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Nata

LumCAT: 2-1121-A4
Luminaire: TE 2213130-1+92.76.365.00

Report No: NT20170511503	Voltage(V): 219.9000
Test No: GC20170511503	Current(A): 0.1350
LampCAT: LUXEON CoB 1208	Power (W): 28.1000
Lamp flux(lm): 3194.0	PF: 0.9420
Number of Lamps: 1	Ballast type: DC
Length(mm): 70	Width(mm): 70
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2930.59
Efficiency(%): 91.75%
Lumens(lm)/Power(W): 104.29
Central intensity(cd): 8493.550
Maximum intensity(cd): 8493.550
Angle of maximum intensity: C=0.0 γ=0.0
Beam Angle(50%Imax): [C0/180]Total=29.1
[C90/270]Total=29.1
Field angle(10%Imax): [C0/180]Total=67.8
[C90/270]Total=67.8
Maximum s/h(1/2): C0_180=0.50 C90_270=0.50
Maximum s/h(1/4): C0_180=0.45 C90_270=0.45
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.75%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.748%

Equipment: gms1980	Date: 2017/5/15	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.42

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	8493.551	0.000	0	.000%	.000%
1.0	8480.475	8.122	8.122	.254%	.277%
2.0	8450.194	24.301	32.422	.761%	1.106%
3.0	8392.798	40.283	72.705	1.261%	2.481%
4.0	8318.059	55.937	128.642	1.751%	4.390%
5.0	8223.637	71.162	199.803	2.228%	6.818%
6.0	8070.855	85.632	285.435	2.681%	9.740%
7.0	7885.728	99.042	384.477	3.101%	13.119%
8.0	7659.859	111.257	495.734	3.483%	16.916%
9.0	7346.864	121.621	617.356	3.808%	21.066%
10.0	6920.452	129.114	746.469	4.042%	25.472%
11.0	6472.155	133.820	880.289	4.190%	30.038%
12.0	5918.012	135.442	1015.731	4.241%	34.660%
13.0	5261.603	132.674	1148.405	4.154%	39.187%
14.0	4610.974	126.368	1274.773	3.956%	43.499%
15.0	3954.426	117.590	1392.363	3.682%	47.511%
16.0	3330.362	106.743	1499.106	3.342%	51.154%
17.0	2752.269	94.723	1593.828	2.966%	54.386%
18.0	2303.009	83.351	1677.179	2.610%	57.230%
19.0	1966.890	74.288	1751.467	2.326%	59.765%
20.0	1705.097	67.208	1818.674	2.104%	62.058%
21.0	1522.585	61.978	1880.652	1.940%	64.173%
22.0	1408.893	58.909	1939.561	1.844%	66.183%
23.0	1330.713	57.484	1997.046	1.800%	68.145%
24.0	1269.601	56.852	2053.898	1.780%	70.085%
25.0	1224.317	56.706	2110.604	1.775%	72.020%
26.0	1188.668	56.959	2167.563	1.783%	73.963%
27.0	1149.426	57.202	2224.765	1.791%	75.915%
28.0	1118.540	57.420	2282.185	1.798%	77.875%
29.0	1088.809	57.750	2339.935	1.808%	79.845%
30.0	1063.153	58.103	2398.038	1.819%	81.828%
31.0	1029.706	58.241	2456.279	1.823%	83.815%
32.0	982.647	57.652	2513.931	1.805%	85.783%
33.0	923.076	56.143	2570.074	1.758%	87.698%
34.0	843.147	53.451	2623.525	1.673%	89.522%
35.0	743.124	49.264	2672.789	1.542%	91.203%
36.0	647.284	44.271	2717.06	1.386%	92.714%
37.0	546.132	38.923	2755.982	1.219%	94.042%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	443.410	33.030	2789.012	1.034%	95.169%
39.0	342.630	26.830	2815.842	.840%	96.085%
40.0	258.022	20.949	2836.79	.656%	96.799%
41.0	173.593	15.370	2852.16	.481%	97.324%
42.0	100.519	9.959	2862.119	.312%	97.664%
43.0	57.864	5.867	2867.986	.184%	97.864%
44.0	37.796	3.610	2871.596	.113%	97.987%
45.0	30.377	2.620	2874.216	.082%	98.077%
46.0	25.643	2.191	2876.407	.069%	98.151%
47.0	21.059	1.857	2878.265	.058%	98.215%
48.0	17.632	1.564	2879.829	.049%	98.268%
49.0	15.044	1.342	2881.171	.042%	98.314%
50.0	13.874	1.206	2882.376	.038%	98.355%
51.0	13.558	1.161	2883.537	.036%	98.395%
52.0	13.324	1.153	2884.69	.036%	98.434%
53.0	13.117	1.150	2885.84	.036%	98.473%
54.0	12.938	1.148	2886.989	.036%	98.512%
55.0	12.787	1.148	2888.137	.036%	98.552%
56.0	12.649	1.149	2889.287	.036%	98.591%
57.0	12.525	1.151	2890.438	.036%	98.630%
58.0	12.388	1.152	2891.59	.036%	98.669%
59.0	12.305	1.154	2892.744	.036%	98.709%
60.0	12.209	1.158	2893.902	.036%	98.748%
61.0	12.112	1.161	2895.063	.036%	98.788%
62.0	12.044	1.164	2896.227	.036%	98.828%
63.0	11.975	1.168	2897.395	.037%	98.867%
64.0	11.961	1.175	2898.57	.037%	98.908%
65.0	11.933	1.183	2899.752	.037%	98.948%
66.0	11.933	1.191	2900.943	.037%	98.988%
67.0	11.920	1.199	2902.142	.038%	99.029%
68.0	11.920	1.208	2903.35	.038%	99.071%
69.0	11.933	1.217	2904.567	.038%	99.112%
70.0	11.906	1.224	2905.791	.038%	99.154%
71.0	11.878	1.229	2907.02	.038%	99.196%
72.0	11.851	1.234	2908.254	.039%	99.238%
73.0	11.823	1.238	2909.492	.039%	99.280%
74.0	11.782	1.241	2910.733	.039%	99.323%
75.0	11.755	1.244	2911.977	.039%	99.365%

Zonal flux distribution table

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	11.699	1.245	2913.222	.039%	99.407%
77.0	11.713	1.248	2914.47	.039%	99.450%
78.0	11.713	1.254	2915.724	.039%	99.493%
79.0	11.727	1.259	2916.984	.039%	99.536%
80.0	11.713	1.264	2918.247	.040%	99.579%
81.0	11.672	1.265	2919.512	.040%	99.622%
82.0	11.576	1.261	2920.773	.039%	99.665%
83.0	11.493	1.254	2922.027	.039%	99.708%
84.0	11.355	1.245	2923.271	.039%	99.750%
85.0	11.300	1.237	2924.508	.039%	99.793%
86.0	11.218	1.231	2925.739	.039%	99.835%
87.0	11.080	1.220	2926.959	.038%	99.876%
88.0	11.025	1.211	2928.17	.038%	99.918%
89.0	11.025	1.209	2929.379	.038%	99.959%
90.0	10.998	1.207	2930.586	.038%	100.000%

Zonal flux distribution table

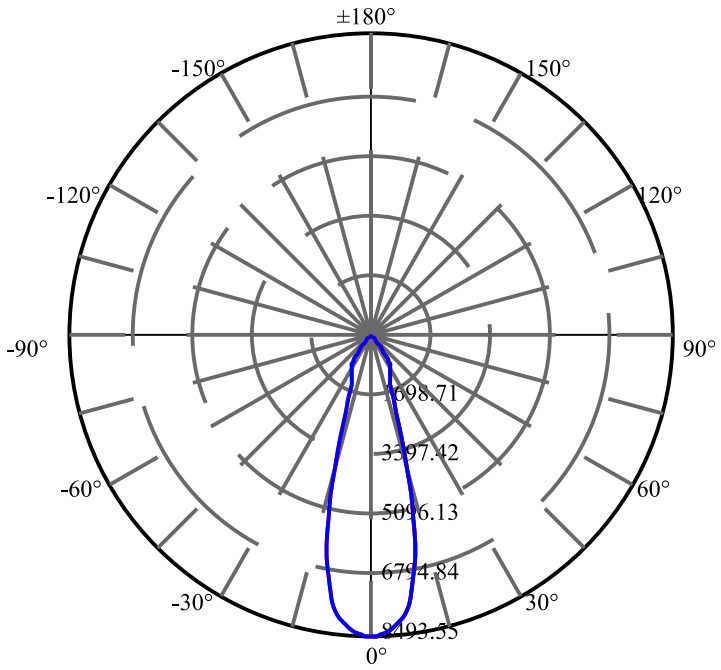
ZONAL LUMEN SUMMARY

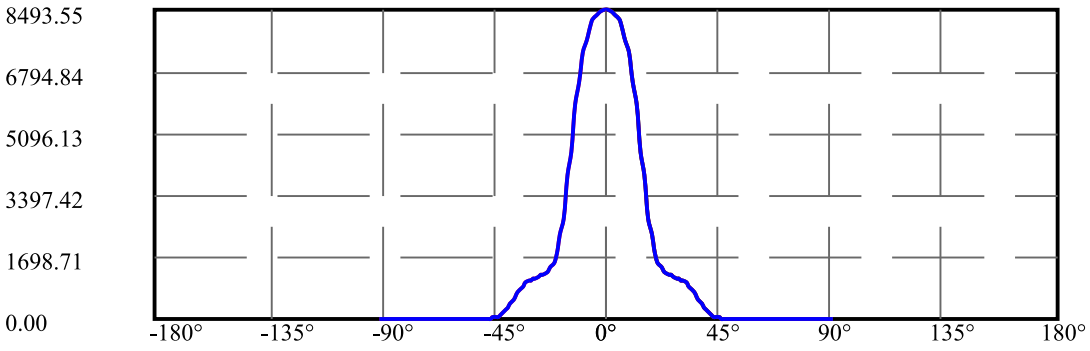
Zone	Lumens	%Lamp	%Fixt
0-30	2398.04	75.08%	81.83%
0-40	2836.79	88.82%	96.80%
0-60	2893.90	90.60%	98.75%
0-90	2929.38	91.72%	99.96%
0-120	2929.38	91.72%	99.96%
0-180	2930.59	91.75%	100.00%
60-90	36.63	1.15%	1.25%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-29.08	2344.47	73.40%	80.00%

ZONAL LUMEN SUMMARY

0-10	746.47
10-20	1072.20
20-30	579.36
30-40	438.75
40-50	45.59
50-60	11.53
60-70	11.89
70-80	12.46
80-90	11.13
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:

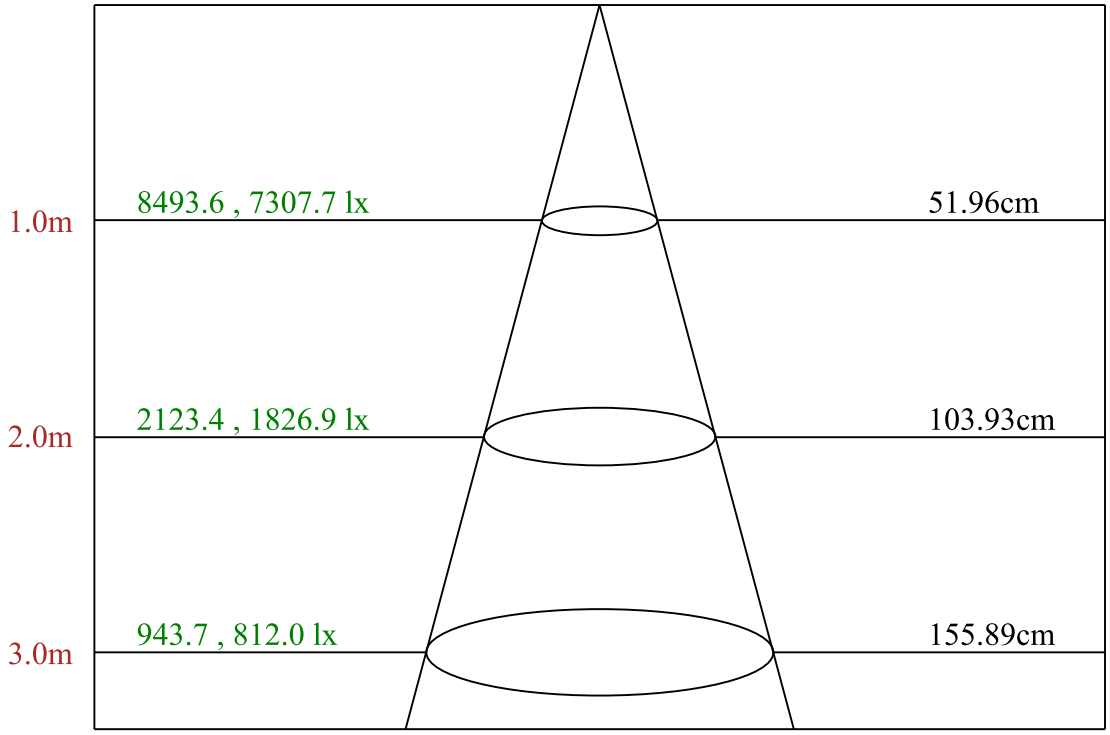
C90/C270:

Field angle(10%Imax):C0/180Left:33.9 Right:33.9
:C90/270Left:33.9 Right:33.9

Beam Angle(50%Imax):C0/180Left:14.6 Right:14.6
:C90/270Left:14.6 Right:14.6

Equipment: gms1980 Date: 2017/5/15 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

Lux distance Curve

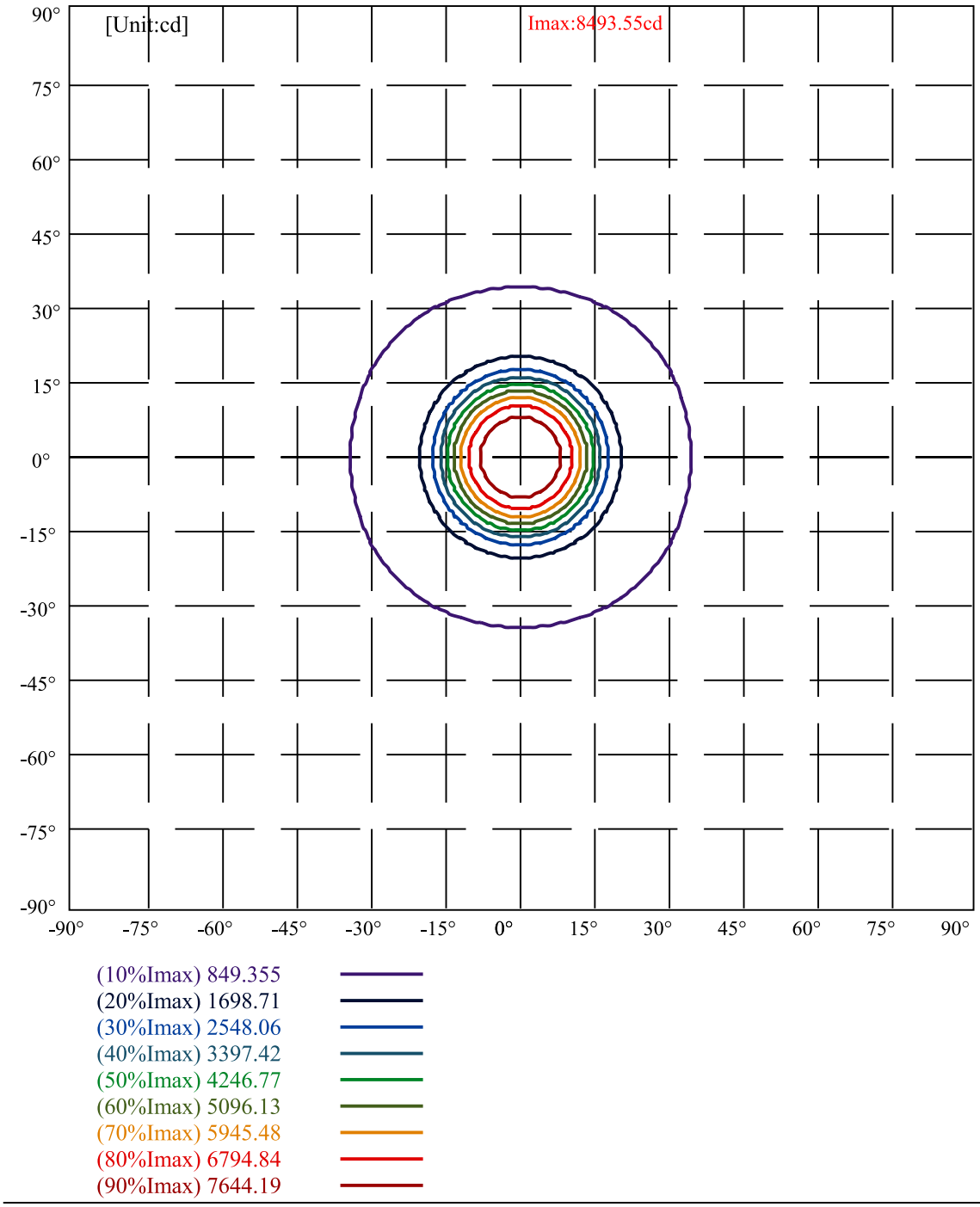


Max , Ave

Beam angle of C0 plane 29.13

Equipment: gms1980	Date: 2017/5/15	Operator: NT07
Temperature(°C): 25.0	Humidity(%): 60.0%	Distance(m): 7.42

ISO-Intensity(V-H)



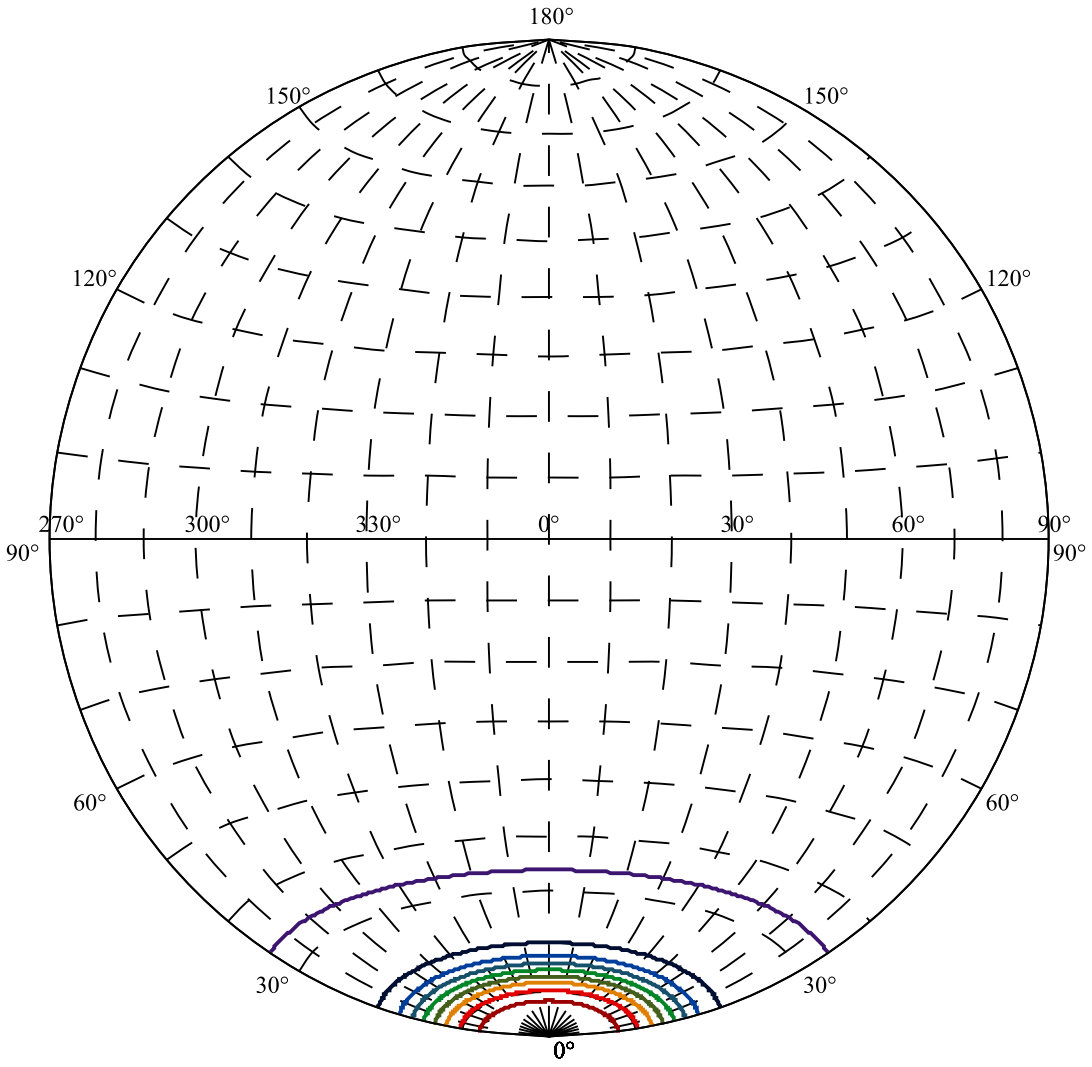
(10%Imax) 849.355
(20%Imax) 1698.71
(30%Imax) 2548.06
(40%Imax) 3397.42
(50%Imax) 4246.77
(60%Imax) 5096.13
(70%Imax) 5945.48
(80%Imax) 6794.84
(90%Imax) 7644.19

Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/5/15
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

ISO candela diagram on circular web



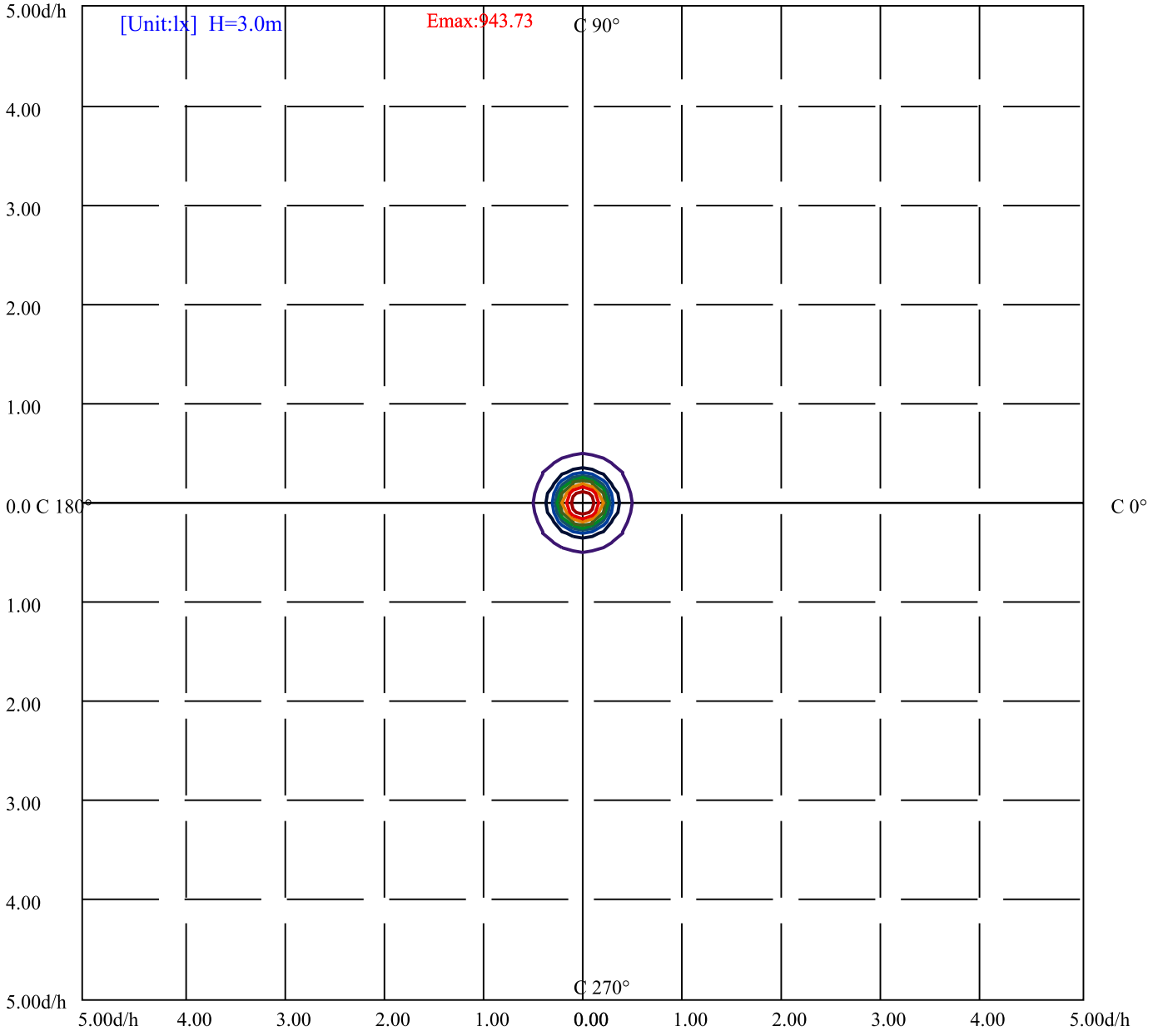
House [Unit:cd] Road

Imax:8493.55

(10%Imax) 849.355
(20%Imax) 1698.71
(30%Imax) 2548.06
(40%Imax) 3397.42
(50%Imax) 4246.77
(60%Imax) 5096.13
(70%Imax) 5945.48
(80%Imax) 6794.84
(90%Imax) 7644.19

Equipment: gms1980 Date: 2017/5/15 Operator: NT07
Temperature(°C): 25.0 Humidity(%): 60.0% Distance(m): 7.42

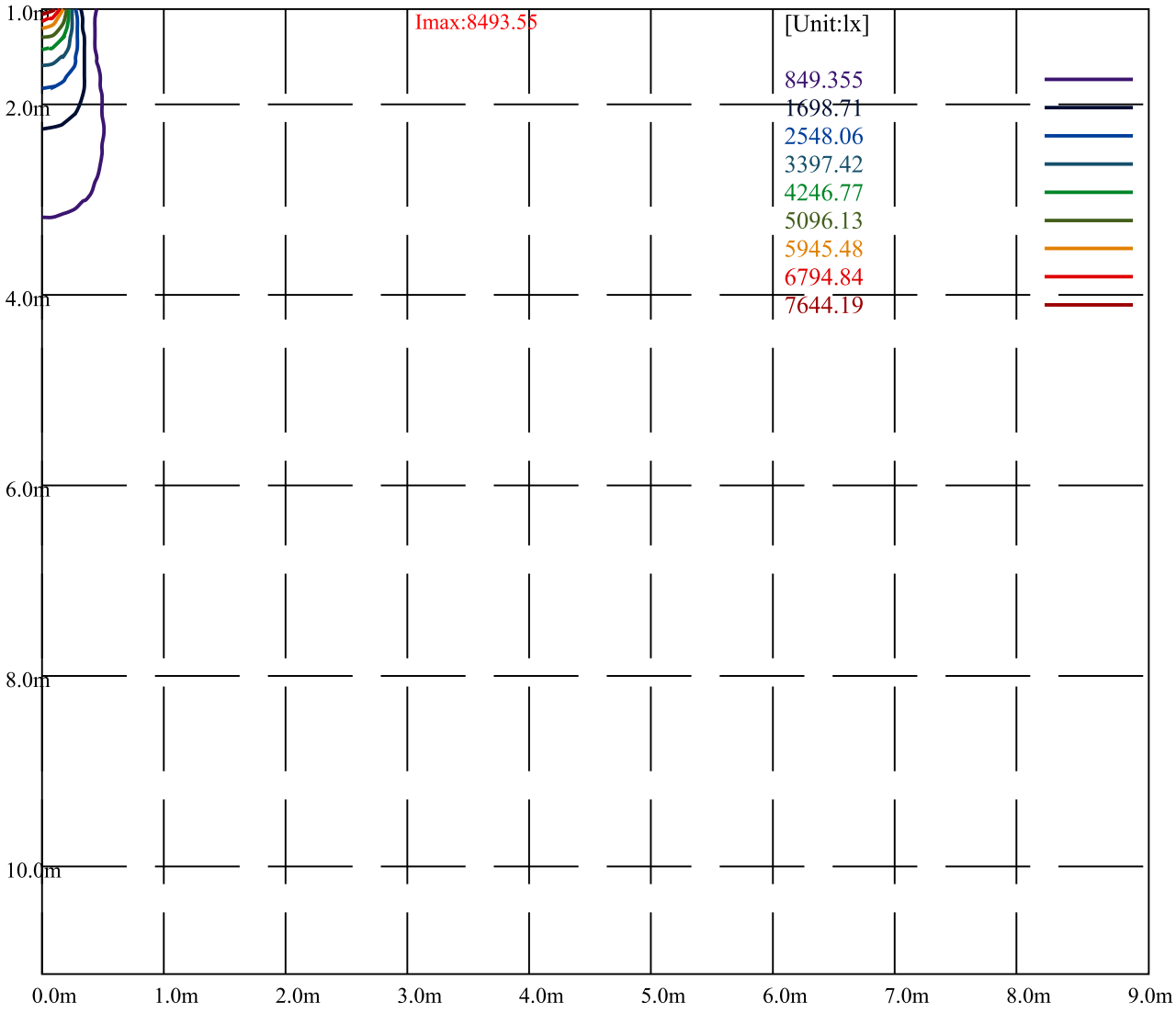
ISO illuminance diagram



(10%Emax) 94.37277
(20%Emax) 188.7455
(30%Emax) 283.1178
(40%Emax) 377.4911
(50%Emax) 471.8633
(60%Emax) 566.2366
(70%Emax) 660.6089
(80%Emax) 754.9822
(90%Emax) 849.3544

Equipment: gms1980
Temperature(°C): 25.0
Date: 2017/5/15
Humidity(%): 60.0%
Operator: NT07
Distance(m): 7.42

Space ISO Lux diagram



Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/5/15
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

Luminance Limitting Curve(no luminous side)

Luminance Table

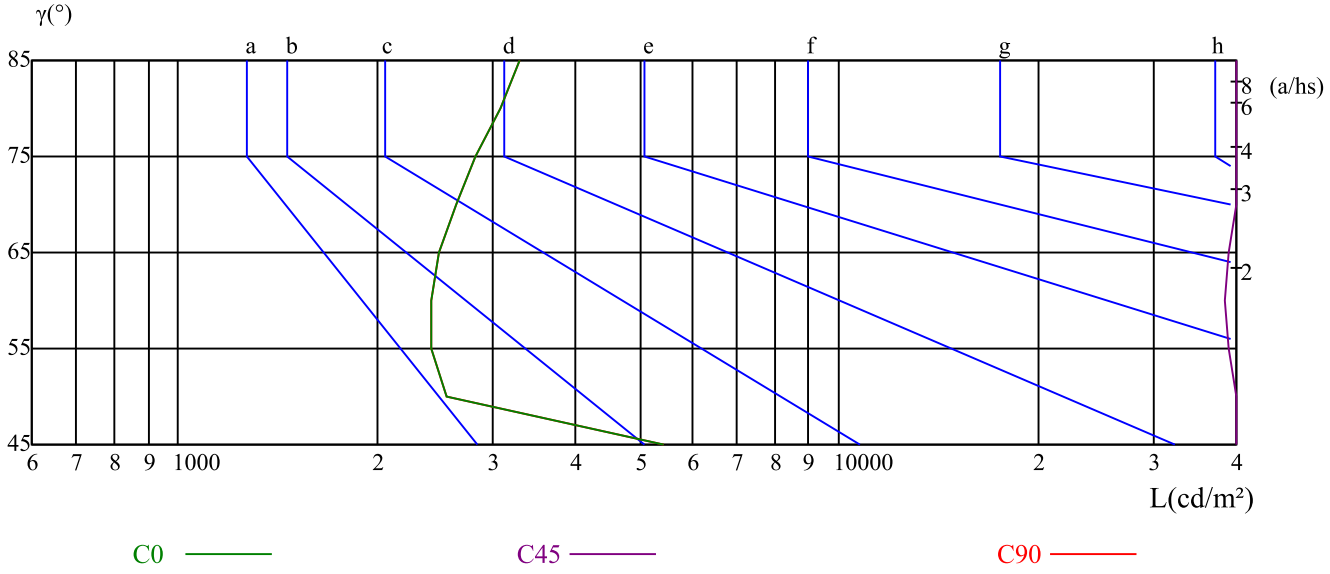
γ	45	50	55	60	65	70	75	80	85
C0	5431	2543	2424	2414	2487	2643	2815	3070	3299
C45	53993	40901	38841	38341	38820	39952	42783	44042	47902
C90	5431	2543	2424	2414	2487	2643	2815	3070	3299

L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5763	5763	111142	9269	9269	181492	26461	26461	523555

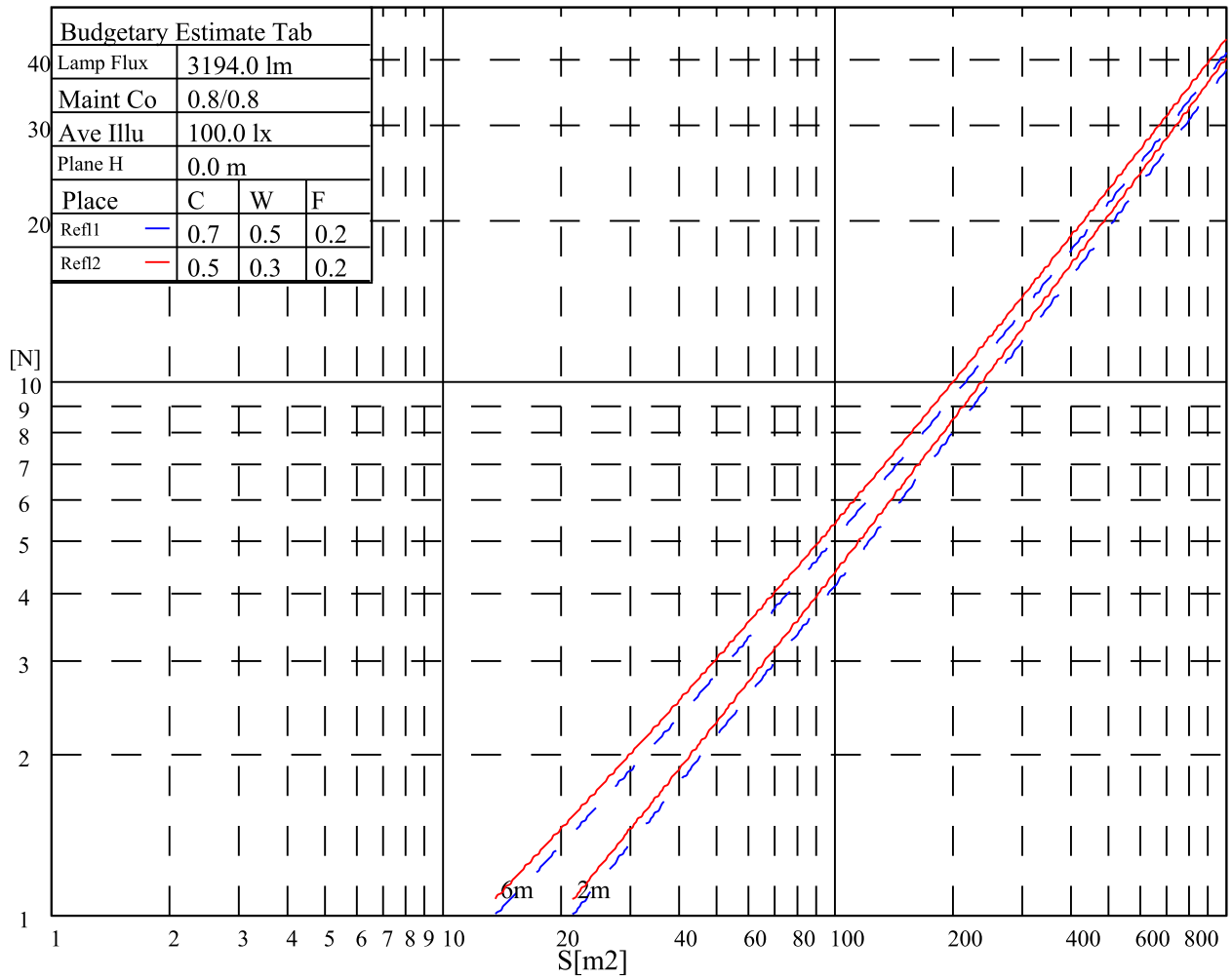
Glare Table

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: 2017/5/15	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	1.09	1.09	1.09	1.07	1.07	1.07	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.92
1	1.02	1.00	0.99	1.00	0.99	0.97	0.97	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.89	0.87
2	0.97	0.93	0.91	0.95	0.92	0.90	0.92	0.90	0.88	0.89	0.88	0.86	0.87	0.85	0.84	0.83
3	0.91	0.88	0.84	0.90	0.87	0.84	0.88	0.85	0.82	0.86	0.83	0.81	0.84	0.82	0.80	0.79
4	0.87	0.83	0.79	0.86	0.82	0.79	0.84	0.81	0.78	0.82	0.79	0.77	0.81	0.78	0.76	0.75
5	0.83	0.78	0.75	0.82	0.78	0.75	0.80	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.72
6	0.79	0.74	0.71	0.78	0.74	0.71	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.70	0.68
7	0.76	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.66
8	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.63
9	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.61	0.60
10	0.67	0.63	0.60	0.67	0.62	0.60	0.66	0.62	0.60	0.65	0.62	0.59	0.65	0.62	0.59	0.58

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	8505.11	8471.53	8417.02	8358.11	8274.43	8169.82	8012.91	7808.65	7566.40
90.0	8481.99	8506.76	8505.66	8468.78	8418.67	8346.55	8222.67	8093.29	7928.67
180.0	8505.11	8511.17	8497.40	8447.30	8396.10	8323.43	8183.03	8032.18	7837.83
270.0	8481.99	8432.44	8380.69	8297.00	8183.03	8054.75	7864.81	7608.79	7306.53
360.0	8505.11	8471.53	8417.02	8358.11	8274.43	8169.82	8012.91	7808.65	7566.40

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	7218.44	6769.73	6288.54	5729.72	4959.48	4320.83	3680.52	3008.28	2452.76
90.0	7688.63	7375.91	7019.69	6585.85	5939.48	5359.19	4745.86	4047.20	3380.46
180.0	7548.23	7177.70	6771.94	6161.36	5669.71	4992.51	4214.02	3675.01	3037.46
270.0	6932.15	6358.46	5808.45	5195.12	4477.74	3771.36	3177.30	2590.95	2138.39
360.0	7218.44	6769.73	6288.54	5729.72	4959.48	4320.83	3680.52	3008.28	2452.76

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2074.53	1788.78	1547.08	1423.76	1343.38	1281.16	1234.36	1200.78	1165.54
90.0	2851.37	2354.76	1975.97	1739.23	1543.78	1424.86	1335.67	1271.25	1228.86
180.0	2446.71	2121.87	1836.13	1569.11	1457.34	1367.60	1297.68	1247.58	1210.14
270.0	1839.43	1602.14	1461.20	1358.24	1291.07	1249.23	1210.69	1177.66	1150.13
360.0	2074.53	1788.78	1547.08	1423.76	1343.38	1281.16	1234.36	1200.78	1165.54

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1136.91	1101.68	1076.35	1052.68	1024.05	965.14	894.12	811.53	695.91
90.0	1192.52	1152.33	1123.15	1092.87	1057.63	1031.76	1002.03	934.86	852.82
180.0	1172.15	1136.91	1097.00	1071.62	1040.79	1009.73	951.59	881.45	788.02
270.0	1096.12	1083.23	1058.73	1035.45	996.36	923.96	844.57	744.75	635.74
360.0	1136.91	1101.68	1076.35	1052.68	1024.05	965.14	894.12	811.53	695.91

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	599.01	502.11	379.89	288.50	236.36	119.80	61.00	38.87	33.58
90.0	766.39	661.23	562.13	468.53	359.52	286.29	175.52	102.29	56.87
180.0	685.56	591.47	496.44	378.62	287.83	202.94	120.96	59.57	33.75
270.0	538.18	429.72	335.18	234.87	148.38	85.34	44.60	30.72	26.98
360.0	599.01	502.11	379.89	288.50	236.36	119.80	61.00	38.87	33.58

C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	29.51	24.94	19.05	14.48	13.71	13.32	13.10	12.94	12.77
90.0	39.15	34.58	29.62	24.67	18.11	14.48	14.09	13.76	13.54
180.0	29.95	25.00	20.81	17.34	14.65	14.26	13.93	13.65	13.38
270.0	22.90	18.06	14.76	14.04	13.71	13.43	13.10	12.94	12.77
360.0	29.51	24.94	19.05	14.48	13.71	13.32	13.10	12.94	12.77

C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	12.66	12.55	12.44	12.28	12.17	12.06	11.95	11.89	11.84
90.0	13.32	13.16	12.99	12.83	12.66	12.61	12.50	12.33	12.28
180.0	13.16	12.99	12.83	12.72	12.55	12.44	12.39	12.28	12.17
270.0	12.61	12.44	12.33	12.28	12.17	12.11	12.00	11.95	11.89
360.0	12.66	12.55	12.44	12.28	12.17	12.06	11.95	11.89	11.84

C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	11.78	11.78	11.84	11.89	11.89	11.89	11.89	11.84	11.84
90.0	12.17	12.17	12.11	12.06	12.00	12.00	12.06	12.06	12.00
180.0	12.11	12.06	11.95	11.95	11.95	11.95	11.95	11.95	11.95
270.0	11.84	11.84	11.84	11.84	11.84	11.84	11.84	11.78	11.73
360.0	11.78	11.78	11.84	11.89	11.89	11.89	11.89	11.84	11.84

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	11.84	11.84	11.78	11.73	11.73	11.78	11.78	11.89	11.89
90.0	11.95	11.89	11.84	11.84	11.78	11.73	11.73	11.62	11.56
180.0	11.89	11.84	11.84	11.78	11.67	11.67	11.62	11.56	11.51
270.0	11.73	11.73	11.67	11.67	11.62	11.67	11.73	11.84	11.89
360.0	11.84	11.84	11.78	11.73	11.73	11.78	11.78	11.89	11.89

C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	11.78	11.67	11.56	11.34	11.29	11.23	11.07	10.96	11.01
90.0	11.56	11.45	11.51	11.45	11.40	11.29	11.23	11.12	11.07
180.0	11.51	11.40	11.45	11.34	11.23	11.18	11.01	10.96	11.01
270.0	11.84	11.78	11.45	11.29	11.29	11.18	11.01	11.07	11.01
360.0	11.78	11.67	11.56	11.34	11.29	11.23	11.07	10.96	11.01

C/γ(°)	90.0
0.0	10.96
90.0	11.01
180.0	10.96
270.0	11.07
360.0	10.96