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Nata

LumCAT: 3-1915-E
Luminaire: 99.02.73.181+92.76.323.00
Report No: GC2017031801
Test No: NT-0010
LampCAT: LUXEON CoB 1205
Lamp flux(lm): 2435.0
Number of Lamps: 1
Length(mm): 79
Phm Type: C

Voltage(V): 36.0000
Current(A): 0.5000
Power (W): 18.0000
PF: 0.0000
Ballast type: DC
Width(mm): 79
Height(mm): 0

Photometric Results

Lumens(lm): 2189.51
Efficiency(%): 89.92%
Lumens(lm)/Power(W): 121.64
Central intensity(cd): 17677.230
Maximum intensity(cd): 17677.230
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=13.9
 [C90/270]Total=13.9
Field angle(10%Imax): [C0/180]Total=29.5
 [C90/270]Total=29.5
Maximum s/h(1/2): C0_180=0.24 C90_270=0.24
Maximum s/h(1/4): C0_180=0.25 C90_270=0.25
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.92%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.711%

Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/3/17
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	17677.234	0.000	0	.000%	.000%
1.0	17435.674	16.801	16.801	.690%	.767%
2.0	16617.398	48.876	65.677	2.007%	3.000%
3.0	15432.997	76.654	142.331	3.148%	6.501%
4.0	13868.845	98.083	240.414	4.028%	10.980%
5.0	12292.580	112.545	352.959	4.622%	16.120%
6.0	10297.267	118.716	471.674	4.875%	21.542%
7.0	8730.431	118.105	589.779	4.850%	26.937%
8.0	7174.744	113.830	703.609	4.675%	32.135%
9.0	5642.386	103.876	807.485	4.266%	36.880%
10.0	4423.094	91.089	898.574	3.741%	41.040%
11.0	3498.146	79.149	977.724	3.250%	44.655%
12.0	2855.294	69.452	1047.176	2.852%	47.827%
13.0	2333.290	61.575	1108.751	2.529%	50.639%
14.0	1953.952	54.876	1163.628	2.254%	53.146%
15.0	1698.008	50.136	1213.763	2.059%	55.435%
16.0	1510.335	47.011	1260.774	1.931%	57.583%
17.0	1345.372	44.471	1305.245	1.826%	59.614%
18.0	1215.170	42.218	1347.463	1.734%	61.542%
19.0	1134.692	40.883	1388.346	1.679%	63.409%
20.0	1073.015	40.407	1428.753	1.659%	65.255%
21.0	1022.638	40.241	1468.994	1.653%	67.092%
22.0	988.097	40.407	1509.401	1.659%	68.938%
23.0	957.410	40.822	1550.223	1.676%	70.802%
24.0	930.777	41.283	1591.505	1.695%	72.688%
25.0	909.422	41.842	1633.347	1.718%	74.599%
26.0	888.597	42.442	1675.79	1.743%	76.537%
27.0	866.326	42.935	1718.724	1.763%	78.498%
28.0	843.203	43.282	1762.006	1.777%	80.475%
29.0	821.015	43.541	1805.546	1.788%	82.464%
30.0	800.534	43.781	1849.328	1.798%	84.463%
31.0	779.950	43.983	1893.311	1.806%	86.472%
32.0	741.513	43.588	1936.899	1.790%	88.463%
33.0	678.350	41.830	1978.728	1.718%	90.373%
34.0	597.224	38.603	2017.331	1.585%	92.136%
35.0	491.991	33.827	2051.158	1.389%	93.681%
36.0	388.643	28.040	2079.198	1.152%	94.962%
37.0	301.874	22.521	2101.718	.925%	95.990%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	202.697	16.842	2118.56	.692%	96.760%
39.0	115.598	10.864	2129.425	.446%	97.256%
40.0	59.736	6.115	2135.54	.251%	97.535%
41.0	36.268	3.419	2138.958	.140%	97.691%
42.0	29.090	2.375	2141.333	.098%	97.800%
43.0	24.424	1.982	2143.315	.081%	97.890%
44.0	20.061	1.679	2144.994	.069%	97.967%
45.0	16.469	1.404	2146.398	.058%	98.031%
46.0	14.473	1.210	2147.608	.050%	98.086%
47.0	13.158	1.099	2148.707	.045%	98.136%
48.0	12.305	1.029	2149.737	.042%	98.184%
49.0	11.982	0.997	2150.734	.041%	98.229%
50.0	11.693	0.987	2151.721	.041%	98.274%
51.0	11.438	0.979	2152.7	.040%	98.319%
52.0	11.225	0.972	2153.672	.040%	98.363%
53.0	11.004	0.967	2154.639	.040%	98.407%
54.0	10.777	0.960	2155.599	.039%	98.451%
55.0	10.605	0.954	2156.554	.039%	98.495%
56.0	10.454	0.952	2157.505	.039%	98.538%
57.0	10.289	0.948	2158.453	.039%	98.582%
58.0	10.144	0.945	2159.398	.039%	98.625%
59.0	10.007	0.942	2160.34	.039%	98.668%
60.0	9.883	0.940	2161.28	.039%	98.711%
61.0	9.786	0.939	2162.219	.039%	98.754%
62.0	9.669	0.937	2163.156	.039%	98.796%
63.0	9.580	0.936	2164.092	.038%	98.839%
64.0	9.470	0.935	2165.027	.038%	98.882%
65.0	9.401	0.934	2165.961	.038%	98.925%
66.0	9.339	0.935	2166.896	.038%	98.967%
67.0	9.277	0.936	2167.832	.038%	99.010%
68.0	9.188	0.935	2168.767	.038%	99.053%
69.0	9.139	0.935	2169.702	.038%	99.095%
70.0	9.077	0.936	2170.638	.038%	99.138%
71.0	9.036	0.936	2171.574	.038%	99.181%
72.0	8.995	0.938	2172.512	.039%	99.224%
73.0	8.960	0.939	2173.451	.039%	99.267%
74.0	8.954	0.942	2174.392	.039%	99.310%
75.0	8.898	0.943	2175.336	.039%	99.353%

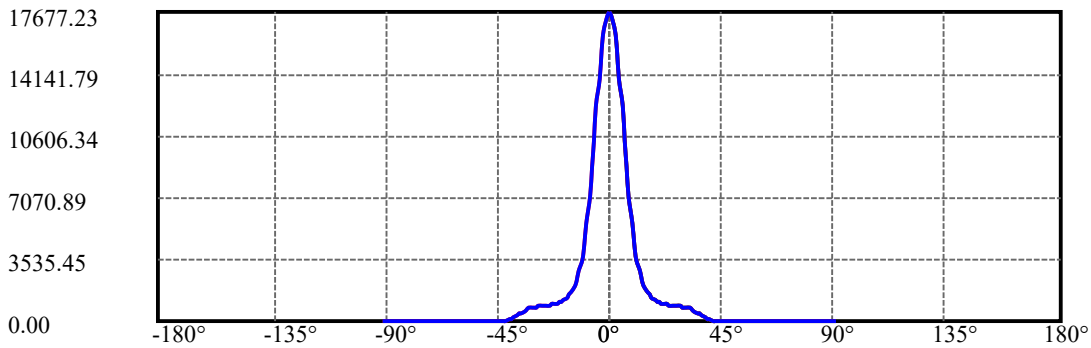
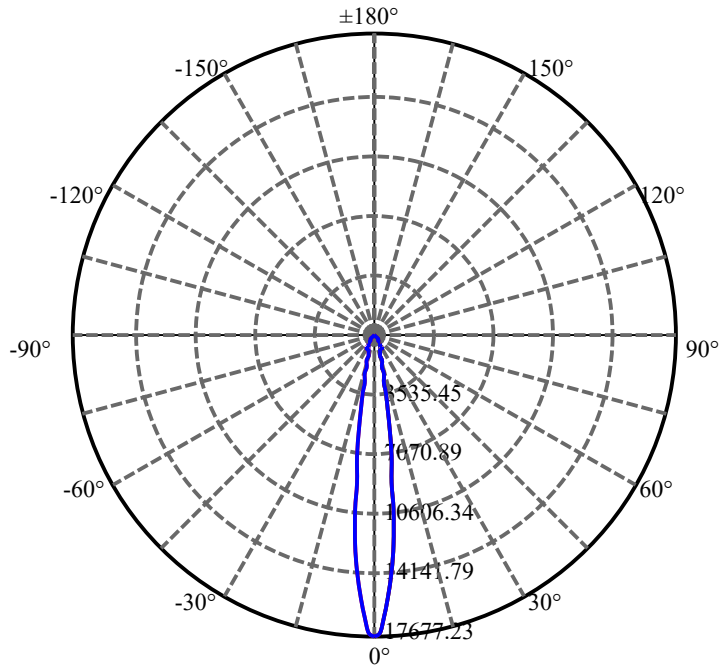
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	8.885	0.944	2176.28	.039%	99.396%
77.0	8.857	0.946	2177.226	.039%	99.439%
78.0	8.830	0.947	2178.172	.039%	99.482%
79.0	8.802	0.947	2179.12	.039%	99.526%
80.0	8.781	0.948	2180.068	.039%	99.569%
81.0	8.733	0.947	2181.015	.039%	99.612%
82.0	8.754	0.948	2181.963	.039%	99.655%
83.0	8.699	0.949	2182.912	.039%	99.699%
84.0	8.685	0.947	2183.859	.039%	99.742%
85.0	8.658	0.947	2184.806	.039%	99.785%
86.0	8.603	0.943	2185.749	.039%	99.828%
87.0	8.603	0.942	2186.691	.039%	99.871%
88.0	8.575	0.941	2187.632	.039%	99.914%
89.0	8.541	0.938	2188.57	.039%	99.957%
90.0	8.589	0.939	2189.509	.039%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1849.33	75.95%	84.46%
0-40	2135.54	87.70%	97.54%
0-60	2161.28	88.76%	98.71%
0-90	2188.57	89.88%	99.96%
0-120	2188.57	89.88%	99.96%
0-180	2189.51	89.92%	100.00%
60-90	28.23	1.16%	1.29%
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%
0-27.76	1751.61	71.93%	80.00%

ZONAL LUMEN SUMMARY

0-10	898.57
10-20	530.18
20-30	420.57
30-40	286.21
40-50	16.18
50-60	9.56
60-70	9.36
70-80	9.43
80-90	8.50
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: —————

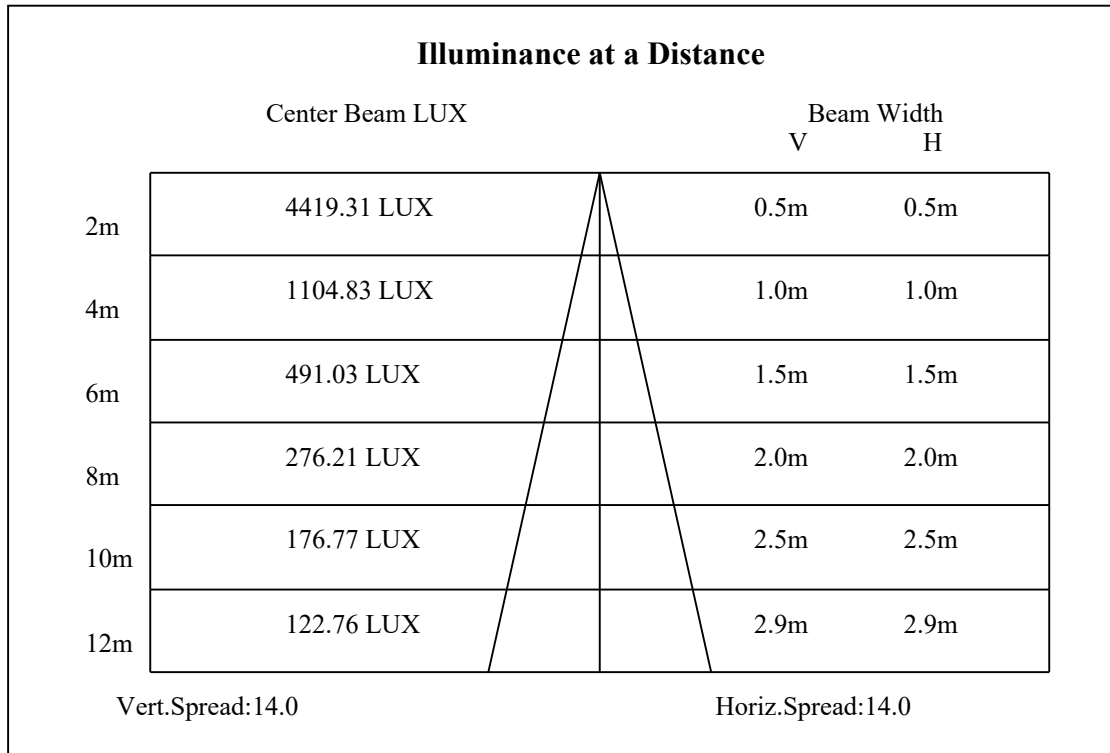
C90/C270: —————

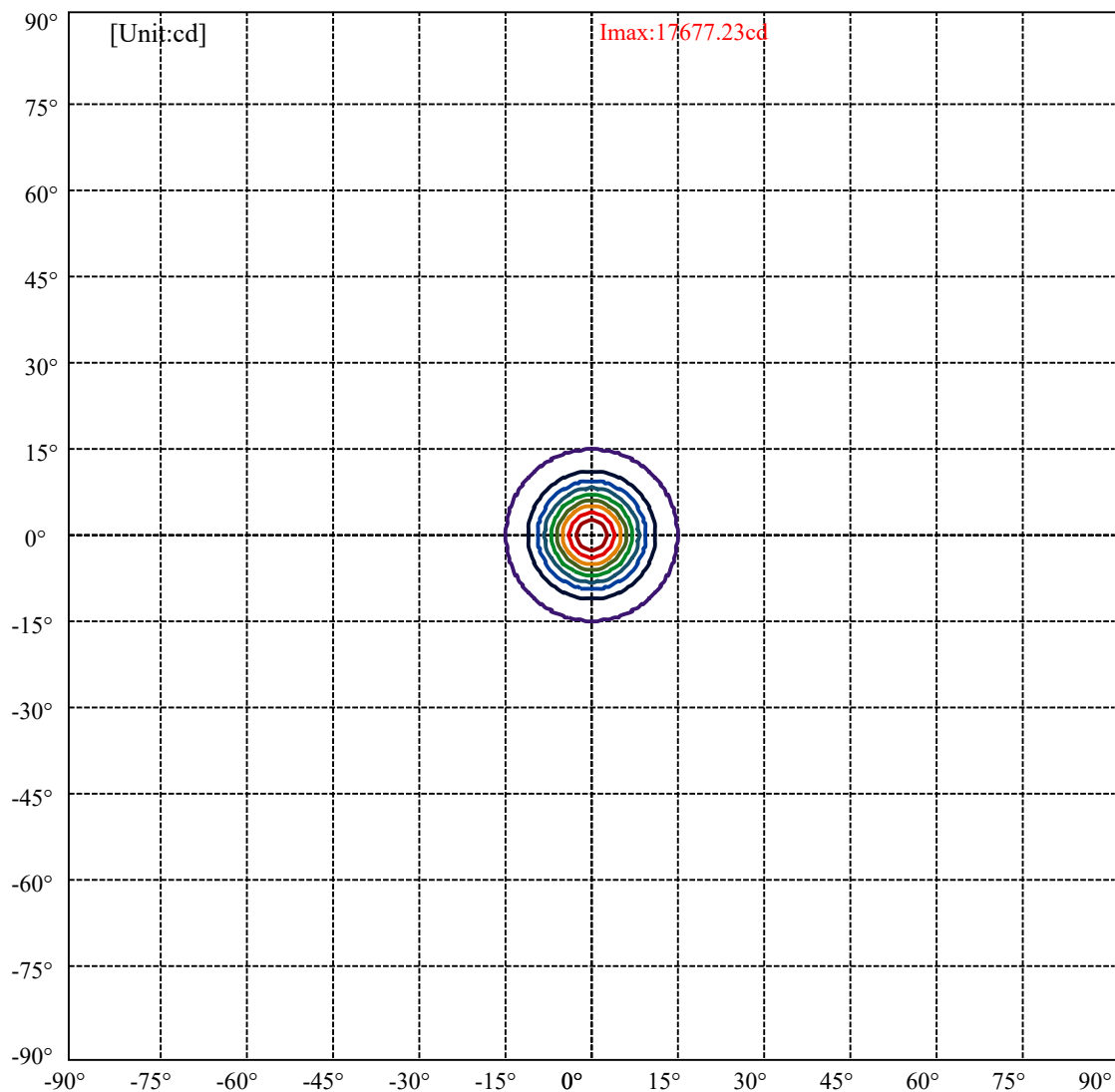
Field angle(10%Imax):C0/180Left:14.7 Right:14.7

:C90/270Left:14.7 Right:14.7

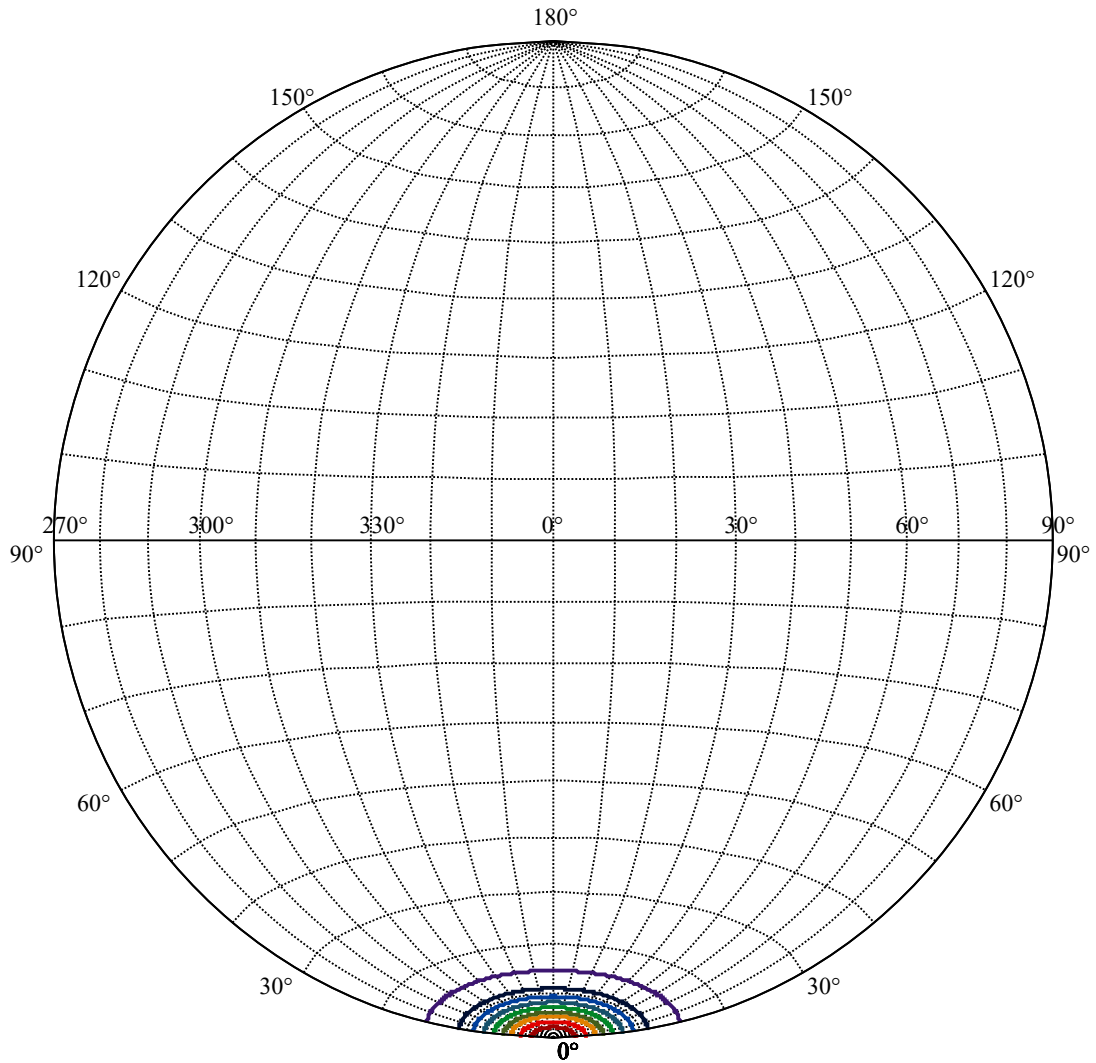
Beam Angle(50%Imax):C0/180Left:6.9 Right:6.9

:C90/270Left:6.9 Right:6.9





(10%Imax)	1767.72	—
(20%Imax)	3535.45	—
(30%Imax)	5303.17	—
(40%Imax)	7070.89	—
(50%Imax)	8838.62	—
(60%Imax)	10606.3	—
(70%Imax)	12374.1	—
(80%Imax)	14141.8	—
(90%Imax)	15909.5	—



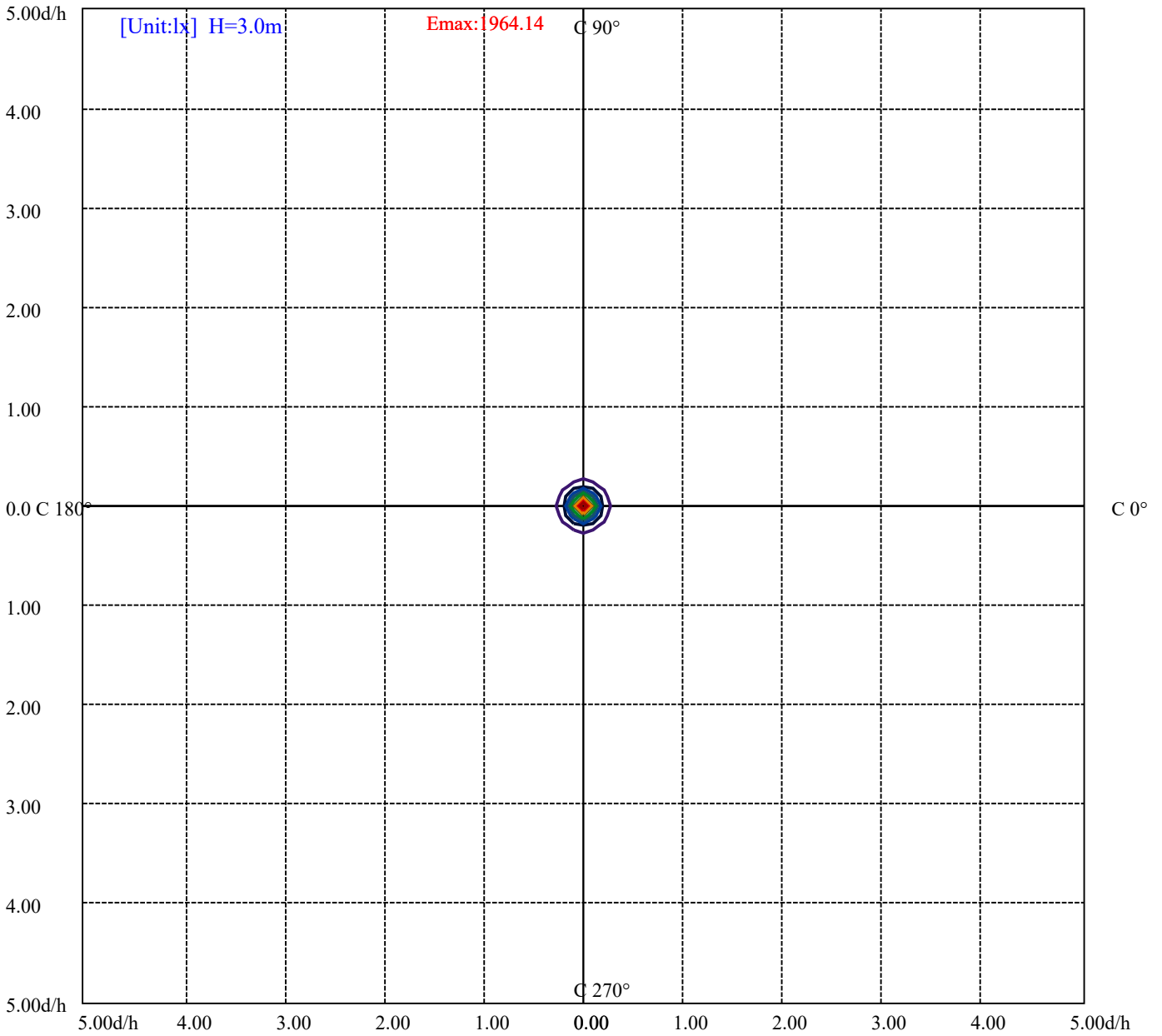
House

[Unit:cd]

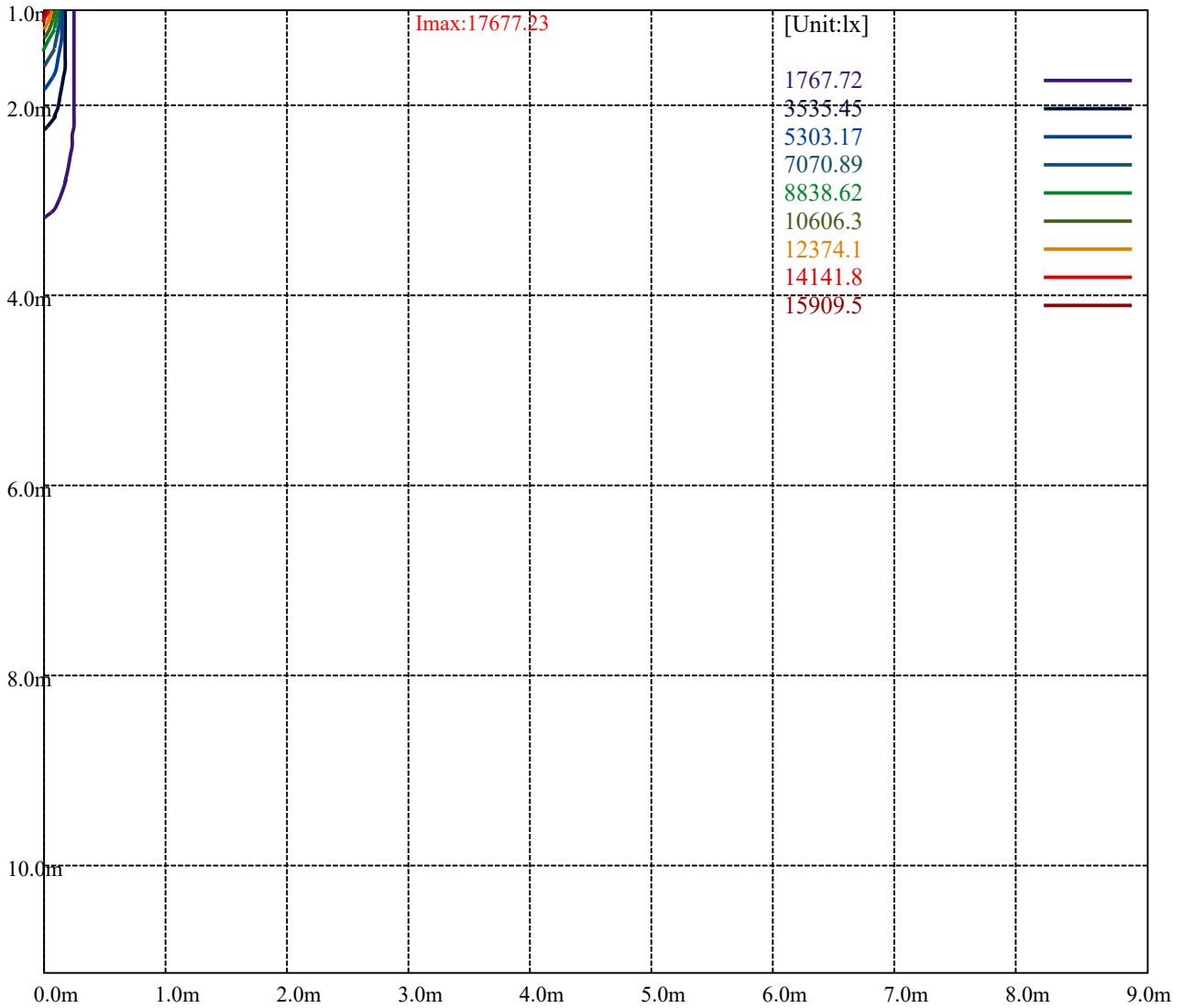
Road

Imax:17677.23

(10%Imax)	1767.72	—
(20%Imax)	3535.45	—
(30%Imax)	5303.17	—
(40%Imax)	7070.89	—
(50%Imax)	8838.62	—
(60%Imax)	10606.3	—
(70%Imax)	12374.1	—
(80%Imax)	14141.8	—
(90%Imax)	15909.5	—



- (10%Emax) 196.4133
- (20%Emax) 392.8267
- (30%Emax) 589.24
- (40%Emax) 785.6533
- (50%Emax) 982.0667
- (60%Emax) 1178.478
- (70%Emax) 1374.889
- (80%Emax) 1571.311
- (90%Emax) 1767.722



Luminance Table

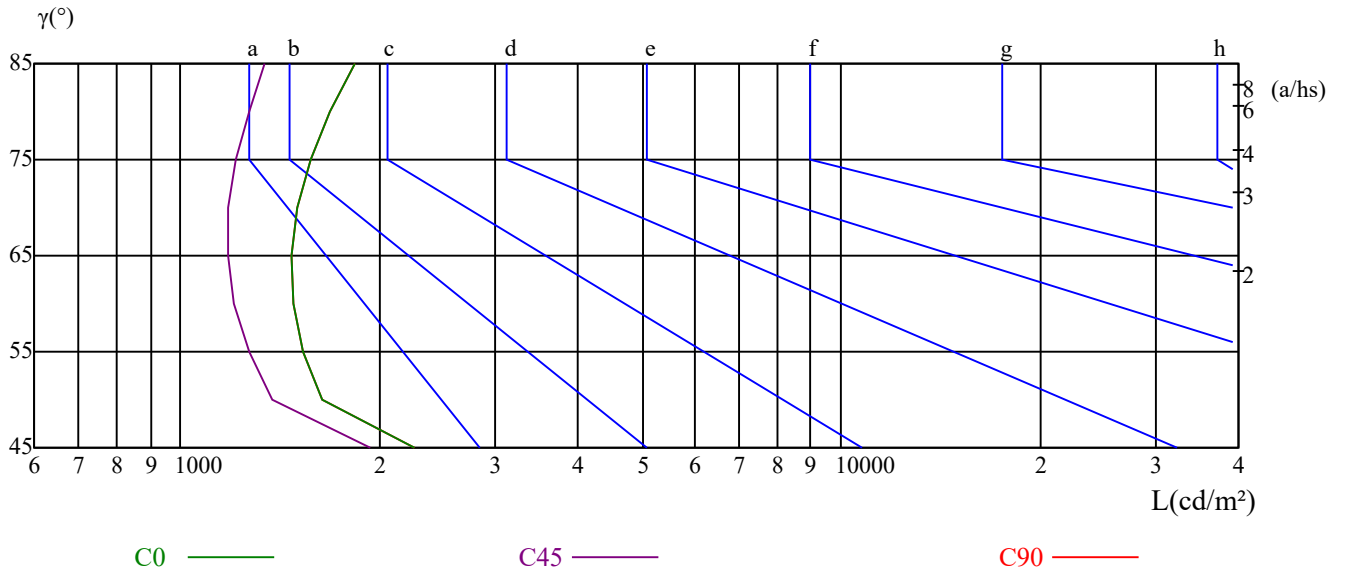
γ	45	50	55	60	65	70	75	80	85
C0	2262	1638	1528	1477	1472	1503	1577	1687	1832
C45	1934	1380	1267	1205	1180	1182	1214	1269	1339
C90	2262	1638	1528	1477	1472	1503	1577	1687	1832

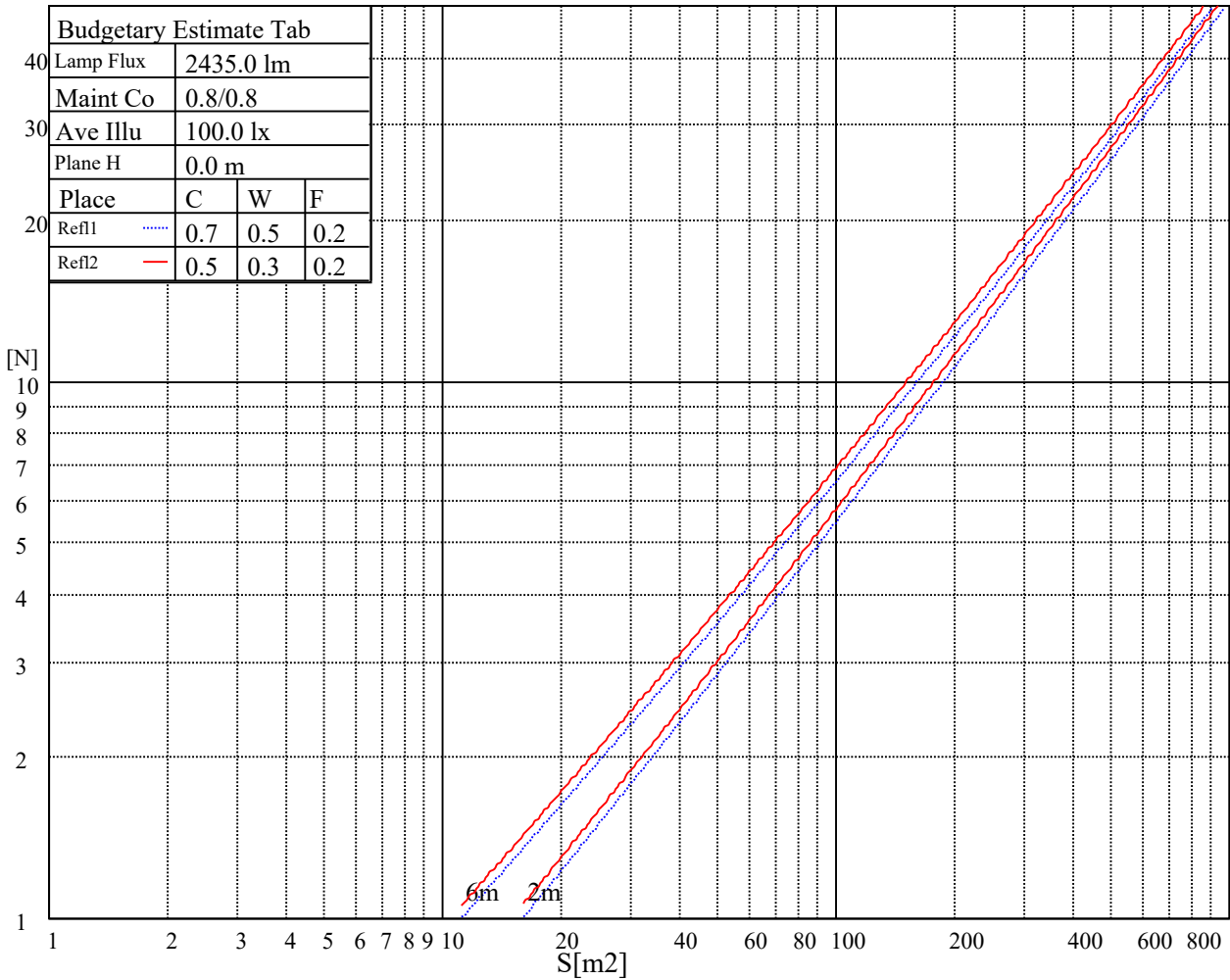
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3656	3656	3656	5651	5651	5651	16327	16327	16327

Glare Table

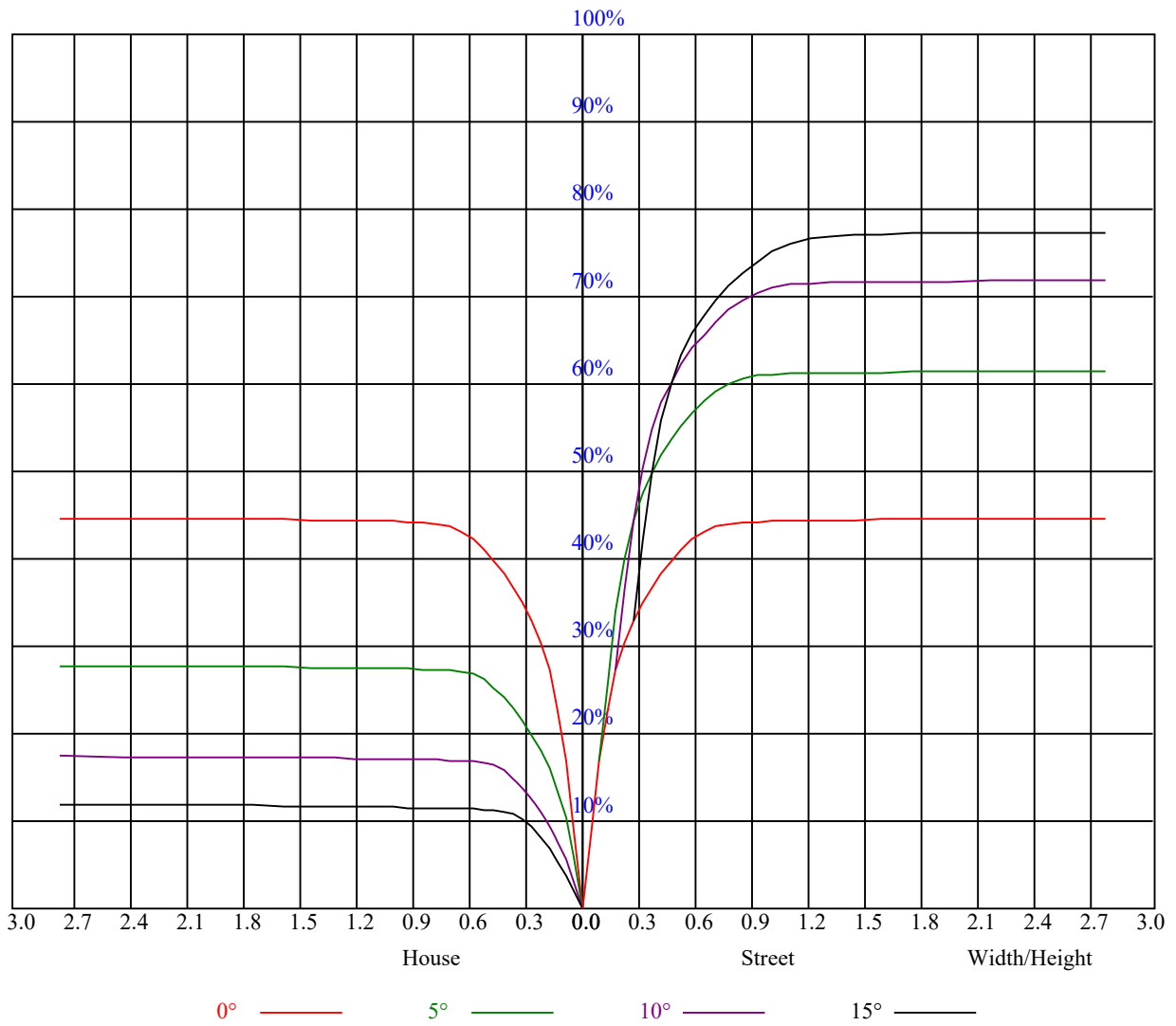
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.07	1.07	1.07	1.05	1.05	1.05	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.90
1	1.01	0.99	0.97	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.88	0.86
2	0.96	0.93	0.90	0.94	0.92	0.89	0.91	0.89	0.87	0.89	0.87	0.86	0.86	0.85	0.84	0.82
3	0.91	0.88	0.85	0.90	0.87	0.84	0.88	0.85	0.83	0.86	0.83	0.82	0.84	0.82	0.80	0.79
4	0.87	0.83	0.80	0.86	0.83	0.80	0.84	0.81	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.76
5	0.84	0.80	0.77	0.83	0.79	0.76	0.81	0.78	0.76	0.80	0.77	0.75	0.79	0.76	0.74	0.73
6	0.80	0.76	0.74	0.80	0.76	0.73	0.79	0.75	0.73	0.77	0.75	0.72	0.76	0.74	0.72	0.71
7	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.72	0.70	0.69
8	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.72	0.69	0.67	0.66
9	0.73	0.69	0.66	0.72	0.69	0.66	0.72	0.68	0.66	0.71	0.68	0.66	0.70	0.67	0.65	0.65
10	0.71	0.67	0.64	0.70	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.68	0.66	0.64	0.63



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	17662.09	17711.64	17139.06	16208.60	14947.81	13241.06	11391.17	9733.97	7950.14
45.0	17728.16	17304.23	16346.25	15135.00	13494.32	11666.45	9992.74	8170.37	6700.36
90.0	17529.96	16709.62	15349.72	13676.01	10946.31	10308.76	8250.20	6752.12	5427.46
135.0	17788.72	17238.16	15966.36	14595.45	13020.84	11132.40	9243.97	7674.86	6105.75
180.0	17662.09	17139.06	15916.81	14600.96	13059.38	10952.92	9271.50	7682.57	6236.79
225.0	17728.16	17596.03	17012.43	15757.14	14413.77	12850.16	10740.95	9087.06	7523.46
270.0	17529.96	17926.36	17739.17	17078.50	15883.77	14490.84	12701.51	10796.56	9133.86
315.0	17788.72	17860.30	17469.40	16412.31	15184.56	13698.03	10786.10	9945.94	8320.12
360.0	17662.09	17711.64	17139.06	16208.60	14947.81	13241.06	11391.17	9733.97	7950.14

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	6342.50	5092.72	3909.00	3121.70	2824.39	2110.86	1829.52	1609.30	1400.08
45.0	5241.37	4024.62	3220.80	2780.35	2174.18	1890.09	1671.51	1458.44	1323.56
90.0	4176.03	3254.38	2695.56	2249.60	1920.92	1699.59	1507.99	1372.01	1250.33
135.0	4762.38	3776.87	2967.54	2824.39	2062.96	1764.56	1565.80	1411.65	1264.09
180.0	4820.74	3687.68	2963.14	2405.41	2015.61	1761.80	1544.88	1396.23	1261.34
225.0	5778.17	4581.79	3597.39	2744.01	2343.20	1971.57	1673.71	1512.95	1367.05
270.0	7383.06	5813.96	4591.70	3600.69	2813.38	2292.00	1960.01	1707.30	1473.86
315.0	6634.85	5152.73	4040.04	3116.19	2511.67	2141.14	1830.63	1614.80	1422.66
360.0	6342.50	5092.72	3909.00	3121.70	2824.39	2110.86	1829.52	1609.30	1400.08

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1273.45	1179.31	1097.27	1048.82	1010.84	975.60	946.42	924.40	901.82
45.0	1210.69	1124.25	1060.39	1016.34	983.31	951.37	928.80	907.33	885.86
90.0	1146.82	1097.16	1051.14	1006.05	976.15	949.78	919.17	895.49	872.15
135.0	1172.70	1113.79	1053.23	1015.24	985.51	956.88	932.10	910.63	887.51
180.0	1090.72	1083.07	1030.66	983.25	955.61	932.93	908.05	889.22	870.44
225.0	1217.30	1094.36	1080.48	1028.51	988.81	960.24	936.07	911.02	893.18
270.0	1334.02	1234.36	1117.09	1053.78	1011.94	968.99	942.02	923.85	901.82
315.0	1275.66	1151.23	1093.86	1029.11	992.61	963.49	933.59	913.44	895.99
360.0	1273.45	1179.31	1097.27	1048.82	1010.84	975.60	946.42	924.40	901.82

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	882.00	859.43	834.66	814.83	794.46	775.19	728.40	657.37	551.11
45.0	861.63	833.00	811.53	788.96	768.59	720.69	648.56	558.27	453.66
90.0	842.47	814.50	791.27	770.24	737.87	667.06	588.28	490.00	383.25
135.0	862.18	835.21	810.43	788.96	766.94	714.08	639.76	555.52	433.29
180.0	845.72	822.93	803.93	783.12	765.06	713.86	631.11	544.40	437.09
225.0	875.56	852.11	829.87	810.49	789.78	763.14	703.29	612.61	522.15
270.0	885.31	870.44	847.32	830.25	814.28	795.01	766.94	706.92	603.42
315.0	875.73	858.00	839.11	817.42	802.61	783.07	720.47	652.69	551.94
360.0	882.00	859.43	834.66	814.83	794.46	775.19	728.40	657.37	551.11

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	456.42	358.42	283.54	144.36	77.19	39.42	32.15	28.02	22.68
45.0	356.21	290.15	161.04	88.37	42.89	31.93	27.47	22.52	18.17
90.0	275.67	187.14	110.44	50.10	32.04	28.57	24.17	18.72	16.46
135.0	335.84	279.14	145.40	70.97	36.39	31.00	26.32	21.25	17.67
180.0	329.51	238.34	156.14	72.73	36.34	31.55	27.86	22.68	17.62
225.0	415.84	306.00	215.71	135.44	60.45	34.69	31.16	26.10	21.36
270.0	510.37	411.27	298.96	229.70	116.39	54.12	32.65	29.51	25.00
315.0	429.27	344.54	250.34	133.13	76.20	38.87	30.94	26.59	21.53
360.0	456.42	358.42	283.54	144.36	77.19	39.42	32.15	28.02	22.68

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	18.39	16.46	15.25	12.77	12.39	12.11	11.78	11.56	11.34
45.0	14.53	13.49	12.88	12.55	12.22	11.89	11.67	11.40	11.23
90.0	14.31	12.72	12.39	12.06	11.78	11.51	11.23	11.01	10.79
135.0	14.92	13.05	12.11	11.78	11.56	11.34	11.12	11.01	10.63
180.0	13.21	12.66	12.06	11.73	11.45	11.23	11.01	10.85	10.63
225.0	18.06	15.36	13.27	12.22	11.89	11.62	11.40	11.18	10.96
270.0	20.59	17.62	13.98	12.83	12.39	12.00	11.73	11.45	11.29
315.0	17.73	14.42	13.32	12.50	12.17	11.84	11.56	11.34	11.18
360.0	18.39	16.46	15.25	12.77	12.39	12.11	11.78	11.56	11.34
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	11.12	10.90	10.79	10.57	10.41	10.30	10.13	10.02	9.91
45.0	10.96	10.79	10.57	10.41	10.19	10.13	9.97	9.86	9.74
90.0	10.63	10.46	10.35	10.08	10.08	9.74	9.74	9.63	9.52
135.0	10.52	10.41	10.24	10.13	10.02	9.86	9.74	9.69	9.58
180.0	10.41	10.24	10.13	10.02	9.91	9.80	9.58	9.58	9.47
225.0	10.68	10.52	10.35	10.24	10.02	9.97	9.86	9.74	9.63
270.0	11.01	10.79	10.63	10.46	10.30	10.13	10.02	9.91	9.74
315.0	10.90	10.74	10.57	10.41	10.24	10.13	10.02	9.86	9.74
360.0	11.12	10.90	10.79	10.57	10.41	10.30	10.13	10.02	9.91
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	9.80	9.69	9.58	9.52	9.47	9.36	9.30	9.19	9.14
45.0	9.52	9.41	9.25	9.36	9.25	9.19	9.14	9.08	9.03
90.0	9.52	9.36	9.30	9.25	9.19	9.08	9.03	9.03	8.97
135.0	9.52	9.41	9.36	9.25	9.19	9.14	9.08	9.08	8.97
180.0	9.41	9.36	9.30	9.19	9.14	9.03	9.03	8.97	8.92
225.0	9.52	9.41	9.36	9.25	9.25	9.14	9.08	9.03	9.03
270.0	9.63	9.58	9.52	9.47	9.41	9.30	9.25	9.08	9.14
315.0	9.69	9.52	9.52	9.41	9.30	9.25	9.19	9.14	9.08
360.0	9.80	9.69	9.58	9.52	9.47	9.36	9.30	9.19	9.14
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	9.08	9.03	9.03	8.97	8.92	8.86	8.86	8.86	8.81
45.0	8.92	8.86	9.03	8.81	8.86	8.81	8.75	8.70	8.75
90.0	8.97	8.92	8.86	8.86	8.81	8.75	8.75	8.70	8.64
135.0	8.92	8.92	8.92	8.86	8.86	8.81	8.75	8.70	8.75
180.0	8.92	8.92	8.81	8.81	8.81	8.81	8.70	8.81	8.75
225.0	8.92	8.92	8.92	8.81	8.81	8.75	8.75	8.75	8.70
270.0	9.19	9.08	9.08	9.08	9.08	9.25	9.25	9.08	8.97
315.0	9.03	9.03	8.97	8.97	8.92	8.81	8.81	8.81	8.86
360.0	9.08	9.03	9.03	8.97	8.92	8.86	8.86	8.86	8.81
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	8.75	8.81	8.75	8.75	8.75	8.64	8.64	8.64	8.64
45.0	8.64	8.75	8.64	8.59	8.64	8.59	8.53	8.53	8.53
90.0	8.70	8.64	8.64	8.64	8.59	8.53	8.59	8.53	8.53
135.0	8.75	8.75	8.70	8.70	8.64	8.59	8.59	8.48	8.59
180.0	8.70	8.70	8.64	8.64	8.64	8.59	8.59	8.59	8.53
225.0	8.64	8.64	8.59	8.59	8.53	8.53	8.59	8.53	8.53
270.0	8.97	8.92	8.86	8.86	8.75	8.70	8.64	8.70	8.48
315.0	8.70	8.81	8.75	8.70	8.70	8.64	8.64	8.59	8.48
360.0	8.75	8.81	8.75	8.75	8.75	8.64	8.64	8.64	8.64

Intensity data(cd)

<i>C/γ</i> (°)	90.0
0.0	8.59
45.0	8.53
90.0	8.64
135.0	8.59
180.0	8.59
225.0	8.53
270.0	8.64
315.0	8.59
360.0	8.59