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Nata

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Client:

LumCAT: 1655-S

Luminaire: 92.70.064.00

Report No: nata-0100

Test No: GC2018092704

LampCAT: CITIZEN CLU028-1203C4

Lamp flux(lm): 1506.0

Number of Lamps: 1

Length(mm): 32

Phm Type: C

Voltage(V): 36.4000

Current(A): 0.4000

Power (W): 14.5600

PF: 0.0000

Ballast type: DC

Width(mm): 32

Height(mm): 0

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Photometric Results

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Lumens(lm): 1242.87, Efficiency(%): 82.53% , Luminous Efficacy(lm/W): 85.36

Central intensity(cd): 2568.234, Maximum intensity(cd): 2568.234

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

Beam Angle(50%Imax): [C0/180]Total=38.0

[C90/270]Total=38.0

Field angle(10%Imax): [C0/180]Total=68.2

[C90/270]Total=68.2

Maximum s/h(1/2): C0\_180=0.63 C90\_270=0.63

Maximum s/h(1/4): C0\_180=0.63 C90\_270=0.63

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 83.47%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 97.057%

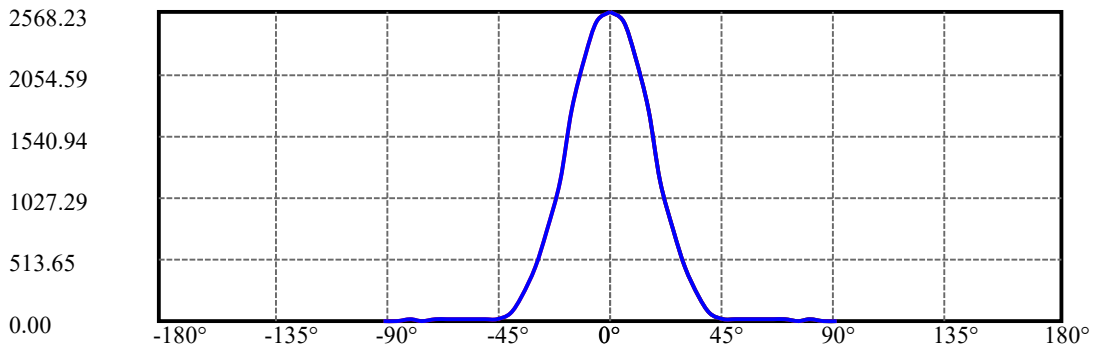
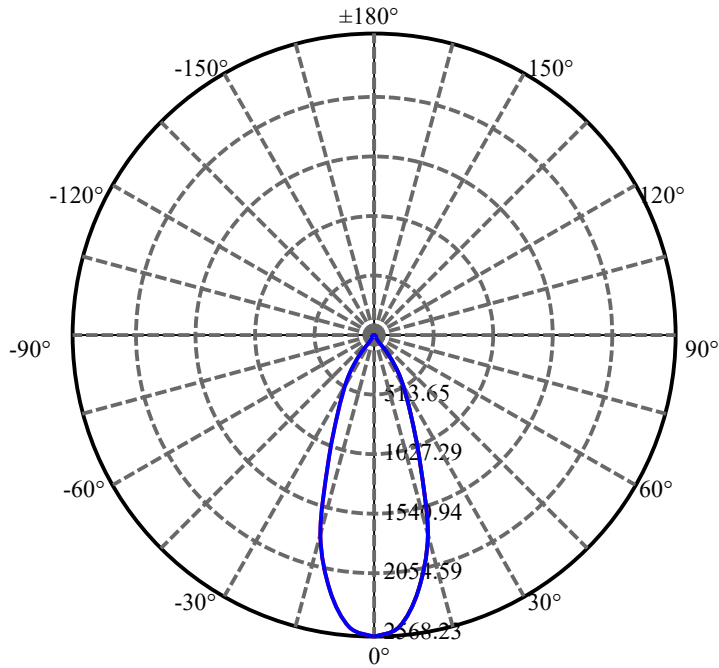
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	2568.234	15.359	15.359	1.020%	1.236%
5.0	2493.141	119.106	134.464	7.909%	10.819%
10.0	2206.969	210.066	344.53	13.949%	27.720%
15.0	1756.125	249.139	593.669	16.543%	47.766%
20.0	1165.598	218.519	812.188	14.510%	65.348%
25.0	747.689	173.204	985.393	11.501%	79.284%
30.0	442.505	121.277	1106.669	8.053%	89.041%
35.0	213.912	67.254	1173.923	4.466%	94.452%
40.0	56.461	19.893	1193.816	1.321%	96.053%
45.0	21.945	8.506	1202.322	.565%	96.737%
50.0	16.277	6.835	1209.156	.454%	97.287%
55.0	12.881	5.784	1214.94	.384%	97.753%
60.0	10.765	5.110	1220.05	.339%	98.164%
65.0	9.253	4.597	1224.647	.305%	98.534%
70.0	8.332	4.292	1228.939	.285%	98.879%
75.0	7.748	4.102	1233.041	.272%	99.209%
80.0	8.030	4.335	1237.376	.288%	99.558%
85.0	7.172	3.916	1241.292	.260%	99.873%
90.0	5.766	1.580	1242.872	.105%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1106.67	73.48%	89.04%
0-40	1193.82	79.27%	96.05%
0-60	1220.05	81.01%	98.16%
0-90	1241.29	82.42%	99.87%
0-120	1241.29	82.42%	99.87%
0-180	1242.87	82.53%	100.00%
60-90	26.35	1.75%	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%
0-25.37	994.30	66.02%	80.00%

ZONAL LUMEN SUMMARY

0-10	344.53
10-20	467.66
20-30	294.48
30-40	87.15
40-50	15.34
50-60	10.89
60-70	8.89
70-80	8.44
80-90	3.92
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

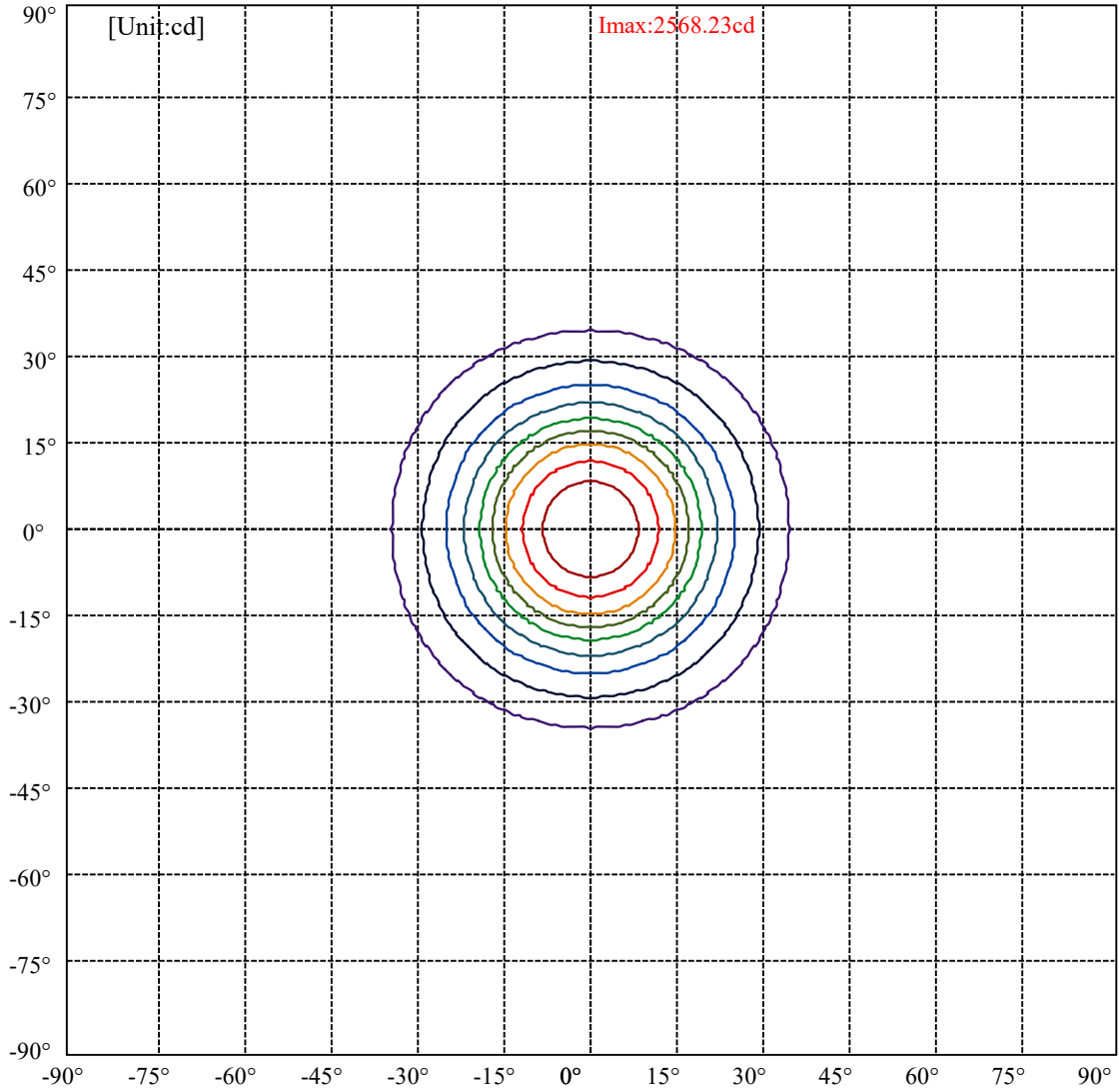


C0(Max): —————  
C0/C180: —————  
C90/C270: —————

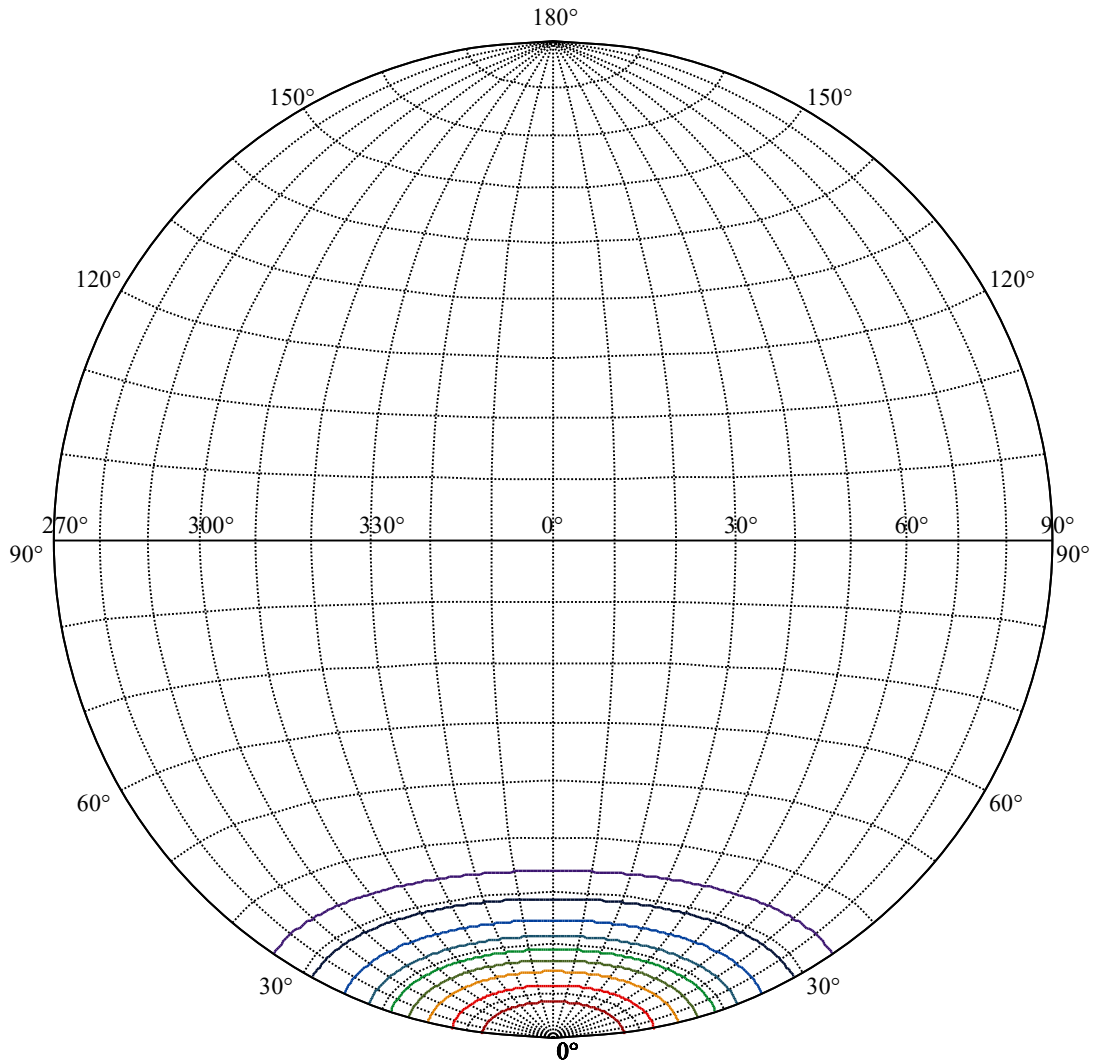
Field angle(10%Imax):C0/180Left:34.1 Right:34.1  
:C90/270Left:34.1 Right:34.1

Beam Angle(50%Imax):C0/180Left:19.0 Right:19.0  
:C90/270Left:19.0 Right:19.0





(10%Imax) 256.823	—
(20%Imax) 513.647	—
(30%Imax) 770.47	—
(40%Imax) 1027.29	—
(50%Imax) 1284.12	—
(60%Imax) 1540.94	—
(70%Imax) 1797.76	—
(80%Imax) 2054.59	—
(90%Imax) 2311.41	—



House

[Unit:cd]

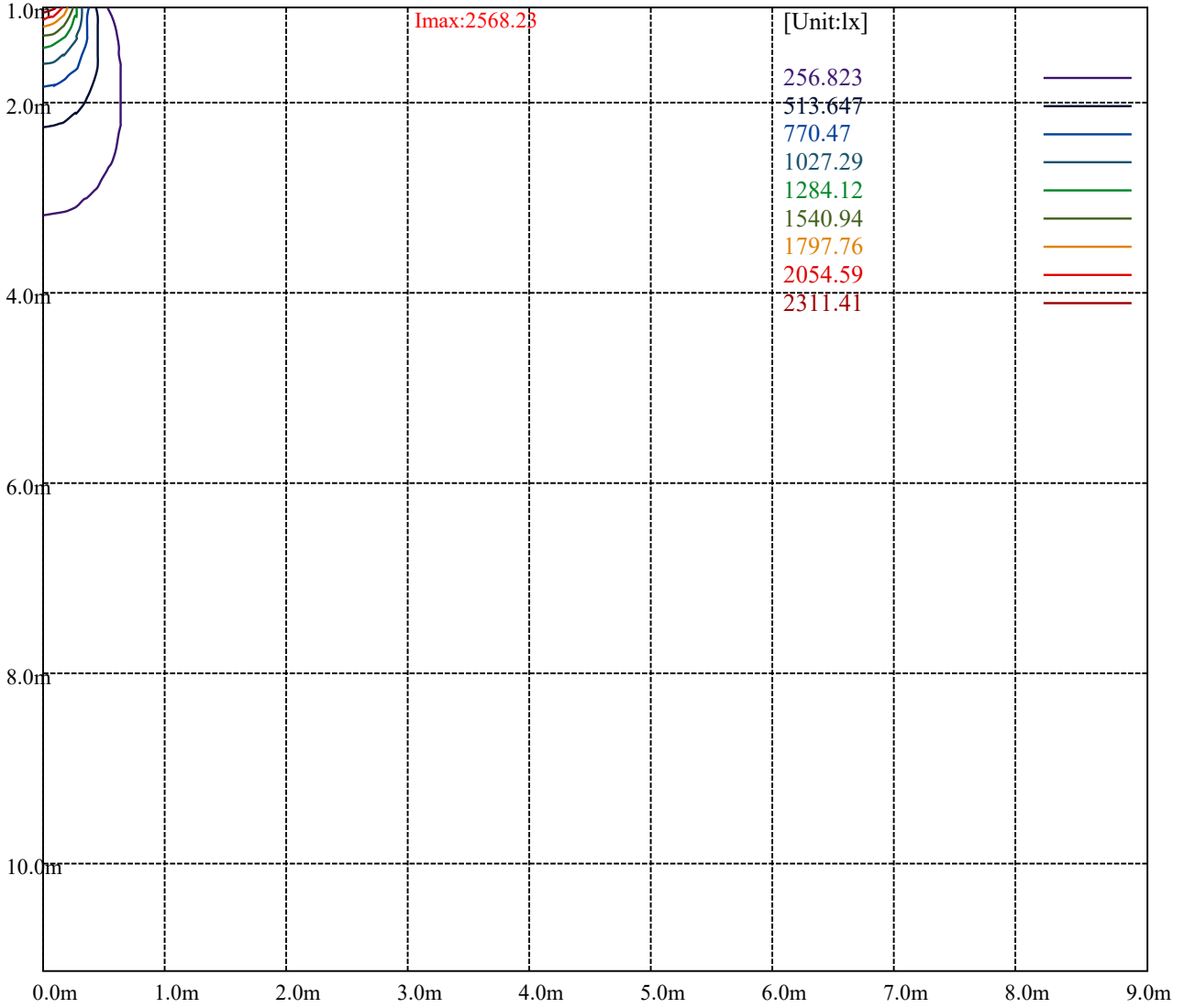
Road

**Imax:2568.23**

(10%Imax) 256.823	—
(20%Imax) 513.647	—
(30%Imax) 770.47	—
(40%Imax) 1027.29	—
(50%Imax) 1284.12	—
(60%Imax) 1540.94	—
(70%Imax) 1797.76	—
(80%Imax) 2054.59	—
(90%Imax) 2311.41	—







Luminance Table

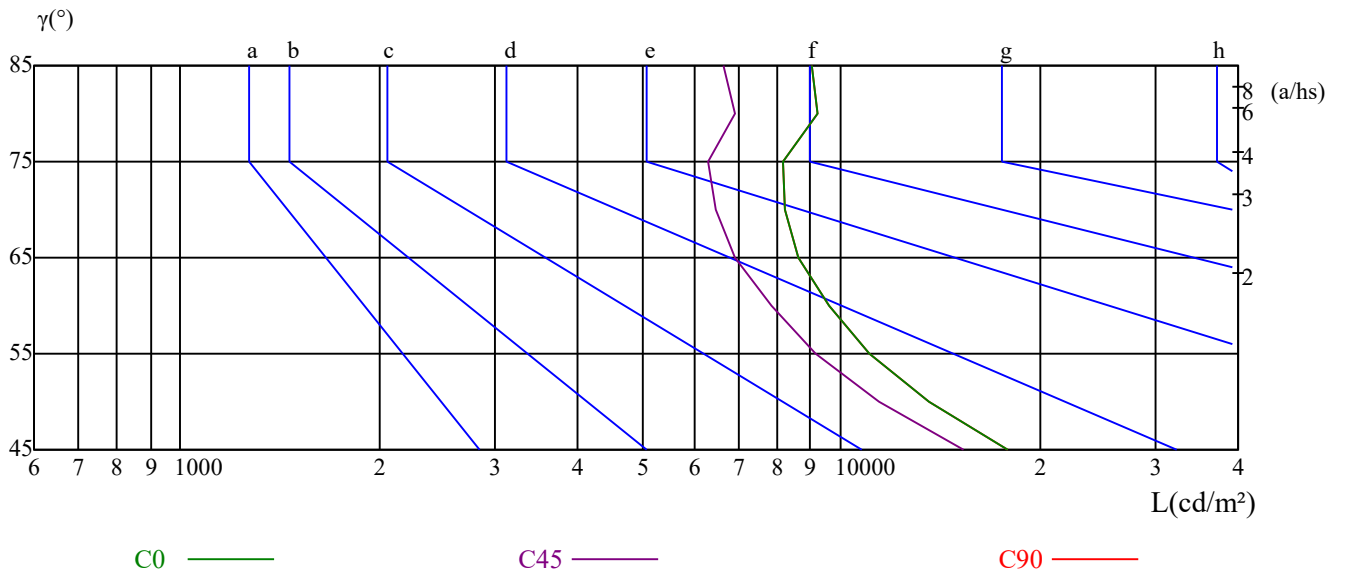
$\gamma$	45	50	55	60	65	70	75	80	85
C0	17960	13593	11066	9597	8641	8235	8199	9218	9072
C45	15366	11456	9182	7833	6931	6480	6316	6932	6634
C90	17960	13593	11066	9597	8641	8235	8199	9218	9072

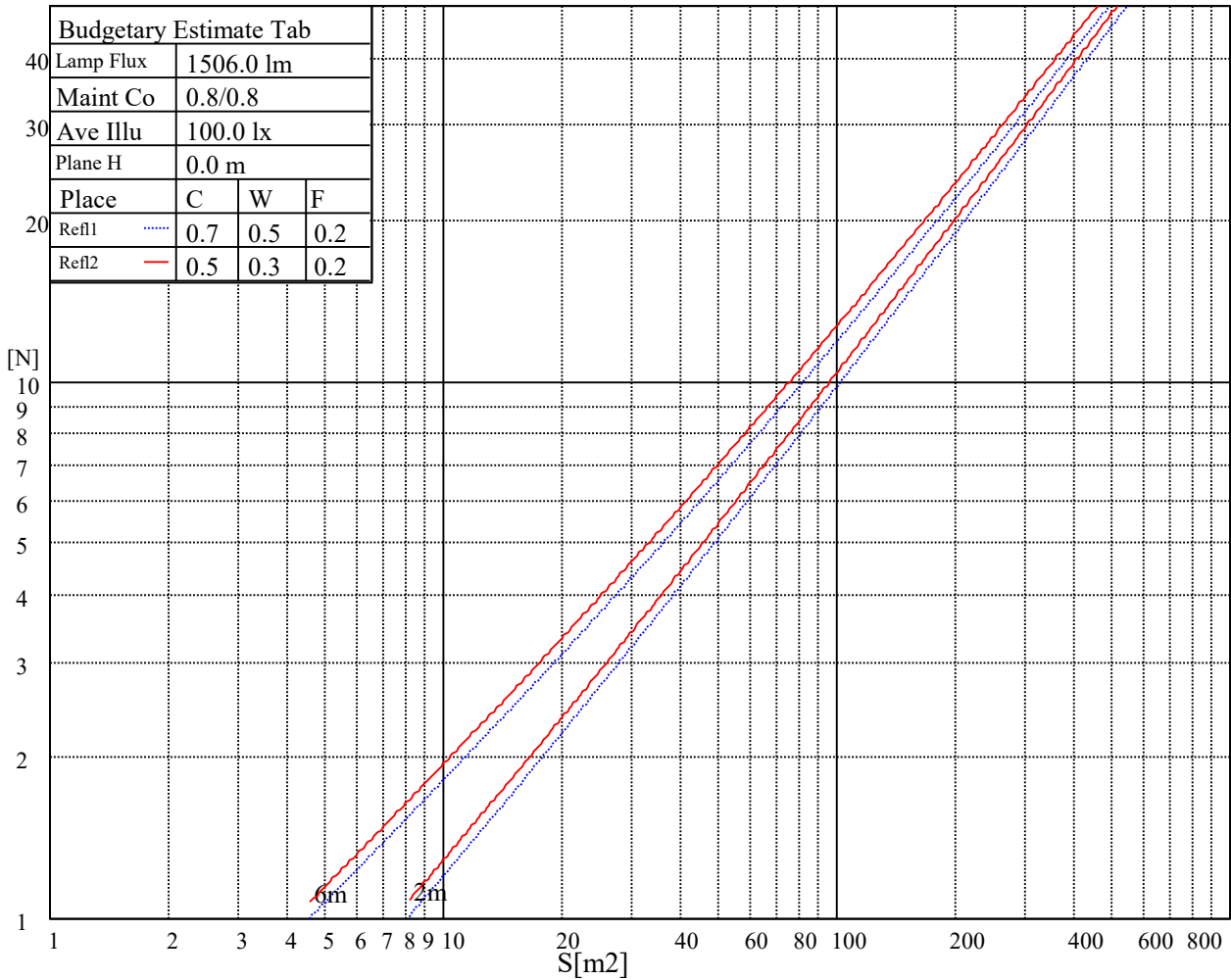
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
21382	21382	21382	29236	29236	29236	80359	80359	80359

Glare Table

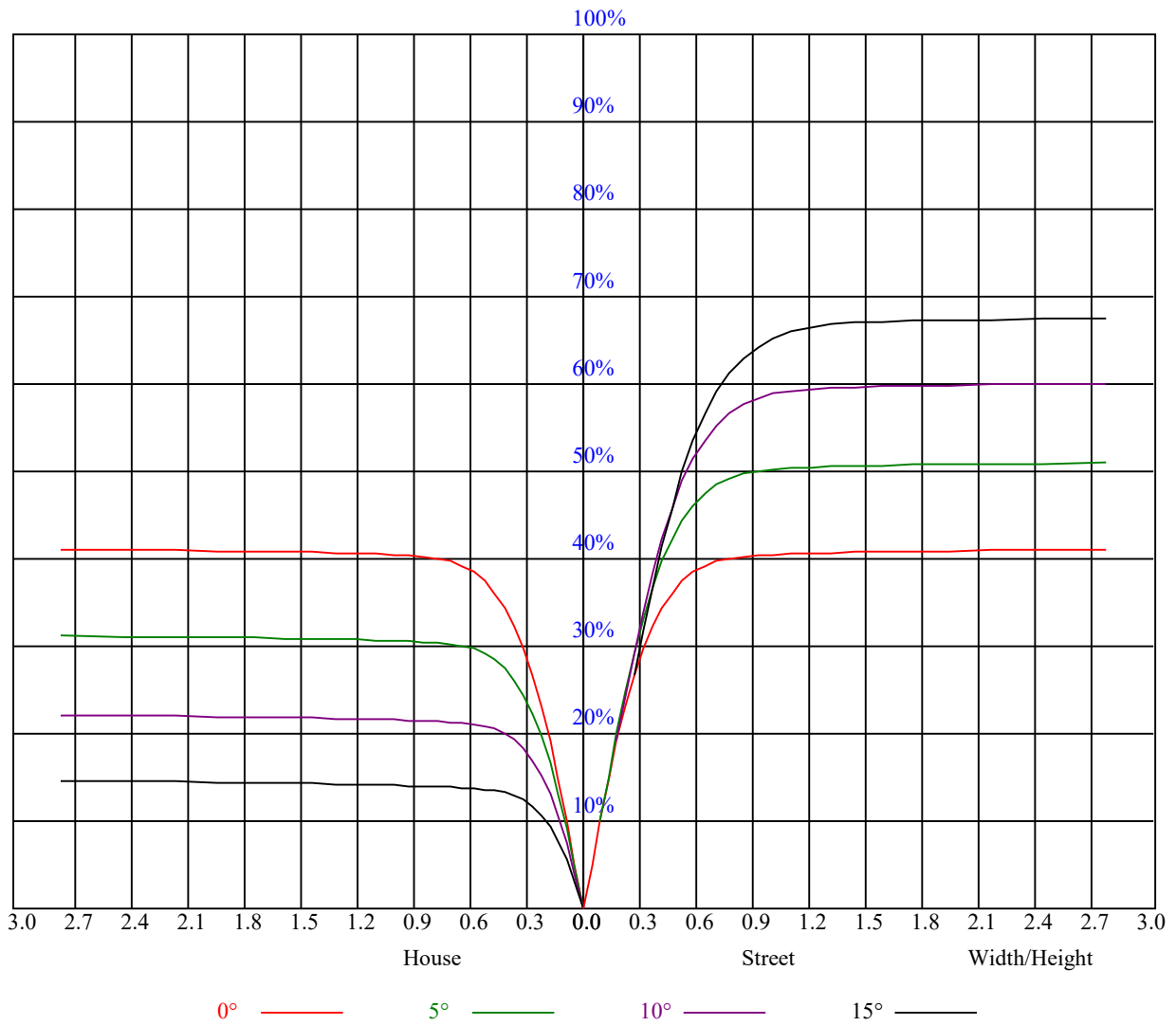
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

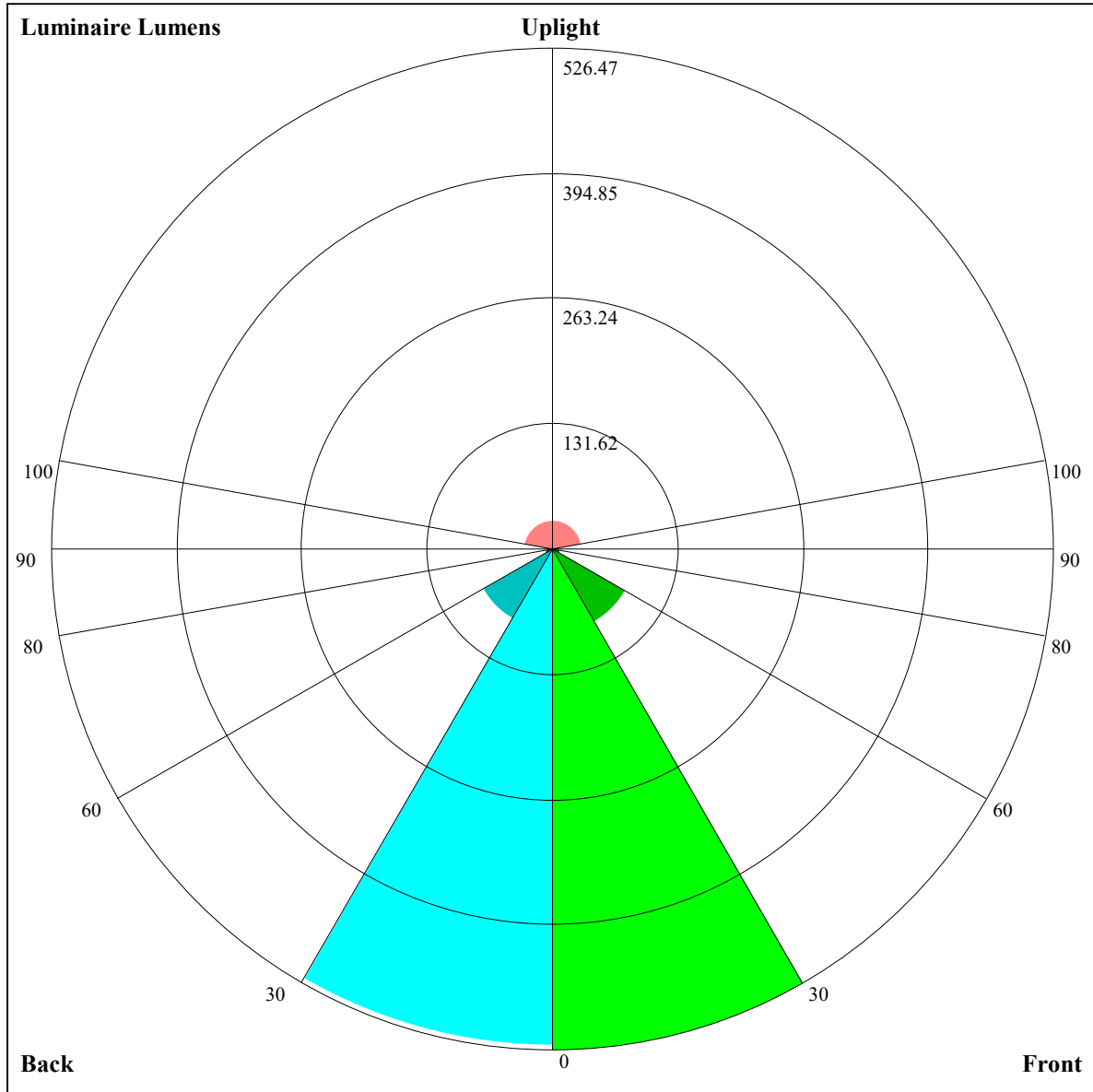
Luminance Limiting Curve





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	0.99	0.99	0.99	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.85	0.85	0.85	0.83
1	0.92	0.90	0.88	0.90	0.88	0.86	0.87	0.85	0.84	0.84	0.82	0.81	0.81	0.80	0.79	0.77
2	0.87	0.84	0.81	0.85	0.82	0.80	0.83	0.80	0.78	0.80	0.78	0.77	0.78	0.76	0.75	0.74
3	0.82	0.79	0.76	0.81	0.78	0.75	0.79	0.76	0.74	0.77	0.75	0.73	0.75	0.73	0.72	0.70
4	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.70	0.74	0.71	0.69	0.73	0.70	0.68	0.67
5	0.75	0.71	0.68	0.74	0.70	0.67	0.73	0.69	0.67	0.71	0.68	0.66	0.70	0.68	0.66	0.65
6	0.72	0.67	0.64	0.71	0.67	0.64	0.70	0.66	0.64	0.69	0.66	0.63	0.68	0.65	0.63	0.62
7	0.69	0.65	0.62	0.68	0.64	0.61	0.67	0.64	0.61	0.66	0.63	0.61	0.65	0.63	0.61	0.60
8	0.66	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.59	0.64	0.61	0.59	0.63	0.60	0.58	0.57
9	0.64	0.60	0.57	0.63	0.59	0.57	0.63	0.59	0.57	0.62	0.59	0.56	0.61	0.58	0.56	0.55
10	0.61	0.57	0.55	0.61	0.57	0.55	0.60	0.57	0.55	0.60	0.57	0.55	0.59	0.56	0.54	0.53





Luminaire Lumens:

FL=526.47,FM=88.49,FH=8.96,FVH=3.82

BL=522.65,BM=85.5,BH=8.93,BVH=3.98

UL=6.29,UH=29.94

BUG Rating:B2-U2-G0

Intensity data(cd)

C/ $\gamma$ (°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0
0.0	2573.44	2502.56	2240.44	1789.31	1227.94	768.94	458.44	293.06	63.00
45.0	2561.63	2480.63	2162.81	1718.44	1152.00	691.88	402.75	182.98	47.98
90.0	2567.81	2424.94	2057.06	1537.31	995.12	599.46	325.24	123.75	30.88
135.0	2570.06	2468.25	2176.88	1712.81	1159.31	702.00	415.69	178.82	44.21
180.0	2573.44	2488.50	2169.00	1733.06	1112.18	745.37	451.18	201.88	48.60
225.0	2561.63	2500.31	2229.75	1756.13	1115.83	799.14	488.19	231.58	62.32
270.0	2567.81	2556.56	2360.25	1989.56	1459.13	897.75	543.94	291.38	91.58
315.0	2570.06	2523.38	2259.56	1812.38	1103.29	776.98	454.61	207.84	63.11
360.0	2573.44	2502.56	2240.44	1789.31	1227.94	768.94	458.44	293.06	63.00
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	23.91	17.55	14.06	11.53	9.62	8.44	7.65	6.75	6.75
45.0	20.76	16.43	13.11	10.91	9.23	8.33	7.48	7.43	7.65
90.0	18.39	14.40	11.93	10.13	9.00	8.66	8.33	12.83	8.33
135.0	19.58	15.30	12.15	10.52	9.17	8.44	8.10	9.56	8.55
180.0	20.31	15.75	12.54	10.46	9.17	8.21	7.65	7.14	6.92
225.0	21.38	16.03	12.60	10.35	8.94	7.93	7.37	6.86	6.53
270.0	27.00	17.89	13.67	11.14	9.51	8.38	7.88	7.03	6.47
315.0	24.24	16.88	12.99	11.08	9.39	8.27	7.54	6.64	6.19
360.0	23.91	17.55	14.06	11.53	9.62	8.44	7.65	6.75	6.75
C/ $\gamma$ (°)	90.0								
0.0	5.68								
45.0	5.57								
90.0	5.63								
135.0	5.79								
180.0	5.96								
225.0	5.85								
270.0	5.85								
315.0	5.79								
360.0	5.68								