



NATA LIGHTING CO.,LTD.
www.nata.cn
Email:info@nata.com
Tel:+86-750-3770000 Fax:+86-750-3771111
Address:380JinOu Road,GaoXin Zone,Jiang Men City,Guangdong,China

Nata

LumCAT: 3-1699-N

Luminaire: 92.70.045.00+92.70.089.00

Report No: NATA0100

Test No: GC2018062211

LampCAT: NICHIA NFCWJ120B-V3

Lamp flux(lm): 2303.0

Number of Lamps: 1

Length(mm): 79

Phm Type: C

Voltage(V): 33.8000

Current(A): 0.5000

Power (W): 16.9000

PF: 0.0000

Ballast type: DC

Width(mm): 79

Height(mm): 0

Photometric Results

Lumens(lm): 1818.10

Efficiency(%): 78.95%

Lumens(lm)/Power(W): 107.58

Central intensity(cd): 7439.771

Maximum intensity(cd): 7439.771

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=23.3

[C90/270]Total=23.3

Field angle(10%Imax): [C0/180]Total=45.9

[C90/270]Total=45.9

Maximum s/h(1/2): C0_180=0.39 C90_270=0.39

Maximum s/h(1/4): C0_180=0.40 C90_270=0.40

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 79.24%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.542%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7439.771	7.120	7.12	.309%	.392%
2.0	7269.303	55.639	62.758	2.416%	3.452%
4.0	6812.335	104.219	166.977	4.525%	9.184%
6.0	6117.592	140.243	307.22	6.090%	16.898%
8.0	5307.643	162.003	469.222	7.034%	25.808%
10.0	4436.995	168.976	638.198	7.337%	35.102%
12.0	3568.687	162.724	800.922	7.066%	44.053%
14.0	2709.945	143.781	944.703	6.243%	51.961%
16.0	2025.938	122.470	1067.173	5.318%	58.697%
18.0	1440.606	97.632	1164.805	4.239%	64.067%
20.0	1063.807	79.796	1244.601	3.465%	68.456%
22.0	822.364	67.562	1312.163	2.934%	72.172%
24.0	659.927	58.867	1371.031	2.556%	75.410%
26.0	554.707	53.330	1424.361	2.316%	78.343%
28.0	473.575	48.760	1473.12	2.117%	81.025%
30.0	399.489	43.807	1516.927	1.902%	83.435%
32.0	335.782	39.024	1555.951	1.694%	85.581%
34.0	284.428	34.882	1590.833	1.515%	87.500%
36.0	241.821	31.173	1622.006	1.354%	89.214%
38.0	202.250	27.308	1649.314	1.186%	90.716%
40.0	170.627	24.054	1673.368	1.044%	92.039%
42.0	140.752	20.655	1694.023	.897%	93.175%
44.0	116.431	17.738	1711.761	.770%	94.151%
46.0	95.413	15.052	1726.813	.654%	94.979%
48.0	77.237	12.588	1739.402	.547%	95.671%
50.0	62.358	10.476	1749.878	.455%	96.247%
52.0	50.542	8.735	1758.613	.379%	96.728%
54.0	40.040	7.104	1765.717	.308%	97.119%
56.0	31.988	5.816	1771.533	.253%	97.438%
58.0	25.285	4.703	1776.236	.204%	97.697%
60.0	20.295	3.855	1780.09	.167%	97.909%
62.0	17.969	3.480	1783.57	.151%	98.101%
64.0	16.689	3.290	1786.86	.143%	98.281%
66.0	15.725	3.151	1790.01	.137%	98.455%
68.0	14.989	3.048	1793.058	.132%	98.622%
70.0	14.370	2.961	1796.02	.129%	98.785%
72.0	13.723	2.862	1798.882	.124%	98.943%
74.0	13.138	2.770	1801.652	.120%	99.095%

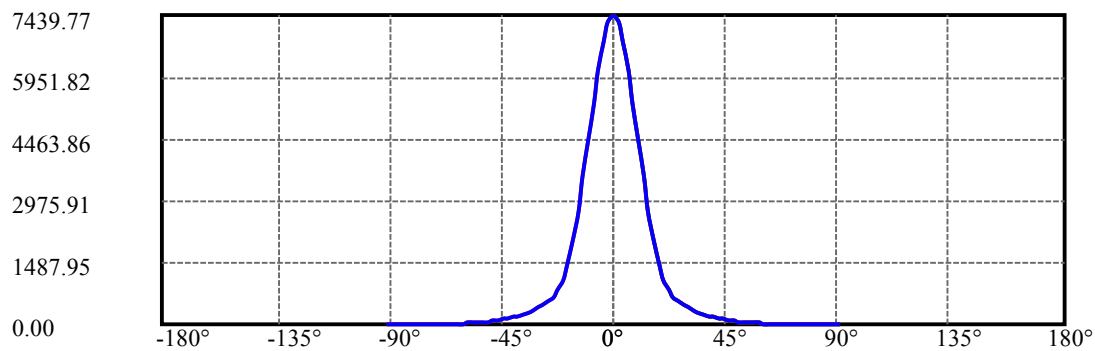
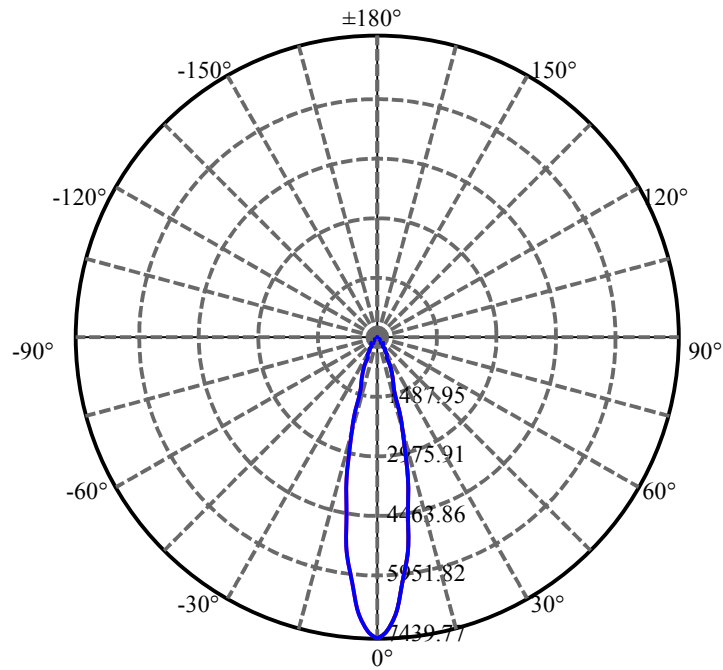
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	12.477	2.655	1804.307	.115%	99.241%
78.0	11.768	2.525	1806.831	.110%	99.380%
80.0	11.039	2.384	1809.215	.104%	99.511%
82.0	10.357	2.249	1811.465	.098%	99.635%
84.0	9.683	2.112	1813.577	.092%	99.751%
86.0	8.775	1.920	1815.497	.083%	99.857%
88.0	8.059	1.766	1817.263	.077%	99.954%
90.0	7.673	0.841	1818.104	.037%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1516.93	65.87%	83.43%
0-40	1673.37	72.66%	92.04%
0-60	1780.09	77.29%	97.91%
0-90	1817.26	78.91%	99.95%
0-120	1817.26	78.91%	99.95%
0-180	1818.10	78.95%	100.00%
60-90	41.03	1.78%	2.26%
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%
0-27.24	1454.48	63.16%	80.00%

ZONAL LUMEN SUMMARY

0-10	638.20
10-20	606.40
20-30	272.33
30-40	156.44
40-50	76.51
50-60	30.21
60-70	15.93
70-80	13.20
80-90	8.05
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:

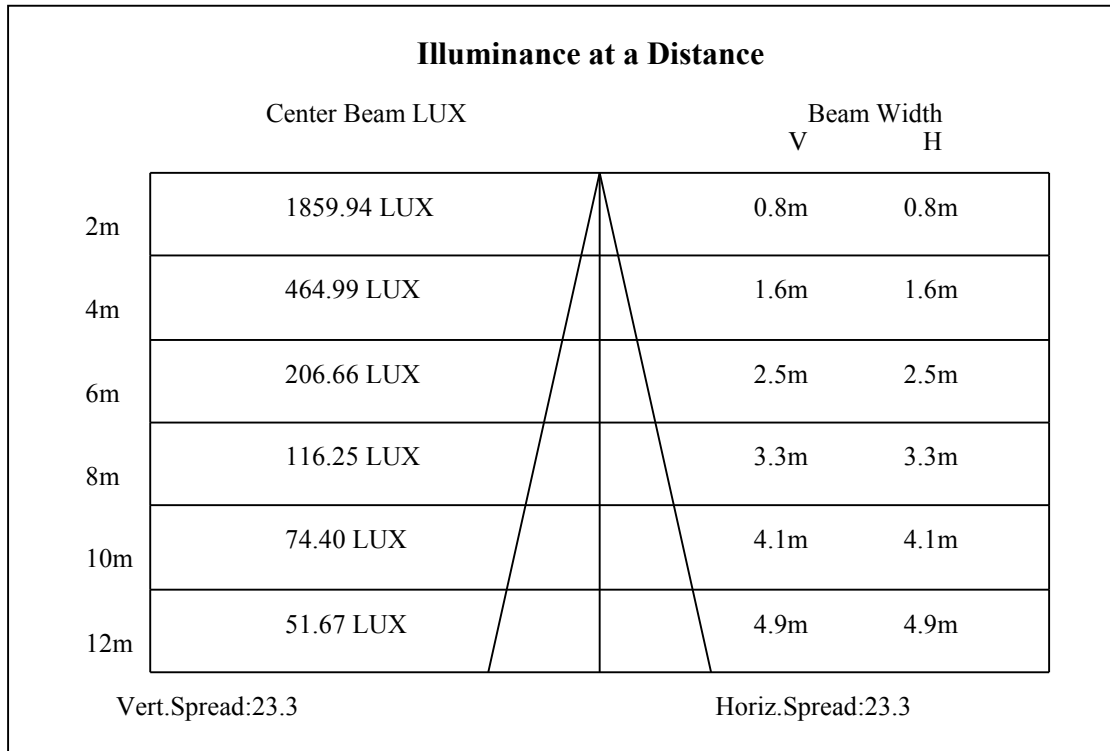
C90/C270:

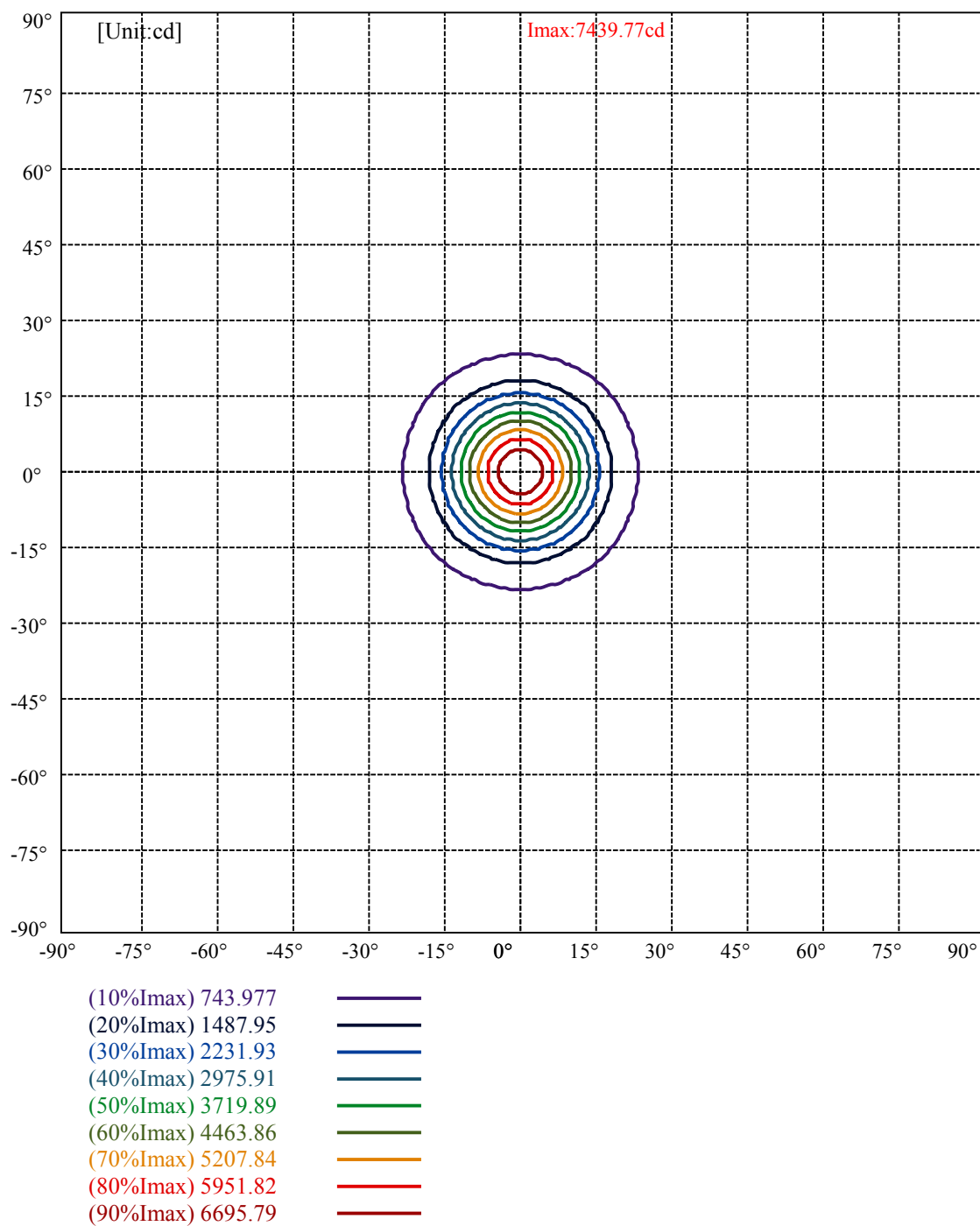
Field angle(10%Imax):C0/180Left:23.0 Right:23.0

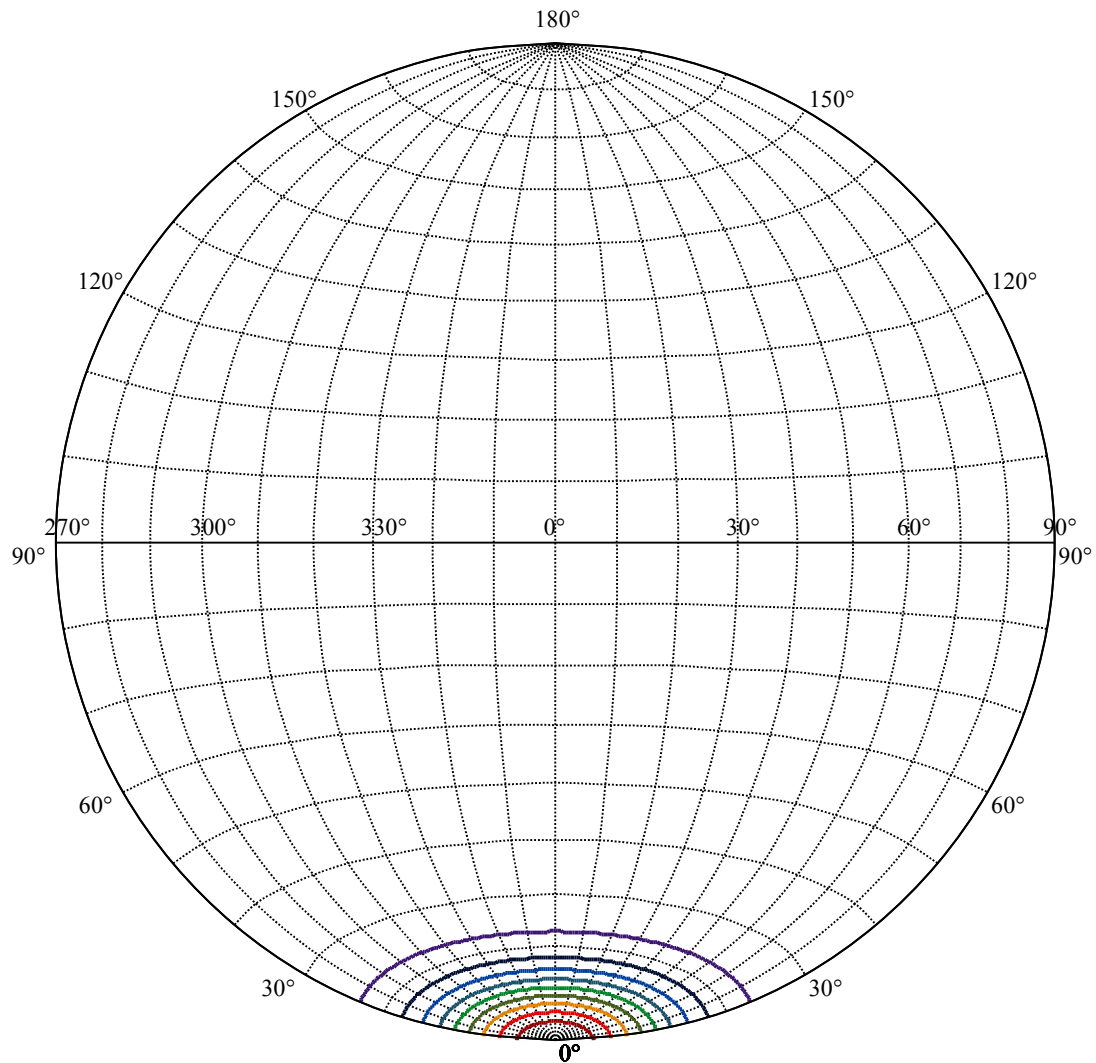
:C90/270Left:23.0 Right:23.0

Beam Angle(50%Imax):C0/180Left:11.7 Right:11.7

:C90/270Left:11.7 Right:11.7







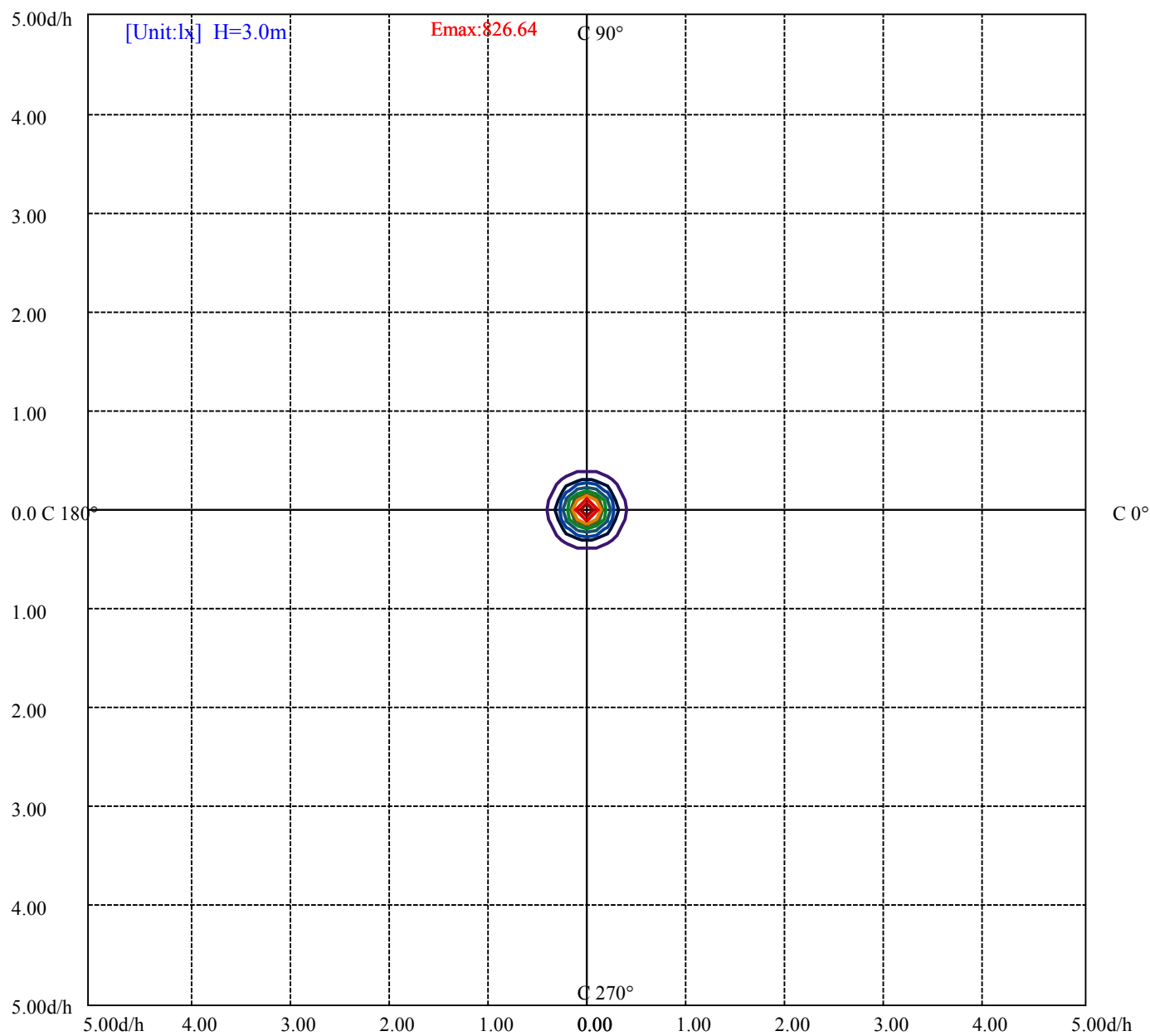
House

[Unit:cd]

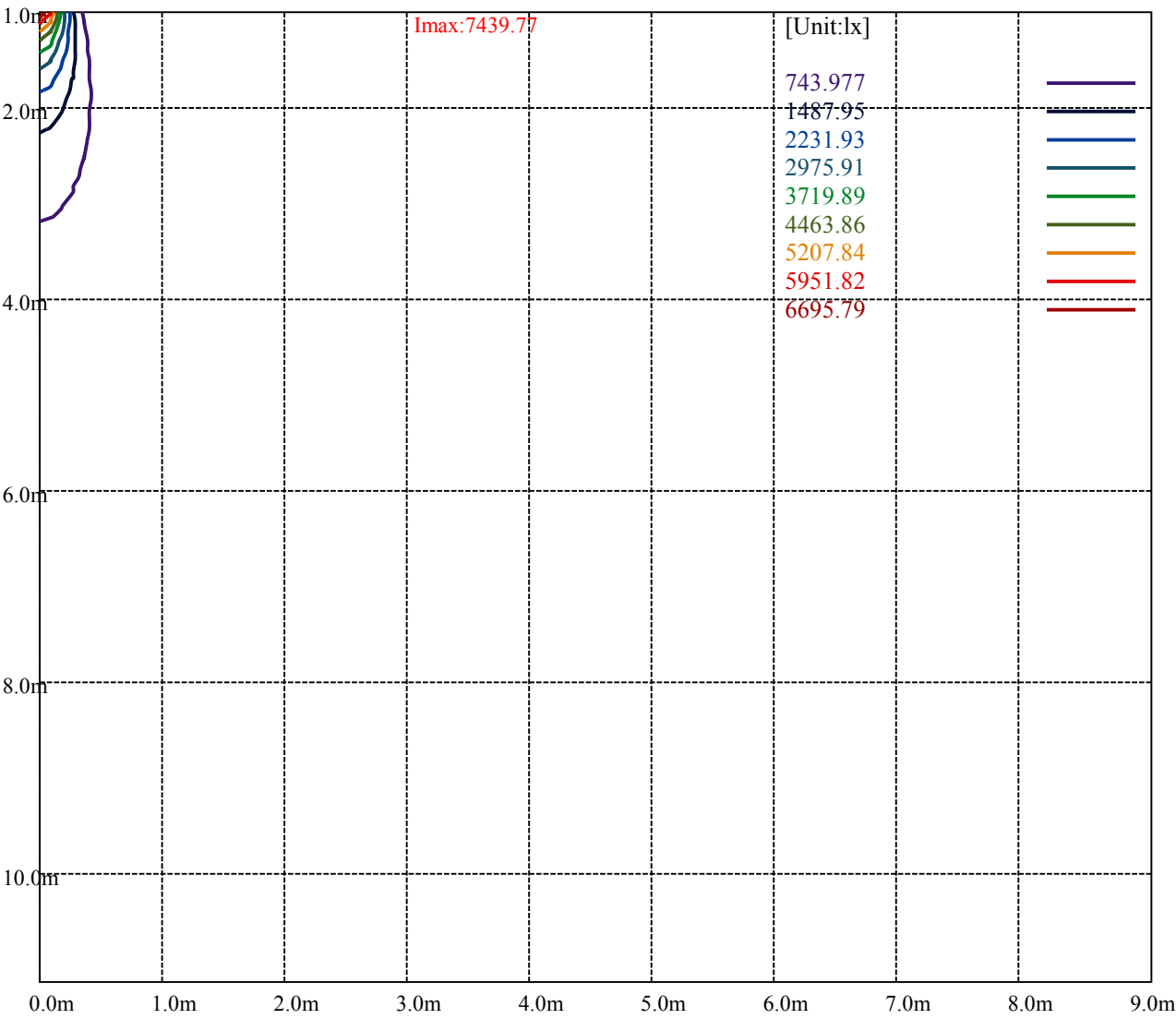
Road

Imax:7439.77

(10%Imax)	743.977	—
(20%Imax)	1487.95	—
(30%Imax)	2231.93	—
(40%Imax)	2975.91	—
(50%Imax)	3719.89	—
(60%Imax)	4463.86	—
(70%Imax)	5207.84	—
(80%Imax)	5951.82	—
(90%Imax)	6695.79	—



(10%E _{max}) 82.664	—
(20%E _{max}) 165.3278	—
(30%E _{max}) 247.9922	—
(40%E _{max}) 330.6555	—
(50%E _{max}) 413.32	—
(60%E _{max}) 495.9844	—
(70%E _{max}) 578.6478	—
(80%E _{max}) 661.3123	—
(90%E _{max}) 743.9755	—



Luminance Table

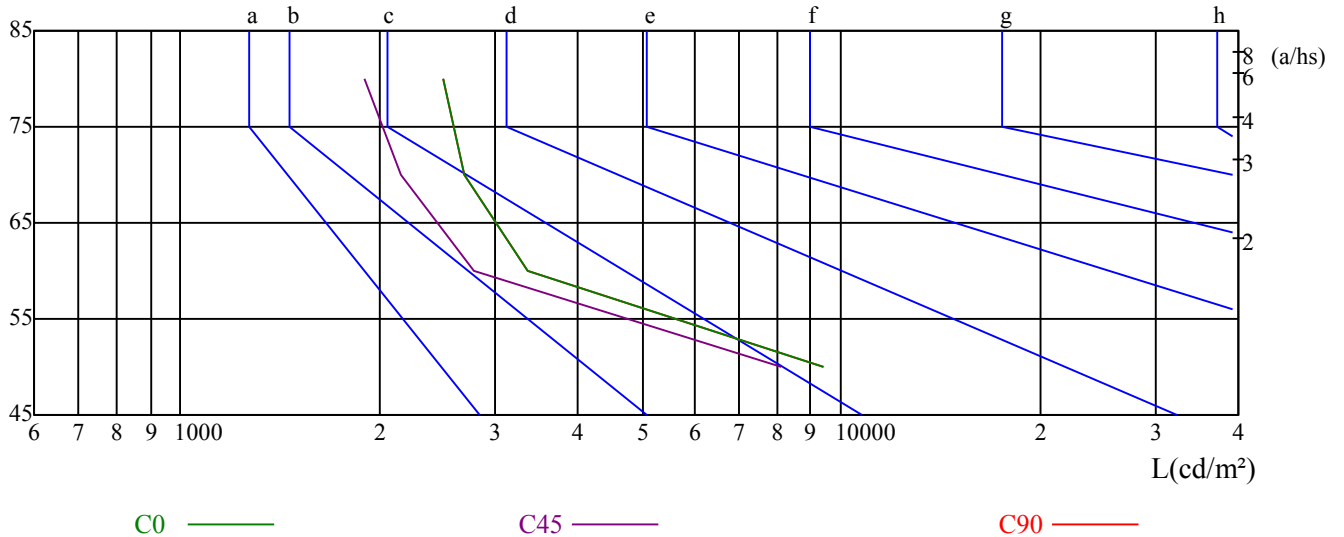
γ	45	50	55	60	65	70	75	80	85
C0	0	9428	0	3348	0	2698	0	2492	0
C45	0	8107	0	2787	0	2161	0	1898	0
C90	0	9428	0	3348	0	2698	0	2492	0

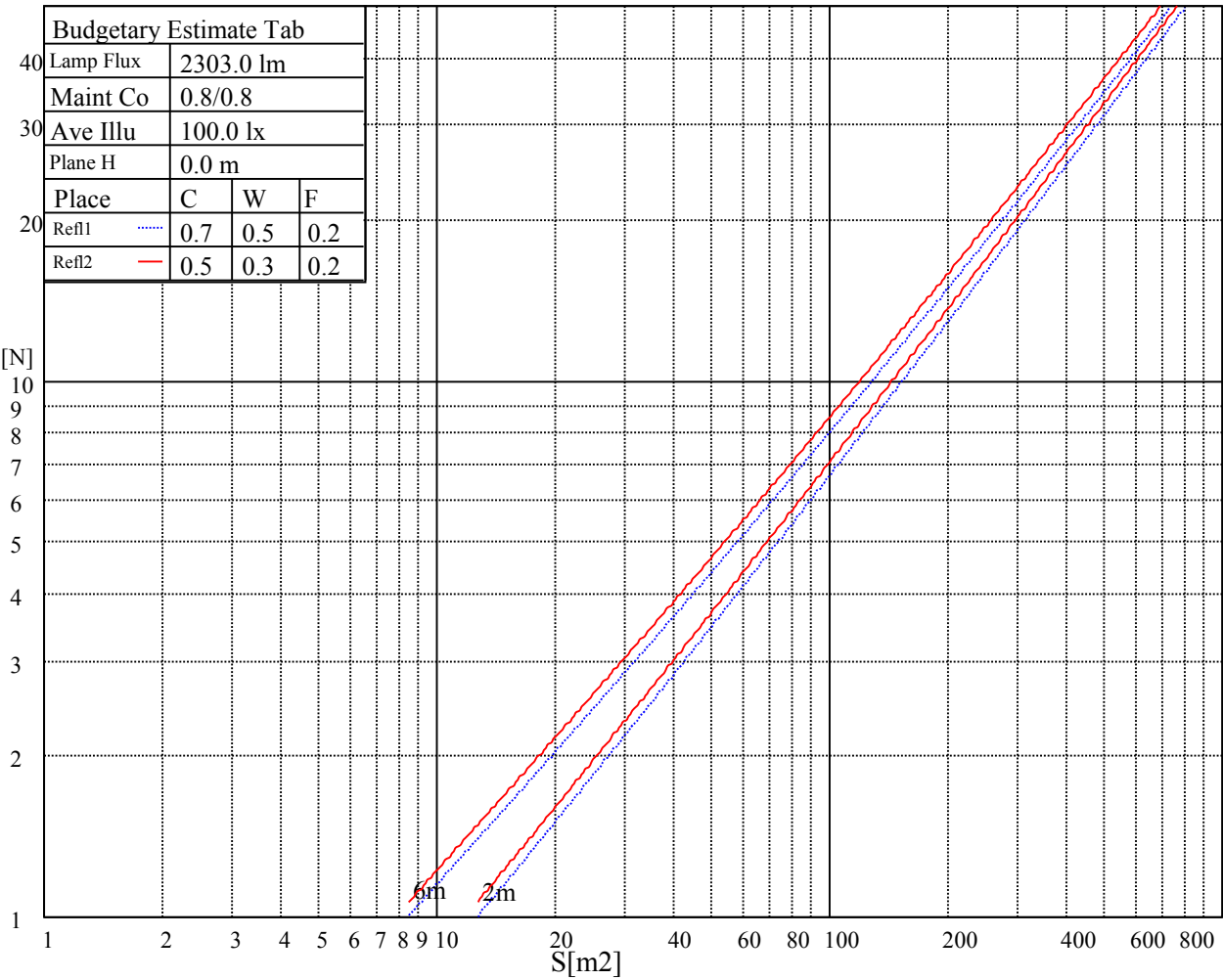
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
5495	5495	5495	7136	7136	7136	16549	16549	16549

Glare Table

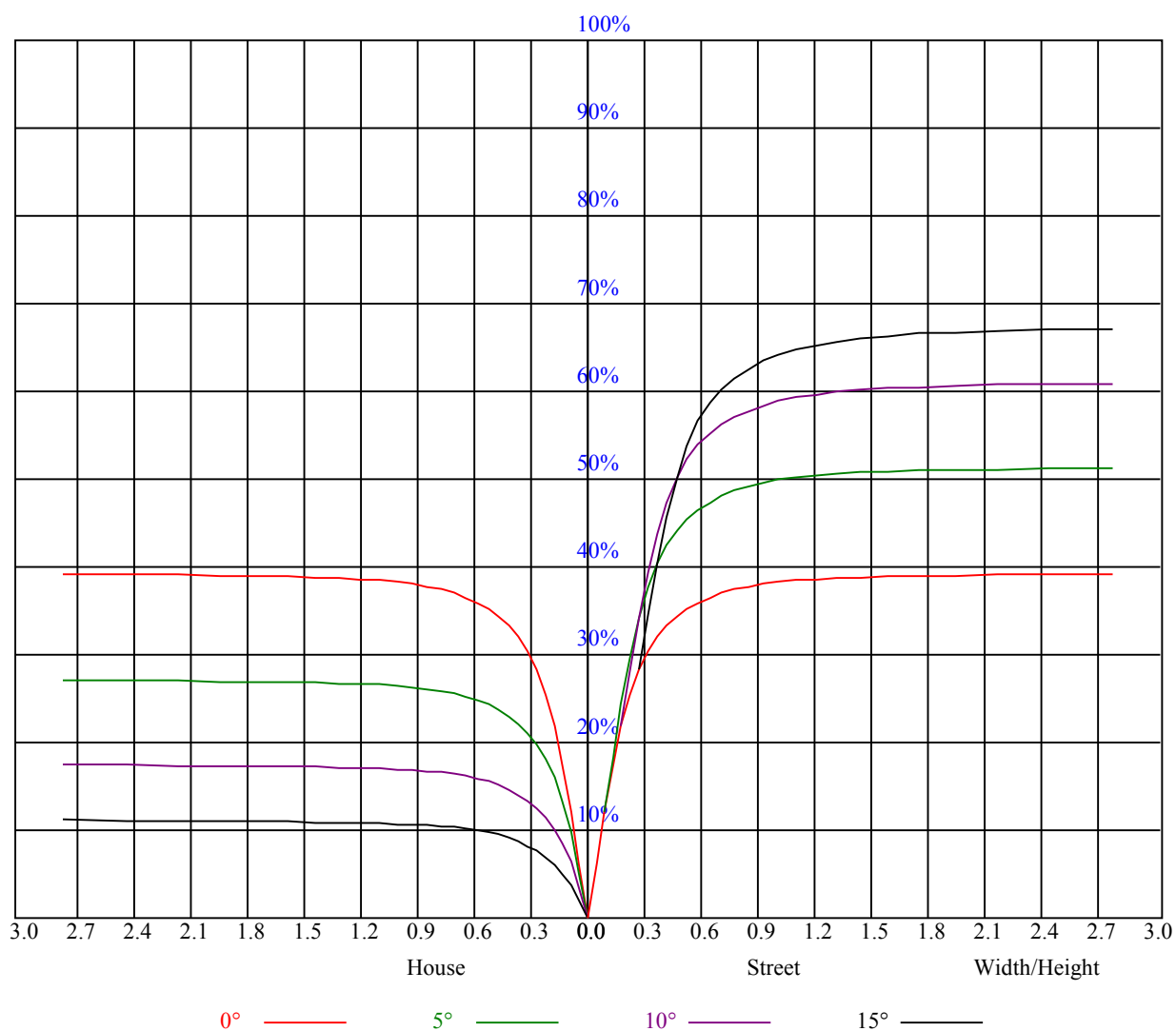
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

Luminance Limiting Curve

 $\gamma(^{\circ})$ 



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	0.94	0.94	0.94	0.92	0.92	0.92	0.88	0.88	0.88	0.84	0.84	0.84	0.81	0.81	0.81	0.79
1	0.88	0.86	0.85	0.86	0.85	0.83	0.83	0.82	0.81	0.80	0.79	0.78	0.78	0.77	0.76	0.75
2	0.83	0.80	0.78	0.82	0.79	0.77	0.79	0.77	0.75	0.77	0.75	0.74	0.75	0.74	0.72	0.71
3	0.79	0.76	0.73	0.78	0.75	0.72	0.76	0.73	0.71	0.74	0.72	0.70	0.72	0.71	0.69	0.68
4	0.75	0.72	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.71	0.69	0.67	0.70	0.68	0.66	0.65
5	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.68	0.65	0.64	0.63
6	0.69	0.65	0.63	0.69	0.65	0.62	0.67	0.64	0.62	0.66	0.64	0.62	0.65	0.63	0.61	0.60
7	0.67	0.63	0.60	0.66	0.62	0.60	0.65	0.62	0.60	0.64	0.61	0.59	0.63	0.61	0.59	0.58
8	0.64	0.60	0.58	0.64	0.60	0.58	0.63	0.60	0.58	0.62	0.59	0.57	0.62	0.59	0.57	0.56
9	0.62	0.58	0.56	0.62	0.58	0.56	0.61	0.58	0.56	0.60	0.58	0.56	0.60	0.57	0.55	0.55
10	0.60	0.57	0.54	0.60	0.56	0.54	0.59	0.56	0.54	0.59	0.56	0.54	0.58	0.56	0.54	0.53



Intensity data(cd)

C/γ(°)	0.0	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0
0.0	7429.86	7389.12	7015.84	6399.76	5641.63	4748.06	3932.13	3032.51	2231.44
45.0	7421.60	7444.73	7154.03	6552.26	5803.50	4966.09	4078.58	3164.09	2397.71
90.0	7465.65	7334.06	6944.81	6317.17	5426.36	4601.61	3735.03	2812.28	2180.23
135.0	7441.97	7324.15	6924.44	6235.14	5442.88	4635.20	3701.99	2816.13	2140.59
180.0	7429.86	7161.19	6573.18	5776.52	4989.21	4056.56	3200.98	2424.13	1781.07
225.0	7421.60	7054.93	6458.12	5686.22	4797.61	3918.91	3066.09	2254.01	1664.91
270.0	7465.65	7205.23	6715.78	5956.55	5150.53	4278.43	3419.55	2563.43	1884.58
315.0	7441.97	7241.02	6712.48	6017.11	5209.44	4291.10	3415.15	2612.98	1926.97
360.0	7429.86	7389.12	7015.84	6399.76	5641.63	4748.06	3932.13	3032.51	2231.44
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	1655.00	1192.52	916.14	719.04	595.16	508.17	434.39	367.78	312.17
45.0	1753.00	1243.17	939.26	723.44	599.56	510.92	433.29	360.62	306.11
90.0	1550.94	1086.70	847.70	676.31	566.26	486.20	410.23	343.55	289.87
135.0	1525.61	1088.47	840.16	667.83	562.68	482.29	407.42	338.60	285.74
180.0	1208.49	962.83	747.34	619.82	527.44	453.44	377.69	321.86	271.26
225.0	1089.46	898.30	714.41	595.71	507.56	430.32	357.54	303.14	256.89
270.0	1370.35	1004.78	789.51	636.45	537.90	460.27	390.35	325.38	278.03
315.0	1372.01	1033.68	784.39	640.80	541.09	456.97	385.01	325.33	275.34
360.0	1655.00	1192.52	916.14	719.04	595.16	508.17	434.39	367.78	312.17
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	280.24	219.07	185.87	153.83	125.80	103.40	84.40	67.06	54.84
45.0	265.59	218.96	186.20	155.31	130.54	105.21	86.22	70.97	56.60
90.0	244.45	210.15	176.35	146.12	120.52	99.43	79.89	64.69	52.19
135.0	239.72	201.95	172.49	141.77	117.44	97.06	78.90	63.59	52.03
180.0	224.46	191.05	157.30	128.17	105.76	86.66	69.59	56.16	45.09
225.0	215.44	182.40	152.56	126.02	104.28	85.28	68.38	55.33	44.60
270.0	233.11	195.45	167.04	136.21	112.76	92.55	75.10	59.85	49.06
315.0	231.57	198.97	167.21	138.58	114.35	93.71	75.43	61.22	49.94
360.0	280.24	219.07	185.87	153.83	125.80	103.40	84.40	67.06	54.84
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	43.77	34.63	27.75	21.69	18.61	17.18	16.13	15.25	14.65
45.0	45.26	36.89	28.90	22.57	18.94	17.29	16.24	15.42	14.76
90.0	41.18	33.36	26.26	21.03	18.28	16.90	15.91	15.20	14.53
135.0	41.46	32.37	26.04	20.32	17.73	16.52	15.58	14.76	14.15
180.0	35.29	28.30	22.30	18.66	17.12	16.02	15.14	14.53	13.93
225.0	35.13	28.24	21.91	18.61	17.07	16.08	15.20	14.59	13.98
270.0	38.76	30.39	24.45	19.82	18.11	16.85	15.97	15.20	14.59
315.0	39.48	31.71	24.67	19.66	17.89	16.68	15.64	14.98	14.37
360.0	43.77	34.63	27.75	21.69	18.61	17.18	16.13	15.25	14.65
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	14.04	13.43	12.77	12.11	11.34	10.63	9.91	9.19	8.31
45.0	14.15	13.54	12.88	12.22	11.40	10.57	10.02	9.14	8.37
90.0	13.93	13.32	12.61	11.95	11.12	10.41	9.80	8.75	8.15
135.0	13.49	12.94	12.28	11.56	10.79	10.02	9.41	8.70	8.04
180.0	13.32	12.72	12.00	11.29	10.52	9.91	9.08	8.37	7.76
225.0	13.38	12.72	12.11	11.40	10.68	10.08	9.30	8.37	7.76
270.0	13.87	13.27	12.66	11.89	11.40	10.74	10.13	8.75	7.98
315.0	13.60	13.16	12.50	11.73	11.07	10.52	9.80	8.92	8.09
360.0	14.04	13.43	12.77	12.11	11.34	10.63	9.91	9.19	8.31

Intensity data(cd)

Appendix Page: 16 Total:16

C/ $\gamma(^{\circ})$	90.0
0.0	7.71
45.0	7.76
90.0	7.71
135.0	7.65
180.0	7.65
225.0	7.65
270.0	7.65
315.0	7.60
360.0	7.71