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NATA

LumCAT: 2-1703-A
Luminaire: 99.02.73.173+92.76.365.00
Report No: NATA0100
Test No: GC2018101103
LampCAT: CITIZEN CLU048
Lamp flux(lm): 3977.0
Number of Lamps: 1
Length(mm): 70
Phm Type: C

Voltage(V): 49.9000
Current(A): 0.5000
Power (W): 24.9500
PF: 0.0000
Ballast type: DC
Width(mm): 70
Height(mm): 0

Photometric Results

Lumens(lm): 3529.41
Efficiency(%): 88.75%
Lumens(lm)/Power(W): 142.78
Central intensity(cd): 6067.758
Maximum intensity(cd): 6067.758
Angle of maximum intensity: C=0.0 γ =0.0
Beam Angle(50%Imax): [C0/180]Total=43.7
 [C90/270]Total=43.7
Field angle(10%Imax): [C0/180]Total=74.7
 [C90/270]Total=74.7
Maximum s/h(1/2): C0_180=0.70 C90_270=0.70
Maximum s/h(1/4): C0_180=0.69 C90_270=0.69
Up flux rate of lamp(%): 0.00%
Down flux rate of lamp(%): 89.57%
Up flux rate of LUM(%): - -
Down flux rate of LUM(%): 100.00%
CIE Type : Direct lighting
Output flux ratio in π solid angle : 97.663%

Equipment:
Temperature(°C): 25.0

Date: 2018/10/11
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.50

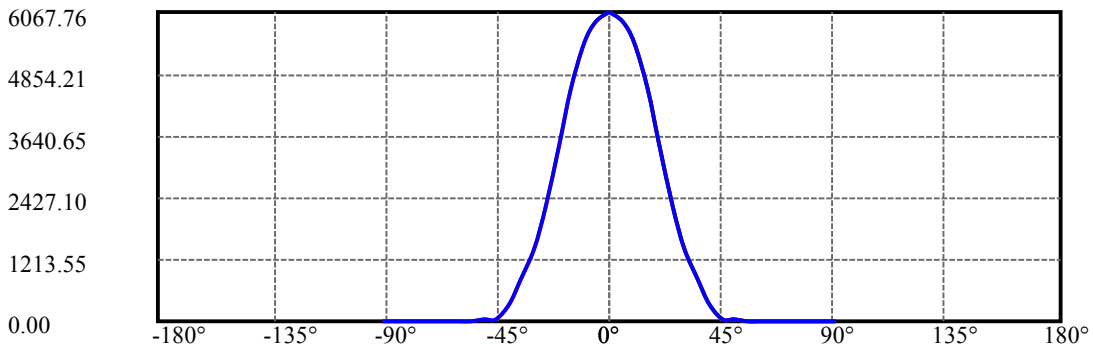
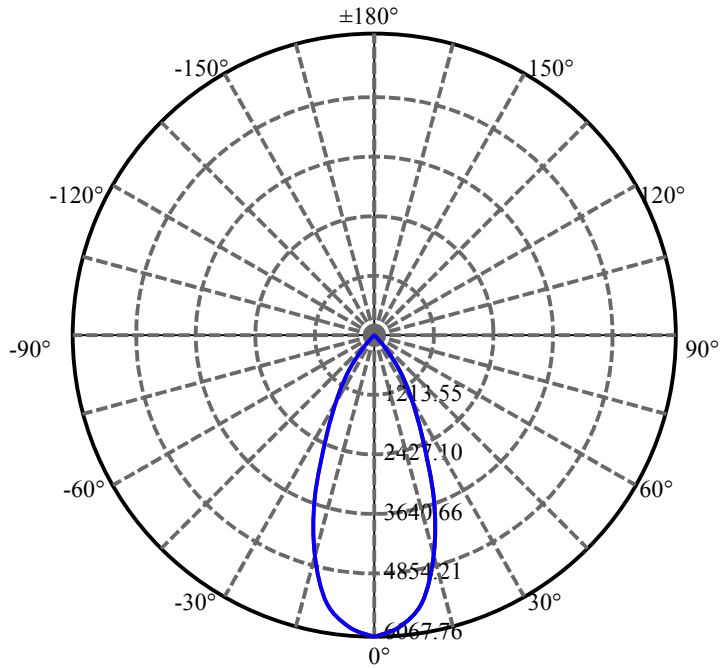
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6067.758	36.286	36.286	.912%	1.028%
5.0	5889.305	281.352	317.638	7.074%	9.000%
10.0	5453.227	519.055	836.693	13.051%	23.706%
15.0	4570.242	648.373	1485.066	16.303%	42.077%
20.0	3482.789	652.932	2137.998	16.418%	60.577%
25.0	2259.773	523.483	2661.481	13.163%	75.409%
30.0	1433.798	392.959	3054.441	9.881%	86.542%
35.0	843.546	265.210	3319.65	6.669%	94.057%
40.0	341.684	120.387	3440.038	3.027%	97.468%
45.0	38.011	14.733	3454.77	.370%	97.885%
50.0	19.350	8.125	3462.895	.204%	98.115%
55.0	18.000	8.082	3470.978	.203%	98.344%
60.0	17.093	8.114	3479.092	.204%	98.574%
65.0	17.536	8.712	3487.803	.219%	98.821%
70.0	18.330	9.442	3497.245	.237%	99.089%
75.0	18.274	9.675	3506.92	.243%	99.363%
80.0	17.648	9.527	3516.447	.240%	99.633%
85.0	16.397	8.954	3525.401	.225%	99.886%
90.0	14.639	4.012	3529.413	.101%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	3054.44	76.80%	86.54%
0-40	3440.04	86.50%	97.47%
0-60	3479.09	87.48%	98.57%
0-90	3525.40	88.64%	99.89%
0-120	3525.40	88.64%	99.89%
0-180	3529.41	88.75%	100.00%
60-90	54.42	1.37%	1.54%
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%
0-27.06	2823.53	71.00%	80.00%

ZONAL LUMEN SUMMARY

0-10	836.69
10-20	1301.31
20-30	916.44
30-40	385.60
40-50	22.86
50-60	16.20
60-70	18.15
70-80	19.20
80-90	8.95
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: —————

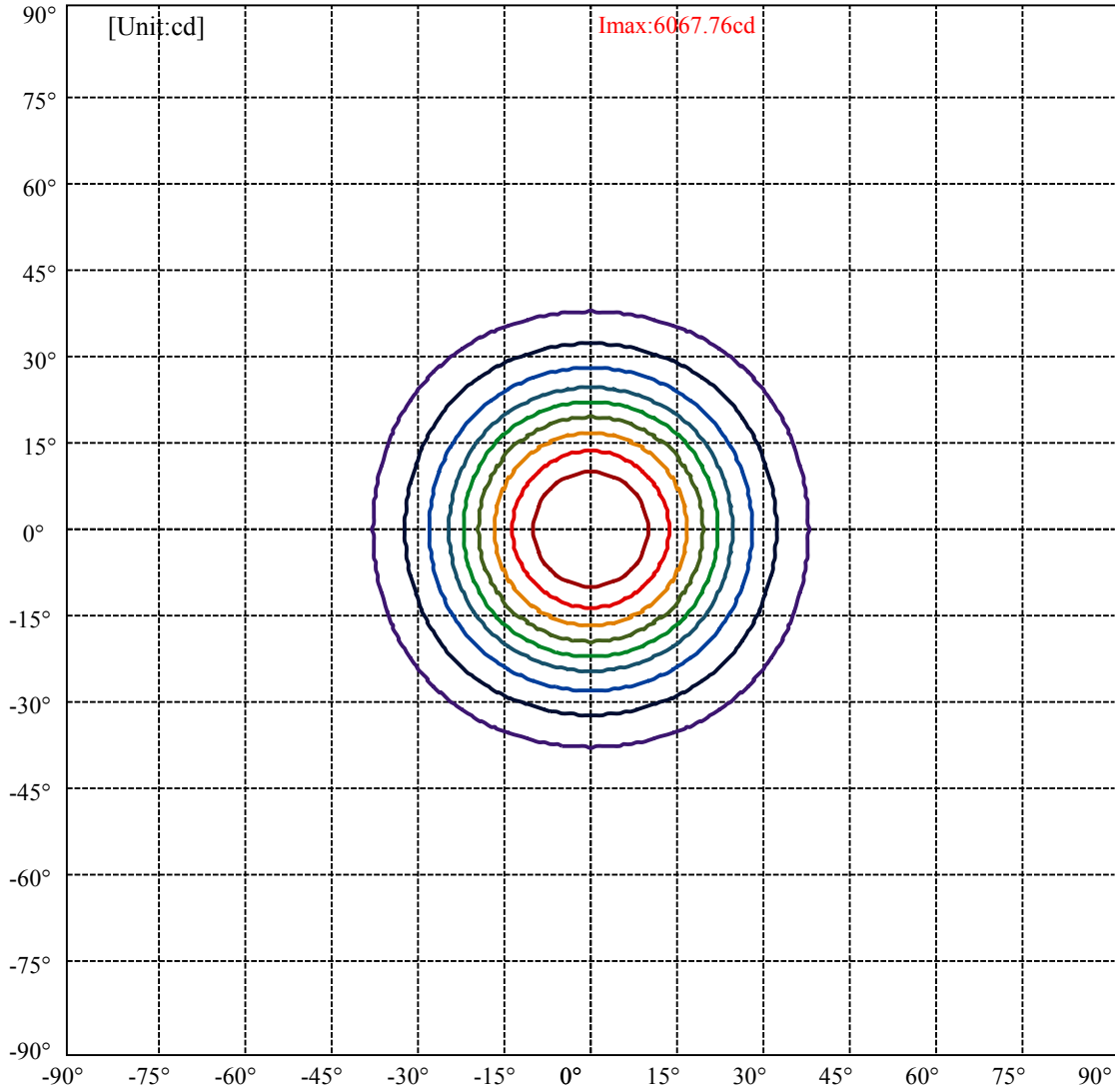
C90/C270: —————

Field angle(10%Imax):C0/180Left:37.4 Right:37.4

:C90/270Left:37.4 Right:37.4

Beam Angle(50%Imax):C0/180Left:21.8 Right:21.8

:C90/270Left:21.8 Right:21.8

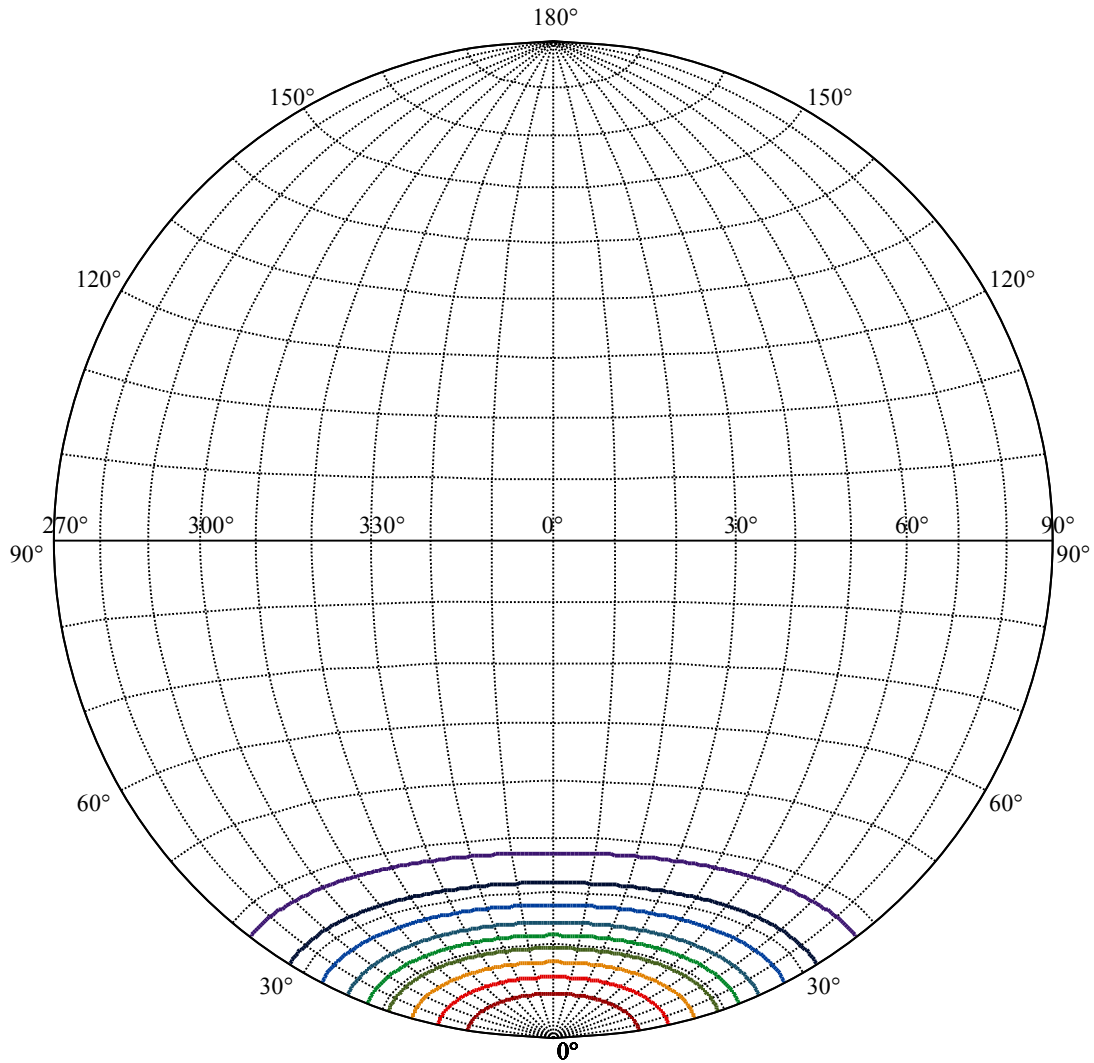


(10%Imax) 606.776	—
(20%Imax) 1213.55	—
(30%Imax) 1820.33	—
(40%Imax) 2427.1	—
(50%Imax) 3033.88	—
(60%Imax) 3640.65	—
(70%Imax) 4247.43	—
(80%Imax) 4854.21	—
(90%Imax) 5460.98	—

Equipment:
Temperature(°C): 25.0

Date: 2018/10/11
Humidity(%): 60.0%

Operator: NT07
Distance(m): 7.50



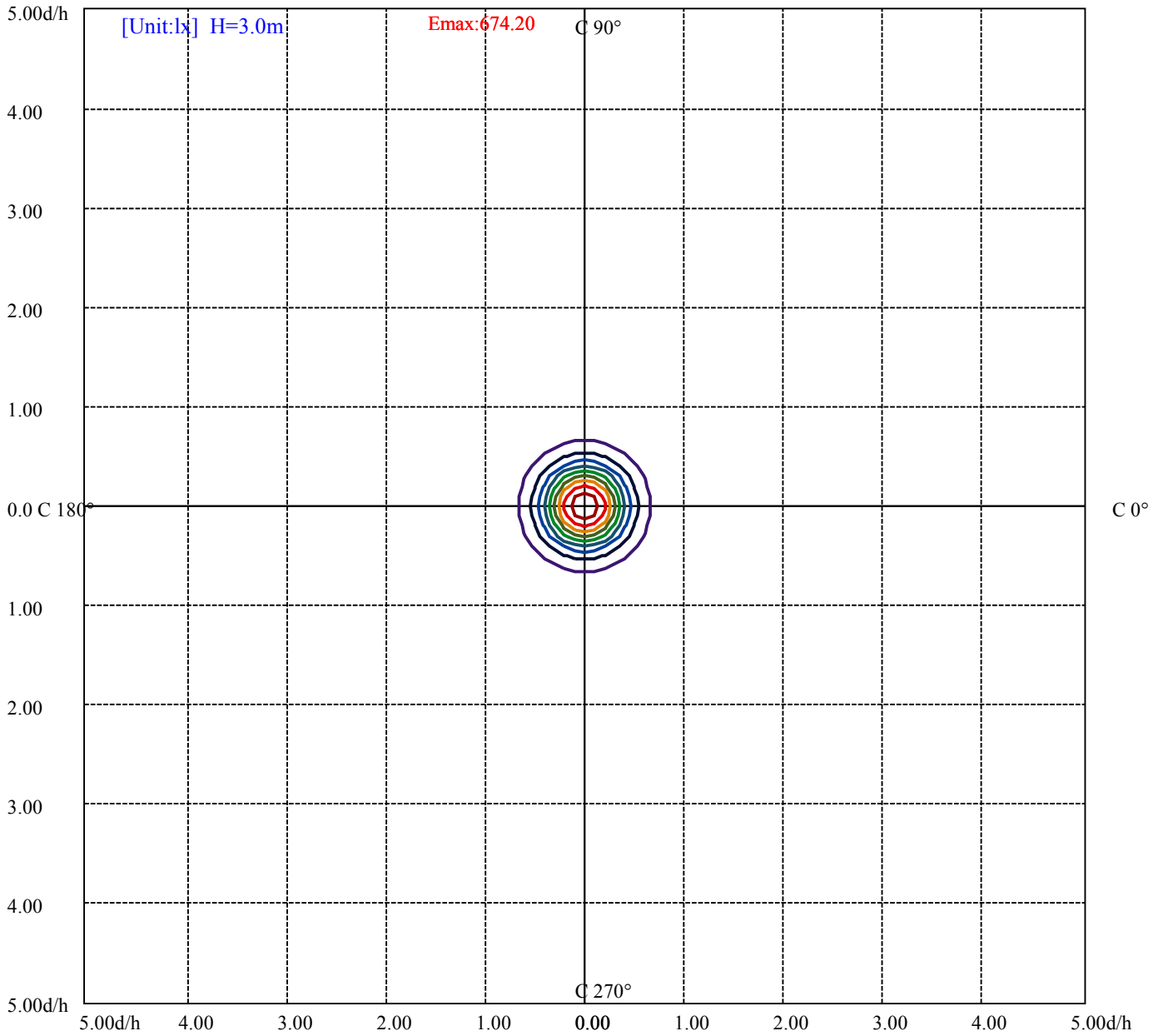
House

[Unit:cd]

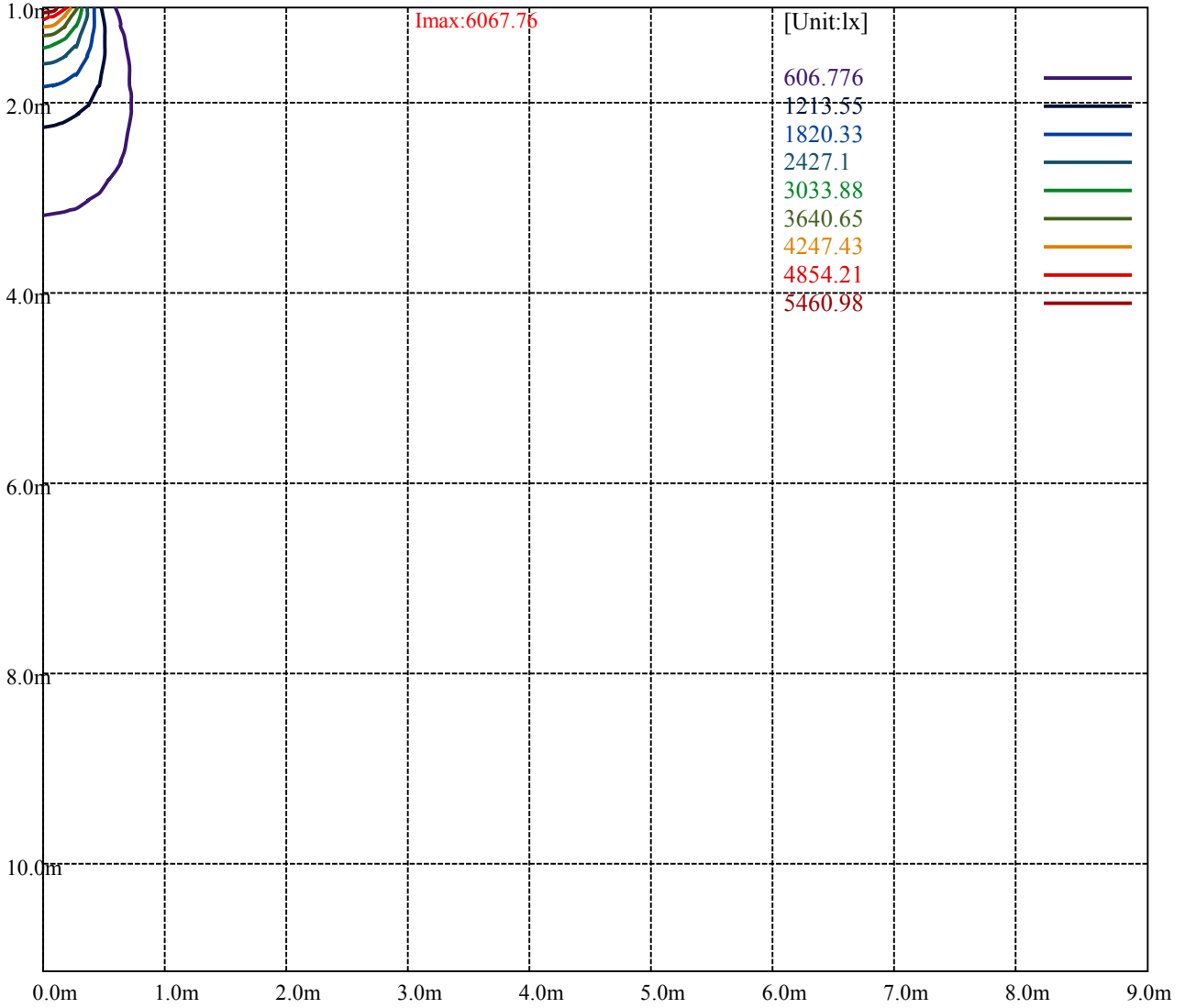
Road

Imax:6067.76

(10%Imax) 606.776	—
(20%Imax) 1213.55	—
(30%Imax) 1820.33	—
(40%Imax) 2427.1	—
(50%Imax) 3033.88	—
(60%Imax) 3640.65	—
(70%Imax) 4247.43	—
(80%Imax) 4854.21	—
(90%Imax) 5460.98	—



- (10%Emax) 67.41945 ———
- (20%Emax) 134.8389 ———
- (30%Emax) 202.2589 ———
- (40%Emax) 269.6778 ———
- (50%Emax) 337.0978 ———
- (60%Emax) 404.5167 ———
- (70%Emax) 471.9367 ———
- (80%Emax) 539.3556 ———
- (90%Emax) 606.7756 ———



Luminance Table

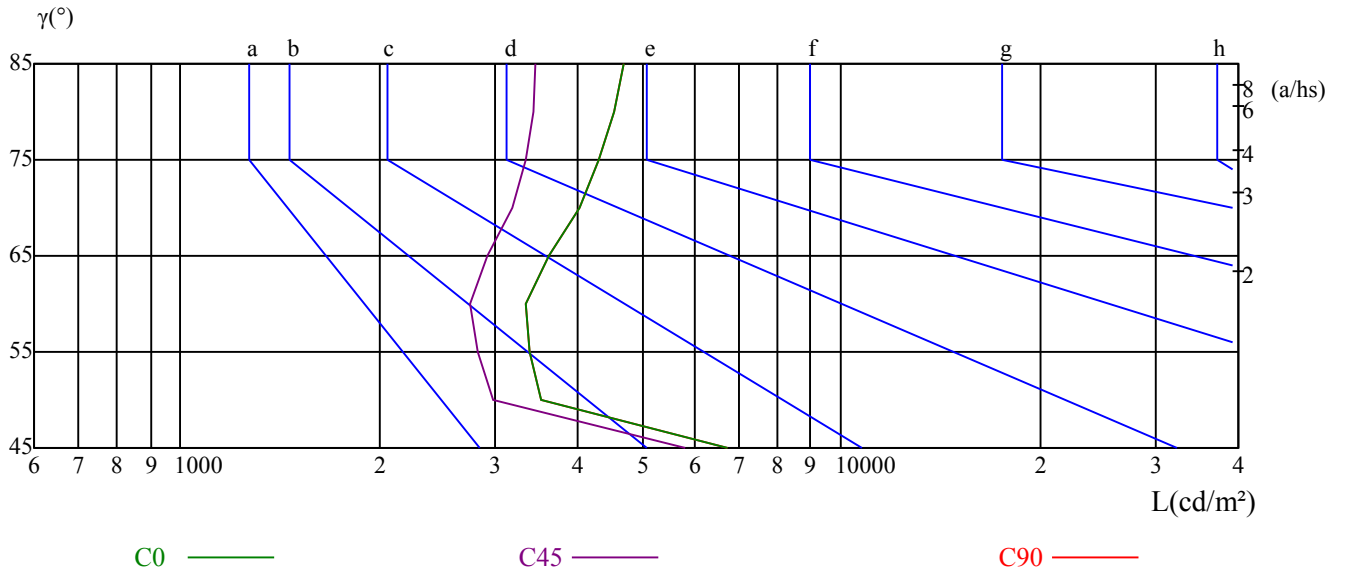
γ	45	50	55	60	65	70	75	80	85
C0	6736	3512	3375	3340	3607	4011	4307	4544	4691
C45	5808	2983	2822	2747	2914	3177	3337	3433	3440
C90	6736	3512	3375	3340	3607	4011	4307	4544	4691

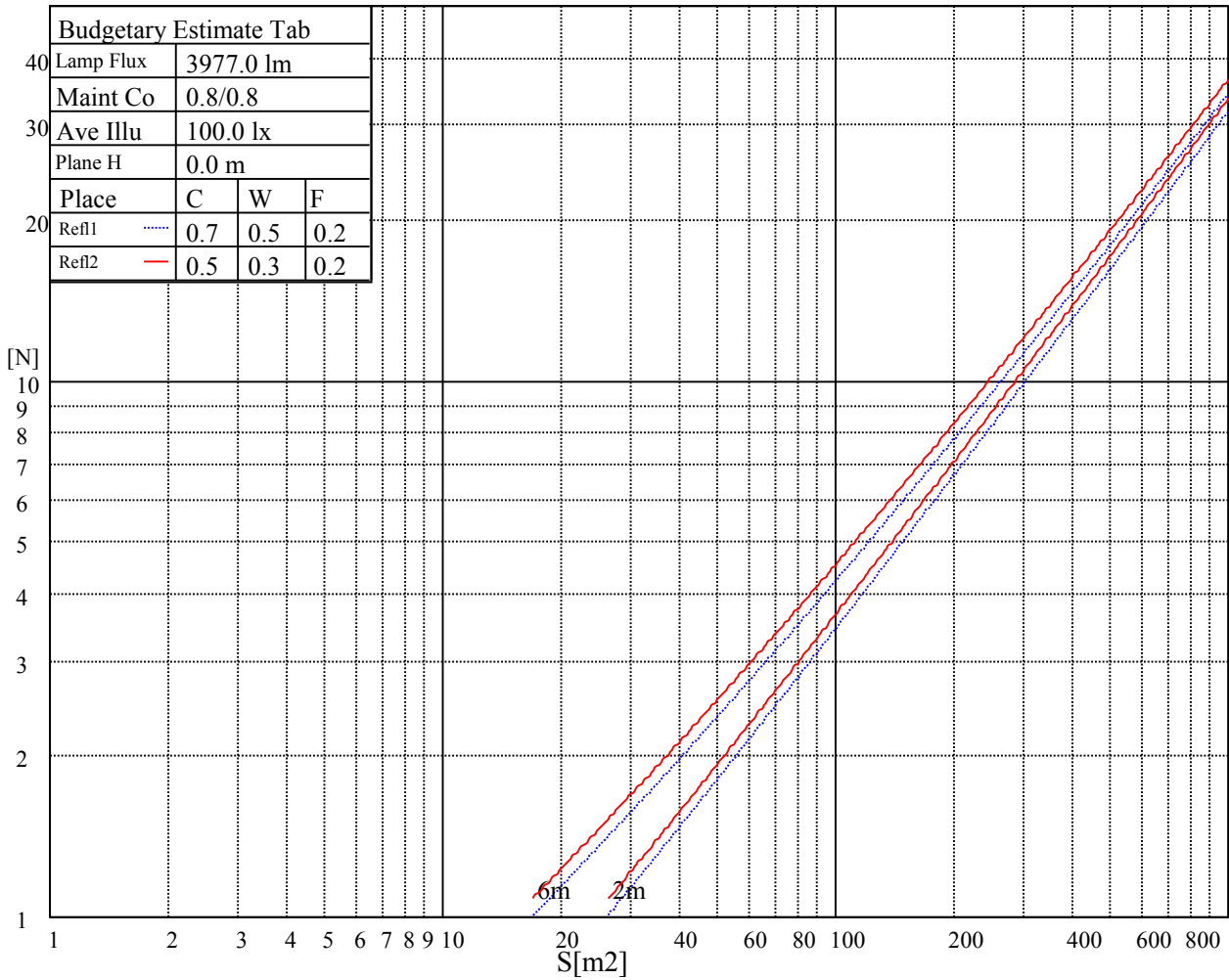
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
8468	8468	8468	14409	14409	14409	38394	38394	38394

Glare Table

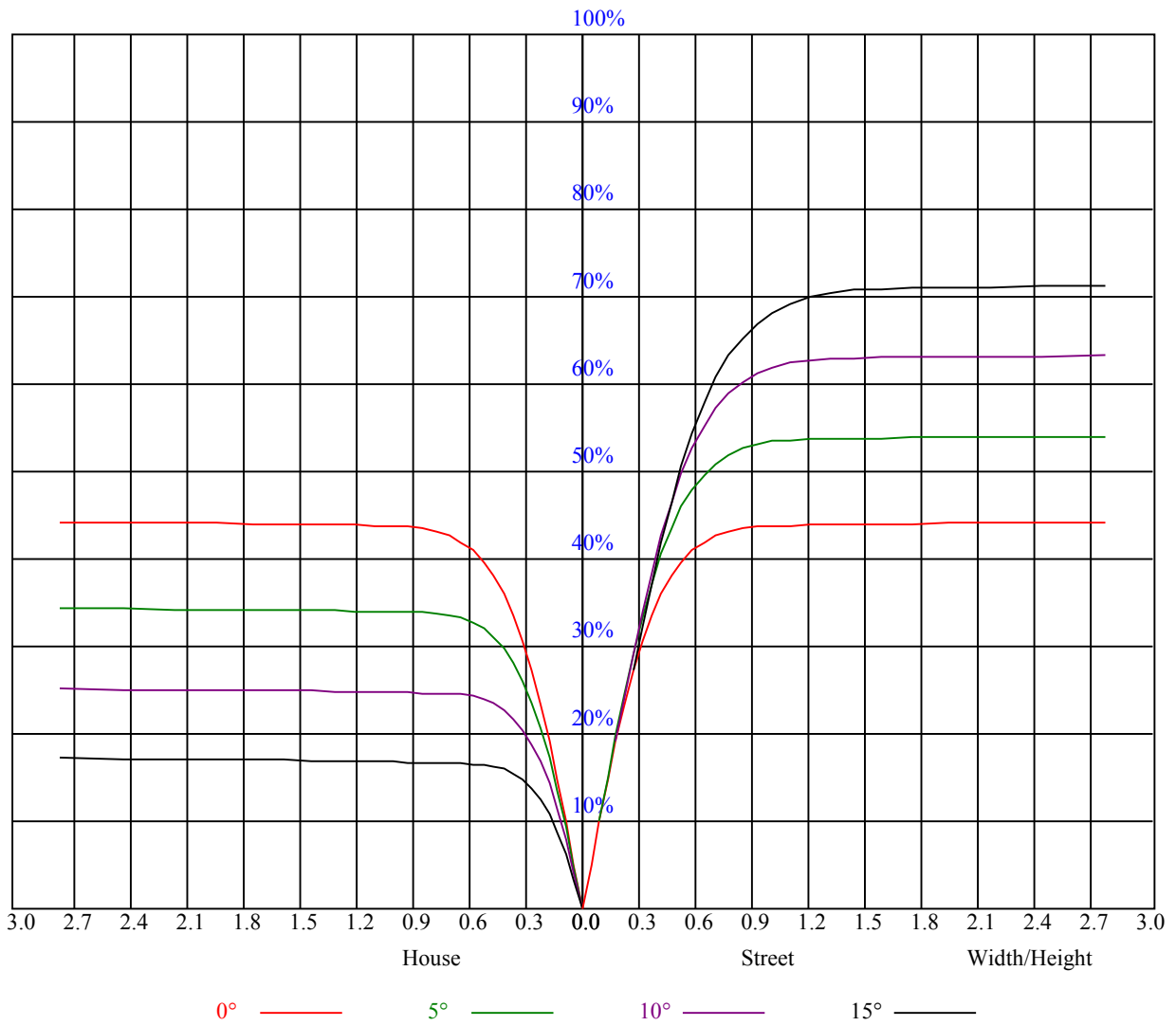
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

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	1.07	1.07	1.07	1.04	1.04	1.04	1.00	1.00	1.00	0.95	0.95	0.95	0.91	0.91	0.91	0.90
1	0.99	0.97	0.94	0.97	0.95	0.93	0.93	0.92	0.90	0.90	0.89	0.87	0.87	0.86	0.85	0.83
2	0.93	0.90	0.87	0.92	0.88	0.86	0.89	0.86	0.84	0.86	0.84	0.82	0.84	0.82	0.80	0.79
3	0.88	0.84	0.81	0.87	0.83	0.80	0.85	0.81	0.79	0.82	0.80	0.78	0.80	0.78	0.77	0.75
4	0.84	0.79	0.76	0.83	0.79	0.75	0.81	0.77	0.75	0.79	0.76	0.74	0.77	0.75	0.73	0.72
5	0.80	0.75	0.72	0.79	0.75	0.71	0.77	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	0.75	0.71	0.68	0.74	0.70	0.67	0.73	0.70	0.67	0.72	0.69	0.67	0.65
7	0.73	0.68	0.65	0.72	0.68	0.65	0.71	0.67	0.64	0.70	0.67	0.64	0.69	0.66	0.64	0.63
8	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.61	0.67	0.63	0.61	0.60
9	0.67	0.62	0.59	0.66	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.58
10	0.64	0.60	0.57	0.64	0.60	0.57	0.63	0.59	0.57	0.63	0.59	0.57	0.62	0.59	0.56	0.55



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	6078.94	5874.75	5415.19	4504.50	3476.25	2243.81	1450.13	865.69	321.19
45.0	6067.13	5923.13	5534.44	4766.63	3612.94	2349.56	1556.44	880.88	371.25
90.0	6067.69	5902.31	5460.19	4554.56	3430.69	2251.13	1468.13	828.23	349.59
135.0	6057.56	5950.13	5614.88	4795.31	3713.06	2503.13	1636.88	962.44	473.63
180.0	6078.38	5925.38	5498.44	4606.31	3557.81	2288.81	1477.69	855.90	350.94
225.0	6067.13	5877.00	5403.38	4493.25	3441.38	2186.44	1297.13	797.40	299.87
270.0	6067.69	5859.56	5483.25	4567.50	3478.50	2250.56	1499.06	849.38	337.50
315.0	6057.56	5802.19	5216.06	4273.88	3151.69	2004.75	1084.95	708.47	229.50
360.0	6078.94	5874.75	5415.19	4504.50	3476.25	2243.81	1450.13	865.69	321.19

C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	31.89	19.46	18.06	17.04	18.45	18.96	18.73	17.66	16.26
45.0	36.39	19.35	17.61	17.10	17.27	18.06	18.06	17.55	16.20
90.0	36.34	18.34	17.16	16.65	16.93	17.04	17.04	16.54	15.86
135.0	68.23	20.42	17.83	16.93	17.04	17.83	17.89	17.61	16.71
180.0	35.83	18.28	17.44	16.88	17.16	18.00	18.00	17.38	16.26
225.0	30.43	19.24	18.17	17.16	16.99	18.45	18.56	17.89	16.43
270.0	38.03	20.53	19.18	17.61	17.78	19.01	19.13	18.51	16.88
315.0	26.94	19.18	18.56	17.38	18.68	19.29	18.79	18.06	16.59
360.0	31.89	19.46	18.06	17.04	18.45	18.96	18.73	17.66	16.26

C/γ(°)	90.0
0.0	14.57
45.0	14.68
90.0	14.68
135.0	14.63
180.0	14.57
225.0	14.68
270.0	14.68
315.0	14.63
360.0	14.57