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## Nata

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LumCAT: 2-1747-N	
Luminaire: 92.70.132.00	
Report No: 200407-B031	Voltage(V): 220.4000
Test No: 200407-C031	Current(A): 0.0420
LampCAT: LUMILEDS LUXEON 1203	Power (W): 8.3000
Lamp flux(lm): 753.0	PF: 0.8970
Number of Lamps: 1	Ballast type: AC
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

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## Photometric Results

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Lumens(lm): 619.69  
Efficiency(%): 82.30%  
Lumens(lm)/Power(W): 74.66  
Central intensity(cd): 1295.744  
Maximum intensity(cd): 1295.744  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=37.9  
                                  [C90/270]Total=37.9  
Field angle(10%Imax): [C0/180]Total=66.7  
                                  [C90/270]Total=66.7  
Maximum s/h(1/2): C0\_180=0.62 C90\_270=0.62  
Maximum s/h(1/4): C0\_180=0.62 C90\_270=0.62  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 82.30%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 97.856%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1295.744	0.000	0	.000%	.000%
1.0	1293.134	1.239	1.239	.165%	.200%
2.0	1287.565	3.704	4.943	.492%	.798%
3.0	1278.401	6.137	11.08	.815%	1.788%
4.0	1263.319	8.508	19.588	1.130%	3.161%
5.0	1248.238	10.805	30.392	1.435%	4.904%
6.0	1227.357	13.010	43.402	1.728%	7.004%
7.0	1203.053	15.086	58.488	2.003%	9.438%
8.0	1174.457	17.015	75.503	2.260%	12.184%
9.0	1140.873	18.764	94.268	2.492%	15.212%
10.0	1100.676	20.285	114.553	2.694%	18.486%
11.0	1051.169	21.501	136.054	2.855%	21.955%
12.0	1001.251	22.436	158.49	2.980%	25.576%
13.0	959.569	23.270	181.76	3.090%	29.331%
14.0	910.996	23.943	205.703	3.180%	33.195%
15.0	862.232	24.344	230.047	3.233%	37.123%
16.0	809.994	24.503	254.55	3.254%	41.077%
17.0	753.503	24.348	278.897	3.233%	45.006%
18.0	699.525	23.957	302.855	3.182%	48.872%
19.0	646.445	23.417	326.272	3.110%	52.651%
20.0	593.278	22.690	348.962	3.013%	56.312%
21.0	541.736	21.795	370.757	2.894%	59.829%
22.0	492.809	20.790	391.546	2.761%	63.184%
23.0	449.132	19.764	411.311	2.625%	66.374%
24.0	410.194	18.788	430.099	2.495%	69.406%
25.0	374.040	17.832	447.931	2.368%	72.283%
26.0	343.060	16.927	464.858	2.248%	75.015%
27.0	312.225	16.032	480.889	2.129%	77.602%
28.0	286.077	15.148	496.037	2.012%	80.046%
29.0	261.564	14.328	510.365	1.903%	82.358%
30.0	238.072	13.490	523.855	1.792%	84.535%
31.0	209.320	12.450	536.305	1.653%	86.544%
32.0	183.311	11.248	547.554	1.494%	88.359%
33.0	142.940	9.611	557.165	1.276%	89.910%
34.0	102.534	7.429	564.594	.987%	91.109%
35.0	76.774	5.569	570.163	.740%	92.008%
36.0	54.628	4.184	574.347	.556%	92.683%
37.0	41.589	3.138	577.485	.417%	93.189%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	34.576	2.542	580.027	.338%	93.600%
39.0	29.333	2.181	582.208	.290%	93.952%
40.0	25.777	1.922	584.13	.255%	94.262%
41.0	23.283	1.747	585.877	.232%	94.544%
42.0	21.067	1.611	587.489	.214%	94.804%
43.0	19.542	1.504	588.993	.200%	95.047%
44.0	18.010	1.417	590.41	.188%	95.275%
45.0	16.827	1.339	591.749	.178%	95.491%
46.0	15.719	1.273	593.022	.169%	95.697%
47.0	14.762	1.212	594.234	.161%	95.892%
48.0	13.904	1.159	595.393	.154%	96.079%
49.0	13.190	1.113	596.506	.148%	96.259%
50.0	12.512	1.072	597.577	.142%	96.432%
51.0	11.868	1.031	598.609	.137%	96.598%
52.0	11.293	0.994	599.602	.132%	96.759%
53.0	10.742	0.959	600.561	.127%	96.913%
54.0	10.220	0.924	601.485	.123%	97.062%
55.0	9.727	0.890	602.375	.118%	97.206%
56.0	9.327	0.861	603.236	.114%	97.345%
57.0	8.869	0.832	604.068	.110%	97.479%
58.0	8.486	0.803	604.871	.107%	97.609%
59.0	8.138	0.777	605.648	.103%	97.734%
60.0	7.796	0.753	606.401	.100%	97.856%
61.0	7.442	0.727	607.128	.097%	97.973%
62.0	7.158	0.703	607.832	.093%	98.087%
63.0	6.850	0.681	608.513	.090%	98.197%
64.0	6.589	0.659	609.172	.088%	98.303%
65.0	6.305	0.638	609.81	.085%	98.406%
66.0	6.067	0.617	610.428	.082%	98.506%
67.0	5.806	0.597	611.025	.079%	98.602%
68.0	5.568	0.576	611.601	.077%	98.695%
69.0	5.348	0.557	612.158	.074%	98.785%
70.0	5.145	0.539	612.697	.072%	98.872%
71.0	4.930	0.521	613.218	.069%	98.956%
72.0	4.722	0.502	613.719	.067%	99.037%
73.0	4.513	0.483	614.202	.064%	99.115%
74.0	4.298	0.463	614.665	.062%	99.189%
75.0	4.101	0.444	615.109	.059%	99.261%

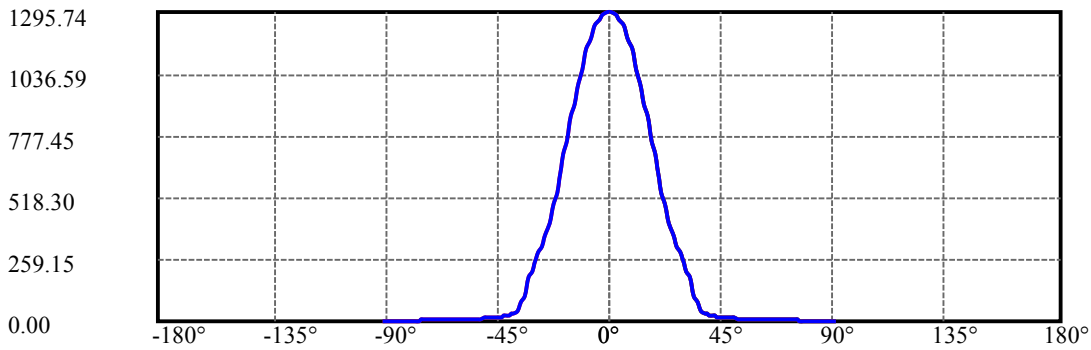
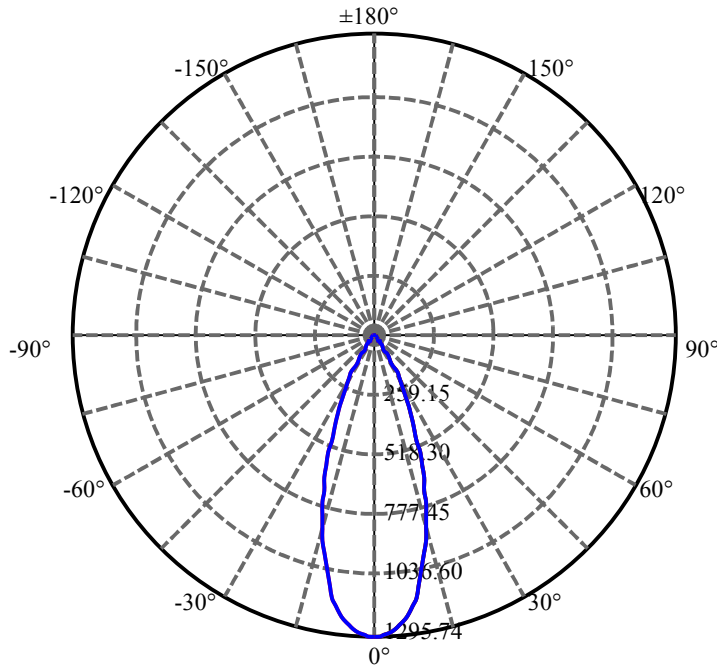
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	3.892	0.424	615.534	.056%	99.329%
77.0	3.724	0.406	615.94	.054%	99.395%
78.0	3.538	0.389	616.328	.052%	99.458%
79.0	3.341	0.370	616.698	.049%	99.517%
80.0	3.202	0.353	617.051	.047%	99.574%
81.0	3.022	0.337	617.387	.045%	99.629%
82.0	2.860	0.319	617.706	.042%	99.680%
83.0	2.715	0.303	618.009	.040%	99.729%
84.0	2.593	0.289	618.298	.038%	99.776%
85.0	2.419	0.274	618.572	.036%	99.820%
86.0	2.280	0.257	618.829	.034%	99.861%
87.0	2.129	0.241	619.07	.032%	99.900%
88.0	1.943	0.223	619.293	.030%	99.936%
89.0	1.804	0.205	619.498	.027%	99.969%
90.0	1.671	0.190	619.689	.025%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	523.86	69.57%	84.54%
0-40	584.13	77.57%	94.26%
0-60	606.40	80.53%	97.86%
0-90	619.50	82.27%	99.97%
0-120	619.50	82.27%	99.97%
0-180	619.69	82.30%	100.00%
60-90	13.85	1.84%	2.24%
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%
0-27.98	495.75	65.84%	80.00%

ZONAL LUMEN SUMMARY

0-10	114.55
10-20	234.41
20-30	174.89
30-40	60.28
40-50	13.45
50-60	8.82
60-70	6.30
70-80	4.35
80-90	2.45
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: —————

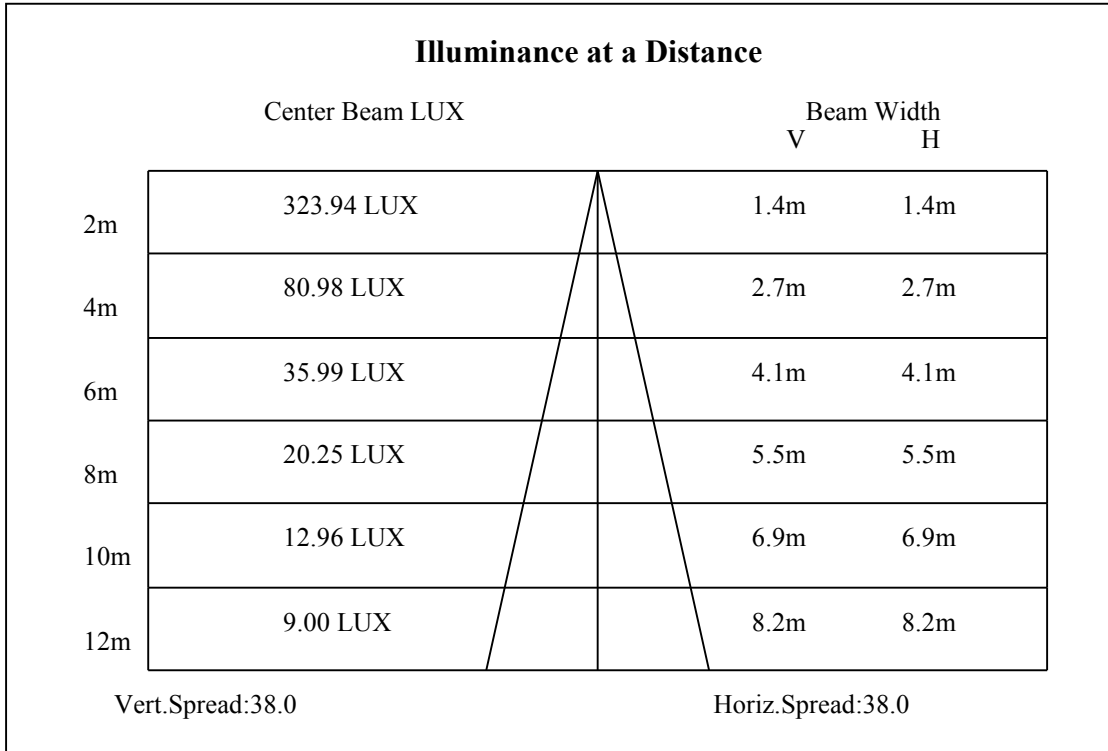
C90/C270: —————

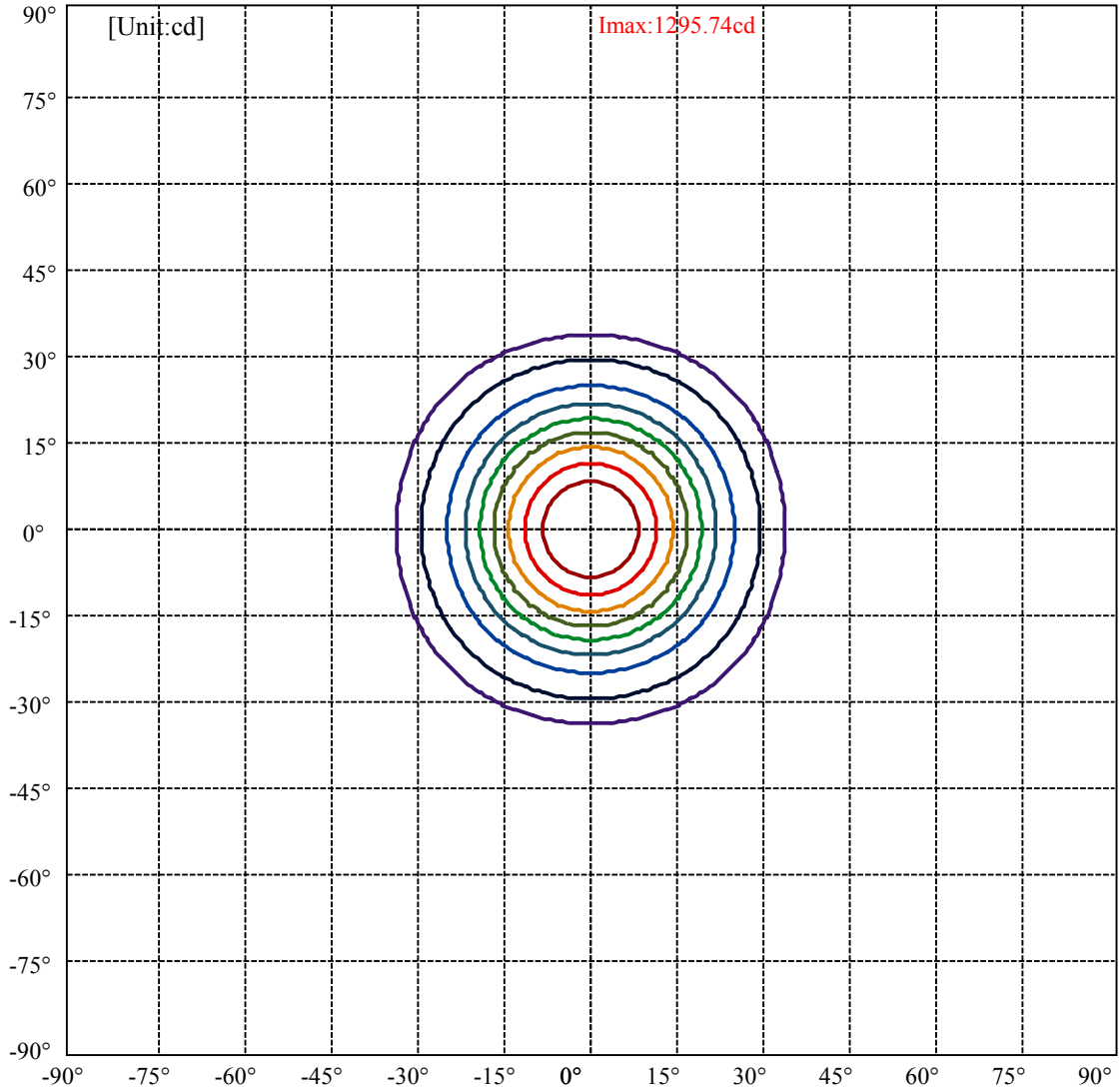
Field angle(10%Imax):C0/180Left:33.3 Right:33.3

:C90/270Left:33.3 Right:33.3

Beam Angle(50%Imax):C0/180Left:19.0 Right:19.0

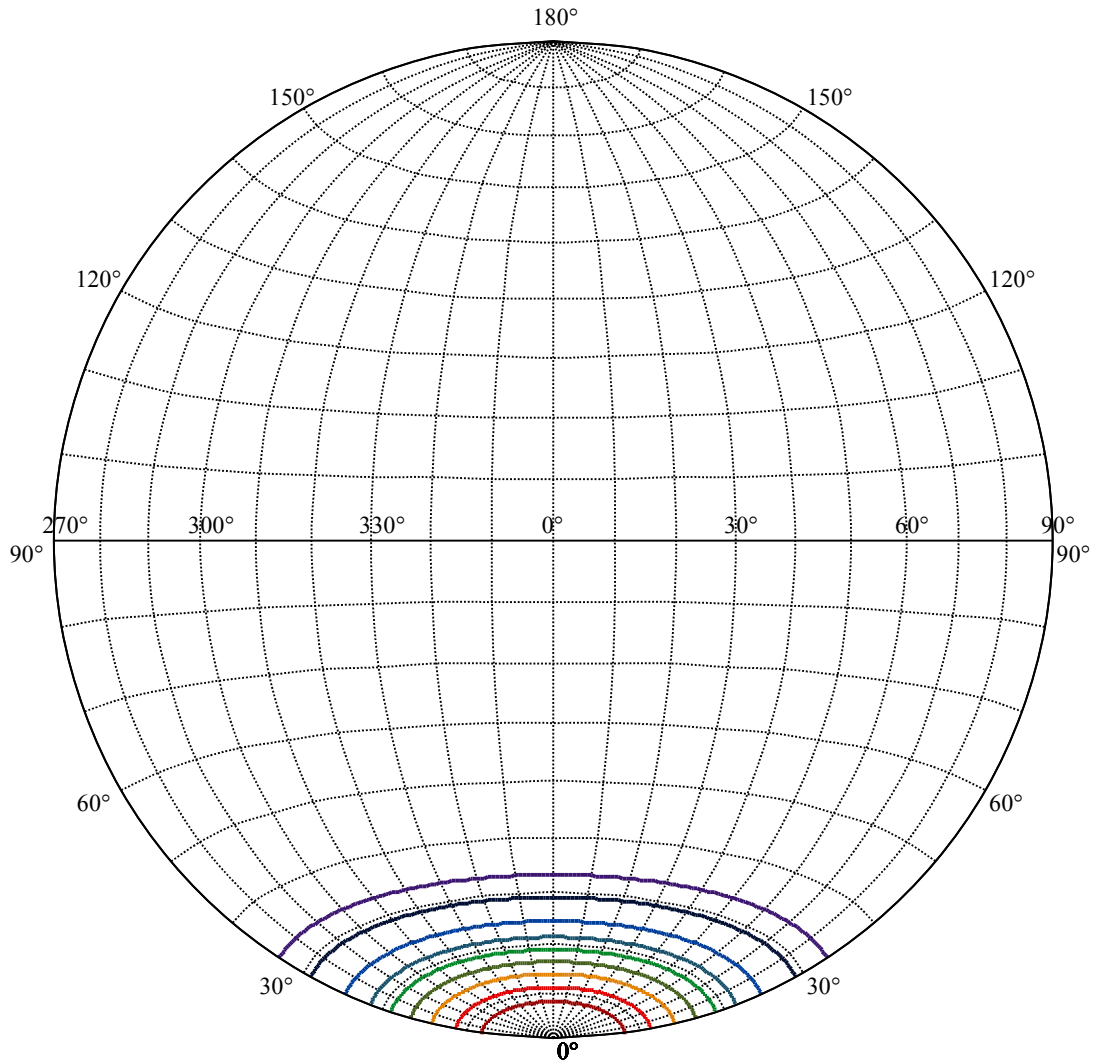
:C90/270Left:19.0 Right:19.0





(10%Imax) 129.574	—
(20%Imax) 259.149	—
(30%Imax) 388.723	—
(40%Imax) 518.297	—
(50%Imax) 647.872	—
(60%Imax) 777.446	—
(70%Imax) 907.021	—
(80%Imax) 1036.59	—
(90%Imax) 1166.17	—





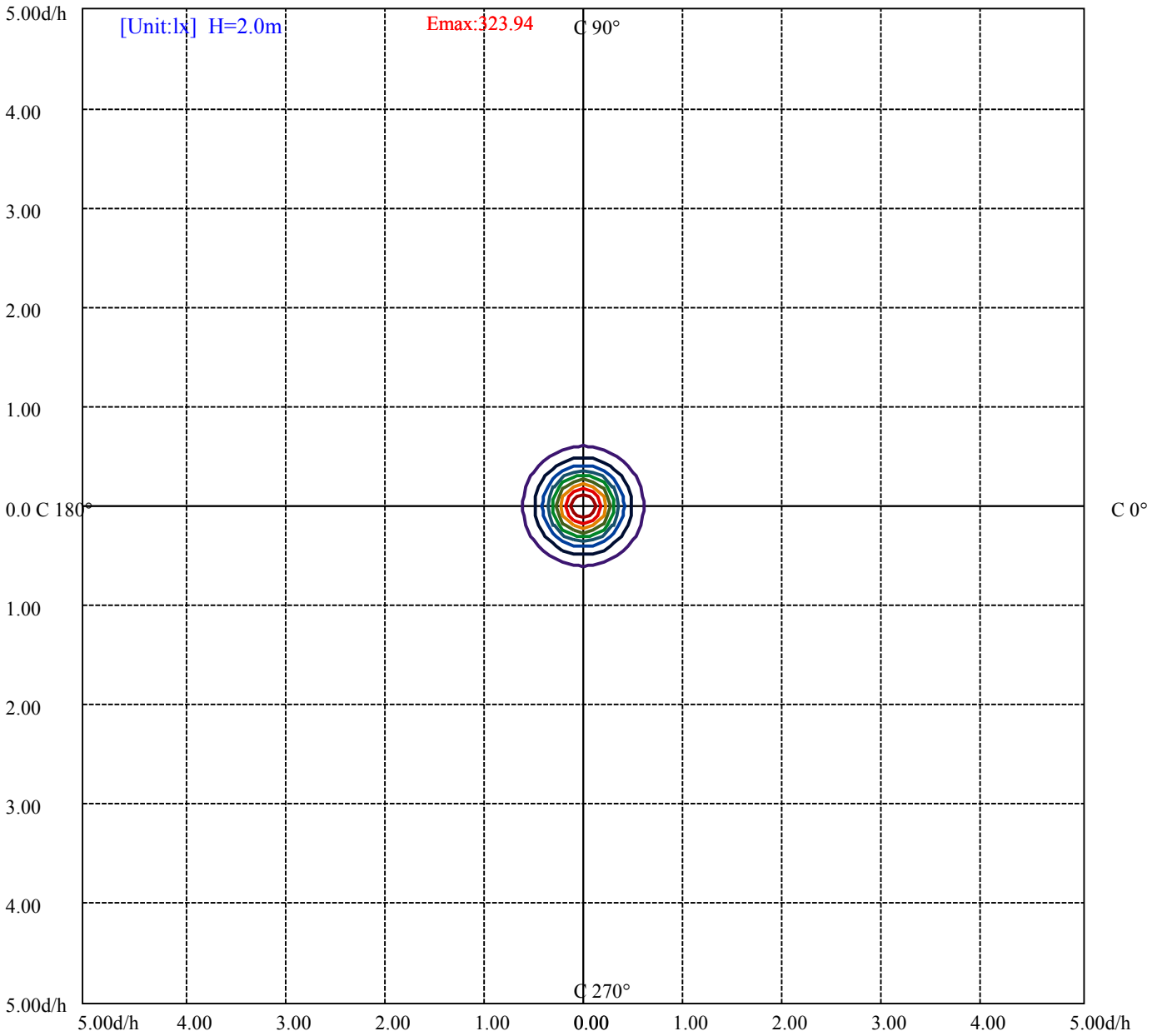
House

[Unit:cd]

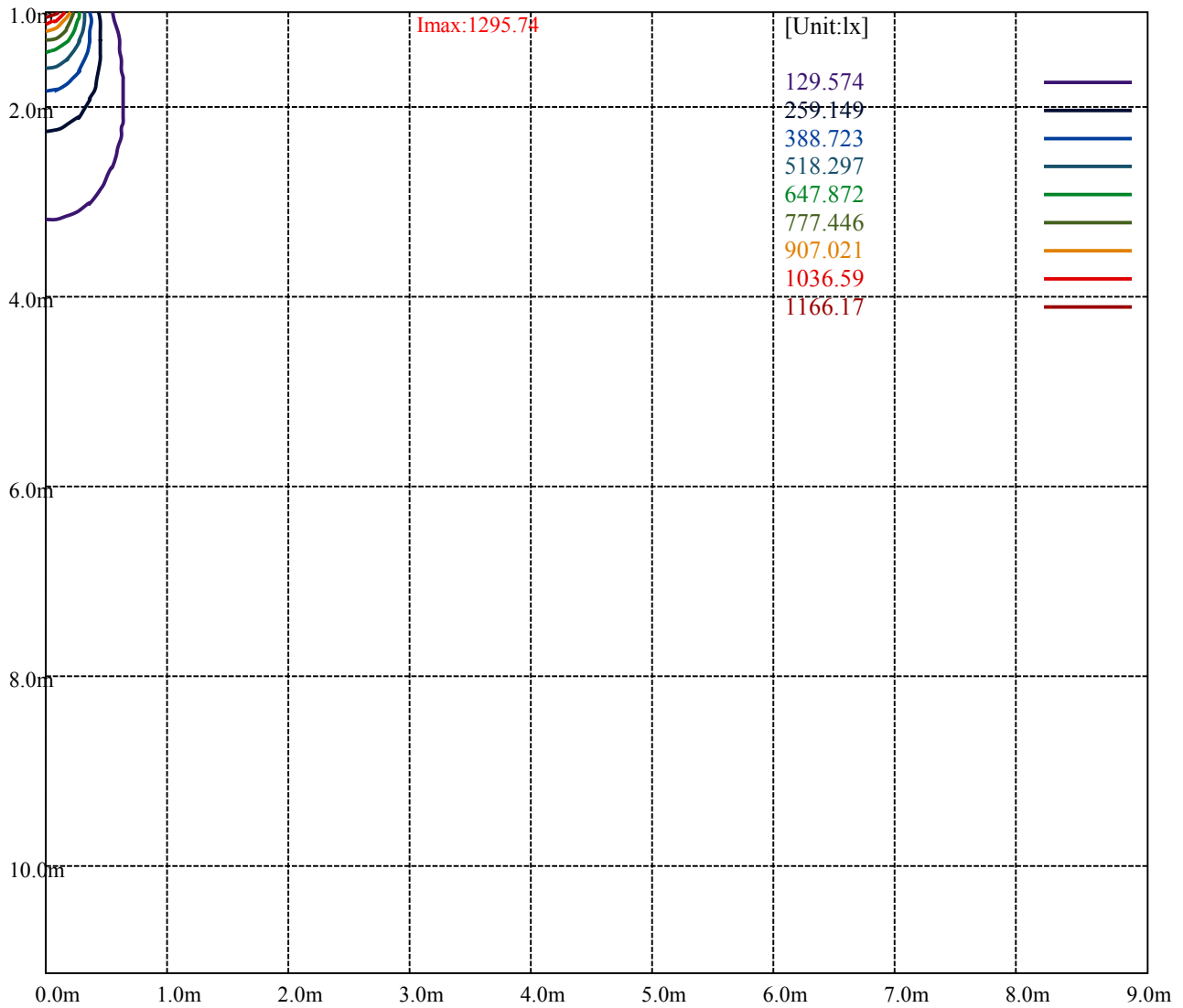
Road

Imax:1295.74

(10%Imax)	129.574	—
(20%Imax)	259.149	—
(30%Imax)	388.723	—
(40%Imax)	518.297	—
(50%Imax)	647.872	—
(60%Imax)	777.446	—
(70%Imax)	907.021	—
(80%Imax)	1036.59	—
(90%Imax)	1166.17	—



- (10%Emax) 32.3935
- (20%Emax) 64.78725
- (30%Emax) 97.18075
- (40%Emax) 129.5742
- (50%Emax) 161.968
- (60%Emax) 194.3615
- (70%Emax) 226.755
- (80%Emax) 259.1475
- (90%Emax) 291.5425



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

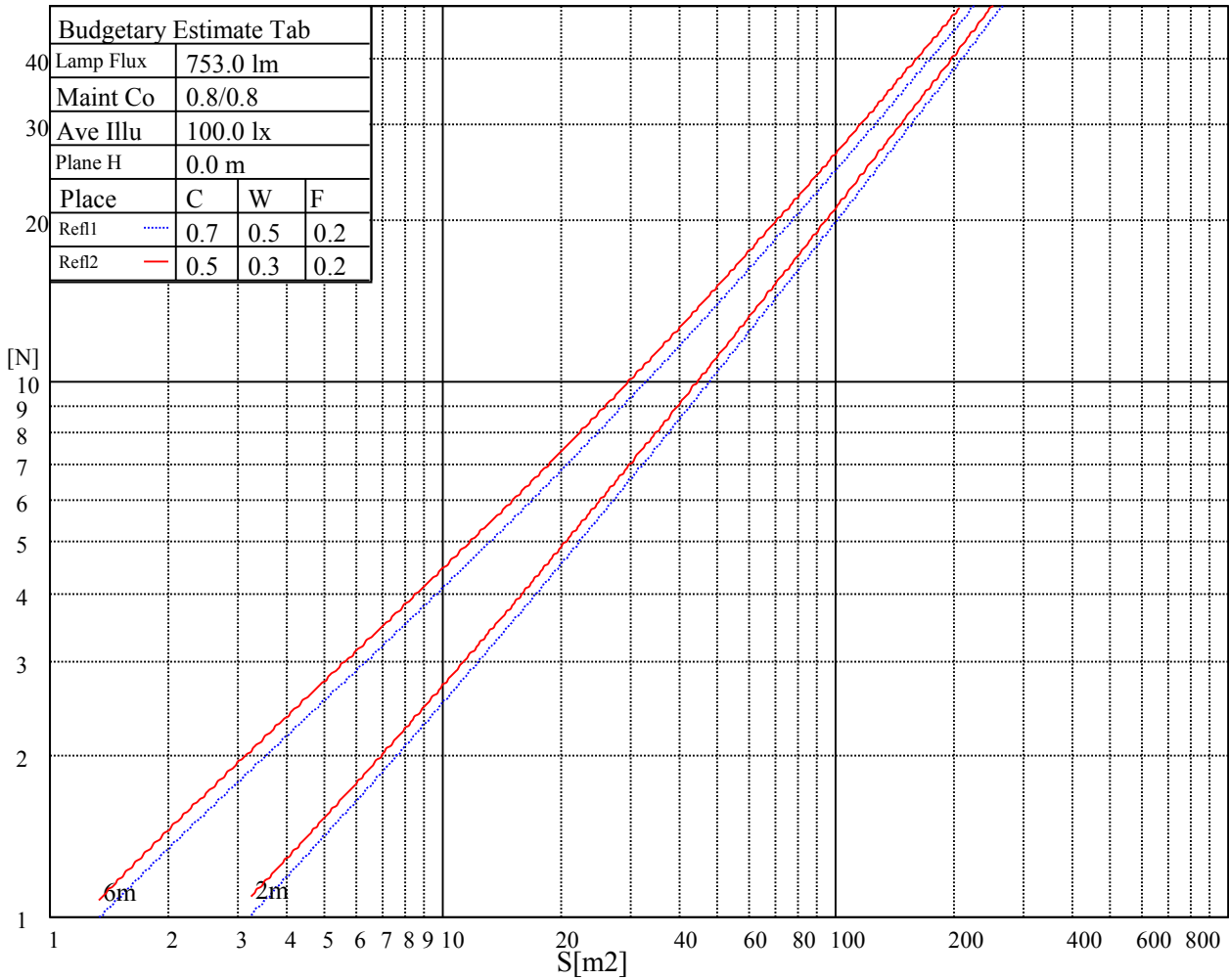
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

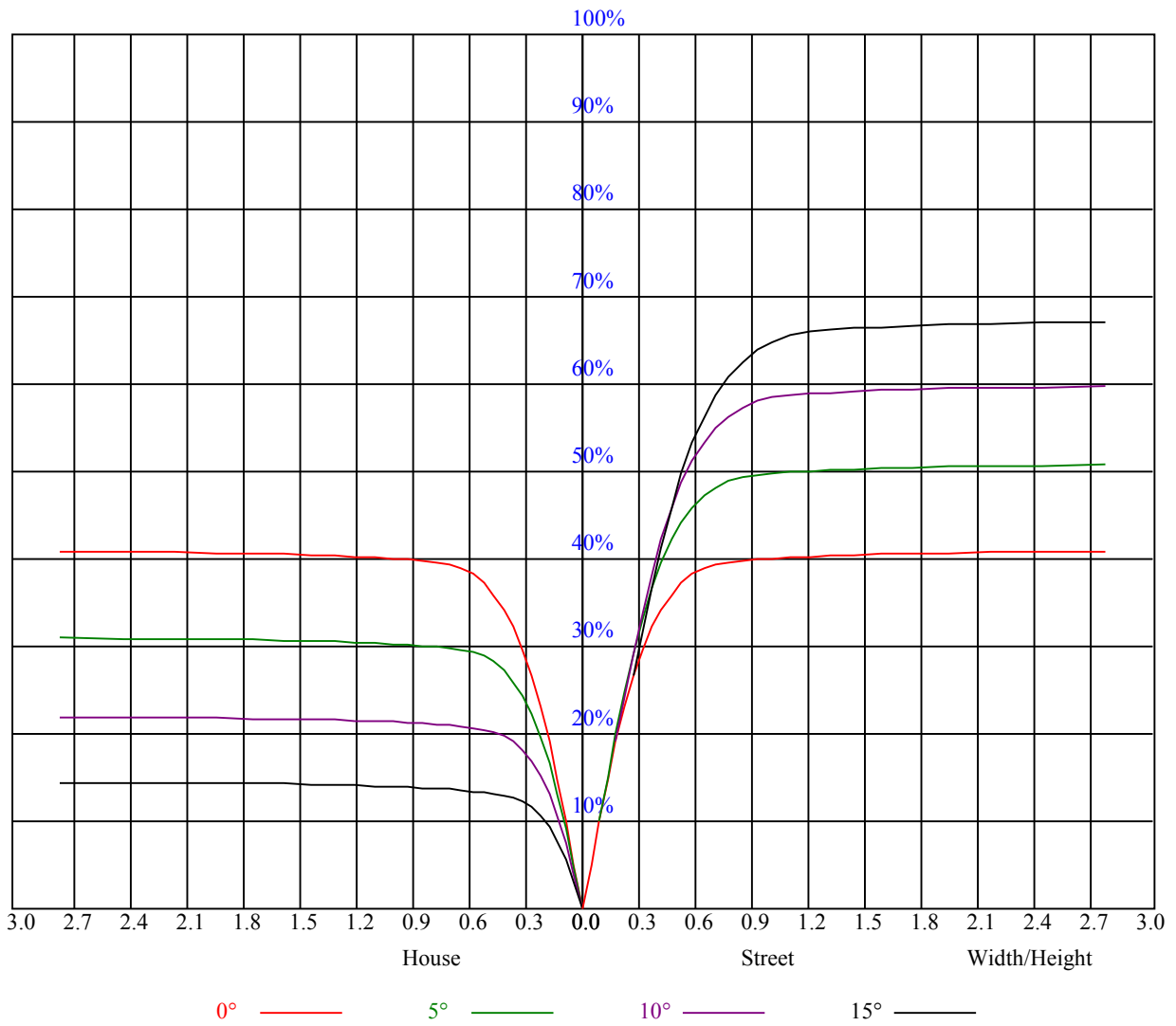
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.98	0.98	0.98	0.96	0.96	0.96	0.91	0.91	0.91	0.88	0.88	0.88	0.84	0.84	0.84	0.82
1	0.92	0.90	0.88	0.90	0.88	0.86	0.86	0.85	0.84	0.83	0.82	0.81	0.81	0.80	0.79	0.77
2	0.86	0.83	0.80	0.84	0.82	0.79	0.82	0.80	0.78	0.79	0.78	0.76	0.77	0.76	0.74	0.73
3	0.81	0.77	0.74	0.80	0.76	0.74	0.78	0.75	0.72	0.76	0.73	0.71	0.74	0.72	0.70	0.69
4	0.77	0.72	0.69	0.76	0.72	0.69	0.74	0.71	0.68	0.72	0.70	0.67	0.71	0.68	0.67	0.65
5	0.73	0.68	0.65	0.72	0.68	0.65	0.70	0.67	0.64	0.69	0.66	0.64	0.68	0.65	0.63	0.62
6	0.69	0.65	0.62	0.68	0.64	0.61	0.67	0.64	0.61	0.66	0.63	0.61	0.65	0.62	0.60	0.59
7	0.66	0.61	0.58	0.65	0.61	0.58	0.64	0.61	0.58	0.63	0.60	0.58	0.62	0.60	0.57	0.56
8	0.63	0.59	0.56	0.62	0.58	0.55	0.62	0.58	0.55	0.61	0.57	0.55	0.60	0.57	0.55	0.54
9	0.60	0.56	0.53	0.60	0.56	0.53	0.59	0.55	0.53	0.58	0.55	0.53	0.58	0.55	0.52	0.51
10	0.58	0.53	0.51	0.57	0.53	0.51	0.57	0.53	0.50	0.56	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	1297.48	1294.24	1287.28	1278.92	1262.22	1250.15	1226.49	1201.89	1172.19
45.0	1295.16	1293.31	1291.92	1280.31	1265.00	1256.18	1238.09	1209.78	1182.87
90.0	1291.92	1285.42	1271.50	1252.47	1228.34	1200.50	1168.95	1138.78	1101.66
135.0	1298.41	1292.84	1285.88	1275.21	1257.11	1234.84	1212.10	1187.04	1157.81
180.0	1297.48	1291.92	1286.81	1277.99	1260.83	1252.94	1228.34	1204.21	1181.48
225.0	1295.16	1291.45	1284.95	1274.75	1259.43	1242.26	1219.53	1190.76	1159.20
270.0	1291.92	1297.95	1296.56	1294.70	1287.74	1277.07	1265.47	1255.72	1235.30
315.0	1298.41	1297.95	1295.63	1292.84	1285.88	1271.96	1259.90	1236.23	1205.14
360.0	1297.48	1294.24	1287.28	1278.92	1262.22	1250.15	1226.49	1201.89	1172.19
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	1136.46	1095.17	1048.30	1000.97	924.59	924.59	868.90	817.35	759.76
45.0	1146.21	1103.52	1056.65	1003.29	950.39	893.77	839.48	782.87	723.47
90.0	1062.68	1019.53	911.64	911.64	875.91	847.70	800.04	751.36	697.30
135.0	1129.50	1087.74	1046.91	1015.82	973.12	927.19	872.43	819.07	763.85
180.0	1147.60	1110.48	1068.25	1017.21	968.48	916.51	863.15	810.25	756.88
225.0	1120.69	1078.46	1028.34	920.41	920.41	872.80	801.80	759.76	707.28
270.0	1210.71	1174.98	1140.64	1096.09	1048.30	998.18	944.82	890.06	832.99
315.0	1173.12	1135.54	1108.62	1044.59	1015.35	907.23	907.23	849.23	786.49
360.0	1136.46	1095.17	1048.30	1000.97	924.59	924.59	868.90	817.35	759.76
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	707.19	651.69	599.35	548.39	499.35	455.96	415.59	377.96	342.13
45.0	666.86	618.14	567.56	521.16	471.97	422.32	387.51	341.58	314.20
90.0	643.34	590.58	540.18	494.52	452.62	416.15	382.13	351.23	320.74
135.0	710.48	656.19	600.97	546.68	496.56	452.94	413.04	376.84	342.04
180.0	705.84	653.41	600.97	549.93	503.52	462.22	422.78	387.51	368.49
225.0	659.58	609.14	554.57	499.81	446.82	402.78	364.96	331.32	303.57
270.0	774.05	719.76	666.86	609.79	557.81	508.63	462.22	420.92	387.05
315.0	728.86	672.66	615.77	563.62	513.82	472.06	433.31	404.96	366.26
360.0	707.19	651.69	599.35	548.39	499.35	455.96	415.59	377.96	342.13
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	307.89	279.63	252.53	221.48	187.89	152.43	117.86	86.17	65.34
45.0	282.18	253.41	230.21	230.21	191.46	165.38	134.43	105.71	78.65
90.0	293.73	268.72	238.28	201.48	163.48	126.22	105.10	62.92	50.39
135.0	311.88	285.89	263.62	247.38	234.85	204.13	138.47	103.48	72.57
180.0	338.33	300.28	284.96	261.30	243.20	243.20	154.66	117.40	84.18
225.0	275.73	254.52	234.75	208.72	176.05	156.05	111.23	83.53	68.96
270.0	355.50	338.33	307.70	280.79	257.58	235.31	235.31	150.49	114.94
315.0	332.57	307.84	280.46	253.22	220.04	183.76	146.45	110.58	79.16
360.0	307.89	279.63	252.53	221.48	187.89	152.43	117.86	86.17	65.34
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	45.80	39.67	33.60	28.91	25.71	23.16	21.02	19.16	17.68
45.0	56.66	43.25	38.56	30.58	26.54	24.83	21.53	20.37	18.70
90.0	39.67	33.78	28.77	25.38	22.97	20.93	19.16	17.73	16.52
135.0	50.16	39.77	33.87	29.09	25.85	23.48	21.53	20.00	18.65
180.0	57.40	40.70	34.29	29.33	25.48	22.88	20.79	19.12	17.91
225.0	48.72	37.63	32.25	27.70	24.45	22.13	20.19	18.56	17.17
270.0	83.43	57.17	40.70	33.92	29.09	25.24	22.69	21.39	18.89
315.0	55.17	40.74	34.57	29.74	26.13	23.62	21.62	20.00	18.56
360.0	45.80	39.67	33.60	28.91	25.71	23.16	21.02	19.16	17.68



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	16.43	15.31	14.29	13.41	12.67	11.97	11.32	10.72	10.26
45.0	17.22	15.96	14.94	14.01	13.18	12.44	11.79	11.14	10.58
90.0	15.41	14.43	13.60	12.81	12.11	11.51	10.90	10.39	9.79
135.0	17.73	16.47	15.78	14.99	14.11	13.55	12.99	12.39	11.83
180.0	16.38	15.50	14.48	13.46	12.90	12.16	11.55	10.95	10.39
225.0	16.01	14.99	14.01	13.22	12.53	11.83	11.23	10.63	10.12
270.0	18.05	16.71	15.17	14.66	13.74	13.04	12.34	11.69	11.09
315.0	17.40	16.38	15.82	14.66	14.29	13.60	12.81	12.44	11.88
360.0	16.43	15.31	14.29	13.41	12.67	11.97	11.32	10.72	10.26
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	9.70	9.19	8.96	8.40	8.12	7.80	7.42	7.05	6.77
45.0	10.07	9.56	9.05	8.58	8.17	7.84	7.47	7.10	6.87
90.0	9.37	8.86	8.54	8.12	7.66	7.38	7.05	6.68	6.31
135.0	11.32	10.81	10.35	9.98	9.56	9.19	8.86	8.58	8.21
180.0	9.88	9.37	8.91	8.45	8.07	7.70	7.38	7.01	6.87
225.0	9.56	9.05	8.82	8.40	8.03	7.66	7.33	7.01	6.73
270.0	10.53	10.02	9.51	8.96	8.58	8.21	7.84	7.47	7.15
315.0	11.32	10.95	10.49	10.07	9.70	9.33	9.00	8.63	8.35
360.0	9.70	9.19	8.96	8.40	8.12	7.80	7.42	7.05	6.77
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	6.50	6.17	5.89	5.71	5.43	5.15	4.92	4.73	4.50
45.0	6.45	6.22	5.99	5.71	5.43	5.20	4.97	4.78	4.50
90.0	6.13	5.85	5.57	5.24	5.06	4.83	4.59	4.36	4.18
135.0	7.98	7.75	7.42	7.33	6.96	6.77	6.59	6.31	6.22
180.0	6.45	6.17	5.99	5.61	5.43	5.20	4.87	4.78	4.50
225.0	6.40	6.08	5.85	5.61	5.34	5.10	4.87	4.69	4.45
270.0	6.82	6.68	6.22	6.03	5.75	5.43	5.34	5.06	4.78
315.0	8.07	7.80	7.52	7.29	7.05	6.87	6.64	6.45	6.31
360.0	6.50	6.17	5.89	5.71	5.43	5.15	4.92	4.73	4.50
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	4.27	4.04	3.85	3.62	3.39	3.34	3.11	2.92	2.78
45.0	4.32	4.08	3.90	3.62	3.39	3.20	3.02	2.83	2.60
90.0	3.94	3.71	3.53	3.34	3.11	2.92	2.83	2.60	2.51
135.0	5.99	5.75	5.61	5.43	5.24	5.06	4.92	4.78	4.64
180.0	4.36	4.13	3.85	3.67	3.48	3.29	3.06	2.88	2.74
225.0	4.22	4.04	3.76	3.62	3.34	3.16	2.97	2.69	2.55
270.0	4.59	4.41	4.18	3.94	3.81	3.57	3.39	3.11	2.97
315.0	6.08	5.94	5.71	5.57	5.38	5.24	5.01	4.92	4.83
360.0	4.27	4.04	3.85	3.62	3.39	3.34	3.11	2.92	2.78
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	2.51	2.37	2.23	2.09	1.95	1.81	1.67	1.58	1.53
45.0	2.37	2.23	2.04	1.90	1.67	1.62	1.44	1.35	1.30
90.0	2.37	2.18	2.09	1.90	1.76	1.67	1.62	1.53	1.39
135.0	4.50	4.41	4.27	4.27	3.99	3.76	3.48	3.11	2.83
180.0	2.55	2.37	2.18	2.09	1.86	1.76	1.62	1.53	1.48
225.0	2.37	2.18	2.00	1.86	1.72	1.53	1.48	1.39	1.30
270.0	2.83	2.60	2.46	2.23	2.13	1.95	1.90	1.72	1.58
315.0	4.69	4.55	4.45	4.41	4.27	4.13	3.81	3.34	3.02
360.0	2.51	2.37	2.23	2.09	1.95	1.81	1.67	1.58	1.53

Intensity data(cd)

<b>C/γ(°)</b>	<b>90.0</b>
<b>0.0</b>	<b>1.44</b>
<b>45.0</b>	<b>1.21</b>
<b>90.0</b>	<b>1.30</b>
<b>135.0</b>	<b>2.46</b>
<b>180.0</b>	<b>1.30</b>
<b>225.0</b>	<b>1.21</b>
<b>270.0</b>	<b>1.53</b>
<b>315.0</b>	<b>2.92</b>
<b>360.0</b>	<b>1.44</b>