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Nata

LumCAT: 3-1700-N
Luminaire: 92.70.045.00+92.70.089.00
Report No: NATA0100
Test No: GC2018070214
LampCAT: NICHIA NFCWD096B-V3
Lamp flux(lm): 2246.0
Number of Lamps: 1
Length(mm): 77
Phm Type: C

Voltage(V): 33.9000
Current(A): 0.5000
Power (W): 16.9500
PF: 0.0000
Ballast type: DC
Width(mm): 77
Height(mm): 0

Photometric Results

Lumens(lm): 1760.77
Efficiency(%): 78.40%
Lumens(lm)/Power(W): 103.88
Central intensity(cd): 3690.293
Maximum intensity(cd): 3690.293
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=37.6
 [C90/270]Total=37.6
Field angle(10%Imax): [C0/180]Total=65.5
 [C90/270]Total=65.5
Maximum s/h(1/2): C0_180=0.62 C90_270=0.62
Maximum s/h(1/4): C0_180=0.58 C90_270=0.58
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 78.54%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.617%

$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3690.293	3.531	3.531	.157%	.201%
2.0	3660.906	28.020	31.552	1.248%	1.792%
4.0	3577.290	54.727	86.279	2.437%	4.900%
6.0	3454.101	79.184	165.463	3.526%	9.397%
8.0	3291.409	100.462	265.925	4.473%	15.103%
10.0	3087.150	117.569	383.494	5.235%	21.780%
12.0	2884.611	131.532	515.026	5.856%	29.250%
14.0	2635.137	139.812	654.837	6.225%	37.190%
16.0	2343.063	141.640	796.478	6.306%	45.235%
18.0	1995.588	135.244	931.722	6.022%	52.916%
20.0	1625.678	121.941	1053.663	5.429%	59.841%
22.0	1235.624	101.514	1155.178	4.520%	65.606%
24.0	941.795	84.011	1239.188	3.740%	70.378%
26.0	719.271	69.151	1308.34	3.079%	74.305%
28.0	570.598	58.750	1367.089	2.616%	77.641%
30.0	471.090	51.658	1418.747	2.300%	80.575%
32.0	391.375	45.485	1464.232	2.025%	83.159%
34.0	330.442	40.525	1504.757	1.804%	85.460%
36.0	281.703	36.314	1541.071	1.617%	87.523%
38.0	233.735	31.560	1572.631	1.405%	89.315%
40.0	195.760	27.597	1600.227	1.229%	90.882%
42.0	161.721	23.732	1623.96	1.057%	92.230%
44.0	132.177	20.137	1644.097	.897%	93.374%
46.0	107.573	16.971	1661.068	.756%	94.337%
48.0	87.822	14.313	1675.381	.637%	95.150%
50.0	70.252	11.803	1687.184	.525%	95.821%
52.0	57.424	9.924	1697.108	.442%	96.384%
54.0	46.151	8.188	1705.296	.365%	96.849%
56.0	36.888	6.707	1712.003	.299%	97.230%
58.0	29.393	5.467	1717.47	.243%	97.541%
60.0	23.839	4.528	1721.998	.202%	97.798%
62.0	20.612	3.991	1725.989	.178%	98.025%
64.0	18.657	3.678	1729.667	.164%	98.233%
66.0	17.136	3.433	1733.1	.153%	98.428%
68.0	15.863	3.226	1736.326	.144%	98.612%
70.0	14.776	3.045	1739.371	.136%	98.785%
72.0	13.826	2.884	1742.255	.128%	98.948%
74.0	12.986	2.738	1744.992	.122%	99.104%

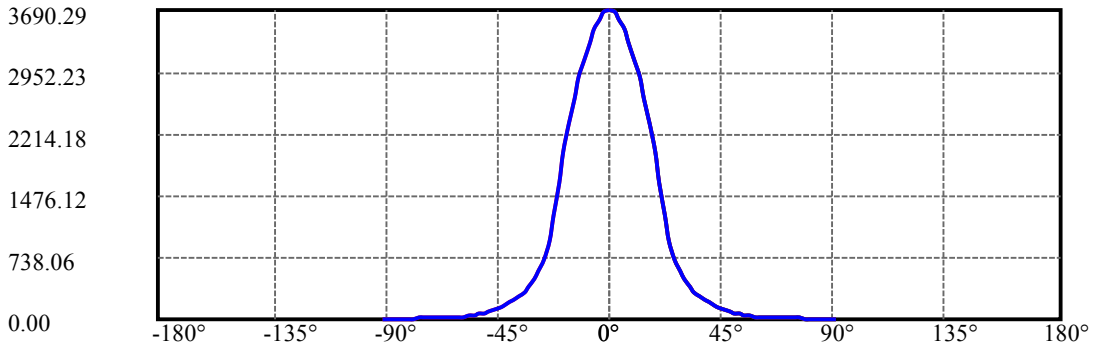
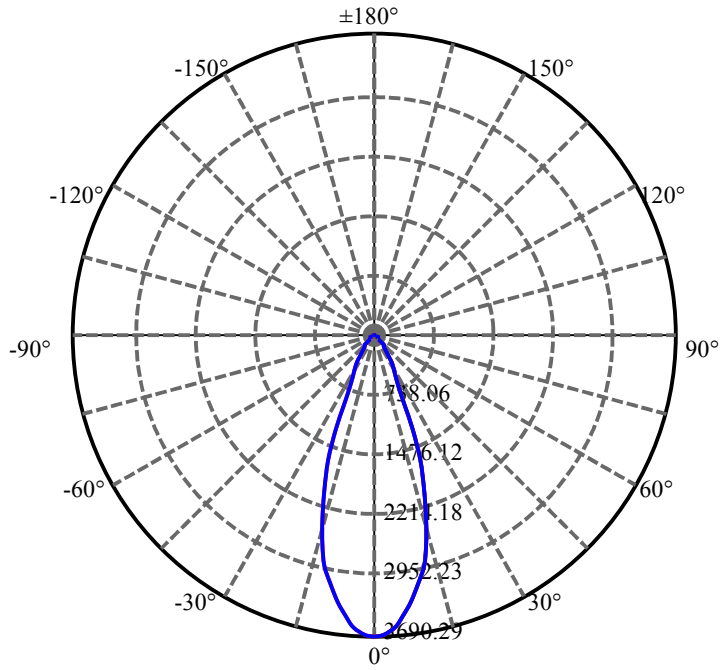
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
76.0	12.112	2.578	1747.57	.115%	99.250%
78.0	11.349	2.434	1750.004	.108%	99.389%
80.0	10.598	2.289	1752.293	.102%	99.519%
82.0	9.862	2.142	1754.435	.095%	99.640%
84.0	9.174	2.001	1756.436	.089%	99.754%
86.0	8.341	1.825	1758.261	.081%	99.857%
88.0	7.722	1.692	1759.953	.075%	99.954%
90.0	7.460	0.818	1760.771	.036%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1418.75	63.17%	80.58%
0-40	1600.23	71.25%	90.88%
0-60	1722.00	76.67%	97.80%
0-90	1759.95	78.36%	99.95%
0-120	1759.95	78.36%	99.95%
0-180	1760.77	78.40%	100.00%
60-90	42.48	1.89%	2.41%
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%
0-29.61	1408.62	62.72%	80.00%

ZONAL LUMEN SUMMARY

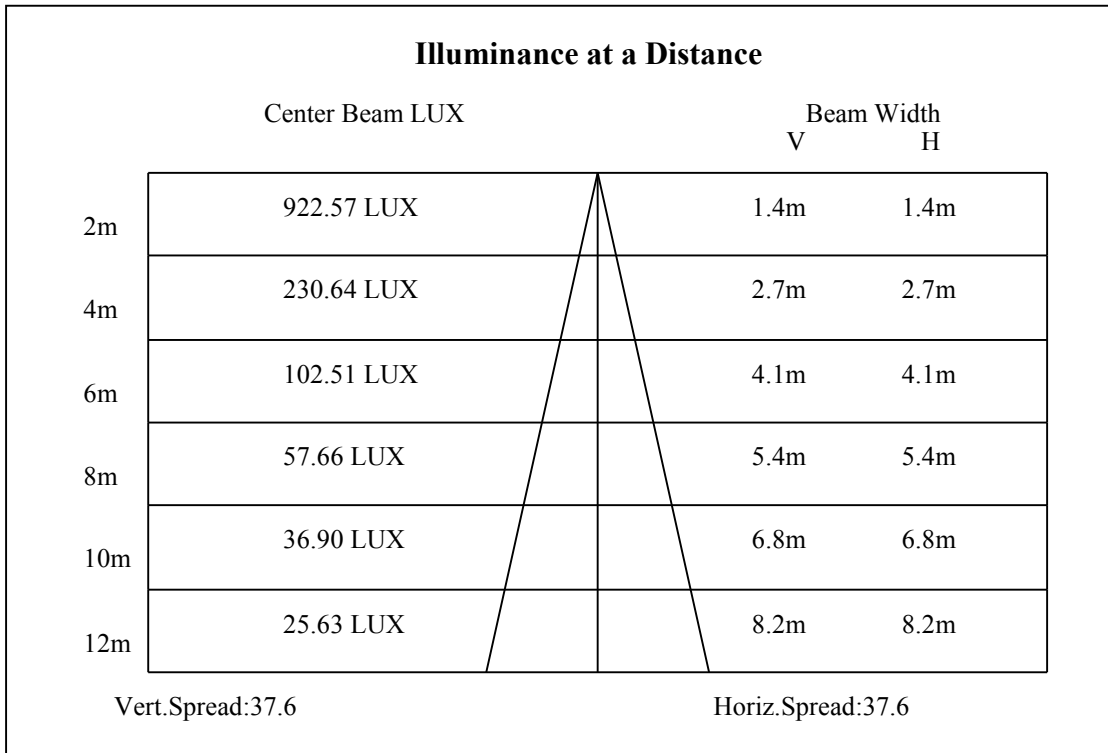
0-10	383.49
10-20	670.17
20-30	365.08
30-40	181.48
40-50	86.96
50-60	34.81
60-70	17.37
70-80	12.92
80-90	7.66
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

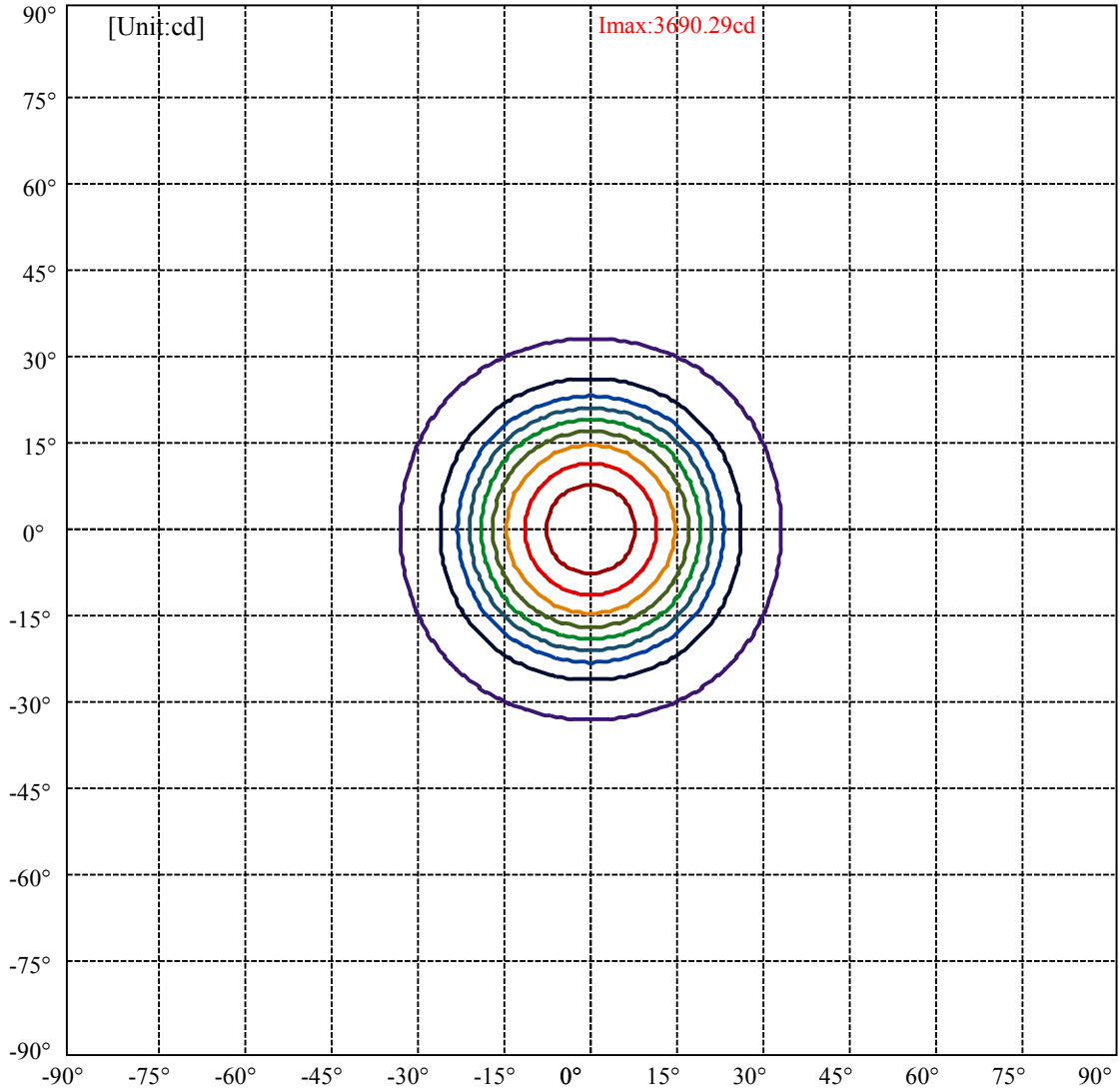


C0(Max): —————
C0/C180: —————
C90/C270: —————

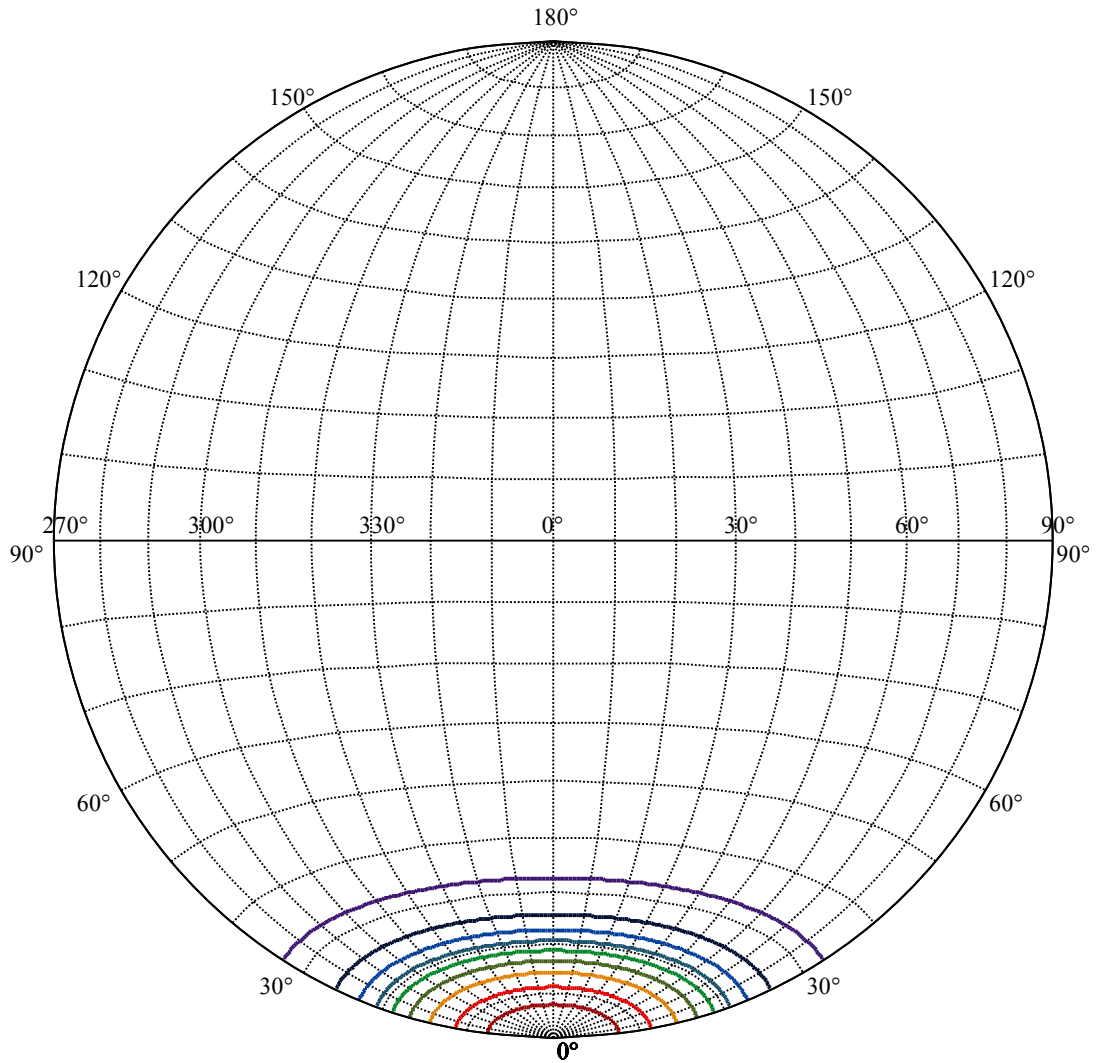
Field angle(10%Imax):C0/180Left:32.7 Right:32.7
:C90/270Left:32.7 Right:32.7

Beam Angle(50%Imax):C0/180Left:18.8 Right:18.8
:C90/270Left:18.8 Right:18.8





(10%I _{max}) 369.029	—
(20%I _{max}) 738.059	—
(30%I _{max}) 1107.09	—
(40%I _{max}) 1476.12	—
(50%I _{max}) 1845.15	—
(60%I _{max}) 2214.18	—
(70%I _{max}) 2583.2	—
(80%I _{max}) 2952.23	—
(90%I _{max}) 3321.26	—



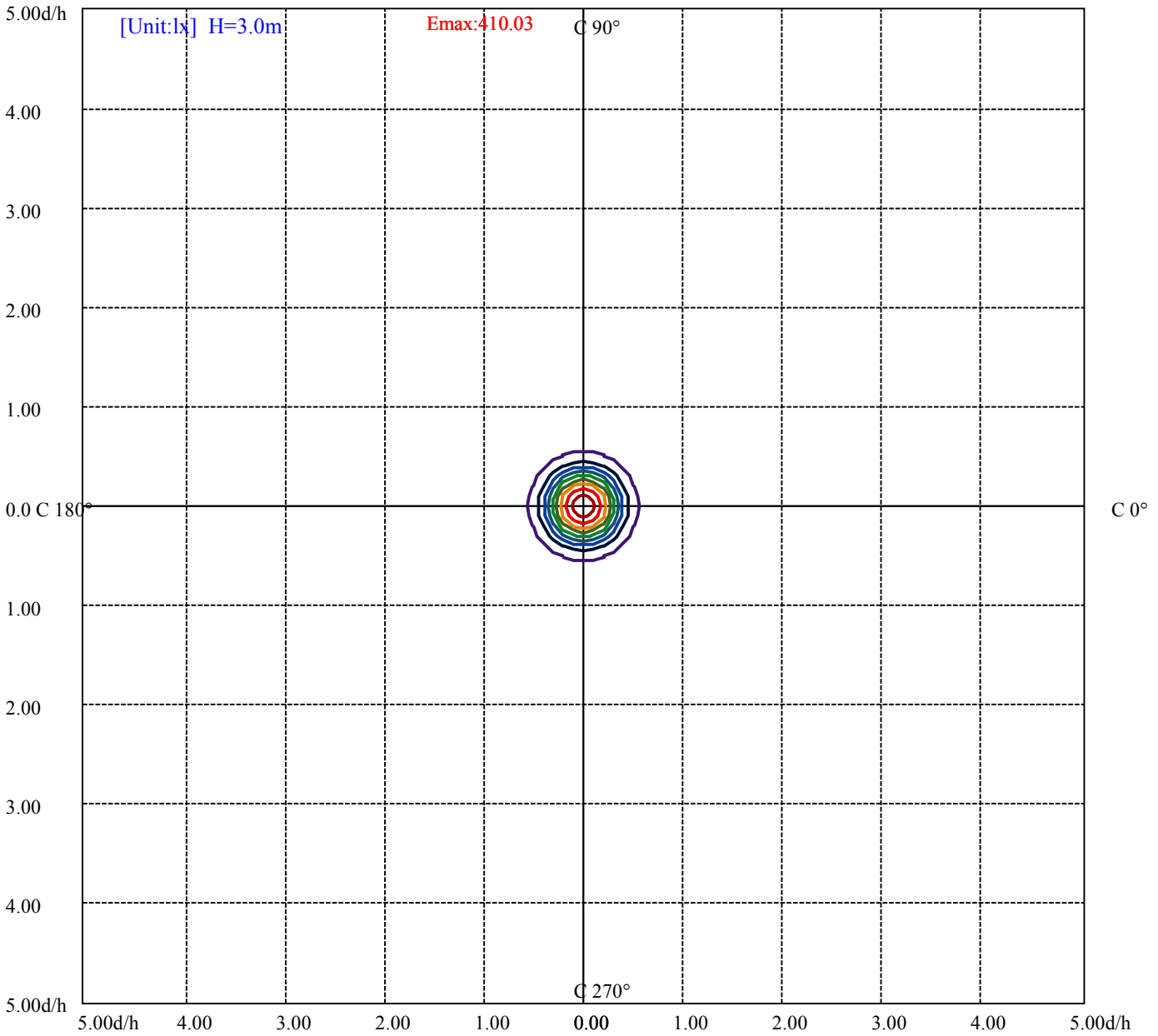
House

[Unit:cd]

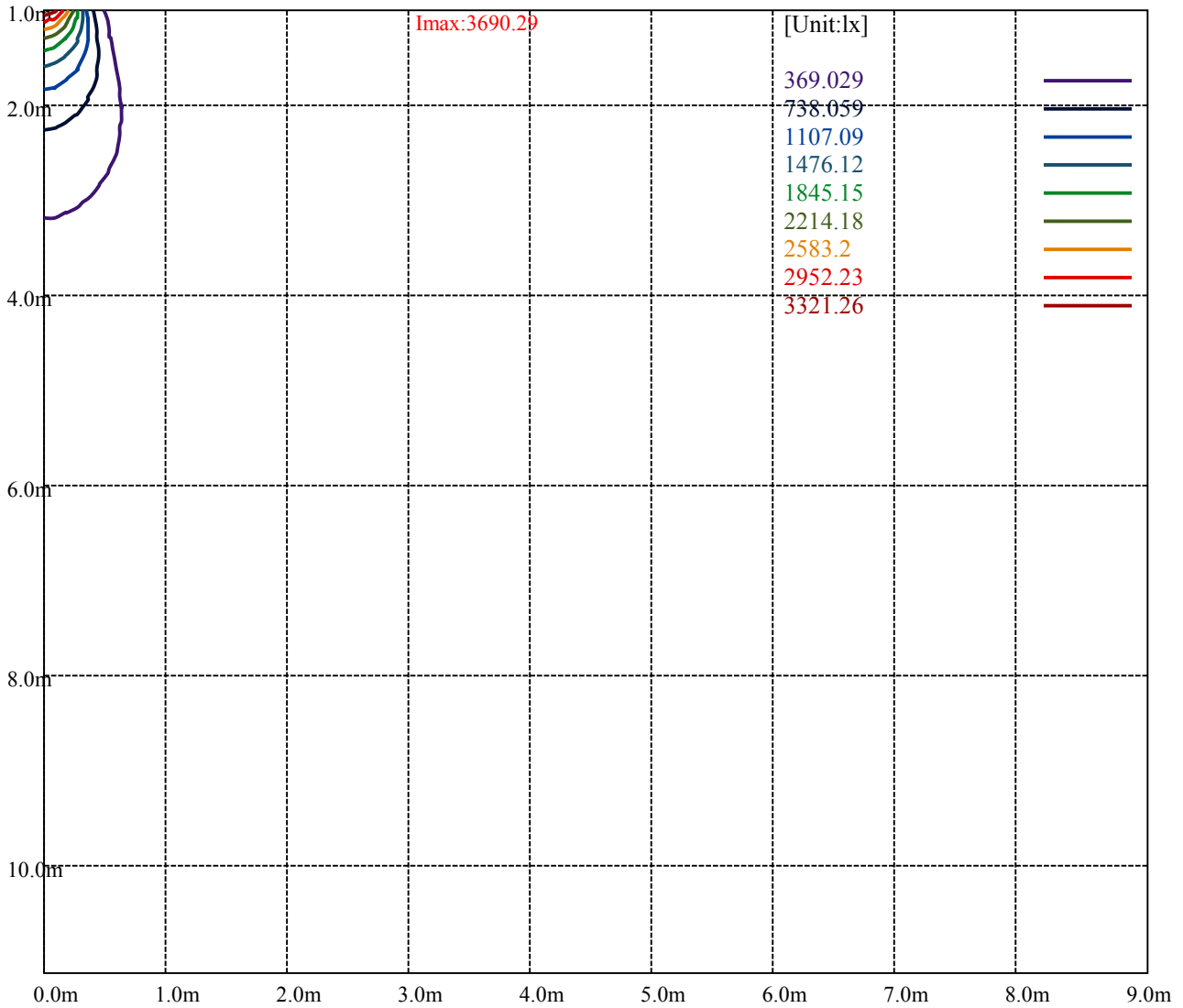
Road

Imax:3690.29

(10%Imax)	369.029	—
(20%Imax)	738.059	—
(30%Imax)	1107.09	—
(40%Imax)	1476.12	—
(50%Imax)	1845.15	—
(60%Imax)	2214.18	—
(70%Imax)	2583.2	—
(80%Imax)	2952.23	—
(90%Imax)	3321.26	—



- (10%Emax) 41.00322
- (20%Emax) 82.00644
- (30%Emax) 123.01
- (40%Emax) 164.0133
- (50%Emax) 205.0167
- (60%Emax) 246.0189
- (70%Emax) 287.0222
- (80%Emax) 328.0255
- (90%Emax) 369.0289



Luminance Table

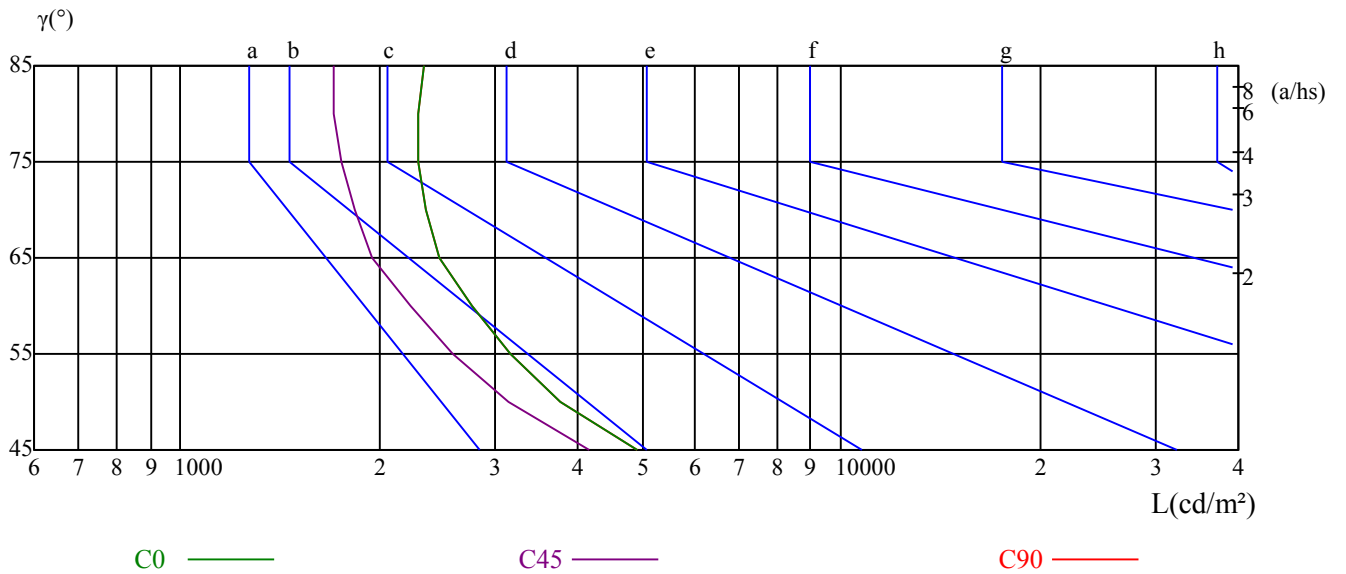
γ	45	50	55	60	65	70	75	80	85
C0	4917	3770	3151	2759	2462	2351	2291	2290	2335
C45	4161	3142	2586	2228	1955	1832	1750	1711	1701
C90	4917	3770	3151	2759	2462	2351	2291	2290	2335

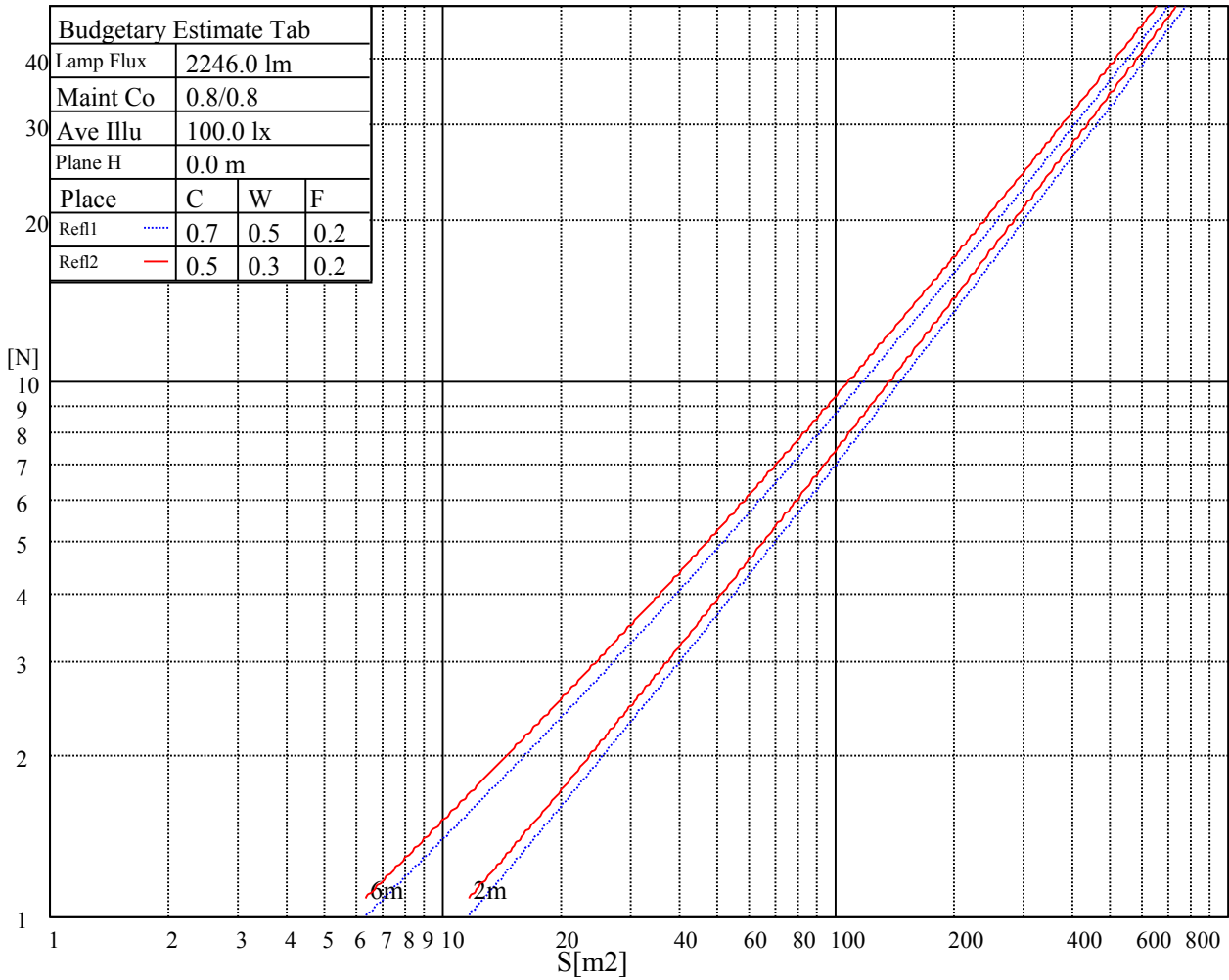
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6594	6594	6594	8981	8981	8981	23219	23219	23219

Glare Table

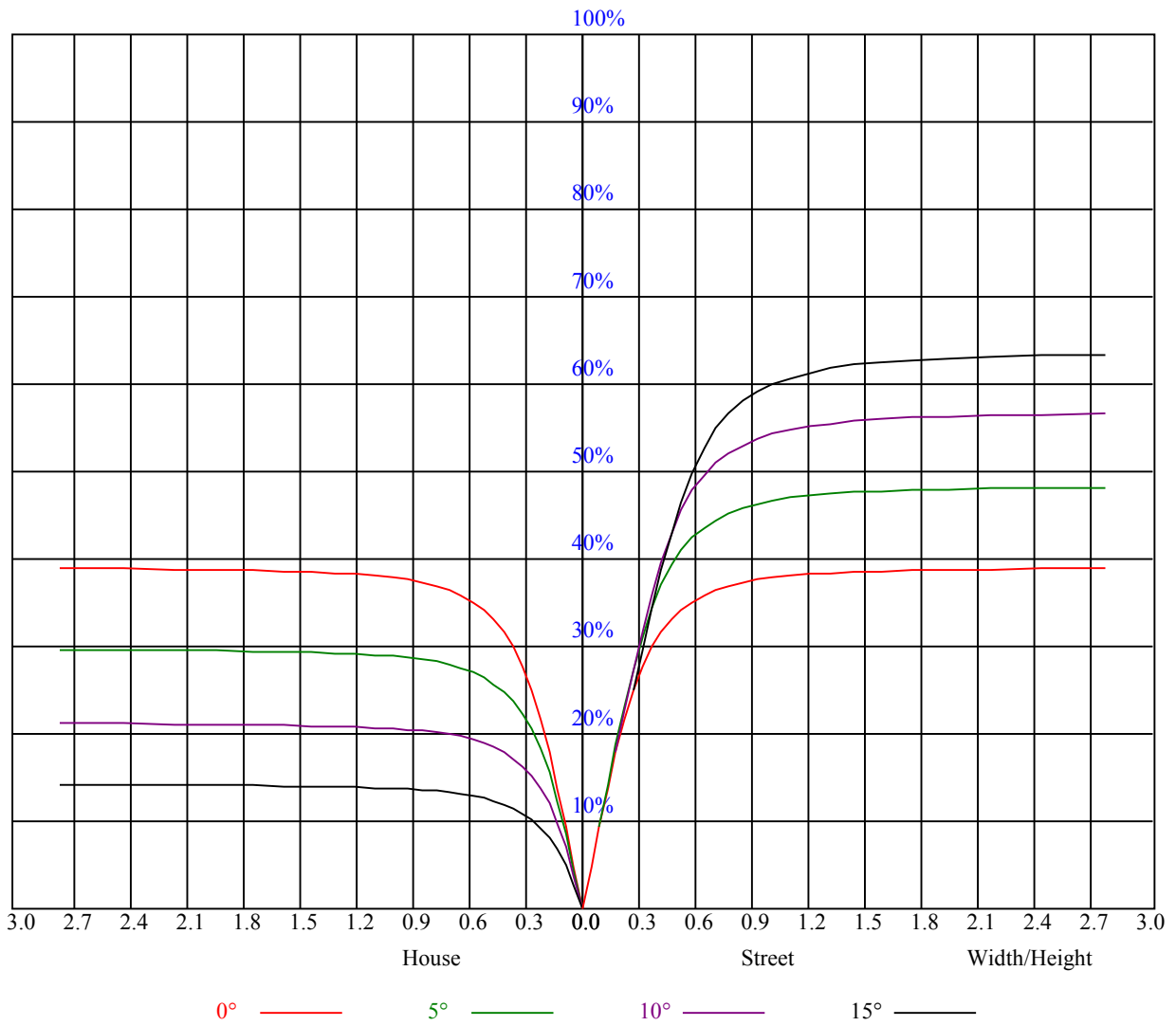
Glare	Quality	Service Values Illuminance(lx)							
		a	b	c	d	e	f	g	h
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.94	0.94	0.94	0.91	0.91	0.91	0.87	0.87	0.87	0.84	0.84	0.84	0.80	0.80	0.80	0.79
1	0.87	0.85	0.83	0.85	0.84	0.82	0.82	0.81	0.80	0.79	0.78	0.77	0.77	0.76	0.75	0.74
2	0.82	0.79	0.76	0.80	0.78	0.75	0.78	0.76	0.74	0.75	0.74	0.72	0.73	0.72	0.71	0.69
3	0.77	0.73	0.70	0.76	0.73	0.70	0.74	0.71	0.69	0.72	0.70	0.68	0.70	0.68	0.67	0.66
4	0.73	0.69	0.66	0.72	0.68	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.67	0.65	0.63	0.62
5	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.61	0.66	0.63	0.61	0.65	0.62	0.60	0.59
6	0.66	0.62	0.59	0.65	0.61	0.58	0.64	0.61	0.58	0.63	0.60	0.58	0.62	0.59	0.57	0.56
7	0.63	0.59	0.56	0.62	0.58	0.55	0.61	0.58	0.55	0.60	0.57	0.55	0.60	0.57	0.55	0.54
8	0.60	0.56	0.53	0.60	0.56	0.53	0.59	0.55	0.53	0.58	0.55	0.52	0.57	0.54	0.52	0.51
9	0.57	0.53	0.51	0.57	0.53	0.51	0.56	0.53	0.50	0.56	0.53	0.50	0.55	0.52	0.50	0.49
10	0.55	0.51	0.49	0.55	0.51	0.49	0.54	0.51	0.48	0.54	0.51	0.48	0.53	0.50	0.48	0.47



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	3684.92	3664.55	3584.17	3453.69	3298.43	3089.21	2861.83	2594.26	2274.93
45.0	3687.68	3652.99	3574.26	3459.19	3297.33	3091.42	2888.26	2625.09	2310.17
90.0	3692.08	3631.52	3521.41	3388.17	3216.39	3013.24	2824.94	2574.99	2287.59
135.0	3696.49	3662.35	3581.42	3452.04	3297.88	3109.03	2912.48	2685.10	2396.05
180.0	3684.92	3657.95	3572.61	3463.05	3303.38	3094.17	2920.74	2690.06	2447.26
225.0	3687.68	3660.70	3571.51	3443.78	3276.96	3072.70	2864.03	2628.39	2348.16
270.0	3692.08	3686.03	3617.21	3493.88	3344.13	3142.62	2941.11	2706.02	2425.23
315.0	3696.49	3671.16	3595.73	3479.01	3296.78	3084.81	2863.48	2577.19	2255.11
360.0	3684.92	3664.55	3584.17	3453.69	3298.43	3089.21	2861.83	2594.26	2274.93
C/γ(°)	18.0	20.0	22.0	24.0	26.0	28.0	30.0	32.0	34.0
0.0	1892.29	1513.50	1153.98	846.22	665.63	532.95	445.41	376.04	315.47
45.0	1983.13	1579.57	1211.79	905.13	692.06	549.46	456.42	377.69	317.68
90.0	1941.29	1539.38	1082.41	889.05	683.86	546.32	456.80	377.47	318.12
135.0	2076.73	1716.66	1348.88	1010.84	779.60	610.58	498.26	415.13	348.51
180.0	2114.72	1755.20	1394.58	1046.46	794.19	625.77	512.41	423.93	360.62
225.0	1988.09	1650.04	1263.54	949.89	725.09	575.56	472.55	392.66	332.76
270.0	2075.08	1736.48	1337.87	1027.90	760.33	590.76	492.75	406.87	342.45
315.0	1893.39	1514.60	1091.93	858.88	653.41	533.39	434.12	361.23	307.93
360.0	1892.29	1513.50	1153.98	846.22	665.63	532.95	445.41	376.04	315.47
C/γ(°)	36.0	38.0	40.0	42.0	44.0	46.0	48.0	50.0	52.0
0.0	280.24	220.23	181.91	146.95	122.67	99.38	80.55	65.24	53.07
45.0	278.03	223.58	191.27	155.15	128.23	105.21	85.50	69.43	57.86
90.0	269.78	227.27	188.24	155.64	126.35	102.18	84.13	67.22	54.40
135.0	294.00	246.43	208.17	172.82	142.43	114.41	95.58	75.48	61.28
180.0	302.20	254.86	213.78	177.28	143.20	116.83	94.81	75.54	61.83
225.0	281.12	237.35	198.31	167.10	135.60	110.61	89.63	71.35	58.03
270.0	290.70	242.96	201.62	168.75	136.71	110.61	90.68	72.07	58.64
315.0	257.55	217.20	182.79	150.08	122.23	101.36	81.70	65.68	54.29
360.0	280.24	220.23	181.91	146.95	122.67	99.38	80.55	65.24	53.07
C/γ(°)	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
0.0	42.61	34.80	27.69	22.46	20.04	18.17	16.74	15.58	14.48
45.0	45.64	36.34	29.90	23.73	20.70	18.88	17.34	15.97	14.92
90.0	43.38	34.69	27.58	23.01	20.26	18.39	17.01	15.80	14.76
135.0	50.21	38.98	30.83	24.94	21.09	18.99	17.45	16.08	14.98
180.0	48.95	39.03	31.00	24.94	21.09	18.94	17.34	15.97	14.92
225.0	47.18	37.88	29.79	24.17	20.76	18.72	17.12	15.86	14.70
270.0	47.73	38.43	30.39	24.67	20.92	18.83	17.29	16.02	14.92
315.0	43.49	34.96	27.97	22.79	20.04	18.33	16.79	15.64	14.53
360.0	42.61	34.80	27.69	22.46	20.04	18.17	16.74	15.58	14.48
C/γ(°)	72.0	74.0	76.0	78.0	80.0	82.0	84.0	86.0	88.0
0.0	13.54	12.72	11.84	11.12	10.41	9.74	9.03	8.15	7.60
45.0	13.93	13.16	12.28	11.45	10.79	10.13	9.47	8.42	7.71
90.0	13.76	12.99	12.17	11.34	10.63	10.02	9.36	8.26	7.65
135.0	14.04	13.16	12.22	11.40	10.74	9.86	9.14	8.48	7.82
180.0	13.93	12.99	12.11	11.34	10.57	9.80	9.08	8.37	7.76
225.0	13.82	12.94	12.06	11.34	10.46	9.69	9.03	8.31	7.71
270.0	14.04	13.16	12.28	11.62	10.79	9.91	9.30	8.48	7.87
315.0	13.54	12.77	11.95	11.18	10.41	9.74	8.97	8.26	7.65
360.0	13.54	12.72	11.84	11.12	10.41	9.74	9.03	8.15	7.60

Intensity data(cd)

C/ γ (°)	90.0
0.0	7.49
45.0	7.43
90.0	7.43
135.0	7.49
180.0	7.43
225.0	7.43
270.0	7.54
315.0	7.43
360.0	7.49