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NATA

Client:

LumCAT: 1408-N

Luminaire: 92.70.046.00

Report No: nt0100

Test No: GC2020010818

LampCAT: LUMINUS CLM-9-AA40

Lamp flux(lm): 1288.0

Number of Lamps: 1

Length(mm): 0

Phm Type: C

Voltage(V): 34.1700

Current(A): 0.3070

Power (W): 10.4900

PF: 0.0000

Ballast type: DC

Width(mm): 0

Height(mm): 0

Photometric Results

Lumens(lm): 984.39, Efficiency(%): 76.43% , Luminous Efficacy(lm/W): 93.84

Central intensity(cd): 854.142, Maximum intensity(cd): 854.142

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=59.8

[C90/270]Total=59.8

Field angle(10%Imax): [C0/180]Total=101.8

[C90/270]Total=101.8

Maximum s/h(1/2): C0_180=0.87 C90_270=0.87

Maximum s/h(1/4): C0_180=0.92 C90_270=0.92

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 76.43%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 90.677%

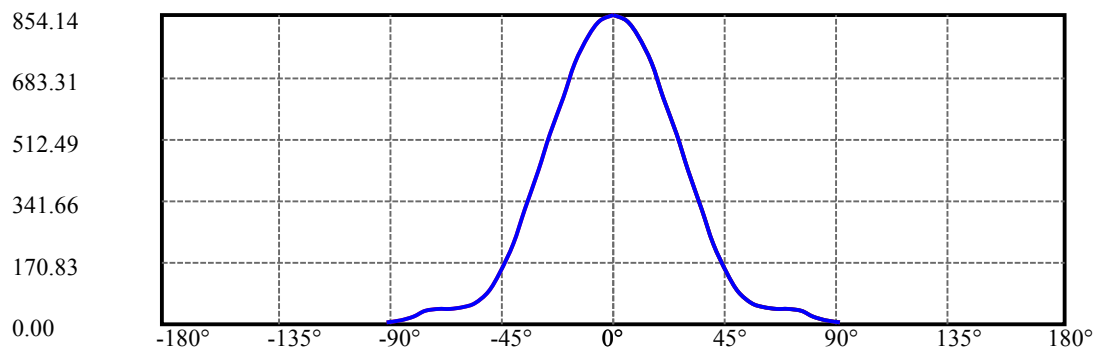
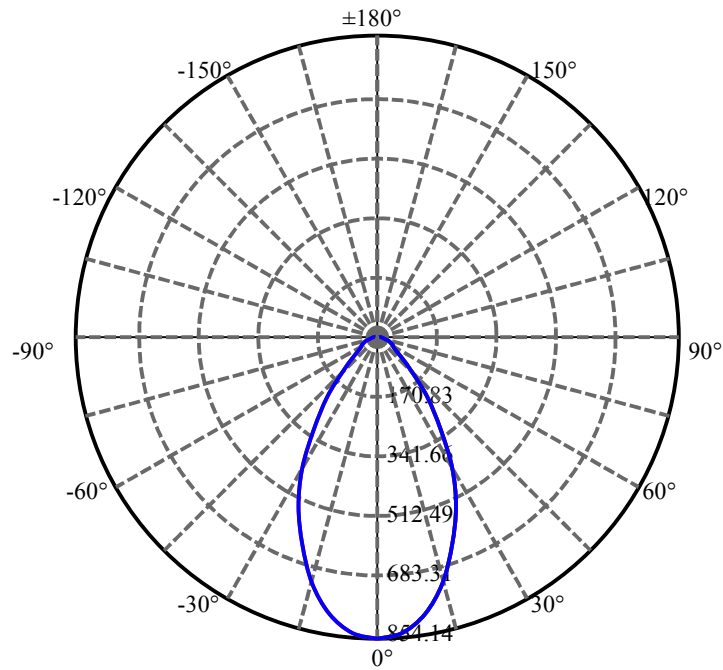
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	854.142	0.000	0	.000%	.000%
5.0	840.368	20.257	20.257	1.573%	2.058%
10.0	796.697	58.563	78.82	4.547%	8.007%
15.0	721.223	90.042	168.862	6.991%	17.154%
20.0	628.059	111.200	280.062	8.634%	28.450%
25.0	525.832	121.022	401.084	9.396%	40.745%
30.0	424.350	120.246	521.33	9.336%	52.960%
35.0	316.336	109.071	630.402	8.468%	64.040%
40.0	221.899	89.800	720.202	6.972%	73.163%
45.0	142.017	67.382	787.584	5.232%	80.008%
50.0	90.710	47.026	834.61	3.651%	84.785%
55.0	60.729	32.928	867.538	2.557%	88.130%
60.0	47.728	25.070	892.608	1.946%	90.677%
65.0	41.963	21.804	914.412	1.693%	92.892%
70.0	40.177	20.798	935.21	1.615%	95.004%
75.0	35.789	19.856	955.066	1.542%	97.021%
80.0	21.073	15.215	970.281	1.181%	98.567%
85.0	13.184	9.308	979.589	.723%	99.513%
90.0	4.338	4.798	984.386	.372%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	521.33	40.48%	52.96%
0-40	720.20	55.92%	73.16%
0-60	892.61	69.30%	90.68%
0-90	979.59	76.06%	99.51%
0-120	979.59	76.06%	99.51%
0-180	984.39	76.43%	100.00%
60-90	112.05	8.70%	11.38%
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%
0-44.99	787.51	61.14%	80.00%

ZONAL LUMEN SUMMARY

0-10	78.82
10-20	201.24
20-30	241.27
30-40	198.87
40-50	114.41
50-60	58.00
60-70	42.60
70-80	35.07
80-90	9.31
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: —————

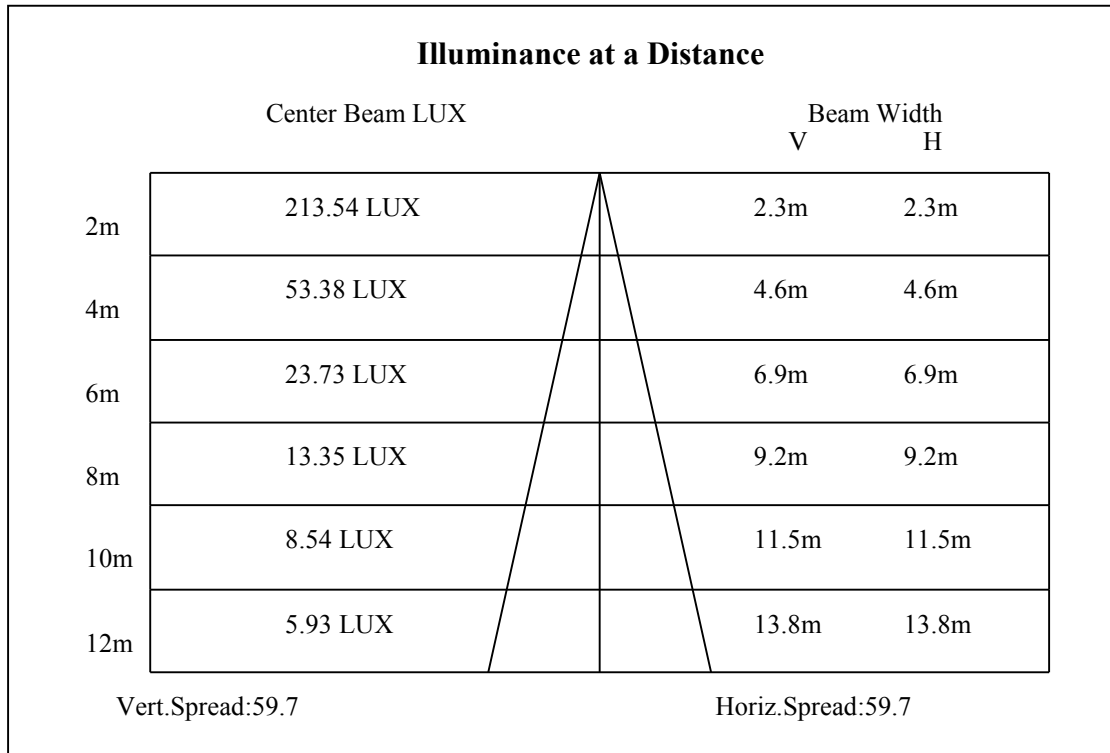
C90/C270: —————

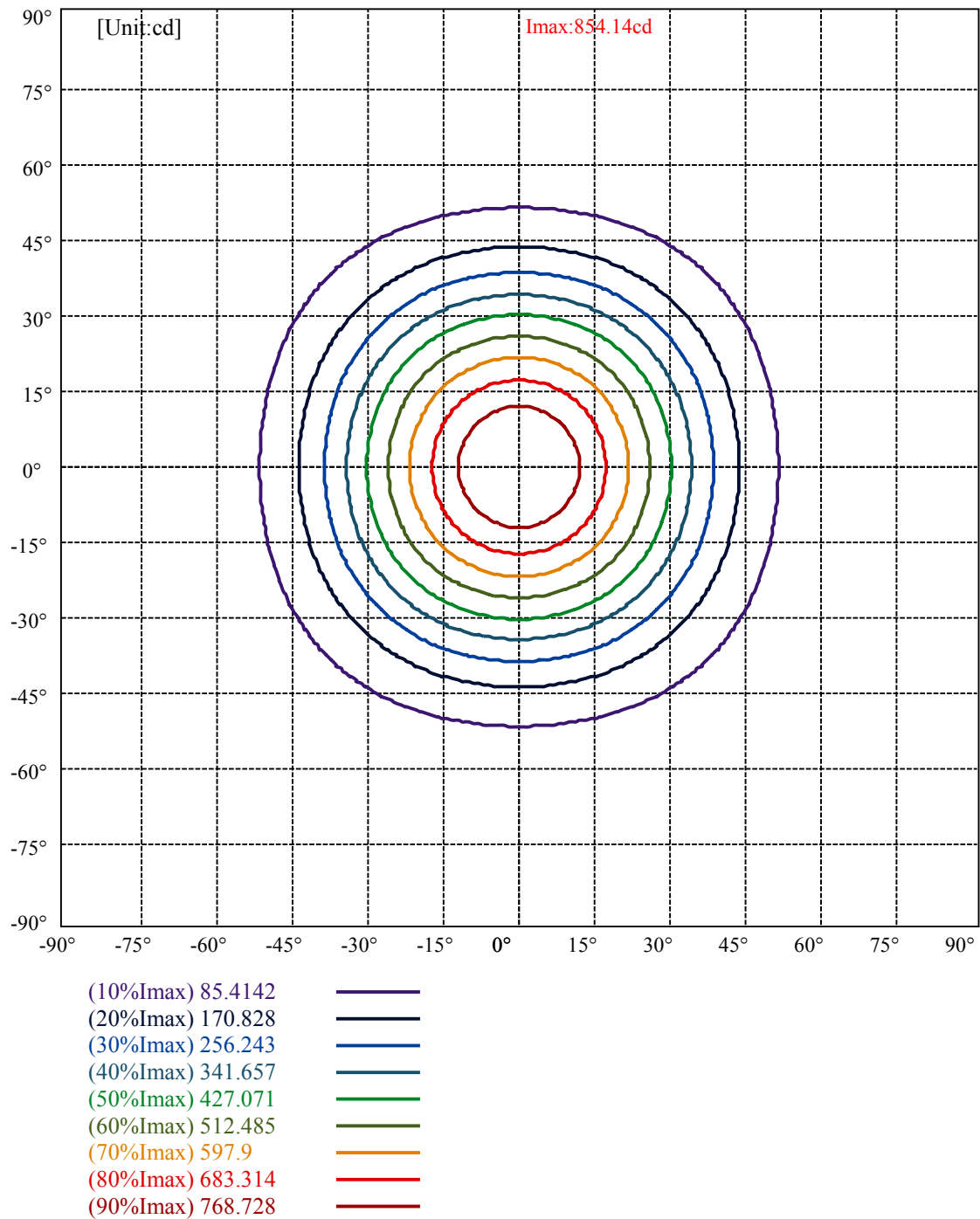
Field angle(10%Imax):C0/180Left:50.9 Right:50.9

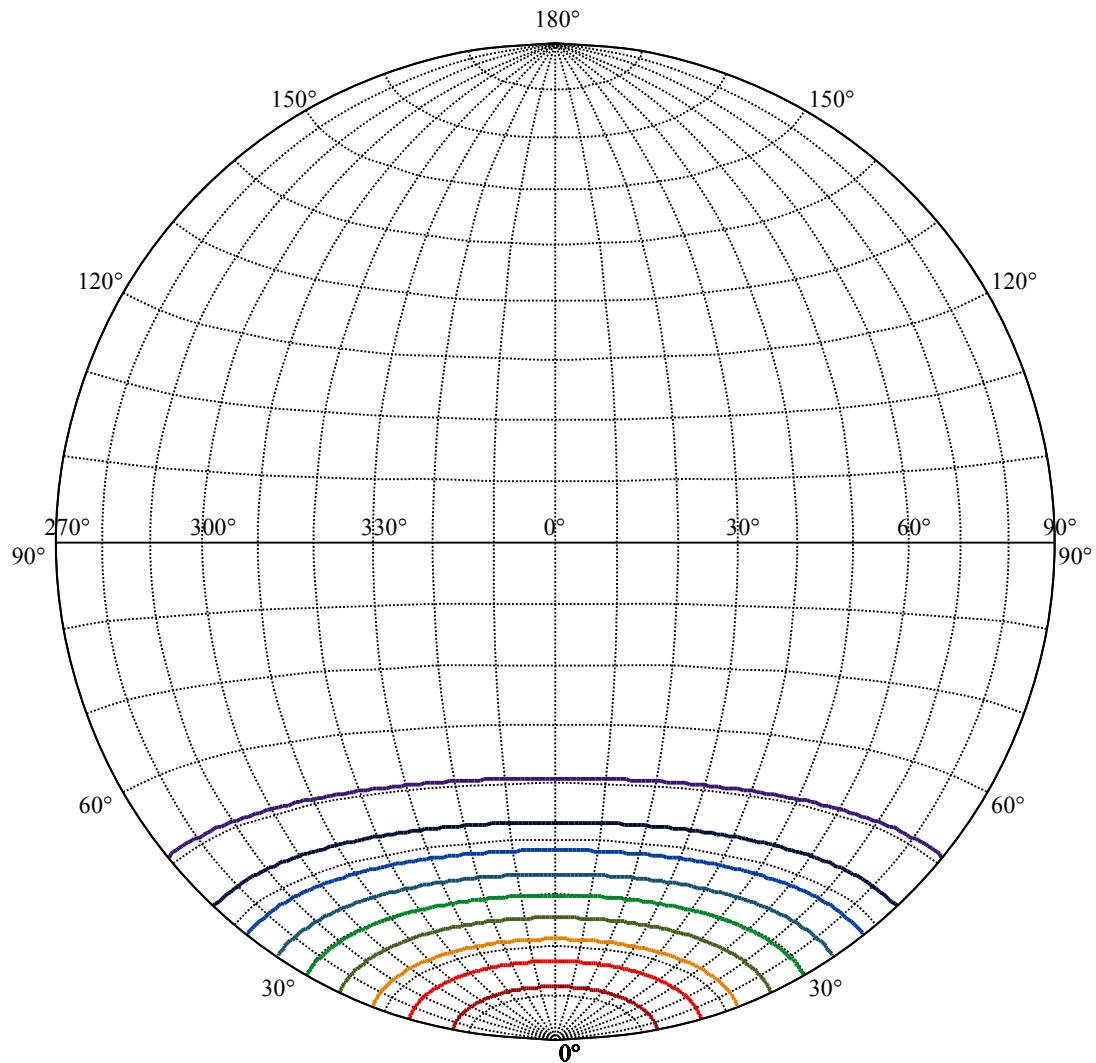
:C90/270Left:50.9 Right:50.9

Beam Angle(50%Imax):C0/180Left:29.9 Right:29.9

:C90/270Left:29.9 Right:29.9







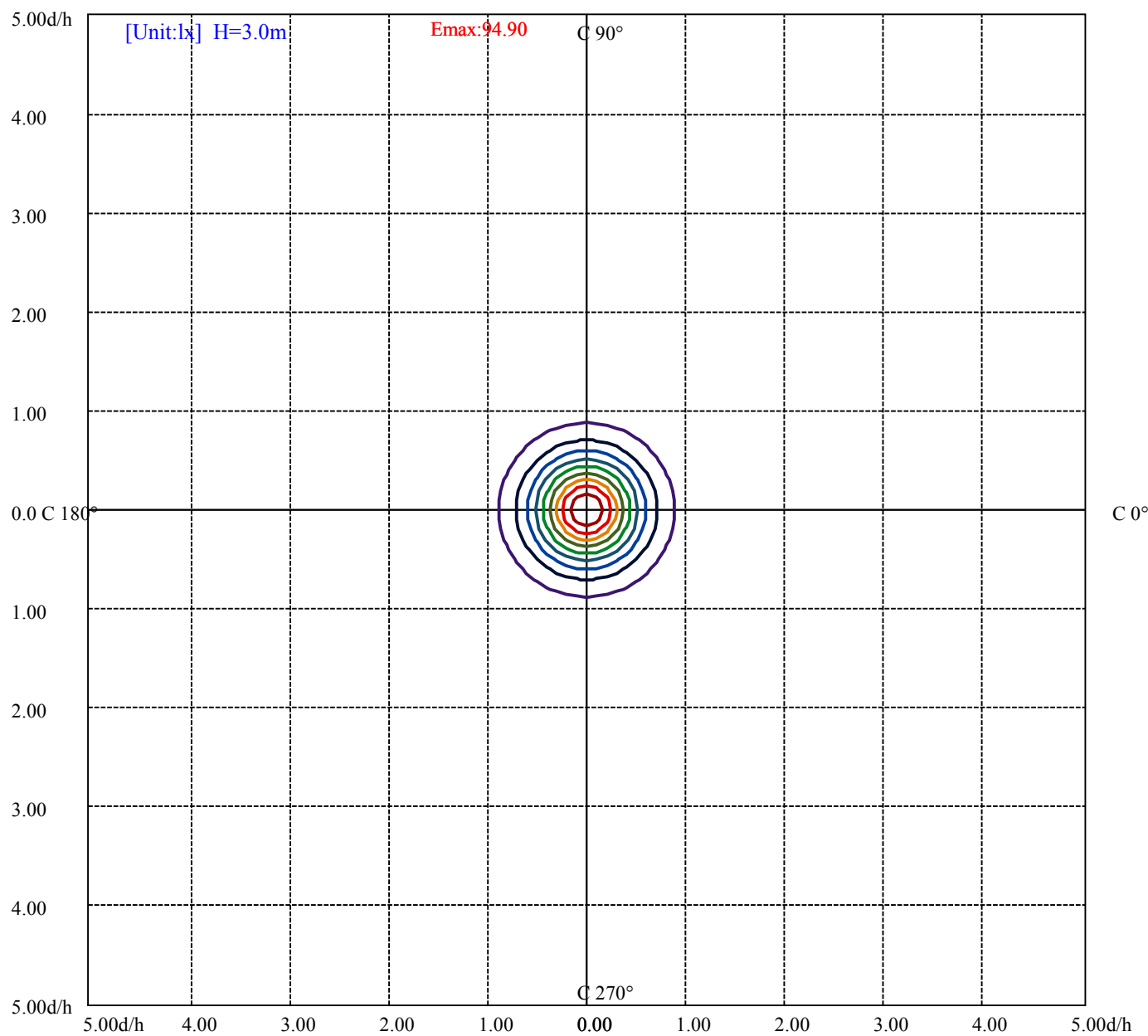
House

[Unit:cd]

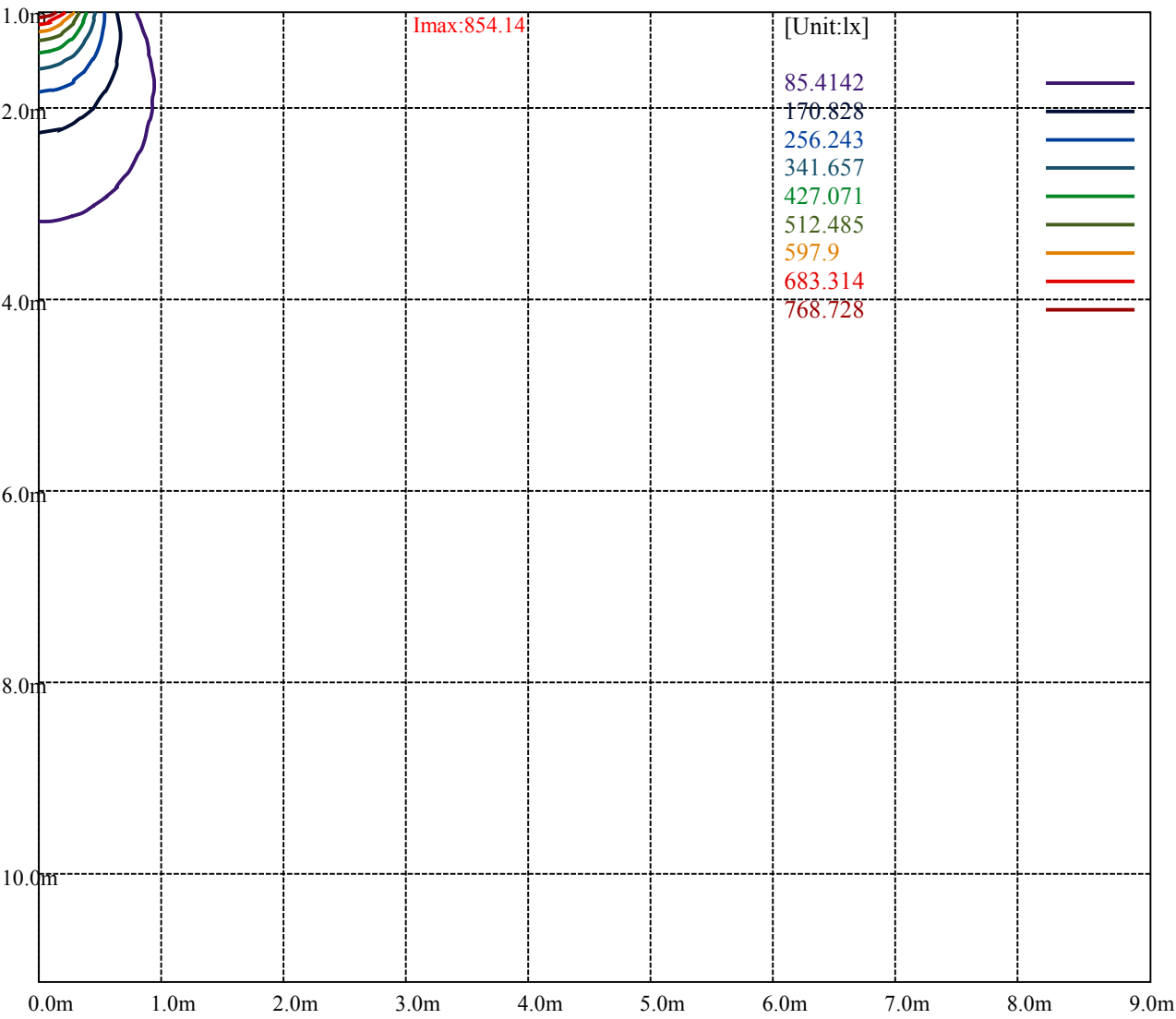
Road

Imax:854.14
(10%Imax) 85.4142
(20%Imax) 170.828
(30%Imax) 256.243
(40%Imax) 341.657
(50%Imax) 427.071
(60%Imax) 512.485
(70%Imax) 597.9
(80%Imax) 683.314
(90%Imax) 768.728





(10%Emax)	9.490467	—
(20%Emax)	18.98089	—
(30%Emax)	28.47145	—
(40%Emax)	37.96189	—
(50%Emax)	47.45234	—
(60%Emax)	56.94278	—
(70%Emax)	66.43322	—
(80%Emax)	75.92367	—
(90%Emax)	85.41422	—



Luminance Table

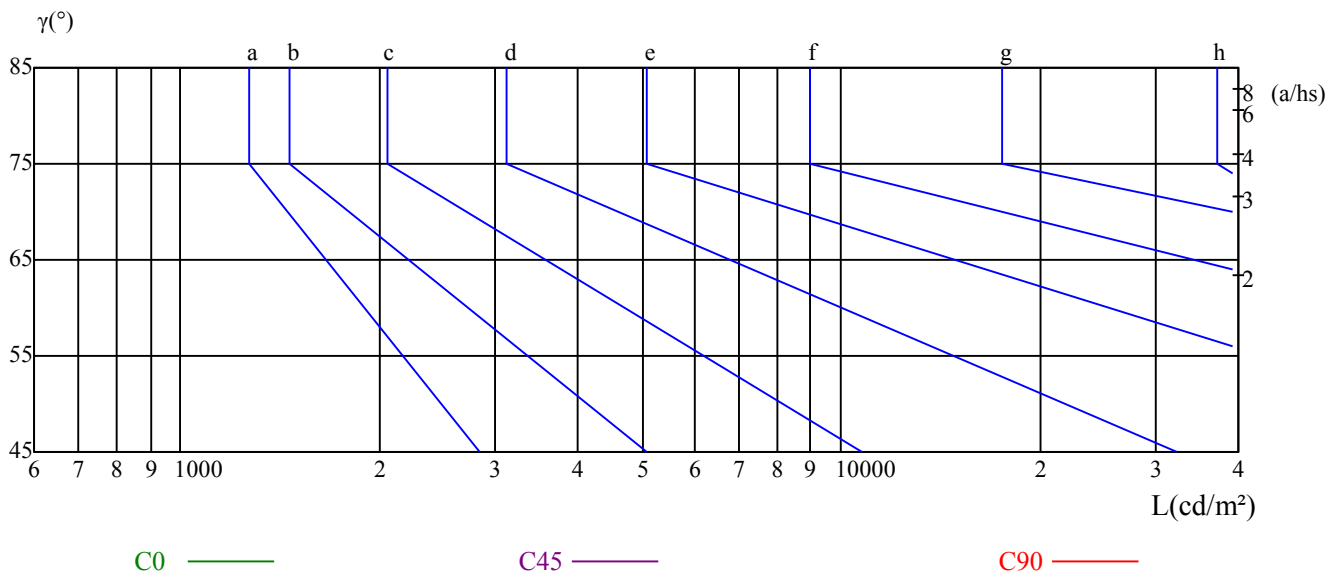
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

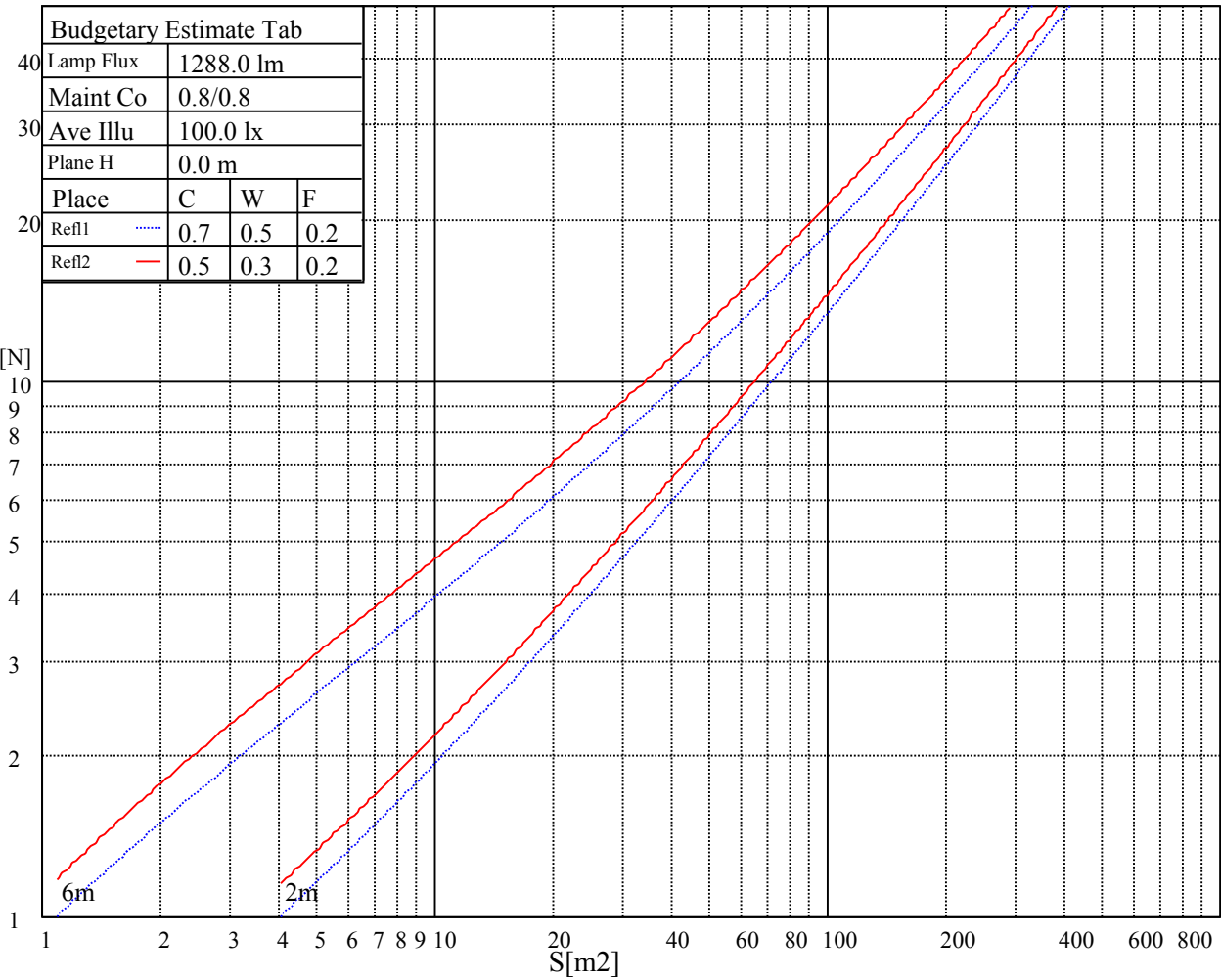
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

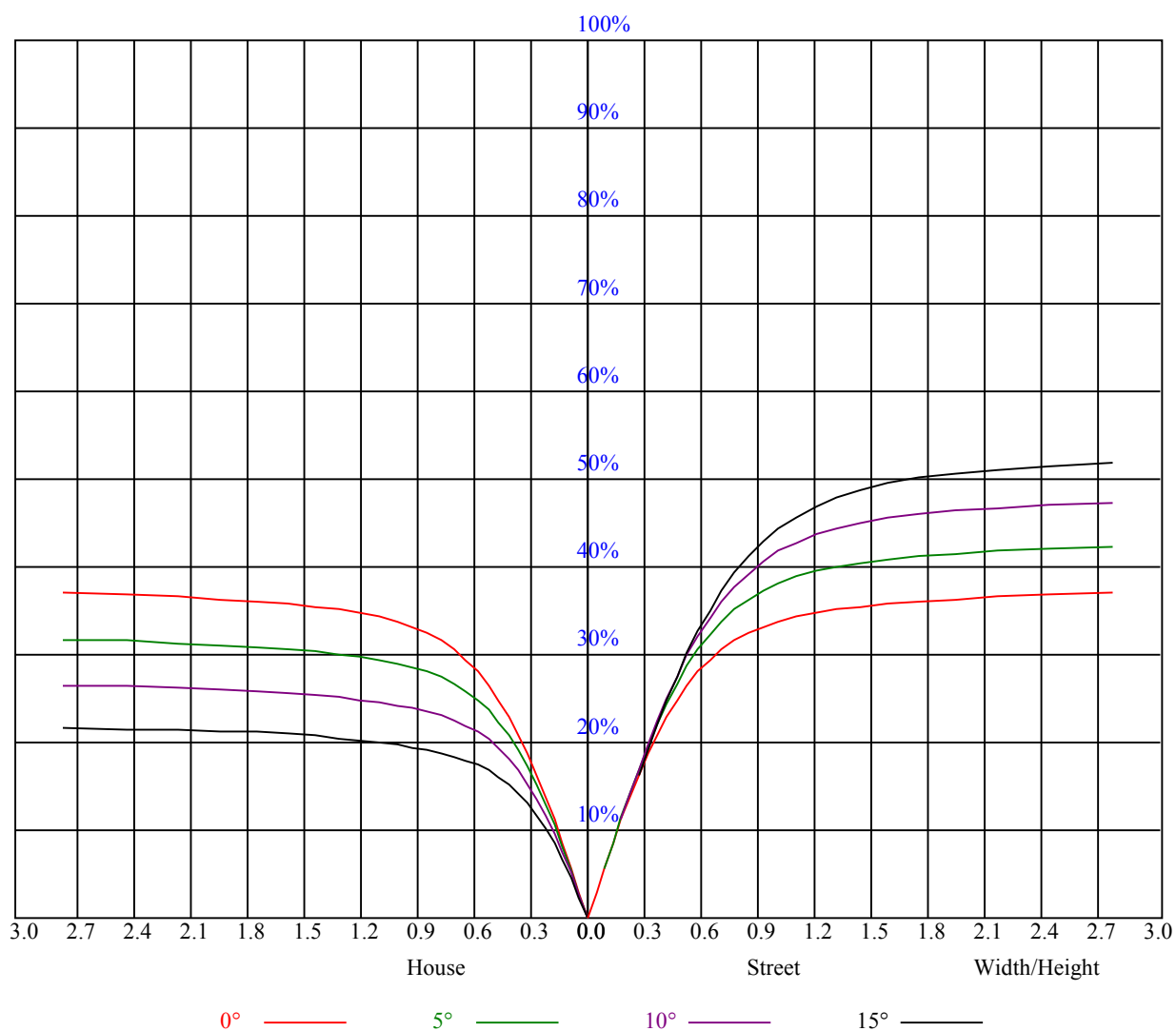
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

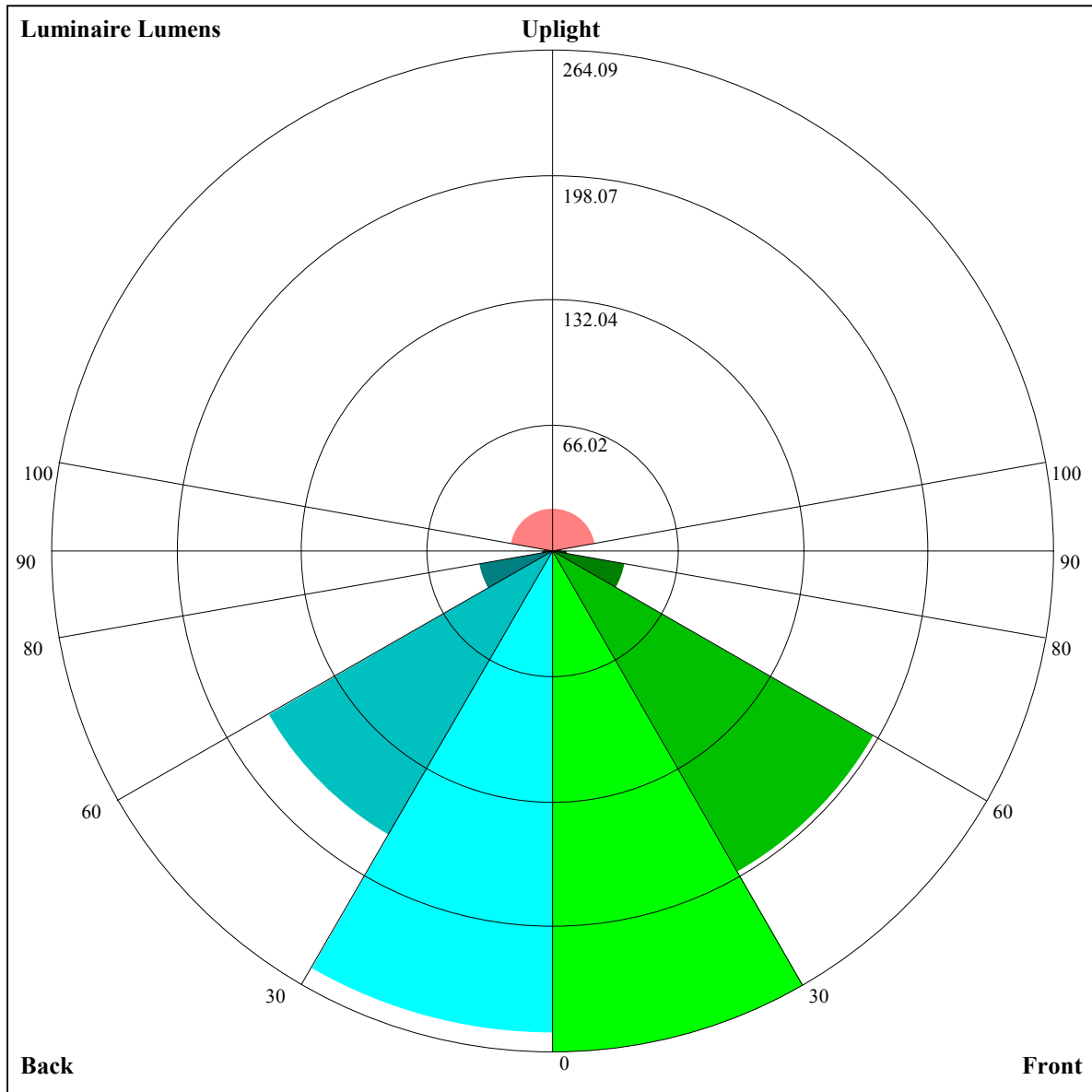
Luminance Limiting Curve





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	0.91	0.91	0.91	0.89	0.89	0.89	0.85	0.85	0.85	0.81	0.81	0.81	0.78	0.78	0.78	0.76
1	0.82	0.80	0.77	0.81	0.78	0.76	0.77	0.76	0.74	0.74	0.73	0.72	0.72	0.71	0.69	0.68
2	0.75	0.71	0.67	0.73	0.70	0.66	0.71	0.68	0.65	0.68	0.66	0.64	0.66	0.64	0.62	0.61
3	0.68	0.63	0.59	0.67	0.63	0.59	0.65	0.61	0.58	0.63	0.60	0.57	0.61	0.58	0.56	0.55
4	0.63	0.57	0.53	0.62	0.57	0.53	0.60	0.56	0.52	0.58	0.55	0.52	0.57	0.54	0.51	0.50
5	0.58	0.52	0.48	0.57	0.52	0.48	0.55	0.51	0.48	0.54	0.50	0.47	0.53	0.49	0.47	0.45
6	0.53	0.48	0.44	0.53	0.48	0.44	0.52	0.47	0.43	0.50	0.46	0.43	0.49	0.46	0.43	0.42
7	0.50	0.44	0.40	0.49	0.44	0.40	0.48	0.43	0.40	0.47	0.43	0.40	0.46	0.42	0.40	0.38
8	0.46	0.41	0.37	0.46	0.41	0.37	0.45	0.40	0.37	0.44	0.40	0.37	0.43	0.40	0.37	0.35
9	0.43	0.38	0.35	0.43	0.38	0.35	0.42	0.38	0.34	0.41	0.37	0.34	0.41	0.37	0.34	0.33
10	0.41	0.36	0.32	0.40	0.35	0.32	0.40	0.35	0.32	0.39	0.35	0.32	0.38	0.35	0.32	0.31





Luminaire Lumens:

FL=264.09,FM=195.5,FH=38.35,FVH=7.76

BL=254.01,BM=173.33,BH=39.33,BVH=6.38

UL=4.73,UH=22.52

BUG Rating:B1-U2-G0

NATA 1408-N

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	854.33	853.65	821.19	752.85	667.13	567.51	460.91	352.41	256.95		
45.0	854.10	852.75	815.74	745.37	654.47	554.51	451.80	344.19	245.36		
90.0	851.91	832.44	781.37	696.83	598.28	496.69	395.38	290.14	198.68		
135.0	856.24	836.10	785.93	706.05	601.54	504.73	393.92	284.63	195.30		
180.0	854.33	833.79	778.33	698.74	604.29	494.94	393.58	281.81	187.48		
225.0	854.10	831.99	788.01	712.07	621.79	522.68	417.94	305.83	213.24		
270.0	851.91	838.63	799.48	729.11	638.10	535.84	438.36	331.03	232.48		
315.0	856.24	843.58	803.53	728.78	638.89	529.76	442.91	340.65	245.70		
360.0	854.33	853.65	821.19	752.85	667.13	567.51	460.91	352.41	256.95		
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	165.88	104.63	69.36	49.89	40.95	38.76	37.35	29.36	15.81		
45.0	158.40	99.06	63.00	46.35	39.21	36.51	31.67	19.97	13.56		
90.0	127.24	82.13	56.03	48.04	46.18	44.27	39.54	17.10	13.56		
135.0	121.78	78.98	55.07	47.87	47.48	47.64	42.02	19.35	14.57		
180.0	114.53	75.38	53.44	47.08	46.01	46.18	38.53	16.88	5.63		
225.0	132.30	82.97	54.79	42.81	37.46	35.04	30.54	16.48	11.81		
270.0	153.23	98.38	65.25	48.94	39.32	36.00	31.44	23.85	14.18		
315.0	162.79	104.18	68.91	50.85	39.09	37.01	35.21	25.59	16.37		
360.0	165.88	104.63	69.36	49.89	40.95	38.76	37.35	29.36	15.81		
C/ γ (°)	90.0										
0.0	4.72										
45.0	4.16										
90.0	4.28										
135.0	4.22										
180.0	4.22										
225.0	4.22										
270.0	4.28										
315.0	4.61										
360.0	4.72										