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Nata

Client:

LumCAT: 4-2202-L

Luminaire: 92.70.131.00

Report No: NT2018010917

Test No: GC2018010917

LampCAT: SEOUL SAWx15

Lamp flux(lm): 3105.0

Number of Lamps: 1

Length(mm): 102

Phm Type: C

Voltage(V): 34.6000

Current(A): 0.6400

Power (W): 22.1140

PF: 0.0000

Ballast type: DC

Width(mm): 102

Height(mm): 0

Photometric Results

Lumens(lm): 3023.04, Efficiency(%): 97.36% , Luminous Efficacy(lm/W): 136.70

Central intensity(cd): 14990.480, Maximum intensity(cd): 14990.480

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=22.2

[C90/270]Total=22.2

Field angle(10%Imax): [C0/180]Total=39.8

[C90/270]Total=39.8

Maximum s/h(1/2): C0_180=0.38 C90_270=0.38

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(%): 100.15%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 95.846%

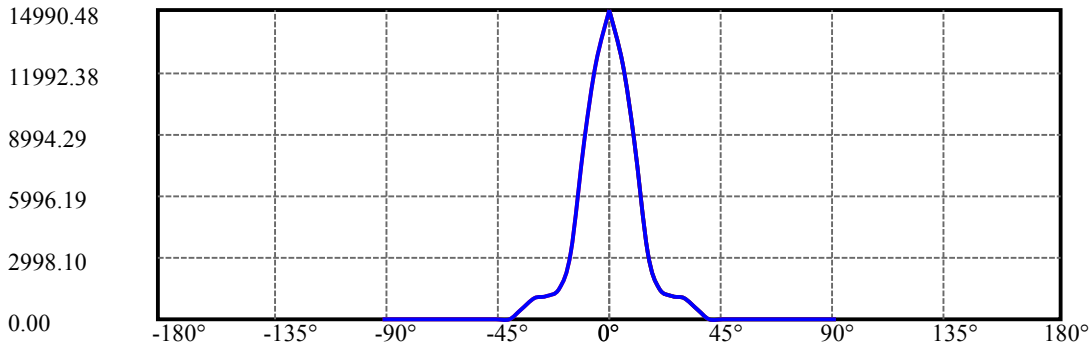
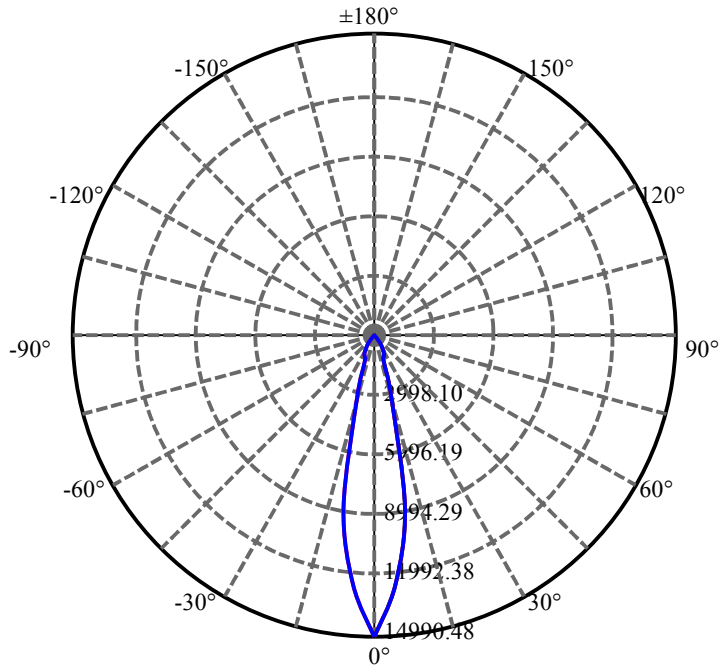
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	14990.481	89.646	89.646	2.887%	2.965%
5.0	12428.569	593.754	683.4	19.123%	22.606%
10.0	8683.014	826.476	1509.876	26.618%	49.946%
15.0	3277.714	465.004	1974.88	14.976%	65.328%
20.0	1460.990	273.898	2248.778	8.821%	74.388%
25.0	1134.348	262.775	2511.553	8.463%	83.080%
30.0	999.294	273.875	2785.428	8.820%	92.140%
35.0	485.577	152.665	2938.093	4.917%	97.190%
40.0	32.022	11.283	2949.375	.363%	97.563%
45.0	20.522	7.954	2957.329	.256%	97.826%
50.0	18.444	7.745	2965.074	.249%	98.083%
55.0	17.164	7.707	2972.781	.248%	98.337%
60.0	16.538	7.850	2980.631	.253%	98.597%
65.0	15.842	7.870	2988.501	.253%	98.857%
70.0	15.024	7.738	2996.24	.249%	99.113%
75.0	14.404	7.626	3003.866	.246%	99.366%
80.0	14.205	7.668	3011.534	.247%	99.619%
85.0	14.122	7.711	3019.245	.248%	99.874%
90.0	13.847	3.795	3023.04	.122%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2785.43	89.71%	92.14%
0-40	2949.38	94.99%	97.56%
0-60	2980.63	95.99%	98.60%
0-90	3019.25	97.24%	99.87%
0-120	3019.25	97.24%	99.87%
0-180	3023.04	97.36%	100.00%
60-90	46.46	1.50%	1.54%
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%
0-23.23	2418.43	77.89%	80.00%

ZONAL LUMEN SUMMARY

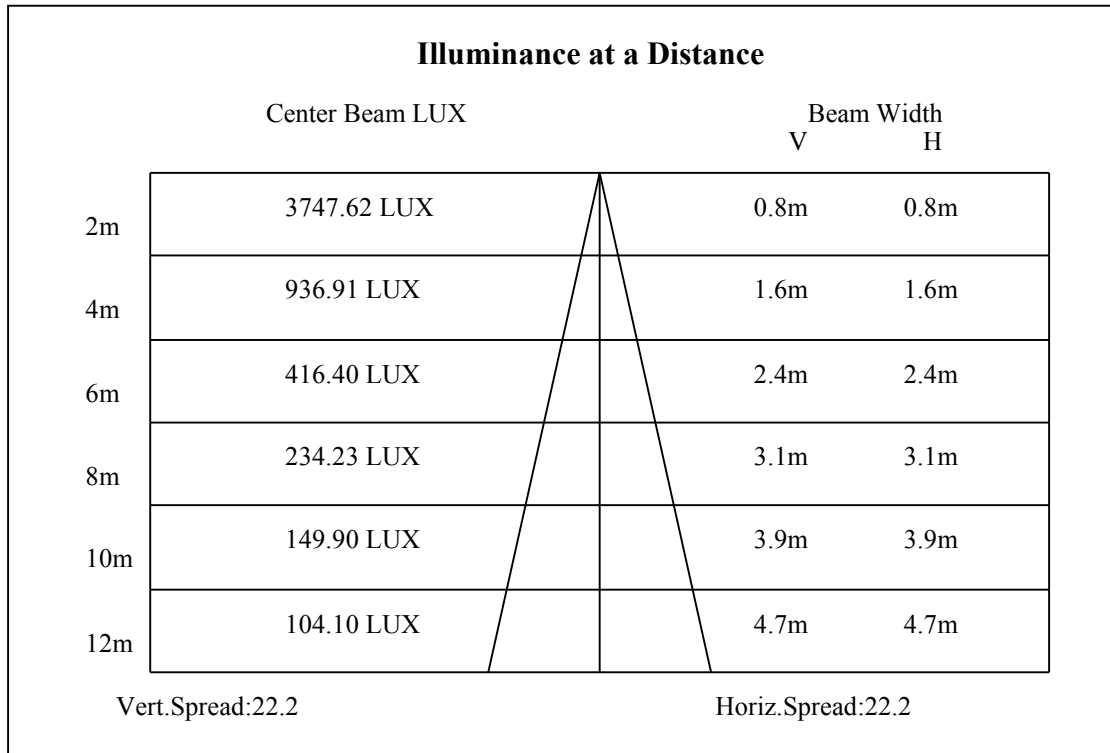
0-10	1509.88
10-20	738.90
20-30	536.65
30-40	163.95
40-50	15.70
50-60	15.56
60-70	15.61
70-80	15.29
80-90	7.71
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

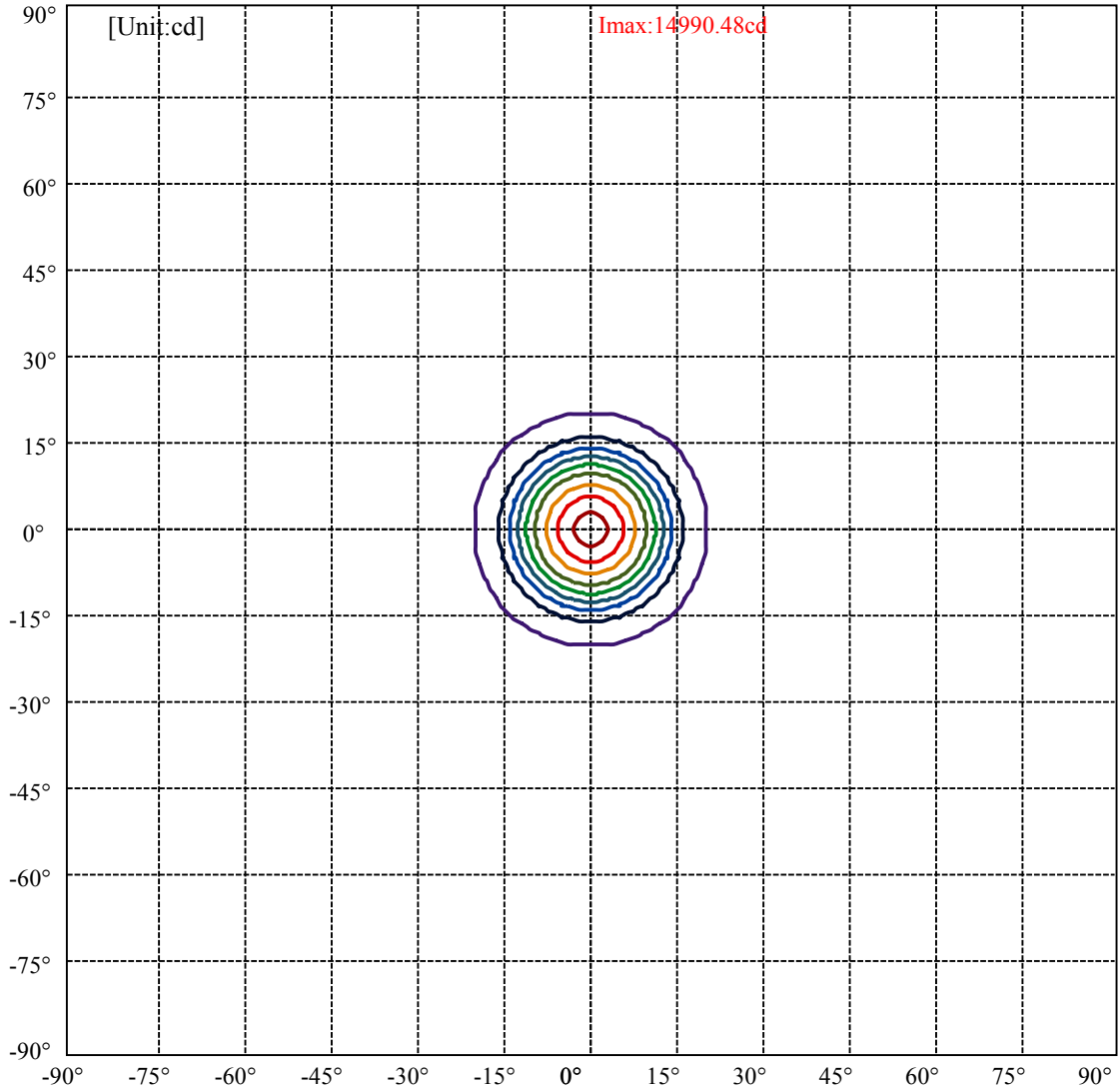


C0(Max): ———
C0/C180: ———
C90/C270: ———

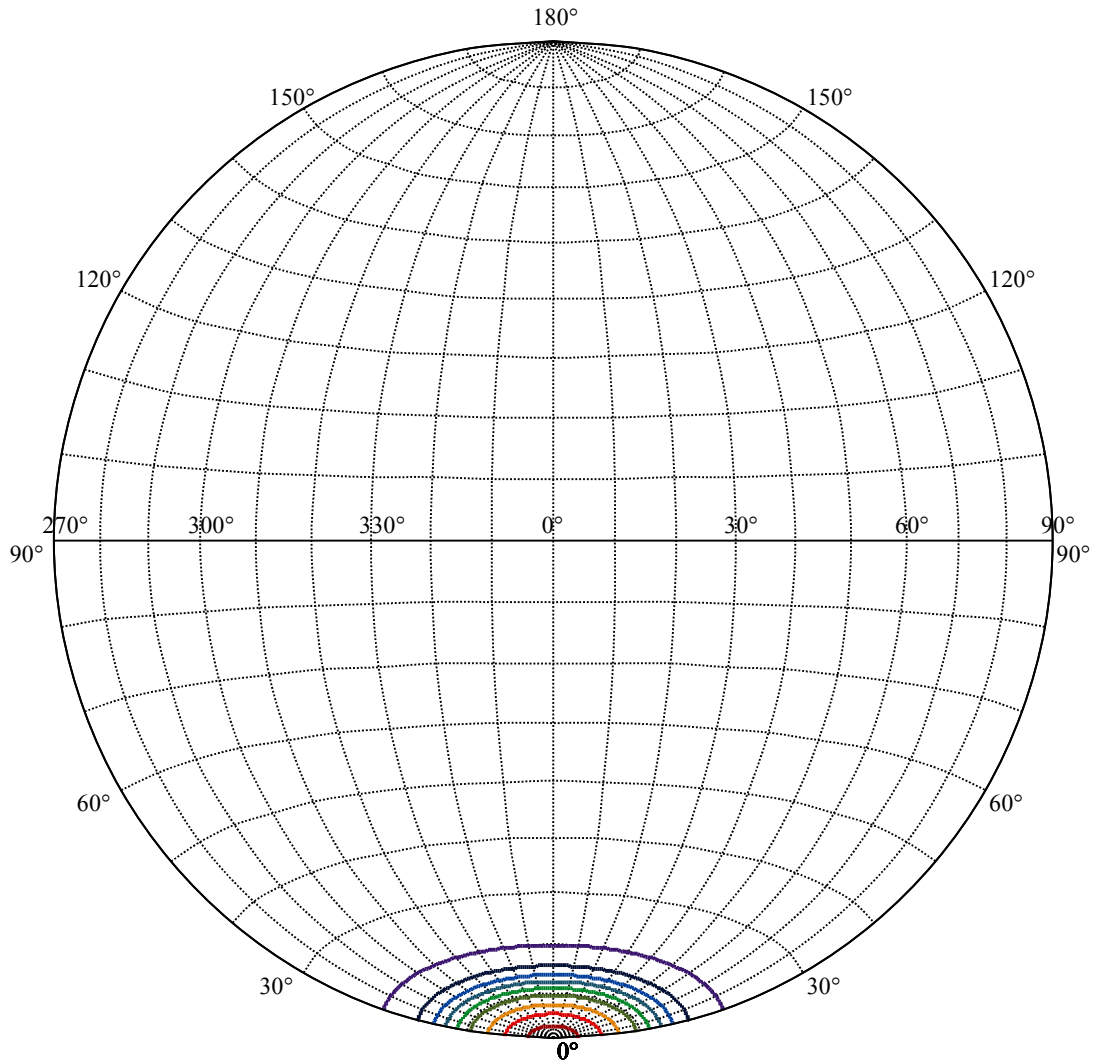
Field angle(10%Imax):C0/180Left:19.9 Right:19.9
:C90/270Left:19.9 Right:19.9

Beam Angle(50%Imax):C0/180Left:11.1 Right:11.1
:C90/270Left:11.1 Right:11.1





(10%Imax) 1499.05	—
(20%Imax) 2998.1	—
(30%Imax) 4497.14	—
(40%Imax) 5996.19	—
(50%Imax) 7495.24	—
(60%Imax) 8994.29	—
(70%Imax) 10493.3	—
(80%Imax) 11992.4	—
(90%Imax) 13491.4	—



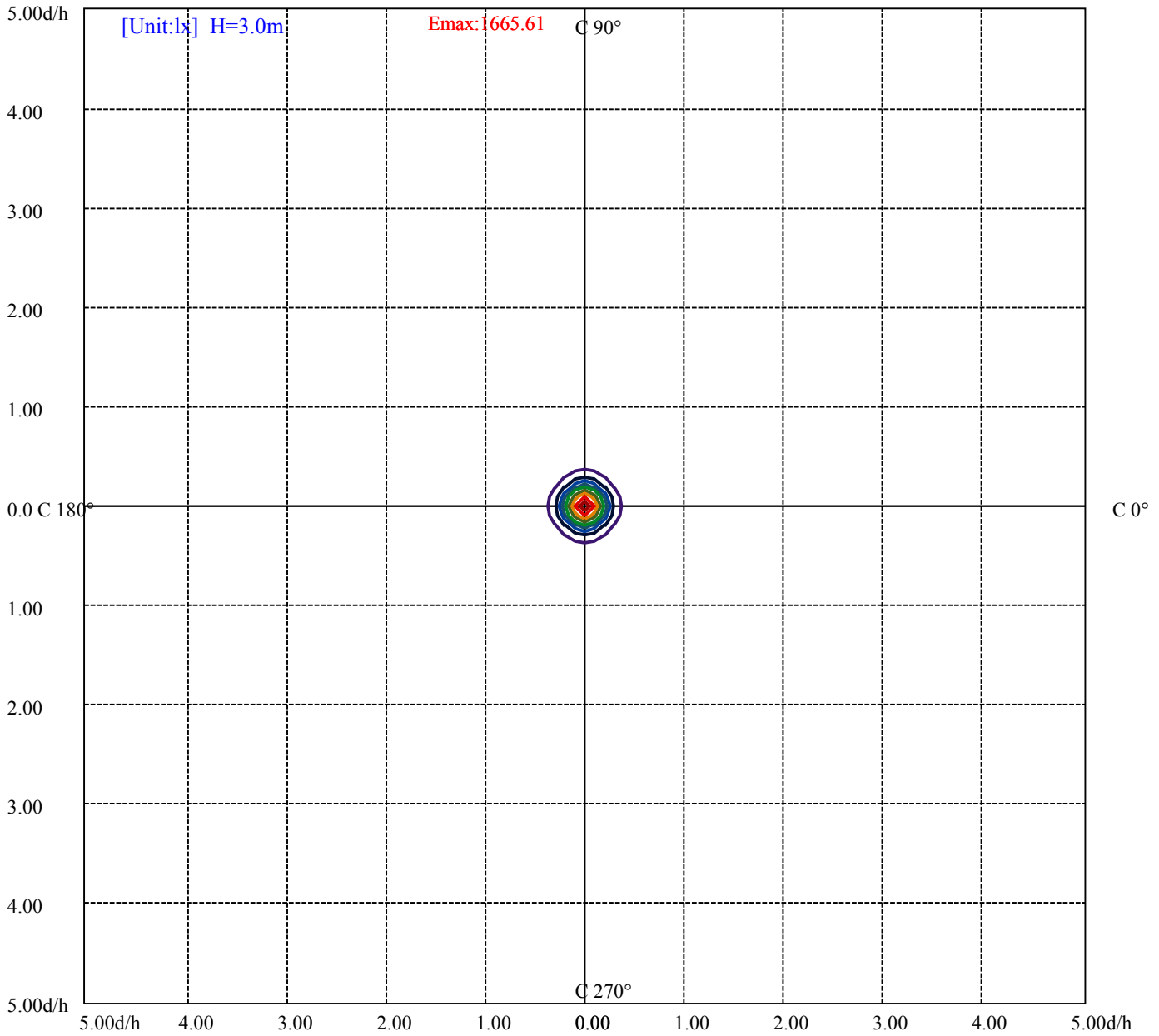
House

[Unit:cd]

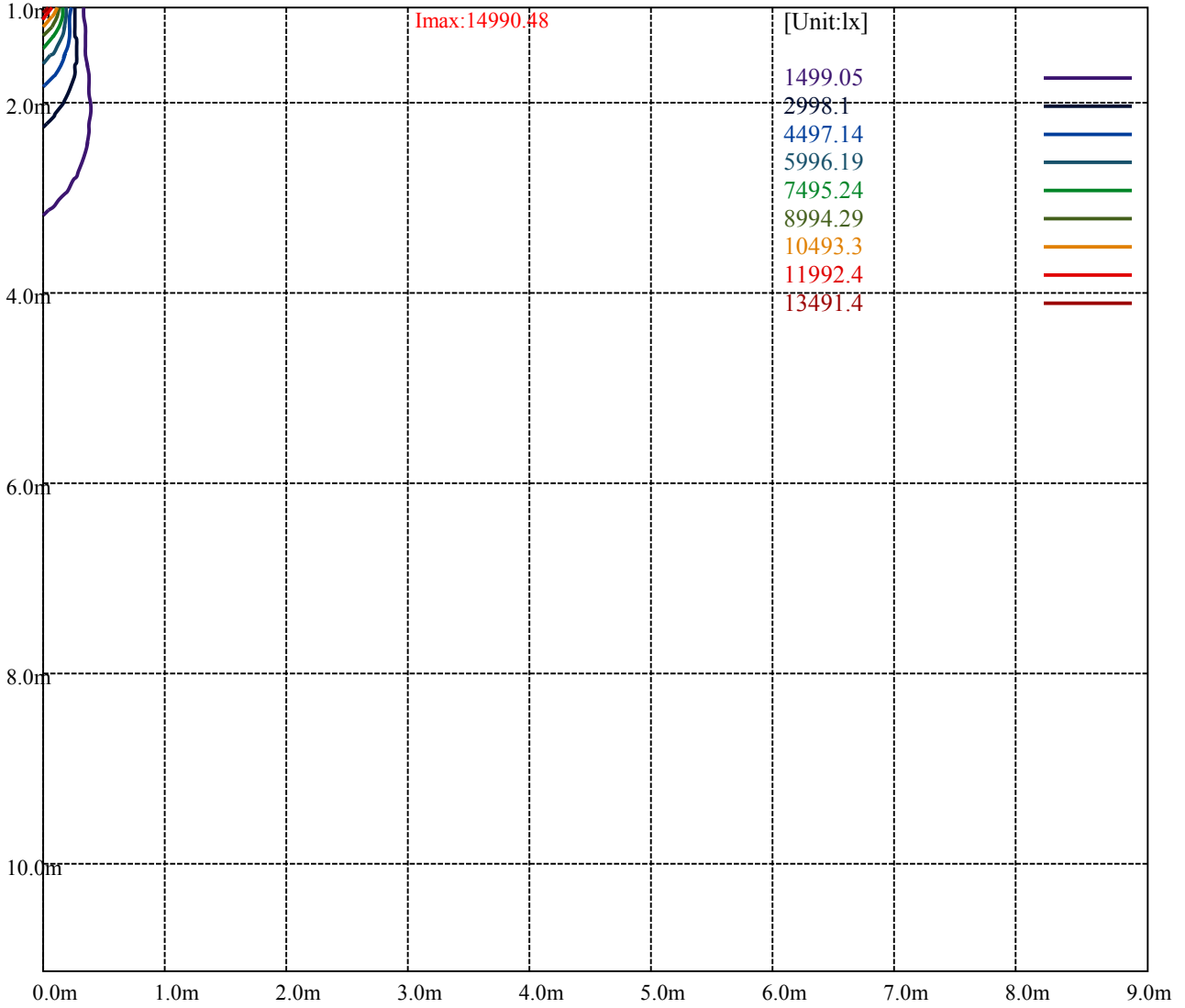
Road

Imax:14990.48

(10%Imax) 1499.05	—
(20%Imax) 2998.1	—
(30%Imax) 4497.14	—
(40%Imax) 5996.19	—
(50%Imax) 7495.24	—
(60%Imax) 8994.29	—
(70%Imax) 10493.3	—
(80%Imax) 11992.4	—
(90%Imax) 13491.4	—



(10%Emax) 166.56	—
(20%Emax) 333.12	—
(30%Emax) 499.68	—
(40%Emax) 666.24	—
(50%Emax) 832.8	—
(60%Emax) 999.36	—
(70%Emax) 1165.922	—
(80%Emax) 1332.478	—
(90%Emax) 1499.044	—



Luminance Table

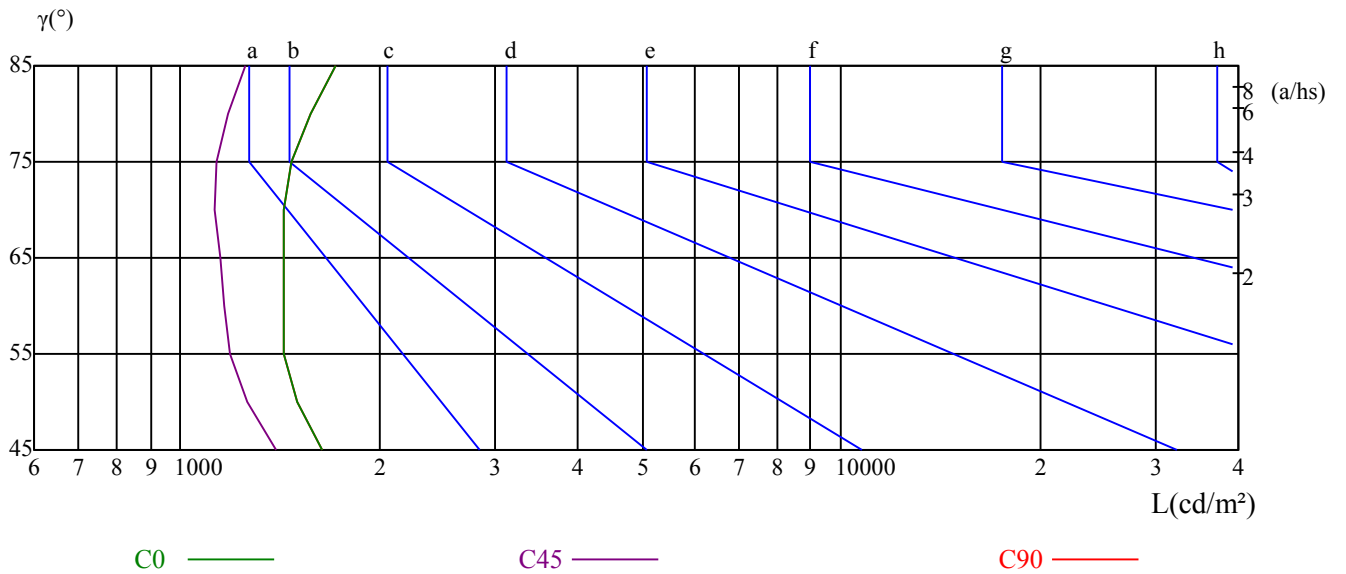
γ	45	50	55	60	65	70	75	80	85
C0	1635	1498	1432	1430	1433	1436	1472	1571	1717
C45	1396	1260	1186	1165	1147	1128	1132	1180	1255
C90	1635	1498	1432	1430	1433	1436	1472	1571	1717

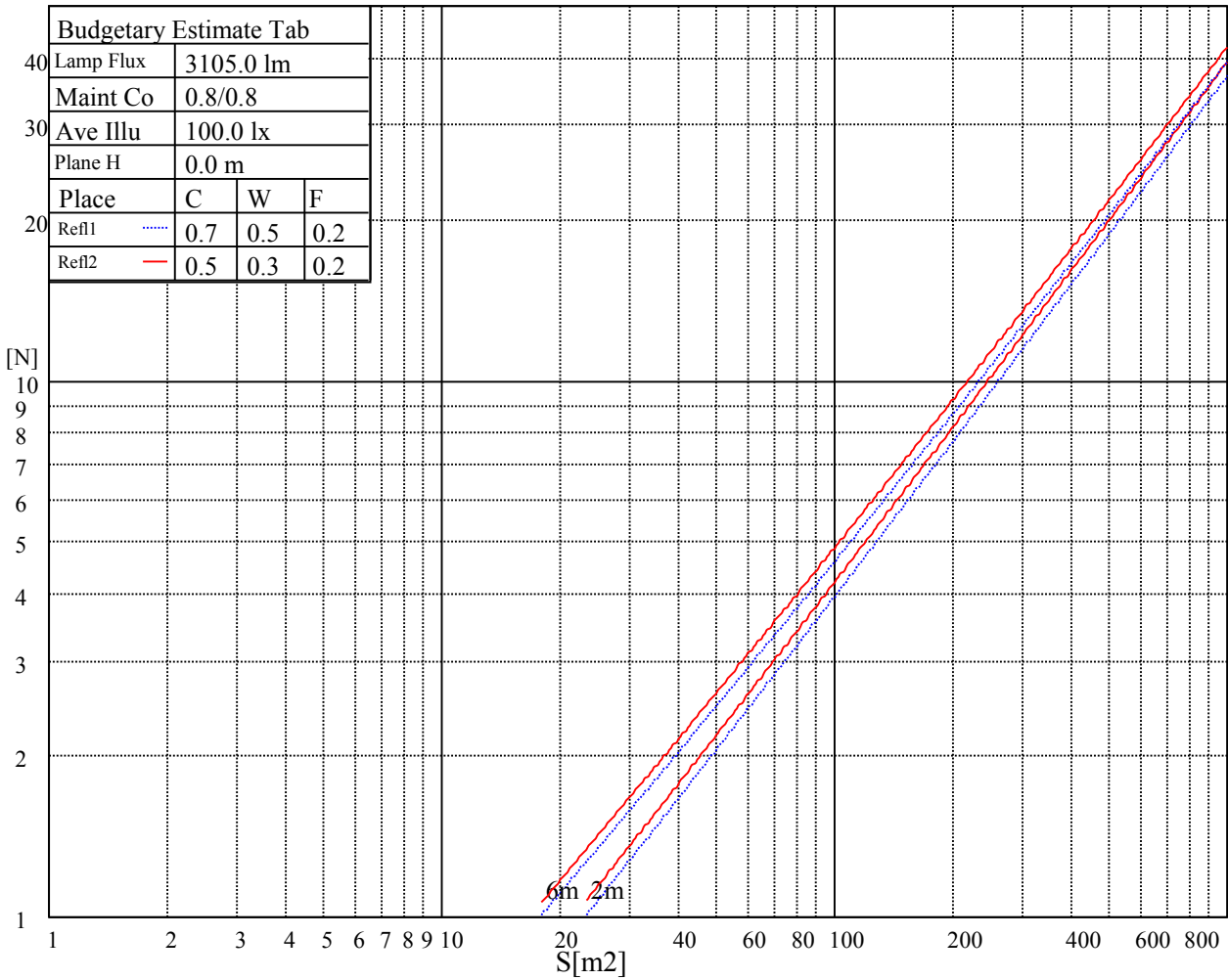
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3603	3603	3603	5349	5349	5349	15574	15574	15574

Glare Table

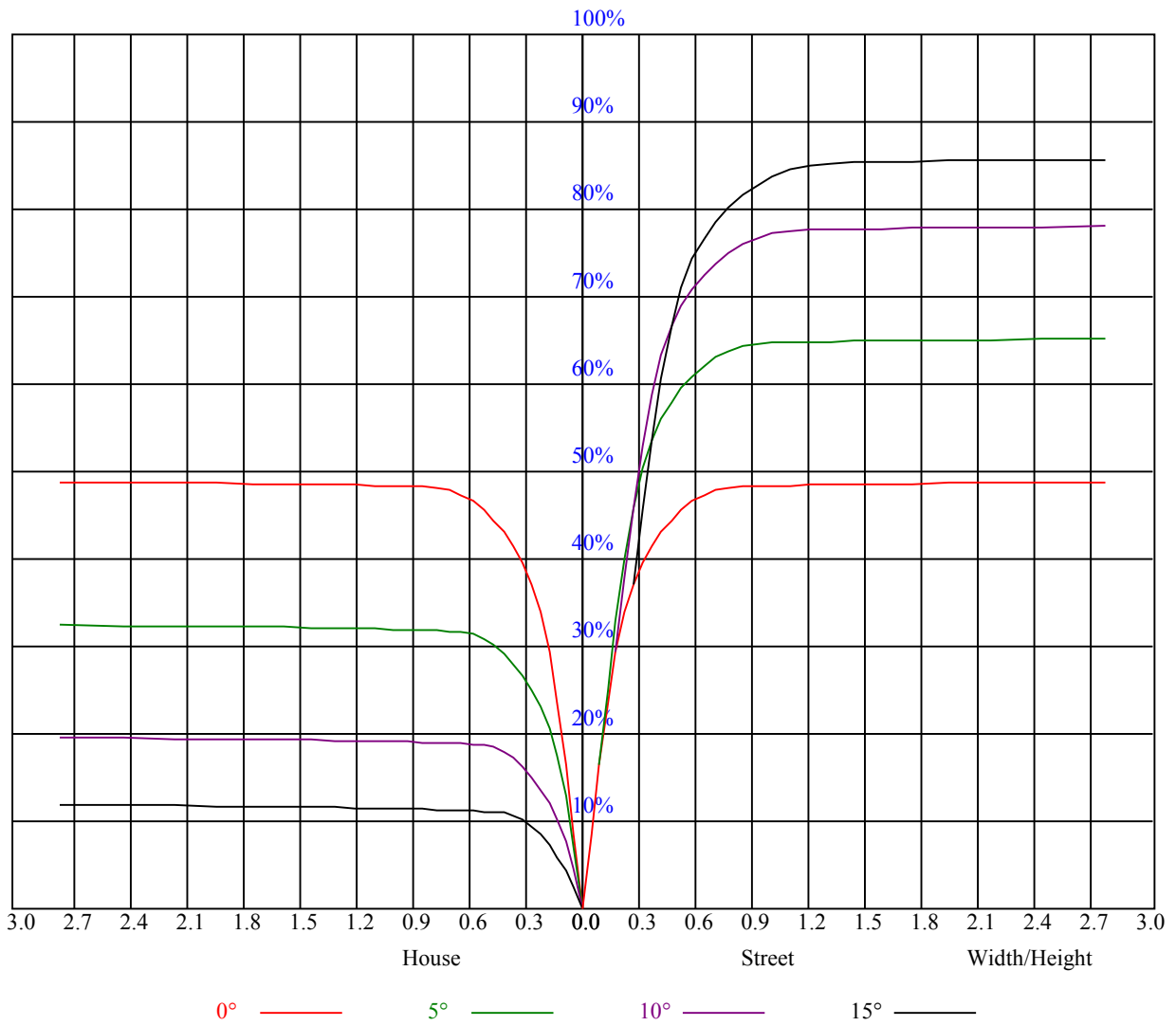
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

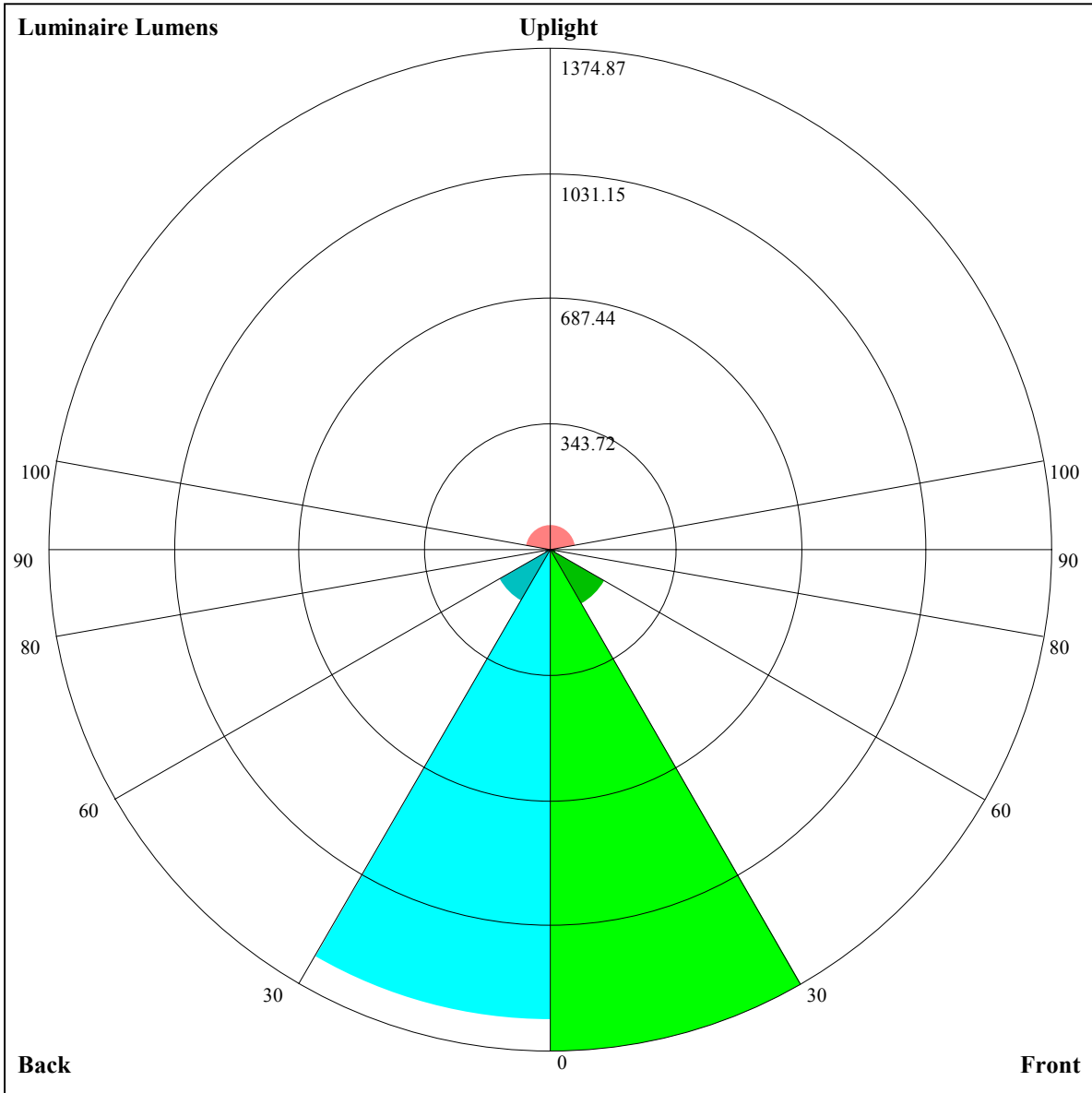
Luminance Limiting Curve





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	1.19	1.19	1.19	1.16	1.16	1.16	1.11	1.11	1.11	1.07	1.07	1.07	1.02	1.02	1.02	1.00
1	1.09	1.06	1.03	1.07	1.04	1.02	1.03	1.01	0.99	0.99	0.97	0.96	0.96	0.94	0.93	0.91
2	1.04	1.00	0.97	1.02	0.99	0.96	0.99	0.96	0.93	0.96	0.94	0.91	0.93	0.91	0.90	0.88
3	0.99	0.95	0.91	0.98	0.94	0.91	0.95	0.92	0.89	0.93	0.90	0.88	0.91	0.89	0.87	0.85
4	0.95	0.91	0.87	0.94	0.90	0.87	0.92	0.89	0.86	0.90	0.87	0.85	0.89	0.86	0.84	0.83
5	0.92	0.87	0.84	0.91	0.87	0.84	0.90	0.86	0.83	0.88	0.85	0.82	0.87	0.84	0.82	0.80
6	0.89	0.84	0.81	0.88	0.84	0.81	0.87	0.83	0.80	0.86	0.82	0.80	0.85	0.82	0.79	0.78
7	0.86	0.82	0.79	0.86	0.82	0.78	0.85	0.81	0.78	0.84	0.80	0.78	0.83	0.80	0.77	0.76
8	0.84	0.80	0.76	0.83	0.79	0.76	0.82	0.79	0.76	0.82	0.78	0.76	0.81	0.78	0.75	0.74
9	0.82	0.77	0.75	0.81	0.77	0.74	0.80	0.77	0.74	0.80	0.76	0.74	0.79	0.76	0.74	0.73
10	0.80	0.76	0.73	0.79	0.75	0.73	0.79	0.75	0.72	0.78	0.75	0.72	0.77	0.74	0.72	0.71





Luminaire Lumens:

FL=1374.87,FM=173.79,FH=15.45,FVH=7.66

BL=1291.91,BM=162.61,BH=15.41,BVH=7.68

UL=15.11,UH=71.89

BUG Rating:B3-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	14953.32	13450.28	9640.38	4118.22	1629.67	1207.94	1035.06	630.95	42.17
45.0	15035.90	12927.24	9376.10	3958.56	1466.70	1158.94	992.12	543.41	36.50
90.0	14980.85	12640.95	8241.39	2801.27	1384.67	1098.60	975.05	416.67	26.65
135.0	14991.86	12745.56	8853.07	3479.56	1475.51	1168.85	1012.49	521.93	32.70
180.0	14953.32	10793.26	7067.59	2543.61	1370.90	1090.12	977.86	333.92	25.99
225.0	15035.90	12123.42	8484.19	2699.42	1417.15	1082.63	995.25	408.35	27.75
270.0	14980.85	12855.67	9321.05	3622.71	1530.57	1177.11	1015.24	632.60	31.93
315.0	14991.86	11892.18	8480.34	2998.37	1412.75	1090.61	991.29	396.79	32.48
360.0	14953.32	13450.28	9640.38	4118.22	1629.67	1207.94	1035.06	630.95	42.17
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	22.96	19.66	17.73	16.46	15.58	14.92	14.42	14.20	14.04
45.0	20.04	17.95	17.07	16.90	16.30	15.25	14.37	14.15	14.04
90.0	18.83	17.51	16.30	15.64	15.14	14.65	14.20	14.09	13.98
135.0	21.53	19.38	18.28	17.84	16.85	15.64	14.70	14.48	14.42
180.0	21.09	18.99	17.12	16.13	15.42	14.76	14.37	14.15	14.04
225.0	18.94	17.29	16.52	16.30	15.75	14.87	14.31	14.09	14.09
270.0	19.55	17.73	16.41	15.69	15.20	14.76	14.31	14.15	14.09
315.0	21.25	19.05	17.89	17.34	16.52	15.36	14.53	14.31	14.26
360.0	22.96	19.66	17.73	16.46	15.58	14.92	14.42	14.20	14.04
C/ γ (°)	90.0								
0.0	13.82								
45.0	13.87								
90.0	13.87								
135.0	13.82								
180.0	13.82								
225.0	13.87								
270.0	13.87								
315.0	13.82								
360.0	13.82								