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## Nata

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### Client:

LumCAT: 2-1682-M

Luminaire: 92.70.124.00

Report No: nata-0100

Test No:

LampCAT: CREE CMT1420

Lamp flux(lm): 1997.6

Number of Lamps: 1

Length(mm): 70

Phm Type: C

Voltage(V): 35.3000

Current(A): 0.4000

Power (W): 14.1200

PF: 0.0000

Ballast type: DC

Width(mm): 70

Height(mm): 0

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## Photometric Results

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Lumens(lm): 1782.45, Efficiency(%): 89.23% , Luminous Efficacy(lm/W): 126.24

Central intensity(cd): 3828.347, Maximum intensity(cd): 3828.347

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

Beam Angle(50%Imax): [C0/180]Total=37.0

[C90/270]Total=37.0

Field angle(10%Imax): [C0/180]Total=68.6

[C90/270]Total=68.6

Maximum s/h(1/2): C0\_180=0.60 C90\_270=0.60

Maximum s/h(1/4): C0\_180=0.62 C90\_270=0.62

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 90.29%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 97.587%

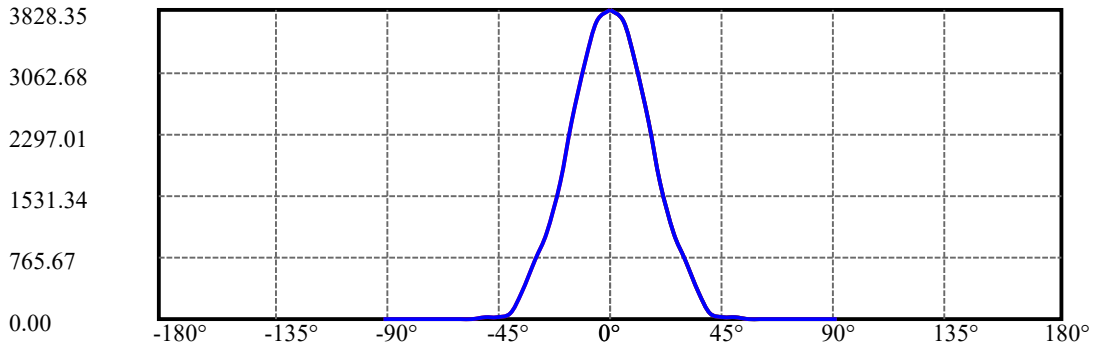
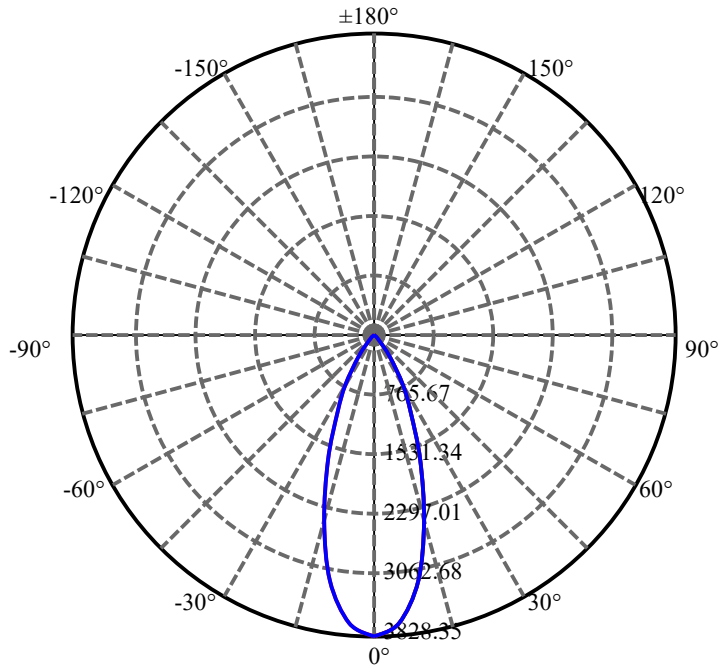
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	3828.347	22.894	22.894	1.146%	1.284%
5.0	3682.998	175.949	198.843	8.808%	11.156%
10.0	3178.062	302.498	501.341	15.143%	28.127%
15.0	2450.285	347.618	848.959	17.401%	47.629%
20.0	1689.130	316.668	1165.627	15.852%	65.395%
25.0	1075.134	249.058	1414.685	12.468%	79.368%
30.0	729.470	199.925	1614.61	10.008%	90.584%
35.0	329.292	103.529	1718.139	5.183%	96.392%
40.0	62.510	22.024	1740.163	1.103%	97.628%
45.0	15.313	5.935	1746.098	.297%	97.961%
50.0	12.181	5.115	1751.213	.256%	98.248%
55.0	10.309	4.629	1755.842	.232%	98.507%
60.0	9.029	4.286	1760.128	.215%	98.748%
65.0	8.183	4.065	1764.193	.203%	98.976%
70.0	7.749	3.991	1768.185	.200%	99.200%
75.0	7.563	4.005	1772.189	.200%	99.424%
80.0	7.550	4.075	1776.265	.204%	99.653%
85.0	7.556	4.126	1780.391	.207%	99.885%
90.0	7.508	2.058	1782.449	.103%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1614.61	80.83%	90.58%
0-40	1740.16	87.11%	97.63%
0-60	1760.13	88.11%	98.75%
0-90	1780.39	89.12%	99.88%
0-120	1780.39	89.12%	99.88%
0-180	1782.45	89.23%	100.00%
60-90	24.55	1.23%	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%
0-25.28	1425.96	71.38%	80.00%

ZONAL LUMEN SUMMARY

0-10	501.34
10-20	664.29
20-30	448.98
30-40	125.55
40-50	11.05
50-60	8.92
60-70	8.06
70-80	8.08
80-90	4.13
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: —————

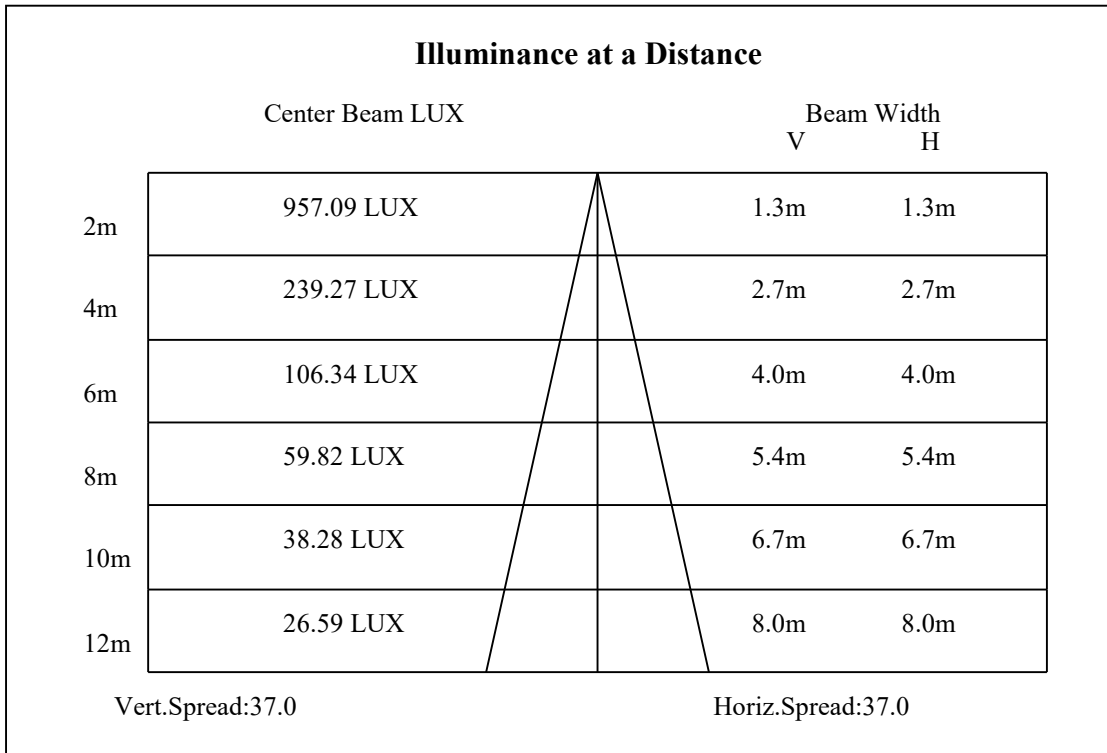
C90/C270: —————

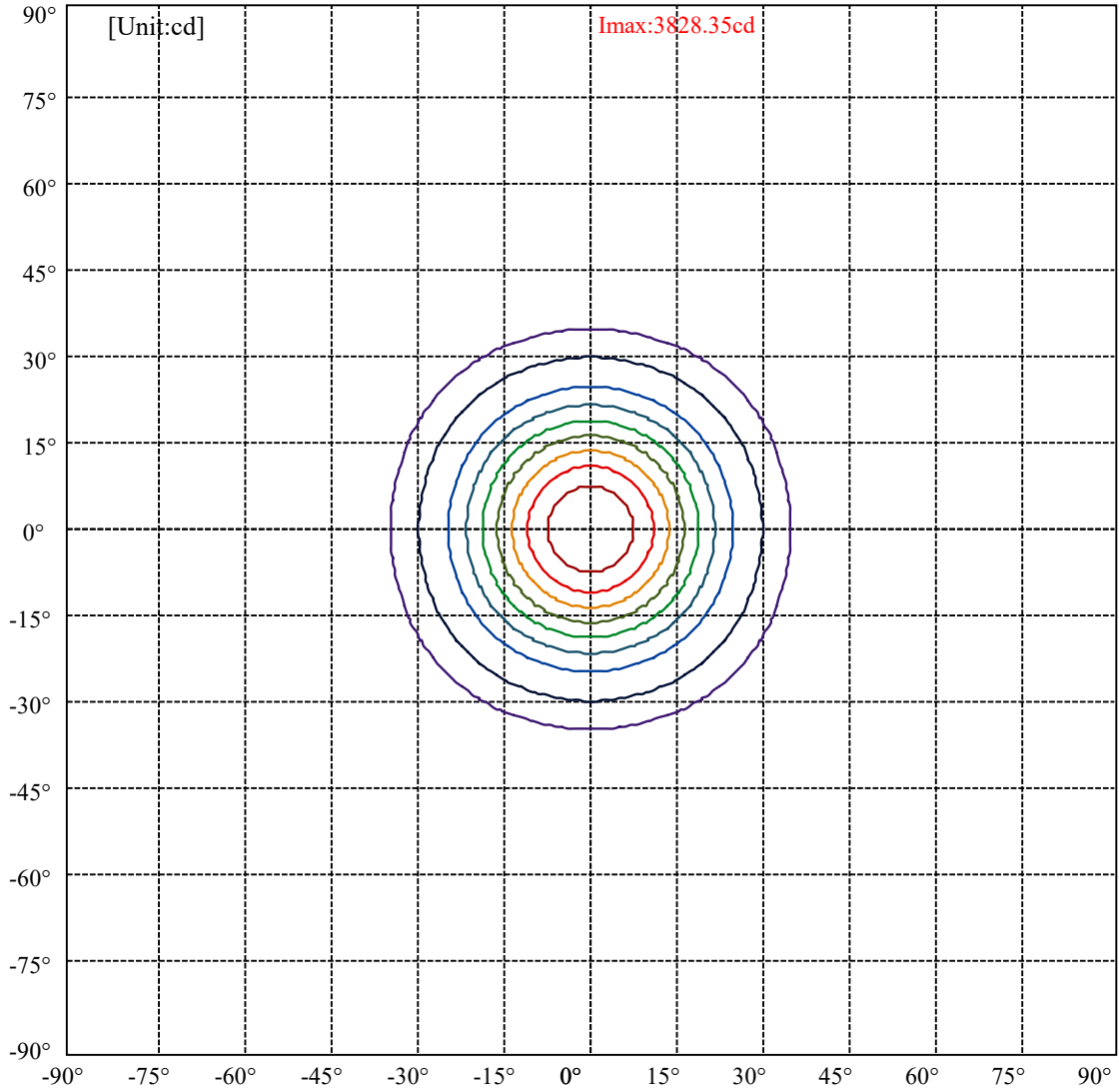
Field angle(10%Imax):C0/180Left:34.3 Right:34.3

:C90/270Left:34.3 Right:34.3

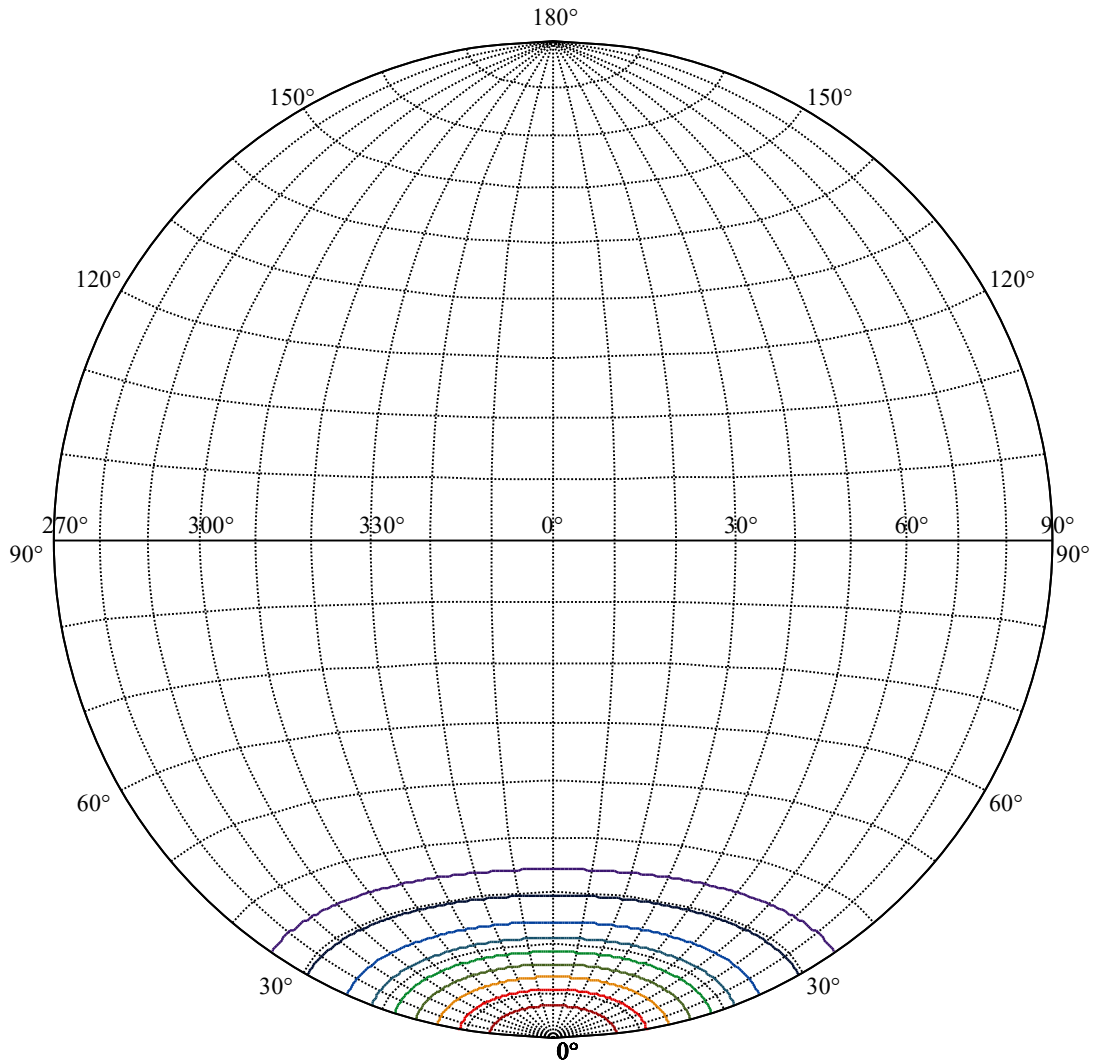
Beam Angle(50%Imax):C0/180Left:18.5 Right:18.5

:C90/270Left:18.5 Right:18.5





(10%Imax) 382.835	—
(20%Imax) 765.669	—
(30%Imax) 1148.5	—
(40%Imax) 1531.34	—
(50%Imax) 1914.17	—
(60%Imax) 2297.01	—
(70%Imax) 2679.84	—
(80%Imax) 3062.68	—
(90%Imax) 3445.51	—



House

[Unit:cd]

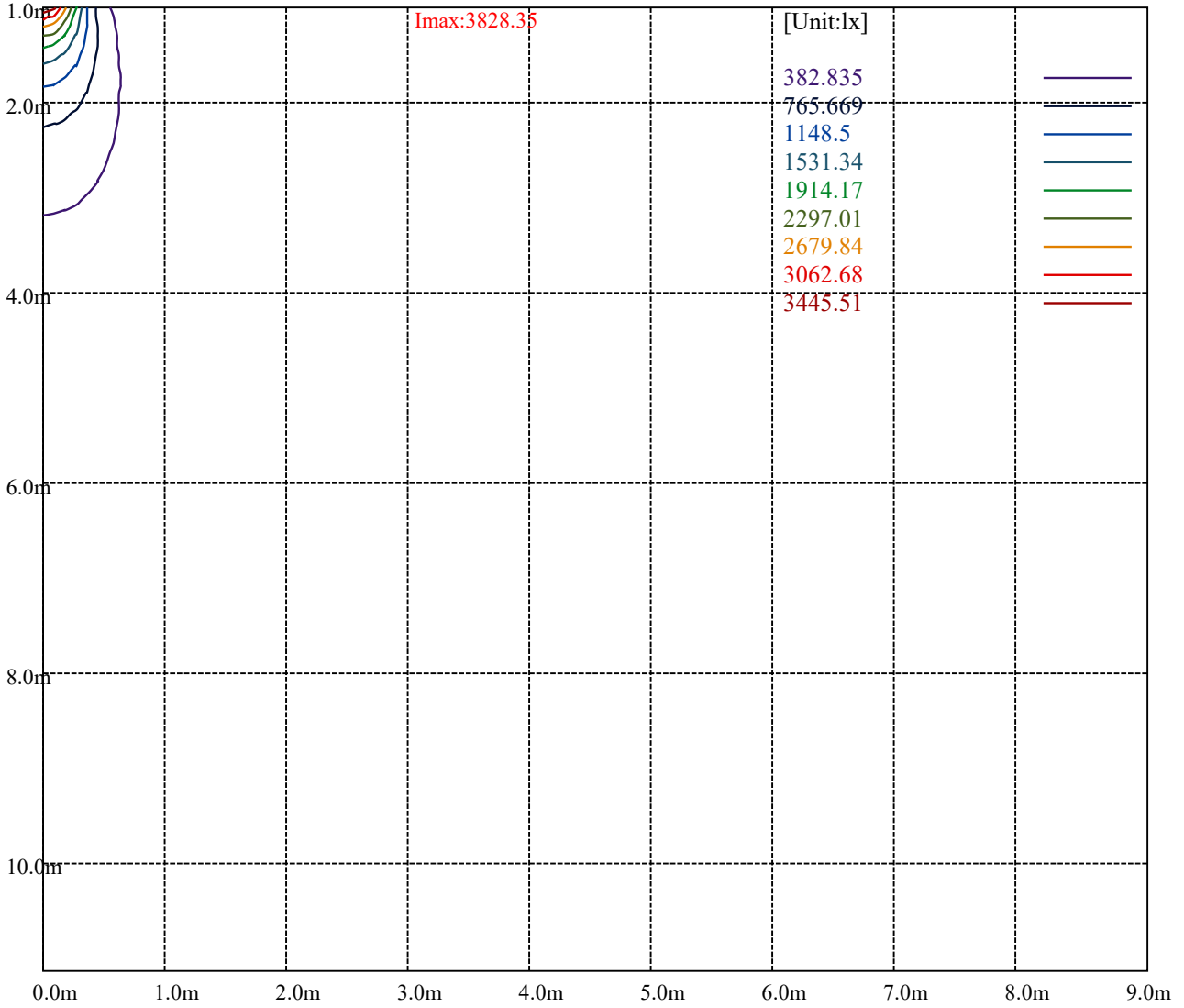
Road

**Imax:3828.35**

(10%Imax) 382.835	—
(20%Imax) 765.669	—
(30%Imax) 1148.5	—
(40%Imax) 1531.34	—
(50%Imax) 1914.17	—
(60%Imax) 2297.01	—
(70%Imax) 2679.84	—
(80%Imax) 3062.68	—
(90%Imax) 3445.51	—







Luminance Table

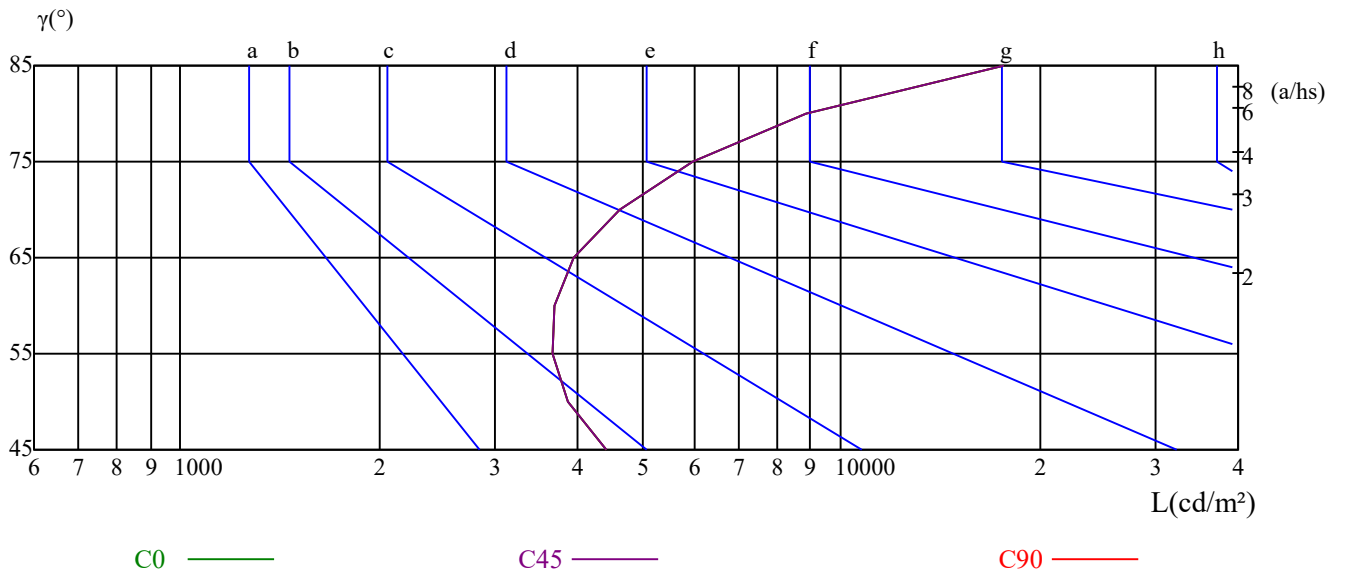
$\gamma$	45	50	55	60	65	70	75	80	85
C0	4419	3867	3668	3685	3951	4624	5964	8873	17694
C45	4419	3867	3668	3685	3951	4624	5964	8873	17694
C90	4419	3867	3668	3685	3951	4624	5964	8873	17694

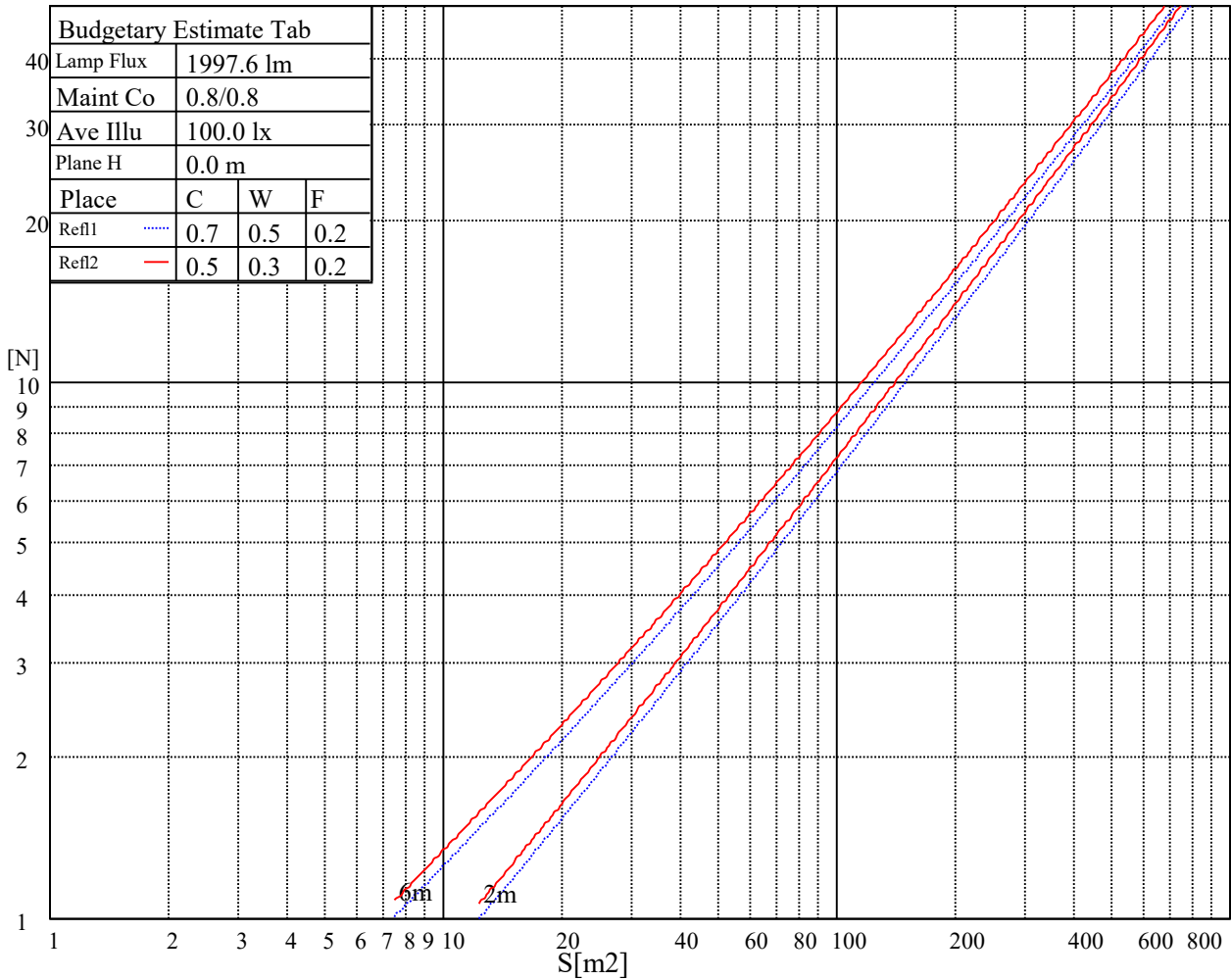
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
3951	3951	3951	5964	5964	5964	17694	17694	17694

Glare Table

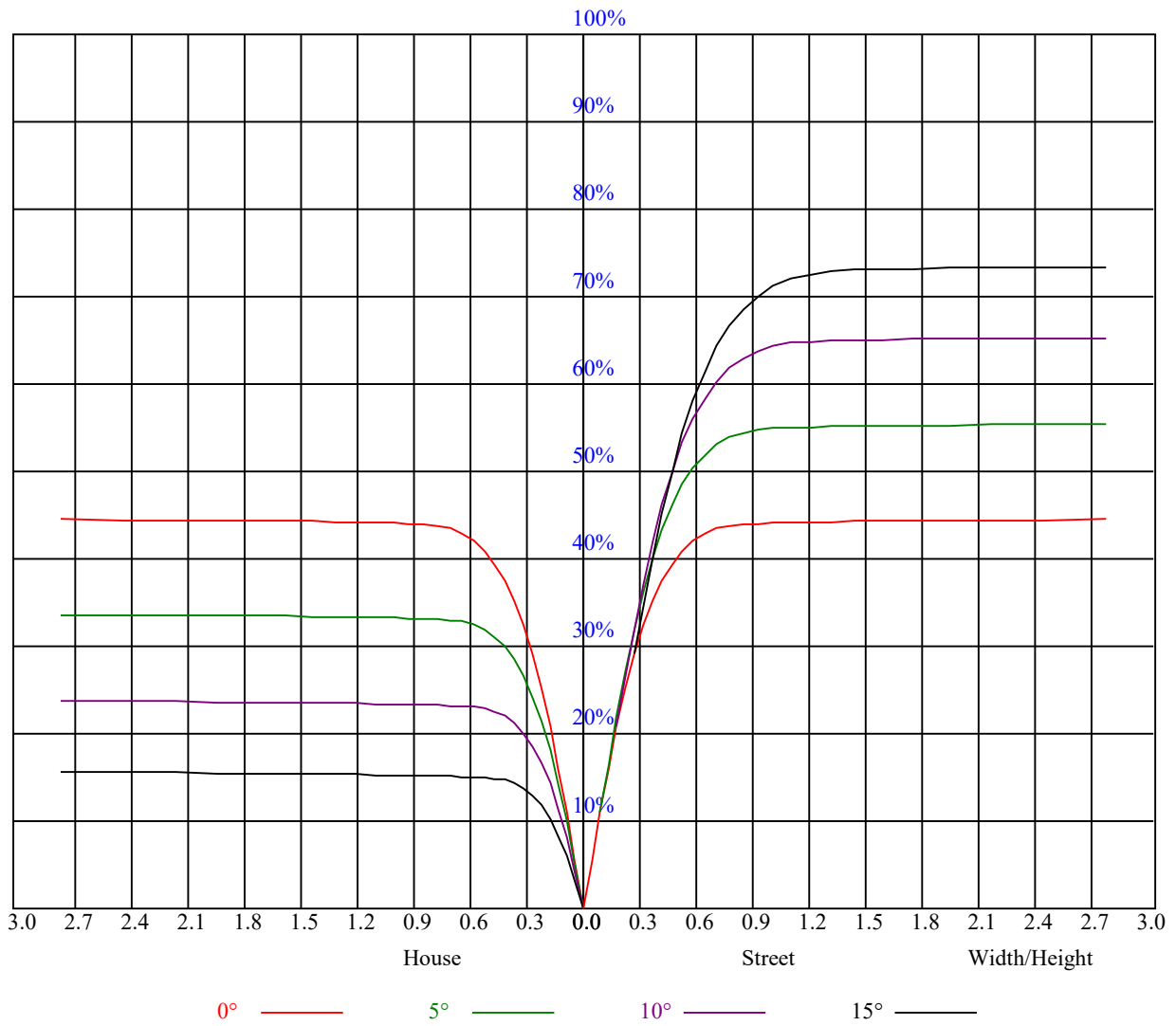
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

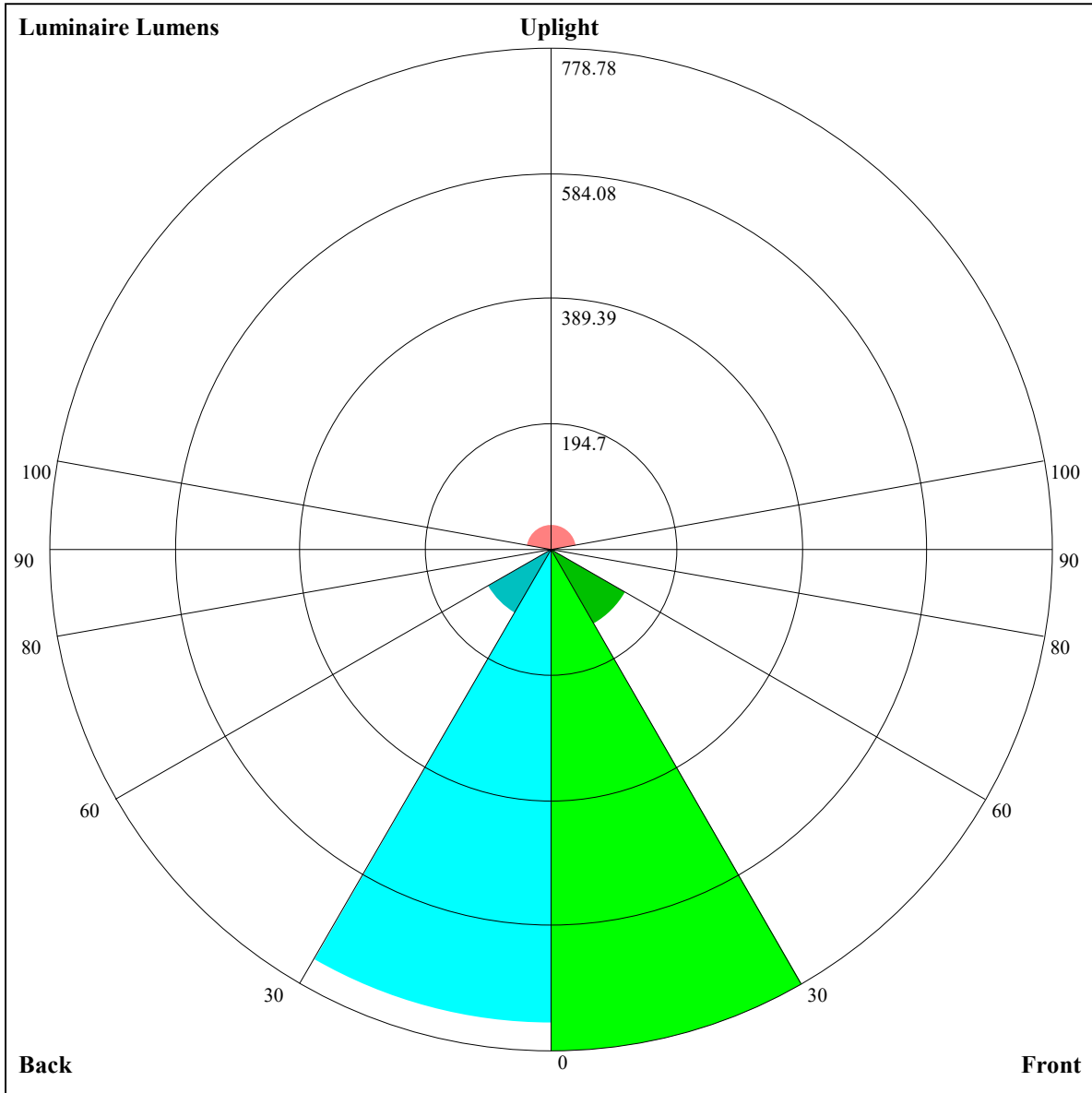
Luminance Limiting Curve





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	1.05	1.05	1.05	1.00	1.00	1.00	0.96	0.96	0.96	0.92	0.92	0.92	0.90
1	1.00	0.97	0.95	0.98	0.96	0.94	0.94	0.92	0.91	0.91	0.89	0.88	0.88	0.87	0.86	0.84
2	0.94	0.91	0.88	0.93	0.90	0.87	0.90	0.87	0.85	0.87	0.85	0.83	0.85	0.83	0.82	0.80
3	0.89	0.85	0.82	0.88	0.85	0.82	0.86	0.83	0.80	0.84	0.81	0.79	0.82	0.80	0.78	0.77
4	0.85	0.81	0.78	0.84	0.80	0.77	0.82	0.79	0.76	0.81	0.78	0.75	0.79	0.77	0.75	0.73
5	0.81	0.77	0.74	0.81	0.76	0.73	0.79	0.76	0.73	0.78	0.75	0.72	0.76	0.74	0.72	0.70
6	0.78	0.74	0.70	0.77	0.73	0.70	0.76	0.72	0.70	0.75	0.72	0.69	0.74	0.71	0.69	0.68
7	0.75	0.70	0.67	0.74	0.70	0.67	0.73	0.70	0.67	0.72	0.69	0.66	0.71	0.68	0.66	0.65
8	0.72	0.68	0.65	0.72	0.67	0.64	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	0.64	0.62	0.67	0.64	0.62	0.67	0.64	0.61	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	0.59	0.58





Luminaire Lumens:

FL=778.78,FM=133.6,FH=8.16,FVH=4.11

BL=736.39,BM=114.28,BH=8.09,BVH=4.11

UL=8.19,UH=38.98

BUG Rating:B2-U2-G0

Intensity data(cd)

<b>C/γ(°)</b>	<b>0.0</b>	<b>5.0</b>	<b>10.0</b>	<b>15.0</b>	<b>20.0</b>	<b>25.0</b>	<b>30.0</b>	<b>35.0</b>	<b>40.0</b>
<b>0.0</b>	3830.27	3772.46	3347.43	2628.39	1904.95	1218.95	825.30	427.24	97.95
<b>45.0</b>	3817.61	3792.28	3388.72	2664.18	1958.91	1253.08	848.42	464.13	111.43
<b>90.0</b>	3833.58	3731.17	3295.13	2580.49	1791.54	1080.37	790.39	373.67	76.36
<b>135.0</b>	3831.93	3742.73	3301.73	2574.44	1794.29	1171.60	781.25	376.59	92.11
<b>180.0</b>	3830.27	3605.09	2981.85	2262.27	1454.04	948.35	630.89	225.95	28.57
<b>225.0</b>	3817.61	3558.30	2960.38	2173.63	1465.60	936.73	598.08	211.80	28.46
<b>270.0</b>	3833.58	3649.69	3071.60	2399.91	1582.32	1002.58	684.90	291.80	33.36
<b>315.0</b>	3831.93	3612.25	3077.65	2318.98	1561.40	989.42	676.53	263.17	31.82
<b>360.0</b>	3830.27	3772.46	3347.43	2628.39	1904.95	1218.95	825.30	427.24	97.95
<b>C/γ(°)</b>	<b>45.0</b>	<b>50.0</b>	<b>55.0</b>	<b>60.0</b>	<b>65.0</b>	<b>70.0</b>	<b>75.0</b>	<b>80.0</b>	<b>85.0</b>
<b>0.0</b>	18.11	12.99	10.90	9.41	8.31	7.82	7.54	7.54	7.54
<b>45.0</b>	17.45	12.94	10.85	9.41	8.53	7.93	7.65	7.60	7.60
<b>90.0</b>	15.97	12.33	10.52	9.19	8.20	7.76	7.54	7.54	7.54
<b>135.0</b>	15.86	12.50	10.46	9.25	8.26	7.76	7.60	7.60	7.54
<b>180.0</b>	12.88	11.23	9.69	8.59	7.98	7.65	7.54	7.49	7.54
<b>225.0</b>	13.54	11.56	9.80	8.70	7.98	7.71	7.60	7.60	7.60
<b>270.0</b>	14.48	12.00	10.19	8.81	8.09	7.71	7.54	7.54	7.54
<b>315.0</b>	14.20	11.89	10.08	8.86	8.09	7.65	7.49	7.49	7.54
<b>360.0</b>	18.11	12.99	10.90	9.41	8.31	7.82	7.54	7.54	7.54
<b>C/γ(°)</b>	<b>90.0</b>								
<b>0.0</b>	7.49								
<b>45.0</b>	7.54								
<b>90.0</b>	7.49								
<b>135.0</b>	7.49								
<b>180.0</b>	7.49								
<b>225.0</b>	7.60								
<b>270.0</b>	7.49								
<b>315.0</b>	7.49								
<b>360.0</b>	7.49								