
NATA

Client:

LumCAT: 2-1794-N

Luminaire: 92.70.131.00

Report No: nata-0100

Test No: GC2018111311

LampCAT: OSRAM S15

Lamp flux(lm): 2619.0

Number of Lamps: 1

Length(mm): 69

Phm Type: C

Voltage(V): 36.2000

Current(A): 0.5500

Power (W): 19.9100

PF: 1.0000

Ballast type: DC

Width(mm): 69

Height(mm): 0

Photometric Results

Lumens(lm): 2196.08, Efficiency(%): 83.85% , Luminous Efficacy(lm/W): 110.30

Central intensity(cd): 7214.485, Maximum intensity(cd): 7214.485

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=27.4

[C90/270]Total=27.4

Field angle(10%Imax): [C0/180]Total=57.6

[C90/270]Total=57.6

Maximum s/h(1/2): C0_180=0.46 C90_270=0.46

Maximum s/h(1/4): C0_180=0.48 C90_270=0.48

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 85.42%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 96.420%

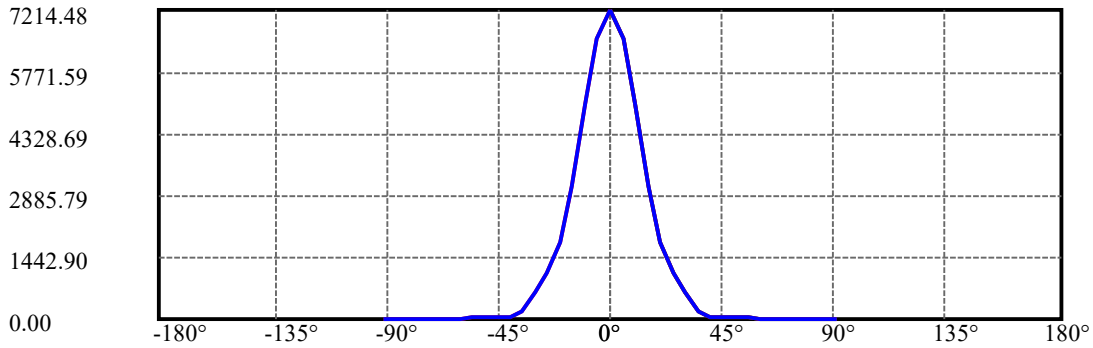
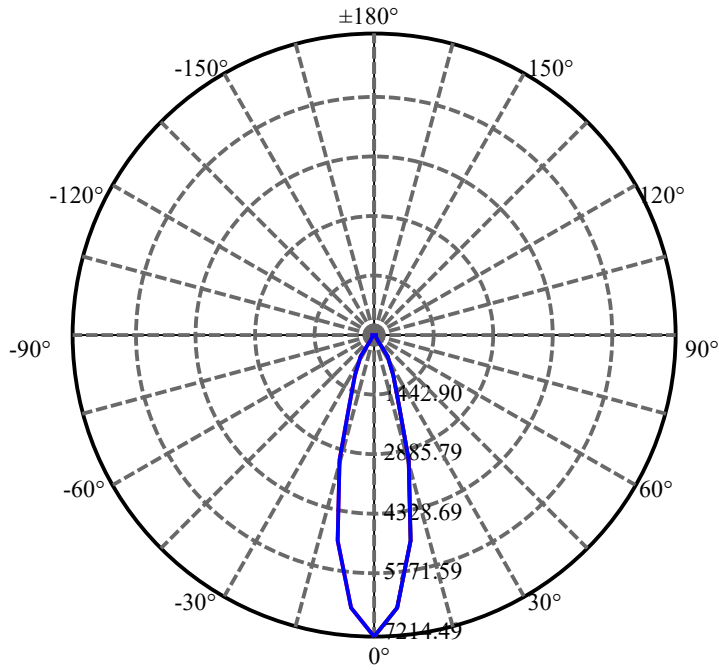
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	7214.484	43.144	43.144	1.647%	1.965%
5.0	6559.242	313.357	356.501	11.965%	16.233%
10.0	5013.914	477.240	833.741	18.222%	37.965%
15.0	3113.508	441.708	1275.449	16.866%	58.078%
20.0	1798.523	337.176	1612.625	12.874%	73.432%
25.0	1071.710	248.265	1860.89	9.479%	84.737%
30.0	610.193	167.235	2028.125	6.385%	92.352%
35.0	184.085	57.876	2086.001	2.210%	94.987%
40.0	58.676	20.674	2106.675	.789%	95.929%
45.0	40.852	15.834	2122.508	.605%	96.650%
50.0	31.261	13.126	2135.635	.501%	97.247%
55.0	25.270	11.347	2146.981	.433%	97.764%
60.0	21.185	10.057	2157.038	.384%	98.222%
65.0	17.712	8.799	2165.837	.336%	98.623%
70.0	15.497	7.982	2173.819	.305%	98.986%
75.0	13.641	7.222	2181.041	.276%	99.315%
80.0	12.122	6.544	2187.585	.250%	99.613%
85.0	10.744	5.867	2193.451	.224%	99.880%
90.0	9.605	2.632	2196.083	.101%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	2028.12	77.44%	92.35%
0-40	2106.67	80.44%	95.93%
0-60	2157.04	82.36%	98.22%
0-90	2193.45	83.75%	99.88%
0-120	2193.45	83.75%	99.88%
0-180	2196.08	83.85%	100.00%
60-90	46.47	1.77%	2.12%
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%
0-22.90	1756.87	67.08%	80.00%

ZONAL LUMEN SUMMARY

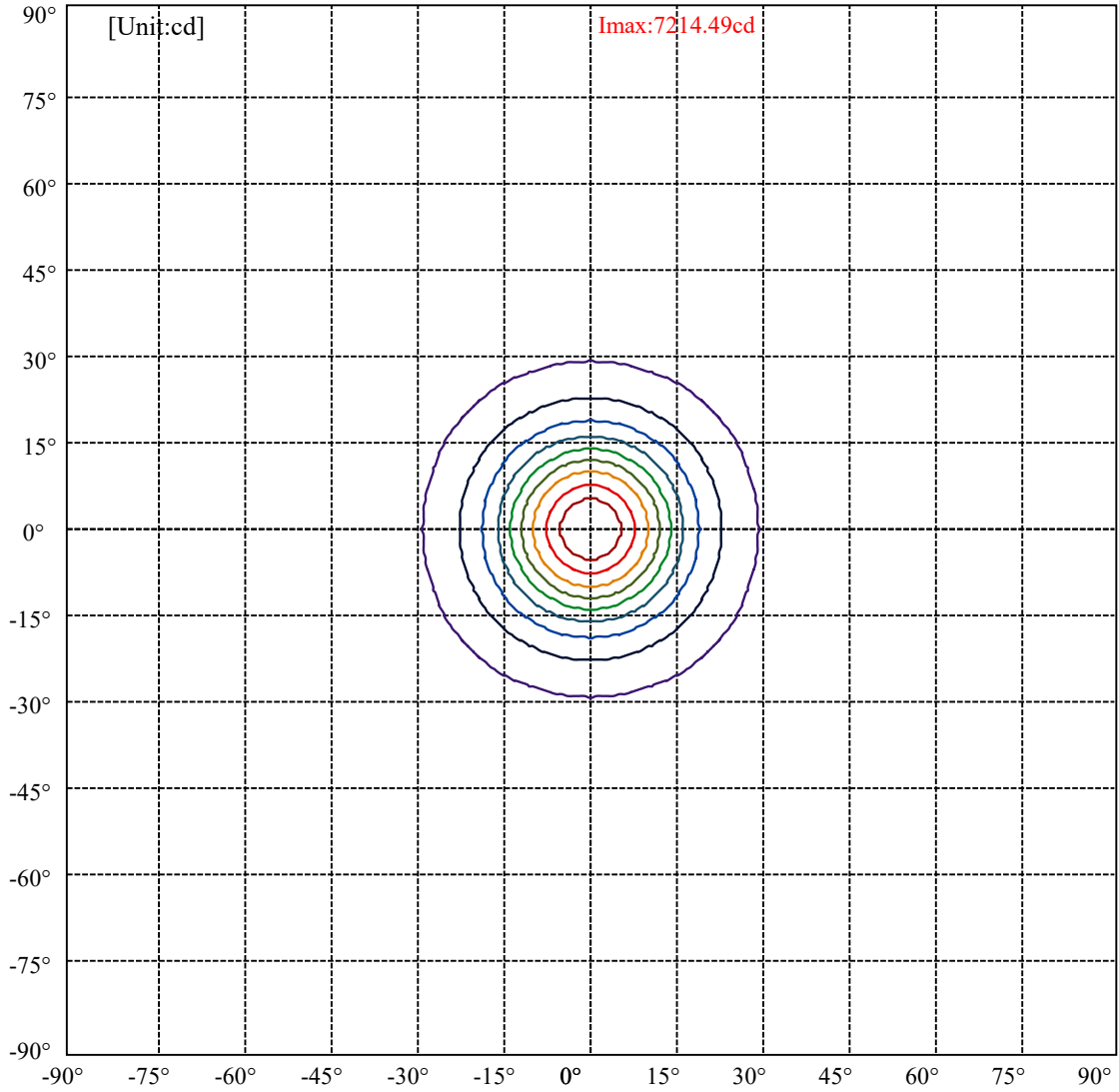
0-10	833.74
10-20	778.88
20-30	415.50
30-40	78.55
40-50	28.96
50-60	21.40
60-70	16.78
70-80	13.77
80-90	5.87
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



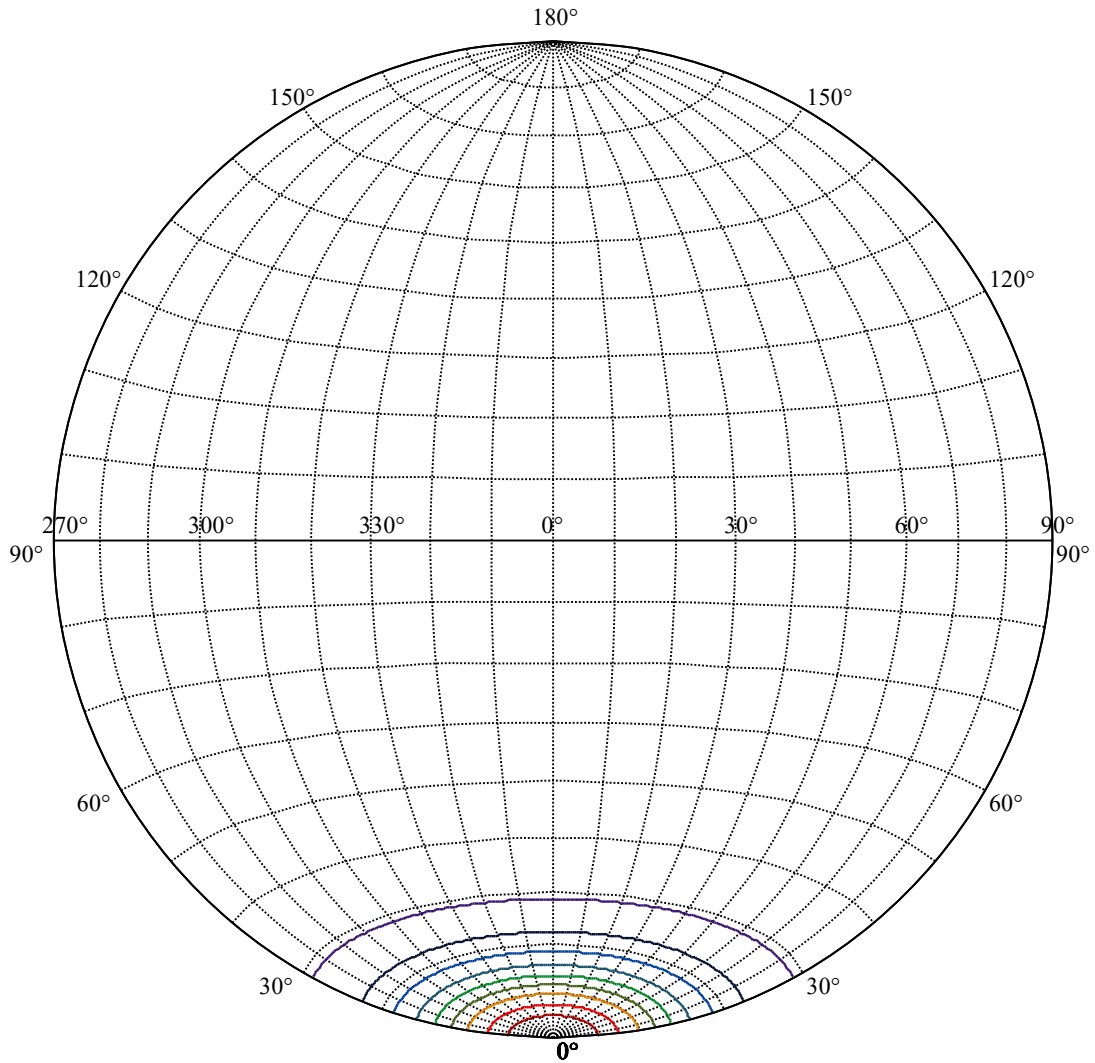
C0(Max): ———
C0/C180: ———
C90/C270: ———

Field angle(10%Imax):C0/180Left:28.8 Right:28.8
:C90/270Left:28.8 Right:28.8

Beam Angle(50%Imax):C0/180Left:13.7 Right:13.7
:C90/270Left:13.7 Right:13.7



(10%Imax) 721.448	—
(20%Imax) 1442.9	—
(30%Imax) 2164.35	—
(40%Imax) 2885.79	—
(50%Imax) 3607.24	—
(60%Imax) 4328.69	—
(70%Imax) 5050.14	—
(80%Imax) 5771.59	—
(90%Imax) 6493.04	—



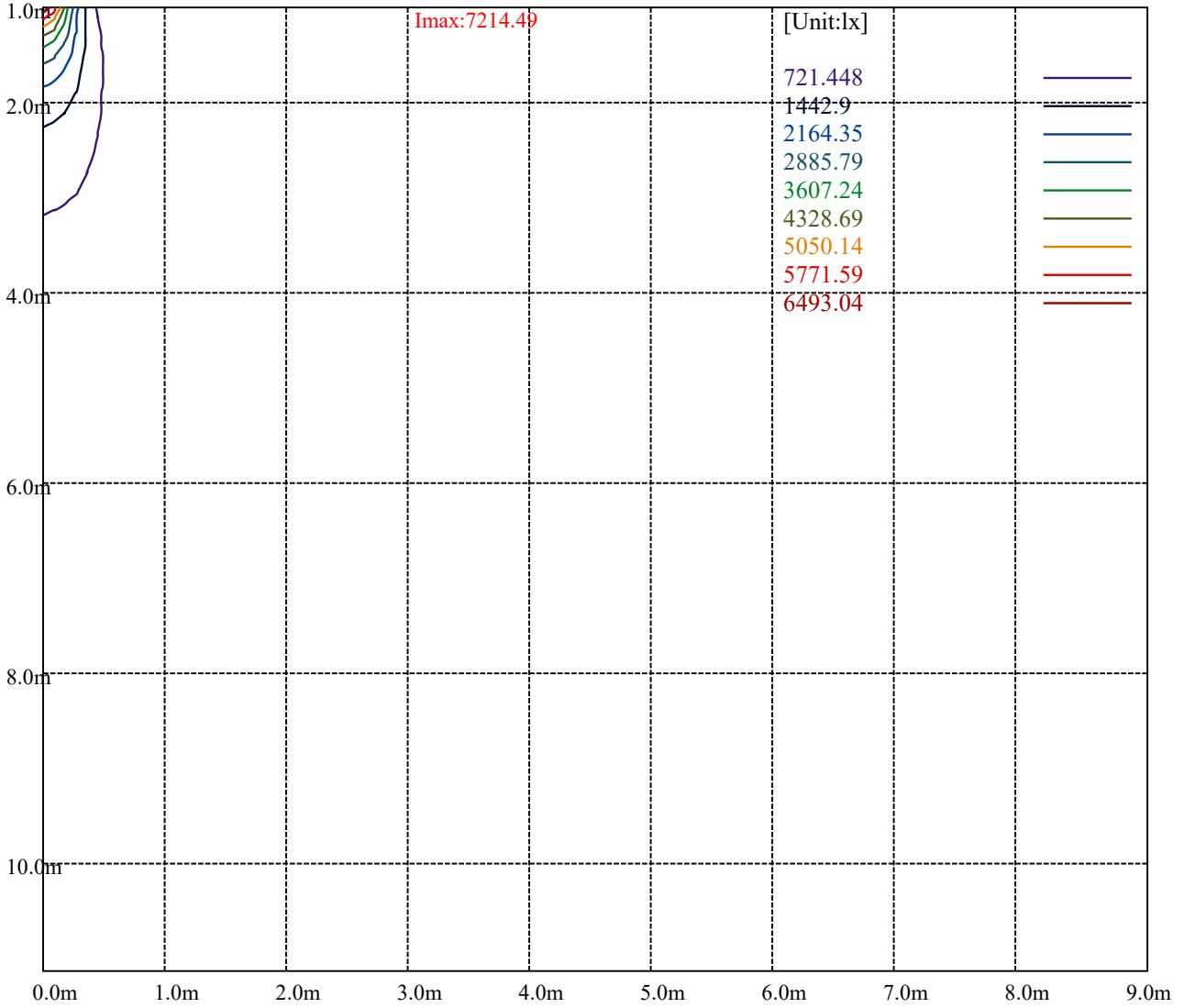
House

[Unit:cd]

Road

Imax:7214.49

(10%Imax) 721.448	—
(20%Imax) 1442.9	—
(30%Imax) 2164.35	—
(40%Imax) 2885.79	—
(50%Imax) 3607.24	—
(60%Imax) 4328.69	—
(70%Imax) 5050.14	—
(80%Imax) 5771.59	—
(90%Imax) 6493.04	—



Luminance Table

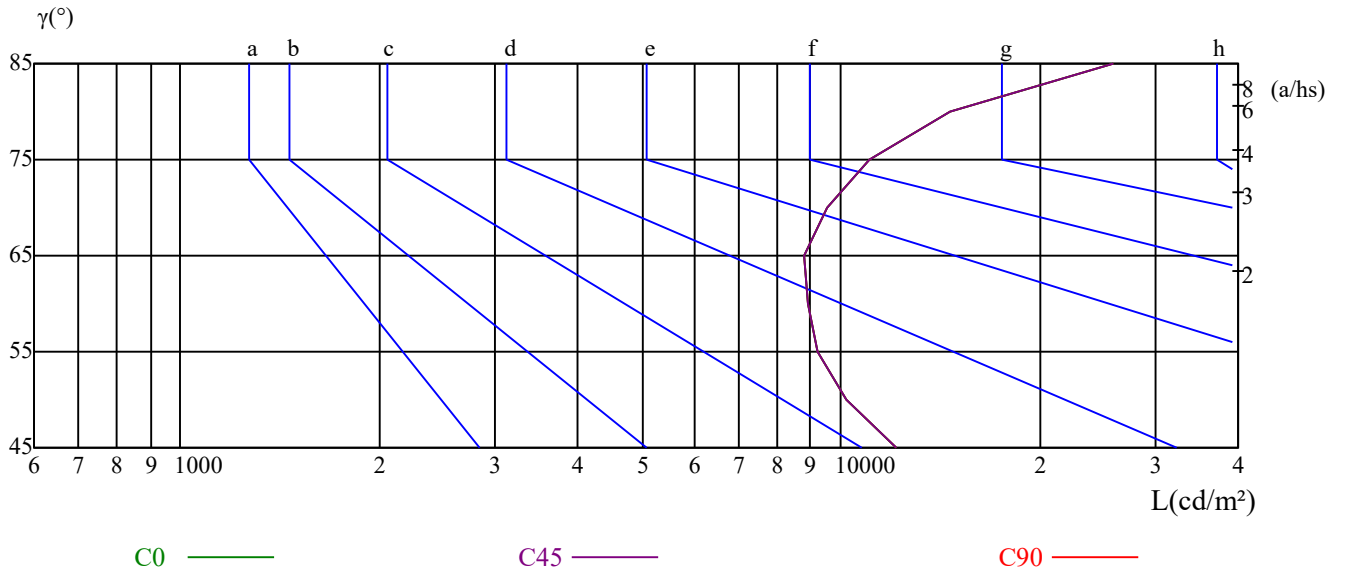
γ	45	50	55	60	65	70	75	80	85
C0	12135	10215	9254	8899	8803	9517	11070	14662	25892
C45	12135	10215	9254	8899	8803	9517	11070	14662	25892
C90	12135	10215	9254	8899	8803	9517	11070	14662	25892

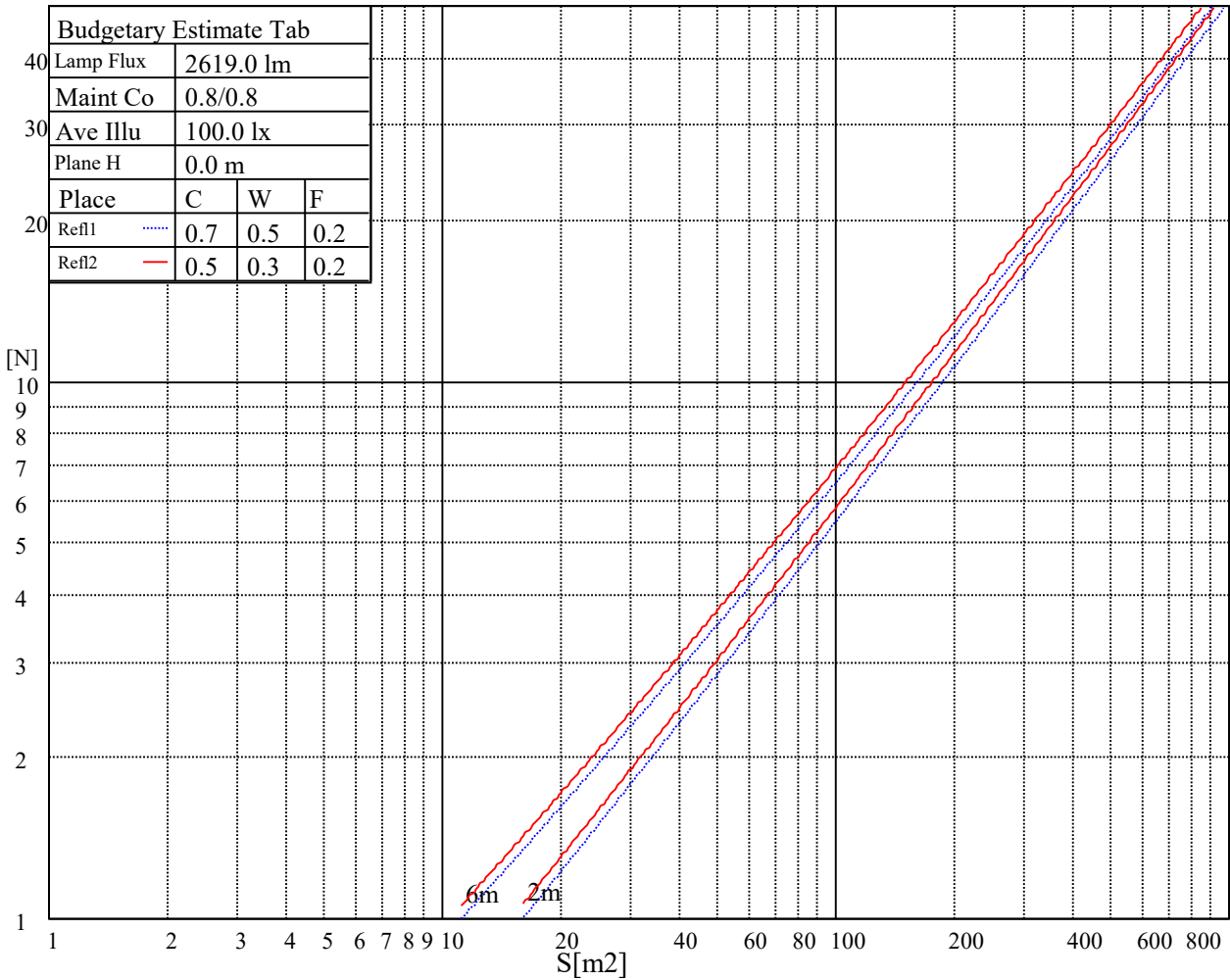
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
8803	8803	8803	11070	11070	11070	25892	25892	25892

Glare Table

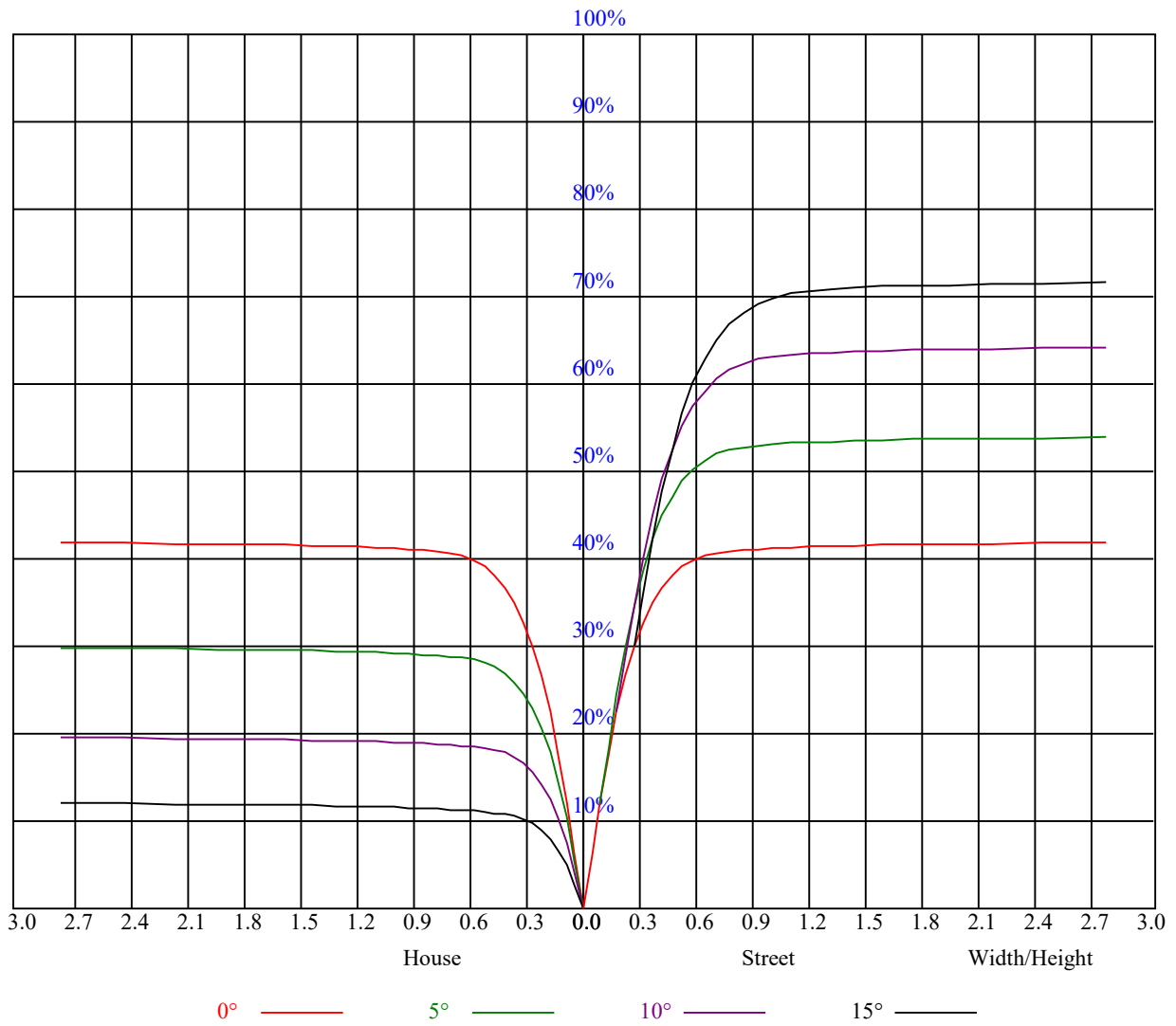
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

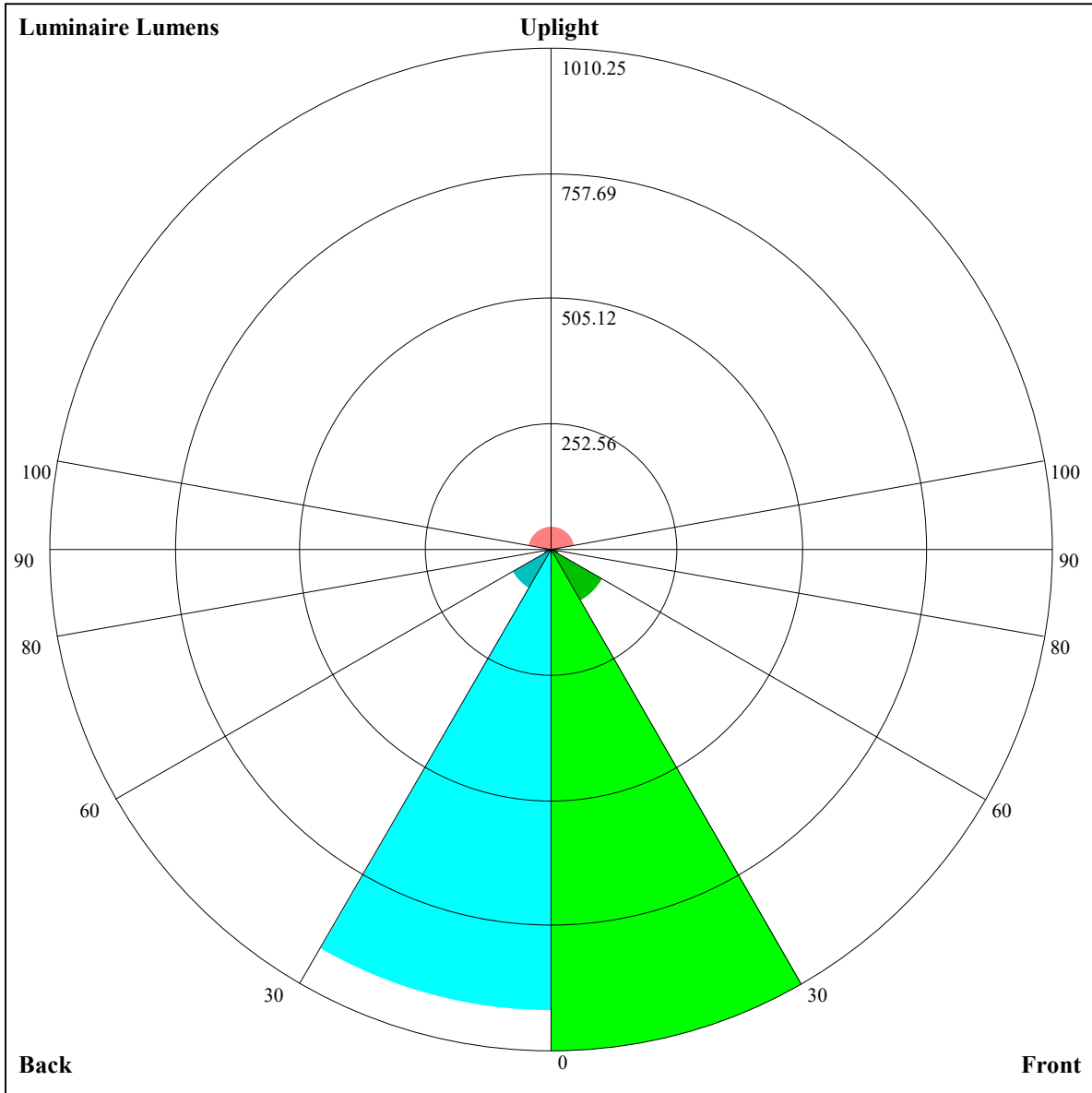
Luminance Limiting Curve





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





Luminaire Lumens:

FL=1010.25,FM=118.99,FH=16.46,FVH=5.96

BL=930.1,BM=92.23,BH=15.89,BVH=5.77

UL=10.48,UH=49.87

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	7152.19	6890.06	5743.13	3900.38	2294.44	1272.94	860.63	312.75	69.69
45.0	7240.50	6545.81	5124.38	3138.75	1804.50	1116.00	645.19	299.25	62.04
90.0	7228.13	6387.75	4536.56	2781.00	1566.56	994.16	516.77	102.15	55.74
135.0	7237.13	6579.00	4930.31	3048.75	1730.81	1050.75	559.13	108.28	53.16
180.0	7152.19	6127.31	4399.88	2568.38	1441.69	936.06	417.32	74.76	48.66
225.0	7240.50	6566.06	5019.19	3035.81	1740.38	1049.29	599.23	115.65	54.00
270.0	7228.13	6734.25	5257.13	3263.63	1897.88	1054.13	621.56	292.50	65.08
315.0	7237.13	6643.69	5100.75	3171.38	1911.94	1100.36	661.73	167.34	61.03
360.0	7152.19	6890.06	5743.13	3900.38	2294.44	1272.94	860.63	312.75	69.69
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	47.98	35.78	28.01	23.57	19.24	16.59	14.51	12.99	11.59
45.0	42.24	32.12	25.93	21.54	17.89	15.64	13.89	12.21	10.86
90.0	38.64	30.71	24.92	20.76	17.44	15.30	13.39	11.81	10.07
135.0	37.24	29.14	24.13	20.53	17.49	15.24	13.39	11.93	10.46
180.0	34.93	27.56	22.67	19.41	16.71	14.74	13.11	11.64	10.41
225.0	39.32	30.04	24.58	20.81	17.38	15.24	13.44	12.04	10.74
270.0	44.21	32.96	26.21	21.71	17.94	15.75	13.84	12.21	10.74
315.0	42.24	31.78	25.71	21.15	17.61	15.47	13.56	12.15	11.08
360.0	47.98	35.78	28.01	23.57	19.24	16.59	14.51	12.99	11.59
C/ γ (°)	90.0								
0.0	10.29								
45.0	9.73								
90.0	9.34								
135.0	9.34								
180.0	9.28								
225.0	9.62								
270.0	9.39								
315.0	9.84								
360.0	10.29								