
Nata

Client:

LumCAT: 2-1651-A

Luminaire: 92.70.131.00+92.70.148.00

Report No: NT2018031203

Voltage(V): 35.2200

Test No: nata-0100

Current(A): 0.5000

LampCAT: CITIZEN CLU721

Power (W): 17.6100

Lamp flux(lm): 1963.0

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): 1673.40, Efficiency(%): 85.25% , Luminous Efficacy(lm/W): 95.03

Central intensity(cd): 5719.259, Maximum intensity(cd): 5719.259

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=27.6

[C90/270]Total=27.6

Field angle(10%Imax): [C0/180]Total=49.8

[C90/270]Total=49.8

Maximum s/h(1/2): C0_180=0.47 C90_270=0.47

Maximum s/h(1/4): C0_180=0.46 C90_270=0.46

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 86.91%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 96.425%

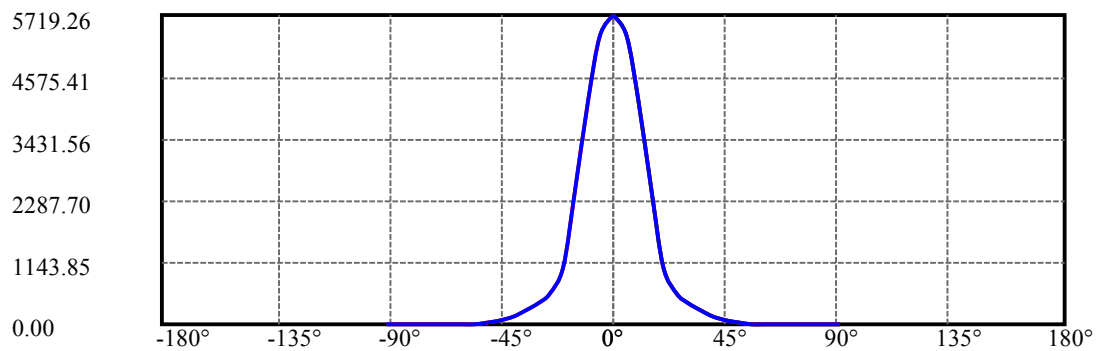
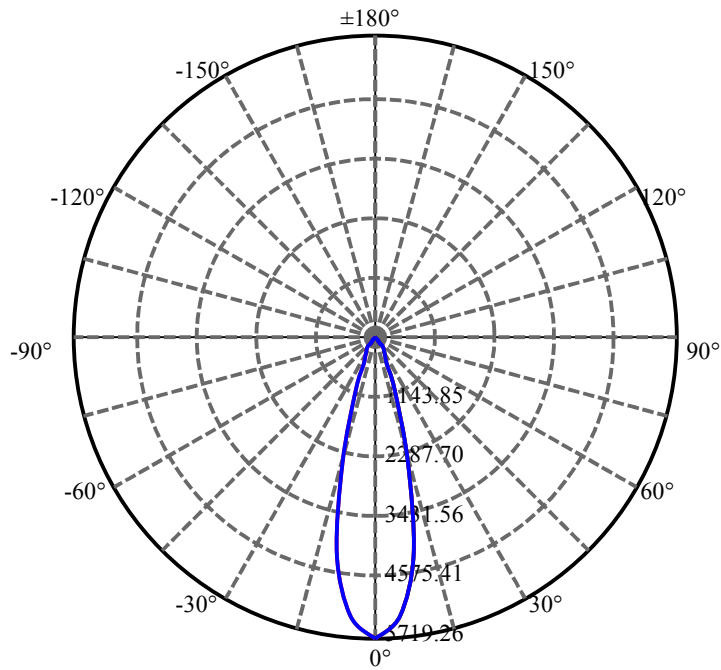
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	5719.259	34.202	34.202	1.742%	2.044%
5.0	5319.068	254.110	288.312	12.945%	17.229%
10.0	4163.709	396.315	684.626	20.189%	40.912%
15.0	2458.750	348.819	1033.445	17.770%	61.757%
20.0	1056.828	198.128	1231.573	10.093%	73.597%
25.0	559.979	129.721	1361.294	6.608%	81.349%
30.0	380.412	104.259	1465.553	5.311%	87.579%
35.0	241.966	76.074	1541.627	3.875%	92.125%
40.0	135.336	47.684	1589.31	2.429%	94.975%
45.0	72.585	28.133	1617.444	1.433%	96.656%
50.0	37.087	15.573	1633.016	.793%	97.587%
55.0	15.925	7.150	1640.167	.364%	98.014%
60.0	10.220	4.851	1645.018	.247%	98.304%
65.0	9.834	4.886	1649.904	.249%	98.596%
70.0	9.717	5.005	1654.909	.255%	98.895%
75.0	9.697	5.134	1660.043	.262%	99.202%
80.0	12.016	6.486	1666.53	.330%	99.589%
85.0	9.215	5.032	1671.562	.256%	99.890%
90.0	6.710	1.839	1673.401	.094%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1465.55	74.66%	87.58%
0-40	1589.31	80.96%	94.97%
0-60	1645.02	83.80%	98.30%
0-90	1671.56	85.15%	99.89%
0-120	1671.56	85.15%	99.89%
0-180	1673.40	85.25%	100.00%
60-90	31.39	1.60%	1.88%
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%
0-24.13	1338.72	68.20%	80.00%

ZONAL LUMEN SUMMARY

0-10	684.63
10-20	546.95
20-30	233.98
30-40	123.76
40-50	43.71
50-60	12.00
60-70	9.89
70-80	11.62
80-90	5.03
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



C0(Max): —————

C0/C180: —————

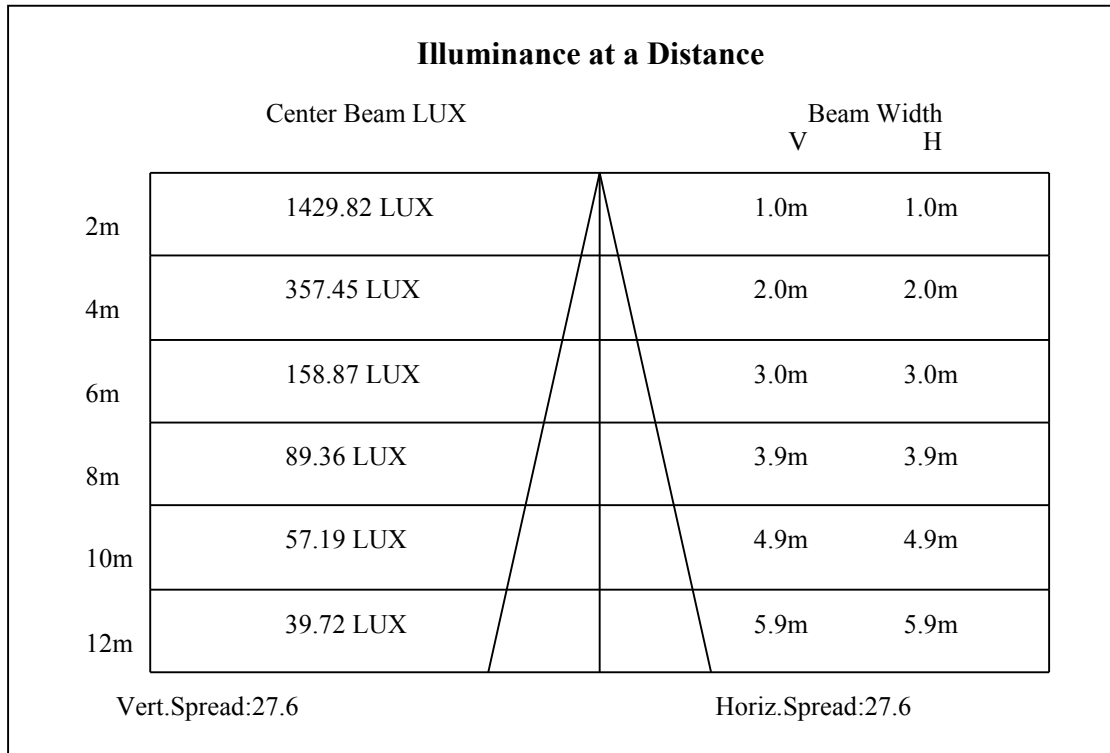
C90/C270: —————

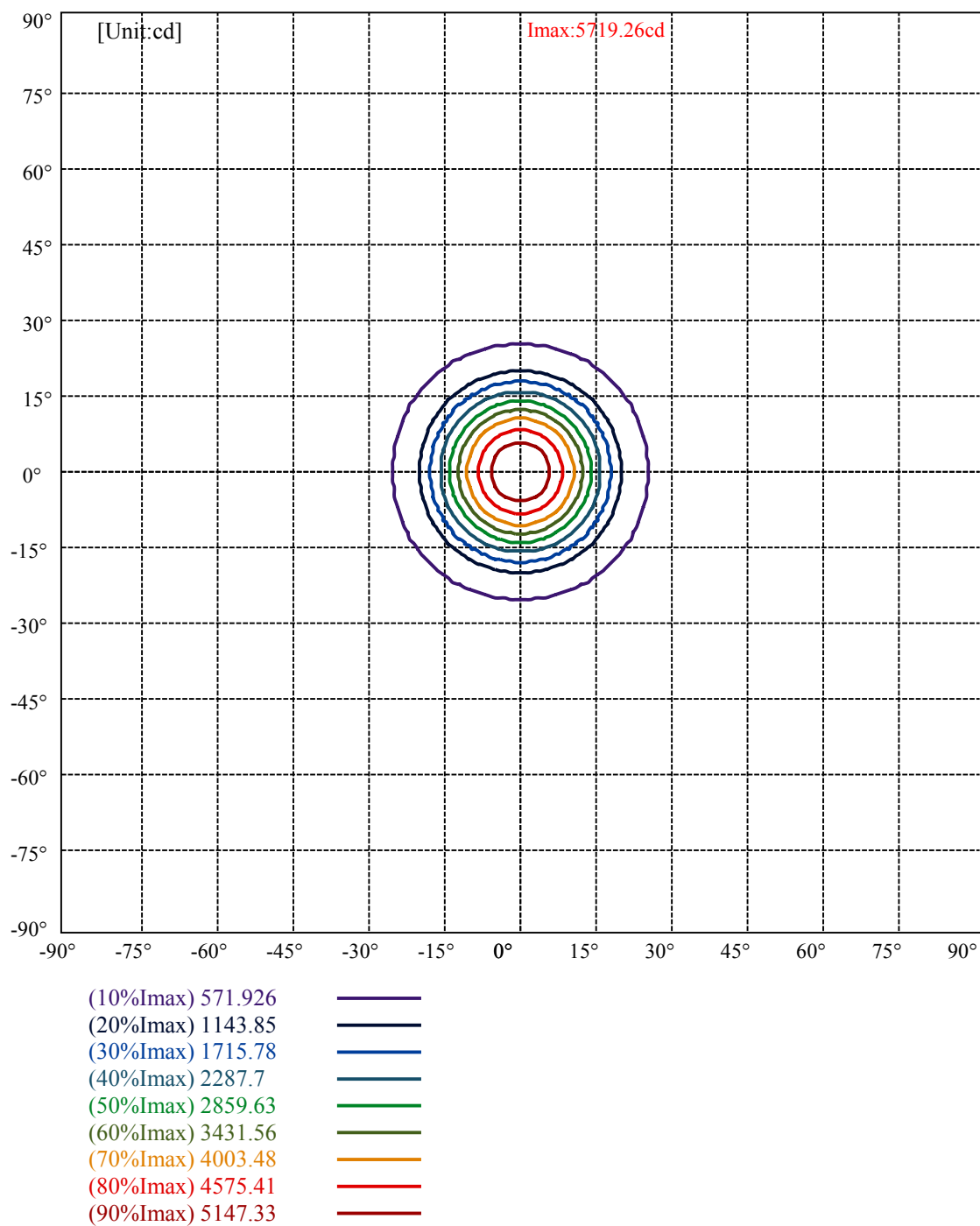
Field angle(10%Imax):C0/180Left:24.9 Right:24.9

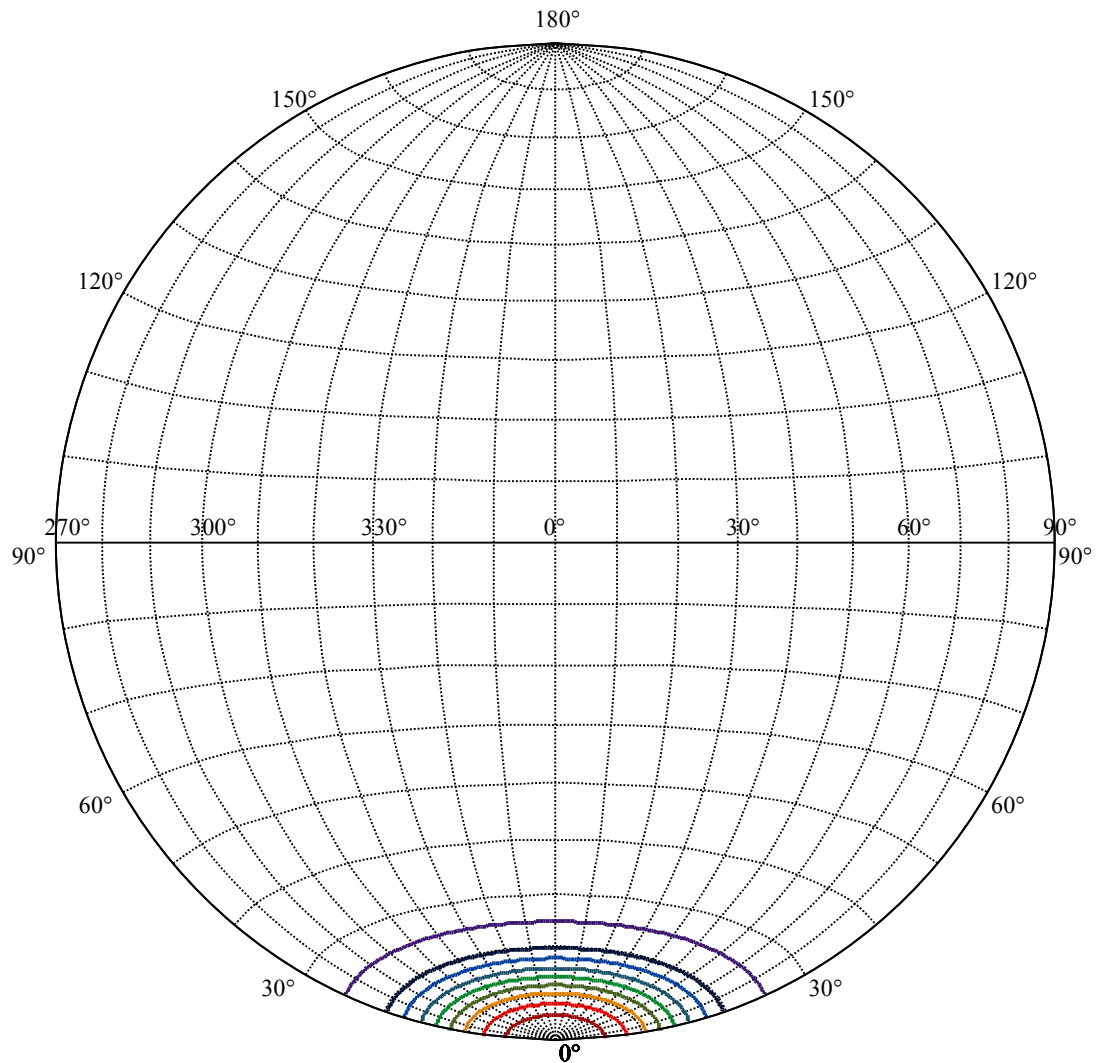
:C90/270Left:24.9 Right:24.9

Beam Angle(50%Imax):C0/180Left:13.8 Right:13.8

:C90/270Left:13.8 Right:13.8







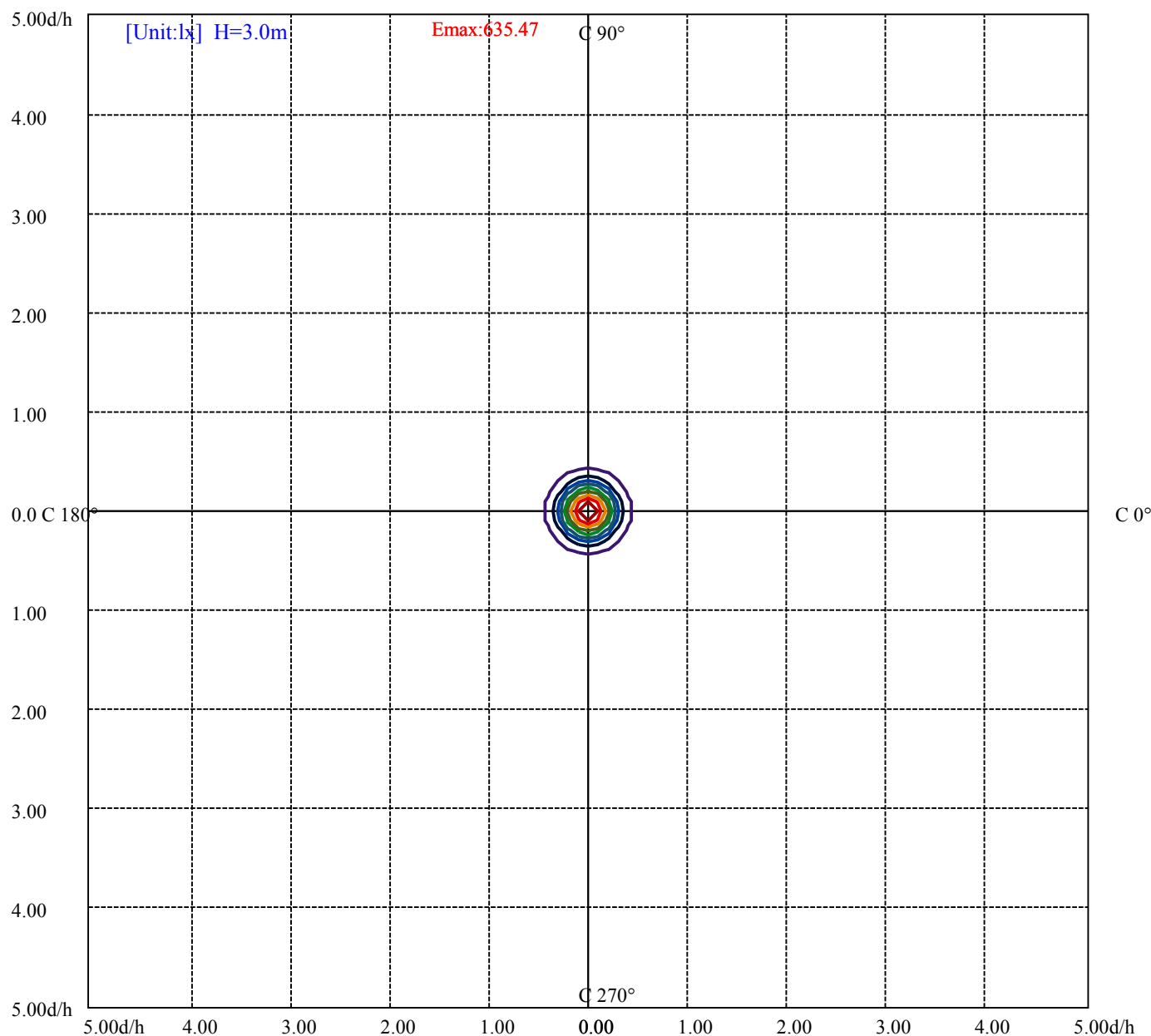
House

[Unit:cd]

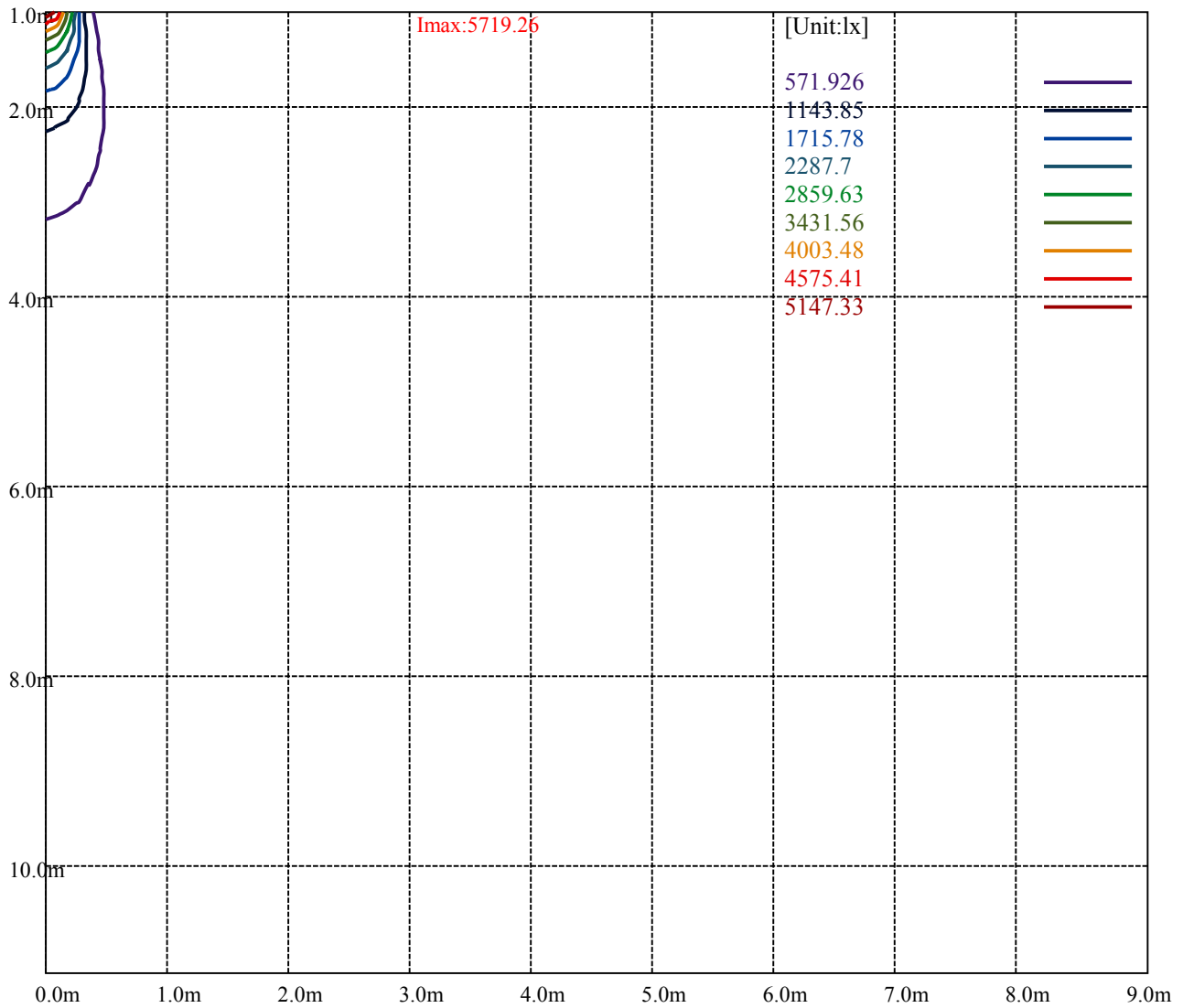
Road

Imax:5719.26

(10%Imax)	571.926	—
(20%Imax)	1143.85	—
(30%Imax)	1715.78	—
(40%Imax)	2287.7	—
(50%Imax)	2859.63	—
(60%Imax)	3431.56	—
(70%Imax)	4003.48	—
(80%Imax)	4575.41	—
(90%Imax)	5147.33	—



(10%Emax) 63.54722	—
(20%Emax) 127.0944	—
(30%Emax) 190.6411	—
(40%Emax) 254.1889	—
(50%Emax) 317.7356	—
(60%Emax) 381.2833	—
(70%Emax) 444.83	—
(80%Emax) 508.3778	—
(90%Emax) 571.9244	—



Luminance Table

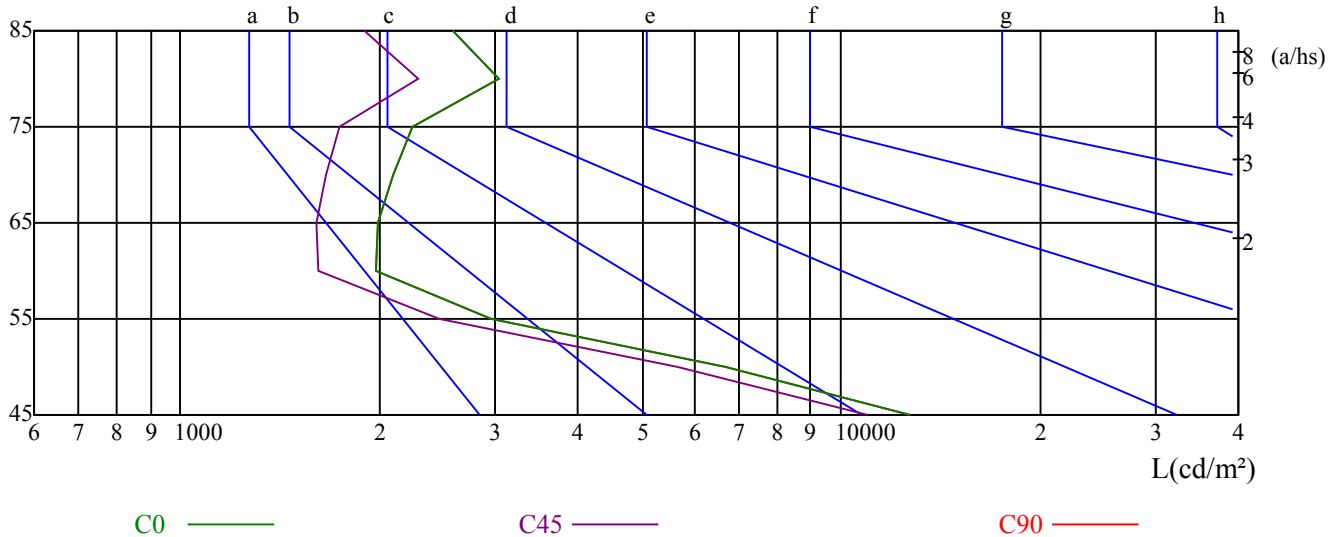
γ	45	50	55	60	65	70	75	80	85
C0	12752	6667	2954	1974	1997	2096	2249	3040	2585
C45	10973	5652	2465	1620	1610	1658	1741	2294	1894
C90	12752	6667	2954	1974	1997	2096	2249	3040	2585

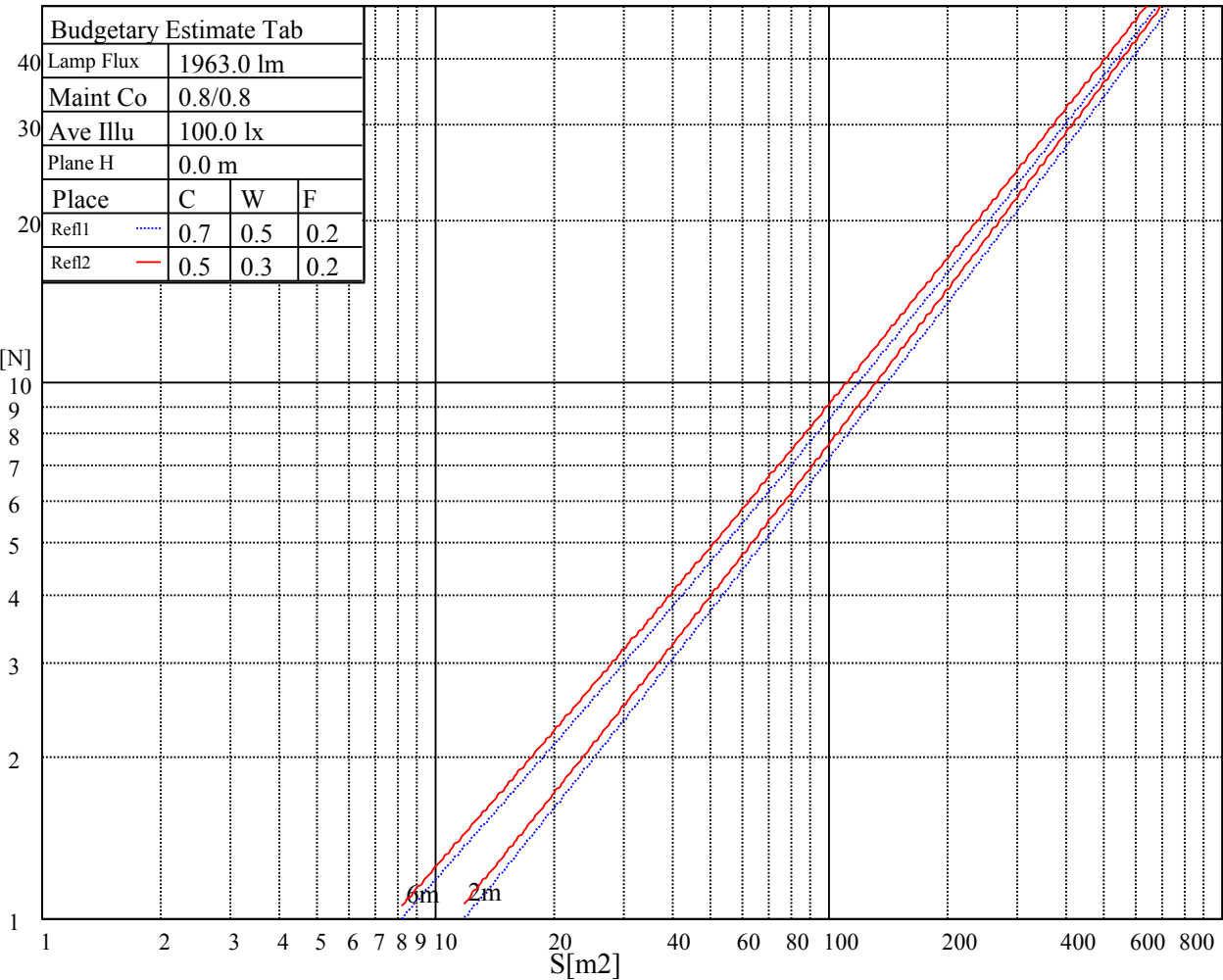
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4749	4749	4749	7646	7646	7646	21578	21578	21578

Glare Table

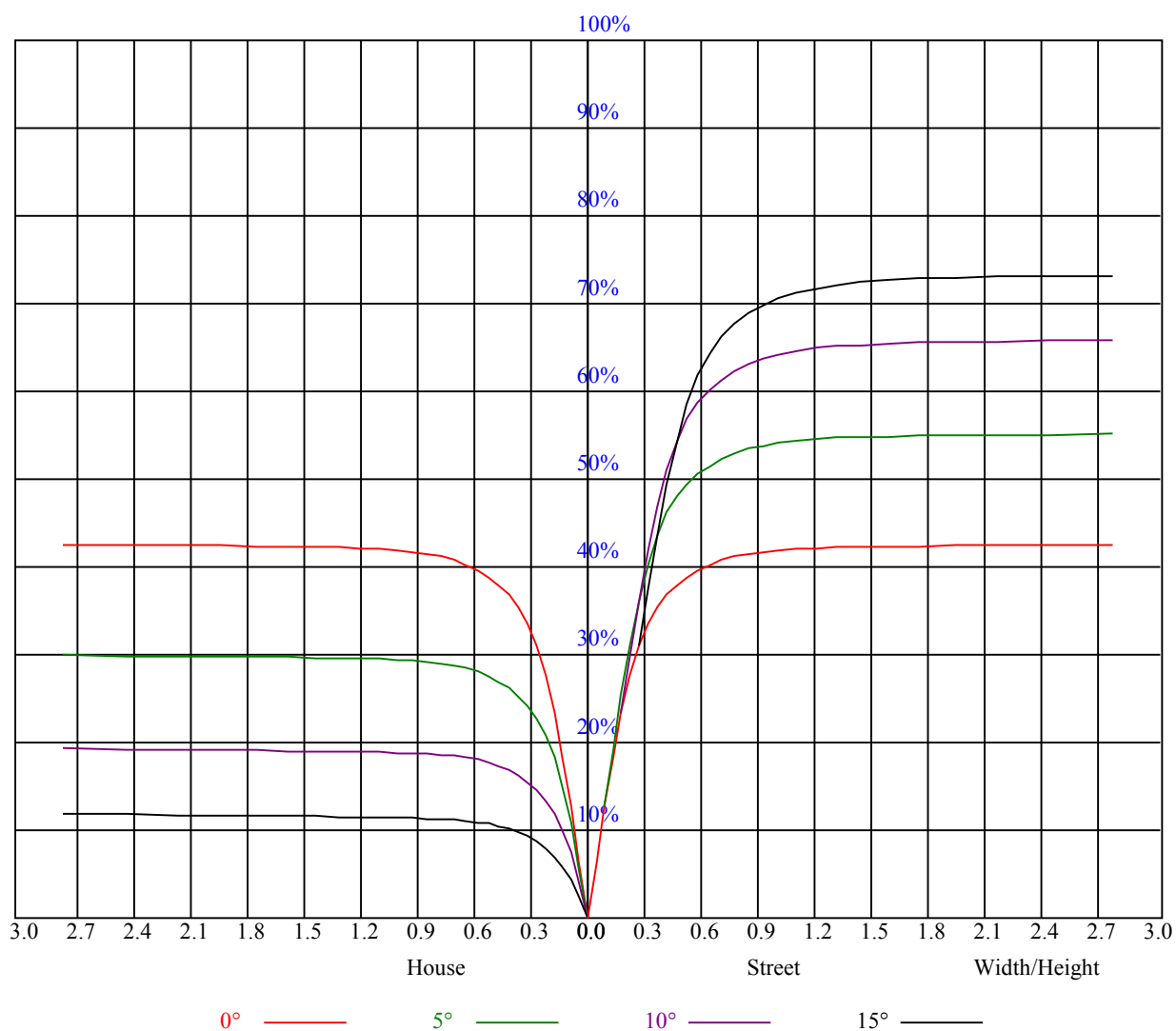
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

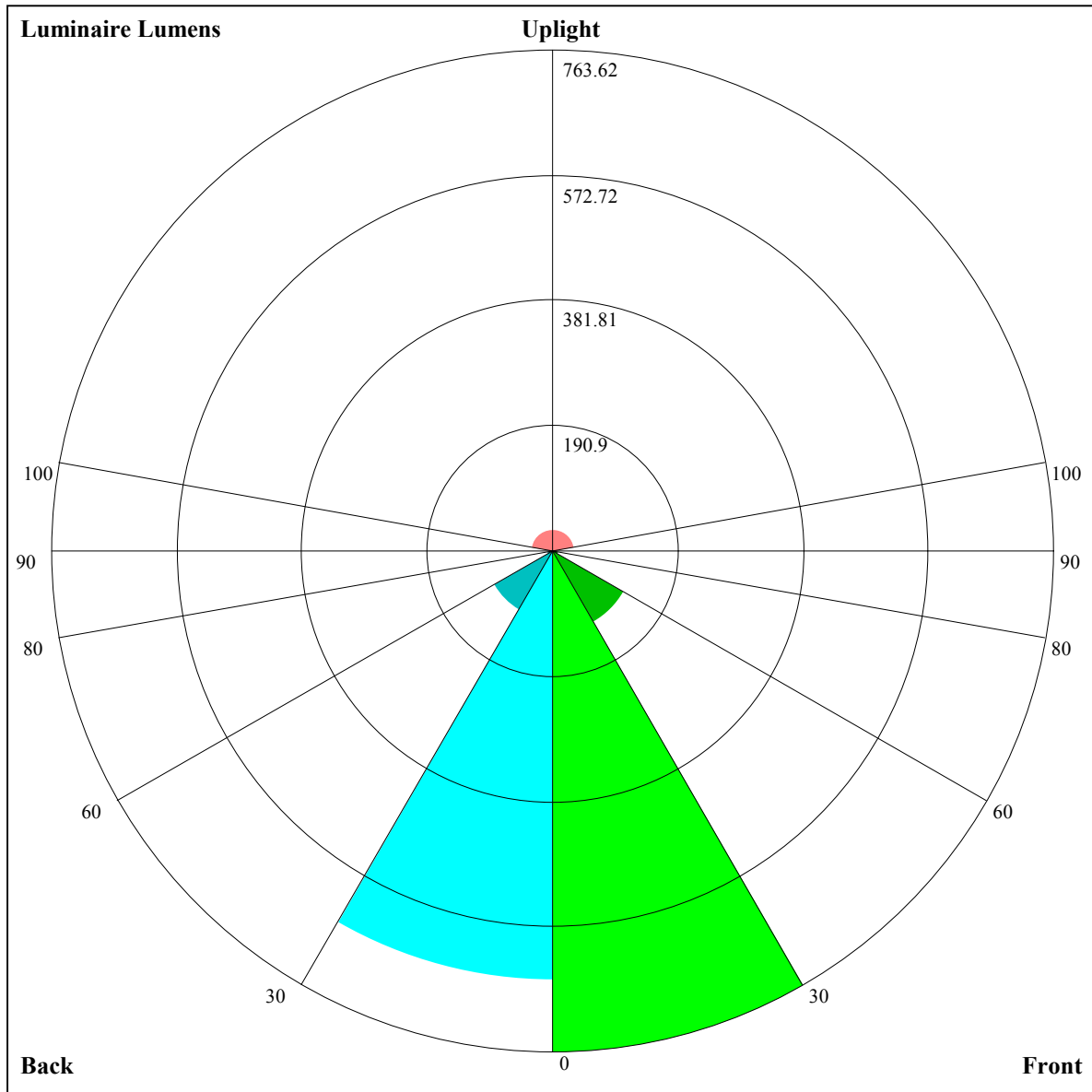
Luminance Limiting Curve

 $\gamma(^{\circ})$ 



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	1.03	1.03	1.03	1.01	1.01	1.01	0.97	0.97	0.97	0.92	0.92	0.92	0.89	0.89	0.89	0.87
1	0.95	0.93	0.91	0.93	0.91	0.89	0.90	0.88	0.86	0.87	0.85	0.84	0.84	0.82	0.81	0.80
2	0.90	0.87	0.84	0.89	0.86	0.83	0.86	0.84	0.81	0.83	0.81	0.80	0.81	0.79	0.78	0.77
3	0.86	0.82	0.79	0.85	0.81	0.79	0.83	0.80	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.74
4	0.82	0.78	0.75	0.81	0.78	0.75	0.80	0.76	0.74	0.78	0.75	0.73	0.76	0.74	0.72	0.71
5	0.79	0.75	0.72	0.78	0.74	0.72	0.77	0.74	0.71	0.76	0.73	0.70	0.74	0.72	0.70	0.69
6	0.76	0.72	0.69	0.76	0.72	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.72	0.70	0.68	0.67
7	0.74	0.70	0.67	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.70	0.68	0.65	0.65
8	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.68	0.66	0.64	0.63
9	0.69	0.65	0.63	0.69	0.65	0.62	0.68	0.65	0.62	0.67	0.64	0.62	0.67	0.64	0.62	0.61
10	0.67	0.63	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.66	0.63	0.60	0.65	0.62	0.60	0.59





Luminaire Lumens:

FL=763.62,FM=126.66,FH=10.64,FVH=5.29

BL=654.8,BM=105.16,BH=10.24,BVH=4.98

UL=7.32,UH=34.84

BUG Rating:B2-U2-G0

Nata 2-1651-A

Intensity data(cd)										Appendix Page: 15 Total:15	
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	5690.63	5663.10	4841.66	3276.96	1617.56	695.36	460.27	300.06	175.13		
45.0	5736.88	5457.74	4399.56	2682.35	1199.68	596.26	401.36	281.89	145.57		
90.0	5714.30	5118.59	3850.09	2043.69	802.56	519.84	349.17	208.72	118.43		
135.0	5735.23	5124.65	3933.23	2119.12	855.03	518.08	351.81	211.97	120.57		
180.0	5690.63	4922.59	3421.76	1705.65	719.15	458.29	302.09	183.23	100.81		
225.0	5736.88	5238.62	3940.39	2128.48	901.88	512.52	347.35	214.00	120.24		
270.0	5714.30	5494.63	4474.98	2894.87	1262.44	597.91	416.23	278.59	153.17		
315.0	5735.23	5532.62	4448.01	2818.89	1096.34	581.56	415.02	257.28	148.76		
360.0	5690.63	5663.10	4841.66	3276.96	1617.56	695.36	460.27	300.06	175.13		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	95.85	49.77	23.12	11.07	10.08	9.91	9.74	9.63	9.80		
45.0	78.07	41.35	16.90	10.35	10.02	9.86	10.02	17.34	9.58		
90.0	59.79	29.68	12.33	9.97	9.74	9.69	9.52	9.08	8.75		
135.0	62.27	30.67	12.99	9.80	9.63	9.58	9.58	10.13	9.25		
180.0	52.19	25.93	11.18	9.91	9.74	9.47	9.30	9.63	8.86		
225.0	63.92	31.93	13.76	9.86	9.69	9.69	9.69	9.25	8.81		
270.0	86.66	45.53	19.16	10.46	9.86	9.74	9.91	21.31	9.30		
315.0	81.92	41.84	17.95	10.35	9.91	9.80	9.80	9.74	9.36		
360.0	95.85	49.77	23.12	11.07	10.08	9.91	9.74	9.63	9.80		
C/γ(°)	90.0										
0.0	6.77										
45.0	6.72										
90.0	6.66										
135.0	6.72										
180.0	6.77										
225.0	6.66										
270.0	6.66										
315.0	6.72										
360.0	6.77										