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## Nata

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LumCAT: 2-2530-L	
Luminaire: 92.70.135.00	
Report No: 220914-B010	Voltage(V): 34.7700
Test No: 220914-C010	Current(A): 0.4850
LampCAT: LUMILEDS LUXEON1205	Power (W): 16.8630
Lamp flux(lm): 2455.9	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 43	Width(mm): 43
Phm Type: C	Height(mm): 0

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## Photometric Results

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Lumens(lm): 2119.09  
Efficiency(%): 86.29%  
Lumens(lm)/Power(W): 125.67  
Central intensity(cd): 7185.137  
Maximum intensity(cd): 7185.137  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=23.7  
                                  [C90/270]Total=23.7  
Field angle(10%Imax): [C0/180]Total=60.5  
                                  [C90/270]Total=60.5  
Maximum s/h(1/2): C0\_180=0.39 C90\_270=0.39  
Maximum s/h(1/4): C0\_180=0.46 C90\_270=0.46  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 86.29%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 97.914%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7185.137	0.000	0	.000%	.000%
1.0	7126.728	6.848	6.848	.279%	.323%
2.0	6950.457	20.205	27.053	.823%	1.277%
3.0	6683.885	32.609	59.662	1.328%	2.815%
4.0	6368.165	43.689	103.351	1.779%	4.877%
5.0	6013.905	53.267	156.618	2.169%	7.391%
6.0	5637.985	61.234	217.852	2.493%	10.280%
7.0	5258.927	67.637	285.489	2.754%	13.472%
8.0	4898.468	72.695	358.183	2.960%	16.903%
9.0	4527.776	76.395	434.578	3.111%	20.508%
10.0	4167.541	78.689	513.267	3.204%	24.221%
11.0	3845.547	80.067	593.335	3.260%	28.000%
12.0	3541.778	80.754	674.089	3.288%	31.810%
13.0	3211.718	80.147	754.236	3.264%	35.592%
14.0	2931.403	78.631	832.867	3.202%	39.303%
15.0	2700.234	77.314	910.181	3.148%	42.952%
16.0	2463.537	75.664	985.844	3.081%	46.522%
17.0	2251.265	73.422	1059.267	2.990%	49.987%
18.0	2074.546	71.323	1130.59	2.904%	53.353%
19.0	1912.167	69.361	1199.95	2.824%	56.626%
20.0	1764.428	67.292	1267.242	2.740%	59.801%
21.0	1628.416	65.149	1332.392	2.653%	62.876%
22.0	1514.288	63.154	1395.546	2.572%	65.856%
23.0	1392.190	60.986	1456.532	2.483%	68.734%
24.0	1309.350	59.065	1515.597	2.405%	71.521%
25.0	1210.960	57.306	1572.903	2.333%	74.225%
26.0	1120.949	55.045	1627.948	2.241%	76.823%
27.0	1037.691	52.812	1680.76	2.150%	79.315%
28.0	939.562	50.060	1730.82	2.038%	81.678%
29.0	840.656	46.576	1777.395	1.897%	83.875%
30.0	743.580	42.774	1820.169	1.742%	85.894%
31.0	638.340	38.457	1858.626	1.566%	87.709%
32.0	542.108	33.818	1892.445	1.377%	89.305%
33.0	456.019	29.405	1921.85	1.197%	90.692%
34.0	376.772	25.203	1947.053	1.026%	91.882%
35.0	291.153	20.743	1967.796	.845%	92.860%
36.0	221.848	16.334	1984.13	.665%	93.631%
37.0	177.840	13.036	1997.165	.531%	94.246%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	123.061	10.044	2007.209	.409%	94.720%
39.0	92.378	7.354	2014.563	.299%	95.067%
40.0	72.338	5.745	2020.307	.234%	95.338%
41.0	61.254	4.757	2025.065	.194%	95.563%
42.0	54.330	4.199	2029.264	.171%	95.761%
43.0	48.714	3.817	2033.081	.155%	95.941%
44.0	43.881	3.495	2036.576	.142%	96.106%
45.0	39.893	3.220	2039.795	.131%	96.258%
46.0	36.793	2.999	2042.794	.122%	96.400%
47.0	34.052	2.818	2045.612	.115%	96.533%
48.0	31.759	2.660	2048.272	.108%	96.658%
49.0	29.600	2.520	2050.792	.103%	96.777%
50.0	27.748	2.391	2053.183	.097%	96.890%
51.0	26.254	2.285	2055.468	.093%	96.998%
52.0	24.977	2.198	2057.666	.090%	97.101%
53.0	23.931	2.127	2059.794	.087%	97.202%
54.0	23.244	2.079	2061.873	.085%	97.300%
55.0	22.885	2.059	2063.932	.084%	97.397%
56.0	22.878	2.068	2066	.084%	97.495%
57.0	23.214	2.107	2068.107	.086%	97.594%
58.0	23.804	2.174	2070.282	.089%	97.697%
59.0	24.476	2.257	2072.539	.092%	97.803%
60.0	24.954	2.335	2074.874	.095%	97.914%
61.0	25.141	2.391	2077.265	.097%	98.026%
62.0	24.857	2.409	2079.674	.098%	98.140%
63.0	23.894	2.371	2082.045	.097%	98.252%
64.0	22.549	2.279	2084.324	.093%	98.359%
65.0	20.667	2.139	2086.463	.087%	98.460%
66.0	18.942	1.976	2088.439	.080%	98.554%
67.0	17.231	1.819	2090.258	.074%	98.639%
68.0	15.827	1.675	2091.932	.068%	98.718%
69.0	14.819	1.563	2093.496	.064%	98.792%
70.0	14.057	1.483	2094.979	.060%	98.862%
71.0	13.519	1.425	2096.404	.058%	98.930%
72.0	13.131	1.386	2097.79	.056%	98.995%
73.0	12.877	1.360	2099.15	.055%	99.059%
74.0	12.645	1.342	2100.492	.055%	99.122%
75.0	12.391	1.323	2101.814	.054%	99.185%

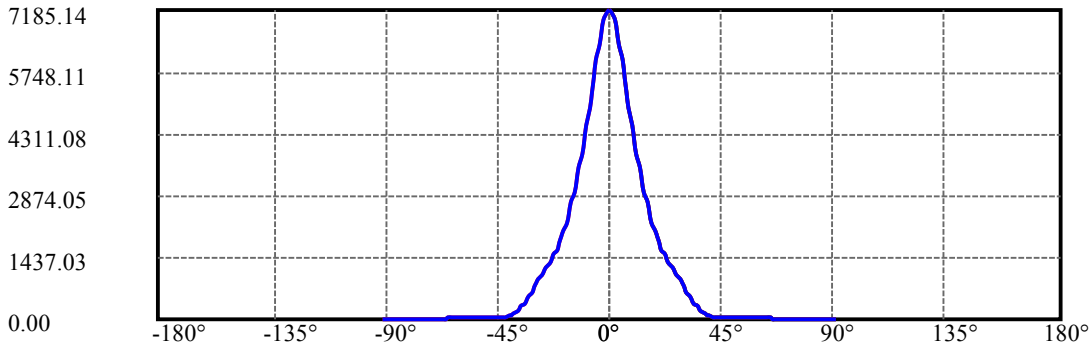
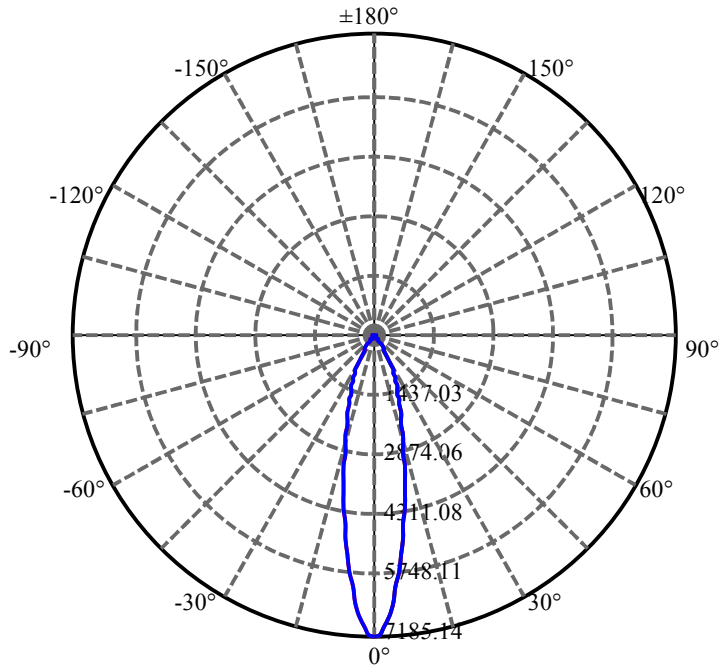
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	12.167	1.304	2103.118	.053%	99.246%
77.0	11.943	1.285	2104.403	.052%	99.307%
78.0	11.674	1.264	2105.668	.051%	99.367%
79.0	11.383	1.239	2106.907	.050%	99.425%
80.0	11.092	1.212	2108.118	.049%	99.482%
81.0	10.815	1.185	2109.303	.048%	99.538%
82.0	10.569	1.160	2110.463	.047%	99.593%
83.0	10.337	1.136	2111.599	.046%	99.647%
84.0	10.136	1.115	2112.714	.045%	99.699%
85.0	9.964	1.097	2113.811	.045%	99.751%
86.0	9.814	1.081	2114.892	.044%	99.802%
87.0	9.673	1.066	2115.959	.043%	99.852%
88.0	9.553	1.053	2117.012	.043%	99.902%
89.0	9.463	1.042	2118.054	.042%	99.951%
90.0	9.404	1.034	2119.089	.042%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1820.17	74.12%	85.89%
0-40	2020.31	82.27%	95.34%
0-60	2074.87	84.49%	97.91%
0-90	2118.05	86.25%	99.95%
0-120	2118.05	86.25%	99.95%
0-180	2119.09	86.29%	100.00%
60-90	45.52	1.85%	2.15%
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%
0-27.29	1695.27	69.03%	80.00%

ZONAL LUMEN SUMMARY

0-10	513.27
10-20	753.97
20-30	552.93
30-40	200.14
40-50	32.88
50-60	21.69
60-70	20.10
70-80	13.14
80-90	9.94
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: —————

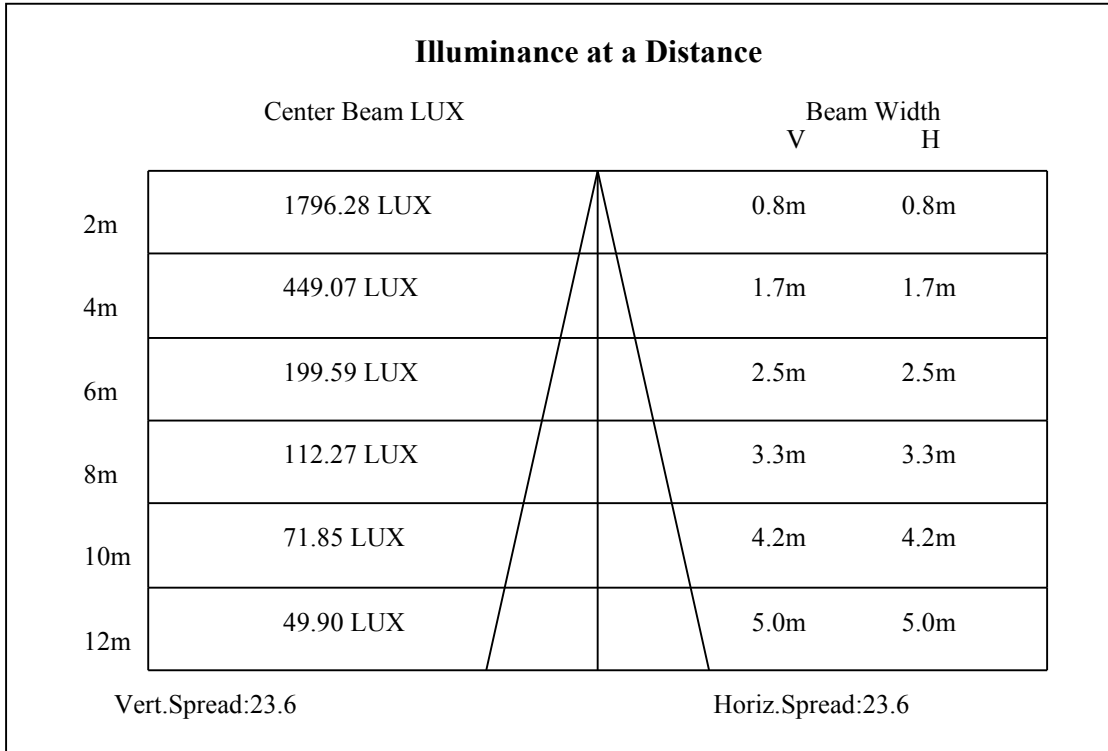
C90/C270: —————

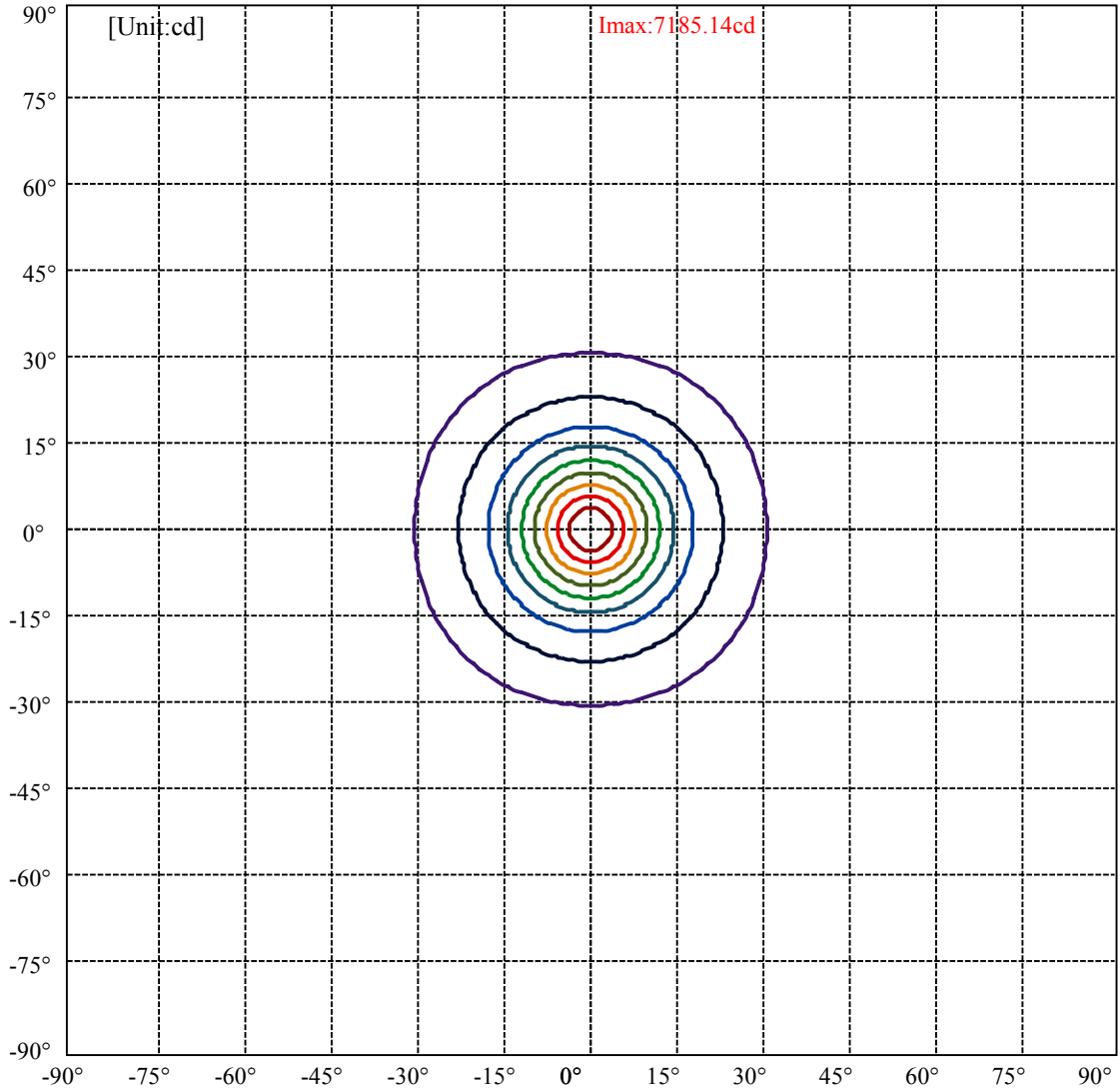
Field angle(10%Imax):C0/180Left:30.2 Right:30.2

:C90/270Left:30.2 Right:30.2

Beam Angle(50%Imax):C0/180Left:11.8 Right:11.8

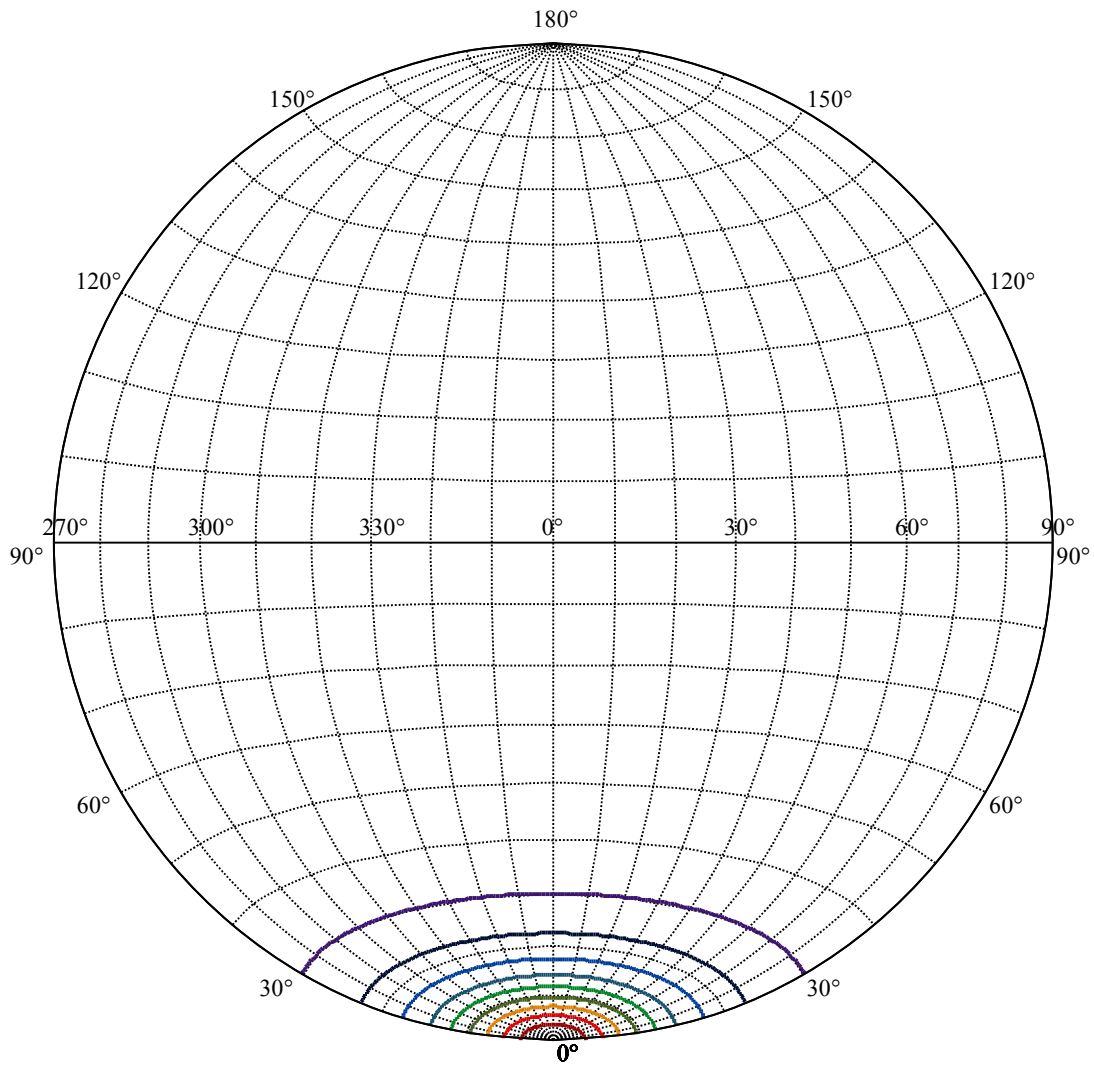
:C90/270Left:11.8 Right:11.8





(10%Imax) 718.514	—
(20%Imax) 1437.03	—
(30%Imax) 2155.54	—
(40%Imax) 2874.05	—
(50%Imax) 3592.57	—
(60%Imax) 4311.08	—
(70%Imax) 5029.6	—
(80%Imax) 5748.11	—
(90%Imax) 6466.62	—





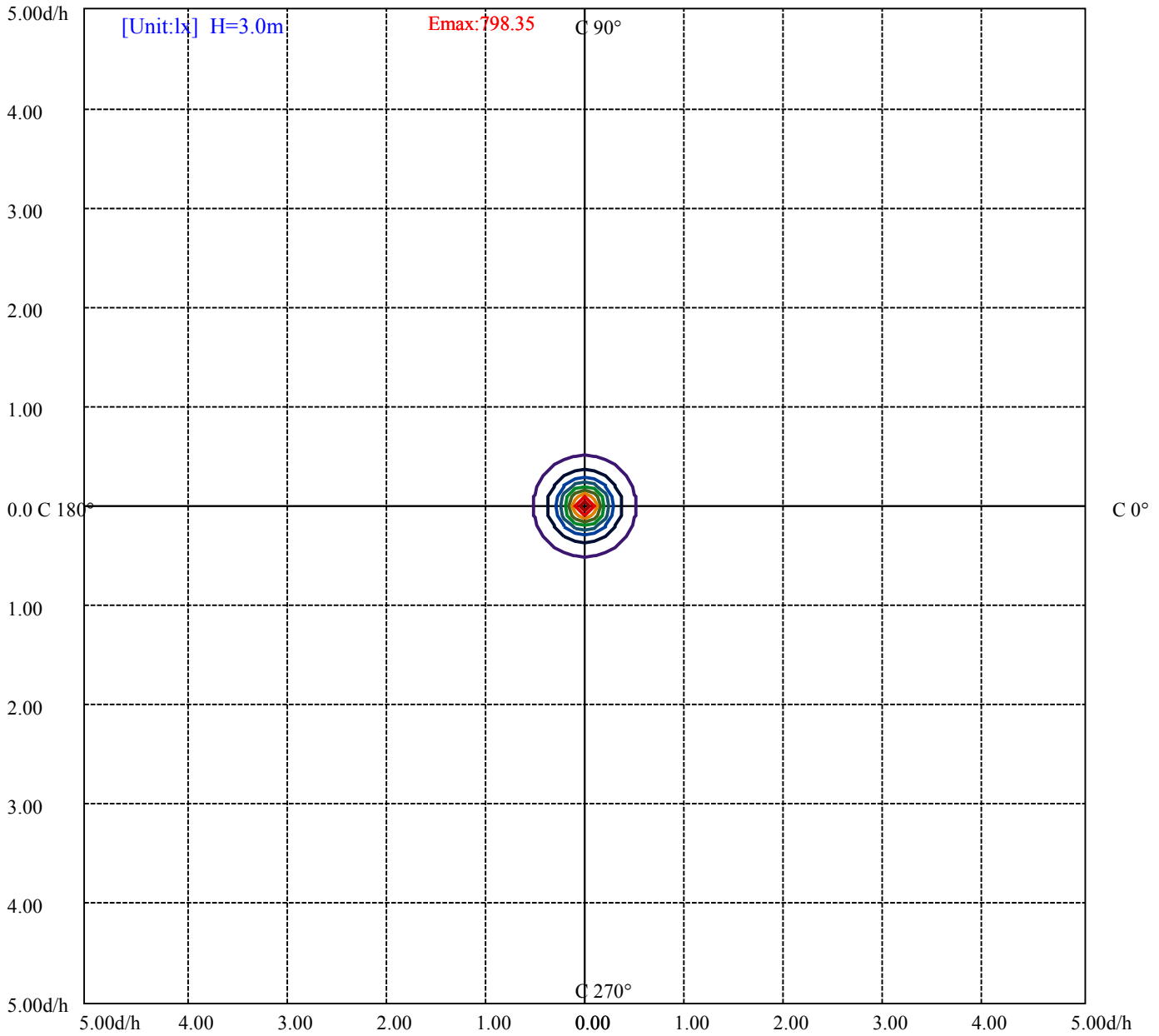
House

[Unit:cd]

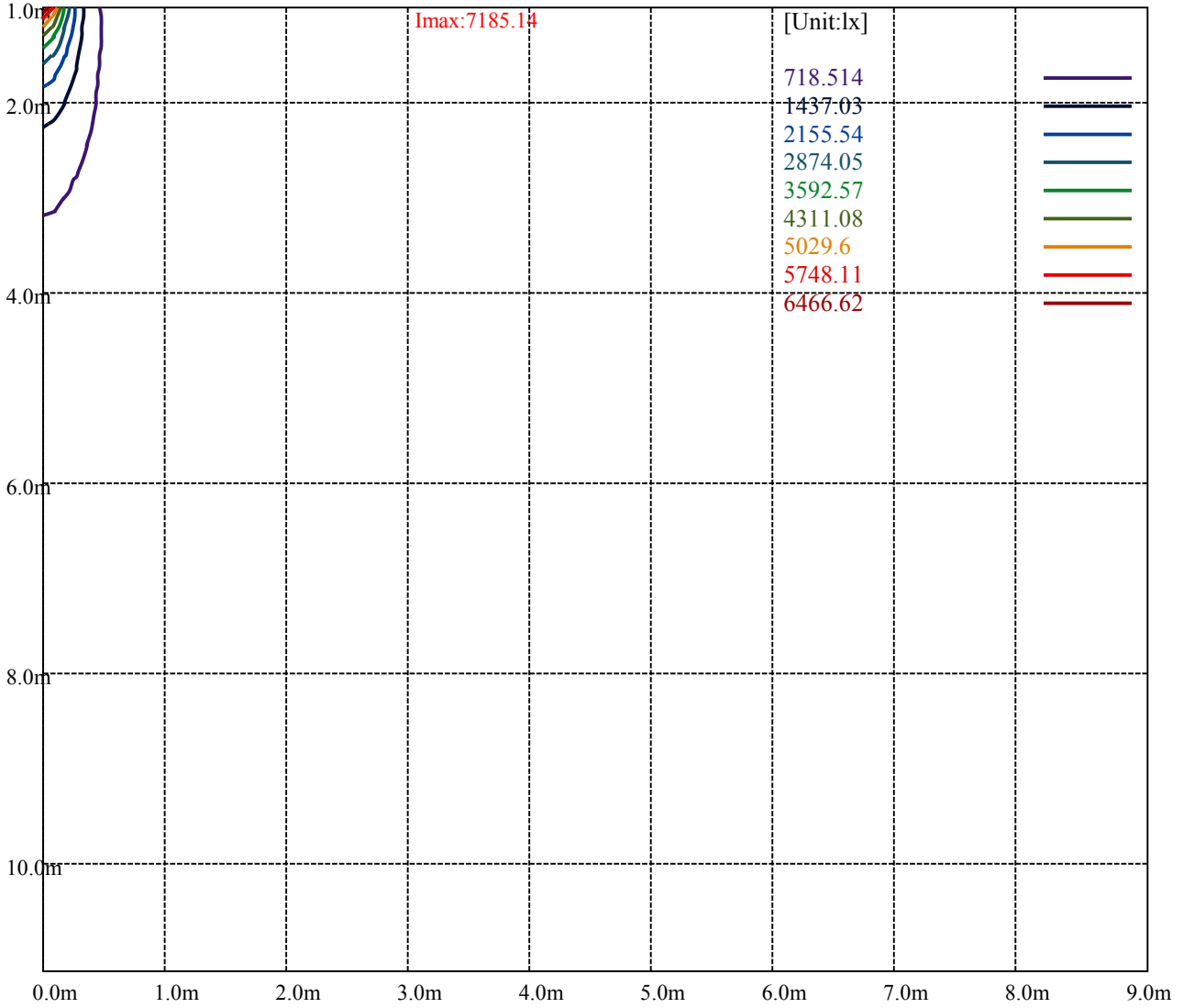
Road

**Imax:7185.14**

(10%Imax) 718.514	—
(20%Imax) 1437.03	—
(30%Imax) 2155.54	—
(40%Imax) 2874.05	—
(50%Imax) 3592.57	—
(60%Imax) 4311.08	—
(70%Imax) 5029.6	—
(80%Imax) 5748.11	—
(90%Imax) 6466.62	—



- (10%Emax) 79.83478
- (20%Emax) 159.67
- (30%Emax) 239.5045
- (40%Emax) 319.3389
- (50%Emax) 399.1733
- (60%Emax) 479.0089
- (70%Emax) 558.8433
- (80%Emax) 638.6778
- (90%Emax) 718.5134



Luminance Table

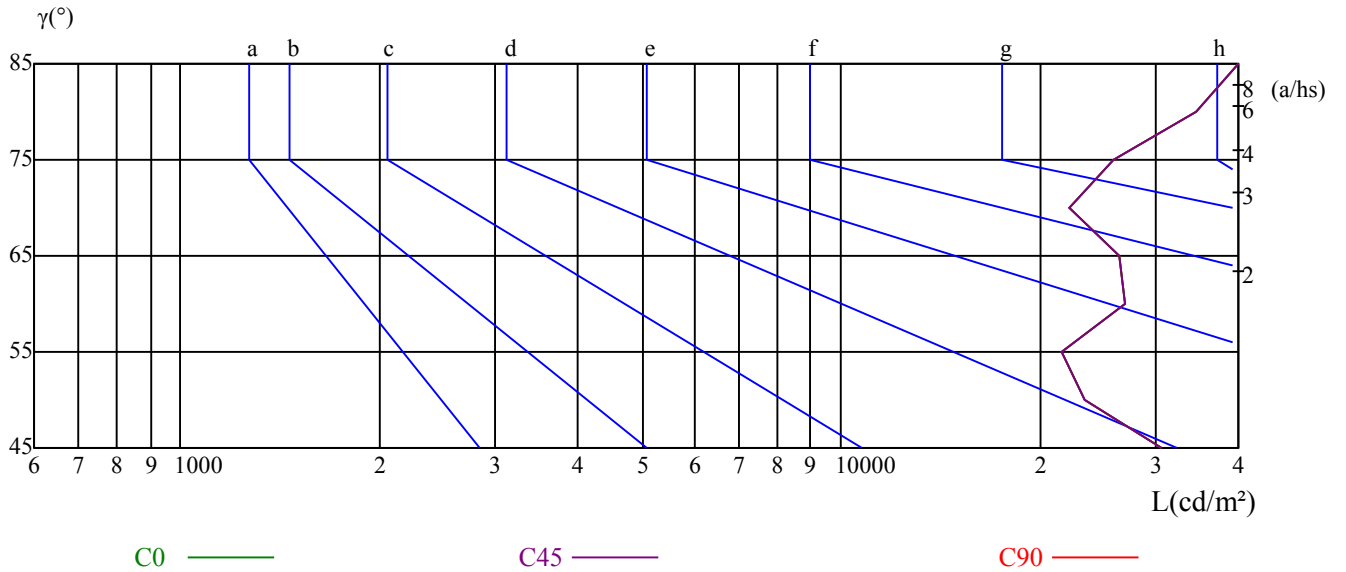
$\gamma$	45	50	55	60	65	70	75	80	85
C0	30512	23347	21579	26992	26448	22228	25893	34545	61829
C45	30512	23347	21579	26992	26448	22228	25893	34545	61829
C90	30512	23347	21579	26992	26448	22228	25893	34545	61829

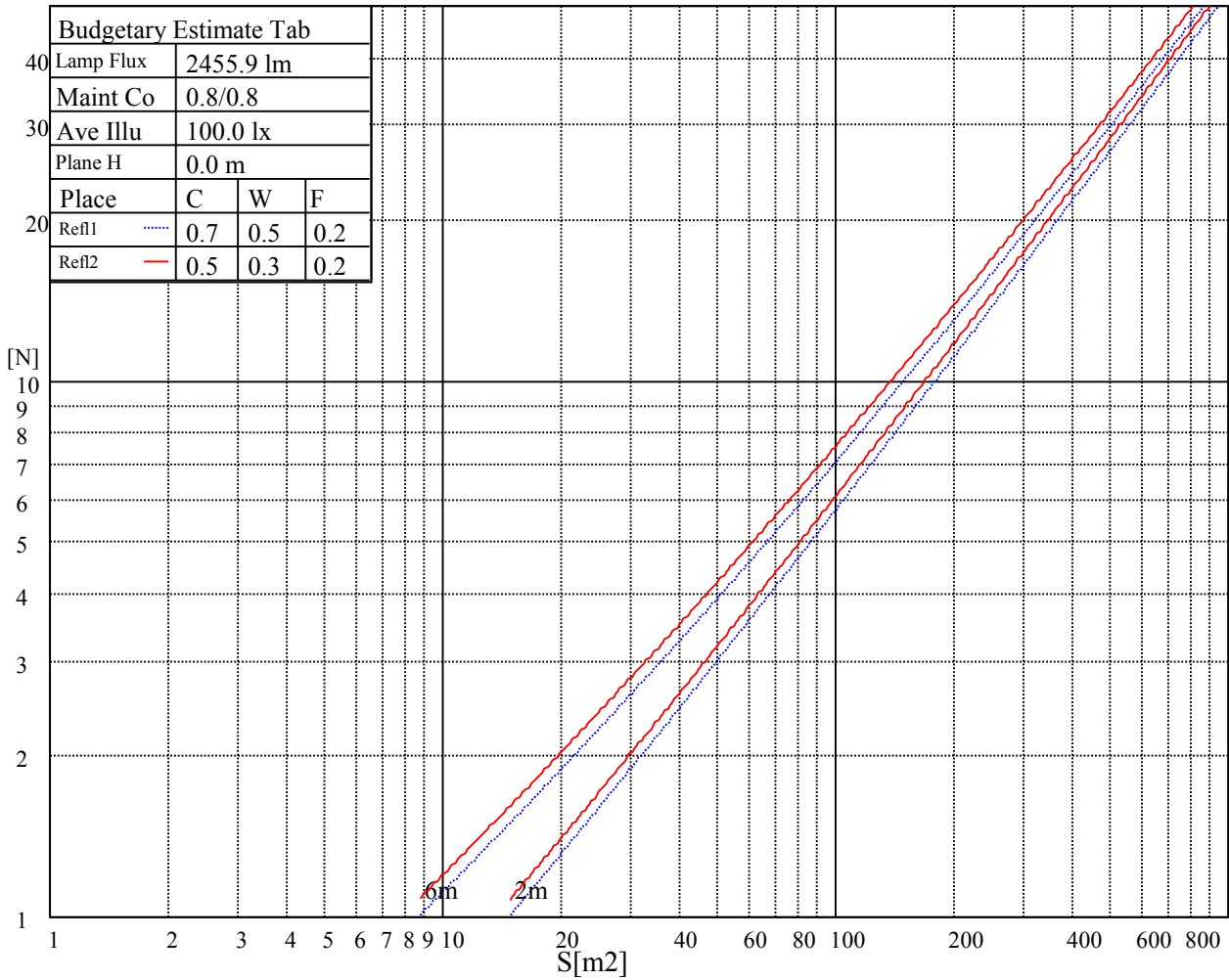
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
26448	26448	26448	25893	25893	25893	61829	61829	61829

Glare Table

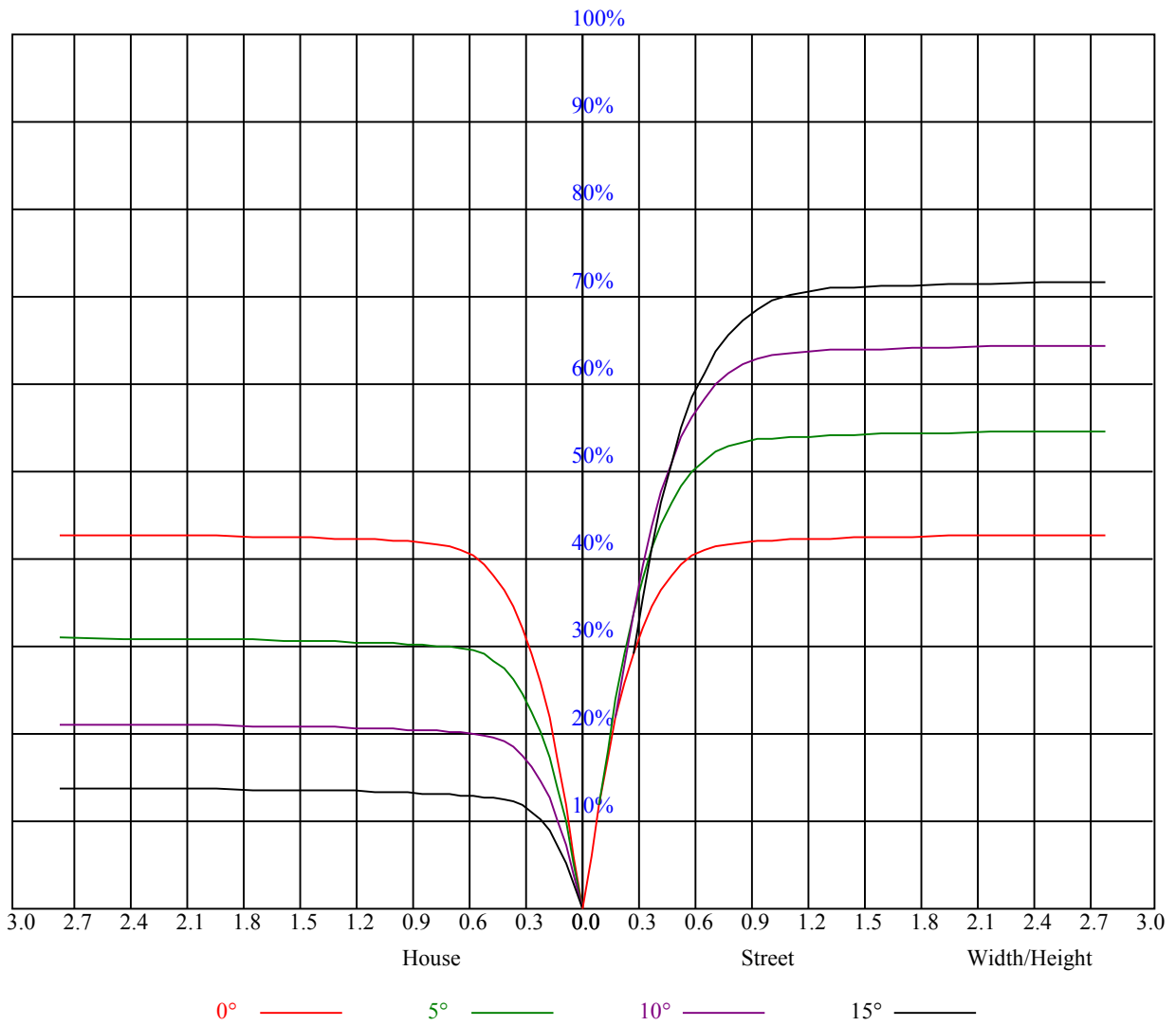
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.03	1.03	1.03	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.88	0.88	0.88	0.86
1	0.96	0.94	0.92	0.94	0.93	0.91	0.91	0.89	0.88	0.88	0.87	0.86	0.85	0.84	0.83	0.82
2	0.91	0.87	0.85	0.89	0.86	0.84	0.86	0.84	0.82	0.84	0.82	0.80	0.81	0.80	0.79	0.77
3	0.86	0.82	0.79	0.84	0.81	0.78	0.82	0.79	0.77	0.80	0.78	0.76	0.78	0.76	0.75	0.73
4	0.81	0.77	0.74	0.80	0.77	0.74	0.79	0.75	0.73	0.77	0.74	0.72	0.75	0.73	0.71	0.70
5	0.77	0.73	0.70	0.77	0.73	0.70	0.75	0.72	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.67
6	0.74	0.70	0.66	0.73	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.65	0.70	0.67	0.65	0.64
7	0.71	0.66	0.63	0.70	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.67	0.64	0.62	0.61
8	0.68	0.63	0.61	0.67	0.63	0.60	0.66	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.60	0.59
9	0.65	0.61	0.58	0.65	0.61	0.58	0.64	0.60	0.58	0.63	0.60	0.58	0.63	0.60	0.57	0.56
10	0.63	0.59	0.56	0.62	0.58	0.56	0.62	0.58	0.56	0.61	0.58	0.55	0.61	0.57	0.55	0.54



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	7152.42	7292.84	7300.01	7144.06	6903.25	6561.47	6219.68	5819.93	5462.61
45.0	7256.39	7095.06	6768.21	6459.89	6122.28	5679.51	5319.20	4977.42	4596.79
90.0	7105.22	6848.88	6540.55	6117.50	5766.15	5425.56	4981.60	4644.00	4303.40
135.0	7226.52	6976.15	6653.49	6321.26	5928.09	5573.75	5175.20	4794.57	4463.54
180.0	7152.42	6876.96	6577.00	6202.95	5802.01	5455.44	5105.29	4676.86	4335.07
225.0	7256.39	7298.22	7160.79	6931.34	6640.94	6234.62	5931.07	5536.11	5108.28
270.0	7105.22	7286.27	7314.35	7197.24	6941.49	6651.69	6269.87	5878.49	5528.94
315.0	7226.52	7339.45	7289.26	7096.85	6841.11	6529.20	6101.97	5744.05	5389.11
360.0	7152.42	7292.84	7300.01	7144.06	6903.25	6561.47	6219.68	5819.93	5462.61
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	5032.39	4698.97	4359.57	4075.75	3644.33	3352.74	3115.52	2770.74	2543.08
45.0	4216.76	3891.71	3548.13	3260.72	2964.94	2676.93	2480.94	2262.24	2065.06
90.0	3935.33	3588.16	3304.34	3005.57	2731.31	2512.61	2292.72	2119.44	1939.58
135.0	4094.87	3734.56	3438.18	3157.34	2836.47	2597.46	2400.27	2198.31	2005.90
180.0	4011.81	3628.20	3340.19	3076.08	2795.24	2546.07	2348.89	2151.10	1990.37
225.0	4802.94	4424.70	4062.60	3748.30	3449.53	3071.90	2854.40	2624.94	2391.91
270.0	5132.77	4760.51	4424.70	4097.26	3704.68	3411.89	3129.86	2845.43	2583.72
315.0	4995.34	4613.52	4286.67	3913.22	3567.25	3281.63	2979.28	2736.09	2490.50
360.0	5032.39	4698.97	4359.57	4075.75	3644.33	3352.74	3115.52	2770.74	2543.08
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2368.01	2143.93	1966.47	1807.53	1684.43	1569.11	1464.54	1342.05	1255.41
45.0	1904.32	1777.65	1628.27	1512.35	1413.75	1297.24	1215.97	1141.88	1054.04
90.0	1785.42	1660.53	1549.39	1423.91	1333.09	1186.27	1159.21	1072.45	984.19
135.0	1869.67	1730.44	1600.78	1490.24	1382.08	1293.05	1199.84	1116.78	1025.96
180.0	1830.83	1687.42	1572.10	1456.18	1346.23	1186.69	1177.85	1081.59	996.86
225.0	2187.55	2025.03	1861.90	1713.71	1596.60	1477.69	1377.90	1257.80	1190.52
270.0	2380.56	2173.21	1992.16	1849.35	1704.75	1587.63	1468.13	1360.57	1271.54
315.0	2270.01	2099.12	1944.36	1774.06	1653.36	1539.83	1411.36	1314.56	1189.08
360.0	2368.01	2143.93	1966.47	1807.53	1684.43	1569.11	1464.54	1342.05	1255.41
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1175.34	1080.33	990.70	898.09	781.57	685.37	595.14	484.60	399.75
45.0	955.45	864.03	750.50	656.09	552.71	452.93	377.04	304.14	220.01
90.0	879.74	783.18	673.42	570.70	480.59	386.66	302.29	235.19	176.93
135.0	938.12	818.61	718.23	620.24	506.70	421.26	344.18	314.30	195.33
180.0	901.97	792.62	688.05	593.70	488.54	397.36	320.45	243.25	185.65
225.0	1108.95	1027.93	924.74	818.85	724.98	619.88	520.39	434.05	352.12
270.0	1190.88	1095.27	1015.20	918.40	802.48	710.46	616.65	527.02	420.66
315.0	1151.08	1054.52	964.41	872.57	769.14	662.96	572.01	471.63	378.77
360.0	1175.34	1080.33	990.70	898.09	781.57	685.37	595.14	484.60	399.75
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	323.26	305.34	177.35	128.35	88.73	73.20	65.31	57.84	51.45
45.0	160.32	115.14	80.13	70.09	62.86	56.29	48.46	44.34	40.69
90.0	117.89	86.10	72.12	64.11	56.53	50.31	44.99	41.11	38.12
135.0	138.87	97.10	74.33	65.73	58.62	51.57	45.35	41.59	38.30
180.0	129.72	88.61	71.88	63.52	55.99	49.54	44.34	39.91	36.99
225.0	261.48	198.98	145.56	96.08	75.17	66.45	58.80	51.45	45.95
270.0	340.59	304.74	193.72	134.38	98.05	72.36	64.06	58.38	50.49
315.0	302.65	226.70	169.40	116.76	82.76	70.33	63.34	55.09	49.06
360.0	323.26	305.34	177.35	128.35	88.73	73.20	65.31	57.84	51.45



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	45.95	42.01	39.02	36.27	33.28	31.01	29.22	27.37	25.81
45.0	37.17	34.78	32.21	30.12	28.14	26.71	25.22	24.14	23.24
90.0	35.31	32.98	30.65	28.62	27.01	25.57	24.38	23.48	22.95
135.0	35.37	32.92	30.65	28.74	26.95	25.51	24.32	23.54	22.65
180.0	34.48	31.73	29.76	28.02	26.11	24.86	23.78	22.77	22.29
225.0	41.35	38.18	35.02	32.39	30.29	28.32	26.53	25.22	24.08
270.0	45.17	41.41	37.70	35.07	32.74	30.06	28.32	26.77	25.16
315.0	44.34	40.33	37.41	34.84	32.27	29.94	28.26	26.53	25.28
360.0	45.95	42.01	39.02	36.27	33.28	31.01	29.22	27.37	25.81
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	24.68	23.72	23.00	22.89	22.95	23.36	24.20	24.92	25.57
45.0	22.71	22.65	22.95	23.66	24.50	25.34	25.81	25.51	24.80
90.0	22.77	22.95	23.60	24.56	25.39	25.87	25.63	25.04	23.60
135.0	22.41	22.41	22.95	23.66	24.44	25.34	25.45	25.16	24.02
180.0	22.11	22.29	22.77	23.48	24.56	25.16	25.22	24.68	23.54
225.0	23.06	22.41	22.23	22.23	22.83	23.60	24.56	25.28	25.51
270.0	24.08	23.36	22.71	22.53	22.77	23.48	24.32	25.22	26.05
315.0	24.14	23.30	22.83	22.71	23.00	23.66	24.44	25.34	25.75
360.0	24.68	23.72	23.00	22.89	22.95	23.36	24.20	24.92	25.57
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	25.45	24.86	23.54	21.99	19.66	17.81	16.49	15.12	14.22
45.0	23.06	21.15	19.06	17.21	15.60	14.58	13.92	13.50	13.15
90.0	21.45	19.66	17.63	15.77	14.82	14.10	13.50	13.21	12.97
135.0	22.53	20.67	18.16	16.55	15.24	14.22	13.74	13.38	13.03
180.0	21.99	20.14	17.81	16.25	14.88	14.10	13.56	13.21	12.97
225.0	25.10	24.08	22.41	20.26	18.28	16.67	15.00	14.16	13.62
270.0	26.11	25.45	23.84	22.23	20.26	17.81	16.37	15.18	14.16
315.0	25.45	24.38	22.89	21.27	19.12	17.33	15.95	14.70	14.04
360.0	25.45	24.86	23.54	21.99	19.66	17.81	16.49	15.12	14.22
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	13.68	13.32	13.03	12.79	12.61	12.37	12.13	11.83	11.53
45.0	12.91	12.67	12.49	12.19	12.01	11.77	11.35	11.11	10.88
90.0	12.67	12.49	12.31	12.07	11.77	11.53	11.23	10.93	10.64
135.0	12.79	12.67	12.43	12.13	11.89	11.65	11.35	10.99	10.70
180.0	12.67	12.49	12.25	12.07	11.77	11.53	11.23	10.93	10.64
225.0	13.21	12.91	12.73	12.43	12.25	12.07	11.89	11.59	11.29
270.0	13.62	13.32	13.03	12.79	12.61	12.37	12.19	11.89	11.59
315.0	13.50	13.15	12.91	12.67	12.43	12.25	12.01	11.77	11.47
360.0	13.68	13.32	13.03	12.79	12.61	12.37	12.13	11.83	11.53
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	11.23	10.93	10.70	10.46	10.28	10.16	9.98	9.80	9.68
45.0	10.52	10.34	10.16	9.98	9.86	9.68	9.50	9.38	9.32
90.0	10.34	10.22	9.98	9.80	9.62	9.50	9.38	9.32	9.26
135.0	10.46	10.22	10.04	9.86	9.74	9.62	9.50	9.38	9.38
180.0	10.40	10.16	9.98	9.86	9.68	9.56	9.44	9.38	9.38
225.0	10.99	10.76	10.46	10.22	9.98	9.80	9.68	9.56	9.44
270.0	11.35	11.05	10.76	10.52	10.28	10.10	9.98	9.80	9.62
315.0	11.23	10.88	10.64	10.40	10.28	10.10	9.92	9.80	9.62
360.0	11.23	10.93	10.70	10.46	10.28	10.16	9.98	9.80	9.68

Intensity data(cd)

C/ $\gamma$ (°)	90.0
0.0	9.50
45.0	9.32
90.0	9.32
135.0	9.38
180.0	9.38
225.0	9.38
270.0	9.44
315.0	9.50
360.0	9.50