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NATA

LumCAT: 2-2159-A
Luminaire: 92.70.151.00+92.70.153.00
Report No: NATA0100
Test No: GC2020011303
LampCAT: CITIZEN LCN-C03A
Lamp flux(lm): 2216.0
Number of Lamps: 1
Length(mm): 0
Phm Type: C

Voltage(V): 33.8800
Current(A): 0.4970
Power (W): 16.8000
PF: 0.0000
Ballast type: DC
Width(mm): 0
Height(mm): 0

Photometric Results

Lumens(lm): 1870.73
Efficiency(%): 84.42%
Lumens(lm)/Power(W): 111.35
Central intensity(cd): 3689.016
Maximum intensity(cd): 3689.016
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=35.3
 [C90/270]Total=35.3
Field angle(10%Imax): [C0/180]Total=75.7
 [C90/270]Total=75.7
Maximum s/h(1/2): C0_180=0.57 C90_270=0.57
Maximum s/h(1/4): C0_180=0.61 C90_270=0.61
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 84.42%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 98.493%

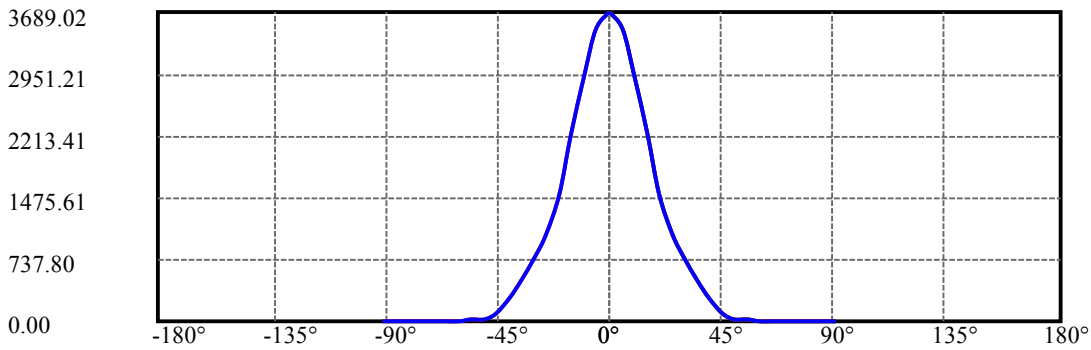
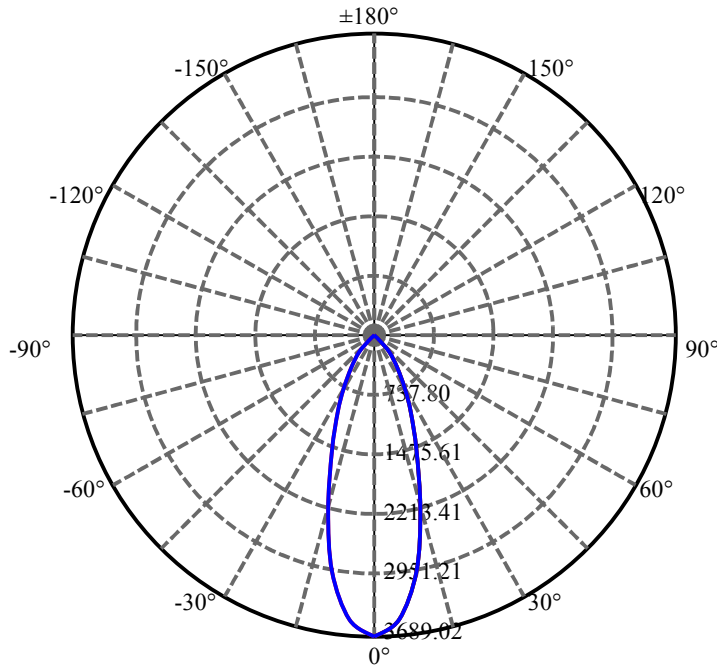
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3689.016	0.000	0	.000%	.000%
5.0	3481.313	85.719	85.719	3.868%	4.582%
10.0	2941.805	229.775	315.494	10.369%	16.865%
15.0	2218.359	306.097	621.592	13.813%	33.227%
20.0	1511.536	307.396	928.988	13.872%	49.659%
25.0	1031.407	266.708	1195.695	12.036%	63.916%
30.0	759.741	226.671	1422.367	10.229%	76.033%
35.0	492.216	184.359	1606.726	8.319%	85.888%
40.0	276.511	128.256	1734.982	5.788%	92.744%
45.0	94.936	68.776	1803.759	3.104%	96.420%
50.0	27.408	24.721	1828.48	1.116%	97.741%
55.0	12.445	8.665	1837.145	.391%	98.205%
60.0	10.849	5.384	1842.53	.243%	98.493%
65.0	9.823	5.025	1847.555	.227%	98.761%
70.0	9.204	4.818	1852.373	.217%	99.019%
75.0	8.761	4.696	1857.069	.212%	99.270%
80.0	8.550	4.632	1861.7	.209%	99.517%
85.0	8.353	4.593	1866.293	.207%	99.763%
90.0	7.854	4.438	1870.731	.200%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1422.37	64.19%	76.03%
0-40	1734.98	78.29%	92.74%
0-60	1842.53	83.15%	98.49%
0-90	1866.29	84.22%	99.76%
0-120	1866.29	84.22%	99.76%
0-180	1870.73	84.42%	100.00%
60-90	29.15	1.32%	1.56%
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%
0-32.01	1496.59	67.54%	80.00%

ZONAL LUMEN SUMMARY

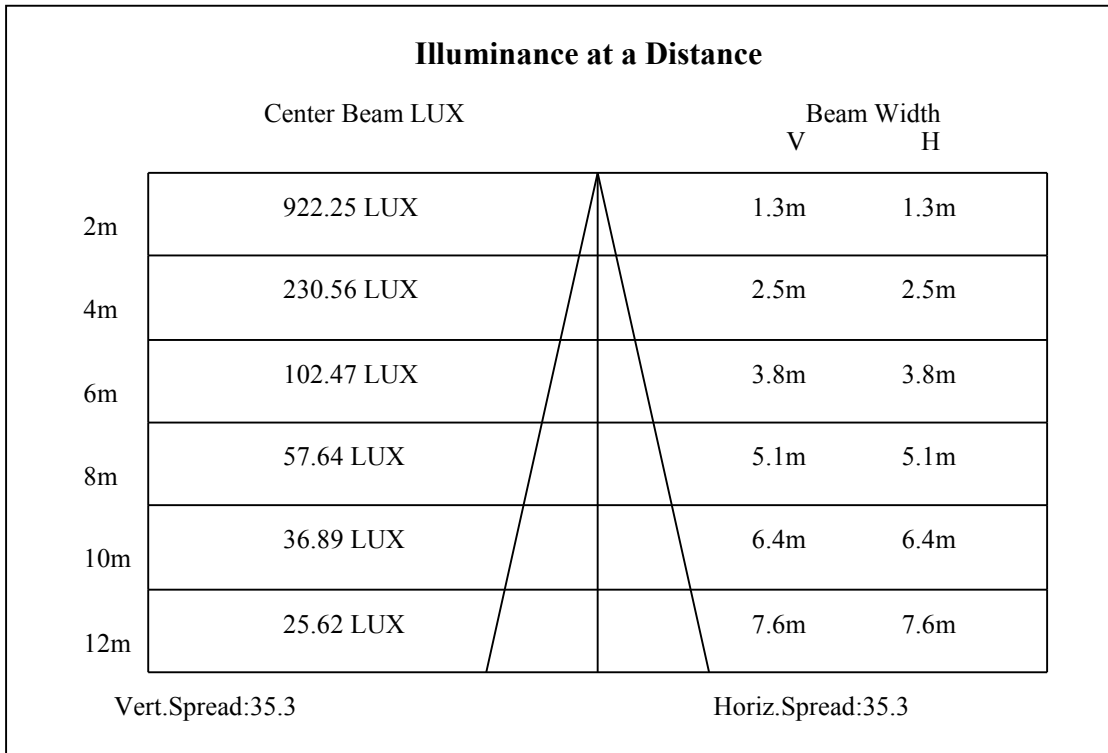
0-10	315.49
10-20	613.49
20-30	493.38
30-40	312.62
40-50	93.50
50-60	14.05
60-70	9.84
70-80	9.33
80-90	4.59
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

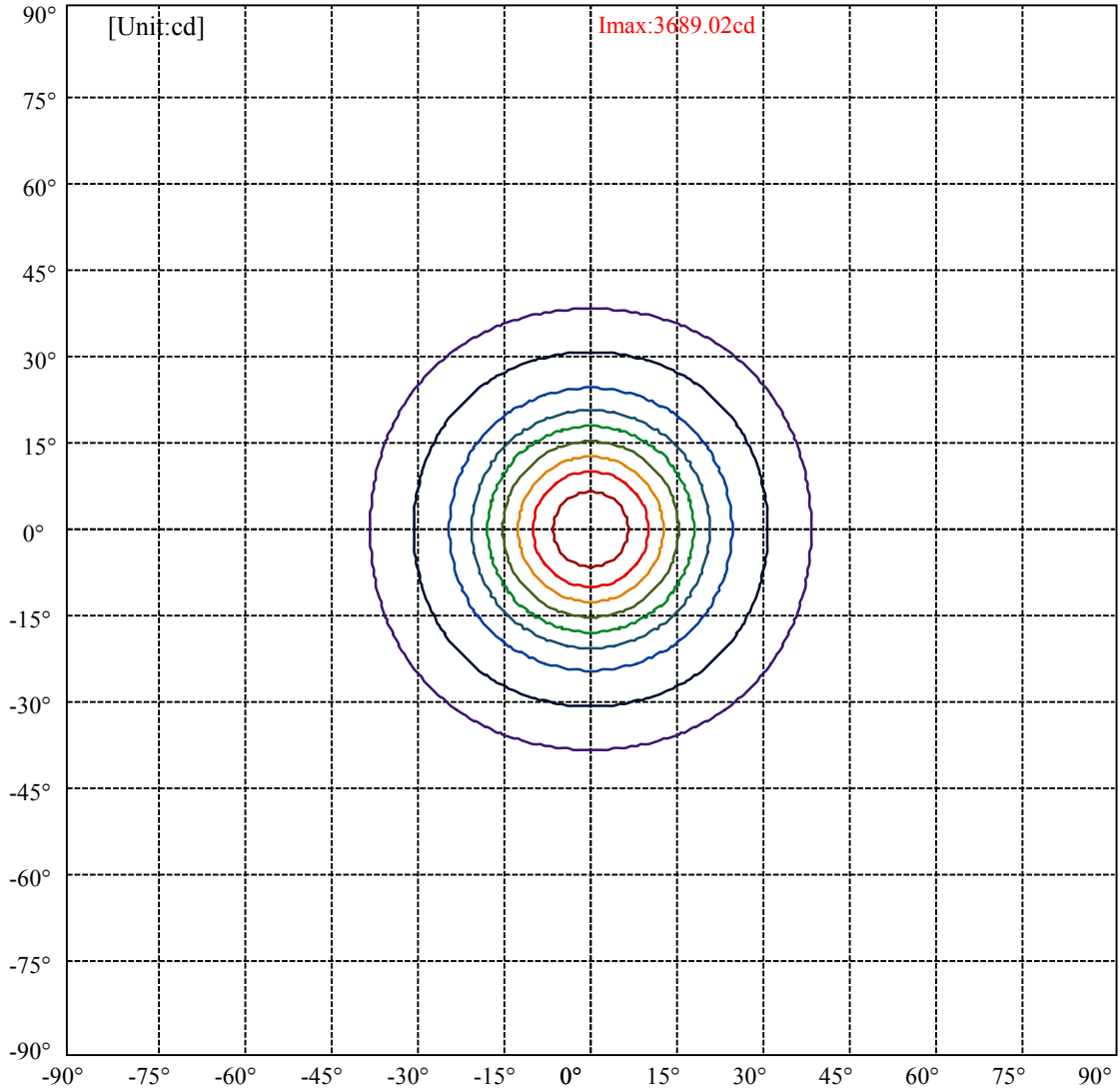


C0(Max): —————
C0/C180: —————
C90/C270: —————

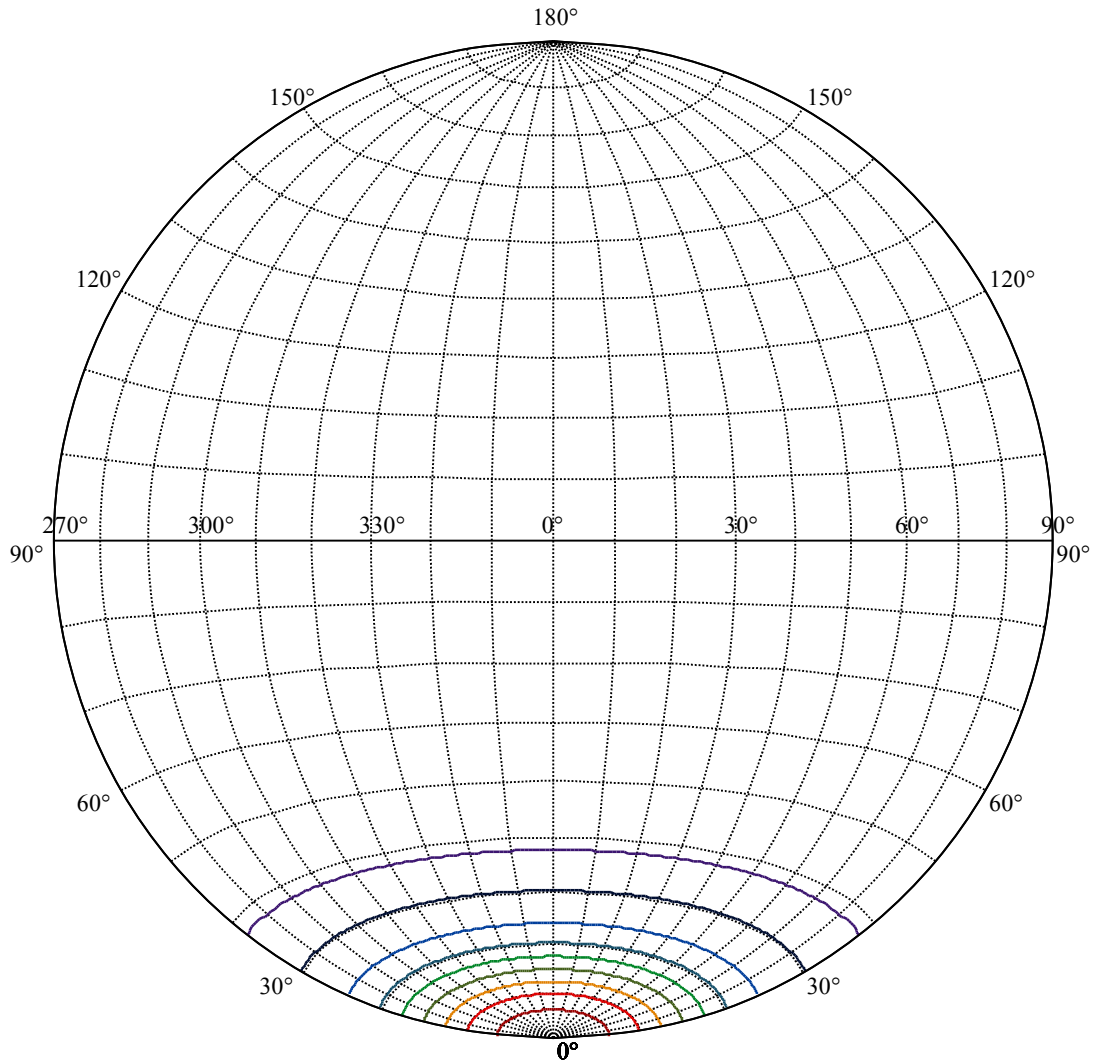
Field angle(10%Imax):C0/180Left:37.9 Right:37.9
:C90/270Left:37.9 Right:37.9

Beam Angle(50%Imax):C0/180Left:17.6 Right:17.6
:C90/270Left:17.6 Right:17.6





(10%Imax) 368.902	—
(20%Imax) 737.803	—
(30%Imax) 1106.7	—
(40%Imax) 1475.61	—
(50%Imax) 1844.51	—
(60%Imax) 2213.41	—
(70%Imax) 2582.31	—
(80%Imax) 2951.21	—
(90%Imax) 3320.11	—



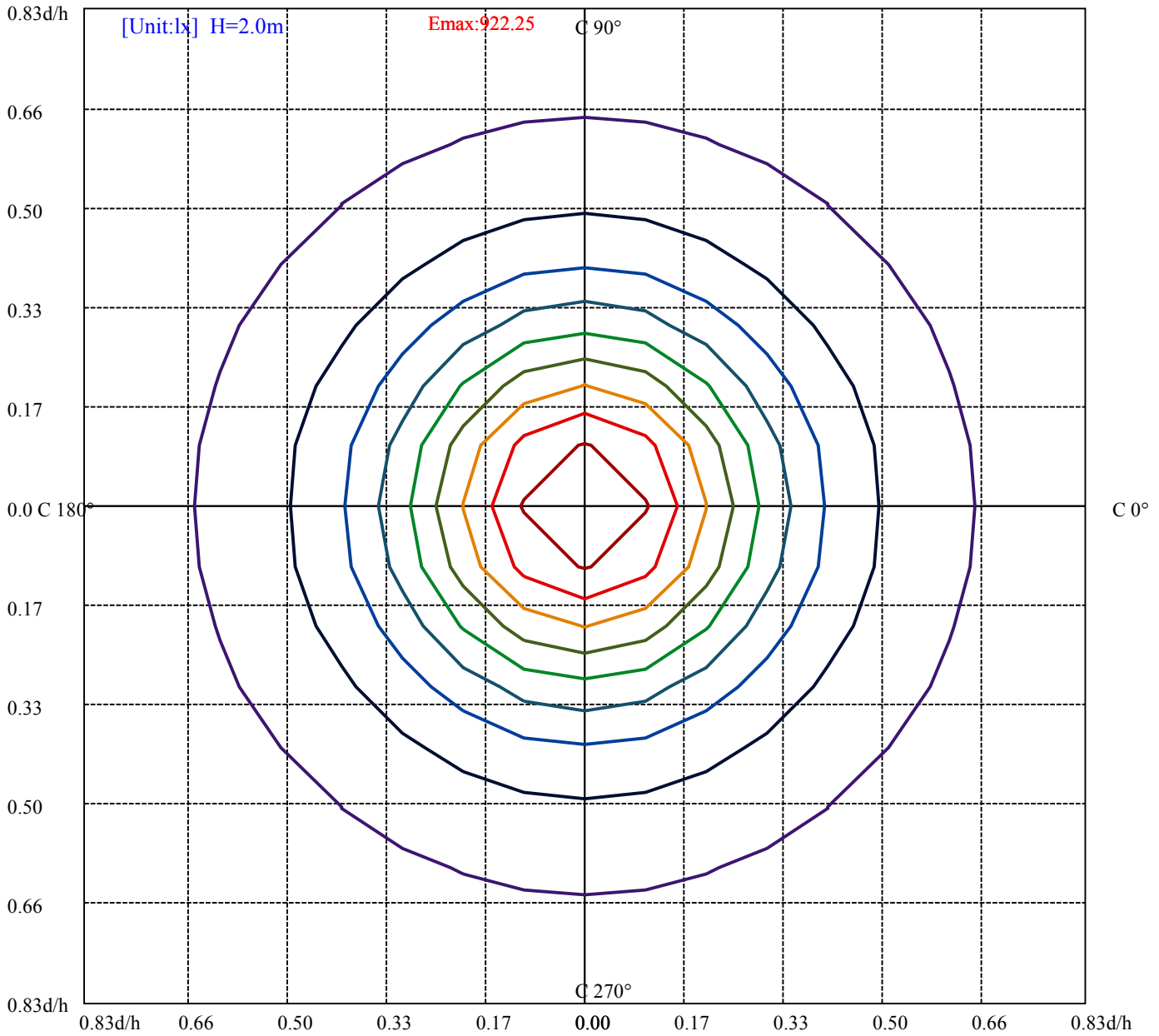
House

[Unit:cd]

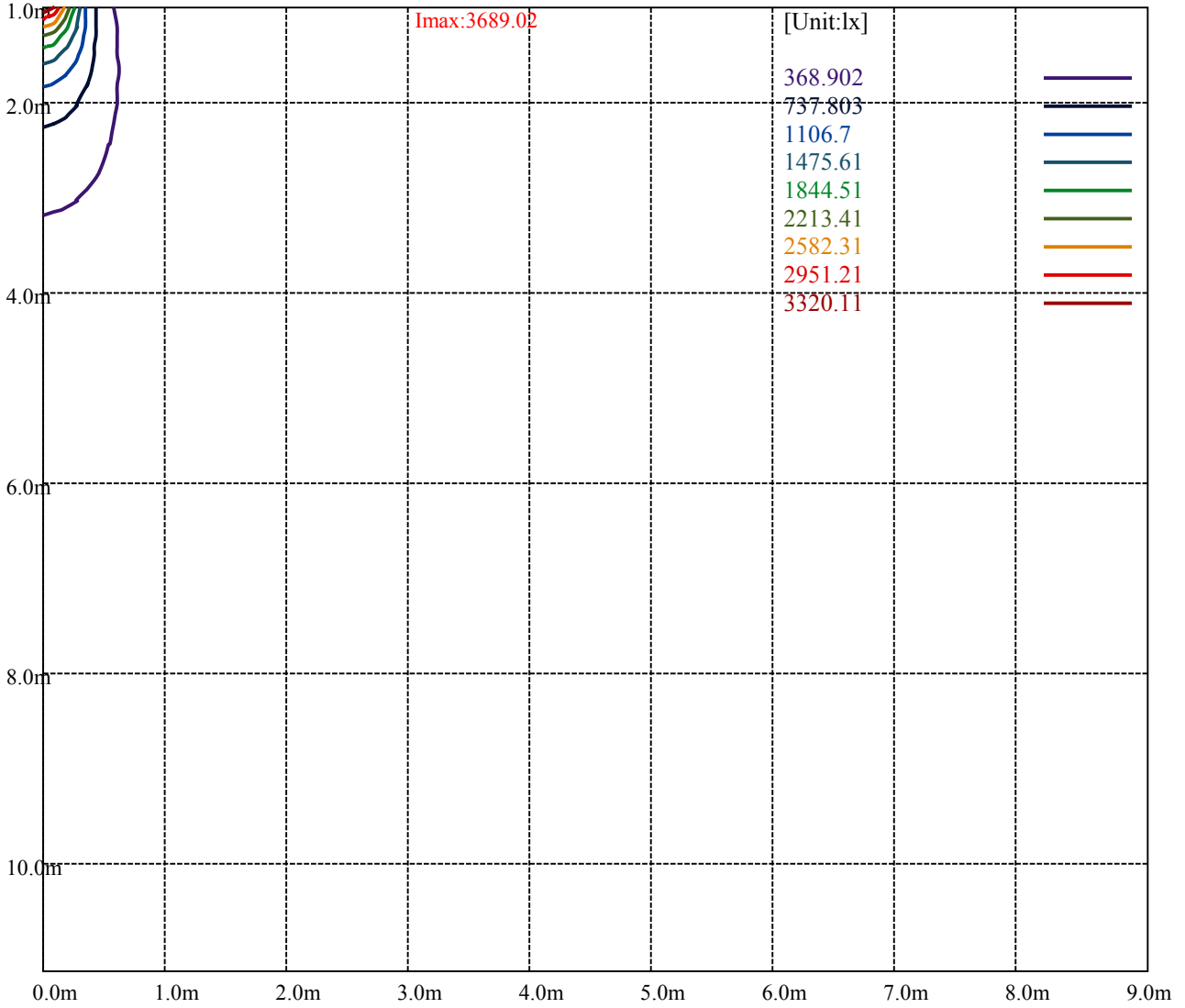
Road

Imax:3689.02

(10%Imax)	368.902	—
(20%Imax)	737.803	—
(30%Imax)	1106.7	—
(40%Imax)	1475.61	—
(50%Imax)	1844.51	—
(60%Imax)	2213.41	—
(70%Imax)	2582.31	—
(80%Imax)	2951.21	—
(90%Imax)	3320.11	—



- (10%Emax) 92.22525
- (20%Emax) 184.4505
- (30%Emax) 276.675
- (40%Emax) 368.9
- (50%Emax) 461.125
- (60%Emax) 553.3525
- (70%Emax) 645.5775
- (80%Emax) 737.8025
- (90%Emax) 830.0275



Luminance Table

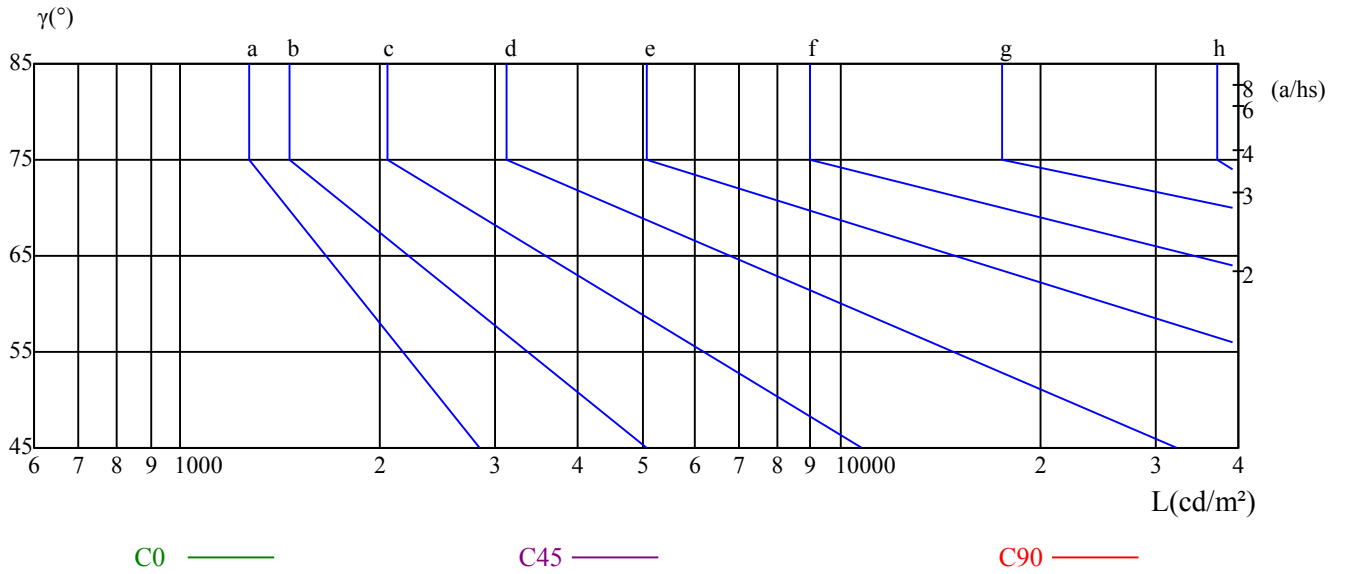
γ	45	50	55	60	65	70	75	80	85
C0	0	0	0	0	0	0	0	0	0
C45	0	0	0	0	0	0	0	0	0
C90	0	0	0	0	0	0	0	0	0

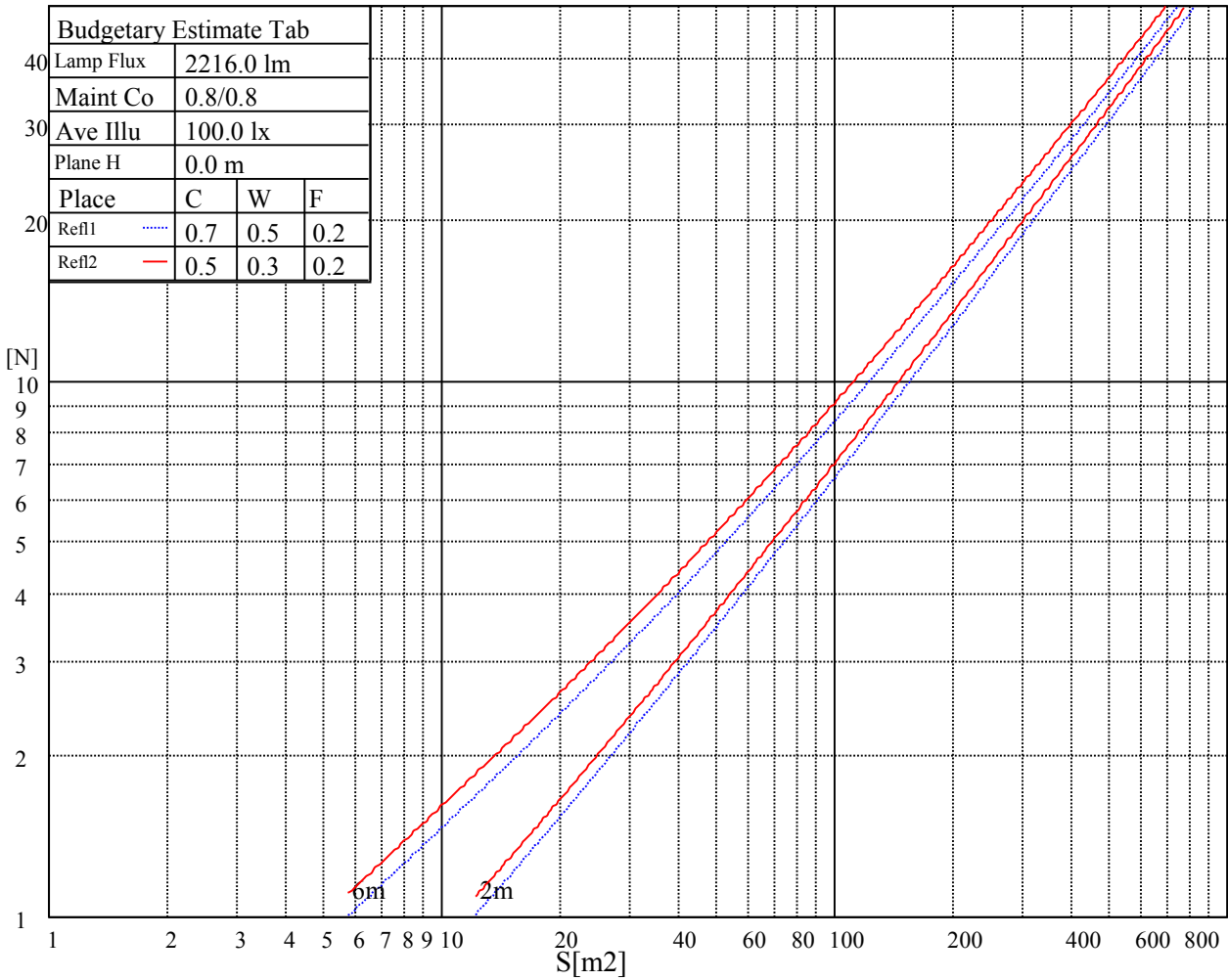
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
0	0	0	0	0	0	0	0	0

Glare Table

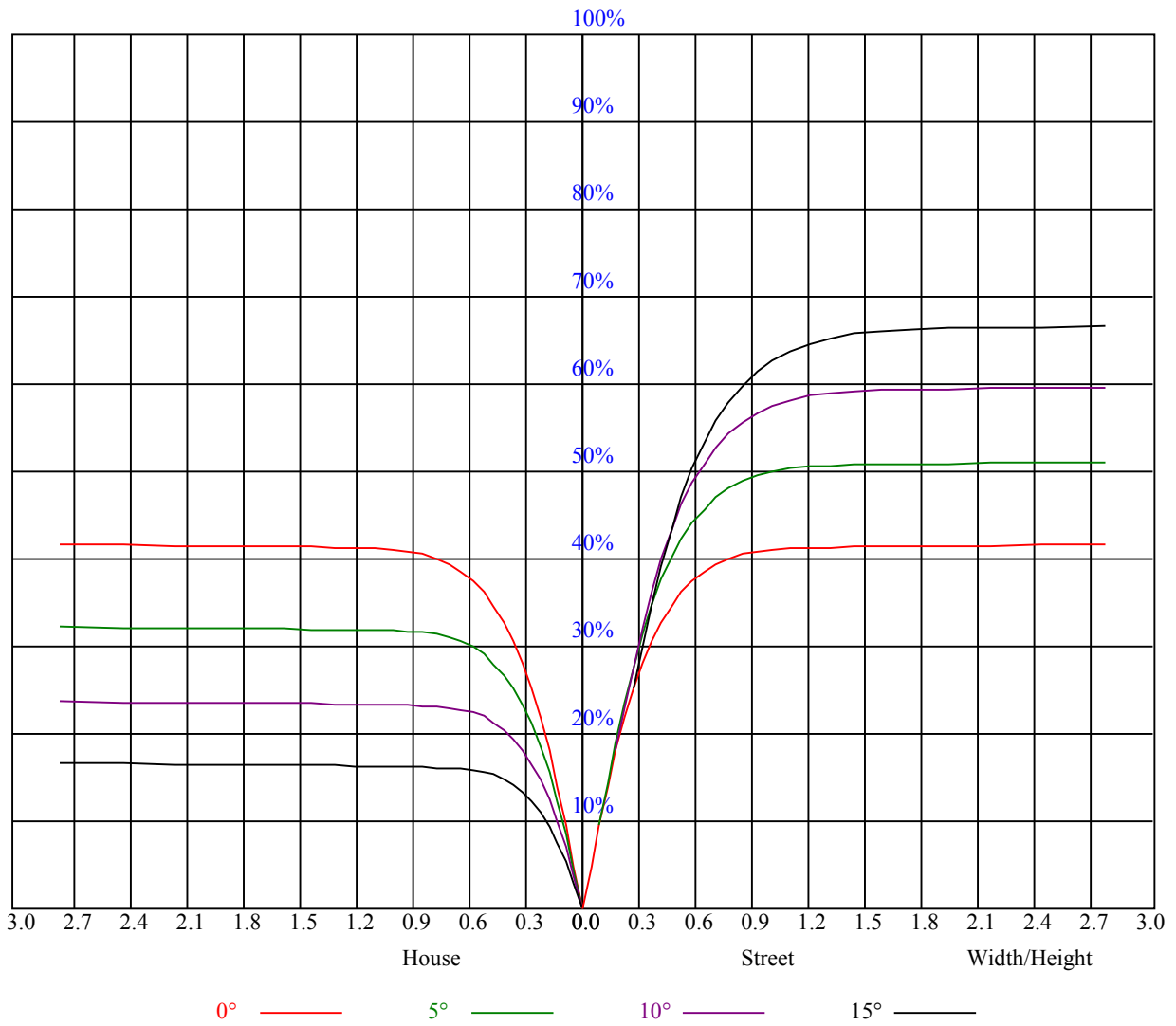
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.86	0.86	0.86	0.84
1	0.94	0.92	0.90	0.92	0.90	0.88	0.88	0.87	0.86	0.85	0.84	0.83	0.82	0.81	0.81	0.79
2	0.88	0.84	0.82	0.86	0.83	0.81	0.83	0.81	0.79	0.81	0.79	0.77	0.79	0.77	0.76	0.74
3	0.82	0.78	0.75	0.81	0.77	0.74	0.79	0.76	0.73	0.77	0.74	0.72	0.75	0.73	0.71	0.70
4	0.77	0.73	0.70	0.76	0.72	0.69	0.75	0.71	0.68	0.73	0.70	0.68	0.71	0.69	0.67	0.66
5	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.64	0.69	0.66	0.64	0.68	0.65	0.63	0.62
6	0.69	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.60	0.66	0.63	0.60	0.65	0.62	0.60	0.58
7	0.65	0.61	0.57	0.65	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.57	0.62	0.59	0.56	0.55
8	0.62	0.58	0.54	0.62	0.57	0.54	0.61	0.57	0.54	0.60	0.56	0.54	0.59	0.56	0.54	0.52
9	0.59	0.55	0.51	0.59	0.54	0.51	0.58	0.54	0.51	0.57	0.54	0.51	0.57	0.53	0.51	0.50
10	0.56	0.52	0.49	0.56	0.52	0.49	0.55	0.52	0.49	0.55	0.51	0.49	0.54	0.51	0.49	0.47



Intensity data(cd)

C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	3664.69	3741.75	3333.38	2666.81	1834.31	1204.31	886.50	630.00	390.94
45.0	3675.94	3686.06	3276.00	2522.25	1751.63	1162.69	865.13	594.56	354.38
90.0	3700.69	3447.00	2817.56	2129.06	1448.44	976.73	740.08	473.23	229.16
135.0	3714.75	3381.75	2787.19	2034.56	1396.69	941.06	707.63	442.13	290.25
180.0	3664.69	3209.63	2585.81	1857.94	1113.98	879.24	627.69	343.13	171.11
225.0	3675.94	3273.75	2691.56	1973.25	1352.25	945.96	685.74	386.61	195.24
270.0	3700.69	3518.44	2986.88	2314.13	1586.25	1085.63	797.06	524.81	290.81
315.0	3714.75	3592.13	3056.06	2248.88	1608.75	1055.64	768.09	543.26	290.19
360.0	3664.69	3741.75	3333.38	2666.81	1834.31	1204.31	886.50	630.00	390.94
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	151.71	46.80	13.89	11.36	10.18	9.45	8.94	8.72	8.49
45.0	133.76	35.94	11.81	10.63	9.79	9.17	8.72	8.38	8.16
90.0	78.64	19.46	11.42	10.41	9.56	9.06	8.55	8.38	8.16
135.0	69.36	21.15	12.49	10.97	10.07	9.51	9.11	9.00	8.66
180.0	56.64	16.65	11.87	10.46	9.45	8.89	8.55	8.33	8.10
225.0	65.70	17.66	11.81	10.52	9.56	8.94	8.55	8.33	8.21
270.0	96.41	28.41	12.88	11.08	9.84	9.17	8.66	8.44	8.27
315.0	107.27	33.19	13.39	11.36	10.13	9.45	9.00	8.83	8.78
360.0	151.71	46.80	13.89	11.36	10.18	9.45	8.94	8.72	8.49
C/γ(°)	90.0								
0.0	8.04								
45.0	7.88								
90.0	7.76								
135.0	7.82								
180.0	7.88								
225.0	7.76								
270.0	7.82								
315.0	7.88								
360.0	8.04								