



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

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## Nata

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LumCAT: 1-1060-N	
Luminaire: 92.70.361.000	
Report No: 220519-B028	Voltage(V): 37.1700
Test No: 220519-C028	Current(A): 0.3700
LampCAT: Bridgelux C10-(30C2000C)	Power (W): 13.7520
Lamp flux(lm): 1425.8	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): 1229.14  
Efficiency(%): 86.21%  
Lumens(lm)/Power(W): 89.38  
Central intensity(cd): 7742.930  
Maximum intensity(cd): 7742.930  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=16.3  
                                  [C90/270]Total=16.3  
Field angle(10%Imax): [C0/180]Total=43.2  
                                  [C90/270]Total=43.2  
Maximum s/h(1/2): C0\_180=0.28 C90\_270=0.28  
Maximum s/h(1/4): C0\_180=0.31 C90\_270=0.31  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 86.21%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.282%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7742.930	0.000	0	.000%	.000%
1.0	7671.451	7.375	7.375	.517%	.600%
2.0	7443.045	21.694	29.069	1.522%	2.365%
3.0	7065.183	34.699	63.768	2.434%	5.188%
4.0	6578.197	45.669	109.437	3.203%	8.904%
5.0	5935.480	53.833	163.27	3.776%	13.283%
6.0	5278.646	58.933	222.203	4.133%	18.078%
7.0	4583.197	61.212	283.416	4.293%	23.058%
8.0	3956.240	61.115	344.531	4.286%	28.030%
9.0	3352.287	59.232	403.762	4.154%	32.849%
10.0	2860.147	56.220	459.983	3.943%	37.423%
11.0	2477.355	53.333	513.315	3.741%	41.762%
12.0	2163.428	50.730	564.046	3.558%	45.890%
13.0	1911.197	48.356	612.401	3.391%	49.824%
14.0	1697.953	46.197	658.598	3.240%	53.582%
15.0	1524.819	44.244	702.842	3.103%	57.182%
16.0	1370.291	42.421	745.263	2.975%	60.633%
17.0	1243.786	40.708	785.971	2.855%	63.945%
18.0	1120.673	38.985	824.956	2.734%	67.117%
19.0	1026.428	37.355	862.311	2.620%	70.156%
20.0	922.032	35.662	897.974	2.501%	73.057%
21.0	824.291	33.533	931.506	2.352%	75.785%
22.0	743.573	31.507	963.013	2.210%	78.349%
23.0	661.278	29.478	992.491	2.067%	80.747%
24.0	589.223	27.340	1019.831	1.918%	82.971%
25.0	522.210	25.272	1045.103	1.772%	85.027%
26.0	454.720	23.061	1068.163	1.617%	86.904%
27.0	389.208	20.647	1088.81	1.448%	88.583%
28.0	337.783	18.406	1107.216	1.291%	90.081%
29.0	269.269	15.882	1123.098	1.114%	91.373%
30.0	218.218	13.162	1136.26	.923%	92.444%
31.0	170.983	10.831	1147.091	.760%	93.325%
32.0	120.761	8.358	1155.449	.586%	94.005%
33.0	91.616	6.257	1161.706	.439%	94.514%
34.0	70.830	4.916	1166.622	.345%	94.914%
35.0	58.633	4.021	1170.643	.282%	95.241%
36.0	50.805	3.485	1174.127	.244%	95.525%
37.0	44.867	3.120	1177.248	.219%	95.778%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	39.175	2.805	1180.053	.197%	96.007%
39.0	34.104	2.501	1182.554	.175%	96.210%
40.0	30.086	2.239	1184.793	.157%	96.392%
41.0	26.657	2.021	1186.813	.142%	96.557%
42.0	23.528	1.823	1188.637	.128%	96.705%
43.0	21.070	1.652	1190.289	.116%	96.839%
44.0	19.121	1.517	1191.806	.106%	96.963%
45.0	17.358	1.402	1193.208	.098%	97.077%
46.0	16.036	1.306	1194.514	.092%	97.183%
47.0	14.849	1.228	1195.742	.086%	97.283%
48.0	13.878	1.161	1196.903	.081%	97.378%
49.0	13.019	1.105	1198.008	.077%	97.467%
50.0	12.242	1.053	1199.061	.074%	97.553%
51.0	11.629	1.010	1200.071	.071%	97.635%
52.0	11.092	0.975	1201.046	.068%	97.715%
53.0	10.614	0.944	1201.99	.066%	97.791%
54.0	10.180	0.917	1202.907	.064%	97.866%
55.0	9.829	0.893	1203.8	.063%	97.939%
56.0	9.493	0.873	1204.673	.061%	98.010%
57.0	9.224	0.856	1205.529	.060%	98.079%
58.0	8.985	0.842	1206.371	.059%	98.148%
59.0	8.784	0.831	1207.201	.058%	98.215%
60.0	8.612	0.822	1208.023	.058%	98.282%
61.0	8.455	0.814	1208.838	.057%	98.349%
62.0	8.328	0.809	1209.646	.057%	98.414%
63.0	8.216	0.805	1210.451	.056%	98.480%
64.0	8.089	0.800	1211.251	.056%	98.545%
65.0	7.977	0.795	1212.046	.056%	98.610%
66.0	7.910	0.793	1212.839	.056%	98.674%
67.0	7.783	0.789	1213.628	.055%	98.738%
68.0	7.678	0.783	1214.411	.055%	98.802%
69.0	7.544	0.777	1215.188	.054%	98.865%
70.0	7.394	0.767	1215.955	.054%	98.928%
71.0	7.208	0.755	1216.71	.053%	98.989%
72.0	7.051	0.741	1217.451	.052%	99.049%
73.0	6.916	0.730	1218.181	.051%	99.109%
74.0	6.760	0.719	1218.9	.050%	99.167%
75.0	6.603	0.706	1219.606	.050%	99.225%

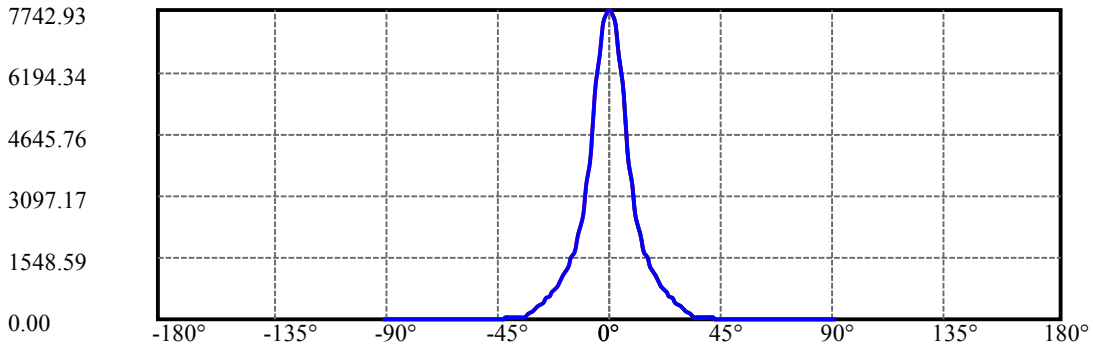
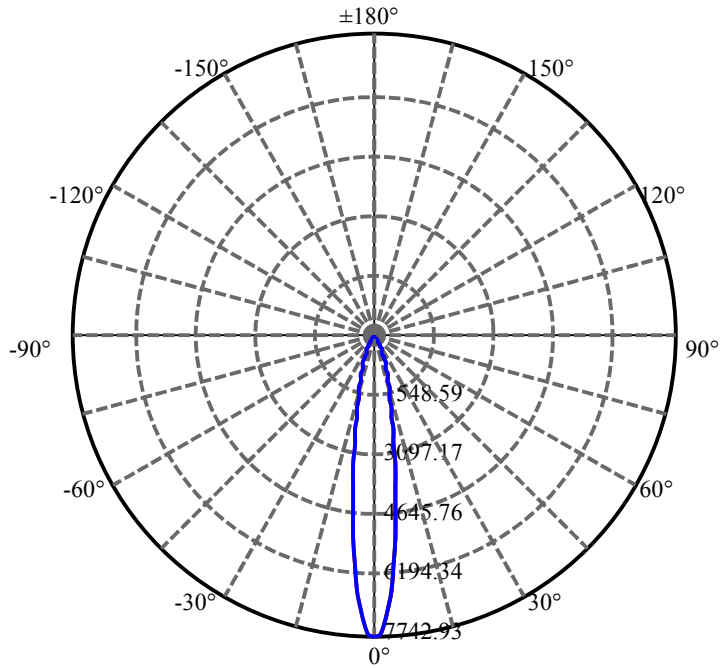
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	6.513	0.696	1220.303	.049%	99.281%
77.0	6.416	0.689	1220.992	.048%	99.337%
78.0	6.304	0.681	1221.673	.048%	99.393%
79.0	6.207	0.672	1222.345	.047%	99.447%
80.0	6.102	0.664	1223.009	.047%	99.501%
81.0	6.005	0.655	1223.663	.046%	99.555%
82.0	5.901	0.646	1224.309	.045%	99.607%
83.0	5.818	0.637	1224.946	.045%	99.659%
84.0	5.691	0.627	1225.573	.044%	99.710%
85.0	5.602	0.616	1226.19	.043%	99.760%
86.0	5.505	0.607	1226.797	.043%	99.810%
87.0	5.408	0.597	1227.394	.042%	99.858%
88.0	5.325	0.588	1227.982	.041%	99.906%
89.0	5.266	0.581	1228.562	.041%	99.953%
90.0	5.206	0.574	1229.137	.040%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1136.26	79.69%	92.44%
0-40	1184.79	83.10%	96.39%
0-60	1208.02	84.73%	98.28%
0-90	1228.56	86.17%	99.95%
0-120	1228.56	86.17%	99.95%
0-180	1229.14	86.21%	100.00%
60-90	21.36	1.50%	1.74%
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%
0-22.69	983.31	68.96%	80.00%

ZONAL LUMEN SUMMARY

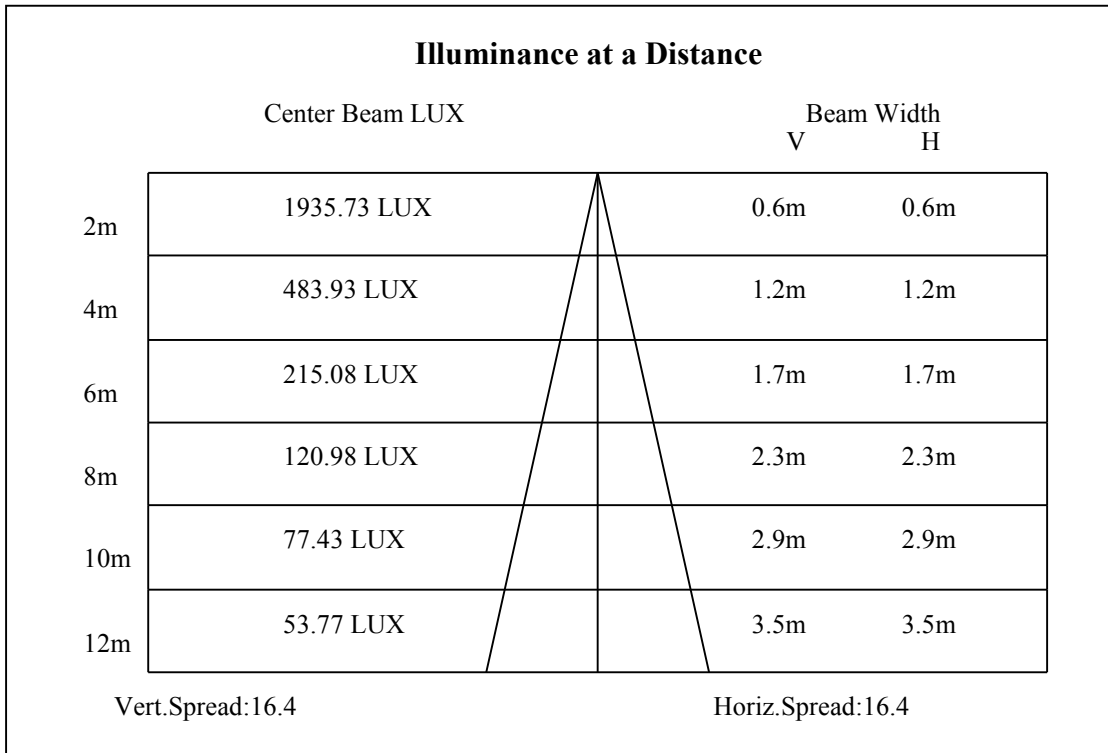
0-10	459.98
10-20	437.99
20-30	238.29
30-40	48.53
40-50	14.27
50-60	8.96
60-70	7.93
70-80	7.05
80-90	5.55
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

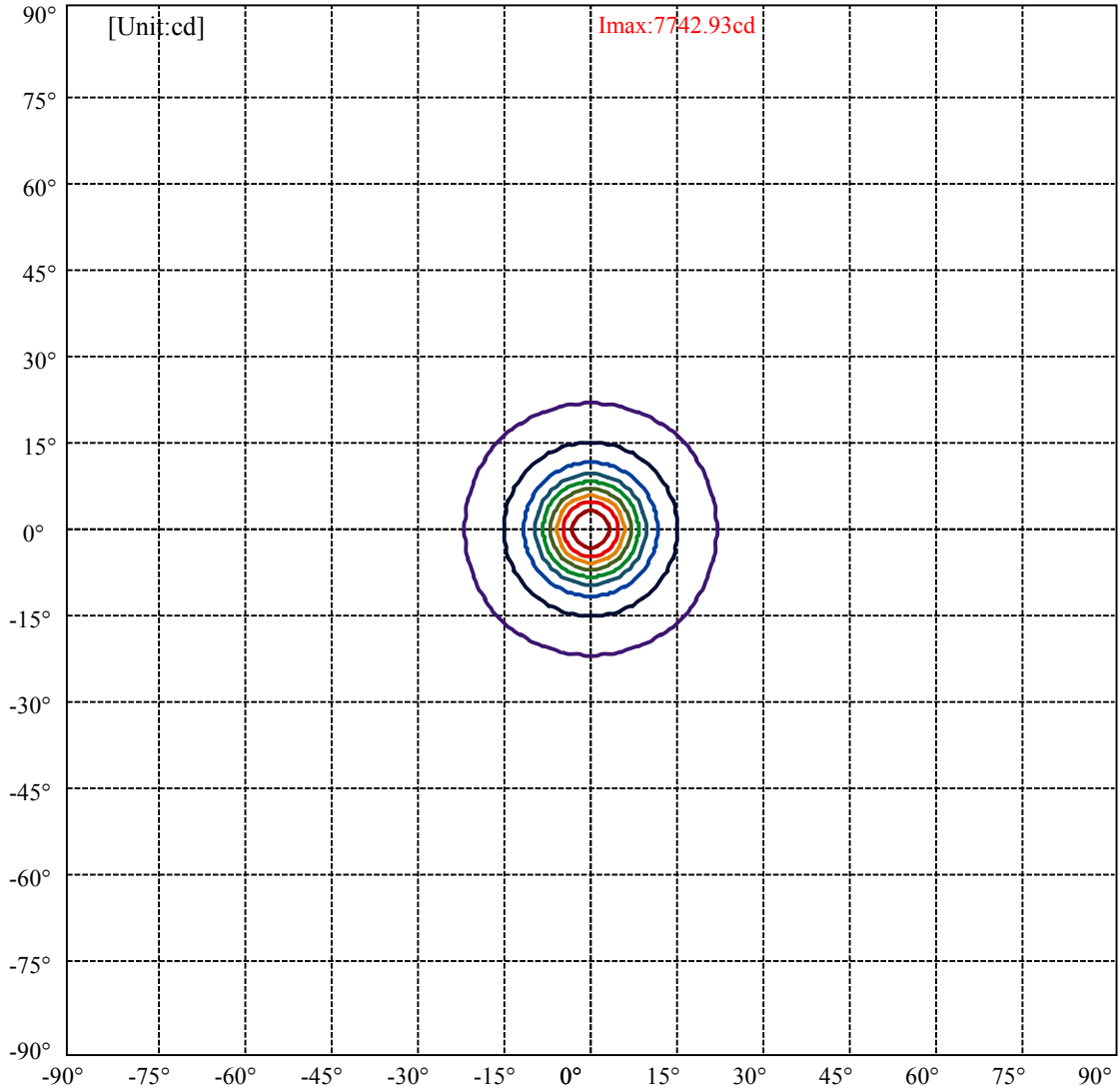


C0(Max): —————  
C0/C180: —————  
C90/C270: —————

Field angle(10%Imax):C0/180Left:21.6 Right:21.6  
:C90/270Left:21.6 Right:21.6

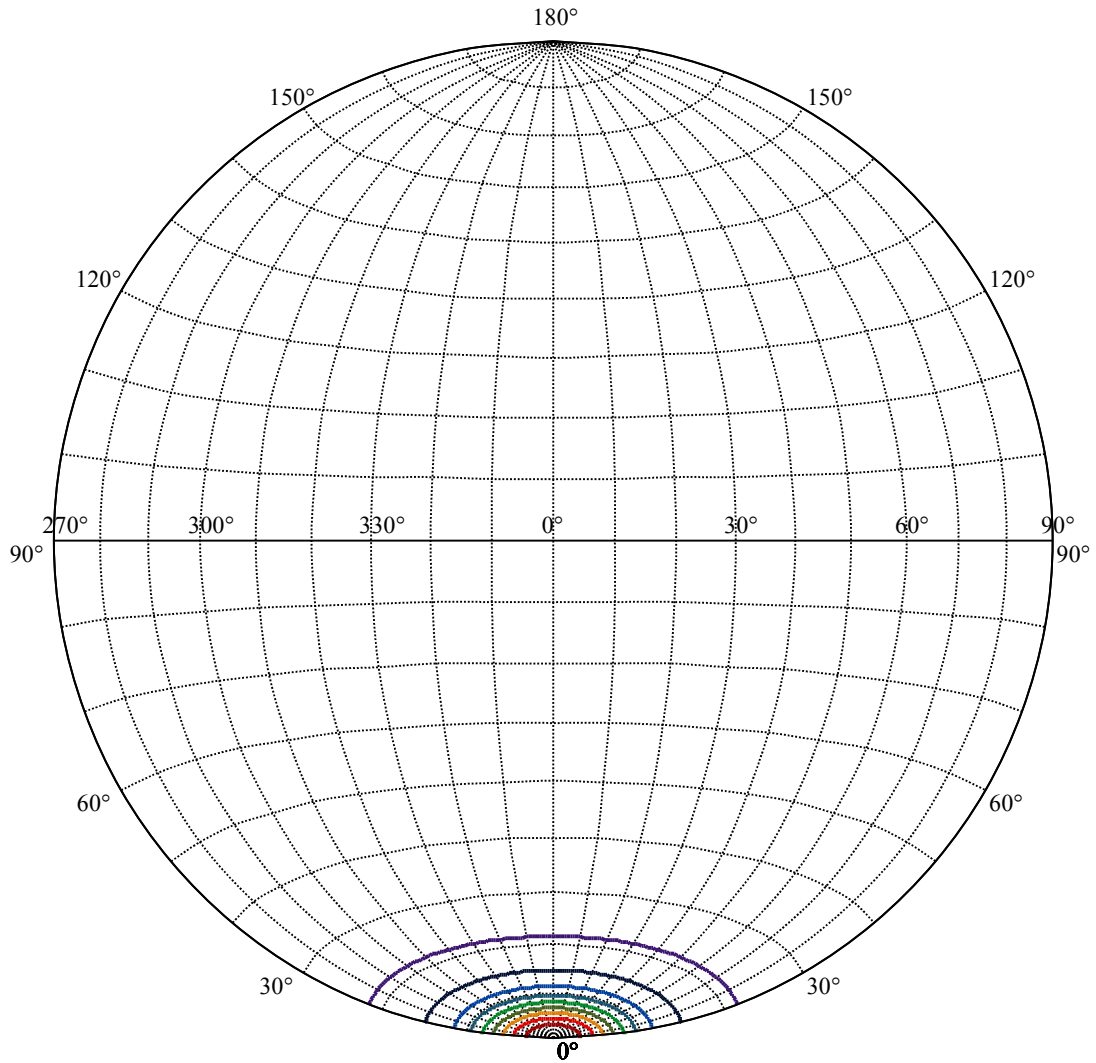
Beam Angle(50%Imax):C0/180Left:8.1 Right:8.1  
:C90/270Left:8.1 Right:8.1





(10%Imax) 774.293	—
(20%Imax) 1548.59	—
(30%Imax) 2322.88	—
(40%Imax) 3097.17	—
(50%Imax) 3871.47	—
(60%Imax) 4645.76	—
(70%Imax) 5420.05	—
(80%Imax) 6194.34	—
(90%Imax) 6968.64	—





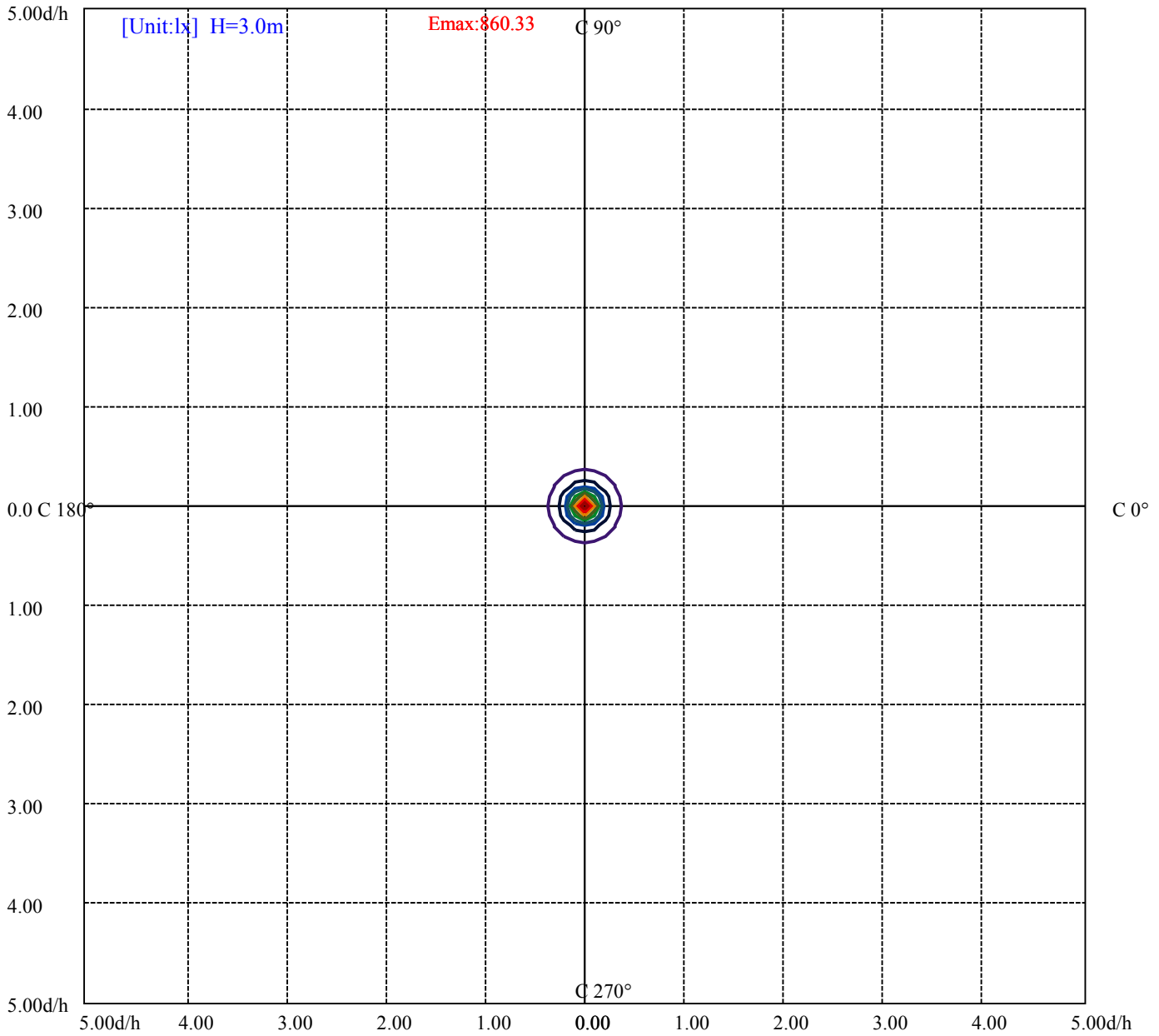
House

[Unit:cd]

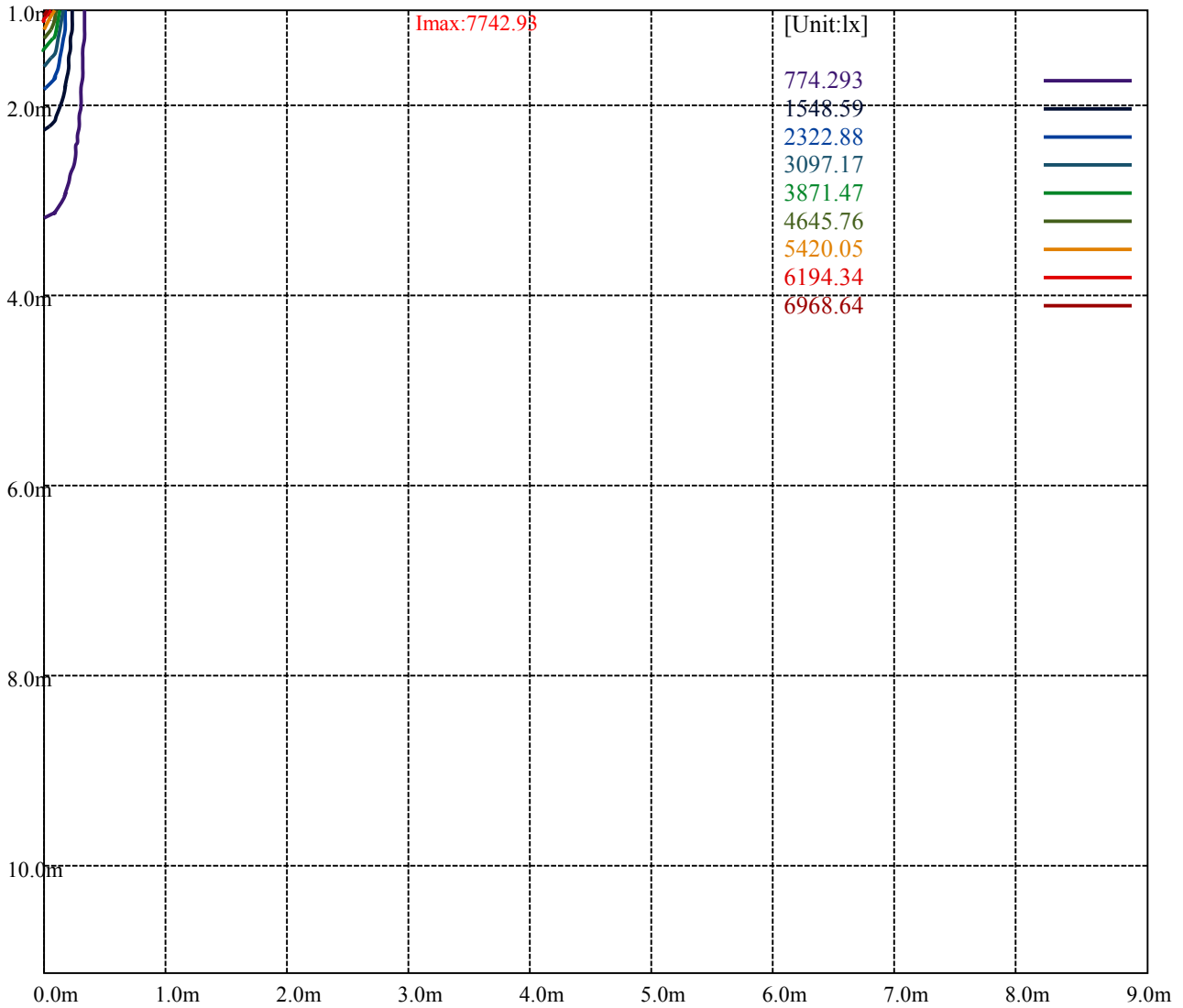
Road

Imax:7742.93

(10%Imax)	774.293	—
(20%Imax)	1548.59	—
(30%Imax)	2322.88	—
(40%Imax)	3097.17	—
(50%Imax)	3871.47	—
(60%Imax)	4645.76	—
(70%Imax)	5420.05	—
(80%Imax)	6194.34	—
(90%Imax)	6968.64	—



(10%Emax) 86.03244	—
(20%Emax) 172.0644	—
(30%Emax) 258.0978	—
(40%Emax) 344.13	—
(50%Emax) 430.1622	—
(60%Emax) 516.1945	—
(70%Emax) 602.2267	—
(80%Emax) 688.26	—
(90%Emax) 774.2922	—



Luminance Table

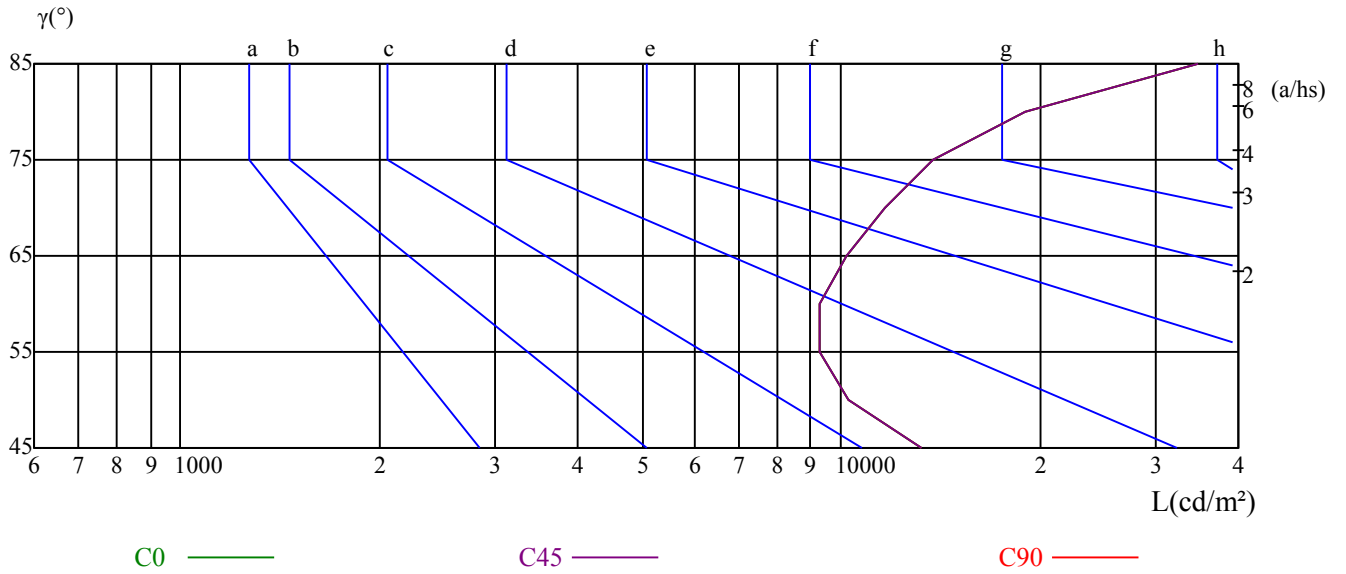
$\gamma$	45	50	55	60	65	70	75	80	85
C0	13276	10300	9268	9315	10208	11693	13797	19006	34761
C45	13276	10300	9268	9315	10208	11693	13797	19006	34761
C90	13276	10300	9268	9315	10208	11693	13797	19006	34761

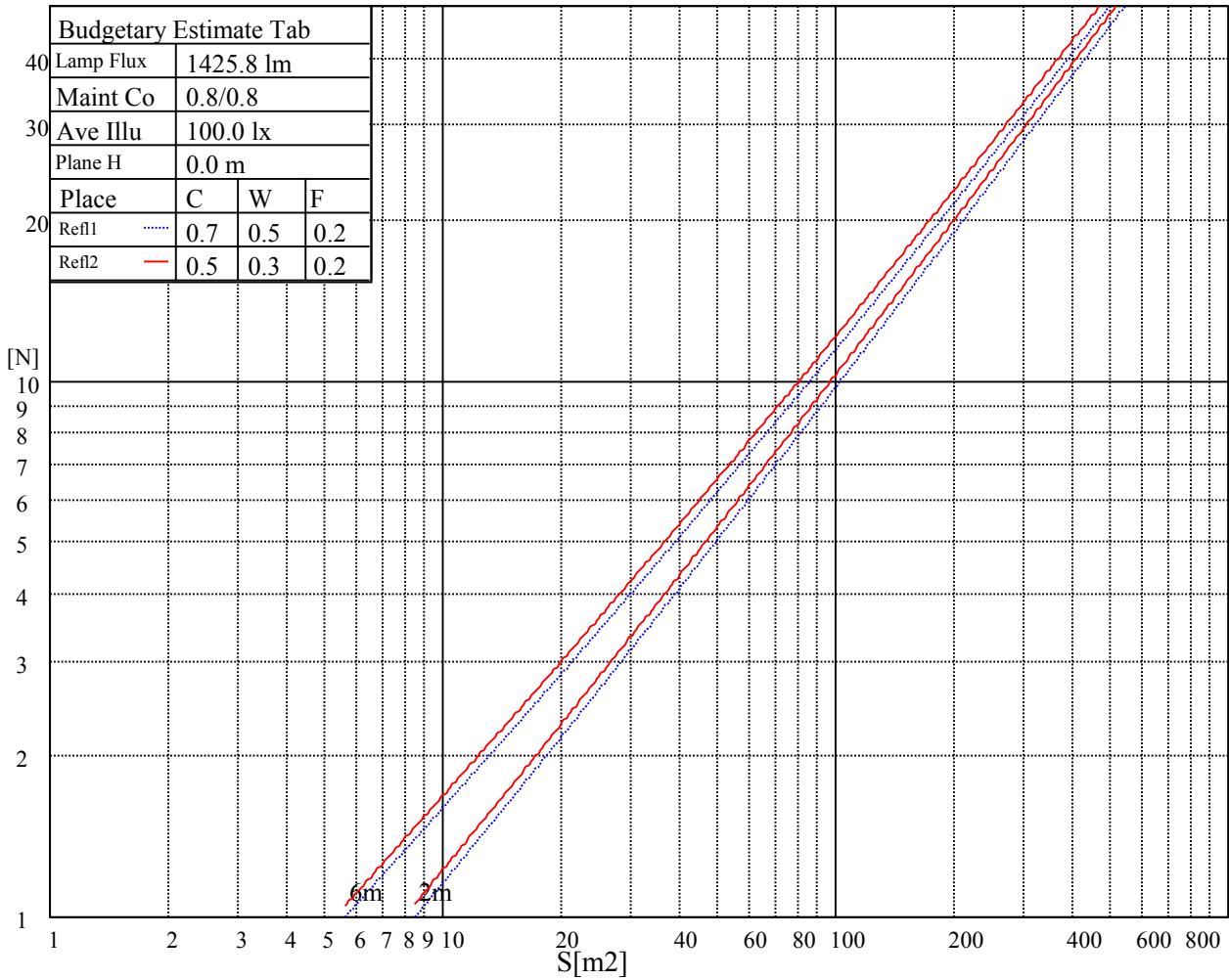
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
10208	10208	10208	13797	13797	13797	34761	34761	34761

Glare Table

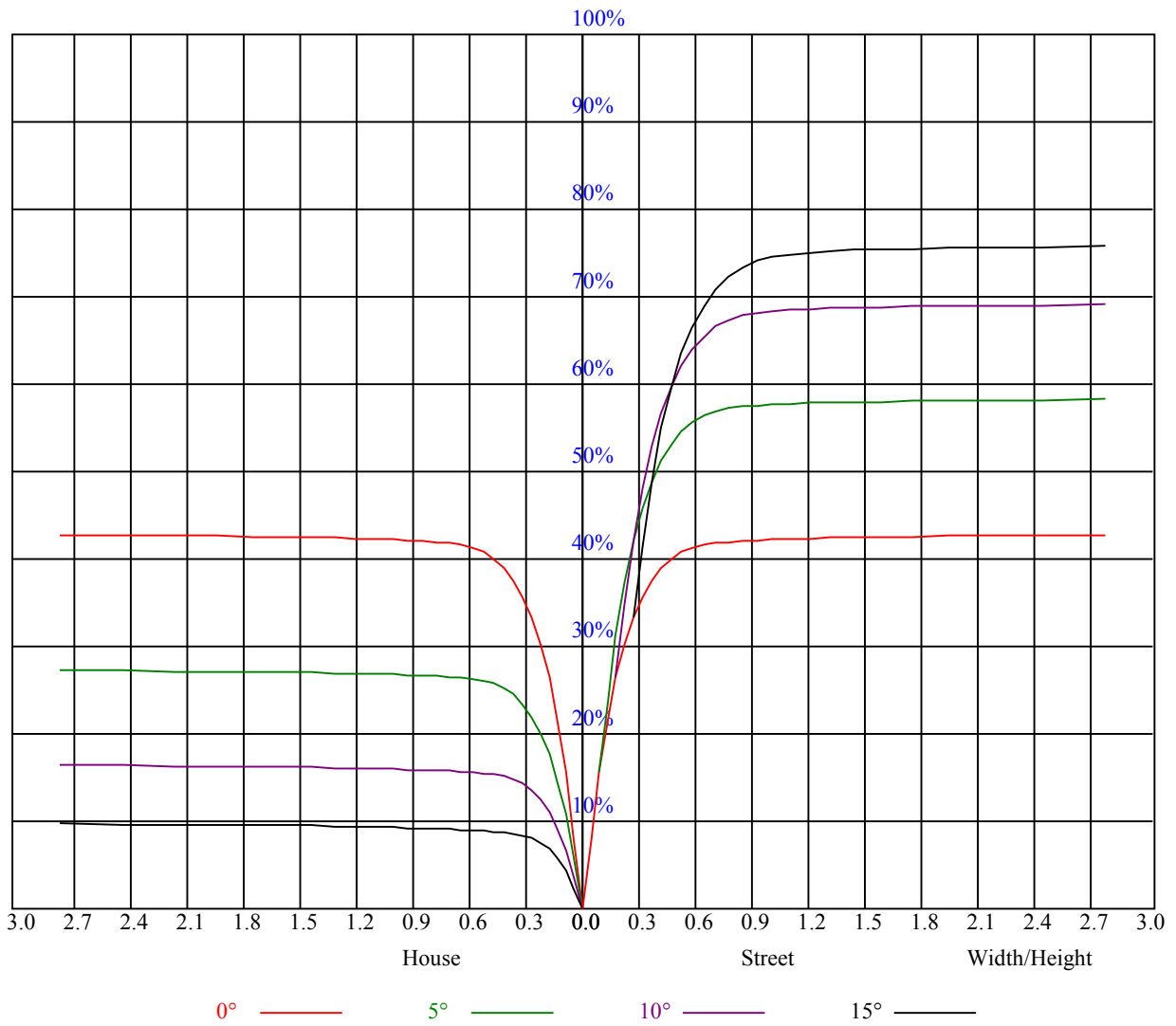
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.97	0.95	0.93	0.95	0.93	0.92	0.92	0.90	0.89	0.88	0.87	0.86	0.85	0.85	0.84	0.83
2	0.92	0.89	0.87	0.91	0.88	0.86	0.88	0.86	0.84	0.85	0.84	0.82	0.83	0.82	0.81	0.79
3	0.88	0.85	0.82	0.87	0.84	0.81	0.85	0.82	0.80	0.83	0.80	0.79	0.81	0.79	0.78	0.76
4	0.84	0.81	0.78	0.83	0.80	0.77	0.82	0.79	0.77	0.80	0.78	0.76	0.78	0.76	0.75	0.74
5	0.81	0.77	0.75	0.80	0.77	0.74	0.79	0.76	0.74	0.78	0.75	0.73	0.76	0.74	0.72	0.71
6	0.78	0.74	0.72	0.78	0.74	0.71	0.76	0.73	0.71	0.75	0.73	0.71	0.74	0.72	0.70	0.69
7	0.76	0.72	0.69	0.75	0.71	0.69	0.74	0.71	0.69	0.73	0.70	0.68	0.72	0.70	0.68	0.67
8	0.73	0.69	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.71	0.68	0.66	0.70	0.68	0.66	0.65
9	0.71	0.67	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.69	0.66	0.64	0.63
10	0.69	0.65	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.68	0.65	0.63	0.67	0.64	0.63	0.62



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	7620.88	7824.04	7889.77	7773.85	7504.96	6968.98	6403.12	5747.03	4986.38
45.0	7857.51	7751.15	7460.15	7012.60	6485.58	5763.76	4989.37	4321.93	3713.64
90.0	7723.06	7428.48	7050.24	6491.56	5797.82	5121.42	4446.81	3676.00	3150.17
135.0	7770.27	7536.04	7068.17	6583.57	6002.18	5193.72	4513.14	3885.73	3279.24
180.0	7620.88	7290.45	6808.25	6197.57	5557.02	4807.72	4155.81	3503.31	2952.39
225.0	7857.51	7813.29	7630.45	7288.66	6787.33	6239.40	5597.65	4790.39	4150.44
270.0	7723.06	7838.98	7816.87	7600.57	7280.29	6749.69	6094.80	5450.06	4878.82
315.0	7770.27	7889.18	7820.46	7573.08	7210.38	6639.14	6028.47	5291.12	4538.83
360.0	7620.88	7824.04	7889.77	7773.85	7504.96	6968.98	6403.12	5747.03	4986.38
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4239.47	3639.55	3062.34	2610.60	2296.30	2012.48	1804.54	1602.57	1431.08
45.0	3067.12	2649.44	2320.21	2025.62	1787.81	1612.13	1441.84	1295.44	1182.51
90.0	2711.59	2293.91	2035.78	1829.63	1653.36	1463.35	1331.89	1185.86	1096.70
135.0	2767.75	2406.85	2088.36	1870.27	1670.69	1499.20	1366.55	1234.49	1120.96
180.0	2558.02	2215.64	1954.52	1761.52	1594.80	1400.61	1261.38	1181.02	1079.73
225.0	3573.22	2967.93	2582.52	2263.44	1958.70	1760.32	1590.62	1408.38	1266.16
270.0	4001.65	3439.97	3015.13	2535.32	2197.71	1982.60	1729.25	1541.03	1413.16
315.0	3899.47	3267.89	2759.99	2411.03	2130.19	1852.94	1672.48	1513.54	1359.98
360.0	4239.47	3639.55	3062.34	2610.60	2296.30	2012.48	1804.54	1602.57	1431.08
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1302.61	1192.67	1070.77	980.55	890.92	793.52	699.71	631.59	567.65
45.0	1068.38	969.19	874.78	776.79	692.54	620.83	555.70	491.17	428.43
90.0	989.09	897.01	796.63	703.11	636.55	574.46	509.15	438.41	373.28
135.0	1025.96	927.37	818.61	730.18	653.10	581.99	518.06	454.72	384.81
180.0	960.95	867.43	778.16	676.46	614.80	544.71	478.44	406.74	341.67
225.0	1173.25	1075.43	969.01	865.40	777.27	685.19	624.00	553.49	478.80
270.0	1258.40	1154.43	1055.83	940.51	850.88	764.84	668.04	608.28	547.93
315.0	1186.75	1127.90	1012.45	921.33	832.54	724.68	660.69	593.29	515.19
360.0	1302.61	1192.67	1070.77	980.55	890.92	793.52	699.71	631.59	567.65
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	495.95	435.60	371.07	316.09	303.54	195.93	148.55	105.52	76.30
45.0	355.53	307.73	244.15	192.82	135.46	97.58	73.44	59.93	53.42
90.0	316.33	263.33	199.46	151.83	112.45	78.69	65.37	58.50	50.91
135.0	317.89	302.35	206.80	148.13	104.69	79.77	61.90	55.09	49.77
180.0	286.87	231.96	173.34	124.64	89.45	67.88	59.33	53.12	47.09
225.0	414.86	356.84	288.25	234.47	184.94	128.53	92.08	70.99	60.77
270.0	464.28	400.94	345.97	303.54	218.76	167.97	118.73	81.62	65.73
315.0	461.95	403.51	325.12	274.21	218.58	149.74	113.53	81.86	65.07
360.0	495.95	435.60	371.07	316.09	303.54	195.93	148.55	105.52	76.30
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	63.52	56.29	47.98	42.19	37.05	32.45	28.08	25.04	22.53
45.0	47.03	40.75	35.73	31.31	27.49	24.56	21.63	19.48	17.93
90.0	43.98	38.66	33.58	29.16	25.69	22.59	20.38	18.28	16.55
135.0	42.36	37.52	33.46	28.62	25.51	22.83	20.08	18.22	16.73
180.0	40.21	35.55	31.55	27.73	24.44	21.93	19.72	17.81	16.49
225.0	53.36	47.26	41.29	35.91	31.85	28.02	25.04	22.29	20.02
270.0	58.32	51.75	45.17	39.20	34.48	30.77	26.53	23.84	21.51
315.0	57.66	51.15	44.64	38.72	34.18	30.12	26.77	23.60	21.21
360.0	63.52	56.29	47.98	42.19	37.05	32.45	28.08	25.04	22.53



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	20.02	18.34	16.85	15.60	14.46	13.50	12.79	12.13	11.53
45.0	16.31	15.06	14.16	13.38	12.49	11.95	11.41	10.88	10.40
90.0	15.36	14.28	13.27	12.55	11.89	11.17	10.70	10.28	9.92
135.0	15.24	14.22	13.44	12.61	11.89	11.29	10.82	10.34	9.92
180.0	15.18	14.22	13.27	12.49	11.83	11.23	10.64	10.22	9.86
225.0	18.28	16.79	15.36	14.34	13.50	12.49	11.89	11.29	10.82
270.0	19.18	17.63	16.31	15.06	13.98	13.21	12.43	11.77	11.23
315.0	19.30	17.75	16.13	15.00	14.10	13.09	12.37	11.83	11.23
360.0	20.02	18.34	16.85	15.60	14.46	13.50	12.79	12.13	11.53
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	10.99	10.58	10.16	9.80	9.50	9.20	8.96	8.78	8.66
45.0	10.04	9.68	9.38	9.14	8.90	8.72	8.54	8.37	8.25
90.0	9.50	9.26	8.96	8.78	8.60	8.48	8.37	8.19	8.07
135.0	9.56	9.32	8.96	8.78	8.60	8.48	8.31	8.25	8.13
180.0	9.50	9.20	8.96	8.78	8.60	8.37	8.25	8.19	8.07
225.0	10.34	9.92	9.62	9.26	9.02	8.84	8.66	8.48	8.37
270.0	10.76	10.34	9.92	9.62	9.32	9.08	8.90	8.72	8.54
315.0	10.76	10.34	9.98	9.62	9.32	9.08	8.90	8.66	8.54
360.0	10.99	10.58	10.16	9.80	9.50	9.20	8.96	8.78	8.66
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	8.48	8.31	8.19	8.13	8.01	7.89	7.77	7.65	7.47
45.0	8.13	8.01	7.89	7.83	7.77	7.59	7.53	7.29	7.11
90.0	8.01	7.89	7.83	7.77	7.65	7.53	7.35	7.23	6.99
135.0	8.01	7.95	7.83	7.77	7.59	7.47	7.41	7.23	6.99
180.0	8.01	7.89	7.77	7.71	7.53	7.47	7.23	7.05	6.93
225.0	8.25	8.13	8.01	7.89	7.83	7.71	7.53	7.41	7.23
270.0	8.43	8.25	8.13	8.13	7.95	7.89	7.83	7.71	7.53
315.0	8.43	8.31	8.19	8.07	7.95	7.89	7.71	7.59	7.41
360.0	8.48	8.31	8.19	8.13	8.01	7.89	7.77	7.65	7.47
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	7.35	7.17	7.05	6.81	6.69	6.63	6.51	6.39	6.27
45.0	6.99	6.81	6.69	6.51	6.45	6.27	6.21	6.09	5.98
90.0	6.87	6.75	6.57	6.45	6.39	6.27	6.21	6.09	6.04
135.0	6.87	6.69	6.57	6.45	6.39	6.27	6.09	6.04	5.92
180.0	6.75	6.69	6.51	6.39	6.33	6.21	6.09	6.04	5.98
225.0	7.05	6.93	6.75	6.63	6.51	6.45	6.33	6.21	6.09
270.0	7.29	7.17	6.99	6.81	6.69	6.63	6.51	6.45	6.33
315.0	7.23	7.11	6.93	6.75	6.63	6.57	6.45	6.33	6.21
360.0	7.35	7.17	7.05	6.81	6.69	6.63	6.51	6.39	6.27
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	6.15	6.04	5.98	5.86	5.74	5.68	5.56	5.50	5.44
45.0	5.92	5.74	5.68	5.56	5.50	5.38	5.32	5.26	5.20
90.0	5.92	5.86	5.74	5.50	5.44	5.32	5.26	5.20	5.20
135.0	5.86	5.74	5.68	5.56	5.50	5.38	5.32	5.26	5.20
180.0	5.86	5.74	5.68	5.56	5.50	5.38	5.32	5.20	5.20
225.0	6.04	5.92	5.86	5.74	5.62	5.62	5.44	5.38	5.26
270.0	6.21	6.15	6.04	5.98	5.86	5.68	5.56	5.38	5.32
315.0	6.09	6.04	5.92	5.80	5.68	5.62	5.50	5.44	5.32
360.0	6.15	6.04	5.98	5.86	5.74	5.68	5.56	5.50	5.44

Intensity data(cd)

<b>C/γ(°)</b>	<b>90.0</b>
<b>0.0</b>	<b>5.32</b>
<b>45.0</b>	<b>5.14</b>
<b>90.0</b>	<b>5.14</b>
<b>135.0</b>	<b>5.20</b>
<b>180.0</b>	<b>5.20</b>
<b>225.0</b>	<b>5.20</b>
<b>270.0</b>	<b>5.20</b>
<b>315.0</b>	<b>5.26</b>
<b>360.0</b>	<b>5.32</b>