
Nata

Client:

LumCAT: 2-1651-A

Luminaire: 92.70.131.00+92.70.148.00

Report No: NT2018031208

Test No: nata-0100

LampCAT: LUMINUS CXM-14

Lamp flux(lm): 1820.0

Number of Lamps: 1

Length(mm): 70

Phm Type: C

Voltage(V): 34.0000

Current(A): 0.5000

Power (W): 17.0000

PF: 0.0000

Ballast type: DC

Width(mm): 70

Height(mm): 0

Photometric Results

Lumens(lm): 1564.66, Efficiency(%): 85.97% , Luminous Efficacy(lm/W): 92.04

Central intensity(cd): 4474.571, Maximum intensity(cd): 4474.571

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=30.4

[C90/270]Total=30.4

Field angle(10%Imax): [C0/180]Total=56.8

[C90/270]Total=56.8

Maximum s/h(1/2): C0_180=0.51 C90_270=0.51

Maximum s/h(1/4): C0_180=0.49 C90_270=0.49

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 87.36%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 96.737%

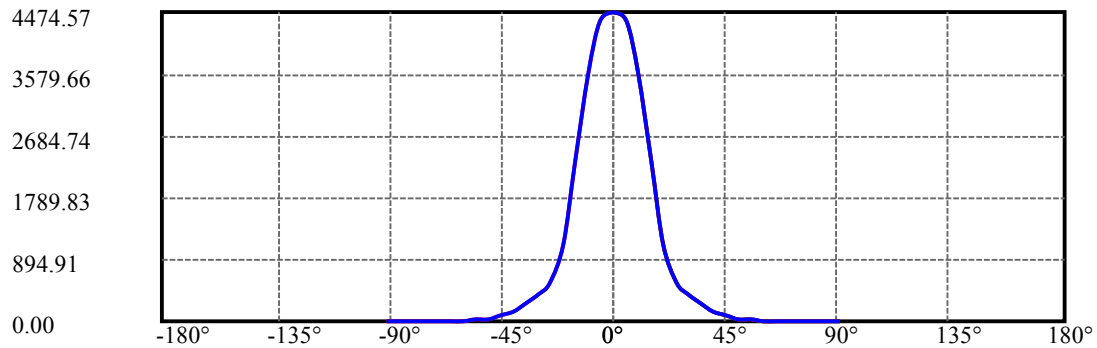
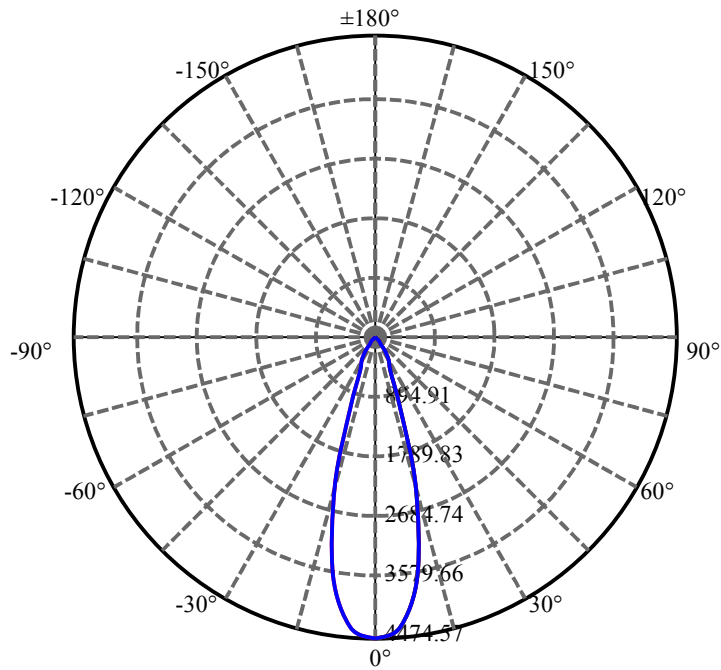
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4474.571	26.759	26.759	1.470%	1.710%
5.0	4325.300	206.634	233.393	11.354%	14.916%
10.0	3593.875	342.076	575.469	18.795%	36.779%
15.0	2283.464	323.951	899.42	17.800%	57.483%
20.0	1122.724	210.482	1109.902	11.565%	70.936%
25.0	566.854	131.313	1241.215	7.215%	79.328%
30.0	389.779	106.826	1348.041	5.870%	86.155%
35.0	258.903	81.399	1429.44	4.472%	91.358%
40.0	146.980	51.786	1481.226	2.845%	94.667%
45.0	76.129	29.507	1510.733	1.621%	96.553%
50.0	37.948	15.934	1526.667	.876%	97.572%
55.0	15.237	6.841	1533.509	.376%	98.009%
60.0	9.566	4.541	1538.05	.250%	98.299%
65.0	9.249	4.595	1542.645	.252%	98.593%
70.0	9.105	4.690	1547.335	.258%	98.893%
75.0	9.167	4.854	1552.188	.267%	99.203%
80.0	10.688	5.769	1557.958	.317%	99.571%
85.0	8.850	4.833	1562.79	.266%	99.880%
90.0	6.834	1.873	1564.663	.103%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1348.04	74.07%	86.16%
0-40	1481.23	81.39%	94.67%
0-60	1538.05	84.51%	98.30%
0-90	1562.79	85.87%	99.88%
0-120	1562.79	85.87%	99.88%
0-180	1564.66	85.97%	100.00%
60-90	29.28	1.61%	1.87%
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%
0-25.49	1251.73	68.78%	80.00%

ZONAL LUMEN SUMMARY

0-10	575.47
10-20	534.43
20-30	238.14
30-40	133.18
40-50	45.44
50-60	11.38
60-70	9.28
70-80	10.62
80-90	4.83
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: —————

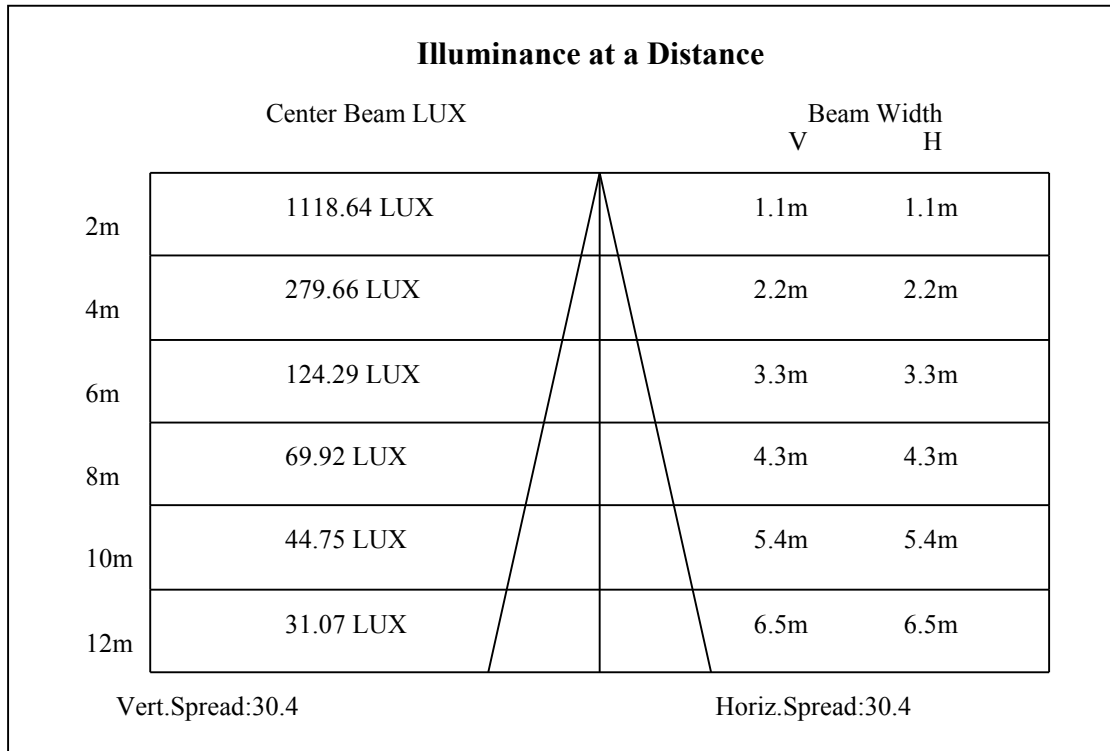
C90/C270: —————

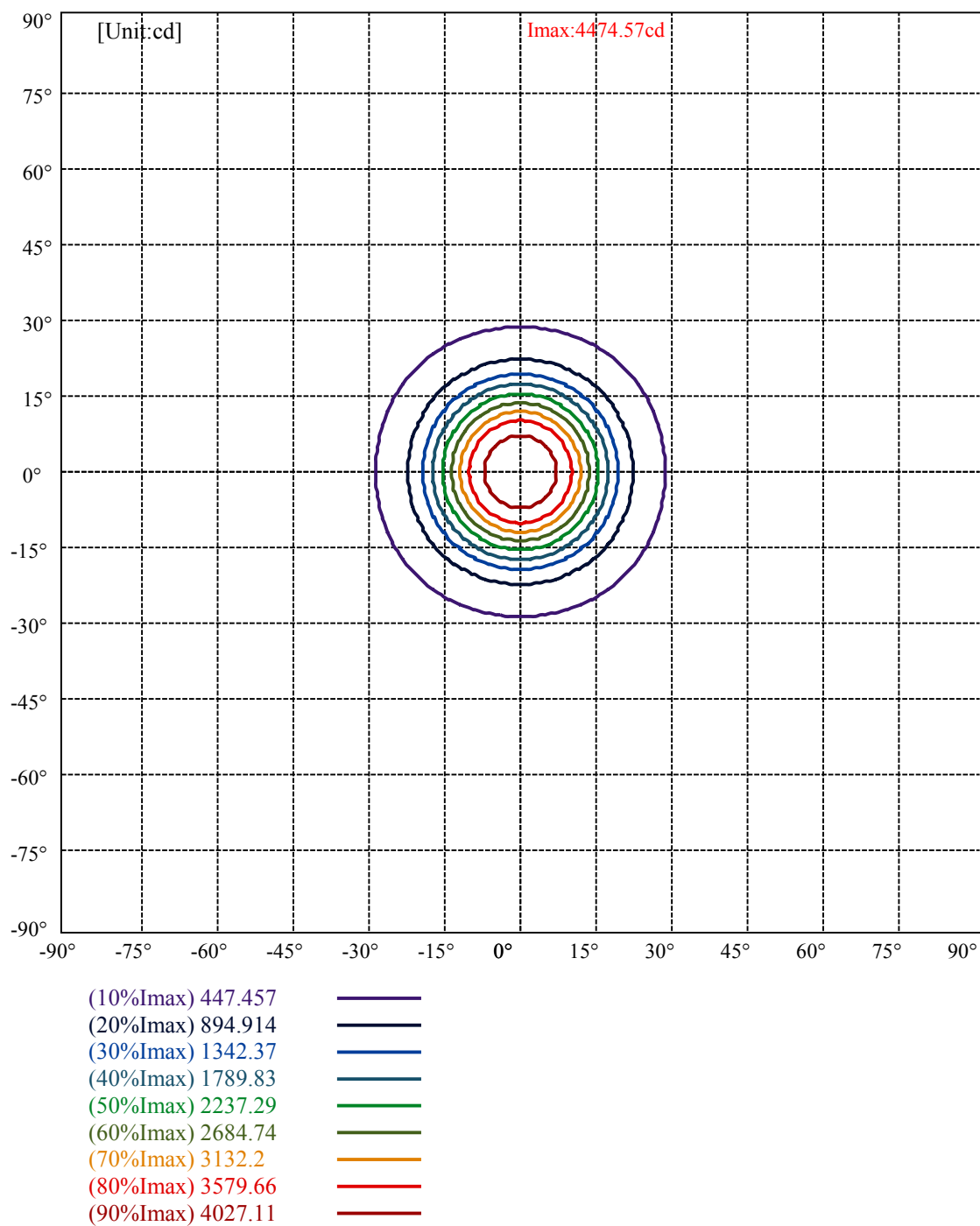
Field angle(10%Imax):C0/180Left:28.4 Right:28.4

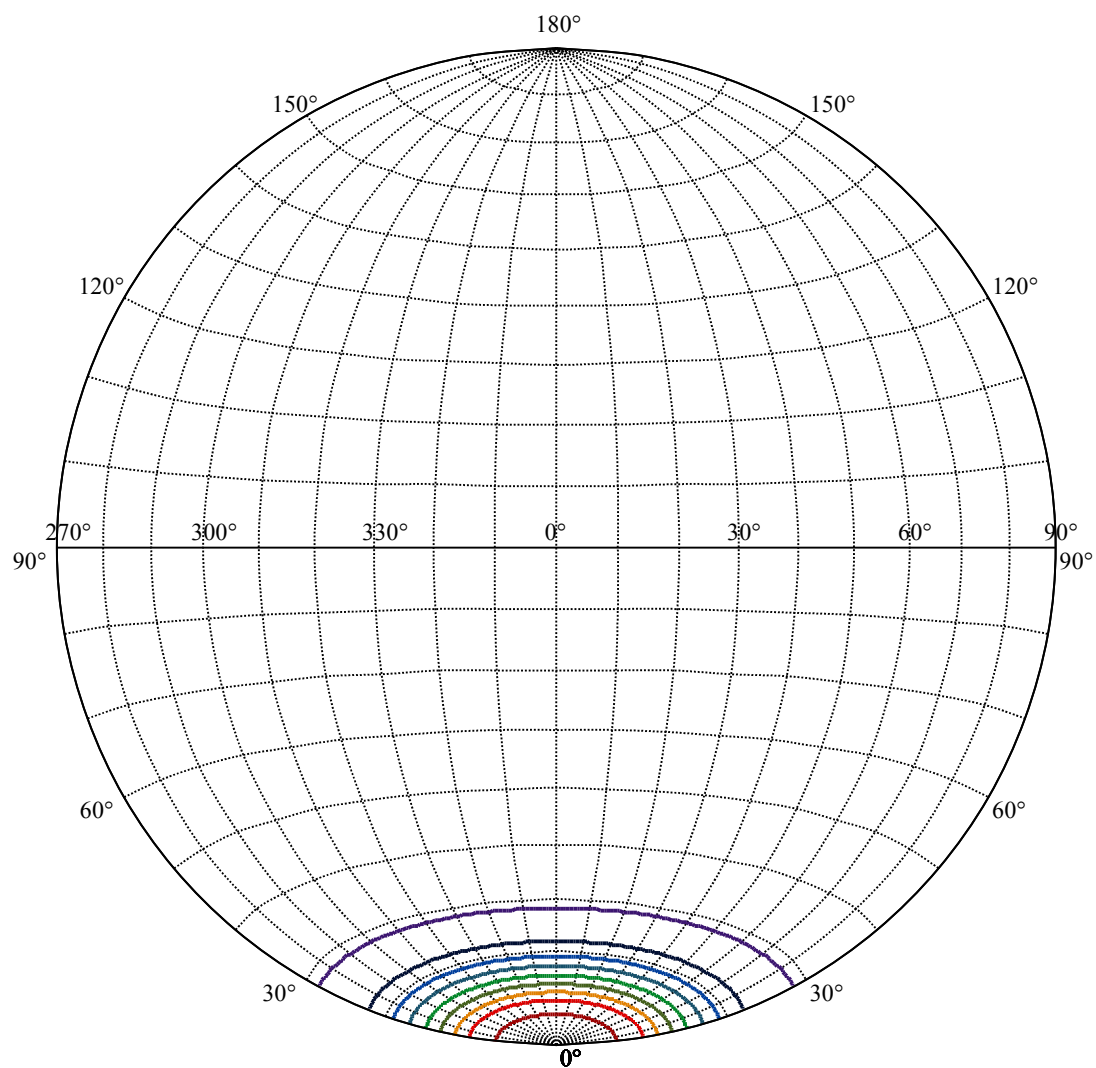
:C90/270Left:28.4 Right:28.4

Beam Angle(50%Imax):C0/180Left:15.2 Right:15.2

:C90/270Left:15.2 Right:15.2







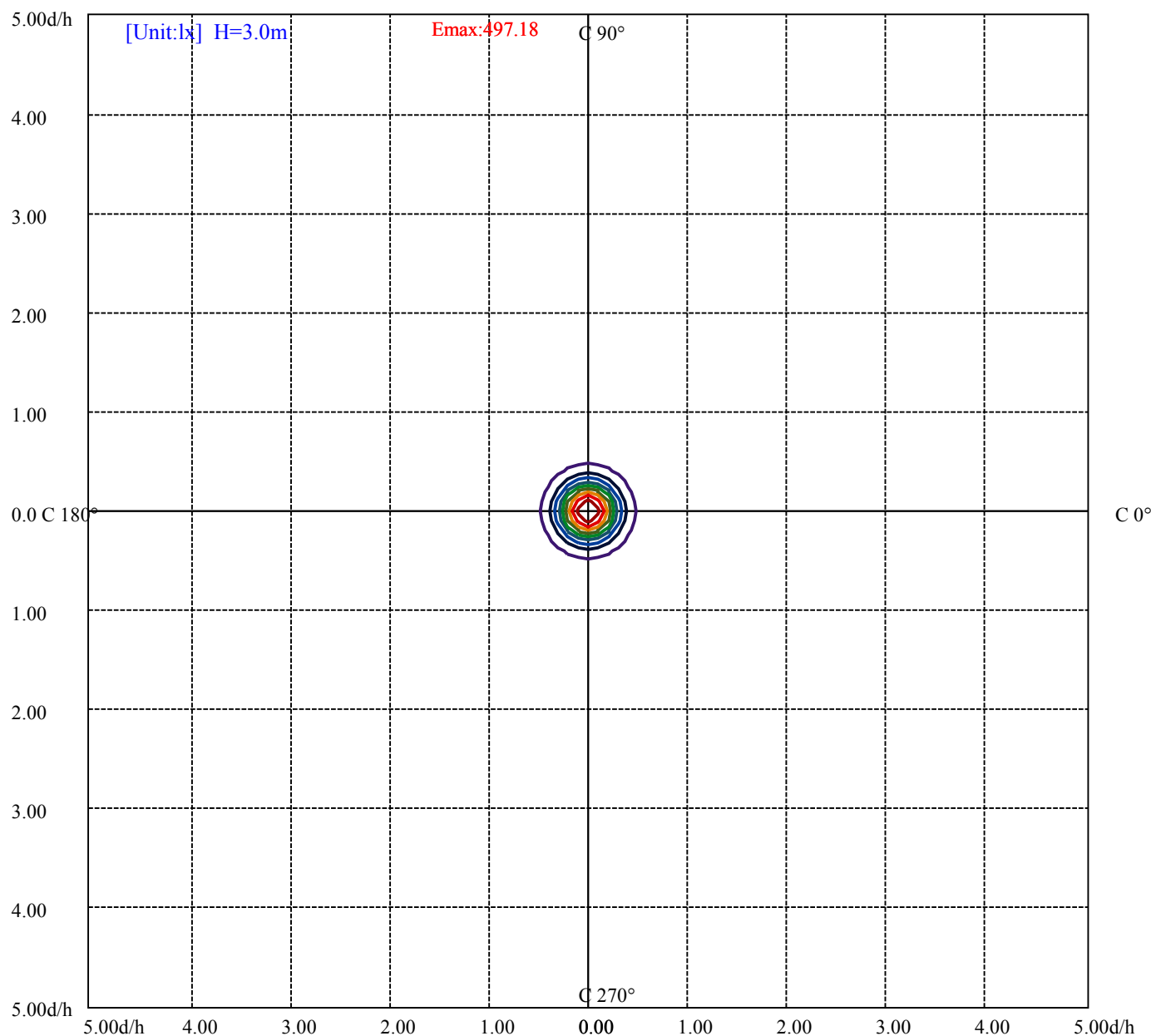
House

[Unit:cd]

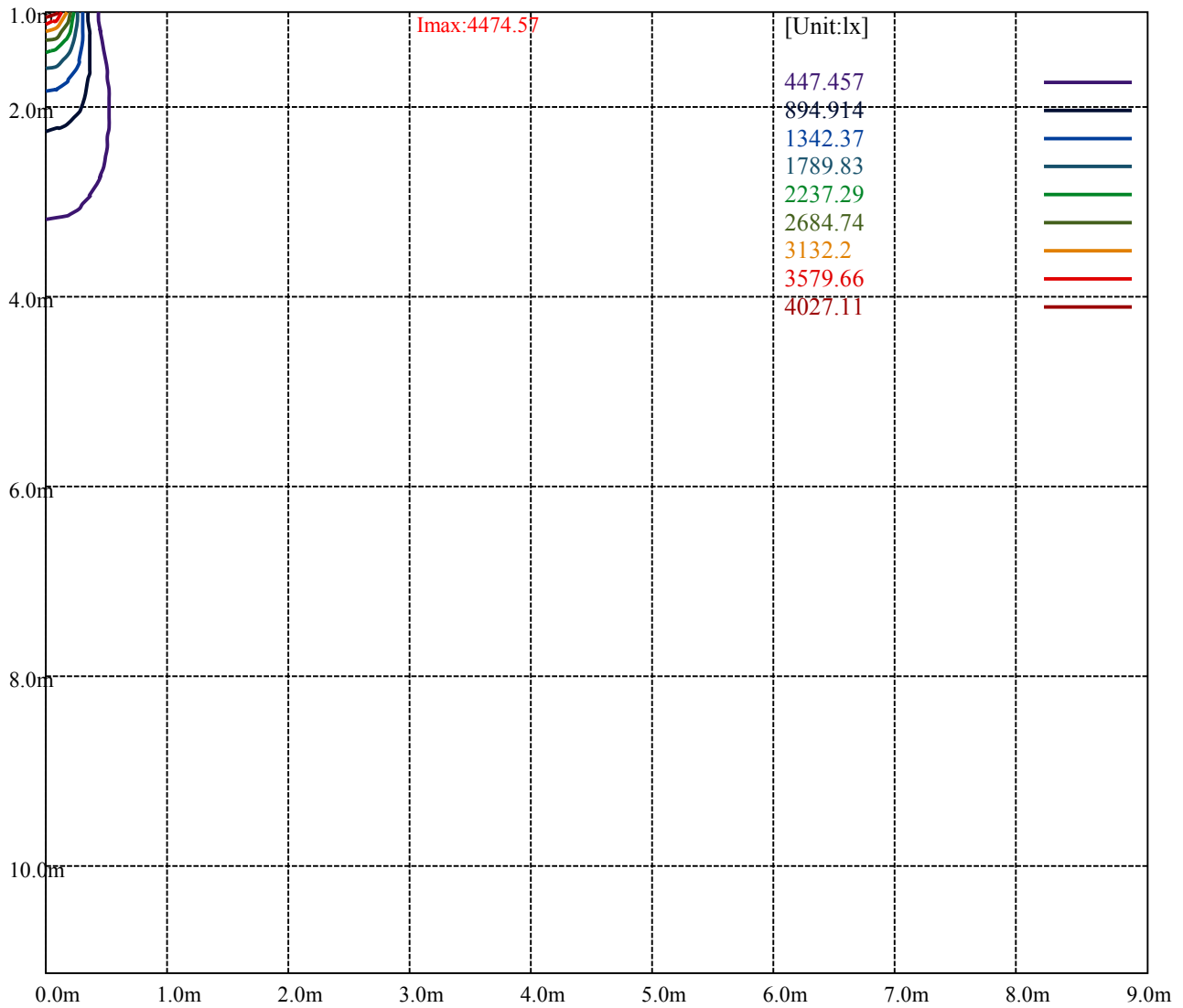
Road

Imax:4474.57

(10%Imax)	447.457	—
(20%Imax)	894.914	—
(30%Imax)	1342.37	—
(40%Imax)	1789.83	—
(50%Imax)	2237.29	—
(60%Imax)	2684.74	—
(70%Imax)	3132.2	—
(80%Imax)	3579.66	—
(90%Imax)	4027.11	—



(10%Emax)	49.71745	—
(20%Emax)	99.43478	—
(30%Emax)	149.1522	—
(40%Emax)	198.87	—
(50%Emax)	248.5867	—
(60%Emax)	298.3044	—
(70%Emax)	348.0222	—
(80%Emax)	397.7389	—
(90%Emax)	447.4567	—



Luminance Table

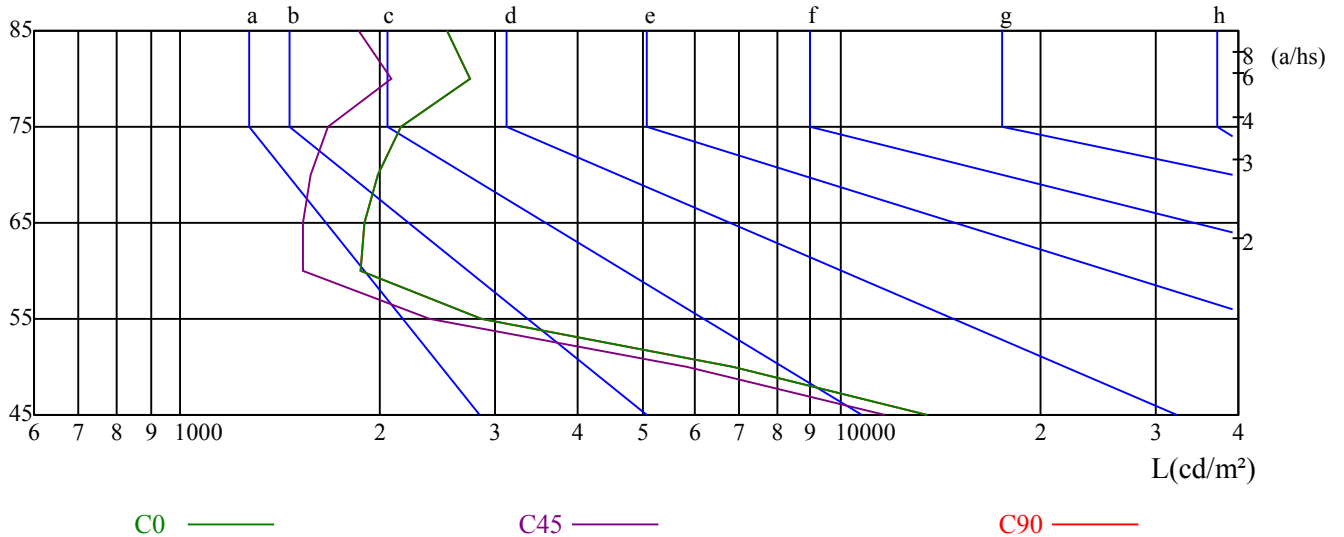
γ	45	50	55	60	65	70	75	80	85
C0	13492	6888	2857	1869	1902	1992	2160	2752	2532
C45	11632	5850	2389	1537	1537	1578	1674	2079	1857
C90	13492	6888	2857	1869	1902	1992	2160	2752	2532

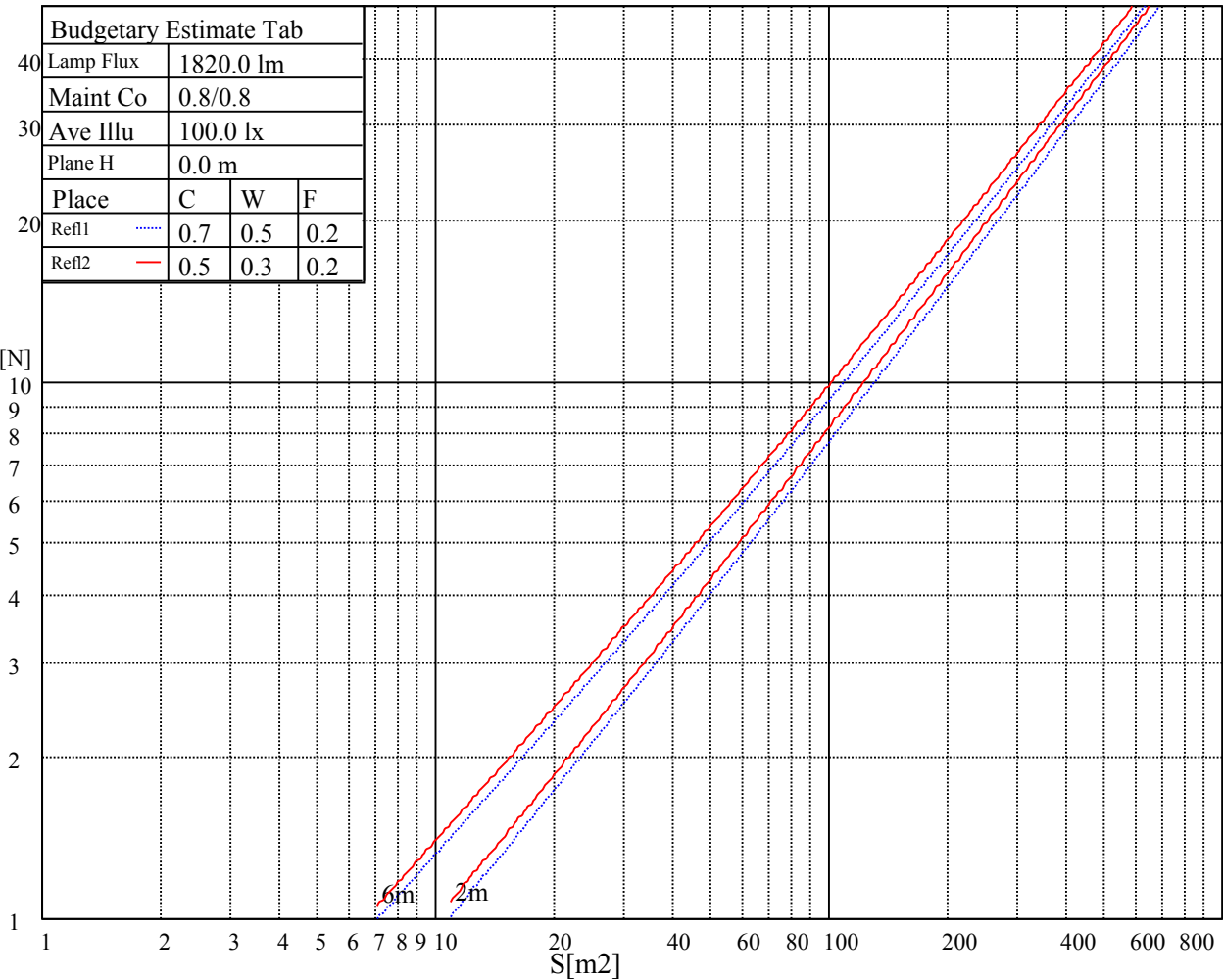
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4467	4467	4467	7228	7228	7228	20724	20724	20724

Glare Table

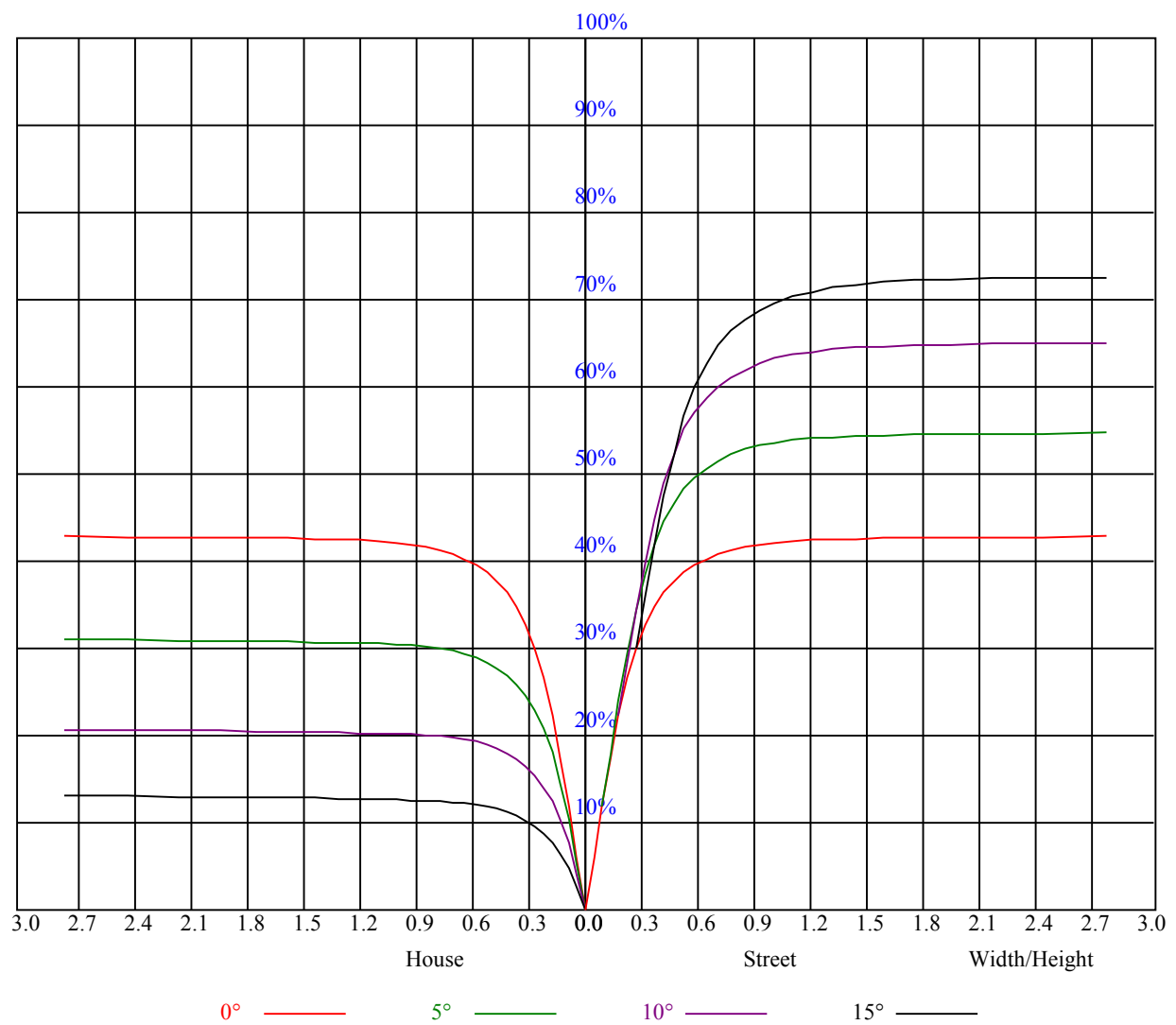
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

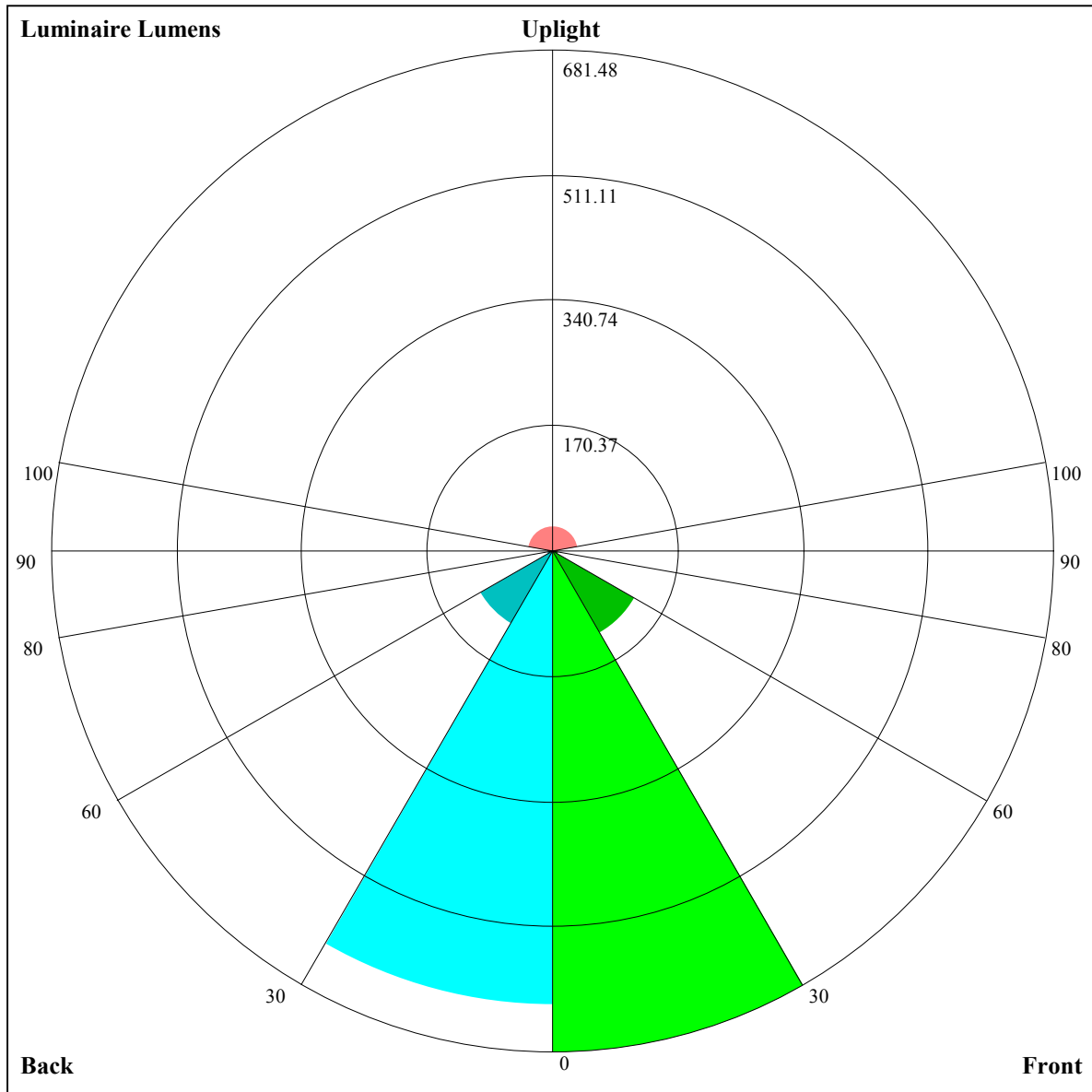
Luminance Limiting Curve

 $\gamma(^{\circ})$ 



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	1.04	1.04	1.04	1.02	1.02	1.02	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.87
1	0.96	0.94	0.91	0.94	0.92	0.90	0.91	0.89	0.87	0.87	0.86	0.85	0.84	0.83	0.82	0.81
2	0.91	0.87	0.85	0.89	0.86	0.84	0.87	0.84	0.82	0.84	0.82	0.80	0.82	0.80	0.78	0.77
3	0.86	0.82	0.79	0.85	0.82	0.79	0.83	0.80	0.78	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	0.71	0.77	0.73	0.71	0.75	0.72	0.70	0.74	0.72	0.70	0.68
6	0.76	0.72	0.69	0.75	0.71	0.68	0.74	0.71	0.68	0.73	0.70	0.68	0.72	0.69	0.67	0.66
7	0.73	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.64
8	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.62
9	0.68	0.64	0.62	0.68	0.64	0.61	0.67	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.60
10	0.66	0.62	0.60	0.66	0.62	0.60	0.65	0.62	0.59	0.65	0.62	0.59	0.64	0.61	0.59	0.58





Luminaire Lumens:

FL=681.48,FM=129.27,FH=9.63,FVH=4.79

BL=616.87,BM=114.37,BH=9.62,BVH=4.75

UL=7.46,UH=35.48

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	4472.78	4434.24	3967.36	2838.16	1521.76	679.95	456.42	300.61	181.80		
45.0	4470.03	4372.58	3784.58	2541.40	1278.41	589.10	414.57	281.34	156.64		
90.0	4473.88	4301.56	3494.43	2203.36	1048.60	519.90	372.79	238.89	137.86		
135.0	4481.59	4322.48	3601.79	2243.00	1125.35	557.72	379.34	282.99	144.14		
180.0	4472.78	4207.41	3174.55	1766.76	828.87	487.58	332.60	196.55	116.22		
225.0	4470.03	4257.51	3396.98	2011.21	902.59	528.10	361.67	226.56	133.73		
270.0	4473.88	4347.80	3701.44	2387.25	1182.61	602.32	405.77	283.54	155.15		
315.0	4481.59	4358.82	3629.87	2276.58	1093.59	570.16	395.08	260.75	150.30		
360.0	4472.78	4434.24	3967.36	2838.16	1521.76	679.95	456.42	300.61	181.80		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	99.82	50.32	21.20	9.97	9.36	9.19	9.14	14.20	8.86		
45.0	82.97	41.84	17.45	9.97	9.41	9.25	9.08	8.92	8.64		
90.0	73.23	36.56	14.04	9.52	9.30	9.19	9.08	9.91	9.14		
135.0	73.83	39.70	14.15	9.14	8.92	8.81	8.64	10.57	8.81		
180.0	56.27	26.26	10.90	9.14	8.92	8.75	8.64	8.53	8.15		
225.0	67.17	31.93	13.05	9.69	9.47	9.30	10.63	15.47	9.30		
270.0	79.45	38.54	16.02	9.58	9.30	9.19	9.08	9.03	9.08		
315.0	76.31	38.43	15.09	9.52	9.30	9.14	9.03	8.86	8.81		
360.0	99.82	50.32	21.20	9.97	9.36	9.19	9.14	14.20	8.86		
C/γ(°)	90.0										
0.0	9.41										
45.0	6.61										
90.0	6.39										
135.0	6.17										
180.0	6.22										
225.0	6.55										
270.0	6.61										
315.0	6.72										
360.0	9.41										