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## Nata

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### Client:

LumCAT: 3-1882-L

Luminaire: 92.70.131.00

Report No: NT2018010914

Test No: GC2018010914

LampCAT: SEOUL SAWx15

Lamp flux(lm): 3105.0

Number of Lamps: 1

Length(mm): 74

Phm Type: C

Voltage(V): 34.6000

Current(A): 0.6400

Power (W): 22.1140

PF: 0.0000

Ballast type: DC

Width(mm): 74

Height(mm): 0

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## Photometric Results

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Lumens(lm): 3069.13, Efficiency(%): 98.84% , Luminous Efficacy(lm/W): 138.79

Central intensity(cd): 13260.330, Maximum intensity(cd): 13260.330

Angle of maximum intensity: C=0.0  $\gamma$ =0.0

Beam Angle(50%Imax): [C0/180]Total=24.0

[C90/270]Total=24.0

Field angle(10%Imax): [C0/180]Total=46.4

[C90/270]Total=46.4

Maximum s/h(1/2): C0\_180=0.41 C90\_270=0.41

Maximum s/h(1/4): C0\_180=0.39 C90\_270=0.39

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 101.30%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 96.143%

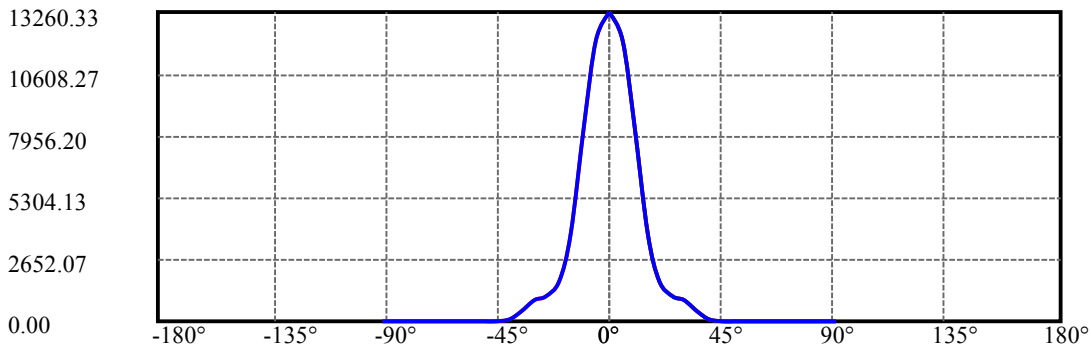
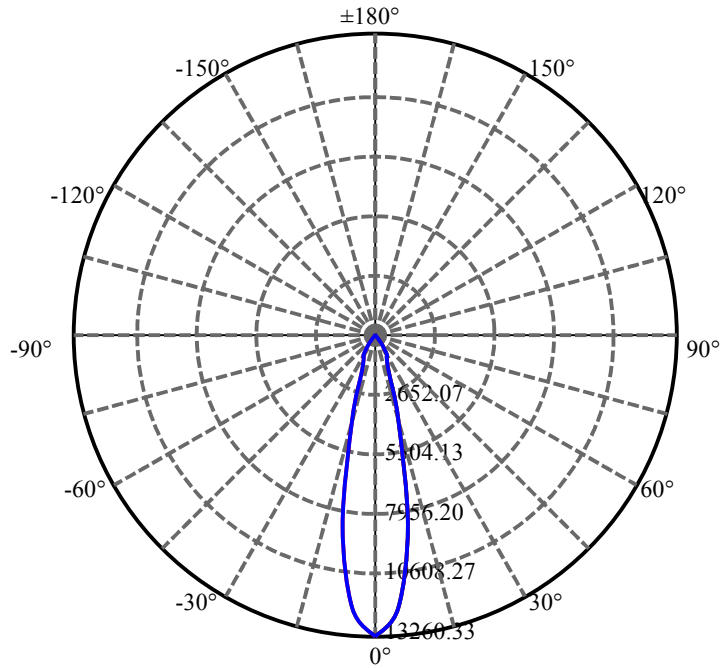
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	13260.334	79.299	79.299	2.554%	2.584%
5.0	12005.048	573.521	652.82	18.471%	21.271%
10.0	8457.145	804.977	1457.797	25.925%	47.499%
15.0	3822.015	542.223	2000.021	17.463%	65.166%
20.0	1728.496	324.048	2324.069	10.436%	75.724%
25.0	1105.718	256.143	2580.211	8.249%	84.070%
30.0	938.189	257.128	2837.34	8.281%	92.448%
35.0	423.060	133.010	2970.349	4.284%	96.781%
40.0	47.328	16.675	2987.024	.537%	97.325%
45.0	26.764	10.374	2997.398	.334%	97.663%
50.0	22.449	9.426	3006.824	.304%	97.970%
55.0	19.600	8.801	3015.625	.283%	98.257%
60.0	18.003	8.546	3024.171	.275%	98.535%
65.0	17.012	8.451	3032.623	.272%	98.810%
70.0	16.138	8.313	3040.935	.268%	99.081%
75.0	15.485	8.198	3049.134	.264%	99.348%
80.0	15.024	8.110	3057.244	.261%	99.613%
85.0	14.686	8.019	3065.263	.258%	99.874%
90.0	14.115	3.869	3069.132	.125%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2837.34	91.38%	92.45%
0-40	2987.02	96.20%	97.32%
0-60	3024.17	97.40%	98.54%
0-90	3065.26	98.72%	99.87%
0-120	3065.26	98.72%	99.87%
0-180	3069.13	98.84%	100.00%
60-90	49.64	1.60%	1.62%
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%
0-22.56	2455.31	79.08%	80.00%

ZONAL LUMEN SUMMARY

0-10	1457.80
10-20	866.27
20-30	513.27
30-40	149.68
40-50	19.80
50-60	17.35
60-70	16.76
70-80	16.31
80-90	8.02
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: —————

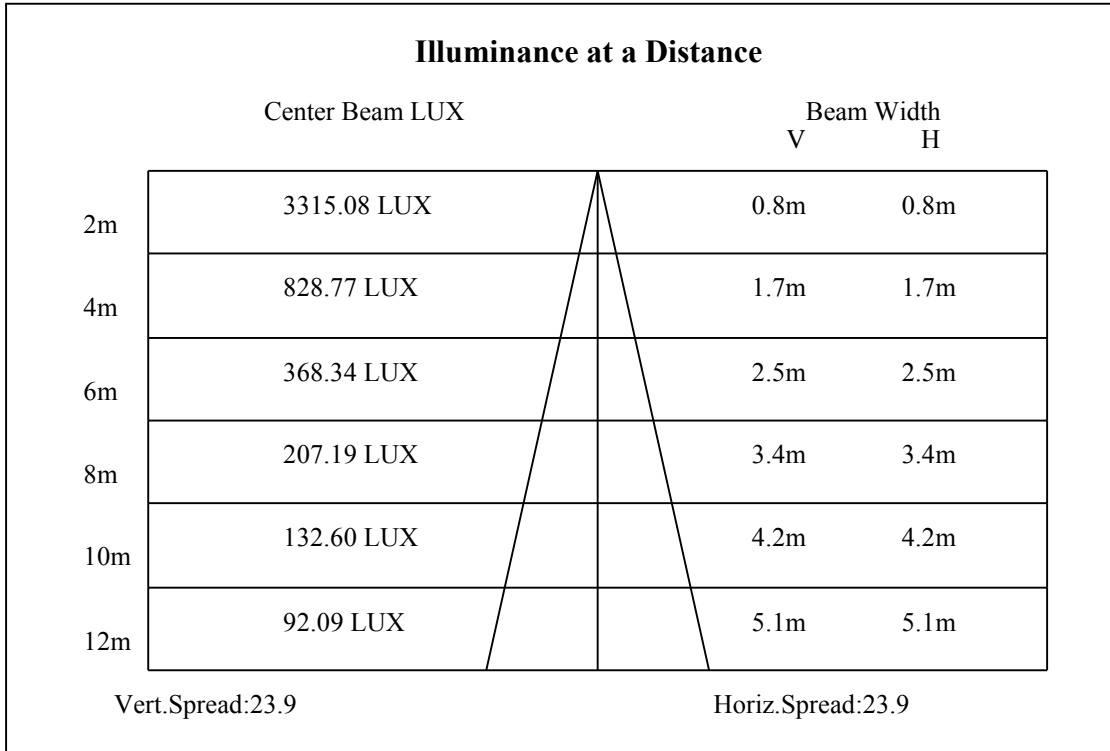
C90/C270: —————

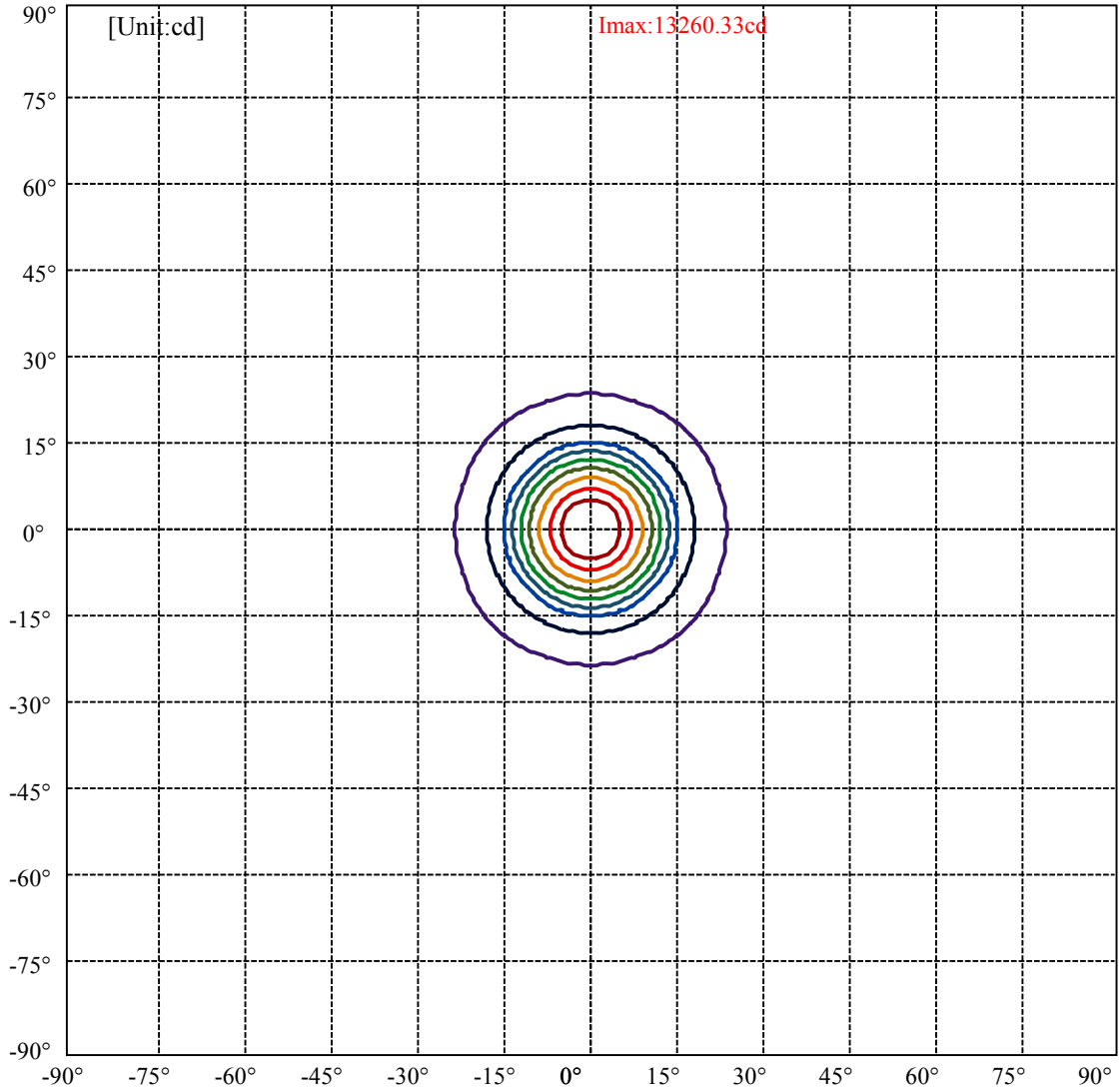
Field angle(10%Imax):C0/180Left:23.2 Right:23.2

:C90/270Left:23.2 Right:23.2

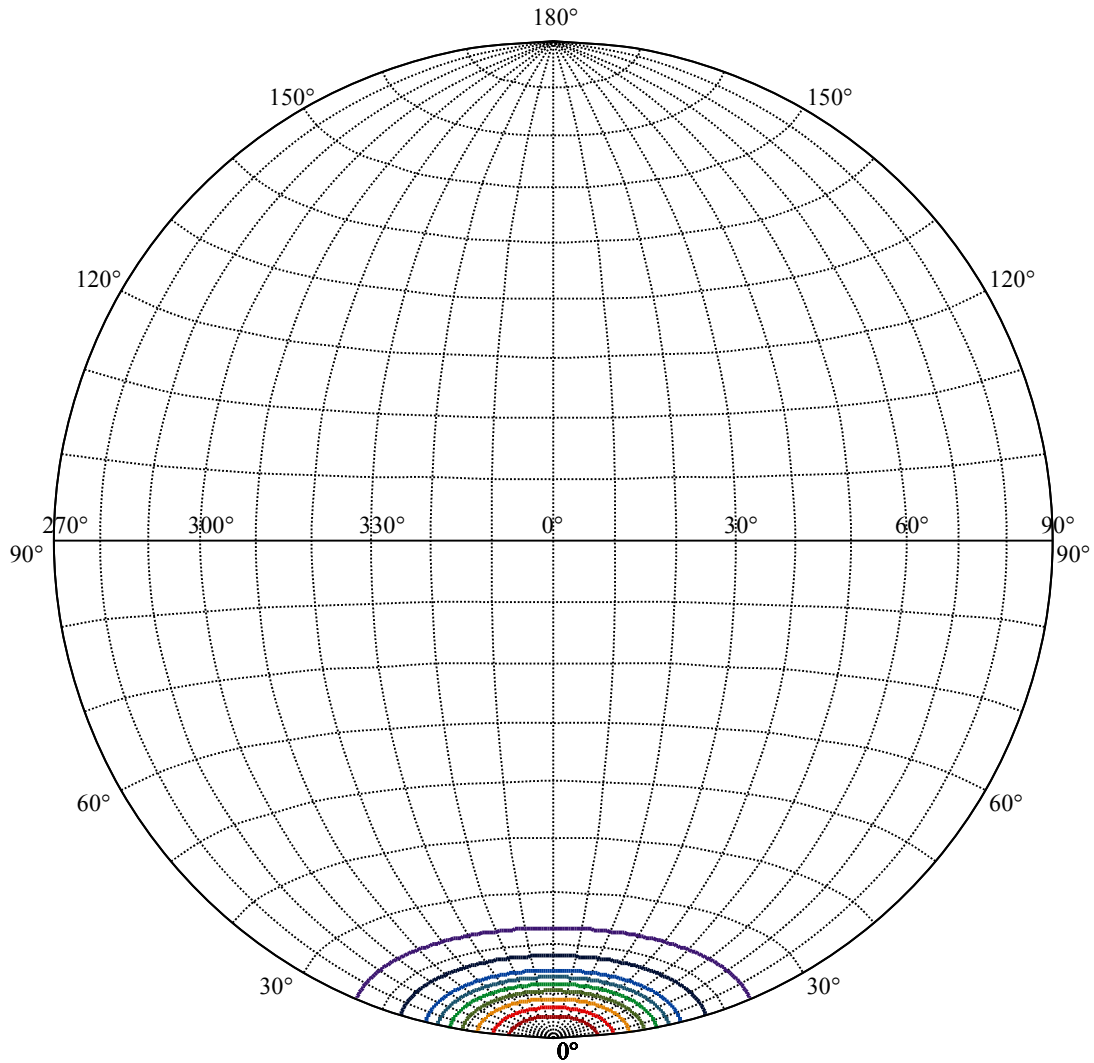
Beam Angle(50%Imax):C0/180Left:12.0 Right:12.0

:C90/270Left:12.0 Right:12.0





(10%Imax) 1326.03	—
(20%Imax) 2652.07	—
(30%Imax) 3978.1	—
(40%Imax) 5304.13	—
(50%Imax) 6630.17	—
(60%Imax) 7956.2	—
(70%Imax) 9282.23	—
(80%Imax) 10608.3	—
(90%Imax) 11934.3	—



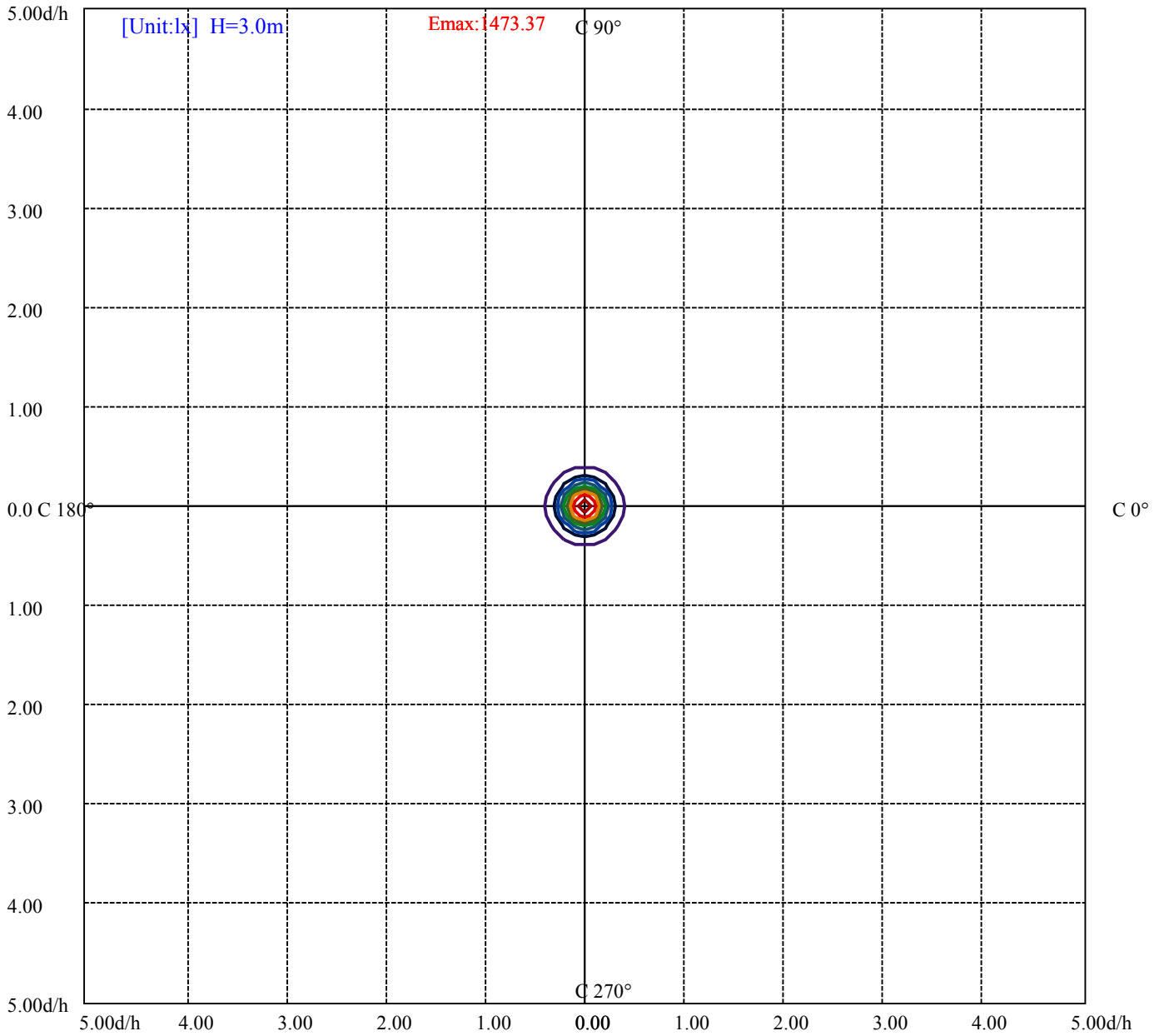
House

[Unit:cd]

Road

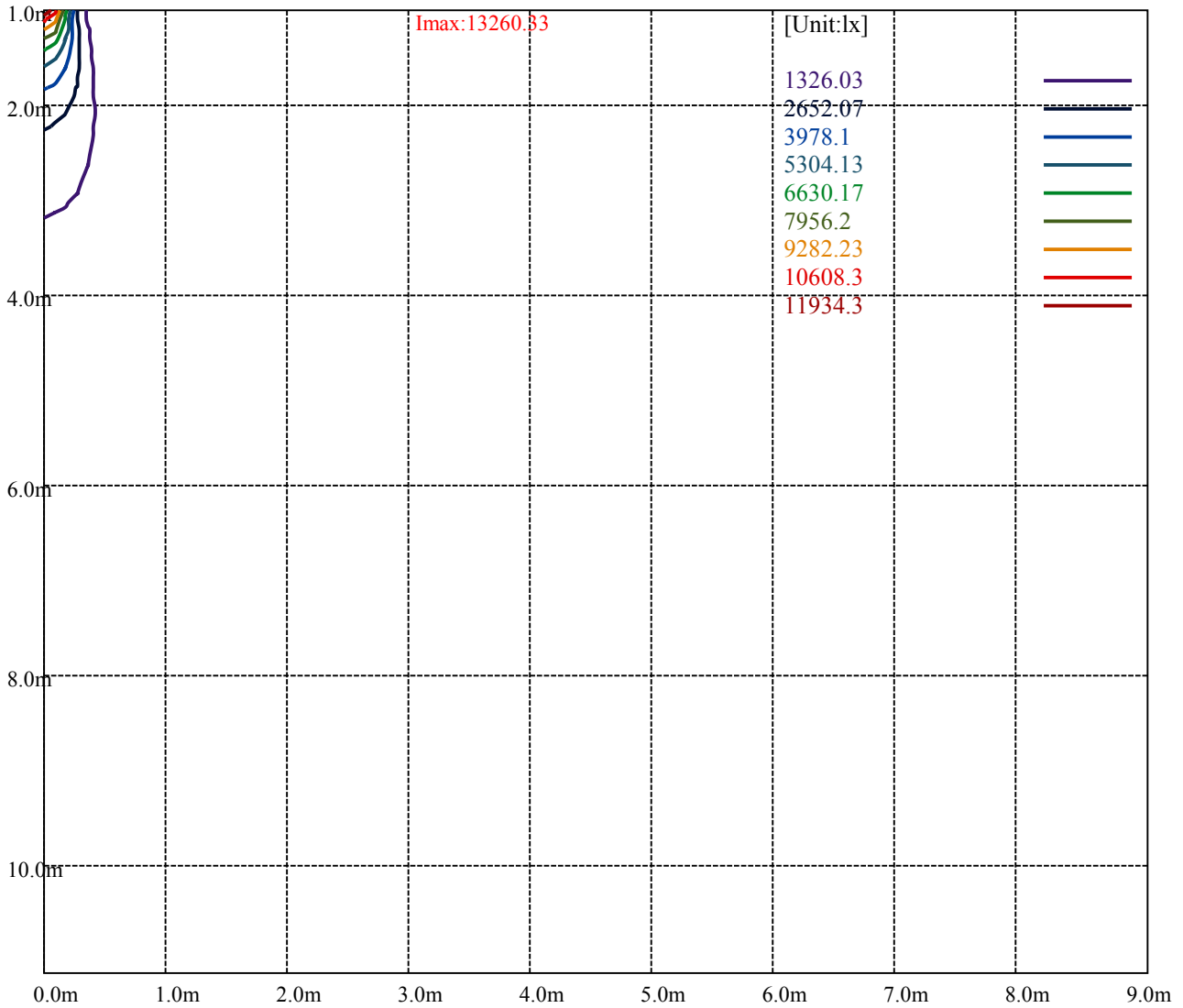
**Imax:13260.33**

(10%Imax) 1326.03	—
(20%Imax) 2652.07	—
(30%Imax) 3978.1	—
(40%Imax) 5304.13	—
(50%Imax) 6630.17	—
(60%Imax) 7956.2	—
(70%Imax) 9282.23	—
(80%Imax) 10608.3	—
(90%Imax) 11934.3	—



(10%Emax) 147.3367	—
(20%Emax) 294.6733	—
(30%Emax) 442.01	—
(40%Emax) 589.3467	—
(50%Emax) 736.6833	—
(60%Emax) 884.02	—
(70%Emax) 1031.357	—
(80%Emax) 1178.689	—
(90%Emax) 1326.033	—





Luminance Table

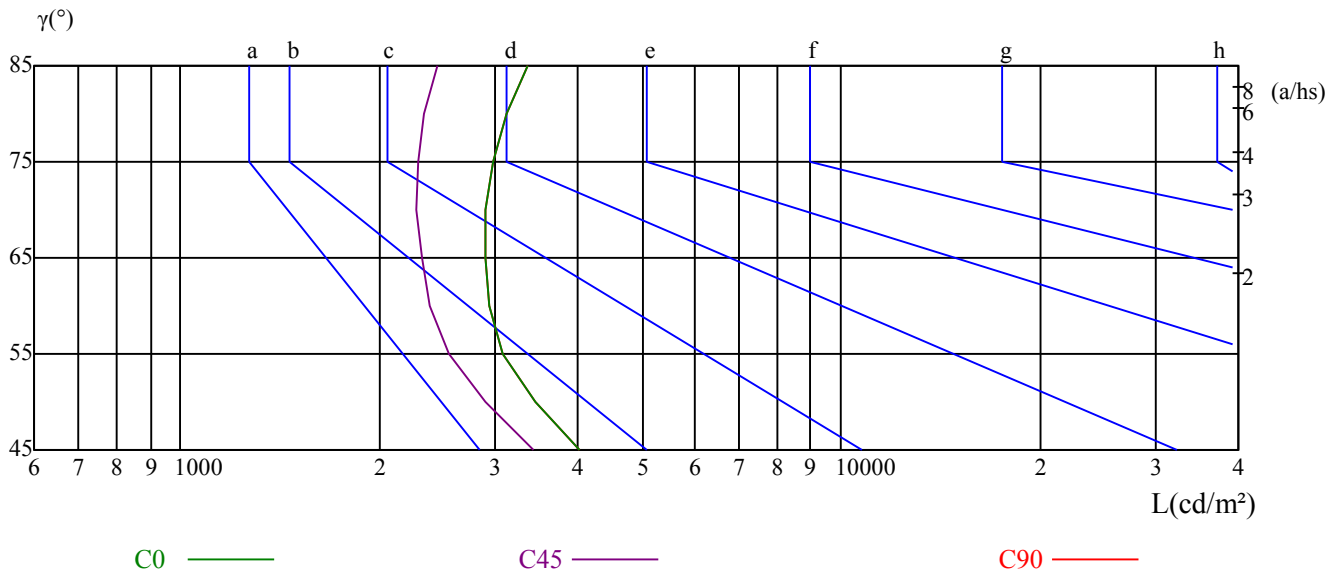
$\gamma$	45	50	55	60	65	70	75	80	85
C0	4027	3441	3085	2935	2899	2903	2975	3121	3350
C45	3434	2890	2551	2387	2317	2278	2286	2343	2447
C90	4027	3441	3085	2935	2899	2903	2975	3121	3350

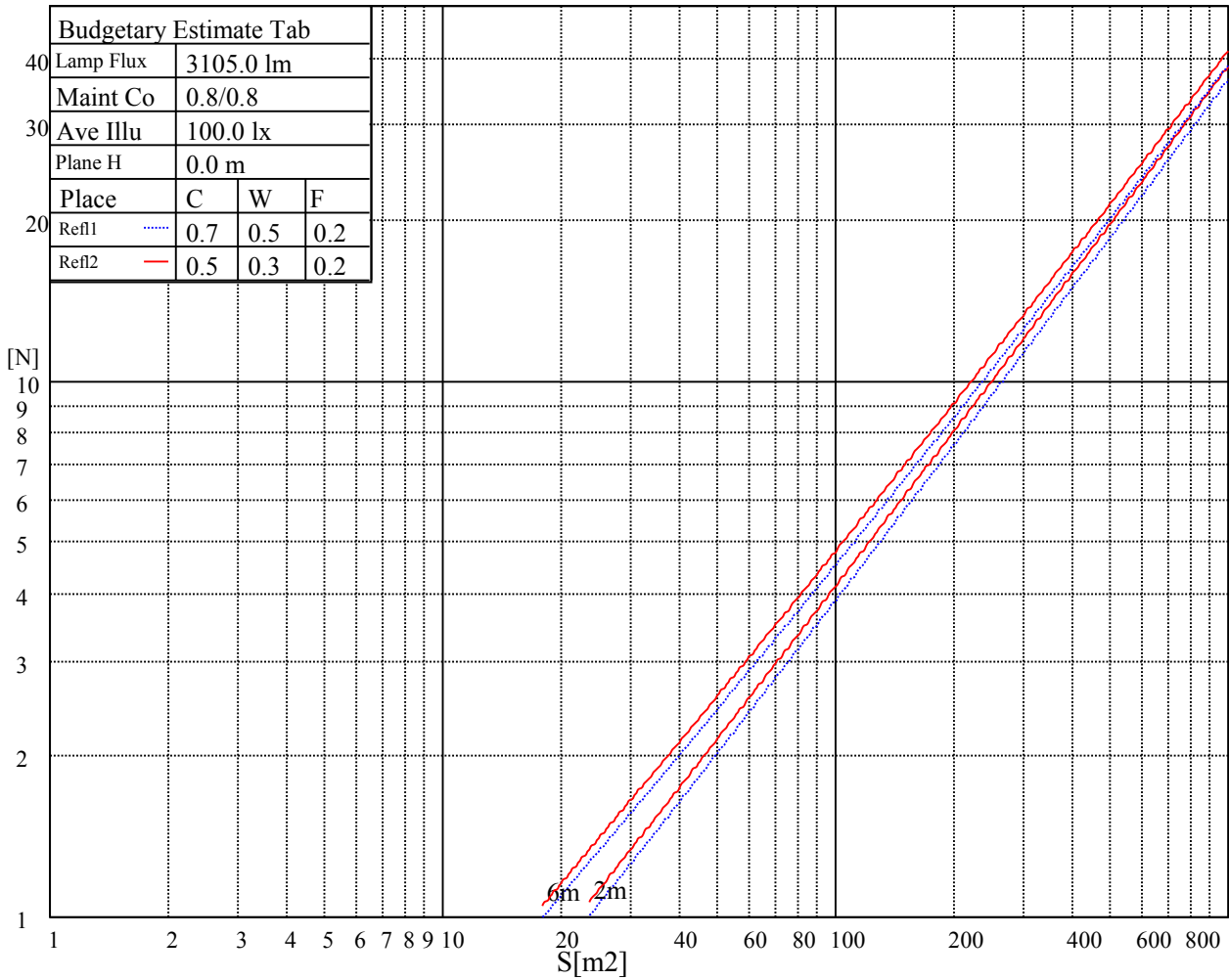
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
7351	7351	7351	10925	10925	10925	30772	30772	30772

Glare Table

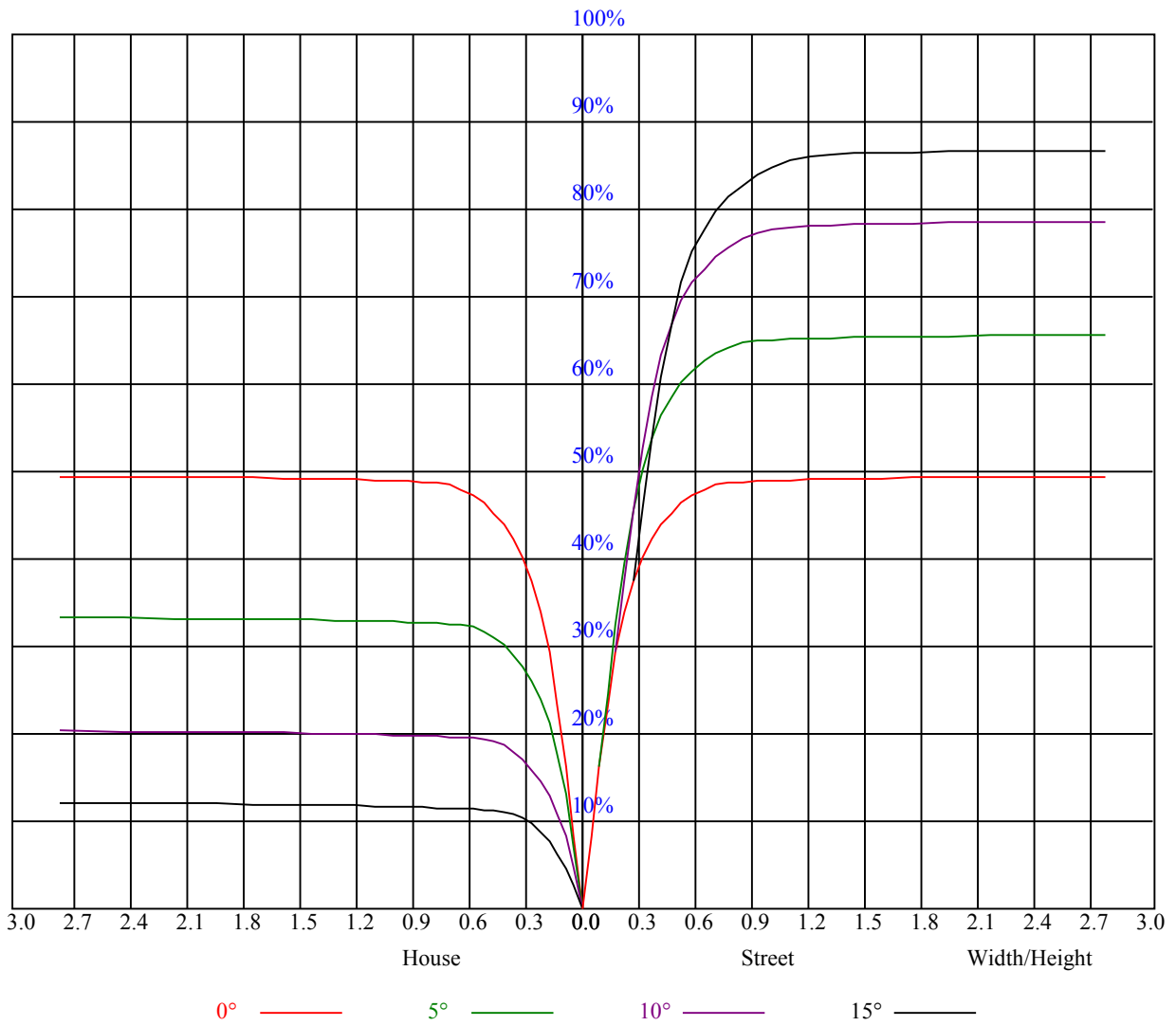
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

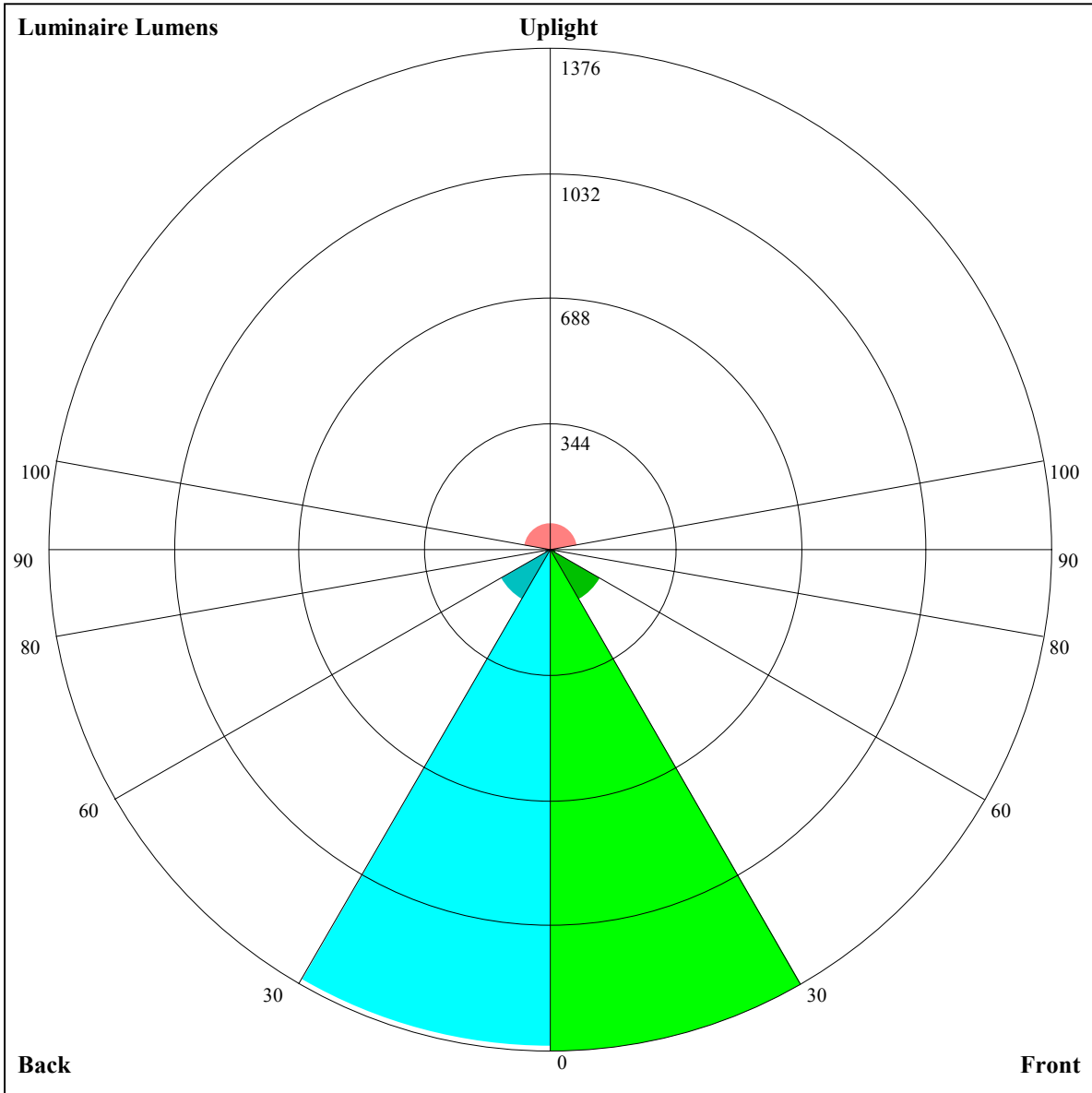
Luminance Limiting Curve





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	1.21	1.21	1.21	1.18	1.18	1.18	1.13	1.13	1.13	1.08	1.08	1.08	1.03	1.03	1.03	1.01
1	1.11	1.08	1.05	1.09	1.06	1.04	1.04	1.02	1.00	1.01	0.99	0.97	0.97	0.96	0.95	0.93
2	1.05	1.02	0.98	1.04	1.00	0.97	1.00	0.98	0.95	0.97	0.95	0.93	0.95	0.93	0.91	0.90
3	1.01	0.96	0.93	0.99	0.95	0.92	0.97	0.94	0.91	0.95	0.92	0.89	0.92	0.90	0.88	0.87
4	0.97	0.92	0.89	0.96	0.92	0.88	0.94	0.90	0.87	0.92	0.89	0.86	0.90	0.87	0.85	0.84
5	0.93	0.89	0.85	0.93	0.88	0.85	0.91	0.87	0.84	0.89	0.86	0.84	0.88	0.85	0.83	0.82
6	0.90	0.86	0.82	0.90	0.85	0.82	0.88	0.84	0.82	0.87	0.84	0.81	0.86	0.83	0.81	0.79
7	0.88	0.83	0.80	0.87	0.83	0.80	0.86	0.82	0.79	0.85	0.81	0.79	0.84	0.81	0.79	0.77
8	0.85	0.81	0.78	0.85	0.80	0.77	0.84	0.80	0.77	0.83	0.79	0.77	0.82	0.79	0.77	0.76
9	0.83	0.79	0.76	0.82	0.78	0.75	0.82	0.78	0.75	0.81	0.77	0.75	0.80	0.77	0.75	0.74
10	0.81	0.77	0.74	0.80	0.76	0.74	0.80	0.76	0.73	0.79	0.76	0.73	0.78	0.75	0.73	0.72





Luminaire Lumens:

FL=1376,FM=159.89,FH=16.6,FVH=8

BL=1363.55,BM=156.82,BH=16.59,BVH=7.96

UL=15.4,UH=73.29

BUG Rating:B3-U2-G0

Intensity data(cd)

C/ $\gamma$ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	13268.59	12569.38	8968.69	4272.38	1679.22	1115.44	959.08	483.40	54.95
45.0	13268.59	11958.25	7735.42	3044.62	1504.14	1114.34	939.26	390.90	46.25
90.0	13224.55	10822.44	6933.80	2618.48	1383.57	1075.25	855.91	270.27	32.10
135.0	13279.60	12161.96	8445.65	3606.19	1549.84	1133.06	956.33	407.97	40.91
180.0	13268.59	10776.19	7967.21	3285.22	1442.48	1024.82	835.54	342.84	39.31
225.0	13268.59	12525.33	9034.76	4361.02	1750.79	1094.80	995.36	483.34	55.33
270.0	13224.55	12784.10	9915.66	5285.41	2890.46	1195.83	1011.39	581.95	72.18
315.0	13279.60	12442.75	8655.97	4102.80	1627.47	1092.21	952.64	423.82	37.60
360.0	13268.59	12569.38	8968.69	4272.38	1679.22	1115.44	959.08	483.40	54.95
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	28.19	22.85	19.82	17.84	16.96	16.02	15.58	15.36	14.70
45.0	32.87	27.09	22.63	19.93	17.89	16.46	15.47	14.76	14.59
90.0	21.97	19.32	17.84	16.90	16.46	15.69	15.14	14.76	14.87
135.0	25.11	20.98	18.44	17.29	16.46	15.80	15.25	14.87	14.65
180.0	25.60	22.13	19.10	17.51	16.41	15.75	15.31	15.03	14.48
225.0	32.70	27.42	22.90	20.32	18.61	17.01	16.02	15.20	14.65
270.0	23.73	19.93	18.06	17.01	16.52	16.24	15.53	15.03	14.59
315.0	23.95	19.88	18.00	17.23	16.79	16.13	15.58	15.20	14.98
360.0	28.19	22.85	19.82	17.84	16.96	16.02	15.58	15.36	14.70
C/ $\gamma$ (°)	90.0								
0.0	14.09								
45.0	13.98								
90.0	13.98								
135.0	14.04								
180.0	14.04								
225.0	14.15								
270.0	14.37								
315.0	14.26								
360.0	14.09								