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Nata

LumCAT: 3-1545-A3
Luminaire: 92.76.365.00
Report No: NATA0100
Test No: GC2019111508
LampCAT: LUMENS EDC-47-10W
Lamp flux(lm): 691.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 218.0000
Current(A): 0.0440
Power (W): 9.5000
PF: 0.9940
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 621.86
Efficiency(%): 89.99%
Lumens(lm)/Power(W): 65.46
Central intensity(cd): 6638.906
Maximum intensity(cd): 6638.906
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=11.2
[C90/270]Total=11.2
Field angle(10%Imax): [C0/180]Total=24.8
[C90/270]Total=24.8
Maximum s/h(1/2): C0_180=0.19 C90_270=0.19
Maximum s/h(1/4): C0_180=0.21 C90_270=0.21
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.99%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.420%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6638.906	0.000	0	.000%	.000%
1.0	6518.391	6.296	6.296	.911%	1.012%
2.0	6105.797	18.119	24.415	2.622%	3.926%
3.0	5427.844	27.585	52	3.992%	8.362%
4.0	4638.727	33.696	85.696	4.876%	13.781%
5.0	3754.477	36.107	121.803	5.225%	19.587%
6.0	3012.820	35.564	157.367	5.147%	25.306%
7.0	2345.977	33.262	190.629	4.814%	30.655%
8.0	1840.008	29.958	220.587	4.335%	35.472%
9.0	1340.817	25.779	246.366	3.731%	39.618%
10.0	1116.183	22.235	268.601	3.218%	43.193%
11.0	889.045	20.036	288.637	2.900%	46.415%
12.0	717.687	17.564	306.201	2.542%	49.240%
13.0	586.997	15.483	321.684	2.241%	51.730%
14.0	499.852	13.912	335.596	2.013%	53.967%
15.0	442.983	12.944	348.54	1.873%	56.048%
16.0	402.195	12.384	360.924	1.792%	58.040%
17.0	375.180	12.106	373.03	1.752%	59.987%
18.0	352.913	12.005	385.034	1.737%	61.917%
19.0	335.334	11.974	397.008	1.733%	63.843%
20.0	318.952	11.975	408.984	1.733%	65.768%
21.0	304.608	11.974	420.957	1.733%	67.694%
22.0	293.520	12.020	432.977	1.739%	69.627%
23.0	284.337	12.125	445.102	1.755%	71.576%
24.0	278.072	12.296	457.398	1.779%	73.554%
25.0	269.121	12.442	469.84	1.801%	75.555%
26.0	263.749	12.578	482.419	1.820%	77.577%
27.0	258.905	12.787	495.205	1.850%	79.634%
28.0	254.876	13.008	508.213	1.882%	81.725%
29.0	249.799	13.204	521.417	1.911%	83.849%
30.0	244.090	13.335	534.752	1.930%	85.993%
31.0	235.772	13.354	548.106	1.933%	88.140%
32.0	215.691	12.934	561.04	1.872%	90.220%
33.0	186.898	11.860	572.9	1.716%	92.128%
34.0	151.559	10.243	583.143	1.482%	93.775%
35.0	109.547	8.109	591.252	1.174%	95.079%
36.0	70.432	5.731	596.982	.829%	96.000%
37.0	40.683	3.624	600.606	.524%	96.583%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
38.0	19.477	2.008	602.614	.291%	96.906%
39.0	14.273	1.152	603.766	.167%	97.091%
40.0	10.723	0.872	604.638	.126%	97.231%
41.0	8.620	0.689	605.327	.100%	97.342%
42.0	7.179	0.574	605.901	.083%	97.434%
43.0	6.117	0.493	606.393	.071%	97.514%
44.0	5.344	0.433	606.826	.063%	97.583%
45.0	4.570	0.381	607.207	.055%	97.644%
46.0	4.282	0.346	607.553	.050%	97.700%
47.0	4.148	0.335	607.888	.049%	97.754%
48.0	4.043	0.331	608.219	.048%	97.807%
49.0	3.930	0.327	608.547	.047%	97.860%
50.0	3.832	0.324	608.871	.047%	97.912%
51.0	3.762	0.321	609.192	.046%	97.964%
52.0	3.698	0.320	609.512	.046%	98.015%
53.0	3.628	0.319	609.831	.046%	98.066%
54.0	3.558	0.317	610.147	.046%	98.117%
55.0	3.516	0.316	610.463	.046%	98.168%
56.0	3.452	0.315	610.778	.046%	98.219%
57.0	3.410	0.314	611.092	.045%	98.269%
58.0	3.382	0.314	611.406	.045%	98.320%
59.0	3.333	0.314	611.72	.045%	98.370%
60.0	3.305	0.314	612.033	.045%	98.421%
61.0	3.277	0.314	612.347	.045%	98.471%
62.0	3.263	0.315	612.662	.046%	98.522%
63.0	3.241	0.316	612.979	.046%	98.573%
64.0	3.227	0.317	613.296	.046%	98.624%
65.0	3.220	0.319	613.615	.046%	98.675%
66.0	3.192	0.320	613.935	.046%	98.726%
67.0	3.192	0.321	614.256	.046%	98.778%
68.0	3.178	0.323	614.579	.047%	98.830%
69.0	3.171	0.324	614.903	.047%	98.882%
70.0	3.150	0.325	615.228	.047%	98.934%
71.0	3.143	0.325	615.553	.047%	98.986%
72.0	3.150	0.327	615.88	.047%	99.039%
73.0	3.150	0.329	616.209	.048%	99.092%
74.0	3.143	0.331	616.54	.048%	99.145%
75.0	3.150	0.332	616.873	.048%	99.199%

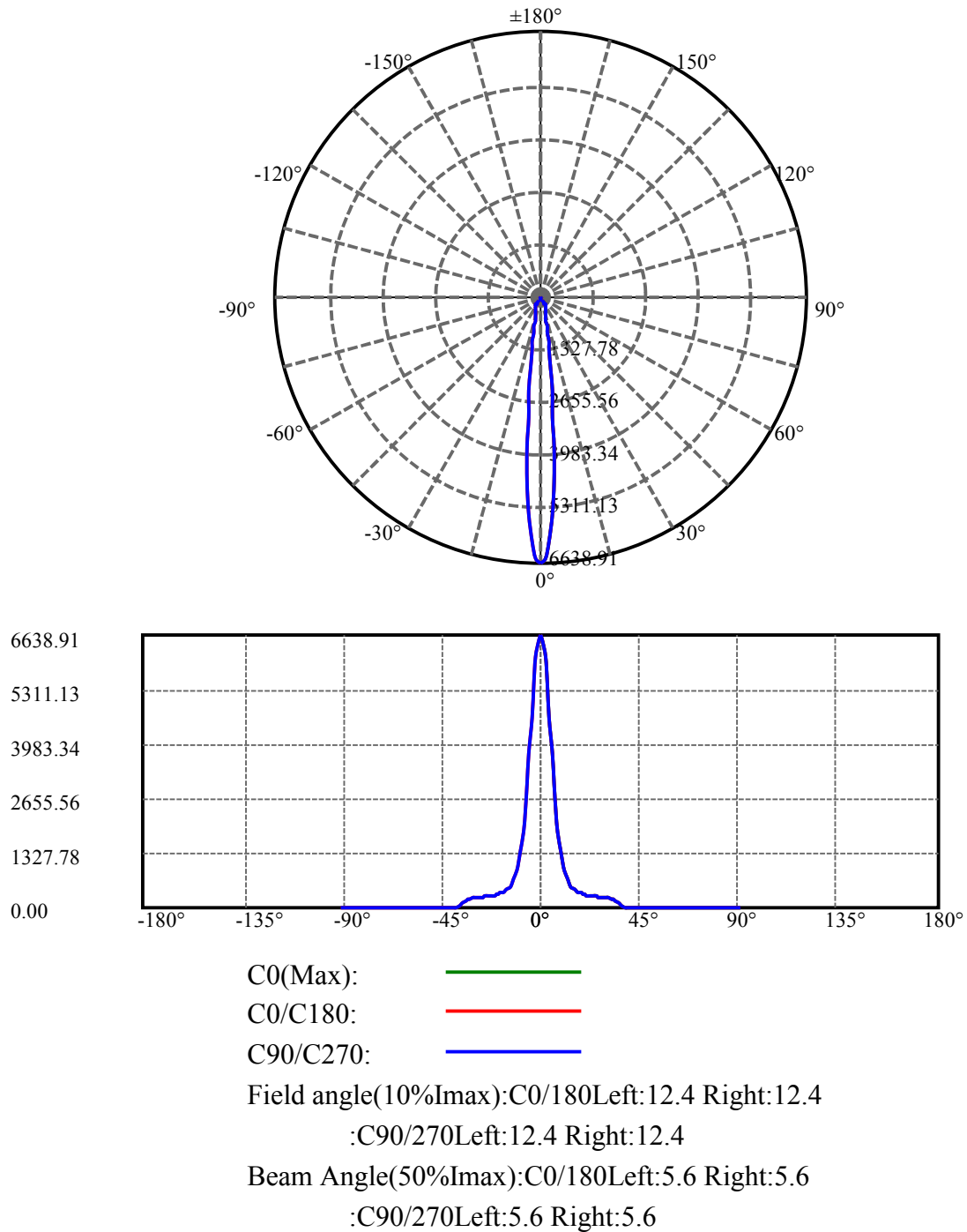
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	3.150	0.334	617.207	.048%	99.253%
77.0	3.150	0.336	617.543	.049%	99.307%
78.0	3.171	0.338	617.881	.049%	99.361%
79.0	3.178	0.341	618.223	.049%	99.416%
80.0	3.178	0.343	618.565	.050%	99.471%
81.0	3.185	0.344	618.909	.050%	99.526%
82.0	3.171	0.345	619.254	.050%	99.582%
83.0	3.150	0.344	619.598	.050%	99.637%
84.0	3.122	0.342	619.939	.049%	99.692%
85.0	3.087	0.339	620.278	.049%	99.746%
86.0	2.995	0.332	620.611	.048%	99.800%
87.0	2.883	0.322	620.932	.047%	99.852%
88.0	2.820	0.312	621.245	.045%	99.902%
89.0	2.777	0.307	621.552	.044%	99.951%
90.0	2.763	0.304	621.855	.044%	100.000%

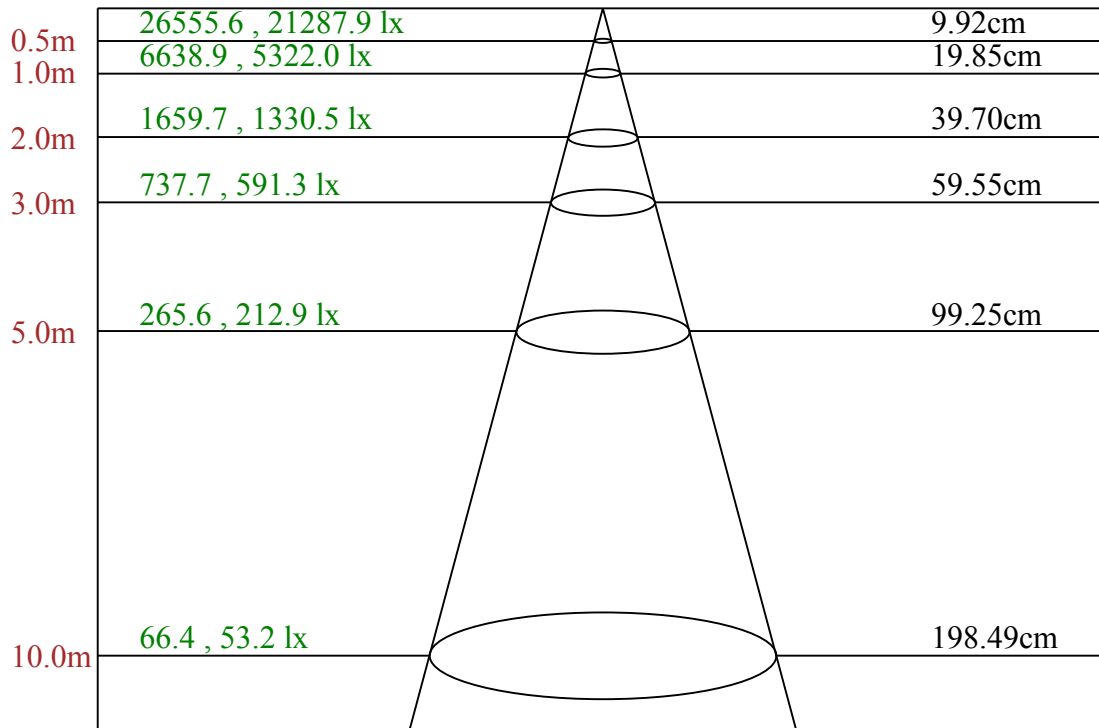
ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	534.75	77.39%	85.99%
0-40	604.64	87.50%	97.23%
0-60	612.03	88.57%	98.42%
0-90	621.55	89.95%	99.95%
0-120	621.55	89.95%	99.95%
0-180	621.86	89.99%	100.00%
60-90	9.83	1.42%	1.58%
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%
0-27.18	497.48	71.99%	80.00%

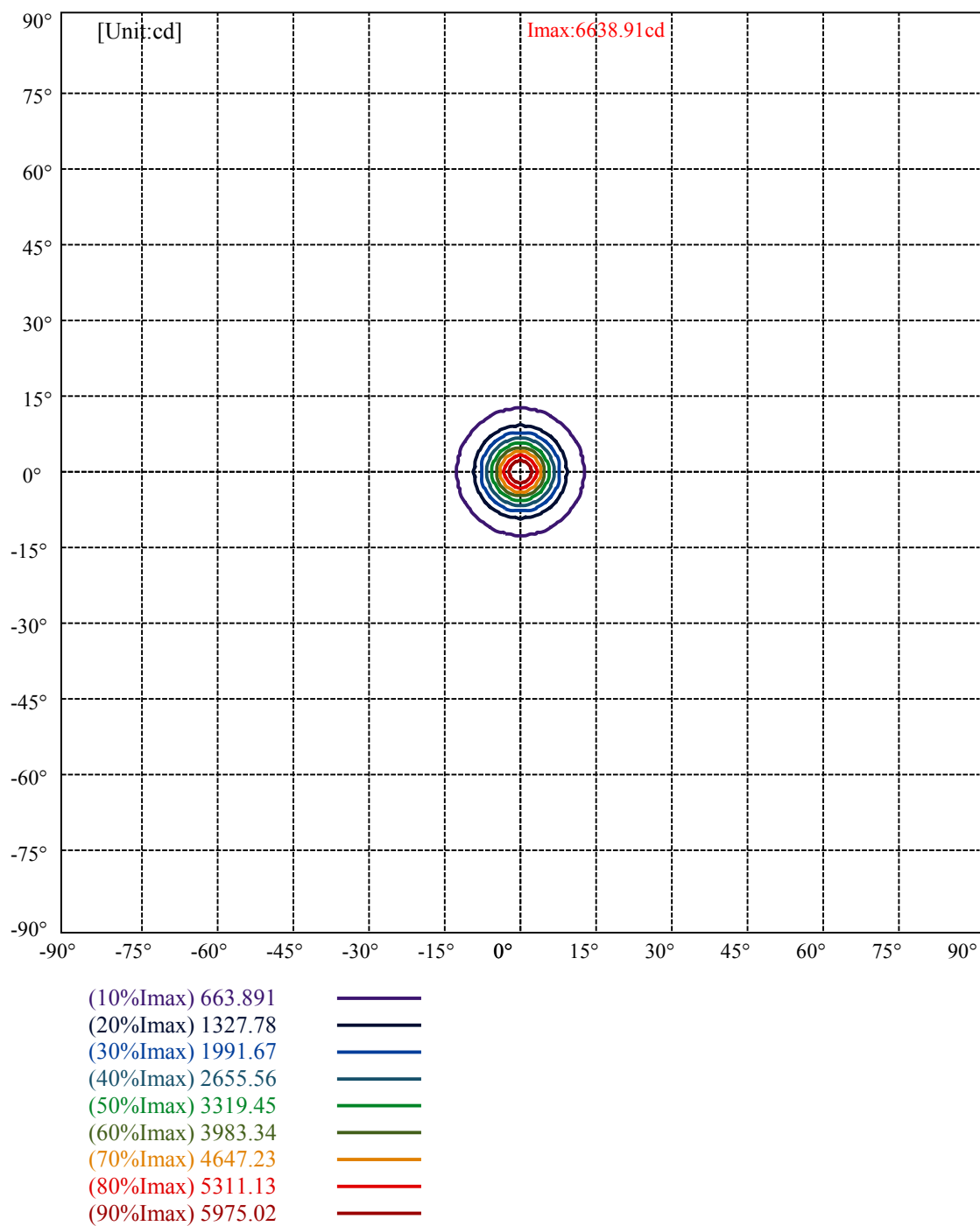
ZONAL LUMEN SUMMARY

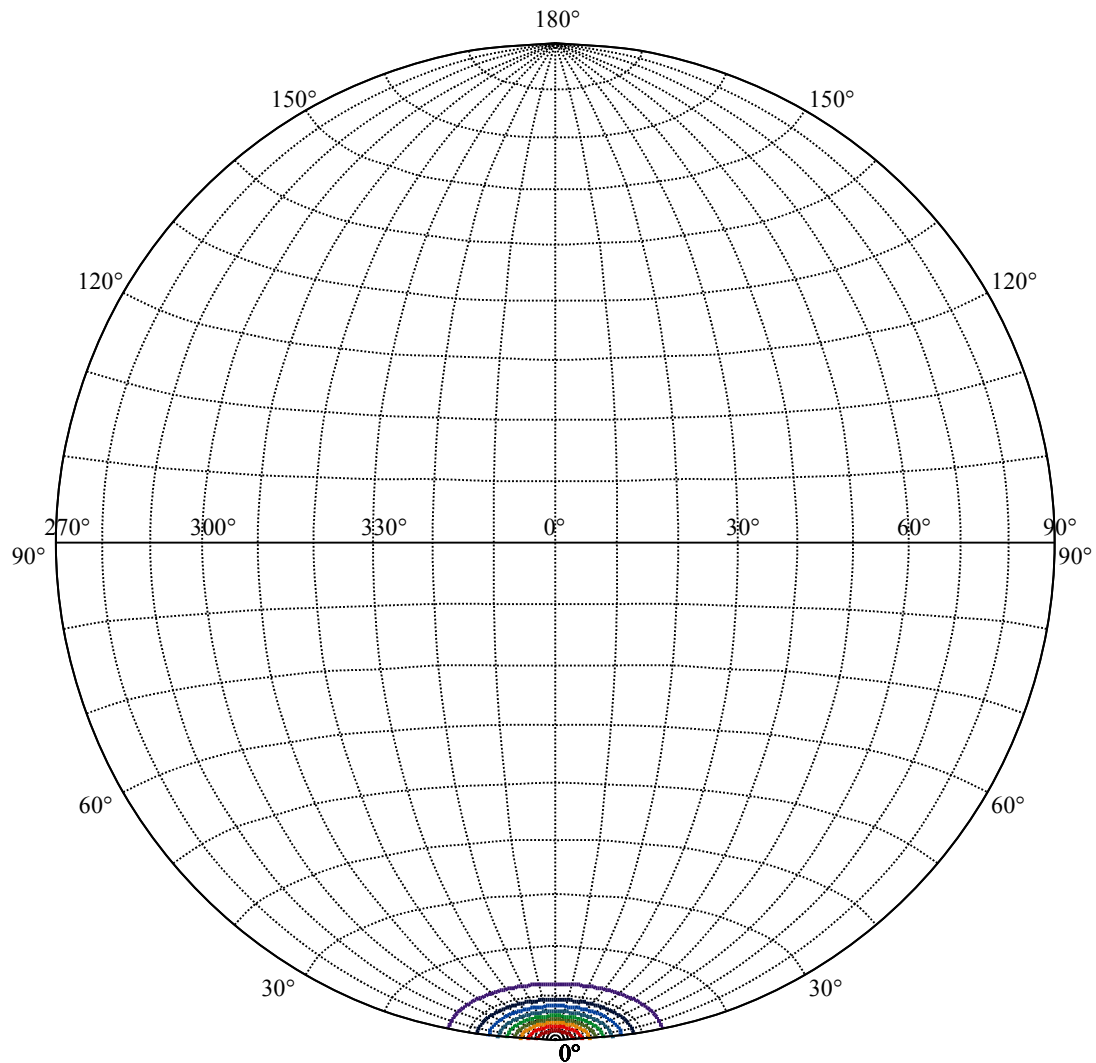
0-10	268.60
10-20	140.38
20-30	125.77
30-40	69.89
40-50	4.23
50-60	3.16
60-70	3.19
70-80	3.34
80-90	2.99
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00





Max , Ave Beam angle of C0 plane 11.34





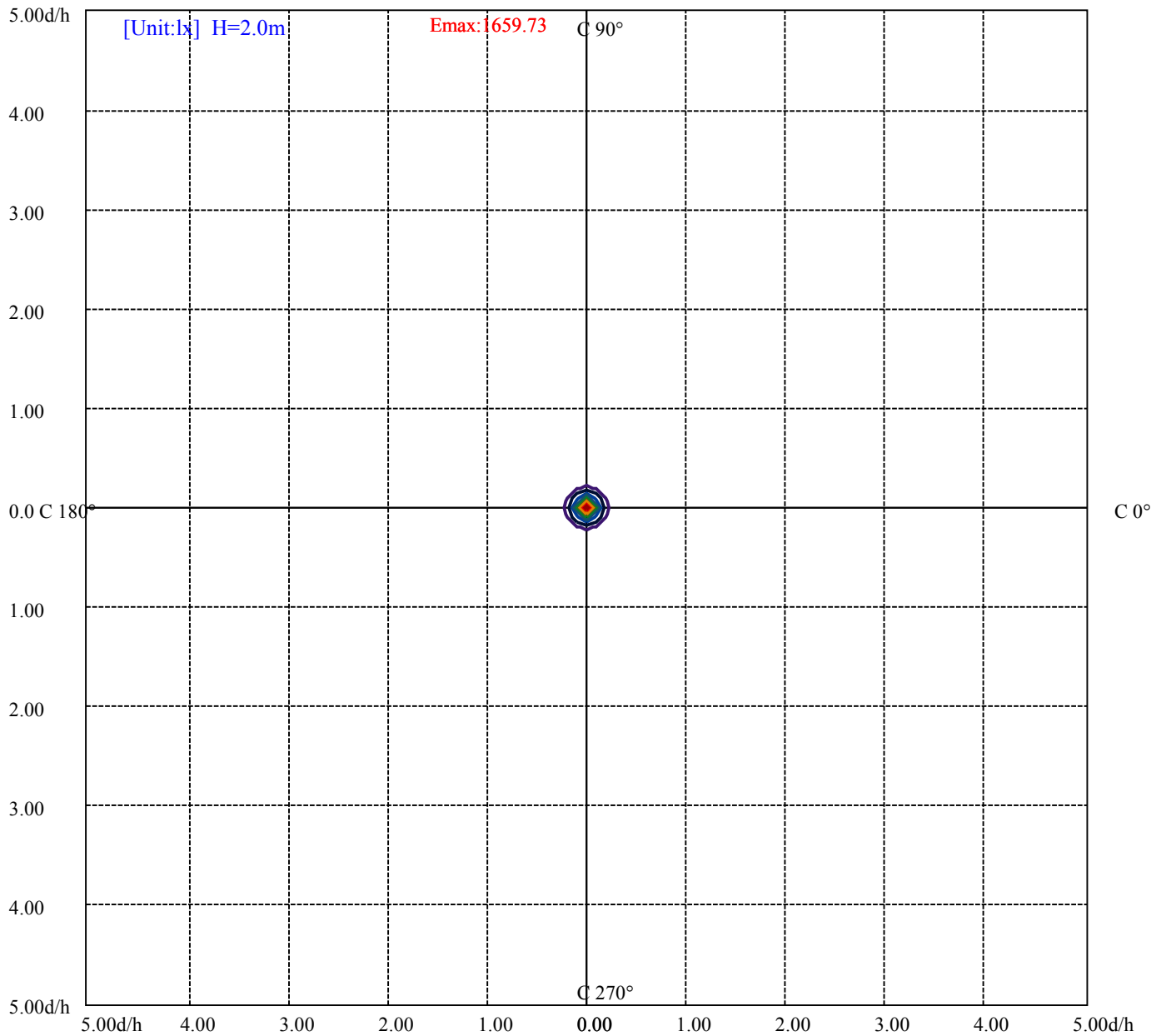
House

[Unit:cd]

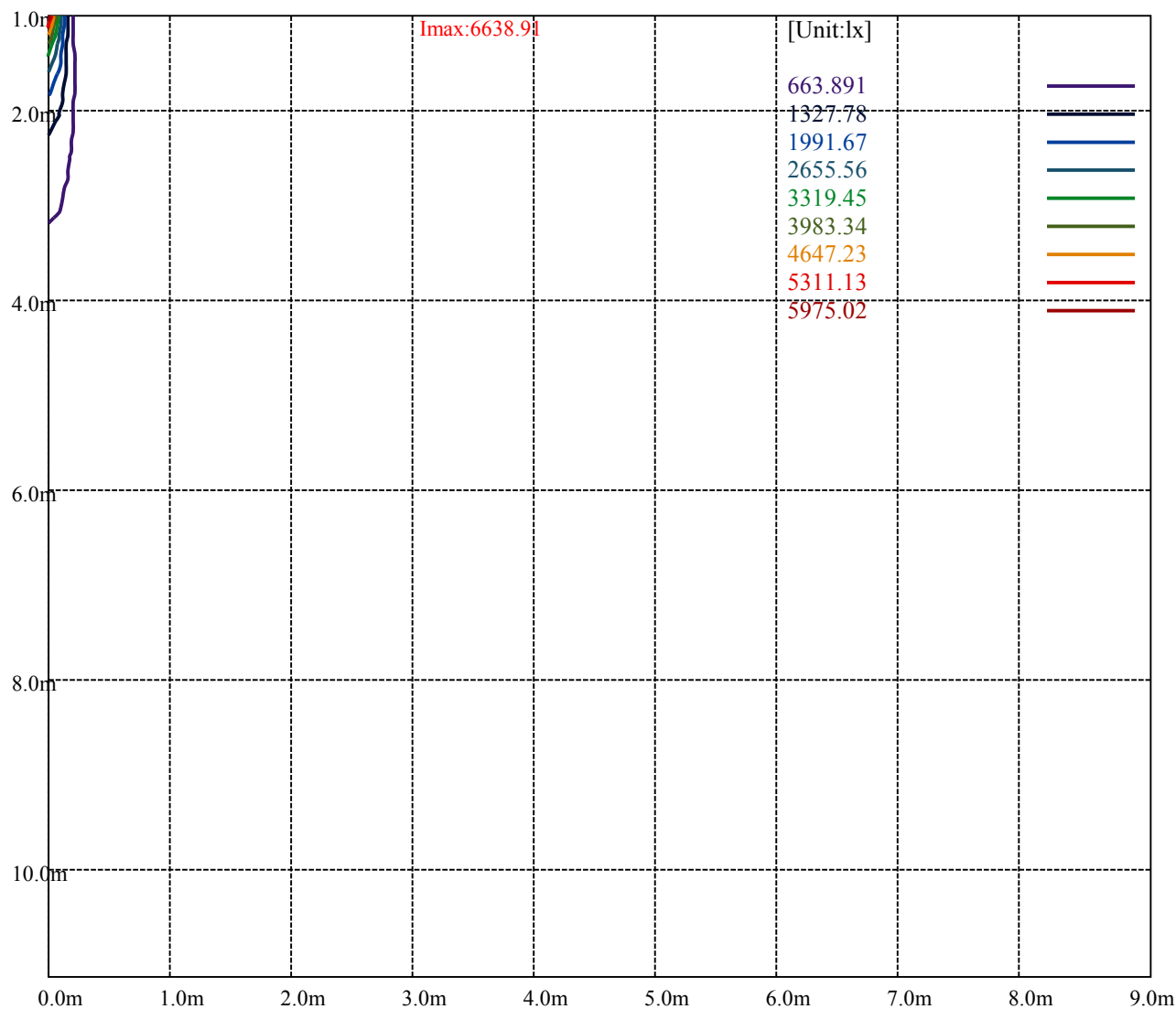
Road

Imax:6638.91

(10%Imax)	663.891	—
(20%Imax)	1327.78	—
(30%Imax)	1991.67	—
(40%Imax)	2655.56	—
(50%Imax)	3319.45	—
(60%Imax)	3983.34	—
(70%Imax)	4647.23	—
(80%Imax)	5311.13	—
(90%Imax)	5975.02	—



(10%Emax)	165.9722	—
(20%Emax)	331.945	—
(30%Emax)	497.9175	—
(40%Emax)	663.89	—
(50%Emax)	829.86	—
(60%Emax)	995.8325	—
(70%Emax)	1161.805	—
(80%Emax)	1327.777	—
(90%Emax)	1493.75	—



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

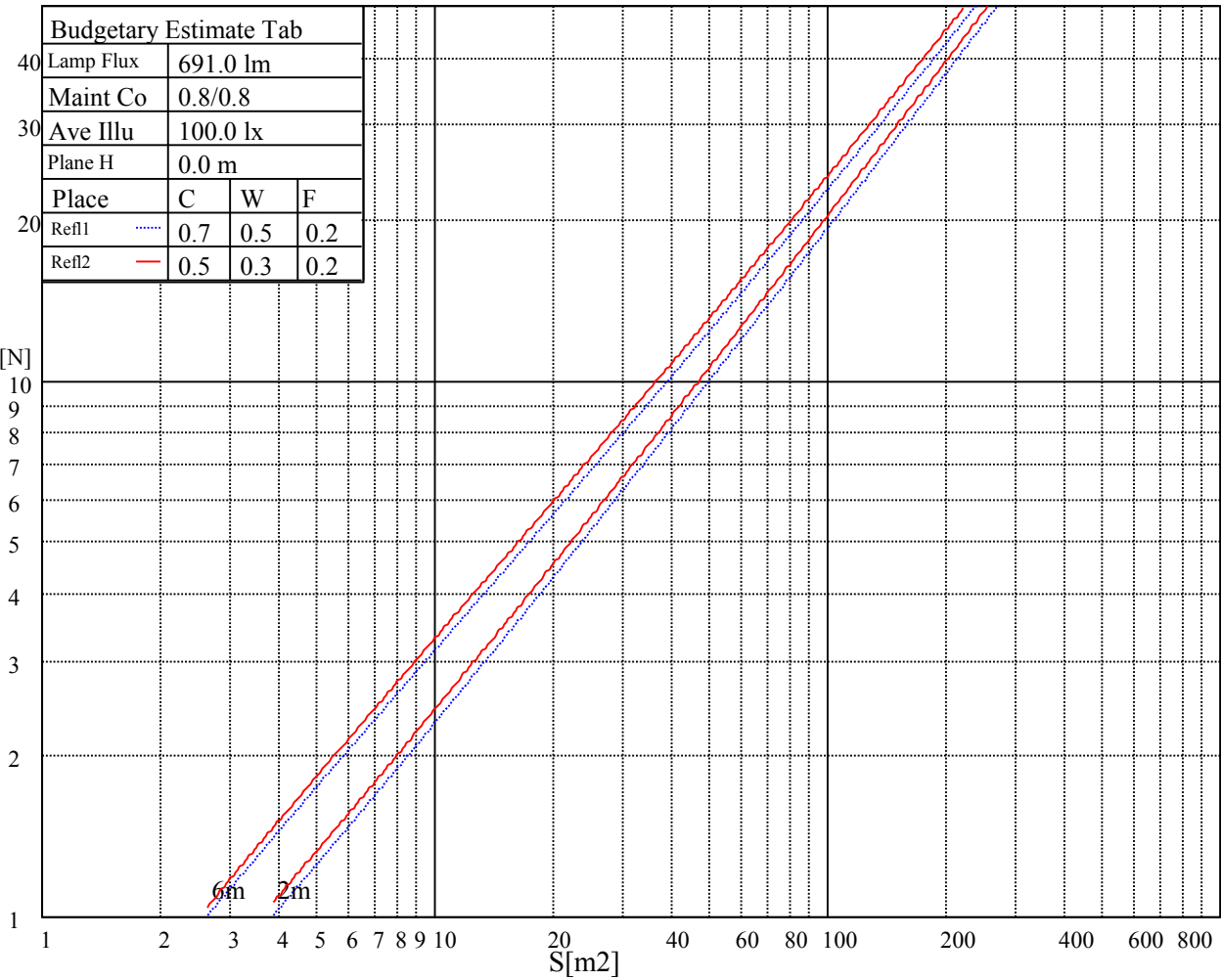
Luminance Limiting Curve

 $\gamma(^{\circ})$ 

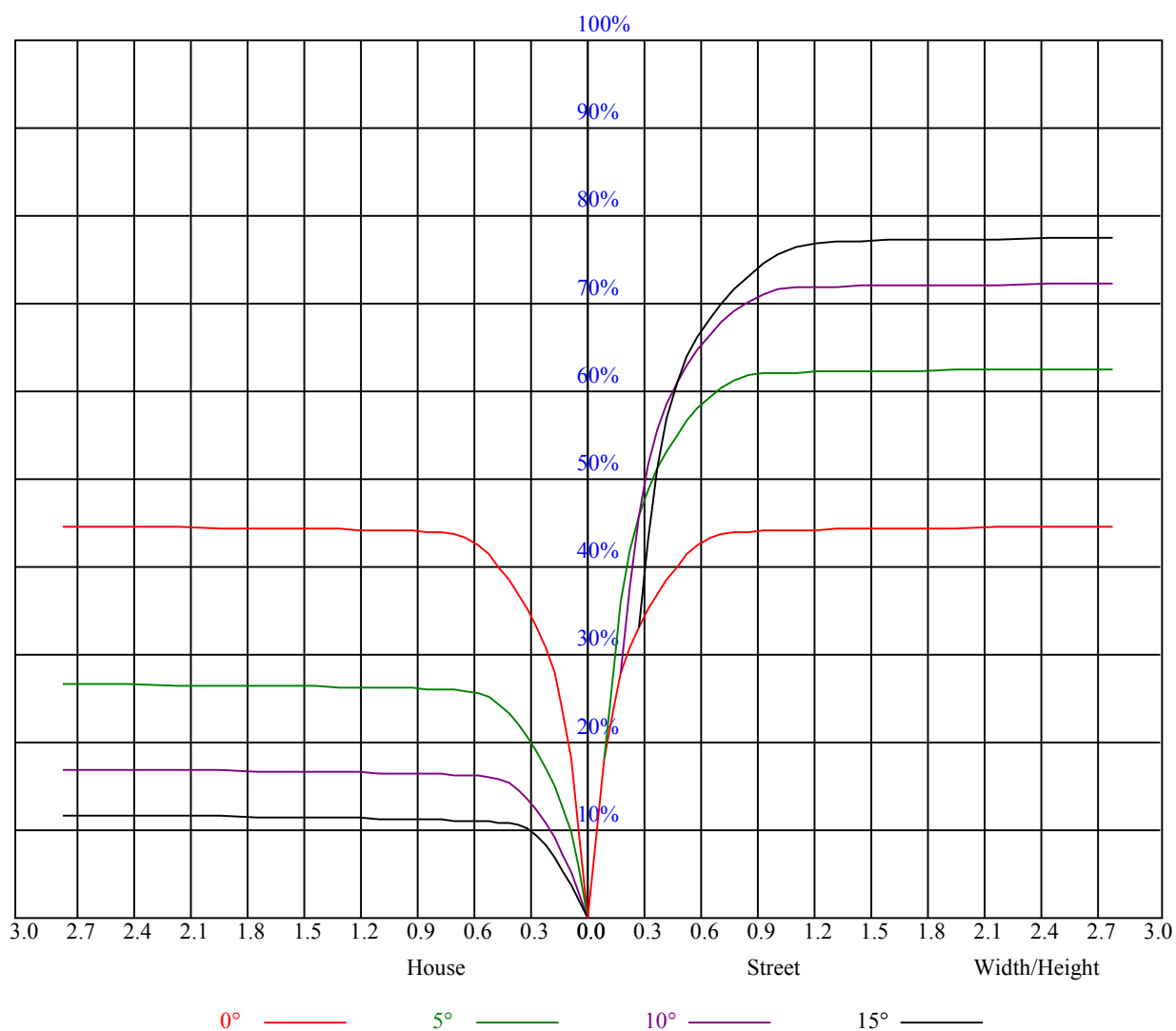
C0 ———

C45 ———

C90 ———



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	0.97	0.99	0.97	0.96	0.95	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.88	0.86
2	0.96	0.93	0.90	0.94	0.92	0.89	0.92	0.89	0.88	0.89	0.87	0.86	0.86	0.85	0.84	0.83
3	0.91	0.88	0.85	0.90	0.87	0.84	0.88	0.85	0.83	0.86	0.84	0.82	0.84	0.82	0.81	0.79
4	0.88	0.84	0.81	0.87	0.83	0.80	0.85	0.82	0.79	0.83	0.81	0.79	0.82	0.79	0.78	0.77
5	0.84	0.80	0.77	0.83	0.80	0.77	0.82	0.79	0.76	0.80	0.78	0.76	0.79	0.77	0.75	0.74
6	0.81	0.77	0.74	0.80	0.77	0.74	0.79	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.73	0.72
7	0.78	0.74	0.71	0.78	0.74	0.71	0.77	0.73	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.69
8	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.69	0.74	0.71	0.68	0.73	0.70	0.68	0.67
9	0.73	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.65
10	0.71	0.68	0.65	0.71	0.67	0.65	0.70	0.67	0.65	0.70	0.67	0.65	0.69	0.67	0.65	0.64



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	6635.25	6561.56	6180.19	5605.88	4736.25	3843.56	3107.25	2401.31	1897.31
45.0	6653.81	6538.50	6121.69	5449.50	4710.94	3836.81	3022.88	2398.50	1900.13
90.0	6624.56	6411.94	5900.06	5167.69	4380.19	3510.00	2821.50	2170.69	1668.38
135.0	6642.00	6594.19	6203.25	5650.88	4925.81	3953.25	3219.75	2572.31	1980.00
180.0	6635.25	6459.19	6036.19	5237.44	4461.75	3691.69	2899.13	2225.81	1758.38
225.0	6653.81	6509.81	6127.31	5434.31	4565.25	3772.69	3055.50	2308.50	1838.25
270.0	6624.56	6624.56	6278.06	5722.88	4964.63	3939.75	3186.00	2535.19	1960.88
315.0	6642.00	6447.38	5999.63	5154.19	4365.00	3488.06	2790.56	2155.50	1716.75
360.0	6635.25	6561.56	6180.19	5605.88	4736.25	3843.56	3107.25	2401.31	1897.31

C/γ(°)	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0
0.0	1462.50	1139.06	919.13	749.81	599.06	516.38	455.63	403.88	377.44
45.0	1422.00	1130.06	903.38	711.56	579.38	501.19	442.13	404.44	379.69
90.0	1107.90	1020.71	794.19	650.59	547.09	461.87	419.12	390.15	367.93
135.0	1530.00	1220.06	952.31	768.38	618.19	518.06	458.44	414.00	380.81
180.0	1120.89	1062.68	862.88	691.71	578.14	488.25	431.38	397.13	371.76
225.0	1460.25	1097.72	883.01	719.72	576.51	499.44	445.05	398.81	374.06
270.0	1528.31	1222.31	958.50	776.81	627.19	524.81	462.38	416.25	385.88
315.0	1094.68	1036.86	838.97	672.92	570.43	488.81	429.75	392.91	363.88
360.0	1462.50	1139.06	919.13	749.81	599.06	516.38	455.63	403.88	377.44

C/γ(°)	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0
0.0	357.19	338.06	321.75	308.25	296.44	286.88	284.06	271.91	265.28
45.0	355.50	337.50	321.19	305.44	294.75	286.88	284.63	271.52	266.63
90.0	349.14	334.69	319.78	304.43	292.84	283.33	275.40	268.59	263.81
135.0	356.63	339.19	317.81	304.31	294.19	284.06	273.38	267.02	261.84
180.0	346.84	330.36	316.07	300.88	290.70	281.93	272.87	267.13	262.07
225.0	351.23	330.53	317.64	304.93	292.44	284.29	276.86	269.10	264.09
270.0	364.50	345.38	324.00	309.94	298.13	286.88	284.06	270.56	264.26
315.0	342.28	326.98	313.37	298.69	288.68	280.46	273.32	267.13	262.01
360.0	357.19	338.06	321.75	308.25	296.44	286.88	284.06	271.91	265.28

C/γ(°)	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0
0.0	260.66	256.78	251.72	246.49	239.29	224.44	203.63	170.27	116.72
45.0	261.84	257.85	253.13	248.06	237.60	220.05	195.08	152.83	115.76
90.0	259.26	255.04	249.47	243.45	234.90	208.24	175.11	142.93	105.30
135.0	256.05	252.06	247.89	243.62	235.41	221.91	193.73	154.74	111.21
180.0	257.01	253.18	248.79	241.65	234.34	212.74	176.12	143.94	101.87
225.0	259.48	255.21	249.24	243.56	235.46	211.61	181.13	145.29	106.09
270.0	259.59	255.60	250.03	244.91	237.09	217.18	191.59	157.67	115.65
315.0	257.34	253.29	248.12	240.98	232.09	209.36	178.82	144.79	103.78
360.0	260.66	256.78	251.72	246.49	239.29	224.44	203.63	170.27	116.72

C/γ(°)	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0
0.0	77.29	46.52	19.58	14.40	10.86	8.55	7.09	6.24	5.34
45.0	84.43	44.44	20.87	15.64	11.19	9.06	7.43	6.24	5.46
90.0	66.38	39.54	19.86	14.23	10.63	8.66	7.14	6.02	5.29
135.0	76.05	48.43	22.33	15.92	12.77	9.90	8.21	7.09	6.02
180.0	50.40	31.39	18.34	14.06	10.63	8.89	7.59	6.36	5.46
225.0	67.78	35.61	18.17	13.56	9.90	8.16	6.98	5.79	5.18
270.0	83.48	50.57	20.59	14.51	10.69	8.21	6.75	5.85	5.18
315.0	57.66	28.97	16.09	11.87	9.11	7.54	6.24	5.34	4.84
360.0	77.29	46.52	19.58	14.40	10.86	8.55	7.09	6.24	5.34

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	4.56	4.28	4.16	4.05	3.94	3.83	3.77	3.66	3.60
45.0	4.67	4.22	4.11	3.99	3.88	3.83	3.71	3.66	3.60
90.0	4.28	4.11	4.05	3.88	3.83	3.71	3.66	3.60	3.54
135.0	4.89	4.33	4.11	4.05	3.94	3.83	3.77	3.71	3.60
180.0	4.50	4.33	4.22	4.11	3.99	3.88	3.83	3.77	3.71
225.0	4.61	4.39	4.22	4.16	3.99	3.88	3.83	3.77	3.66
270.0	4.73	4.39	4.28	4.16	3.99	3.94	3.83	3.77	3.71
315.0	4.33	4.22	4.05	3.94	3.88	3.77	3.71	3.66	3.60
360.0	4.56	4.28	4.16	4.05	3.94	3.83	3.77	3.66	3.60
C/ γ (°)	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0
0.0	3.54	3.49	3.43	3.38	3.38	3.32	3.26	3.26	3.26
45.0	3.54	3.49	3.43	3.38	3.38	3.32	3.32	3.26	3.26
90.0	3.43	3.43	3.38	3.32	3.32	3.26	3.26	3.21	3.21
135.0	3.54	3.49	3.43	3.43	3.38	3.32	3.32	3.26	3.21
180.0	3.60	3.54	3.49	3.49	3.38	3.38	3.32	3.32	3.26
225.0	3.66	3.60	3.49	3.49	3.43	3.38	3.32	3.32	3.32
270.0	3.66	3.60	3.54	3.49	3.43	3.38	3.38	3.32	3.32
315.0	3.49	3.49	3.43	3.32	3.38	3.32	3.26	3.26	3.26
360.0	3.54	3.49	3.43	3.38	3.38	3.32	3.26	3.26	3.26
C/ γ (°)	63.0	64.0	65.0	66.0	67.0	68.0	69.0	70.0	71.0
0.0	3.26	3.21	3.26	3.21	3.21	3.21	3.15	3.15	3.15
45.0	3.26	3.21	3.15	3.21	3.21	3.21	3.15	3.15	3.15
90.0	3.15	3.15	3.15	3.15	3.09	3.09	3.09	3.09	3.09
135.0	3.21	3.21	3.21	3.15	3.15	3.15	3.15	3.15	3.09
180.0	3.26	3.26	3.26	3.21	3.21	3.21	3.21	3.15	3.15
225.0	3.26	3.26	3.21	3.21	3.21	3.21	3.21	3.15	3.15
270.0	3.26	3.26	3.26	3.21	3.21	3.15	3.15	3.15	3.15
315.0	3.26	3.26	3.26	3.21	3.26	3.21	3.26	3.21	3.21
360.0	3.26	3.21	3.26	3.21	3.21	3.21	3.15	3.15	3.15
C/ γ (°)	72.0	73.0	74.0	75.0	76.0	77.0	78.0	79.0	80.0
0.0	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.21	3.15
45.0	3.15	3.15	3.15	3.21	3.15	3.21	3.21	3.21	3.21
90.0	3.09	3.04	3.04	3.04	3.04	3.04	3.04	3.04	3.04
135.0	3.09	3.09	3.09	3.09	3.15	3.09	3.09	3.04	3.04
180.0	3.15	3.15	3.09	3.09	3.09	3.09	3.15	3.15	3.15
225.0	3.15	3.15	3.15	3.09	3.09	3.09	3.09	3.09	3.09
270.0	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.15
315.0	3.26	3.32	3.32	3.38	3.38	3.38	3.49	3.54	3.60
360.0	3.15	3.15	3.15	3.15	3.15	3.15	3.15	3.21	3.15
C/ γ (°)	81.0	82.0	83.0	84.0	85.0	86.0	87.0	88.0	89.0
0.0	3.15	3.15	3.09	3.09	3.09	2.98	2.87	2.76	2.76
45.0	3.26	3.26	3.26	3.21	3.15	2.98	2.81	2.76	2.76
90.0	3.04	3.04	3.04	3.04	2.98	2.87	2.87	2.76	2.76
135.0	3.04	3.04	3.04	3.04	2.98	2.93	2.87	2.87	2.81
180.0	3.09	3.04	3.04	2.98	3.04	2.98	2.87	2.87	2.76
225.0	3.09	3.09	3.09	3.09	3.04	3.04	2.93	2.87	2.81
270.0	3.15	3.15	3.09	3.09	3.09	3.04	2.98	2.87	2.81
315.0	3.66	3.60	3.54	3.43	3.32	3.15	2.87	2.81	2.76
360.0	3.15	3.15	3.09	3.09	3.09	2.98	2.87	2.76	2.76

Intensity data(cd)

Appendix Page: 18 Total:18

C/ γ (°)	90.0
0.0	2.76
45.0	2.76
90.0	2.76
135.0	2.76
180.0	2.76
225.0	2.76
270.0	2.81
315.0	2.76
360.0	2.76