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Nata

LumCAT: LN01D05024DA-N

Luminaire: 97.70.234.00

Report No: 210107-B010

Test No: 210107-C010

LampCAT: XICATO XOB LES 9.8MM

Lamp flux(lm): 1260.0

Number of Lamps: 1

Length(mm): 92

Phm Type: C

Voltage(V): 34.8500

Current(A): 0.3810

Power (W): 13.2770

PF: 0.0000

Ballast type: DC

Width(mm): 92

Height(mm): 50

Photometric Results

Lumens(lm): 1121.59

Efficiency(%): 89.01%

Lumens(lm)/Power(W): 84.48

Central intensity(cd): 4000.360

Maximum intensity(cd): 4000.360

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=28.3

[C90/270]Total=28.3

Field angle(10%Imax): [C0/180]Total=47.8

[C90/270]Total=47.8

Maximum s/h(1/2): C0_180=0.48 C90_270=0.48

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(%): 89.01%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 96.548%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4000.359	0.000	0	.000%	.000%
1.0	3991.641	3.824	3.824	.303%	.341%
2.0	3960.633	11.414	15.238	.906%	1.359%
3.0	3908.742	18.821	34.059	1.494%	3.037%
4.0	3840.750	25.940	59.999	2.059%	5.349%
5.0	3752.016	32.664	92.663	2.592%	8.262%
6.0	3623.625	38.761	131.424	3.076%	11.718%
7.0	3492.984	44.173	175.596	3.506%	15.656%
8.0	3342.727	48.922	224.518	3.883%	20.018%
9.0	3163.289	52.728	277.246	4.185%	24.719%
10.0	2957.414	55.390	332.636	4.396%	29.658%
11.0	2751.188	57.041	389.677	4.527%	34.743%
12.0	2537.578	57.814	447.49	4.588%	39.898%
13.0	2270.672	57.062	504.552	4.529%	44.986%
14.0	2037.305	55.142	559.694	4.376%	49.902%
15.0	1814.414	52.878	612.572	4.197%	54.617%
16.0	1585.477	49.818	662.39	3.954%	59.058%
17.0	1326.502	45.347	707.737	3.599%	63.102%
18.0	1170.471	41.170	748.907	3.267%	66.772%
19.0	983.201	37.469	786.376	2.974%	70.113%
20.0	828.323	33.156	819.532	2.631%	73.069%
21.0	693.654	29.225	848.757	2.319%	75.675%
22.0	575.170	25.498	874.255	2.024%	77.948%
23.0	477.802	22.094	896.349	1.754%	79.918%
24.0	390.811	18.991	915.34	1.507%	81.611%
25.0	322.348	16.216	931.556	1.287%	83.057%
26.0	271.125	14.009	945.565	1.112%	84.306%
27.0	228.825	12.231	957.796	.971%	85.397%
28.0	187.896	10.550	968.347	.837%	86.337%
29.0	160.397	9.112	977.459	.723%	87.150%
30.0	140.231	8.117	985.576	.644%	87.873%
31.0	122.259	7.305	992.881	.580%	88.525%
32.0	108.837	6.621	999.501	.525%	89.115%
33.0	98.044	6.095	1005.596	.484%	89.658%
34.0	87.877	5.626	1011.222	.447%	90.160%
35.0	79.411	5.195	1016.418	.412%	90.623%
36.0	72.851	4.848	1021.266	.385%	91.056%
37.0	66.713	4.552	1025.818	.361%	91.461%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	61.861	4.292	1030.109	.341%	91.844%
39.0	56.573	4.042	1034.152	.321%	92.204%
40.0	52.158	3.792	1037.944	.301%	92.543%
41.0	48.558	3.586	1041.53	.285%	92.862%
42.0	44.909	3.396	1044.926	.270%	93.165%
43.0	41.372	3.196	1048.122	.254%	93.450%
44.0	38.580	3.018	1051.14	.239%	93.719%
45.0	35.810	2.859	1053.999	.227%	93.974%
46.0	32.815	2.684	1056.683	.213%	94.213%
47.0	30.565	2.521	1059.203	.200%	94.438%
48.0	28.399	2.384	1061.587	.189%	94.651%
49.0	26.353	2.248	1063.835	.178%	94.851%
50.0	24.546	2.122	1065.958	.168%	95.040%
51.0	22.992	2.011	1067.969	.160%	95.220%
52.0	21.565	1.912	1069.881	.152%	95.390%
53.0	20.426	1.827	1071.707	.145%	95.553%
54.0	19.357	1.753	1073.461	.139%	95.709%
55.0	18.450	1.688	1075.148	.134%	95.860%
56.0	17.691	1.633	1076.782	.130%	96.005%
57.0	16.938	1.583	1078.365	.126%	96.146%
58.0	16.298	1.537	1079.902	.122%	96.284%
59.0	15.764	1.499	1081.401	.119%	96.417%
60.0	15.202	1.463	1082.864	.116%	96.548%
61.0	14.681	1.426	1084.29	.113%	96.675%
62.0	14.217	1.392	1085.682	.111%	96.799%
63.0	13.845	1.365	1087.047	.108%	96.921%
64.0	13.430	1.338	1088.385	.106%	97.040%
65.0	13.071	1.312	1089.697	.104%	97.157%
66.0	12.776	1.290	1090.987	.102%	97.272%
67.0	12.649	1.278	1092.265	.101%	97.386%
68.0	12.762	1.287	1093.552	.102%	97.501%
69.0	13.015	1.315	1094.867	.104%	97.618%
70.0	13.458	1.360	1096.227	.108%	97.739%
71.0	13.929	1.415	1097.642	.112%	97.865%
72.0	14.463	1.476	1099.119	.117%	97.997%
73.0	15.054	1.544	1100.662	.123%	98.134%
74.0	15.525	1.608	1102.27	.128%	98.278%
75.0	15.996	1.665	1103.935	.132%	98.426%

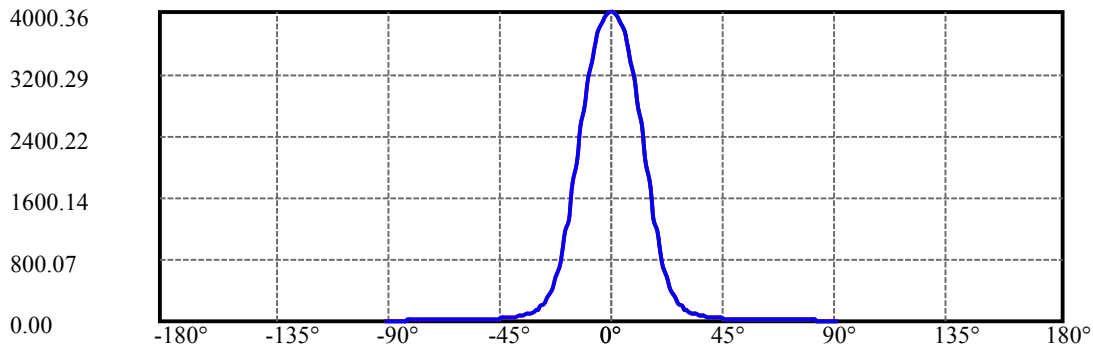
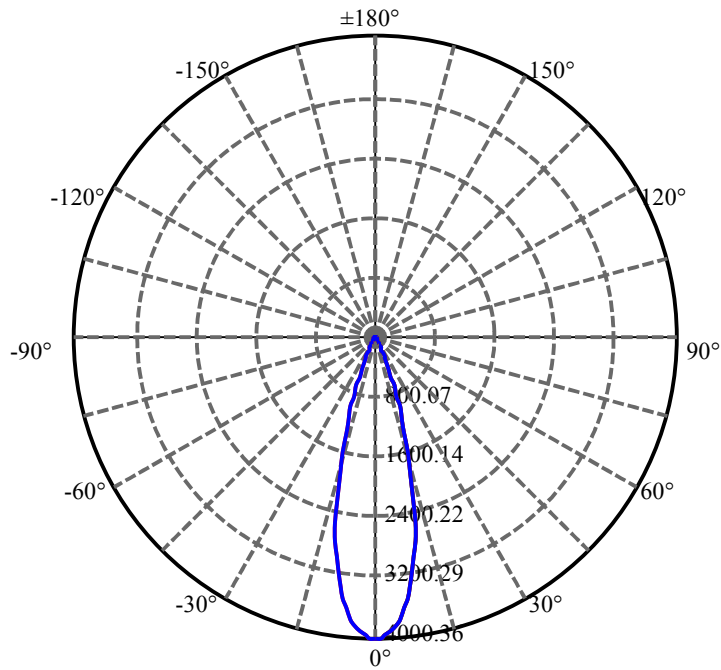
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	16.397	1.720	1105.655	.136%	98.580%
77.0	16.580	1.758	1107.413	.140%	98.736%
78.0	16.488	1.770	1109.183	.140%	98.894%
79.0	15.785	1.734	1110.917	.138%	99.049%
80.0	14.738	1.646	1112.563	.131%	99.196%
81.0	13.310	1.517	1114.079	.120%	99.331%
82.0	11.510	1.346	1115.425	.107%	99.451%
83.0	9.724	1.154	1116.58	.092%	99.554%
84.0	8.409	0.988	1117.568	.078%	99.642%
85.0	7.179	0.851	1118.418	.068%	99.718%
86.0	6.202	0.731	1119.15	.058%	99.783%
87.0	5.752	0.654	1119.804	.052%	99.841%
88.0	5.470	0.615	1120.419	.049%	99.896%
89.0	5.302	0.590	1121.009	.047%	99.949%
90.0	5.210	0.576	1121.585	.046%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	985.58	78.22%	87.87%
0-40	1037.94	82.38%	92.54%
0-60	1082.86	85.94%	96.55%
0-90	1121.01	88.97%	99.95%
0-120	1121.01	88.97%	99.95%
0-180	1121.59	89.01%	100.00%
60-90	39.61	3.14%	3.53%
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%
0-23.05	897.27	71.21%	80.00%

ZONAL LUMEN SUMMARY

0-10	332.64
10-20	486.90
20-30	166.04
30-40	52.37
40-50	28.01
50-60	16.91
60-70	13.36
70-80	16.34
80-90	8.45
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: ———

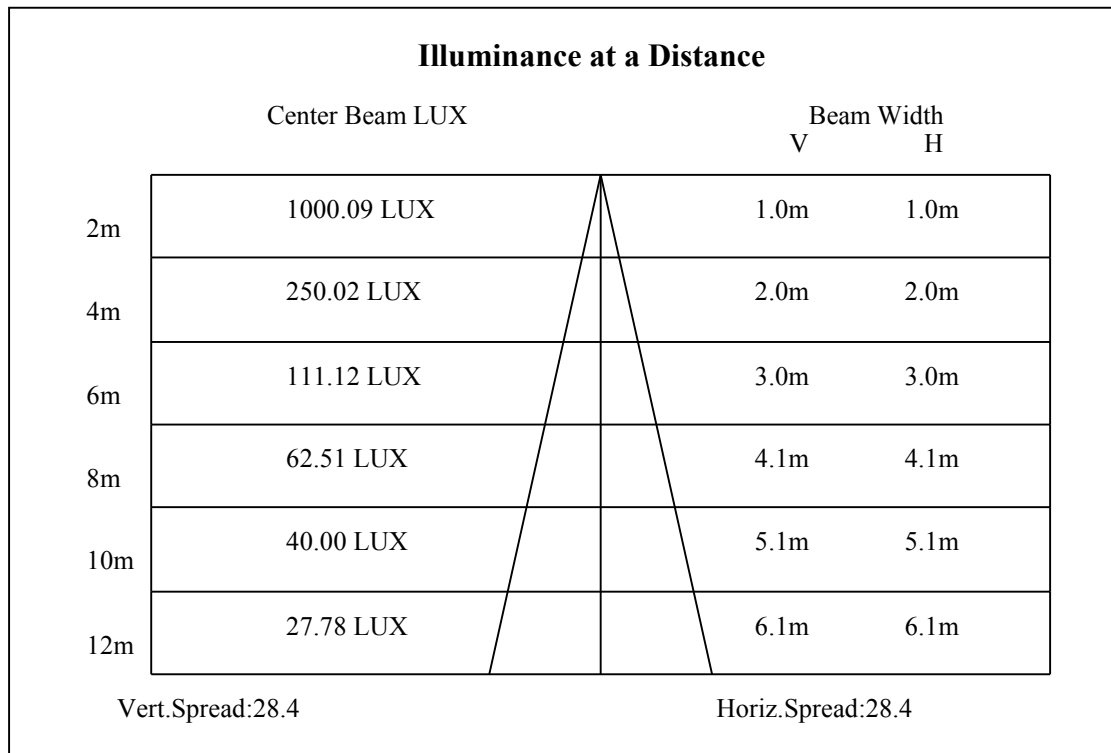
C90/C270: ———

Field angle(10%Imax):C0/180Left:23.9 Right:23.9

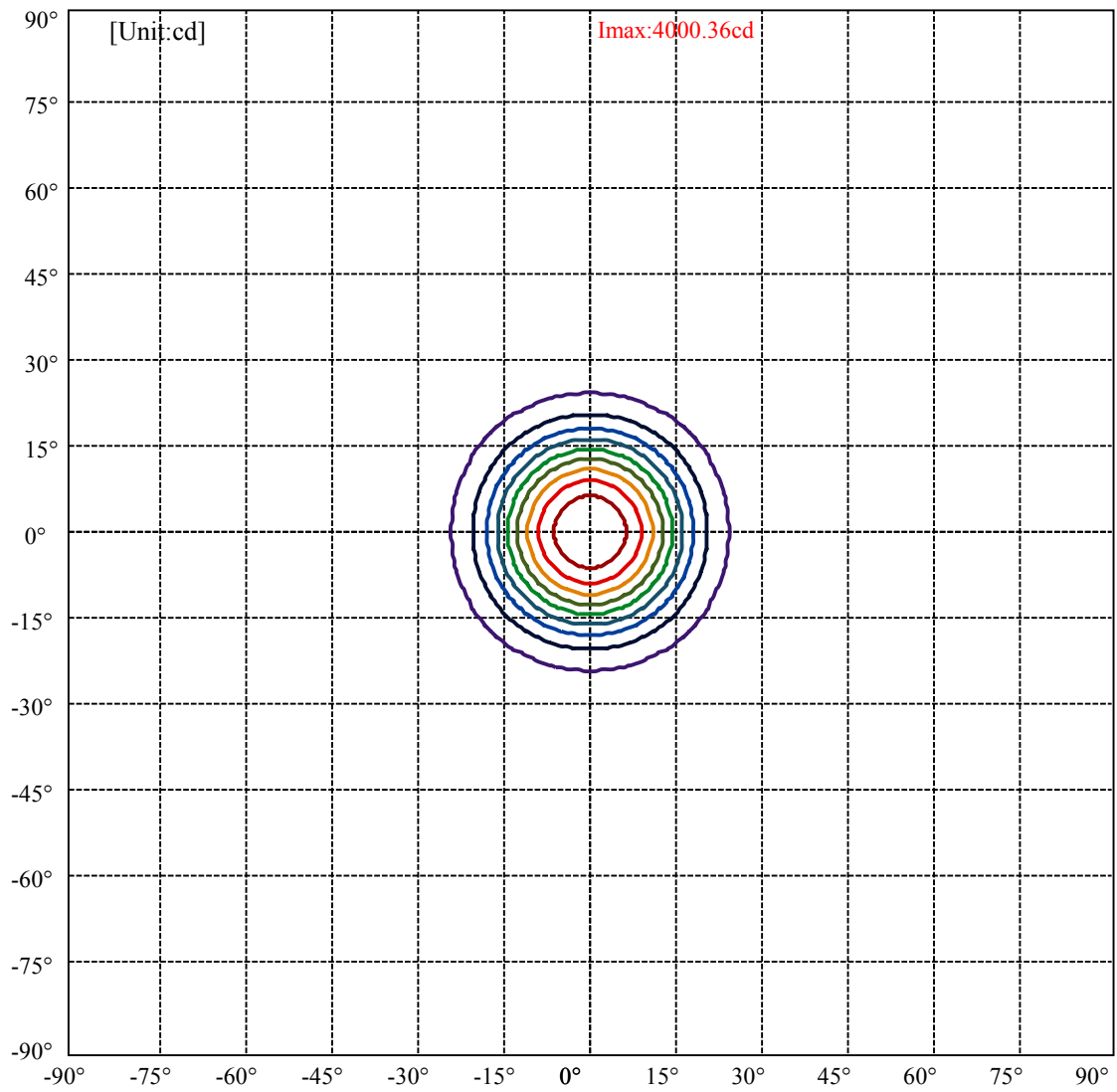
:C90/270Left:23.9 Right:23.9

Beam Angle(50%Imax):C0/180Left:14.2 Right:14.2

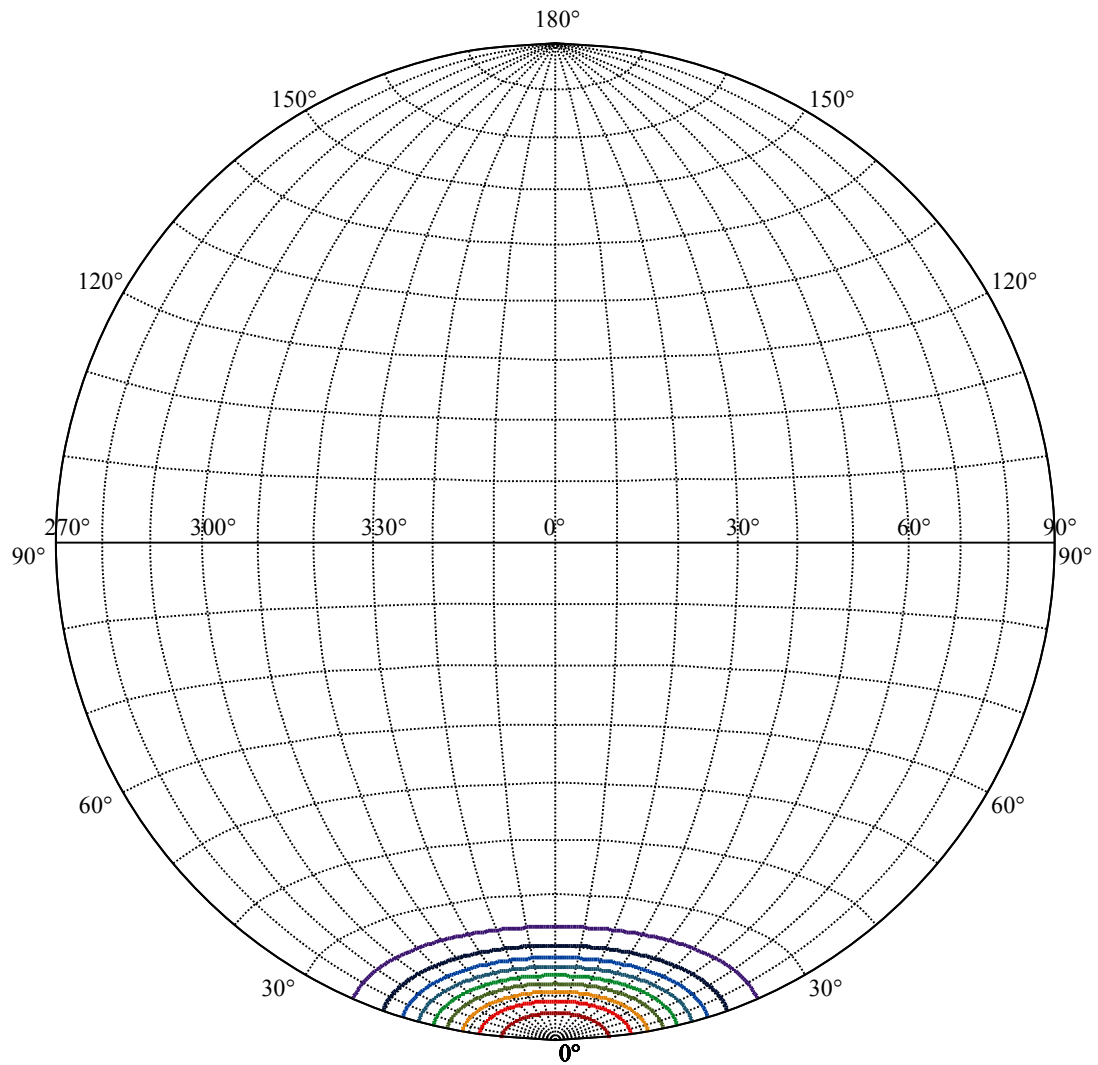
:C90/270Left:14.2 Right:14.2



ISO-Intensity(V-H)



(10%Imax) 400.036	—
(20%Imax) 800.072	—
(30%Imax) 1200.11	—
(40%Imax) 1600.14	—
(50%Imax) 2000.18	—
(60%Imax) 2400.22	—
(70%Imax) 2800.25	—
(80%Imax) 3200.29	—
(90%Imax) 3600.32	—



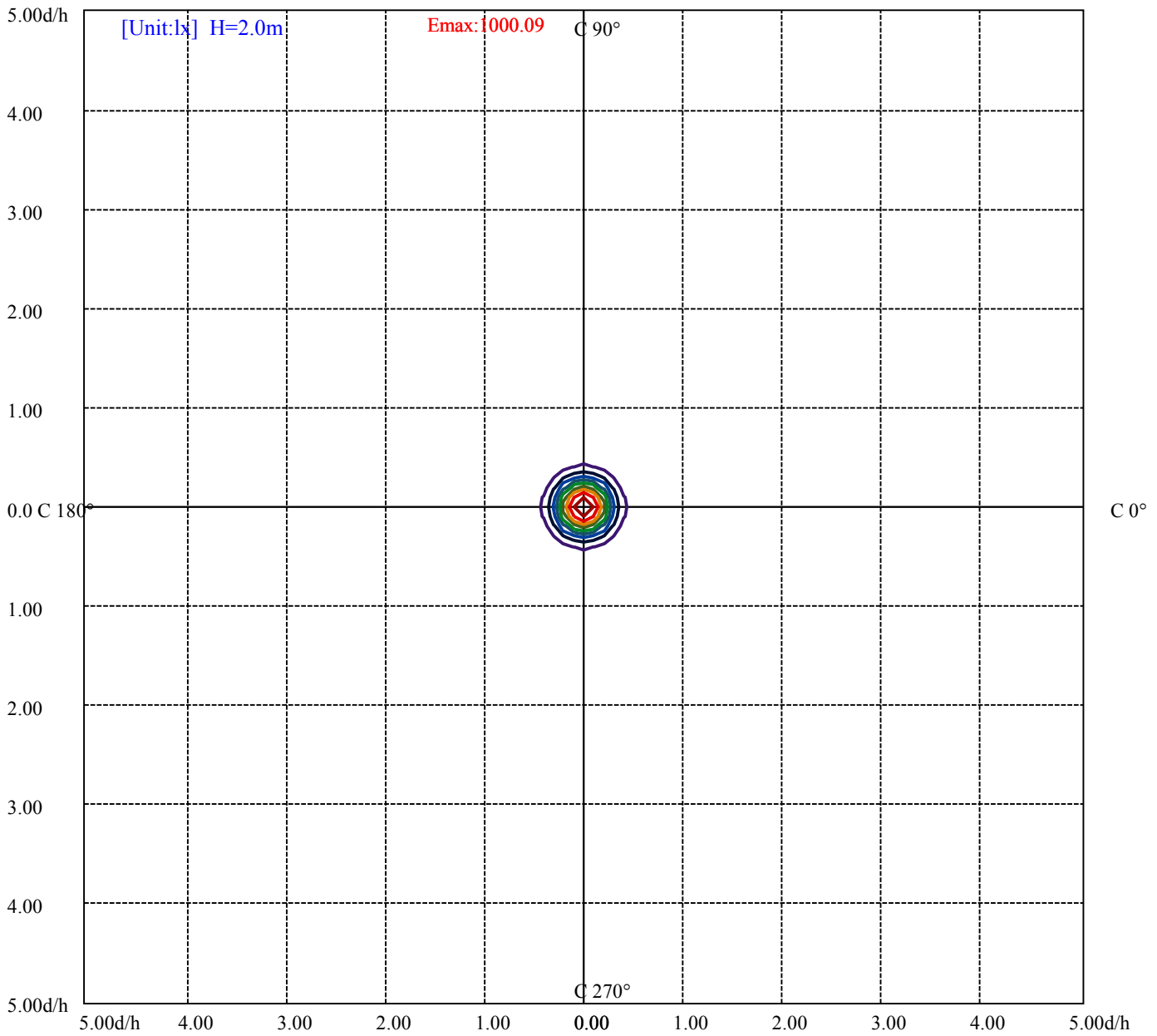
House

[Unit:cd]

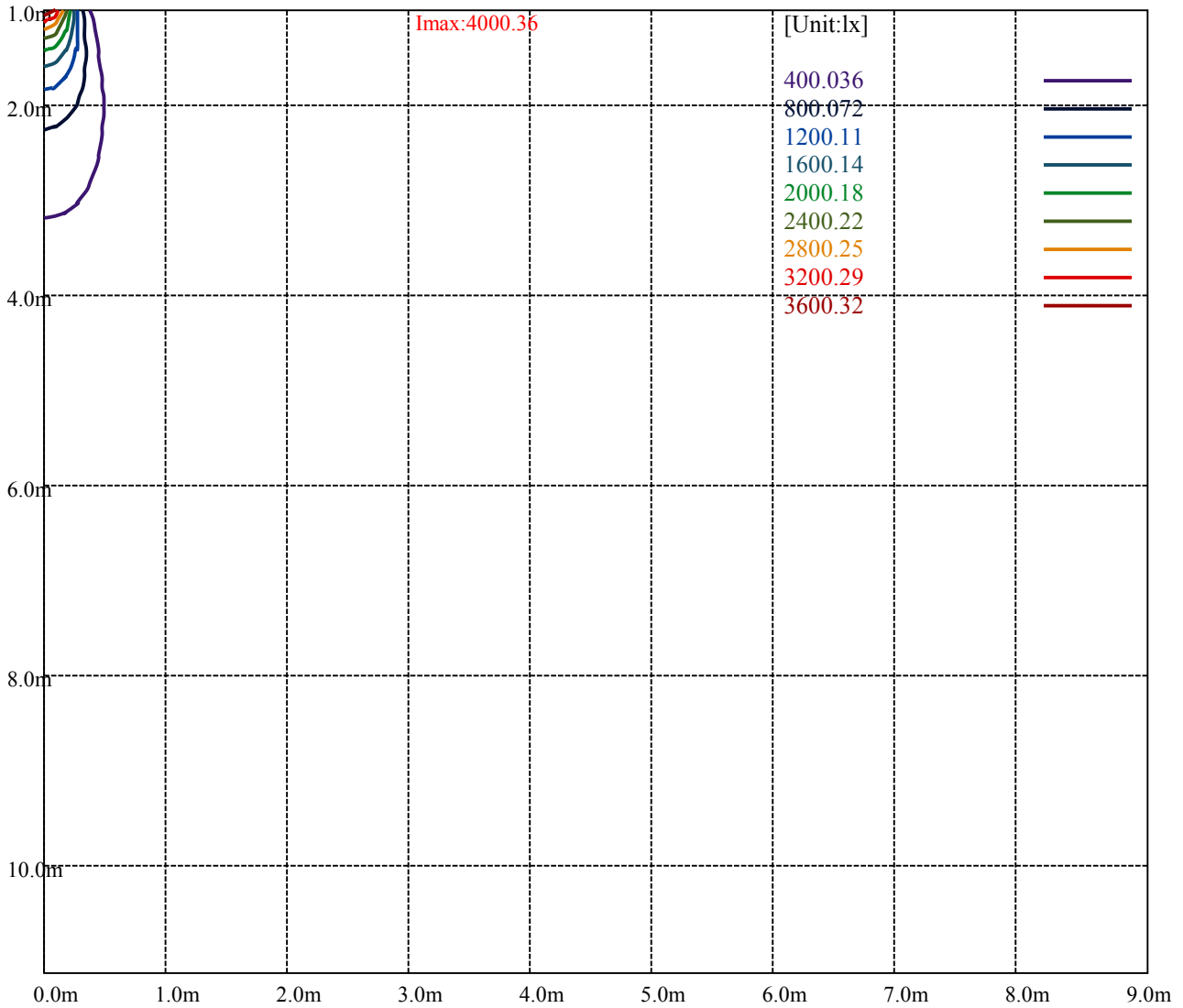
Road

Imax:4000.36

(10%Imax) 400.036	—
(20%Imax) 800.072	—
(30%Imax) 1200.11	—
(40%Imax) 1600.14	—
(50%Imax) 2000.18	—
(60%Imax) 2400.22	—
(70%Imax) 2800.25	—
(80%Imax) 3200.29	—
(90%Imax) 3600.32	—



(10%Emax) 100.009	—
(20%Emax) 200.018	—
(30%Emax) 300.0275	—
(40%Emax) 400.035	—
(50%Emax) 500.045	—
(60%Emax) 600.055	—
(70%Emax) 700.0625	—
(80%Emax) 800.0725	—
(90%Emax) 900.08	—



Luminance Table

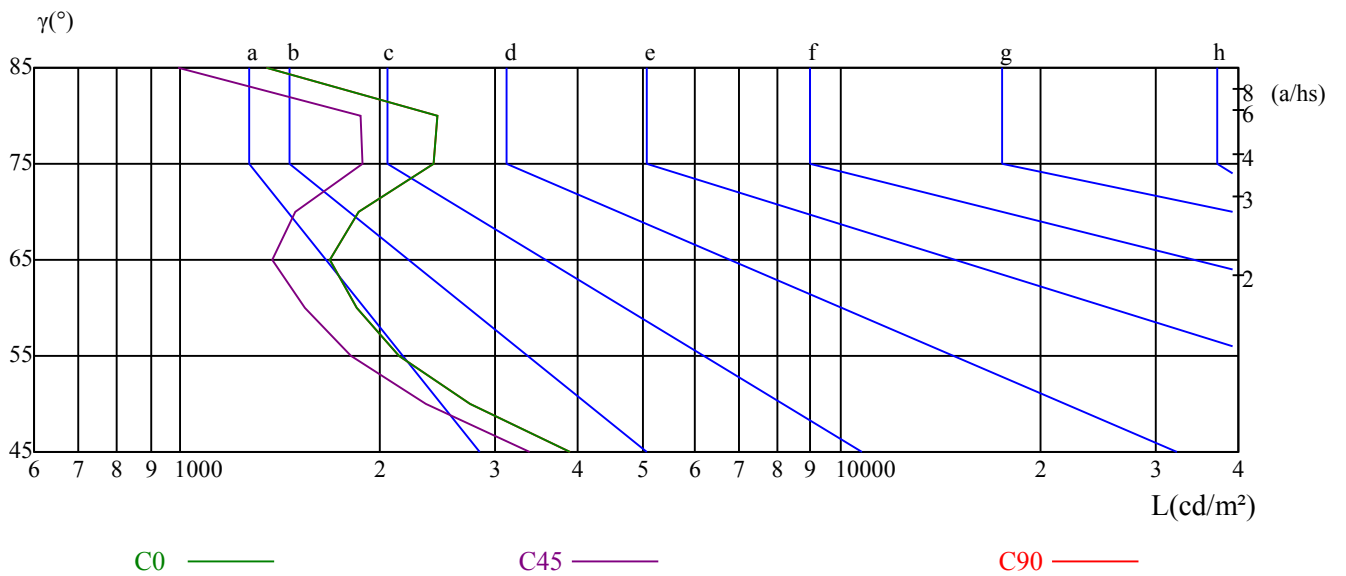
γ	45	50	55	60	65	70	75	80	85
C0	3877	2738	2140	1850	1687	1865	2411	2456	1349
C45	3383	2355	1812	1541	1380	1494	1888	1871	995
C90	3877	2738	2140	1850	1687	1865	2411	2456	1349

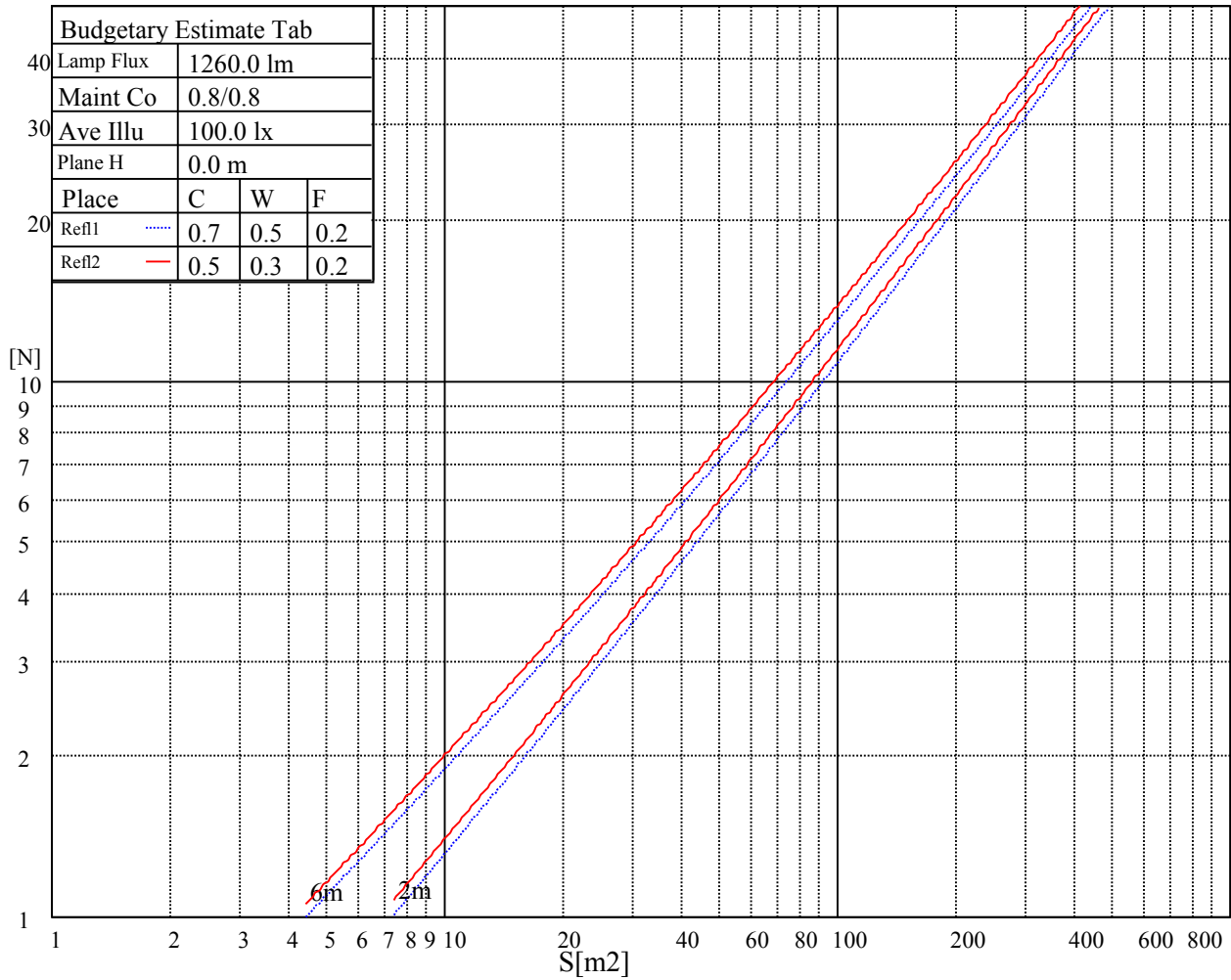
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3654	3654	3654	7302	7302	7302	9732	9732	9732

Glare Table

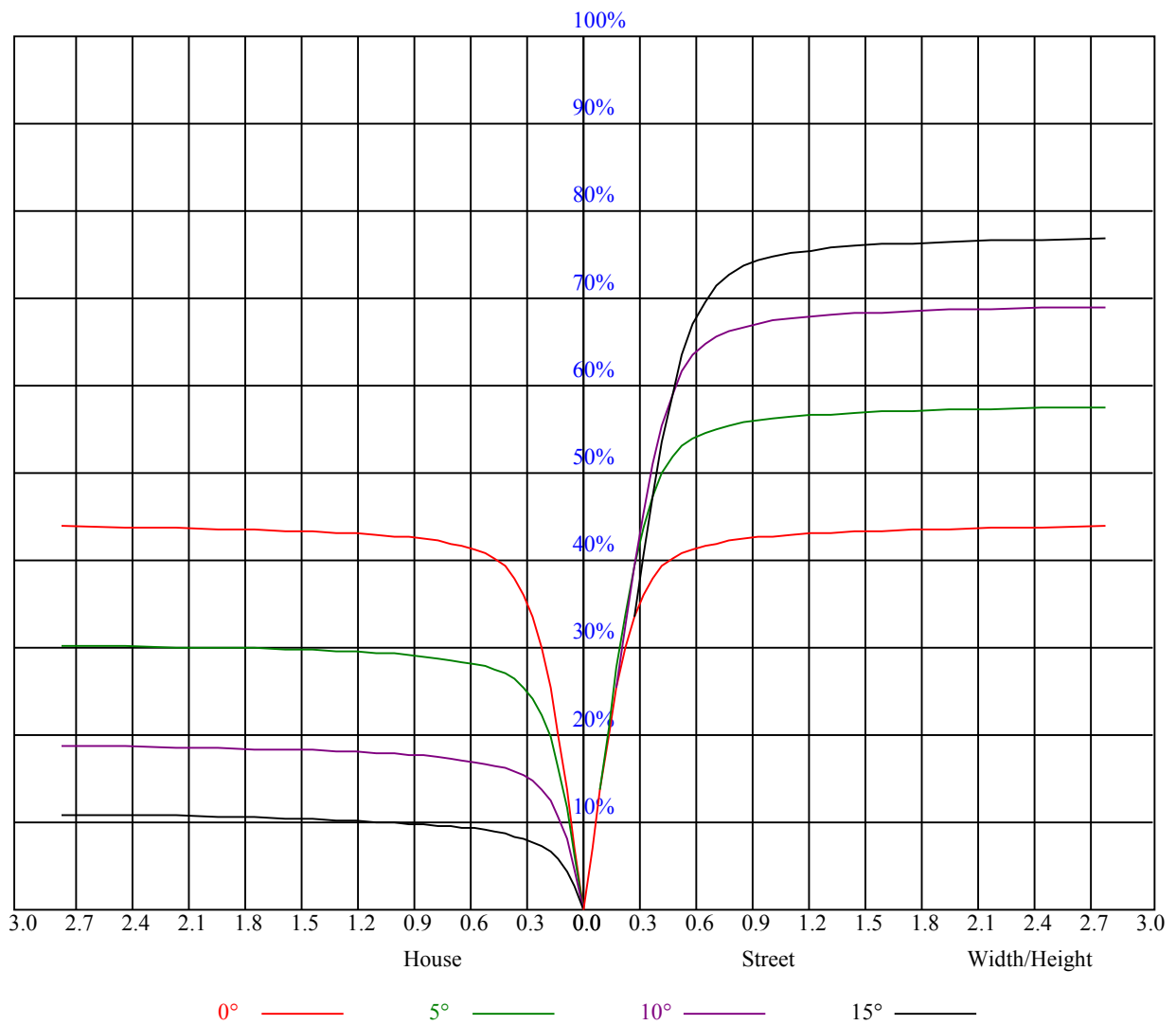
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.06	1.06	1.06	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.89
1	0.99	0.97	0.95	0.97	0.95	0.94	0.94	0.92	0.91	0.90	0.89	0.88	0.87	0.87	0.86	0.84
2	0.94	0.90	0.88	0.92	0.89	0.87	0.89	0.87	0.85	0.87	0.85	0.83	0.84	0.83	0.81	0.80
3	0.89	0.85	0.82	0.88	0.84	0.82	0.85	0.83	0.80	0.83	0.81	0.79	0.81	0.80	0.78	0.77
4	0.85	0.81	0.78	0.84	0.80	0.77	0.82	0.79	0.76	0.80	0.78	0.76	0.79	0.77	0.75	0.73
5	0.81	0.77	0.74	0.81	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.72	0.76	0.74	0.72	0.71
6	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.68
7	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
8	0.73	0.68	0.66	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.70	0.67	0.65	0.64
9	0.70	0.66	0.63	0.70	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.68	0.65	0.63	0.62
10	0.68	0.64	0.61	0.68	0.64	0.61	0.67	0.64	0.61	0.66	0.63	0.61	0.66	0.63	0.61	0.60



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	3999.94	4014.56	4009.50	3984.19	3939.75	3870.56	3779.44	3681.56	3550.50
45.0	4000.50	3996.00	3969.00	3925.13	3856.50	3776.06	3659.06	3518.44	3377.81
90.0	3998.25	3974.06	3926.25	3858.19	3777.19	3675.94	3521.81	3375.56	3212.44
135.0	4002.75	3981.38	3938.06	3872.81	3796.31	3700.69	3550.50	3409.31	3251.25
180.0	3999.94	3967.88	3906.56	3837.38	3748.50	3623.06	3472.88	3318.19	3119.63
225.0	4000.50	3985.31	3952.13	3878.44	3813.19	3718.69	3555.56	3436.31	3281.06
270.0	3998.25	4005.00	3990.38	3957.75	3897.56	3823.88	3720.94	3594.38	3462.75
315.0	4002.75	4008.94	3993.19	3956.06	3897.00	3827.25	3728.81	3610.13	3486.38
360.0	3999.94	4014.56	4009.50	3984.19	3939.75	3870.56	3779.44	3681.56	3550.50
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3399.19	3245.63	3053.25	2867.06	2637.00	2391.75	2165.06	1936.13	1662.75
45.0	3197.25	2993.06	2793.94	2577.94	2295.00	2067.19	1843.31	1602.56	1375.88
90.0	3029.63	2781.56	2568.38	2344.50	2089.69	1839.94	1627.88	1401.19	1121.96
135.0	3025.69	2823.75	2606.63	2377.69	2089.69	1864.69	1649.81	1420.31	1208.81
180.0	2925.00	2689.88	2440.13	2212.88	1958.63	1715.63	1508.06	1314.00	1065.43
225.0	3087.00	2871.00	2658.38	2402.44	2140.88	1911.38	1665.56	1456.88	1103.68
270.0	3297.38	3111.75	2927.81	2754.56	2458.69	2233.69	2005.88	1753.31	1514.81
315.0	3345.19	3142.69	2961.00	2763.56	2495.81	2274.19	2049.75	1799.44	1558.69
360.0	3399.19	3245.63	3053.25	2867.06	2637.00	2391.75	2165.06	1936.13	1662.75
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1458.00	1268.44	1054.69	901.69	765.00	631.13	518.06	432.00	351.56
45.0	1185.75	988.31	820.69	687.94	566.44	466.31	381.38	308.81	286.31
90.0	1017.28	848.48	716.91	588.88	481.84	402.64	328.56	269.66	228.32
135.0	1035.00	857.25	707.63	597.38	494.44	407.81	335.25	284.06	226.74
180.0	925.54	784.18	645.81	529.48	443.42	363.94	299.03	252.84	211.56
225.0	1061.89	886.95	748.63	614.14	500.57	415.01	335.93	273.83	230.96
270.0	1319.06	1120.50	942.19	802.69	664.31	560.25	457.88	372.94	310.50
315.0	1361.25	1111.50	990.06	827.04	685.35	575.33	470.42	384.64	323.04
360.0	1458.00	1268.44	1054.69	901.69	765.00	631.13	518.06	432.00	351.56
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	292.50	255.43	200.53	169.03	144.79	127.80	112.73	101.53	91.01
45.0	213.86	175.61	152.16	133.48	115.48	104.18	94.73	85.89	78.24
90.0	195.24	162.45	141.86	125.33	110.59	98.44	89.44	80.83	73.41
135.0	193.78	161.44	141.02	124.37	107.72	96.92	87.86	79.43	72.06
180.0	182.42	156.26	135.39	120.49	108.17	95.34	86.74	79.54	71.55
225.0	196.54	163.35	143.27	127.13	112.89	101.31	92.59	84.15	76.73
270.0	284.06	206.83	177.36	154.13	131.51	117.23	105.69	94.84	85.56
315.0	272.19	221.79	191.59	167.91	146.93	129.49	114.58	96.81	86.74
360.0	292.50	255.43	200.53	169.03	144.79	127.80	112.73	101.53	91.01
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	82.13	75.32	69.98	62.49	57.83	54.34	49.16	45.79	42.98
45.0	72.23	66.15	61.43	56.59	52.09	48.38	44.66	41.23	38.36
90.0	67.67	61.93	57.43	52.93	48.66	45.34	42.13	38.53	36.00
135.0	66.26	60.53	56.14	51.53	47.19	43.65	40.11	36.79	34.14
180.0	65.93	60.92	56.53	51.41	47.64	43.88	40.78	37.58	34.93
225.0	70.93	65.25	60.69	55.86	51.53	48.04	44.83	41.01	38.19
270.0	78.41	71.38	65.93	60.41	55.52	51.69	47.81	44.21	41.29
315.0	79.26	72.23	66.77	61.37	56.81	53.16	49.78	45.84	42.75
360.0	82.13	75.32	69.98	62.49	57.83	54.34	49.16	45.79	42.98

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	39.38	36.39	34.20	31.39	29.19	27.23	25.03	23.51	22.16
45.0	35.78	32.79	30.60	28.58	26.66	24.69	23.18	21.66	20.42
90.0	33.64	30.88	28.91	27.11	25.14	23.57	22.28	20.87	19.97
135.0	31.73	28.97	27.00	25.20	23.46	21.88	20.64	19.46	18.45
180.0	32.29	29.87	27.90	25.93	24.30	22.78	21.43	20.31	19.41
225.0	35.61	32.63	30.38	28.29	26.33	24.41	22.89	21.60	20.48
270.0	38.53	35.44	33.08	30.83	28.58	26.55	24.86	23.34	21.88
315.0	39.54	35.55	32.46	29.87	27.17	25.26	23.63	21.77	20.64
360.0	39.38	36.39	34.20	31.39	29.19	27.23	25.03	23.51	22.16
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	20.81	19.74	18.84	17.89	17.21	16.59	15.98	15.41	14.91
45.0	19.41	18.56	17.72	16.99	16.43	15.81	15.24	14.79	14.34
90.0	18.96	18.11	17.44	16.76	16.09	15.58	15.08	14.40	14.01
135.0	17.72	16.99	16.37	15.81	15.30	14.85	14.34	13.95	13.61
180.0	18.39	17.72	17.04	16.26	15.75	15.24	14.68	14.23	13.78
225.0	19.41	18.45	17.72	17.04	16.31	15.75	15.24	14.68	14.23
270.0	20.76	19.80	18.90	18.06	17.38	16.82	16.14	15.58	14.91
315.0	19.41	18.23	17.49	16.71	15.92	15.47	14.91	14.40	13.95
360.0	20.81	19.74	18.84	17.89	17.21	16.59	15.98	15.41	14.91
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	14.46	14.06	13.61	13.28	12.94	12.60	12.26	11.98	11.64
45.0	13.95	13.56	13.11	12.83	12.54	12.15	11.87	11.59	11.19
90.0	13.61	13.11	12.71	12.32	11.98	11.64	11.31	10.91	10.63
135.0	13.28	12.94	12.71	12.66	13.61	15.53	17.78	20.64	23.79
180.0	13.33	12.83	12.54	12.21	11.87	11.59	11.19	10.97	10.63
225.0	13.89	13.44	13.05	12.71	12.38	11.98	11.70	11.31	11.03
270.0	14.51	14.01	13.56	13.22	12.77	12.43	12.09	11.76	11.31
315.0	13.73	13.50	13.28	12.99	13.11	14.18	15.92	18.51	21.21
360.0	14.46	14.06	13.61	13.28	12.94	12.60	12.26	11.98	11.64
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	11.36	11.08	10.74	10.41	10.18	9.90	9.68	9.45	9.28
45.0	10.86	10.52	10.24	9.90	9.62	9.28	8.94	8.72	8.38
90.0	10.35	9.96	9.62	9.34	8.94	8.66	8.38	7.99	7.76
135.0	26.72	30.04	32.79	35.38	37.46	38.19	37.07	32.18	26.83
180.0	10.24	10.01	9.73	9.34	9.11	8.78	8.61	8.21	7.88
225.0	10.69	10.35	10.07	9.73	9.34	9.11	8.83	8.49	8.21
270.0	11.03	10.69	10.35	10.01	9.68	9.39	9.06	8.66	8.38
315.0	24.47	27.79	30.66	33.86	36.84	39.32	41.34	42.58	41.18
360.0	11.36	11.08	10.74	10.41	10.18	9.90	9.68	9.45	9.28
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	8.89	8.44	7.99	7.59	7.26	6.81	6.19	5.85	5.57
45.0	8.04	7.82	7.43	7.26	7.03	6.36	5.85	5.51	5.40
90.0	7.48	7.09	6.86	6.58	6.19	5.79	5.46	5.23	5.12
135.0	21.54	14.79	9.34	7.26	6.19	5.68	5.40	5.18	5.06
180.0	7.54	7.20	6.86	6.47	5.91	5.51	5.29	5.06	5.06
225.0	7.88	7.59	7.31	7.14	6.86	6.13	5.74	5.46	5.23
270.0	8.10	7.76	7.37	7.14	6.81	6.41	6.02	5.74	5.46
315.0	37.01	31.39	24.64	17.83	11.19	6.92	6.08	5.74	5.51
360.0	8.89	8.44	7.99	7.59	7.26	6.81	6.19	5.85	5.57

Intensity data(cd)

C/γ(°)	90.0
0.0	5.34
45.0	5.29
90.0	5.18
135.0	5.01
180.0	5.06
225.0	5.23
270.0	5.29
315.0	5.29
360.0	5.34