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NATA

LumCAT: 2-2136-A	
Luminaire: BJB 47.360.1010	
Report No: NATA0100	Voltage(V): 34.2500
Test No: GC2020011320	Current(A): 0.6020
LampCAT: LUMINUS CXM-14-AC40	Power (W): 20.6000
Lamp flux(lm): 2552.0	PF: 0.0000
Number of Lamps: 1	Ballast type: DC
Length(mm): 0	Width(mm): 0
Phm Type: C	Height(mm): 0

Photometric Results

Lumens(lm): 1897.10
Efficiency(%): 74.34%
Lumens(lm)/Power(W): 92.09
Central intensity(cd): 10037.390
Maximum intensity(cd): 10037.390
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=23.7
 [C90/270]Total=23.7
Field angle(10%Imax): [C0/180]Total=42.1
 [C90/270]Total=42.1
Maximum s/h(1/2): C0_180=0.40 C90_270=0.40
Maximum s/h(1/4): C0_180=0.41 C90_270=0.41
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 74.34%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.883%

γ(°)	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	10037.391	0.000	0	.000%	.000%
1.0	9999.352	9.587	9.587	.376%	.505%
2.0	9847.125	28.486	38.073	1.116%	2.007%
3.0	9636.609	46.599	84.671	1.826%	4.463%
4.0	9359.438	63.586	148.257	2.492%	7.815%
5.0	8945.227	78.746	227.003	3.086%	11.966%
6.0	8460.141	91.470	318.473	3.584%	16.787%
7.0	7962.961	101.938	420.411	3.994%	22.161%
8.0	7368.398	109.724	530.134	4.300%	27.944%
9.0	6756.258	114.473	644.607	4.486%	33.978%
10.0	6151.008	116.806	761.413	4.577%	40.136%
11.0	5518.336	116.601	878.014	4.569%	46.282%
12.0	4926.797	114.180	992.194	4.474%	52.300%
13.0	4332.094	109.880	1102.074	4.306%	58.092%
14.0	3763.828	103.627	1205.701	4.061%	63.555%
15.0	3265.383	96.500	1302.201	3.781%	68.641%
16.0	2820.867	89.181	1391.382	3.495%	73.342%
17.0	2350.266	80.528	1471.91	3.156%	77.587%
18.0	1975.922	71.329	1543.239	2.795%	81.347%
19.0	1617.476	62.518	1605.757	2.450%	84.643%
20.0	1304.409	53.479	1659.236	2.096%	87.461%
21.0	1015.777	44.552	1703.788	1.746%	89.810%
22.0	786.199	36.211	1740	1.419%	91.719%
23.0	571.690	28.492	1768.492	1.116%	93.221%
24.0	376.031	20.721	1789.212	.812%	94.313%
25.0	241.552	14.042	1803.255	.550%	95.053%
26.0	147.291	9.179	1812.433	.360%	95.537%
27.0	54.844	4.945	1817.379	.194%	95.797%
28.0	29.686	2.140	1819.519	.084%	95.910%
29.0	23.513	1.392	1820.911	.055%	95.984%
30.0	20.658	1.193	1822.103	.047%	96.047%
31.0	19.209	1.109	1823.213	.043%	96.105%
32.0	18.120	1.069	1824.282	.042%	96.161%
33.0	17.311	1.044	1825.326	.041%	96.216%
34.0	16.685	1.029	1826.355	.040%	96.271%
35.0	16.102	1.018	1827.373	.040%	96.324%
36.0	15.652	1.011	1828.384	.040%	96.378%
37.0	15.307	1.010	1829.394	.040%	96.431%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	14.998	1.012	1830.405	.040%	96.484%
39.0	14.723	1.014	1831.42	.040%	96.538%
40.0	14.491	1.019	1832.439	.040%	96.591%
41.0	14.316	1.026	1833.464	.040%	96.645%
42.0	14.140	1.034	1834.498	.041%	96.700%
43.0	13.992	1.042	1835.54	.041%	96.755%
44.0	13.845	1.051	1836.591	.041%	96.810%
45.0	13.760	1.061	1837.652	.042%	96.866%
46.0	13.711	1.074	1838.726	.042%	96.923%
47.0	13.690	1.090	1839.816	.043%	96.980%
48.0	13.711	1.108	1840.924	.043%	97.039%
49.0	13.809	1.130	1842.054	.044%	97.098%
50.0	13.894	1.155	1843.209	.045%	97.159%
51.0	14.112	1.185	1844.394	.046%	97.221%
52.0	14.316	1.220	1845.614	.048%	97.286%
53.0	14.583	1.257	1846.871	.049%	97.352%
54.0	14.948	1.302	1848.172	.051%	97.421%
55.0	15.237	1.347	1849.52	.053%	97.492%
56.0	15.567	1.392	1850.912	.055%	97.565%
57.0	15.926	1.440	1852.352	.056%	97.641%
58.0	16.242	1.488	1853.839	.058%	97.719%
59.0	16.495	1.530	1855.37	.060%	97.800%
60.0	16.720	1.569	1856.939	.061%	97.883%
61.0	16.910	1.605	1858.544	.063%	97.967%
62.0	17.037	1.636	1860.18	.064%	98.054%
63.0	17.128	1.662	1861.841	.065%	98.141%
64.0	17.100	1.680	1863.521	.066%	98.230%
65.0	16.938	1.685	1865.205	.066%	98.319%
66.0	16.657	1.676	1866.881	.066%	98.407%
67.0	16.390	1.662	1868.543	.065%	98.494%
68.0	16.186	1.650	1870.193	.065%	98.581%
69.0	15.841	1.634	1871.827	.064%	98.668%
70.0	15.546	1.612	1873.439	.063%	98.753%
71.0	15.159	1.587	1875.026	.062%	98.836%
72.0	14.667	1.551	1876.577	.061%	98.918%
73.0	14.189	1.509	1878.086	.059%	98.997%
74.0	13.676	1.465	1879.551	.057%	99.075%
75.0	12.748	1.396	1880.947	.055%	99.148%

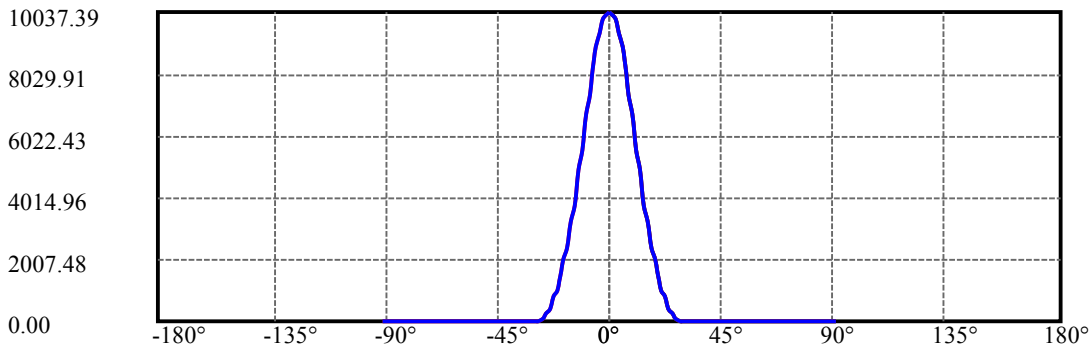
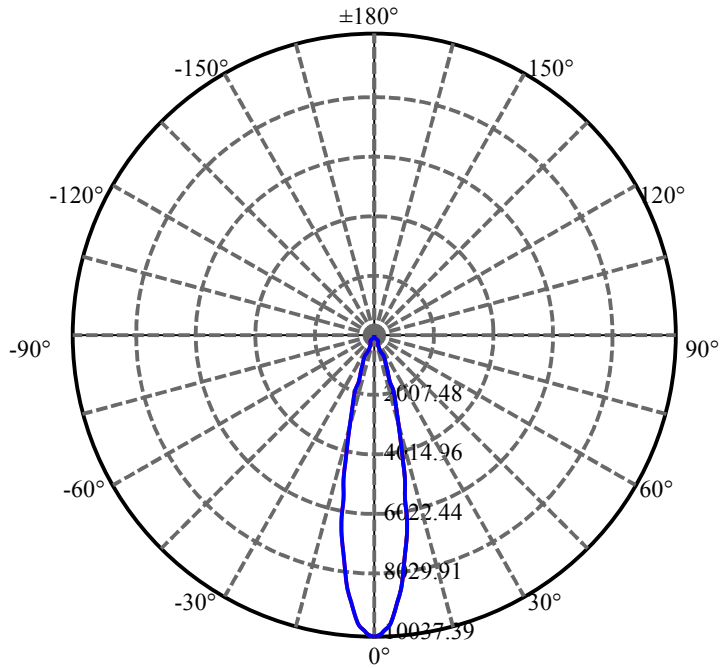
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	11.995	1.313	1882.261	.051%	99.218%
77.0	11.496	1.252	1883.513	.049%	99.284%
78.0	11.109	1.210	1884.723	.047%	99.347%
79.0	10.596	1.166	1885.889	.046%	99.409%
80.0	10.146	1.118	1887.008	.044%	99.468%
81.0	9.837	1.081	1888.088	.042%	99.525%
82.0	9.633	1.056	1889.144	.041%	99.580%
83.0	9.450	1.037	1890.181	.041%	99.635%
84.0	9.323	1.023	1891.204	.040%	99.689%
85.0	9.239	1.013	1892.217	.040%	99.742%
86.0	9.204	1.008	1893.225	.040%	99.796%
87.0	9.077	1.000	1894.226	.039%	99.848%
88.0	8.754	0.977	1895.203	.038%	99.900%
89.0	8.663	0.955	1896.157	.037%	99.950%
90.0	8.620	0.948	1897.105	.037%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1822.10	71.40%	96.05%
0-40	1832.44	71.80%	96.59%
0-60	1856.94	72.76%	97.88%
0-90	1896.16	74.30%	99.95%
0-120	1896.16	74.30%	99.95%
0-180	1897.10	74.34%	100.00%
60-90	40.79	1.60%	2.15%
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%
0-17.64	1517.68	59.47%	80.00%

ZONAL LUMEN SUMMARY

0-10	761.41
10-20	897.82
20-30	162.87
30-40	10.34
40-50	10.77
50-60	13.73
60-70	16.50
70-80	13.57
80-90	9.15
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



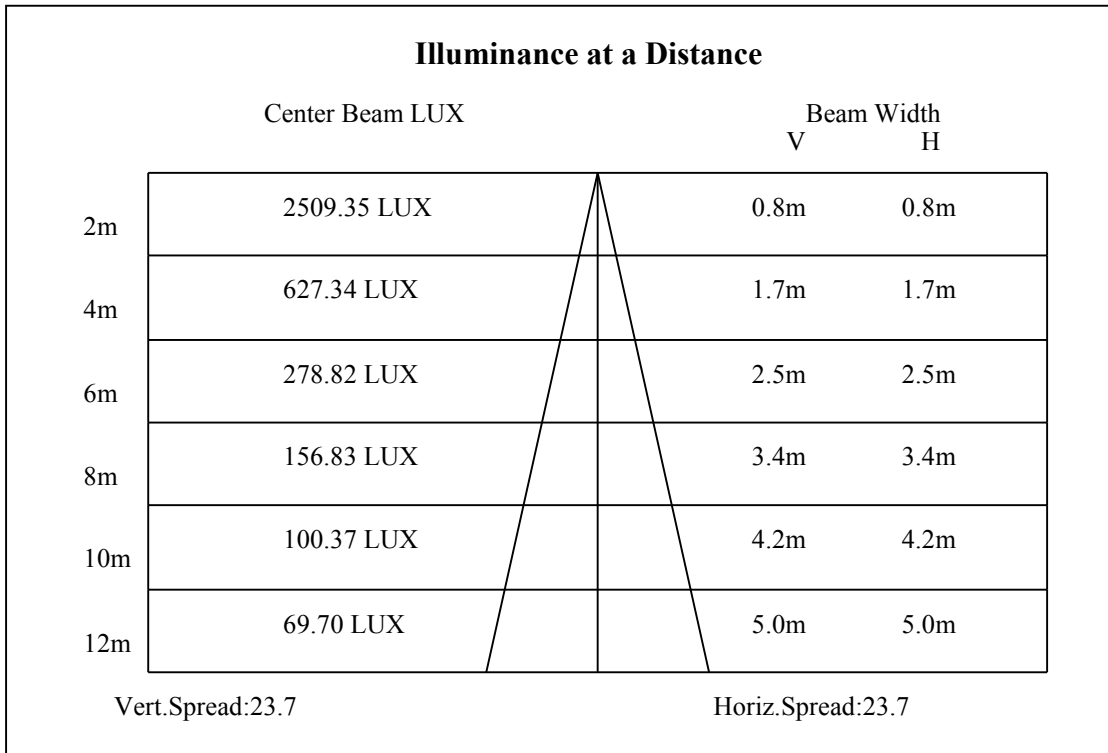
C0(Max): —————

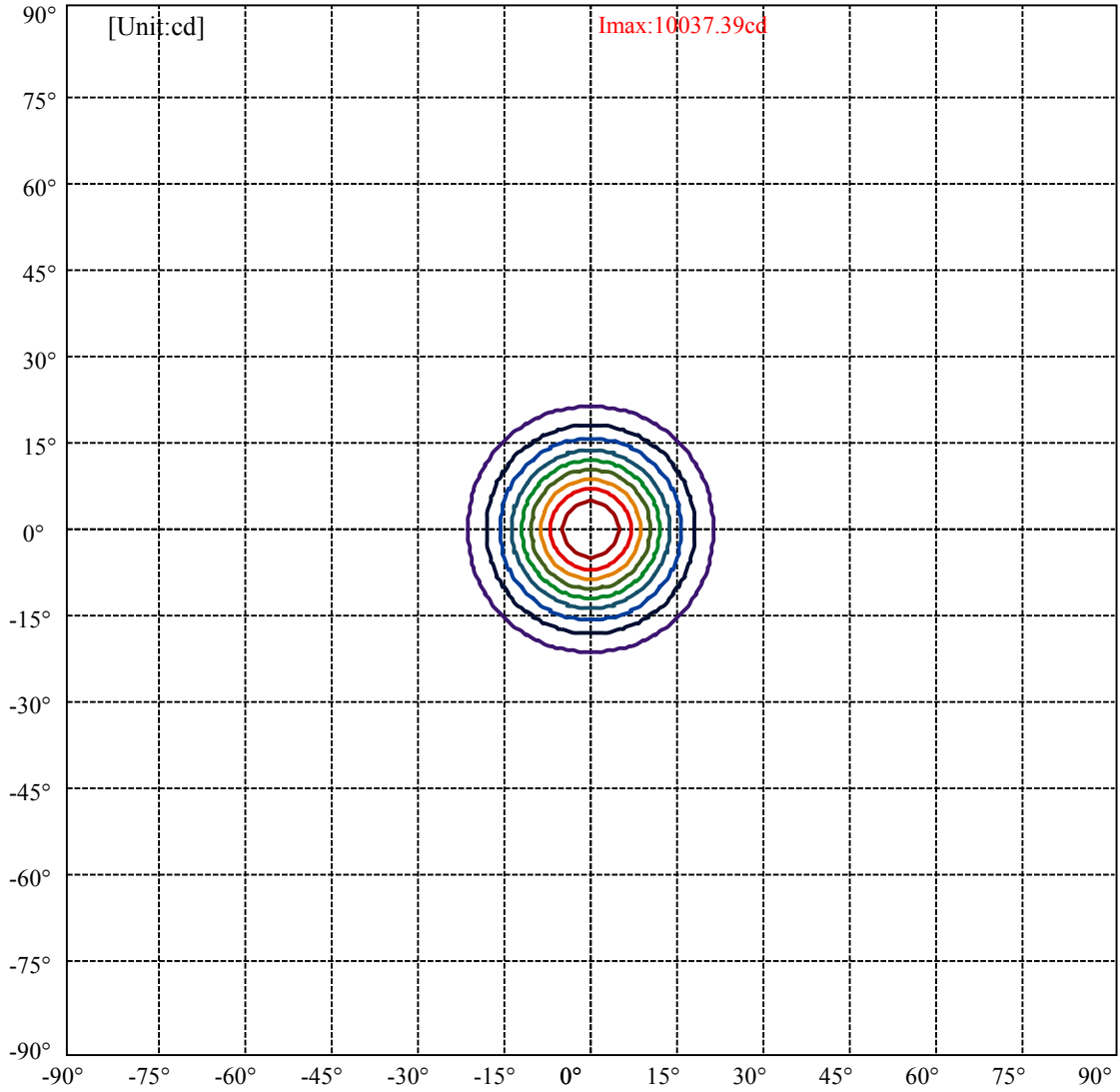
C0/C180: —————

C90/C270: —————

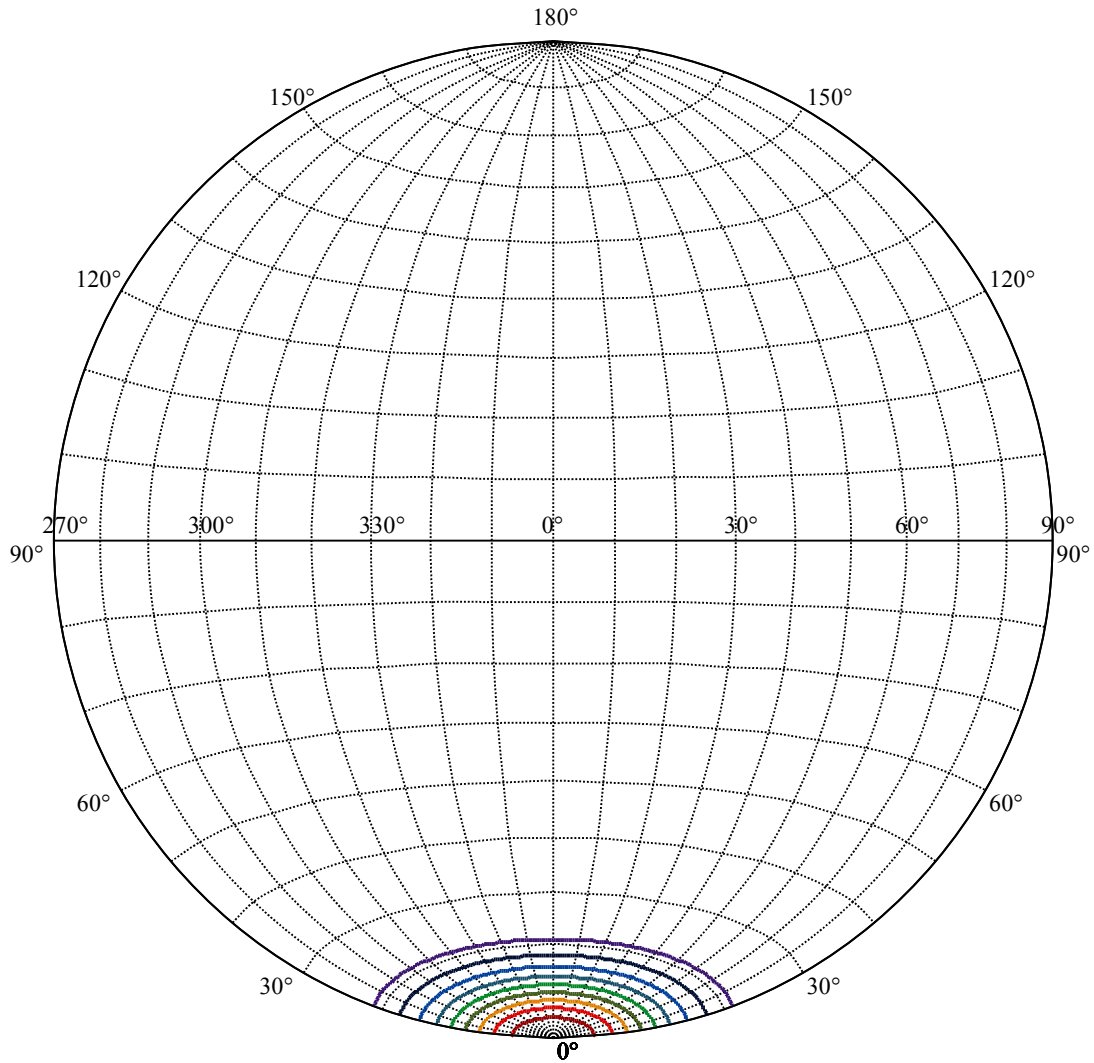
Field angle(10%Imax):C0/180Left:21.1 Right:21.1
:C90/270Left:21.1 Right:21.1

Beam Angle(50%Imax):C0/180Left:11.8 Right:11.8
:C90/270Left:11.8 Right:11.8





(10%Imax) 1003.74	—
(20%Imax) 2007.48	—
(30%Imax) 3011.22	—
(40%Imax) 4014.96	—
(50%Imax) 5018.7	—
(60%Imax) 6022.43	—
(70%Imax) 7026.17	—
(80%Imax) 8029.91	—
(90%Imax) 9033.65	—



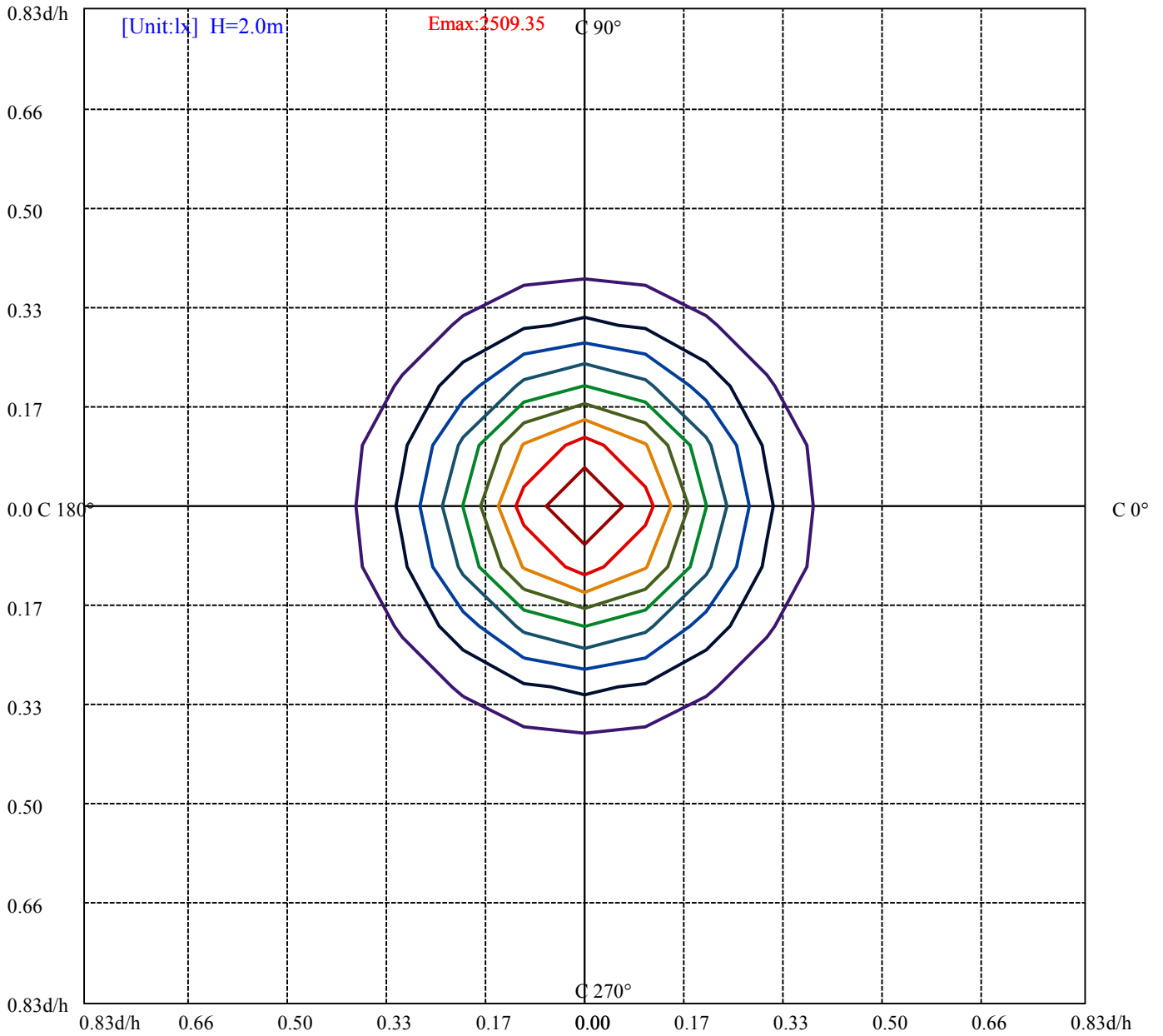
House

[Unit:cd]

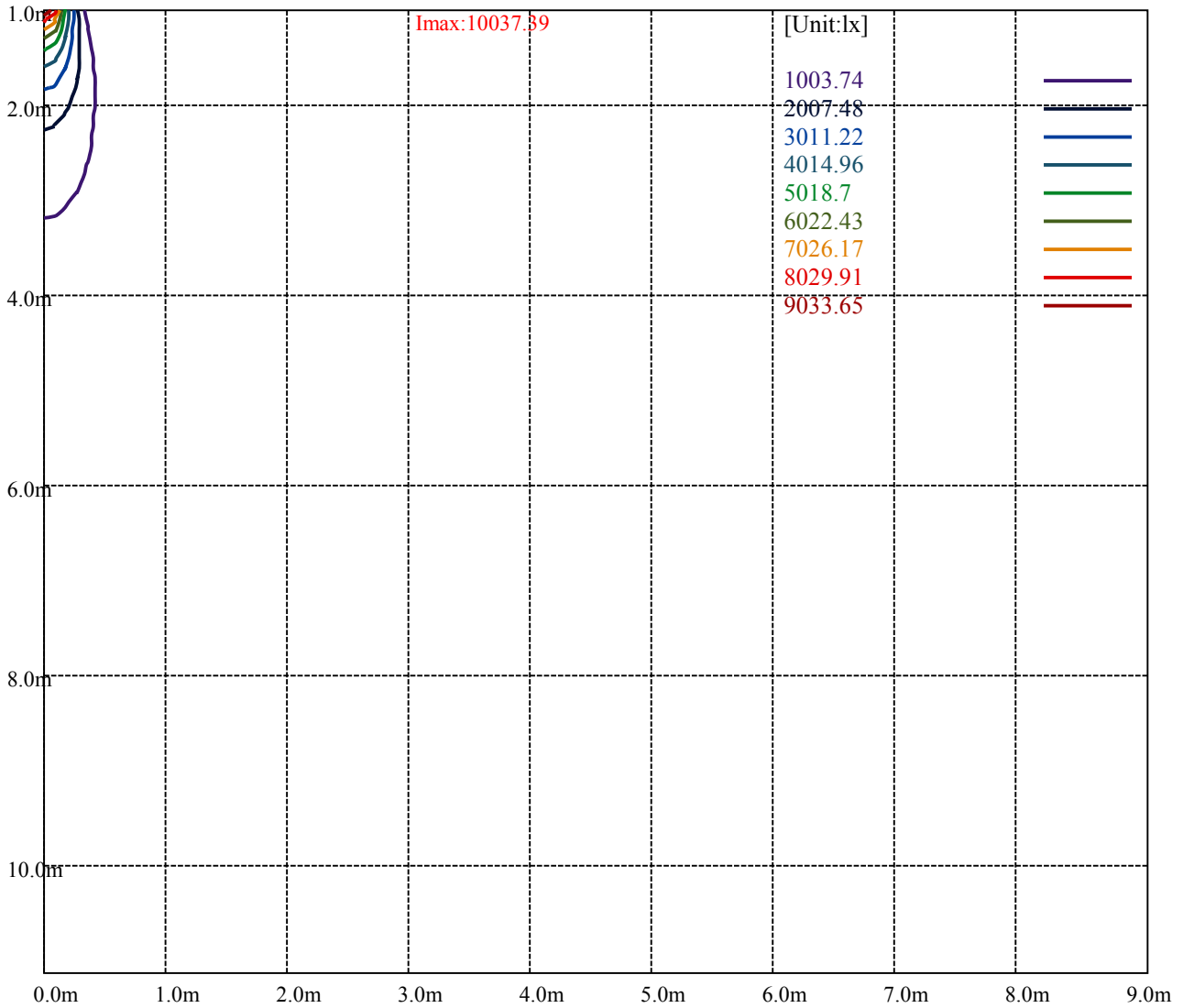
Road

Imax:10037.39

(10%Imax) 1003.74	—
(20%Imax) 2007.48	—
(30%Imax) 3011.22	—
(40%Imax) 4014.96	—
(50%Imax) 5018.7	—
(60%Imax) 6022.43	—
(70%Imax) 7026.17	—
(80%Imax) 8029.91	—
(90%Imax) 9033.65	—



- (10%Emax) 250.935
- (20%Emax) 501.87
- (30%Emax) 752.805
- (40%Emax) 1003.737
- (50%Emax) 1254.672
- (60%Emax) 1505.608
- (70%Emax) 1756.542
- (80%Emax) 2007.478
- (90%Emax) 2258.413



Luminance Table

γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

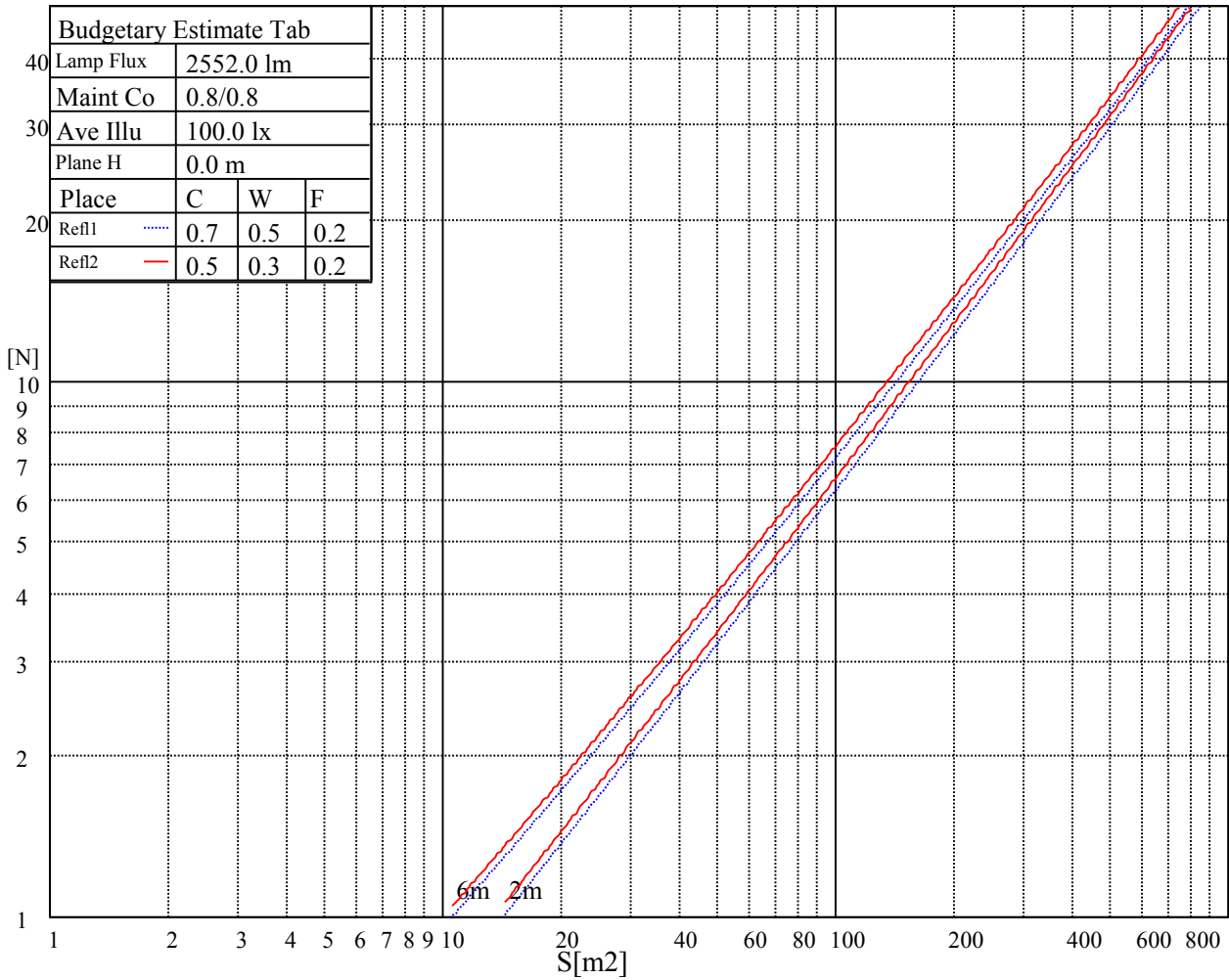
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

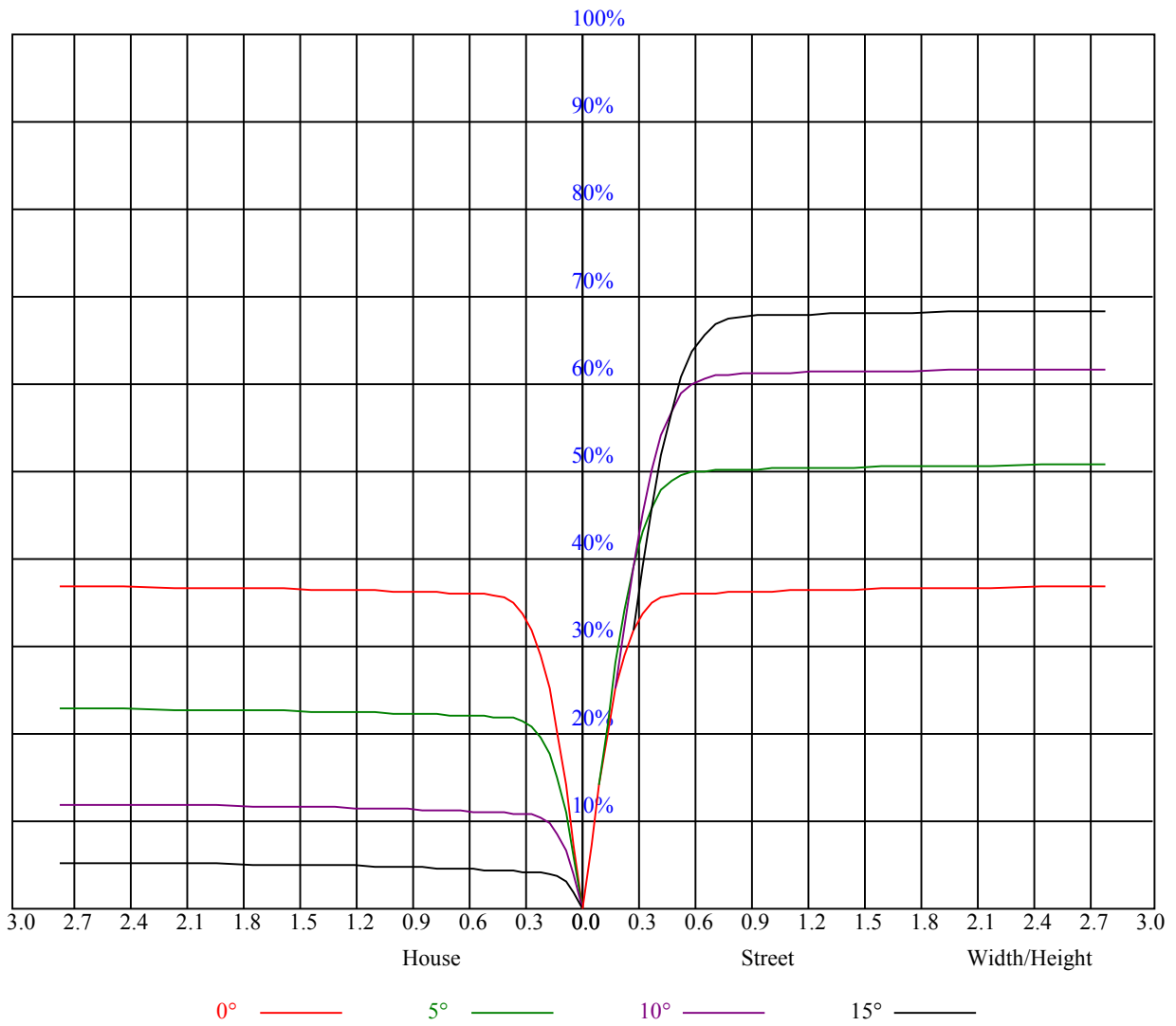
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.88	0.88	0.88	0.86	0.86	0.86	0.83	0.83	0.83	0.79	0.79	0.79	0.76	0.76	0.76	0.74
1	0.84	0.82	0.81	0.82	0.81	0.80	0.79	0.78	0.77	0.76	0.76	0.75	0.74	0.73	0.73	0.72
2	0.80	0.78	0.76	0.79	0.77	0.75	0.76	0.75	0.73	0.74	0.73	0.72	0.72	0.71	0.70	0.69
3	0.77	0.74	0.72	0.76	0.73	0.71	0.74	0.72	0.70	0.72	0.71	0.69	0.71	0.69	0.68	0.67
4	0.74	0.71	0.69	0.73	0.70	0.68	0.72	0.69	0.68	0.70	0.68	0.67	0.69	0.67	0.66	0.65
5	0.71	0.69	0.66	0.71	0.68	0.66	0.70	0.67	0.66	0.69	0.67	0.65	0.68	0.66	0.64	0.64
6	0.69	0.66	0.64	0.69	0.66	0.64	0.68	0.65	0.64	0.67	0.65	0.63	0.66	0.64	0.63	0.62
7	0.67	0.64	0.62	0.67	0.64	0.62	0.66	0.64	0.62	0.65	0.63	0.62	0.65	0.63	0.61	0.61
8	0.66	0.63	0.61	0.65	0.62	0.61	0.65	0.62	0.60	0.64	0.62	0.60	0.63	0.61	0.60	0.59
9	0.64	0.61	0.59	0.64	0.61	0.59	0.63	0.61	0.59	0.63	0.60	0.59	0.62	0.60	0.59	0.58
10	0.62	0.60	0.58	0.62	0.60	0.58	0.62	0.59	0.58	0.61	0.59	0.57	0.61	0.59	0.57	0.57



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	10037.81	10040.06	9918.00	9749.25	9538.88	9131.06	8669.25	8261.44	7624.13
45.0	10018.69	10057.50	9999.00	9867.94	9660.94	9388.13	8933.63	8478.00	7968.94
90.0	10063.13	10071.00	9982.13	9797.63	9554.63	9192.94	8782.88	8237.81	7637.06
135.0	10029.94	10054.13	9967.50	9812.25	9588.94	9249.19	8801.44	8328.94	7742.25
180.0	10037.81	9963.00	9785.25	9519.75	9199.69	8750.25	8214.19	7682.63	7121.25
225.0	10018.69	9903.38	9650.25	9371.81	9020.25	8524.69	7963.31	7433.44	6805.69
270.0	10063.13	9981.56	9775.69	9529.31	9203.06	8686.69	8209.69	7695.56	7082.44
315.0	10029.94	9924.19	9699.19	9444.94	9109.13	8638.88	8106.75	7585.88	6965.44
360.0	10037.81	10040.06	9918.00	9749.25	9538.88	9131.06	8669.25	8261.44	7624.13
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	7011.00	6516.00	5798.25	5224.50	4668.19	3996.56	3498.19	3034.13	2511.56
45.0	7297.88	6729.19	6215.06	5481.56	4843.69	4368.38	3724.31	3259.69	2827.13
90.0	7070.63	6415.31	5761.13	5190.75	4645.69	3993.19	3503.81	3050.44	2530.13
135.0	7129.69	6555.94	5891.06	5311.69	4683.94	4090.50	3593.81	3137.06	2615.06
180.0	6470.44	5811.75	5234.63	4617.56	4029.19	3535.31	3021.19	2604.38	2176.88
225.0	6227.44	5569.88	4930.88	4384.69	3794.63	3253.50	2817.00	2410.31	1964.81
270.0	6448.50	5870.25	5224.50	4667.06	4060.13	3491.44	3029.63	2550.38	2121.19
315.0	6394.50	5739.75	5091.19	4536.56	3931.31	3381.75	2935.13	2520.56	2055.38
360.0	7011.00	6516.00	5798.25	5224.50	4668.19	3996.56	3498.19	3034.13	2511.56
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	2138.06	1807.31	1424.25	1144.13	896.63	657.56	452.25	296.44	148.89
45.0	2320.31	1959.75	1650.38	1262.81	987.19	766.13	527.06	363.94	284.06
90.0	2146.50	1802.81	1450.13	1098.51	884.19	671.57	466.76	295.71	172.80
135.0	2222.44	1869.75	1486.69	1198.13	947.25	690.19	478.13	330.19	310.50
180.0	1794.94	1486.69	1099.69	886.84	671.68	486.84	294.36	168.47	76.73
225.0	1660.50	1089.62	1057.50	790.88	584.83	392.51	227.08	114.58	44.27
270.0	1793.81	1491.75	1145.81	897.19	680.63	453.38	297.56	216.11	73.63
315.0	1730.81	1432.13	1120.84	847.74	637.20	455.34	265.05	146.98	67.44
360.0	2138.06	1807.31	1424.25	1144.13	896.63	657.56	452.25	296.44	148.89
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	63.34	28.52	21.99	19.35	17.72	16.54	15.69	14.96	14.23
45.0	93.49	37.01	25.43	20.70	19.01	18.11	17.33	16.76	16.26
90.0	73.63	36.84	27.00	22.56	20.93	19.63	18.73	18.00	17.49
135.0	84.60	36.56	26.94	22.89	20.87	19.41	18.45	17.66	16.93
180.0	32.74	24.19	20.36	18.28	16.88	15.75	14.91	14.34	13.78
225.0	28.18	23.29	20.70	19.35	18.34	17.38	16.76	16.26	15.64
270.0	32.06	26.38	23.46	21.54	20.31	19.46	18.79	18.17	17.72
315.0	30.71	24.69	22.22	20.59	19.63	18.68	17.83	17.33	16.76
360.0	63.34	28.52	21.99	19.35	17.72	16.54	15.69	14.96	14.23
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	13.73	13.28	12.88	12.54	12.32	12.15	11.98	11.87	11.70
45.0	15.81	15.41	15.13	14.79	14.51	14.29	14.06	13.95	13.78
90.0	16.93	16.54	16.31	16.03	15.75	15.58	15.41	15.13	15.02
135.0	16.48	16.14	15.75	15.47	15.24	14.96	14.74	14.57	14.34
180.0	13.33	13.05	12.77	12.49	12.26	12.09	11.98	11.87	11.70
225.0	15.30	14.96	14.63	14.40	14.18	14.01	13.78	13.67	13.50
270.0	17.33	17.04	16.76	16.54	16.37	16.26	16.09	15.98	15.98
315.0	16.31	16.03	15.75	15.53	15.30	15.19	15.08	14.91	14.74
360.0	13.73	13.28	12.88	12.54	12.32	12.15	11.98	11.87	11.70

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	11.59	11.48	11.36	11.31	11.25	11.19	11.19	11.19	11.14
45.0	13.61	13.56	13.44	13.33	13.22	13.11	12.99	12.88	12.83
90.0	14.91	14.74	14.63	14.57	14.63	14.96	15.53	16.09	16.93
135.0	14.18	14.01	13.89	13.73	13.67	13.50	13.44	13.33	13.16
180.0	11.59	11.48	11.42	11.31	11.25	11.19	11.14	11.14	11.14
225.0	13.44	13.33	13.22	13.16	13.11	12.99	12.88	12.77	12.71
270.0	16.14	16.54	17.10	17.94	19.07	19.97	21.49	22.73	24.13
315.0	14.63	14.57	14.46	14.34	14.29	14.23	14.23	14.40	14.63
360.0	11.59	11.48	11.36	11.31	11.25	11.19	11.19	11.19	11.14
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	11.14	11.08	11.08	11.08	11.03	11.03	11.03	11.03	11.03
45.0	12.71	12.66	12.54	12.38	12.32	12.32	12.21	12.15	12.09
90.0	18.17	19.24	20.42	21.71	22.84	23.68	24.58	25.48	26.33
135.0	13.11	12.99	12.94	12.94	12.99	13.11	13.28	13.50	13.78
180.0	11.08	11.03	11.03	11.03	10.97	10.91	10.91	10.86	10.86
225.0	12.60	12.54	12.43	12.32	12.26	12.21	12.15	12.15	12.09
270.0	25.82	27.17	28.58	30.04	31.22	32.01	32.57	32.79	32.63
315.0	14.96	15.19	15.53	15.92	16.31	16.71	17.04	17.33	17.49
360.0	11.14	11.08	11.08	11.08	11.03	11.03	11.03	11.03	11.03
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	11.03	11.03	11.03	10.97	11.14	11.53	11.76	12.04	12.26
45.0	12.04	11.98	11.93	11.93	11.87	11.81	11.76	11.70	11.59
90.0	27.17	27.62	27.56	27.00	26.16	25.03	23.51	22.28	20.87
135.0	14.01	14.23	14.18	14.12	14.06	14.18	14.29	14.51	14.57
180.0	10.80	10.80	10.80	10.74	10.91	11.14	11.36	11.64	11.81
225.0	12.09	12.09	12.04	12.04	12.04	11.98	11.98	11.93	11.87
270.0	32.29	31.39	30.26	28.86	27.39	26.27	24.58	23.23	21.83
315.0	17.61	17.66	17.72	17.61	17.55	17.55	17.49	17.04	16.48
360.0	11.03	11.03	11.03	10.97	11.14	11.53	11.76	12.04	12.26
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	12.38	12.49	12.54	12.54	12.21	11.70	11.36	10.80	9.79
45.0	11.42	11.36	11.25	11.14	11.03	10.86	10.69	10.46	10.29
90.0	19.13	17.72	16.09	13.33	11.08	10.52	10.29	10.07	9.84
135.0	14.46	14.12	13.95	13.33	13.05	12.77	12.54	12.09	11.53
180.0	12.21	12.54	12.88	12.83	12.66	12.04	10.91	9.73	9.34
225.0	11.81	11.76	11.64	11.48	11.31	11.19	10.97	10.74	10.58
270.0	20.36	18.79	17.16	14.18	11.81	10.69	10.29	10.07	9.84
315.0	15.58	14.74	13.89	13.16	12.83	12.21	11.81	10.80	9.96
360.0	12.38	12.49	12.54	12.54	12.21	11.70	11.36	10.80	9.79
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	9.34	9.23	9.11	9.06	9.00	8.94	8.94	8.78	8.72
45.0	10.13	9.90	9.73	9.56	9.45	9.39	9.28	8.89	8.89
90.0	9.62	9.51	9.45	9.39	9.28	9.23	8.78	8.61	8.55
135.0	10.86	10.18	9.73	9.34	9.11	9.11	8.94	8.61	8.49
180.0	9.23	9.17	9.06	9.00	8.94	8.83	8.78	8.61	8.55
225.0	10.35	10.13	9.73	9.51	9.39	9.34	9.23	8.94	8.89
270.0	9.62	9.51	9.45	9.39	9.34	9.28	9.23	8.94	8.66
315.0	9.56	9.45	9.34	9.34	9.39	9.51	9.45	8.66	8.55
360.0	9.34	9.23	9.11	9.06	9.00	8.94	8.94	8.78	8.72

Intensity data(cd)

C/γ(°)	90.0
0.0	8.55
45.0	8.83
90.0	8.61
135.0	8.49
180.0	8.55
225.0	8.89
270.0	8.55
315.0	8.49
360.0	8.55