
NATA

Client:

LumCAT: 3-2046-M

Luminaire: 92.70.131.000

Report No: nata-0100

Test No: GC2018120708

LampCAT: OSRAM SOLERIQ S13

Lamp flux(lm): 1777.0

Number of Lamps: 1

Length(mm): 84

Phm Type: C

Voltage(V): 36.8000

Current(A): 0.5000

Power (W): 18.4000

PF: 0.0000

Ballast type: DC

Width(mm): 84

Height(mm): 0

Photometric Results

Lumens(lm): 1569.21, Efficiency(%): 88.31% , Luminous Efficacy(lm/W): 85.28

Central intensity(cd): 4237.664, Maximum intensity(cd): 4237.664

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=30.2

[C90/270]Total=30.2

Field angle(10%Imax): [C0/180]Total=66.6

[C90/270]Total=66.6

Maximum s/h(1/2): C0_180=0.49 C90_270=0.49

Maximum s/h(1/4): C0_180=0.55 C90_270=0.55

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 89.65%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.254%

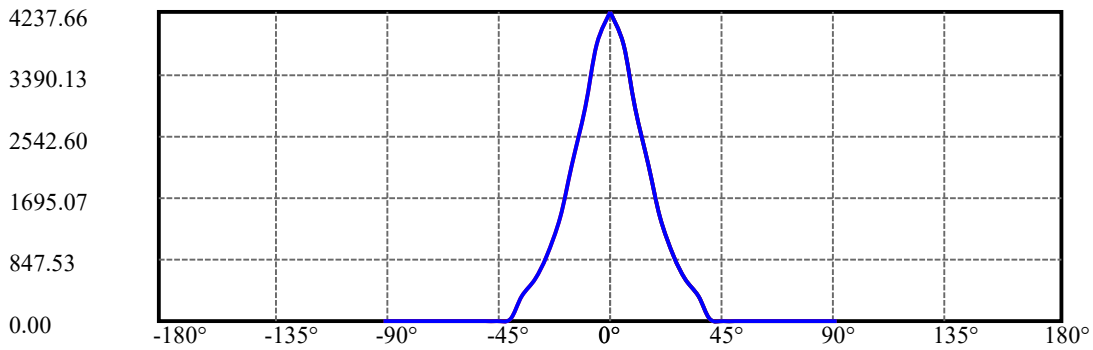
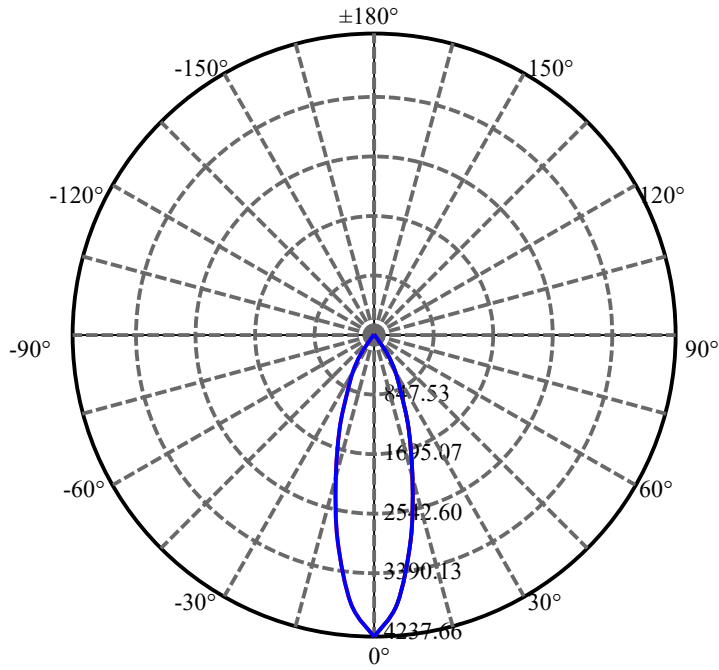
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4237.664	25.342	25.342	1.426%	1.615%
5.0	3800.250	181.551	206.893	10.217%	13.185%
10.0	2928.797	278.772	485.664	15.688%	30.950%
15.0	2129.414	302.097	787.761	17.000%	50.201%
20.0	1420.594	266.324	1054.085	14.987%	67.173%
25.0	883.512	204.668	1258.754	11.518%	80.216%
30.0	590.351	161.797	1420.55	9.105%	90.527%
35.0	337.120	105.990	1526.54	5.965%	97.281%
40.0	24.504	8.634	1535.174	.486%	97.831%
45.0	9.316	3.611	1538.785	.203%	98.061%
50.0	8.332	3.499	1542.284	.197%	98.284%
55.0	7.791	3.498	1545.782	.197%	98.507%
60.0	7.425	3.525	1549.306	.198%	98.732%
65.0	7.165	3.559	1552.866	.200%	98.959%
70.0	6.968	3.589	1556.455	.202%	99.187%
75.0	6.848	3.626	1560.081	.204%	99.418%
80.0	6.764	3.651	1563.732	.205%	99.651%
85.0	6.694	3.655	1567.387	.206%	99.884%
90.0	6.638	1.819	1569.206	.102%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1420.55	79.94%	90.53%
0-40	1535.17	86.39%	97.83%
0-60	1549.31	87.19%	98.73%
0-90	1567.39	88.20%	99.88%
0-120	1567.39	88.20%	99.88%
0-180	1569.21	88.31%	100.00%
60-90	21.61	1.22%	1.38%
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%
0-24.92	1255.37	70.65%	80.00%

ZONAL LUMEN SUMMARY

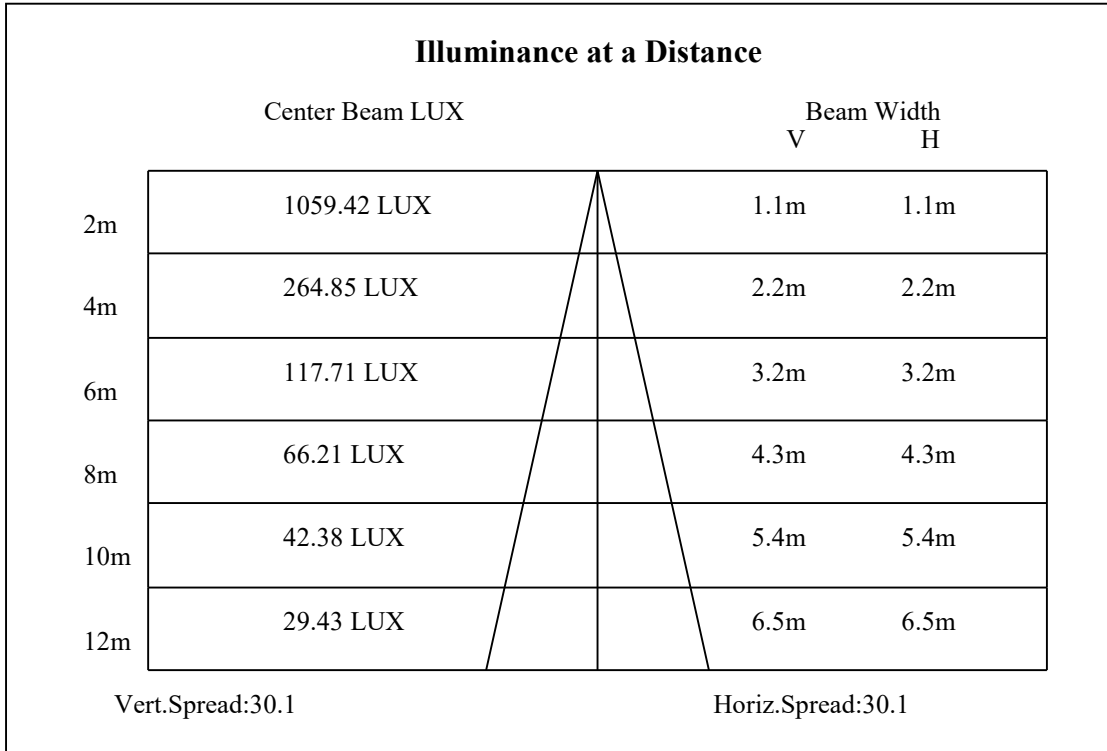
0-10	485.66
10-20	568.42
20-30	366.46
30-40	114.62
40-50	7.11
50-60	7.02
60-70	7.15
70-80	7.28
80-90	3.66
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

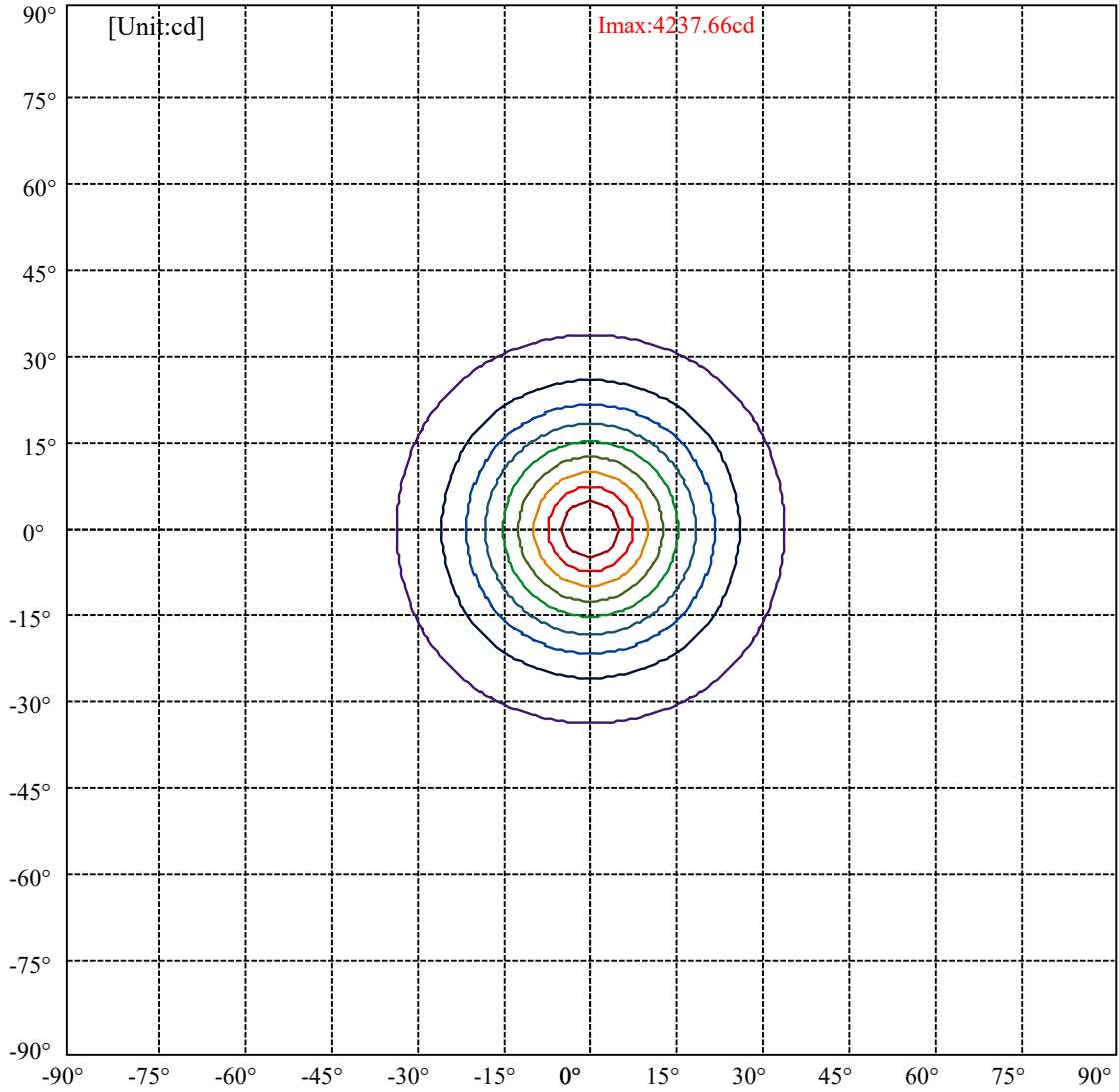


C0(Max): —————
C0/C180: —————
C90/C270: —————

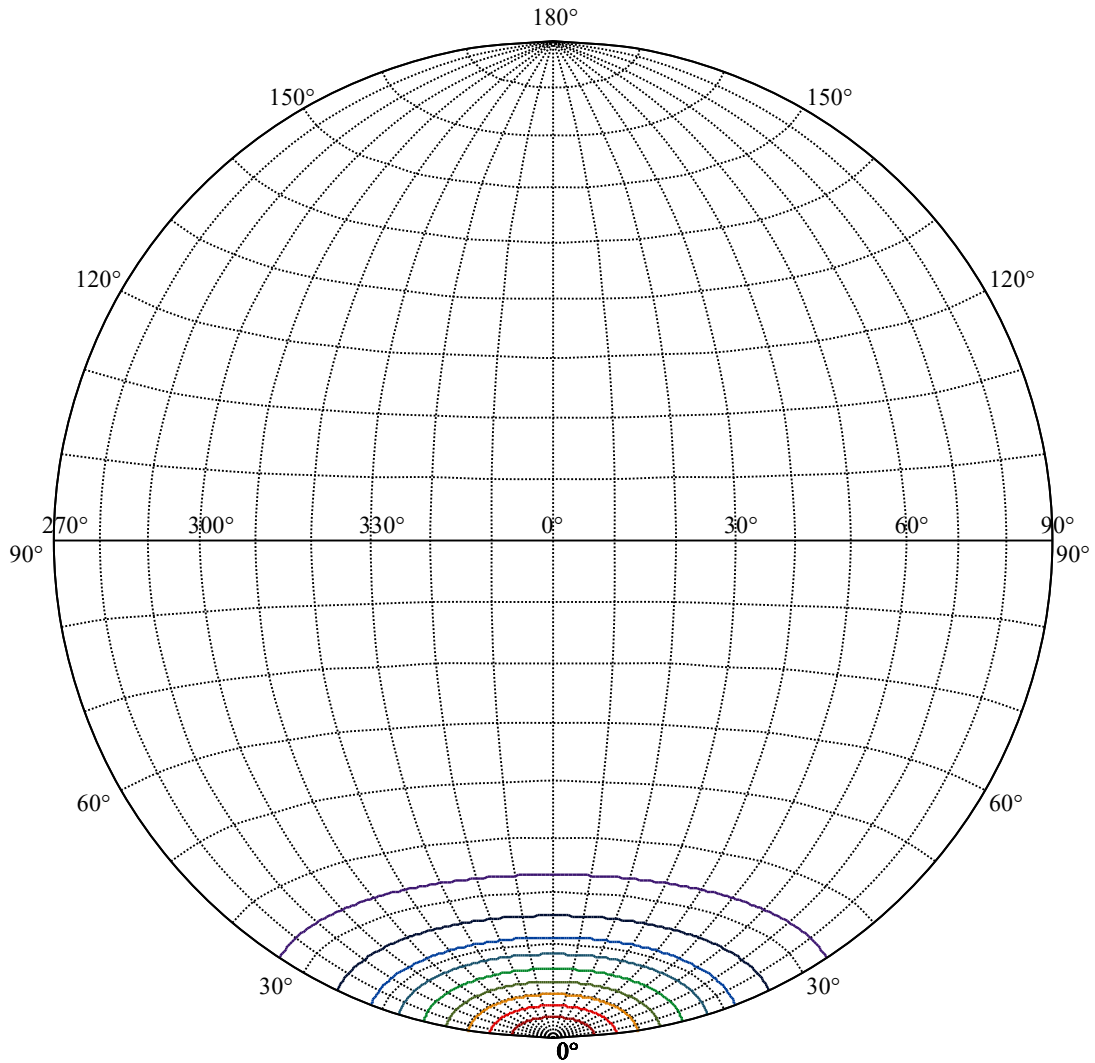
Field angle(10%Imax):C0/180Left:33.3 Right:33.3
:C90/270Left:33.3 Right:33.3

Beam Angle(50%Imax):C0/180Left:15.1 Right:15.1
:C90/270Left:15.1 Right:15.1





(10%Imax) 423.766	—
(20%Imax) 847.533	—
(30%Imax) 1271.3	—
(40%Imax) 1695.07	—
(50%Imax) 2118.83	—
(60%Imax) 2542.6	—
(70%Imax) 2966.36	—
(80%Imax) 3390.13	—
(90%Imax) 3813.9	—



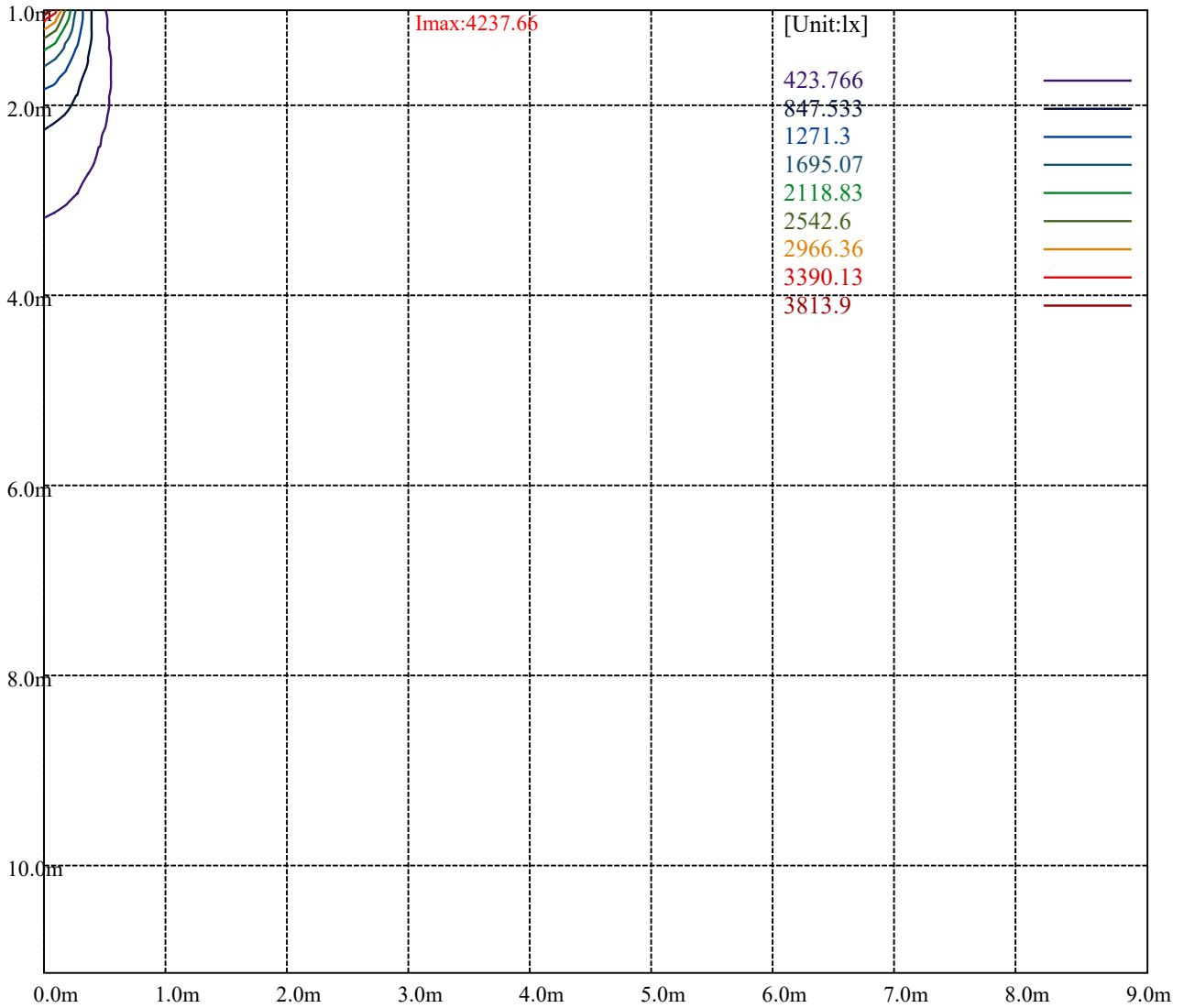
House

[Unit:cd]

Road

Imax:4237.66

(10%Imax) 423.766	—
(20%Imax) 847.533	—
(30%Imax) 1271.3	—
(40%Imax) 1695.07	—
(50%Imax) 2118.83	—
(60%Imax) 2542.6	—
(70%Imax) 2966.36	—
(80%Imax) 3390.13	—
(90%Imax) 3813.9	—



Luminance Table

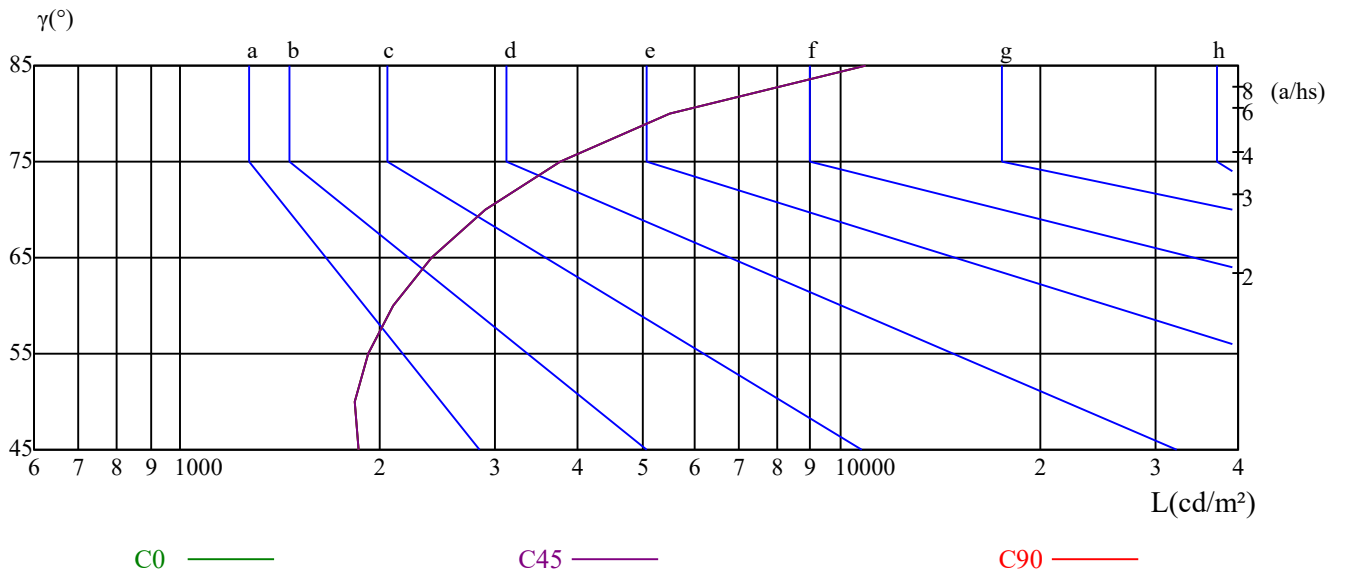
γ	45	50	55	60	65	70	75	80	85
C0	1867	1837	1925	2105	2403	2887	3750	5521	10885
C45	1867	1837	1925	2105	2403	2887	3750	5521	10885
C90	1867	1837	1925	2105	2403	2887	3750	5521	10885

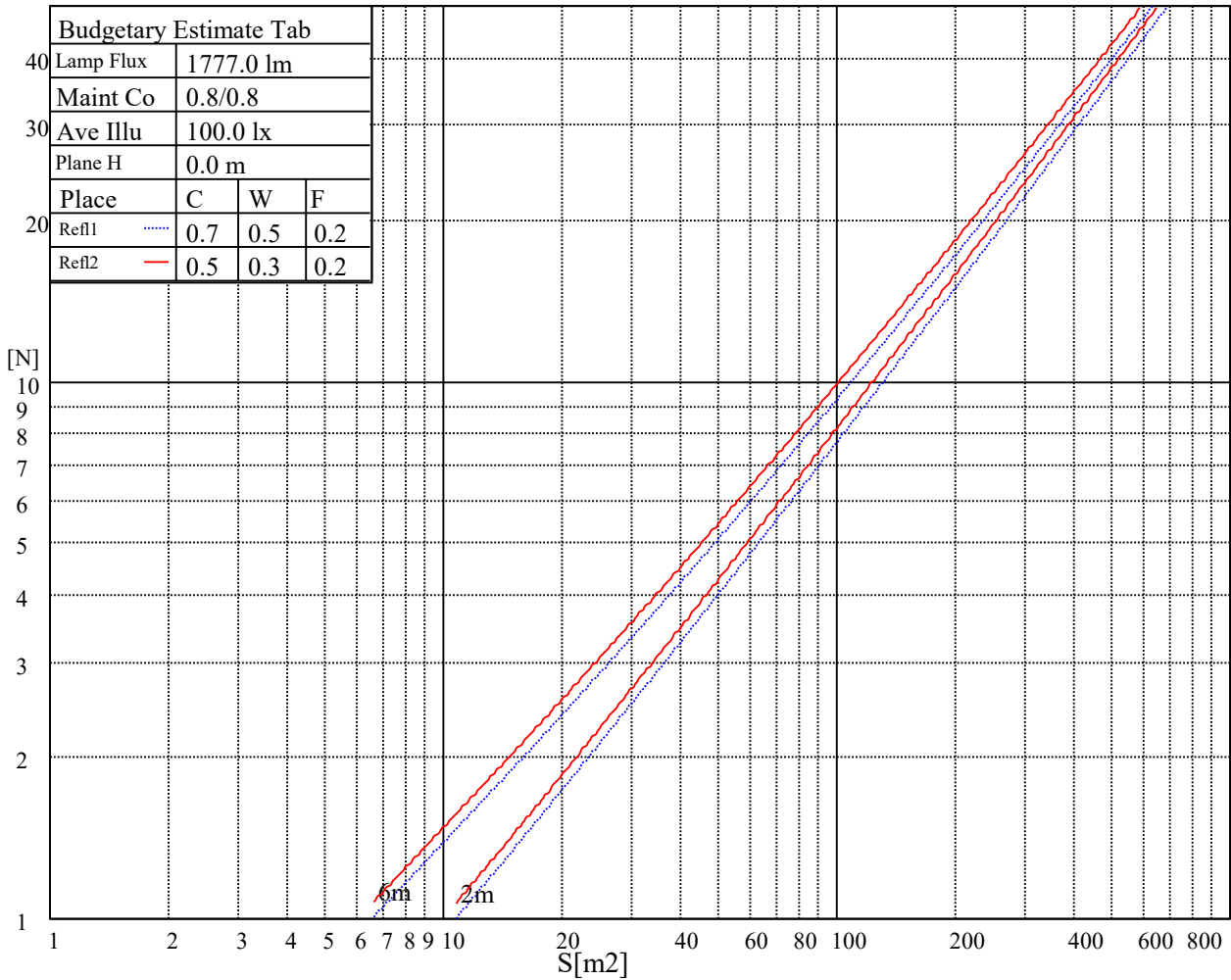
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
2403	2403	2403	3750	3750	3750	10885	10885	10885

Glare Table

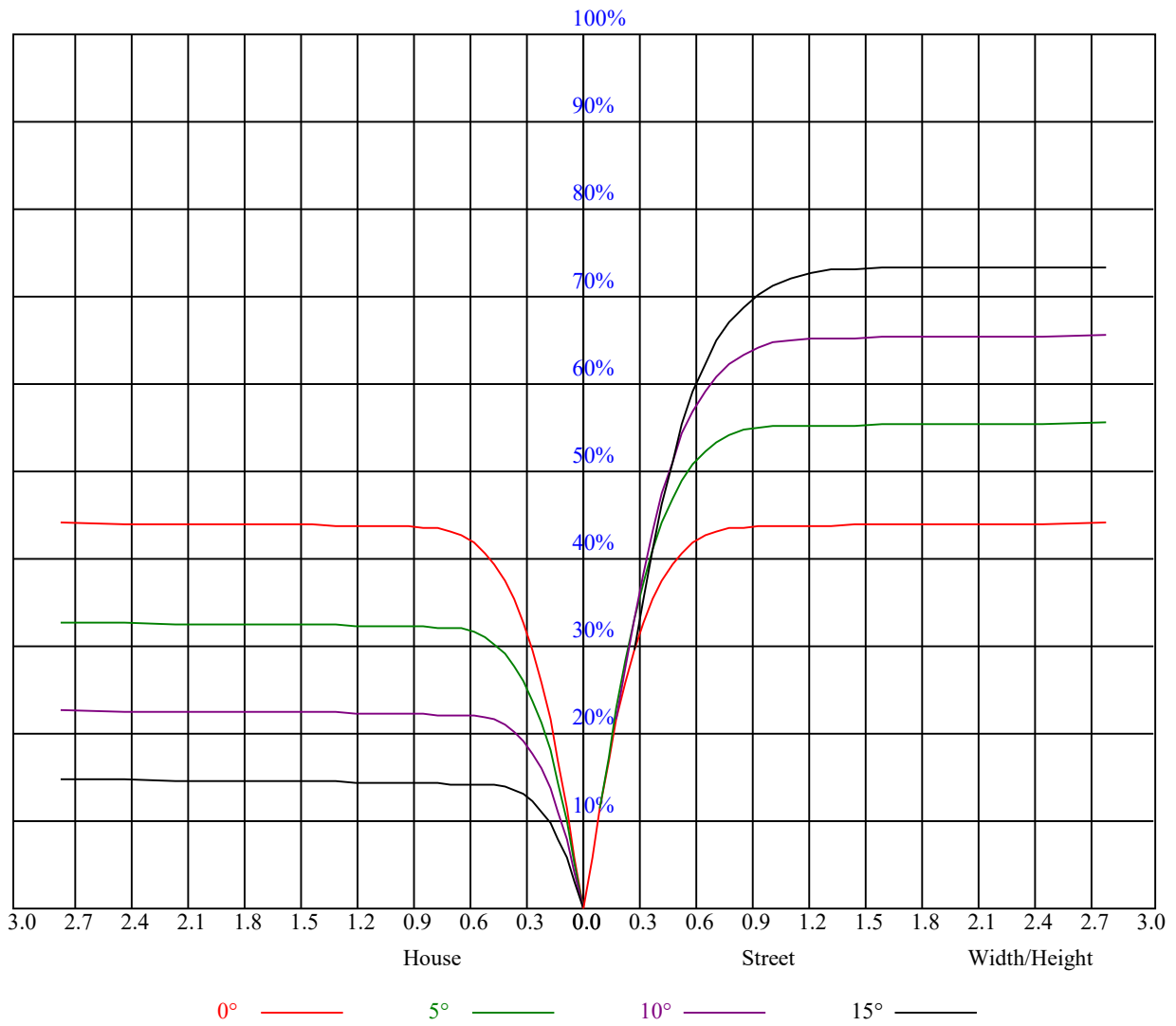
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

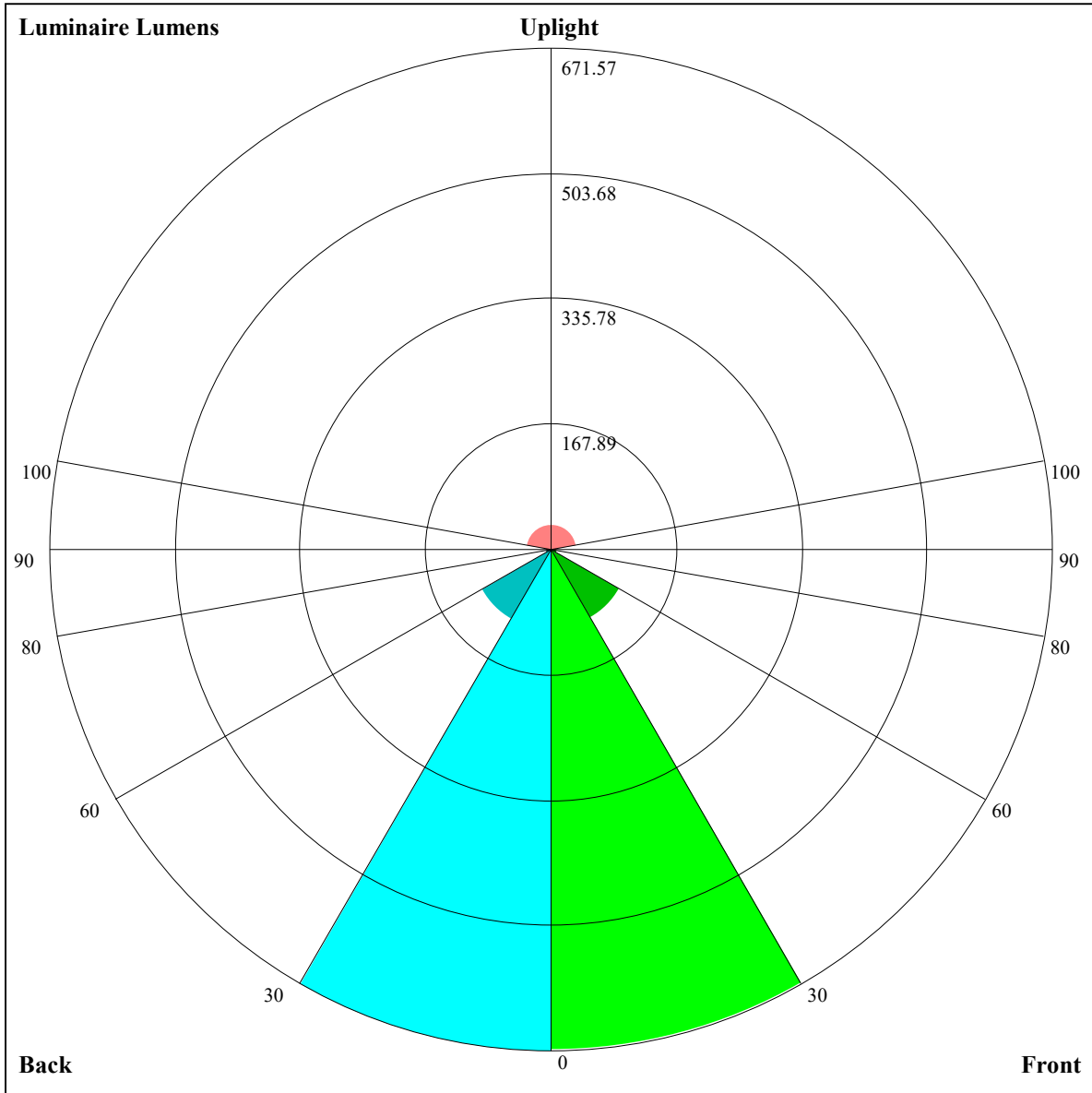
Luminance Limiting Curve





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





Luminaire Lumens:

FL=670.33,FM=106,FH=7.19,FVH=3.66

BL=671.57,BM=107.12,BH=7.2,BVH=3.66

UL=7.24,UH=34.46

BUG Rating:B2-U2-G0

Intensity data(cd)

C/\u03b3(\u00b0)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	4235.06	3848.06	3000.38	2249.44	1454.06	923.63	595.69	365.06	27.56
45.0	4250.81	3787.88	2934.00	2068.31	1326.94	811.69	555.75	301.50	16.03
90.0	4227.19	3658.50	2744.44	1899.56	1106.44	737.83	536.01	205.59	13.78
135.0	4242.38	3859.88	2946.94	2134.69	1430.44	863.44	576.00	326.25	15.69
180.0	4235.06	3696.75	2853.56	2040.75	1391.06	849.83	575.78	311.74	15.58
225.0	4250.81	3862.69	2931.75	2163.38	1526.63	940.11	621.39	386.10	23.79
270.0	4217.63	3977.44	3115.69	2338.31	1684.69	1062.00	671.63	469.69	65.76
315.0	4242.38	3710.81	2903.63	2140.88	1444.50	879.58	590.57	331.03	17.83
360.0	4235.06	3848.06	3000.38	2249.44	1454.06	923.63	595.69	365.06	27.56
C/\u03b3(\u00b0)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	9.28	8.38	7.76	7.43	7.14	6.98	6.86	6.75	6.69
45.0	8.94	8.21	7.71	7.37	7.09	6.92	6.75	6.69	6.69
90.0	8.72	8.10	7.65	7.31	7.09	6.98	6.86	6.86	6.69
135.0	9.34	8.44	7.93	7.54	7.26	6.98	6.86	6.75	6.69
180.0	9.22	8.44	7.88	7.48	7.20	6.98	6.81	6.75	6.64
225.0	9.73	8.33	7.76	7.37	7.14	6.92	6.81	6.69	6.64
270.0	9.96	8.44	7.82	7.48	7.20	7.03	6.98	6.86	6.81
315.0	9.34	8.33	7.82	7.43	7.20	6.98	6.86	6.75	6.69
360.0	9.28	8.38	7.76	7.43	7.14	6.98	6.86	6.75	6.69
C/\u03b3(\u00b0)	90.0								
0.0	6.64								
45.0	6.58								
90.0	6.64								
135.0	6.64								
180.0	6.64								
225.0	6.64								
270.0	6.69								
315.0	6.64								
360.0	6.64								