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NATA

LumCAT: 3-2033-M
Luminaire: 92.70.135.00
Report No: GC2017061708
Test No: NT-0010
LampCAT: LUMILEDS LUXEON CoB 1208
Lamp flux(lm): 3097.0
Number of Lamps: 1
Length(mm): 79
Phm Type: C

Voltage(V): 35.3000
Current(A): 0.7000
Power (W): 24.7100
PF: 0.0000
Ballast type: DC
Width(mm): 79
Height(mm): 0

Photometric Results

Lumens(lm): 2764.30
Efficiency(%): 89.26%
Lumens(lm)/Power(W): 111.87
Central intensity(cd): 19809.290
Maximum intensity(cd): 19809.290
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=15.5
 [C90/270]Total=15.5
Field angle(10%Imax): [C0/180]Total=31.8
 [C90/270]Total=31.8
Maximum s/h(1/2): C0_180=0.27 C90_270=0.27
Maximum s/h(1/4): C0_180=0.27 C90_270=0.27
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.26%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.793%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	19809.293	0.000	0	.000%	.000%
1.0	19637.240	18.874	18.874	.609%	.683%
2.0	19017.857	55.481	74.356	1.791%	2.690%
3.0	18019.961	88.582	162.938	2.860%	5.894%
4.0	16772.932	116.463	279.401	3.761%	10.107%
5.0	14767.090	135.684	415.085	4.381%	15.016%
6.0	13012.993	145.992	561.076	4.714%	20.297%
7.0	11388.003	151.457	712.533	4.890%	25.776%
8.0	9412.993	148.869	861.402	4.807%	31.162%
9.0	7663.163	138.393	999.795	4.469%	36.168%
10.0	6132.870	124.849	1124.644	4.031%	40.685%
11.0	4750.541	108.748	1233.391	3.511%	44.619%
12.0	3843.763	93.948	1327.339	3.034%	48.017%
13.0	3106.282	82.480	1409.819	2.663%	51.001%
14.0	2652.893	73.717	1483.536	2.380%	53.668%
15.0	2229.096	67.022	1550.558	2.164%	56.092%
16.0	1956.429	61.330	1611.888	1.980%	58.311%
17.0	1741.847	57.592	1669.48	1.860%	60.394%
18.0	1589.341	54.924	1724.404	1.773%	62.381%
19.0	1474.135	53.298	1777.702	1.721%	64.309%
20.0	1371.593	52.085	1829.787	1.682%	66.193%
21.0	1296.441	51.232	1881.018	1.654%	68.047%
22.0	1244.412	51.060	1932.078	1.649%	69.894%
23.0	1199.954	51.289	1983.367	1.656%	71.749%
24.0	1159.763	51.592	2034.959	1.666%	73.616%
25.0	1131.588	52.100	2087.059	1.682%	75.500%
26.0	1101.183	52.705	2139.764	1.702%	77.407%
27.0	1074.880	53.238	2193.002	1.719%	79.333%
28.0	1049.361	53.781	2246.783	1.737%	81.278%
29.0	1025.398	54.282	2301.065	1.753%	83.242%
30.0	995.557	54.565	2355.63	1.762%	85.216%
31.0	955.118	54.284	2409.915	1.753%	87.180%
32.0	884.756	52.710	2462.625	1.702%	89.087%
33.0	799.295	49.613	2512.238	1.602%	90.881%
34.0	700.565	45.390	2557.628	1.466%	92.523%
35.0	594.650	40.225	2597.853	1.299%	93.979%
36.0	463.754	33.700	2631.552	1.088%	95.198%
37.0	357.853	26.796	2658.349	.865%	96.167%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	256.012	20.490	2678.839	.662%	96.908%
39.0	151.901	13.923	2692.762	.450%	97.412%
40.0	111.737	9.195	2701.957	.297%	97.745%
41.0	50.473	5.776	2707.733	.187%	97.954%
42.0	27.803	2.844	2710.577	.092%	98.056%
43.0	21.321	1.820	2712.396	.059%	98.122%
44.0	17.783	1.476	2713.872	.048%	98.176%
45.0	15.402	1.275	2715.148	.041%	98.222%
46.0	13.971	1.149	2716.296	.037%	98.263%
47.0	13.186	1.080	2717.376	.035%	98.302%
48.0	12.814	1.051	2718.428	.034%	98.340%
49.0	12.580	1.043	2719.47	.034%	98.378%
50.0	12.360	1.040	2720.51	.034%	98.416%
51.0	12.209	1.039	2721.55	.034%	98.453%
52.0	12.030	1.040	2722.59	.034%	98.491%
53.0	11.878	1.040	2723.63	.034%	98.529%
54.0	11.713	1.040	2724.67	.034%	98.566%
55.0	11.603	1.041	2725.71	.034%	98.604%
56.0	11.493	1.044	2726.754	.034%	98.642%
57.0	11.355	1.045	2727.799	.034%	98.679%
58.0	11.273	1.046	2728.845	.034%	98.717%
59.0	11.204	1.051	2729.896	.034%	98.755%
60.0	11.121	1.055	2730.951	.034%	98.793%
61.0	11.053	1.058	2732.009	.034%	98.832%
62.0	10.998	1.063	2733.071	.034%	98.870%
63.0	10.929	1.066	2734.138	.034%	98.909%
64.0	10.874	1.070	2735.208	.035%	98.947%
65.0	10.846	1.075	2736.283	.035%	98.986%
66.0	10.791	1.080	2737.362	.035%	99.025%
67.0	10.736	1.082	2738.445	.035%	99.065%
68.0	10.695	1.086	2739.53	.035%	99.104%
69.0	10.708	1.092	2740.622	.035%	99.143%
70.0	10.653	1.097	2741.719	.035%	99.183%
71.0	10.640	1.101	2742.82	.036%	99.223%
72.0	10.598	1.104	2743.924	.036%	99.263%
73.0	10.585	1.108	2745.032	.036%	99.303%
74.0	10.557	1.111	2746.143	.036%	99.343%
75.0	10.585	1.117	2747.26	.036%	99.383%

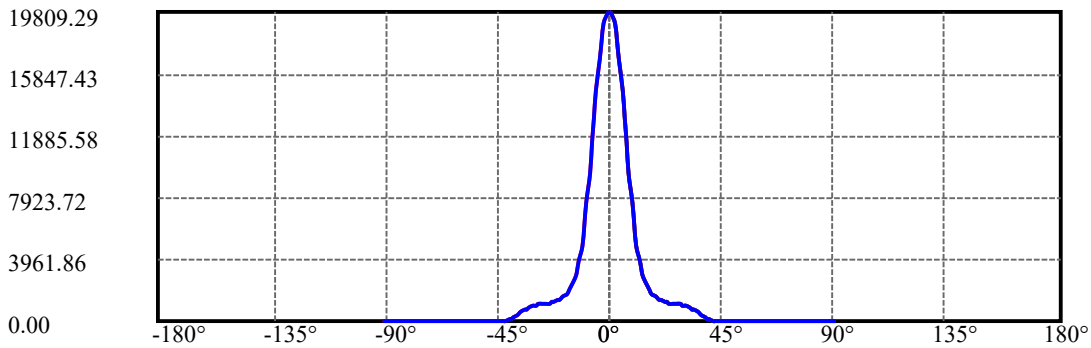
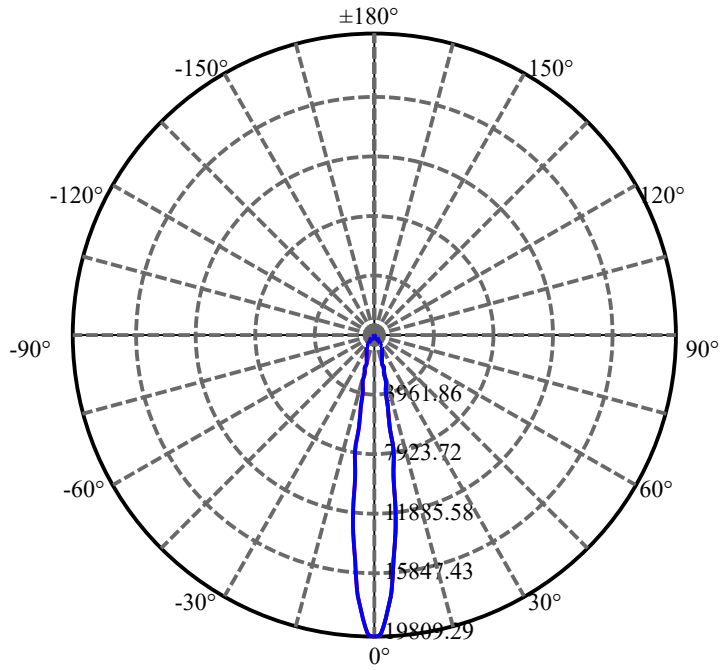
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	10.557	1.122	2748.382	.036%	99.424%
77.0	10.543	1.125	2749.507	.036%	99.465%
78.0	10.530	1.128	2750.636	.036%	99.506%
79.0	10.516	1.131	2751.766	.037%	99.546%
80.0	10.530	1.135	2752.901	.037%	99.587%
81.0	10.516	1.138	2754.039	.037%	99.629%
82.0	10.488	1.139	2755.178	.037%	99.670%
83.0	10.474	1.140	2756.318	.037%	99.711%
84.0	10.447	1.140	2757.457	.037%	99.752%
85.0	10.447	1.140	2758.598	.037%	99.794%
86.0	10.447	1.142	2759.74	.037%	99.835%
87.0	10.433	1.143	2760.882	.037%	99.876%
88.0	10.406	1.142	2762.024	.037%	99.918%
89.0	10.392	1.140	2763.164	.037%	99.959%
90.0	10.406	1.140	2764.304	.037%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2355.63	76.06%	85.22%
0-40	2701.96	87.24%	97.74%
0-60	2730.95	88.18%	98.79%
0-90	2763.16	89.22%	99.96%
0-120	2763.16	89.22%	99.96%
0-180	2764.30	89.26%	100.00%
60-90	33.27	1.07%	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%
0-27.34	2211.44	71.41%	80.00%

ZONAL LUMEN SUMMARY

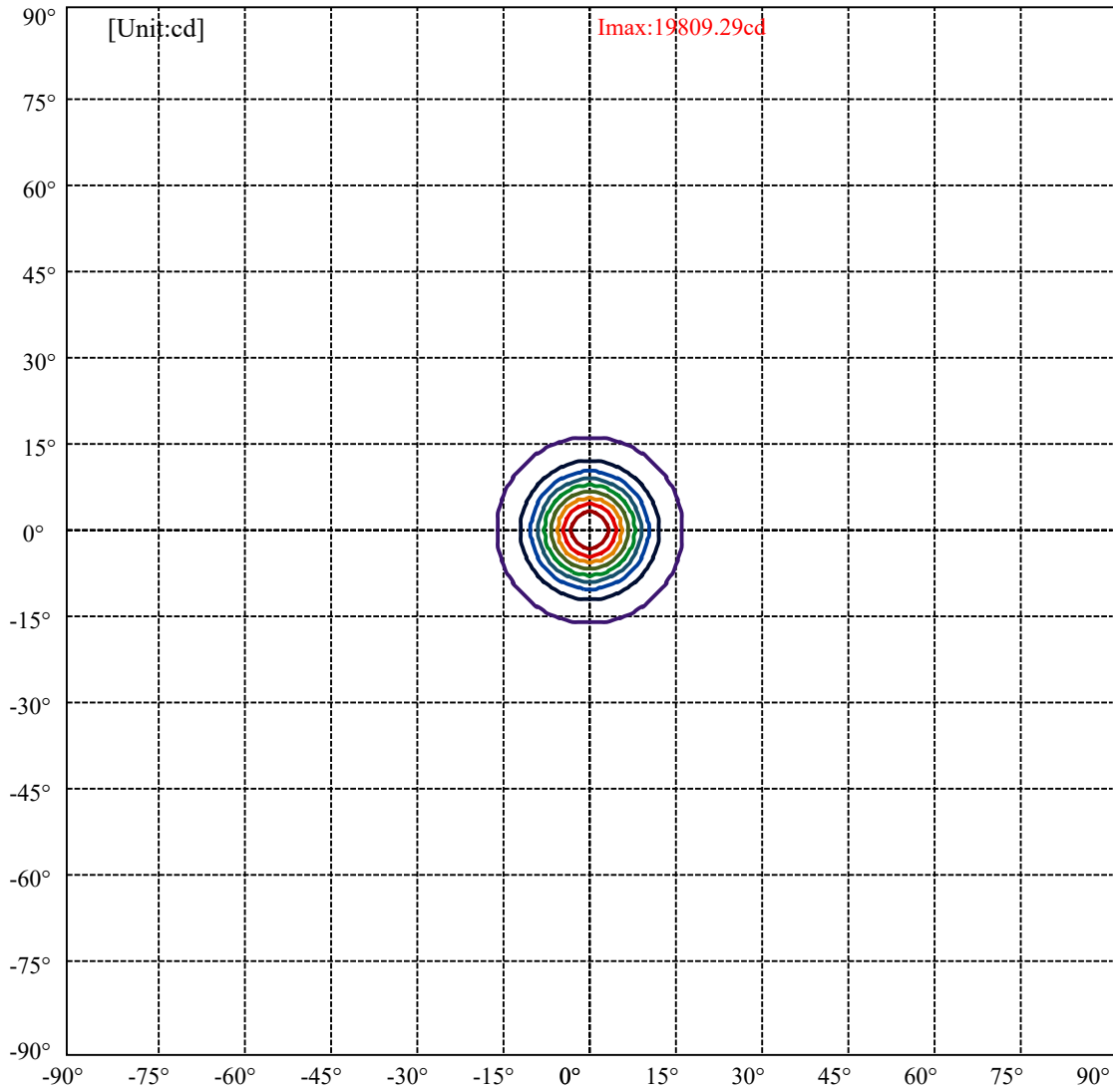
0-10	1124.64
10-20	705.14
20-30	525.84
30-40	346.33
40-50	18.55
50-60	10.44
60-70	10.77
70-80	11.18
80-90	10.26
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



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

Field angle(10%Imax):C0/180Left:15.9 Right:15.9
:C90/270Left:15.9 Right:15.9

Beam Angle(50%Imax):C0/180Left:7.8 Right:7.8
:C90/270Left:7.8 Right:7.8

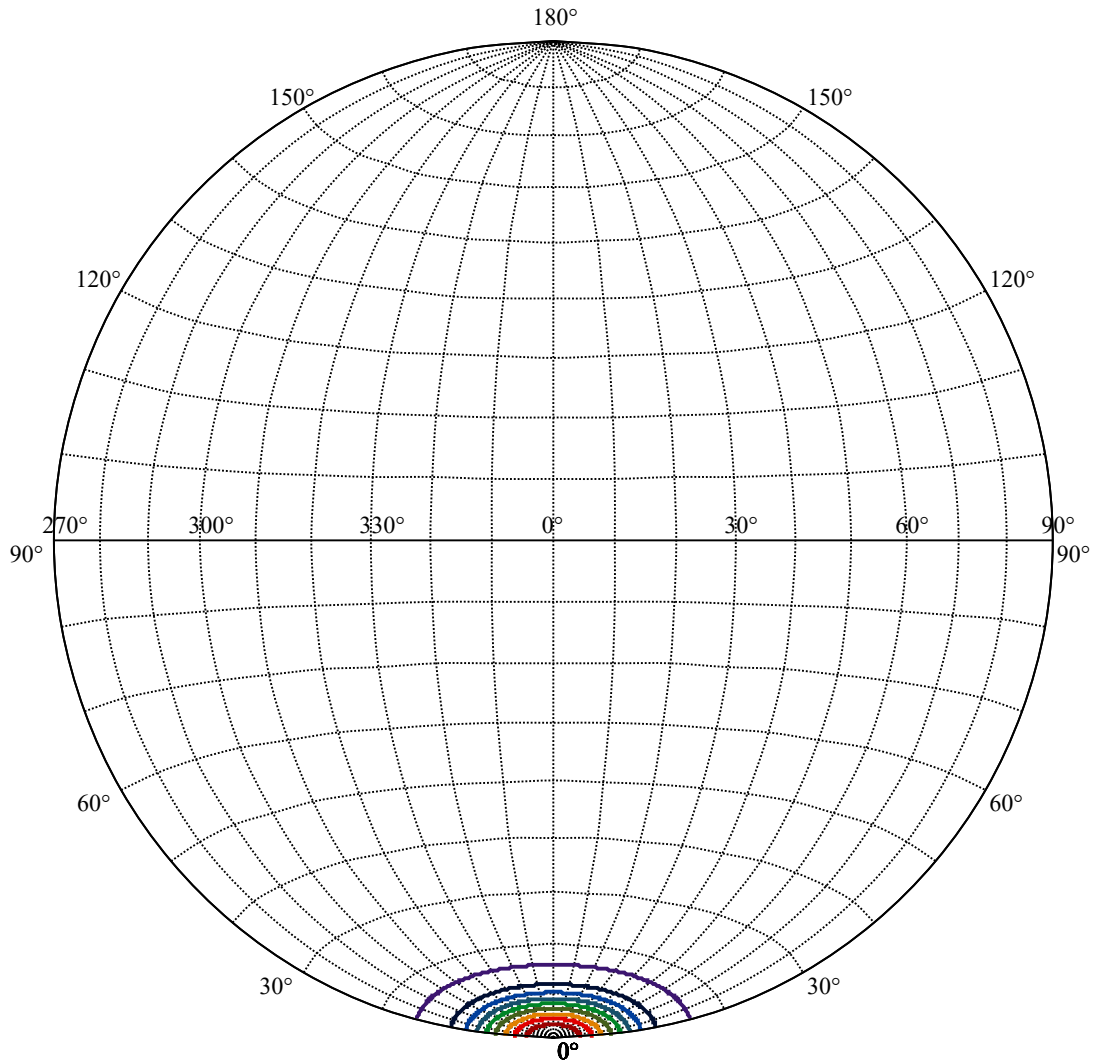


(10%Imax) 1980.93	—
(20%Imax) 3961.86	—
(30%Imax) 5942.79	—
(40%Imax) 7923.72	—
(50%Imax) 9904.65	—
(60%Imax) 11885.6	—
(70%Imax) 13866.5	—
(80%Imax) 15847.4	—
(90%Imax) 17828.4	—

Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/6/10
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.42












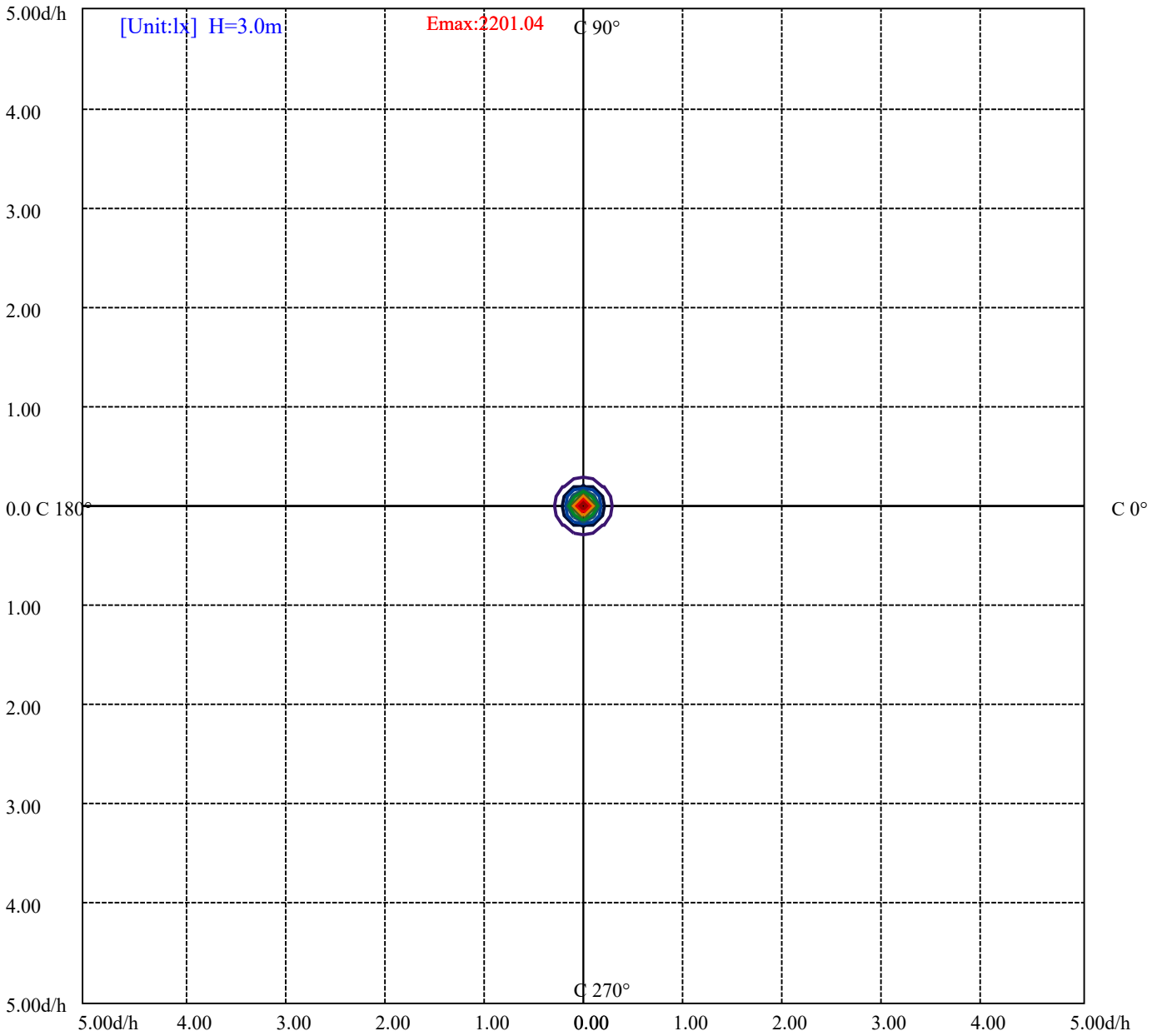
House

[Unit:cd]

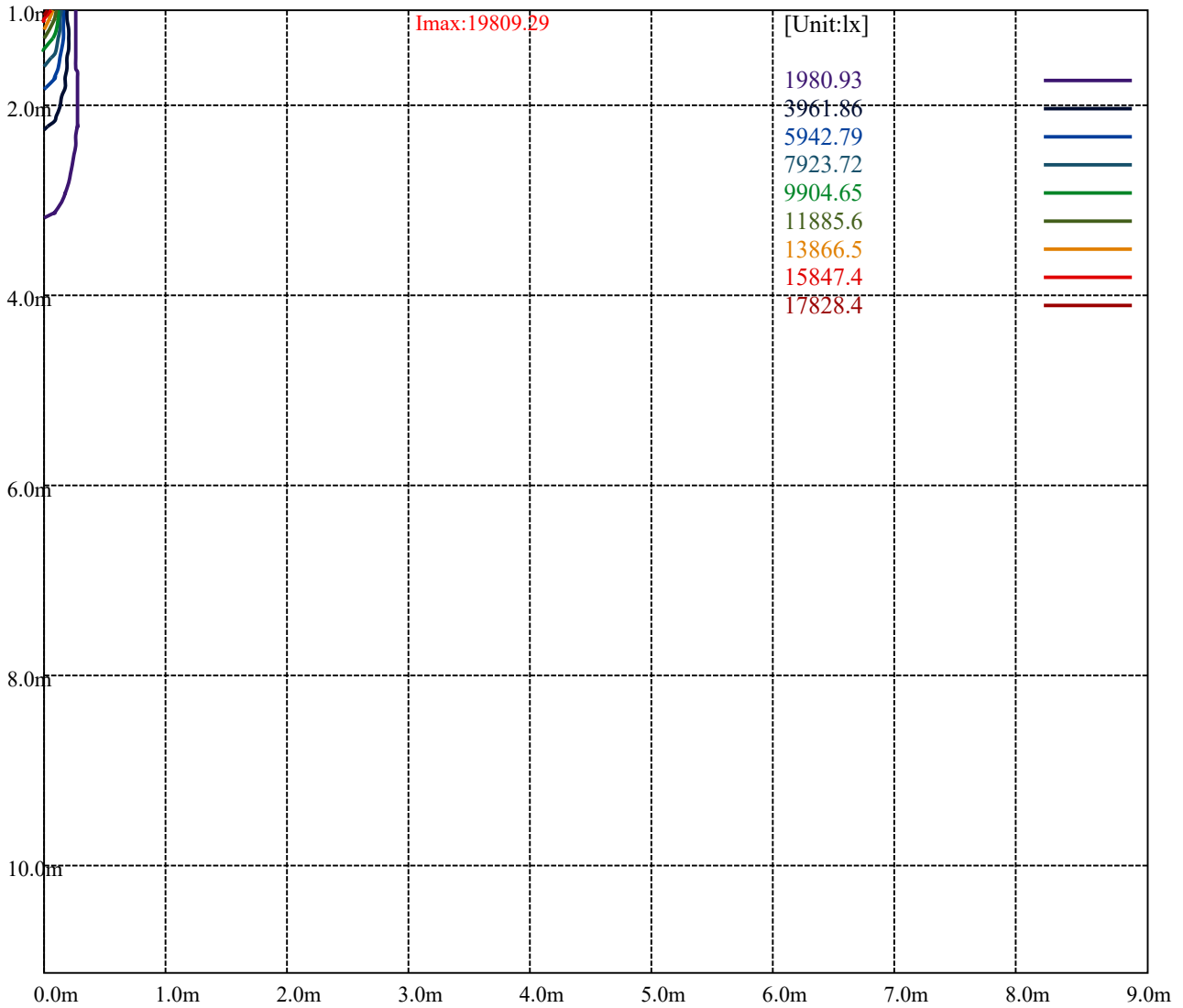
Road

Imax:19809.29

(10%Imax)	1980.93	
(20%Imax)	3961.86	
(30%Imax)	5942.79	
(40%Imax)	7923.72	
(50%Imax)	9904.65	
(60%Imax)	11885.6	
(70%Imax)	13866.5	
(80%Imax)	15847.4	
(90%Imax)	17828.4	



- (10%Emax) 220.1033
- (20%Emax) 440.2056
- (30%Emax) 660.3088
- (40%Emax) 880.4122
- (50%Emax) 1100.514
- (60%Emax) 1320.622
- (70%Emax) 1540.722
- (80%Emax) 1760.822
- (90%Emax) 1980.922



Luminance Table

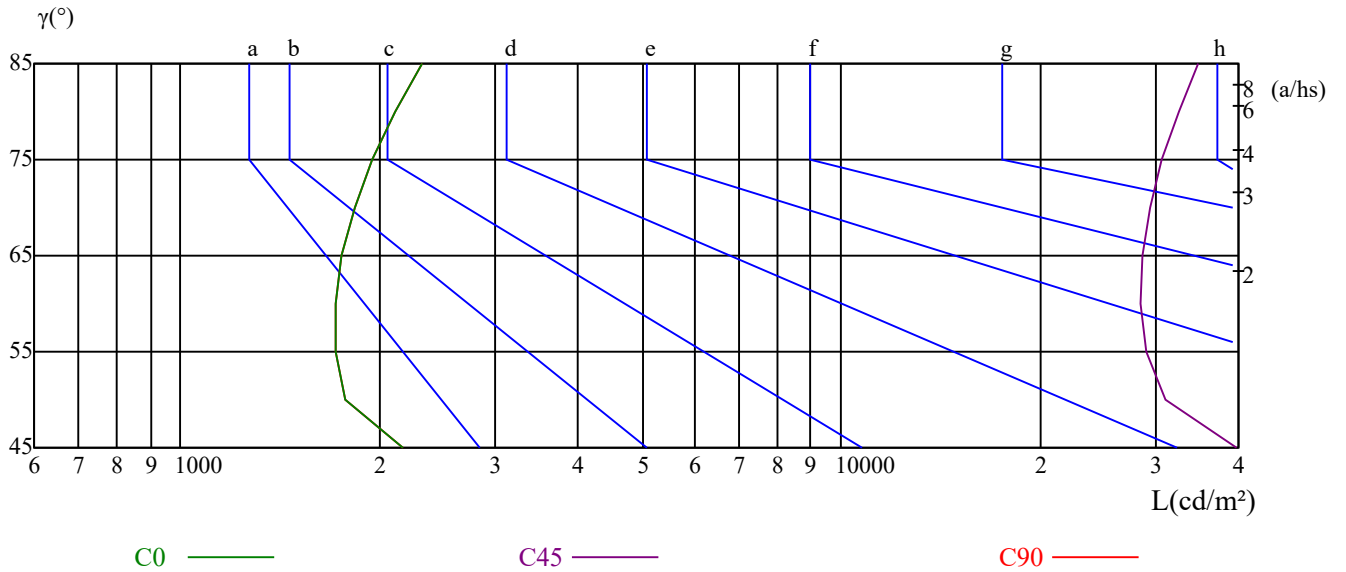
γ	45	50	55	60	65	70	75	80	85
C0	2165	1776	1719	1714	1756	1831	1954	2117	2325
C45	39793	30925	29016	28486	28660	29422	30588	32498	34779
C90	2165	1776	1719	1714	1756	1831	1954	2117	2325

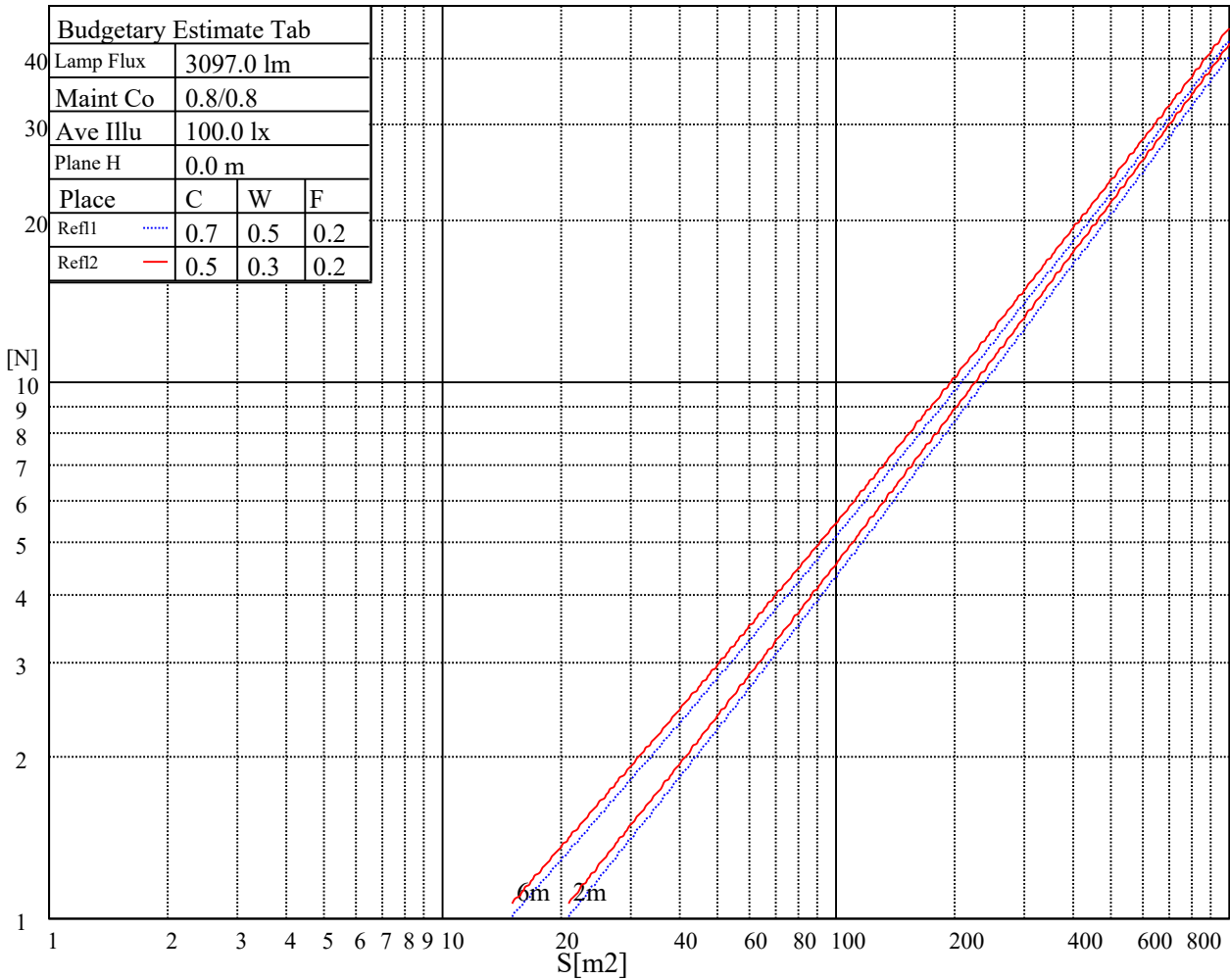
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
4218	4218	85493	6722	6722	136146	19702	19702	402367

Glare Table

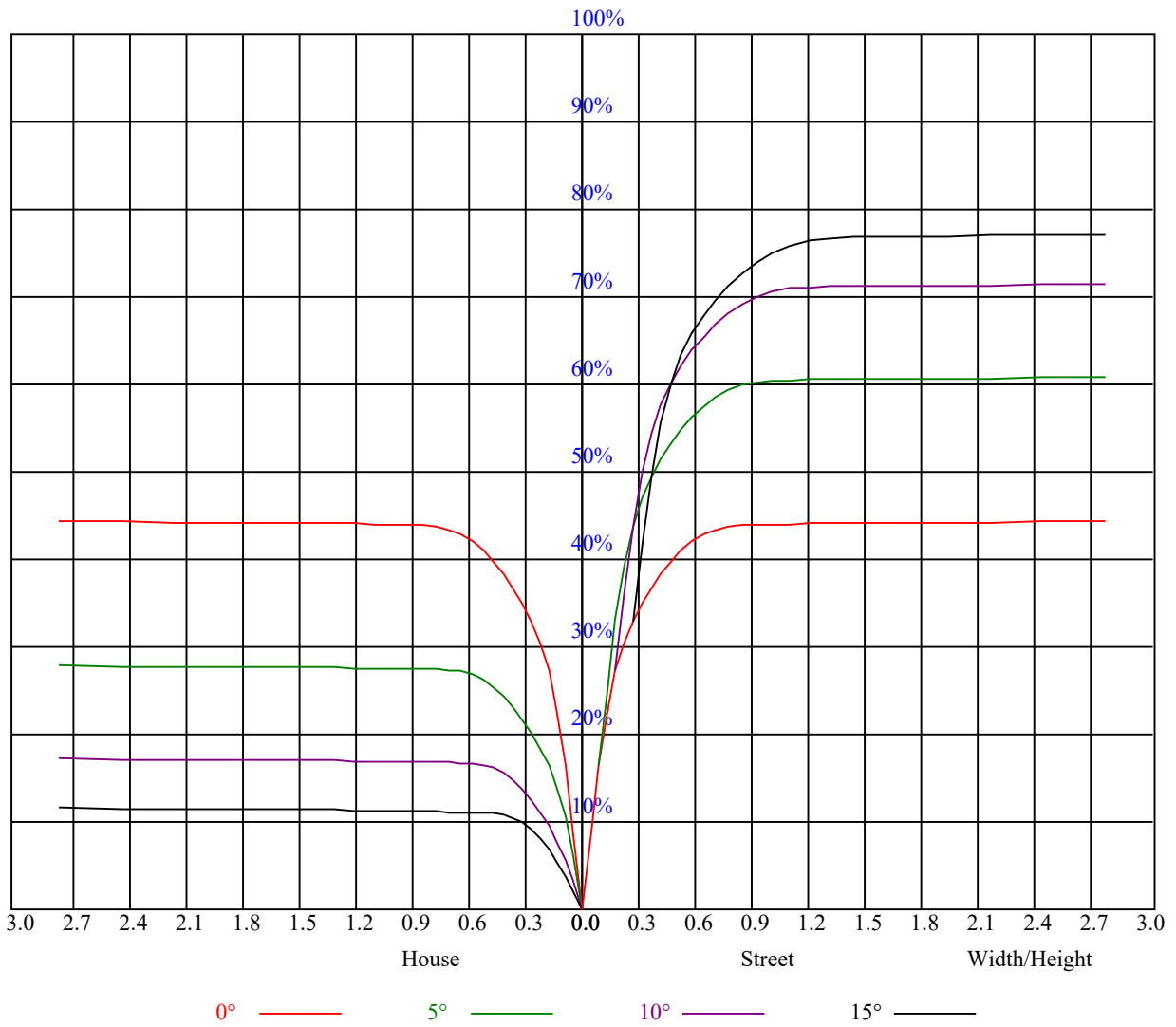
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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 RHOF=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	0.97	0.98	0.97	0.95	0.95	0.93	0.92	0.91	0.90	0.90	0.88	0.88	0.87	0.85
2	0.95	0.92	0.90	0.94	0.91	0.89	0.91	0.89	0.87	0.88	0.86	0.85	0.86	0.84	0.83	0.82
3	0.91	0.87	0.84	0.89	0.86	0.84	0.87	0.85	0.82	0.85	0.83	0.81	0.83	0.81	0.80	0.79
4	0.87	0.83	0.80	0.86	0.82	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.81	0.79	0.77	0.76
5	0.83	0.79	0.76	0.82	0.79	0.76	0.81	0.78	0.75	0.80	0.77	0.75	0.78	0.76	0.74	0.73
6	0.80	0.76	0.73	0.79	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.76	0.74	0.72	0.71
7	0.77	0.73	0.70	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.68
8	0.75	0.71	0.68	0.74	0.71	0.68	0.73	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
9	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
10	0.70	0.66	0.64	0.70	0.66	0.64	0.69	0.66	0.64	0.69	0.66	0.64	0.68	0.65	0.63	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	20090.08	20051.54	19528.51	18669.63	17491.42	15823.21	13885.22	12051.85	9998.24
90.0	19528.51	19875.36	19842.33	19440.41	18680.64	17612.54	15883.77	14204.55	12387.69
180.0	20090.08	19809.29	19071.54	17909.85	16560.97	14694.55	12018.81	10771.78	8555.76
270.0	19528.51	18812.77	17629.06	16059.95	14358.71	10938.05	10264.16	8523.83	6710.27
360.0	20090.08	20051.54	19528.51	18669.63	17491.42	15823.21	13885.22	12051.85	9998.24
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	8054.75	6485.64	4938.56	3864.96	3066.64	2868.44	2198.40	1907.70	1718.31
90.0	10157.91	8478.69	6727.89	5356.99	4123.72	3374.96	2802.37	2387.25	2100.40
180.0	7141.37	5534.82	4151.25	3481.22	2933.96	2401.56	2151.05	1922.02	1685.83
270.0	5298.63	4032.33	3184.46	2671.89	2300.81	1966.61	1764.56	1608.75	1462.85
360.0	8054.75	6485.64	4938.56	3864.96	3066.64	2868.44	2198.40	1907.70	1718.31
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1561.40	1449.64	1352.19	1280.61	1232.71	1194.72	1155.63	1129.21	1105.53
90.0	1852.65	1683.07	1532.22	1416.60	1338.97	1278.96	1221.15	1185.91	1157.29
180.0	1568.56	1458.44	1362.65	1289.97	1240.97	1196.38	1164.44	1134.71	1095.84
270.0	1374.76	1305.39	1239.32	1198.58	1164.99	1129.76	1097.82	1076.52	1046.07
360.0	1561.40	1449.64	1352.19	1280.61	1232.71	1194.72	1155.63	1129.21	1105.53
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	1072.50	1047.17	1024.05	998.72	970.64	913.94	821.44	723.99	606.17
90.0	1127.56	1101.68	1075.80	1049.93	1024.60	1005.88	954.68	867.14	779.60
180.0	1076.13	1049.26	1024.43	1002.25	970.48	880.96	788.24	686.55	580.13
270.0	1023.33	999.33	977.31	931.33	854.75	738.25	632.82	524.58	412.70
360.0	1072.50	1047.17	1024.05	998.72	970.64	913.94	821.44	723.99	606.17
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	482.84	373.28	280.79	147.11	76.36	37.11	27.75	21.97	17.62
90.0	648.01	534.60	410.72	296.75	283.54	111.54	41.13	30.23	24.50
180.0	443.15	335.35	233.55	123.00	57.97	30.17	24.28	18.00	14.92
270.0	281.01	188.18	98.99	40.74	29.07	23.07	18.06	15.09	14.09
360.0	482.84	373.28	280.79	147.11	76.36	37.11	27.75	21.97	17.62
C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	15.69	13.49	13.05	12.66	12.44	12.22	12.11	11.95	11.78
90.0	18.77	16.08	14.09	13.54	13.16	12.94	12.72	12.50	12.28
180.0	13.49	13.10	12.72	12.44	12.28	12.06	11.95	11.78	11.67
270.0	13.65	13.21	12.88	12.61	12.44	12.22	12.06	11.89	11.78
360.0	15.69	13.49	13.05	12.66	12.44	12.22	12.11	11.95	11.78
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	11.62	11.51	11.40	11.34	11.23	11.18	11.07	11.01	10.96
90.0	12.11	11.95	11.84	11.62	11.51	11.40	11.34	11.23	11.18
180.0	11.51	11.45	11.34	11.23	11.18	11.12	11.01	10.96	10.90
270.0	11.62	11.51	11.40	11.23	11.18	11.12	11.07	11.01	10.96
360.0	11.62	11.51	11.40	11.34	11.23	11.18	11.07	11.01	10.96
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	10.90	10.85	10.85	10.79	10.74	10.74	10.74	10.68	10.68
90.0	11.07	11.01	10.96	10.90	10.85	10.79	10.74	10.68	10.63
180.0	10.85	10.79	10.79	10.74	10.68	10.63	10.68	10.63	10.63
270.0	10.90	10.85	10.79	10.74	10.68	10.63	10.68	10.63	10.63
360.0	10.90	10.85	10.85	10.79	10.74	10.74	10.74	10.68	10.68

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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	10.63	10.57	10.57	10.63	10.57	10.57	10.52	10.52	10.52
90.0	10.63	10.63	10.63	10.57	10.57	10.57	10.52	10.46	10.63
180.0	10.57	10.57	10.52	10.57	10.57	10.57	10.57	10.57	10.52
270.0	10.57	10.57	10.52	10.57	10.52	10.46	10.52	10.52	10.46
360.0	10.63	10.57	10.57	10.63	10.57	10.57	10.52	10.52	10.52
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	10.52	10.52	10.52	10.46	10.46	10.46	10.41	10.46	10.41
90.0	10.63	10.52	10.46	10.46	10.46	10.41	10.46	10.41	10.35
180.0	10.52	10.46	10.46	10.46	10.46	10.46	10.46	10.41	10.41
270.0	10.41	10.46	10.46	10.41	10.41	10.46	10.41	10.35	10.41
360.0	10.52	10.52	10.52	10.46	10.46	10.46	10.41	10.46	10.41
C/γ(°)	90.0								
0.0	10.41								
90.0	10.35								
180.0	10.46								
270.0	10.41								
360.0	10.41								