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Nata

LumCAT: 2-1299-N

Luminaire: 92.70.045.00+92.70.059.00

Report No: NATA0100

Test No: GC2018062017

LampCAT: NICHIA NFCW108B-V3

Lamp flux(lm): 2255.0

Number of Lamps: 1

Length(mm): 70

Phm Type: C

Voltage(V): 33.8000

Current(A): 0.5000

Power (W): 16.9000

PF: 0.0000

Ballast type: DC

Width(mm): 70

Height(mm): 0

Photometric Results

Lumens(lm): 1721.72

Efficiency(%): 76.35%

Lumens(lm)/Power(W): 101.88

Central intensity(cd): 6988.171

Maximum intensity(cd): 6988.171

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=22.7

[C90/270]Total=22.7

Field angle(10%Imax): [C0/180]Total=47.3

[C90/270]Total=47.3

Maximum s/h(1/2): C0_180=0.38 C90_270=0.38

Maximum s/h(1/4): C0_180=0.39 C90_270=0.39

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 78.13%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 95.651%

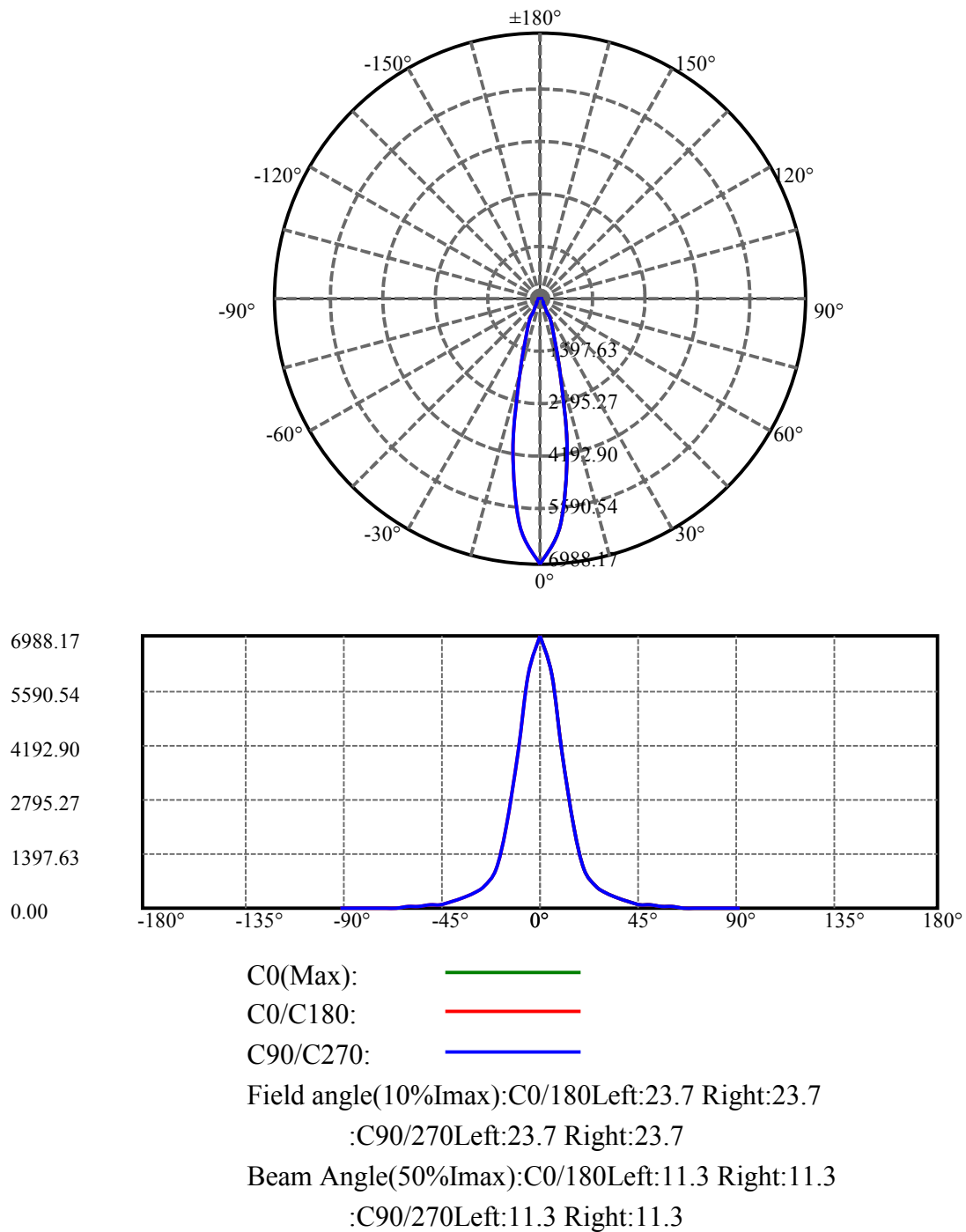
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6988.171	41.791	41.791	1.853%	2.427%
5.0	5999.221	286.603	328.393	12.710%	19.074%
10.0	4012.579	381.930	710.323	16.937%	41.257%
15.0	2071.084	293.821	1004.144	13.030%	58.322%
20.0	1011.111	189.557	1193.701	8.406%	69.332%
25.0	585.635	135.664	1329.365	6.016%	77.212%
30.0	392.545	107.584	1436.95	4.771%	83.460%
35.0	268.283	84.348	1521.297	3.740%	88.359%
40.0	172.905	60.921	1582.218	2.702%	91.898%
45.0	108.275	41.967	1624.185	1.861%	94.335%
50.0	69.564	29.210	1653.394	1.295%	96.032%
55.0	42.682	19.165	1672.559	.850%	97.145%
60.0	26.744	12.695	1685.254	.563%	97.882%
65.0	17.859	8.872	1694.126	.393%	98.397%
70.0	15.072	7.763	1701.889	.344%	98.848%
75.0	13.062	6.916	1708.805	.307%	99.250%
80.0	11.176	6.033	1714.838	.268%	99.600%
85.0	8.940	4.882	1719.72	.216%	99.884%
90.0	7.295	1.999	1721.719	.089%	100.000%

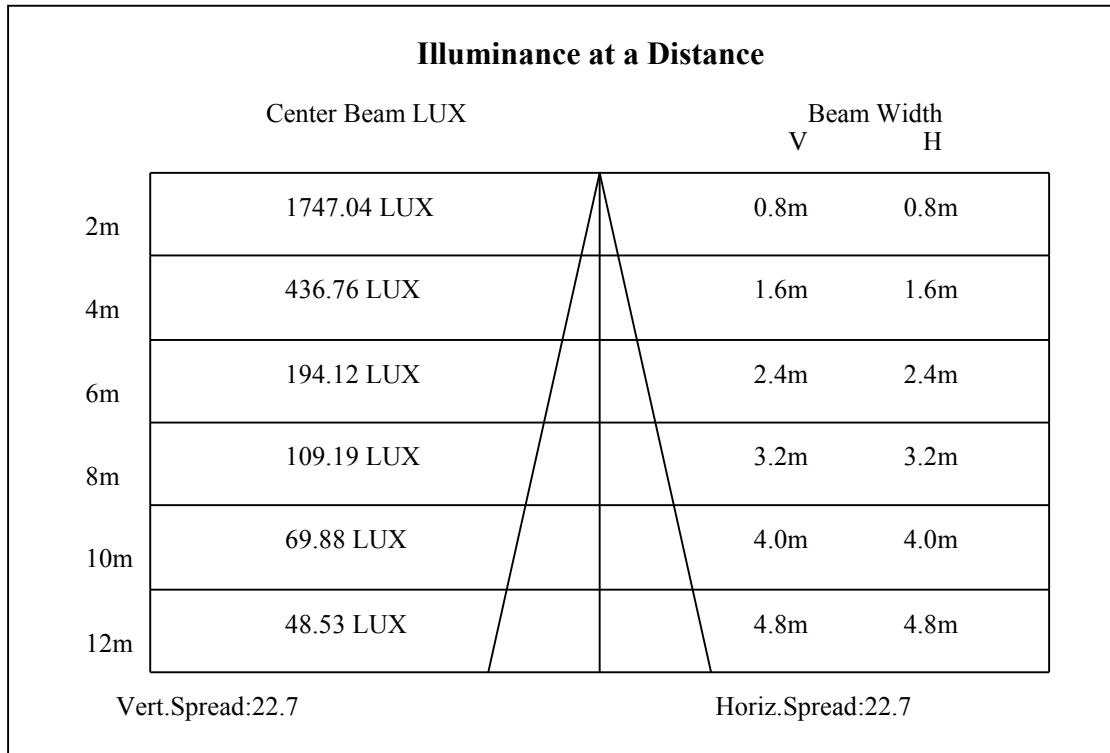
ZONAL LUMEN SUMMARY

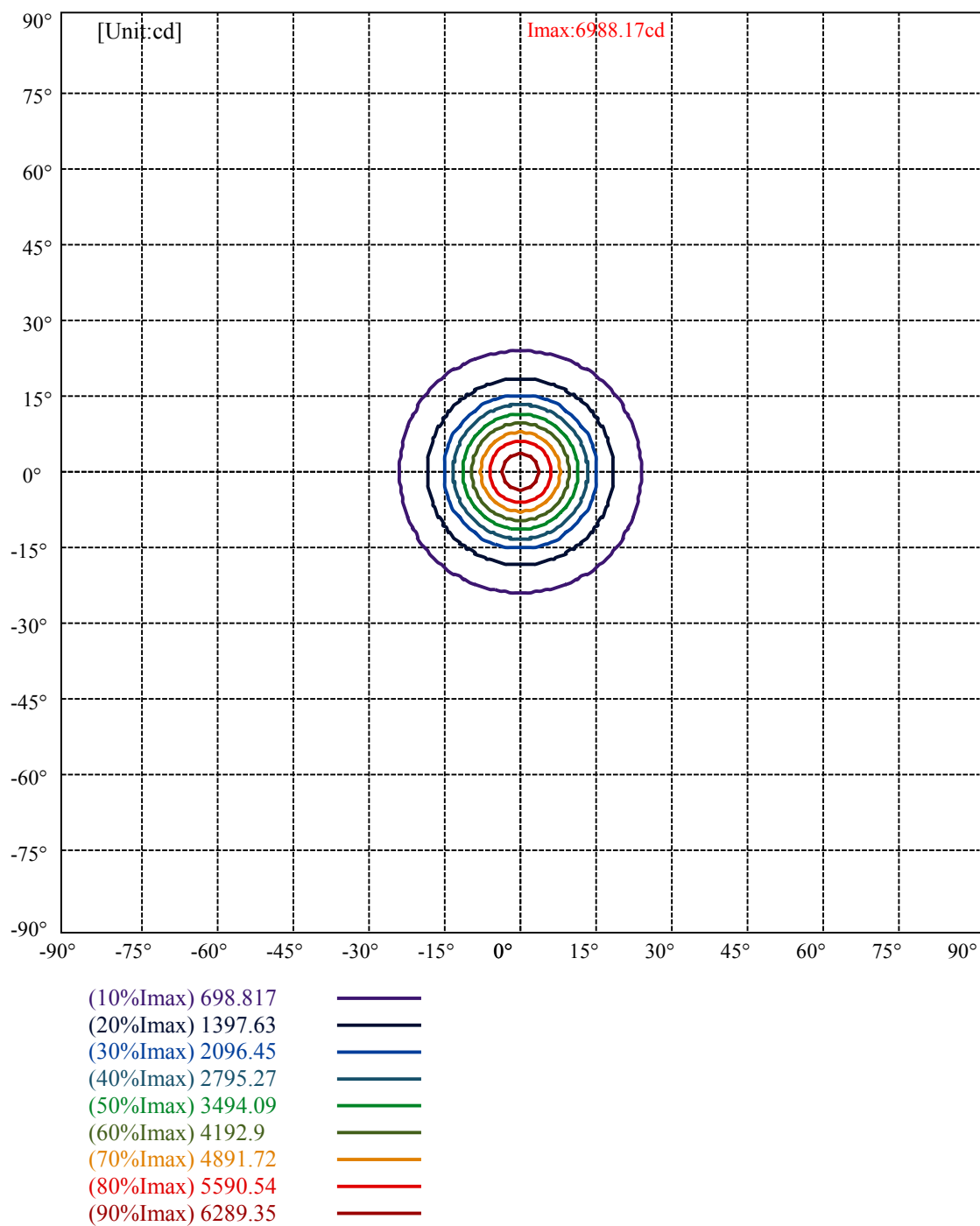
Zone	Lumens	%Lamp	%Fixt
0-30	1436.95	63.72%	83.46%
0-40	1582.22	70.16%	91.90%
0-60	1685.25	74.73%	97.88%
0-90	1719.72	76.26%	99.88%
0-120	1719.72	76.26%	99.88%
0-180	1721.72	76.35%	100.00%
60-90	47.16	2.09%	2.74%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.23	1377.38	61.08%	80.00%

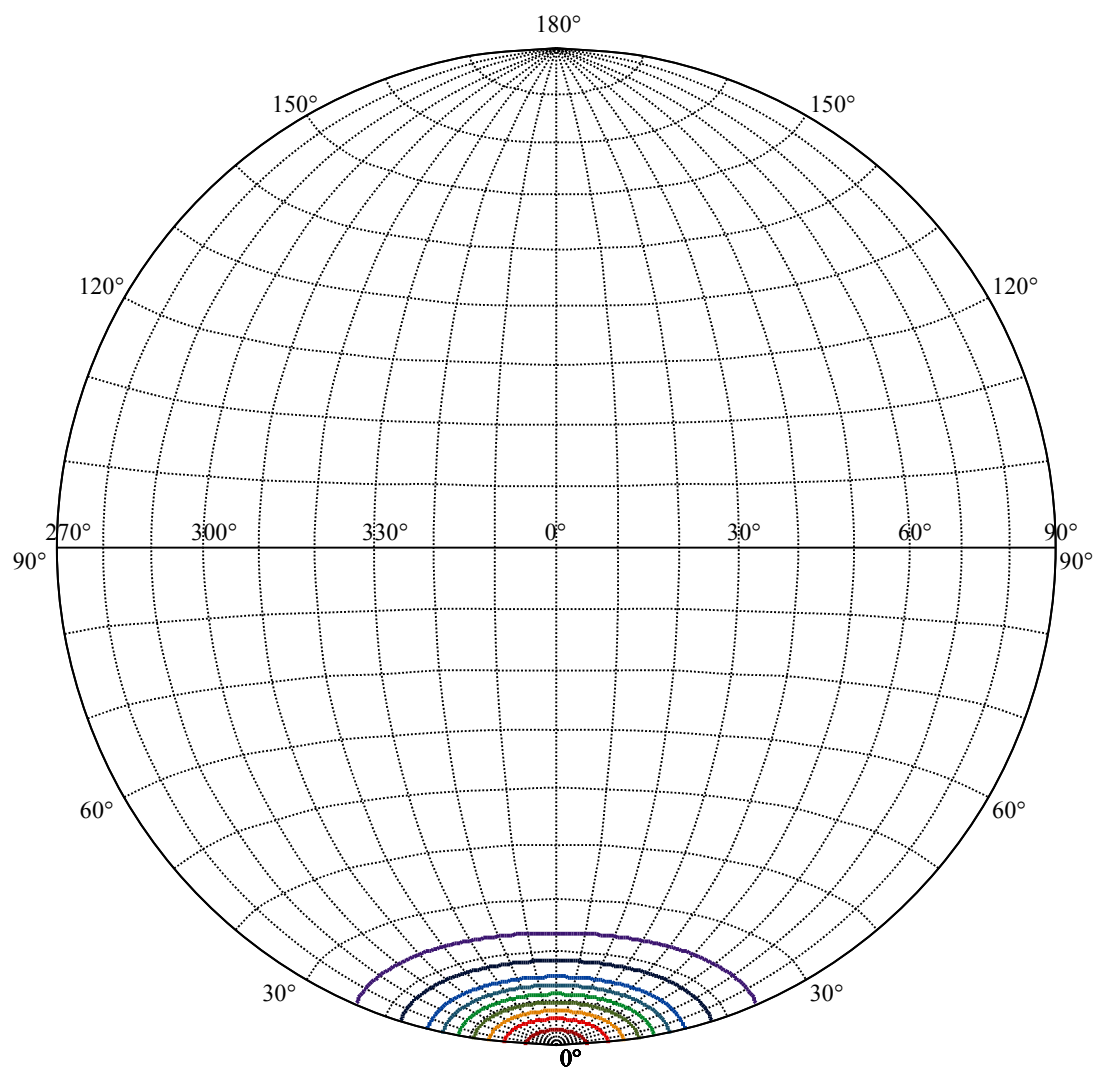
ZONAL LUMEN SUMMARY

0-10	710.32
10-20	483.38
20-30	243.25
30-40	145.27
40-50	71.18
50-60	31.86
60-70	16.64
70-80	12.95
80-90	4.88
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









House

[Unit:cd]

Road

Imax:6988.17

(10%Imax) 698.817

(20%Imax) 1397.63

(30%Imax) 2096.45

(40%Imax) 2795.27

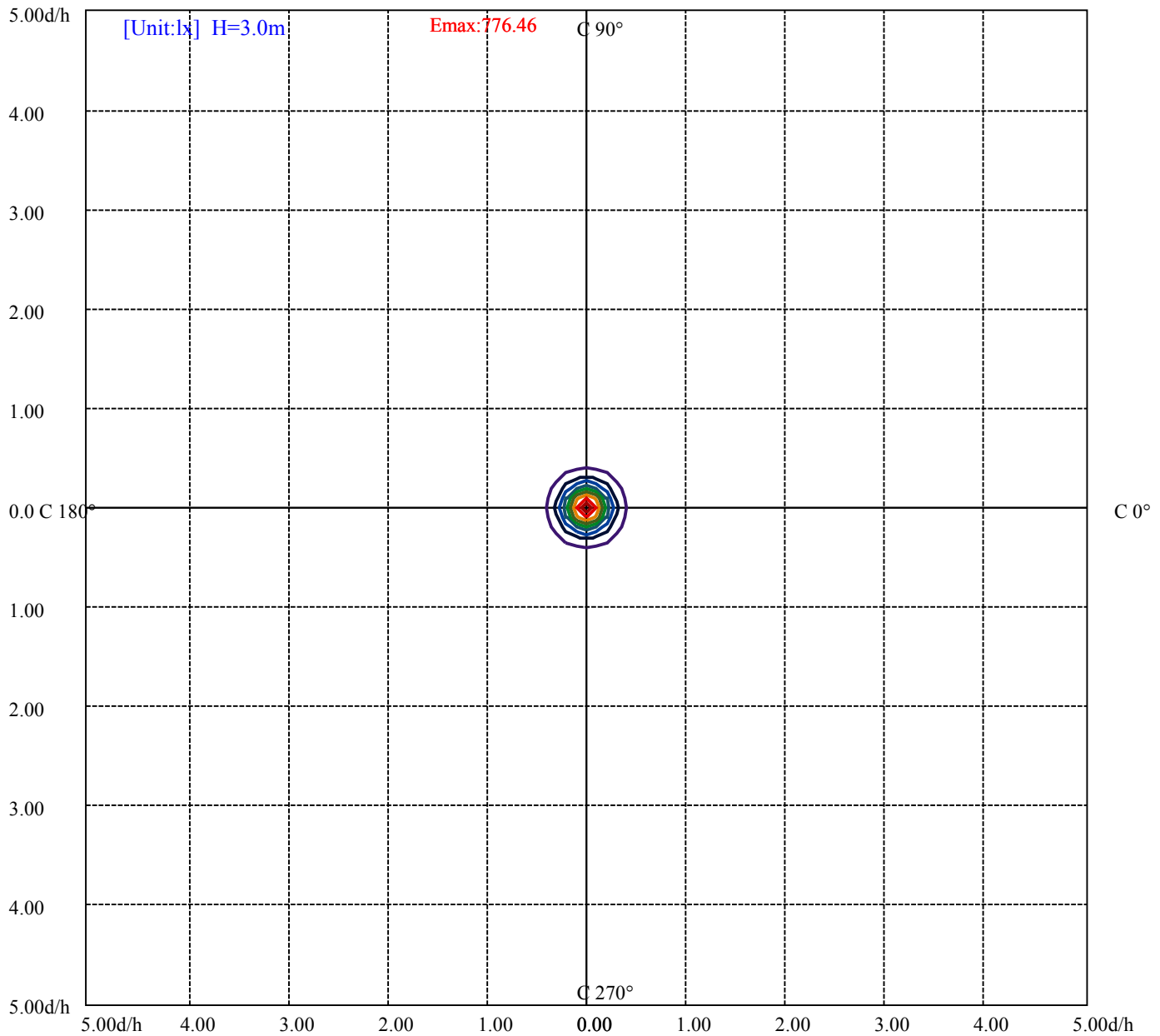
(50%Imax) 3494.09

(60%Imax) 4192.9

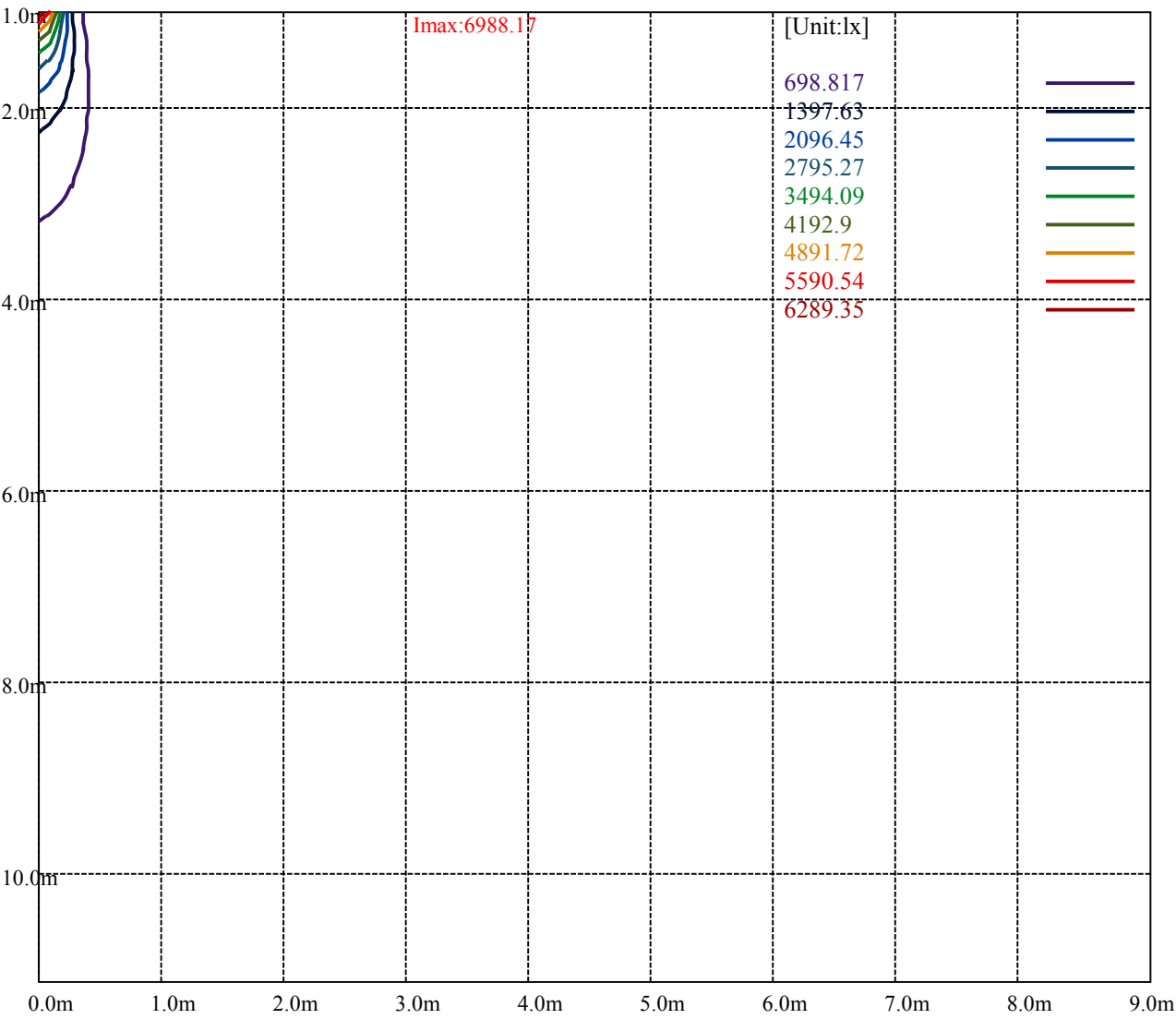
(70%Imax) 4891.72

(80%Imax) 5590.54

(90%Imax) 6289.35



(10%Emax)	77.646	—
(20%Emax)	155.2922	—
(30%Emax)	232.9378	—
(40%Emax)	310.5844	—
(50%Emax)	388.23	—
(60%Emax)	465.8755	—
(70%Emax)	543.5222	—
(80%Emax)	621.1677	—
(90%Emax)	698.8145	—



Luminance Table

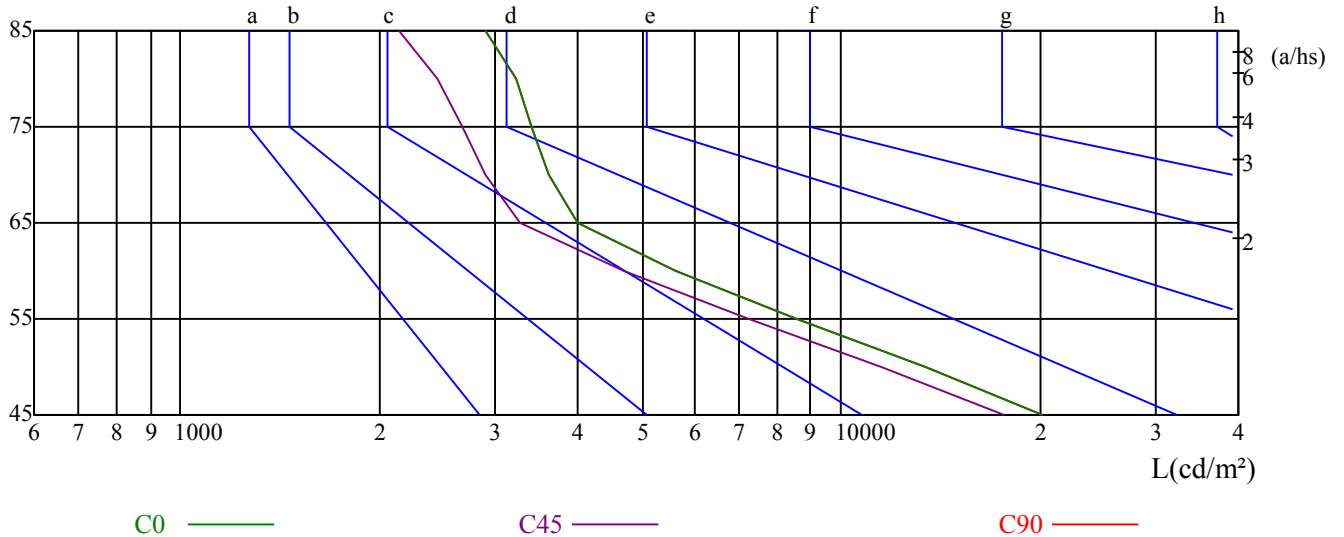
γ	45	50	55	60	65	70	75	80	85
C0	20255	13410	8555	5626	3985	3610	3404	3220	2905
C45	17678	11534	7244	4685	3259	2892	2665	2453	2141
C90	20255	13410	8555	5626	3985	3610	3404	3220	2905

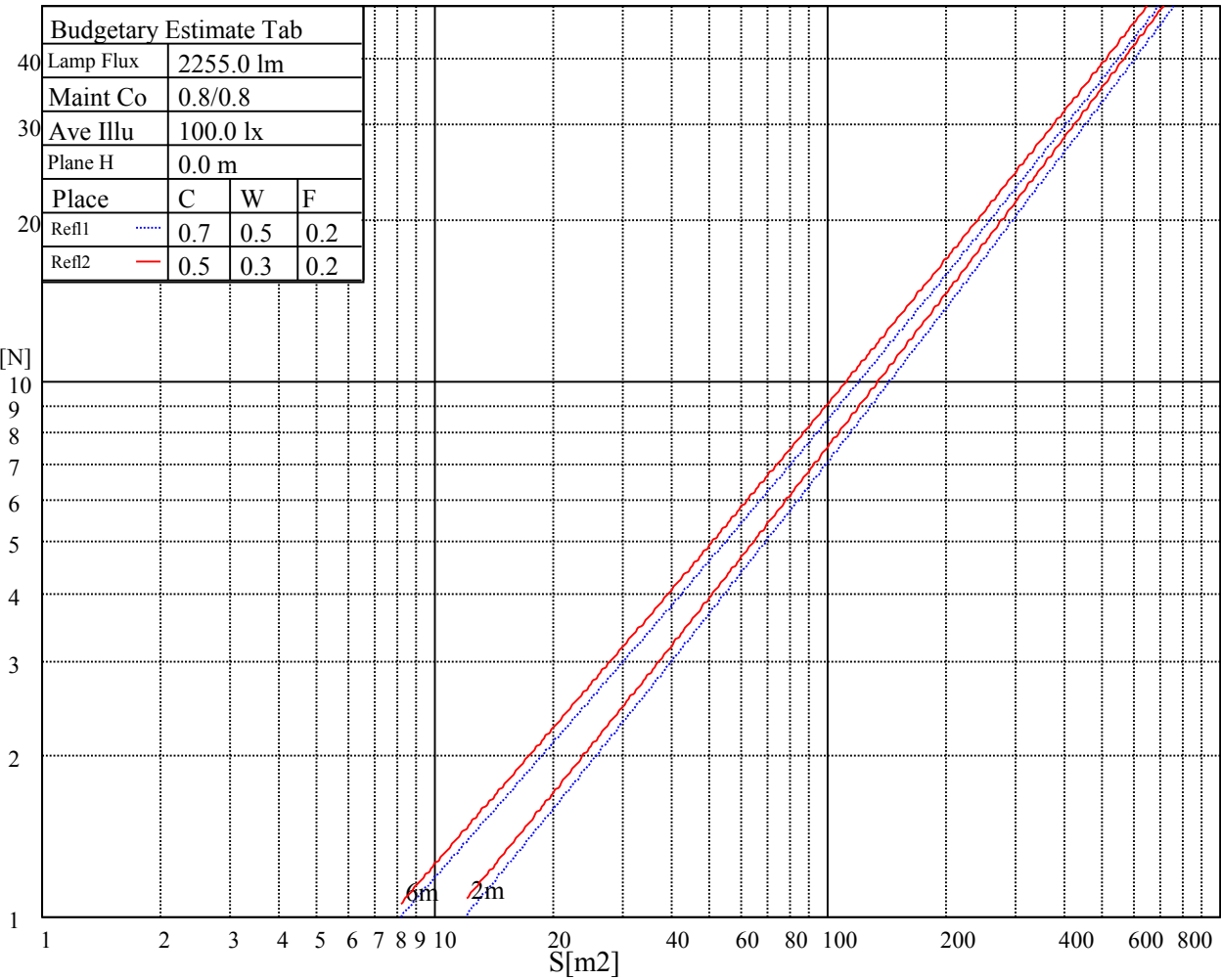
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
8624	8624	8624	10300	10300	10300	20933	20933	20933

Glare Table

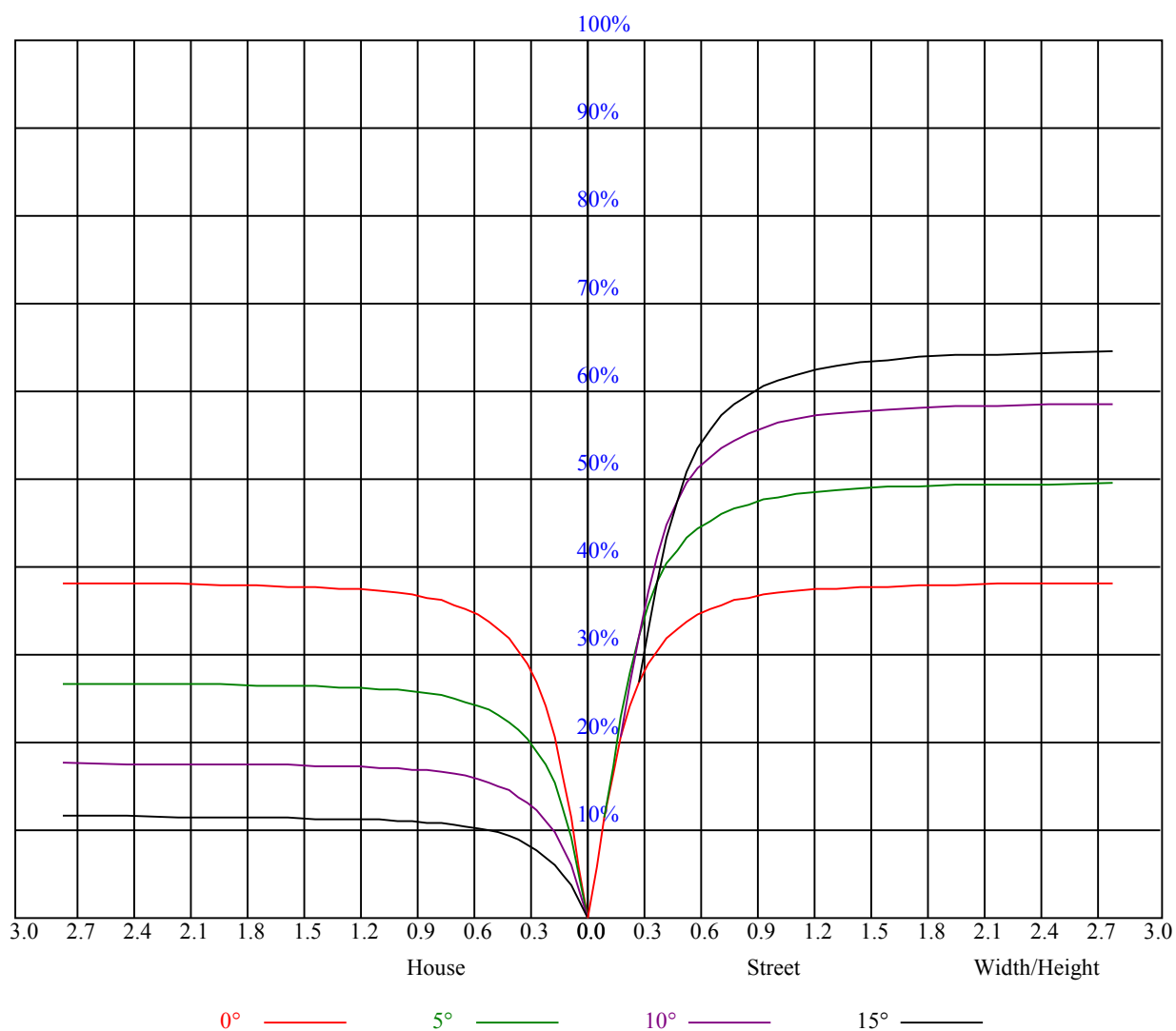
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve

 $\gamma(^{\circ})$ 



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	0.93	0.93	0.93	0.91	0.91	0.91	0.87	0.87	0.87	0.83	0.83	0.83	0.80	0.80	0.80	0.78
1	0.85	0.83	0.81	0.83	0.81	0.79	0.80	0.78	0.77	0.77	0.76	0.75	0.74	0.73	0.72	0.71
2	0.80	0.77	0.74	0.79	0.76	0.74	0.76	0.74	0.72	0.74	0.72	0.70	0.72	0.70	0.69	0.68
3	0.76	0.73	0.70	0.75	0.72	0.69	0.73	0.70	0.68	0.71	0.69	0.67	0.70	0.68	0.66	0.65
4	0.73	0.69	0.66	0.72	0.68	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.67	0.65	0.63	0.62
5	0.70	0.66	0.63	0.69	0.65	0.62	0.68	0.64	0.62	0.66	0.64	0.61	0.65	0.63	0.61	0.60
6	0.67	0.63	0.60	0.66	0.63	0.60	0.65	0.62	0.60	0.64	0.61	0.59	0.63	0.61	0.59	0.58
7	0.64	0.61	0.58	0.64	0.60	0.58	0.63	0.60	0.57	0.62	0.59	0.57	0.61	0.59	0.57	0.56
8	0.62	0.58	0.56	0.62	0.58	0.56	0.61	0.58	0.56	0.60	0.57	0.55	0.60	0.57	0.55	0.54
9	0.60	0.57	0.54	0.60	0.56	0.54	0.59	0.56	0.54	0.59	0.56	0.54	0.58	0.55	0.54	0.53
10	0.59	0.55	0.53	0.58	0.55	0.52	0.58	0.55	0.52	0.57	0.54	0.52	0.57	0.54	0.52	0.51



Intensity data(cd)										Appendix Page: 14 Total:14	
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	6983.35	6477.39	4543.80	2468.73	1231.06	674.99	439.35	294.00	191.21		
45.0	7051.62	5789.73	3633.72	1844.94	895.77	551.11	372.73	279.69	162.75		
90.0	6868.29	5040.41	3167.95	1287.77	726.14	487.36	331.44	220.23	145.29		
135.0	7049.42	5851.94	3686.03	1783.28	856.68	531.29	353.46	252.76	158.73		
180.0	6983.35	5521.61	3454.79	1670.96	854.14	520.78	344.65	235.42	153.28		
225.0	7051.62	6295.15	4372.03	2296.40	1091.55	621.70	417.33	284.37	189.56		
270.0	6868.29	6722.39	4867.54	2817.79	1337.87	686.55	462.47	305.56	200.57		
315.0	7049.42	6295.15	4374.78	2398.81	1095.68	611.29	418.92	274.24	181.85		
360.0	6983.35	6477.39	4543.80	2468.73	1231.06	674.99	439.35	294.00	191.21		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	120.63	79.72	48.67	30.01	18.55	15.53	13.43	11.51	9.19		
45.0	100.42	64.69	38.59	23.78	17.01	14.53	12.55	10.63	8.15		
90.0	89.91	56.32	34.13	21.86	16.41	14.20	12.50	10.46	8.04		
135.0	97.56	62.16	39.03	24.22	17.07	14.76	12.88	10.90	8.64		
180.0	95.52	61.94	37.82	23.56	17.07	14.76	12.72	10.79	8.86		
225.0	116.77	73.94	46.25	28.74	18.39	15.47	13.38	11.51	9.52		
270.0	128.94	82.58	50.71	33.31	19.88	15.97	13.76	12.06	9.74		
315.0	116.44	75.15	46.25	28.46	18.50	15.36	13.27	11.56	9.36		
360.0	120.63	79.72	48.67	30.01	18.55	15.53	13.43	11.51	9.19		
C/γ(°)	90.0										
0.0	7.38										
45.0	7.16										
90.0	7.21										
135.0	7.21										
180.0	7.21										
225.0	7.32										
270.0	7.43										
315.0	7.43										
360.0	7.38										