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Nata

LumCAT: 1-0811-S	
Luminaire: 92.70.208.00	
Report No: NATA0100	Voltage(V): 34.0000
Test No: GC2019103004	Current(A): 0.2970
LampCAT: OSRAM 5050	Power (W): 10.1000
Lamp flux(lm): 878.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 657.01
Efficiency(%): 74.83%
Lumens(lm)/Power(W): 65.05
Central intensity(cd): 691.910
Maximum intensity(cd): 691.910
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=61.2
[C90/270]Total=61.2
Field angle(10%Imax): [C0/180]Total=85.6
[C90/270]Total=85.6
Maximum s/h(1/2): C0_180=0.94 C90_270=0.94
Maximum s/h(1/4): C0_180=0.91 C90_270=0.91
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 74.83%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.892%

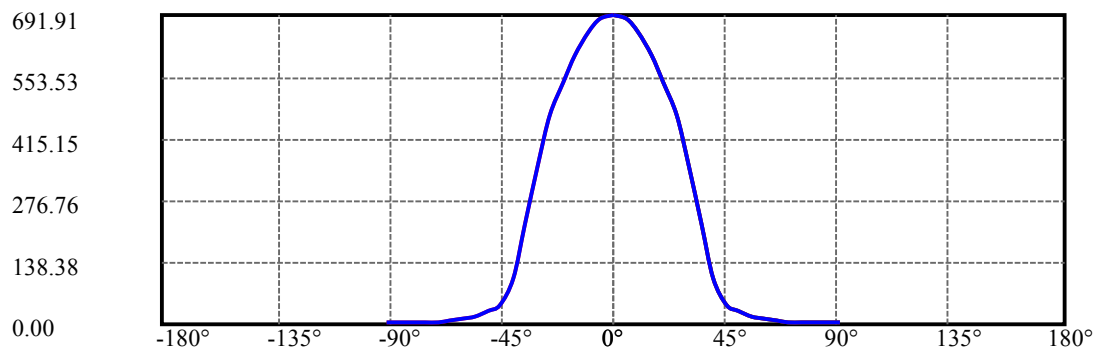
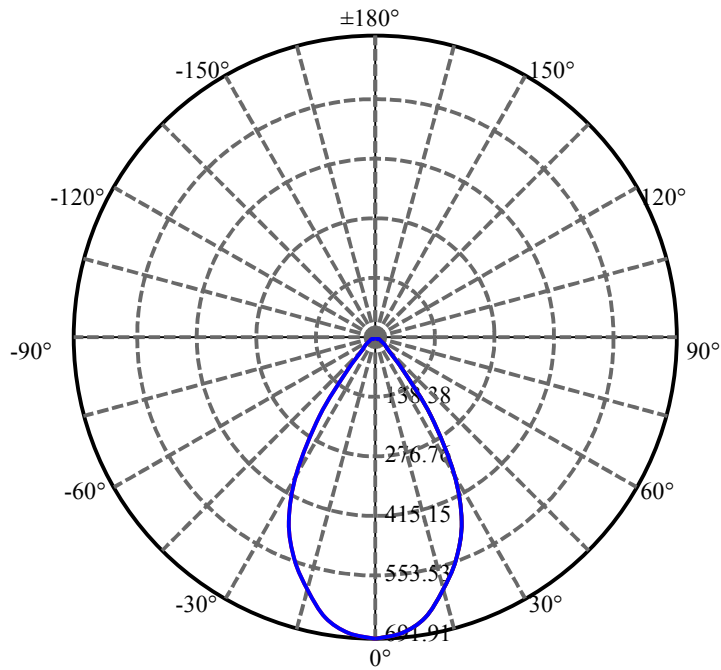
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	691.910	0.000	0	.000%	.000%
5.0	683.044	16.437	16.437	1.872%	2.502%
10.0	654.195	47.837	64.274	5.448%	9.783%
15.0	603.756	74.621	138.895	8.499%	21.140%
20.0	542.823	94.494	233.389	10.762%	35.523%
25.0	467.244	105.937	339.327	12.066%	51.647%
30.0	362.194	104.966	444.293	11.955%	67.623%
35.0	222.335	86.076	530.369	9.804%	80.724%
40.0	101.848	54.087	584.456	6.160%	88.957%
45.0	43.453	26.904	611.36	3.064%	93.051%
50.0	28.695	14.578	625.938	1.660%	95.270%
55.0	18.464	10.254	636.192	1.168%	96.831%
60.0	11.686	6.969	643.161	.794%	97.892%
65.0	6.838	4.503	647.665	.513%	98.577%
70.0	4.194	2.793	650.458	.318%	99.002%
75.0	3.115	1.910	652.368	.218%	99.293%
80.0	2.837	1.593	653.961	.181%	99.535%
85.0	2.802	1.532	655.493	.175%	99.769%
90.0	2.749	1.520	657.013	.173%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	444.29	50.60%	67.62%
0-40	584.46	66.57%	88.96%
0-60	643.16	73.25%	97.89%
0-90	655.49	74.66%	99.77%
0-120	655.49	74.66%	99.77%
0-180	657.01	74.83%	100.00%
60-90	19.30	2.20%	2.94%
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%
0-34.72	525.61	59.86%	80.00%

ZONAL LUMEN SUMMARY

0-10	64.27
10-20	169.11
20-30	210.90
30-40	140.16
40-50	41.48
50-60	17.22
60-70	7.30
70-80	3.50
80-90	1.53
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: —————

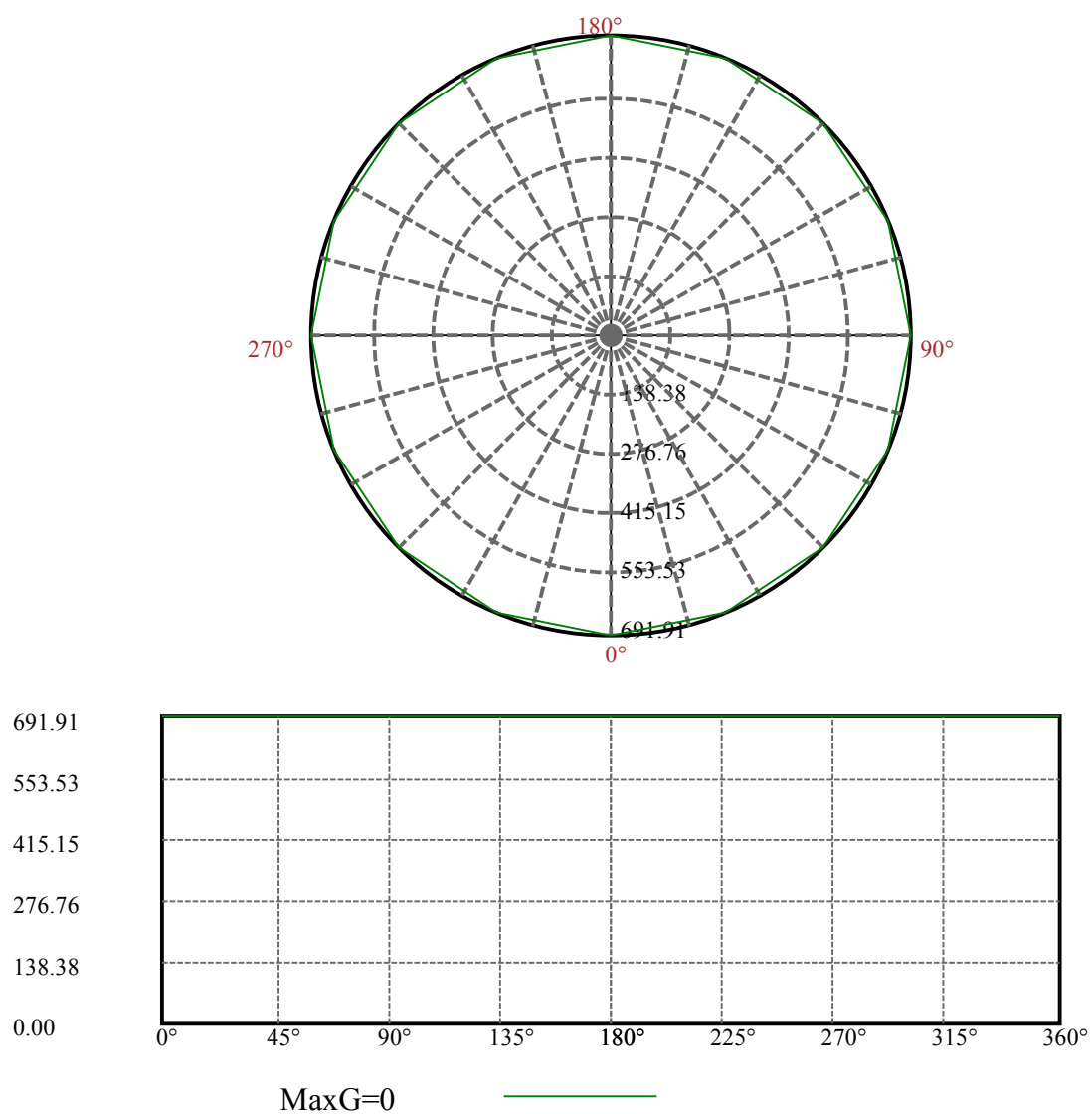
C90/C270: —————

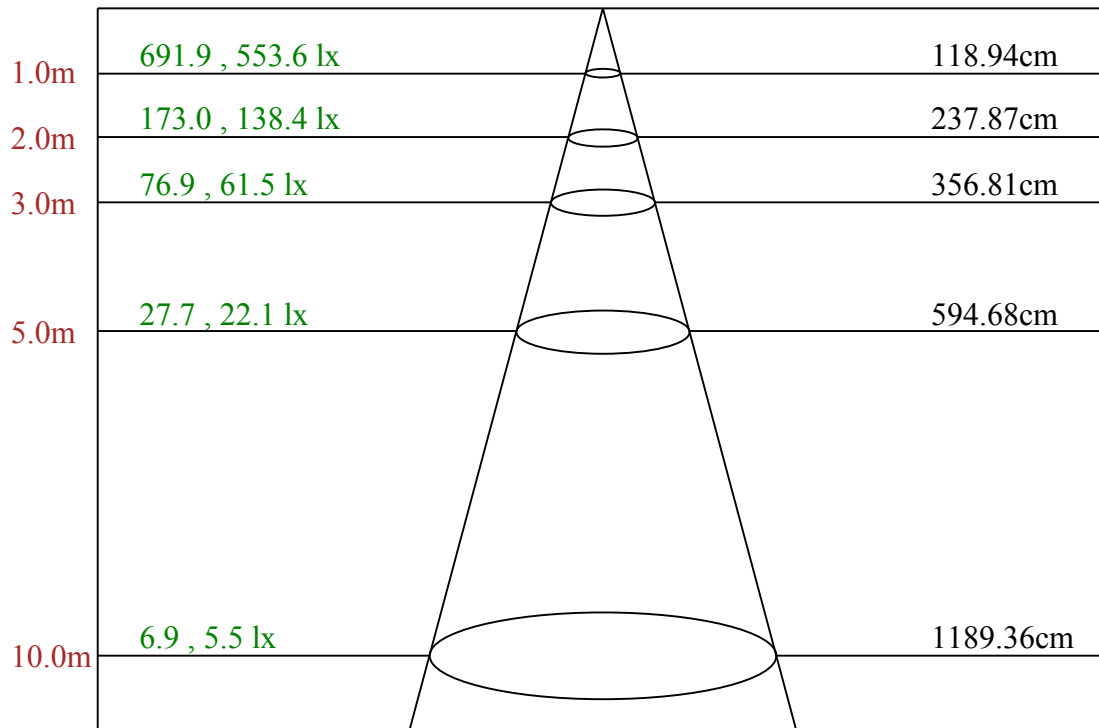
Field angle(10%Imax):C0/180Left:42.8 Right:42.8

:C90/270Left:42.8 Right:42.8

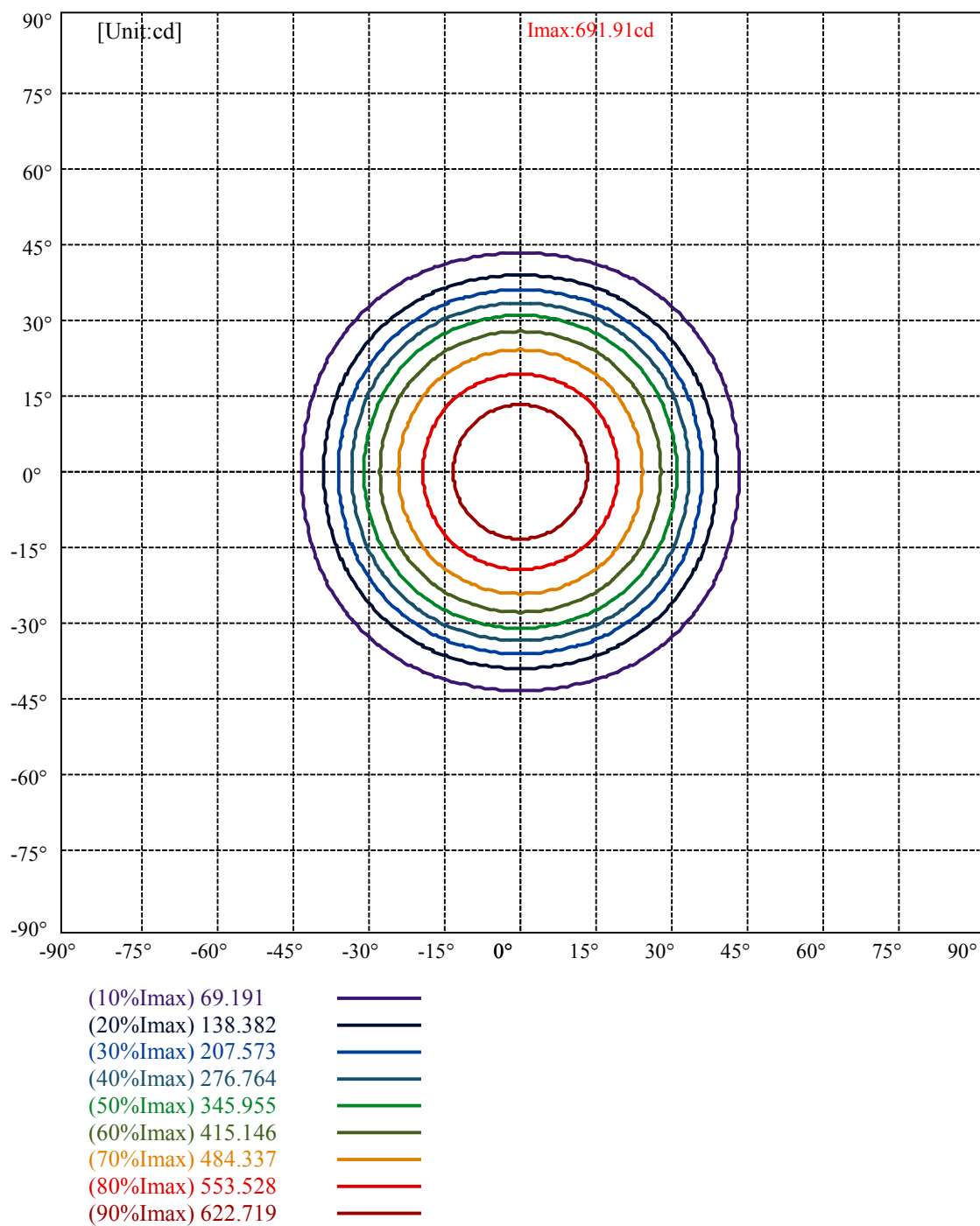
Beam Angle(50%Imax):C0/180Left:30.6 Right:30.6

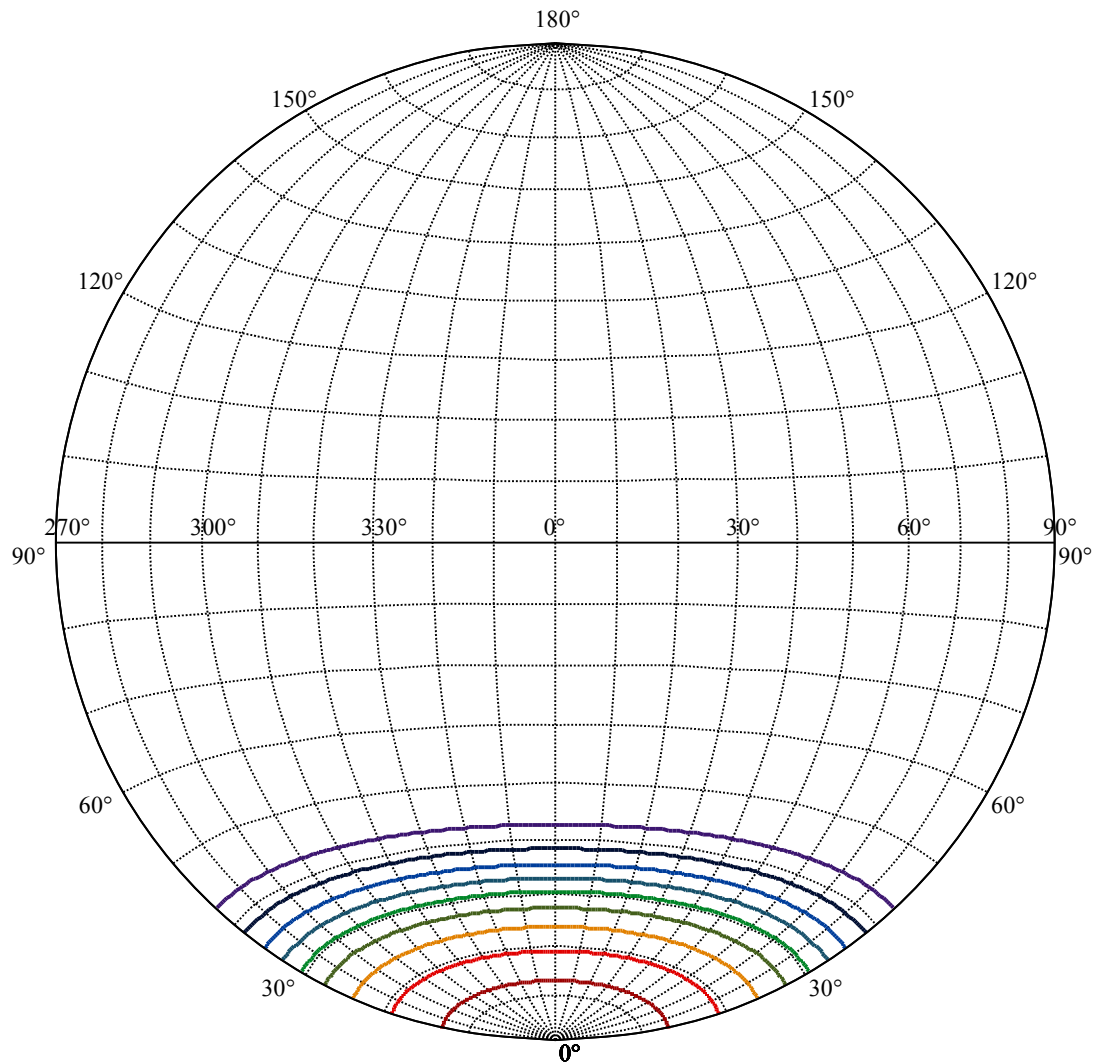
:C90/270Left:30.6 Right:30.6





Max , Ave Beam angle of C0 plane 61.48





House

[Unit:cd]

Road

Imax:691.91

(10%Imax) 69.191

(20%Imax) 138.382

(30%Imax) 207.573

(40%Imax) 276.764

(50%Imax) 345.955

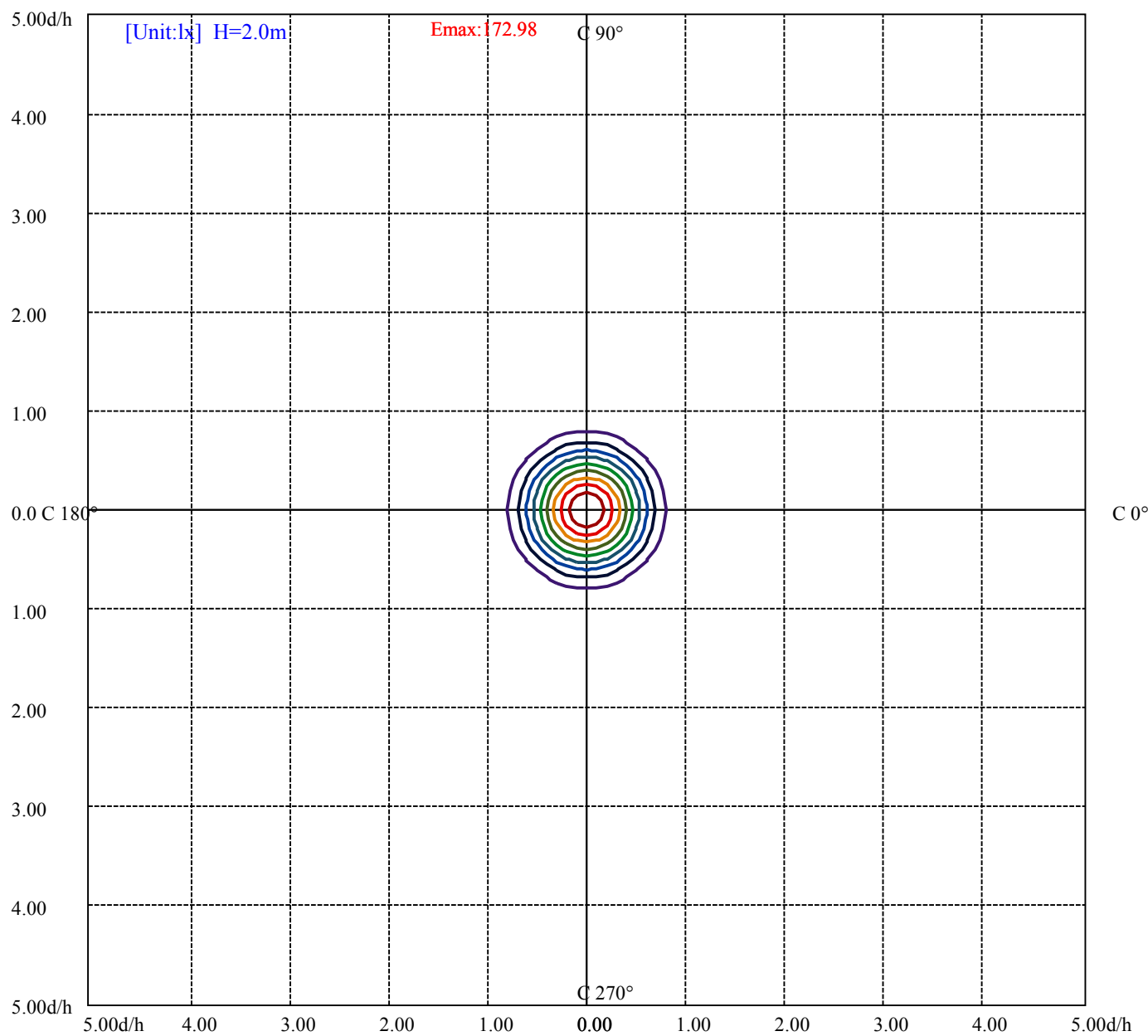
(60%Imax) 415.146

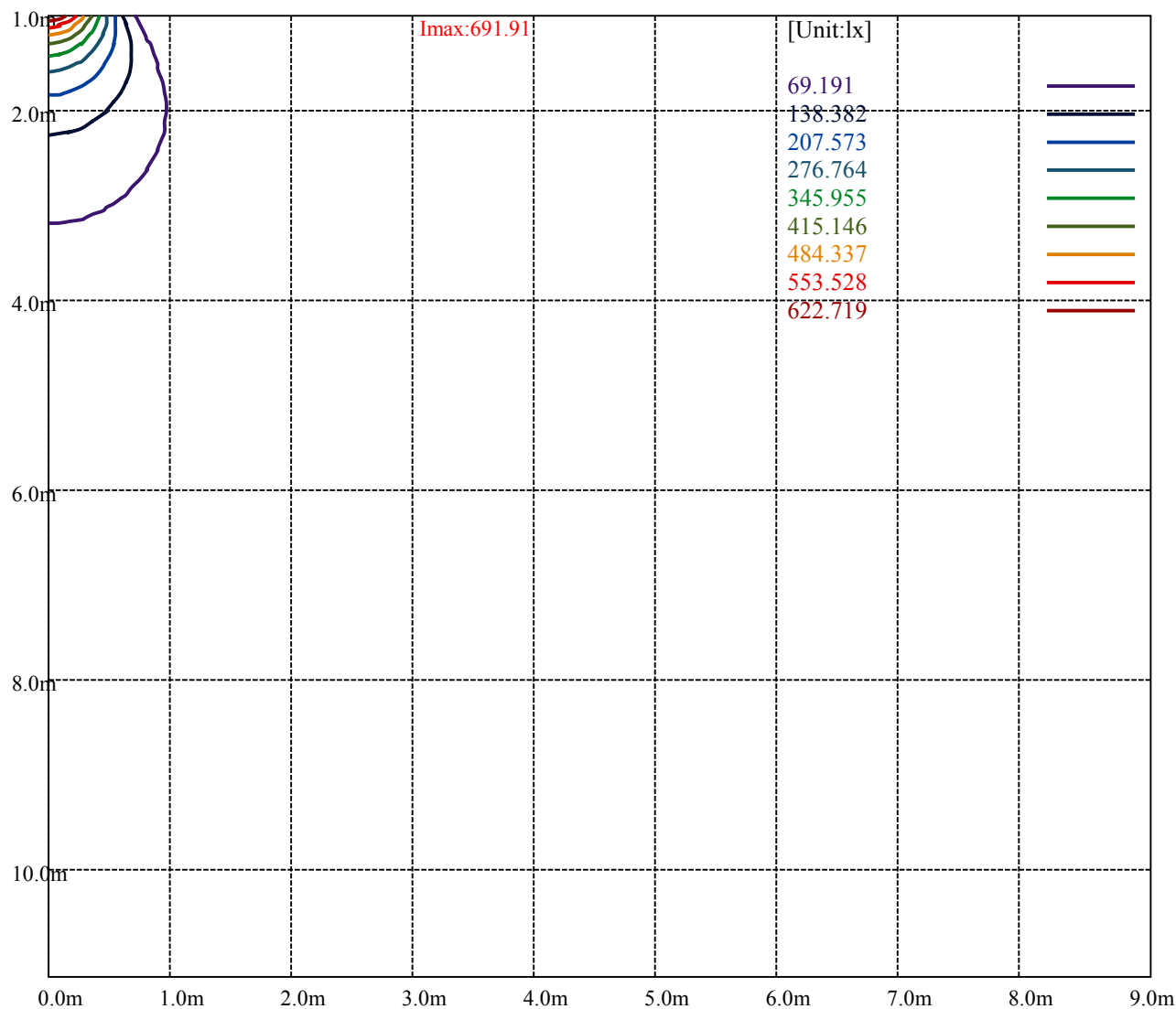
(70%Imax) 484.337

(80%Imax) 553.528

(90%Imax) 622.719



(10%E_{max}) 17.29775(20%E_{max}) 34.5955(30%E_{max}) 51.89325(40%E_{max}) 69.191(50%E_{max}) 86.48875(60%E_{max}) 103.7865(70%E_{max}) 121.0843(80%E_{max}) 138.382(90%E_{max}) 155.6797



Luminance Table

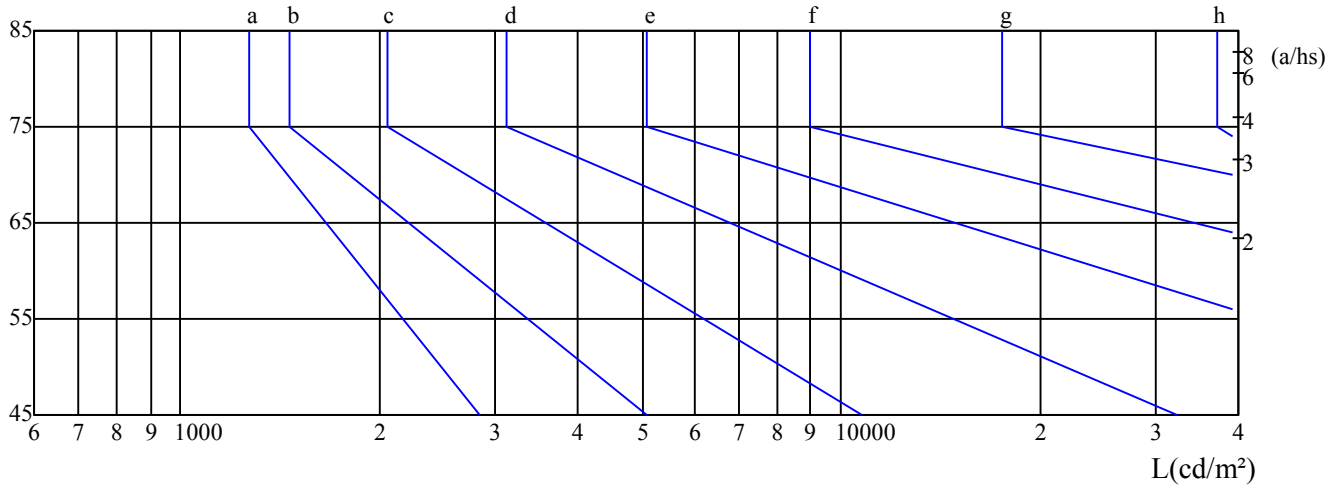
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

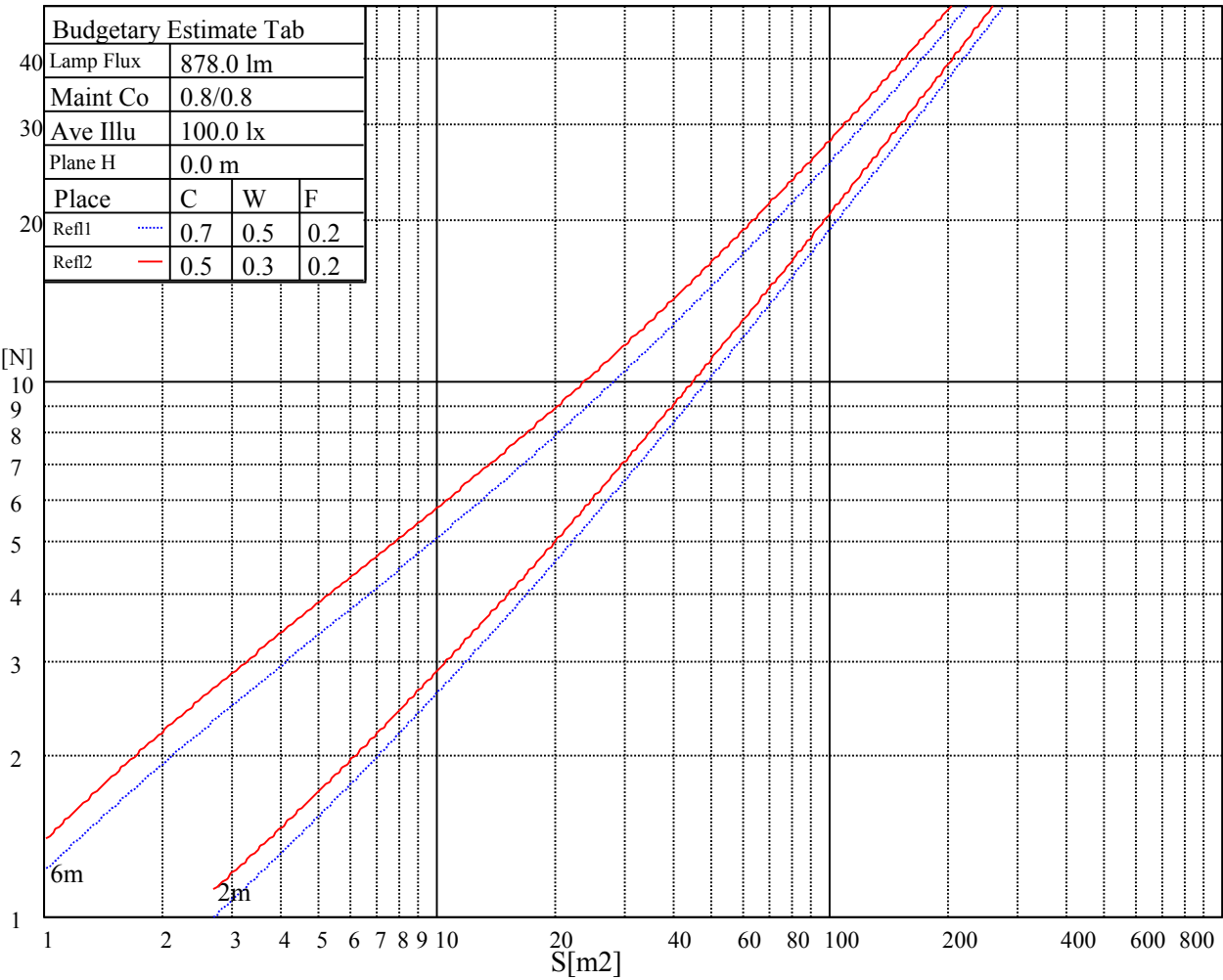
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

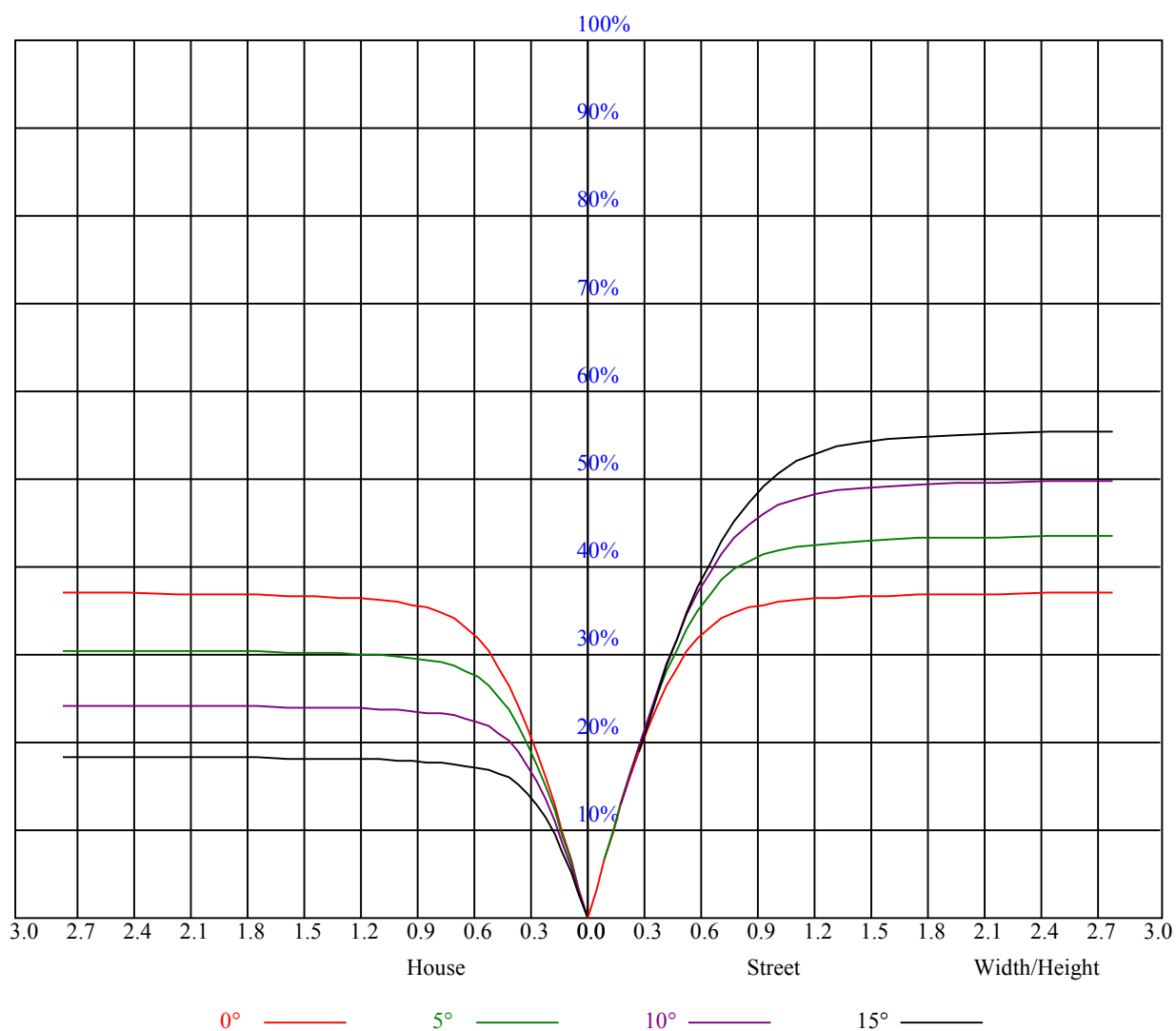
C0 ———

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	0.89	0.89	0.89	0.87	0.87	0.87	0.83	0.83	0.83	0.80	0.80	0.80	0.76	0.76	0.76	0.75
1	0.82	0.80	0.79	0.81	0.79	0.77	0.78	0.76	0.75	0.75	0.74	0.73	0.72	0.71	0.71	0.69
2	0.76	0.73	0.70	0.75	0.72	0.70	0.73	0.70	0.68	0.70	0.68	0.67	0.68	0.67	0.65	0.64
3	0.71	0.67	0.64	0.70	0.66	0.63	0.68	0.65	0.62	0.66	0.63	0.61	0.64	0.62	0.60	0.59
4	0.66	0.62	0.58	0.65	0.61	0.58	0.63	0.60	0.57	0.62	0.59	0.57	0.60	0.58	0.56	0.55
5	0.62	0.57	0.54	0.61	0.57	0.53	0.59	0.56	0.53	0.58	0.55	0.52	0.57	0.54	0.52	0.51
6	0.58	0.53	0.50	0.57	0.53	0.49	0.56	0.52	0.49	0.55	0.51	0.49	0.54	0.51	0.48	0.47
7	0.54	0.49	0.46	0.53	0.49	0.46	0.52	0.49	0.46	0.52	0.48	0.45	0.51	0.48	0.45	0.44
8	0.51	0.46	0.43	0.50	0.46	0.43	0.49	0.45	0.43	0.49	0.45	0.42	0.48	0.45	0.42	0.41
9	0.48	0.43	0.40	0.47	0.43	0.40	0.47	0.43	0.40	0.46	0.42	0.40	0.45	0.42	0.40	0.39
10	0.45	0.41	0.38	0.45	0.41	0.38	0.44	0.40	0.38	0.44	0.40	0.37	0.43	0.40	0.37	0.36



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	687.15	673.03	650.03	600.98	541.86	461.59	332.44	210.04	88.43
22.5	694.41	674.49	645.13	603.84	544.16	468.68	352.29	216.17	95.46
45.0	689.23	670.95	639.28	591.02	525.04	446.57	371.42	204.02	83.42
67.5	690.58	678.21	648.39	596.36	529.59	456.69	351.68	205.65	90.84
90.0	691.76	678.21	643.33	582.30	513.11	427.67	291.32	165.54	66.04
112.5	693.28	685.74	659.87	606.94	545.18	462.60	344.48	198.84	89.83
135.0	696.04	687.09	659.08	606.21	532.97	448.20	369.23	216.11	90.45
157.5	692.83	695.70	667.52	615.60	545.23	463.89	376.71	226.41	108.68
180.0	687.15	691.82	660.66	597.43	522.84	448.54	318.99	197.27	83.03
202.5	694.41	690.53	655.59	595.97	535.44	460.63	352.69	208.01	101.08
225.0	689.23	693.51	671.12	620.89	563.96	492.92	416.19	292.61	146.87
247.5	690.58	688.50	665.89	617.12	566.55	499.67	391.22	240.13	117.96
270.0	691.76	688.05	664.54	617.74	565.43	500.68	382.95	243.28	122.40
292.5	693.28	682.37	650.48	598.56	552.09	481.44	370.80	232.31	110.87
315.0	696.04	681.86	647.33	609.98	563.12	489.54	419.68	286.93	136.69
337.5	692.83	668.64	638.89	599.18	538.59	466.59	353.03	214.03	97.54
360.0	687.15	673.03	650.03	600.98	541.86	461.59	332.44	210.04	88.43
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	39.49	25.54	16.26	10.13	5.96	3.83	2.93	2.76	2.76
22.5	42.69	29.19	18.34	11.25	6.69	4.05	3.04	2.81	2.81
45.0	44.78	30.15	19.86	12.66	6.98	4.22	3.15	2.87	2.81
67.5	40.95	28.07	17.72	10.80	6.47	3.88	3.04	2.81	2.81
90.0	32.74	20.93	13.28	8.16	4.78	3.32	2.87	2.81	2.81
112.5	39.38	26.16	16.76	10.29	6.08	3.94	2.98	2.81	2.76
135.0	43.37	29.25	18.90	12.83	7.03	4.28	3.15	2.81	2.81
157.5	42.92	29.25	18.79	11.70	7.09	4.33	3.09	2.81	2.81
180.0	35.78	23.46	14.46	9.11	5.40	3.66	2.93	2.76	2.81
202.5	40.33	26.16	17.38	10.74	6.47	4.11	3.09	2.81	2.81
225.0	54.90	35.33	23.51	15.98	9.39	5.29	3.66	3.04	2.81
247.5	47.64	30.94	20.25	12.54	7.37	4.44	3.21	2.87	2.81
270.0	44.33	29.48	17.89	11.14	6.53	4.16	3.04	2.87	2.81
292.5	45.11	30.09	18.96	11.59	6.81	4.22	3.09	2.81	2.76
315.0	57.54	36.23	24.08	16.31	9.51	5.23	3.49	2.93	2.81
337.5	43.31	28.91	19.01	11.76	6.86	4.16	3.09	2.81	2.81
360.0	39.49	25.54	16.26	10.13	5.96	3.83	2.93	2.76	2.76
C/γ(°)	90.0								
0.0	2.70								
22.5	2.76								
45.0	2.76								
67.5	2.76								
90.0	2.76								
112.5	2.76								
135.0	2.76								
157.5	2.76								
180.0	2.70								
202.5	2.76								
225.0	2.81								
247.5	2.76								
270.0	2.76								
292.5	2.70								
315.0	2.76								
337.5	2.76								
360.0	2.70								