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Nata

Client:

LumCAT: 3-2116-N

Luminaire: 92.70.131.00

Report No: nata0100

Test No: GC2018041602

LampCAT: CITIZEN CLU038

Lamp flux(lm): 2449.1

Number of Lamps: 1

Length(mm): 80

Phm Type: C

Voltage(V): 36.7000

Current(A): 0.6000

Power (W): 22.0200

PF: 0.0000

Ballast type: DC

Width(mm): 80

Height(mm): 0

Photometric Results

Lumens(lm): 2107.38, Efficiency(%): 86.05% , Luminous Efficacy(lm/W): 95.70

Central intensity(cd): 7057.542, Maximum intensity(cd): 7057.542

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=27.2

[C90/270]Total=27.2

Field angle(10%Imax): [C0/180]Total=55.8

[C90/270]Total=55.8

Maximum s/h(1/2): C0_180=0.46 C90_270=0.46

Maximum s/h(1/4): C0_180=0.47 C90_270=0.47

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 86.05%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.831%

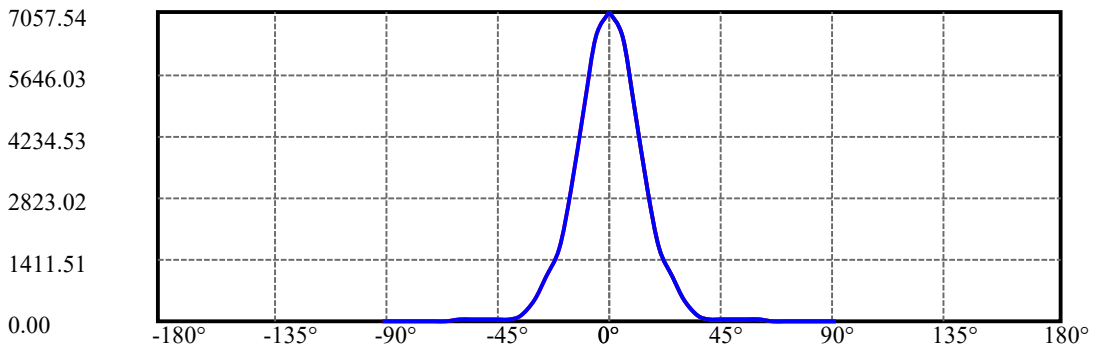
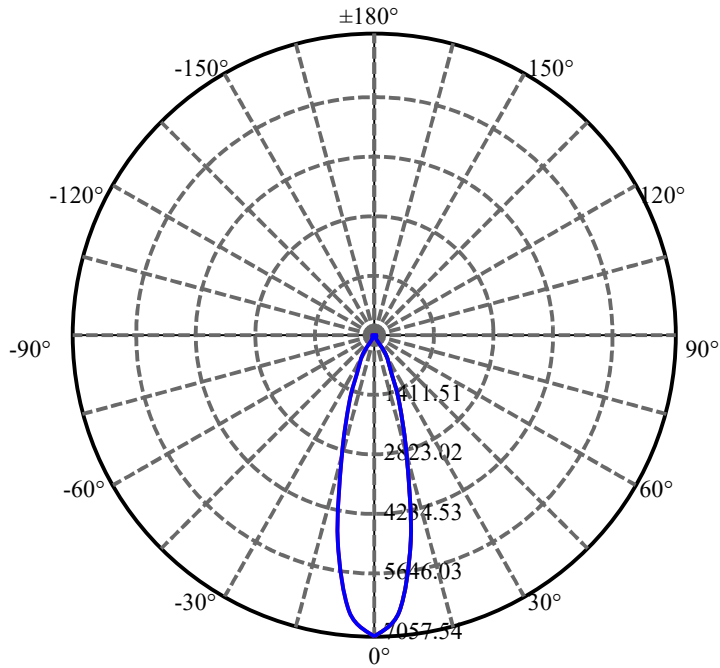
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7057.542	0.000	0	.000%	.000%
5.0	6504.157	162.126	162.126	6.620%	7.693%
10.0	4904.286	408.116	570.242	16.664%	27.059%
15.0	2973.046	467.278	1037.52	19.080%	49.233%
20.0	1656.165	381.512	1419.032	15.578%	67.336%
25.0	991.428	277.684	1696.716	11.338%	80.513%
30.0	496.361	188.281	1884.997	7.688%	89.447%
35.0	116.609	90.264	1975.261	3.686%	93.731%
40.0	53.467	28.376	2003.637	1.159%	95.077%
45.0	42.834	17.831	2021.468	.728%	95.923%
50.0	34.190	15.564	2037.032	.635%	96.662%
55.0	26.689	13.237	2050.269	.540%	97.290%
60.0	22.663	11.407	2061.676	.466%	97.831%
65.0	18.967	10.120	2071.796	.413%	98.311%
70.0	15.189	8.648	2080.445	.353%	98.722%
75.0	14.081	7.651	2088.095	.312%	99.085%
80.0	12.814	7.196	2095.292	.294%	99.426%
85.0	11.342	6.564	2101.855	.268%	99.738%
90.0	8.837	5.525	2107.38	.226%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1885.00	76.97%	89.45%
0-40	2003.64	81.81%	95.08%
0-60	2061.68	84.18%	97.83%
0-90	2101.86	85.82%	99.74%
0-120	2101.86	85.82%	99.74%
0-180	2107.38	86.05%	100.00%
60-90	51.59	2.11%	2.45%
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%
0-24.81	1685.90	68.84%	80.00%

ZONAL LUMEN SUMMARY

0-10	570.24
10-20	848.79
20-30	465.96
30-40	118.64
40-50	33.39
50-60	24.64
60-70	18.77
70-80	14.85
80-90	6.56
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: —————

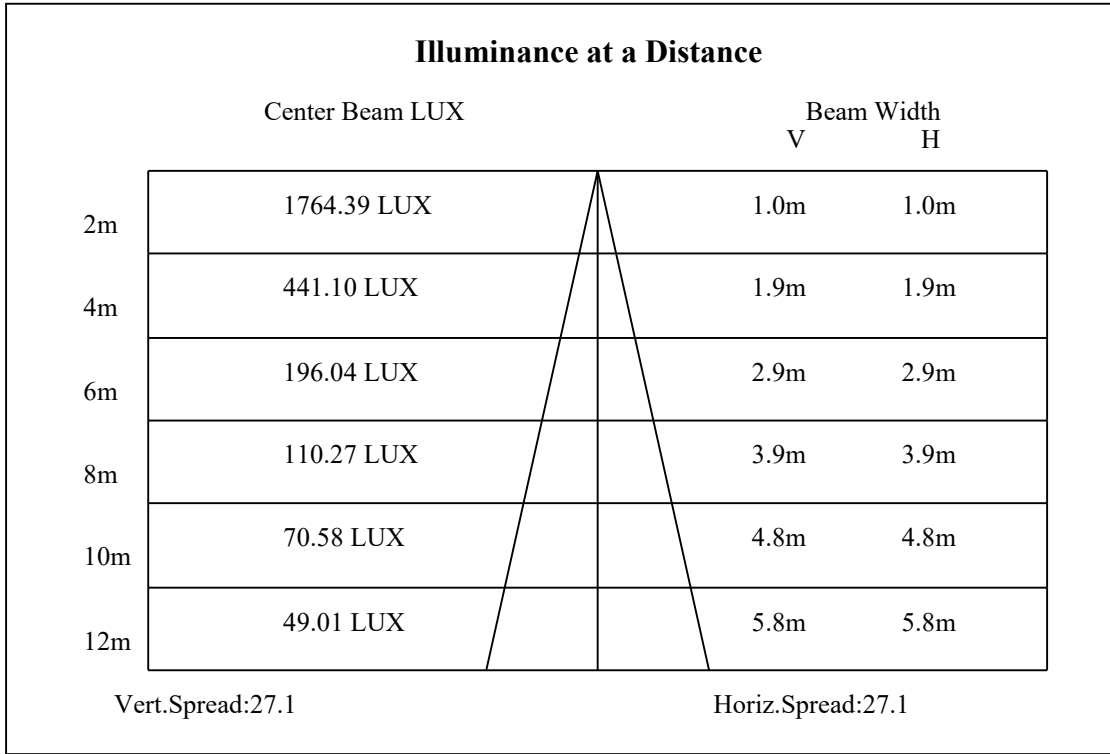
C90/C270: —————

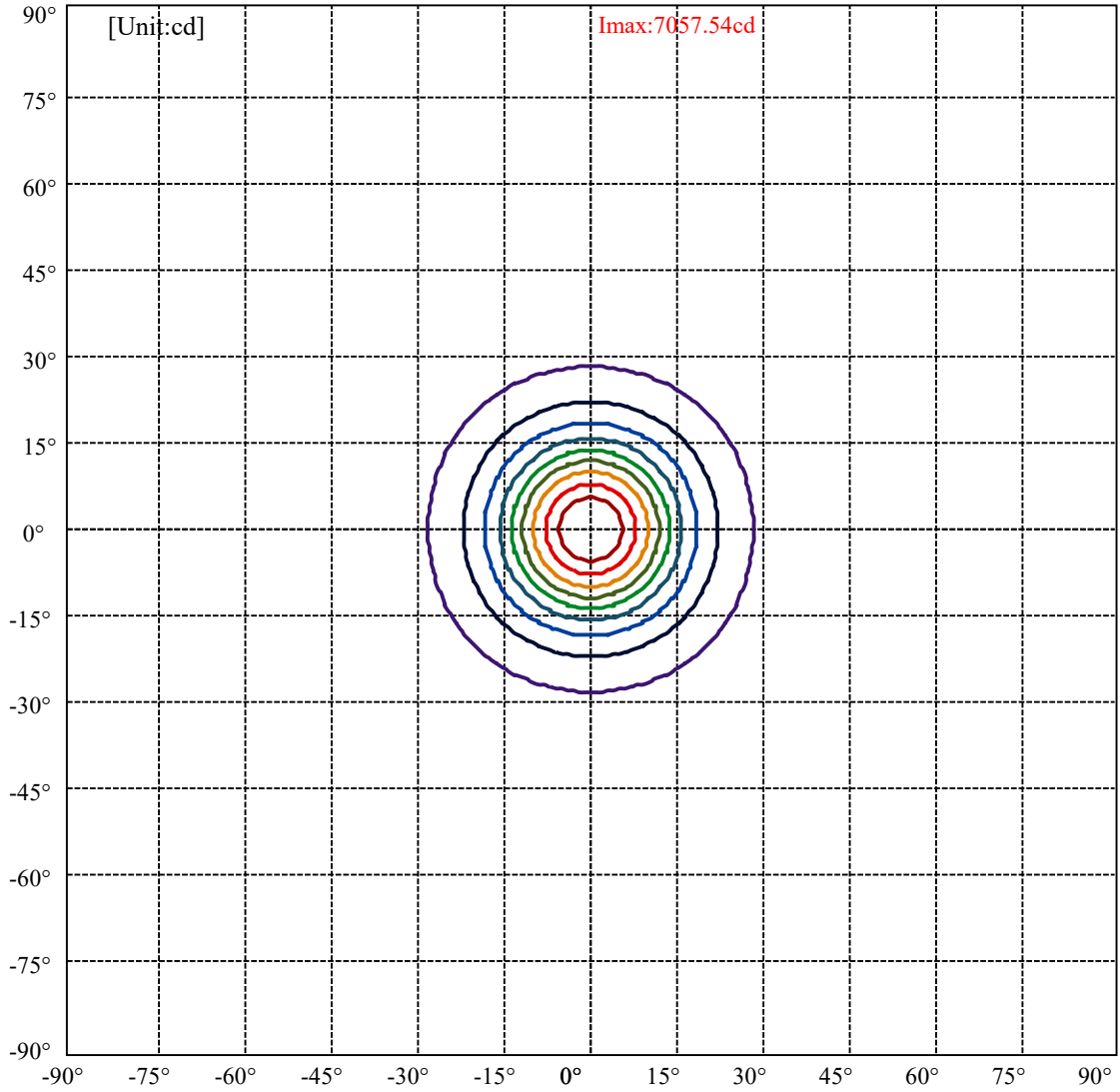
Field angle(10%Imax):C0/180Left:27.9 Right:27.9

:C90/270Left:27.9 Right:27.9

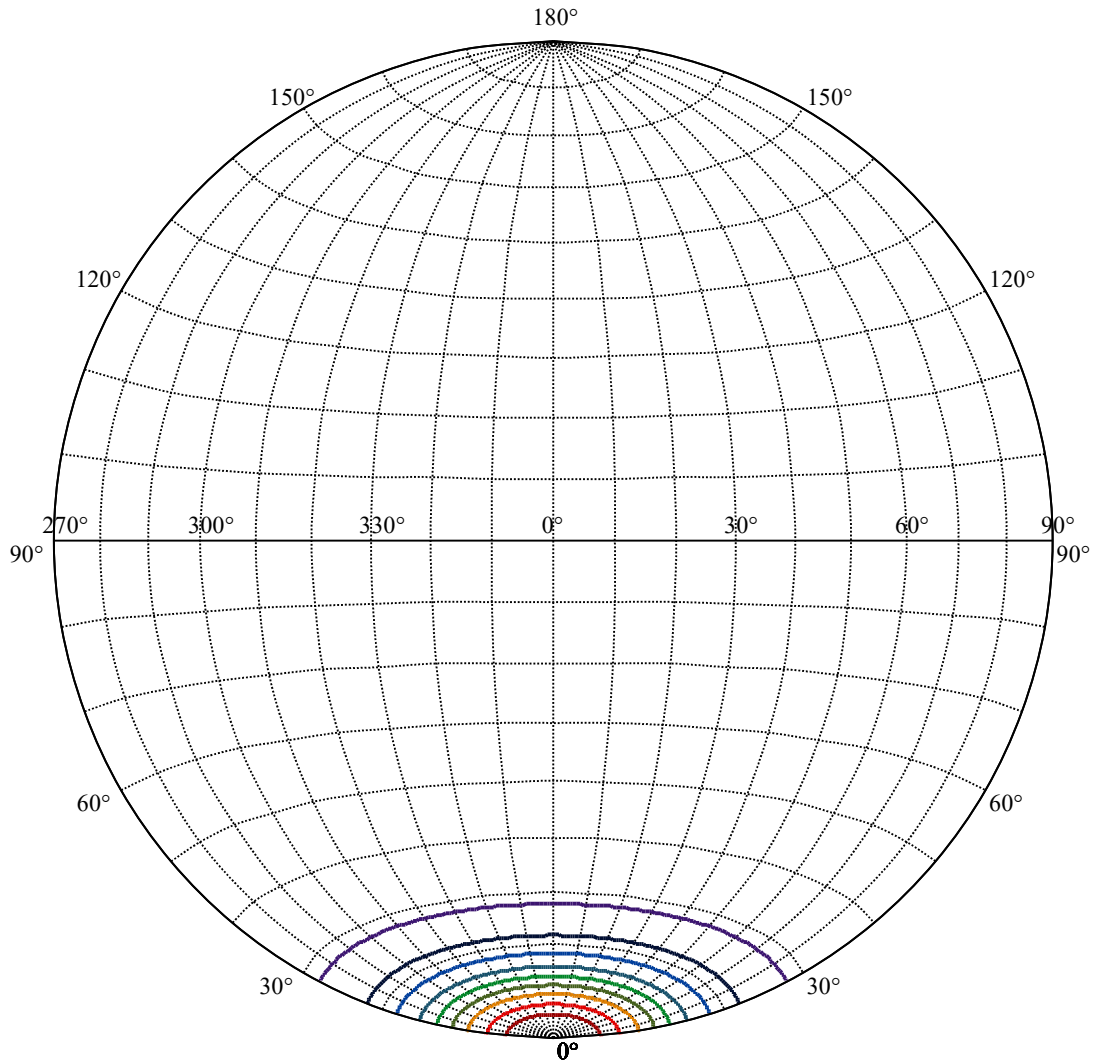
Beam Angle(50%Imax):C0/180Left:13.6 Right:13.6

:C90/270Left:13.6 Right:13.6





(10%Imax) 705.754	—
(20%Imax) 1411.51	—
(30%Imax) 2117.26	—
(40%Imax) 2823.02	—
(50%Imax) 3528.77	—
(60%Imax) 4234.53	—
(70%Imax) 4940.28	—
(80%Imax) 5646.03	—
(90%Imax) 6351.79	—



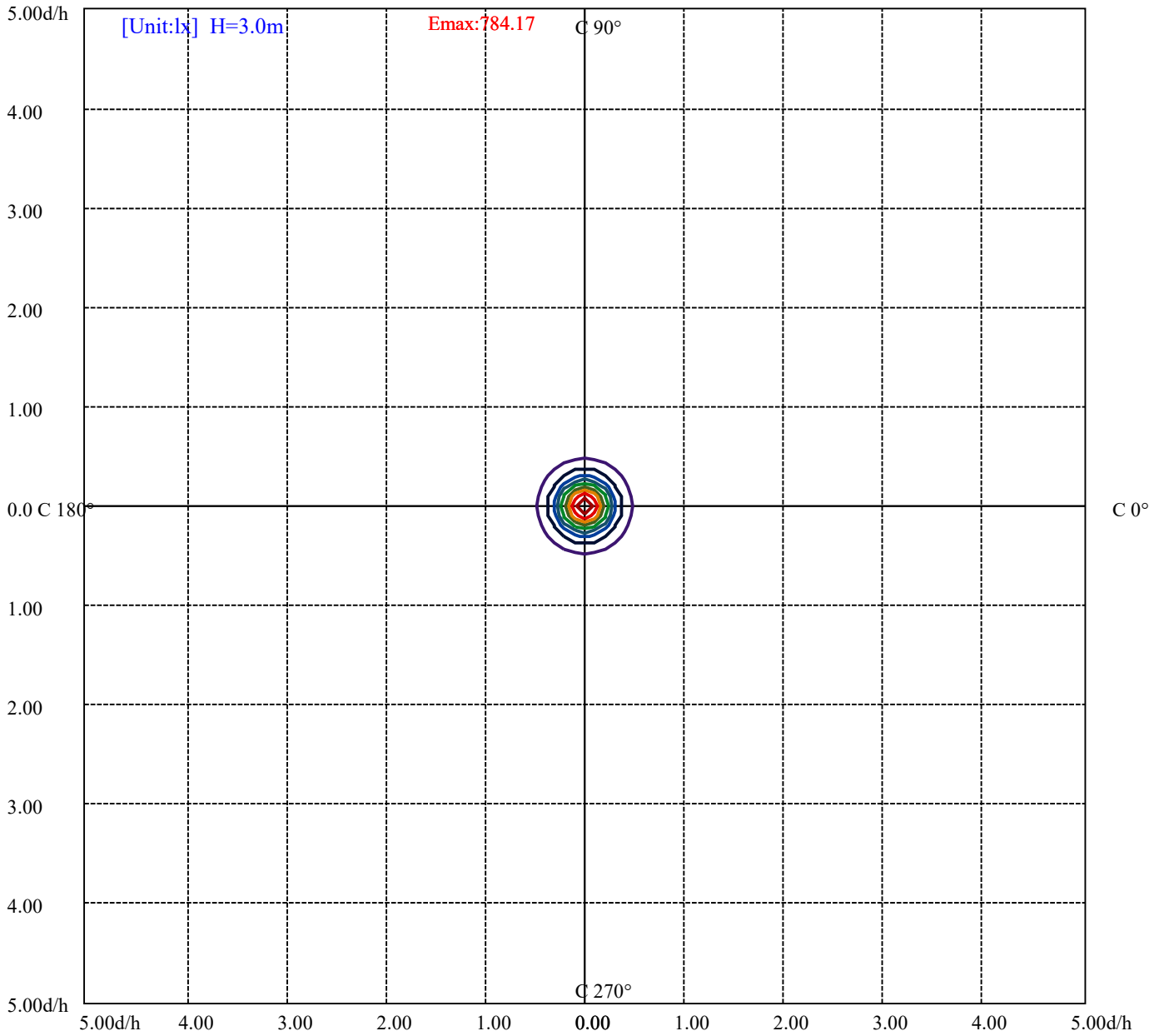
House

[Unit:cd]

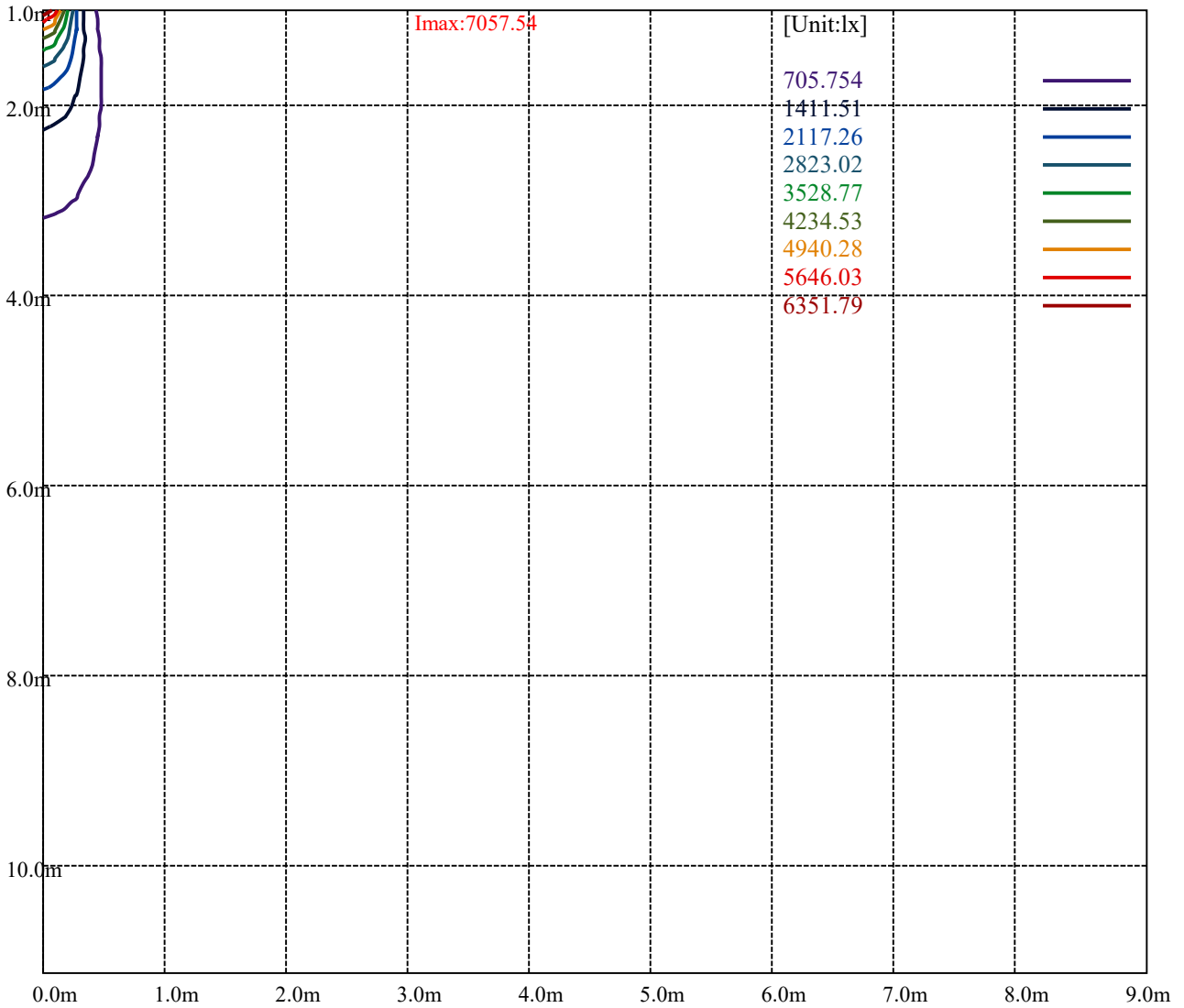
Road

Imax:7057.54

(10%Imax)	705.754	—
(20%Imax)	1411.51	—
(30%Imax)	2117.26	—
(40%Imax)	2823.02	—
(50%Imax)	3528.77	—
(60%Imax)	4234.53	—
(70%Imax)	4940.28	—
(80%Imax)	5646.03	—
(90%Imax)	6351.79	—



- (10%Emax) 78.417
- (20%Emax) 156.8344
- (30%Emax) 235.2511
- (40%Emax) 313.6678
- (50%Emax) 392.0844
- (60%Emax) 470.5022
- (70%Emax) 548.9189
- (80%Emax) 627.3356
- (90%Emax) 705.7522



Luminance Table

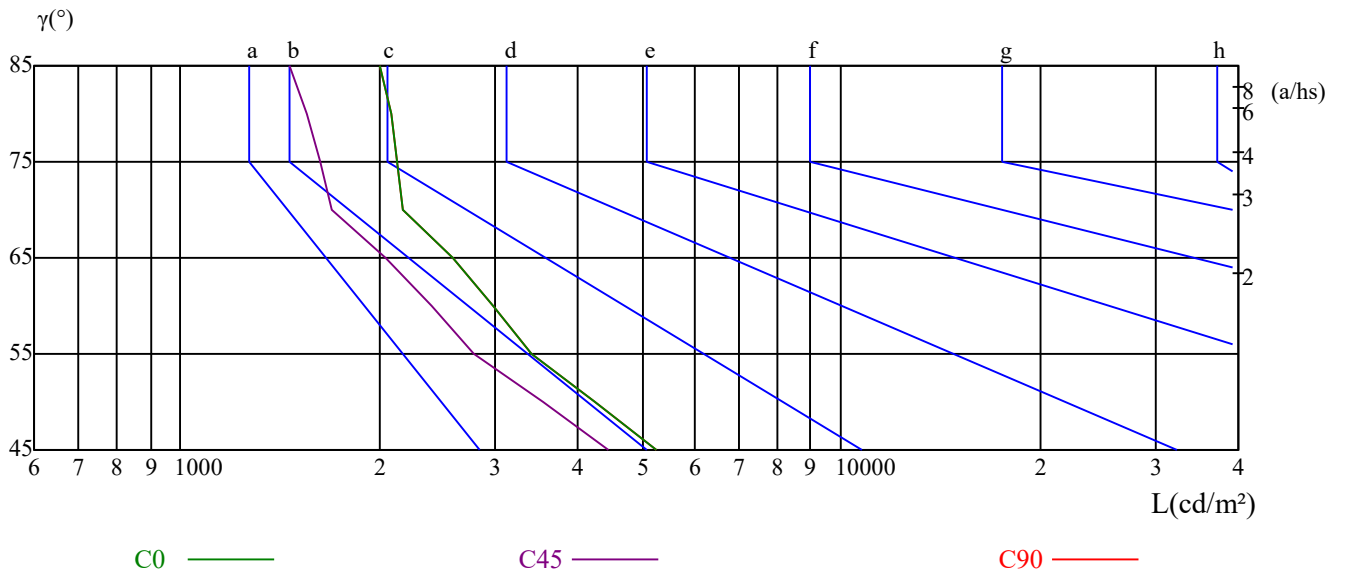
γ	45	50	55	60	65	70	75	80	85
C0	5258	4255	3393	2969	2582	2170	2133	2082	2004
C45	4441	3539	2779	2393	2047	1689	1628	1555	1459
C90	5258	4255	3393	2969	2582	2170	2133	2082	2004

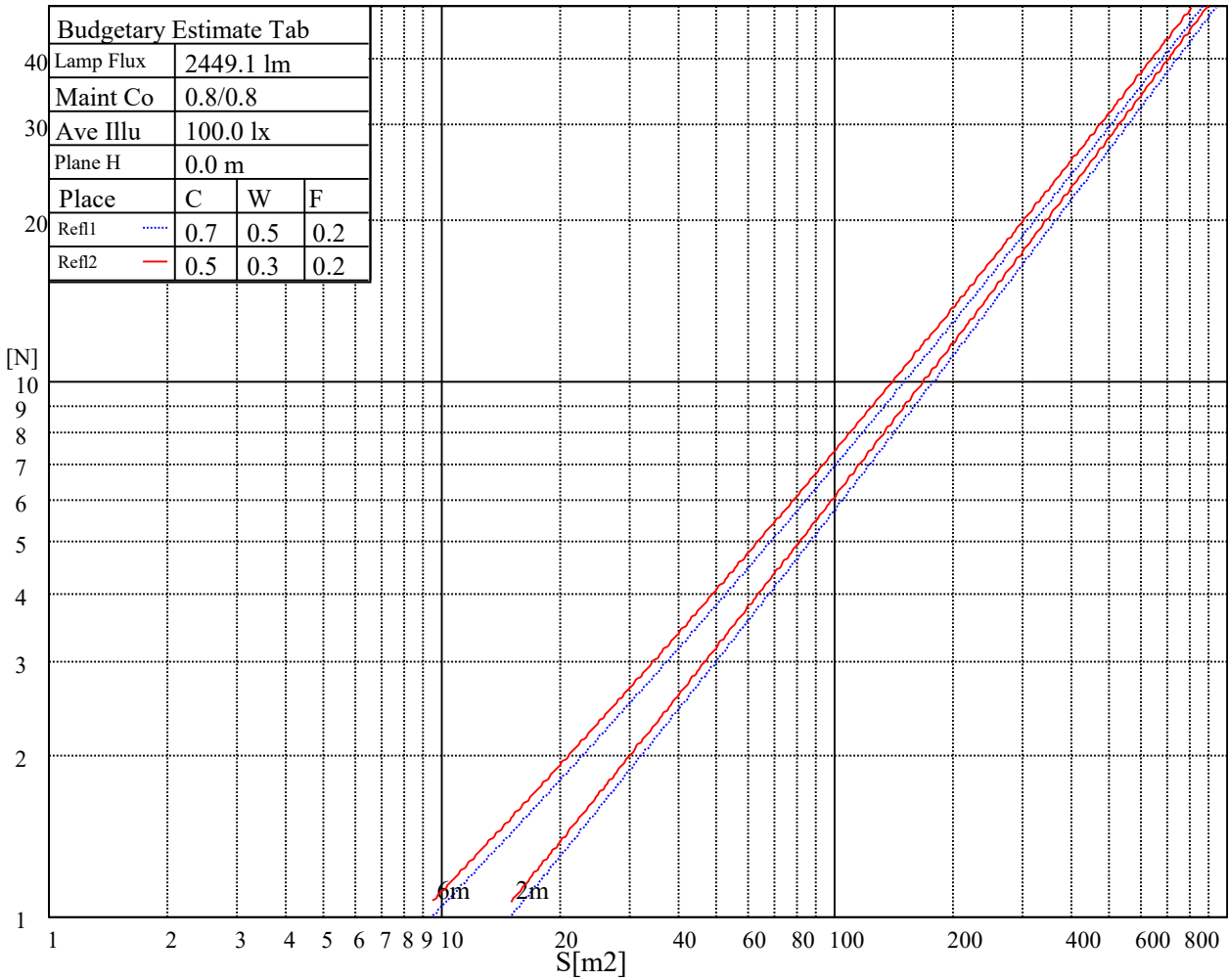
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
7012	7012	7012	8501	8501	8501	20333	20333	20333

Glare Table

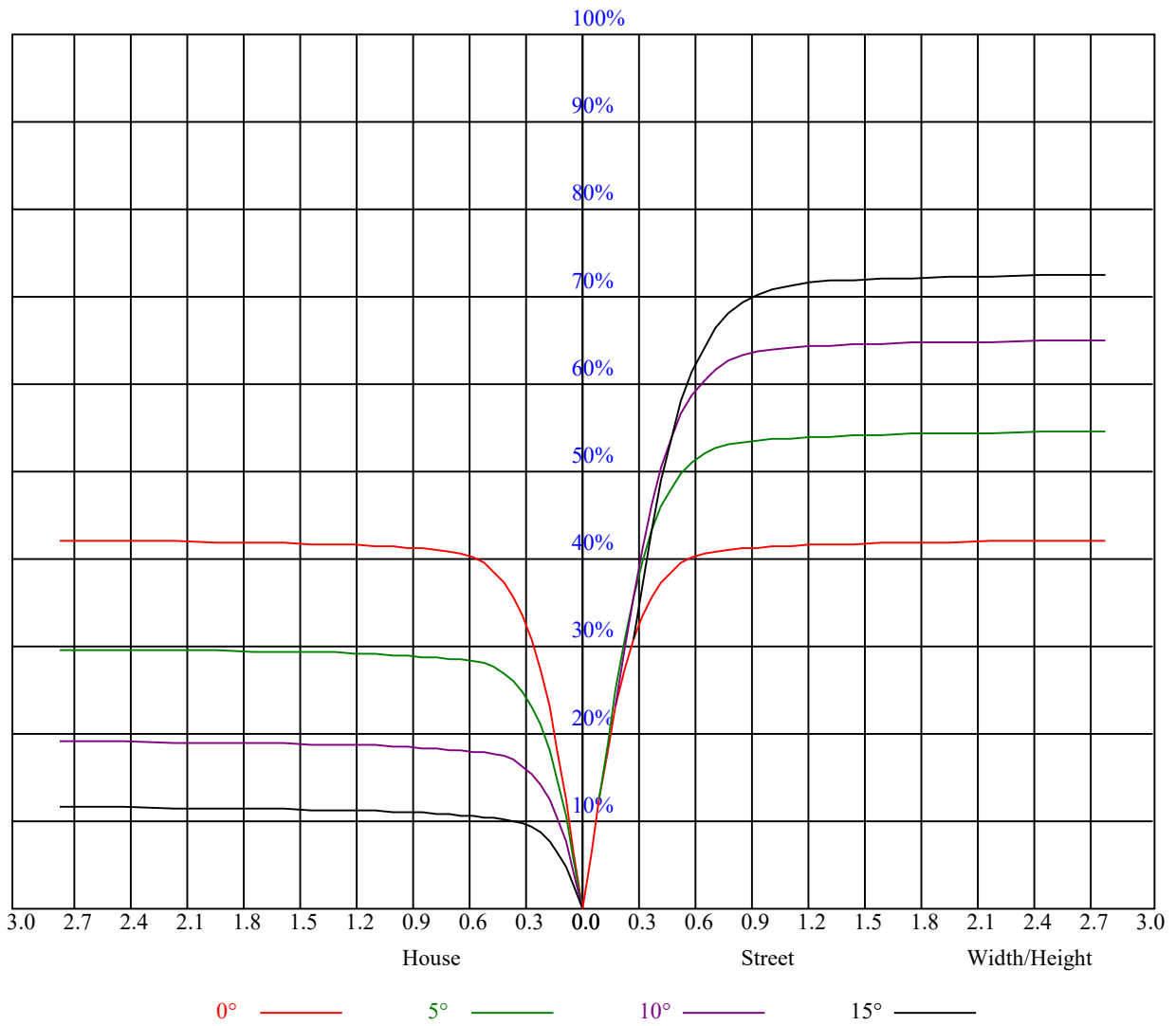
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

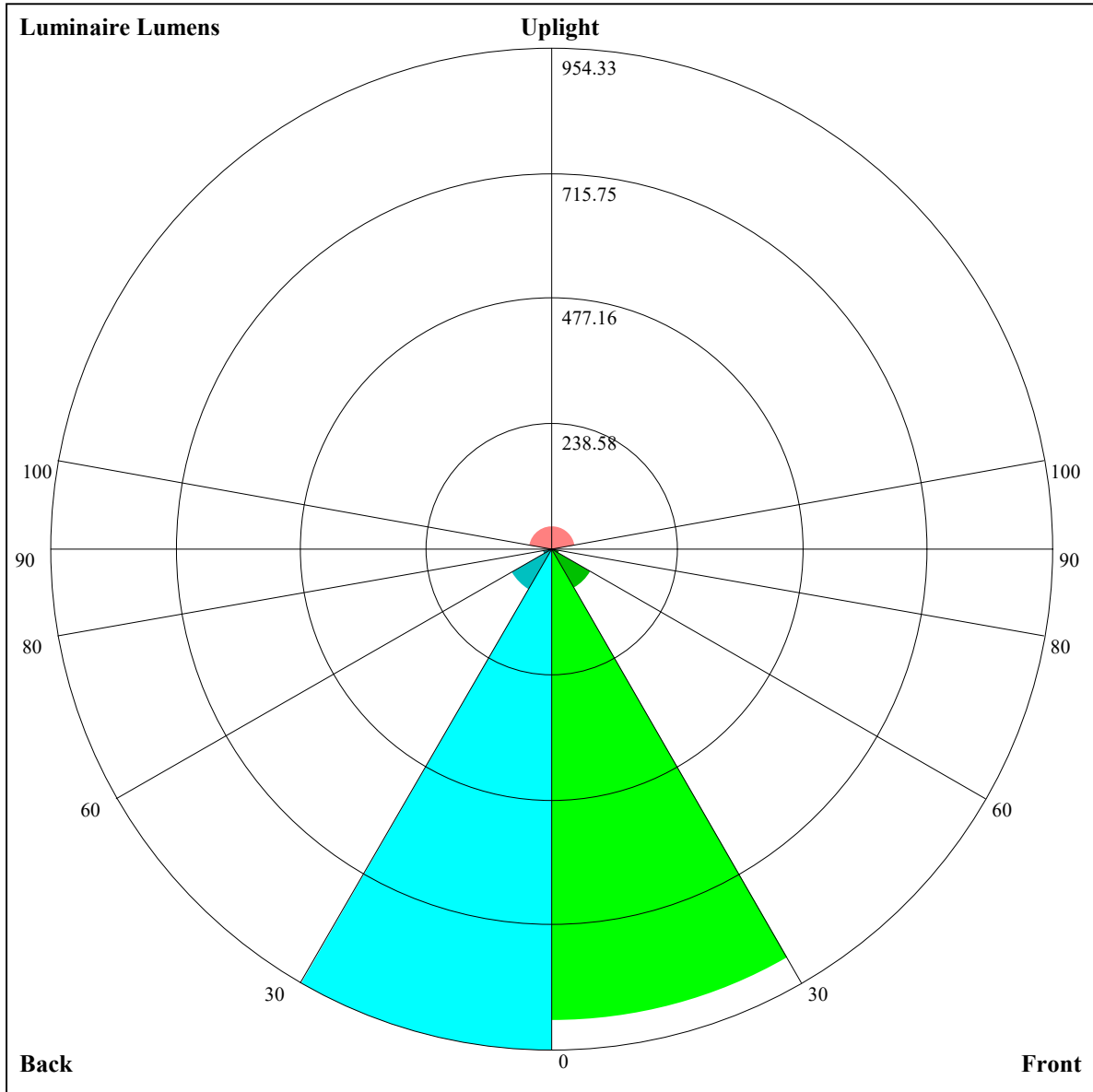
Luminance Limiting Curve





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	1.02	1.02	1.02	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.86
1	0.96	0.94	0.92	0.94	0.93	0.91	0.91	0.89	0.88	0.88	0.87	0.86	0.85	0.84	0.83	0.82
2	0.91	0.88	0.85	0.89	0.87	0.84	0.87	0.84	0.82	0.84	0.82	0.81	0.82	0.80	0.79	0.78
3	0.86	0.83	0.80	0.85	0.82	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.79	0.77	0.75	0.74
4	0.82	0.78	0.75	0.81	0.78	0.75	0.79	0.76	0.74	0.78	0.75	0.73	0.76	0.74	0.72	0.71
5	0.78	0.74	0.71	0.78	0.74	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.68
6	0.75	0.71	0.68	0.75	0.71	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.71	0.69	0.67	0.66
7	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.63
8	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.61
9	0.67	0.63	0.60	0.67	0.63	0.60	0.66	0.63	0.60	0.65	0.62	0.60	0.65	0.62	0.60	0.59
10	0.65	0.61	0.58	0.65	0.61	0.58	0.64	0.60	0.58	0.63	0.60	0.58	0.63	0.60	0.58	0.57





Luminaire Lumens:

FL=897.65,FM=84.47,FH=15.28,FVH=5.67

BL=954.33,BM=88.7,BH=18.07,BVH=6.36

UL=9.64,UH=45.88

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	7064.84	6274.78	4412.22	2743.46	1721.06	1080.21	515.33	85.17	54.78
45.0	7109.43	6402.51	4660.52	2805.67	1780.52	1129.21	594.06	167.92	57.37
90.0	7053.28	6437.74	4669.33	2767.69	1613.70	1033.24	528.10	79.06	52.96
135.0	7002.62	6823.69	5583.27	3491.68	1857.05	1096.17	608.92	289.05	56.27
180.0	7064.84	6812.68	5457.19	3406.89	1670.96	898.02	469.19	80.05	51.48
225.0	7109.43	6719.08	5221.55	3088.11	1499.19	814.45	369.87	75.15	51.86
270.0	7053.28	6528.59	5004.63	3004.98	1605.44	968.99	513.68	80.88	51.75
315.0	7002.62	6034.18	4225.58	2475.89	1501.39	911.13	371.74	75.59	51.26
360.0	7064.84	6274.78	4412.22	2743.46	1721.06	1080.21	515.33	85.17	54.78
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	42.83	32.70	24.33	19.60	15.14	13.43	12.17	11.23	9.97
45.0	44.71	34.96	25.55	20.65	16.24	13.98	12.66	11.73	10.46
90.0	42.72	33.80	26.26	21.42	17.23	14.26	13.10	11.84	10.90
135.0	44.43	36.23	28.96	24.72	20.92	15.53	14.59	13.54	12.72
180.0	42.56	35.68	28.96	26.32	24.22	18.22	17.29	15.20	12.61
225.0	41.68	34.30	28.52	25.44	22.74	17.62	16.74	14.70	12.72
270.0	42.39	33.91	26.98	22.79	19.77	14.76	13.54	12.66	11.40
315.0	41.35	31.93	23.95	20.37	15.47	13.71	12.55	11.62	9.97
360.0	42.83	32.70	24.33	19.60	15.14	13.43	12.17	11.23	9.97
C/ γ (°)	90.0								
0.0	8.64								
45.0	8.81								
90.0	8.75								
135.0	8.97								
180.0	8.97								
225.0	9.08								
270.0	8.75								
315.0	8.70								
360.0	8.64								