
NATA

Client:

LumCAT: 3-2035-M

Luminaire: 92.70.131.00

Report No: nata-0100

Test No: GC2018121102

LampCAT: OSRAM SOLERIQ S13

Lamp flux(lm): 1804.0

Number of Lamps: 1

Length(mm): 78

Phm Type: C

Voltage(V): 36.3000

Current(A): 0.5000

Power (W): 18.1500

PF: 0.0000

Ballast type: DC

Width(mm): 78

Height(mm): 0

Photometric Results

Lumens(lm): 1606.27, Efficiency(%): 89.04% , Luminous Efficacy(lm/W): 88.50

Central intensity(cd): 2748.375, Maximum intensity(cd): 2748.375

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=43.4

[C90/270]Total=43.4

Field angle(10%Imax): [C0/180]Total=74.0

[C90/270]Total=74.0

Maximum s/h(1/2): C0_180=0.69 C90_270=0.69

Maximum s/h(1/4): C0_180=0.72 C90_270=0.72

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 89.87%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 97.784%

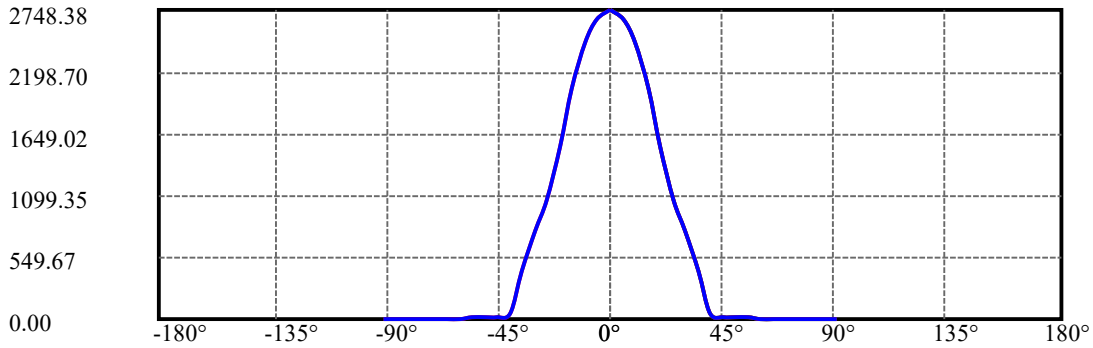
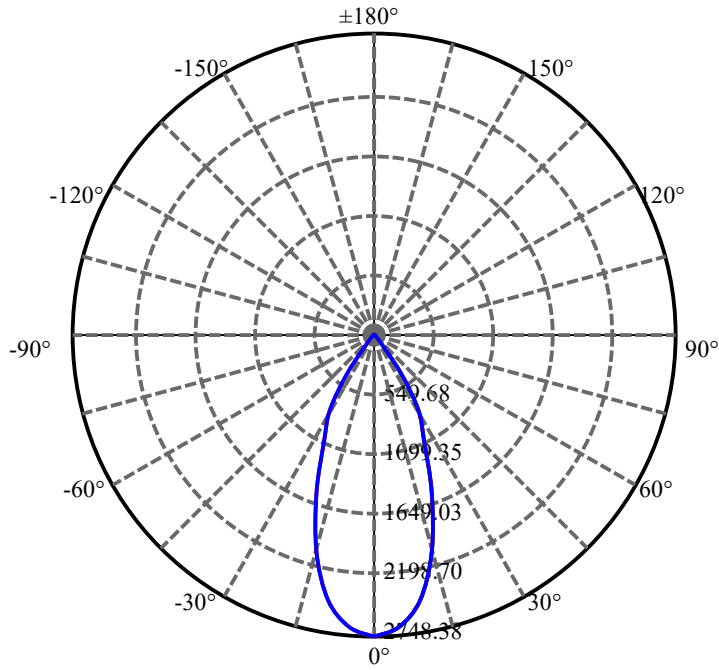
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2748.375	16.436	16.436	.911%	1.023%
5.0	2666.250	127.376	143.811	7.061%	8.953%
10.0	2452.852	233.470	377.281	12.942%	23.488%
15.0	2052.844	291.234	668.515	16.144%	41.619%
20.0	1532.180	287.244	955.759	15.923%	59.502%
25.0	1056.818	244.815	1200.574	13.571%	74.743%
30.0	793.666	217.519	1418.093	12.058%	88.285%
35.0	419.309	131.830	1549.923	7.308%	96.492%
40.0	53.051	18.692	1568.615	1.036%	97.656%
45.0	12.016	4.657	1573.272	.258%	97.946%
50.0	9.717	4.080	1577.352	.226%	98.200%
55.0	8.831	3.965	1581.318	.220%	98.446%
60.0	8.276	3.929	1585.246	.218%	98.691%
65.0	7.798	3.874	1589.12	.215%	98.932%
70.0	7.460	3.843	1592.963	.213%	99.171%
75.0	7.193	3.808	1596.771	.211%	99.409%
80.0	7.059	3.811	1600.582	.211%	99.646%
85.0	6.954	3.797	1604.379	.210%	99.882%
90.0	6.905	1.892	1606.271	.105%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1418.09	78.61%	88.28%
0-40	1568.61	86.95%	97.66%
0-60	1585.25	87.87%	98.69%
0-90	1604.38	88.93%	99.88%
0-120	1604.38	88.93%	99.88%
0-180	1606.27	89.04%	100.00%
60-90	23.06	1.28%	1.44%
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%
0-26.94	1285.02	71.23%	80.00%

ZONAL LUMEN SUMMARY

0-10	377.28
10-20	578.48
20-30	462.33
30-40	150.52
40-50	8.74
50-60	7.89
60-70	7.72
70-80	7.62
80-90	3.80
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: —————

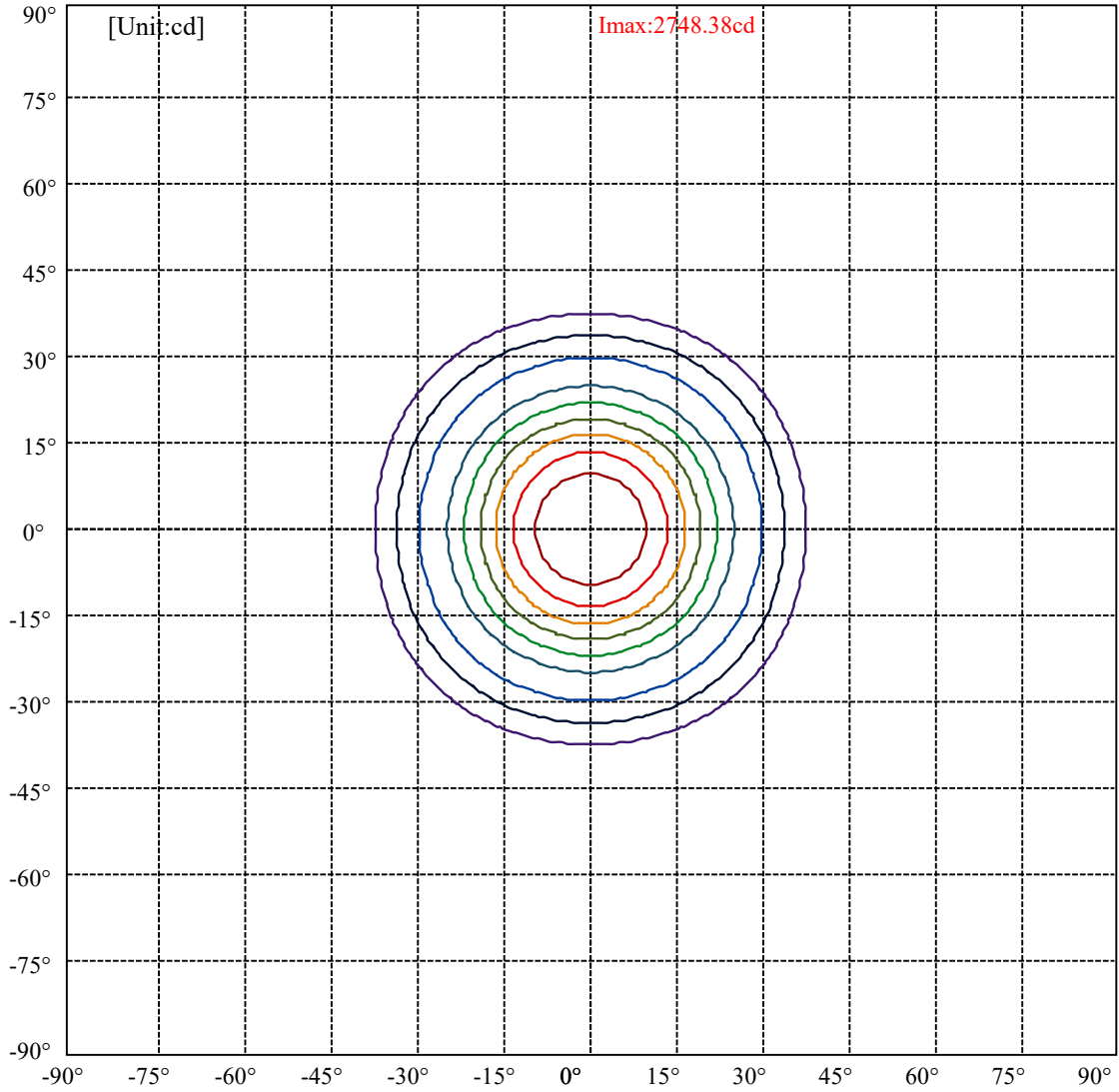
C90/C270: —————

Field angle(10%Imax):C0/180Left:37.0 Right:37.0

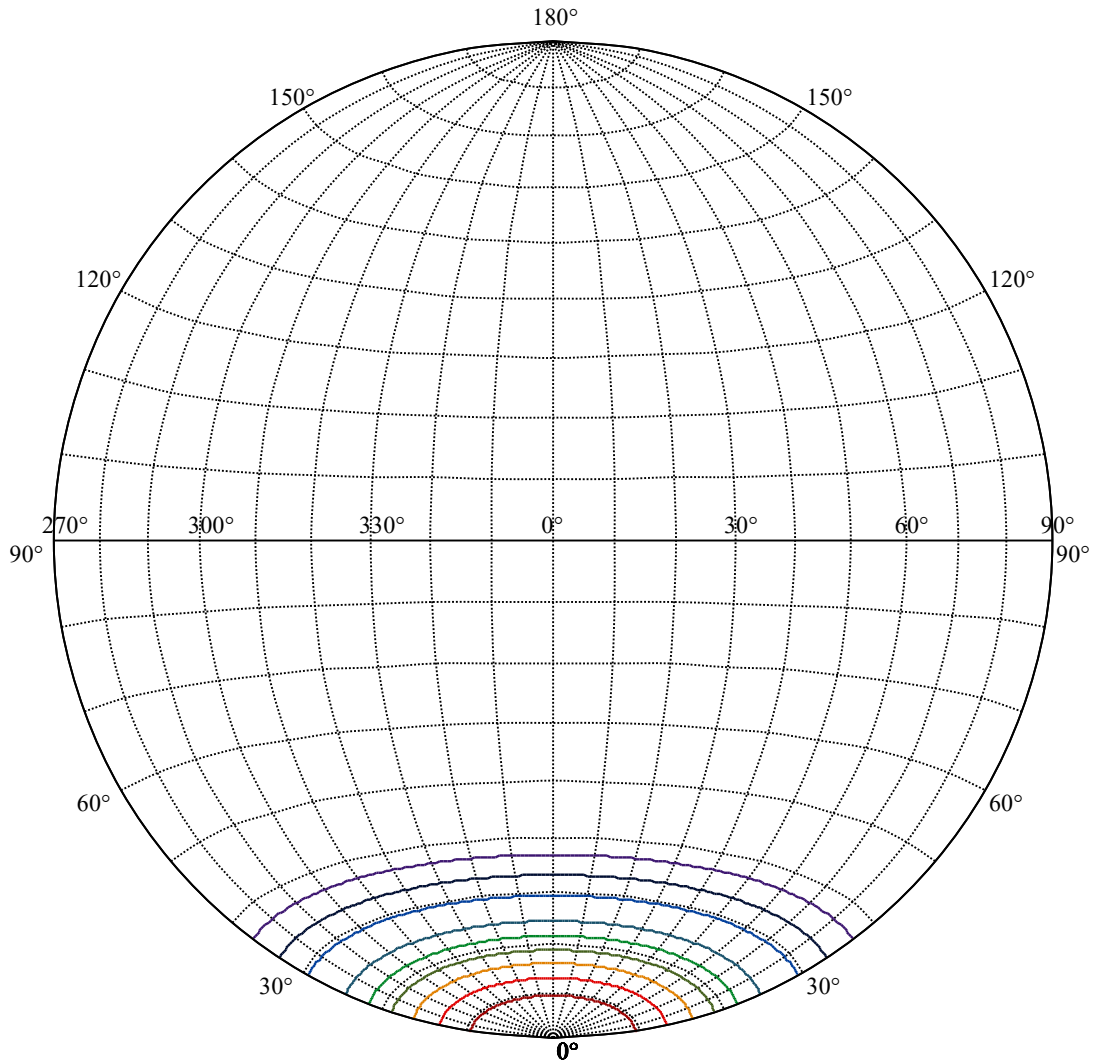
:C90/270Left:37.0 Right:37.0

Beam Angle(50%Imax):C0/180Left:21.7 Right:21.7

:C90/270Left:21.7 Right:21.7



(10%Imax) 274.837	—
(20%Imax) 549.675	—
(30%Imax) 824.513	—
(40%Imax) 1099.35	—
(50%Imax) 1374.19	—
(60%Imax) 1649.03	—
(70%Imax) 1923.86	—
(80%Imax) 2198.7	—
(90%Imax) 2473.54	—



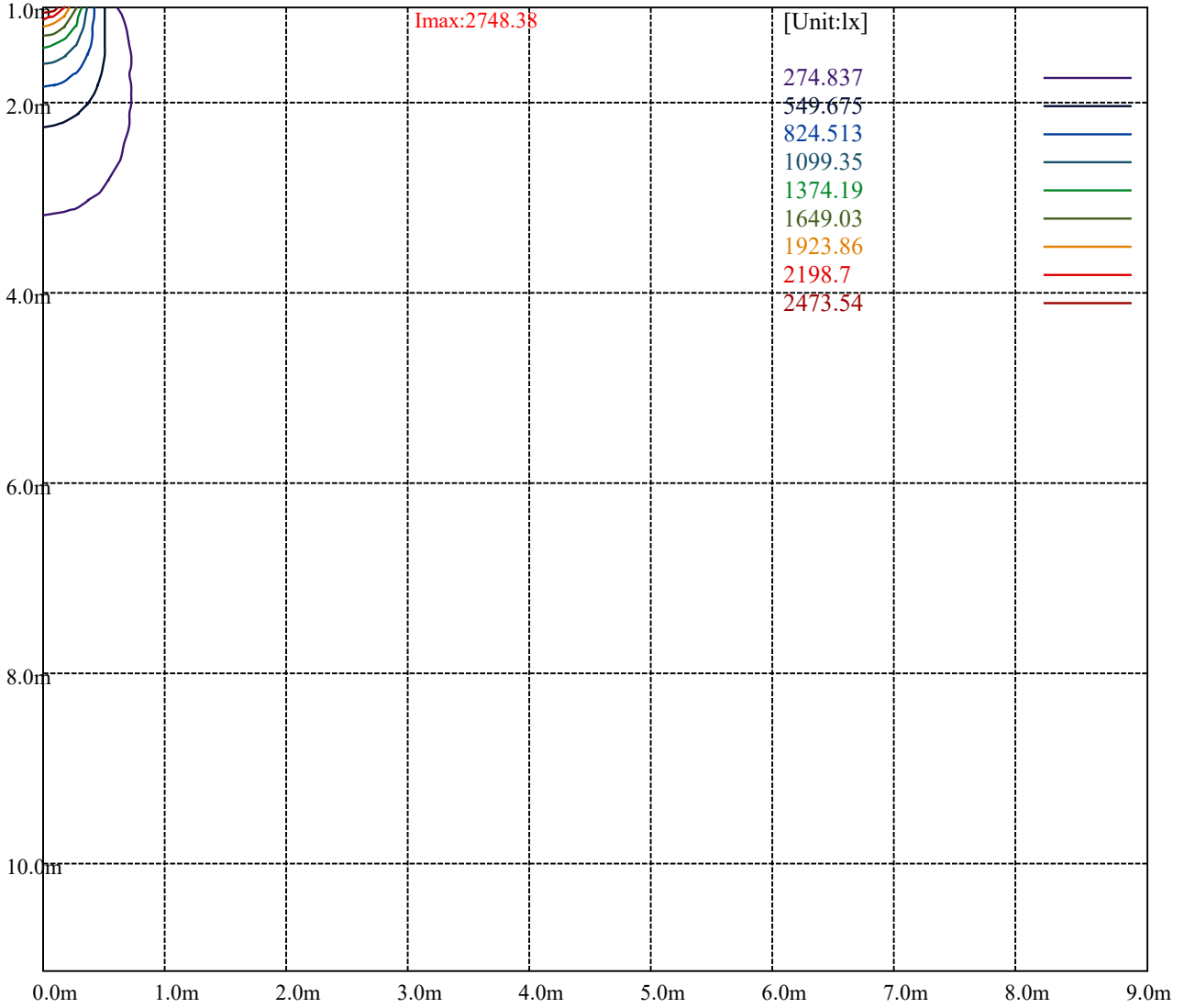
House

[Unit:cd]

Road

Imax:2748.38

(10%Imax) 274.837	—
(20%Imax) 549.675	—
(30%Imax) 824.513	—
(40%Imax) 1099.35	—
(50%Imax) 1374.19	—
(60%Imax) 1649.03	—
(70%Imax) 1923.86	—
(80%Imax) 2198.7	—
(90%Imax) 2473.54	—



Luminance Table

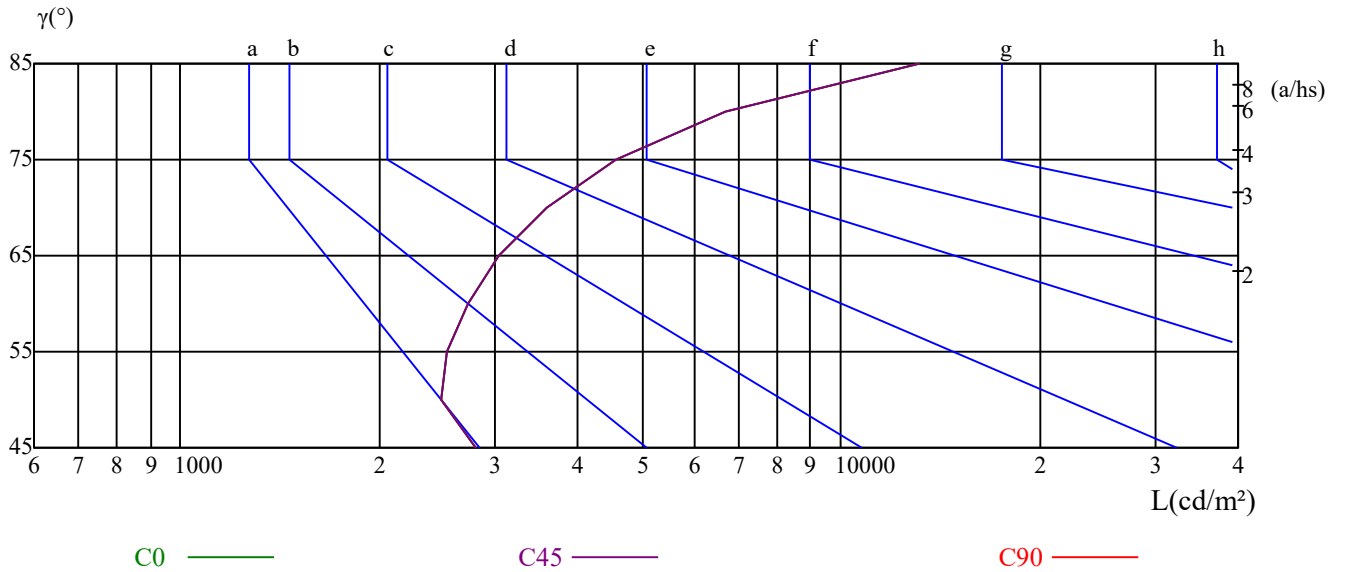
γ	45	50	55	60	65	70	75	80	85
C0	2793	2485	2531	2721	3033	3585	4568	6682	13114
C45	2793	2485	2531	2721	3033	3585	4568	6682	13114
C90	2793	2485	2531	2721	3033	3585	4568	6682	13114

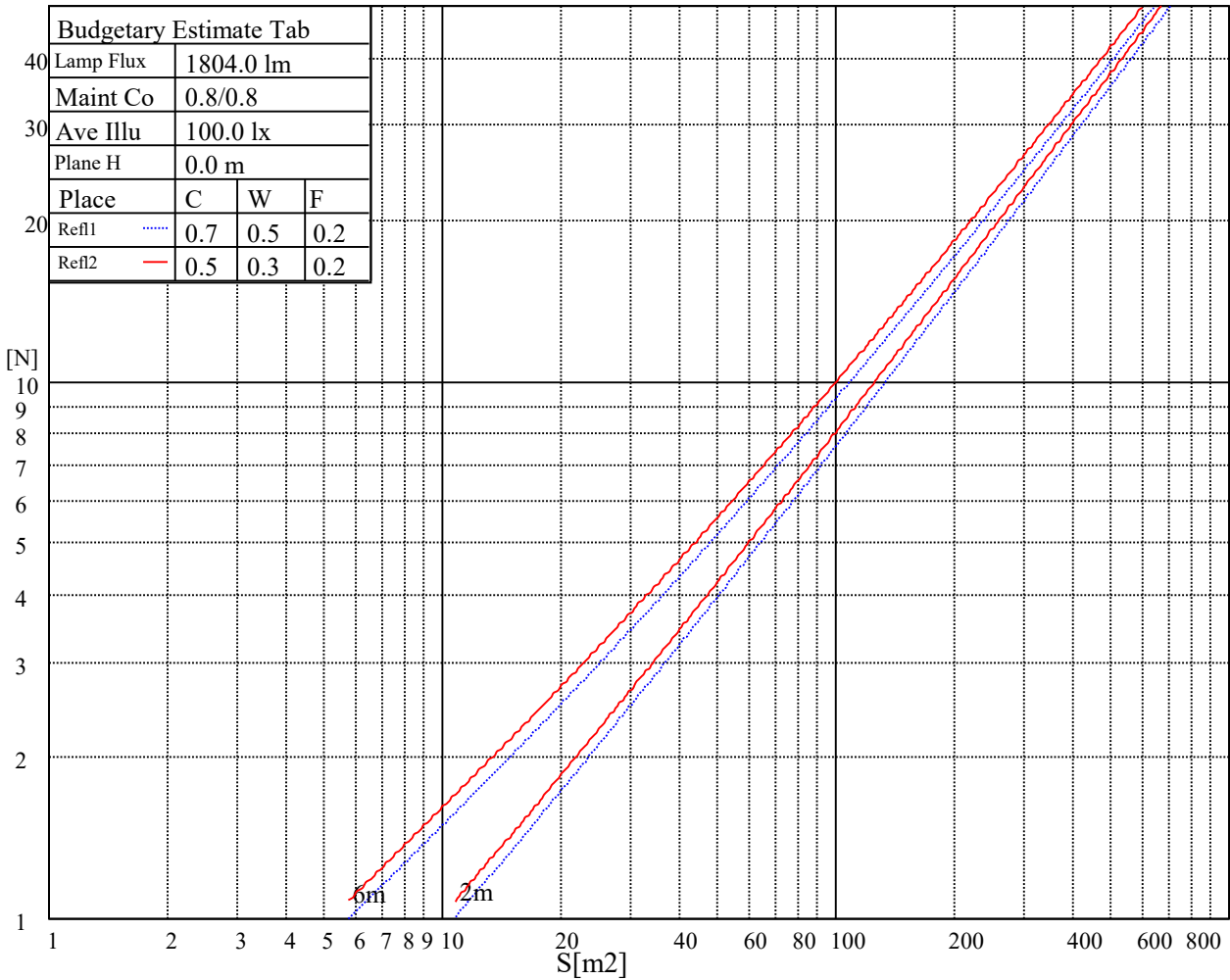
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3033	3033	3033	4568	4568	4568	13114	13114	13114

Glare Table

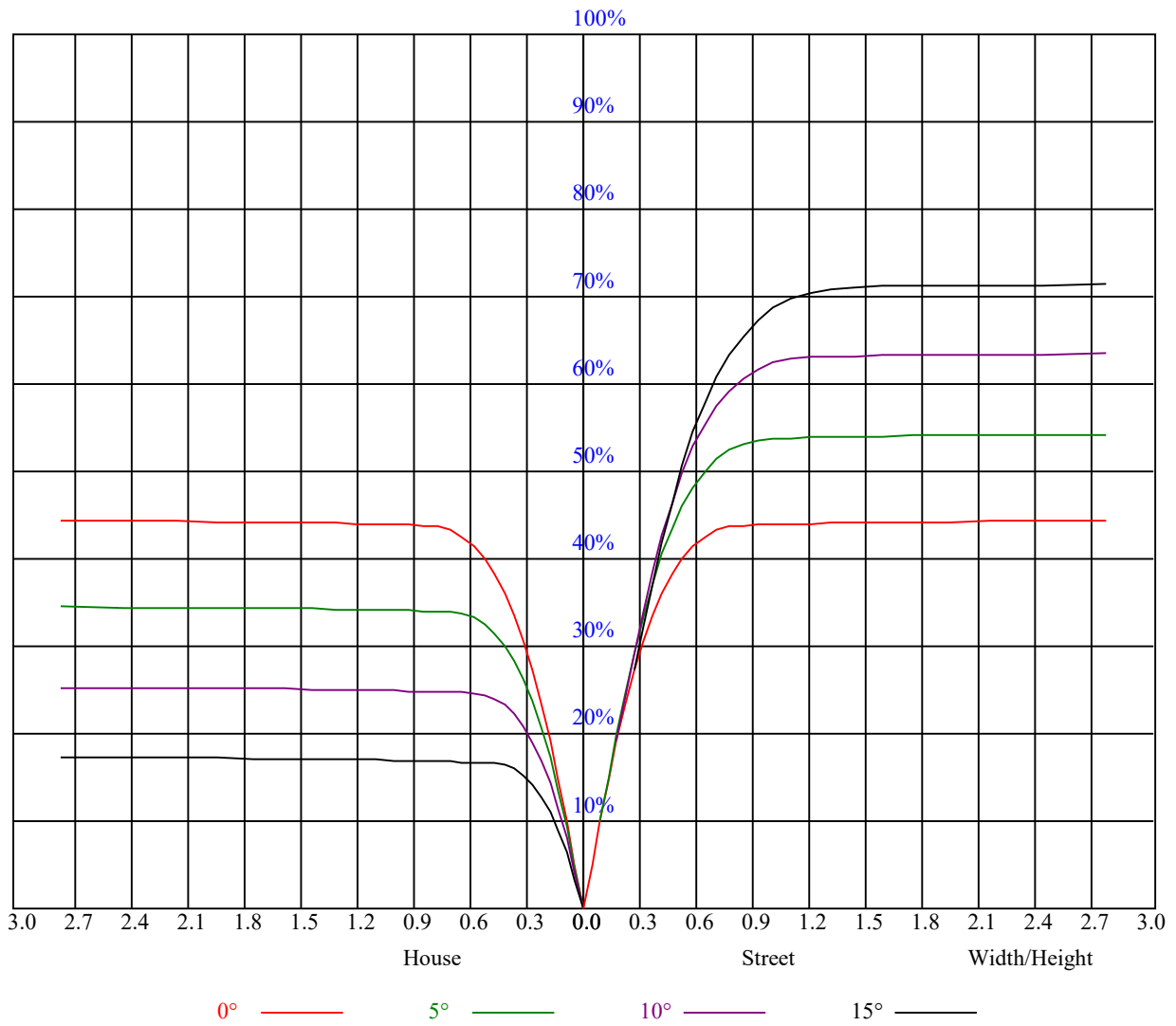
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

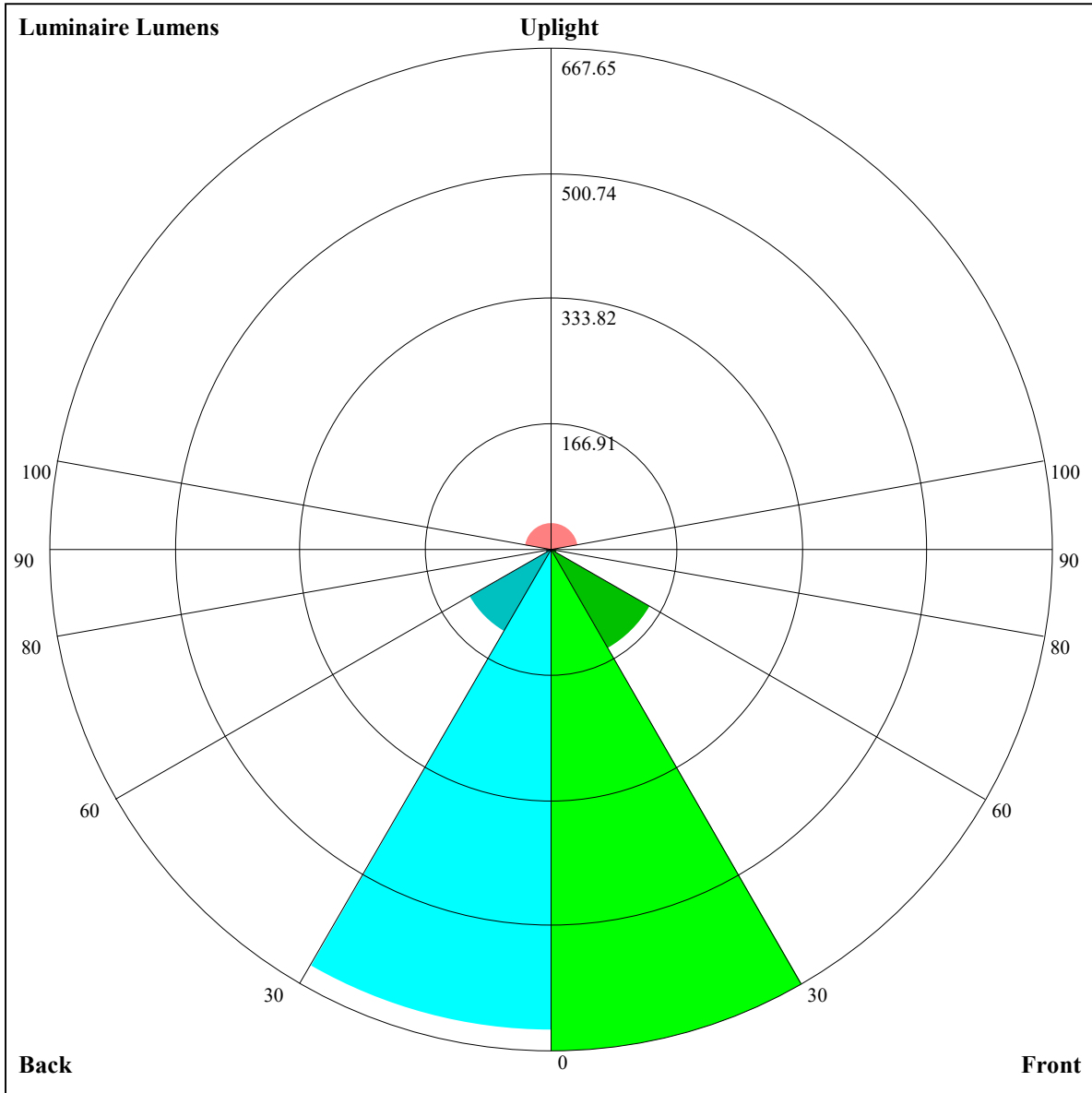
Luminance Limiting Curve





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





Luminaire Lumens:

FL=667.65,FM=151.27,FH=7.73,FVH=3.8

BL=640.38,BM=126.05,BH=7.69,BVH=3.8

UL=7.53,UH=35.85

BUG Rating:B2-U2-G0

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	2742.75	2694.94	2527.88	2172.38	1683.56	1134.00	852.19	553.50	88.43
45.0	2748.94	2702.81	2523.94	2145.94	1648.69	1121.63	837.56	527.06	170.61
90.0	2754.00	2665.13	2410.88	2018.81	1485.00	1029.83	792.79	388.24	29.93
135.0	2747.81	2672.44	2452.50	2057.06	1559.81	1069.88	806.06	430.31	32.63
180.0	2742.75	2633.63	2371.50	1963.13	1382.06	965.31	714.54	301.11	21.32
225.0	2748.94	2634.19	2403.56	1961.44	1413.56	989.55	728.78	312.02	20.08
270.0	2754.00	2673.00	2484.56	2084.63	1558.69	1092.38	819.00	433.13	34.48
315.0	2747.81	2653.88	2448.00	2019.38	1526.06	1051.99	798.41	409.11	26.94
360.0	2742.75	2694.94	2527.88	2172.38	1683.56	1134.00	852.19	553.50	88.43
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	14.23	9.84	8.89	8.33	7.88	7.48	7.26	7.09	6.98
45.0	13.67	10.07	9.06	8.44	7.93	7.54	7.31	7.14	6.98
90.0	11.87	9.96	8.94	8.33	7.88	7.48	7.20	7.03	6.98
135.0	11.87	9.96	9.06	8.44	7.88	7.48	7.20	7.03	6.92
180.0	10.58	9.34	8.66	8.10	7.71	7.37	7.14	7.03	6.92
225.0	10.63	9.39	8.61	8.16	7.65	7.43	7.14	7.09	6.98
270.0	11.70	9.62	8.78	8.27	7.76	7.48	7.14	7.03	6.98
315.0	11.59	9.56	8.66	8.16	7.71	7.43	7.14	7.03	6.92
360.0	14.23	9.84	8.89	8.33	7.88	7.48	7.26	7.09	6.98
C/ γ (°)	90.0								
0.0	6.92								
45.0	6.92								
90.0	6.86								
135.0	6.92								
180.0	6.92								
225.0	6.92								
270.0	6.92								
315.0	6.86								
360.0	6.92								