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Nata

Client:

LumCAT: 1654-N

Luminaire: 92.70.044.00

Report No: nata-0100

Test No: GC2018060206

LampCAT: NICHIA NFCWS024B-V3

Lamp flux(lm): 1023.0

Number of Lamps: 1

Length(mm): 32

Phm Type: C

Voltage(V): 36.4000

Current(A): 0.3000

Power (W): 10.9200

PF: 0.0000

Ballast type: DC

Width(mm): 32

Height(mm): 0

Photometric Results

Lumens(lm): 925.50, Efficiency(%): 90.47% , Luminous Efficacy(lm/W): 84.75

Central intensity(cd): 4577.664, Maximum intensity(cd): 4577.664

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=19.6

[C90/270]Total=19.6

Field angle(10%Imax): [C0/180]Total=45.8

[C90/270]Total=45.8

Maximum s/h(1/2): C0_180=0.34 C90_270=0.34

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(%): 93.06%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 95.606%

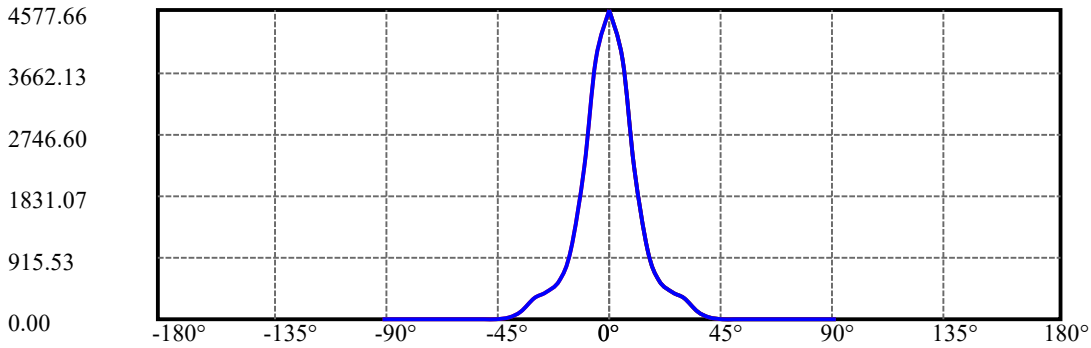
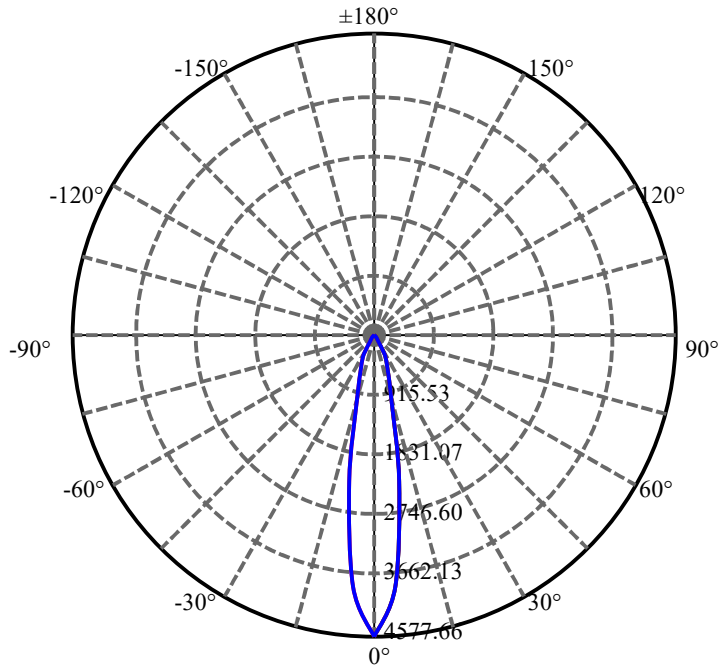
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4577.664	27.375	27.375	2.676%	2.958%
5.0	3846.859	183.777	211.153	17.965%	22.815%
10.0	2239.694	213.181	424.334	20.839%	45.849%
15.0	1034.875	146.816	571.15	14.352%	61.713%
20.0	554.542	103.962	675.112	10.162%	72.946%
25.0	389.696	90.274	765.386	8.824%	82.700%
30.0	301.558	82.648	848.033	8.079%	91.630%
35.0	123.381	38.791	886.824	3.792%	95.821%
40.0	22.780	8.026	894.85	.785%	96.689%
45.0	11.486	4.452	899.302	.435%	97.170%
50.0	9.091	3.817	903.12	.373%	97.582%
55.0	8.011	3.597	906.717	.352%	97.971%
60.0	7.261	3.447	910.163	.337%	98.343%
65.0	6.421	3.190	913.353	.312%	98.688%
70.0	5.788	2.981	916.334	.291%	99.010%
75.0	5.258	2.784	919.118	.272%	99.311%
80.0	4.948	2.671	921.789	.261%	99.599%
85.0	4.728	2.582	924.371	.252%	99.878%
90.0	4.109	1.126	925.497	.110%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	848.03	82.90%	91.63%
0-40	894.85	87.47%	96.69%
0-60	910.16	88.97%	98.34%
0-90	924.37	90.36%	99.88%
0-120	924.37	90.36%	99.88%
0-180	925.50	90.47%	100.00%
60-90	17.65	1.73%	1.91%
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%
0-23.62	740.40	72.38%	80.00%

ZONAL LUMEN SUMMARY

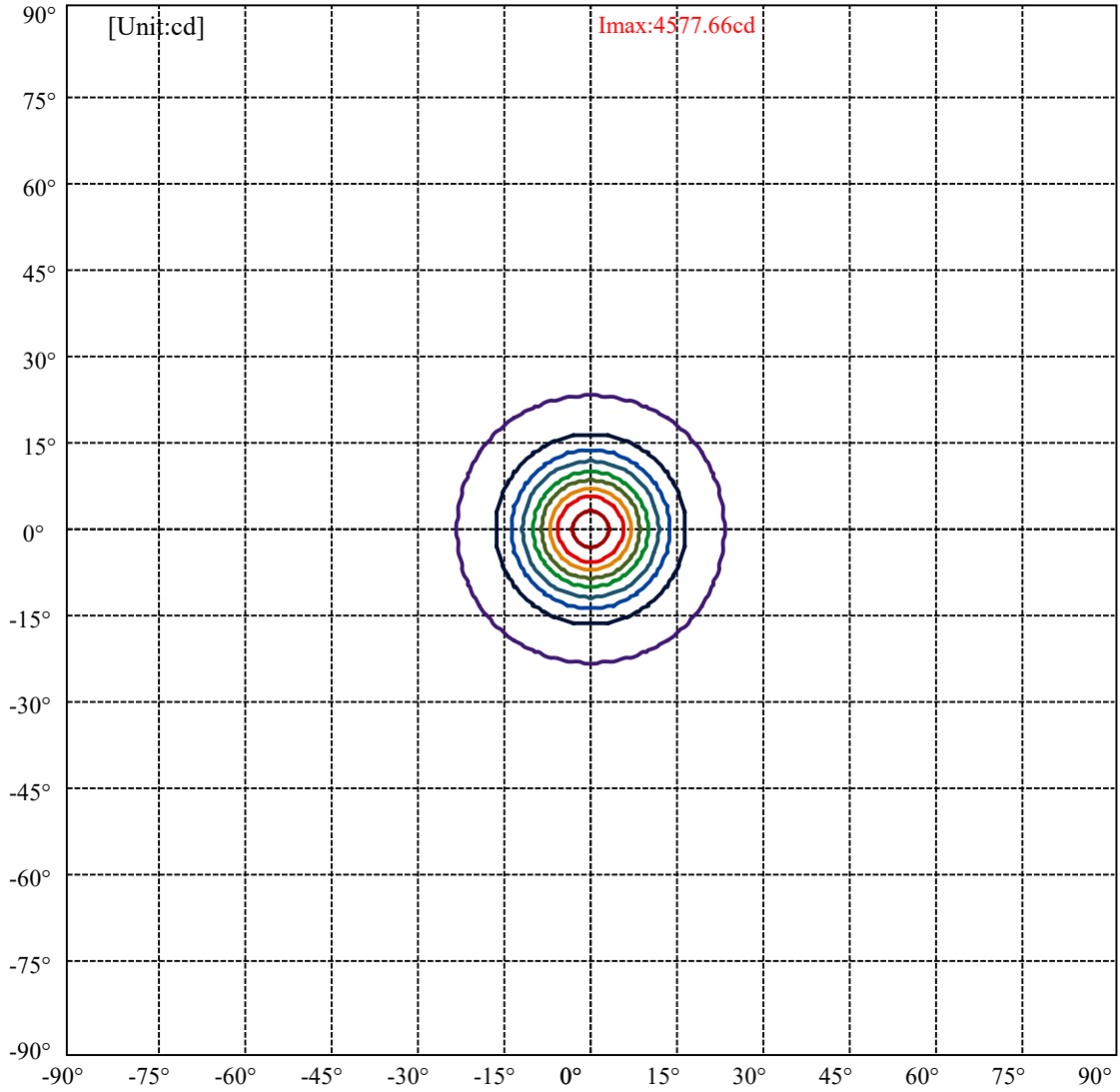
0-10	424.33
10-20	250.78
20-30	172.92
30-40	46.82
40-50	8.27
50-60	7.04
60-70	6.17
70-80	5.45
80-90	2.58
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



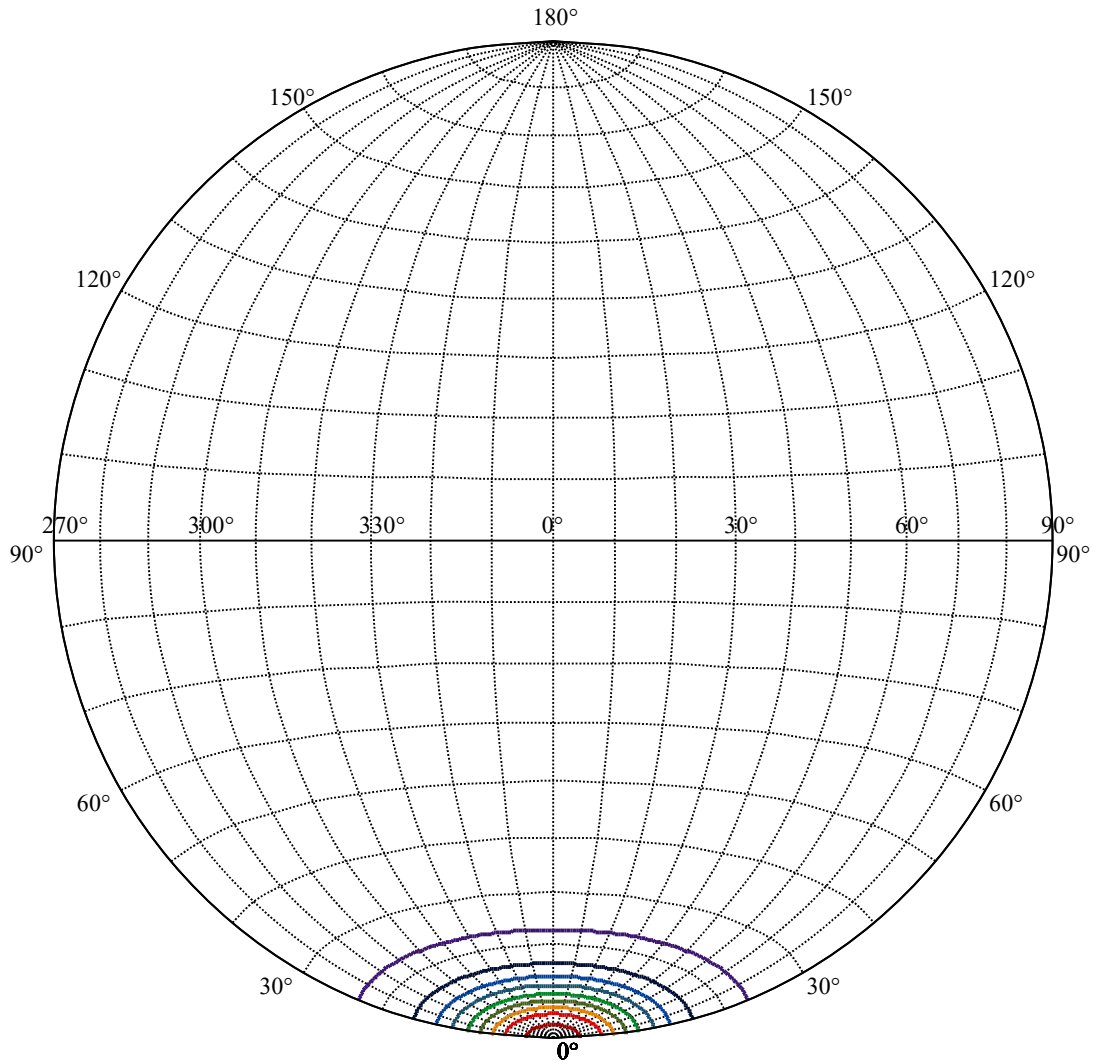
C0(Max): —————
C0/C180: —————
C90/C270: —————

Field angle(10%Imax):C0/180Left:22.9 Right:22.9
:C90/270Left:22.9 Right:22.9

Beam Angle(50%Imax):C0/180Left:9.8 Right:9.8
:C90/270Left:9.8 Right:9.8



(10%Imax) 457.766	—
(20%Imax) 915.533	—
(30%Imax) 1373.3	—
(40%Imax) 1831.07	—
(50%Imax) 2288.83	—
(60%Imax) 2746.6	—
(70%Imax) 3204.36	—
(80%Imax) 3662.13	—
(90%Imax) 4119.9	—



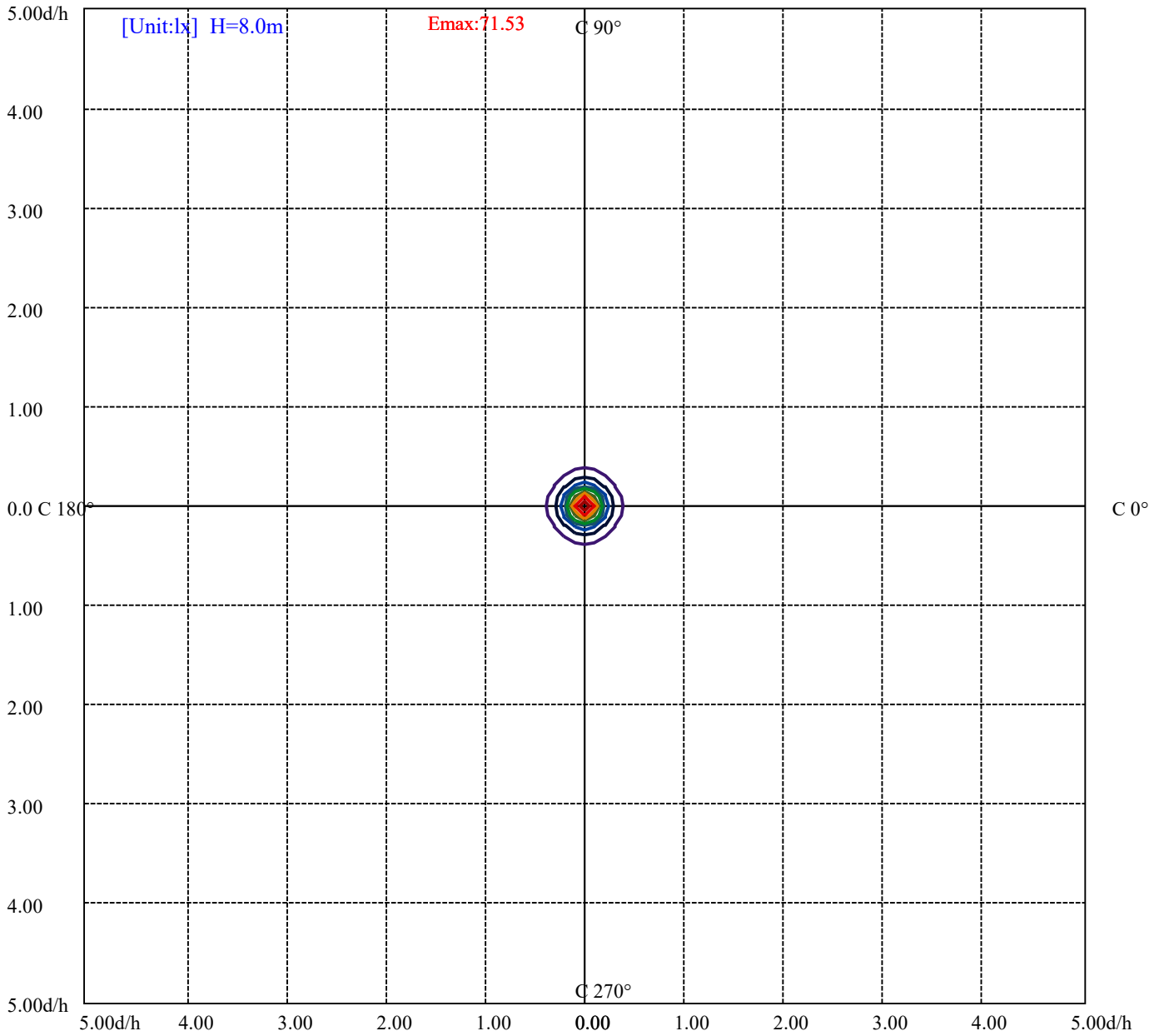
House

[Unit:cd]

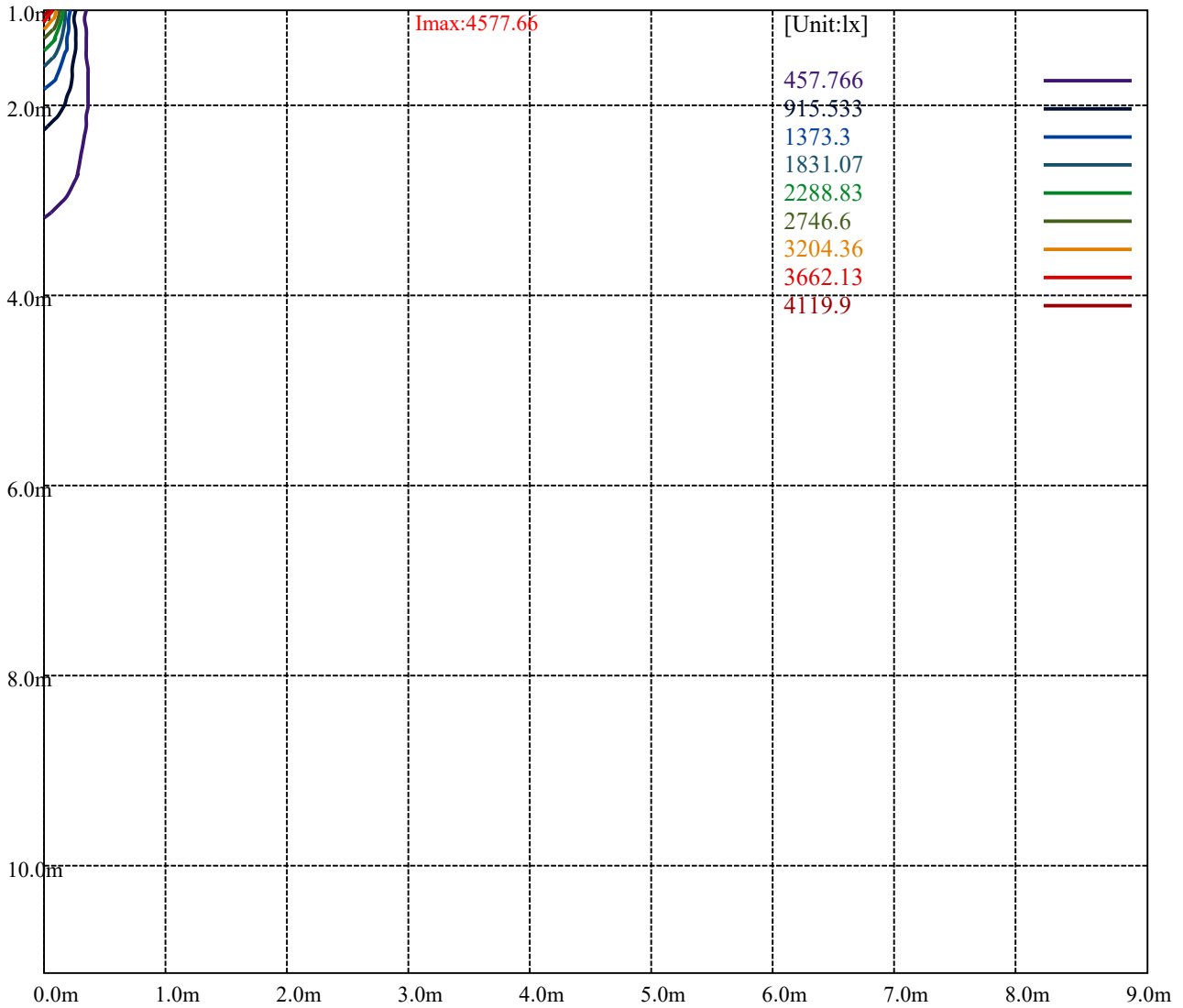
Road

Imax:4577.66

(10%Imax) 457.766	—
(20%Imax) 915.533	—
(30%Imax) 1373.3	—
(40%Imax) 1831.07	—
(50%Imax) 2288.83	—
(60%Imax) 2746.6	—
(70%Imax) 3204.36	—
(80%Imax) 3662.13	—
(90%Imax) 4119.9	—



(10%Emax) 7.152563	—
(20%Emax) 14.30513	—
(30%Emax) 21.45766	—
(40%Emax) 28.61031	—
(50%Emax) 35.76281	—
(60%Emax) 42.91547	—
(70%Emax) 50.06797	—
(80%Emax) 57.22047	—
(90%Emax) 64.37312	—



Luminance Table

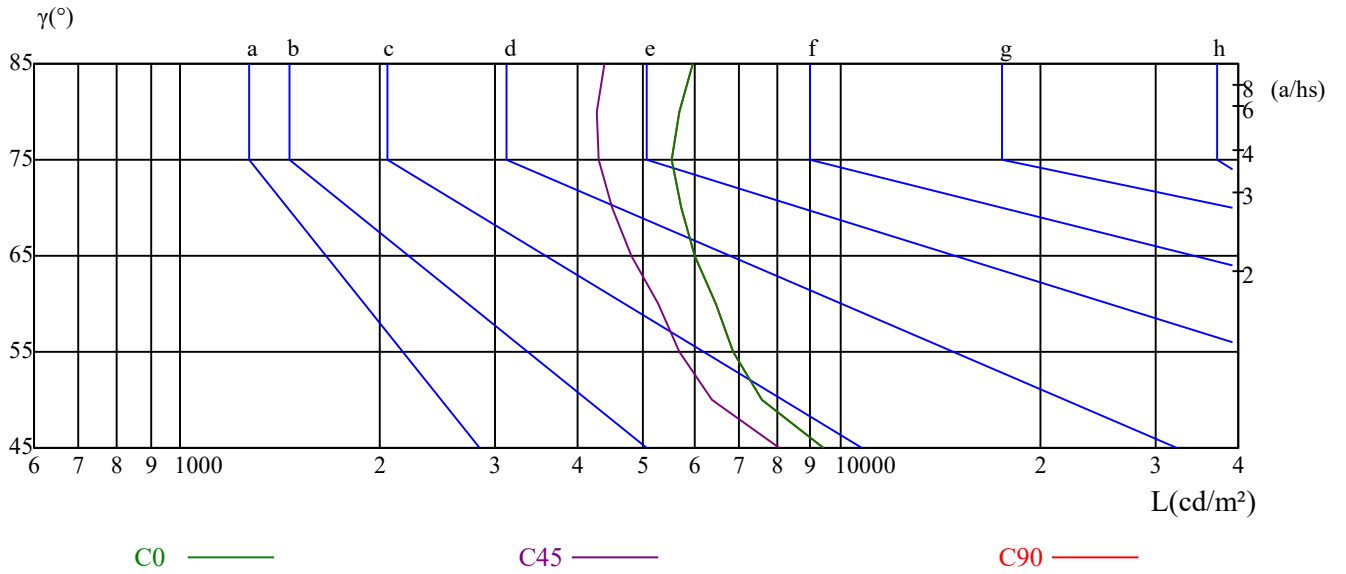
γ	45	50	55	60	65	70	75	80	85
C0	9400	7592	6882	6473	5996	5720	5564	5680	5980
C45	8043	6398	5710	5283	4809	4501	4286	4272	4373
C90	9400	7592	6882	6473	5996	5720	5564	5680	5980

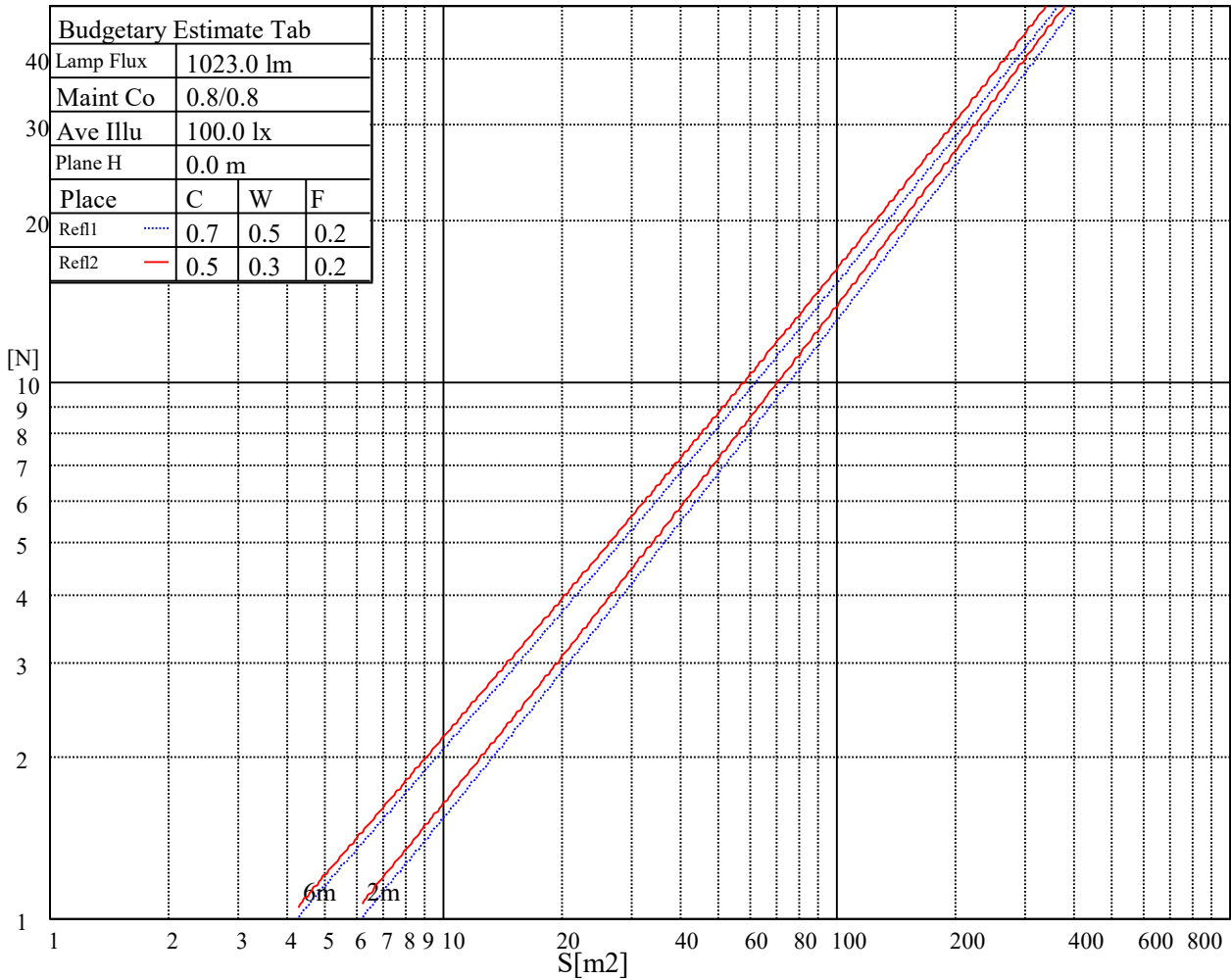
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
14837	14837	14837	19839	19839	19839	52976	52976	52976

Glare Table

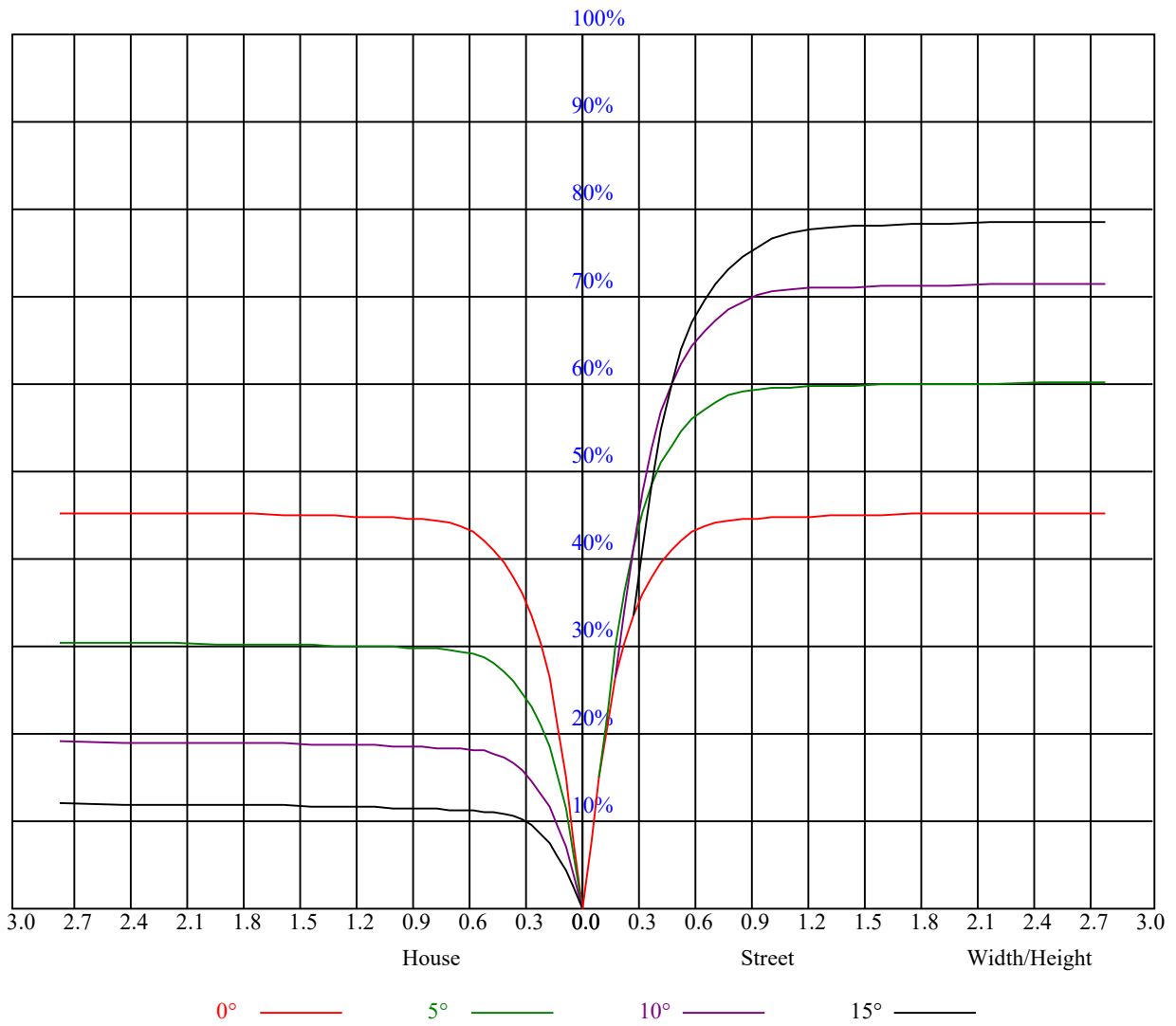
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

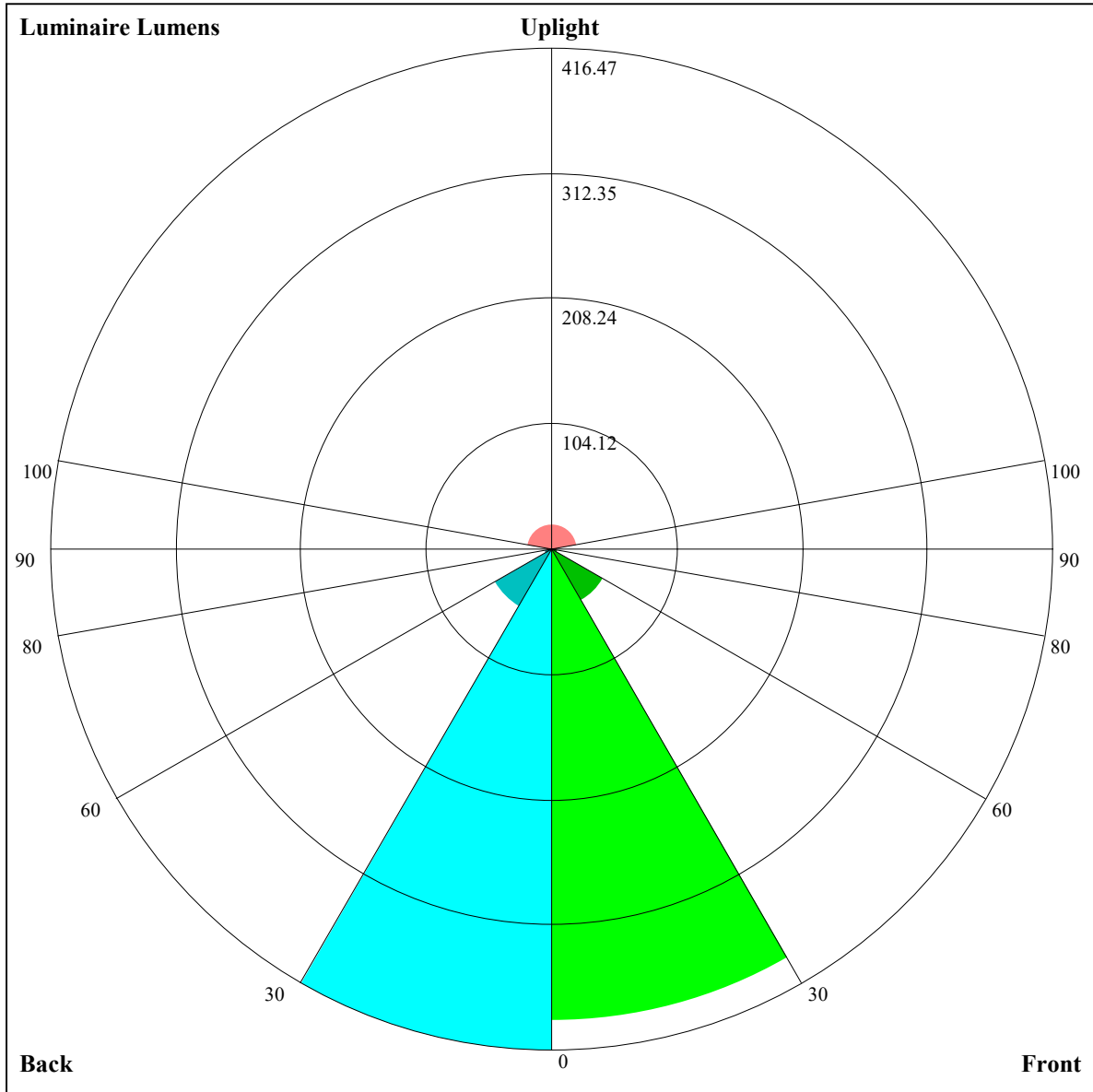
Luminance Limiting Curve





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	1.11	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	0.96	0.99	0.97	0.94	0.95	0.93	0.91	0.92	0.90	0.89	0.89	0.87	0.86	0.84
2	0.96	0.92	0.89	0.94	0.91	0.88	0.91	0.89	0.86	0.89	0.86	0.84	0.86	0.84	0.83	0.81
3	0.92	0.88	0.84	0.90	0.87	0.84	0.88	0.85	0.82	0.86	0.83	0.81	0.84	0.82	0.80	0.78
4	0.88	0.84	0.80	0.87	0.83	0.80	0.85	0.82	0.79	0.83	0.80	0.78	0.82	0.79	0.77	0.76
5	0.85	0.80	0.77	0.84	0.80	0.77	0.82	0.79	0.76	0.81	0.78	0.75	0.79	0.77	0.75	0.74
6	0.82	0.77	0.74	0.81	0.77	0.74	0.80	0.76	0.73	0.79	0.75	0.73	0.77	0.75	0.73	0.71
7	0.79	0.75	0.72	0.79	0.74	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.76	0.73	0.71	0.69
8	0.77	0.72	0.70	0.76	0.72	0.69	0.75	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.69	0.68
9	0.75	0.70	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.66
10	0.73	0.69	0.66	0.72	0.68	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.64





Luminaire Lumens:

FL=392.72,FM=48.95,FH=5.88,FVH=2.47

BL=416.47,BM=54.54,BH=6.2,BVH=2.58

UL=4.48,UH=21.33

BUG Rating:B1-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	4596.11	3805.50	2139.49	989.36	554.97	407.97	305.01	102.13	18.99
45.0	4579.59	3938.18	2376.78	1112.69	608.92	410.17	324.28	139.62	21.36
90.0	4601.06	3913.41	2273.28	1015.74	543.19	374.60	300.44	118.54	25.55
135.0	4533.89	4241.55	2830.45	1298.78	608.37	386.50	310.52	165.50	34.13
180.0	4596.11	3933.78	2316.22	1098.27	573.30	414.63	332.87	148.05	22.35
225.0	4579.59	3749.89	2080.03	940.75	558.71	412.04	305.18	125.42	19.21
270.0	4601.06	3816.51	2120.22	1038.91	533.50	372.73	298.41	116.83	21.31
315.0	4533.89	3376.06	1781.07	784.50	455.37	338.93	235.75	70.97	19.32
360.0	4596.11	3805.50	2139.49	989.36	554.97	407.97	305.01	102.13	18.99
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	10.85	8.86	7.54	6.61	5.84	5.45	4.96	4.62	4.46
45.0	10.85	8.86	7.49	6.61	5.95	5.56	5.12	4.79	4.68
90.0	14.15	11.23	9.41	7.98	6.50	5.73	5.40	5.18	4.84
135.0	14.81	10.52	9.80	9.41	7.98	6.55	5.51	5.18	4.90
180.0	9.58	7.49	6.66	6.44	6.50	6.11	5.29	5.07	5.12
225.0	8.75	7.16	6.44	6.11	5.95	5.67	5.29	4.96	5.01
270.0	10.46	8.64	8.26	7.54	6.55	5.78	5.34	5.01	4.51
315.0	12.44	9.97	8.48	7.38	6.11	5.45	5.18	4.79	4.29
360.0	10.85	8.86	7.54	6.61	5.84	5.45	4.96	4.62	4.46
C/ γ (°)	90.0								
0.0	4.13								
45.0	4.35								
90.0	4.18								
135.0	4.02								
180.0	4.07								
225.0	4.13								
270.0	4.02								
315.0	3.96								
360.0	4.13								