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NATA

LumCAT: CR12L17380150BB

Luminaire:

Report No: NATA0100

Voltage(V): 23.4000

Test No: GC2018120304

Current(A): 0.3000

LampCAT: CREE XHP35

Power (W): 7.0200

Lamp flux(lm): 944.0

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): 902.65

Efficiency(%): 95.62%

Lumens(lm)/Power(W): 128.65

Central intensity(cd): 224.213

Maximum intensity(cd): 335.194

Angle of maximum intensity: C=30.0 γ =45.0

Beam Angle(50%Imax): [C0/180]Total=149.7

[C90/270]Total=78.7

Field angle(10%Imax): [C0/180]Total=165.4

[C90/270]Total=151.1

Maximum s/h(1/2): C0_180=1.67 C90_270=1.78

Maximum s/h(1/4): C0_180=1.90 C90_270=1.66

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 95.67%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 79.894%

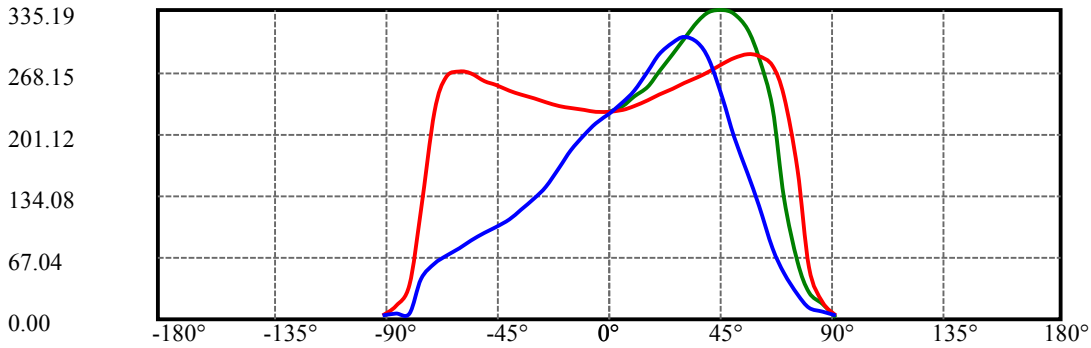
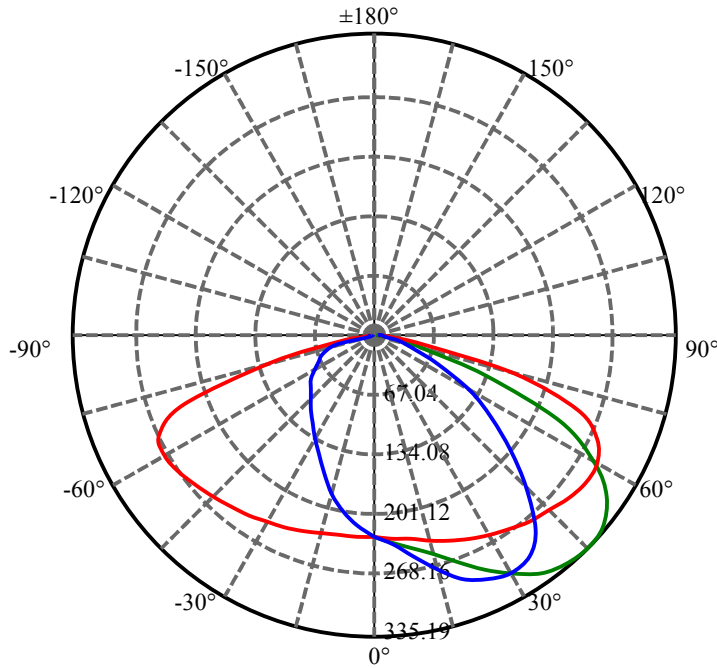
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	224.916	1.345	1.345	.142%	.149%
5.0	225.678	10.781	12.126	1.142%	1.343%
10.0	227.925	21.695	33.821	2.298%	3.747%
15.0	230.966	32.767	66.588	3.471%	7.377%
20.0	234.078	43.884	110.471	4.649%	12.239%
25.0	236.044	54.680	165.152	5.792%	18.296%
30.0	236.983	64.950	230.101	6.880%	25.492%
35.0	235.866	74.156	304.257	7.855%	33.707%
40.0	231.361	81.517	385.774	8.635%	42.738%
45.0	220.630	85.514	471.288	9.058%	52.212%
50.0	206.569	86.738	558.026	9.188%	61.821%
55.0	188.095	84.456	642.482	8.946%	71.177%
60.0	166.575	79.073	721.555	8.376%	79.937%
65.0	139.425	69.264	790.819	7.337%	87.611%
70.0	105.500	54.341	845.16	5.756%	93.631%
75.0	62.473	33.077	878.237	3.504%	97.295%
80.0	29.309	15.821	894.059	1.676%	99.048%
85.0	13.713	7.488	901.546	.793%	99.878%
90.0	4.027	1.104	902.65	.117%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	230.10	24.37%	25.49%
0-40	385.77	40.86%	42.74%
0-60	721.56	76.43%	79.94%
0-90	901.55	95.50%	99.88%
0-120	901.55	95.50%	99.88%
0-180	902.65	95.62%	100.00%
60-90	259.06	27.44%	28.70%
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%
0-60.04	722.12	76.49%	80.00%

ZONAL LUMEN SUMMARY

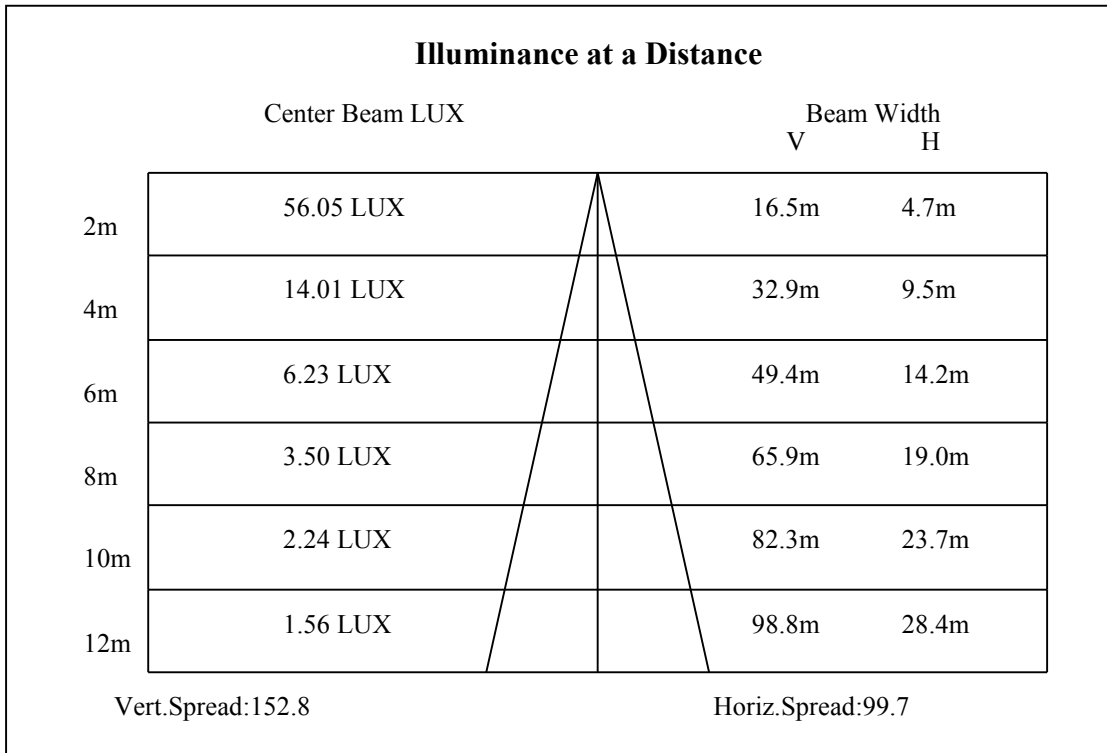
0-10	33.82
10-20	76.65
20-30	119.63
30-40	155.67
40-50	172.25
50-60	163.53
60-70	123.60
70-80	48.90
80-90	7.49
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

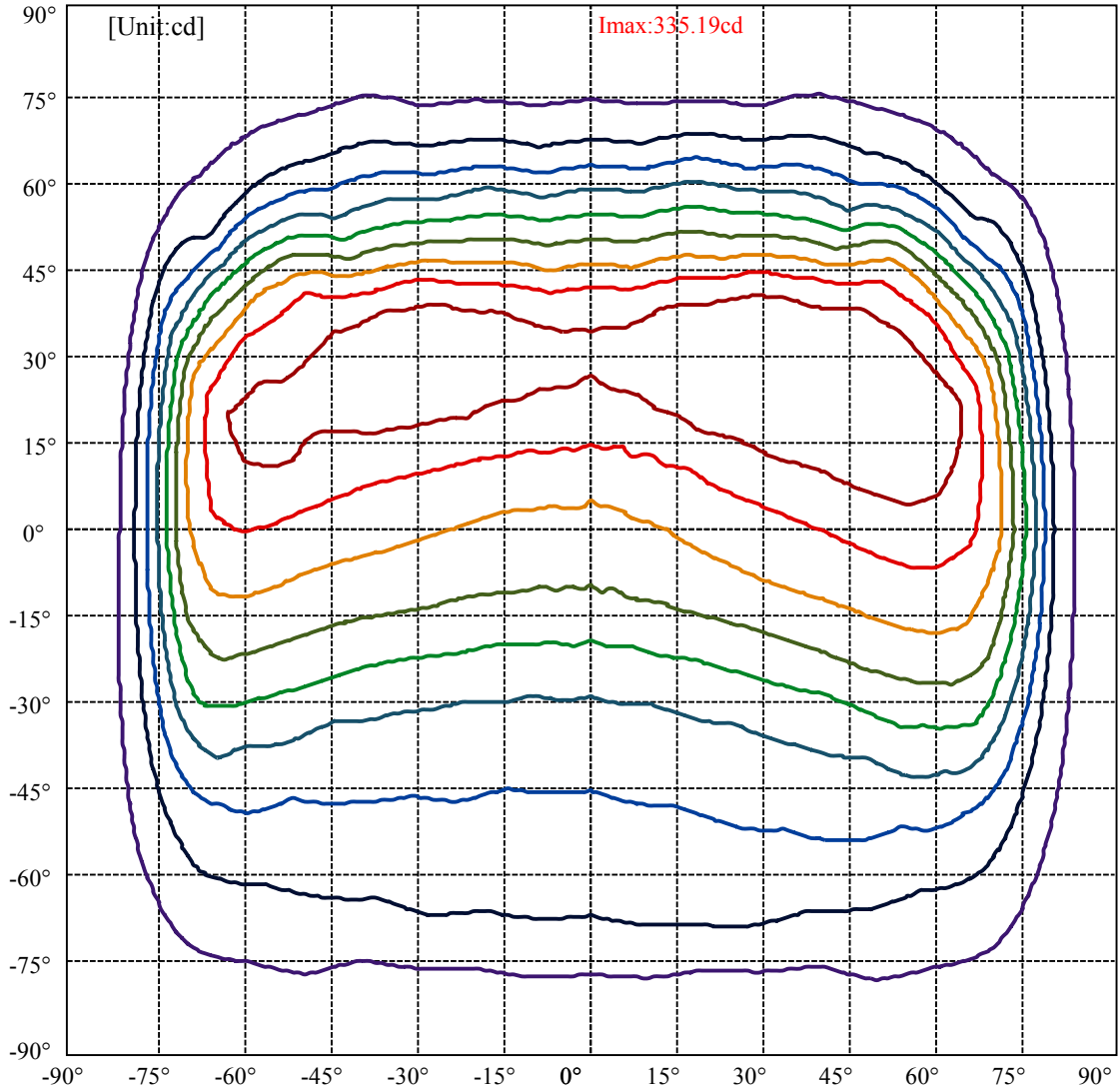


C30(Max): —
 C0/C180: —
 C90/C270: —

Field angle(10%Imax):C0/180Left:136.8 Right:28.6
 :C90/270Left:106.7 Right:44.4

Beam Angle(50%Imax):C0/180Left:128.8 Right:20.9
 :C90/270Left:52.9 Right:25.8



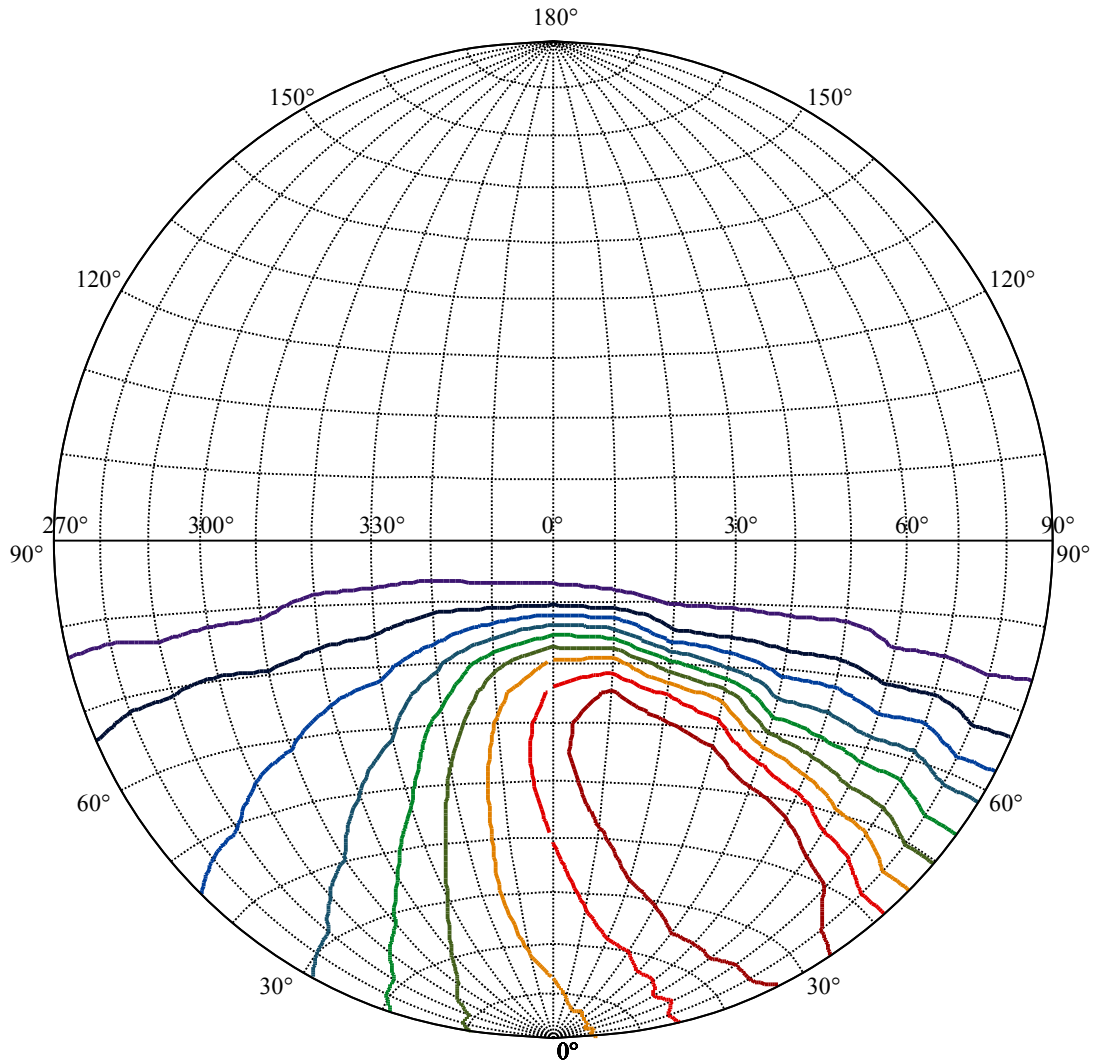


- (10% I_{max}) 33.4733
- (20% I_{max}) 66.9466
- (30% I_{max}) 100.42
- (40% I_{max}) 133.893
- (50% I_{max}) 167.367
- (60% I_{max}) 200.84
- (70% I_{max}) 234.313
- (80% I_{max}) 267.786
- (90% I_{max}) 301.26

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2018/12/3
Humidity(%): 65.0%

Operator: NT07
Distance(m): 7.50












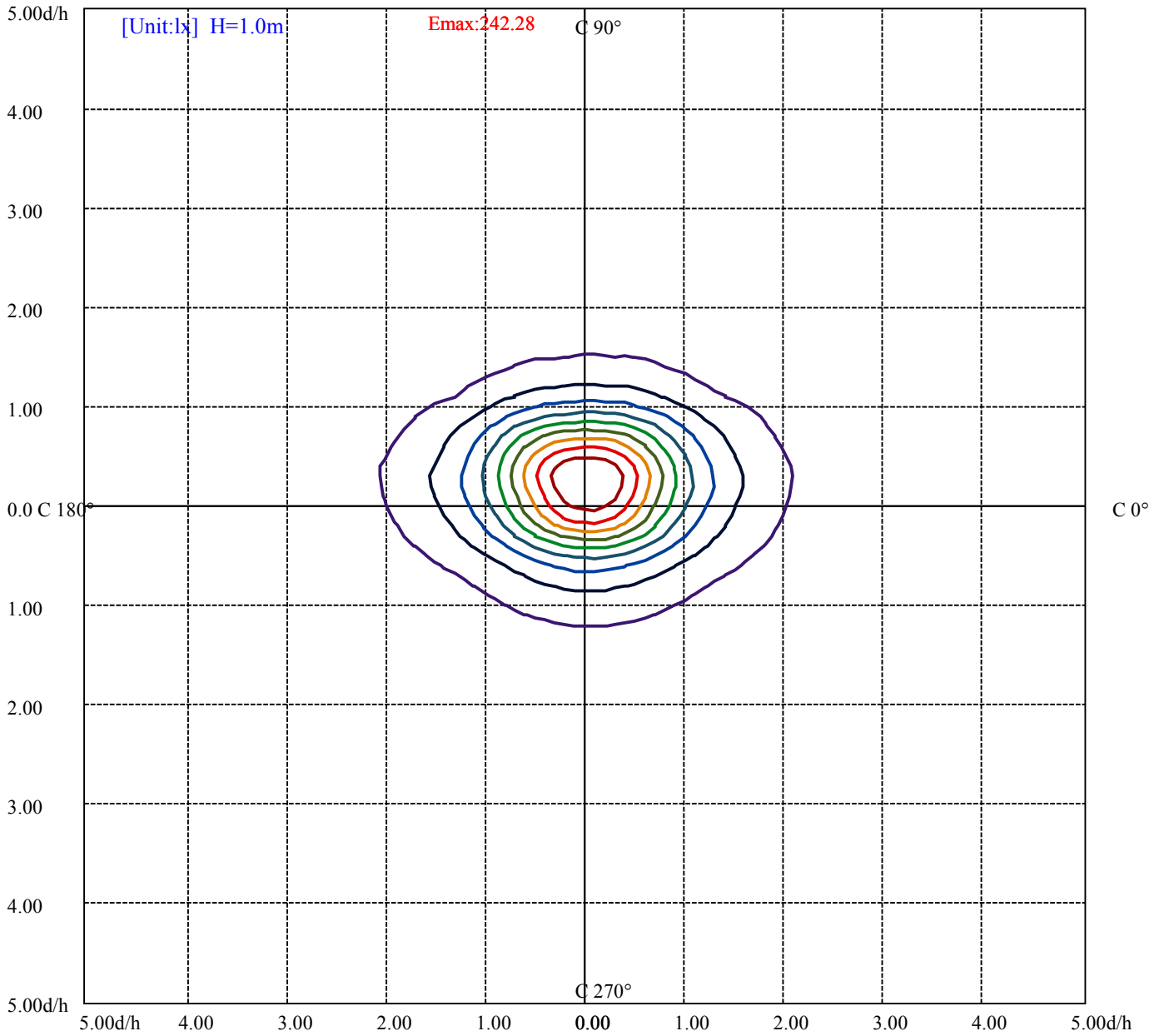
House

[Unit:cd]

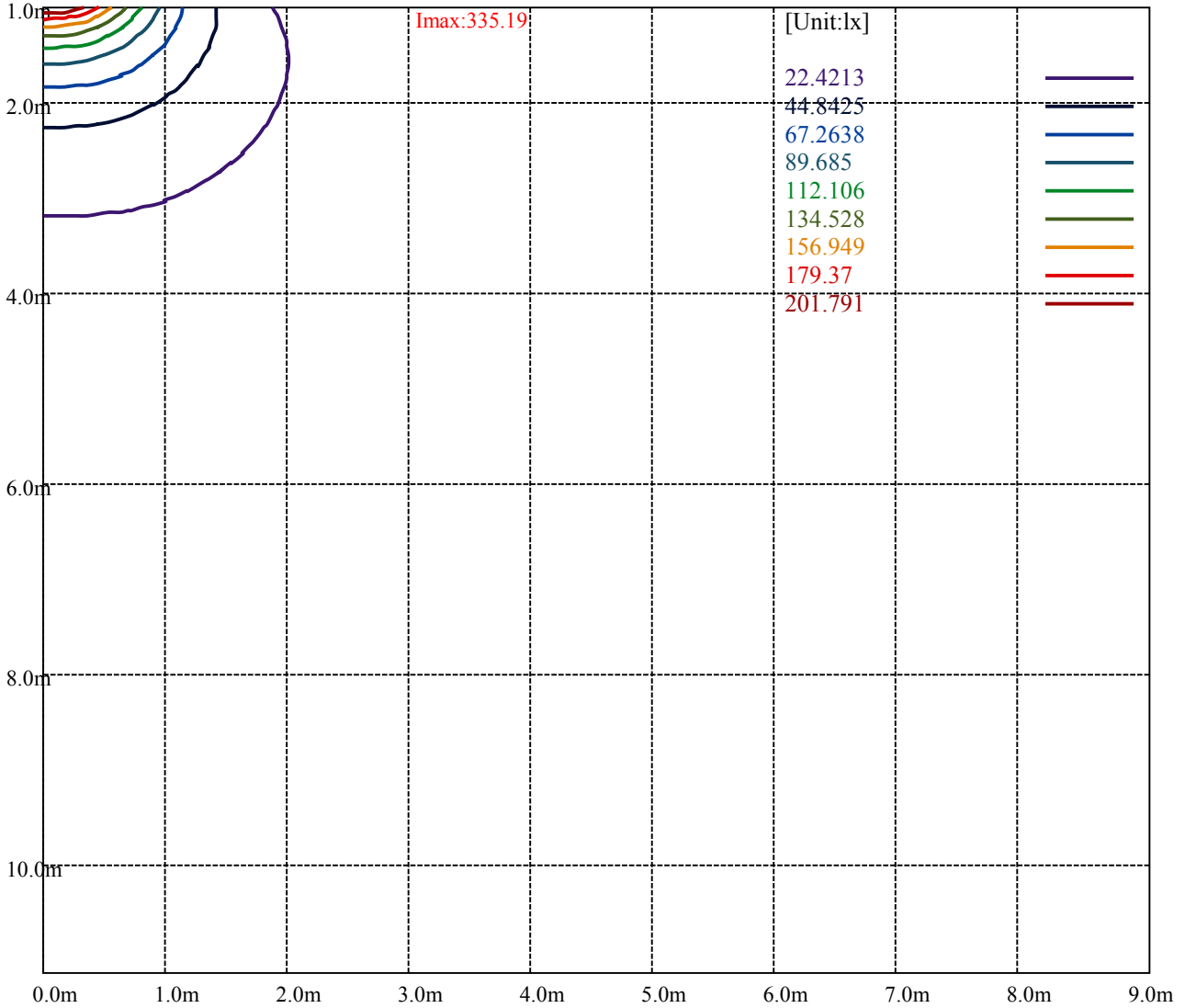
Road

Imax:335.19

(10%Imax) 33.5194	
(20%Imax) 67.0387	
(30%Imax) 100.558	
(40%Imax) 134.077	
(50%Imax) 167.597	
(60%Imax) 201.116	
(70%Imax) 234.636	
(80%Imax) 268.155	
(90%Imax) 301.674	



(10%Emax) 24.2276	—
(20%Emax) 48.4551	—
(30%Emax) 72.6826	—
(40%Emax) 96.9102	—
(50%Emax) 121.138	—
(60%Emax) 145.365	—
(70%Emax) 169.593	—
(80%Emax) 193.82	—
(90%Emax) 218.048	—



Luminance Table

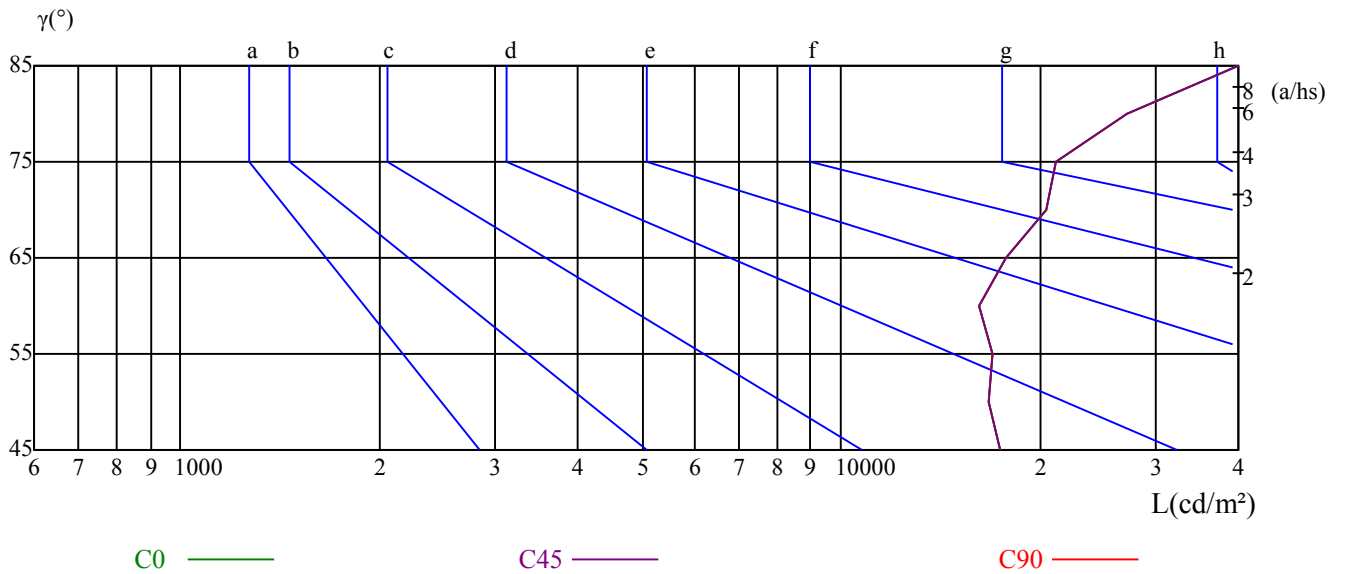
γ	45	50	55	60	65	70	75	80	85
C0	17395	16782	16944	16160	17815	20529	21115	27203	58014
C45	17395	16782	16944	16160	17815	20529	21115	27203	58014
C90	17395	16782	16944	16160	17815	20529	21115	27203	58014

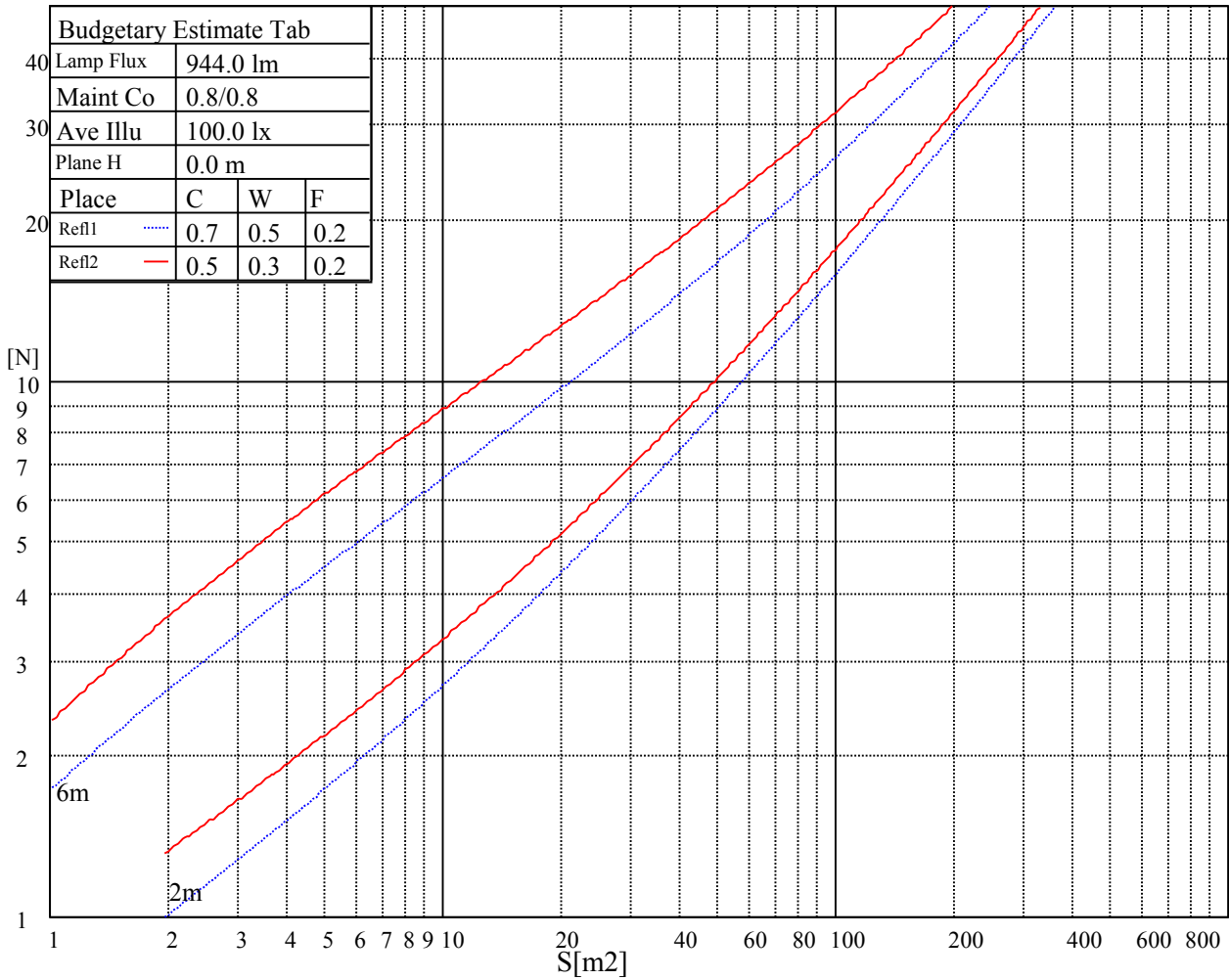
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
17815	17815	17815	21115	21115	21115	58014	58014	58014

Glare Table

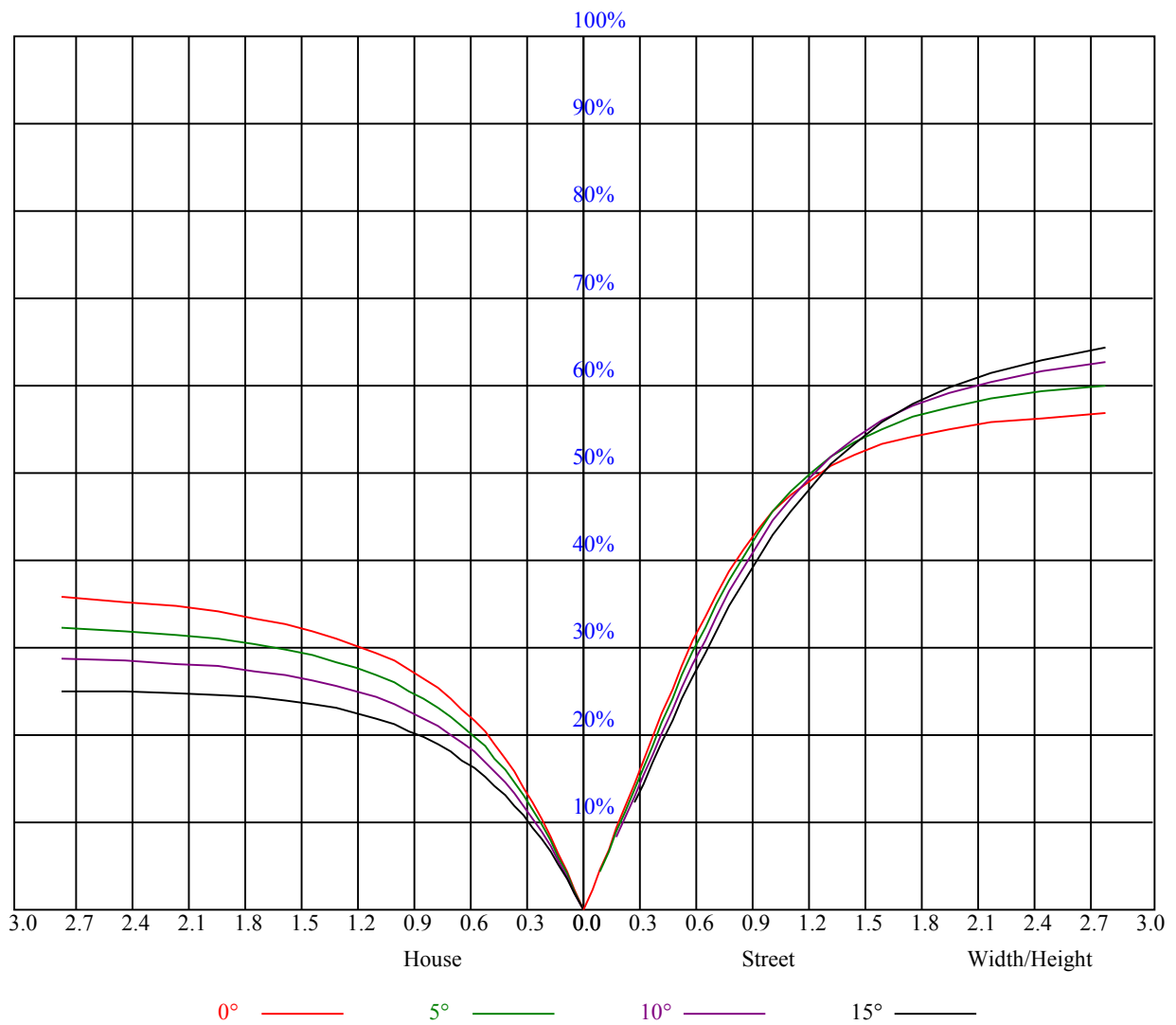
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.14	1.14	1.14	1.11	1.11	1.11	1.06	1.06	1.06	1.02	1.02	1.02	0.98	0.98	0.98	0.96
1	1.00	0.96	0.92	0.98	0.94	0.91	0.94	0.91	0.88	0.90	0.87	0.85	0.86	0.84	0.83	0.81
2	0.87	0.80	0.75	0.85	0.79	0.74	0.82	0.77	0.72	0.79	0.74	0.71	0.76	0.72	0.69	0.67
3	0.76	0.68	0.62	0.75	0.67	0.61	0.72	0.65	0.60	0.69	0.64	0.59	0.67	0.62	0.58	0.56
4	0.67	0.59	0.52	0.66	0.58	0.52	0.63	0.56	0.51	0.61	0.55	0.50	0.59	0.54	0.50	0.48
5	0.60	0.51	0.45	0.59	0.50	0.44	0.57	0.49	0.44	0.55	0.48	0.43	0.53	0.47	0.43	0.41
6	0.54	0.45	0.39	0.53	0.44	0.38	0.51	0.44	0.38	0.49	0.43	0.38	0.48	0.42	0.37	0.35
7	0.48	0.40	0.34	0.48	0.40	0.34	0.46	0.39	0.34	0.45	0.38	0.33	0.43	0.38	0.33	0.31
8	0.44	0.36	0.30	0.43	0.36	0.30	0.42	0.35	0.30	0.41	0.34	0.30	0.40	0.34	0.29	0.28
9	0.40	0.32	0.27	0.40	0.32	0.27	0.39	0.32	0.27	0.38	0.31	0.27	0.37	0.31	0.26	0.25
10	0.37	0.30	0.24	0.37	0.29	0.24	0.36	0.29	0.24	0.35	0.29	0.24	0.34	0.28	0.24	0.22



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	224.21	226.18	230.51	237.32	243.96	250.31	256.33	262.29	269.10
10.0	224.55	229.05	235.97	244.58	254.36	263.98	273.54	284.12	295.20
20.0	226.18	231.75	240.64	250.59	263.36	276.58	291.77	307.52	320.29
30.0	223.82	231.24	240.81	252.84	268.03	287.66	304.93	323.10	332.83
40.0	225.11	233.16	245.31	260.49	280.74	301.84	319.05	329.91	333.73
50.0	224.27	233.94	246.15	261.73	282.66	304.26	317.93	328.05	330.58
60.0	225.90	236.25	250.99	271.46	290.76	306.90	318.60	324.51	317.03
70.0	222.81	234.45	248.29	266.91	287.78	303.08	312.86	313.65	301.05
80.0	224.72	236.36	251.89	273.49	291.09	303.30	308.42	301.44	281.14
90.0	223.14	234.39	248.29	269.49	287.78	299.64	305.27	300.32	280.41
100.0	225.56	237.32	253.01	273.21	290.87	302.51	306.62	300.43	276.47
110.0	224.10	235.01	248.29	268.76	287.04	300.54	308.76	307.86	295.26
120.0	226.46	236.59	251.38	268.20	286.65	300.99	311.12	317.14	309.38
130.0	225.90	234.23	244.29	258.92	277.59	295.14	309.38	320.34	323.38
140.0	226.69	233.44	243.00	254.48	271.80	290.98	306.79	319.39	325.07
150.0	224.89	230.06	236.76	246.77	258.08	274.84	291.04	307.29	317.76
160.0	226.07	229.22	234.62	241.31	249.64	260.10	273.21	288.11	300.26
170.0	224.10	225.11	228.71	233.27	238.33	244.86	252.06	261.23	271.24
180.0	224.21	224.27	226.01	228.32	231.64	235.46	239.74	243.79	248.51
190.0	224.55	222.92	222.24	222.36	223.14	224.27	224.61	224.83	223.82
200.0	226.18	221.68	218.93	216.39	214.48	212.12	209.31	203.57	197.21
210.0	223.82	218.87	214.43	209.08	203.23	195.69	188.04	177.53	166.33
220.0	225.11	218.08	211.89	203.74	194.12	181.69	170.94	156.60	142.65
230.0	224.27	216.68	207.23	195.41	181.01	167.34	152.72	137.53	126.06
240.0	225.90	216.11	206.33	193.11	176.46	158.79	143.33	129.32	118.97
250.0	222.81	213.53	201.88	185.46	168.92	149.06	133.54	121.16	111.54
260.0	224.72	213.69	202.50	186.47	168.47	148.16	132.92	120.43	110.59
270.0	223.14	212.85	199.80	182.36	163.91	144.45	130.39	118.69	108.79
280.0	225.56	214.82	203.91	187.03	169.26	150.41	134.44	122.06	113.01
290.0	224.10	214.76	202.89	188.38	171.62	152.55	137.31	124.99	115.03
300.0	226.46	217.91	209.98	197.44	181.97	166.50	150.41	136.18	126.23
310.0	225.90	219.09	211.84	202.73	189.84	176.34	162.23	146.76	135.06
320.0	226.69	221.01	216.39	210.43	203.23	193.67	183.21	169.37	156.71
330.0	224.89	221.23	218.59	216.34	213.75	208.58	202.22	194.12	184.39
340.0	226.07	224.27	223.82	224.04	225.34	225.90	225.73	222.36	217.91
350.0	224.10	224.89	227.76	231.86	235.91	239.06	242.66	245.19	246.04
360.0	224.21	226.18	230.51	237.32	243.96	250.31	256.33	262.29	269.10

Intensity data(cd)

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	275.91	282.38	287.33	285.47	274.33	241.88	161.78	55.74	18.28
10.0	309.04	322.31	334.69	330.13	306.51	251.04	149.34	44.72	16.09
20.0	329.40	332.49	326.03	308.53	269.10	180.17	73.18	30.83	15.36
30.0	335.19	330.86	314.44	284.18	228.94	131.79	62.49	28.18	15.75
40.0	328.95	310.61	271.91	200.87	138.49	91.74	50.63	24.86	16.14
50.0	318.32	287.78	226.58	171.79	127.63	85.05	47.76	24.41	14.23
60.0	287.89	238.61	192.71	150.13	101.53	62.94	31.84	20.03	12.83
70.0	264.43	223.26	182.81	144.39	102.26	59.29	30.32	17.55	11.93
80.0	236.64	197.61	159.13	120.09	74.42	49.16	23.79	14.46	9.28
90.0	238.39	198.45	158.57	122.06	76.67	49.16	27.84	13.22	8.38
100.0	231.86	194.12	153.68	111.26	71.44	46.69	24.08	14.68	8.83
110.0	256.33	213.19	172.01	135.79	88.88	54.39	31.39	19.24	12.71
120.0	279.68	231.81	183.49	136.58	94.33	56.93	32.29	22.33	12.94
130.0	310.61	273.49	212.68	161.21	117.11	77.40	44.72	24.75	13.78
140.0	322.31	301.16	248.91	181.69	127.41	85.73	43.09	25.48	13.39
150.0	321.24	314.16	295.20	267.64	199.74	115.54	53.38	26.10	15.53
160.0	307.58	309.32	302.91	290.98	256.56	165.83	55.18	27.96	13.39
170.0	282.71	296.66	312.19	317.08	298.13	244.80	133.88	36.17	14.74
180.0	253.07	258.36	265.84	269.10	262.97	224.66	118.13	37.01	13.78
190.0	222.53	222.19	221.57	217.80	208.63	181.58	115.99	50.74	20.64
200.0	190.52	183.04	173.08	157.95	136.97	115.03	84.32	57.54	21.94
210.0	153.34	139.89	125.27	111.83	98.44	81.84	64.58	42.58	18.90
220.0	129.04	118.69	108.45	98.10	86.40	73.58	55.80	39.60	11.42
230.0	115.37	106.03	97.20	87.30	76.39	63.96	45.51	22.05	8.83
240.0	109.29	101.59	93.21	84.66	75.71	64.69	43.09	21.26	11.14
250.0	102.32	94.39	86.51	78.53	70.09	60.92	38.48	17.16	8.55
260.0	101.36	94.44	86.12	78.58	70.59	62.27	46.74	13.11	5.51
270.0	100.24	92.87	84.99	77.46	69.13	60.53	43.37	6.64	5.34
280.0	104.06	96.41	88.03	81.06	72.45	63.90	48.38	12.26	6.47
290.0	107.16	99.39	91.01	82.97	75.15	64.58	39.04	18.56	9.39
300.0	115.71	108.39	100.07	91.97	82.52	69.98	45.68	23.01	12.71
310.0	125.33	116.55	107.78	97.54	86.51	69.75	48.49	25.88	13.11
320.0	144.39	133.09	122.46	112.56	99.06	81.39	60.47	42.41	16.14
330.0	172.24	158.85	142.88	129.15	113.74	90.51	67.05	45.39	20.98
340.0	213.75	207.23	196.59	181.86	156.32	127.46	86.06	56.81	23.96
350.0	246.49	246.83	245.14	238.44	224.78	191.87	120.94	52.43	21.26
360.0	275.91	282.38	287.33	285.47	274.33	241.88	161.78	55.74	18.28

Intensity data(cd)

C/γ(°)	90.0
0.0	3.60
10.0	2.87
20.0	2.87
30.0	2.93
40.0	2.93
50.0	3.09
60.0	3.09
70.0	3.32
80.0	3.32
90.0	3.71
100.0	3.99
110.0	5.34
120.0	5.68
130.0	6.19
140.0	6.02
150.0	4.89
160.0	4.50
170.0	3.77
180.0	3.66
190.0	2.98
200.0	2.93
210.0	2.98
220.0	3.04
230.0	3.04
240.0	3.21
250.0	3.26
260.0	3.49
270.0	3.71
280.0	4.39
290.0	4.78
300.0	6.02
310.0	6.19
320.0	5.63
330.0	5.29
340.0	4.22
350.0	4.05
360.0	3.60