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Nata

LumCAT: 3-2546-M	
Luminaire: 92.70.131.00	
Report No: 200921-B047	Voltage(V): 230.8000
Test No: 200921-C047	Current(A): 0.0890
LampCAT: LUMINUS CXM-14-AC40	Power (W): 19.5900
Lamp flux(lm): 2101.3	PF: 0.9530
Number of Lamps: 1	Ballast type: AC
Length(feet)(ft.):0.000	Width(feet)(ft.):0.000
Phm Type: C	Height(feet)(ft.):0.000

Photometric Results

Lumens(lm): 2013.97
Efficiency(%): 95.84%
Lumens(lm)/Power(W): 102.81
Central intensity(cd): 9117.096
Maximum intensity(cd): 9117.096
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=23.4
 [C90/270]Total=23.4
Field angle(10%Imax): [C0/180]Total=43.7
 [C90/270]Total=43.7
Maximum s/h(1/2): C0_180=0.40 C90_270=0.40
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(%): 95.94%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 99.767%

Equipment: GMS 1800
Temperature(°C): 25.0

Date: 2020/9/21
Humidity(%): 60.0%

Operator: NT0100
Distance(feet): 22.35

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	9117.097	2.181	2.181	.104%	.108%
1.0	9103.350	17.422	19.604	.829%	.973%
2.0	9055.091	34.655	54.258	1.649%	2.694%
3.0	8956.309	51.402	105.661	2.446%	5.246%
4.0	8789.547	67.236	172.897	3.200%	8.585%
5.0	8470.582	80.958	253.855	3.853%	12.605%
6.0	8034.159	92.093	345.948	4.383%	17.177%
7.0	7585.091	101.369	447.317	4.824%	22.211%
8.0	6939.678	105.912	553.23	5.040%	27.470%
9.0	6337.305	108.715	661.944	5.174%	32.868%
10.0	5711.730	108.765	770.71	5.176%	38.268%
11.0	5031.921	105.289	875.999	5.011%	43.496%
12.0	4370.267	99.641	975.64	4.742%	48.444%
13.0	3732.337	92.071	1067.711	4.382%	53.015%
14.0	3046.554	80.823	1148.534	3.846%	57.028%
15.0	2514.539	71.368	1219.902	3.396%	60.572%
16.0	2048.998	61.934	1281.836	2.947%	63.647%
17.0	1681.541	53.913	1335.75	2.566%	66.324%
18.0	1403.353	47.556	1383.305	2.263%	68.686%
19.0	1224.004	43.700	1427.005	2.080%	70.855%
20.0	1075.995	40.357	1467.361	1.921%	72.859%
21.0	958.038	37.650	1505.011	1.792%	74.729%
22.0	902.475	37.073	1542.084	1.764%	76.569%
23.0	844.170	36.171	1578.255	1.721%	78.365%
24.0	798.288	35.606	1613.861	1.694%	80.133%
25.0	758.132	35.135	1648.997	1.672%	81.878%
26.0	724.385	34.823	1683.82	1.657%	83.607%
27.0	700.511	34.875	1718.695	1.660%	85.339%
28.0	678.365	34.924	1753.619	1.662%	87.073%
29.0	655.447	34.847	1788.465	1.658%	88.803%
30.0	622.536	34.134	1822.599	1.624%	90.498%
31.0	581.411	32.838	1855.437	1.563%	92.128%
32.0	521.806	30.323	1885.76	1.443%	93.634%
33.0	458.569	27.388	1913.148	1.303%	94.994%
34.0	391.383	24.000	1937.148	1.142%	96.186%
35.0	314.841	19.803	1956.951	.942%	97.169%
36.0	263.913	17.011	1973.963	.810%	98.014%
37.0	198.252	13.084	1987.046	.623%	98.663%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	128.833	8.698	1995.744	.414%	99.095%
39.0	72.981	5.037	2000.781	.240%	99.345%
40.0	48.985	3.453	2004.234	.164%	99.517%
41.0	18.875	1.358	2005.592	.065%	99.584%
42.0	11.630	0.853	2006.445	.041%	99.626%
43.0	7.726	0.578	2007.023	.027%	99.655%
44.0	6.079	0.463	2007.486	.022%	99.678%
45.0	5.145	0.399	2007.885	.019%	99.698%
46.0	4.432	0.350	2008.234	.017%	99.715%
47.0	3.840	0.308	2008.542	.015%	99.731%
48.0	3.480	0.284	2008.826	.013%	99.745%
49.0	3.150	0.261	2009.087	.012%	99.758%
50.0	2.883	0.242	2009.329	.012%	99.770%
51.0	2.691	0.229	2009.558	.011%	99.781%
52.0	2.604	0.225	2009.783	.011%	99.792%
53.0	2.535	0.222	2010.005	.011%	99.803%
54.0	2.436	0.216	2010.221	.010%	99.814%
55.0	2.367	0.213	2010.434	.010%	99.825%
56.0	2.280	0.207	2010.641	.010%	99.835%
57.0	2.146	0.197	2010.839	.009%	99.845%
58.0	1.995	0.186	2011.024	.009%	99.854%
59.0	1.908	0.179	2011.204	.009%	99.863%
60.0	1.850	0.176	2011.379	.008%	99.871%
61.0	1.787	0.171	2011.551	.008%	99.880%
62.0	1.769	0.171	2011.722	.008%	99.888%
63.0	1.734	0.169	2011.891	.008%	99.897%
64.0	1.711	0.169	2012.06	.008%	99.905%
65.0	1.636	0.163	2012.223	.008%	99.913%
66.0	1.531	0.153	2012.376	.007%	99.921%
67.0	1.427	0.144	2012.52	.007%	99.928%
68.0	1.247	0.127	2012.647	.006%	99.934%
69.0	1.119	0.115	2012.761	.005%	99.940%
70.0	1.009	0.104	2012.865	.005%	99.945%
71.0	0.899	0.093	2012.959	.004%	99.950%
72.0	0.783	0.082	2013.04	.004%	99.954%
73.0	0.713	0.075	2013.115	.004%	99.958%
74.0	0.667	0.070	2013.186	.003%	99.961%
75.0	0.615	0.065	2013.251	.003%	99.964%

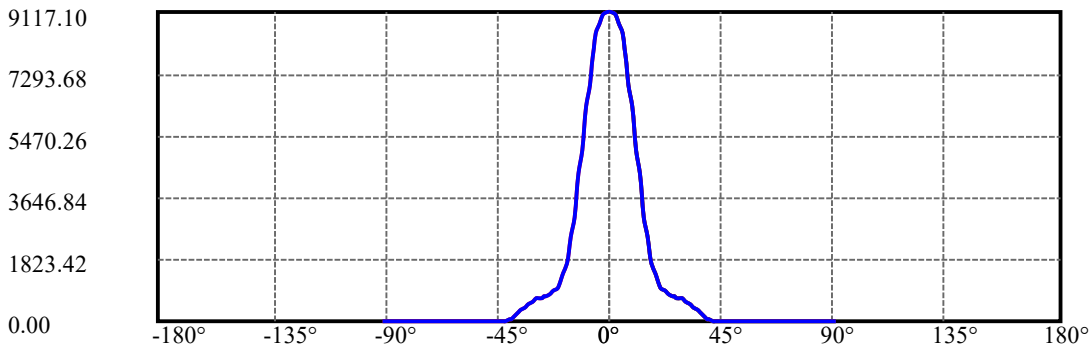
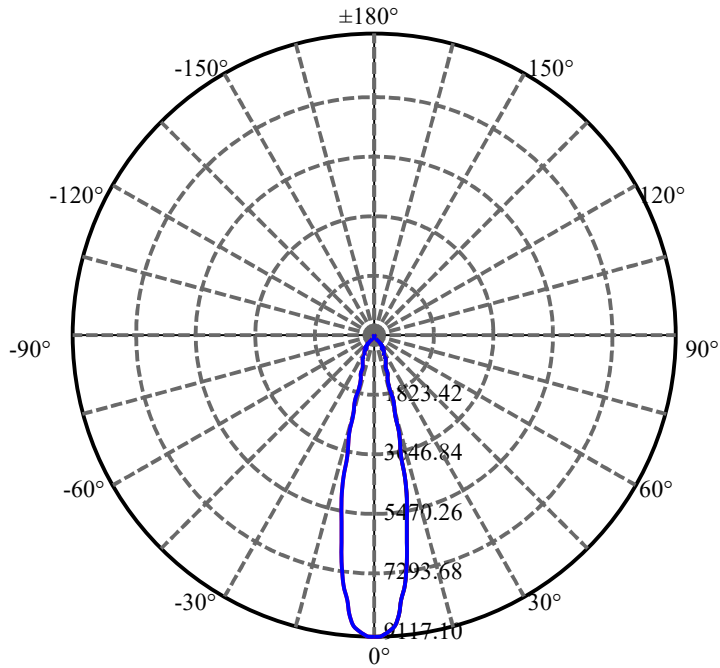
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	0.563	0.060	2013.311	.003%	99.967%
77.0	0.539	0.058	2013.368	.003%	99.970%
78.0	0.510	0.055	2013.423	.003%	99.973%
79.0	0.493	0.053	2013.476	.003%	99.976%
80.0	0.476	0.051	2013.527	.002%	99.978%
81.0	0.447	0.048	2013.576	.002%	99.981%
82.0	0.441	0.048	2013.624	.002%	99.983%
83.0	0.441	0.048	2013.672	.002%	99.985%
84.0	0.423	0.046	2013.718	.002%	99.988%
85.0	0.418	0.046	2013.763	.002%	99.990%
86.0	0.406	0.044	2013.808	.002%	99.992%
87.0	0.377	0.041	2013.849	.002%	99.994%
88.0	0.394	0.043	2013.892	.002%	99.996%
89.0	0.464	0.051	2013.943	.002%	99.999%
90.0	0.452	0.025	2013.968	.001%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1822.60	86.74%	90.50%
0-40	2004.23	95.38%	99.52%
0-60	2011.38	95.72%	99.87%
0-90	2013.94	95.84%	100.00%
0-120	2013.94	95.84%	100.00%
0-180	2013.97	95.84%	100.00%
60-90	2.74	0.13%	0.14%
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%
0-23.92	1611.17	76.68%	80.00%

ZONAL LUMEN SUMMARY

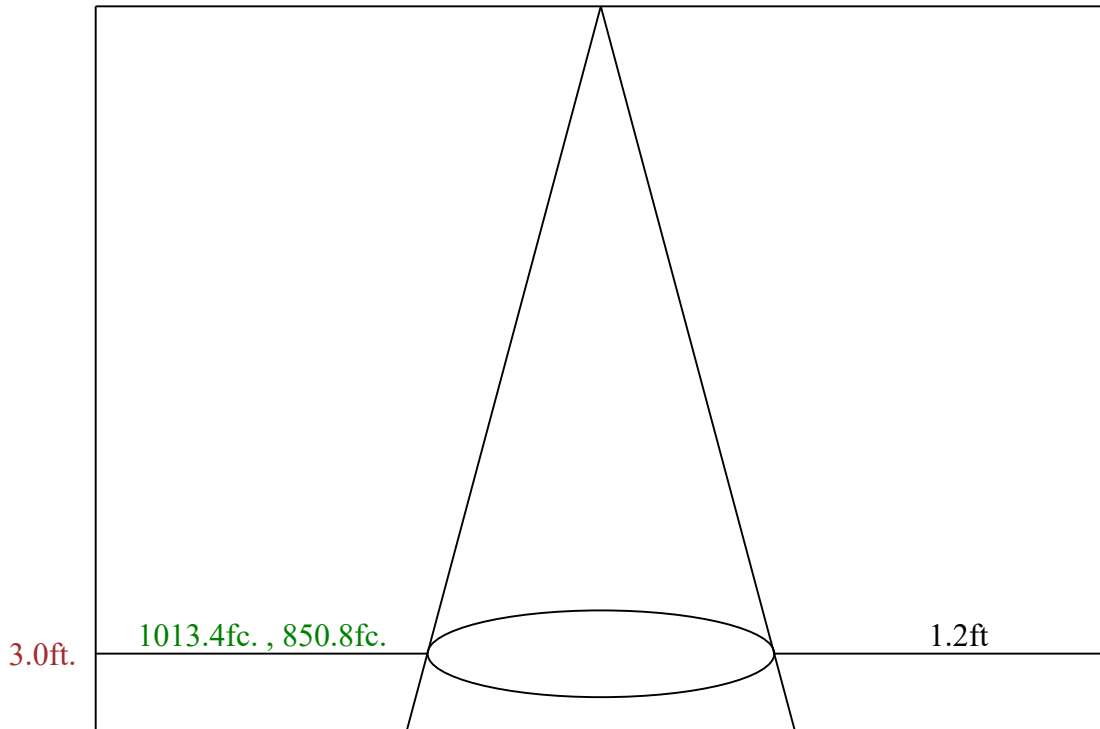
0-10	770.71
10-20	696.65
20-30	355.24
30-40	181.63
40-50	5.10
50-60	2.05
60-70	1.49
70-80	0.66
80-90	0.42
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



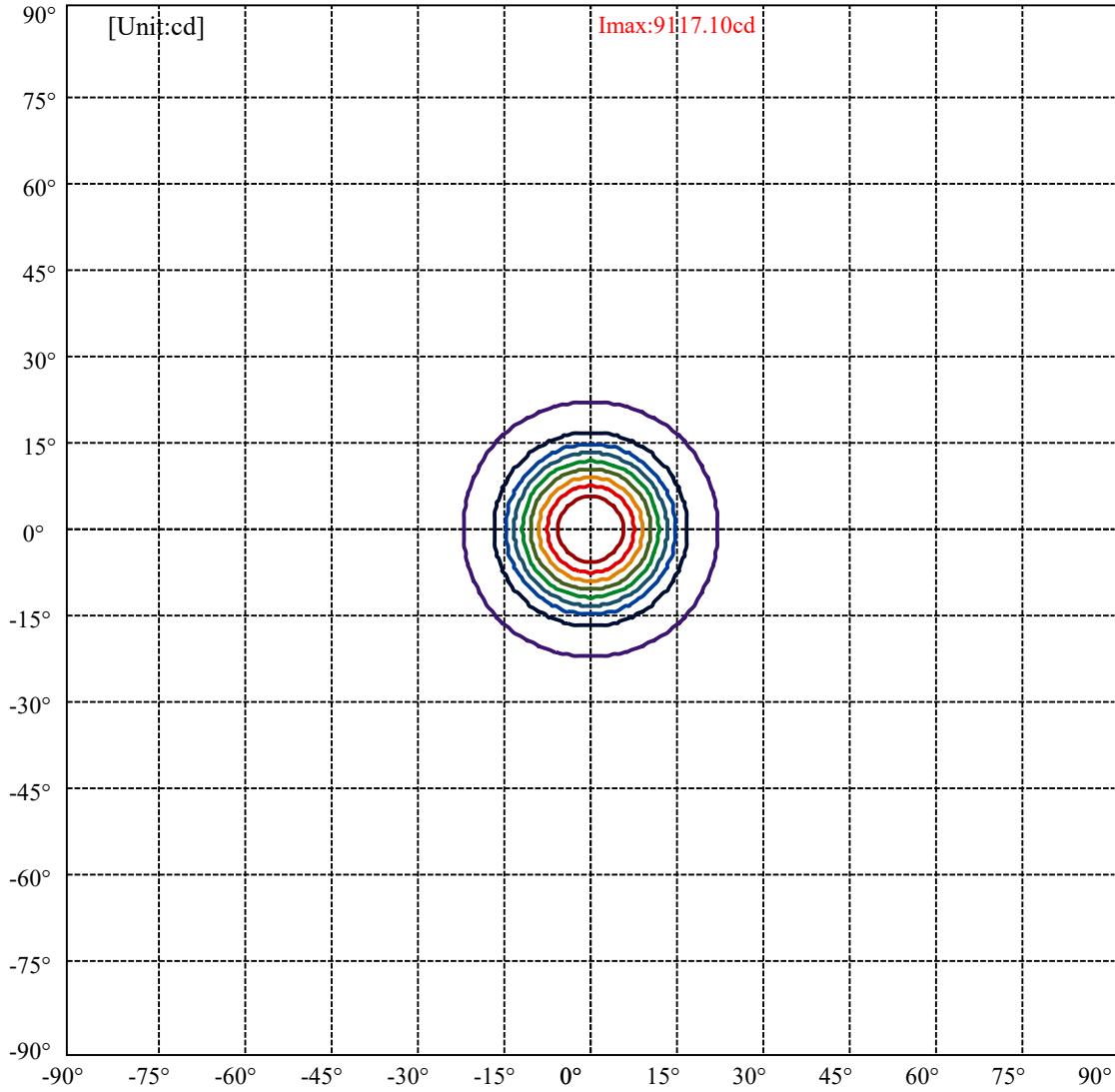
C0(Max): —————
C0/C180: —————
C90/C270: —————

Field angle(10%Imax):C0/180Left:21.8 Right:21.8
:C90/270Left:21.8 Right:21.8

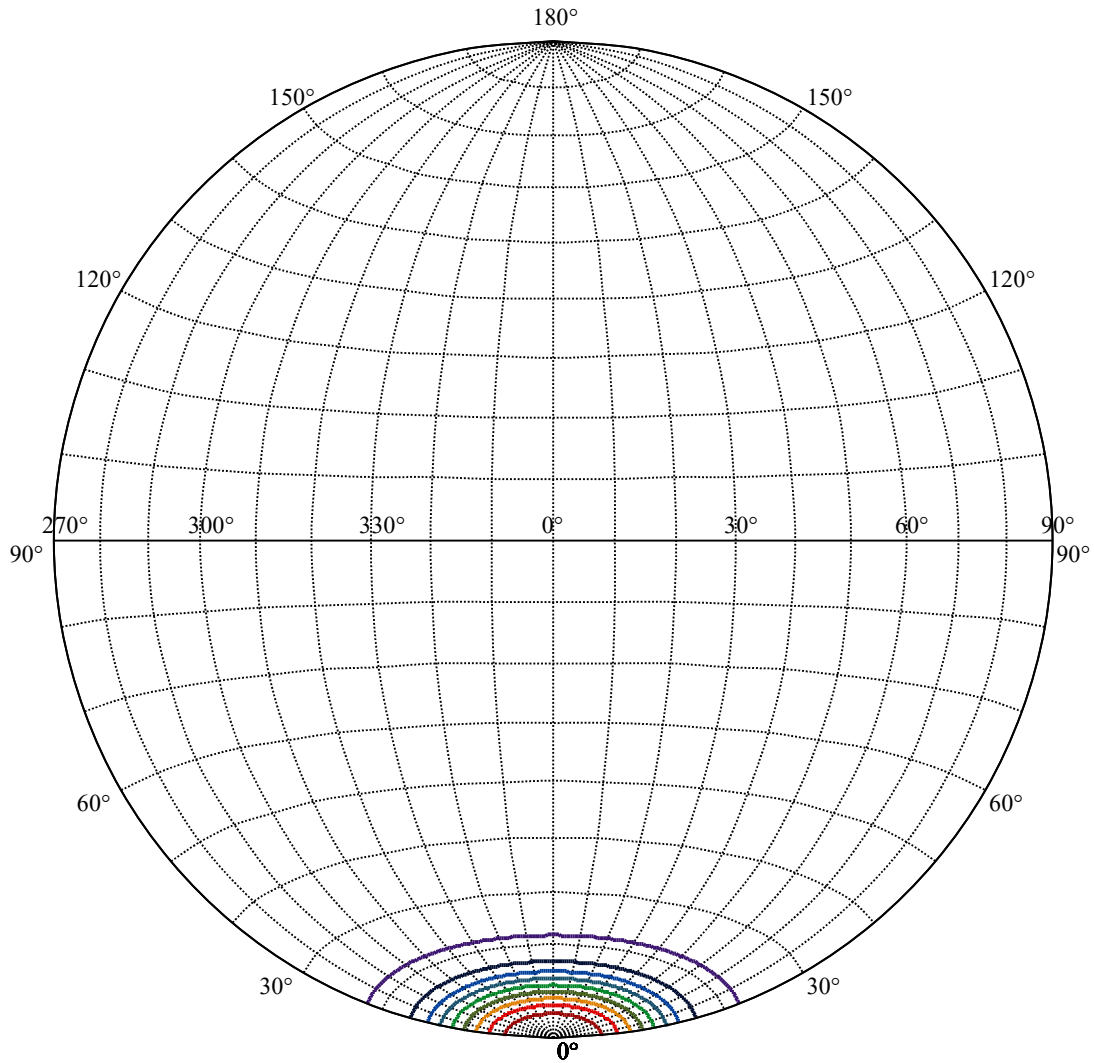
Beam Angle(50%Imax):C0/180Left:11.7 Right:11.7
:C90/270Left:11.7 Right:11.7



Max , Ave Beam angle of C0 plane 23.45



(10%Imax) 911.71	—
(20%Imax) 1823.42	—
(30%Imax) 2735.13	—
(40%Imax) 3646.84	—
(50%Imax) 4558.55	—
(60%Imax) 5470.26	—
(70%Imax) 6381.97	—
(80%Imax) 7293.68	—
(90%Imax) 8205.39	—



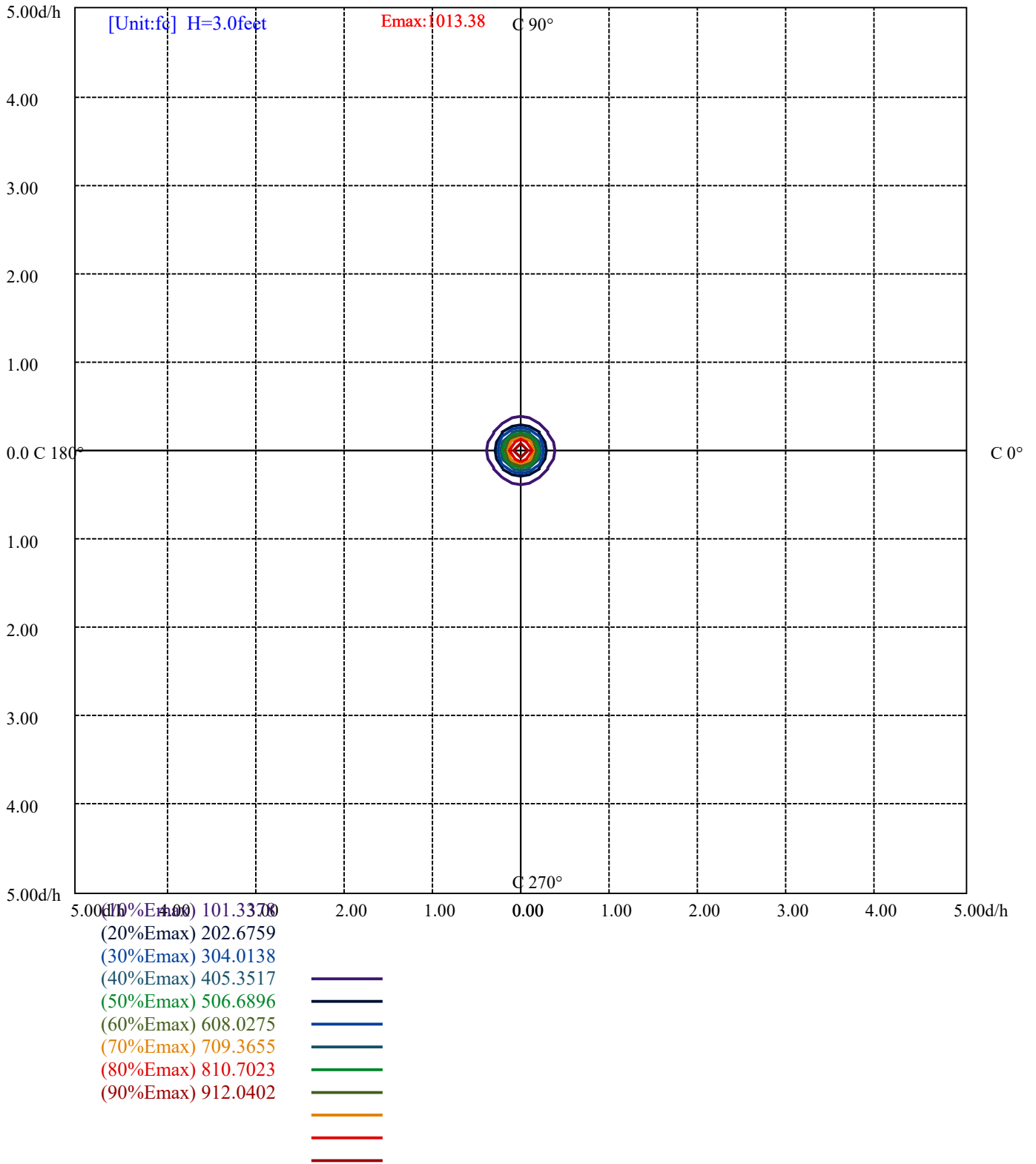
House

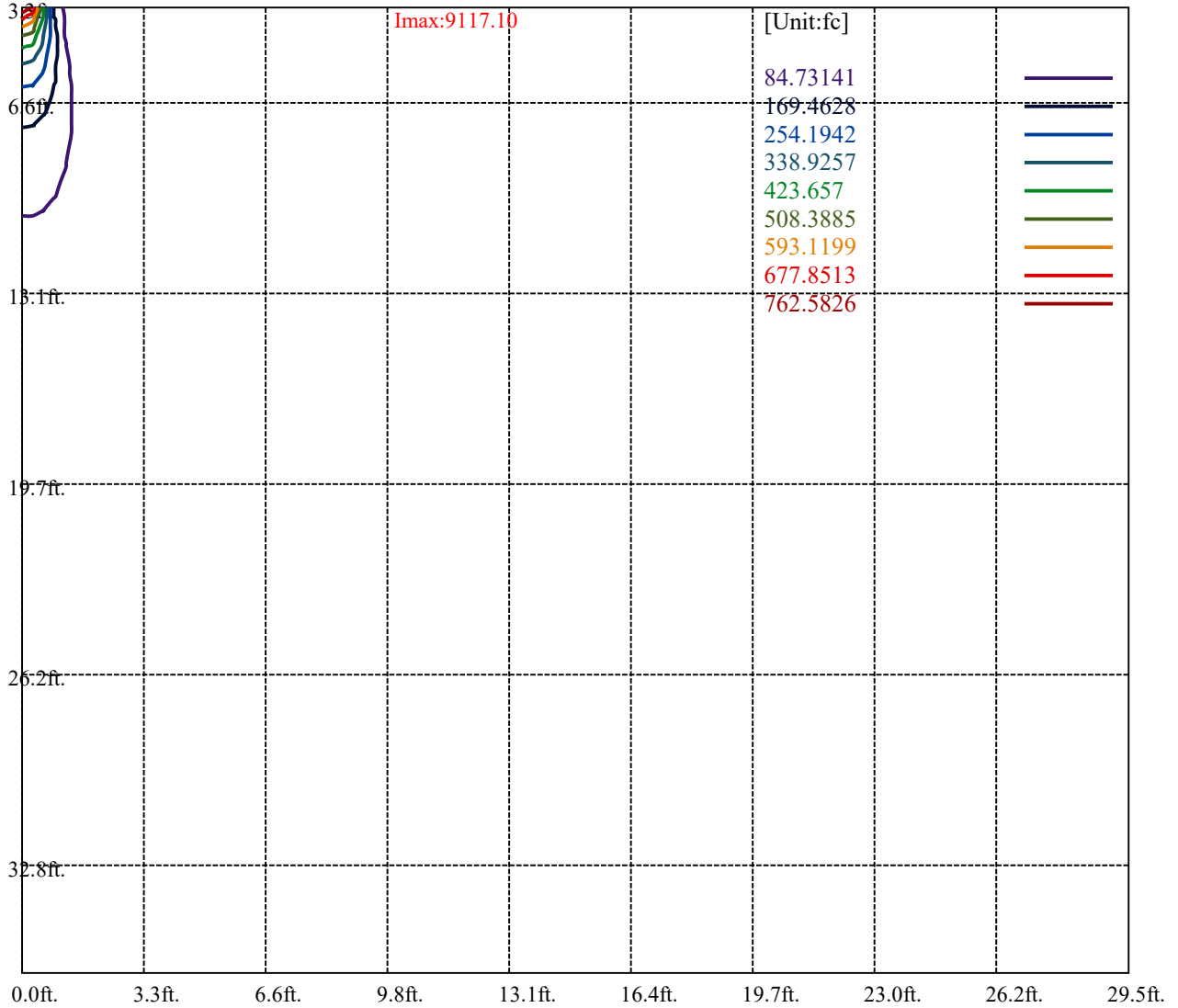
[Unit:cd]

Road

Imax:9117.10

(10%Imax)	911.71	—
(20%Imax)	1823.42	—
(30%Imax)	2735.13	—
(40%Imax)	3646.84	—
(50%Imax)	4558.55	—
(60%Imax)	5470.26	—
(70%Imax)	6381.97	—
(80%Imax)	7293.68	—
(90%Imax)	8205.39	—





Luminance Table

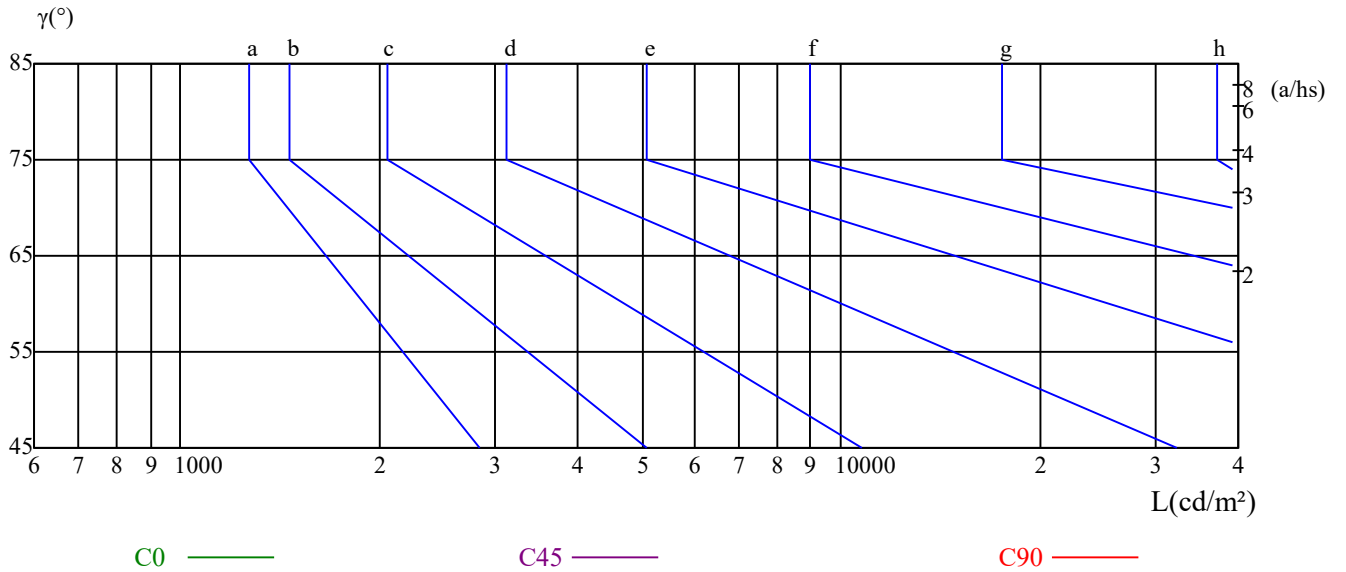
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

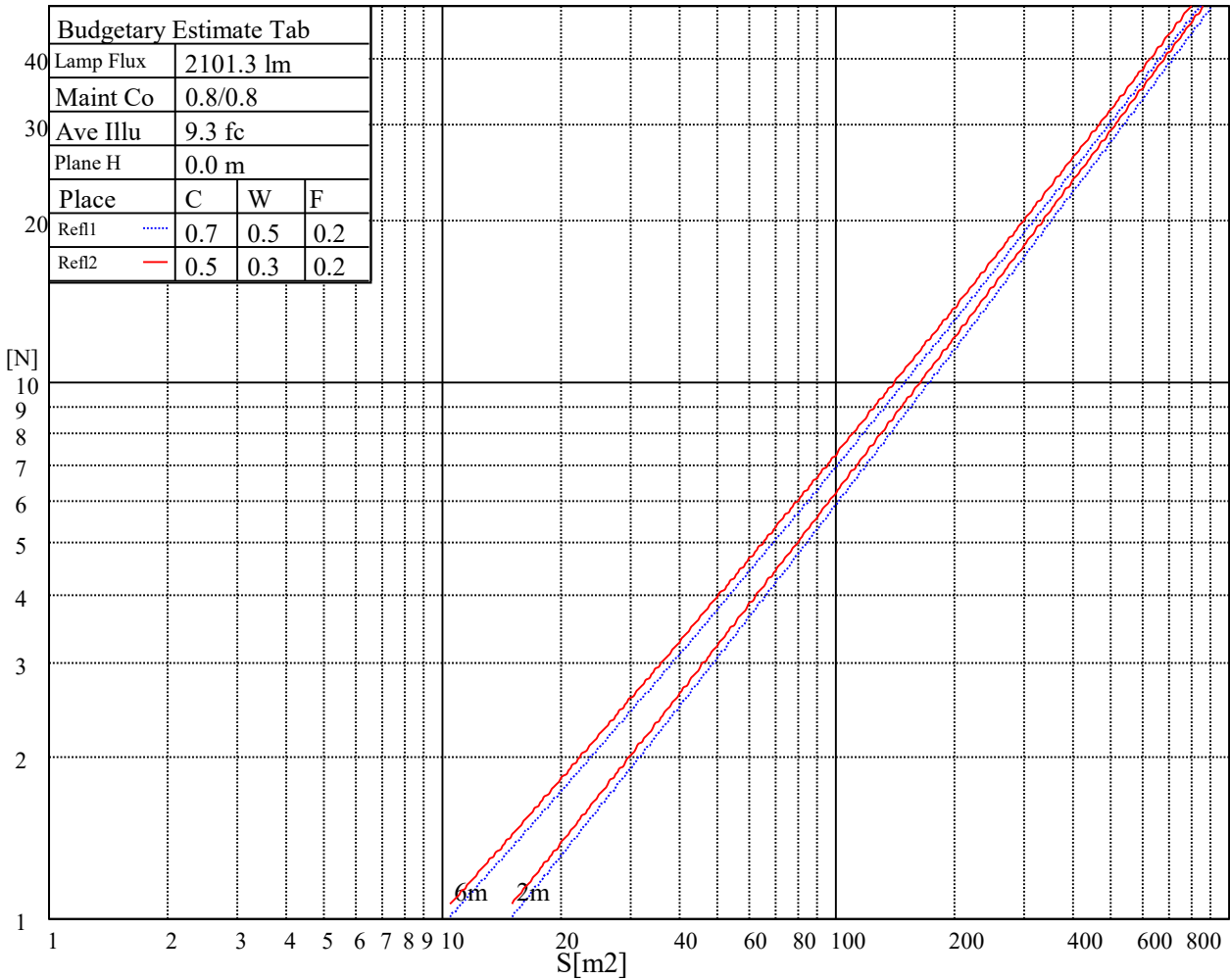
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

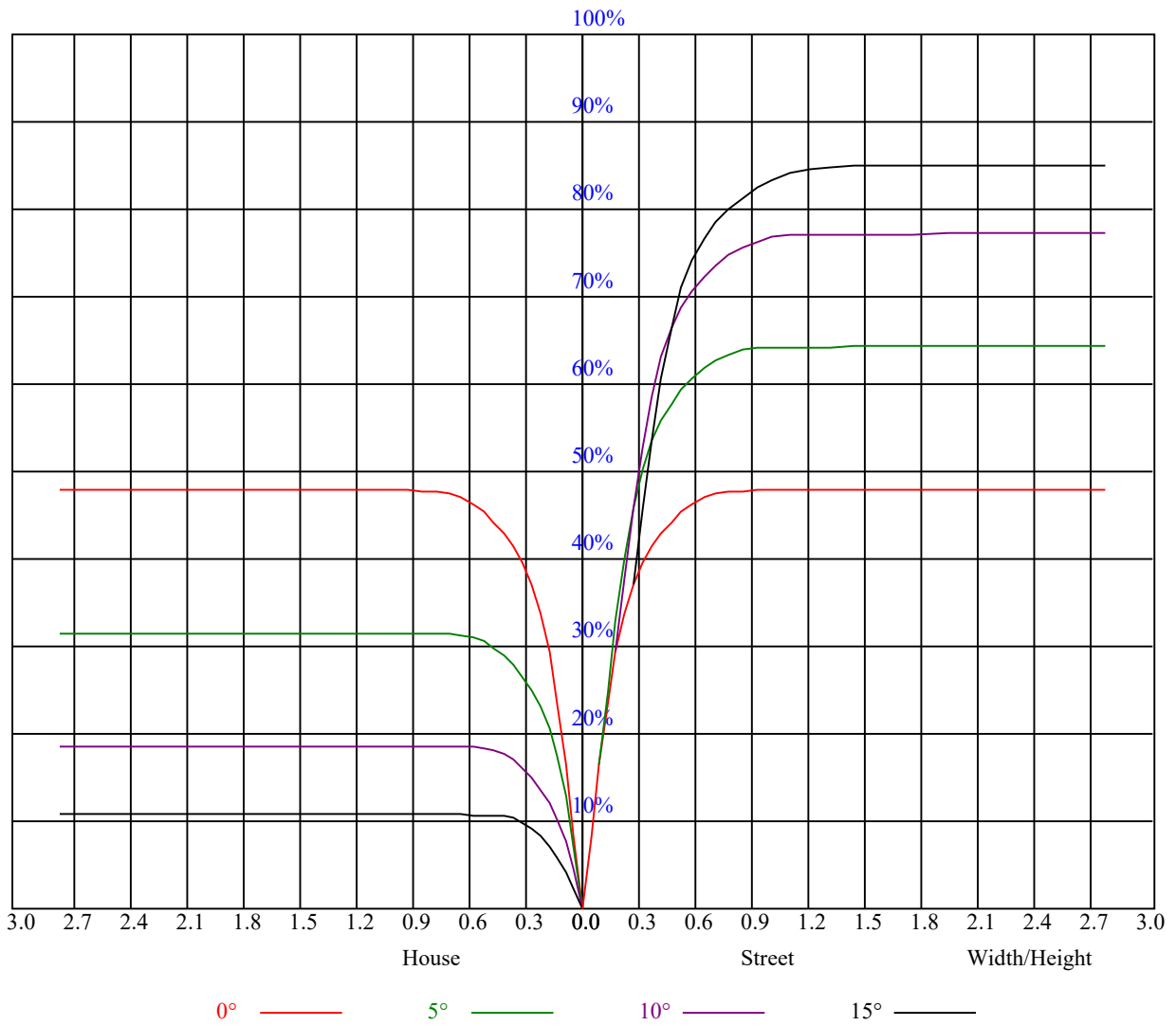
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.14	1.14	1.14	1.12	1.12	1.12	1.07	1.07	1.07	1.02	1.02	1.02	0.98	0.98	0.98	0.96
1	1.08	1.06	1.04	1.06	1.04	1.03	1.02	1.01	1.00	0.99	0.98	0.97	0.95	0.95	0.94	0.92
2	1.03	1.00	0.97	1.01	0.99	0.96	0.98	0.96	0.94	0.96	0.94	0.92	0.93	0.92	0.90	0.89
3	0.98	0.95	0.92	0.97	0.94	0.91	0.95	0.92	0.90	0.93	0.90	0.88	0.90	0.89	0.87	0.86
4	0.94	0.90	0.87	0.93	0.90	0.87	0.91	0.88	0.86	0.90	0.87	0.85	0.88	0.86	0.84	0.83
5	0.91	0.87	0.84	0.90	0.86	0.83	0.88	0.85	0.83	0.87	0.84	0.82	0.86	0.83	0.81	0.80
6	0.87	0.83	0.80	0.87	0.83	0.80	0.86	0.82	0.80	0.84	0.81	0.79	0.83	0.81	0.79	0.78
7	0.85	0.80	0.78	0.84	0.80	0.77	0.83	0.79	0.77	0.82	0.79	0.77	0.81	0.78	0.76	0.75
8	0.82	0.78	0.75	0.81	0.77	0.75	0.80	0.77	0.75	0.80	0.77	0.74	0.79	0.76	0.74	0.73
9	0.79	0.75	0.73	0.79	0.75	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.77	0.74	0.72	0.71
10	0.77	0.73	0.71	0.77	0.73	0.70	0.76	0.73	0.70	0.75	0.72	0.70	0.75	0.72	0.70	0.69



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	9106.89	9083.69	9011.76	8892.97	8690.19	8332.88	7855.39	7268.85	6636.84
45.0	9132.41	9106.42	9041.92	8918.03	8714.32	8384.39	7914.32	7356.55	6725.93
90.0	9086.47	8986.70	8795.06	8476.73	8109.68	7534.74	6755.63	6248.44	5573.74
135.0	9142.62	9108.74	9062.34	8948.65	8686.01	8254.46	7712.00	7084.63	6466.54
180.0	9106.89	9119.42	9113.85	9095.29	8993.20	8737.05	8369.08	7853.07	7247.04
225.0	9132.41	9146.80	9140.30	9088.79	9011.76	8666.98	8247.50	7944.95	7127.32
270.0	9086.47	9136.12	9159.79	9163.04	9126.84	9064.66	8969.07	8740.77	8357.94
315.0	9142.62	9138.91	9115.70	9066.98	8984.38	8789.49	8450.28	8183.46	7382.08
360.0	9106.89	9083.69	9011.76	8892.97	8690.19	8332.88	7855.39	7268.85	6636.84

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	5975.13	5299.96	4607.62	3920.85	3268.42	2652.65	2087.45	1672.14	1413.68
45.0	6066.54	5382.09	4662.38	3949.16	3548.70	2697.19	2151.49	1880.03	1548.71
90.0	4880.47	4184.89	3495.33	2850.79	2271.68	1805.79	1495.35	1291.64	1138.04
135.0	5826.64	5175.13	4497.64	3954.72	3273.06	2490.24	2029.45	1622.03	1379.34
180.0	6616.42	5991.37	5328.73	4662.84	3961.69	3287.44	2642.44	2074.93	1679.11
225.0	6737.53	6067.47	5379.77	4675.83	3964.93	3285.12	2657.75	2114.37	1726.44
270.0	7845.18	7220.59	6562.13	5892.06	5190.91	4468.87	4044.75	3362.62	2717.15
315.0	6750.53	6372.34	5721.76	5055.88	4379.32	3685.12	3007.63	2374.23	1849.87
360.0	5975.13	5299.96	4607.62	3920.85	3268.42	2652.65	2087.45	1672.14	1413.68

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1240.13	1106.95	890.20	890.20	876.37	812.62	769.46	731.83	704.87
45.0	1324.58	1165.42	1042.92	943.61	868.44	809.97	764.96	730.62	704.17
90.0	903.24	903.24	862.13	802.04	775.77	728.11	711.78	689.28	671.46
135.0	1211.36	1082.82	983.98	905.10	835.96	783.52	745.93	715.77	694.89
180.0	1424.35	1235.95	1105.10	1037.35	944.54	871.22	815.07	771.46	735.26
225.0	1453.12	1263.80	1121.34	908.30	908.30	859.30	823.43	781.80	734.19
270.0	2147.31	1719.48	1444.30	1259.62	1119.94	1013.22	929.69	864.73	813.68
315.0	1522.73	1314.37	1158.00	918.09	890.48	875.40	825.98	779.58	736.56
360.0	1240.13	1106.95	890.20	890.20	876.37	812.62	769.46	731.83	704.87

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	682.92	665.93	650.85	616.56	560.97	495.73	421.20	347.38	271.97
45.0	683.29	664.73	649.41	616.00	559.39	493.50	422.04	361.71	270.30
90.0	654.33	628.16	577.68	513.27	439.02	361.95	285.52	212.53	141.62
135.0	673.08	656.84	635.96	587.23	550.11	455.91	380.28	334.80	258.70
180.0	707.88	687.00	670.76	650.81	619.72	567.74	505.10	432.25	356.15
225.0	719.53	694.47	677.54	655.08	623.48	568.26	502.08	431.23	354.48
270.0	769.14	738.05	710.20	685.15	664.26	647.56	631.32	561.25	492.11
315.0	713.92	691.73	671.18	656.19	634.33	583.80	521.02	449.93	373.41
360.0	682.92	665.93	650.85	616.56	560.97	495.73	421.20	347.38	271.97

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	197.54	143.43	71.32	29.09	13.22	10.67	8.58	6.50	5.20
45.0	270.30	240.60	80.42	33.87	14.06	11.60	8.86	6.82	5.71
90.0	78.89	33.55	12.62	10.12	7.61	5.75	4.78	4.18	3.57
135.0	258.70	115.41	59.03	20.84	10.02	8.17	6.54	5.06	4.04
180.0	282.83	252.20	252.20	86.64	39.30	12.99	9.61	7.38	5.57
225.0	277.77	205.29	136.33	77.26	31.88	13.46	11.83	9.28	6.64
270.0	448.49	372.39	265.66	236.43	236.43	73.73	31.37	12.95	10.30
315.0	296.80	223.15	153.08	89.60	39.35	14.62	11.46	9.65	7.61
360.0	197.54	143.43	71.32	29.09	13.22	10.67	8.58	6.50	5.20

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	4.55	3.99	3.48	3.11	2.88	2.69	2.55	2.55	2.55
45.0	5.01	4.36	3.85	3.48	3.25	3.02	2.92	2.88	2.78
90.0	3.25	2.88	2.60	2.51	2.37	2.23	2.18	2.09	2.00
135.0	3.39	3.06	2.83	2.64	2.51	2.46	2.41	2.32	2.18
180.0	4.73	3.85	3.39	3.02	2.69	2.51	2.37	2.37	2.32
225.0	5.99	5.20	4.64	4.13	3.62	3.25	3.02	2.92	2.83
270.0	7.70	6.13	4.97	4.32	3.81	3.29	2.83	2.55	2.51
315.0	6.54	5.99	4.97	4.64	4.08	3.62	3.25	3.16	3.11
360.0	4.55	3.99	3.48	3.11	2.88	2.69	2.55	2.55	2.55
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	2.51	2.41	2.32	2.18	2.04	1.95	1.95	1.95	1.90
45.0	2.74	2.64	2.46	2.23	2.13	2.04	2.00	1.90	1.95
90.0	1.86	1.76	1.67	1.58	1.53	1.48	1.48	1.44	1.39
135.0	2.09	2.09	1.95	1.72	1.58	1.62	1.58	1.48	1.48
180.0	2.23	2.18	2.18	2.09	1.90	1.76	1.72	1.67	1.67
225.0	2.69	2.64	2.55	2.46	2.23	2.09	2.04	1.95	1.90
270.0	2.41	2.32	2.32	2.23	2.13	2.09	1.95	1.81	1.76
315.0	2.97	2.88	2.78	2.69	2.41	2.23	2.09	2.09	2.09
360.0	2.51	2.41	2.32	2.18	2.04	1.95	1.95	1.95	1.90
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	1.95	1.90	1.86	1.62	1.44	1.30	1.16	0.97	0.93
45.0	1.86	1.86	1.76	1.67	1.48	1.25	1.11	1.02	0.88
90.0	1.35	1.25	1.11	0.93	0.93	0.79	0.74	0.70	0.60
135.0	1.48	1.48	1.39	1.25	1.11	1.02	0.84	0.88	0.74
180.0	1.62	1.62	1.53	1.53	1.48	1.25	1.11	1.02	0.93
225.0	1.81	1.76	1.76	1.67	1.53	1.35	1.21	1.07	0.93
270.0	1.76	1.72	1.67	1.67	1.62	1.53	1.39	1.25	1.16
315.0	2.04	2.09	2.00	1.90	1.81	1.48	1.39	1.16	1.02
360.0	1.95	1.90	1.86	1.62	1.44	1.30	1.16	0.97	0.93
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	0.84	0.79	0.70	0.65	0.60	0.60	0.56	0.51	0.51
45.0	0.74	0.74	0.70	0.65	0.60	0.51	0.56	0.56	0.46
90.0	0.56	0.51	0.56	0.51	0.46	0.46	0.46	0.46	0.42
135.0	0.65	0.60	0.56	0.56	0.46	0.51	0.51	0.46	0.42
180.0	0.79	0.70	0.70	0.65	0.60	0.60	0.51	0.56	0.56
225.0	0.74	0.70	0.65	0.60	0.51	0.46	0.46	0.46	0.46
270.0	1.02	0.84	0.79	0.70	0.65	0.60	0.56	0.51	0.51
315.0	0.93	0.84	0.70	0.60	0.60	0.56	0.46	0.42	0.46
360.0	0.84	0.79	0.70	0.65	0.60	0.60	0.56	0.51	0.51
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	0.51	0.46	0.51	0.42	0.51	0.46	0.37	0.37	0.46
45.0	0.46	0.51	0.42	0.46	0.46	0.46	0.42	0.42	0.42
90.0	0.42	0.42	0.42	0.42	0.42	0.42	0.37	0.37	0.42
135.0	0.42	0.46	0.37	0.42	0.42	0.42	0.37	0.37	0.42
180.0	0.46	0.46	0.51	0.46	0.37	0.37	0.42	0.65	0.97
225.0	0.42	0.37	0.42	0.37	0.37	0.37	0.32	0.32	0.32
270.0	0.46	0.46	0.46	0.42	0.42	0.37	0.37	0.32	0.37
315.0	0.42	0.37	0.42	0.42	0.37	0.37	0.37	0.32	0.32
360.0	0.51	0.46	0.51	0.42	0.51	0.46	0.37	0.37	0.46

Intensity data(cd)

C/γ(°)	90.0
0.0	0.51
45.0	0.46
90.0	0.42
135.0	0.42
180.0	0.84
225.0	0.32
270.0	0.32
315.0	0.32
360.0	0.51