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## Nata

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LumCAT: 1-0928-M  
Luminaire: 99.02.73.179+92.76.853.00  
Report No: 220609-B008  
Test No: 220609-C008  
LampCAT: Bridgelux C10-(30C2000C)  
Lamp flux(lm): 1182.2  
Number of Lamps: 1  
Length(mm): 43  
Phm Type: C

Voltage(V): 37.2500  
Current(A): 0.3610  
Power (W): 13.4470  
PF: 0.0000  
Ballast type: DC  
Width(mm): 43  
Height(mm): 0

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## Photometric Results

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Lumens(lm): 828.12  
Efficiency(%): 70.05%  
Lumens(lm)/Power(W): 61.58  
Central intensity(cd): 3259.521  
Maximum intensity(cd): 3259.521  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=30.8  
                                  [C90/270]Total=30.8  
Field angle(10%Imax): [C0/180]Total=45.0  
                                  [C90/270]Total=45.0  
Maximum s/h(1/2): C0\_180=0.52 C90\_270=0.52  
Maximum s/h(1/4): C0\_180=0.48 C90\_270=0.48  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 70.05%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.535%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3259.521	0.000	0	.000%	.000%
1.0	3251.305	3.115	3.115	.264%	.376%
2.0	3230.989	9.304	12.419	.787%	1.500%
3.0	3191.701	15.361	27.78	1.299%	3.355%
4.0	3136.280	21.182	48.962	1.792%	5.912%
5.0	3070.776	26.702	75.664	2.259%	9.137%
6.0	2979.877	31.798	107.462	2.690%	12.977%
7.0	2879.492	36.369	143.831	3.076%	17.368%
8.0	2774.701	40.466	184.297	3.423%	22.255%
9.0	2643.618	43.913	228.21	3.715%	27.557%
10.0	2497.970	46.529	274.739	3.936%	33.176%
11.0	2360.837	48.549	323.289	4.107%	39.039%
12.0	2210.857	49.975	373.264	4.227%	45.074%
13.0	2033.765	50.373	423.637	4.261%	51.156%
14.0	1877.436	50.063	473.7	4.235%	57.202%
15.0	1712.593	49.286	522.985	4.169%	63.153%
16.0	1497.796	47.041	570.027	3.979%	68.834%
17.0	1329.629	44.031	614.057	3.724%	74.151%
18.0	1118.537	40.365	654.422	3.414%	79.025%
19.0	940.481	35.823	690.245	3.030%	83.351%
20.0	744.088	30.832	721.077	2.608%	87.074%
21.0	550.152	24.852	745.929	2.102%	90.075%
22.0	394.294	18.979	764.908	1.605%	92.367%
23.0	263.533	13.803	778.711	1.168%	94.033%
24.0	166.038	9.392	788.103	.794%	95.167%
25.0	86.903	5.751	793.855	.486%	95.862%
26.0	59.723	3.461	797.316	.293%	96.280%
27.0	42.126	2.492	799.807	.211%	96.581%
28.0	27.763	1.769	801.577	.150%	96.794%
29.0	20.070	1.251	802.828	.106%	96.946%
30.0	15.424	0.958	803.787	.081%	97.061%
31.0	12.145	0.767	804.554	.065%	97.154%
32.0	10.068	0.636	805.19	.054%	97.231%
33.0	8.784	0.555	805.746	.047%	97.298%
34.0	7.828	0.503	806.248	.043%	97.359%
35.0	7.126	0.464	806.713	.039%	97.415%
36.0	6.633	0.438	807.151	.037%	97.468%
37.0	6.252	0.420	807.571	.036%	97.518%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	5.938	0.407	807.978	.034%	97.567%
39.0	5.639	0.395	808.373	.033%	97.615%
40.0	5.423	0.386	808.759	.033%	97.662%
41.0	5.206	0.378	809.137	.032%	97.707%
42.0	5.049	0.373	809.51	.032%	97.752%
43.0	4.885	0.368	809.878	.031%	97.797%
44.0	4.743	0.363	810.241	.031%	97.841%
45.0	4.653	0.361	810.602	.031%	97.884%
46.0	4.534	0.359	810.962	.030%	97.928%
47.0	4.452	0.357	811.319	.030%	97.971%
48.0	4.362	0.356	811.675	.030%	98.014%
49.0	4.295	0.355	812.031	.030%	98.057%
50.0	4.228	0.355	812.386	.030%	98.100%
51.0	4.175	0.356	812.742	.030%	98.143%
52.0	4.115	0.356	813.097	.030%	98.186%
53.0	4.086	0.357	813.454	.030%	98.229%
54.0	4.048	0.359	813.813	.030%	98.272%
55.0	4.011	0.360	814.172	.030%	98.315%
56.0	3.981	0.361	814.533	.031%	98.359%
57.0	3.951	0.363	814.896	.031%	98.403%
58.0	3.914	0.364	815.26	.031%	98.447%
59.0	3.891	0.365	815.625	.031%	98.491%
60.0	3.869	0.367	815.991	.031%	98.535%
61.0	3.869	0.369	816.361	.031%	98.580%
62.0	3.862	0.373	816.733	.032%	98.625%
63.0	3.847	0.375	817.108	.032%	98.670%
64.0	3.832	0.377	817.485	.032%	98.715%
65.0	3.817	0.379	817.863	.032%	98.761%
66.0	3.809	0.380	818.244	.032%	98.807%
67.0	3.802	0.383	818.626	.032%	98.853%
68.0	3.802	0.385	819.012	.033%	98.900%
69.0	3.802	0.388	819.4	.033%	98.947%
70.0	3.802	0.391	819.79	.033%	98.994%
71.0	3.802	0.393	820.183	.033%	99.041%
72.0	3.794	0.395	820.578	.033%	99.089%
73.0	3.824	0.398	820.976	.034%	99.137%
74.0	3.929	0.408	821.384	.034%	99.186%
75.0	4.056	0.422	821.806	.036%	99.237%

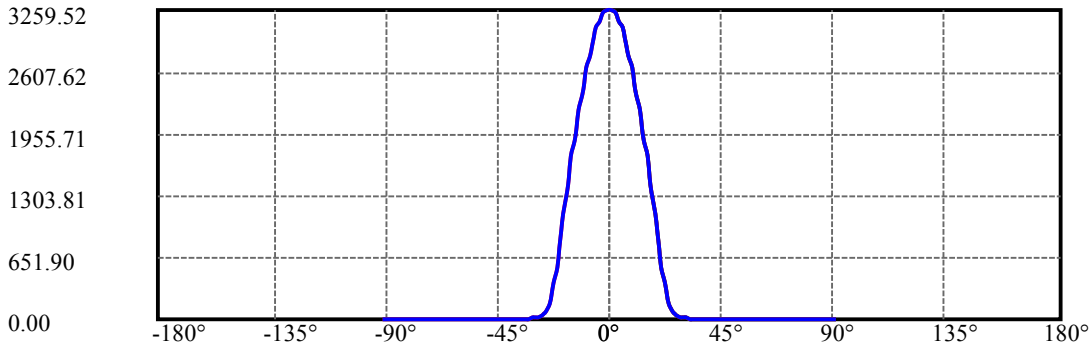
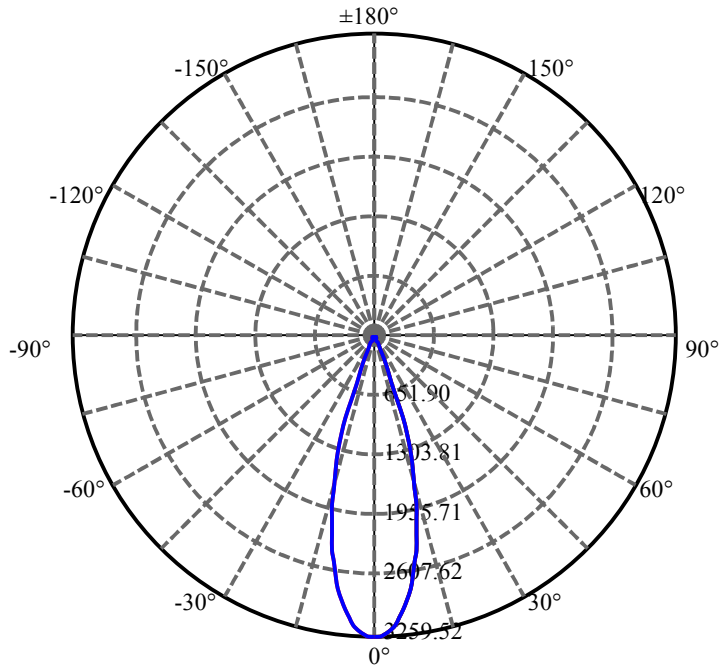
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	4.145	0.435	822.241	.037%	99.290%
77.0	4.198	0.445	822.686	.038%	99.343%
78.0	4.175	0.448	823.134	.038%	99.398%
79.0	4.093	0.444	823.578	.038%	99.451%
80.0	3.944	0.433	824.012	.037%	99.504%
81.0	3.921	0.425	824.437	.036%	99.555%
82.0	3.981	0.429	824.866	.036%	99.607%
83.0	3.989	0.433	825.299	.037%	99.659%
84.0	4.026	0.437	825.735	.037%	99.712%
85.0	3.727	0.423	826.159	.036%	99.763%
86.0	3.660	0.404	826.562	.034%	99.812%
87.0	3.563	0.395	826.958	.033%	99.859%
88.0	3.548	0.390	827.347	.033%	99.906%
89.0	3.533	0.388	827.735	.033%	99.953%
90.0	3.533	0.387	828.123	.033%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	803.79	67.99%	97.06%
0-40	808.76	68.41%	97.66%
0-60	815.99	69.02%	98.54%
0-90	827.74	70.02%	99.95%
0-120	827.74	70.02%	99.95%
0-180	828.12	70.05%	100.00%
60-90	12.11	1.02%	1.46%
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%
0-18.23	662.50	56.04%	80.00%

ZONAL LUMEN SUMMARY

0-10	274.74
10-20	446.34
20-30	82.71
30-40	4.97
40-50	3.63
50-60	3.61
60-70	3.80
70-80	4.22
80-90	3.72
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: —————

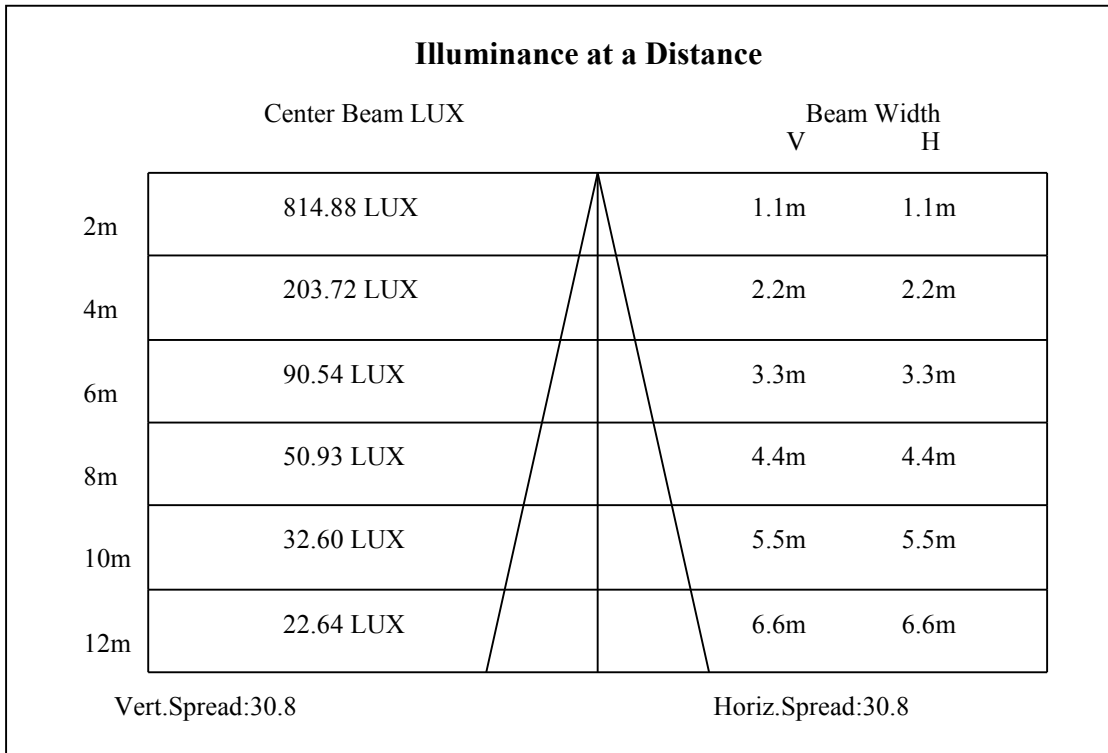
C90/C270: —————

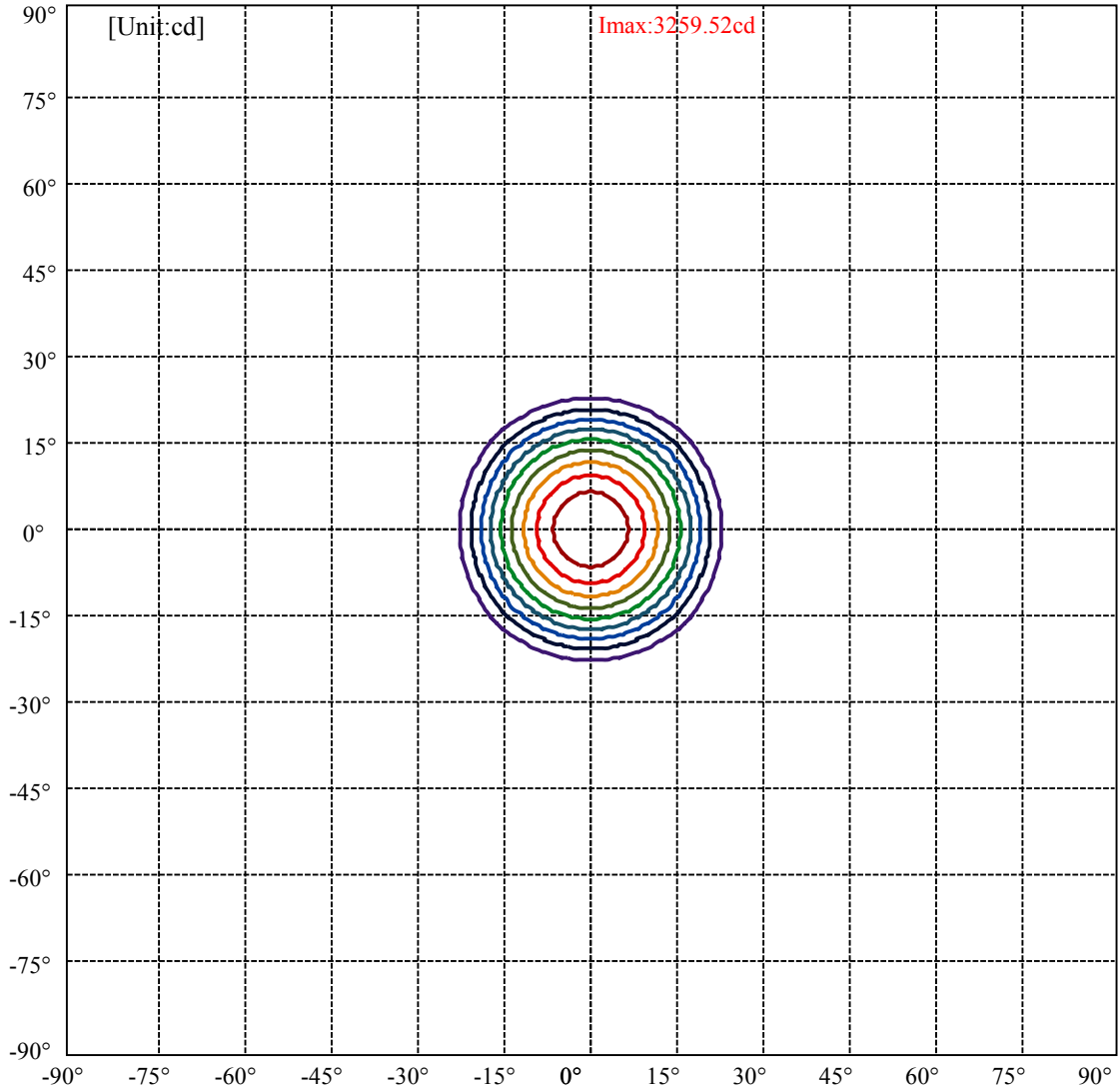
Field angle(10%Imax):C0/180Left:22.5 Right:22.5

:C90/270Left:22.5 Right:22.5

Beam Angle(50%Imax):C0/180Left:15.4 Right:15.4

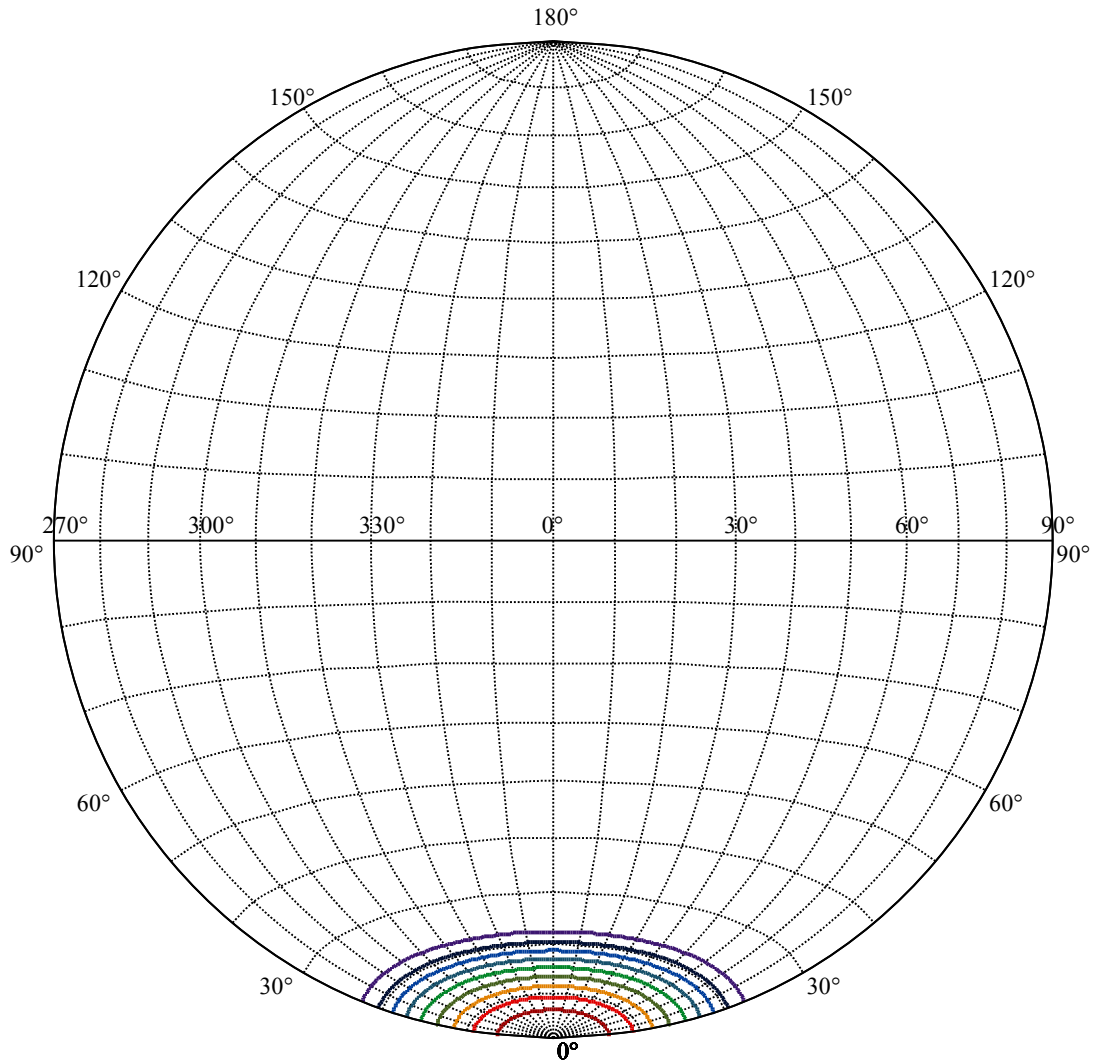
:C90/270Left:15.4 Right:15.4





(10%Imax) 325.952	—
(20%Imax) 651.904	—
(30%Imax) 977.856	—
(40%Imax) 1303.81	—
(50%Imax) 1629.76	—
(60%Imax) 1955.71	—
(70%Imax) 2281.66	—
(80%Imax) 2607.62	—
(90%Imax) 2933.57	—





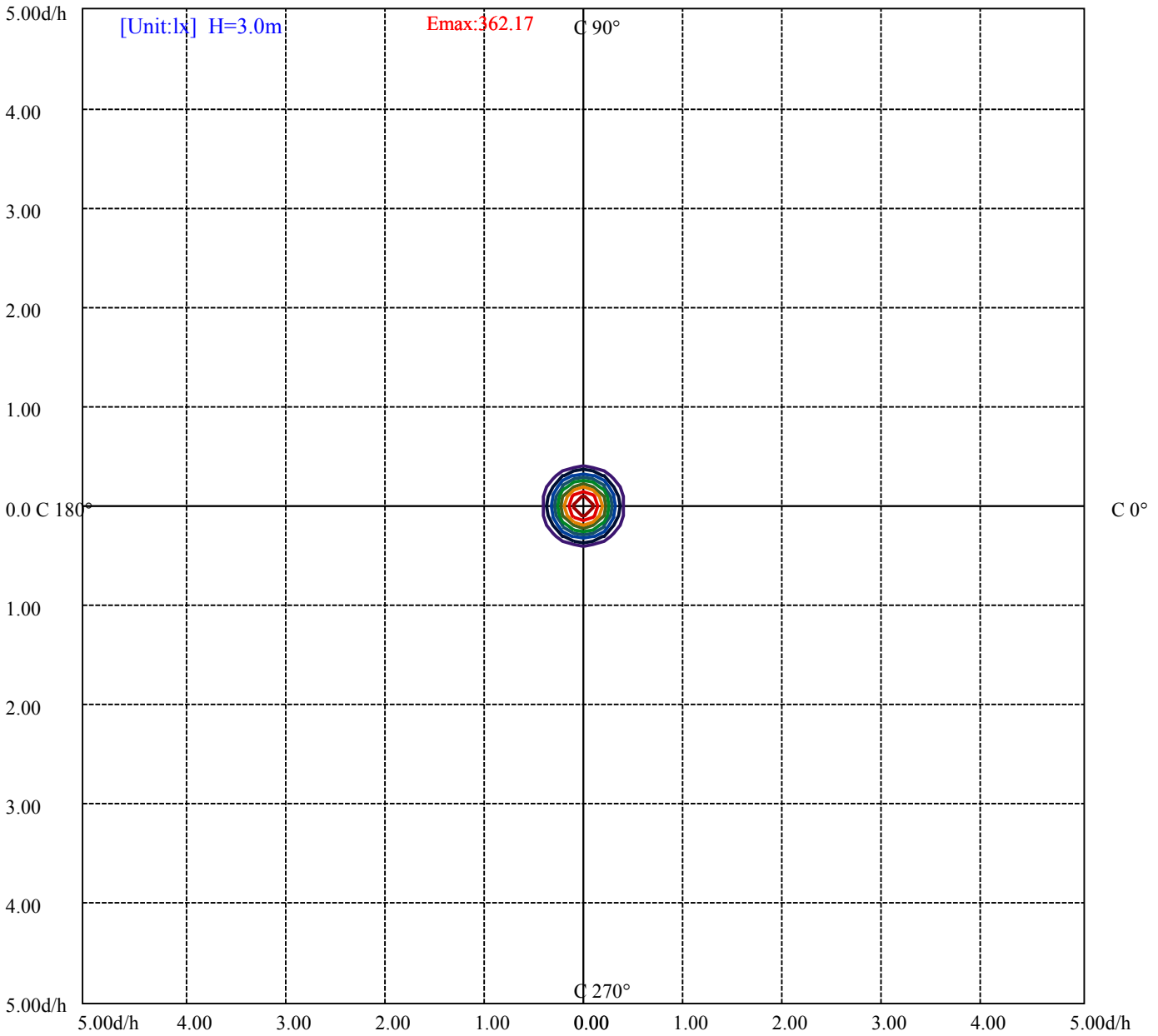
House

[Unit:cd]

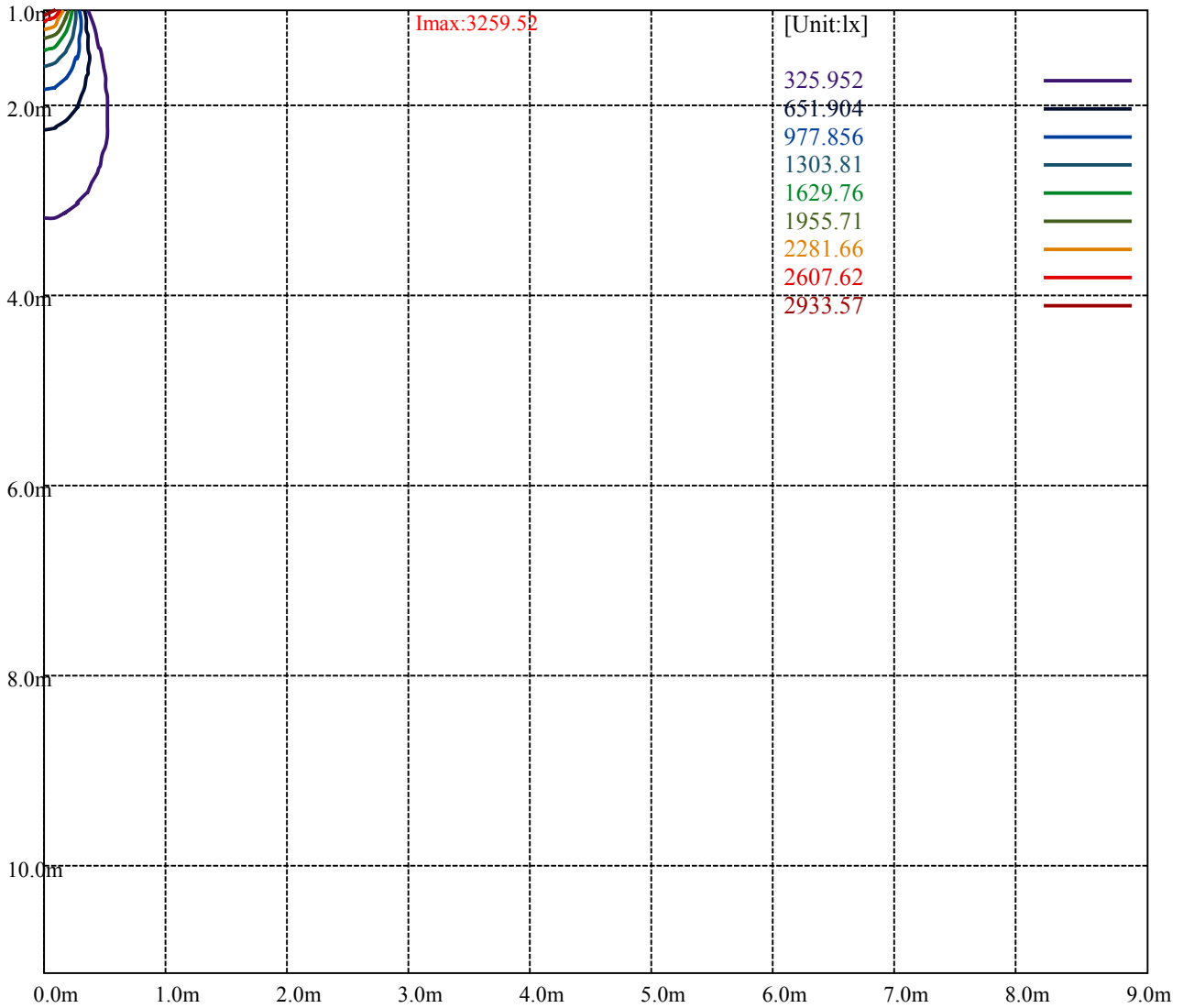
Road

**Imax:3259.52**

(10%Imax)	325.952	—
(20%Imax)	651.904	—
(30%Imax)	977.856	—
(40%Imax)	1303.81	—
(50%Imax)	1629.76	—
(60%Imax)	1955.71	—
(70%Imax)	2281.66	—
(80%Imax)	2607.62	—
(90%Imax)	2933.57	—



- (10%Emax) 36.21689
- (20%Emax) 72.43378
- (30%Emax) 108.6507
- (40%Emax) 144.8678
- (50%Emax) 181.0844
- (60%Emax) 217.3011
- (70%Emax) 253.5178
- (80%Emax) 289.7356
- (90%Emax) 325.9522



Luminance Table

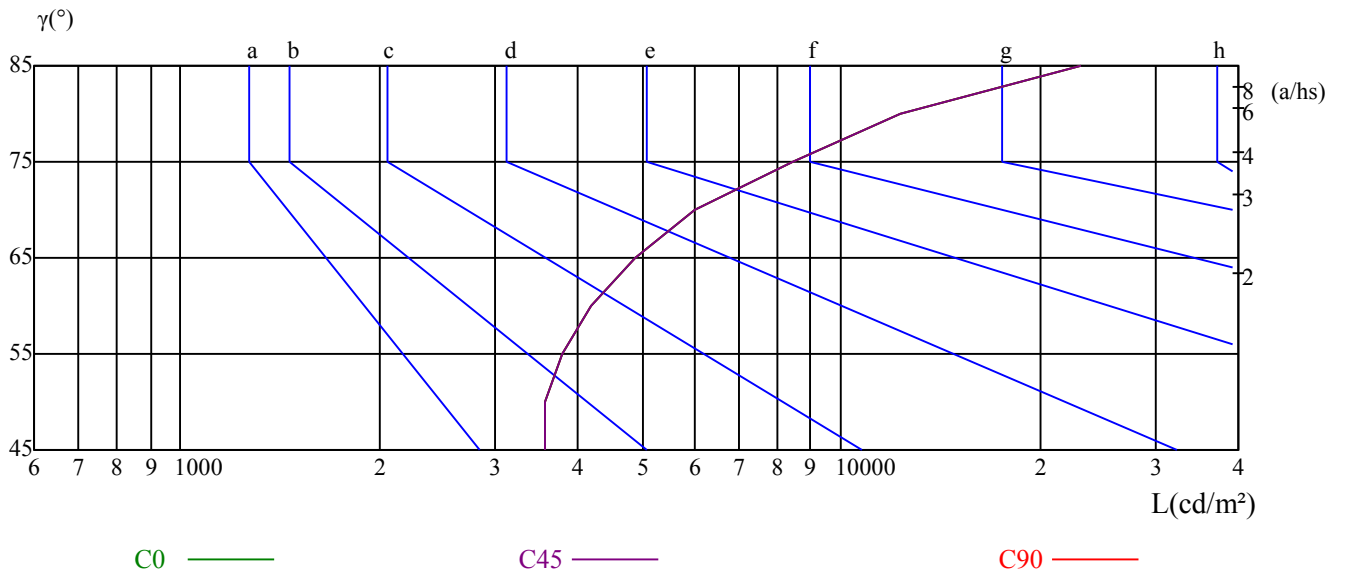
$\gamma$	45	50	55	60	65	70	75	80	85
C0	3559	3557	3782	4185	4884	6012	8475	12283	23128
C45	3559	3557	3782	4185	4884	6012	8475	12283	23128
C90	3559	3557	3782	4185	4884	6012	8475	12283	23128

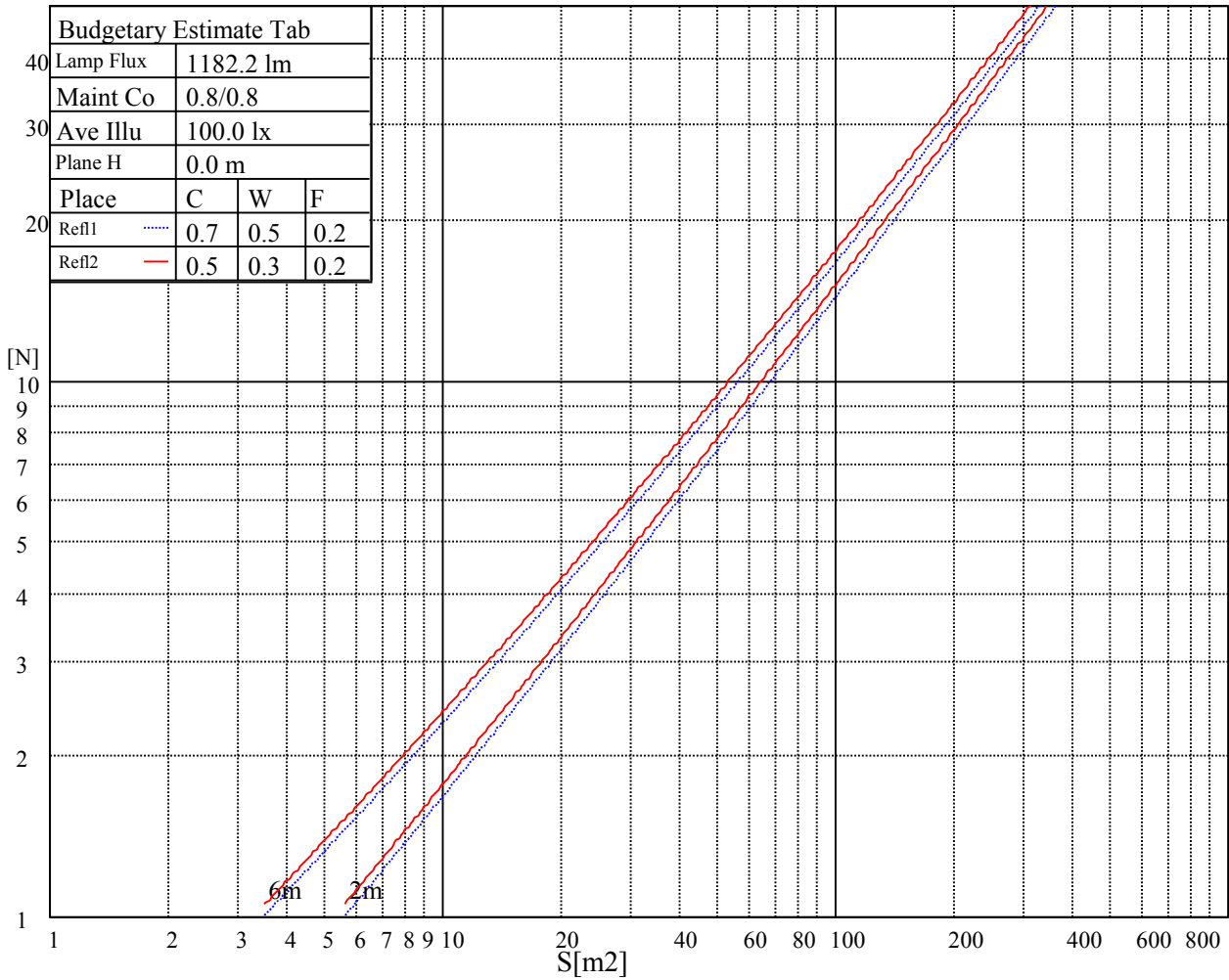
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4884	4884	4884	8475	8475	8475	23128	23128	23128

Glare Table

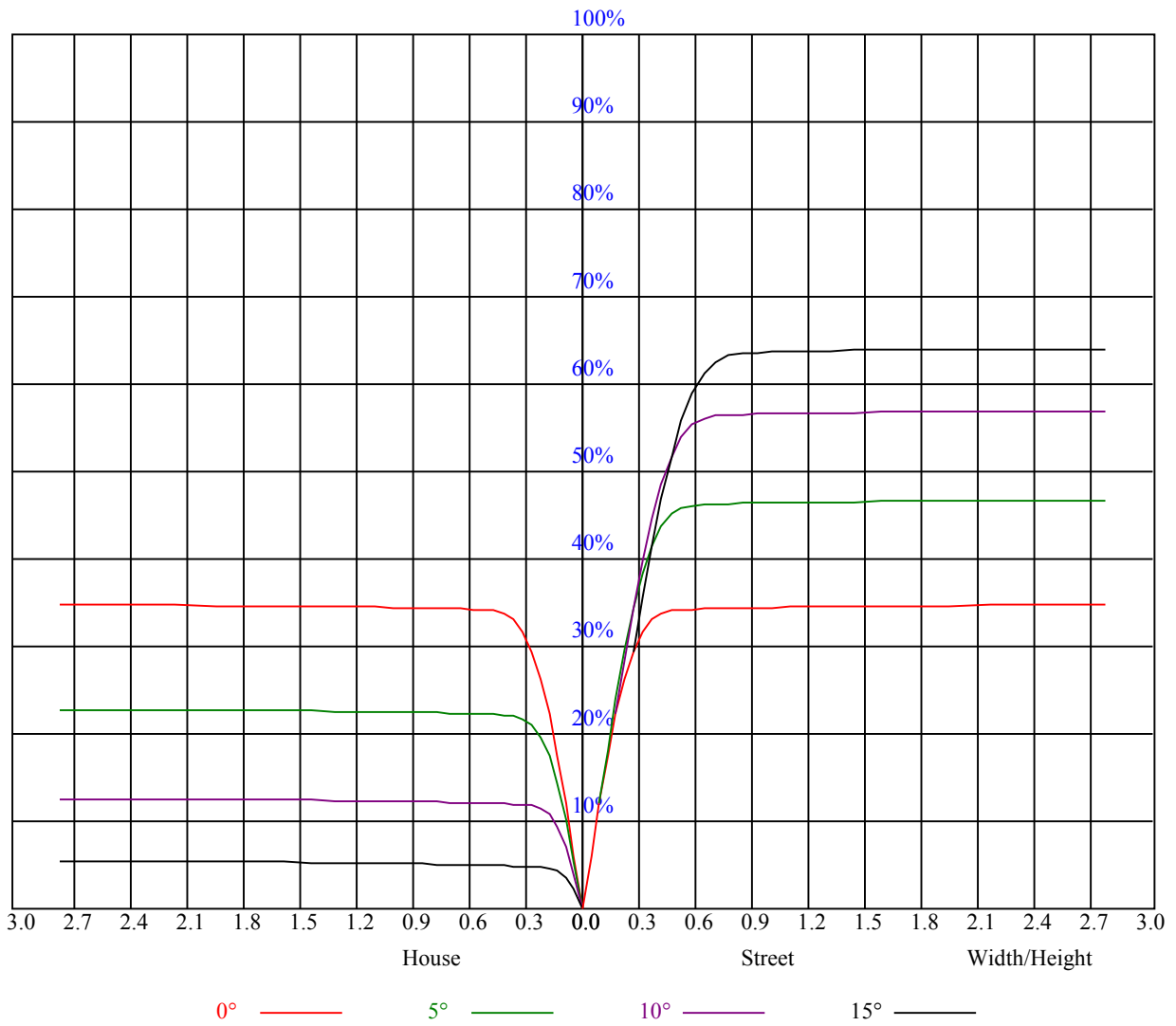
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.83	0.83	0.83	0.81	0.81	0.81	0.78	0.78	0.78	0.75	0.75	0.75	0.71	0.71	0.71	0.70
1	0.79	0.77	0.76	0.77	0.76	0.75	0.75	0.74	0.73	0.72	0.71	0.71	0.70	0.69	0.69	0.67
2	0.75	0.73	0.71	0.74	0.72	0.70	0.72	0.70	0.69	0.70	0.69	0.68	0.68	0.67	0.66	0.65
3	0.72	0.70	0.68	0.71	0.69	0.67	0.69	0.68	0.66	0.68	0.66	0.65	0.66	0.65	0.64	0.63
4	0.69	0.67	0.65	0.69	0.66	0.64	0.67	0.65	0.63	0.66	0.64	0.63	0.65	0.63	0.62	0.61
5	0.67	0.64	0.62	0.66	0.64	0.62	0.65	0.63	0.61	0.64	0.62	0.61	0.63	0.62	0.60	0.59
6	0.65	0.62	0.60	0.64	0.62	0.60	0.63	0.61	0.59	0.63	0.60	0.59	0.62	0.60	0.59	0.58
7	0.63	0.60	0.58	0.62	0.60	0.58	0.62	0.59	0.58	0.61	0.59	0.57	0.60	0.58	0.57	0.56
8	0.61	0.58	0.56	0.61	0.58	0.56	0.60	0.58	0.56	0.59	0.57	0.56	0.59	0.57	0.55	0.55
9	0.59	0.57	0.55	0.59	0.56	0.55	0.58	0.56	0.54	0.58	0.56	0.54	0.57	0.56	0.54	0.53
10	0.58	0.55	0.53	0.57	0.55	0.53	0.57	0.55	0.53	0.57	0.54	0.53	0.56	0.54	0.53	0.52



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	3254.14	3253.55	3242.19	3213.51	3169.89	3113.72	3027.68	2945.82	2852.60
45.0	3271.47	3248.17	3208.73	3161.53	3089.22	3007.96	2905.19	2792.25	2679.92
90.0	3254.74	3233.23	3195.59	3140.01	3065.32	2982.27	2884.87	2753.41	2635.10
135.0	3257.73	3251.16	3223.07	3178.26	3129.26	3057.56	2953.59	2856.19	2745.05
180.0	3254.14	3233.83	3208.13	3157.94	3080.86	3015.73	2913.55	2782.10	2673.34
225.0	3271.47	3275.06	3272.67	3246.38	3208.13	3158.54	3074.29	2997.80	2899.81
270.0	3254.74	3261.91	3258.92	3236.22	3200.96	3145.99	3073.69	3000.79	2908.17
315.0	3257.73	3253.55	3238.61	3199.77	3146.59	3084.44	3006.17	2907.58	2803.61
360.0	3254.14	3253.55	3242.19	3213.51	3169.89	3113.72	3027.68	2945.82	2852.60
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2721.15	2603.43	2479.15	2327.38	2167.24	2021.44	1853.53	1690.41	1495.62
45.0	2537.71	2388.92	2246.11	2120.03	1914.48	1760.32	1613.33	1401.21	1199.24
90.0	2504.24	2336.94	2195.92	2050.12	1879.83	1701.76	1533.86	1180.24	1157.77
135.0	2589.69	2458.83	2317.81	2154.09	1984.99	1828.44	1646.79	1475.90	1278.71
180.0	2543.08	2369.20	2223.41	2076.41	1887.59	1727.46	1560.15	1297.83	1148.51
225.0	2791.66	2638.09	2501.26	2335.14	2163.65	2008.89	1853.53	1667.70	1467.53
270.0	2772.53	2653.03	2523.36	2368.01	2199.50	2051.32	1877.44	1693.40	1515.93
315.0	2688.88	2535.32	2399.68	2255.67	2072.83	1919.86	1762.11	1575.68	1373.72
360.0	2721.15	2603.43	2479.15	2327.38	2167.24	2021.44	1853.53	1690.41	1495.62
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1296.04	1113.20	904.66	700.30	524.63	362.70	308.92	113.71	75.23
45.0	1036.71	800.09	597.53	432.61	311.31	145.86	82.16	55.69	38.42
90.0	950.85	746.31	565.62	383.14	234.11	133.55	80.43	52.04	36.03
135.0	1076.15	895.10	694.93	484.00	338.80	319.08	102.77	69.13	49.24
180.0	961.90	776.67	577.27	398.07	267.27	153.15	90.35	65.37	44.28
225.0	1143.37	1074.48	885.66	682.92	494.52	343.88	206.69	117.53	82.22
270.0	1313.37	1130.52	923.18	717.63	546.14	374.65	303.54	132.17	87.06
315.0	1169.90	987.48	803.86	602.55	437.57	275.40	153.45	89.57	65.31
360.0	1296.04	1113.20	904.66	700.30	524.63	362.70	308.92	113.71	75.23
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	51.75	33.70	23.60	17.09	13.21	10.88	9.20	8.19	7.35
45.0	26.53	17.75	13.80	11.29	9.26	8.19	7.47	6.87	6.39
90.0	24.92	17.75	13.62	11.23	9.44	8.25	7.47	6.81	6.45
135.0	32.63	22.17	16.97	13.21	10.76	9.26	8.19	7.53	6.87
180.0	30.83	21.75	16.19	13.03	10.76	9.02	8.07	7.41	6.81
225.0	60.11	38.18	27.19	20.50	15.60	12.37	10.46	8.96	7.95
270.0	64.06	40.57	28.20	20.91	15.30	12.37	10.46	8.84	7.95
315.0	46.19	30.23	20.97	16.13	12.85	10.22	8.96	8.01	7.23
360.0	51.75	33.70	23.60	17.09	13.21	10.88	9.20	8.19	7.35
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	6.75	6.33	6.04	5.68	5.44	5.20	5.02	4.90	4.72
45.0	6.09	5.80	5.56	5.32	5.14	5.02	4.84	4.72	4.60
90.0	6.04	5.74	5.56	5.32	5.08	4.96	4.84	4.66	4.54
135.0	6.39	6.09	5.86	5.56	5.38	5.14	5.02	4.84	4.72
180.0	6.45	6.15	5.86	5.62	5.44	5.20	5.08	4.90	4.78
225.0	7.35	6.81	6.39	6.04	5.80	5.56	5.32	5.14	4.96
270.0	7.29	6.75	6.33	5.98	5.68	5.44	5.26	5.08	4.90
315.0	6.69	6.33	5.92	5.62	5.44	5.14	5.02	4.84	4.72
360.0	6.75	6.33	6.04	5.68	5.44	5.20	5.02	4.90	4.72



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	4.60	4.48	4.42	4.30	4.24	4.18	4.12	4.00	4.00
45.0	4.54	4.42	4.36	4.30	4.18	4.12	4.12	4.06	4.00
90.0	4.48	4.36	4.30	4.24	4.18	4.12	4.06	4.00	4.00
135.0	4.66	4.54	4.48	4.36	4.30	4.24	4.24	4.18	4.12
180.0	4.72	4.66	4.54	4.48	4.42	4.36	4.30	4.30	4.24
225.0	4.84	4.72	4.60	4.48	4.42	4.36	4.30	4.24	4.24
270.0	4.78	4.60	4.54	4.42	4.36	4.30	4.18	4.12	4.06
315.0	4.60	4.48	4.36	4.30	4.24	4.12	4.06	4.00	4.00
360.0	4.60	4.48	4.42	4.30	4.24	4.18	4.12	4.00	4.00
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	4.00	3.94	3.88	3.82	3.82	3.76	3.76	3.76	3.76
45.0	3.94	3.94	3.94	3.88	3.88	3.82	3.82	3.82	3.82
90.0	3.94	3.88	3.88	3.88	3.82	3.82	3.76	3.76	3.76
135.0	4.06	4.06	4.06	4.00	3.94	3.94	3.88	3.88	3.88
180.0	4.24	4.18	4.18	4.18	4.12	4.12	4.18	4.18	4.18
225.0	4.18	4.12	4.06	4.06	4.00	4.00	3.94	3.94	3.94
270.0	4.06	4.00	3.94	3.94	3.88	3.82	3.82	3.82	3.82
315.0	3.94	3.94	3.88	3.82	3.82	3.82	3.76	3.76	3.70
360.0	4.00	3.94	3.88	3.82	3.82	3.76	3.76	3.76	3.76
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	3.70	3.70	3.70	3.70	3.64	3.64	3.64	3.64	3.64
45.0	3.82	3.76	3.76	3.76	3.76	3.76	3.82	3.82	3.76
90.0	3.76	3.76	3.70	3.70	3.70	3.70	3.70	3.70	3.70
135.0	3.88	3.88	3.88	3.82	3.82	3.82	3.82	3.82	3.82
180.0	4.18	4.18	4.18	4.18	4.18	4.24	4.18	4.24	4.24
225.0	3.94	3.88	3.88	3.88	3.88	3.88	3.82	3.82	3.88
270.0	3.76	3.76	3.70	3.70	3.70	3.70	3.70	3.70	3.70
315.0	3.70	3.70	3.70	3.70	3.70	3.64	3.70	3.64	3.64
360.0	3.70	3.70	3.70	3.70	3.64	3.64	3.64	3.64	3.64
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	3.64	3.64	3.59	3.64	3.59	3.59	3.64	3.59	3.59
45.0	3.76	3.82	3.82	3.82	3.82	3.88	3.82	3.94	3.94
90.0	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70	3.70
135.0	3.82	3.82	3.82	3.82	3.82	3.82	3.82	3.88	3.88
180.0	4.24	4.42	5.26	6.21	6.99	7.35	7.23	6.45	5.26
225.0	3.82	3.82	3.82	3.82	3.82	3.82	3.82	3.82	3.82
270.0	3.70	3.64	3.70	3.70	3.70	3.70	3.70	3.70	3.70
315.0	3.64	3.70	3.70	3.70	3.70	3.70	3.64	3.64	3.64
360.0	3.64	3.64	3.59	3.64	3.59	3.59	3.64	3.59	3.59
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	3.64	3.64	3.64	3.64	3.76	3.76	3.59	3.53	3.47
45.0	4.00	4.06	4.18	4.30	3.64	3.59	3.59	3.59	3.53
90.0	3.76	3.76	3.76	3.94	3.59	3.53	3.53	3.53	3.59
135.0	3.94	4.06	4.12	4.24	4.06	3.53	3.53	3.53	3.53
180.0	4.90	5.08	5.08	4.96	3.53	3.53	3.53	3.53	3.53
225.0	3.82	3.82	3.82	3.82	3.88	3.88	3.59	3.59	3.59
270.0	3.64	3.70	3.64	3.64	3.64	3.70	3.64	3.59	3.53
315.0	3.64	3.70	3.64	3.64	3.70	3.76	3.53	3.53	3.53
360.0	3.64	3.64	3.64	3.64	3.76	3.76	3.59	3.53	3.47

Intensity data(cd)

<b>C/γ(°)</b>	<b>90.0</b>
<b>0.0</b>	<b>3.53</b>
<b>45.0</b>	<b>3.53</b>
<b>90.0</b>	<b>3.53</b>
<b>135.0</b>	<b>3.53</b>
<b>180.0</b>	<b>3.53</b>
<b>225.0</b>	<b>3.59</b>
<b>270.0</b>	<b>3.53</b>
<b>315.0</b>	<b>3.53</b>
<b>360.0</b>	<b>3.53</b>