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## Nata

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LumCAT: LN01D02817DA-N

Luminaire: 92.70.307.00

Report No: 211117-B004

Test No: 211117-C004

LampCAT: Bridgelux V3HD 30G0400-C-83

Lamp flux(lm): 345.5

Number of Lamps: 1

Length(mm): 111

Phm Type: C

Voltage(V): 11.8600

Current(A): 0.3200

Power (W): 3.7950

PF: 0.0000

Ballast type: DC

Width(mm): 111

Height(mm): 0

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## Photometric Results

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Lumens(lm): 221.89

Efficiency(%): 64.23%

Lumens(lm)/Power(W): 58.47

Central intensity(cd): 1216.688

Maximum intensity(cd): 1216.688

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

Beam Angle(50%Imax): [C0/180]Total=18.0

[C90/270]Total=18.0

Field angle(10%Imax): [C0/180]Total=39.8

[C90/270]Total=39.8

Maximum s/h(1/2): C0\_180=0.31 C90\_270=0.31

Maximum s/h(1/4): C0\_180=0.33 C90\_270=0.33

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 64.23%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 95.265%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1216.689	0.000	0	.000%	.000%
1.0	1209.249	1.161	1.161	.336%	.523%
2.0	1170.283	3.415	4.576	.989%	2.062%
3.0	1119.590	5.477	10.053	1.585%	4.530%
4.0	1053.914	7.275	17.328	2.106%	7.809%
5.0	967.960	8.698	26.026	2.518%	11.729%
6.0	878.584	9.704	35.73	2.809%	16.103%
7.0	787.170	10.339	46.07	2.993%	20.762%
8.0	695.098	10.608	56.678	3.071%	25.543%
9.0	608.994	10.569	67.247	3.059%	30.306%
10.0	528.574	10.295	77.541	2.980%	34.946%
11.0	455.340	9.831	87.373	2.846%	39.376%
12.0	394.832	9.294	96.666	2.690%	43.565%
13.0	340.771	8.730	105.396	2.527%	47.499%
14.0	291.811	8.097	113.493	2.344%	51.148%
15.0	250.529	7.445	120.938	2.155%	54.503%
16.0	213.691	6.802	127.741	1.969%	57.569%
17.0	183.143	6.180	133.92	1.789%	60.354%
18.0	157.837	5.622	139.542	1.627%	62.888%
19.0	138.141	5.149	144.692	1.490%	65.208%
20.0	119.902	4.723	149.415	1.367%	67.337%
21.0	104.164	4.303	153.717	1.245%	69.276%
22.0	92.034	3.943	157.66	1.141%	71.053%
23.0	81.428	3.640	161.3	1.053%	72.693%
24.0	71.591	3.346	164.645	.968%	74.201%
25.0	63.704	3.076	167.722	.890%	75.587%
26.0	56.982	2.849	170.57	.825%	76.871%
27.0	50.902	2.639	173.21	.764%	78.060%
28.0	45.763	2.447	175.657	.708%	79.163%
29.0	41.110	2.273	177.93	.658%	80.188%
30.0	37.308	2.117	180.047	.613%	81.142%
31.0	33.850	1.980	182.027	.573%	82.034%
32.0	30.810	1.852	183.88	.536%	82.869%
33.0	28.188	1.738	185.618	.503%	83.652%
34.0	25.985	1.639	187.257	.475%	84.391%
35.0	23.826	1.547	188.804	.448%	85.088%
36.0	21.989	1.459	190.263	.422%	85.746%
37.0	20.458	1.384	191.648	.401%	86.370%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	19.001	1.317	192.965	.381%	86.963%
39.0	17.545	1.247	194.212	.361%	87.525%
40.0	16.477	1.187	195.399	.343%	88.060%
41.0	15.439	1.136	196.535	.329%	88.572%
42.0	14.423	1.085	197.62	.314%	89.061%
43.0	13.571	1.037	198.657	.300%	89.529%
44.0	12.817	0.996	199.653	.288%	89.978%
45.0	12.048	0.956	200.609	.277%	90.408%
46.0	11.435	0.918	201.527	.266%	90.822%
47.0	10.830	0.886	202.413	.256%	91.221%
48.0	10.263	0.853	203.265	.247%	91.605%
49.0	9.792	0.824	204.089	.238%	91.977%
50.0	9.247	0.794	204.883	.230%	92.334%
51.0	8.784	0.763	205.645	.221%	92.678%
52.0	8.380	0.737	206.382	.213%	93.010%
53.0	7.940	0.710	207.092	.205%	93.330%
54.0	7.536	0.682	207.774	.197%	93.637%
55.0	7.215	0.658	208.432	.191%	93.934%
56.0	6.872	0.637	209.069	.184%	94.221%
57.0	6.535	0.613	209.682	.177%	94.497%
58.0	6.214	0.590	210.272	.171%	94.763%
59.0	5.930	0.568	210.839	.164%	95.019%
60.0	5.632	0.546	211.386	.158%	95.265%
61.0	5.378	0.525	211.911	.152%	95.502%
62.0	5.131	0.506	212.417	.147%	95.730%
63.0	4.877	0.487	212.904	.141%	95.949%
64.0	4.676	0.469	213.373	.136%	96.161%
65.0	4.452	0.452	213.825	.131%	96.364%
66.0	4.280	0.436	214.26	.126%	96.561%
67.0	4.115	0.422	214.682	.122%	96.751%
68.0	3.914	0.407	215.089	.118%	96.934%
69.0	3.749	0.391	215.48	.113%	97.110%
70.0	3.615	0.378	215.858	.109%	97.281%
71.0	3.473	0.366	216.225	.106%	97.446%
72.0	3.309	0.353	216.577	.102%	97.605%
73.0	3.167	0.339	216.916	.098%	97.757%
74.0	3.047	0.327	217.243	.095%	97.905%
75.0	2.935	0.316	217.559	.091%	98.047%

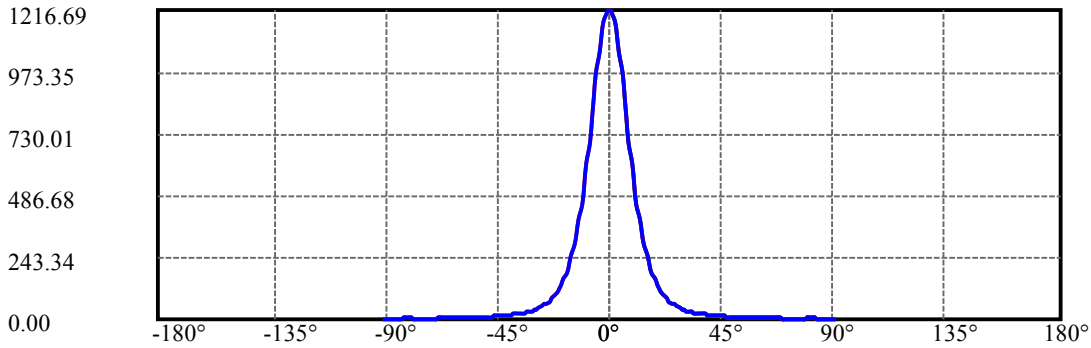
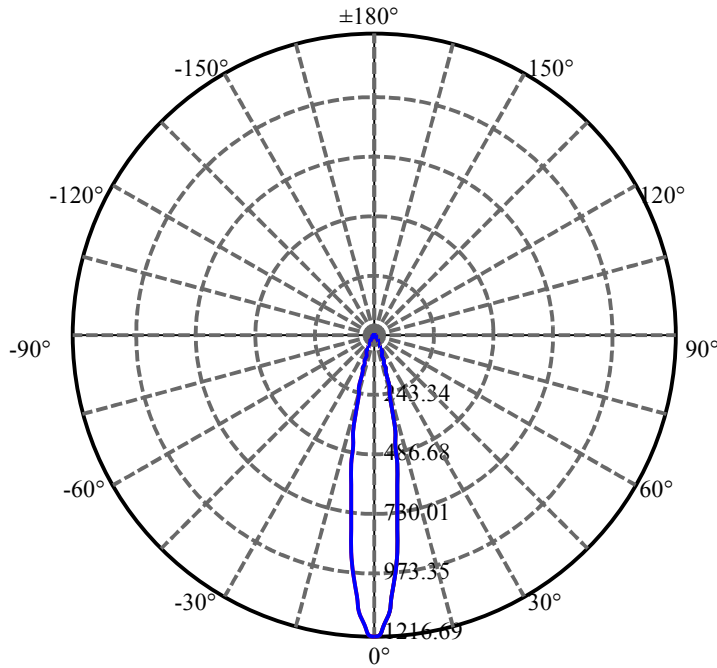
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	2.905	0.310	217.869	.090%	98.187%
77.0	3.167	0.324	218.193	.094%	98.333%
78.0	3.548	0.359	218.552	.104%	98.495%
79.0	4.175	0.415	218.967	.120%	98.682%
80.0	4.474	0.466	219.433	.135%	98.892%
81.0	4.496	0.485	219.918	.140%	99.111%
82.0	3.817	0.451	220.369	.130%	99.314%
83.0	3.047	0.373	220.742	.108%	99.482%
84.0	2.480	0.301	221.043	.087%	99.618%
85.0	1.808	0.234	221.277	.068%	99.723%
86.0	1.232	0.166	221.444	.048%	99.798%
87.0	1.076	0.126	221.57	.037%	99.855%
88.0	1.001	0.114	221.684	.033%	99.906%
89.0	0.934	0.106	221.79	.031%	99.954%
90.0	0.934	0.102	221.892	.030%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	180.05	52.11%	81.14%
0-40	195.40	56.56%	88.06%
0-60	211.39	61.18%	95.27%
0-90	221.79	64.20%	99.95%
0-120	221.79	64.20%	99.95%
0-180	221.89	64.23%	100.00%
60-90	10.95	3.17%	4.93%
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%
0-28.82	177.51	51.38%	80.00%

ZONAL LUMEN SUMMARY

0-10	77.54
10-20	71.87
20-30	30.63
30-40	15.35
40-50	9.48
50-60	6.50
60-70	4.47
70-80	3.57
80-90	2.36
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



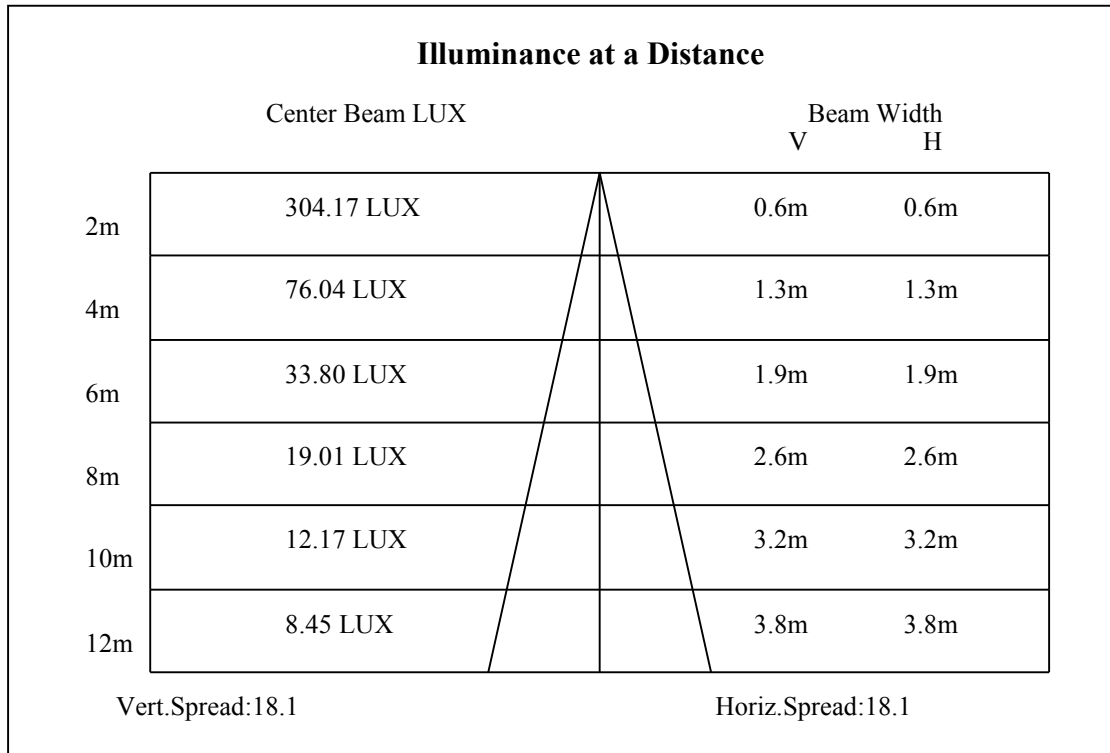
C0(Max): —————

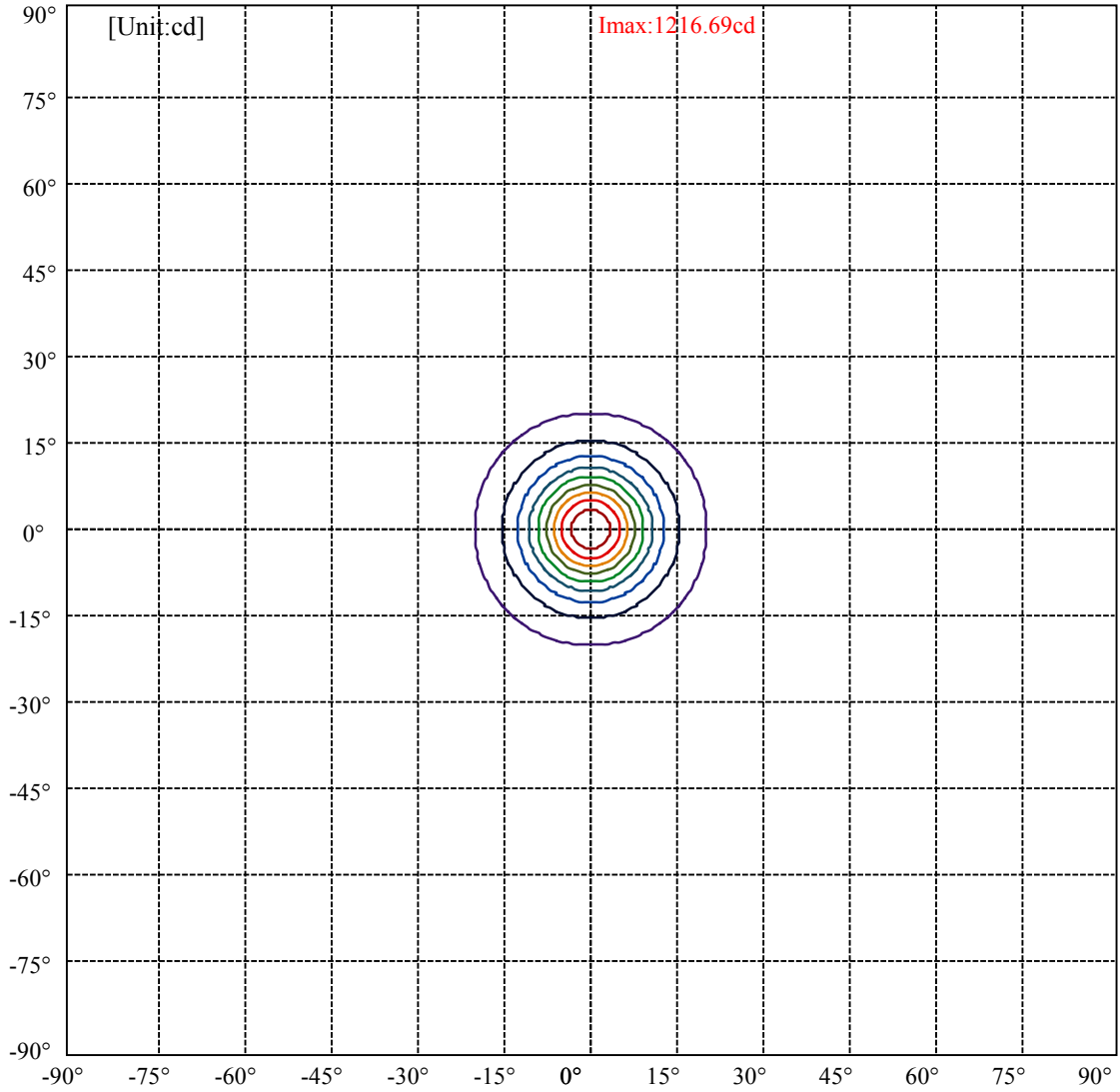
C0/C180: —————

C90/C270: —————

Field angle(10%Imax):C0/180Left:19.9 Right:19.9  
:C90/270Left:19.9 Right:19.9

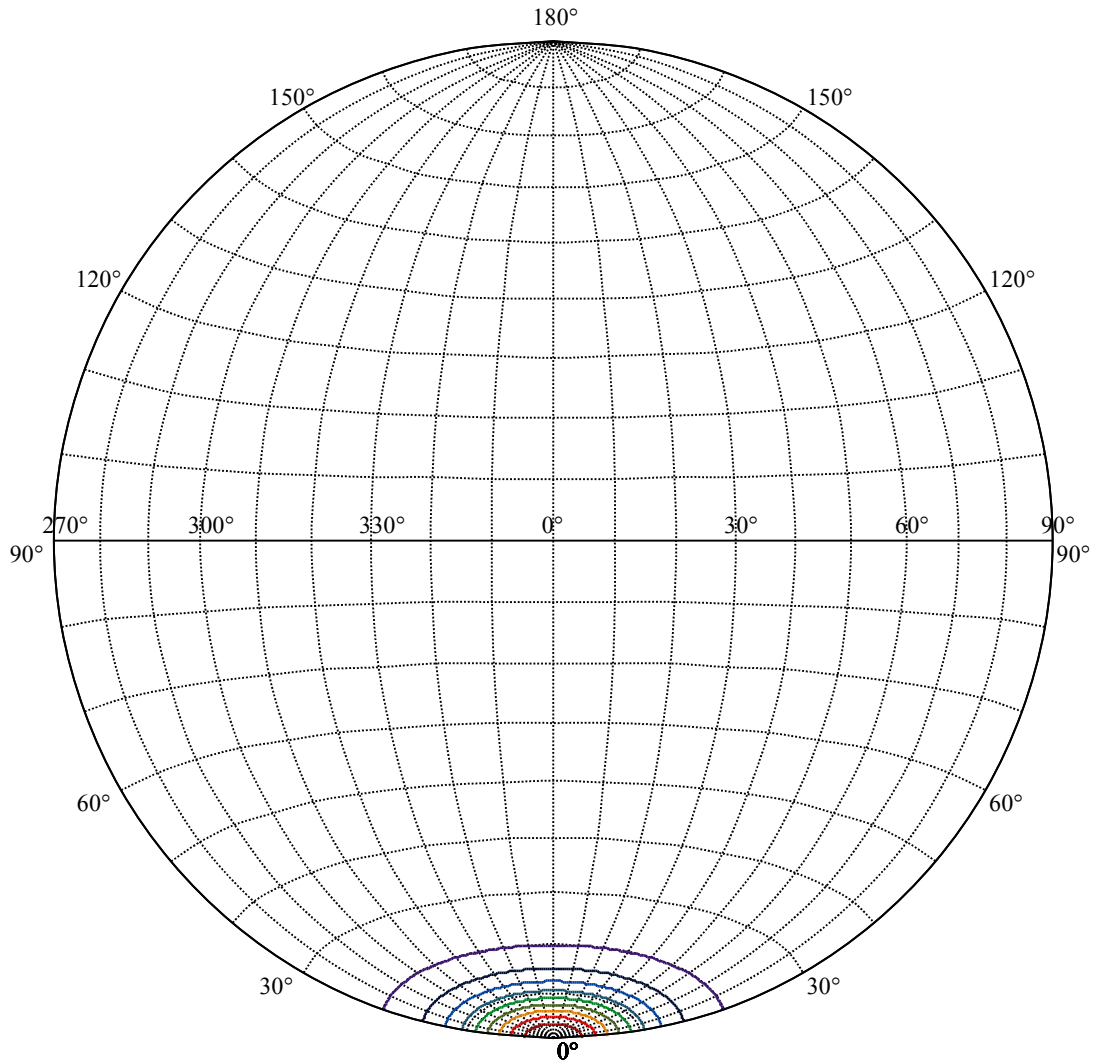
Beam Angle(50%Imax):C0/180Left:9.0 Right:9.0  
:C90/270Left:9.0 Right:9.0





(10%I <sub>max</sub> ) 121.669	—
(20%I <sub>max</sub> ) 243.338	—
(30%I <sub>max</sub> ) 365.007	—
(40%I <sub>max</sub> ) 486.675	—
(50%I <sub>max</sub> ) 608.344	—
(60%I <sub>max</sub> ) 730.013	—
(70%I <sub>max</sub> ) 851.682	—
(80%I <sub>max</sub> ) 973.351	—
(90%I <sub>max</sub> ) 1095.02	—





House

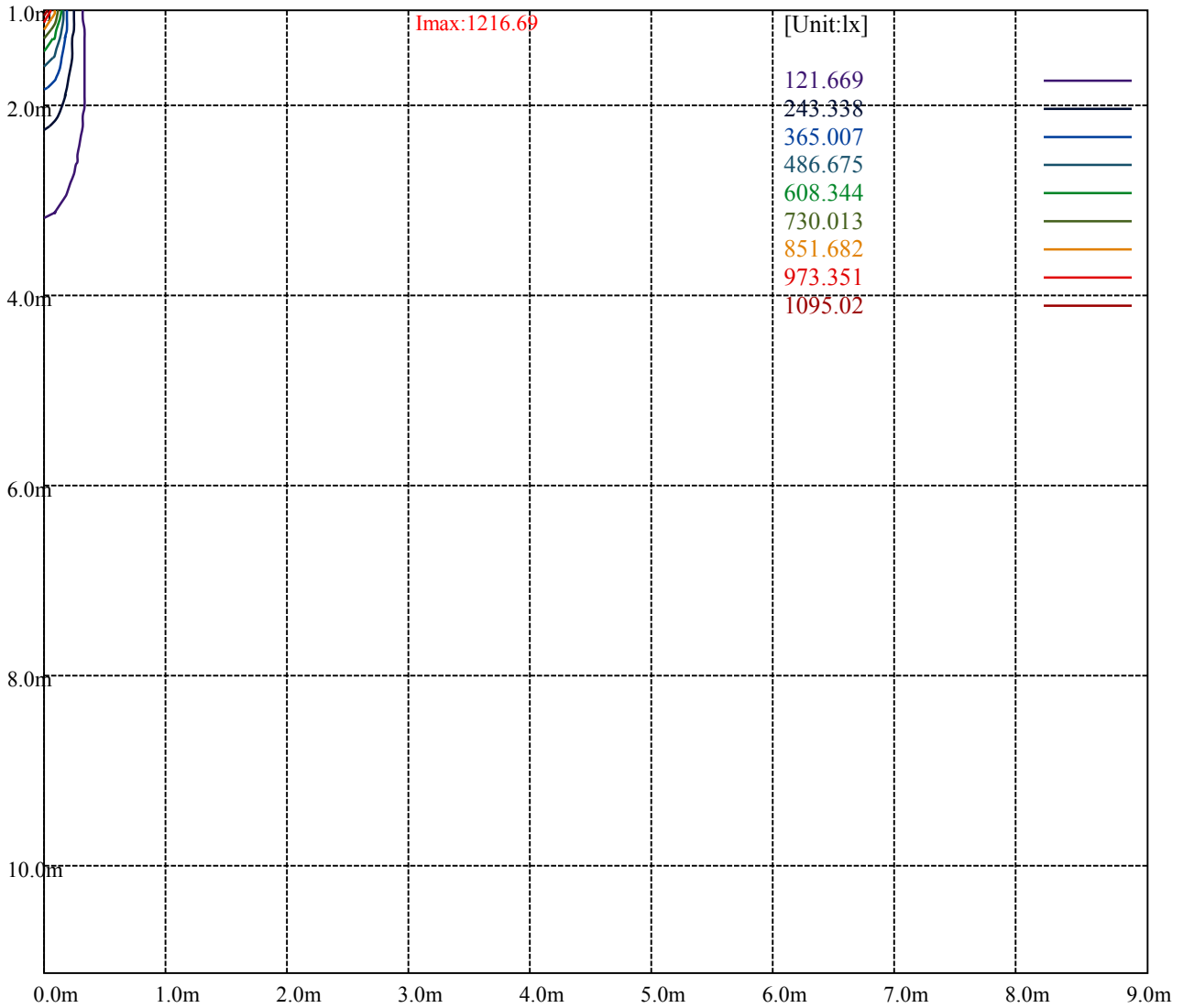
[Unit:cd]

Road

**Imax:1216.69**

(10%Imax)	121.669	—
(20%Imax)	243.338	—
(30%Imax)	365.007	—
(40%Imax)	486.675	—
(50%Imax)	608.344	—
(60%Imax)	730.013	—
(70%Imax)	851.682	—
(80%Imax)	973.351	—
(90%Imax)	1095.02	—





Luminance Table

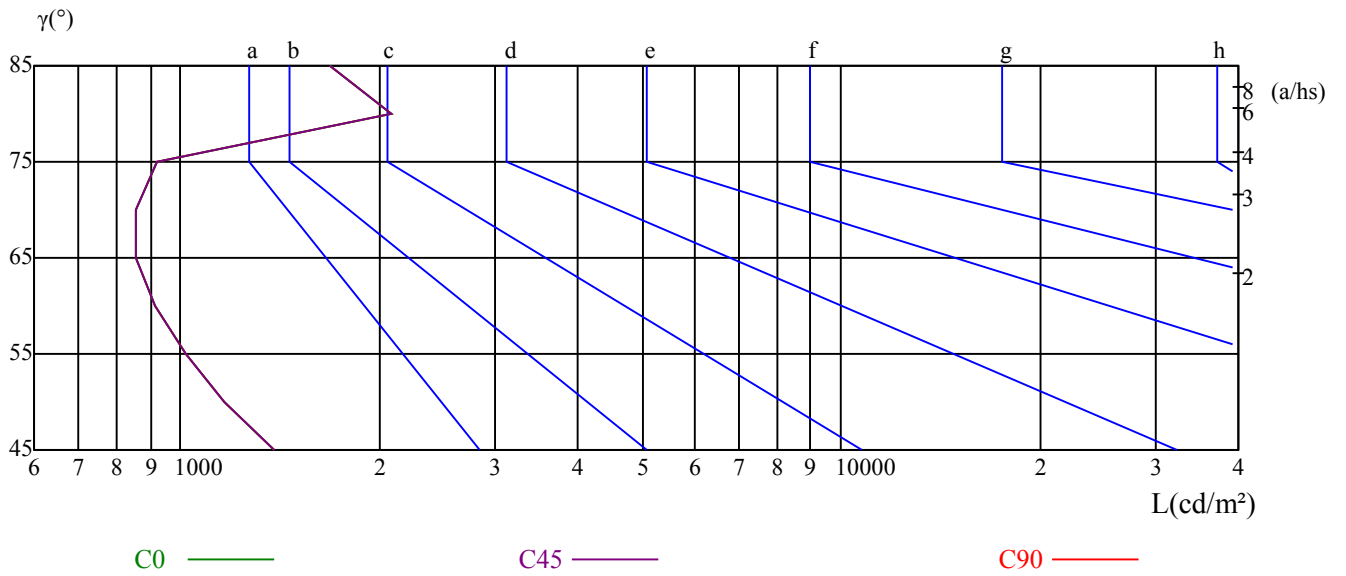
$\gamma$	45	50	55	60	65	70	75	80	85
C0	1383	1168	1021	914	855	858	920	2091	1683
C45	1383	1168	1021	914	855	858	920	2091	1683
C90	1383	1168	1021	914	855	858	920	2091	1683

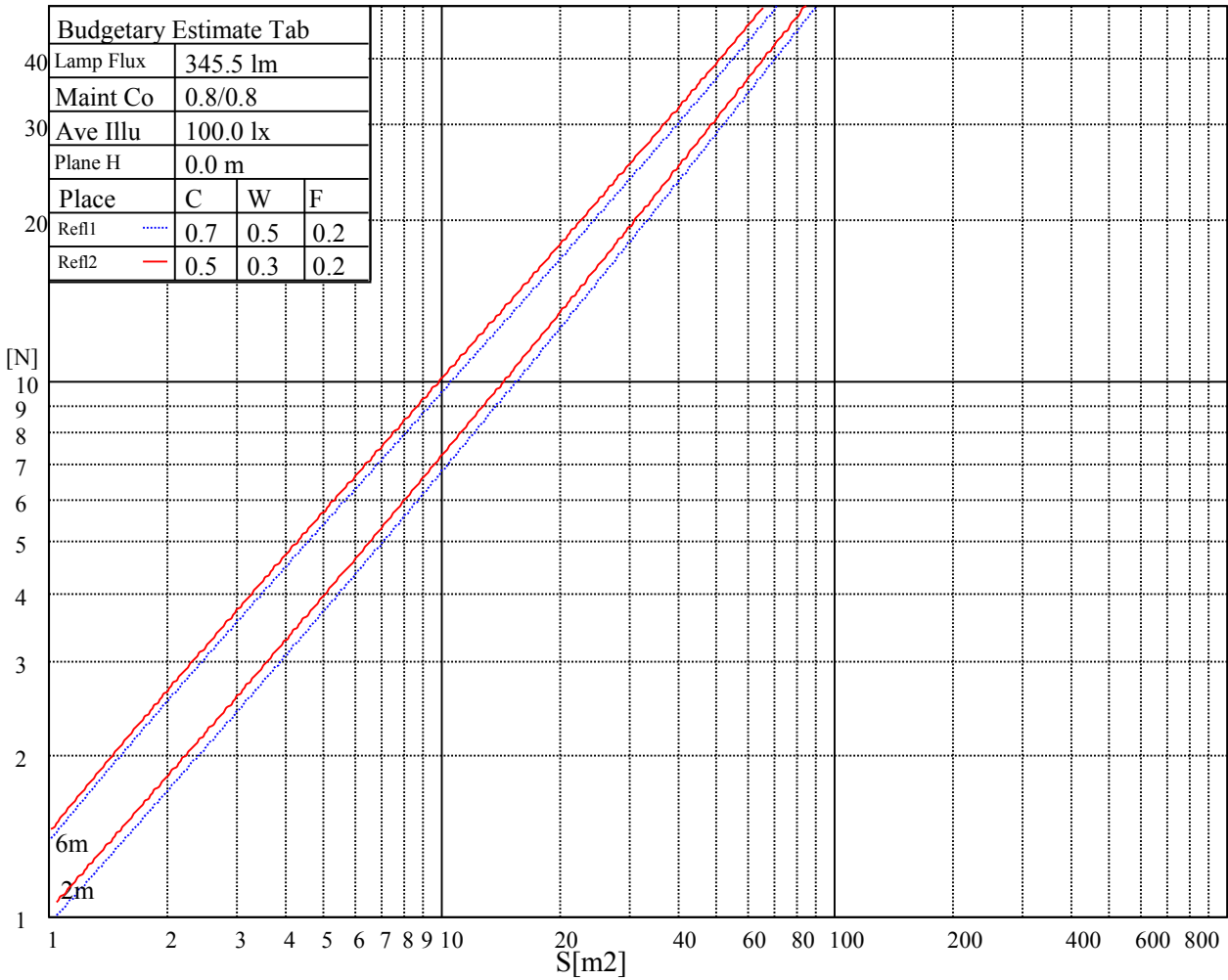
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
855	855	855	920	920	920	1683	1683	1683

Glare Table

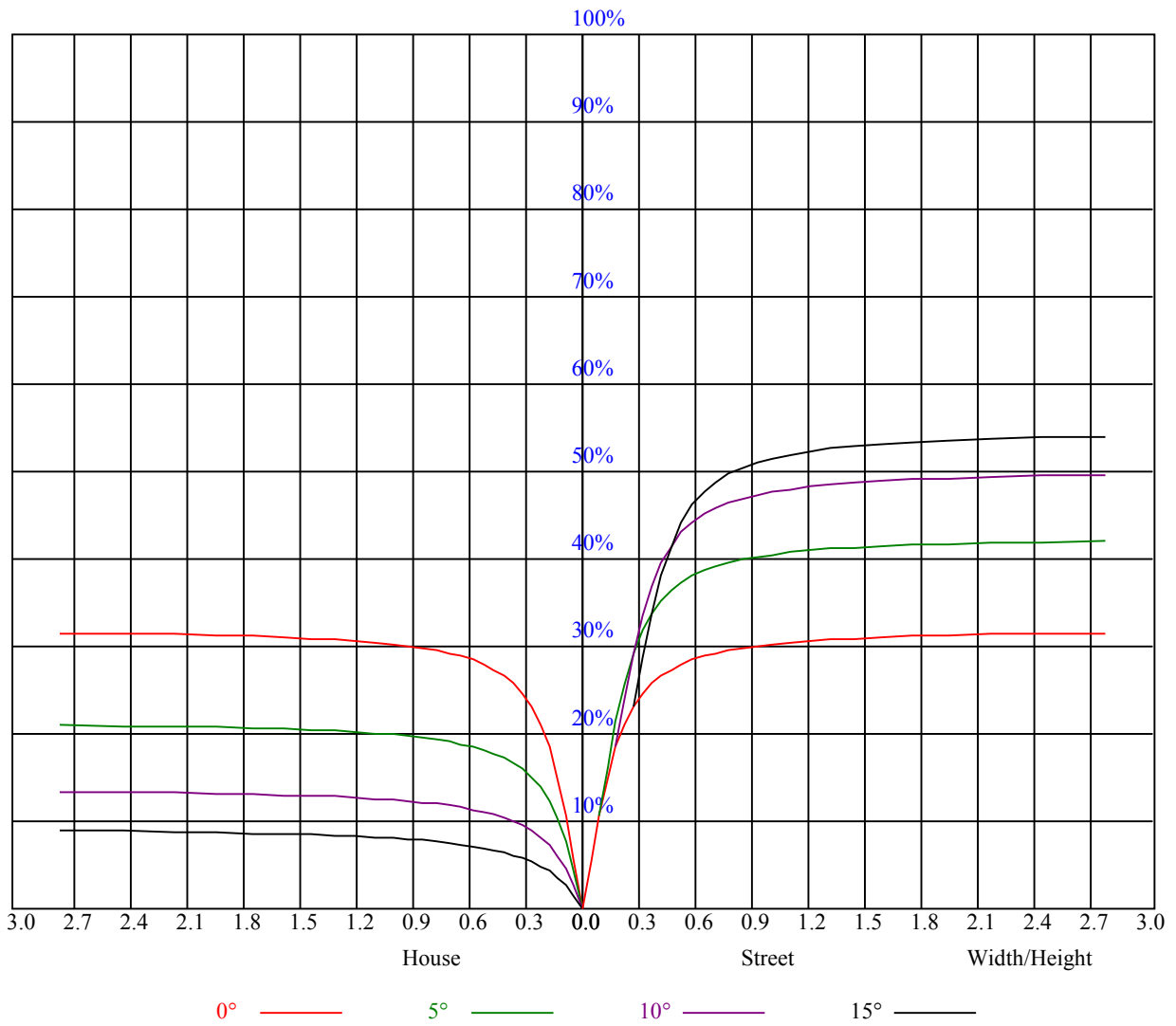
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.76	0.76	0.76	0.75	0.75	0.75	0.71	0.71	0.71	0.68	0.68	0.68	0.66	0.66	0.66	0.64
1	0.71	0.70	0.68	0.70	0.68	0.67	0.67	0.66	0.65	0.65	0.64	0.63	0.63	0.62	0.61	0.60
2	0.67	0.65	0.63	0.66	0.64	0.62	0.64	0.62	0.60	0.62	0.60	0.59	0.60	0.59	0.58	0.57
3	0.63	0.61	0.58	0.62	0.60	0.58	0.61	0.59	0.57	0.59	0.58	0.56	0.58	0.56	0.55	0.54
4	0.60	0.57	0.55	0.60	0.57	0.55	0.58	0.56	0.54	0.57	0.55	0.53	0.56	0.54	0.53	0.52
5	0.58	0.54	0.52	0.57	0.54	0.52	0.56	0.53	0.51	0.55	0.53	0.51	0.54	0.52	0.51	0.50
6	0.55	0.52	0.50	0.55	0.52	0.50	0.54	0.51	0.49	0.53	0.51	0.49	0.52	0.50	0.49	0.48
7	0.53	0.50	0.48	0.53	0.50	0.48	0.52	0.49	0.47	0.51	0.49	0.47	0.51	0.49	0.47	0.46
8	0.51	0.48	0.46	0.51	0.48	0.46	0.50	0.48	0.46	0.50	0.47	0.46	0.49	0.47	0.45	0.45
9	0.50	0.47	0.45	0.49	0.46	0.45	0.49	0.46	0.44	0.48	0.46	0.44	0.48	0.46	0.44	0.43
10	0.48	0.45	0.43	0.48	0.45	0.43	0.47	0.45	0.43	0.47	0.45	0.43	0.47	0.44	0.43	0.42



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	1230.91	1232.70	1208.80	1166.38	1098.26	1022.97	928.56	829.97	742.73
45.0	1218.96	1188.49	1124.55	1057.03	979.95	875.38	786.95	699.71	607.69
90.0	1188.96	1168.53	1099.69	1029.78	950.61	844.37	756.35	670.31	570.22
135.0	1227.92	1211.79	1163.39	1105.43	1035.52	935.73	849.09	760.65	665.65
180.0	1230.91	1189.92	1161.84	1087.56	1014.42	932.92	834.75	735.62	651.43
225.0	1218.96	1229.71	1190.40	1175.64	1125.09	1050.28	971.58	878.55	782.64
270.0	1188.96	1227.32	1221.35	1193.27	1146.66	1074.95	988.31	905.26	808.46
315.0	1227.92	1225.53	1192.25	1141.64	1080.81	1007.08	913.08	817.30	731.97
360.0	1230.91	1232.70	1208.80	1166.38	1098.26	1022.97	928.56	829.97	742.73
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	648.92	561.08	489.38	425.44	355.53	307.13	279.88	223.60	190.49
45.0	524.63	455.91	387.80	335.21	306.53	249.05	208.78	178.96	159.12
90.0	506.47	432.91	362.64	320.22	273.13	229.03	202.80	176.93	146.93
135.0	579.01	505.51	432.01	374.65	319.68	302.95	234.35	200.77	172.45
180.0	563.23	484.00	421.44	360.25	313.11	267.27	228.50	199.04	173.76
225.0	697.91	606.79	523.14	456.03	395.98	331.27	287.89	250.07	213.32
270.0	713.45	631.59	546.14	477.43	408.11	347.16	305.93	257.83	216.01
315.0	638.34	550.80	480.17	409.43	354.10	300.62	256.10	222.34	193.06
360.0	648.92	561.08	489.38	425.44	355.53	307.13	279.88	223.60	190.49
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	166.05	145.44	123.93	109.35	95.25	84.67	74.39	65.55	58.80
45.0	134.44	117.06	104.51	88.91	78.75	70.27	61.49	55.51	50.13
90.0	130.74	115.02	99.97	87.36	77.74	68.48	60.65	54.73	48.88
135.0	150.58	130.62	112.51	99.01	87.42	76.78	67.88	61.01	54.14
180.0	146.81	128.77	113.47	97.28	86.34	76.90	67.76	60.05	54.02
225.0	182.96	160.38	138.69	120.28	106.18	92.68	82.34	72.30	63.88
270.0	188.16	164.86	140.30	123.51	109.23	96.92	83.77	74.75	66.86
315.0	162.95	142.99	125.84	107.61	95.37	84.73	74.45	65.73	59.16
360.0	166.05	145.44	123.93	109.35	95.25	84.67	74.39	65.55	58.80
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	52.88	46.55	42.19	38.42	34.42	31.55	29.04	26.59	24.38
45.0	44.16	40.27	36.81	33.34	30.06	27.73	25.34	23.36	21.69
90.0	44.40	39.91	36.03	32.98	30.35	27.49	25.45	23.66	21.63
135.0	48.28	43.80	39.44	35.91	32.39	29.58	27.13	25.10	22.83
180.0	48.10	43.56	39.02	35.07	32.03	29.10	26.47	24.50	22.71
225.0	57.48	51.75	45.65	41.47	37.76	33.70	30.95	28.38	25.93
270.0	59.22	52.64	47.03	42.78	38.60	35.31	32.03	29.46	26.65
315.0	52.70	47.62	42.72	38.48	35.19	32.03	29.10	26.83	24.80
360.0	52.88	46.55	42.19	38.42	34.42	31.55	29.04	26.59	24.38
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	22.65	20.91	19.54	18.16	17.15	16.07	15.24	14.52	13.80
45.0	20.08	18.82	17.45	16.19	15.24	14.34	13.27	12.49	11.83
90.0	20.20	18.88	17.69	16.31	15.36	14.40	13.44	12.55	11.89
135.0	21.27	19.90	18.22	17.03	15.95	14.82	13.86	13.03	12.25
180.0	20.79	19.36	18.16	16.79	15.83	15.06	14.16	13.44	12.79
225.0	23.72	21.99	20.26	18.70	17.51	16.19	15.24	14.22	13.27
270.0	24.62	22.83	21.15	19.30	18.05	16.91	15.54	14.58	13.74
315.0	22.59	20.97	19.54	17.87	16.73	15.72	14.64	13.74	12.97
360.0	22.65	20.91	19.54	18.16	17.15	16.07	15.24	14.52	13.80



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	13.15	12.49	12.07	11.71	11.35	10.82	10.46	10.04	9.62
45.0	11.05	10.46	9.92	9.32	8.78	8.31	7.89	7.47	7.05
90.0	11.11	10.52	9.92	9.32	8.90	8.37	7.89	7.47	7.05
135.0	11.47	10.88	10.28	9.74	9.20	8.72	8.25	7.89	7.41
180.0	12.13	11.77	11.35	10.76	10.40	9.92	9.50	9.20	8.84
225.0	12.49	11.83	10.99	10.40	9.92	9.20	8.78	8.31	7.77
270.0	12.85	12.07	11.35	10.70	10.10	9.50	8.90	8.43	7.95
315.0	12.13	11.47	10.76	10.16	9.68	9.14	8.60	8.25	7.83
360.0	13.15	12.49	12.07	11.71	11.35	10.82	10.46	10.04	9.62
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	9.32	9.02	8.66	8.37	8.07	7.77	7.47	7.23	6.99
45.0	6.63	6.33	5.98	5.62	5.38	5.14	4.78	4.54	4.36
90.0	6.63	6.27	5.98	5.62	5.32	5.02	4.78	4.48	4.24
135.0	7.05	6.75	6.39	6.09	5.80	5.50	5.26	5.02	4.78
180.0	8.43	8.19	7.89	7.59	7.23	6.99	6.63	6.39	6.15
225.0	7.35	6.99	6.57	6.27	5.92	5.56	5.32	5.02	4.72
270.0	7.53	7.11	6.81	6.33	5.98	5.74	5.32	5.08	4.78
315.0	7.35	7.05	6.69	6.39	6.04	5.74	5.50	5.26	5.02
360.0	9.32	9.02	8.66	8.37	8.07	7.77	7.47	7.23	6.99
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	6.75	6.51	6.27	6.15	6.04	5.74	5.62	5.44	5.26
45.0	4.12	3.94	3.70	3.53	3.35	3.23	3.05	2.93	2.81
90.0	4.00	3.76	3.59	3.41	3.23	3.05	2.87	2.75	2.63
135.0	4.54	4.36	4.12	3.94	3.76	3.59	3.47	3.35	3.17
180.0	5.92	5.74	5.50	5.32	5.20	4.96	4.78	4.66	4.54
225.0	4.48	4.30	4.00	3.88	3.70	3.47	3.29	3.17	3.05
270.0	4.48	4.24	4.06	3.82	3.64	3.47	3.29	3.11	2.99
315.0	4.72	4.54	4.36	4.18	4.00	3.82	3.64	3.53	3.35
360.0	6.75	6.51	6.27	6.15	6.04	5.74	5.62	5.44	5.26
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	5.08	4.96	4.78	4.78	5.14	7.23	8.60	9.92	11.47
45.0	2.63	2.57	2.45	2.27	2.21	2.15	3.23	5.86	4.18
90.0	2.51	2.33	2.21	2.09	1.97	1.85	1.73	1.61	1.49
135.0	3.05	2.87	2.81	2.63	2.51	2.39	2.27	2.15	2.09
180.0	4.30	4.18	4.06	4.00	4.06	4.72	5.98	7.53	8.90
225.0	2.87	2.75	2.63	2.51	2.39	2.27	2.15	2.15	3.70
270.0	2.81	2.63	2.51	2.39	2.27	2.15	2.03	1.85	1.73
315.0	3.23	3.05	2.93	2.81	2.69	2.57	2.39	2.33	2.21
360.0	5.08	4.96	4.78	4.78	5.14	7.23	8.60	9.92	11.47
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	12.73	13.21	11.77	8.66	5.14	2.03	1.61	1.31	1.02
45.0	1.73	1.55	1.49	1.43	1.08	1.02	0.96	0.90	0.90
90.0	1.43	1.31	1.25	1.14	1.02	0.96	0.90	0.90	0.90
135.0	2.03	1.91	1.85	1.79	1.25	1.08	0.96	0.96	0.96
180.0	8.43	5.98	2.93	2.03	1.49	1.20	1.02	0.96	0.90
225.0	5.86	3.05	1.67	1.55	1.43	1.14	1.08	1.02	0.96
270.0	1.67	1.55	1.49	1.37	1.25	1.14	1.02	0.96	0.90
315.0	2.09	1.97	1.91	1.85	1.79	1.31	1.08	1.02	0.96
360.0	12.73	13.21	11.77	8.66	5.14	2.03	1.61	1.31	1.02

Intensity data(cd)

C/γ(°)	90.0
0.0	0.96
45.0	0.90
90.0	0.90
135.0	0.90
180.0	1.08
225.0	0.96
270.0	0.90
315.0	0.90
360.0	0.96