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Nata

LumCAT: 4-2275-M	
Luminaire: 92.70.134.00	
Report No: NATA0100	Voltage(V): 36.5000
Test No: GC2018082415	Current(A): 0.6000
LampCAT: CREE CXA2520	Power (W): 21.9000
Lamp flux(lm): 2645.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 100	Width(mm): 100
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 2347.49
Efficiency(%): 88.75%
Lumens(lm)/Power(W): 107.19
Central intensity(cd): 10070.920
Maximum intensity(cd): 10070.920
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=22.1
 [C90/270]Total=22.1
Field angle(10%Imax): [C0/180]Total=45.8
 [C90/270]Total=45.8
Maximum s/h(1/2): C0_180=0.38 C90_270=0.38
Maximum s/h(1/4): C0_180=0.38 C90_270=0.38
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.10%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.256%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	10070.917	9.637	9.637	.364%	.411%
2.0	9886.202	75.668	85.306	2.861%	3.634%
4.0	9329.926	142.734	228.04	5.396%	9.714%
6.0	8413.581	192.877	420.917	7.292%	17.931%
8.0	7221.473	220.418	641.335	8.333%	27.320%
10.0	5753.325	219.106	860.441	8.284%	36.654%
12.0	4387.651	200.067	1060.508	7.564%	45.176%
14.0	3173.864	168.395	1228.903	6.367%	52.350%
16.0	2272.659	137.384	1366.287	5.194%	58.202%
18.0	1655.959	112.227	1478.514	4.243%	62.983%
20.0	1281.548	96.128	1574.643	3.634%	67.078%
22.0	1057.737	86.900	1661.542	3.285%	70.780%
24.0	942.896	84.109	1745.651	3.180%	74.363%
26.0	892.664	85.821	1831.472	3.245%	78.018%
28.0	859.513	88.497	1919.969	3.346%	81.788%
30.0	830.815	91.104	2011.074	3.444%	85.669%
32.0	786.233	91.375	2102.448	3.455%	89.562%
34.0	658.936	80.811	2183.259	3.055%	93.004%
36.0	460.361	59.345	2242.604	2.244%	95.532%
38.0	274.594	37.076	2279.68	1.402%	97.112%
40.0	96.596	13.617	2293.298	.515%	97.692%
42.0	26.744	3.925	2297.222	.148%	97.859%
44.0	14.728	2.244	2299.466	.085%	97.954%
46.0	12.704	2.004	2301.47	.076%	98.040%
48.0	12.250	1.997	2303.467	.075%	98.125%
50.0	11.885	1.997	2305.464	.075%	98.210%
52.0	11.610	2.006	2307.47	.076%	98.295%
54.0	11.369	2.017	2309.487	.076%	98.381%
56.0	11.197	2.036	2311.523	.077%	98.468%
58.0	11.039	2.053	2313.576	.078%	98.555%
60.0	10.929	2.076	2315.652	.078%	98.644%
62.0	10.825	2.096	2317.748	.079%	98.733%
64.0	10.736	2.116	2319.864	.080%	98.823%
66.0	10.660	2.136	2322	.081%	98.914%
68.0	10.591	2.154	2324.154	.081%	99.006%
70.0	10.536	2.171	2326.325	.082%	99.099%
72.0	10.481	2.186	2328.512	.083%	99.192%
74.0	10.433	2.199	2330.711	.083%	99.285%

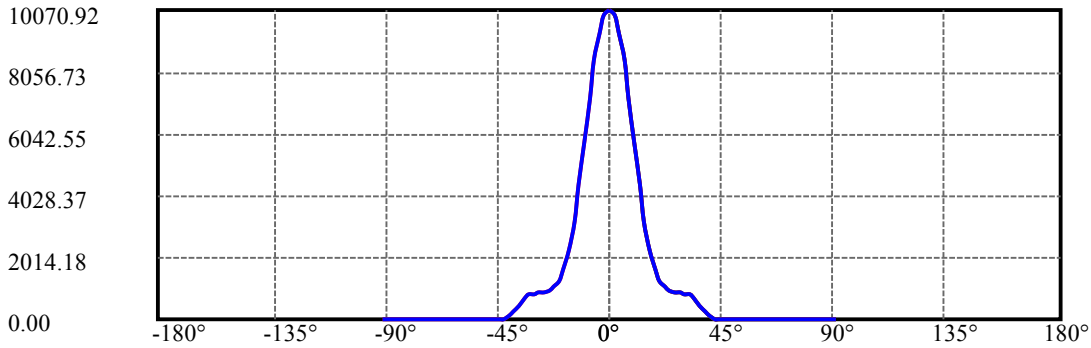
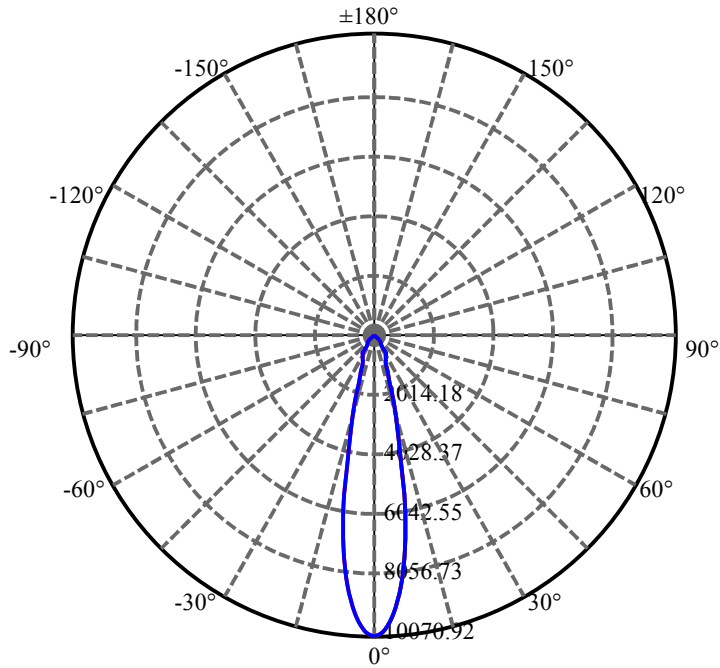
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	10.399	2.213	2332.924	.084%	99.380%
78.0	10.357	2.222	2335.146	.084%	99.474%
80.0	10.351	2.236	2337.381	.085%	99.570%
82.0	10.323	2.242	2339.623	.085%	99.665%
84.0	10.309	2.249	2341.872	.085%	99.761%
86.0	10.289	2.251	2344.123	.085%	99.857%
88.0	10.227	2.241	2346.364	.085%	99.952%
90.0	10.234	1.122	2347.486	.042%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2011.07	76.03%	85.67%
0-40	2293.30	86.70%	97.69%
0-60	2315.65	87.55%	98.64%
0-90	2346.36	88.71%	99.95%
0-120	2346.36	88.71%	99.95%
0-180	2347.49	88.75%	100.00%
60-90	32.79	1.24%	1.40%
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%
0-27.05	1877.99	71.00%	80.00%

ZONAL LUMEN SUMMARY

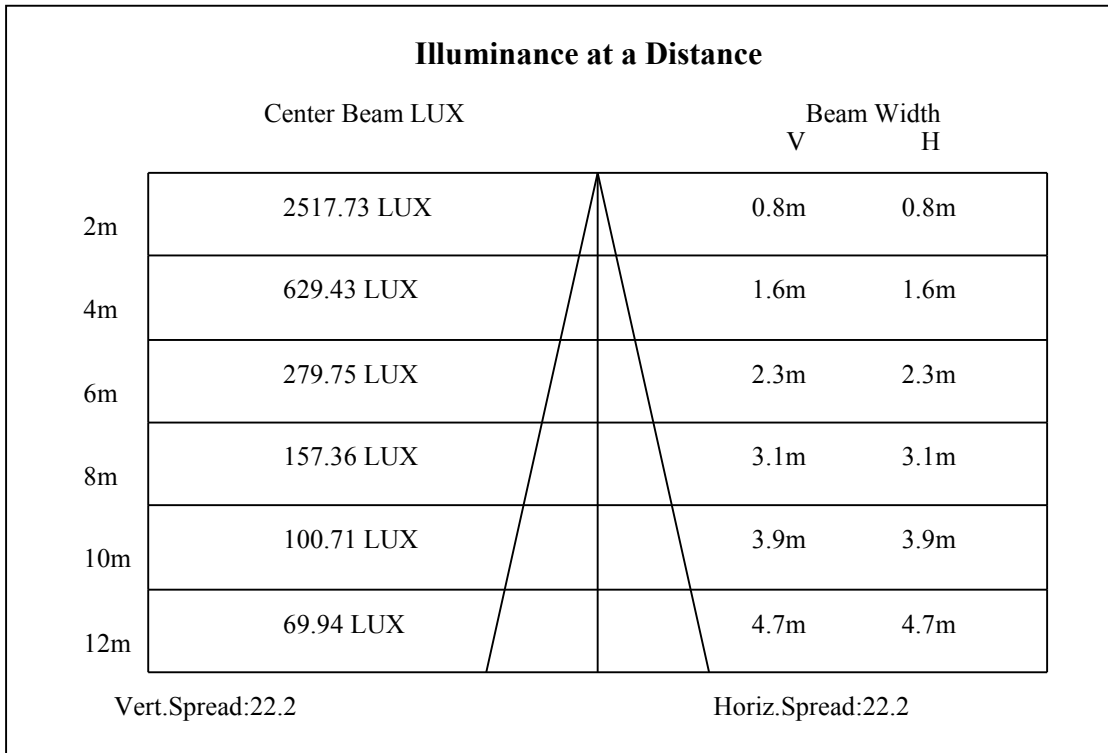
0-10	860.44
10-20	714.20
20-30	436.43
30-40	282.22
40-50	12.17
50-60	10.19
60-70	10.67
70-80	11.06
80-90	8.98
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

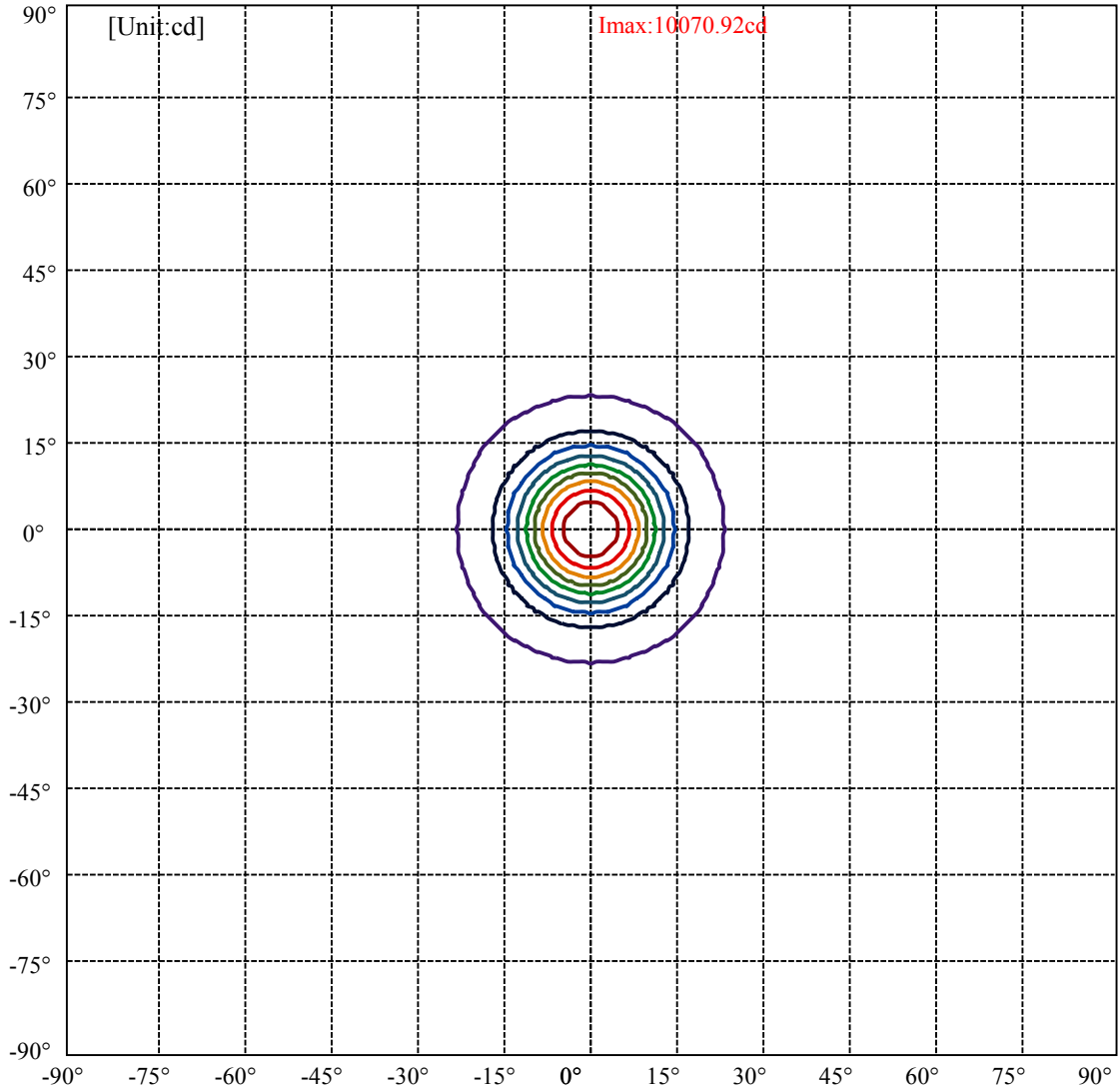


C0(Max): ———
C0/C180: ———
C90/C270: ———

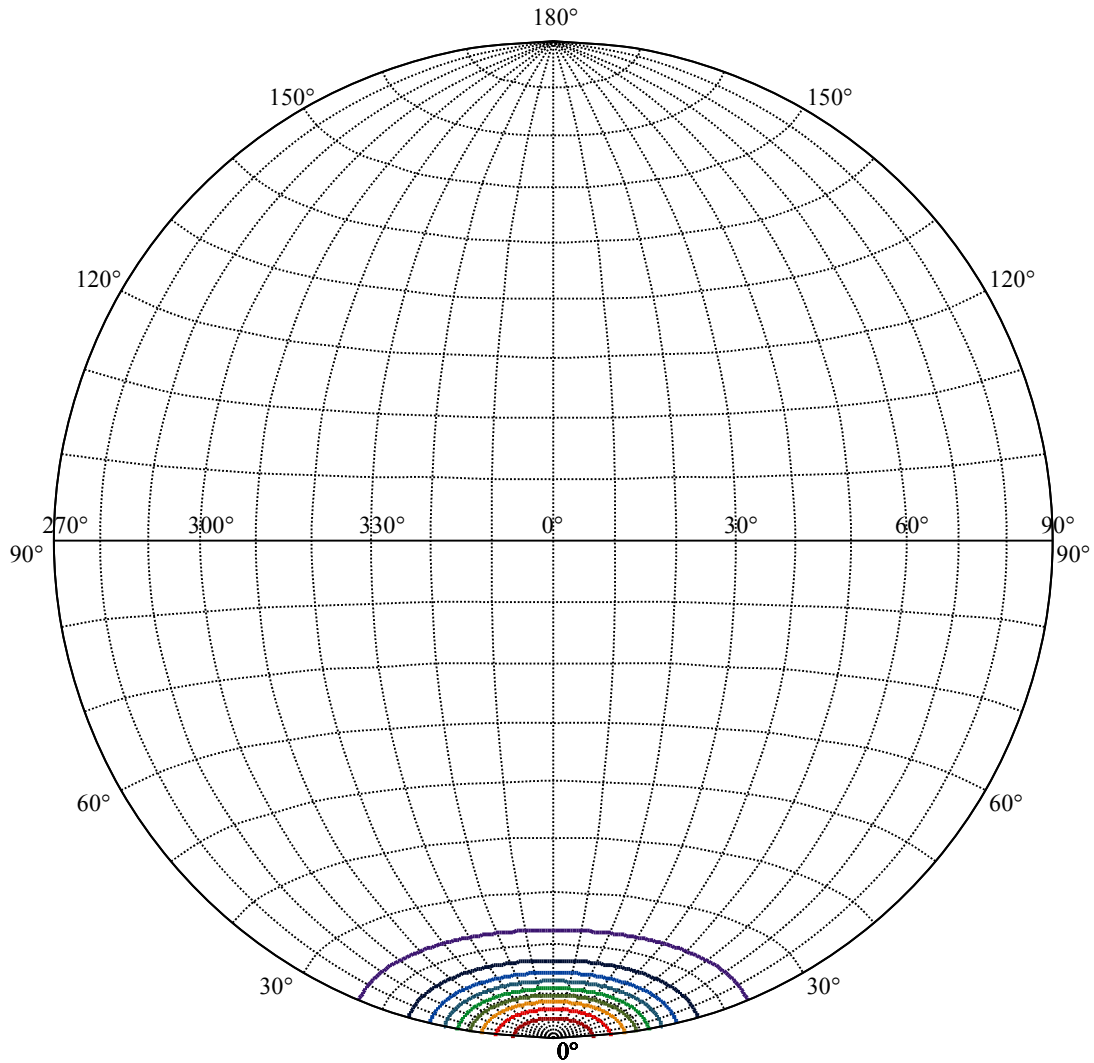
Field angle(10%Imax):C0/180Left:22.9 Right:22.9
:C90/270Left:22.9 Right:22.9

Beam Angle(50%Imax):C0/180Left:11.1 Right:11.1
:C90/270Left:11.1 Right:11.1





(10%Imax) 1007.09	—
(20%Imax) 2014.18	—
(30%Imax) 3021.27	—
(40%Imax) 4028.37	—
(50%Imax) 5035.46	—
(60%Imax) 6042.55	—
(70%Imax) 7049.64	—
(80%Imax) 8056.73	—
(90%Imax) 9063.82	—



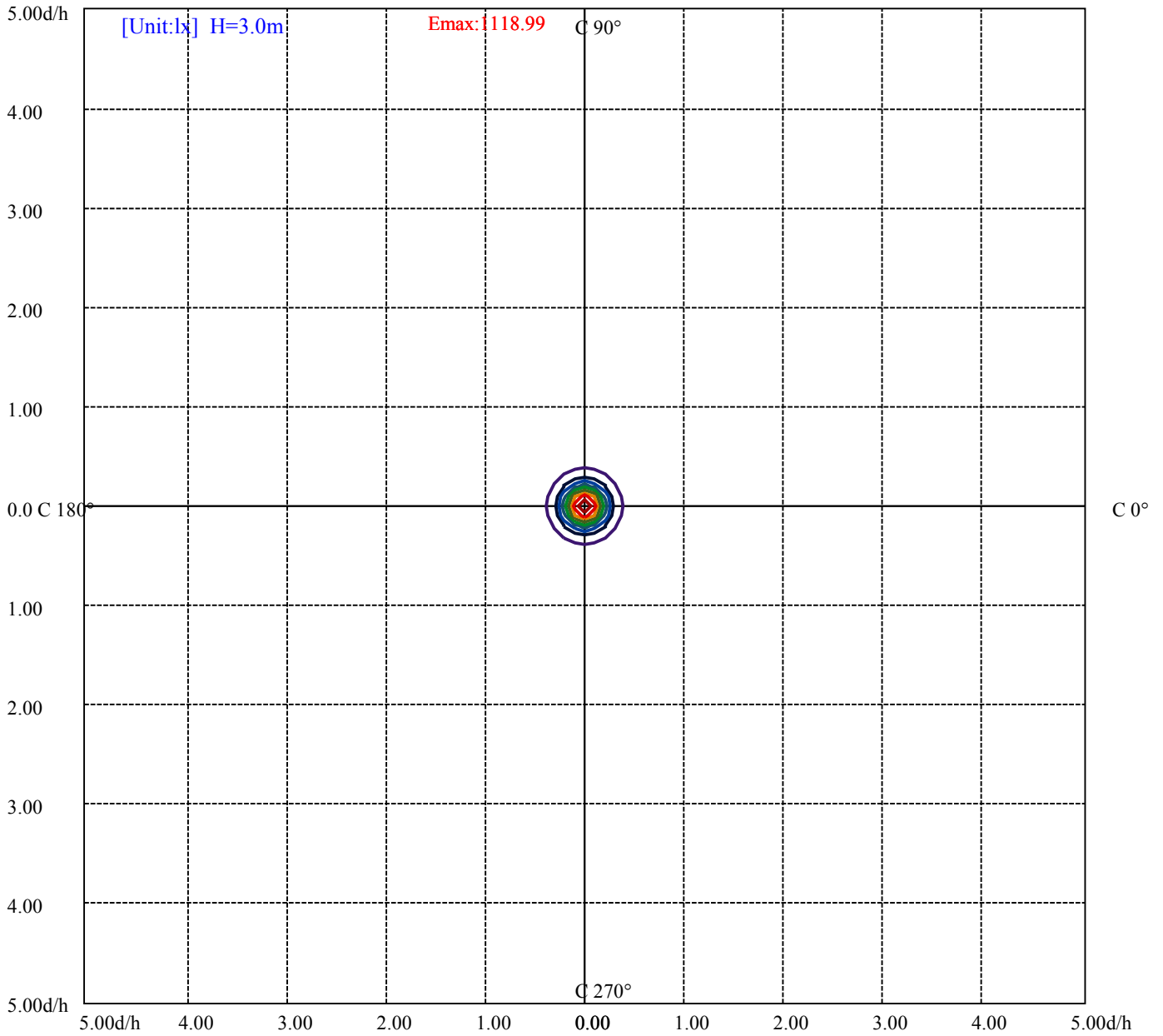
House

[Unit:cd]

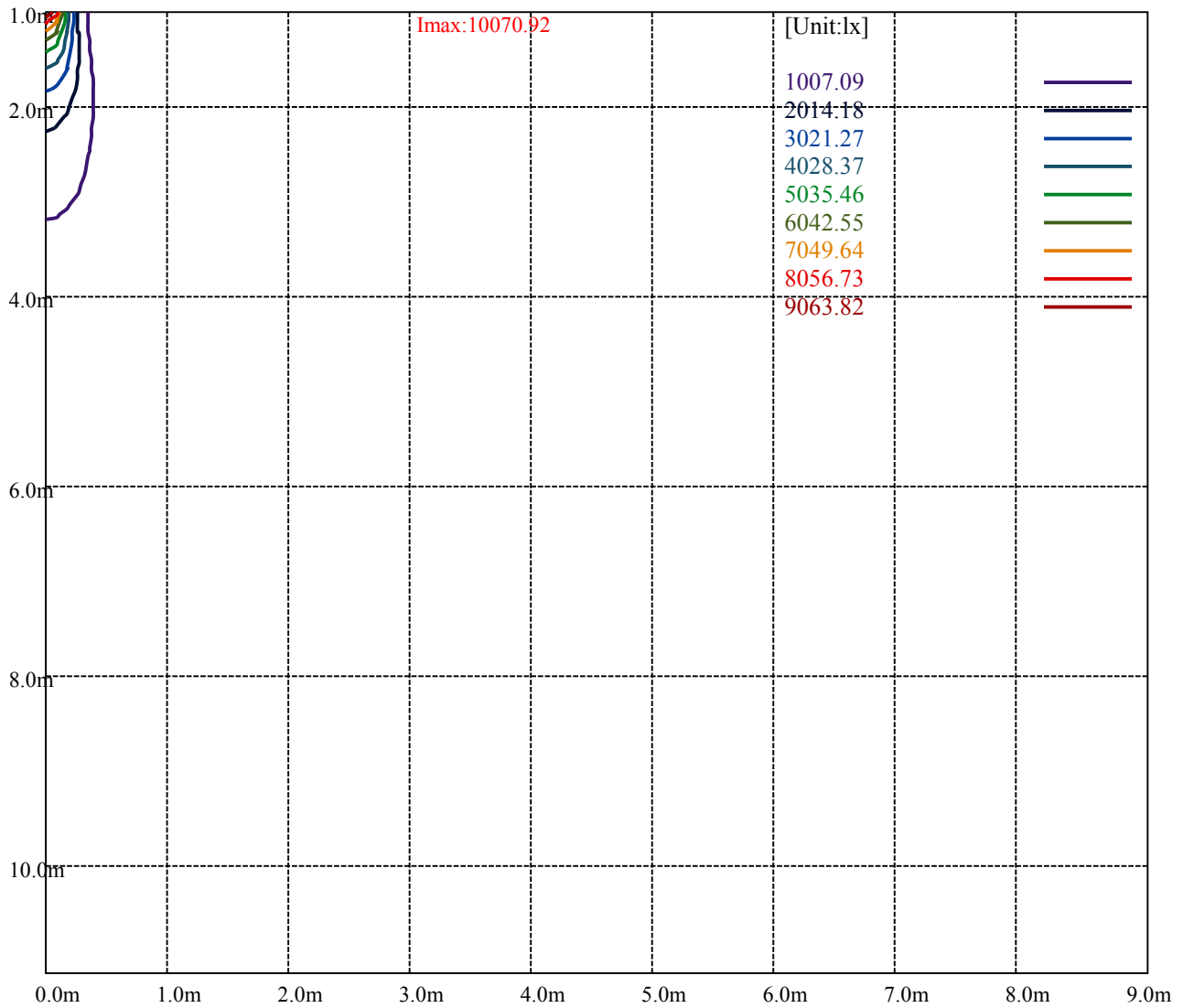
Road

Imax:10070.92

(10%Imax)	1007.09	—
(20%Imax)	2014.18	—
(30%Imax)	3021.27	—
(40%Imax)	4028.37	—
(50%Imax)	5035.46	—
(60%Imax)	6042.55	—
(70%Imax)	7049.64	—
(80%Imax)	8056.73	—
(90%Imax)	9063.82	—



- (10%Emax) 111.8989
- (20%Emax) 223.7978
- (30%Emax) 335.6967
- (40%Emax) 447.5956
- (50%Emax) 559.4944
- (60%Emax) 671.3933
- (70%Emax) 783.2922
- (80%Emax) 895.1912
- (90%Emax) 1007.09



Luminance Table

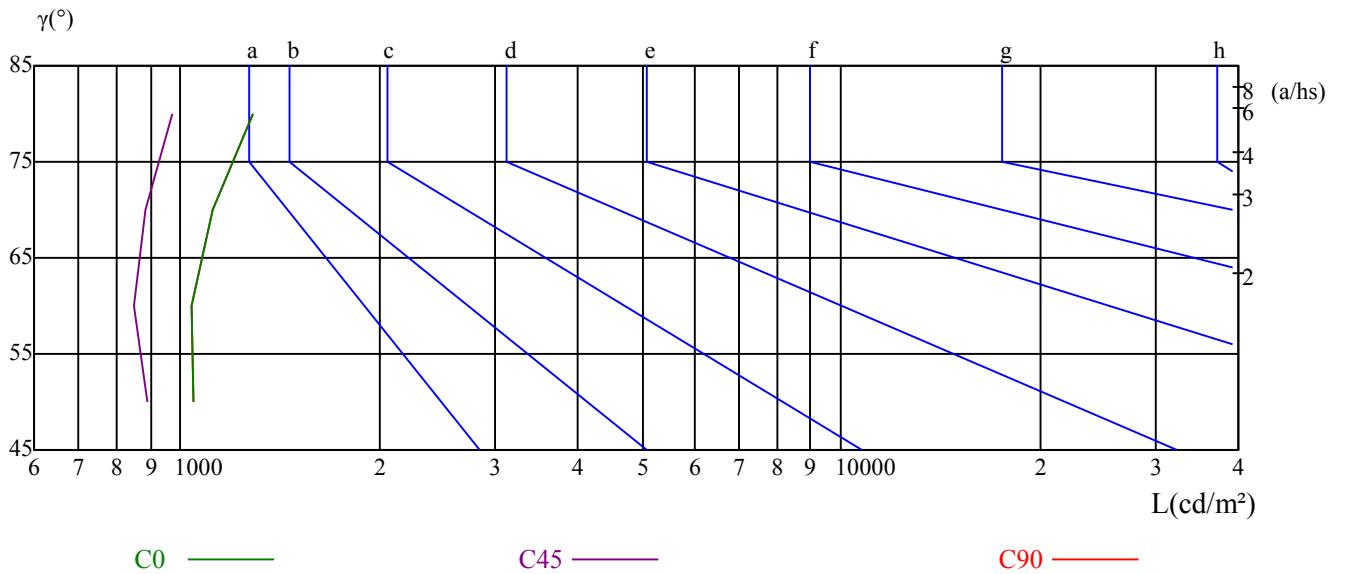
γ	45	50	55	60	65	70	75	80	85
C0	0	1049	0	1037	0	1117	0	1288	0
C45	0	890	0	851	0	884	0	972	0
C90	0	1049	0	1037	0	1117	0	1288	0

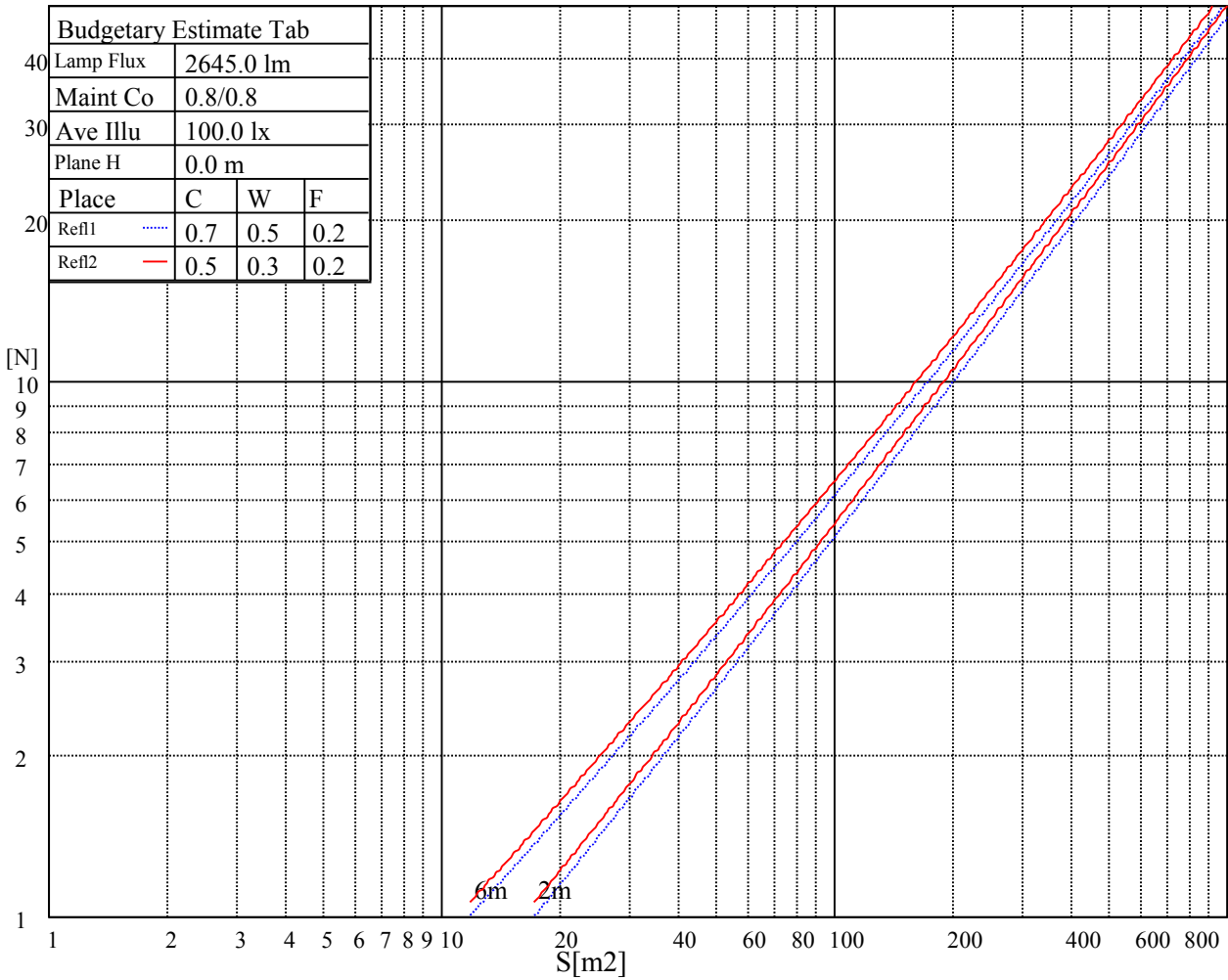
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2452	2452	2452	3999	3999	3999	13139	13139	13139

Glare Table

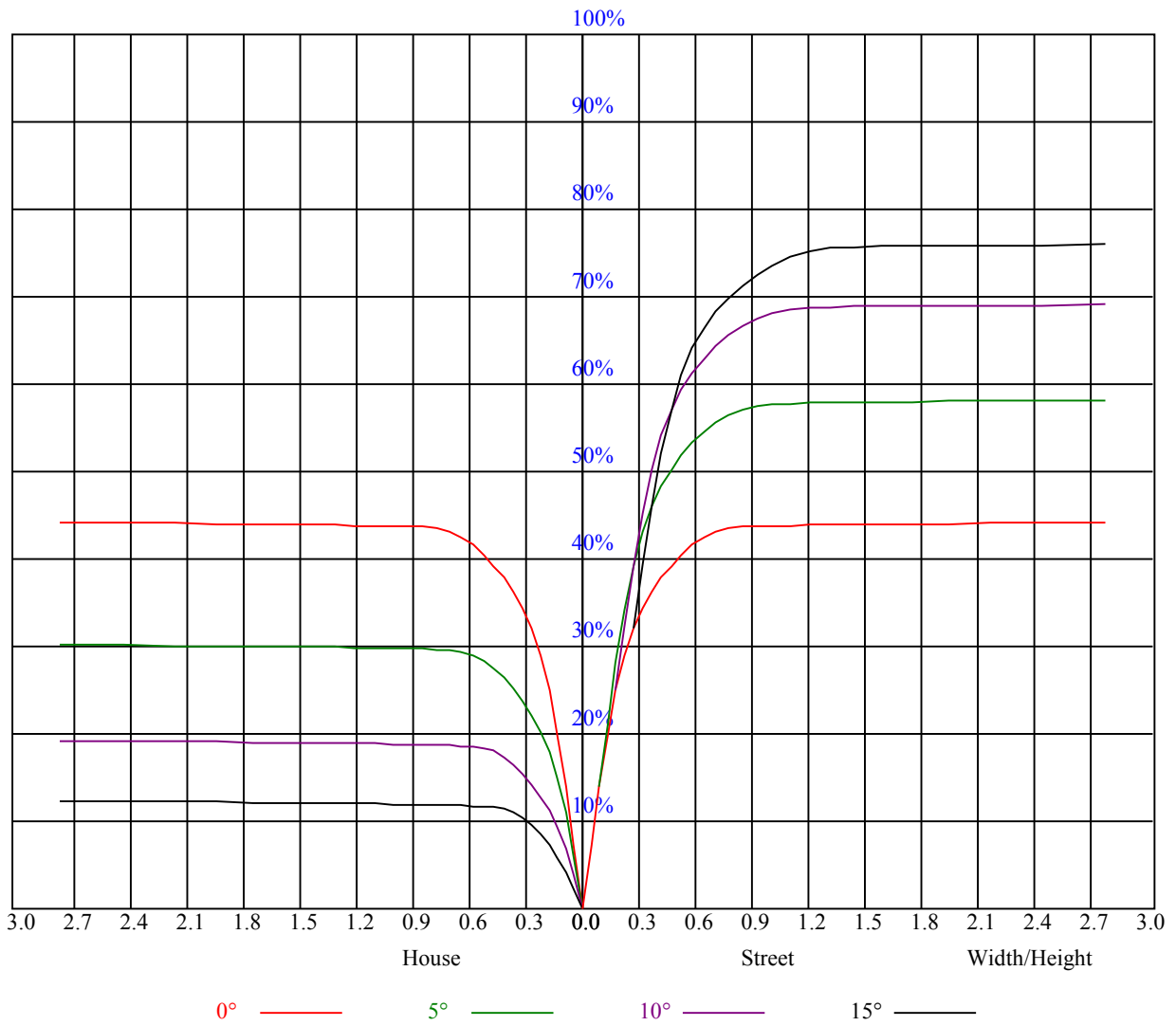
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.06	1.06	1.06	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.89
1	0.99	0.97	0.96	0.98	0.96	0.94	0.94	0.93	0.91	0.91	0.90	0.89	0.88	0.87	0.86	0.84
2	0.94	0.91	0.89	0.93	0.90	0.88	0.90	0.88	0.86	0.87	0.85	0.84	0.85	0.83	0.82	0.81
3	0.90	0.86	0.83	0.88	0.85	0.82	0.86	0.83	0.81	0.84	0.82	0.80	0.82	0.80	0.79	0.78
4	0.86	0.82	0.79	0.85	0.81	0.78	0.83	0.80	0.77	0.81	0.79	0.77	0.80	0.77	0.76	0.75
5	0.82	0.78	0.75	0.81	0.78	0.75	0.80	0.77	0.74	0.78	0.76	0.73	0.77	0.75	0.73	0.72
6	0.79	0.75	0.72	0.78	0.74	0.72	0.77	0.74	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.69
7	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.69	0.74	0.70	0.68	0.73	0.70	0.68	0.67
8	0.73	0.69	0.67	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.71	0.68	0.66	0.65
9	0.71	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.69	0.66	0.64	0.63
10	0.69	0.65	0.62	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.67	0.64	0.62	0.61



Intensity data(cd)

C/γ(°)	0.0	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0
0.0	10066.51	9819.86	9220.85	8165.41	6959.68	5492.43	4108.31	2968.64	2078.38
45.0	10076.97	9993.84	9461.99	8559.07	7392.42	5914.16	4497.56	3273.10	2306.31
90.0	10094.04	10018.06	9481.26	8701.66	7443.63	6029.78	4623.09	3307.24	2432.94
135.0	10046.14	10076.97	9796.19	9092.01	8184.13	6743.86	5273.30	3987.74	2750.62
180.0	10066.51	9924.47	9539.07	8720.38	7500.88	6110.71	4713.93	3385.97	2474.23
225.0	10076.97	9810.50	9135.51	8266.17	6989.96	5409.29	4220.07	3008.83	2182.44
270.0	10094.04	9812.15	9143.77	8064.66	6955.83	5408.19	4063.16	2936.71	2087.19
315.0	10046.14	9633.77	8860.78	7739.28	6345.25	4918.19	3601.79	2522.68	1869.16
360.0	10066.51	9819.86	9220.85	8165.41	6959.68	5492.43	4108.31	2968.64	2078.38
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	1541.58	1201.33	1021.30	927.70	889.71	856.13	832.45	787.86	621.04
45.0	1689.13	1296.03	1053.23	934.86	889.16	856.13	828.60	798.32	670.04
90.0	1718.31	1315.85	1059.29	939.43	882.06	850.95	823.70	794.68	703.35
135.0	1982.03	1503.59	1176.00	993.77	919.44	875.95	845.67	815.39	748.77
180.0	1769.51	1347.78	1088.13	955.45	895.55	863.06	831.41	797.00	689.58
225.0	1624.16	1271.25	1054.16	947.47	895.88	865.21	833.61	788.63	654.07
270.0	1549.84	1227.76	1037.26	940.36	897.97	864.94	833.55	787.86	630.95
315.0	1373.11	1088.80	972.52	904.14	871.54	843.74	817.53	720.14	553.70
360.0	1541.58	1201.33	1021.30	927.70	889.71	856.13	832.45	787.86	621.04
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	425.59	281.34	60.45	21.97	13.16	12.55	12.11	11.78	11.45
45.0	476.79	286.29	93.27	24.61	14.48	12.83	12.44	12.06	11.73
90.0	505.80	300.17	116.33	28.30	15.20	12.83	12.39	12.00	11.73
135.0	579.74	382.64	222.10	41.95	20.10	12.94	12.44	12.06	11.78
180.0	497.99	300.94	124.04	30.78	15.36	12.66	12.22	11.84	11.56
225.0	438.25	228.04	67.66	25.22	13.38	12.77	12.28	11.89	11.62
270.0	422.28	282.44	54.07	22.96	13.32	12.66	12.17	11.84	11.62
315.0	336.45	134.89	34.85	18.17	12.83	12.39	11.95	11.62	11.40
360.0	425.59	281.34	60.45	21.97	13.16	12.55	12.11	11.78	11.45
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	11.23	11.07	10.96	10.79	10.74	10.63	10.57	10.46	10.46
45.0	11.51	11.29	11.12	11.01	10.90	10.85	10.74	10.68	10.63
90.0	11.45	11.29	11.12	11.01	10.90	10.85	10.74	10.68	10.57
135.0	11.51	11.29	11.12	11.01	10.90	10.79	10.68	10.63	10.57
180.0	11.34	11.18	11.01	10.90	10.79	10.68	10.63	10.57	10.46
225.0	11.40	11.23	11.07	10.96	10.85	10.74	10.68	10.57	10.57
270.0	11.34	11.18	11.01	10.96	10.85	10.74	10.68	10.63	10.57
315.0	11.18	11.07	10.90	10.79	10.68	10.63	10.57	10.52	10.46
360.0	11.23	11.07	10.96	10.79	10.74	10.63	10.57	10.46	10.46
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	10.41	10.35	10.30	10.30	10.30	10.24	10.24	10.24	10.19
45.0	10.57	10.52	10.46	10.41	10.41	10.35	10.35	10.35	10.30
90.0	10.52	10.52	10.46	10.41	10.41	10.41	10.35	10.30	10.24
135.0	10.52	10.46	10.41	10.35	10.35	10.35	10.30	10.30	10.24
180.0	10.46	10.35	10.35	10.30	10.30	10.24	10.24	10.24	10.13
225.0	10.46	10.46	10.41	10.41	10.35	10.35	10.30	10.35	10.30
270.0	10.52	10.46	10.46	10.41	10.41	10.35	10.41	10.30	10.24
315.0	10.41	10.35	10.35	10.30	10.30	10.30	10.30	10.24	10.19
360.0	10.41	10.35	10.30	10.30	10.30	10.24	10.24	10.24	10.19

Intensity data(cd)

C/ γ ($^{\circ}$)	90.0
0.0	10.19
45.0	10.30
90.0	10.30
135.0	10.19
180.0	10.13
225.0	10.30
270.0	10.24
315.0	10.24
360.0	10.19