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## Nata

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Client:

LumCAT: 2-1652-A

Luminaire: 92.70.129.00+92.70.148.00

Report No: NT2018031206

Test No: nata-0100

LampCAT: CREE CXA1816

Lamp flux(lm): 1744.0

Number of Lamps: 1

Length(mm): 70

Phm Type: C

Voltage(V): 36.3700

Current(A): 0.5000

Power (W): 18.1850

PF: 0.0000

Ballast type: DC

Width(mm): 70

Height(mm): 0

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## Photometric Results

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Lumens(lm): 1484.96, Efficiency(%): 85.15% , Luminous Efficacy(lm/W): 81.66

Central intensity(cd): 2838.158, Maximum intensity(cd): 2838.158

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

Beam Angle(50%Imax): [C0/180]Total=39.6

[C90/270]Total=39.6

Field angle(10%Imax): [C0/180]Total=69.2

[C90/270]Total=69.2

Maximum s/h(1/2): C0\_180=0.65 C90\_270=0.65

Maximum s/h(1/4): C0\_180=0.64 C90\_270=0.64

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 86.04%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 97.176%

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Equipment: GMS1980  
Temperature(°C): 25.0

Date: 2018/3/9  
Humidity(%): 60.0%

Operator: NT07  
Distance(m): 7.42

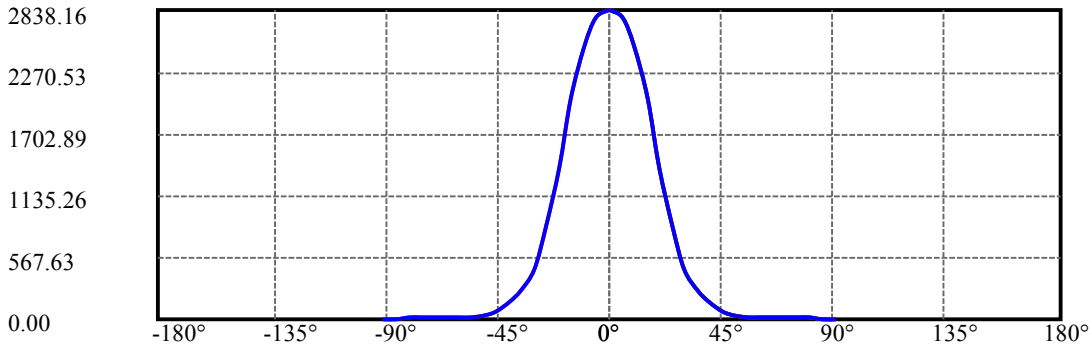
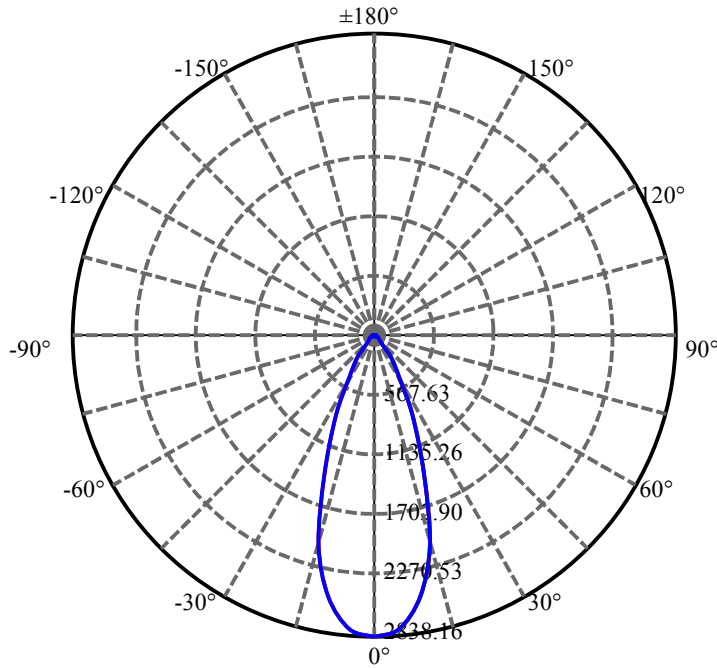
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2838.157	16.973	16.973	.973%	1.143%
5.0	2774.361	132.540	149.513	7.600%	10.069%
10.0	2498.666	237.831	387.344	13.637%	26.084%
15.0	2031.925	288.266	675.61	16.529%	45.497%
20.0	1398.233	262.132	937.742	15.031%	63.149%
25.0	842.329	195.128	1132.87	11.189%	76.290%
30.0	464.187	127.219	1260.089	7.295%	84.857%
35.0	268.462	84.404	1344.493	4.840%	90.541%
40.0	150.049	52.868	1397.361	3.031%	94.101%
45.0	78.786	30.537	1427.898	1.751%	96.157%
50.0	39.978	16.787	1444.684	.963%	97.288%
55.0	18.100	8.127	1452.811	.466%	97.835%
60.0	11.245	5.338	1458.149	.306%	98.195%
65.0	9.325	4.633	1462.782	.266%	98.507%
70.0	8.857	4.562	1467.344	.262%	98.814%
75.0	9.532	5.047	1472.391	.289%	99.154%
80.0	11.720	6.327	1478.717	.363%	99.580%
85.0	8.458	4.619	1483.336	.265%	99.891%
90.0	5.919	1.622	1484.958	.093%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1260.09	72.25%	84.86%
0-40	1397.36	80.12%	94.10%
0-60	1458.15	83.61%	98.19%
0-90	1483.34	85.05%	99.89%
0-120	1483.34	85.05%	99.89%
0-180	1484.96	85.15%	100.00%
60-90	30.52	1.75%	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%
0-27.17	1187.97	68.12%	80.00%

ZONAL LUMEN SUMMARY

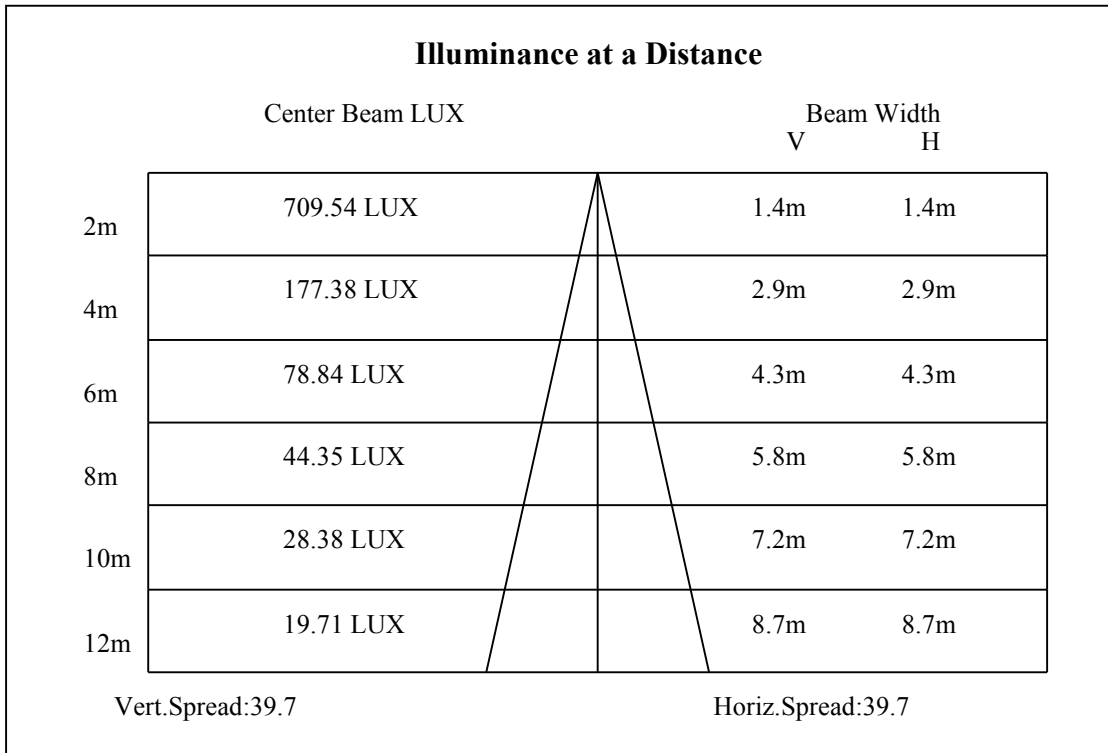
0-10	387.34
10-20	550.40
20-30	322.35
30-40	137.27
40-50	47.32
50-60	13.47
60-70	9.19
70-80	11.37
80-90	4.62
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

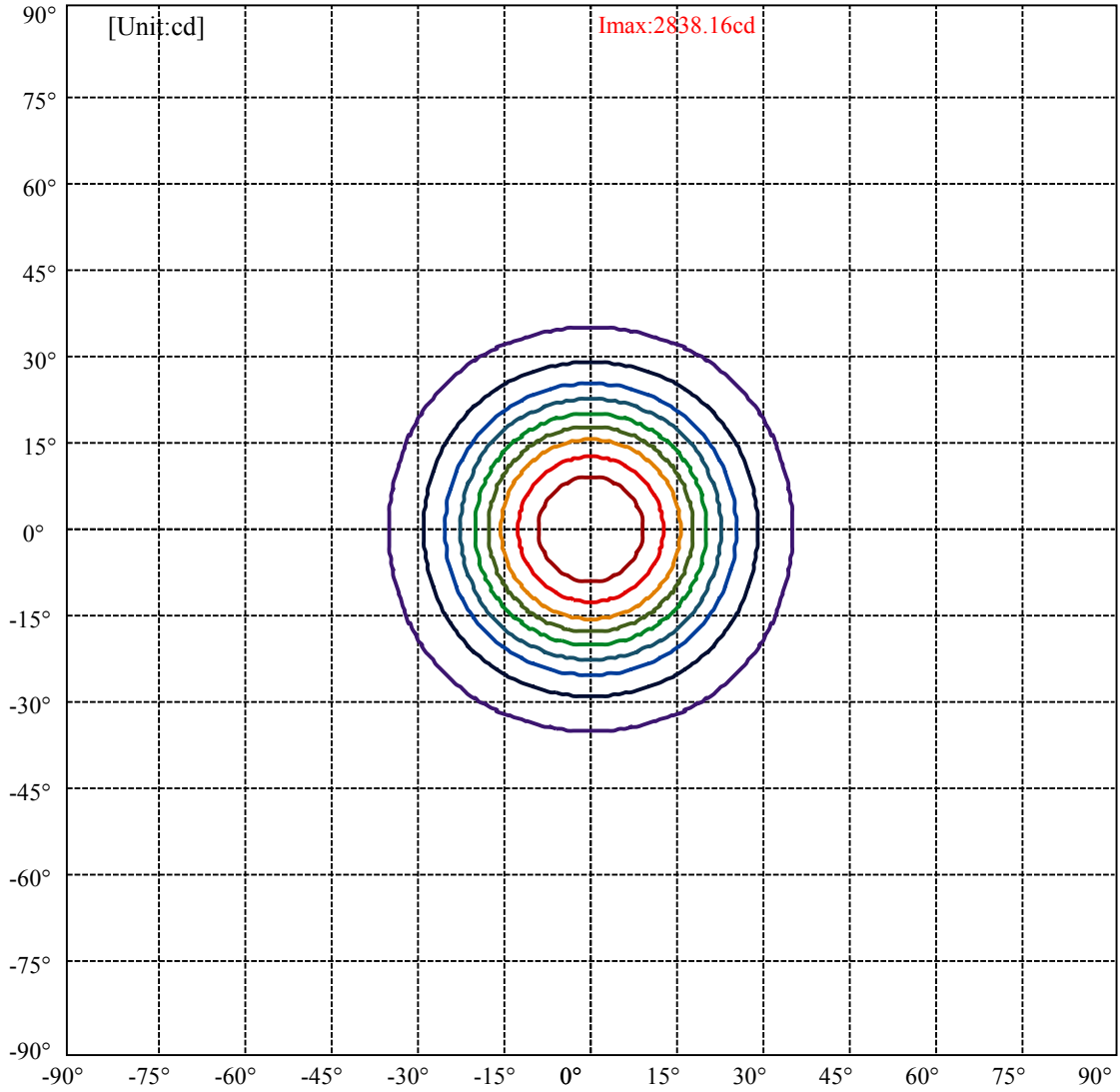


C0(Max): ———  
C0/C180: ———  
C90/C270: ———

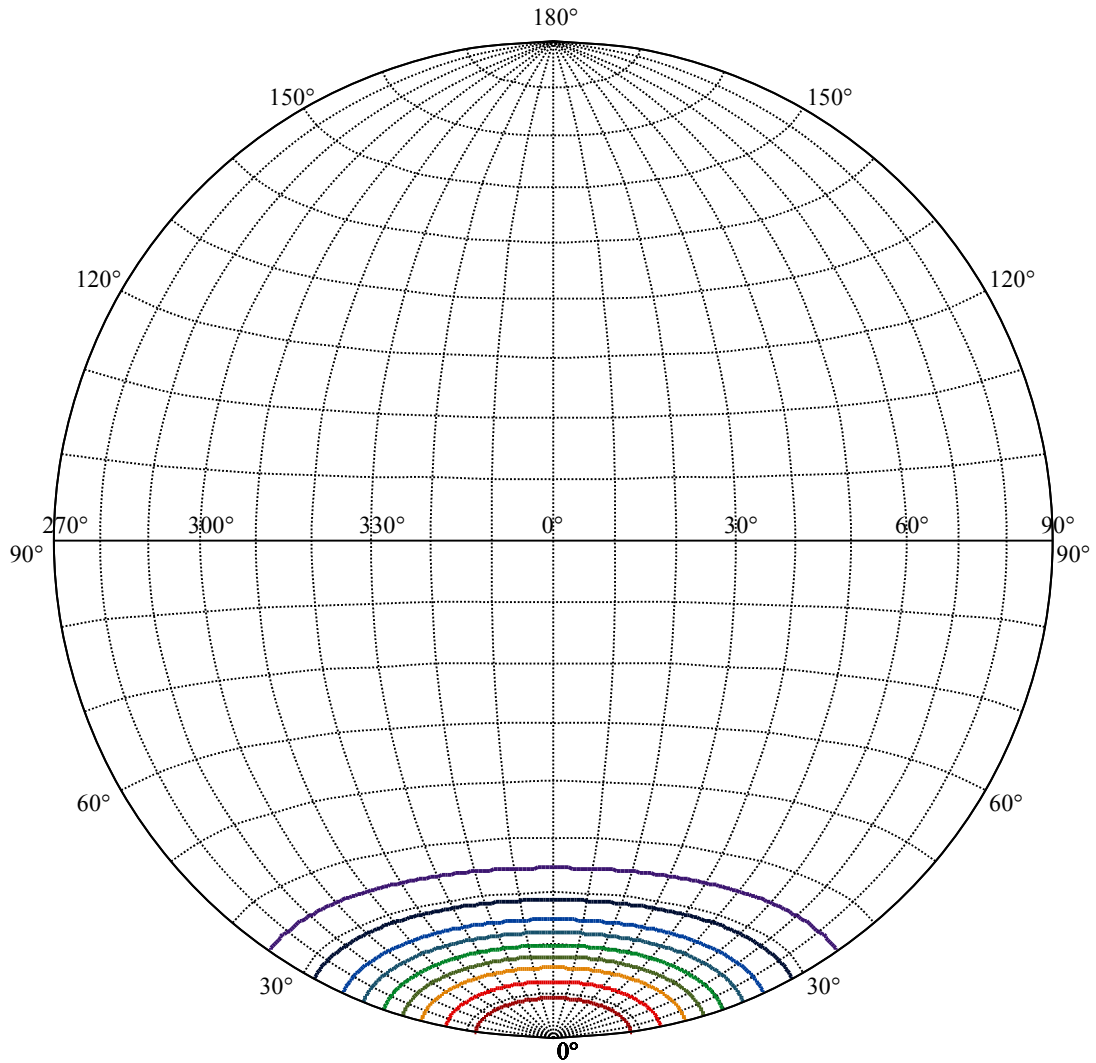
Field angle(10%Imax):C0/180Left:34.6 Right:34.6  
:C90/270Left:34.6 Right:34.6

Beam Angle(50%Imax):C0/180Left:19.8 Right:19.8  
:C90/270Left:19.8 Right:19.8





(10%Imax) 283.816	—
(20%Imax) 567.632	—
(30%Imax) 851.447	—
(40%Imax) 1135.26	—
(50%Imax) 1419.08	—
(60%Imax) 1702.89	—
(70%Imax) 1986.71	—
(80%Imax) 2270.53	—
(90%Imax) 2554.34	—



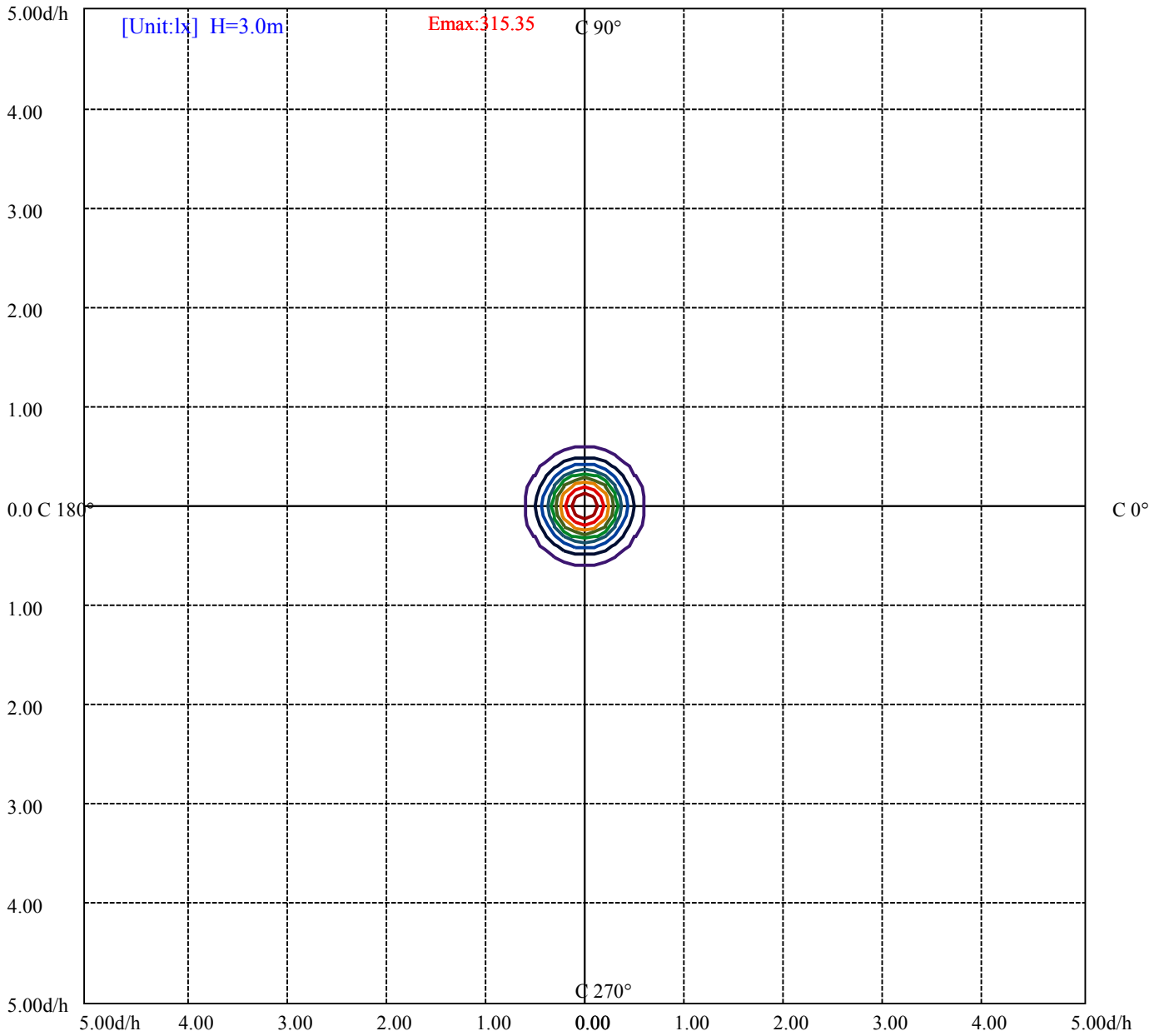
House

[Unit:cd]

Road

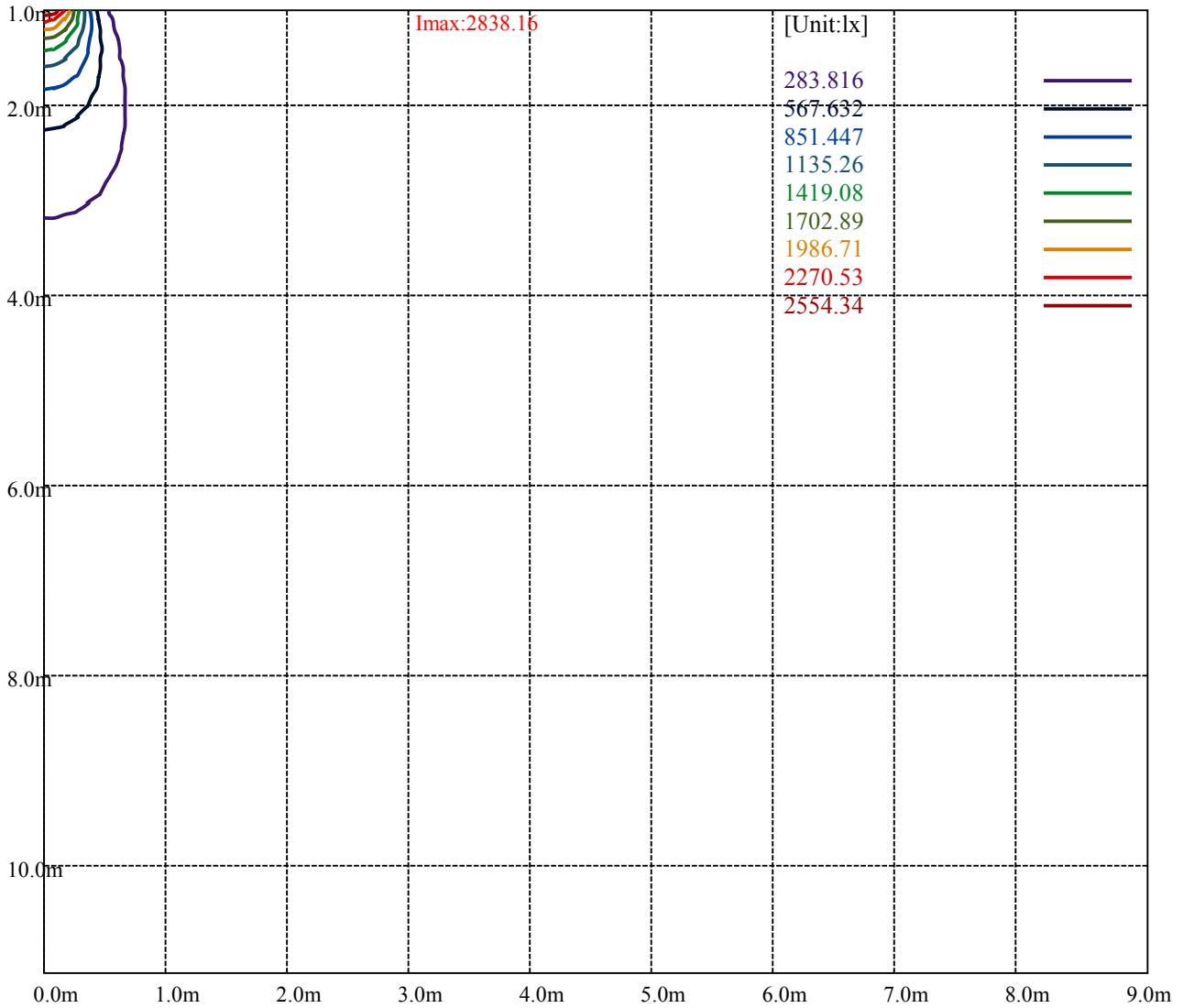
**Imax:2838.16**

(10%Imax) 283.816	—
(20%Imax) 567.632	—
(30%Imax) 851.447	—
(40%Imax) 1135.26	—
(50%Imax) 1419.08	—
(60%Imax) 1702.89	—
(70%Imax) 1986.71	—
(80%Imax) 2270.53	—
(90%Imax) 2554.34	—



- (10%Emax) 31.53511
- (20%Emax) 63.07011
- (30%Emax) 94.60522
- (40%Emax) 126.14
- (50%Emax) 157.6756
- (60%Emax) 189.21
- (70%Emax) 220.7455
- (80%Emax) 252.28
- (90%Emax) 283.8156





Luminance Table

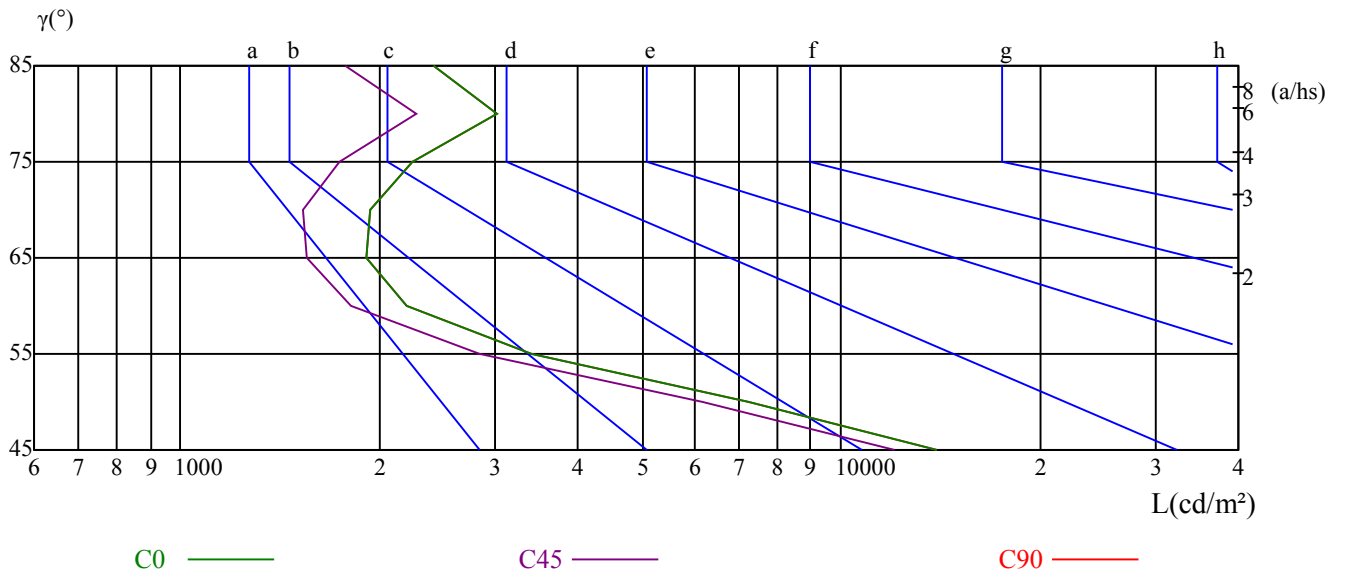
$\gamma$	45	50	55	60	65	70	75	80	85
C0	13962	7257	3394	2197	1918	1938	2246	3017	2420
C45	12038	6163	2838	1807	1549	1535	1741	2280	1775
C90	13962	7257	3394	2197	1918	1938	2246	3017	2420

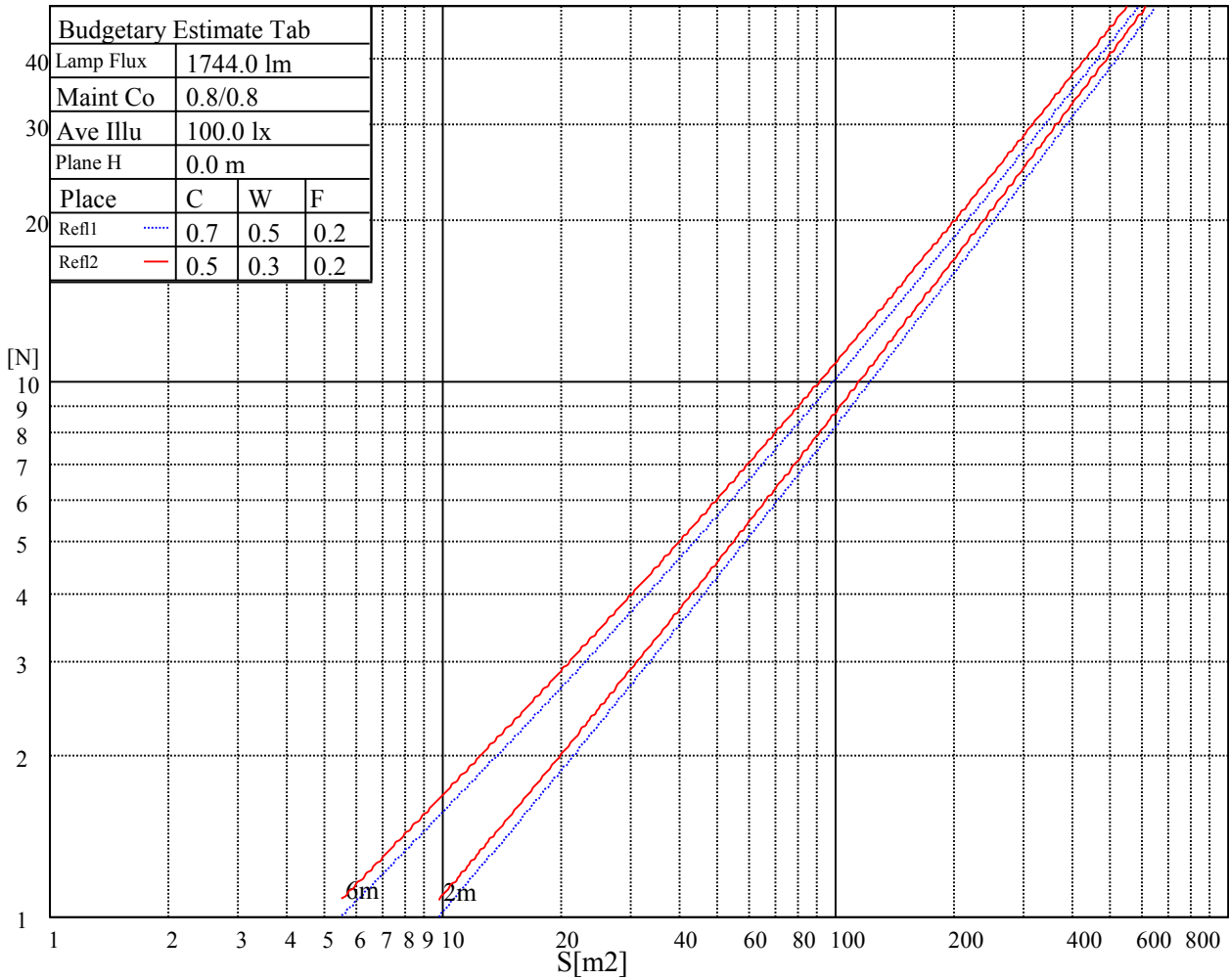
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4503	4503	4503	7516	7516	7516	19805	19805	19805

Glare Table

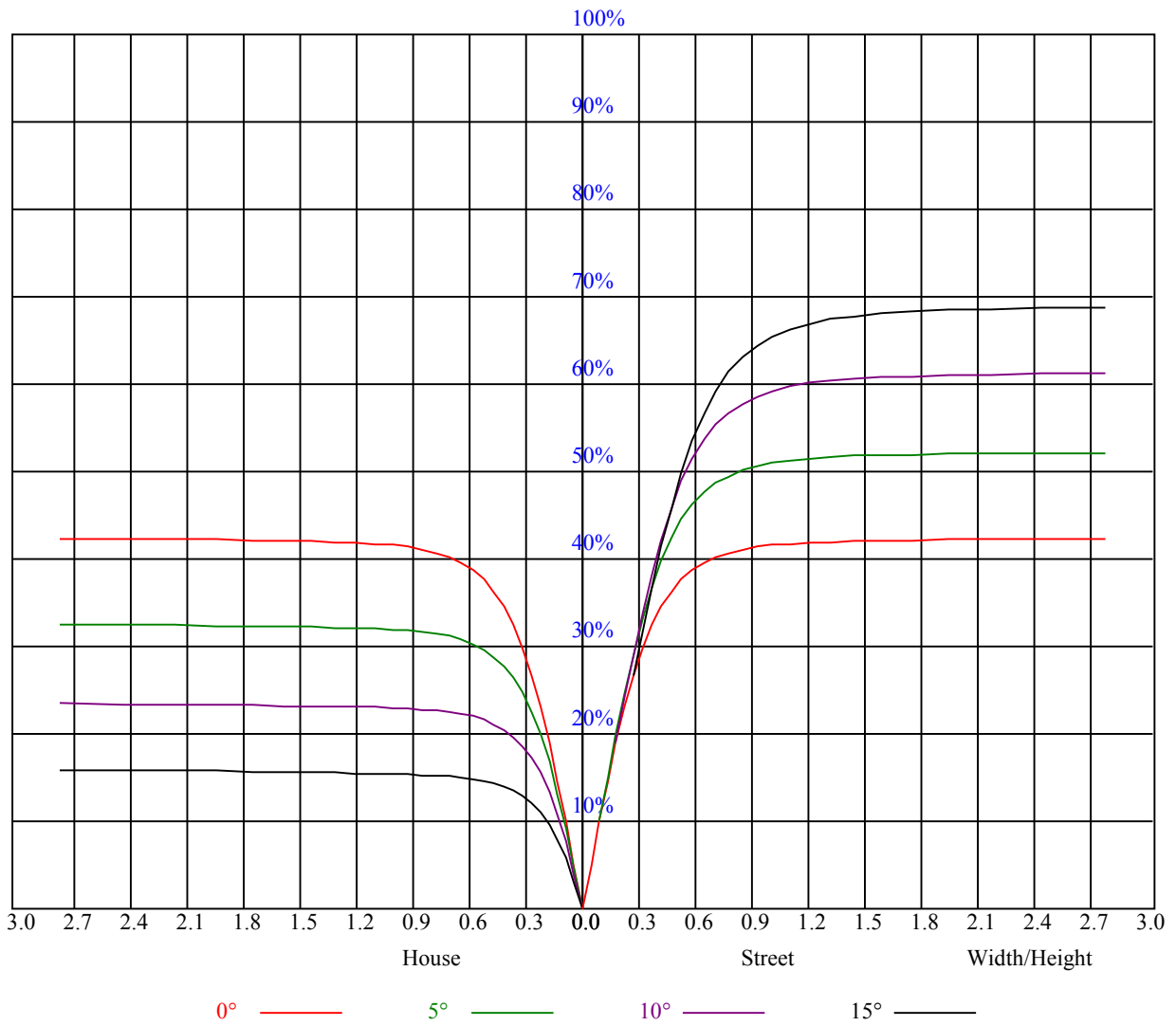
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

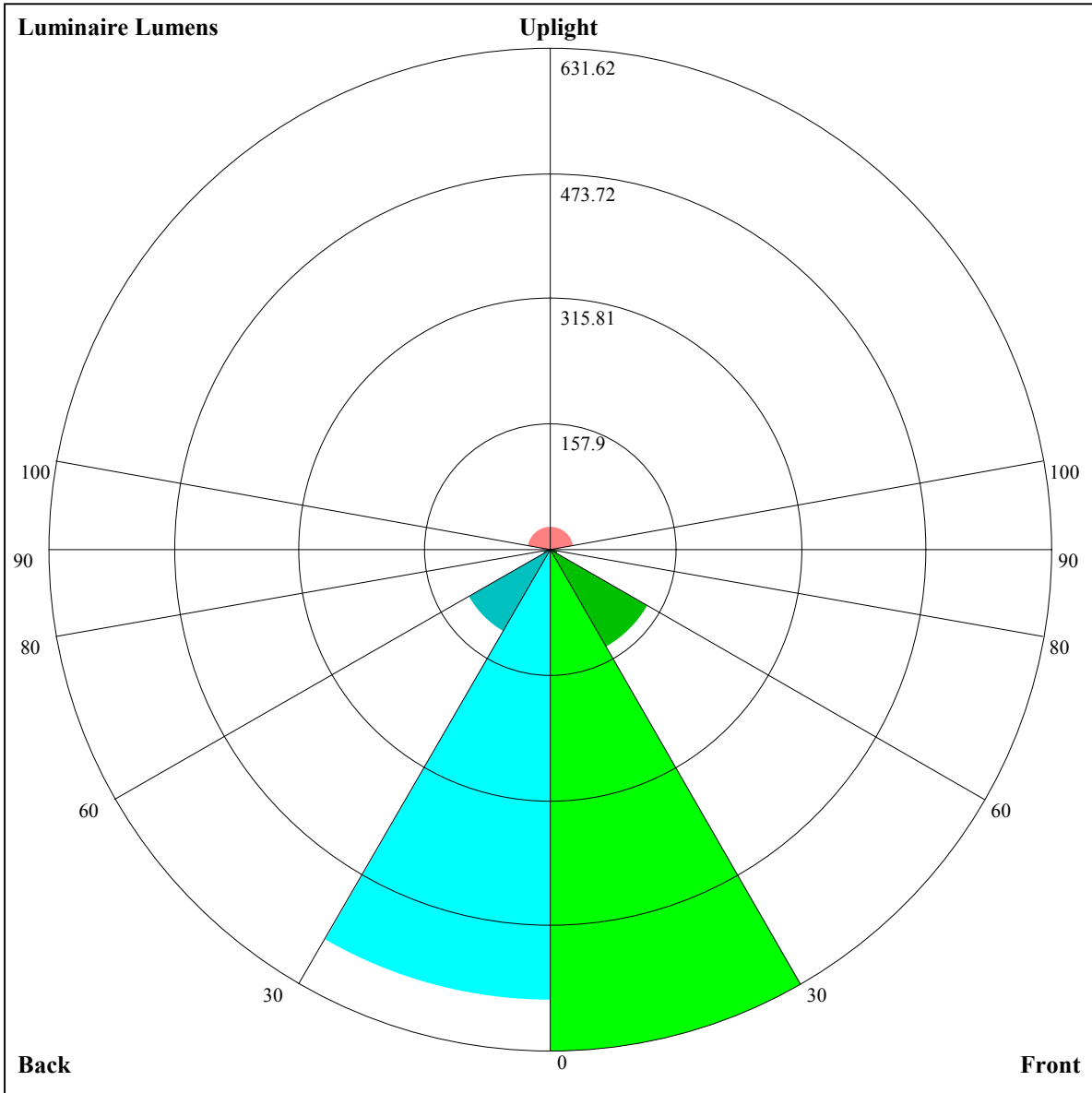
Luminance Limiting Curve





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	1.02	1.02	1.02	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	0.95	0.92	0.90	0.93	0.91	0.89	0.89	0.88	0.86	0.86	0.85	0.84	0.83	0.82	0.81	0.80
2	0.89	0.86	0.83	0.88	0.85	0.82	0.85	0.82	0.80	0.82	0.80	0.79	0.80	0.78	0.77	0.76
3	0.84	0.80	0.77	0.83	0.80	0.77	0.81	0.78	0.75	0.79	0.76	0.74	0.77	0.75	0.73	0.72
4	0.80	0.76	0.73	0.79	0.75	0.72	0.77	0.74	0.71	0.76	0.73	0.70	0.74	0.72	0.70	0.68
5	0.76	0.72	0.69	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.71	0.69	0.67	0.65
6	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.63
7	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.61	0.66	0.63	0.61	0.60
8	0.67	0.63	0.60	0.66	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.58
9	0.64	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.57	0.62	0.59	0.57	0.62	0.59	0.56	0.56
10	0.62	0.58	0.55	0.62	0.58	0.55	0.61	0.57	0.55	0.60	0.57	0.55	0.60	0.57	0.54	0.54





Luminaire Lumens:

FL=631.62,FM=141.95,FH=9.92,FVH=4.7

BL=567.84,BM=119.45,BH=10.18,BVH=4.8

UL=6.46,UH=30.73

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	2833.20	2835.96	2644.91	2274.93	1726.57	1072.50	593.51	332.54	193.25
45.0	2841.46	2813.93	2606.37	2206.11	1626.37	964.59	534.05	297.86	172.71
90.0	2838.16	2769.34	2518.28	2040.94	1425.96	848.31	453.44	251.72	151.07
135.0	2839.81	2763.28	2503.41	2017.82	1396.78	833.55	449.81	278.59	143.59
180.0	2833.20	2681.80	2325.03	1733.18	1072.88	649.34	356.10	209.05	114.19
225.0	2841.46	2741.81	2396.61	1864.76	1048.49	713.97	392.17	232.01	129.16
270.0	2838.16	2794.66	2518.83	2072.32	1438.07	824.19	466.33	285.19	145.51
315.0	2839.81	2794.11	2475.89	2045.35	1450.74	832.18	468.09	260.75	150.91
360.0	2833.20	2835.96	2644.91	2274.93	1726.57	1072.50	593.51	332.54	193.25
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	106.81	57.09	25.99	12.88	9.91	8.92	8.64	10.08	8.86
45.0	92.38	48.45	21.58	11.95	9.52	8.81	8.75	8.59	8.15
90.0	77.90	39.20	16.79	10.90	9.03	8.70	8.86	18.83	8.37
135.0	72.56	36.28	16.35	10.68	9.08	8.86	8.81	8.59	8.48
180.0	56.21	28.19	12.88	10.02	9.08	8.70	8.31	8.70	8.31
225.0	64.09	29.68	14.76	10.63	9.25	9.14	15.31	18.11	8.64
270.0	77.30	38.76	17.67	11.34	9.30	8.81	8.75	8.59	8.09
315.0	83.03	42.17	18.77	11.56	9.41	8.92	8.81	12.28	8.75
360.0	106.81	57.09	25.99	12.88	9.91	8.92	8.64	10.08	8.86
C/ $\gamma$ (°)	90.0								
0.0	5.95								
45.0	5.95								
90.0	5.89								
135.0	5.89								
180.0	5.95								
225.0	5.95								
270.0	5.89								
315.0	5.89								
360.0	5.95								