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NATA

LumCAT: 91.61.0076.000 (CR01D02925AC)

Luminaire:

Report No: NATA0100

Voltage(V): 36.8700

Test No: GC2019030514

Current(A): 0.2000

LampCAT: CREE CXA1507

Power (W): 7.3740

Lamp flux(lm): 589.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 29

Width(mm): 29

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 496.37

Efficiency(%): 84.27%

Lumens(lm)/Power(W): 67.31

Central intensity(cd): 1375.031

Maximum intensity(cd): 1375.031

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=26.3

[C90/270]Total=26.3

Field angle(10%Imax): [C0/180]Total=51.5

[C90/270]Total=51.5

Maximum s/h(1/2): C0_180=0.45 C90_270=0.45

Maximum s/h(1/4): C0_180=0.45 C90_270=0.45

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 84.27%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 84.842%

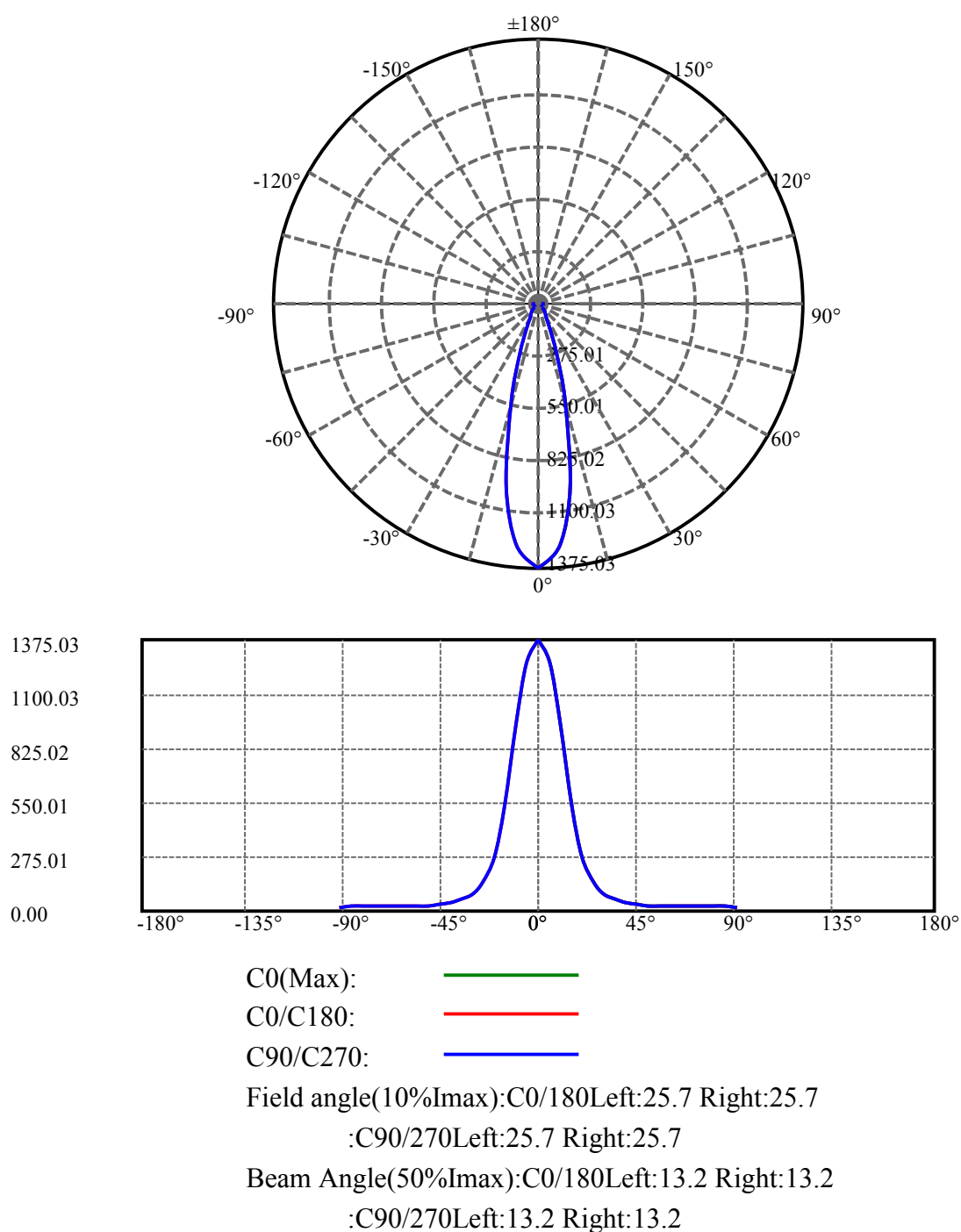
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1375.031	0.000	0	.000%	.000%
5.0	1258.404	31.482	31.482	5.345%	6.342%
10.0	959.498	79.341	110.823	13.471%	22.327%
15.0	530.149	88.365	199.188	15.003%	40.129%
20.0	276.694	66.495	265.683	11.290%	53.526%
25.0	146.018	44.335	310.018	7.527%	62.457%
30.0	87.694	29.576	339.594	5.021%	68.416%
35.0	55.702	21.116	360.71	3.585%	72.670%
40.0	39.839	15.940	376.651	2.706%	75.881%
45.0	30.199	12.968	389.619	2.202%	78.494%
50.0	24.919	11.137	400.756	1.891%	80.738%
55.0	22.212	10.248	411.004	1.740%	82.802%
60.0	21.593	10.125	421.129	1.719%	84.842%
65.0	22.240	10.656	431.785	1.809%	86.989%
70.0	23.428	11.563	443.349	1.963%	89.319%
75.0	25.467	12.780	456.129	2.170%	91.893%
80.0	26.754	13.973	470.102	2.372%	94.708%
85.0	25.130	14.098	484.2	2.394%	97.549%
90.0	19.308	12.167	496.367	2.066%	100.000%

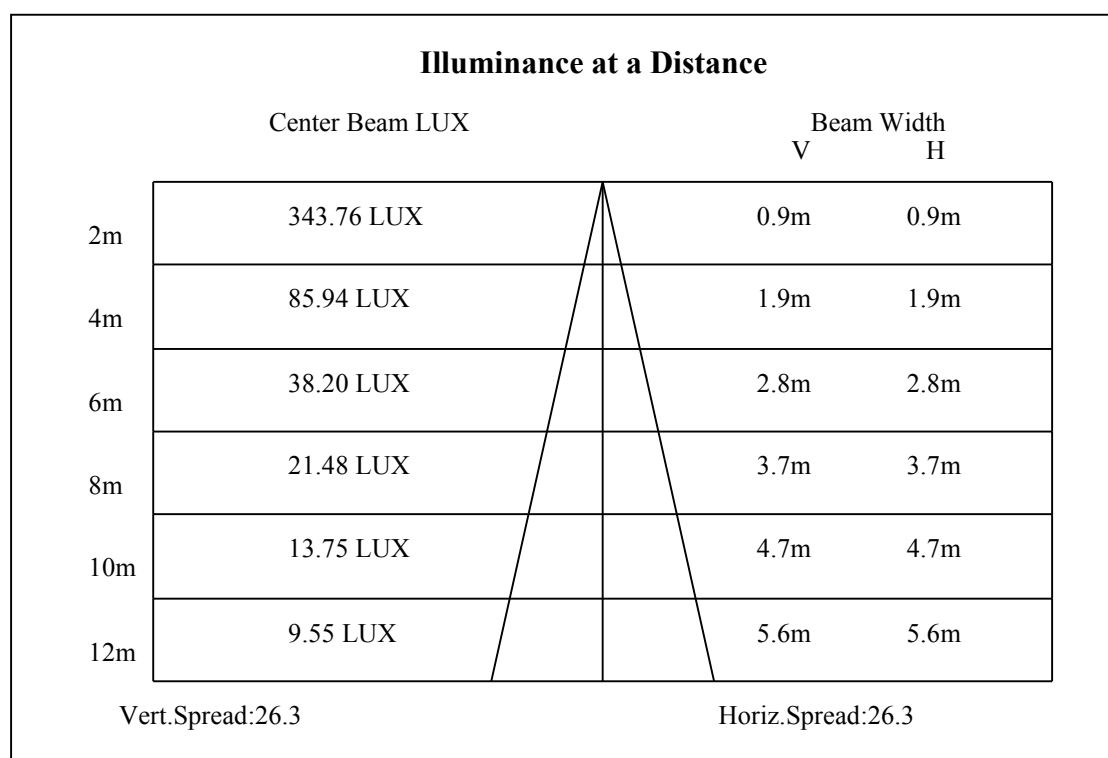
ZONAL LUMEN SUMMARY

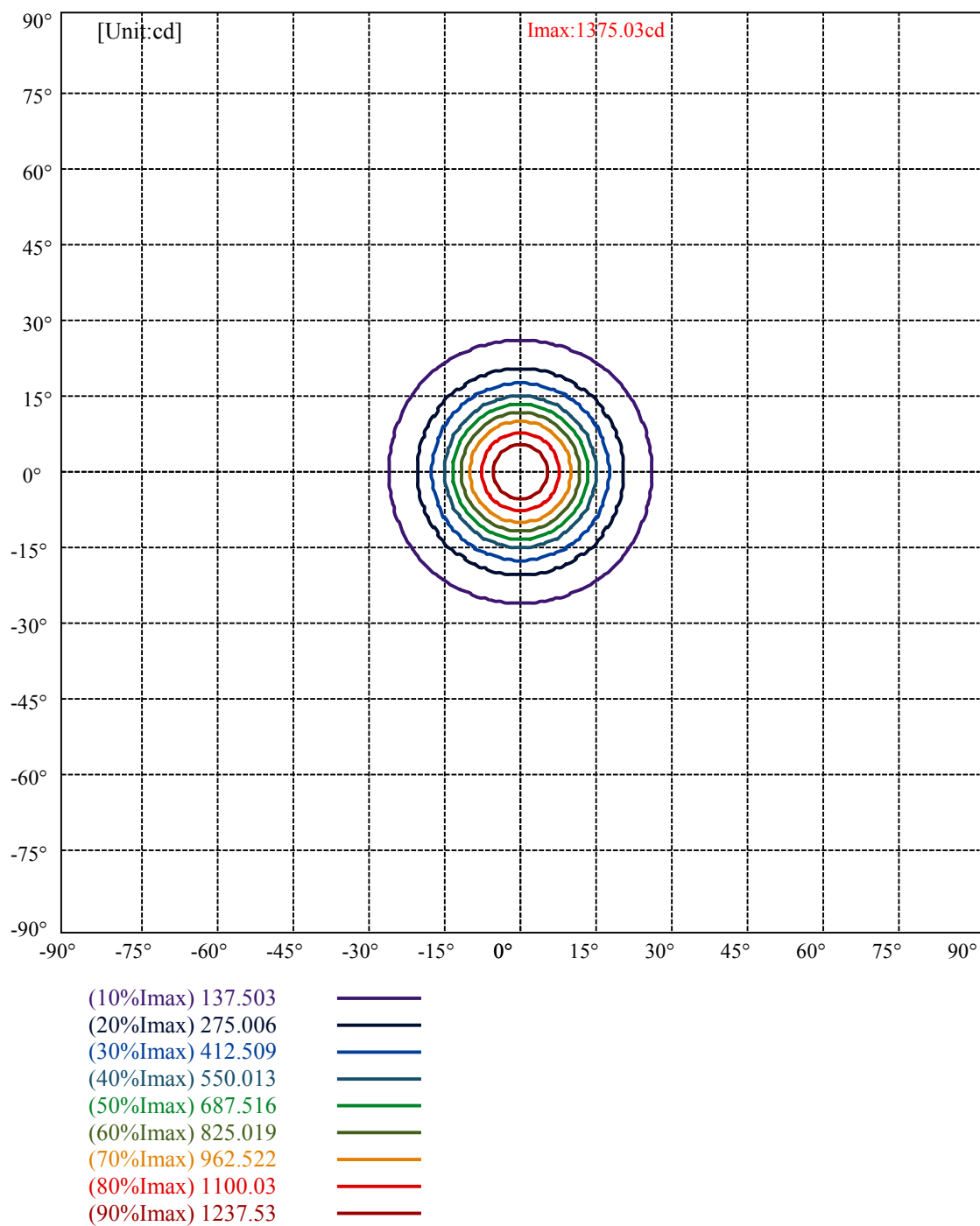
Zone	Lumens	%Lamp	%Fixt
0-30	339.59	57.66%	68.42%
0-40	376.65	63.95%	75.88%
0-60	421.13	71.50%	84.84%
0-90	484.20	82.21%	97.55%
0-120	484.20	82.21%	97.55%
0-180	496.37	84.27%	100.00%
60-90	73.20	12.43%	14.75%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-48.36	397.09	67.42%	80.00%

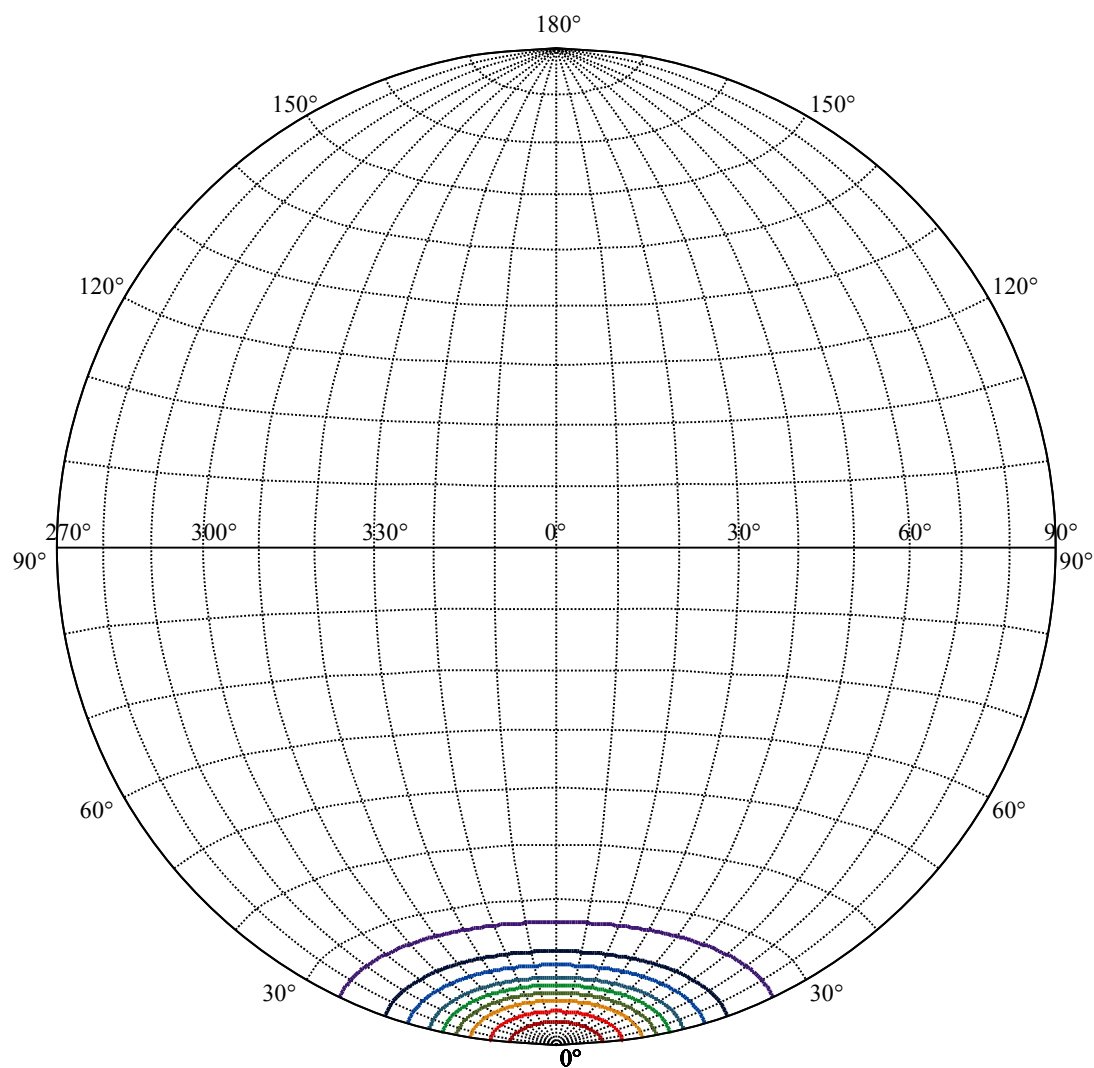
ZONAL LUMEN SUMMARY

0-10	110.82
10-20	154.86
20-30	73.91
30-40	37.06
40-50	24.11
50-60	20.37
60-70	22.22
70-80	26.75
80-90	14.10
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:1375.03

(10%Imax) 137.503

(20%Imax) 275.006

(30%Imax) 412.509

(40%Imax) 550.013

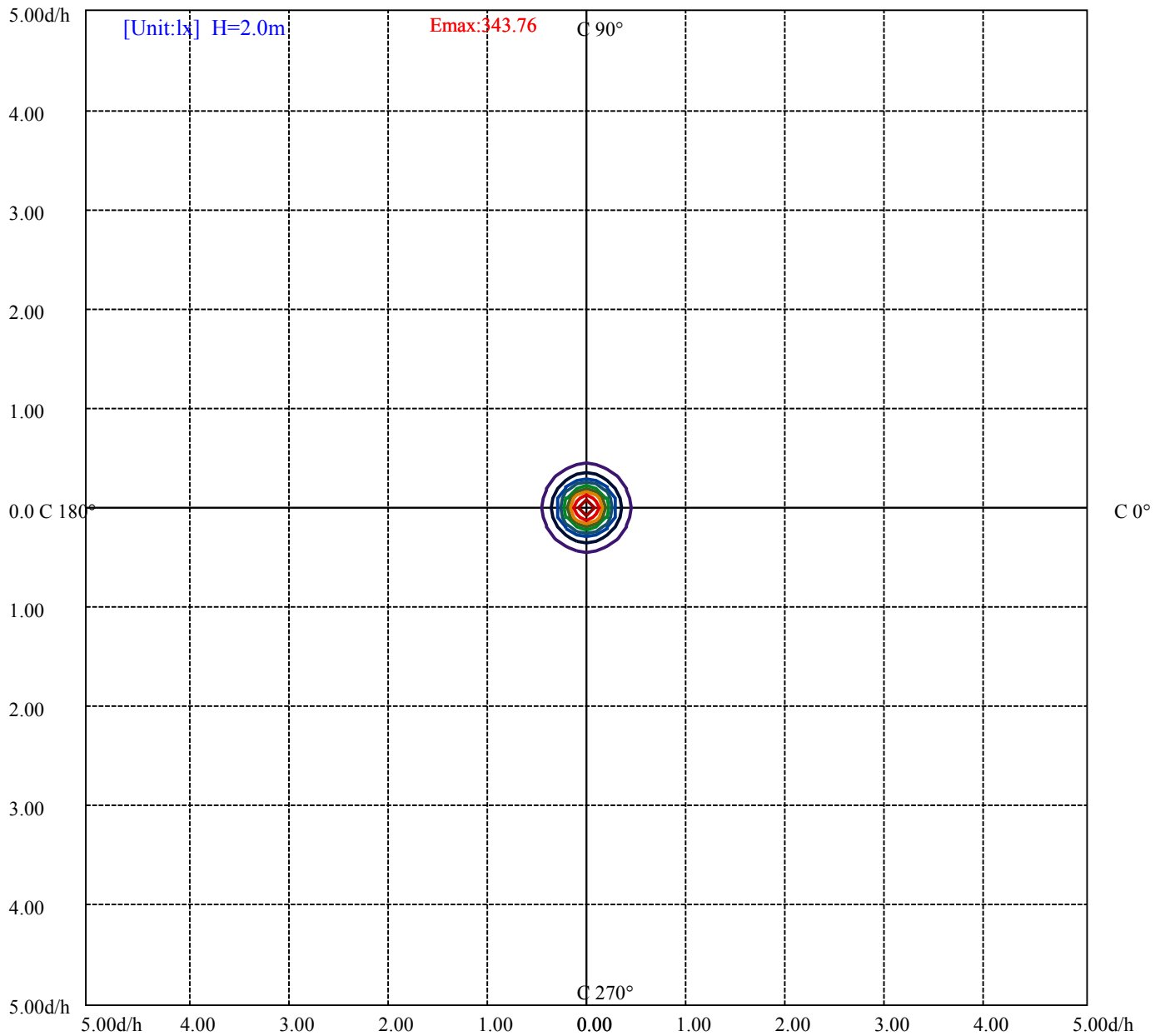
(50%Imax) 687.516

(60%Imax) 825.019

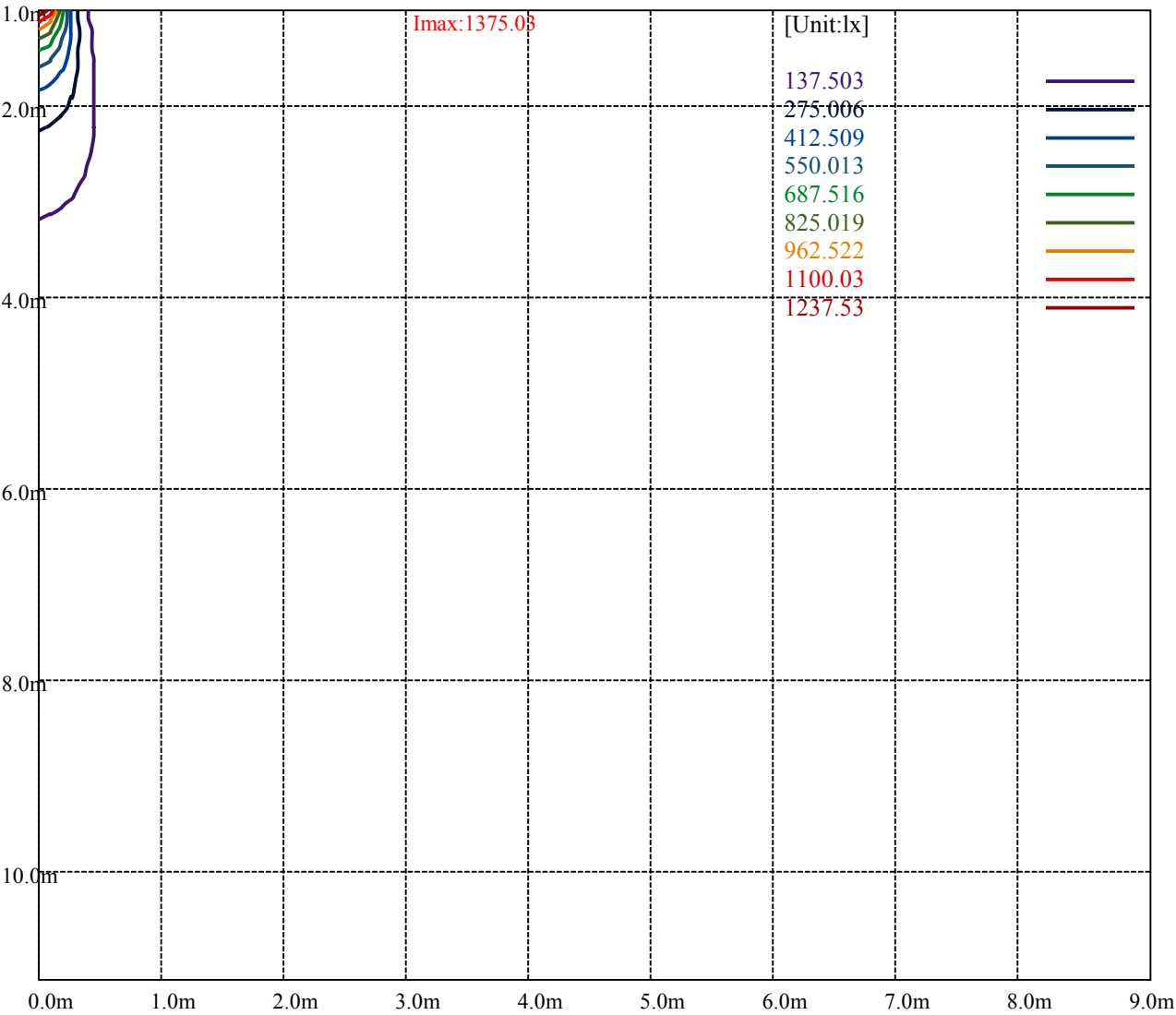
(70%Imax) 962.522

(80%Imax) 1100.03

(90%Imax) 1237.53



(10%Emax)	34.37575	—
(20%Emax)	68.7515	—
(30%Emax)	103.127	—
(40%Emax)	137.5027	—
(50%Emax)	171.8785	—
(60%Emax)	206.2543	—
(70%Emax)	240.6297	—
(80%Emax)	275.005	—
(90%Emax)	309.3825	—



Luminance Table

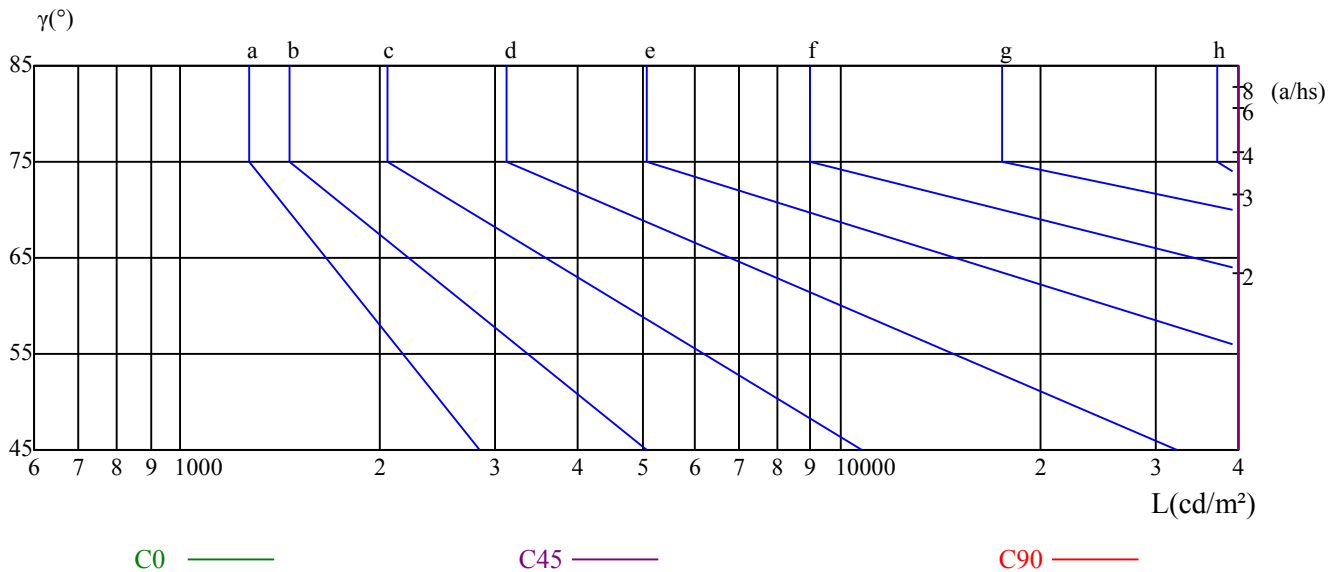
γ	45	50	55	60	65	70	75	80	85
C0	50783	46096	46046	51351	62573	81450	117001	183198	342843
C45	50783	46096	46046	51351	62573	81450	117001	183198	342843
C90	50783	46096	46046	51351	62573	81450	117001	183198	342843

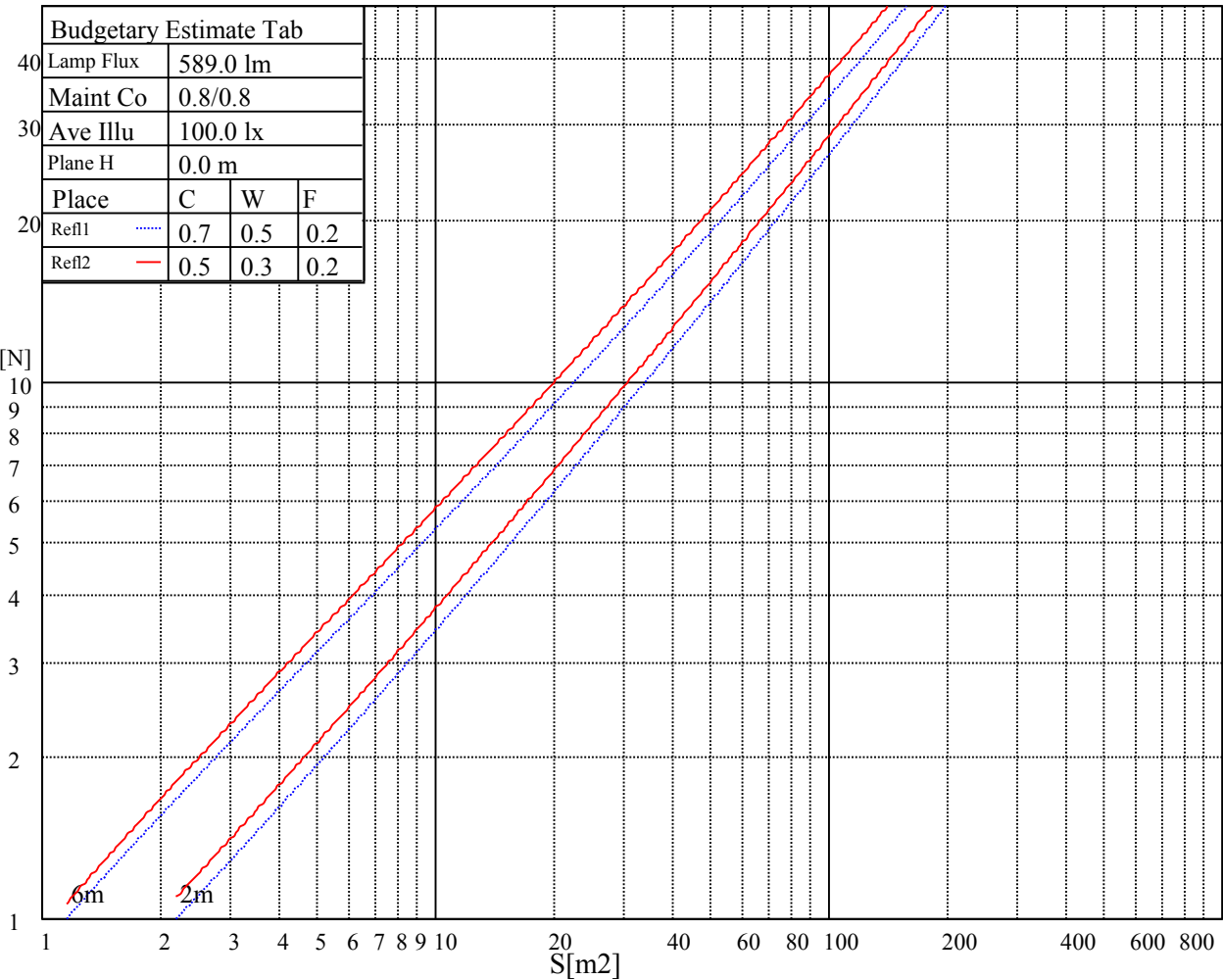
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
62573	62573	62573	117001	117001	117001	342843	342843	342843

Glare Table

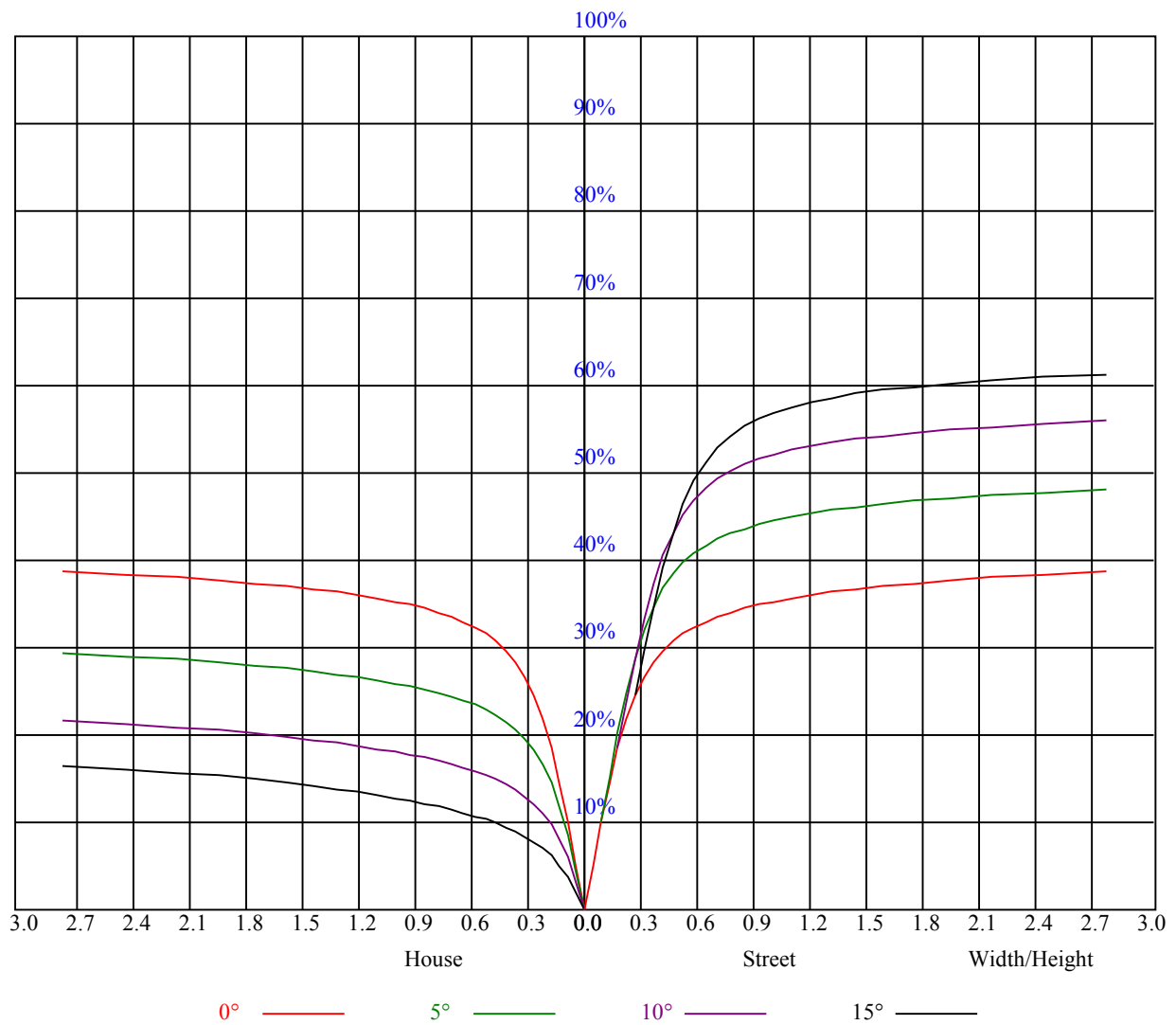
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	1.00	1.00	1.00	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.86	0.86	0.86	0.84
1	0.90	0.87	0.84	0.88	0.85	0.83	0.84	0.82	0.80	0.81	0.79	0.78	0.78	0.77	0.75	0.74
2	0.82	0.78	0.74	0.81	0.77	0.73	0.78	0.75	0.72	0.75	0.73	0.70	0.73	0.71	0.69	0.67
3	0.77	0.72	0.68	0.75	0.71	0.67	0.73	0.69	0.66	0.71	0.68	0.65	0.69	0.66	0.64	0.62
4	0.72	0.67	0.62	0.71	0.66	0.62	0.69	0.65	0.61	0.67	0.64	0.61	0.66	0.62	0.60	0.58
5	0.68	0.62	0.59	0.67	0.62	0.58	0.65	0.61	0.58	0.64	0.60	0.57	0.63	0.59	0.57	0.55
6	0.64	0.59	0.55	0.64	0.59	0.55	0.62	0.58	0.55	0.61	0.57	0.54	0.60	0.57	0.54	0.53
7	0.61	0.56	0.53	0.61	0.56	0.52	0.60	0.55	0.52	0.59	0.55	0.52	0.58	0.54	0.52	0.50
8	0.59	0.54	0.50	0.58	0.53	0.50	0.57	0.53	0.50	0.56	0.52	0.50	0.56	0.52	0.49	0.48
9	0.56	0.51	0.48	0.56	0.51	0.48	0.55	0.51	0.48	0.54	0.50	0.48	0.54	0.50	0.47	0.46
10	0.54	0.49	0.46	0.54	0.49	0.46	0.53	0.49	0.46	0.52	0.49	0.46	0.52	0.48	0.46	0.45



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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	1380.38	1252.69	929.81	524.81	288.00	143.44	86.29	54.73	39.38	
45.0	1375.31	1270.13	961.31	524.25	287.44	153.51	94.73	62.21	44.21	
90.0	1373.06	1215.00	922.16	496.63	242.83	145.07	90.17	58.33	42.64	
135.0	1371.38	1318.50	1058.06	601.88	305.44	164.81	101.25	64.24	45.68	
180.0	1380.38	1311.19	982.80	544.33	283.95	159.58	97.76	63.06	44.78	
225.0	1375.31	1298.81	951.86	518.23	278.66	145.13	83.48	52.93	37.29	
270.0	1373.06	1290.38	989.44	570.94	294.75	140.23	77.57	46.07	32.79	
315.0	1371.38	1110.54	880.54	460.13	232.48	116.38	70.31	44.04	31.95	
360.0	1380.38	1252.69	929.81	524.81	288.00	143.44	86.29	54.73	39.38	
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	
0.0	30.71	25.82	22.95	22.11	22.44	23.85	26.38	27.56	23.79	
45.0	32.40	25.88	22.50	21.83	22.44	24.19	27.34	30.15	27.96	
90.0	32.06	25.99	22.67	22.11	22.39	23.46	24.69	25.20	24.64	
135.0	33.36	26.89	23.40	22.50	22.95	23.63	24.69	25.82	26.04	
180.0	32.51	26.16	23.57	22.95	24.08	25.54	28.97	31.44	28.01	
225.0	28.46	23.91	21.71	20.70	21.32	22.67	25.31	27.34	25.65	
270.0	26.89	23.18	20.87	20.25	20.76	20.98	21.77	21.66	20.98	
315.0	25.20	21.54	20.03	20.31	21.54	23.12	24.58	24.86	23.96	
360.0	30.71	25.82	22.95	22.11	22.44	23.85	26.38	27.56	23.79	
C/γ(°)	90.0									
0.0	18.39									
45.0	20.48									
90.0	19.91									
135.0	22.61									
180.0	21.54									
225.0	19.35									
270.0	15.41									
315.0	16.76									
360.0	18.39									