



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

Nata

LumCAT: LN01D02817DA-N
Luminaire: 92.70.307.00
Report No: 211113-B003 Voltage(V): 21.4400
Test No: 211113-C003 Current(A): 0.1200
LampCAT: CITIZEN CLU7B2 CLU7B2 LES3 Bower (W): 2.5720
Lamp flux(lm): 268.6 PF: 0.0000
Number of Lamps: 1 Ballast type: DC
Length(mm): 111 Width(mm): 111
Phm Type: C Height(mm): 0

Photometric Results

Lumens(lm): 167.85
Efficiency(%): 62.48%
Lumens(lm)/Power(W): 65.26
Central intensity(cd): 813.446
Maximum intensity(cd): 813.446
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=19.5
[C90/270]Total=19.5
Field angle(10%Imax): [C0/180]Total=42.6
[C90/270]Total=42.6
Maximum s/h(1/2): C0_180=0.33 C90_270=0.33
Maximum s/h(1/4): C0_180=0.36 C90_270=0.36
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 62.48%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 95.167%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	813.446	0.000	0	.000%	.000%
1.0	807.456	0.776	0.776	.289%	.462%
2.0	788.186	2.290	3.066	.853%	1.827%
3.0	756.479	3.694	6.76	1.375%	4.028%
4.0	718.170	4.936	11.696	1.837%	6.968%
5.0	668.112	5.964	17.66	2.220%	10.521%
6.0	616.164	6.749	24.409	2.512%	14.542%
7.0	558.241	7.290	31.699	2.713%	18.885%
8.0	504.471	7.606	39.304	2.831%	23.417%
9.0	447.826	7.718	47.022	2.873%	28.015%
10.0	393.660	7.615	54.637	2.835%	32.552%
11.0	346.978	7.400	62.038	2.755%	36.961%
12.0	304.643	7.123	69.161	2.652%	41.205%
13.0	263.249	6.739	75.9	2.509%	45.220%
14.0	227.166	6.277	82.178	2.337%	48.960%
15.0	197.864	5.835	88.013	2.172%	52.436%
16.0	169.945	5.389	93.402	2.006%	55.647%
17.0	148.120	4.953	98.355	1.844%	58.598%
18.0	127.737	4.548	102.903	1.693%	61.308%
19.0	111.327	4.159	107.063	1.548%	63.786%
20.0	96.867	3.811	110.873	1.418%	66.056%
21.0	84.281	3.478	114.352	1.295%	68.128%
22.0	73.929	3.179	117.531	1.183%	70.023%
23.0	65.049	2.916	120.447	1.086%	71.760%
24.0	57.617	2.682	123.129	.998%	73.358%
25.0	50.715	2.463	125.592	.917%	74.825%
26.0	45.225	2.265	127.857	.843%	76.175%
27.0	40.333	2.093	129.95	.779%	77.422%
28.0	36.128	1.936	131.886	.721%	78.575%
29.0	32.371	1.792	133.678	.667%	79.643%
30.0	29.324	1.666	135.344	.620%	80.635%
31.0	26.493	1.553	136.897	.578%	81.561%
32.0	24.065	1.448	138.346	.539%	82.423%
33.0	22.064	1.359	139.705	.506%	83.233%
34.0	20.167	1.278	140.983	.476%	83.995%
35.0	18.613	1.204	142.187	.448%	84.712%
36.0	17.149	1.139	143.326	.424%	85.390%
37.0	15.909	1.078	144.404	.401%	86.033%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	14.729	1.023	145.426	.381%	86.642%
39.0	13.668	0.969	146.396	.361%	87.220%
40.0	12.765	0.922	147.318	.343%	87.769%
41.0	11.973	0.881	148.199	.328%	88.294%
42.0	11.219	0.843	149.041	.314%	88.796%
43.0	10.524	0.805	149.847	.300%	89.275%
44.0	9.941	0.772	150.619	.288%	89.736%
45.0	9.374	0.742	151.361	.276%	90.178%
46.0	8.836	0.712	152.073	.265%	90.602%
47.0	8.373	0.684	152.758	.255%	91.010%
48.0	7.940	0.659	153.417	.245%	91.403%
49.0	7.506	0.634	154.052	.236%	91.781%
50.0	7.103	0.609	154.661	.227%	92.144%
51.0	6.767	0.587	155.248	.218%	92.493%
52.0	6.446	0.567	155.814	.211%	92.831%
53.0	6.147	0.548	156.362	.204%	93.157%
54.0	5.848	0.529	156.891	.197%	93.472%
55.0	5.609	0.511	157.402	.190%	93.777%
56.0	5.370	0.496	157.899	.185%	94.073%
57.0	5.146	0.481	158.379	.179%	94.359%
58.0	4.937	0.466	158.846	.174%	94.637%
59.0	4.728	0.452	159.298	.168%	94.906%
60.0	4.541	0.438	159.735	.163%	95.167%
61.0	4.340	0.424	160.159	.158%	95.420%
62.0	4.160	0.410	160.569	.152%	95.664%
63.0	3.996	0.397	160.966	.148%	95.900%
64.0	3.802	0.383	161.348	.142%	96.128%
65.0	3.615	0.367	161.715	.137%	96.347%
66.0	3.436	0.352	162.067	.131%	96.556%
67.0	3.279	0.338	162.405	.126%	96.757%
68.0	3.130	0.325	162.729	.121%	96.951%
69.0	2.950	0.310	163.039	.115%	97.136%
70.0	2.816	0.296	163.336	.110%	97.312%
71.0	2.659	0.283	163.619	.105%	97.481%
72.0	2.532	0.270	163.888	.100%	97.641%
73.0	2.427	0.259	164.148	.097%	97.796%
74.0	2.315	0.249	164.397	.093%	97.944%
75.0	2.233	0.240	164.637	.089%	98.088%

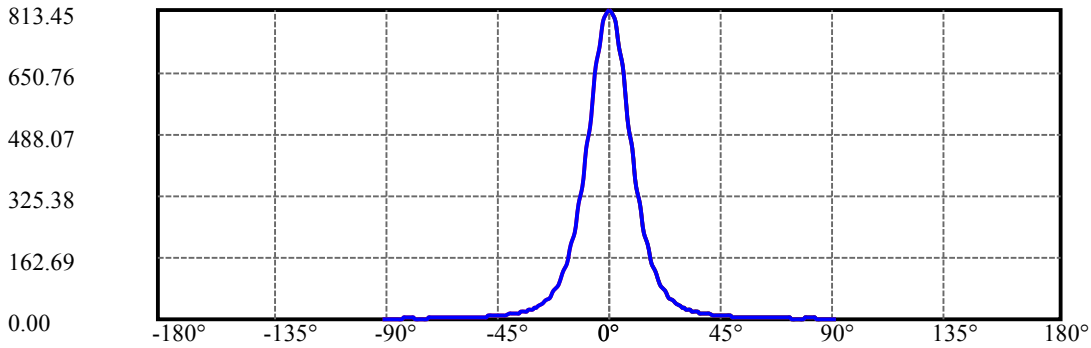
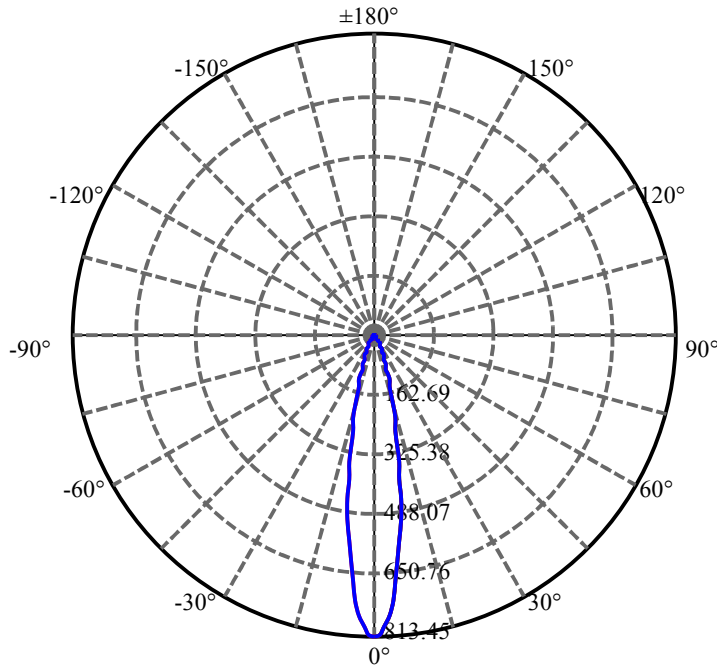
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	2.263	0.239	164.876	.089%	98.230%
77.0	2.375	0.247	165.123	.092%	98.377%
78.0	2.652	0.269	165.393	.100%	98.537%
79.0	3.152	0.312	165.704	.116%	98.723%
80.0	3.533	0.360	166.065	.134%	98.938%
81.0	3.503	0.380	166.445	.142%	99.165%
82.0	2.883	0.346	166.792	.129%	99.371%
83.0	2.136	0.273	167.064	.102%	99.534%
84.0	1.479	0.197	167.261	.073%	99.651%
85.0	1.113	0.141	167.403	.053%	99.735%
86.0	0.926	0.111	167.514	.041%	99.802%
87.0	0.784	0.094	167.608	.035%	99.857%
88.0	0.732	0.083	167.691	.031%	99.907%
89.0	0.702	0.079	167.77	.029%	99.954%
90.0	0.717	0.078	167.847	.029%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	135.34	50.38%	80.64%
0-40	147.32	54.84%	87.77%
0-60	159.74	59.46%	95.17%
0-90	167.77	62.45%	99.95%
0-120	167.77	62.45%	99.95%
0-180	167.85	62.48%	100.00%
60-90	8.47	3.15%	5.05%
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%
0-29.36	134.28	49.98%	80.00%

ZONAL LUMEN SUMMARY

0-10	54.64
10-20	56.24
20-30	24.47
30-40	11.97
40-50	7.34
50-60	5.07
60-70	3.60
70-80	2.73
80-90	1.70
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



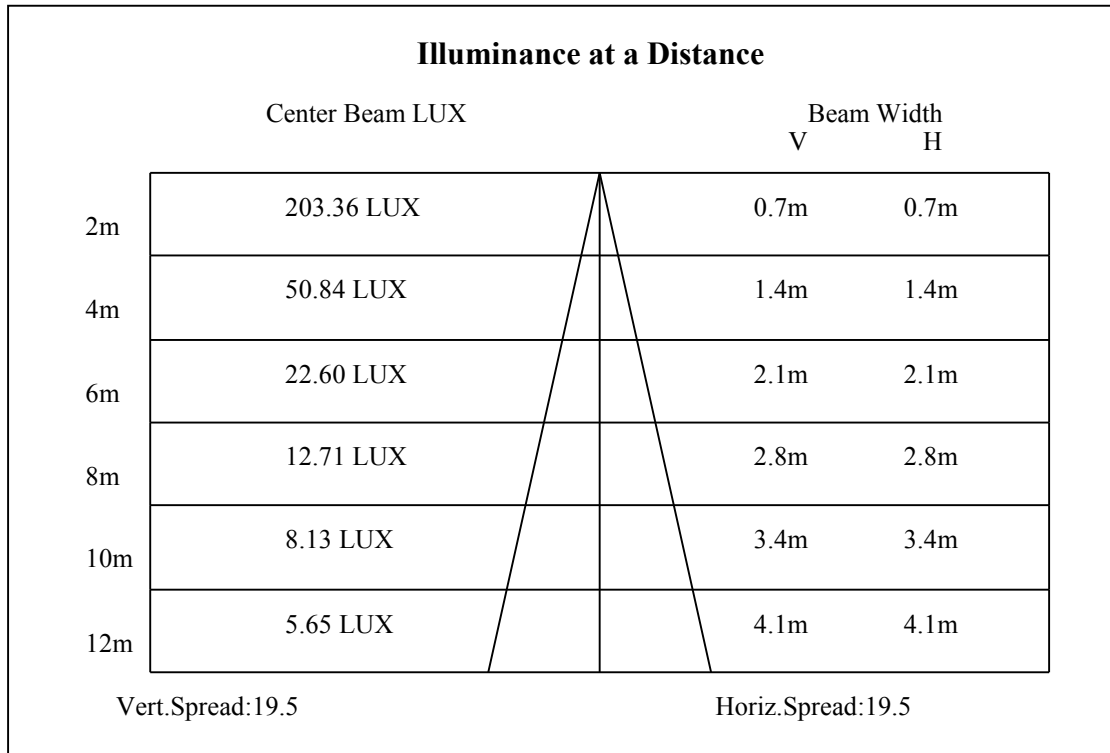
C0(Max): —————

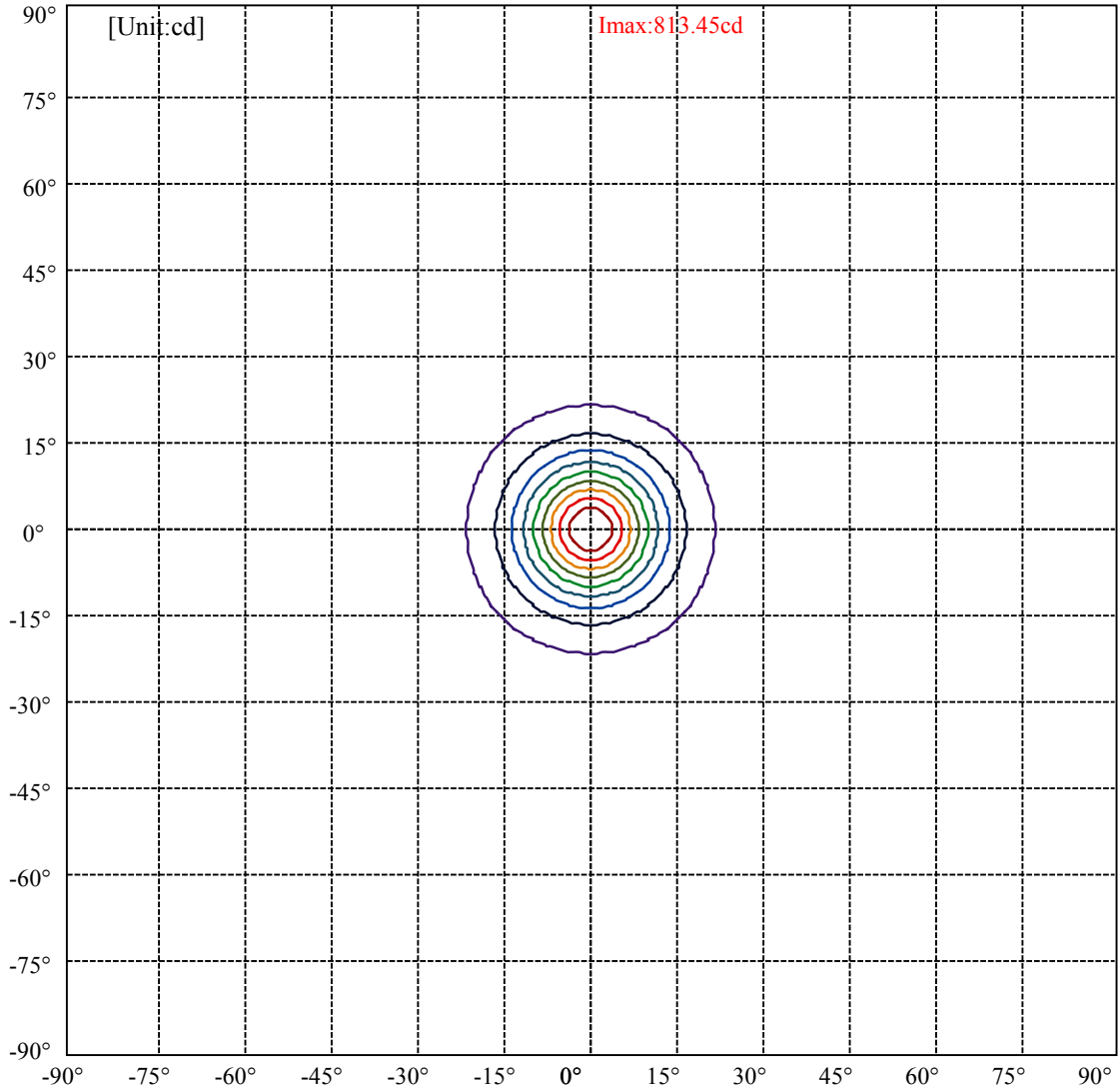
C0/C180: —————

C90/C270: —————

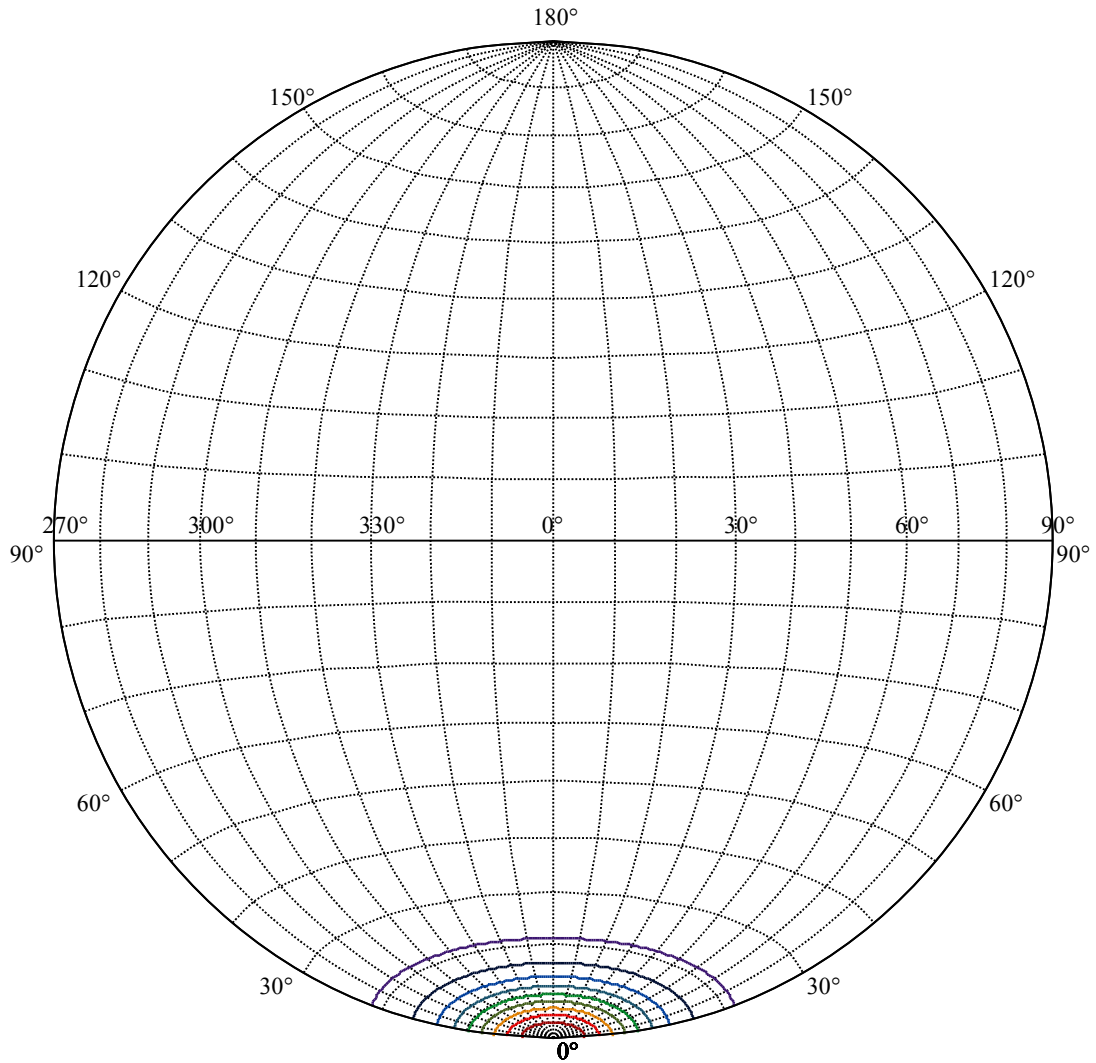
Field angle(10%Imax):C0/180Left:21.3 Right:21.3
:C90/270Left:21.3 Right:21.3

Beam Angle(50%Imax):C0/180Left:9.8 Right:9.8
:C90/270Left:9.8 Right:9.8





(10%Imax) 81.3446	—
(20%Imax) 162.689	—
(30%Imax) 244.034	—
(40%Imax) 325.378	—
(50%Imax) 406.723	—
(60%Imax) 488.068	—
(70%Imax) 569.412	—
(80%Imax) 650.757	—
(90%Imax) 732.101	—



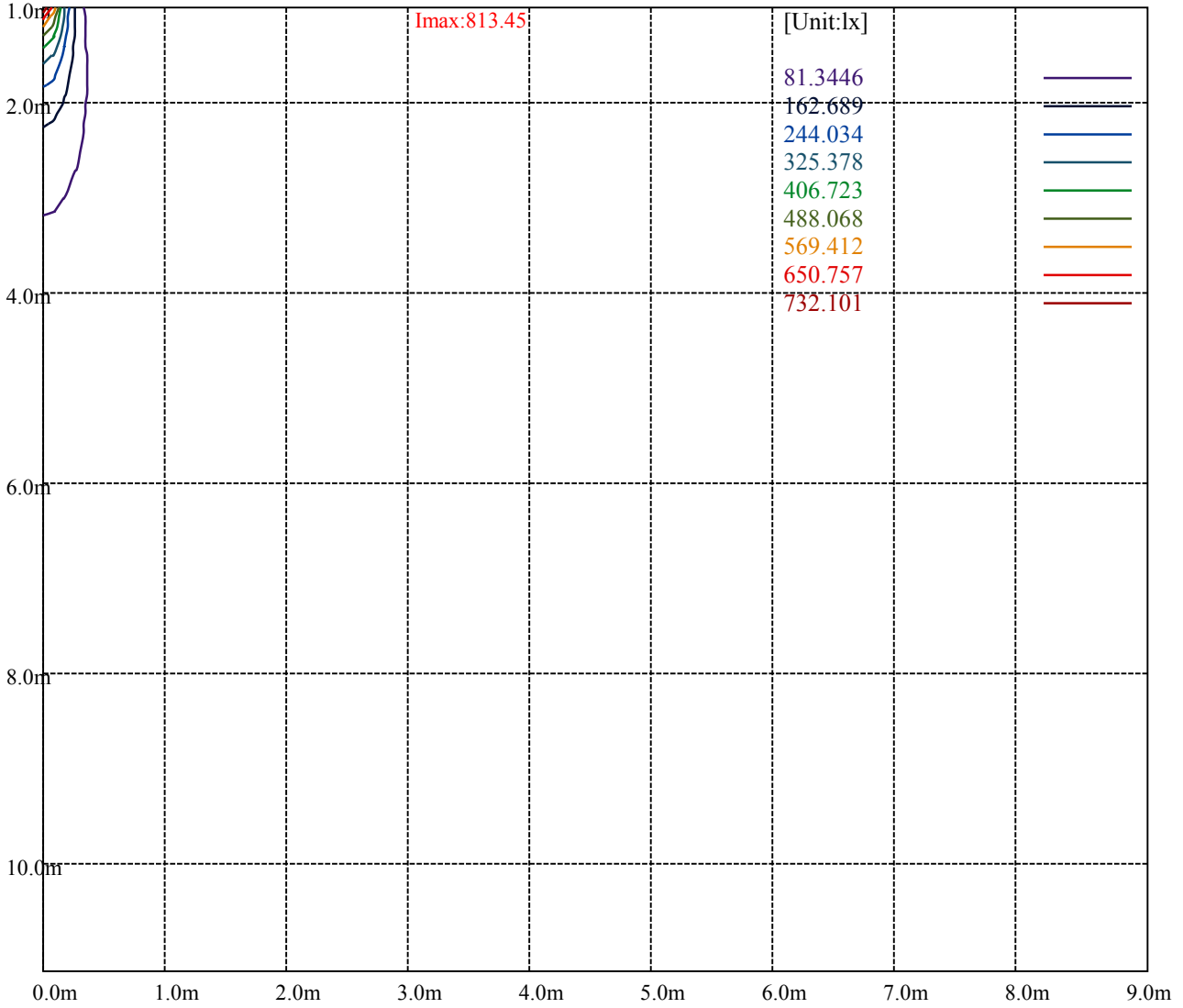
House

[Unit:cd]

Road

Imax:813.45

(10%Imax) 81.3446	—
(20%Imax) 162.689	—
(30%Imax) 244.034	—
(40%Imax) 325.378	—
(50%Imax) 406.723	—
(60%Imax) 488.068	—
(70%Imax) 569.412	—
(80%Imax) 650.757	—
(90%Imax) 732.101	—



Luminance Table

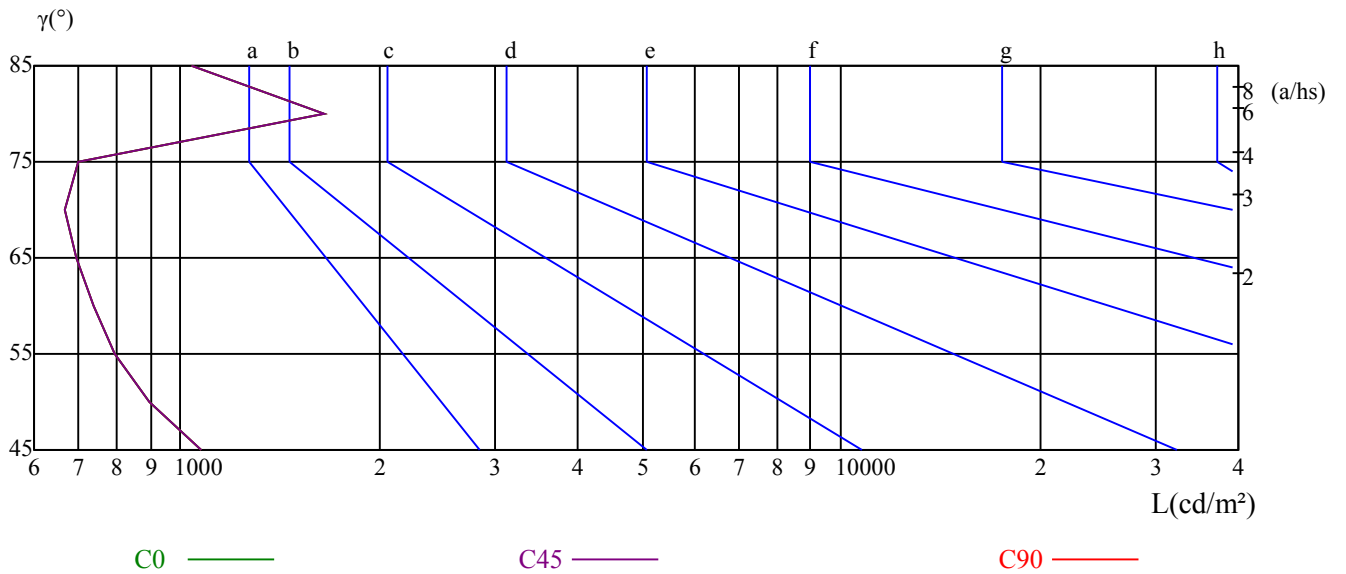
γ	45	50	55	60	65	70	75	80	85
C0	1076	897	794	737	694	668	700	1651	1036
C45	1076	897	794	737	694	668	700	1651	1036
C90	1076	897	794	737	694	668	700	1651	1036

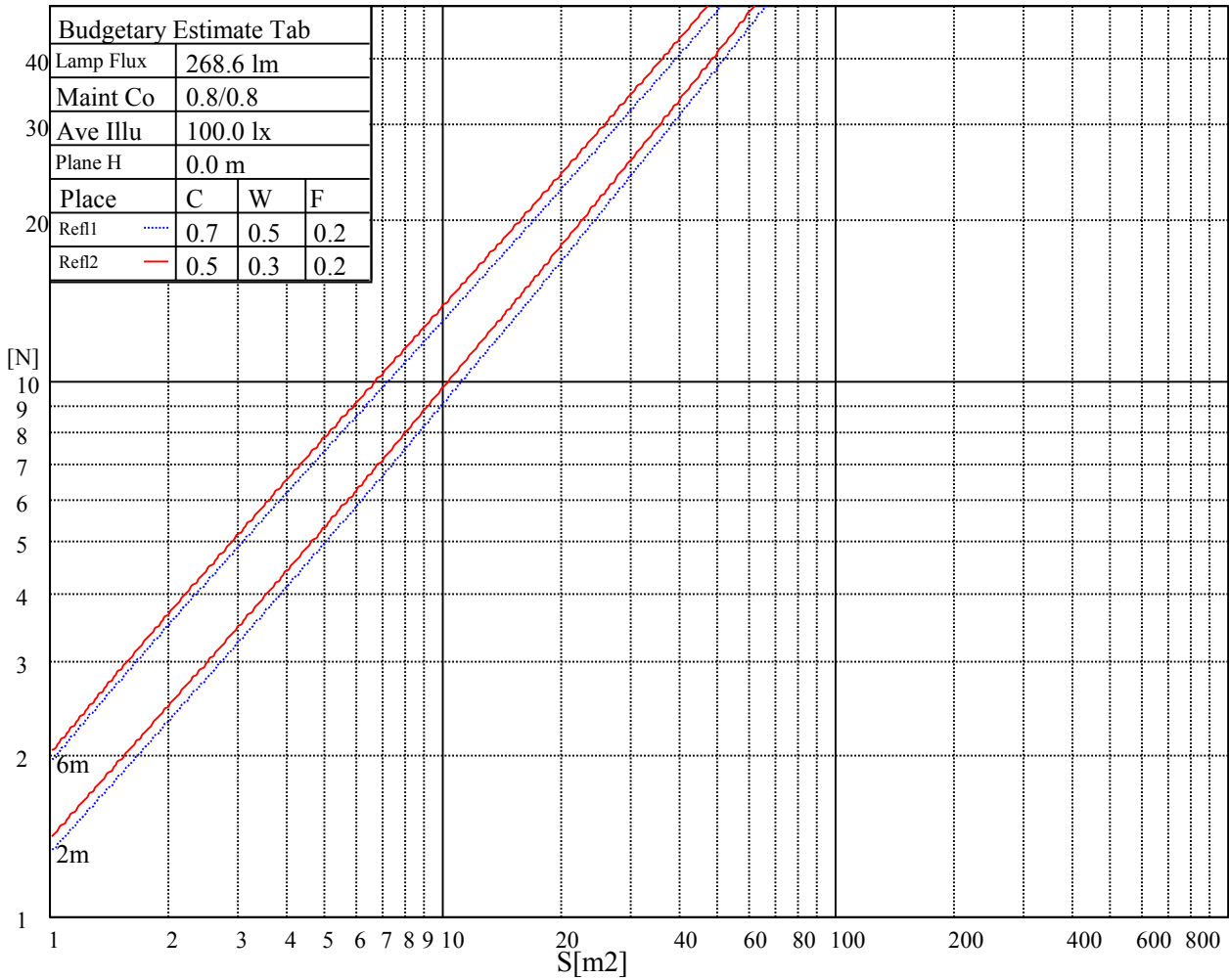
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
694	694	694	700	700	700	1036	1036	1036

Glare Table

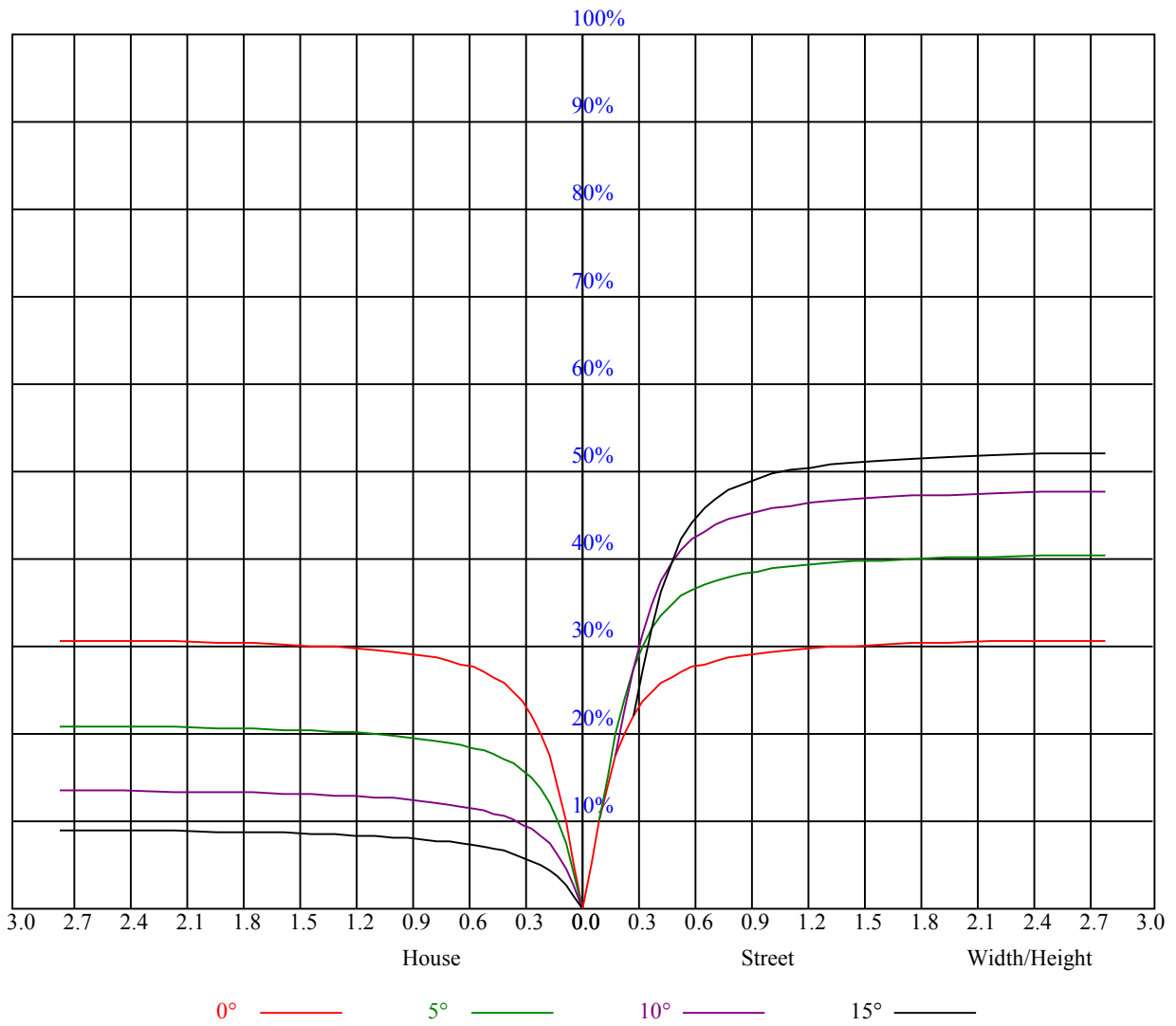
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.74	0.74	0.74	0.73	0.73	0.73	0.69	0.69	0.69	0.66	0.66	0.66	0.64	0.64	0.64	0.62
1	0.69	0.68	0.66	0.68	0.67	0.65	0.65	0.64	0.63	0.63	0.62	0.61	0.61	0.60	0.60	0.59
2	0.65	0.63	0.61	0.64	0.62	0.60	0.62	0.60	0.59	0.60	0.59	0.57	0.58	0.57	0.56	0.55
3	0.61	0.59	0.56	0.61	0.58	0.56	0.59	0.57	0.55	0.57	0.56	0.54	0.56	0.55	0.53	0.52
4	0.58	0.55	0.53	0.58	0.55	0.53	0.56	0.54	0.52	0.55	0.53	0.51	0.54	0.52	0.51	0.50
5	0.56	0.53	0.50	0.55	0.52	0.50	0.54	0.52	0.50	0.53	0.51	0.49	0.52	0.50	0.49	0.48
6	0.53	0.50	0.48	0.53	0.50	0.48	0.52	0.49	0.47	0.51	0.49	0.47	0.50	0.48	0.47	0.46
7	0.51	0.48	0.46	0.51	0.48	0.46	0.50	0.47	0.46	0.49	0.47	0.45	0.49	0.47	0.45	0.44
8	0.49	0.46	0.44	0.49	0.46	0.44	0.48	0.46	0.44	0.48	0.45	0.44	0.47	0.45	0.44	0.43
9	0.48	0.45	0.43	0.47	0.45	0.43	0.47	0.44	0.42	0.46	0.44	0.42	0.46	0.44	0.42	0.42
10	0.46	0.43	0.41	0.46	0.43	0.41	0.45	0.43	0.41	0.45	0.43	0.41	0.45	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	804.63	817.24	815.51	801.47	773.02	732.57	688.83	634.22	583.49
45.0	818.20	810.37	788.38	758.26	715.06	664.21	613.01	553.13	500.85
90.0	815.03	797.70	771.41	731.14	682.08	632.90	579.90	512.26	459.32
135.0	815.93	803.44	772.84	737.71	701.20	635.47	581.93	527.32	467.75
180.0	804.63	782.17	749.90	698.45	650.83	599.14	530.84	476.65	424.66
225.0	818.20	813.18	796.45	761.43	724.15	679.39	629.14	564.19	511.72
270.0	815.03	818.61	809.05	785.21	753.54	707.77	654.47	603.56	558.21
315.0	815.93	816.94	801.94	778.16	745.48	693.43	651.19	594.60	529.77
360.0	804.63	817.24	815.51	801.47	773.02	732.57	688.83	634.22	583.49
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	525.05	467.39	418.21	371.96	318.78	280.36	245.76	208.18	181.95
45.0	443.43	388.10	342.56	306.17	255.68	223.77	198.92	164.50	145.02
90.0	408.89	350.57	308.44	270.74	237.04	200.23	174.96	152.91	131.46
135.0	410.50	362.04	311.97	272.59	233.57	199.69	173.88	147.89	127.51
180.0	364.07	320.10	280.60	237.34	210.75	180.75	152.37	135.40	118.37
225.0	459.62	397.36	351.35	309.04	266.26	228.73	200.05	171.97	150.04
270.0	486.81	436.32	394.19	338.68	293.21	261.18	220.73	189.36	167.91
315.0	484.24	427.41	368.50	330.61	290.70	242.60	216.25	189.36	162.71
360.0	525.05	467.39	418.21	371.96	318.78	280.36	245.76	208.18	181.95
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	159.12	137.31	118.85	104.45	90.59	78.75	69.73	60.89	54.14
45.0	128.35	109.41	95.01	85.15	72.60	64.65	57.42	49.89	44.75
90.0	113.11	99.37	86.16	75.11	66.68	58.74	52.58	46.61	41.41
135.0	111.86	97.82	83.47	73.44	64.95	56.35	50.73	45.41	40.51
180.0	98.47	87.90	77.44	65.49	59.10	52.70	46.55	41.29	37.23
225.0	129.07	111.56	98.17	85.21	74.09	65.67	58.44	50.61	45.35
270.0	141.67	124.11	109.05	92.80	81.74	72.30	62.26	55.51	49.48
315.0	140.24	123.15	106.78	92.62	81.68	71.23	63.22	55.51	48.94
360.0	159.12	137.31	118.85	104.45	90.59	78.75	69.73	60.89	54.14
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	47.56	41.95	37.70	34.06	30.12	27.43	25.04	22.47	20.67
45.0	40.33	35.49	32.15	29.16	25.99	23.78	21.81	19.72	18.22
90.0	37.47	33.94	30.12	27.43	25.16	22.65	20.85	19.30	17.69
135.0	36.15	32.74	29.40	26.77	24.20	22.05	20.38	18.64	17.21
180.0	33.28	30.23	27.19	24.56	22.53	20.55	18.82	17.51	16.31
225.0	40.87	36.39	32.57	29.70	26.89	24.38	22.47	20.55	19.00
270.0	43.08	38.78	35.07	31.43	28.38	26.05	23.66	21.63	20.02
315.0	43.92	39.50	34.78	31.49	28.68	25.63	23.48	21.51	19.78
360.0	47.56	41.95	37.70	34.06	30.12	27.43	25.04	22.47	20.67
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	19.06	17.51	16.07	14.94	13.86	13.03	12.19	11.53	10.93
45.0	16.91	15.60	14.34	13.38	12.37	11.59	10.88	10.10	9.50
90.0	16.31	15.18	14.04	13.03	12.19	11.35	10.64	9.98	9.32
135.0	16.01	15.00	13.74	12.85	12.07	11.29	10.58	9.98	9.38
180.0	14.94	14.04	13.21	12.25	11.53	10.93	10.40	9.74	9.32
225.0	17.57	16.25	15.18	14.10	13.15	12.31	11.59	10.82	10.22
270.0	18.40	17.09	15.77	14.64	13.68	12.85	11.95	11.23	10.64
315.0	17.99	16.61	15.48	14.16	13.27	12.43	11.53	10.82	10.22
360.0	19.06	17.51	16.07	14.94	13.86	13.03	12.19	11.53	10.93

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	10.40	9.80	9.44	9.02	8.54	8.19	7.89	7.59	7.35
45.0	8.90	8.37	7.89	7.47	6.99	6.63	6.27	5.92	5.62
90.0	8.84	8.37	7.83	7.41	6.99	6.51	6.21	5.92	5.56
135.0	8.84	8.31	7.89	7.47	7.11	6.75	6.45	6.15	5.80
180.0	8.90	8.43	8.07	7.71	7.35	6.99	6.69	6.39	6.21
225.0	9.62	9.02	8.48	8.07	7.59	7.11	6.75	6.39	6.09
270.0	9.86	9.32	8.84	8.31	7.83	7.41	6.99	6.63	6.27
315.0	9.62	9.08	8.54	8.07	7.65	7.23	6.87	6.57	6.27
360.0	10.40	9.80	9.44	9.02	8.54	8.19	7.89	7.59	7.35
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	7.17	7.05	6.93	6.81	6.69	6.63	6.51	6.39	6.27
45.0	5.32	4.96	4.72	4.48	4.30	4.06	3.82	3.64	3.47
90.0	5.26	4.96	4.72	4.48	4.24	3.94	3.76	3.59	3.41
135.0	5.56	5.38	5.14	4.96	4.78	4.54	4.36	4.18	4.00
180.0	5.92	5.80	5.56	5.38	5.20	5.02	4.90	4.66	4.48
225.0	5.74	5.44	5.14	4.90	4.66	4.42	4.24	3.94	3.76
270.0	5.92	5.62	5.32	5.02	4.78	4.54	4.24	4.06	3.82
315.0	5.92	5.68	5.44	5.14	4.84	4.66	4.48	4.24	4.06
360.0	7.17	7.05	6.93	6.81	6.69	6.63	6.51	6.39	6.27
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	6.15	5.86	5.62	5.32	5.02	4.66	4.36	4.06	3.70
45.0	3.29	3.11	2.99	2.87	2.69	2.57	2.45	2.33	2.21
90.0	3.23	3.05	2.87	2.75	2.63	2.51	2.33	2.27	2.15
135.0	3.82	3.64	3.47	3.29	3.17	3.05	2.93	2.81	2.69
180.0	4.36	4.12	3.88	3.70	3.53	3.41	3.23	3.11	2.99
225.0	3.59	3.47	3.29	3.11	2.99	2.87	2.69	2.57	2.45
270.0	3.64	3.47	3.29	3.11	2.99	2.87	2.69	2.57	2.39
315.0	3.88	3.70	3.53	3.35	3.23	3.11	2.93	2.81	2.69
360.0	6.15	5.86	5.62	5.32	5.02	4.66	4.36	4.06	3.70
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	3.41	3.23	3.05	2.87	2.75	2.69	2.81	4.90	7.59
45.0	2.15	1.97	1.85	1.79	1.73	2.09	2.51	2.15	1.49
90.0	2.03	1.91	1.79	1.67	1.61	1.49	1.43	1.31	1.20
135.0	2.57	2.51	2.39	2.27	2.21	2.15	2.09	2.09	1.91
180.0	2.87	2.81	2.75	2.99	3.88	4.90	6.93	9.14	9.80
225.0	2.39	2.27	2.15	2.03	1.91	1.85	1.79	2.09	2.93
270.0	2.27	2.21	2.09	1.97	1.85	1.73	1.61	1.55	1.49
315.0	2.57	2.51	2.45	2.27	2.15	2.09	2.03	1.97	1.85
360.0	3.41	3.23	3.05	2.87	2.75	2.69	2.81	4.90	7.59
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	9.32	8.07	5.50	3.41	1.79	1.37	1.02	0.84	0.78
45.0	1.25	1.20	1.08	1.02	0.84	0.78	0.72	0.72	0.66
90.0	1.14	1.08	0.96	0.90	0.78	0.72	0.66	0.66	0.72
135.0	1.67	1.61	1.43	1.37	0.96	0.84	0.72	0.72	0.66
180.0	8.48	6.27	4.06	1.25	1.02	0.90	0.72	0.72	0.72
225.0	2.99	1.85	1.25	1.20	1.08	0.90	0.78	0.72	0.66
270.0	1.37	1.25	1.20	1.14	0.96	0.90	0.78	0.72	0.72
315.0	1.79	1.73	1.61	1.55	1.49	1.02	0.90	0.78	0.72
360.0	9.32	8.07	5.50	3.41	1.79	1.37	1.02	0.84	0.78

Intensity data(cd)

C/γ(°)	90.0
0.0	0.72
45.0	0.66
90.0	0.66
135.0	0.72
180.0	0.90
225.0	0.72
270.0	0.66
315.0	0.72
360.0	0.72