



NATA LIGHTING CO.,LTD.
www.nata.cn
Email:info@nata.com
Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

Client:

LumCAT: 2-2008-M

Luminaire: 92.70.131.00

Report No: GC2019091909

Test No: NATA07

LampCAT: OSRAM OPTO SOLERIQ S13

Lamp flux(lm): 1233.0

Number of Lamps: 1

Length(mm): 70

Phm Type: C

Voltage(V): 220.4000

Current(A): 0.0720

Power (W): 14.6700

PF: 0.9220

Ballast type: AC

Width(mm): 70

Height(mm): 0

Photometric Results

Lumens(lm): 1081.28, Efficiency(%): 87.69% , Luminous Efficacy(lm/W): 73.71

Central intensity(cd): 2269.286, Maximum intensity(cd): 2269.286

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=36.6

[C90/270]Total=36.6

Field angle(10%Imax): [C0/180]Total=73.0

[C90/270]Total=73.0

Maximum s/h(1/2): C0_180=0.60 C90_270=0.60

Maximum s/h(1/4): C0_180=0.61 C90_270=0.61

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 87.69%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 99.575%

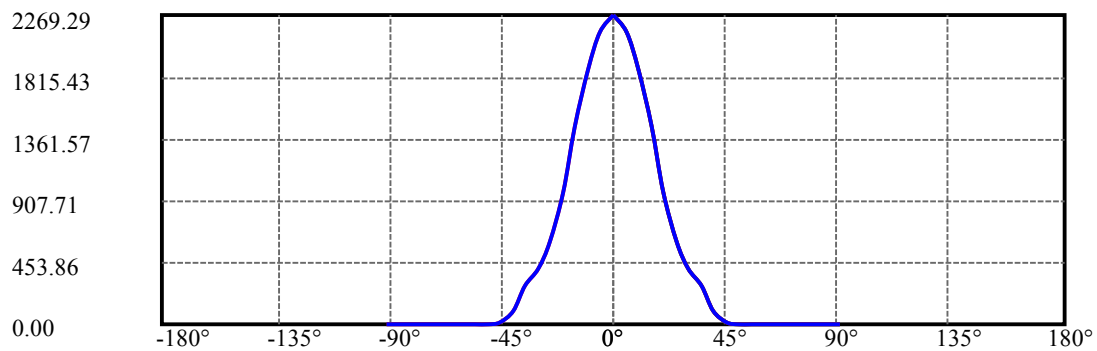
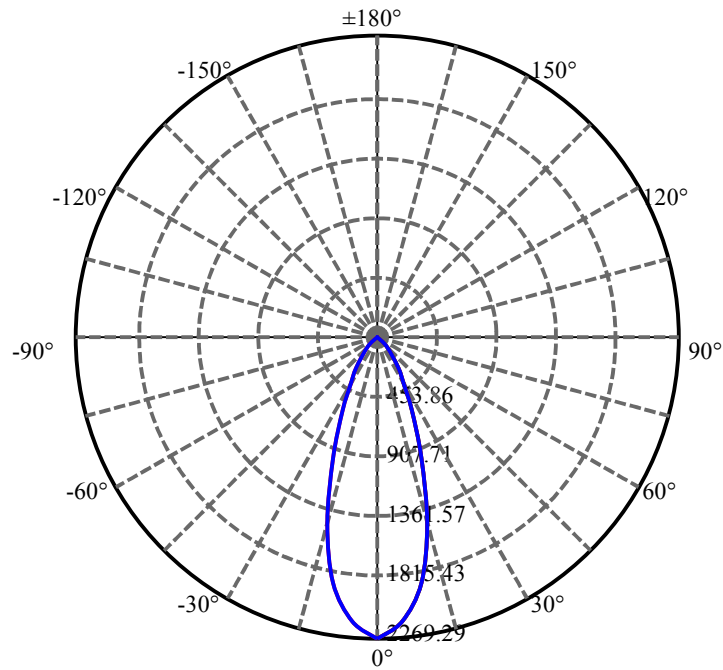
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2269.286	0.000	0	.000%	.000%
5.0	2144.461	52.765	52.765	4.279%	4.880%
10.0	1875.148	143.794	196.559	11.662%	18.178%
15.0	1447.657	197.106	393.666	15.986%	36.407%
20.0	968.594	199.133	592.799	16.150%	54.824%
25.0	599.224	164.435	757.234	13.336%	70.031%
30.0	414.538	128.292	885.526	10.405%	81.896%
35.0	279.615	102.219	987.745	8.290%	91.350%
40.0	103.334	63.892	1051.637	5.182%	97.259%
45.0	7.546	20.530	1072.168	1.665%	99.158%
50.0	3.283	2.188	1074.356	.177%	99.360%
55.0	2.517	1.261	1075.617	.102%	99.477%
60.0	2.077	1.062	1076.679	.086%	99.575%
65.0	1.769	0.935	1077.614	.076%	99.661%
70.0	1.543	0.839	1078.453	.068%	99.739%
75.0	1.369	0.761	1079.214	.062%	99.809%
80.0	1.288	0.711	1079.925	.058%	99.875%
85.0	1.206	0.678	1080.602	.055%	99.938%
90.0	1.259	0.675	1081.277	.055%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	885.53	71.82%	81.90%
0-40	1051.64	85.29%	97.26%
0-60	1076.68	87.32%	99.57%
0-90	1080.60	87.64%	99.94%
0-120	1080.60	87.64%	99.94%
0-180	1081.28	87.69%	100.00%
60-90	4.99	0.40%	0.46%
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%
0-29.20	865.02	70.16%	80.00%

ZONAL LUMEN SUMMARY

0-10	196.56
10-20	396.24
20-30	292.73
30-40	166.11
40-50	22.72
50-60	2.32
60-70	1.77
70-80	1.47
80-90	0.68
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:

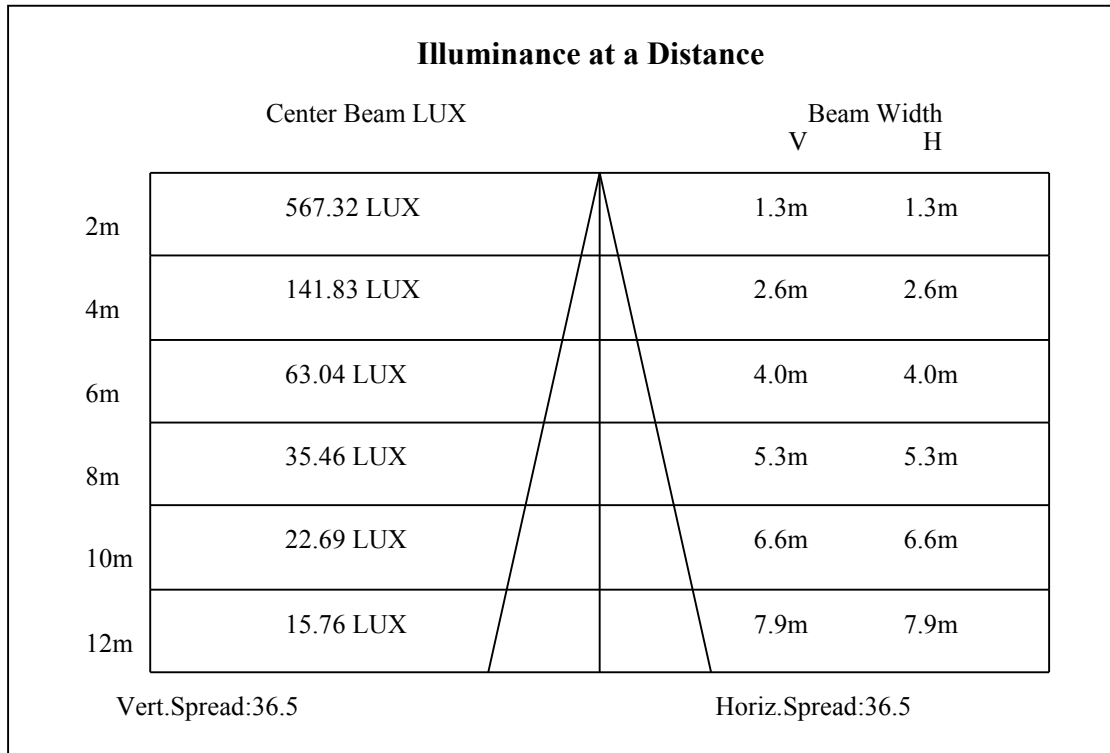
C90/C270:

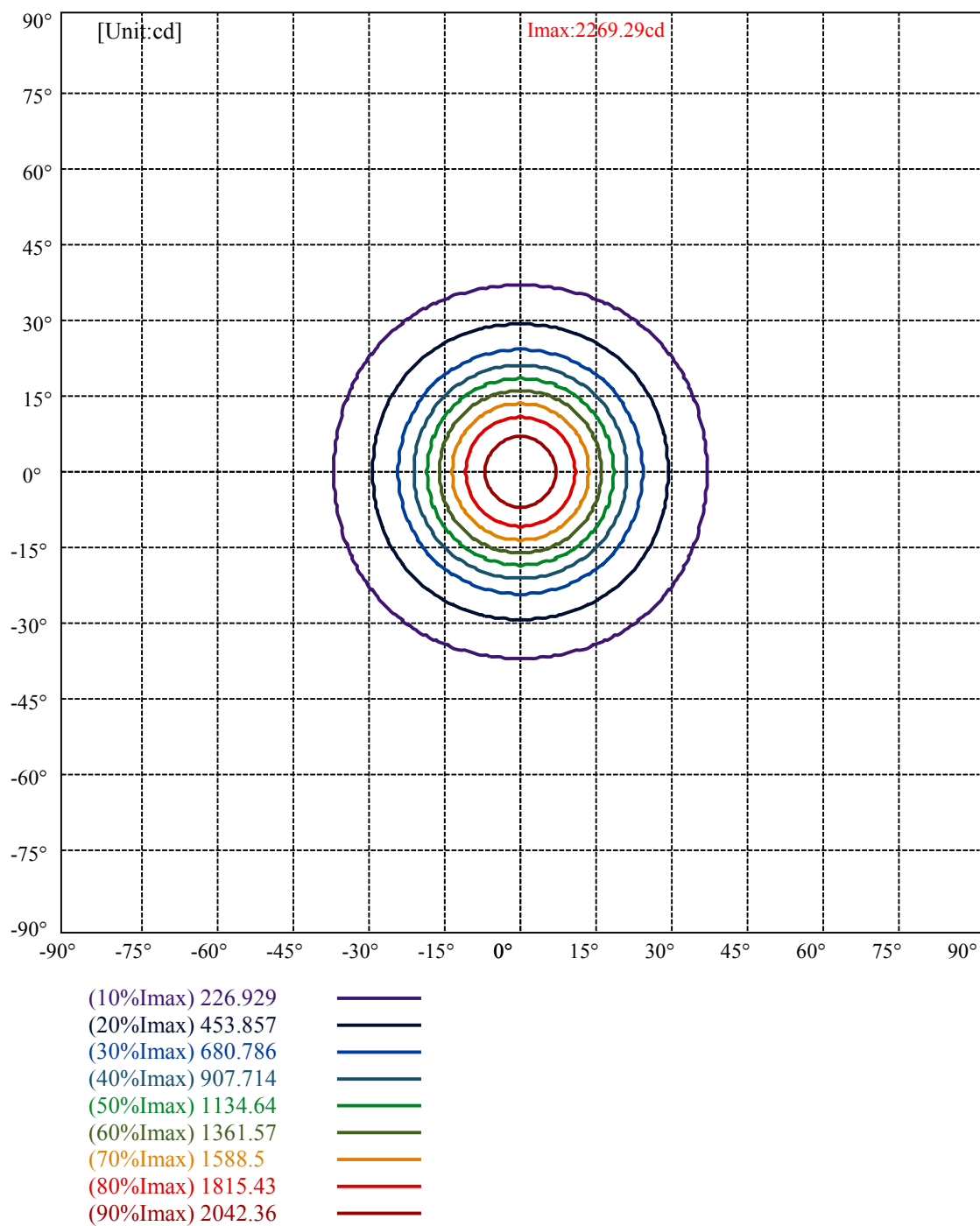
Field angle(10%Imax):C0/180Left:36.5 Right:36.5

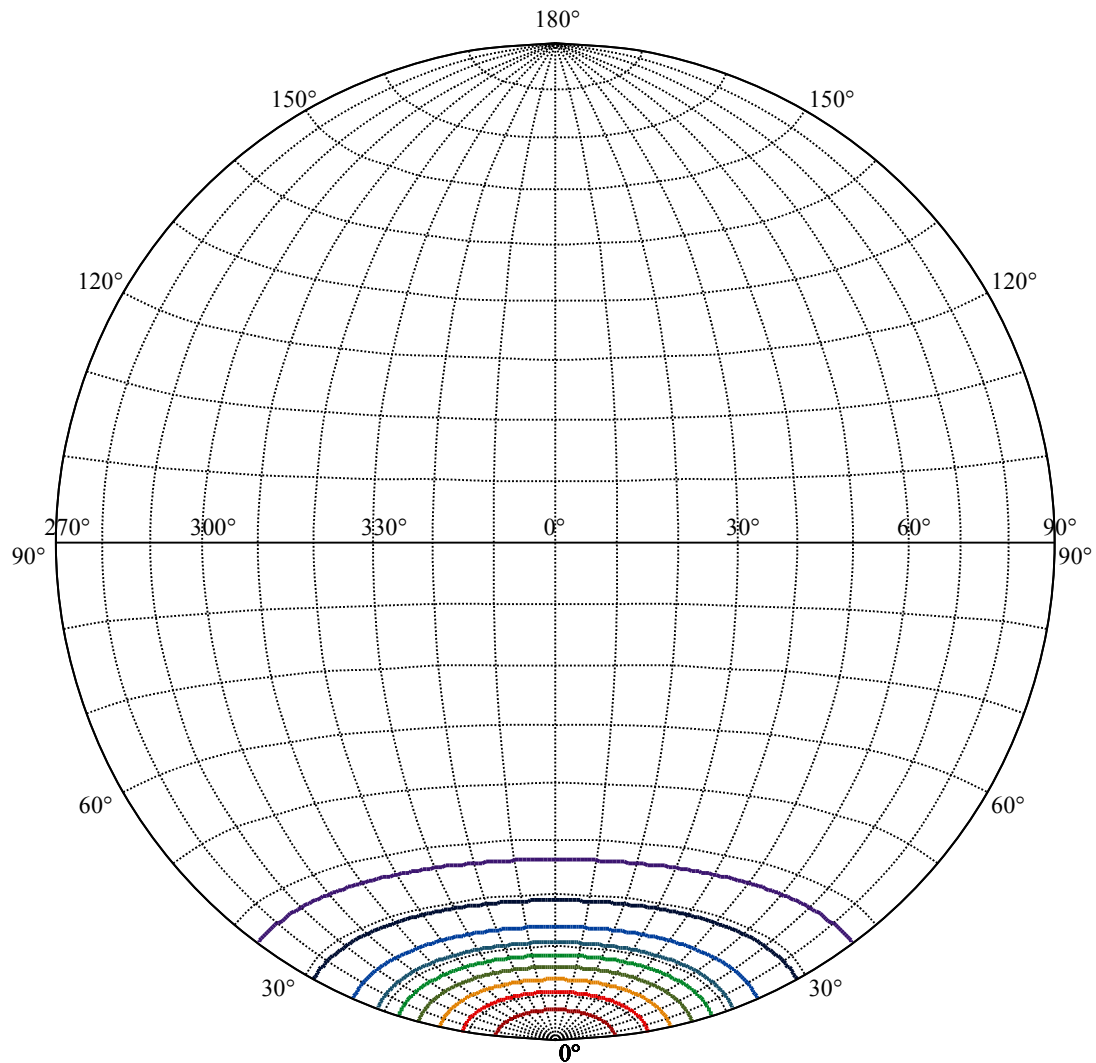
:C90/270Left:36.5 Right:36.5

Beam Angle(50%Imax):C0/180Left:18.3 Right:18.3

:C90/270Left:18.3 Right:18.3







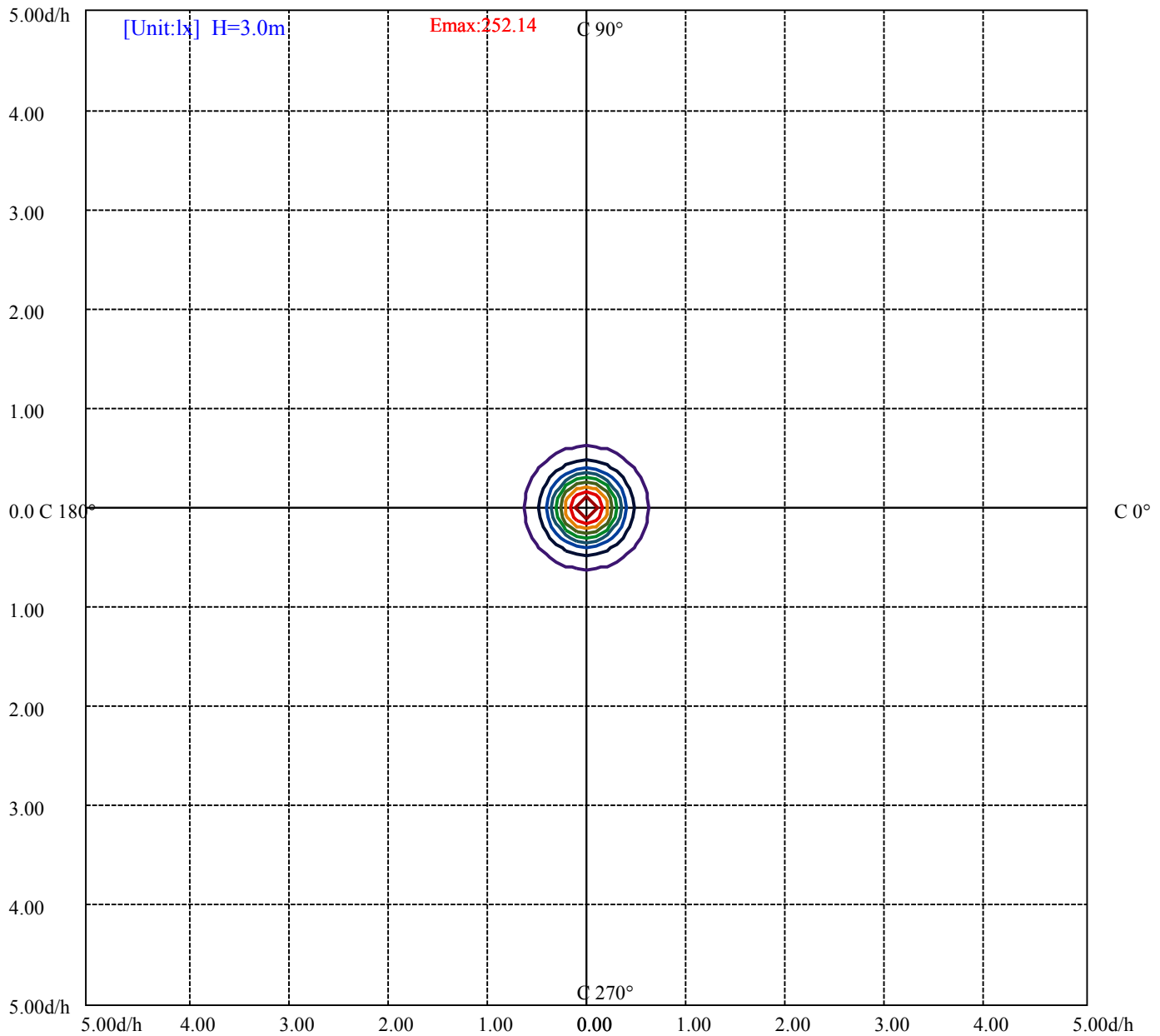
House

[Unit:cd]

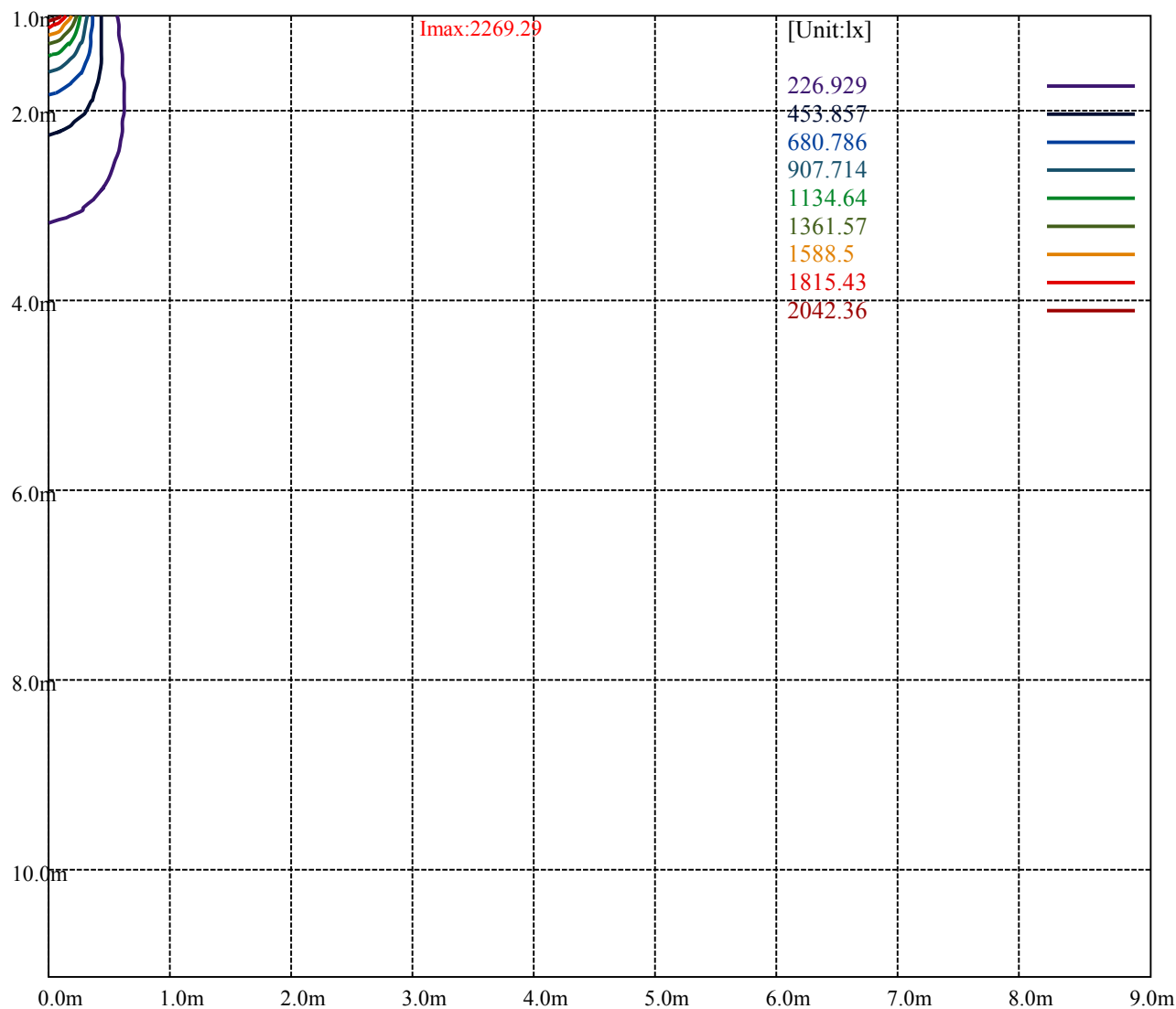
Road

Imax:2269.29

(10%Imax)	226.929	—
(20%Imax)	453.857	—
(30%Imax)	680.786	—
(40%Imax)	907.714	—
(50%Imax)	1134.64	—
(60%Imax)	1361.57	—
(70%Imax)	1588.5	—
(80%Imax)	1815.43	—
(90%Imax)	2042.36	—



(10%Emax) 25.21422	—
(20%Emax) 50.42844	—
(30%Emax) 75.64278	—
(40%Emax) 100.857	—
(50%Emax) 126.0711	—
(60%Emax) 151.2856	—
(70%Emax) 176.5	—
(80%Emax) 201.7144	—
(90%Emax) 226.9278	—



Luminance Table

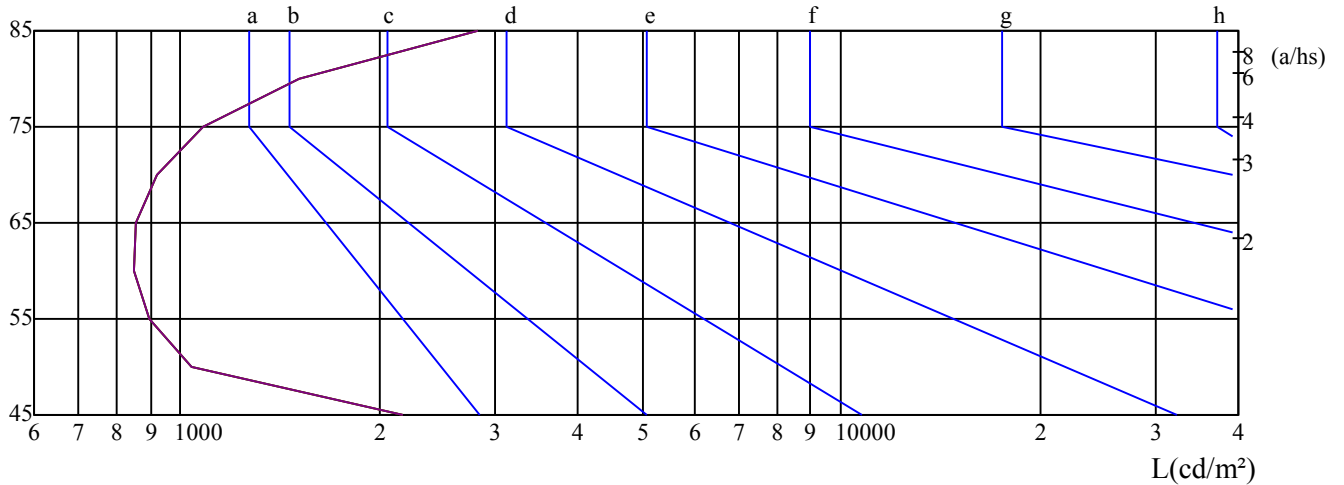
γ	45	50	55	60	65	70	75	80	85
C0	2178	1042	896	848	854	921	1079	1513	2825
C45	2178	1042	896	848	854	921	1079	1513	2825
C90	2178	1042	896	848	854	921	1079	1513	2825

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
854	854	854	1079	1079	1079	2825	2825	2825

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

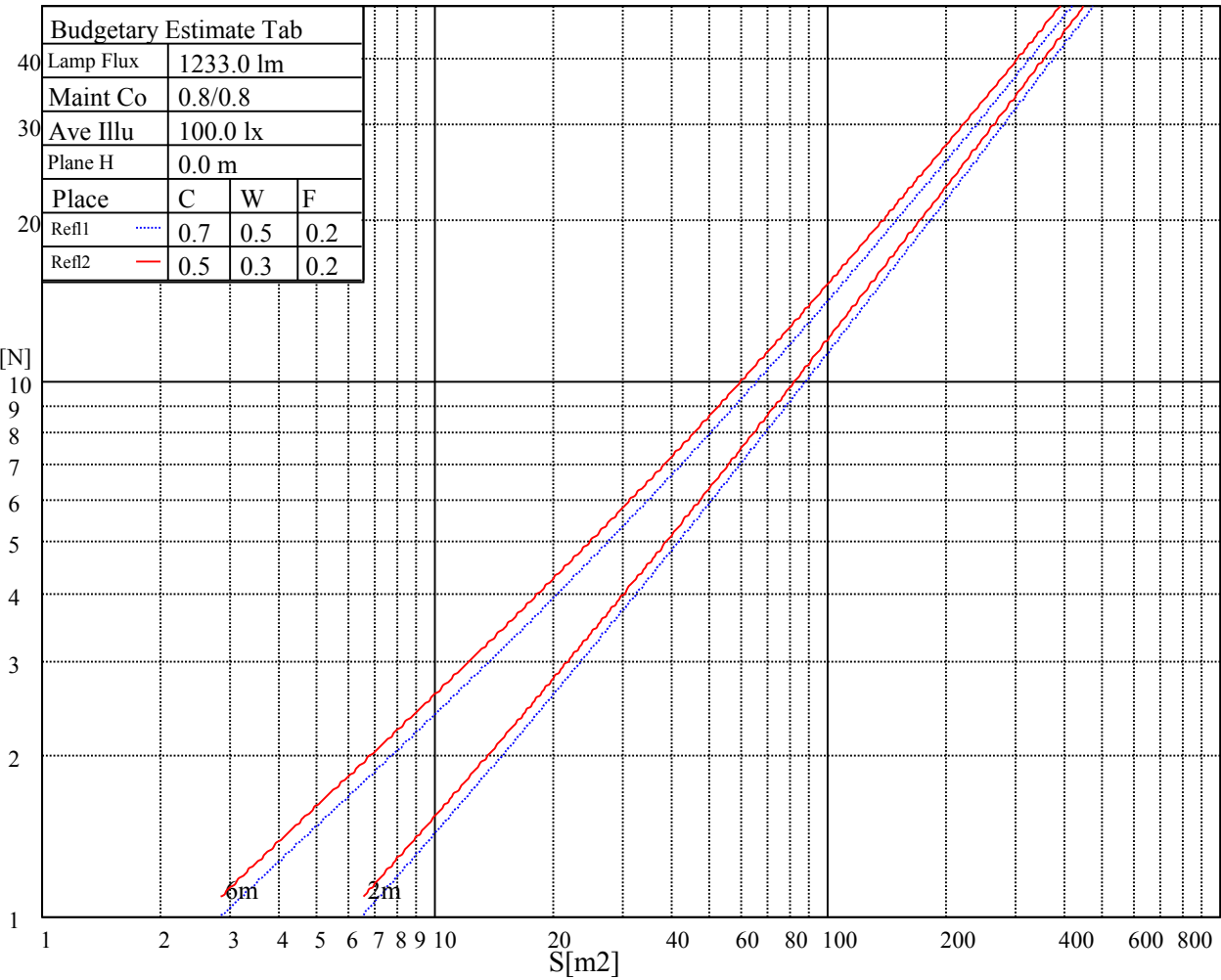
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

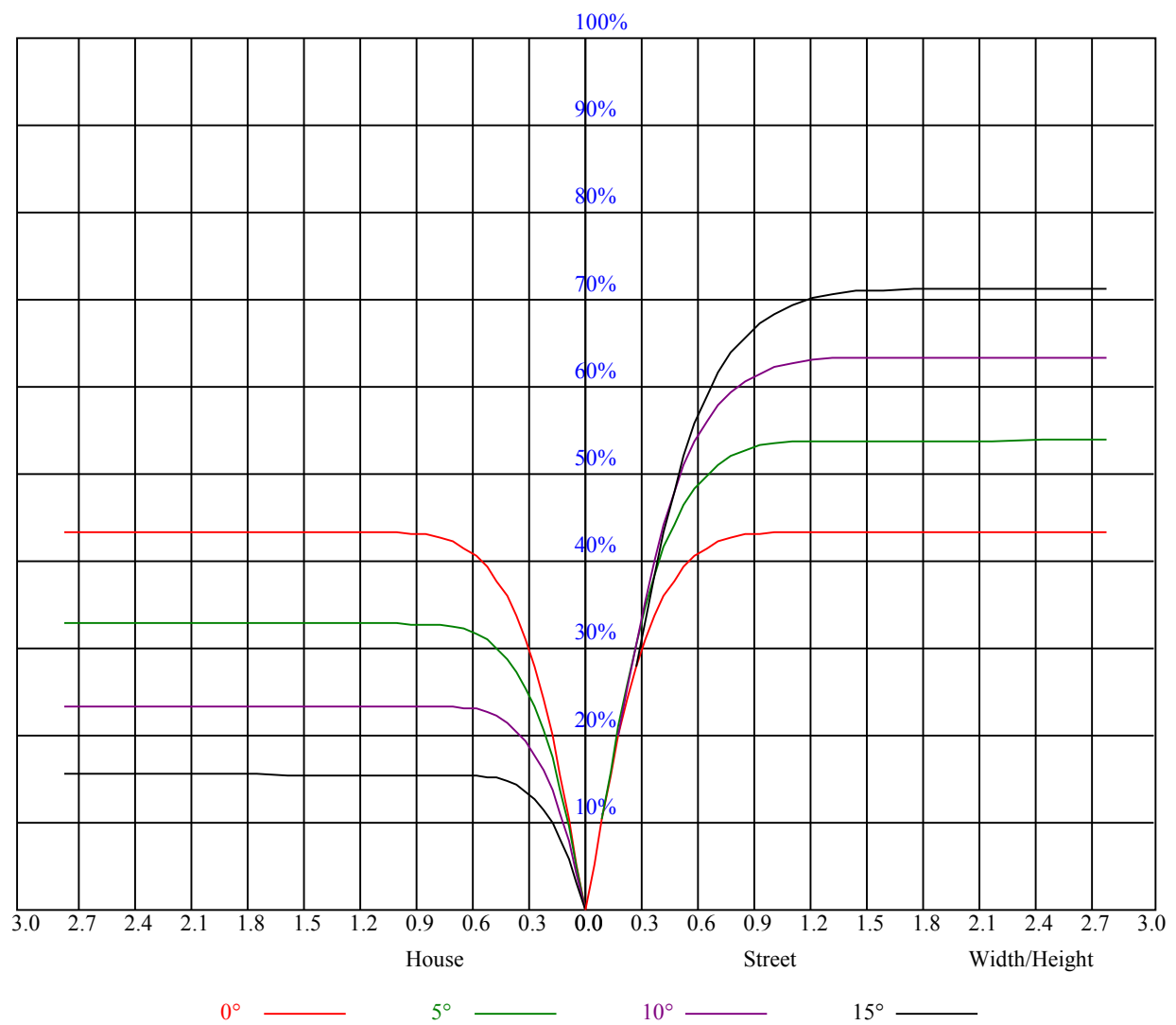
C0 ———

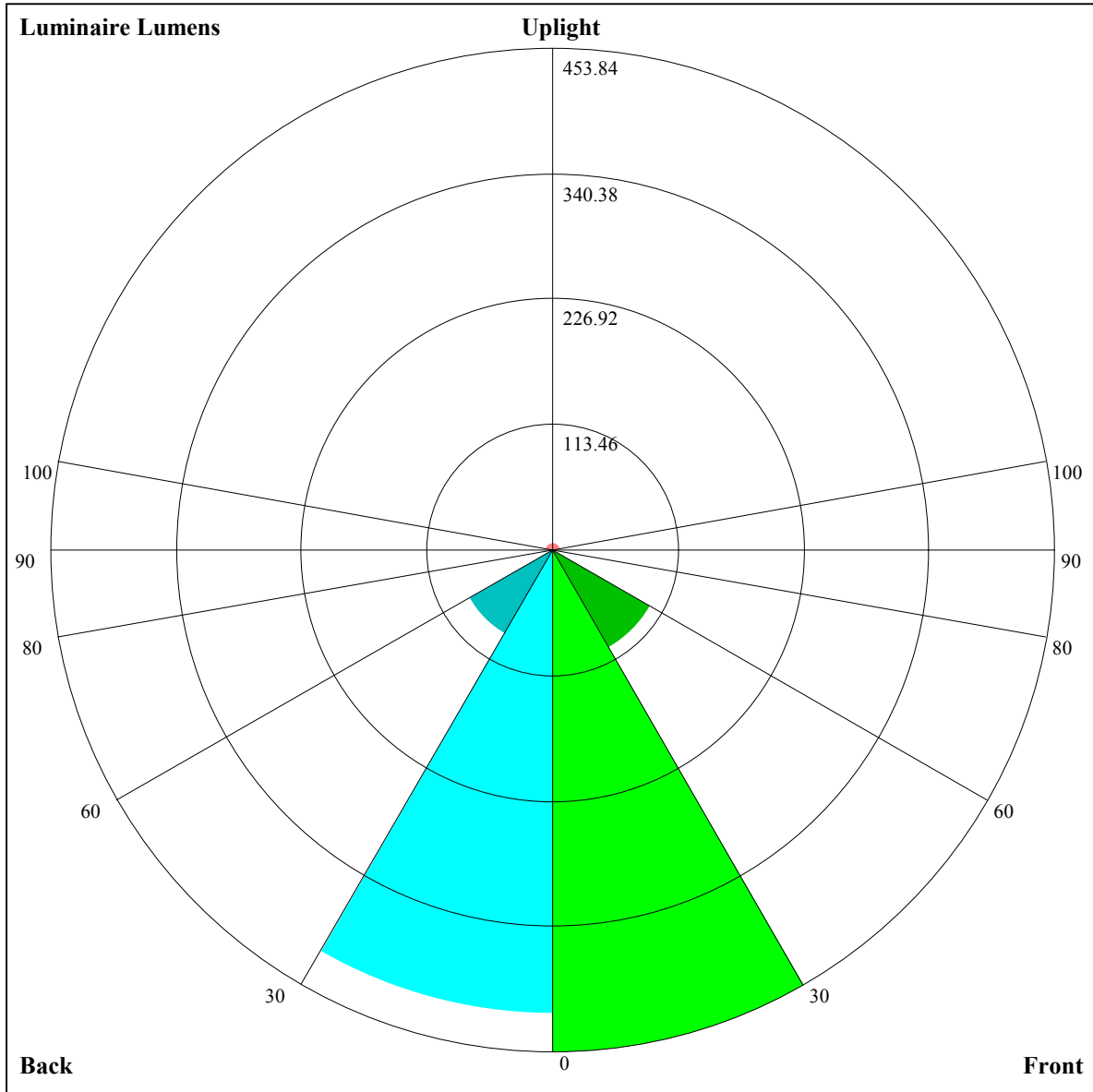
C45 ———

C90 ———



RHOCC	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	0.88
1	0.98	0.96	0.94	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.85	0.85	0.83
2	0.92	0.89	0.86	0.91	0.88	0.85	0.88	0.85	0.83	0.85	0.83	0.82	0.83	0.81	0.80	0.79
3	0.87	0.83	0.80	0.86	0.82	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.79	0.77	0.76	0.74
4	0.82	0.78	0.75	0.81	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.72	0.76	0.74	0.72	0.70
5	0.78	0.73	0.70	0.77	0.73	0.70	0.75	0.72	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.67
6	0.74	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.63
7	0.70	0.66	0.62	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.61	0.60
8	0.67	0.62	0.59	0.67	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.58	0.57
9	0.64	0.59	0.56	0.64	0.59	0.56	0.63	0.59	0.56	0.62	0.59	0.56	0.61	0.58	0.56	0.55
10	0.61	0.57	0.54	0.61	0.57	0.54	0.60	0.56	0.54	0.60	0.56	0.53	0.59	0.56	0.53	0.52





Luminaire Lumens:

FL=453.84,FM=101.3,FH=1.66,FVH=0.69

BL=419.8,BM=87.63,BH=1.6,BVH=0.68

UL=1.37,UH=6.54

BUG Rating:B1-U1-G0

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	2301.19	2228.33	2032.51	1542.49	832.48	626.72	415.96	310.16	80.83		
45.0	2226.48	2316.04	2156.41	1819.06	1335.07	891.92	519.30	385.66	270.11		
90.0	2282.63	2174.97	1884.95	1464.07	882.36	569.18	404.82	321.99	90.12		
135.0	2266.85	2153.16	1885.88	1542.96	1099.34	639.02	423.24	336.47	249.70		
180.0	2301.19	2110.47	1816.74	1379.15	958.28	570.34	409.32	249.23	31.83		
225.0	2226.48	1925.79	1549.92	1084.96	763.43	444.87	361.20	102.74	8.45		
270.0	2282.63	2130.42	1865.92	1391.22	994.93	540.65	400.97	292.39	58.00		
315.0	2266.85	2116.50	1808.85	1357.34	882.87	511.09	381.48	238.28	37.63		
360.0	2301.19	2228.33	2032.51	1542.49	832.48	626.72	415.96	310.16	80.83		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	7.10	3.25	2.51	2.04	1.76	1.53	1.35	1.30	1.25		
45.0	19.72	5.01	3.16	2.55	2.04	1.76	1.53	1.30	1.21		
90.0	6.68	3.25	2.51	2.09	1.76	1.62	1.39	1.30	1.25		
135.0	7.15	3.06	2.51	2.04	1.76	1.53	1.39	1.30	1.21		
180.0	5.80	2.88	2.37	2.00	1.67	1.48	1.35	1.30	1.16		
225.0	3.62	2.83	2.23	1.86	1.67	1.35	1.30	1.25	1.16		
270.0	6.08	3.16	2.55	2.13	1.81	1.58	1.39	1.35	1.25		
315.0	4.22	2.83	2.32	1.90	1.67	1.48	1.25	1.21	1.16		
360.0	7.10	3.25	2.51	2.04	1.76	1.53	1.35	1.30	1.25		
C/ γ (°)	90.0										
0.0	1.30										
45.0	1.21										
90.0	1.30										
135.0	1.25										
180.0	1.21										
225.0	1.16										
270.0	1.39										
315.0	1.25										
360.0	1.30										