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Nata

LumCAT: 1681-S	
Luminaire: 92.70.122.00	
Report No: NATA0100	Voltage(V): 37.7000
Test No: GC2018081105	Current(A): 0.2600
LampCAT: LUMINUS CXM-7-AA00	Power (W): 9.8020
Lamp flux(lm): 1066.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 47	Width(mm): 47
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 962.05
Efficiency(%): 90.25%
Lumens(lm)/Power(W): 98.90
Central intensity(cd): 1380.402
Maximum intensity(cd): 1380.402
Angle of maximum intensity: $C=0.0$ $\gamma=0.0$
Beam Angle(50%Imax): [C0/180]Total=53.5
[C90/270]Total=53.5
Field angle(10%Imax): [C0/180]Total=75.2
[C90/270]Total=75.2
Maximum s/h(1/2): C0_180=0.81 C90_270=0.81
Maximum s/h(1/4): C0_180=0.82 C90_270=0.82
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.94%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.938%

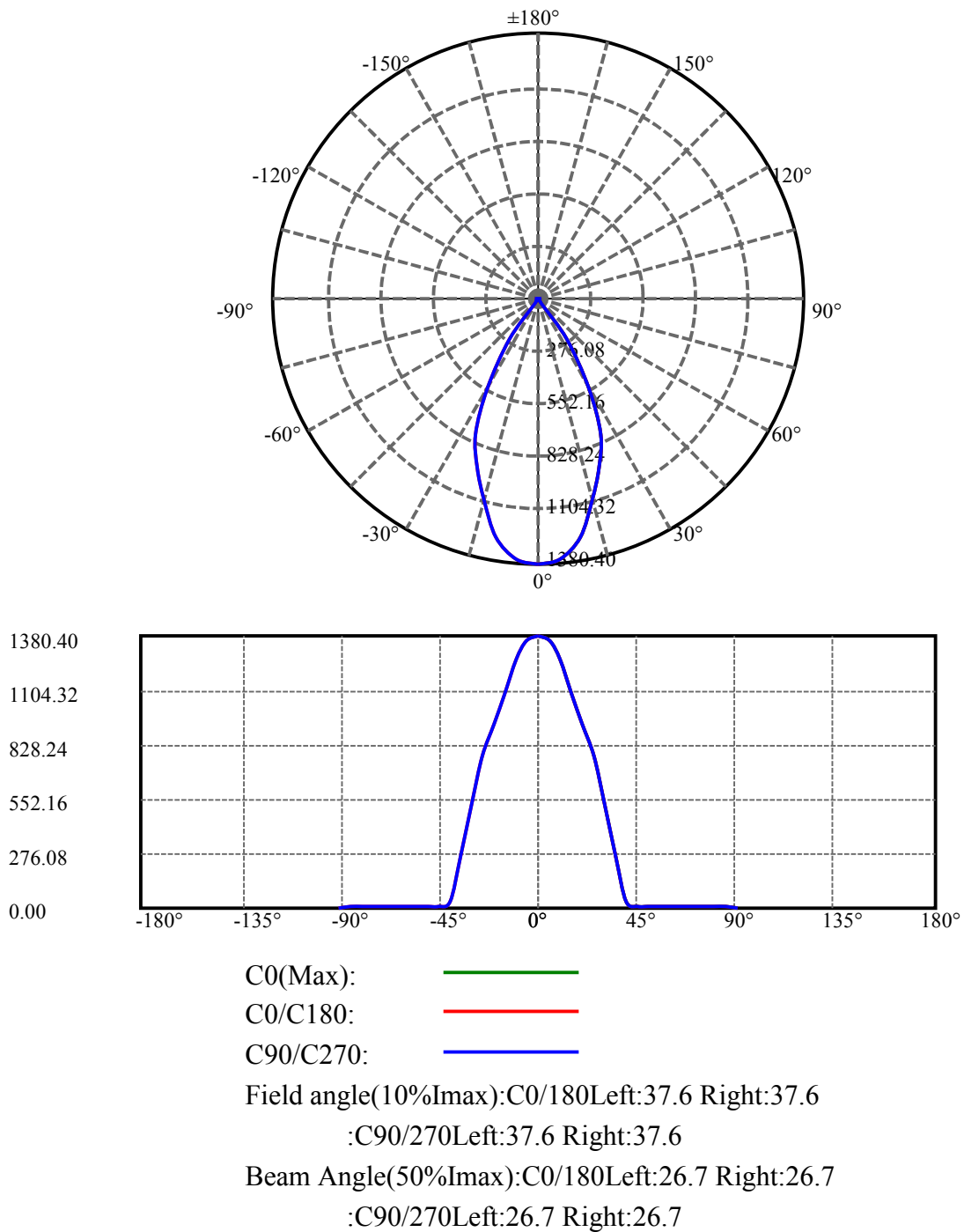
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1380.402	8.255	8.255	.774%	.858%
5.0	1356.452	64.802	73.057	6.079%	7.594%
10.0	1259.622	119.895	192.952	11.247%	20.056%
15.0	1081.390	153.415	346.367	14.392%	36.003%
20.0	931.513	174.634	521.002	16.382%	54.155%
25.0	772.675	178.992	699.994	16.791%	72.760%
30.0	536.181	146.950	846.944	13.785%	88.035%
35.0	253.019	79.549	926.493	7.462%	96.304%
40.0	33.399	11.768	938.261	1.104%	97.527%
45.0	10.825	4.196	942.456	.394%	97.963%
50.0	6.084	2.555	945.011	.240%	98.228%
55.0	4.934	2.216	947.227	.208%	98.459%
60.0	4.590	2.179	949.406	.204%	98.685%
65.0	4.398	2.185	951.59	.205%	98.912%
70.0	4.349	2.240	953.831	.210%	99.145%
75.0	4.336	2.296	956.126	.215%	99.384%
80.0	4.343	2.344	958.47	.220%	99.627%
85.0	4.453	2.431	960.902	.228%	99.880%
90.0	4.205	1.152	962.054	.108%	100.000%

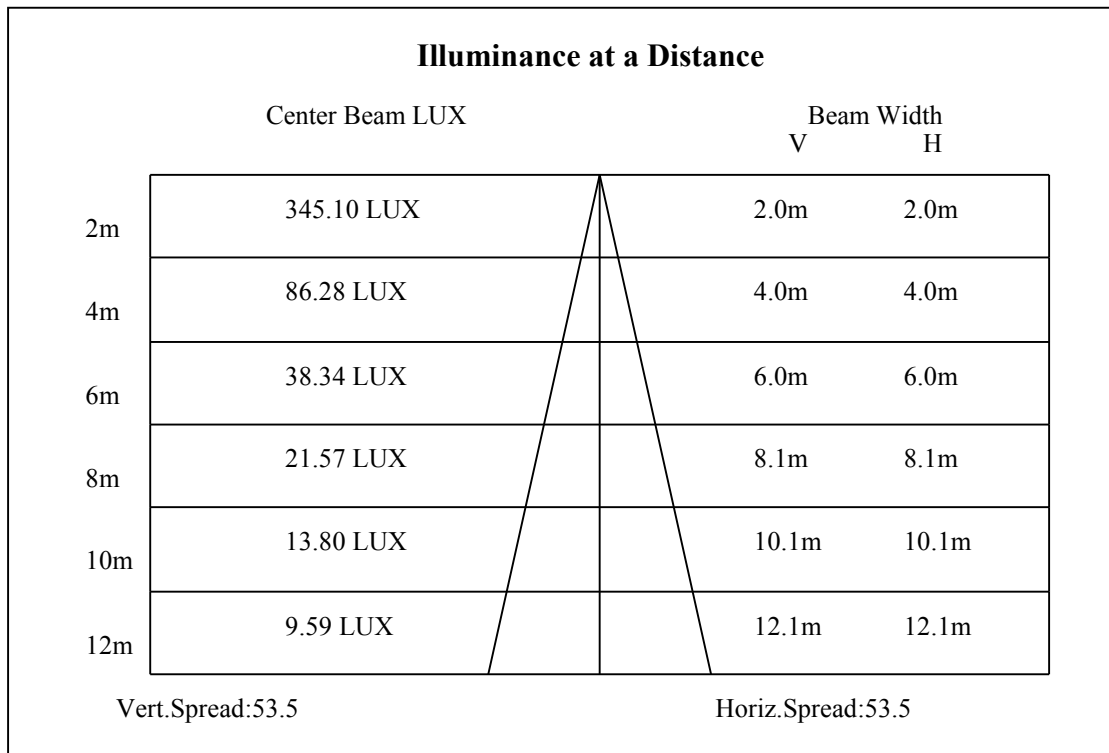
ZONAL LUMEN SUMMARY

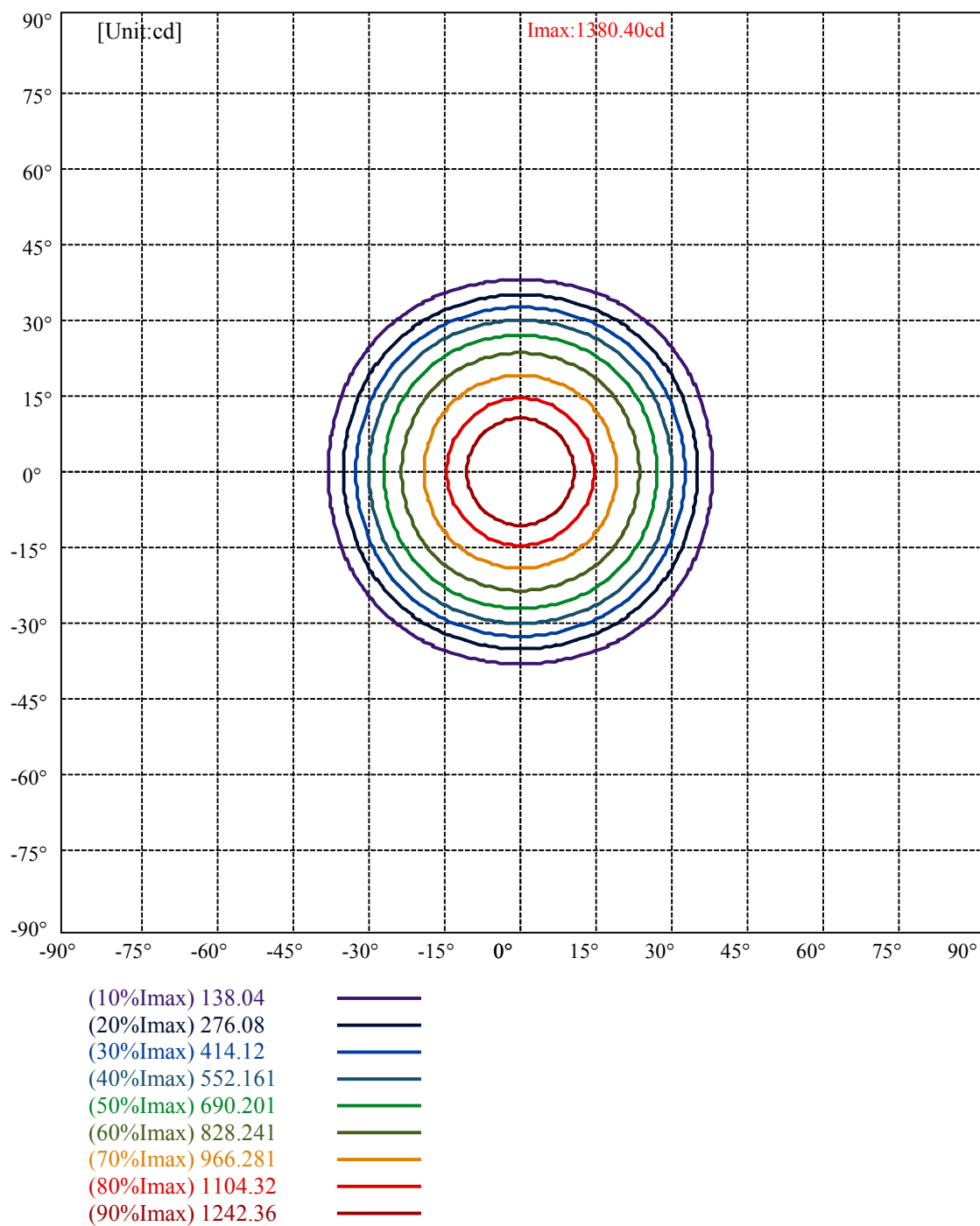
Zone	Lumens	%Lamp	%Fixt
0-30	846.94	79.45%	88.03%
0-40	938.26	88.02%	97.53%
0-60	949.41	89.06%	98.69%
0-90	960.90	90.14%	99.88%
0-120	960.90	90.14%	99.88%
0-180	962.05	90.25%	100.00%
60-90	13.68	1.28%	1.42%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-27.37	769.64	72.20%	80.00%

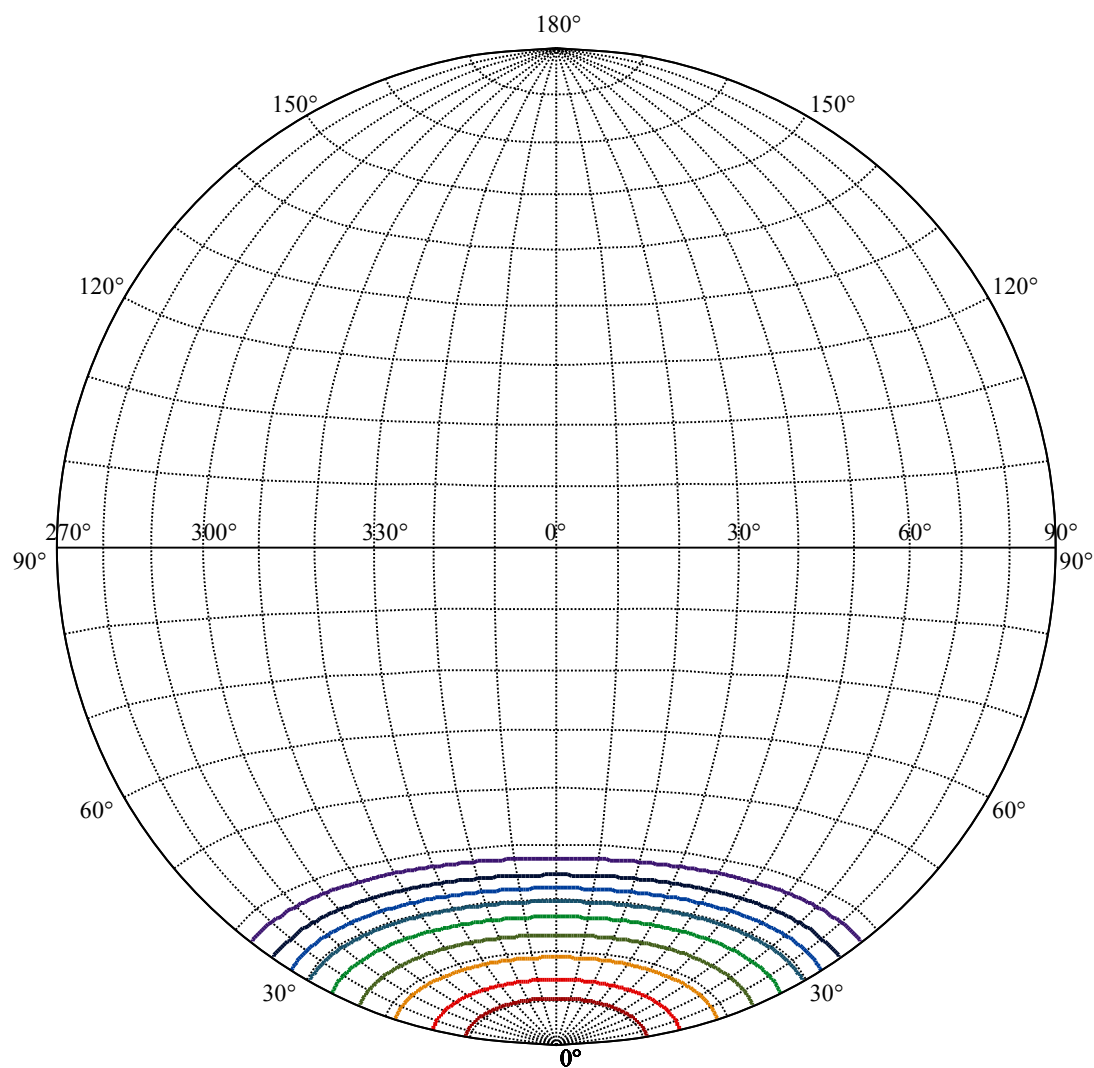
ZONAL LUMEN SUMMARY

0-10	192.95
10-20	328.05
20-30	325.94
30-40	91.32
40-50	6.75
50-60	4.39
60-70	4.42
70-80	4.64
80-90	2.43
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:1380.40

(10%Imax) 138.04

(20%Imax) 276.08

(30%Imax) 414.12

(40%Imax) 552.161

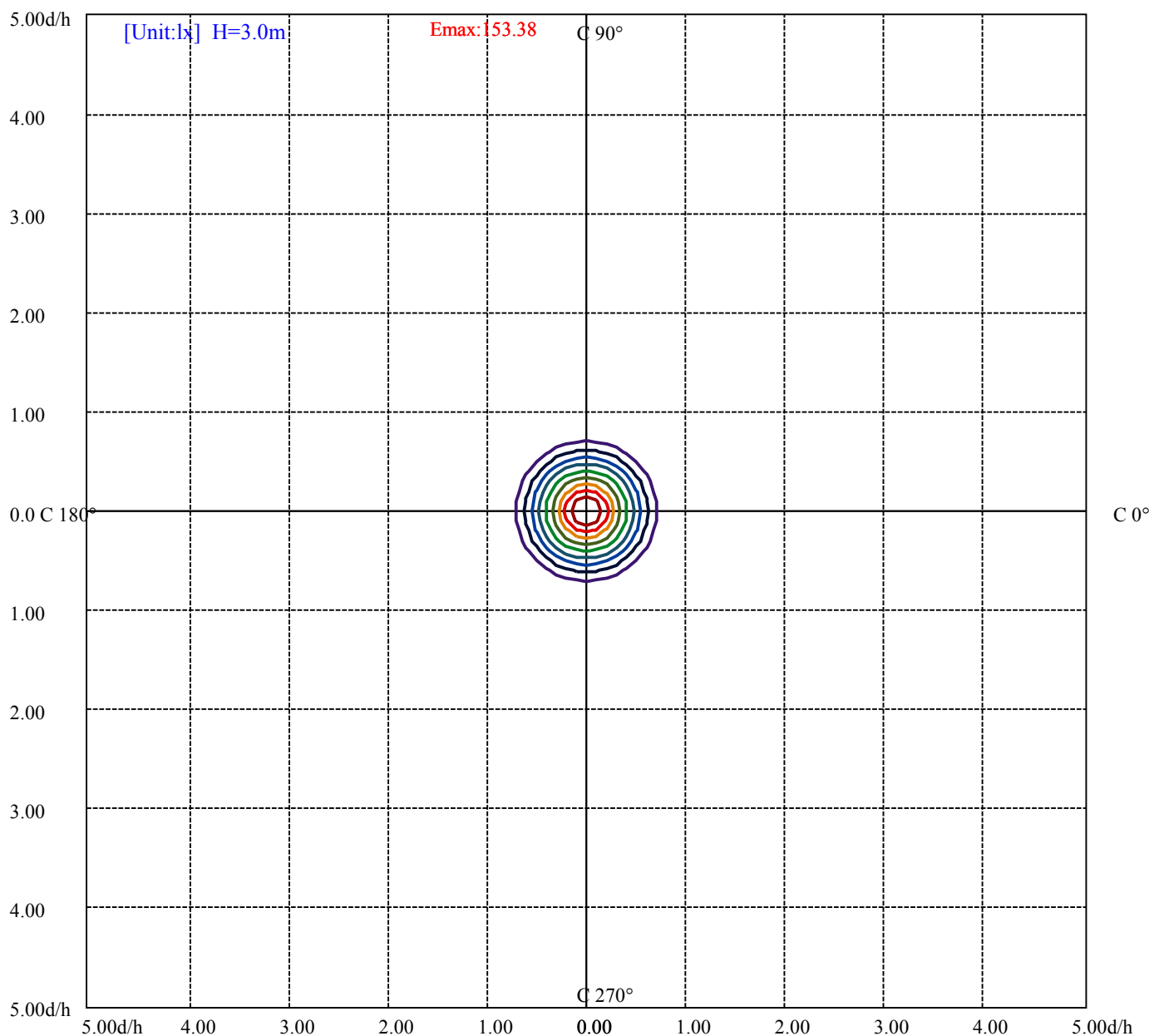
(50%Imax) 690.201

(60%Imax) 828.241

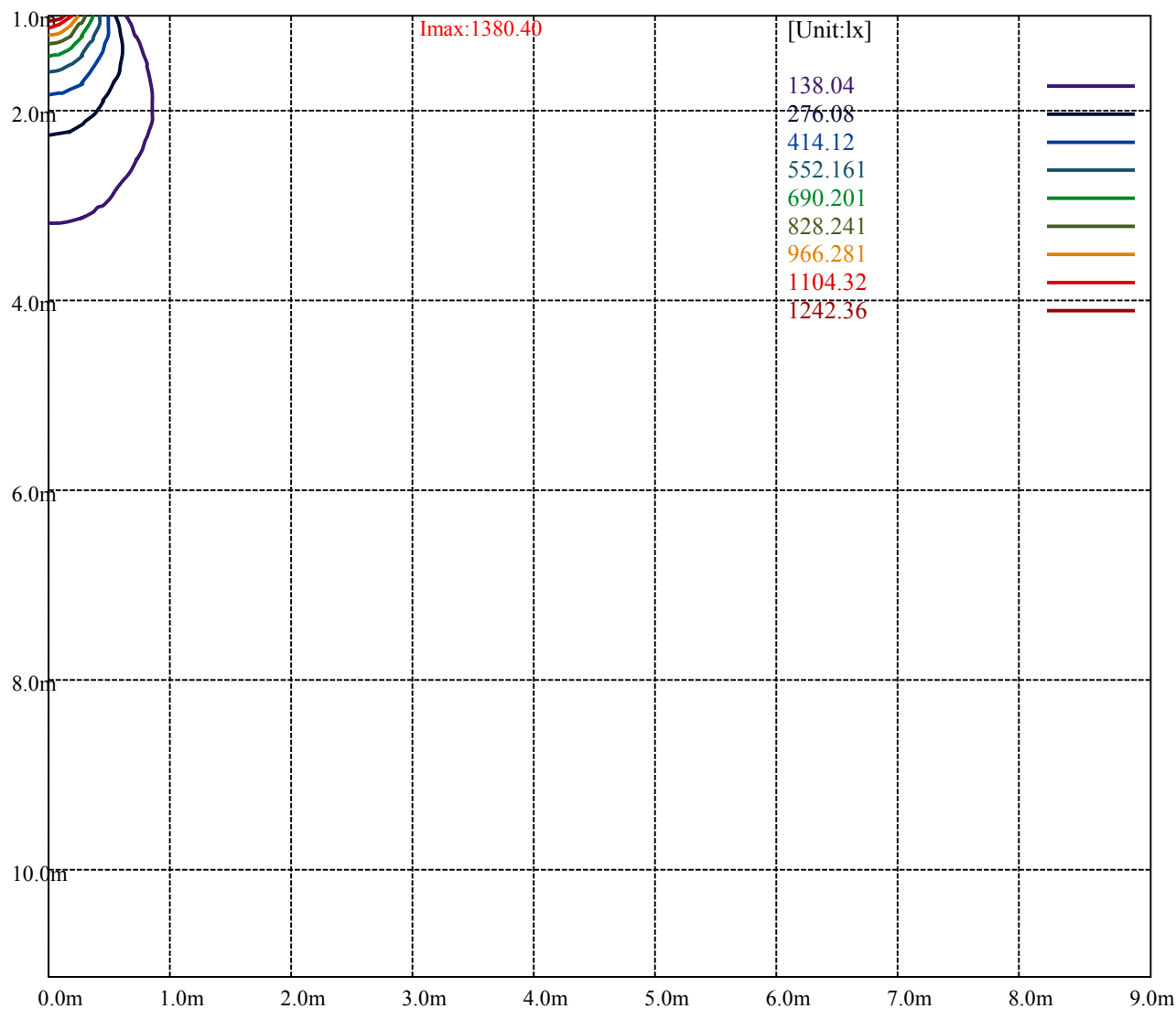
(70%Imax) 966.281

(80%Imax) 1104.32

(90%Imax) 1242.36



(10%Emax) 15.33778	—
(20%Emax) 30.67555	—
(30%Emax) 46.01333	—
(40%Emax) 61.35111	—
(50%Emax) 76.68889	—
(60%Emax) 92.02678	—
(70%Emax) 107.3646	—
(80%Emax) 122.7022	—
(90%Emax) 138.04	—



Luminance Table

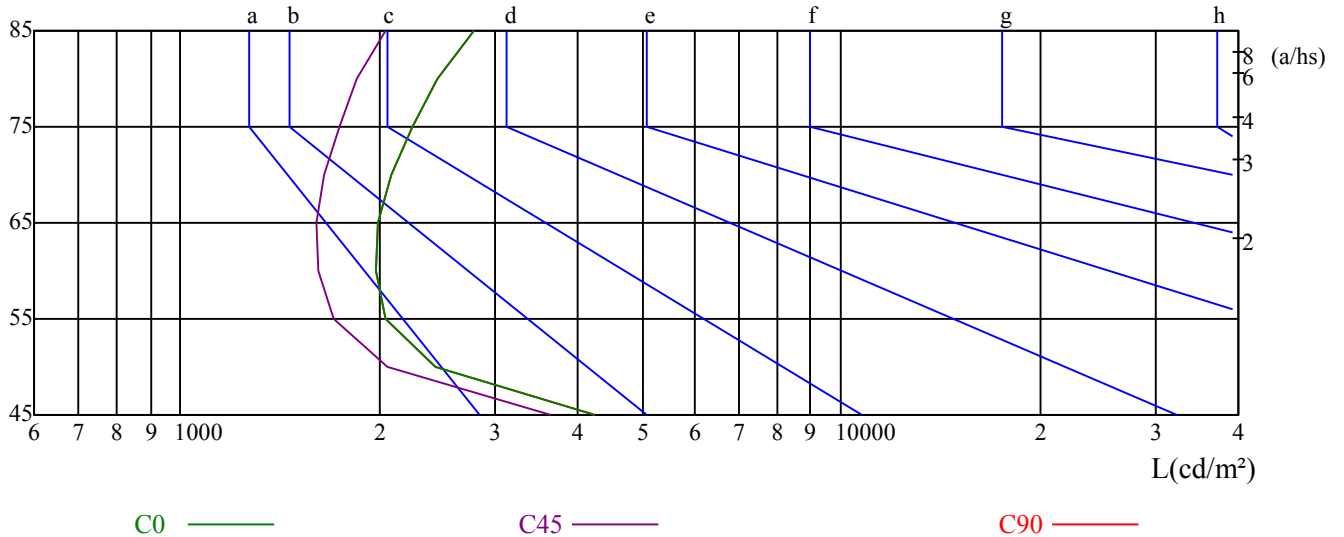
γ	45	50	55	60	65	70	75	80	85
C0	4230	2433	2037	1974	1989	2091	2242	2450	2788
C45	3642	2064	1701	1621	1605	1654	1736	1850	2043
C90	4230	2433	2037	1974	1989	2091	2242	2450	2788

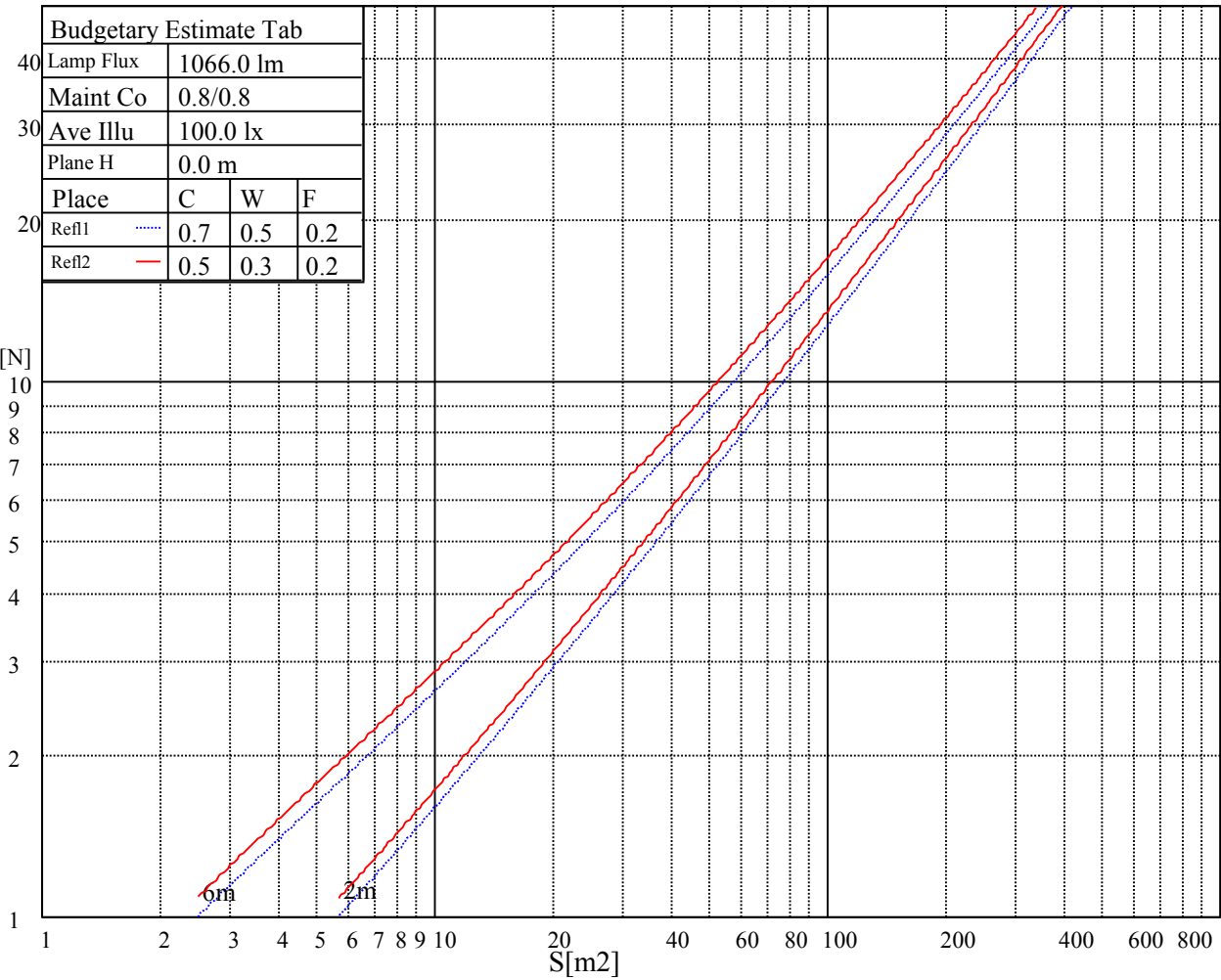
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4711	4711	4711	7583	7583	7583	23128	23128	23128

Glare Table

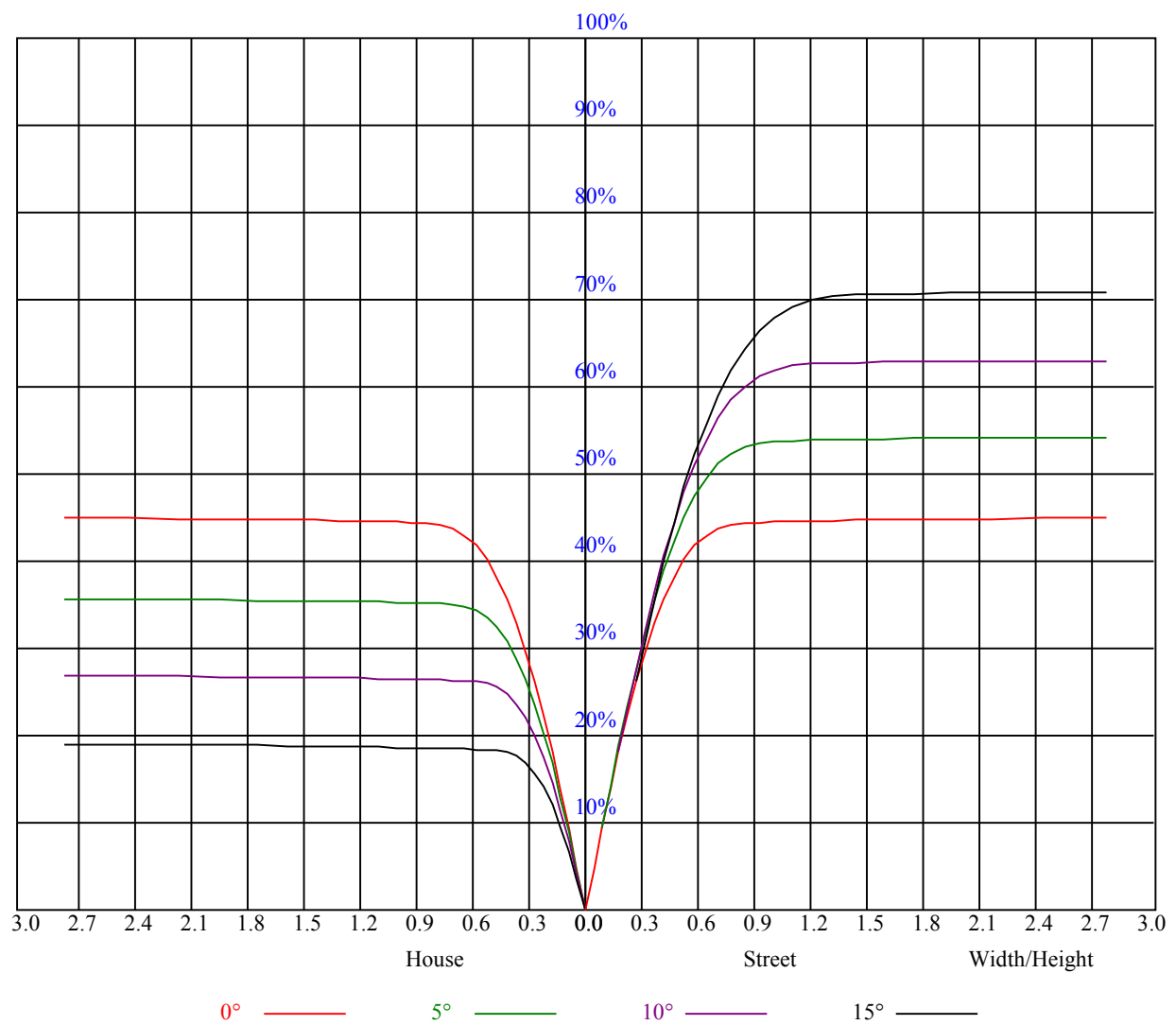
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

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	1.08	1.08	1.08	1.06	1.06	1.06	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.00	0.98	0.96	0.98	0.96	0.94	0.95	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.85
2	0.94	0.91	0.88	0.93	0.90	0.87	0.90	0.87	0.85	0.87	0.85	0.83	0.85	0.83	0.82	0.80
3	0.89	0.85	0.82	0.88	0.84	0.81	0.86	0.82	0.80	0.83	0.81	0.78	0.81	0.79	0.77	0.76
4	0.84	0.80	0.76	0.83	0.79	0.76	0.82	0.78	0.75	0.80	0.77	0.74	0.78	0.76	0.73	0.72
5	0.80	0.75	0.72	0.79	0.75	0.72	0.78	0.74	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.69
6	0.76	0.71	0.68	0.76	0.71	0.68	0.74	0.70	0.67	0.73	0.70	0.67	0.72	0.69	0.66	0.65
7	0.73	0.68	0.65	0.72	0.68	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.62
8	0.69	0.65	0.61	0.69	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.59
9	0.66	0.62	0.59	0.66	0.62	0.58	0.65	0.61	0.58	0.64	0.61	0.58	0.64	0.60	0.58	0.57
10	0.64	0.59	0.56	0.63	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.56	0.61	0.58	0.55	0.54



Nata 1681-S

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	1376.96	1365.95	1274.01	1096.17	943.12	776.30	526.89	290.70	31.44		
45.0	1380.26	1355.49	1243.72	1063.14	908.98	739.41	517.53	280.79	27.09		
90.0	1380.81	1320.25	1188.12	992.83	860.86	706.15	462.47	150.14	24.45		
135.0	1383.57	1337.32	1232.71	1050.48	901.82	768.59	548.91	281.89	38.04		
180.0	1376.96	1346.68	1248.13	1086.10	932.71	773.05	509.16	233.88	32.26		
225.0	1380.26	1367.05	1291.62	1095.95	962.11	805.42	568.13	246.71	37.71		
270.0	1380.81	1382.47	1321.90	1173.80	998.72	844.57	623.79	323.73	46.63		
315.0	1383.57	1376.41	1276.76	1092.65	943.78	767.93	532.56	216.32	29.57		
360.0	1376.96	1365.95	1274.01	1096.17	943.12	776.30	526.89	290.70	31.44		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	9.86	6.06	5.01	4.68	4.40	4.35	4.29	4.35	4.51		
45.0	9.36	5.84	4.96	4.62	4.40	4.35	4.40	4.40	4.57		
90.0	9.36	5.78	4.84	4.57	4.35	4.35	4.35	4.29	4.46		
135.0	11.73	6.44	5.01	4.57	4.40	4.35	4.35	4.35	4.51		
180.0	10.68	6.17	4.84	4.51	4.40	4.35	4.35	4.35	4.40		
225.0	11.62	6.11	4.90	4.57	4.40	4.35	4.29	4.35	4.40		
270.0	13.71	6.55	5.01	4.62	4.40	4.35	4.35	4.35	4.35		
315.0	10.30	5.73	4.90	4.57	4.40	4.35	4.29	4.29	4.40		
360.0	9.86	6.06	5.01	4.68	4.40	4.35	4.29	4.35	4.51		
C/ γ (°)	90.0										
0.0	4.18										
45.0	4.18										
90.0	4.24										
135.0	4.18										
180.0	4.18										
225.0	4.24										
270.0	4.24										
315.0	4.18										
360.0	4.18										