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## Nata

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LumCAT: LN01D04536DA-N

Luminaire: 97.70.234.00

Report No: 201231-B009

Test No: 201231-C009

LampCAT: CITIZEN CLU028 LES9.8

Lamp flux(lm): 1520.7

Number of Lamps: 1

Length(mm): 92

Phm Type: C

Voltage(V): 36.9400

Current(A): 0.3800

Power (W): 14.0370

PF: 0.0000

Ballast type: DC

Width(mm): 92

Height(mm): 50

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## Photometric Results

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Lumens(lm): 1376.90

Efficiency(%): 90.54%

Lumens(lm)/Power(W): 98.09

Central intensity(cd): 2716.453

Maximum intensity(cd): 2716.453

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

Beam Angle(50%Imax): [C0/180]Total=39.3

[C90/270]Total=39.3

Field angle(10%Imax): [C0/180]Total=65.1

[C90/270]Total=65.1

Maximum s/h(1/2): C0\_180=0.66 C90\_270=0.66

Maximum s/h(1/4): C0\_180=0.63 C90\_270=0.63

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 90.54%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 96.831%

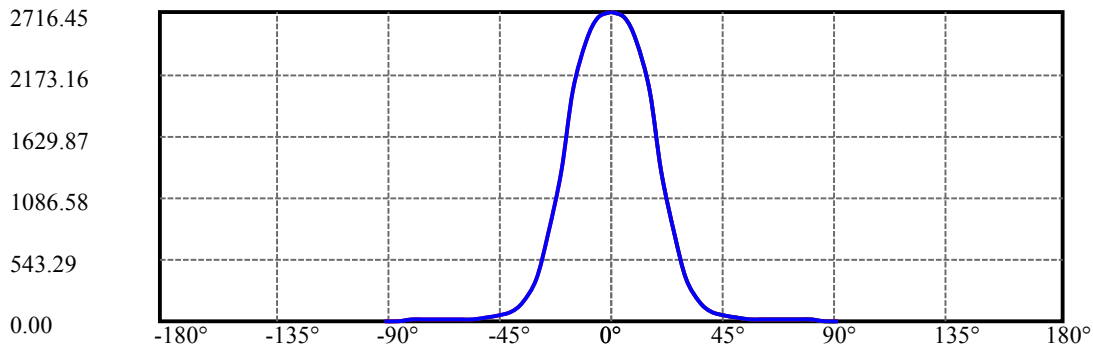
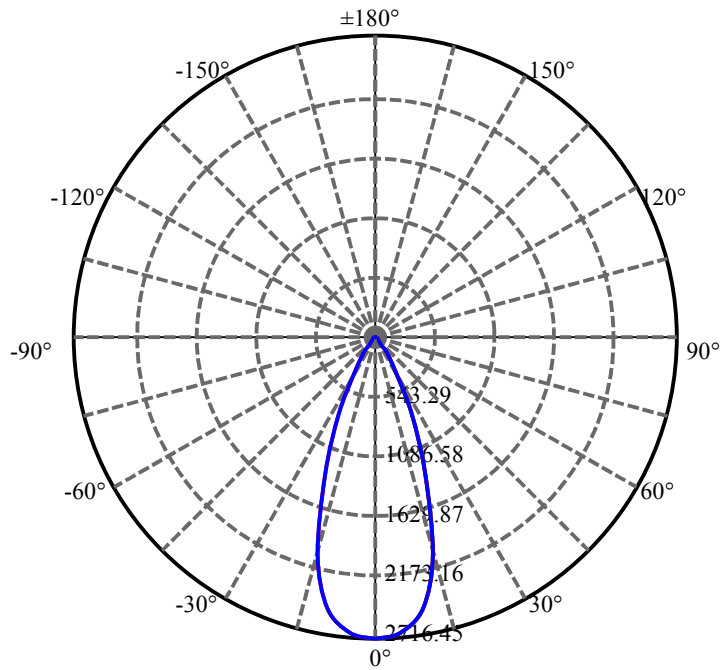
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2716.453	0.000	0	.000%	.000%
5.0	2670.117	64.395	64.395	4.235%	4.677%
10.0	2470.500	183.896	248.291	12.093%	18.033%
15.0	2017.266	266.211	514.502	17.506%	37.367%
20.0	1311.687	274.352	788.855	18.041%	57.292%
25.0	758.798	217.156	1006.01	14.280%	73.063%
30.0	375.391	143.533	1149.543	9.439%	83.488%
35.0	173.489	80.826	1230.37	5.315%	89.358%
40.0	84.825	43.098	1273.467	2.834%	92.488%
45.0	47.398	24.482	1297.949	1.610%	94.266%
50.0	30.382	15.717	1313.666	1.034%	95.408%
55.0	20.820	11.133	1324.799	.732%	96.216%
60.0	15.834	8.472	1333.271	.557%	96.831%
65.0	13.493	7.130	1340.401	.469%	97.349%
70.0	15.841	7.428	1347.828	.488%	97.889%
75.0	19.976	9.362	1357.19	.616%	98.569%
80.0	15.701	9.546	1366.737	.628%	99.262%
85.0	7.699	6.358	1373.095	.418%	99.724%
90.0	6.195	3.804	1376.899	.250%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1149.54	75.59%	83.49%
0-40	1273.47	83.74%	92.49%
0-60	1333.27	87.67%	96.83%
0-90	1373.09	90.29%	99.72%
0-120	1373.09	90.29%	99.72%
0-180	1376.90	90.54%	100.00%
60-90	48.30	3.18%	3.51%
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%
0-28.33	1101.52	72.44%	80.00%

ZONAL LUMEN SUMMARY

0-10	248.29
10-20	540.56
20-30	360.69
30-40	123.92
40-50	40.20
50-60	19.61
60-70	14.56
70-80	18.91
80-90	6.36
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: —————

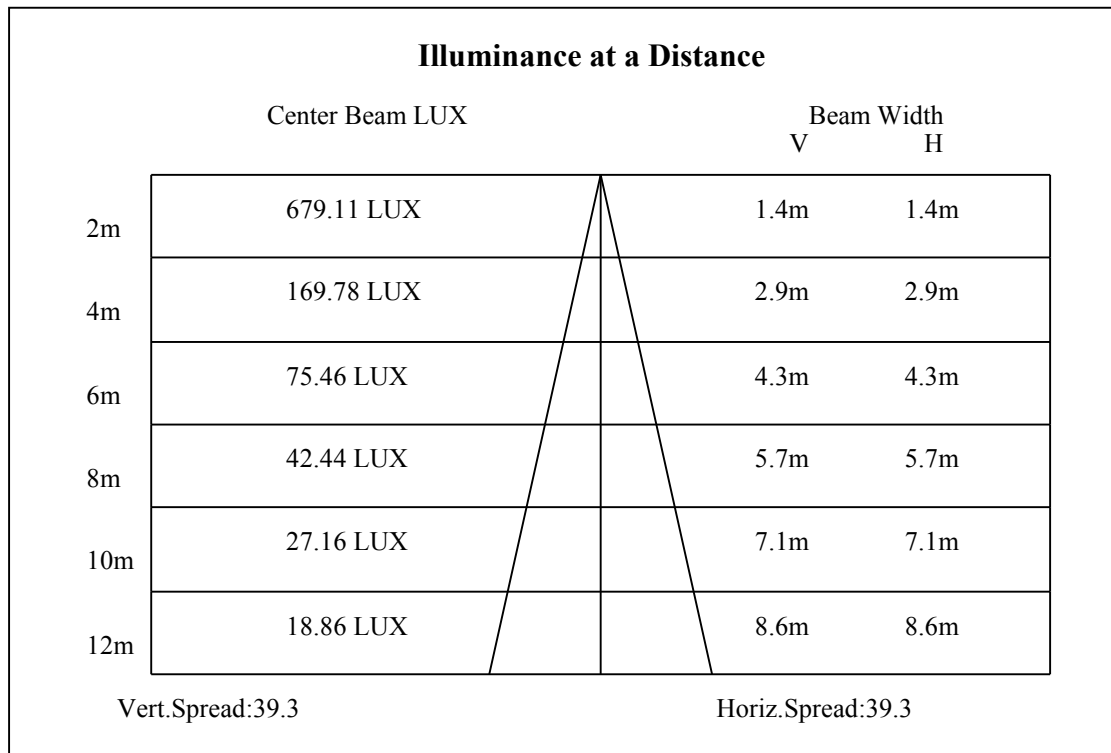
C90/C270: —————

Field angle(10%Imax):C0/180Left:32.6 Right:32.6

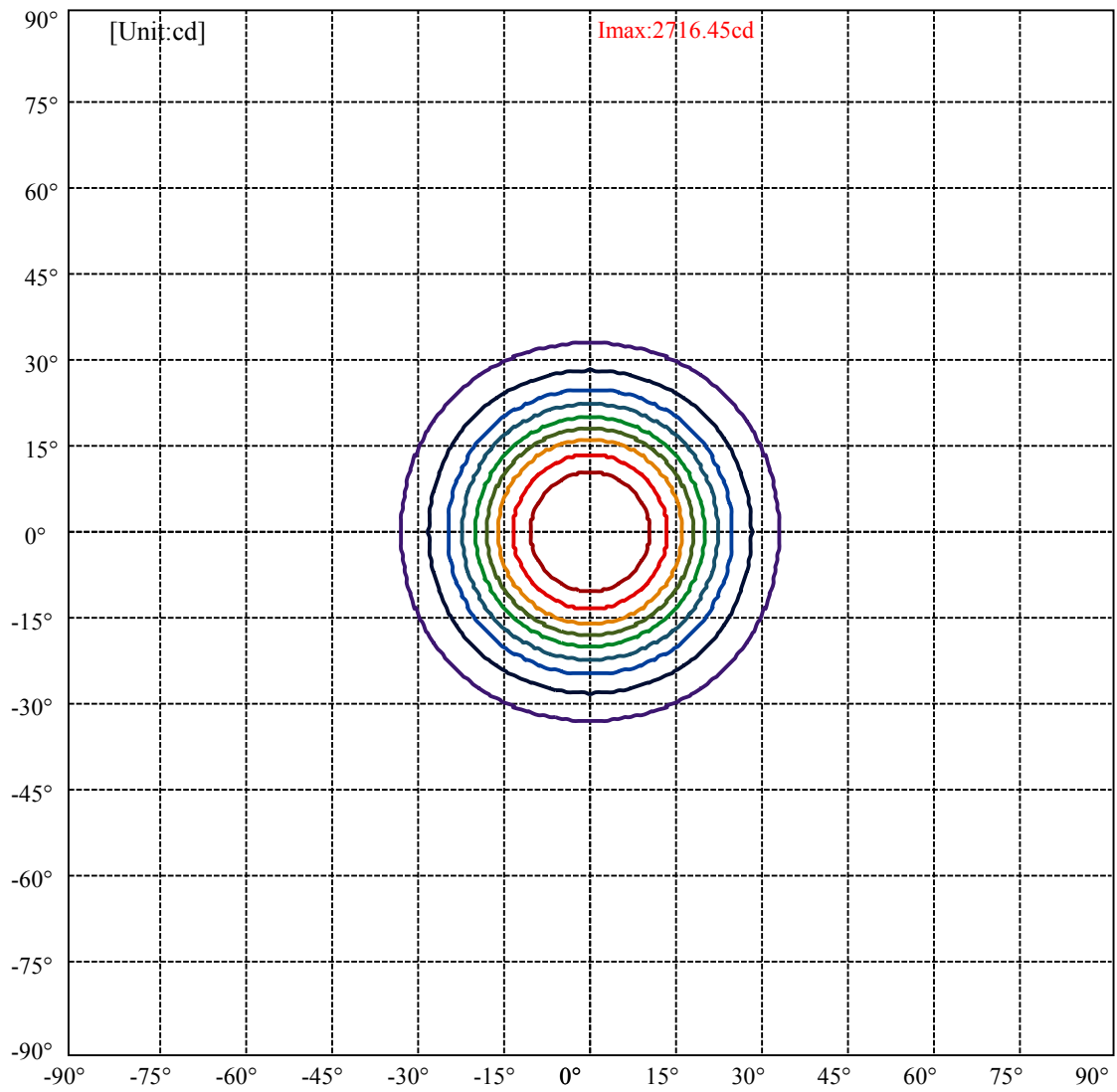
:C90/270Left:32.6 Right:32.6

Beam Angle(50%Imax):C0/180Left:19.7 Right:19.7

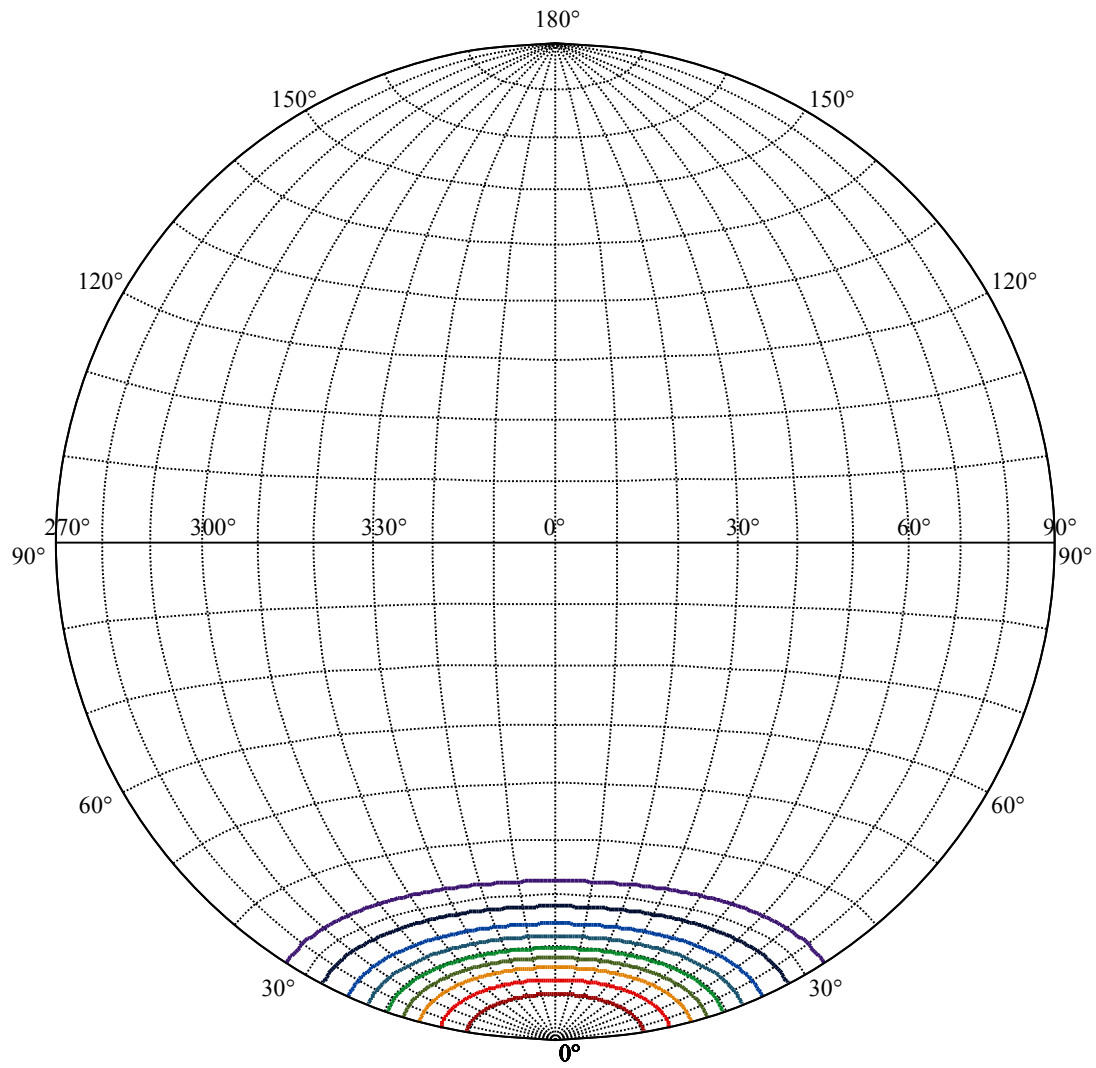
:C90/270Left:19.7 Right:19.7



ISO-Intensity(V-H)



(10%Imax) 271.645	—
(20%Imax) 543.291	—
(30%Imax) 814.936	—
(40%Imax) 1086.58	—
(50%Imax) 1358.23	—
(60%Imax) 1629.87	—
(70%Imax) 1901.52	—
(80%Imax) 2173.16	—
(90%Imax) 2444.81	—



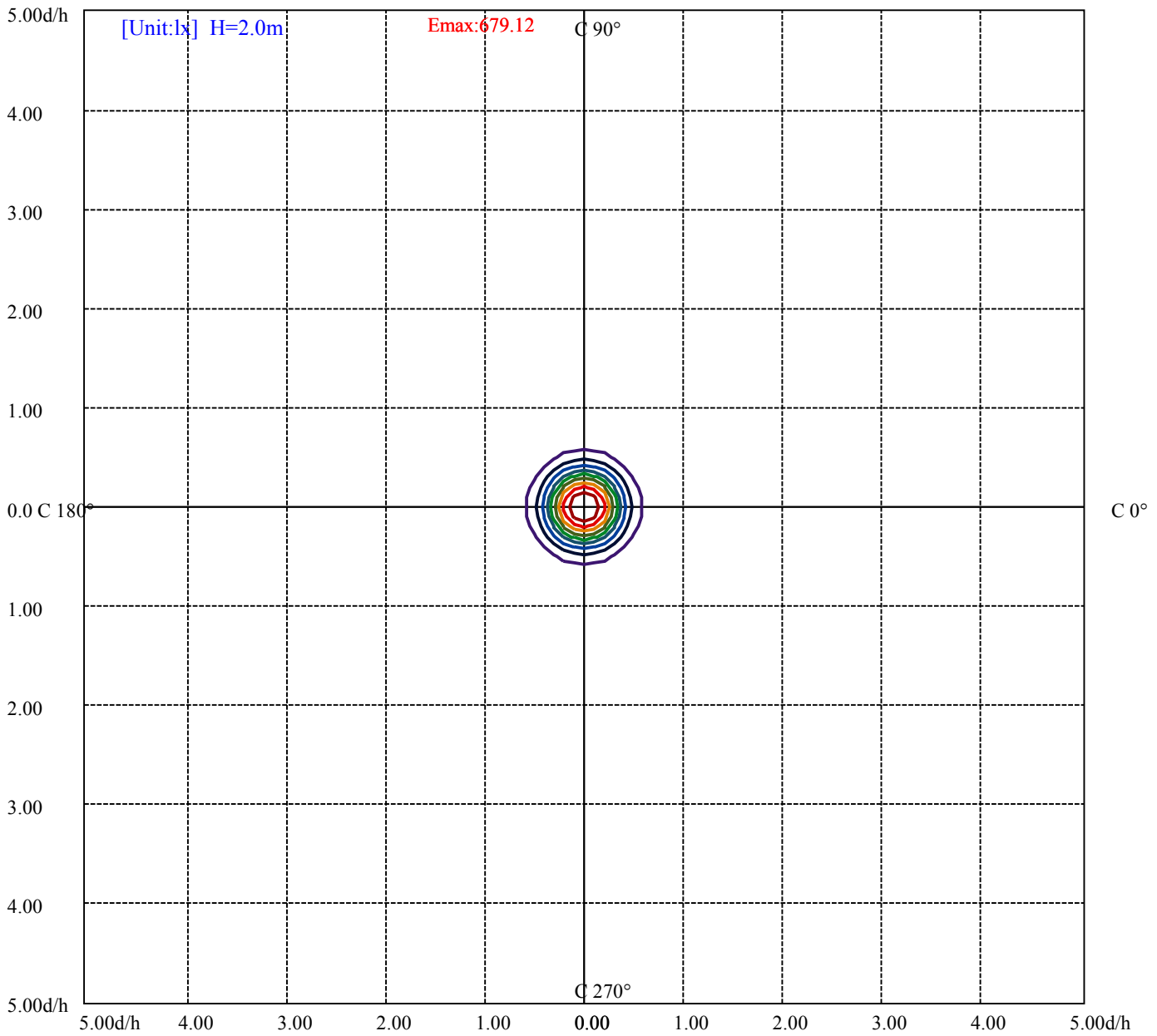
House

[Unit:cd]

Road

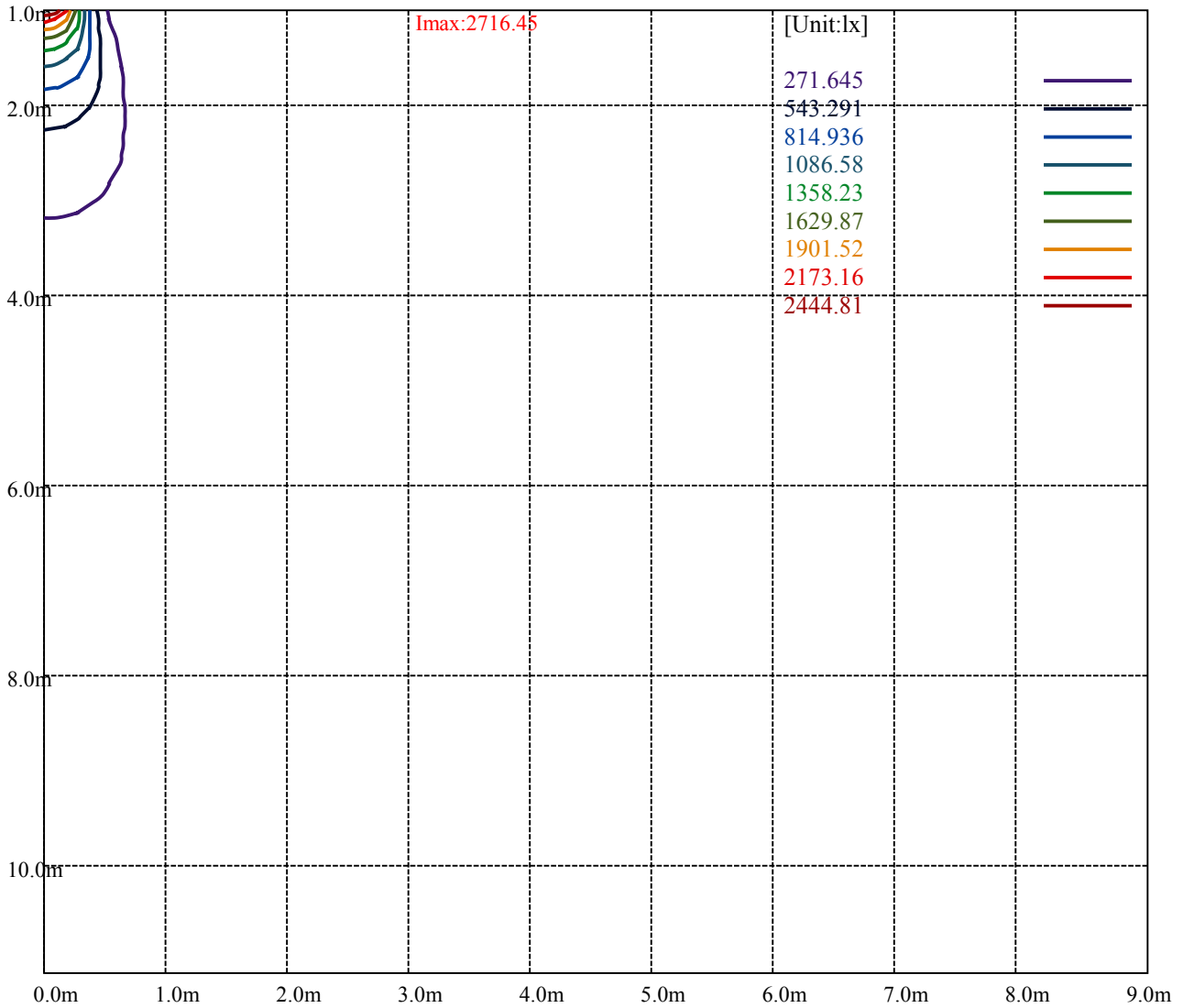
**Imax:2716.45**

(10%Imax) 271.645	—
(20%Imax) 543.291	—
(30%Imax) 814.936	—
(40%Imax) 1086.58	—
(50%Imax) 1358.23	—
(60%Imax) 1629.87	—
(70%Imax) 1901.52	—
(80%Imax) 2173.16	—
(90%Imax) 2444.81	—



(10%Emax) 67.91125	—
(20%Emax) 135.8225	—
(30%Emax) 203.7337	—
(40%Emax) 271.645	—
(50%Emax) 339.5575	—
(60%Emax) 407.4675	—
(70%Emax) 475.38	—
(80%Emax) 543.29	—
(90%Emax) 611.2025	—





Luminance Table

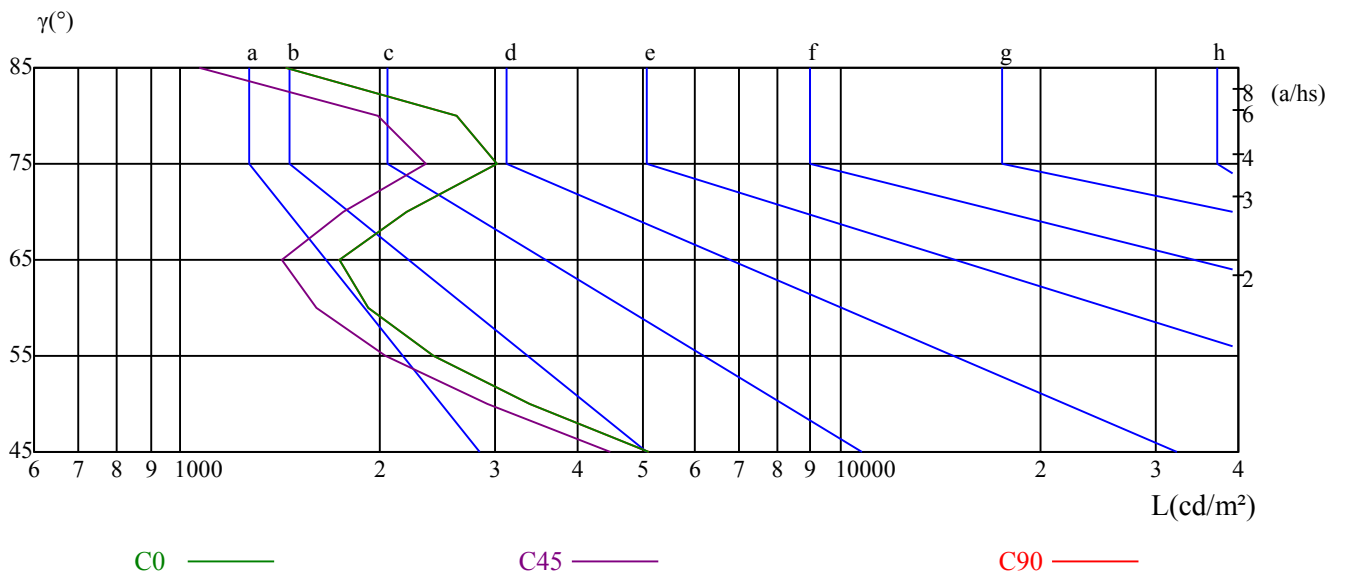
$\gamma$	45	50	55	60	65	70	75	80	85
C0	5131	3389	2414	1927	1742	2195	3011	2617	1447
C45	4478	2915	2044	1605	1424	1759	2357	1993	1067
C90	5131	3389	2414	1927	1742	2195	3011	2617	1447

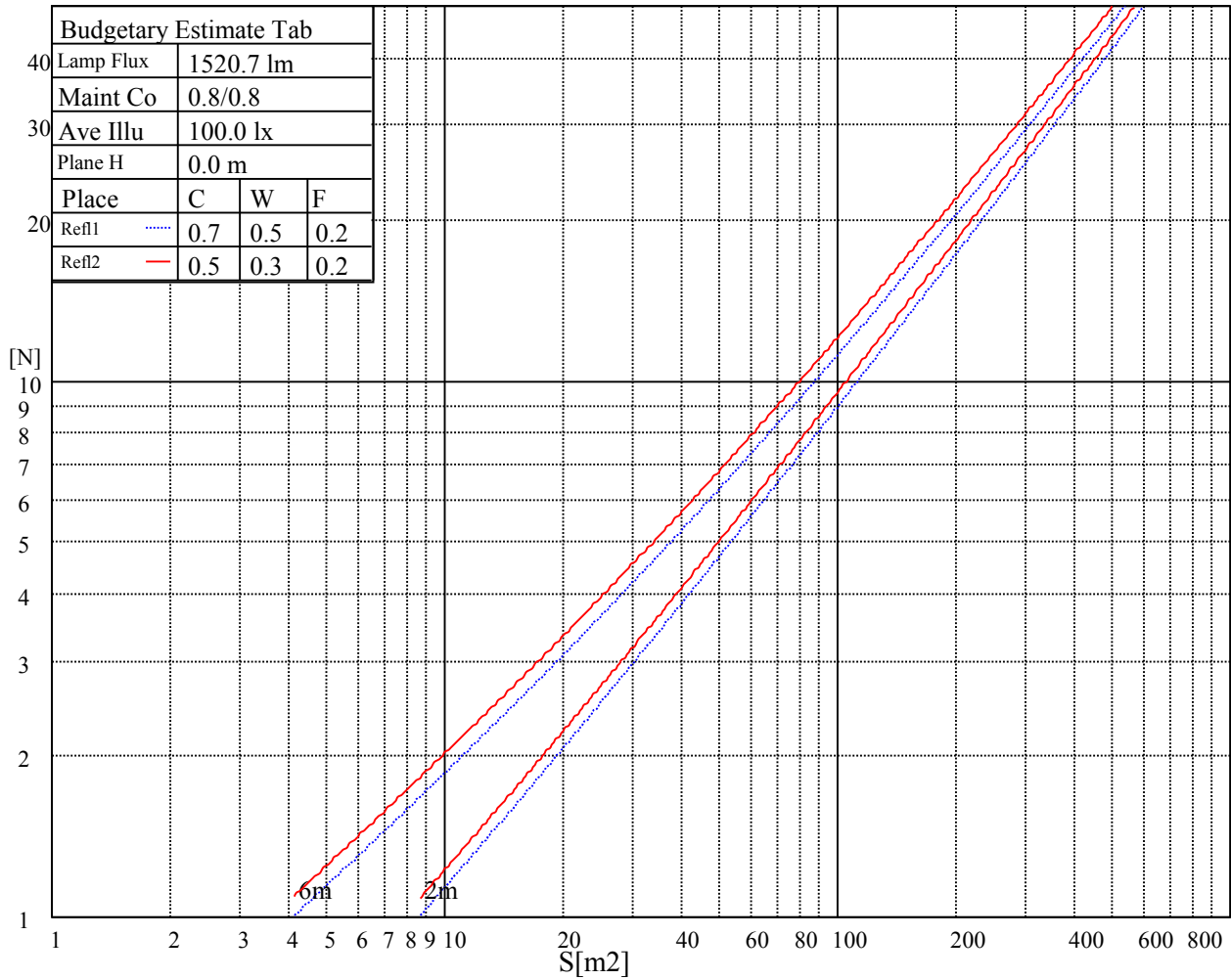
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3772	3772	3772	9119	9119	9119	10437	10437	10437

Glare Table

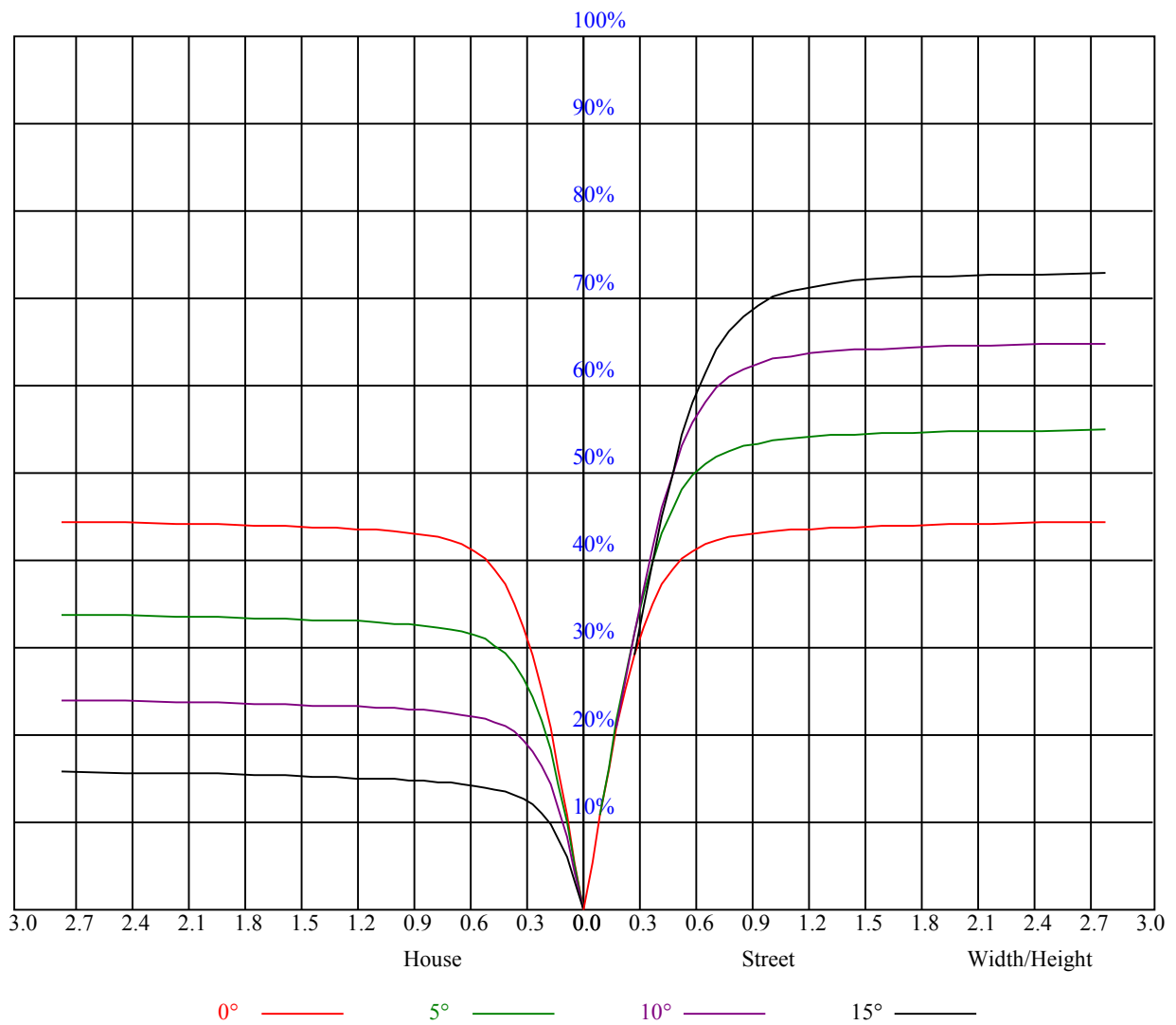
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.08	1.08	1.08	1.05	1.05	1.05	1.01	1.01	1.01	0.96	0.96	0.96	0.92	0.92	0.92	0.91
1	1.00	0.98	0.96	0.98	0.96	0.95	0.95	0.93	0.92	0.91	0.90	0.89	0.88	0.87	0.86	0.85
2	0.94	0.90	0.88	0.92	0.89	0.87	0.90	0.87	0.85	0.87	0.85	0.83	0.84	0.83	0.81	0.80
3	0.88	0.84	0.81	0.87	0.83	0.80	0.85	0.82	0.79	0.83	0.80	0.78	0.81	0.79	0.77	0.75
4	0.84	0.79	0.76	0.83	0.78	0.75	0.81	0.77	0.74	0.79	0.76	0.73	0.77	0.75	0.73	0.71
5	0.79	0.75	0.71	0.78	0.74	0.71	0.77	0.73	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.68
6	0.75	0.71	0.67	0.75	0.70	0.67	0.73	0.69	0.66	0.72	0.69	0.66	0.71	0.68	0.66	0.64
7	0.72	0.67	0.64	0.71	0.67	0.63	0.70	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.63	0.61
8	0.69	0.64	0.61	0.68	0.64	0.60	0.67	0.63	0.60	0.66	0.63	0.60	0.66	0.62	0.60	0.59
9	0.66	0.61	0.58	0.65	0.61	0.58	0.65	0.60	0.58	0.64	0.60	0.57	0.63	0.60	0.57	0.56
10	0.63	0.58	0.55	0.63	0.58	0.55	0.62	0.58	0.55	0.61	0.58	0.55	0.61	0.57	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	2715.19	2666.81	2450.25	2031.19	1369.13	777.94	369.00	180.06	85.44
45.0	2721.94	2675.81	2484.00	2014.31	1417.50	772.88	381.94	181.52	86.79
90.0	2715.19	2676.38	2479.50	2003.63	1268.44	750.38	364.95	168.58	82.24
135.0	2713.50	2693.25	2553.19	2134.13	1518.75	851.63	445.50	196.59	94.05
180.0	2715.19	2661.19	2442.38	1981.13	1112.40	720.56	366.64	164.81	81.17
225.0	2721.94	2675.81	2481.75	1999.13	1282.50	756.00	371.14	172.58	85.16
270.0	2715.19	2675.81	2487.94	2120.06	1428.75	787.50	387.56	180.34	88.37
315.0	2713.50	2635.88	2385.00	1854.56	1096.03	653.51	316.41	143.44	75.38
360.0	2715.19	2666.81	2450.25	2031.19	1369.13	777.94	369.00	180.06	85.44
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	49.78	32.01	22.11	16.26	13.44	11.14	9.96	8.89	7.43
45.0	47.03	29.81	20.64	15.75	13.67	19.97	29.08	21.38	7.48
90.0	45.06	28.01	19.91	15.36	13.56	20.03	29.19	21.26	7.59
135.0	52.20	33.41	22.28	16.82	13.56	11.36	9.96	8.94	7.48
180.0	46.97	30.54	20.87	15.92	13.28	11.31	10.01	8.89	7.43
225.0	46.29	29.76	20.19	15.41	14.01	21.09	30.49	22.50	8.44
270.0	48.21	30.88	20.81	15.81	13.84	21.26	31.50	25.26	8.72
315.0	43.65	28.63	19.74	15.36	12.60	10.58	9.62	8.49	7.03
360.0	49.78	32.01	22.11	16.26	13.44	11.14	9.96	8.89	7.43
C/γ(°)	90.0								
0.0	6.36								
45.0	6.13								
90.0	6.02								
135.0	6.19								
180.0	6.41								
225.0	6.19								
270.0	6.13								
315.0	6.13								
360.0	6.36								