
Nata

Client:

LumCAT: 1709-M

Luminaire: 92.70.124.00

Report No: nata-0100

Test No:

LampCAT: CREE CMT1420

Lamp flux(lm): 2017.1

Number of Lamps: 1

Length(mm): 46

Phm Type: C

Voltage(V): 35.2000

Current(A): 0.4000

Power (W): 14.0800

PF: 0.0000

Ballast type: DC

Width(mm): 46

Height(mm): 0

Photometric Results

Lumens(lm): 1844.73, Efficiency(%): 91.45% , Luminous Efficacy(lm/W): 131.02

Central intensity(cd): 6991.062, Maximum intensity(cd): 6991.062

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=17.8

[C90/270]Total=17.8

Field angle(10%Imax): [C0/180]Total=59.0

[C90/270]Total=59.0

Maximum s/h(1/2): C0_180=0.30 C90_270=0.30

Maximum s/h(1/4): C0_180=0.33 C90_270=0.33

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 92.17%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.007%

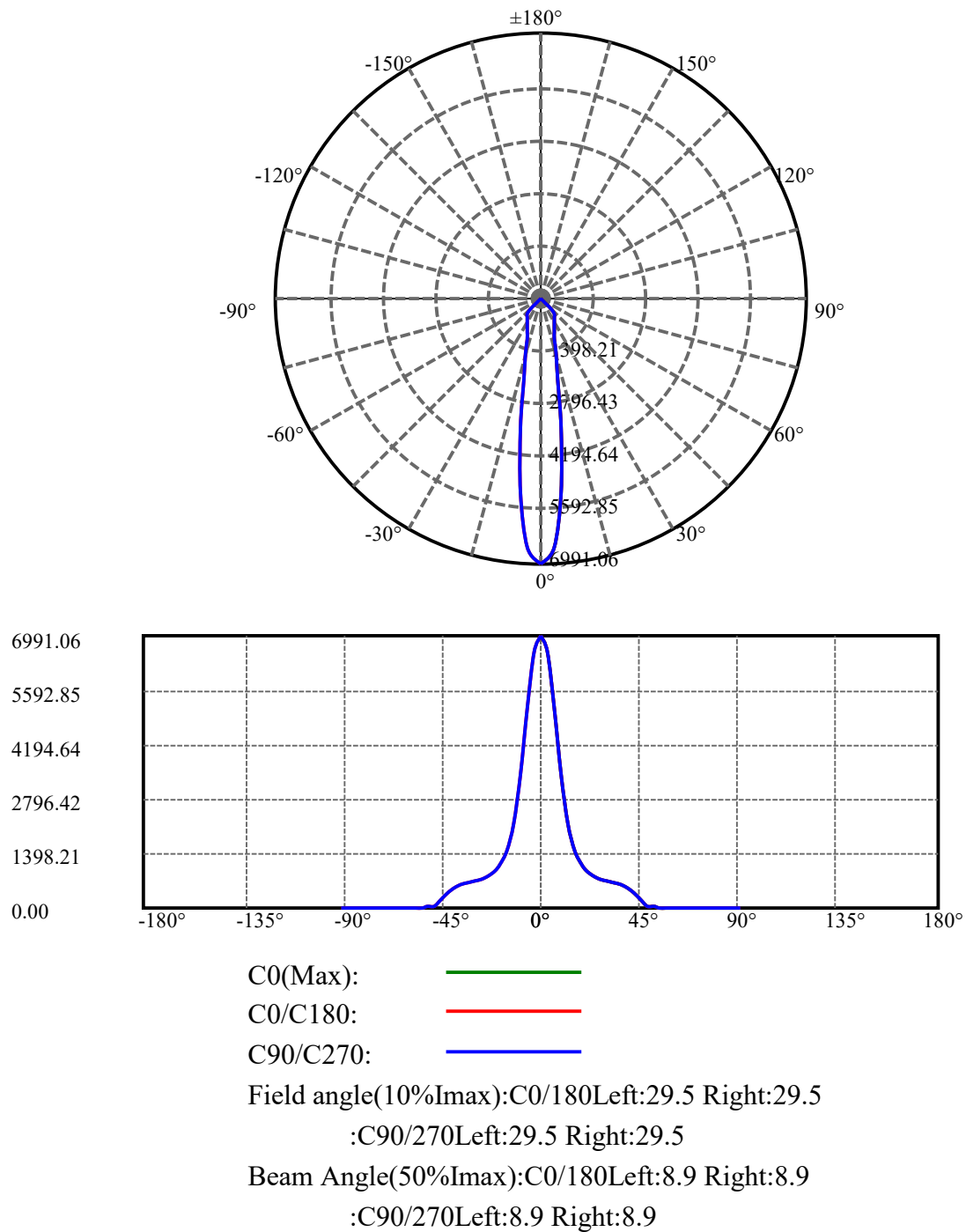
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6991.062	15.052	15.052	.746%	.816%
3.0	6548.683	112.741	127.794	5.589%	6.928%
6.0	5127.265	176.299	304.092	8.740%	16.484%
9.0	3428.087	176.406	480.498	8.745%	26.047%
12.0	2164.749	148.052	628.551	7.340%	34.073%
15.0	1468.698	125.043	753.593	6.199%	40.851%
18.0	1130.136	114.879	868.473	5.695%	47.079%
21.0	948.395	111.801	980.274	5.543%	53.139%
24.0	826.878	110.633	1090.907	5.485%	59.136%
27.0	743.089	110.973	1201.88	5.502%	65.152%
30.0	690.001	113.488	1315.367	5.626%	71.304%
33.0	650.003	116.454	1431.821	5.773%	77.617%
36.0	612.330	118.395	1550.216	5.870%	84.035%
39.0	531.033	109.931	1660.147	5.450%	89.994%
42.0	373.647	82.243	1742.391	4.077%	94.452%
45.0	209.593	48.752	1791.142	2.417%	97.095%
48.0	64.492	15.765	1806.908	.782%	97.950%
51.0	23.392	5.980	1812.888	.296%	98.274%
54.0	13.406	3.568	1816.456	.177%	98.467%
57.0	10.502	2.897	1819.353	.144%	98.624%
60.0	9.642	2.747	1822.1	.136%	98.773%
63.0	8.947	2.622	1824.722	.130%	98.915%
66.0	8.279	2.488	1827.21	.123%	99.050%
69.0	7.901	2.426	1829.636	.120%	99.182%
72.0	7.591	2.375	1832.011	.118%	99.311%
75.0	7.378	2.344	1834.355	.116%	99.438%
78.0	7.233	2.327	1836.682	.115%	99.564%
81.0	7.130	2.316	1838.999	.115%	99.689%
84.0	7.061	2.310	1841.309	.115%	99.815%
87.0	6.958	2.286	1843.594	.113%	99.938%
90.0	6.903	1.135	1844.73	.056%	100.000%

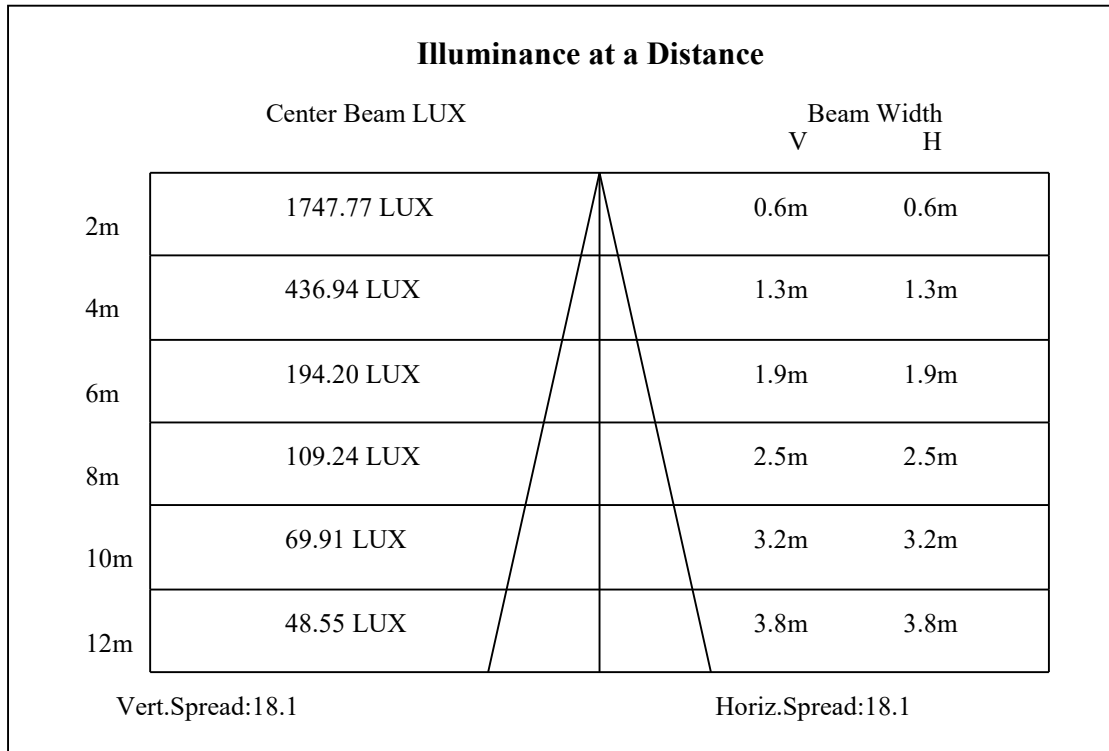
ZONAL LUMEN SUMMARY

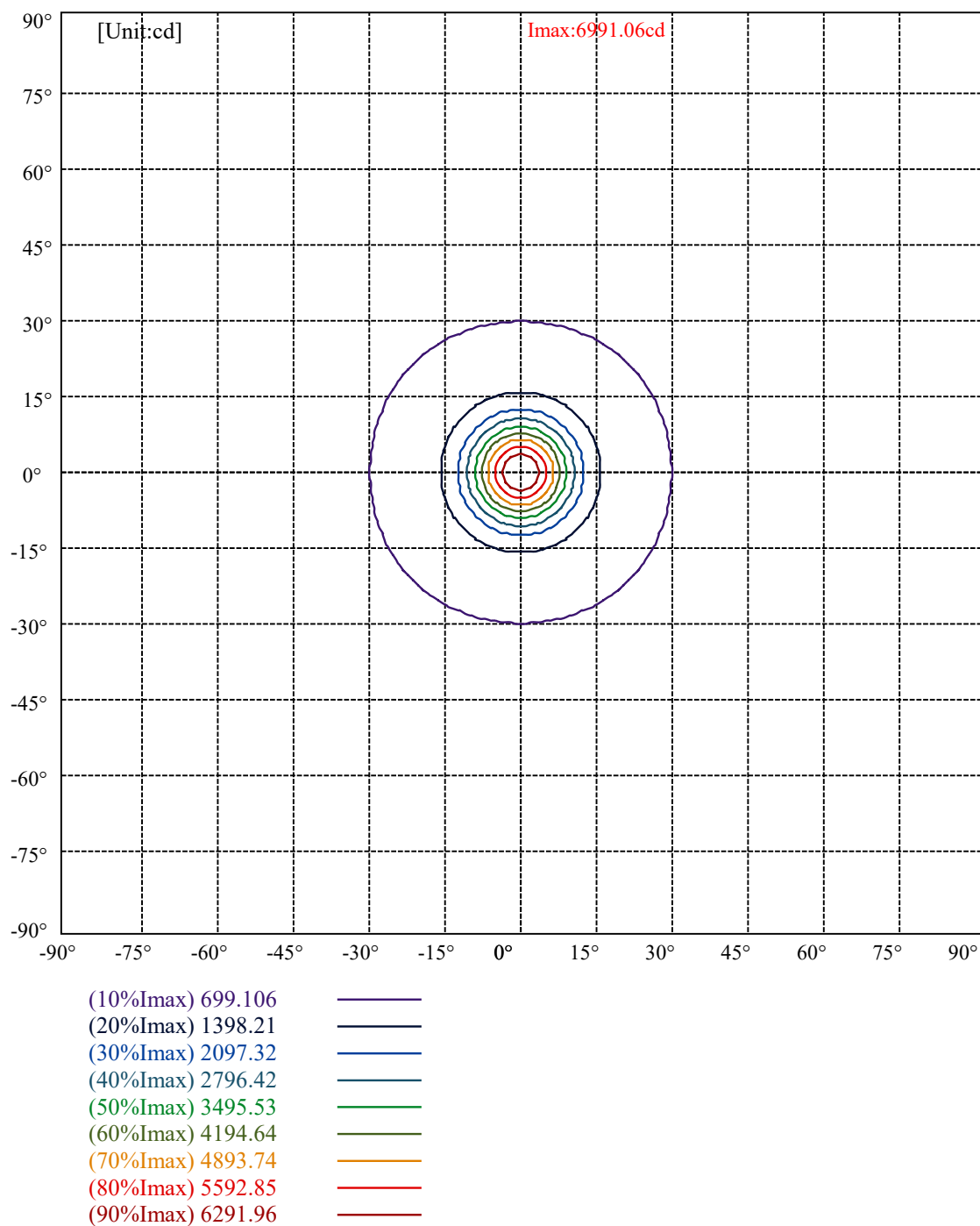
Zone	Lumens	%Lamp	%Fixt
0-30	1315.37	65.21%	71.30%
0-40	1660.15	82.30%	89.99%
0-60	1822.10	90.33%	98.77%
0-90	1843.59	91.40%	99.94%
0-120	1843.59	91.40%	99.94%
0-180	1844.73	91.45%	100.00%
60-90	24.24	1.20%	1.31%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-34.11	1475.78	73.16%	80.00%

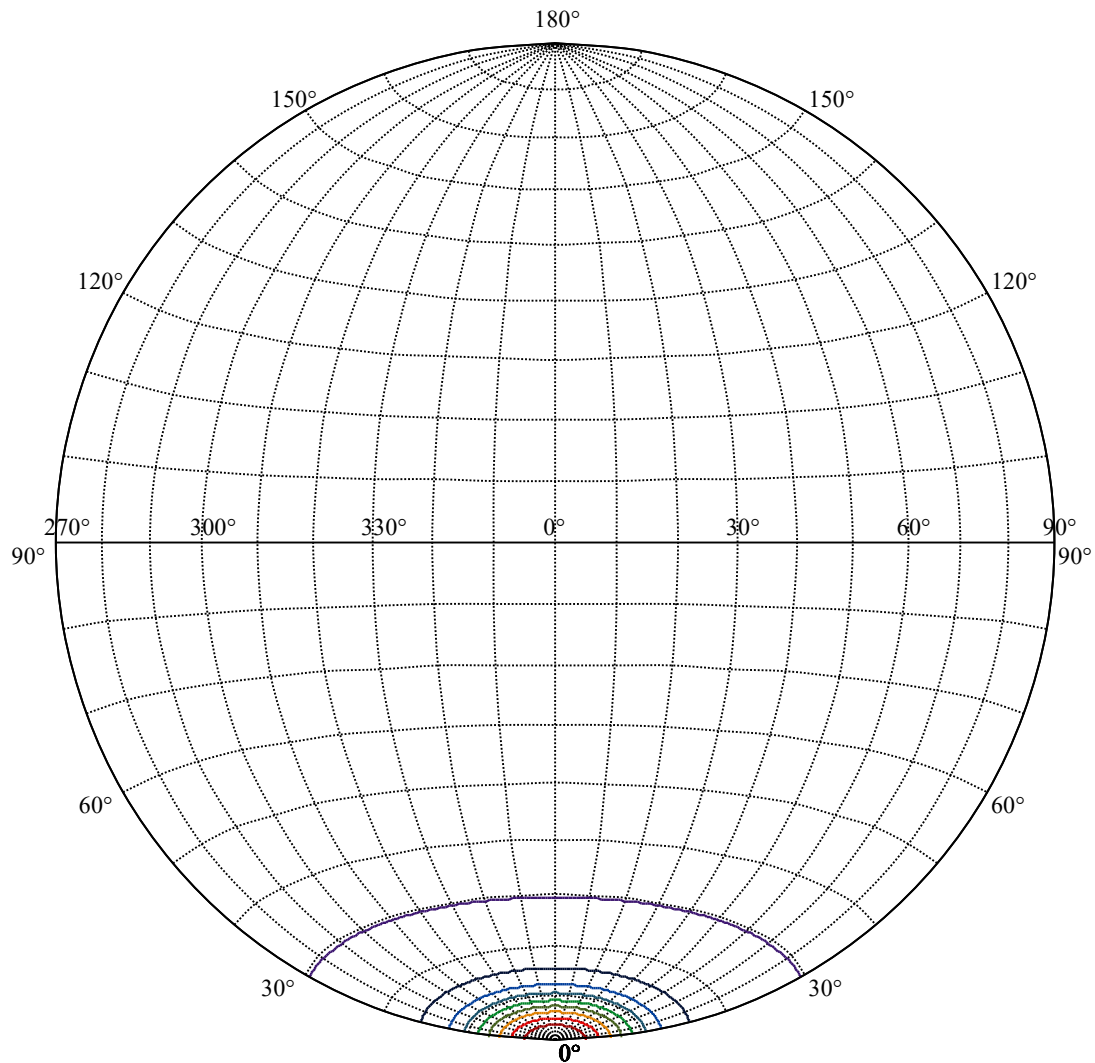
ZONAL LUMEN SUMMARY

0-10	480.50
10-20	387.97
20-30	446.89
30-40	344.78
40-50	146.76
50-60	15.19
60-70	7.54
70-80	7.05
80-90	6.91
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









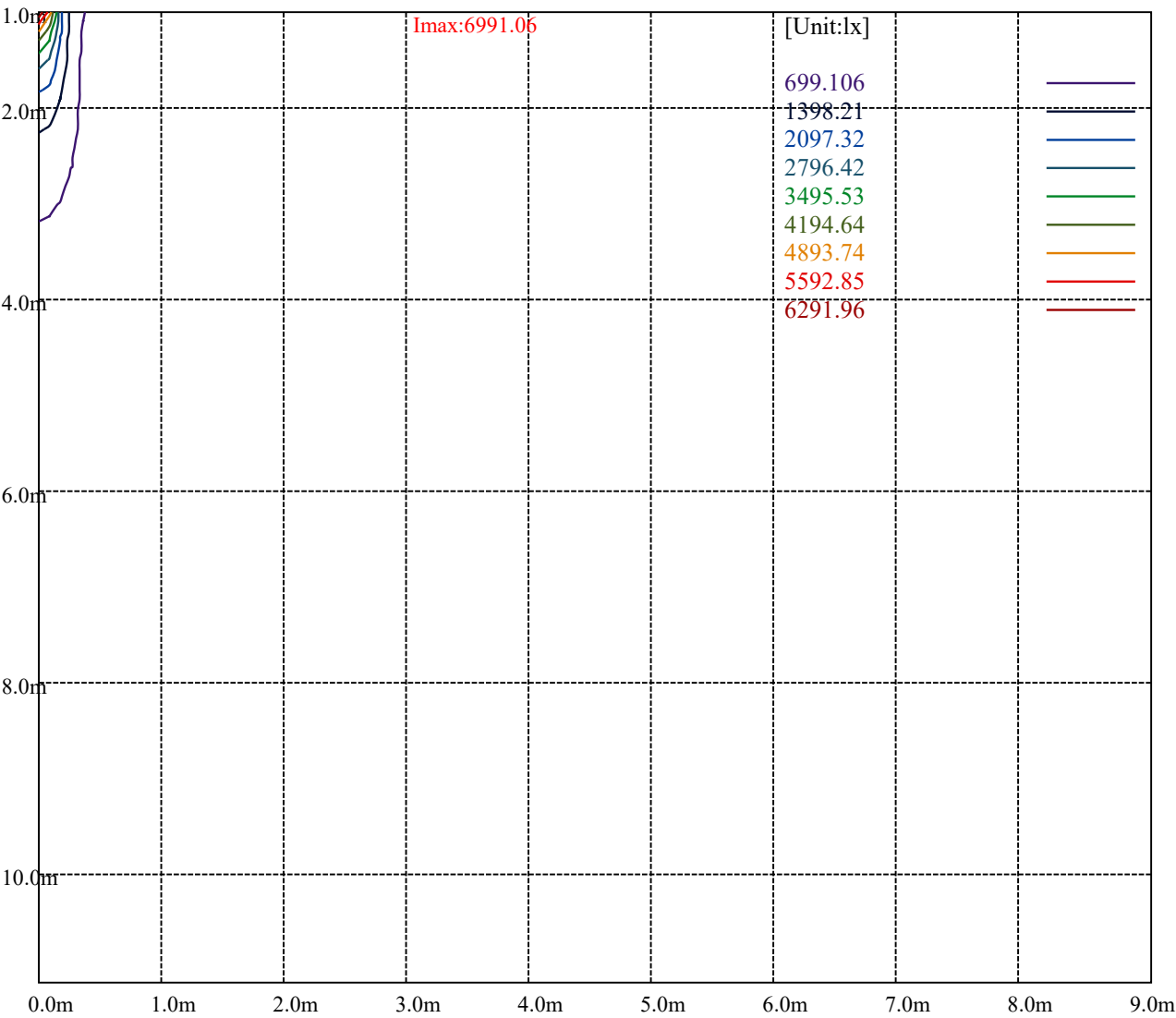
House

[Unit:cd]

Road

Imax:6991.06

(10%Imax)	699.106	_____
(20%Imax)	1398.21	_____
(30%Imax)	2097.32	_____
(40%Imax)	2796.42	_____
(50%Imax)	3495.53	_____
(60%Imax)	4194.64	_____
(70%Imax)	4893.74	_____
(80%Imax)	5592.85	_____
(90%Imax)	6291.96	_____



Luminance Table

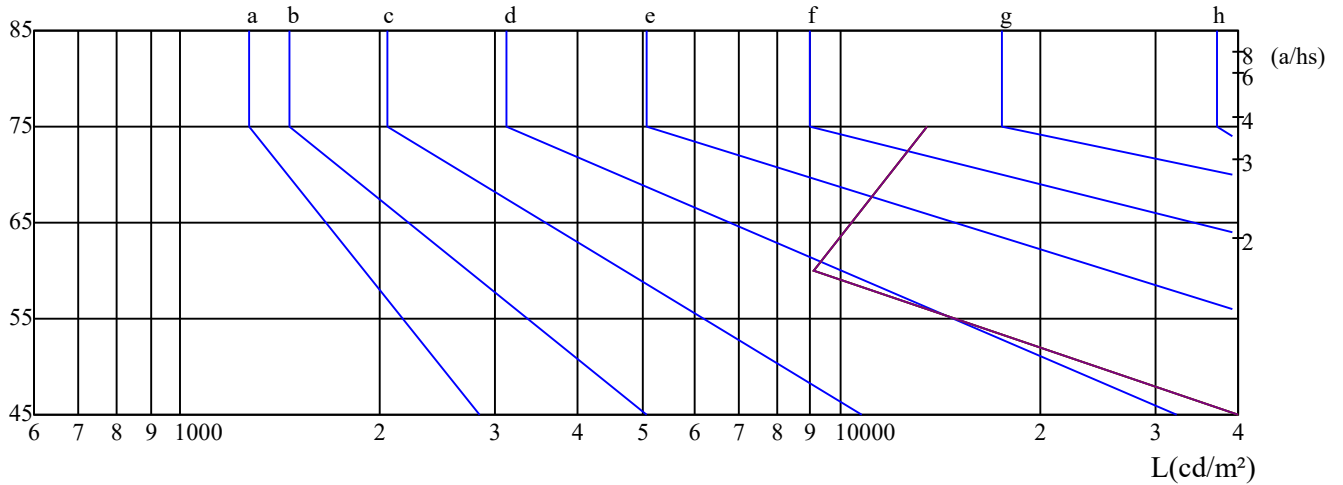
γ	45	50	55	60	65	70	75	80	85
C0	140080	0	0	9113	0	0	13471	0	0
C45	140080	0	0	9113	0	0	13471	0	0
C90	140080	0	0	9113	0	0	13471	0	0

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
10289	10289	10289	13471	13471	13471	36795	36795	36795

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

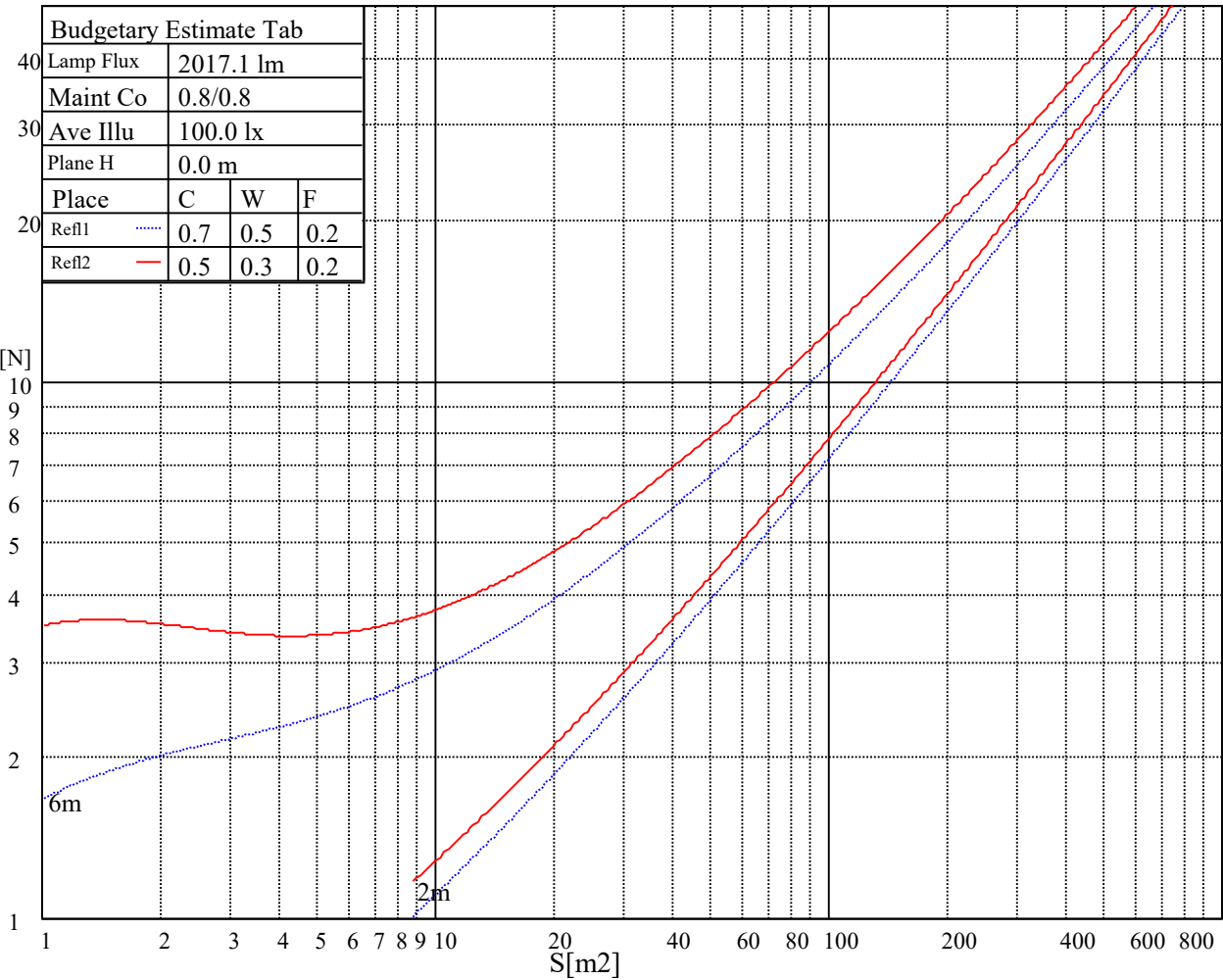
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

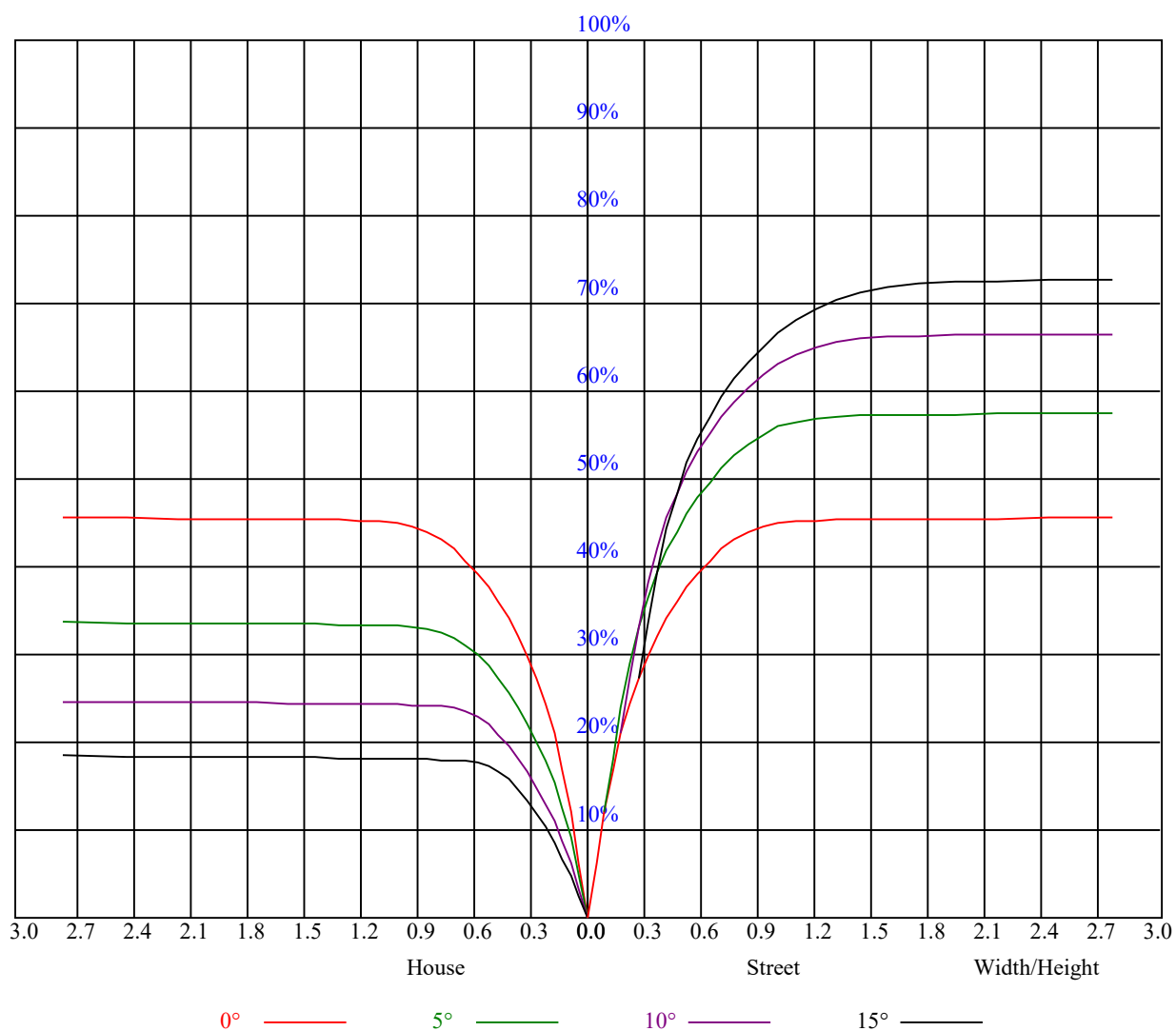
C0 ———

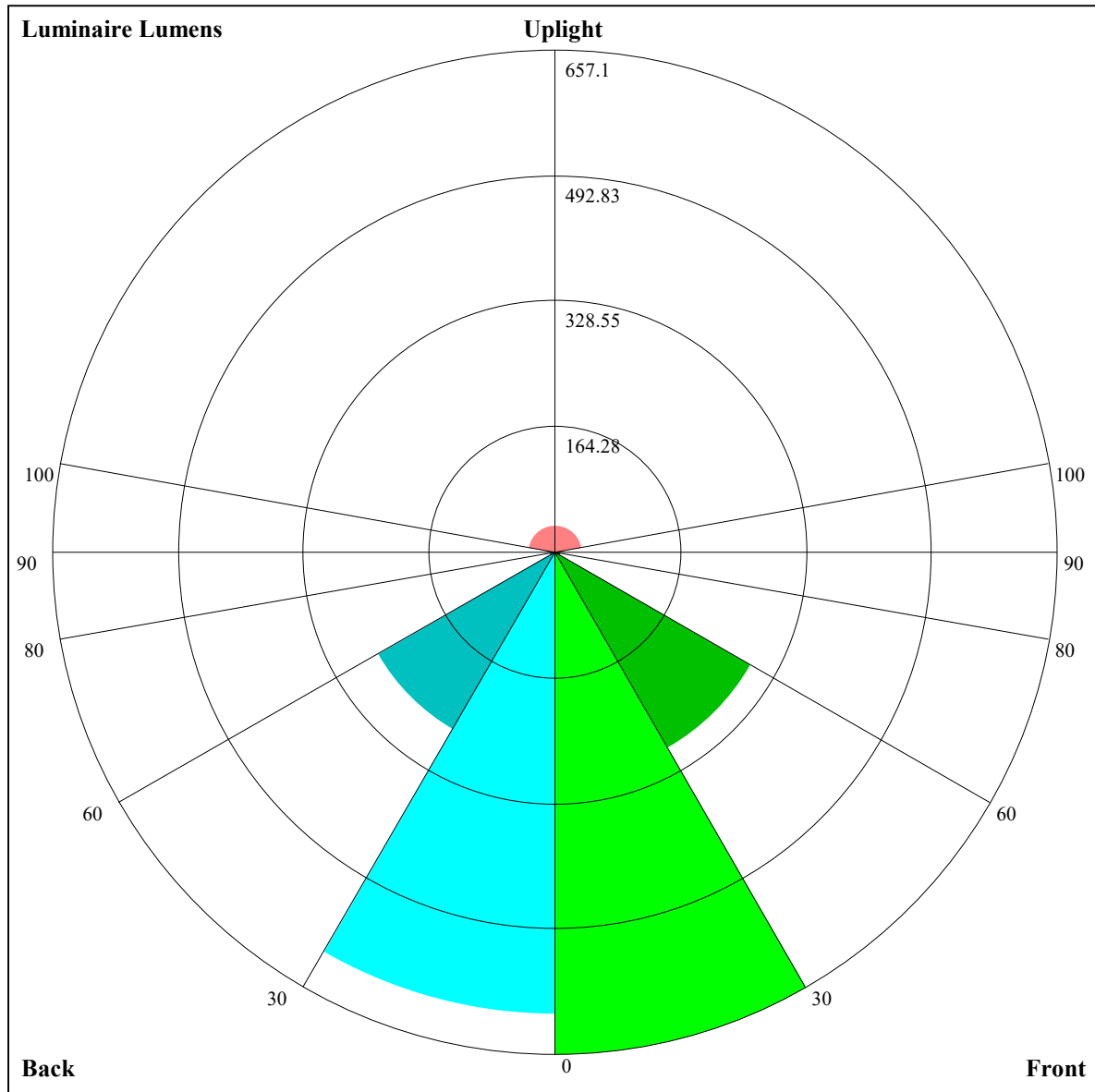
C45 ———

C90 ———



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	1.10	1.10	1.10	1.07	1.07	1.07	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.92
1	0.98	0.95	0.92	0.96	0.93	0.91	0.93	0.90	0.88	0.89	0.87	0.85	0.86	0.84	0.83	0.81
2	0.89	0.84	0.80	0.87	0.83	0.79	0.84	0.80	0.77	0.81	0.78	0.75	0.79	0.76	0.74	0.72
3	0.80	0.74	0.69	0.79	0.73	0.69	0.76	0.71	0.67	0.74	0.70	0.66	0.72	0.68	0.65	0.64
4	0.73	0.66	0.61	0.72	0.65	0.60	0.69	0.64	0.60	0.67	0.63	0.59	0.65	0.61	0.58	0.56
5	0.66	0.59	0.54	0.65	0.58	0.53	0.63	0.57	0.53	0.62	0.56	0.52	0.60	0.55	0.52	0.50
6	0.60	0.53	0.48	0.59	0.53	0.48	0.58	0.52	0.47	0.56	0.51	0.47	0.55	0.50	0.47	0.45
7	0.55	0.48	0.43	0.54	0.48	0.43	0.53	0.47	0.43	0.52	0.46	0.42	0.51	0.46	0.42	0.40
8	0.51	0.44	0.39	0.50	0.43	0.39	0.49	0.43	0.39	0.48	0.42	0.38	0.47	0.42	0.38	0.37
9	0.47	0.40	0.35	0.46	0.40	0.35	0.45	0.39	0.35	0.44	0.39	0.35	0.43	0.38	0.35	0.33
10	0.43	0.37	0.32	0.43	0.36	0.32	0.42	0.36	0.32	0.41	0.36	0.32	0.40	0.35	0.32	0.30





Luminaire Lumens:

FL=657.1,FM=296.54,FH=8.32,FVH=3.85

BL=604.97,BM=267.96,BH=8.05,BVH=3.82

UL=7.53,UH=35.84

BUG Rating:B2-U2-G0

Nata 1709-M

Intensity data(cd)										Appendix Page: 15 Total:15			
C/γ(°)	0.0	3.0	6.0	9.0	12.0	15.0	18.0	21.0	24.0				
0.0	6955.83	6851.77	5832.12	4098.95	2659.77	1715.01	1260.24	1021.85	884.76				
45.0	7001.52	6724.59	5502.34	3728.97	2354.76	1550.39	1174.35	975.60	846.22				
90.0	7003.72	6507.12	4994.72	3290.72	2034.33	1398.98	1089.79	920.49	805.31				
135.0	7003.17	6481.24	4926.45	3183.91	2006.26	1398.98	1106.08	933.76	808.78				
180.0	6955.83	6136.04	4376.98	2789.71	1759.60	1280.61	1027.90	879.86	773.05				
225.0	7001.52	6382.69	4777.24	3145.37	1949.00	1358.24	1071.45	912.67	801.18				
270.0	7003.72	6646.96	5271.10	3528.56	2252.36	1508.55	1158.39	970.64	846.77				
315.0	7003.17	6659.07	5337.17	3658.50	2301.91	1538.83	1152.88	972.30	848.97				
360.0	6955.83	6851.77	5832.12	4098.95	2659.77	1715.01	1260.24	1021.85	884.76				
C/γ(°)	27.0	30.0	33.0	36.0	39.0	42.0	45.0	48.0	51.0				
0.0	777.95	710.78	669.49	631.50	584.15	450.91	282.99	113.31	29.95				
45.0	753.17	701.42	659.03	621.59	564.88	408.52	280.24	91.83	28.24				
90.0	728.18	679.07	641.13	604.90	517.14	357.76	184.71	52.19	22.19				
135.0	728.95	677.74	637.55	601.22	497.16	326.48	157.68	40.14	19.10				
180.0	710.61	664.70	626.49	586.74	462.69	292.68	122.34	30.06	16.68				
225.0	728.84	683.64	645.48	609.36	510.76	347.74	169.13	42.17	20.26				
270.0	758.13	701.97	661.23	624.89	556.07	395.86	250.12	72.56	24.72				
315.0	758.90	700.70	659.63	618.45	555.41	409.23	229.53	73.67	25.99				
360.0	777.95	710.78	669.49	631.50	584.15	450.91	282.99	113.31	29.95				
C/γ(°)	54.0	57.0	60.0	63.0	66.0	69.0	72.0	75.0	78.0				
0.0	15.58	11.23	10.19	9.41	8.75	8.31	7.87	7.54	7.32				
45.0	14.76	11.12	10.13	9.36	8.70	8.20	7.82	7.54	7.32				
90.0	13.27	10.63	9.74	9.03	8.31	7.98	7.65	7.43	7.27				
135.0	11.84	10.30	9.36	8.75	8.04	7.76	7.43	7.27	7.16				
180.0	11.95	9.91	9.25	8.48	7.82	7.49	7.32	7.16	7.05				
225.0	12.55	10.02	9.36	8.81	7.98	7.60	7.38	7.27	7.16				
270.0	13.21	10.24	9.47	8.81	8.26	7.87	7.60	7.43	7.32				
315.0	14.09	10.57	9.63	8.92	8.37	7.98	7.65	7.38	7.27				
360.0	15.58	11.23	10.19	9.41	8.75	8.31	7.87	7.54	7.32				
C/γ(°)	81.0	84.0	87.0	90.0									
0.0	7.21	7.10	7.05	6.88									
45.0	7.16	7.10	6.99	6.94									
90.0	7.16	7.10	6.94	6.94									
135.0	7.10	6.99	6.94	6.88									
180.0	6.99	6.94	6.88	6.88									
225.0	7.05	6.99	6.94	6.94									
270.0	7.21	7.21	6.94	6.88									
315.0	7.16	7.05	6.99	6.88									
360.0	7.21	7.10	7.05	6.88									