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Nata

LumCAT: LN01D02817DA-N

Luminaire: 92.70.307.00

Report No: 211111-B011

Voltage(V): 35.7500

Test No: 211111-C011

Current(A): 0.2510

LampCAT: CITIZEN CLU702-1002C9303H5.3

Power (W): 8.9730

Lamp flux(lm): 1012.5

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 111

Width(mm): 111

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 644.21

Efficiency(%): 63.63%

Lumens(lm)/Power(W): 71.79

Central intensity(cd): 2009.639

Maximum intensity(cd): 2009.639

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=26.1

[C90/270]Total=26.1

Field angle(10%Imax): [C0/180]Total=54.2

[C90/270]Total=54.2

Maximum s/h(1/2): C0_180=0.44 C90_270=0.44

Maximum s/h(1/4): C0_180=0.46 C90_270=0.46

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 63.63%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 95.296%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2009.639	0.000	0	.000%	.000%
1.0	2002.021	1.920	1.92	.190%	.298%
2.0	1975.804	5.709	7.629	.564%	1.184%
3.0	1934.425	9.352	16.981	.924%	2.636%
4.0	1882.142	12.775	29.756	1.262%	4.619%
5.0	1809.691	15.882	45.638	1.569%	7.084%
6.0	1726.411	18.583	64.221	1.835%	9.969%
7.0	1636.184	20.872	85.093	2.061%	13.209%
8.0	1535.351	22.698	107.791	2.242%	16.732%
9.0	1430.933	24.040	131.831	2.374%	20.464%
10.0	1308.178	24.788	156.619	2.448%	24.312%
11.0	1196.500	25.027	181.646	2.472%	28.197%
12.0	1111.718	25.232	206.878	2.492%	32.113%
13.0	1008.196	25.158	232.036	2.485%	36.019%
14.0	908.543	24.534	256.57	2.423%	39.827%
15.0	820.848	23.742	280.312	2.345%	43.512%
16.0	741.070	22.886	303.198	2.260%	47.065%
17.0	656.102	21.758	324.956	2.149%	50.442%
18.0	586.049	20.480	345.437	2.023%	53.622%
19.0	527.715	19.377	364.814	1.914%	56.630%
20.0	466.259	18.192	383.006	1.797%	59.454%
21.0	411.839	16.861	399.868	1.665%	62.071%
22.0	369.109	15.693	415.561	1.550%	64.507%
23.0	327.610	14.619	430.18	1.444%	66.776%
24.0	294.111	13.593	443.773	1.343%	68.886%
25.0	262.801	12.663	456.436	1.251%	70.852%
26.0	229.220	11.614	468.05	1.147%	72.655%
27.0	203.675	10.591	478.641	1.046%	74.299%
28.0	181.582	9.754	488.395	.963%	75.813%
29.0	162.042	8.990	497.385	.888%	77.208%
30.0	145.222	8.296	505.681	.819%	78.496%
31.0	130.530	7.674	513.355	.758%	79.687%
32.0	117.004	7.092	520.447	.700%	80.788%
33.0	105.830	6.565	527.011	.648%	81.807%
34.0	96.135	6.112	533.123	.604%	82.756%
35.0	86.851	5.683	538.806	.561%	83.638%
36.0	78.978	5.280	544.086	.521%	84.458%
37.0	72.615	4.944	549.03	.488%	85.225%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	66.318	4.637	553.668	.458%	85.945%
39.0	60.477	4.328	557.996	.427%	86.617%
40.0	55.959	4.061	562.057	.401%	87.247%
41.0	51.836	3.839	565.895	.379%	87.843%
42.0	47.899	3.624	569.519	.358%	88.406%
43.0	44.830	3.435	572.954	.339%	88.939%
44.0	41.954	3.275	576.229	.324%	89.447%
45.0	39.288	3.122	579.351	.308%	89.932%
46.0	36.965	2.982	582.333	.295%	90.395%
47.0	34.761	2.853	585.186	.282%	90.838%
48.0	32.827	2.732	587.918	.270%	91.262%
49.0	31.169	2.628	590.546	.260%	91.670%
50.0	29.421	2.526	593.073	.250%	92.062%
51.0	27.912	2.426	595.498	.240%	92.438%
52.0	26.680	2.343	597.841	.231%	92.802%
53.0	25.395	2.265	600.106	.224%	93.154%
54.0	24.140	2.183	602.289	.216%	93.493%
55.0	23.147	2.111	604.4	.208%	93.820%
56.0	22.094	2.044	606.444	.202%	94.138%
57.0	20.988	1.970	608.414	.195%	94.443%
58.0	20.084	1.899	610.314	.188%	94.738%
59.0	19.151	1.834	612.148	.181%	95.023%
60.0	18.098	1.760	613.908	.174%	95.296%
61.0	17.134	1.681	615.589	.166%	95.557%
62.0	16.268	1.610	617.198	.159%	95.807%
63.0	15.379	1.539	618.738	.152%	96.046%
64.0	14.520	1.467	620.205	.145%	96.274%
65.0	13.706	1.397	621.602	.138%	96.490%
66.0	12.929	1.329	622.93	.131%	96.697%
67.0	12.227	1.265	624.195	.125%	96.893%
68.0	11.555	1.205	625.4	.119%	97.080%
69.0	10.860	1.143	626.544	.113%	97.257%
70.0	10.330	1.088	627.632	.107%	97.426%
71.0	9.889	1.045	628.677	.103%	97.589%
72.0	9.620	1.014	629.691	.100%	97.746%
73.0	9.493	0.999	630.691	.099%	97.901%
74.0	9.441	0.995	631.686	.098%	98.056%
75.0	9.433	0.997	632.683	.098%	98.211%

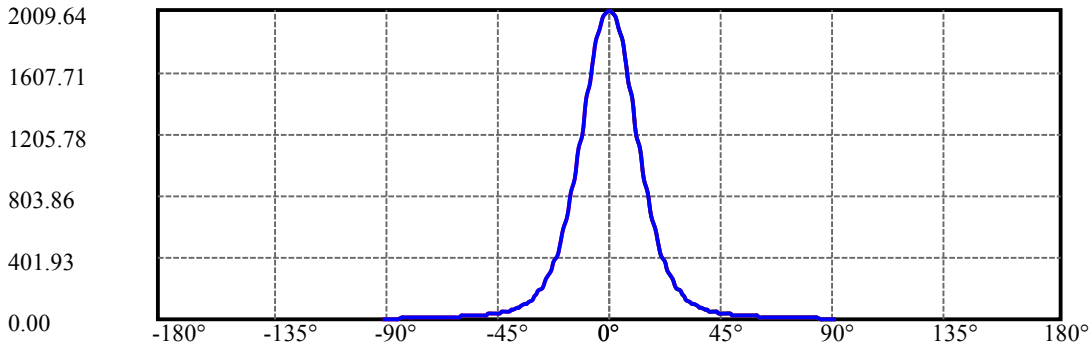
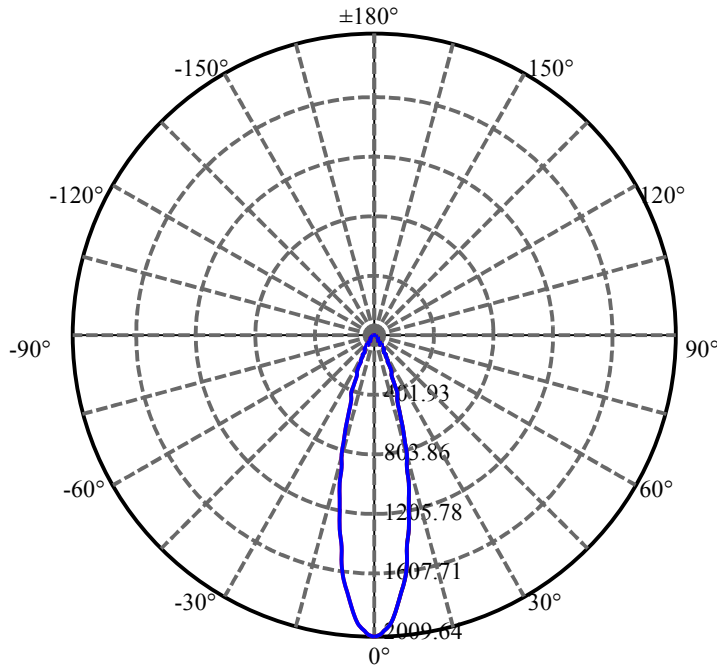
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	9.717	1.017	633.7	.100%	98.368%
77.0	10.098	1.056	634.757	.104%	98.532%
78.0	10.614	1.109	635.865	.110%	98.704%
79.0	10.965	1.159	637.025	.115%	98.884%
80.0	10.554	1.160	638.185	.115%	99.065%
81.0	9.792	1.100	639.285	.109%	99.235%
82.0	8.769	1.007	640.292	.099%	99.392%
83.0	7.663	0.893	641.185	.088%	99.530%
84.0	6.095	0.750	641.934	.074%	99.647%
85.0	4.422	0.574	642.508	.057%	99.736%
86.0	3.451	0.430	642.939	.043%	99.802%
87.0	3.010	0.354	643.292	.035%	99.857%
88.0	2.801	0.318	643.61	.031%	99.907%
89.0	2.696	0.301	643.912	.030%	99.954%
90.0	2.764	0.299	644.211	.030%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	505.68	49.94%	78.50%
0-40	562.06	55.51%	87.25%
0-60	613.91	60.63%	95.30%
0-90	643.91	63.60%	99.95%
0-120	643.91	63.60%	99.95%
0-180	644.21	63.63%	100.00%
60-90	31.76	3.14%	4.93%
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%
0-31.28	515.37	50.90%	80.00%

ZONAL LUMEN SUMMARY

0-10	156.62
10-20	226.39
20-30	122.68
30-40	56.38
40-50	31.02
50-60	20.84
60-70	13.72
70-80	10.55
80-90	5.73
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



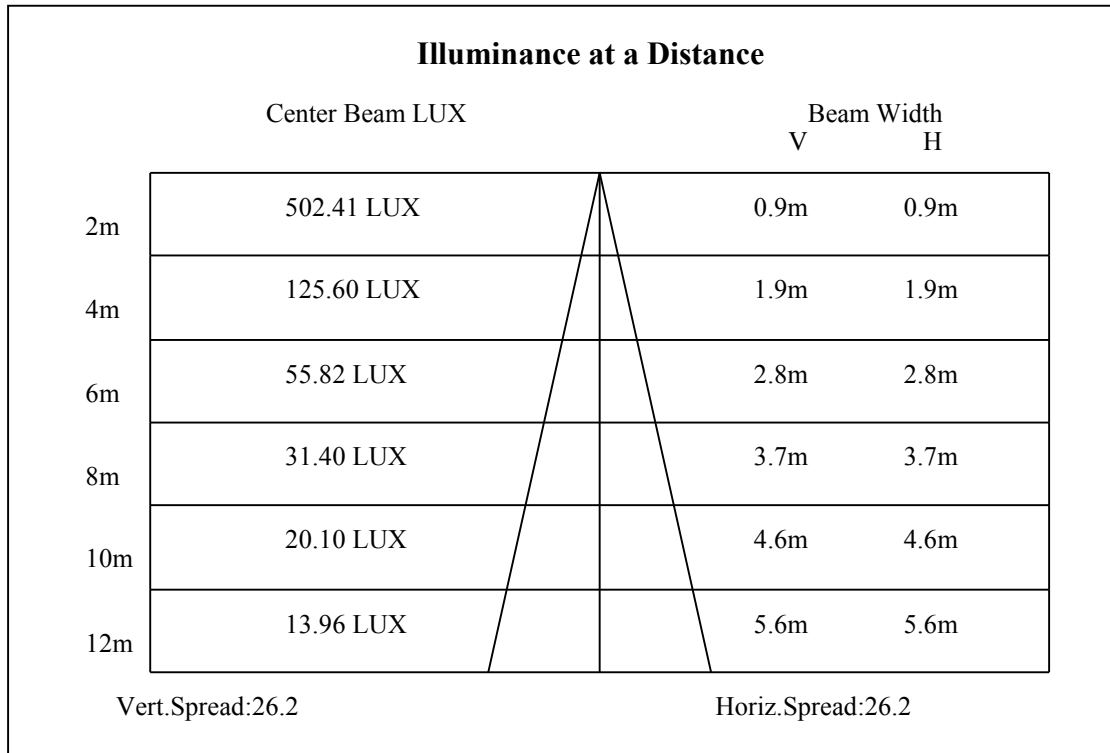
C0(Max): —————

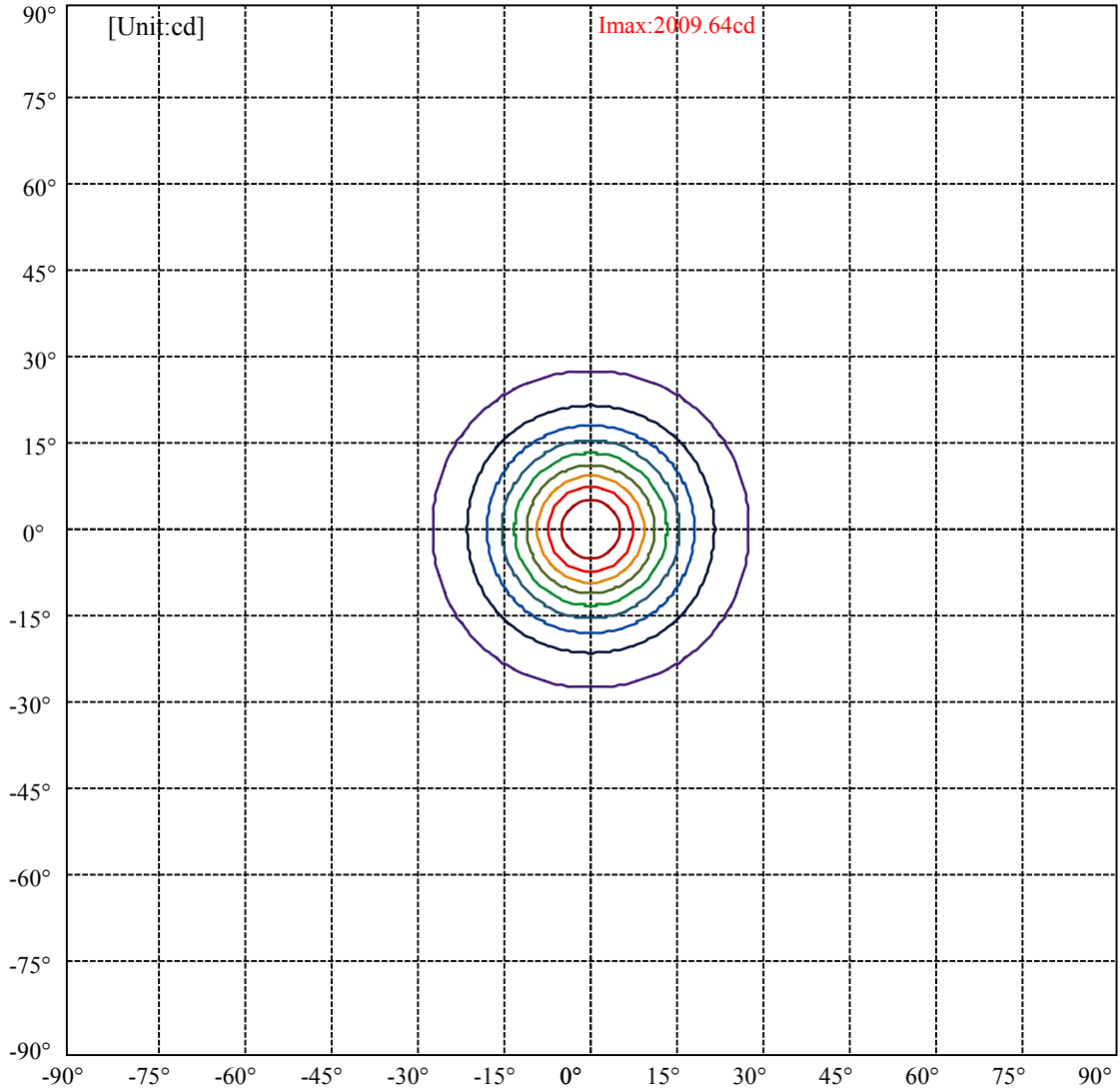
C0/C180: —————

C90/C270: —————

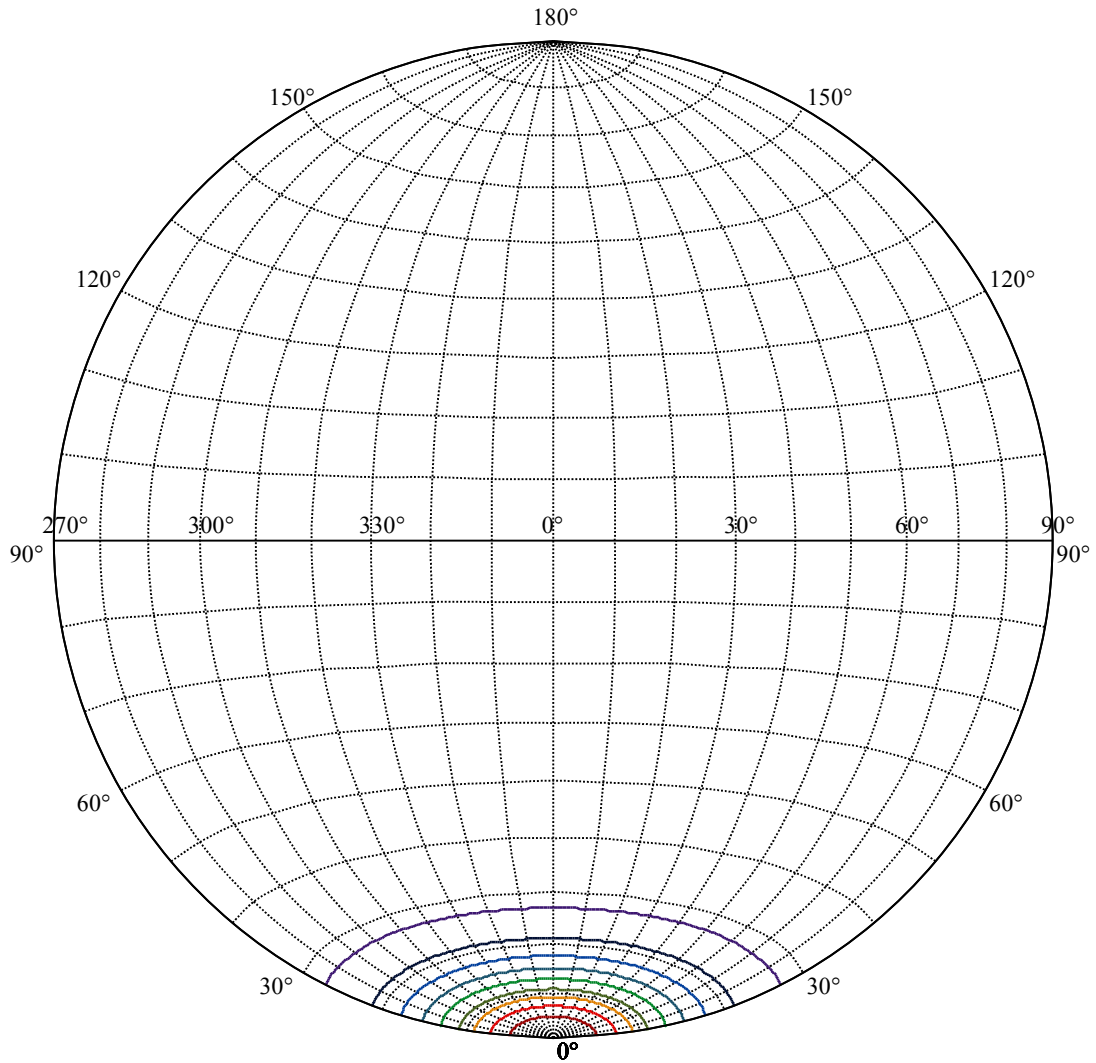
Field angle(10%Imax):C0/180Left:27.1 Right:27.1
:C90/270Left:27.1 Right:27.1

Beam Angle(50%Imax):C0/180Left:13.0 Right:13.0
:C90/270Left:13.0 Right:13.0





(10%Imax) 200.964	—
(20%Imax) 401.928	—
(30%Imax) 602.892	—
(40%Imax) 803.856	—
(50%Imax) 1004.82	—
(60%Imax) 1205.78	—
(70%Imax) 1406.75	—
(80%Imax) 1607.71	—
(90%Imax) 1808.68	—



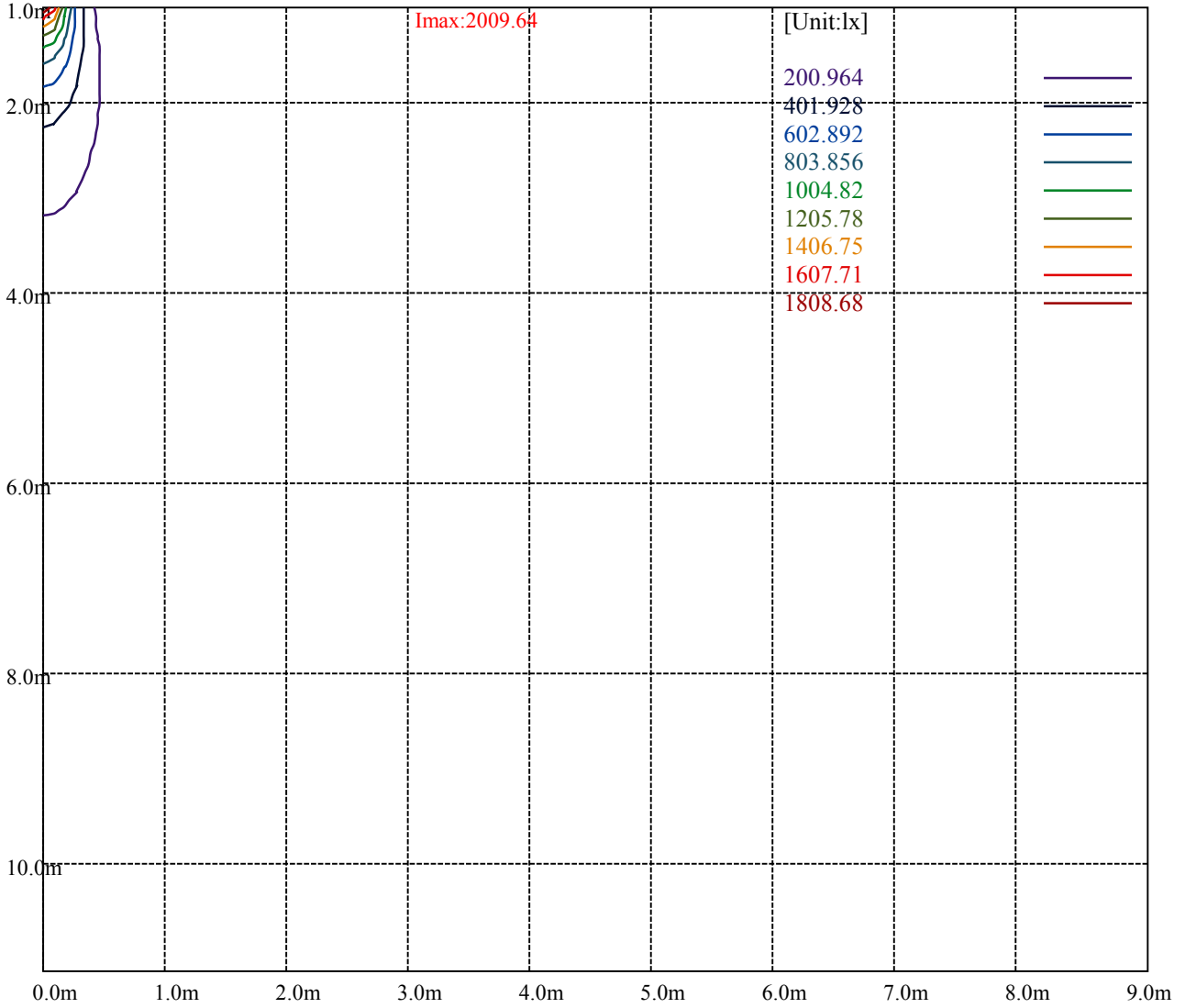
House

[Unit:cd]

Road

I_{max}:2009.64

(10%I _{max})	200.964	—
(20%I _{max})	401.928	—
(30%I _{max})	602.892	—
(40%I _{max})	803.856	—
(50%I _{max})	1004.82	—
(60%I _{max})	1205.78	—
(70%I _{max})	1406.75	—
(80%I _{max})	1607.71	—
(90%I _{max})	1808.68	—



Luminance Table

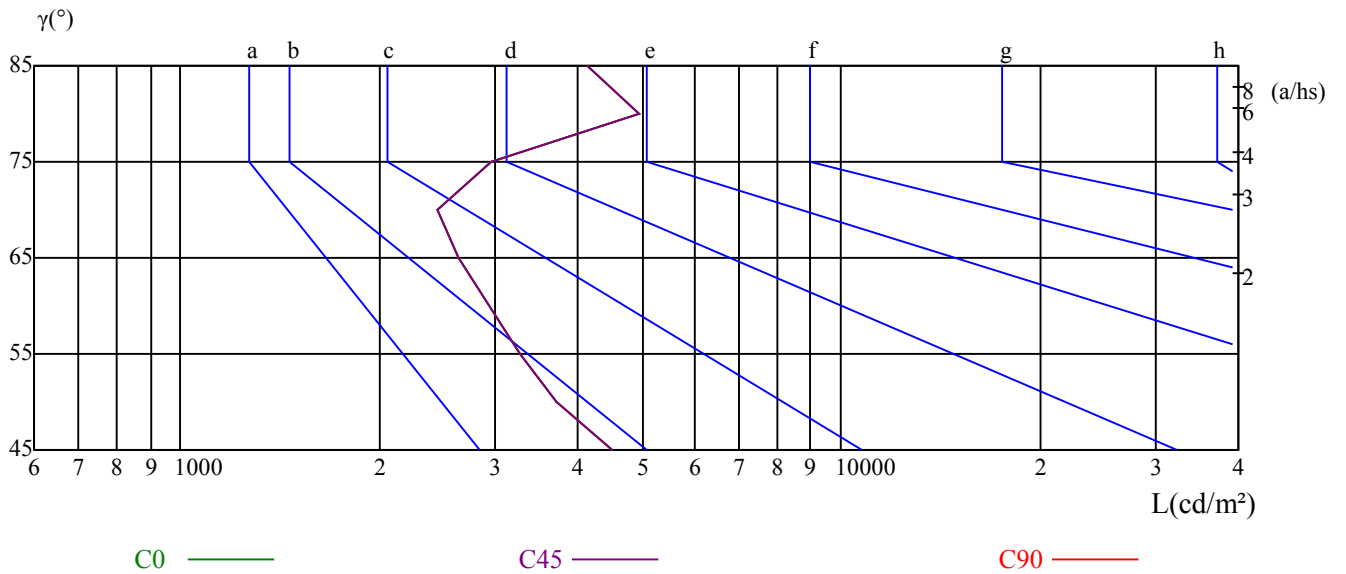
γ	45	50	55	60	65	70	75	80	85
C0	4509	3715	3275	2938	2632	2451	2958	4933	4118
C45	4509	3715	3275	2938	2632	2451	2958	4933	4118
C90	4509	3715	3275	2938	2632	2451	2958	4933	4118

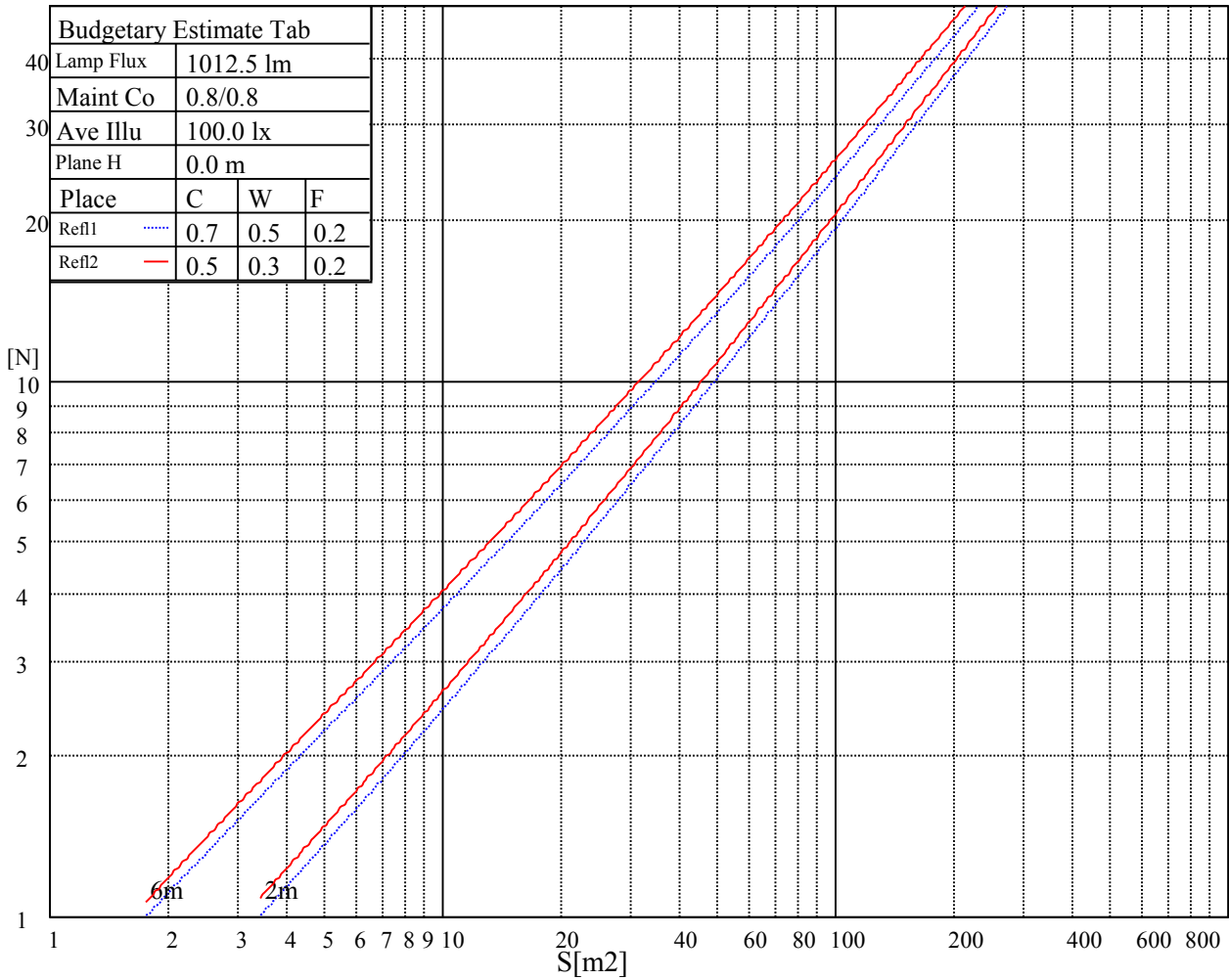
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2632	2632	2632	2958	2958	2958	4118	4118	4118

Glare Table

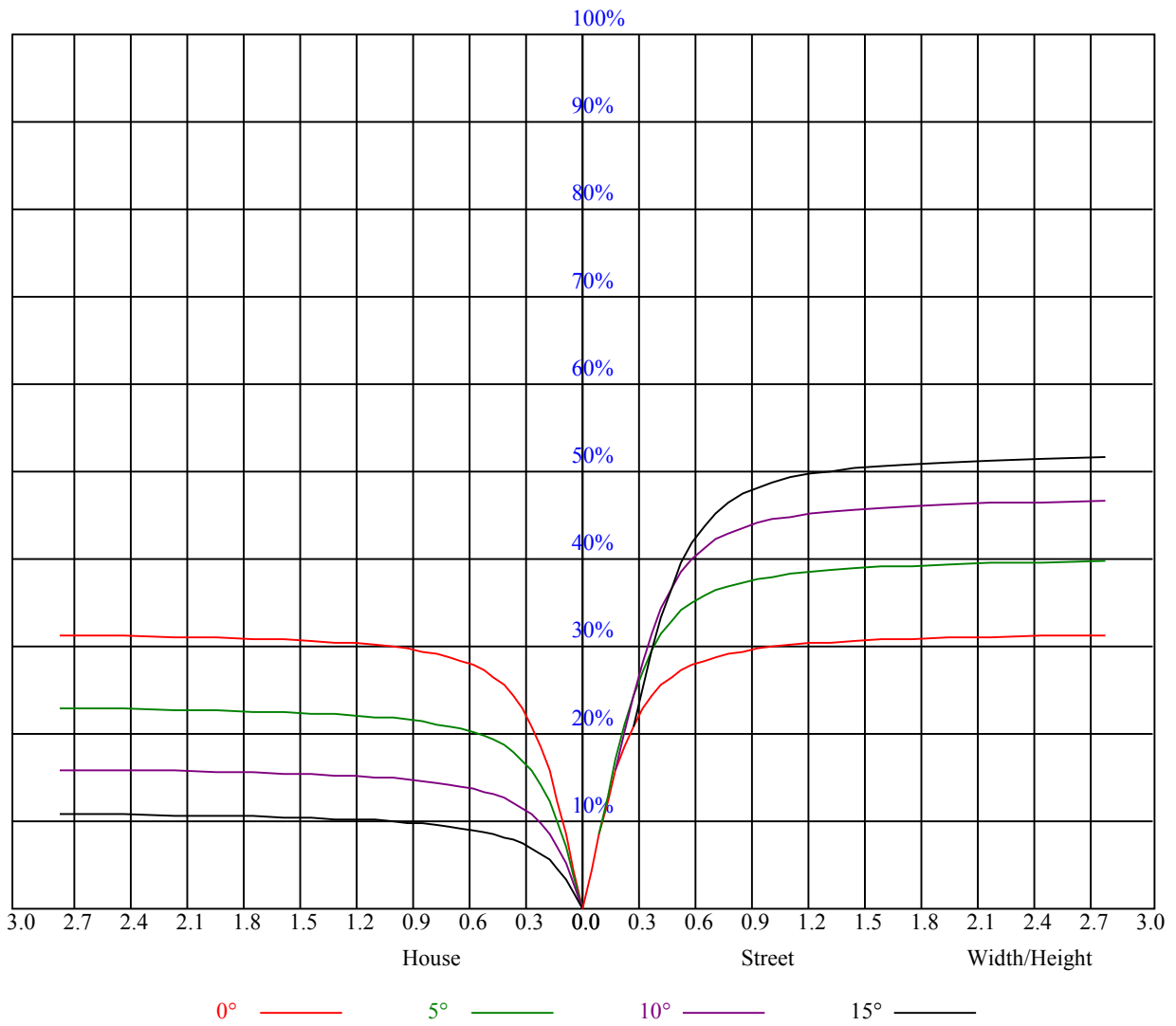
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.76	0.76	0.76	0.74	0.74	0.74	0.71	0.71	0.71	0.68	0.68	0.68	0.65	0.65	0.65	0.64
1	0.70	0.69	0.67	0.69	0.67	0.66	0.66	0.65	0.64	0.64	0.63	0.62	0.62	0.61	0.60	0.59
2	0.66	0.63	0.61	0.65	0.62	0.60	0.63	0.61	0.59	0.61	0.59	0.58	0.59	0.58	0.57	0.56
3	0.62	0.59	0.56	0.61	0.58	0.56	0.59	0.57	0.55	0.58	0.56	0.54	0.56	0.55	0.53	0.52
4	0.58	0.55	0.53	0.58	0.55	0.52	0.56	0.54	0.52	0.55	0.53	0.51	0.54	0.52	0.50	0.49
5	0.55	0.52	0.49	0.55	0.52	0.49	0.54	0.51	0.49	0.53	0.50	0.48	0.52	0.50	0.48	0.47
6	0.53	0.49	0.47	0.52	0.49	0.47	0.51	0.48	0.46	0.50	0.48	0.46	0.50	0.47	0.46	0.45
7	0.50	0.47	0.45	0.50	0.47	0.44	0.49	0.46	0.44	0.48	0.46	0.44	0.48	0.45	0.44	0.43
8	0.48	0.45	0.43	0.48	0.45	0.42	0.47	0.44	0.42	0.47	0.44	0.42	0.46	0.44	0.42	0.41
9	0.46	0.43	0.41	0.46	0.43	0.41	0.45	0.43	0.41	0.45	0.42	0.40	0.44	0.42	0.40	0.40
10	0.45	0.41	0.39	0.44	0.41	0.39	0.44	0.41	0.39	0.43	0.41	0.39	0.43	0.41	0.39	0.38



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	2010.09	2011.88	1997.54	1968.26	1918.67	1852.34	1781.23	1689.81	1601.38
45.0	2005.90	1989.17	1947.35	1898.95	1839.79	1760.32	1665.91	1573.89	1466.93
90.0	2008.29	1987.98	1943.16	1892.37	1830.83	1737.61	1662.92	1558.36	1436.46
135.0	2014.27	2003.51	1975.43	1935.40	1882.81	1811.11	1723.27	1636.03	1532.06
180.0	2010.09	1992.16	1960.49	1901.93	1840.99	1769.88	1676.07	1572.10	1474.70
225.0	2005.90	2008.89	1993.95	1961.09	1918.67	1854.13	1775.26	1696.38	1597.79
270.0	2008.29	2014.27	2001.72	1975.43	1934.20	1863.69	1794.98	1715.51	1617.51
315.0	2014.27	2008.29	1986.78	1941.97	1891.18	1828.44	1731.64	1647.39	1555.97
360.0	2010.09	2011.88	1997.54	1968.26	1918.67	1852.34	1781.23	1689.81	1601.38
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	1495.62	1385.07	1285.28	1187.29	1066.59	973.37	885.54	792.92	706.88
45.0	1356.39	1256.01	1144.27	1048.66	946.49	850.88	771.41	698.51	611.27
90.0	1348.62	1183.11	1122.76	1029.42	939.91	844.85	756.23	683.57	616.17
135.0	1422.12	1307.39	1206.41	1106.62	999.07	898.09	813.24	734.36	641.15
180.0	1361.17	1192.37	1143.01	1023.45	943.14	845.15	744.22	679.09	609.84
225.0	1503.38	1392.24	1188.19	1175.88	1065.87	949.23	873.23	790.65	684.47
270.0	1512.35	1414.95	1302.02	1203.42	1092.88	985.92	896.29	801.29	713.45
315.0	1447.81	1334.28	1180.06	1118.99	1011.62	920.85	826.62	748.17	665.59
360.0	1495.62	1385.07	1285.28	1187.29	1066.59	973.37	885.54	792.92	706.88
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	637.56	574.82	504.91	453.52	401.54	355.53	319.08	301.75	249.89
45.0	553.31	497.74	435.60	388.39	351.35	310.12	286.75	244.87	220.43
90.0	539.03	483.94	434.16	379.19	340.11	305.28	270.50	239.85	215.53
135.0	577.81	519.25	450.54	400.94	358.52	316.09	302.95	248.39	218.99
180.0	523.32	474.44	424.01	363.30	329.24	294.70	260.22	230.17	206.33
225.0	624.12	560.84	496.37	438.17	391.68	345.01	304.08	271.76	240.03
270.0	641.75	578.41	506.11	453.52	406.32	359.11	317.29	304.14	247.91
315.0	591.49	532.28	478.38	417.67	374.11	335.03	292.01	261.48	234.65
360.0	637.56	574.82	504.91	453.52	401.54	355.53	319.08	301.75	249.89
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	220.67	197.72	175.37	157.99	141.02	126.20	114.61	103.01	92.98
45.0	195.81	174.66	157.39	140.06	125.18	113.71	102.36	93.33	84.43
90.0	191.39	172.45	153.39	136.71	123.81	111.20	100.09	91.42	83.65
135.0	196.53	174.36	154.70	139.34	124.29	111.38	101.40	92.38	82.64
180.0	182.84	162.35	146.10	130.14	117.83	105.76	95.31	87.18	79.95
225.0	215.35	190.67	169.34	152.67	138.09	122.19	111.08	101.10	90.17
270.0	218.76	195.99	173.88	156.73	140.00	125.42	113.95	102.54	92.50
315.0	208.06	184.46	166.17	148.13	134.03	120.16	107.85	98.11	88.49
360.0	220.67	197.72	175.37	157.99	141.02	126.20	114.61	103.01	92.98
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	85.09	78.81	70.33	64.95	60.41	56.11	52.52	50.25	47.68
45.0	76.54	70.27	64.71	58.44	53.90	49.77	45.23	41.89	39.02
90.0	75.11	69.07	63.58	58.08	53.06	49.06	45.11	41.53	38.78
135.0	75.83	69.61	63.46	57.96	53.54	49.12	45.29	42.19	39.14
180.0	72.06	66.62	61.78	56.65	53.24	50.37	47.98	46.19	44.28
225.0	82.52	75.65	69.61	62.80	58.08	53.72	49.42	45.59	42.07
270.0	84.67	77.50	69.61	64.06	59.10	54.26	49.89	46.49	43.02
315.0	80.01	73.38	67.46	60.89	56.35	52.28	47.74	44.52	41.65
360.0	85.09	78.81	70.33	64.95	60.41	56.11	52.52	50.25	47.68

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	45.77	43.92	41.65	40.03	38.48	36.81	35.67	34.60	33.52
45.0	36.09	33.52	31.43	29.34	27.67	25.87	24.20	22.89	21.45
90.0	35.91	33.64	31.31	29.22	27.55	25.69	24.02	22.65	21.39
135.0	36.69	34.18	32.03	30.23	28.56	26.65	25.22	23.96	22.47
180.0	42.25	40.69	39.08	37.70	36.63	35.67	34.66	33.94	33.28
225.0	39.32	36.45	33.94	31.91	30.00	28.08	26.35	24.92	23.54
270.0	39.91	37.35	34.84	32.74	30.53	28.50	26.89	25.39	23.66
315.0	38.36	35.97	33.82	31.43	29.94	28.08	26.29	25.10	23.84
360.0	45.77	43.92	41.65	40.03	38.48	36.81	35.67	34.60	33.52
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	32.74	32.03	31.13	30.29	29.58	28.56	27.13	25.93	24.62
45.0	20.14	19.06	18.16	16.91	16.01	15.30	14.22	13.50	12.85
90.0	19.90	18.82	17.75	16.73	15.72	14.88	13.98	13.09	12.43
135.0	21.27	20.26	19.12	18.11	17.27	16.31	15.48	14.70	13.92
180.0	32.51	31.67	30.83	29.82	28.74	27.61	26.41	24.92	23.66
225.0	21.99	20.85	19.72	18.40	17.45	16.55	15.60	14.70	13.92
270.0	22.35	21.15	19.78	18.70	17.75	16.73	15.60	14.76	13.98
315.0	22.23	21.33	20.26	18.94	18.16	17.27	16.37	15.48	14.76
360.0	32.74	32.03	31.13	30.29	29.58	28.56	27.13	25.93	24.62
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	23.42	22.11	20.79	19.60	18.40	17.27	16.25	15.30	14.40
45.0	12.07	11.41	10.88	10.28	9.74	9.32	8.72	8.31	7.95
90.0	11.65	11.05	10.46	9.86	9.32	8.90	8.37	7.95	7.53
135.0	13.27	12.61	11.95	11.47	10.99	10.40	9.98	9.62	9.20
180.0	22.35	20.91	19.42	18.05	16.79	15.66	14.40	13.62	13.50
225.0	13.15	12.43	11.77	11.11	10.64	10.04	9.44	9.02	8.60
270.0	13.15	12.37	11.71	11.05	10.46	9.92	9.32	8.84	8.37
315.0	13.98	13.27	12.67	12.01	11.47	10.93	10.40	9.98	9.56
360.0	23.42	22.11	20.79	19.60	18.40	17.27	16.25	15.30	14.40
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	14.34	14.76	15.42	16.43	17.81	20.26	23.06	25.16	26.77
45.0	7.47	7.05	6.75	6.45	7.59	8.25	8.96	9.08	6.69
90.0	7.11	6.69	6.33	5.98	5.62	5.32	4.96	4.66	4.42
135.0	8.84	8.48	8.07	7.71	7.41	7.11	7.05	6.75	6.39
180.0	14.10	14.94	16.07	17.33	18.76	20.26	21.21	21.51	19.90
225.0	8.07	7.71	7.35	6.93	6.57	6.21	6.57	7.53	7.65
270.0	7.89	7.53	7.11	6.69	6.33	5.92	5.50	5.20	4.96
315.0	9.14	8.78	8.43	7.95	7.65	7.47	7.59	7.83	7.65
360.0	14.34	14.76	15.42	16.43	17.81	20.26	23.06	25.16	26.77
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	26.95	25.04	22.23	17.03	8.78	5.32	3.88	3.29	2.87
45.0	4.60	4.30	4.12	3.88	2.99	2.81	2.75	2.63	2.63
90.0	4.12	3.88	3.59	3.17	2.93	2.75	2.63	2.63	2.63
135.0	6.15	5.92	5.74	5.50	3.64	3.23	2.87	2.69	2.63
180.0	17.63	15.00	10.99	5.50	4.12	3.53	2.87	2.81	2.69
225.0	6.99	4.96	4.36	4.12	3.94	3.17	2.93	2.75	2.69
270.0	4.60	4.30	4.06	3.82	3.59	3.17	2.87	2.69	2.69
315.0	7.29	6.75	6.21	5.74	5.38	3.64	3.29	2.93	2.75
360.0	26.95	25.04	22.23	17.03	8.78	5.32	3.88	3.29	2.87

Intensity data(cd)

C/γ(°)	90.0
0.0	2.81
45.0	2.63
90.0	2.63
135.0	2.69
180.0	3.35
225.0	2.69
270.0	2.63
315.0	2.69
360.0	2.81