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## Nata

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LumCAT: 1-0870-A	
Luminaire: 92.70.043.00	
Report No: NATA0100	Voltage(V): 34.3700
Test No: GC2019092701	Current(A): 0.0970
LampCAT: BRIDGELUX V4HD LES5.2	Power (W): 3.3300
Lamp flux(lm): 356.5	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

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## Photometric Results

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Lumens(lm): 320.83  
Efficiency(%): 89.99%  
Lumens(lm)/Power(W): 96.35  
Central intensity(cd): 3698.930  
Maximum intensity(cd): 3698.930  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=11.3  
                                  [C90/270]Total=11.3  
Field angle(10%Imax): [C0/180]Total=22.0  
                                  [C90/270]Total=22.0  
Maximum s/h(1/2): C0\_180=0.20 C90\_270=0.20  
Maximum s/h(1/4): C0\_180=0.19 C90\_270=0.19  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 89.99%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.375%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3698.930	0.000	0	.000%	.000%
1.0	3674.391	3.528	3.528	.990%	1.100%
2.0	3592.898	10.431	13.959	2.926%	4.351%
3.0	3346.594	16.597	30.556	4.655%	9.524%
4.0	2891.742	20.882	51.437	5.857%	16.032%
5.0	2280.234	22.250	73.687	6.240%	22.967%
6.0	1639.076	20.597	94.284	5.777%	29.387%
7.0	1149.588	17.309	111.593	4.855%	34.782%
8.0	822.923	14.117	125.71	3.959%	39.182%
9.0	585.295	11.413	137.123	3.201%	42.739%
10.0	446.759	9.340	146.463	2.620%	45.651%
11.0	370.062	8.162	154.624	2.289%	48.194%
12.0	317.088	7.512	162.136	2.107%	50.536%
13.0	276.131	7.040	169.176	1.975%	52.730%
14.0	236.693	6.564	175.74	1.841%	54.776%
15.0	212.323	6.164	181.904	1.729%	56.697%
16.0	197.191	6.001	187.905	1.683%	58.568%
17.0	188.557	6.007	193.912	1.685%	60.440%
18.0	180.823	6.090	200.002	1.708%	62.338%
19.0	174.895	6.189	206.191	1.736%	64.267%
20.0	169.727	6.308	212.499	1.769%	66.233%
21.0	164.602	6.420	218.918	1.801%	68.234%
22.0	159.405	6.511	225.429	1.826%	70.264%
23.0	154.252	6.581	232.011	1.846%	72.315%
24.0	148.999	6.630	238.641	1.860%	74.381%
25.0	143.754	6.657	245.297	1.867%	76.456%
26.0	139.057	6.676	251.973	1.872%	78.537%
27.0	134.297	6.688	258.661	1.876%	80.621%
28.0	130.029	6.692	265.353	1.877%	82.707%
29.0	124.833	6.668	272.021	1.870%	84.786%
30.0	119.742	6.603	278.624	1.852%	86.844%
31.0	112.563	6.465	285.089	1.813%	88.859%
32.0	100.673	6.109	291.198	1.713%	90.763%
33.0	85.648	5.489	296.687	1.540%	92.474%
34.0	67.198	4.626	301.313	1.297%	93.915%
35.0	50.674	3.661	304.973	1.027%	95.056%
36.0	33.251	2.672	307.646	.749%	95.889%
37.0	19.392	1.717	309.363	.482%	96.424%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	10.118	0.985	310.348	.276%	96.731%
39.0	5.716	0.540	310.888	.152%	96.900%
40.0	4.556	0.358	311.246	.100%	97.012%
41.0	3.973	0.304	311.55	.085%	97.106%
42.0	3.614	0.276	311.826	.077%	97.192%
43.0	3.319	0.257	312.082	.072%	97.272%
44.0	3.129	0.243	312.326	.068%	97.348%
45.0	2.974	0.235	312.56	.066%	97.421%
46.0	2.841	0.227	312.788	.064%	97.492%
47.0	2.749	0.222	313.01	.062%	97.561%
48.0	2.665	0.219	313.229	.061%	97.630%
49.0	2.580	0.215	313.444	.060%	97.697%
50.0	2.489	0.211	313.656	.059%	97.763%
51.0	2.412	0.207	313.863	.058%	97.827%
52.0	2.363	0.205	314.068	.057%	97.891%
53.0	2.313	0.203	314.271	.057%	97.954%
54.0	2.236	0.201	314.472	.056%	98.017%
55.0	2.173	0.197	314.669	.055%	98.078%
56.0	2.088	0.193	314.861	.054%	98.138%
57.0	2.046	0.189	315.05	.053%	98.197%
58.0	2.025	0.188	315.239	.053%	98.256%
59.0	2.032	0.190	315.428	.053%	98.315%
60.0	2.046	0.193	315.621	.054%	98.375%
61.0	2.074	0.197	315.817	.055%	98.436%
62.0	2.095	0.201	316.018	.056%	98.499%
63.0	2.109	0.204	316.223	.057%	98.563%
64.0	2.088	0.206	316.429	.058%	98.627%
65.0	2.039	0.204	316.633	.057%	98.691%
66.0	1.955	0.199	316.832	.056%	98.753%
67.0	1.828	0.190	317.023	.053%	98.812%
68.0	1.737	0.181	317.203	.051%	98.868%
69.0	1.702	0.175	317.379	.049%	98.923%
70.0	1.659	0.173	317.551	.048%	98.977%
71.0	1.638	0.170	317.722	.048%	99.030%
72.0	1.631	0.170	317.892	.048%	99.083%
73.0	1.610	0.170	318.061	.048%	99.136%
74.0	1.596	0.169	318.23	.047%	99.188%
75.0	1.589	0.168	318.398	.047%	99.241%

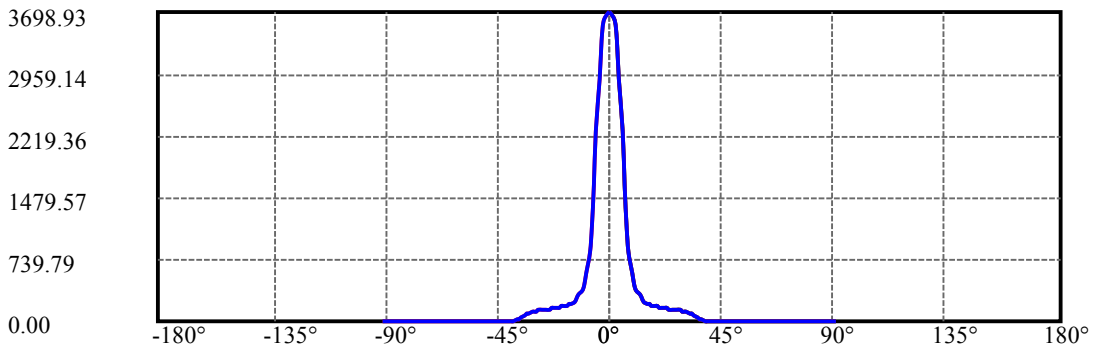
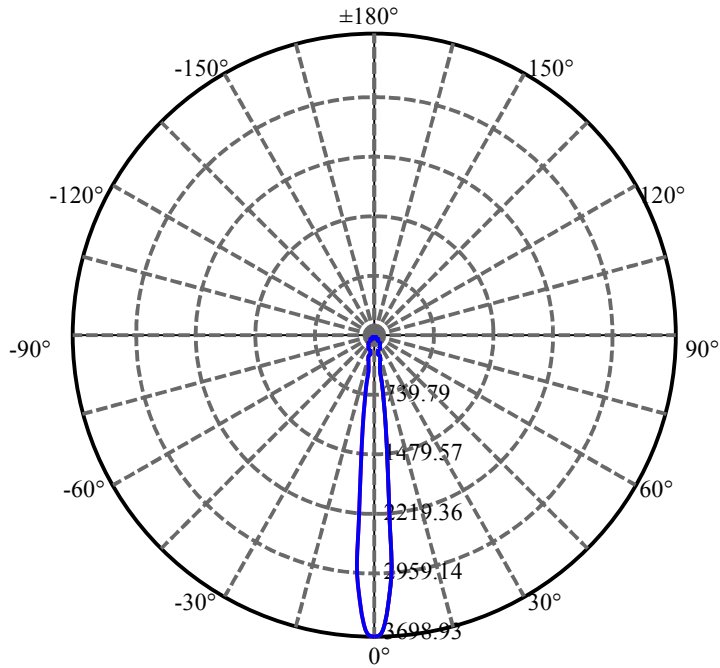
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	1.575	0.168	318.566	.047%	99.293%
77.0	1.568	0.168	318.734	.047%	99.345%
78.0	1.547	0.167	318.9	.047%	99.397%
79.0	1.547	0.166	319.066	.047%	99.449%
80.0	1.540	0.166	319.233	.047%	99.501%
81.0	1.512	0.165	319.398	.046%	99.552%
82.0	1.505	0.164	319.561	.046%	99.603%
83.0	1.484	0.162	319.724	.046%	99.654%
84.0	1.477	0.161	319.885	.045%	99.704%
85.0	1.470	0.161	320.046	.045%	99.754%
86.0	1.470	0.161	320.207	.045%	99.804%
87.0	1.455	0.160	320.367	.045%	99.854%
88.0	1.420	0.158	320.524	.044%	99.903%
89.0	1.413	0.155	320.68	.044%	99.952%
90.0	1.406	0.155	320.834	.043%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	278.62	78.15%	86.84%
0-40	311.25	87.30%	97.01%
0-60	315.62	88.52%	98.38%
0-90	320.68	89.94%	99.95%
0-120	320.68	89.94%	99.95%
0-180	320.83	89.99%	100.00%
60-90	5.25	1.47%	1.64%
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%
0-26.70	256.67	71.99%	80.00%

ZONAL LUMEN SUMMARY

0-10	146.46
10-20	66.04
20-30	66.13
30-40	32.62
40-50	2.41
50-60	1.97
60-70	1.93
70-80	1.68
80-90	1.45
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



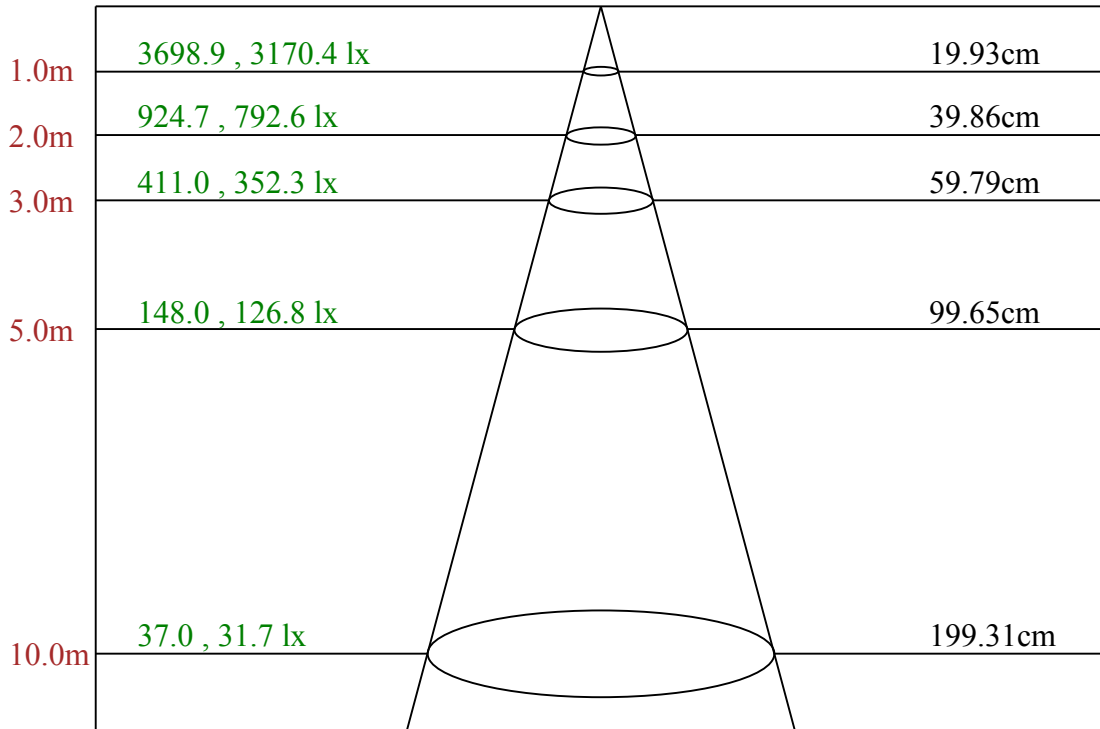
C0(Max): —————

C0/C180: —————

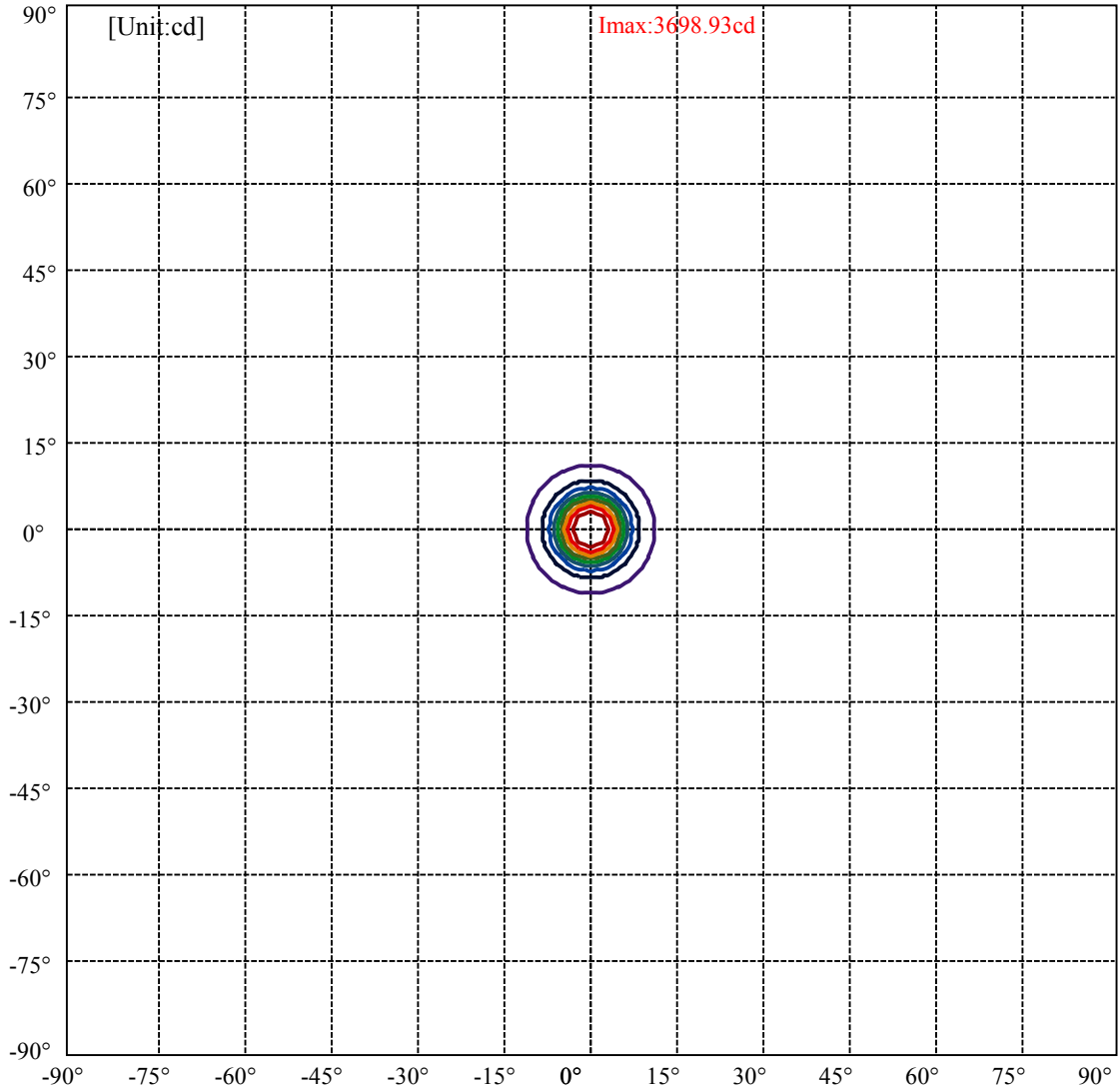
C90/C270: —————

Field angle(10%Imax):C0/180Left:11.0 Right:11.0  
:C90/270Left:11.0 Right:11.0

Beam Angle(50%Imax):C0/180Left:5.7 Right:5.7  
:C90/270Left:5.7 Right:5.7

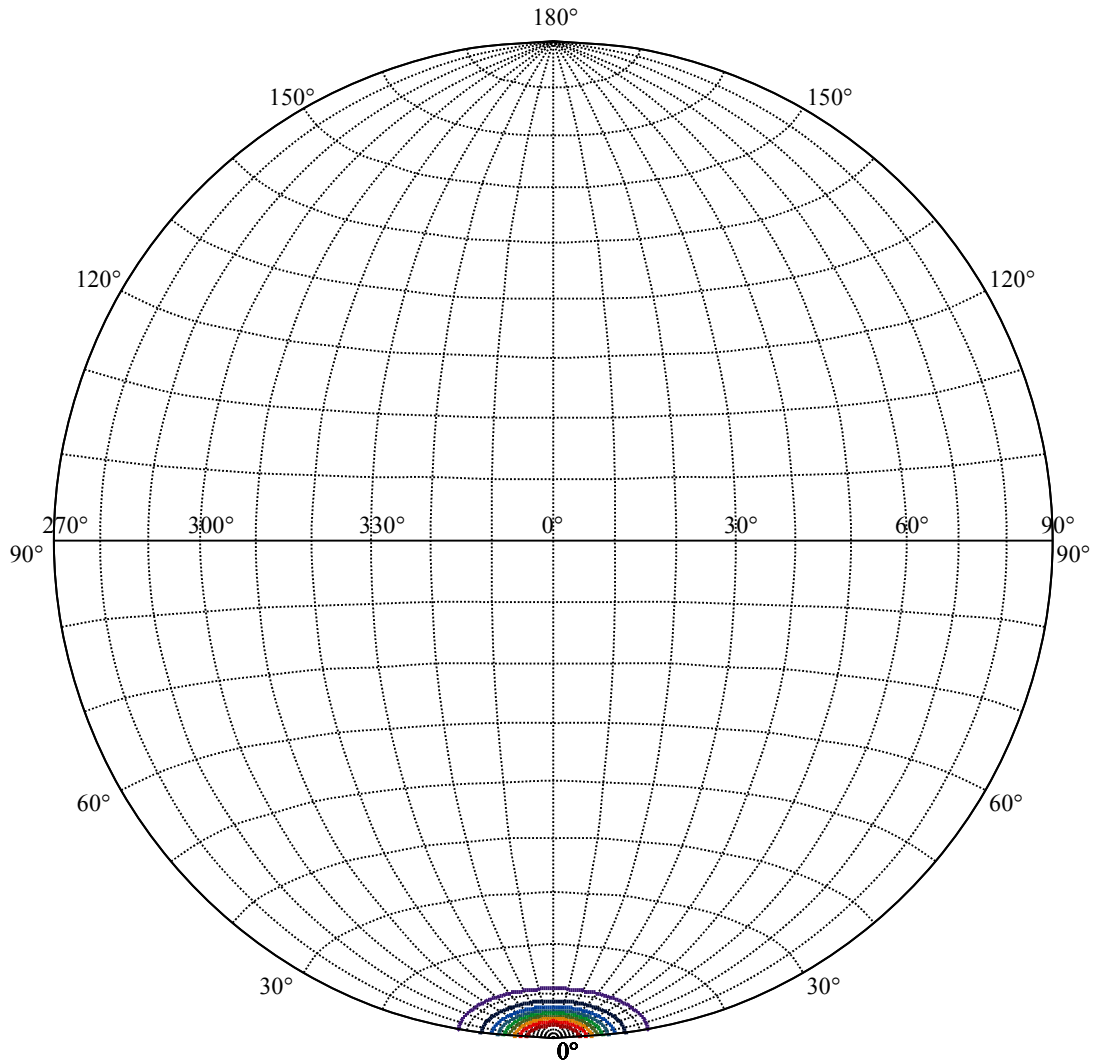


Max , Ave      Beam angle of C0 plane 11.38



(10%Imax) 369.893	—
(20%Imax) 739.786	—
(30%Imax) 1109.68	—
(40%Imax) 1479.57	—
(50%Imax) 1849.46	—
(60%Imax) 2219.36	—
(70%Imax) 2589.25	—
(80%Imax) 2959.14	—
(90%Imax) 3329.04	—





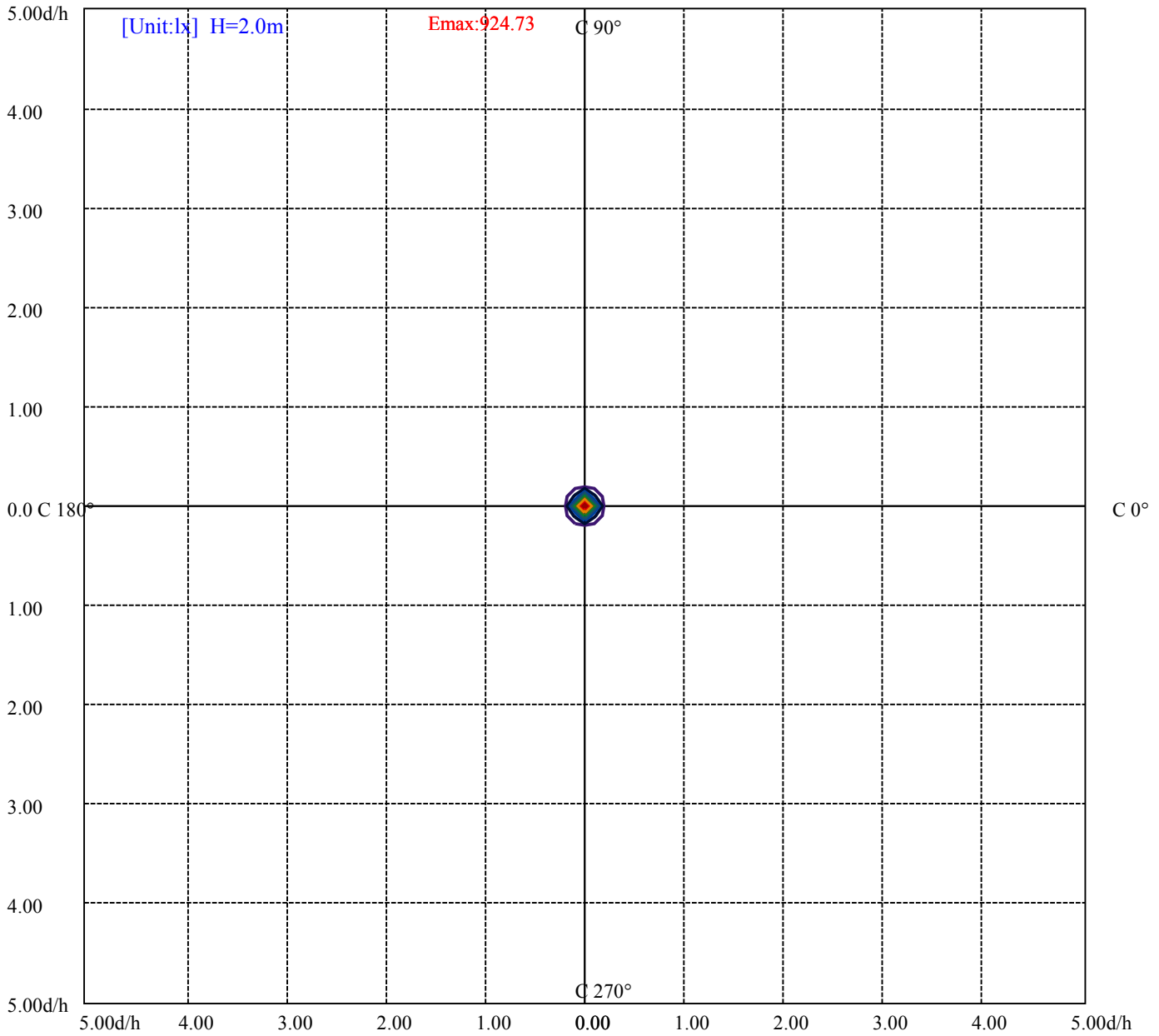
House

[Unit:cd]

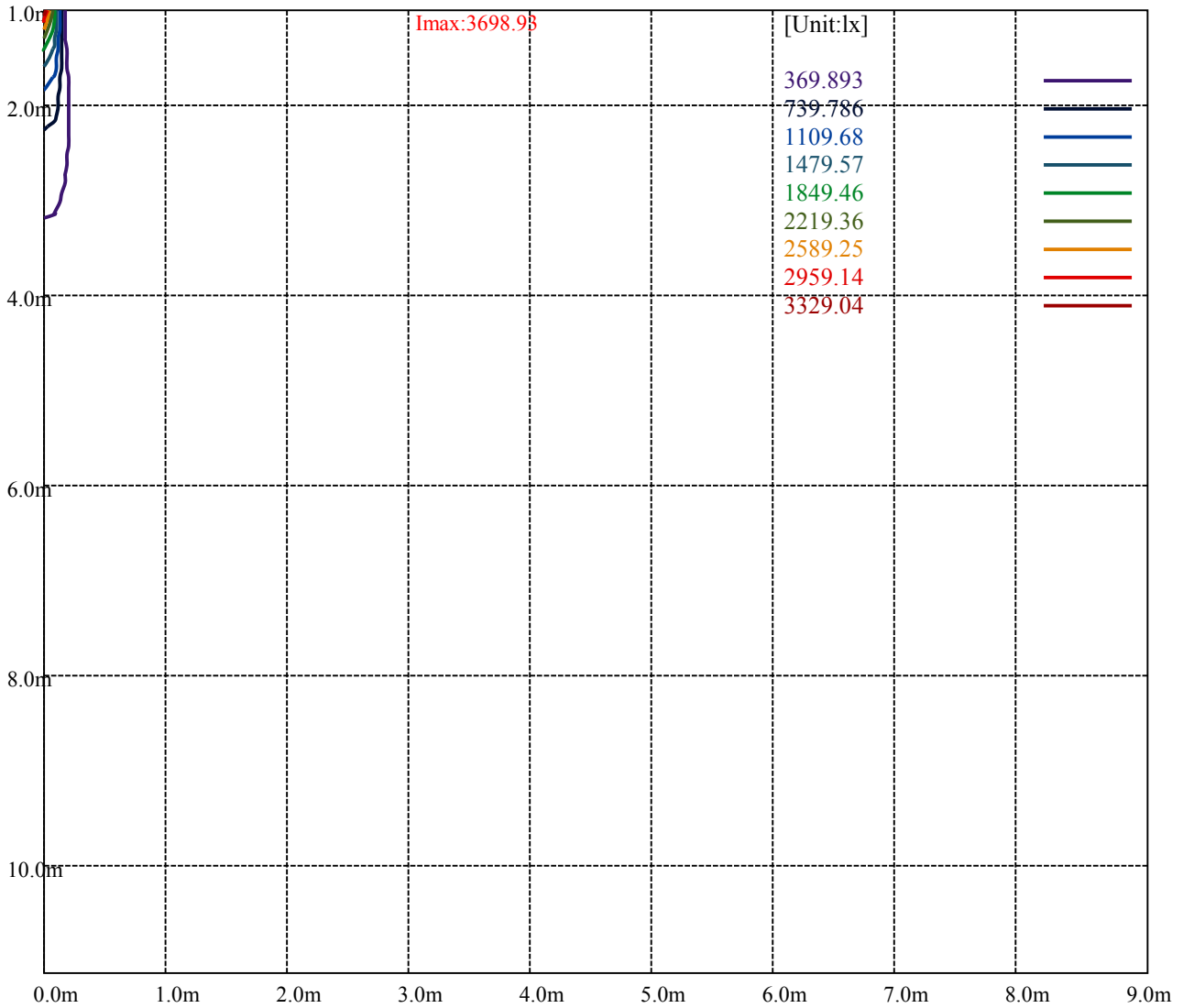
Road

**Imax:3698.93**

(10%Imax)	369.893	—
(20%Imax)	739.786	—
(30%Imax)	1109.68	—
(40%Imax)	1479.57	—
(50%Imax)	1849.46	—
(60%Imax)	2219.36	—
(70%Imax)	2589.25	—
(80%Imax)	2959.14	—
(90%Imax)	3329.04	—



- (10%Emax) 92.47325
- (20%Emax) 184.9462
- (30%Emax) 277.42
- (40%Emax) 369.8925
- (50%Emax) 462.365
- (60%Emax) 554.84
- (70%Emax) 647.3125
- (80%Emax) 739.785
- (90%Emax) 832.2575



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

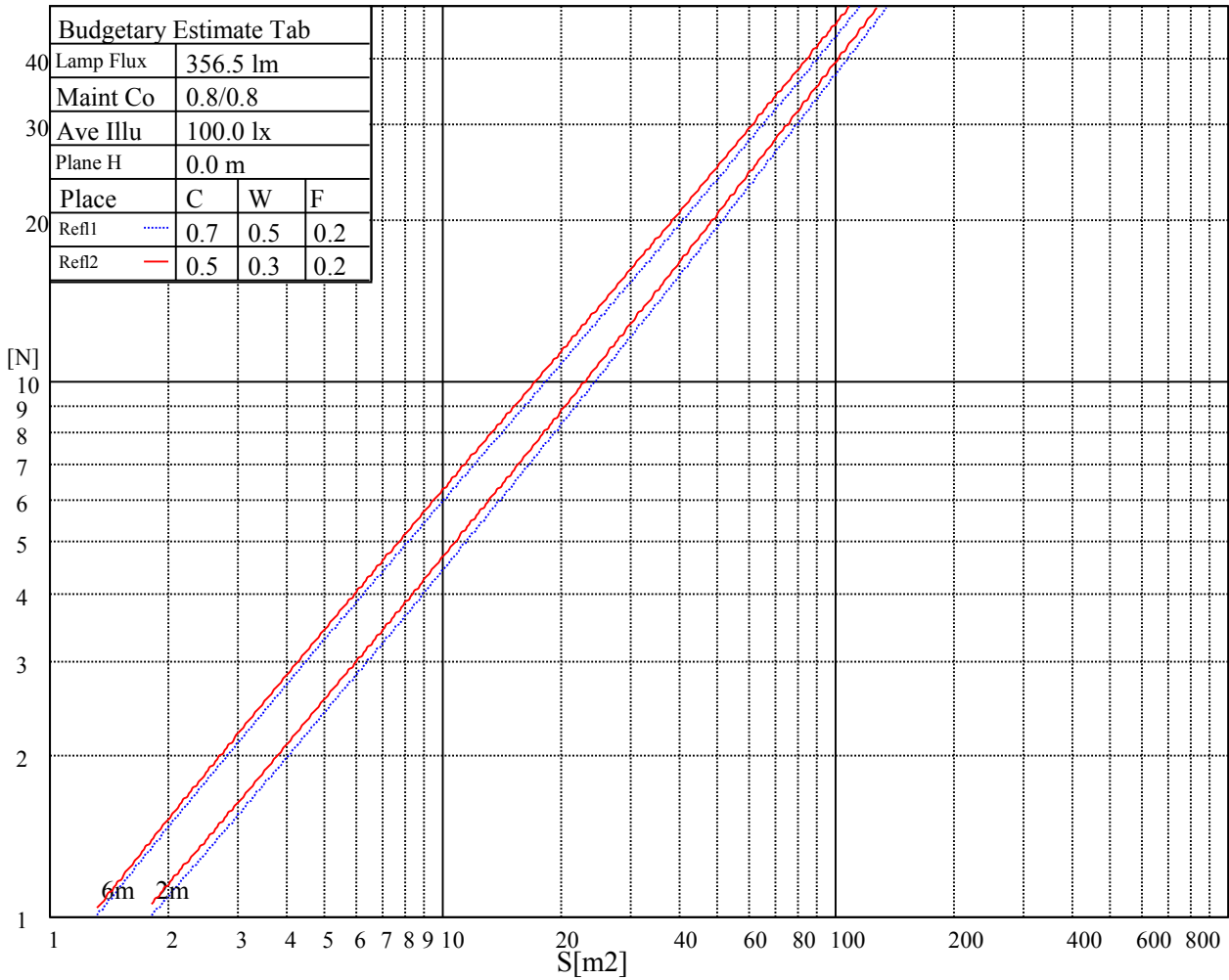
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

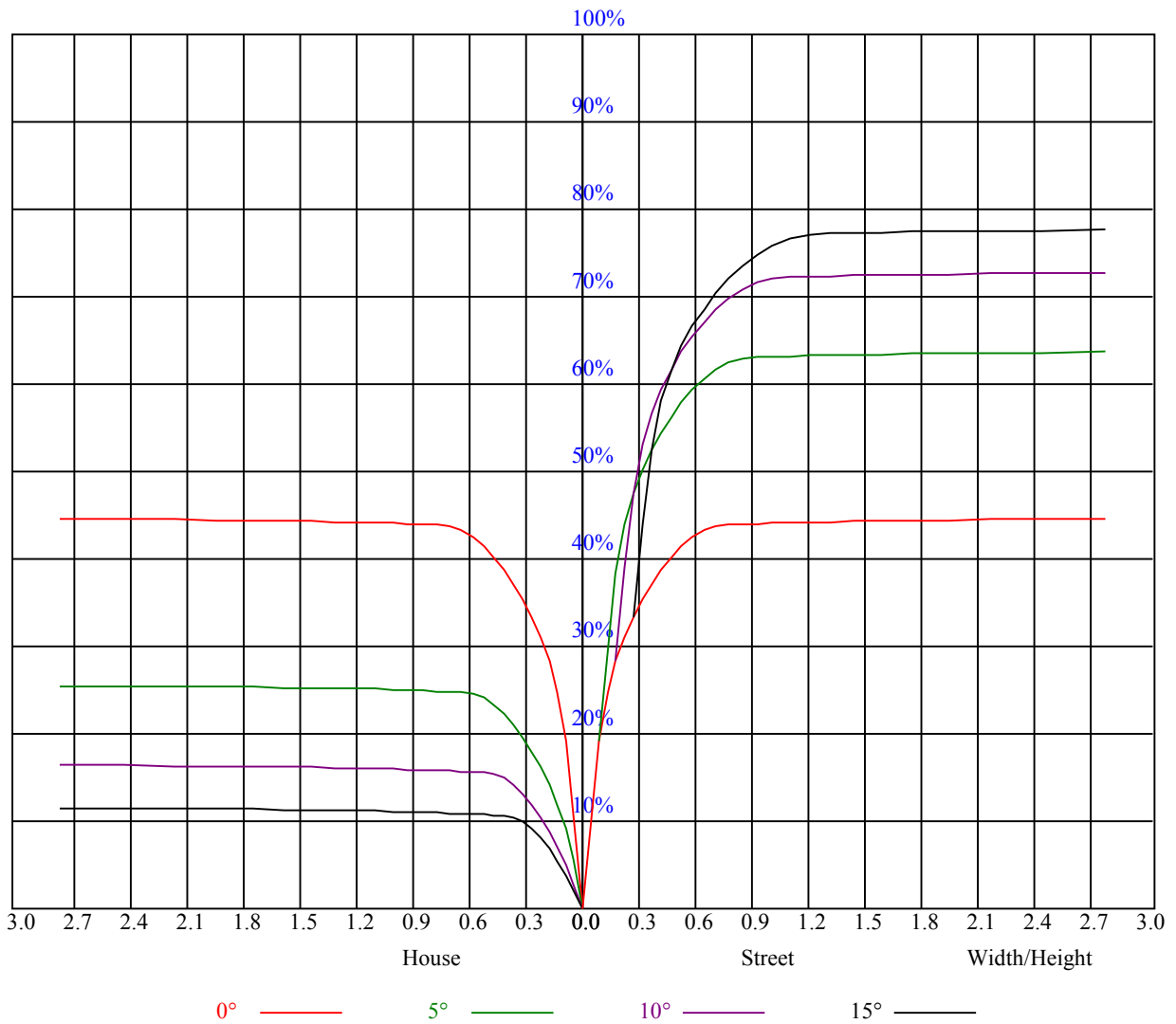
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.07	1.07	1.07	1.05	1.05	1.05	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.90
1	1.01	0.99	0.98	0.99	0.97	0.96	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.88	0.86
2	0.96	0.93	0.91	0.94	0.92	0.90	0.92	0.90	0.88	0.89	0.87	0.86	0.87	0.85	0.84	0.83
3	0.92	0.88	0.85	0.90	0.87	0.85	0.88	0.86	0.83	0.86	0.84	0.82	0.84	0.82	0.81	0.80
4	0.88	0.84	0.81	0.87	0.83	0.81	0.85	0.82	0.80	0.83	0.81	0.79	0.82	0.80	0.78	0.77
5	0.84	0.81	0.78	0.84	0.80	0.77	0.82	0.79	0.77	0.81	0.78	0.76	0.80	0.77	0.75	0.74
6	0.81	0.78	0.75	0.81	0.77	0.74	0.80	0.76	0.74	0.79	0.76	0.74	0.77	0.75	0.73	0.72
7	0.79	0.75	0.72	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.75	0.73	0.71	0.70
8	0.76	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.74	0.71	0.69	0.68
9	0.74	0.70	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.72	0.69	0.67	0.72	0.69	0.67	0.66
10	0.72	0.68	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.65



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	3703.50	3661.31	3585.94	3286.69	2728.69	2122.31	1616.06	1009.13	716.06
45.0	3703.50	3693.94	3638.25	3481.31	3056.63	2439.00	1766.81	1252.69	880.88
90.0	3705.75	3679.88	3603.38	3359.81	2877.75	2302.88	1717.31	1118.87	801.73
135.0	3684.38	3706.31	3650.06	3535.88	3270.94	2673.56	2098.13	1542.38	1060.31
180.0	3703.50	3688.88	3627.00	3429.56	3044.25	2431.13	1775.25	1116.45	898.82
225.0	3700.69	3661.88	3562.88	3245.06	2689.88	2097.00	1367.44	1025.66	730.80
270.0	3705.75	3672.00	3602.81	3360.38	2925.00	2291.63	1663.88	1197.56	855.00
315.0	3684.38	3630.94	3472.88	3074.06	2540.81	1884.38	1107.73	933.98	639.79
360.0	3703.50	3661.31	3585.94	3286.69	2728.69	2122.31	1616.06	1009.13	716.06
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	530.44	407.81	337.50	299.25	285.75	227.31	212.12	199.52	192.71
45.0	597.94	470.25	390.94	333.56	284.63	238.78	216.51	199.52	190.52
90.0	598.39	440.72	378.68	322.71	270.45	232.54	210.94	194.01	183.38
135.0	742.50	565.88	446.06	376.88	312.75	287.44	225.51	203.18	192.26
180.0	620.83	467.04	390.49	330.47	277.03	240.92	218.25	199.80	189.84
225.0	538.88	404.83	339.19	291.60	249.13	219.99	203.74	193.11	186.64
270.0	574.31	442.69	363.38	306.56	287.44	233.78	212.06	198.28	189.79
315.0	479.08	374.85	314.27	275.68	241.88	212.79	199.46	190.13	183.32
360.0	530.44	407.81	337.50	299.25	285.75	227.31	212.12	199.52	192.71
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	186.30	180.84	176.74	171.45	166.39	160.82	155.70	148.16	143.33
45.0	183.26	177.30	171.11	165.43	159.24	153.39	147.26	141.64	137.08
90.0	174.26	167.01	160.59	154.74	148.73	143.16	138.54	134.10	130.61
135.0	179.78	172.63	166.67	158.57	152.78	147.77	141.75	137.70	131.01
180.0	181.63	175.33	169.48	165.99	161.55	156.49	152.89	147.94	143.89
225.0	181.01	176.06	173.08	169.43	165.15	160.43	155.25	149.34	145.52
270.0	182.93	176.96	171.11	167.23	161.83	157.56	151.14	146.42	141.41
315.0	177.41	173.03	169.03	163.97	159.58	154.41	149.46	144.73	139.61
360.0	186.30	180.84	176.74	171.45	166.39	160.82	155.70	148.16	143.33
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	138.71	133.48	128.59	124.26	117.00	101.93	84.66	65.59	48.54
45.0	132.30	128.19	124.48	119.98	114.86	105.30	92.59	69.92	52.20
90.0	127.01	124.09	121.78	118.86	114.19	103.39	88.65	70.93	54.96
135.0	124.59	119.14	115.48	110.31	104.34	97.48	85.73	71.78	60.08
180.0	139.11	134.49	130.56	126.28	120.43	110.98	96.36	74.64	58.95
225.0	141.53	136.91	130.95	126.11	118.35	104.29	88.54	67.11	47.76
270.0	135.68	131.46	126.68	121.78	115.76	104.06	87.41	71.04	52.82
315.0	135.45	132.47	120.15	110.36	95.57	77.96	61.26	46.58	30.09
360.0	138.71	133.48	128.59	124.26	117.00	101.93	84.66	65.59	48.54
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	29.25	14.79	7.59	4.44	3.71	3.09	2.93	2.64	2.48
45.0	34.37	19.69	9.39	4.61	3.71	3.32	2.81	2.53	2.36
90.0	36.00	19.07	9.68	5.01	4.33	3.94	3.54	3.15	2.93
135.0	44.83	30.15	17.33	9.28	5.91	4.78	4.22	3.94	3.83
180.0	39.49	23.74	10.80	5.12	3.94	3.54	3.15	2.87	2.64
225.0	29.48	15.02	7.37	4.44	3.77	3.21	2.98	2.70	2.59
270.0	34.03	19.41	9.34	5.29	4.67	4.16	3.99	3.83	3.60
315.0	18.56	13.28	9.45	7.54	6.41	5.74	5.29	4.89	4.61
360.0	29.25	14.79	7.59	4.44	3.71	3.09	2.93	2.64	2.48



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	2.36	2.31	2.31	2.19	2.14	2.03	1.97	1.91	1.86
45.0	2.31	2.25	2.19	2.14	2.03	1.91	1.86	1.86	1.86
90.0	2.76	2.59	2.48	2.42	2.36	2.36	2.25	2.19	2.19
135.0	3.66	3.54	3.43	3.38	3.32	3.15	3.04	2.81	2.70
180.0	2.53	2.48	2.42	2.42	2.42	2.36	2.19	2.19	2.08
225.0	2.48	2.36	2.31	2.25	2.14	2.08	2.03	1.97	1.91
270.0	3.38	3.15	2.98	2.76	2.53	2.42	2.31	2.25	2.19
315.0	4.33	4.05	3.88	3.77	3.71	3.60	3.66	3.71	3.71
360.0	2.36	2.31	2.31	2.19	2.14	2.03	1.97	1.91	1.86
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	1.86	1.80	1.80	1.80	1.80	1.80	1.80	1.91	2.08
45.0	1.80	1.80	1.74	1.74	1.74	1.74	1.74	1.74	1.74
90.0	2.14	2.25	2.25	2.25	2.25	2.25	2.31	2.42	2.42
135.0	2.53	2.42	2.31	2.25	2.25	2.31	2.31	2.36	2.42
180.0	2.03	1.97	1.91	1.80	1.80	1.80	1.80	1.80	1.80
225.0	1.86	1.86	1.80	1.80	1.74	1.74	1.74	1.74	1.74
270.0	2.25	2.25	2.25	2.25	2.31	2.42	2.53	2.53	2.48
315.0	3.43	3.04	2.64	2.48	2.31	2.19	2.14	2.08	2.08
360.0	1.86	1.80	1.80	1.80	1.80	1.80	1.80	1.91	2.08
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	2.25	2.19	2.08	2.14	2.03	1.86	1.69	1.63	1.58
45.0	1.74	1.74	1.69	1.74	1.69	1.69	1.69	1.63	1.63
90.0	2.31	2.25	2.25	2.03	1.86	1.69	1.69	1.63	1.63
135.0	2.42	2.42	2.36	2.08	1.86	1.80	1.80	1.74	1.69
180.0	1.80	1.80	1.80	1.86	1.80	1.74	1.69	1.63	1.63
225.0	1.74	1.69	1.69	1.69	1.69	1.69	1.69	1.63	1.63
270.0	2.48	2.53	2.48	2.25	1.86	1.69	1.63	1.63	1.63
315.0	2.14	2.08	1.97	1.86	1.86	1.74	1.74	1.74	1.69
360.0	2.25	2.19	2.08	2.14	2.03	1.86	1.69	1.63	1.58
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	1.58	1.58	1.58	1.58	1.58	1.58	1.52	1.52	1.52
45.0	1.63	1.58	1.58	1.58	1.52	1.52	1.52	1.52	1.52
90.0	1.63	1.63	1.58	1.58	1.58	1.58	1.58	1.58	1.52
135.0	1.69	1.69	1.69	1.63	1.63	1.63	1.58	1.58	1.58
180.0	1.63	1.58	1.58	1.58	1.58	1.52	1.52	1.52	1.52
225.0	1.58	1.58	1.58	1.58	1.52	1.52	1.52	1.52	1.52
270.0	1.63	1.58	1.58	1.58	1.58	1.58	1.58	1.58	1.58
315.0	1.69	1.69	1.63	1.63	1.63	1.63	1.58	1.58	1.58
360.0	1.58	1.58	1.58	1.58	1.58	1.58	1.52	1.52	1.52
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	1.52	1.52	1.46	1.46	1.46	1.46	1.46	1.41	1.41
45.0	1.52	1.52	1.46	1.46	1.46	1.46	1.46	1.46	1.41
90.0	1.52	1.52	1.46	1.46	1.46	1.46	1.46	1.41	1.41
135.0	1.52	1.52	1.52	1.52	1.52	1.46	1.46	1.41	1.41
180.0	1.52	1.46	1.46	1.46	1.46	1.46	1.46	1.41	1.41
225.0	1.46	1.46	1.46	1.46	1.46	1.52	1.46	1.41	1.41
270.0	1.52	1.52	1.52	1.52	1.46	1.46	1.46	1.46	1.46
315.0	1.52	1.52	1.52	1.46	1.46	1.46	1.41	1.41	1.41
360.0	1.52	1.52	1.46	1.46	1.46	1.46	1.46	1.41	1.41

Intensity data(cd)

<b>C/γ(°)</b>	<b>90.0</b>
<b>0.0</b>	<b>1.41</b>
<b>45.0</b>	<b>1.41</b>
<b>90.0</b>	<b>1.41</b>
<b>135.0</b>	<b>1.41</b>
<b>180.0</b>	<b>1.41</b>
<b>225.0</b>	<b>1.41</b>
<b>270.0</b>	<b>1.41</b>
<b>315.0</b>	<b>1.41</b>
<b>360.0</b>	<b>1.41</b>