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## Nata

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### Client:

LumCAT: 2-1680-M

Luminaire: 92.70.132.00

Report No: NT2017122510

Test No: GC2017122510

LampCAT: NICHIA NFCWL036B-V2

Lamp flux(lm): 1719.0

Number of Lamps: 1

Length(mm): 70

Phm Type: C

Voltage(V): 35.0000

Current(A): 0.3500

Power (W): 12.2500

PF: 0.0000

Ballast type: DC

Width(mm): 70

Height(mm): 0

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## Photometric Results

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Lumens(lm): 1511.86, Efficiency(%): 87.95% , Luminous Efficacy(lm/W): 123.42

Central intensity(cd): 3428.913, Maximum intensity(cd): 3428.913

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

Beam Angle(50%Imax): [C0/180]Total=35.6

[C90/270]Total=35.6

Field angle(10%Imax): [C0/180]Total=68.0

[C90/270]Total=68.0

Maximum s/h(1/2): C0\_180=0.58 C90\_270=0.58

Maximum s/h(1/4): C0\_180=0.60 C90\_270=0.60

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 89.06%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 97.364%

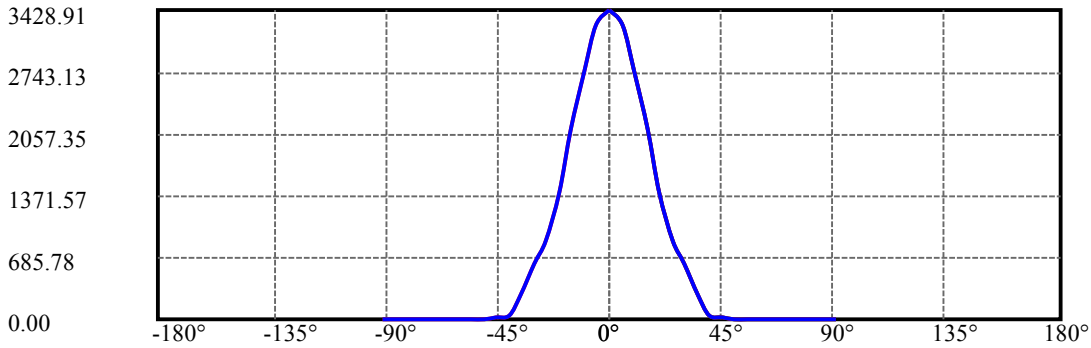
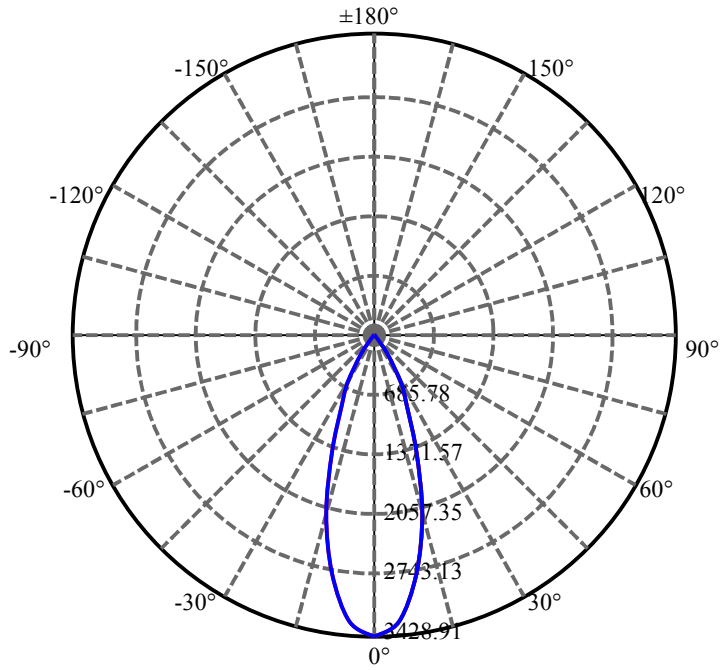
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3428.913	20.506	20.506	1.193%	1.356%
5.0	3261.610	155.818	176.324	9.064%	11.663%
10.0	2755.435	262.271	438.594	15.257%	29.010%
15.0	2099.920	297.912	736.507	17.331%	48.715%
20.0	1410.132	264.363	1000.87	15.379%	66.201%
25.0	881.446	204.190	1205.059	11.878%	79.707%
30.0	618.579	169.533	1374.592	9.862%	90.921%
35.0	276.562	86.951	1461.543	5.058%	96.672%
40.0	34.403	12.122	1473.665	.705%	97.474%
45.0	12.037	4.665	1478.33	.271%	97.782%
50.0	10.192	4.280	1482.61	.249%	98.065%
55.0	9.029	4.054	1486.664	.236%	98.333%
60.0	8.217	3.901	1490.565	.227%	98.591%
65.0	7.660	3.805	1494.37	.221%	98.843%
70.0	7.378	3.800	1498.17	.221%	99.094%
75.0	7.254	3.841	1502.01	.223%	99.349%
80.0	7.247	3.912	1505.922	.228%	99.607%
85.0	7.247	3.957	1509.879	.230%	99.869%
90.0	7.226	1.980	1511.86	.115%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1374.59	79.96%	90.92%
0-40	1473.66	85.73%	97.47%
0-60	1490.56	86.71%	98.59%
0-90	1509.88	87.83%	99.87%
0-120	1509.88	87.83%	99.87%
0-180	1511.86	87.95%	100.00%
60-90	23.22	1.35%	1.54%
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%
0-25.13	1209.49	70.36%	80.00%

ZONAL LUMEN SUMMARY

0-10	438.59
10-20	562.28
20-30	373.72
30-40	99.07
40-50	8.95
50-60	7.95
60-70	7.61
70-80	7.75
80-90	3.96
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: —————

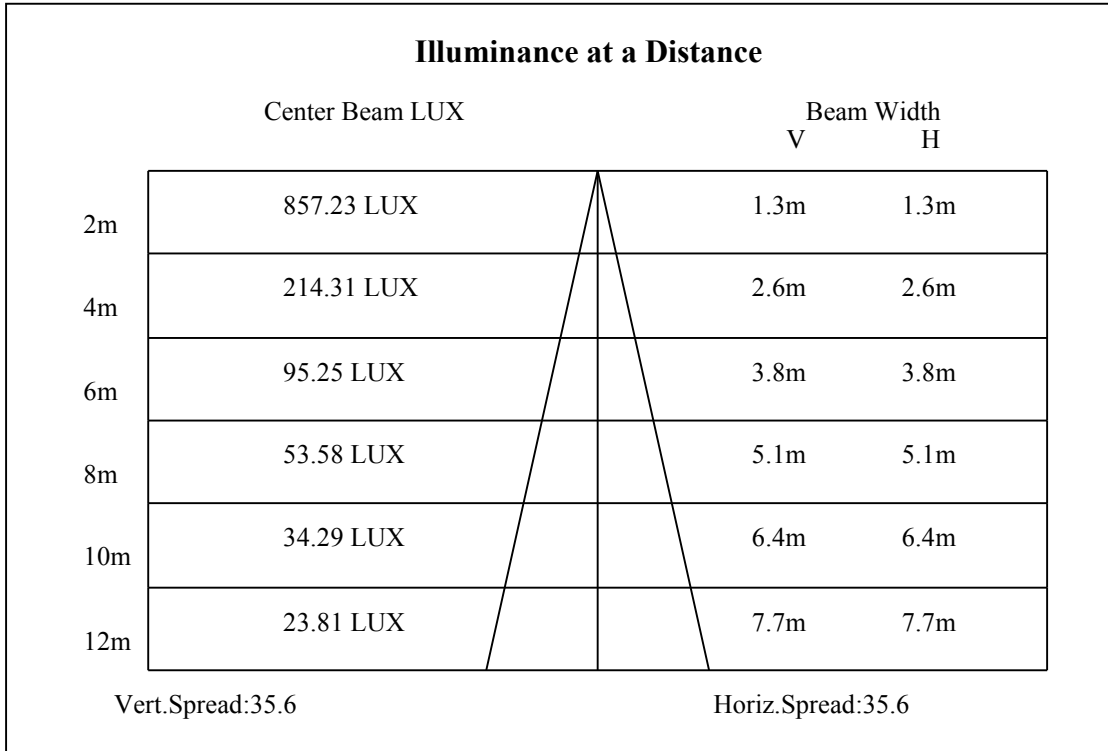
C90/C270: —————

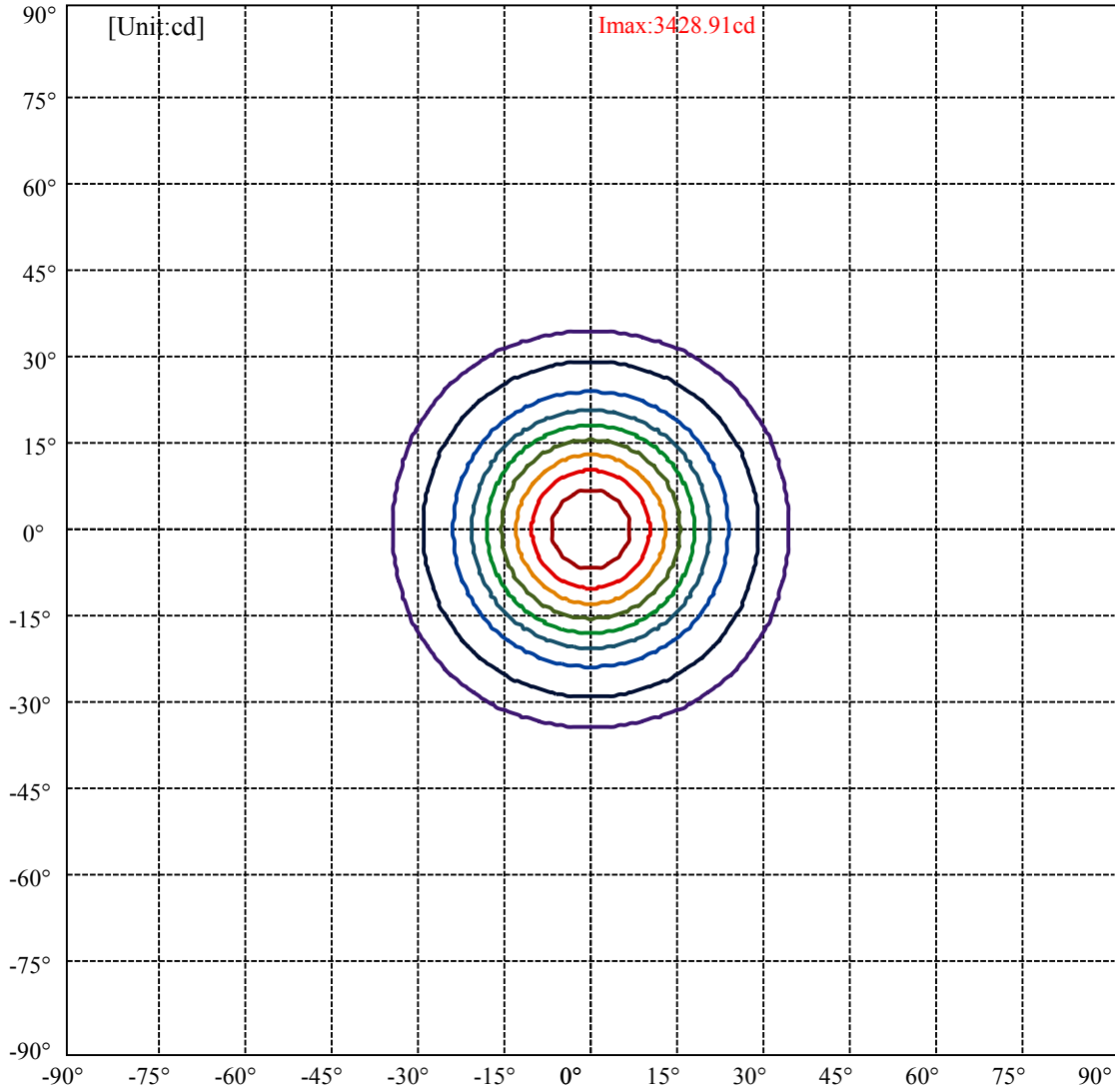
Field angle(10%Imax):C0/180Left:34.0 Right:34.0

:C90/270Left:34.0 Right:34.0

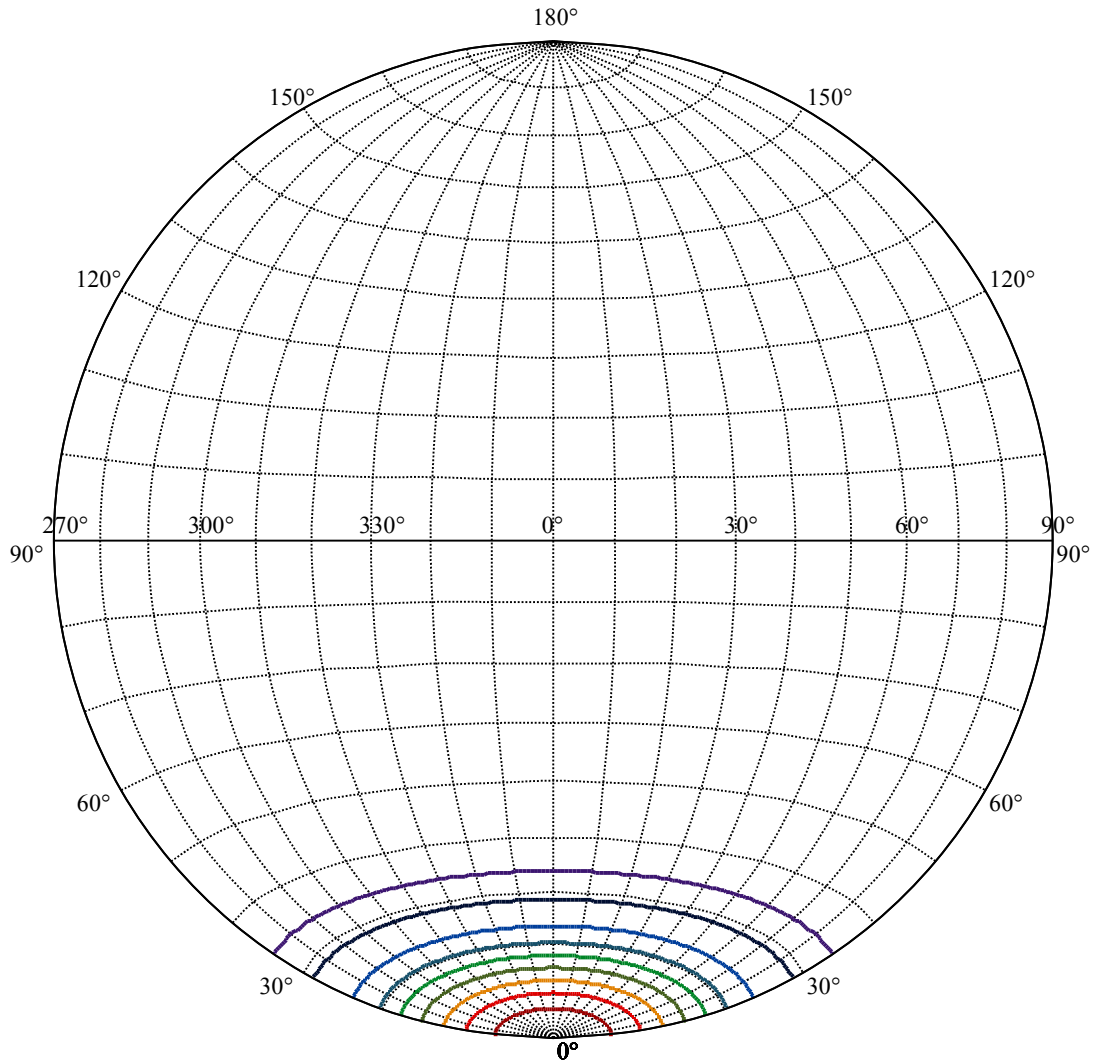
Beam Angle(50%Imax):C0/180Left:17.8 Right:17.8

:C90/270Left:17.8 Right:17.8





(10%Imax) 342.891	—
(20%Imax) 685.783	—
(30%Imax) 1028.67	—
(40%Imax) 1371.57	—
(50%Imax) 1714.46	—
(60%Imax) 2057.35	—
(70%Imax) 2400.24	—
(80%Imax) 2743.13	—
(90%Imax) 3086.02	—



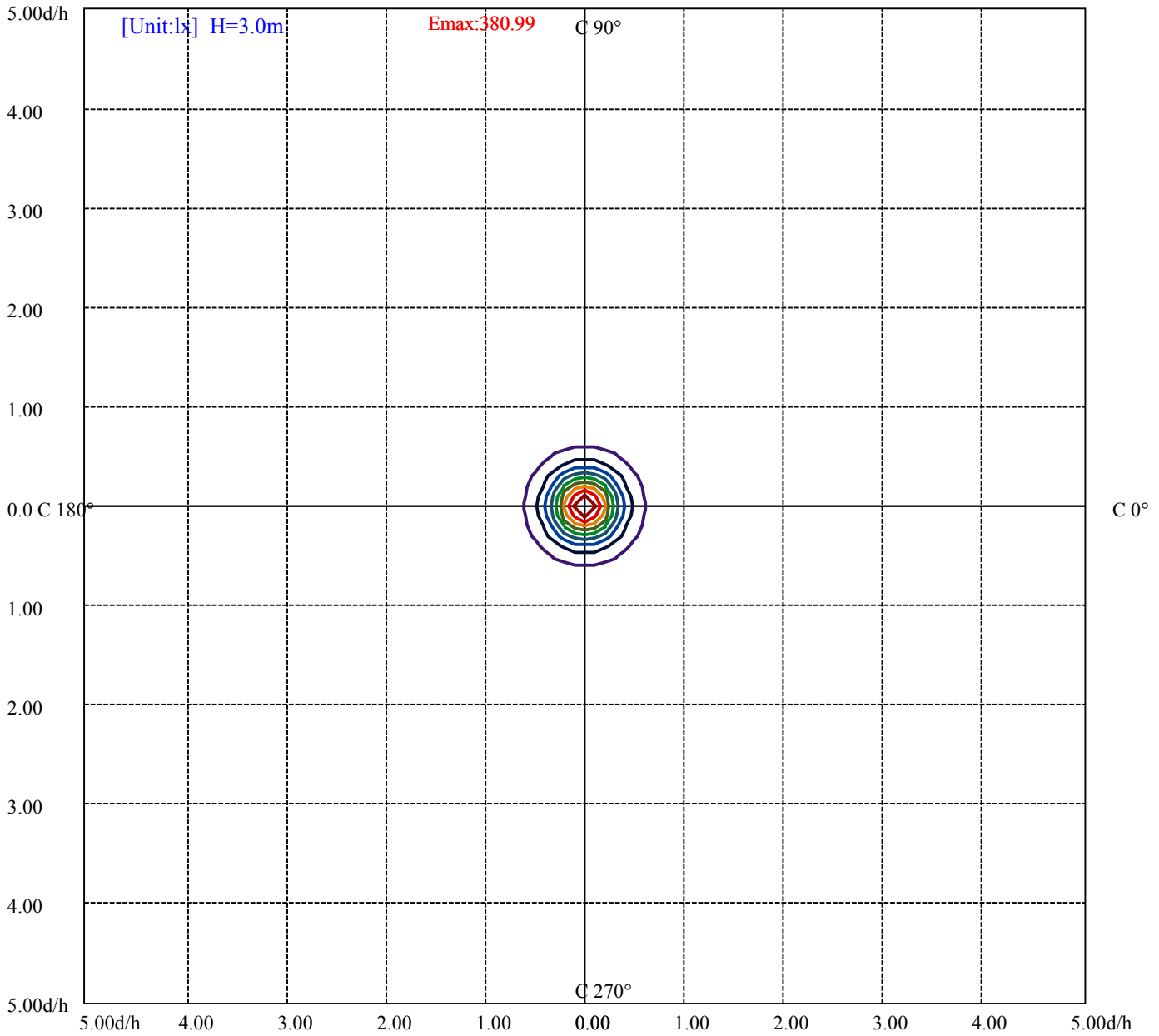
House

[Unit:cd]

Road

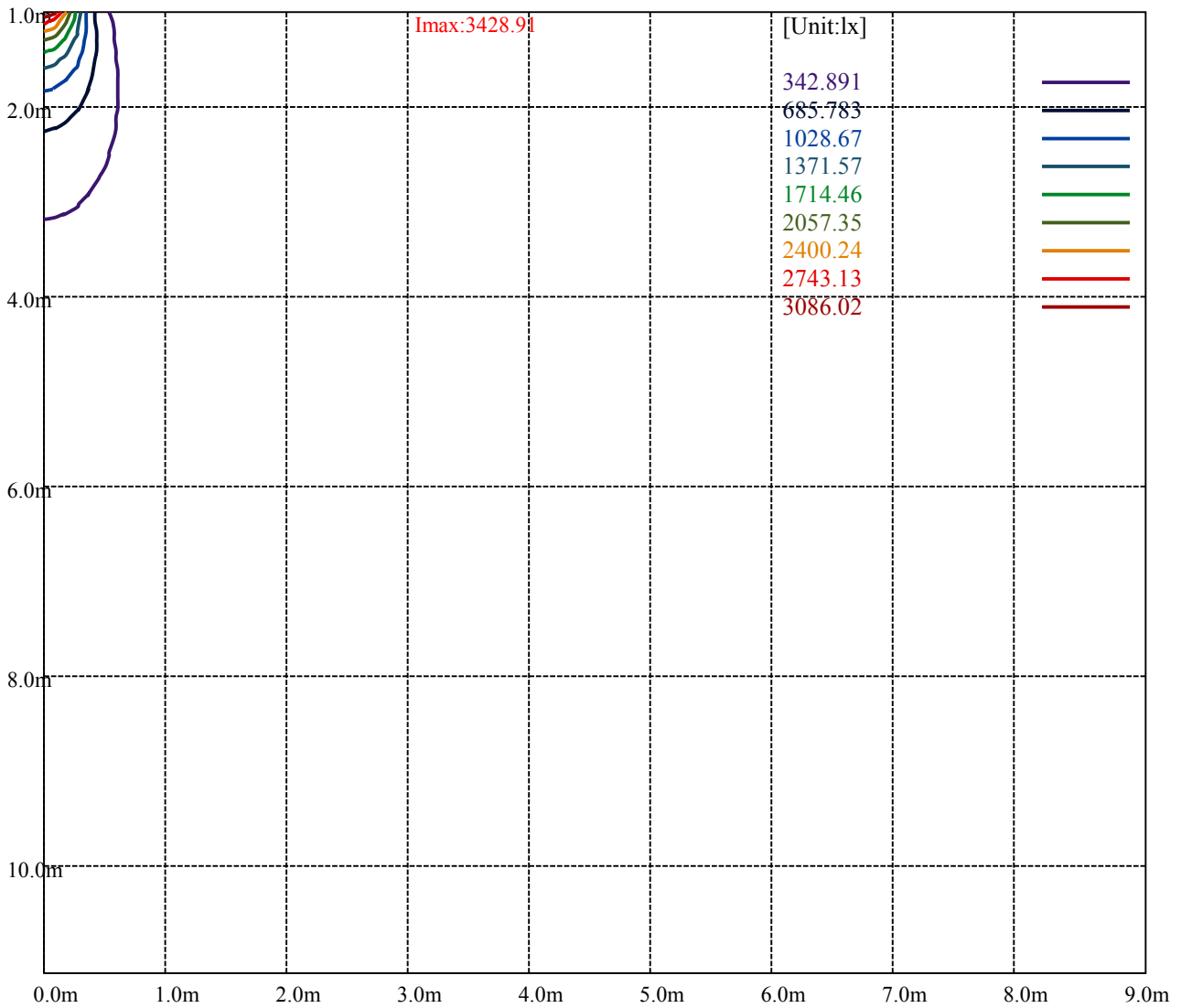
I<sub>max</sub>:3428.91

(10%I <sub>max</sub> )	342.891	—
(20%I <sub>max</sub> )	685.783	—
(30%I <sub>max</sub> )	1028.67	—
(40%I <sub>max</sub> )	1371.57	—
(50%I <sub>max</sub> )	1714.46	—
(60%I <sub>max</sub> )	2057.35	—
(70%I <sub>max</sub> )	2400.24	—
(80%I <sub>max</sub> )	2743.13	—
(90%I <sub>max</sub> )	3086.02	—



- (10%Emax) 38.099
- (20%Emax) 76.19789
- (30%Emax) 114.2967
- (40%Emax) 152.3956
- (50%Emax) 190.4944
- (60%Emax) 228.5933
- (70%Emax) 266.6933
- (80%Emax) 304.7922
- (90%Emax) 342.8911





Luminance Table

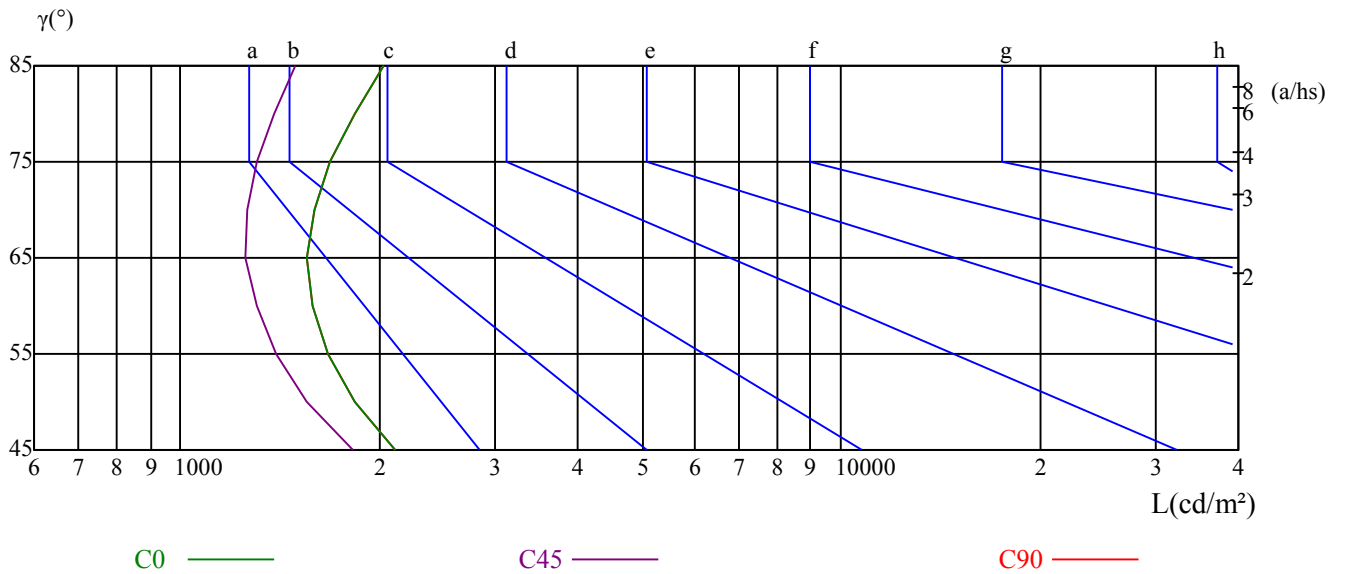
$\gamma$	45	50	55	60	65	70	75	80	85
C0	2115	1832	1675	1587	1555	1591	1683	1833	2033
C45	1820	1553	1398	1303	1254	1259	1302	1384	1490
C90	2115	1832	1675	1587	1555	1591	1683	1833	2033

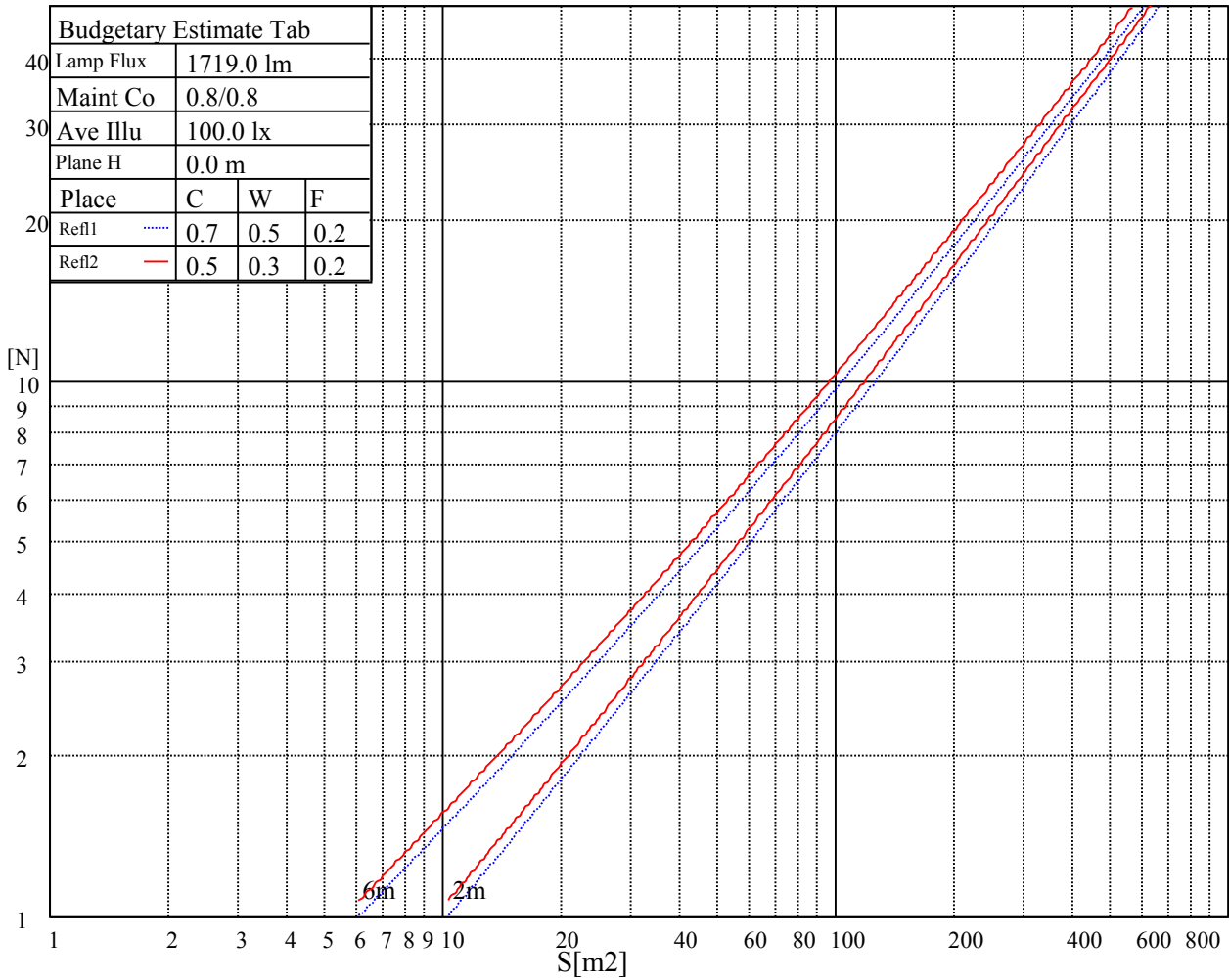
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3699	3699	3699	5720	5720	5720	16969	16969	16969

Glare Table

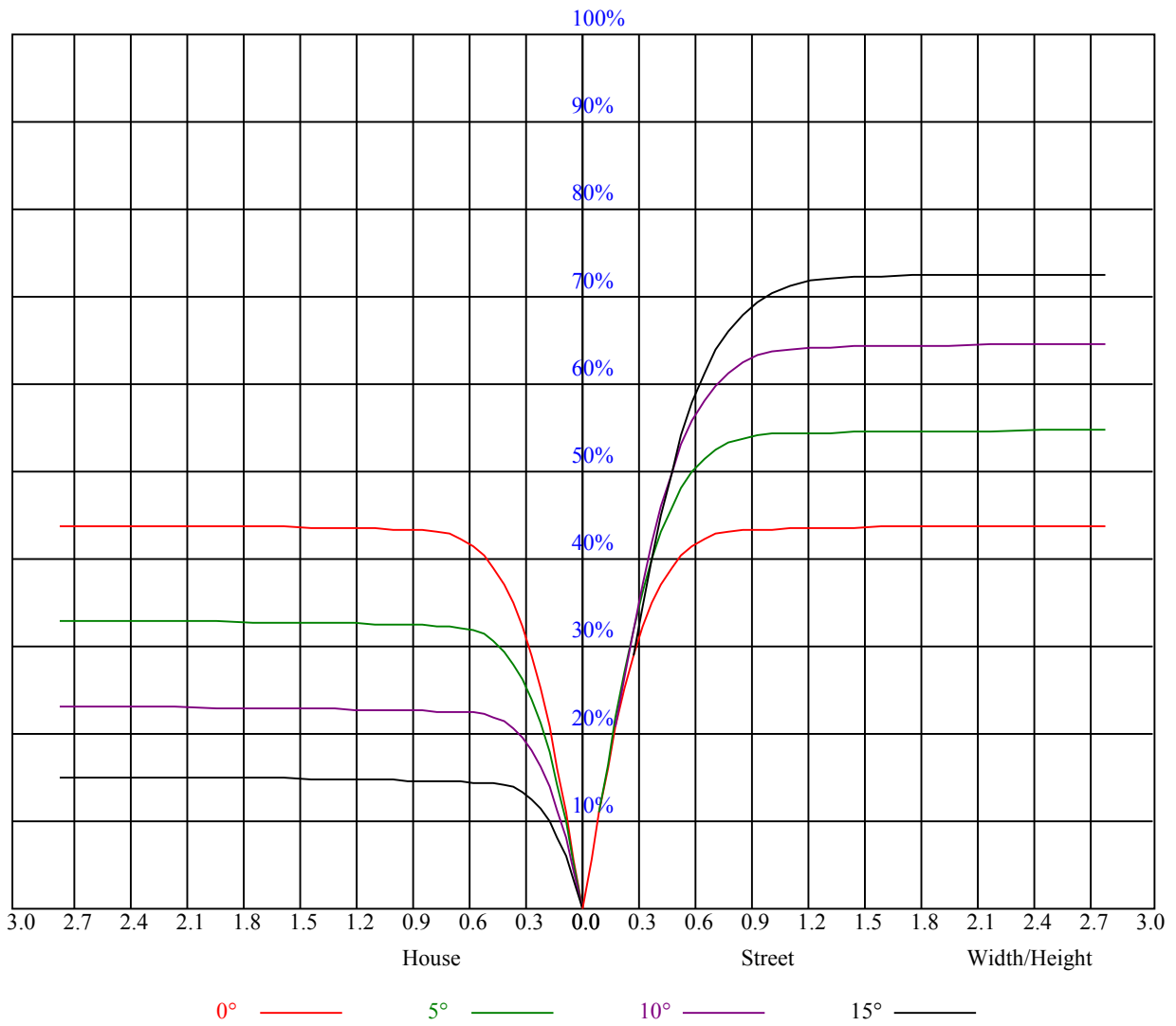
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

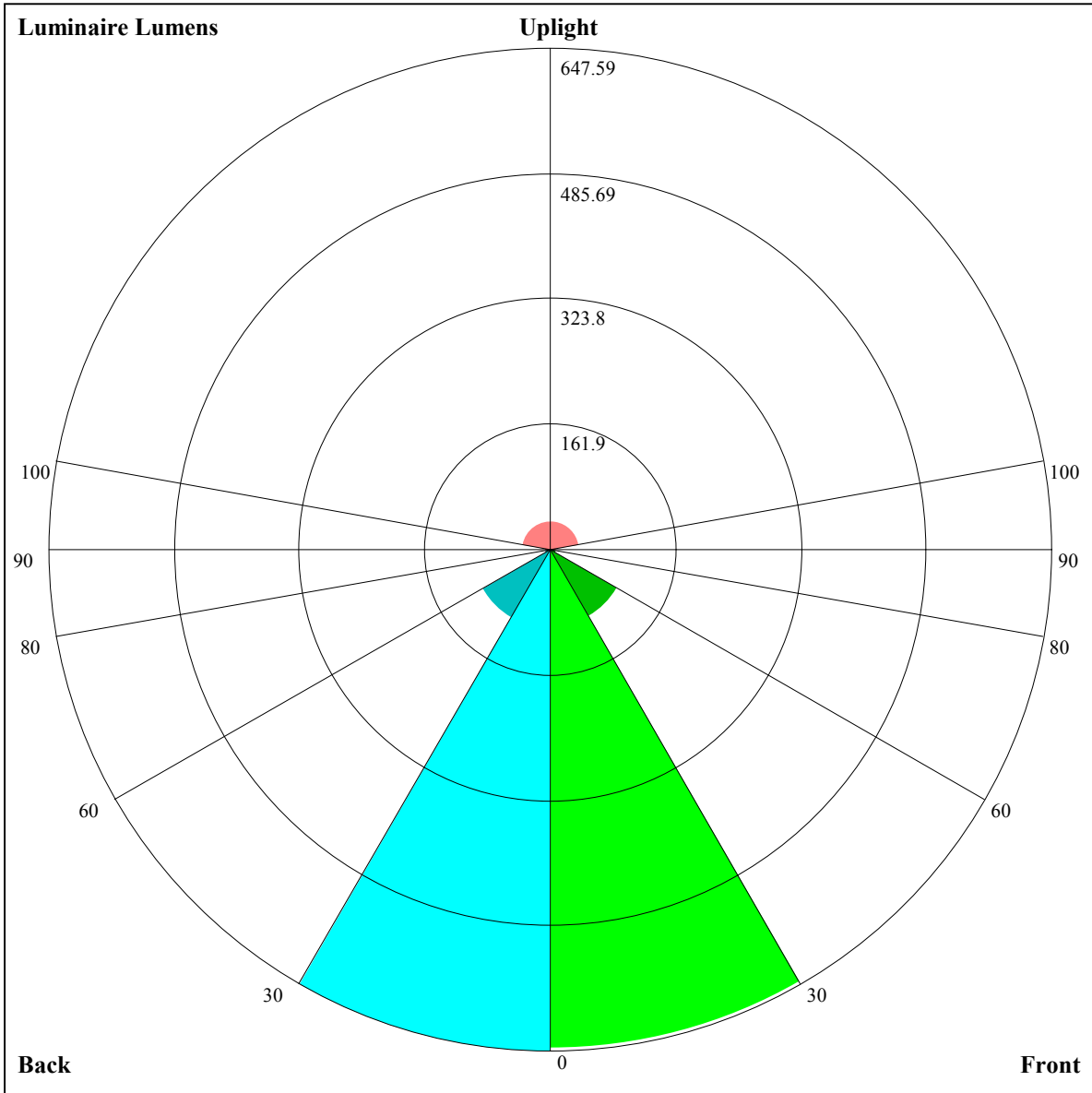
Luminance Limiting Curve





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	0.89	0.87	0.91	0.88	0.86	0.88	0.86	0.84	0.86	0.84	0.82	0.83	0.82	0.80	0.79
3	0.88	0.84	0.81	0.87	0.83	0.80	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	0.81	0.78	0.75	0.80	0.77	0.74	0.78	0.76	0.74	0.72
5	0.80	0.76	0.73	0.80	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.71	0.75	0.73	0.71	0.70
6	0.77	0.73	0.70	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.67
7	0.74	0.70	0.67	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.71	0.68	0.65	0.64
8	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.68	0.65	0.63	0.62
9	0.69	0.64	0.62	0.68	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.60
10	0.66	0.62	0.59	0.66	0.62	0.59	0.65	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.58





Luminaire Lumens:

FL=643.28,FM=100.66,FH=7.68,FVH=3.95

BL=647.59,BM=101.92,BH=7.7,BVH=3.96

UL=7.88,UH=37.52

BUG Rating:B2-U2-G0

Nata 2-1680-M

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	3415.70	3260.44	2802.37	2140.59	1443.58	896.87	639.20	292.35	32.98
45.0	3438.82	3291.27	2834.85	2163.72	1446.33	908.43	629.85	288.50	38.87
90.0	3433.32	3215.29	2687.85	2032.13	1370.35	844.57	582.00	250.34	27.53
135.0	3427.81	3309.99	2824.94	2202.81	1520.11	928.80	652.97	325.38	44.10
180.0	3415.70	3237.32	2732.45	2084.99	1376.41	864.28	599.45	253.98	33.86
225.0	3438.82	3265.95	2723.09	2080.58	1388.52	838.18	609.09	264.16	30.01
270.0	3433.32	3313.29	2793.56	2140.04	1492.03	927.70	645.26	302.81	41.07
315.0	3427.81	3199.33	2644.36	1954.50	1243.72	842.75	590.81	234.98	26.81
360.0	3415.70	3260.44	2802.37	2140.59	1443.58	896.87	639.20	292.35	32.98
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	11.84	10.13	8.97	8.20	7.60	7.38	7.21	7.21	7.21
45.0	12.50	10.30	9.14	8.31	7.71	7.38	7.27	7.27	7.27
90.0	11.23	10.08	8.97	8.15	7.60	7.38	7.27	7.21	7.27
135.0	12.33	10.24	9.08	8.26	7.71	7.38	7.27	7.27	7.21
180.0	12.33	10.30	8.97	8.20	7.65	7.38	7.27	7.21	7.21
225.0	11.67	10.19	8.97	8.20	7.71	7.38	7.27	7.32	7.32
270.0	12.94	10.41	9.19	8.31	7.71	7.43	7.27	7.27	7.27
315.0	11.45	9.91	8.92	8.09	7.60	7.32	7.21	7.21	7.21
360.0	11.84	10.13	8.97	8.20	7.60	7.38	7.21	7.21	7.21
C/ $\gamma$ (°)	90.0								
0.0	7.21								
45.0	7.21								
90.0	7.27								
135.0	7.21								
180.0	7.21								
225.0	7.27								
270.0	7.21								
315.0	7.21								
360.0	7.21								