
NATA

Client:

LumCAT: 3-1923-E

Luminaire: LMOP009-3225DH + 92.76.340.00

Report No: nata-0100

Voltage(V):

Test No: 201600021

Current(A):

LampCAT: CITIZEN CLC251

Power (W): 15.9000

Lamp flux(lm): 1063.5

PF:

Number of Lamps: 1

Ballast type:

Length(mm): 0

Width(mm): 0

Phm Type: C

Height(mm): 0

Photometric Results

Lumens(lm): 961.36, Efficiency(%): 90.40% , Luminous Efficacy(lm/W): 60.46

Central intensity(cd): 6614.261, Maximum intensity(cd): 6614.261

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=15.8

[C90/270]Total=15.8

Field angle(10%Imax): [C0/180]Total=34.0

[C90/270]Total=34.0

Maximum s/h(1/2): C0_180=0.27 C90_270=0.27

Maximum s/h(1/4): C0_180=0.28 C90_270=0.28

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 94.03%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 95.032%

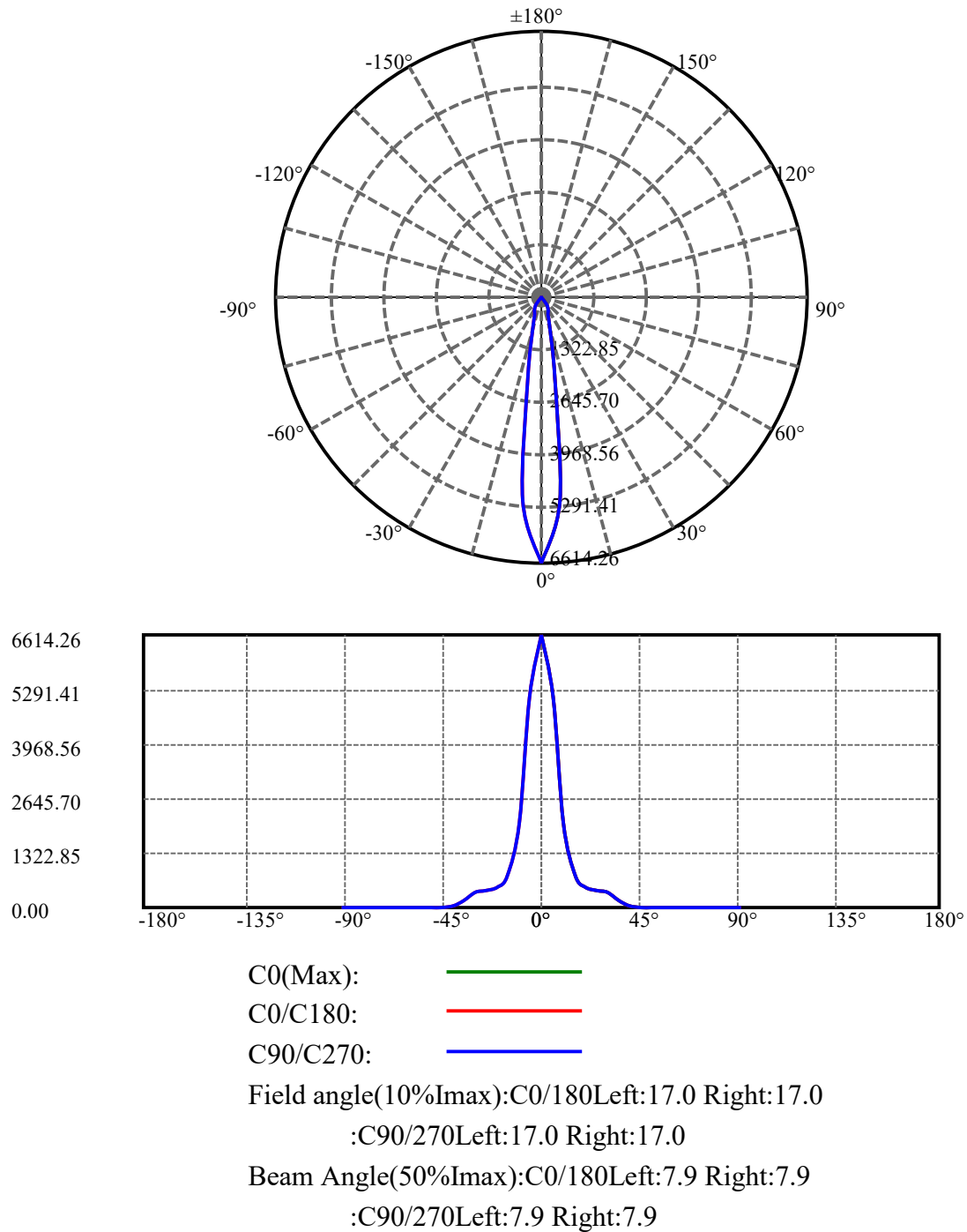
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	6614.261	39.555	39.555	3.719%	4.114%
5.0	5086.105	242.980	282.535	22.847%	29.389%
10.0	2041.963	194.360	476.895	18.276%	49.606%
15.0	767.750	108.919	585.814	10.242%	60.936%
20.0	503.848	94.458	680.273	8.882%	70.761%
25.0	417.973	96.825	777.097	9.104%	80.833%
30.0	362.078	99.234	876.332	9.331%	91.155%
35.0	184.673	58.061	934.393	5.459%	97.195%
40.0	23.347	8.226	942.619	.773%	98.050%
45.0	5.159	1.999	944.618	.188%	98.258%
50.0	4.506	1.892	946.51	.178%	98.455%
55.0	4.203	1.887	948.397	.177%	98.651%
60.0	4.051	1.923	950.32	.181%	98.851%
65.0	3.950	1.962	952.283	.185%	99.056%
70.0	3.883	2.000	954.283	.188%	99.264%
75.0	3.811	2.018	956.3	.190%	99.474%
80.0	3.778	2.039	958.34	.192%	99.686%
85.0	3.714	2.028	960.368	.191%	99.897%
90.0	3.626	0.994	961.362	.093%	100.000%

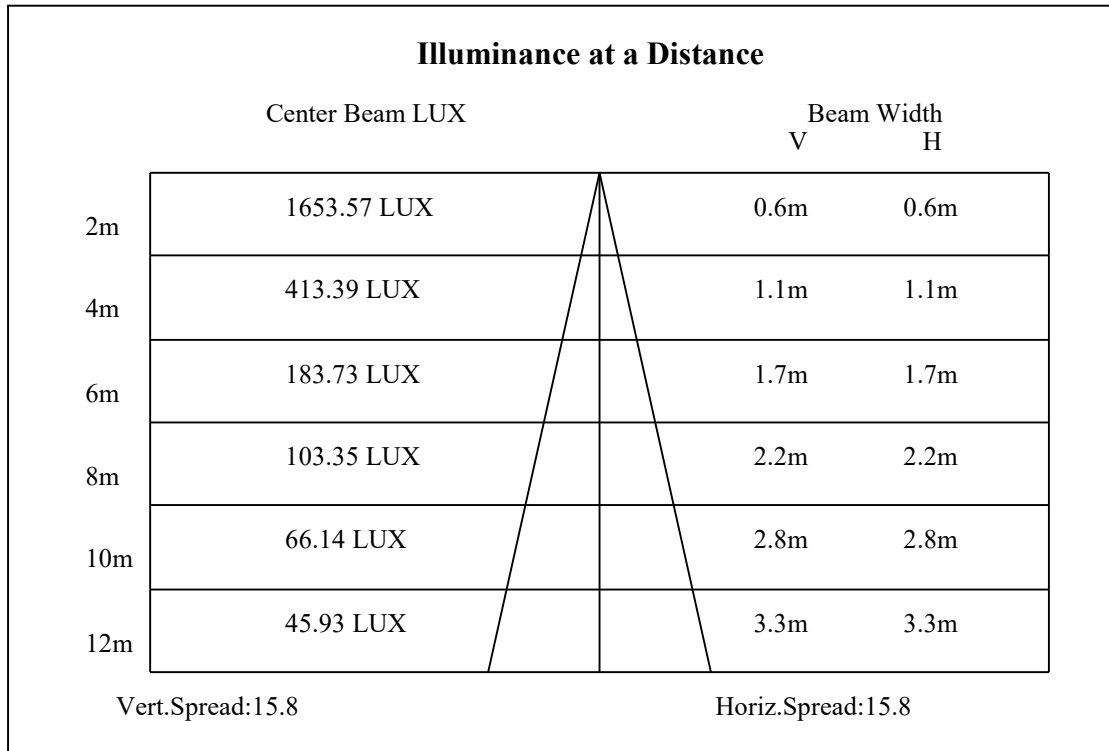
ZONAL LUMEN SUMMARY

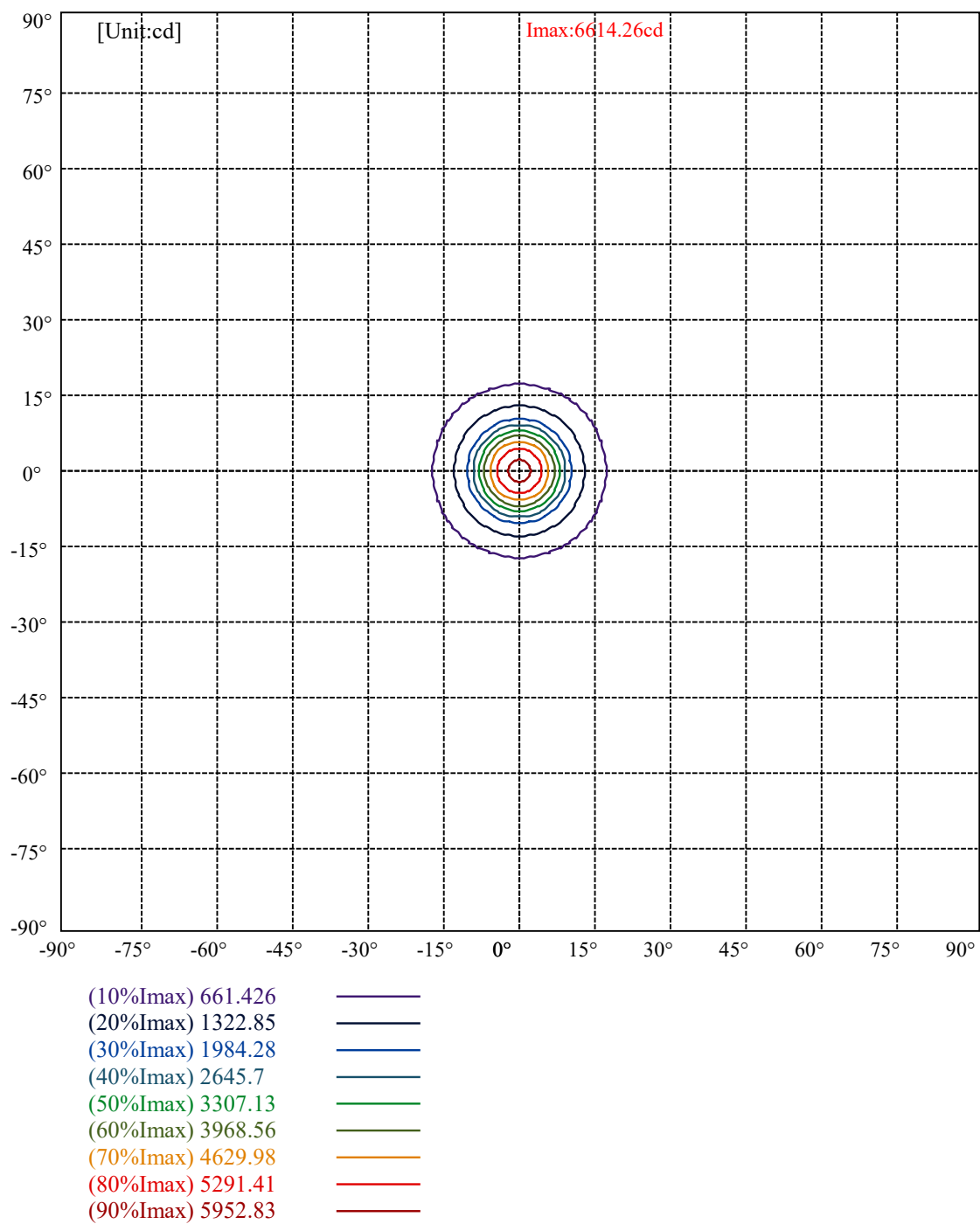
Zone	Lumens	%Lamp	%Fixt
0-30	876.33	82.40%	91.16%
0-40	942.62	88.63%	98.05%
0-60	950.32	89.36%	98.85%
0-90	960.37	90.30%	99.90%
0-120	960.37	90.30%	99.90%
0-180	961.36	90.40%	100.00%
60-90	11.97	1.13%	1.25%
90-120	0.00	0.00%	0.00%
90-130	0.00	0.00%	0.00%
90-150	0.00	0.00%	0.00%
90-180	0.00	0.00%	0.00%
0-24.59	769.09	72.32%	80.00%

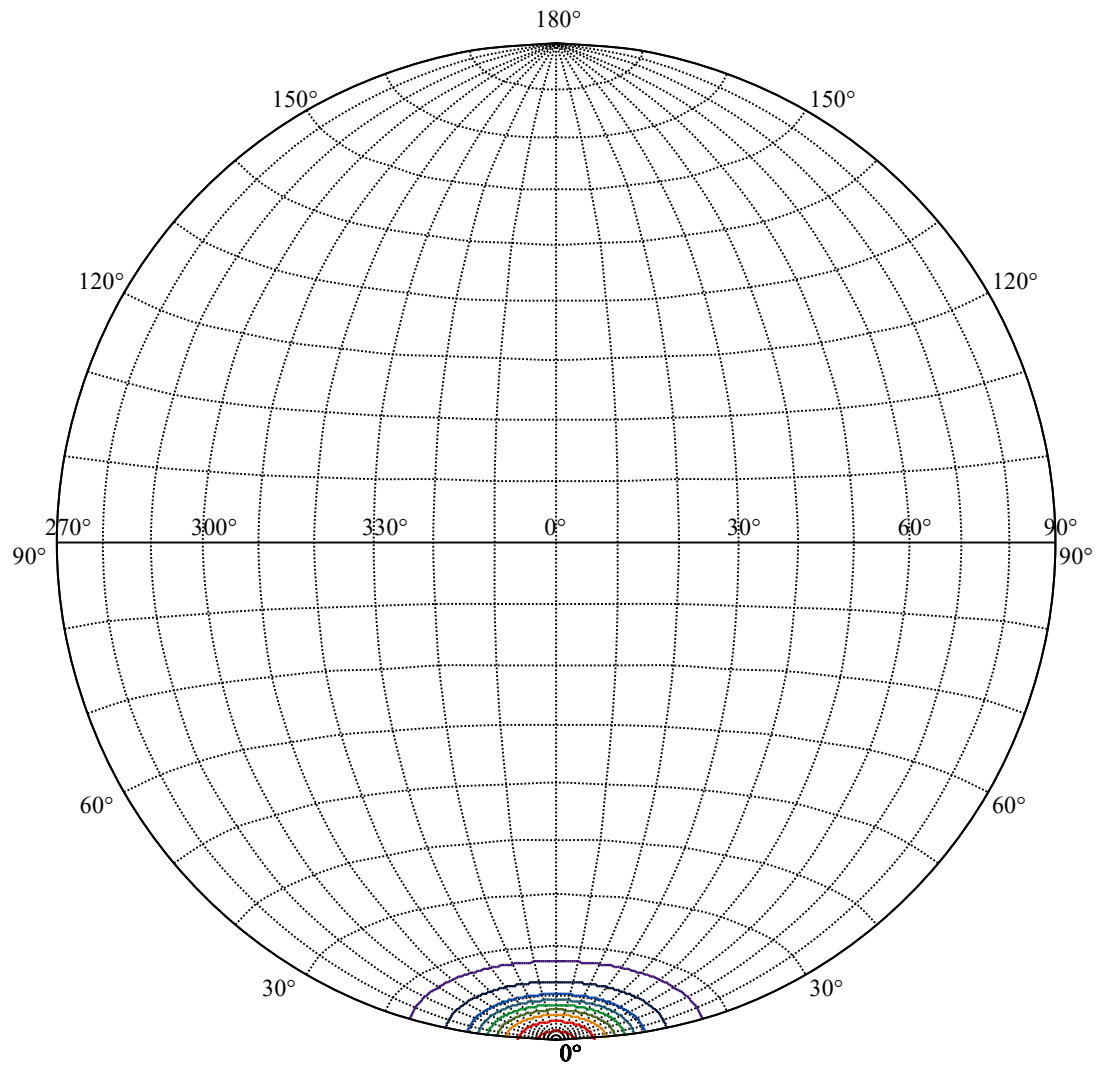
ZONAL LUMEN SUMMARY

0-10	476.89
10-20	203.38
20-30	196.06
30-40	66.29
40-50	3.89
50-60	3.81
60-70	3.96
70-80	4.06
80-90	2.03
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







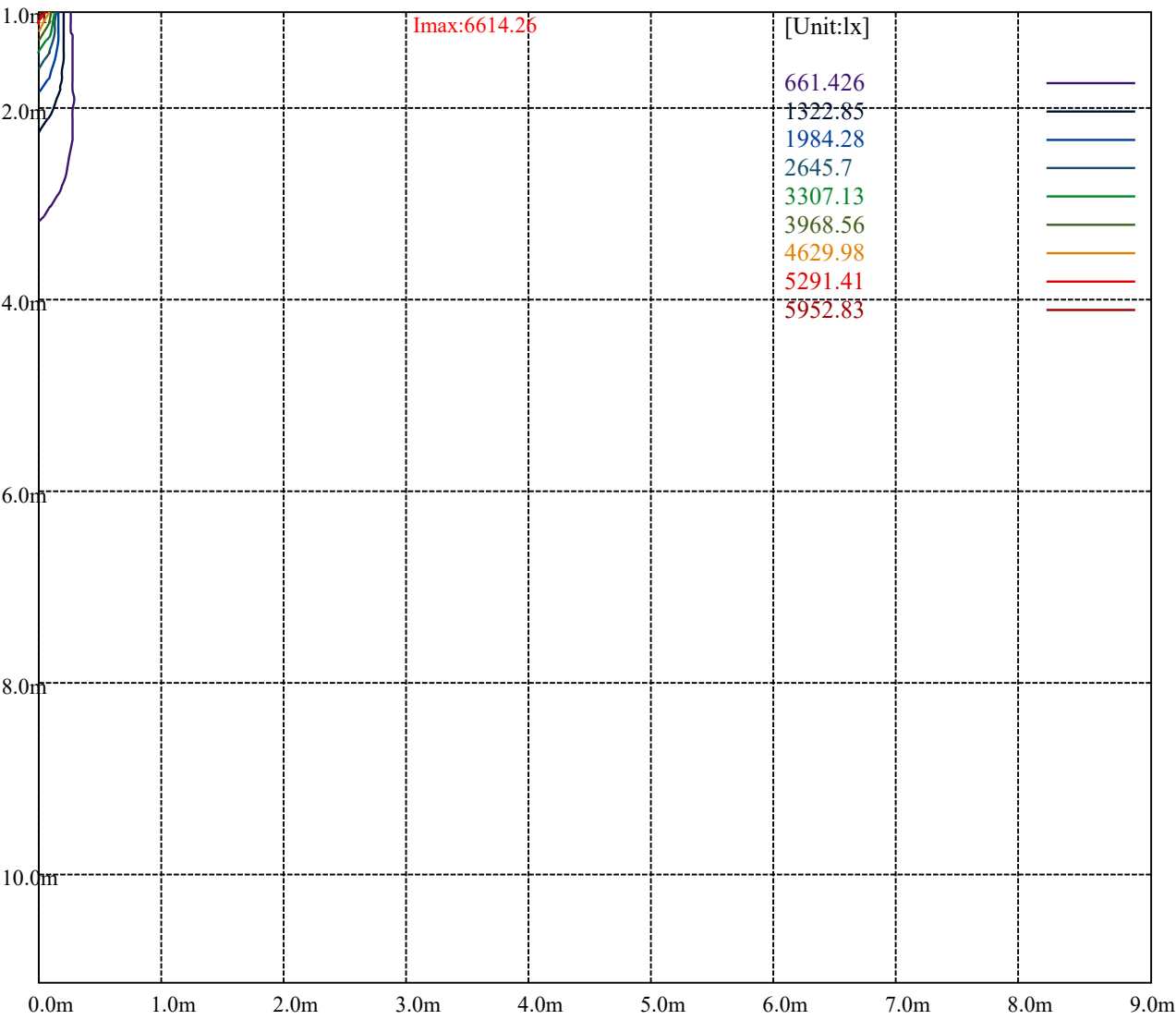


House

[Unit:cd]

Road

Imax:6614.26	
(10%Imax) 661.426	_____
(20%Imax) 1322.85	_____
(30%Imax) 1984.28	_____
(40%Imax) 2645.7	_____
(50%Imax) 3307.13	_____
(60%Imax) 3968.56	_____
(70%Imax) 4629.98	_____
(80%Imax) 5291.41	_____
(90%Imax) 5952.83	_____



Luminance Table

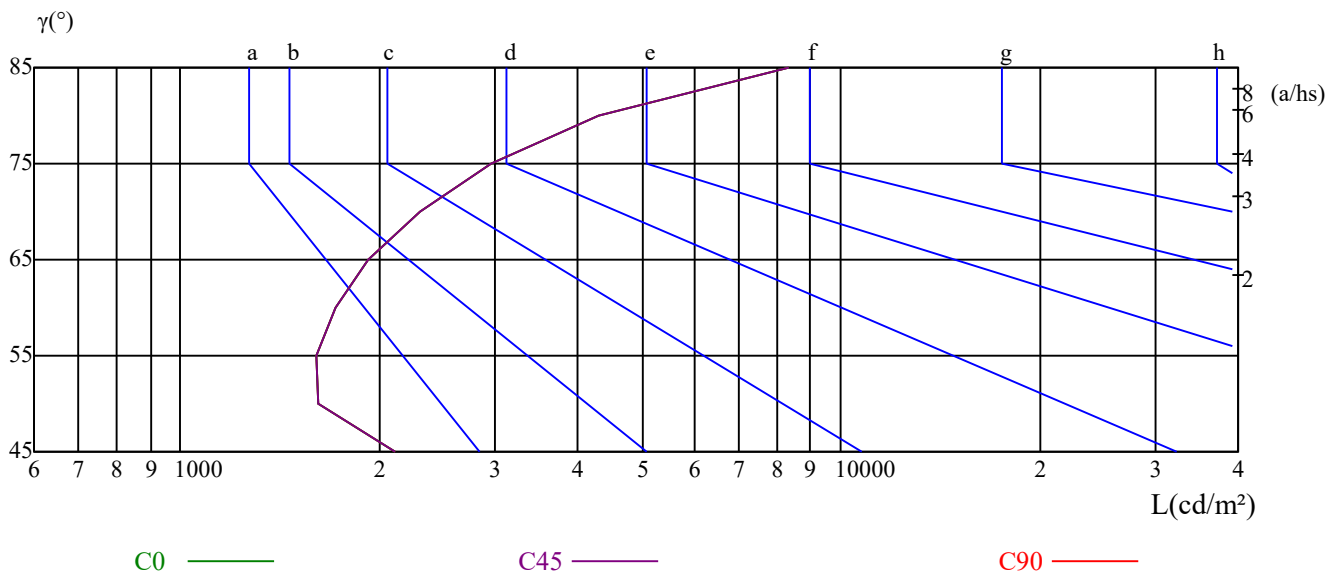
γ	45	50	55	60	65	70	75	80	85
C0	2115	1616	1609	1714	1923	2302	2959	4305	8369
C45	2115	1616	1609	1714	1923	2302	2959	4305	8369
C90	2115	1616	1609	1714	1923	2302	2959	4305	8369

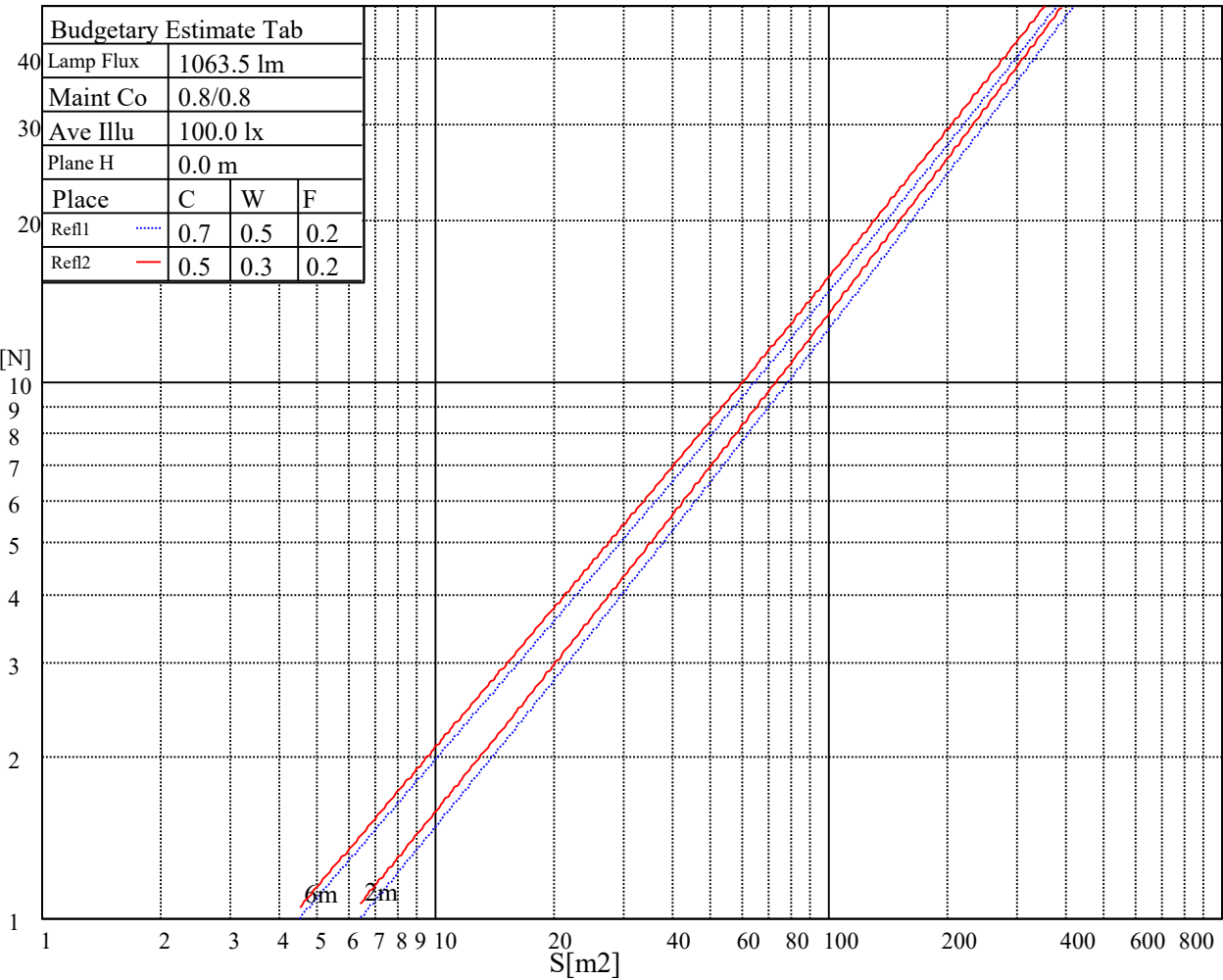
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
1923	1923	1923	2959	2959	2959	8369	8369	8369

Glare Table

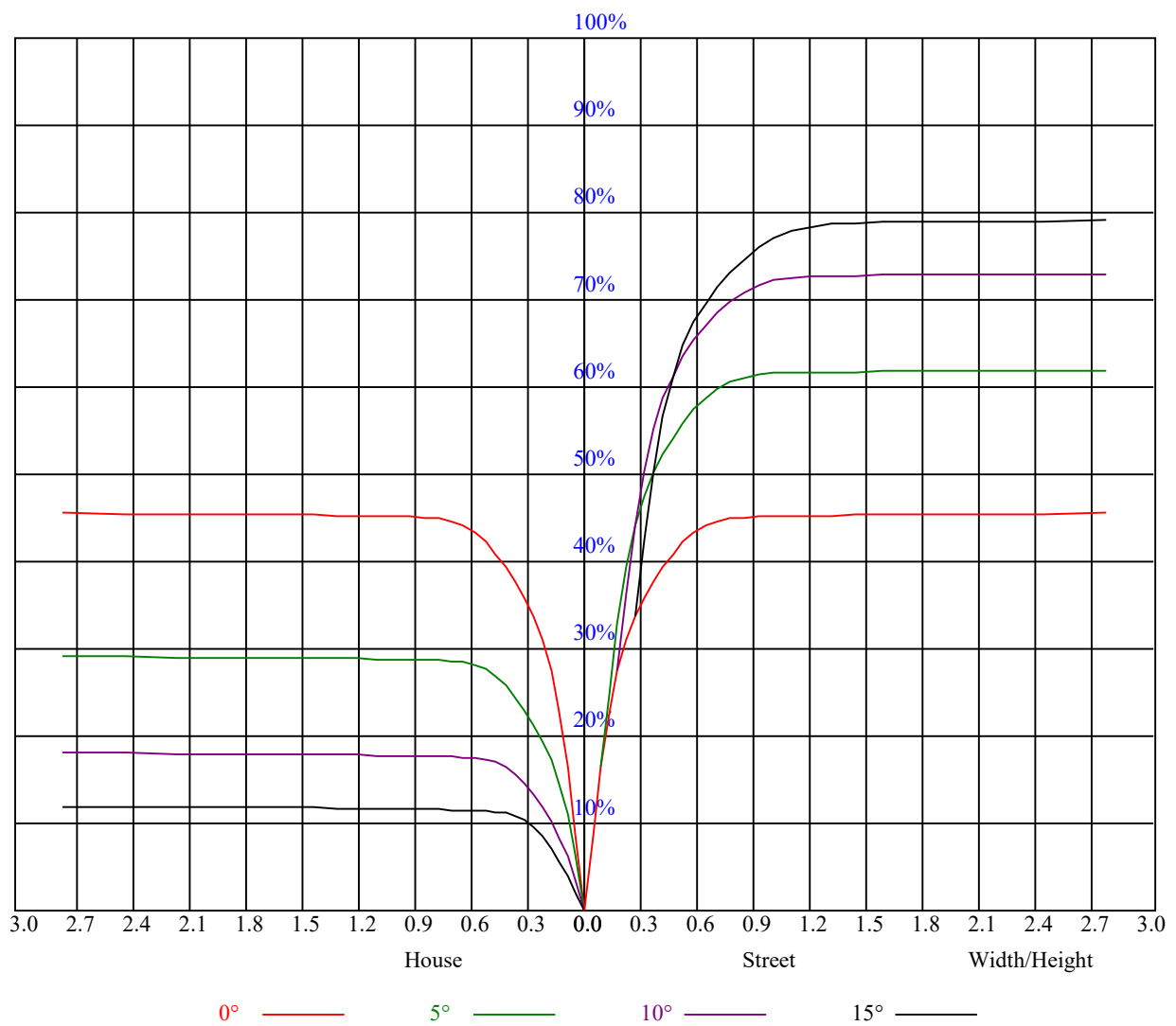
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

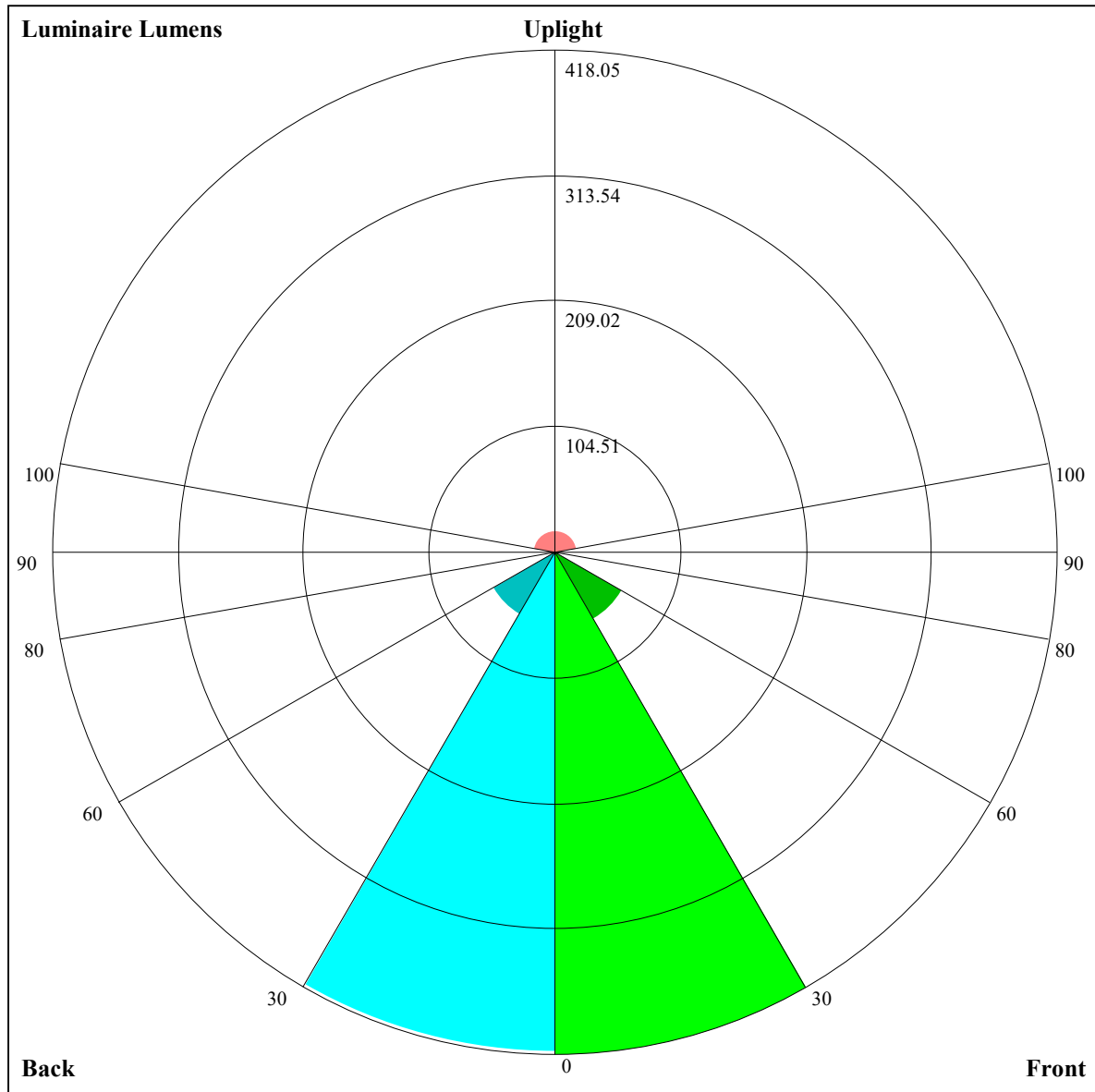
Luminance Limiting Curve





RHOC	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	1.12	1.12	1.12	1.09	1.09	1.09	1.04	1.04	1.04	1.00	1.00	1.00	0.96	0.96	0.96	0.94
1	1.01	0.98	0.95	0.99	0.96	0.93	0.95	0.93	0.91	0.91	0.90	0.88	0.88	0.87	0.85	0.83
2	0.96	0.92	0.89	0.94	0.91	0.88	0.91	0.88	0.86	0.88	0.86	0.84	0.86	0.84	0.82	0.80
3	0.92	0.87	0.84	0.90	0.86	0.83	0.88	0.85	0.82	0.86	0.83	0.80	0.84	0.81	0.79	0.78
4	0.88	0.83	0.80	0.87	0.83	0.79	0.85	0.81	0.78	0.83	0.80	0.78	0.81	0.79	0.77	0.75
5	0.85	0.80	0.77	0.84	0.79	0.76	0.82	0.78	0.76	0.81	0.77	0.75	0.79	0.77	0.74	0.73
6	0.82	0.77	0.74	0.81	0.77	0.74	0.80	0.76	0.73	0.78	0.75	0.73	0.77	0.74	0.72	0.71
7	0.79	0.75	0.71	0.78	0.74	0.71	0.77	0.74	0.71	0.76	0.73	0.71	0.75	0.72	0.70	0.69
8	0.77	0.72	0.69	0.76	0.72	0.69	0.75	0.72	0.69	0.74	0.71	0.69	0.74	0.71	0.68	0.67
9	0.75	0.70	0.67	0.74	0.70	0.67	0.73	0.70	0.67	0.73	0.69	0.67	0.72	0.69	0.67	0.66
10	0.73	0.68	0.66	0.72	0.68	0.66	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.64





Luminaire Lumens:

FL=418.05,FM=63.61,FH=4,FVH=2.03

BL=415.85,BM=60.42,BH=3.99,BVH=2.02

UL=3.96,UH=18.83

BUG Rating:B1-U2-G0

NATA 3-1923-E

Intensity data(cd)										Appendix Page: 15 Total:15	
C/γ(°)	0.0	5.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0		
0.0	6631.44	5395.04	2422.28	904.23	539.71	432.57	379.34	235.15	43.39		
45.0	6617.29	4878.58	1984.65	666.72	511.95	421.49	364.39	202.44	20.92		
90.0	6583.94	5444.22	2380.50	923.77	539.03	433.58	382.71	224.37	34.23		
135.0	6624.37	5222.21	2286.51	837.86	512.75	428.19	374.29	199.11	31.20		
180.0	6631.44	4765.38	1710.75	664.09	473.91	402.12	349.33	150.90	12.43		
225.0	6617.29	5357.31	2041.25	823.04	494.56	411.01	357.11	177.21	20.45		
270.0	6583.94	4768.08	1614.06	653.14	472.39	402.49	332.31	120.00	11.99		
315.0	6624.37	4858.03	1895.71	669.18	486.48	412.33	357.14	168.21	12.16		
360.0	6631.44	5395.04	2422.28	904.23	539.71	432.57	379.34	235.15	43.39		
C/γ(°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0		
0.0	5.39	4.51	4.21	4.04	3.94	3.87	3.81	3.77	3.71		
45.0	5.02	4.48	4.21	4.08	4.01	3.94	3.84	3.81	3.77		
90.0	5.59	4.72	4.31	4.14	4.11	4.04	3.94	3.91	3.81		
135.0	5.42	4.58	4.25	4.08	3.94	3.91	3.84	3.81	3.74		
180.0	4.85	4.41	4.14	4.01	3.87	3.81	3.77	3.74	3.67		
225.0	5.05	4.48	4.21	4.04	3.94	3.84	3.74	3.74	3.67		
270.0	4.99	4.41	4.14	4.01	3.87	3.81	3.77	3.71	3.67		
315.0	4.95	4.45	4.14	4.01	3.91	3.84	3.77	3.74	3.67		
360.0	5.39	4.51	4.21	4.04	3.94	3.87	3.81	3.77	3.71		
C/γ(°)	90.0										
0.0	3.61										
45.0	3.61										
90.0	3.67										
135.0	3.64										
180.0	3.61										
225.0	3.64										
270.0	3.64										
315.0	3.61										
360.0	3.61										