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## NATA

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LumCAT: 2-1569-M  
Luminaire: BJB47.319.2344  
Report No: NT2017061705  
Test No: GC2017061705  
LampCAT: Certaflux SLM 1208 L14 G1  
Lamp flux(lm): 2401.0  
Number of Lamps: 1  
Length(mm): 70  
Phm Type: C

Voltage(V): 34.4000  
Current(A): 0.5000  
Power (W): 17.2000  
PF: 0.0000  
Ballast type: DC  
Width(mm): 70  
Height(mm): 44

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## Photometric Results

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Lumens(lm): 2178.51  
Efficiency(%): 90.73%  
Lumens(lm)/Power(W): 126.66  
Central intensity(cd): 2412.021  
Maximum intensity(cd): 2412.021  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=61.4  
                                  [C90/270]Total=61.4  
Field angle(10%Imax): [C0/180]Total=79.3  
                                  [C90/270]Total=79.3  
Maximum s/h(1/2): C0\_180=0.98 C90\_270=0.98  
Maximum s/h(1/4): C0\_180=0.90 C90\_270=0.90  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 90.75%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.636%

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Equipment: GMS1980  
Temperature(°C): 25.0

Date: 2017/6/17  
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	2412.021	0.577	0.577	.024%	.026%
1.0	2411.126	4.615	5.192	.192%	.238%
2.0	2407.548	9.214	14.406	.384%	.661%
3.0	2402.386	13.788	28.193	.574%	1.294%
4.0	2400.184	18.360	46.554	.765%	2.137%
5.0	2397.087	22.910	69.464	.954%	3.189%
6.0	2394.540	27.448	96.912	1.143%	4.449%
7.0	2388.828	31.925	128.837	1.330%	5.914%
8.0	2380.088	36.325	165.161	1.513%	7.581%
9.0	2368.251	40.627	205.788	1.692%	9.446%
10.0	2353.317	44.813	250.601	1.866%	11.503%
11.0	2341.411	48.992	299.593	2.040%	13.752%
12.0	2327.165	53.059	352.652	2.210%	16.188%
13.0	2308.584	56.949	409.601	2.372%	18.802%
14.0	2289.039	60.727	470.328	2.529%	21.589%
15.0	2264.814	64.281	534.609	2.677%	24.540%
16.0	2238.111	67.651	602.259	2.818%	27.645%
17.0	2211.409	70.902	673.161	2.953%	30.900%
18.0	2177.618	73.793	746.954	3.073%	34.287%
19.0	2138.597	76.352	823.306	3.180%	37.792%
20.0	2092.350	78.476	901.782	3.268%	41.395%
21.0	2036.743	80.042	981.824	3.334%	45.069%
22.0	1979.553	81.319	1063.144	3.387%	48.801%
23.0	1916.926	82.136	1145.28	3.421%	52.572%
24.0	1846.660	82.367	1227.647	3.431%	56.353%
25.0	1762.149	81.666	1309.313	3.401%	60.101%
26.0	1683.074	80.909	1390.222	3.370%	63.815%
27.0	1594.158	79.365	1469.587	3.306%	67.458%
28.0	1490.191	76.719	1546.306	3.195%	70.980%
29.0	1395.817	74.208	1620.514	3.091%	74.386%
30.0	1293.027	70.897	1691.411	2.953%	77.641%
31.0	1166.170	65.865	1757.276	2.743%	80.664%
32.0	1050.923	61.071	1818.347	2.544%	83.468%
33.0	929.366	55.507	1873.854	2.312%	86.015%
34.0	809.205	49.622	1923.476	2.067%	88.293%
35.0	701.377	44.116	1967.591	1.837%	90.318%
36.0	584.100	37.649	2005.241	1.568%	92.047%
37.0	483.925	31.937	2037.178	1.330%	93.513%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	370.433	25.009	2062.187	1.042%	94.661%
39.0	285.639	19.713	2081.9	.821%	95.565%
40.0	217.487	15.330	2097.23	.638%	96.269%
41.0	164.928	11.866	2109.096	.494%	96.814%
42.0	129.568	9.507	2118.603	.396%	97.250%
43.0	76.212	5.700	2124.303	.237%	97.512%
44.0	48.236	3.674	2127.977	.153%	97.681%
45.0	30.859	2.393	2130.37	.100%	97.790%
46.0	24.314	1.918	2132.288	.080%	97.878%
47.0	21.376	1.714	2134.002	.071%	97.957%
48.0	19.222	1.566	2135.569	.065%	98.029%
49.0	17.171	1.421	2136.99	.059%	98.094%
50.0	15.705	1.319	2138.309	.055%	98.155%
51.0	14.624	1.246	2139.556	.052%	98.212%
52.0	13.695	1.183	2140.739	.049%	98.266%
53.0	12.966	1.136	2141.875	.047%	98.318%
54.0	12.415	1.101	2142.976	.046%	98.369%
55.0	11.989	1.077	2144.053	.045%	98.418%
56.0	11.713	1.065	2145.118	.044%	98.467%
57.0	11.465	1.054	2146.172	.044%	98.516%
58.0	11.232	1.045	2147.217	.044%	98.564%
59.0	11.053	1.039	2148.256	.043%	98.611%
60.0	10.839	1.029	2149.285	.043%	98.659%
61.0	10.681	1.024	2150.31	.043%	98.706%
62.0	10.550	1.022	2151.331	.043%	98.753%
63.0	10.433	1.019	2152.35	.042%	98.799%
64.0	10.296	1.015	2153.365	.042%	98.846%
65.0	10.172	1.011	2154.376	.042%	98.892%
66.0	10.075	1.009	2155.385	.042%	98.939%
67.0	9.972	1.007	2156.392	.042%	98.985%
68.0	9.876	1.004	2157.396	.042%	99.031%
69.0	9.773	1.000	2158.397	.042%	99.077%
70.0	9.683	0.998	2159.395	.042%	99.123%
71.0	9.580	0.993	2160.388	.041%	99.168%
72.0	9.511	0.992	2161.38	.041%	99.214%
73.0	9.442	0.990	2162.37	.041%	99.259%
74.0	9.373	0.988	2163.358	.041%	99.305%
75.0	9.311	0.986	2164.344	.041%	99.350%

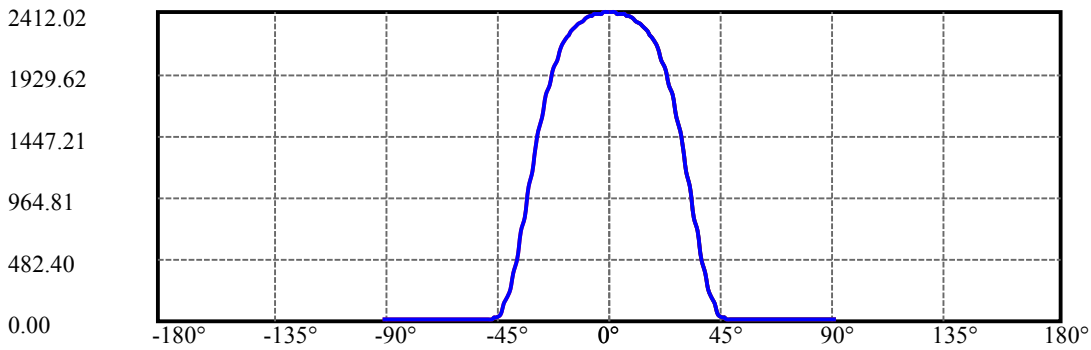
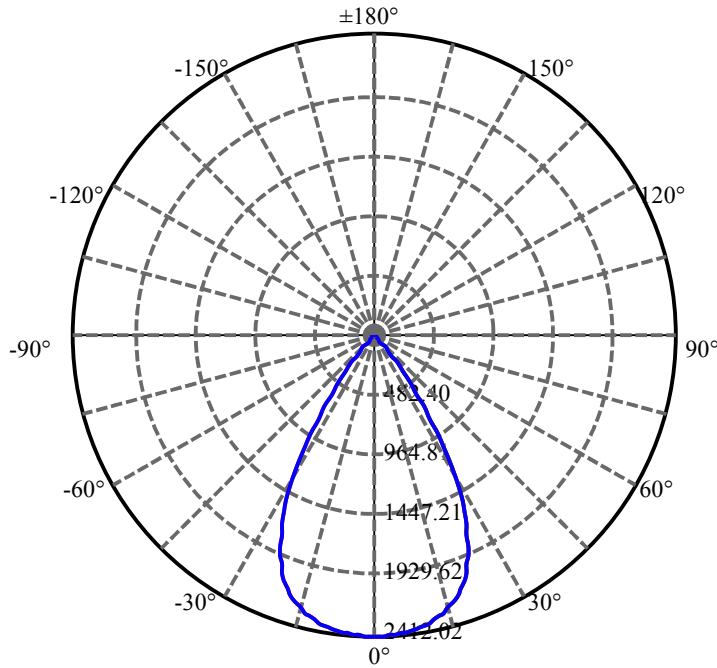
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	9.263	0.986	2165.33	.041%	99.395%
77.0	9.208	0.984	2166.314	.041%	99.440%
78.0	9.153	0.982	2167.296	.041%	99.485%
79.0	9.098	0.979	2168.275	.041%	99.530%
80.0	9.050	0.977	2169.252	.041%	99.575%
81.0	9.022	0.977	2170.23	.041%	99.620%
82.0	9.002	0.978	2171.207	.041%	99.665%
83.0	8.954	0.975	2172.182	.041%	99.710%
84.0	8.954	0.976	2173.158	.041%	99.754%
85.0	8.919	0.974	2174.132	.041%	99.799%
86.0	8.885	0.972	2175.104	.040%	99.844%
87.0	8.885	0.973	2176.077	.041%	99.888%
88.0	8.871	0.972	2177.05	.040%	99.933%
89.0	8.864	0.972	2178.022	.040%	99.978%
90.0	8.864	0.486	2178.508	.020%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1691.41	70.45%	77.64%
0-40	2097.23	87.35%	96.27%
0-60	2149.29	89.52%	98.66%
0-90	2178.02	90.71%	99.98%
0-120	2178.02	90.71%	99.98%
0-180	2178.51	90.73%	100.00%
60-90	29.77	1.24%	1.37%
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%
0-30.78	1742.81	72.59%	80.00%

ZONAL LUMEN SUMMARY

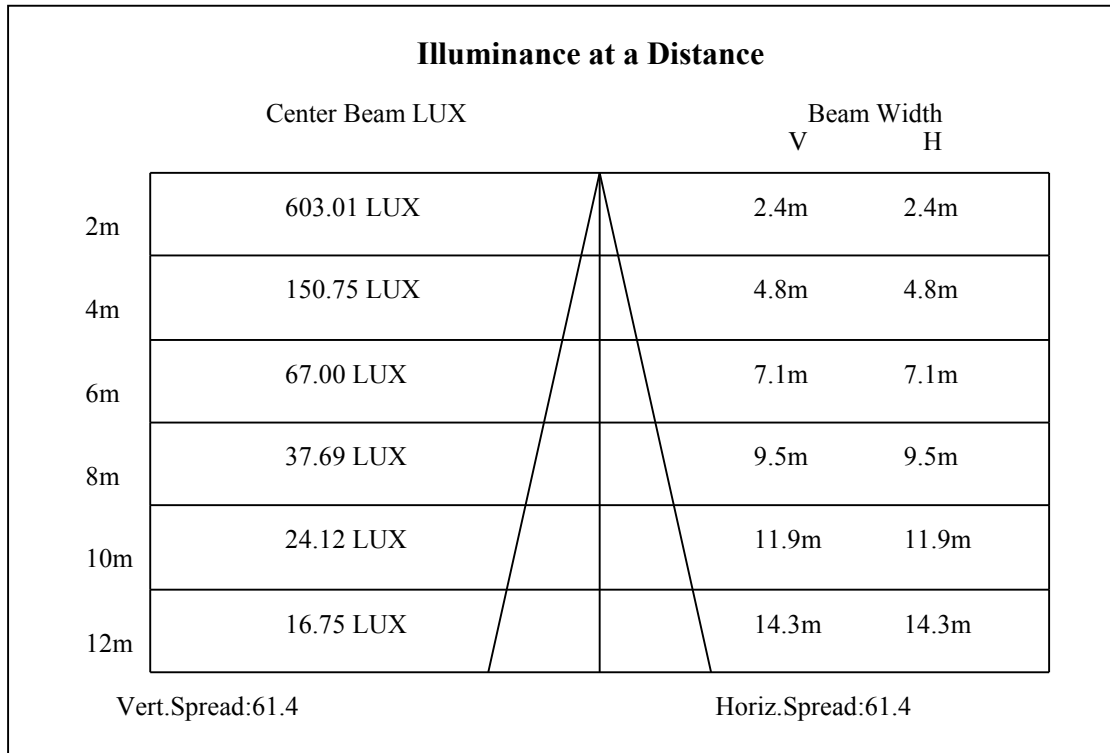
0-10	250.60
10-20	651.18
20-30	789.63
30-40	405.82
40-50	41.08
50-60	10.98
60-70	10.11
70-80	9.86
80-90	8.77
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

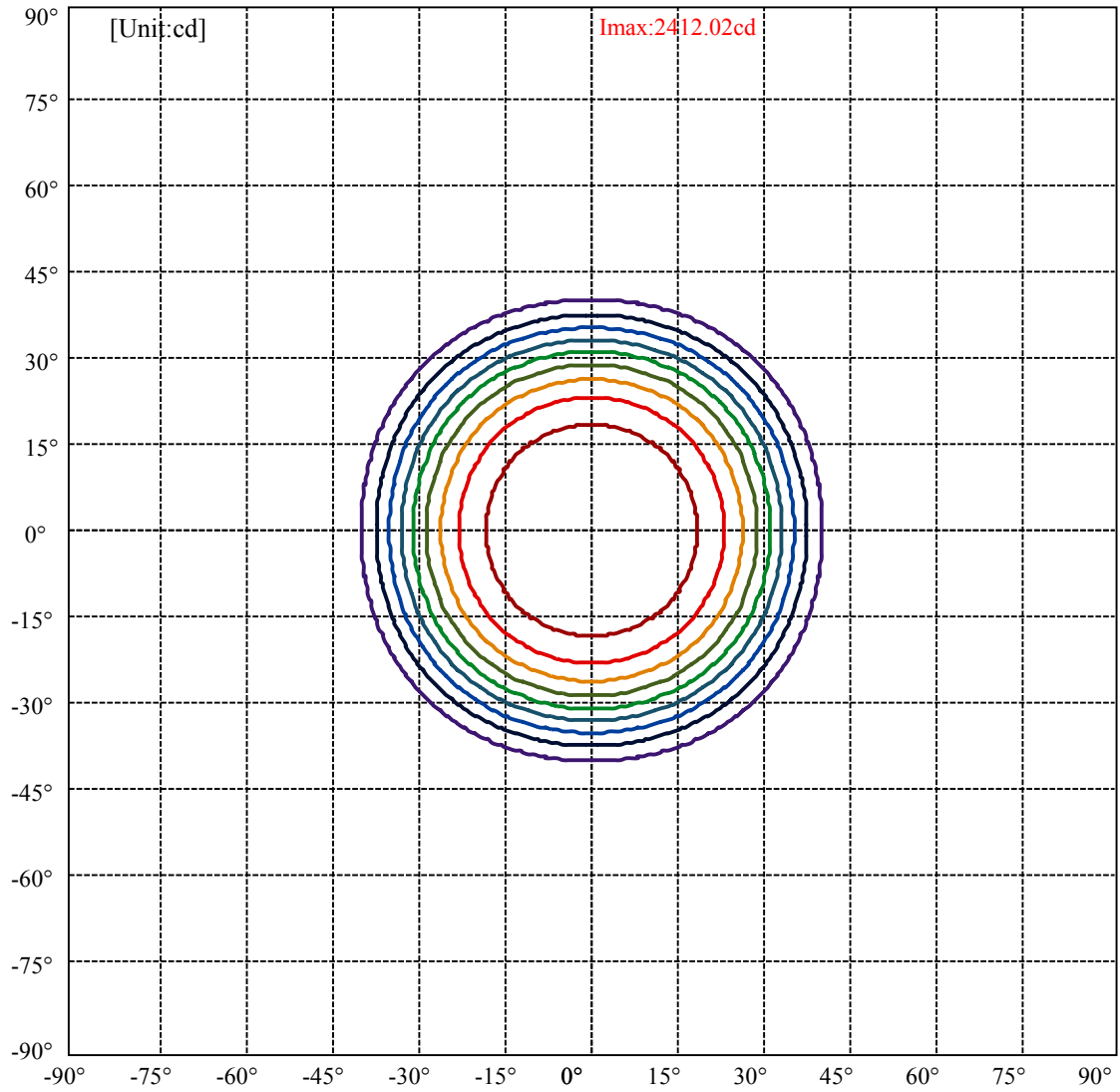


C0(Max): —————  
C0/C180: —————  
C90/C270: —————

Field angle(10%Imax):C0/180Left:39.7 Right:39.7  
:C90/270Left:39.7 Right:39.7

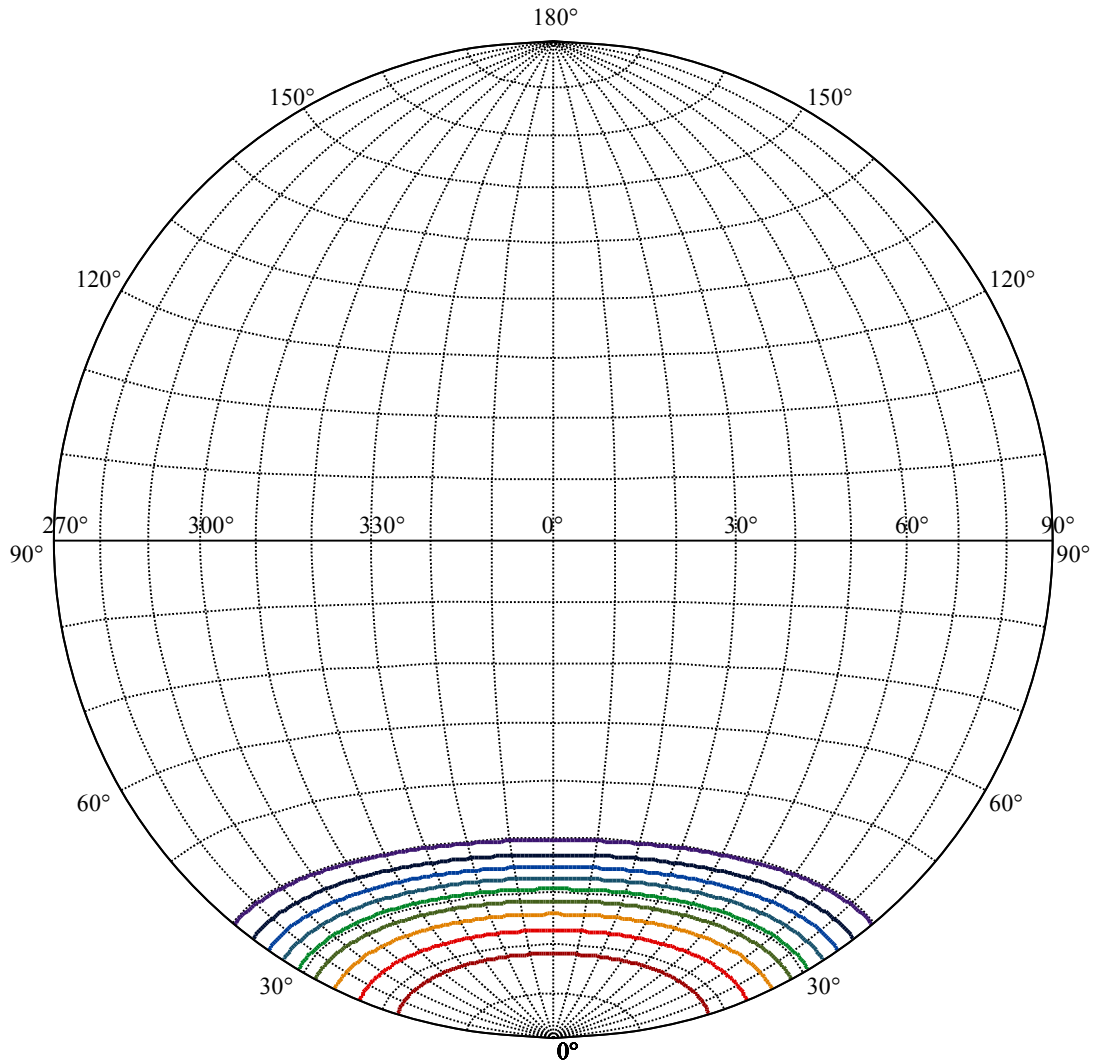
Beam Angle(50%Imax):C0/180Left:30.7 Right:30.7  
:C90/270Left:30.7 Right:30.7





(10%Imax) 241.202	—
(20%Imax) 482.404	—
(30%Imax) 723.606	—
(40%Imax) 964.808	—
(50%Imax) 1206.01	—
(60%Imax) 1447.21	—
(70%Imax) 1688.41	—
(80%Imax) 1929.62	—
(90%Imax) 2170.82	—





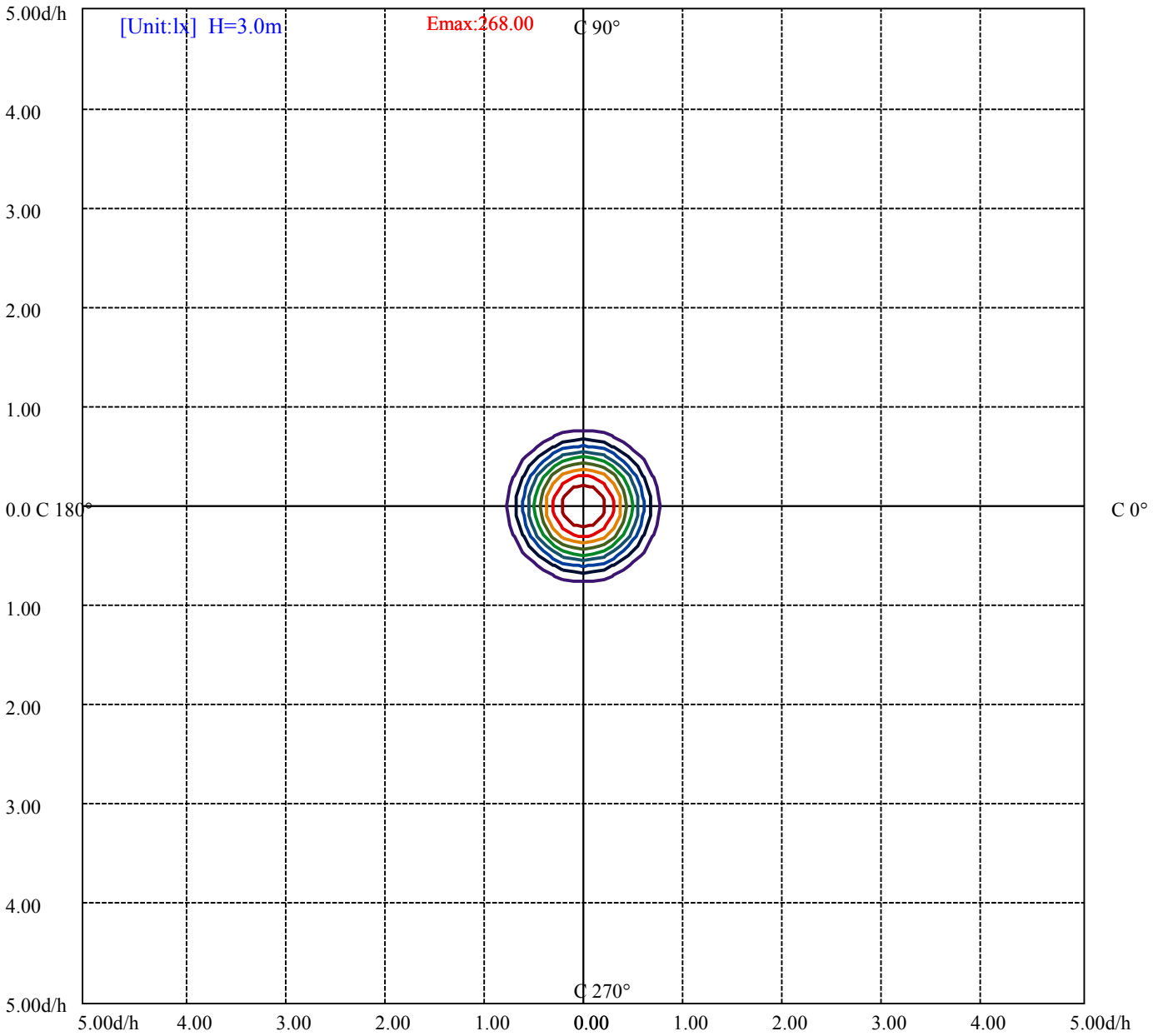
House

[Unit:cd]

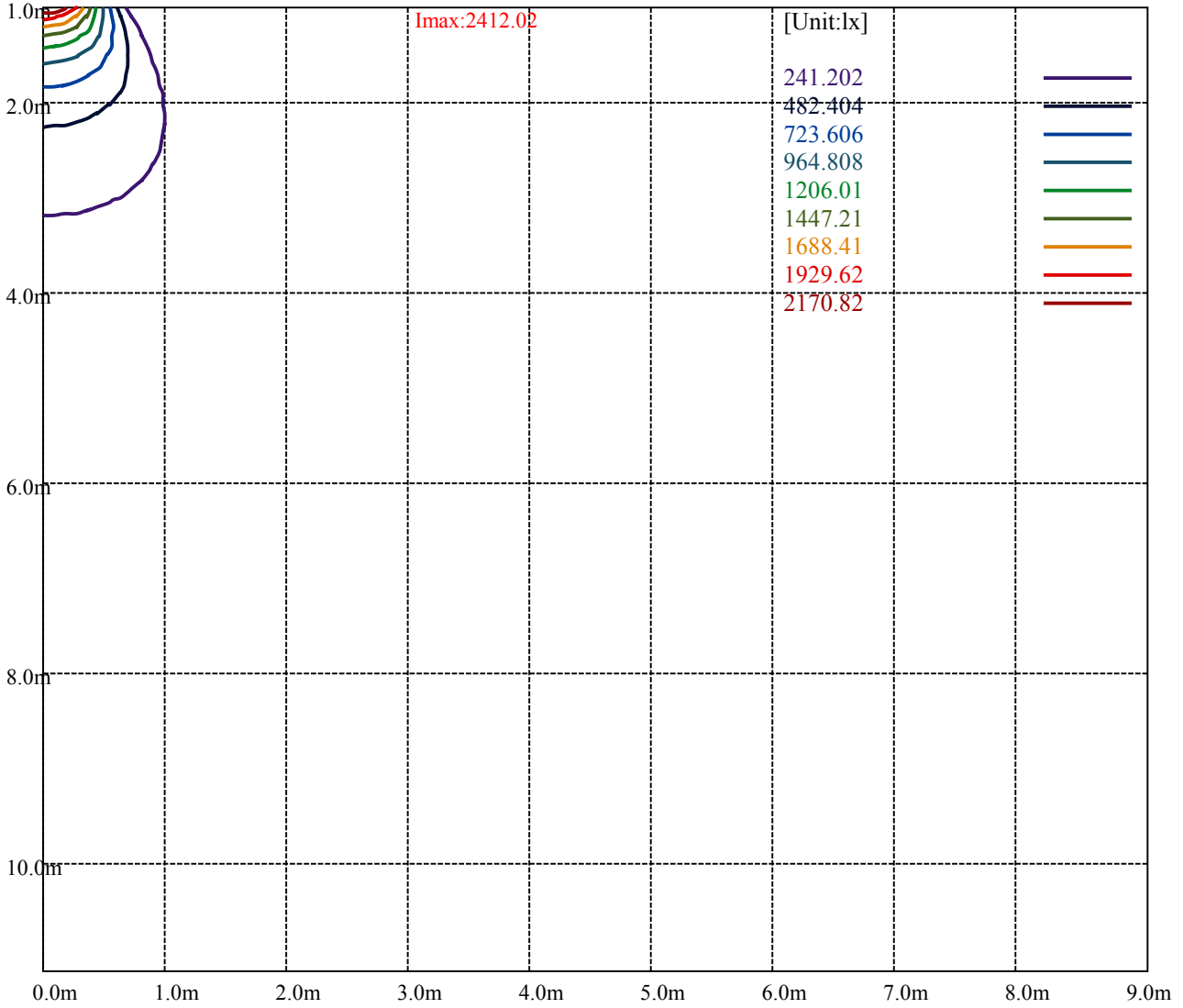
Road

Imax:2412.02

(10%Imax)	241.202	—
(20%Imax)	482.404	—
(30%Imax)	723.606	—
(40%Imax)	964.808	—
(50%Imax)	1206.01	—
(60%Imax)	1447.21	—
(70%Imax)	1688.41	—
(80%Imax)	1929.62	—
(90%Imax)	2170.82	—



(10%Emax) 26.80022	—
(20%Emax) 53.60044	—
(30%Emax) 80.40067	—
(40%Emax) 107.2009	—
(50%Emax) 134.0011	—
(60%Emax) 160.8011	—
(70%Emax) 187.6011	—
(80%Emax) 214.4022	—
(90%Emax) 241.2022	—



Luminance Table

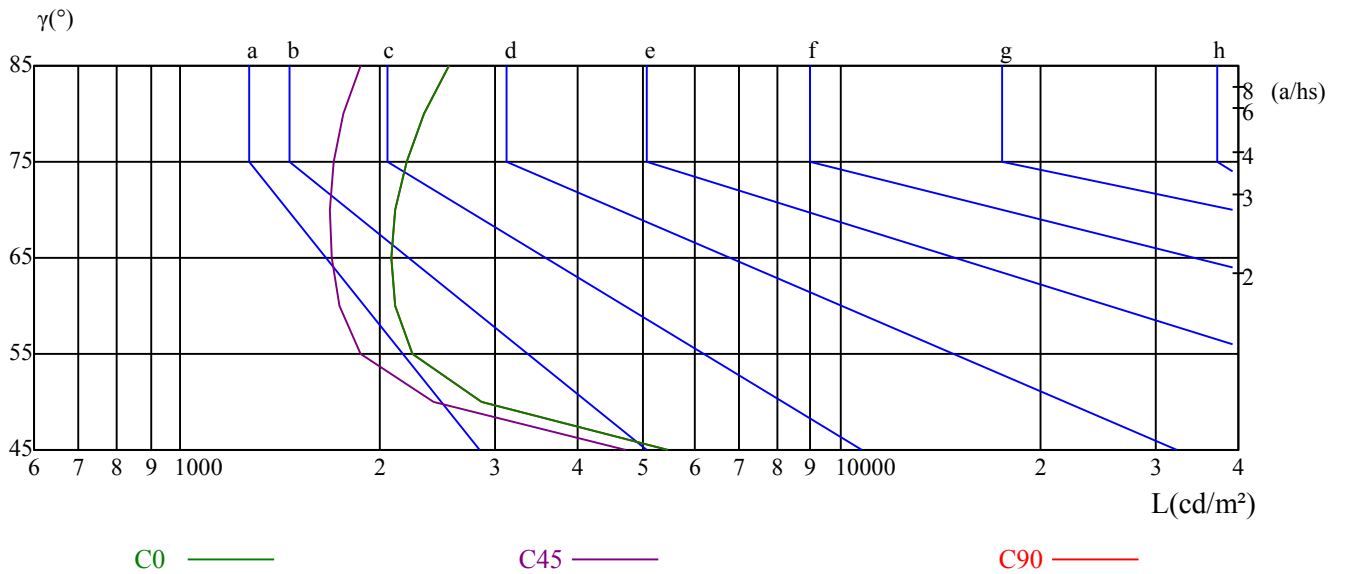
$\gamma$	45	50	55	60	65	70	75	80	85
C0	5469	2851	2248	2118	2092	2119	2194	2330	2552
C45	4715	2421	1880	1742	1690	1678	1701	1761	1871
C90	5469	2851	2248	2118	2092	2119	2194	2330	2552

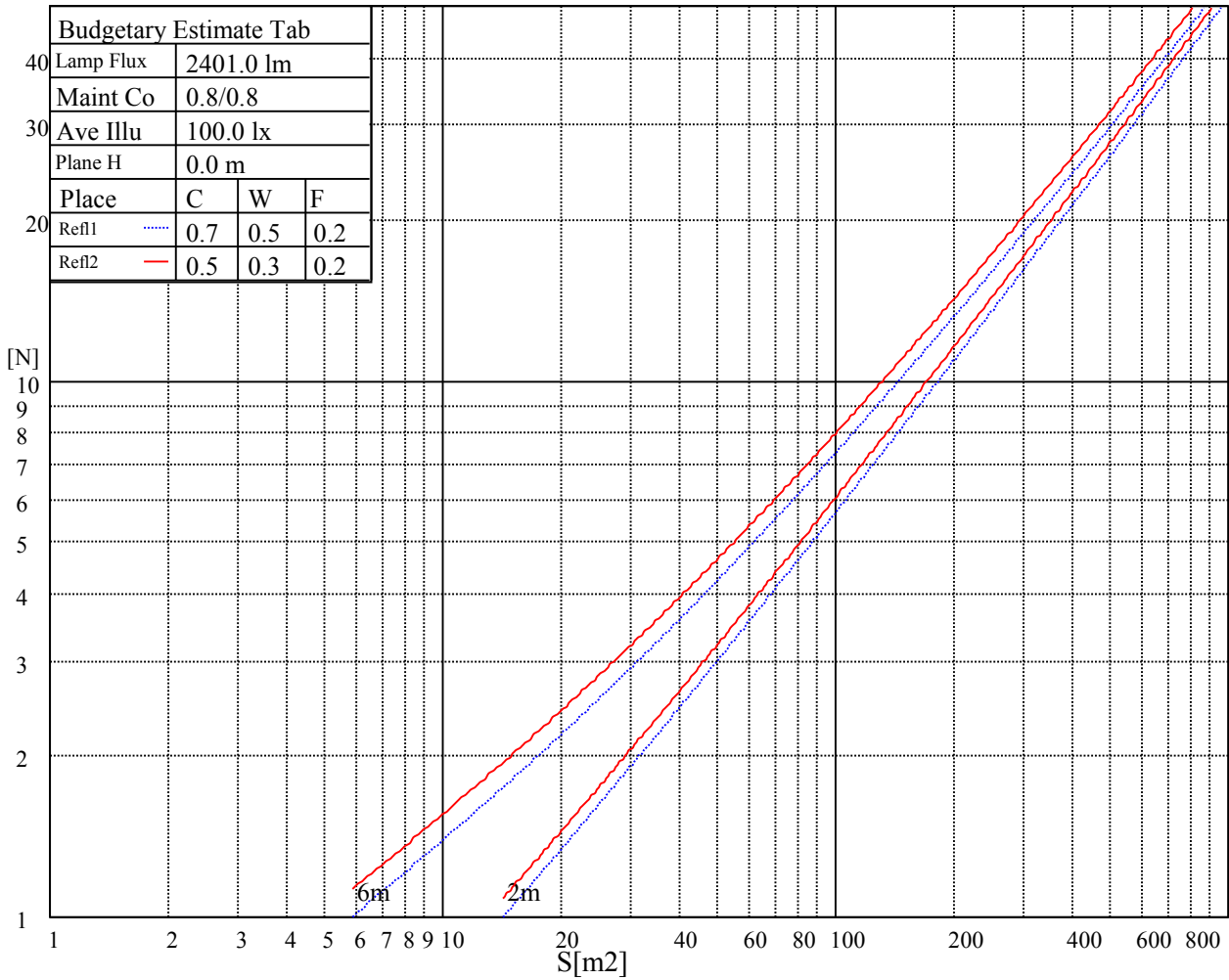
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4912	4912	4912	7342	7342	7342	20885	20885	20885

Glare Table

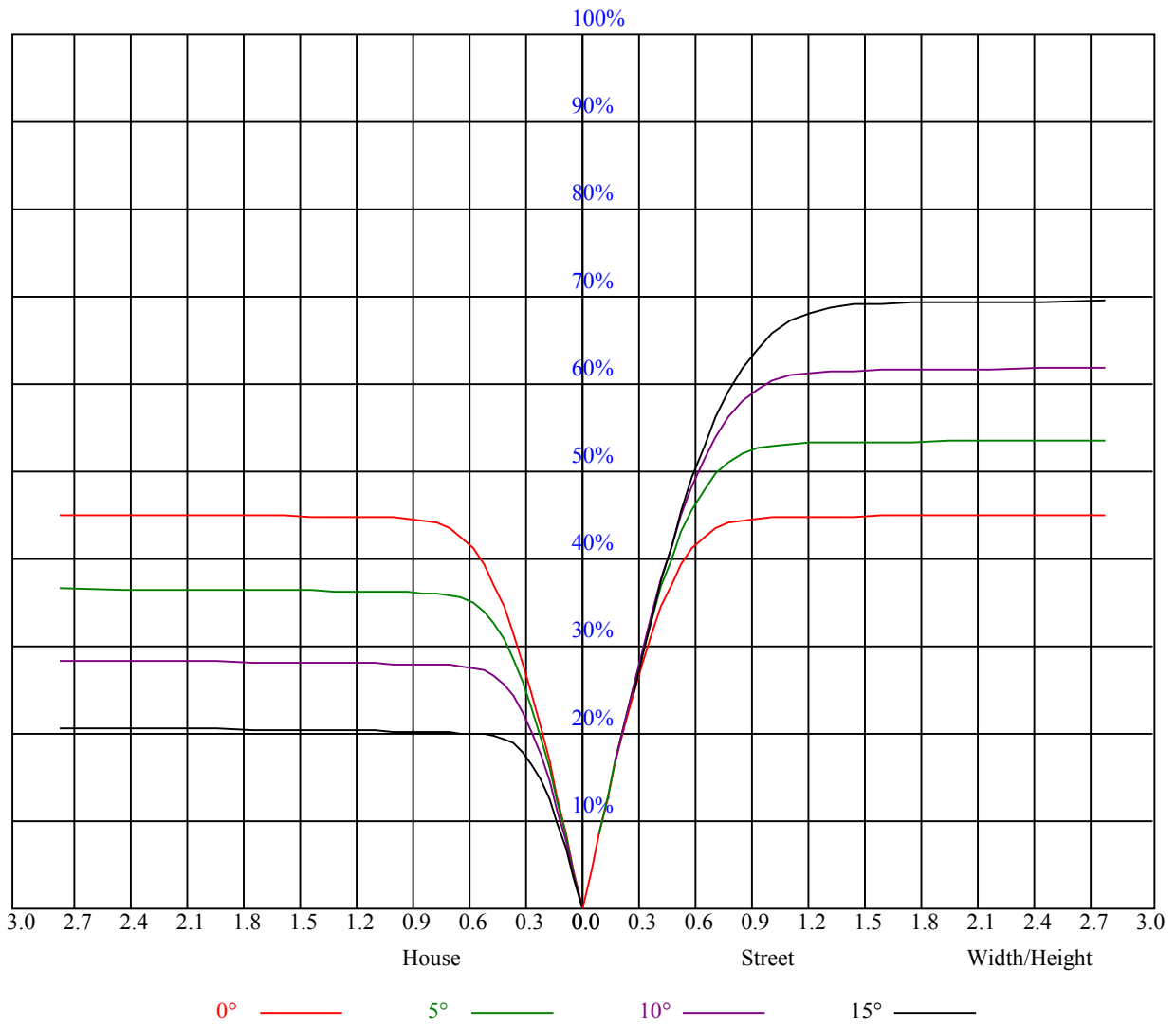
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.08	1.08	1.08	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	1.00	0.98	0.96	0.99	0.97	0.95	0.95	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.85
2	0.94	0.90	0.87	0.92	0.89	0.86	0.89	0.87	0.84	0.87	0.84	0.83	0.84	0.82	0.81	0.79
3	0.88	0.83	0.80	0.87	0.83	0.79	0.84	0.81	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.74
4	0.82	0.78	0.74	0.81	0.77	0.73	0.79	0.76	0.73	0.78	0.74	0.72	0.76	0.73	0.71	0.70
5	0.77	0.72	0.69	0.77	0.72	0.68	0.75	0.71	0.68	0.74	0.70	0.67	0.72	0.69	0.67	0.65
6	0.73	0.68	0.64	0.72	0.67	0.64	0.71	0.67	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.61
7	0.69	0.64	0.60	0.68	0.63	0.60	0.67	0.63	0.60	0.66	0.62	0.59	0.65	0.62	0.59	0.58
8	0.65	0.60	0.56	0.65	0.60	0.56	0.64	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.56	0.54
9	0.62	0.57	0.53	0.61	0.56	0.53	0.60	0.56	0.53	0.60	0.56	0.53	0.59	0.55	0.52	0.51
10	0.59	0.54	0.50	0.58	0.53	0.50	0.57	0.53	0.50	0.57	0.53	0.50	0.56	0.52	0.50	0.49



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	2414.77	2418.08	2418.63	2411.47	2404.86	2391.65	2380.64	2372.93	2365.77
45.0	2413.12	2407.62	2401.56	2398.81	2401.01	2407.07	2410.37	2410.37	2407.07
90.0	2409.27	2409.27	2403.76	2402.11	2409.82	2415.87	2422.48	2422.48	2419.18
135.0	2410.92	2405.41	2402.11	2399.36	2402.11	2410.92	2416.98	2416.43	2410.92
180.0	2414.77	2410.37	2405.96	2412.02	2418.63	2423.58	2427.44	2422.48	2411.47
225.0	2413.12	2411.47	2409.27	2398.26	2388.35	2380.09	2370.18	2358.62	2343.20
270.0	2409.27	2413.12	2409.27	2397.71	2386.69	2369.63	2361.37	2353.66	2342.65
315.0	2410.92	2413.67	2409.82	2399.36	2390.00	2377.89	2366.87	2353.66	2340.45
360.0	2414.77	2418.08	2418.63	2411.47	2404.86	2391.65	2380.64	2372.93	2365.77
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2349.81	2334.39	2316.22	2296.40	2270.53	2248.50	2219.32	2186.84	2156.56
45.0	2399.91	2388.90	2378.99	2370.73	2362.47	2355.86	2341.00	2322.28	2305.76
90.0	2407.07	2393.85	2387.25	2377.89	2365.77	2354.76	2339.90	2323.38	2303.56
135.0	2406.52	2390.55	2388.35	2379.54	2363.57	2354.76	2339.90	2322.28	2300.26
180.0	2399.91	2387.25	2374.58	2366.87	2354.76	2337.69	2325.03	2303.56	2284.84
225.0	2330.54	2313.47	2299.16	2278.23	2252.36	2218.22	2181.89	2146.65	2110.31
270.0	2327.23	2312.37	2298.05	2279.89	2251.26	2220.42	2185.19	2142.24	2103.15
315.0	2325.03	2305.76	2288.69	2267.77	2247.95	2222.08	2186.29	2157.66	2126.83
360.0	2349.81	2334.39	2316.22	2296.40	2270.53	2248.50	2219.32	2186.84	2156.56
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2123.53	2080.58	2027.73	1971.02	1899.45	1823.47	1728.77	1630.22	1538.28
45.0	2287.59	2266.67	2231.99	2190.69	2156.01	2108.66	2065.17	2012.31	1947.34
90.0	2275.48	2247.95	2208.86	2162.06	2120.77	2078.93	2025.52	1957.26	1893.94
135.0	2275.48	2246.85	2208.31	2175.83	2129.58	2086.09	2037.64	1978.18	1906.05
180.0	2255.66	2220.42	2185.74	2138.94	2098.75	2055.81	2001.85	1929.18	1866.96
225.0	2053.60	1995.24	1936.33	1852.65	1776.67	1694.64	1596.09	1490.38	1397.88
270.0	2069.02	2013.96	1958.36	1900.00	1825.12	1736.48	1649.49	1545.43	1455.69
315.0	2080.58	2037.09	1981.48	1902.75	1830.07	1751.34	1668.76	1554.24	1458.44
360.0	2123.53	2080.58	2027.73	1971.02	1899.45	1823.47	1728.77	1630.22	1538.28
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1433.12	1331.26	1233.81	1130.31	955.78	829.70	721.79	560.47	450.91
45.0	1882.38	1812.46	1726.02	1645.09	1546.53	1441.93	1346.68	1237.12	1111.04
90.0	1816.31	1739.78	1646.19	1549.84	1460.10	1357.69	1255.84	1098.21	1021.30
135.0	1829.52	1745.84	1667.11	1575.16	1463.95	1371.45	1282.81	1153.43	1029.00
180.0	1791.54	1702.34	1606.55	1517.35	1410.54	1310.89	1097.05	1065.51	940.58
225.0	1294.38	1095.79	1050.81	907.22	778.77	642.95	514.61	408.08	312.56
270.0	1352.19	1247.58	1139.12	1017.44	856.68	736.65	617.18	476.79	373.28
315.0	1353.84	1246.48	1096.94	1001.81	857.01	716.12	598.96	474.04	372.35
360.0	1433.12	1331.26	1233.81	1130.31	955.78	829.70	721.79	560.47	450.91
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	363.92	281.34	160.54	97.01	49.33	37.33	34.69	33.09	31.66
45.0	988.81	876.50	692.61	585.80	486.15	357.32	280.24	179.81	105.27
90.0	867.36	746.07	629.90	493.09	390.74	297.41	205.03	124.81	71.41
135.0	894.67	759.23	625.99	519.18	400.26	305.01	281.89	130.65	74.82
180.0	800.96	665.36	552.49	432.80	313.33	237.57	161.65	77.74	46.58
225.0	207.07	137.09	79.17	38.65	30.23	26.10	22.24	19.82	17.89
270.0	281.34	227.55	110.72	60.78	36.50	30.12	25.93	22.85	19.77
315.0	268.68	178.27	112.04	57.81	33.36	28.57	24.89	20.92	18.50
360.0	363.92	281.34	160.54	97.01	49.33	37.33	34.69	33.09	31.66



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	30.06	27.53	25.77	24.17	22.35	20.87	19.60	18.00	16.90
45.0	53.29	32.92	27.31	23.62	20.54	18.11	16.46	15.14	13.82
90.0	41.73	31.93	27.42	24.06	20.87	18.11	16.24	14.65	13.82
135.0	40.14	30.50	26.48	23.07	19.71	17.67	15.97	14.65	13.21
180.0	32.04	26.65	23.29	20.43	17.45	15.58	14.20	13.10	12.55
225.0	16.02	15.03	13.65	12.94	12.17	11.67	11.40	11.29	11.12
270.0	17.07	15.09	13.43	12.72	12.22	11.89	11.67	11.45	11.18
315.0	16.52	14.87	13.65	12.77	12.06	11.73	11.45	11.29	11.12
360.0	30.06	27.53	25.77	24.17	22.35	20.87	19.60	18.00	16.90
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	16.02	15.20	14.48	13.82	13.27	12.88	12.22	11.95	11.78
45.0	12.72	12.22	11.89	11.62	11.40	11.29	11.07	10.96	10.79
90.0	13.16	12.28	12.00	11.78	11.45	11.29	11.12	10.96	10.74
135.0	12.55	12.17	11.89	11.67	11.45	11.23	11.01	10.90	10.74
180.0	12.11	11.78	11.62	11.40	11.12	10.96	10.85	10.63	10.57
225.0	10.85	10.68	10.57	10.41	10.35	10.24	10.13	9.97	9.86
270.0	11.01	10.85	10.68	10.57	10.46	10.30	10.19	10.08	10.02
315.0	10.90	10.74	10.57	10.46	10.35	10.24	10.13	10.02	9.91
360.0	16.02	15.20	14.48	13.82	13.27	12.88	12.22	11.95	11.78
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	11.67	11.40	11.29	11.18	11.07	10.96	10.85	10.79	10.68
45.0	10.63	10.46	10.35	10.24	10.13	10.02	9.97	9.86	9.63
90.0	10.63	10.52	10.41	10.30	10.13	10.02	9.86	9.69	9.63
135.0	10.63	10.52	10.35	10.24	10.13	10.02	9.91	9.80	9.69
180.0	10.46	10.30	10.24	10.13	10.02	9.91	9.74	9.69	9.58
225.0	9.74	9.63	9.52	9.47	9.41	9.36	9.25	9.14	9.08
270.0	9.91	9.80	9.63	9.52	9.47	9.41	9.30	9.25	9.14
315.0	9.80	9.74	9.58	9.52	9.41	9.30	9.30	9.25	9.19
360.0	11.67	11.40	11.29	11.18	11.07	10.96	10.85	10.79	10.68
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	10.68	10.57	10.46	10.35	10.35	10.30	10.24	10.13	10.08
45.0	9.58	9.52	9.41	9.36	9.25	9.25	9.14	9.08	8.97
90.0	9.58	9.47	9.41	9.30	9.19	9.14	9.08	8.97	8.97
135.0	9.58	9.52	9.36	9.36	9.30	9.25	9.14	9.08	8.97
180.0	9.52	9.36	9.36	9.25	9.25	9.19	9.14	9.08	8.97
225.0	9.03	9.03	8.97	8.97	8.92	8.86	8.81	8.81	8.75
270.0	9.08	9.03	9.03	8.97	8.92	8.81	8.81	8.81	8.86
315.0	9.03	9.03	8.97	8.92	8.92	8.86	8.86	8.81	8.81
360.0	10.68	10.57	10.46	10.35	10.35	10.30	10.24	10.13	10.08
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	10.02	9.97	9.86	9.86	9.69	9.58	9.47	9.47	9.36
45.0	8.92	8.92	8.81	8.86	8.81	8.81	8.81	8.75	8.75
90.0	8.92	8.86	8.81	8.75	8.81	8.75	8.81	8.75	8.81
135.0	8.97	8.92	8.92	8.86	8.86	8.86	8.81	8.81	8.86
180.0	8.92	8.92	8.86	8.86	8.86	8.86	8.86	8.86	8.86
225.0	8.81	8.81	8.75	8.81	8.75	8.70	8.70	8.75	8.70
270.0	8.81	8.81	8.81	8.75	8.75	8.75	8.81	8.81	8.75
315.0	8.81	8.81	8.81	8.86	8.81	8.75	8.81	8.75	8.81
360.0	10.02	9.97	9.86	9.86	9.69	9.58	9.47	9.47	9.36

Intensity data(cd)

C/γ(°)	90.0
0.0	9.36
45.0	8.75
90.0	8.75
135.0	8.92
180.0	8.81
225.0	8.75
270.0	8.75
315.0	8.81
360.0	9.36