
Nata

LumCAT: 1655-S

Luminaire: 92.70.064.00

Report No: NT20180409014

Test No: nata-0100

LampCAT: SEOUL SAWX10

Lamp flux(lm): 1576.0

Number of Lamps: 1

Length(mm): 35

Phm Type: C

Voltage(V): 34.4000

Current(A): 0.3500

Power (W): 12.0400

PF: 0.0000

Ballast type: DC

Width(mm): 35

Height(mm): 0

Photometric Results

Lumens(lm): 1409.01

Efficiency(%): 89.40%

Lumens(lm)/Power(W): 117.03

Central intensity(cd): 2885.093

Maximum intensity(cd): 2885.093

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=39.1

[C90/270]Total=39.1

Field angle(10%Imax): [C0/180]Total=68.1

[C90/270]Total=68.1

Maximum s/h(1/2): C0_180=0.64 C90_270=0.64

Maximum s/h(1/4): C0_180=0.64 C90_270=0.64

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 90.41%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.433%

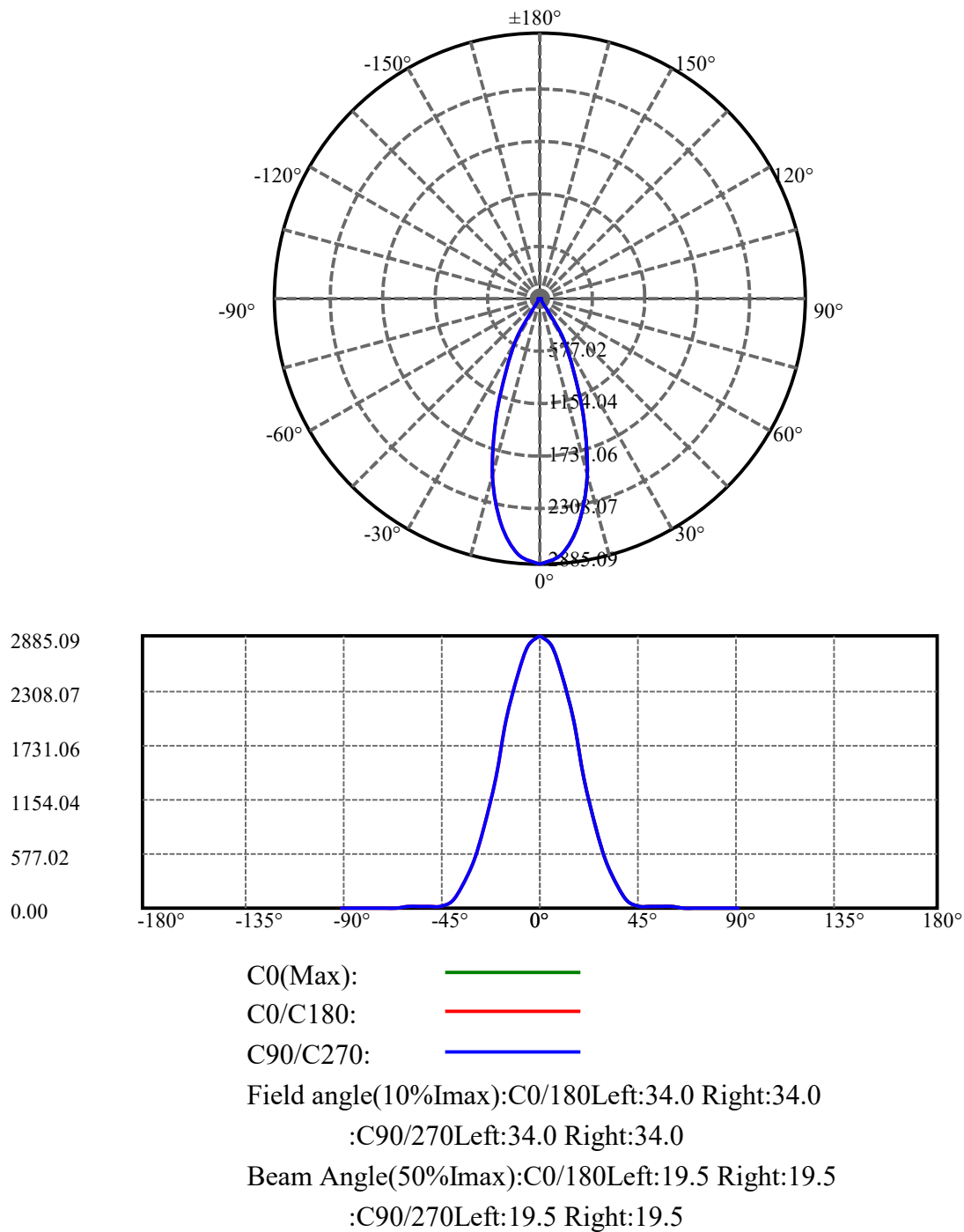
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2885.093	17.253	17.253	1.095%	1.225%
5.0	2778.559	132.741	149.994	8.423%	10.645%
10.0	2476.712	235.741	385.735	14.958%	27.376%
15.0	1991.459	282.525	668.261	17.927%	47.428%
20.0	1385.673	259.778	928.038	16.483%	65.864%
25.0	866.932	200.827	1128.866	12.743%	80.117%
30.0	504.716	138.327	1267.192	8.777%	89.935%
35.0	237.541	74.683	1341.875	4.739%	95.235%
40.0	70.486	24.835	1366.71	1.576%	96.998%
45.0	18.320	7.101	1373.81	.451%	97.502%
50.0	12.801	5.375	1379.185	.341%	97.883%
55.0	10.626	4.771	1383.956	.303%	98.222%
60.0	9.263	4.397	1388.354	.279%	98.534%
65.0	8.224	4.086	1392.439	.259%	98.824%
70.0	7.632	3.931	1396.37	.249%	99.103%
75.0	7.130	3.775	1400.145	.240%	99.371%
80.0	6.703	3.618	1403.764	.230%	99.627%
85.0	6.517	3.559	1407.322	.226%	99.880%
90.0	6.173	1.692	1409.014	.107%	100.000%

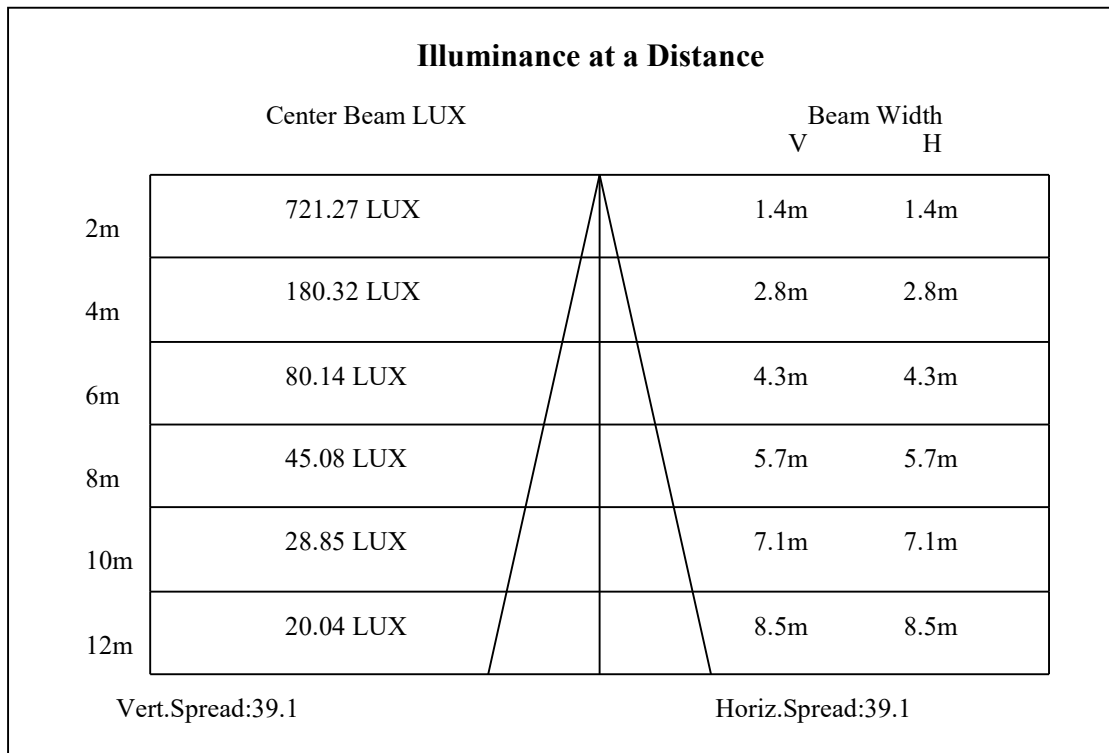
ZONAL LUMEN SUMMARY

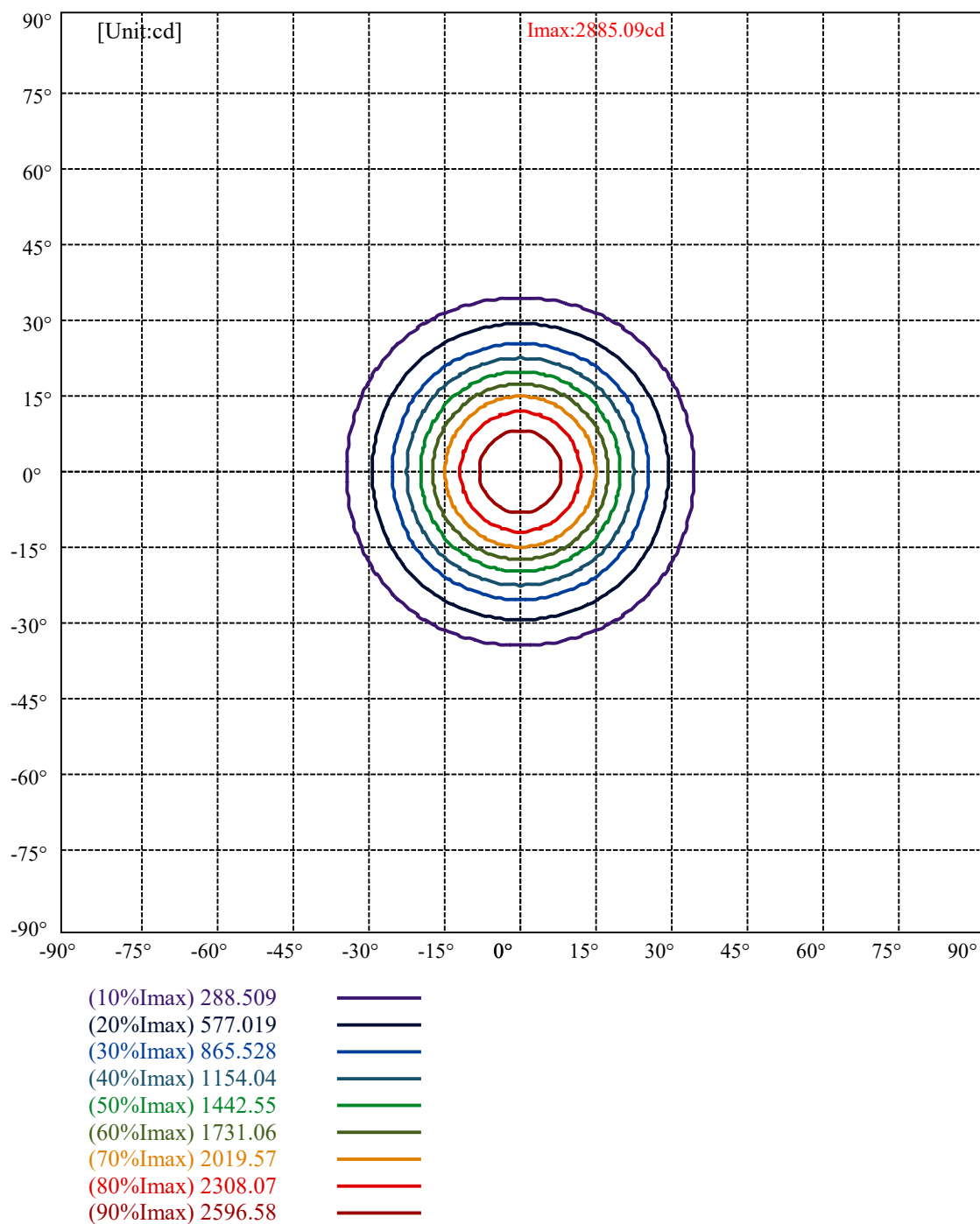
Zone	Lumens	%Lamp	%Fixt
0-30	1267.19	80.41%	89.93%
0-40	1366.71	86.72%	97.00%
0-60	1388.35	88.09%	98.53%
0-90	1407.32	89.30%	99.88%
0-120	1407.32	89.30%	99.88%
0-180	1409.01	89.40%	100.00%
60-90	23.37	1.48%	1.66%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-24.96	1127.21	71.52%	80.00%

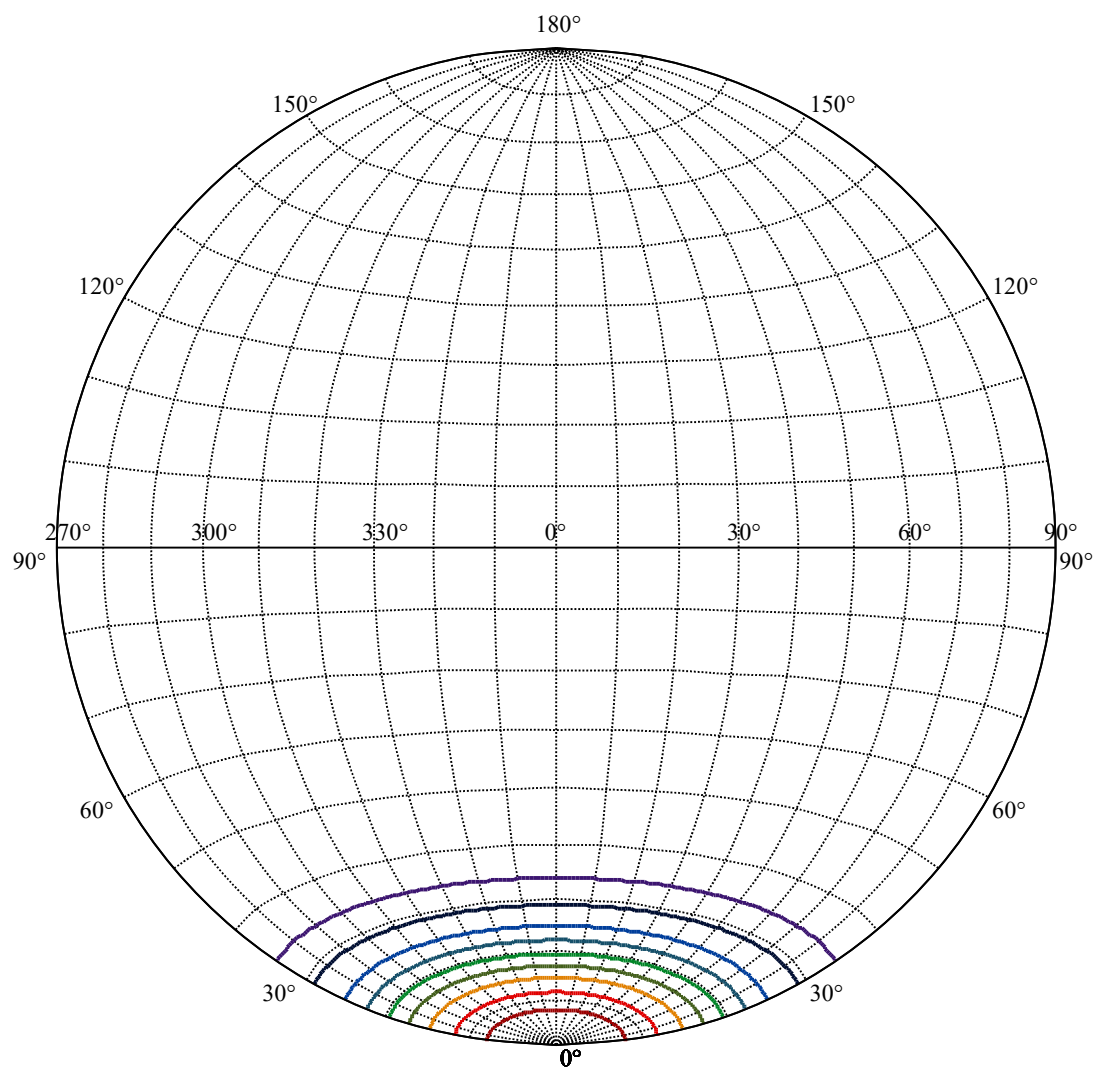
ZONAL LUMEN SUMMARY

0-10	385.74
10-20	542.30
20-30	339.15
30-40	99.52
40-50	12.48
50-60	9.17
60-70	8.02
70-80	7.39
80-90	3.56
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









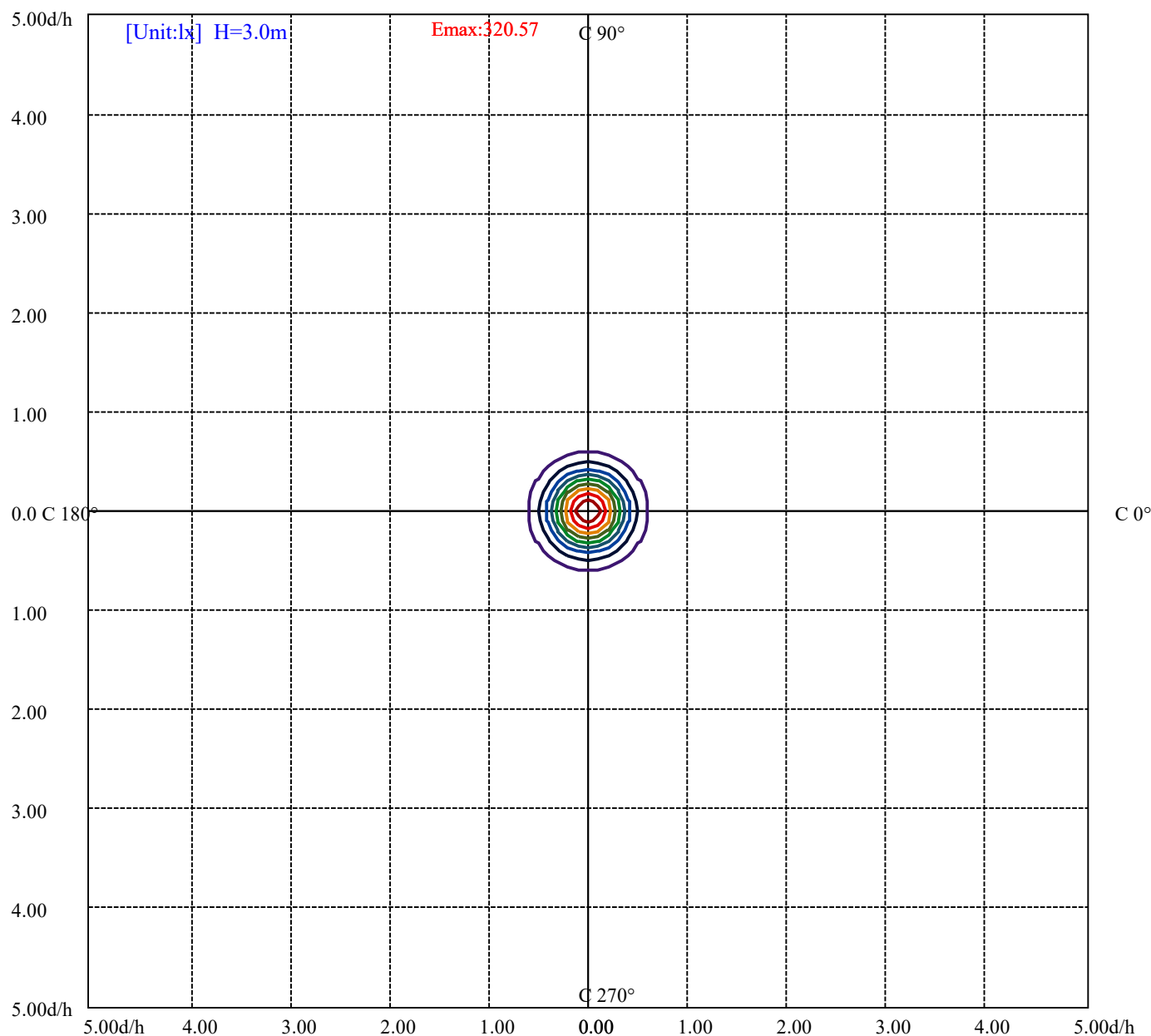
House

[Unit:cd]

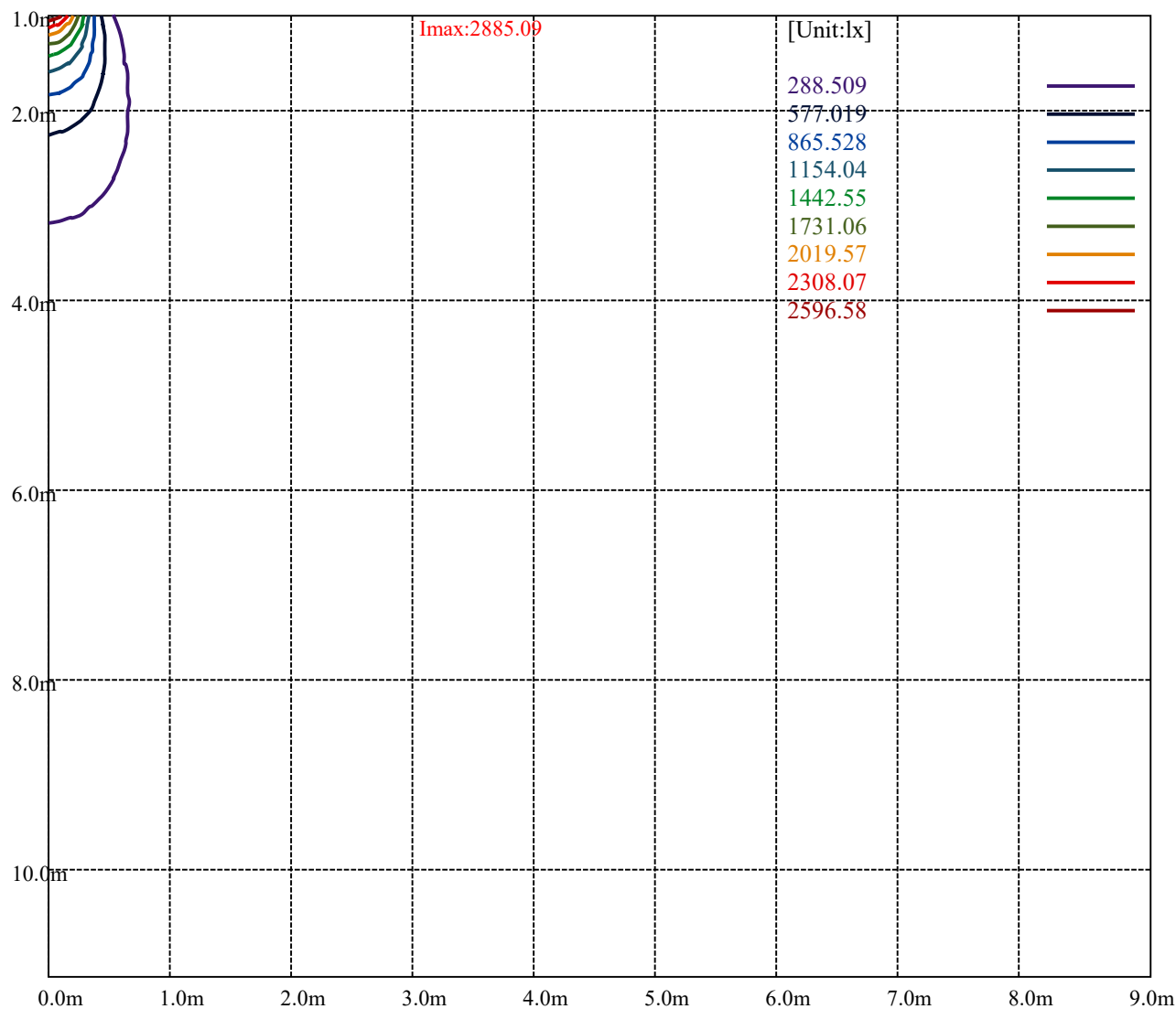
Road

Imax:2885.09

(10%Imax)	288.509	—
(20%Imax)	577.019	—
(30%Imax)	865.528	—
(40%Imax)	1154.04	—
(50%Imax)	1442.55	—
(60%Imax)	1731.06	—
(70%Imax)	2019.57	—
(80%Imax)	2308.07	—
(90%Imax)	2596.58	—



(10%Emax)	32.05656	—
(20%Emax)	64.11311	—
(30%Emax)	96.16966	—
(40%Emax)	128.2267	—
(50%Emax)	160.2822	—
(60%Emax)	192.3389	—
(70%Emax)	224.3956	—
(80%Emax)	256.4522	—
(90%Emax)	288.5089	—



Luminance Table

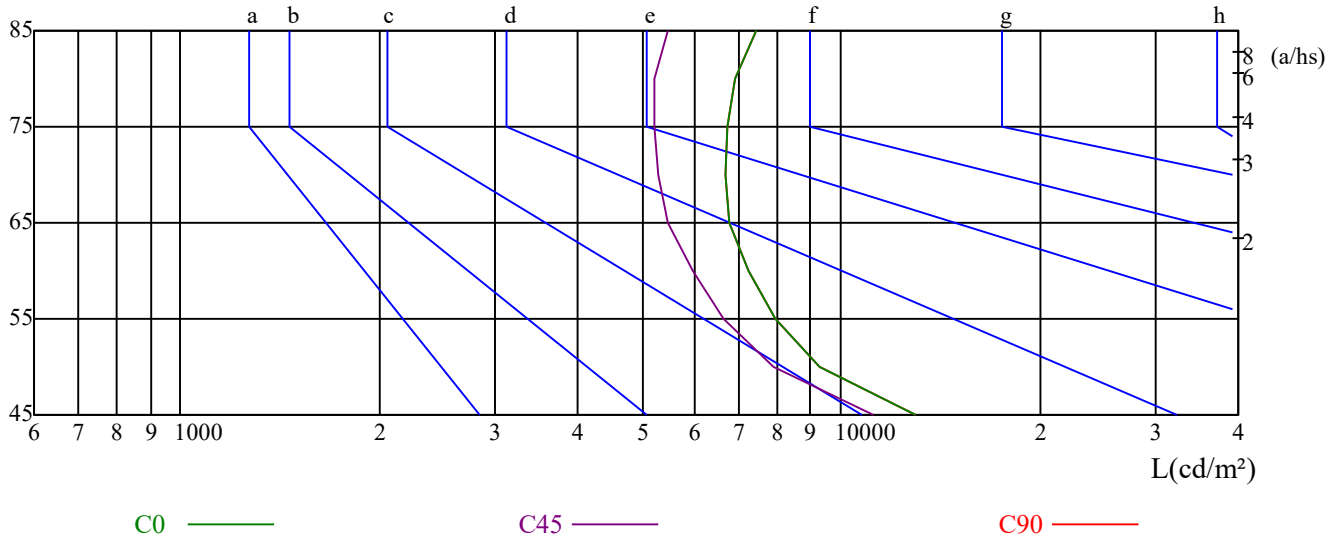
γ	45	50	55	60	65	70	75	80	85
C0	12987	9294	7969	7241	6766	6680	6721	6903	7458
C45	11197	7894	6663	5955	5466	5292	5208	5216	5470
C90	12987	9294	7969	7241	6766	6680	6721	6903	7458

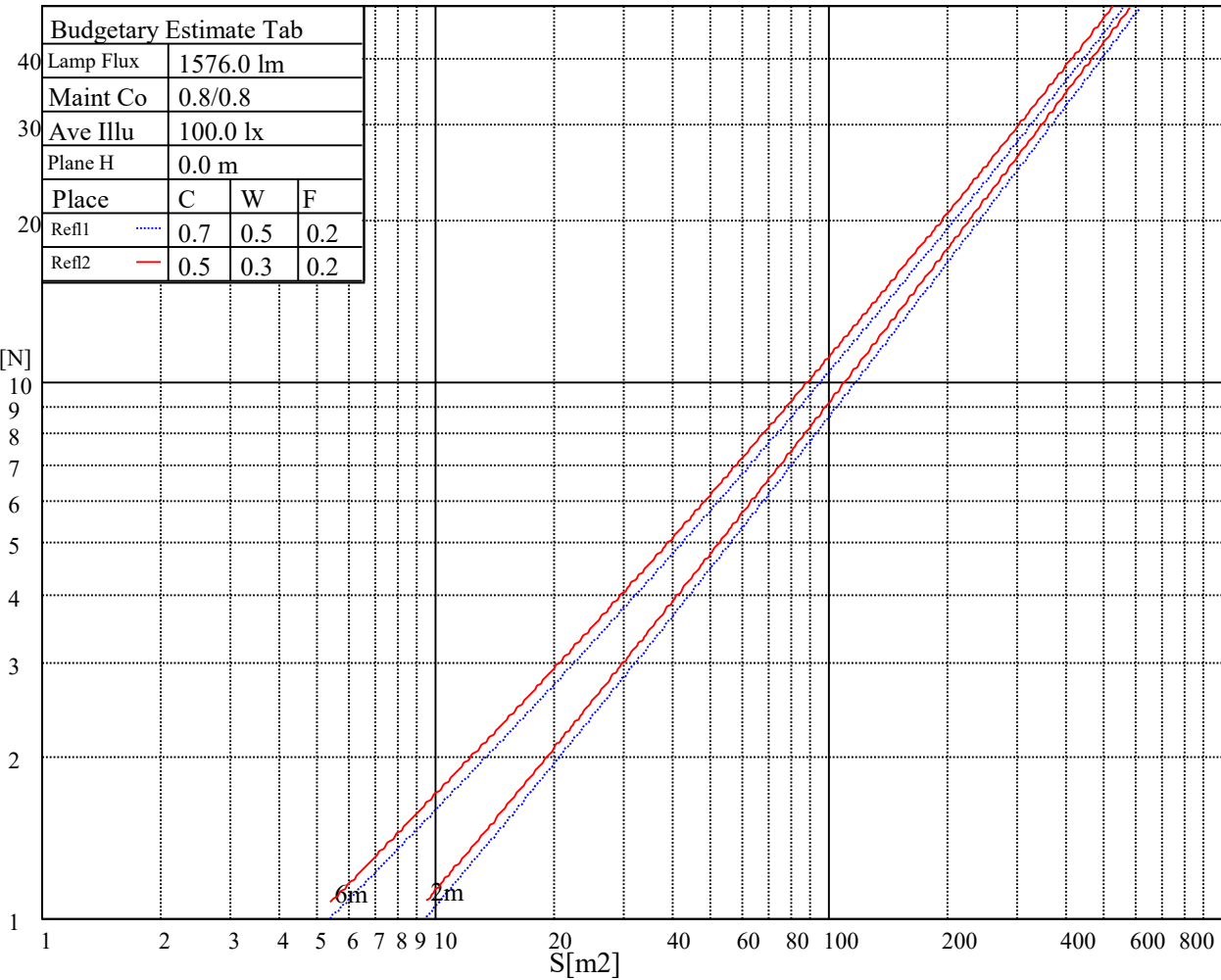
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
15886	15886	15886	22488	22488	22488	61043	61043	61043

Glare Table

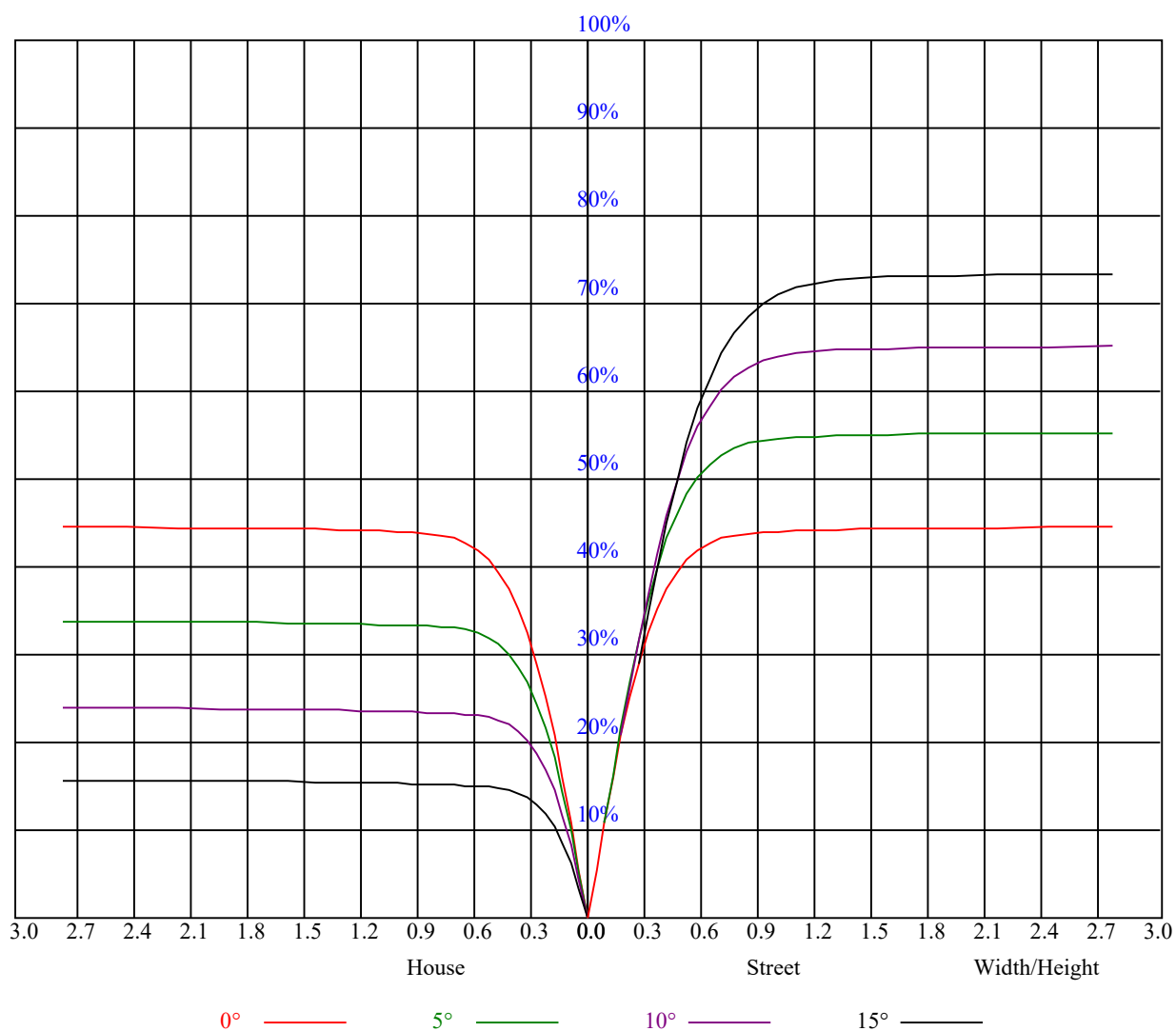
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve

 $\gamma(^{\circ})$ 



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 RHOFC=20 CU															
0	1.08	1.08	1.08	1.05	1.05	1.05	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.90
1	1.00	0.97	0.95	0.98	0.96	0.94	0.94	0.92	0.91	0.91	0.89	0.88	0.88	0.87	0.86	0.84
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	0.85	0.82	0.86	0.83	0.80	0.84	0.81	0.79	0.82	0.80	0.78	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	0.75	0.73
5	0.81	0.77	0.74	0.81	0.76	0.73	0.79	0.75	0.73	0.78	0.74	0.72	0.76	0.74	0.71	0.70
6	0.78	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.68
7	0.75	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.65
8	0.72	0.67	0.64	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.63
9	0.69	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.67	0.64	0.61	0.60
10	0.67	0.63	0.60	0.66	0.62	0.60	0.66	0.62	0.60	0.65	0.62	0.59	0.65	0.61	0.59	0.58



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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	2881.65	2884.40	2682.90	2270.53	1723.82	1114.34	688.21	348.51	130.32		
45.0	2880.00	2886.06	2700.52	2318.43	1798.14	1162.24	739.41	382.09	145.62		
90.0	2891.56	2850.82	2561.77	2089.94	1542.68	946.14	563.12	274.46	93.65		
135.0	2887.16	2792.46	2503.41	2016.72	1408.89	841.26	499.36	285.74	59.57		
180.0	2881.65	2667.48	2261.72	1722.16	1080.04	669.98	364.20	126.57	23.56		
225.0	2880.00	2616.83	2240.24	1643.43	1049.87	641.08	328.63	103.45	22.13		
270.0	2891.56	2741.81	2391.65	1913.76	1249.78	747.67	406.87	180.81	36.28		
315.0	2887.16	2788.61	2471.48	1956.70	1232.16	812.74	447.94	198.70	52.74		
360.0	2881.65	2884.40	2682.90	2270.53	1723.82	1114.34	688.21	348.51	130.32		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	23.12	13.82	11.45	9.52	8.26	7.54	7.05	6.72	6.50		
45.0	26.70	14.76	11.95	10.30	8.81	7.93	7.32	7.05	6.77		
90.0	20.54	13.93	11.78	10.08	8.70	7.82	7.21	6.61	6.39		
135.0	18.39	13.65	10.96	9.58	8.53	7.98	7.27	6.66	6.33		
180.0	13.16	10.74	9.30	8.48	7.82	7.65	6.88	6.44	6.33		
225.0	12.94	10.85	9.41	8.48	7.76	7.27	6.99	6.50	6.39		
270.0	15.42	11.78	9.69	8.53	7.82	7.38	7.05	6.61	6.33		
315.0	16.30	12.88	10.46	9.14	8.09	7.49	7.27	7.05	7.10		
360.0	23.12	13.82	11.45	9.52	8.26	7.54	7.05	6.72	6.50		
C/γ(°)	90.0										
0.0	6.33										
45.0	6.66										
90.0	6.28										
135.0	5.95										
180.0	6.06										
225.0	6.11										
270.0	6.00										
315.0	6.00										
360.0	6.33										