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## Nata

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LumCAT: LN01D05036DA-N

Luminaire: 97.70.234.00

Report No: 201231-B013

Test No: 201231-C013

LampCAT: CITIZEN CLU028 LES9.8

Lamp flux(lm): 1521.0

Number of Lamps: 1

Length(mm): 92

Phm Type: C

Voltage(V): 36.9600

Current(A): 0.3800

Power (W): 14.0440

PF: 0.0000

Ballast type: DC

Width(mm): 92

Height(mm): 50

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## Photometric Results

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Lumens(lm): 1392.92

Efficiency(%): 91.58%

Lumens(lm)/Power(W): 99.18

Central intensity(cd): 2701.266

Maximum intensity(cd): 2701.266

Angle of maximum intensity: C=0.0  $\gamma$ =0.0

Beam Angle(50%Imax): [C0/180]Total=40.8

[C90/270]Total=40.8

Field angle(10%Imax): [C0/180]Total=64.8

[C90/270]Total=64.8

Maximum s/h(1/2): C0\_180=0.67 C90\_270=0.67

Maximum s/h(1/4): C0\_180=0.64 C90\_270=0.64

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 91.58%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 96.875%

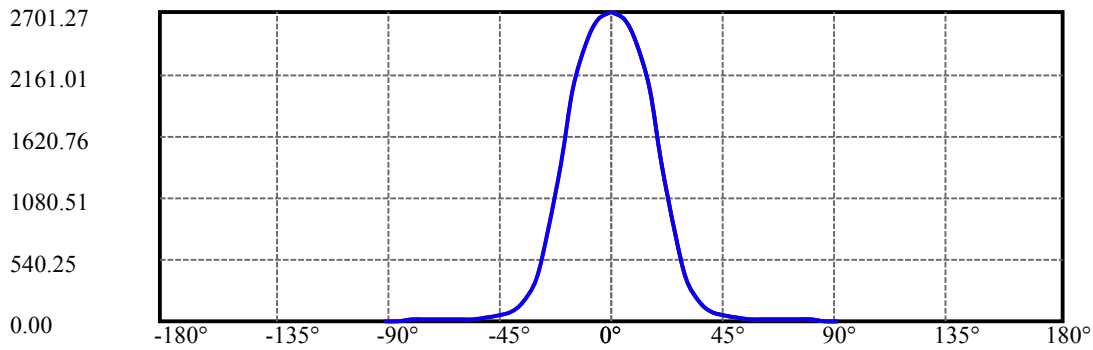
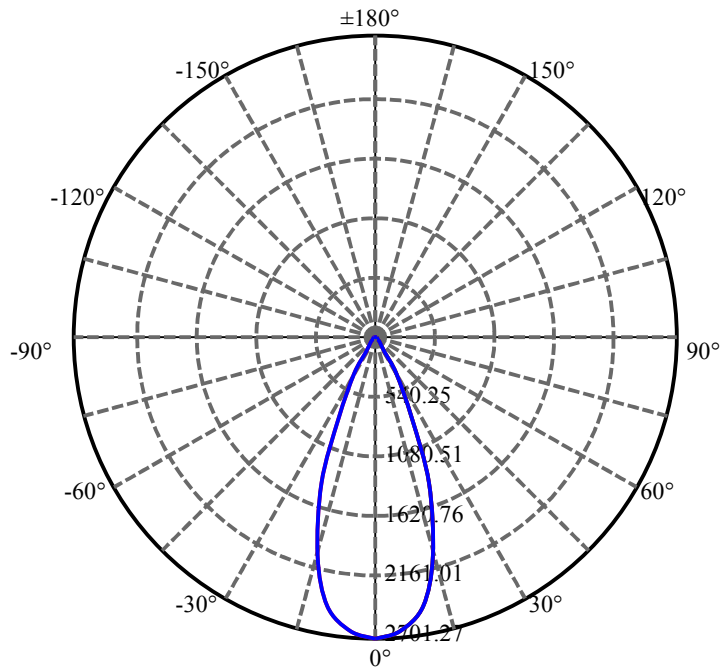
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2701.266	0.000	0	.000%	.000%
5.0	2638.055	63.830	63.83	4.197%	4.582%
10.0	2437.523	181.569	245.399	11.938%	17.618%
15.0	2022.680	264.576	509.976	17.395%	36.612%
20.0	1396.104	281.756	791.732	18.524%	56.840%
25.0	793.259	229.624	1021.355	15.097%	73.325%
30.0	371.215	147.365	1168.72	9.689%	83.904%
35.0	162.738	78.628	1247.349	5.170%	89.549%
40.0	82.427	40.904	1288.253	2.689%	92.486%
45.0	48.199	24.187	1312.439	1.590%	94.222%
50.0	31.873	16.180	1328.619	1.064%	95.384%
55.0	22.134	11.743	1340.362	.772%	96.227%
60.0	16.931	9.030	1349.392	.594%	96.875%
65.0	13.859	7.485	1356.877	.492%	97.412%
70.0	15.209	7.360	1364.237	.484%	97.941%
75.0	18.021	8.686	1372.923	.571%	98.564%
80.0	17.339	9.461	1382.384	.622%	99.244%
85.0	7.552	6.763	1389.147	.445%	99.729%
90.0	6.230	3.773	1392.921	.248%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1168.72	76.84%	83.90%
0-40	1288.25	84.70%	92.49%
0-60	1349.39	88.72%	96.87%
0-90	1389.15	91.33%	99.73%
0-120	1389.15	91.33%	99.73%
0-180	1392.92	91.58%	100.00%
60-90	48.79	3.21%	3.50%
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%
0-28.15	1114.34	73.26%	80.00%

ZONAL LUMEN SUMMARY

0-10	245.40
10-20	546.33
20-30	376.99
30-40	119.53
40-50	40.37
50-60	20.77
60-70	14.85
70-80	18.15
80-90	6.76
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: —————

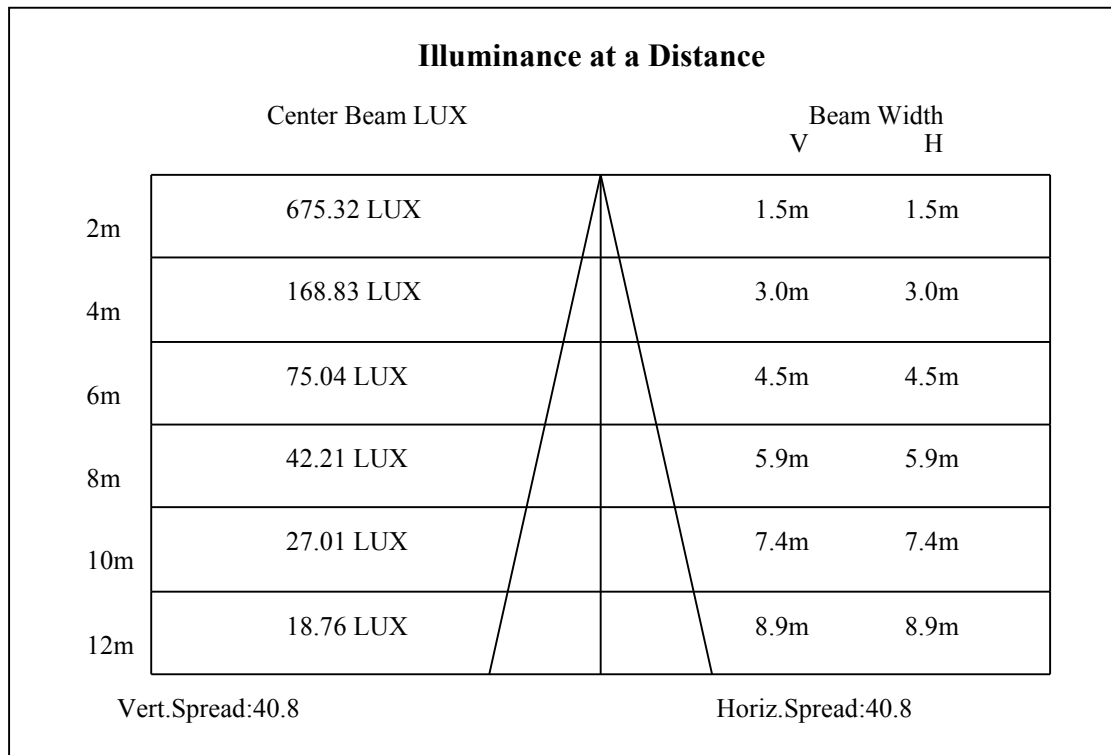
C90/C270: —————

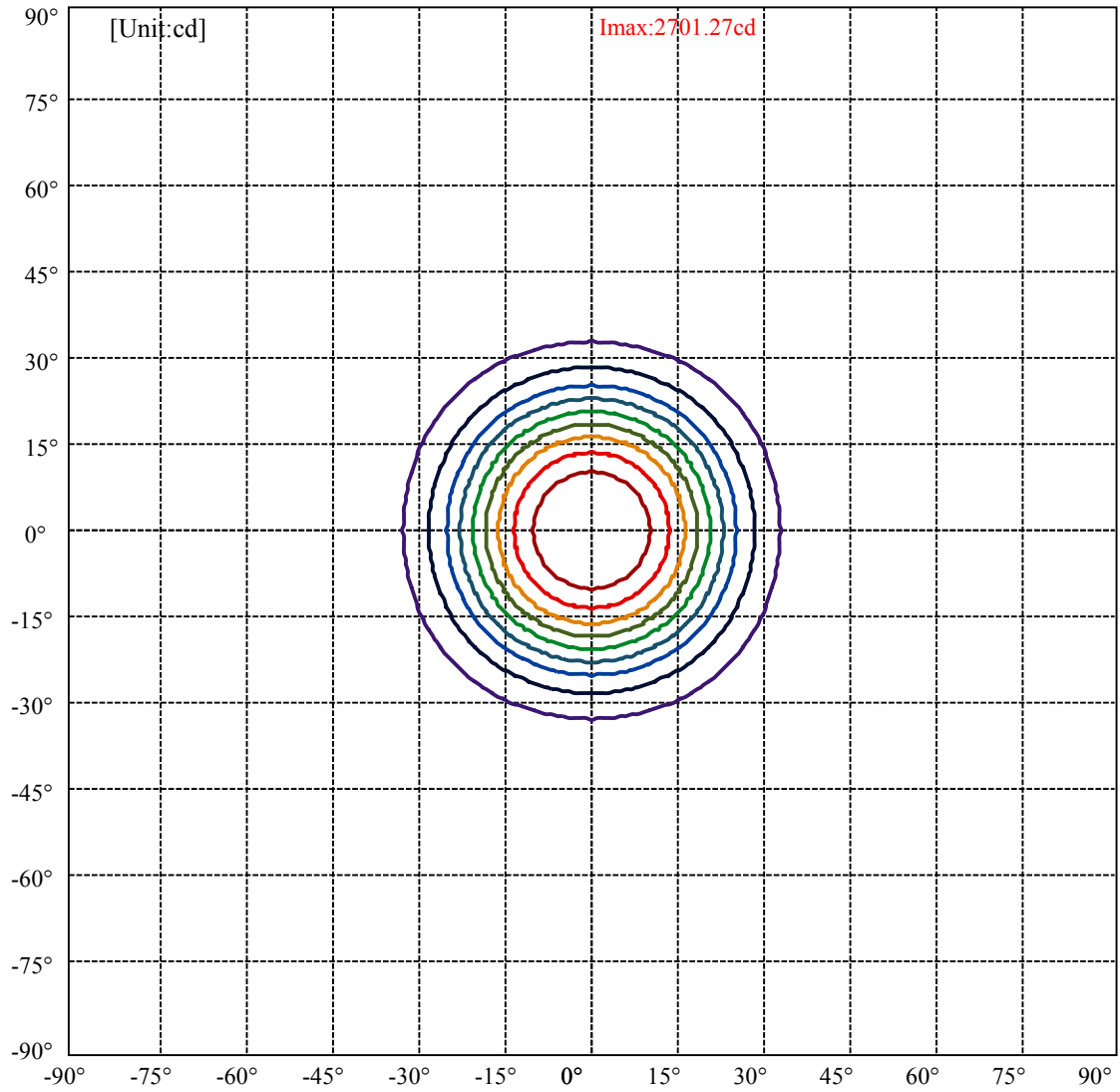
Field angle(10%Imax):C0/180Left:32.4 Right:32.4

:C90/270Left:32.4 Right:32.4

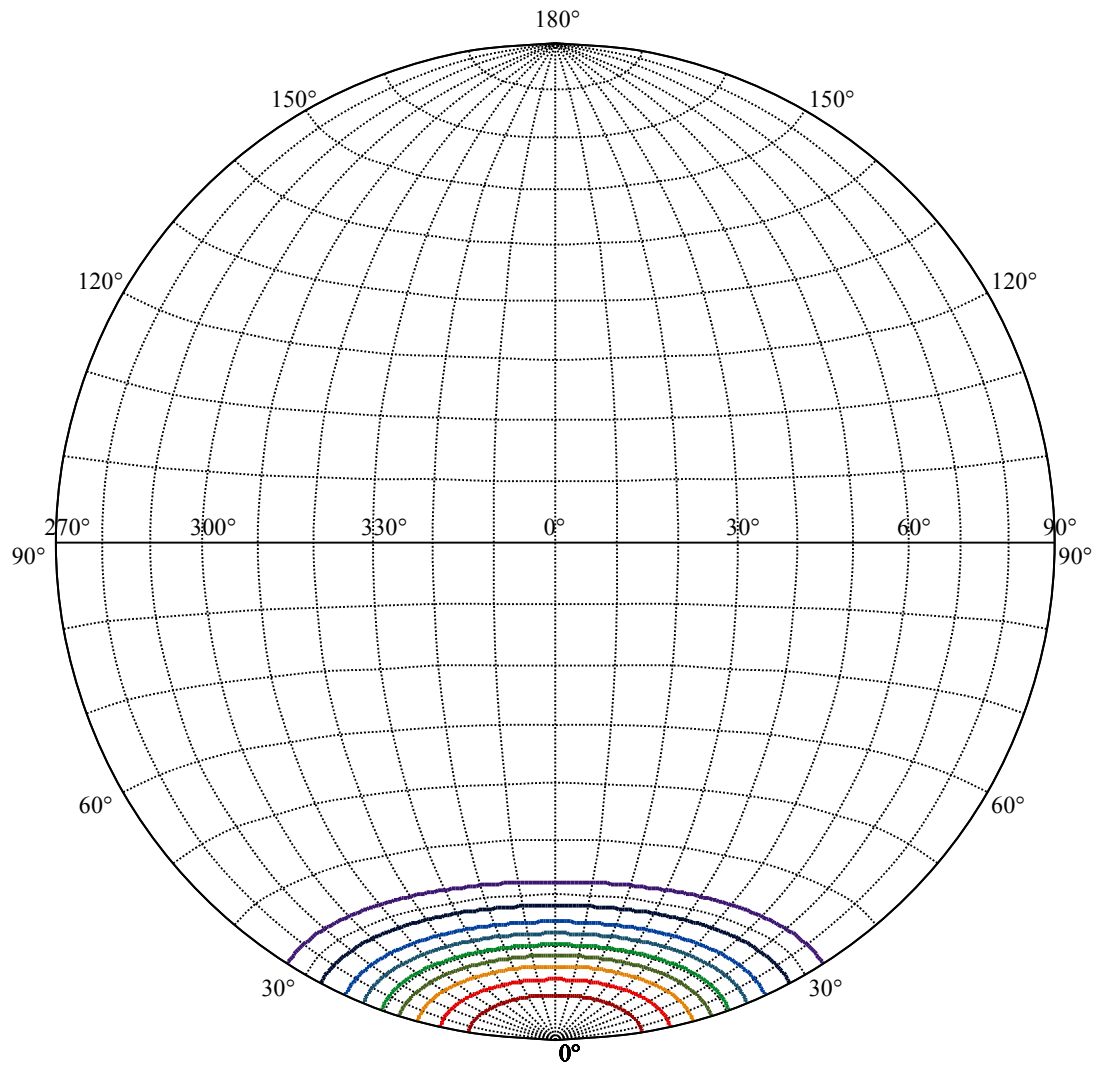
Beam Angle(50%Imax):C0/180Left:20.4 Right:20.4

:C90/270Left:20.4 Right:20.4





(10%Imax) 270.127	—
(20%Imax) 540.253	—
(30%Imax) 810.38	—
(40%Imax) 1080.51	—
(50%Imax) 1350.63	—
(60%Imax) 1620.76	—
(70%Imax) 1890.89	—
(80%Imax) 2161.01	—
(90%Imax) 2431.14	—



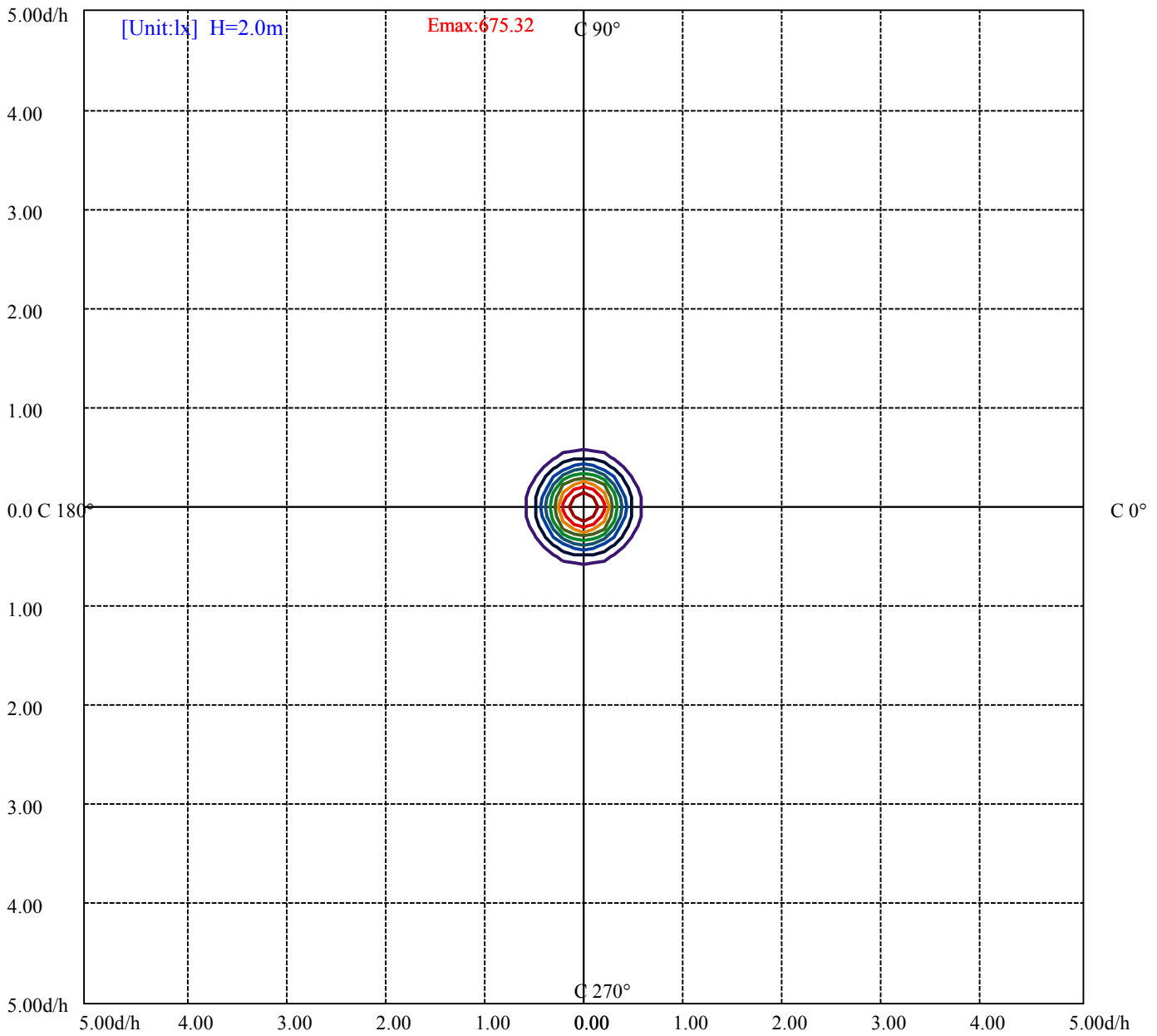
House

[Unit:cd]

Road

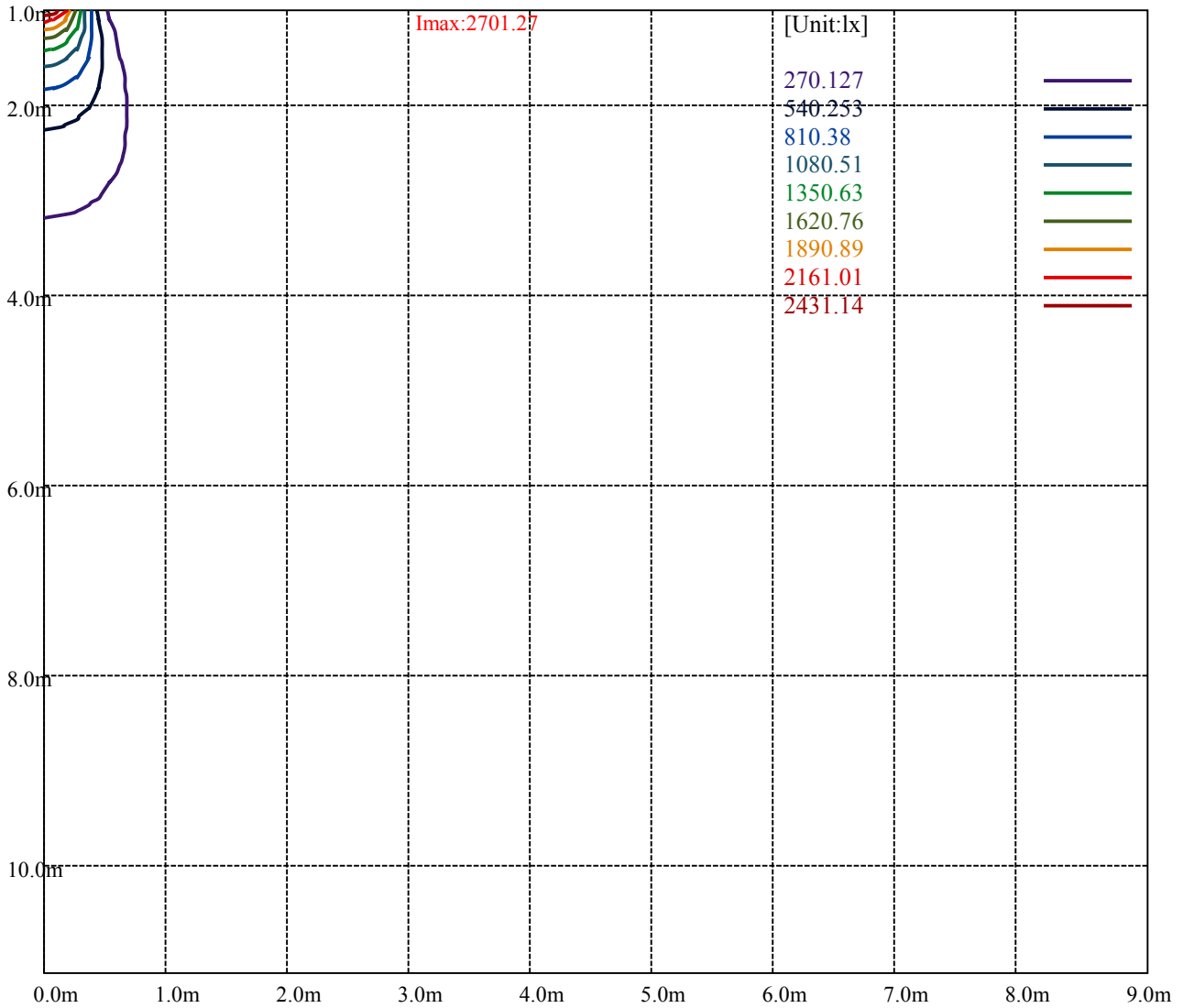
**Imax:2701.27**

(10%Imax) 270.127	—
(20%Imax) 540.253	—
(30%Imax) 810.38	—
(40%Imax) 1080.51	—
(50%Imax) 1350.63	—
(60%Imax) 1620.76	—
(70%Imax) 1890.89	—
(80%Imax) 2161.01	—
(90%Imax) 2431.14	—



(10%Emax) 67.5315	—
(20%Emax) 135.0632	—
(30%Emax) 202.5948	—
(40%Emax) 270.1275	—
(50%Emax) 337.6575	—
(60%Emax) 405.19	—
(70%Emax) 472.72	—
(80%Emax) 540.2525	—
(90%Emax) 607.785	—





Luminance Table

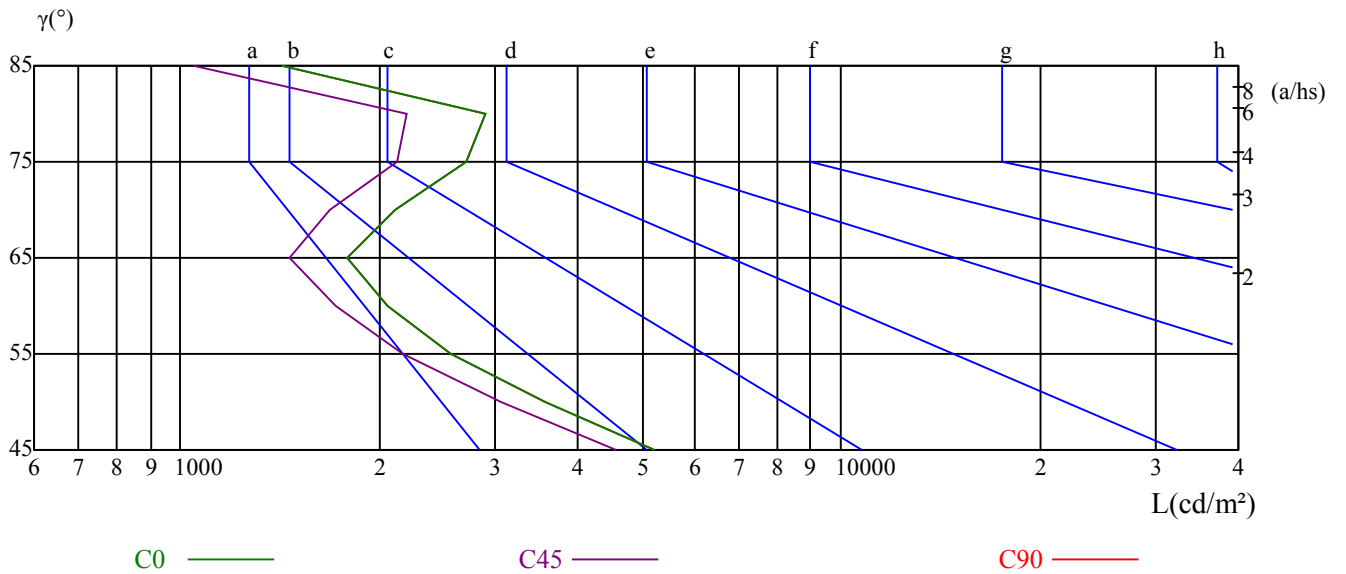
$\gamma$	45	50	55	60	65	70	75	80	85
C0	5218	3555	2567	2061	1789	2107	2717	2890	1419
C45	4554	3058	2174	1716	1463	1688	2127	2201	1046
C90	5218	3555	2567	2061	1789	2107	2717	2890	1419

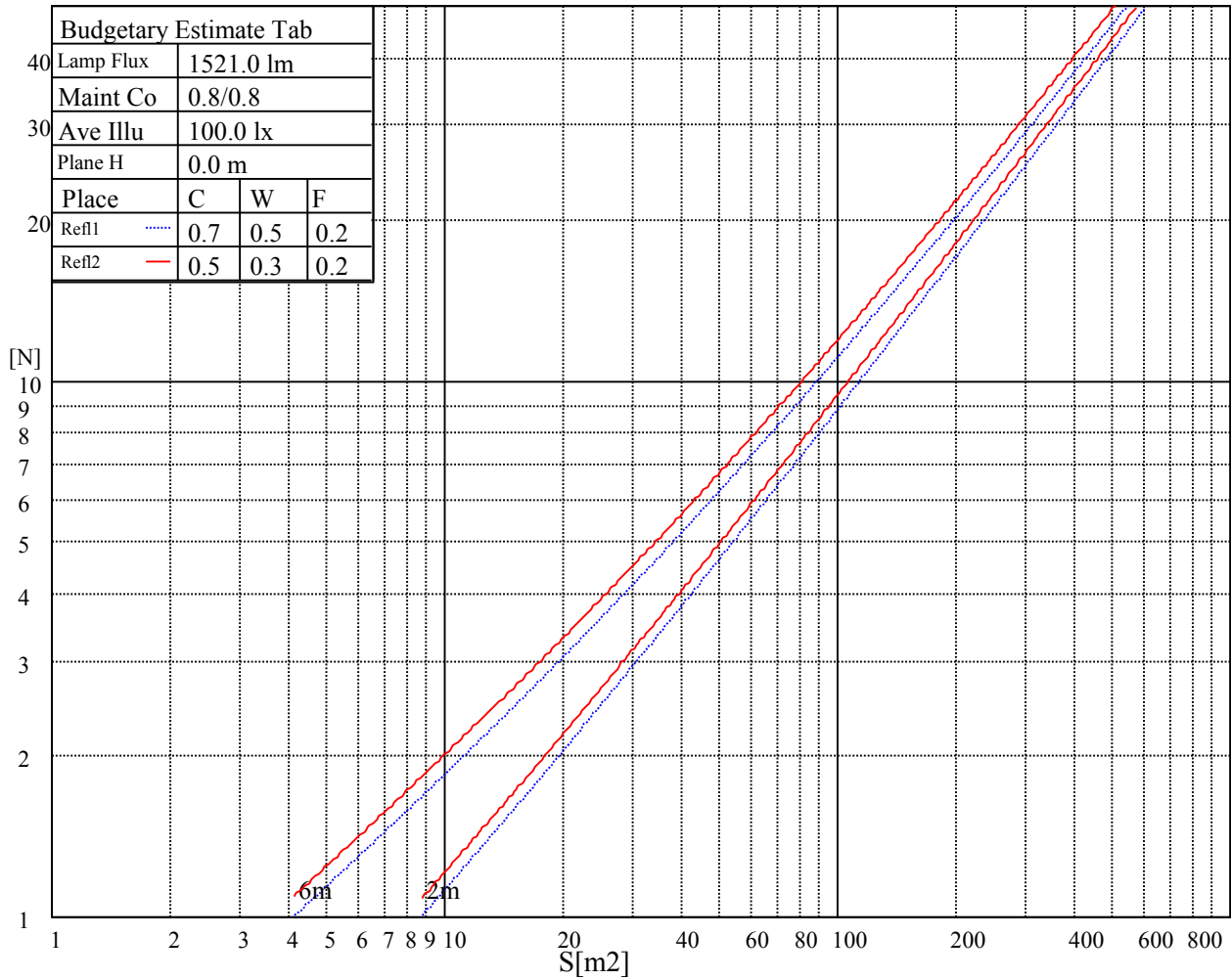
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3874	3874	3874	8226	8226	8226	10237	10237	10237

Glare Table

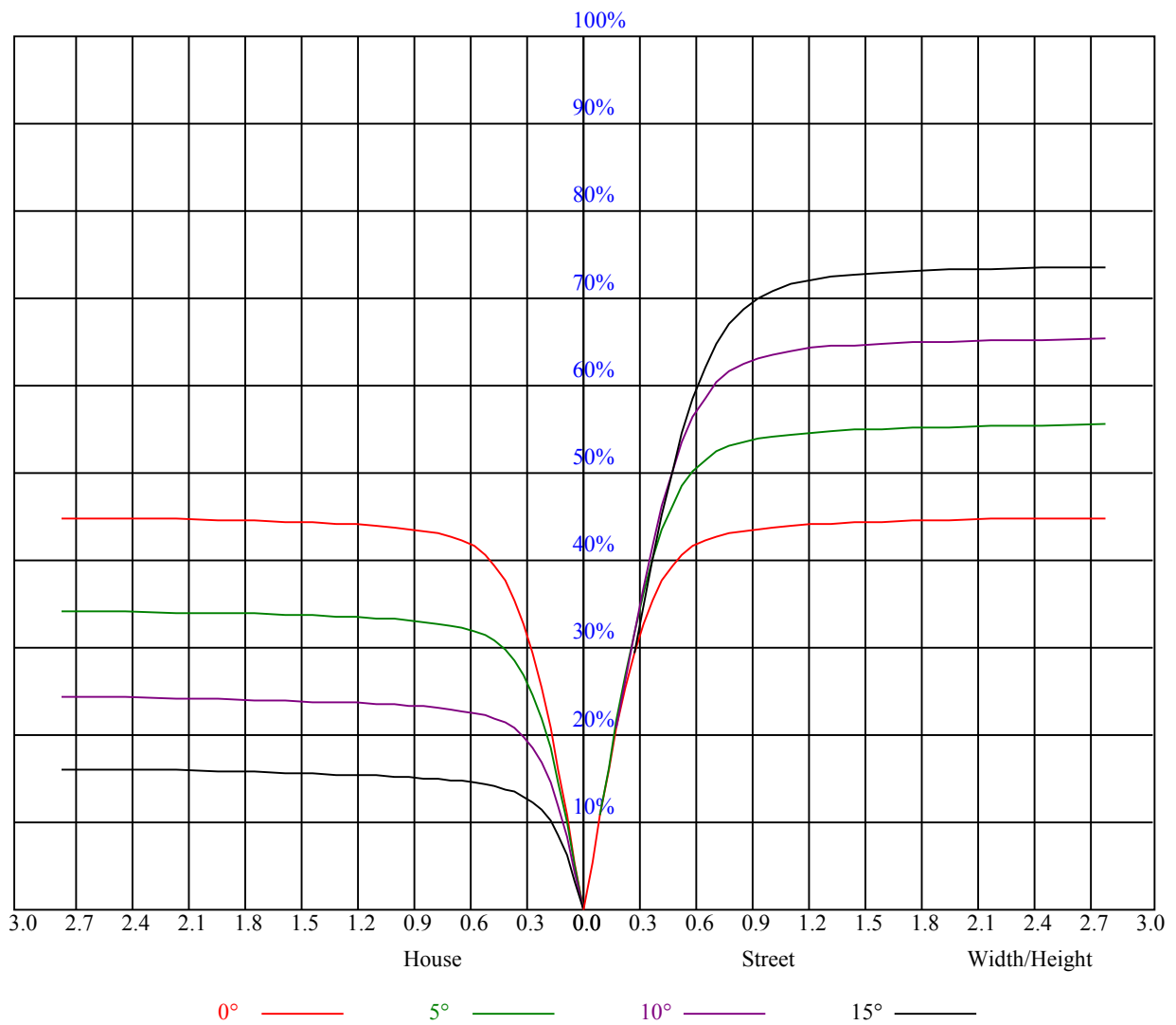
Glare	Quality	Service Values Illuminance(lx)							
		a	b	c	d	e	f	g	h
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.09	1.09	1.09	1.06	1.06	1.06	1.02	1.02	1.02	0.97	0.97	0.97	0.93	0.93	0.93	0.92
1	1.01	0.99	0.97	0.99	0.97	0.96	0.96	0.94	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86
2	0.95	0.92	0.89	0.93	0.90	0.88	0.91	0.88	0.86	0.88	0.86	0.84	0.85	0.84	0.82	0.81
3	0.89	0.85	0.82	0.88	0.84	0.81	0.86	0.83	0.80	0.84	0.81	0.79	0.82	0.79	0.77	0.76
4	0.85	0.80	0.76	0.84	0.79	0.76	0.82	0.78	0.75	0.80	0.77	0.74	0.78	0.76	0.73	0.72
5	0.80	0.75	0.72	0.79	0.75	0.71	0.78	0.74	0.71	0.76	0.73	0.70	0.75	0.72	0.70	0.68
6	0.76	0.71	0.68	0.76	0.71	0.68	0.74	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.66	0.65
7	0.73	0.68	0.64	0.72	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.63	0.69	0.66	0.63	0.62
8	0.69	0.65	0.61	0.69	0.64	0.61	0.68	0.64	0.61	0.67	0.63	0.61	0.66	0.63	0.60	0.59
9	0.66	0.62	0.58	0.66	0.61	0.58	0.65	0.61	0.58	0.64	0.61	0.58	0.64	0.60	0.58	0.57
10	0.64	0.59	0.56	0.63	0.59	0.56	0.63	0.58	0.56	0.62	0.58	0.55	0.61	0.58	0.55	0.54



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	2696.06	2663.44	2459.81	2053.13	1448.44	780.75	361.69	160.26	81.56
45.0	2705.06	2670.75	2498.06	2062.69	1442.81	775.13	369.00	155.19	78.19
90.0	2706.75	2666.81	2482.88	2073.38	1439.44	764.16	360.90	154.41	75.38
135.0	2697.19	2664.00	2511.56	2124.56	1567.69	909.00	429.19	191.03	94.11
180.0	2696.06	2601.56	2387.25	1964.25	1288.13	792.51	375.75	160.99	83.93
225.0	2705.06	2601.00	2381.63	1954.69	1397.25	803.59	382.16	164.03	84.38
270.0	2706.75	2628.56	2422.13	2045.81	1464.75	855.00	401.06	176.23	88.99
315.0	2697.19	2608.31	2356.88	1902.94	1120.33	665.94	289.97	139.78	72.90
360.0	2696.06	2663.44	2459.81	2053.13	1448.44	780.75	361.69	160.26	81.56
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	49.89	32.63	22.44	17.04	13.95	12.04	10.13	8.72	7.54
45.0	47.19	31.39	21.94	17.04	13.84	11.98	10.46	9.28	7.37
90.0	44.61	29.31	20.42	15.86	13.50	24.24	40.44	40.44	7.37
135.0	53.16	35.55	24.24	18.11	14.46	12.43	10.52	8.89	7.54
180.0	49.28	32.51	22.95	17.38	14.12	12.21	10.18	8.66	7.65
225.0	48.54	32.01	21.99	17.33	14.06	11.98	10.97	9.84	7.54
270.0	49.16	31.78	22.11	16.54	13.56	25.31	41.79	44.61	8.49
315.0	43.76	29.81	20.98	16.14	13.39	11.48	9.68	8.27	6.92
360.0	49.89	32.63	22.44	17.04	13.95	12.04	10.13	8.72	7.54
C/γ(°)	90.0								
0.0	6.19								
45.0	6.24								
90.0	6.19								
135.0	6.13								
180.0	6.24								
225.0	6.41								
270.0	6.30								
315.0	6.13								
360.0	6.19								