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Nata

LumCAT: LM01D01538BY

Luminaire:

Report No: 200417-B013

Voltage(V): 35.8100

Test No: 200417-C013

Current(A): 0.1000

LampCAT: CREE JR 5050

Power (W): 3.5810

Lamp flux(lm): 371.5

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): 349.73

Efficiency(%): 94.14%

Lumens(lm)/Power(W): 97.66

Central intensity(cd): 262.561

Maximum intensity(cd): 262.624

Angle of maximum intensity: C=0.0 γ =1.0

Beam Angle(50%Imax): [C0/180]Total=63.9

[C90/270]Total=63.9

Field angle(10%Imax): [C0/180]Total=114.8

[C90/270]Total=114.8

Maximum s/h(1/2): C0_180=0.94 C90_270=0.94

Maximum s/h(1/4): C0_180=0.96 C90_270=0.96

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 94.14%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 89.569%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	262.561	0.000	0	.000%	.000%
1.0	262.624	0.251	0.251	.068%	.072%
2.0	262.427	0.754	1.005	.203%	.287%
3.0	261.991	1.254	2.259	.338%	.646%
4.0	261.352	1.752	4.011	.472%	1.147%
5.0	260.416	2.245	6.256	.604%	1.789%
6.0	259.256	2.731	8.987	.735%	2.570%
7.0	257.871	3.210	12.196	.864%	3.487%
8.0	256.198	3.679	15.875	.990%	4.539%
9.0	254.032	4.135	20.011	1.113%	5.722%
10.0	251.494	4.575	24.585	1.232%	7.030%
11.0	248.864	5.000	29.585	1.346%	8.459%
12.0	246.164	5.411	34.996	1.457%	10.007%
13.0	242.592	5.800	40.797	1.561%	11.665%
14.0	238.908	6.163	46.96	1.659%	13.427%
15.0	235.055	6.507	53.467	1.752%	15.288%
16.0	230.477	6.821	60.288	1.836%	17.238%
17.0	225.478	7.100	67.388	1.911%	19.269%
18.0	220.605	7.355	74.743	1.980%	21.372%
19.0	215.445	7.586	82.33	2.042%	23.541%
20.0	209.890	7.785	90.115	2.096%	25.767%
21.0	204.005	7.948	98.062	2.139%	28.039%
22.0	197.986	8.078	106.14	2.175%	30.349%
23.0	191.756	8.178	114.318	2.201%	32.688%
24.0	185.316	8.244	122.562	2.219%	35.045%
25.0	178.755	8.278	130.84	2.228%	37.412%
26.0	172.048	8.281	139.121	2.229%	39.780%
27.0	165.741	8.264	147.385	2.225%	42.143%
28.0	158.590	8.211	155.597	2.210%	44.491%
29.0	151.601	8.115	163.712	2.185%	46.811%
30.0	145.125	8.012	171.724	2.157%	49.102%
31.0	138.192	7.884	179.608	2.122%	51.356%
32.0	130.781	7.706	187.314	2.074%	53.560%
33.0	124.355	7.516	194.83	2.023%	55.709%
34.0	117.809	7.329	202.159	1.973%	57.804%
35.0	110.566	7.092	209.251	1.909%	59.832%
36.0	104.386	6.844	216.095	1.842%	61.789%
37.0	98.262	6.609	222.705	1.779%	63.679%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	92.039	6.352	229.057	1.710%	65.495%
39.0	85.915	6.074	235.131	1.635%	67.232%
40.0	80.705	5.811	240.942	1.564%	68.894%
41.0	75.424	5.560	246.501	1.497%	70.483%
42.0	70.530	5.303	251.804	1.427%	72.000%
43.0	65.820	5.051	256.855	1.360%	73.444%
44.0	61.474	4.804	261.659	1.293%	74.818%
45.0	57.509	4.573	266.232	1.231%	76.125%
46.0	53.592	4.345	270.577	1.170%	77.368%
47.0	49.992	4.120	274.697	1.109%	78.546%
48.0	46.856	3.915	278.612	1.054%	79.665%
49.0	43.938	3.729	282.34	1.004%	80.731%
50.0	40.901	3.537	285.878	.952%	81.743%
51.0	38.405	3.355	289.233	.903%	82.702%
52.0	36.127	3.198	292.431	.861%	83.616%
53.0	33.877	3.045	295.476	.820%	84.487%
54.0	31.809	2.895	298.371	.779%	85.315%
55.0	30.080	2.763	301.134	.744%	86.105%
56.0	28.434	2.644	303.778	.712%	86.861%
57.0	26.789	2.525	306.303	.680%	87.583%
58.0	25.404	2.414	308.717	.650%	88.273%
59.0	24.096	2.314	311.031	.623%	88.935%
60.0	22.830	2.217	313.248	.597%	89.569%
61.0	21.642	2.122	315.37	.571%	90.175%
62.0	20.545	2.033	317.403	.547%	90.757%
63.0	19.561	1.951	319.354	.525%	91.314%
64.0	18.577	1.871	321.225	.504%	91.850%
65.0	17.663	1.793	323.018	.483%	92.362%
66.0	16.826	1.721	324.739	.463%	92.854%
67.0	16.073	1.654	326.393	.445%	93.327%
68.0	15.265	1.587	327.981	.427%	93.781%
69.0	14.590	1.523	329.504	.410%	94.217%
70.0	13.964	1.466	330.97	.395%	94.636%
71.0	13.373	1.413	332.383	.380%	95.040%
72.0	12.790	1.360	333.744	.366%	95.429%
73.0	12.319	1.313	335.057	.353%	95.805%
74.0	11.855	1.271	336.328	.342%	96.168%
75.0	11.391	1.228	337.556	.331%	96.519%

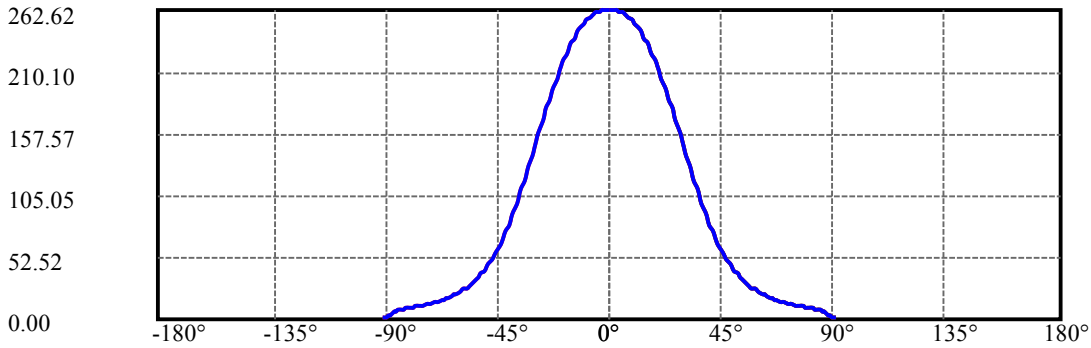
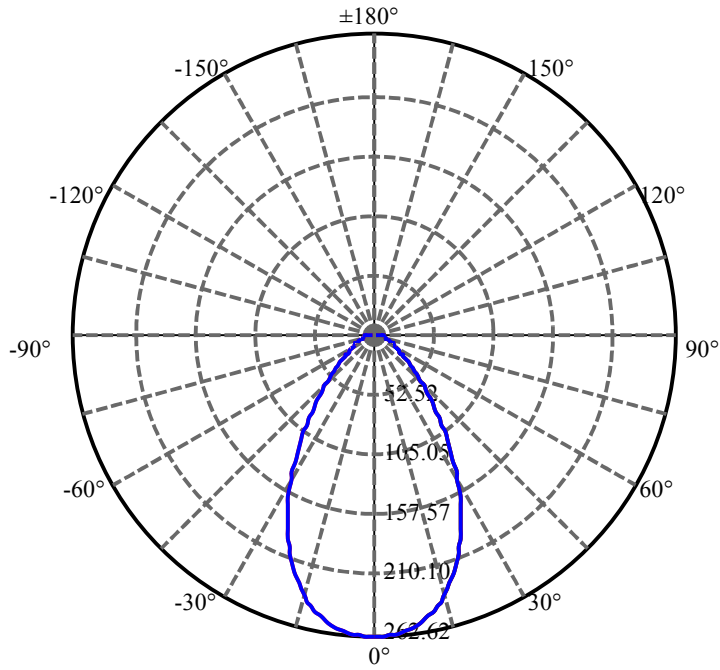
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	10.997	1.188	338.744	.320%	96.859%
77.0	10.610	1.152	339.896	.310%	97.188%
78.0	10.223	1.115	341.011	.300%	97.507%
79.0	9.780	1.075	342.086	.289%	97.815%
80.0	9.436	1.036	343.122	.279%	98.111%
81.0	9.127	1.004	344.126	.270%	98.398%
82.0	8.789	0.972	345.098	.262%	98.676%
83.0	8.353	0.932	346.029	.251%	98.942%
84.0	7.755	0.878	346.907	.236%	99.193%
85.0	7.186	0.815	347.723	.220%	99.426%
86.0	5.878	0.714	348.437	.192%	99.630%
87.0	4.071	0.545	348.981	.147%	99.786%
88.0	2.447	0.357	349.338	.096%	99.888%
89.0	1.631	0.224	349.562	.060%	99.952%
90.0	1.427	0.168	349.729	.045%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	171.72	46.23%	49.10%
0-40	240.94	64.86%	68.89%
0-60	313.25	84.32%	89.57%
0-90	349.56	94.10%	99.95%
0-120	349.56	94.10%	99.95%
0-180	349.73	94.14%	100.00%
60-90	38.53	10.37%	11.02%
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%
0-48.31	279.78	75.32%	80.00%

ZONAL LUMEN SUMMARY

0-10	24.59
10-20	65.53
20-30	81.61
30-40	69.22
40-50	44.94
50-60	27.37
60-70	17.72
70-80	12.15
80-90	6.44
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: —————

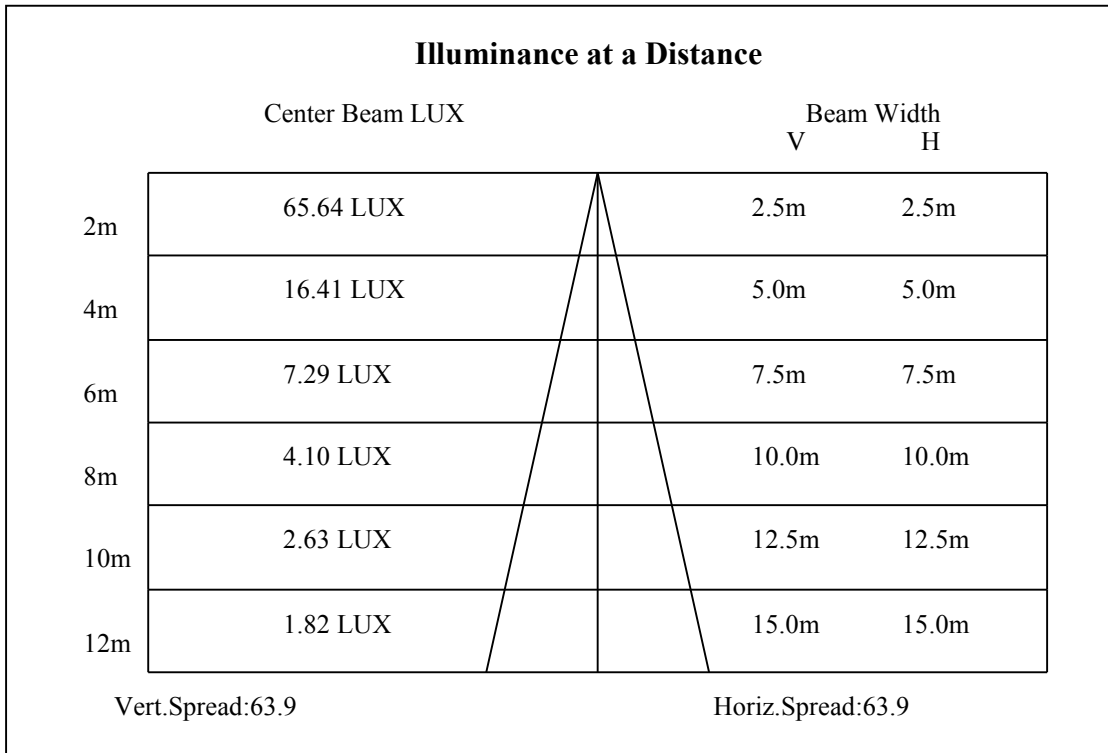
C90/C270: —————

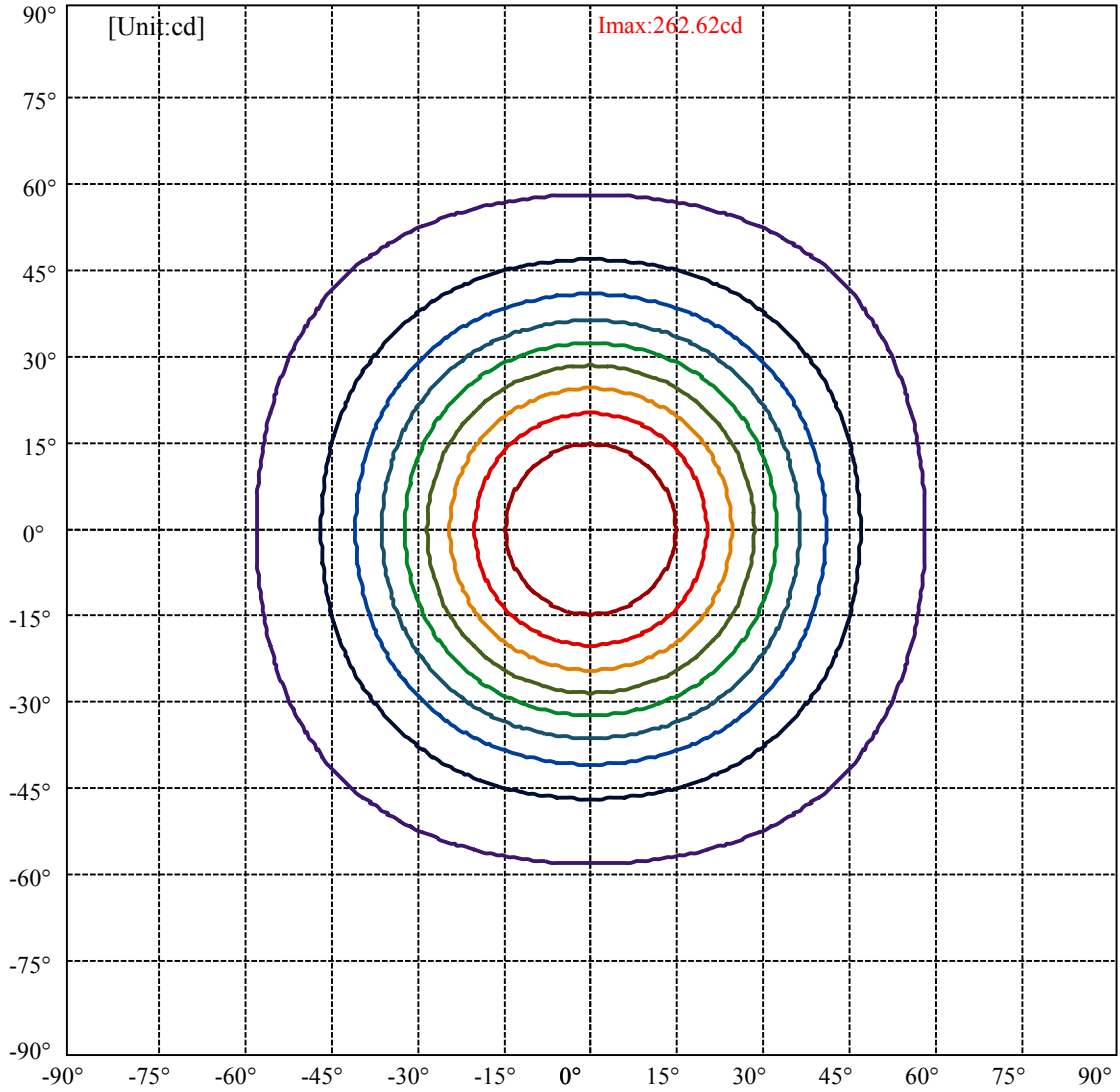
Field angle(10%Imax):C0/180Left:58.4 Right:56.4

:C90/270Left:58.4 Right:56.4

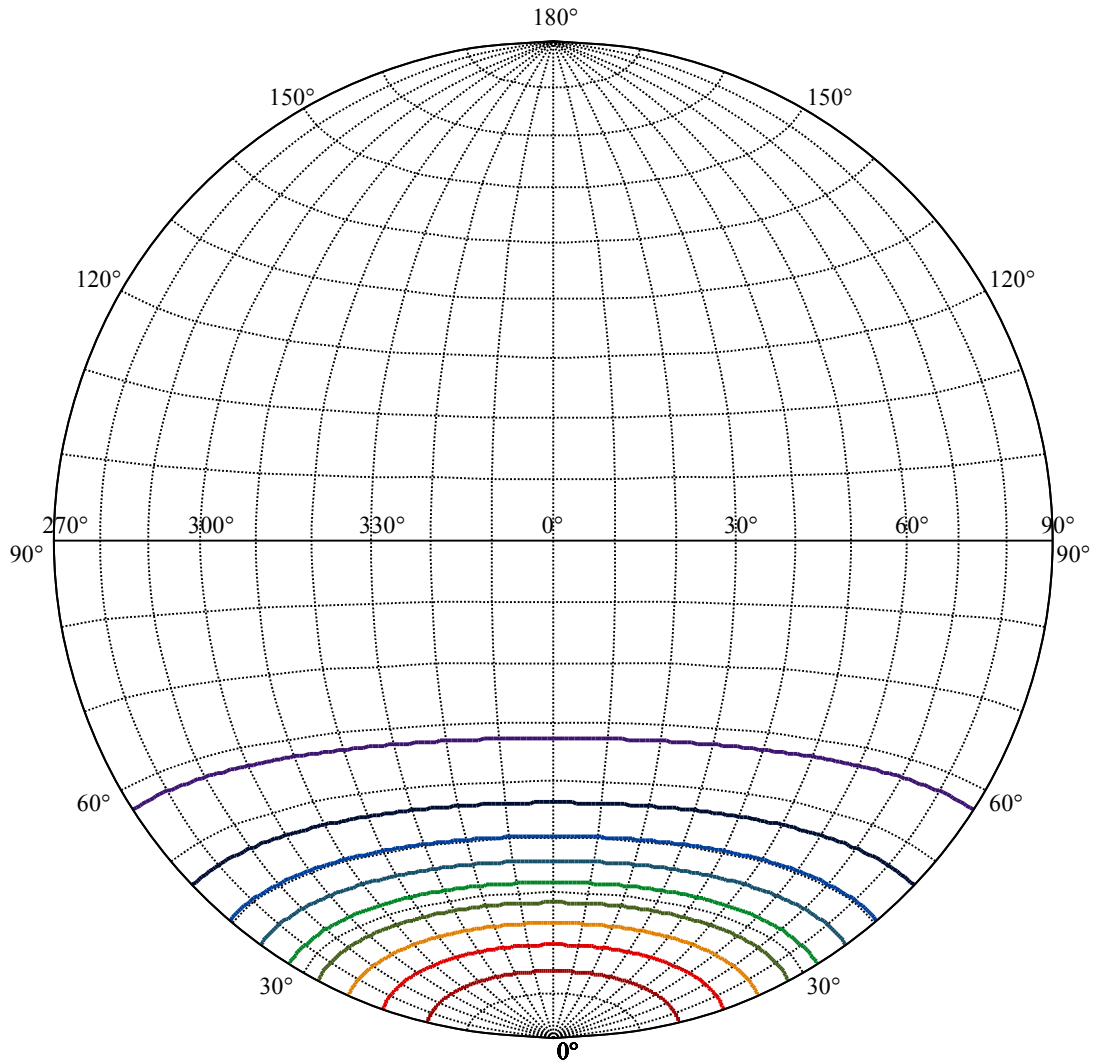
Beam Angle(50%Imax):C0/180Left:32.9 Right:30.9

:C90/270Left:32.9 Right:30.9





(10%Imax) 26.2624	—
(20%Imax) 52.5248	—
(30%Imax) 78.7873	—
(40%Imax) 105.05	—
(50%Imax) 131.312	—
(60%Imax) 157.575	—
(70%Imax) 183.837	—
(80%Imax) 210.099	—
(90%Imax) 236.362	—



House

[Unit:cd]

Road

I_{max}:262.62

(10%I_{max}) 26.2624

(20%I_{max}) 52.5248

(30%I_{max}) 78.7873

(40%I_{max}) 105.05

(50%I_{max}) 131.312

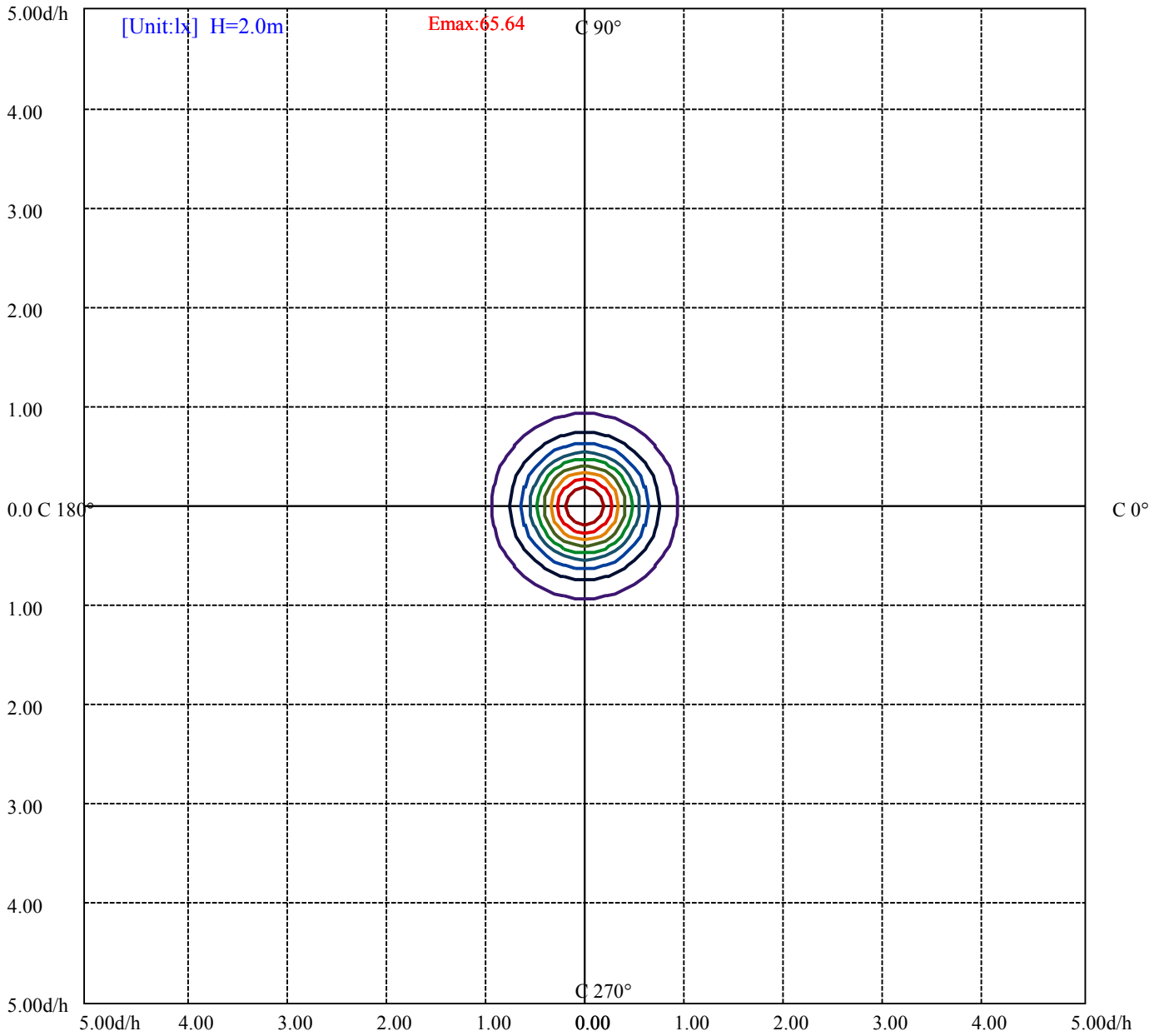
(60%I_{max}) 157.575

(70%I_{max}) 183.837

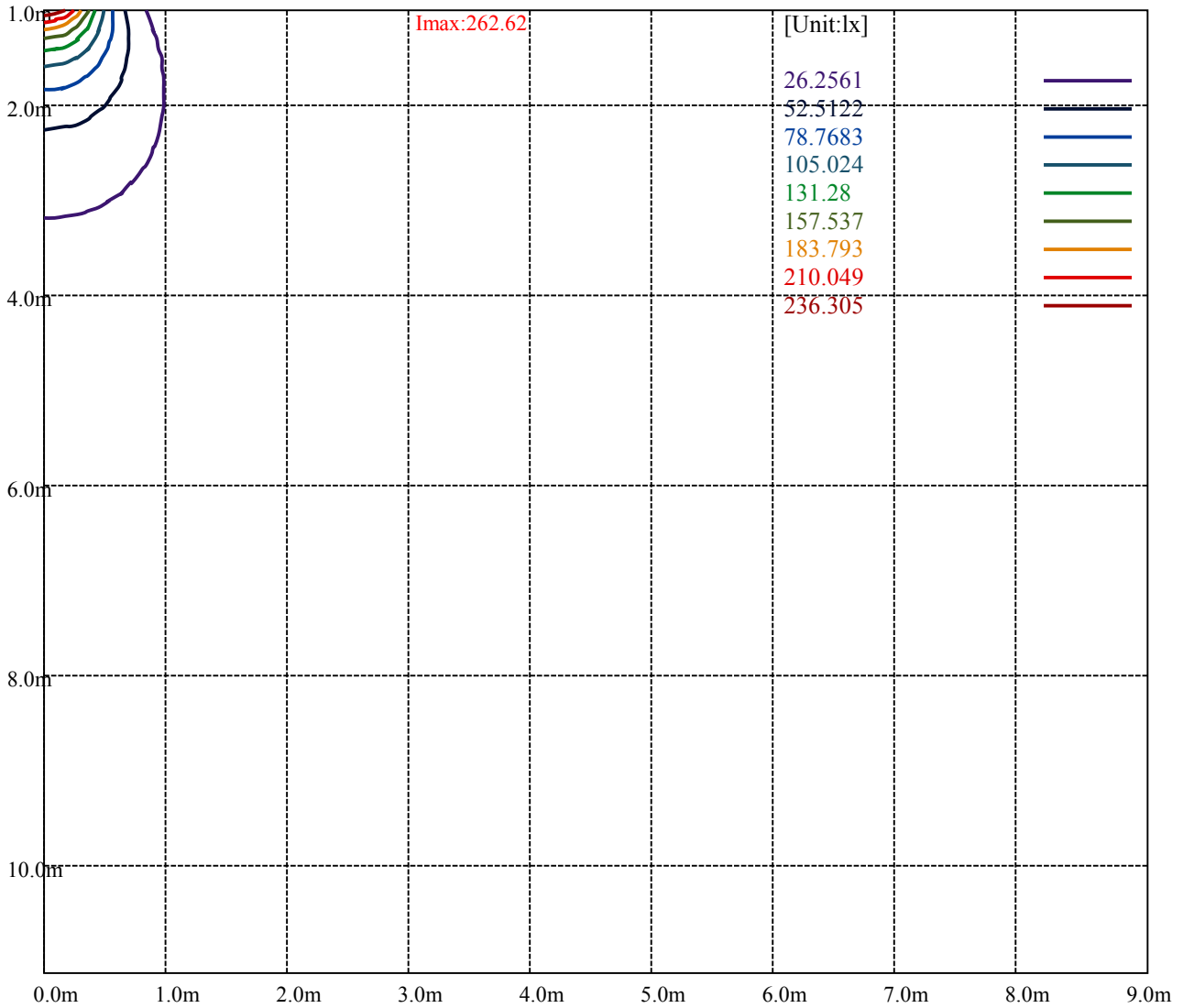
(80%I_{max}) 210.099

(90%I_{max}) 236.362





- (10%Emax) 6.564025
- (20%Emax) 13.12805
- (30%Emax) 19.69208
- (40%Emax) 26.256
- (50%Emax) 32.82
- (60%Emax) 39.38425
- (70%Emax) 45.94825
- (80%Emax) 52.51225
- (90%Emax) 59.07625



Luminance Table

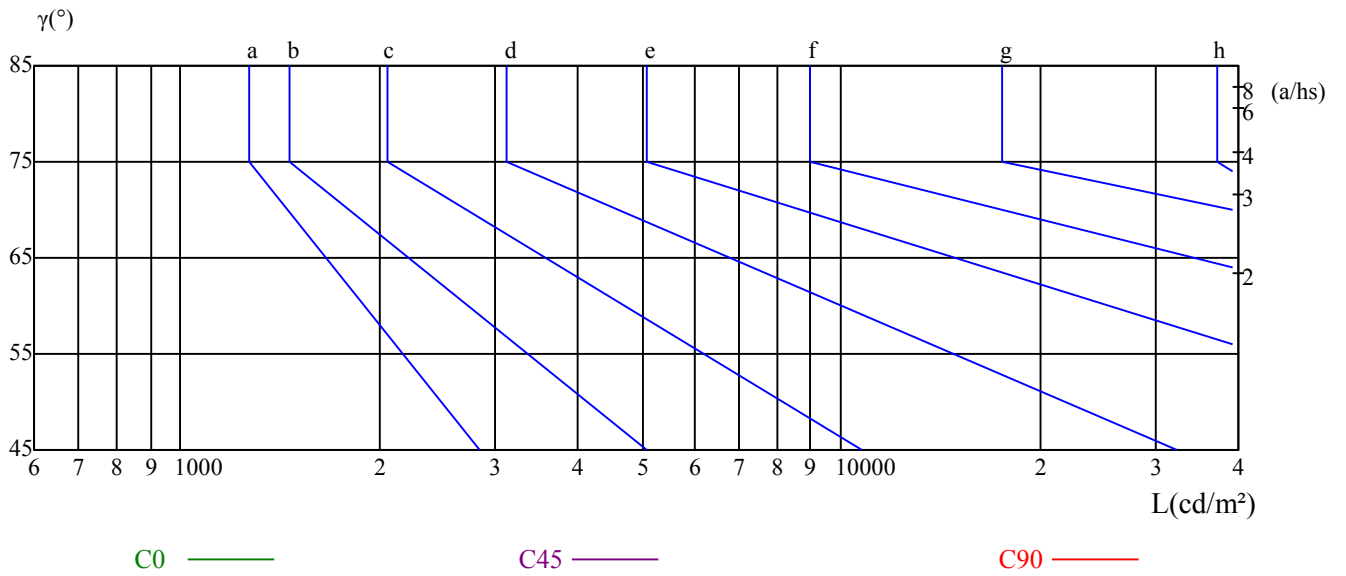
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

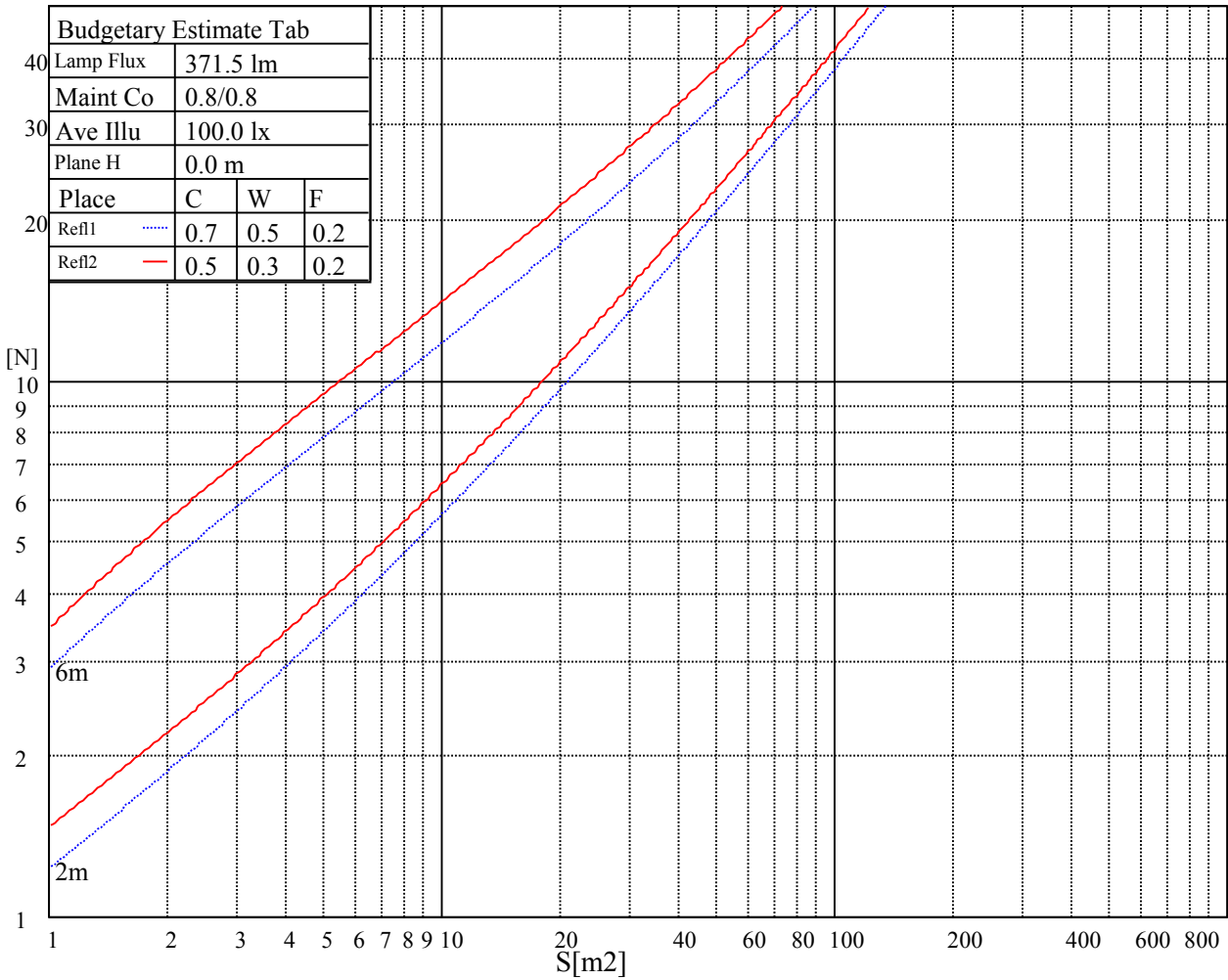
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

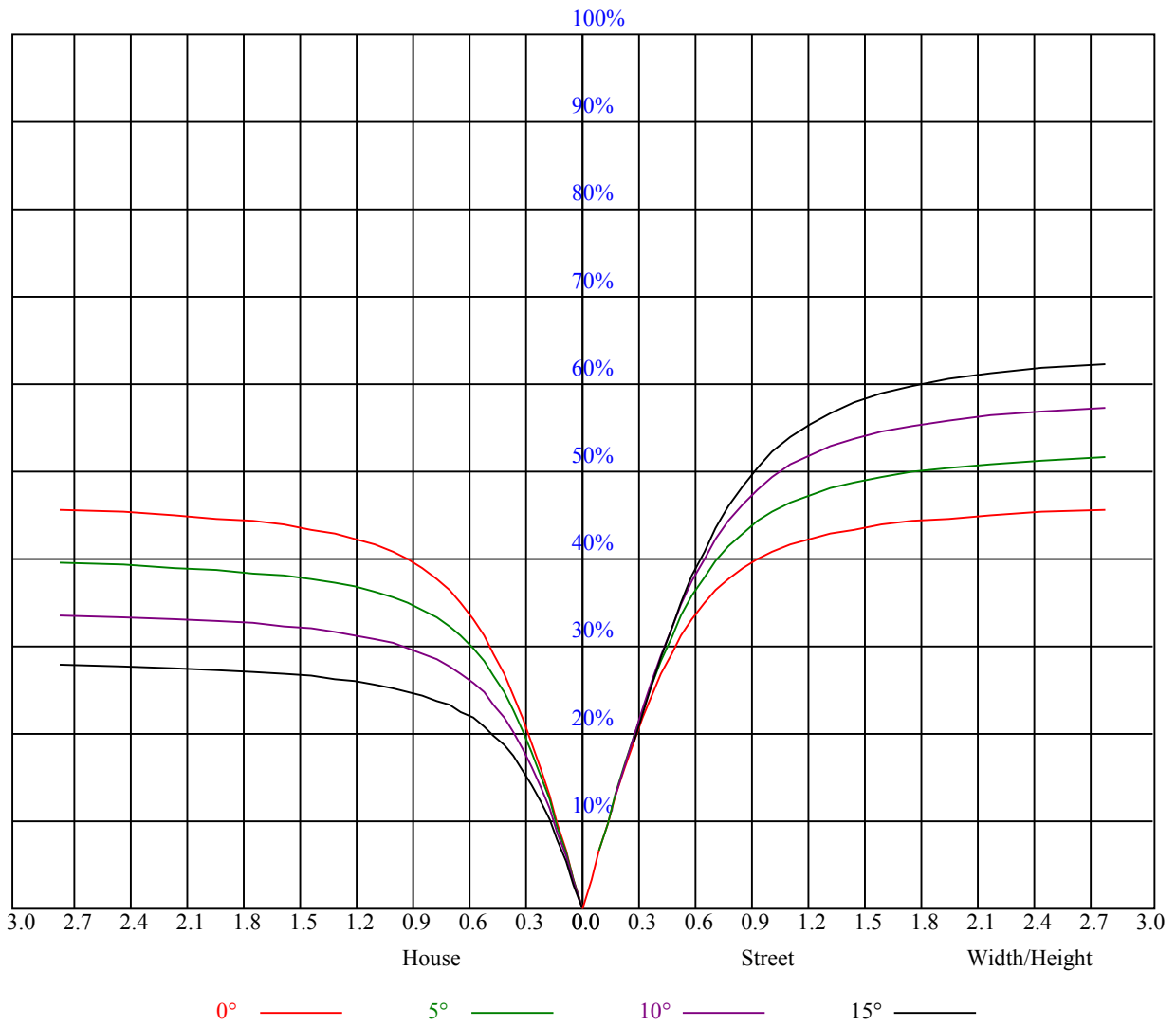
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve





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	1.12	1.12	1.12	1.09	1.09	1.09	1.05	1.05	1.05	1.00	1.00	1.00	0.96	0.96	0.96	0.94
1	1.01	0.97	0.95	0.99	0.96	0.93	0.95	0.92	0.90	0.91	0.89	0.87	0.88	0.86	0.85	0.83
2	0.91	0.86	0.81	0.89	0.85	0.81	0.86	0.82	0.79	0.83	0.80	0.77	0.80	0.78	0.75	0.74
3	0.83	0.76	0.71	0.81	0.75	0.71	0.79	0.74	0.70	0.76	0.72	0.69	0.74	0.70	0.67	0.66
4	0.75	0.69	0.64	0.74	0.68	0.63	0.72	0.67	0.62	0.70	0.65	0.62	0.68	0.64	0.61	0.59
5	0.69	0.62	0.57	0.68	0.62	0.57	0.66	0.61	0.56	0.65	0.60	0.56	0.63	0.59	0.55	0.54
6	0.64	0.57	0.52	0.63	0.56	0.52	0.62	0.56	0.51	0.60	0.55	0.51	0.59	0.54	0.50	0.49
7	0.59	0.52	0.47	0.59	0.52	0.47	0.57	0.51	0.47	0.56	0.51	0.47	0.55	0.50	0.46	0.45
8	0.55	0.48	0.44	0.54	0.48	0.43	0.53	0.47	0.43	0.52	0.47	0.43	0.51	0.46	0.43	0.41
9	0.51	0.45	0.40	0.51	0.45	0.40	0.50	0.44	0.40	0.49	0.44	0.40	0.48	0.43	0.40	0.38
10	0.48	0.42	0.37	0.48	0.41	0.37	0.47	0.41	0.37	0.46	0.41	0.37	0.45	0.40	0.37	0.36



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	262.63	261.68	260.27	258.98	257.68	256.05	253.91	251.78	248.85
45.0	262.46	261.96	261.23	260.16	259.43	258.13	256.95	255.54	253.58
90.0	263.03	263.48	263.64	263.70	263.81	263.70	263.25	262.41	261.28
135.0	262.13	263.19	264.32	265.33	265.84	266.12	266.18	265.89	265.44
180.0	262.63	263.87	264.60	265.05	265.33	265.33	265.11	264.66	263.98
225.0	262.46	263.14	263.53	263.48	262.91	262.46	261.84	261.11	259.82
270.0	263.03	262.74	262.18	261.17	259.65	257.96	255.99	253.97	251.94
315.0	262.13	260.94	259.65	258.08	256.16	253.58	250.82	247.61	244.69
360.0	262.63	261.68	260.27	258.98	257.68	256.05	253.91	251.78	248.85
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	246.04	243.45	240.13	237.04	233.04	228.83	224.55	220.05	214.59
45.0	251.33	248.06	245.03	242.21	239.12	234.73	231.13	226.69	220.61
90.0	259.31	257.23	255.21	253.01	250.31	246.88	243.17	238.61	234.23
135.0	264.38	263.36	261.96	260.33	257.57	254.87	251.33	247.61	243.90
180.0	263.03	261.51	259.48	257.34	254.76	251.49	248.01	244.41	239.18
225.0	257.68	255.43	253.18	250.26	247.28	244.13	239.91	235.74	230.63
270.0	248.91	245.81	242.44	239.46	234.45	230.91	227.59	222.02	216.73
315.0	241.59	237.09	233.49	229.67	224.21	219.43	214.76	208.69	203.96
360.0	246.04	243.45	240.13	237.04	233.04	228.83	224.55	220.05	214.59
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	209.64	204.81	198.45	192.77	187.14	180.51	174.04	168.08	161.16
45.0	215.78	210.83	205.14	198.56	192.54	185.68	179.78	172.80	165.49
90.0	229.16	224.21	218.98	212.01	206.10	199.91	191.48	184.89	178.09
135.0	239.29	234.39	228.49	222.24	216.45	209.93	202.73	196.71	190.01
180.0	234.90	230.29	224.33	219.38	213.53	206.10	199.91	193.56	185.40
225.0	225.45	220.89	215.44	209.42	203.91	197.78	191.14	184.84	177.81
270.0	212.40	206.33	200.93	196.09	189.28	184.05	178.65	171.68	165.94
315.0	198.23	191.81	187.37	181.58	174.94	170.10	164.81	157.50	152.49
360.0	209.64	204.81	198.45	192.77	187.14	180.51	174.04	168.08	161.16
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	155.25	148.50	141.41	135.39	128.87	122.40	116.61	111.04	104.06
45.0	159.36	152.44	145.74	139.50	133.59	125.49	118.86	113.74	106.54
90.0	171.62	163.41	156.54	149.51	141.86	134.33	127.63	120.38	113.23
135.0	181.41	174.99	168.19	160.20	151.54	145.35	137.19	129.04	122.12
180.0	179.38	171.45	162.34	156.04	148.84	138.99	132.86	125.83	116.27
225.0	171.73	164.19	156.94	150.36	143.66	135.39	128.70	122.12	113.85
270.0	160.09	152.83	146.87	140.85	133.43	127.52	121.50	115.03	108.62
315.0	147.09	140.91	134.78	129.15	123.75	116.78	111.49	105.30	99.84
360.0	155.25	148.50	141.41	135.39	128.87	122.40	116.61	111.04	104.06
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	98.66	93.21	87.08	81.39	76.73	71.89	67.28	63.45	59.29
45.0	100.24	95.46	88.59	83.08	79.03	72.96	68.46	64.35	59.51
90.0	106.88	100.07	94.05	87.75	81.84	76.73	71.89	66.26	62.10
135.0	114.58	107.78	100.58	93.77	87.92	82.07	75.43	70.59	65.98
180.0	110.53	103.95	96.98	90.45	84.94	78.92	73.91	68.57	63.62
225.0	107.61	101.36	95.29	88.14	82.86	77.23	72.45	67.50	63.28
270.0	102.71	96.19	90.56	84.77	79.26	74.64	69.75	65.03	61.20
315.0	93.88	88.09	83.19	77.96	73.07	68.96	65.08	60.81	56.81
360.0	98.66	93.21	87.08	81.39	76.73	71.89	67.28	63.45	59.29

Intensity data(cd)

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	55.91	52.09	48.60	45.73	43.03	40.28	37.80	35.72	33.36
45.0	56.08	52.71	48.77	45.84	43.48	40.05	37.80	35.66	33.47
90.0	58.16	53.72	50.34	47.19	44.04	41.06	38.59	36.11	34.03
135.0	60.64	56.76	53.10	49.39	45.90	43.03	40.05	37.63	35.10
180.0	59.57	55.41	51.53	48.32	45.34	41.96	39.43	37.01	34.59
225.0	58.73	54.56	51.08	47.59	44.66	41.63	38.87	36.73	34.65
270.0	57.49	53.21	49.95	46.91	43.71	40.78	38.42	35.89	33.58
315.0	53.49	50.29	46.58	43.88	41.34	38.42	36.28	34.26	32.23
360.0	55.91	52.09	48.60	45.73	43.03	40.28	37.80	35.72	33.36
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	31.61	30.04	28.52	26.83	25.59	24.30	23.01	21.99	20.87
45.0	31.44	29.76	28.13	26.55	25.26	23.85	22.78	21.60	20.48
90.0	31.89	29.98	28.35	26.72	25.20	23.96	22.78	21.43	20.36
135.0	32.79	30.94	29.08	27.34	25.88	24.64	23.06	21.94	20.81
180.0	32.34	30.60	28.91	27.06	25.65	24.19	22.95	21.66	20.48
225.0	32.29	30.60	28.91	27.11	25.76	24.47	23.18	21.94	20.93
270.0	31.78	29.93	28.41	26.83	25.37	24.13	22.78	21.60	20.53
315.0	30.32	28.80	27.17	25.88	24.53	23.23	22.11	20.98	19.91
360.0	31.61	30.04	28.52	26.83	25.59	24.30	23.01	21.99	20.87
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	20.03	19.01	18.17	17.38	16.76	15.92	15.24	14.68	14.01
45.0	19.52	18.68	17.66	16.88	16.14	15.30	14.68	14.06	13.39
90.0	19.41	18.28	17.38	16.54	15.75	14.91	14.23	13.44	12.88
135.0	19.63	18.56	17.66	16.76	15.92	15.19	14.46	13.89	13.28
180.0	19.46	18.45	17.55	16.59	15.86	14.96	14.34	13.78	13.22
225.0	19.80	18.79	17.94	17.04	16.26	15.47	14.74	14.12	13.61
270.0	19.58	18.56	17.72	16.93	16.09	15.36	14.68	13.95	13.33
315.0	19.07	18.28	17.21	16.48	15.81	15.02	14.34	13.78	13.28
360.0	20.03	19.01	18.17	17.38	16.76	15.92	15.24	14.68	14.01
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	13.44	12.99	12.49	11.93	11.53	11.14	10.69	10.29	9.96
45.0	12.88	12.43	11.93	11.48	11.03	10.46	10.07	9.06	8.44
90.0	12.26	11.64	11.14	10.63	10.18	9.73	9.34	8.83	8.49
135.0	12.71	12.26	11.81	11.31	10.97	10.63	10.18	9.90	9.62
180.0	12.54	12.09	11.59	11.08	10.69	10.29	9.90	9.56	9.23
225.0	12.99	12.54	12.21	11.87	11.59	11.31	10.91	10.58	10.35
270.0	12.77	12.26	11.81	11.31	10.80	10.46	10.13	9.73	9.39
315.0	12.71	12.32	11.87	11.53	11.19	10.86	10.58	10.29	10.01
360.0	13.44	12.99	12.49	11.93	11.53	11.14	10.69	10.29	9.96
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	9.51	9.11	8.61	8.04	7.59	7.03	5.74	3.15	1.86
45.0	8.38	8.38	7.99	7.09	6.64	5.23	2.81	1.74	1.41
90.0	8.16	7.76	7.26	6.47	5.91	3.83	2.03	1.41	1.41
135.0	9.23	8.83	8.33	7.48	6.92	5.06	2.87	1.74	1.41
180.0	8.78	8.33	7.76	7.26	6.75	4.78	2.53	1.58	1.41
225.0	10.01	9.68	9.28	8.83	8.04	7.09	5.34	2.81	1.63
270.0	9.11	8.72	8.38	7.99	7.59	6.81	6.19	3.94	2.19
315.0	9.84	9.51	9.23	8.89	8.04	7.20	5.06	3.21	1.74
360.0	9.51	9.11	8.61	8.04	7.59	7.03	5.74	3.15	1.86

Intensity data(cd)

C/ γ (°)	90.0
0.0	1.46
45.0	1.41
90.0	1.41
135.0	1.41
180.0	1.41
225.0	1.41
270.0	1.52
315.0	1.41
360.0	1.46