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LumCAT: 1-1006-M  
Luminaire: 92.70.277.00  
Report No: 221130-B009  
Test No: 221130-C009  
LampCAT: CREE CXA1512 LES8.5  
Lamp flux(lm): 812.3  
Number of Lamps: 1  
Length(mm): 0  
Phm Type: C

Voltage(V): 17.5800  
Current(A): 0.3050  
Power (W): 5.3610  
PF: 0.0000  
Ballast type: DC  
Width(mm): 0  
Height(mm): 0

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### Photometric Results

Lumens(lm): 620.06  
Efficiency(%): 76.34%  
Lumens(lm)/Power(W): 115.66  
Central intensity(cd): 3375.740  
Maximum intensity(cd): 3375.740  
Angle of maximum intensity: C=0.0  $\gamma$ =0.0  
Beam Angle(50%Imax): [C0/180]Total=23.4  
                                  [C90/270]Total=23.4  
Field angle(10%Imax): [C0/180]Total=41.8  
                                  [C90/270]Total=41.8  
Maximum s/h(1/2): C0\_180=0.40 C90\_270=0.40  
Maximum s/h(1/4): C0\_180=0.40 C90\_270=0.40  
Up flux rate of lamp(%): 0.00%  
Down flux rate of lamp(%): 76.34%  
Up flux rate of LUM(%): - -  
Down flux rate of LUM(%): 100.00%  
CIE Type : Direct lighting  
Output flux ratio in  $\pi$  solid angle : 98.437%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3375.740	0.000	0	.000%	.000%
1.0	3361.698	3.224	3.224	.397%	.520%
2.0	3313.298	9.581	12.804	1.179%	2.065%
3.0	3244.732	15.685	28.489	1.931%	4.595%
4.0	3152.414	21.413	49.902	2.636%	8.048%
5.0	3032.609	26.608	76.51	3.276%	12.339%
6.0	2869.334	31.016	107.526	3.819%	17.341%
7.0	2699.711	34.567	142.093	4.256%	22.916%
8.0	2510.145	37.286	179.379	4.590%	28.929%
9.0	2308.703	39.054	218.433	4.808%	35.228%
10.0	2069.392	39.620	258.053	4.878%	41.617%
11.0	1849.203	39.155	297.208	4.820%	47.932%
12.0	1624.801	37.976	335.184	4.675%	54.057%
13.0	1403.401	35.937	371.121	4.424%	59.852%
14.0	1210.668	33.460	404.581	4.119%	65.249%
15.0	1041.448	30.918	435.499	3.806%	70.235%
16.0	892.290	28.335	463.834	3.488%	74.805%
17.0	742.333	25.455	489.289	3.134%	78.910%
18.0	619.892	22.460	511.749	2.765%	82.532%
19.0	517.961	19.796	531.546	2.437%	85.725%
20.0	422.221	17.208	548.754	2.119%	88.500%
21.0	329.410	14.433	563.186	1.777%	90.828%
22.0	250.768	11.659	574.845	1.435%	92.708%
23.0	186.183	9.168	584.014	1.129%	94.186%
24.0	115.293	6.591	590.605	.811%	95.249%
25.0	73.250	4.287	594.892	.528%	95.941%
26.0	42.693	2.737	597.629	.337%	96.382%
27.0	23.490	1.619	599.248	.199%	96.643%
28.0	12.526	0.912	600.16	.112%	96.790%
29.0	8.679	0.555	600.715	.068%	96.880%
30.0	7.208	0.429	601.144	.053%	96.949%
31.0	6.416	0.379	601.523	.047%	97.010%
32.0	5.886	0.352	601.875	.043%	97.067%
33.0	5.527	0.336	602.212	.041%	97.121%
34.0	5.213	0.325	602.537	.040%	97.174%
35.0	4.922	0.315	602.851	.039%	97.224%
36.0	4.691	0.306	603.157	.038%	97.274%
37.0	4.526	0.301	603.458	.037%	97.322%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	4.369	0.297	603.755	.037%	97.370%
39.0	4.220	0.293	604.048	.036%	97.418%
40.0	4.101	0.290	604.338	.036%	97.464%
41.0	4.003	0.289	604.627	.036%	97.511%
42.0	3.944	0.289	604.916	.036%	97.557%
43.0	3.869	0.289	605.205	.036%	97.604%
44.0	3.817	0.290	605.495	.036%	97.651%
45.0	3.757	0.291	605.786	.036%	97.698%
46.0	3.720	0.292	606.079	.036%	97.745%
47.0	3.682	0.294	606.373	.036%	97.792%
48.0	3.645	0.296	606.669	.036%	97.840%
49.0	3.615	0.298	606.967	.037%	97.888%
50.0	3.570	0.300	607.267	.037%	97.937%
51.0	3.555	0.301	607.568	.037%	97.985%
52.0	3.525	0.304	607.872	.037%	98.034%
53.0	3.503	0.306	608.178	.038%	98.084%
54.0	3.481	0.308	608.486	.038%	98.133%
55.0	3.451	0.309	608.795	.038%	98.183%
56.0	3.436	0.311	609.106	.038%	98.233%
57.0	3.413	0.313	609.42	.039%	98.284%
58.0	3.391	0.315	609.734	.039%	98.335%
59.0	3.398	0.317	610.052	.039%	98.386%
60.0	3.369	0.320	610.371	.039%	98.437%
61.0	3.354	0.321	610.692	.039%	98.489%
62.0	3.361	0.324	611.016	.040%	98.541%
63.0	3.331	0.325	611.341	.040%	98.594%
64.0	3.339	0.327	611.668	.040%	98.646%
65.0	3.331	0.330	611.999	.041%	98.700%
66.0	3.309	0.331	612.33	.041%	98.753%
67.0	3.301	0.332	612.662	.041%	98.807%
68.0	3.286	0.334	612.996	.041%	98.861%
69.0	3.271	0.335	613.33	.041%	98.915%
70.0	3.271	0.336	613.667	.041%	98.969%
71.0	3.249	0.337	614.004	.041%	99.023%
72.0	3.212	0.336	614.339	.041%	99.077%
73.0	3.204	0.336	614.675	.041%	99.131%
74.0	3.189	0.336	615.011	.041%	99.186%
75.0	3.144	0.335	615.346	.041%	99.240%

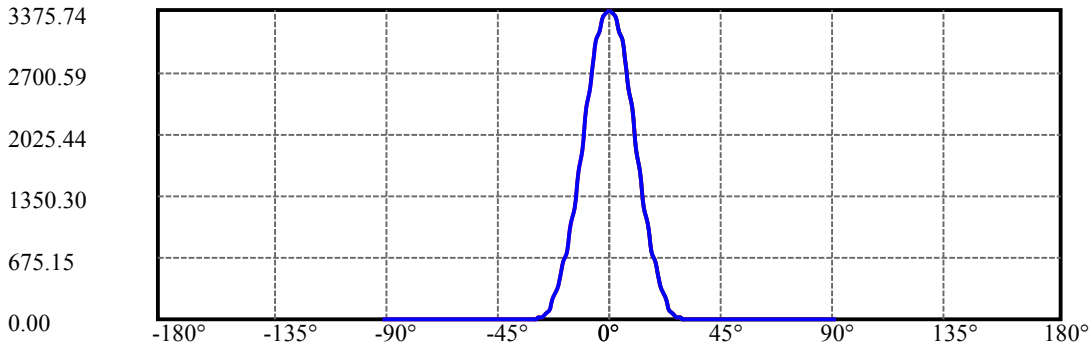
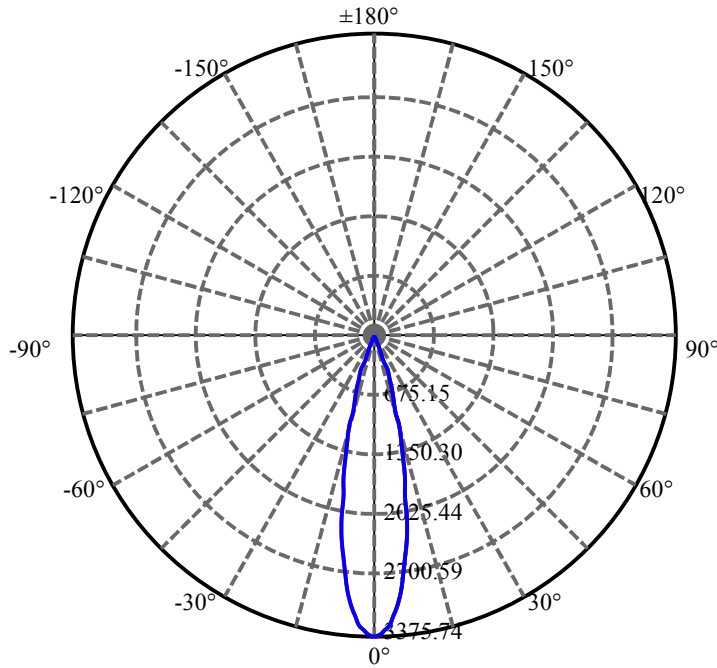
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	3.115	0.332	615.678	.041%	99.293%
77.0	3.100	0.331	616.009	.041%	99.347%
78.0	3.047	0.329	616.338	.041%	99.400%
79.0	2.973	0.323	616.662	.040%	99.452%
80.0	2.928	0.318	616.98	.039%	99.503%
81.0	2.913	0.316	617.296	.039%	99.554%
82.0	2.905	0.316	617.611	.039%	99.605%
83.0	2.905	0.316	617.927	.039%	99.656%
84.0	2.920	0.317	618.245	.039%	99.707%
85.0	2.853	0.315	618.56	.039%	99.758%
86.0	2.838	0.311	618.871	.038%	99.808%
87.0	2.704	0.303	619.174	.037%	99.857%
88.0	2.696	0.296	619.47	.036%	99.905%
89.0	2.696	0.296	619.766	.036%	99.952%
90.0	2.696	0.296	620.061	.036%	100.000%

## ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	601.14	74.01%	96.95%
0-40	604.34	74.40%	97.46%
0-60	610.37	75.14%	98.44%
0-90	619.77	76.30%	99.95%
0-120	619.77	76.30%	99.95%
0-180	620.06	76.34%	100.00%
60-90	9.71	1.20%	1.57%
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%
0-17.30	496.05	61.07%	80.00%

## ZONAL LUMEN SUMMARY

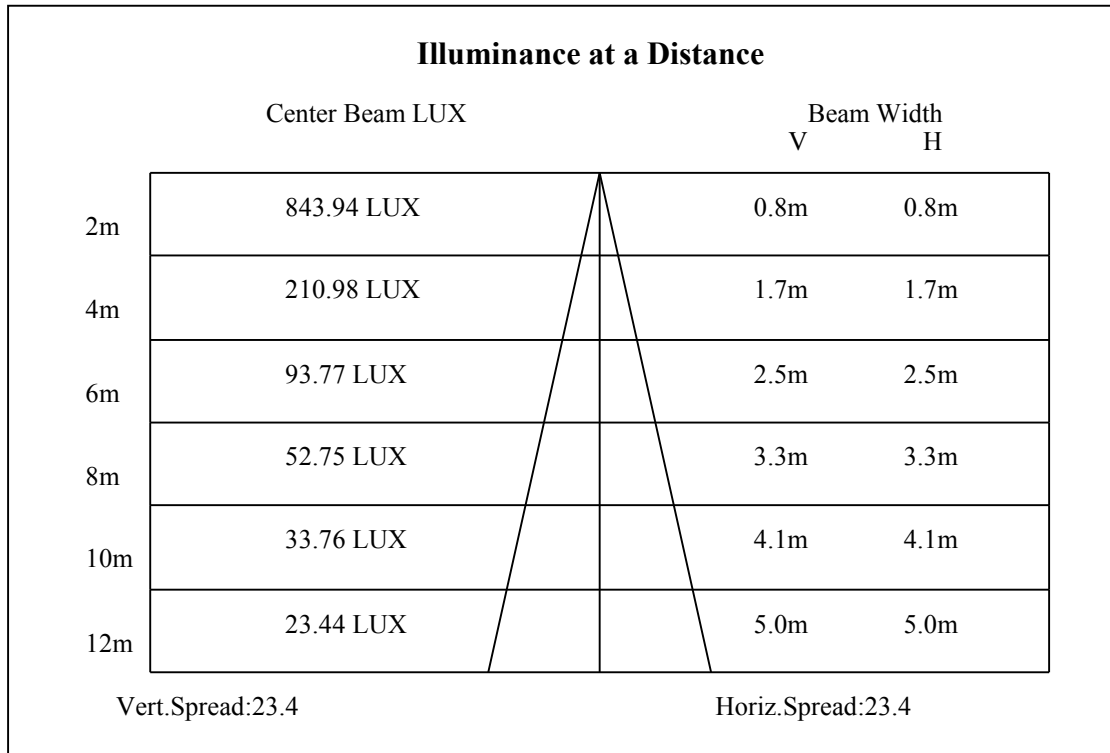
0-10	258.05
10-20	290.70
20-30	52.39
30-40	3.19
40-50	2.93
50-60	3.10
60-70	3.30
70-80	3.31
80-90	2.79
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

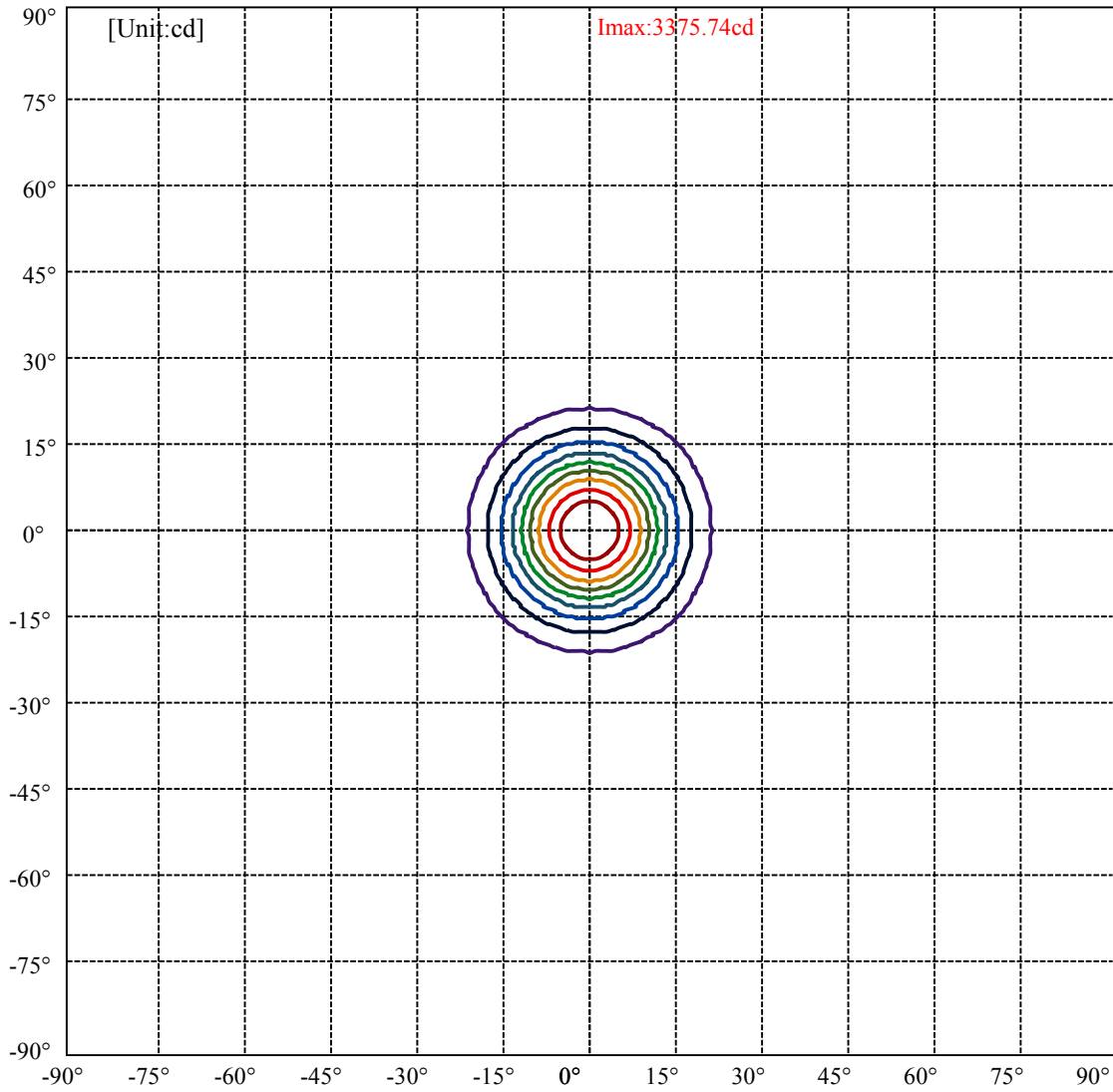


C0(Max): ———  
C0/C180: ———  
C90/C270: ———

Field angle(10%Imax):C0/180Left:20.9 Right:20.9  
:C90/270Left:20.9 Right:20.9

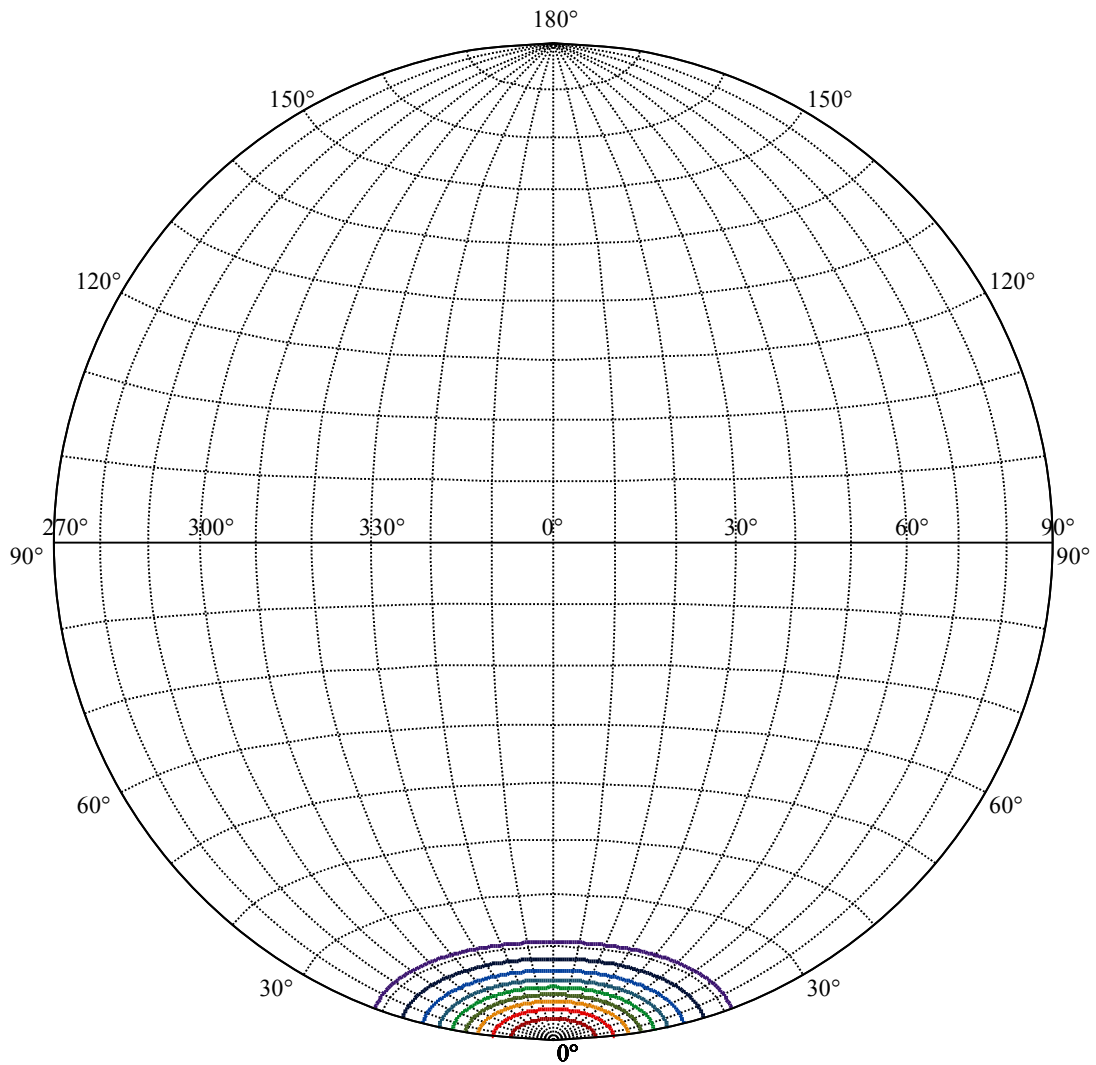
Beam Angle(50%Imax):C0/180Left:11.7 Right:11.7  
:C90/270Left:11.7 Right:11.7





(10%Imax) 337.574	—
(20%Imax) 675.148	—
(30%Imax) 1012.72	—
(40%Imax) 1350.3	—
(50%Imax) 1687.87	—
(60%Imax) 2025.44	—
(70%Imax) 2363.02	—
(80%Imax) 2700.59	—
(90%Imax) 3038.17	—





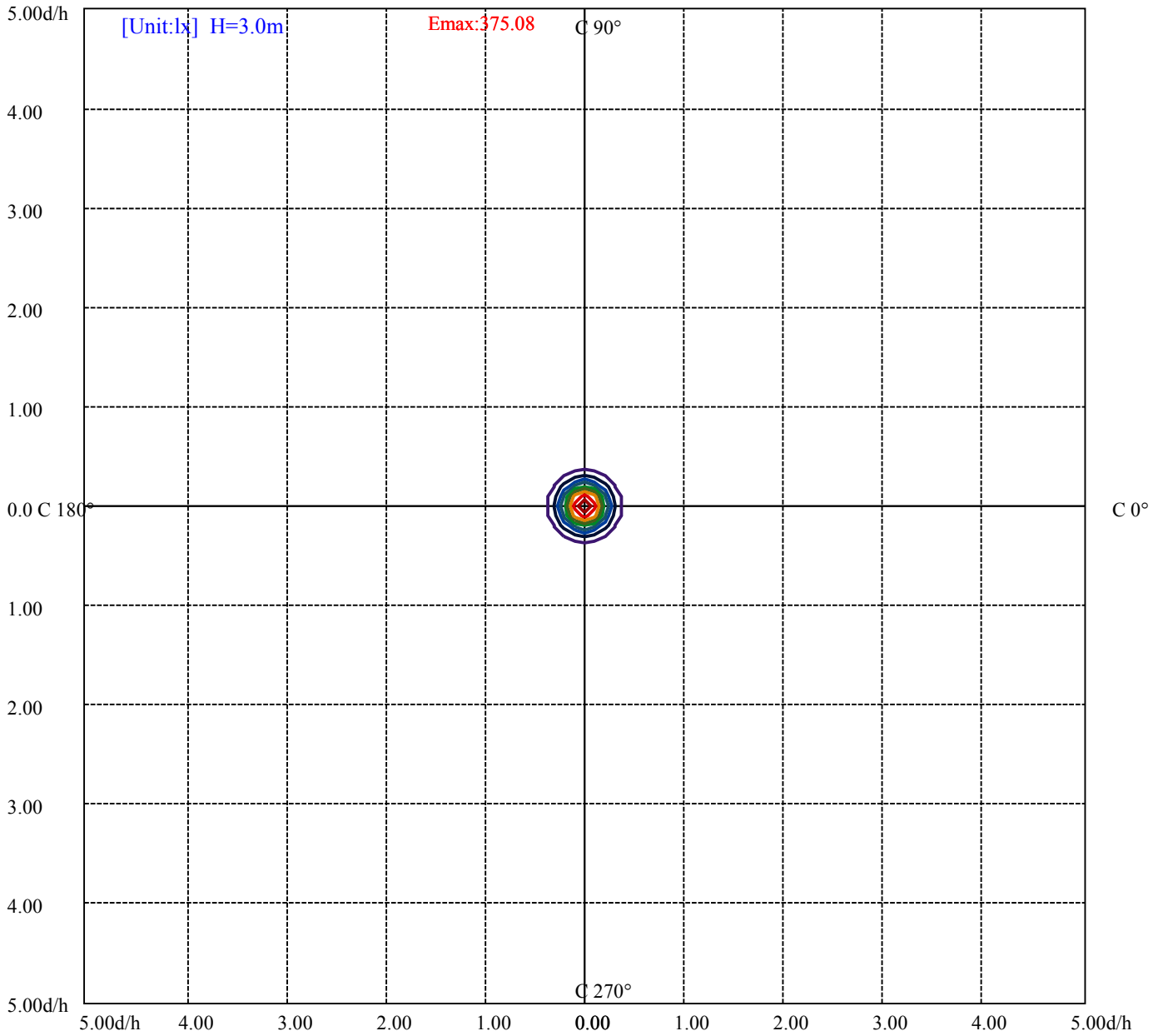
House

[Unit:cd]

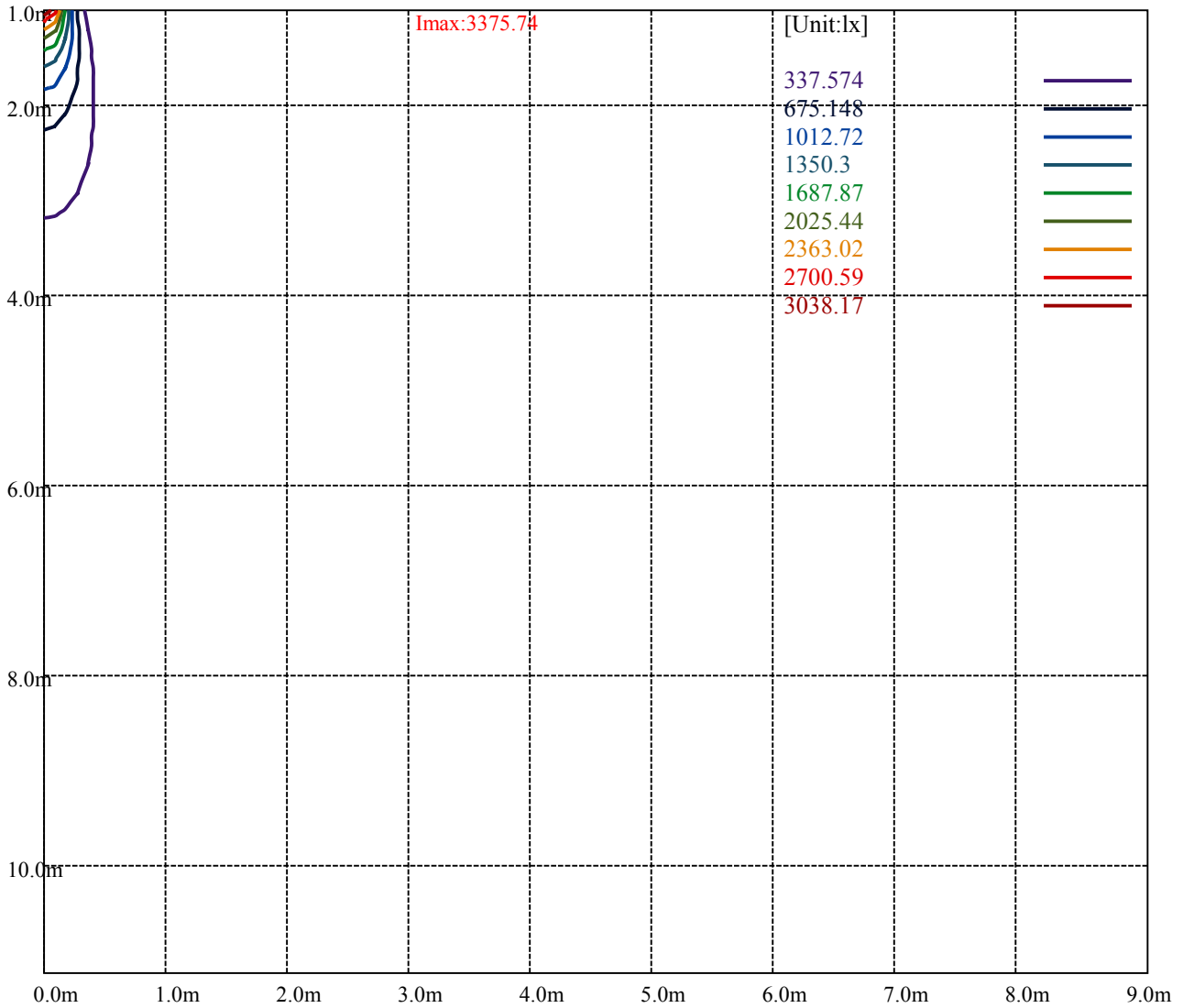
Road

**Imax:3375.74**

(10%Imax)	337.574	—
(20%Imax)	675.148	—
(30%Imax)	1012.72	—
(40%Imax)	1350.3	—
(50%Imax)	1687.87	—
(60%Imax)	2025.44	—
(70%Imax)	2363.02	—
(80%Imax)	2700.59	—
(90%Imax)	3038.17	—



(10%Emax) 37.50822	—
(20%Emax) 75.01645	—
(30%Emax) 112.5244	—
(40%Emax) 150.0333	—
(50%Emax) 187.5411	—
(60%Emax) 225.0489	—
(70%Emax) 262.5578	—
(80%Emax) 300.0656	—
(90%Emax) 337.5733	—



Luminance Table

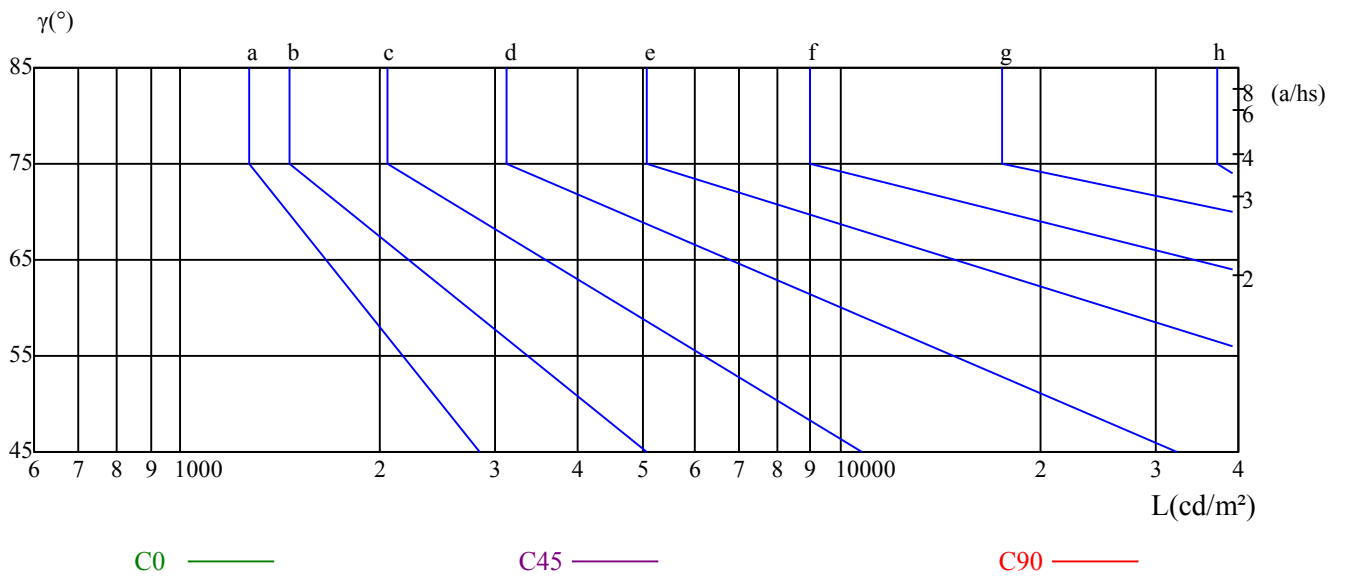
$\gamma$	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

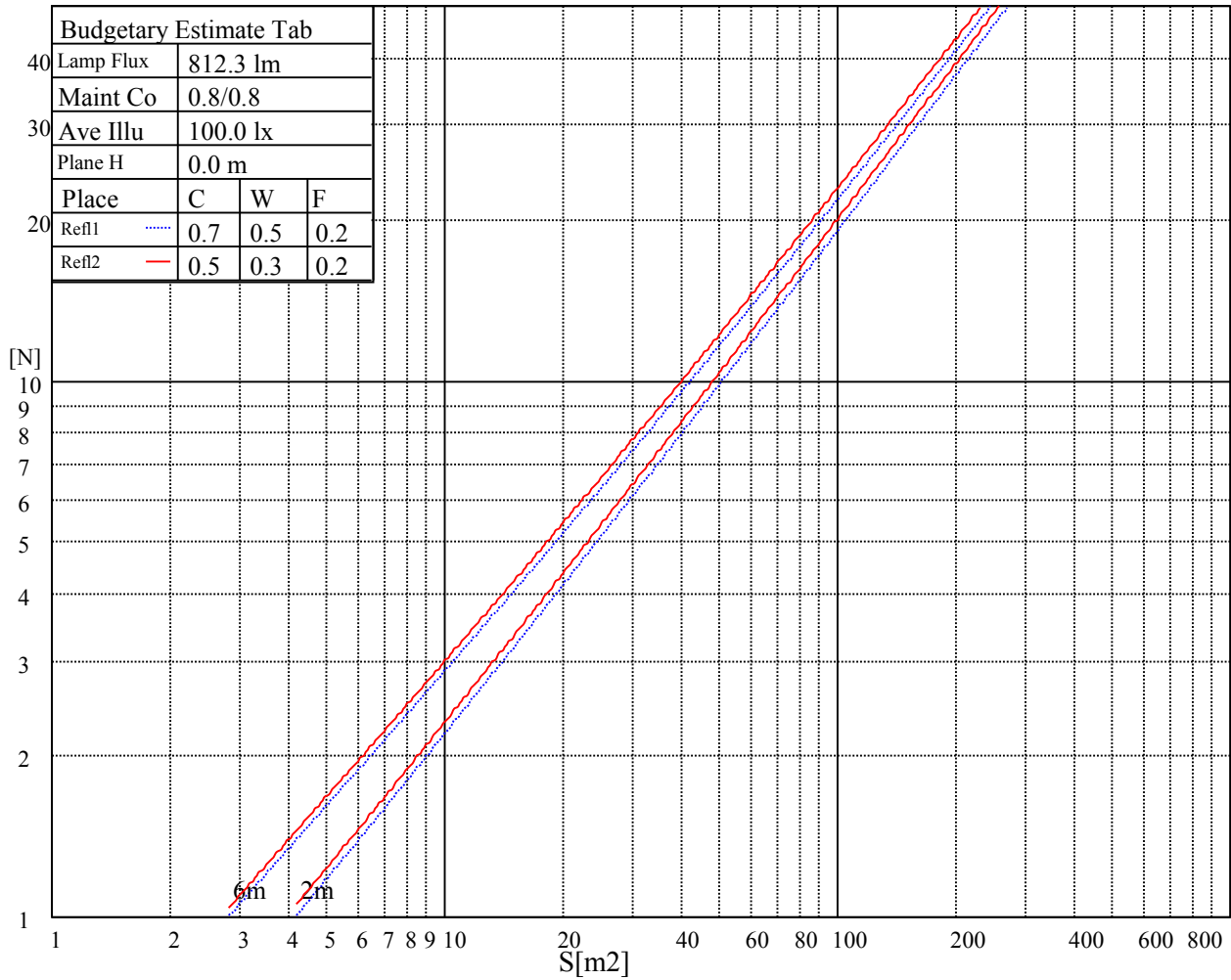
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

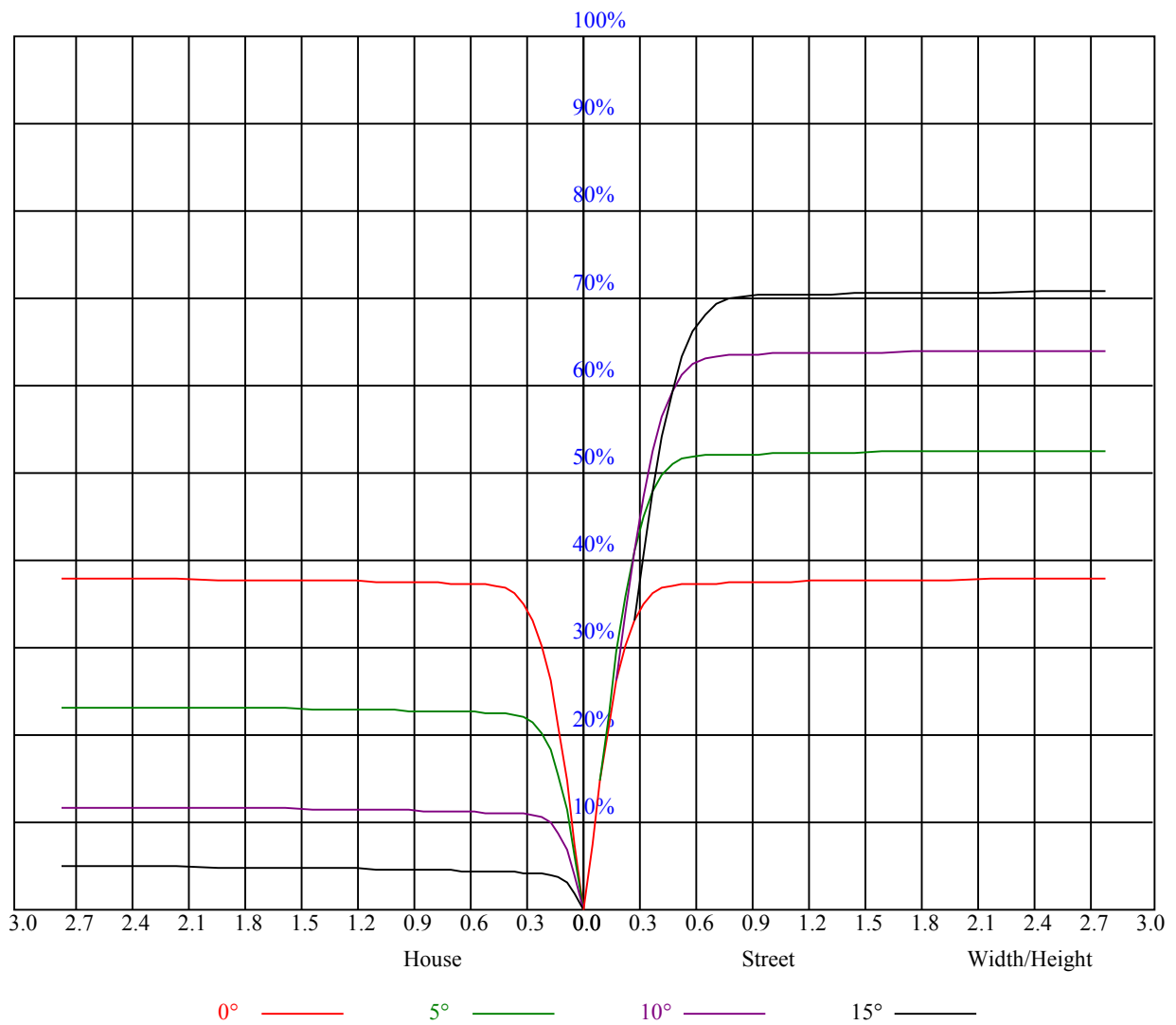
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.91	0.91	0.91	0.89	0.89	0.89	0.85	0.85	0.85	0.81	0.81	0.81	0.78	0.78	0.78	0.76
1	0.86	0.85	0.83	0.85	0.83	0.82	0.81	0.80	0.80	0.79	0.78	0.77	0.76	0.76	0.75	0.74
2	0.82	0.80	0.78	0.81	0.79	0.77	0.79	0.77	0.76	0.77	0.75	0.74	0.74	0.73	0.73	0.71
3	0.79	0.76	0.74	0.78	0.76	0.74	0.76	0.74	0.73	0.75	0.73	0.72	0.73	0.72	0.70	0.70
4	0.76	0.73	0.71	0.76	0.73	0.71	0.74	0.72	0.70	0.73	0.71	0.69	0.71	0.70	0.69	0.68
5	0.74	0.71	0.69	0.73	0.71	0.69	0.72	0.70	0.68	0.71	0.69	0.67	0.70	0.68	0.67	0.66
6	0.72	0.69	0.67	0.71	0.68	0.66	0.70	0.68	0.66	0.69	0.67	0.66	0.68	0.67	0.65	0.64
7	0.70	0.67	0.65	0.69	0.67	0.65	0.69	0.66	0.64	0.68	0.66	0.64	0.67	0.65	0.64	0.63
8	0.68	0.65	0.63	0.68	0.65	0.63	0.67	0.65	0.63	0.66	0.64	0.63	0.66	0.64	0.62	0.62
9	0.66	0.64	0.62	0.66	0.63	0.61	0.65	0.63	0.61	0.65	0.63	0.61	0.64	0.62	0.61	0.60
10	0.65	0.62	0.60	0.65	0.62	0.60	0.64	0.62	0.60	0.64	0.61	0.60	0.63	0.61	0.60	0.59



## 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	3346.16	3398.15	3414.88	3397.55	3344.37	3264.30	3145.39	2999.60	2848.42
45.0	3402.93	3387.99	3332.42	3257.73	3161.53	3030.07	2866.94	2699.64	2492.89
90.0	3371.86	3320.47	3235.02	3128.66	3014.53	2876.50	2669.76	2482.73	2283.16
135.0	3382.01	3318.68	3227.25	3135.83	3010.95	2872.32	2687.09	2478.55	2281.96
180.0	3346.16	3276.25	3178.26	3056.96	2928.49	2774.92	2552.05	2356.06	2146.92
225.0	3402.93	3386.20	3331.22	3267.29	3177.06	3040.23	2901.60	2742.66	2516.19
270.0	3371.86	3398.15	3386.79	3350.94	3284.62	3198.57	3072.49	2917.73	2755.21
315.0	3382.01	3407.71	3400.54	3362.89	3297.76	3203.95	3059.35	2920.72	2756.40
360.0	3346.16	3398.15	3414.88	3397.55	3344.37	3264.30	3145.39	2999.60	2848.42
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2678.12	2438.52	2229.98	2017.26	1745.38	1532.06	1333.68	1132.32	959.03
45.0	2291.52	2054.90	1812.31	1596.60	1367.74	1162.79	1002.06	858.05	699.71
90.0	2047.73	1811.11	1604.96	1382.08	1174.20	1013.47	847.48	716.32	587.85
135.0	2076.41	1815.89	1603.17	1404.79	1177.73	1018.19	874.18	728.39	605.30
180.0	1909.70	1676.07	1475.90	1177.49	1078.12	932.56	784.91	667.86	552.30
225.0	2343.51	2111.07	1843.97	1660.53	1434.07	1182.63	1063.30	916.19	763.40
270.0	2574.15	2327.38	2118.84	1904.32	1637.83	1434.07	1245.85	1078.54	892.11
315.0	2548.46	2320.21	2104.50	1855.33	1612.13	1409.57	1180.12	1040.66	878.97
360.0	2678.12	2438.52	2229.98	2017.26	1745.38	1532.06	1333.68	1132.32	959.03
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	824.59	690.15	590.36	485.79	388.39	307.73	222.70	149.98	96.20
45.0	590.36	492.36	390.78	308.32	221.62	150.52	92.14	51.57	25.75
90.0	470.67	376.98	284.36	203.46	141.91	92.02	45.95	24.62	15.48
135.0	504.91	400.34	317.89	258.67	171.07	102.72	56.35	31.19	16.25
180.0	444.80	358.40	269.61	192.05	132.71	84.13	43.14	20.61	13.03
225.0	639.24	537.90	444.02	334.50	257.48	187.21	112.51	67.70	36.63
270.0	761.25	653.70	543.15	437.99	351.35	301.75	182.01	122.91	69.37
315.0	723.31	633.86	537.60	414.51	341.61	263.39	167.55	117.41	68.84
360.0	824.59	690.15	590.36	485.79	388.39	307.73	222.70	149.98	96.20
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	54.32	22.65	12.25	9.08	7.41	6.51	6.04	5.56	5.20
45.0	14.04	9.62	7.29	6.39	5.86	5.44	5.14	4.90	4.66
90.0	11.05	8.31	6.93	6.21	5.80	5.50	5.20	4.96	4.72
135.0	11.65	9.02	7.11	6.45	6.04	5.68	5.38	5.14	4.84
180.0	9.68	7.47	6.51	6.09	5.62	5.32	5.08	4.90	4.72
225.0	17.51	11.35	8.78	7.05	6.39	5.86	5.50	5.20	4.90
270.0	36.45	16.49	10.40	8.31	7.17	6.39	5.98	5.56	5.20
315.0	33.22	15.30	10.16	8.07	7.05	6.39	5.92	5.50	5.14
360.0	54.32	22.65	12.25	9.08	7.41	6.51	6.04	5.56	5.20
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	4.90	4.66	4.48	4.30	4.12	4.00	3.94	3.82	3.76
45.0	4.48	4.36	4.18	4.06	3.94	3.88	3.82	3.76	3.70
90.0	4.54	4.42	4.30	4.18	4.06	4.00	3.94	3.88	3.82
135.0	4.72	4.54	4.42	4.30	4.24	4.12	4.06	4.00	4.00
180.0	4.54	4.42	4.30	4.18	4.12	4.06	4.00	3.94	3.88
225.0	4.60	4.48	4.36	4.18	4.06	3.94	3.88	3.82	3.76
270.0	4.90	4.72	4.48	4.30	4.18	4.06	4.00	3.88	3.82
315.0	4.84	4.60	4.42	4.24	4.06	3.94	3.88	3.82	3.76
360.0	4.90	4.66	4.48	4.30	4.12	4.00	3.94	3.82	3.76



## Intensity data(cd)

C/ $\gamma$ (°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	3.76	3.64	3.64	3.59	3.59	3.53	3.53	3.47	3.47
45.0	3.64	3.64	3.53	3.53	3.47	3.47	3.47	3.47	3.41
90.0	3.76	3.76	3.76	3.70	3.64	3.59	3.59	3.53	3.53
135.0	3.88	3.88	3.88	3.82	3.82	3.76	3.76	3.70	3.70
180.0	3.82	3.82	3.76	3.76	3.76	3.70	3.70	3.64	3.64
225.0	3.70	3.64	3.64	3.59	3.59	3.53	3.47	3.47	3.47
270.0	3.76	3.70	3.64	3.59	3.53	3.53	3.47	3.47	3.41
315.0	3.70	3.64	3.59	3.59	3.53	3.47	3.47	3.47	3.41
360.0	3.76	3.64	3.64	3.59	3.59	3.53	3.53	3.47	3.47
C/ $\gamma$ (°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	3.47	3.41	3.41	3.35	3.35	3.35	3.35	3.35	3.35
45.0	3.35	3.35	3.35	3.35	3.29	3.29	3.23	3.23	3.23
90.0	3.53	3.47	3.47	3.47	3.41	3.41	3.41	3.41	3.41
135.0	3.64	3.64	3.59	3.59	3.59	3.59	3.53	3.53	3.53
180.0	3.64	3.59	3.59	3.59	3.59	3.59	3.59	3.53	3.59
225.0	3.41	3.41	3.41	3.35	3.29	3.35	3.35	3.29	3.29
270.0	3.41	3.35	3.35	3.29	3.29	3.29	3.23	3.23	3.23
315.0	3.41	3.41	3.35	3.35	3.35	3.35	3.29	3.29	3.29
360.0	3.47	3.41	3.41	3.35	3.35	3.35	3.35	3.35	3.35
C/ $\gamma$ (°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	3.29	3.29	3.29	3.29	3.29	3.29	3.29	3.29	3.23
45.0	3.23	3.23	3.17	3.17	3.17	3.17	3.11	3.11	3.11
90.0	3.35	3.35	3.35	3.35	3.35	3.29	3.29	3.29	3.29
135.0	3.53	3.53	3.53	3.47	3.47	3.47	3.47	3.47	3.47
180.0	3.59	3.53	3.53	3.53	3.53	3.53	3.47	3.47	3.41
225.0	3.23	3.29	3.29	3.23	3.23	3.17	3.17	3.17	3.17
270.0	3.23	3.23	3.23	3.17	3.17	3.17	3.17	3.17	3.11
315.0	3.23	3.29	3.29	3.29	3.23	3.23	3.23	3.23	3.23
360.0	3.29	3.29	3.29	3.29	3.29	3.29	3.29	3.29	3.23
C/ $\gamma$ (°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	3.23	3.23	3.23	3.11	3.11	3.05	3.05	2.99	2.93
45.0	3.05	3.05	3.05	3.05	2.99	2.99	2.93	2.93	2.93
90.0	3.23	3.23	3.23	3.17	3.17	3.17	3.05	2.93	2.87
135.0	3.41	3.41	3.35	3.35	3.29	3.35	3.29	2.99	2.87
180.0	3.35	3.29	3.29	3.17	3.11	3.05	2.99	2.99	2.99
225.0	3.17	3.17	3.11	3.11	3.11	3.11	3.05	3.05	3.05
270.0	3.11	3.11	3.11	3.11	3.05	3.05	3.05	2.99	2.93
315.0	3.17	3.17	3.17	3.11	3.11	3.05	2.99	2.93	2.87
360.0	3.23	3.23	3.23	3.11	3.11	3.05	3.05	2.99	2.93
C/ $\gamma$ (°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	2.93	2.93	2.93	2.87	2.87	2.87	2.75	2.75	2.69
45.0	2.87	2.87	2.87	2.87	2.75	2.69	2.69	2.69	2.69
90.0	2.81	2.75	2.75	2.75	2.75	2.69	2.69	2.63	2.69
135.0	2.87	2.87	2.87	2.87	2.81	2.75	2.69	2.69	2.69
180.0	2.99	3.05	3.05	3.17	2.75	2.75	2.75	2.75	2.75
225.0	3.05	3.05	2.99	3.05	3.11	3.11	2.69	2.69	2.69
270.0	2.93	2.87	2.93	2.93	2.93	2.99	2.69	2.69	2.69
315.0	2.87	2.87	2.87	2.87	2.87	2.87	2.69	2.69	2.69
360.0	2.93	2.93	2.93	2.87	2.87	2.87	2.75	2.75	2.69

Intensity data(cd)

C/ $\gamma$ ( $^{\circ}$ )	90.0
0.0	2.75
45.0	2.69
90.0	2.69
135.0	2.69
180.0	2.75
225.0	2.63
270.0	2.69
315.0	2.69
360.0	2.75