
Nata

LumCAT: 6723-A
Luminaire: TE 2213480-1+92.76.365.00
Report No: GC2017033005
Test No: NT-0010
LampCAT: CITIZEN CLU046
Lamp flux(lm): 3964.0
Number of Lamps: 1
Length(mm): 160
Phm Type: C

Voltage(V): 34.7000
Current(A): 0.8000
Power (W): 27.7600
PF: 0.0000
Ballast type: DC
Width(mm): 160
Height(mm): 0

Photometric Results

Lumens(lm): 3691.01
Efficiency(%): 93.11%
Lumens(lm)/Power(W): 132.96
Central intensity(cd): 2402.249
Maximum intensity(cd): 2405.207
Angle of maximum intensity: C=0.0 γ =11.0
Beam Angle(50%Imax): [C0/180]Total=82.4
[C90/270]Total=82.4
Field angle(10%Imax): [C0/180]Total=99.6
[C90/270]Total=99.6
Maximum s/h(1/2): C0_180=1.22 C90_270=1.22
Maximum s/h(1/4): C0_180=1.17 C90_270=1.17
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 93.11%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.375%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2402.248	0.000	0	.000%	.000%
1.0	2402.042	2.299	2.299	.058%	.062%
2.0	2402.592	6.896	9.195	.174%	.249%
3.0	2403.074	11.494	20.688	.290%	.561%
4.0	2403.418	16.089	36.777	.406%	.996%
5.0	2403.556	20.679	57.457	.522%	1.557%
6.0	2403.831	25.264	82.721	.637%	2.241%
7.0	2403.900	29.842	112.562	.753%	3.050%
8.0	2404.313	34.411	146.974	.868%	3.982%
9.0	2404.588	38.974	185.947	.983%	5.038%
10.0	2405.070	43.526	229.473	1.098%	6.217%
11.0	2405.208	48.065	277.537	1.213%	7.519%
12.0	2405.001	52.582	330.12	1.327%	8.944%
13.0	2403.281	57.062	387.182	1.440%	10.490%
14.0	2401.354	61.499	448.681	1.551%	12.156%
15.0	2397.637	65.883	514.564	1.662%	13.941%
16.0	2392.201	70.185	584.748	1.771%	15.843%
17.0	2384.424	74.385	659.133	1.877%	17.858%
18.0	2374.720	78.468	737.601	1.980%	19.984%
19.0	2362.883	82.425	820.026	2.079%	22.217%
20.0	2348.844	86.238	906.263	2.176%	24.553%
21.0	2331.294	89.868	996.131	2.267%	26.988%
22.0	2310.442	93.278	1089.409	2.353%	29.515%
23.0	2288.006	96.488	1185.897	2.434%	32.129%
24.0	2255.730	99.342	1285.239	2.506%	34.821%
25.0	2224.141	101.862	1387.102	2.570%	37.581%
26.0	2190.901	104.218	1491.319	2.629%	40.404%
27.0	2150.985	106.225	1597.545	2.680%	43.282%
28.0	2101.709	107.669	1705.214	2.716%	46.199%
29.0	2055.668	108.769	1813.982	2.744%	49.146%
30.0	2001.507	109.543	1923.525	2.763%	52.114%
31.0	1942.252	109.749	2033.275	2.769%	55.087%
32.0	1876.460	109.402	2142.676	2.760%	58.051%
33.0	1810.117	108.608	2251.284	2.740%	60.994%
34.0	1742.742	107.520	2358.804	2.712%	63.907%
35.0	1664.355	105.812	2464.616	2.669%	66.774%
36.0	1590.029	103.620	2568.236	2.614%	69.581%
37.0	1517.492	101.350	2669.586	2.557%	72.327%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	1443.372	98.830	2768.416	2.493%	75.004%
39.0	1360.168	95.693	2864.108	2.414%	77.597%
40.0	1291.210	92.471	2956.579	2.333%	80.102%
41.0	1217.008	89.316	3045.895	2.253%	82.522%
42.0	1145.338	85.828	3131.723	2.165%	84.847%
43.0	1089.160	82.772	3214.496	2.088%	87.090%
44.0	1012.136	79.309	3293.805	2.001%	89.239%
45.0	912.870	73.980	3367.785	1.866%	91.243%
46.0	782.159	66.289	3434.074	1.672%	93.039%
47.0	643.313	56.695	3490.768	1.430%	94.575%
48.0	498.109	46.142	3536.911	1.164%	95.825%
49.0	361.569	35.303	3572.214	.891%	96.782%
50.0	206.255	23.675	3595.888	.597%	97.423%
51.0	113.760	13.539	3609.428	.342%	97.790%
52.0	46.034	6.857	3616.285	.173%	97.976%
53.0	27.446	3.196	3619.481	.081%	98.062%
54.0	19.972	2.090	3621.571	.053%	98.119%
55.0	18.244	1.706	3623.277	.043%	98.165%
56.0	17.260	1.604	3624.881	.040%	98.208%
57.0	16.414	1.540	3626.421	.039%	98.250%
58.0	16.076	1.502	3627.923	.038%	98.291%
59.0	16.317	1.514	3629.438	.038%	98.332%
60.0	17.549	1.600	3631.038	.040%	98.375%
61.0	19.545	1.770	3632.808	.045%	98.423%
62.0	21.678	1.986	3634.794	.050%	98.477%
63.0	23.234	2.184	3636.979	.055%	98.536%
64.0	24.356	2.335	3639.314	.059%	98.599%
65.0	25.113	2.448	3641.762	.062%	98.666%
66.0	25.608	2.531	3644.293	.064%	98.734%
67.0	25.863	2.588	3646.881	.065%	98.804%
68.0	25.739	2.614	3649.495	.066%	98.875%
69.0	25.195	2.598	3652.093	.066%	98.946%
70.0	24.521	2.553	3654.646	.064%	99.015%
71.0	23.860	2.501	3657.147	.063%	99.083%
72.0	23.186	2.446	3659.593	.062%	99.149%
73.0	22.387	2.383	3661.976	.060%	99.213%
74.0	21.286	2.296	3664.272	.058%	99.276%
75.0	20.061	2.185	3666.457	.055%	99.335%

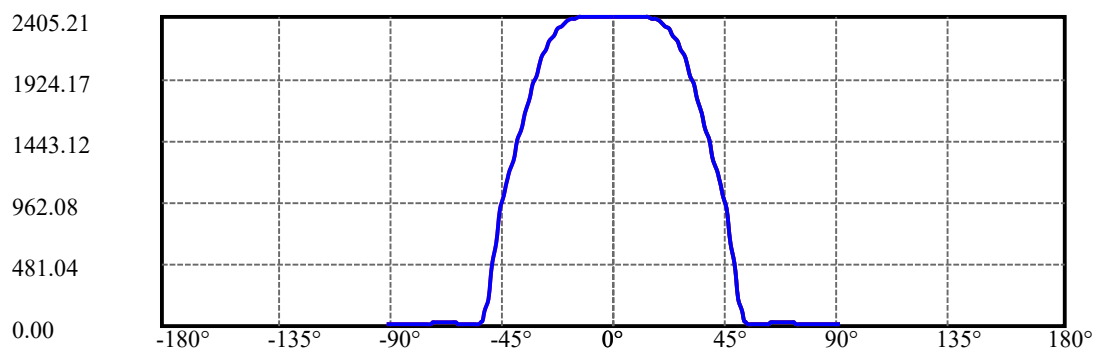
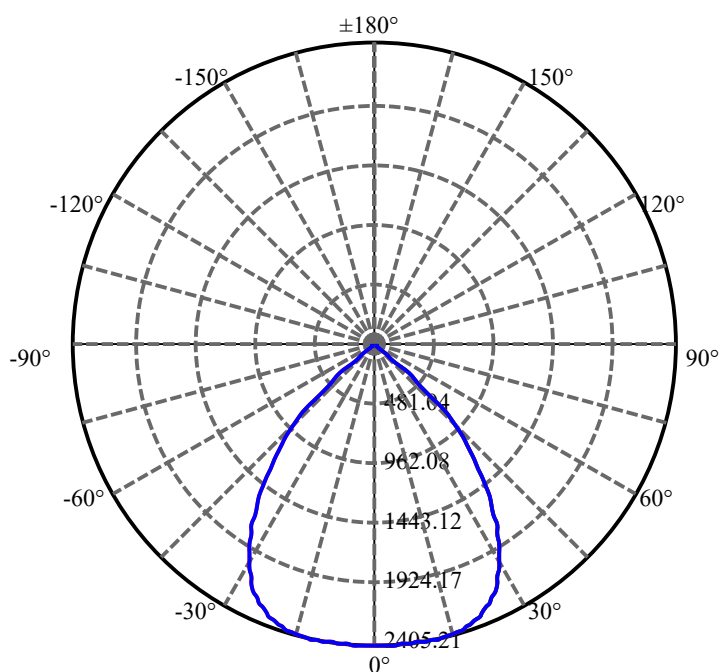
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	19.105	2.079	3668.536	.052%	99.391%
77.0	18.065	1.982	3670.518	.050%	99.445%
78.0	17.384	1.898	3672.415	.048%	99.496%
79.0	16.634	1.828	3674.243	.046%	99.546%
80.0	15.980	1.758	3676.002	.044%	99.593%
81.0	15.430	1.699	3677.7	.043%	99.639%
82.0	14.913	1.645	3679.346	.042%	99.684%
83.0	14.425	1.595	3680.94	.040%	99.727%
84.0	14.088	1.553	3682.494	.039%	99.769%
85.0	13.916	1.528	3684.022	.039%	99.811%
86.0	13.654	1.507	3685.529	.038%	99.852%
87.0	12.752	1.445	3686.974	.036%	99.891%
88.0	12.243	1.369	3688.343	.035%	99.928%
89.0	12.133	1.336	3689.68	.034%	99.964%
90.0	12.099	1.329	3691.008	.034%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1923.53	48.52%	52.11%
0-40	2956.58	74.59%	80.10%
0-60	3631.04	91.60%	98.38%
0-90	3689.68	93.08%	99.96%
0-120	3689.68	93.08%	99.96%
0-180	3691.01	93.11%	100.00%
60-90	60.24	1.52%	1.63%
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%
0-39.96	2952.81	74.49%	80.00%

ZONAL LUMEN SUMMARY

0-10	229.47
10-20	676.79
20-30	1017.26
30-40	1033.05
40-50	639.31
50-60	35.15
60-70	23.61
70-80	21.36
80-90	13.68
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

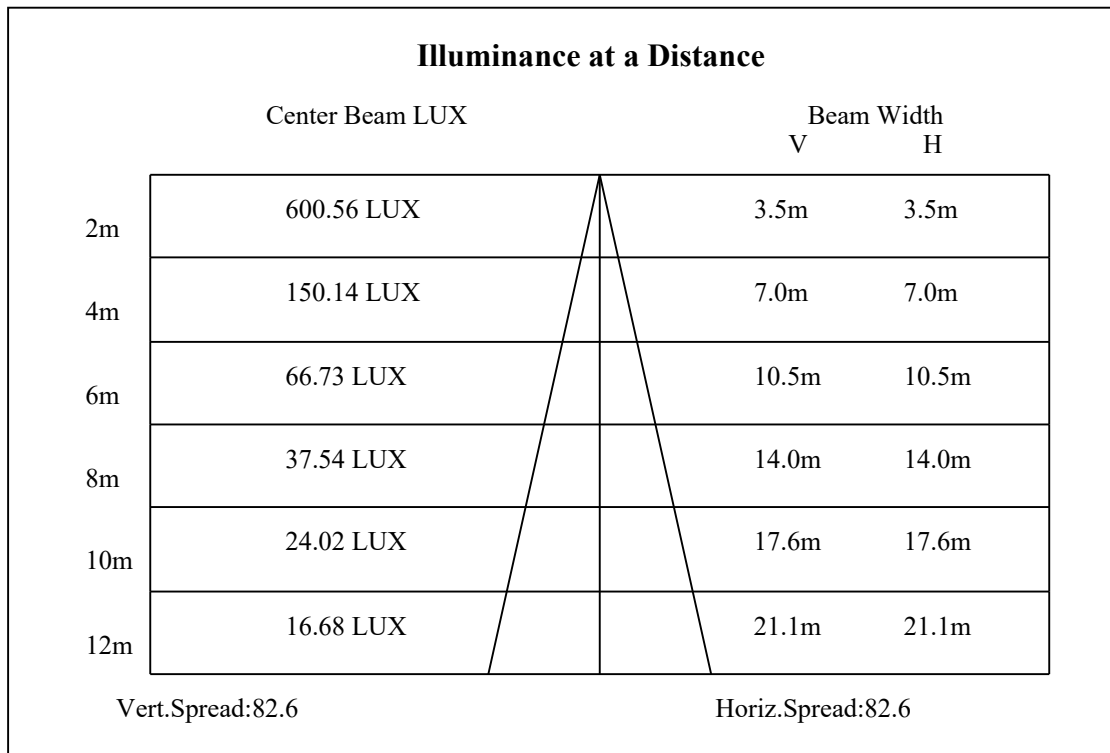
C0(Max): —————C0/C180: —————C90/C270: —————

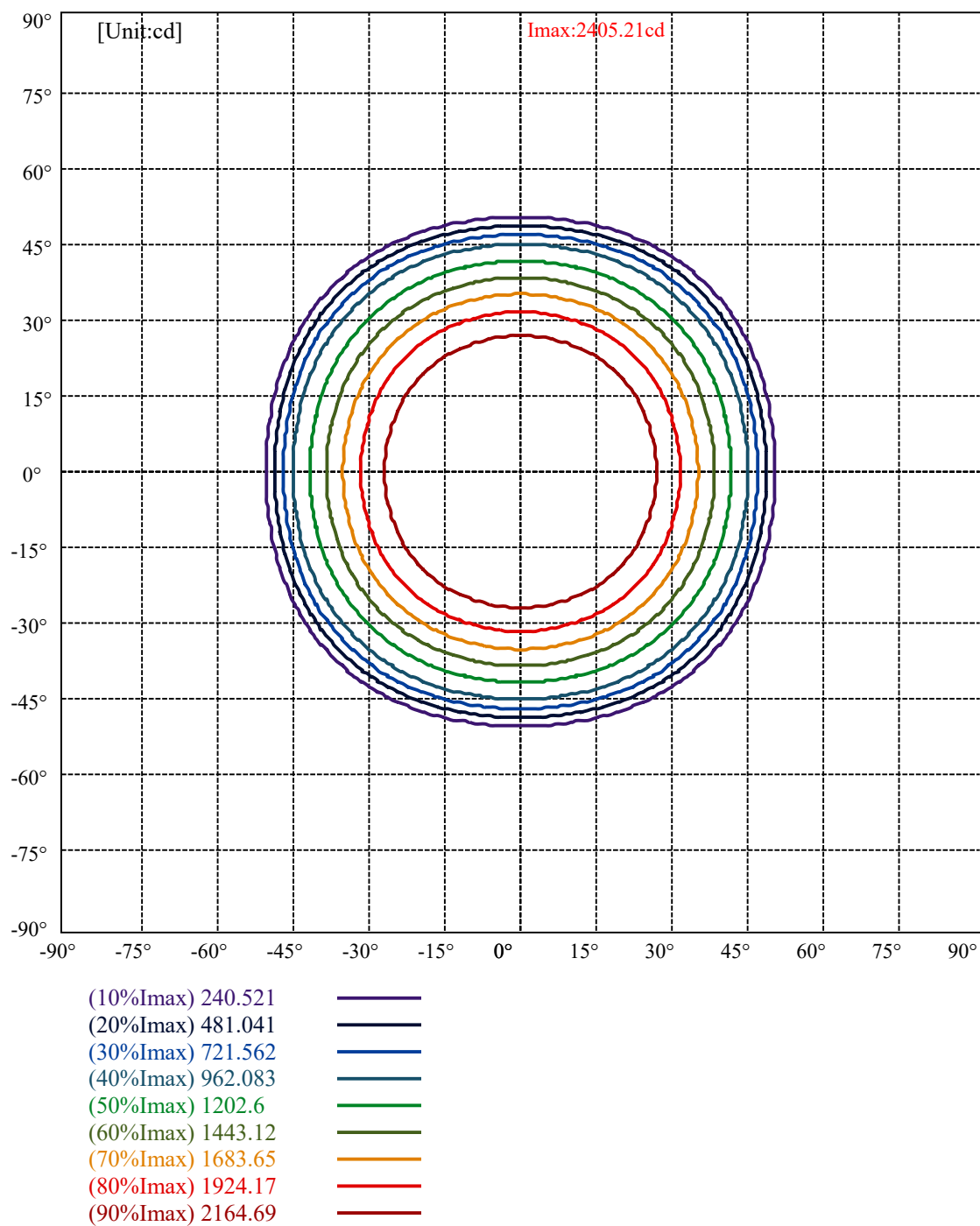
Field angle(10%Imax):C0/180Left:60.8 Right:38.8

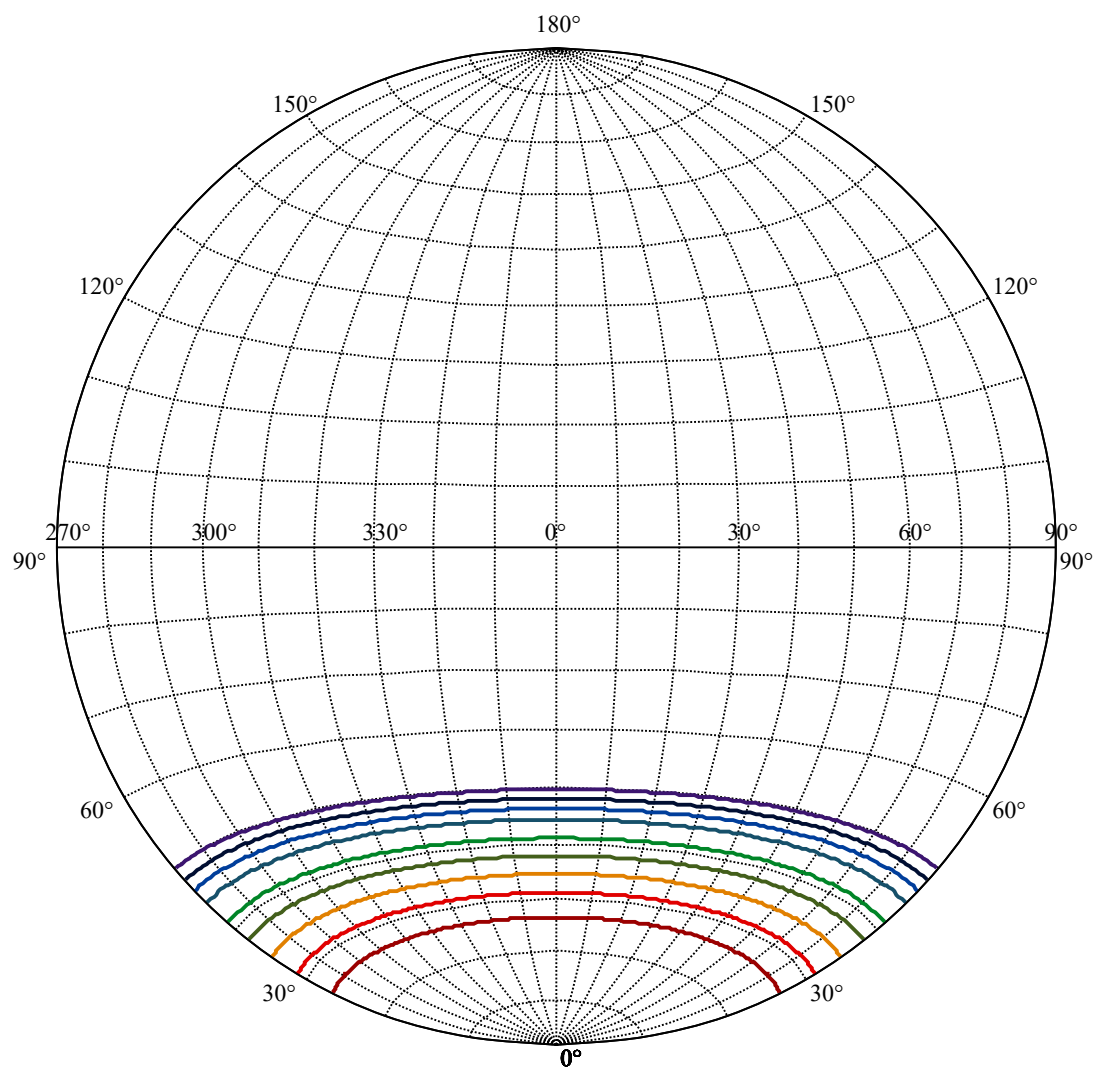
:C90/270Left:60.8 Right:38.8

Beam Angle(50%Imax):C0/180Left:52.2 Right:30.2

:C90/270Left:52.2 Right:30.2







House

[Unit:cd]

Road

Imax:2405.21

(10%Imax) 240.521

(20%Imax) 481.041

(30%Imax) 721.562

(40%Imax) 962.083

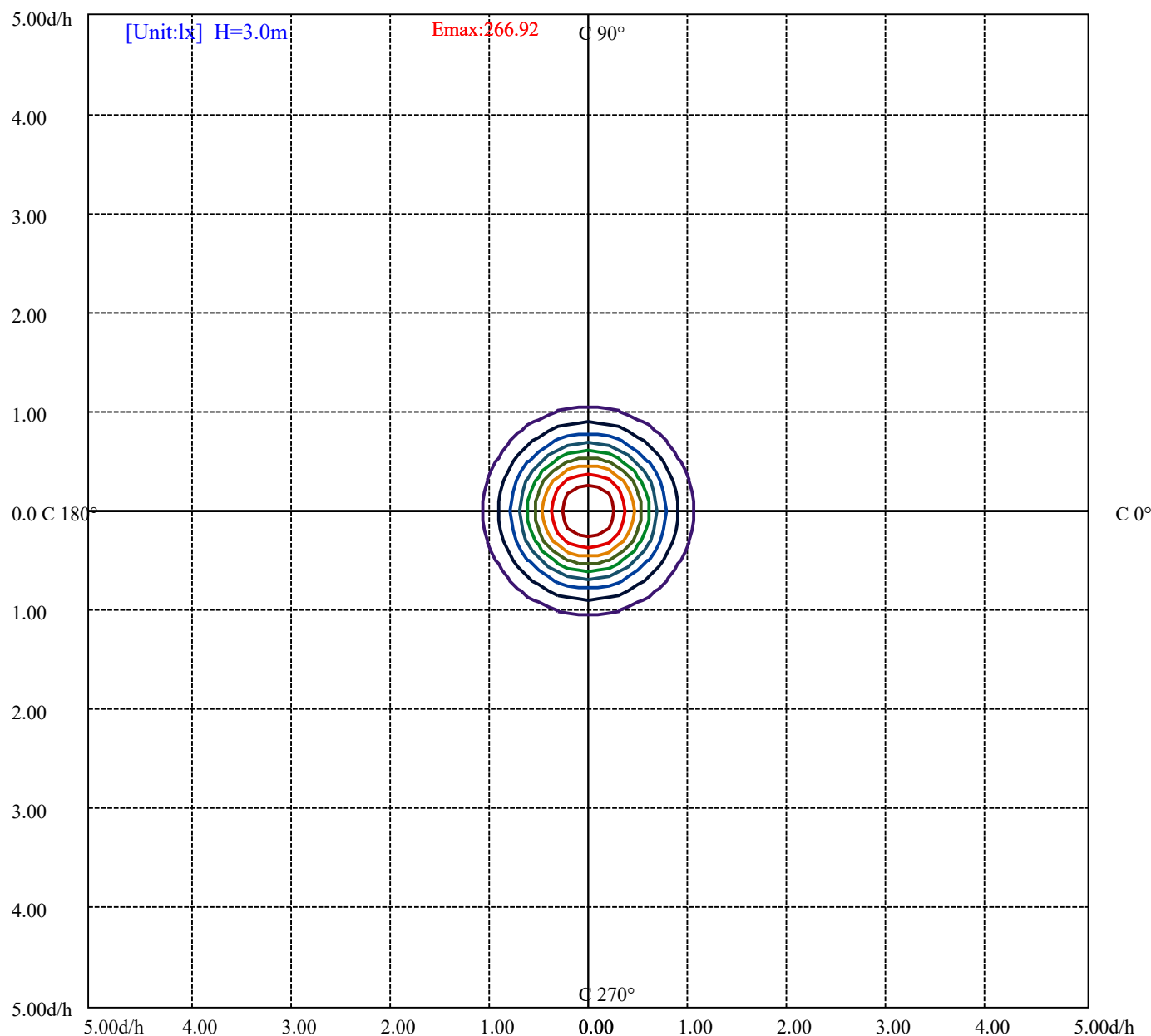
(50%Imax) 1202.6

(60%Imax) 1443.12

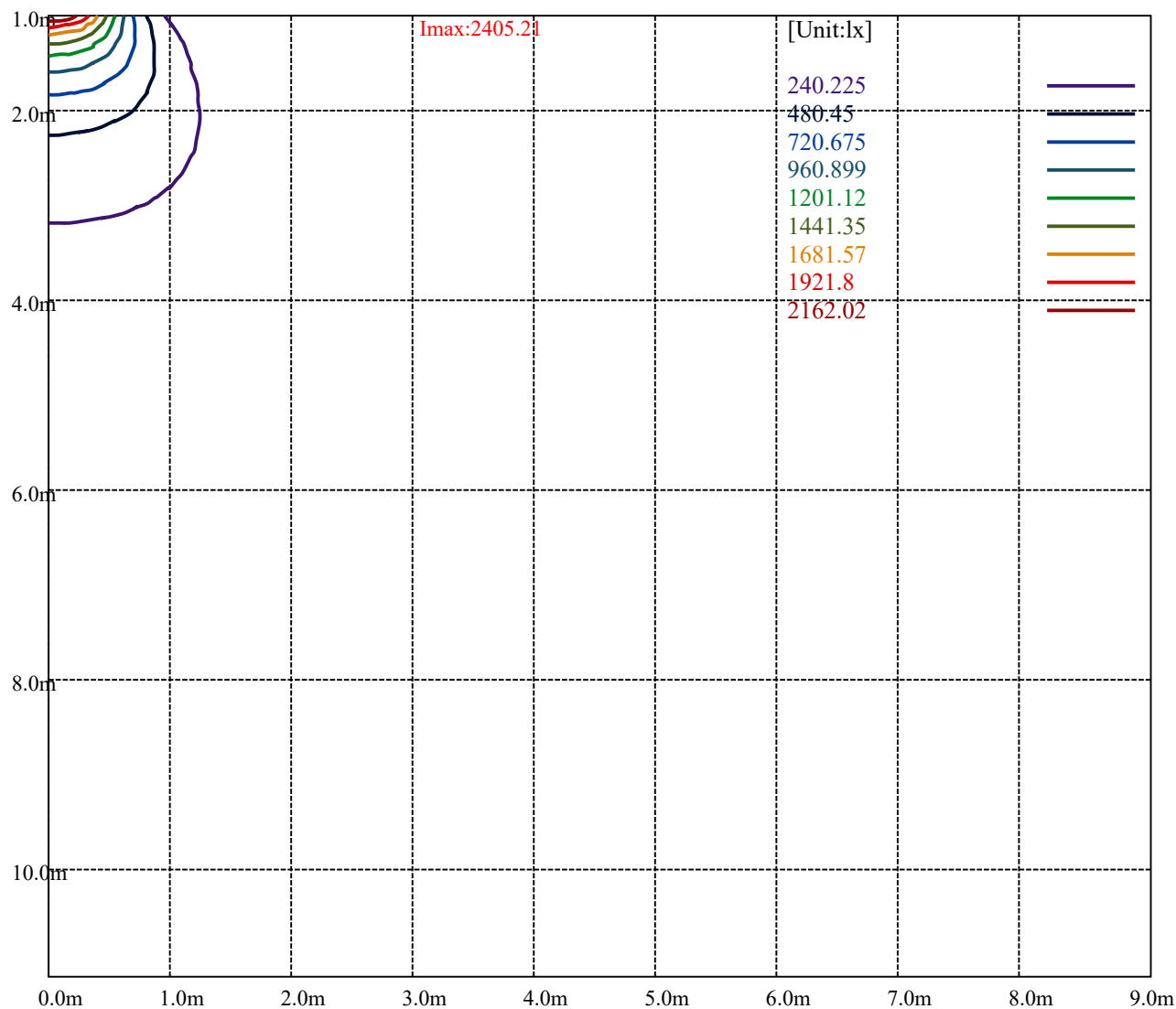
(70%Imax) 1683.65

(80%Imax) 1924.17

(90%Imax) 2164.69



(10%Emax) 26.69167	—
(20%Emax) 53.38334	—
(30%Emax) 80.075	—
(40%Emax) 106.7666	—
(50%Emax) 133.4578	—
(60%Emax) 160.15	—
(70%Emax) 186.8411	—
(80%Emax) 213.5333	—
(90%Emax) 240.2244	—



Luminance Table

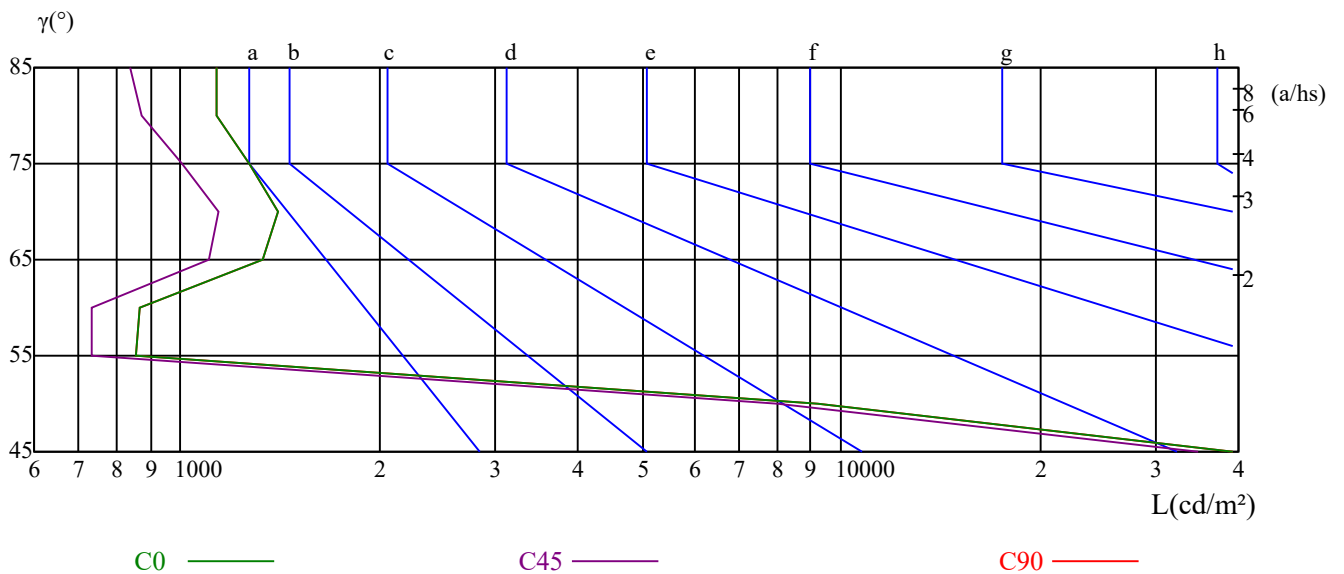
γ	45	50	55	60	65	70	75	80	85
C0	39300	9211	853	868	1329	1408	1268	1133	1134
C45	34763	8033	733	733	1103	1143	1005	872	841
C90	39300	9211	853	868	1329	1408	1268	1133	1134

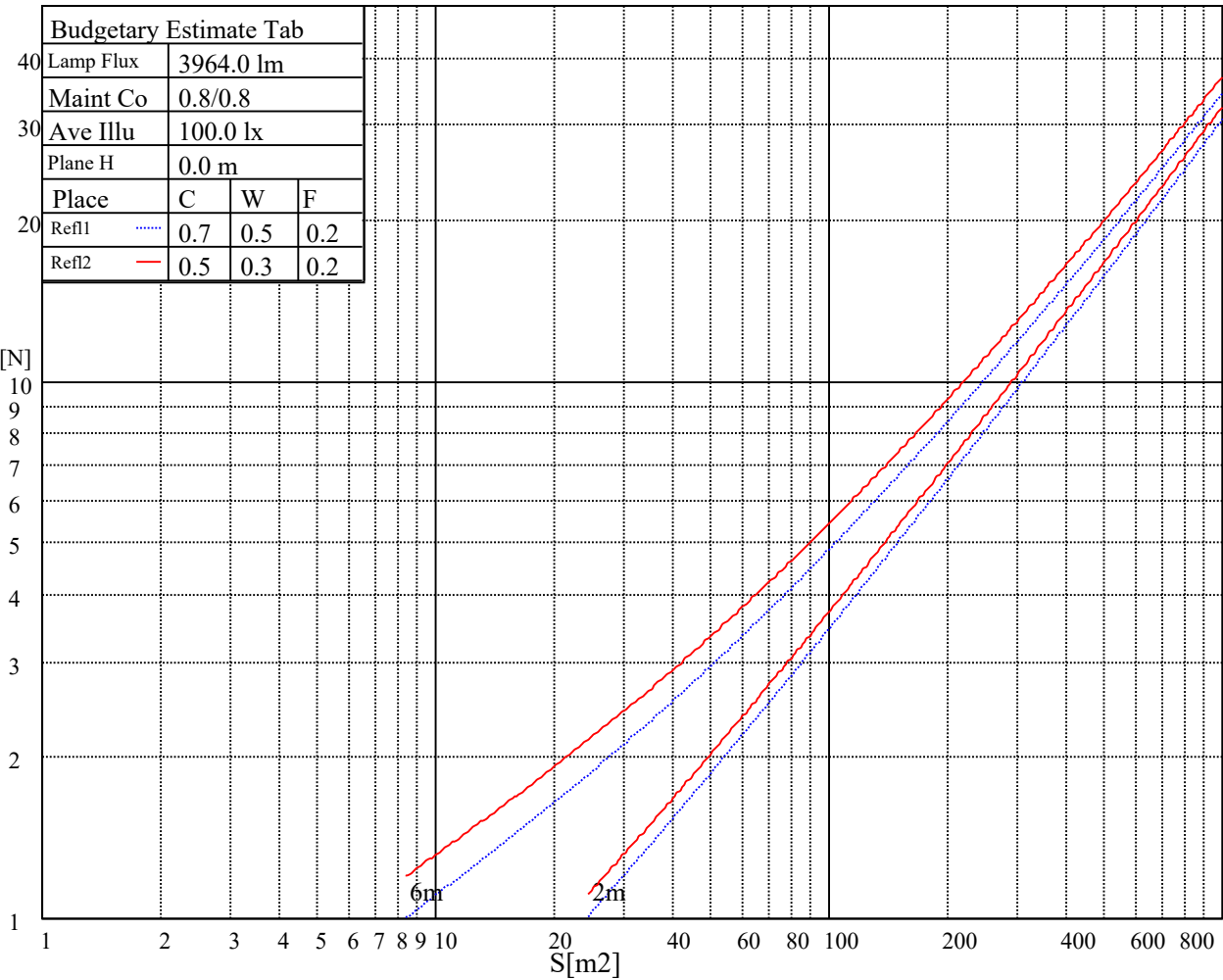
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2641	2641	2641	3445	3445	3445	7096	7096	7096

Glare Table

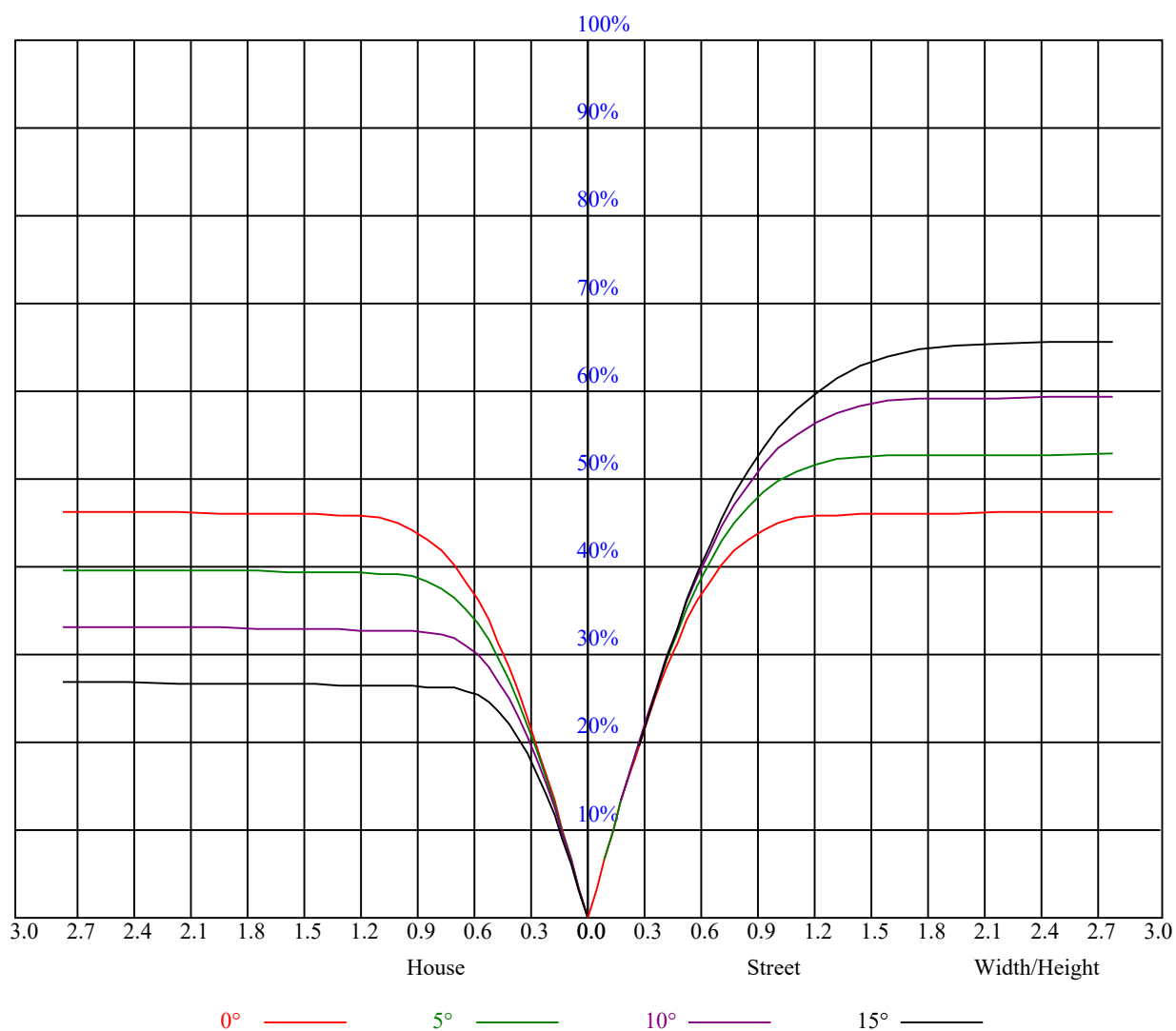
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve





RHOC	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	0.86	0.83	0.86	0.83	0.81	0.83	0.81	0.79	0.78
3	0.86	0.81	0.76	0.85	0.80	0.76	0.82	0.78	0.74	0.80	0.76	0.73	0.78	0.75	0.72	0.71
4	0.79	0.73	0.69	0.78	0.72	0.68	0.76	0.71	0.67	0.74	0.70	0.67	0.72	0.69	0.66	0.64
5	0.73	0.67	0.62	0.72	0.66	0.62	0.70	0.65	0.61	0.69	0.64	0.61	0.67	0.63	0.60	0.59
6	0.67	0.61	0.56	0.67	0.61	0.56	0.65	0.60	0.56	0.64	0.59	0.55	0.62	0.58	0.55	0.53
7	0.62	0.56	0.51	0.62	0.56	0.51	0.60	0.55	0.51	0.59	0.54	0.51	0.58	0.54	0.50	0.49
8	0.58	0.52	0.47	0.57	0.51	0.47	0.56	0.51	0.47	0.55	0.50	0.47	0.54	0.50	0.46	0.45
9	0.54	0.48	0.43	0.53	0.47	0.43	0.52	0.47	0.43	0.52	0.47	0.43	0.51	0.46	0.43	0.41
10	0.50	0.44	0.40	0.50	0.44	0.40	0.49	0.44	0.40	0.48	0.43	0.40	0.48	0.43	0.40	0.38



Intensity data(cd)

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C/γ(°)	0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0
0.0	2401.56	2399.91	2397.16	2396.05	2395.50	2396.61	2397.16	2397.71	2398.26
45.0	2404.31	2398.26	2393.30	2390.00	2386.69	2385.04	2383.94	2382.29	2380.64
90.0	2399.36	2393.85	2390.00	2386.14	2382.84	2380.09	2379.54	2378.99	2377.89
135.0	2403.76	2399.91	2398.26	2396.05	2393.85	2392.20	2391.65	2392.75	2393.85
180.0	2401.56	2403.76	2406.52	2408.17	2409.27	2409.27	2409.27	2409.82	2410.37
225.0	2404.31	2410.92	2416.43	2421.38	2425.23	2427.44	2427.44	2427.44	2427.99
270.0	2399.36	2404.31	2410.92	2415.87	2420.28	2422.48	2424.13	2424.13	2424.68
315.0	2403.76	2405.41	2408.17	2410.92	2413.67	2415.32	2417.53	2418.08	2420.83
360.0	2401.56	2399.91	2397.16	2396.05	2395.50	2396.61	2397.16	2397.71	2398.26
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2398.81	2401.01	2403.21	2404.31	2405.96	2406.52	2405.41	2402.66	2396.61
45.0	2378.99	2380.09	2381.74	2382.84	2381.19	2380.64	2378.99	2374.58	2371.28
90.0	2377.34	2377.34	2375.68	2375.68	2373.48	2371.83	2368.53	2364.12	2358.07
135.0	2394.95	2394.95	2395.50	2397.16	2398.26	2398.26	2395.50	2393.30	2387.80
180.0	2410.37	2409.27	2408.72	2405.96	2402.66	2398.81	2394.95	2389.45	2378.44
225.0	2426.34	2425.78	2424.13	2421.38	2415.87	2412.02	2405.41	2394.40	2384.49
270.0	2426.89	2427.99	2427.44	2426.89	2424.13	2421.38	2415.32	2407.62	2398.26
315.0	2423.03	2424.13	2425.23	2425.78	2424.68	2421.38	2416.98	2411.47	2400.46
360.0	2398.81	2401.01	2403.21	2404.31	2405.96	2406.52	2405.41	2402.66	2396.61
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2388.90	2380.09	2365.22	2352.01	2336.04	2317.32	2288.14	2261.72	2229.78
45.0	2363.57	2354.21	2342.10	2328.89	2312.37	2291.45	2261.72	2233.64	2206.66
90.0	2351.46	2343.20	2334.39	2322.83	2307.96	2289.25	2263.37	2231.99	2201.71
135.0	2380.09	2369.08	2356.41	2341.00	2323.93	2307.41	2271.08	2244.10	2217.12
180.0	2366.87	2354.21	2338.25	2315.67	2290.35	2259.51	2223.18	2185.19	2141.14
225.0	2372.93	2355.31	2339.90	2316.77	2287.04	2263.37	2232.54	2195.10	2165.92
270.0	2385.04	2371.83	2358.07	2338.25	2318.43	2293.10	2255.66	2222.08	2185.19
315.0	2388.90	2375.13	2356.41	2334.94	2307.41	2282.64	2250.16	2219.32	2179.68
360.0	2388.90	2380.09	2365.22	2352.01	2336.04	2317.32	2288.14	2261.72	2229.78
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	2191.24	2146.65	2105.91	2055.81	1999.10	1944.04	1879.07	1819.61	1749.14
45.0	2170.87	2129.58	2091.04	2042.59	1985.88	1924.77	1862.56	1790.98	1714.46
90.0	2165.92	2117.47	2073.97	2023.87	1972.67	1902.20	1841.64	1777.22	1690.78
135.0	2170.87	2121.32	2080.03	2016.72	1955.60	1898.90	1820.16	1750.24	1683.07
180.0	2098.75	2047.55	1988.09	1930.28	1870.27	1789.88	1722.71	1655.00	1567.46
225.0	2128.48	2070.12	2028.83	1977.08	1911.56	1843.29	1780.52	1705.65	1627.47
270.0	2141.14	2089.39	2042.04	1984.23	1919.27	1859.81	1789.33	1724.37	1648.94
315.0	2140.59	2091.59	2035.44	1981.48	1923.67	1848.79	1784.93	1718.86	1633.52
360.0	2191.24	2146.65	2105.91	2055.81	1999.10	1944.04	1879.07	1819.61	1749.14
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	1675.92	1607.10	1536.07	1445.23	1374.76	1306.49	1227.76	1168.30	1113.24
45.0	1637.38	1563.05	1492.58	1405.59	1334.57	1265.20	1187.57	1133.06	1078.55
90.0	1621.41	1547.64	1466.70	1386.87	1317.50	1242.62	1182.06	1093.14	1052.57
135.0	1597.74	1525.06	1455.14	1372.56	1304.84	1236.02	1162.79	1109.39	1049.93
180.0	1497.53	1427.61	1350.53	1274.01	1209.04	1092.21	1078.89	999.77	886.46
225.0	1555.89	1475.51	1403.94	1324.11	1249.78	1187.57	1093.42	1059.34	955.94
270.0	1569.66	1498.08	1424.86	1334.57	1267.40	1203.53	1131.96	1075.80	989.91
315.0	1564.70	1495.88	1417.15	1338.42	1271.80	1202.43	1098.27	1074.48	970.48
360.0	1675.92	1607.10	1536.07	1445.23	1374.76	1306.49	1227.76	1168.30	1113.24

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	1038.36	923.85	805.48	659.58	525.79	367.78	278.59	89.14	39.48
45.0	1000.37	888.06	761.43	603.97	458.62	298.96	200.41	61.94	34.08
90.0	974.44	862.68	726.36	589.71	447.39	271.54	146.34	58.47	33.25
135.0	954.13	822.54	697.01	552.22	420.63	287.94	123.99	47.84	28.85
180.0	766.44	622.63	474.81	341.51	209.27	74.55	34.96	25.16	20.76
225.0	842.36	696.02	531.79	387.49	247.92	100.15	39.59	29.01	22.79
270.0	869.89	726.74	585.80	421.18	292.90	123.33	40.91	28.08	21.09
315.0	856.95	714.74	563.83	429.22	290.04	125.80	45.31	28.63	19.27
360.0	1038.36	923.85	805.48	659.58	525.79	367.78	278.59	89.14	39.48
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	23.89	19.93	18.44	16.74	16.30	15.86	15.47	15.69	17.51
45.0	19.43	16.85	15.97	15.42	15.03	14.70	14.42	14.26	15.03
90.0	19.49	18.06	16.90	15.69	15.31	14.92	14.65	14.42	14.87
135.0	19.93	18.55	17.23	16.63	16.19	16.02	16.96	18.39	20.21
180.0	18.94	18.17	17.40	16.74	17.01	18.83	21.80	25.99	29.84
225.0	20.87	19.21	18.11	17.23	16.85	18.06	20.98	25.55	28.68
270.0	19.32	18.22	17.56	16.79	16.24	15.97	18.61	22.57	25.99
315.0	17.89	16.96	16.46	16.08	15.69	16.19	17.51	19.49	21.31
360.0	23.89	19.93	18.44	16.74	16.30	15.86	15.47	15.69	17.51
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	20.59	22.57	22.85	22.85	22.68	22.24	21.53	20.65	19.99
45.0	16.68	17.51	17.62	17.45	17.07	16.63	16.52	16.41	15.64
90.0	16.02	17.34	18.17	18.22	18.28	18.22	17.95	17.84	17.78
135.0	22.13	23.51	24.83	25.99	26.65	26.59	25.88	25.00	24.33
180.0	31.22	31.49	31.55	31.60	31.60	31.49	31.00	30.12	29.01
225.0	30.28	31.38	33.09	34.47	35.57	35.84	34.96	33.64	32.43
270.0	26.92	27.47	27.86	28.68	29.12	28.96	28.13	27.25	26.81
315.0	22.02	23.56	24.94	25.60	25.93	25.93	25.60	25.27	24.89
360.0	20.59	22.57	22.85	22.85	22.68	22.24	21.53	20.65	19.99
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	19.16	18.66	18.55	18.33	17.51	16.85	16.57	15.80	15.53
45.0	14.76	14.37	14.26	14.26	14.20	14.26	14.09	13.87	13.76
90.0	17.56	17.34	17.12	16.46	16.08	15.86	15.75	15.09	14.65
135.0	24.00	23.45	22.41	21.36	20.65	19.43	18.61	17.56	16.79
180.0	27.80	26.59	24.61	22.46	20.98	18.88	18.17	17.40	16.68
225.0	31.16	29.29	26.81	24.28	22.79	21.03	18.99	18.44	17.18
270.0	26.65	25.71	24.11	21.86	20.15	19.10	18.55	17.78	16.90
315.0	24.39	23.67	22.41	21.47	20.48	19.10	18.33	17.12	16.35
360.0	19.16	18.66	18.55	18.33	17.51	16.85	16.57	15.80	15.53
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	14.87	14.48	14.20	13.93	13.76	13.65	13.60	12.72	12.28
45.0	13.76	13.82	13.98	14.09	14.04	14.04	12.94	12.00	11.95
90.0	14.59	14.20	14.09	14.15	14.26	14.20	12.61	12.17	12.06
135.0	15.97	15.25	14.59	14.09	13.93	13.82	12.83	12.28	12.22
180.0	15.86	15.25	14.59	14.04	13.82	12.88	12.28	12.28	12.22
225.0	16.30	15.58	14.76	14.31	13.93	13.54	12.22	12.06	12.00
270.0	16.24	15.47	14.81	14.26	13.98	13.71	12.83	12.17	12.11
315.0	15.86	15.25	14.37	13.82	13.60	13.38	12.72	12.28	12.22
360.0	14.87	14.48	14.20	13.93	13.76	13.65	13.60	12.72	12.28

Intensity data(cd)

Appendix Page: 18 Total:18

C/γ(°)	90.0
0.0	12.22
45.0	11.95
90.0	12.00
135.0	12.17
180.0	12.22
225.0	12.00
270.0	12.06
315.0	12.17
360.0	12.22