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NATA

LumCAT: 2-1672-M
Luminaire: 92.70.135.00
Report No: NATA0100
Test No: GC2018102508
LampCAT: LUMILEDS LUXEON CoB 1205
Lamp flux(lm): 2979.0
Number of Lamps: 1
Length(mm): 70
Phm Type: C

Voltage(V): 35.7000
Current(A): 0.6000
Power (W): 21.4200
PF: 0.0000
Ballast type: DC
Width(mm): 70
Height(mm): 0

Photometric Results

Lumens(lm): 2687.08
Efficiency(%): 90.20%
Lumens(lm)/Power(W): 127.86
Central intensity(cd): 9081.983
Maximum intensity(cd): 9081.983
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=26.5
[C90/270]Total=26.5
Field angle(10%Imax): [C0/180]Total=60.6
[C90/270]Total=60.6
Maximum s/h(1/2): C0_180=0.45 C90_270=0.45
Maximum s/h(1/4): C0_180=0.43 C90_270=0.43
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.94%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 96.938%

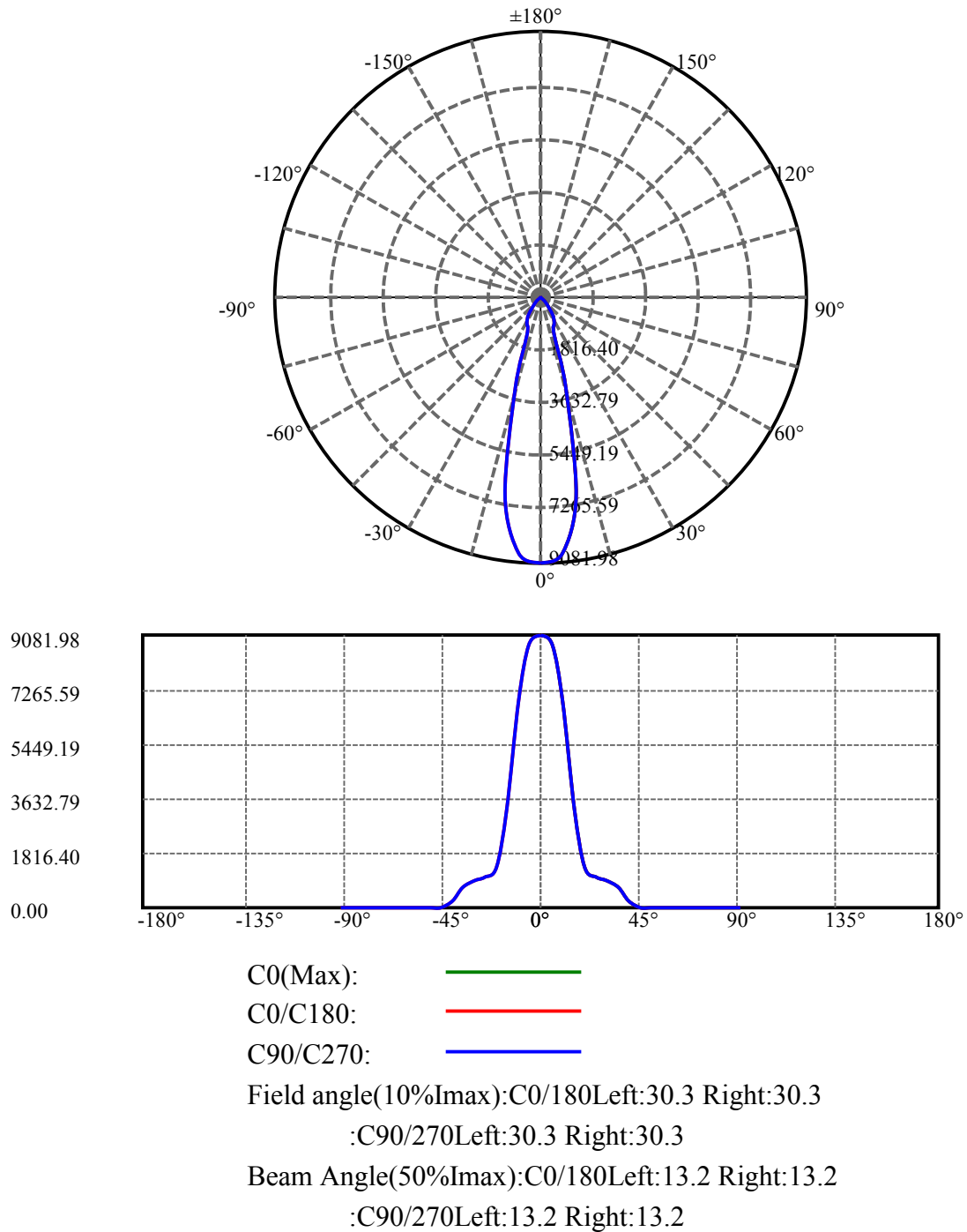
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9081.984	54.312	54.312	1.823%	2.021%
5.0	8765.016	418.734	473.046	14.056%	17.604%
10.0	6887.531	655.576	1128.622	22.007%	42.002%
15.0	3261.586	462.716	1591.338	15.533%	59.222%
20.0	1342.617	251.706	1843.044	8.449%	68.589%
25.0	1027.076	237.925	2080.969	7.987%	77.443%
30.0	921.565	252.572	2333.541	8.478%	86.843%
35.0	682.341	214.527	2548.068	7.201%	94.827%
40.0	229.570	80.886	2628.954	2.715%	97.837%
45.0	22.795	8.835	2637.789	.297%	98.166%
50.0	13.739	5.769	2643.558	.194%	98.380%
55.0	12.713	5.708	2649.266	.192%	98.593%
60.0	12.016	5.704	2654.971	.191%	98.805%
65.0	11.566	5.746	2660.717	.193%	99.019%
70.0	11.243	5.791	2666.508	.194%	99.234%
75.0	11.025	5.837	2672.345	.196%	99.452%
80.0	10.905	5.887	2678.232	.198%	99.671%
85.0	10.814	5.905	2684.137	.198%	99.890%
90.0	10.751	2.946	2687.083	.099%	100.000%

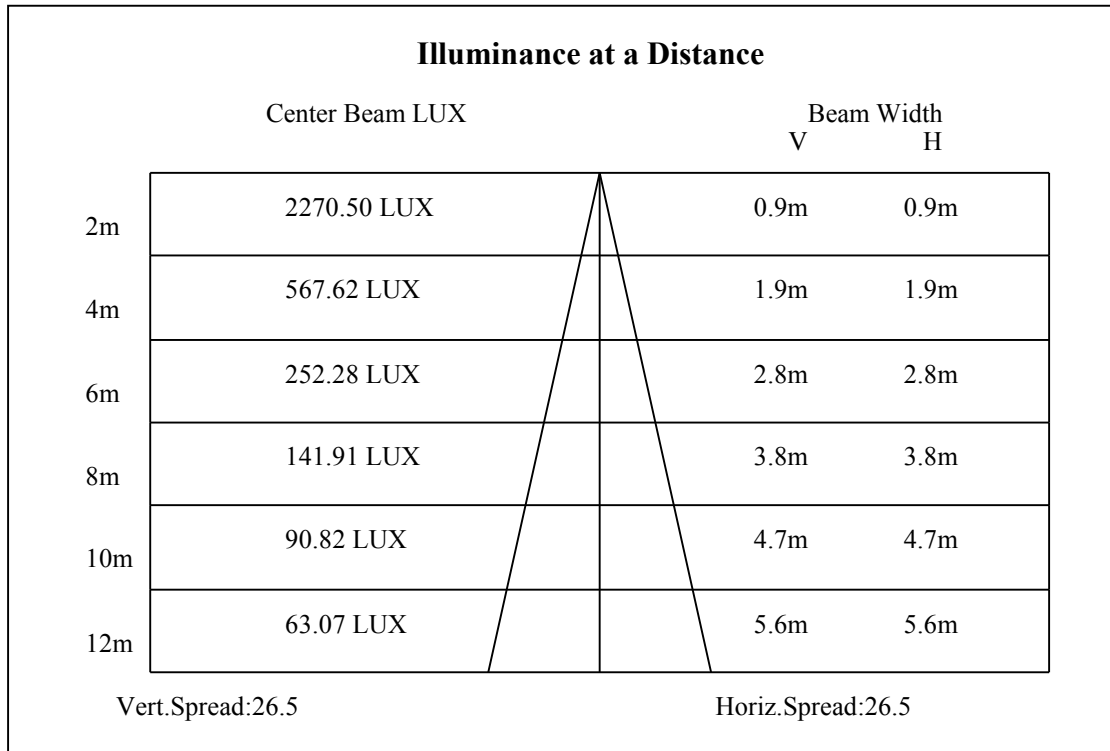
ZONAL LUMEN SUMMARY

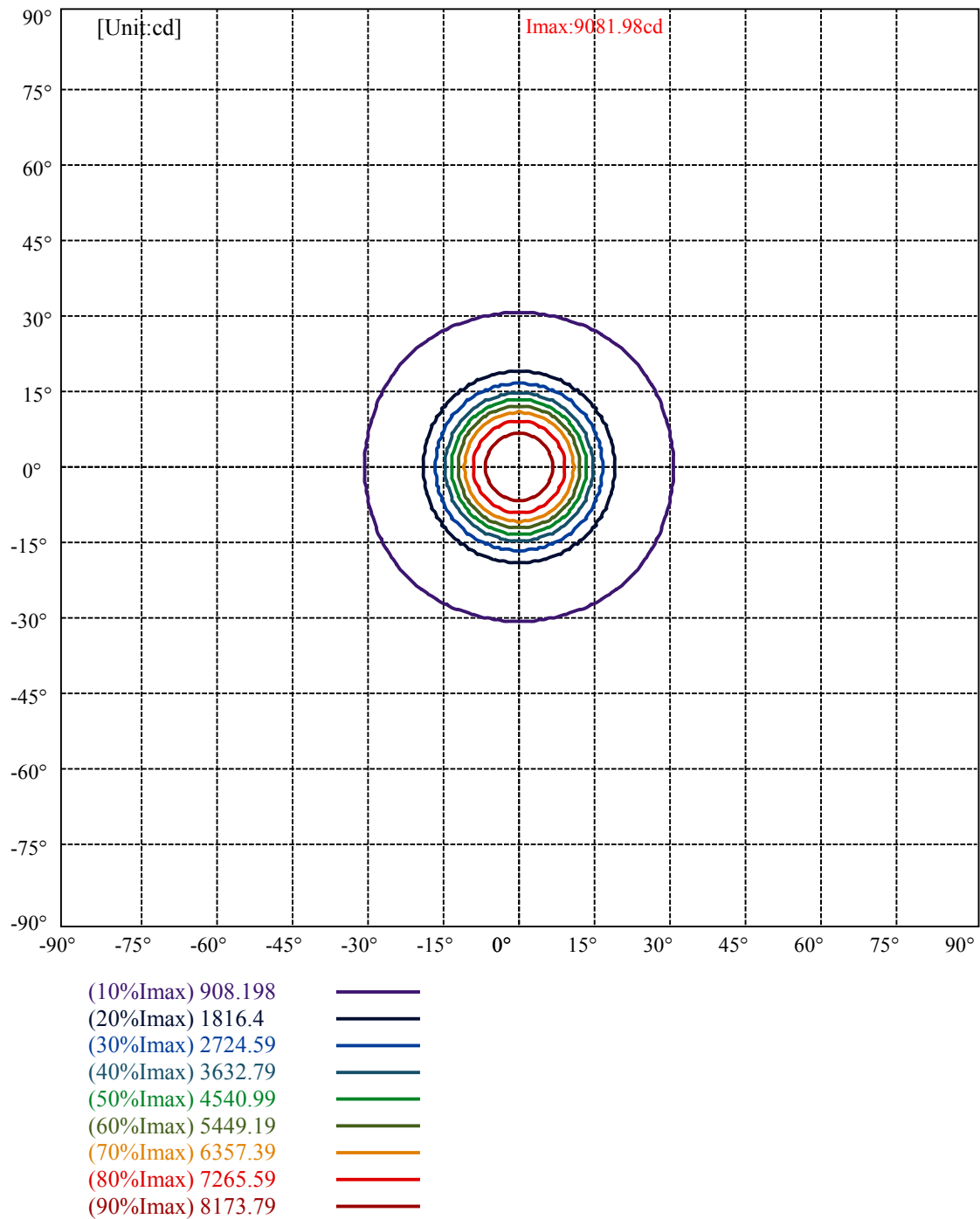
Zone	Lumens	%Lamp	%Fixt
0-30	2333.54	78.33%	86.84%
0-40	2628.95	88.25%	97.84%
0-60	2654.97	89.12%	98.80%
0-90	2684.14	90.10%	99.89%
0-120	2684.14	90.10%	99.89%
0-180	2687.08	90.20%	100.00%
60-90	34.87	1.17%	1.30%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-26.36	2149.67	72.16%	80.00%

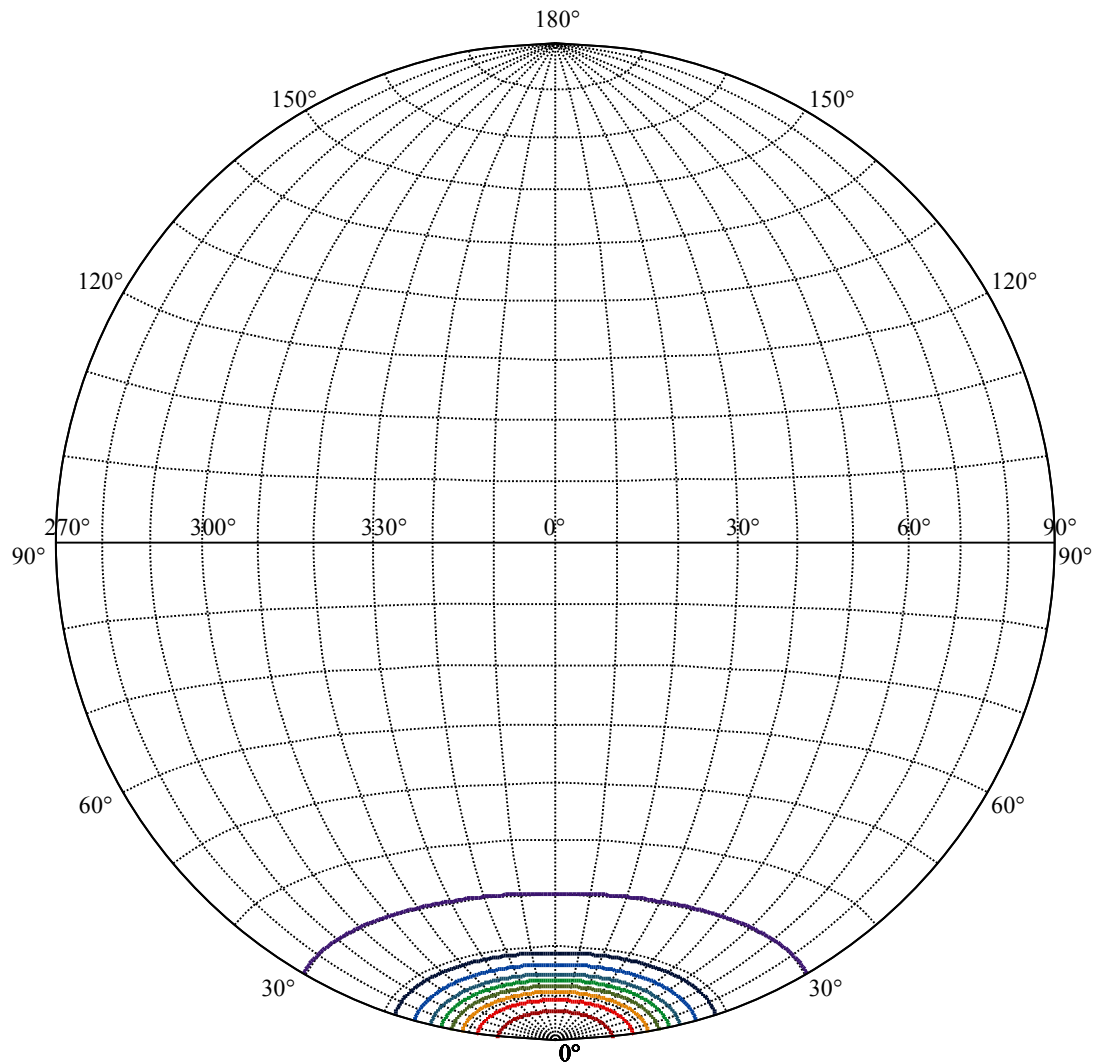
ZONAL LUMEN SUMMARY

0-10	1128.62
10-20	714.42
20-30	490.50
30-40	295.41
40-50	14.60
50-60	11.41
60-70	11.54
70-80	11.72
80-90	5.91
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:9081.98

(10%Imax) 908.198

(20%Imax) 1816.4

(30%Imax) 2724.59

(40%Imax) 3632.79

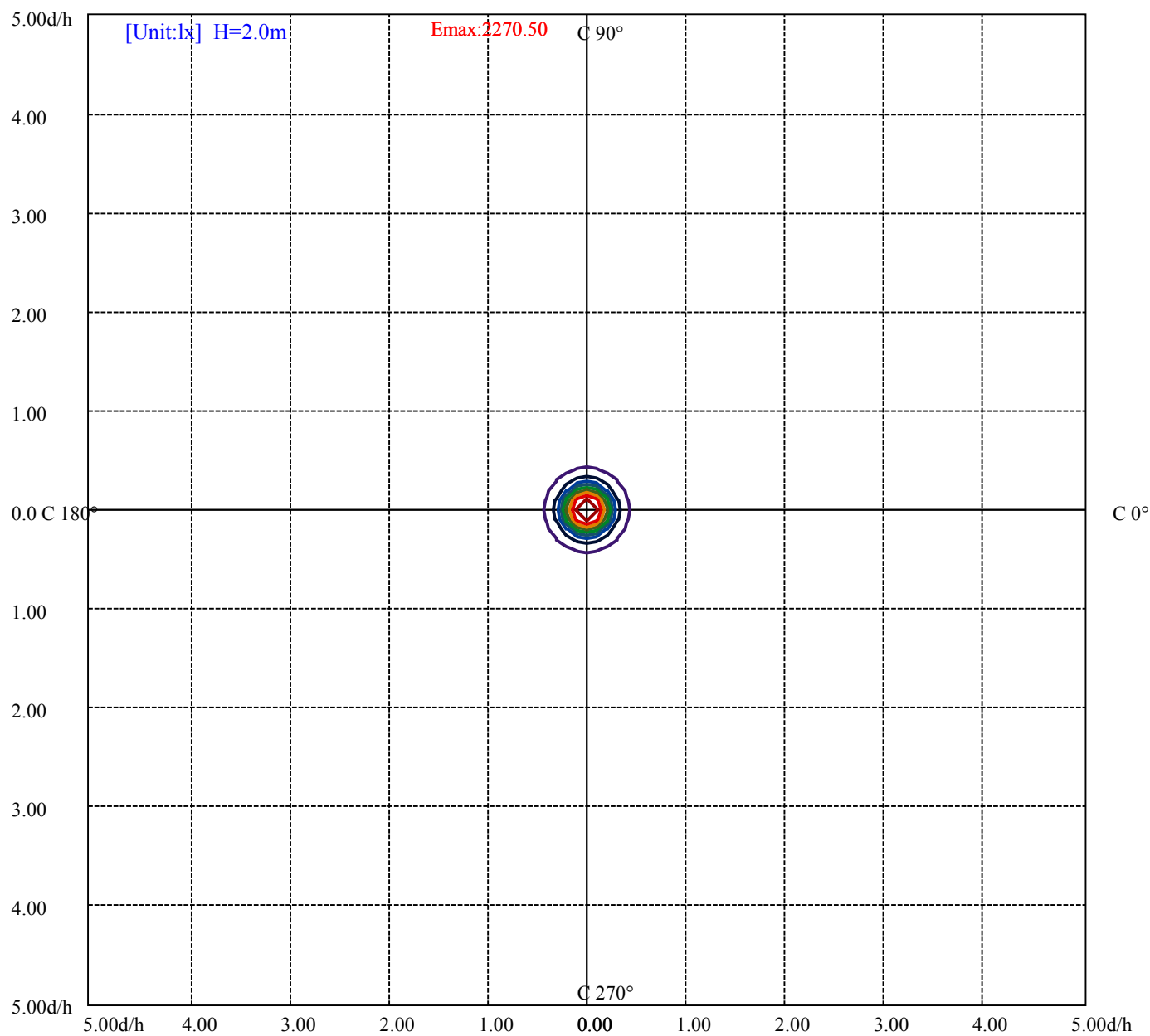
(50%Imax) 4540.99

(60%Imax) 5449.19

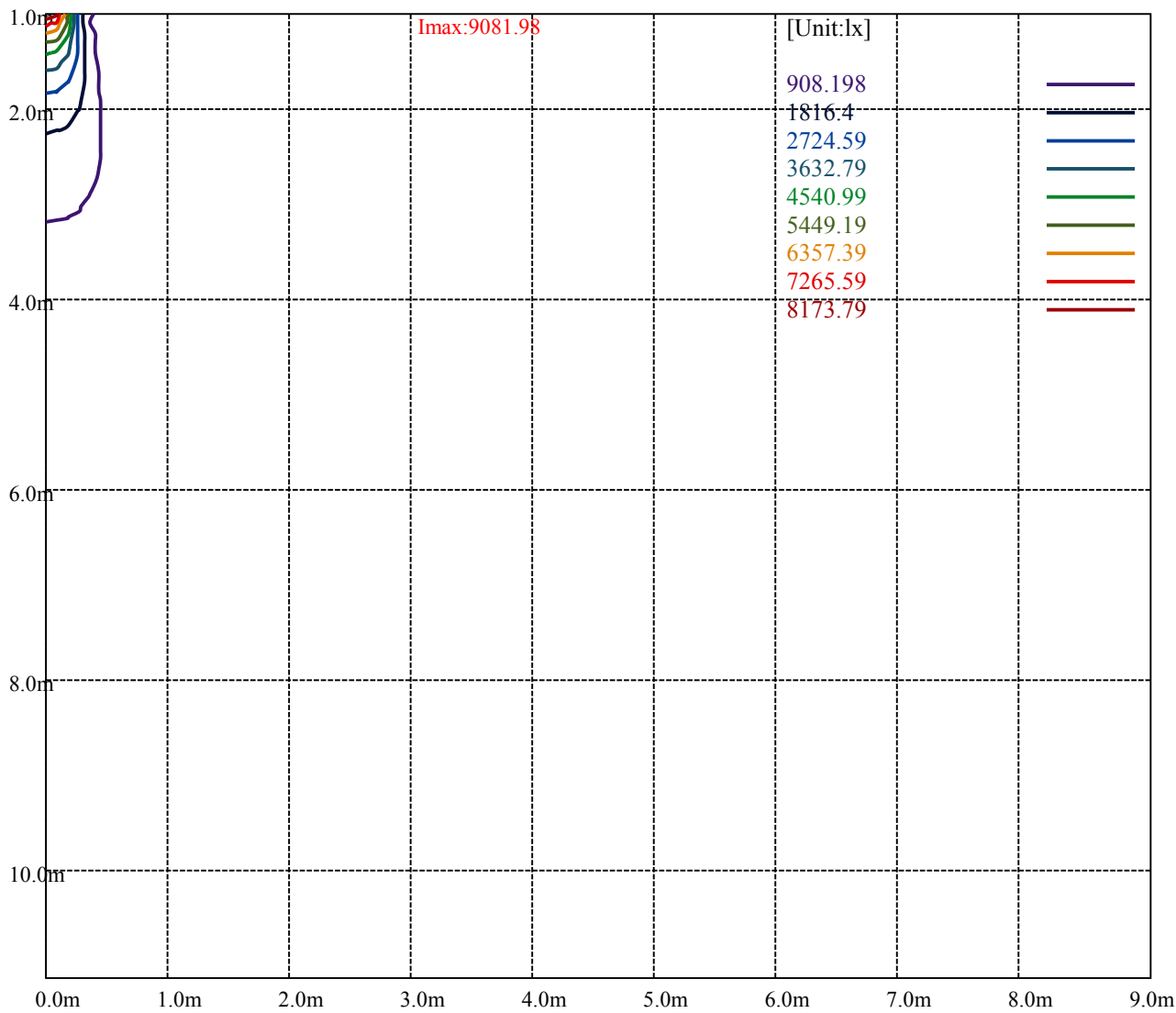
(70%Imax) 6357.39

(80%Imax) 7265.59

(90%Imax) 8173.79



(10%Emax) 227.0493	—
(20%Emax) 454.0975	—
(30%Emax) 681.1475	—
(40%Emax) 908.1975	—
(50%Emax) 1135.248	—
(60%Emax) 1362.295	—
(70%Emax) 1589.345	—
(80%Emax) 1816.395	—
(90%Emax) 2043.445	—



Luminance Table

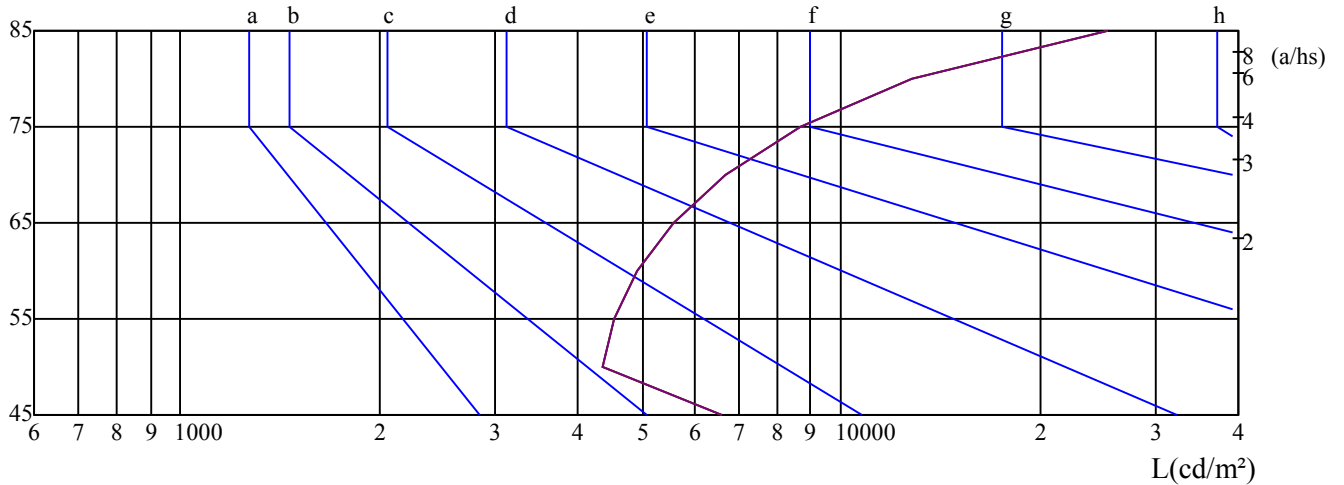
γ	45	50	55	60	65	70	75	80	85
C0	6579	4362	4523	4905	5585	6709	8693	12817	25322
C45	6579	4362	4523	4905	5585	6709	8693	12817	25322
C90	6579	4362	4523	4905	5585	6709	8693	12817	25322

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5585	5585	5585	8693	8693	8693	25322	25322	25322

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

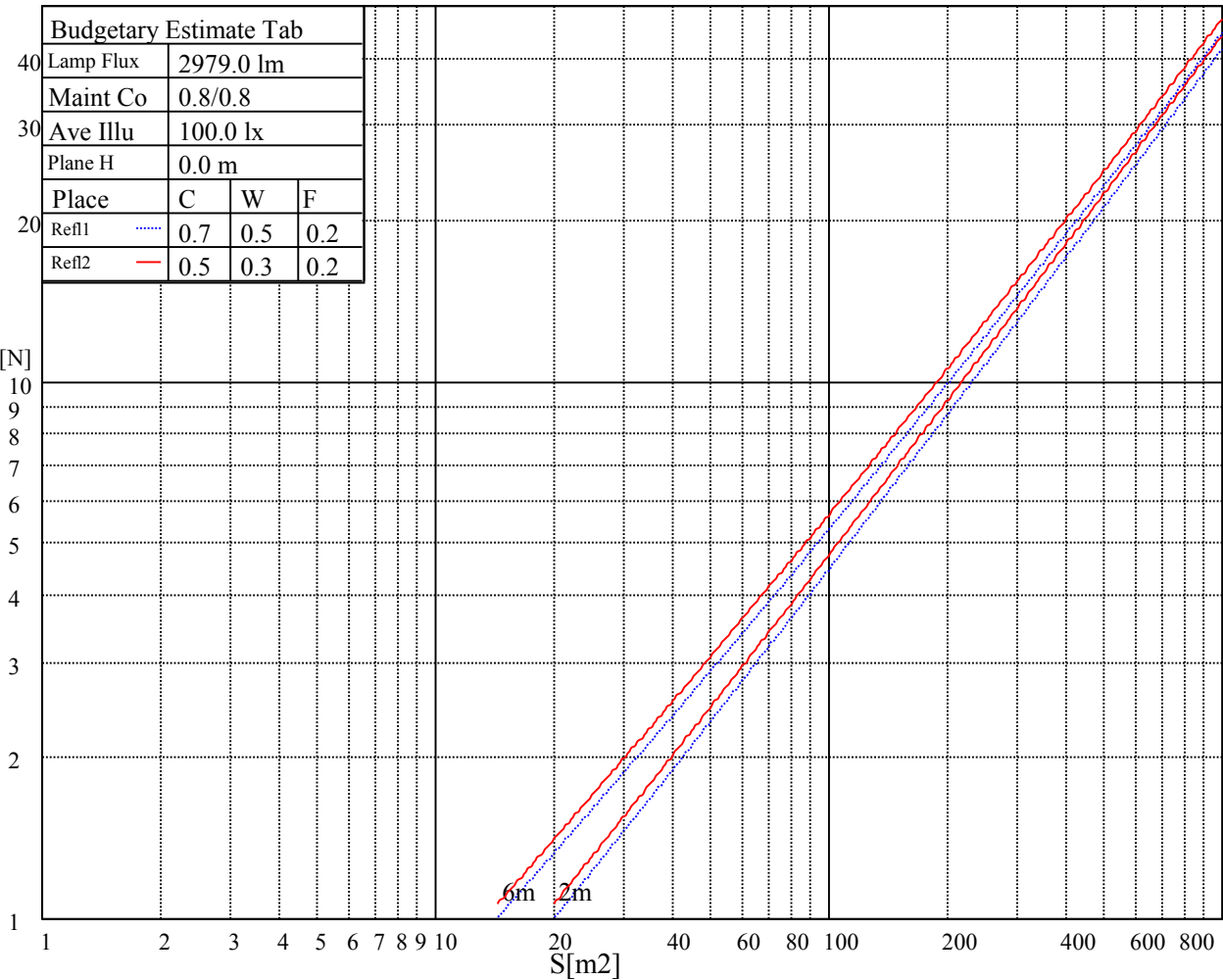
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

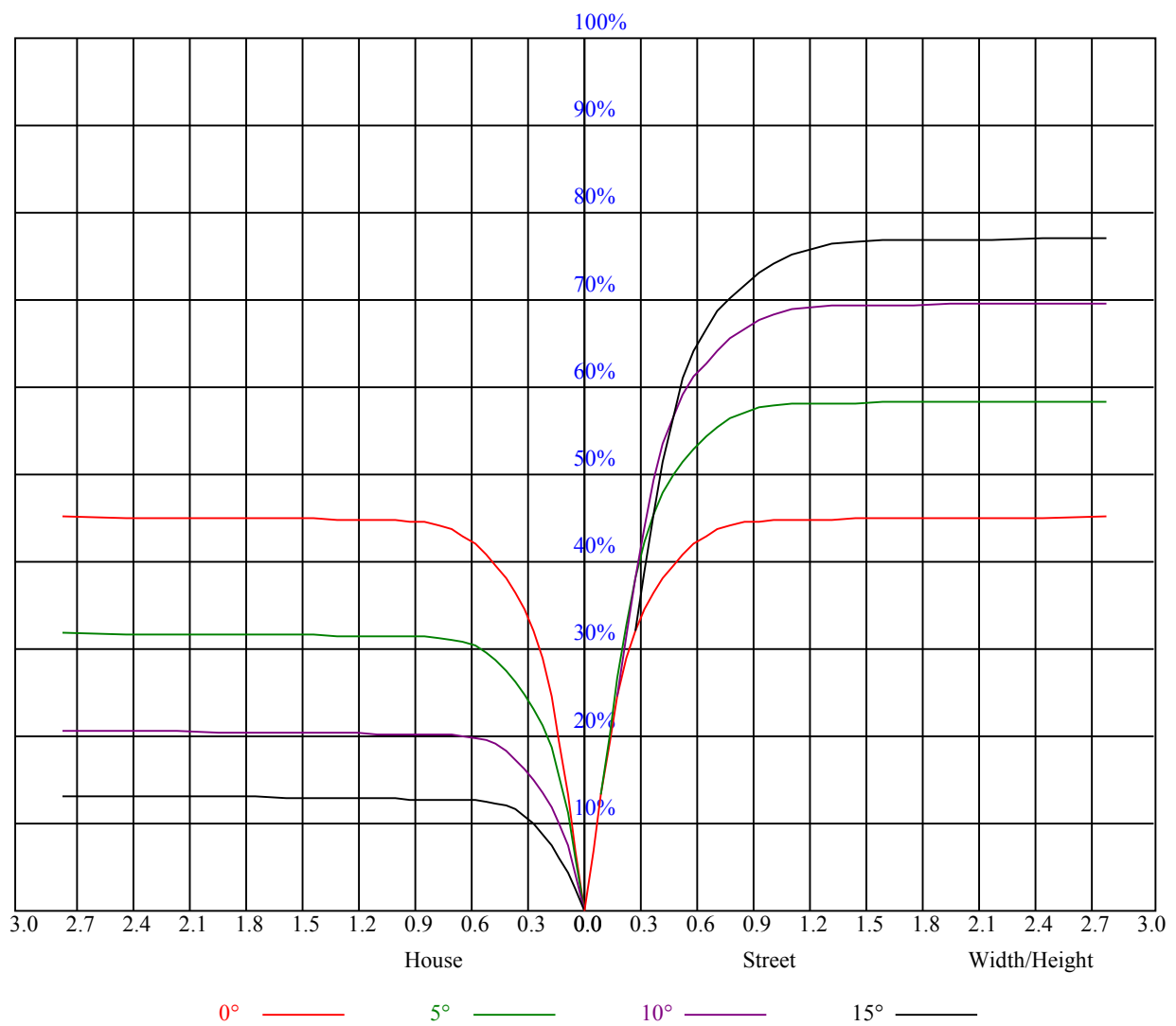
C0 ———

C45 ———

C90 ———



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	1.09	1.09	1.09	1.07	1.07	1.07	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.92
1	1.01	0.98	0.96	0.99	0.97	0.95	0.95	0.93	0.92	0.92	0.90	0.89	0.89	0.87	0.86	0.85
2	0.96	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	0.91	0.87	0.84	0.90	0.86	0.83	0.88	0.85	0.82	0.85	0.83	0.81	0.83	0.81	0.80	0.78
4	0.87	0.83	0.80	0.86	0.82	0.79	0.84	0.81	0.78	0.83	0.80	0.77	0.81	0.79	0.77	0.75
5	0.84	0.79	0.76	0.83	0.79	0.76	0.81	0.78	0.75	0.80	0.77	0.75	0.79	0.76	0.74	0.73
6	0.81	0.76	0.73	0.80	0.76	0.73	0.79	0.75	0.72	0.77	0.74	0.72	0.76	0.74	0.71	0.70
7	0.78	0.73	0.70	0.77	0.73	0.70	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.68
8	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
9	0.73	0.69	0.66	0.72	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.64
10	0.71	0.67	0.64	0.70	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.69	0.66	0.63	0.63



NATA 2-1672-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	9079.31	8863.88	7292.25	3773.81	1427.06	1065.38	937.69	727.88	310.50	
45.0	9086.63	8807.06	7003.69	3180.38	1337.63	1013.06	909.56	640.13	288.00	
90.0	9087.75	8677.13	6347.25	2477.25	1121.06	985.16	890.21	604.07	128.70	
135.0	9074.25	8875.69	7054.88	3439.69	1415.81	1028.81	924.75	714.94	305.44	
180.0	9079.31	8669.25	6521.06	2996.44	1230.75	1000.18	909.62	628.65	131.34	
225.0	9086.63	8776.69	6805.69	3492.00	1451.81	1033.54	930.60	691.65	199.69	
270.0	9087.75	8830.69	7365.38	3785.06	1553.63	1068.75	947.25	802.69	285.75	
315.0	9074.25	8619.75	6710.06	2948.06	1203.19	1021.73	922.84	648.73	187.14	
360.0	9079.31	8863.88	7292.25	3773.81	1427.06	1065.38	937.69	727.88	310.50	
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	
0.0	24.58	13.73	12.71	11.98	11.48	11.19	10.97	10.91	10.80	
45.0	21.15	13.67	12.77	12.04	11.59	11.25	11.03	10.91	10.80	
90.0	18.90	13.61	12.66	12.04	11.59	11.25	11.03	10.91	10.80	
135.0	25.88	13.89	12.83	12.09	11.64	11.31	11.08	10.91	10.80	
180.0	20.87	13.61	12.60	11.98	11.53	11.25	11.03	10.86	10.80	
225.0	23.29	13.78	12.71	12.04	11.59	11.25	11.03	10.91	10.80	
270.0	25.59	14.12	12.94	12.09	11.64	11.31	11.08	10.97	10.91	
315.0	22.11	13.50	12.49	11.87	11.48	11.14	10.97	10.86	10.80	
360.0	24.58	13.73	12.71	11.98	11.48	11.19	10.97	10.91	10.80	
C/γ(°)	90.0									
0.0	10.74									
45.0	10.80									
90.0	10.74									
135.0	10.74									
180.0	10.74									
225.0	10.74									
270.0	10.74									
315.0	10.74									
360.0	10.74									