



NATA LIGHTING CO.,LTD.  
www.nata.cn  
Email:info@nata.com  
Tel:+86-750-3770000 Fax:+86-750-3771111  
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

---

## NATA

---

LumCAT: 2-1567-M  
Luminaire: BJB 47.319.2021  
Report No: NATA0100  
Test No: GC2020011325  
LampCAT: LUMINUS CXM-14-AC40  
Lamp flux(lm): 2552.0  
Number of Lamps: 1  
Length(mm): 0  
Phm Type: C

Voltage(V): 34.2800  
Current(A): 0.6020  
Power (W): 20.6000  
PF: 0.0000  
Ballast type: DC  
Width(mm): 0  
Height(mm): 0

---

## Photometric Results

---

Lumens(lm): 2278.17  
Efficiency(%): 89.27%  
Lumens(lm)/Power(W): 110.59  
Central intensity(cd): 7001.156  
Maximum intensity(cd): 7001.156  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=26.7  
                                  [C90/270]Total=26.7  
Field angle(10%Imax): [C0/180]Total=67.5  
                                  [C90/270]Total=67.5  
Maximum s/h(1/2): C0\_180=0.45 C90\_270=0.45  
Maximum s/h(1/4): C0\_180=0.44 C90\_270=0.44  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 89.27%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.486%

---

Equipment: GMS1980  
Temperature(°C): 25.0

Date: 2020/1/13  
Humidity(%): 65.0%

Operator: NT07  
Distance(m): 7.50

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7001.156	0.000	0	.000%	.000%
1.0	6983.508	6.691	6.691	.262%	.294%
2.0	6936.047	19.979	26.67	.783%	1.171%
3.0	6846.469	32.963	59.633	1.292%	2.618%
4.0	6713.367	45.389	105.022	1.779%	4.610%
5.0	6547.922	57.049	162.072	2.235%	7.114%
6.0	6292.406	67.479	229.551	2.644%	10.076%
7.0	5977.969	76.162	305.713	2.984%	13.419%
8.0	5652.422	83.236	388.95	3.262%	17.073%
9.0	5253.820	88.389	477.339	3.464%	20.953%
10.0	4838.484	91.332	568.67	3.579%	24.962%
11.0	4474.969	93.061	661.731	3.647%	29.047%
12.0	4078.336	93.500	755.231	3.664%	33.151%
13.0	3632.273	91.506	846.736	3.586%	37.167%
14.0	3242.250	87.993	934.73	3.448%	41.030%
15.0	2841.258	83.517	1018.247	3.273%	44.696%
16.0	2448.773	77.514	1095.761	3.037%	48.098%
17.0	2114.578	71.064	1166.824	2.785%	51.218%
18.0	1830.375	65.044	1231.868	2.549%	54.073%
19.0	1609.383	59.845	1291.713	2.345%	56.699%
20.0	1449.844	55.992	1347.705	2.194%	59.157%
21.0	1319.484	53.177	1400.882	2.084%	61.491%
22.0	1221.124	51.055	1451.936	2.001%	63.732%
23.0	1154.433	49.846	1501.782	1.953%	65.920%
24.0	1100.545	49.302	1551.084	1.932%	68.084%
25.0	1056.150	49.039	1600.122	1.922%	70.237%
26.0	1017.921	48.959	1649.081	1.918%	72.386%
27.0	982.238	48.934	1698.015	1.917%	74.534%
28.0	949.444	48.906	1746.921	1.916%	76.681%
29.0	920.503	48.923	1795.845	1.917%	78.828%
30.0	891.963	48.936	1844.781	1.918%	80.976%
31.0	862.003	48.810	1893.591	1.913%	83.119%
32.0	817.080	48.104	1941.695	1.885%	85.230%
33.0	754.601	46.302	1987.997	1.814%	87.263%
34.0	681.237	43.453	2031.45	1.703%	89.170%
35.0	590.878	39.507	2070.957	1.548%	90.904%
36.0	505.195	34.899	2105.856	1.368%	92.436%
37.0	425.334	30.349	2136.205	1.189%	93.768%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	339.841	25.541	2161.745	1.001%	94.889%
39.0	263.848	20.606	2182.351	.807%	95.794%
40.0	194.323	15.979	2198.33	.626%	96.495%
41.0	115.650	11.038	2209.368	.433%	96.980%
42.0	63.394	6.505	2215.873	.255%	97.265%
43.0	35.838	3.676	2219.549	.144%	97.427%
44.0	28.392	2.424	2221.973	.095%	97.533%
45.0	25.446	2.069	2224.042	.081%	97.624%
46.0	22.359	1.870	2225.912	.073%	97.706%
47.0	19.990	1.684	2227.596	.066%	97.780%
48.0	18.204	1.544	2229.14	.061%	97.848%
49.0	16.530	1.426	2230.567	.056%	97.910%
50.0	15.314	1.328	2231.894	.052%	97.969%
51.0	14.674	1.269	2233.163	.050%	98.024%
52.0	14.055	1.233	2234.396	.048%	98.078%
53.0	13.620	1.204	2235.6	.047%	98.131%
54.0	13.310	1.187	2236.787	.047%	98.183%
55.0	13.008	1.175	2237.962	.046%	98.235%
56.0	12.727	1.163	2239.124	.046%	98.286%
57.0	12.466	1.152	2240.276	.045%	98.336%
58.0	12.234	1.142	2241.419	.045%	98.387%
59.0	12.073	1.136	2242.555	.045%	98.436%
60.0	11.904	1.133	2243.688	.044%	98.486%
61.0	11.742	1.128	2244.816	.044%	98.536%
62.0	11.616	1.126	2245.942	.044%	98.585%
63.0	11.510	1.125	2247.066	.044%	98.635%
64.0	11.370	1.123	2248.189	.044%	98.684%
65.0	11.271	1.120	2249.31	.044%	98.733%
66.0	11.180	1.120	2250.43	.044%	98.782%
67.0	11.081	1.119	2251.549	.044%	98.831%
68.0	10.997	1.118	2252.667	.044%	98.880%
69.0	10.920	1.118	2253.786	.044%	98.929%
70.0	10.842	1.118	2254.903	.044%	98.978%
71.0	11.102	1.134	2256.037	.044%	99.028%
72.0	11.545	1.178	2257.215	.046%	99.080%
73.0	11.714	1.216	2258.431	.048%	99.133%
74.0	11.848	1.239	2259.67	.049%	99.188%
75.0	11.876	1.253	2260.923	.049%	99.243%

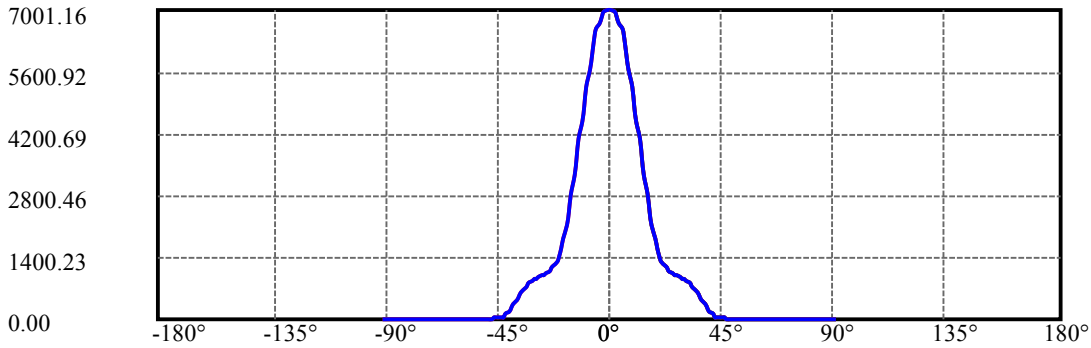
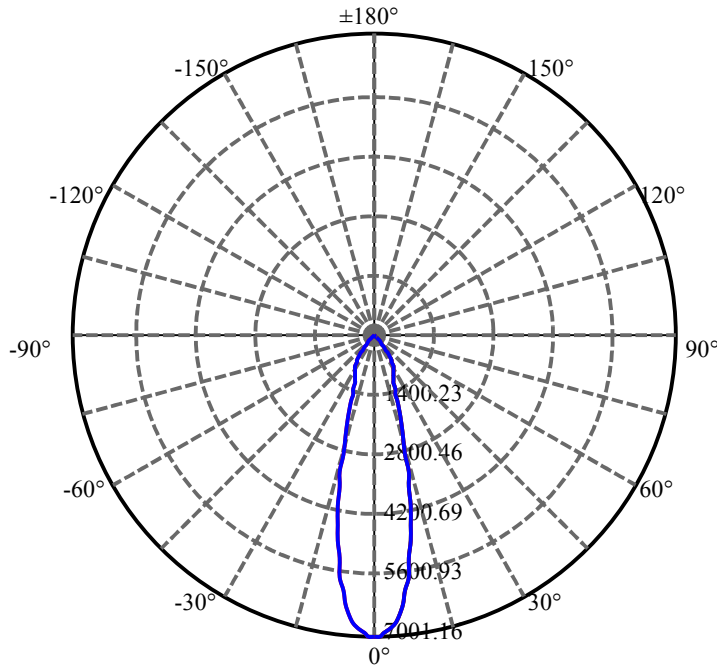
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	11.848	1.259	2262.183	.049%	99.298%
77.0	11.686	1.255	2263.438	.049%	99.353%
78.0	11.419	1.237	2264.674	.048%	99.407%
79.0	10.856	1.197	2265.871	.047%	99.460%
80.0	10.385	1.145	2267.016	.045%	99.510%
81.0	10.385	1.123	2268.14	.044%	99.560%
82.0	10.329	1.123	2269.263	.044%	99.609%
83.0	10.315	1.122	2270.385	.044%	99.658%
84.0	10.294	1.123	2271.508	.044%	99.707%
85.0	10.287	1.123	2272.631	.044%	99.757%
86.0	10.301	1.125	2273.756	.044%	99.806%
87.0	10.273	1.126	2274.882	.044%	99.855%
88.0	9.998	1.110	2275.993	.044%	99.904%
89.0	9.935	1.093	2277.085	.043%	99.952%
90.0	9.935	1.089	2278.175	.043%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1844.78	72.29%	80.98%
0-40	2198.33	86.14%	96.50%
0-60	2243.69	87.92%	98.49%
0-90	2277.09	89.23%	99.95%
0-120	2277.09	89.23%	99.95%
0-180	2278.17	89.27%	100.00%
60-90	34.53	1.35%	1.52%
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%
0-29.55	1822.54	71.42%	80.00%

ZONAL LUMEN SUMMARY

0-10	568.67
10-20	779.03
20-30	497.08
30-40	353.55
40-50	33.56
50-60	11.79
60-70	11.22
70-80	12.11
80-90	10.07
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



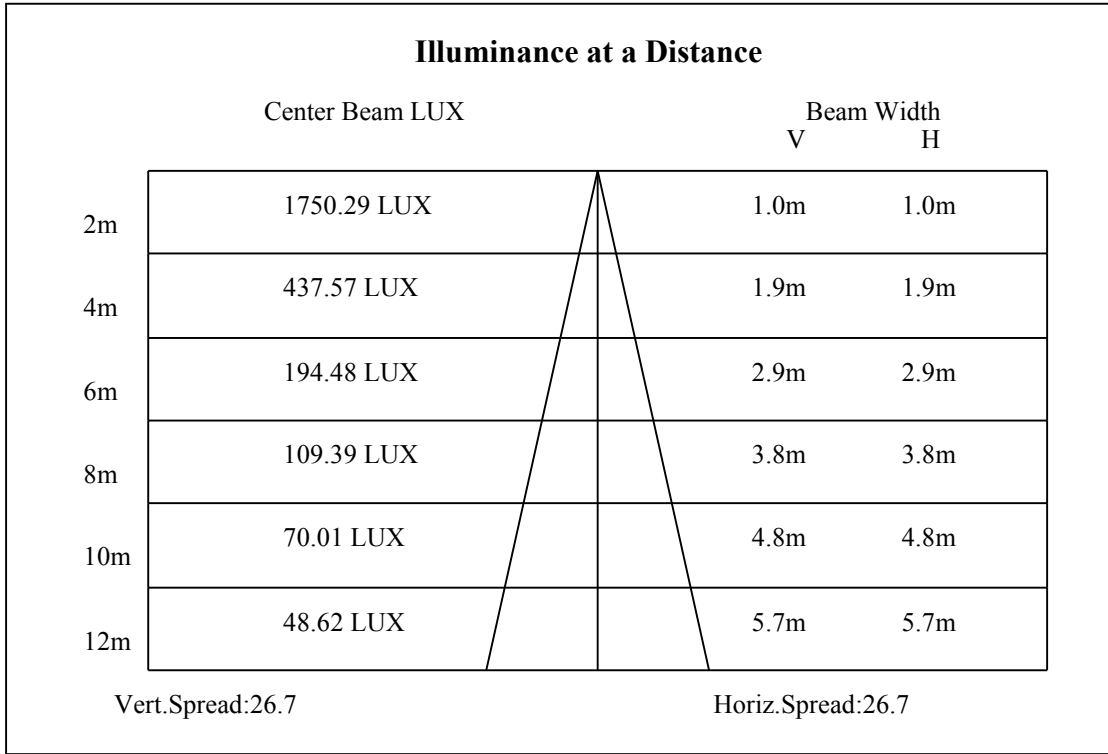
C0(Max): —————

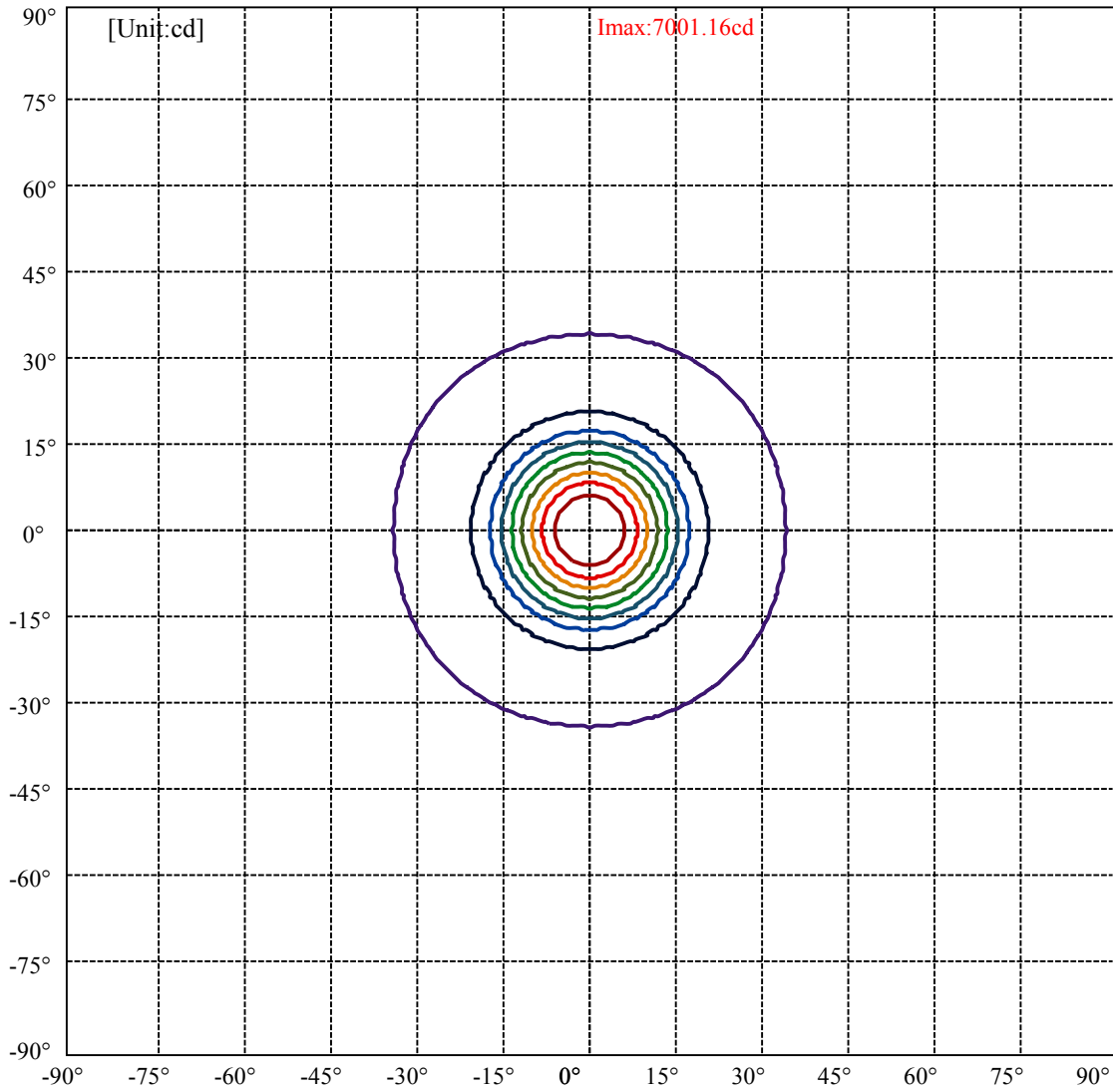
C0/C180: —————

C90/C270: —————

Field angle(10%Imax):C0/180Left:33.7 Right:33.7  
:C90/270Left:33.7 Right:33.7

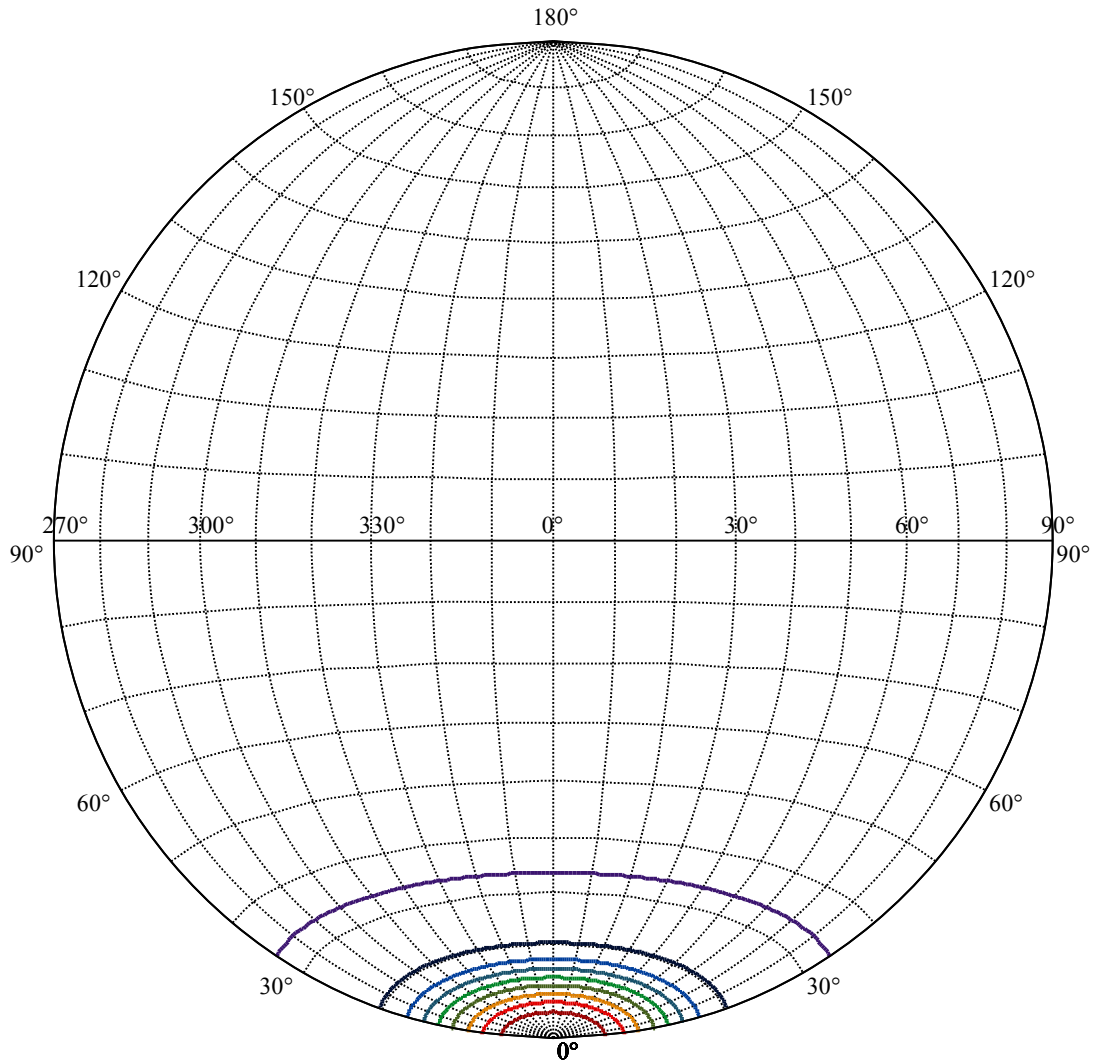
Beam Angle(50%Imax):C0/180Left:13.3 Right:13.3  
:C90/270Left:13.3 Right:13.3





(10%Imax) 700.116	—
(20%Imax) 1400.23	—
(30%Imax) 2100.35	—
(40%Imax) 2800.46	—
(50%Imax) 3500.58	—
(60%Imax) 4200.69	—
(70%Imax) 4900.81	—
(80%Imax) 5600.92	—
(90%Imax) 6301.04	—





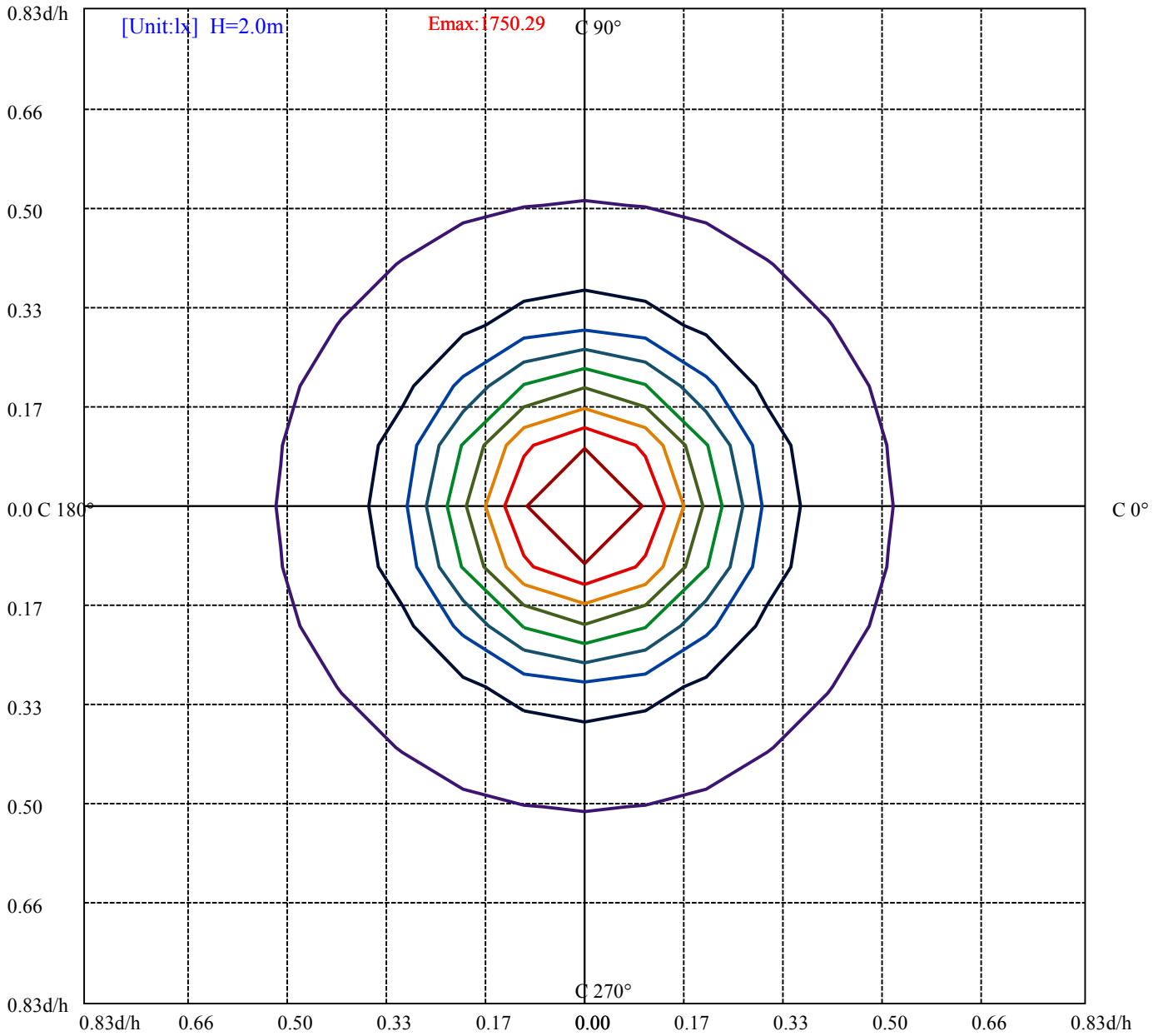
House

[Unit:cd]

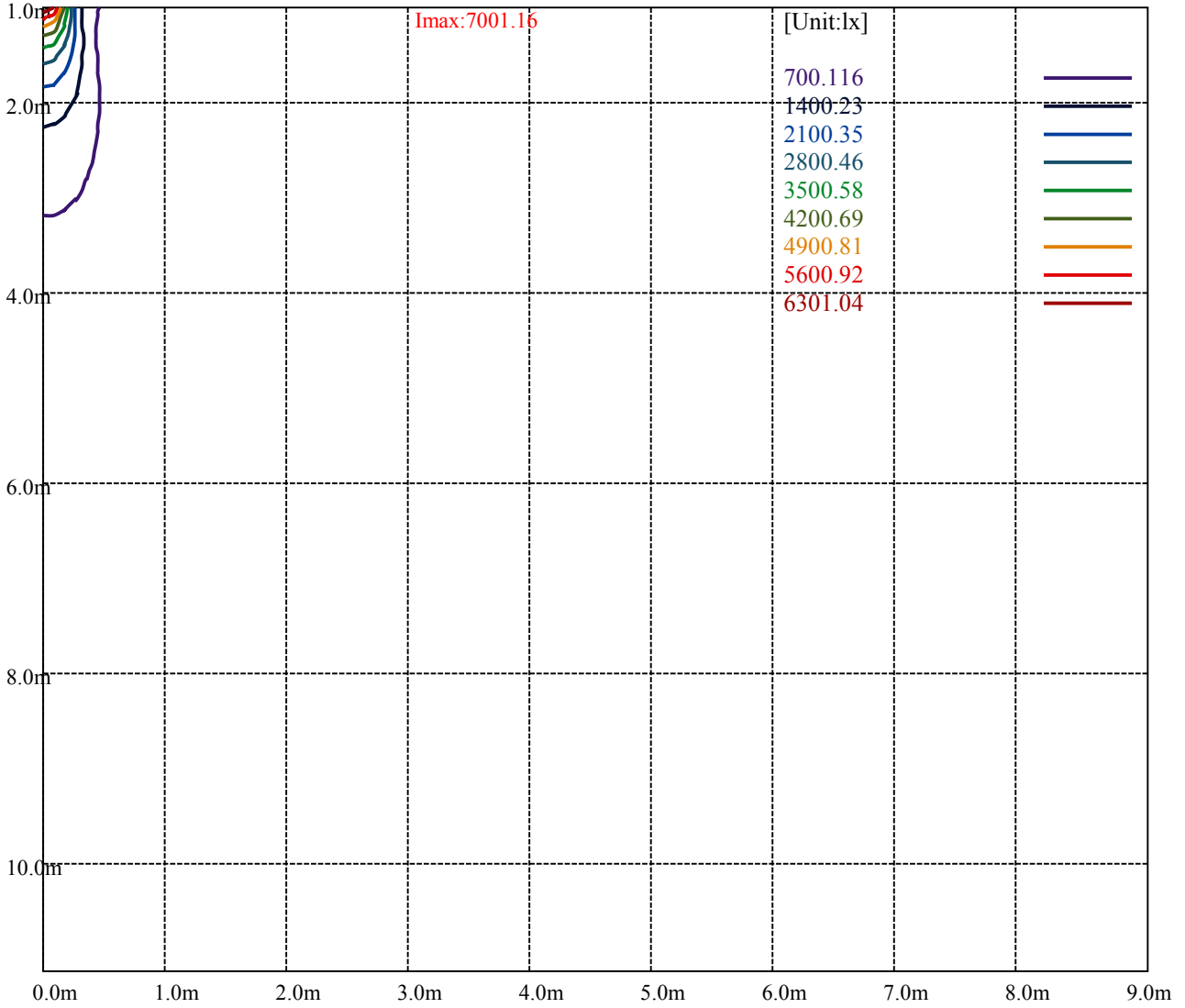
Road

**Imax:7001.16**

(10%Imax) 700.116	—
(20%Imax) 1400.23	—
(30%Imax) 2100.35	—
(40%Imax) 2800.46	—
(50%Imax) 3500.58	—
(60%Imax) 4200.69	—
(70%Imax) 4900.81	—
(80%Imax) 5600.92	—
(90%Imax) 6301.04	—



(10%Emax) 175.0287	—
(20%Emax) 350.0575	—
(30%Emax) 525.0875	—
(40%Emax) 700.115	—
(50%Emax) 875.145	—
(60%Emax) 1050.172	—
(70%Emax) 1225.203	—
(80%Emax) 1400.23	—
(90%Emax) 1575.26	—



Luminance Table

$\gamma$	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

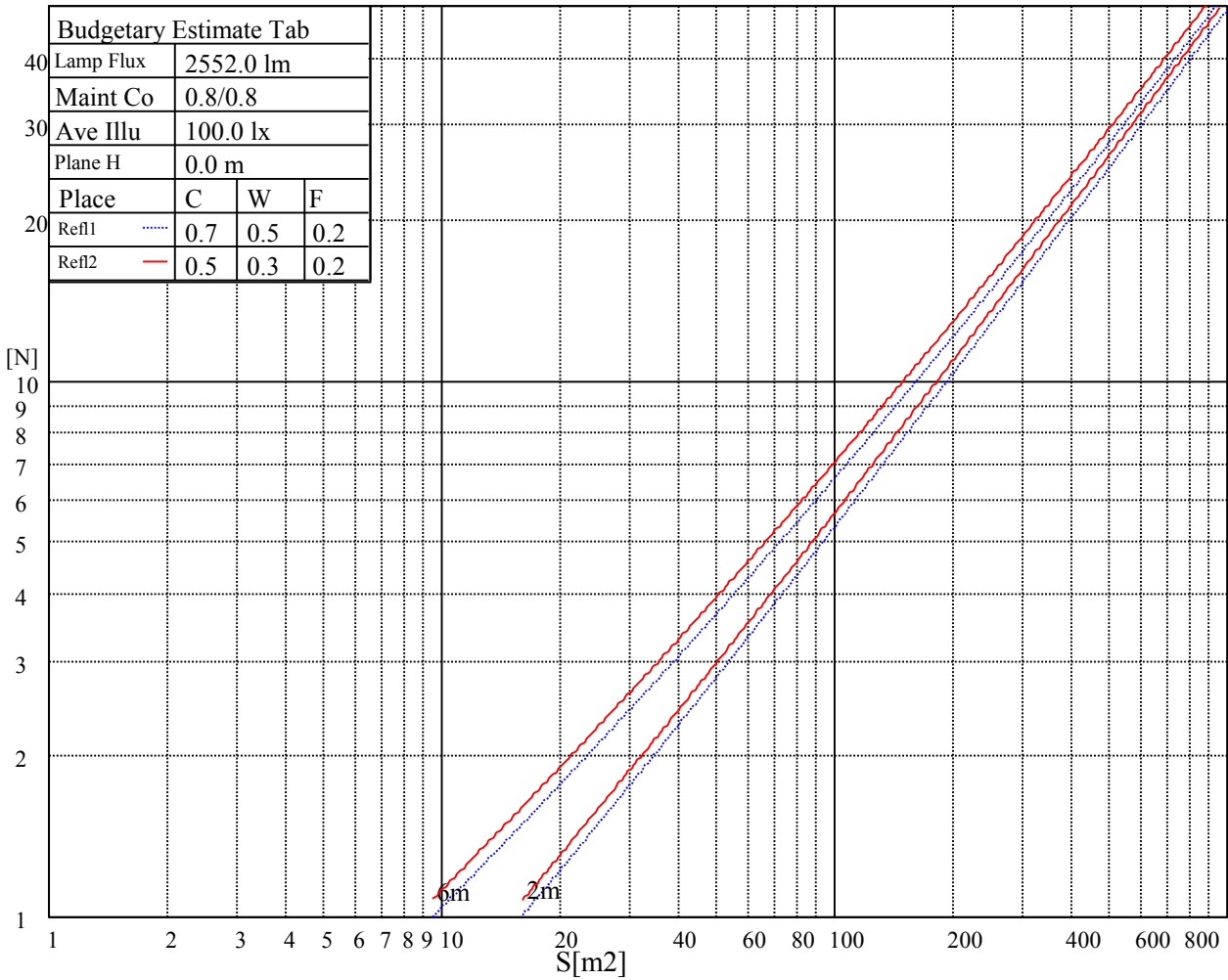
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

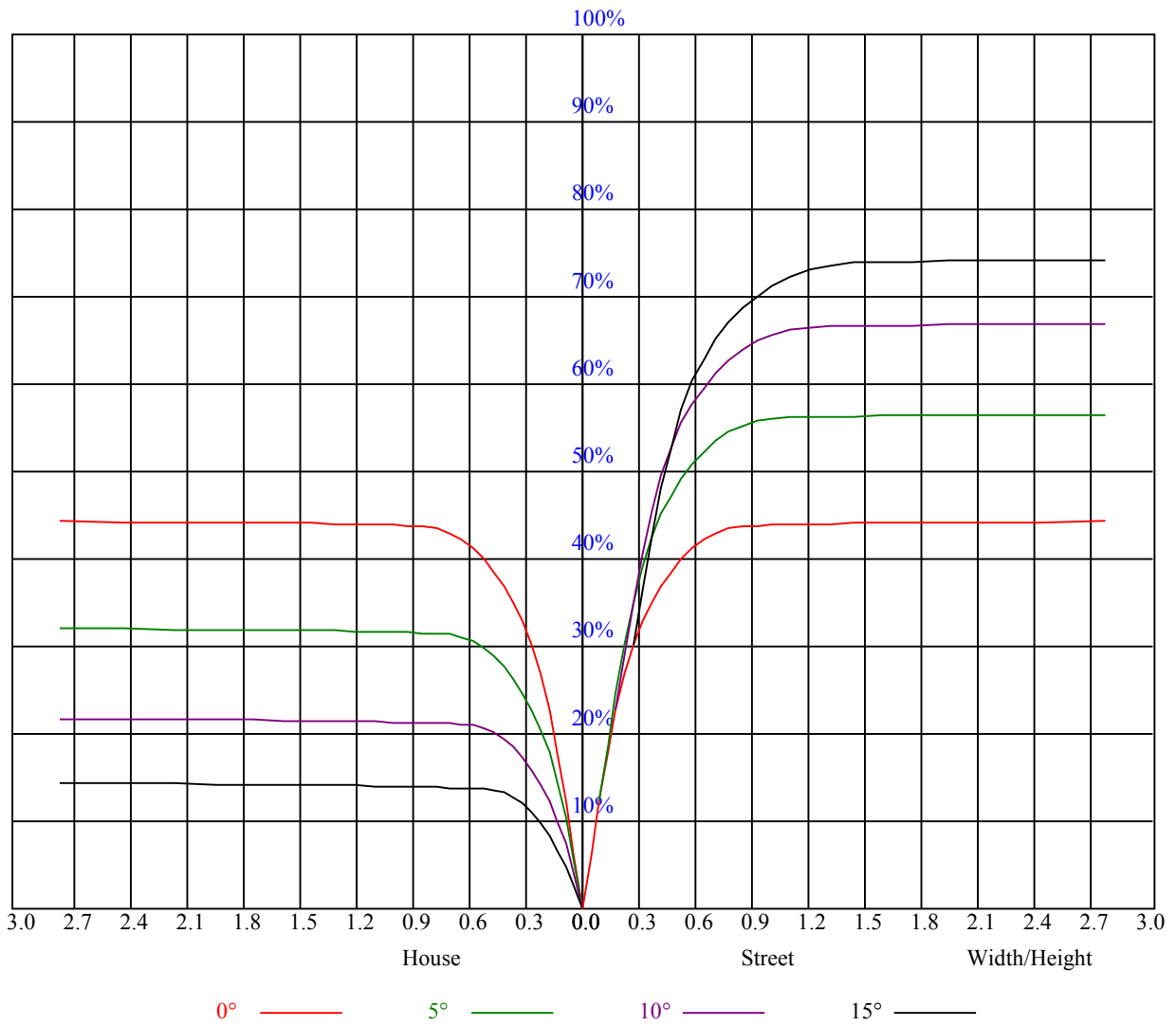
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.06	1.06	1.06	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.89
1	1.00	0.97	0.96	0.98	0.96	0.94	0.94	0.93	0.91	0.91	0.90	0.89	0.88	0.87	0.86	0.84
2	0.94	0.90	0.88	0.92	0.89	0.87	0.89	0.87	0.85	0.87	0.85	0.83	0.84	0.83	0.81	0.80
3	0.89	0.85	0.82	0.87	0.84	0.81	0.85	0.82	0.80	0.83	0.81	0.78	0.81	0.79	0.77	0.76
4	0.84	0.80	0.77	0.83	0.79	0.76	0.81	0.78	0.75	0.79	0.77	0.74	0.78	0.75	0.74	0.72
5	0.80	0.75	0.72	0.79	0.75	0.72	0.78	0.74	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.69
6	0.76	0.72	0.68	0.76	0.71	0.68	0.74	0.71	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
7	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.63
8	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
9	0.67	0.63	0.60	0.67	0.62	0.59	0.66	0.62	0.59	0.65	0.62	0.59	0.64	0.61	0.59	0.58
10	0.64	0.60	0.57	0.64	0.60	0.57	0.63	0.60	0.57	0.63	0.59	0.57	0.62	0.59	0.57	0.56



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	6986.81	7003.13	6985.69	6929.44	6844.50	6692.06	6479.44	6232.50	5923.13
45.0	7014.38	7022.81	6999.19	6946.31	6865.31	6747.75	6531.19	6289.31	5984.44
90.0	7006.50	6977.81	6931.69	6846.75	6713.44	6553.69	6307.31	5984.44	5650.31
135.0	6996.94	6973.88	6913.13	6811.88	6684.75	6520.50	6244.31	5950.69	5605.88
180.0	6986.81	6928.88	6856.31	6721.31	6506.44	6311.25	6033.38	5565.38	5249.25
225.0	7014.38	6970.50	6900.75	6775.31	6597.56	6382.13	6078.38	5721.75	5382.56
270.0	7006.50	7000.88	6959.25	6873.19	6757.31	6601.50	6335.44	6067.13	5750.44
315.0	6996.94	6990.19	6942.38	6867.56	6737.63	6574.50	6329.81	6012.56	5673.38
360.0	6986.81	7003.13	6985.69	6929.44	6844.50	6692.06	6479.44	6232.50	5923.13
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	5483.81	5116.50	4742.44	4313.25	3877.88	3477.94	3033.00	2606.06	2260.69
45.0	5545.69	5172.19	4784.63	4351.50	3915.56	3524.06	3084.19	2711.25	2322.56
90.0	5301.00	4858.31	4496.63	4125.38	3651.75	3265.88	2889.00	2454.19	2143.69
135.0	5153.06	4782.38	4407.75	3989.81	3570.75	3196.13	2781.56	2434.50	2085.75
180.0	4890.94	4390.88	4068.56	3697.31	3276.00	2858.63	2504.81	2150.44	1881.56
225.0	5033.81	4593.94	4235.06	3866.63	3387.94	3009.38	2646.00	2265.75	1949.63
270.0	5317.88	4961.25	4605.19	4199.63	3776.06	3388.50	2953.13	2578.50	2197.69
315.0	5304.38	4832.44	4459.50	4083.19	3602.25	3217.50	2838.38	2389.50	2075.06
360.0	5483.81	5116.50	4742.44	4313.25	3877.88	3477.94	3033.00	2606.06	2260.69
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1937.81	1715.63	1525.50	1384.88	1288.69	1206.56	1143.56	1095.75	1053.00
45.0	1977.19	1731.38	1522.13	1365.75	1267.31	1190.25	1121.63	1074.38	1036.13
90.0	1876.50	1622.25	1488.94	1355.63	1244.81	1184.63	1117.91	1066.61	1028.31
135.0	1789.31	1590.19	1424.81	1301.63	1222.31	1157.06	1096.88	1058.06	1020.94
180.0	1638.56	1454.06	1329.75	1224.00	1114.37	1090.07	1048.50	1008.79	974.93
225.0	1728.00	1532.81	1395.56	1275.75	1174.50	1120.33	1065.49	1019.53	984.43
270.0	1879.88	1658.25	1468.13	1328.63	1237.50	1168.88	1104.19	1062.00	1024.88
315.0	1815.75	1570.50	1443.94	1319.63	1219.50	1117.69	1106.21	1064.08	1020.77
360.0	1937.81	1715.63	1525.50	1384.88	1288.69	1206.56	1143.56	1095.75	1053.00
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1004.63	970.31	941.63	912.94	883.69	857.25	815.06	744.75	670.50
45.0	998.44	966.38	936.00	905.06	871.88	844.31	793.69	729.56	645.75
90.0	994.61	958.78	931.78	904.67	877.28	825.13	759.49	682.93	582.19
135.0	984.94	951.75	922.50	889.88	857.81	816.75	748.13	677.25	590.63
180.0	947.25	920.59	886.89	858.88	831.04	769.11	701.72	628.65	543.60
225.0	954.79	922.22	898.09	874.13	841.95	783.56	713.25	630.00	527.57
270.0	987.19	954.00	925.88	895.50	864.56	818.44	743.06	667.13	577.13
315.0	986.06	951.53	921.26	894.66	867.83	822.09	762.41	689.63	589.67
360.0	1004.63	970.31	941.63	912.94	883.69	857.25	815.06	744.75	670.50
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	581.63	500.63	408.38	319.50	290.81	173.64	97.48	52.65	31.39
45.0	556.88	479.25	399.94	303.75	284.63	157.16	88.26	44.55	30.04
90.0	500.51	419.51	329.79	245.48	176.57	106.88	58.78	33.53	29.25
135.0	504.56	425.25	345.38	290.25	179.55	117.39	63.39	33.47	29.03
180.0	456.75	379.13	294.08	214.65	148.56	83.42	43.59	29.31	25.71
225.0	446.68	367.09	280.91	199.63	133.14	73.46	40.39	29.19	25.76
270.0	485.44	403.31	321.75	284.63	157.67	98.04	48.66	30.71	27.79
315.0	509.12	428.51	338.51	252.90	183.66	115.20	66.60	33.30	28.18
360.0	581.63	500.63	408.38	319.50	290.81	173.64	97.48	52.65	31.39



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	27.17	24.24	21.77	19.58	17.21	15.75	14.96	14.34	13.56
45.0	27.39	23.57	21.15	19.29	17.04	15.64	14.79	14.12	13.67
90.0	26.10	22.95	20.25	18.34	16.88	15.58	15.08	14.40	13.95
135.0	26.04	22.73	20.59	18.84	17.21	15.98	15.30	14.68	14.29
180.0	23.23	20.98	18.56	16.93	15.69	14.85	14.34	13.89	13.56
225.0	23.12	20.48	18.23	16.65	15.47	14.57	14.12	13.56	13.22
270.0	25.26	21.71	19.46	17.83	15.98	14.79	14.29	13.73	13.39
315.0	25.26	22.22	19.91	18.17	16.76	15.36	14.51	13.73	13.33
360.0	27.17	24.24	21.77	19.58	17.21	15.75	14.96	14.34	13.56
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	13.28	12.99	12.66	12.43	12.15	11.98	11.81	11.64	11.53
45.0	13.39	13.05	12.83	12.60	12.32	12.15	11.98	11.81	11.70
90.0	13.56	13.28	12.94	12.71	12.49	12.38	12.21	12.04	11.93
135.0	13.89	13.61	13.33	12.88	12.60	12.43	12.26	12.09	11.93
180.0	13.22	12.94	12.66	12.43	12.21	12.04	11.87	11.70	11.53
225.0	12.94	12.66	12.38	12.15	11.98	11.81	11.70	11.53	11.42
270.0	13.16	12.77	12.54	12.32	12.09	11.93	11.70	11.59	11.48
315.0	13.05	12.77	12.49	12.21	12.04	11.87	11.70	11.53	11.42
360.0	13.28	12.99	12.66	12.43	12.15	11.98	11.81	11.64	11.53
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	11.42	11.25	11.19	11.08	10.97	10.91	10.80	10.74	10.63
45.0	11.64	11.48	11.36	11.31	11.19	11.14	11.03	10.91	10.86
90.0	11.81	11.64	11.59	11.48	11.36	11.31	11.19	11.14	11.42
135.0	11.81	11.64	11.53	11.48	11.36	11.25	11.25	11.31	13.44
180.0	11.42	11.31	11.19	11.08	10.97	10.86	10.80	10.69	10.63
225.0	11.25	11.19	11.08	10.97	10.91	10.80	10.74	10.63	10.58
270.0	11.42	11.25	11.14	11.03	10.97	10.91	10.80	10.69	10.69
315.0	11.31	11.19	11.08	11.03	10.91	10.80	10.74	10.63	10.58
360.0	11.42	11.25	11.19	11.08	10.97	10.91	10.80	10.74	10.63
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	10.58	10.52	10.46	10.41	10.41	10.41	10.35	10.29	10.24
45.0	10.80	10.74	10.69	10.58	10.58	10.52	10.46	10.46	10.46
90.0	13.28	14.06	15.47	16.82	17.83	18.17	17.55	14.40	10.91
135.0	15.58	16.43	16.48	15.64	14.63	13.22	11.98	10.80	10.69
180.0	10.58	10.52	10.46	10.46	10.41	10.41	10.35	10.29	10.29
225.0	10.46	10.46	10.35	10.35	10.29	10.24	10.24	10.18	10.13
270.0	10.58	10.52	10.46	10.41	10.35	10.29	10.24	10.24	10.18
315.0	10.52	10.46	10.41	10.35	10.29	10.24	10.18	10.18	10.18
360.0	10.58	10.52	10.46	10.41	10.41	10.41	10.35	10.29	10.24
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	10.24	10.24	10.24	10.24	10.29	10.35	10.35	9.96	9.96
45.0	10.46	10.35	10.35	10.29	10.24	10.24	10.13	10.01	9.90
90.0	10.97	10.69	10.63	10.58	10.52	10.41	10.24	9.96	9.90
135.0	10.69	10.74	10.69	10.69	10.63	10.69	10.74	10.29	9.96
180.0	10.29	10.29	10.41	10.41	10.46	10.58	10.63	9.96	9.96
225.0	10.13	10.07	10.07	10.07	10.01	10.07	10.13	9.90	9.90
270.0	10.18	10.13	10.07	10.07	10.07	10.01	10.01	9.96	9.96
315.0	10.13	10.13	10.07	10.01	10.07	10.07	9.96	9.96	9.96
360.0	10.24	10.24	10.24	10.24	10.29	10.35	10.35	9.96	9.96

Intensity data(cd)

C/γ(°)	90.0
0.0	9.96
45.0	9.90
90.0	9.96
135.0	9.96
180.0	9.96
225.0	9.90
270.0	9.90
315.0	9.96
360.0	9.96