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Nata

LumCAT: NA01D0201530CA

Luminaire:

Report No: 200406-B007

Voltage(V): 3.4600

Test No: 200406-C007

Current(A): 0.2870

LampCAT: CREE 3030-HE

Power (W): 0.9930

Lamp flux(lm): 134.6

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 0

Width(mm): 0

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 125.79

Efficiency(%): 93.44%

Lumens(lm)/Power(W): 126.68

Central intensity(cd): 210.544

Maximum intensity(cd): 396.563

Angle of maximum intensity: C=195.0 γ =10.0

Beam Angle(50%Imax): [C0/180]Total=20.4

[C90/270]Total=32.2

Field angle(10%Imax): [C0/180]Total=45.0

[C90/270]Total=63.5

Maximum s/h(1/2): C0_180=0.84 C90_270=0.51

Maximum s/h(1/4): C0_180=0.72 C90_270=0.53

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 93.44%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 93.139%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	204.839	0.000	0	.000%	.000%
1.0	204.811	0.196	0.196	.146%	.156%
2.0	204.743	0.588	0.784	.437%	.623%
3.0	204.748	0.979	1.763	.728%	1.402%
4.0	204.968	1.371	3.135	1.019%	2.492%
5.0	205.095	1.764	4.899	1.310%	3.894%
6.0	204.506	2.153	7.051	1.599%	5.605%
7.0	203.749	2.534	9.585	1.882%	7.620%
8.0	202.261	2.906	12.491	2.158%	9.930%
9.0	199.446	3.256	15.747	2.418%	12.518%
10.0	195.680	3.576	19.322	2.656%	15.360%
11.0	190.812	3.862	23.184	2.869%	18.430%
12.0	184.849	4.107	27.291	3.050%	21.695%
13.0	176.958	4.294	31.585	3.190%	25.108%
14.0	168.159	4.417	36.002	3.281%	28.620%
15.0	159.234	4.495	40.497	3.339%	32.193%
16.0	149.491	4.524	45.02	3.360%	35.789%
17.0	138.098	4.479	49.499	3.327%	39.349%
18.0	128.046	4.388	53.887	3.260%	42.837%
19.0	117.806	4.277	58.164	3.177%	46.238%
20.0	107.562	4.125	62.289	3.064%	49.517%
21.0	97.315	3.934	66.223	2.922%	52.644%
22.0	88.097	3.726	69.949	2.768%	55.606%
23.0	79.800	3.523	73.472	2.617%	58.406%
24.0	71.130	3.300	76.772	2.451%	61.030%
25.0	63.935	3.071	79.843	2.281%	63.471%
26.0	57.558	2.868	82.711	2.130%	65.751%
27.0	51.464	2.667	85.378	1.981%	67.871%
28.0	45.497	2.455	87.833	1.824%	69.823%
29.0	40.847	2.259	90.092	1.678%	71.618%
30.0	36.480	2.088	92.18	1.551%	73.278%
31.0	32.510	1.920	94.1	1.426%	74.804%
32.0	29.055	1.764	95.864	1.310%	76.206%
33.0	26.072	1.624	97.488	1.206%	77.497%
34.0	23.459	1.499	98.987	1.113%	78.689%
35.0	20.963	1.380	100.366	1.025%	79.786%
36.0	18.970	1.271	101.638	.944%	80.796%
37.0	17.236	1.181	102.818	.877%	81.735%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	15.713	1.100	103.918	.817%	82.609%
39.0	14.196	1.021	104.939	.758%	83.421%
40.0	13.001	0.949	105.888	.705%	84.175%
41.0	11.972	0.889	106.777	.661%	84.882%
42.0	10.966	0.833	107.61	.619%	85.544%
43.0	10.085	0.780	108.39	.579%	86.164%
44.0	9.361	0.734	109.124	.545%	86.748%
45.0	8.709	0.694	109.818	.516%	87.300%
46.0	8.051	0.655	110.474	.487%	87.821%
47.0	7.545	0.620	111.094	.461%	88.314%
48.0	7.076	0.591	111.685	.439%	88.784%
49.0	6.630	0.563	112.248	.418%	89.231%
50.0	6.216	0.536	112.784	.398%	89.657%
51.0	5.883	0.512	113.295	.380%	90.064%
52.0	5.562	0.491	113.787	.365%	90.454%
53.0	5.280	0.472	114.258	.350%	90.829%
54.0	5.023	0.454	114.712	.337%	91.190%
55.0	4.795	0.438	115.151	.326%	91.539%
56.0	4.610	0.425	115.576	.316%	91.876%
57.0	4.409	0.412	115.988	.306%	92.204%
58.0	4.254	0.401	116.389	.298%	92.523%
59.0	4.123	0.392	116.78	.291%	92.834%
60.0	3.989	0.383	117.163	.285%	93.139%
61.0	3.863	0.375	117.538	.278%	93.437%
62.0	3.748	0.367	117.905	.272%	93.728%
63.0	3.654	0.360	118.265	.267%	94.014%
64.0	3.584	0.355	118.62	.264%	94.297%
65.0	3.513	0.351	118.971	.261%	94.576%
66.0	3.452	0.348	119.319	.258%	94.852%
67.0	3.405	0.345	119.663	.256%	95.126%
68.0	3.387	0.344	120.008	.256%	95.400%
69.0	3.368	0.345	120.352	.256%	95.674%
70.0	3.335	0.344	120.696	.256%	95.947%
71.0	3.265	0.341	121.038	.253%	96.218%
72.0	3.157	0.334	121.371	.248%	96.484%
73.0	3.038	0.324	121.695	.241%	96.741%
74.0	2.930	0.314	122.009	.233%	96.991%
75.0	2.834	0.305	122.314	.226%	97.233%

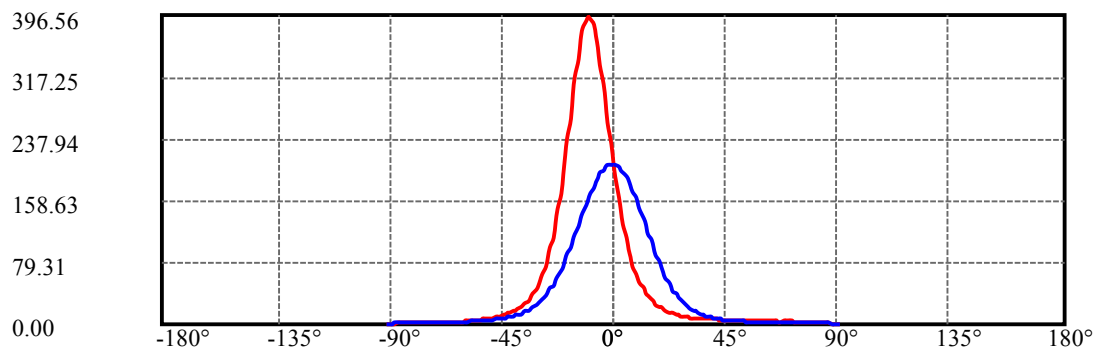
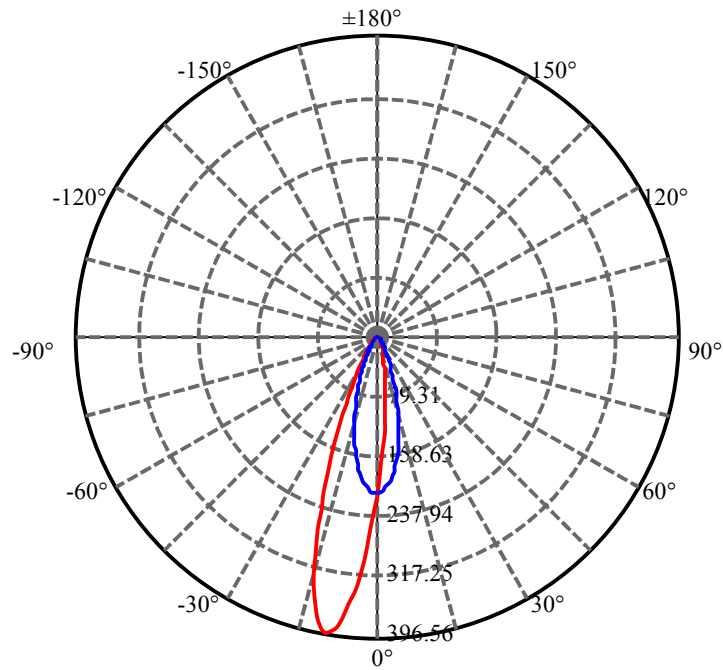
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	2.756	0.297	122.61	.220%	97.469%
77.0	2.688	0.290	122.901	.216%	97.699%
78.0	2.616	0.284	123.185	.211%	97.925%
79.0	2.557	0.278	123.462	.206%	98.146%
80.0	2.527	0.274	123.737	.204%	98.364%
81.0	2.480	0.271	124.007	.201%	98.579%
82.0	2.423	0.266	124.273	.198%	98.791%
83.0	2.360	0.260	124.533	.193%	98.997%
84.0	2.250	0.251	124.784	.187%	99.197%
85.0	2.112	0.238	125.022	.177%	99.386%
86.0	1.765	0.212	125.234	.157%	99.555%
87.0	1.437	0.175	125.41	.130%	99.694%
88.0	1.249	0.147	125.557	.109%	99.811%
89.0	1.116	0.130	125.686	.096%	99.914%
90.0	0.860	0.108	125.795	.080%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	92.18	68.47%	73.28%
0-40	105.89	78.66%	84.17%
0-60	117.16	87.03%	93.14%
0-90	125.69	93.36%	99.91%
0-120	125.69	93.36%	99.91%
0-180	125.79	93.44%	100.00%
60-90	8.91	6.62%	7.08%
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%
0-35.21	100.64	74.76%	80.00%

ZONAL LUMEN SUMMARY

0-10	19.32
10-20	42.97
20-30	29.89
30-40	13.71
40-50	6.90
50-60	4.38
60-70	3.53
70-80	3.04
80-90	1.95
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

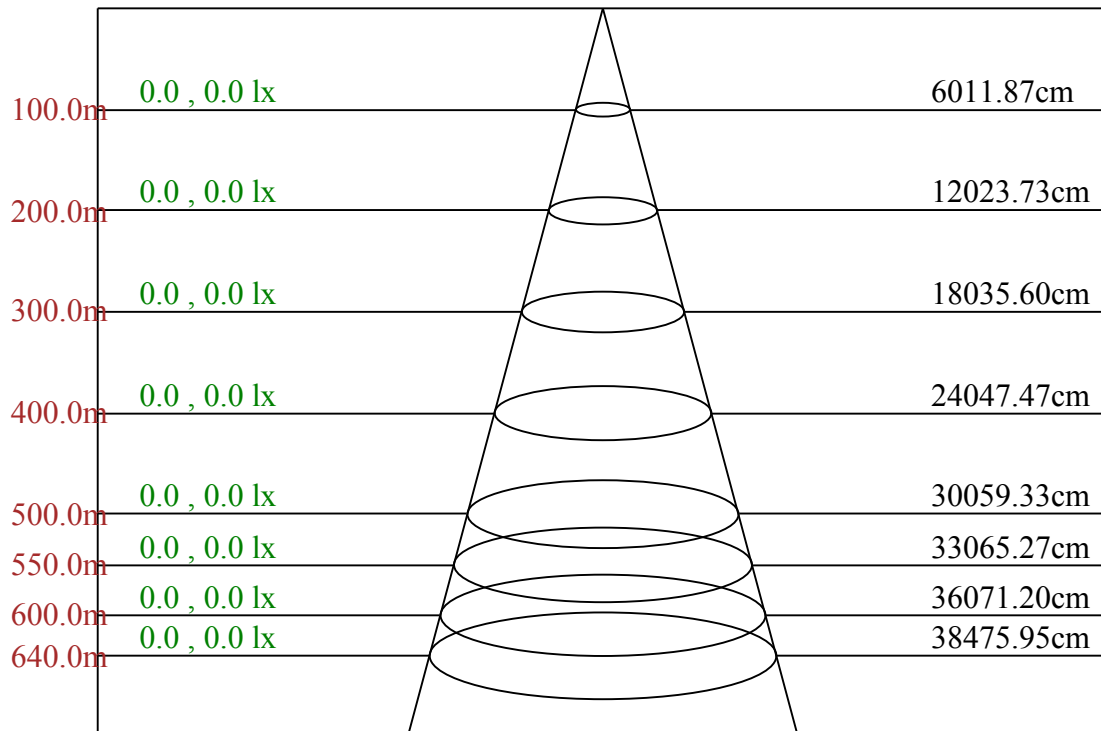


C0/C180: —

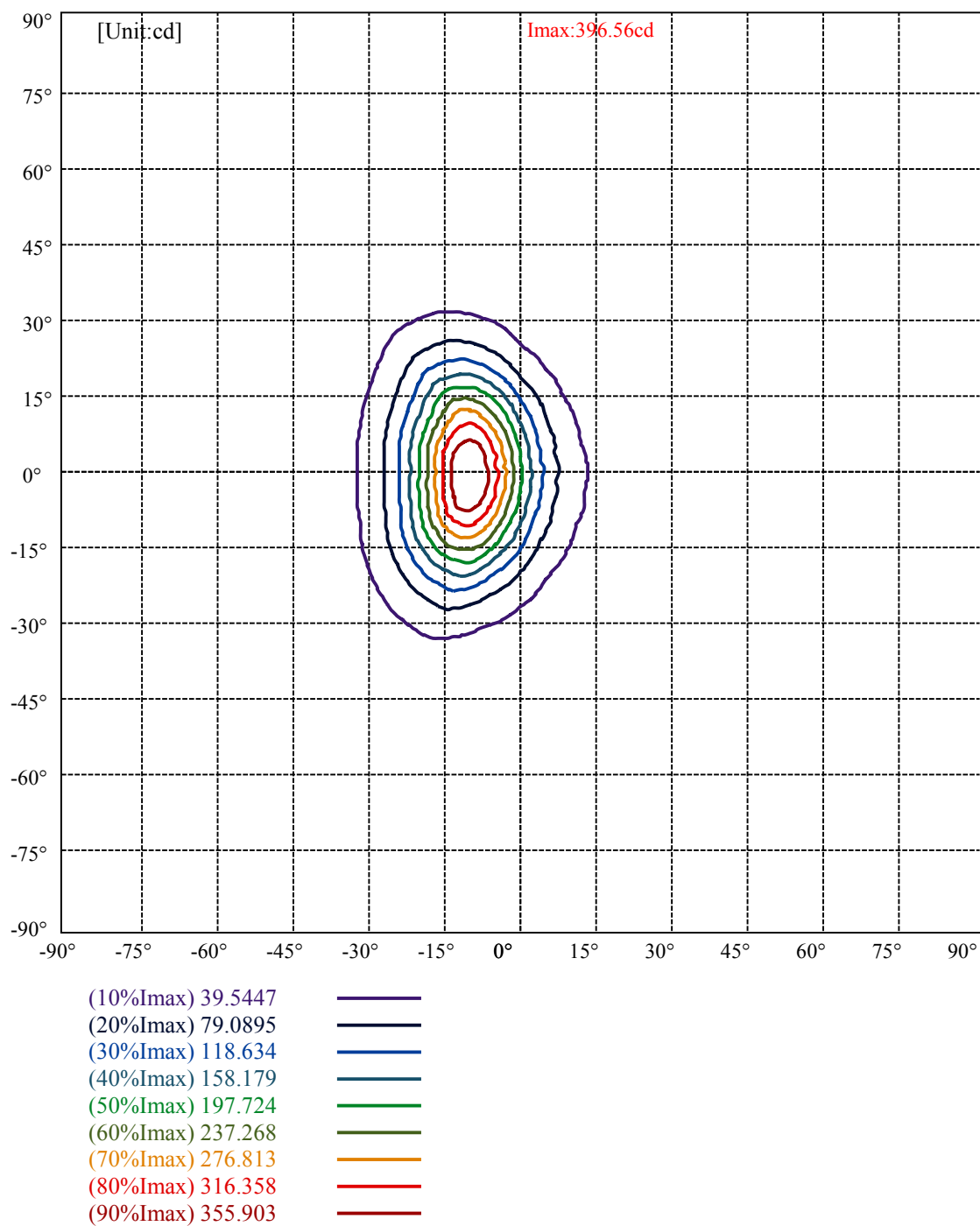
C90/C270: —

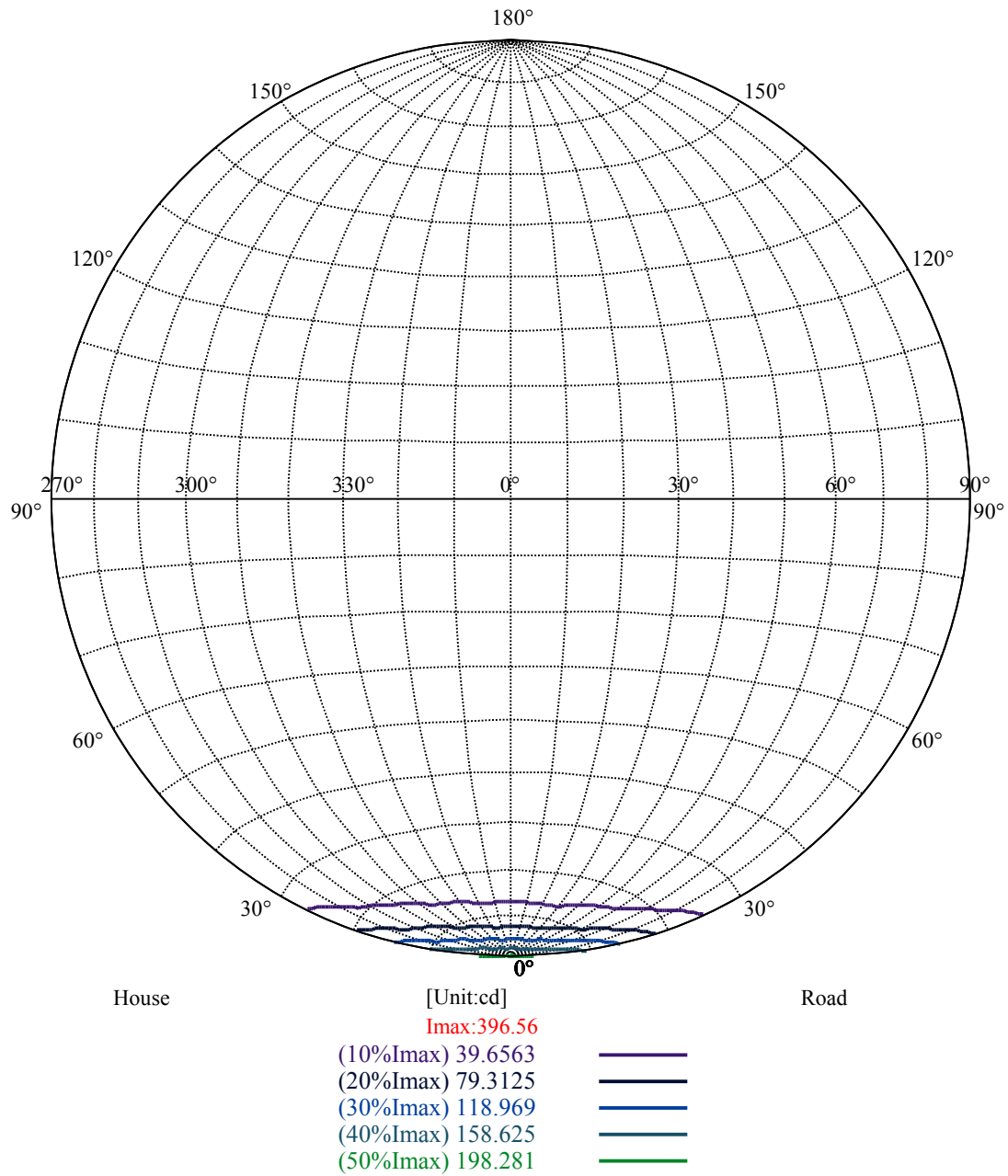
Field angle(10%Imax):C0/180Left:21.8 Right:23.2
:C90/270Left:31.6 Right:31.9

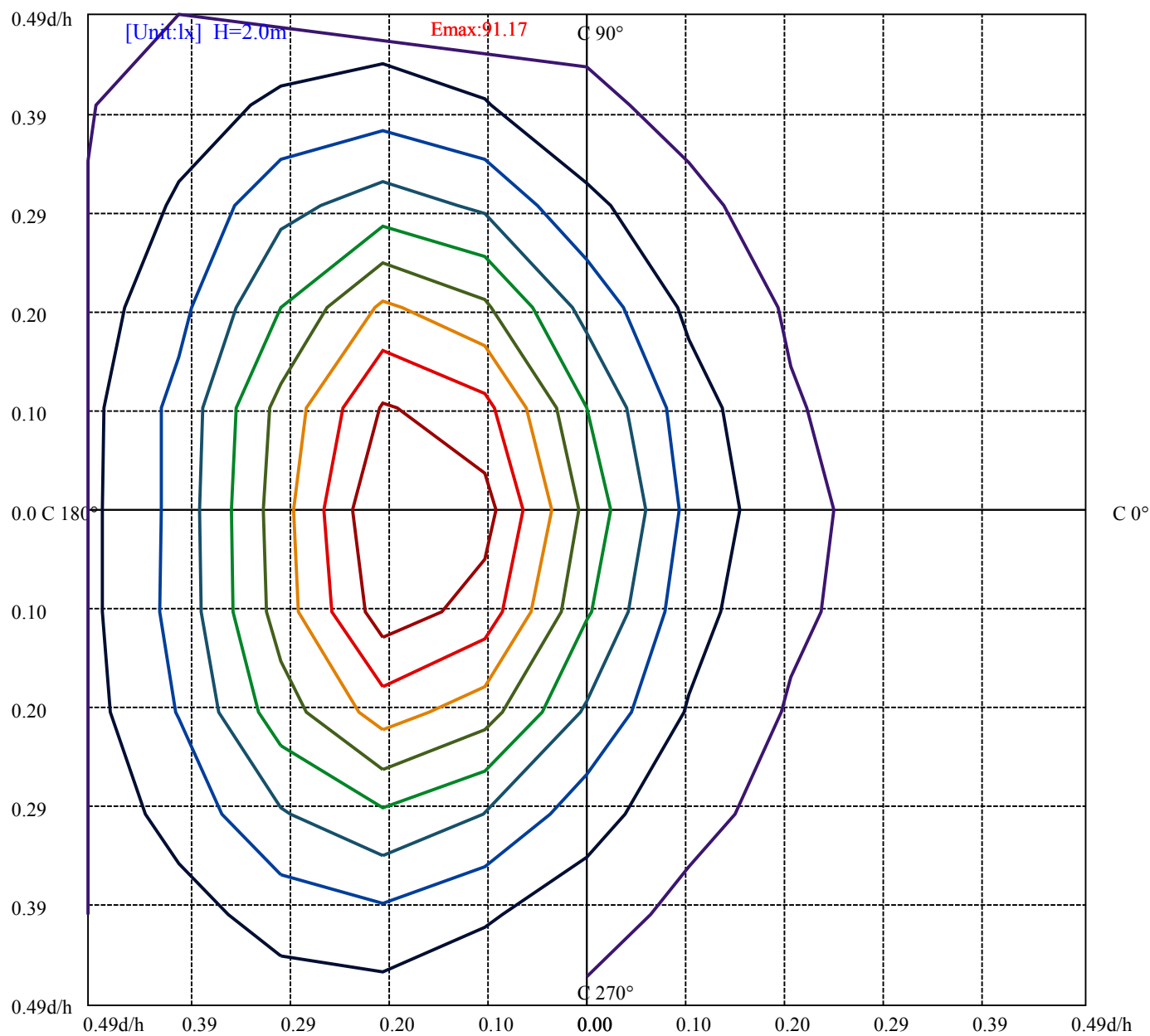
Beam Angle(50%Imax):C0/180Left:9.8 Right:10.6
:C90/270Left:15.6 Right:16.6



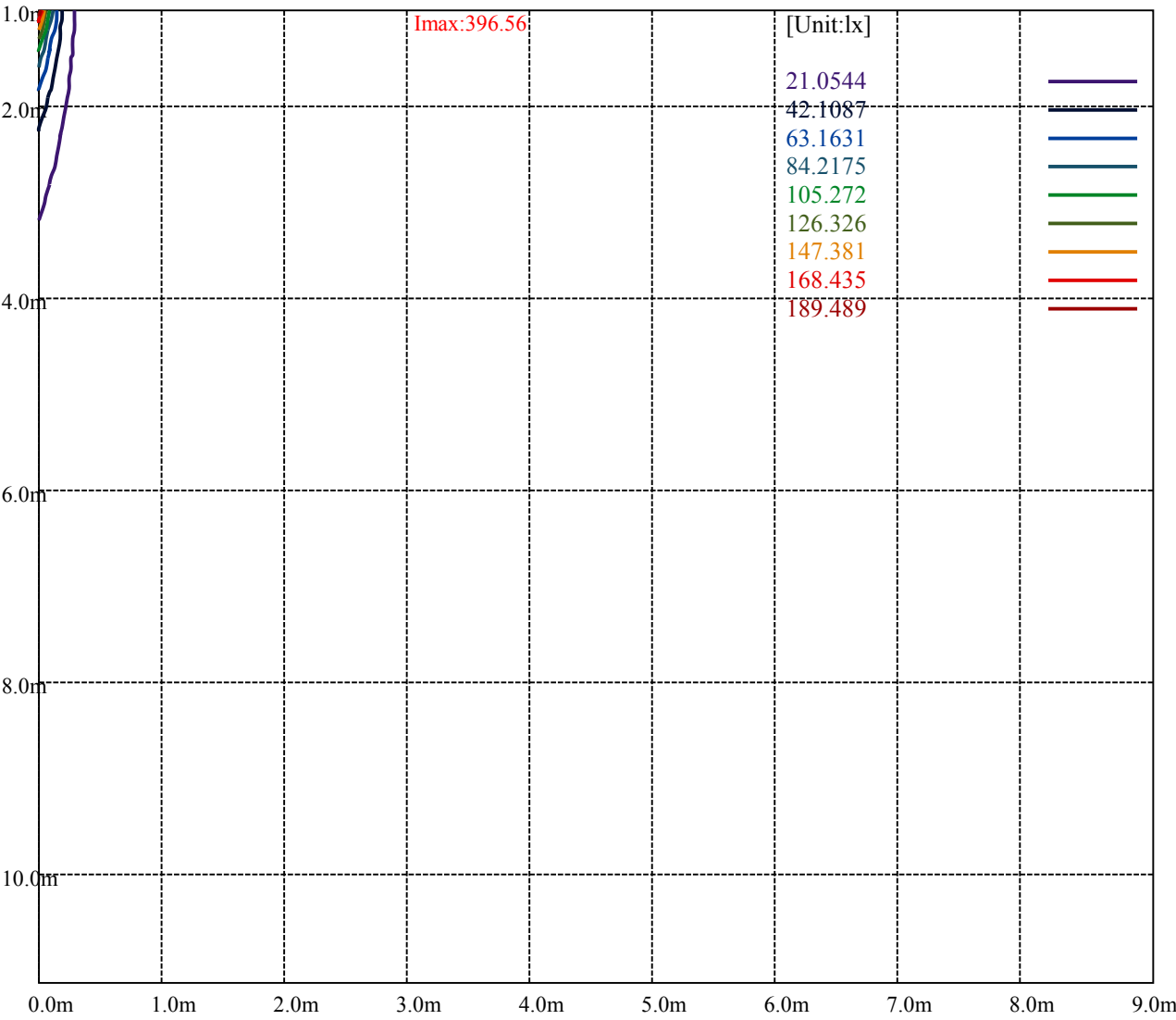
Max , Ave Beam angle of C195 plane 32.44







(10%Emax) 9.1166	—
(20%Emax) 18.2332	—
(30%Emax) 27.34975	—
(40%Emax) 36.4665	—
(50%Emax) 45.583	—
(60%Emax) 54.6995	—
(70%Emax) 63.81625	—
(80%Emax) 72.93275	—
(90%Emax) 82.0495	—



Luminance Table

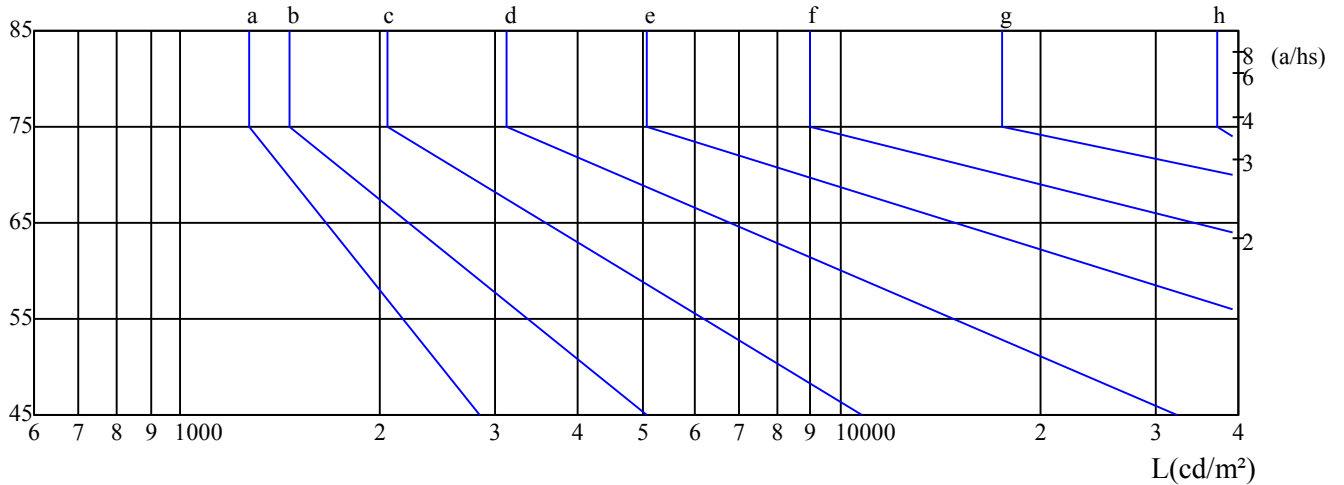
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

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

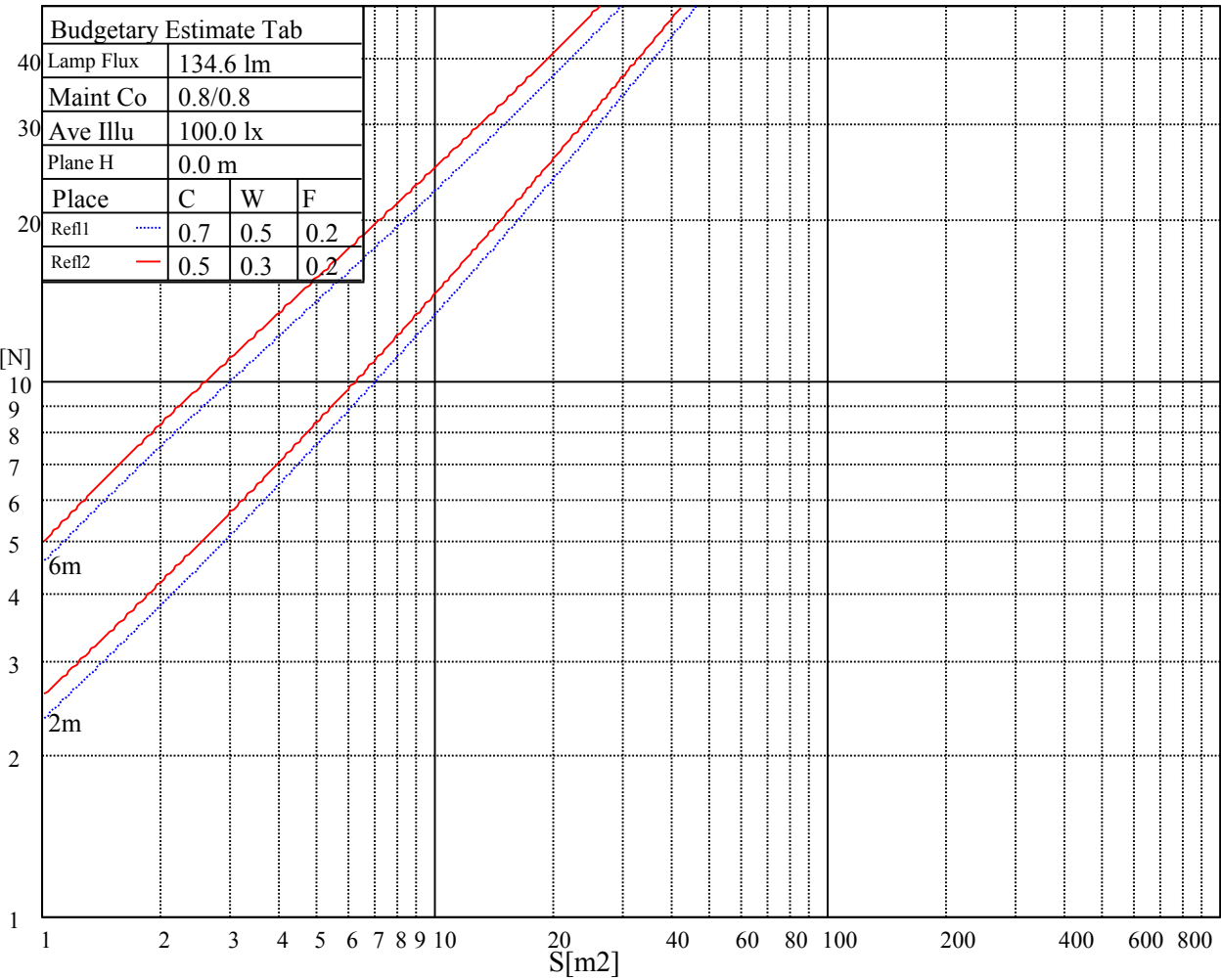
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

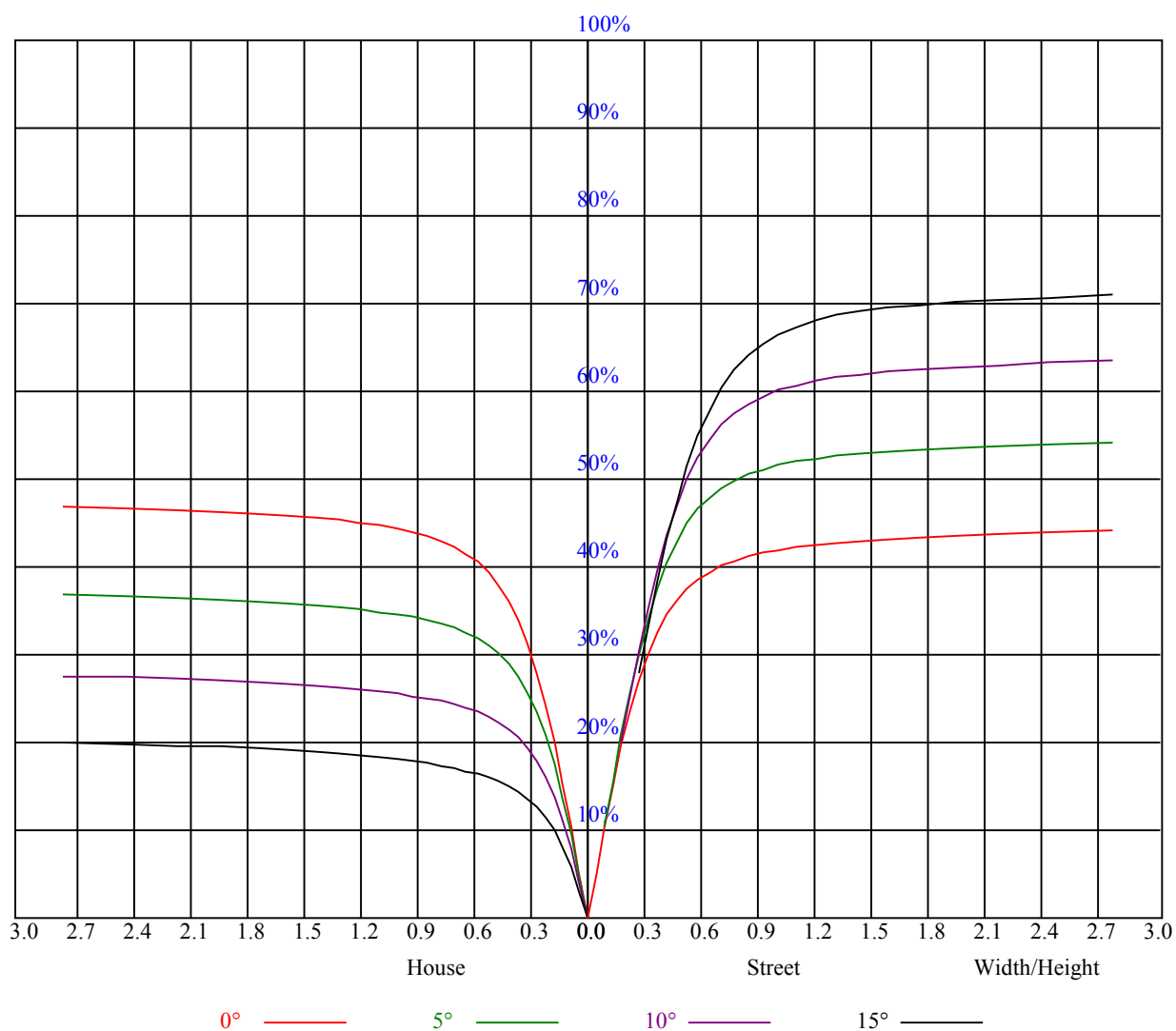
C0 ———

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	1.09	1.09	1.09	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.93
1	1.02	0.99	0.97	1.00	0.98	0.95	0.96	0.94	0.92	0.93	0.91	0.90	0.89	0.88	0.87	0.85
2	0.95	0.90	0.87	0.93	0.89	0.86	0.90	0.87	0.84	0.87	0.84	0.82	0.84	0.82	0.80	0.79
3	0.88	0.83	0.79	0.87	0.82	0.78	0.84	0.80	0.77	0.82	0.79	0.76	0.80	0.77	0.75	0.73
4	0.83	0.77	0.73	0.81	0.76	0.73	0.79	0.75	0.72	0.78	0.74	0.71	0.76	0.73	0.70	0.69
5	0.78	0.72	0.68	0.77	0.72	0.68	0.75	0.71	0.67	0.73	0.70	0.66	0.72	0.69	0.66	0.64
6	0.73	0.68	0.64	0.73	0.67	0.63	0.71	0.67	0.63	0.70	0.66	0.63	0.69	0.65	0.62	0.61
7	0.69	0.64	0.60	0.69	0.64	0.60	0.68	0.63	0.59	0.67	0.62	0.59	0.65	0.62	0.59	0.58
8	0.66	0.61	0.57	0.65	0.60	0.57	0.64	0.60	0.56	0.64	0.59	0.56	0.63	0.59	0.56	0.55
9	0.63	0.57	0.54	0.62	0.57	0.54	0.62	0.57	0.54	0.61	0.56	0.53	0.60	0.56	0.53	0.52
10	0.60	0.55	0.51	0.60	0.55	0.51	0.59	0.54	0.51	0.58	0.54	0.51	0.57	0.54	0.51	0.50



Intensity data(cd)

C/ γ (°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
0.0	210.54	188.83	163.29	144.39	127.69	110.87	96.41	85.16	74.36
15.0	209.08	187.54	162.34	143.89	127.69	111.49	97.14	85.78	74.59
30.0	198.68	177.69	159.47	140.85	126.06	110.98	97.20	86.12	75.32
45.0	208.13	191.76	174.15	156.83	142.71	129.66	114.19	102.88	92.59
60.0	200.59	188.78	177.08	160.76	150.47	139.33	124.37	115.48	105.75
75.0	206.66	200.14	191.08	183.38	175.56	166.56	156.66	147.66	137.64
90.0	204.75	203.51	201.15	197.83	194.34	189.39	183.54	177.47	169.82
105.0	203.51	208.58	212.85	216.96	219.38	220.95	221.23	220.28	218.25
120.0	207.28	218.70	228.21	237.99	246.94	254.14	260.38	265.05	267.64
135.0	199.91	217.29	234.45	249.13	264.99	278.27	292.22	304.03	312.47
150.0	210.38	229.22	248.46	272.42	290.87	308.25	328.33	342.06	352.80
165.0	198.56	220.05	247.50	269.89	291.94	315.73	337.95	355.11	370.35
180.0	210.54	232.65	258.53	284.68	307.46	331.71	353.81	370.58	384.81
195.0	209.08	231.24	259.99	282.60	305.04	332.16	351.62	368.21	384.58
210.0	198.68	218.36	240.92	263.87	283.89	303.36	326.14	342.23	355.56
225.0	208.13	226.07	241.71	258.64	275.01	288.68	302.40	314.27	322.93
240.0	200.59	213.41	225.23	234.96	245.42	253.24	260.61	266.51	270.56
255.0	206.66	212.01	216.23	220.44	222.36	223.14	222.86	221.74	219.77
270.0	204.75	204.92	203.57	201.21	198.23	193.44	187.65	181.91	175.22
285.0	203.51	195.69	188.61	181.01	171.23	163.29	152.78	141.41	133.54
300.0	207.28	196.48	183.83	170.44	158.40	146.81	132.64	121.89	111.77
315.0	199.91	184.73	169.54	152.83	137.64	124.93	110.19	99.45	89.61
330.0	210.38	189.34	169.09	151.65	134.04	119.59	105.24	92.64	82.74
345.0	198.56	178.48	156.60	137.31	121.89	106.31	92.59	82.07	71.61
360.0	210.54	188.83	163.29	144.39	127.69	110.87	96.41	85.16	74.36
C/ γ (°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	64.97	57.71	50.85	45.62	40.39	35.78	32.18	28.97	25.54
15.0	64.97	57.43	50.29	44.94	39.77	35.33	31.78	28.69	25.31
30.0	66.94	57.77	51.47	46.01	40.11	36.06	32.51	29.31	25.88
45.0	81.28	72.79	65.03	57.21	50.29	44.89	39.60	35.61	31.78
60.0	93.99	85.28	77.01	68.23	60.53	54.51	48.15	43.14	38.08
75.0	127.46	118.29	107.83	99.06	89.83	80.72	73.24	66.49	58.84
90.0	162.56	153.51	144.17	135.79	127.13	116.04	107.61	99.51	89.83
105.0	214.03	209.64	204.08	196.71	188.38	180.28	170.78	162.00	151.99
120.0	268.48	267.58	265.05	261.06	254.14	247.33	239.34	229.28	218.25
135.0	319.44	323.38	325.01	324.17	319.05	312.47	304.99	291.26	276.58
150.0	361.35	365.29	364.56	358.99	348.92	336.21	318.04	299.70	277.59
165.0	381.26	386.10	385.88	379.97	367.20	348.81	329.57	305.44	279.84
180.0	392.29	394.65	389.93	379.74	364.61	340.59	318.43	294.86	264.49
195.0	392.06	396.56	393.86	386.94	372.21	350.16	332.33	309.77	277.09
210.0	368.44	374.85	377.83	376.48	369.84	360.00	344.42	327.38	305.72
225.0	329.40	334.69	336.21	335.08	330.53	324.23	315.34	302.85	287.49
240.0	273.71	275.01	274.56	272.76	268.03	262.80	255.99	246.77	236.08
255.0	216.23	211.56	206.33	199.41	191.42	183.32	173.87	165.21	154.80
270.0	167.51	160.20	151.59	143.72	134.66	125.10	116.61	108.56	98.61
285.0	124.48	112.44	105.13	97.03	88.37	80.16	73.29	66.04	59.29
300.0	100.01	91.52	83.36	75.71	66.99	60.81	55.18	49.16	43.88
315.0	79.54	70.48	63.28	56.36	50.06	45.00	40.22	36.45	32.68
330.0	72.79	63.96	57.21	51.36	44.94	40.44	36.62	32.74	29.42
345.0	63.51	55.63	48.99	44.04	39.60	34.82	31.56	28.63	25.31
360.0	64.97	57.71	50.85	45.62	40.39	35.78	32.18	28.97	25.54

Intensity data(cd)

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	23.12	21.04	18.73	17.21	15.92	14.68	13.61	12.77	11.87
15.0	22.89	20.76	18.68	17.16	15.86	14.57	13.50	12.66	11.76
30.0	23.46	21.32	19.18	17.38	15.98	14.57	13.33	12.43	11.53
45.0	28.13	25.31	22.84	20.31	18.45	16.82	15.02	13.84	12.71
60.0	33.58	30.15	27.17	23.85	21.60	19.58	17.33	15.75	14.29
75.0	52.93	47.31	41.51	37.07	33.13	29.25	25.88	23.34	20.81
90.0	82.24	74.70	66.99	59.85	54.11	48.21	43.03	38.98	34.88
105.0	141.08	131.29	121.33	110.53	101.42	92.93	83.59	75.77	69.30
120.0	207.39	194.51	182.81	169.20	155.53	143.72	131.01	118.74	108.39
135.0	263.48	242.89	225.45	210.21	189.00	173.42	159.02	141.58	128.14
150.0	253.74	232.71	212.40	187.99	169.76	152.78	133.20	118.91	105.98
165.0	255.38	231.36	204.81	182.53	161.66	141.36	123.53	108.90	94.44
180.0	239.79	216.00	193.28	166.73	147.32	130.05	111.09	97.76	85.89
195.0	256.22	232.99	207.79	183.54	163.29	142.54	124.14	109.69	95.40
210.0	283.11	262.41	238.95	215.61	195.47	178.99	154.58	138.09	124.71
225.0	272.59	254.81	238.05	218.53	199.29	182.59	164.76	148.16	134.33
240.0	225.79	213.36	200.42	188.16	174.32	162.06	148.61	135.39	123.75
255.0	144.34	134.83	125.27	113.68	104.57	95.79	85.73	78.24	71.27
270.0	91.01	83.59	74.98	68.46	62.04	55.74	50.29	45.79	41.01
285.0	53.94	48.54	44.10	39.49	35.33	31.89	28.52	25.65	23.46
300.0	39.66	35.44	31.73	28.91	26.16	23.96	21.71	19.69	18.11
315.0	29.48	26.89	24.58	22.05	20.14	18.51	16.65	15.41	14.29
330.0	26.78	24.19	21.71	19.86	18.00	16.71	15.30	14.18	13.28
345.0	23.01	20.98	18.73	17.27	15.98	14.51	13.73	12.71	11.81
360.0	23.12	21.04	18.73	17.21	15.92	14.68	13.61	12.77	11.87
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	11.03	10.18	9.39	8.83	8.33	7.93	7.65	7.37	7.03
15.0	11.08	10.41	9.68	9.06	8.49	7.99	7.71	7.43	7.14
30.0	10.80	10.01	9.45	8.94	8.44	7.82	7.43	7.14	6.86
45.0	11.64	10.69	10.01	9.34	8.66	8.21	7.88	7.48	7.14
60.0	12.94	11.87	10.97	10.13	9.51	8.89	8.33	7.82	7.43
75.0	18.84	16.88	15.13	13.78	12.54	11.42	10.58	9.96	9.00
90.0	31.50	28.01	24.98	22.44	20.31	17.89	16.31	14.79	13.16
105.0	62.27	55.63	50.18	44.33	39.49	35.44	31.50	28.35	25.14
120.0	98.55	87.13	78.69	70.76	62.83	55.74	50.01	44.33	39.32
135.0	115.93	101.98	91.91	82.18	71.89	64.52	57.09	50.51	44.49
150.0	92.87	81.28	72.00	62.72	55.63	48.60	42.53	37.74	33.19
165.0	81.96	72.45	63.06	55.41	48.32	42.02	37.41	33.36	29.03
180.0	74.42	64.46	56.81	49.44	43.71	38.25	33.69	30.21	26.83
195.0	84.04	72.96	63.45	56.14	49.67	42.64	37.86	33.64	29.19
210.0	107.04	93.21	83.76	72.06	63.11	56.98	49.22	43.76	39.09
225.0	121.33	106.26	95.46	85.61	75.71	66.94	59.96	52.88	46.52
240.0	112.78	100.24	90.96	82.41	72.90	65.87	59.34	52.82	46.86
255.0	63.79	56.98	51.58	45.90	41.51	36.96	32.79	29.53	26.33
270.0	36.96	32.91	29.42	26.66	24.02	21.66	19.69	17.89	16.03
285.0	21.43	19.13	17.49	16.03	14.79	13.50	12.49	11.64	10.63
300.0	16.88	15.02	13.89	13.11	11.87	11.14	10.52	9.79	9.23
315.0	13.33	12.21	11.48	10.80	10.13	9.62	9.17	8.66	8.27
330.0	12.49	11.53	10.97	10.35	9.73	9.17	8.72	8.27	7.88
345.0	11.25	10.52	9.62	9.11	8.66	8.16	7.88	7.65	7.31
360.0	11.03	10.18	9.39	8.83	8.33	7.93	7.65	7.37	7.03

Intensity data(cd)

C/ γ (°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	6.86	6.69	6.47	6.36	6.24	6.19	6.08	6.02	5.91
15.0	6.92	6.69	6.58	6.41	6.30	6.19	6.08	5.96	5.85
30.0	6.69	6.53	6.36	6.13	6.02	5.91	5.74	5.63	5.51
45.0	6.86	6.53	6.36	6.08	5.91	5.79	5.63	5.51	5.34
60.0	7.03	6.75	6.41	6.13	5.91	5.68	5.46	5.29	5.12
75.0	8.38	7.93	7.31	6.86	6.53	6.08	5.74	5.51	5.18
90.0	12.04	11.03	9.90	9.11	8.38	7.65	7.14	6.58	6.13
105.0	22.39	20.25	18.34	16.14	14.68	13.28	11.81	10.74	9.79
120.0	35.38	31.50	28.29	25.09	22.28	19.97	17.94	15.69	14.18
135.0	39.88	35.38	31.84	28.13	24.86	22.50	19.69	17.55	15.81
150.0	29.31	26.33	23.63	20.70	18.68	16.93	15.24	13.73	12.60
165.0	26.10	23.63	20.87	19.01	17.33	15.86	14.23	13.11	11.98
180.0	23.96	21.77	19.86	17.66	16.20	14.85	13.56	12.38	11.42
195.0	26.21	23.57	21.32	18.84	17.21	15.58	14.23	12.94	11.76
210.0	34.03	30.54	27.51	24.19	21.88	19.86	17.61	16.09	14.74
225.0	41.51	36.73	32.85	29.08	25.76	23.18	20.93	18.39	16.65
240.0	42.13	37.41	33.53	29.70	26.44	23.91	21.38	19.07	17.27
255.0	23.51	21.26	19.29	17.16	15.64	14.29	12.88	11.64	10.63
270.0	14.63	13.44	12.26	11.25	10.46	9.56	8.78	8.21	7.65
285.0	9.96	9.39	8.83	8.27	7.82	7.37	6.98	6.53	6.24
300.0	8.83	8.33	7.99	7.65	7.20	6.98	6.69	6.47	6.24
315.0	7.93	7.59	7.37	7.09	6.92	6.69	6.53	6.30	6.19
330.0	7.59	7.43	7.14	6.98	6.81	6.64	6.53	6.41	6.30
345.0	7.14	6.98	6.81	6.69	6.58	6.41	6.36	6.30	6.19
360.0	6.86	6.69	6.47	6.36	6.24	6.19	6.08	6.02	5.91
C/ γ (°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	5.79	5.74	5.63	5.51	5.40	5.29	5.23	5.18	5.06
15.0	5.79	5.63	5.57	5.46	5.40	5.23	5.18	5.06	5.01
30.0	5.46	5.34	5.29	5.18	5.06	4.95	4.84	4.78	4.67
45.0	5.23	5.12	4.95	4.84	4.73	4.67	4.56	4.44	4.39
60.0	4.95	4.84	4.73	4.61	4.56	4.39	4.33	4.28	4.16
75.0	4.95	4.78	4.56	4.44	4.33	4.16	4.05	3.94	3.88
90.0	5.74	5.34	5.01	4.73	4.44	4.16	3.99	3.83	3.60
105.0	8.89	8.10	7.48	6.86	6.30	5.85	5.46	5.12	4.73
120.0	12.77	11.25	10.18	9.28	8.27	7.37	6.69	6.02	5.57
135.0	14.34	12.66	11.53	10.46	9.45	8.55	7.88	7.09	6.41
150.0	11.42	10.41	9.68	8.89	8.21	7.59	7.03	6.53	6.13
165.0	11.08	10.18	9.45	8.72	8.10	7.54	6.98	6.53	6.02
180.0	10.46	9.62	8.94	8.27	7.71	7.14	6.64	6.19	5.79
195.0	10.91	9.96	9.17	8.55	7.99	7.31	6.86	6.41	6.02
210.0	13.33	12.09	11.14	10.18	9.28	8.61	7.93	7.31	6.81
225.0	15.08	13.39	12.21	11.19	10.01	9.17	8.44	7.71	7.14
240.0	15.64	13.84	12.54	11.36	10.18	9.17	8.33	7.48	6.81
255.0	9.68	8.83	8.10	7.48	6.98	6.41	5.96	5.63	5.34
270.0	7.14	6.64	6.19	5.79	5.46	5.06	4.84	4.61	4.39
285.0	5.91	5.63	5.40	5.18	5.01	4.78	4.61	4.44	4.33
300.0	6.08	5.79	5.63	5.46	5.23	5.12	5.01	4.84	4.73
315.0	6.08	5.96	5.79	5.68	5.57	5.40	5.29	5.18	5.06
330.0	6.19	6.08	6.02	5.91	5.79	5.68	5.63	5.51	5.40
345.0	6.13	6.02	5.91	5.79	5.68	5.57	5.46	5.40	5.29
360.0	5.79	5.74	5.63	5.51	5.40	5.29	5.23	5.18	5.06

Intensity data(cd)

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	5.01	5.01	5.01	5.01	5.01	5.01	4.89	4.78	4.61
15.0	4.89	4.84	4.78	4.67	4.61	4.56	4.44	4.33	4.22
30.0	4.61	4.50	4.44	4.33	4.28	4.16	4.11	3.94	3.83
45.0	4.33	4.28	4.16	4.11	3.99	3.94	3.88	3.83	3.71
60.0	4.11	3.99	3.94	3.83	3.71	3.66	3.54	3.49	3.43
75.0	3.77	3.66	3.60	3.43	3.38	3.32	3.21	3.15	3.04
90.0	3.49	3.32	3.21	3.15	3.09	2.98	2.93	2.81	2.76
105.0	4.44	4.22	3.99	3.83	3.71	3.60	3.43	3.32	3.26
120.0	5.18	4.78	4.50	4.28	4.05	3.94	3.88	3.83	3.88
135.0	5.91	5.51	5.12	4.84	4.61	4.44	4.39	4.28	4.22
150.0	5.74	5.34	5.06	4.67	4.39	4.16	3.94	3.71	3.54
165.0	5.68	5.29	5.01	4.61	4.33	4.11	3.83	3.66	3.43
180.0	5.34	5.01	4.73	4.33	4.11	3.88	3.66	3.43	3.21
195.0	5.51	5.18	4.84	4.50	4.28	3.99	3.83	3.60	3.38
210.0	6.24	5.79	5.40	5.06	4.73	4.50	4.16	4.05	3.83
225.0	6.53	5.96	5.63	5.29	4.89	4.78	4.61	4.44	4.39
240.0	6.30	5.79	5.46	5.12	4.84	4.61	4.44	4.33	4.28
255.0	5.01	4.73	4.50	4.28	4.16	4.05	3.88	3.66	3.60
270.0	4.16	3.99	3.88	3.71	3.60	3.49	3.38	3.26	3.15
285.0	4.22	4.11	3.99	3.83	3.77	3.66	3.54	3.43	3.32
300.0	4.61	4.50	4.39	4.28	4.16	4.11	4.05	3.99	3.88
315.0	4.95	4.89	4.84	4.73	4.61	4.50	4.44	4.39	4.33
330.0	5.29	5.18	5.06	4.95	4.84	4.67	4.50	4.39	4.22
345.0	5.23	5.23	5.12	5.01	4.95	4.84	4.78	4.61	4.44
360.0	5.01	5.01	5.01	5.01	5.01	5.01	4.89	4.78	4.61
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	4.39	4.11	3.71	3.49	3.38	4.28	4.50	4.22	3.71
15.0	4.11	3.94	3.83	3.60	3.49	3.26	3.15	3.09	3.43
30.0	3.71	3.66	3.54	3.43	3.38	3.32	3.26	3.21	3.15
45.0	3.71	3.77	3.71	3.71	3.54	3.43	3.32	3.21	3.21
60.0	3.38	3.43	3.49	3.43	3.43	3.32	3.32	3.21	3.09
75.0	3.04	2.93	2.87	2.81	2.81	2.76	2.70	2.70	2.70
90.0	2.70	2.70	2.64	2.59	2.53	2.53	2.48	2.42	2.31
105.0	3.15	3.04	3.04	3.04	3.09	3.21	3.32	3.38	3.38
120.0	3.94	3.99	4.05	4.22	4.28	4.22	4.16	4.16	4.39
135.0	4.16	4.11	4.05	4.05	4.11	4.11	4.05	3.88	3.71
150.0	3.43	3.32	3.21	3.15	3.04	2.98	2.87	2.81	2.76
165.0	3.21	3.04	2.93	2.81	2.70	2.53	2.48	2.42	2.36
180.0	3.04	2.93	2.76	2.59	2.48	2.36	2.31	2.25	2.19
195.0	3.21	3.09	2.87	2.76	2.64	2.59	2.53	2.48	2.36
210.0	3.71	3.66	3.54	3.49	3.38	3.26	3.15	3.04	2.93
225.0	4.33	4.39	4.50	4.56	4.50	4.44	4.39	4.22	3.99
240.0	4.22	4.16	4.22	4.39	4.84	5.01	5.63	5.74	5.51
255.0	3.49	3.43	3.49	3.54	3.60	3.71	3.71	3.71	3.77
270.0	3.04	3.04	2.98	2.87	2.81	2.76	2.70	2.70	2.64
285.0	3.21	3.15	3.09	3.04	2.98	2.93	2.93	2.93	2.87
300.0	3.94	3.88	3.94	3.94	3.88	3.94	3.83	3.94	3.66
315.0	4.28	4.22	4.16	3.99	3.83	3.60	3.54	3.43	3.38
330.0	4.11	3.99	3.88	3.71	3.60	3.54	3.43	3.32	3.21
345.0	4.22	4.05	3.83	3.66	3.43	3.21	3.09	3.60	3.66
360.0	4.39	4.11	3.71	3.49	3.38	4.28	4.50	4.22	3.71

Intensity data(cd)										Appendix Page: 20 Total:21	
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0		
0.0	3.43	3.26	3.15	3.04	2.98	2.93	2.81	2.76	2.70		
15.0	3.49	3.54	3.38	3.15	3.09	2.98	2.93	2.87	2.81		
30.0	3.04	3.04	2.98	3.04	2.98	2.93	2.87	2.87	2.87		
45.0	3.15	3.15	3.09	3.04	2.98	2.98	2.93	2.87	2.81		
60.0	3.04	2.93	2.87	2.81	2.70	2.64	2.64	2.53	2.53		
75.0	2.70	2.64	2.59	2.53	2.53	2.48	2.42	2.31	2.19		
90.0	2.08	2.08	2.19	2.19	2.19	2.25	2.25	2.19	2.19		
105.0	2.98	2.59	2.48	2.59	2.59	2.48	2.42	2.31	2.31		
120.0	4.16	3.77	3.38	3.15	3.04	2.87	2.70	2.76	2.87		
135.0	3.60	3.54	3.54	3.49	3.43	3.38	3.32	3.38	3.43		
150.0	2.70	2.64	2.59	2.59	2.59	2.59	2.53	2.53	2.53		
165.0	2.36	2.25	2.25	2.25	2.25	2.25	2.19	2.19	2.14		
180.0	2.19	2.14	2.08	2.08	2.14	2.08	2.08	2.03	2.03		
195.0	2.31	2.25	2.25	2.25	2.19	2.19	2.14	2.08	2.03		
210.0	2.81	2.70	2.64	2.53	2.48	2.42	2.36	2.36	2.31		
225.0	3.94	3.99	4.05	3.71	3.38	3.04	2.81	2.59	2.48		
240.0	5.34	4.78	4.11	3.66	3.32	3.21	3.04	2.93	2.81		
255.0	3.54	3.32	3.04	2.76	2.64	2.59	2.48	2.42	2.42		
270.0	2.59	2.59	2.53	2.48	2.42	2.42	2.36	2.31	2.25		
285.0	2.76	2.70	2.64	2.64	2.59	2.48	2.42	2.36	2.31		
300.0	3.43	3.15	2.98	2.93	2.81	2.81	2.70	2.64	2.53		
315.0	3.32	3.26	3.15	3.04	2.98	2.87	2.81	2.70	2.70		
330.0	3.15	3.04	2.98	2.93	2.81	2.76	2.70	2.64	2.70		
345.0	3.66	3.54	3.38	3.15	3.04	2.93	2.87	2.76	2.70		
360.0	3.43	3.26	3.15	3.04	2.98	2.93	2.81	2.76	2.70		
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0		
0.0	2.64	2.59	2.48	2.31	2.19	1.69	1.13	0.90	0.79		
15.0	2.76	2.70	2.64	2.48	2.36	1.46	1.18	0.96	0.84		
30.0	2.87	2.87	2.76	2.53	2.25	1.35	1.07	0.90	0.79		
45.0	2.76	2.70	2.70	2.48	2.19	1.46	1.18	0.96	0.79		
60.0	2.48	2.36	2.36	2.14	2.03	1.29	1.07	0.90	0.68		
75.0	2.08	1.91	1.80	1.69	1.58	1.24	1.01	0.84	0.68		
90.0	2.14	2.08	2.14	2.08	1.91	1.24	1.01	0.84	0.62		
105.0	2.25	2.25	2.25	2.19	2.14	2.08	1.63	1.58	1.46		
120.0	2.98	3.09	3.09	2.87	2.70	2.70	2.76	2.87	2.93		
135.0	3.38	3.15	2.87	2.76	2.64	2.36	2.08	1.97	1.97		
150.0	2.53	2.53	2.53	2.53	2.31	1.86	1.35	1.13	1.01		
165.0	2.14	2.08	2.08	2.03	1.97	1.80	1.35	1.01	0.90		
180.0	2.03	1.97	1.91	1.86	1.80	1.63	1.13	0.96	0.79		
195.0	1.91	1.86	1.74	1.58	1.35	1.24	1.13	1.07	0.96		
210.0	2.19	2.08	1.97	1.91	1.80	1.63	1.46	1.35	1.18		
225.0	2.42	2.36	2.25	2.14	1.97	1.91	1.86	1.80	1.74		
240.0	2.81	2.81	2.81	2.81	2.81	2.64	2.48	2.19	2.14		
255.0	2.36	2.31	2.25	2.19	2.14	1.91	1.58	1.35	1.24		
270.0	2.25	2.19	2.08	2.08	1.97	1.80	1.52	1.13	0.96		
285.0	2.25	2.19	2.14	2.08	1.97	1.80	1.24	1.01	0.84		
300.0	2.48	2.48	2.36	2.31	2.08	1.91	1.46	1.18	0.96		
315.0	2.59	2.48	2.42	2.25	2.08	1.86	1.29	1.07	0.84		
330.0	2.64	2.64	2.59	2.48	2.25	1.91	1.35	1.13	0.90		
345.0	2.59	2.48	2.42	2.25	2.19	1.58	1.18	0.90	0.79		
360.0	2.64	2.59	2.48	2.31	2.19	1.69	1.13	0.90	0.79		

Intensity data(cd)

Appendix Page: 21 Total:21

C/ γ (°)	90.0
0.0	0.62
15.0	0.62
30.0	0.51
45.0	0.56
60.0	0.56
75.0	0.56
90.0	0.51
105.0	1.01
120.0	0.96
135.0	1.69
150.0	1.01
165.0	0.68
180.0	0.62
195.0	0.68
210.0	0.96
225.0	1.29
240.0	2.08
255.0	1.41
270.0	0.73
285.0	0.62
300.0	0.79
315.0	0.73
330.0	0.79
345.0	0.68
360.0	0.62