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NATA

LumCAT: LM01D03024AE

Luminaire:

Report No: NATA0100

Voltage(V): 36.7000

Test No: GC2018122603

Current(A): 0.2500

LampCAT: LUXEON CoB 1202S

Power (W): 9.1750

Lamp flux(lm): 1218.0

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 30

Width(mm): 30

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 1107.65

Efficiency(%): 90.94%

Lumens(lm)/Power(W): 123.31

Central intensity(cd): 4140.984

Maximum intensity(cd): 4140.984

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=24.8

[C90/270]Total=24.8

Field angle(10%Imax): [C0/180]Total=48.7

[C90/270]Total=48.7

Maximum s/h(1/2): C0_180=0.42 C90_270=0.42

Maximum s/h(1/4): C0_180=0.42 C90_270=0.42

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 92.89%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 93.572%

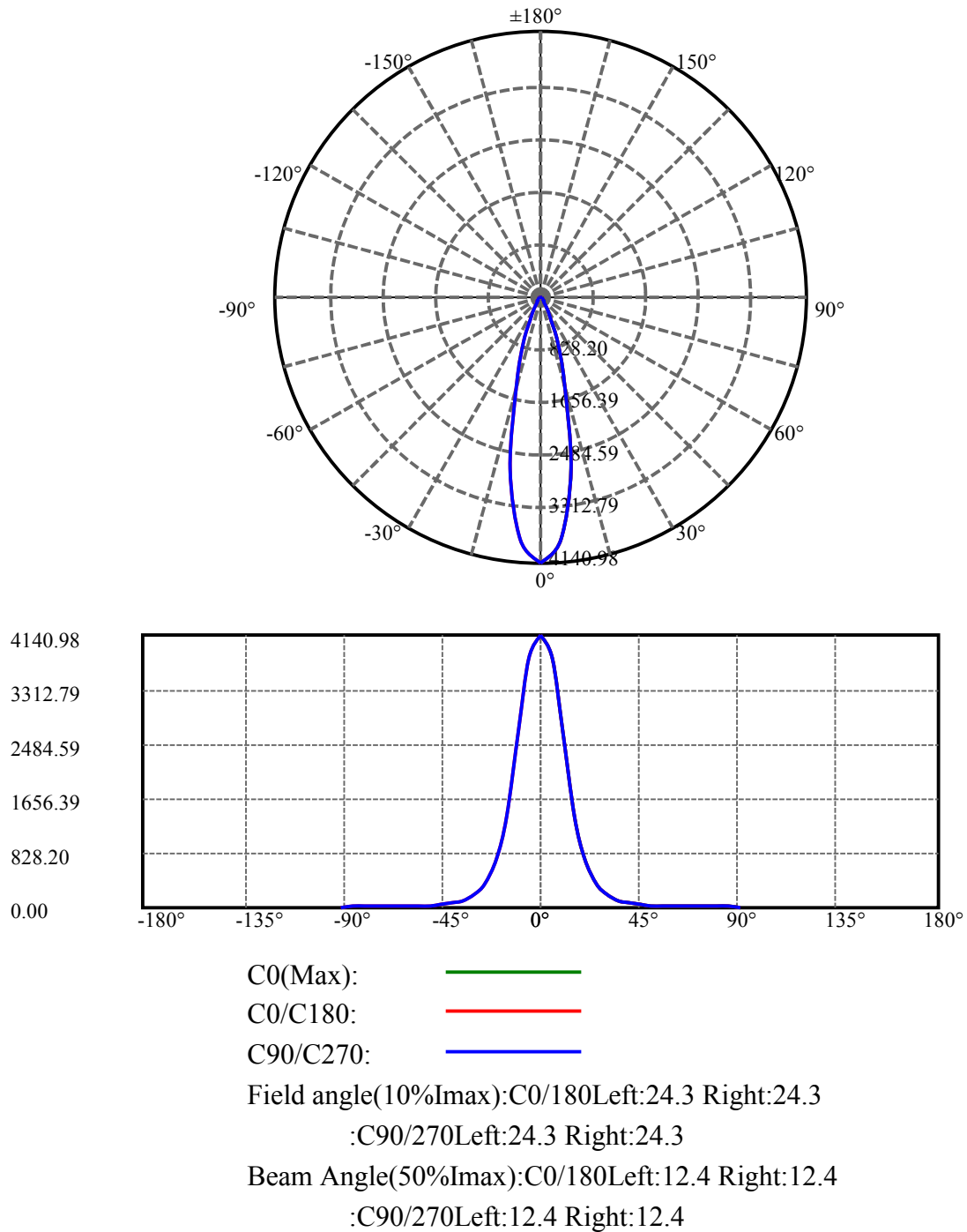
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4140.984	24.764	24.764	2.033%	2.236%
5.0	3781.336	180.647	205.411	14.831%	18.545%
10.0	2711.250	258.065	463.476	21.188%	41.843%
15.0	1377.295	195.395	658.871	16.042%	59.483%
20.0	734.189	137.641	796.512	11.301%	71.910%
25.0	365.948	84.773	881.285	6.960%	79.563%
30.0	217.533	59.619	940.904	4.895%	84.946%
35.0	111.635	35.098	976.002	2.882%	88.114%
40.0	70.172	24.724	1000.726	2.030%	90.346%
45.0	48.312	18.725	1019.451	1.537%	92.037%
50.0	36.295	15.240	1034.692	1.251%	93.413%
55.0	28.413	12.758	1047.449	1.047%	94.565%
60.0	23.562	11.185	1058.634	.918%	95.574%
65.0	19.842	9.857	1068.491	.809%	96.464%
70.0	17.339	8.931	1077.422	.733%	97.271%
75.0	16.151	8.551	1085.973	.702%	98.043%
80.0	18.197	9.823	1095.796	.806%	98.929%
85.0	17.205	9.395	1105.191	.771%	99.778%
90.0	8.986	2.463	1107.654	.202%	100.000%

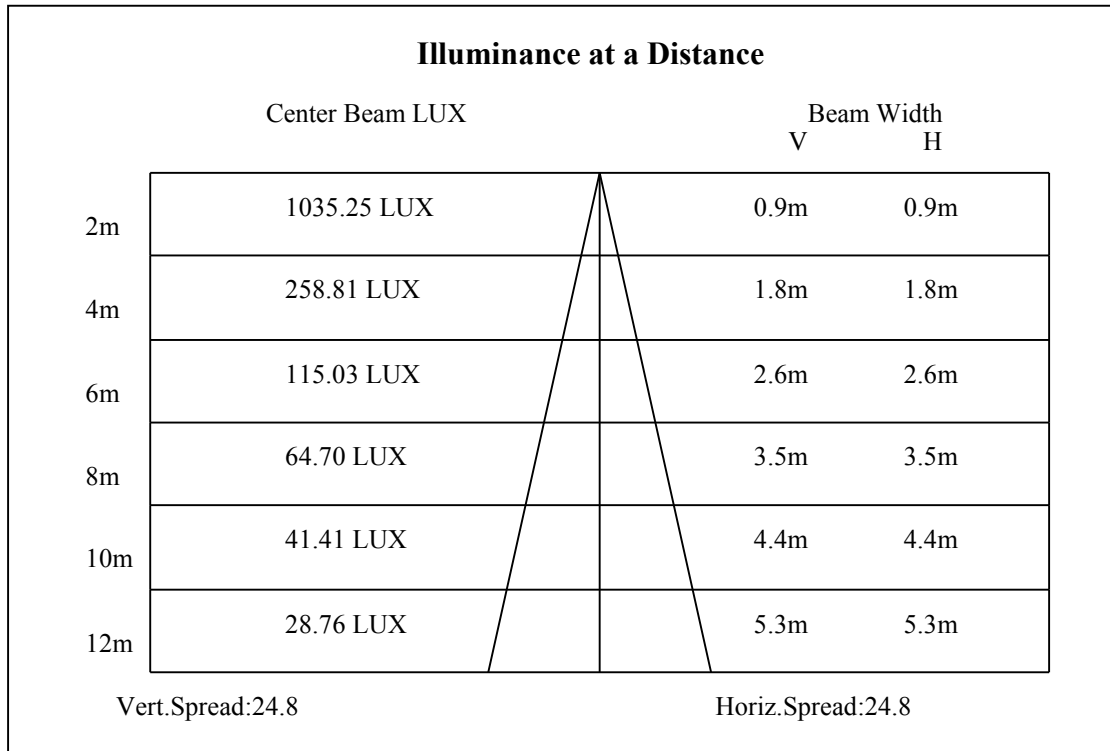
ZONAL LUMEN SUMMARY

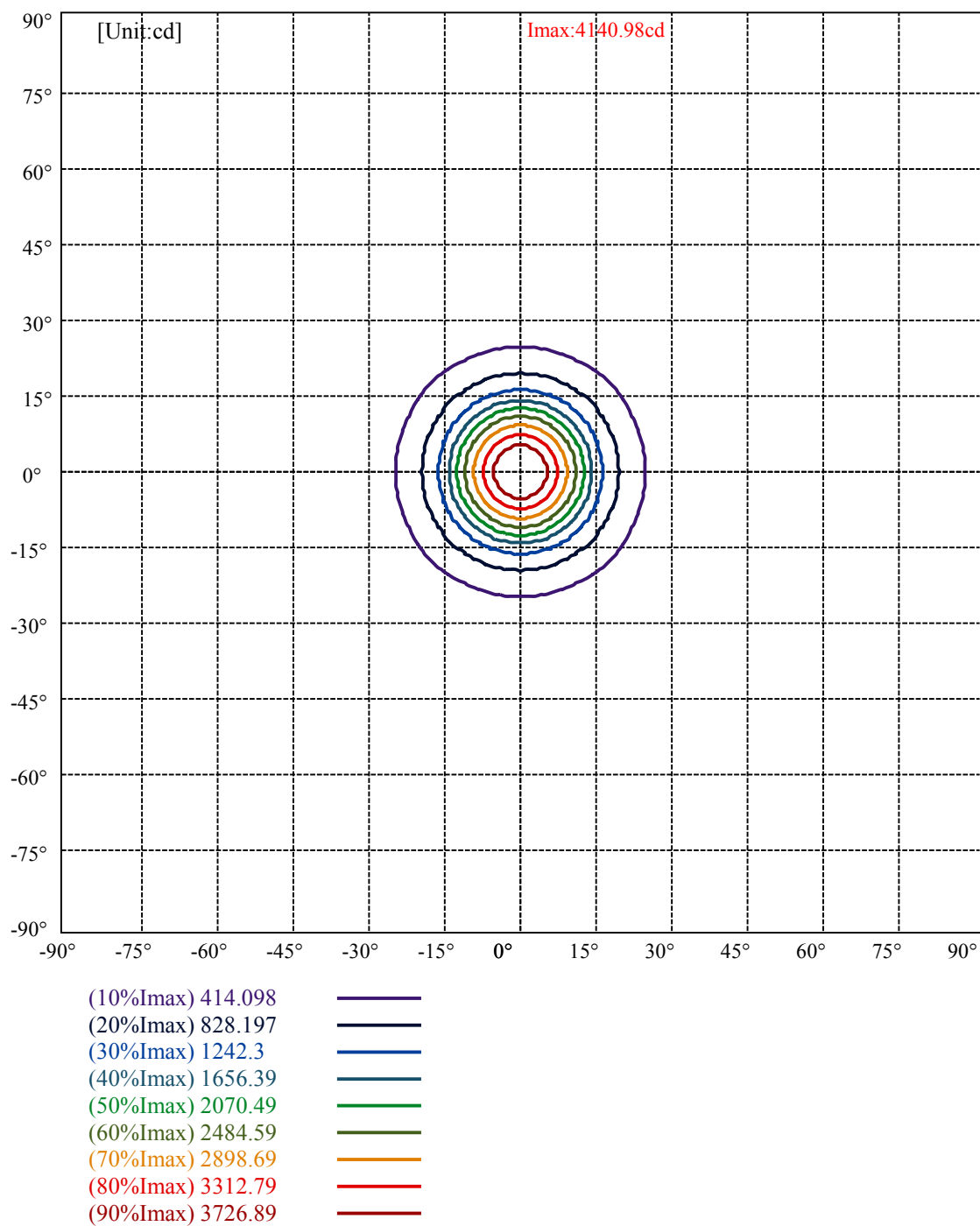
Zone	Lumens	%Lamp	%Fixt
0-30	940.90	77.25%	84.95%
0-40	1000.73	82.16%	90.35%
0-60	1058.63	86.92%	95.57%
0-90	1105.19	90.74%	99.78%
0-120	1105.19	90.74%	99.78%
0-180	1107.65	90.94%	100.00%
60-90	57.74	4.74%	5.21%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-25.41	886.12	72.75%	80.00%

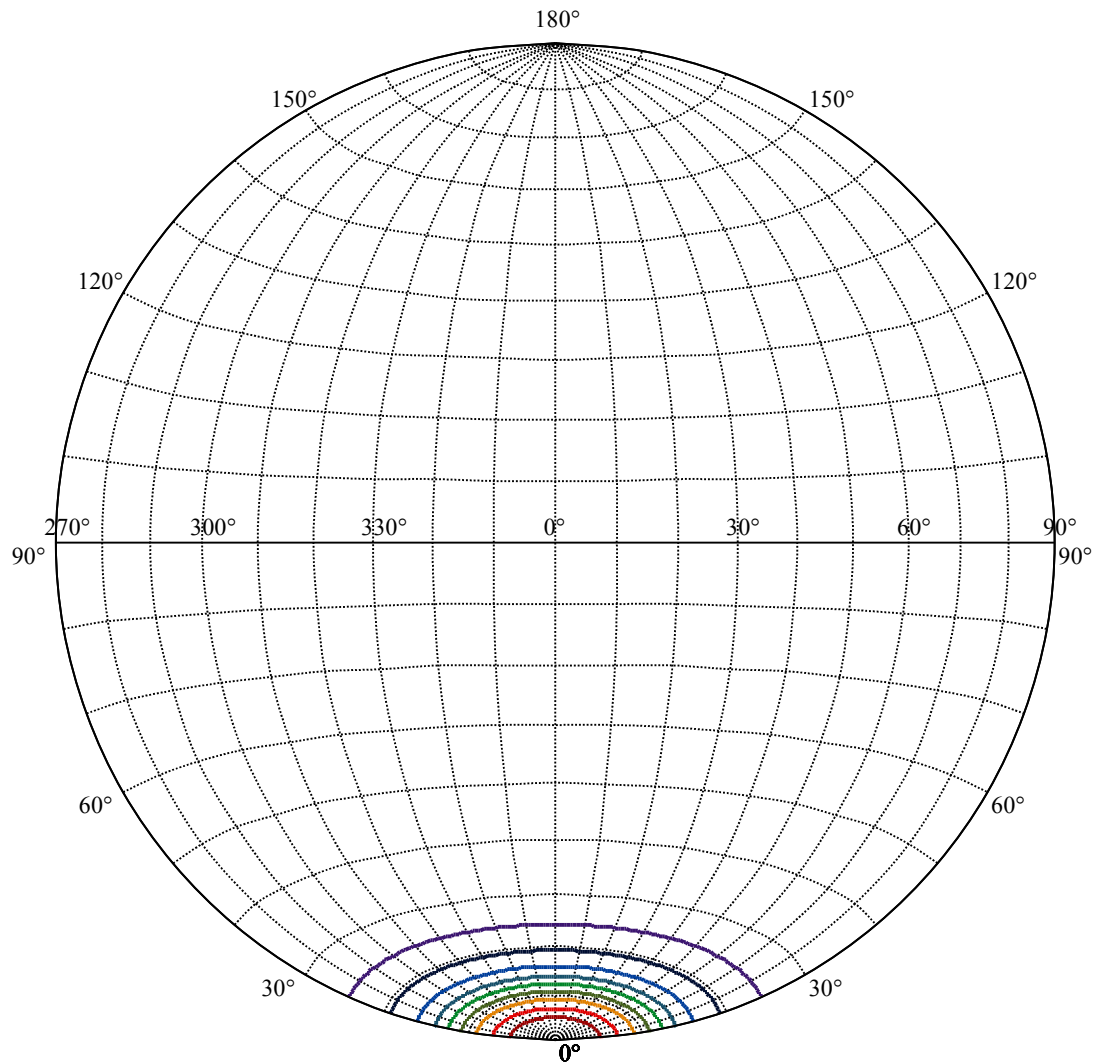
ZONAL LUMEN SUMMARY

0-10	463.48
10-20	333.04
20-30	144.39
30-40	59.82
40-50	33.97
50-60	23.94
60-70	18.79
70-80	18.37
80-90	9.40
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









House

[Unit:cd]

Road

Imax:4140.98

(10%Imax) 414.098

(20%Imax) 828.197

(30%Imax) 1242.3

(40%Imax) 1656.39

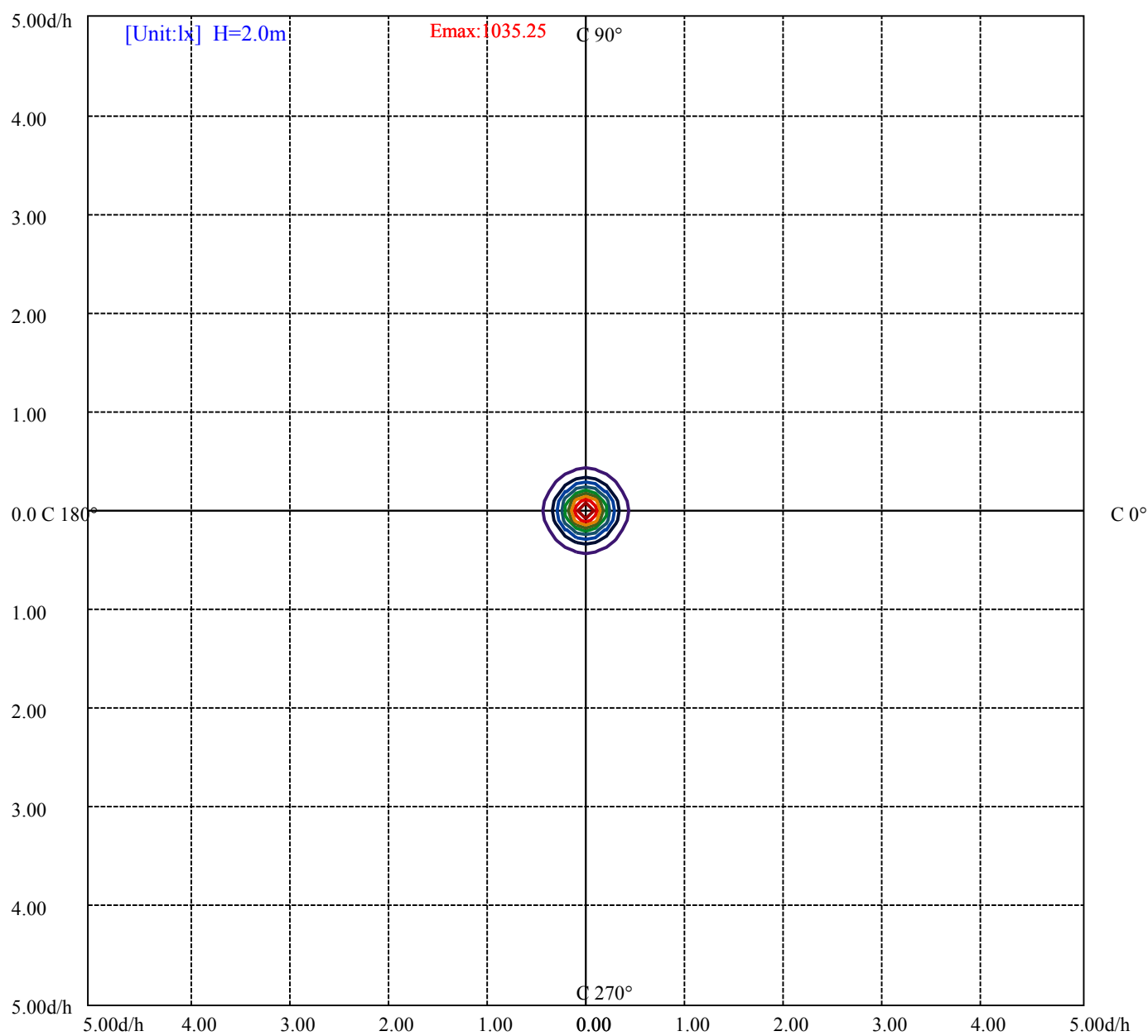
(50%Imax) 2070.49

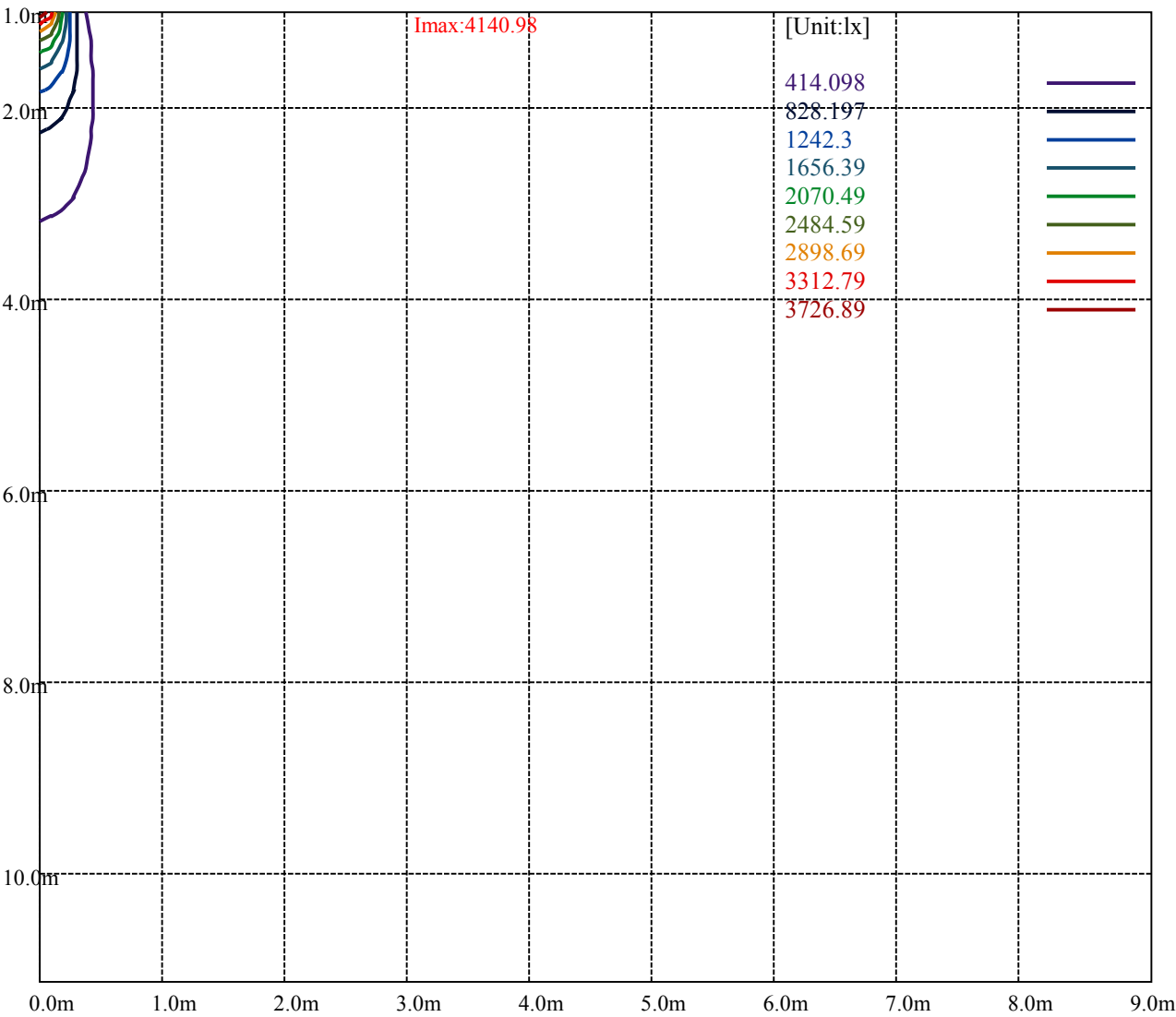
(60%Imax) 2484.59

(70%Imax) 2898.69

(80%Imax) 3312.79

(90%Imax) 3726.89

(10%E_{max}) 103.5242(20%E_{max}) 207.0488(30%E_{max}) 310.5725(40%E_{max}) 414.0975(50%E_{max}) 517.6225(60%E_{max}) 621.145(70%E_{max}) 724.67(80%E_{max}) 828.195(90%E_{max}) 931.72



Luminance Table

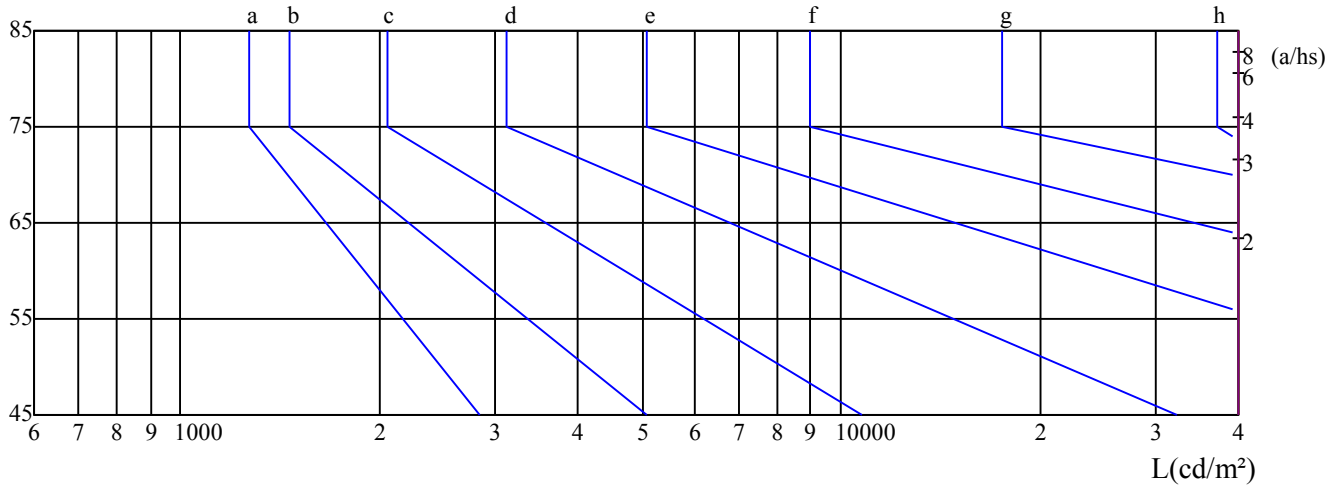
γ	45	50	55	60	65	70	75	80	85
C0	75915	62739	55041	52359	52167	56329	69335	116435	219345
C45	75915	62739	55041	52359	52167	56329	69335	116435	219345
C90	75915	62739	55041	52359	52167	56329	69335	116435	219345

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
52167	52167	52167	69335	69335	69335	219345	219345	219345

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

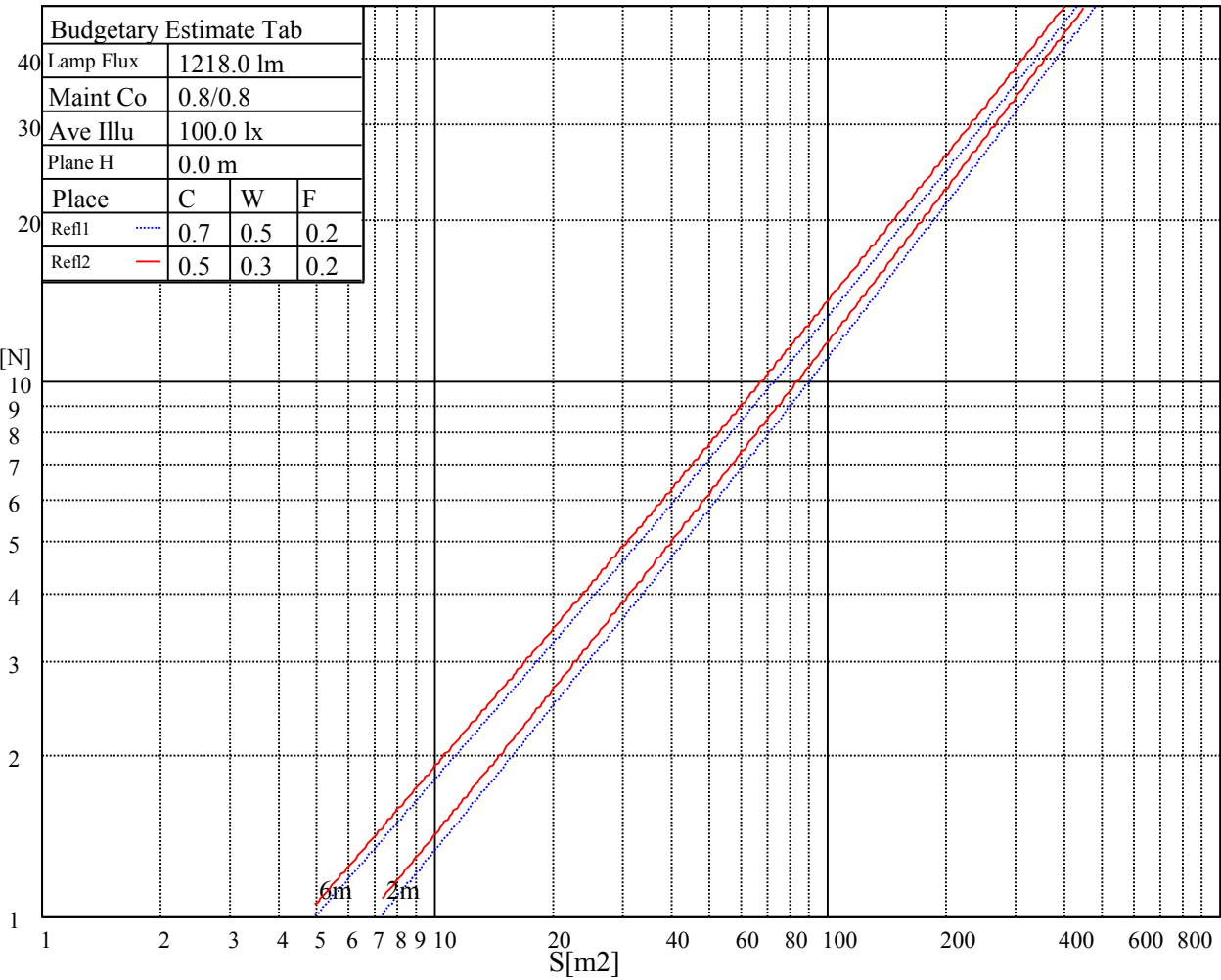
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

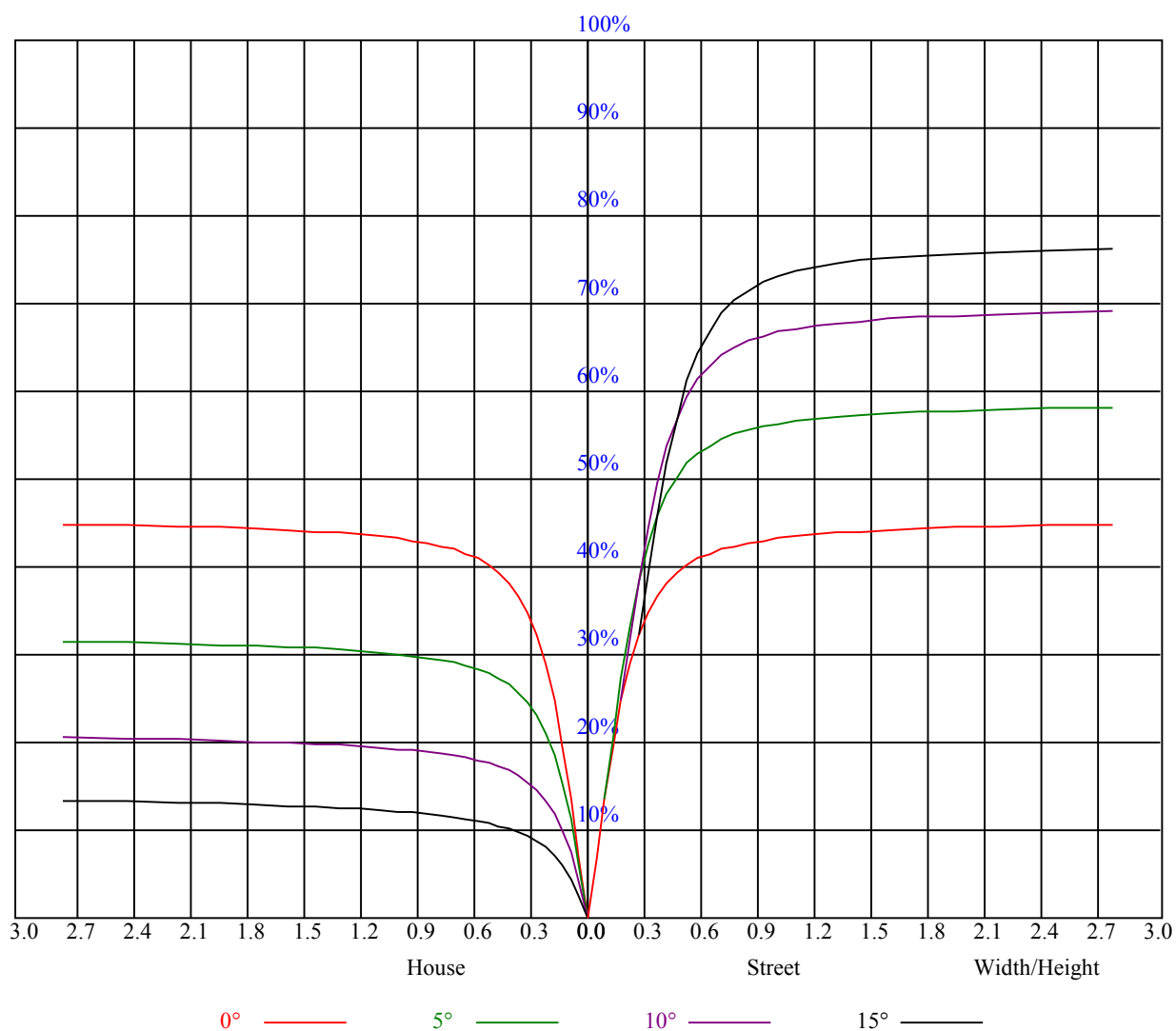
C0 ———

C45 ———

C90 ———



RHOC	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	1.11	1.11	1.11	1.08	1.08	1.08	1.03	1.03	1.03	0.99	0.99	0.99	0.95	0.95	0.95	0.93
1	1.01	0.98	0.95	0.99	0.96	0.94	0.95	0.93	0.91	0.91	0.90	0.88	0.88	0.87	0.86	0.84
2	0.95	0.91	0.88	0.93	0.90	0.87	0.90	0.87	0.85	0.88	0.85	0.83	0.85	0.83	0.81	0.80
3	0.90	0.86	0.82	0.89	0.85	0.82	0.87	0.83	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.76
4	0.86	0.82	0.78	0.85	0.81	0.78	0.83	0.80	0.77	0.81	0.78	0.76	0.80	0.77	0.75	0.74
5	0.83	0.78	0.74	0.82	0.77	0.74	0.80	0.76	0.73	0.79	0.75	0.73	0.77	0.75	0.72	0.71
6	0.80	0.75	0.72	0.79	0.74	0.71	0.78	0.74	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.69
7	0.77	0.72	0.69	0.76	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.67
8	0.74	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.65
9	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.70	0.66	0.64	0.63
10	0.70	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.62



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	4137.75	3961.69	3134.25	1764.56	900.56	442.69	293.06	131.91	80.16
45.0	4118.06	3966.19	3140.44	1755.56	876.94	442.69	290.81	123.75	76.73
90.0	4149.00	3764.25	2571.19	1104.92	710.83	369.45	204.64	116.89	73.18
135.0	4159.13	3760.88	2673.56	1433.25	728.44	372.38	243.45	118.29	75.26
180.0	4137.75	3576.38	2360.81	1083.60	571.89	292.56	160.20	90.45	60.92
225.0	4118.06	3537.56	2236.50	1081.97	530.04	238.84	137.14	76.22	50.79
270.0	4149.00	3822.75	2793.38	1486.13	767.81	371.81	198.51	116.55	68.96
315.0	4159.13	3861.00	2779.88	1308.38	786.99	397.18	212.46	119.03	75.38
360.0	4137.75	3961.69	3134.25	1764.56	900.56	442.69	293.06	131.91	80.16

C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	55.41	42.47	33.02	26.89	22.50	19.18	16.99	16.26	16.09
45.0	52.99	41.40	32.29	26.16	21.94	19.01	17.61	16.54	15.81
90.0	49.50	37.07	27.96	22.67	18.62	16.03	14.51	17.94	18.56
135.0	50.63	36.96	27.84	22.84	19.29	16.71	16.54	22.33	22.67
180.0	44.49	34.31	27.17	23.63	19.91	17.89	17.10	17.83	15.13
225.0	38.59	30.38	24.47	21.04	18.45	16.31	15.58	15.81	15.75
270.0	45.39	33.13	26.16	21.54	18.11	16.14	14.51	16.59	14.85
315.0	49.50	34.65	28.41	23.74	19.91	17.44	16.37	22.28	18.79
360.0	55.41	42.47	33.02	26.89	22.50	19.18	16.99	16.26	16.09

C/ γ (°)	90.0
0.0	8.94
45.0	8.94
90.0	8.61
135.0	9.00
180.0	9.17
225.0	9.00
270.0	8.66
315.0	9.56
360.0	8.94