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Nata

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LumCAT: 3-2080-A  
Luminaire: 92.70.151.00+92.70.153.00  
Report No: NT2017072110  
Test No: GC2017072110  
LampCAT: CITIZEN LCN-C03A  
Lamp flux(lm): 2968.0  
Number of Lamps: 1  
Length(mm): 80  
Phm Type: C

Voltage(V): 34.1600  
Current(A): 0.7000  
Power (W): 23.9120  
PF: 0.0000  
Ballast type: DC  
Width(mm): 80  
Height(mm): 0

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Photometric Results

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Lumens(lm): 2533.92  
Efficiency(%): 85.37%  
Lumens(lm)/Power(W): 105.94  
Central intensity(cd): 6589.984  
Maximum intensity(cd): 6589.984  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=30.4  
                                  [C90/270]Total=30.4  
Field angle(10%Imax): [C0/180]Total=68.1  
                                  [C90/270]Total=68.1  
Maximum s/h(1/2): C0\_180=0.50 C90\_270=0.50  
Maximum s/h(1/4): C0\_180=0.52 C90\_270=0.52  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 85.36%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.722%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6589.984	0.000	0	.000%	.000%
1.0	6570.868	6.297	6.297	.212%	.249%
2.0	6518.764	18.787	25.085	.633%	.990%
3.0	6424.490	30.956	56.041	1.043%	2.212%
4.0	6298.718	42.589	98.629	1.435%	3.892%
5.0	6145.272	53.533	152.163	1.804%	6.005%
6.0	5942.283	63.523	215.686	2.140%	8.512%
7.0	5700.254	72.265	287.951	2.435%	11.364%
8.0	5469.996	79.943	367.894	2.694%	14.519%
9.0	5191.112	86.675	454.569	2.920%	17.939%
10.0	4879.811	91.442	546.012	3.081%	21.548%
11.0	4604.279	94.766	640.777	3.193%	25.288%
12.0	4304.443	97.385	738.162	3.281%	29.131%
13.0	3963.437	98.119	836.281	3.306%	33.003%
14.0	3661.736	97.602	933.883	3.288%	36.855%
15.0	3361.218	96.414	1030.297	3.248%	40.660%
16.0	3046.856	93.896	1124.193	3.164%	44.366%
17.0	2771.533	90.608	1214.801	3.053%	47.942%
18.0	2499.592	86.909	1301.711	2.928%	51.371%
19.0	2257.730	82.768	1384.478	2.789%	54.638%
20.0	2042.970	78.715	1463.193	2.652%	57.744%
21.0	1843.543	74.629	1537.822	2.514%	60.689%
22.0	1676.087	70.728	1608.55	2.383%	63.481%
23.0	1535.219	67.382	1675.932	2.270%	66.140%
24.0	1402.142	64.221	1740.154	2.164%	68.674%
25.0	1292.119	61.262	1801.415	2.064%	71.092%
26.0	1208.600	59.030	1860.445	1.989%	73.422%
27.0	1123.981	57.067	1917.512	1.923%	75.674%
28.0	1056.796	55.213	1972.725	1.860%	77.853%
29.0	999.266	53.792	2026.517	1.812%	79.976%
30.0	940.289	52.368	2078.885	1.764%	82.042%
31.0	875.970	50.544	2129.429	1.703%	84.037%
32.0	809.814	48.296	2177.724	1.627%	85.943%
33.0	739.721	45.650	2223.374	1.538%	87.744%
34.0	661.614	42.409	2265.783	1.429%	89.418%
35.0	582.533	38.639	2304.421	1.302%	90.943%
36.0	502.520	34.548	2338.97	1.164%	92.306%
37.0	428.768	30.373	2369.343	1.023%	93.505%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	361.054	26.363	2395.706	.888%	94.545%
39.0	287.496	22.137	2417.843	.746%	95.419%
40.0	225.751	17.900	2435.743	.603%	96.125%
41.0	178.934	14.411	2450.154	.486%	96.694%
42.0	130.447	11.240	2461.394	.379%	97.138%
43.0	95.178	8.358	2469.752	.282%	97.468%
44.0	69.954	6.233	2475.985	.210%	97.714%
45.0	50.100	4.614	2480.598	.155%	97.896%
46.0	35.450	3.346	2483.944	.113%	98.028%
47.0	25.753	2.434	2486.378	.082%	98.124%
48.0	19.353	1.823	2488.202	.061%	98.196%
49.0	14.845	1.404	2489.606	.047%	98.251%
50.0	13.106	1.165	2490.771	.039%	98.297%
51.0	12.271	1.074	2491.845	.036%	98.339%
52.0	11.742	1.030	2492.876	.035%	98.380%
53.0	11.478	1.010	2493.886	.034%	98.420%
54.0	11.339	1.006	2494.891	.034%	98.460%
55.0	11.186	1.005	2495.897	.034%	98.499%
56.0	11.075	1.006	2496.903	.034%	98.539%
57.0	11.005	1.010	2497.912	.034%	98.579%
58.0	10.922	1.014	2498.926	.034%	98.619%
59.0	10.852	1.018	2499.944	.034%	98.659%
60.0	10.796	1.023	2500.967	.034%	98.699%
61.0	10.741	1.028	2501.995	.035%	98.740%
62.0	10.699	1.033	2503.028	.035%	98.781%
63.0	10.671	1.039	2504.067	.035%	98.822%
64.0	10.629	1.045	2505.112	.035%	98.863%
65.0	10.602	1.051	2506.163	.035%	98.905%
66.0	10.602	1.058	2507.221	.036%	98.946%
67.0	10.574	1.065	2508.286	.036%	98.988%
68.0	10.560	1.071	2509.356	.036%	99.031%
69.0	10.532	1.076	2510.432	.036%	99.073%
70.0	10.518	1.081	2511.513	.036%	99.116%
71.0	10.518	1.087	2512.601	.037%	99.159%
72.0	10.490	1.092	2513.693	.037%	99.202%
73.0	10.518	1.099	2514.792	.037%	99.245%
74.0	10.490	1.104	2515.896	.037%	99.289%
75.0	10.490	1.109	2517.005	.037%	99.332%

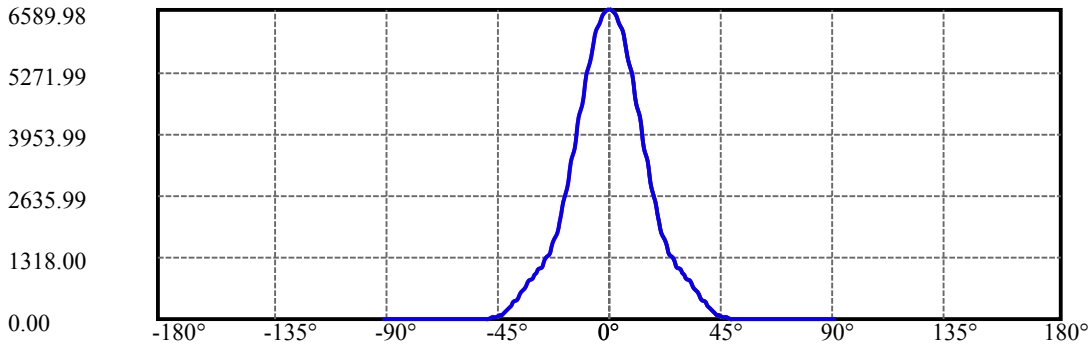
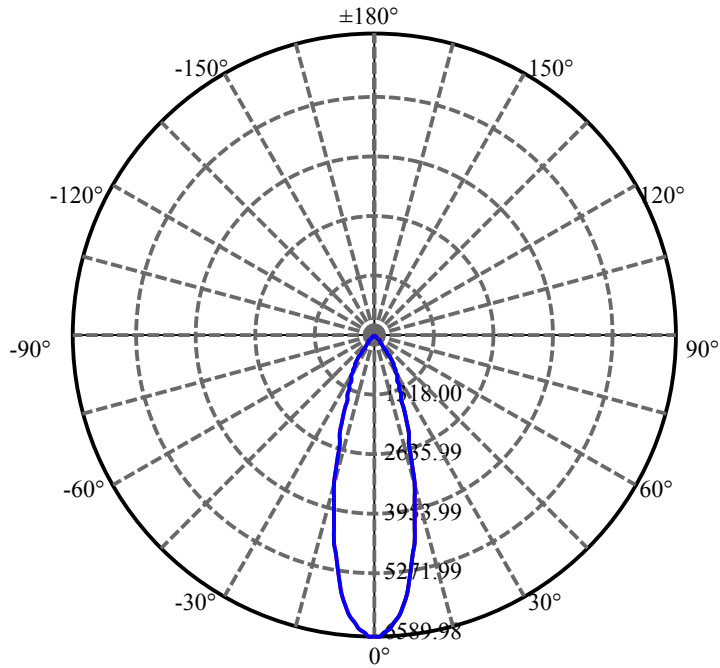
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	10.476	1.113	2518.118	.037%	99.376%
77.0	10.463	1.116	2519.234	.038%	99.420%
78.0	10.476	1.121	2520.355	.038%	99.465%
79.0	10.504	1.127	2521.482	.038%	99.509%
80.0	10.490	1.132	2522.614	.038%	99.554%
81.0	10.490	1.135	2523.749	.038%	99.599%
82.0	10.560	1.142	2524.89	.038%	99.644%
83.0	10.616	1.151	2526.041	.039%	99.689%
84.0	10.574	1.154	2527.196	.039%	99.735%
85.0	10.518	1.151	2528.347	.039%	99.780%
86.0	10.296	1.138	2529.485	.038%	99.825%
87.0	10.170	1.120	2530.605	.038%	99.869%
88.0	10.073	1.109	2531.713	.037%	99.913%
89.0	10.073	1.104	2532.818	.037%	99.956%
90.0	10.059	1.104	2533.921	.037%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2078.88	70.04%	82.04%
0-40	2435.74	82.07%	96.13%
0-60	2500.97	84.26%	98.70%
0-90	2532.82	85.34%	99.96%
0-120	2532.82	85.34%	99.96%
0-180	2533.92	85.37%	100.00%
60-90	32.87	1.11%	1.30%
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%
0-29.01	2027.14	68.30%	80.00%

ZONAL LUMEN SUMMARY

0-10	546.01
10-20	917.18
20-30	615.69
30-40	356.86
40-50	55.03
50-60	10.20
60-70	10.55
70-80	11.10
80-90	10.20
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): —————

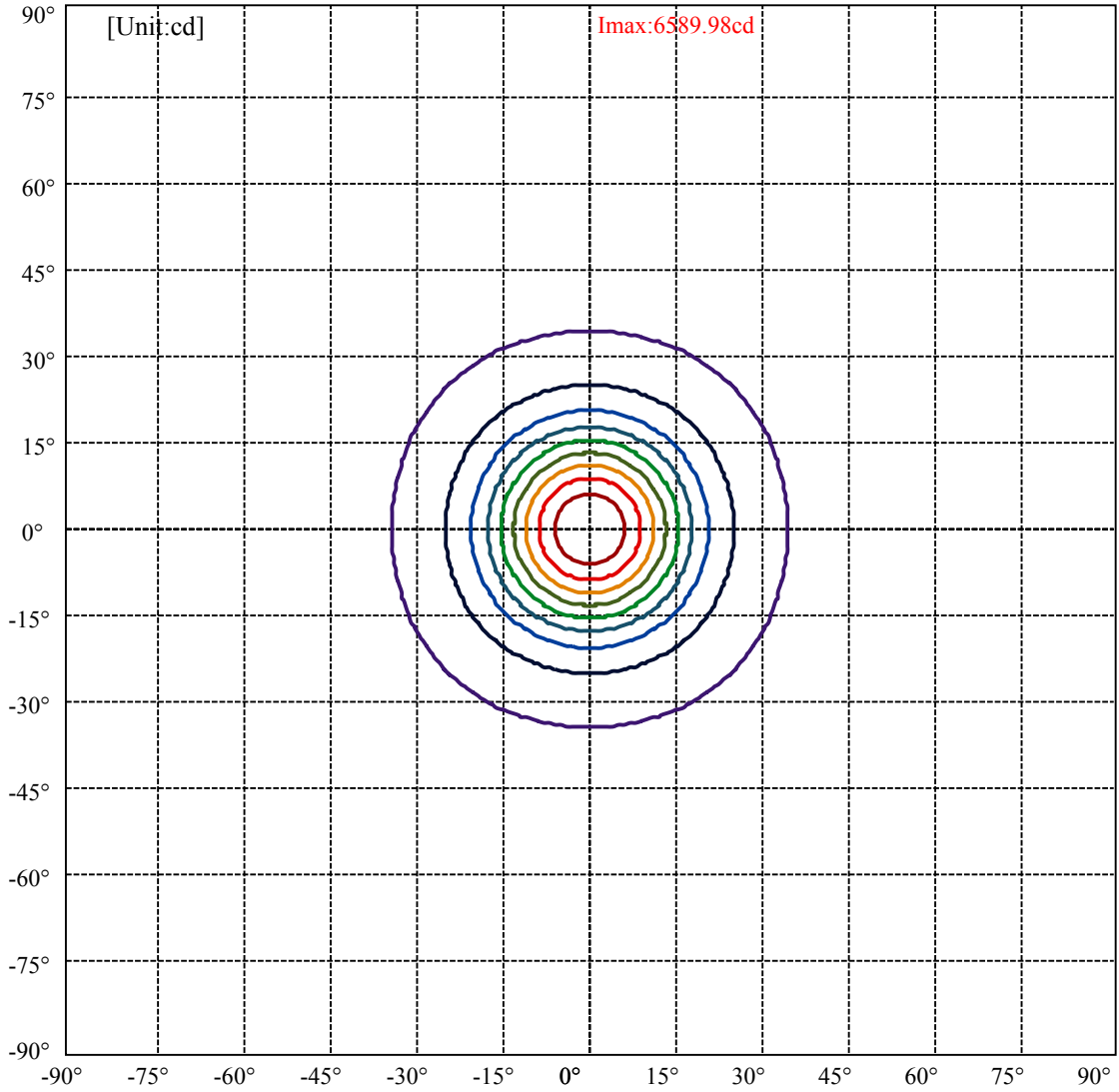
C0/C180: —————

C90/C270: —————

Field angle(10%Imax):C0/180Left:34.0 Right:34.0  
:C90/270Left:34.0 Right:34.0

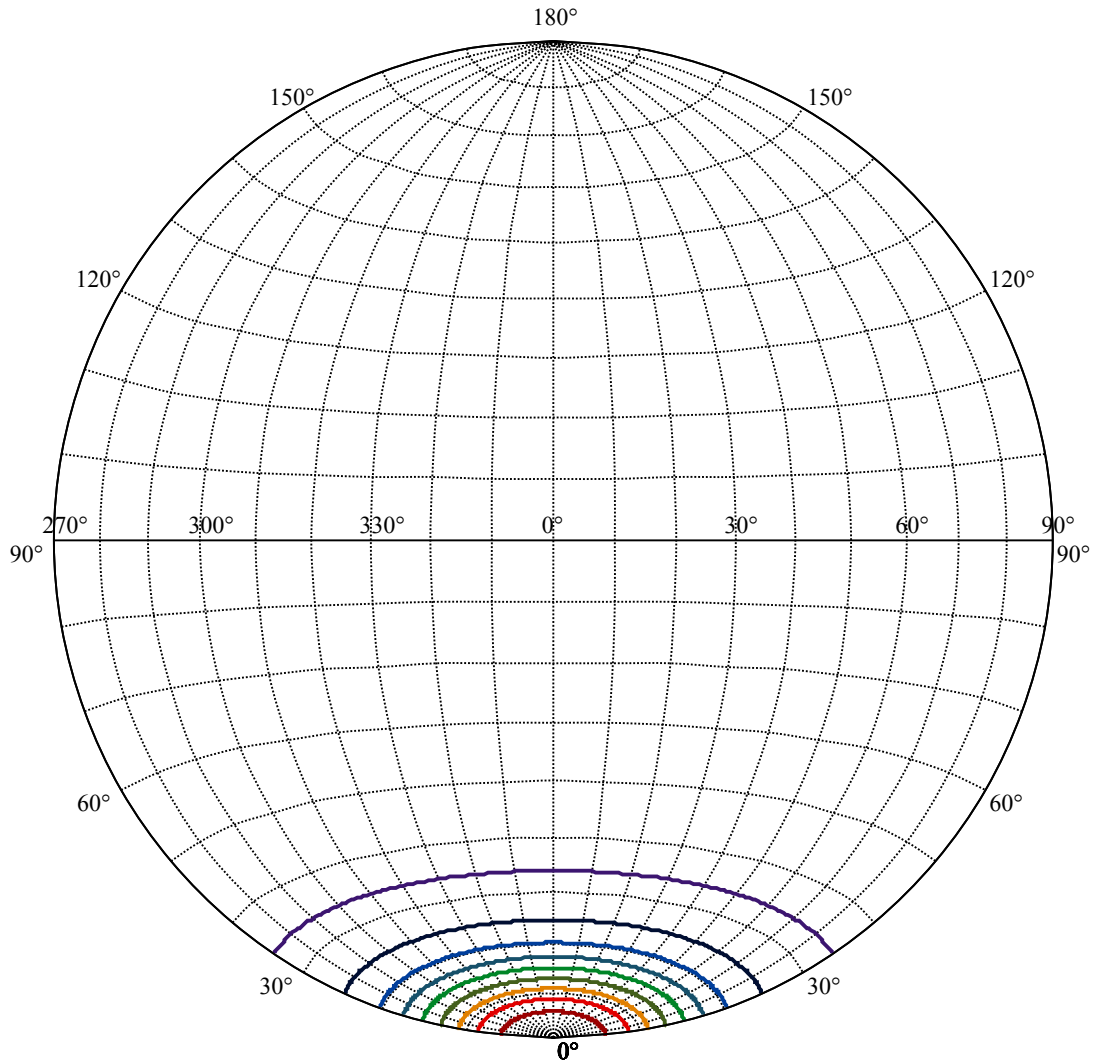
Beam Angle(50%Imax):C0/180Left:15.2 Right:15.2  
:C90/270Left:15.2 Right:15.2





(10%Imax) 658.998	—
(20%Imax) 1318	—
(30%Imax) 1977	—
(40%Imax) 2635.99	—
(50%Imax) 3294.99	—
(60%Imax) 3953.99	—
(70%Imax) 4612.99	—
(80%Imax) 5271.99	—
(90%Imax) 5930.99	—





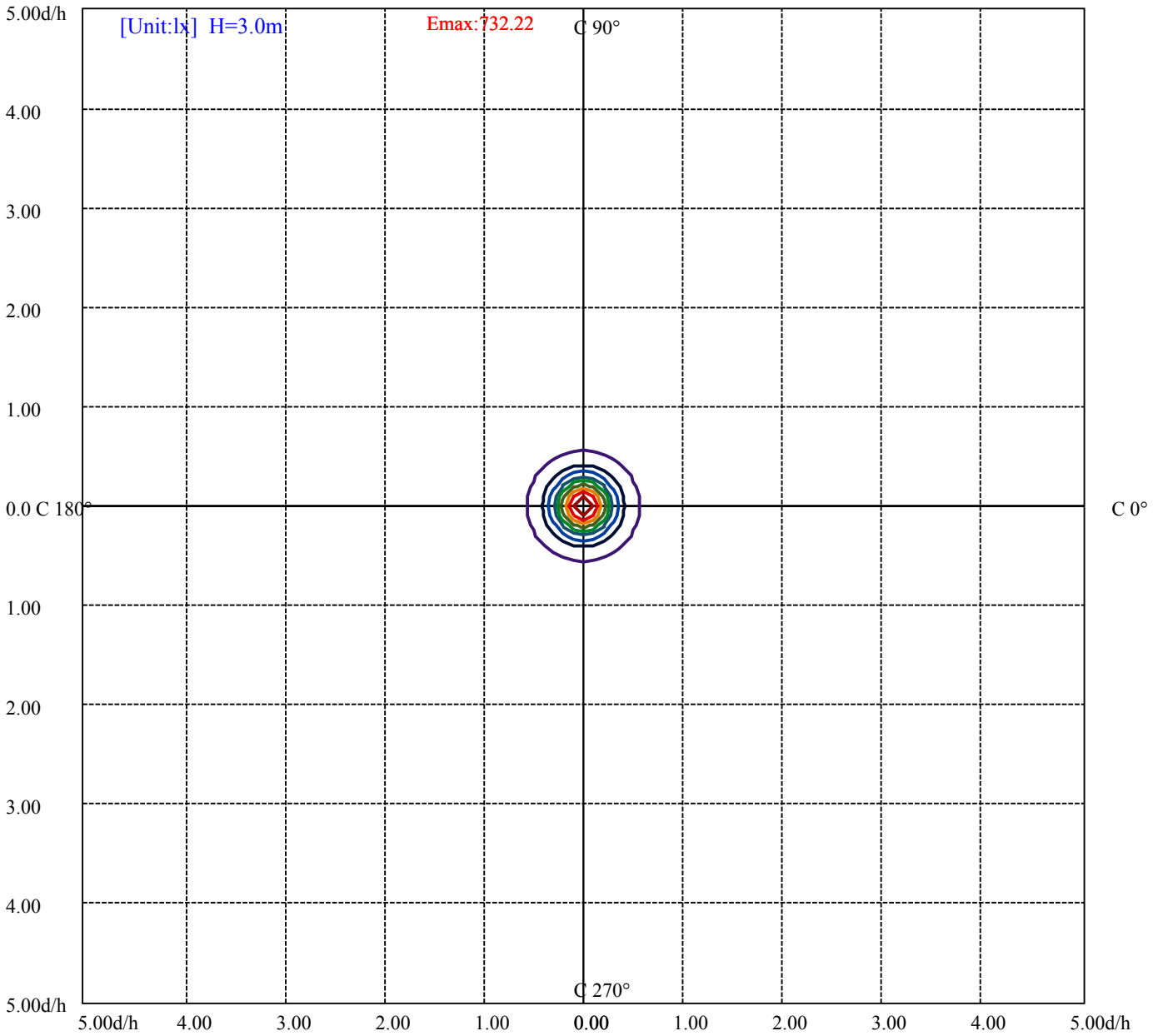
House

[Unit:cd]

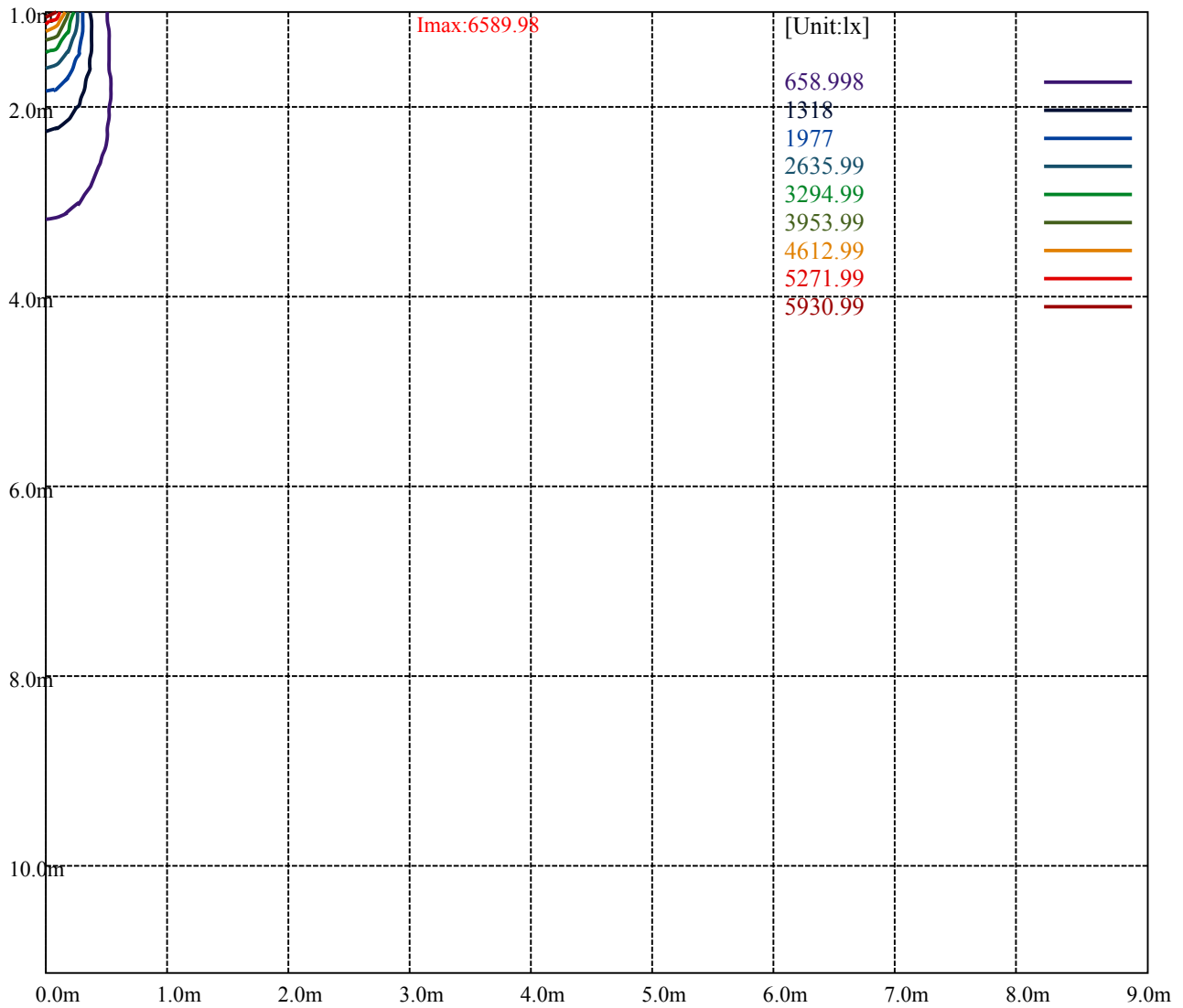
Road

I<sub>max</sub>:6589.98

(10%I <sub>max</sub> )	658.998	—
(20%I <sub>max</sub> )	1318	—
(30%I <sub>max</sub> )	1977	—
(40%I <sub>max</sub> )	2635.99	—
(50%I <sub>max</sub> )	3294.99	—
(60%I <sub>max</sub> )	3953.99	—
(70%I <sub>max</sub> )	4612.99	—
(80%I <sub>max</sub> )	5271.99	—
(90%I <sub>max</sub> )	5930.99	—



- (10%Emax) 73.222
- (20%Emax) 146.4444
- (30%Emax) 219.6656
- (40%Emax) 292.8878
- (50%Emax) 366.11
- (60%Emax) 439.3322
- (70%Emax) 512.5544
- (80%Emax) 585.7756
- (90%Emax) 658.9978



Luminance Table

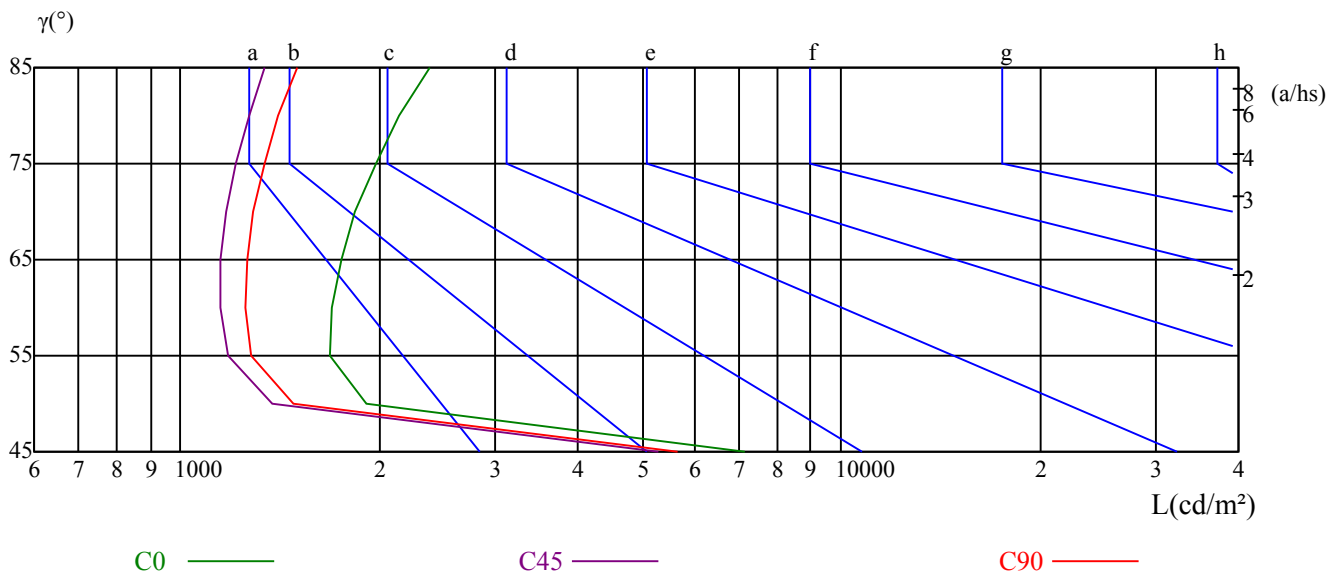
$\gamma$	45	50	55	60	65	70	75	80	85
C0	7157	1915	1686	1693	1746	1840	1972	2148	2386
C45	5306	1381	1182	1152	1152	1174	1212	1266	1340
C90	5668	1483	1276	1251	1258	1289	1340	1409	1503

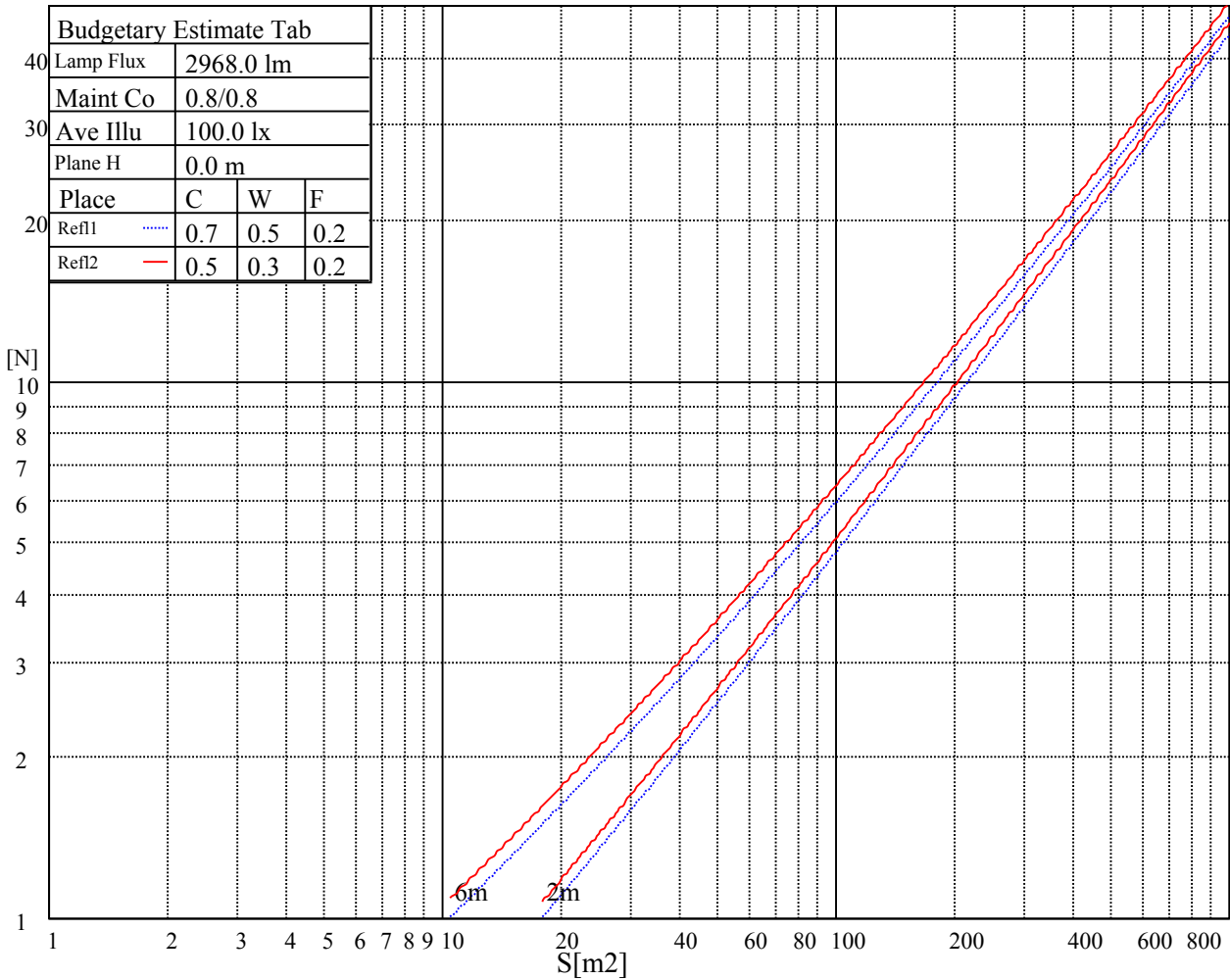
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4181	4181	4181	6755	6755	6755	20114	20114	20114

Glare Table

Glare	Quality	Service Values Illuminance(lx)							
		a	b	c	d	e	f	g	h
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 RHOF=20 CU															
0	1.02	1.02	1.02	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.87	0.87	0.87	0.85
1	0.95	0.93	0.91	0.93	0.92	0.90	0.90	0.88	0.87	0.87	0.86	0.85	0.84	0.83	0.82	0.81
2	0.89	0.86	0.84	0.88	0.85	0.83	0.85	0.83	0.81	0.83	0.81	0.79	0.81	0.79	0.78	0.76
3	0.84	0.81	0.78	0.83	0.80	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.77	0.75	0.74	0.72
4	0.80	0.76	0.73	0.79	0.75	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.74	0.72	0.70	0.69
5	0.76	0.72	0.69	0.75	0.71	0.68	0.74	0.70	0.68	0.72	0.69	0.67	0.71	0.69	0.66	0.65
6	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.64	0.69	0.66	0.64	0.68	0.66	0.63	0.62
7	0.69	0.65	0.62	0.69	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.59
8	0.66	0.62	0.59	0.66	0.61	0.59	0.65	0.61	0.58	0.64	0.61	0.58	0.63	0.60	0.58	0.57
9	0.63	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.56	0.61	0.58	0.56	0.61	0.58	0.55	0.54
10	0.61	0.56	0.54	0.60	0.56	0.54	0.60	0.56	0.53	0.59	0.56	0.53	0.59	0.55	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	6556.87	6532.94	6486.19	6383.52	6248.56	6101.36	5907.70	5665.89	5436.60
45.0	6615.31	6586.26	6530.88	6443.06	6325.08	6172.76	5961.57	5721.82	5493.09
90.0	6594.71	6578.02	6527.10	6428.32	6296.14	6134.20	5938.30	5691.49	5457.20
135.0	6593.05	6586.26	6530.88	6443.06	6325.08	6172.76	5961.57	5721.82	5493.09
180.0	6556.87	6532.94	6486.19	6383.52	6248.56	6101.36	5907.70	5665.89	5436.60
225.0	6615.31	6586.26	6530.88	6443.06	6325.08	6172.76	5961.57	5721.82	5493.09
270.0	6594.71	6578.02	6527.10	6428.32	6296.14	6134.20	5938.30	5691.49	5457.20
315.0	6593.05	6586.26	6530.88	6443.06	6325.08	6172.76	5961.57	5721.82	5493.09
360.0	6556.87	6532.94	6486.19	6383.52	6248.56	6101.36	5907.70	5665.89	5436.60

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	5160.85	4860.89	4588.20	4293.52	3975.19	3673.28	3375.55	3068.91	2807.07
45.0	5226.24	4889.27	4612.85	4311.33	3952.93	3656.87	3359.41	3043.31	2759.10
90.0	5179.77	4879.81	4603.22	4301.59	3972.69	3659.93	3350.50	3031.90	2760.88
135.0	4803.85	4889.27	4612.85	4311.33	3952.93	3656.87	3359.41	3043.31	2759.10
180.0	5160.85	4860.89	4588.20	4293.52	3975.19	3673.28	3375.55	3068.91	2807.07
225.0	5226.24	4889.27	4612.85	4311.33	3952.93	3656.87	3359.41	3043.31	2759.10
270.0	5179.77	4879.81	4603.22	4301.59	3972.69	3659.93	3350.50	3031.90	2760.88
315.0	5591.32	4889.27	4612.85	4311.33	3952.93	3656.87	3359.41	3043.31	2759.10
360.0	5160.85	4860.89	4588.20	4293.52	3975.19	3673.28	3375.55	3068.91	2807.07

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2528.81	2295.07	2078.87	1876.85	1717.69	1572.99	1424.40	1323.12	1229.79
45.0	2495.14	2247.38	2033.79	1836.39	1663.15	1525.41	1394.91	1283.77	1200.96
90.0	2479.28	2241.09	2025.44	1824.54	1660.37	1517.06	1394.35	1277.82	1202.69
135.0	2495.14	2247.38	2033.79	1836.39	1663.15	1525.41	1394.91	1283.77	1200.96
180.0	2528.81	2295.07	2078.87	1876.85	1717.69	1572.99	1424.40	1323.12	1229.79
225.0	2495.14	2247.38	2033.79	1836.39	1663.15	1525.41	1394.91	1283.77	1200.96
270.0	2479.28	2241.09	2025.44	1824.54	1660.37	1517.06	1394.35	1277.82	1202.69
315.0	2495.14	2247.38	2033.79	1836.39	1663.15	1525.41	1394.91	1283.77	1200.96
360.0	2528.81	2295.07	2078.87	1876.85	1717.69	1572.99	1424.40	1323.12	1229.79

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1139.02	1071.63	1000.95	934.06	868.83	802.33	733.54	657.36	580.72
45.0	1118.54	1049.42	999.39	944.02	877.24	811.23	740.61	660.97	579.44
90.0	1119.82	1056.71	997.33	939.07	880.58	814.46	744.12	667.15	590.52
135.0	1118.54	1049.42	999.39	944.02	877.24	811.23	740.61	660.97	579.44
180.0	1139.02	1071.63	1000.95	934.06	868.83	802.33	733.54	657.36	580.72
225.0	1118.54	1049.42	999.39	944.02	877.24	811.23	740.61	660.97	579.44
270.0	1119.82	1056.71	997.33	939.07	880.58	814.46	744.12	667.15	590.52
315.0	1118.54	1049.42	999.39	944.02	877.24	811.23	740.61	660.97	579.44
360.0	1139.02	1071.63	1000.95	934.06	868.83	802.33	733.54	657.36	580.72

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	500.98	431.63	357.51	288.83	234.40	184.93	136.01	102.34	75.69
45.0	500.31	425.23	364.13	287.44	219.94	168.90	126.66	90.77	66.23
90.0	508.49	432.97	358.45	286.27	228.73	193.00	132.45	96.83	71.68
135.0	500.31	425.23	364.13	287.44	219.94	168.90	126.66	90.77	66.23
180.0	500.98	431.63	357.51	288.83	234.40	184.93	136.01	102.34	75.69
225.0	500.31	425.23	364.13	287.44	219.94	168.90	126.66	90.77	66.23
270.0	508.49	432.97	358.45	286.27	228.73	193.00	132.45	96.83	71.68
315.0	500.31	425.23	364.13	287.44	219.94	168.90	126.66	90.77	66.23
360.0	500.98	431.63	357.51	288.83	234.40	184.93	136.01	102.34	75.69

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	52.76	39.12	29.44	21.65	16.36	13.80	12.74	11.97	11.63
45.0	47.97	33.00	23.37	17.59	14.19	12.69	11.97	11.58	11.35
90.0	51.70	36.67	26.82	20.59	14.64	13.25	12.41	11.85	11.58
135.0	47.97	33.00	23.37	17.59	14.19	12.69	11.97	11.58	11.35
180.0	52.76	39.12	29.44	21.65	16.36	13.80	12.74	11.97	11.63
225.0	47.97	33.00	23.37	17.59	14.19	12.69	11.97	11.58	11.35
270.0	51.70	36.67	26.82	20.59	14.64	13.25	12.41	11.85	11.58
315.0	47.97	33.00	23.37	17.59	14.19	12.69	11.97	11.58	11.35
360.0	52.76	39.12	29.44	21.65	16.36	13.80	12.74	11.97	11.63
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	11.41	11.24	11.07	10.96	10.96	10.85	10.80	10.69	10.69
45.0	11.24	11.07	10.96	10.91	10.80	10.74	10.69	10.63	10.57
90.0	11.46	11.35	11.30	11.24	11.13	11.07	11.02	11.02	10.96
135.0	11.24	11.07	10.96	10.91	10.80	10.74	10.69	10.63	10.57
180.0	11.41	11.24	11.07	10.96	10.96	10.85	10.80	10.69	10.69
225.0	11.24	11.07	10.96	10.91	10.80	10.74	10.69	10.63	10.57
270.0	11.46	11.35	11.30	11.24	11.13	11.07	11.02	11.02	10.96
315.0	11.24	11.07	10.96	10.91	10.80	10.74	10.69	10.63	10.57
360.0	11.41	11.24	11.07	10.96	10.96	10.85	10.80	10.69	10.69
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	10.63	10.63	10.52	10.52	10.46	10.46	10.41	10.41	10.41
45.0	10.57	10.46	10.46	10.46	10.46	10.41	10.41	10.35	10.35
90.0	10.91	10.96	10.96	10.96	10.91	10.96	10.91	10.96	10.96
135.0	10.57	10.46	10.46	10.46	10.46	10.41	10.41	10.35	10.35
180.0	10.63	10.63	10.52	10.52	10.46	10.46	10.41	10.41	10.41
225.0	10.57	10.46	10.46	10.46	10.46	10.41	10.41	10.35	10.35
270.0	10.91	10.96	10.96	10.96	10.91	10.96	10.91	10.96	10.96
315.0	10.57	10.46	10.46	10.46	10.46	10.41	10.41	10.35	10.35
360.0	10.63	10.63	10.52	10.52	10.46	10.46	10.41	10.41	10.41
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	10.35	10.35	10.35	10.35	10.30	10.30	10.30	10.35	10.30
45.0	10.30	10.35	10.30	10.30	10.30	10.24	10.30	10.30	10.30
90.0	11.02	11.02	11.02	11.02	11.02	11.07	11.02	11.07	11.07
135.0	10.30	10.35	10.30	10.30	10.30	10.24	10.30	10.30	10.30
180.0	10.35	10.35	10.35	10.35	10.30	10.30	10.30	10.35	10.30
225.0	10.30	10.35	10.30	10.30	10.30	10.24	10.30	10.30	10.30
270.0	11.02	11.02	11.02	11.02	11.02	11.07	11.02	11.07	11.07
315.0	10.30	10.35	10.30	10.30	10.30	10.24	10.30	10.30	10.30
360.0	10.35	10.35	10.35	10.35	10.30	10.30	10.30	10.35	10.30
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	10.24	10.30	10.30	10.30	10.30	10.24	10.24	10.18	10.18
45.0	10.30	10.30	10.30	10.30	10.30	10.24	10.13	10.02	10.02
90.0	11.13	11.35	11.58	11.41	11.19	10.46	10.18	10.07	10.07
135.0	10.30	10.30	10.30	10.30	10.30	10.24	10.13	10.02	10.02
180.0	10.24	10.30	10.30	10.30	10.30	10.24	10.24	10.18	10.18
225.0	10.30	10.30	10.30	10.30	10.30	10.24	10.13	10.02	10.02
270.0	11.13	11.35	11.58	11.41	11.19	10.46	10.18	10.07	10.07
315.0	10.30	10.30	10.30	10.30	10.30	10.24	10.13	10.02	10.02
360.0	10.24	10.30	10.30	10.30	10.30	10.24	10.24	10.18	10.18



Intensity data(cd)

C/ $\gamma$ (°)	90.0
0.0	10.13
45.0	10.02
90.0	10.07
135.0	10.02
180.0	10.13
225.0	10.02
270.0	10.07
315.0	10.02
360.0	10.13