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## Nata

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LumCAT: LN01D02824DA-N

Luminaire: 92.70.307.00

Report No: 211117-B003

Test No: 211117-C003

LampCAT: Bridgelux V3HD 30G0400-C-83

Lamp flux(lm): 345.5

Number of Lamps: 1

Length(mm): 111

Phm Type: C

Voltage(V): 11.8500

Current(A): 0.3200

Power (W): 3.7920

PF: 0.0000

Ballast type: DC

Width(mm): 111

Height(mm): 0

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## Photometric Results

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Lumens(lm): 224.22

Efficiency(%): 64.90%

Lumens(lm)/Power(W): 59.13

Central intensity(cd): 845.033

Maximum intensity(cd): 845.033

Angle of maximum intensity: C=0.0  $\gamma$ =0.0

Beam Angle(50%Imax): [C0/180]Total=23.5

[C90/270]Total=23.5

Field angle(10%Imax): [C0/180]Total=48.0

[C90/270]Total=48.0

Maximum s/h(1/2): C0\_180=0.40 C90\_270=0.40

Maximum s/h(1/4): C0\_180=0.41 C90\_270=0.41

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 64.90%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 95.262%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	845.033	0.000	0	.000%	.000%
1.0	840.701	0.807	0.807	.233%	.360%
2.0	828.310	2.396	3.202	.693%	1.428%
3.0	807.755	3.913	7.115	1.133%	3.173%
4.0	780.179	5.315	12.43	1.538%	5.544%
5.0	745.754	6.564	18.995	1.900%	8.472%
6.0	706.556	7.632	26.627	2.209%	11.876%
7.0	659.149	8.477	35.104	2.454%	15.656%
8.0	613.080	9.105	44.209	2.635%	19.717%
9.0	562.103	9.524	53.733	2.757%	23.965%
10.0	508.146	9.685	63.419	2.803%	28.285%
11.0	459.126	9.665	73.084	2.797%	32.595%
12.0	411.712	9.520	82.603	2.755%	36.841%
13.0	363.096	9.195	91.798	2.661%	40.942%
14.0	318.102	8.719	100.518	2.524%	44.831%
15.0	280.331	8.216	108.733	2.378%	48.495%
16.0	242.918	7.667	116.4	2.219%	51.914%
17.0	211.525	7.077	123.477	2.048%	55.071%
18.0	184.046	6.522	129.999	1.888%	57.980%
19.0	160.324	5.991	135.991	1.734%	60.652%
20.0	139.471	5.487	141.478	1.588%	63.099%
21.0	122.157	5.024	146.501	1.454%	65.340%
22.0	107.391	4.613	151.114	1.335%	67.397%
23.0	94.566	4.238	155.352	1.227%	69.287%
24.0	84.446	3.914	159.266	1.133%	71.033%
25.0	74.788	3.621	162.886	1.048%	72.647%
26.0	67.065	3.348	166.235	.969%	74.141%
27.0	60.171	3.113	169.348	.901%	75.529%
28.0	54.144	2.894	172.242	.838%	76.820%
29.0	48.841	2.694	174.936	.780%	78.022%
30.0	44.508	2.520	177.457	.730%	79.146%
31.0	40.236	2.358	179.815	.683%	80.197%
32.0	36.606	2.201	182.016	.637%	81.179%
33.0	33.574	2.068	184.084	.598%	82.101%
34.0	30.676	1.944	186.028	.563%	82.969%
35.0	28.271	1.831	187.859	.530%	83.785%
36.0	25.985	1.728	189.586	.500%	84.556%
37.0	24.006	1.630	191.217	.472%	85.283%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	22.146	1.540	192.757	.446%	85.970%
39.0	20.480	1.455	194.212	.421%	86.619%
40.0	19.061	1.379	195.591	.399%	87.234%
41.0	17.814	1.313	196.904	.380%	87.819%
42.0	16.619	1.251	198.155	.362%	88.377%
43.0	15.536	1.191	199.347	.345%	88.909%
44.0	14.639	1.139	200.485	.330%	89.417%
45.0	13.751	1.091	201.577	.316%	89.903%
46.0	13.004	1.046	202.623	.303%	90.370%
47.0	12.257	1.005	203.628	.291%	90.818%
48.0	11.614	0.965	204.593	.279%	91.248%
49.0	10.965	0.927	205.52	.268%	91.662%
50.0	10.337	0.888	206.408	.257%	92.058%
51.0	9.807	0.852	207.26	.247%	92.438%
52.0	9.314	0.820	208.081	.237%	92.804%
53.0	8.814	0.789	208.869	.228%	93.156%
54.0	8.350	0.757	209.626	.219%	93.493%
55.0	7.940	0.727	210.353	.210%	93.817%
56.0	7.521	0.699	211.052	.202%	94.129%
57.0	7.178	0.672	211.724	.195%	94.429%
58.0	6.812	0.647	212.371	.187%	94.717%
59.0	6.506	0.623	212.993	.180%	94.995%
60.0	6.177	0.599	213.592	.173%	95.262%
61.0	5.886	0.576	214.168	.167%	95.519%
62.0	5.632	0.555	214.723	.161%	95.766%
63.0	5.378	0.535	215.258	.155%	96.005%
64.0	5.146	0.516	215.775	.149%	96.236%
65.0	4.915	0.498	216.273	.144%	96.458%
66.0	4.698	0.480	216.752	.139%	96.672%
67.0	4.481	0.462	217.214	.134%	96.877%
68.0	4.302	0.445	217.659	.129%	97.076%
69.0	4.115	0.429	218.088	.124%	97.267%
70.0	3.929	0.413	218.501	.120%	97.452%
71.0	3.742	0.396	218.898	.115%	97.628%
72.0	3.563	0.380	219.278	.110%	97.798%
73.0	3.391	0.364	219.641	.105%	97.960%
74.0	3.219	0.348	219.989	.101%	98.115%
75.0	3.070	0.332	220.321	.096%	98.263%

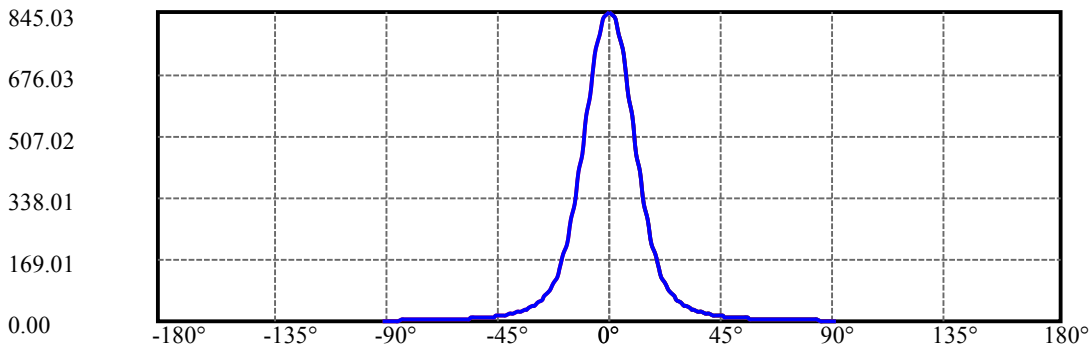
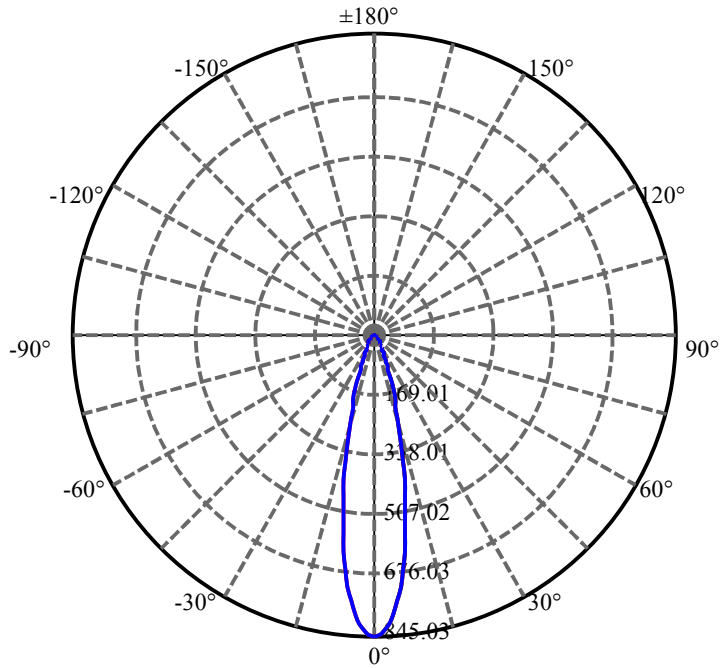
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	3.018	0.323	220.644	.094%	98.407%
77.0	3.115	0.327	220.971	.095%	98.553%
78.0	3.227	0.339	221.311	.098%	98.705%
79.0	3.339	0.353	221.663	.102%	98.862%
80.0	3.637	0.376	222.04	.109%	99.030%
81.0	3.667	0.395	222.435	.114%	99.206%
82.0	3.324	0.379	222.814	.110%	99.375%
83.0	2.779	0.332	223.145	.096%	99.523%
84.0	2.136	0.268	223.413	.077%	99.642%
85.0	1.569	0.202	223.615	.059%	99.732%
86.0	1.270	0.155	223.77	.045%	99.802%
87.0	1.061	0.128	223.898	.037%	99.859%
88.0	0.978	0.112	224.01	.032%	99.908%
89.0	0.919	0.104	224.114	.030%	99.955%
90.0	0.934	0.102	224.215	.029%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	177.46	51.36%	79.15%
0-40	195.59	56.61%	87.23%
0-60	213.59	61.82%	95.26%
0-90	224.11	64.87%	99.95%
0-120	224.11	64.87%	99.95%
0-180	224.22	64.90%	100.00%
60-90	11.12	3.22%	4.96%
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%
0-30.81	179.37	51.92%	80.00%

ZONAL LUMEN SUMMARY

0-10	63.42
10-20	78.06
20-30	35.98
30-40	18.13
40-50	10.82
50-60	7.18
60-70	4.91
70-80	3.54
80-90	2.07
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: —————

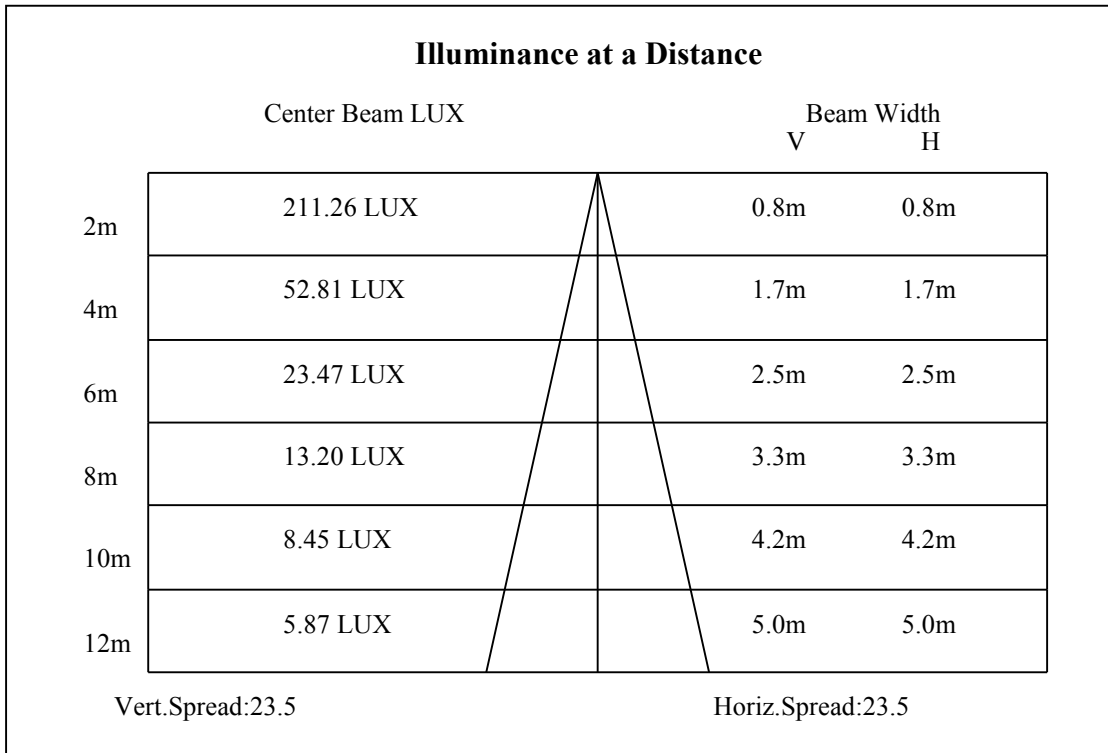
C90/C270: —————

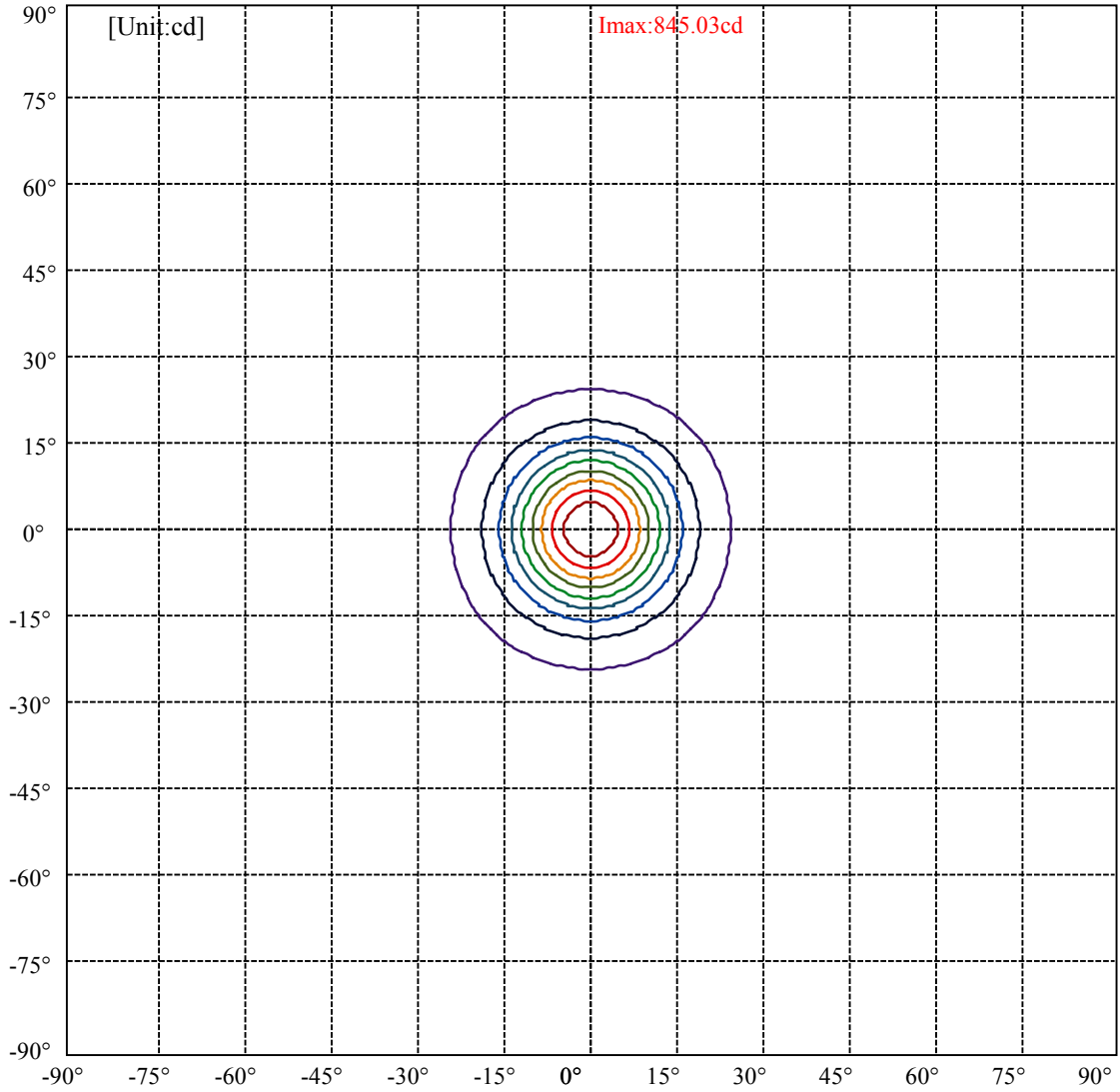
Field angle(10%Imax):C0/180Left:24.0 Right:24.0

:C90/270Left:24.0 Right:24.0

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

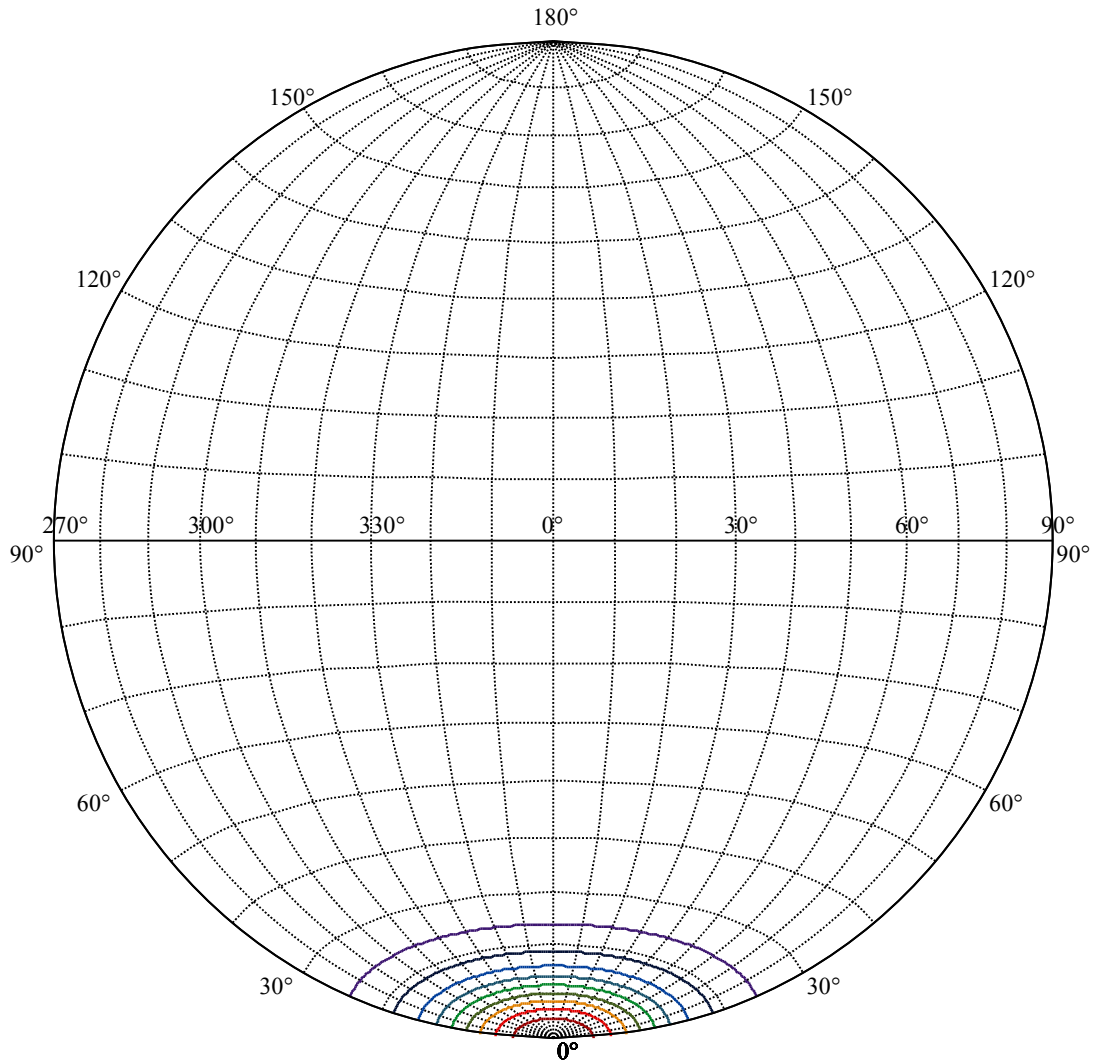
:C90/270Left:11.8 Right:11.8





(10%Imax) 84.5033	—
(20%Imax) 169.007	—
(30%Imax) 253.51	—
(40%Imax) 338.013	—
(50%Imax) 422.516	—
(60%Imax) 507.02	—
(70%Imax) 591.523	—
(80%Imax) 676.026	—
(90%Imax) 760.53	—





House

[Unit:cd]

Road

**Imax:845.03**

(10%Imax) 84.5033

(20%Imax) 169.007

(30%Imax) 253.51

(40%Imax) 338.013

(50%Imax) 422.516

(60%Imax) 507.02

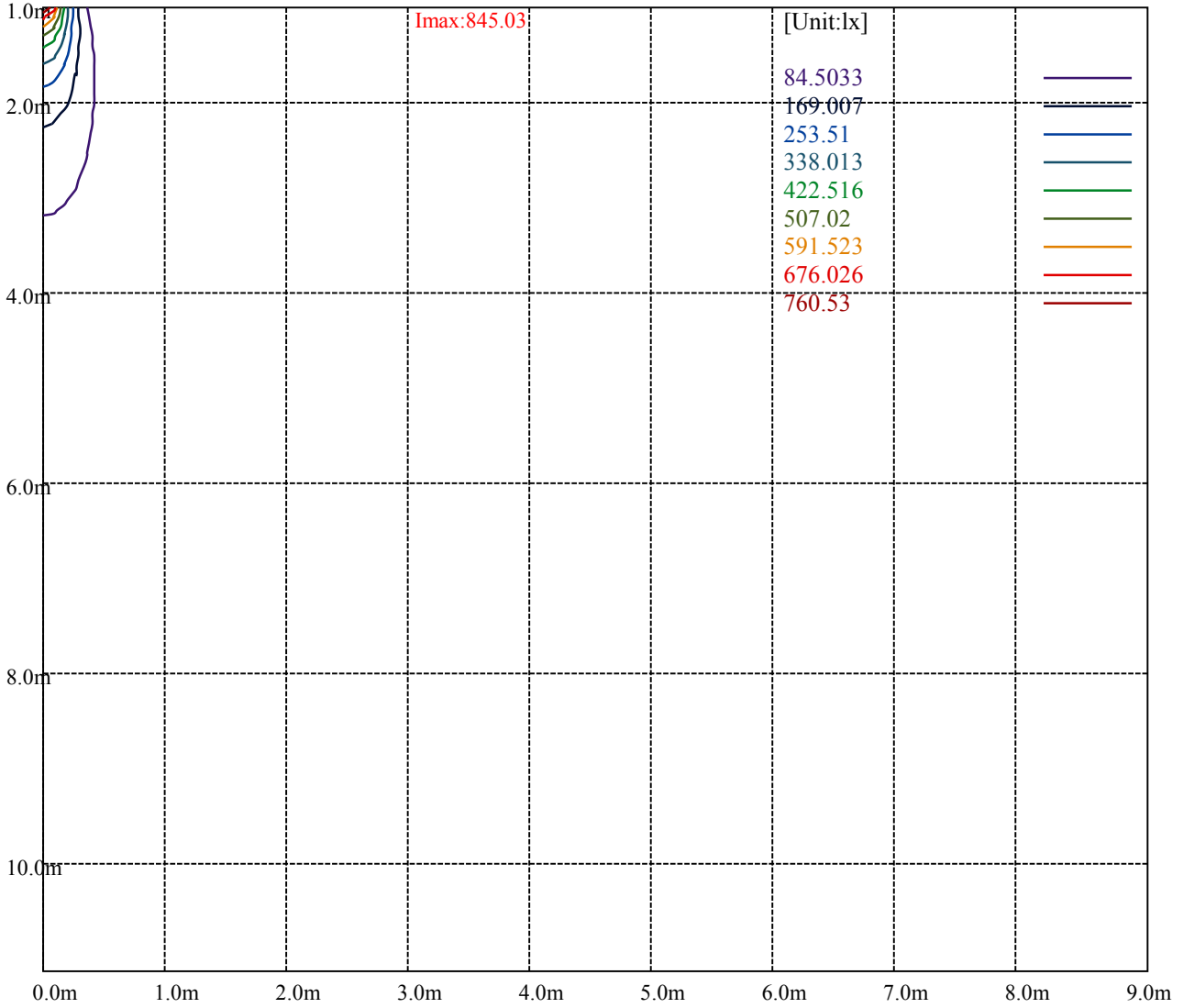
(70%Imax) 591.523

(80%Imax) 676.026

(90%Imax) 760.53







Luminance Table

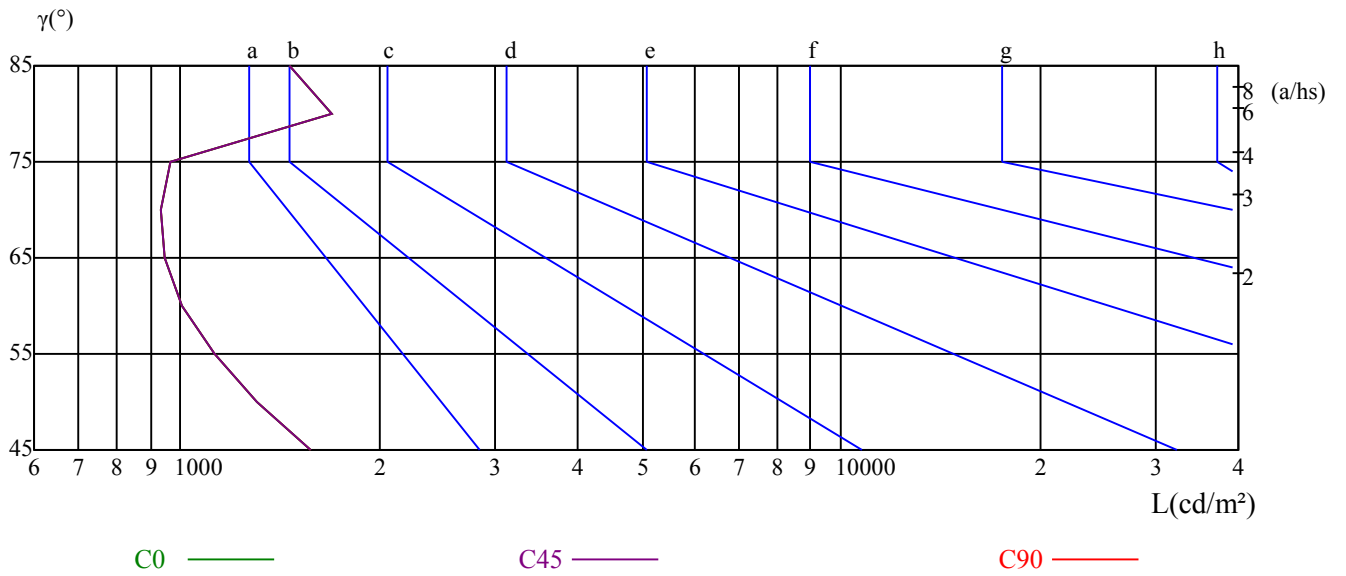
$\gamma$	45	50	55	60	65	70	75	80	85
C0	1578	1305	1123	1003	944	932	963	1700	1461
C45	1578	1305	1123	1003	944	932	963	1700	1461
C90	1578	1305	1123	1003	944	932	963	1700	1461

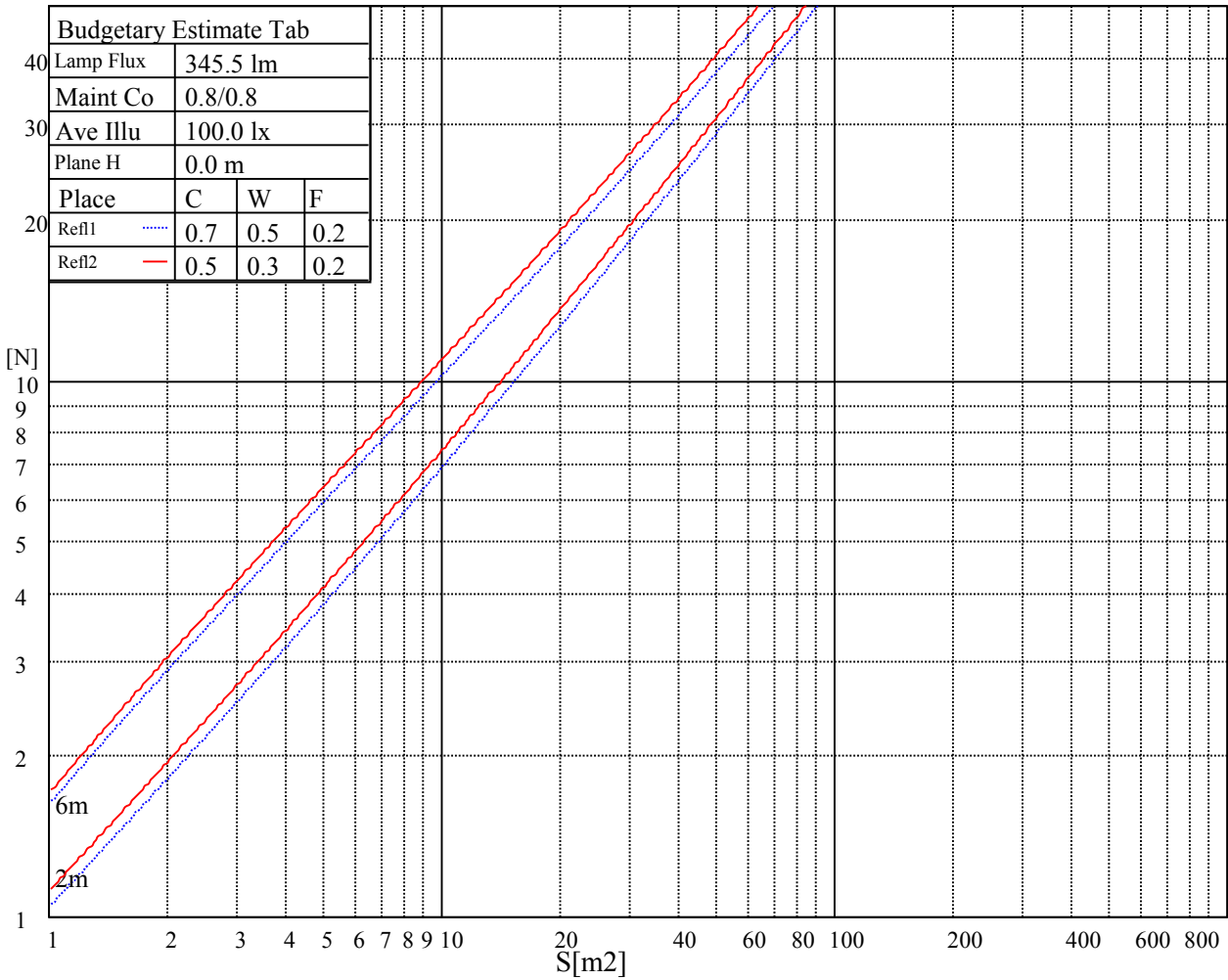
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
944	944	944	963	963	963	1461	1461	1461

Glare Table

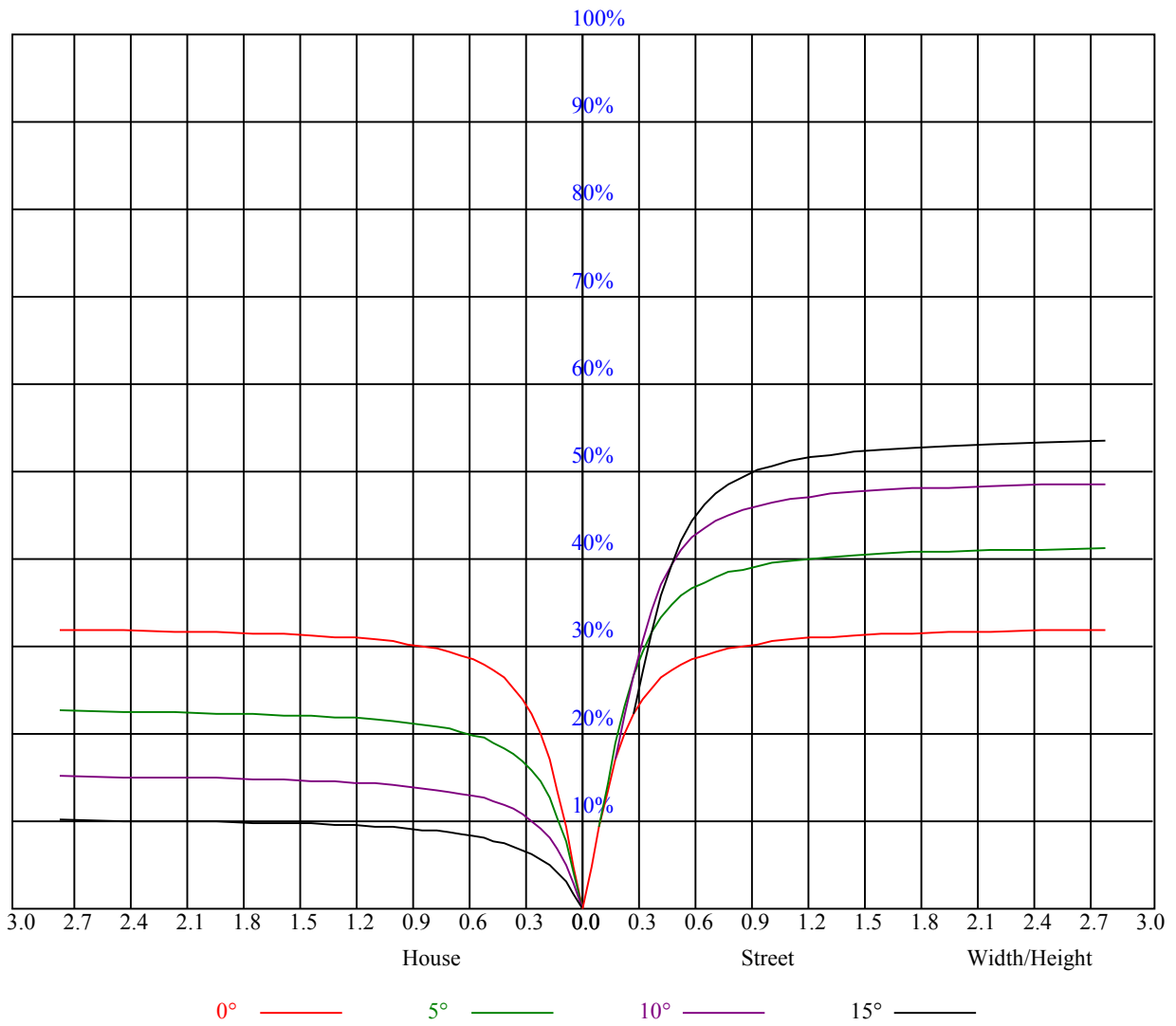
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.77	0.77	0.77	0.75	0.75	0.75	0.72	0.72	0.72	0.69	0.69	0.69	0.66	0.66	0.66	0.65
1	0.72	0.70	0.69	0.70	0.69	0.68	0.68	0.67	0.66	0.65	0.64	0.64	0.63	0.62	0.62	0.61
2	0.67	0.65	0.63	0.66	0.64	0.62	0.64	0.62	0.61	0.62	0.61	0.59	0.60	0.59	0.58	0.57
3	0.63	0.60	0.58	0.62	0.60	0.57	0.61	0.58	0.57	0.59	0.57	0.56	0.58	0.56	0.55	0.54
4	0.60	0.57	0.54	0.59	0.56	0.54	0.58	0.55	0.53	0.57	0.54	0.53	0.55	0.54	0.52	0.51
5	0.57	0.54	0.51	0.57	0.53	0.51	0.55	0.53	0.51	0.54	0.52	0.50	0.53	0.51	0.50	0.49
6	0.55	0.51	0.49	0.54	0.51	0.49	0.53	0.50	0.48	0.52	0.50	0.48	0.51	0.49	0.48	0.47
7	0.52	0.49	0.46	0.52	0.49	0.46	0.51	0.48	0.46	0.50	0.48	0.46	0.50	0.47	0.46	0.45
8	0.50	0.47	0.45	0.50	0.47	0.44	0.49	0.46	0.44	0.49	0.46	0.44	0.48	0.46	0.44	0.43
9	0.48	0.45	0.43	0.48	0.45	0.43	0.47	0.45	0.43	0.47	0.44	0.43	0.46	0.44	0.42	0.42
10	0.47	0.43	0.41	0.46	0.43	0.41	0.46	0.43	0.41	0.45	0.43	0.41	0.45	0.43	0.41	0.40



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	841.26	849.93	850.64	841.62	825.61	799.08	764.60	728.51	688.41
45.0	850.76	842.46	824.71	801.94	769.98	731.55	691.94	643.12	598.01
90.0	842.46	822.98	798.84	765.20	725.58	685.90	642.58	584.86	537.72
135.0	845.38	830.39	801.88	772.31	737.89	689.19	645.39	599.20	546.80
180.0	841.26	822.80	798.90	764.42	723.19	681.60	636.01	575.60	526.48
225.0	851.30	851.36	843.65	826.50	800.81	770.69	734.18	683.27	638.40
270.0	842.46	852.55	855.36	848.01	833.37	811.15	773.56	736.87	695.76
315.0	845.38	853.15	852.49	842.04	825.01	796.86	764.18	721.76	673.06
360.0	841.26	849.93	850.64	841.62	825.61	799.08	764.60	728.51	688.41

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	633.74	587.07	539.21	485.55	432.37	387.02	339.28	295.54	260.22
45.0	545.72	491.59	444.08	404.11	345.49	306.17	274.62	230.83	202.98
90.0	490.39	432.79	388.81	347.46	308.86	264.88	233.45	205.31	177.53
135.0	494.10	446.89	395.62	347.58	308.32	268.05	235.96	204.24	176.69
180.0	477.66	418.51	373.69	332.11	289.14	250.42	219.83	189.66	166.41
225.0	590.66	528.69	479.10	430.64	378.42	330.02	291.41	251.98	220.49
270.0	638.82	590.00	539.81	483.52	427.95	380.75	331.51	286.81	251.02
315.0	625.73	569.62	512.68	462.73	414.21	357.50	316.57	278.99	236.86
360.0	633.74	587.07	539.21	485.55	432.37	387.02	339.28	295.54	260.22

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	225.27	198.38	172.15	149.38	132.05	115.44	101.28	90.41	80.91
45.0	180.99	152.55	133.85	119.57	102.72	91.54	82.22	72.12	65.07
90.0	153.39	135.04	117.71	103.07	90.70	81.38	73.32	64.59	58.74
135.0	155.00	135.34	117.18	103.43	91.84	79.89	72.00	65.13	58.26
180.0	143.53	124.41	110.12	96.50	85.03	76.24	68.72	60.65	55.09
225.0	190.07	164.38	144.72	125.66	109.71	97.52	87.06	75.89	68.36
270.0	216.07	189.54	163.96	142.03	125.42	109.71	96.38	86.16	77.20
315.0	208.06	182.96	156.07	137.61	121.66	104.81	94.59	83.36	72.90
360.0	225.27	198.38	172.15	149.38	132.05	115.44	101.28	90.41	80.91

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	70.69	63.76	57.78	51.93	46.91	42.90	38.84	35.31	32.57
45.0	59.10	52.40	47.86	43.80	38.90	35.79	32.86	29.88	27.49
90.0	53.36	48.16	43.38	39.74	36.39	32.80	30.23	27.90	25.63
135.0	52.16	47.50	43.02	39.44	35.55	32.33	29.70	27.31	25.10
180.0	50.13	44.70	40.81	37.41	33.64	31.07	28.68	26.11	24.56
225.0	61.78	55.39	49.77	45.41	41.11	37.35	34.30	31.25	28.80
270.0	67.58	61.01	55.39	49.83	45.05	41.29	37.52	34.12	31.49
315.0	66.56	60.23	52.70	48.52	44.34	39.32	36.45	33.52	30.53
360.0	70.69	63.76	57.78	51.93	46.91	42.90	38.84	35.31	32.57

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	29.76	27.55	25.28	23.24	21.69	20.32	18.88	17.81	16.79
45.0	25.57	23.48	21.63	20.08	18.58	17.39	16.13	15.00	14.10
90.0	23.54	21.87	20.20	18.64	17.39	16.19	15.12	14.10	13.15
135.0	23.18	21.57	19.66	18.34	17.21	15.95	14.88	13.98	13.09
180.0	22.65	20.85	19.72	18.40	17.09	16.25	15.48	14.64	14.22
225.0	26.41	24.20	22.47	20.73	19.18	17.93	16.79	15.48	14.58
270.0	28.80	26.65	24.44	22.47	20.91	19.54	17.93	16.79	15.77
315.0	27.96	25.87	23.78	21.93	20.44	18.94	17.75	16.49	15.42
360.0	29.76	27.55	25.28	23.24	21.69	20.32	18.88	17.81	16.79



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	15.77	15.12	14.52	13.80	13.09	12.49	11.89	11.35	10.82
45.0	13.15	12.37	11.65	10.99	10.34	9.74	9.26	8.72	8.19
90.0	12.37	11.71	10.88	10.34	9.74	9.08	8.60	8.13	7.65
135.0	12.25	11.59	10.93	10.40	9.80	9.20	8.72	8.31	7.83
180.0	13.74	13.15	12.55	12.07	11.47	10.93	10.52	10.04	9.62
225.0	13.74	12.79	11.95	11.29	10.64	9.98	9.44	8.90	8.43
270.0	14.52	13.68	12.91	12.07	11.29	10.64	9.98	9.50	8.90
315.0	14.46	13.62	12.67	11.95	11.35	10.64	10.04	9.56	9.08
360.0	15.77	15.12	14.52	13.80	13.09	12.49	11.89	11.35	10.82
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	10.34	9.92	9.50	9.08	8.78	8.48	8.13	7.89	7.65
45.0	7.71	7.29	6.87	6.51	6.15	5.80	5.44	5.14	4.90
90.0	7.17	6.81	6.39	6.09	5.74	5.38	5.14	4.84	4.48
135.0	7.47	7.05	6.63	6.33	5.98	5.74	5.38	5.14	4.90
180.0	9.26	8.90	8.54	8.31	7.95	7.71	7.47	7.23	7.05
225.0	7.95	7.47	7.11	6.75	6.33	5.98	5.74	5.38	5.14
270.0	8.37	7.95	7.47	7.05	6.69	6.39	5.92	5.62	5.32
315.0	8.54	8.13	7.65	7.29	6.87	6.57	6.21	5.86	5.62
360.0	10.34	9.92	9.50	9.08	8.78	8.48	8.13	7.89	7.65
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	7.41	7.17	6.93	6.69	6.45	6.27	6.04	5.80	5.62
45.0	4.66	4.36	4.12	3.94	3.70	3.53	3.41	3.17	2.99
90.0	4.24	4.06	3.82	3.64	3.47	3.29	3.11	2.93	2.75
135.0	4.60	4.42	4.24	4.00	3.82	3.70	3.53	3.41	3.23
180.0	6.81	6.63	6.33	6.15	5.98	5.74	5.56	5.32	5.08
225.0	4.90	4.60	4.42	4.18	3.94	3.76	3.59	3.41	3.23
270.0	5.08	4.78	4.60	4.30	4.06	3.88	3.70	3.53	3.35
315.0	5.32	5.14	4.84	4.66	4.42	4.24	4.00	3.88	3.70
360.0	7.41	7.17	6.93	6.69	6.45	6.27	6.04	5.80	5.62
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	5.32	5.08	4.84	4.54	4.30	4.06	3.82	3.59	3.70
45.0	2.87	2.75	2.57	2.45	2.33	2.21	2.15	2.39	2.15
90.0	2.63	2.45	2.27	2.15	2.03	1.85	1.79	1.67	1.49
135.0	3.05	2.93	2.81	2.63	2.51	2.39	2.27	2.21	2.09
180.0	4.84	4.60	4.36	4.36	5.08	6.87	8.60	9.86	11.23
225.0	3.11	2.93	2.81	2.63	2.45	2.33	2.27	2.33	4.00
270.0	3.17	2.99	2.81	2.69	2.51	2.39	2.21	2.09	1.97
315.0	3.53	3.41	3.29	3.11	2.93	2.81	2.69	2.57	2.45
360.0	5.32	5.08	4.84	4.54	4.30	4.06	3.82	3.59	3.70
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	5.14	6.99	6.93	5.56	3.05	2.03	1.37	1.20	1.02
45.0	1.79	1.61	1.55	1.43	1.14	1.02	0.96	0.90	0.90
90.0	1.43	1.31	1.20	1.14	0.96	0.90	0.90	0.90	0.90
135.0	1.97	1.91	1.85	1.79	1.20	1.08	0.96	0.90	0.90
180.0	11.23	8.90	5.32	2.09	1.43	1.20	1.02	0.96	0.96
225.0	3.64	1.97	1.67	1.55	1.49	1.31	1.02	0.96	0.90
270.0	1.79	1.67	1.55	1.43	1.31	1.20	1.02	0.96	0.90
315.0	2.33	2.21	2.15	2.09	1.97	1.43	1.25	1.08	0.90
360.0	5.14	6.99	6.93	5.56	3.05	2.03	1.37	1.20	1.02

Intensity data(cd)

C/γ(°)	90.0
0.0	0.96
45.0	0.84
90.0	0.90
135.0	0.90
180.0	1.20
225.0	0.90
270.0	0.90
315.0	0.90
360.0	0.96