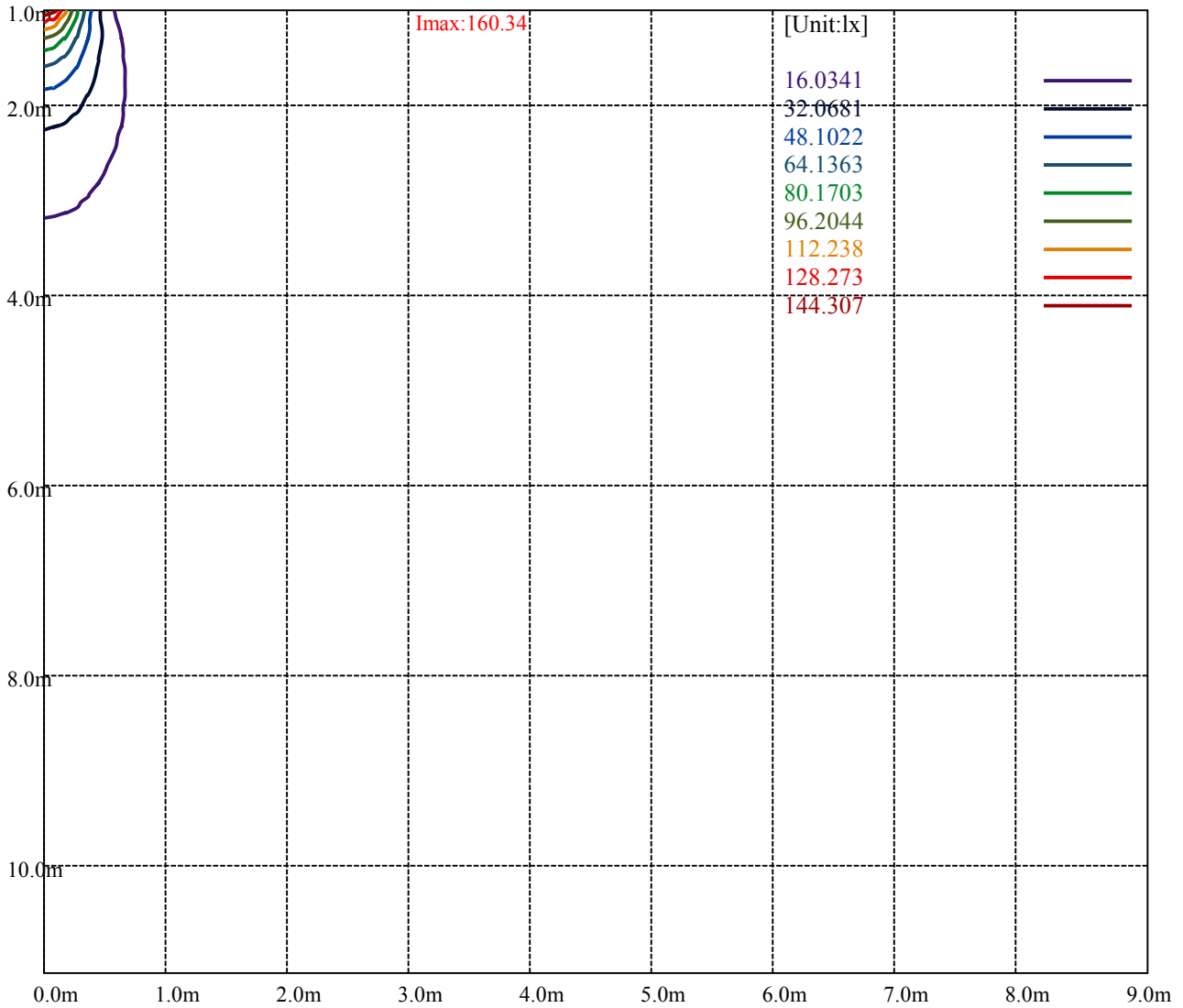
(90%Imax) 144.307





- (10%Emax) 1.781556 ———
- (20%Emax) 3.563122 ———
- (30%Emax) 5.344678 ———
- (40%Emax) 7.126245 ———
- (50%Emax) 8.9078 ———
- (60%Emax) 10.68937 ———
- (70%Emax) 12.47089 ———
- (80%Emax) 14.25245 ———
- (90%Emax) 16.034 ———





Luminance Table

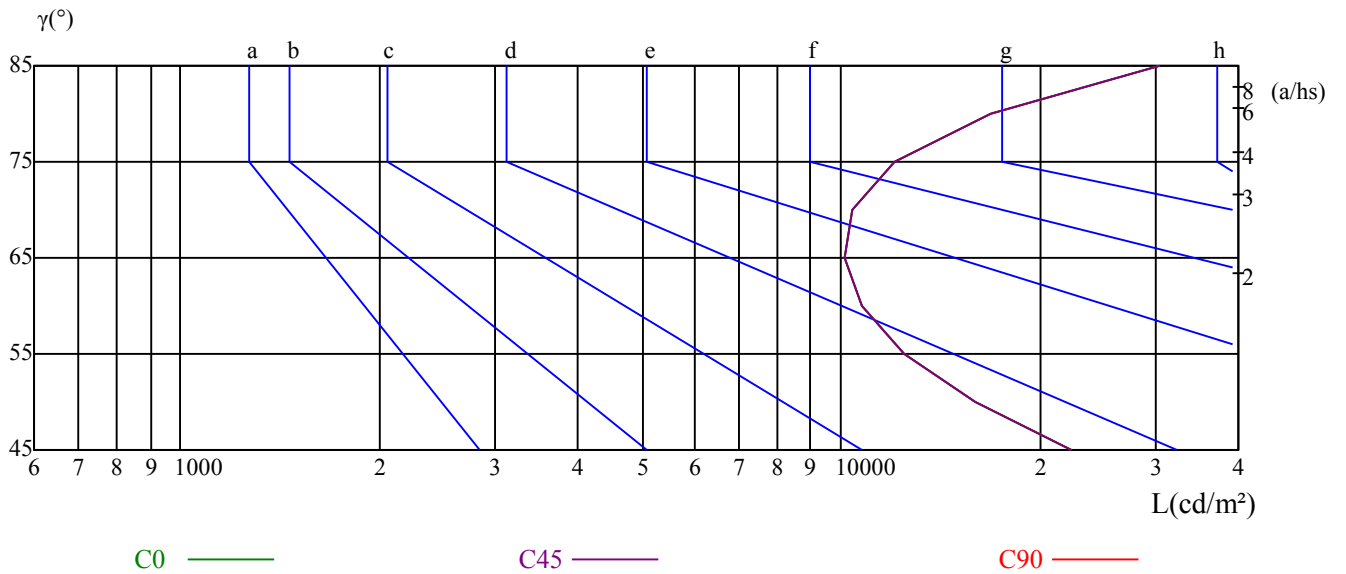
$\gamma$	45	50	55	60	65	70	75	80	85
C0	22274	16025	12504	10793	10107	10433	12021	16804	30455
C45	22274	16025	12504	10793	10107	10433	12021	16804	30455
C90	22274	16025	12504	10793	10107	10433	12021	16804	30455

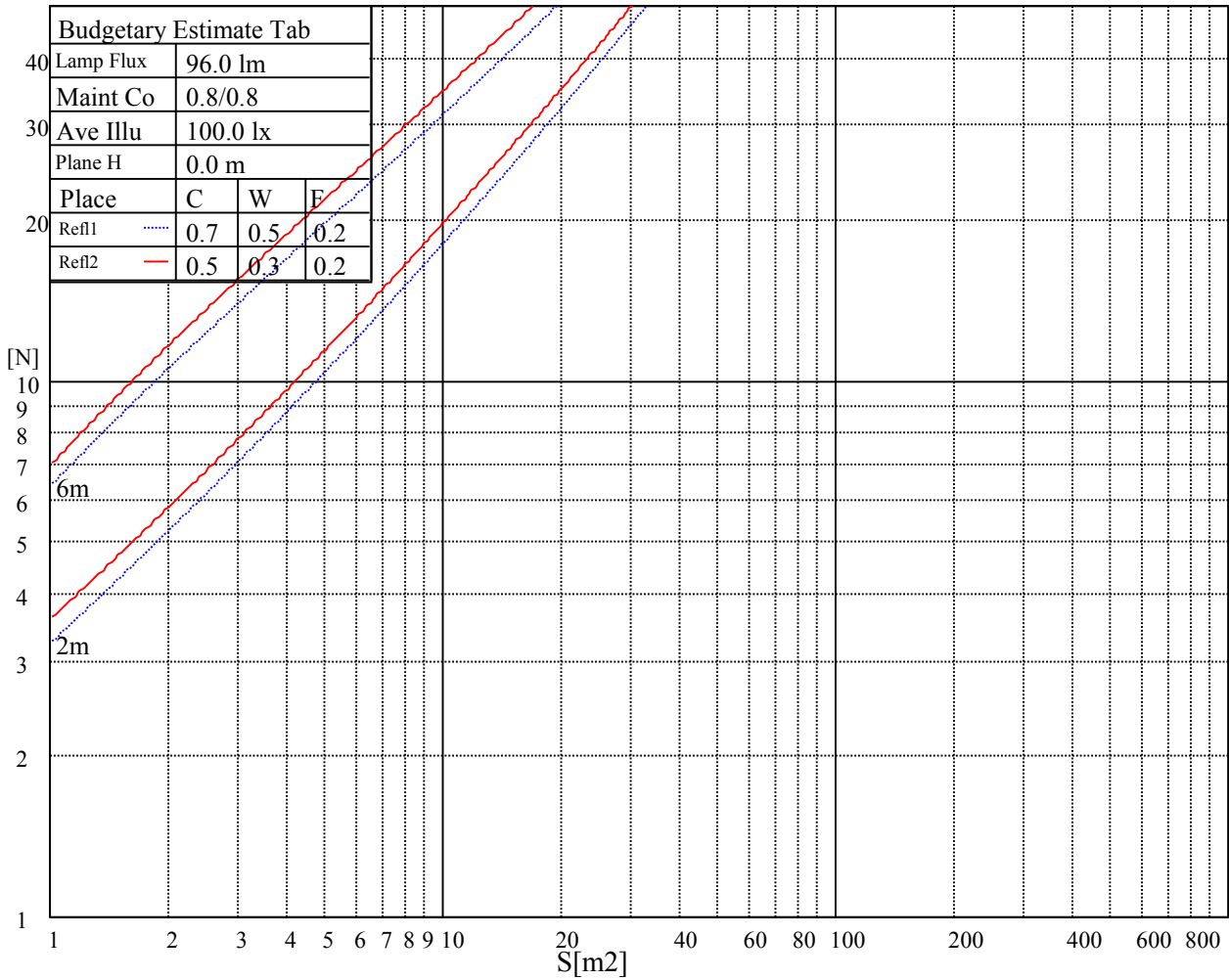
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
10107	10107	10107	12021	12021	12021	30455	30455	30455

Glare Table

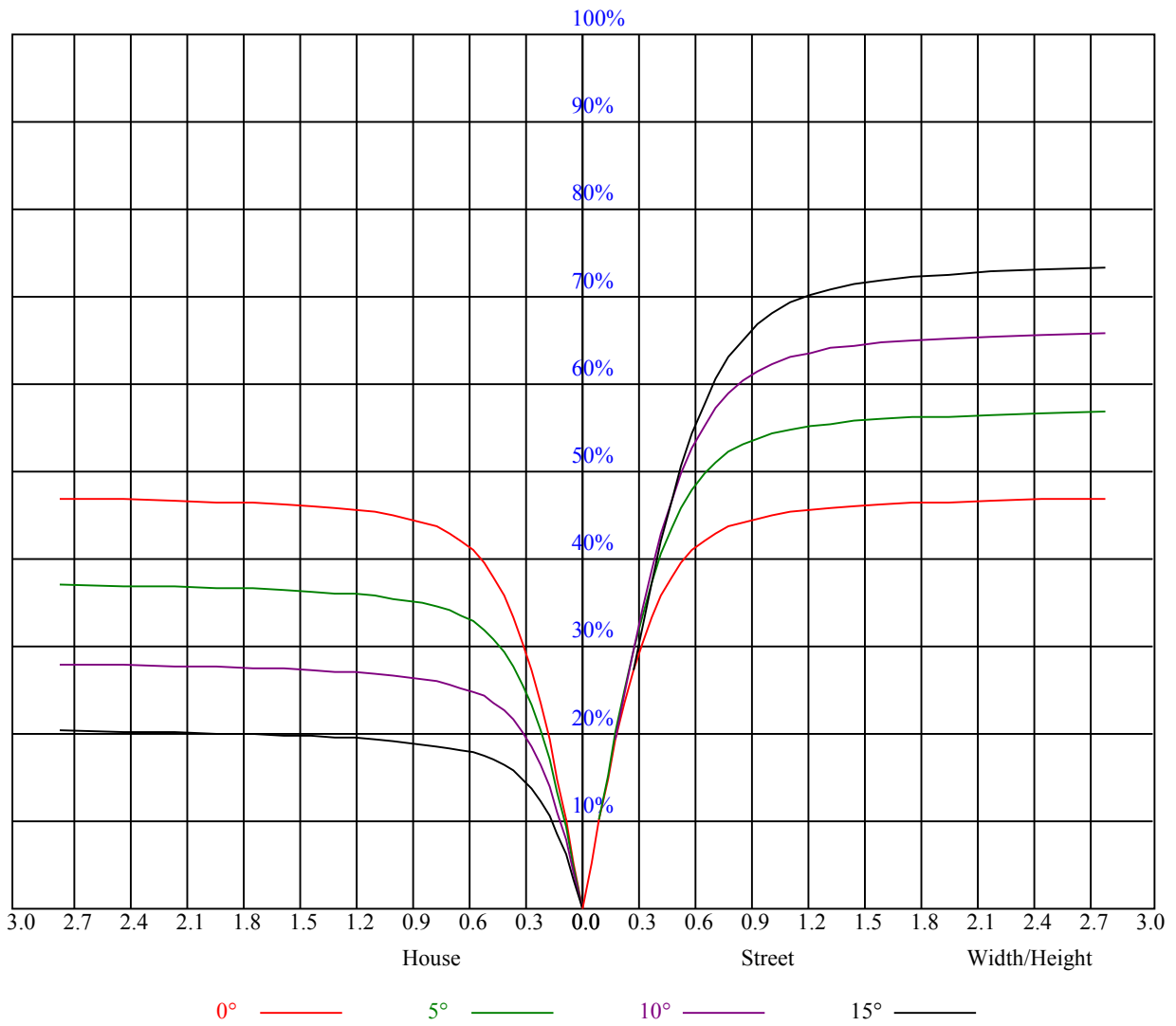
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

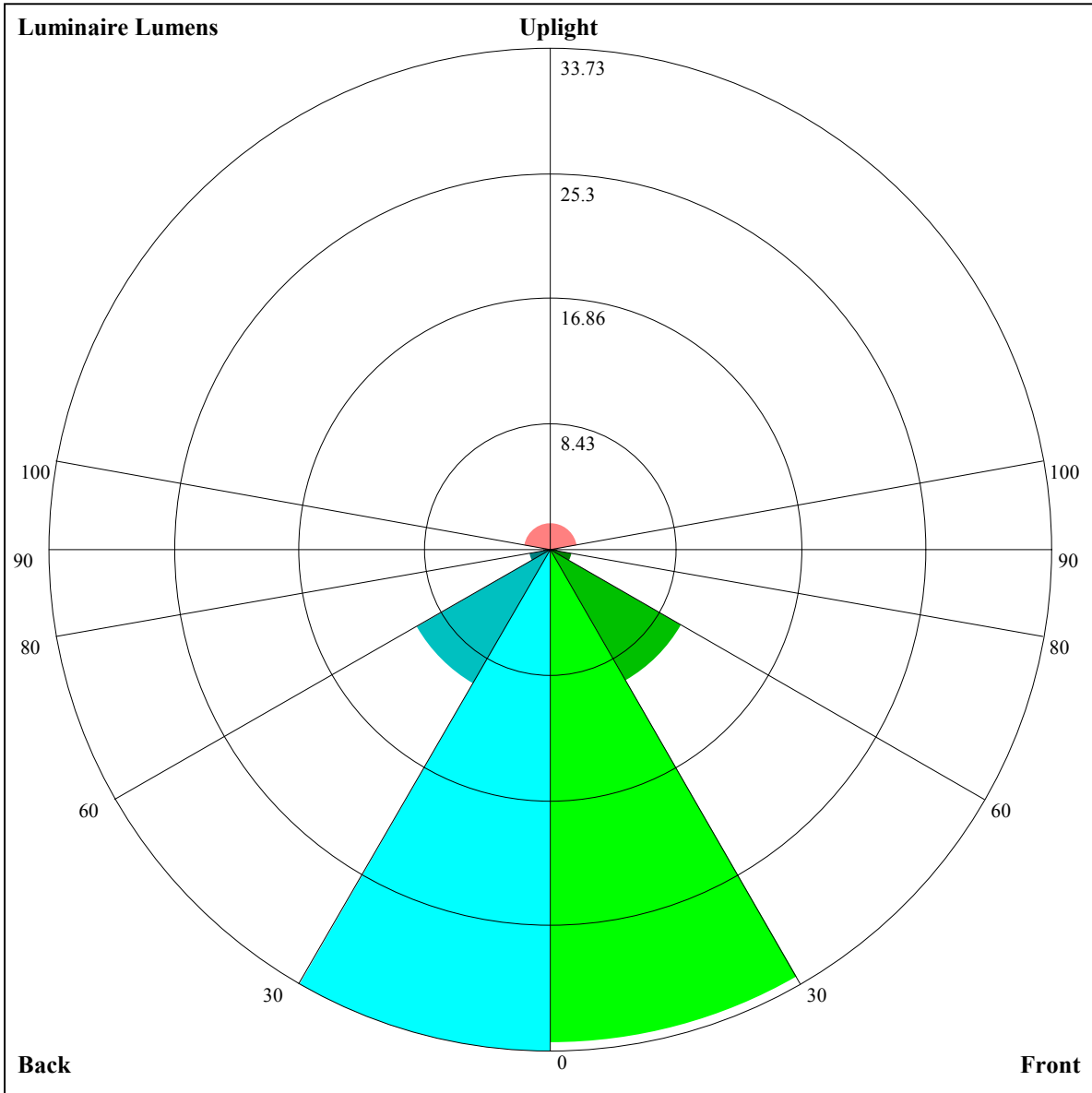
Luminance Limiting Curve





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	1.14	1.14	1.14	1.12	1.12	1.12	1.07	1.07	1.07	1.02	1.02	1.02	0.98	0.98	0.98	0.96
1	1.05	1.03	1.01	1.03	1.01	0.99	0.99	0.98	0.96	0.96	0.94	0.93	0.93	0.91	0.90	0.89
2	0.98	0.94	0.90	0.96	0.93	0.89	0.93	0.90	0.87	0.90	0.88	0.86	0.88	0.86	0.84	0.82
3	0.91	0.86	0.82	0.90	0.85	0.82	0.87	0.84	0.80	0.85	0.82	0.79	0.83	0.80	0.78	0.76
4	0.86	0.80	0.76	0.84	0.79	0.76	0.82	0.78	0.75	0.80	0.77	0.74	0.79	0.76	0.73	0.72
5	0.80	0.75	0.71	0.80	0.74	0.70	0.78	0.73	0.70	0.76	0.72	0.69	0.75	0.71	0.69	0.67
6	0.76	0.70	0.66	0.75	0.70	0.66	0.74	0.69	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.63
7	0.72	0.66	0.62	0.71	0.66	0.62	0.70	0.65	0.62	0.69	0.64	0.61	0.68	0.64	0.61	0.60
8	0.68	0.62	0.59	0.68	0.62	0.58	0.66	0.62	0.58	0.66	0.61	0.58	0.65	0.61	0.58	0.56
9	0.65	0.59	0.55	0.64	0.59	0.55	0.63	0.59	0.55	0.63	0.58	0.55	0.62	0.58	0.55	0.54
10	0.62	0.56	0.53	0.61	0.56	0.53	0.60	0.56	0.52	0.60	0.55	0.52	0.59	0.55	0.52	0.51





Luminaire Lumens:

FL=33.23,FM=10.17,FH=1.52,FVH=0.49

BL=33.73,BM=10.39,BH=1.54,BVH=0.49

UL=0.39,UH=1.86

BUG Rating:B0-U1-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	159.30	151.48	129.38	104.57	75.71	51.30	34.88	19.41	11.14
45.0	162.34	143.66	117.79	91.74	71.44	50.06	33.24	19.97	11.59
90.0	157.16	134.16	108.28	84.60	65.81	46.52	30.94	18.28	10.74
135.0	162.56	143.94	118.74	96.02	73.46	52.59	35.27	20.81	11.81
180.0	159.30	151.59	129.32	101.70	74.53	52.65	33.69	19.01	11.31
225.0	162.34	166.73	149.18	115.48	86.06	55.13	33.86	18.96	10.52
270.0	157.16	172.97	159.24	126.51	91.97	58.61	35.33	19.35	10.74
315.0	162.56	163.97	143.78	110.81	80.38	51.30	31.11	16.65	9.73
360.0	159.30	151.48	129.38	104.57	75.71	51.30	34.88	19.41	11.14
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	6.41	4.22	2.93	2.19	1.74	1.46	1.29	1.24	1.13
45.0	6.69	4.39	3.04	2.25	1.69	1.46	1.24	1.18	1.18
90.0	6.36	3.94	2.81	2.08	1.69	1.41	1.18	1.07	0.90
135.0	6.69	4.44	3.04	2.25	1.80	1.46	1.24	1.18	1.07
180.0	6.53	4.16	2.93	2.19	1.74	1.46	1.29	1.18	1.07
225.0	6.02	3.99	2.81	2.14	1.69	1.41	1.24	1.18	1.07
270.0	6.13	4.16	2.76	2.14	1.69	1.41	1.24	1.13	1.01
315.0	5.57	3.66	2.64	2.03	1.63	1.35	1.24	1.18	1.07
360.0	6.41	4.22	2.93	2.19	1.74	1.46	1.29	1.24	1.13
C/ $\gamma$ (°)	90.0								
0.0	0.34								
45.0	0.34								
90.0	0.34								
135.0	0.39								
180.0	0.39								
225.0	0.34								
270.0	0.39								
315.0	0.34								
360.0	0.34								