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NATA

Client:

LumCAT: 2-1682-M

Luminaire: 92.70.124.00

Report No: nt0100

Test No: GC2019122319

LampCAT: LUMINUS CXM-9-AC40

Lamp flux(lm): 1036.0

Number of Lamps: 1

Length(mm): 0

Phm Type: C

Voltage(V): 33.5200

Current(A): 0.2970

Power (W): 9.9500

PF: 1.0000

Ballast type: DC

Width(mm): 0

Height(mm): 0

Photometric Results

Lumens(lm): 969.46, Efficiency(%): 93.58% , Luminous Efficacy(lm/W): 97.43

Central intensity(cd): 1968.609, Maximum intensity(cd): 1968.609

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=37.8

[C90/270]Total=37.8

Field angle(10%Imax): [C0/180]Total=70.4

[C90/270]Total=70.4

Maximum s/h(1/2): C0_180=0.61 C90_270=0.61

Maximum s/h(1/4): C0_180=0.63 C90_270=0.63

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 93.58%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.497%

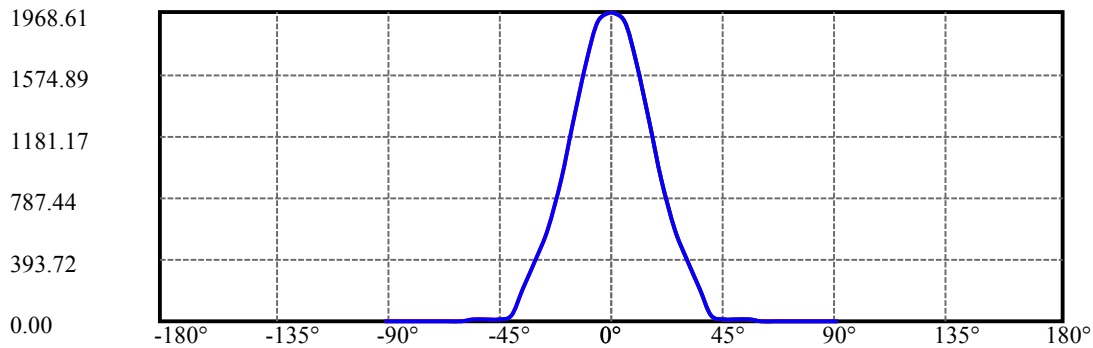
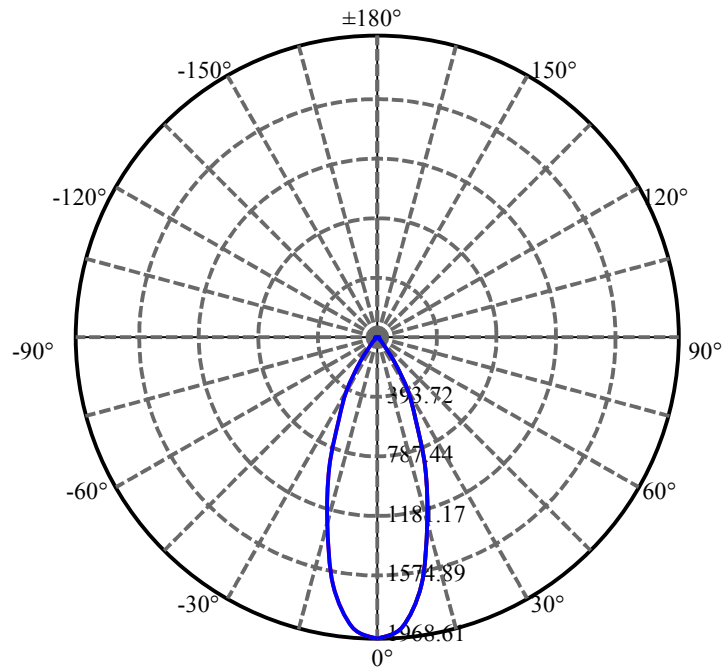
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1968.609	0.000	0	.000%	.000%
5.0	1901.813	46.270	46.27	4.466%	4.773%
10.0	1648.336	127.000	173.27	12.259%	17.873%
15.0	1262.967	172.697	345.966	16.670%	35.687%
20.0	907.038	178.839	524.805	17.262%	54.134%
25.0	588.614	156.866	681.672	15.142%	70.315%
30.0	401.119	125.252	806.923	12.090%	83.234%
35.0	203.365	89.014	895.938	8.592%	92.416%
40.0	35.824	39.907	935.844	3.852%	96.533%
45.0	11.271	8.720	944.564	.842%	97.432%
50.0	8.634	4.022	948.587	.388%	97.847%
55.0	6.905	3.379	951.965	.326%	98.196%
60.0	5.723	2.919	954.884	.282%	98.497%
65.0	4.999	2.607	957.491	.252%	98.766%
70.0	4.605	2.432	959.923	.235%	99.016%
75.0	4.423	2.360	962.283	.228%	99.260%
80.0	4.416	2.365	964.648	.228%	99.504%
85.0	4.409	2.398	967.045	.231%	99.751%
90.0	4.402	2.412	969.458	.233%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	806.92	77.89%	83.23%
0-40	935.84	90.33%	96.53%
0-60	954.88	92.17%	98.50%
0-90	967.05	93.34%	99.75%
0-120	967.05	93.34%	99.75%
0-180	969.46	93.58%	100.00%
60-90	15.08	1.46%	1.56%
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%
0-28.75	775.57	74.86%	80.00%

ZONAL LUMEN SUMMARY

0-10	173.27
10-20	351.54
20-30	282.12
30-40	128.92
40-50	12.74
50-60	6.30
60-70	5.04
70-80	4.72
80-90	2.40
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:

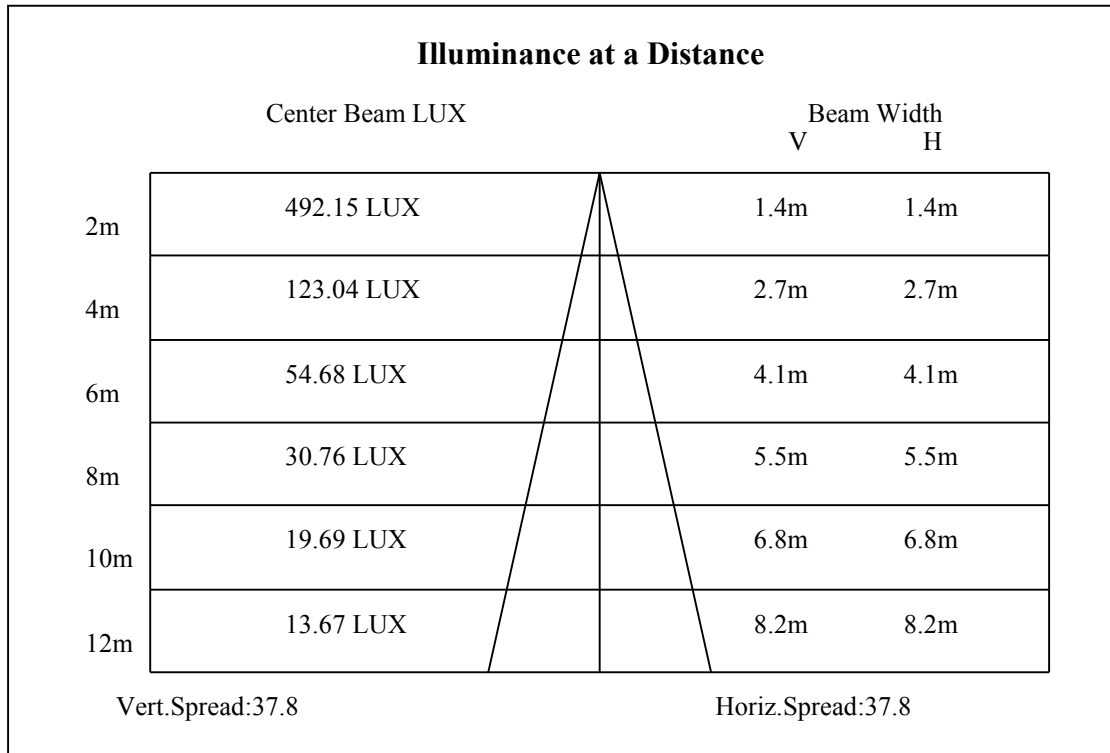
C90/C270:

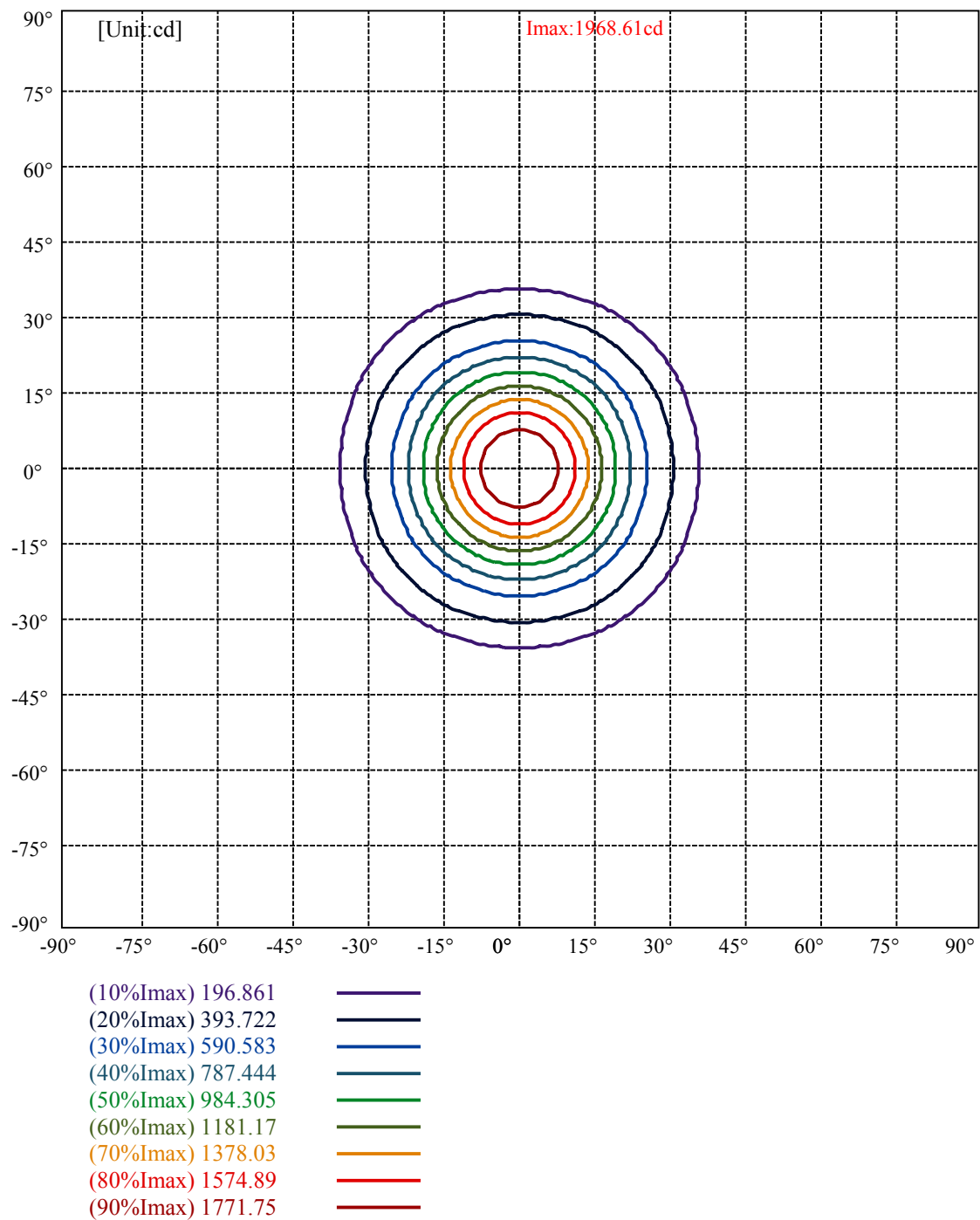
Field angle(10%Imax):C0/180Left:35.2 Right:35.2

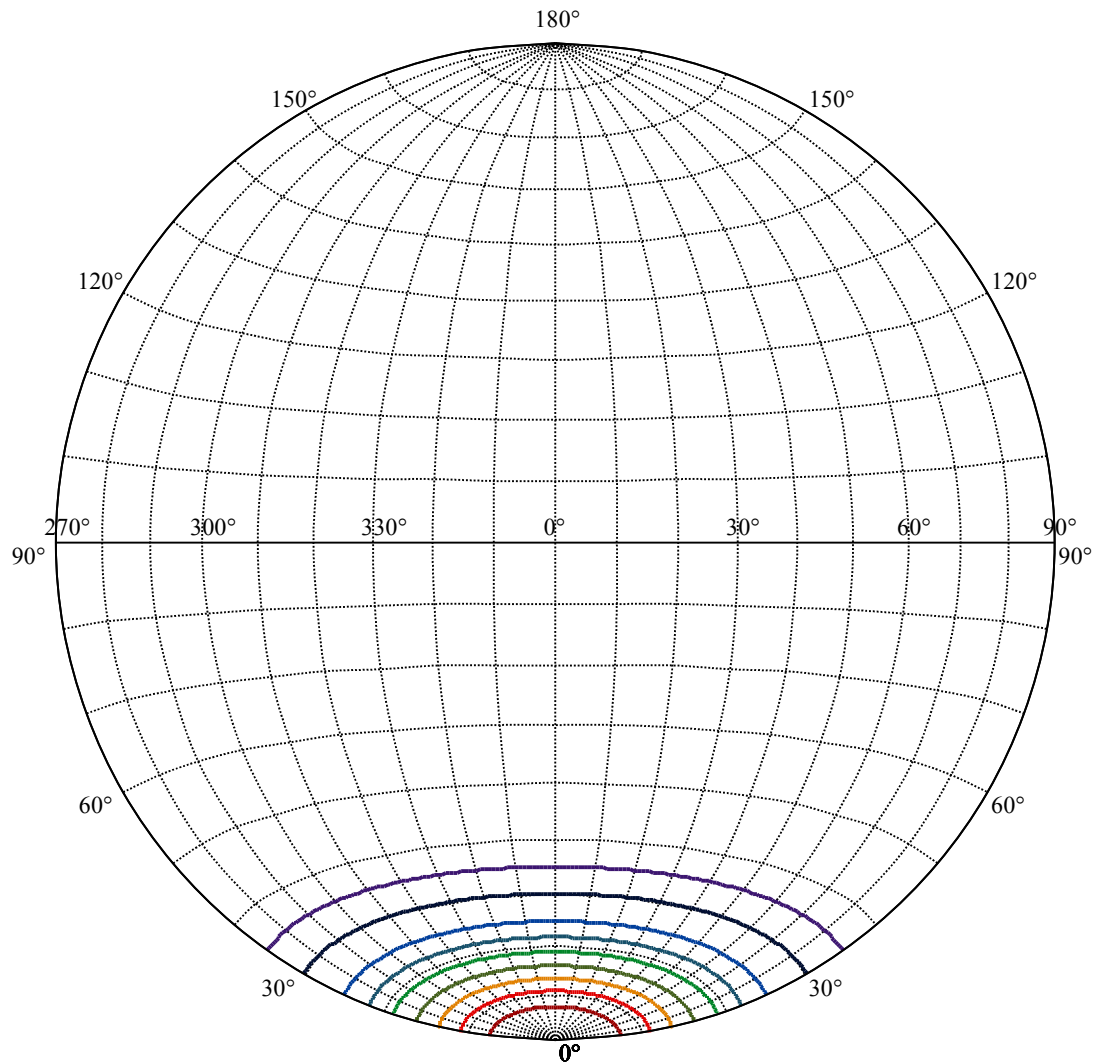
:C90/270Left:35.2 Right:35.2

Beam Angle(50%Imax):C0/180Left:18.9 Right:18.9

:C90/270Left:18.9 Right:18.9







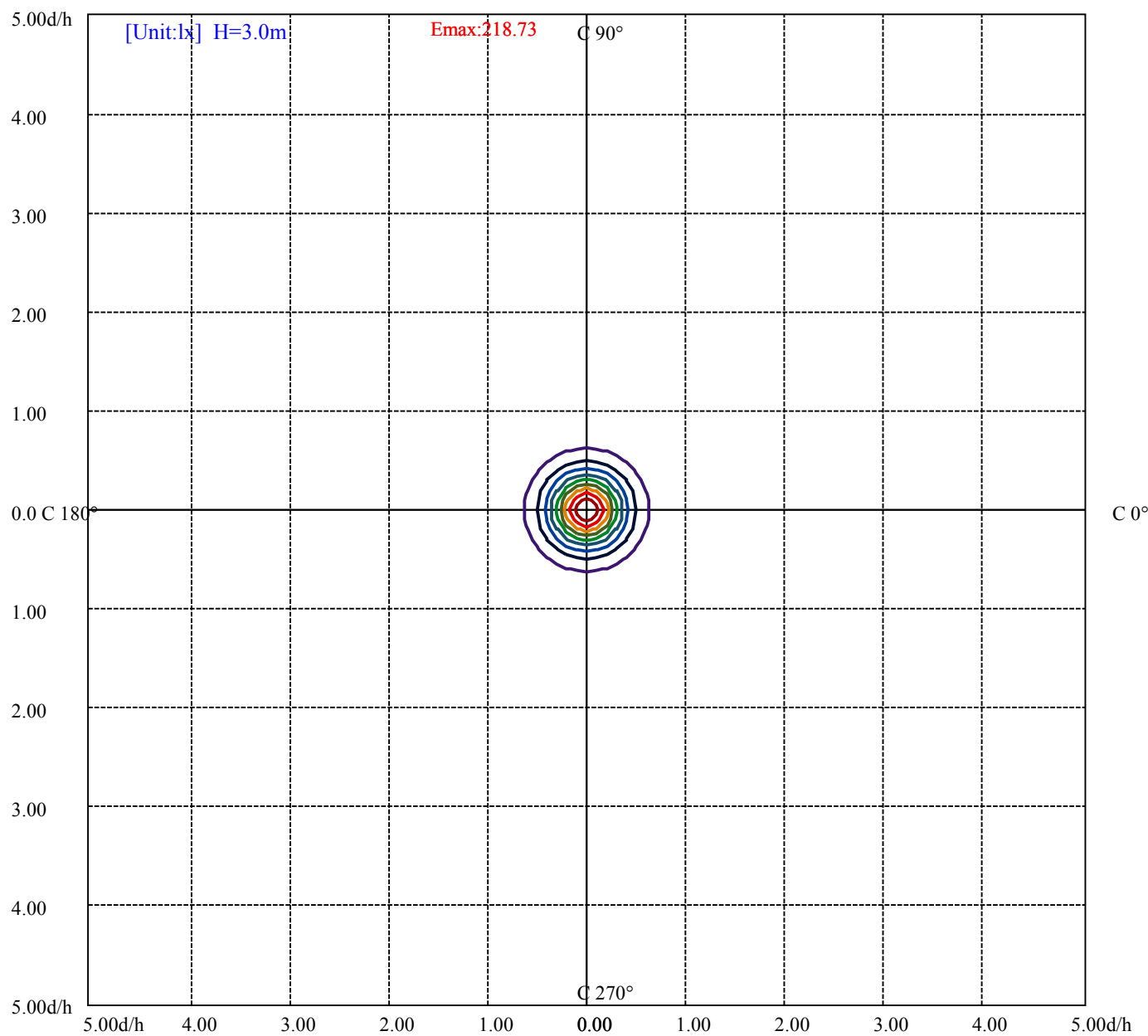
House

[Unit:cd]

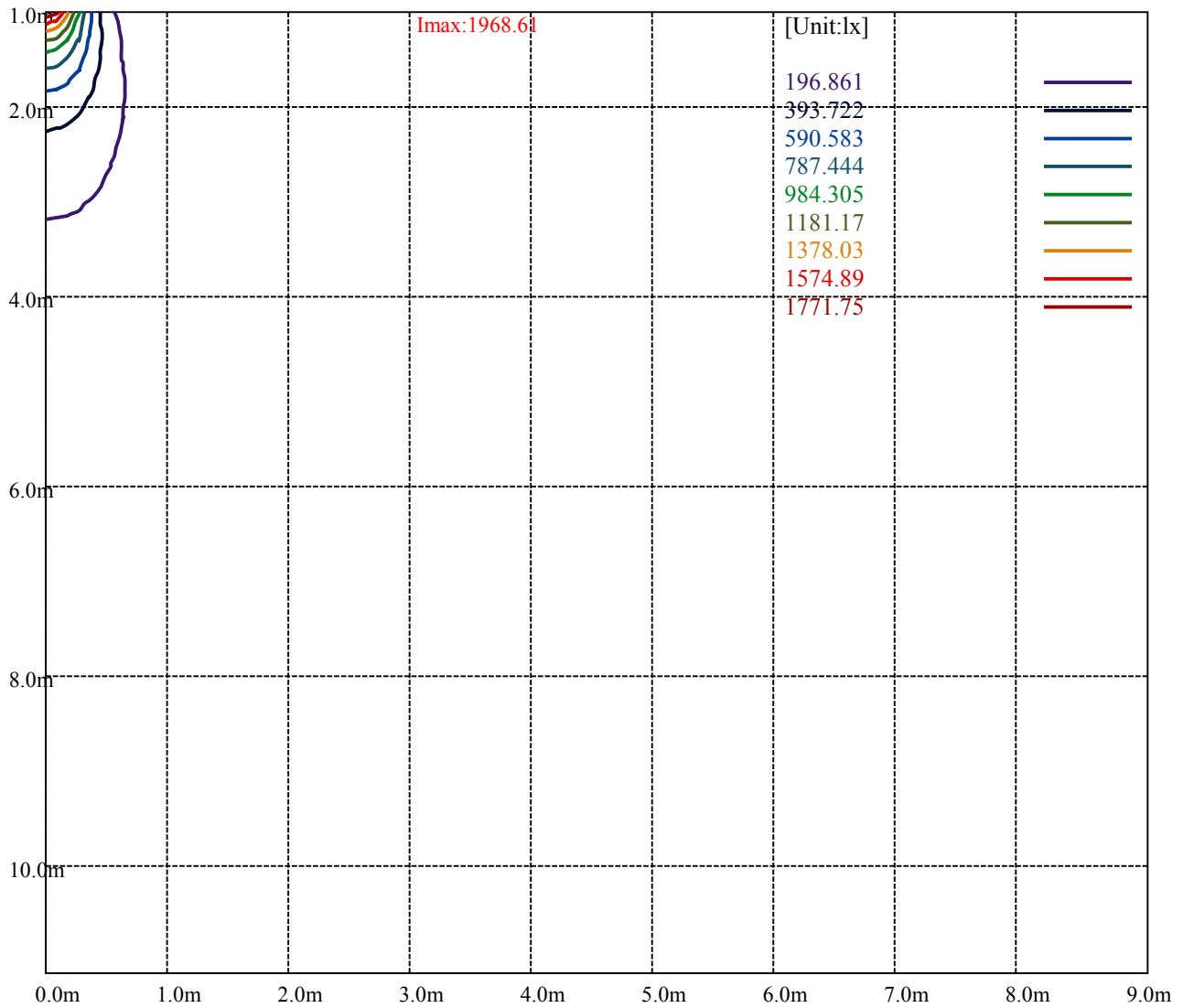
Road

Imax:1968.61

(10%Imax)	196.861	—
(20%Imax)	393.722	—
(30%Imax)	590.583	—
(40%Imax)	787.444	—
(50%Imax)	984.305	—
(60%Imax)	1181.17	—
(70%Imax)	1378.03	—
(80%Imax)	1574.89	—
(90%Imax)	1771.75	—



(10%Emax)	21.87344	—
(20%Emax)	43.74678	—
(30%Emax)	65.62022	—
(40%Emax)	87.49367	—
(50%Emax)	109.3671	—
(60%Emax)	131.24	—
(70%Emax)	153.1144	—
(80%Emax)	174.9878	—
(90%Emax)	196.8611	—



Luminance Table

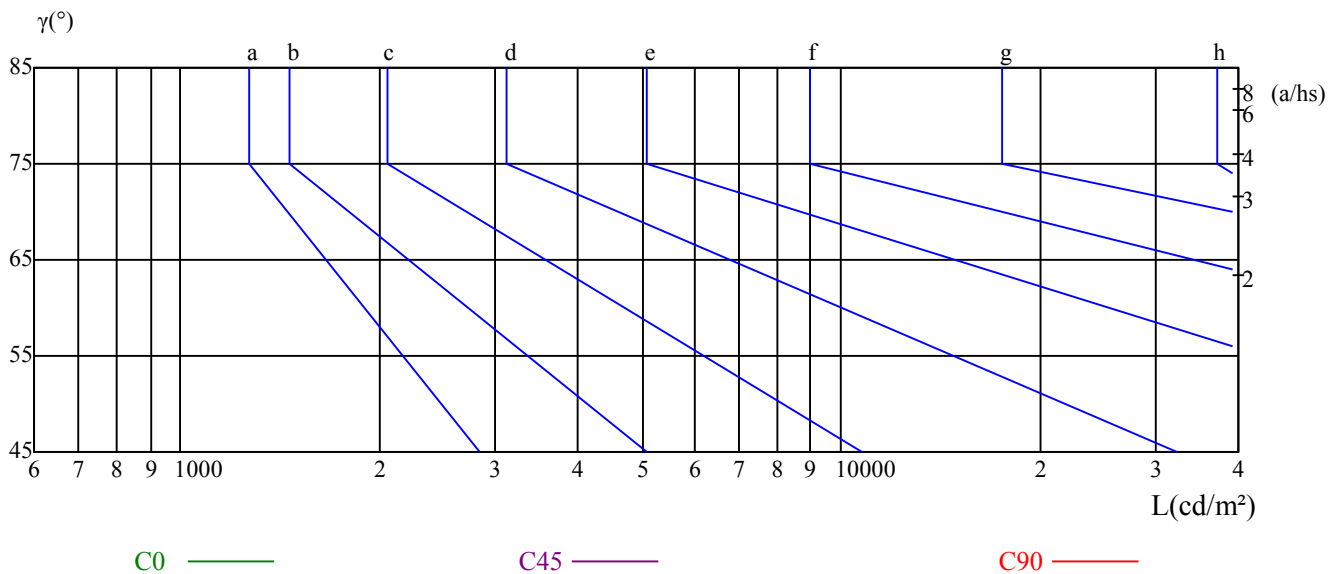
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

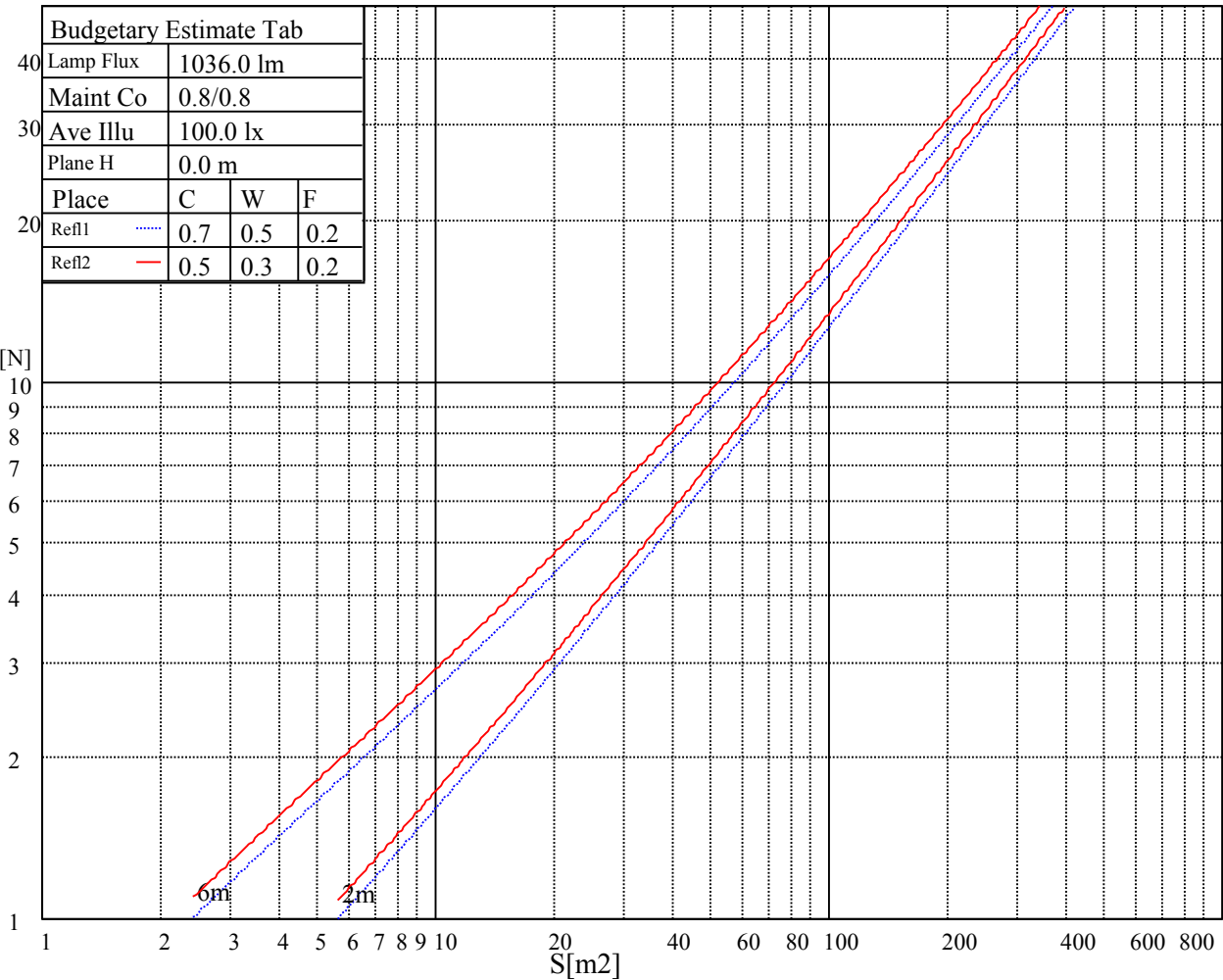
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

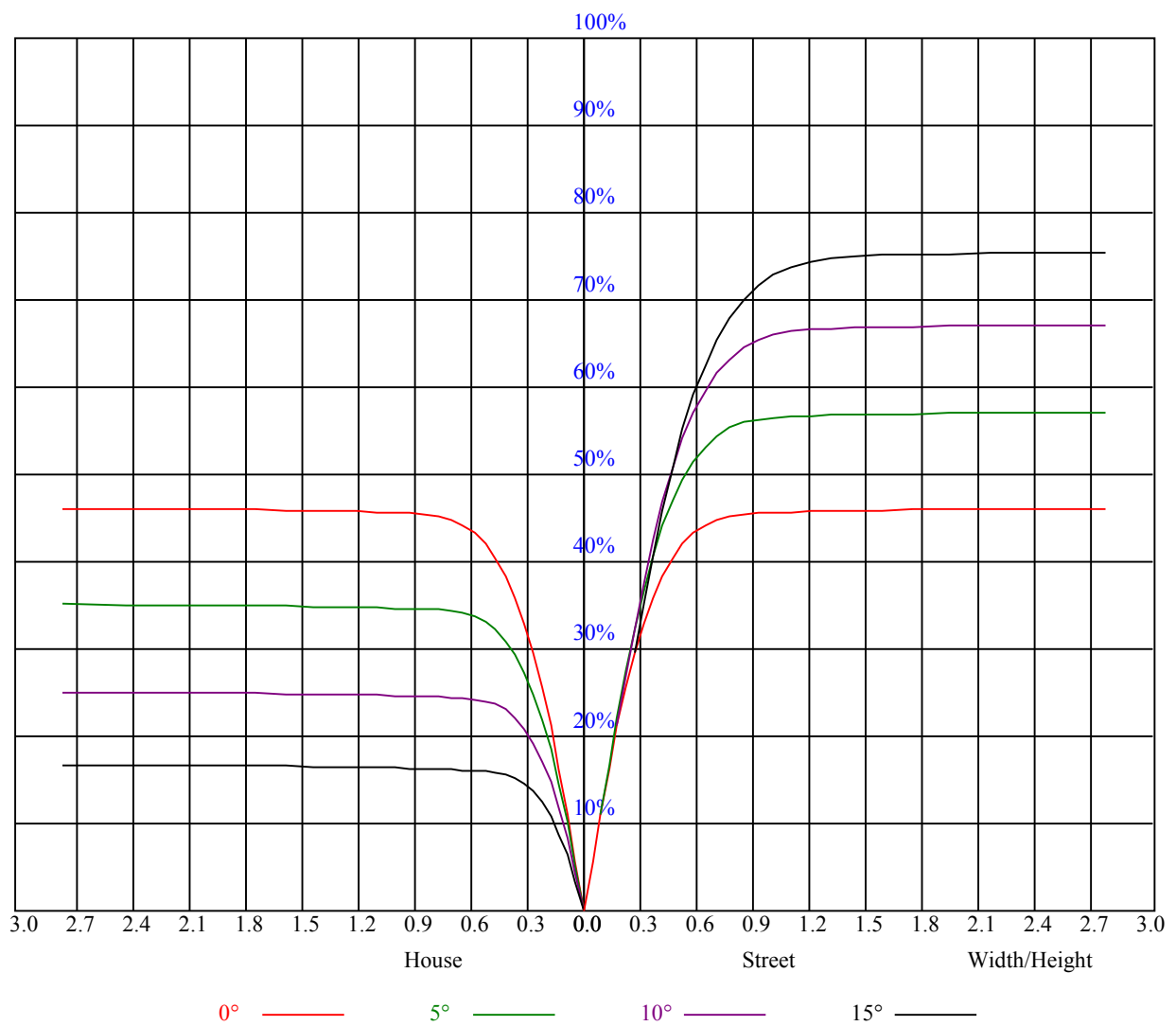
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

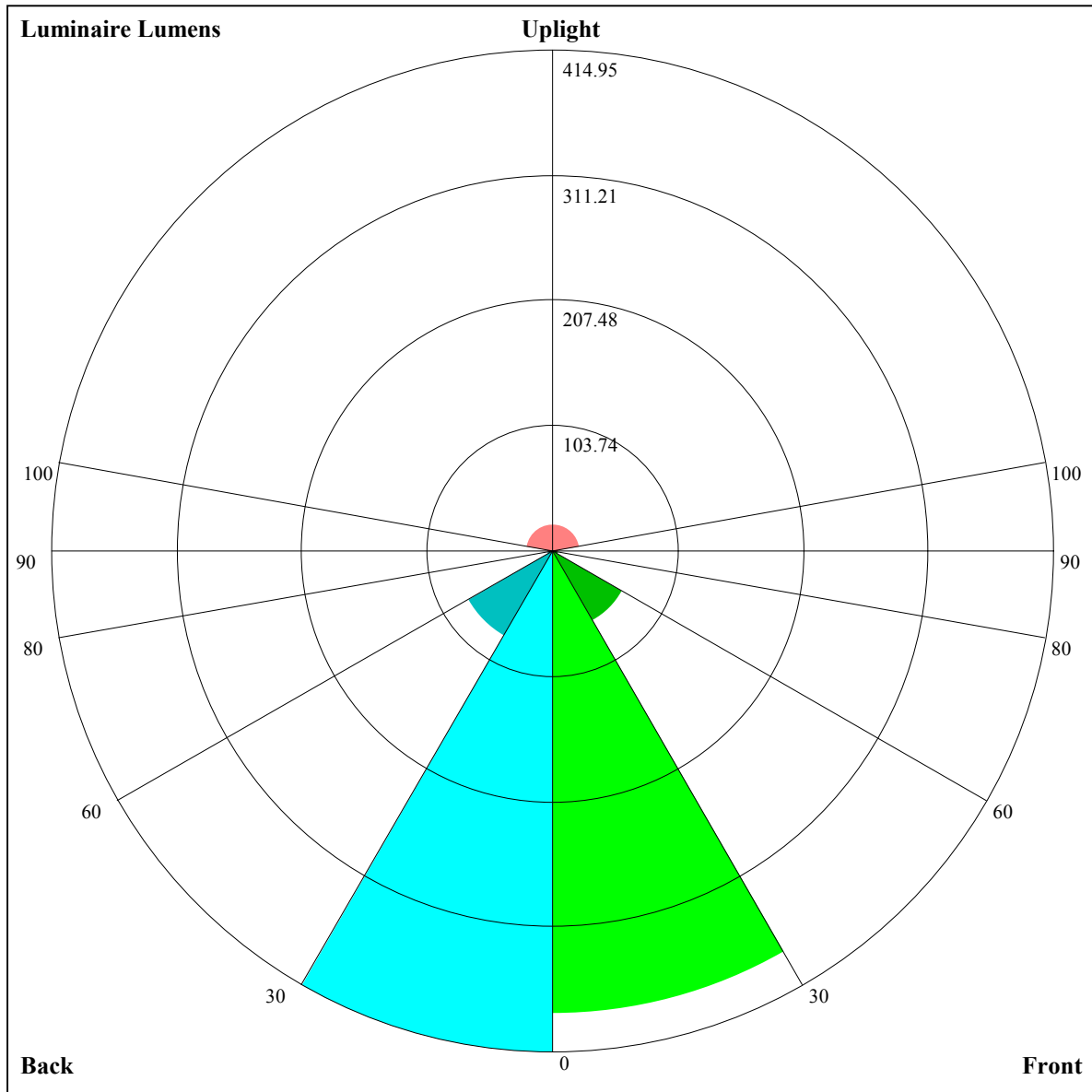
Luminance Limiting Curve





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	1.11	1.11	1.11	1.09	1.09	1.09	1.04	1.04	1.04	1.00	1.00	1.00	0.95	0.95	0.95	0.94
1	1.04	1.02	1.00	1.02	1.00	0.98	0.98	0.97	0.95	0.95	0.94	0.92	0.92	0.91	0.90	0.88
2	0.98	0.94	0.91	0.96	0.93	0.90	0.93	0.91	0.88	0.90	0.88	0.87	0.88	0.86	0.85	0.83
3	0.92	0.88	0.85	0.91	0.87	0.84	0.88	0.85	0.83	0.86	0.84	0.81	0.84	0.82	0.80	0.79
4	0.87	0.82	0.79	0.86	0.82	0.78	0.84	0.80	0.78	0.82	0.79	0.77	0.81	0.78	0.76	0.75
5	0.83	0.78	0.74	0.82	0.77	0.74	0.80	0.76	0.73	0.79	0.75	0.73	0.77	0.74	0.72	0.71
6	0.78	0.74	0.70	0.78	0.73	0.70	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.68	0.67
7	0.75	0.70	0.66	0.74	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.65	0.71	0.68	0.65	0.64
8	0.71	0.66	0.63	0.71	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.62	0.68	0.65	0.62	0.61
9	0.68	0.63	0.60	0.68	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.59	0.65	0.62	0.59	0.58
10	0.65	0.60	0.57	0.65	0.60	0.57	0.64	0.60	0.57	0.63	0.60	0.57	0.63	0.59	0.57	0.56





Luminaire Lumens:

FL=383.71,FM=66.22,FH=4.85,FVH=2.41

BL=414.95,BM=81.74,BH=4.92,BVH=2.41

UL=4.8,UH=22.85

BUG Rating:B1-U2-G0

NATA 2-1682-M

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	1967.63	1859.06	1565.44	1222.31	828.56	545.06	376.31	146.70	20.48		
45.0	1968.19	1897.88	1617.19	1250.44	869.06	568.13	387.00	171.96	25.26		
90.0	1970.44	1893.94	1630.69	1116.96	881.61	572.91	384.81	176.51	27.96		
135.0	1968.19	1941.19	1753.31	1405.13	1037.81	677.25	462.94	294.19	66.32		
180.0	1967.63	1931.06	1714.50	1360.13	992.19	640.07	439.59	219.77	52.14		
225.0	1968.19	1917.00	1685.81	1334.81	938.14	599.23	414.79	207.06	38.81		
270.0	1970.44	1918.13	1685.81	1308.94	928.69	594.56	411.19	286.88	36.45		
315.0	1968.19	1856.25	1533.94	1105.03	780.24	511.71	332.33	123.86	19.18		
360.0	1967.63	1859.06	1565.44	1222.31	828.56	545.06	376.31	146.70	20.48		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	10.24	8.10	6.47	5.46	4.84	4.50	4.39	4.39	4.39		
45.0	10.86	8.55	6.86	5.68	4.95	4.61	4.44	4.44	4.39		
90.0	10.46	8.21	6.69	5.63	5.01	4.61	4.44	4.44	4.44		
135.0	12.71	9.06	7.20	5.96	5.12	4.67	4.44	4.39	4.39		
180.0	11.64	8.83	7.14	5.91	5.01	4.61	4.39	4.39	4.33		
225.0	11.64	8.83	7.03	5.79	5.12	4.67	4.44	4.44	4.44		
270.0	12.04	9.17	7.20	5.85	5.06	4.67	4.44	4.44	4.50		
315.0	10.58	8.33	6.64	5.51	4.89	4.50	4.39	4.39	4.39		
360.0	10.24	8.10	6.47	5.46	4.84	4.50	4.39	4.39	4.39		
C/γ(°)	90.0										
0.0	4.33										
45.0	4.44										
90.0	4.39										
135.0	4.39										
180.0	4.39										
225.0	4.44										
270.0	4.44										
315.0	4.39										
360.0	4.33										