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Nata

Client:

LumCAT: 3-2016-A

Luminaire: 92.70.045.00+92.70.089.00

Report No: NT2018032101

Test No: nata-0100

LampCAT: NICHIA NEVWJ048Z-V1

Lamp flux(lm): 3055.0

Number of Lamps: 1

Length(mm): 82

Phm Type: C

Voltage(V): 43.8000

Current(A): 0.5000

Power (W): 21.9000

PF: 0.0000

Ballast type: DC

Width(mm): 82

Height(mm): 0

Photometric Results

Lumens(lm): 2524.91, Efficiency(%): 82.65% , Luminous Efficacy(lm/W): 115.29

Central intensity(cd): 17421.220, Maximum intensity(cd): 17421.220

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=17.2

[C90/270]Total=17.2

Field angle(10%Imax): [C0/180]Total=34.0

[C90/270]Total=34.0

Maximum s/h(1/2): C0_180=0.30 C90_270=0.30

Maximum s/h(1/4): C0_180=0.31 C90_270=0.31

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 85.98%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 95.009%

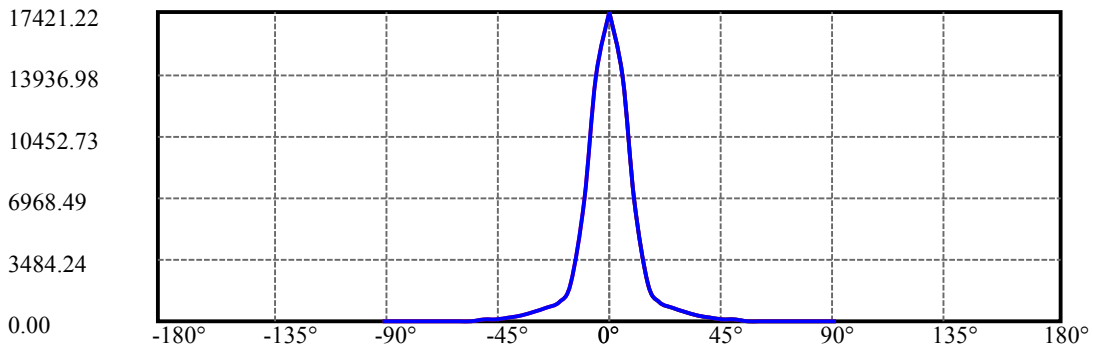
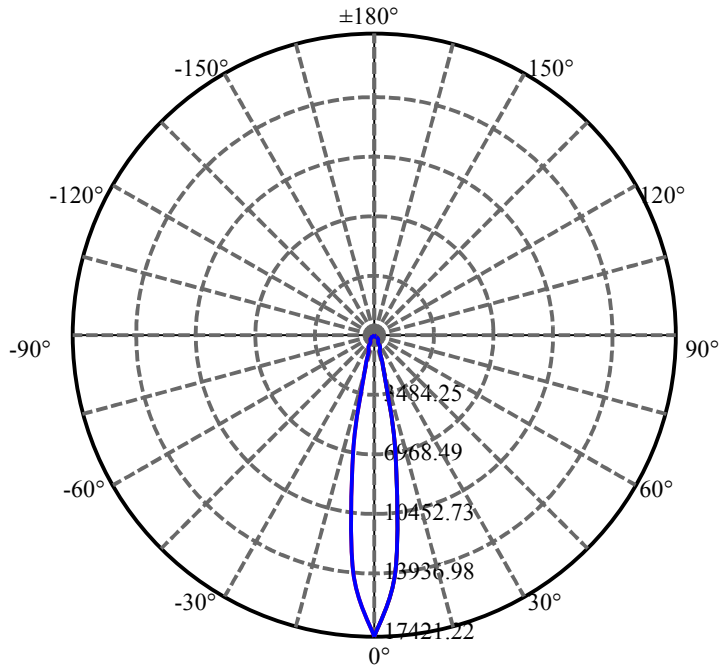
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	17421.221	104.182	104.182	3.410%	4.126%
5.0	13712.829	655.107	759.29	21.444%	30.072%
10.0	6829.265	650.030	1409.32	21.278%	55.817%
15.0	2142.933	304.014	1713.334	9.951%	67.857%
20.0	1115.305	209.091	1922.425	6.844%	76.138%
25.0	755.532	175.021	2097.446	5.729%	83.070%
30.0	496.492	136.073	2233.519	4.454%	88.459%
35.0	315.625	99.232	2332.751	3.248%	92.390%
40.0	207.040	72.947	2405.699	2.388%	95.279%
45.0	118.695	46.005	2451.704	1.506%	97.101%
50.0	62.916	26.418	2478.122	.865%	98.147%
55.0	26.578	11.934	2490.056	.391%	98.620%
60.0	11.658	5.534	2495.59	.181%	98.839%
65.0	10.323	5.128	2500.718	.168%	99.042%
70.0	10.165	5.236	2505.954	.171%	99.249%
75.0	10.082	5.338	2511.292	.175%	99.461%
80.0	10.062	5.431	2516.723	.178%	99.676%
85.0	10.013	5.468	2522.191	.179%	99.892%
90.0	9.910	2.716	2524.907	.089%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2233.52	73.11%	88.46%
0-40	2405.70	78.75%	95.28%
0-60	2495.59	81.69%	98.84%
0-90	2522.19	82.56%	99.89%
0-120	2522.19	82.56%	99.89%
0-180	2524.91	82.65%	100.00%
60-90	32.14	1.05%	1.27%
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%
0-22.79	2019.93	66.12%	80.00%

ZONAL LUMEN SUMMARY

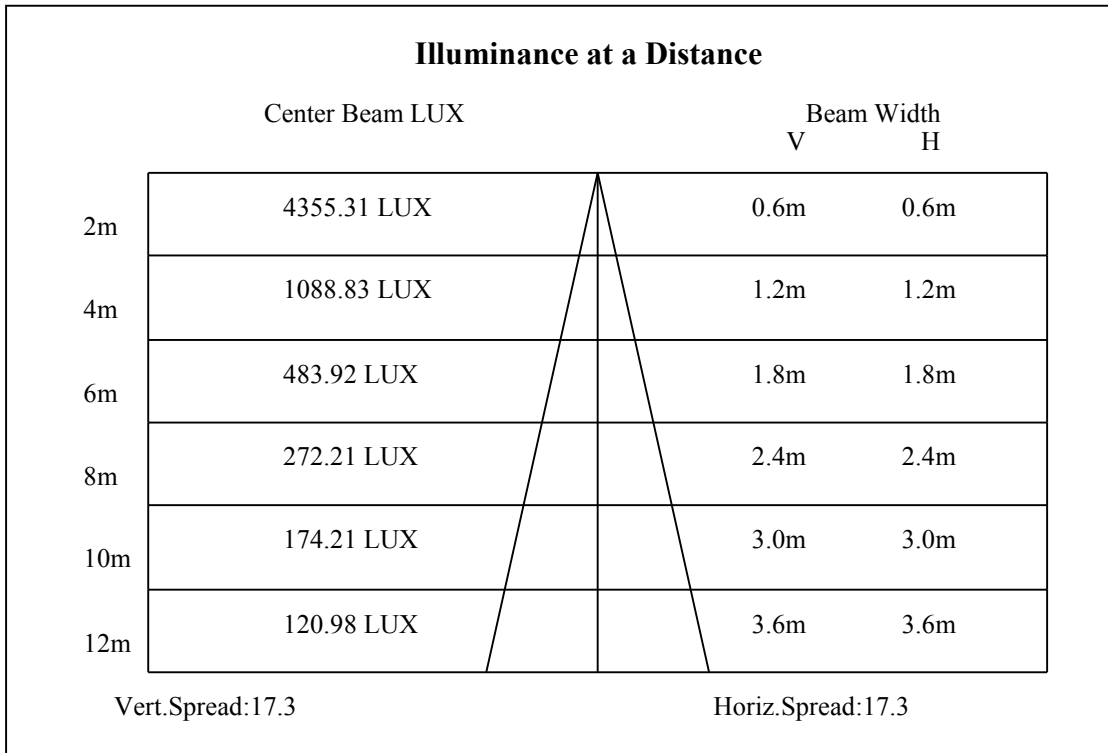
0-10	1409.32
10-20	513.11
20-30	311.09
30-40	172.18
40-50	72.42
50-60	17.47
60-70	10.36
70-80	10.77
80-90	5.47
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

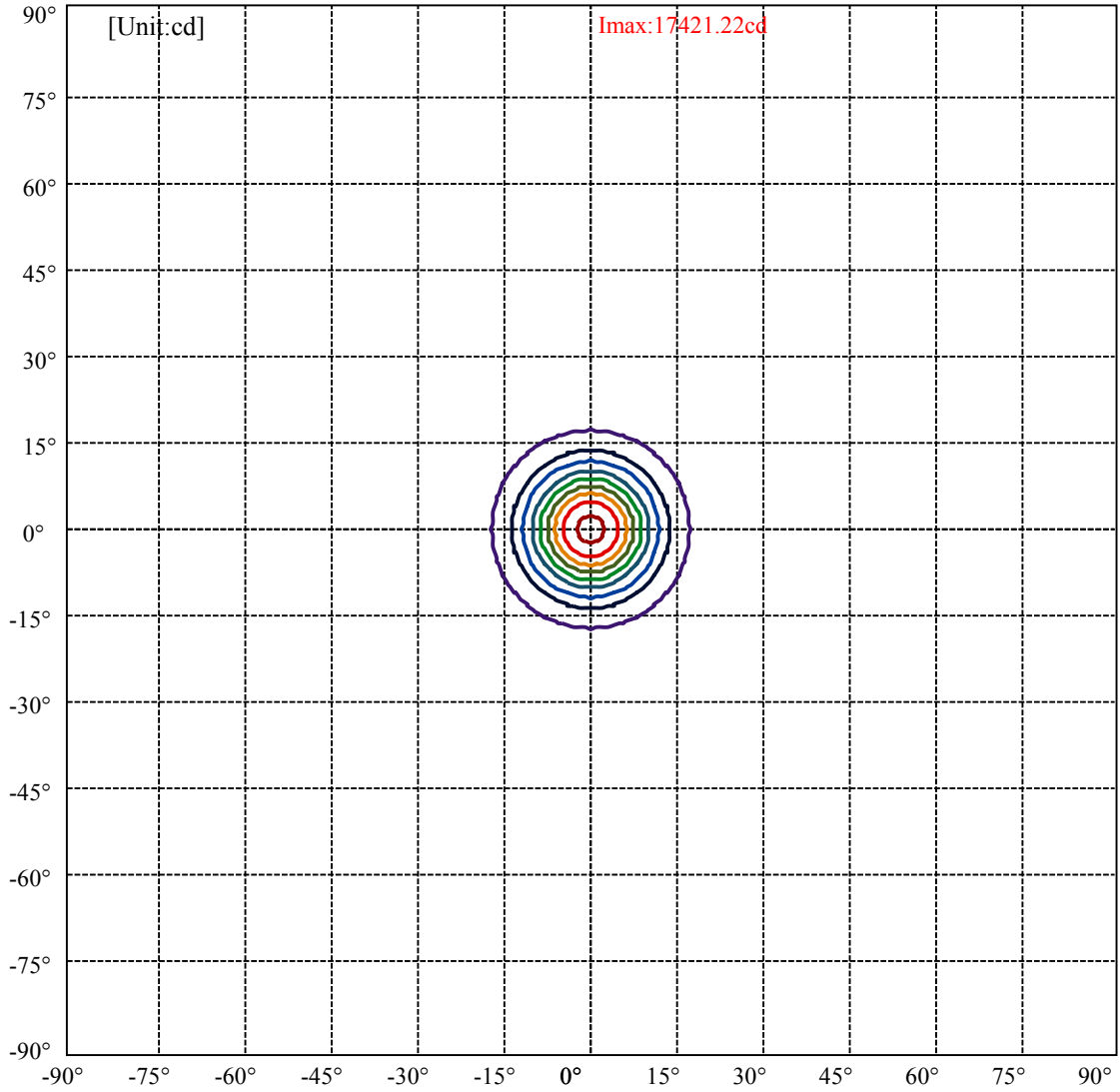


C0(Max): ———
C0/C180: ———
C90/C270: ———

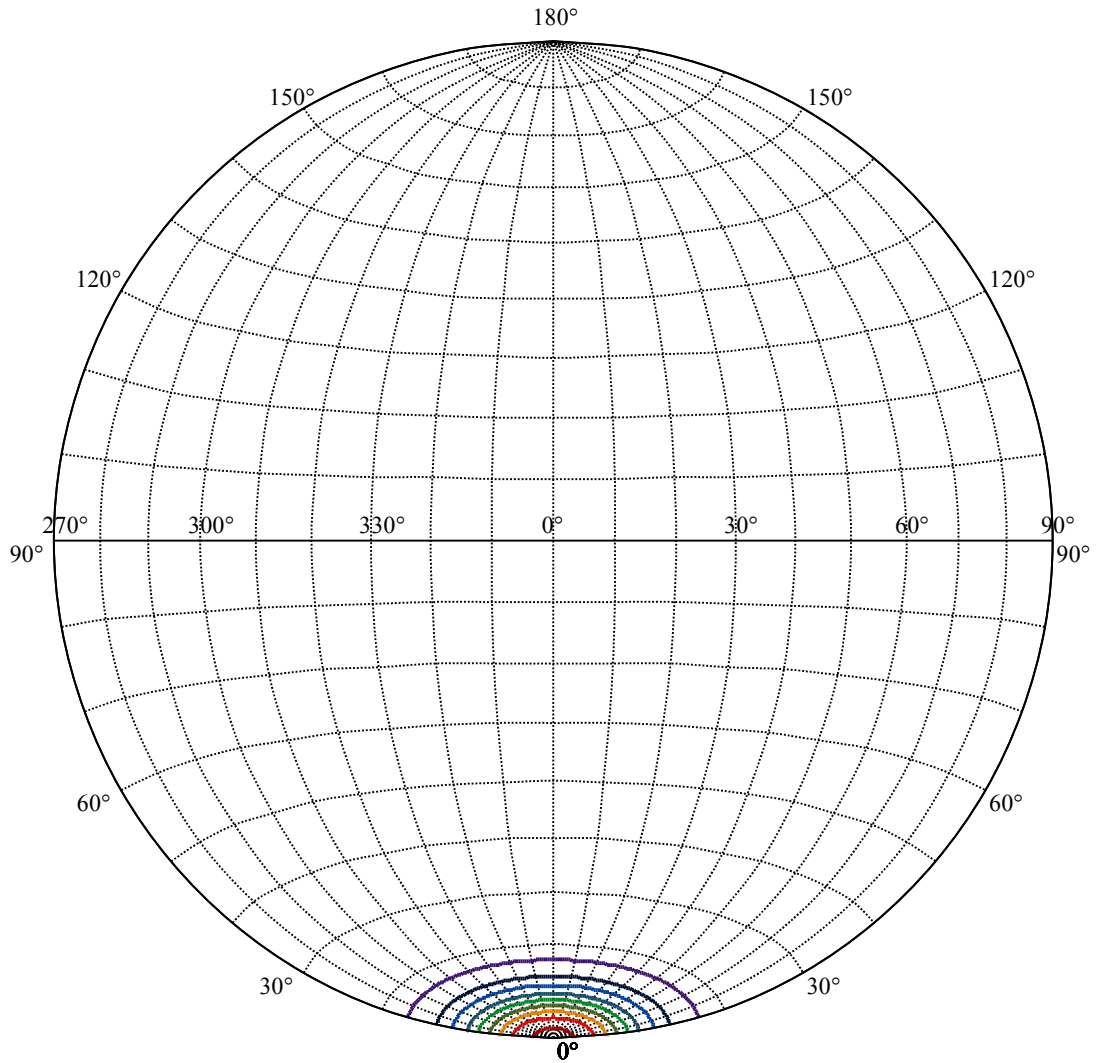
Field angle(10%Imax):C0/180Left:17.0 Right:17.0
:C90/270Left:17.0 Right:17.0

Beam Angle(50%Imax):C0/180Left:8.6 Right:8.6
:C90/270Left:8.6 Right:8.6





(10%Imax) 1742.12	—
(20%Imax) 3484.24	—
(30%Imax) 5226.37	—
(40%Imax) 6968.49	—
(50%Imax) 8710.61	—
(60%Imax) 10452.7	—
(70%Imax) 12194.9	—
(80%Imax) 13937	—
(90%Imax) 15679.1	—



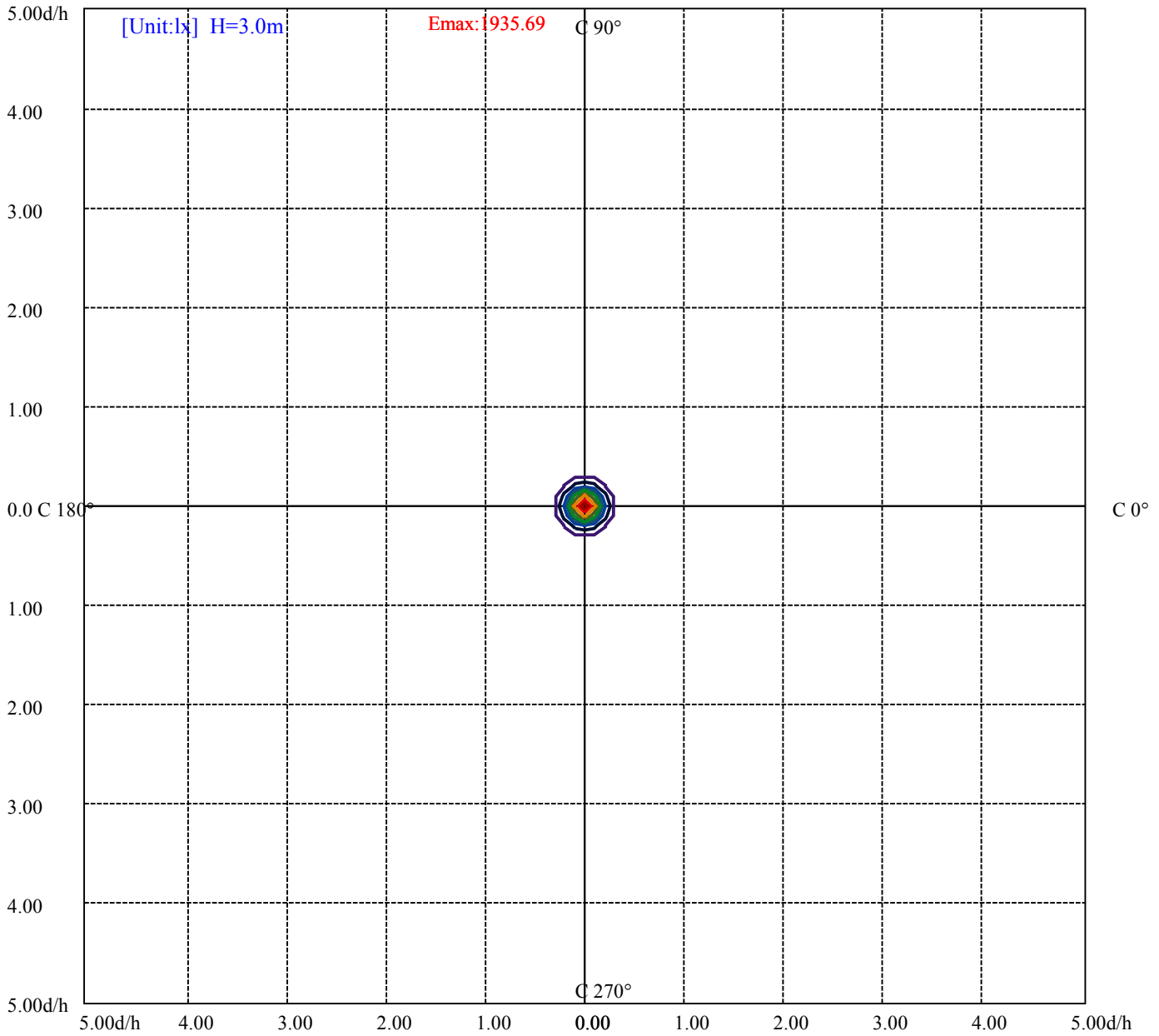
House

[Unit:cd]

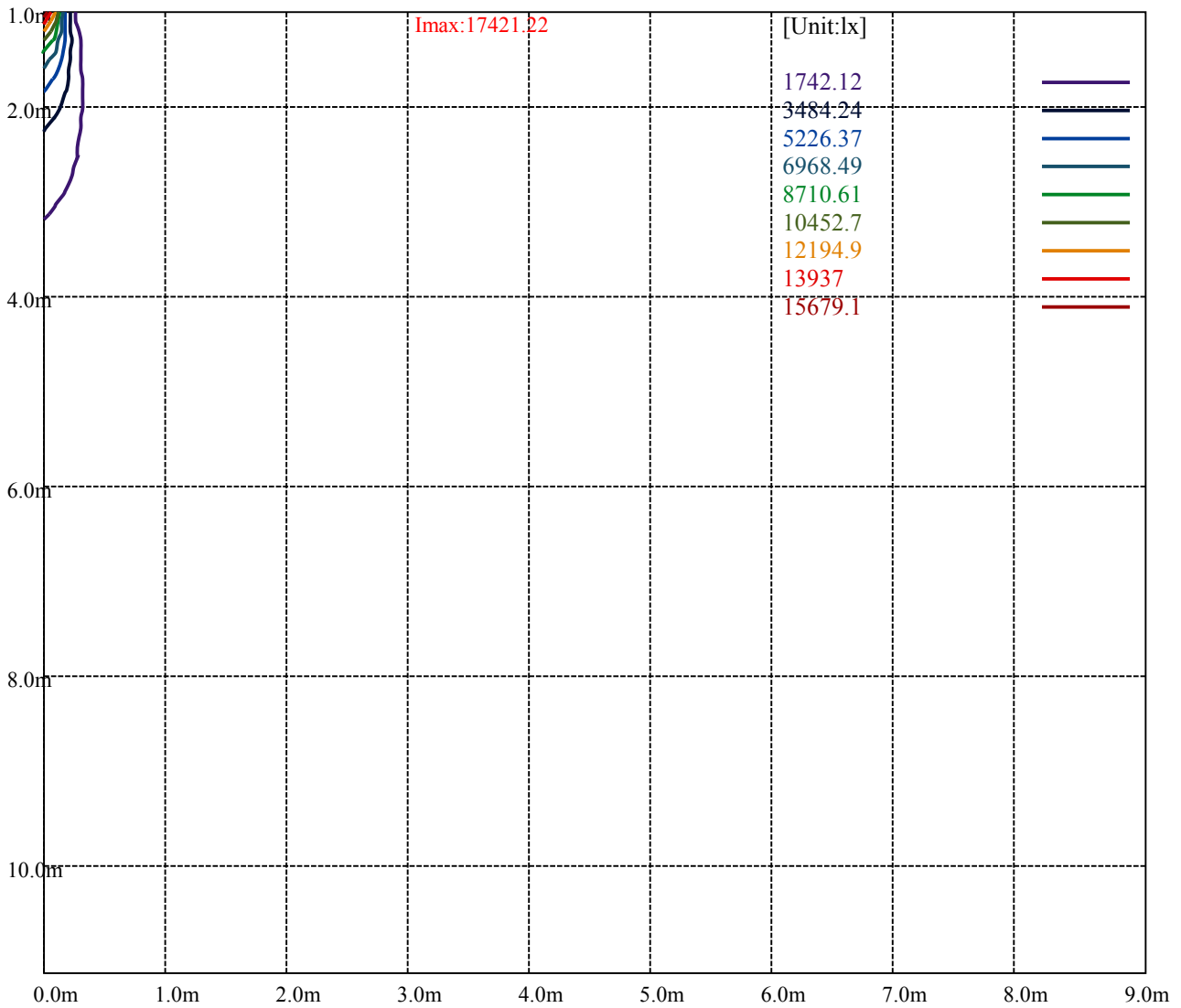
Road

Imax:17421.22

(10%Imax) 1742.12	—
(20%Imax) 3484.24	—
(30%Imax) 5226.37	—
(40%Imax) 6968.49	—
(50%Imax) 8710.61	—
(60%Imax) 10452.7	—
(70%Imax) 12194.9	—
(80%Imax) 13937	—
(90%Imax) 15679.1	—



(10%Emax) 193.5678	—
(20%Emax) 387.1356	—
(30%Emax) 580.7034	—
(40%Emax) 774.2711	—
(50%Emax) 967.84	—
(60%Emax) 1161.411	—
(70%Emax) 1354.978	—
(80%Emax) 1548.544	—
(90%Emax) 1742.111	—



Luminance Table

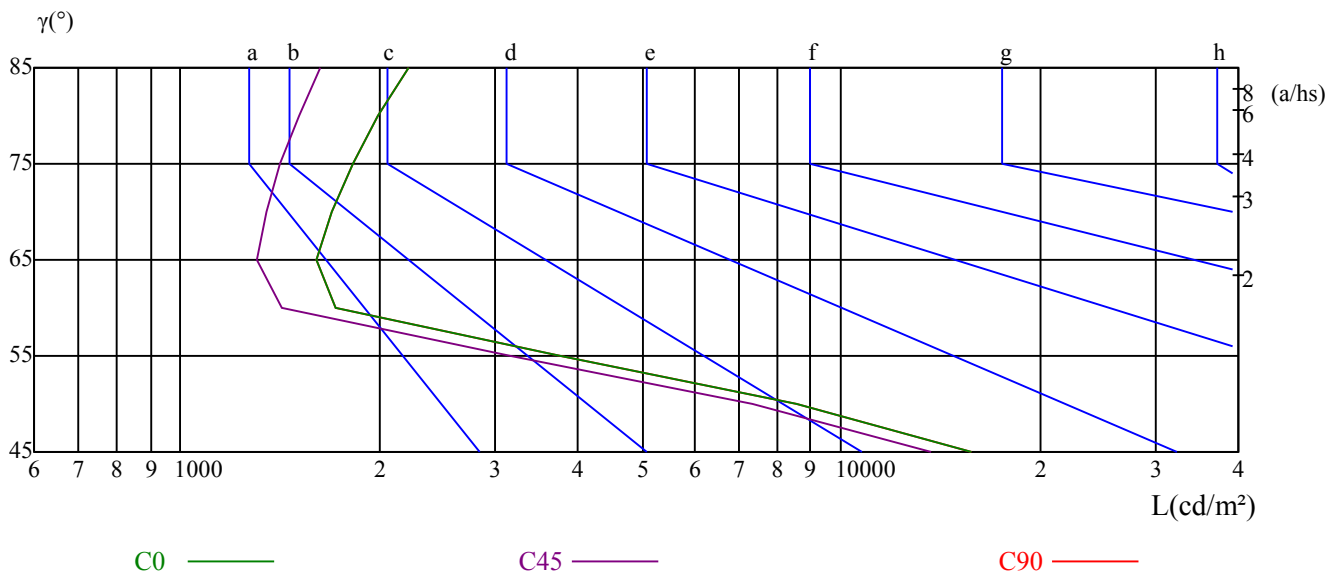
γ	45	50	55	60	65	70	75	80	85
C0	15747	8575	3754	1722	1611	1695	1819	1995	2222
C45	13658	7328	3158	1425	1309	1350	1417	1513	1633
C90	15747	8575	3754	1722	1611	1695	1819	1995	2222

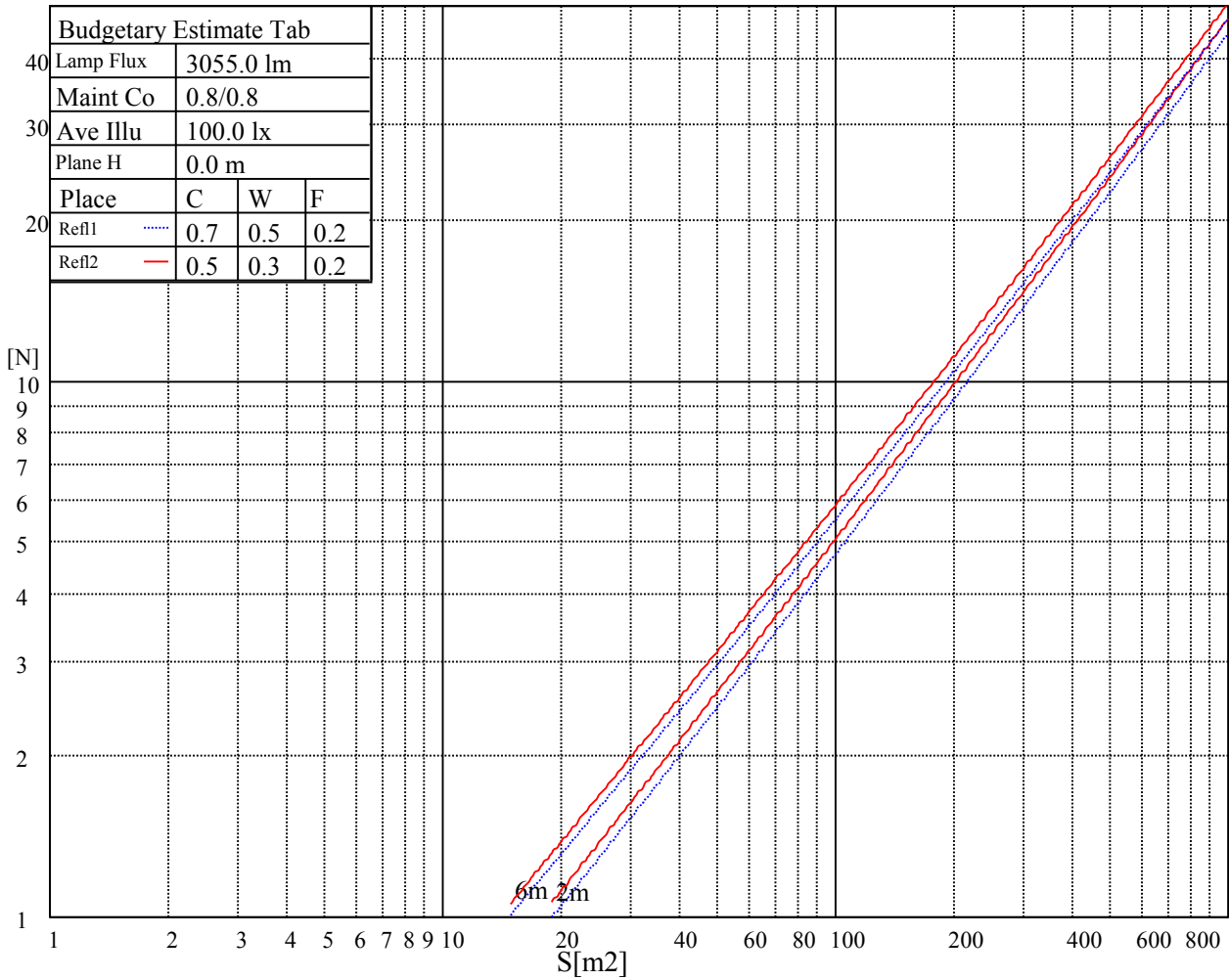
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3633	3633	3633	5793	5793	5793	17087	17087	17087

Glare Table

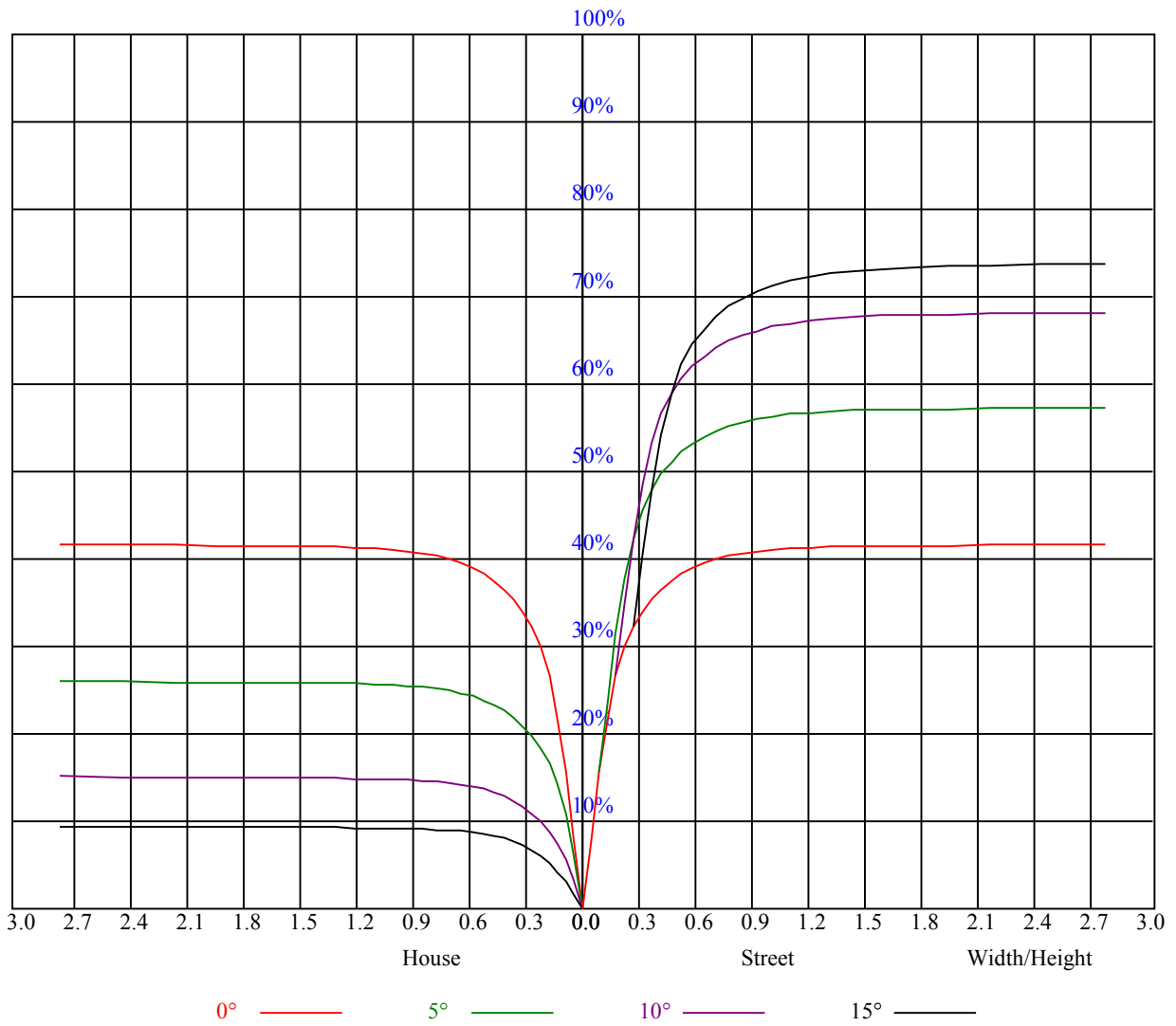
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

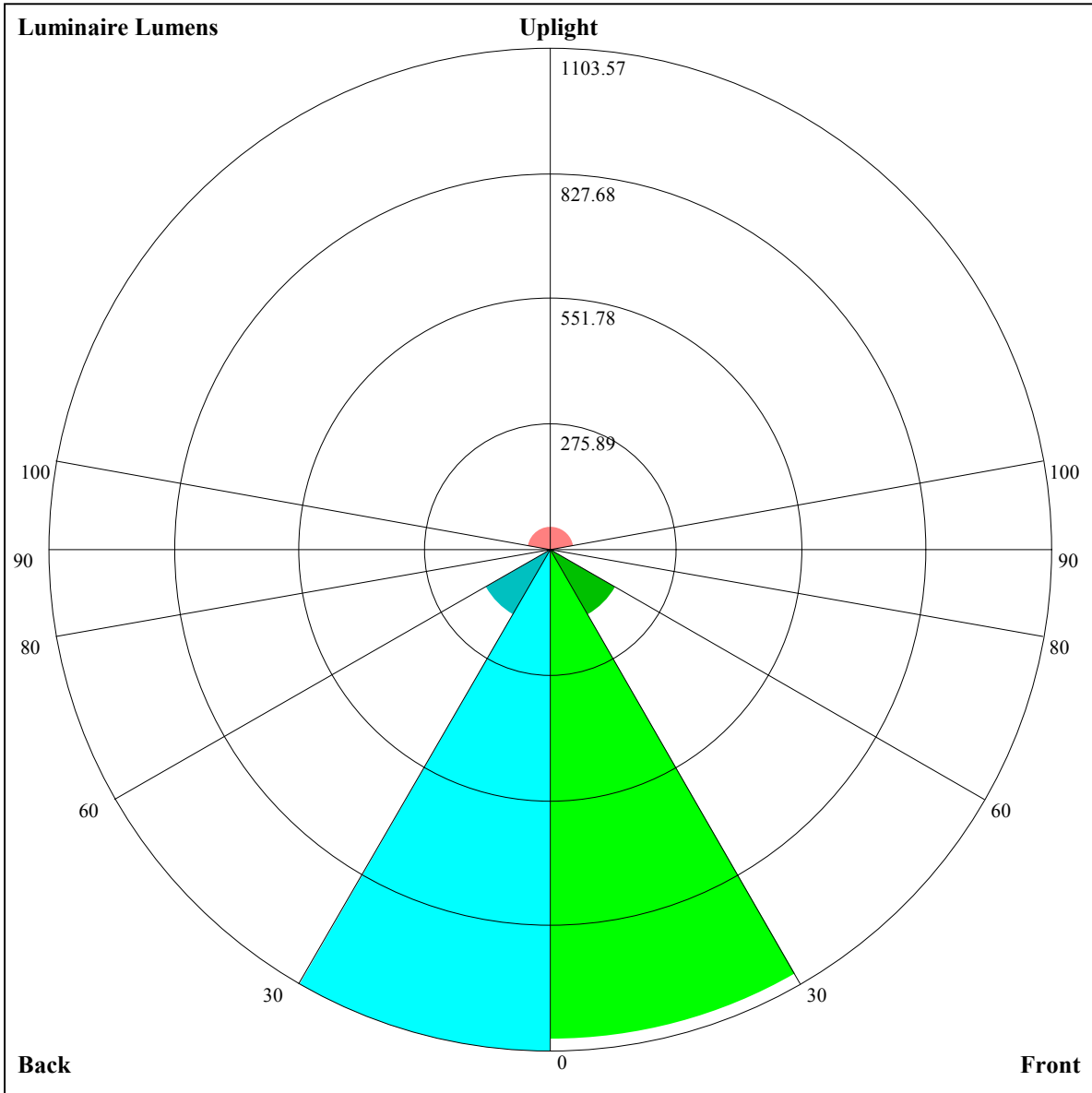
Luminance Limiting Curve





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





Luminaire Lumens:

FL=1079.73,FM=166.36,FH=10.64,FVH=5.45

BL=1103.57,BM=166.47,BH=10.66,BVH=5.46

UL=10.81,UH=51.45

BUG Rating:B3-U2-G0

Intensity data(cd)

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	17645.58	14633.99	7531.72	2840.91	1218.40	803.82	520.83	339.70	211.86
45.0	17441.87	12123.42	5169.80	1603.24	1019.09	668.38	444.86	281.34	176.18
90.0	17028.94	10964.48	4075.83	1430.37	968.06	620.32	399.49	259.54	162.80
135.0	17568.50	13642.98	7102.28	2170.87	1093.42	722.89	470.73	290.15	194.73
180.0	17645.58	12701.51	5871.77	1759.05	1075.36	697.56	466.05	289.38	186.26
225.0	17441.87	15569.95	8763.88	2483.59	1089.46	848.20	559.81	351.65	223.64
270.0	17028.94	15823.21	9221.95	2873.94	1381.92	896.32	588.55	387.05	282.99
315.0	17568.50	14243.09	6896.92	1981.48	1076.74	786.76	521.60	326.21	217.86
360.0	17645.58	14633.99	7531.72	2840.91	1218.40	803.82	520.83	339.70	211.86

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	123.99	69.26	27.91	11.07	10.30	10.13	10.02	10.02	10.02
45.0	99.27	49.17	21.58	10.57	10.24	10.13	10.02	10.02	9.91
90.0	90.57	46.41	18.77	10.52	10.24	10.13	10.02	10.08	9.97
135.0	109.62	56.54	23.18	10.68	10.30	10.13	10.13	10.08	10.13
180.0	105.21	55.11	22.35	10.52	10.19	10.08	9.97	9.97	10.02
225.0	140.89	75.21	32.76	13.27	10.35	10.13	10.08	10.02	9.97
270.0	152.95	87.32	39.48	15.69	10.57	10.35	10.24	10.13	10.02
315.0	127.07	64.31	26.59	10.96	10.41	10.24	10.19	10.19	10.08
360.0	123.99	69.26	27.91	11.07	10.30	10.13	10.02	10.02	10.02

C/γ(°)	90.0
0.0	9.86
45.0	9.86
90.0	9.91
135.0	9.97
180.0	9.91
225.0	9.86
270.0	9.97
315.0	9.97
360.0	9.86