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Nata

LumCAT: 3-2042-M	
Luminaire: 92.70.129.00	
Report No: GC2017061907	Voltage(V): 218.3000
Test No: NT-0010	Current(A): 0.1000
LampCAT: CREE CXA1830	Power (W): 19.8000
Lamp flux(lm): 2036.0	PF: 0.9010
Number of Lamps: 1	Ballast type: DC
Length(mm): 84	Width(mm): 84
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1832.39
Efficiency(%): 90.00%
Lumens(lm)/Power(W): 92.54
Central intensity(cd): 17791.470
Maximum intensity(cd): 17791.470
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=13.1
 [C90/270]Total=13.1
Field angle(10%Imax): [C0/180]Total=25.8
 [C90/270]Total=25.8
Maximum s/h(1/2): C0_180=0.23 C90_270=0.23
Maximum s/h(1/4): C0_180=0.22 C90_270=0.22
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 90.00%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.634%

Equipment: gms1980
Temperature(°C): 25.0

Date: 2017/6/3
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	17791.477	0.000	0	.000%	.000%
1.0	17598.777	16.934	16.934	.832%	.924%
2.0	16979.395	49.630	66.563	2.438%	3.633%
3.0	15860.372	78.542	145.105	3.858%	7.919%
4.0	14203.588	100.634	245.739	4.943%	13.411%
5.0	11687.373	111.382	357.121	5.471%	19.489%
6.0	10069.678	114.339	471.46	5.616%	25.729%
7.0	7924.956	111.692	583.152	5.486%	31.825%
8.0	6101.901	100.388	683.54	4.931%	37.303%
9.0	4415.523	85.238	768.778	4.187%	41.955%
10.0	3347.842	70.256	839.033	3.451%	45.789%
11.0	2701.755	60.448	899.481	2.969%	49.088%
12.0	2068.744	52.148	951.63	2.561%	51.934%
13.0	1753.409	45.359	996.989	2.228%	54.409%
14.0	1438.390	40.855	1037.844	2.007%	56.639%
15.0	1223.518	36.544	1074.387	1.795%	58.633%
16.0	1111.947	34.221	1108.609	1.681%	60.501%
17.0	1009.528	33.037	1141.646	1.623%	62.304%
18.0	931.981	32.011	1173.657	1.572%	64.051%
19.0	879.994	31.525	1205.182	1.548%	65.771%
20.0	839.638	31.474	1236.656	1.546%	67.489%
21.0	813.032	31.735	1268.39	1.559%	69.221%
22.0	794.257	32.299	1300.689	1.586%	70.983%
23.0	777.383	32.977	1333.667	1.620%	72.783%
24.0	761.981	33.656	1367.323	1.653%	74.620%
25.0	746.964	34.310	1401.633	1.685%	76.492%
26.0	729.896	34.861	1436.494	1.712%	78.395%
27.0	711.645	35.268	1471.762	1.732%	80.319%
28.0	694.949	35.612	1507.374	1.749%	82.263%
29.0	676.712	35.887	1543.26	1.763%	84.221%
30.0	658.998	36.064	1579.324	1.771%	86.189%
31.0	633.396	35.965	1615.29	1.766%	88.152%
32.0	583.157	34.853	1650.143	1.712%	90.054%
33.0	520.200	32.505	1682.648	1.597%	91.828%
34.0	444.415	29.192	1711.84	1.434%	93.421%
35.0	356.655	24.878	1736.718	1.222%	94.779%
36.0	267.381	19.869	1756.588	.976%	95.863%
37.0	186.751	14.811	1771.399	.727%	96.672%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	126.974	10.472	1781.871	.514%	97.243%
39.0	57.878	6.310	1788.18	.310%	97.588%
40.0	31.465	3.116	1791.296	.153%	97.758%
41.0	20.316	1.844	1793.14	.091%	97.858%
42.0	14.948	1.281	1794.421	.063%	97.928%
43.0	12.388	1.013	1795.434	.050%	97.983%
44.0	10.722	0.872	1796.306	.043%	98.031%
45.0	9.525	0.778	1797.084	.038%	98.073%
46.0	8.864	0.719	1797.803	.035%	98.113%
47.0	8.575	0.694	1798.497	.034%	98.151%
48.0	8.424	0.687	1799.184	.034%	98.188%
49.0	8.245	0.684	1799.869	.034%	98.225%
50.0	8.080	0.681	1800.549	.033%	98.263%
51.0	7.942	0.678	1801.227	.033%	98.300%
52.0	7.832	0.677	1801.904	.033%	98.336%
53.0	7.735	0.677	1802.581	.033%	98.373%
54.0	7.653	0.678	1803.259	.033%	98.410%
55.0	7.556	0.679	1803.938	.033%	98.448%
56.0	7.488	0.680	1804.618	.033%	98.485%
57.0	7.405	0.681	1805.299	.033%	98.522%
58.0	7.364	0.683	1805.982	.034%	98.559%
59.0	7.323	0.687	1806.669	.034%	98.597%
60.0	7.309	0.691	1807.36	.034%	98.634%
61.0	7.254	0.695	1808.055	.034%	98.672%
62.0	7.226	0.698	1808.752	.034%	98.710%
63.0	7.171	0.700	1809.453	.034%	98.748%
64.0	7.144	0.702	1810.155	.034%	98.787%
65.0	7.144	0.707	1810.862	.035%	98.825%
66.0	7.144	0.713	1811.575	.035%	98.864%
67.0	7.130	0.718	1812.293	.035%	98.903%
68.0	7.116	0.722	1813.014	.035%	98.943%
69.0	7.075	0.724	1813.738	.036%	98.982%
70.0	7.102	0.728	1814.466	.036%	99.022%
71.0	7.102	0.734	1815.201	.036%	99.062%
72.0	7.144	0.741	1815.941	.036%	99.103%
73.0	7.281	0.754	1816.696	.037%	99.144%
74.0	7.625	0.784	1817.479	.038%	99.186%
75.0	8.754	0.865	1818.345	.043%	99.234%

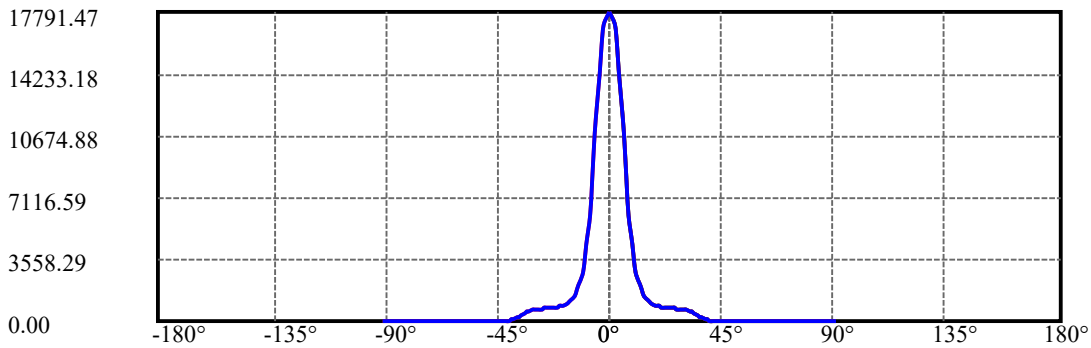
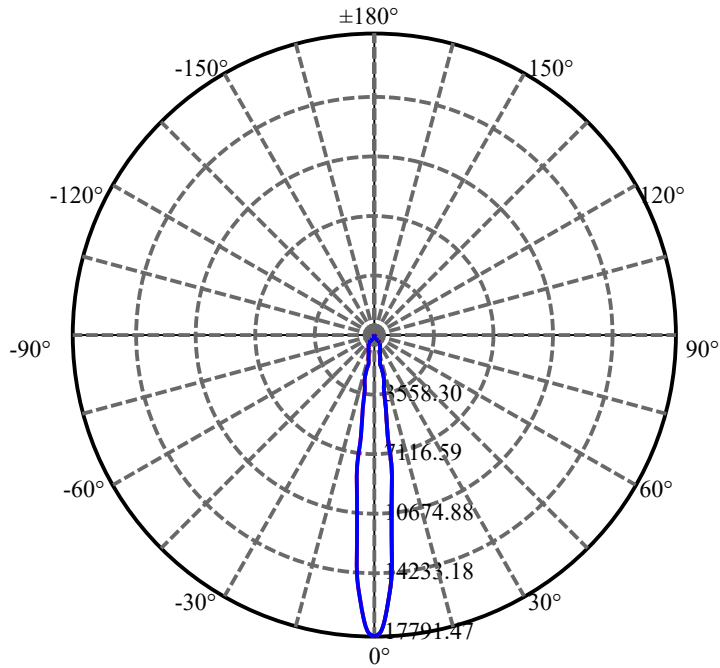
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	9.869	0.989	1819.333	.049%	99.288%
77.0	10.378	1.079	1820.413	.053%	99.347%
78.0	10.667	1.127	1821.539	.055%	99.408%
79.0	10.268	1.125	1822.664	.055%	99.469%
80.0	9.580	1.070	1823.734	.053%	99.528%
81.0	9.057	1.008	1824.742	.050%	99.583%
82.0	8.492	0.952	1825.694	.047%	99.635%
83.0	7.708	0.881	1826.574	.043%	99.683%
84.0	7.488	0.828	1827.402	.041%	99.728%
85.0	7.680	0.828	1828.23	.041%	99.773%
86.0	7.983	0.856	1829.086	.042%	99.820%
87.0	7.914	0.870	1829.956	.043%	99.867%
88.0	7.997	0.872	1830.828	.043%	99.915%
89.0	6.813	0.812	1831.64	.040%	99.959%
90.0	6.799	0.746	1832.386	.037%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1579.32	77.57%	86.19%
0-40	1791.30	87.98%	97.76%
0-60	1807.36	88.77%	98.63%
0-90	1831.64	89.96%	99.96%
0-120	1831.64	89.96%	99.96%
0-180	1832.39	90.00%	100.00%
60-90	24.97	1.23%	1.36%
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%
0-26.83	1465.91	72.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	839.03
10-20	397.62
20-30	342.67
30-40	211.97
40-50	9.25
50-60	6.81
60-70	7.11
70-80	9.27
80-90	7.91
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: —————

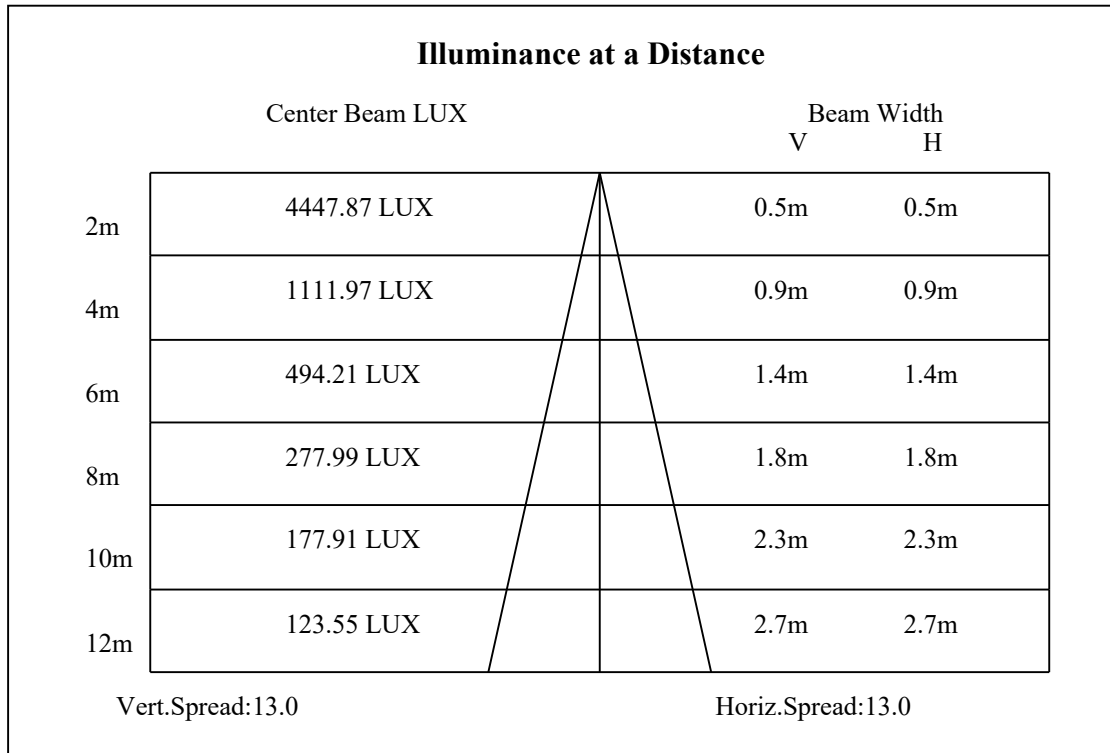
C90/C270: —————

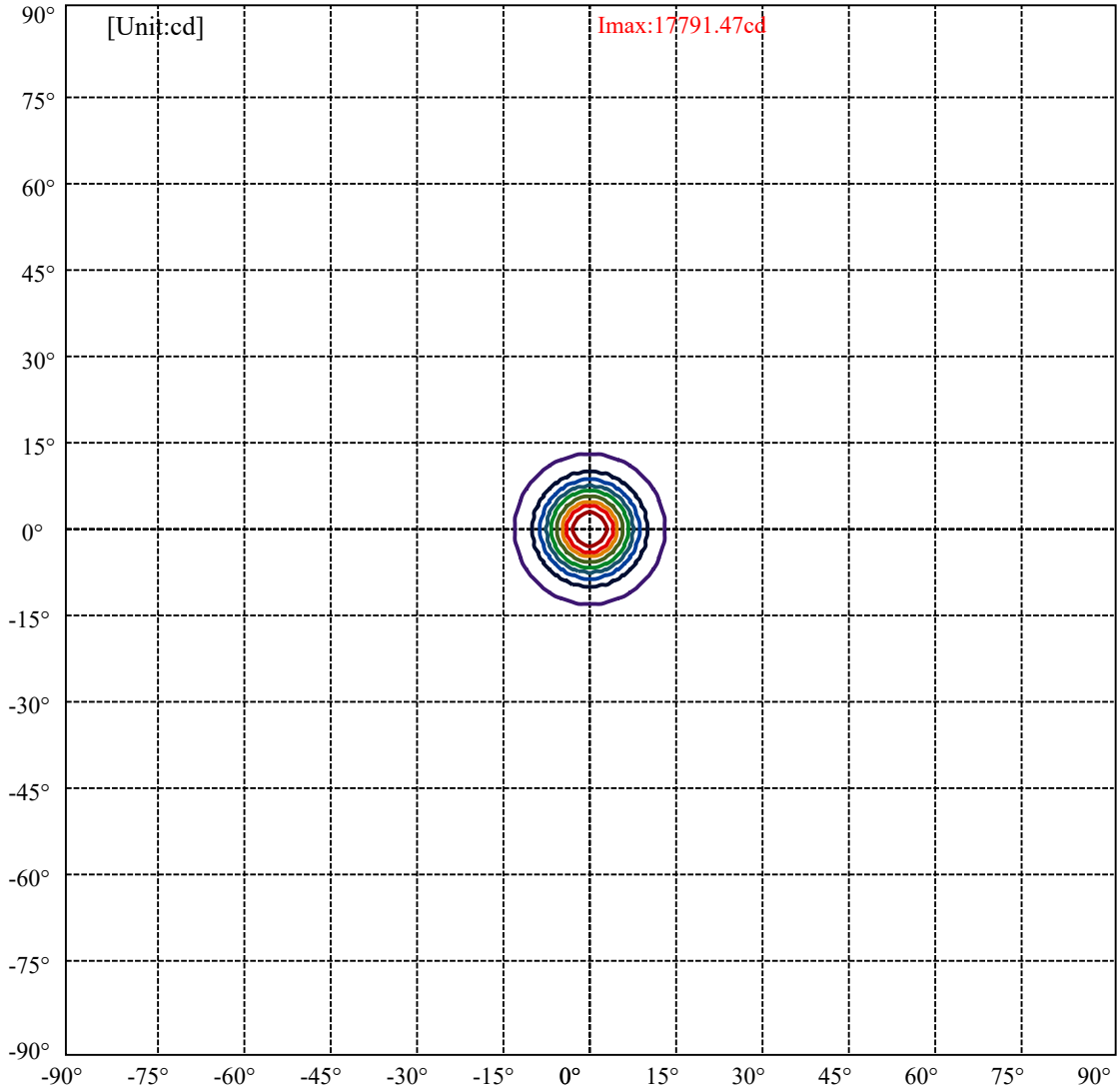
Field angle(10%Imax):C0/180Left:12.9 Right:12.9

:C90/270Left:12.9 Right:12.9

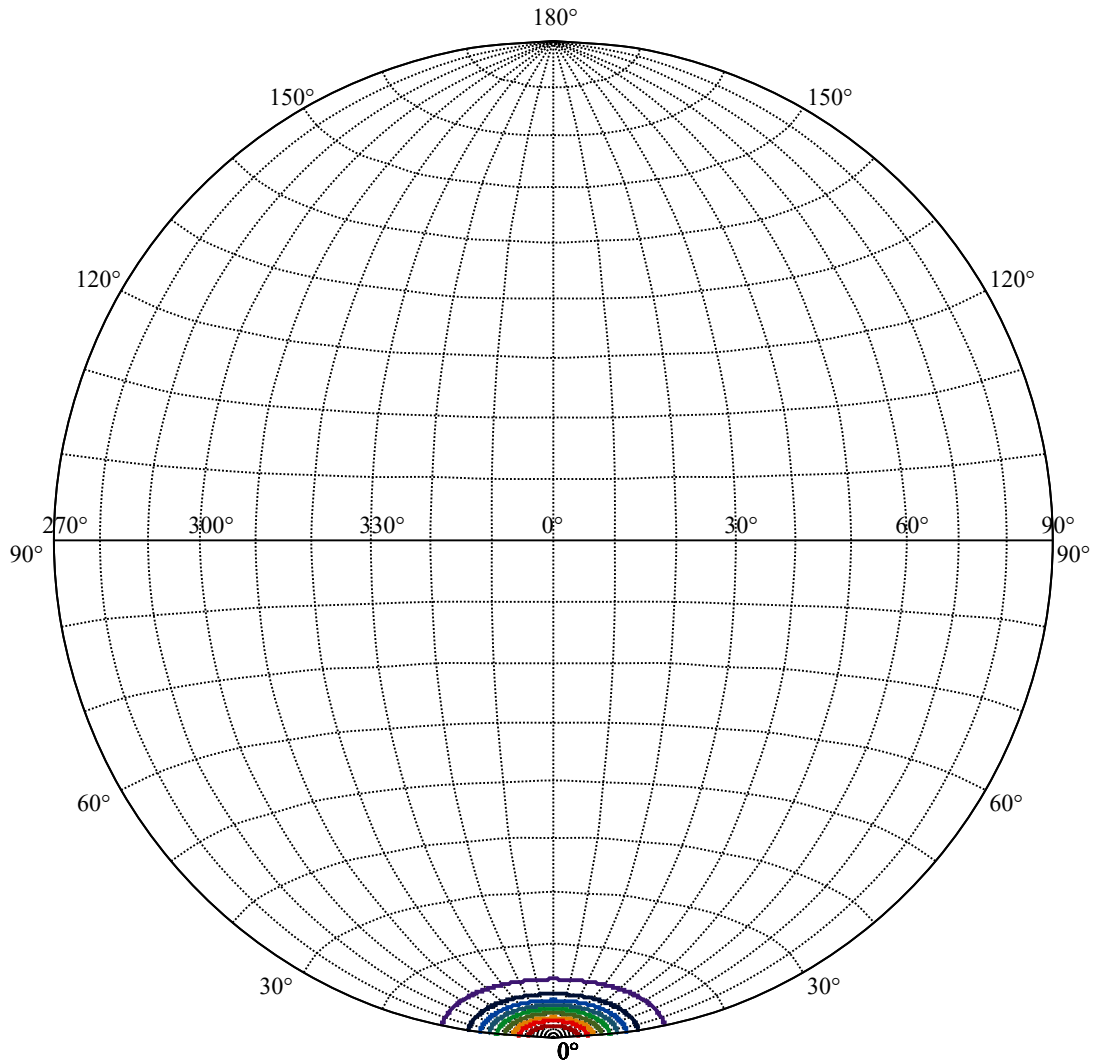
Beam Angle(50%Imax):C0/180Left:6.5 Right:6.5

:C90/270Left:6.5 Right:6.5





(10%I _{max}) 1779.15	—
(20%I _{max}) 3558.29	—
(30%I _{max}) 5337.44	—
(40%I _{max}) 7116.59	—
(50%I _{max}) 8895.74	—
(60%I _{max}) 10674.9	—
(70%I _{max}) 12454	—
(80%I _{max}) 14233.2	—
(90%I _{max}) 16012.3	—



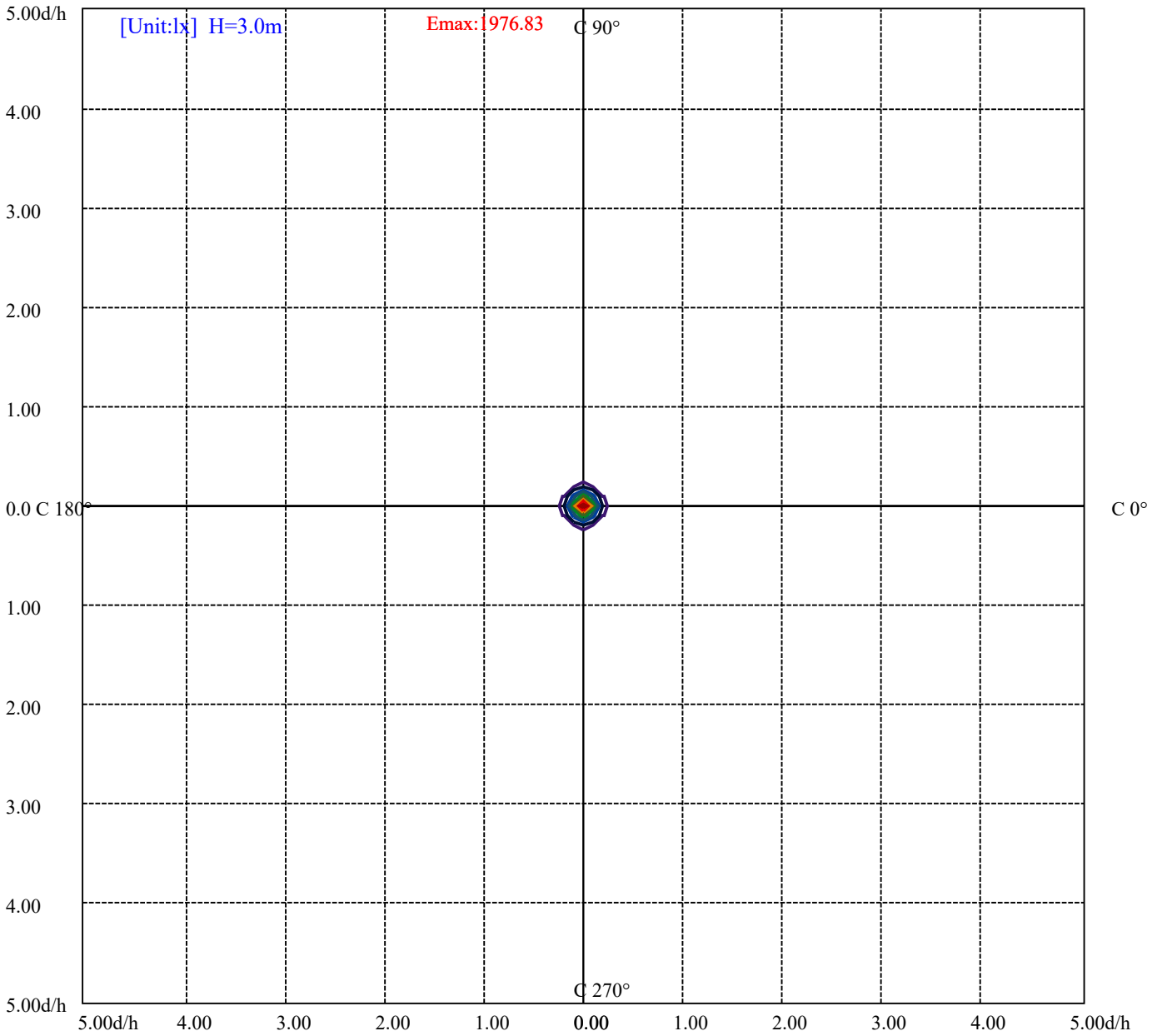
House

[Unit:cd]

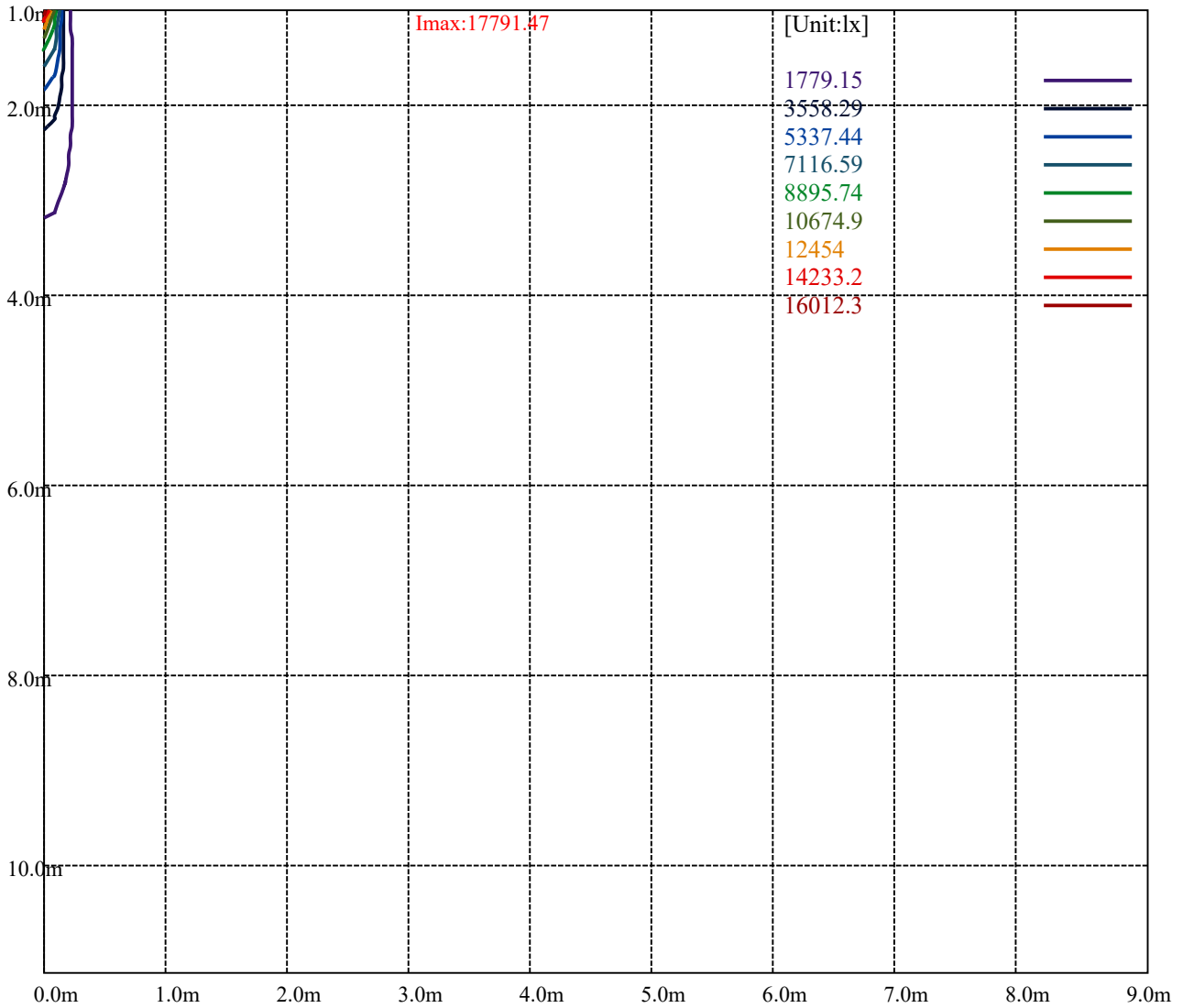
Road

Imax:17791.47

(10%Imax)	1779.15	—
(20%Imax)	3558.29	—
(30%Imax)	5337.44	—
(40%Imax)	7116.59	—
(50%Imax)	8895.74	—
(60%Imax)	10674.9	—
(70%Imax)	12454	—
(80%Imax)	14233.2	—
(90%Imax)	16012.3	—



- (10%Emax) 197.6822
- (20%Emax) 395.3656
- (30%Emax) 593.0478
- (40%Emax) 790.7311
- (50%Emax) 988.4133
- (60%Emax) 1186.1
- (70%Emax) 1383.778
- (80%Emax) 1581.467
- (90%Emax) 1779.144



Luminance Table

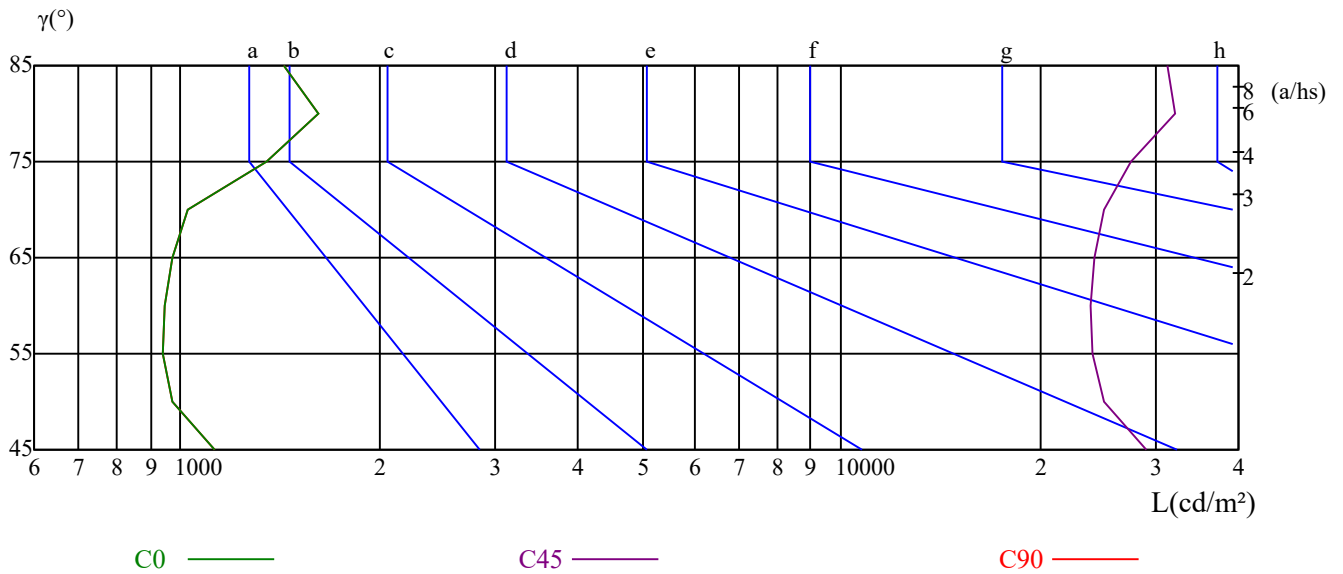
γ	45	50	55	60	65	70	75	80	85
C0	1124	975	939	945	970	1023	1353	1612	1430
C45	29019	25068	24046	23886	24222	24988	27410	32039	31211
C90	1124	975	939	945	970	1023	1353	1612	1430

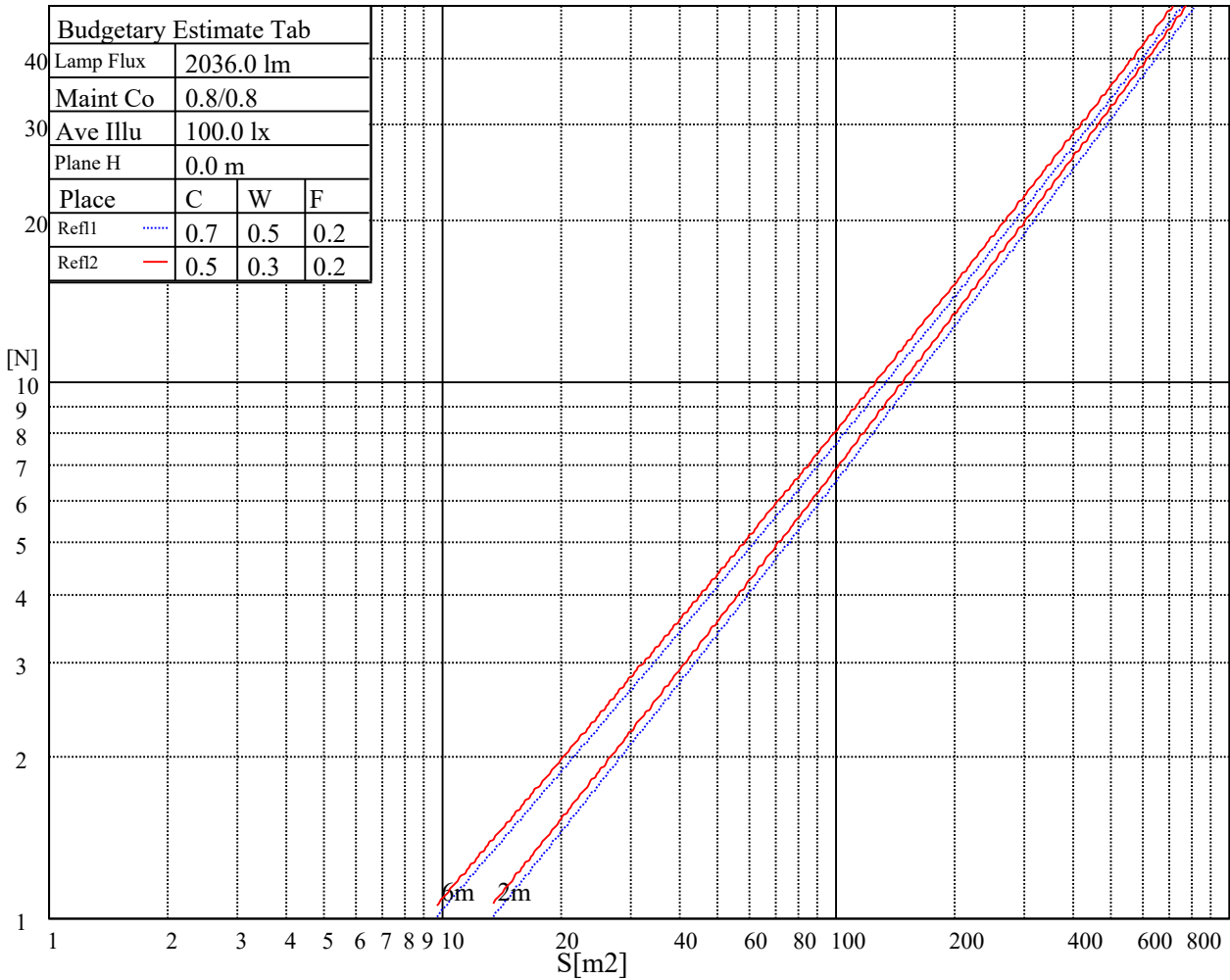
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2340	2340	72618	4681	4681	122720	12197	12197	363600

Glare Table

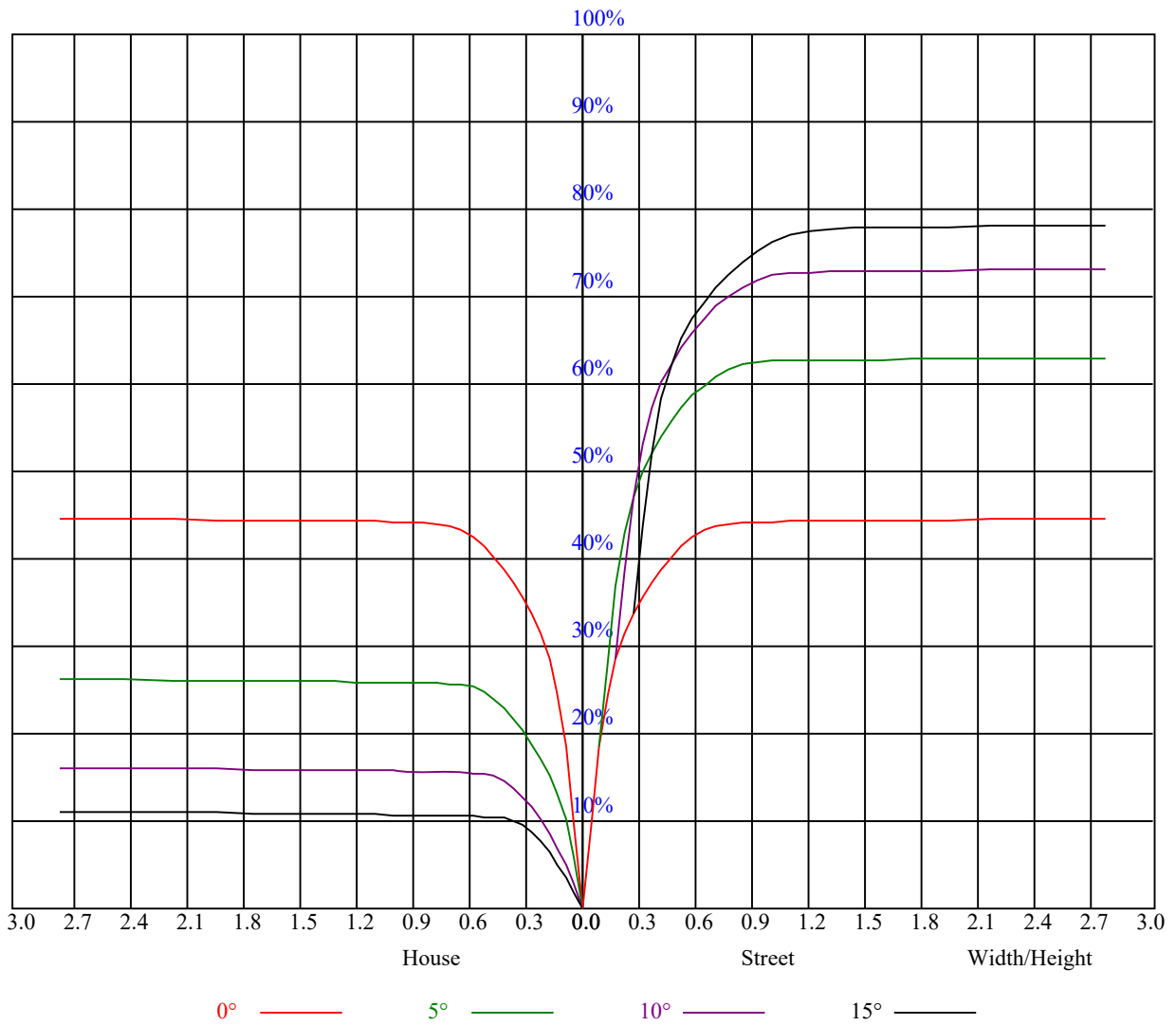
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.98	0.99	0.98	0.96	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.89	0.88	0.86
2	0.96	0.93	0.91	0.95	0.92	0.90	0.92	0.90	0.88	0.89	0.88	0.86	0.87	0.85	0.84	0.83
3	0.92	0.88	0.86	0.91	0.88	0.85	0.88	0.86	0.84	0.86	0.84	0.82	0.84	0.83	0.81	0.80
4	0.88	0.84	0.81	0.87	0.84	0.81	0.85	0.82	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.77
5	0.85	0.81	0.78	0.84	0.80	0.78	0.82	0.79	0.77	0.81	0.78	0.76	0.80	0.78	0.76	0.75
6	0.82	0.78	0.75	0.81	0.77	0.75	0.80	0.77	0.74	0.79	0.76	0.74	0.78	0.75	0.73	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	0.73	0.70	0.75	0.72	0.70	0.75	0.72	0.70	0.74	0.71	0.69	0.68
9	0.74	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.68	0.73	0.70	0.68	0.72	0.69	0.67	0.67
10	0.72	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.71	0.68	0.66	0.70	0.68	0.66	0.65



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	17937.38	17706.14	16885.80	15735.12	14083.43	11523.30	9392.62	7366.55	5604.74
90.0	17645.58	17986.93	18041.98	17684.12	16913.33	15481.86	13450.28	11286.56	9337.57
180.0	17937.38	17893.33	17447.37	16450.85	14953.32	10821.34	10542.20	8049.80	5822.76
270.0	17645.58	16808.72	15542.42	13571.40	10864.28	8922.99	6893.61	4996.92	3642.53
360.0	17937.38	17706.14	16885.80	15735.12	14083.43	11523.30	9392.62	7366.55	5604.74
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	3986.08	3116.19	2780.35	1996.90	1649.49	1425.41	1240.97	1103.88	1012.49
90.0	6535.19	4922.04	3870.46	2862.93	2473.13	1883.48	1554.24	1329.06	1181.51
180.0	4315.32	3167.39	2417.53	1954.50	1626.37	1349.98	1097.55	1084.83	970.26
270.0	2825.49	2185.74	1738.68	1460.65	1264.65	1094.69	1001.31	930.01	873.86
360.0	3986.08	3116.19	2780.35	1996.90	1649.49	1425.41	1240.97	1103.88	1012.49
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	935.96	888.06	848.97	820.89	802.72	786.76	768.04	752.07	734.45
90.0	1046.07	954.68	891.36	851.17	824.74	806.03	788.41	775.74	763.63
180.0	908.32	864.28	826.56	805.97	790.22	774.20	764.29	750.36	734.01
270.0	837.57	812.96	791.66	774.09	759.34	742.55	727.18	709.68	687.49
360.0	935.96	888.06	848.97	820.89	802.72	786.76	768.04	752.07	734.45
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	708.58	689.86	673.34	656.27	639.76	600.67	529.09	444.31	363.37
90.0	746.56	732.80	715.18	697.01	680.50	665.63	634.80	576.44	491.65
180.0	720.91	701.91	678.96	664.42	645.70	587.29	516.70	439.74	358.86
270.0	670.53	655.23	639.37	618.28	567.63	479.05	400.20	317.18	212.74
360.0	708.58	689.86	673.34	656.27	639.76	600.67	529.09	444.31	363.37
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	280.24	184.44	101.25	41.73	22.24	18.22	13.38	10.85	9.63
90.0	395.86	311.62	280.24	127.95	64.20	31.11	19.93	16.79	13.65
180.0	256.45	178.22	98.50	40.96	22.68	19.27	15.25	12.22	10.63
270.0	136.98	72.73	27.91	20.87	16.74	12.66	11.23	9.69	8.97
360.0	280.24	184.44	101.25	41.73	22.24	18.22	13.38	10.85	9.63
C/γ(°)	45.0	46.0	47.0	48.0	49.0	50.0	51.0	52.0	53.0
0.0	9.14	8.81	8.59	8.42	8.20	8.04	7.87	7.76	7.71
90.0	11.12	9.36	8.92	8.70	8.48	8.37	8.15	8.04	7.93
180.0	9.14	8.81	8.53	8.42	8.31	8.09	7.98	7.82	7.71
270.0	8.70	8.48	8.26	8.15	7.98	7.82	7.76	7.71	7.60
360.0	9.14	8.81	8.59	8.42	8.20	8.04	7.87	7.76	7.71
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	7.65	7.54	7.43	7.38	7.32	7.32	7.27	7.27	7.21
90.0	7.82	7.71	7.65	7.54	7.49	7.43	7.43	7.38	7.38
180.0	7.65	7.54	7.49	7.38	7.32	7.32	7.32	7.21	7.16
270.0	7.49	7.43	7.38	7.32	7.32	7.21	7.21	7.16	7.16
360.0	7.65	7.54	7.43	7.38	7.32	7.32	7.27	7.27	7.21
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	7.10	7.10	7.10	7.10	7.05	7.05	6.99	7.05	7.05
90.0	7.32	7.27	7.27	7.27	7.27	7.27	7.21	7.21	7.21
180.0	7.16	7.10	7.10	7.10	7.10	7.05	7.05	7.05	7.05
270.0	7.10	7.10	7.10	7.10	7.10	7.10	7.05	7.10	7.10
360.0	7.10	7.10	7.10	7.10	7.05	7.05	6.99	7.05	7.05

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Intensity data(cd)										Appendix Page: 17 Total:17
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0	
0.0	7.05	6.99	6.99	7.05	7.38	7.71	7.82	7.38	7.10	
90.0	7.21	7.21	7.32	9.08	11.95	14.59	17.01	16.63	14.98	
180.0	7.05	7.05	7.21	8.97	10.68	10.79	10.52	10.02	9.19	
270.0	7.27	7.87	8.97	9.91	9.47	8.42	7.32	7.05	7.05	
360.0	7.05	6.99	6.99	7.05	7.38	7.71	7.82	7.38	7.10	
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0	
0.0	7.10	7.10	7.10	7.10	7.05	6.94	6.83	6.77	6.77	
90.0	14.04	12.39	9.03	8.04	8.81	10.02	11.12	11.56	6.88	
180.0	8.09	7.54	7.76	7.87	8.04	8.15	6.88	6.83	6.77	
270.0	6.99	6.94	6.94	6.94	6.83	6.83	6.83	6.83	6.83	
360.0	7.10	7.10	7.10	7.10	7.05	6.94	6.83	6.77	6.77	
C/γ(°)	90.0									
0.0	6.77									
90.0	6.83									
180.0	6.77									
270.0	6.83									
360.0	6.77									