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Nata

LumCAT: 3-1942-M	
Luminaire: BJB 47.319.2021	
Report No: GC2017062006	Voltage(V): 218.3000
Test No: NT-0010	Current(A): 0.1030
LampCAT: CITIZEN CLU036	Power (W): 20.5000
Lamp flux(lm): 2279.0	PF: 0.9070
Number of Lamps: 1	Ballast type: DC
Length(mm): 86	Width(mm): 86
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2077.57
Efficiency(%): 91.16%
Lumens(lm)/Power(W): 101.34
Central intensity(cd): 9042.326
Maximum intensity(cd): 9042.326
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=15.2
 [C90/270]Total=15.2
Field angle(10%Imax): [C0/180]Total=59.7
 [C90/270]Total=59.7
Maximum s/h(1/2): C0_180=0.26 C90_270=0.26
Maximum s/h(1/4): C0_180=0.36 C90_270=0.36
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.16%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.734%

Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/5/10
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9042.325	0.000	0	.000%	.000%
1.0	8946.321	8.607	8.607	.378%	.414%
2.0	8609.100	25.197	33.804	1.106%	1.627%
3.0	8038.234	39.815	73.619	1.747%	3.544%
4.0	7354.503	51.524	125.144	2.261%	6.024%
5.0	6558.181	59.852	184.995	2.626%	8.904%
6.0	5717.057	64.510	249.505	2.831%	12.009%
7.0	4913.577	65.984	315.489	2.895%	15.186%
8.0	4272.996	65.747	381.236	2.885%	18.350%
9.0	3747.207	64.999	446.235	2.852%	21.479%
10.0	3327.609	64.024	510.26	2.809%	24.560%
11.0	3052.120	63.747	574.006	2.797%	27.629%
12.0	2850.820	64.528	638.534	2.831%	30.735%
13.0	2671.818	65.540	704.074	2.876%	33.889%
14.0	2535.278	66.650	770.724	2.925%	37.097%
15.0	2414.361	67.951	838.675	2.982%	40.368%
16.0	2282.157	68.817	907.492	3.020%	43.680%
17.0	2160.826	69.189	976.681	3.036%	47.011%
18.0	2045.827	69.359	1046.04	3.043%	50.349%
19.0	1925.666	69.096	1115.136	3.032%	53.675%
20.0	1806.469	68.308	1183.444	2.997%	56.963%
21.0	1690.644	67.152	1250.596	2.947%	60.195%
22.0	1577.710	65.679	1316.275	2.882%	63.357%
23.0	1475.718	64.069	1380.344	2.811%	66.440%
24.0	1369.528	62.207	1442.551	2.730%	69.435%
25.0	1267.970	59.971	1502.522	2.631%	72.321%
26.0	1187.154	57.953	1560.476	2.543%	75.111%
27.0	1098.967	55.930	1616.406	2.454%	77.803%
28.0	1028.632	53.866	1670.272	2.364%	80.396%
29.0	960.748	52.048	1722.32	2.284%	82.901%
30.0	895.327	50.114	1772.434	2.199%	85.313%
31.0	813.039	47.541	1819.975	2.086%	87.601%
32.0	721.913	43.975	1863.95	1.930%	89.718%
33.0	628.352	39.779	1903.729	1.745%	91.633%
34.0	515.651	34.621	1938.35	1.519%	93.299%
35.0	402.118	28.503	1966.852	1.251%	94.671%
36.0	308.171	22.616	1989.468	.992%	95.759%
37.0	204.796	16.730	2006.198	.734%	96.565%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	133.388	11.288	2017.486	.495%	97.108%
39.0	78.173	7.221	2024.708	.317%	97.456%
40.0	46.316	4.342	2029.049	.191%	97.665%
41.0	29.737	2.708	2031.758	.119%	97.795%
42.0	22.821	1.910	2033.667	.084%	97.887%
43.0	19.538	1.569	2035.236	.069%	97.962%
44.0	17.116	1.383	2036.62	.061%	98.029%
45.0	15.120	1.239	2037.859	.054%	98.089%
46.0	13.468	1.118	2038.977	.049%	98.142%
47.0	12.374	1.028	2040.004	.045%	98.192%
48.0	11.665	0.972	2040.976	.043%	98.239%
49.0	10.942	0.928	2041.905	.041%	98.283%
50.0	10.509	0.894	2042.799	.039%	98.326%
51.0	10.179	0.875	2043.674	.038%	98.369%
52.0	9.903	0.862	2044.536	.038%	98.410%
53.0	9.711	0.853	2045.389	.037%	98.451%
54.0	9.525	0.848	2046.237	.037%	98.492%
55.0	9.353	0.843	2047.08	.037%	98.532%
56.0	9.215	0.839	2047.919	.037%	98.573%
57.0	9.077	0.836	2048.755	.037%	98.613%
58.0	8.960	0.834	2049.589	.037%	98.653%
59.0	8.878	0.834	2050.423	.037%	98.693%
60.0	8.816	0.836	2051.259	.037%	98.734%
61.0	8.761	0.839	2052.098	.037%	98.774%
62.0	8.699	0.841	2052.939	.037%	98.815%
63.0	8.658	0.844	2053.783	.037%	98.855%
64.0	8.596	0.847	2054.63	.037%	98.896%
65.0	8.548	0.848	2055.478	.037%	98.937%
66.0	8.513	0.851	2056.329	.037%	98.978%
67.0	8.479	0.854	2057.184	.037%	99.019%
68.0	8.451	0.858	2058.041	.038%	99.060%
69.0	8.451	0.862	2058.904	.038%	99.102%
70.0	8.417	0.866	2059.77	.038%	99.143%
71.0	8.396	0.869	2060.639	.038%	99.185%
72.0	8.355	0.871	2061.51	.038%	99.227%
73.0	8.341	0.873	2062.383	.038%	99.269%
74.0	8.320	0.876	2063.259	.038%	99.311%
75.0	8.327	0.880	2064.139	.039%	99.354%

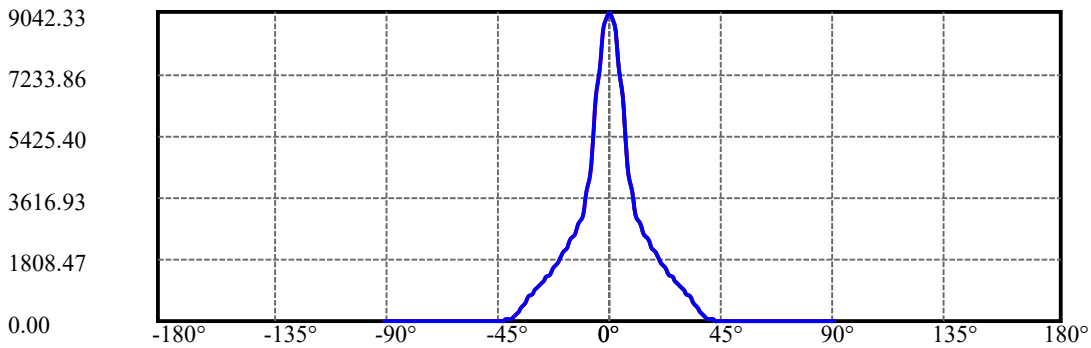
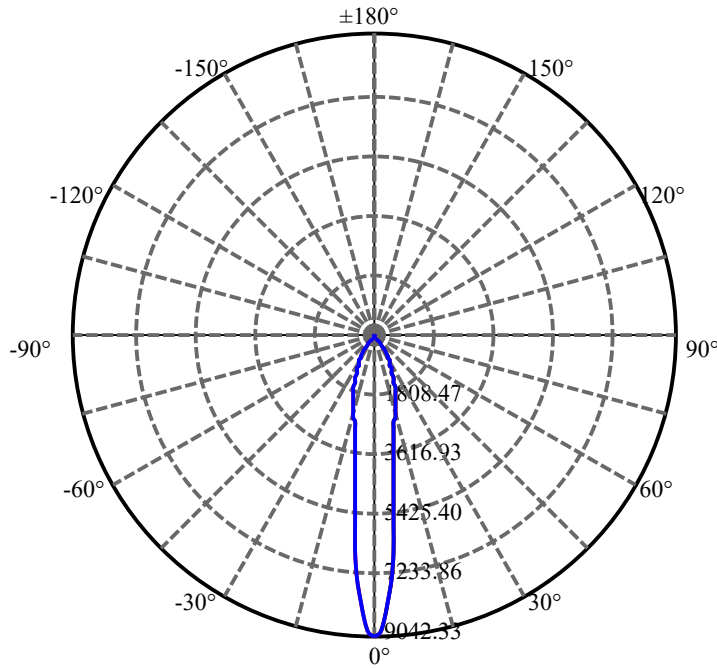
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	8.314	0.883	2065.022	.039%	99.396%
77.0	8.307	0.886	2065.908	.039%	99.439%
78.0	8.293	0.889	2066.797	.039%	99.482%
79.0	8.279	0.890	2067.687	.039%	99.524%
80.0	8.272	0.892	2068.579	.039%	99.567%
81.0	8.252	0.894	2069.473	.039%	99.610%
82.0	8.252	0.895	2070.368	.039%	99.653%
83.0	8.258	0.898	2071.265	.039%	99.697%
84.0	8.265	0.900	2072.166	.039%	99.740%
85.0	8.245	0.901	2073.067	.040%	99.783%
86.0	8.245	0.901	2073.968	.040%	99.827%
87.0	8.210	0.901	2074.869	.040%	99.870%
88.0	8.203	0.899	2075.768	.039%	99.913%
89.0	8.210	0.900	2076.667	.039%	99.957%
90.0	8.217	0.901	2077.568	.040%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1772.43	77.77%	85.31%
0-40	2029.05	89.03%	97.66%
0-60	2051.26	90.01%	98.73%
0-90	2076.67	91.12%	99.96%
0-120	2076.67	91.12%	99.96%
0-180	2077.57	91.16%	100.00%
60-90	26.24	1.15%	1.26%
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%
0-27.85	1662.05	72.93%	80.00%

ZONAL LUMEN SUMMARY

0-10	510.26
10-20	673.18
20-30	588.99
30-40	256.62
40-50	13.75
50-60	8.46
60-70	8.51
70-80	8.81
80-90	8.09
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



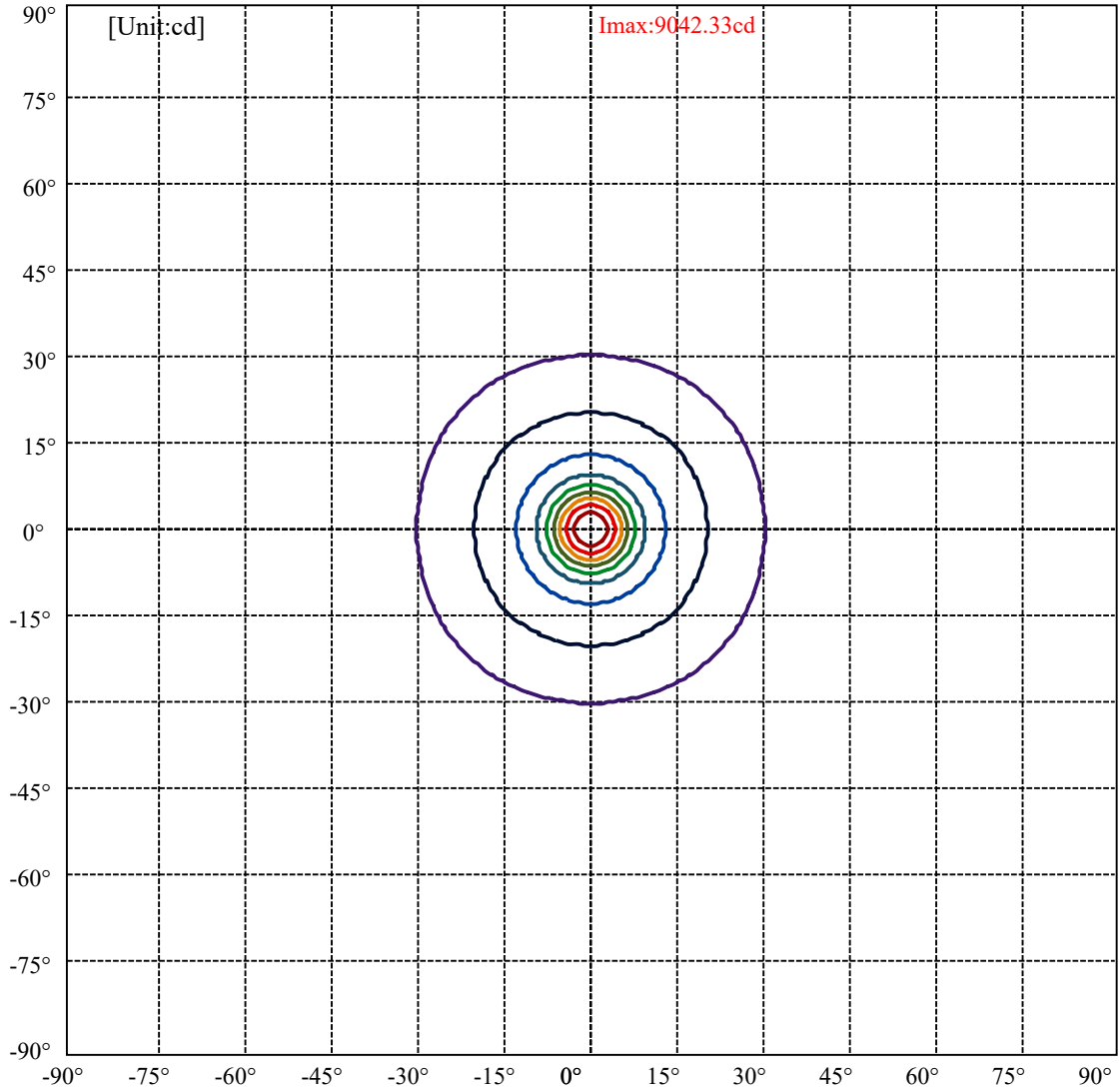
C0(Max): —————

C0/C180: —————

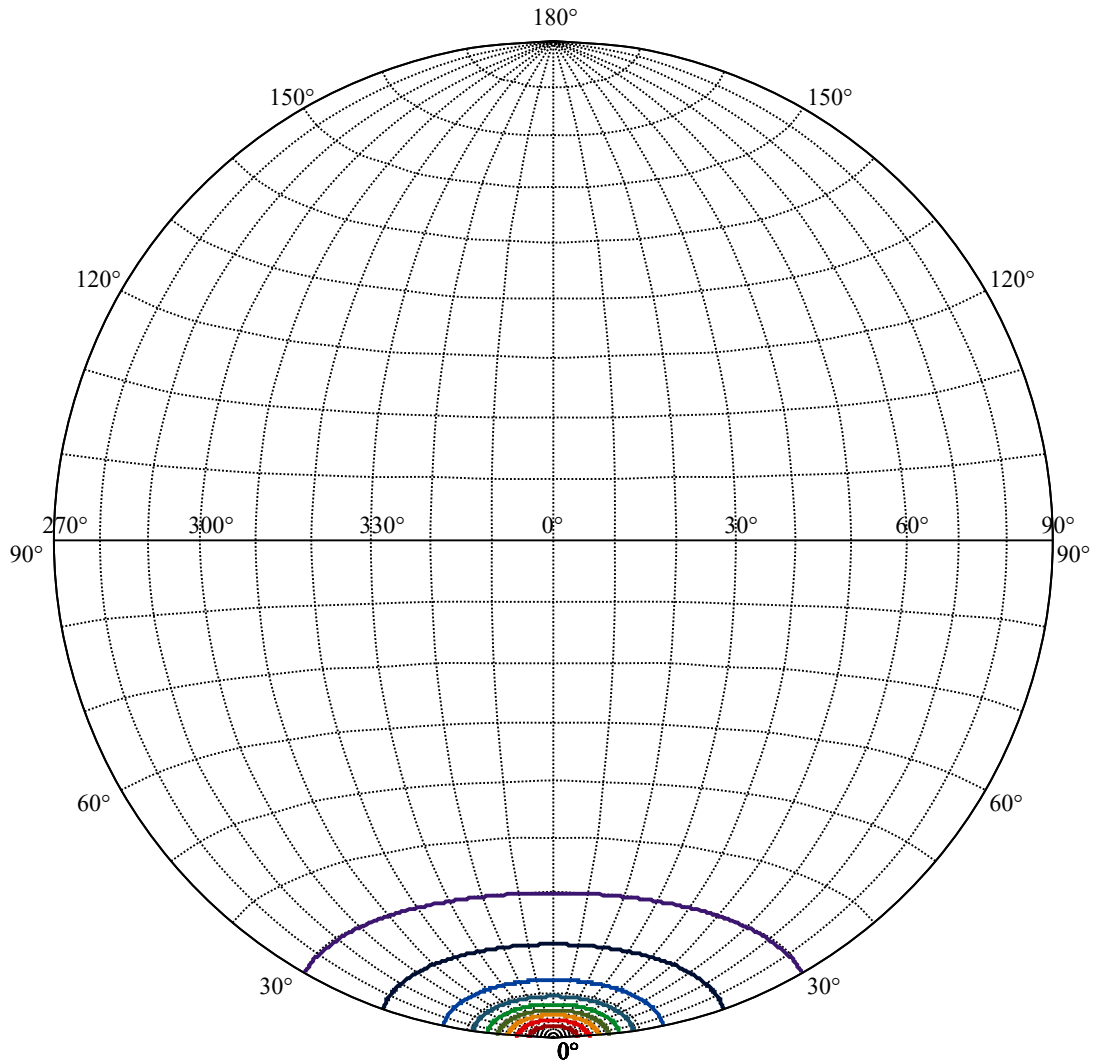
C90/C270: —————

Field angle(10%Imax):C0/180Left:29.9 Right:29.9
:C90/270Left:29.9 Right:29.9

Beam Angle(50%Imax):C0/180Left:7.6 Right:7.6
:C90/270Left:7.6 Right:7.6



(10%Imax) 904.233	—
(20%Imax) 1808.47	—
(30%Imax) 2712.7	—
(40%Imax) 3616.93	—
(50%Imax) 4521.16	—
(60%Imax) 5425.4	—
(70%Imax) 6329.63	—
(80%Imax) 7233.86	—
(90%Imax) 8138.09	—



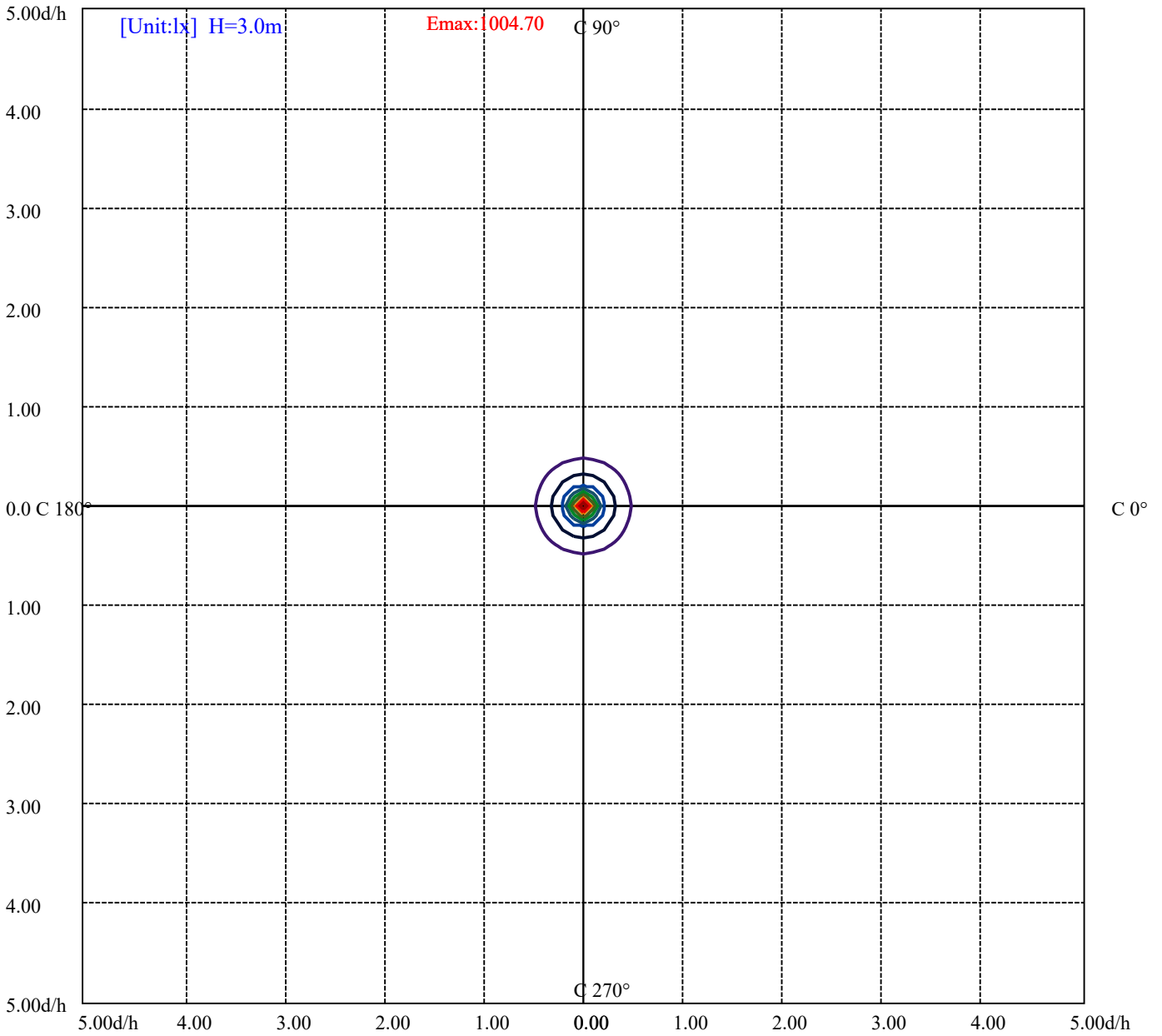
House

[Unit:cd]

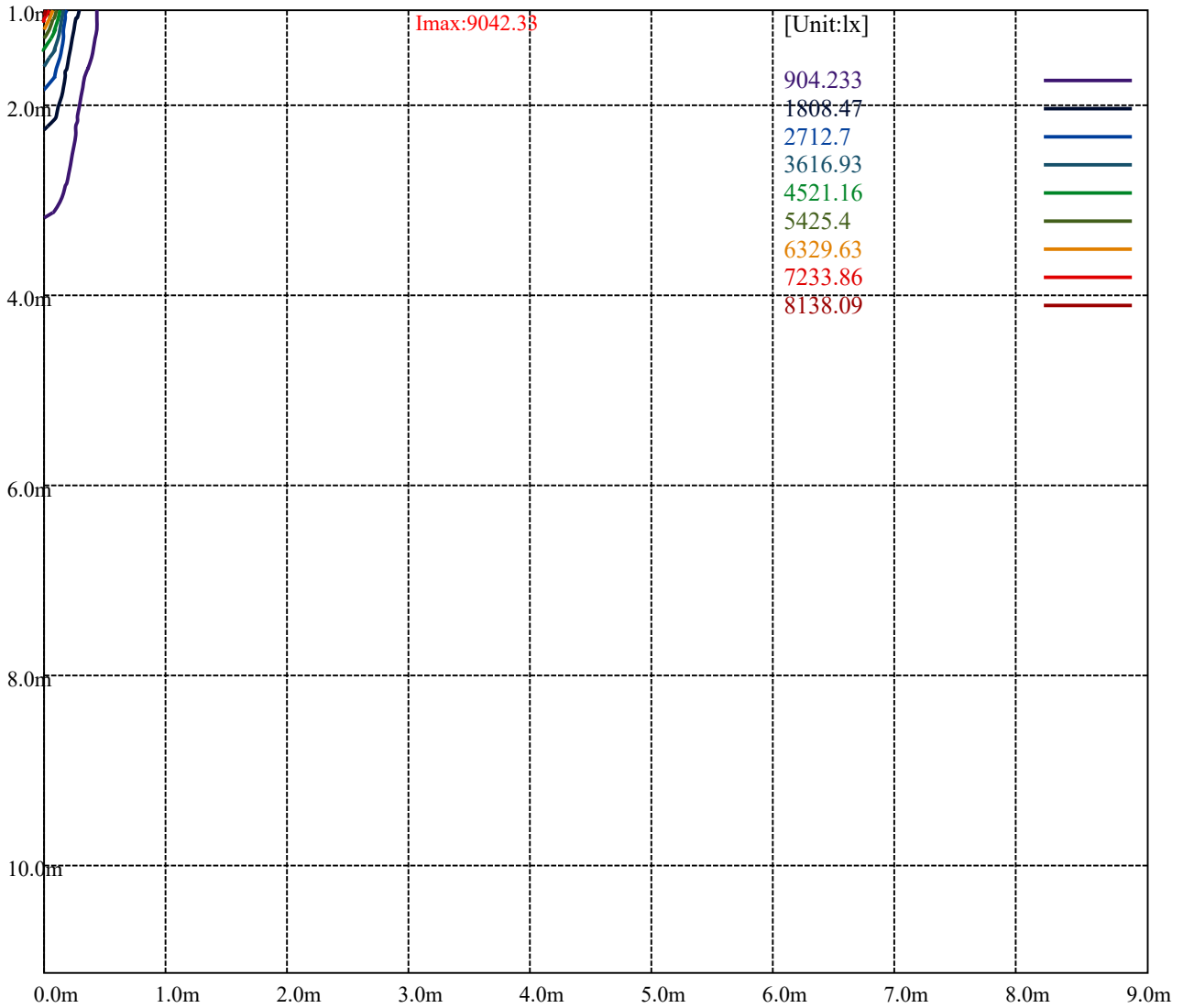
Road

Imax:9042.33

(10%Imax) 904.233	—
(20%Imax) 1808.47	—
(30%Imax) 2712.7	—
(40%Imax) 3616.93	—
(50%Imax) 4521.16	—
(60%Imax) 5425.4	—
(70%Imax) 6329.63	—
(80%Imax) 7233.86	—
(90%Imax) 8138.09	—



- (10%Emax) 100.4701
- (20%Emax) 200.94
- (30%Emax) 301.41
- (40%Emax) 401.88
- (50%Emax) 502.3511
- (60%Emax) 602.8211
- (70%Emax) 703.2911
- (80%Emax) 803.7611
- (90%Emax) 904.2311



Luminance Table

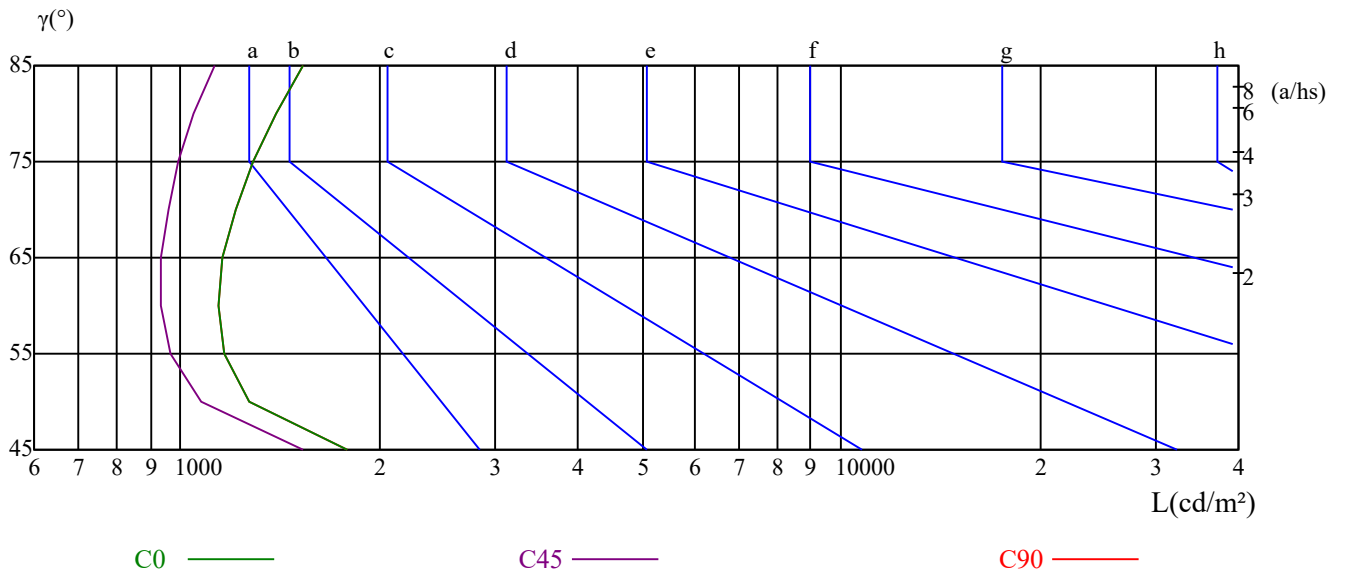
γ	45	50	55	60	65	70	75	80	85
C0	1784	1268	1163	1140	1160	1212	1288	1392	1535
C45	1532	1072	968	934	934	957	995	1049	1124
C90	1784	1268	1163	1140	1160	1212	1288	1392	1535

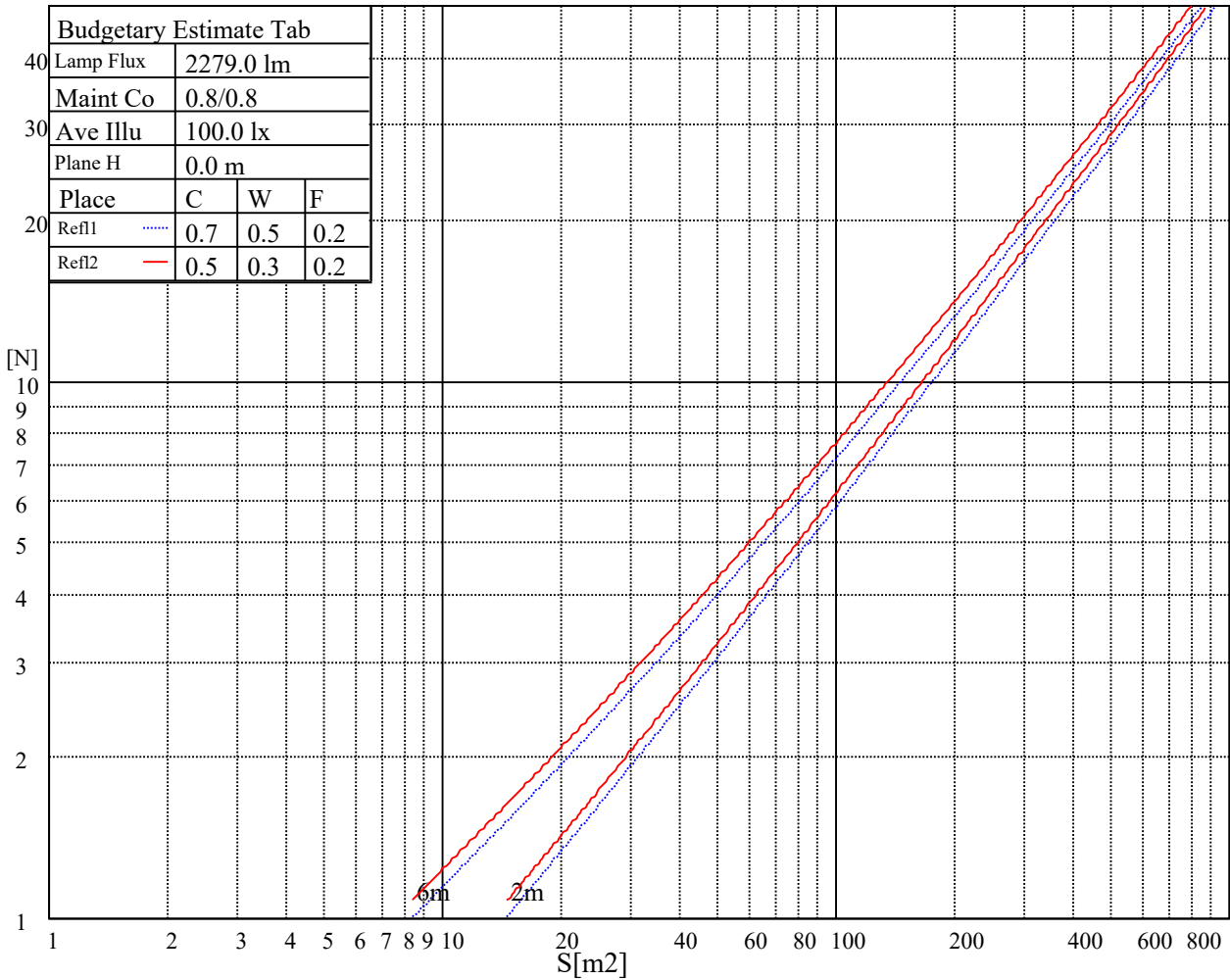
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2799	2799	2799	4453	4453	4453	13093	13093	13093

Glare Table

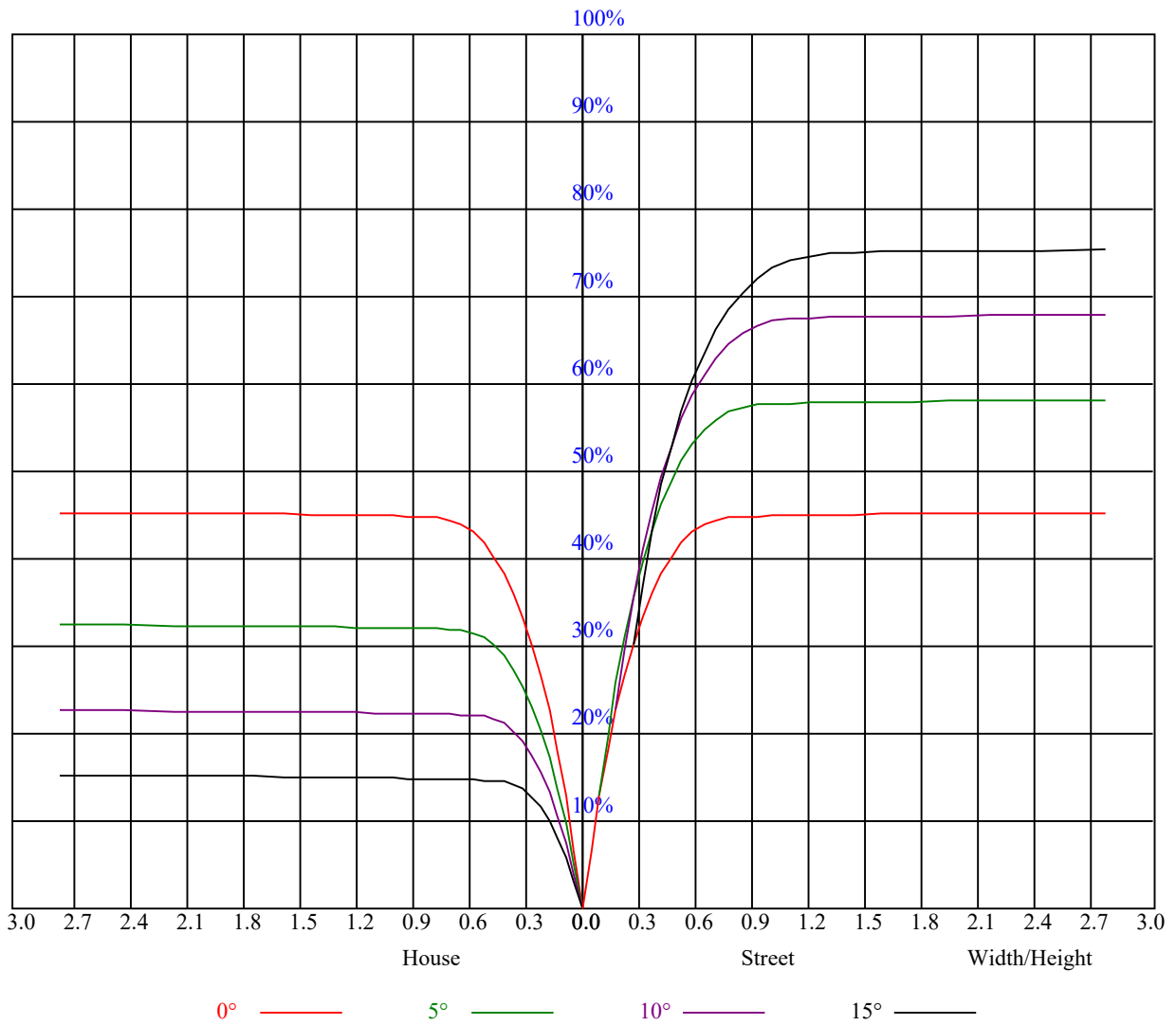
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.09	1.09	1.09	1.06	1.06	1.06	1.01	1.01	1.01	0.97	0.97	0.97	0.93	0.93	0.93	0.91
1	1.02	1.00	0.98	1.00	0.98	0.96	0.96	0.95	0.93	0.93	0.92	0.91	0.90	0.89	0.88	0.86
2	0.96	0.93	0.90	0.94	0.91	0.89	0.91	0.89	0.87	0.89	0.87	0.85	0.86	0.85	0.83	0.82
3	0.91	0.87	0.84	0.90	0.86	0.83	0.87	0.84	0.82	0.85	0.83	0.80	0.83	0.81	0.79	0.78
4	0.86	0.82	0.79	0.85	0.81	0.78	0.83	0.80	0.77	0.82	0.79	0.76	0.80	0.77	0.75	0.74
5	0.82	0.77	0.74	0.81	0.77	0.74	0.80	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
6	0.78	0.74	0.70	0.78	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.68
7	0.75	0.70	0.67	0.74	0.70	0.67	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.65
8	0.72	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.69	0.65	0.63	0.62
9	0.69	0.64	0.61	0.68	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.60
10	0.66	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.58	0.64	0.61	0.58	0.57



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	8983.55	8430.79	7550.43	6470.23	5529.86	4677.59	3911.21	3399.18	3103.53
45.0	9281.41	9054.02	8563.47	7866.46	6998.22	5863.51	5017.29	4261.92	3637.03
90.0	9111.28	9028.15	8713.78	8170.92	7461.24	6626.04	5556.84	4774.49	4109.96
135.0	8813.98	9122.29	9187.26	9146.52	8816.18	8283.24	7575.21	6624.94	5776.52
180.0	8941.71	9277.00	9381.06	9337.01	9107.98	8669.18	7887.38	6904.07	6016.01
225.0	9281.41	9261.59	9137.16	8738.00	8039.89	7178.25	6288.54	5332.76	4479.94
270.0	9111.28	9032.00	8695.61	8153.30	7249.28	6361.22	5393.88	4523.98	3897.99
315.0	8813.98	8364.72	7644.03	6423.43	5633.37	4806.42	4106.11	3487.27	3162.99
360.0	8983.55	8430.79	7550.43	6470.23	5529.86	4677.59	3911.21	3399.18	3103.53
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2871.19	2697.21	2570.03	2467.08	2320.63	2218.77	2133.44	1995.24	1896.69
45.0	3242.27	3008.83	2819.99	2681.80	2545.81	2429.09	2301.91	2177.48	2056.36
90.0	3572.06	3224.65	3002.23	2815.03	2677.94	2536.45	2404.31	2287.04	2156.56
135.0	4899.47	4159.51	3665.66	3322.65	3032.51	2860.18	2715.93	2545.81	2415.87
180.0	5194.57	4317.52	3802.19	3442.68	3129.96	2944.42	2786.95	2626.19	2479.74
225.0	3879.82	3409.09	3091.42	2897.07	2744.01	2587.65	2469.83	2355.31	2235.29
270.0	3411.85	3084.81	2879.45	2723.64	2570.03	2462.67	2358.07	2240.80	2122.42
315.0	2906.43	2719.24	2586.00	2456.62	2353.66	2243.00	2144.45	2029.38	1923.67
360.0	2871.19	2697.21	2570.03	2467.08	2320.63	2218.77	2133.44	1995.24	1896.69
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1811.36	1685.28	1568.56	1478.81	1358.24	1269.60	1186.47	1089.02	1017.99
45.0	1946.79	1837.23	1703.45	1599.39	1489.83	1383.57	1276.76	1196.93	1124.80
90.0	2018.92	1903.85	1792.09	1657.75	1555.89	1458.99	1344.48	1260.79	1182.61
135.0	2290.35	2158.21	2031.58	1914.86	1777.77	1678.12	1553.69	1439.17	1349.98
180.0	2353.66	2211.62	2083.88	1931.93	1819.61	1706.75	1583.97	1463.95	1367.05
225.0	2116.92	2007.91	1884.58	1763.46	1656.10	1531.67	1426.51	1324.11	1232.16
270.0	2020.57	1906.60	1792.64	1691.88	1581.77	1483.77	1378.06	1276.76	1191.42
315.0	1808.05	1694.64	1594.98	1487.07	1382.47	1293.27	1206.29	1093.03	1031.21
360.0	1811.36	1685.28	1568.56	1478.81	1358.24	1269.60	1186.47	1089.02	1017.99
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	951.93	880.35	818.14	727.85	598.46	493.86	390.35	284.64	183.89
45.0	1037.81	973.95	913.94	851.72	767.49	667.83	548.36	428.34	323.18
90.0	1097.99	1023.28	963.10	902.43	847.10	752.13	649.61	526.94	408.13
135.0	1250.88	1167.75	1098.93	1031.76	956.33	901.82	841.26	724.54	613.88
180.0	1280.06	1180.41	1097.82	1040.40	970.15	905.18	845.17	746.23	627.64
225.0	1096.94	1080.59	992.89	941.96	887.67	787.97	697.18	583.82	458.67
270.0	1109.94	1019.09	956.33	901.82	822.54	730.60	624.34	516.43	385.39
315.0	966.18	903.64	844.84	764.68	654.57	535.92	430.54	314.26	216.15
360.0	951.93	880.35	818.14	727.85	598.46	493.86	390.35	284.64	183.89
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	105.38	48.34	30.89	26.15	21.86	18.99	16.52	14.59	13.43
45.0	285.19	130.15	60.56	31.55	26.59	22.90	19.16	16.63	14.87
90.0	305.78	198.20	115.62	53.46	30.12	25.60	22.08	18.50	16.30
135.0	505.97	384.29	279.69	173.54	93.60	44.82	30.50	26.70	22.74
180.0	518.80	400.15	298.85	197.21	107.97	52.08	31.16	25.49	21.86
225.0	337.44	241.92	146.34	68.60	36.39	27.80	24.11	20.65	17.51
270.0	285.19	178.27	99.87	46.25	30.56	25.82	21.75	18.88	16.63
315.0	121.62	57.04	35.29	28.63	23.45	19.88	17.29	14.87	13.60
360.0	105.38	48.34	30.89	26.15	21.86	18.99	16.52	14.59	13.43

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	12.00	11.23	10.74	10.30	9.97	9.86	9.63	9.47	9.25
45.0	13.27	12.11	11.45	10.96	10.52	10.24	10.02	9.86	9.69
90.0	14.65	12.88	12.06	11.40	10.85	10.41	10.13	9.86	9.69
135.0	19.38	16.90	15.25	14.20	12.44	11.78	11.23	10.74	10.52
180.0	18.99	16.13	14.37	13.21	12.06	11.34	10.68	10.24	10.02
225.0	15.31	13.71	12.39	11.62	10.96	10.41	10.13	9.91	9.69
270.0	14.98	13.21	11.89	11.23	10.74	10.30	10.02	9.80	9.58
315.0	12.39	11.56	10.85	10.41	10.02	9.74	9.58	9.36	9.25
360.0	12.00	11.23	10.74	10.30	9.97	9.86	9.63	9.47	9.25
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	9.08	8.97	8.92	8.86	8.70	8.64	8.64	8.59	8.59
45.0	9.47	9.25	9.14	9.08	9.03	8.97	8.86	8.81	8.75
90.0	9.52	9.36	9.25	9.08	8.97	8.92	8.86	8.81	8.75
135.0	10.24	10.08	9.74	9.52	9.30	9.19	9.03	8.97	8.92
180.0	9.80	9.52	9.36	9.14	8.97	8.86	8.81	8.70	8.59
225.0	9.52	9.36	9.25	9.08	8.97	8.86	8.81	8.81	8.75
270.0	9.47	9.30	9.14	9.03	8.97	8.86	8.86	8.81	8.70
315.0	9.08	8.97	8.92	8.81	8.75	8.70	8.64	8.59	8.53
360.0	9.08	8.97	8.92	8.86	8.70	8.64	8.64	8.59	8.59
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	8.53	8.42	8.42	8.37	8.37	8.31	8.31	8.26	8.26
45.0	8.70	8.70	8.64	8.59	8.59	8.53	8.53	8.48	8.48
90.0	8.75	8.64	8.59	8.59	8.53	8.53	8.53	8.48	8.48
135.0	8.81	8.75	8.70	8.64	8.59	8.53	8.53	8.48	8.42
180.0	8.53	8.48	8.48	8.42	8.37	8.37	8.31	8.31	8.31
225.0	8.70	8.64	8.53	8.53	8.48	8.48	8.48	8.48	8.48
270.0	8.70	8.59	8.59	8.53	8.53	8.53	8.53	8.48	8.42
315.0	8.53	8.53	8.42	8.42	8.37	8.31	8.37	8.37	8.31
360.0	8.53	8.42	8.42	8.37	8.37	8.31	8.31	8.26	8.26
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	8.26	8.26	8.20	8.20	8.15	8.20	8.20	8.15	8.15
45.0	8.42	8.42	8.42	8.37	8.37	8.37	8.37	8.37	8.37
90.0	8.42	8.42	8.37	8.42	8.42	8.37	8.37	8.31	8.31
135.0	8.42	8.37	8.37	8.37	8.37	8.31	8.31	8.31	8.31
180.0	8.26	8.20	8.20	8.26	8.20	8.20	8.15	8.15	8.20
225.0	8.37	8.37	8.31	8.31	8.37	8.37	8.31	8.31	8.31
270.0	8.37	8.42	8.42	8.42	8.37	8.37	8.37	8.37	8.31
315.0	8.31	8.26	8.26	8.26	8.26	8.26	8.26	8.26	8.20
360.0	8.26	8.26	8.20	8.20	8.15	8.20	8.20	8.15	8.15
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	8.15	8.15	8.15	8.15	8.15	8.09	8.09	8.09	8.09
45.0	8.31	8.31	8.37	8.37	8.31	8.37	8.26	8.26	8.26
90.0	8.31	8.31	8.31	8.31	8.31	8.31	8.31	8.26	8.26
135.0	8.31	8.26	8.31	8.31	8.31	8.26	8.20	8.20	8.20
180.0	8.15	8.09	8.15	8.15	8.09	8.15	8.04	8.09	8.09
225.0	8.26	8.31	8.26	8.31	8.26	8.26	8.26	8.26	8.26
270.0	8.31	8.31	8.31	8.31	8.31	8.31	8.31	8.26	8.31
315.0	8.20	8.26	8.20	8.20	8.20	8.20	8.20	8.20	8.20
360.0	8.15	8.15	8.15	8.15	8.15	8.09	8.09	8.09	8.09

Intensity data(cd)

C/γ(°)	90.0
0.0	8.09
45.0	8.31
90.0	8.26
135.0	8.26
180.0	8.09
225.0	8.26
270.0	8.26
315.0	8.20
360.0	8.09