



NATA LIGHTING CO.,LTD.
www.nata.cn
Email:info@nata.com
Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: CR01D06312BG

Luminaire: 92.70.184.00

Report No: NATA0100

Voltage(V): 32.4800

Test No: GC20190410

Current(A): 0.2970

LampCAT: XICATO XOB LES 9.8MM

Power (W): 9.6500

Lamp flux(lm): 1022.4

PF: 0.0000

Number of Lamps: 1

Ballast type: DC

Length(mm): 63

Width(mm): 63

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 886.76

Efficiency(%): 86.73%

Lumens(lm)/Power(W): 91.89

Central intensity(cd): 7224.891

Maximum intensity(cd): 7224.891

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=14.7

[C90/270]Total=14.7

Field angle(10%Imax): [C0/180]Total=31.7

[C90/270]Total=31.7

Maximum s/h(1/2): C0_180=0.25 C90_270=0.25

Maximum s/h(1/4): C0_180=0.27 C90_270=0.27

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 86.73%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 93.988%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7224.891	0.000	0	.000%	.000%
1.0	7142.414	6.874	6.874	.672%	.775%
2.0	6851.602	20.086	26.96	1.965%	3.040%
3.0	6392.602	31.676	58.636	3.098%	6.612%
4.0	5839.945	40.946	99.582	4.005%	11.230%
5.0	5155.664	47.303	146.885	4.627%	16.564%
6.0	4507.242	50.781	197.666	4.967%	22.291%
7.0	3837.797	51.798	249.463	5.066%	28.132%
8.0	3234.938	50.618	300.081	4.951%	33.840%
9.0	2682.141	47.955	348.036	4.690%	39.248%
10.0	2194.383	44.131	392.167	4.316%	44.224%
11.0	1799.648	39.909	432.075	3.903%	48.725%
12.0	1459.223	35.624	467.7	3.484%	52.742%
13.0	1215.113	31.738	499.437	3.104%	56.321%
14.0	986.273	28.178	527.615	2.756%	59.499%
15.0	834.342	24.994	552.609	2.445%	62.317%
16.0	704.145	22.543	575.152	2.205%	64.860%
17.0	598.985	20.293	595.445	1.985%	67.148%
18.0	510.968	18.301	613.746	1.790%	69.212%
19.0	444.684	16.626	630.373	1.626%	71.087%
20.0	382.830	15.146	645.518	1.481%	72.795%
21.0	332.923	13.744	659.262	1.344%	74.345%
22.0	296.585	12.650	671.912	1.237%	75.771%
23.0	258.764	11.653	683.565	1.140%	77.085%
24.0	219.614	10.459	694.024	1.023%	78.265%
25.0	191.341	9.344	703.368	.914%	79.319%
26.0	166.704	8.452	711.82	.827%	80.272%
27.0	144.802	7.621	719.441	.745%	81.131%
28.0	128.440	6.918	726.359	.677%	81.911%
29.0	112.922	6.315	732.674	.618%	82.623%
30.0	100.596	5.765	738.439	.564%	83.273%
31.0	90.113	5.307	743.746	.519%	83.872%
32.0	80.845	4.898	748.644	.479%	84.424%
33.0	73.441	4.545	753.189	.445%	84.937%
34.0	67.163	4.255	757.444	.416%	85.417%
35.0	61.924	4.009	761.453	.392%	85.869%
36.0	57.150	3.791	765.244	.371%	86.296%
37.0	53.655	3.614	768.858	.353%	86.704%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	50.323	3.471	772.329	.339%	87.095%
39.0	47.517	3.340	775.668	.327%	87.472%
40.0	45.359	3.239	778.908	.317%	87.837%
41.0	43.474	3.163	782.071	.309%	88.194%
42.0	41.470	3.086	785.157	.302%	88.542%
43.0	39.797	3.010	788.167	.294%	88.881%
44.0	38.398	2.951	791.119	.289%	89.214%
45.0	36.949	2.896	794.014	.283%	89.541%
46.0	35.789	2.845	796.859	.278%	89.861%
47.0	34.587	2.799	799.658	.274%	90.177%
48.0	33.518	2.753	802.411	.269%	90.488%
49.0	32.527	2.712	805.123	.265%	90.793%
50.0	31.620	2.674	807.798	.262%	91.095%
51.0	30.811	2.641	810.439	.258%	91.393%
52.0	30.164	2.616	813.056	.256%	91.688%
53.0	29.545	2.597	815.653	.254%	91.981%
54.0	28.948	2.578	818.231	.252%	92.272%
55.0	28.470	2.563	820.794	.251%	92.561%
56.0	27.998	2.552	823.346	.250%	92.848%
57.0	27.548	2.540	825.886	.248%	93.135%
58.0	27.148	2.529	828.415	.247%	93.420%
59.0	26.810	2.523	830.937	.247%	93.704%
60.0	26.445	2.516	833.453	.246%	93.988%
61.0	26.149	2.510	835.963	.245%	94.271%
62.0	25.868	2.506	838.47	.245%	94.554%
63.0	25.545	2.500	840.97	.245%	94.836%
64.0	25.200	2.490	843.46	.244%	95.117%
65.0	24.778	2.473	845.934	.242%	95.396%
66.0	24.244	2.446	848.379	.239%	95.671%
67.0	23.646	2.408	850.787	.236%	95.943%
68.0	22.992	2.363	853.15	.231%	96.209%
69.0	22.219	2.306	855.456	.226%	96.469%
70.0	21.466	2.244	857.7	.219%	96.722%
71.0	20.637	2.176	859.876	.213%	96.968%
72.0	19.652	2.095	861.971	.205%	97.204%
73.0	18.731	2.007	863.978	.196%	97.430%
74.0	17.733	1.917	865.895	.187%	97.647%
75.0	16.678	1.818	867.713	.178%	97.852%

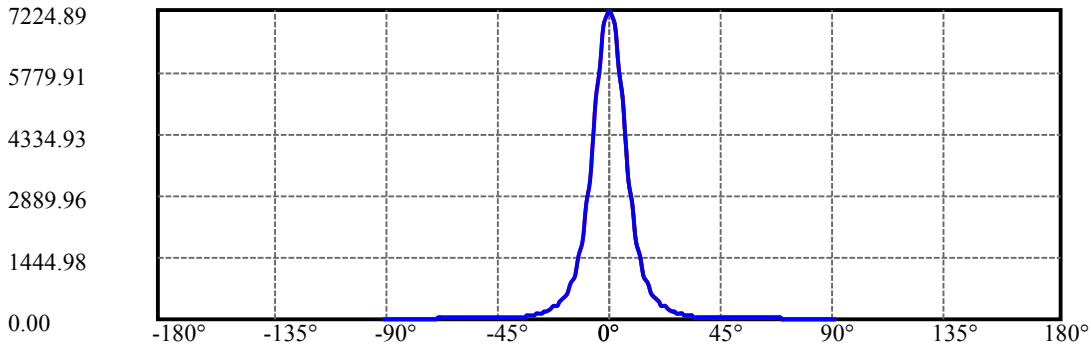
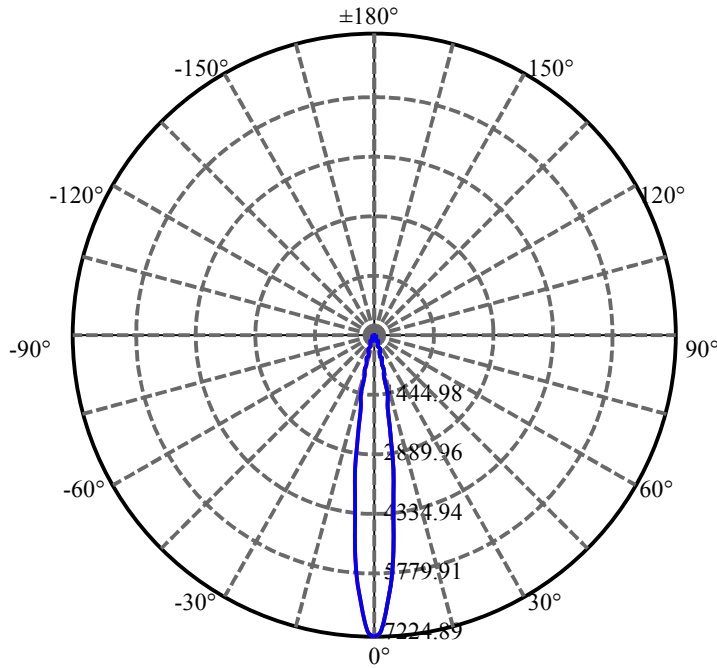
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	15.729	1.720	869.434	.168%	98.046%
77.0	14.878	1.632	871.066	.160%	98.230%
78.0	14.048	1.548	872.614	.151%	98.404%
79.0	13.416	1.476	874.09	.144%	98.571%
80.0	12.825	1.415	875.504	.138%	98.730%
81.0	12.305	1.359	876.863	.133%	98.883%
82.0	11.848	1.310	878.173	.128%	99.031%
83.0	11.433	1.266	879.439	.124%	99.174%
84.0	11.046	1.225	880.663	.120%	99.312%
85.0	10.695	1.187	881.85	.116%	99.446%
86.0	10.336	1.150	882.999	.112%	99.575%
87.0	9.520	1.087	884.086	.106%	99.698%
88.0	8.438	0.984	885.07	.096%	99.809%
89.0	7.643	0.881	885.951	.086%	99.908%
90.0	7.186	0.813	886.764	.080%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	738.44	72.22%	83.27%
0-40	778.91	76.18%	87.84%
0-60	833.45	81.52%	93.99%
0-90	885.95	86.65%	99.91%
0-120	885.95	86.65%	99.91%
0-180	886.76	86.73%	100.00%
60-90	55.01	5.38%	6.20%
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%
0-25.71	709.41	69.39%	80.00%

ZONAL LUMEN SUMMARY

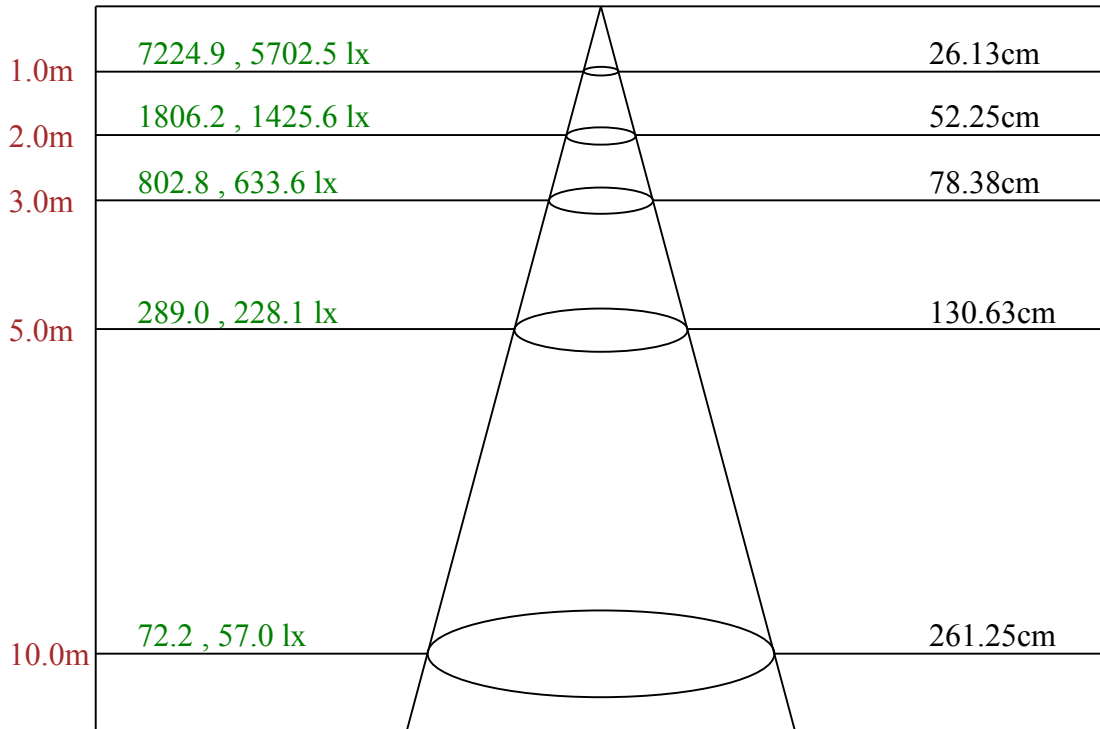
0-10	392.17
10-20	253.35
20-30	92.92
30-40	40.47
40-50	28.89
50-60	25.66
60-70	24.25
70-80	17.80
80-90	10.45
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



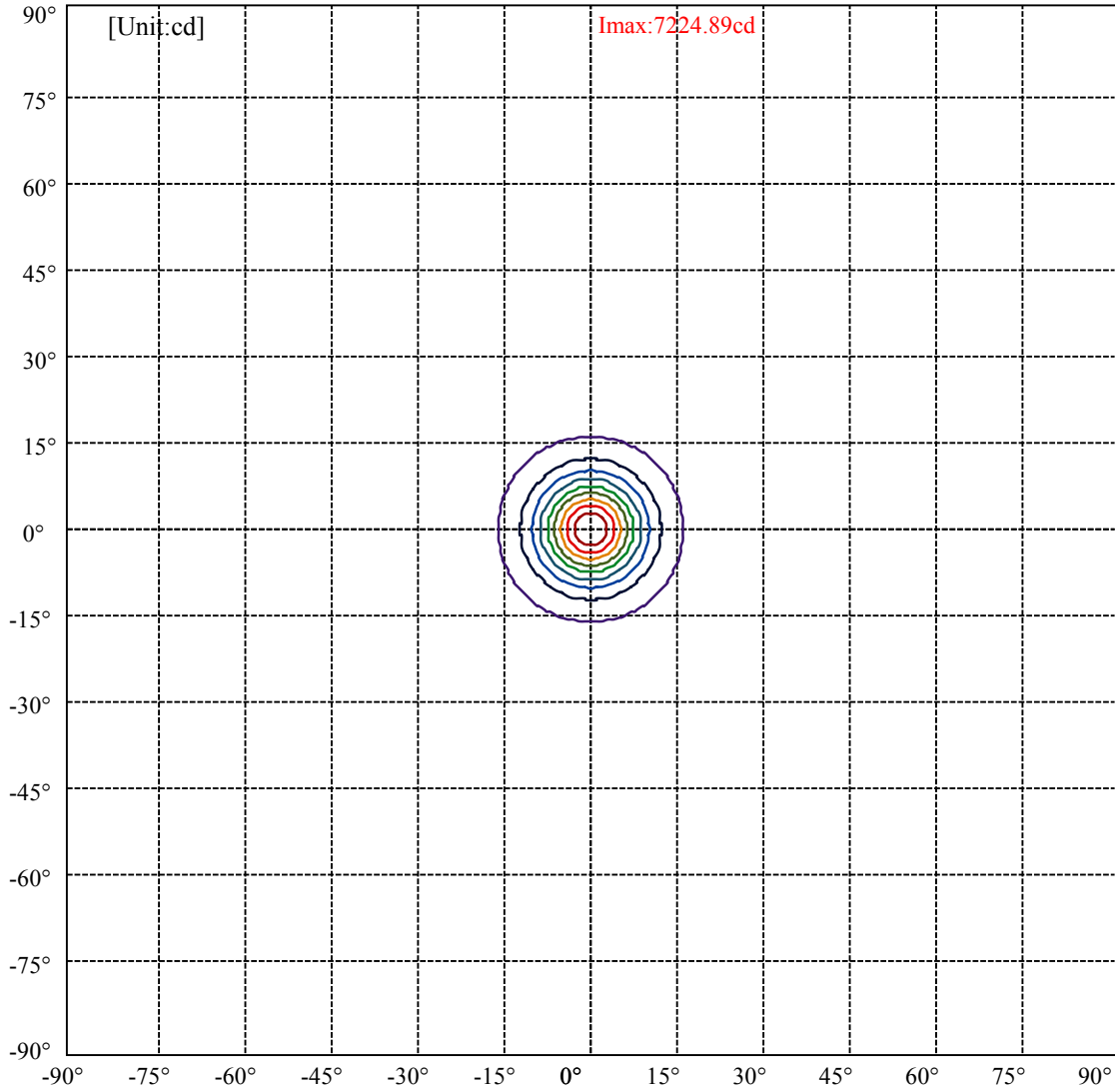
C0(Max): ———
C0/C180: ———
C90/C270: ———

Field angle(10%Imax):C0/180Left:15.9 Right:15.9
:C90/270Left:15.9 Right:15.9

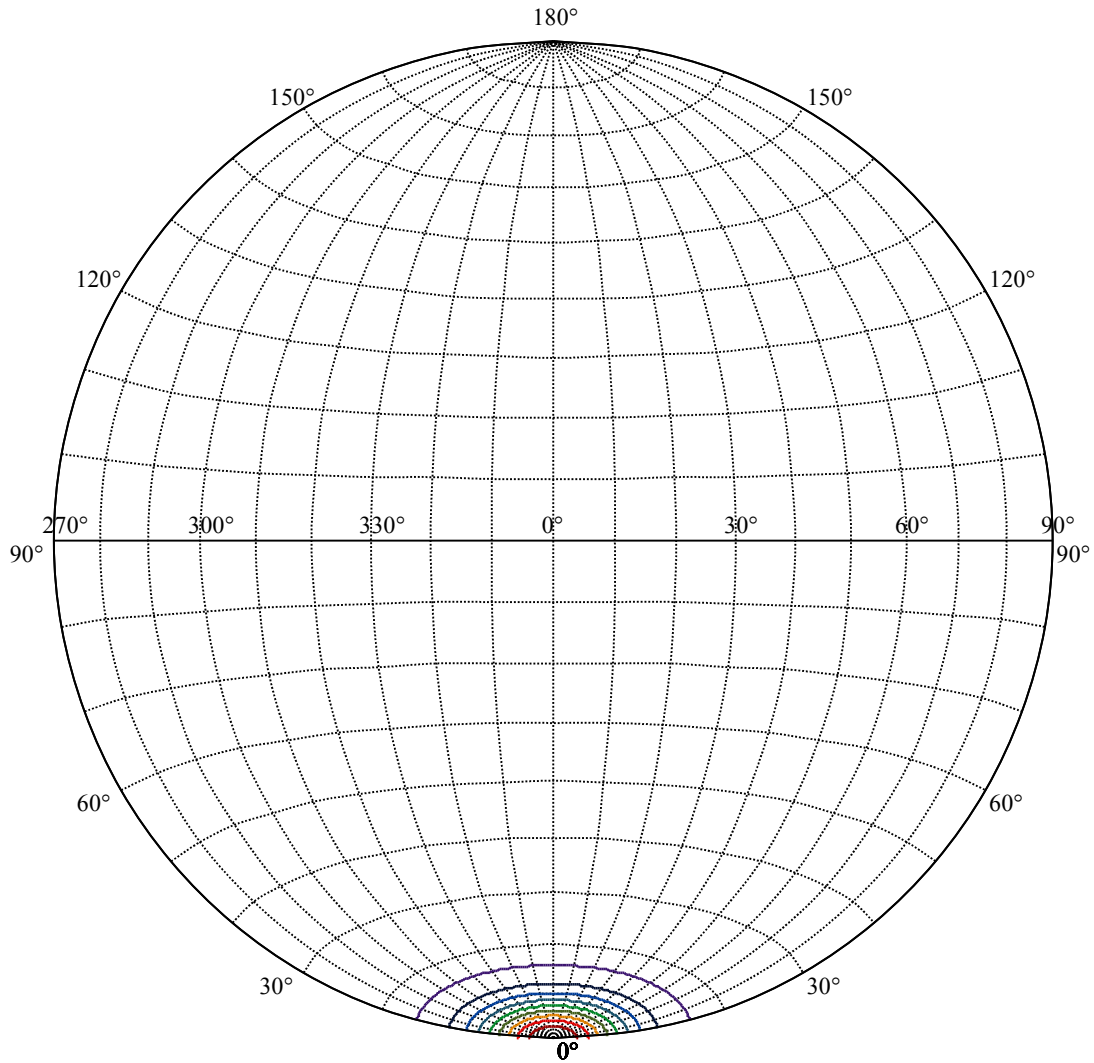
Beam Angle(50%Imax):C0/180Left:7.4 Right:7.4
:C90/270Left:7.4 Right:7.4



Max , Ave Beam angle of C0 plane 14.88



(10%I _{max}) 722.489	—
(20%I _{max}) 1444.98	—
(30%I _{max}) 2167.47	—
(40%I _{max}) 2889.96	—
(50%I _{max}) 3612.45	—
(60%I _{max}) 4334.93	—
(70%I _{max}) 5057.42	—
(80%I _{max}) 5779.91	—
(90%I _{max}) 6502.4	—



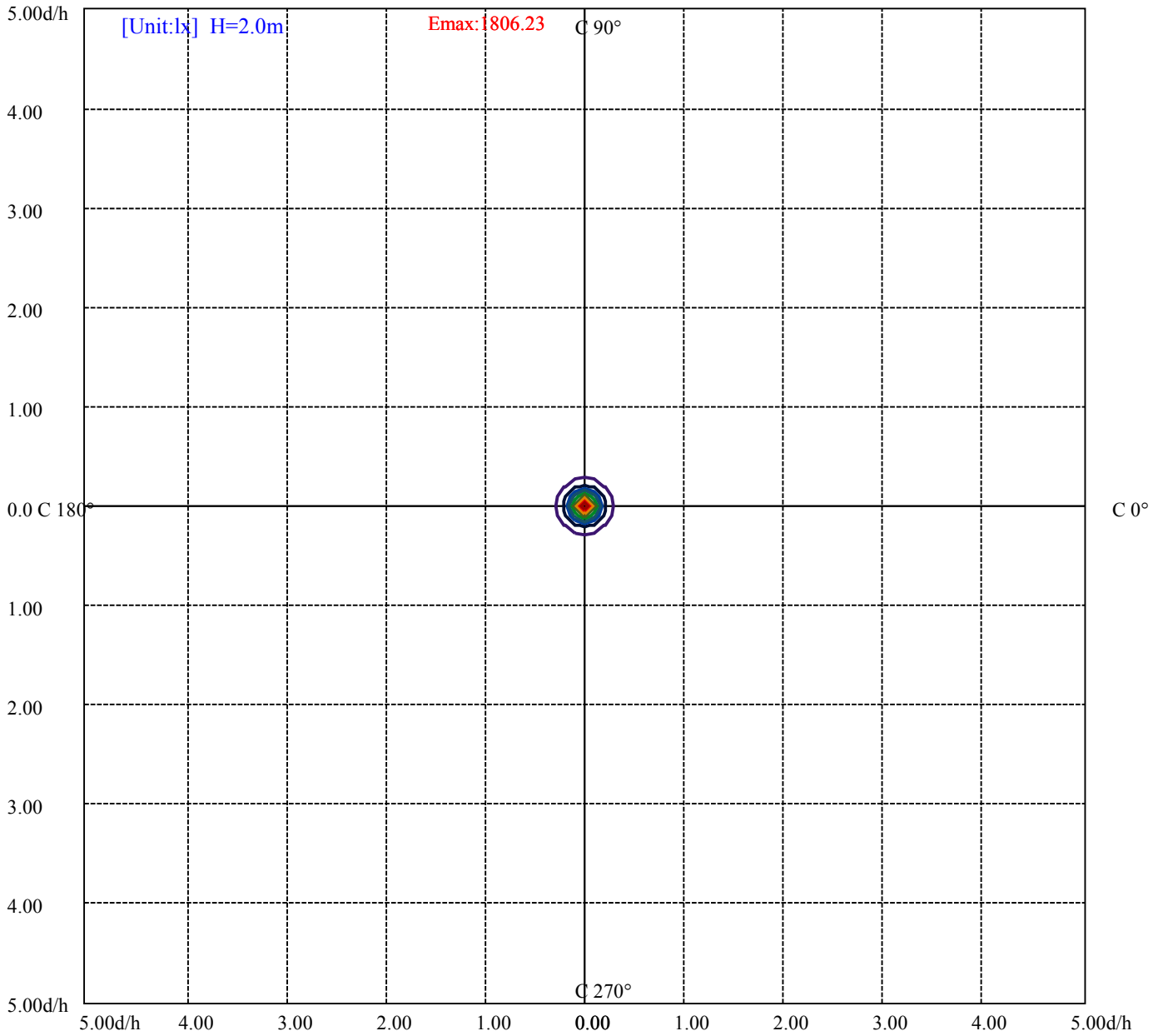
House

[Unit:cd]

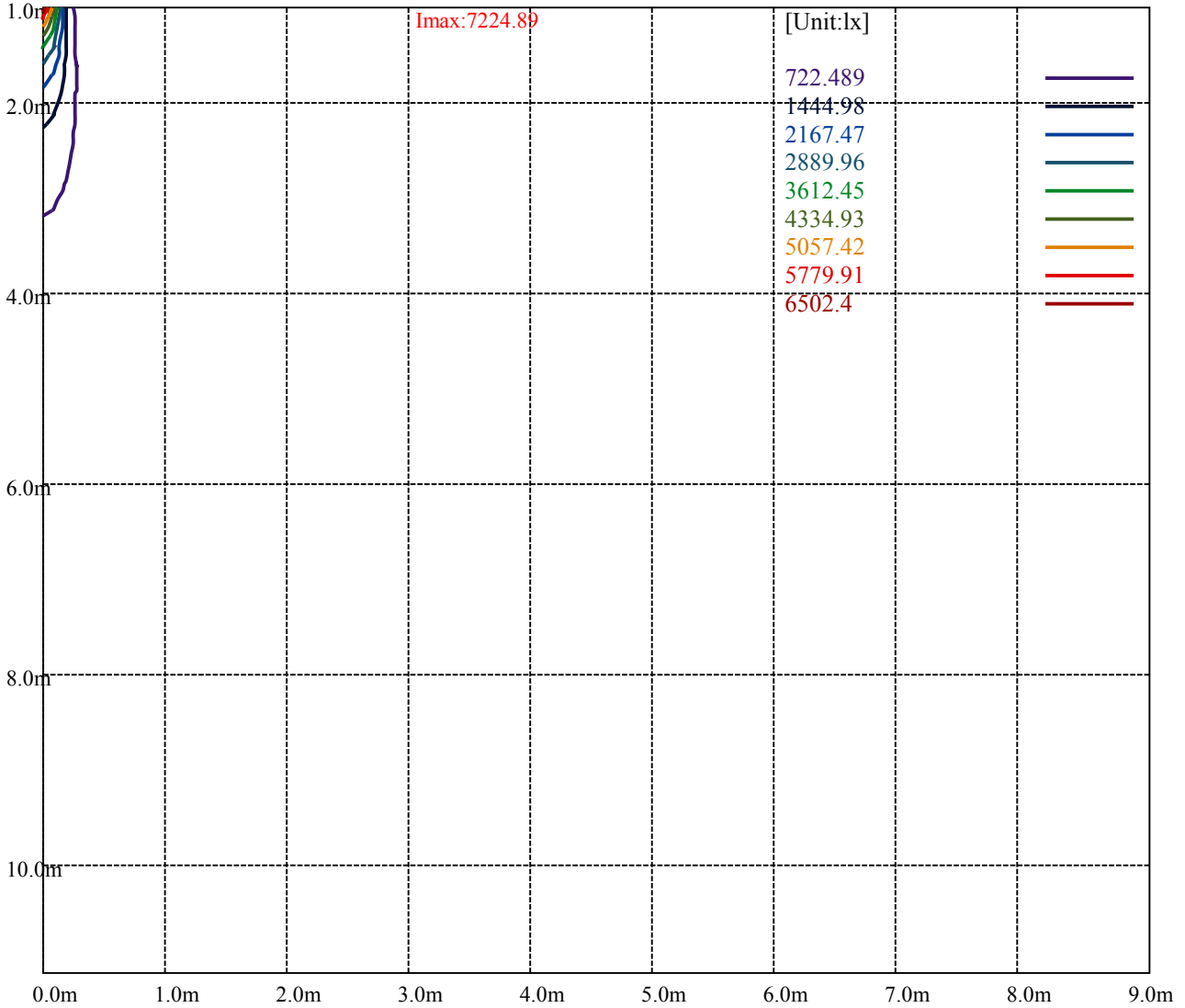
Road

Imax:7224.89

(10%Imax) 722.489	—
(20%Imax) 1444.98	—
(30%Imax) 2167.47	—
(40%Imax) 2889.96	—
(50%Imax) 3612.45	—
(60%Imax) 4334.93	—
(70%Imax) 5057.42	—
(80%Imax) 5779.91	—
(90%Imax) 6502.4	—



- (10%Emax) 180.622
- (20%Emax) 361.245
- (30%Emax) 541.865
- (40%Emax) 722.4875
- (50%Emax) 903.11
- (60%Emax) 1083.733
- (70%Emax) 1264.355
- (80%Emax) 1444.975
- (90%Emax) 1625.598



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

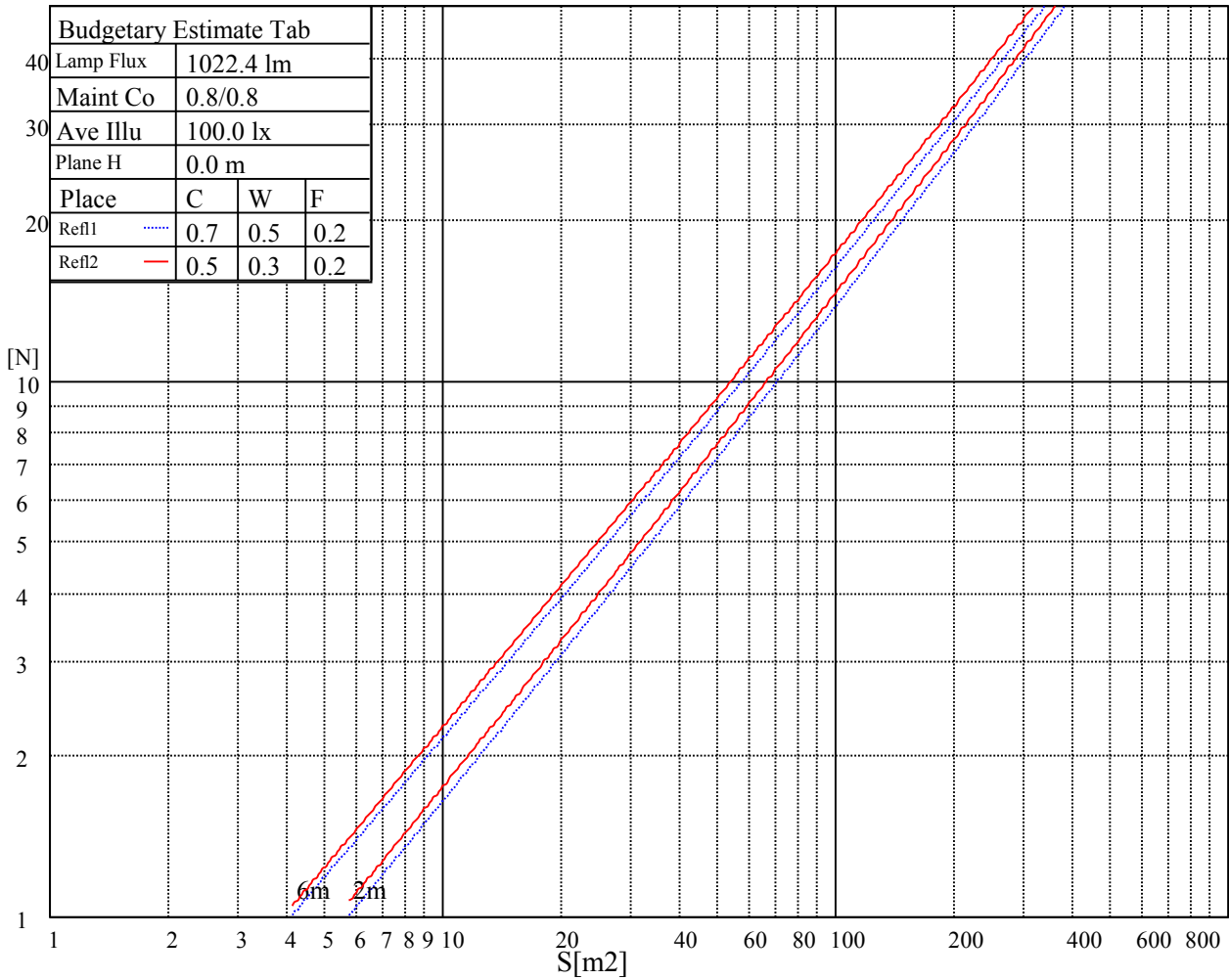
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

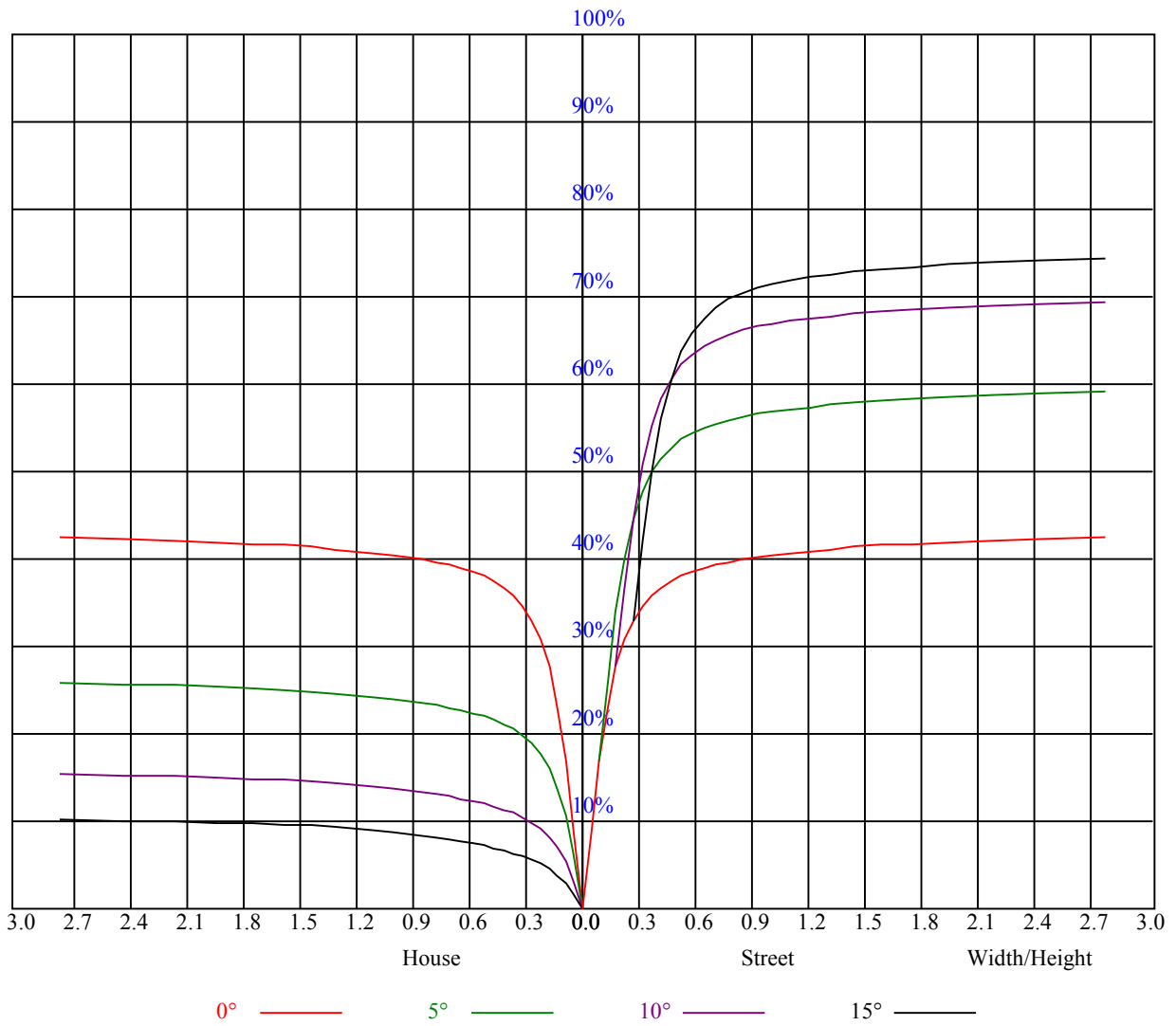
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.03	1.03	1.03	1.01	1.01	1.01	0.96	0.96	0.96	0.92	0.92	0.92	0.89	0.89	0.89	0.87
1	0.96	0.94	0.92	0.94	0.93	0.91	0.91	0.89	0.88	0.88	0.87	0.86	0.85	0.84	0.83	0.82
2	0.91	0.88	0.85	0.89	0.87	0.84	0.87	0.84	0.82	0.84	0.82	0.81	0.82	0.80	0.79	0.77
3	0.86	0.83	0.80	0.85	0.82	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.79	0.77	0.75	0.74
4	0.83	0.79	0.76	0.82	0.78	0.75	0.80	0.77	0.74	0.78	0.76	0.73	0.77	0.74	0.73	0.71
5	0.79	0.75	0.72	0.79	0.75	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.69
6	0.77	0.72	0.70	0.76	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.67
7	0.74	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.65
8	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.69	0.67	0.65	0.64
9	0.70	0.66	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.68	0.65	0.63	0.68	0.65	0.63	0.62
10	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.67	0.64	0.62	0.66	0.64	0.62	0.61



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	7251.19	7125.19	6676.88	6175.13	5572.69	4768.31	4130.44	3534.75	2921.63
45.0	7254.00	7034.63	6656.63	5992.31	5370.75	4732.88	3939.75	3340.69	2794.50
90.0	7184.81	6955.88	6514.31	5911.31	5308.31	4595.63	3981.94	3322.69	2725.31
135.0	7209.56	7205.63	6973.88	6611.06	6123.94	5399.44	4776.19	4140.00	3477.94
180.0	7251.19	7238.81	7048.13	6668.44	6189.75	5552.44	4923.56	4218.75	3556.13
225.0	7254.00	7284.38	7158.38	6829.31	6241.50	5732.44	5095.69	4237.31	3708.56
270.0	7184.81	7241.63	7093.69	6800.63	6338.81	5606.44	4972.50	4340.81	3738.38
315.0	7209.56	7053.19	6690.94	6152.63	5573.81	4857.75	4237.88	3567.38	2957.06
360.0	7251.19	7125.19	6676.88	6175.13	5572.69	4768.31	4130.44	3534.75	2921.63
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2393.44	1987.31	1612.69	1344.38	1103.06	912.38	779.06	657.56	559.13
45.0	2221.88	1830.94	1508.63	1221.19	1002.94	848.25	713.81	605.81	529.88
90.0	2263.50	1820.81	1463.63	1103.29	1006.31	810.00	690.64	592.59	505.69
135.0	2892.94	2423.25	1964.81	1627.31	1318.50	1069.31	898.88	746.44	626.06
180.0	3022.31	2482.31	2022.75	1683.00	1398.38	1108.69	928.58	784.80	667.24
225.0	3149.44	2464.88	2097.56	1735.88	1401.75	1115.44	959.01	809.72	680.23
270.0	3044.81	2550.94	2121.19	1715.63	1384.88	1151.44	942.75	782.44	667.13
315.0	2468.81	1994.63	1605.94	1243.13	1105.09	874.69	762.02	653.79	556.54
360.0	2393.44	1987.31	1612.69	1344.38	1103.06	912.38	779.06	657.56	559.13
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	487.69	428.63	365.06	321.19	287.44	237.43	206.89	180.23	154.97
45.0	455.63	400.50	343.69	302.06	286.88	228.99	192.49	169.14	148.50
90.0	435.21	382.50	332.33	290.08	255.54	220.50	192.94	166.50	143.72
135.0	537.75	462.94	383.06	335.25	294.75	285.75	216.56	191.14	168.69
180.0	548.94	472.56	411.47	348.98	308.81	273.88	240.64	211.22	187.82
225.0	578.70	498.21	437.85	380.19	335.87	292.22	257.68	222.90	192.38
270.0	566.44	493.31	425.25	369.00	325.13	291.38	240.47	209.48	182.19
315.0	477.39	418.84	363.94	316.63	278.27	239.96	209.25	180.11	155.36
360.0	487.69	428.63	365.06	321.19	287.44	237.43	206.89	180.23	154.97
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	134.49	119.70	105.69	95.51	85.61	77.18	70.88	64.80	59.74
45.0	127.58	113.96	102.04	90.51	81.11	74.08	67.67	61.99	58.05
90.0	127.07	113.29	98.66	88.76	80.49	71.89	66.21	61.37	56.87
135.0	145.58	130.16	116.33	102.83	90.84	82.58	74.59	68.23	63.39
180.0	164.53	146.14	127.97	112.61	100.97	89.89	80.61	73.35	67.39
225.0	168.19	147.38	126.56	112.95	101.19	88.88	80.44	73.41	66.66
270.0	153.84	135.11	119.87	105.75	93.83	84.99	76.50	69.30	63.79
315.0	137.14	121.78	106.26	95.85	86.85	77.29	70.65	64.86	59.51
360.0	134.49	119.70	105.69	95.51	85.61	77.18	70.88	64.80	59.74
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	56.03	52.71	49.33	47.14	45.23	43.43	41.74	40.50	39.15
45.0	54.11	51.24	48.49	46.24	44.61	43.09	41.18	39.94	38.70
90.0	53.21	50.46	47.70	45.62	43.82	42.13	40.67	39.21	37.91
135.0	57.88	54.28	50.91	47.64	45.34	43.59	40.89	38.93	37.63
180.0	61.43	57.43	54.06	50.51	48.21	46.01	43.93	42.08	40.61
225.0	60.92	56.70	52.54	49.11	46.58	44.10	42.13	40.05	38.31
270.0	58.61	54.79	50.96	47.81	45.34	43.48	41.18	39.49	38.03
315.0	55.01	51.64	48.60	46.07	43.76	41.96	40.05	38.19	36.84
360.0	56.03	52.71	49.33	47.14	45.23	43.43	41.74	40.50	39.15

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	38.08	37.13	36.28	35.61	35.04	34.71	34.43	34.31	34.31
45.0	37.24	36.23	35.33	34.26	33.30	32.51	31.61	30.83	30.09
90.0	36.73	35.61	34.31	33.47	32.63	31.56	30.88	30.15	29.31
135.0	35.83	34.82	33.92	32.63	31.28	30.32	29.03	28.35	27.79
180.0	39.09	37.86	36.62	35.61	34.82	34.09	33.58	33.30	33.19
225.0	36.79	35.33	33.64	32.46	31.28	29.98	29.08	28.24	27.34
270.0	36.23	34.99	33.58	32.23	30.94	29.87	28.86	27.90	26.78
315.0	35.61	34.37	33.02	31.89	30.94	29.93	29.03	28.24	27.56
360.0	38.08	37.13	36.28	35.61	35.04	34.71	34.43	34.31	34.31
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	34.37	34.48	34.71	34.82	35.10	35.38	35.61	35.72	35.61
45.0	29.31	28.58	27.73	27.06	26.38	25.76	25.03	24.47	23.85
90.0	28.80	28.29	27.84	27.51	27.17	26.94	26.83	26.78	26.78
135.0	27.00	26.21	25.54	24.69	24.02	23.40	22.56	21.83	21.26
180.0	33.08	33.08	33.24	33.41	33.58	33.81	33.98	34.14	34.26
225.0	26.55	25.82	25.03	24.30	23.57	22.89	22.28	21.66	21.09
270.0	25.82	25.31	24.47	23.85	23.29	22.89	22.56	22.50	22.50
315.0	26.66	25.99	25.43	24.75	24.08	23.40	22.73	22.11	21.60
360.0	34.37	34.48	34.71	34.82	35.10	35.38	35.61	35.72	35.61
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	35.49	35.10	34.48	33.41	31.95	30.49	28.74	27.06	25.09
45.0	23.29	22.56	21.94	21.26	20.59	19.91	19.35	18.62	18.06
90.0	26.72	26.72	26.66	26.61	26.49	26.27	25.99	25.48	24.64
135.0	20.53	19.91	19.35	18.56	17.89	17.27	16.59	16.03	15.58
180.0	34.20	34.03	33.53	32.79	31.78	30.60	28.91	27.39	25.93
225.0	20.64	20.25	19.58	19.13	18.68	18.11	17.61	17.10	16.54
270.0	22.56	22.67	22.95	23.12	23.29	23.34	23.40	23.40	23.12
315.0	20.93	20.36	19.74	19.07	18.51	17.94	17.16	16.65	16.14
360.0	35.49	35.10	34.48	33.41	31.95	30.49	28.74	27.06	25.09
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	23.40	21.83	20.19	18.45	17.21	16.09	15.02	14.23	13.61
45.0	17.44	16.76	16.20	15.58	15.02	14.46	13.89	13.28	12.88
90.0	23.57	22.28	20.70	19.35	17.83	16.59	15.75	15.02	14.23
135.0	14.79	14.29	13.78	13.22	12.83	12.43	11.93	11.59	11.25
180.0	23.96	22.28	20.64	18.90	17.27	15.92	14.68	13.84	13.05
225.0	15.98	15.53	14.96	14.46	13.95	13.44	12.94	12.49	11.93
270.0	22.67	21.99	20.87	19.52	18.17	16.88	15.36	14.34	13.50
315.0	15.41	14.91	14.51	13.95	13.56	13.22	12.83	12.54	12.15
360.0	23.40	21.83	20.19	18.45	17.21	16.09	15.02	14.23	13.61
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	12.94	12.38	11.87	11.48	11.03	10.63	9.23	7.88	7.26
45.0	12.38	11.87	11.59	11.19	10.74	10.35	8.89	7.59	7.09
90.0	13.78	13.28	12.71	12.32	11.81	11.36	10.18	8.44	7.54
135.0	10.91	10.58	10.24	10.01	9.79	9.45	9.17	8.66	7.99
180.0	12.38	11.87	11.36	10.74	10.35	9.90	9.56	8.72	7.82
225.0	11.59	11.19	10.80	10.41	10.13	9.90	9.62	9.00	7.93
270.0	12.66	12.04	11.53	11.03	10.69	10.24	9.96	8.83	7.93
315.0	11.81	11.59	11.36	11.19	11.03	10.86	9.56	8.38	7.59
360.0	12.94	12.38	11.87	11.48	11.03	10.63	9.23	7.88	7.26

Intensity data(cd)

C/γ(°)	90.0
0.0	6.64
45.0	6.81
90.0	7.20
135.0	7.43
180.0	7.43
225.0	7.48
270.0	7.31
315.0	7.20
360.0	6.64