



NATA LIGHTING CO.,LTD

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Nata

LumCAT: 2-1682-M	
Luminaire: 92.70.124.00	
Report No: NT2017081504	Voltage(V): 35.4000
Test No: GC2017081504	Current(A): 0.3000
LampCAT: CITIZEN CLU026	Power (W): 10.6200
Lamp flux(lm): 1398.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 70	Width(mm): 70
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1274.42
Efficiency(%): 91.16%
Lumens(lm)/Power(W): 120.00
Central intensity(cd): 2742.928
Maximum intensity(cd): 2742.928
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=36.5
[C90/270]Total=36.5
Field angle(10%Imax): [C0/180]Total=69.0
[C90/270]Total=69.0
Maximum s/h(1/2): C0_180=0.60 C90_270=0.60
Maximum s/h(1/4): C0_180=0.62 C90_270=0.62
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.16%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.631%

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2017/8/15
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.46

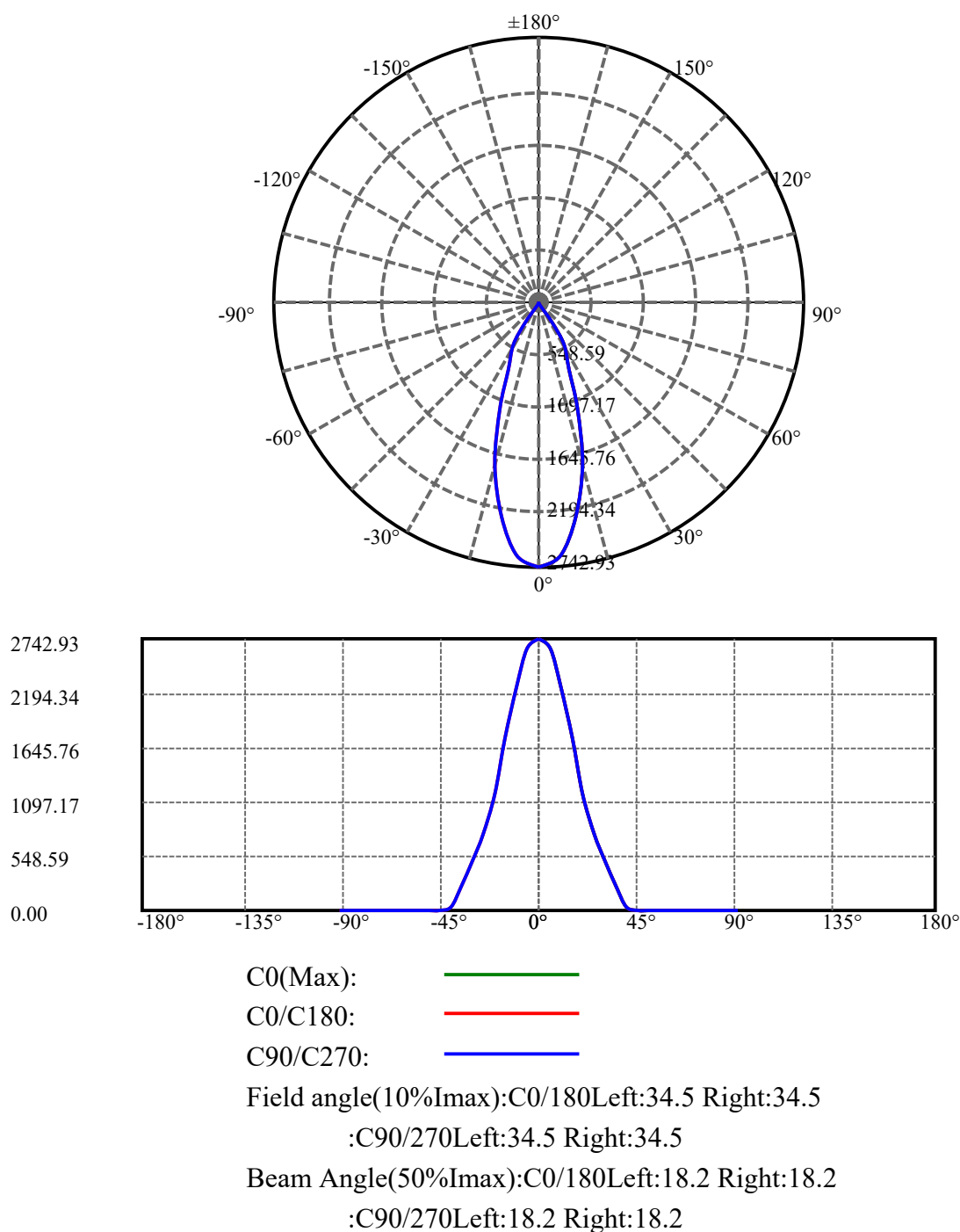
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2742.928	0.000	0	.000%	.000%
5.0	2633.782	64.277	64.277	4.598%	5.044%
10.0	2258.898	175.027	239.304	12.520%	18.777%
15.0	1732.782	236.784	476.087	16.937%	37.357%
20.0	1176.635	239.777	715.864	17.151%	56.172%
25.0	763.825	203.518	919.383	14.558%	72.141%
30.0	508.127	160.967	1080.349	11.514%	84.772%
35.0	246.884	111.181	1191.53	7.953%	93.496%
40.0	40.333	47.920	1239.45	3.428%	97.256%
45.0	8.118	8.971	1248.421	.642%	97.960%
50.0	6.629	2.980	1251.401	.213%	98.194%
55.0	6.170	2.783	1254.184	.199%	98.412%
60.0	5.864	2.782	1256.966	.199%	98.631%
65.0	5.642	2.797	1259.763	.200%	98.850%
70.0	5.551	2.834	1262.597	.203%	99.072%
75.0	5.489	2.886	1265.483	.206%	99.299%
80.0	5.503	2.941	1268.424	.210%	99.530%
85.0	5.510	2.992	1271.416	.214%	99.764%
90.0	5.454	3.002	1274.418	.215%	100.000%

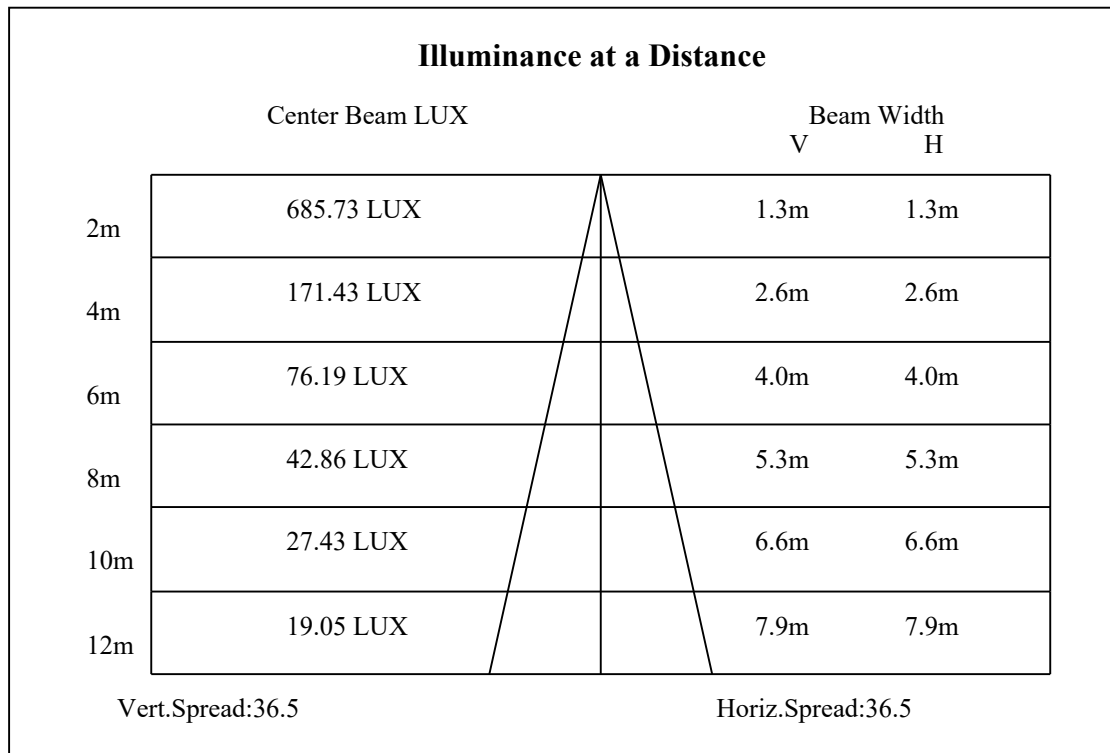
ZONAL LUMEN SUMMARY

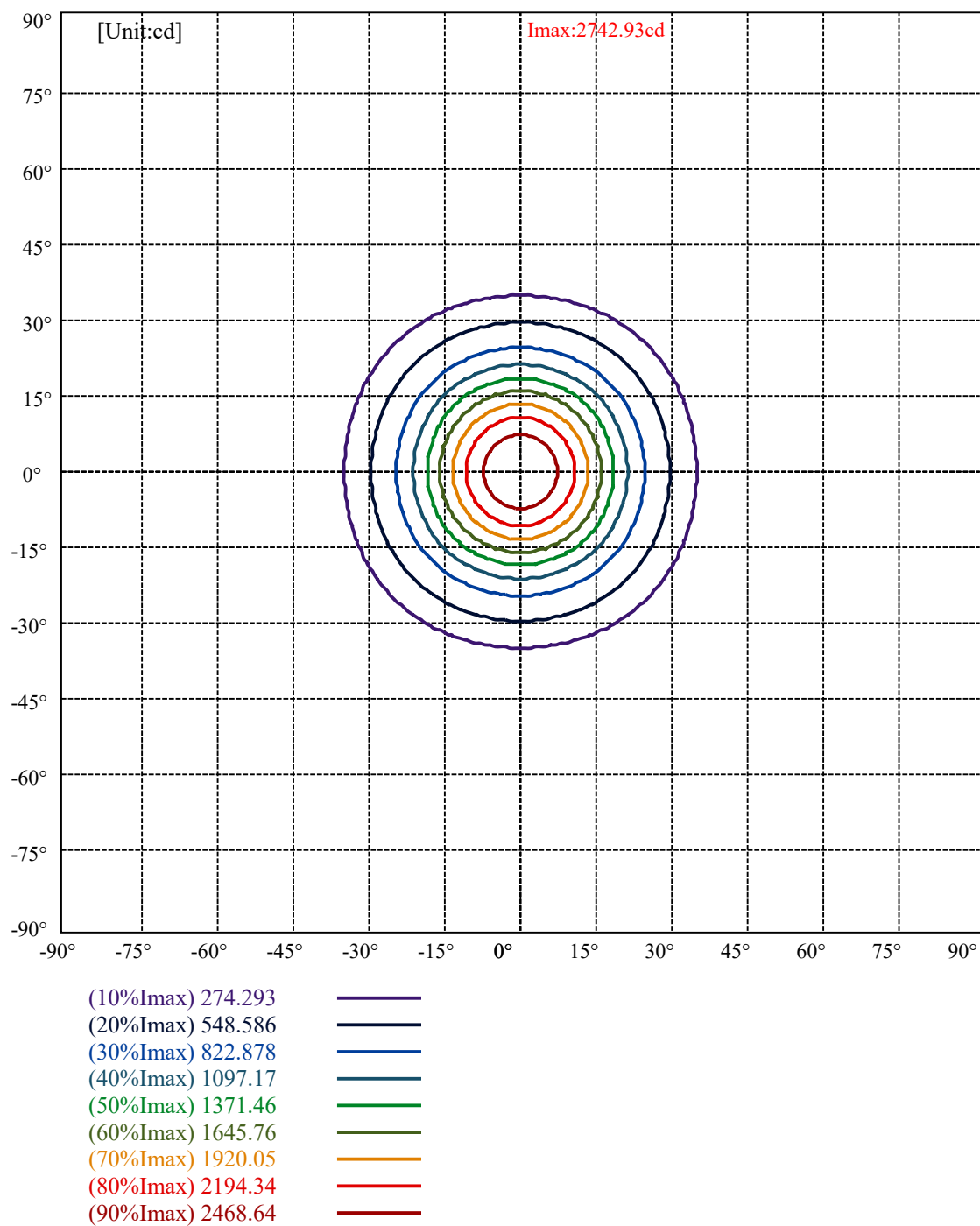
Zone	Lumens	%Lamp	%Fixt
0-30	1080.35	77.28%	84.77%
0-40	1239.45	88.66%	97.26%
0-60	1256.97	89.91%	98.63%
0-90	1271.42	90.95%	99.76%
0-120	1271.42	90.95%	99.76%
0-180	1274.42	91.16%	100.00%
60-90	17.23	1.23%	1.35%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-28.11	1019.54	72.93%	80.00%

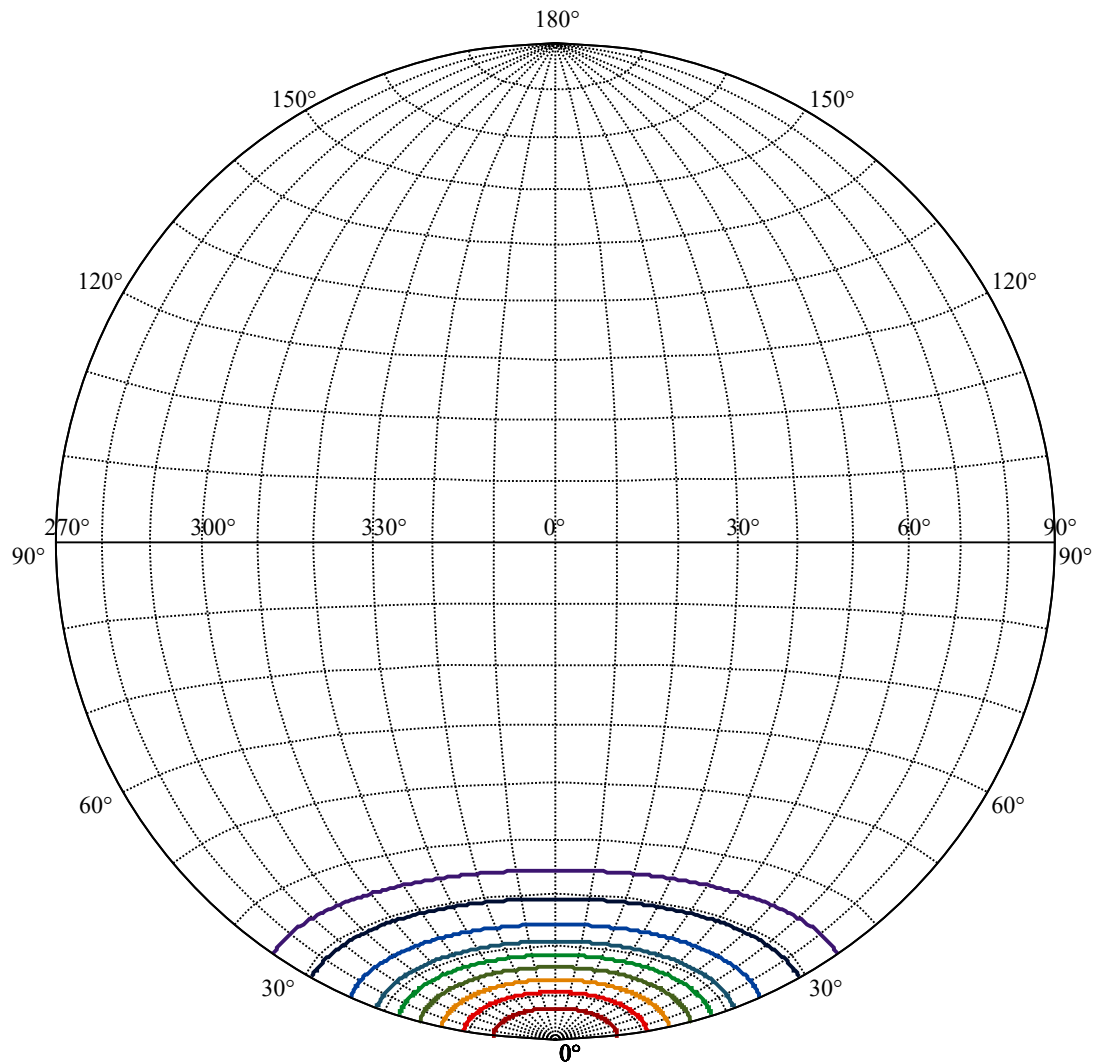
ZONAL LUMEN SUMMARY

0-10	239.30
10-20	476.56
20-30	364.49
30-40	159.10
40-50	11.95
50-60	5.56
60-70	5.63
70-80	5.83
80-90	2.99
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:2742.93

(10%Imax) 274.293

(20%Imax) 548.586

(30%Imax) 822.878

(40%Imax) 1097.17

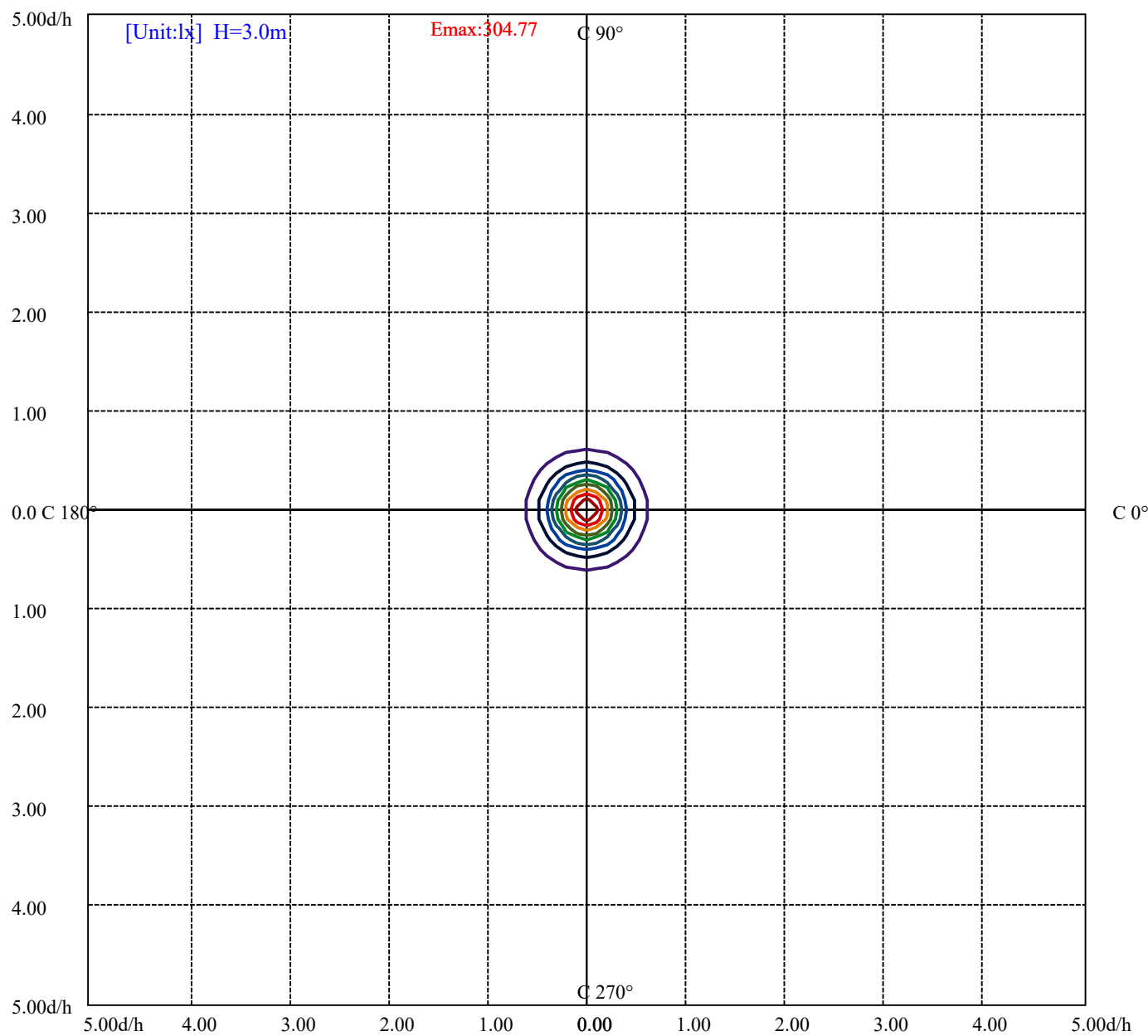
(50%Imax) 1371.46

(60%Imax) 1645.76

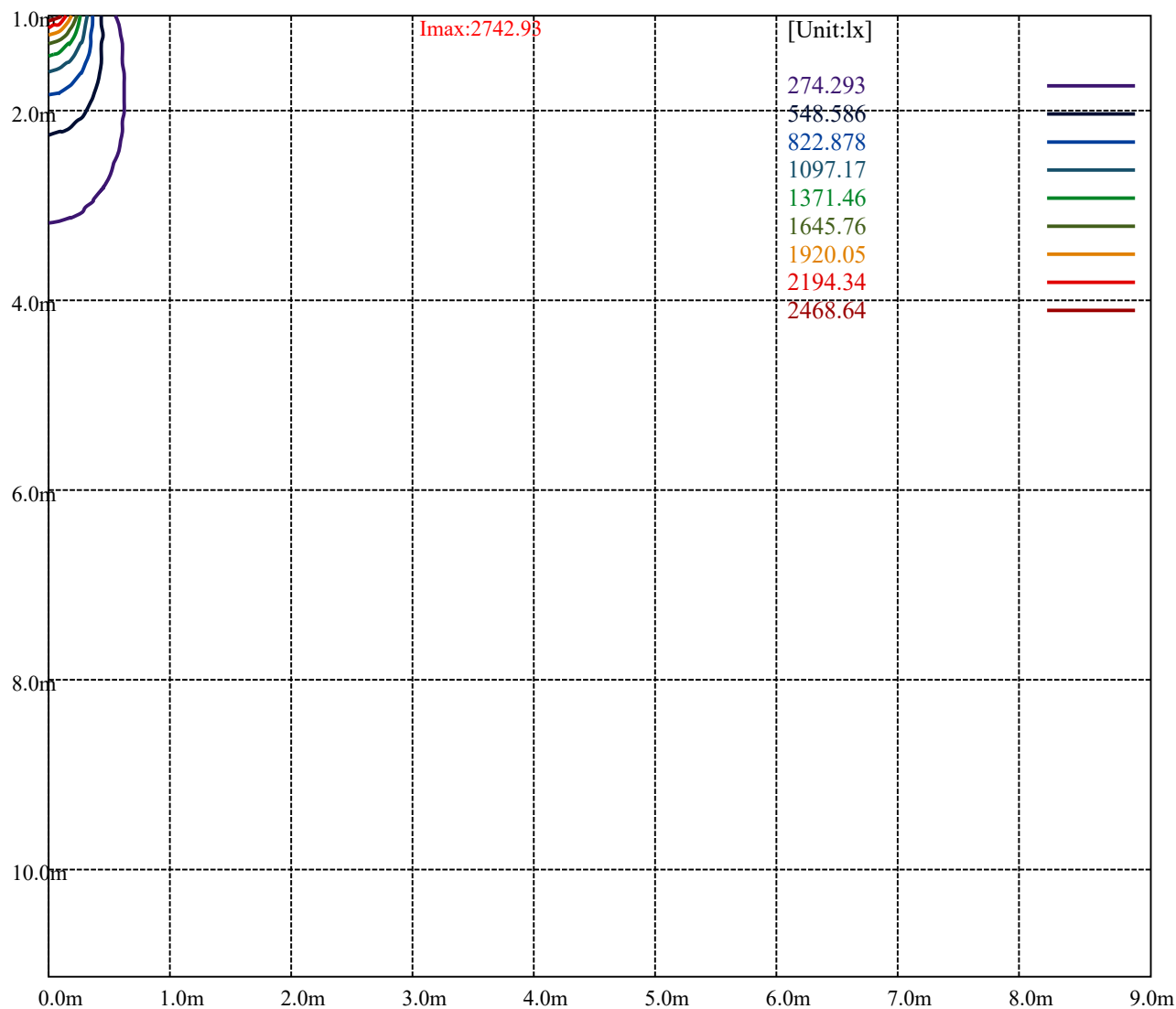
(70%Imax) 1920.05

(80%Imax) 2194.34

(90%Imax) 2468.64



(10%Emax) 30.47689	—
(20%Emax) 60.95389	—
(30%Emax) 91.43078	—
(40%Emax) 121.9078	—
(50%Emax) 152.3844	—
(60%Emax) 182.8611	—
(70%Emax) 213.3389	—
(80%Emax) 243.8156	—
(90%Emax) 274.2922	—



Luminance Table

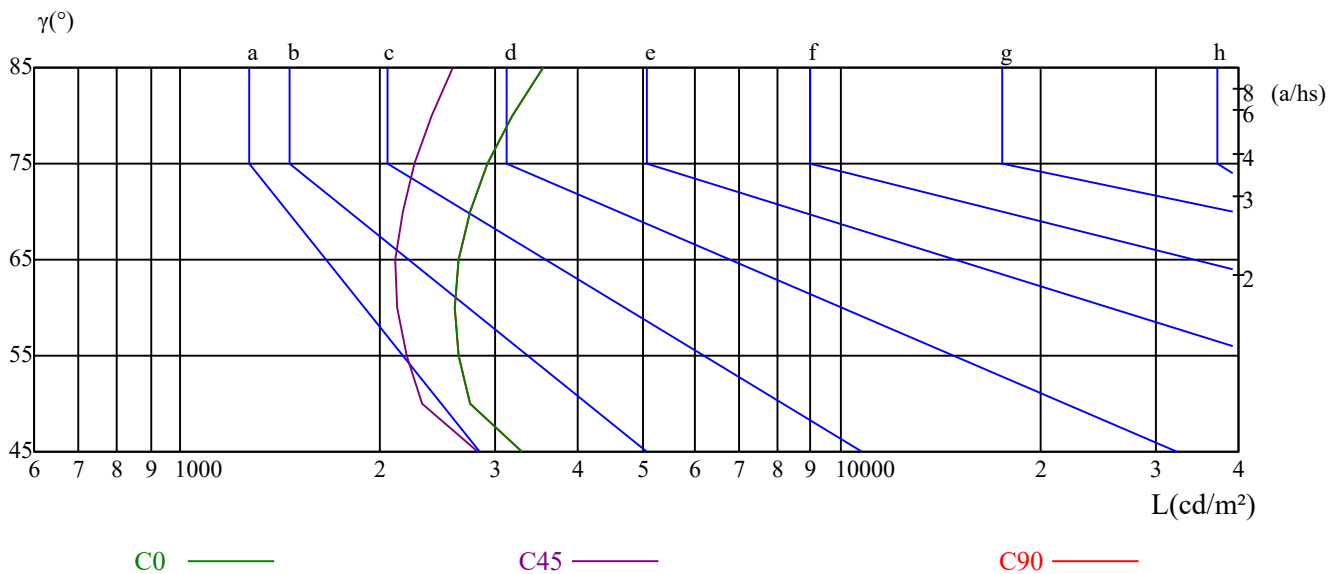
γ	45	50	55	60	65	70	75	80	85
C0	3284	2743	2632	2603	2630	2747	2918	3187	3534
C45	2822	2322	2194	2134	2119	2170	2256	2403	2588
C90	3284	2743	2632	2603	2630	2747	2918	3187	3534

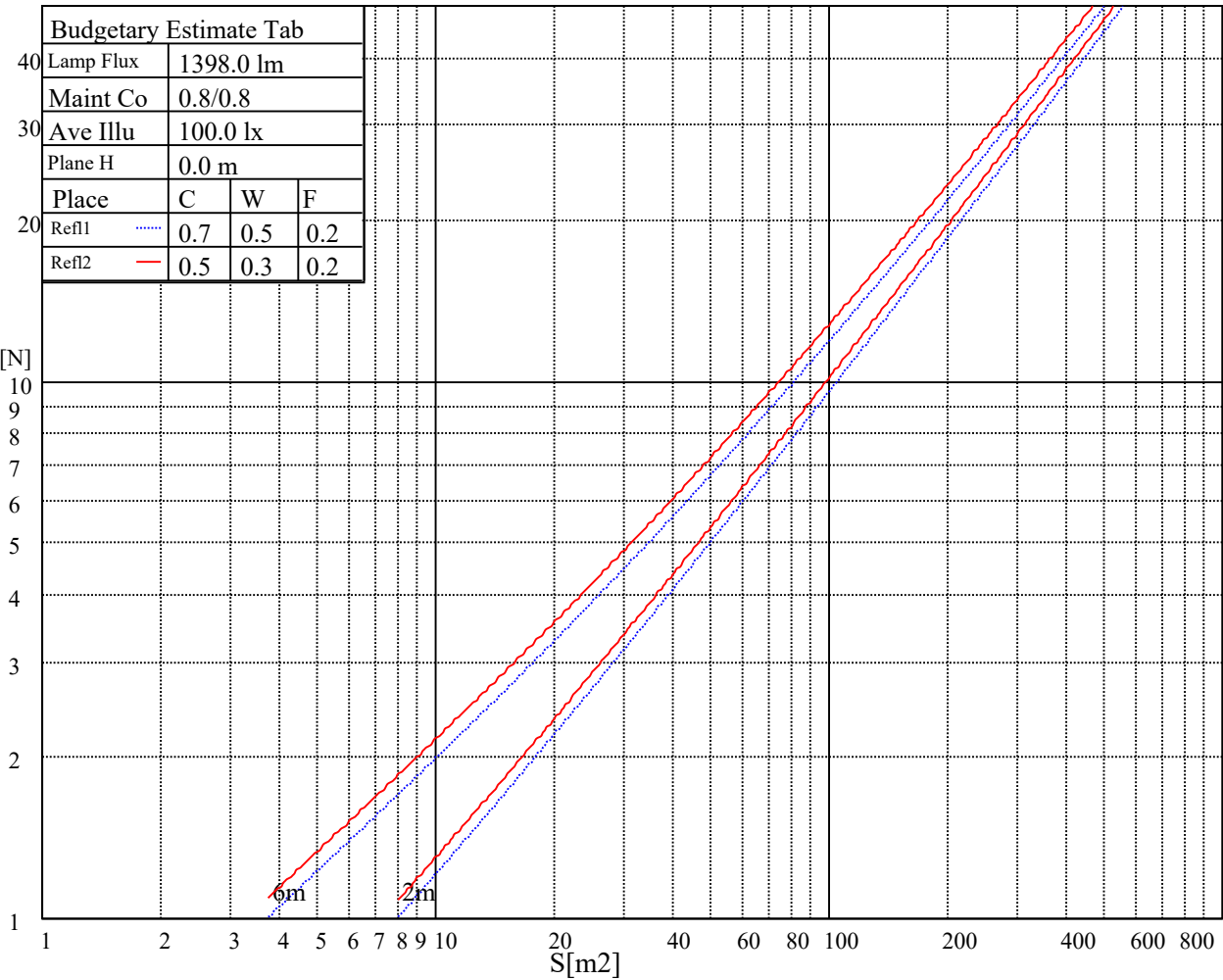
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6309	6309	6309	10022	10022	10022	29875	29875	29875

Glare Table

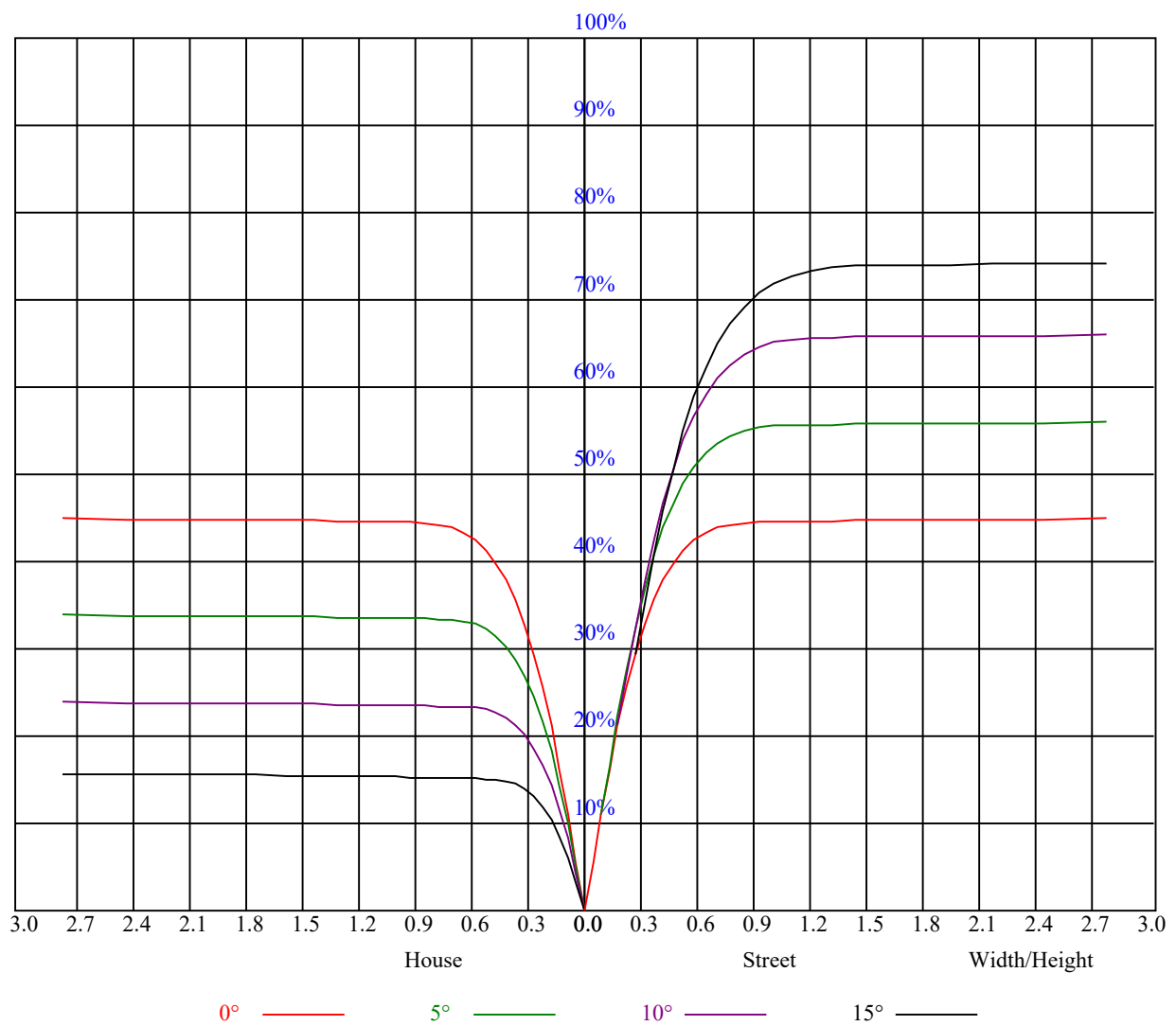
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve





RHOC	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 RHOF=20 CU															
0	1.09	1.09	1.09	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	1.02	0.99	0.98	1.00	0.98	0.96	0.96	0.94	0.93	0.93	0.91	0.90	0.89	0.89	0.88	0.86
2	0.95	0.92	0.89	0.94	0.91	0.88	0.91	0.89	0.86	0.88	0.86	0.85	0.86	0.84	0.83	0.81
3	0.90	0.86	0.83	0.89	0.85	0.82	0.87	0.83	0.81	0.84	0.82	0.80	0.82	0.80	0.79	0.77
4	0.85	0.81	0.78	0.84	0.80	0.77	0.82	0.79	0.76	0.81	0.78	0.75	0.79	0.77	0.74	0.73
5	0.81	0.76	0.73	0.80	0.76	0.73	0.79	0.75	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.70
6	0.77	0.72	0.69	0.76	0.72	0.69	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.66
7	0.74	0.69	0.65	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.63
8	0.70	0.66	0.62	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.61	0.60
9	0.67	0.63	0.59	0.67	0.62	0.59	0.66	0.62	0.59	0.65	0.62	0.59	0.64	0.61	0.59	0.58
10	0.64	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.57	0.63	0.59	0.56	0.62	0.59	0.56	0.55



Nata 2-1682-M

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	2741.95	2664.60	2297.85	1745.23	1168.13	760.20	496.97	292.73	35.90		
45.0	2750.30	2591.70	2143.70	1558.24	1033.45	653.91	420.73	136.40	16.14		
90.0	2728.60	2543.28	2057.44	1474.77	970.29	618.29	381.10	125.05	14.30		
135.0	2750.86	2644.56	2227.73	1715.18	1172.58	750.74	517.56	296.07	26.99		
180.0	2741.95	2603.94	2215.49	1720.75	1109.92	761.20	522.68	225.83	30.00		
225.0	2750.30	2683.52	2389.12	1926.66	1391.85	884.03	602.99	317.27	73.01		
270.0	2728.60	2706.34	2450.34	1972.85	1463.64	927.16	609.39	355.06	92.94		
315.0	2750.86	2632.32	2289.51	1748.57	1103.24	755.08	513.61	226.67	33.39		
360.0	2741.95	2664.60	2297.85	1745.23	1168.13	760.20	496.97	292.73	35.90		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	8.01	6.57	6.12	5.79	5.62	5.51	5.45	5.45	5.45		
45.0	6.90	6.34	6.01	5.73	5.51	5.45	5.40	5.45	5.45		
90.0	7.01	6.40	6.12	5.73	5.62	5.51	5.51	5.51	5.51		
135.0	8.07	6.73	6.29	5.95	5.73	5.68	5.57	5.62	5.62		
180.0	7.62	6.79	6.23	5.95	5.68	5.51	5.51	5.45	5.51		
225.0	9.13	6.85	6.23	5.95	5.62	5.51	5.40	5.45	5.45		
270.0	10.85	6.79	6.23	5.95	5.68	5.57	5.51	5.45	5.45		
315.0	7.35	6.57	6.12	5.84	5.68	5.68	5.57	5.62	5.62		
360.0	8.01	6.57	6.12	5.79	5.62	5.51	5.45	5.45	5.45		
C/γ(°)	90.0										
0.0	5.45										
45.0	5.40										
90.0	5.45										
135.0	5.51										
180.0	5.40										
225.0	5.40										
270.0	5.51										
315.0	5.51										
360.0	5.45										