
Nata

Client:

LumCAT: 2-1650-A

Luminaire: 92.70.135.00+92.70.148.00

Report No: NT2018031211

Voltage(V): 34.5000

Test No: nata-0100

Current(A): 0.5000

LampCAT: LUMILEDS 1208

Power (W): 17.2500

Lamp flux(lm): 2262.0

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): 1965.77, Efficiency(%): 86.90% , Luminous Efficacy(lm/W): 113.96

Central intensity(cd): 9463.644, Maximum intensity(cd): 9463.644

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=20.4

[C90/270]Total=20.4

Field angle(10%Imax): [C0/180]Total=44.8

[C90/270]Total=44.8

Maximum s/h(1/2): C0_180=0.35 C90_270=0.35

Maximum s/h(1/4): C0_180=0.36 C90_270=0.36

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 89.32%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 95.601%

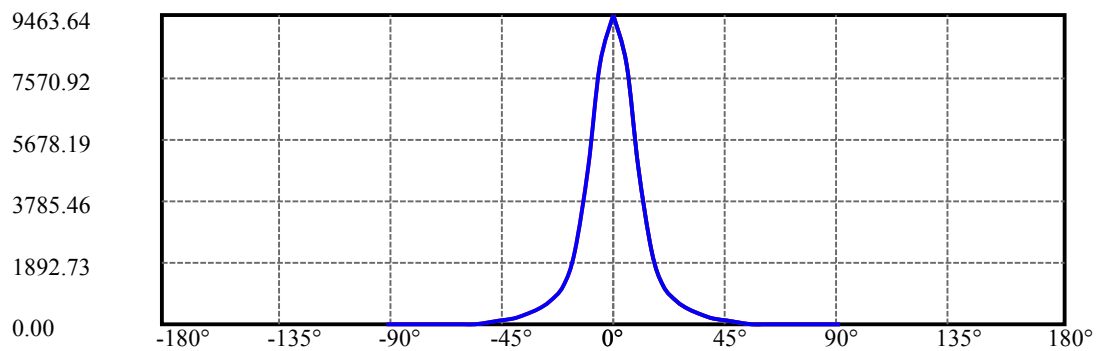
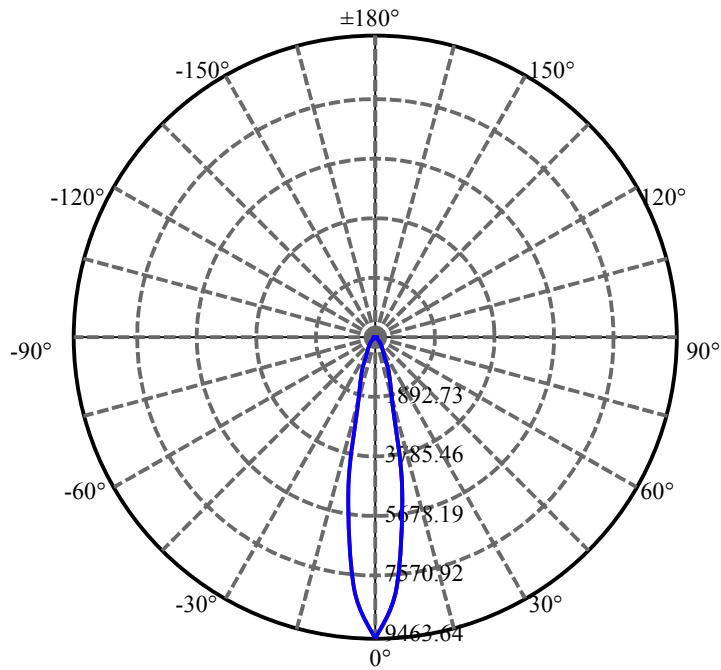
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9463.645	56.594	56.594	2.502%	2.879%
5.0	7923.992	378.555	435.15	16.735%	22.136%
10.0	4813.512	458.165	893.315	20.255%	45.444%
15.0	2209.964	313.524	1206.839	13.860%	61.393%
20.0	1148.002	215.220	1422.059	9.515%	72.341%
25.0	727.419	168.509	1590.568	7.450%	80.913%
30.0	459.576	125.956	1716.523	5.568%	87.321%
35.0	281.421	88.478	1805.002	3.912%	91.822%
40.0	165.444	58.292	1863.294	2.577%	94.787%
45.0	91.043	35.287	1898.581	1.560%	96.582%
50.0	45.050	18.916	1917.498	.836%	97.545%
55.0	18.657	8.377	1925.875	.370%	97.971%
60.0	12.071	5.730	1931.605	.253%	98.262%
65.0	11.844	5.884	1937.489	.260%	98.562%
70.0	11.693	6.023	1943.511	.266%	98.868%
75.0	12.388	6.559	1950.07	.290%	99.202%
80.0	13.647	7.367	1957.437	.326%	99.576%
85.0	11.300	6.171	1963.608	.273%	99.890%
90.0	7.873	2.158	1965.765	.095%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1716.52	75.89%	87.32%
0-40	1863.29	82.37%	94.79%
0-60	1931.60	85.39%	98.26%
0-90	1963.61	86.81%	99.89%
0-120	1963.61	86.81%	99.89%
0-180	1965.77	86.90%	100.00%
60-90	37.73	1.67%	1.92%
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	1572.61	69.52%	80.00%

ZONAL LUMEN SUMMARY

0-10	893.31
10-20	528.74
20-30	294.46
30-40	146.77
40-50	54.20
50-60	14.11
60-70	11.91
70-80	13.93
80-90	6.17
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: —————

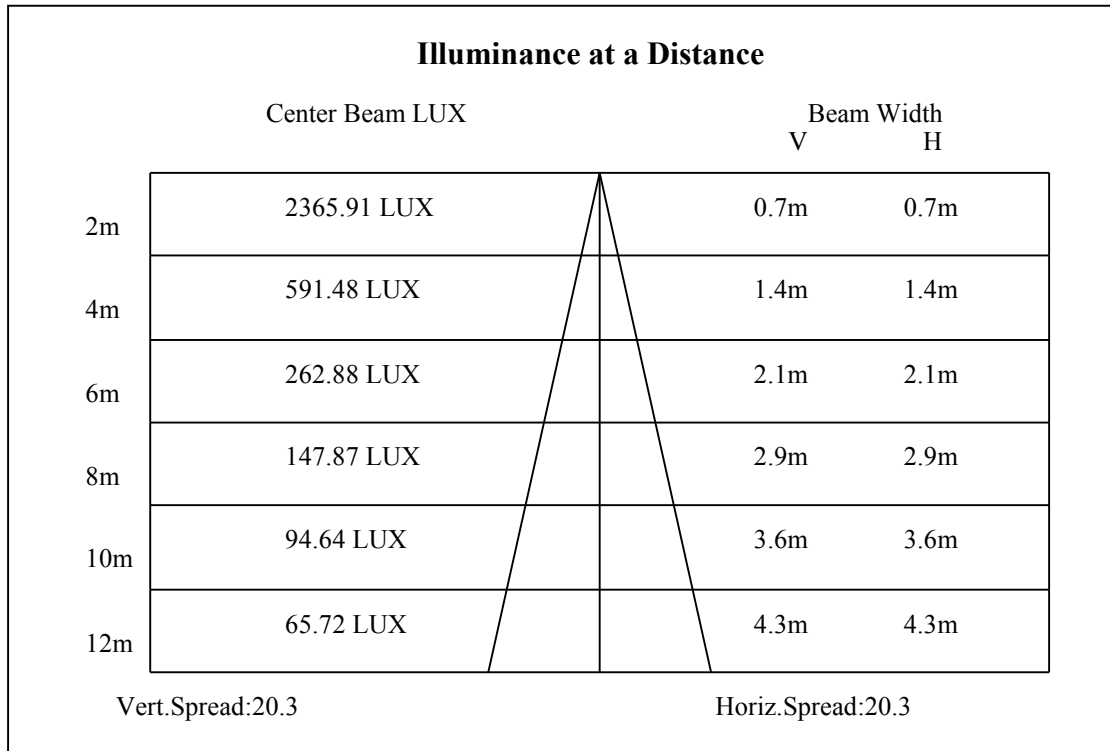
C90/C270: —————

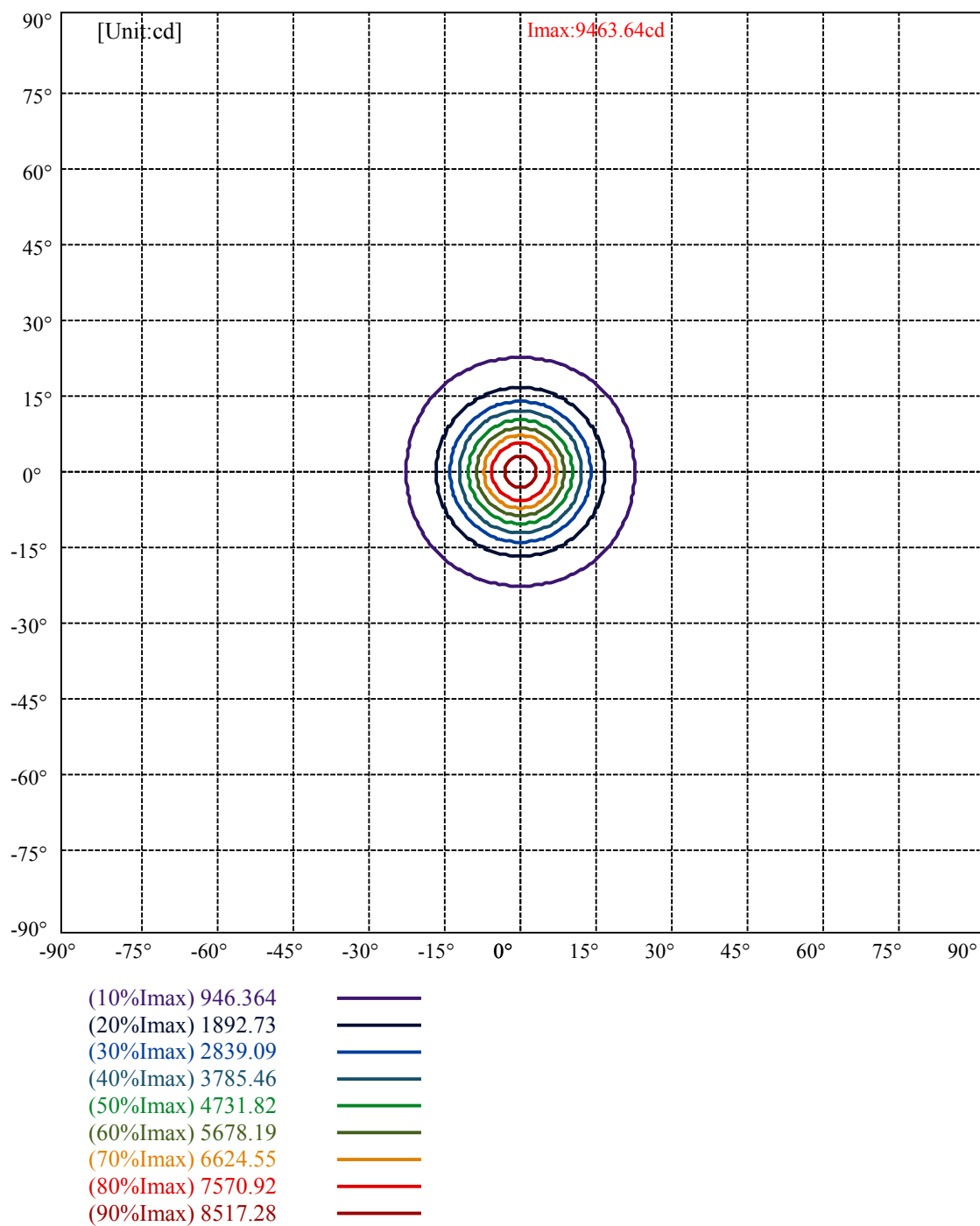
Field angle(10%Imax):C0/180Left:22.4 Right:22.4

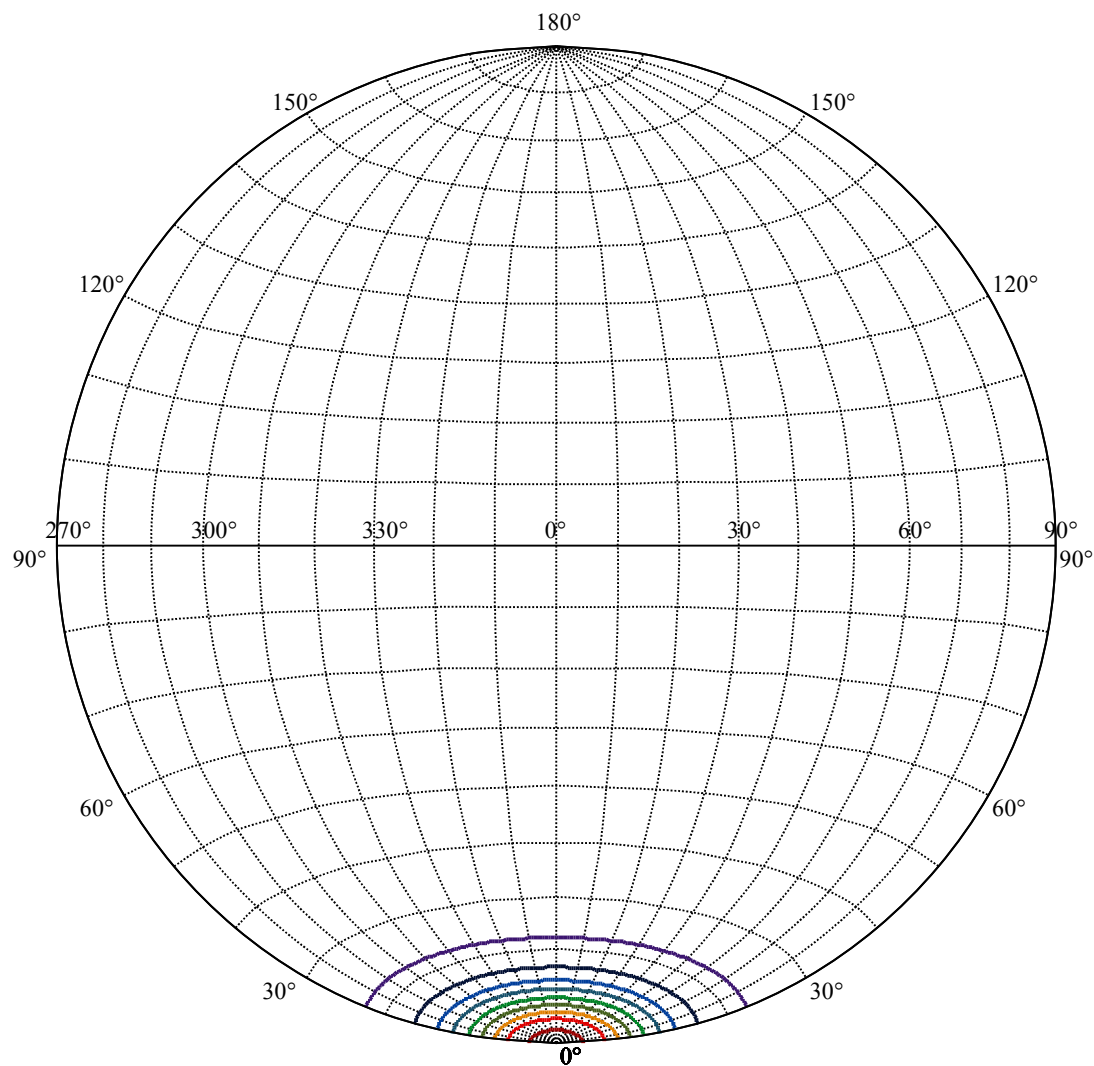
:C90/270Left:22.4 Right:22.4

Beam Angle(50%Imax):C0/180Left:10.2 Right:10.2

:C90/270Left:10.2 Right:10.2





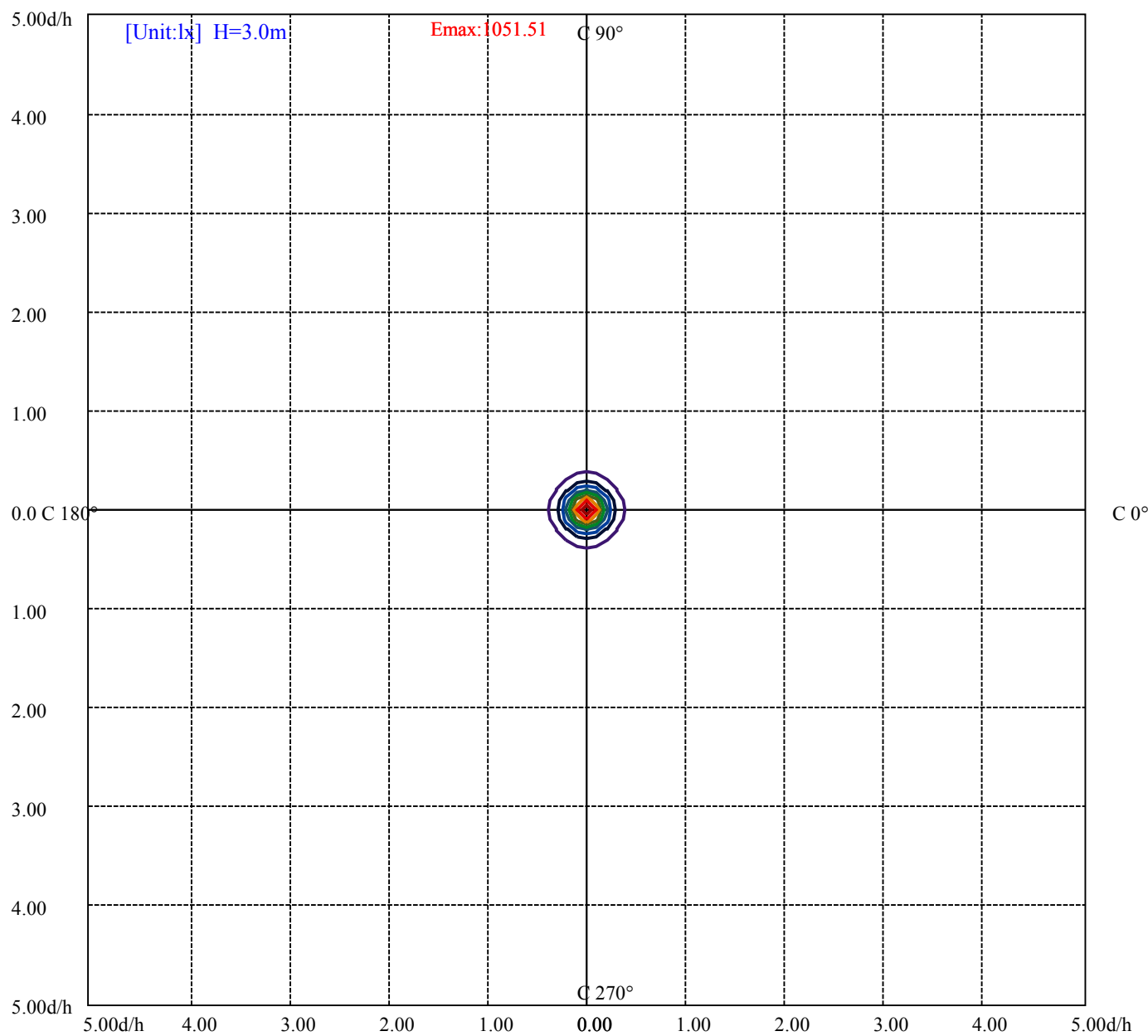


House

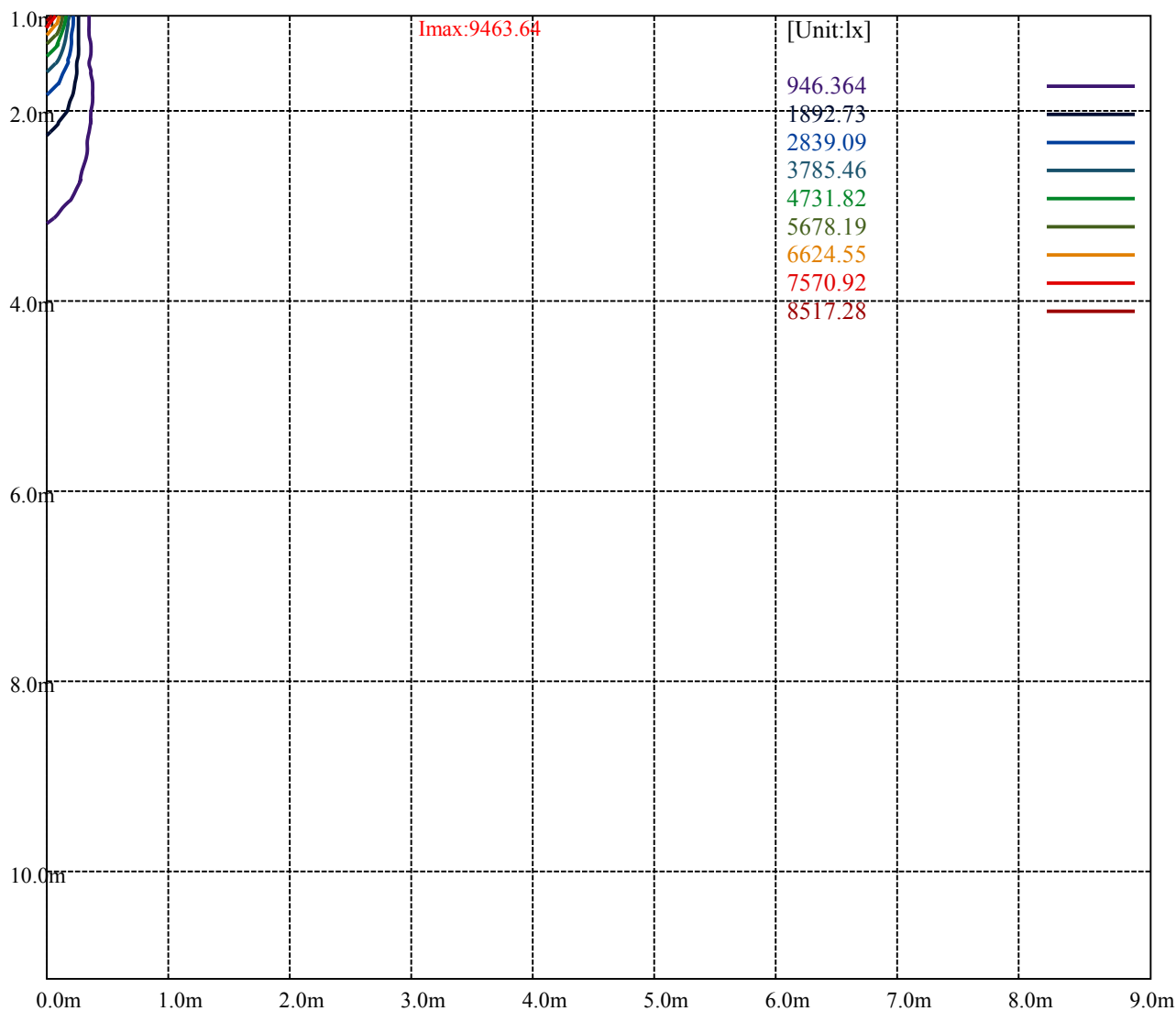
[Unit:cd]

Road

Imax:9463.64	
(10%Imax) 946.364	—
(20%Imax) 1892.73	—
(30%Imax) 2839.09	—
(40%Imax) 3785.46	—
(50%Imax) 4731.82	—
(60%Imax) 5678.19	—
(70%Imax) 6624.55	—
(80%Imax) 7570.92	—
(90%Imax) 8517.28	—



(10%E _{max}) 105.1511	—
(20%E _{max}) 210.3022	—
(30%E _{max}) 315.4533	—
(40%E _{max}) 420.6044	—
(50%E _{max}) 525.7556	—
(60%E _{max}) 630.9067	—
(70%E _{max}) 736.0578	—
(80%E _{max}) 841.2089	—
(90%E _{max}) 946.36	—



Luminance Table

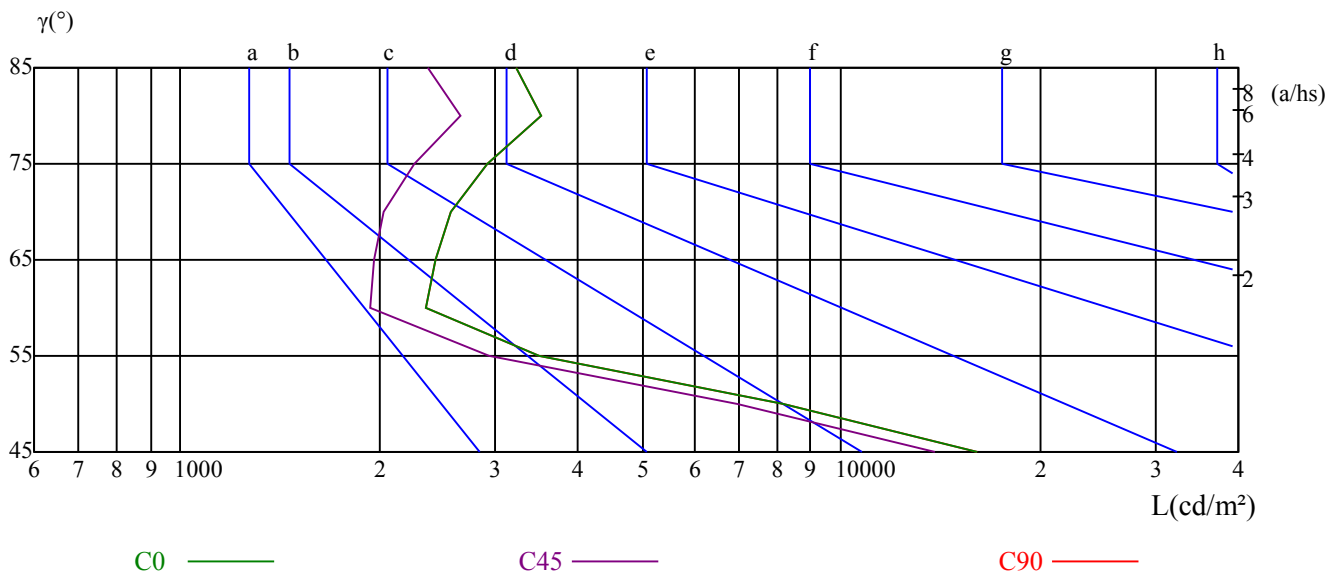
γ	45	50	55	60	65	70	75	80	85
C0	16135	8177	3498	2359	2436	2558	2919	3514	3233
C45	13911	6945	2925	1940	1968	2027	2262	2655	2371
C90	16135	8177	3498	2359	2436	2558	2919	3514	3233

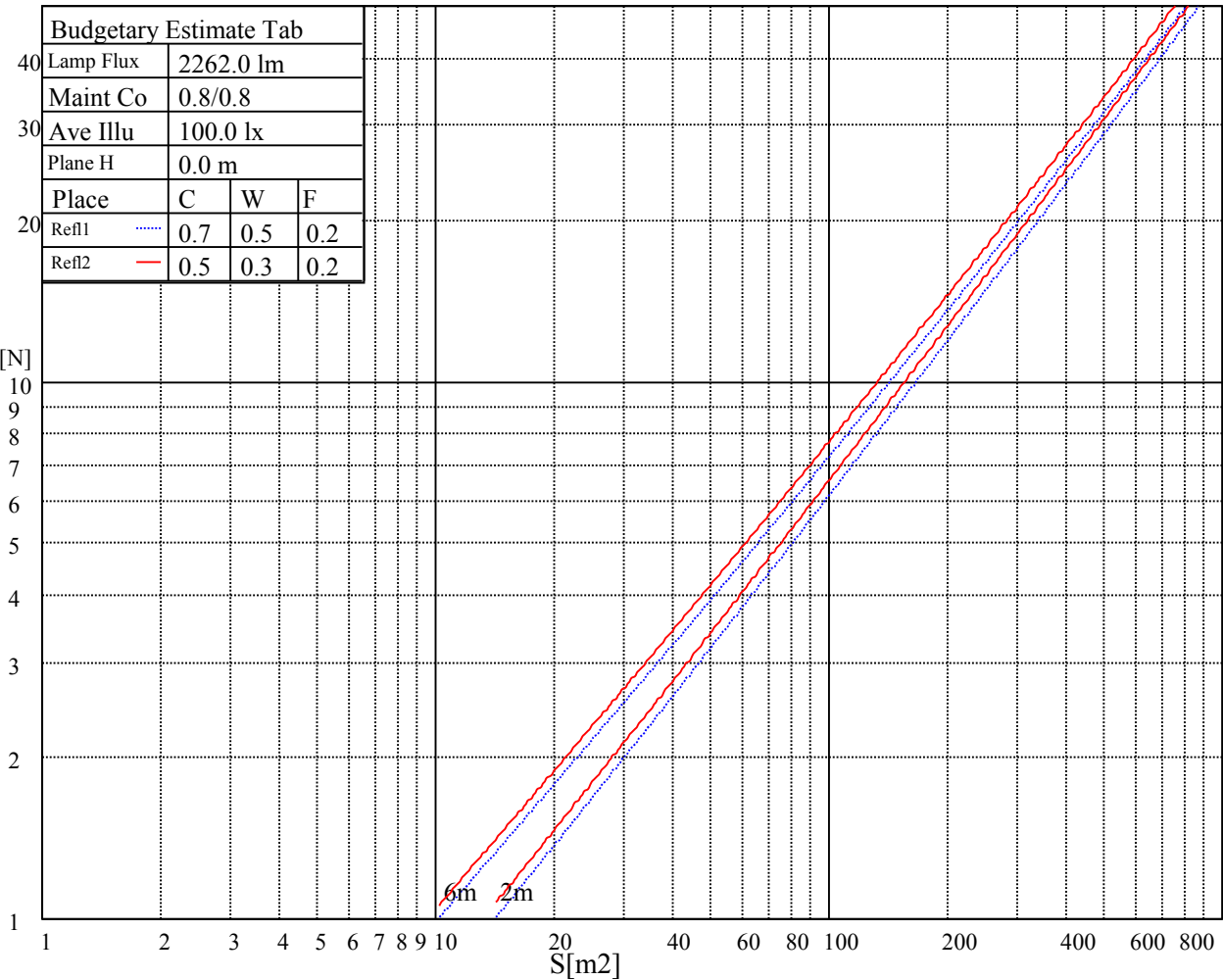
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5719	5719	5719	9768	9768	9768	26461	26461	26461

Glare Table

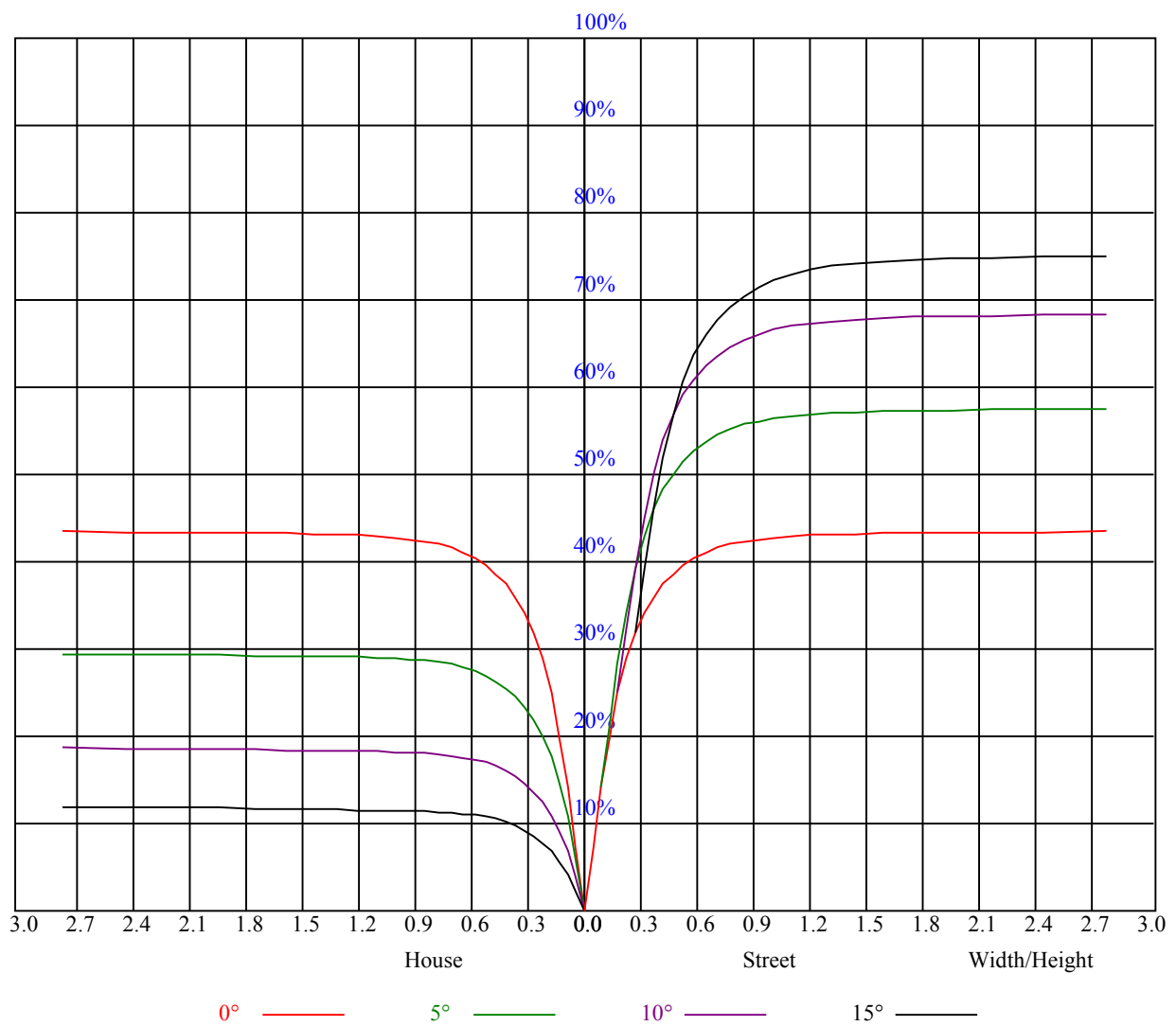
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

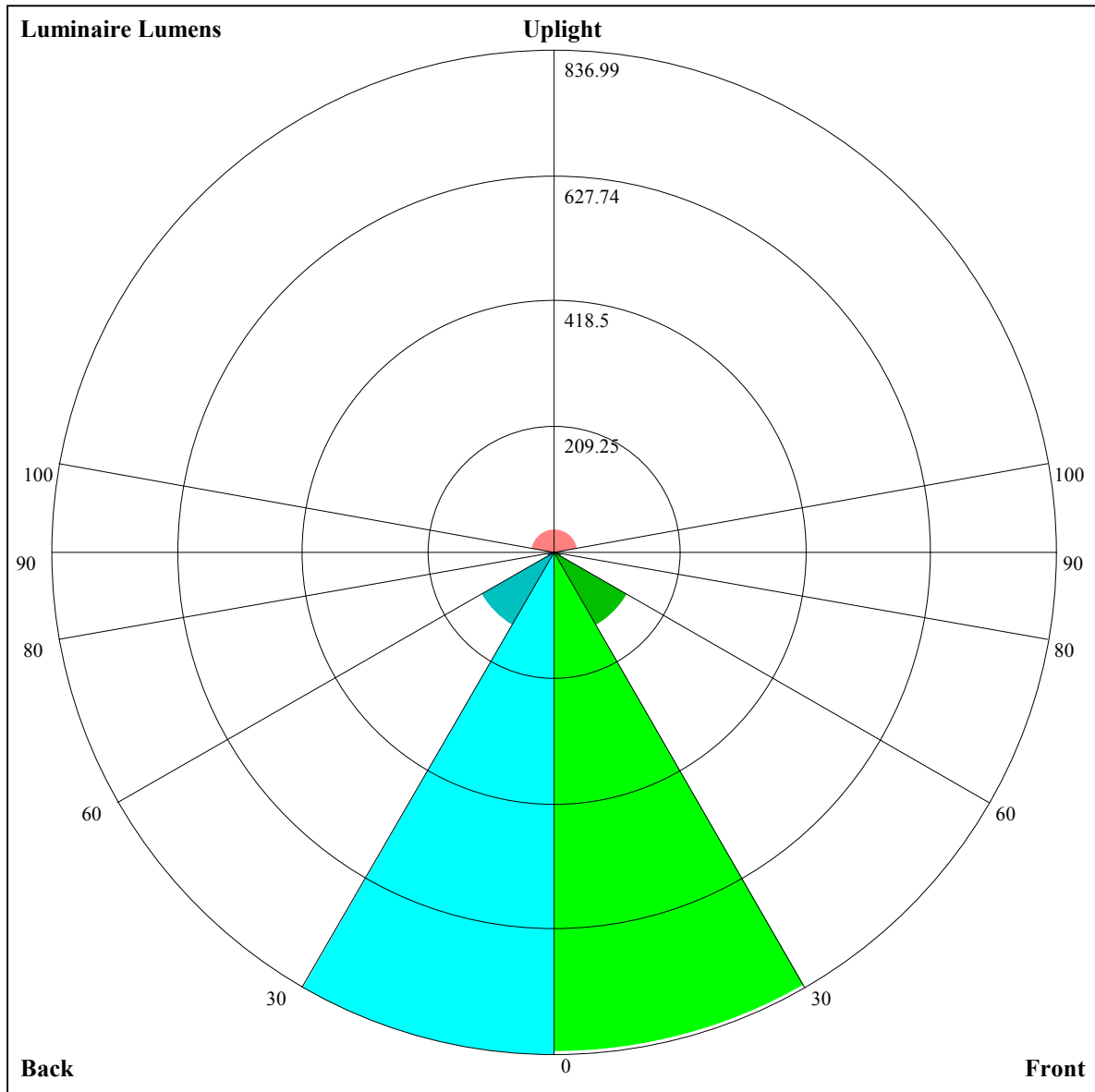
Luminance Limiting Curve





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	1.06	1.06	1.06	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.89
1	0.97	0.94	0.92	0.95	0.93	0.90	0.91	0.89	0.88	0.88	0.86	0.85	0.85	0.84	0.82	0.81
2	0.92	0.88	0.85	0.90	0.87	0.84	0.88	0.85	0.83	0.85	0.83	0.81	0.82	0.81	0.79	0.78
3	0.88	0.84	0.80	0.86	0.83	0.80	0.84	0.81	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.75
4	0.84	0.80	0.76	0.83	0.79	0.76	0.81	0.78	0.75	0.79	0.77	0.74	0.78	0.75	0.73	0.72
5	0.81	0.76	0.73	0.80	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.70
6	0.78	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.68
7	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.66
8	0.73	0.69	0.66	0.72	0.68	0.66	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.64
9	0.71	0.67	0.64	0.70	0.66	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.68	0.65	0.63	0.62
10	0.69	0.65	0.62	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.67	0.64	0.62	0.61





Luminaire Lumens:

FL=831.58,FM=139.74,FH=12.53,FVH=6.04

BL=836.99,BM=139.05,BH=12.45,BVH=5.99

UL=8.59,UH=40.88

BUG Rating:B2-U2-G0

Nata 2-1650-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	9499.43	8157.16	5148.32	2424.68	1262.44	748.77	498.26	294.00	170.67		
45.0	9525.86	7371.50	4185.39	1937.43	1100.03	670.59	421.73	278.59	151.96		
90.0	9319.95	6992.71	3448.73	1716.66	969.05	610.25	392.17	231.40	134.94		
135.0	9509.34	7935.83	4655.02	2135.64	1169.40	715.18	445.41	280.79	160.27		
180.0	9499.43	7809.20	4436.44	1966.61	1083.40	703.13	426.69	249.08	155.92		
225.0	9525.86	8358.66	5530.97	2478.09	1077.62	768.42	497.93	301.32	181.30		
270.0	9319.95	8731.95	6117.32	2889.91	1438.07	872.64	546.16	330.89	202.94		
315.0	9509.34	8034.93	4985.91	2130.68	1084.01	730.38	448.27	285.30	165.55		
360.0	9499.43	8157.16	5148.32	2424.68	1262.44	748.77	498.26	294.00	170.67		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	98.72	49.44	20.04	12.00	11.84	11.62	11.18	11.12	11.29		
45.0	84.18	40.69	15.53	12.06	11.84	11.67	15.75	19.16	11.45		
90.0	71.08	32.81	13.54	12.00	11.84	11.67	11.67	11.18	10.52		
135.0	85.78	43.11	17.07	12.17	11.95	11.84	12.66	13.38	11.62		
180.0	83.96	40.47	16.74	12.11	11.95	11.73	13.16	13.93	12.00		
225.0	100.04	49.66	21.86	12.17	11.89	11.78	11.67	11.29	10.90		
270.0	113.97	57.97	25.66	12.11	11.73	11.62	11.45	17.73	11.29		
315.0	90.62	46.25	18.83	11.95	11.73	11.62	11.56	11.40	11.34		
360.0	98.72	49.44	20.04	12.00	11.84	11.62	11.18	11.12	11.29		
C/γ(°)	90.0										
0.0	7.82										
45.0	7.87										
90.0	7.87										
135.0	7.87										
180.0	7.87										
225.0	7.87										
270.0	7.93										
315.0	7.87										
360.0	7.82										