



NATA LIGHTING CO.,LTD
www.nata.cn
Email:info@nata.cn
Tel:0750-377 0000(10 lines) Fax:0750-377 1111
Address:380JinOu Road,Gaoxin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: 2-1120-A3
Luminaire: TE 2133401-1+92.76.365.00
Report No: NT2017071204
Test No: GC2017071204
LampCAT: CREE CXA1830
Lamp flux(lm): 1976.0
Number of Lamps: 1
Length(mm): 71
Phm Type: C

Voltage(V): 35.2000
Current(A): 0.5000
Power (W): 17.6000
PF: 0.0000
Ballast type: DC
Width(mm): 71
Height(mm): 0

Photometric Results

Lumens(lm): 1813.24
Efficiency(%): 91.76%
Lumens(lm)/Power(W): 103.03
Central intensity(cd): 11820.400
Maximum intensity(cd): 11820.400
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=15.8
 [C90/270]Total=15.8
Field angle(10%Imax): [C0/180]Total=32.0
 [C90/270]Total=32.0
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(%): 91.76%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.736%

Equipment: GMS1980
Temperature(°C): 25.0

Date: 2017/7/12
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.46

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	11820.400	0.000	0	.000%	.000%
1.0	11743.879	11.275	11.275	.571%	.622%
2.0	11494.421	33.354	44.629	1.688%	2.461%
3.0	11035.295	53.884	98.513	2.727%	5.433%
4.0	10400.032	71.751	170.263	3.631%	9.390%
5.0	9433.572	85.323	255.587	4.318%	14.096%
6.0	8289.445	93.139	348.726	4.714%	19.232%
7.0	7052.379	95.226	443.952	4.819%	24.484%
8.0	5810.027	92.054	536.006	4.659%	29.561%
9.0	4605.935	84.416	620.422	4.272%	34.216%
10.0	3619.580	74.438	694.86	3.767%	38.321%
11.0	2919.274	65.337	760.196	3.307%	41.925%
12.0	2294.933	56.999	817.195	2.885%	45.068%
13.0	1851.181	49.204	866.399	2.490%	47.782%
14.0	1554.836	43.597	909.996	2.206%	50.186%
15.0	1321.976	39.494	949.49	1.999%	52.364%
16.0	1182.819	36.702	986.192	1.857%	54.388%
17.0	1079.606	35.232	1021.424	1.783%	56.331%
18.0	1001.298	34.310	1055.734	1.736%	58.224%
19.0	950.439	33.956	1089.69	1.718%	60.096%
20.0	908.645	34.026	1123.716	1.722%	61.973%
21.0	876.144	34.272	1157.988	1.734%	63.863%
22.0	853.807	34.764	1192.752	1.759%	65.780%
23.0	832.193	35.377	1228.129	1.790%	67.731%
24.0	811.136	35.929	1264.058	1.818%	69.713%
25.0	792.047	36.453	1300.511	1.845%	71.723%
26.0	771.922	36.918	1337.428	1.868%	73.759%
27.0	749.279	37.217	1374.645	1.883%	75.811%
28.0	725.850	37.347	1411.992	1.890%	77.871%
29.0	701.175	37.335	1449.327	1.889%	79.930%
30.0	677.287	37.218	1486.545	1.884%	81.983%
31.0	654.936	37.074	1523.619	1.876%	84.027%
32.0	626.714	36.718	1560.337	1.858%	86.052%
33.0	589.872	35.841	1596.178	1.814%	88.029%
34.0	540.405	34.206	1630.383	1.731%	89.915%
35.0	477.539	31.614	1661.997	1.600%	91.659%
36.0	405.318	28.110	1690.107	1.423%	93.209%
37.0	339.252	24.284	1714.391	1.229%	94.548%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	274.028	20.470	1734.862	1.036%	95.677%
39.0	199.539	16.164	1751.026	.818%	96.569%
40.0	132.458	11.579	1762.605	.586%	97.207%
41.0	80.542	7.585	1770.189	.384%	97.626%
42.0	41.537	4.435	1774.625	.224%	97.870%
43.0	21.266	2.326	1776.951	.118%	97.999%
44.0	14.588	1.353	1778.304	.068%	98.073%
45.0	12.257	1.032	1779.336	.052%	98.130%
46.0	10.838	0.903	1780.239	.046%	98.180%
47.0	9.906	0.825	1781.064	.042%	98.225%
48.0	9.231	0.774	1781.838	.039%	98.268%
49.0	8.716	0.737	1782.575	.037%	98.309%
50.0	8.369	0.712	1783.287	.036%	98.348%
51.0	8.223	0.702	1783.989	.036%	98.387%
52.0	8.111	0.701	1784.69	.035%	98.425%
53.0	7.972	0.700	1785.39	.035%	98.464%
54.0	7.875	0.698	1786.088	.035%	98.502%
55.0	7.791	0.699	1786.787	.035%	98.541%
56.0	7.722	0.701	1787.488	.035%	98.580%
57.0	7.659	0.703	1788.192	.036%	98.618%
58.0	7.617	0.706	1788.898	.036%	98.657%
59.0	7.562	0.710	1789.608	.036%	98.697%
60.0	7.541	0.713	1790.321	.036%	98.736%
61.0	7.506	0.718	1791.039	.036%	98.776%
62.0	7.485	0.722	1791.762	.037%	98.815%
63.0	7.471	0.727	1792.489	.037%	98.855%
64.0	7.429	0.731	1793.22	.037%	98.896%
65.0	7.381	0.733	1793.953	.037%	98.936%
66.0	7.367	0.736	1794.689	.037%	98.977%
67.0	7.367	0.741	1795.43	.037%	99.018%
68.0	7.353	0.746	1796.176	.038%	99.059%
69.0	7.353	0.750	1796.926	.038%	99.100%
70.0	7.353	0.755	1797.681	.038%	99.142%
71.0	7.339	0.759	1798.44	.038%	99.184%
72.0	7.283	0.760	1799.201	.038%	99.226%
73.0	7.290	0.762	1799.963	.039%	99.268%
74.0	7.269	0.765	1800.728	.039%	99.310%
75.0	7.269	0.768	1801.496	.039%	99.352%

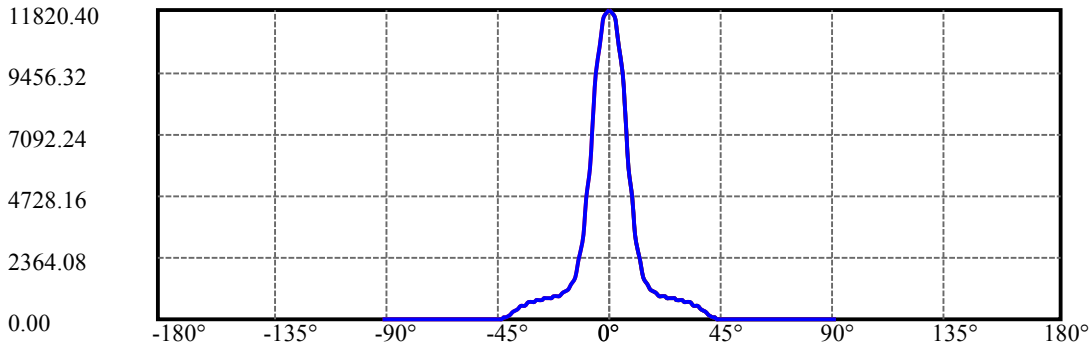
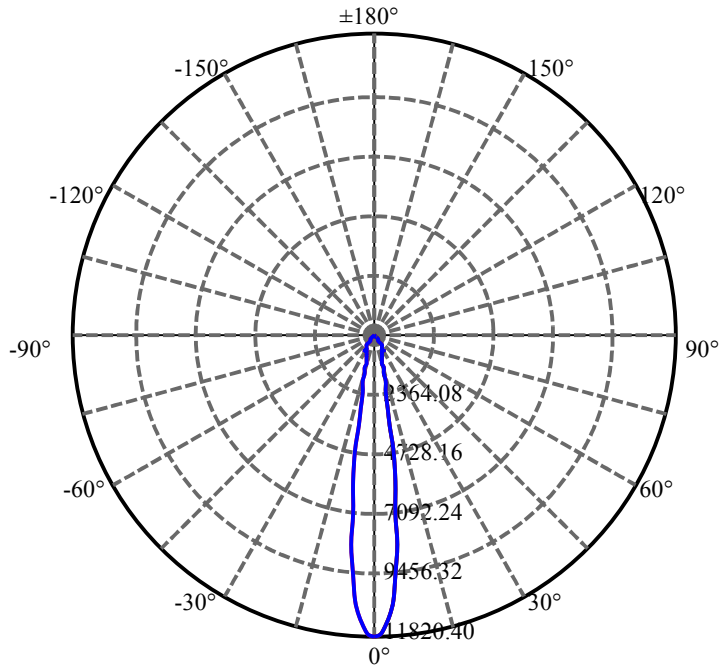
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	7.269	0.772	1802.268	.039%	99.395%
77.0	7.276	0.776	1803.044	.039%	99.438%
78.0	7.276	0.779	1803.823	.039%	99.481%
79.0	7.256	0.781	1804.604	.040%	99.524%
80.0	7.235	0.781	1805.385	.040%	99.567%
81.0	7.221	0.782	1806.167	.040%	99.610%
82.0	7.221	0.783	1806.95	.040%	99.653%
83.0	7.221	0.785	1807.735	.040%	99.696%
84.0	7.214	0.786	1808.521	.040%	99.740%
85.0	7.242	0.789	1809.31	.040%	99.783%
86.0	7.228	0.791	1810.101	.040%	99.827%
87.0	7.172	0.788	1810.889	.040%	99.870%
88.0	7.144	0.784	1811.673	.040%	99.913%
89.0	7.158	0.784	1812.457	.040%	99.957%
90.0	7.158	0.785	1813.242	.040%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1486.55	75.23%	81.98%
0-40	1762.60	89.20%	97.21%
0-60	1790.32	90.60%	98.74%
0-90	1812.46	91.72%	99.96%
0-120	1812.46	91.72%	99.96%
0-180	1813.24	91.76%	100.00%
60-90	22.85	1.16%	1.26%
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%
0-29.03	1450.59	73.41%	80.00%

ZONAL LUMEN SUMMARY

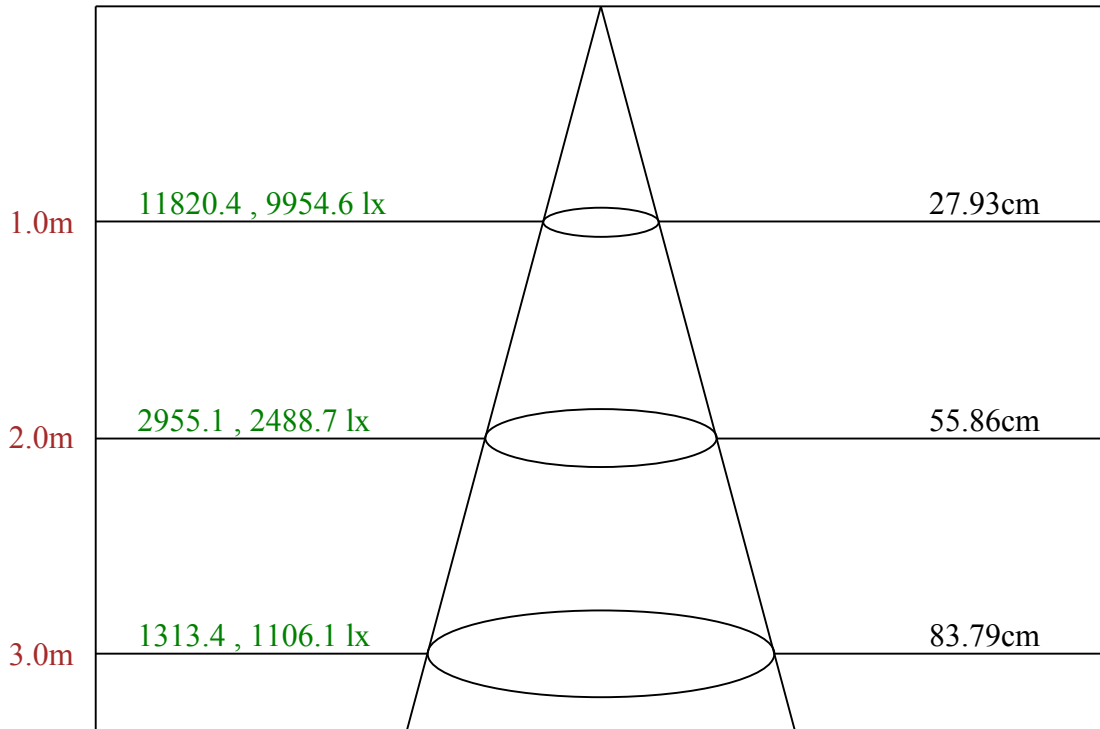
0-10	694.86
10-20	428.86
20-30	362.83
30-40	276.06
40-50	20.68
50-60	7.03
60-70	7.36
70-80	7.70
80-90	7.07
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



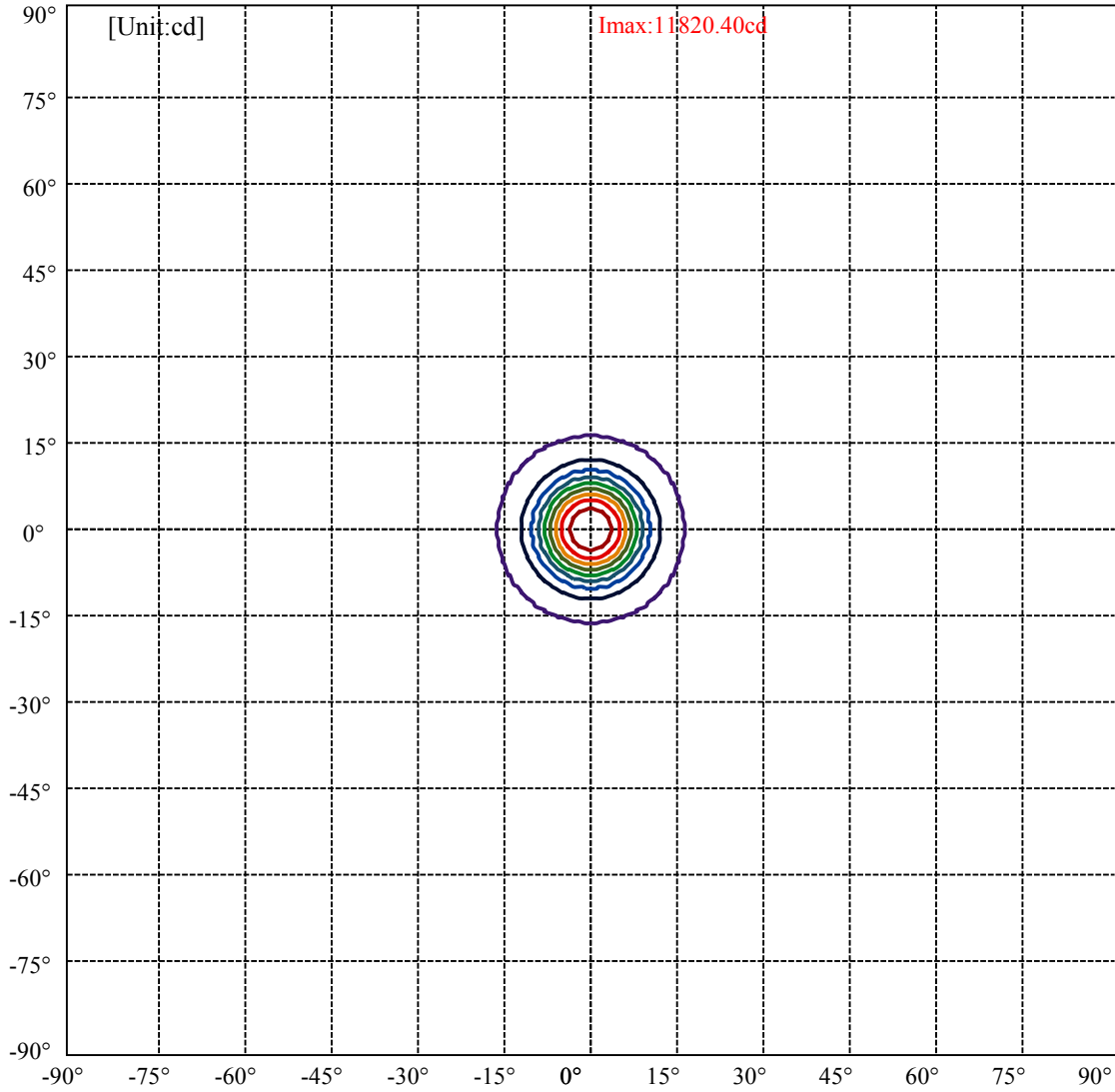
C0(Max): —————
C0/C180: —————
C90/C270: —————

Field angle(10%Imax):C0/180Left:16.0 Right:16.0
:C90/270Left:16.0 Right:16.0

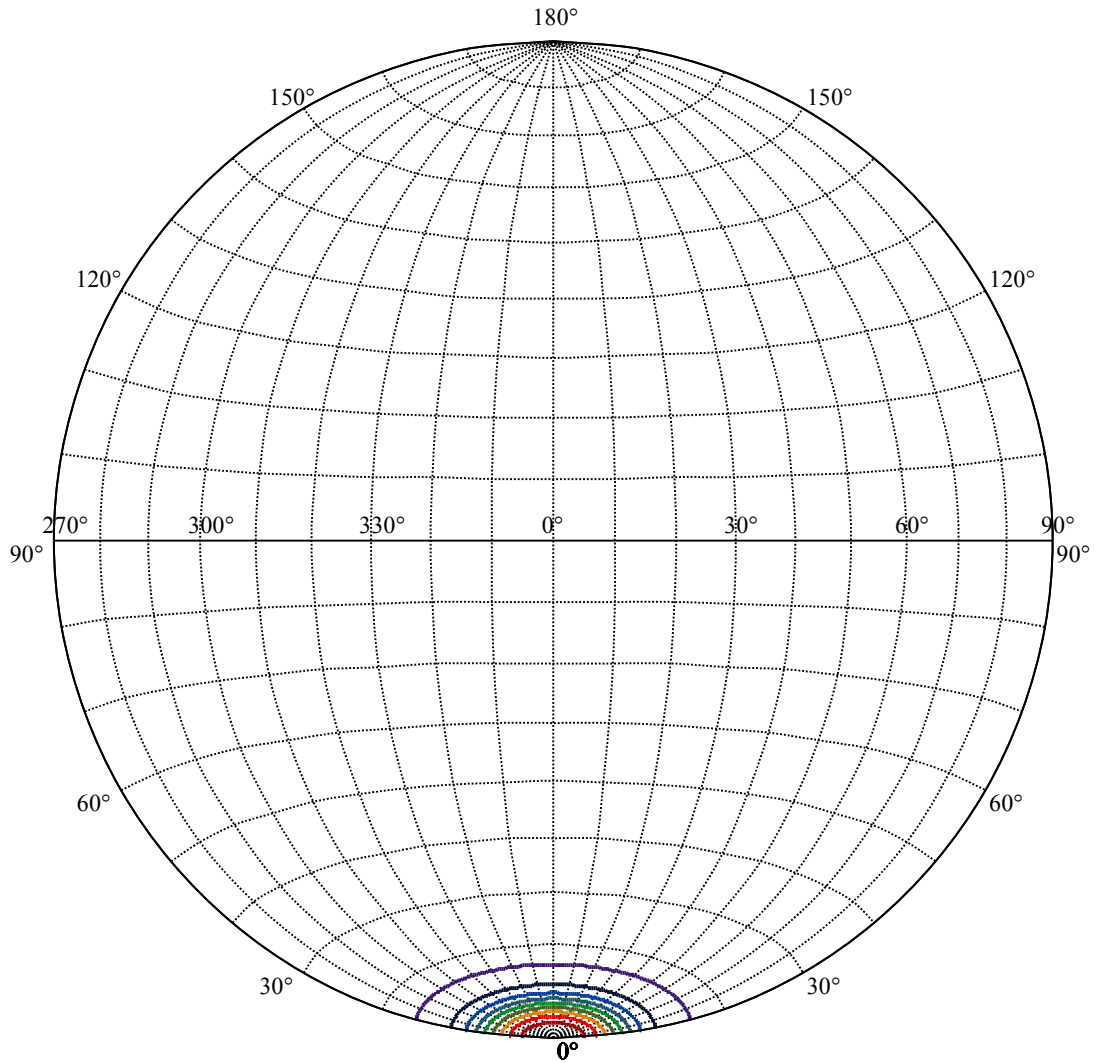
Beam Angle(50%Imax):C0/180Left:7.9 Right:7.9
:C90/270Left:7.9 Right:7.9



Max , Ave Beam angle of C0 plane 15.90



(10%Imax) 1182.04	—
(20%Imax) 2364.08	—
(30%Imax) 3546.12	—
(40%Imax) 4728.16	—
(50%Imax) 5910.2	—
(60%Imax) 7092.24	—
(70%Imax) 8274.28	—
(80%Imax) 9456.32	—
(90%Imax) 10638.4	—



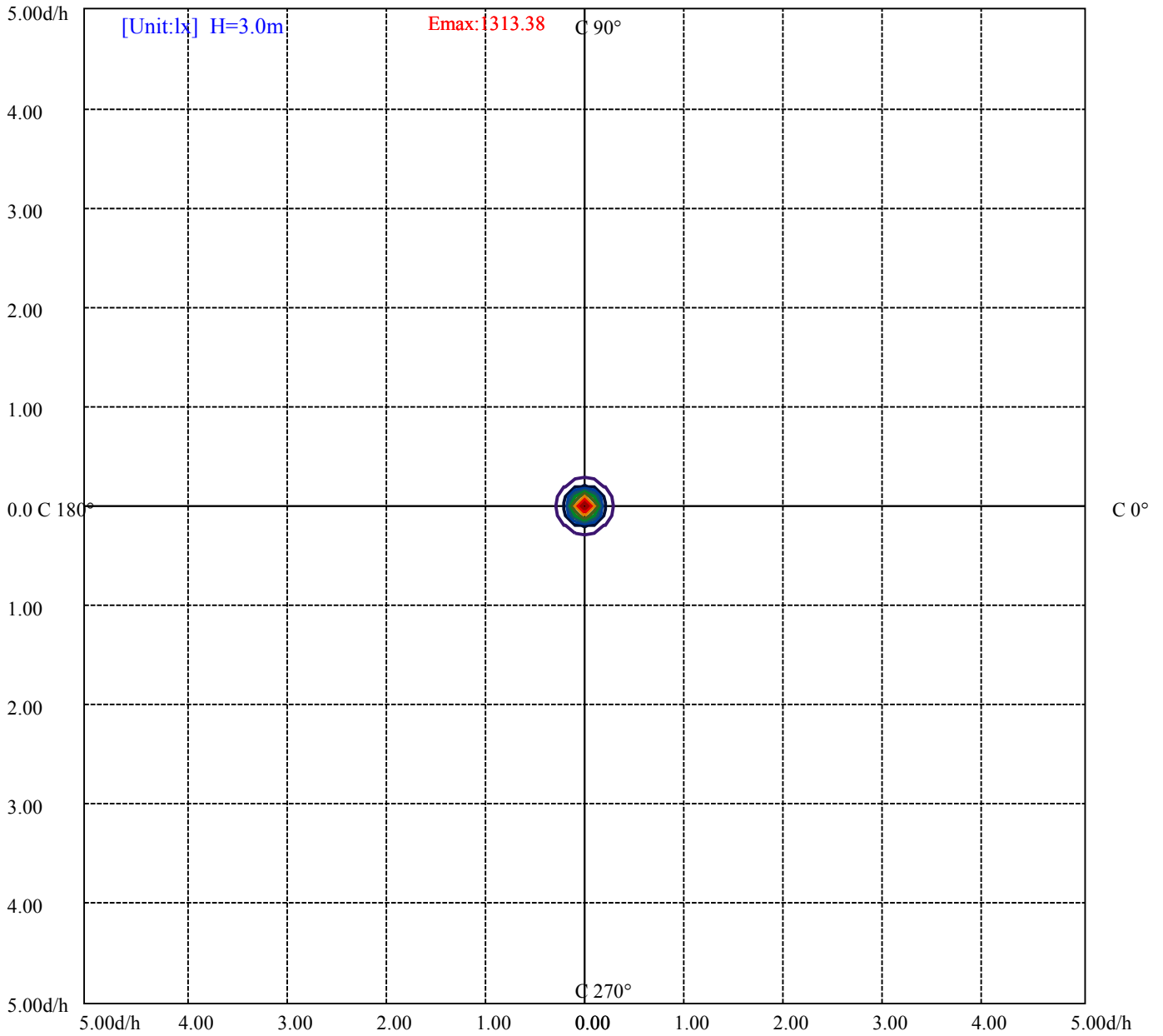
House

[Unit:cd]

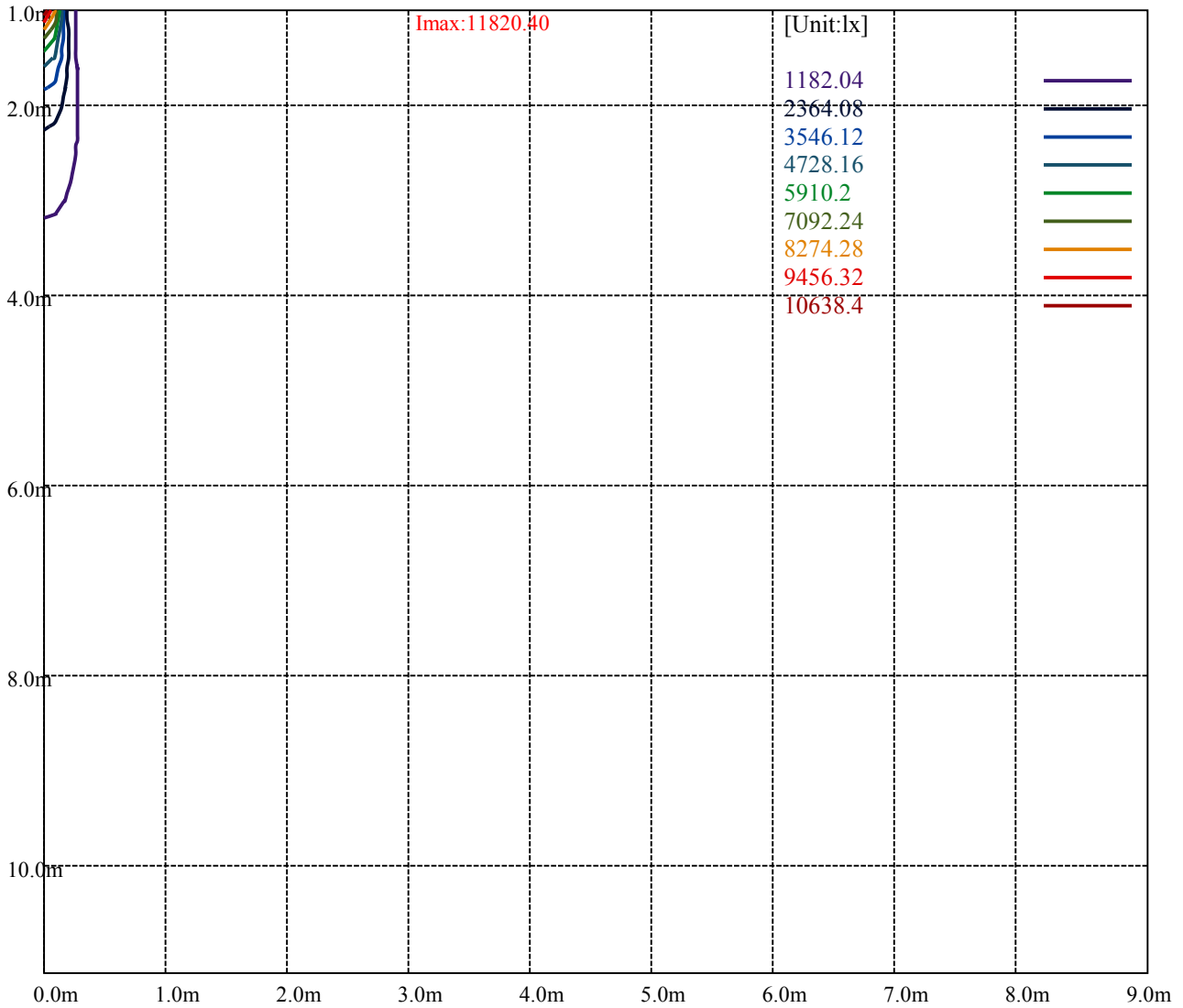
Road

Imax:11820.40

(10%Imax) 1182.04	—
(20%Imax) 2364.08	—
(30%Imax) 3546.12	—
(40%Imax) 4728.16	—
(50%Imax) 5910.2	—
(60%Imax) 7092.24	—
(70%Imax) 8274.28	—
(80%Imax) 9456.32	—
(90%Imax) 10638.4	—



(10%Emax) 131.3378	—
(20%Emax) 262.6756	—
(30%Emax) 394.0133	—
(40%Emax) 525.3511	—
(50%Emax) 656.6877	—
(60%Emax) 788.0256	—
(70%Emax) 919.3633	—
(80%Emax) 1050.701	—
(90%Emax) 1182.033	—



Luminance Table

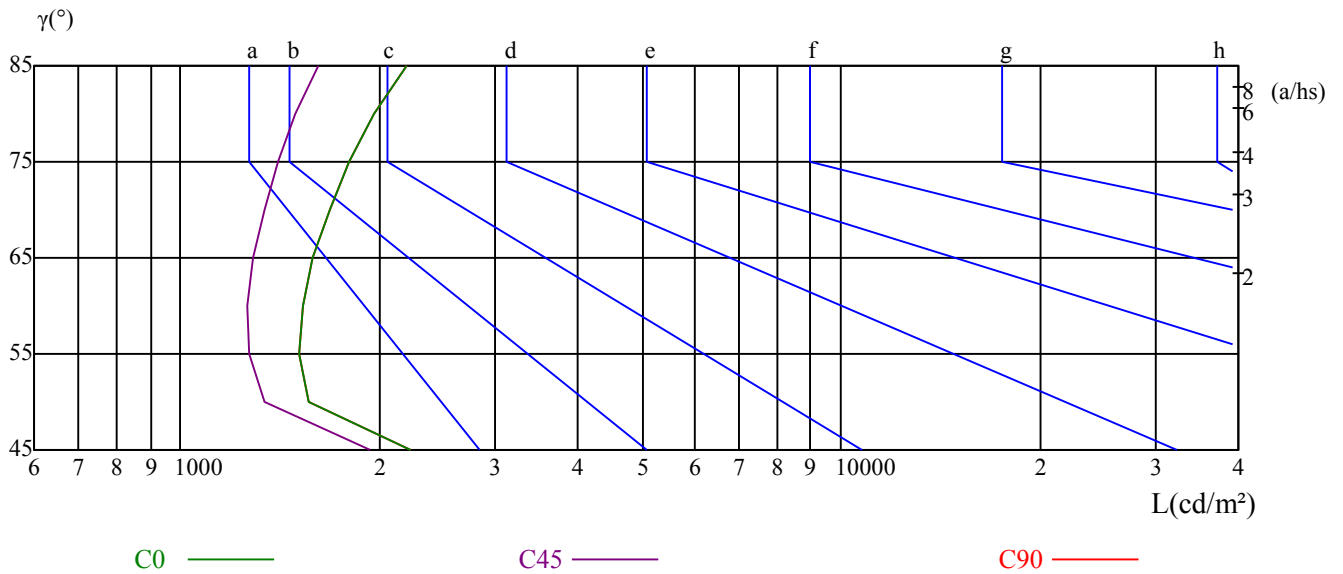
γ	45	50	55	60	65	70	75	80	85
C0	2231	1565	1509	1528	1580	1682	1799	1967	2204
C45	1935	1337	1270	1264	1284	1339	1401	1492	1620
C90	2231	1565	1509	1528	1580	1682	1799	1967	2204

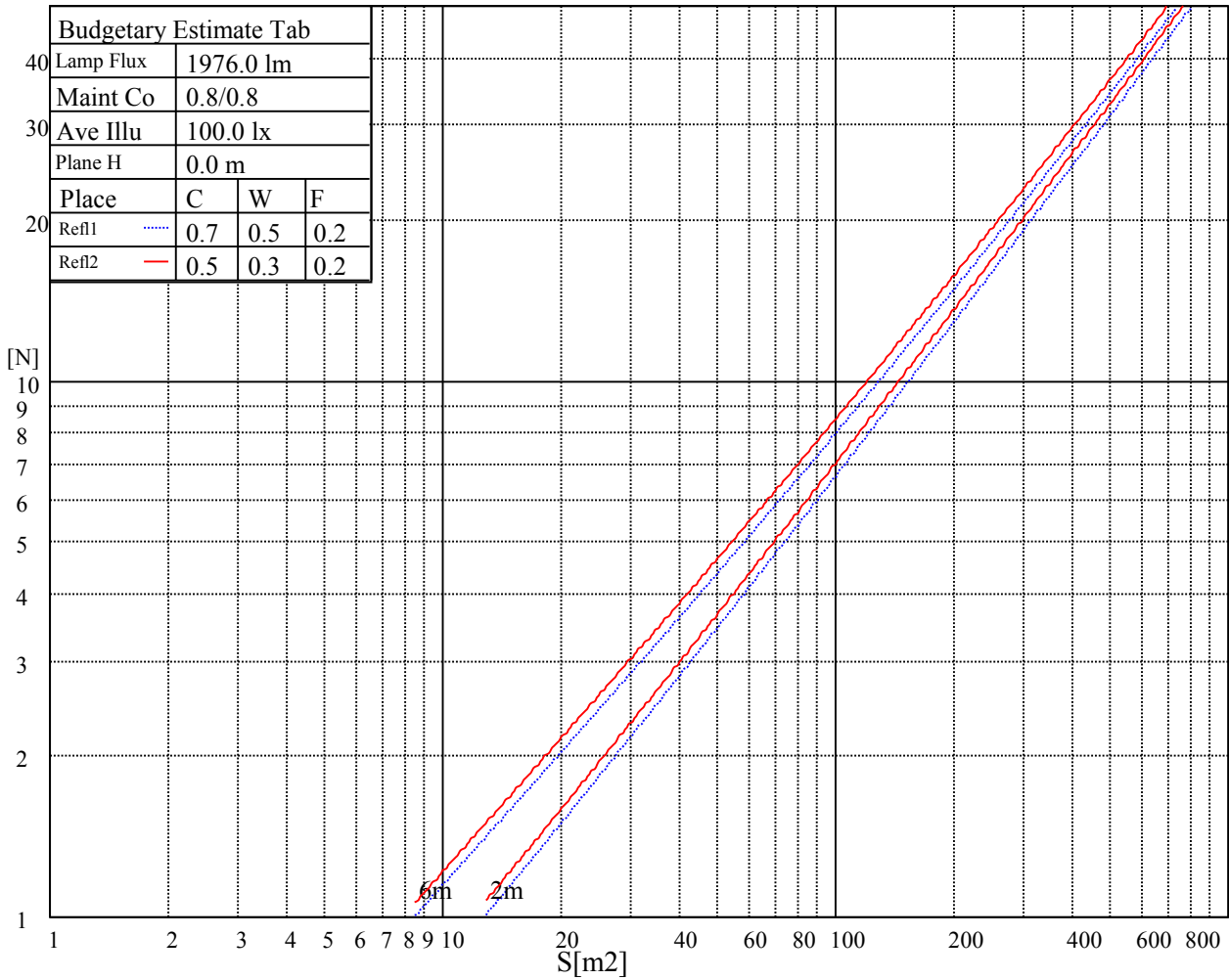
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3564	3564	3564	5732	5732	5732	16957	16957	16957

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	0.97	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.87
2	0.97	0.94	0.92	0.96	0.93	0.91	0.93	0.91	0.89	0.90	0.88	0.87	0.88	0.86	0.85	0.84
3	0.92	0.89	0.86	0.91	0.88	0.85	0.89	0.86	0.84	0.87	0.84	0.82	0.85	0.83	0.81	0.80
4	0.88	0.84	0.81	0.87	0.83	0.81	0.85	0.82	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.77
5	0.84	0.80	0.77	0.84	0.80	0.77	0.82	0.79	0.76	0.81	0.78	0.75	0.79	0.77	0.75	0.74
6	0.81	0.77	0.74	0.80	0.76	0.73	0.79	0.76	0.73	0.78	0.75	0.72	0.77	0.74	0.72	0.71
7	0.78	0.74	0.71	0.77	0.73	0.70	0.76	0.73	0.70	0.75	0.72	0.70	0.74	0.72	0.69	0.68
8	0.75	0.71	0.68	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.66
9	0.73	0.68	0.66	0.72	0.68	0.66	0.72	0.68	0.65	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	0.63	0.69	0.66	0.63	0.69	0.65	0.63	0.68	0.65	0.63	0.62

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	11787.01	11853.79	11837.10	11581.10	11191.54	10540.41	9399.56	8292.09	7117.84
45.0	11853.79	11781.44	11480.93	11041.28	10373.46	9210.34	8097.31	6900.80	5565.16
90.0	11792.57	11558.84	11044.62	10391.27	9498.62	8303.22	7122.29	5766.62	4506.67
135.0	11848.23	11647.88	11302.84	10601.63	9794.68	8664.95	7362.71	6155.07	5019.77
180.0	11787.01	11525.45	11073.56	10421.88	9436.29	8354.42	7012.10	5659.77	4533.94
225.0	11853.79	11814.83	11592.23	11060.76	10585.49	9629.95	8565.34	7256.97	5902.41
270.0	11792.57	11892.75	11814.83	11620.05	11224.93	10490.33	9471.90	8364.44	7179.06
315.0	11848.23	11876.05	11809.27	11564.40	11095.26	10274.95	9284.36	8023.29	6655.37
360.0	11787.01	11853.79	11837.10	11581.10	11191.54	10540.41	9399.56	8292.09	7117.84
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	5648.64	4552.30	3611.79	2866.06	2197.68	1820.36	1517.62	1325.06	1171.47
45.0	4351.96	3450.40	2827.10	2180.99	1773.62	1540.99	1314.49	1168.68	1085.76
90.0	3567.82	2767.00	2195.46	1823.15	1554.91	1320.61	1106.30	1082.37	1002.62
135.0	3789.87	3010.75	2854.93	1965.06	1634.49	1424.12	1249.93	1126.94	1042.35
180.0	3586.75	2703.55	2199.35	1829.27	1505.93	1325.06	1107.86	1088.93	997.72
225.0	4771.57	3680.24	2834.34	2275.04	1875.46	1529.31	1338.42	1107.24	1065.90
270.0	5670.90	4557.87	3600.66	2854.93	2189.89	1819.81	1515.95	1303.36	1164.23
315.0	5459.98	4234.53	3230.58	2564.98	2077.47	1658.42	1425.24	1259.95	1106.80
360.0	5648.64	4552.30	3611.79	2866.06	2197.68	1820.36	1517.62	1325.06	1171.47
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1065.73	1001.17	947.19	907.12	881.52	858.15	833.66	814.74	795.26
45.0	997.28	949.97	914.91	880.41	858.70	839.23	816.97	795.82	779.12
90.0	947.64	908.85	876.96	852.64	832.27	812.07	792.59	772.72	747.62
135.0	973.35	929.94	893.21	863.16	842.01	818.08	799.16	780.24	761.31
180.0	944.80	906.56	874.45	847.46	826.43	805.84	785.36	767.77	744.79
225.0	994.33	943.63	902.50	870.95	848.35	828.04	807.73	787.86	767.77
270.0	1060.16	992.82	937.73	896.55	872.62	850.36	827.54	811.40	794.15
315.0	1027.11	970.56	922.20	890.87	868.55	845.79	826.09	805.84	785.36
360.0	1065.73	1001.17	947.19	907.12	881.52	858.15	833.66	814.74	795.26
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	773.00	745.17	725.14	696.76	670.60	649.45	625.52	591.58	534.26
45.0	749.07	727.92	701.21	675.61	651.12	629.98	586.01	528.69	466.92
90.0	729.26	705.50	675.44	657.41	634.60	588.13	544.83	485.23	412.49
135.0	734.60	713.45	689.52	666.15	644.45	619.96	567.65	503.65	439.65
180.0	727.09	700.04	676.72	654.96	635.26	592.63	542.71	484.22	405.09
225.0	749.46	726.48	700.26	679.01	659.81	634.26	601.82	555.40	497.80
270.0	768.55	746.84	729.04	702.32	678.95	659.47	633.87	597.14	548.17
315.0	763.21	741.39	712.06	686.07	664.70	639.83	616.56	577.33	515.95
360.0	773.00	745.17	725.14	696.76	670.60	649.45	625.52	591.58	534.26
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	469.14	404.03	338.92	289.39	189.72	132.01	81.14	34.78	18.75
45.0	394.57	328.90	286.61	179.92	119.93	69.95	29.05	16.36	13.25
90.0	337.69	272.64	201.35	132.56	78.25	34.67	17.53	13.13	11.24
135.0	362.29	294.40	243.14	149.20	93.16	48.03	19.53	13.97	11.69
180.0	339.09	273.08	201.85	134.18	81.86	37.23	18.20	13.25	11.19
225.0	415.16	348.38	282.04	199.40	139.18	86.54	41.46	19.20	14.75
270.0	479.16	411.27	332.80	281.04	188.16	128.89	65.50	32.50	18.64
315.0	445.44	381.32	305.53	230.62	169.40	107.02	59.88	26.94	17.20
360.0	469.14	404.03	338.92	289.39	189.72	132.01	81.14	34.78	18.75

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	15.69	12.47	11.19	10.46	9.46	8.57	8.40	8.24	8.07
45.0	11.07	10.07	9.46	8.68	8.35	8.24	8.13	8.07	8.01
90.0	10.18	9.57	8.79	8.40	8.24	8.18	8.07	7.96	7.90
135.0	10.30	9.57	9.02	8.40	8.29	8.18	8.13	8.01	7.85
180.0	10.13	9.35	8.79	8.35	8.24	8.13	8.01	7.96	7.79
225.0	12.13	10.80	9.91	9.18	8.68	8.46	8.35	8.24	8.01
270.0	14.30	12.41	11.13	10.18	9.24	8.68	8.40	8.29	8.13
315.0	14.25	12.47	10.96	10.18	9.24	8.51	8.29	8.13	8.01
360.0	15.69	12.47	11.19	10.46	9.46	8.57	8.40	8.24	8.07
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	8.01	7.90	7.79	7.74	7.68	7.62	7.62	7.57	7.51
45.0	7.85	7.79	7.68	7.62	7.57	7.57	7.57	7.51	7.51
90.0	7.74	7.74	7.62	7.62	7.57	7.57	7.46	7.46	7.46
135.0	7.79	7.74	7.68	7.68	7.62	7.57	7.51	7.46	7.46
180.0	7.79	7.68	7.68	7.62	7.62	7.51	7.51	7.51	7.51
225.0	7.90	7.79	7.74	7.62	7.57	7.51	7.51	7.51	7.46
270.0	8.01	7.90	7.79	7.74	7.68	7.62	7.62	7.57	7.51
315.0	7.90	7.79	7.79	7.62	7.62	7.51	7.51	7.46	7.46
360.0	8.01	7.90	7.79	7.74	7.68	7.62	7.62	7.57	7.51
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	7.46	7.40	7.40	7.40	7.40	7.40	7.35	7.29	7.29
45.0	7.46	7.40	7.35	7.35	7.35	7.35	7.35	7.35	7.29
90.0	7.46	7.46	7.35	7.29	7.29	7.29	7.35	7.35	7.35
135.0	7.46	7.46	7.40	7.40	7.40	7.35	7.40	7.35	7.35
180.0	7.51	7.46	7.40	7.40	7.40	7.40	7.40	7.40	7.40
225.0	7.46	7.46	7.40	7.35	7.35	7.35	7.35	7.40	7.35
270.0	7.57	7.46	7.40	7.40	7.40	7.40	7.35	7.40	7.35
315.0	7.40	7.35	7.35	7.35	7.35	7.29	7.29	7.29	7.35
360.0	7.46	7.40	7.40	7.40	7.40	7.40	7.35	7.29	7.29
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	7.29	7.29	7.29	7.29	7.23	7.29	7.29	7.23	7.23
45.0	7.23	7.23	7.23	7.23	7.23	7.23	7.18	7.18	7.18
90.0	7.23	7.23	7.23	7.23	7.23	7.23	7.23	7.18	7.18
135.0	7.29	7.35	7.35	7.29	7.29	7.29	7.29	7.29	7.23
180.0	7.35	7.35	7.29	7.29	7.35	7.35	7.35	7.35	7.23
225.0	7.29	7.29	7.23	7.29	7.29	7.29	7.35	7.29	7.29
270.0	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29	7.29
315.0	7.29	7.29	7.23	7.23	7.23	7.23	7.23	7.23	7.23
360.0	7.29	7.29	7.29	7.29	7.23	7.29	7.29	7.23	7.23
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	7.23	7.23	7.23	7.18	7.18	7.23	7.18	7.18	7.18
45.0	7.18	7.23	7.12	7.18	7.18	7.18	7.12	7.12	7.12
90.0	7.23	7.23	7.18	7.18	7.23	7.12	7.12	7.12	7.18
135.0	7.23	7.23	7.23	7.23	7.23	7.18	7.12	7.12	7.23
180.0	7.29	7.23	7.29	7.29	7.23	7.23	7.18	7.18	7.18
225.0	7.23	7.18	7.23	7.23	7.40	7.29	7.23	7.12	7.12
270.0	7.18	7.23	7.23	7.23	7.29	7.35	7.23	7.12	7.12
315.0	7.18	7.18	7.23	7.18	7.18	7.23	7.18	7.18	7.12
360.0	7.23	7.23	7.23	7.18	7.18	7.23	7.18	7.18	7.18

Intensity data(cd)

C/γ(°)	90.0
0.0	7.18
45.0	7.12
90.0	7.18
135.0	7.18
180.0	7.23
225.0	7.12
270.0	7.12
315.0	7.12
360.0	7.18