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Nata

Client:

LumCAT: 5-1134-A

Luminaire: 92.70.231.00

Report No: GC2019091909

Voltage(V): 34.7200

Test No: GC2019100809

Current(A): 0.5970 Power (W): 20.7000

LampCAT: LUMILEDS LUXEON 3030 2D(ROUND LES) ARRAY 20W

Lamp flux(lm): 2982.9

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 134

Width(mm): 134

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 2349.24, Efficiency(%): 78.76% , Luminous Efficacy(lm/W): 113.49

Central intensity(cd): 2695.641, Maximum intensity(cd): 2695.641

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=57.4

[C90/270]Total=57.4

Field angle(10%Imax): [C0/180]Total=85.8

[C90/270]Total=85.8

Maximum s/h(1/2): C0_180=0.86 C90_270=0.86

Maximum s/h(1/4): C0_180=0.88 C90_270=0.88

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 78.76%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 96.602%

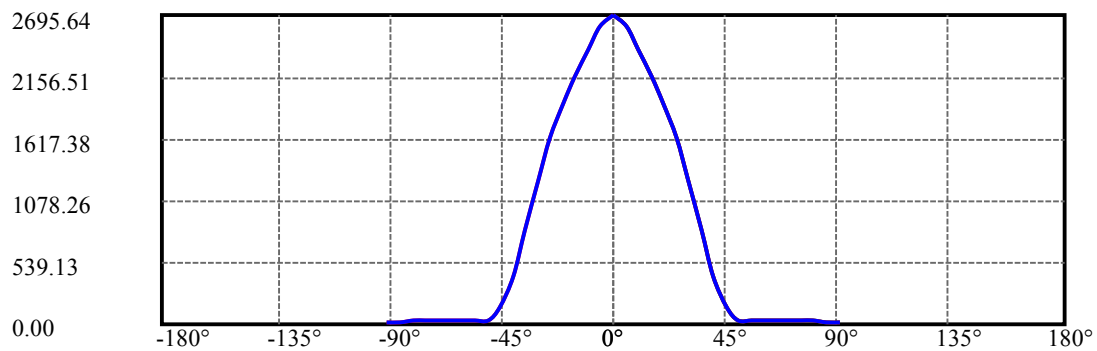
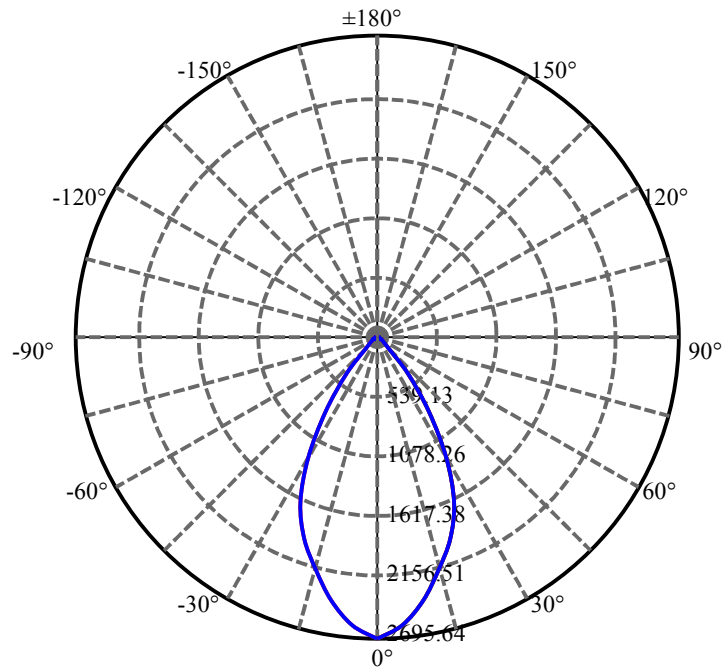
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2695.641	0.000	0	.000%	.000%
5.0	2591.086	63.201	63.201	2.119%	2.690%
10.0	2391.117	178.229	241.43	5.975%	10.277%
15.0	2155.781	269.719	511.149	9.042%	21.758%
20.0	1926.141	336.408	847.557	11.278%	36.078%
25.0	1627.945	372.758	1220.315	12.496%	51.945%
30.0	1251.232	364.362	1584.677	12.215%	67.455%
35.0	820.659	305.101	1889.778	10.228%	80.442%
40.0	426.002	207.996	2097.774	6.973%	89.296%
45.0	152.747	107.160	2204.934	3.592%	93.857%
50.0	34.502	37.836	2242.771	1.268%	95.468%
55.0	28.519	13.703	2256.473	.459%	96.051%
60.0	27.443	12.935	2269.409	.434%	96.602%
65.0	27.288	13.305	2282.714	.446%	97.168%
70.0	27.886	13.970	2296.685	.468%	97.763%
75.0	28.596	14.763	2311.448	.495%	98.391%
80.0	28.392	15.248	2326.696	.511%	99.040%
85.0	21.930	13.674	2340.37	.458%	99.623%
90.0	10.455	8.868	2349.238	.297%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1584.68	53.13%	67.45%
0-40	2097.77	70.33%	89.30%
0-60	2269.41	76.08%	96.60%
0-90	2340.37	78.46%	99.62%
0-120	2340.37	78.46%	99.62%
0-180	2349.24	78.76%	100.00%
60-90	83.90	2.81%	3.57%
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%
0-34.83	1879.39	63.01%	80.00%

ZONAL LUMEN SUMMARY

0-10	241.43
10-20	606.13
20-30	737.12
30-40	513.10
40-50	145.00
50-60	26.64
60-70	27.28
70-80	30.01
80-90	13.67
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

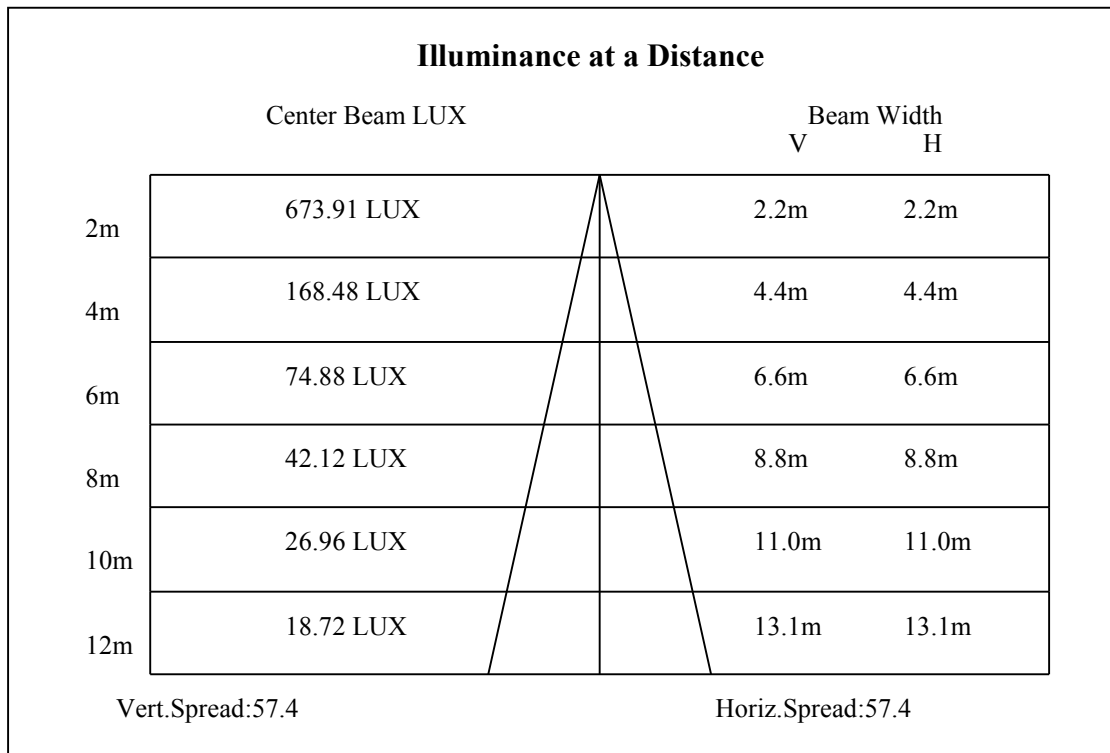
C0(Max): —————C0/C180: —————C90/C270: —————

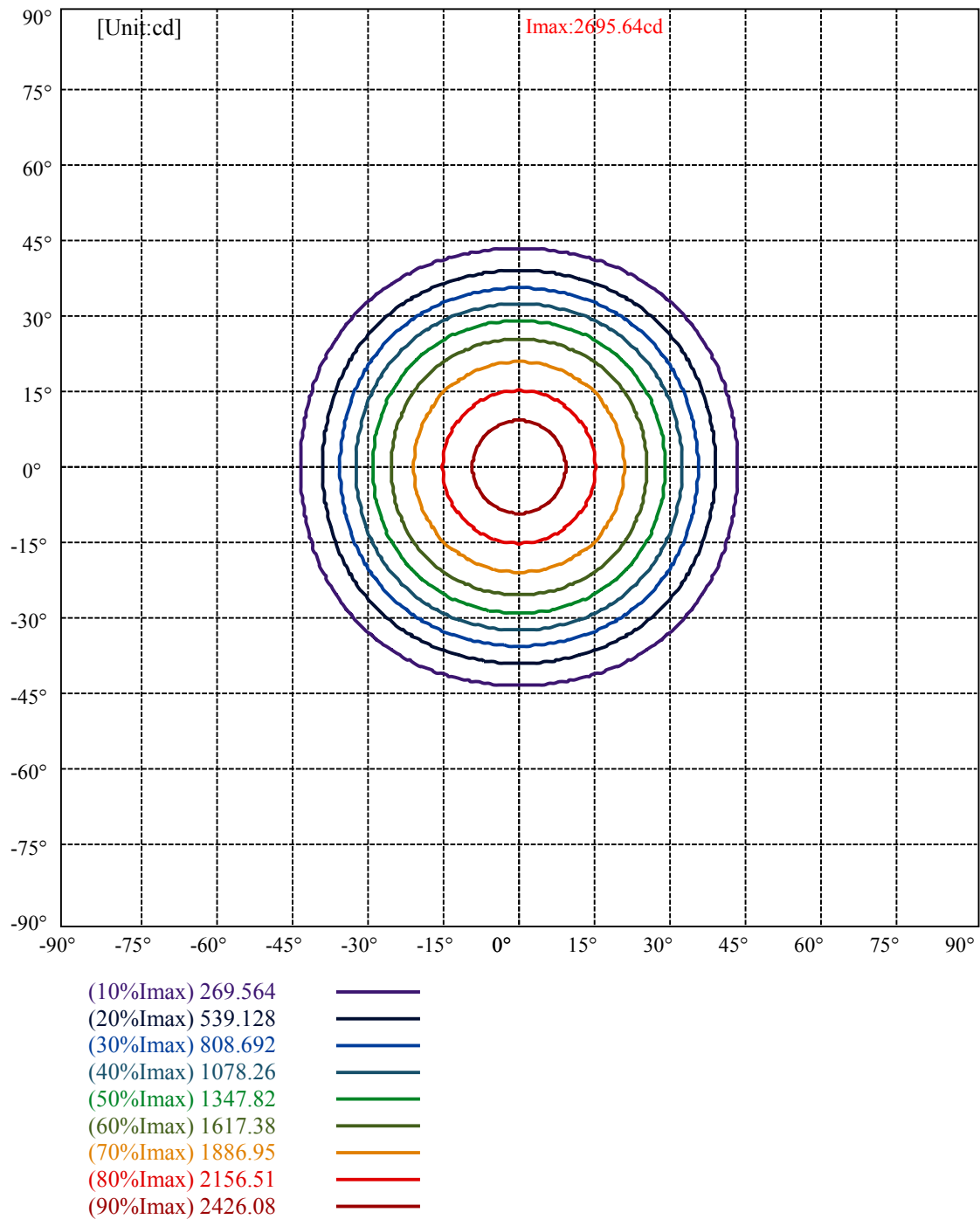
Field angle(10%Imax):C0/180Left:42.9 Right:42.9

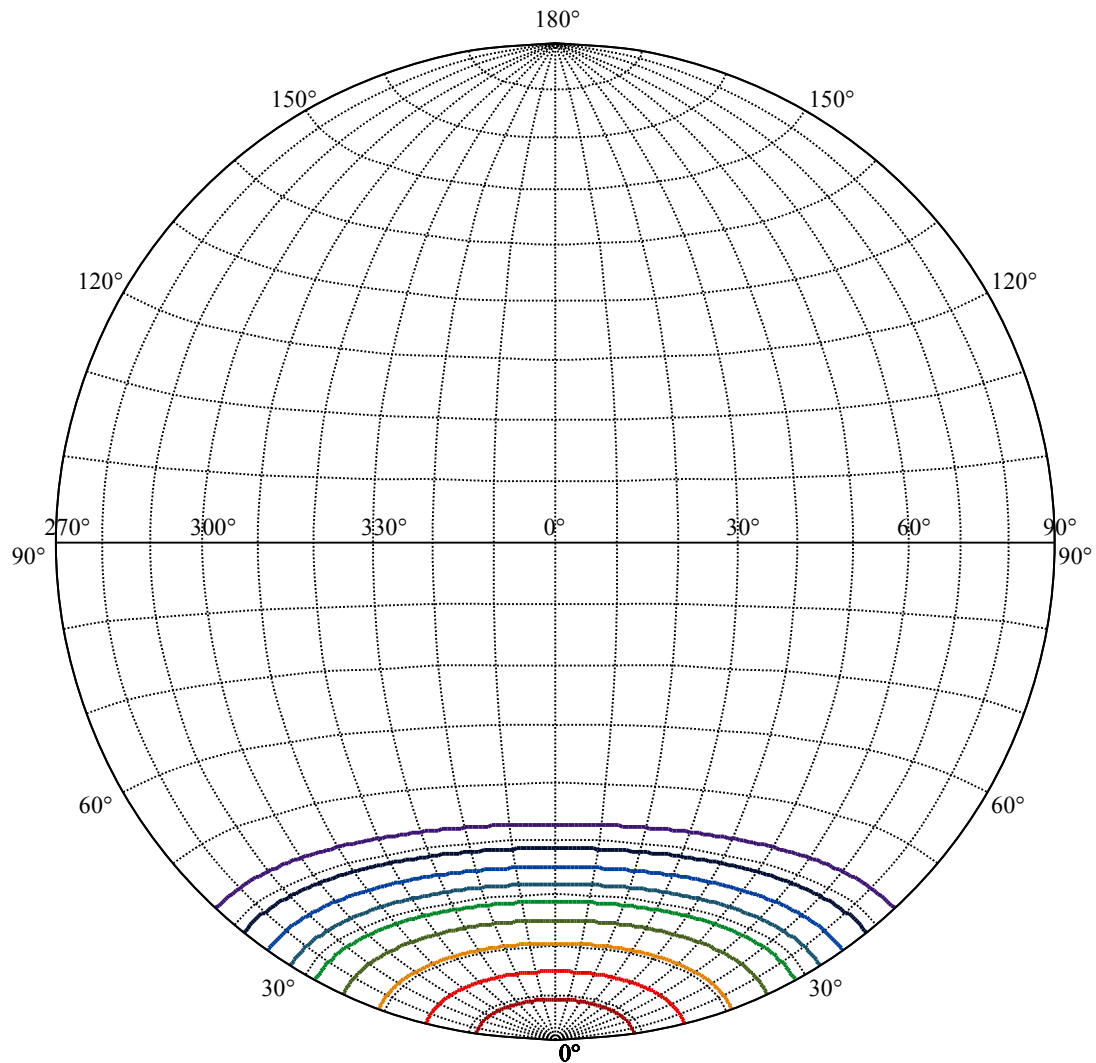
:C90/270Left:42.9 Right:42.9

Beam Angle(50%Imax):C0/180Left:28.7 Right:28.7

:C90/270Left:28.7 Right:28.7







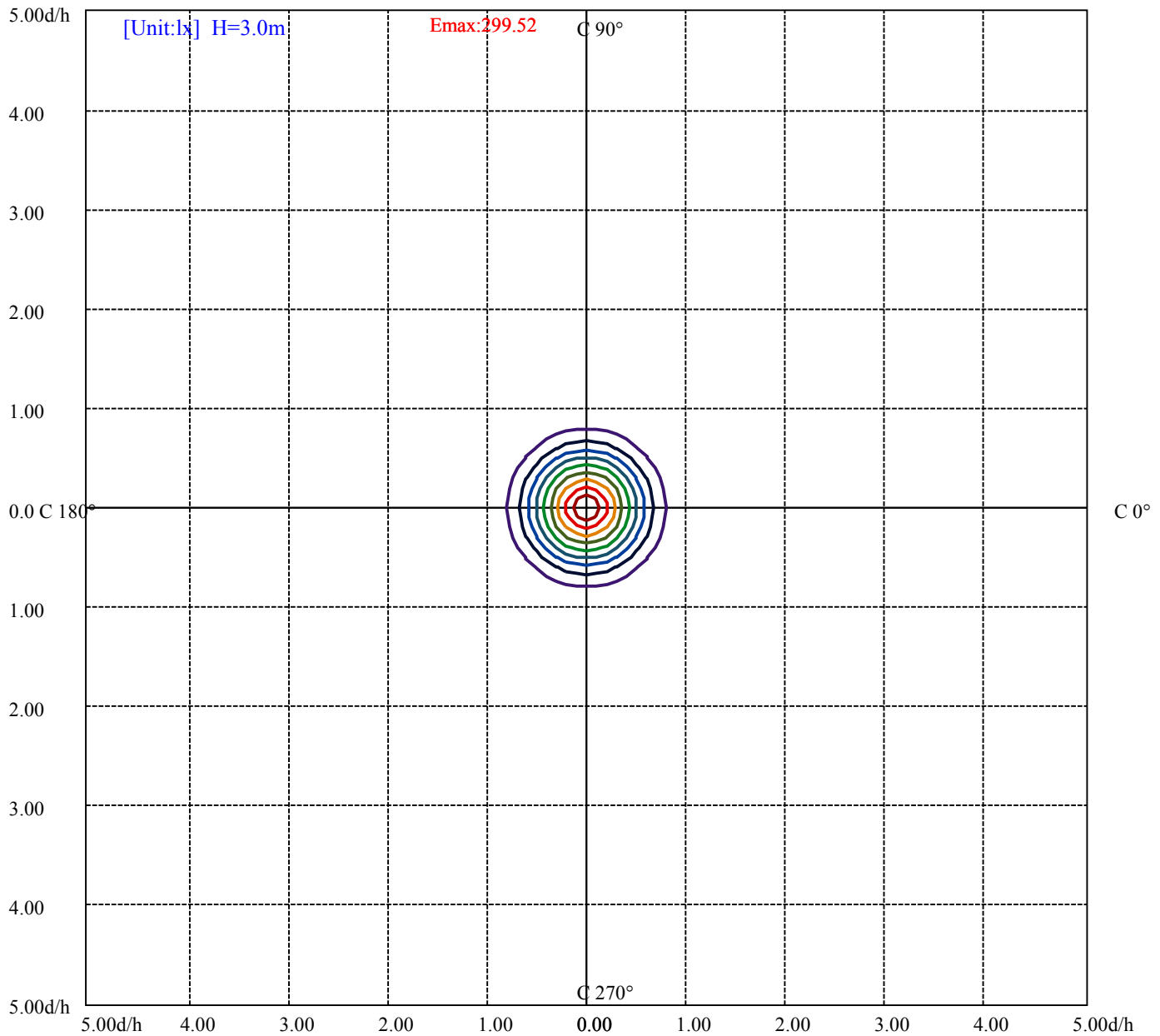
House

[Unit:cd]

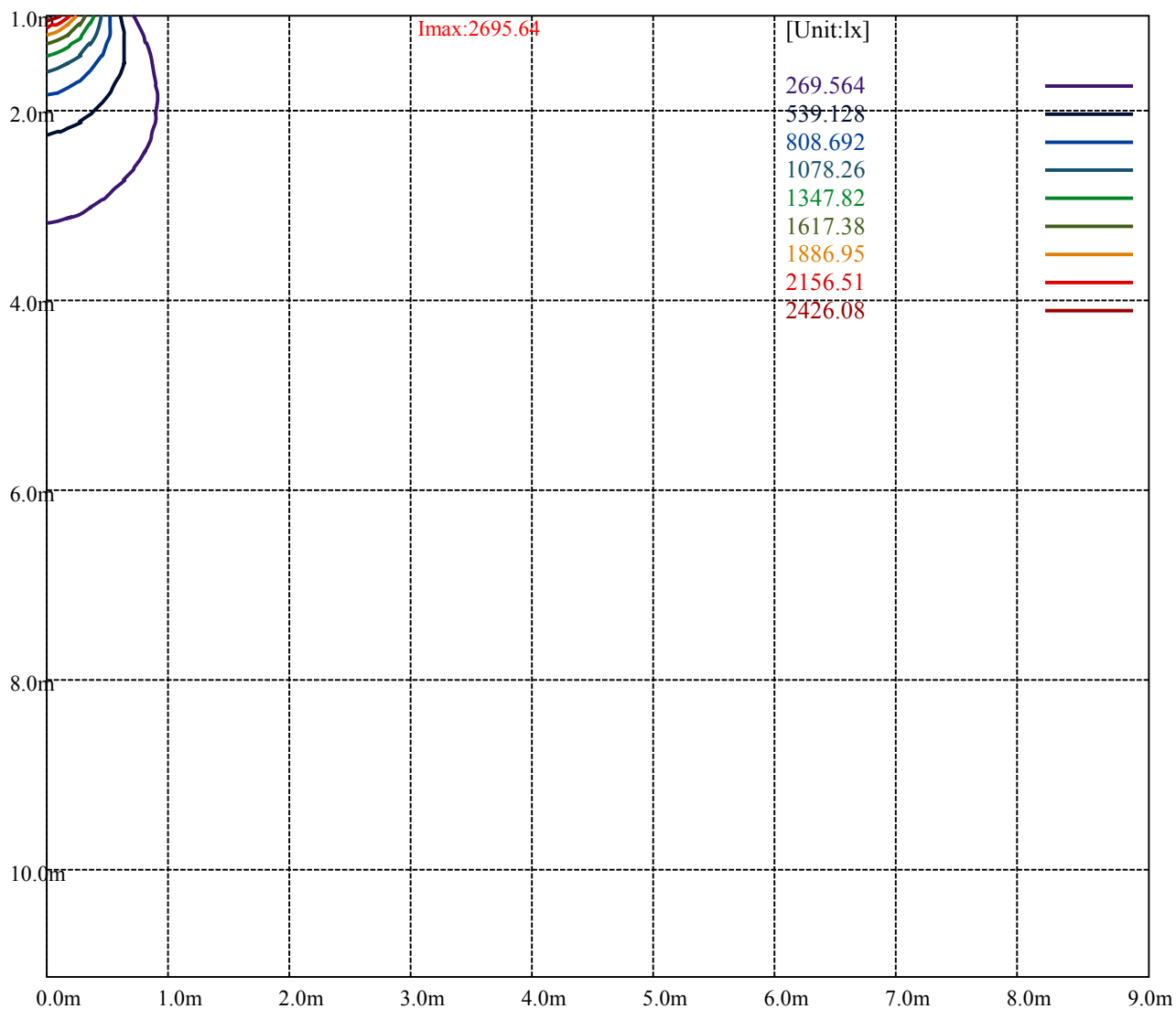
Road

Imax:2695.64

(10%Imax)	269.564	
(20%Imax)	539.128	
(30%Imax)	808.692	
(40%Imax)	1078.26	
(50%Imax)	1347.82	
(60%Imax)	1617.38	
(70%Imax)	1886.95	
(80%Imax)	2156.51	
(90%Imax)	2426.08	



(10%Emax)	29.95156	—
(20%Emax)	59.90311	—
(30%Emax)	89.85455	—
(40%Emax)	119.8067	—
(50%Emax)	149.7578	—
(60%Emax)	179.7089	—
(70%Emax)	209.6611	—
(80%Emax)	239.6122	—
(90%Emax)	269.5634	—



Luminance Table

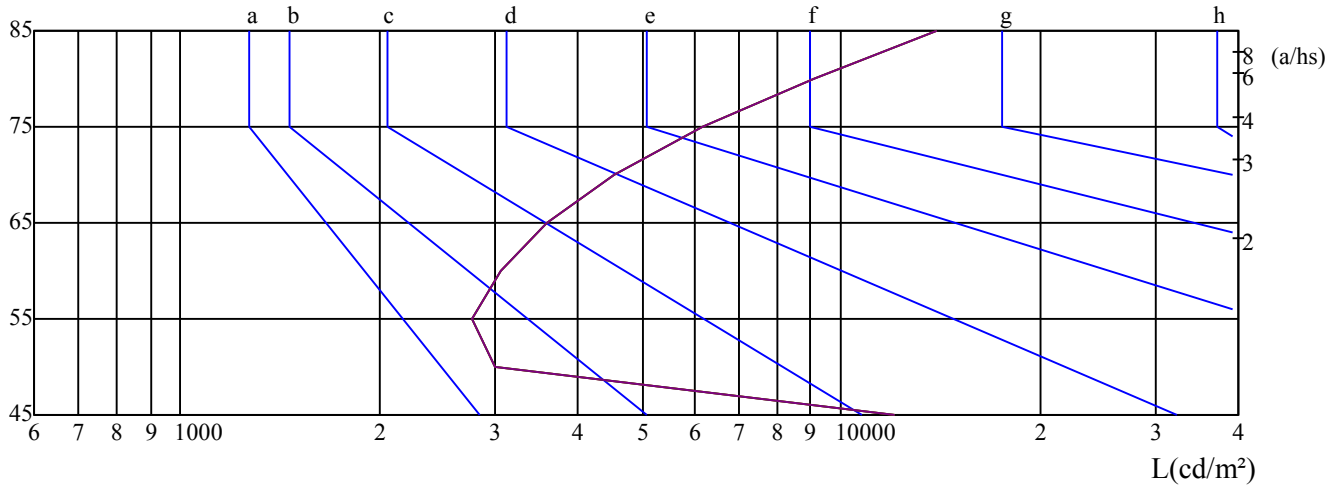
γ	45	50	55	60	65	70	75	80	85
C0	12030	2989	2769	3057	3596	4541	6153	9106	14013
C45	12030	2989	2769	3057	3596	4541	6153	9106	14013
C90	12030	2989	2769	3057	3596	4541	6153	9106	14013

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3596	3596	3596	6153	6153	6153	14013	14013	14013

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

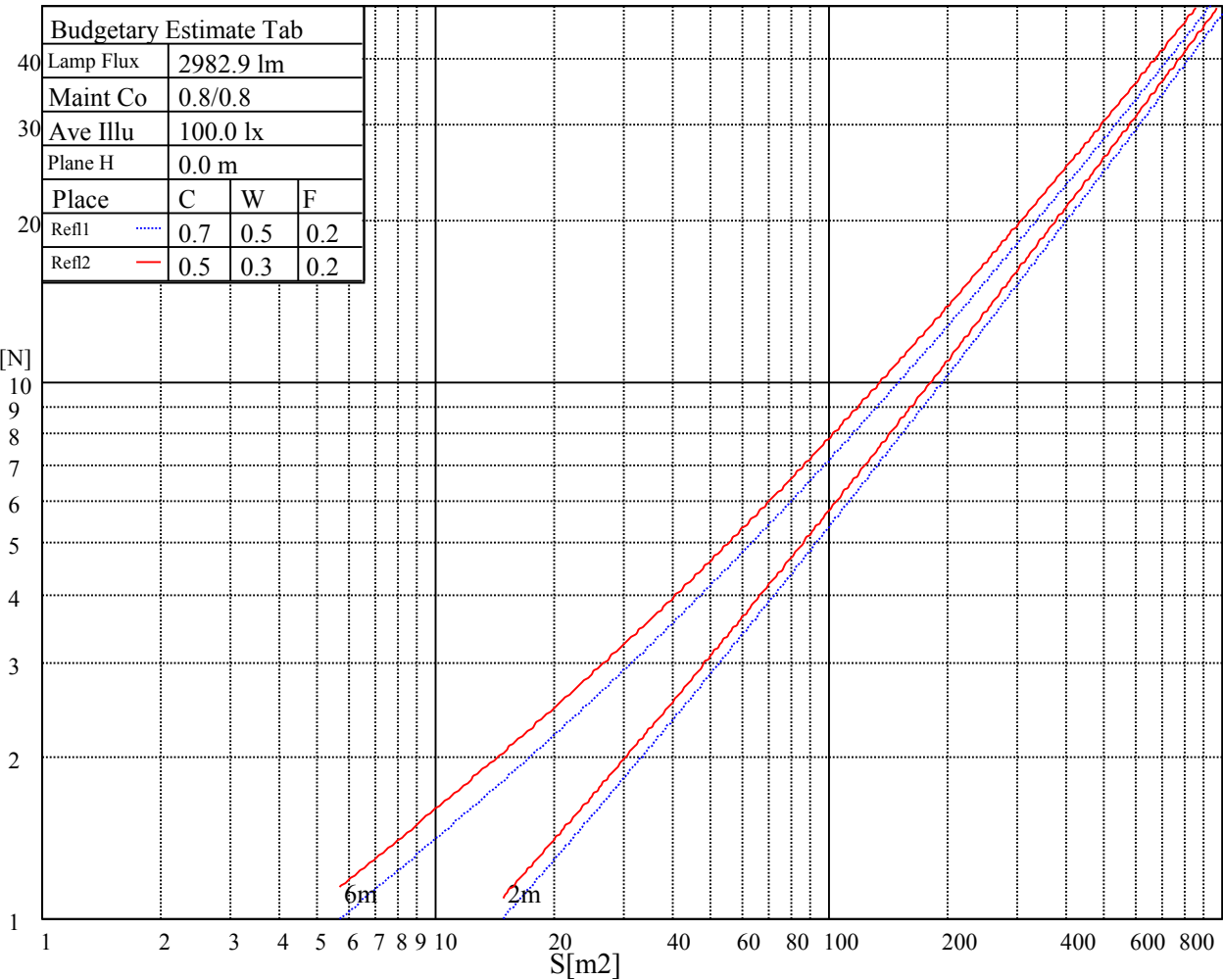
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

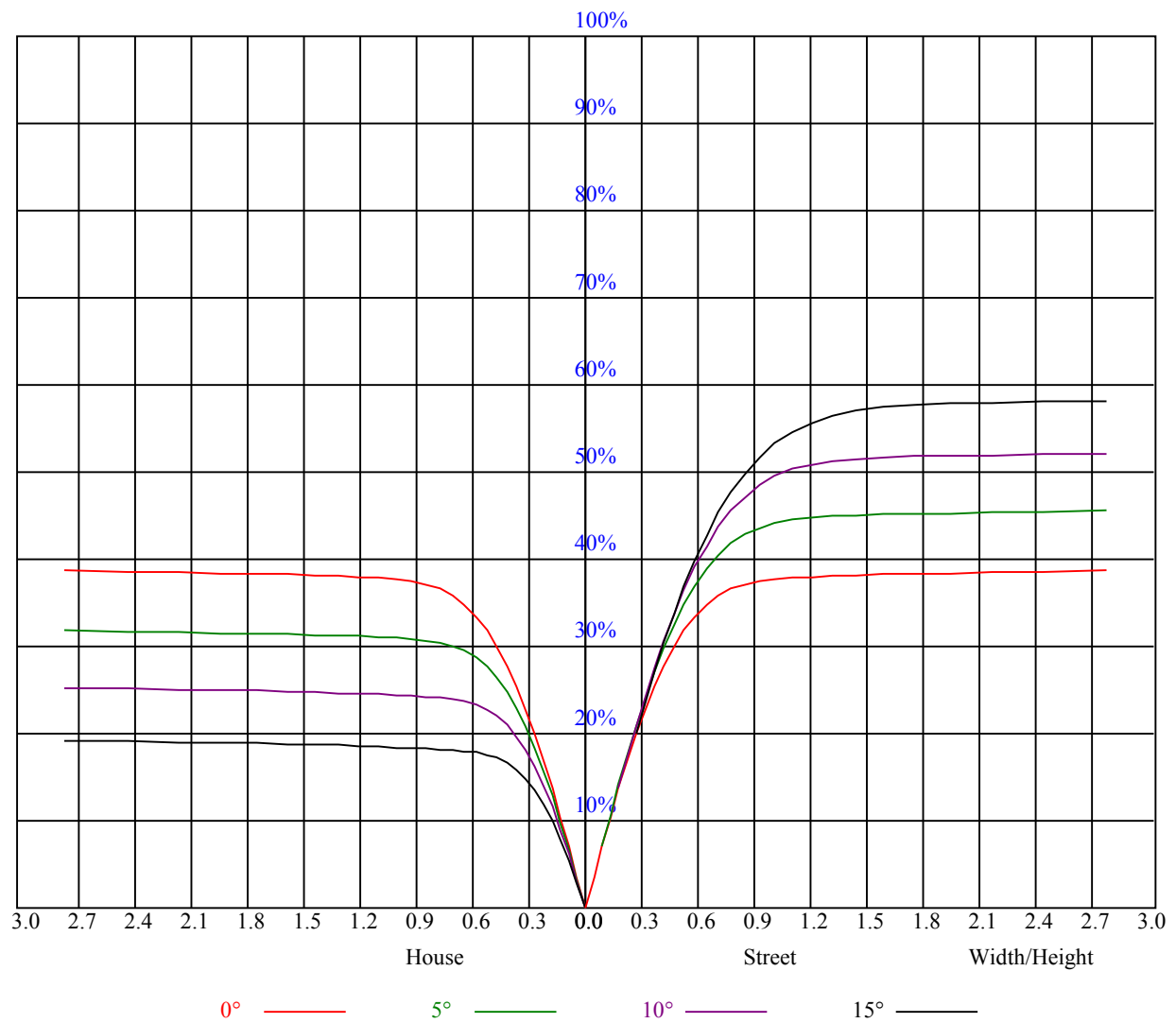
C0 ———

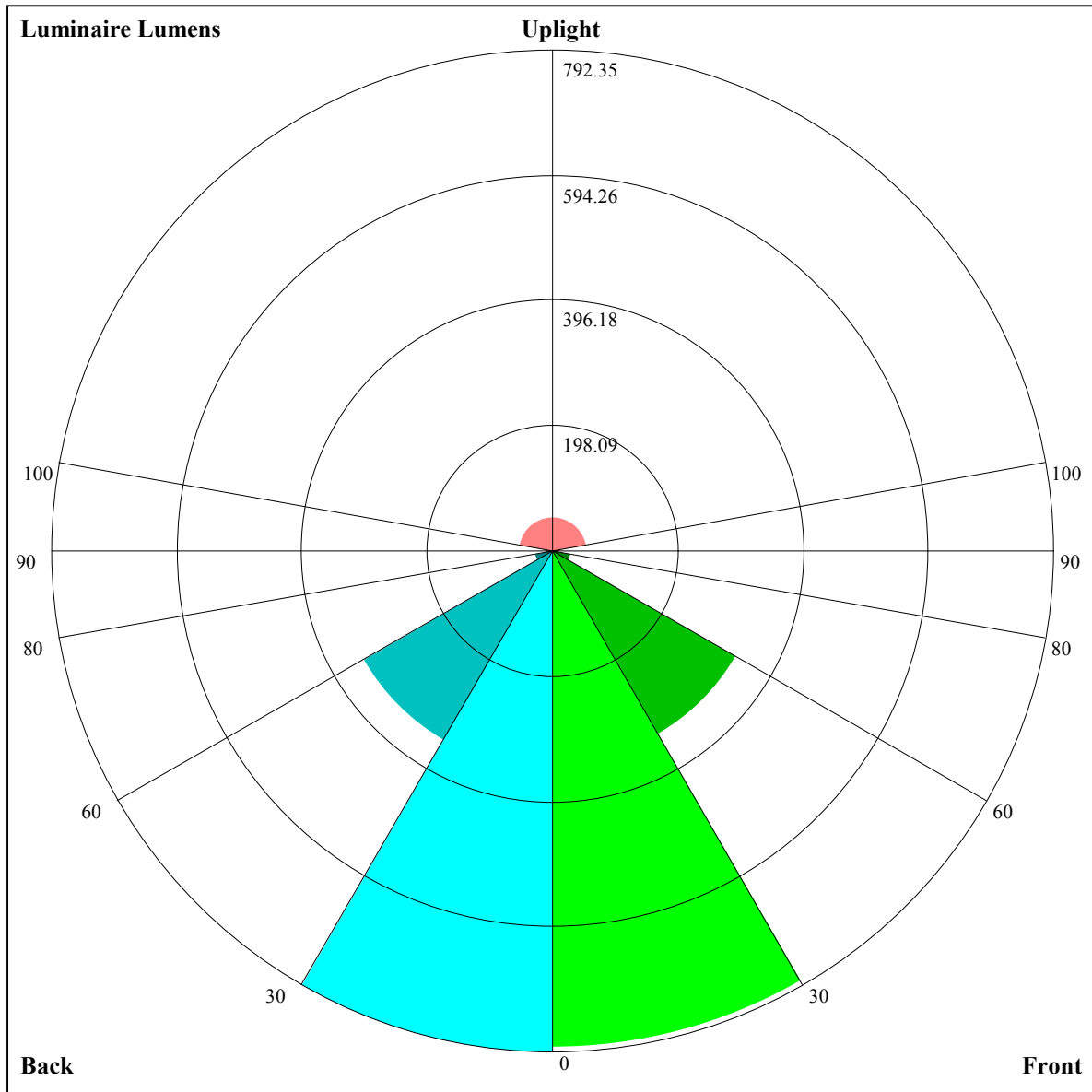
C45 ———

C90 ———



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	0.94	0.94	0.94	0.92	0.92	0.92	0.88	0.88	0.88	0.84	0.84	0.84	0.80	0.80	0.80	0.79
1	0.86	0.84	0.82	0.85	0.83	0.81	0.81	0.80	0.78	0.79	0.77	0.76	0.76	0.75	0.74	0.72
2	0.80	0.77	0.74	0.79	0.75	0.73	0.76	0.73	0.71	0.74	0.72	0.70	0.71	0.70	0.68	0.67
3	0.74	0.70	0.67	0.73	0.69	0.66	0.71	0.68	0.65	0.69	0.66	0.64	0.67	0.65	0.63	0.62
4	0.69	0.65	0.61	0.68	0.64	0.61	0.67	0.63	0.60	0.65	0.62	0.59	0.64	0.61	0.59	0.57
5	0.65	0.60	0.56	0.64	0.59	0.56	0.63	0.59	0.56	0.61	0.58	0.55	0.60	0.57	0.55	0.53
6	0.61	0.56	0.52	0.60	0.55	0.52	0.59	0.55	0.52	0.58	0.54	0.51	0.57	0.53	0.51	0.50
7	0.57	0.52	0.49	0.56	0.52	0.48	0.55	0.51	0.48	0.54	0.51	0.48	0.53	0.50	0.48	0.46
8	0.54	0.49	0.45	0.53	0.48	0.45	0.52	0.48	0.45	0.51	0.48	0.45	0.51	0.47	0.45	0.44
9	0.50	0.46	0.42	0.50	0.45	0.42	0.49	0.45	0.42	0.49	0.45	0.42	0.48	0.44	0.42	0.41
10	0.48	0.43	0.40	0.47	0.43	0.40	0.47	0.43	0.40	0.46	0.42	0.40	0.45	0.42	0.39	0.38





Luminaire Lumens:

FL=785.82,FM=333.37,FH=28.54,FVH=10.91

BL=792.35,BM=344.43,BH=28.51,BVH=11.55

UL=11.41,UH=54.29

BUG Rating:B2-U2-G1

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	2691.00	2539.69	2347.88	2115.00	1884.38	1592.44	1213.88	752.63	375.19
45.0	2700.56	2642.63	2457.00	2226.94	2005.88	1728.56	1393.88	942.19	542.25
90.0	2702.25	2610.00	2406.38	2175.19	1956.94	1661.63	1233.00	862.43	453.88
135.0	2688.75	2633.06	2449.69	2232.56	1996.88	1722.94	1400.06	954.56	524.81
180.0	2691.00	2619.00	2410.88	2187.00	1957.50	1665.56	1332.00	882.23	469.13
225.0	2700.56	2559.94	2343.38	2095.88	1857.94	1523.81	1099.91	693.39	318.38
270.0	2702.25	2588.63	2388.38	2134.13	1905.19	1590.75	1217.25	797.63	398.25
315.0	2688.75	2535.75	2325.38	2079.56	1844.44	1537.88	1119.88	680.23	326.14
360.0	2691.00	2539.69	2347.88	2115.00	1884.38	1592.44	1213.88	752.63	375.19

C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	95.63	31.05	28.01	27.17	27.17	27.96	28.52	28.07	18.17
45.0	286.31	41.17	29.31	27.62	27.11	27.28	28.01	28.13	26.66
90.0	136.91	32.06	27.68	26.27	25.71	25.82	25.93	25.03	22.73
135.0	286.88	40.50	28.24	27.00	26.61	26.89	27.68	27.96	26.61
180.0	158.06	35.66	28.35	27.34	27.23	27.79	28.69	28.86	27.17
225.0	70.31	31.22	28.69	28.01	28.24	29.25	30.21	29.93	17.72
270.0	109.52	33.36	29.25	28.24	28.18	28.86	29.70	29.36	21.04
315.0	78.36	30.99	28.63	27.90	28.07	29.25	30.04	29.81	15.36
360.0	95.63	31.05	28.01	27.17	27.17	27.96	28.52	28.07	18.17

C/ γ (°)	90.0
0.0	10.41
45.0	10.58
90.0	10.46
135.0	10.46
180.0	10.41
225.0	10.52
270.0	10.41
315.0	10.41
360.0	10.41