



NATA LIGHTING CO.,LTD.
www.nata.cn
Email:info@nata.com
Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

NATA

LumCAT: 3-1546-A3
Luminaire: 99.02.73.172+92.76.365.00
Report No: NATA0100 Voltage(V): 36.2000
Test No: GC2018111515 Current(A): 0.5000
LampCAT: OSRAM OPTO SOLERIQ S13 G2 Power (W): 18.1000
Lamp flux(lm): 1689.0 PF: 0.0000
Number of Lamps: 1 Ballast type: DC
Length(mm): 84 Width(mm): 84
Phm Type: C Height(mm): 0

Photometric Results

Lumens(lm): 1563.29
Efficiency(%): 92.56%
Lumens(lm)/Power(W): 88.29
Central intensity(cd): 6059.672
Maximum intensity(cd): 6059.672
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=24.2
[C90/270]Total=24.2
Field angle(10%Imax): [C0/180]Total=52.7
[C90/270]Total=52.7
Maximum s/h(1/2): C0_180=0.41 C90_270=0.41
Maximum s/h(1/4): C0_180=0.41 C90_270=0.41
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 94.61%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.646%

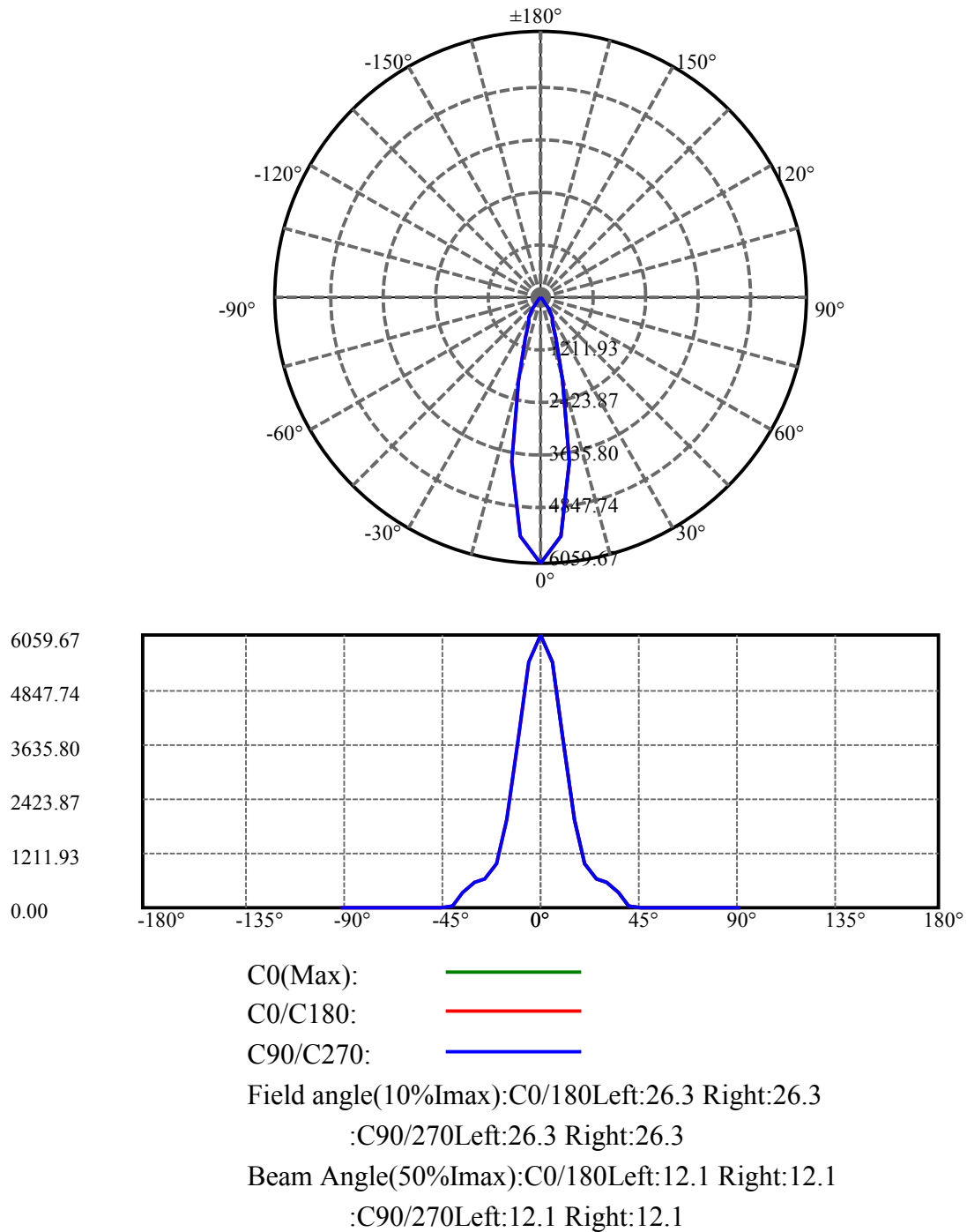
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6059.672	36.238	36.238	2.146%	2.318%
5.0	5448.023	260.270	296.508	15.410%	18.967%
10.0	3807.773	362.436	658.944	21.459%	42.151%
15.0	1959.891	278.047	936.99	16.462%	59.937%
20.0	979.777	183.683	1120.673	10.875%	71.687%
25.0	626.836	145.208	1265.881	8.597%	80.976%
30.0	549.021	150.469	1416.351	8.909%	90.601%
35.0	326.573	102.674	1519.025	6.079%	97.169%
40.0	34.320	12.092	1531.117	.716%	97.942%
45.0	9.584	3.715	1534.832	.220%	98.180%
50.0	7.509	3.153	1537.985	.187%	98.382%
55.0	7.123	3.198	1541.183	.189%	98.586%
60.0	6.863	3.258	1544.44	.193%	98.795%
65.0	6.694	3.325	1547.766	.197%	99.007%
70.0	6.574	3.386	1551.152	.200%	99.224%
75.0	6.483	3.432	1554.584	.203%	99.443%
80.0	6.434	3.473	1558.057	.206%	99.666%
85.0	6.391	3.490	1561.547	.207%	99.889%
90.0	6.342	1.738	1563.286	.103%	100.000%

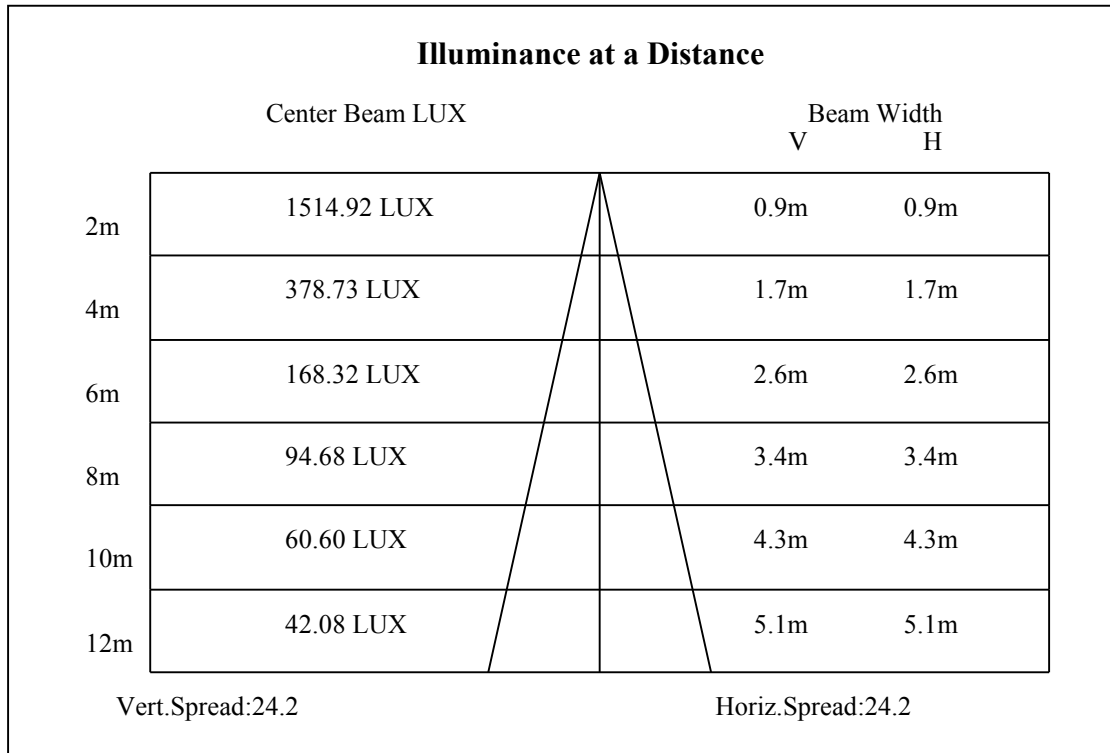
ZONAL LUMEN SUMMARY

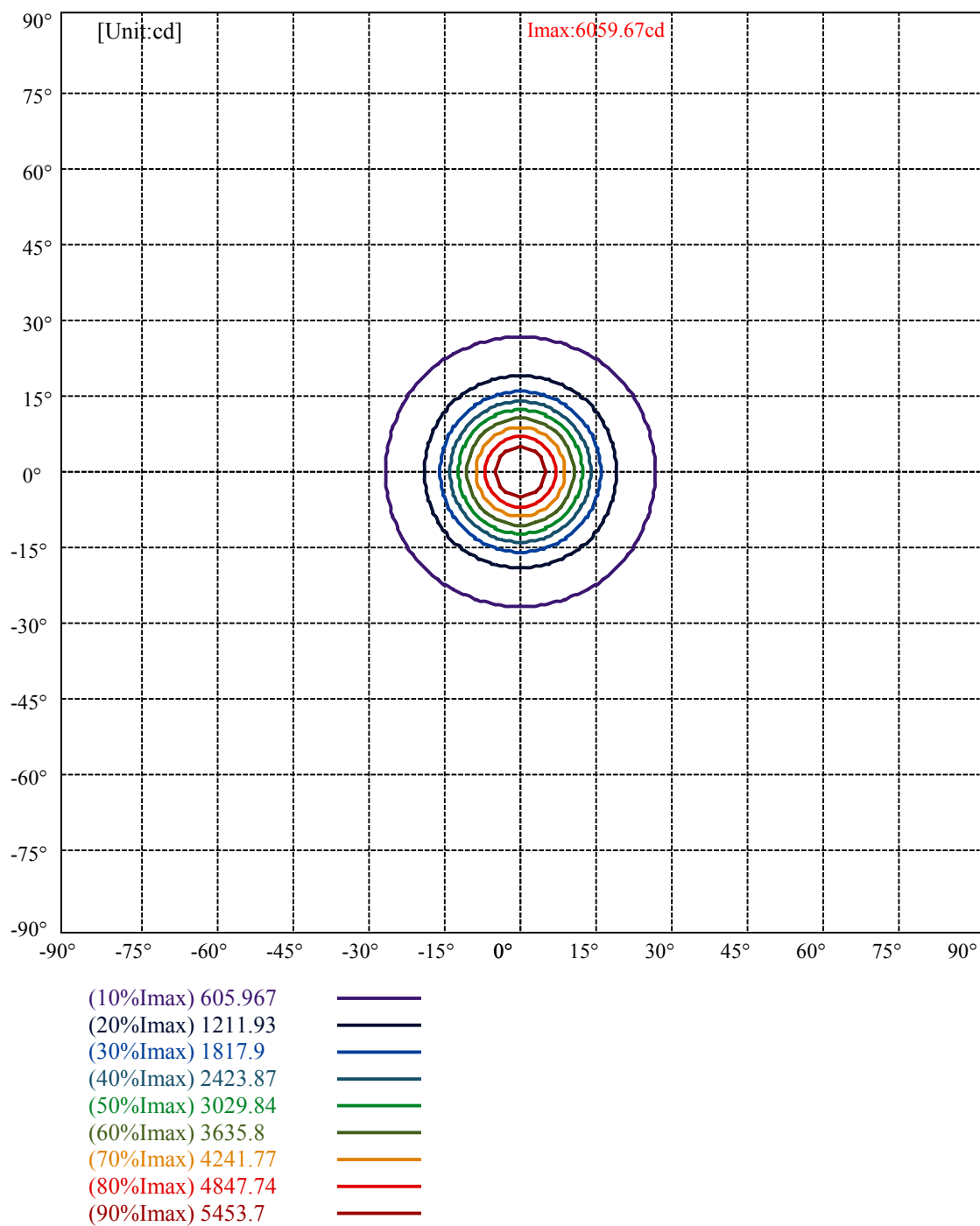
Zone	Lumens	%Lamp	%Fixt
0-30	1416.35	83.86%	90.60%
0-40	1531.12	90.65%	97.94%
0-60	1544.44	91.44%	98.79%
0-90	1561.55	92.45%	99.89%
0-120	1561.55	92.45%	99.89%
0-180	1563.29	92.56%	100.00%
60-90	20.36	1.21%	1.30%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-24.47	1250.63	74.05%	80.00%

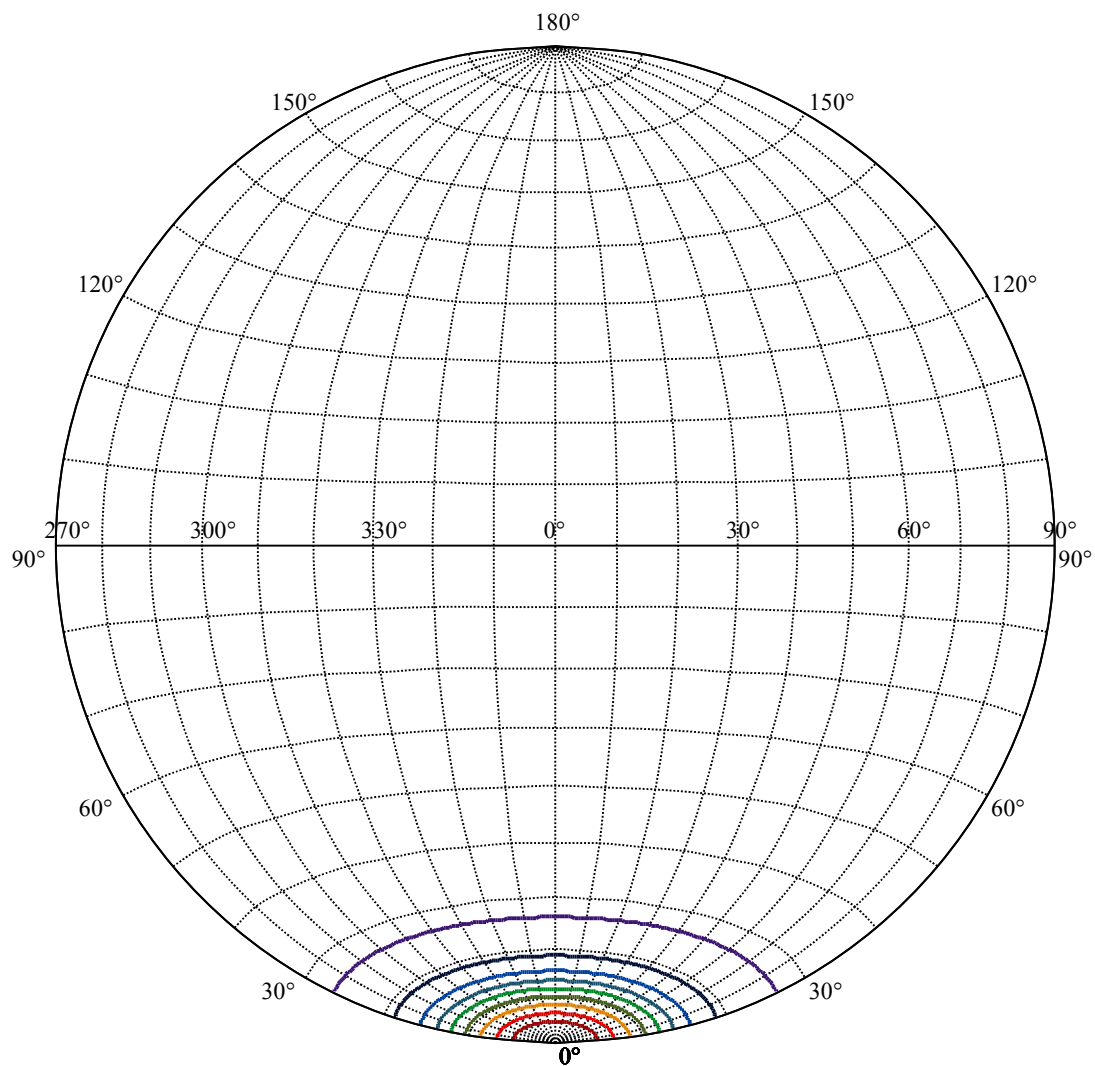
ZONAL LUMEN SUMMARY

0-10	658.94
10-20	461.73
20-30	295.68
30-40	114.77
40-50	6.87
50-60	6.46
60-70	6.71
70-80	6.91
80-90	3.49
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:6059.67

(10%Imax) 605.967

(20%Imax) 1211.93

(30%Imax) 1817.9

(40%Imax) 2423.87

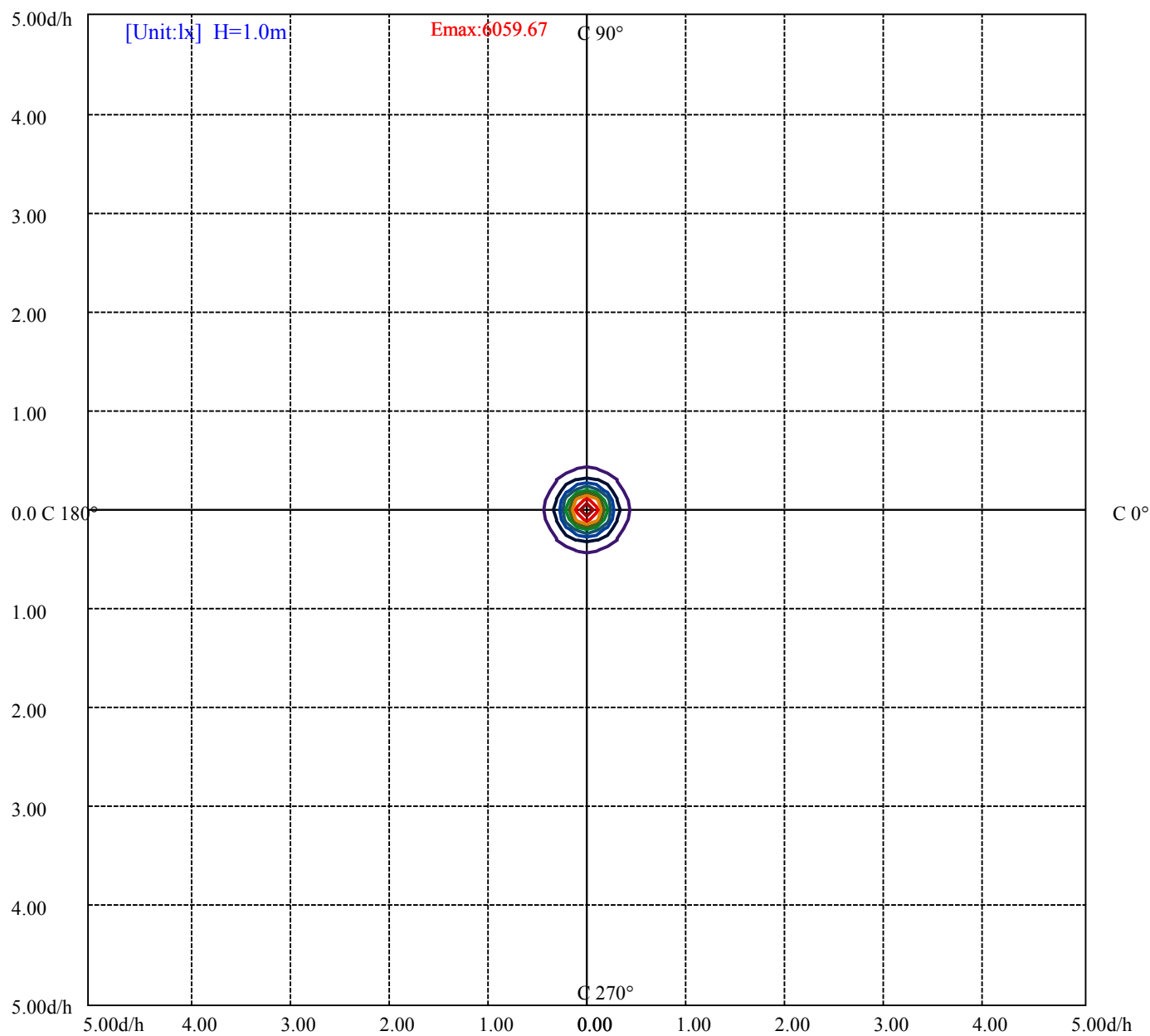
(50%Imax) 3029.84

(60%Imax) 3635.8

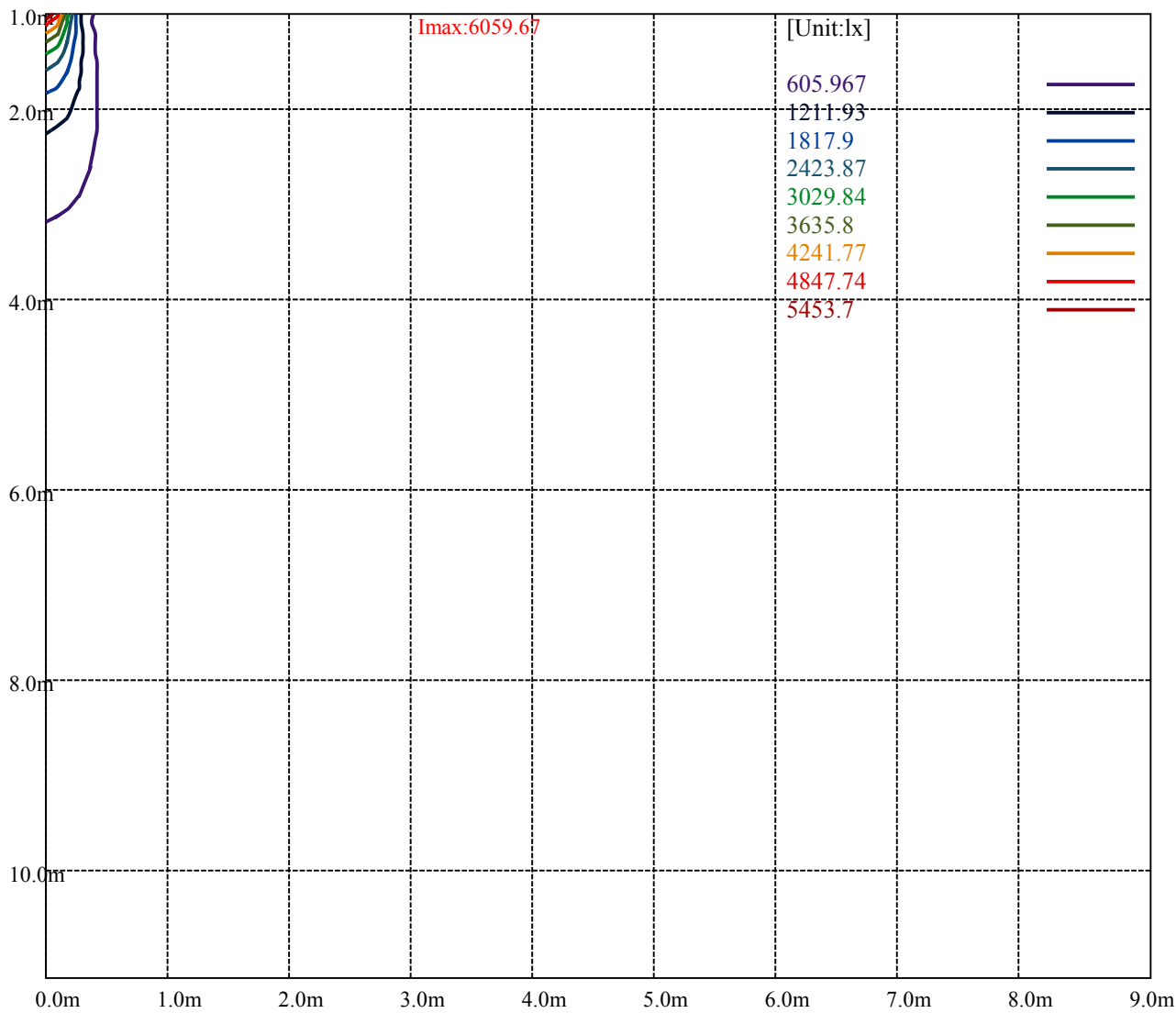
(70%Imax) 4241.77

(80%Imax) 4847.74

(90%Imax) 5453.7



(10%Emax) 605.965	—
(20%Emax) 1211.93	—
(30%Emax) 1817.9	—
(40%Emax) 2423.86	—
(50%Emax) 3029.83	—
(60%Emax) 3635.79	—
(70%Emax) 4241.76	—
(80%Emax) 4847.72	—
(90%Emax) 5453.69	—



Luminance Table

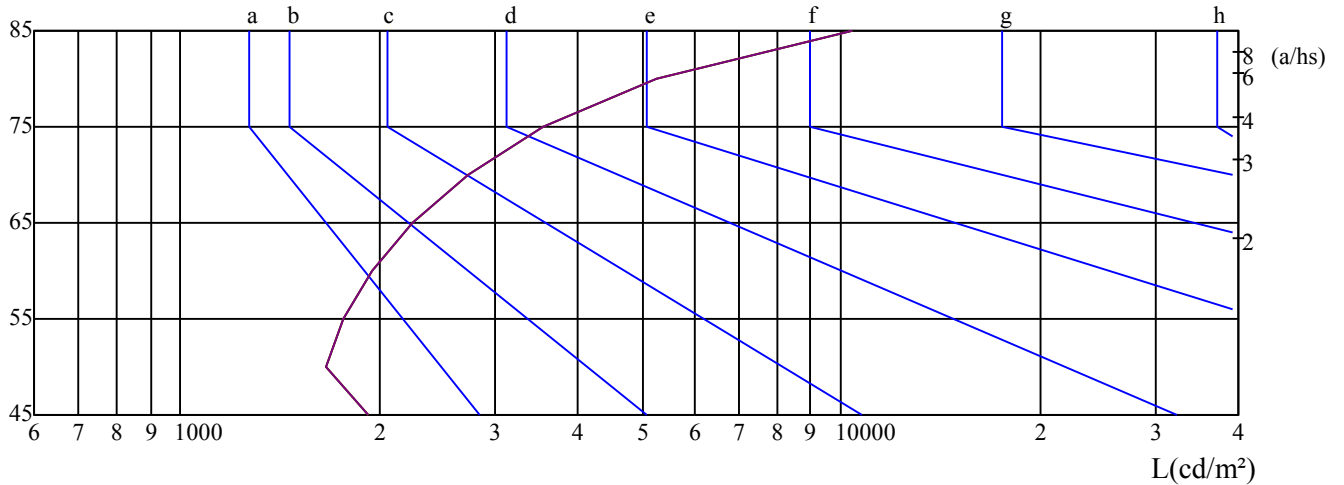
γ	45	50	55	60	65	70	75	80	85
C0	1921	1656	1760	1945	2245	2724	3550	5251	10393
C45	1921	1656	1760	1945	2245	2724	3550	5251	10393
C90	1921	1656	1760	1945	2245	2724	3550	5251	10393

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2245	2245	2245	3550	3550	3550	10393	10393	10393

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

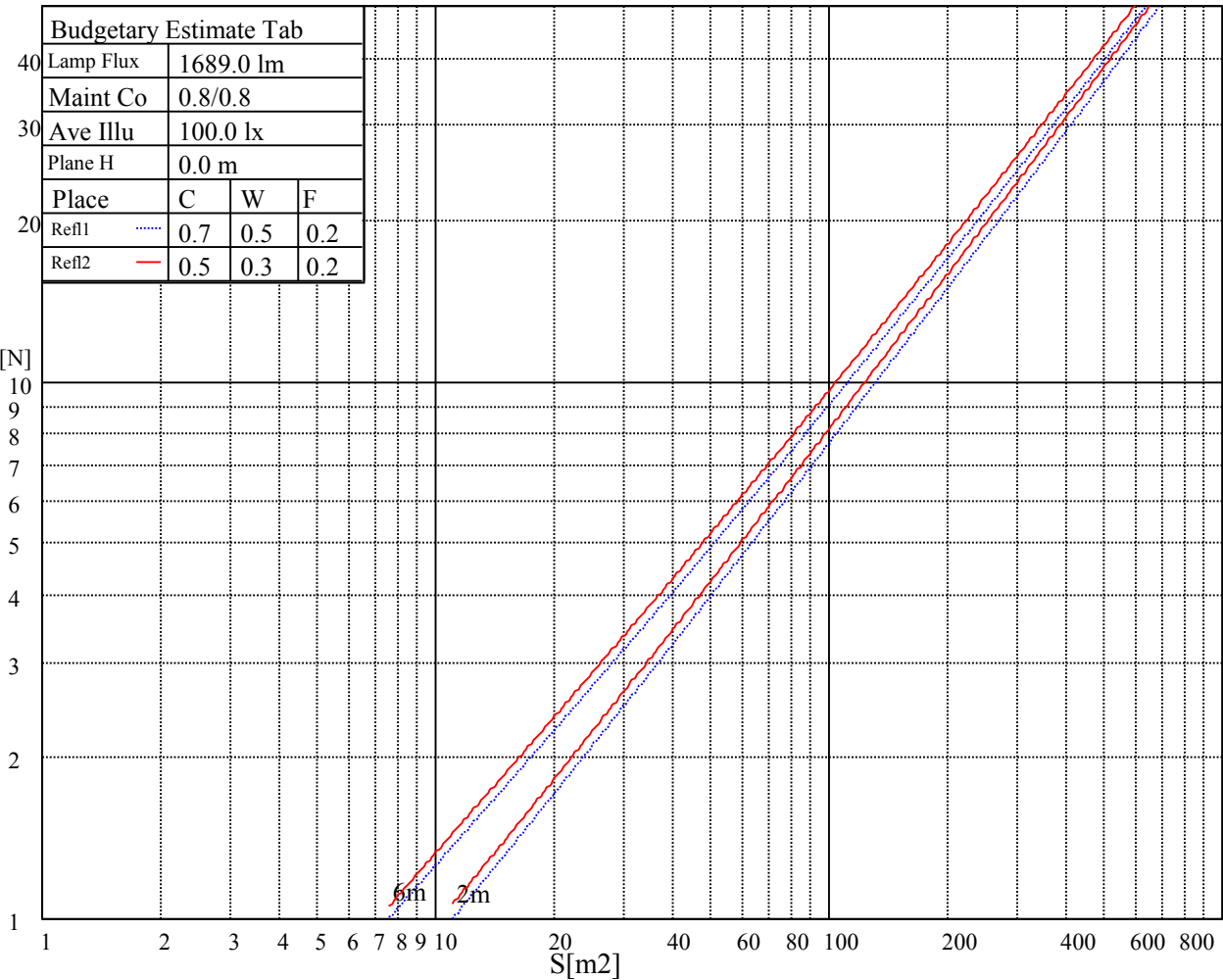
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

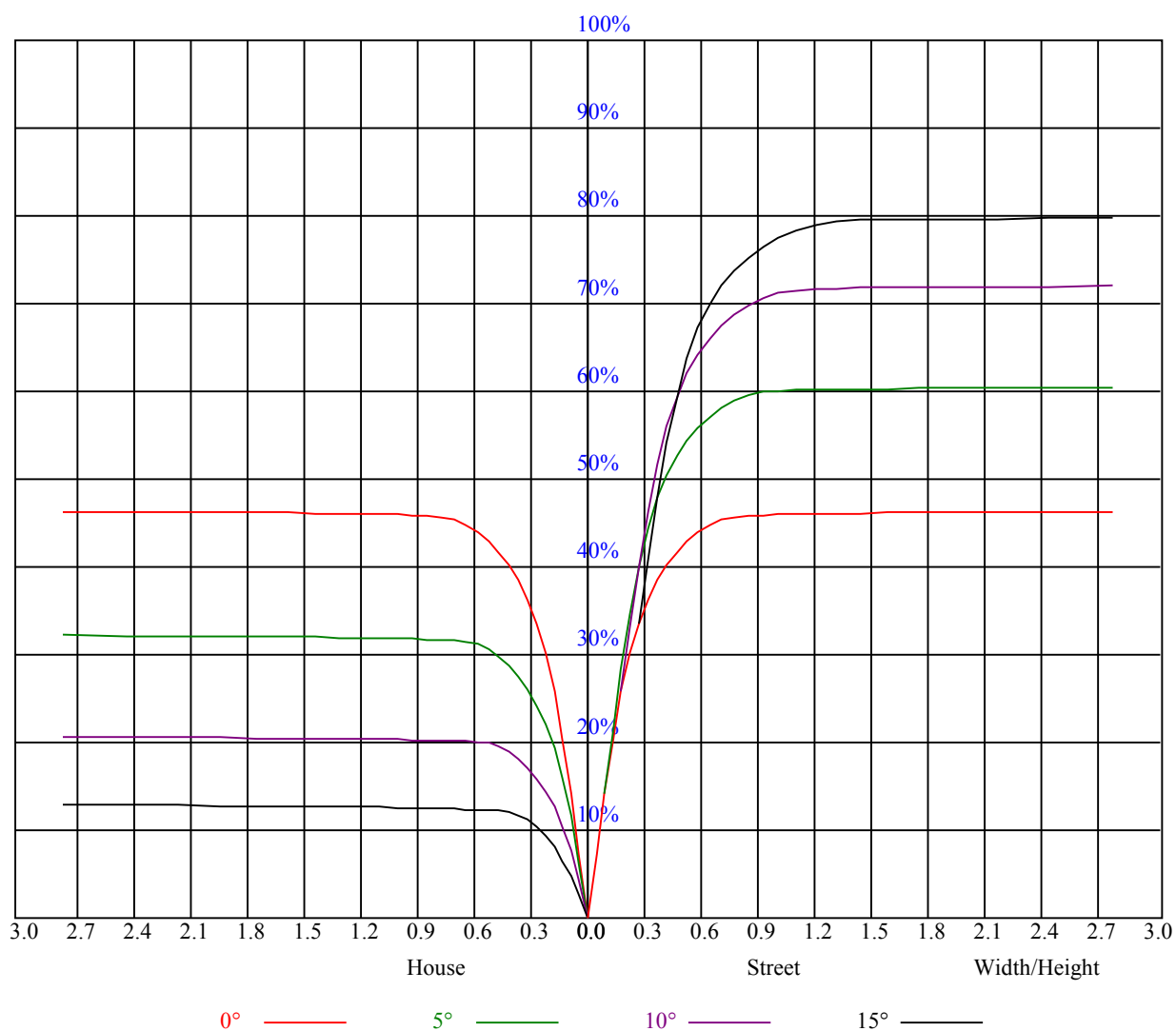
C0 ———

C45 ———

C90 ———



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	1.13	1.13	1.13	1.10	1.10	1.10	1.05	1.05	1.05	1.01	1.01	1.01	0.97	0.97	0.97	0.95
1	1.04	1.01	0.99	1.02	0.99	0.97	0.98	0.96	0.94	0.94	0.93	0.91	0.91	0.90	0.89	0.87
2	0.98	0.95	0.92	0.97	0.93	0.91	0.94	0.91	0.89	0.91	0.89	0.87	0.88	0.87	0.85	0.84
3	0.94	0.90	0.86	0.93	0.89	0.86	0.90	0.87	0.84	0.88	0.85	0.83	0.86	0.84	0.82	0.81
4	0.90	0.86	0.82	0.89	0.85	0.82	0.87	0.84	0.81	0.85	0.82	0.80	0.84	0.81	0.79	0.78
5	0.86	0.82	0.79	0.86	0.82	0.78	0.84	0.80	0.78	0.83	0.80	0.77	0.81	0.79	0.76	0.75
6	0.83	0.79	0.76	0.83	0.79	0.75	0.81	0.78	0.75	0.80	0.77	0.75	0.79	0.76	0.74	0.73
7	0.81	0.76	0.73	0.80	0.76	0.73	0.79	0.75	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.71
8	0.78	0.74	0.71	0.78	0.73	0.71	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.70	0.69
9	0.76	0.71	0.69	0.75	0.71	0.69	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.67
10	0.74	0.69	0.67	0.73	0.69	0.67	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.65



NATA 3-1546-A3

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	6018.19	5917.50	4609.69	2584.13	1315.69	699.75	566.44	460.13	86.79
45.0	6102.56	5460.75	3792.38	1969.31	933.19	596.25	543.38	318.94	23.23
90.0	6039.00	5088.94	3297.94	1616.63	795.32	583.37	528.41	217.18	21.49
135.0	6078.94	5252.06	3529.13	1761.19	874.13	605.25	540.00	305.44	21.04
180.0	6018.19	4939.88	2989.69	1310.63	768.49	581.68	529.37	174.21	16.54
225.0	6102.56	5521.50	3837.38	1925.44	987.13	635.06	556.26	312.36	23.40
270.0	6039.00	5708.25	4357.13	2356.88	1128.94	672.19	571.50	441.56	51.53
315.0	6078.94	5695.31	4048.88	2154.94	1035.34	641.14	556.82	382.78	30.54
360.0	6018.19	5917.50	4609.69	2584.13	1315.69	699.75	566.44	460.13	86.79
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	13.11	7.71	7.26	6.92	6.75	6.64	6.53	6.47	6.41
45.0	8.55	7.43	7.09	6.86	6.69	6.58	6.47	6.47	6.41
90.0	7.99	7.31	7.03	6.81	6.64	6.53	6.47	6.41	6.41
135.0	8.21	7.54	7.20	6.92	6.69	6.58	6.53	6.47	6.36
180.0	7.93	7.43	7.03	6.81	6.69	6.58	6.47	6.41	6.36
225.0	9.11	7.48	7.09	6.86	6.69	6.53	6.47	6.41	6.41
270.0	11.14	7.59	7.14	6.86	6.69	6.58	6.47	6.41	6.41
315.0	10.63	7.59	7.14	6.86	6.69	6.58	6.47	6.41	6.36
360.0	13.11	7.71	7.26	6.92	6.75	6.64	6.53	6.47	6.41
C/γ(°)	90.0								
0.0	6.36								
45.0	6.36								
90.0	6.30								
135.0	6.30								
180.0	6.36								
225.0	6.36								
270.0	6.36								
315.0	6.36								
360.0	6.36								