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Nata

LumCAT: 3-2115-N	
Luminaire: 92.70.131.00	
Report No: NATA0100	Voltage(V): 0.0000
Test No: GC2020010626	Current(A): 0.0000
LampCAT: LUMINUS CXM-14-AC40	Power (W): 0.0000
Lamp flux(lm): 2579.0	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): 2159.75
Efficiency(%): 83.74%
Lumens(lm)/Power(W): 0.00
Central intensity(cd): 12666.090
Maximum intensity(cd): 12666.090
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=16.0
 [C90/270]Total=16.0
Field angle(10%Imax): [C0/180]Total=44.9
 [C90/270]Total=44.9
Maximum s/h(1/2): C0_180=0.27 C90_270=0.27
Maximum s/h(1/4): C0_180=0.32 C90_270=0.32
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 83.74%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.828%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	12666.094	0.000	0	.000%	.000%
1.0	12547.266	12.064	12.064	.468%	.559%
2.0	12015.492	35.255	47.319	1.367%	2.191%
3.0	11506.359	56.257	103.575	2.181%	4.796%
4.0	10444.711	73.477	177.053	2.849%	8.198%
5.0	9519.258	85.884	262.937	3.330%	12.174%
6.0	8359.805	93.959	356.896	3.643%	16.525%
7.0	7229.180	96.761	453.656	3.752%	21.005%
8.0	6342.961	97.133	550.79	3.766%	25.502%
9.0	5517.422	96.122	646.912	3.727%	29.953%
10.0	4778.859	93.178	740.089	3.613%	34.267%
11.0	4236.398	90.081	830.17	3.493%	38.438%
12.0	3773.461	87.559	917.729	3.395%	42.492%
13.0	3288.234	83.805	1001.534	3.249%	46.373%
14.0	2965.430	80.046	1081.58	3.104%	50.079%
15.0	2661.820	77.253	1158.834	2.995%	53.656%
16.0	2352.516	73.474	1232.308	2.849%	57.058%
17.0	2125.477	69.734	1302.042	2.704%	60.287%
18.0	1929.938	66.865	1368.907	2.593%	63.383%
19.0	1740.727	63.862	1432.769	2.476%	66.339%
20.0	1589.625	60.955	1493.724	2.364%	69.162%
21.0	1454.906	58.461	1552.185	2.267%	71.869%
22.0	1317.874	55.720	1607.905	2.161%	74.449%
23.0	1203.145	52.898	1660.803	2.051%	76.898%
24.0	1099.385	50.342	1711.145	1.952%	79.229%
25.0	1005.216	47.854	1758.999	1.856%	81.444%
26.0	931.289	45.711	1804.71	1.772%	83.561%
27.0	847.491	43.518	1848.228	1.687%	85.576%
28.0	744.462	40.305	1888.533	1.563%	87.442%
29.0	641.595	36.263	1924.796	1.406%	89.121%
30.0	542.173	31.961	1956.758	1.239%	90.601%
31.0	431.634	27.100	1983.857	1.051%	91.856%
32.0	346.809	22.301	2006.159	.865%	92.888%
33.0	251.198	17.618	2023.776	.683%	93.704%
34.0	174.066	12.870	2036.646	.499%	94.300%
35.0	119.208	9.108	2045.754	.353%	94.722%
36.0	87.244	6.573	2052.328	.255%	95.026%
37.0	69.666	5.118	2057.445	.198%	95.263%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	60.195	4.335	2061.78	.168%	95.464%
39.0	52.418	3.844	2065.623	.149%	95.642%
40.0	46.484	3.449	2069.073	.134%	95.801%
41.0	41.738	3.142	2072.214	.122%	95.947%
42.0	37.821	2.891	2075.105	.112%	96.081%
43.0	34.545	2.681	2077.785	.104%	96.205%
44.0	32.105	2.516	2080.301	.098%	96.321%
45.0	30.143	2.392	2082.693	.093%	96.432%
46.0	28.385	2.289	2084.982	.089%	96.538%
47.0	27.021	2.204	2087.186	.085%	96.640%
48.0	25.931	2.141	2089.326	.083%	96.739%
49.0	24.905	2.088	2091.414	.081%	96.836%
50.0	24.026	2.040	2093.454	.079%	96.930%
51.0	23.351	2.004	2095.458	.078%	97.023%
52.0	22.725	1.977	2097.436	.077%	97.115%
53.0	22.170	1.953	2099.389	.076%	97.205%
54.0	21.783	1.937	2101.326	.075%	97.295%
55.0	21.431	1.929	2103.255	.075%	97.384%
56.0	21.122	1.923	2105.178	.075%	97.473%
57.0	20.862	1.920	2107.097	.074%	97.562%
58.0	20.609	1.918	2109.015	.074%	97.651%
59.0	20.370	1.916	2110.931	.074%	97.739%
60.0	20.173	1.915	2112.846	.074%	97.828%
61.0	19.920	1.913	2114.759	.074%	97.917%
62.0	19.835	1.916	2116.675	.074%	98.005%
63.0	19.645	1.920	2118.595	.074%	98.094%
64.0	19.329	1.912	2120.508	.074%	98.183%
65.0	18.977	1.896	2122.403	.074%	98.271%
66.0	18.394	1.865	2124.268	.072%	98.357%
67.0	17.873	1.824	2126.091	.071%	98.441%
68.0	17.234	1.778	2127.87	.069%	98.524%
69.0	16.798	1.736	2129.606	.067%	98.604%
70.0	16.235	1.697	2131.302	.066%	98.683%
71.0	15.848	1.658	2132.961	.064%	98.759%
72.0	15.469	1.628	2134.589	.063%	98.835%
73.0	15.166	1.602	2136.191	.062%	98.909%
74.0	14.878	1.580	2137.771	.061%	98.982%
75.0	14.618	1.558	2139.329	.060%	99.054%

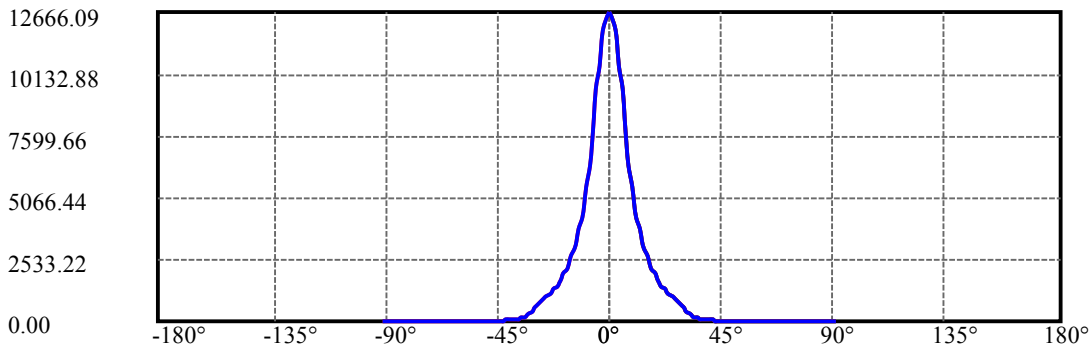
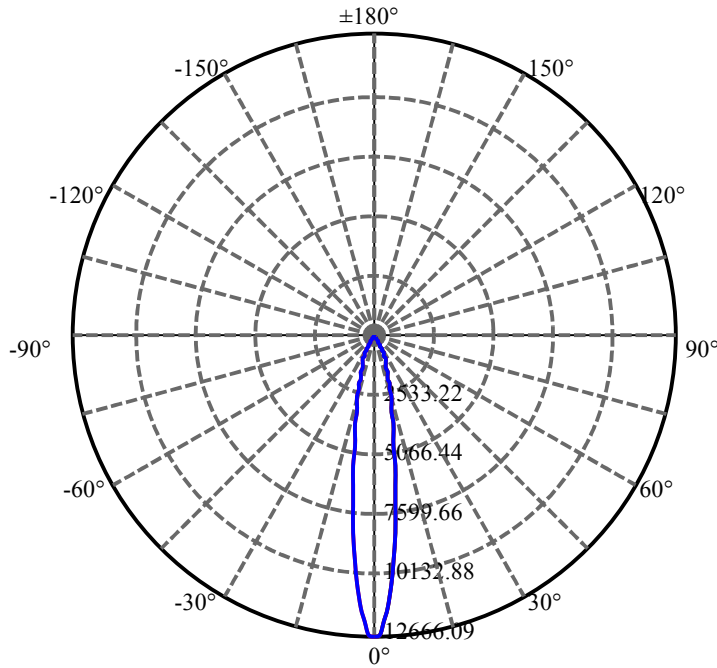
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	14.344	1.537	2140.867	.060%	99.125%
77.0	14.084	1.516	2142.382	.059%	99.196%
78.0	13.802	1.493	2143.875	.058%	99.265%
79.0	13.542	1.469	2145.344	.057%	99.333%
80.0	13.247	1.444	2146.788	.056%	99.400%
81.0	12.980	1.418	2148.207	.055%	99.465%
82.0	12.698	1.392	2149.599	.054%	99.530%
83.0	12.438	1.366	2150.966	.053%	99.593%
84.0	12.199	1.342	2152.308	.052%	99.655%
85.0	11.904	1.316	2153.623	.051%	99.716%
86.0	11.658	1.288	2154.911	.050%	99.776%
87.0	11.313	1.257	2156.168	.049%	99.834%
88.0	11.011	1.223	2157.391	.047%	99.891%
89.0	10.779	1.194	2158.586	.046%	99.946%
90.0	10.526	1.168	2159.754	.045%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1956.76	75.87%	90.60%
0-40	2069.07	80.23%	95.80%
0-60	2112.85	81.93%	97.83%
0-90	2158.59	83.70%	99.95%
0-120	2158.59	83.70%	99.95%
0-180	2159.75	83.74%	100.00%
60-90	47.65	1.85%	2.21%
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%
0-24.35	1727.80	67.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	740.09
10-20	753.63
20-30	463.03
30-40	112.32
40-50	24.38
50-60	19.39
60-70	18.46
70-80	15.49
80-90	11.80
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



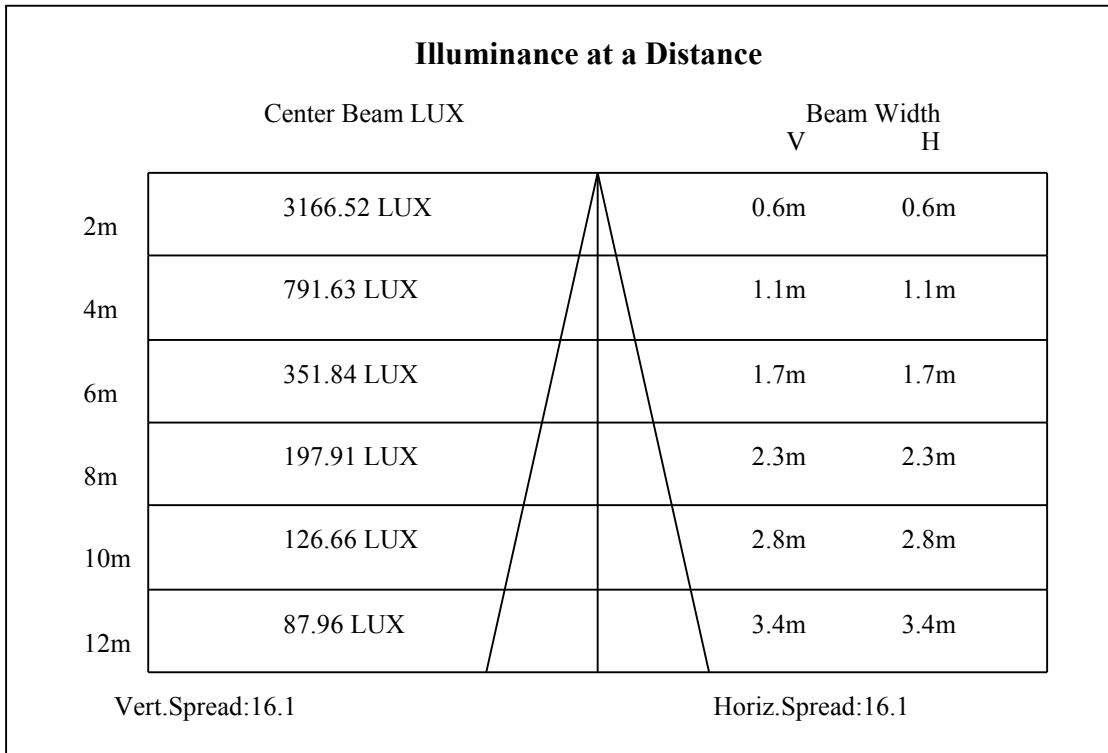
C0(Max): —————

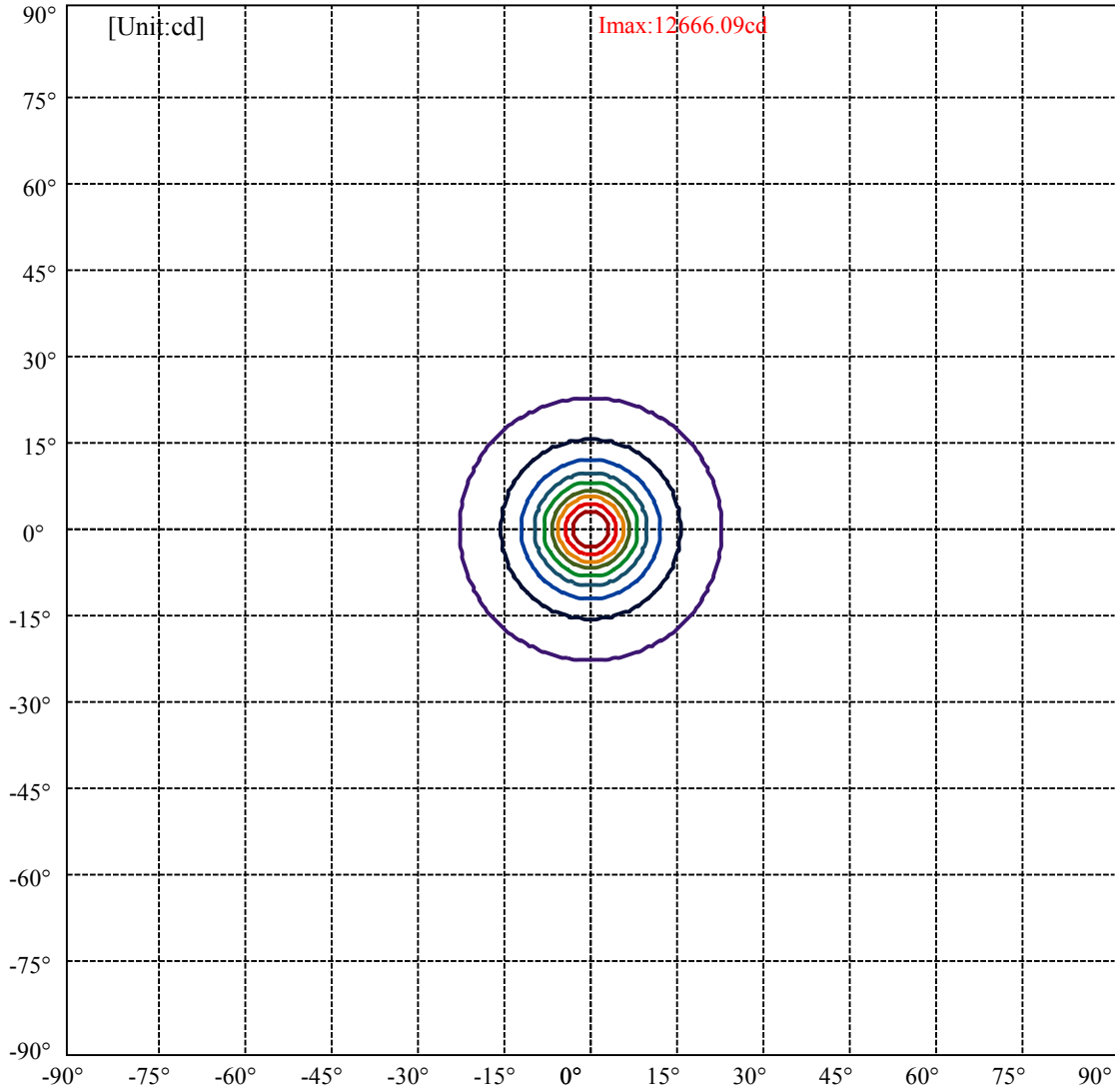
C0/C180: —————

C90/C270: —————

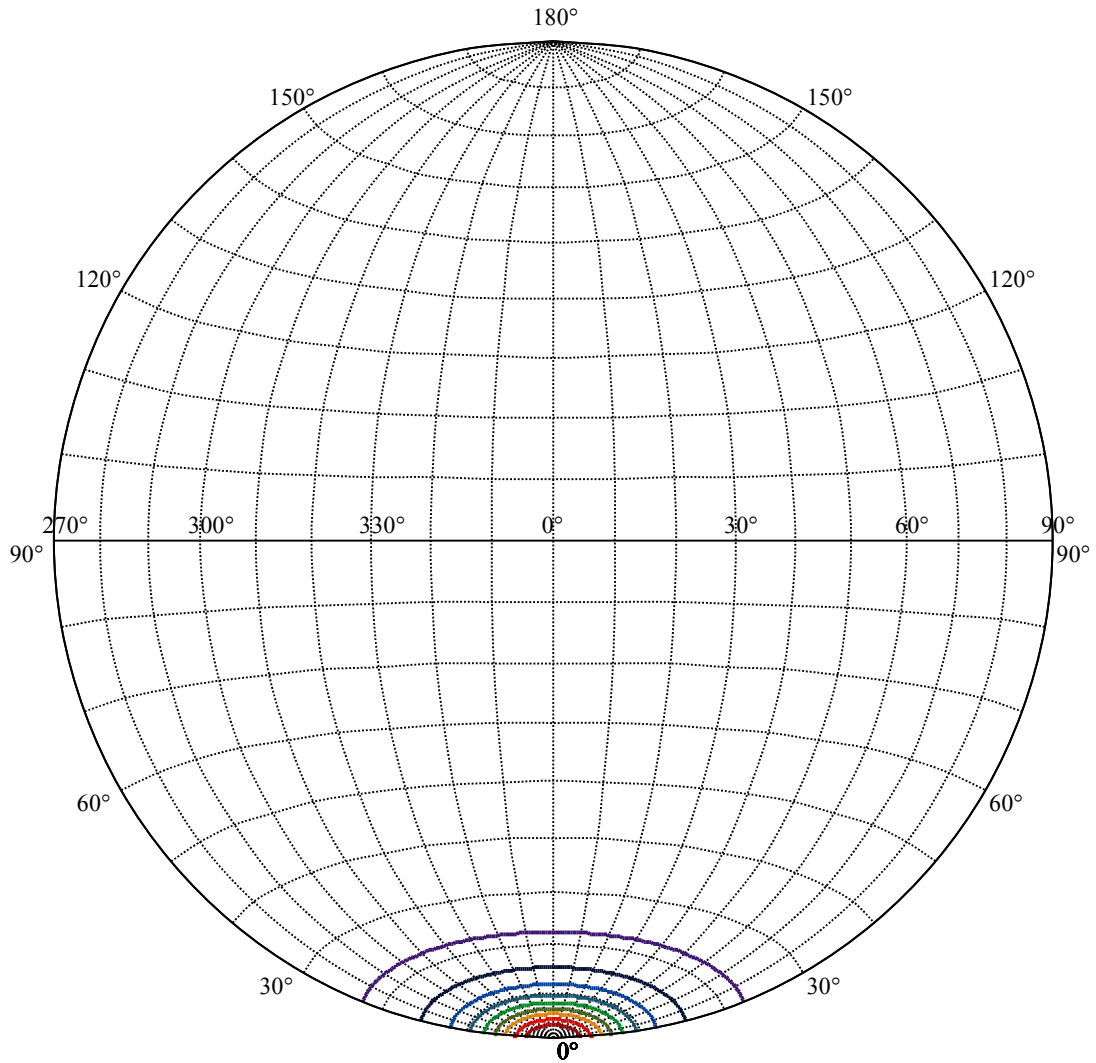
Field angle(10%Imax):C0/180Left:22.4 Right:22.4
:C90/270Left:22.4 Right:22.4

Beam Angle(50%Imax):C0/180Left:8.0 Right:8.0
:C90/270Left:8.0 Right:8.0





(10%Imax) 1266.61	—
(20%Imax) 2533.22	—
(30%Imax) 3799.83	—
(40%Imax) 5066.44	—
(50%Imax) 6333.05	—
(60%Imax) 7599.66	—
(70%Imax) 8866.27	—
(80%Imax) 10132.9	—
(90%Imax) 11399.5	—



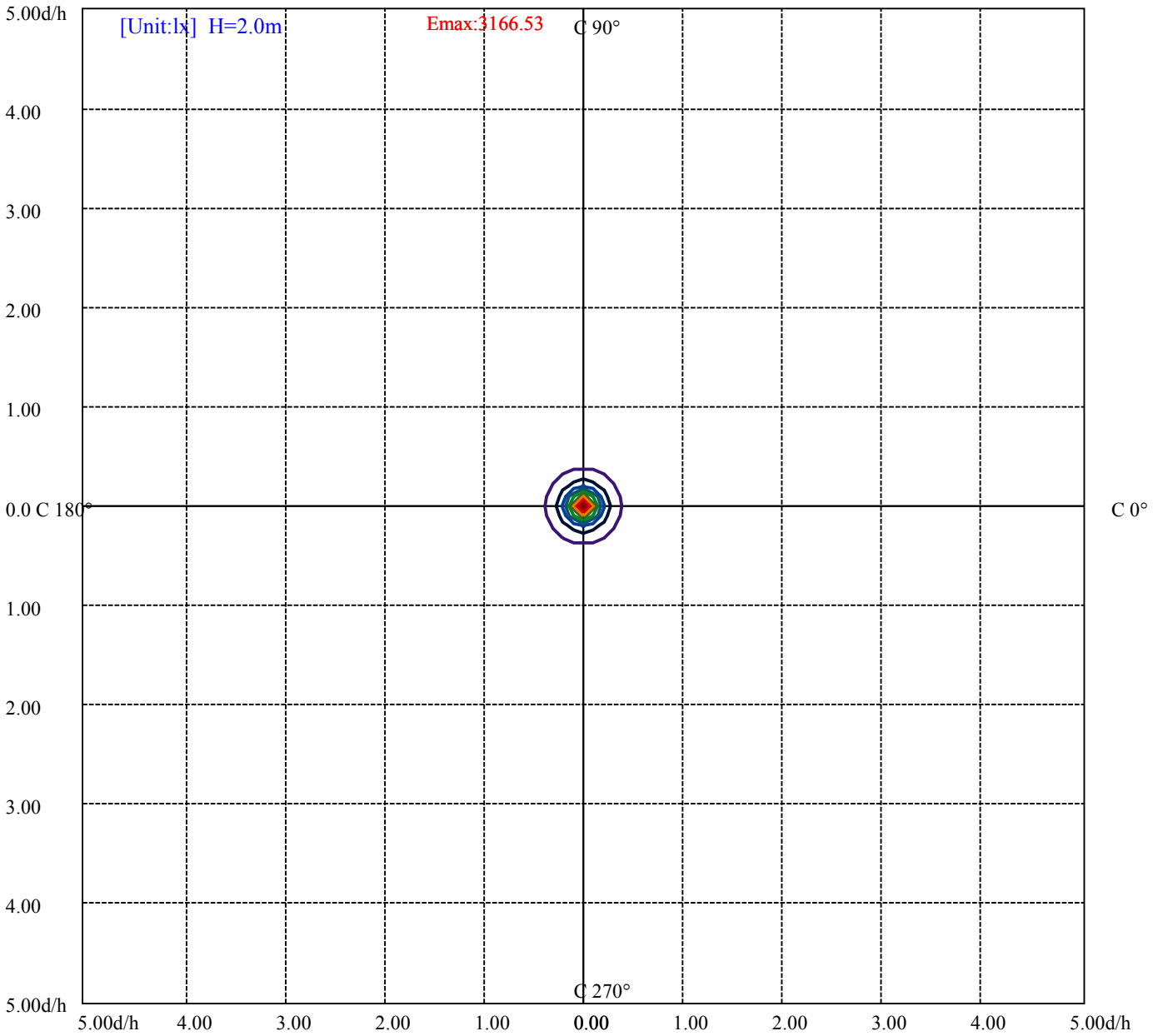
House

[Unit:cd]

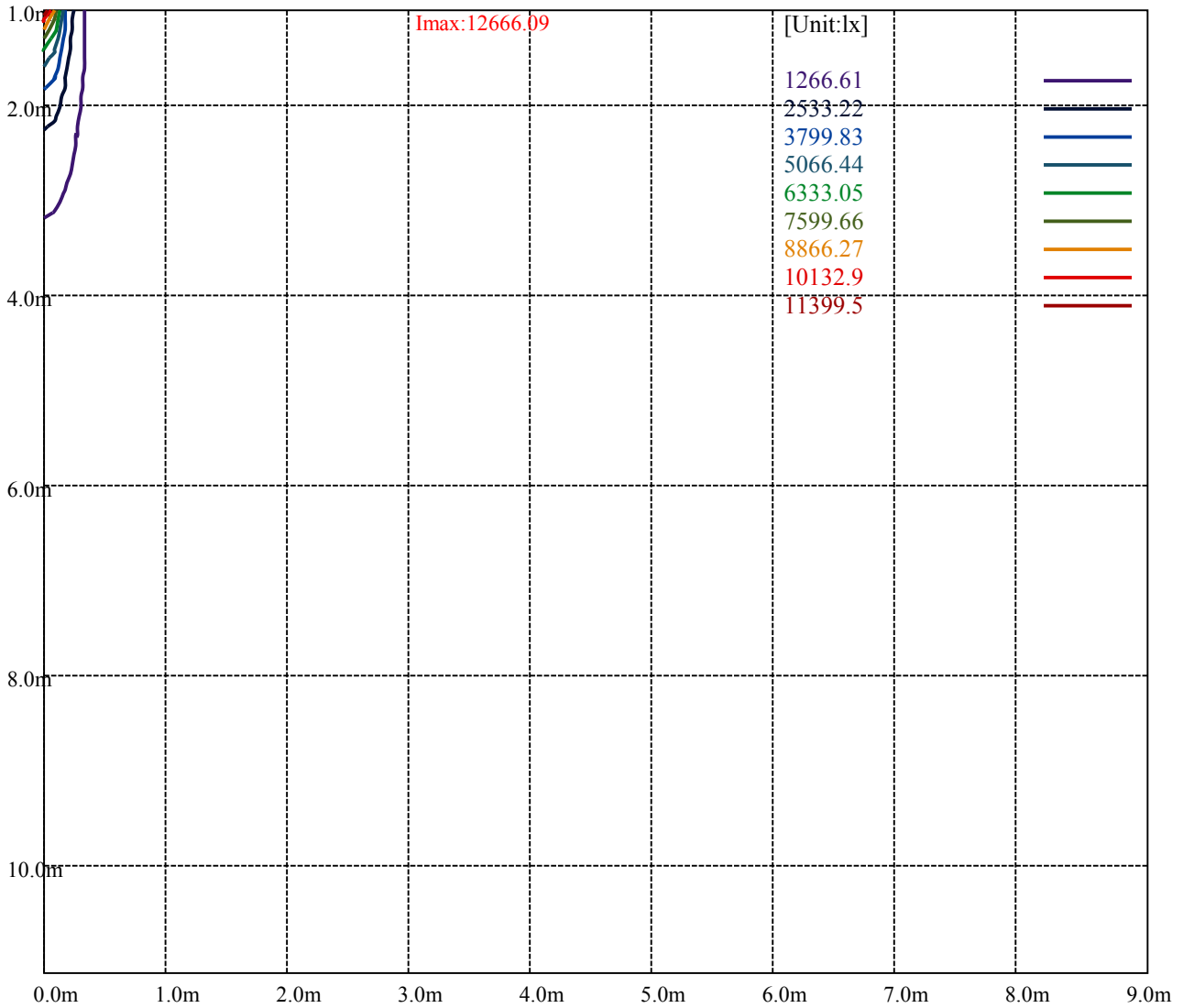
Road

Imax:12666.09

(10%Imax)	1266.61	—
(20%Imax)	2533.22	—
(30%Imax)	3799.83	—
(40%Imax)	5066.44	—
(50%Imax)	6333.05	—
(60%Imax)	7599.66	—
(70%Imax)	8866.27	—
(80%Imax)	10132.9	—
(90%Imax)	11399.5	—



- (10%Emax) 316.6525
- (20%Emax) 633.305
- (30%Emax) 949.955
- (40%Emax) 1266.608
- (50%Emax) 1583.26
- (60%Emax) 1899.912
- (70%Emax) 2216.563
- (80%Emax) 2533.225
- (90%Emax) 2849.875



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

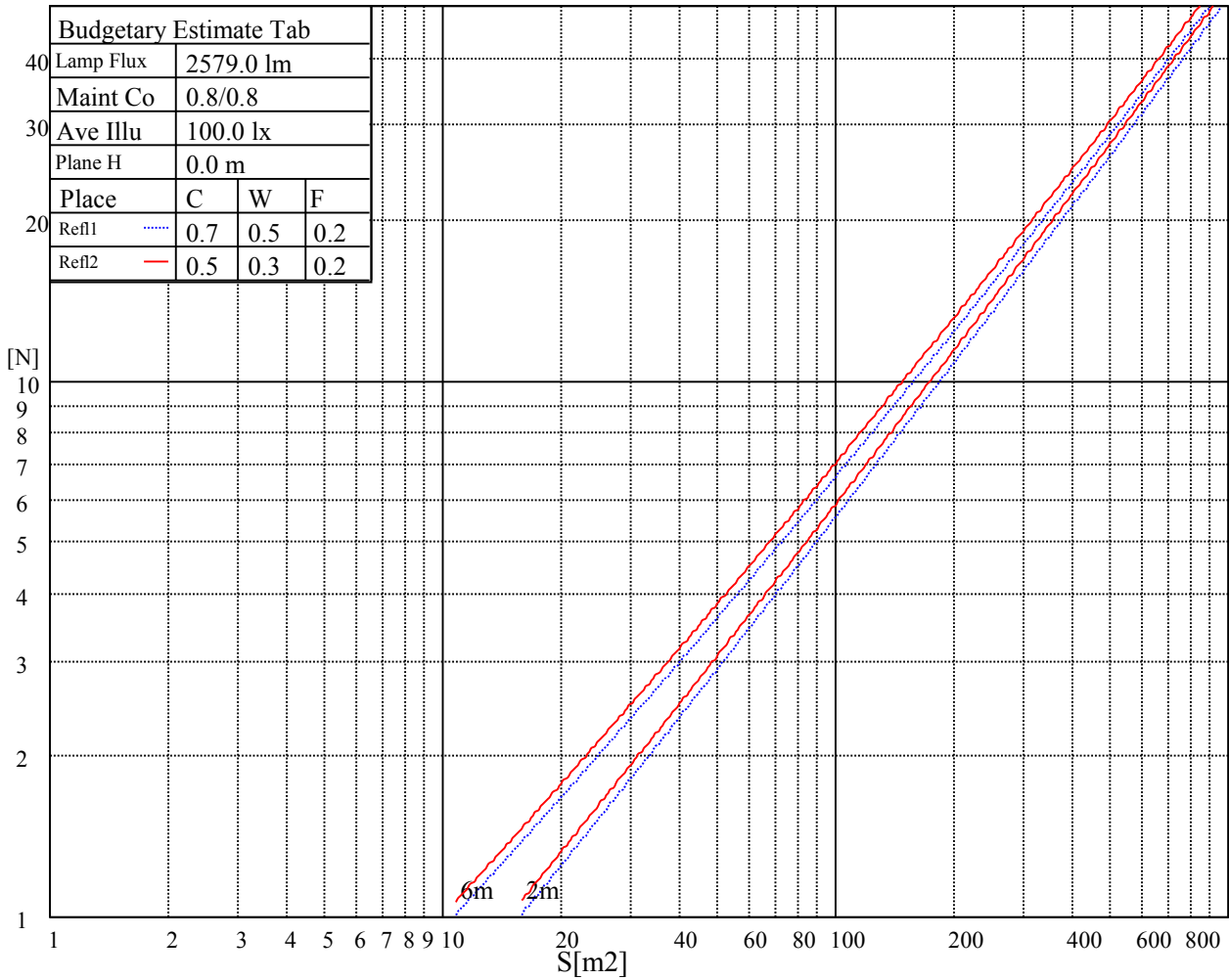
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

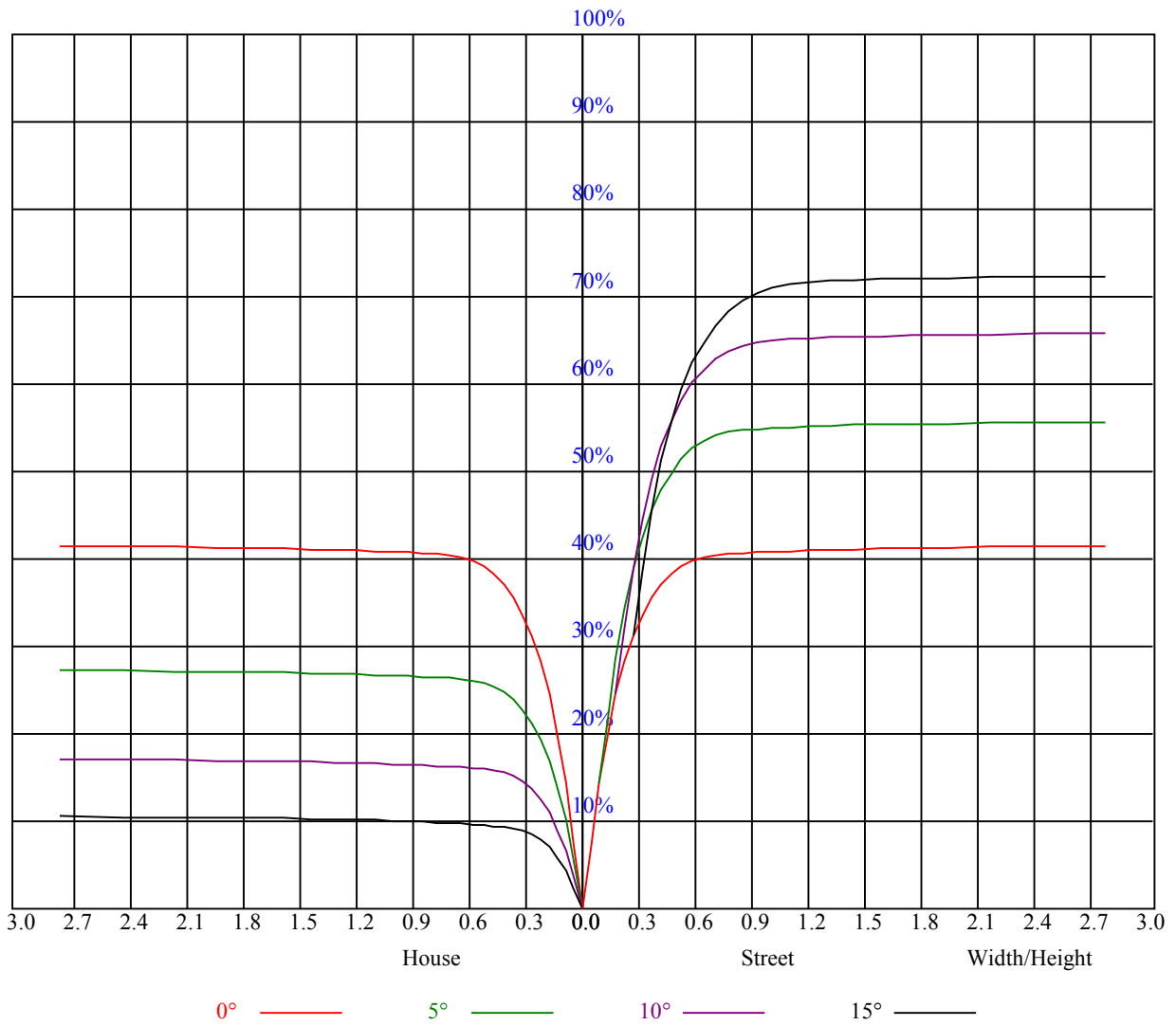
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.00	1.00	1.00	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.85	0.85	0.85	0.84
1	0.94	0.92	0.90	0.92	0.90	0.89	0.89	0.87	0.86	0.86	0.85	0.84	0.83	0.82	0.81	0.80
2	0.89	0.86	0.84	0.87	0.85	0.83	0.85	0.83	0.81	0.82	0.81	0.79	0.80	0.79	0.78	0.76
3	0.85	0.81	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.79	0.77	0.76	0.78	0.76	0.74	0.73
4	0.81	0.77	0.74	0.80	0.77	0.74	0.78	0.75	0.73	0.77	0.74	0.72	0.75	0.73	0.72	0.70
5	0.78	0.74	0.71	0.77	0.73	0.71	0.75	0.72	0.70	0.74	0.72	0.70	0.73	0.71	0.69	0.68
6	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.72	0.69	0.67	0.71	0.68	0.67	0.66
7	0.72	0.68	0.66	0.71	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.63
8	0.70	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.68	0.65	0.63	0.67	0.64	0.62	0.62
9	0.67	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.61	0.66	0.63	0.61	0.65	0.62	0.61	0.60
10	0.65	0.62	0.59	0.65	0.62	0.59	0.64	0.61	0.59	0.64	0.61	0.59	0.63	0.61	0.59	0.58



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	12757.50	12414.38	11745.00	10850.63	9607.50	8448.75	7250.63	6260.63	5551.88
45.0	12661.88	12318.75	11587.50	10524.38	9433.13	8190.00	7025.63	6131.25	5394.38
90.0	12622.50	12352.50	11192.06	10964.25	9806.63	8709.19	7617.38	6415.88	5612.63
135.0	12633.75	12712.50	12560.63	12200.63	11463.75	10389.38	9298.13	8032.50	7003.13
180.0	12757.50	12830.63	12706.88	12324.38	11184.75	10814.63	9438.75	8299.69	7252.88
225.0	12661.88	12785.63	12712.50	12403.13	11151.00	10900.13	9834.19	8471.81	7431.75
270.0	12622.50	12650.63	12481.88	12003.75	11306.25	10226.25	8994.38	7925.63	6946.88
315.0	12611.25	12313.13	11137.50	10779.75	9604.69	8475.75	7419.38	6296.06	5550.19
360.0	12757.50	12414.38	11745.00	10850.63	9607.50	8448.75	7250.63	6260.63	5551.88
C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	4882.50	4297.50	3841.88	3442.50	3003.75	2840.63	2439.00	2179.69	1958.63
45.0	4640.63	4111.88	3656.25	3223.13	2868.75	2716.31	2406.94	2121.19	1933.31
90.0	4926.38	4201.88	3713.06	3294.00	2886.75	2534.63	2264.63	2005.88	1815.19
135.0	6024.38	5203.13	4595.63	4145.63	3538.13	3161.25	2896.88	2541.94	2305.13
180.0	6349.50	5424.75	4801.50	4264.31	3688.31	3294.56	2950.31	2624.06	2338.31
225.0	6515.44	5569.31	4931.44	4386.38	3846.94	3402.00	3062.81	2730.94	2468.81
270.0	5895.00	5197.50	4590.00	4066.88	3498.75	3121.88	2868.75	2450.81	2207.25
315.0	4905.56	4224.94	3761.44	3364.88	2974.50	2652.19	2405.25	2165.63	1977.19
360.0	4882.50	4297.50	3841.88	3442.50	3003.75	2840.63	2439.00	2179.69	1958.63
C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	1787.06	1620.56	1478.25	1361.25	1235.81	1127.81	1034.44	962.44	896.63
45.0	1787.06	1598.06	1462.50	1353.94	1209.94	1112.63	1033.88	944.44	859.50
90.0	1632.94	1477.13	1355.06	1234.69	1114.37	1040.57	957.04	869.68	807.36
135.0	2099.25	1886.63	1710.00	1577.81	1424.25	1299.94	1199.25	1087.88	1008.56
180.0	2117.25	1901.81	1737.56	1577.25	1438.88	1331.44	1118.08	1093.50	1011.71
225.0	2219.06	1999.13	1827.00	1656.00	1506.38	1387.69	1272.94	1102.95	1036.46
270.0	1997.44	1798.88	1625.63	1485.00	1342.13	1213.88	1109.81	1001.81	915.75
315.0	1799.44	1643.63	1521.00	1393.31	1271.25	1111.22	1069.65	979.03	914.34
360.0	1787.06	1620.56	1478.25	1361.25	1235.81	1127.81	1034.44	962.44	896.63
C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	803.25	671.63	568.13	469.13	349.31	291.38	172.52	108.51	77.23
45.0	761.63	634.50	537.75	432.00	315.00	291.94	149.68	91.69	75.99
90.0	727.93	623.70	523.18	437.68	341.94	251.21	182.42	118.01	88.03
135.0	928.69	840.94	740.81	628.31	506.25	410.63	320.06	232.99	127.63
180.0	942.58	850.50	751.44	649.13	538.31	430.09	337.22	241.20	155.76
225.0	962.89	895.22	783.17	682.99	582.08	460.41	366.24	278.16	186.75
270.0	827.44	737.44	645.19	552.38	445.50	367.31	294.19	211.78	158.91
315.0	825.53	701.78	583.09	485.78	374.68	271.52	187.26	110.19	83.36
360.0	803.25	671.63	568.13	469.13	349.31	291.38	172.52	108.51	77.23
C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	66.15	57.09	50.40	43.99	39.99	36.17	33.24	31.50	29.59
45.0	65.42	56.70	49.78	44.55	39.83	36.45	33.30	31.05	29.19
90.0	72.79	62.16	55.52	48.88	43.43	39.43	36.23	33.13	30.99
135.0	87.47	70.31	59.74	53.27	47.48	41.91	37.46	34.37	31.56
180.0	102.54	78.13	66.88	56.81	49.73	44.16	39.77	35.44	32.79
225.0	114.92	81.39	68.46	57.88	51.81	45.84	41.40	37.35	34.14
270.0	118.52	92.98	77.68	67.44	58.73	52.43	46.58	42.13	38.81
315.0	70.14	58.56	53.10	46.52	40.89	37.52	34.59	31.39	29.76
360.0	66.15	57.09	50.40	43.99	39.99	36.17	33.24	31.50	29.59

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	28.46	27.17	26.10	25.26	24.41	23.68	23.06	22.61	22.05
45.0	27.56	26.33	25.37	24.58	23.79	23.12	22.56	21.94	21.49
90.0	29.31	27.73	26.55	25.48	24.58	23.79	23.23	22.67	22.16
135.0	29.42	27.56	26.16	24.98	23.85	23.01	22.33	21.77	21.15
180.0	30.66	28.41	26.94	25.76	24.64	23.68	22.95	22.28	21.83
225.0	31.73	29.76	27.73	26.38	25.31	24.08	23.34	22.73	22.11
270.0	35.72	33.08	31.22	29.64	27.96	26.83	25.88	25.03	24.36
315.0	28.29	27.06	26.10	25.37	24.69	24.02	23.46	22.78	22.22
360.0	28.46	27.17	26.10	25.26	24.41	23.68	23.06	22.61	22.05
C/γ(°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	21.77	21.49	21.32	21.21	21.09	21.09	21.09	20.93	21.04
45.0	21.15	20.76	20.36	20.14	19.91	19.69	19.52	19.24	19.24
90.0	21.71	21.26	20.87	20.48	20.19	19.80	19.52	19.18	19.01
135.0	20.87	20.59	20.31	20.14	19.97	19.80	19.63	19.46	19.29
180.0	21.38	21.09	20.93	20.70	20.53	20.42	20.31	20.25	20.25
225.0	21.66	21.38	21.04	20.81	20.59	20.36	20.19	20.03	19.97
270.0	24.02	23.68	23.34	23.06	22.61	22.16	21.66	21.09	20.64
315.0	21.71	21.21	20.81	20.36	19.97	19.63	19.46	19.18	19.24
360.0	21.77	21.49	21.32	21.21	21.09	21.09	21.09	20.93	21.04
C/γ(°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	20.98	20.59	20.31	19.52	19.01	18.23	17.94	17.38	16.99
45.0	18.90	18.51	17.78	17.21	16.54	16.14	15.75	15.24	14.91
90.0	18.90	18.34	18.00	17.27	16.93	16.31	15.92	15.47	15.13
135.0	19.07	18.96	18.39	18.17	17.44	16.93	16.37	15.92	15.30
180.0	20.03	20.08	19.97	19.52	19.24	18.39	18.00	17.21	16.93
225.0	19.80	19.74	19.63	19.07	18.62	17.83	17.21	16.59	16.20
270.0	20.19	19.74	19.29	18.79	18.11	17.61	17.16	16.65	16.20
315.0	19.29	18.68	18.45	17.61	17.10	16.43	16.03	15.41	15.13
360.0	20.98	20.59	20.31	19.52	19.01	18.23	17.94	17.38	16.99
C/γ(°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	16.71	16.48	16.20	15.98	15.75	15.53	15.30	15.08	14.85
45.0	14.68	14.40	14.12	13.84	13.56	13.33	13.05	12.77	12.49
90.0	14.79	14.51	14.23	14.01	13.67	13.39	13.11	12.83	12.49
135.0	14.96	14.74	14.46	14.18	13.89	13.61	13.28	13.05	12.77
180.0	16.31	15.86	15.58	15.30	15.08	14.85	14.63	14.29	14.01
225.0	15.69	15.36	15.02	14.74	14.46	14.18	13.89	13.67	13.33
270.0	15.81	15.53	15.19	14.91	14.68	14.34	14.01	13.73	13.44
315.0	14.79	14.46	14.23	14.01	13.67	13.44	13.16	12.94	12.60
360.0	16.71	16.48	16.20	15.98	15.75	15.53	15.30	15.08	14.85
C/γ(°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	14.68	14.46	14.18	14.01	13.67	13.22	12.49	11.87	11.64
45.0	12.26	11.98	11.76	11.48	11.14	10.91	10.74	10.52	10.35
90.0	12.21	11.87	11.59	11.36	11.03	10.80	10.58	10.41	10.29
135.0	12.49	12.26	11.98	11.76	11.48	11.25	11.03	10.86	10.63
180.0	13.78	13.44	13.28	13.05	12.83	12.66	12.21	11.76	11.42
225.0	13.05	12.83	12.54	12.32	12.04	11.87	11.48	11.19	10.86
270.0	13.05	12.66	12.38	12.04	11.70	11.42	11.14	10.86	10.63
315.0	12.32	12.09	11.81	11.59	11.36	11.14	10.86	10.63	10.41
360.0	14.68	14.46	14.18	14.01	13.67	13.22	12.49	11.87	11.64

Intensity data(cd)

C/γ(°)	90.0
0.0	10.69
45.0	10.29
90.0	10.29
135.0	10.41
180.0	11.14
225.0	10.69
270.0	10.35
315.0	10.35
360.0	10.69