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Nata

LumCAT: 8384-E
Luminaire: TE 2213480-1+92.76.365.00
Report No: GC2017033006
Test No: NT-0010
LampCAT: CITIZEN CLU046
Lamp flux(lm): 3964.0
Number of Lamps: 1
Length(mm): 200
Phm Type: C

Voltage(V): 34.7000
Current(A): 0.8000
Power (W): 27.7600
PF: 0.0000
Ballast type: DC
Width(mm): 200
Height(mm): 0

Photometric Results

Lumens(lm): 3690.26
Efficiency(%): 93.09%
Lumens(lm)/Power(W): 132.93
Central intensity(cd): 2411.333
Maximum intensity(cd): 2411.333
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=83.2
 [C90/270]Total=83.2
Field angle(10%Imax): [C0/180]Total=100.3
 [C90/270]Total=100.3
Maximum s/h(1/2): C0_180=1.20 C90_270=1.20
Maximum s/h(1/4): C0_180=1.18 C90_270=1.18
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 93.09%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.621%

Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/3/30
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	2411.333	0.000	0	.000%	.000%
1.0	2411.126	2.307	2.307	.058%	.063%
2.0	2410.438	6.920	9.228	.175%	.250%
3.0	2409.406	11.527	20.755	.291%	.562%
4.0	2408.511	16.127	36.882	.407%	.999%
5.0	2407.410	20.718	57.6	.523%	1.561%
6.0	2406.378	25.298	82.898	.638%	2.246%
7.0	2405.208	29.865	112.763	.753%	3.056%
8.0	2404.175	34.420	147.183	.868%	3.988%
9.0	2402.868	38.958	186.142	.983%	5.044%
10.0	2400.734	43.471	229.613	1.097%	6.222%
11.0	2397.844	47.948	277.56	1.210%	7.521%
12.0	2393.371	52.375	329.935	1.321%	8.941%
13.0	2386.351	56.723	386.658	1.431%	10.478%
14.0	2378.574	60.991	447.649	1.539%	12.131%
15.0	2369.008	65.177	512.826	1.644%	13.897%
16.0	2356.964	69.249	582.075	1.747%	15.773%
17.0	2342.512	73.183	655.258	1.846%	17.756%
18.0	2326.064	76.975	732.233	1.942%	19.842%
19.0	2309.203	80.644	812.877	2.034%	22.028%
20.0	2289.314	84.166	897.043	2.123%	24.308%
21.0	2267.498	87.500	984.543	2.207%	26.680%
22.0	2245.682	90.694	1075.237	2.288%	29.137%
23.0	2222.352	93.751	1168.988	2.365%	31.678%
24.0	2195.167	96.583	1265.571	2.436%	34.295%
25.0	2167.158	99.190	1364.761	2.502%	36.983%
26.0	2137.771	101.618	1466.379	2.564%	39.736%
27.0	2103.223	103.757	1570.136	2.617%	42.548%
28.0	2062.275	105.462	1675.598	2.660%	45.406%
29.0	2020.432	106.815	1782.413	2.695%	48.300%
30.0	1973.153	107.826	1890.239	2.720%	51.222%
31.0	1920.574	108.357	1998.595	2.734%	54.159%
32.0	1862.902	108.392	2106.988	2.734%	57.096%
33.0	1804.129	108.032	2215.02	2.725%	60.023%
34.0	1744.600	107.395	2322.415	2.709%	62.934%
35.0	1675.917	106.229	2428.643	2.680%	65.812%
36.0	1606.339	104.508	2533.151	2.636%	68.644%
37.0	1538.895	102.580	2635.731	2.588%	71.424%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	1469.111	100.403	2736.134	2.533%	74.145%
39.0	1391.413	97.638	2833.772	2.463%	76.791%
40.0	1312.820	94.314	2928.086	2.379%	79.346%
41.0	1250.682	91.285	3019.371	2.303%	81.820%
42.0	1177.588	88.223	3107.594	2.226%	84.211%
43.0	1106.269	84.601	3192.195	2.134%	86.503%
44.0	1013.100	79.991	3272.186	2.018%	88.671%
45.0	933.192	74.798	3346.984	1.887%	90.698%
46.0	812.515	68.271	3415.255	1.722%	92.548%
47.0	687.063	59.642	3474.897	1.505%	94.164%
48.0	550.247	50.019	3524.915	1.262%	95.519%
49.0	425.655	40.076	3564.991	1.011%	96.605%
50.0	255.675	28.407	3593.398	.717%	97.375%
51.0	164.784	17.789	3611.187	.449%	97.857%
52.0	87.024	10.805	3621.993	.273%	98.150%
53.0	35.339	5.323	3627.315	.134%	98.294%
54.0	22.146	2.534	3629.849	.064%	98.363%
55.0	18.396	1.810	3631.659	.046%	98.412%
56.0	17.384	1.617	3633.276	.041%	98.456%
57.0	16.593	1.553	3634.829	.039%	98.498%
58.0	16.042	1.509	3636.338	.038%	98.539%
59.0	15.863	1.492	3637.83	.038%	98.579%
60.0	16.586	1.533	3639.363	.039%	98.621%
61.0	17.673	1.635	3640.998	.041%	98.665%
62.0	18.877	1.761	3642.759	.044%	98.713%
63.0	20.144	1.898	3644.657	.048%	98.764%
64.0	20.887	2.013	3646.67	.051%	98.819%
65.0	20.963	2.071	3648.741	.052%	98.875%
66.0	20.915	2.089	3650.831	.053%	98.932%
67.0	20.763	2.096	3652.926	.053%	98.988%
68.0	20.295	2.080	3655.006	.052%	99.045%
69.0	19.731	2.042	3657.048	.052%	99.100%
70.0	19.139	1.996	3659.044	.050%	99.154%
71.0	18.430	1.942	3660.986	.049%	99.207%
72.0	17.618	1.874	3662.861	.047%	99.258%
73.0	17.095	1.815	3664.676	.046%	99.307%
74.0	16.572	1.770	3666.446	.045%	99.355%
75.0	16.015	1.722	3668.168	.043%	99.401%

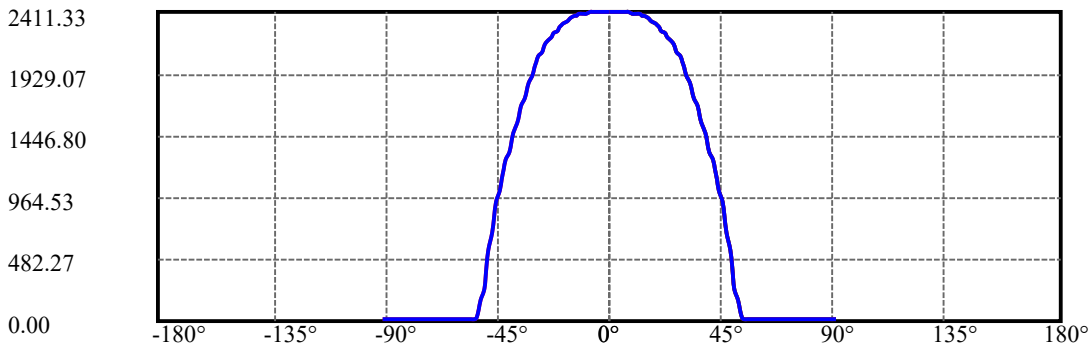
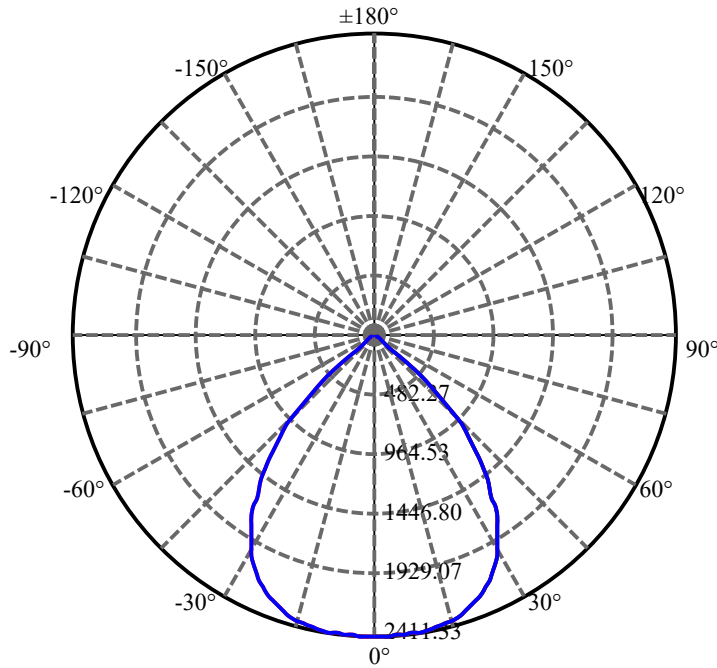
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	15.498	1.673	3669.84	.042%	99.447%
77.0	15.037	1.628	3671.468	.041%	99.491%
78.0	14.686	1.591	3673.059	.040%	99.534%
79.0	14.273	1.556	3674.615	.039%	99.576%
80.0	13.991	1.524	3676.139	.038%	99.617%
81.0	13.764	1.501	3677.64	.038%	99.658%
82.0	13.551	1.481	3679.121	.037%	99.698%
83.0	13.310	1.460	3680.582	.037%	99.738%
84.0	13.158	1.442	3682.024	.036%	99.777%
85.0	13.035	1.430	3683.453	.036%	99.816%
86.0	12.732	1.408	3684.862	.036%	99.854%
87.0	12.608	1.387	3686.248	.035%	99.891%
88.0	12.367	1.368	3687.616	.035%	99.928%
89.0	11.947	1.333	3688.949	.034%	99.965%
90.0	11.927	1.309	3690.258	.033%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1890.24	47.69%	51.22%
0-40	2928.09	73.87%	79.35%
0-60	3639.36	91.81%	98.62%
0-90	3688.95	93.06%	99.96%
0-120	3688.95	93.06%	99.96%
0-180	3690.26	93.09%	100.00%
60-90	51.12	1.29%	1.39%
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%
0-40.26	2952.21	74.48%	80.00%

ZONAL LUMEN SUMMARY

0-10	229.61
10-20	667.43
20-30	993.20
30-40	1037.85
40-50	665.31
50-60	45.96
60-70	19.68
70-80	17.09
80-90	12.81
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: —————

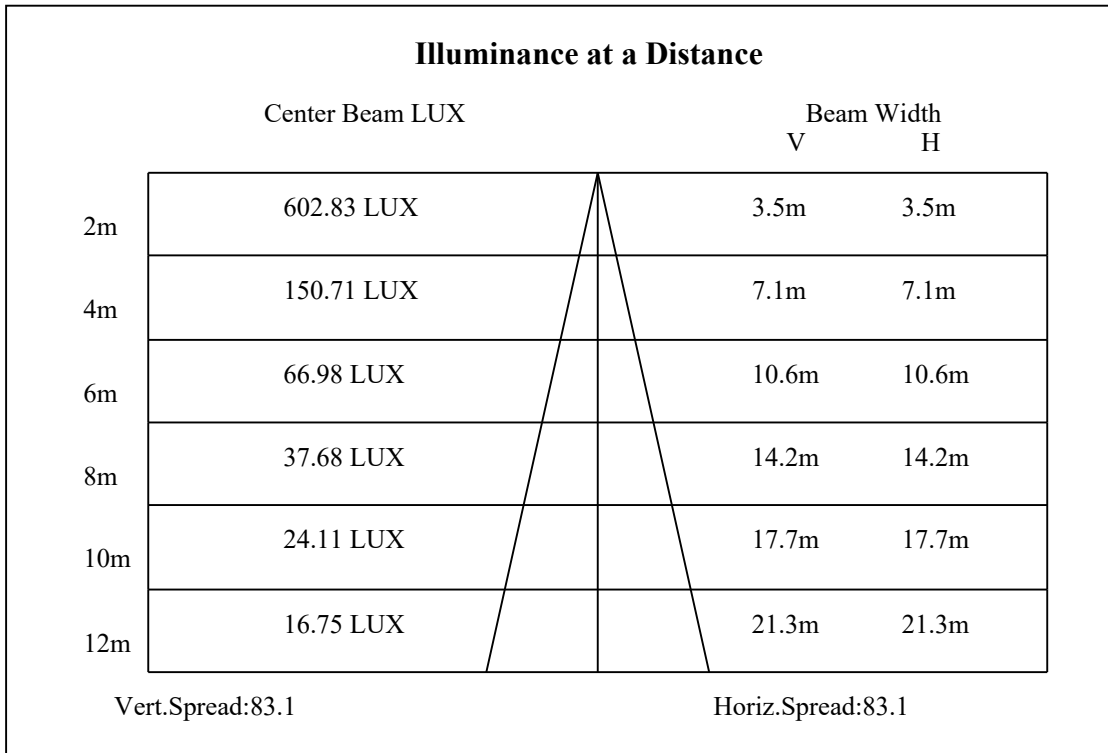
C90/C270: —————

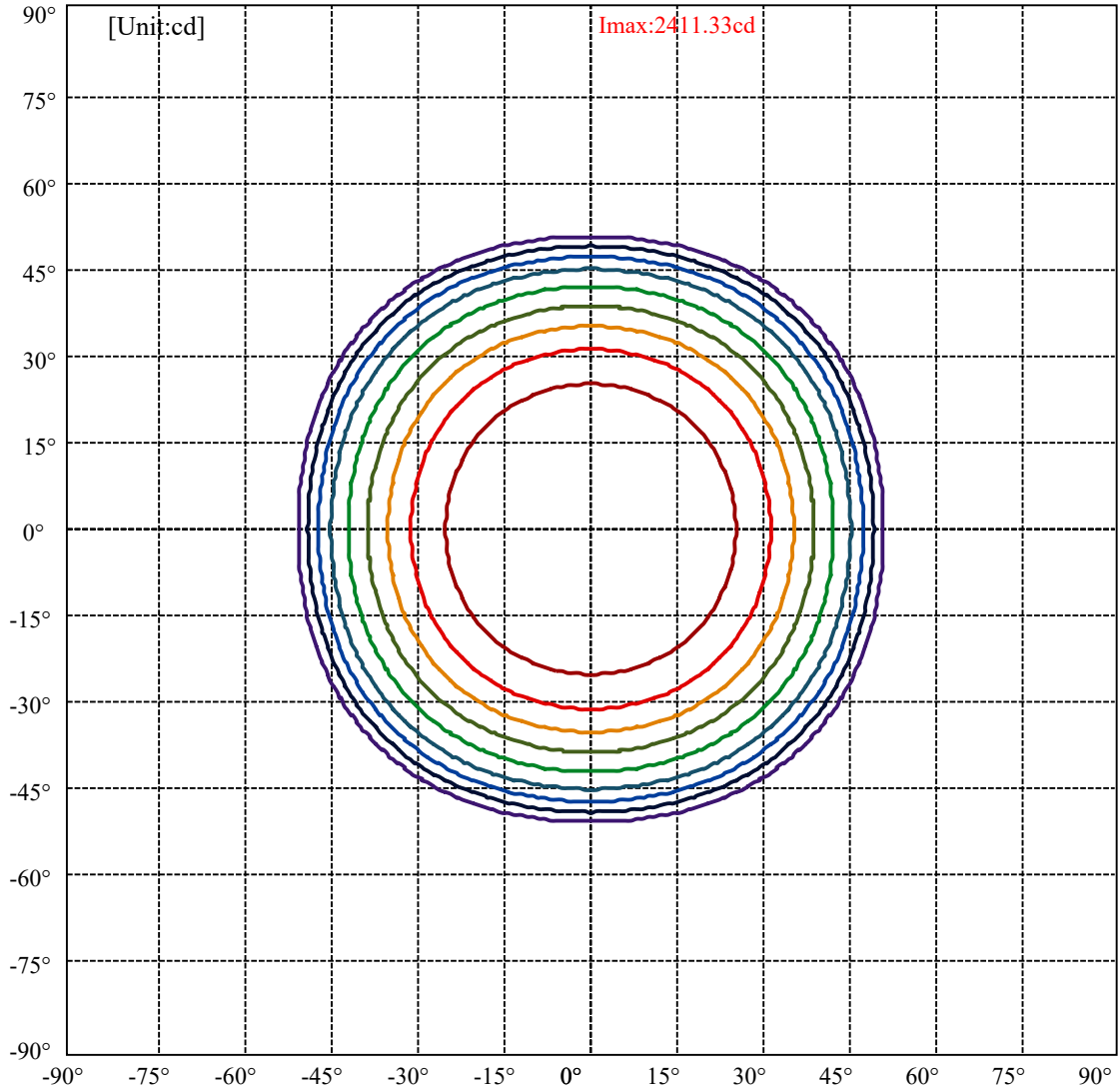
Field angle(10%Imax):C0/180Left:50.2 Right:50.2

:C90/270Left:50.2 Right:50.2

Beam Angle(50%Imax):C0/180Left:41.6 Right:41.6

:C90/270Left:41.6 Right:41.6



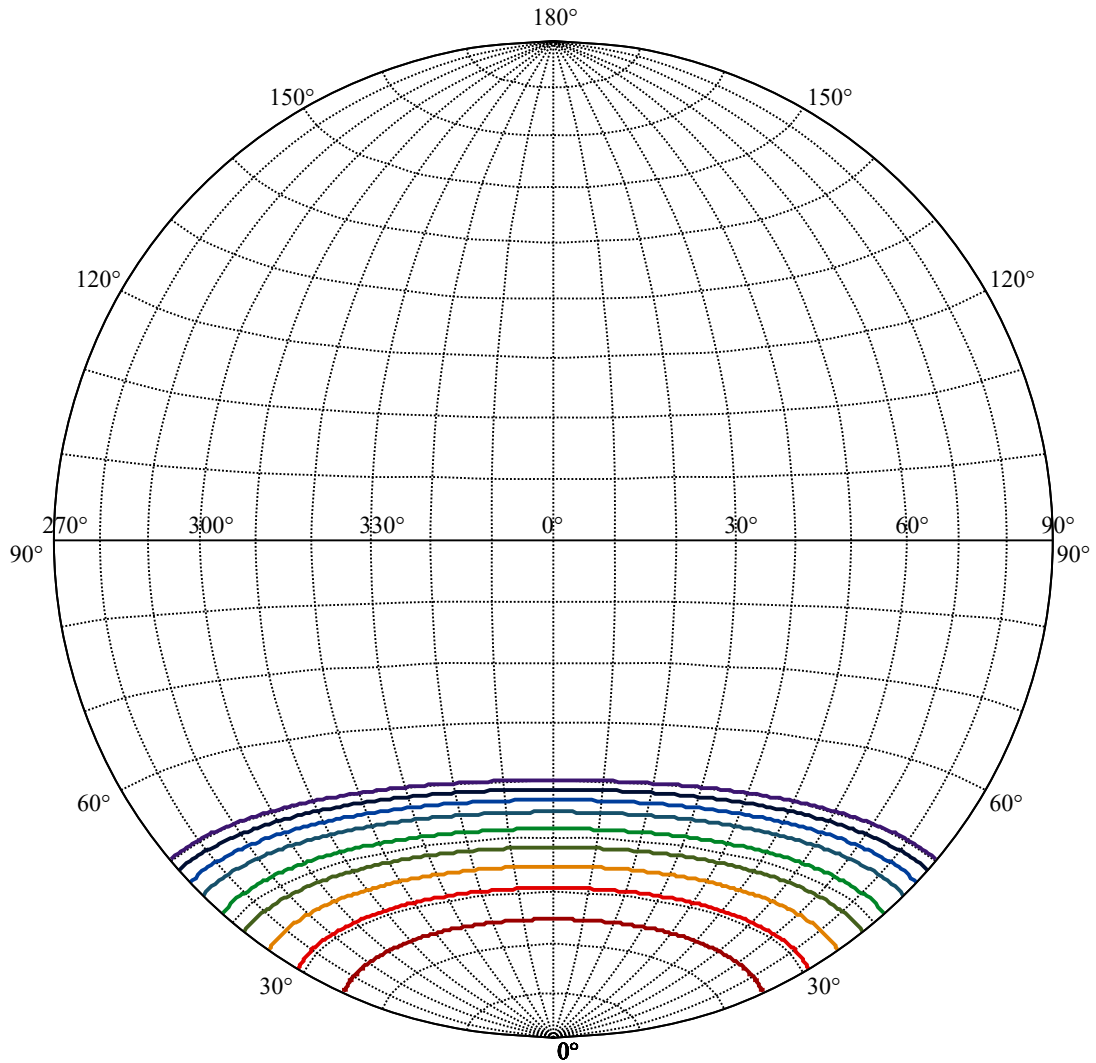


(10%Imax) 241.133	—
(20%Imax) 482.267	—
(30%Imax) 723.4	—
(40%Imax) 964.533	—
(50%Imax) 1205.67	—
(60%Imax) 1446.8	—
(70%Imax) 1687.93	—
(80%Imax) 1929.07	—
(90%Imax) 2170.2	—

Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/3/30
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42












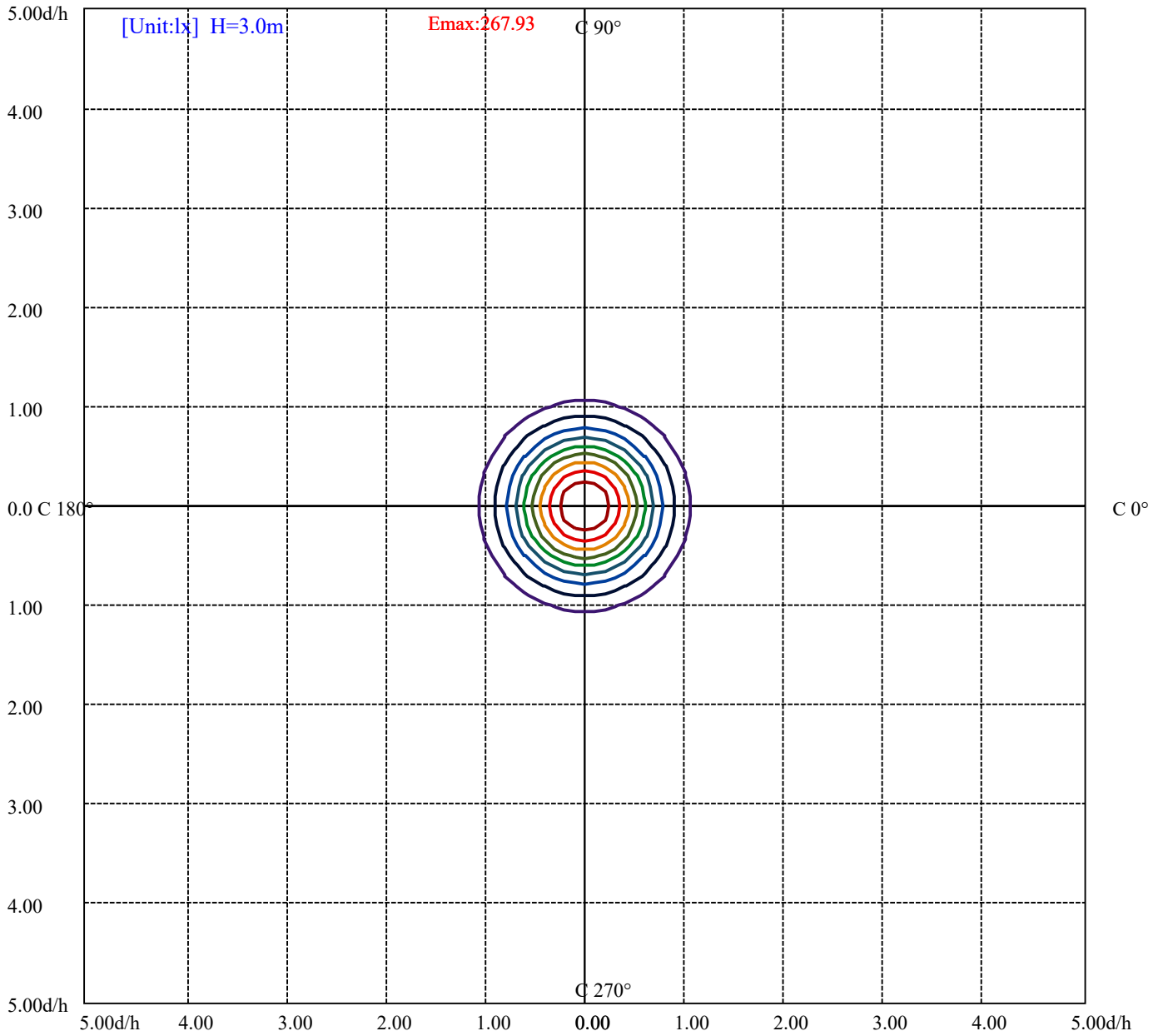
House

[Unit:cd]

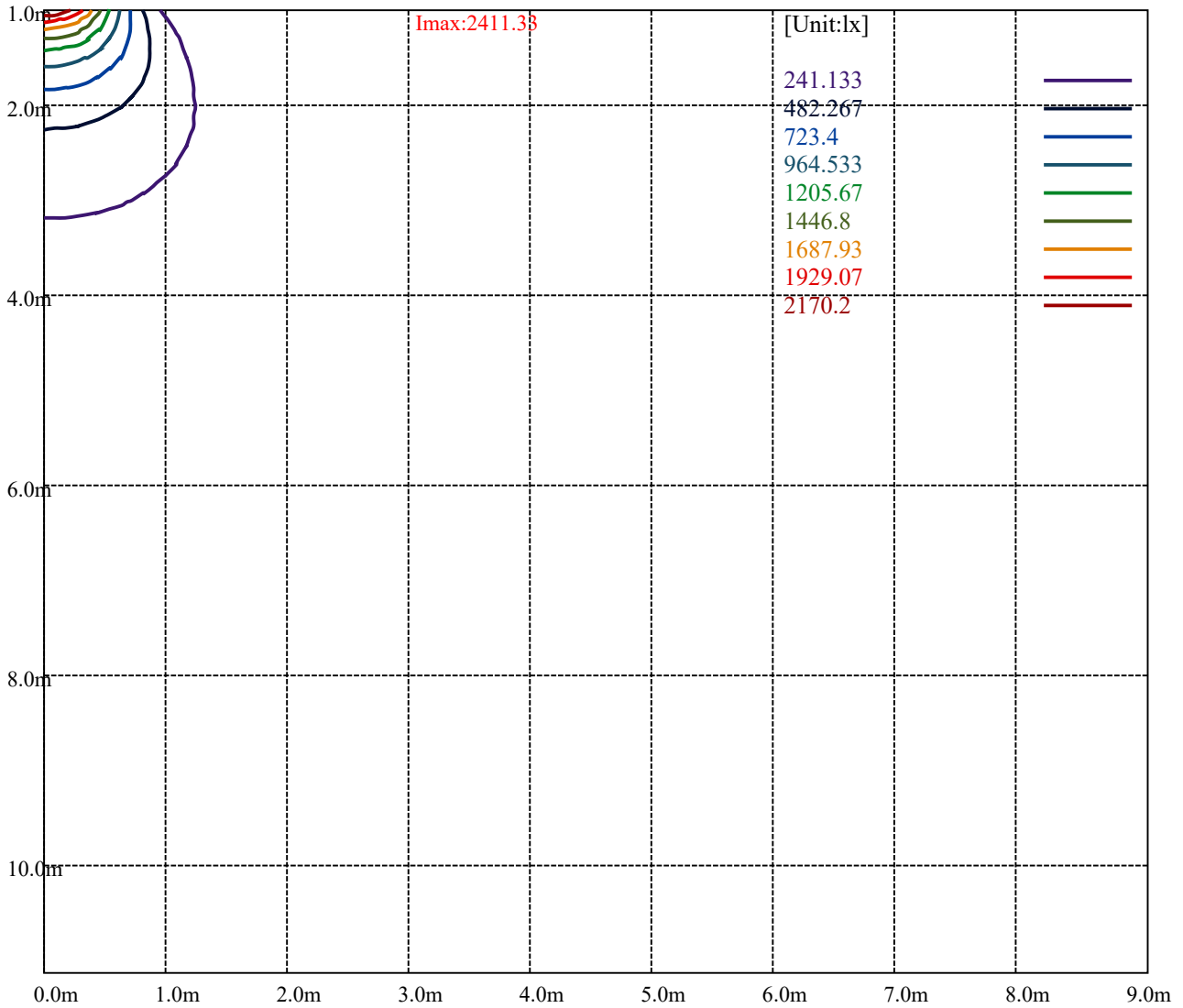
Road

Imax:2411.33

(10%Imax) 241.133	
(20%Imax) 482.267	
(30%Imax) 723.4	
(40%Imax) 964.533	
(50%Imax) 1205.67	
(60%Imax) 1446.8	
(70%Imax) 1687.93	
(80%Imax) 1929.07	
(90%Imax) 2170.2	



- (10%Emax) 26.79255
- (20%Emax) 53.58522
- (30%Emax) 80.37778
- (40%Emax) 107.1703
- (50%Emax) 133.9633
- (60%Emax) 160.7556
- (70%Emax) 187.5478
- (80%Emax) 214.3411
- (90%Emax) 241.1333



Luminance Table

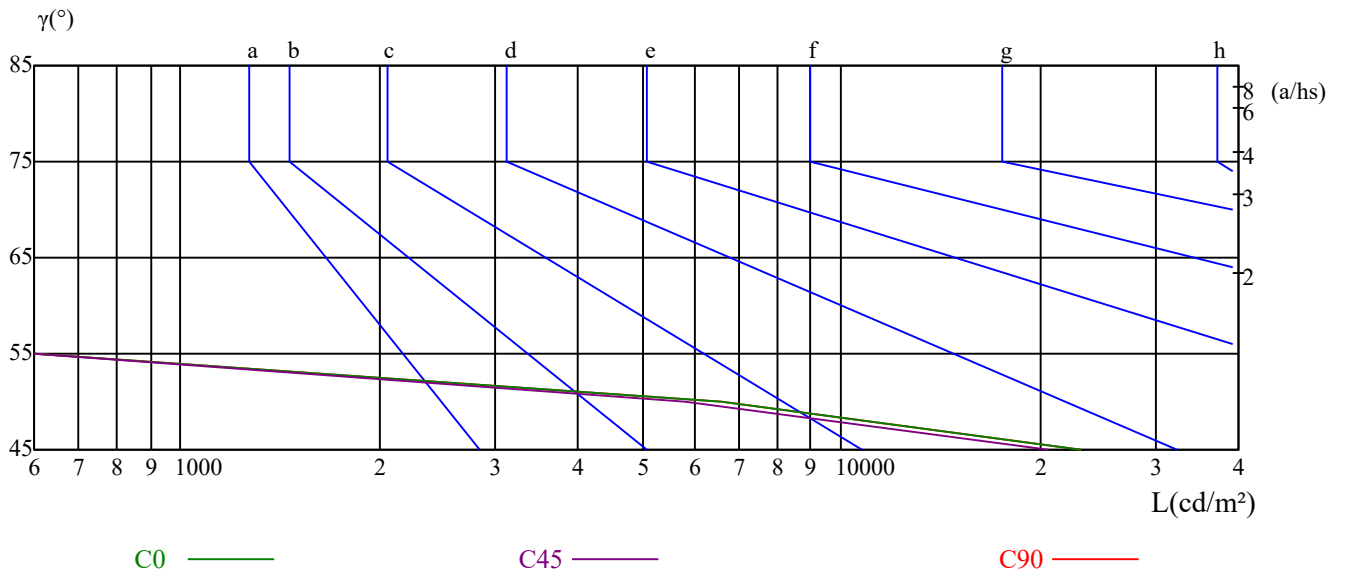
γ	45	50	55	60	65	70	75	80	85
C0	23153	6601	499	478	649	645	598	591	638
C45	20607	5794	431	406	542	528	477	457	475
C90	23153	6601	499	478	649	645	598	591	638

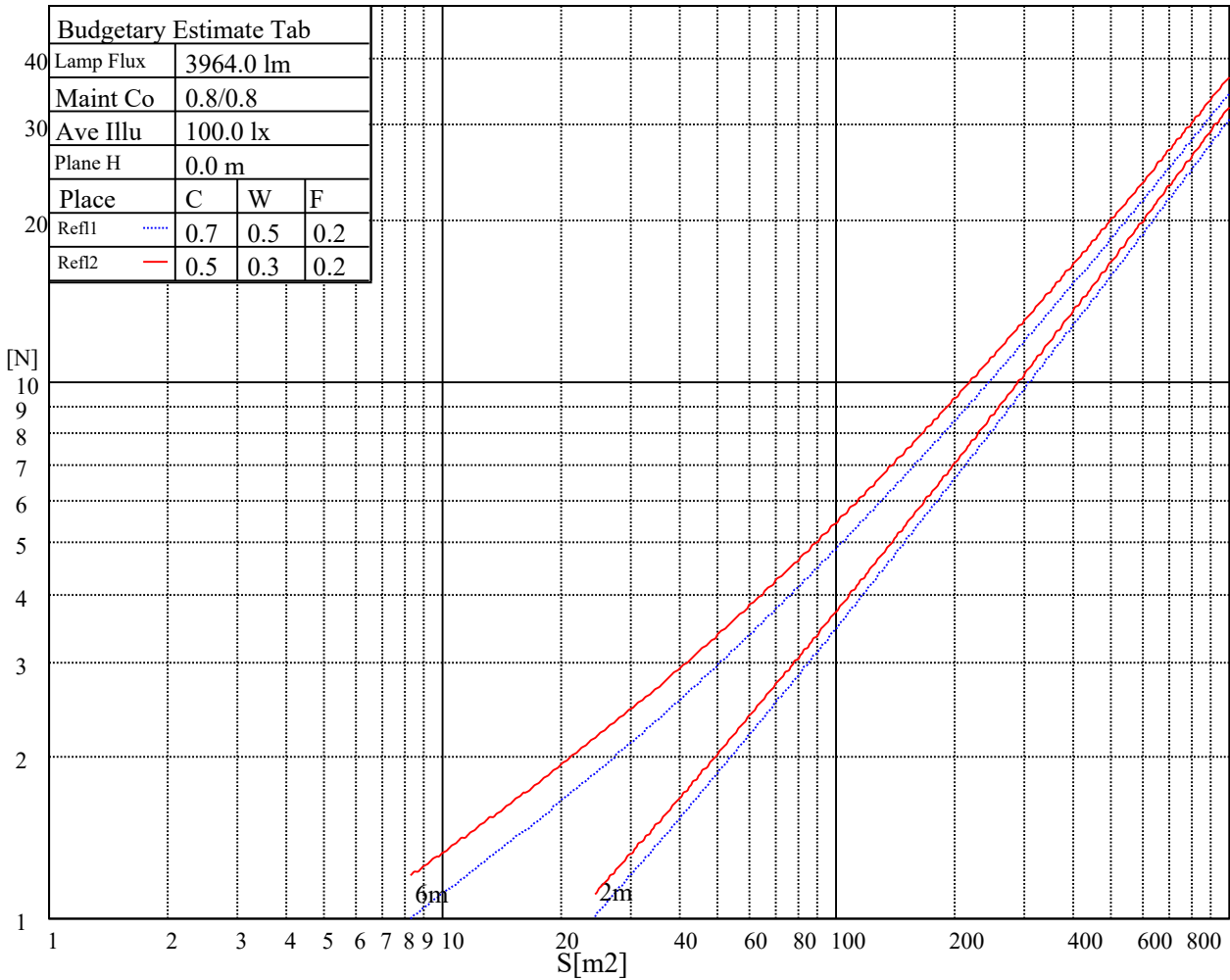
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1240	1240	1240	1547	1547	1547	3739	3739	3739

Glare Table

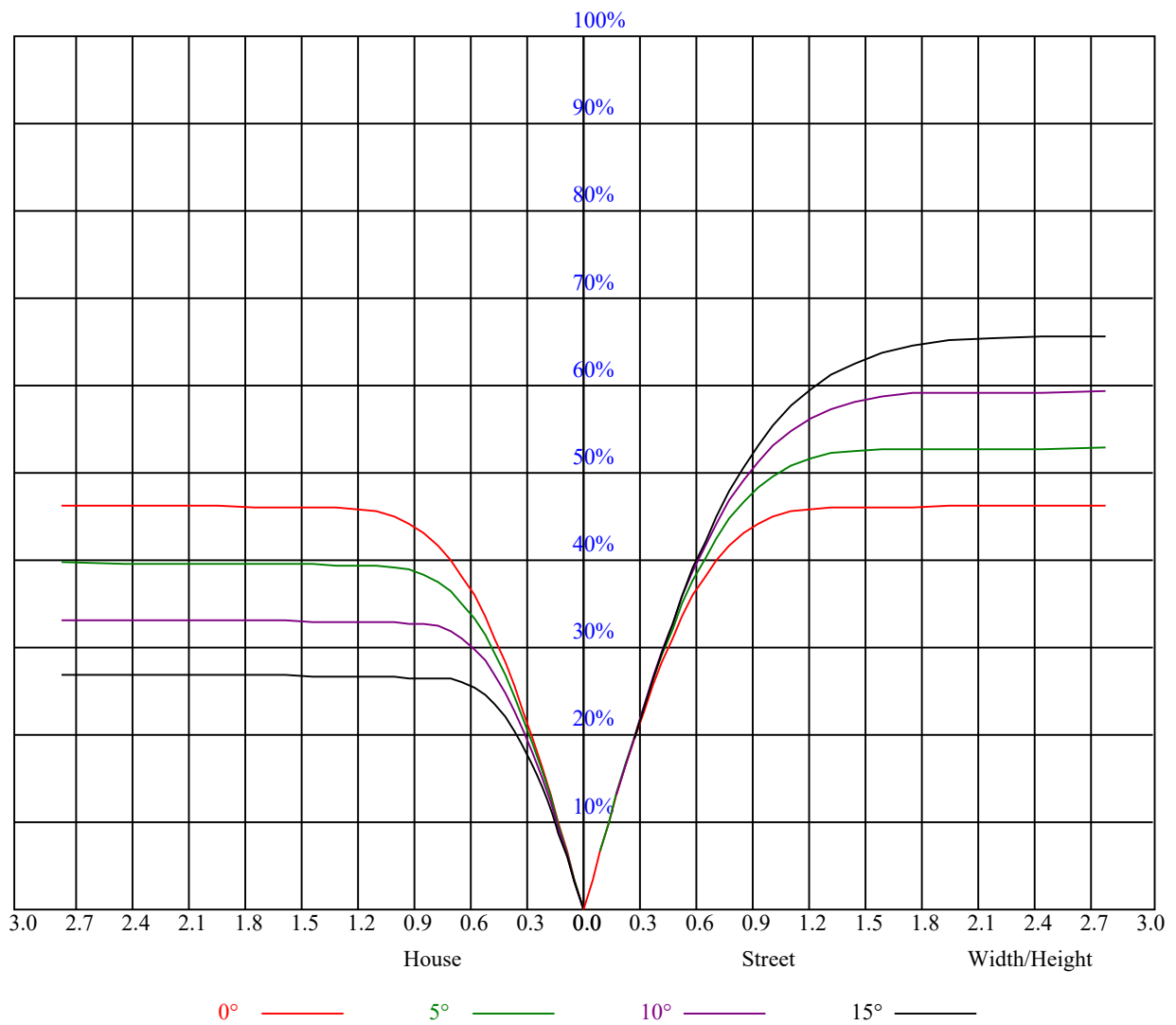
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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 RHOF=20 CU															
0	1.11	1.11	1.11	1.08	1.08	1.08	1.03	1.03	1.03	0.99	0.99	0.99	0.95	0.95	0.95	0.93
1	1.02	0.99	0.97	1.00	0.97	0.95	0.96	0.94	0.92	0.93	0.91	0.90	0.89	0.88	0.87	0.85
2	0.93	0.89	0.86	0.92	0.88	0.85	0.89	0.85	0.83	0.86	0.83	0.81	0.83	0.81	0.79	0.78
3	0.86	0.80	0.76	0.84	0.80	0.76	0.82	0.78	0.74	0.80	0.76	0.73	0.77	0.75	0.72	0.70
4	0.79	0.73	0.68	0.78	0.72	0.68	0.76	0.71	0.67	0.74	0.70	0.66	0.72	0.68	0.66	0.64
5	0.73	0.66	0.62	0.72	0.66	0.62	0.70	0.65	0.61	0.68	0.64	0.60	0.67	0.63	0.60	0.58
6	0.67	0.61	0.56	0.66	0.60	0.56	0.65	0.60	0.56	0.63	0.59	0.55	0.62	0.58	0.55	0.53
7	0.62	0.56	0.51	0.61	0.55	0.51	0.60	0.55	0.51	0.59	0.54	0.50	0.58	0.54	0.50	0.49
8	0.58	0.51	0.47	0.57	0.51	0.47	0.56	0.51	0.47	0.55	0.50	0.46	0.54	0.50	0.46	0.45
9	0.54	0.47	0.43	0.53	0.47	0.43	0.52	0.47	0.43	0.51	0.46	0.43	0.50	0.46	0.43	0.41
10	0.50	0.44	0.40	0.50	0.44	0.40	0.49	0.43	0.40	0.48	0.43	0.39	0.47	0.43	0.39	0.38



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	2408.17	2409.27	2408.72	2408.17	2406.52	2405.41	2405.41	2404.86	2405.41
45.0	2409.27	2408.72	2405.96	2403.76	2403.21	2402.11	2402.11	2401.56	2399.91
90.0	2411.47	2410.37	2409.27	2408.17	2407.62	2406.52	2404.86	2403.21	2401.01
135.0	2416.43	2414.77	2413.67	2412.57	2411.47	2409.27	2408.72	2407.62	2405.41
180.0	2408.17	2408.17	2407.62	2405.96	2404.86	2403.21	2401.56	2399.91	2398.26
225.0	2409.27	2408.72	2409.27	2409.82	2410.37	2410.92	2409.82	2408.72	2408.17
270.0	2411.47	2412.57	2413.12	2413.12	2412.57	2412.02	2410.92	2409.27	2408.72
315.0	2416.43	2416.43	2415.87	2413.67	2411.47	2409.82	2407.62	2406.52	2406.52
360.0	2408.17	2409.27	2408.72	2408.17	2406.52	2405.41	2405.41	2404.86	2405.41
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2407.07	2408.17	2409.27	2408.72	2406.52	2403.21	2396.05	2388.35	2378.44
45.0	2397.71	2394.40	2388.35	2381.19	2371.28	2359.72	2347.60	2331.64	2311.82
90.0	2396.61	2390.55	2383.39	2372.93	2359.72	2345.95	2329.44	2312.37	2293.10
135.0	2404.31	2399.91	2395.50	2390.00	2380.09	2370.73	2360.82	2345.95	2327.78
180.0	2396.61	2394.40	2392.20	2386.69	2377.89	2369.08	2359.72	2345.40	2328.34
225.0	2406.52	2405.41	2402.66	2399.36	2394.40	2387.25	2379.54	2370.18	2360.27
270.0	2407.07	2406.52	2405.41	2403.21	2398.81	2394.95	2387.80	2378.44	2366.87
315.0	2407.07	2406.52	2405.96	2404.86	2402.11	2397.71	2391.10	2383.39	2373.48
360.0	2407.07	2408.17	2409.27	2408.72	2406.52	2403.21	2396.05	2388.35	2378.44
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2365.22	2352.56	2334.94	2316.22	2296.40	2275.48	2251.26	2224.83	2199.50
45.0	2292.55	2276.03	2245.75	2223.18	2201.71	2170.32	2140.04	2117.47	2080.58
90.0	2272.18	2251.26	2230.89	2200.60	2175.28	2148.85	2111.96	2078.38	2042.59
135.0	2310.17	2289.80	2266.67	2244.65	2218.77	2193.45	2162.06	2127.38	2093.24
180.0	2310.17	2288.69	2269.98	2249.05	2227.03	2206.66	2184.09	2150.50	2120.22
225.0	2344.30	2330.54	2314.57	2293.10	2273.83	2251.81	2228.13	2201.71	2178.03
270.0	2353.66	2337.69	2320.63	2303.56	2282.64	2262.27	2239.14	2214.92	2188.49
315.0	2360.27	2347.05	2331.09	2309.62	2289.80	2269.98	2244.65	2222.08	2199.50
360.0	2365.22	2352.56	2334.94	2316.22	2296.40	2275.48	2251.26	2224.83	2199.50
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	2170.87	2129.58	2093.24	2053.05	1996.90	1947.34	1894.49	1831.18	1763.46
45.0	2044.24	2010.66	1956.15	1904.95	1850.45	1776.12	1715.56	1655.55	1578.47
90.0	1998.00	1947.34	1897.79	1836.13	1778.87	1712.25	1642.88	1580.12	1505.24
135.0	2052.50	1996.90	1951.20	1897.79	1832.83	1774.47	1716.66	1650.59	1582.32
180.0	2086.09	2036.54	1990.29	1940.74	1880.73	1816.31	1755.75	1685.83	1612.60
225.0	2146.65	2115.82	2078.38	2036.54	1993.59	1939.64	1881.83	1827.32	1770.06
270.0	2162.62	2127.93	2097.10	2065.17	2017.82	1975.42	1928.63	1878.52	1808.60
315.0	2164.82	2133.44	2099.30	2050.85	2013.41	1961.66	1897.24	1847.69	1786.58
360.0	2170.87	2129.58	2093.24	2053.05	1996.90	1947.34	1894.49	1831.18	1763.46
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	1699.59	1626.92	1558.10	1480.47	1402.84	1334.57	1258.59	1185.36	1123.70
45.0	1513.50	1444.13	1357.14	1293.83	1223.90	1147.38	1081.86	1029.55	926.60
90.0	1430.37	1363.75	1298.23	1216.75	1095.07	1087.97	1027.63	934.31	830.25
135.0	1519.01	1441.93	1376.96	1303.18	1224.45	1157.29	1090.67	1014.14	908.43
180.0	1545.98	1469.46	1401.19	1324.11	1245.93	1178.76	1092.04	1036.55	943.23
225.0	1696.29	1636.28	1572.41	1496.98	1421.01	1353.29	1275.66	1198.03	1096.50
270.0	1749.14	1688.03	1615.91	1539.93	1472.76	1397.88	1322.45	1255.29	1181.51
315.0	1696.84	1640.68	1572.96	1476.06	1416.60	1348.33	1271.80	1196.93	1094.58
360.0	1699.59	1626.92	1558.10	1480.47	1402.84	1334.57	1258.59	1185.36	1123.70

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	1075.80	957.98	845.67	733.90	563.23	398.61	281.89	90.24	34.91
45.0	805.48	674.99	525.79	368.88	289.60	71.85	31.00	21.58	19.93
90.0	693.71	538.89	389.47	221.33	92.33	29.95	20.32	19.16	18.00
135.0	795.01	632.60	496.06	348.51	290.70	52.19	26.26	18.50	17.23
180.0	830.91	676.15	544.07	402.63	237.79	91.28	34.02	20.37	17.67
225.0	1068.26	985.78	863.78	722.17	580.73	406.32	234.54	107.64	41.24
270.0	1121.50	1058.18	965.14	859.43	750.97	553.87	398.61	282.99	86.16
315.0	1074.87	975.54	866.53	745.13	599.89	441.33	291.63	135.71	47.57
360.0	1075.80	957.98	845.67	733.90	563.23	398.61	281.89	90.24	34.91
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	22.30	19.38	18.61	17.78	17.07	16.46	15.91	15.86	16.57
45.0	18.55	17.73	16.85	16.30	15.80	15.86	18.39	22.35	25.38
90.0	17.23	16.63	16.02	15.47	15.09	16.24	19.43	21.25	21.75
135.0	16.74	16.35	15.75	15.14	14.81	14.53	15.64	16.46	17.23
180.0	16.79	16.13	15.64	15.14	14.70	14.48	15.42	17.12	17.73
225.0	21.47	18.88	18.11	17.23	16.68	16.19	15.64	15.69	17.51
270.0	36.23	22.35	19.38	18.11	17.29	16.74	16.19	15.75	15.80
315.0	27.86	19.71	18.72	17.56	16.90	16.41	16.08	16.90	19.05
360.0	22.30	19.38	18.61	17.78	17.07	16.46	15.91	15.86	16.57
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	17.84	19.38	20.21	20.59	20.76	20.87	21.20	21.47	21.36
45.0	25.71	25.60	25.60	26.26	26.70	25.99	24.50	23.40	22.24
90.0	22.02	22.52	22.74	22.68	22.02	21.03	20.32	19.66	18.66
135.0	17.78	18.11	18.39	18.39	18.28	17.95	17.56	17.01	16.30
180.0	18.11	18.28	18.28	18.28	18.17	17.67	16.85	15.58	14.70
225.0	20.92	21.03	19.82	18.55	17.78	17.12	16.41	16.08	15.86
270.0	17.01	18.88	19.43	19.43	19.38	18.77	18.39	18.06	17.34
315.0	21.75	23.29	23.23	23.12	23.01	22.96	22.63	21.86	20.98
360.0	17.84	19.38	20.21	20.59	20.76	20.87	21.20	21.47	21.36
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	20.76	19.93	19.32	18.83	17.89	16.74	15.80	15.09	14.59
45.0	20.70	19.10	17.23	15.97	15.53	15.03	14.65	14.42	14.26
90.0	17.29	17.01	16.35	15.86	15.36	14.81	14.42	14.04	13.82
135.0	15.75	15.31	14.70	14.20	13.87	13.60	13.49	13.32	13.21
180.0	14.15	13.98	13.87	13.71	13.49	13.38	13.21	13.05	12.99
225.0	15.36	15.14	14.92	14.42	14.09	13.93	13.76	13.65	13.49
270.0	16.96	17.07	17.12	16.46	16.13	15.97	15.64	15.14	14.70
315.0	19.99	19.21	19.05	18.66	17.62	16.85	16.52	15.47	14.87
360.0	20.76	19.93	19.32	18.83	17.89	16.74	15.80	15.09	14.59
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	14.37	14.04	13.65	13.38	13.21	12.99	12.88	12.06	11.84
45.0	13.98	13.82	13.60	13.43	13.10	12.22	12.11	12.06	12.06
90.0	13.65	13.49	13.27	13.10	12.83	12.06	12.00	11.95	11.95
135.0	13.10	12.94	12.77	12.66	12.55	12.11	11.89	11.89	11.84
180.0	12.88	12.83	12.66	12.61	12.50	12.39	11.78	11.78	11.73
225.0	13.43	13.38	13.27	13.27	13.43	13.54	13.60	13.16	12.11
270.0	14.42	14.04	13.65	13.38	13.43	13.49	13.60	13.71	12.17
315.0	14.26	13.87	13.60	13.43	13.21	13.05	12.99	12.33	11.89
360.0	14.37	14.04	13.65	13.38	13.21	12.99	12.88	12.06	11.84

Intensity data(cd)

C/ γ (°)	90.0
0.0	11.84
45.0	12.06
90.0	11.95
135.0	11.84
180.0	11.78
225.0	12.06
270.0	12.00
315.0	11.89
360.0	11.84