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Nata

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Client:

LumCAT: 3-2116-N

Luminaire: 92.70.131.00

Report No: nata0100

Test No: GC2018052101

LampCAT: LUMINUS CHM-9 XH20

Lamp flux(lm): 1521.7

Number of Lamps: 1

Length(mm): 80

Phm Type: C

Voltage(V): 35.1000

Current(A): 0.4000

Power (W): 14.0400

PF: 0.0000

Ballast type: DC

Width(mm): 80

Height(mm): 0

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Photometric Results

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Lumens(lm): 1301.84, Efficiency(%): 85.55% , Luminous Efficacy(lm/W): 92.72

Central intensity(cd): 7976.296, Maximum intensity(cd): 7976.296

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

Beam Angle(50%Imax): [C0/180]Total=18.8

[C90/270]Total=18.8

Field angle(10%Imax): [C0/180]Total=38.0

[C90/270]Total=38.0

Maximum s/h(1/2): C0\_180=0.32 C90\_270=0.32

Maximum s/h(1/4): C0\_180=0.33 C90\_270=0.33

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 88.61%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 94.881%

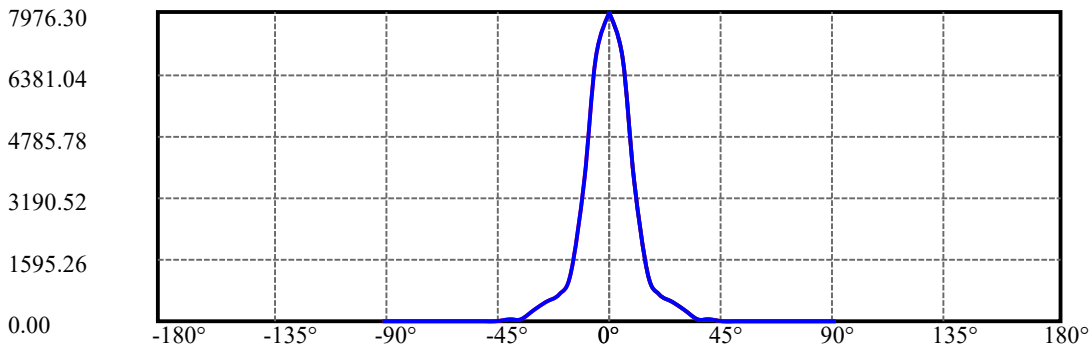
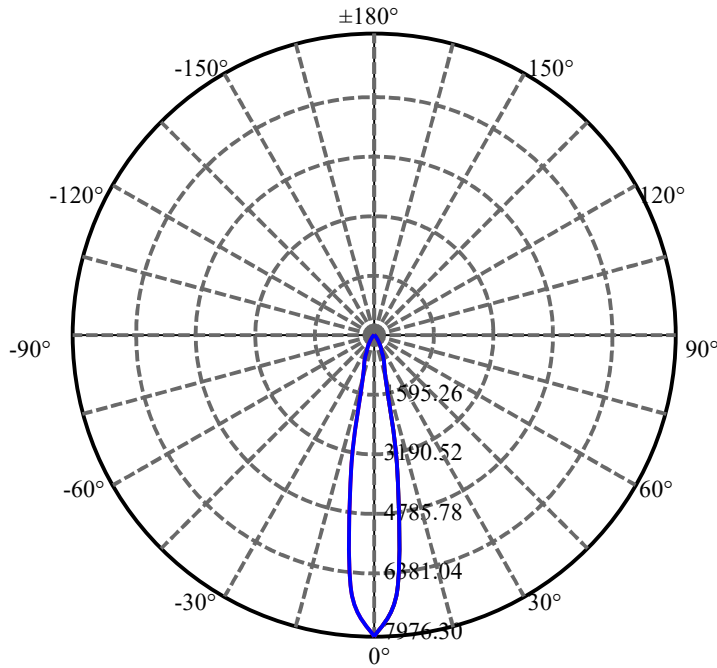
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7976.296	47.700	47.7	3.135%	3.664%
5.0	6769.666	323.409	371.109	21.253%	28.506%
10.0	3597.523	342.423	713.533	22.503%	54.809%
15.0	1225.411	173.847	887.38	11.425%	68.163%
20.0	692.506	129.827	1017.207	8.532%	78.136%
25.0	515.259	119.361	1136.568	7.844%	87.304%
30.0	318.157	87.197	1223.765	5.730%	94.002%
35.0	48.374	15.209	1238.973	.999%	95.171%
40.0	30.894	10.885	1249.858	.715%	96.007%
45.0	23.943	9.280	1259.138	.610%	96.720%
50.0	18.471	7.756	1266.894	.510%	97.315%
55.0	14.459	6.492	1273.387	.427%	97.814%
60.0	12.422	5.897	1279.283	.388%	98.267%
65.0	10.433	5.183	1284.466	.341%	98.665%
70.0	8.520	4.388	1288.855	.288%	99.002%
75.0	7.790	4.125	1292.98	.271%	99.319%
80.0	7.150	3.860	1296.84	.254%	99.616%
85.0	6.414	3.502	1300.342	.230%	99.885%
90.0	5.478	1.501	1301.843	.099%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1223.76	80.42%	94.00%
0-40	1249.86	82.14%	96.01%
0-60	1279.28	84.07%	98.27%
0-90	1300.34	85.45%	99.88%
0-120	1300.34	85.45%	99.88%
0-180	1301.84	85.55%	100.00%
60-90	26.96	1.77%	2.07%
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%
0-21.02	1041.48	68.44%	80.00%

ZONAL LUMEN SUMMARY

0-10	713.53
10-20	303.67
20-30	206.56
30-40	26.09
40-50	17.04
50-60	12.39
60-70	9.57
70-80	7.98
80-90	3.50
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): —————

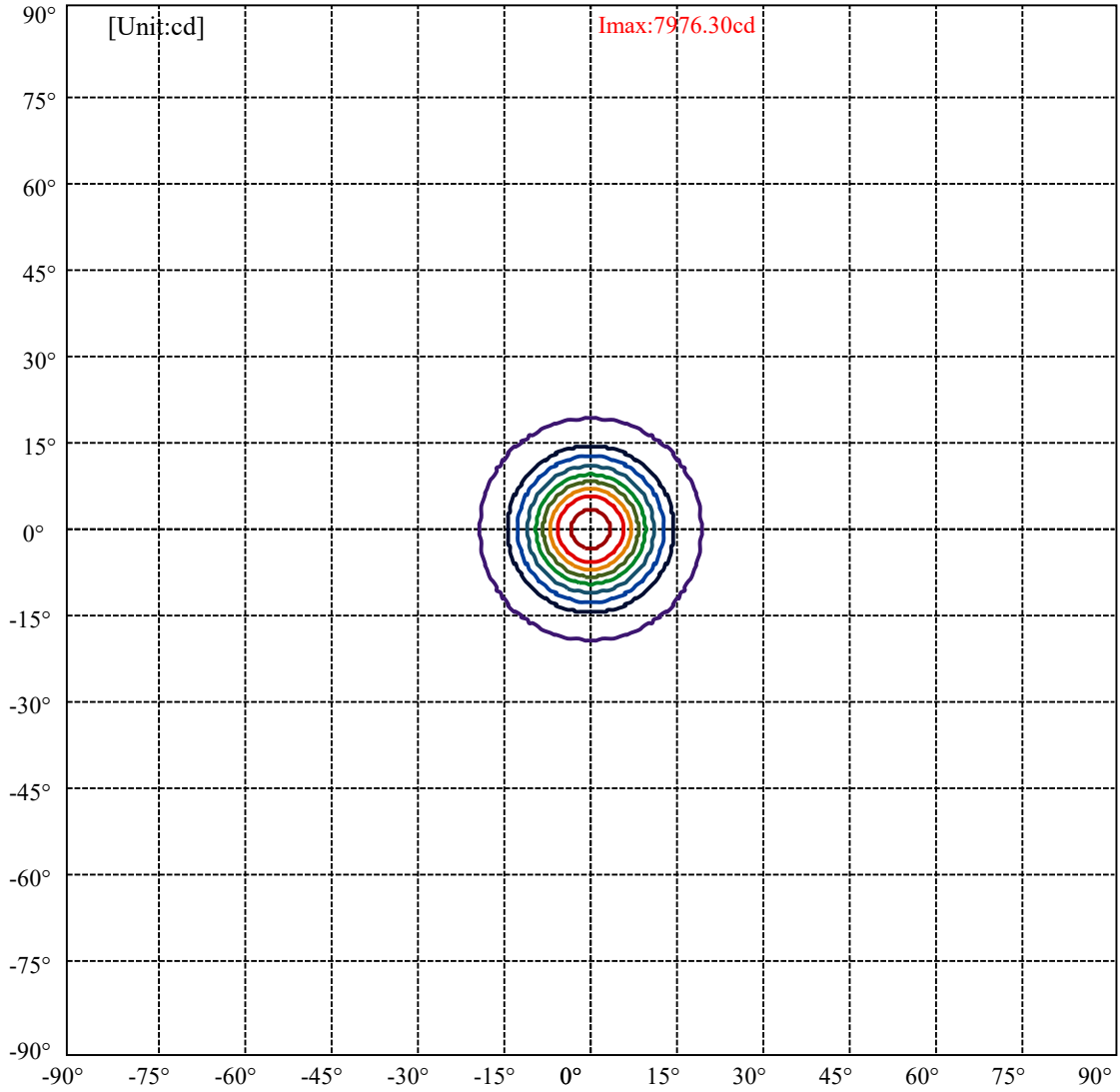
C0/C180: —————

C90/C270: —————

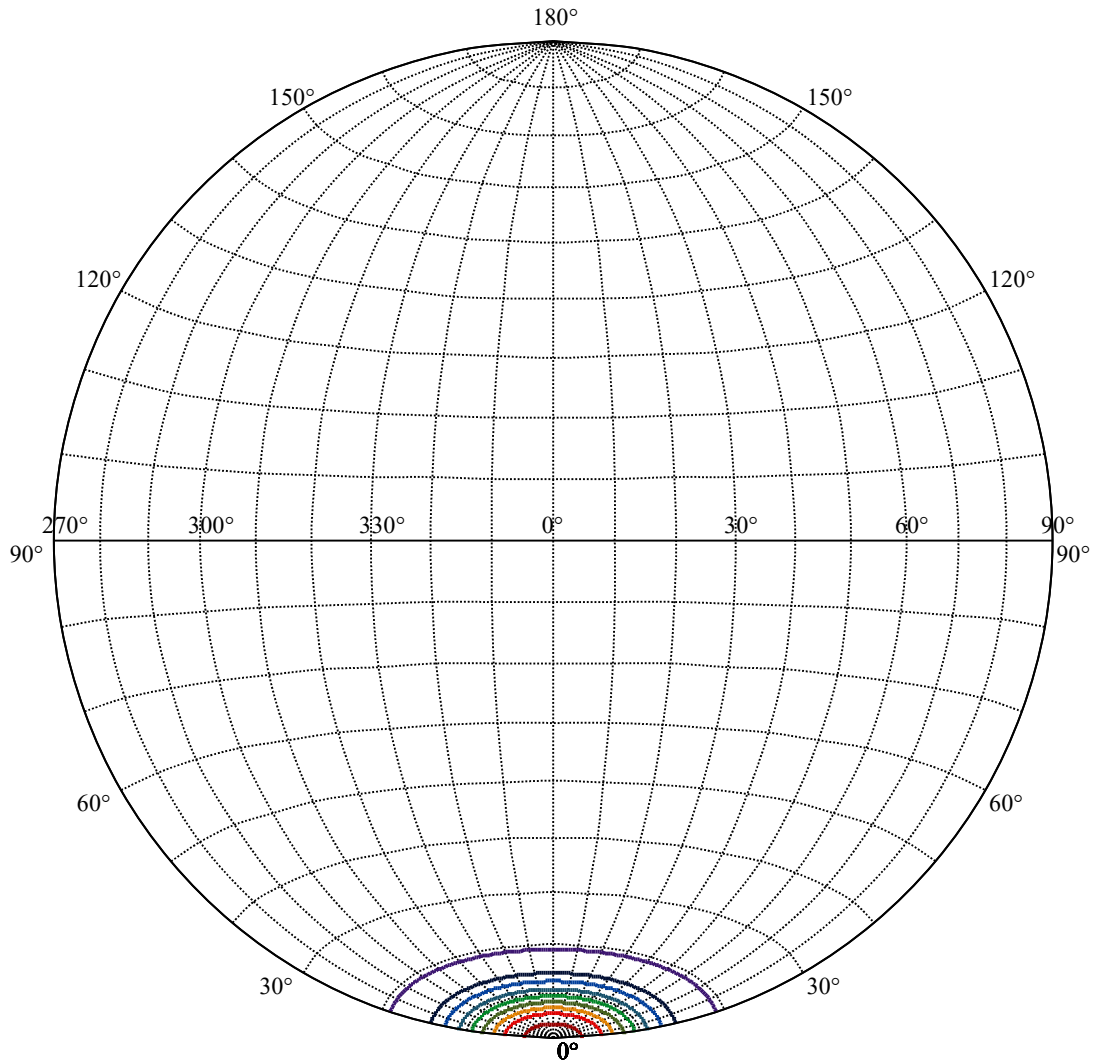
Field angle(10%Imax):C0/180Left:19.0 Right:19.0  
:C90/270Left:19.0 Right:19.0

Beam Angle(50%Imax):C0/180Left:9.4 Right:9.4  
:C90/270Left:9.4 Right:9.4





(10%Imax) 797.63	—
(20%Imax) 1595.26	—
(30%Imax) 2392.89	—
(40%Imax) 3190.52	—
(50%Imax) 3988.15	—
(60%Imax) 4785.78	—
(70%Imax) 5583.41	—
(80%Imax) 6381.04	—
(90%Imax) 7178.67	—



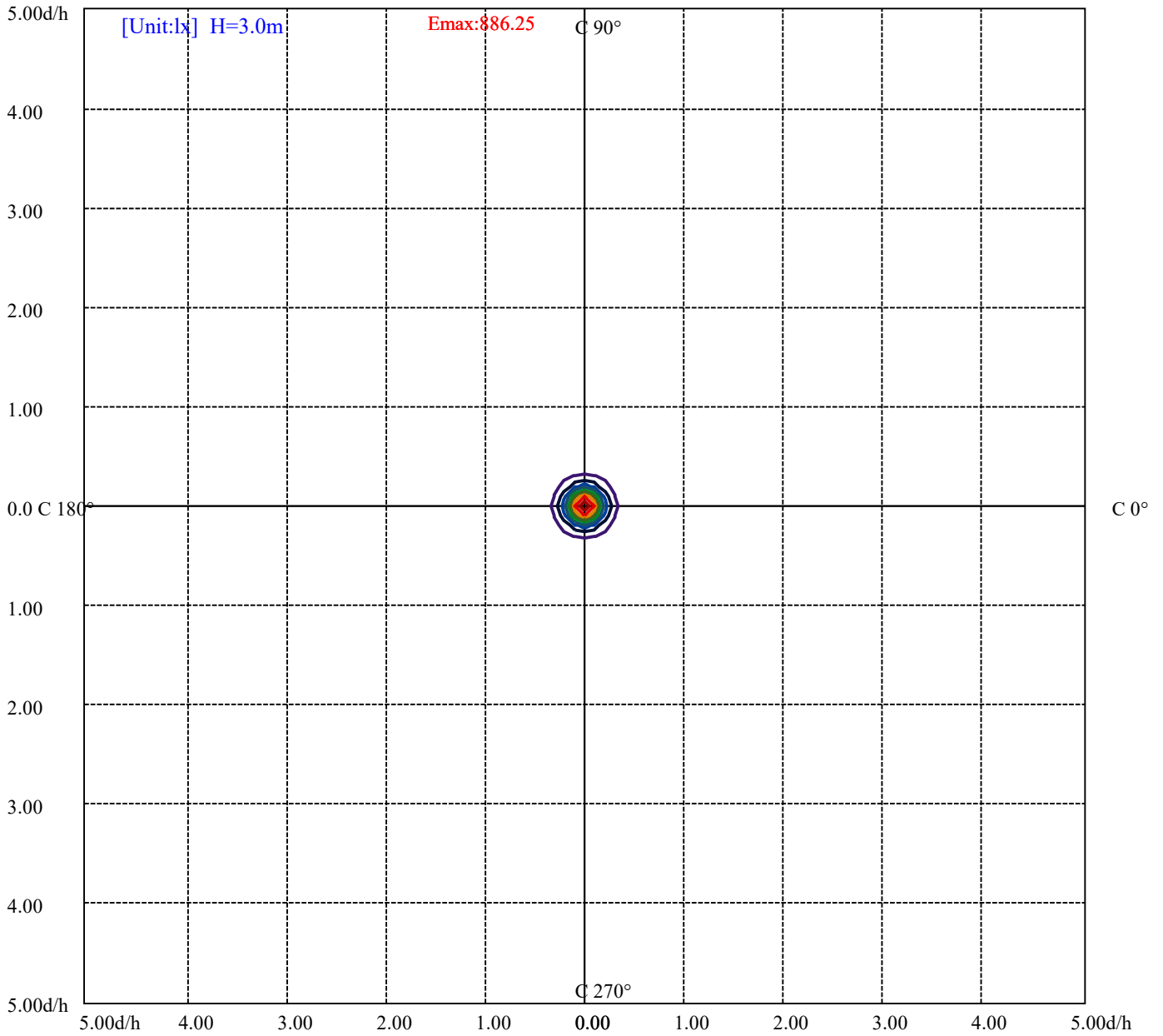
House

[Unit:cd]

Road

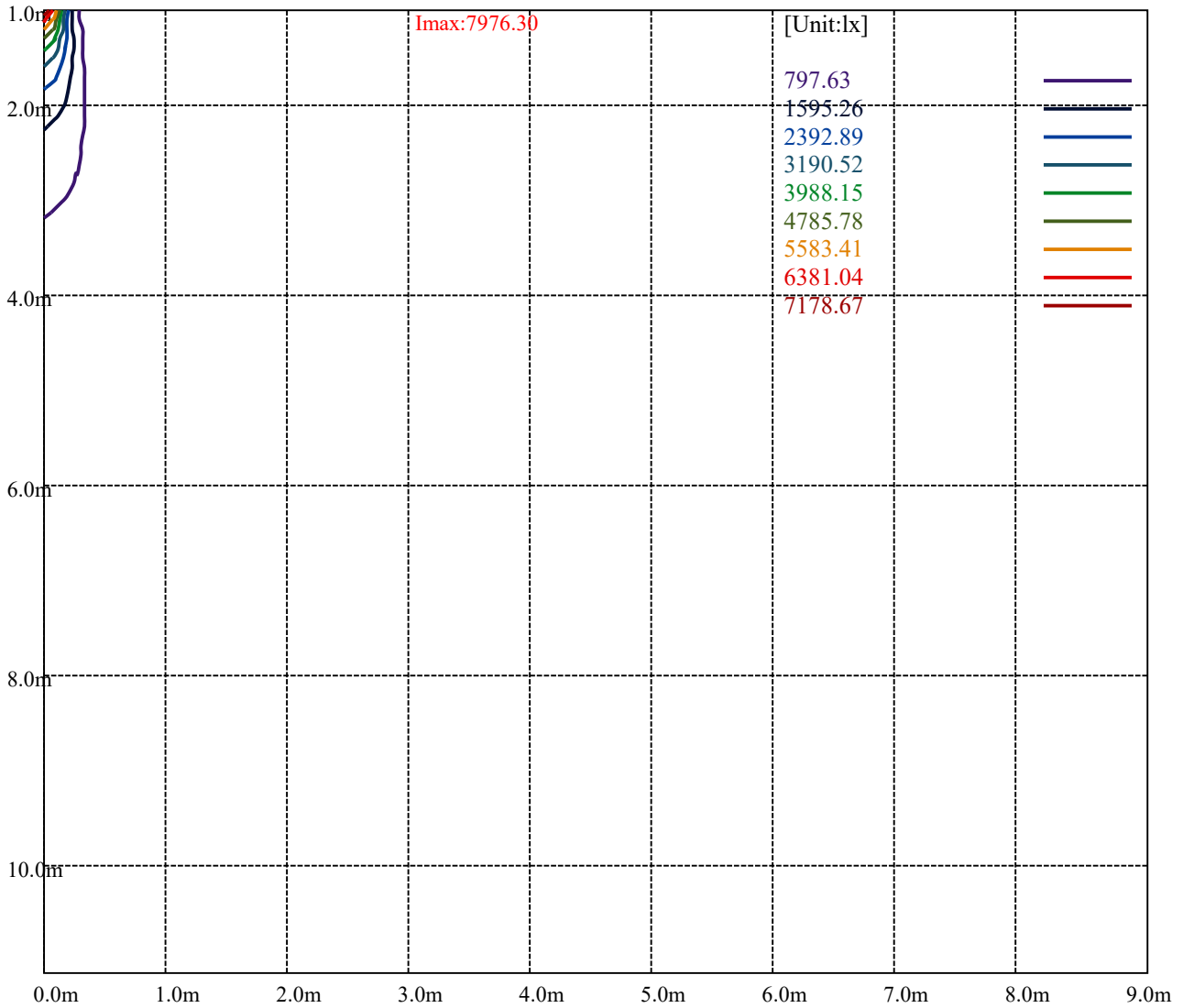
**Imax:7976.30**

(10%Imax) 797.63	—
(20%Imax) 1595.26	—
(30%Imax) 2392.89	—
(40%Imax) 3190.52	—
(50%Imax) 3988.15	—
(60%Imax) 4785.78	—
(70%Imax) 5583.41	—
(80%Imax) 6381.04	—
(90%Imax) 7178.67	—



- (10%Emax) 88.62511
- (20%Emax) 177.25
- (30%Emax) 265.8755
- (40%Emax) 354.5
- (50%Emax) 443.1255
- (60%Emax) 531.7511
- (70%Emax) 620.3755
- (80%Emax) 709.0011
- (90%Emax) 797.6255





Luminance Table

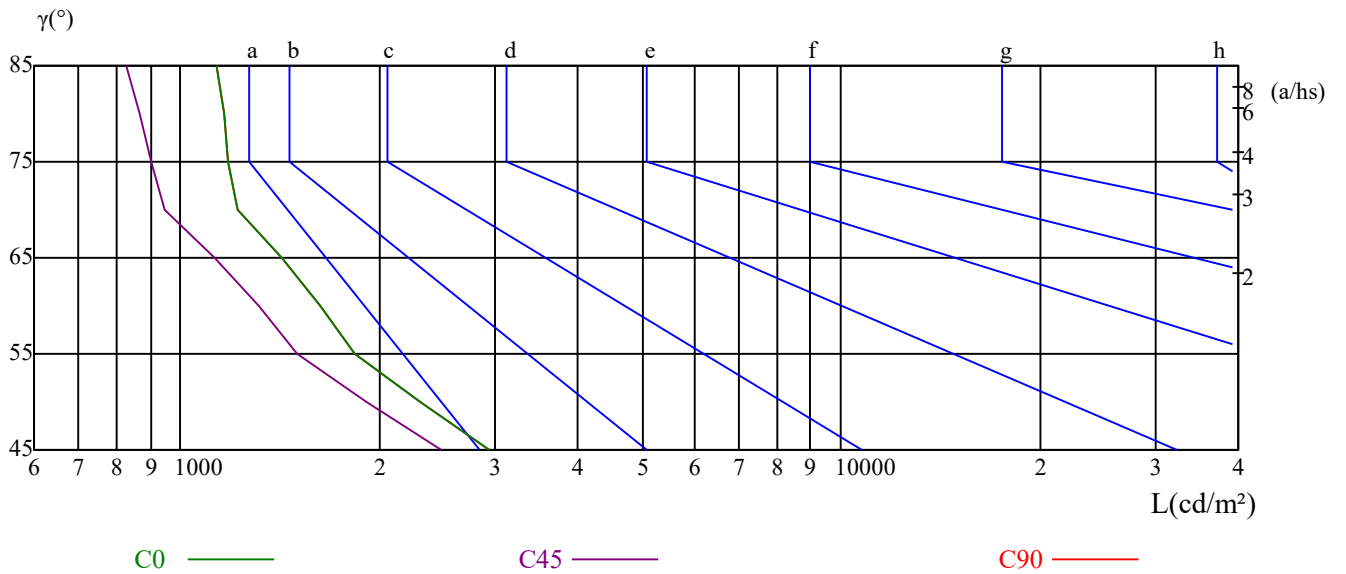
$\gamma$	45	50	55	60	65	70	75	80	85
C0	2939	2299	1838	1627	1420	1217	1180	1162	1134
C45	2482	1912	1506	1312	1126	947	901	868	825
C90	2939	2299	1838	1627	1420	1217	1180	1162	1134

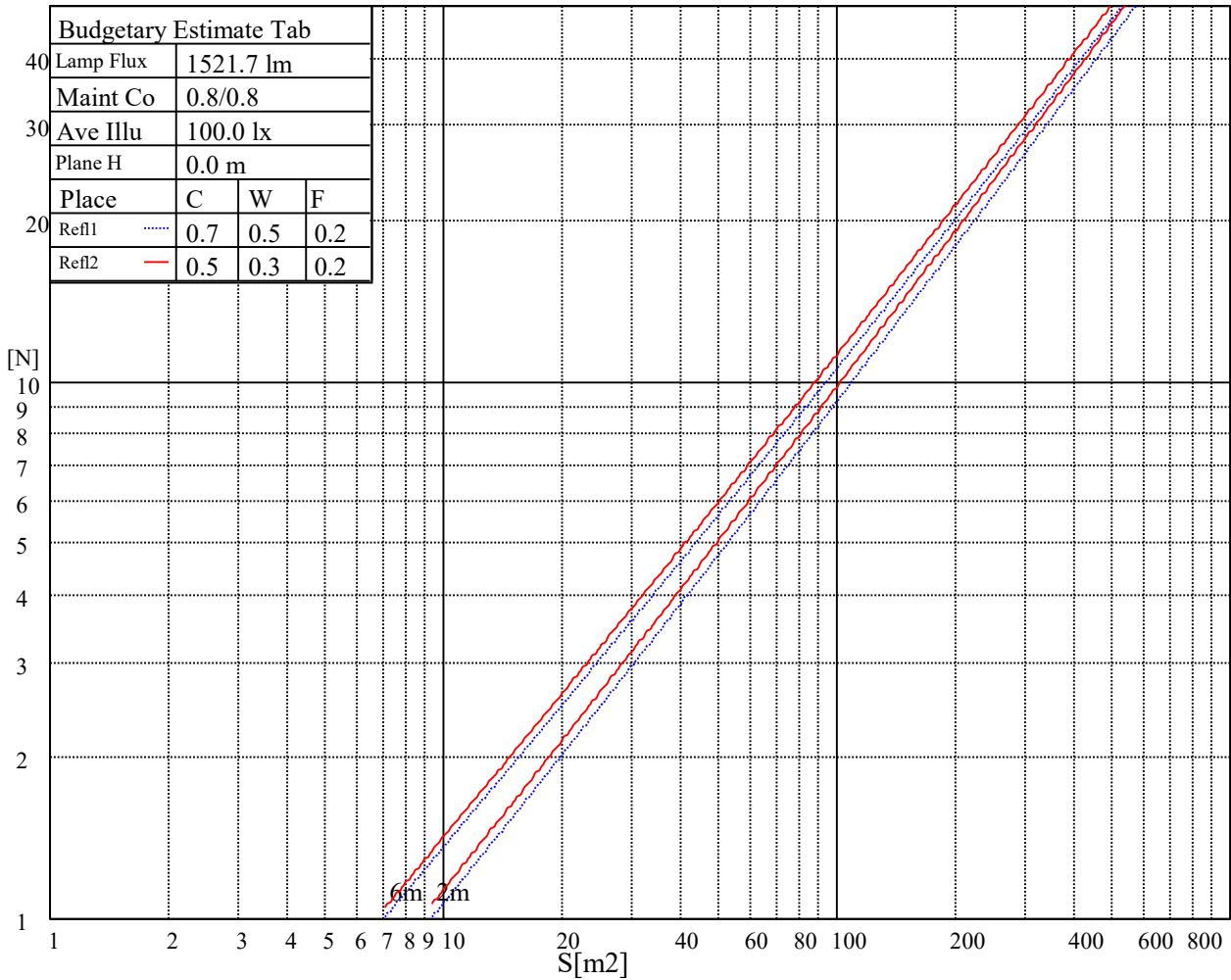
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3857	3857	3857	4703	4703	4703	11499	11499	11499

Glare Table

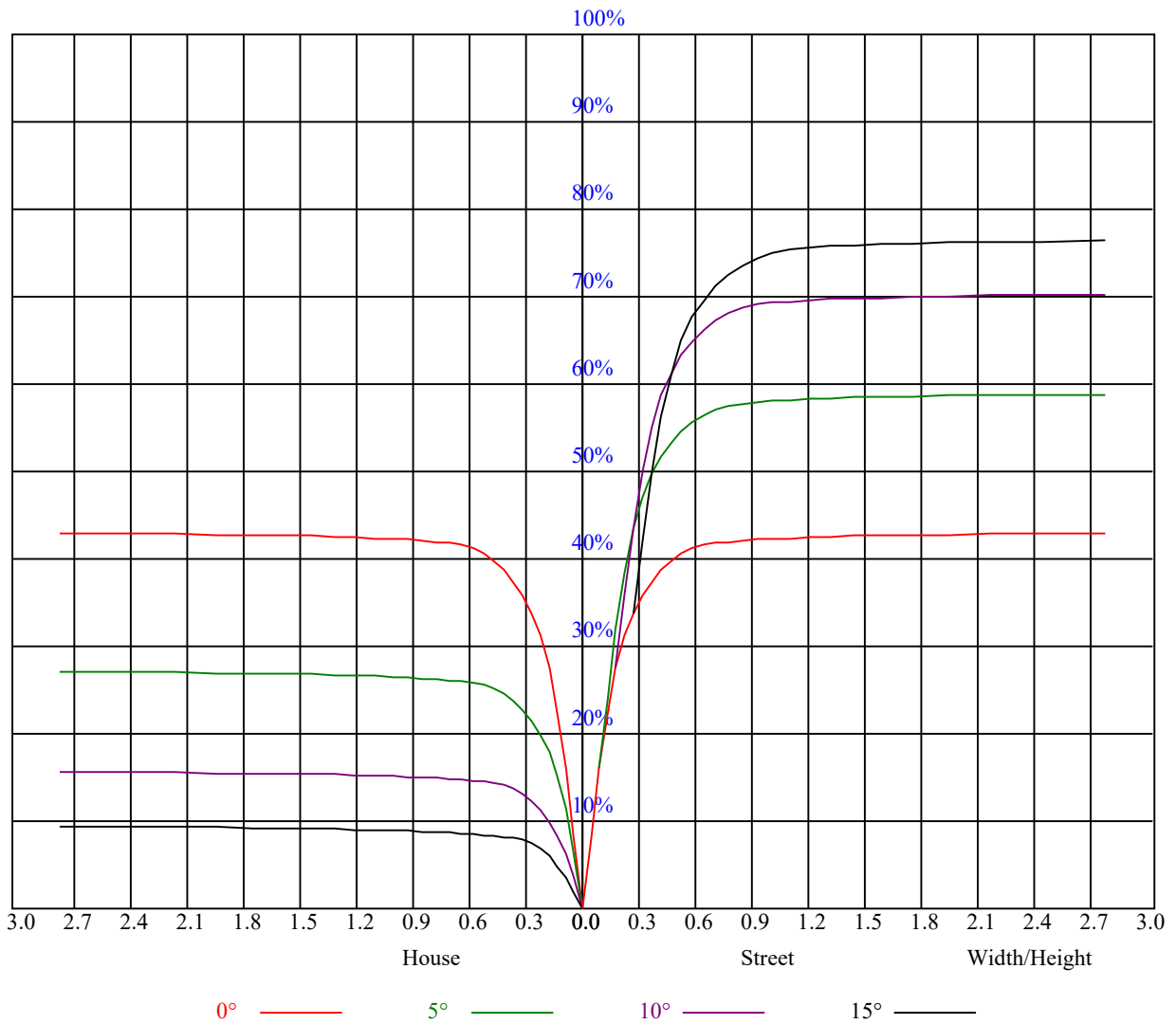
Glare	Quality	Service Values Illuminance(lx)							
		a	b	c	d	e	f	g	h
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

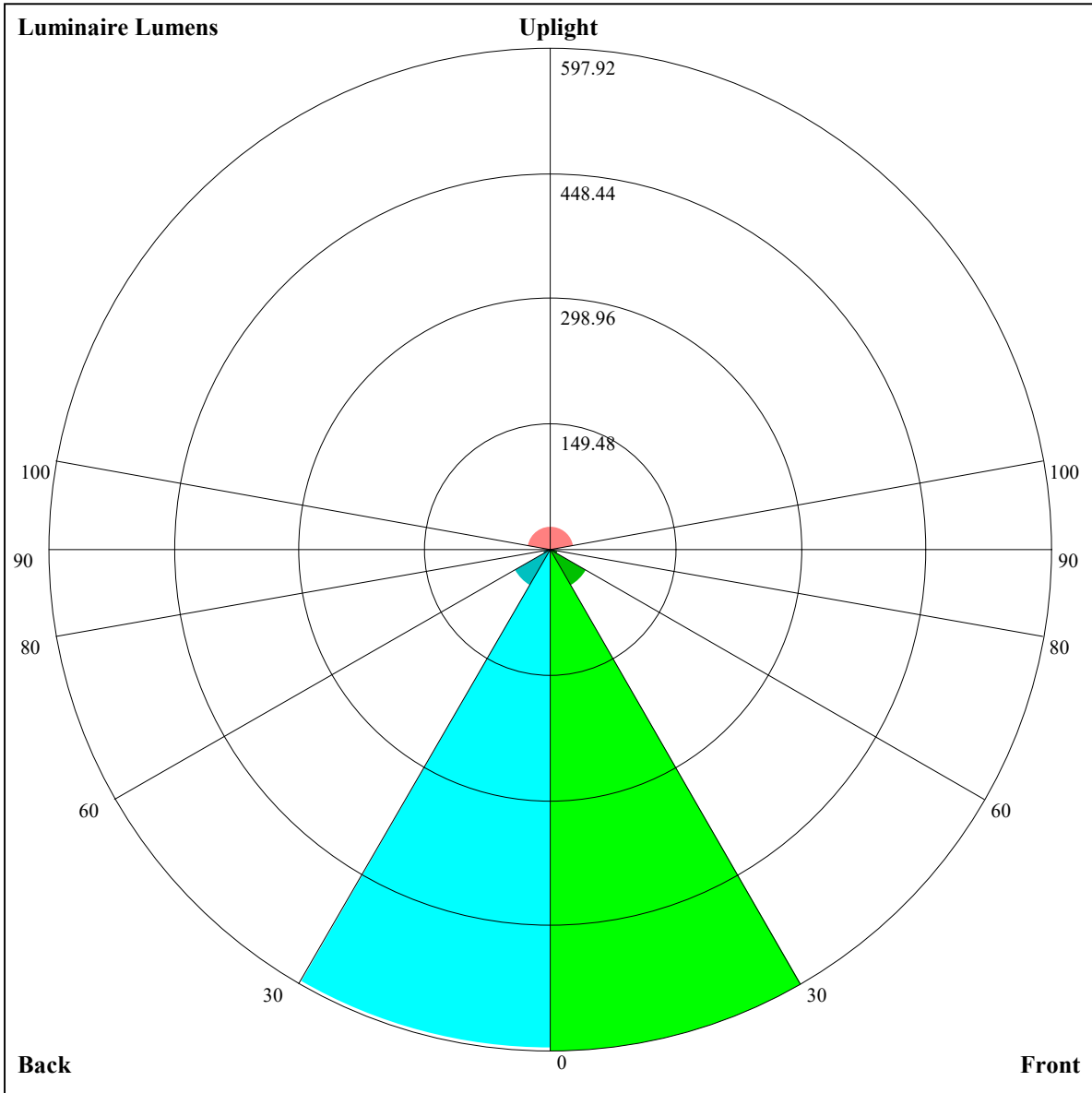
Luminance Limiting Curve





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	1.05	1.05	1.05	1.03	1.03	1.03	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.89
1	0.96	0.93	0.90	0.94	0.91	0.89	0.90	0.88	0.86	0.87	0.85	0.84	0.84	0.82	0.81	0.80
2	0.91	0.88	0.85	0.90	0.87	0.84	0.87	0.84	0.82	0.84	0.82	0.80	0.82	0.80	0.79	0.77
3	0.87	0.84	0.80	0.86	0.83	0.80	0.84	0.81	0.79	0.82	0.79	0.77	0.80	0.78	0.76	0.75
4	0.84	0.80	0.77	0.83	0.80	0.77	0.81	0.78	0.76	0.80	0.77	0.75	0.78	0.76	0.74	0.73
5	0.81	0.77	0.74	0.81	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
6	0.79	0.75	0.72	0.78	0.75	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.69
7	0.77	0.73	0.70	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.73	0.71	0.69	0.68
8	0.75	0.71	0.68	0.74	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.72	0.69	0.67	0.67
9	0.73	0.69	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.71	0.68	0.66	0.65
10	0.71	0.68	0.65	0.71	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.69	0.67	0.65	0.64





Luminaire Lumens:

FL=597.92,FM=48.82,FH=9.27,FVH=3.44

BL=595.63,BM=49.4,BH=9.32,BVH=3.49

UL=5.98,UH=28.44

BUG Rating:B2-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	7976.02	6860.03	3791.73	1503.04	724.54	532.95	333.09	47.95	31.22
45.0	8007.95	6459.22	3242.82	1093.97	627.64	496.61	291.80	42.67	29.01
90.0	7918.21	5963.71	2571.13	897.80	631.28	475.74	178.27	40.69	28.74
135.0	8003.00	6623.28	3463.05	1295.48	692.61	513.13	322.63	44.87	30.12
180.0	7976.02	6679.44	3342.47	1063.80	675.71	504.37	274.79	45.20	30.56
225.0	8007.95	7184.86	3961.86	1091.93	684.08	511.36	383.96	51.09	31.71
270.0	7918.21	7468.95	4705.12	1766.76	803.27	560.47	422.28	70.58	34.69
315.0	8003.00	6917.84	3701.99	1090.50	700.92	527.44	338.43	43.94	31.11
360.0	7976.02	6860.03	3791.73	1503.04	724.54	532.95	333.09	47.95	31.22
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	24.00	18.72	14.53	12.55	10.74	8.48	7.76	7.16	6.44
45.0	22.52	17.45	14.37	12.22	9.86	8.53	7.71	6.94	6.06
90.0	22.02	17.07	14.04	11.89	9.08	8.26	7.49	6.88	5.95
135.0	24.22	18.50	14.31	12.50	10.63	8.48	7.87	7.27	6.50
180.0	23.45	17.78	13.98	12.17	9.97	8.42	7.60	7.10	6.50
225.0	24.83	19.27	14.65	12.50	11.07	8.70	8.04	7.27	6.66
270.0	26.04	20.48	15.31	13.10	11.40	8.86	8.09	7.38	6.66
315.0	24.45	18.50	14.48	12.44	10.74	8.42	7.76	7.21	6.55
360.0	24.00	18.72	14.53	12.55	10.74	8.48	7.76	7.16	6.44
C/ $\gamma$ (°)	90.0								
0.0	5.45								
45.0	5.40								
90.0	5.45								
135.0	5.45								
180.0	5.45								
225.0	5.51								
270.0	5.62								
315.0	5.51								
360.0	5.45								