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NATA

LumCAT: 2-1536-A
Luminaire: 92.76.323.00
Report No: NATA0100
Test No: GC2018111208
LampCAT: Philips SLM 1208 G7
Lamp flux(lm): 3443.0
Number of Lamps: 1
Length(mm): 70
Phm Type: C

Voltage(V): 35.3000
Current(A): 0.7000
Power (W): 24.7100
PF: 0.0000
Ballast type: DC
Width(mm): 70
Height(mm): 0

Photometric Results

Lumens(lm): 3063.16
Efficiency(%): 88.97%
Lumens(lm)/Power(W): 124.13
Central intensity(cd): 17121.090
Maximum intensity(cd): 17121.090
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=16.9
 [C90/270]Total=16.9
Field angle(10%Imax): [C0/180]Total=38.1
 [C90/270]Total=38.1
Maximum s/h(1/2): C0_180=0.29 C90_270=0.29
Maximum s/h(1/4): C0_180=0.30 C90_270=0.30
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.08%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.483%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	17121.094	4.096	4.096	.119%	.134%
1.0	17012.813	32.560	36.656	.946%	1.197%
2.0	16595.859	63.514	100.17	1.845%	3.270%
3.0	15886.406	91.175	191.346	2.648%	6.247%
4.0	14930.156	114.209	305.555	3.317%	9.975%
5.0	13685.766	130.803	436.357	3.799%	14.245%
6.0	12114.914	138.869	575.227	4.033%	18.779%
7.0	10576.898	141.353	716.58	4.106%	23.393%
8.0	9224.016	140.775	857.355	4.089%	27.989%
9.0	7717.781	132.397	989.752	3.845%	32.311%
10.0	6382.266	121.534	1111.285	3.530%	36.279%
11.0	5316.258	111.239	1222.524	3.231%	39.911%
12.0	4429.898	101.001	1323.525	2.934%	43.208%
13.0	3727.617	91.954	1415.479	2.671%	46.210%
14.0	3164.484	83.952	1499.431	2.438%	48.950%
15.0	2741.695	77.816	1577.247	2.260%	51.491%
16.0	2399.695	72.535	1649.781	2.107%	53.859%
17.0	2086.523	66.898	1716.679	1.943%	56.043%
18.0	1868.344	63.313	1779.992	1.839%	58.110%
19.0	1719.914	61.405	1841.396	1.783%	60.114%
20.0	1590.820	59.666	1901.062	1.733%	62.062%
21.0	1499.766	58.939	1960.001	1.712%	63.986%
22.0	1439.227	59.123	2019.124	1.717%	65.916%
23.0	1386.492	59.408	2078.532	1.725%	67.856%
24.0	1345.641	60.020	2138.552	1.743%	69.815%
25.0	1313.297	60.864	2199.416	1.768%	71.802%
26.0	1282.992	61.676	2261.093	1.791%	73.816%
27.0	1252.477	62.355	2323.447	1.811%	75.851%
28.0	1225.406	63.087	2386.534	1.832%	77.911%
29.0	1191.417	63.341	2449.875	1.840%	79.979%
30.0	1163.623	63.802	2513.677	1.853%	82.062%
31.0	1123.896	63.477	2577.155	1.844%	84.134%
32.0	1068.940	62.118	2639.272	1.804%	86.162%
33.0	998.782	59.653	2698.925	1.733%	88.109%
34.0	913.170	55.997	2754.922	1.626%	89.937%
35.0	805.563	50.669	2805.591	1.472%	91.591%
36.0	685.793	44.204	2849.795	1.284%	93.034%
37.0	581.555	38.380	2888.175	1.115%	94.287%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	461.580	31.163	2919.338	.905%	95.305%
39.0	354.002	24.430	2943.769	.710%	96.102%
40.0	258.230	18.202	2961.971	.529%	96.697%
41.0	174.923	12.585	2974.556	.366%	97.107%
42.0	112.992	8.291	2982.847	.241%	97.378%
43.0	67.015	5.012	2987.859	.146%	97.542%
44.0	47.292	3.603	2991.461	.105%	97.659%
45.0	38.644	2.997	2994.458	.087%	97.757%
46.0	34.109	2.691	2997.148	.078%	97.845%
47.0	29.630	2.376	2999.525	.069%	97.923%
48.0	25.868	2.108	3001.633	.061%	97.991%
49.0	22.830	1.889	3003.522	.055%	98.053%
50.0	20.623	1.732	3005.255	.050%	98.110%
51.0	19.209	1.637	3006.892	.048%	98.163%
52.0	18.527	1.601	3008.493	.047%	98.215%
53.0	17.986	1.575	3010.068	.046%	98.267%
54.0	17.501	1.553	3011.621	.045%	98.317%
55.0	17.093	1.535	3013.156	.045%	98.368%
56.0	16.699	1.518	3014.674	.044%	98.417%
57.0	16.341	1.503	3016.177	.044%	98.466%
58.0	16.017	1.490	3017.667	.043%	98.515%
59.0	15.715	1.477	3019.144	.043%	98.563%
60.0	15.441	1.466	3020.61	.043%	98.611%
61.0	15.258	1.463	3022.074	.043%	98.659%
62.0	15.223	1.474	3023.548	.043%	98.707%
63.0	15.265	1.492	3025.039	.043%	98.755%
64.0	15.328	1.511	3026.55	.044%	98.805%
65.0	15.398	1.530	3028.08	.044%	98.855%
66.0	15.202	1.523	3029.603	.044%	98.904%
67.0	14.885	1.503	3031.106	.044%	98.954%
68.0	14.548	1.479	3032.585	.043%	99.002%
69.0	14.147	1.448	3034.033	.042%	99.049%
70.0	13.985	1.441	3035.474	.042%	99.096%
71.0	13.866	1.438	3036.912	.042%	99.143%
72.0	13.746	1.434	3038.346	.042%	99.190%
73.0	13.648	1.431	3039.777	.042%	99.237%
74.0	13.598	1.433	3041.21	.042%	99.283%
75.0	13.570	1.437	3042.648	.042%	99.330%

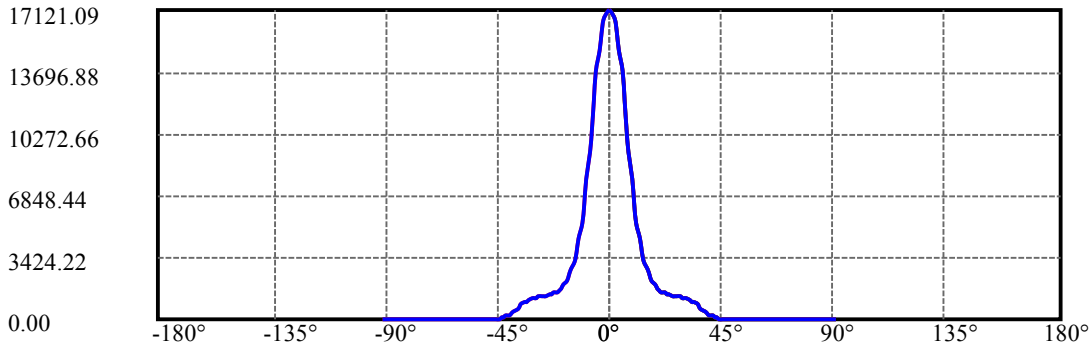
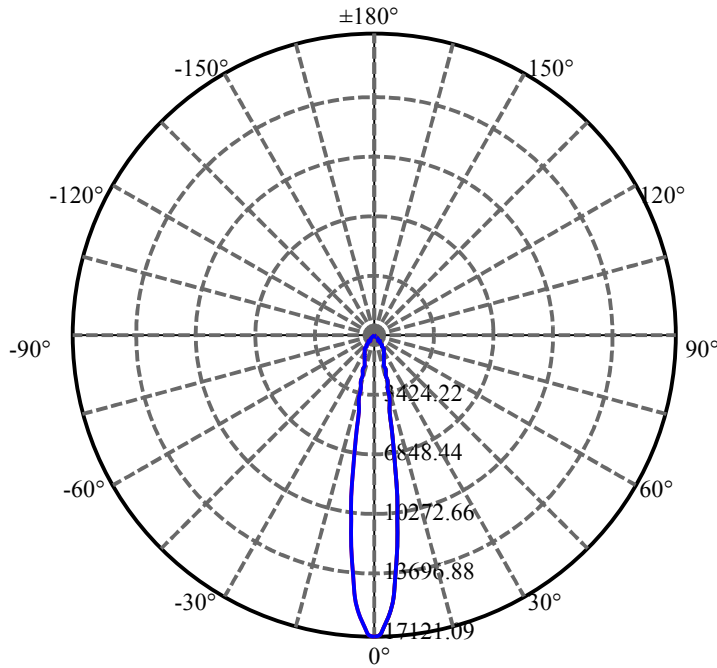
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	13.570	1.444	3044.092	.042%	99.377%
77.0	13.570	1.450	3045.542	.042%	99.425%
78.0	13.591	1.458	3046.999	.042%	99.472%
79.0	13.563	1.460	3048.46	.042%	99.520%
80.0	13.493	1.457	3049.917	.042%	99.568%
81.0	13.254	1.436	3051.352	.042%	99.614%
82.0	13.057	1.418	3052.77	.041%	99.661%
83.0	13.029	1.418	3054.188	.041%	99.707%
84.0	12.959	1.413	3055.602	.041%	99.753%
85.0	12.881	1.407	3057.009	.041%	99.799%
86.0	12.790	1.399	3058.408	.041%	99.845%
87.0	12.530	1.372	3059.78	.040%	99.890%
88.0	12.375	1.356	3061.136	.039%	99.934%
89.0	12.319	1.351	3062.487	.039%	99.978%
90.0	12.298	0.674	3063.161	.020%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2513.68	73.01%	82.06%
0-40	2961.97	86.03%	96.70%
0-60	3020.61	87.73%	98.61%
0-90	3062.49	88.95%	99.98%
0-120	3062.49	88.95%	99.98%
0-180	3063.16	88.97%	100.00%
60-90	43.34	1.26%	1.41%
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%
0-29.01	2450.53	71.17%	80.00%

ZONAL LUMEN SUMMARY

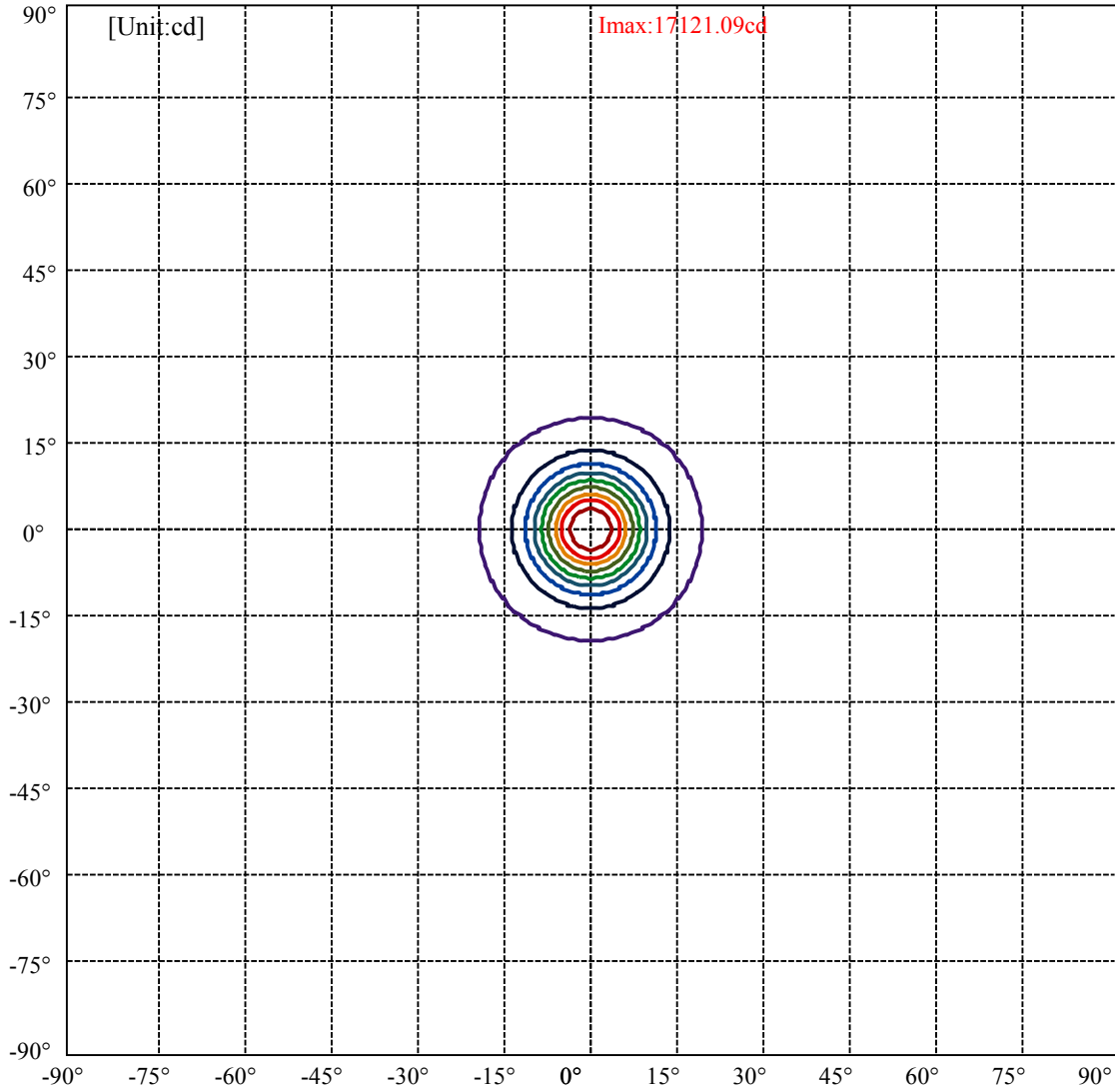
0-10	1111.29
10-20	789.78
20-30	612.62
30-40	448.29
40-50	43.28
50-60	15.36
60-70	14.86
70-80	14.44
80-90	12.57
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



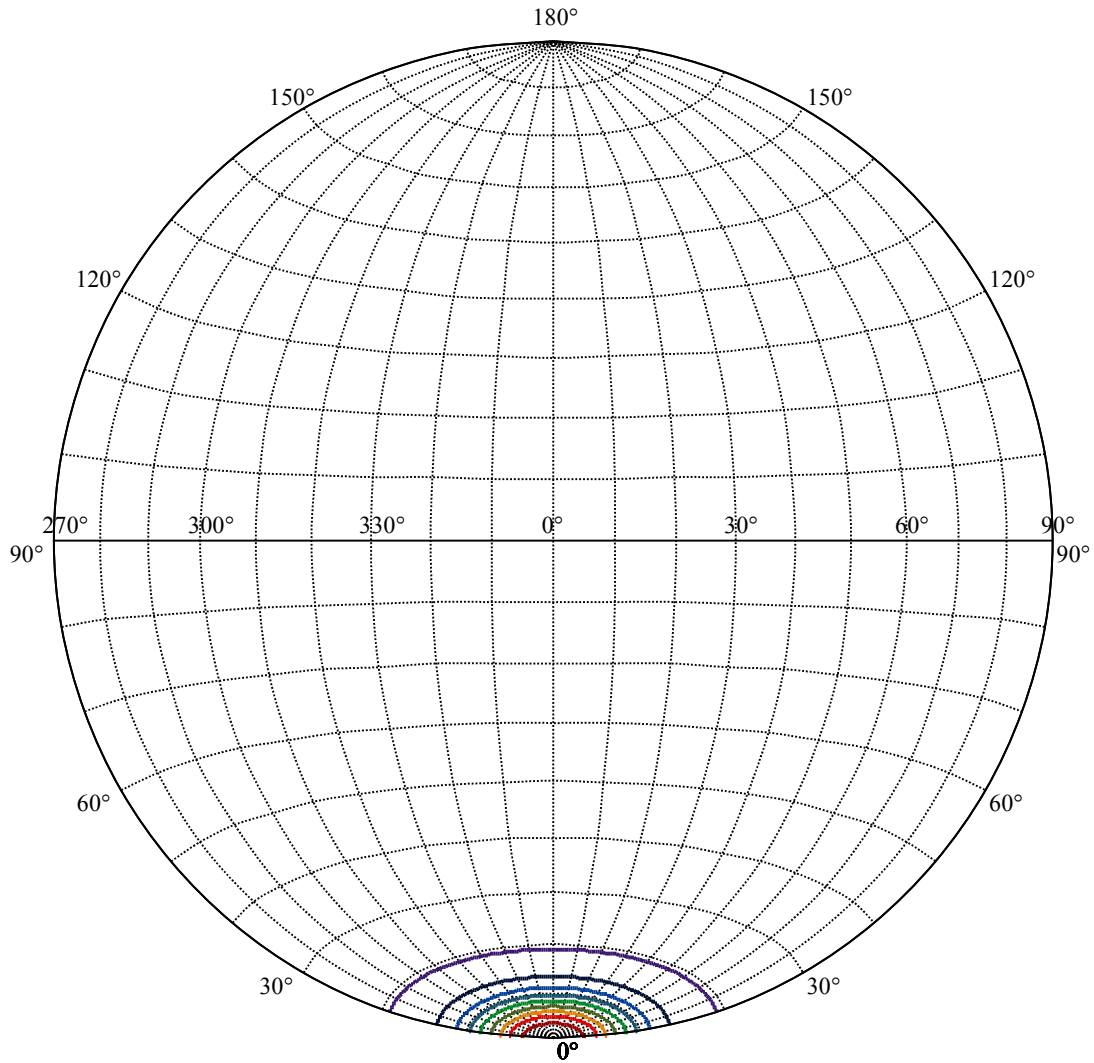
C0(Max): —————
C0/C180: —————
C90/C270: —————

Field angle(10%Imax):C0/180Left:19.1 Right:19.1
:C90/270Left:19.1 Right:19.1

Beam Angle(50%Imax):C0/180Left:8.4 Right:8.4
:C90/270Left:8.4 Right:8.4



(10%I _{max}) 1712.11	—
(20%I _{max}) 3424.22	—
(30%I _{max}) 5136.33	—
(40%I _{max}) 6848.44	—
(50%I _{max}) 8560.55	—
(60%I _{max}) 10272.7	—
(70%I _{max}) 11984.8	—
(80%I _{max}) 13696.9	—
(90%I _{max}) 15409	—



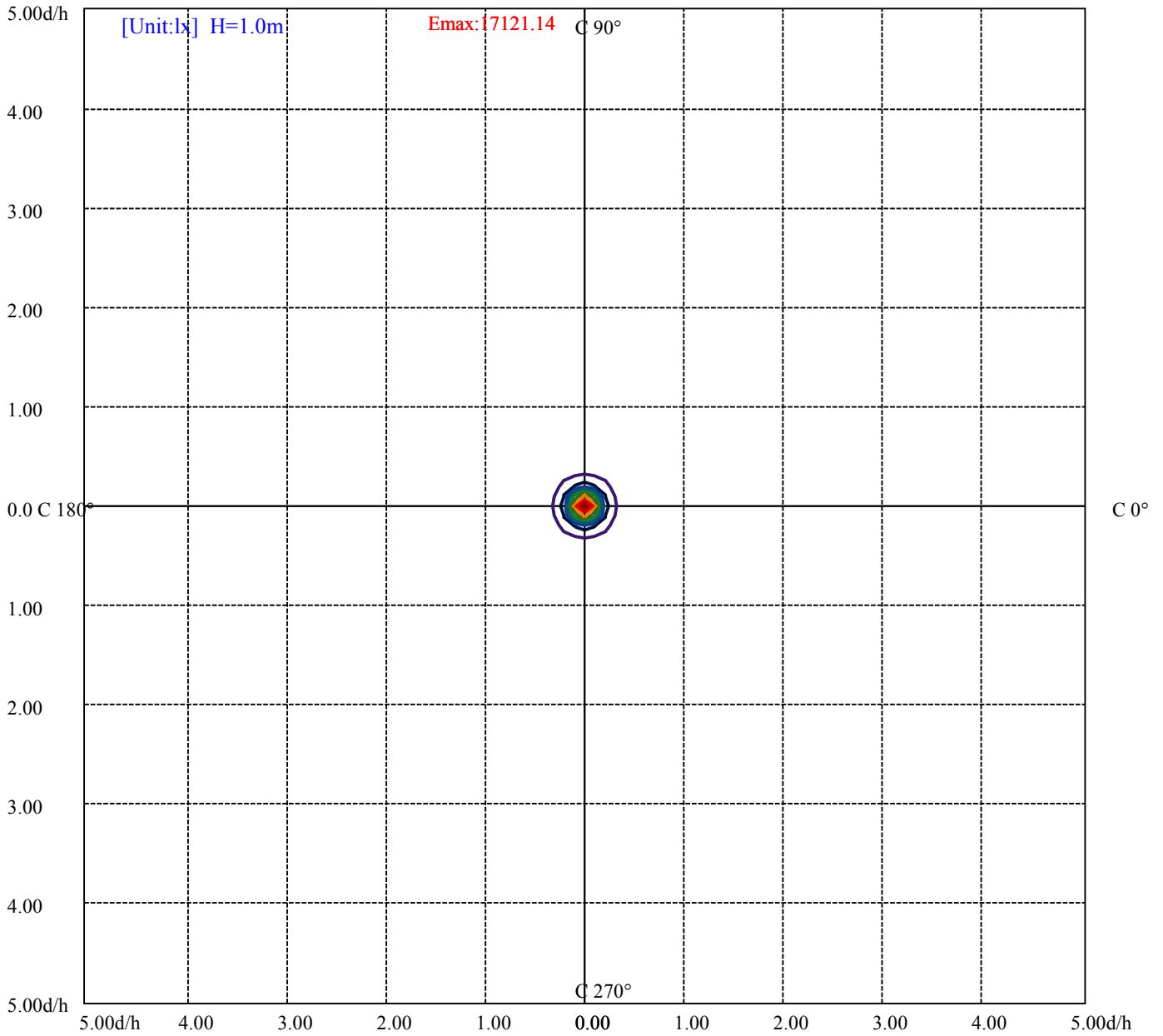
House

[Unit:cd]

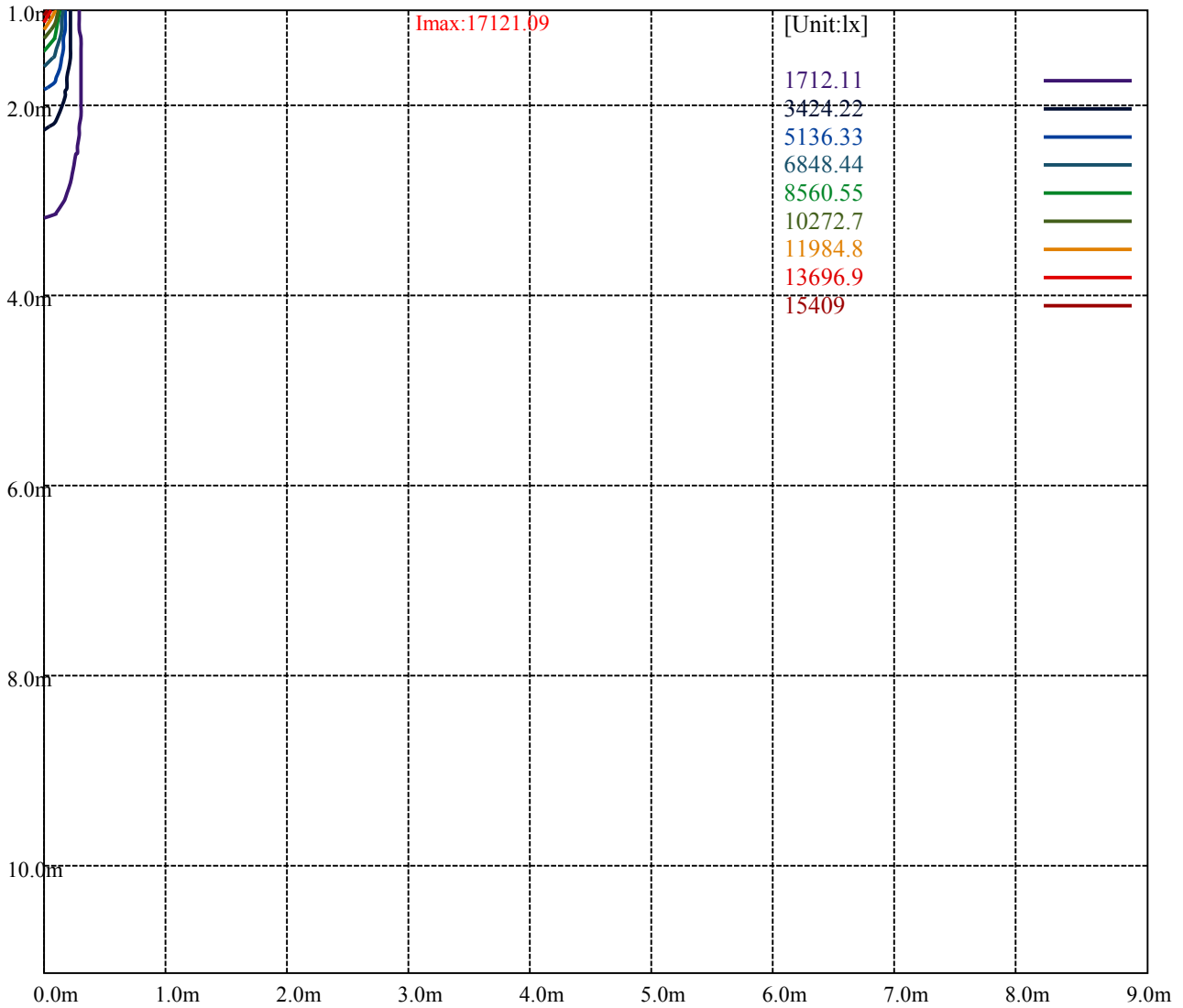
Road

Imax:17121.09

(10%Imax) 1712.11	—
(20%Imax) 3424.22	—
(30%Imax) 5136.33	—
(40%Imax) 6848.44	—
(50%Imax) 8560.55	—
(60%Imax) 10272.7	—
(70%Imax) 11984.8	—
(80%Imax) 13696.9	—
(90%Imax) 15409	—



(10%Emax) 1712.11	—
(20%Emax) 3424.22	—
(30%Emax) 5136.32	—
(40%Emax) 6848.43	—
(50%Emax) 8560.54	—
(60%Emax) 10272.6	—
(70%Emax) 11984.8	—
(80%Emax) 13696.9	—
(90%Emax) 15409	—



Luminance Table

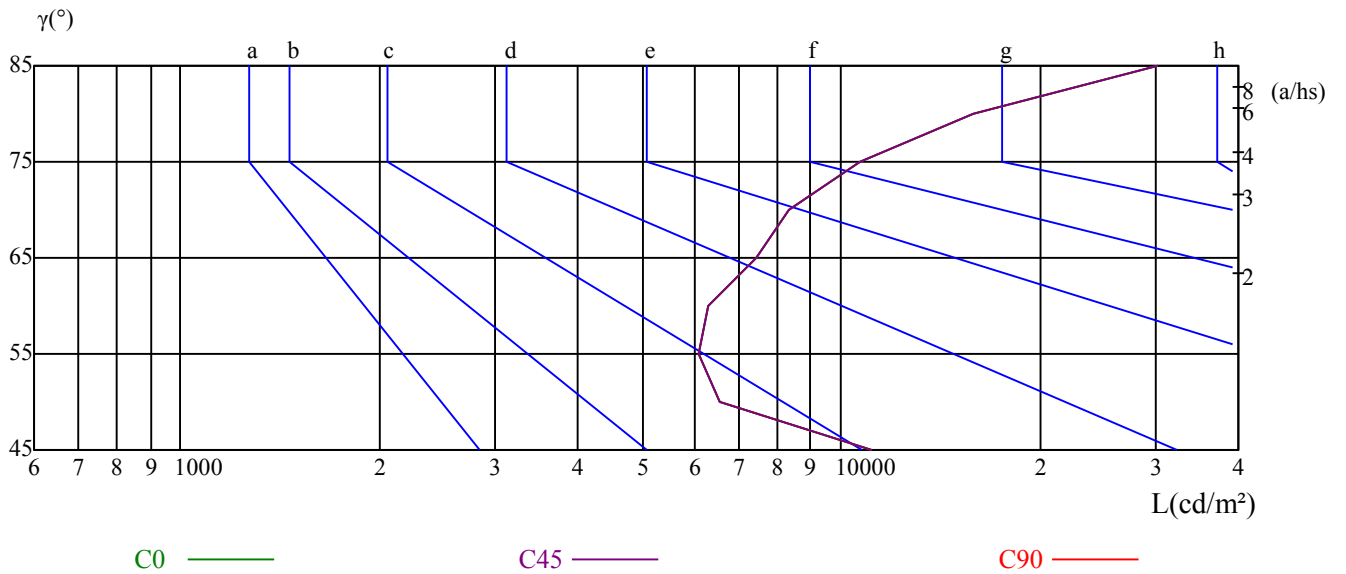
γ	45	50	55	60	65	70	75	80	85
C0	11153	6548	6082	6302	7436	8345	10700	15858	30162
C45	11153	6548	6082	6302	7436	8345	10700	15858	30162
C90	11153	6548	6082	6302	7436	8345	10700	15858	30162

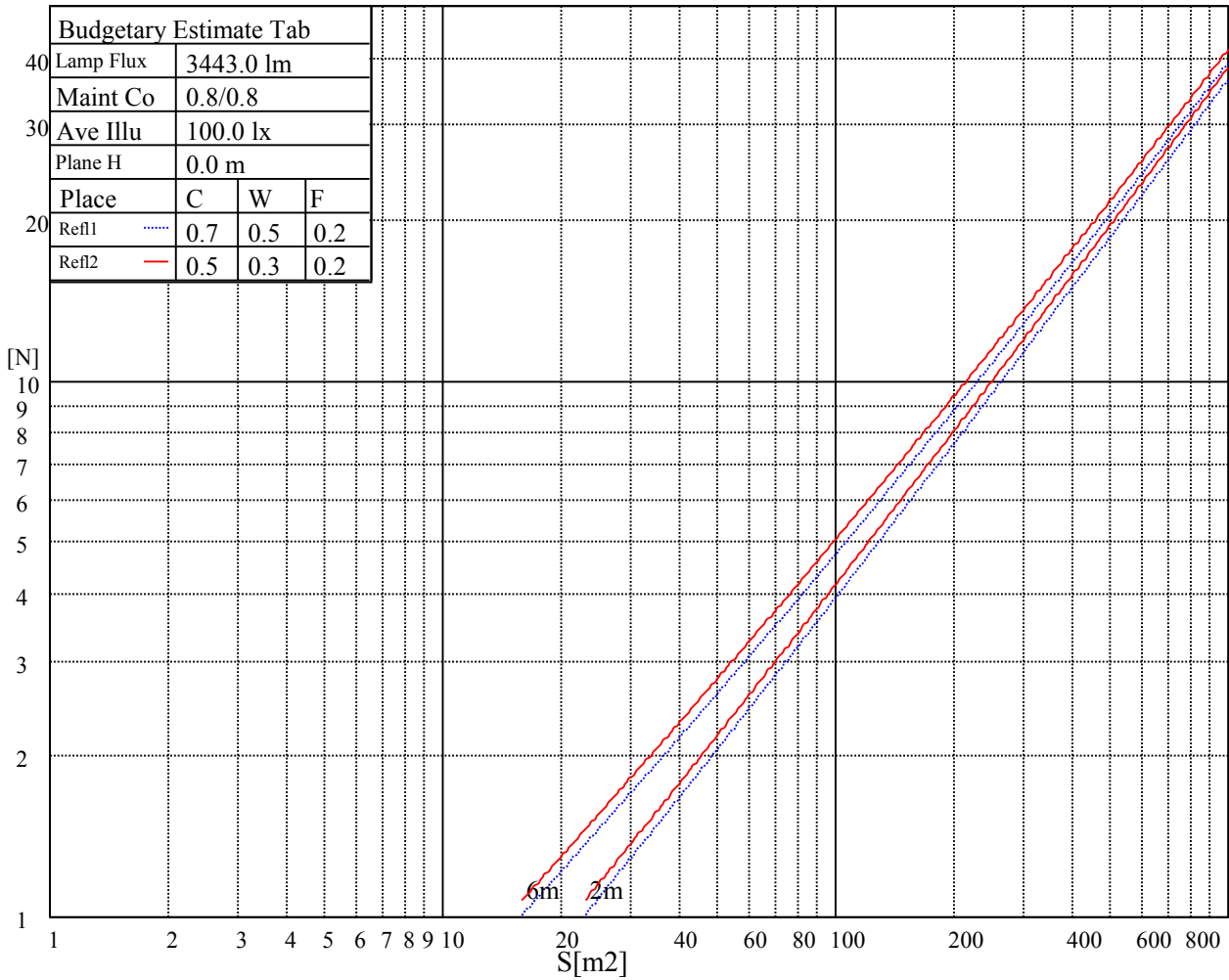
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
7436	7436	7436	10700	10700	10700	30162	30162	30162

Glare Table

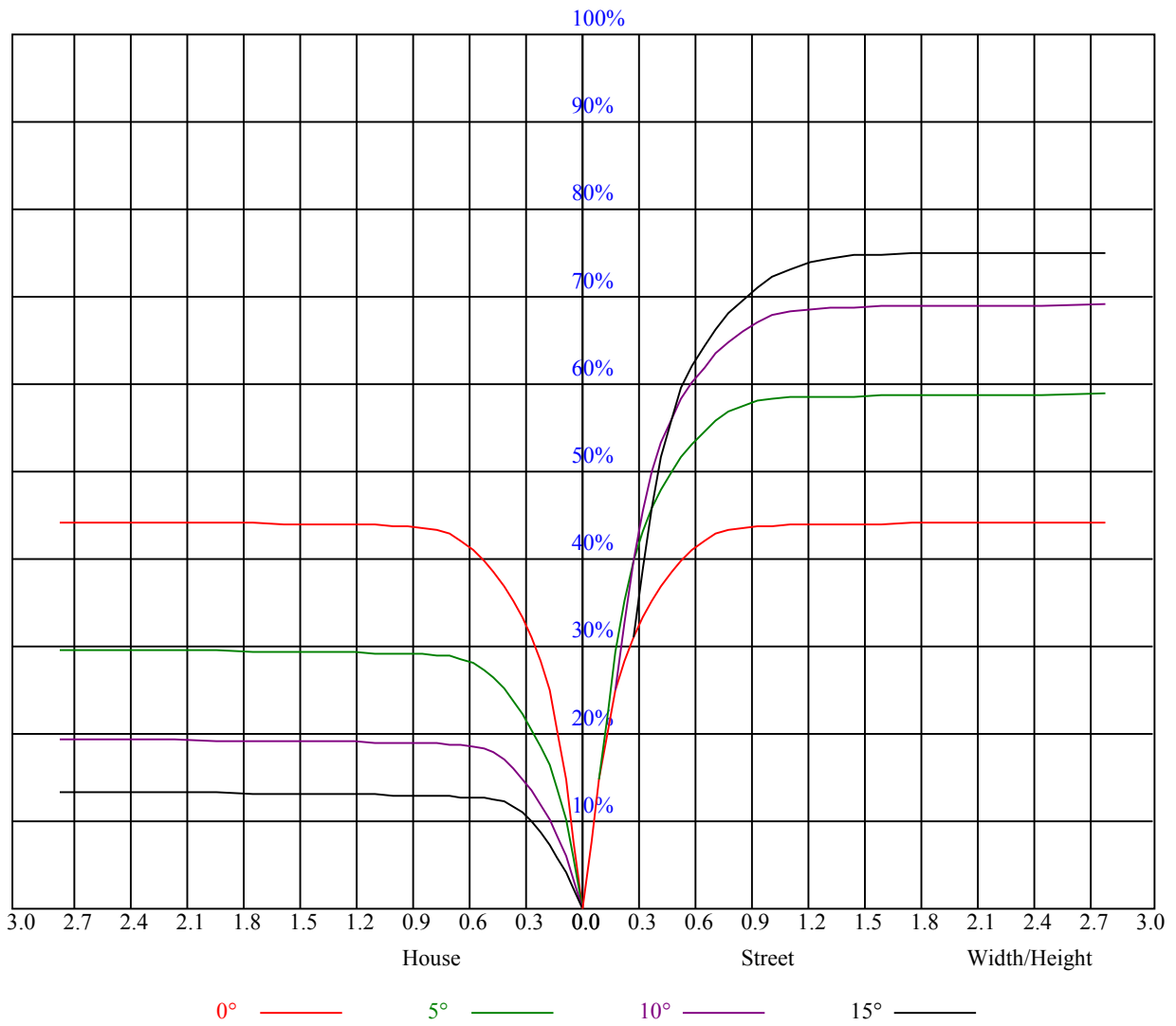
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.00	0.98	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	0.85
2	0.94	0.91	0.88	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	0.89	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	0.78	0.77
4	0.85	0.81	0.78	0.84	0.81	0.78	0.82	0.79	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.74
5	0.81	0.77	0.74	0.81	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
6	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	0.71	0.69	0.68
7	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.66
8	0.72	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.69	0.67	0.64	0.63
9	0.70	0.66	0.63	0.69	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.62	0.67	0.64	0.62	0.61
10	0.68	0.64	0.61	0.67	0.63	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.65	0.62	0.60	0.59



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	16841.25	17218.13	17341.88	17229.38	16875.00	16048.13	15063.75	13831.88	12217.50
45.0	17313.75	17251.88	16897.50	16301.25	15271.88	13905.00	12459.38	10726.88	9185.63
90.0	17173.13	16858.13	16200.00	15170.63	14000.63	12144.38	10681.88	9123.75	7638.75
135.0	17156.25	16846.88	15963.75	15030.00	14040.00	12172.50	10659.38	9331.88	7576.88
180.0	16841.25	16222.50	15345.00	13966.88	12223.13	11161.13	9441.00	7841.25	6594.75
225.0	17313.75	17178.75	16773.75	15930.00	14968.13	13826.25	11192.06	10635.19	9142.31
270.0	17173.13	17251.88	17083.13	16678.13	15890.63	14934.38	13590.00	12026.25	10530.00
315.0	17156.25	17274.38	17161.88	16785.00	16171.88	15294.38	13831.88	11098.13	10906.31
360.0	16841.25	17218.13	17341.88	17229.38	16875.00	16048.13	15063.75	13831.88	12217.50
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	10501.88	8988.75	7374.38	6114.38	5085.00	4078.13	3448.13	2941.88	2462.63
45.0	7509.38	6052.50	5040.00	4162.50	3470.63	2998.13	2846.25	2299.50	2022.19
90.0	6203.25	5079.38	4296.38	3596.63	3051.56	2671.88	2324.81	2072.25	1856.81
135.0	6491.25	5338.13	4336.88	3718.13	3206.25	2840.63	2386.69	2089.13	1854.56
180.0	5430.38	4523.06	3884.63	3304.13	2880.56	2487.38	2169.56	1945.69	1774.69
225.0	7594.31	6246.56	5241.94	4335.19	3702.38	3135.94	2691.00	2371.50	2110.50
270.0	8831.25	7278.75	6080.63	5101.88	4128.75	3526.88	3043.13	2840.63	2287.69
315.0	9180.56	7551.00	6275.25	5106.38	4295.81	3576.94	3024.00	2637.00	2323.13
360.0	10501.88	8988.75	7374.38	6114.38	5085.00	4078.13	3448.13	2941.88	2462.63
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2172.38	1948.50	1742.63	1623.38	1532.25	1446.75	1395.00	1355.06	1317.38
45.0	1825.31	1693.69	1543.50	1467.00	1416.94	1358.44	1324.13	1298.25	1265.63
90.0	1701.00	1595.81	1512.56	1434.94	1388.25	1350.00	1314.00	1281.38	1255.50
135.0	1703.25	1594.69	1497.94	1440.56	1397.25	1357.88	1323.56	1299.94	1271.81
180.0	1623.38	1535.63	1468.13	1404.56	1365.75	1333.13	1299.94	1269.00	1238.63
225.0	1867.50	1725.19	1618.31	1519.88	1459.69	1412.44	1370.81	1335.38	1307.81
270.0	2040.19	1840.50	1659.94	1555.31	1476.56	1413.56	1366.88	1334.81	1303.88
315.0	2013.75	1825.31	1683.56	1552.50	1477.13	1419.75	1370.81	1332.56	1303.31
360.0	2172.38	1948.50	1742.63	1623.38	1532.25	1446.75	1395.00	1355.06	1317.38
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1284.75	1258.88	1233.56	1206.00	1179.56	1153.69	1130.63	1086.19	990.00
45.0	1236.94	1211.06	1177.31	1150.88	1126.13	1067.63	989.44	897.19	768.94
90.0	1221.75	1194.75	1164.94	1118.31	1085.34	1002.43	899.72	799.71	691.93
135.0	1236.94	1210.50	1180.69	1153.13	1100.25	1013.63	920.81	807.19	685.69
180.0	1206.56	1180.13	1117.46	1104.86	1037.36	942.47	837.56	736.14	631.69
225.0	1278.56	1243.13	1215.00	1185.19	1120.84	1105.99	1025.38	938.48	840.38
270.0	1279.69	1254.38	1222.31	1199.81	1175.06	1147.50	1100.81	1029.38	916.88
315.0	1274.63	1250.44	1220.06	1190.81	1166.63	1118.19	1085.91	1011.09	919.01
360.0	1284.75	1258.88	1233.56	1206.00	1179.56	1153.69	1130.63	1086.19	990.00
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	894.94	790.88	651.38	537.19	426.38	311.63	287.44	133.48	72.84
45.0	660.38	550.69	419.06	320.63	285.19	140.68	78.19	54.68	46.80
90.0	559.97	453.60	350.89	232.99	153.23	92.25	57.54	48.04	38.59
135.0	576.56	483.19	342.56	293.63	160.14	87.47	54.79	47.59	39.43
180.0	481.44	391.33	292.16	190.86	108.45	63.11	46.63	38.76	33.19
225.0	708.58	598.22	487.29	367.71	255.54	172.29	103.11	57.15	48.04
270.0	813.38	702.56	576.56	452.81	345.38	294.19	139.84	79.88	49.89
315.0	791.10	681.98	572.74	436.22	331.54	237.77	136.41	76.56	49.56
360.0	894.94	790.88	651.38	537.19	426.38	311.63	287.44	133.48	72.84

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	49.73	43.93	36.11	32.85	30.15	24.64	20.98	19.41	18.56
45.0	38.42	35.44	32.96	23.85	22.11	19.74	19.01	18.45	17.89
90.0	33.02	29.31	26.10	23.23	20.36	19.58	18.96	18.45	18.06
135.0	33.98	31.11	23.68	21.26	20.25	19.58	18.96	18.51	18.06
180.0	29.98	24.69	21.94	20.03	19.29	18.62	18.06	17.61	17.16
225.0	36.96	31.39	28.41	25.26	22.50	19.52	18.84	18.23	17.78
270.0	44.33	38.59	34.65	30.88	22.89	20.98	19.35	18.68	18.06
315.0	42.75	38.42	33.19	29.59	25.09	22.33	19.52	18.90	18.34
360.0	49.73	43.93	36.11	32.85	30.15	24.64	20.98	19.41	18.56
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	18.06	17.61	17.04	16.71	16.31	15.92	15.64	15.30	15.08
45.0	17.44	16.99	16.54	16.20	15.92	15.58	15.24	15.02	14.79
90.0	17.55	17.21	16.88	16.48	16.20	15.92	15.69	15.81	16.82
135.0	17.66	17.33	16.99	16.71	16.43	16.20	15.98	15.92	15.92
180.0	16.71	16.31	16.03	15.75	15.41	15.19	14.96	14.79	14.63
225.0	17.27	16.82	16.48	16.09	15.75	15.47	15.19	14.91	14.68
270.0	17.61	17.16	16.71	16.31	15.98	15.64	15.36	15.13	14.91
315.0	17.72	17.33	16.93	16.48	16.14	15.81	15.47	15.19	14.96
360.0	18.06	17.61	17.04	16.71	16.31	15.92	15.64	15.30	15.08
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	14.79	14.57	14.40	14.18	14.01	13.89	13.78	13.67	13.56
45.0	14.63	14.40	14.23	14.12	14.01	13.89	13.84	13.73	13.56
90.0	18.39	20.03	21.32	20.31	18.73	17.04	14.57	13.89	13.56
135.0	15.92	15.98	16.03	16.09	16.14	16.03	15.92	15.98	16.09
180.0	14.46	14.29	14.23	14.06	13.95	13.89	13.84	13.73	13.67
225.0	14.51	14.29	14.18	14.01	13.84	13.73	13.61	13.50	13.39
270.0	14.74	14.57	14.46	14.34	14.18	14.12	14.01	13.89	13.73
315.0	14.68	14.51	14.34	14.51	14.23	13.78	13.61	13.50	13.39
360.0	14.79	14.57	14.40	14.18	14.01	13.89	13.78	13.67	13.56
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	13.44	13.33	13.28	13.16	13.05	13.05	12.94	12.88	12.83
45.0	13.33	13.22	13.16	13.05	12.99	12.94	12.83	12.77	12.71
90.0	13.44	13.33	13.28	13.11	13.11	12.99	12.99	12.94	12.83
135.0	15.98	15.98	16.14	16.65	17.16	17.49	18.11	18.28	18.17
180.0	13.56	13.44	13.39	13.28	13.16	13.16	13.05	13.05	12.94
225.0	13.33	13.22	13.11	13.05	12.99	12.94	12.94	12.83	12.77
270.0	13.61	13.50	13.33	13.22	13.16	13.11	13.05	12.99	12.99
315.0	13.28	13.16	13.11	13.05	12.94	12.88	12.83	12.77	12.71
360.0	13.44	13.33	13.28	13.16	13.05	13.05	12.94	12.88	12.83
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	12.77	12.71	12.66	12.66	12.54	12.54	12.66	12.49	12.38
45.0	12.66	12.60	12.60	12.54	12.54	12.49	12.49	12.32	12.32
90.0	12.83	12.77	12.71	12.66	12.66	12.54	12.49	12.26	12.26
135.0	16.43	15.24	15.24	14.96	14.63	14.29	12.54	12.32	12.32
180.0	12.88	12.83	12.77	12.71	12.71	12.66	12.38	12.32	12.32
225.0	12.77	12.66	12.66	12.60	12.54	12.54	12.54	12.43	12.32
270.0	12.99	12.99	12.99	12.94	12.88	12.77	12.71	12.43	12.32
315.0	12.71	12.66	12.60	12.60	12.54	12.49	12.43	12.43	12.32
360.0	12.77	12.71	12.66	12.66	12.54	12.54	12.66	12.49	12.38

Intensity data(cd)

C/ γ (°)	90.0
0.0	12.32
45.0	12.32
90.0	12.26
135.0	12.32
180.0	12.26
225.0	12.32
270.0	12.32
315.0	12.26
360.0	12.32