NATA LIGHTING CO.,LTD
www.nata.cn
Email:info@nata.cn
Tel:0750-377 0000(10 lines) Fax:0750-377 1111
Address:380JinOu Road,Gaoxin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: 3-2035-M
Luminaire: 92.70.131.00
Report No: NT2017051107
Test No: GC2017051107
LampCAT: CITIZEN CLU038
Lamp flux(lm): 2365.0
Number of Lamps: 1
Length(mm): 78
Phm Type: C

Voltage(V): 34.2000
Current(A): 0.5000
Power (W): 17.1000
PF: 0.0000
Ballast type: DC
Width(mm): 78
Height(mm): 0

Photometric Results

Lumens(lm): 2102.13
Efficiency(%): 88.89%
Lumens(lm)/Power(W): 122.93
Central intensity(cd): 3796.414
Maximum intensity(cd): 3796.414
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=41.6
[C90/270]Total=41.6
Field angle(10%Imax): [C0/180]Total=71.8
[C90/270]Total=71.8
Maximum s/h(1/2): C0_180=0.68 C90_270=0.68
Maximum s/h(1/4): C0_180=0.70 C90_270=0.70
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 88.89%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.682%

Equipment: gms1980
Temperature(°C): 25.0
Date: 2017/6/4
Humidity(%): 60.0%
Operator: NT07
Distance(m): 7.42

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3796.414	0.000	0	.000%	.000%
1.0	3791.734	3.631	3.631	.154%	.173%
2.0	3776.181	10.862	14.493	.459%	.689%
3.0	3747.139	17.993	32.486	.761%	1.545%
4.0	3707.360	24.953	57.439	1.055%	2.732%
5.0	3657.947	31.685	89.124	1.340%	4.240%
6.0	3600.413	38.145	127.269	1.613%	6.054%
7.0	3540.127	44.321	171.59	1.874%	8.163%
8.0	3468.966	50.163	221.753	2.121%	10.549%
9.0	3377.710	55.489	277.241	2.346%	13.189%
10.0	3283.564	60.282	337.523	2.549%	16.056%
11.0	3184.875	64.633	402.156	2.733%	19.131%
12.0	3082.608	68.513	470.669	2.897%	22.390%
13.0	2970.568	71.836	542.505	3.037%	25.807%
14.0	2859.079	74.619	617.124	3.155%	29.357%
15.0	2742.772	76.905	694.028	3.252%	33.015%
16.0	2631.008	78.741	772.769	3.329%	36.761%
17.0	2480.016	79.592	852.362	3.365%	40.547%
18.0	2335.355	79.395	931.757	3.357%	44.324%
19.0	2195.374	78.825	1010.582	3.333%	48.074%
20.0	2033.233	77.395	1087.977	3.273%	51.756%
21.0	1867.926	74.910	1162.888	3.167%	55.319%
22.0	1745.563	72.615	1235.502	3.070%	58.774%
23.0	1630.633	70.842	1306.344	2.995%	62.144%
24.0	1512.537	68.721	1375.065	2.906%	65.413%
25.0	1425.410	66.802	1441.867	2.825%	68.591%
26.0	1341.587	65.315	1507.183	2.762%	71.698%
27.0	1255.561	63.540	1570.722	2.687%	74.720%
28.0	1154.161	61.009	1631.731	2.580%	77.623%
29.0	1085.891	58.606	1690.338	2.478%	80.411%
30.0	1026.816	57.043	1747.38	2.412%	83.124%
31.0	946.447	54.913	1802.293	2.322%	85.736%
32.0	847.566	51.396	1853.69	2.173%	88.181%
33.0	739.256	46.748	1900.438	1.977%	90.405%
34.0	620.169	41.140	1941.578	1.740%	92.362%
35.0	484.661	34.312	1975.89	1.451%	93.995%
36.0	366.290	27.094	2002.985	1.146%	95.283%
37.0	278.310	21.023	2024.008	.889%	96.284%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	174.666	15.120	2039.128	.639%	97.003%
39.0	86.728	8.922	2048.05	.377%	97.427%
40.0	44.431	4.574	2052.624	.193%	97.645%
41.0	27.996	2.579	2055.203	.109%	97.768%
42.0	21.995	1.816	2057.019	.077%	97.854%
43.0	17.246	1.454	2058.473	.061%	97.923%
44.0	14.383	1.194	2059.667	.050%	97.980%
45.0	12.677	1.040	2060.707	.044%	98.029%
46.0	11.947	0.963	2061.67	.041%	98.075%
47.0	11.589	0.936	2062.606	.040%	98.120%
48.0	11.300	0.925	2063.531	.039%	98.164%
49.0	11.094	0.920	2064.451	.039%	98.207%
50.0	10.874	0.916	2065.367	.039%	98.251%
51.0	10.681	0.912	2066.279	.039%	98.294%
52.0	10.516	0.910	2067.188	.038%	98.338%
53.0	10.337	0.907	2068.095	.038%	98.381%
54.0	10.199	0.905	2069	.038%	98.424%
55.0	10.075	0.905	2069.906	.038%	98.467%
56.0	9.979	0.906	2070.812	.038%	98.510%
57.0	9.855	0.907	2071.719	.038%	98.553%
58.0	9.731	0.906	2072.624	.038%	98.596%
59.0	9.621	0.905	2073.529	.038%	98.639%
60.0	9.552	0.906	2074.435	.038%	98.682%
61.0	9.456	0.907	2075.342	.038%	98.726%
62.0	9.401	0.909	2076.251	.038%	98.769%
63.0	9.305	0.910	2077.16	.038%	98.812%
64.0	9.194	0.908	2078.068	.038%	98.855%
65.0	9.126	0.907	2078.975	.038%	98.898%
66.0	9.071	0.908	2079.883	.038%	98.942%
67.0	9.043	0.911	2080.793	.039%	98.985%
68.0	8.960	0.912	2081.705	.039%	99.028%
69.0	8.905	0.911	2082.617	.039%	99.072%
70.0	8.837	0.911	2083.528	.039%	99.115%
71.0	8.781	0.911	2084.439	.039%	99.158%
72.0	8.754	0.912	2085.35	.039%	99.202%
73.0	8.740	0.915	2086.265	.039%	99.245%
74.0	8.699	0.917	2087.182	.039%	99.289%
75.0	8.671	0.918	2088.1	.039%	99.332%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	8.713	0.923	2089.023	.039%	99.376%
77.0	8.878	0.938	2089.96	.040%	99.421%
78.0	9.015	0.958	2090.918	.041%	99.467%
79.0	8.919	0.964	2091.882	.041%	99.512%
80.0	8.726	0.951	2092.833	.040%	99.558%
81.0	8.616	0.938	2093.771	.040%	99.602%
82.0	8.575	0.932	2094.703	.039%	99.647%
83.0	8.561	0.932	2095.635	.039%	99.691%
84.0	8.534	0.931	2096.566	.039%	99.735%
85.0	8.548	0.932	2097.498	.039%	99.780%
86.0	8.465	0.930	2098.428	.039%	99.824%
87.0	8.465	0.927	2099.355	.039%	99.868%
88.0	8.437	0.926	2100.281	.039%	99.912%
89.0	8.437	0.925	2101.206	.039%	99.956%
90.0	8.451	0.926	2102.132	.039%	100.000%

Zonal flux distribution table

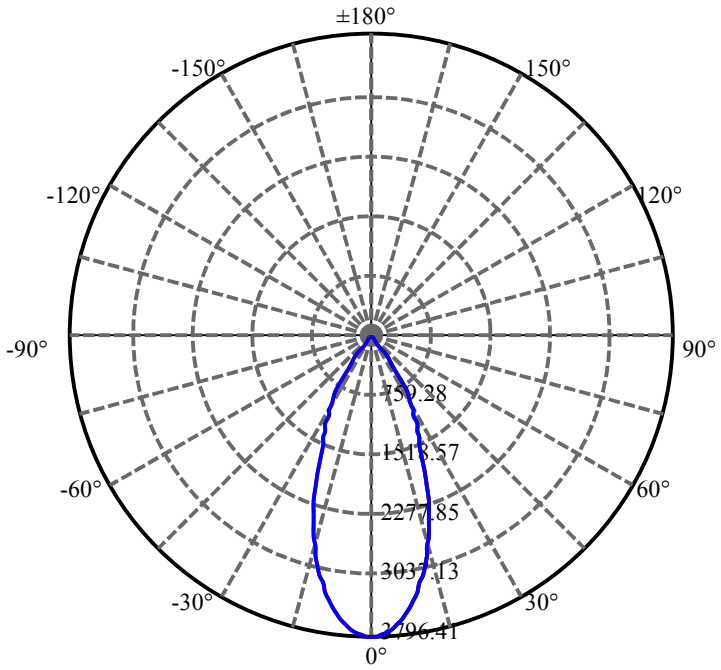
ZONAL LUMEN SUMMARY

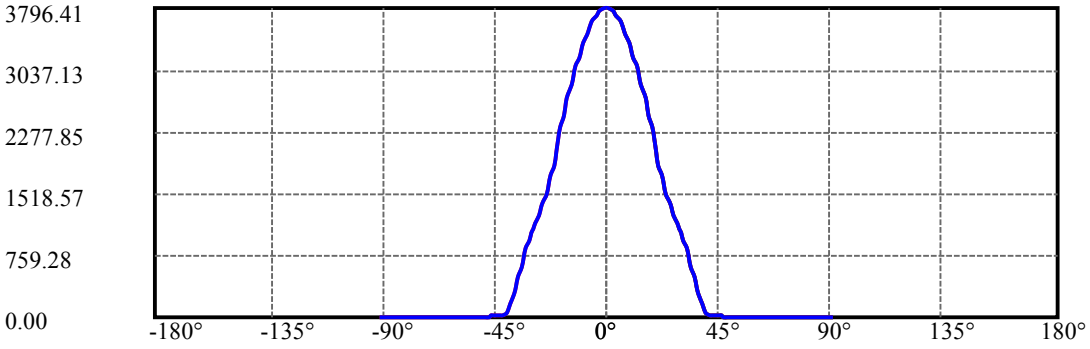
Zone	Lumens	%Lamp	%Fixt
0-30	1747.38	73.88%	83.12%
0-40	2052.62	86.79%	97.64%
0-60	2074.43	87.71%	98.68%
0-90	2101.21	88.85%	99.96%
0-120	2101.21	88.85%	99.96%
0-180	2102.13	88.89%	100.00%
60-90	27.68	1.17%	1.32%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-28.85	1681.71	71.11%	80.00%

ZONAL LUMEN SUMMARY

0-10	337.52
10-20	750.45
20-30	659.40
30-40	305.24
40-50	12.74
50-60	9.07
60-70	9.09
70-80	9.31
80-90	8.37
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

Light Distribution Curve [Unit:cd]





C0(Max):

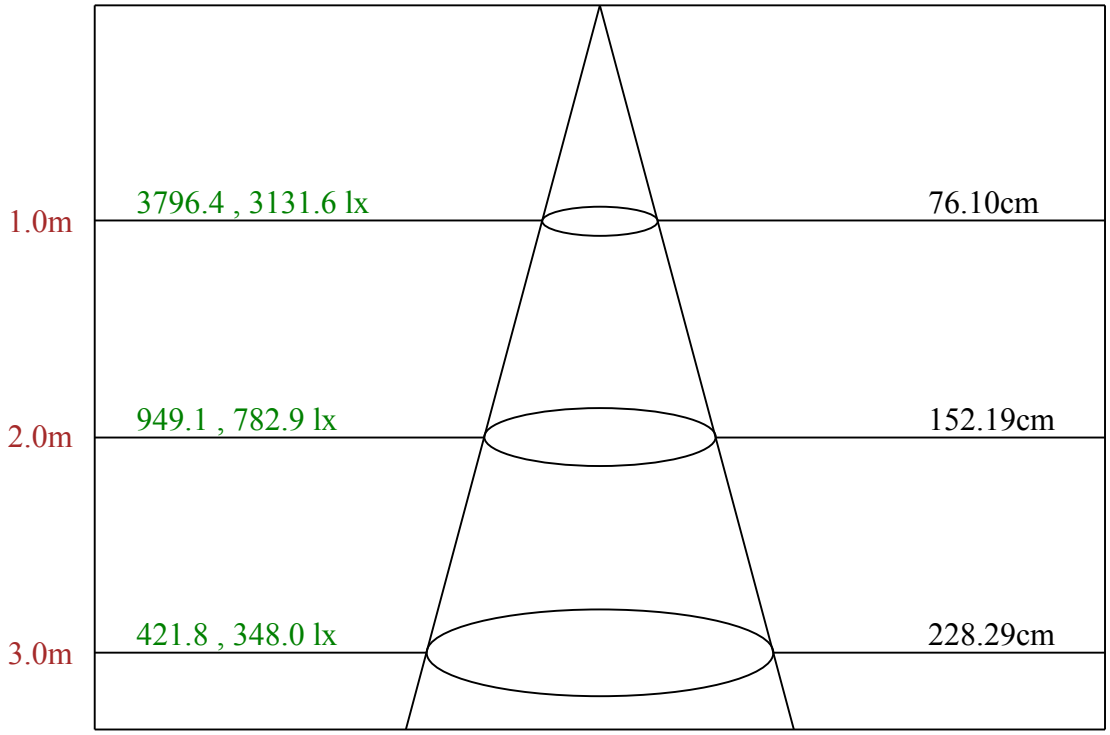
C0/C180:

C90/C270:

Field angle(10%Imax):C0/180Left:35.9 Right:35.9
:C90/270Left:35.9 Right:35.9

Beam Angle(50%Imax):C0/180Left:20.8 Right:20.8
:C90/270Left:20.8 Right:20.8

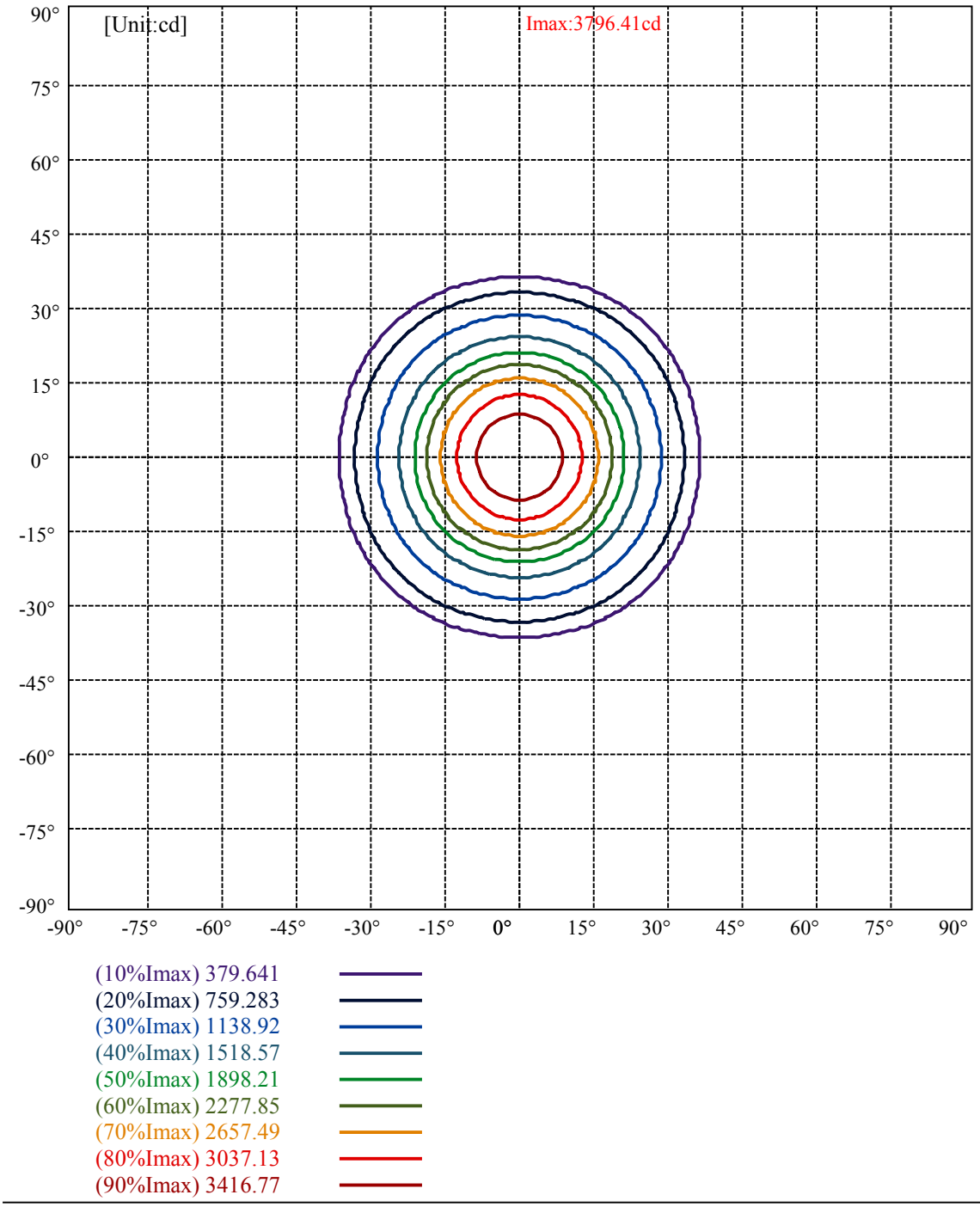
Lux distance Curve



Max , Ave

Beam angle of C0 plane 41.66

ISO-Intensity(V-H)

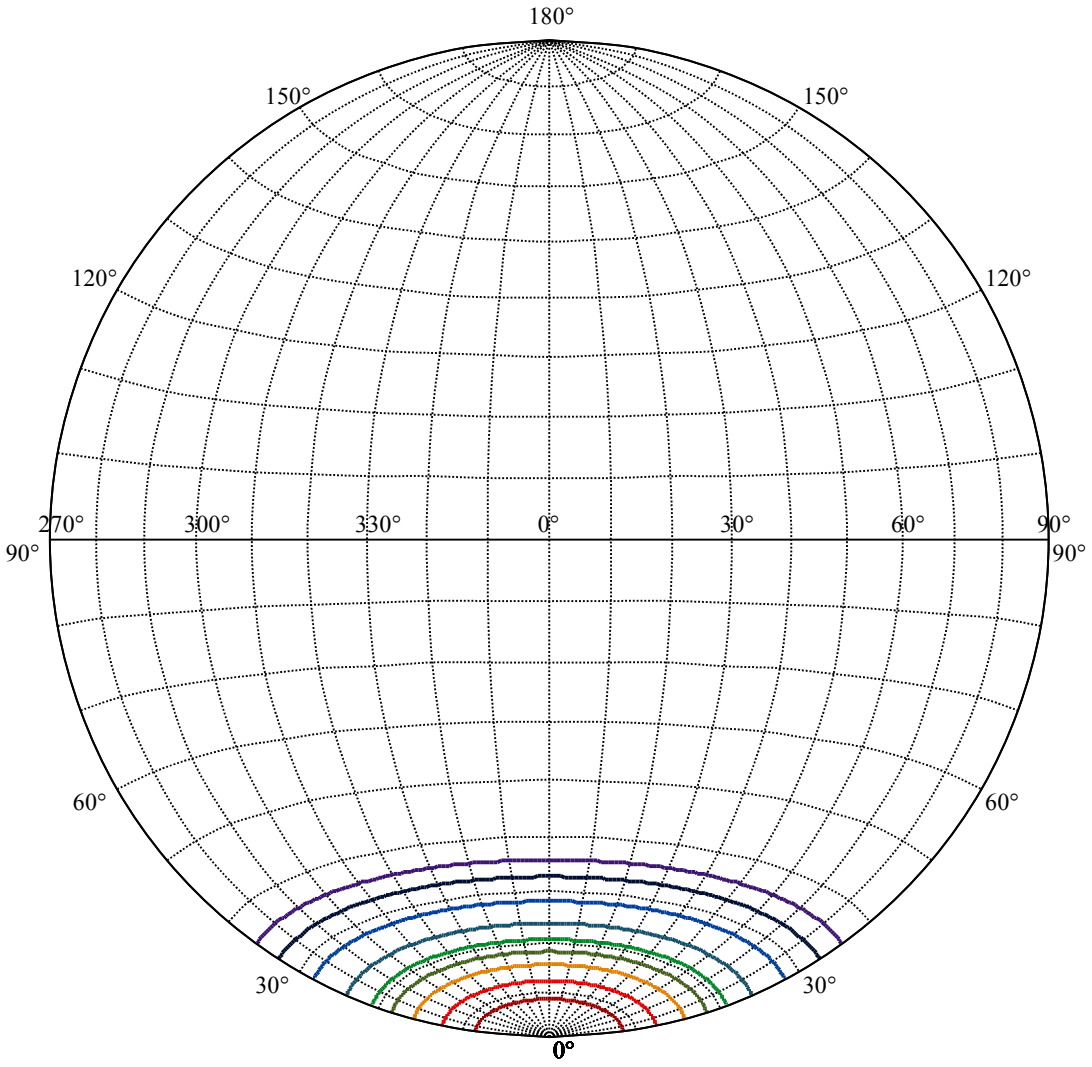


Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/6/4
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

ISO candela diagram on circular web



House [Unit:cd] Road

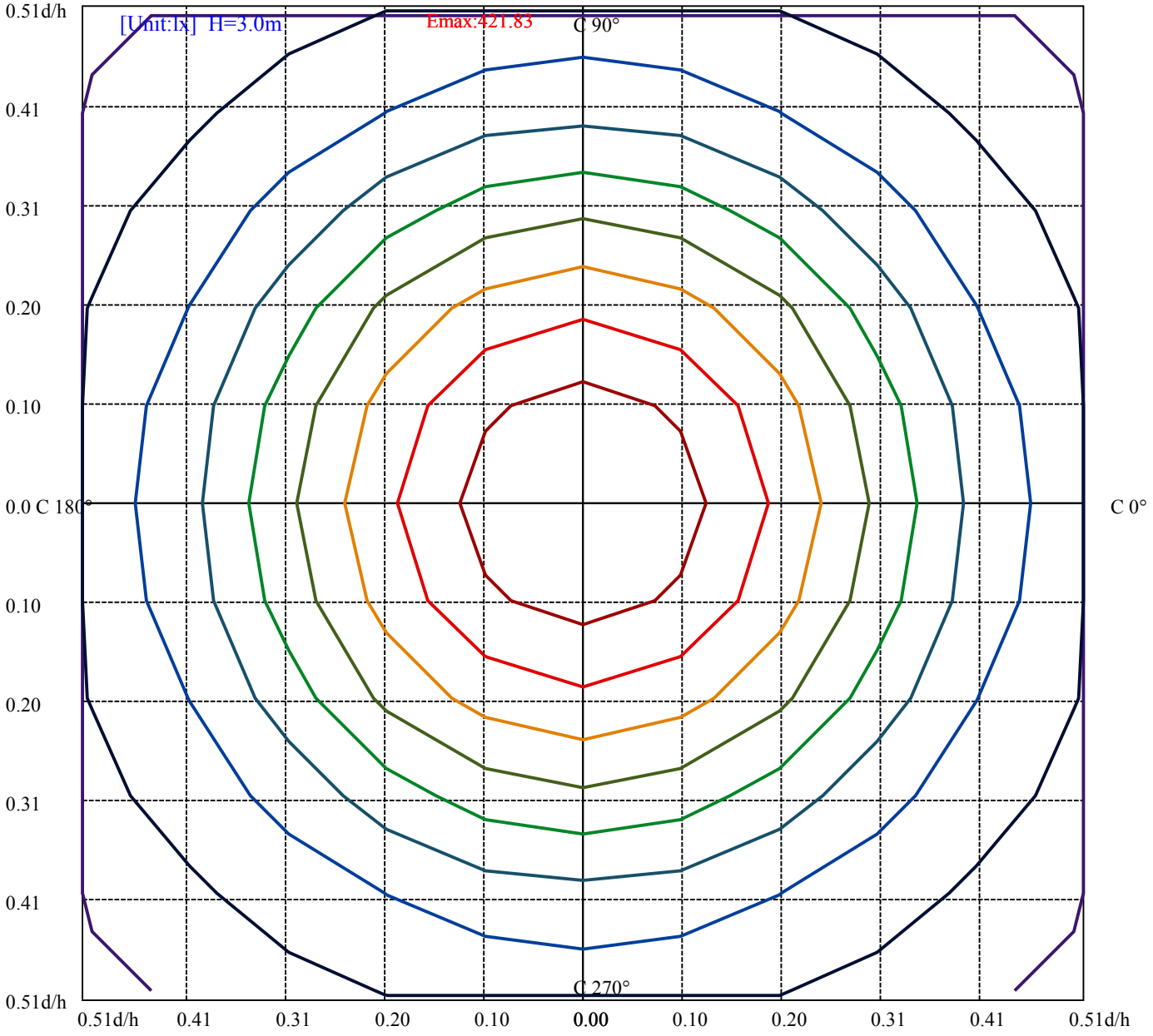
Imax:3796.41

(10%Imax) 379.641
(20%Imax) 759.283
(30%Imax) 1138.92
(40%Imax) 1518.57
(50%Imax) 1898.21
(60%Imax) 2277.85
(70%Imax) 2657.49
(80%Imax) 3037.13
(90%Imax) 3416.77

Equipment: gms1980 Date: 2017/6/4 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

Nata 3-2035-M

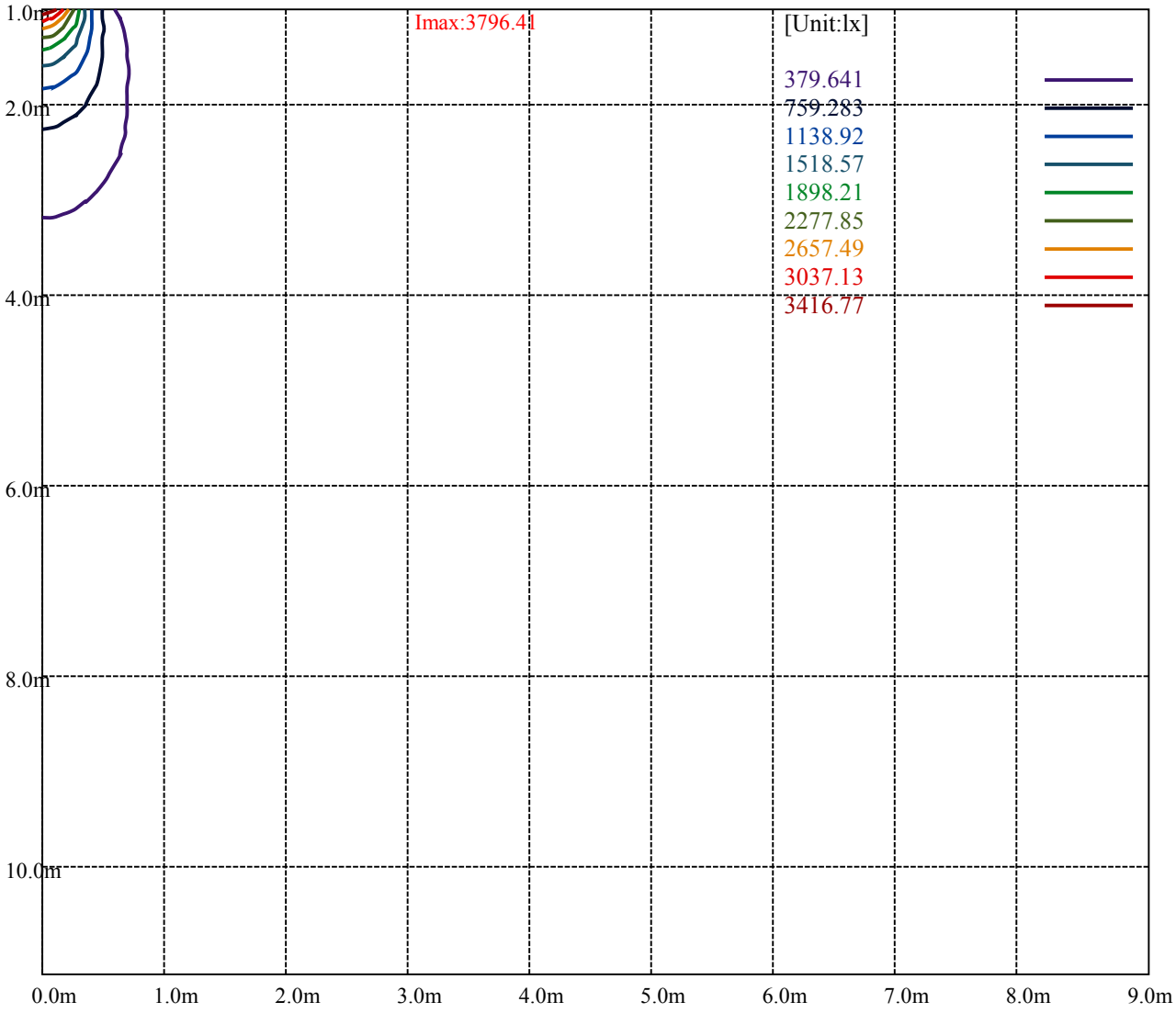
ISO illuminance diagram



(10%Emax) 42.18233
(20%Emax) 84.36478
(30%Emax) 126.5467
(40%Emax) 168.73
(50%Emax) 210.9122
(60%Emax) 253.0945
(70%Emax) 295.2767
(80%Emax) 337.4589
(90%Emax) 379.6411

Equipment: gms1980
Temperature(°C): 25.0
Date: 2017/6/4
Humidity(%): 60.0%
Operator: NT07
Distance(m): 7.42

Space ISO Lux diagram



Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/6/4
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Luminance Limitting Curve(no luminous side)

Luminance Table

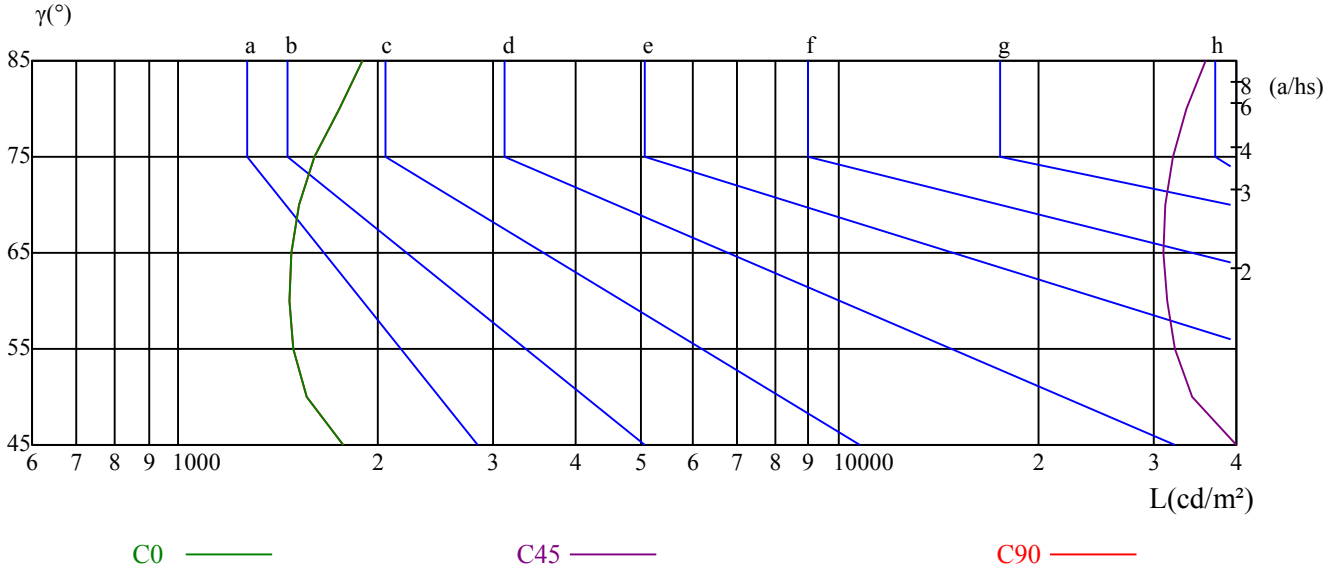
γ	45	50	55	60	65	70	75	80	85
C0	1782	1563	1493	1473	1477	1519	1601	1754	1902
C45	40351	34347	32370	31448	30989	31241	32080	33689	36025
C90	1782	1563	1493	1473	1477	1519	1601	1754	1902

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3549	3549	92438	5507	5507	142785	16120	16120	416773

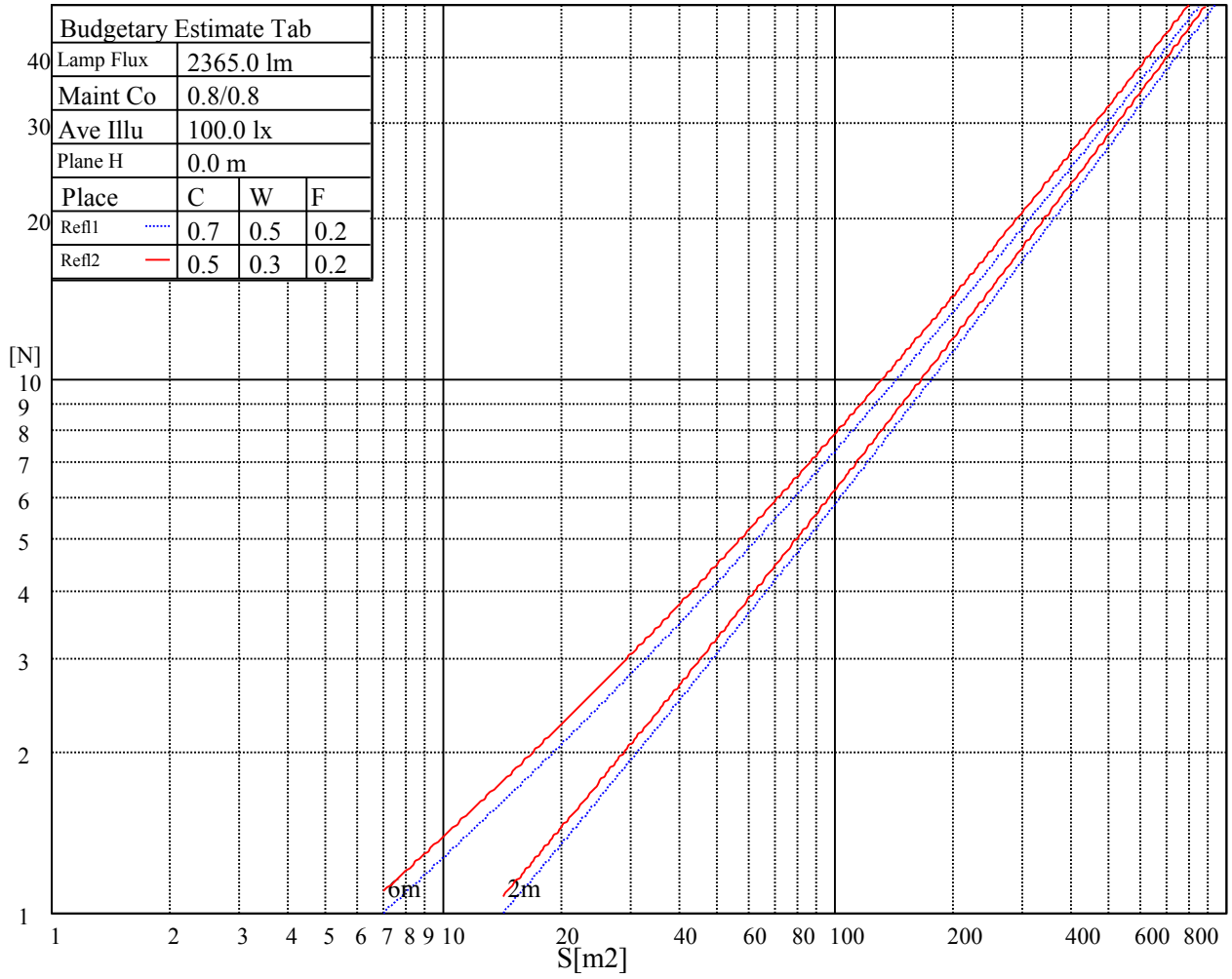
Glare Table

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 Limitting Curve



Budgetary Estimate Table



Equipment: gms1980 Date: 2017/6/4 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

Utilization factor table for indoor luminaire

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	COEFFCIENTS OF UTILIZATION RHOFC=20 CU															
0	1.06	1.06	1.06	1.03	1.03	1.03	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	0.93	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.85	0.84
2	0.93	0.89	0.87	0.91	0.88	0.86	0.88	0.86	0.84	0.86	0.84	0.82	0.83	0.82	0.80	0.79
3	0.87	0.83	0.80	0.86	0.82	0.80	0.84	0.81	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.75
4	0.83	0.78	0.75	0.82	0.77	0.74	0.80	0.76	0.73	0.78	0.75	0.73	0.76	0.74	0.72	0.71
5	0.78	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.69	0.74	0.71	0.69	0.73	0.70	0.68	0.67
6	0.74	0.69	0.66	0.73	0.69	0.66	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.64	0.63
7	0.70	0.66	0.62	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.61	0.60
8	0.67	0.62	0.59	0.67	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.58	0.57
9	0.64	0.59	0.56	0.64	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.56	0.61	0.58	0.56	0.54
10	0.61	0.57	0.54	0.61	0.56	0.53	0.60	0.56	0.53	0.59	0.56	0.53	0.59	0.55	0.53	0.52

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	3793.94	3791.18	3777.42	3754.30	3718.51	3668.41	3614.45	3558.85	3483.97
90.0	3798.89	3787.88	3763.66	3728.97	3682.17	3633.17	3580.32	3513.15	3441.58
180.0	3793.94	3789.53	3774.12	3737.78	3694.84	3642.53	3583.62	3521.96	3448.73
270.0	3798.89	3798.34	3789.53	3767.51	3733.93	3687.68	3623.26	3566.55	3501.59
360.0	3793.94	3791.18	3777.42	3754.30	3718.51	3668.41	3614.45	3558.85	3483.97

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3397.53	3311.64	3209.79	3116.74	3008.83	2893.21	2784.75	2685.65	2519.93
90.0	3350.18	3249.98	3156.93	3058.38	2928.45	2818.89	2707.12	2573.34	2427.44
180.0	3354.04	3247.78	3138.77	3041.32	2929.00	2811.73	2705.47	2593.71	2436.80
270.0	3409.09	3324.86	3234.01	3113.99	3015.99	2912.48	2773.74	2671.34	2535.90
360.0	3397.53	3311.64	3209.79	3116.74	3008.83	2893.21	2784.75	2685.65	2519.93

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2388.35	2267.77	2071.77	1929.18	1807.50	1666.56	1553.69	1462.30	1368.15
90.0	2281.54	2111.96	1952.85	1810.80	1681.97	1579.57	1473.86	1375.31	1296.03
180.0	2298.60	2152.15	2006.81	1828.97	1712.25	1613.70	1495.33	1412.20	1326.31
270.0	2372.93	2249.60	2101.50	1902.75	1780.52	1662.70	1527.26	1451.84	1375.86
360.0	2388.35	2267.77	2071.77	1929.18	1807.50	1666.56	1553.69	1462.30	1368.15

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1281.71	1194.72	1114.34	1047.17	971.19	870.99	766.39	655.72	514.23
90.0	1219.50	1126.45	1057.08	995.42	897.97	803.27	694.81	566.53	428.34
180.0	1234.36	1091.38	1073.54	998.50	923.74	813.46	690.68	578.42	451.90
270.0	1286.67	1204.08	1098.60	1066.17	992.89	902.54	805.14	680.00	544.18
360.0	1281.71	1194.72	1114.34	1047.17	971.19	870.99	766.39	655.72	514.23

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	401.91	297.86	227.44	104.99	52.14	29.40	23.78	18.83	14.98
90.0	311.07	283.54	119.69	58.52	32.87	23.95	18.39	14.98	12.99
180.0	330.72	235.48	152.51	72.29	38.04	27.20	20.92	16.24	14.37
270.0	421.46	296.37	199.03	111.10	54.67	31.44	24.89	18.94	15.20
360.0	401.91	297.86	227.44	104.99	52.14	29.40	23.78	18.83	14.98

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	13.27	12.61	12.11	11.73	11.45	11.18	11.01	10.85	10.57
90.0	11.84	11.34	11.07	10.90	10.74	10.57	10.41	10.30	10.08
180.0	12.50	11.84	11.56	11.29	11.12	10.96	10.68	10.52	10.41
270.0	13.10	12.00	11.62	11.29	11.07	10.79	10.63	10.41	10.30
360.0	13.27	12.61	12.11	11.73	11.45	11.18	11.01	10.85	10.57

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	10.46	10.30	10.19	10.13	9.97	9.80	9.74	9.58	9.58
90.0	9.97	9.86	9.80	9.69	9.58	9.47	9.36	9.30	9.25
180.0	10.24	10.13	10.02	9.86	9.74	9.69	9.63	9.52	9.41
270.0	10.13	10.02	9.91	9.74	9.63	9.52	9.47	9.41	9.36
360.0	10.46	10.30	10.19	10.13	9.97	9.80	9.74	9.58	9.58

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	9.47	9.36	9.25	9.19	9.14	9.08	9.03	8.97	8.92
90.0	9.19	9.08	9.03	8.97	8.97	8.86	8.81	8.75	8.70
180.0	9.30	9.19	9.14	9.08	9.08	8.97	8.92	8.86	8.81
270.0	9.25	9.14	9.08	9.03	8.97	8.92	8.86	8.75	8.70
360.0	9.47	9.36	9.25	9.19	9.14	9.08	9.03	8.97	8.92

Intensity data(cd)

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	8.86	8.86	8.81	8.81	9.03	9.69	10.24	10.02	9.36
90.0	8.70	8.70	8.59	8.59	8.59	8.59	8.59	8.53	8.48
180.0	8.75	8.75	8.75	8.70	8.64	8.64	8.64	8.64	8.59
270.0	8.70	8.64	8.64	8.59	8.59	8.59	8.59	8.48	8.48
360.0	8.86	8.86	8.81	8.81	9.03	9.69	10.24	10.02	9.36

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	8.92	8.81	8.70	8.64	8.64	8.53	8.53	8.53	8.48
90.0	8.48	8.48	8.48	8.48	8.53	8.42	8.42	8.37	8.42
180.0	8.59	8.53	8.59	8.53	8.53	8.48	8.48	8.42	8.48
270.0	8.48	8.48	8.48	8.48	8.48	8.42	8.42	8.42	8.37
360.0	8.92	8.81	8.70	8.64	8.64	8.53	8.53	8.53	8.48

C/γ(°)	90.0
0.0	8.48
90.0	8.42
180.0	8.48
270.0	8.42
360.0	8.48