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Nata

LumCAT: 3-1703-N

Luminaire: 92.70.045.00+92.70.061.00

Report No: NATA0100

Test No: GC2018070223

LampCAT: NICHIA NFCWJ120B-V3

Lamp flux(lm): 2276.0

Number of Lamps: 1

Length(mm): 86

Phm Type: C

Voltage(V): 33.5000

Current(A): 0.5000

Power (W): 16.7500

PF: 0.0000

Ballast type: DC

Width(mm): 86

Height(mm): 0

Photometric Results

Lumens(lm): 1813.85

Efficiency(%): 79.69%

Lumens(lm)/Power(W): 109.62

Central intensity(cd): 4009.895

Maximum intensity(cd): 4009.895

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=34.7

[C90/270]Total=34.7

Field angle(10%Imax): [C0/180]Total=65.2

[C90/270]Total=65.2

Maximum s/h(1/2): C0_180=0.56 C90_270=0.56

Maximum s/h(1/4): C0_180=0.59 C90_270=0.59

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 80.67%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 96.578%

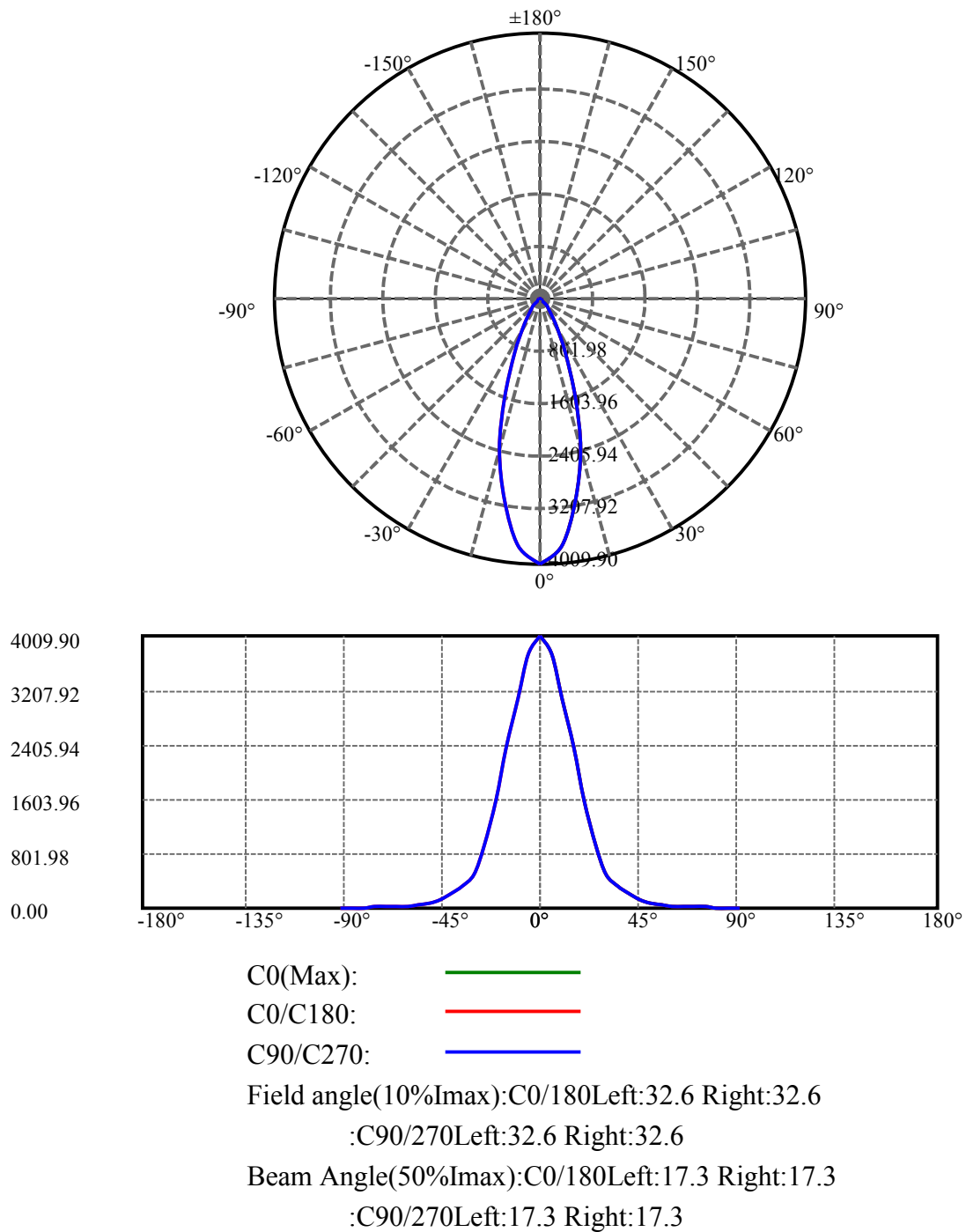
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4009.895	23.980	23.98	1.054%	1.322%
5.0	3735.026	178.435	202.415	7.840%	11.159%
10.0	3087.219	293.851	496.266	12.911%	27.360%
15.0	2356.552	334.320	830.586	14.689%	45.791%
20.0	1604.894	300.876	1131.462	13.220%	62.379%
25.0	910.261	210.865	1342.326	9.265%	74.004%
30.0	497.435	136.331	1478.658	5.990%	81.520%
35.0	312.211	98.159	1576.816	4.313%	86.932%
40.0	215.862	76.056	1652.872	3.342%	91.125%
45.0	133.381	51.697	1704.57	2.271%	93.975%
50.0	81.339	34.154	1738.724	1.501%	95.858%
55.0	46.633	20.938	1759.662	.920%	97.012%
60.0	28.684	13.617	1773.279	.598%	97.763%
65.0	20.791	10.328	1783.607	.454%	98.333%
70.0	17.529	9.029	1792.636	.397%	98.830%
75.0	14.480	7.666	1800.302	.337%	99.253%
80.0	11.775	6.356	1806.659	.279%	99.603%
85.0	9.339	5.100	1811.758	.224%	99.885%
90.0	7.639	2.094	1813.852	.092%	100.000%

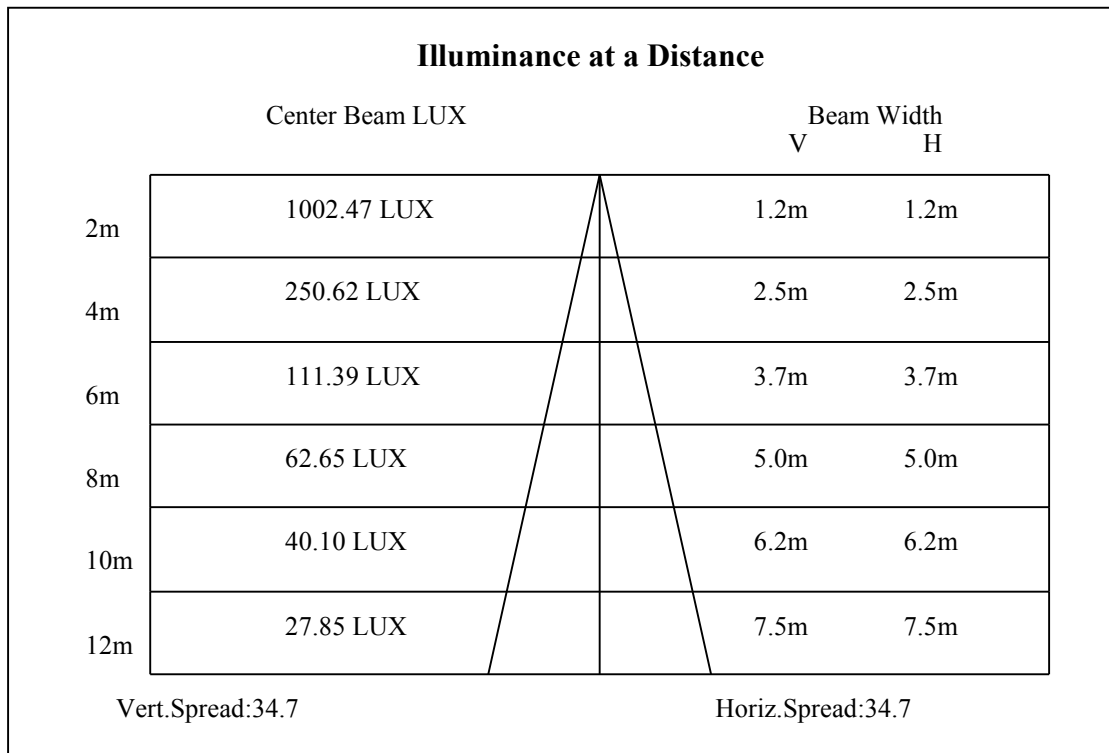
ZONAL LUMEN SUMMARY

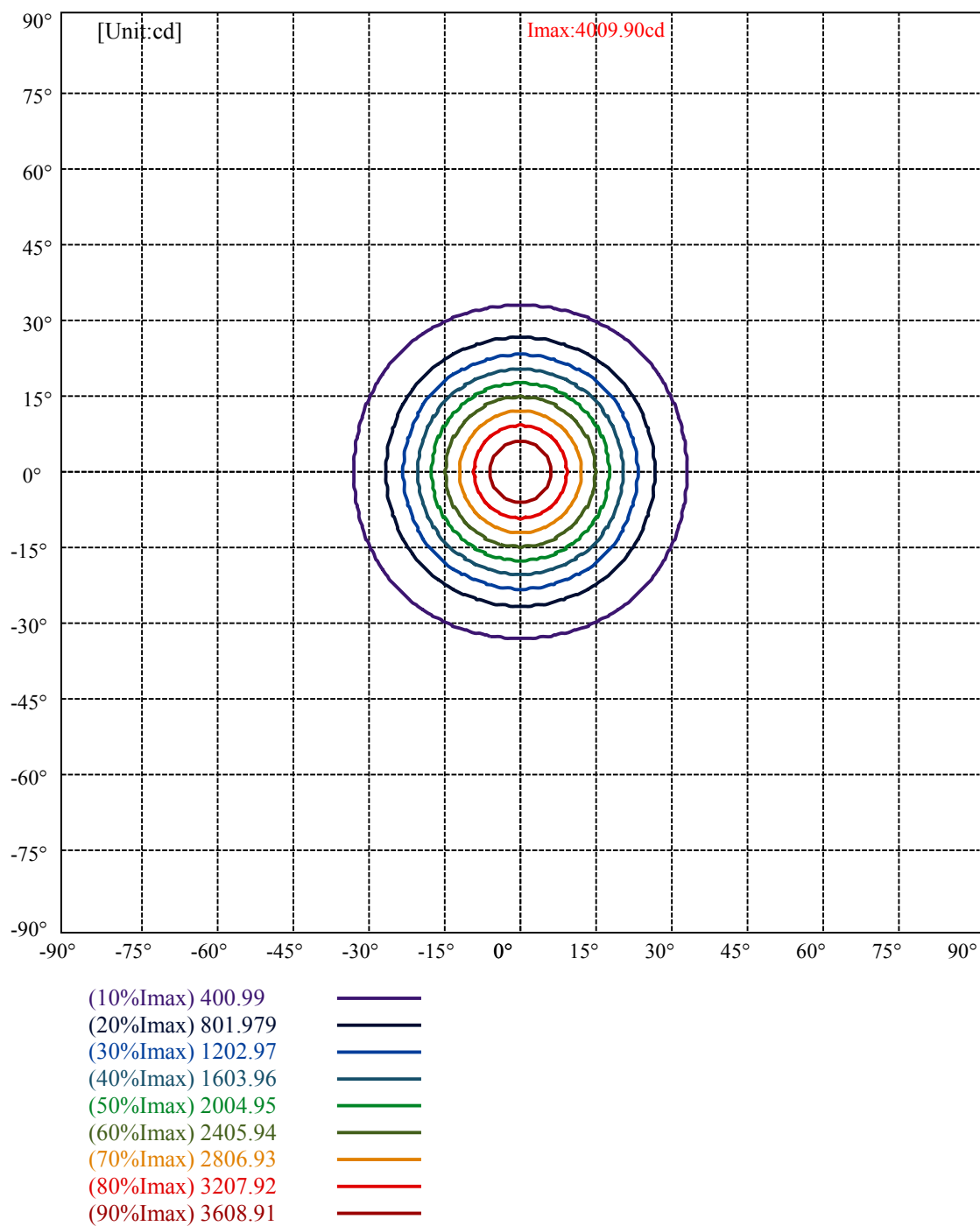
Zone	Lumens	%Lamp	%Fixt
0-30	1478.66	64.97%	81.52%
0-40	1652.87	72.62%	91.12%
0-60	1773.28	77.91%	97.76%
0-90	1811.76	79.60%	99.88%
0-120	1811.76	79.60%	99.88%
0-180	1813.85	79.69%	100.00%
60-90	52.10	2.29%	2.87%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-28.99	1451.08	63.76%	80.00%

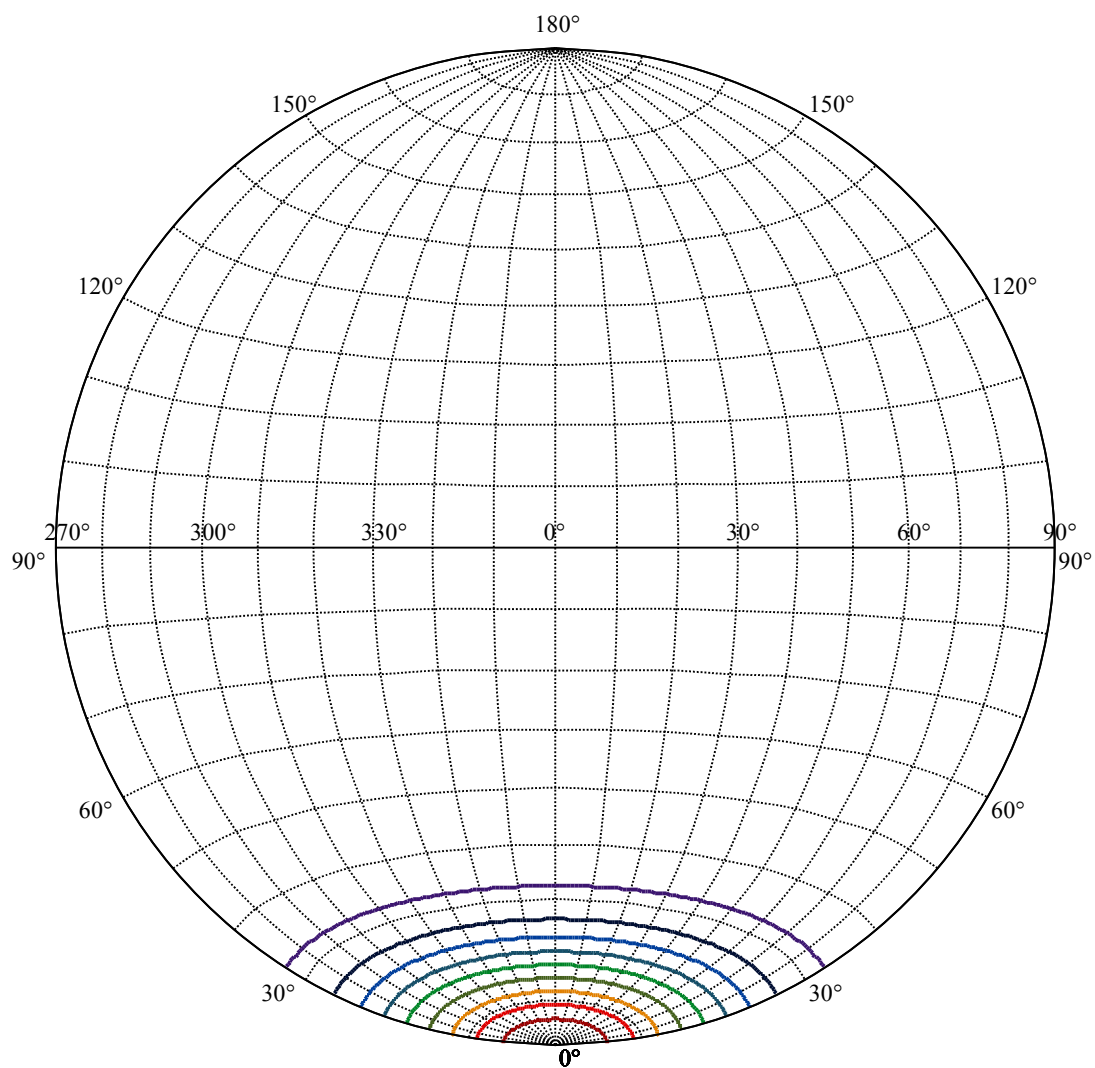
ZONAL LUMEN SUMMARY

0-10	496.27
10-20	635.20
20-30	347.20
30-40	174.21
40-50	85.85
50-60	34.55
60-70	19.36
70-80	14.02
80-90	5.10
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









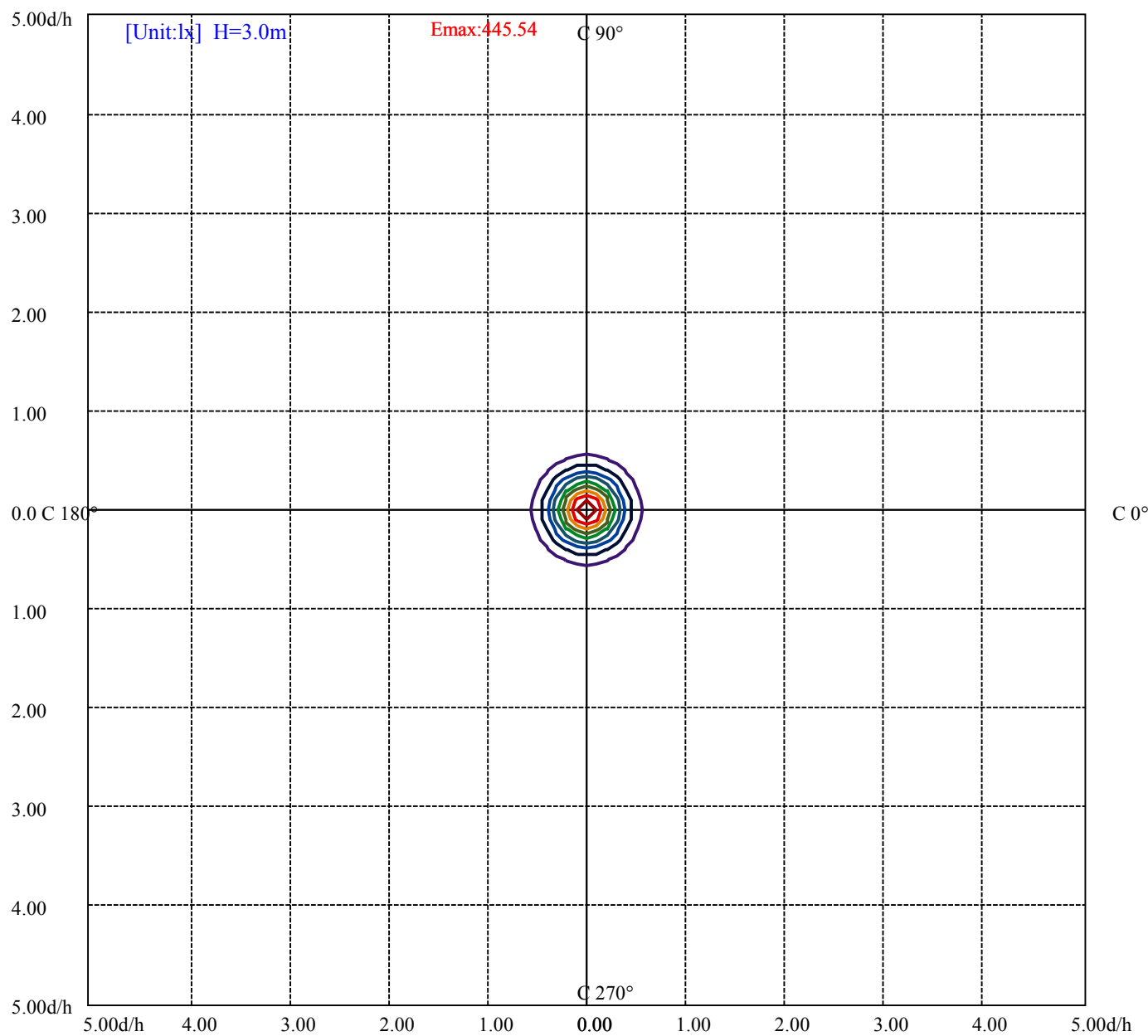
House

[Unit:cd]

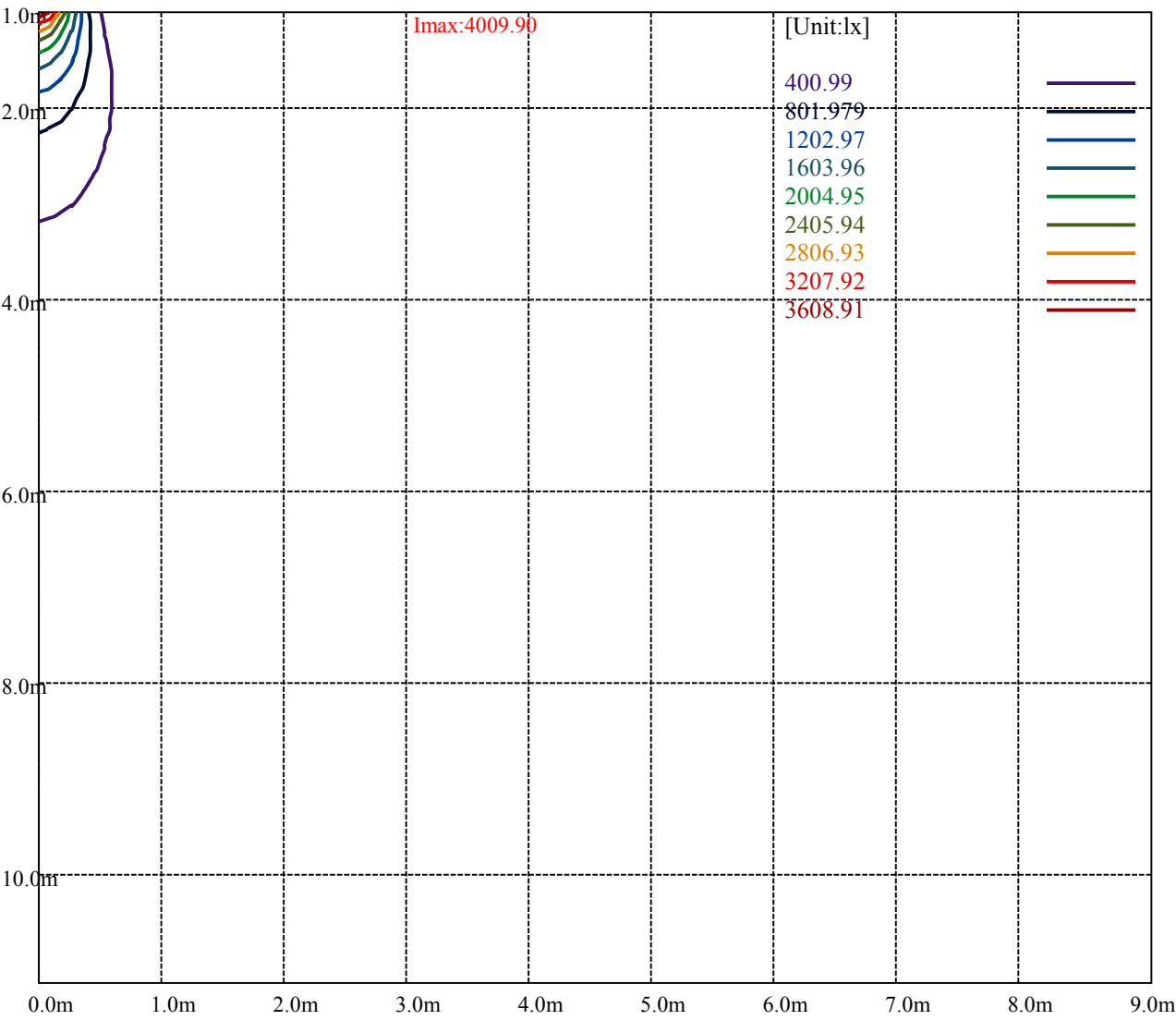
Road

Imax:4009.90

(10%Imax)	400.99	—
(20%Imax)	801.979	—
(30%Imax)	1202.97	—
(40%Imax)	1603.96	—
(50%Imax)	2004.95	—
(60%Imax)	2405.94	—
(70%Imax)	2806.93	—
(80%Imax)	3207.92	—
(90%Imax)	3608.91	—



(10%E _{max}) 44.55434	—
(20%E _{max}) 89.10855	—
(30%E _{max}) 133.6633	—
(40%E _{max}) 178.2167	—
(50%E _{max}) 222.7711	—
(60%E _{max}) 267.3256	—
(70%E _{max}) 311.88	—
(80%E _{max}) 356.4344	—
(90%E _{max}) 400.9889	—



Luminance Table

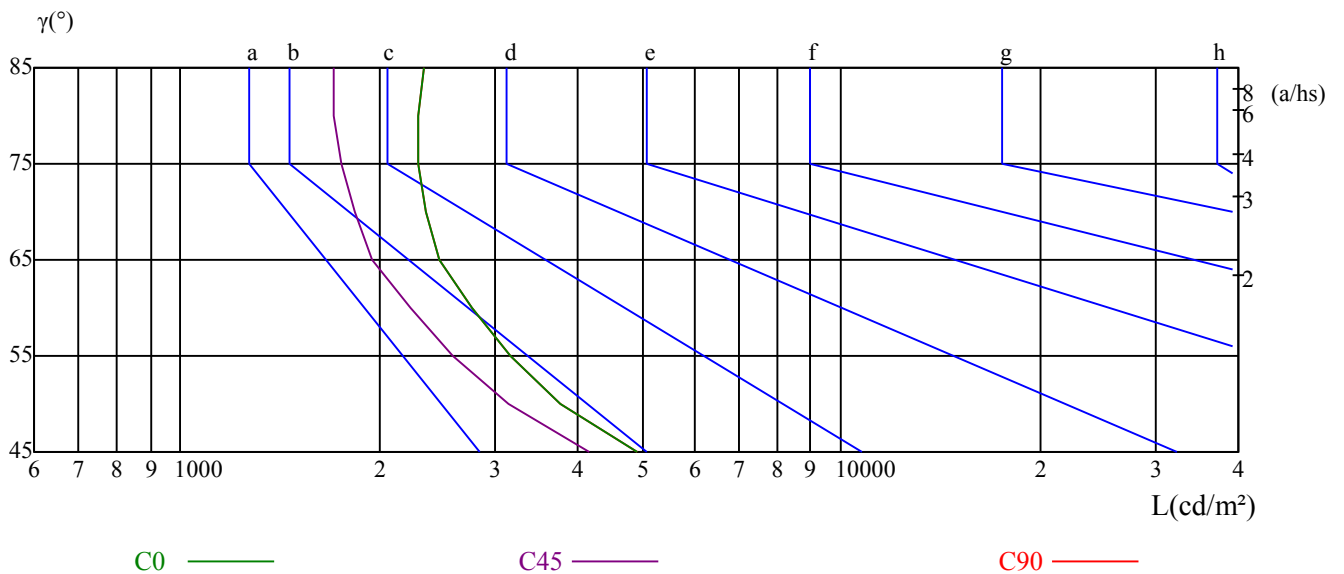
γ	45	50	55	60	65	70	75	80	85
C0	4917	3770	3151	2759	2462	2351	2291	2290	2335
C45	4161	3142	2586	2228	1955	1832	1750	1711	1701
C90	4917	3770	3151	2759	2462	2351	2291	2290	2335

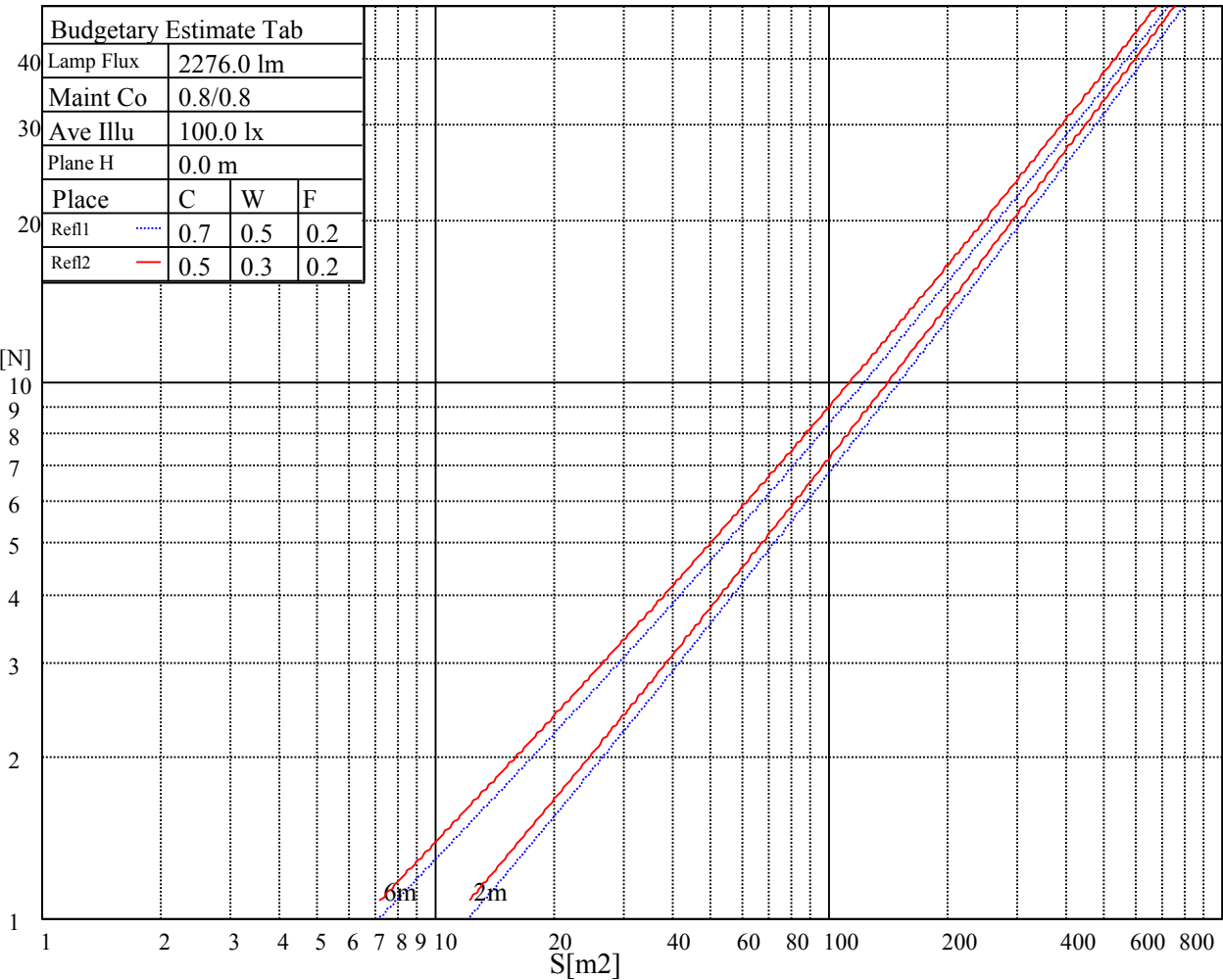
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6594	6594	6594	8981	8981	8981	23219	23219	23219

Glare Table

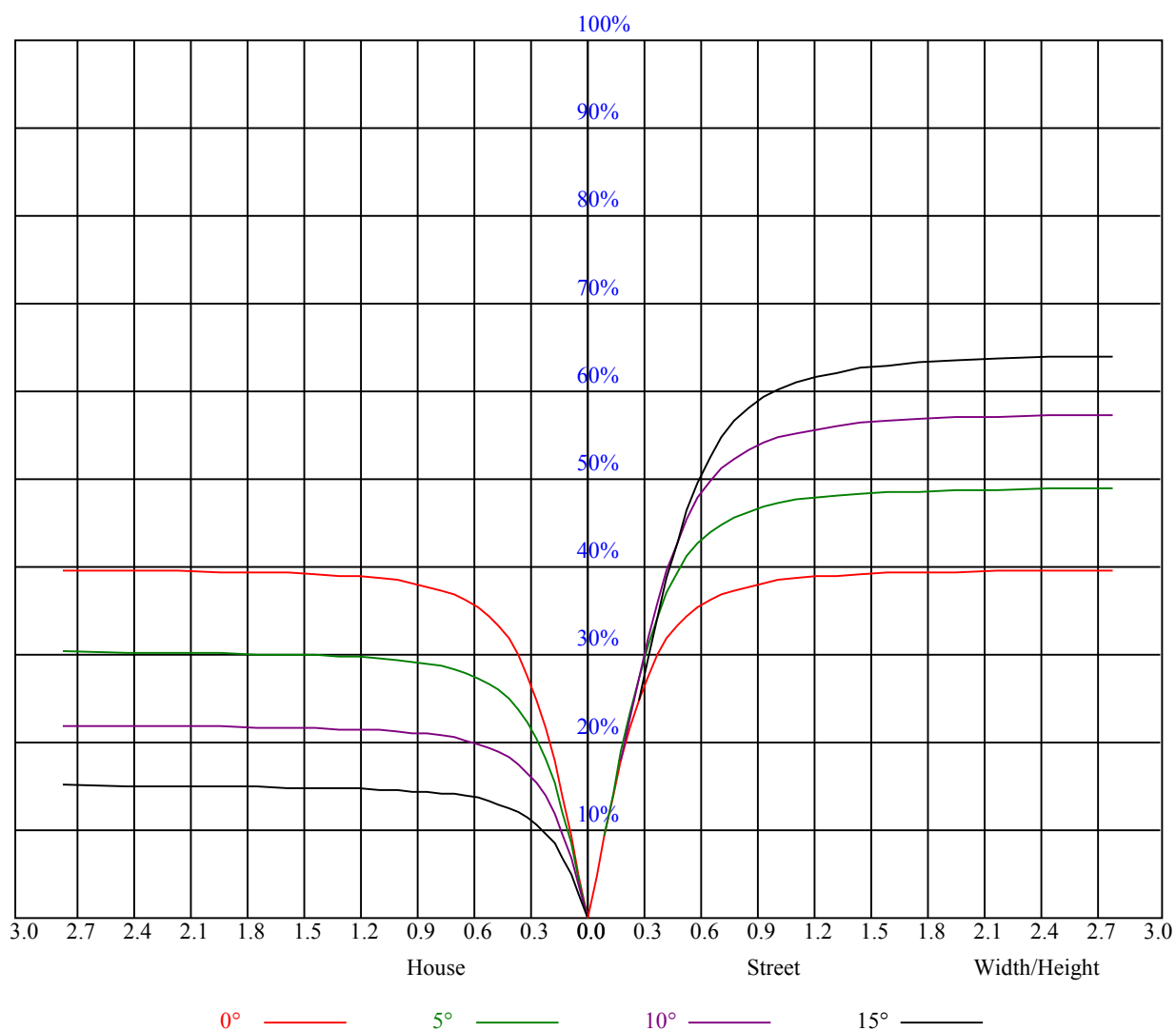
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	0.96	0.96	0.96	0.94	0.94	0.94	0.90	0.90	0.90	0.86	0.86	0.86	0.82	0.82	0.82	0.81
1	0.88	0.86	0.84	0.87	0.85	0.83	0.83	0.82	0.80	0.80	0.79	0.78	0.78	0.77	0.76	0.74
2	0.83	0.80	0.77	0.82	0.79	0.76	0.79	0.77	0.75	0.77	0.75	0.73	0.74	0.73	0.71	0.70
3	0.78	0.75	0.72	0.77	0.74	0.71	0.75	0.72	0.70	0.73	0.71	0.69	0.71	0.69	0.68	0.66
4	0.74	0.70	0.67	0.73	0.70	0.67	0.72	0.68	0.66	0.70	0.67	0.65	0.69	0.66	0.64	0.63
5	0.71	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.62	0.67	0.64	0.62	0.66	0.63	0.61	0.60
6	0.67	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.58
7	0.64	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.57	0.62	0.59	0.56	0.61	0.58	0.56	0.55
8	0.62	0.58	0.55	0.61	0.57	0.55	0.61	0.57	0.54	0.60	0.57	0.54	0.59	0.56	0.54	0.53
9	0.59	0.55	0.53	0.59	0.55	0.52	0.58	0.55	0.52	0.58	0.54	0.52	0.57	0.54	0.52	0.51
10	0.57	0.53	0.51	0.57	0.53	0.50	0.56	0.53	0.50	0.56	0.53	0.50	0.55	0.52	0.50	0.49



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	4019.12	3792.28	3083.16	2348.71	1603.79	889.71	478.99	313.82	203.43		
45.0	3987.74	3883.68	3258.24	2557.92	1761.25	1032.86	556.07	333.64	221.99		
90.0	4028.48	3830.82	3215.84	2483.04	1720.51	992.17	519.73	321.69	220.28		
135.0	4004.25	3880.93	3330.91	2609.12	1844.39	1118.20	580.85	352.91	280.79		
180.0	4019.12	3699.24	3045.72	2344.85	1654.44	923.13	505.58	324.67	217.69		
225.0	3987.74	3563.80	2832.10	2099.85	1438.62	766.88	436.98	280.57	196.28		
270.0	4028.48	3646.94	3044.07	2267.22	1538.28	830.25	474.04	300.61	200.35		
315.0	4004.25	3582.52	2887.71	2141.69	1277.86	728.89	427.24	269.78	186.09		
360.0	4019.12	3792.28	3083.16	2348.71	1603.79	889.71	478.99	313.82	203.43		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	129.99	82.09	46.36	28.46	20.65	17.45	14.37	11.73	9.14		
45.0	145.24	91.34	52.03	31.60	22.08	18.50	15.42	12.61	10.13		
90.0	141.22	85.72	47.51	30.39	21.36	17.95	14.92	12.28	10.02		
135.0	154.16	93.60	55.11	32.54	21.80	18.33	15.14	12.39	9.86		
180.0	134.83	82.75	46.41	27.97	20.48	17.29	14.20	11.40	9.19		
225.0	117.93	69.87	41.02	25.27	19.66	16.79	13.82	11.23	8.70		
270.0	127.07	75.59	43.77	27.64	20.43	17.23	14.26	11.62	8.97		
315.0	116.61	69.76	40.85	25.60	19.88	16.68	13.71	10.96	8.70		
360.0	129.99	82.09	46.36	28.46	20.65	17.45	14.37	11.73	9.14		
C/γ(°)	90.0										
0.0	7.60										
45.0	7.76										
90.0	7.65										
135.0	7.60										
180.0	7.60										
225.0	7.65										
270.0	7.65										
315.0	7.60										
360.0	7.60										