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Nata

LumCAT: 2-1120-A3
Luminaire: 92.76.365.00 +TE2213382-1
Report No: 2017051120-1
Test No: 2017051120
LampCAT: NFCLL060B
Lamp flux(lm): 2170.0
Number of Lamps: 1
Length(mm): 70
Phm Type: C

Voltage(V): 218.2000
Current(A): 0.1020
Power (W): 20.3000
PF: 0.9070
Ballast type: DC
Width(mm): 70
Height(mm): 0

Photometric Results

Lumens(lm): 1989.91
Efficiency(%): 91.70%
Lumens(lm)/Power(W): 98.03
Central intensity(cd): 16866.530
Maximum intensity(cd): 16866.530
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=13.6
 [C90/270]Total=13.6
Field angle(10%Imax): [C0/180]Total=27.6
 [C90/270]Total=27.6
Maximum s/h(1/2): C0_180=0.23 C90_270=0.23
Maximum s/h(1/4): C0_180=0.24 C90_270=0.24
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 91.88%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.623%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	16866.527	4.035	4.035	.186%	.203%
1.0	16669.701	31.903	35.938	1.470%	1.806%
2.0	15846.608	60.647	96.585	2.795%	4.854%
3.0	14523.878	83.356	179.941	3.841%	9.043%
4.0	13265.014	101.471	281.412	4.676%	14.142%
5.0	11505.686	109.966	391.379	5.068%	19.668%
6.0	9835.275	112.739	504.117	5.195%	25.334%
7.0	8075.122	107.918	612.036	4.973%	30.757%
8.0	6261.977	95.569	707.605	4.404%	35.560%
9.0	5106.481	87.600	795.205	4.037%	39.962%
10.0	3916.850	74.586	869.792	3.437%	43.710%
11.0	3039.389	63.597	933.389	2.931%	46.906%
12.0	2477.951	56.497	989.885	2.604%	49.745%
13.0	1964.412	48.459	1038.344	2.233%	52.180%
14.0	1612.740	42.785	1081.129	1.972%	54.331%
15.0	1403.525	39.835	1120.964	1.836%	56.332%
16.0	1248.321	37.733	1158.697	1.739%	58.229%
17.0	1127.651	36.154	1194.851	1.666%	60.045%
18.0	1037.125	35.145	1229.997	1.620%	61.812%
19.0	959.027	34.239	1264.236	1.578%	63.532%
20.0	919.304	34.480	1298.715	1.589%	65.265%
21.0	875.204	34.395	1333.11	1.585%	66.993%
22.0	843.629	34.656	1367.766	1.597%	68.735%
23.0	812.619	34.819	1402.585	1.605%	70.485%
24.0	787.830	35.140	1437.725	1.619%	72.251%
25.0	766.124	35.506	1473.231	1.636%	74.035%
26.0	746.730	35.897	1509.127	1.654%	75.839%
27.0	729.621	36.324	1545.452	1.674%	77.664%
28.0	715.375	36.829	1582.281	1.697%	79.515%
29.0	700.675	37.251	1619.532	1.717%	81.387%
30.0	687.489	37.695	1657.228	1.737%	83.281%
31.0	672.087	37.959	1695.187	1.749%	85.189%
32.0	648.482	37.684	1732.871	1.737%	87.083%
33.0	610.975	36.491	1769.362	1.682%	88.917%
34.0	567.590	34.806	1804.167	1.604%	90.666%
35.0	508.570	31.988	1836.156	1.474%	92.273%
36.0	458.881	29.578	1865.734	1.363%	93.760%
37.0	370.144	24.428	1890.162	1.126%	94.987%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	292.074	19.719	1909.881	.909%	95.978%
39.0	218.932	15.109	1924.99	.696%	96.737%
40.0	174.432	12.296	1937.285	.567%	97.355%
41.0	102.873	7.401	1944.686	.341%	97.727%
42.0	63.549	4.663	1949.349	.215%	97.962%
43.0	34.479	2.579	1951.928	.119%	98.091%
44.0	19.586	1.492	1953.42	.069%	98.166%
45.0	14.824	1.149	1954.57	.053%	98.224%
46.0	13.200	1.041	1955.611	.048%	98.276%
47.0	11.727	0.941	1956.551	.043%	98.324%
48.0	10.791	0.879	1957.431	.041%	98.368%
49.0	9.938	0.822	1958.253	.038%	98.409%
50.0	9.346	0.785	1959.038	.036%	98.449%
51.0	8.630	0.735	1959.774	.034%	98.485%
52.0	8.465	0.731	1960.505	.034%	98.522%
53.0	8.355	0.732	1961.237	.034%	98.559%
54.0	8.258	0.733	1961.97	.034%	98.596%
55.0	8.176	0.734	1962.704	.034%	98.633%
56.0	8.093	0.736	1963.44	.034%	98.670%
57.0	8.011	0.737	1964.177	.034%	98.707%
58.0	7.969	0.741	1964.918	.034%	98.744%
59.0	7.928	0.745	1965.663	.034%	98.781%
60.0	7.901	0.750	1966.413	.035%	98.819%
61.0	7.873	0.755	1967.168	.035%	98.857%
62.0	7.859	0.761	1967.929	.035%	98.895%
63.0	7.818	0.764	1968.693	.035%	98.934%
64.0	7.790	0.768	1969.461	.035%	98.972%
65.0	7.777	0.773	1970.234	.036%	99.011%
66.0	7.790	0.780	1971.014	.036%	99.050%
67.0	7.763	0.784	1971.798	.036%	99.090%
68.0	7.722	0.785	1972.583	.036%	99.129%
69.0	7.708	0.789	1973.372	.036%	99.169%
70.0	7.680	0.791	1974.164	.036%	99.209%
71.0	7.680	0.796	1974.96	.037%	99.249%
72.0	7.680	0.801	1975.761	.037%	99.289%
73.0	7.653	0.803	1976.564	.037%	99.329%
74.0	7.639	0.805	1977.369	.037%	99.370%
75.0	7.584	0.803	1978.172	.037%	99.410%

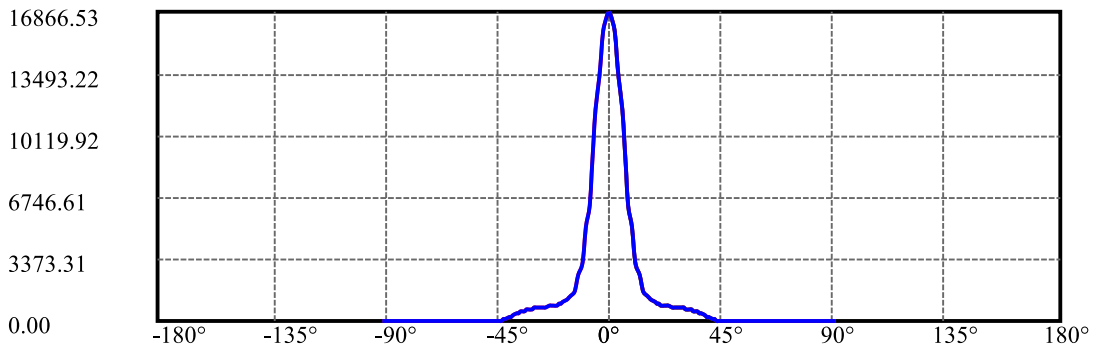
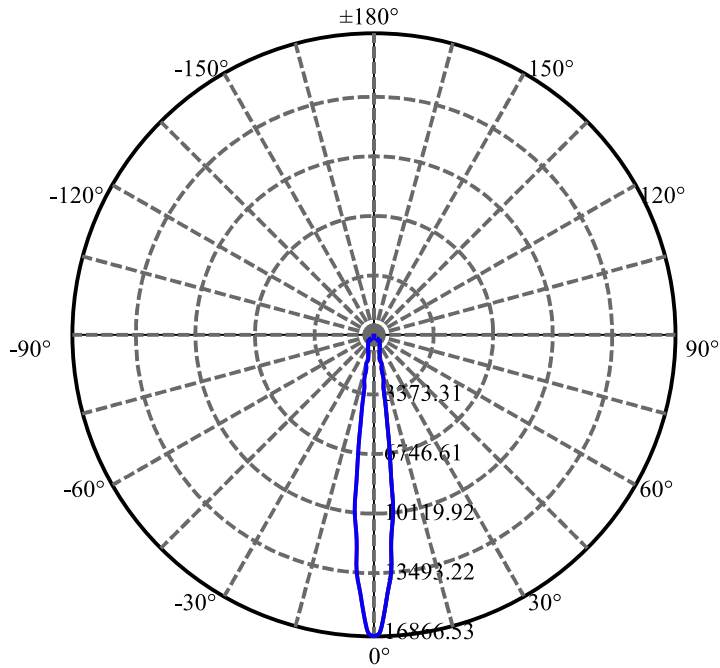
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	7.584	0.807	1978.979	.037%	99.451%
77.0	7.556	0.807	1979.787	.037%	99.491%
78.0	7.543	0.809	1980.596	.037%	99.532%
79.0	7.529	0.810	1981.406	.037%	99.573%
80.0	7.501	0.810	1982.216	.037%	99.613%
81.0	7.515	0.814	1983.03	.038%	99.654%
82.0	7.501	0.815	1983.845	.038%	99.695%
83.0	7.474	0.813	1984.658	.037%	99.736%
84.0	7.460	0.814	1985.472	.037%	99.777%
85.0	7.433	0.812	1986.284	.037%	99.818%
86.0	7.405	0.810	1987.094	.037%	99.858%
87.0	7.364	0.806	1987.9	.037%	99.899%
88.0	7.336	0.804	1988.704	.037%	99.939%
89.0	7.336	0.804	1989.509	.037%	99.980%
90.0	7.336	0.402	1989.911	.019%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1657.23	76.37%	83.28%
0-40	1937.29	89.28%	97.36%
0-60	1966.41	90.62%	98.82%
0-90	1989.51	91.68%	99.98%
0-120	1989.51	91.68%	99.98%
0-180	1989.91	91.70%	100.00%
60-90	23.85	1.10%	1.20%
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%
0-28.26	1591.93	73.36%	80.00%

ZONAL LUMEN SUMMARY

0-10	869.79
10-20	428.92
20-30	358.51
30-40	280.06
40-50	21.75
50-60	7.37
60-70	7.75
70-80	8.05
80-90	7.29
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: —————

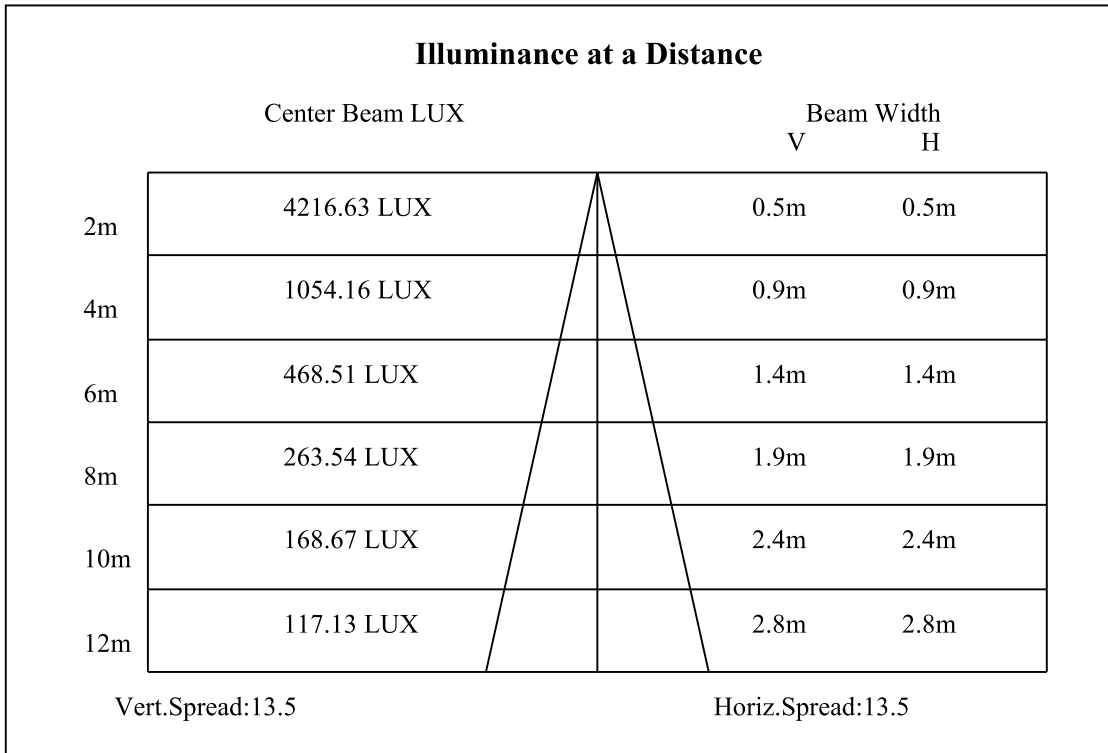
C90/C270: —————

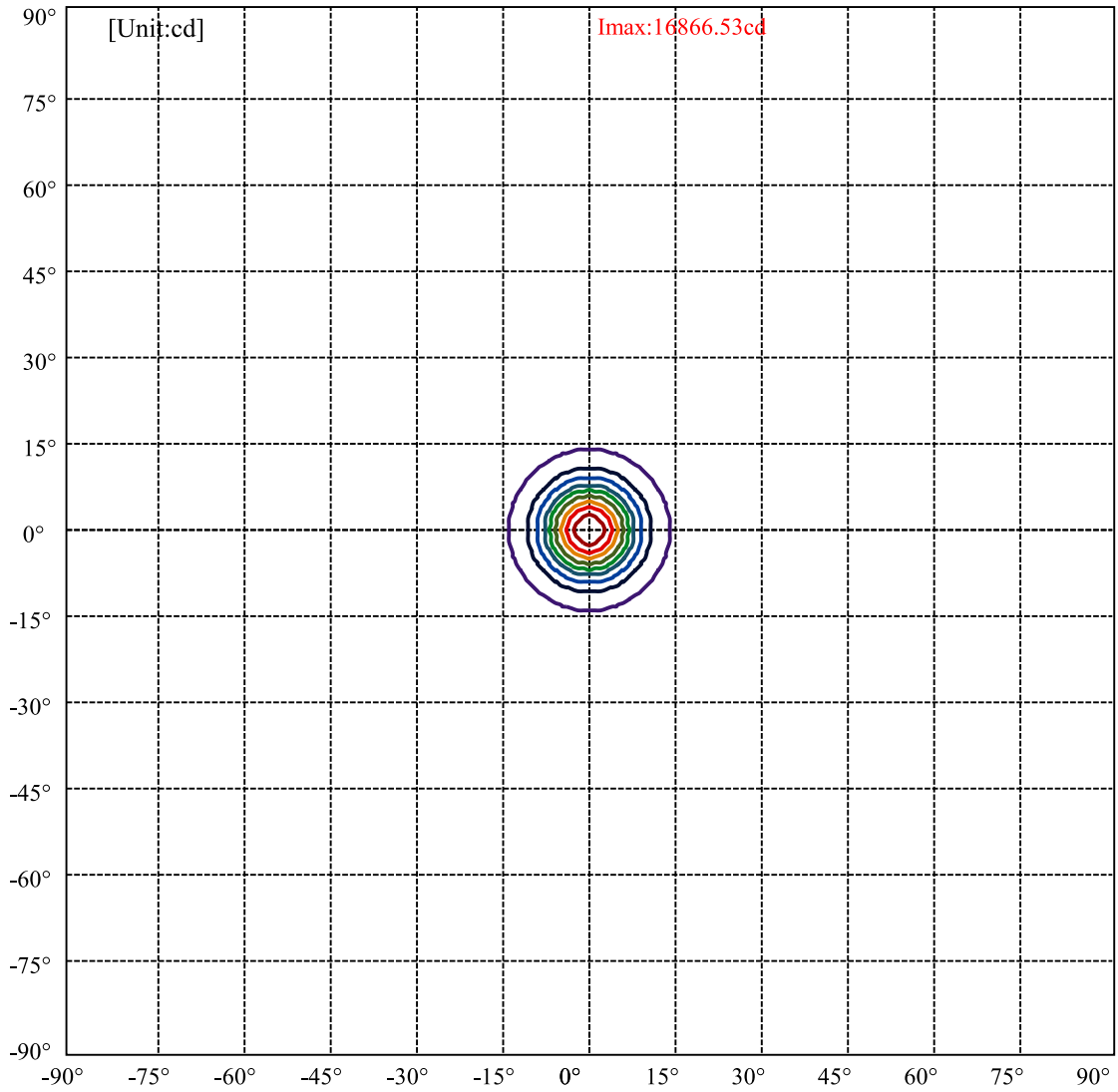
Field angle(10%Imax):C0/180Left:13.8 Right:13.8

:C90/270Left:13.8 Right:13.8

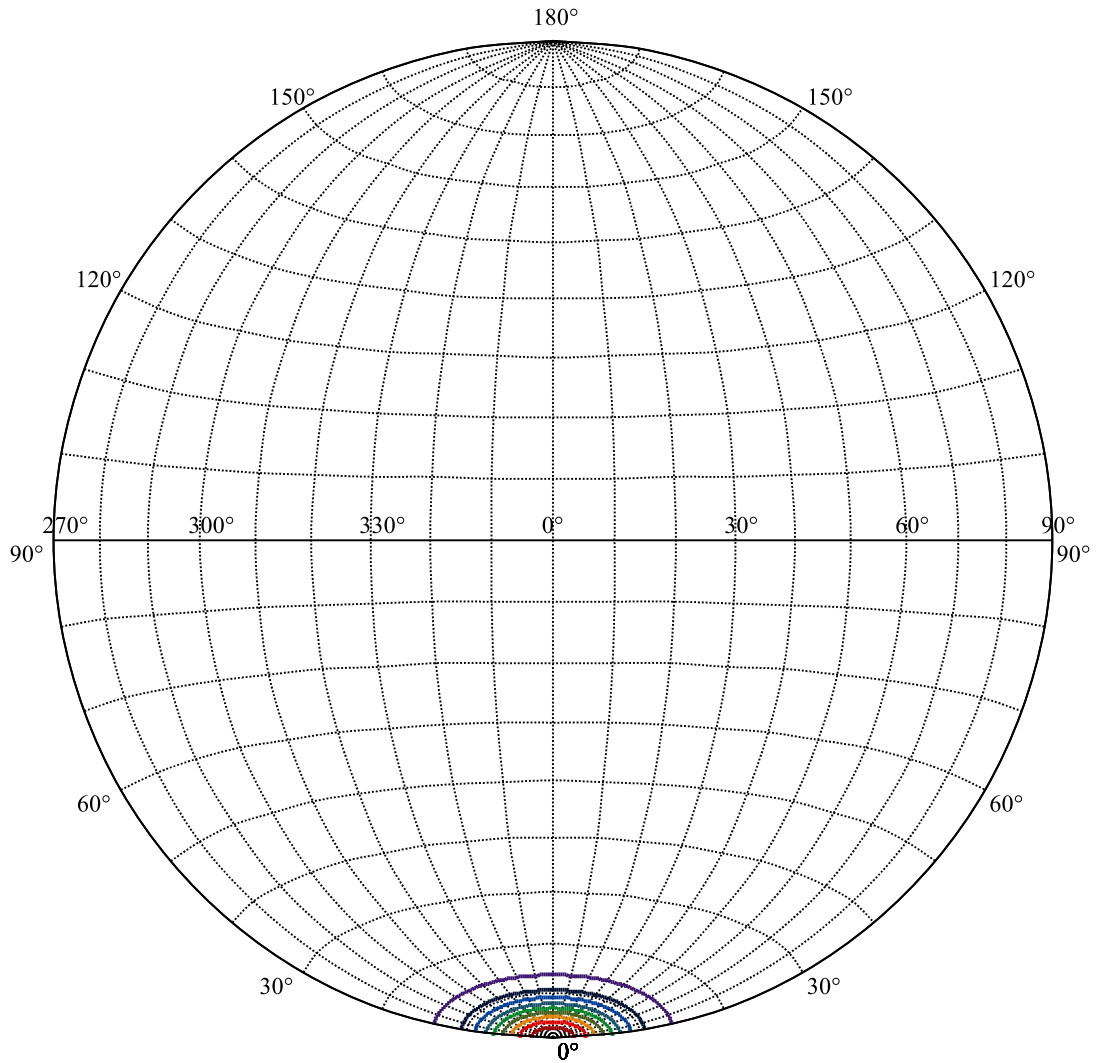
Beam Angle(50%Imax):C0/180Left:6.8 Right:6.8

:C90/270Left:6.8 Right:6.8





(10%I _{max}) 1686.65	—
(20%I _{max}) 3373.31	—
(30%I _{max}) 5059.96	—
(40%I _{max}) 6746.61	—
(50%I _{max}) 8433.26	—
(60%I _{max}) 10119.9	—
(70%I _{max}) 11806.6	—
(80%I _{max}) 13493.2	—
(90%I _{max}) 15179.9	—



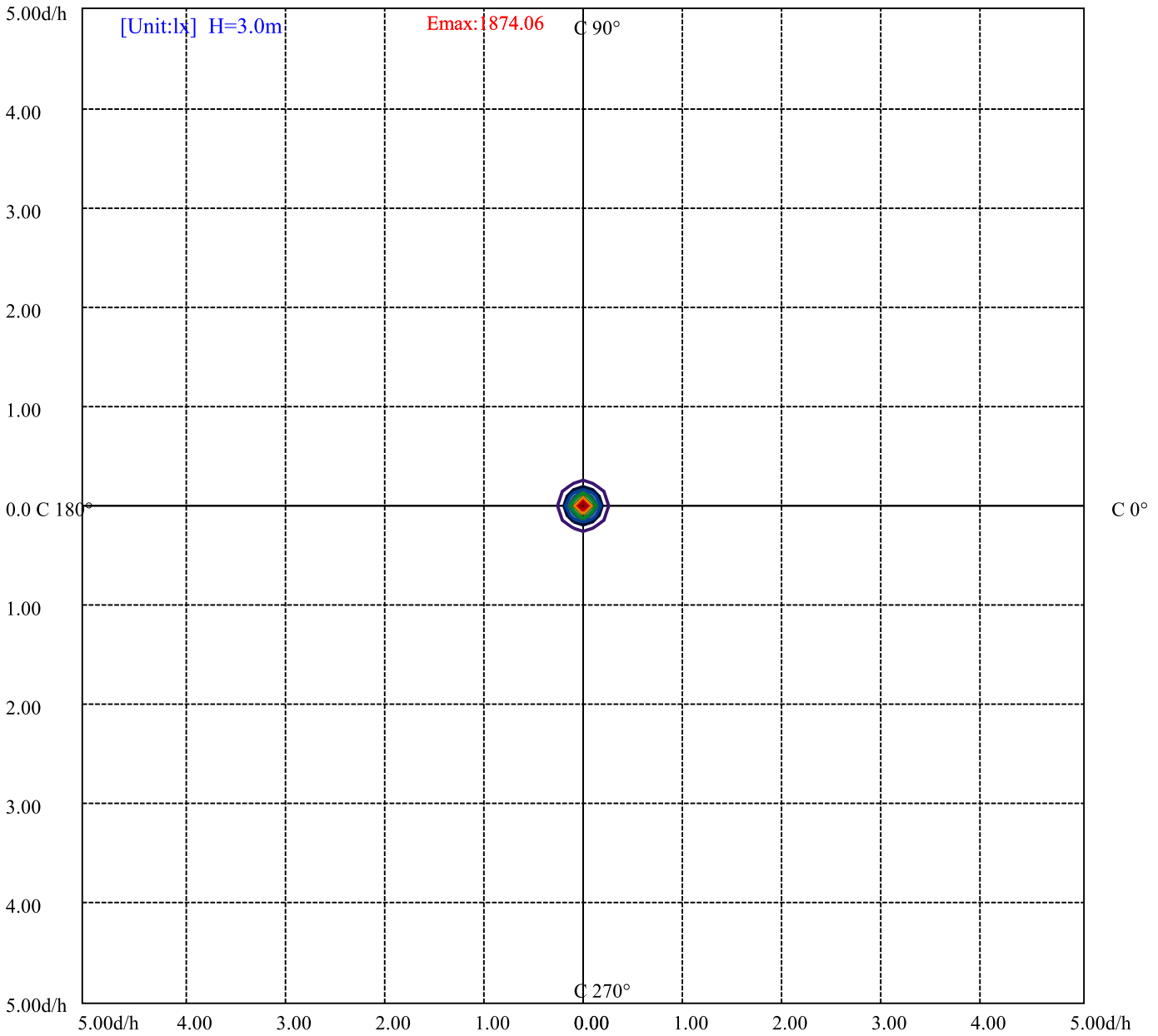
House

[Unit:cd]

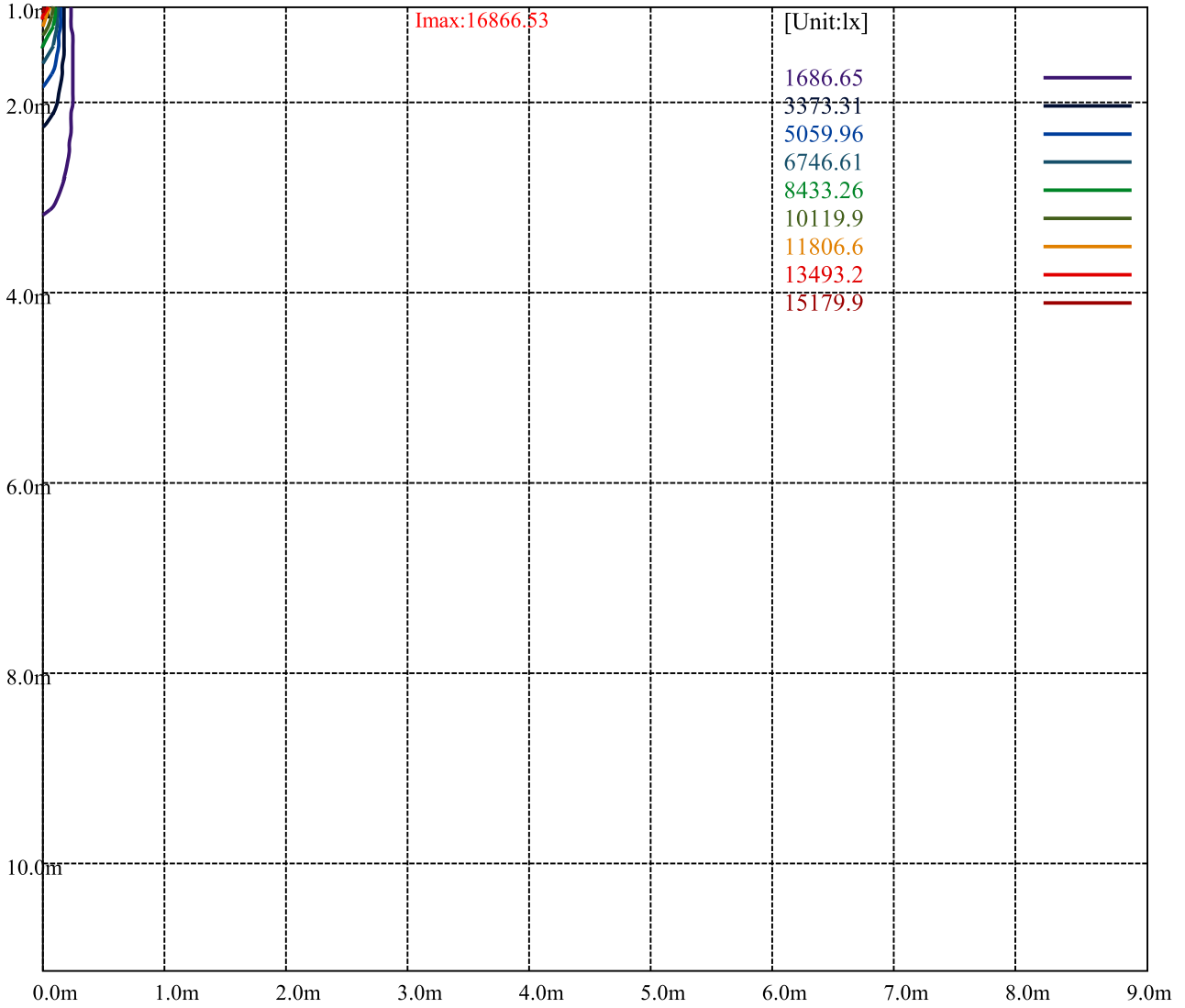
Road

Imax:16866.53

(10%Imax)	1686.65	—
(20%Imax)	3373.31	—
(30%Imax)	5059.96	—
(40%Imax)	6746.61	—
(50%Imax)	8433.26	—
(60%Imax)	10119.9	—
(70%Imax)	11806.6	—
(80%Imax)	13493.2	—
(90%Imax)	15179.9	—



- (10%Emax) 187.4056
- (20%Emax) 374.8111
- (30%Emax) 562.2167
- (40%Emax) 749.6223
- (50%Emax) 937.0278
- (60%Emax) 1124.433
- (70%Emax) 1311.833
- (80%Emax) 1499.245
- (90%Emax) 1686.644



Luminance Table

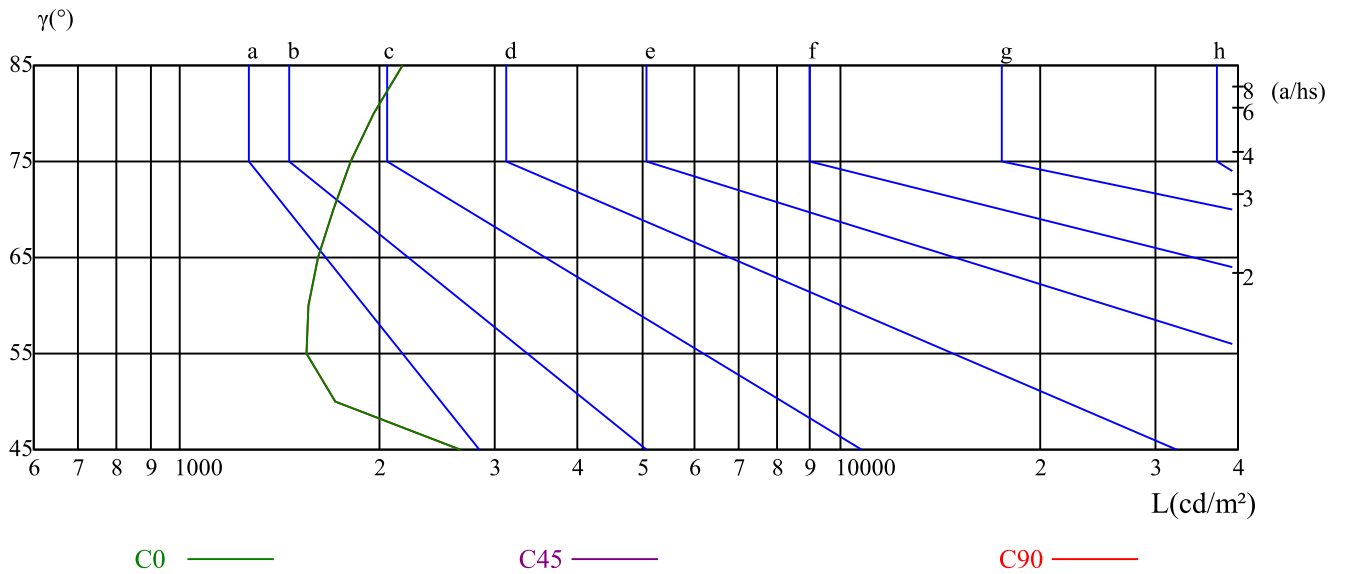
γ	45	50	55	60	65	70	75	80	85
C0	2650	1713	1550	1562	1621	1705	1816	1966	2170
C45	0	0	0	0	0	0	0	0	0
C90	2650	1713	1550	1562	1621	1705	1816	1966	2170

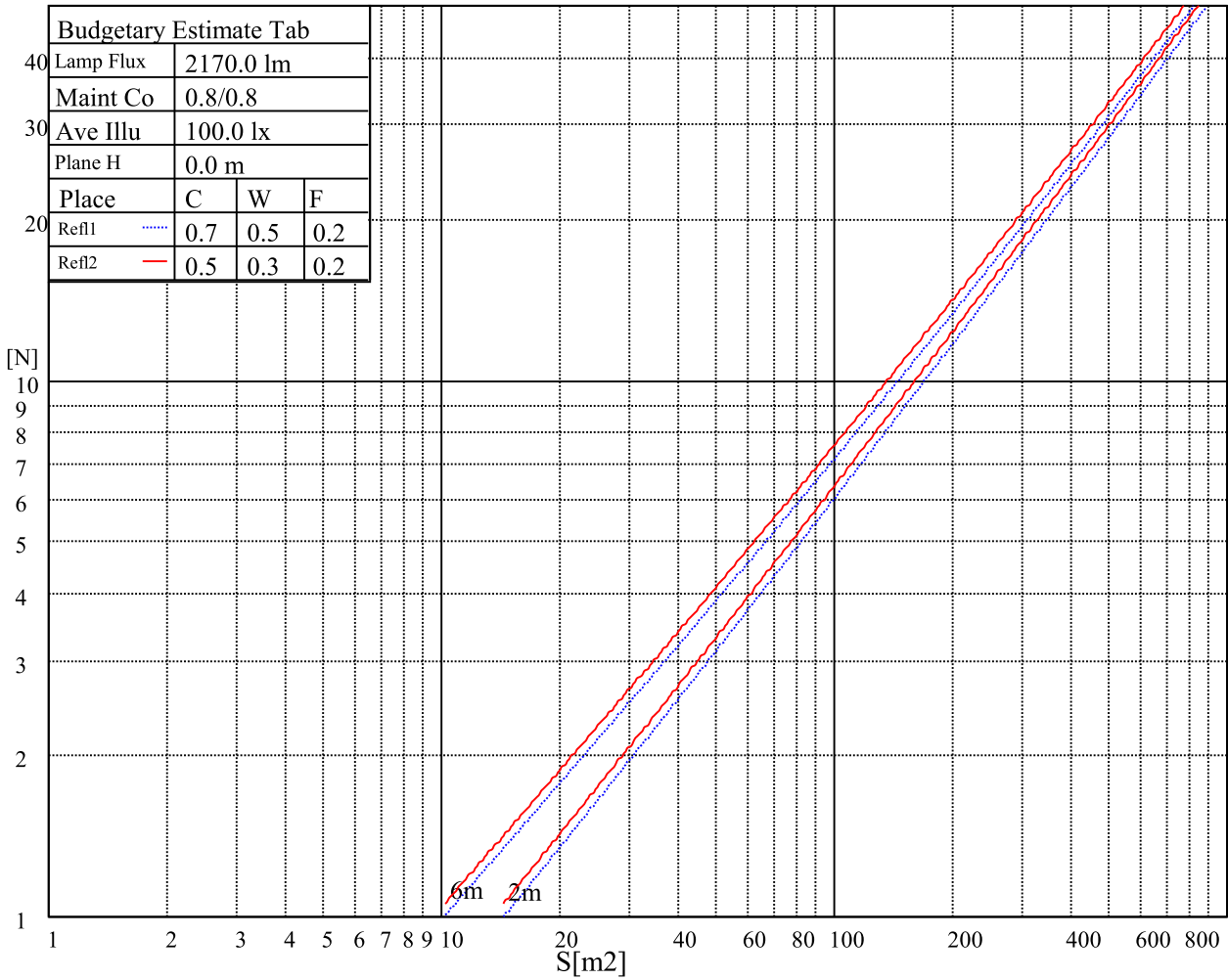
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3755	3755	0	5980	5980	0	17404	17404	0

Glare Table

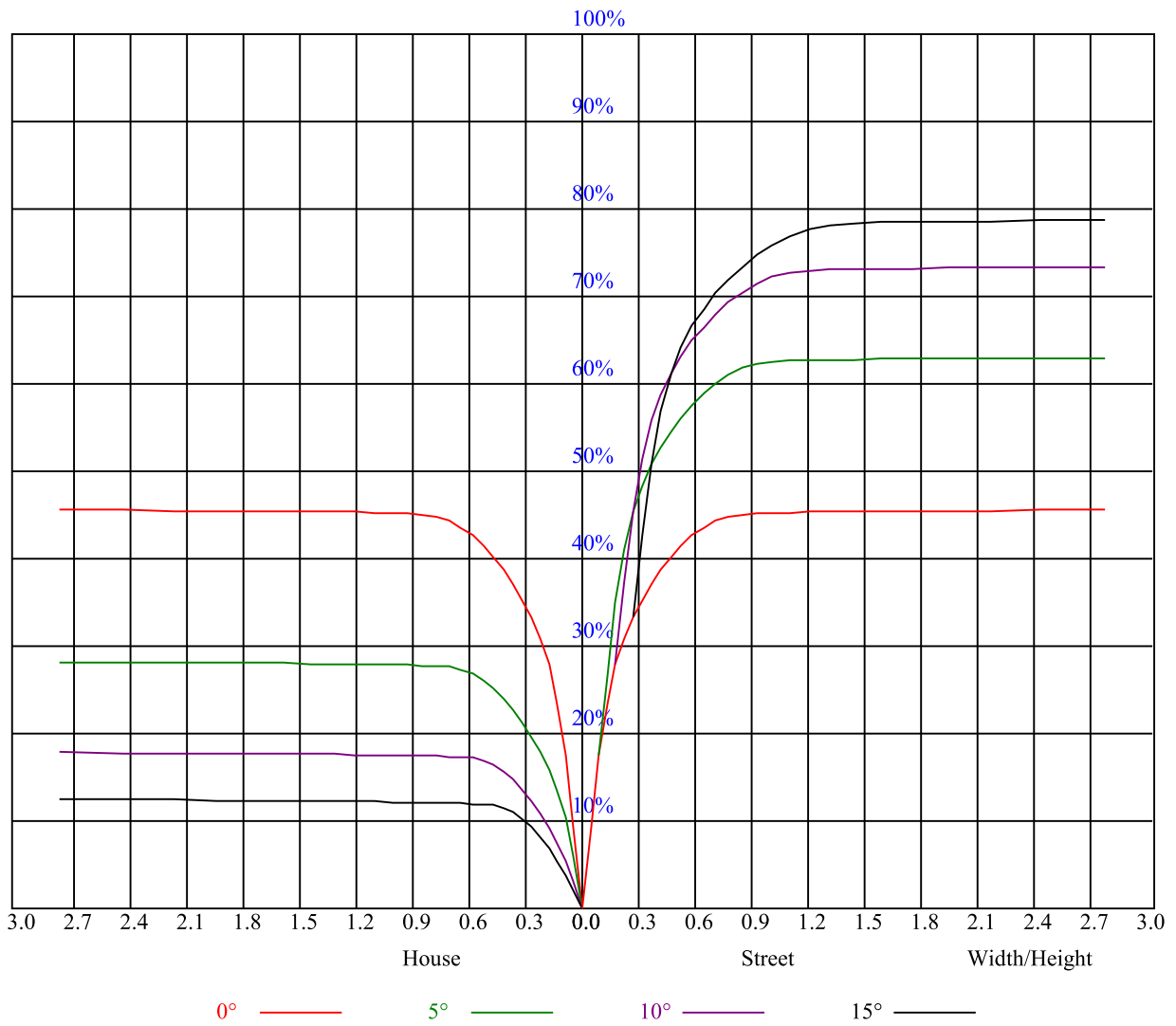
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.09	1.09	1.09	1.07	1.07	1.07	1.02	1.02	1.02	0.98	0.98	0.98	0.94	0.94	0.94	0.92
1	1.03	1.01	0.99	1.01	0.99	0.98	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88
2	0.98	0.95	0.92	0.96	0.93	0.91	0.93	0.91	0.89	0.91	0.89	0.87	0.88	0.87	0.85	0.84
3	0.93	0.89	0.87	0.92	0.89	0.86	0.90	0.87	0.85	0.87	0.85	0.83	0.85	0.84	0.82	0.81
4	0.89	0.85	0.82	0.88	0.84	0.82	0.86	0.83	0.81	0.84	0.82	0.80	0.83	0.81	0.79	0.78
5	0.85	0.81	0.78	0.85	0.81	0.78	0.83	0.80	0.77	0.82	0.79	0.77	0.80	0.78	0.76	0.75
6	0.82	0.78	0.75	0.82	0.78	0.75	0.80	0.77	0.74	0.79	0.76	0.74	0.78	0.76	0.74	0.72
7	0.79	0.75	0.72	0.79	0.75	0.72	0.78	0.74	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.70
8	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.68
9	0.74	0.70	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.73	0.70	0.67	0.72	0.69	0.67	0.66
10	0.72	0.68	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.71	0.68	0.65	0.70	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	16770.18	15129.50	12662.97	10559.82	8451.16	6083.73	4597.21	3501.59	2802.37
90.0	16962.88	17375.80	17183.10	16489.39	15162.53	13400.73	11583.87	9381.61	7476.66
180.0	16770.18	18075.02	18735.69	18933.90	18603.56	17640.07	16274.67	14248.60	10794.36
270.0	16962.88	16098.49	14804.67	12112.41	10842.81	8898.22	6885.35	5168.69	3974.52
360.0	16770.18	15129.50	12662.97	10559.82	8451.16	6083.73	4597.21	3501.59	2802.37
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	2094.90	1762.91	1549.29	1321.35	1170.50	1084.61	994.87	937.06	902.37
90.0	5593.73	4101.70	3143.72	2780.35	2027.18	1651.14	1441.38	1283.36	1144.62
180.0	9716.90	7414.45	5462.70	4115.47	3160.24	2380.09	1972.67	1683.07	1450.74
270.0	3020.39	2388.35	2001.85	1694.64	1499.74	1335.12	1205.18	1089.79	1012.87
360.0	2094.90	1762.91	1549.29	1321.35	1170.50	1084.61	994.87	937.06	902.37
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	861.63	833.55	808.78	781.25	761.43	743.81	725.09	711.88	697.01
90.0	1066.99	1007.53	951.93	916.69	888.06	859.43	832.45	809.33	785.65
180.0	1286.67	1097.66	1053.61	980.72	926.16	872.04	840.60	807.73	781.36
270.0	933.21	897.36	862.90	822.16	798.87	775.19	753.17	735.55	722.89
360.0	861.63	833.55	808.78	781.25	761.43	743.81	725.09	711.88	697.01
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	682.70	671.14	660.13	648.01	625.44	578.64	500.46	416.23	310.52
90.0	764.18	746.56	729.50	714.63	700.87	685.45	673.34	658.47	615.53
180.0	762.09	747.06	730.98	720.85	709.68	696.96	686.99	676.15	664.04
270.0	709.51	696.74	682.09	666.46	652.36	632.87	583.10	519.51	444.20
360.0	682.70	671.14	660.13	648.01	625.44	578.64	500.46	416.23	310.52
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	286.29	121.84	53.79	24.11	18.06	15.91	13.38	11.73	10.63
90.0	558.27	481.74	380.44	298.96	279.69	126.74	60.07	27.80	18.88
180.0	646.86	611.68	547.37	445.68	352.69	248.14	163.35	83.58	35.90
270.0	344.10	265.32	186.70	106.97	47.29	20.70	17.40	14.81	12.94
360.0	286.29	121.84	53.79	24.11	18.06	15.91	13.38	11.73	10.63
C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	9.58	8.75	8.59	8.42	8.31	8.20	8.15	8.04	7.93
90.0	16.24	14.20	12.22	11.07	9.52	9.03	8.75	8.59	8.48
180.0	22.02	19.49	16.85	14.70	13.10	11.56	9.19	8.92	8.75
270.0	11.45	10.35	9.25	8.97	8.81	8.59	8.42	8.31	8.26
360.0	9.58	8.75	8.59	8.42	8.31	8.20	8.15	8.04	7.93
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	7.93	7.87	7.82	7.76	7.71	7.71	7.65	7.65	7.65
90.0	8.37	8.31	8.20	8.15	8.09	8.04	7.98	7.93	7.87
180.0	8.59	8.42	8.31	8.15	8.09	7.98	7.98	7.93	7.93
270.0	8.15	8.09	8.04	7.98	7.98	7.98	7.98	7.98	7.98
360.0	7.93	7.87	7.82	7.76	7.71	7.71	7.65	7.65	7.65
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	7.60	7.54	7.49	7.54	7.54	7.54	7.49	7.43	7.43
90.0	7.82	7.82	7.82	7.82	7.76	7.65	7.71	7.65	7.65
180.0	7.87	7.87	7.82	7.87	7.87	7.82	7.76	7.76	7.76
270.0	7.98	7.93	7.98	7.93	7.87	7.87	7.87	7.87	7.87
360.0	7.60	7.54	7.49	7.54	7.54	7.54	7.49	7.43	7.43

Intensity data(cd)

C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	7.43	7.43	7.43	7.38	7.38	7.38	7.32	7.32	7.32
90.0	7.71	7.65	7.65	7.60	7.54	7.54	7.60	7.60	7.54
180.0	7.76	7.76	7.71	7.65	7.65	7.60	7.60	7.60	7.54
270.0	7.82	7.76	7.76	7.71	7.76	7.71	7.65	7.60	7.60
360.0	7.43	7.43	7.43	7.38	7.38	7.38	7.32	7.32	7.32
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	7.32	7.32	7.32	7.32	7.27	7.27	7.27	7.27	7.27
90.0	7.49	7.54	7.49	7.49	7.49	7.49	7.43	7.38	7.43
180.0	7.54	7.49	7.49	7.43	7.43	7.43	7.38	7.27	7.27
270.0	7.71	7.65	7.60	7.60	7.54	7.43	7.38	7.43	7.38
360.0	7.32	7.32	7.32	7.32	7.27	7.27	7.27	7.27	7.27
C/γ(°)	90.0								
0.0	7.21								
90.0	7.43								
180.0	7.27								
270.0	7.43								
360.0	7.21								