
Nata

Client:

LumCAT: 3-1699-N

Luminaire: 92.70.065.00+92.70.089.00

Report No: nata0100

Voltage(V): 35.1000

Test No: GC2018052101

Current(A): 0.4000

LampCAT: LUMINUS CHM-9 XH20

Power (W): 14.0400

Lamp flux(lm): 1576.5

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 79

Width(mm): 79

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1245.10, Efficiency(%): 78.98% , Luminous Efficacy(lm/W): 88.68

Central intensity(cd): 6899.393, Maximum intensity(cd): 6899.393

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=20.0

[C90/270]Total=20.0

Field angle(10%Imax): [C0/180]Total=38.6

[C90/270]Total=38.6

Maximum s/h(1/2): C0_180=0.34 C90_270=0.34

Maximum s/h(1/4): C0_180=0.34 C90_270=0.34

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 81.52%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 95.288%

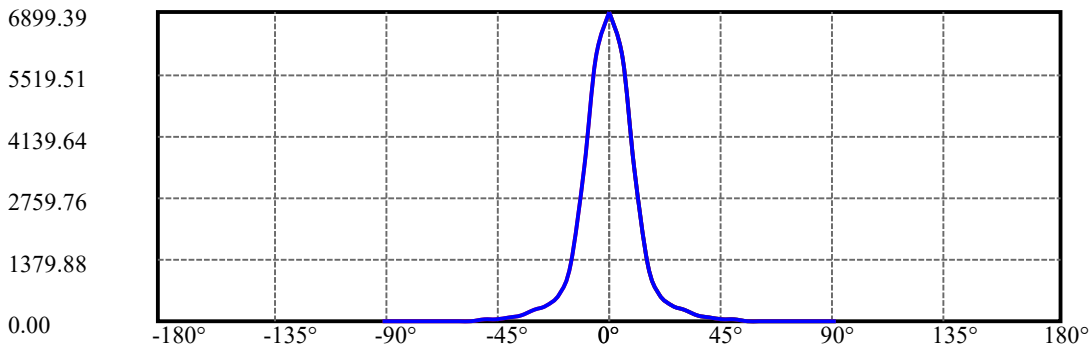
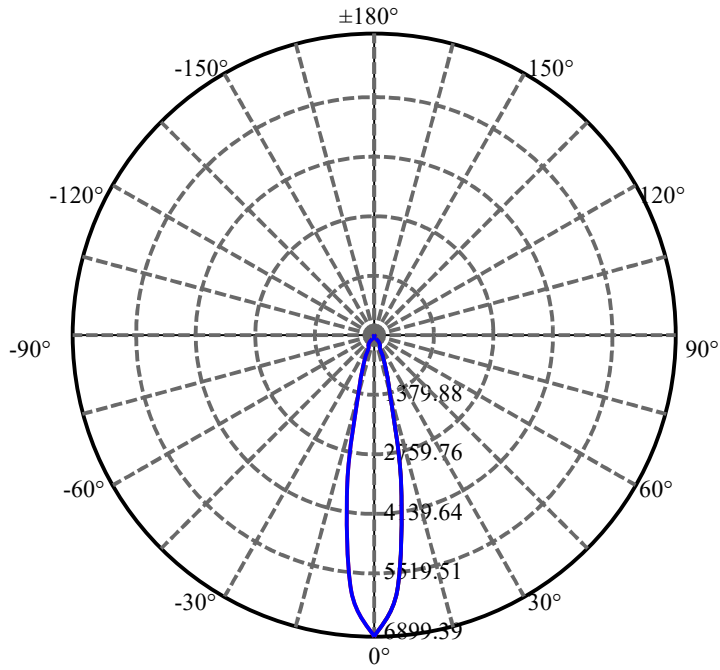
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6899.393	41.260	41.26	2.617%	3.314%
5.0	5875.275	280.681	321.941	17.804%	25.857%
10.0	3431.665	326.636	648.578	20.719%	52.090%
15.0	1299.021	184.290	832.868	11.690%	66.892%
20.0	594.437	111.442	944.309	7.069%	75.842%
25.0	357.426	82.799	1027.108	5.252%	82.492%
30.0	240.211	65.834	1092.942	4.176%	87.779%
35.0	147.764	46.457	1139.399	2.947%	91.511%
40.0	95.172	33.532	1172.932	2.127%	94.204%
45.0	58.374	22.625	1195.557	1.435%	96.021%
50.0	35.394	14.862	1210.419	.943%	97.214%
55.0	19.586	8.794	1219.213	.558%	97.921%
60.0	11.397	5.410	1224.623	.343%	98.355%
65.0	8.857	4.400	1229.023	.279%	98.709%
70.0	8.024	4.133	1233.157	.262%	99.041%
75.0	7.343	3.888	1237.044	.247%	99.353%
80.0	6.559	3.540	1240.585	.225%	99.637%
85.0	5.726	3.127	1243.711	.198%	99.888%
90.0	5.072	1.390	1245.102	.088%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1092.94	69.33%	87.78%
0-40	1172.93	74.40%	94.20%
0-60	1224.62	77.68%	98.36%
0-90	1243.71	78.89%	99.89%
0-120	1243.71	78.89%	99.89%
0-180	1245.10	78.98%	100.00%
60-90	24.50	1.55%	1.97%
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%
0-23.13	996.08	63.18%	80.00%

ZONAL LUMEN SUMMARY

0-10	648.58
10-20	295.73
20-30	148.63
30-40	79.99
40-50	37.49
50-60	14.20
60-70	8.53
70-80	7.43
80-90	3.13
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: ———

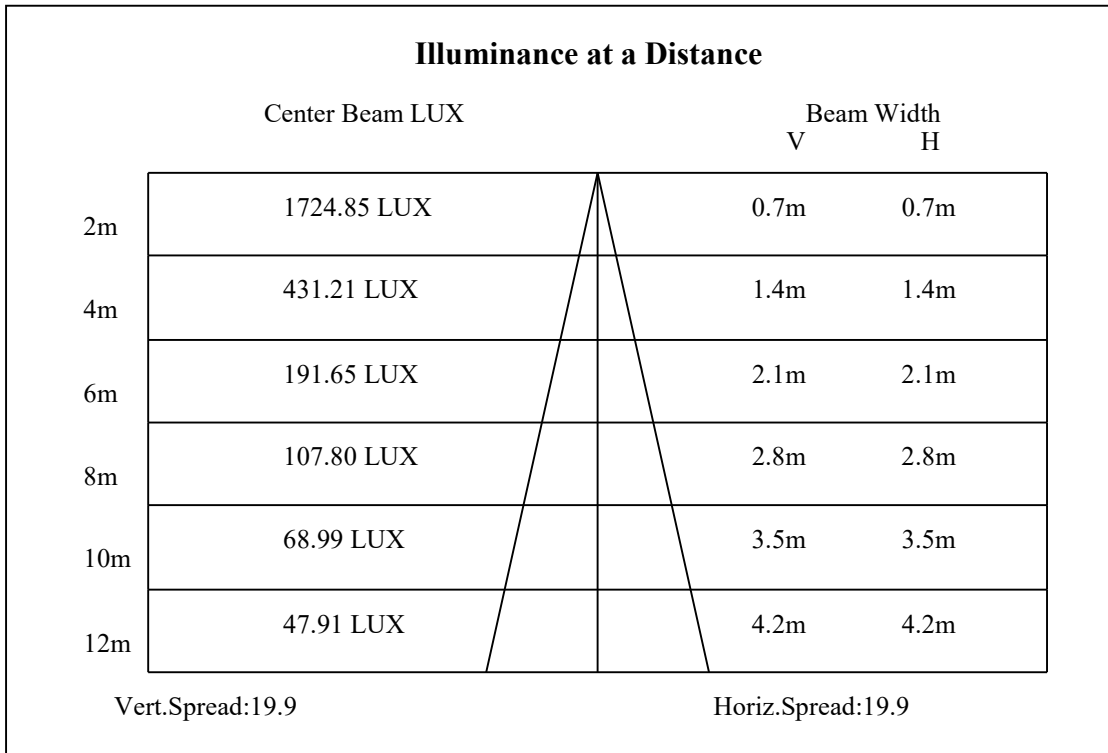
C90/C270: ———

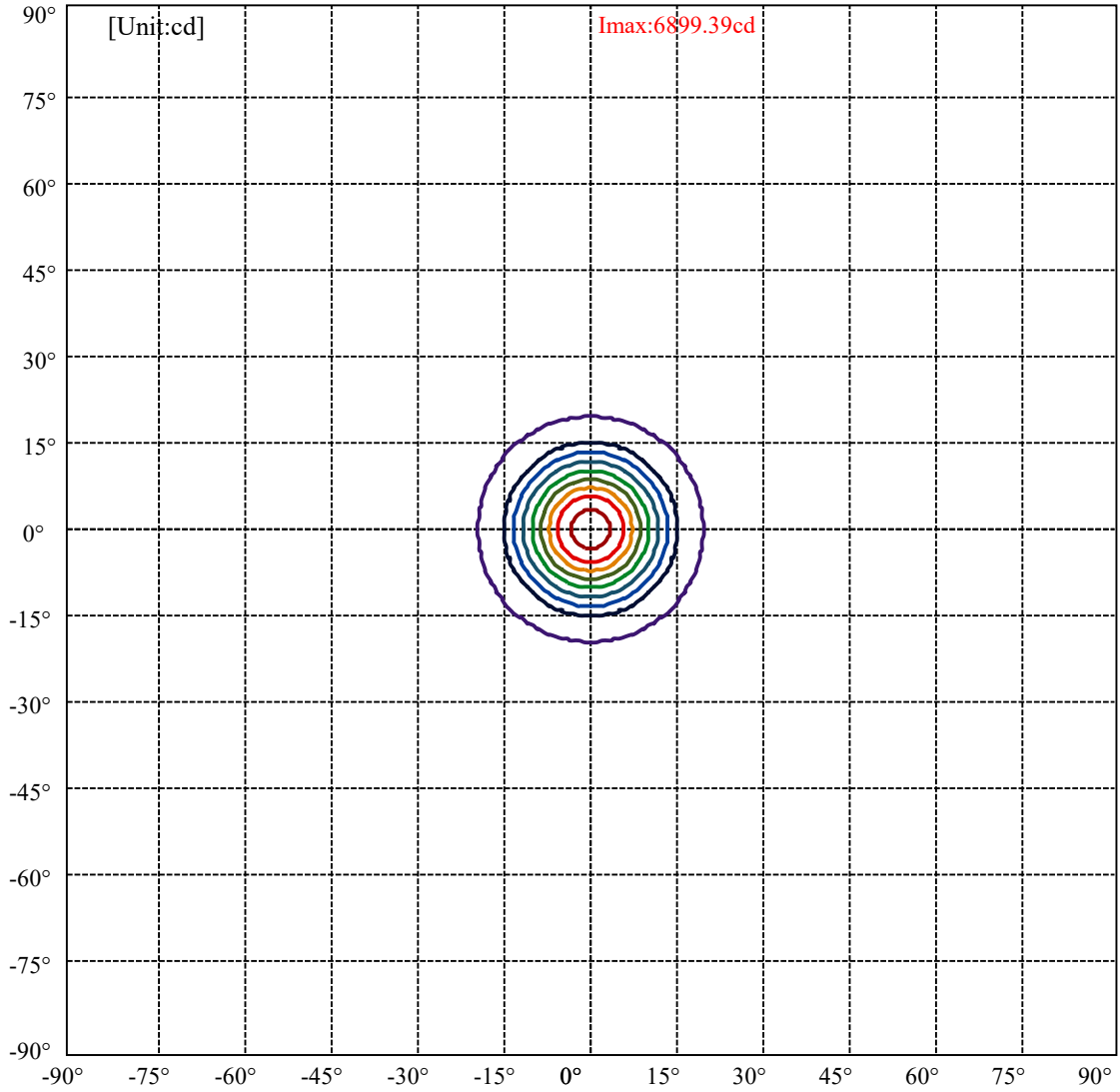
Field angle(10%Imax):C0/180Left:19.3 Right:19.3

:C90/270Left:19.3 Right:19.3

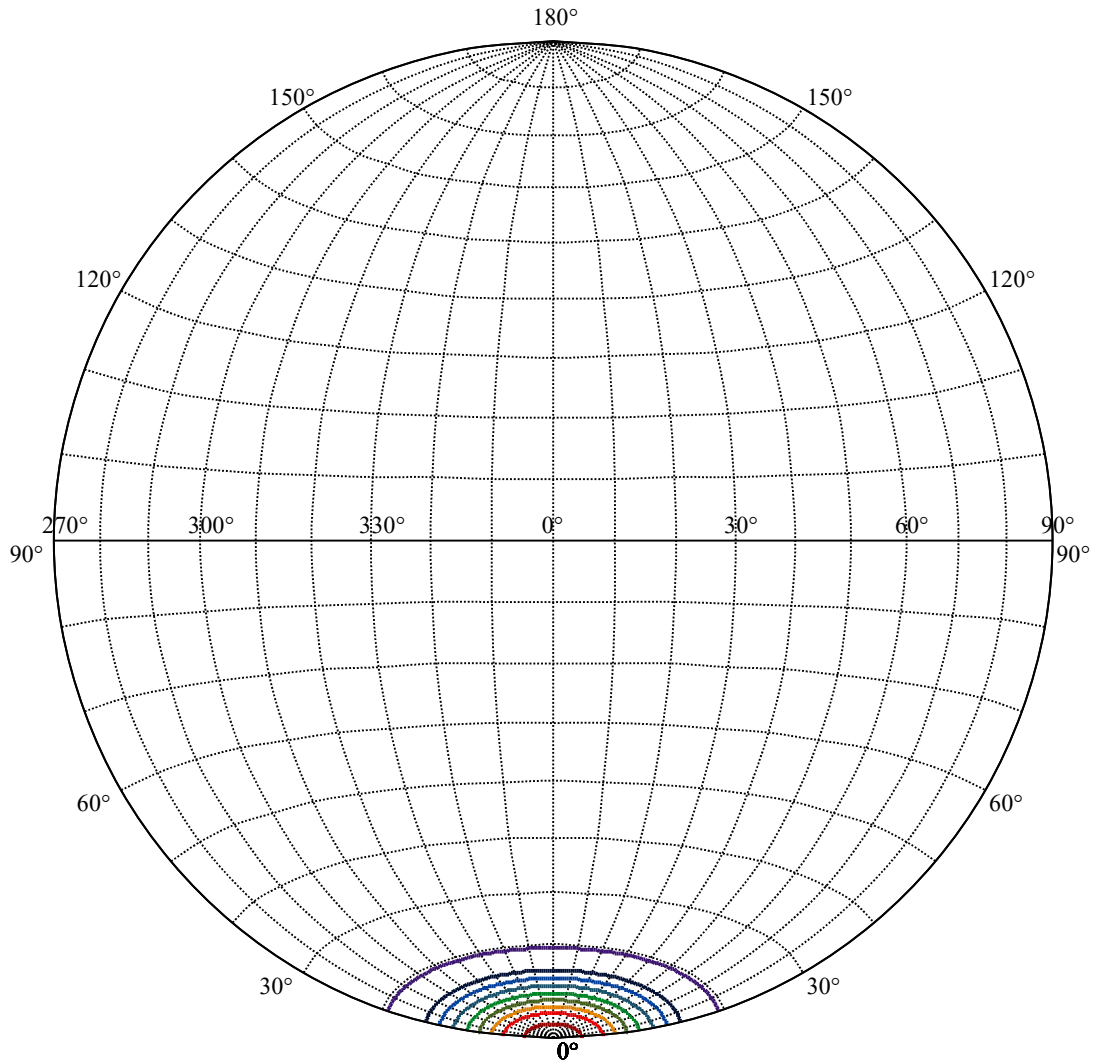
Beam Angle(50%Imax):C0/180Left:10.0 Right:10.0

:C90/270Left:10.0 Right:10.0





(10%Imax) 689.939	—
(20%Imax) 1379.88	—
(30%Imax) 2069.82	—
(40%Imax) 2759.76	—
(50%Imax) 3449.7	—
(60%Imax) 4139.64	—
(70%Imax) 4829.57	—
(80%Imax) 5519.51	—
(90%Imax) 6209.45	—



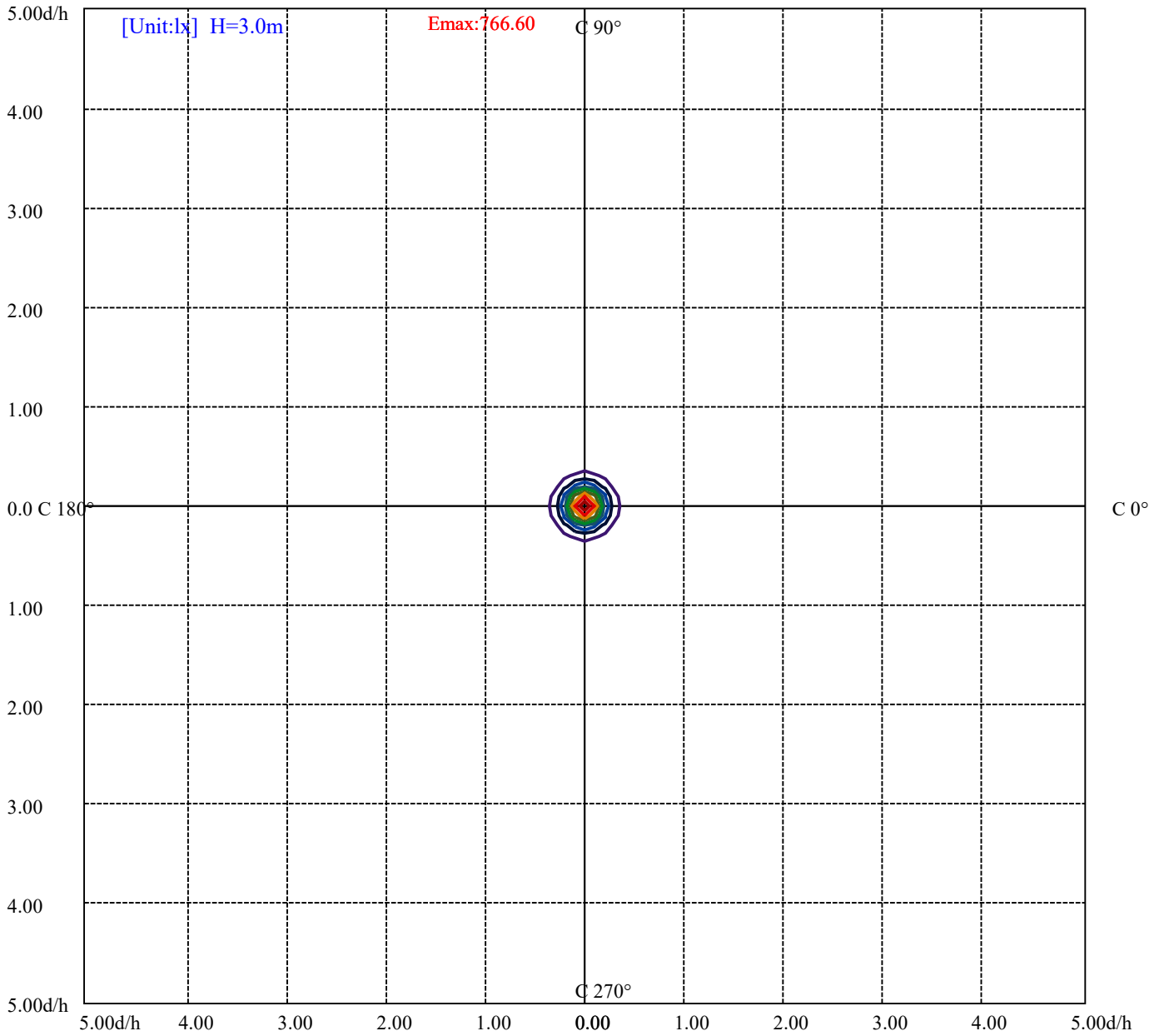
House

[Unit:cd]

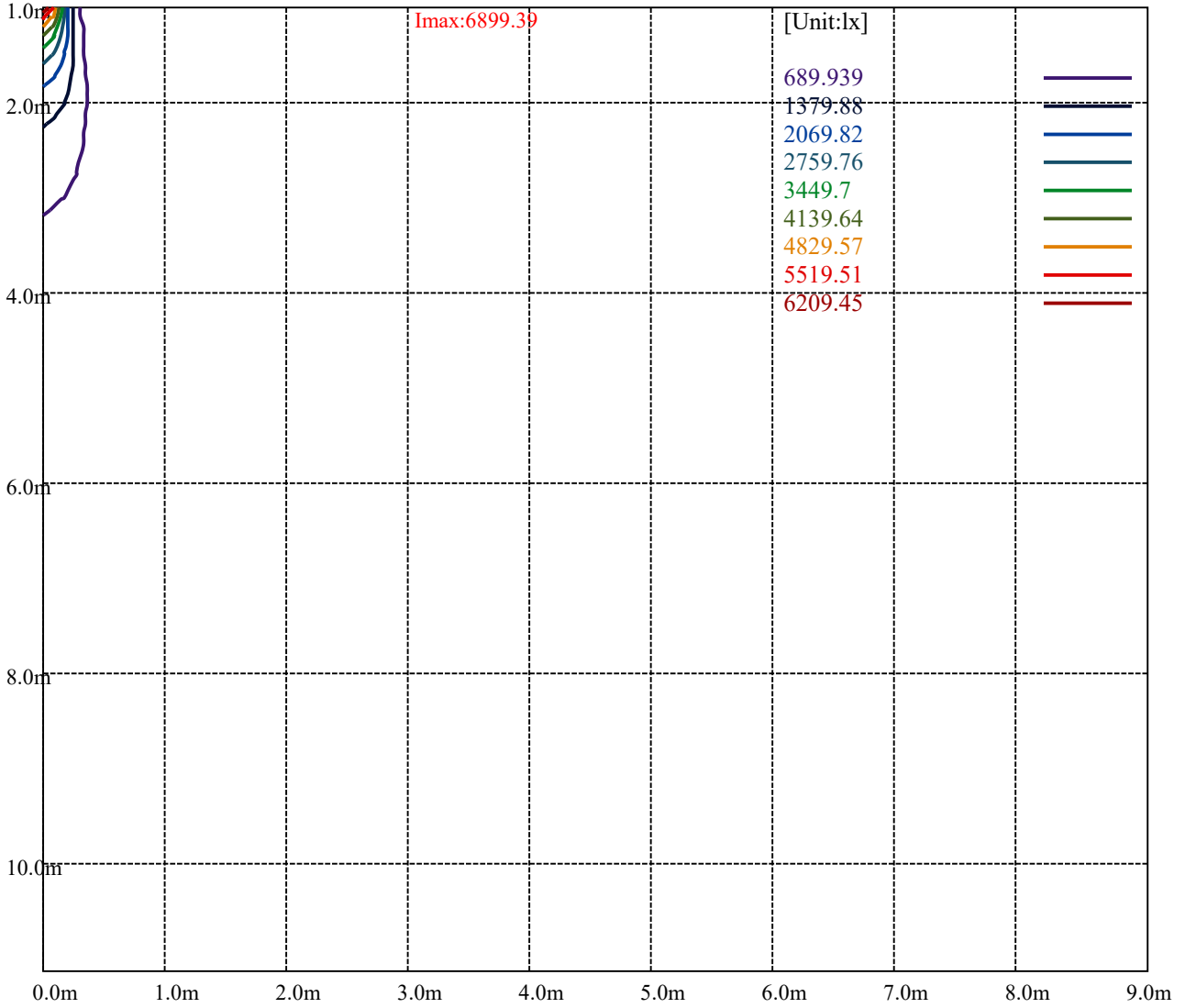
Road

Imax:6899.39

(10%Imax) 689.939	—
(20%Imax) 1379.88	—
(30%Imax) 2069.82	—
(40%Imax) 2759.76	—
(50%Imax) 3449.7	—
(60%Imax) 4139.64	—
(70%Imax) 4829.57	—
(80%Imax) 5519.51	—
(90%Imax) 6209.45	—



(10%Emax) 76.65955	—
(20%Emax) 153.3189	—
(30%Emax) 229.9789	—
(40%Emax) 306.6378	—
(50%Emax) 383.2978	—
(60%Emax) 459.9578	—
(70%Emax) 536.6166	—
(80%Emax) 613.2767	—
(90%Emax) 689.9367	—



Luminance Table

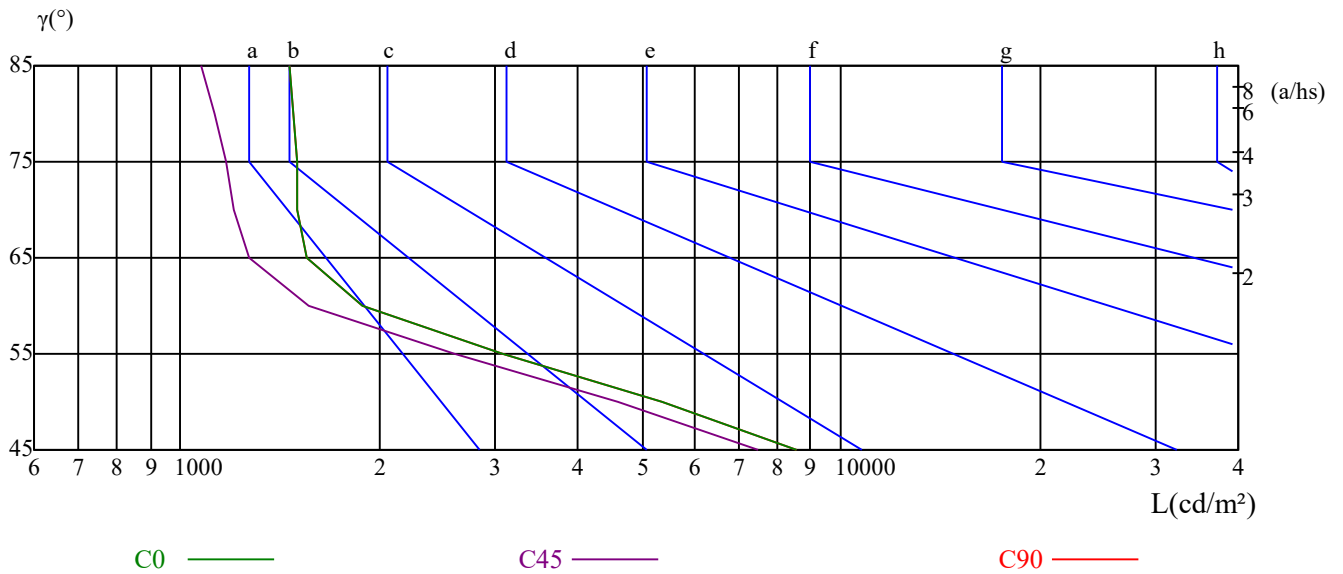
γ	45	50	55	60	65	70	75	80	85
C0	8565	5352	3078	1880	1549	1506	1500	1481	1458
C45	7474	4602	2606	1565	1267	1207	1174	1128	1074
C90	8565	5352	3078	1880	1549	1506	1500	1481	1458

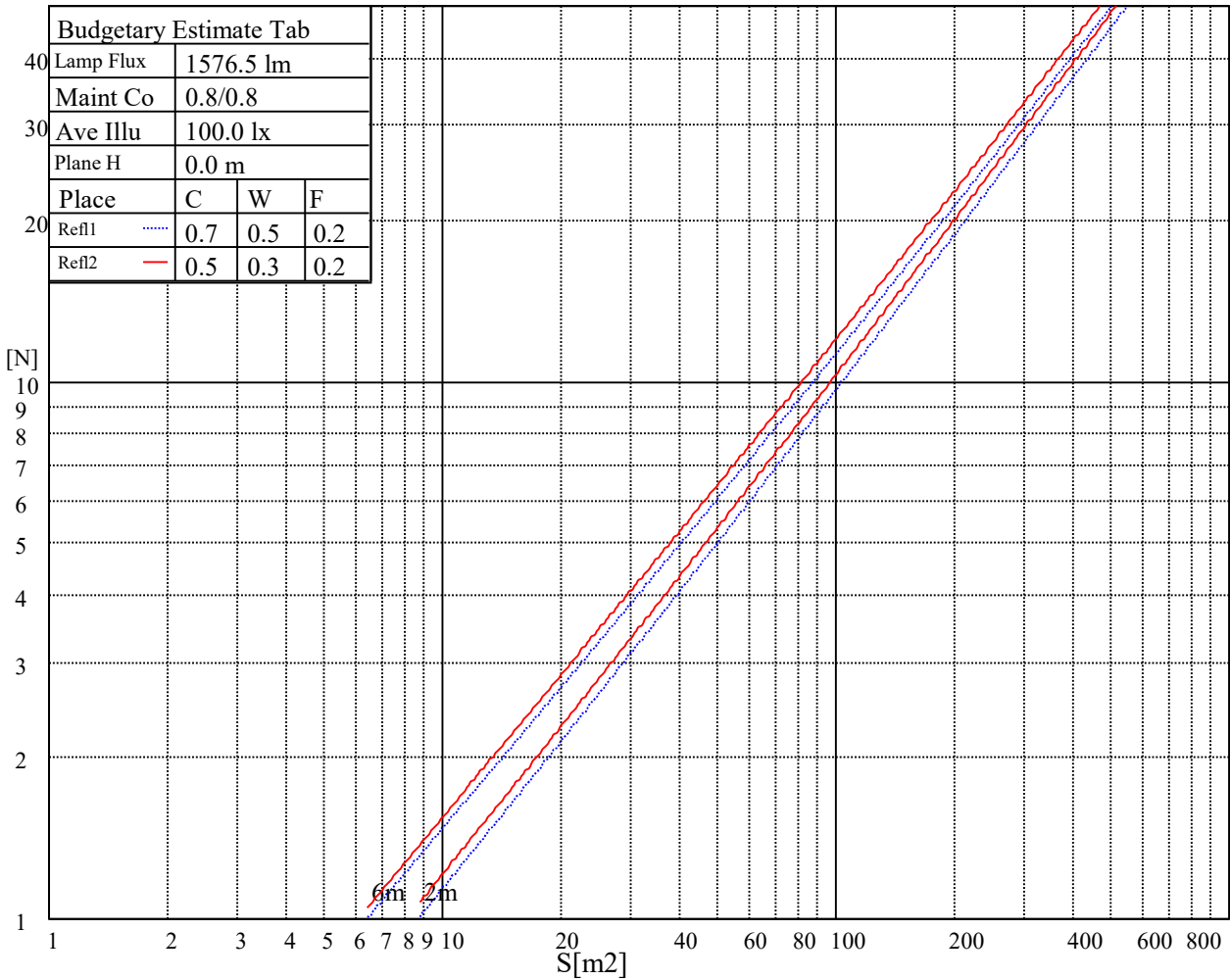
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3358	3358	3358	4546	4546	4546	10527	10527	10527

Glare Table

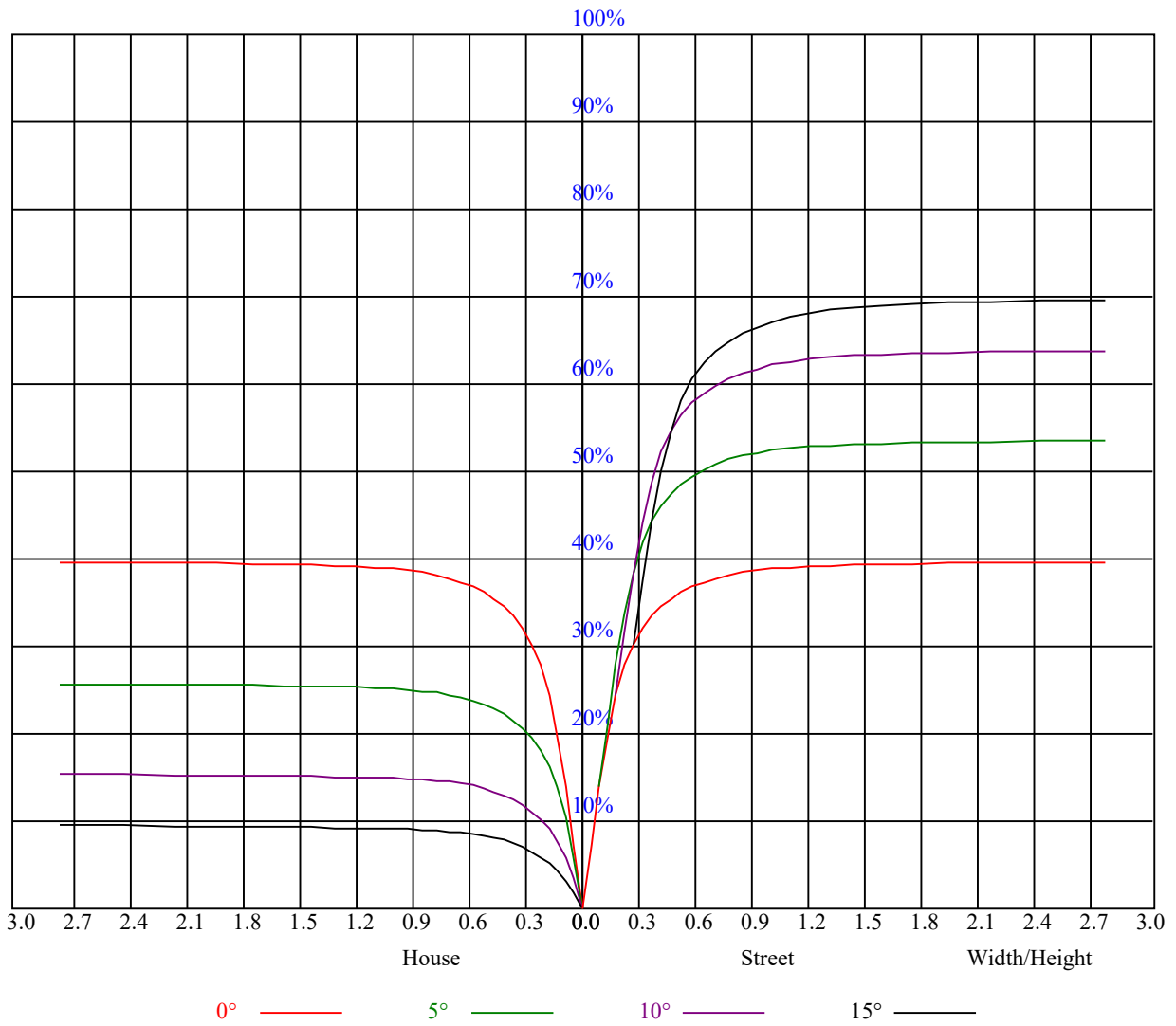
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

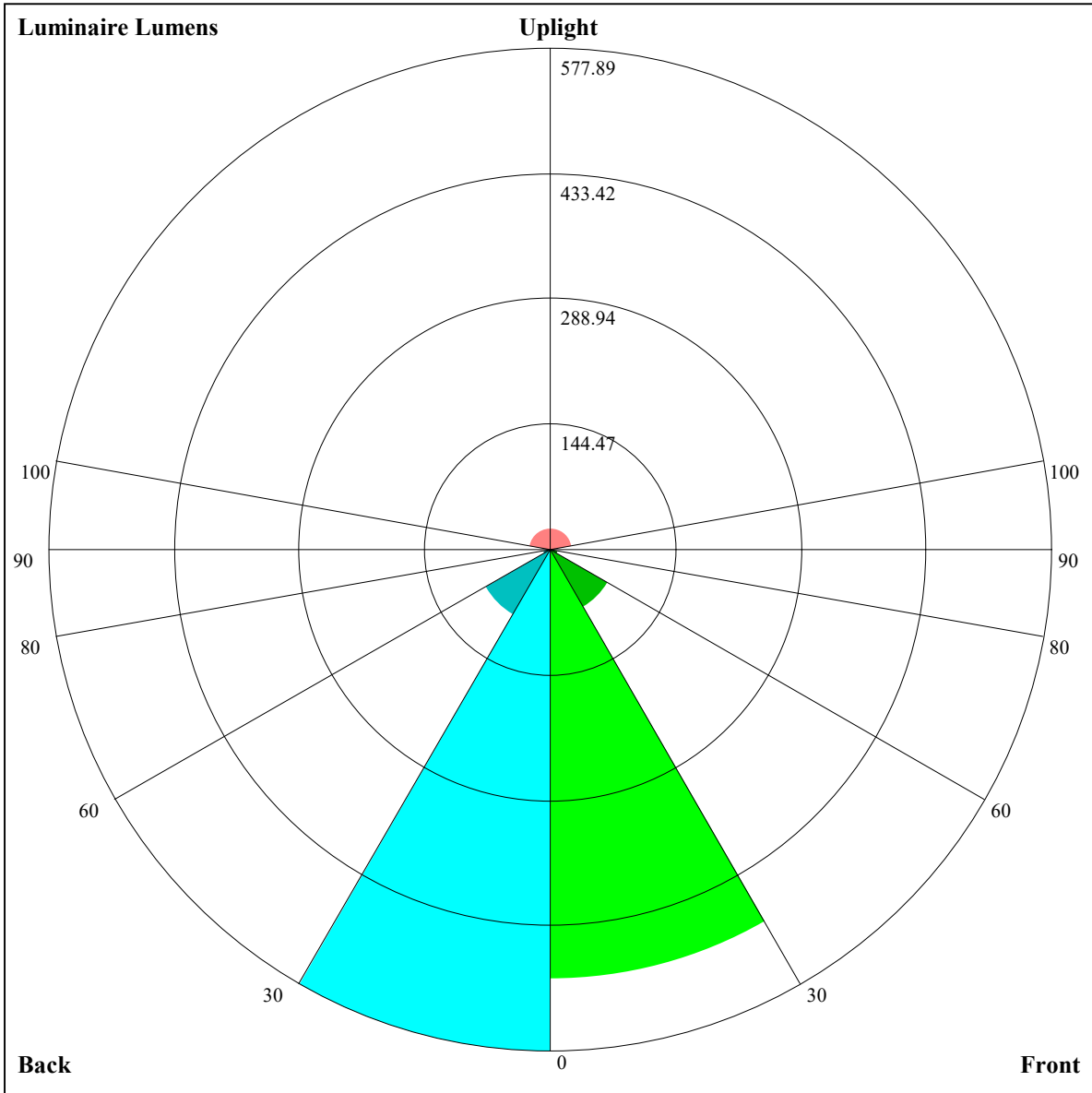
Luminance Limiting Curve





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	0.97	0.97	0.97	0.95	0.95	0.95	0.91	0.91	0.91	0.87	0.87	0.87	0.83	0.83	0.83	0.82
1	0.88	0.86	0.83	0.87	0.84	0.82	0.83	0.81	0.80	0.80	0.79	0.77	0.77	0.76	0.75	0.73
2	0.84	0.81	0.78	0.82	0.79	0.77	0.80	0.77	0.75	0.77	0.75	0.74	0.75	0.74	0.72	0.71
3	0.80	0.76	0.74	0.79	0.76	0.73	0.77	0.74	0.72	0.75	0.73	0.71	0.73	0.71	0.70	0.68
4	0.77	0.73	0.70	0.76	0.72	0.70	0.74	0.71	0.69	0.73	0.70	0.68	0.71	0.69	0.67	0.66
5	0.74	0.70	0.67	0.73	0.70	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.70	0.67	0.65	0.64
6	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.68	0.66	0.64	0.63
7	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.67	0.64	0.62	0.66	0.64	0.62	0.61
8	0.68	0.64	0.61	0.67	0.64	0.61	0.66	0.63	0.61	0.66	0.63	0.61	0.65	0.62	0.61	0.60
9	0.66	0.62	0.60	0.65	0.62	0.60	0.65	0.62	0.60	0.64	0.61	0.59	0.64	0.61	0.59	0.58
10	0.64	0.61	0.58	0.64	0.61	0.58	0.63	0.60	0.58	0.63	0.60	0.58	0.62	0.60	0.58	0.57





Luminaire Lumens:

FL=494.48,FM=76.4,FH=8.32,FVH=3.12

BL=577.89,BM=86.94,BH=8.62,BVH=3.18

UL=5.53,UH=26.33

BUG Rating:B2-U2-G0

Intensity data(cd)

C/ γ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	6960.23	5654.29	2938.91	1090.67	522.49	324.83	208.44	134.45	86.44
45.0	6952.52	5295.32	2563.43	890.26	475.69	302.81	200.13	124.04	78.57
90.0	6790.11	4923.14	2506.72	893.84	441.11	296.81	189.67	117.33	77.13
135.0	6894.71	6045.74	3747.14	1472.21	599.01	364.47	279.14	148.60	98.11
180.0	6960.23	6263.22	3948.65	1074.59	664.48	383.08	249.85	157.24	102.07
225.0	6952.52	6623.84	4476.64	1869.72	765.94	430.49	281.45	179.76	114.79
270.0	6790.11	6624.94	4395.70	2026.08	745.46	424.48	284.64	176.18	112.87
315.0	6894.71	5571.71	2876.15	1074.81	541.31	332.43	228.37	144.52	91.39
360.0	6960.23	5654.29	2938.91	1090.67	522.49	324.83	208.44	134.45	86.44
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	52.08	31.55	17.01	9.97	8.53	7.82	7.16	6.44	5.51
45.0	47.13	28.63	15.31	9.80	8.64	7.87	7.21	6.39	5.45
90.0	47.07	28.08	15.20	9.74	8.42	7.76	7.10	6.22	5.40
135.0	59.19	36.45	21.14	11.84	9.03	8.15	7.49	6.61	5.73
180.0	62.60	39.37	21.80	12.00	8.92	7.98	7.32	6.50	5.78
225.0	70.53	42.61	24.22	13.27	9.25	8.26	7.60	6.83	6.06
270.0	71.96	43.38	23.95	14.04	9.19	8.26	7.54	6.83	6.06
315.0	56.43	33.09	18.06	10.52	8.86	8.09	7.32	6.66	5.84
360.0	52.08	31.55	17.01	9.97	8.53	7.82	7.16	6.44	5.51
C/ γ (°)	90.0								
0.0	4.96								
45.0	5.01								
90.0	5.07								
135.0	5.07								
180.0	5.07								
225.0	5.18								
270.0	5.18								
315.0	5.07								
360.0	4.96								