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Nata

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Client:

LumCAT: 1655-N

Luminaire: 92.70.044.00

Report No: nata-0100

Test No: GC2018060207

LampCAT: NICHIA NFCWS024B-V3

Lamp flux(lm): 1023.0

Number of Lamps: 1

Length(mm): 32

Phm Type: C

Voltage(V): 36.3000

Current(A): 0.3000

Power (W): 10.8900

PF: 0.0000

Ballast type: DC

Width(mm): 32

Height(mm): 0

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Photometric Results

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Lumens(lm): 901.15, Efficiency(%): 88.09% , Luminous Efficacy(lm/W): 82.75

Central intensity(cd): 2319.320, Maximum intensity(cd): 2319.320

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

Beam Angle(50%Imax): [C0/180]Total=32.0

[C90/270]Total=32.0

Field angle(10%Imax): [C0/180]Total=65.2

[C90/270]Total=65.2

Maximum s/h(1/2): C0\_180=0.53 C90\_270=0.53

Maximum s/h(1/4): C0\_180=0.55 C90\_270=0.55

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 89.36%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 96.923%

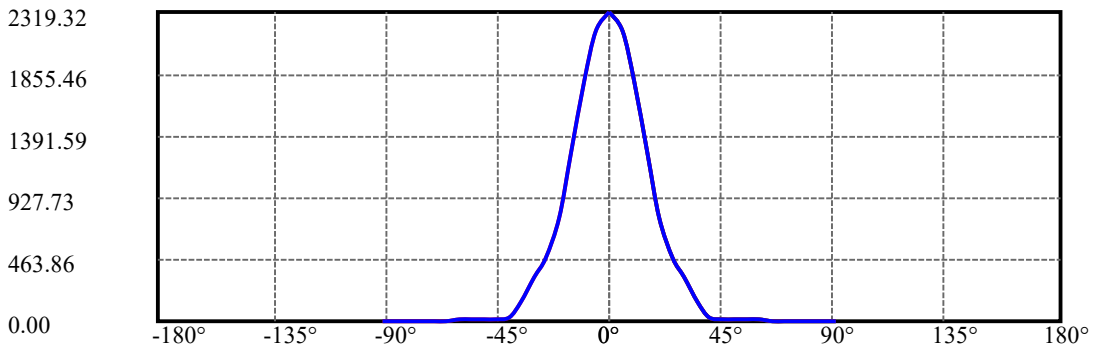
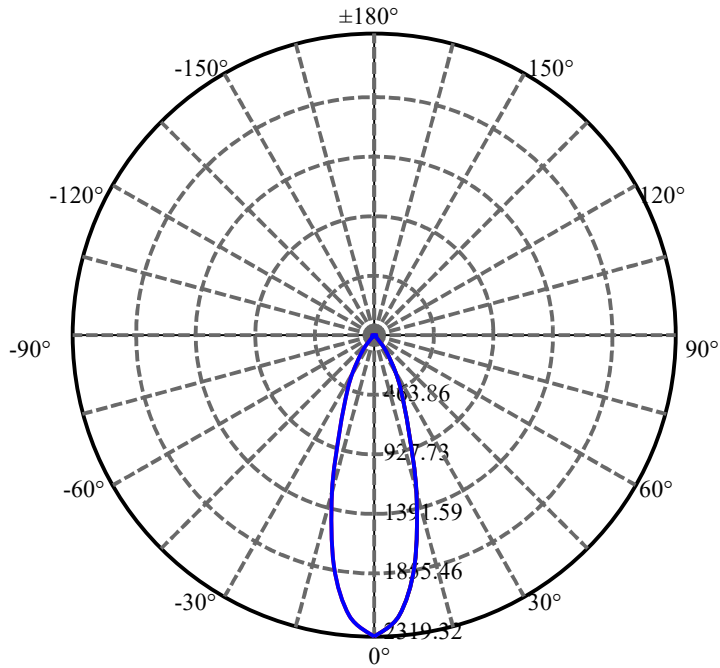
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2319.320	13.870	13.87	1.356%	1.539%
5.0	2171.424	103.736	117.606	10.140%	13.051%
10.0	1807.089	172.004	289.61	16.814%	32.138%
15.0	1255.224	178.077	467.687	17.407%	51.899%
20.0	781.312	146.476	614.163	14.318%	68.154%
25.0	475.639	110.183	724.346	10.771%	80.381%
30.0	325.349	89.168	813.514	8.716%	90.275%
35.0	142.555	44.819	858.333	4.381%	95.249%
40.0	28.767	10.136	868.469	.991%	96.374%
45.0	14.645	5.676	874.145	.555%	97.004%
50.0	10.819	4.543	878.688	.444%	97.508%
55.0	8.637	3.878	882.566	.379%	97.938%
60.0	7.288	3.460	886.025	.338%	98.322%
65.0	6.400	3.180	889.205	.311%	98.675%
70.0	5.822	2.999	892.204	.293%	99.008%
75.0	5.340	2.828	895.031	.276%	99.321%
80.0	4.824	2.604	897.635	.255%	99.610%
85.0	4.418	2.413	900.048	.236%	99.878%
90.0	4.005	1.098	901.146	.107%	100.000%

## ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	813.51	79.52%	90.28%
0-40	868.47	84.89%	96.37%
0-60	886.03	86.61%	98.32%
0-90	900.05	87.98%	99.88%
0-120	900.05	87.98%	99.88%
0-180	901.15	88.09%	100.00%
60-90	17.48	1.71%	1.94%
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%
0-24.84	720.92	70.47%	80.00%

## ZONAL LUMEN SUMMARY

0-10	289.61
10-20	324.55
20-30	199.35
30-40	54.95
40-50	10.22
50-60	7.34
60-70	6.18
70-80	5.43
80-90	2.41
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: —————

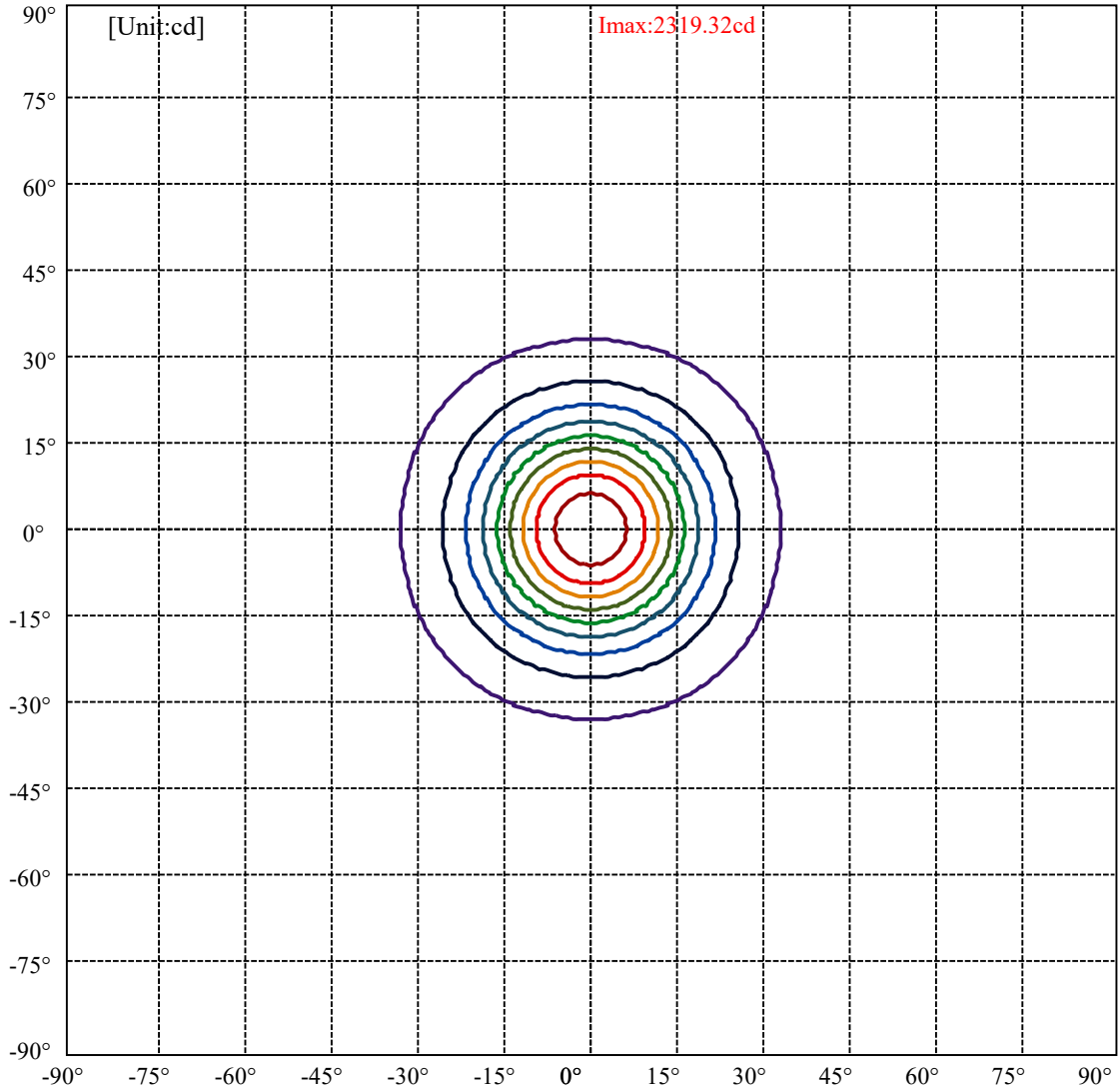
Field angle(10%Imax):C0/180Left:32.6 Right:32.6

:C90/270Left:32.6 Right:32.6

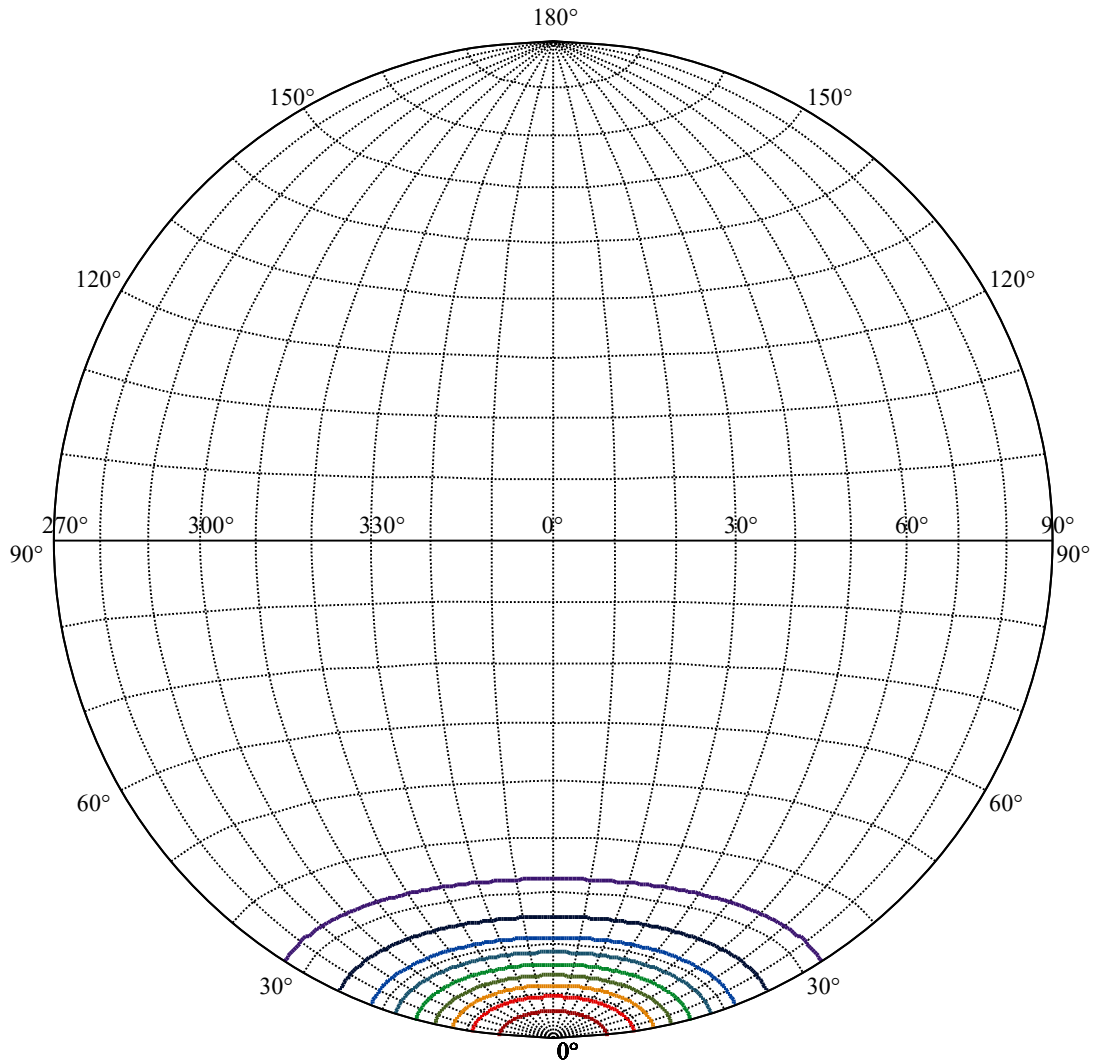
Beam Angle(50%Imax):C0/180Left:16.0 Right:16.0

:C90/270Left:16.0 Right:16.0





(10%Imax) 231.932	—
(20%Imax) 463.864	—
(30%Imax) 695.796	—
(40%Imax) 927.728	—
(50%Imax) 1159.66	—
(60%Imax) 1391.59	—
(70%Imax) 1623.52	—
(80%Imax) 1855.46	—
(90%Imax) 2087.39	—



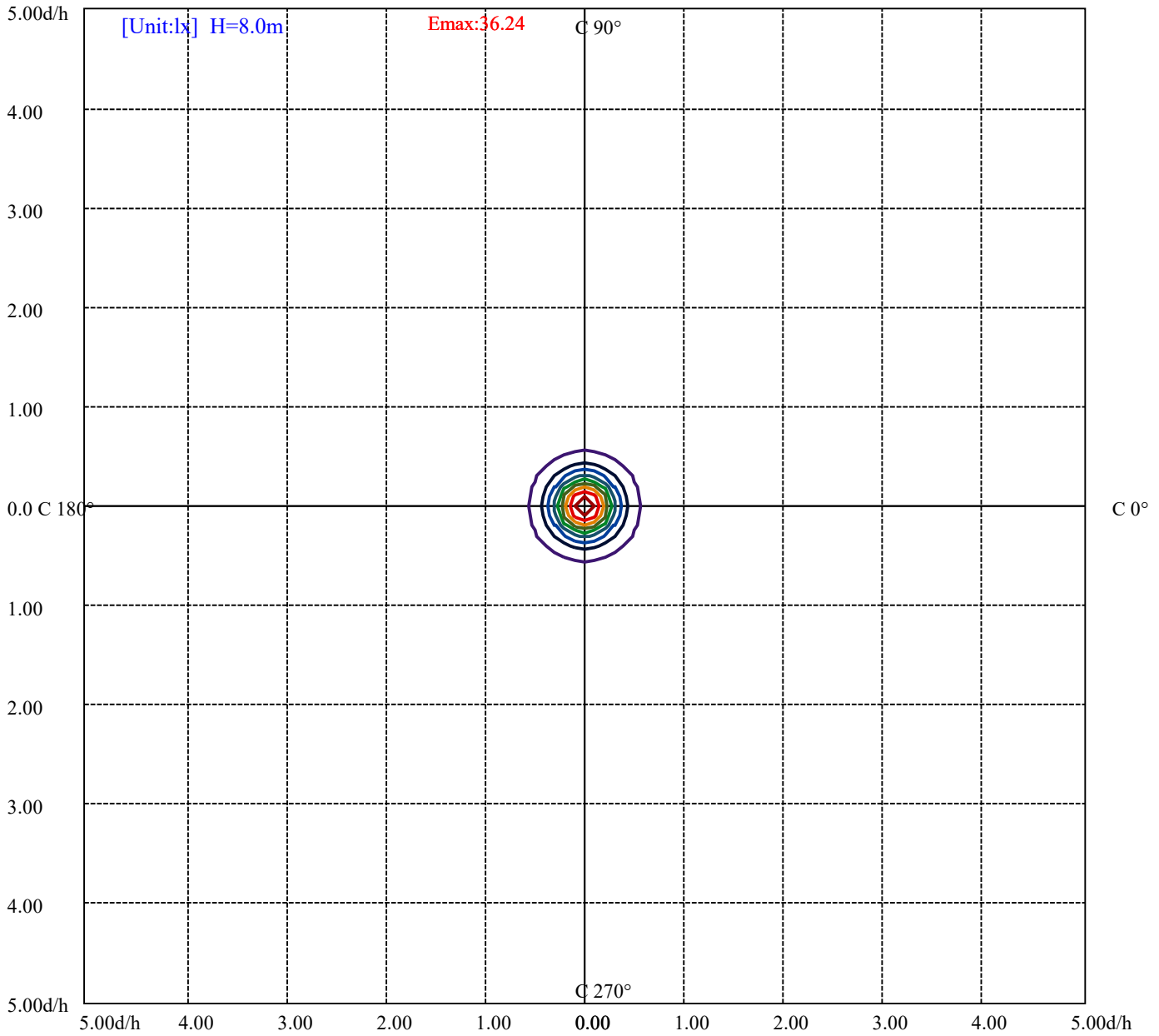
House

[Unit:cd]

Road

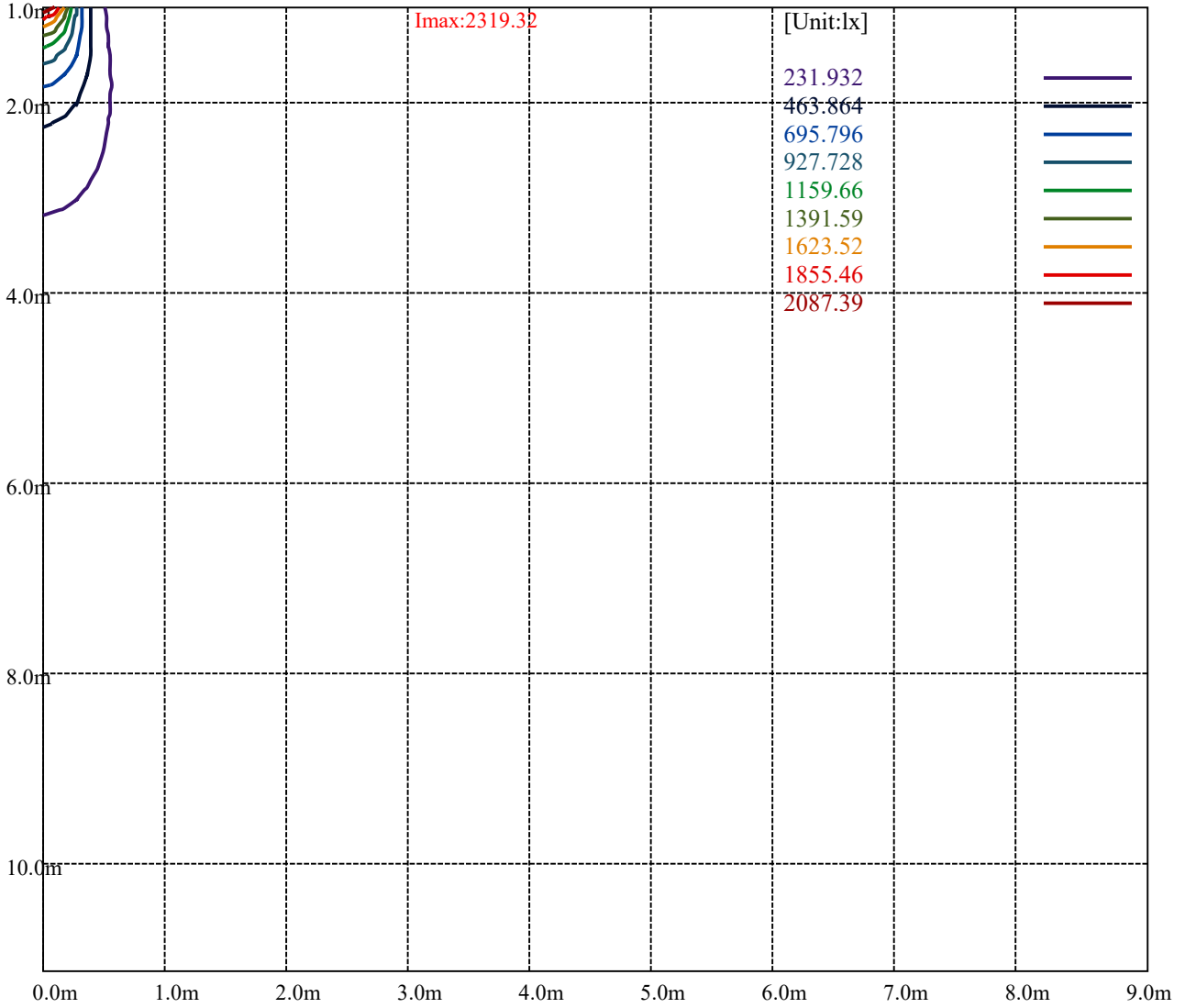
Imax:2319.32

(10%Imax) 231.932	—
(20%Imax) 463.864	—
(30%Imax) 695.796	—
(40%Imax) 927.728	—
(50%Imax) 1159.66	—
(60%Imax) 1391.59	—
(70%Imax) 1623.52	—
(80%Imax) 1855.46	—
(90%Imax) 2087.39	—



- (10%Emax) 3.623938
- (20%Emax) 7.247859
- (30%Emax) 10.8718
- (40%Emax) 14.49572
- (50%Emax) 18.11969
- (60%Emax) 21.74359
- (70%Emax) 25.3675
- (80%Emax) 28.99141
- (90%Emax) 32.61531





Luminance Table

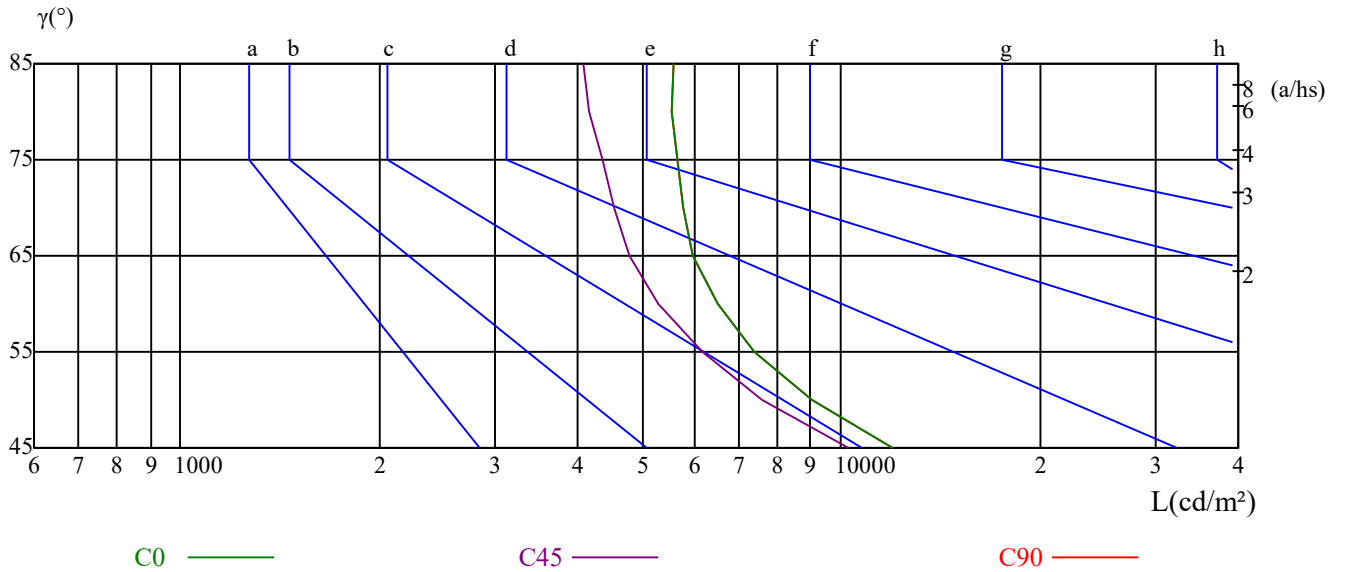
$\gamma$	45	50	55	60	65	70	75	80	85
C0	11986	9034	7420	6497	5977	5754	5651	5538	5589
C45	10255	7614	6157	5303	4794	4528	4353	4165	4087
C90	11986	9034	7420	6497	5977	5754	5651	5538	5589

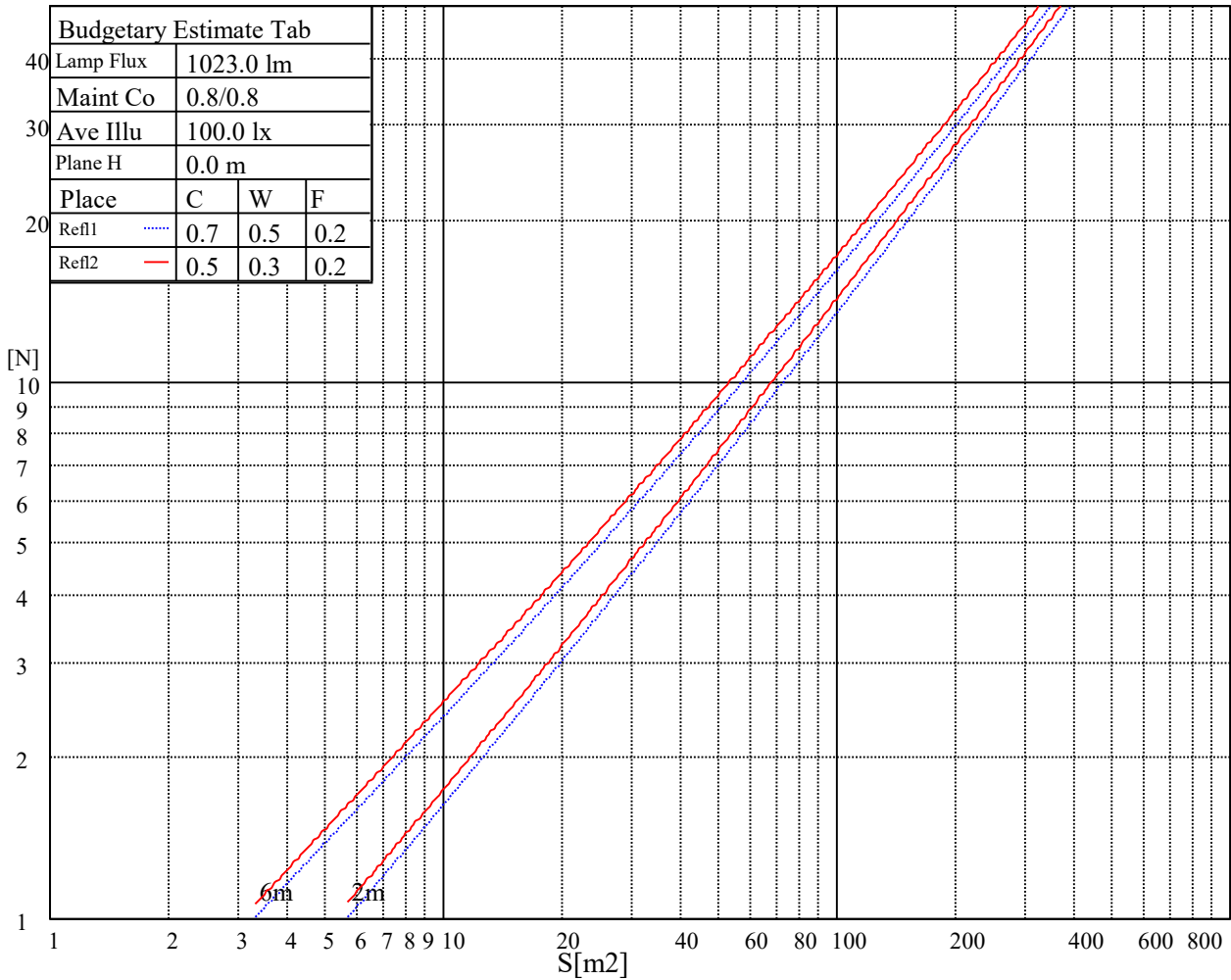
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
14789	14789	14789	20150	20150	20150	49506	49506	49506

Glare Table

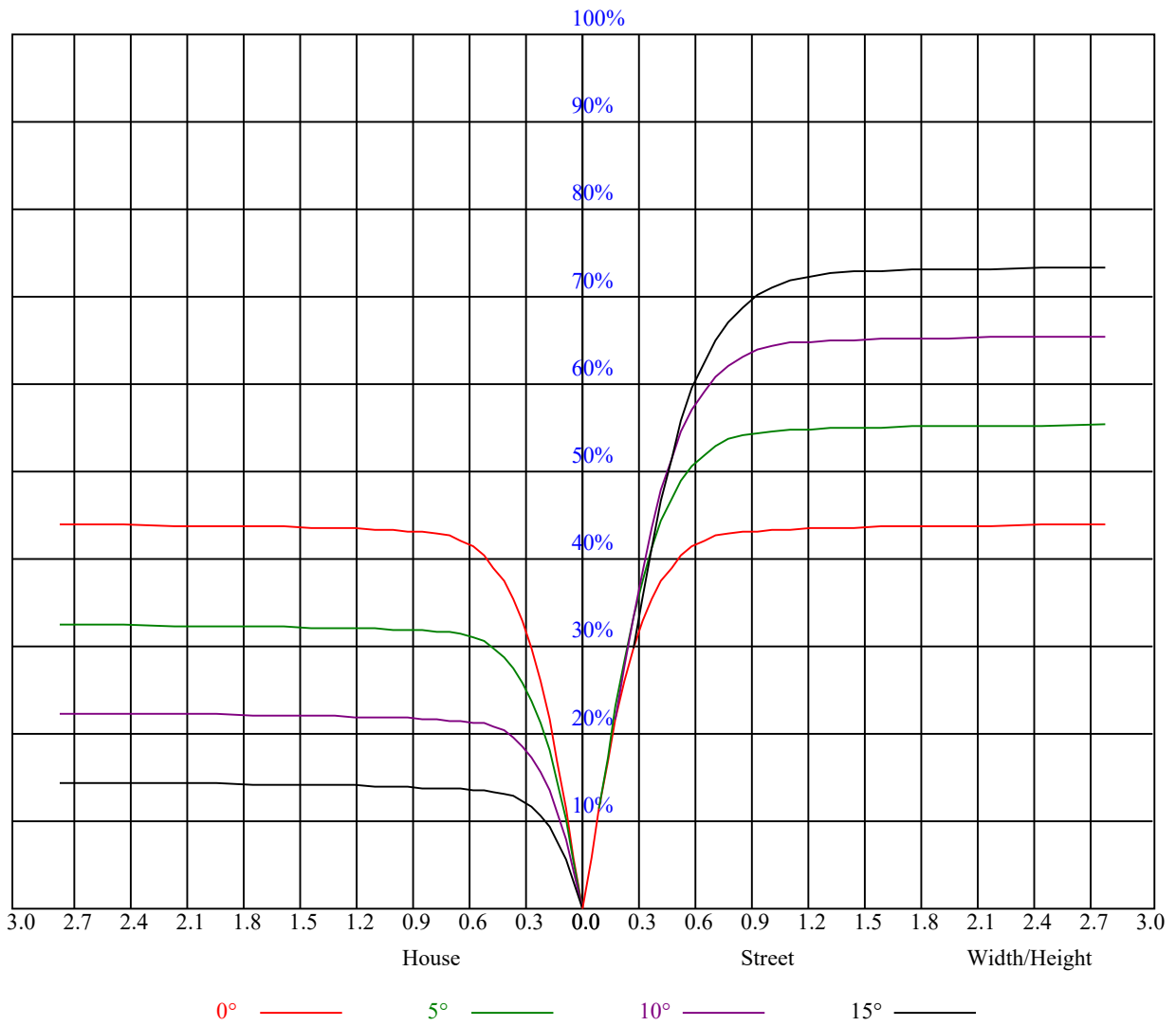
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

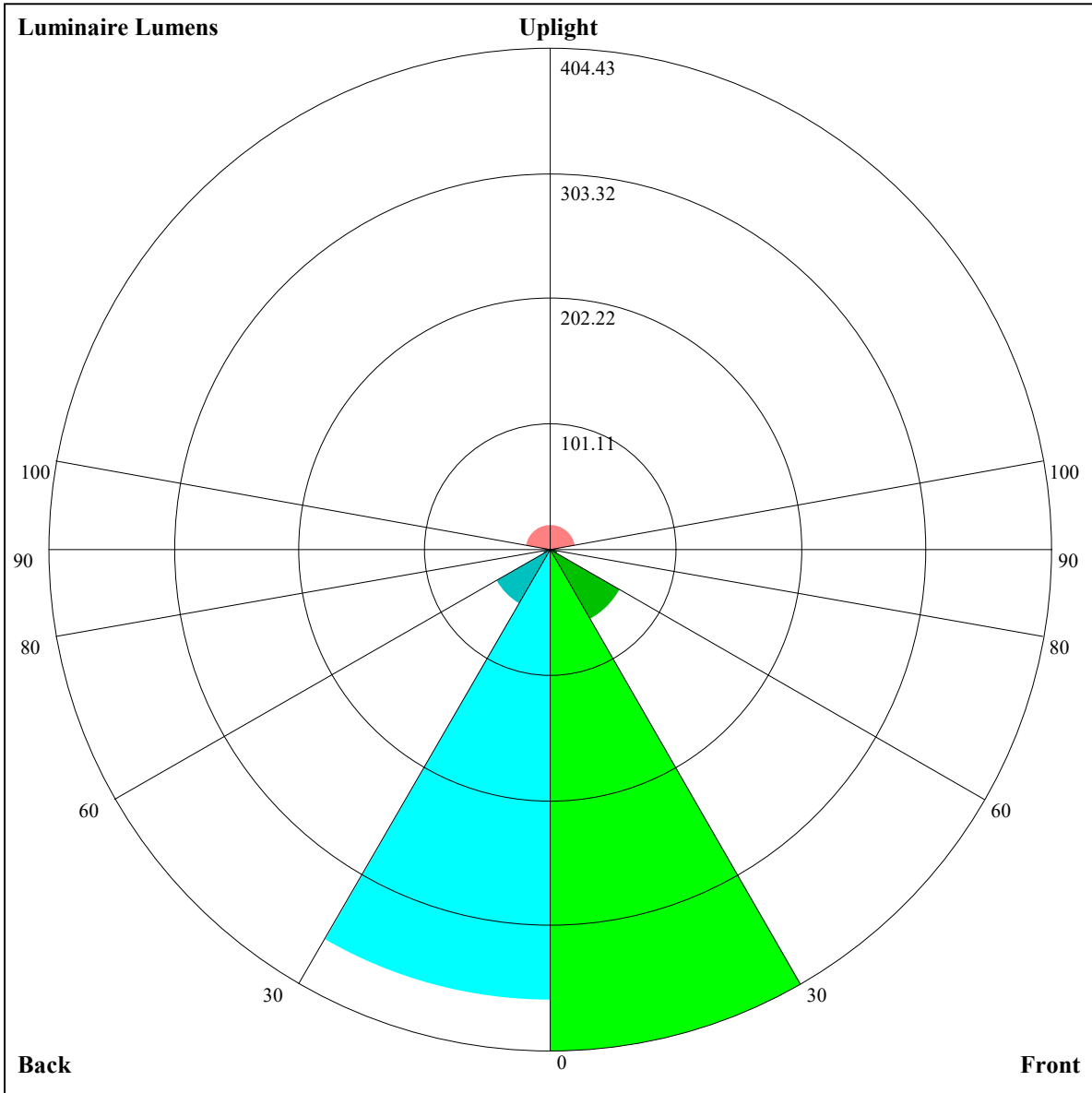
Luminance Limiting Curve





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	1.06	1.06	1.06	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.89
1	0.98	0.96	0.94	0.96	0.94	0.92	0.93	0.91	0.89	0.89	0.88	0.87	0.86	0.85	0.84	0.83
2	0.93	0.90	0.87	0.91	0.88	0.86	0.89	0.86	0.84	0.86	0.84	0.82	0.84	0.82	0.80	0.79
3	0.88	0.84	0.81	0.87	0.84	0.81	0.85	0.82	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.76
4	0.84	0.80	0.77	0.83	0.79	0.76	0.82	0.78	0.76	0.80	0.77	0.75	0.78	0.76	0.74	0.73
5	0.81	0.76	0.73	0.80	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.70
6	0.77	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.69	0.74	0.71	0.69	0.73	0.71	0.68	0.67
7	0.75	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.65
8	0.72	0.68	0.65	0.71	0.67	0.65	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.63
9	0.69	0.65	0.62	0.69	0.65	0.62	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.61
10	0.67	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





Luminaire Lumens:

FL=404.43,FM=65.41,FH=6.13,FVH=2.45

BL=363.84,BM=51.19,BH=5.97,BVH=2.38

UL=4.37,UH=20.8

BUG Rating:B1-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	2308.51	2267.77	1968.82	1485.42	950.82	556.07	400.81	278.03	40.63
45.0	2316.77	2215.47	1907.70	1361.54	851.72	522.49	369.43	158.51	27.86
90.0	2316.77	2075.08	1641.23	1080.48	663.10	405.77	269.12	83.30	23.56
135.0	2333.29	2113.06	1708.95	1151.23	679.40	416.23	286.84	104.66	24.56
180.0	2308.51	2075.63	1648.39	1084.94	652.75	433.79	273.91	74.71	21.86
225.0	2316.77	2110.86	1751.89	1078.00	736.43	471.06	310.52	106.92	23.34
270.0	2316.77	2261.72	1918.16	1434.77	868.79	520.28	367.23	178.11	36.28
315.0	2337.14	2251.81	1911.56	1365.40	847.48	479.43	324.94	156.20	32.04
360.0	2308.51	2267.77	1968.82	1485.42	950.82	556.07	400.81	278.03	40.63
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	16.96	10.96	8.81	7.38	6.55	5.95	5.45	4.96	4.51
45.0	13.54	10.30	8.42	7.21	6.33	5.73	5.29	4.79	4.51
90.0	13.27	10.08	8.15	6.99	6.22	5.73	5.18	4.68	4.24
135.0	14.20	10.96	8.59	7.38	6.39	5.84	5.40	4.73	4.24
180.0	12.94	10.24	8.26	6.94	6.11	5.51	5.01	4.57	4.29
225.0	13.65	10.74	8.59	7.21	6.28	5.62	5.07	4.68	4.29
270.0	16.90	11.78	9.30	7.65	6.72	6.11	5.78	5.23	4.73
315.0	15.69	11.51	8.97	7.54	6.61	6.11	5.56	4.96	4.51
360.0	16.96	10.96	8.81	7.38	6.55	5.95	5.45	4.96	4.51
C/ $\gamma$ (°)	90.0								
0.0	4.13								
45.0	3.96								
90.0	3.91								
135.0	3.91								
180.0	3.96								
225.0	4.07								
270.0	4.07								
315.0	4.02								
360.0	4.13								