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Nata

LumCAT: 3-2547-M	
Luminaire: 92.70.131.00	
Report No: 200921-B030	Voltage(V): 230.6000
Test No: 200921-C030	Current(A): 0.0920
LampCAT: OSRAM OPTO SOLERIQ S15	Power (W): 20.4200
Lamp flux(lm): 2197.0	PF: 0.9570
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): 2132.59
Efficiency(%): 97.07%
Lumens(lm)/Power(W): 104.44
Central intensity(cd): 5669.211
Maximum intensity(cd): 5669.211
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=33.0
 [C90/270]Total=33.0
Field angle(10%Imax): [C0/180]Total=65.4
 [C90/270]Total=65.4
Maximum s/h(1/2): C0_180=0.55 C90_270=0.55
Maximum s/h(1/4): C0_180=0.54 C90_270=0.54
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 97.13%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 99.656%

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	5669.213	1.356	1.356	.062%	.064%
1.0	5659.584	10.832	12.188	.493%	.572%
2.0	5632.844	21.558	33.745	.981%	1.582%
3.0	5579.538	32.022	65.768	1.458%	3.084%
4.0	5509.295	42.144	107.911	1.918%	5.060%
5.0	5411.616	51.722	159.633	2.354%	7.485%
6.0	5278.496	60.506	220.139	2.754%	10.323%
7.0	5138.648	68.674	288.813	3.126%	13.543%
8.0	4961.678	75.724	364.538	3.447%	17.094%
9.0	4778.674	81.977	446.515	3.731%	20.938%
10.0	4545.556	86.558	533.073	3.940%	24.996%
11.0	4319.977	90.392	623.465	4.114%	29.235%
12.0	4055.246	92.459	715.924	4.209%	33.571%
13.0	3790.573	93.507	809.431	4.256%	37.955%
14.0	3527.466	93.581	903.013	4.260%	42.343%
15.0	3255.543	92.400	995.412	4.206%	46.676%
16.0	2978.167	90.020	1085.432	4.097%	50.897%
17.0	2696.034	86.440	1171.872	3.935%	54.951%
18.0	2450.445	83.038	1254.91	3.780%	58.844%
19.0	2172.779	77.573	1332.483	3.531%	62.482%
20.0	1928.175	72.319	1404.802	3.292%	65.873%
21.0	1688.328	66.349	1471.151	3.020%	68.984%
22.0	1475.394	60.609	1531.76	2.759%	71.826%
23.0	1282.443	54.950	1586.71	2.501%	74.403%
24.0	1150.548	51.318	1638.028	2.336%	76.809%
25.0	1055.850	48.933	1686.961	2.227%	79.104%
26.0	982.376	47.225	1734.186	2.150%	81.318%
27.0	922.847	45.944	1780.13	2.091%	83.473%
28.0	862.540	44.406	1824.536	2.021%	85.555%
29.0	821.438	43.671	1868.207	1.988%	87.603%
30.0	768.938	42.161	1910.368	1.919%	89.580%
31.0	702.454	39.674	1950.043	1.806%	91.440%
32.0	633.696	36.825	1986.868	1.676%	93.167%
33.0	540.970	32.310	2019.177	1.471%	94.682%
34.0	448.900	27.527	2046.705	1.253%	95.973%
35.0	347.143	21.835	2068.54	.994%	96.996%
36.0	258.467	16.660	2085.2	.758%	97.778%
37.0	195.671	12.913	2098.113	.588%	98.383%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	121.925	8.232	2106.345	.375%	98.769%
39.0	71.264	4.918	2111.263	.224%	99.000%
40.0	32.332	2.279	2113.542	.104%	99.107%
41.0	23.219	1.670	2115.212	.076%	99.185%
42.0	18.376	1.348	2116.56	.061%	99.248%
43.0	14.843	1.110	2117.671	.051%	99.300%
44.0	12.221	0.931	2118.602	.042%	99.344%
45.0	10.586	0.821	2119.422	.037%	99.382%
46.0	9.031	0.712	2120.135	.032%	99.416%
47.0	8.063	0.647	2120.781	.029%	99.446%
48.0	7.106	0.579	2121.361	.026%	99.473%
49.0	6.346	0.525	2121.886	.024%	99.498%
50.0	5.835	0.490	2122.376	.022%	99.521%
51.0	5.365	0.457	2122.833	.021%	99.542%
52.0	5.000	0.432	2123.265	.020%	99.563%
53.0	4.774	0.418	2123.683	.019%	99.582%
54.0	4.629	0.411	2124.094	.019%	99.602%
55.0	4.466	0.401	2124.495	.018%	99.620%
56.0	4.391	0.399	2124.894	.018%	99.639%
57.0	4.345	0.400	2125.294	.018%	99.658%
58.0	4.368	0.406	2125.7	.018%	99.677%
59.0	4.397	0.413	2126.113	.019%	99.696%
60.0	4.374	0.415	2126.529	.019%	99.716%
61.0	4.350	0.417	2126.946	.019%	99.735%
62.0	4.292	0.416	2127.362	.019%	99.755%
63.0	4.263	0.417	2127.778	.019%	99.774%
64.0	4.182	0.412	2128.19	.019%	99.794%
65.0	4.054	0.403	2128.593	.018%	99.812%
66.0	3.886	0.389	2128.983	.018%	99.831%
67.0	3.683	0.372	2129.354	.017%	99.848%
68.0	3.474	0.353	2129.708	.016%	99.865%
69.0	3.219	0.330	2130.037	.015%	99.880%
70.0	2.900	0.299	2130.336	.014%	99.894%
71.0	2.622	0.272	2130.608	.012%	99.907%
72.0	2.285	0.238	2130.846	.011%	99.918%
73.0	1.972	0.207	2131.053	.009%	99.928%
74.0	1.671	0.176	2131.229	.008%	99.936%
75.0	1.392	0.147	2131.377	.007%	99.943%

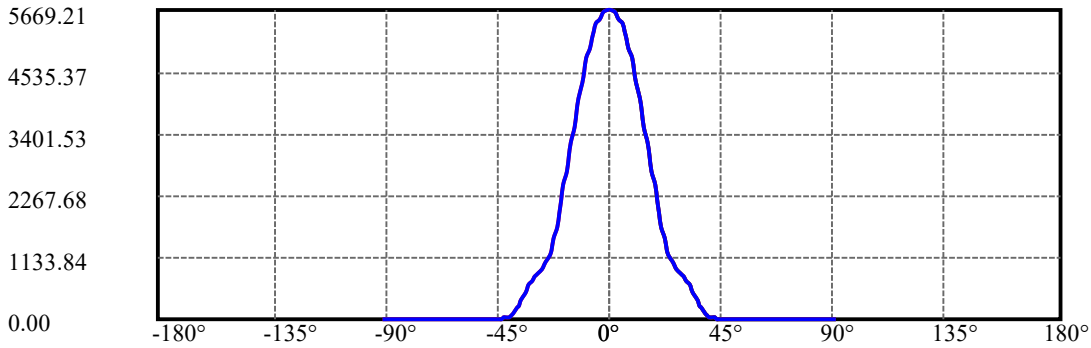
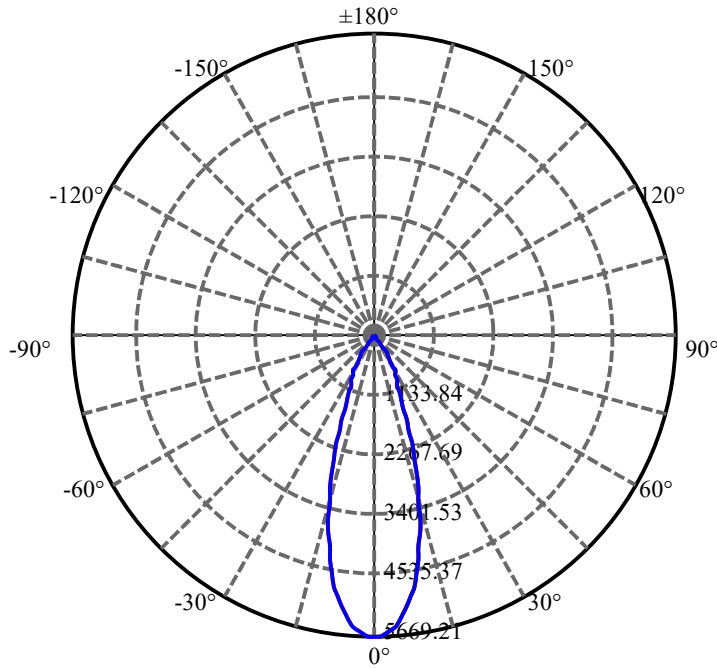
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	1.143	0.122	2131.498	.006%	99.949%
77.0	0.986	0.105	2131.604	.005%	99.954%
78.0	0.916	0.098	2131.702	.004%	99.958%
79.0	0.876	0.094	2131.796	.004%	99.963%
80.0	0.841	0.091	2131.887	.004%	99.967%
81.0	0.789	0.085	2131.972	.004%	99.971%
82.0	0.754	0.082	2132.054	.004%	99.975%
83.0	0.725	0.079	2132.133	.004%	99.978%
84.0	0.702	0.077	2132.21	.003%	99.982%
85.0	0.667	0.073	2132.283	.003%	99.985%
86.0	0.661	0.072	2132.355	.003%	99.989%
87.0	0.655	0.072	2132.427	.003%	99.992%
88.0	0.632	0.069	2132.496	.003%	99.995%
89.0	0.592	0.065	2132.561	.003%	99.999%
90.0	0.568	0.031	2132.592	.001%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1910.37	86.96%	89.58%
0-40	2113.54	96.20%	99.11%
0-60	2126.53	96.79%	99.72%
0-90	2132.56	97.07%	100.00%
0-120	2132.56	97.07%	100.00%
0-180	2132.59	97.07%	100.00%
60-90	6.45	0.29%	0.30%
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%
0-25.40	1706.07	77.66%	80.00%

ZONAL LUMEN SUMMARY

0-10	533.07
10-20	871.73
20-30	505.57
30-40	203.17
40-50	8.83
50-60	4.15
60-70	3.81
70-80	1.55
80-90	0.67
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: —————

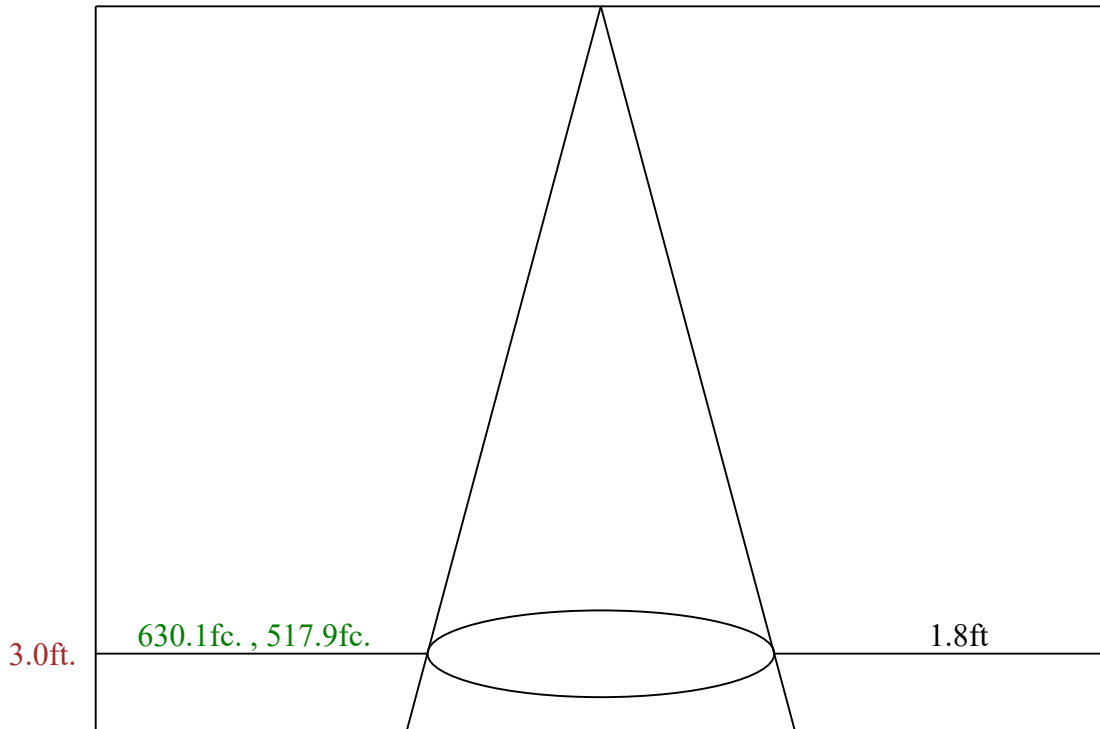
C90/C270: —————

Field angle(10%Imax):C0/180Left:32.7 Right:32.7

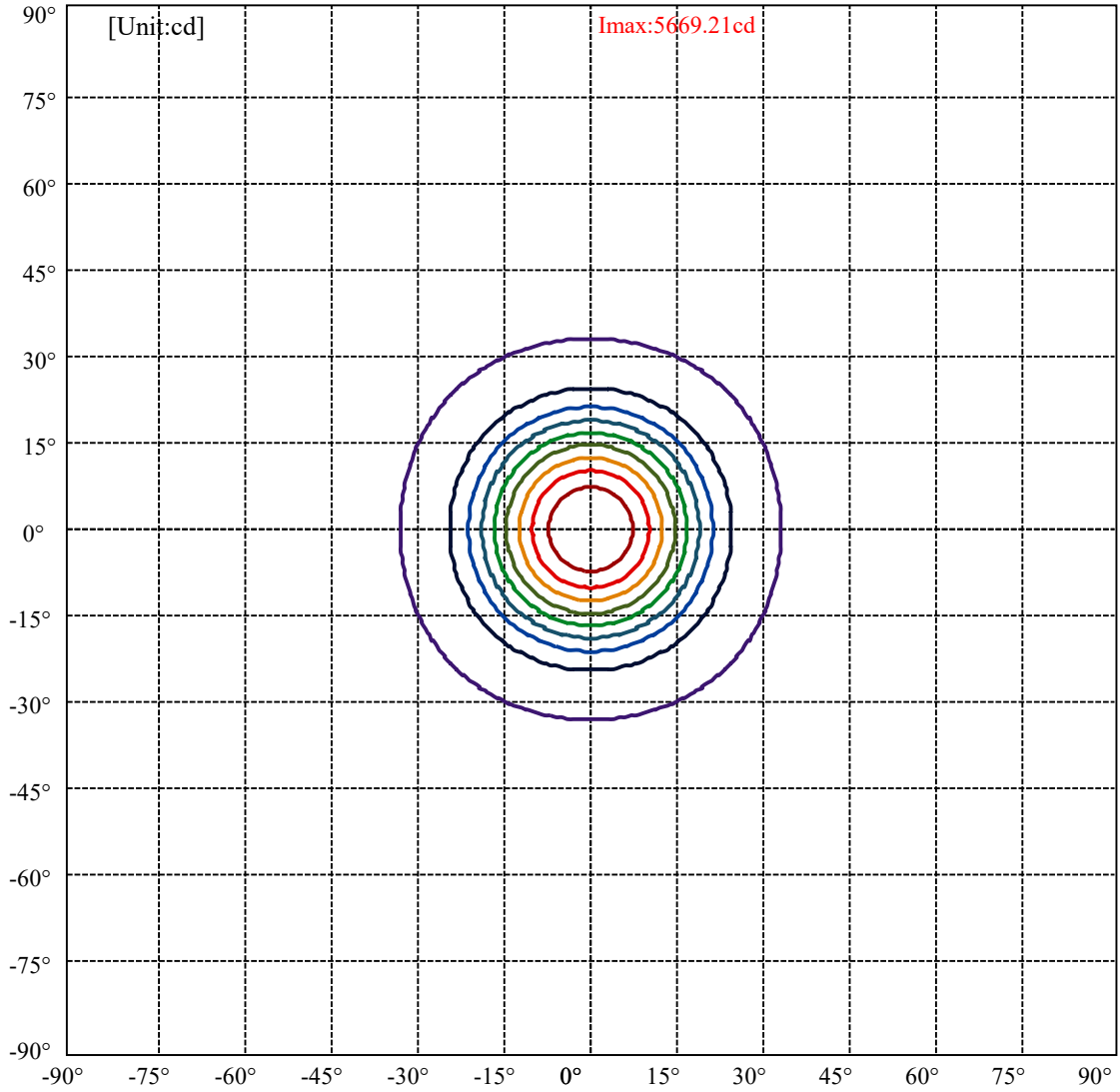
:C90/270Left:32.7 Right:32.7

Beam Angle(50%Imax):C0/180Left:16.5 Right:16.5

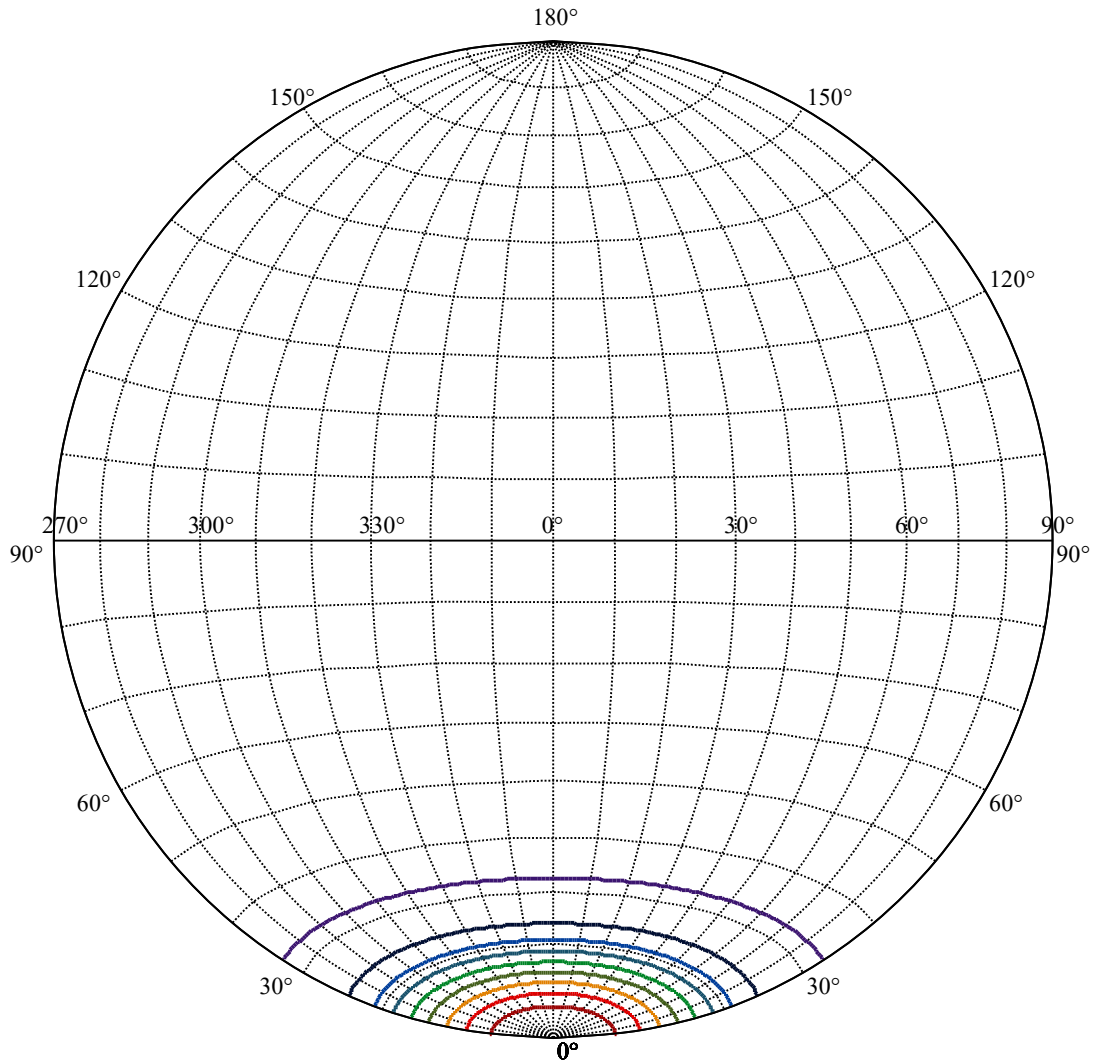
:C90/270Left:16.5 Right:16.5



Max , Ave Beam angle of C0 plane 33.05



(10%Imax) 566.921	—
(20%Imax) 1133.84	—
(30%Imax) 1700.76	—
(40%Imax) 2267.68	—
(50%Imax) 2834.61	—
(60%Imax) 3401.53	—
(70%Imax) 3968.45	—
(80%Imax) 4535.37	—
(90%Imax) 5102.29	—



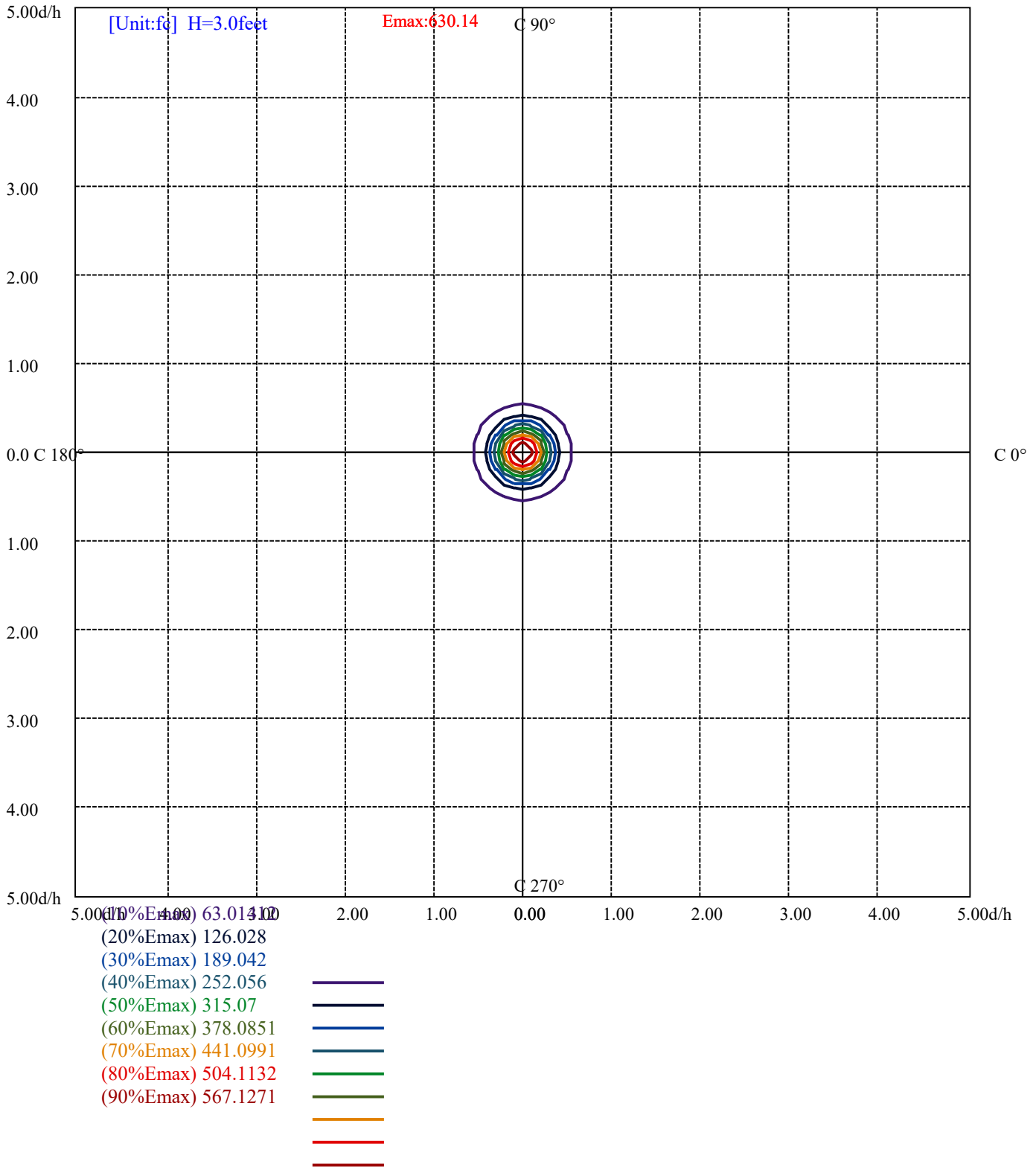
House

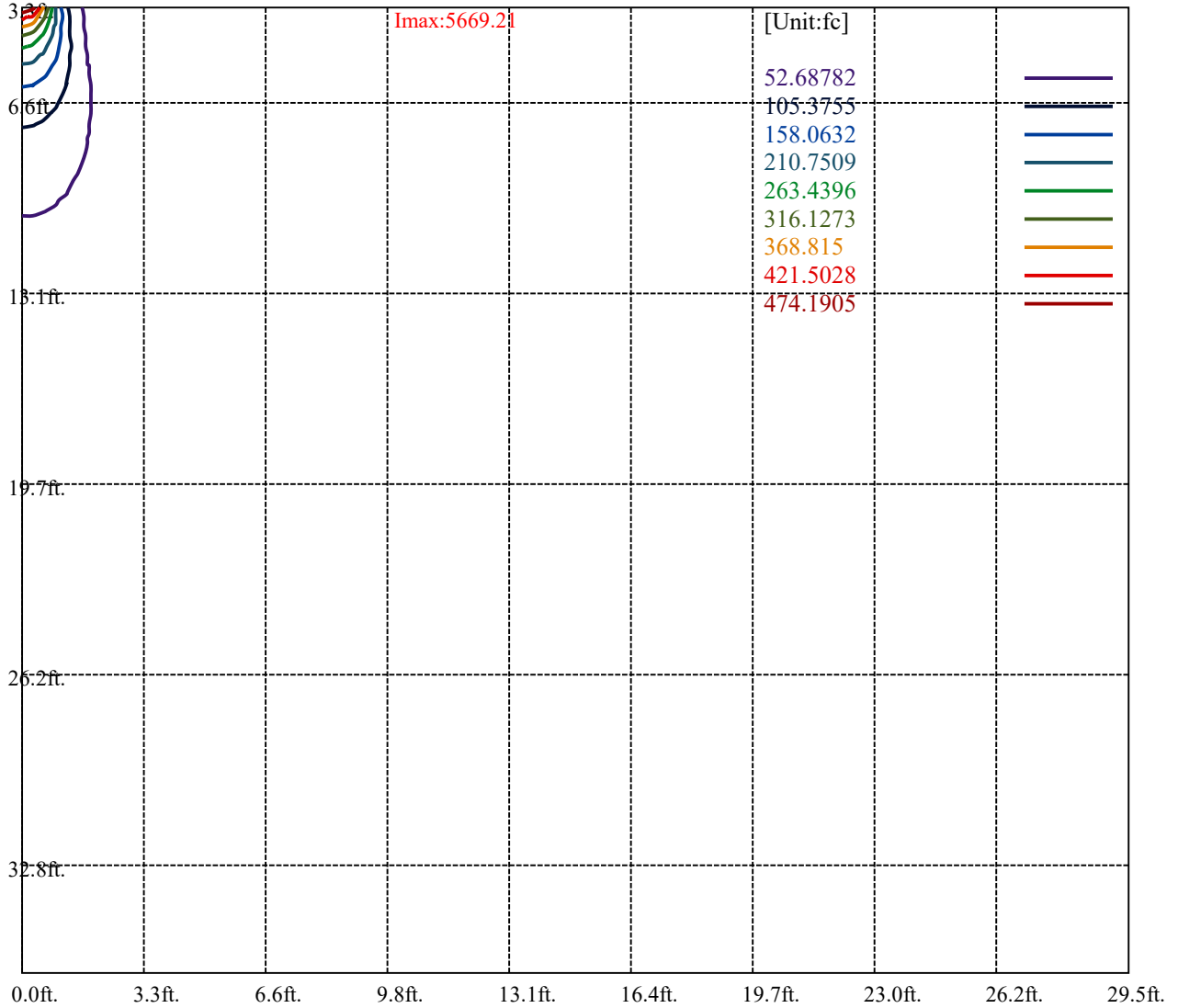
[Unit:cd]

Road

Imax:5669.21

(10%Imax) 566.921	—
(20%Imax) 1133.84	—
(30%Imax) 1700.76	—
(40%Imax) 2267.68	—
(50%Imax) 2834.61	—
(60%Imax) 3401.53	—
(70%Imax) 3968.45	—
(80%Imax) 4535.37	—
(90%Imax) 5102.29	—





Luminance Table

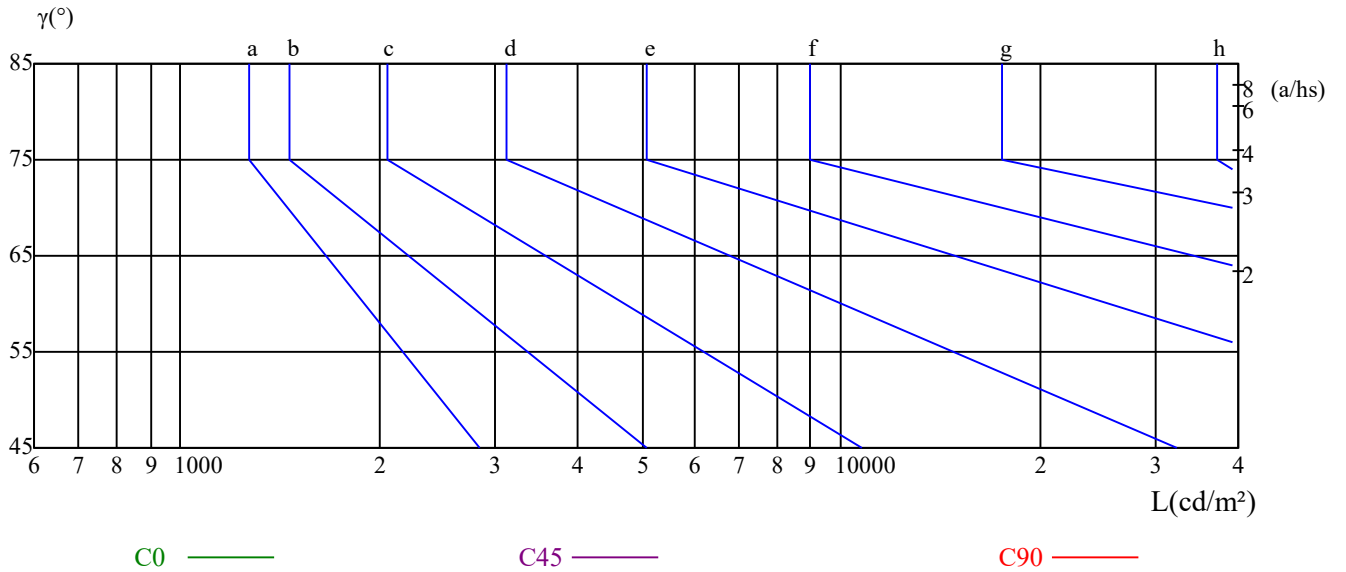
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

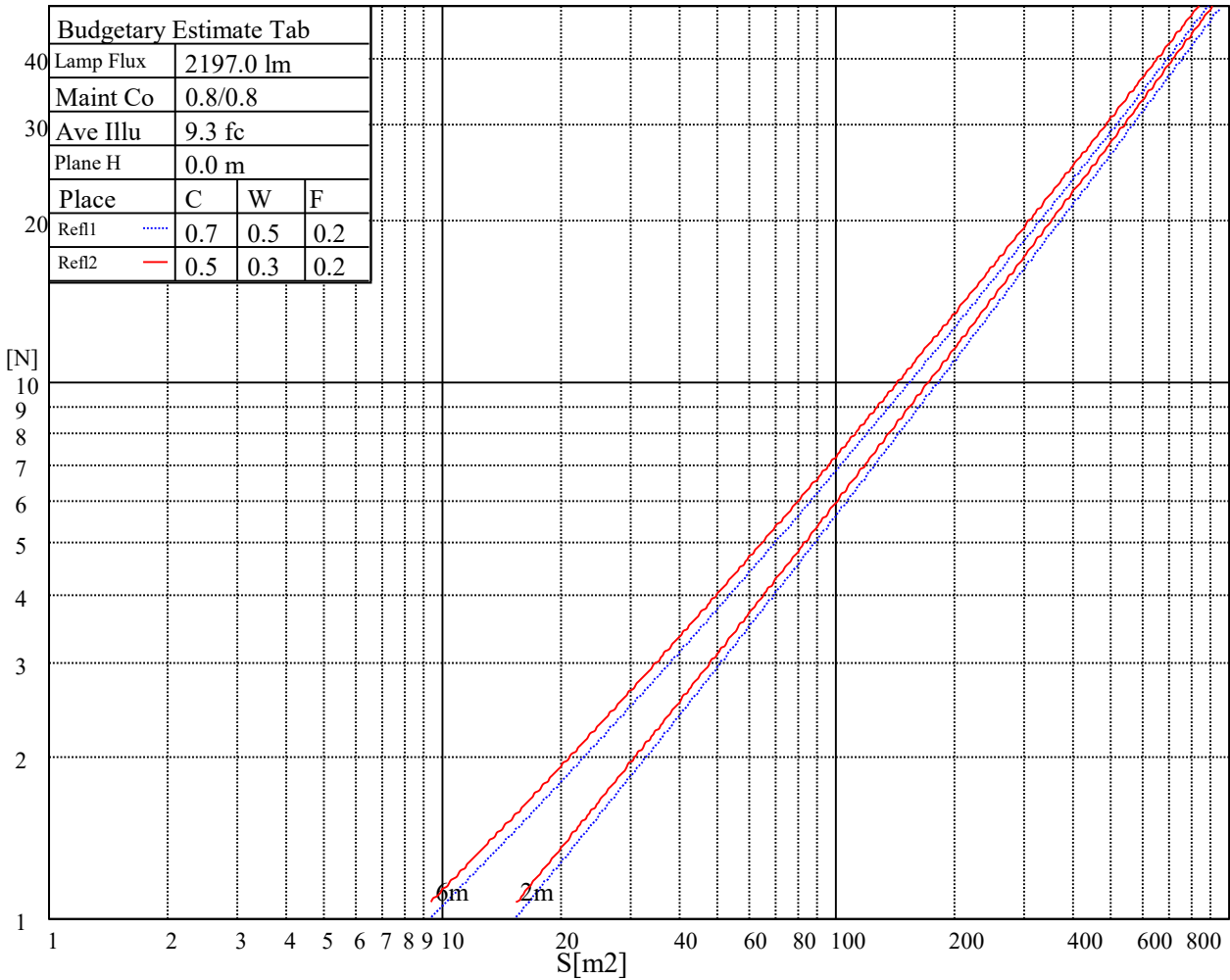
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

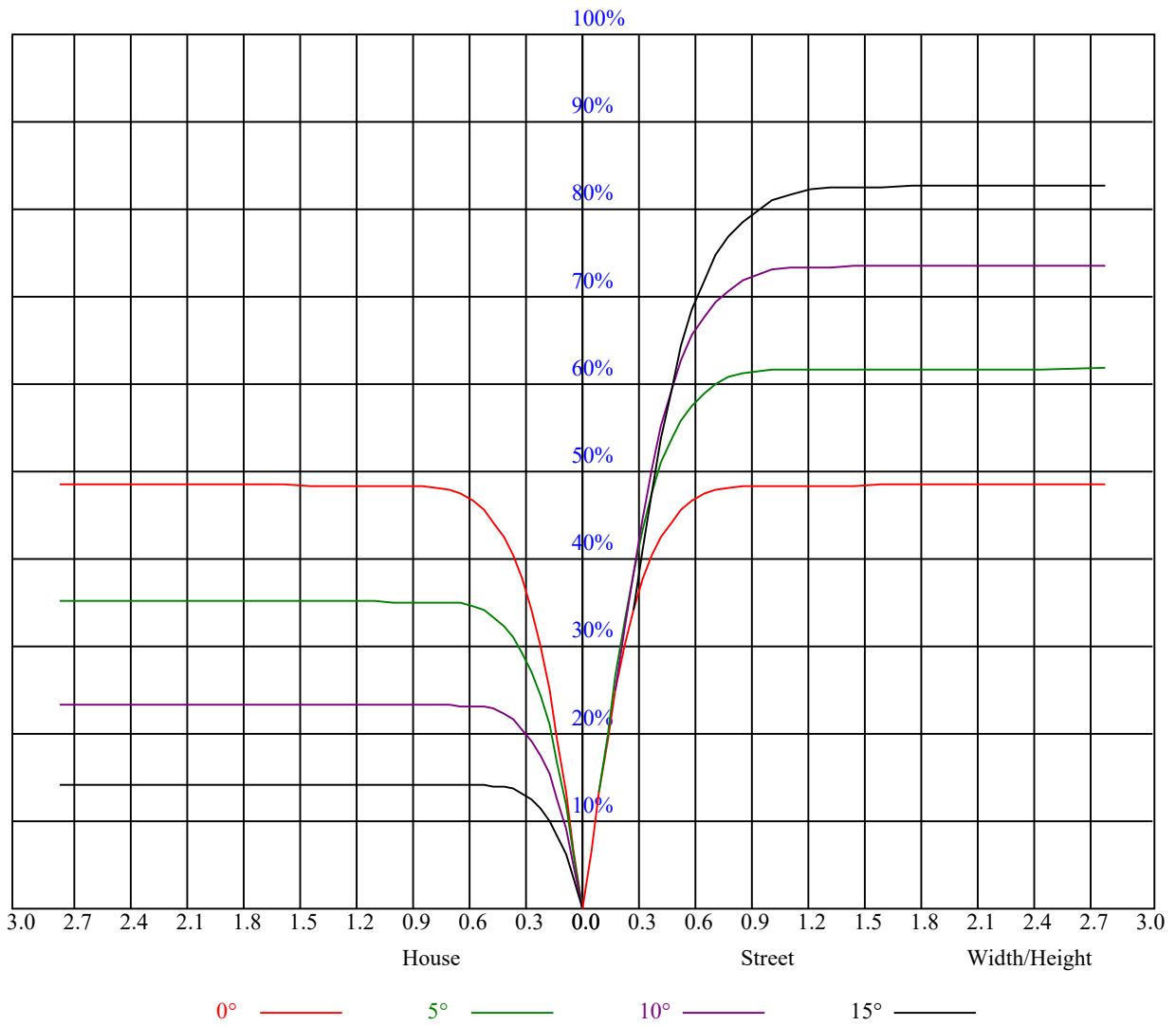
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.16	1.16	1.16	1.13	1.13	1.13	1.08	1.08	1.08	1.03	1.03	1.03	0.99	0.99	0.99	0.97
1	1.09	1.07	1.05	1.07	1.05	1.03	1.03	1.02	1.00	0.99	0.98	0.97	0.96	0.95	0.94	0.93
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	0.91	0.90	0.89
3	0.98	0.94	0.91	0.97	0.93	0.90	0.94	0.91	0.89	0.92	0.89	0.87	0.90	0.88	0.86	0.85
4	0.93	0.89	0.86	0.92	0.88	0.85	0.90	0.87	0.84	0.88	0.86	0.83	0.87	0.84	0.82	0.81
5	0.89	0.85	0.81	0.88	0.84	0.81	0.87	0.83	0.80	0.85	0.82	0.80	0.84	0.81	0.79	0.78
6	0.85	0.81	0.77	0.85	0.80	0.77	0.83	0.80	0.77	0.82	0.79	0.76	0.81	0.78	0.76	0.75
7	0.82	0.77	0.74	0.81	0.77	0.74	0.80	0.76	0.73	0.79	0.76	0.73	0.78	0.75	0.73	0.72
8	0.79	0.74	0.71	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.70	0.76	0.72	0.70	0.69
9	0.76	0.71	0.68	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.66
10	0.73	0.69	0.66	0.73	0.68	0.66	0.72	0.68	0.65	0.71	0.68	0.65	0.71	0.67	0.65	0.64



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	5691.60	5683.71	5648.45	5592.76	5517.59	5417.36	5291.14	5147.75	4972.35
45.0	5667.01	5681.86	5687.43	5680.00	5647.98	5604.36	5516.66	5433.60	5313.88
90.0	5669.79	5668.40	5654.02	5622.93	5569.56	5491.60	5387.20	5254.48	5096.71
135.0	5648.45	5650.30	5632.67	5596.01	5532.90	5448.45	5337.08	5195.55	5041.96
180.0	5691.60	5681.39	5673.97	5600.65	5517.59	5460.51	5287.89	5144.04	5049.38
225.0	5667.01	5623.39	5564.46	5477.68	5362.14	5220.61	5048.45	4852.63	4628.97
270.0	5669.79	5658.66	5623.39	5568.17	5524.09	5382.09	5247.06	5153.79	4876.76
315.0	5648.45	5628.96	5578.38	5498.10	5402.51	5267.94	5112.49	4927.34	4713.42
360.0	5691.60	5683.71	5648.45	5592.76	5517.59	5417.36	5291.14	5147.75	4972.35
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4759.36	4531.98	4273.98	3992.31	3702.29	3453.57	3073.53	2755.66	2500.91
45.0	5160.75	4983.02	4779.78	4555.65	4307.85	4040.11	3759.37	3468.88	3173.76
90.0	4904.60	4688.36	4446.14	4181.64	4024.33	3635.47	3364.94	3200.21	2829.44
135.0	4931.52	4642.42	4503.68	4271.20	3937.09	3792.78	3548.70	3304.61	3055.43
180.0	4872.58	4678.62	4461.91	4231.29	3983.03	3717.14	3438.26	3147.77	2852.18
225.0	4383.03	4121.78	3846.14	3563.54	3277.70	2991.86	2818.77	2434.09	2160.31
270.0	4737.55	4491.61	4227.58	3951.48	3670.27	3389.07	3113.90	2849.40	2589.54
315.0	4480.01	4226.65	4020.62	3694.87	3422.01	3199.74	2926.89	2664.71	2406.71
360.0	4759.36	4531.98	4273.98	3992.31	3702.29	3453.57	3073.53	2755.66	2500.91
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2197.89	1905.09	1632.24	1390.94	1193.73	917.49	902.73	877.67	826.21
45.0	2873.53	2577.47	2286.06	1998.36	1724.12	1573.31	1274.47	1116.70	1045.70
90.0	2668.89	2423.41	2171.91	1926.43	1699.52	1505.56	1345.93	1223.42	1125.05
135.0	2816.91	2574.23	2330.61	2077.25	1832.24	1606.72	1414.14	1266.58	1148.25
180.0	2543.14	2248.01	1954.74	1676.78	1423.42	1217.86	1062.87	957.53	910.67
225.0	2001.61	1640.13	1499.06	1297.67	1140.36	922.64	898.46	886.58	836.65
270.0	2344.53	2105.09	1871.21	1657.30	1471.22	1324.12	1212.75	1121.34	1048.02
315.0	2157.06	1908.80	1679.57	1481.89	1318.55	1191.87	1093.03	996.98	918.46
360.0	2197.89	1905.09	1632.24	1390.94	1193.73	917.49	902.73	877.67	826.21
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	784.45	753.22	727.47	683.29	618.05	568.63	441.25	382.64	284.17
45.0	955.21	887.46	835.49	792.34	756.61	719.02	652.66	568.67	475.40
90.0	1046.16	912.01	912.01	882.22	792.29	704.08	643.38	540.51	392.43
135.0	1091.17	979.81	913.91	880.97	805.79	765.42	680.51	580.74	474.01
180.0	830.85	803.94	768.21	741.29	705.56	644.31	566.35	475.40	378.42
225.0	794.52	759.53	711.27	636.33	546.31	471.74	357.91	264.73	193.78
270.0	984.45	937.58	885.14	822.96	738.51	639.67	532.94	428.07	325.06
315.0	895.96	866.77	818.00	712.11	656.51	556.70	452.76	350.44	253.87
360.0	784.45	753.22	727.47	683.29	618.05	568.63	441.25	382.64	284.17
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	192.11	113.78	54.11	20.93	12.67	10.21	7.29	5.38	4.04
45.0	381.67	287.47	251.74	234.10	51.00	24.96	14.20	11.79	8.63
90.0	330.67	234.01	149.05	84.13	48.35	37.73	30.95	25.20	21.16
135.0	371.92	273.55	273.55	89.93	46.36	31.83	26.64	21.81	18.19
180.0	281.44	281.44	94.25	40.97	17.82	13.74	10.86	9.10	7.05
225.0	112.90	51.65	23.67	16.71	13.74	10.49	8.21	6.40	5.43
270.0	230.86	230.86	82.41	52.44	43.06	36.24	32.44	25.15	21.39
315.0	166.17	92.62	46.64	30.90	25.66	20.56	16.43	13.92	11.88
360.0	192.11	113.78	54.11	20.93	12.67	10.21	7.29	5.38	4.04

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	3.62	3.29	3.06	2.78	2.55	2.46	2.27	2.13	2.04
45.0	6.64	5.15	4.50	3.99	3.67	3.39	3.11	2.92	2.83
90.0	17.59	15.13	13.13	11.51	10.07	8.86	7.98	7.19	6.59
135.0	16.52	12.99	12.02	10.53	9.00	8.49	7.66	7.01	6.59
180.0	5.29	4.97	4.36	3.85	3.48	3.29	3.06	2.97	3.06
225.0	4.78	4.13	3.57	3.16	3.02	2.97	3.02	3.20	3.39
270.0	19.68	17.12	15.03	13.22	11.69	10.44	9.47	8.54	7.89
315.0	10.58	9.47	8.82	7.80	7.29	6.77	6.36	6.03	5.80
360.0	3.62	3.29	3.06	2.78	2.55	2.46	2.27	2.13	2.04
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	1.95	1.90	1.81	1.72	1.67	1.67	1.72	1.72	1.67
45.0	2.74	2.64	2.64	2.69	2.78	2.83	2.88	3.02	2.97
90.0	6.31	5.71	5.57	5.34	5.20	5.10	5.01	4.97	5.01
135.0	6.22	5.89	5.71	5.57	5.52	5.52	5.48	5.48	5.43
180.0	3.25	3.43	3.53	3.76	4.08	4.32	4.50	4.59	4.64
225.0	3.57	3.71	3.94	4.18	4.45	4.73	4.73	4.69	4.64
270.0	7.38	6.96	6.59	6.36	6.22	6.08	5.85	5.75	5.57
315.0	5.61	5.48	5.34	5.15	5.01	4.92	4.83	4.59	4.41
360.0	1.95	1.90	1.81	1.72	1.67	1.67	1.72	1.72	1.67
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	1.72	1.76	1.81	1.76	1.72	1.72	1.72	1.58	1.44
45.0	3.11	3.20	3.20	3.20	3.16	3.02	2.88	2.69	2.51
90.0	4.97	4.92	4.83	4.73	4.50	4.22	3.90	3.57	3.20
135.0	5.34	5.24	5.20	5.01	4.64	4.59	4.22	3.81	3.62
180.0	4.59	4.55	4.55	4.32	4.22	4.04	3.90	3.57	3.16
225.0	4.59	4.41	4.13	3.90	3.67	3.25	2.88	2.51	2.18
270.0	5.48	5.29	4.92	4.64	4.32	3.99	3.67	3.20	2.78
315.0	4.32	4.08	3.81	3.53	3.25	2.97	2.60	2.27	2.09
360.0	1.72	1.76	1.81	1.76	1.72	1.72	1.72	1.58	1.44
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	1.39	1.35	1.16	0.93	0.84	0.79	0.79	0.79	0.79
45.0	2.32	2.04	1.72	1.48	1.30	0.97	0.88	0.84	0.84
90.0	2.74	2.27	1.95	1.67	1.21	1.07	0.97	0.97	0.97
135.0	3.25	2.74	2.37	2.04	1.62	1.21	1.07	1.02	0.97
180.0	2.83	2.46	2.09	1.72	1.39	1.16	1.07	0.93	0.93
225.0	1.72	1.44	1.11	0.93	0.88	0.88	0.84	0.79	0.74
270.0	2.37	2.09	1.76	1.35	1.07	1.02	0.93	0.88	0.79
315.0	1.67	1.39	1.21	1.02	0.84	0.79	0.79	0.79	0.70
360.0	1.39	1.35	1.16	0.93	0.84	0.79	0.79	0.79	0.79
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	0.70	0.70	0.70	0.60	0.60	0.56	0.60	0.60	0.46
45.0	0.79	0.70	0.70	0.70	0.65	0.70	0.70	0.65	0.70
90.0	0.88	0.84	0.79	0.79	0.70	0.74	0.70	0.65	0.70
135.0	0.93	0.84	0.84	0.84	0.74	0.79	0.70	0.70	0.70
180.0	0.93	0.88	0.79	0.74	0.74	0.70	0.70	0.70	0.56
225.0	0.74	0.70	0.70	0.65	0.65	0.60	0.65	0.56	0.51
270.0	0.74	0.74	0.70	0.70	0.70	0.65	0.65	0.70	0.65
315.0	0.60	0.65	0.60	0.60	0.56	0.56	0.56	0.51	0.46
360.0	0.70	0.70	0.70	0.60	0.60	0.56	0.60	0.60	0.46

Intensity data(cd)

C/ γ (°)	90.0
0.0	0.46
45.0	0.60
90.0	0.65
135.0	0.60
180.0	0.70
225.0	0.51
270.0	0.56
315.0	0.46
360.0	0.46