
NATA

LumCAT: 8384-E
Luminaire: TE 2213480-1+92.76.365.00
Report No: GC201703306
Test No: NT-0010
LampCAT: CREE CXA3050
Lamp flux(lm): 3214.0
Number of Lamps: 1
Length(mm): 200
Phm Type: C

Voltage(V): 35.6000
Current(A): 0.8000
Power (W): 28.4800
PF: 0.0000
Ballast type: DC
Width(mm): 200
Height(mm): 0

Photometric Results

Lumens(lm): 2989.11
Efficiency(%): 93.00%
Lumens(lm)/Power(W): 104.95
Central intensity(cd): 1976.938
Maximum intensity(cd): 1976.938
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=82.8
 [C90/270]Total=82.8
Field angle(10%Imax): [C0/180]Total=100.2
 [C90/270]Total=100.2
Maximum s/h(1/2): C0_180=1.20 C90_270=1.20
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(%): 93.00%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.657%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1976.938	0.000	0	.000%	.000%
1.0	1976.525	1.892	1.892	.059%	.063%
2.0	1974.735	5.671	7.563	.176%	.253%
3.0	1972.533	9.441	17.003	.294%	.569%
4.0	1970.124	13.197	30.201	.411%	1.010%
5.0	1967.509	16.939	47.14	.527%	1.577%
6.0	1965.032	20.667	67.807	.643%	2.268%
7.0	1962.829	24.380	92.187	.759%	3.084%
8.0	1960.765	28.080	120.267	.874%	4.024%
9.0	1958.563	31.764	152.031	.988%	5.086%
10.0	1956.016	35.426	187.457	1.102%	6.271%
11.0	1952.644	39.056	226.512	1.215%	7.578%
12.0	1948.446	42.645	269.157	1.327%	9.005%
13.0	1942.872	46.180	315.337	1.437%	10.550%
14.0	1935.577	49.644	364.981	1.545%	12.210%
15.0	1927.249	53.031	418.012	1.650%	13.984%
16.0	1917.408	56.335	474.347	1.753%	15.869%
17.0	1904.539	59.518	533.864	1.852%	17.860%
18.0	1890.981	62.580	596.444	1.947%	19.954%
19.0	1876.941	65.554	661.999	2.040%	22.147%
20.0	1859.323	68.384	730.383	2.128%	24.435%
21.0	1841.224	71.058	801.441	2.211%	26.812%
22.0	1823.743	73.649	875.09	2.292%	29.276%
23.0	1803.028	76.099	951.189	2.368%	31.822%
24.0	1780.799	78.355	1029.544	2.438%	34.443%
25.0	1758.226	80.470	1110.014	2.504%	37.135%
26.0	1732.694	82.404	1192.418	2.564%	39.892%
27.0	1704.271	84.086	1276.504	2.616%	42.705%
28.0	1673.095	85.508	1362.011	2.660%	45.566%
29.0	1637.240	86.608	1448.619	2.695%	48.463%
30.0	1599.595	87.394	1536.013	2.719%	51.387%
31.0	1557.958	87.870	1623.883	2.734%	54.327%
32.0	1508.132	87.840	1711.723	2.733%	57.265%
33.0	1460.027	87.443	1799.166	2.721%	60.191%
34.0	1410.063	86.857	1886.024	2.702%	63.097%
35.0	1353.286	85.819	1971.843	2.670%	65.968%
36.0	1296.165	84.359	2056.202	2.625%	68.790%
37.0	1243.380	82.826	2139.028	2.577%	71.561%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	1179.081	80.858	2219.886	2.516%	74.266%
39.0	1110.439	78.148	2298.034	2.431%	76.880%
40.0	1066.456	75.922	2373.956	2.362%	79.420%
41.0	1010.774	73.969	2447.925	2.301%	81.895%
42.0	952.145	71.316	2519.242	2.219%	84.281%
43.0	900.936	68.644	2587.885	2.136%	86.577%
44.0	847.738	66.000	2653.885	2.054%	88.785%
45.0	774.712	62.353	2716.238	1.940%	90.871%
46.0	683.518	57.028	2773.266	1.774%	92.779%
47.0	576.385	50.110	2823.376	1.559%	94.456%
48.0	455.695	41.722	2865.098	1.298%	95.851%
49.0	331.859	32.341	2897.439	1.006%	96.933%
50.0	213.137	22.723	2920.162	.707%	97.693%
51.0	88.613	12.767	2932.928	.397%	98.121%
52.0	31.747	5.165	2938.093	.161%	98.293%
53.0	17.260	2.132	2940.225	.066%	98.365%
54.0	14.762	1.411	2941.636	.044%	98.412%
55.0	14.081	1.287	2942.924	.040%	98.455%
56.0	13.565	1.249	2944.173	.039%	98.497%
57.0	13.090	1.219	2945.392	.038%	98.538%
58.0	12.739	1.194	2946.586	.037%	98.577%
59.0	12.505	1.180	2947.766	.037%	98.617%
60.0	12.670	1.189	2948.956	.037%	98.657%
61.0	13.434	1.246	2950.201	.039%	98.698%
62.0	14.294	1.336	2951.537	.042%	98.743%
63.0	15.072	1.428	2952.966	.044%	98.791%
64.0	15.677	1.509	2954.475	.047%	98.841%
65.0	16.001	1.568	2956.042	.049%	98.894%
66.0	16.138	1.604	2957.646	.050%	98.947%
67.0	16.070	1.620	2959.265	.050%	99.002%
68.0	15.856	1.617	2960.883	.050%	99.056%
69.0	15.491	1.599	2962.482	.050%	99.109%
70.0	15.106	1.571	2964.053	.049%	99.162%
71.0	14.624	1.537	2965.59	.048%	99.213%
72.0	14.122	1.495	2967.085	.047%	99.263%
73.0	13.709	1.455	2968.54	.045%	99.312%
74.0	13.296	1.420	2969.96	.044%	99.359%
75.0	12.787	1.378	2971.338	.043%	99.406%

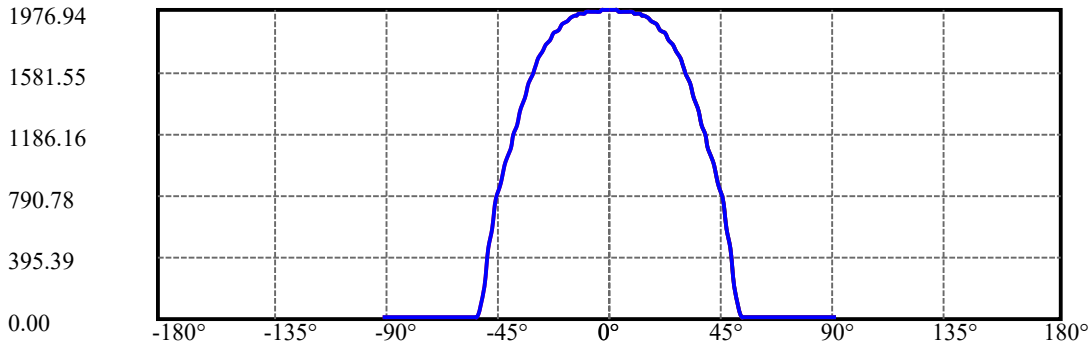
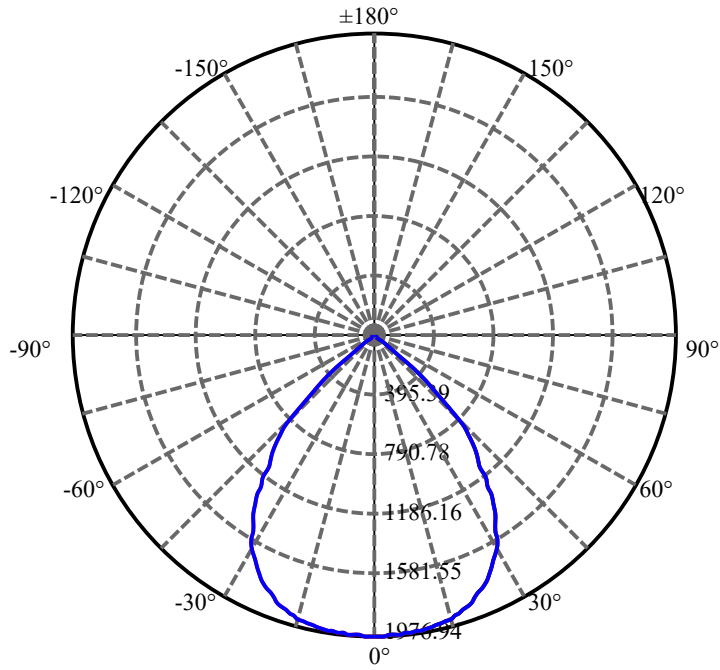
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	12.422	1.338	2972.676	.042%	99.450%
77.0	12.085	1.307	2973.983	.041%	99.494%
78.0	11.761	1.277	2975.259	.040%	99.537%
79.0	11.479	1.249	2976.508	.039%	99.579%
80.0	11.245	1.225	2977.733	.038%	99.620%
81.0	11.059	1.206	2978.939	.038%	99.660%
82.0	10.894	1.191	2980.13	.037%	99.700%
83.0	10.743	1.176	2981.306	.037%	99.739%
84.0	10.626	1.164	2982.47	.036%	99.778%
85.0	10.516	1.154	2983.624	.036%	99.817%
86.0	10.371	1.142	2984.766	.036%	99.855%
87.0	10.048	1.117	2985.883	.035%	99.892%
88.0	9.793	1.087	2986.97	.034%	99.929%
89.0	9.731	1.070	2988.04	.033%	99.964%
90.0	9.717	1.066	2989.106	.033%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1536.01	47.79%	51.39%
0-40	2373.96	73.86%	79.42%
0-60	2948.96	91.75%	98.66%
0-90	2988.04	92.97%	99.96%
0-120	2988.04	92.97%	99.96%
0-180	2989.11	93.00%	100.00%
60-90	40.27	1.25%	1.35%
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%
0-40.23	2391.29	74.40%	80.00%

ZONAL LUMEN SUMMARY

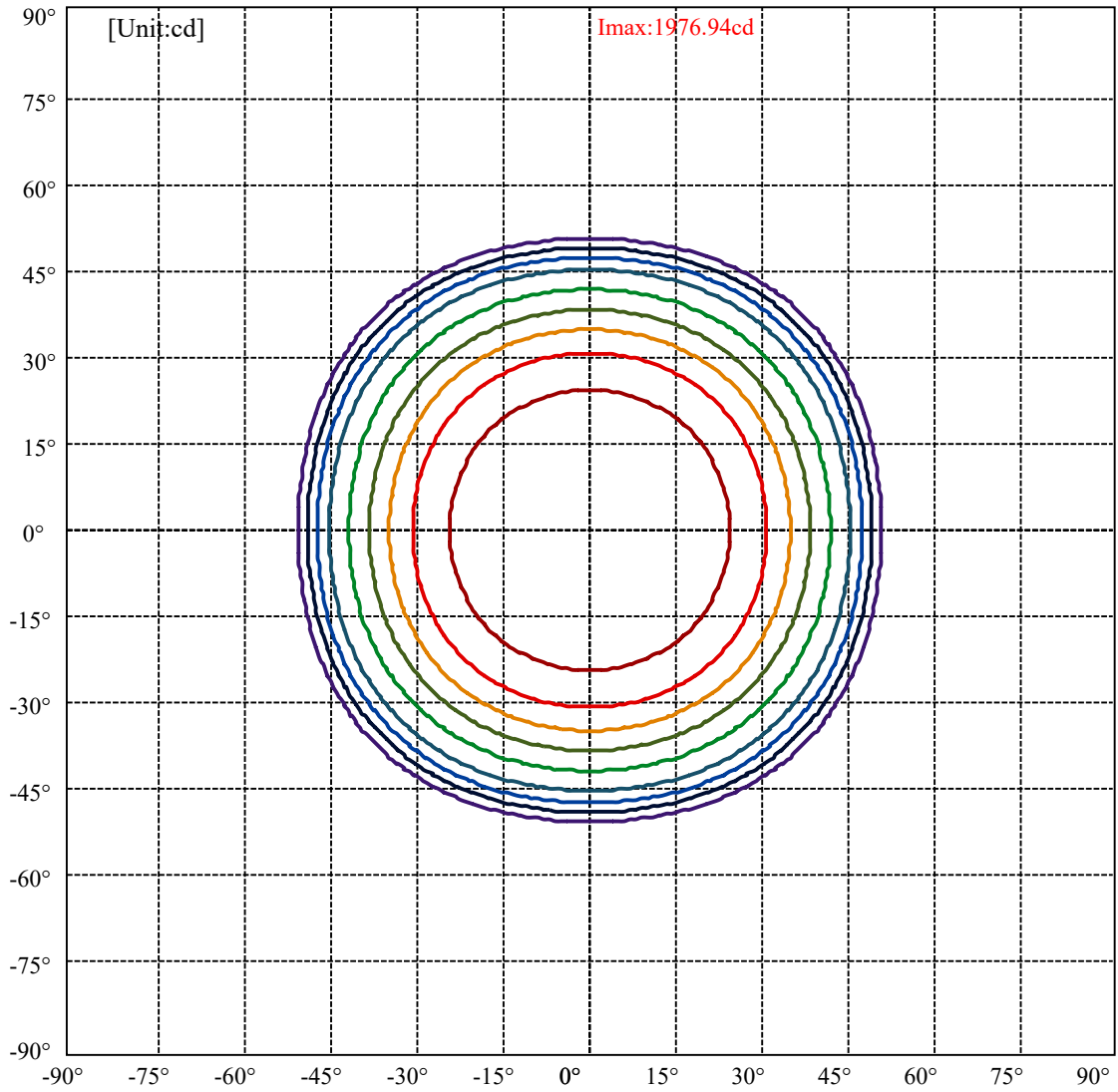
0-10	187.46
10-20	542.93
20-30	805.63
30-40	837.94
40-50	546.21
50-60	28.79
60-70	15.10
70-80	13.68
80-90	10.31
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



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

Field angle(10%Imax):C0/180Left:50.1 Right:50.1
 :C90/270Left:50.1 Right:50.1

Beam Angle(50%Imax):C0/180Left:41.4 Right:41.4
 :C90/270Left:41.4 Right:41.4

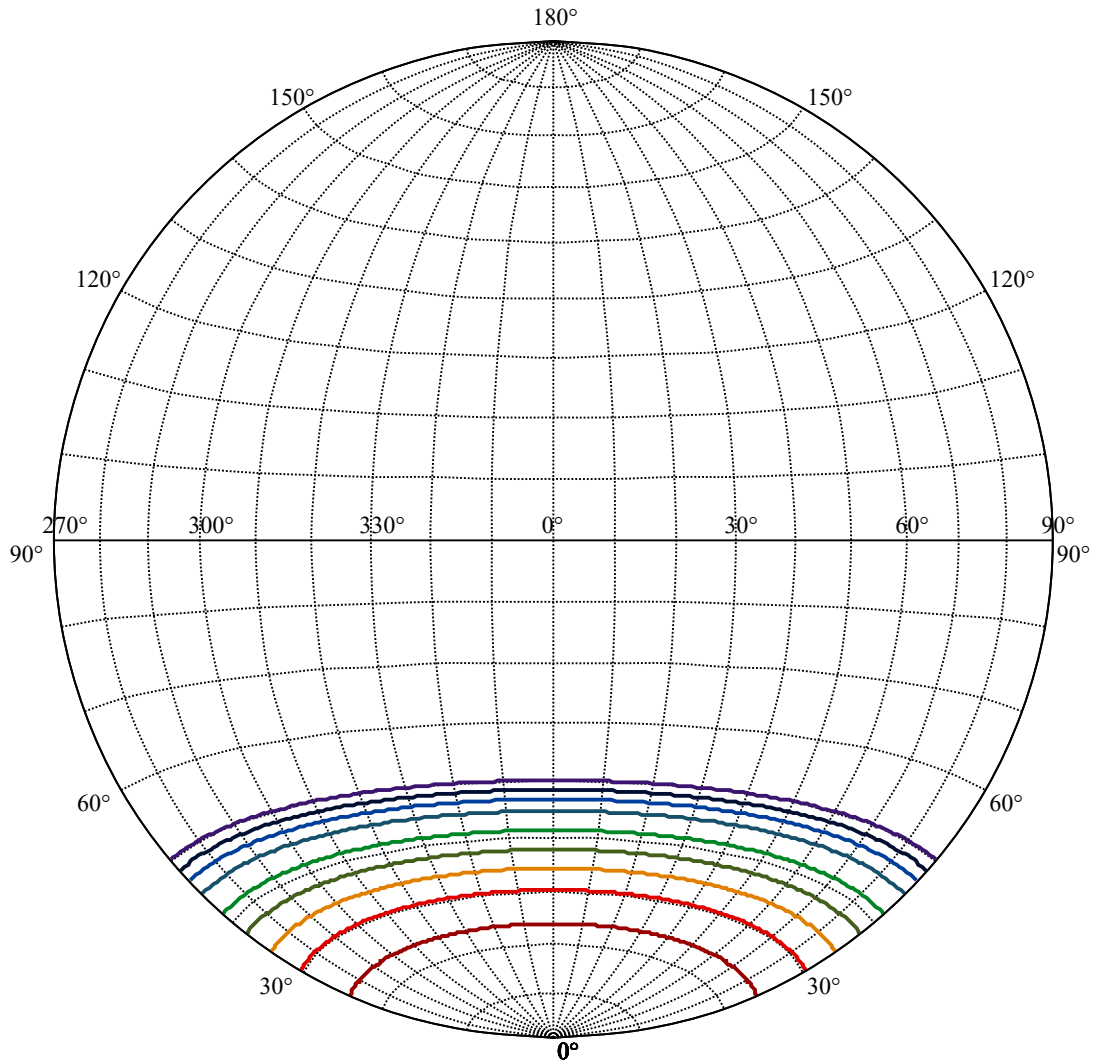


(10%Imax) 197.694	—
(20%Imax) 395.388	—
(30%Imax) 593.081	—
(40%Imax) 790.775	—
(50%Imax) 988.469	—
(60%Imax) 1186.16	—
(70%Imax) 1383.86	—
(80%Imax) 1581.55	—
(90%Imax) 1779.24	—

Equipment: gms1980
Temperature(°C): 25.0

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

Operator: NT07
Distance(m): 7.42



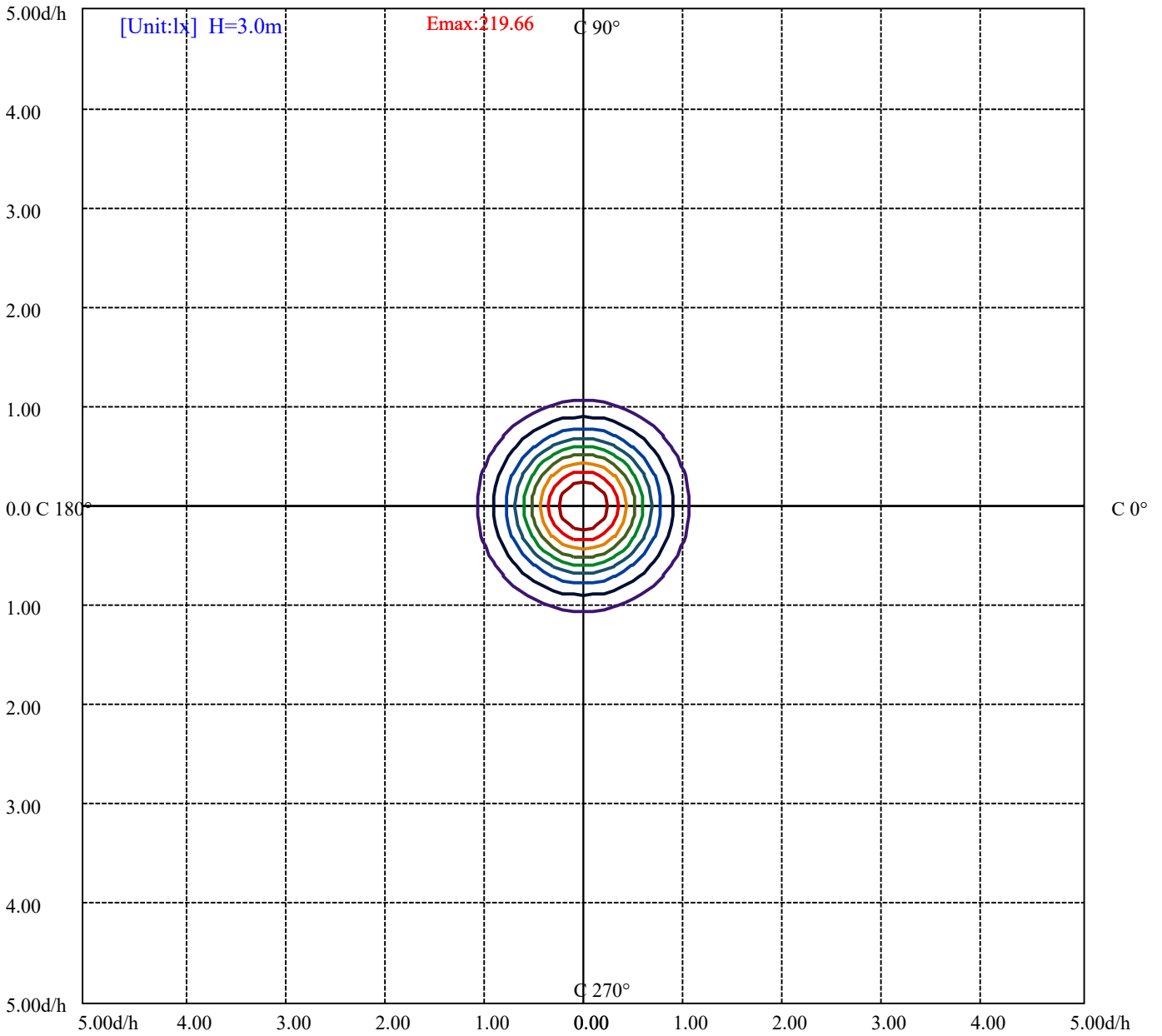
House

[Unit:cd]

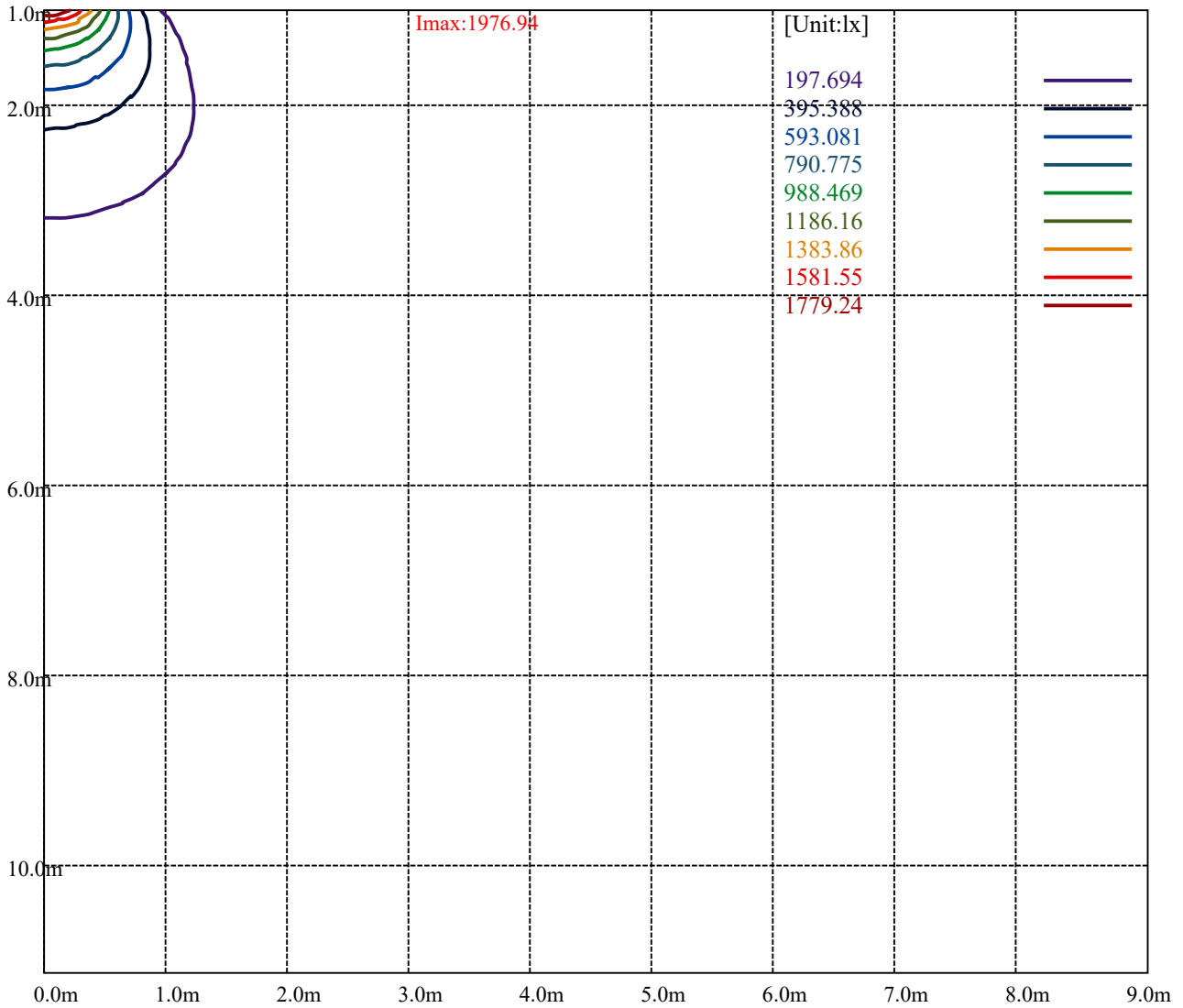
Road

Imax:1976.94

(10%Imax) 197.694	—
(20%Imax) 395.388	—
(30%Imax) 593.081	—
(40%Imax) 790.775	—
(50%Imax) 988.469	—
(60%Imax) 1186.16	—
(70%Imax) 1383.86	—
(80%Imax) 1581.55	—
(90%Imax) 1779.24	—



(10%Emax) 21.966	—
(20%Emax) 43.932	—
(30%Emax) 65.89789	—
(40%Emax) 87.86389	—
(50%Emax) 109.8299	—
(60%Emax) 131.7956	—
(70%Emax) 153.7622	—
(80%Emax) 175.7278	—
(90%Emax) 197.6933	—



Luminance Table

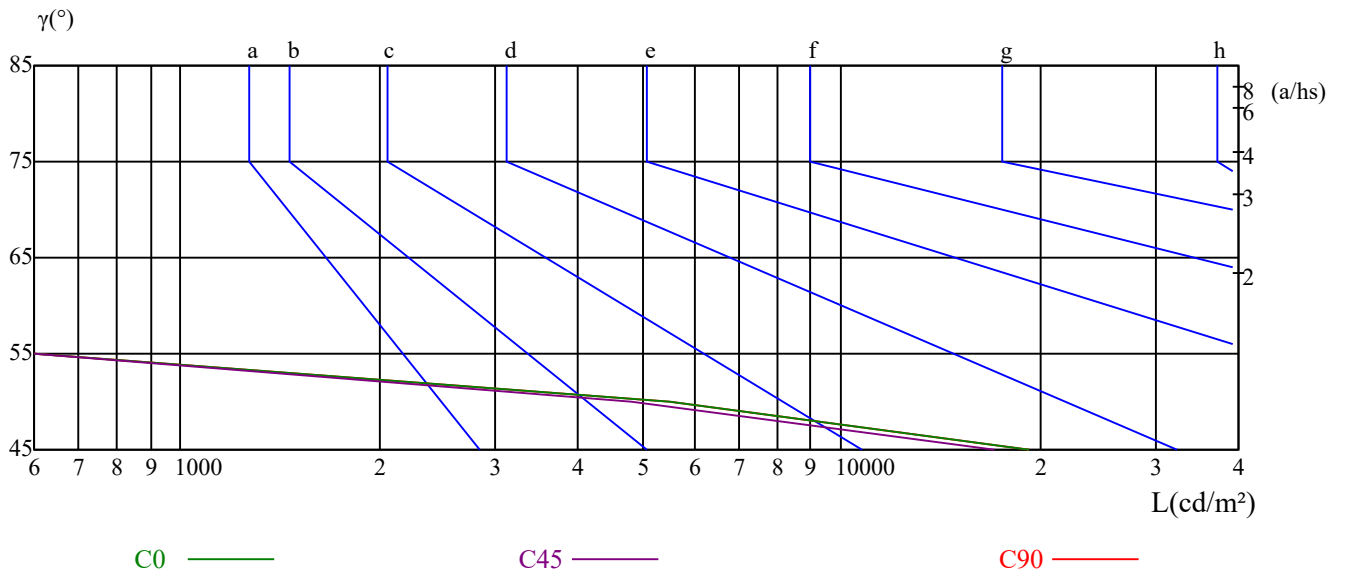
γ	45	50	55	60	65	70	75	80	85
C0	19221	5503	382	365	495	509	478	475	515
C45	17108	4830	330	310	414	416	381	367	383
C90	19221	5503	382	365	495	509	478	475	515

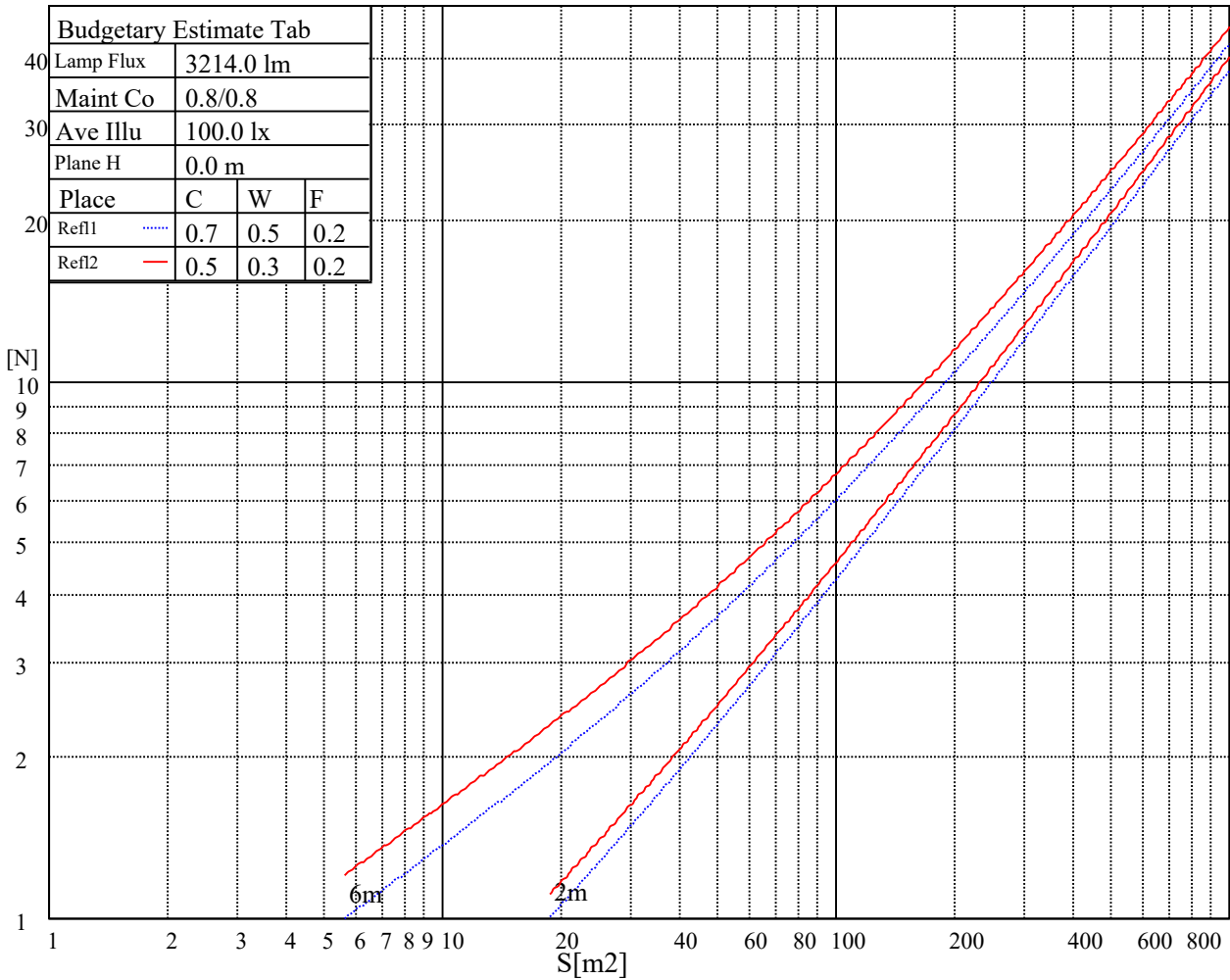
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
947	947	947	1235	1235	1235	3016	3016	3016

Glare Table

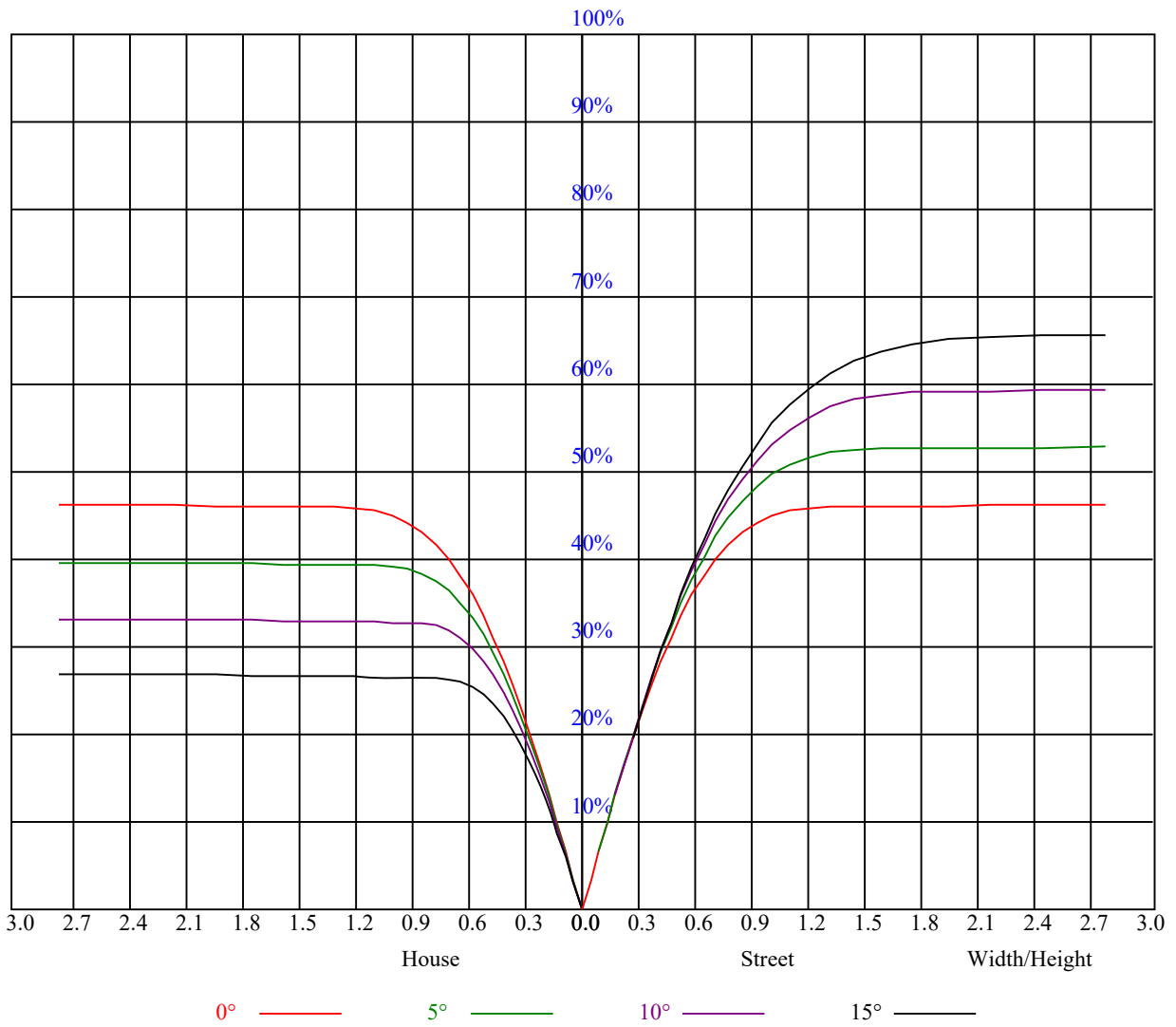
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.92	0.91	0.90	0.89	0.88	0.87	0.85
2	0.93	0.89	0.85	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	0.69	0.66	0.64
5	0.73	0.67	0.62	0.72	0.66	0.62	0.70	0.65	0.61	0.68	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	0.64	0.59	0.55	0.62	0.58	0.55	0.53
7	0.62	0.56	0.51	0.62	0.55	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	0.51	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	0.51	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	0.40	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	1973.22	1973.22	1971.57	1969.92	1968.27	1966.61	1964.96	1963.86	1962.21
45.0	1978.18	1977.63	1975.42	1972.67	1969.92	1967.17	1963.31	1961.66	1959.46
90.0	1978.73	1978.18	1977.63	1973.77	1971.02	1967.72	1965.51	1962.21	1960.01
135.0	1977.63	1978.18	1977.08	1976.52	1974.87	1972.12	1970.47	1968.27	1966.06
180.0	1973.22	1973.22	1971.57	1969.92	1967.72	1965.51	1963.31	1961.66	1959.46
225.0	1978.18	1977.63	1975.97	1974.87	1971.57	1969.37	1967.17	1963.86	1962.21
270.0	1978.73	1978.18	1974.87	1972.67	1969.92	1966.06	1962.76	1960.56	1958.36
315.0	1977.63	1975.97	1973.77	1969.92	1967.72	1965.51	1962.76	1960.56	1958.36
360.0	1973.22	1973.22	1971.57	1969.92	1968.27	1966.61	1964.96	1963.86	1962.21

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	1961.11	1960.01	1958.36	1955.60	1951.75	1945.69	1939.64	1931.93	1919.27
45.0	1956.70	1954.50	1951.20	1946.24	1941.29	1934.13	1924.77	1914.31	1903.30
90.0	1957.26	1953.95	1949.00	1945.14	1939.09	1931.38	1923.67	1913.76	1901.65
135.0	1962.76	1960.56	1958.36	1955.05	1951.20	1944.59	1937.43	1928.63	1915.96
180.0	1957.81	1955.05	1951.20	1946.79	1939.64	1931.38	1923.12	1913.21	1898.90
225.0	1960.56	1957.81	1954.50	1950.10	1945.69	1938.54	1930.83	1922.02	1909.91
270.0	1956.15	1952.85	1949.55	1944.59	1937.99	1931.38	1920.92	1908.81	1896.69
315.0	1956.15	1953.40	1949.00	1944.04	1936.33	1927.52	1917.61	1906.60	1890.64
360.0	1961.11	1960.01	1958.36	1955.60	1951.75	1945.69	1939.64	1931.93	1919.27

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1907.70	1895.04	1876.32	1860.36	1843.84	1824.02	1801.45	1779.42	1752.45
45.0	1888.43	1874.12	1857.05	1838.88	1820.16	1799.24	1775.57	1754.10	1731.52
90.0	1887.33	1873.02	1855.40	1836.68	1819.06	1797.59	1777.22	1753.00	1727.12
135.0	1903.30	1889.54	1870.27	1853.75	1836.68	1816.31	1793.74	1772.82	1748.59
180.0	1886.23	1871.92	1855.40	1836.68	1819.61	1798.69	1776.67	1754.10	1726.57
225.0	1896.14	1882.93	1865.86	1847.69	1831.18	1811.36	1792.09	1767.31	1739.23
270.0	1882.38	1867.51	1850.45	1831.73	1814.11	1793.19	1770.06	1748.59	1727.12
315.0	1876.32	1861.46	1843.84	1824.02	1805.30	1783.83	1759.60	1736.48	1708.95
360.0	1907.70	1895.04	1876.32	1860.36	1843.84	1824.02	1801.45	1779.42	1752.45

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1725.47	1692.43	1657.20	1623.06	1580.67	1533.87	1488.73	1441.38	1377.51
45.0	1699.04	1669.31	1637.93	1597.74	1553.69	1507.44	1455.69	1398.98	1348.33
90.0	1702.89	1675.37	1635.73	1599.39	1560.85	1507.44	1461.75	1413.85	1358.24
135.0	1723.27	1692.43	1659.40	1625.82	1583.42	1534.42	1489.83	1444.13	1390.17
180.0	1700.14	1667.11	1629.67	1592.23	1552.04	1496.43	1448.53	1398.98	1334.02
225.0	1712.25	1682.52	1640.68	1604.34	1566.35	1514.05	1470.01	1424.31	1369.25
270.0	1689.13	1658.30	1628.57	1582.87	1537.17	1499.74	1443.03	1388.52	1345.58
315.0	1681.97	1647.29	1608.75	1571.31	1529.47	1471.66	1422.66	1370.35	1303.18
360.0	1725.47	1692.43	1657.20	1623.06	1580.67	1533.87	1488.73	1441.38	1377.51

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	1325.21	1271.25	1216.20	1145.17	1090.67	1037.26	972.85	922.75	877.60
45.0	1287.77	1233.81	1173.25	1113.24	1058.18	1003.68	939.26	891.91	847.32
90.0	1300.43	1248.68	1189.77	1092.04	1071.51	1012.27	960.07	904.03	849.08
135.0	1334.02	1283.36	1232.16	1167.20	1113.79	1059.84	994.87	946.42	897.42
180.0	1280.06	1225.56	1147.38	1098.43	1042.99	988.81	930.62	878.15	821.17
225.0	1312.54	1262.44	1204.08	1092.65	1086.04	1026.09	973.45	916.80	861.41
270.0	1281.71	1229.41	1176.00	1108.29	1054.88	1002.03	938.71	890.81	841.81
315.0	1247.58	1192.52	1093.81	1066.50	1013.59	956.22	907.33	856.62	786.10
360.0	1325.21	1271.25	1216.20	1145.17	1090.67	1037.26	972.85	922.75	877.60

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	815.39	726.74	633.70	515.88	398.61	290.70	123.22	42.23	21.91
45.0	764.73	677.74	577.54	450.91	313.82	284.09	75.65	25.38	16.41
90.0	796.72	718.49	586.85	490.94	370.58	203.60	104.66	32.37	17.45
135.0	840.16	752.62	663.98	545.61	429.44	293.45	204.20	58.08	20.21
180.0	733.30	629.57	526.45	398.06	279.80	135.38	46.47	22.13	14.70
225.0	790.17	702.08	572.75	456.80	333.59	175.57	70.75	28.24	15.64
270.0	752.07	662.88	561.02	429.99	289.60	211.80	51.53	24.39	15.80
315.0	705.16	598.02	488.79	357.37	239.44	110.50	32.43	21.14	15.97
360.0	815.39	726.74	633.70	515.88	398.61	290.70	123.22	42.23	21.91
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	15.86	15.20	14.65	14.04	13.54	13.16	13.27	13.76	14.09
45.0	14.98	14.20	13.49	12.94	12.55	12.22	12.22	13.10	14.70
90.0	14.76	13.98	13.38	12.94	12.55	12.17	11.89	11.78	12.55
135.0	14.42	13.65	13.27	12.77	12.39	12.06	11.73	11.51	11.45
180.0	13.71	13.16	12.72	12.33	12.06	11.78	11.56	12.28	12.66
225.0	14.48	13.93	13.49	13.05	12.66	12.22	12.06	12.88	14.15
270.0	14.92	14.20	13.71	13.27	12.94	12.72	13.54	14.87	15.86
315.0	14.98	14.31	13.82	13.38	13.21	13.71	15.09	17.29	18.88
360.0	15.86	15.20	14.65	14.04	13.54	13.16	13.27	13.76	14.09
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	14.37	14.81	15.42	16.13	16.52	16.68	16.63	16.52	16.24
45.0	17.18	19.21	19.43	19.55	19.43	19.21	18.83	18.44	17.89
90.0	13.71	14.48	15.42	15.80	16.02	15.97	15.69	15.42	14.98
135.0	11.73	12.22	12.55	12.77	12.83	12.77	12.61	12.44	12.22
180.0	12.77	12.88	12.94	12.88	12.77	12.61	12.39	12.17	11.95
225.0	14.48	14.48	14.48	14.48	14.42	14.20	13.82	13.16	12.44
270.0	16.74	17.51	18.00	18.00	17.40	16.63	15.69	14.98	14.31
315.0	19.60	19.82	19.77	19.49	19.16	18.77	18.28	17.73	16.96
360.0	14.37	14.81	15.42	16.13	16.52	16.68	16.63	16.52	16.24
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	16.02	15.80	15.58	14.92	14.31	13.76	13.16	12.66	12.28
45.0	16.96	15.75	14.48	13.21	12.66	12.22	11.84	11.62	11.40
90.0	14.42	14.09	13.82	13.49	13.05	12.61	12.06	11.56	11.18
135.0	12.00	11.84	11.62	11.29	11.07	10.90	10.68	10.57	10.52
180.0	11.67	11.51	11.34	11.12	11.01	10.85	10.79	10.74	10.63
225.0	12.11	11.89	11.56	11.40	11.23	11.01	10.90	10.79	10.68
270.0	13.76	13.27	12.88	12.50	12.28	12.06	11.84	11.62	11.34
315.0	16.02	15.53	15.09	14.37	13.76	13.27	12.83	12.28	11.95
360.0	16.02	15.80	15.58	14.92	14.31	13.76	13.16	12.66	12.28
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	12.00	11.67	11.29	11.01	10.90	10.74	10.63	10.19	9.91
45.0	11.23	11.01	10.90	10.79	10.63	10.46	10.13	9.69	9.63
90.0	11.01	10.85	10.74	10.63	10.52	10.35	9.91	9.69	9.63
135.0	10.46	10.41	10.30	10.24	10.19	10.13	9.91	9.80	9.80
180.0	10.57	10.46	10.41	10.35	10.24	9.97	9.80	9.80	9.74
225.0	10.57	10.52	10.41	10.35	10.35	10.24	9.86	9.63	9.63
270.0	11.01	10.90	10.79	10.68	10.57	10.46	10.02	9.74	9.69
315.0	11.62	11.34	11.12	10.90	10.74	10.63	10.13	9.80	9.80
360.0	12.00	11.67	11.29	11.01	10.90	10.74	10.63	10.19	9.91

Intensity data(cd)

<i>C/γ</i> (°)	90.0
0.0	9.86
45.0	9.63
90.0	9.63
135.0	9.74
180.0	9.80
225.0	9.63
270.0	9.69
315.0	9.74
360.0	9.86