
Nata

Client:

LumCAT: 2-1795-N

Luminaire: 99.02.73.172

Report No: nata-0100

Test No: GC2018080904

LampCAT: CITIZEN CLU038

Lamp flux(lm): 2394.0

Number of Lamps: 1

Length(mm): 69

Phm Type: C

Voltage(V): 34.7000

Current(A): 0.5000

Power (W): 17.3500

PF: 1.0000

Ballast type: DC

Width(mm): 69

Height(mm): 0

Photometric Results

Lumens(lm): 1993.76, Efficiency(%): 83.28% , Luminous Efficacy(lm/W): 114.91

Central intensity(cd): 4158.410, Maximum intensity(cd): 4158.410

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=40.0

[C90/270]Total=40.0

Field angle(10%Imax): [C0/180]Total=64.4

[C90/270]Total=64.4

Maximum s/h(1/2): C0_180=0.65 C90_270=0.65

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(%): 84.24%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 96.654%

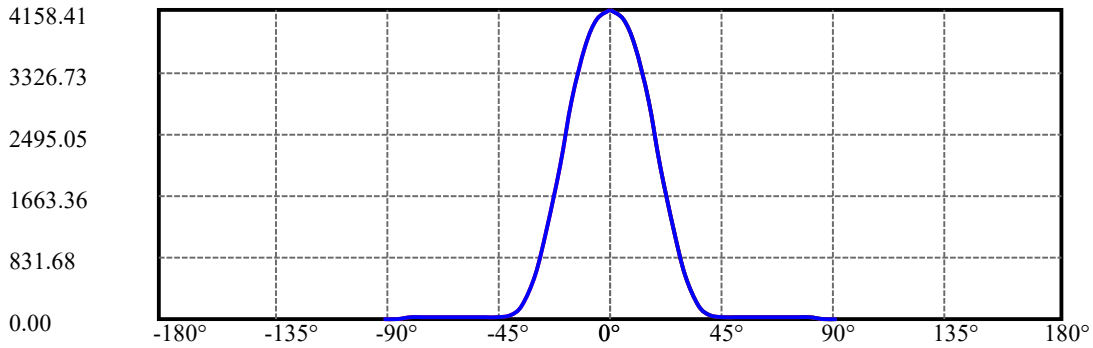
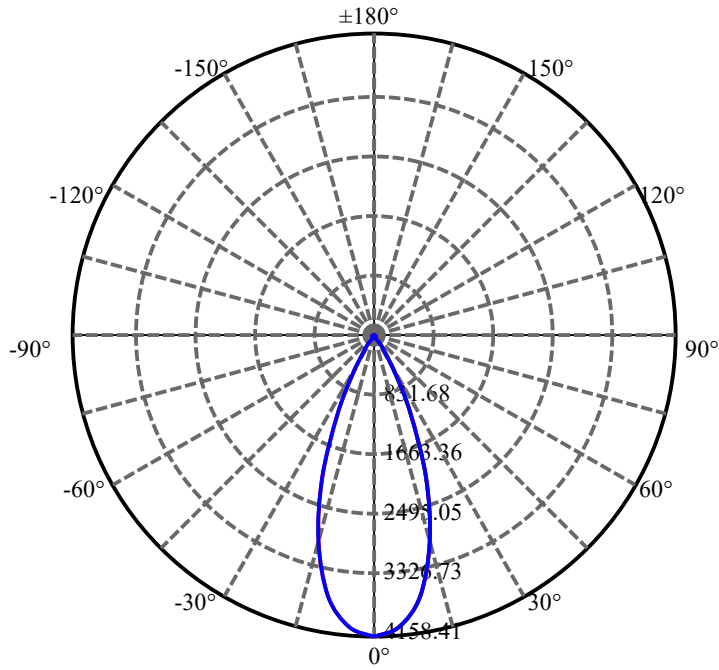
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	4158.410	24.868	24.868	1.039%	1.247%
5.0	4031.161	192.582	217.45	8.044%	10.907%
10.0	3668.477	349.177	566.627	14.585%	28.420%
15.0	2946.619	418.032	984.659	17.462%	49.387%
20.0	2078.035	389.578	1374.237	16.273%	68.927%
25.0	1205.632	279.288	1653.525	11.666%	82.935%
30.0	601.484	164.848	1818.373	6.886%	91.203%
35.0	185.691	58.381	1876.754	2.439%	94.132%
40.0	58.979	20.780	1897.534	.868%	95.174%
45.0	38.402	14.884	1912.419	.622%	95.920%
50.0	31.348	13.163	1925.581	.550%	96.581%
55.0	27.012	12.129	1937.71	.507%	97.189%
60.0	24.314	11.542	1949.252	.482%	97.768%
65.0	21.355	10.609	1959.861	.443%	98.300%
70.0	18.458	9.507	1969.368	.397%	98.777%
75.0	16.070	8.508	1977.876	.355%	99.204%
80.0	13.654	7.371	1985.247	.308%	99.573%
85.0	10.860	5.930	1991.177	.248%	99.871%
90.0	9.408	2.578	1993.755	.108%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	1818.37	75.96%	91.20%
0-40	1897.53	79.26%	95.17%
0-60	1949.25	81.42%	97.77%
0-90	1991.18	83.17%	99.87%
0-120	1991.18	83.17%	99.87%
0-180	1993.76	83.28%	100.00%
60-90	53.47	2.23%	2.68%
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%
0-23.95	1595.00	66.63%	80.00%

ZONAL LUMEN SUMMARY

0-10	566.63
10-20	807.61
20-30	444.14
30-40	79.16
40-50	28.05
50-60	23.67
60-70	20.12
70-80	15.88
80-90	5.93
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



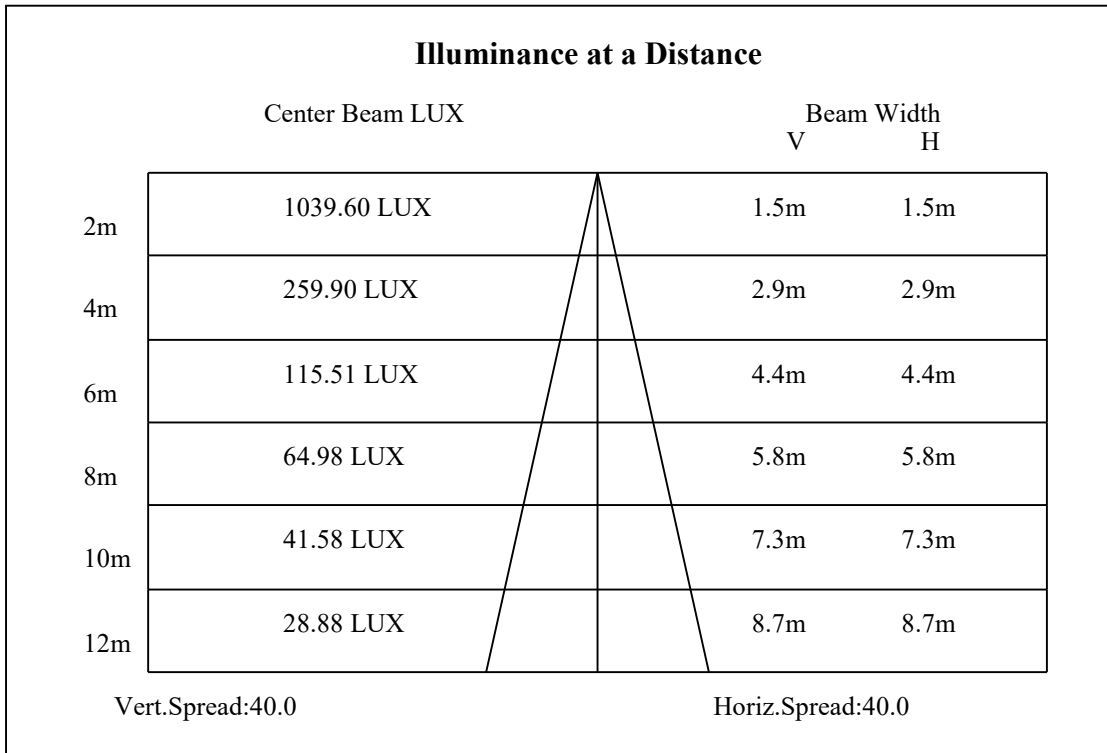
C0(Max): —————

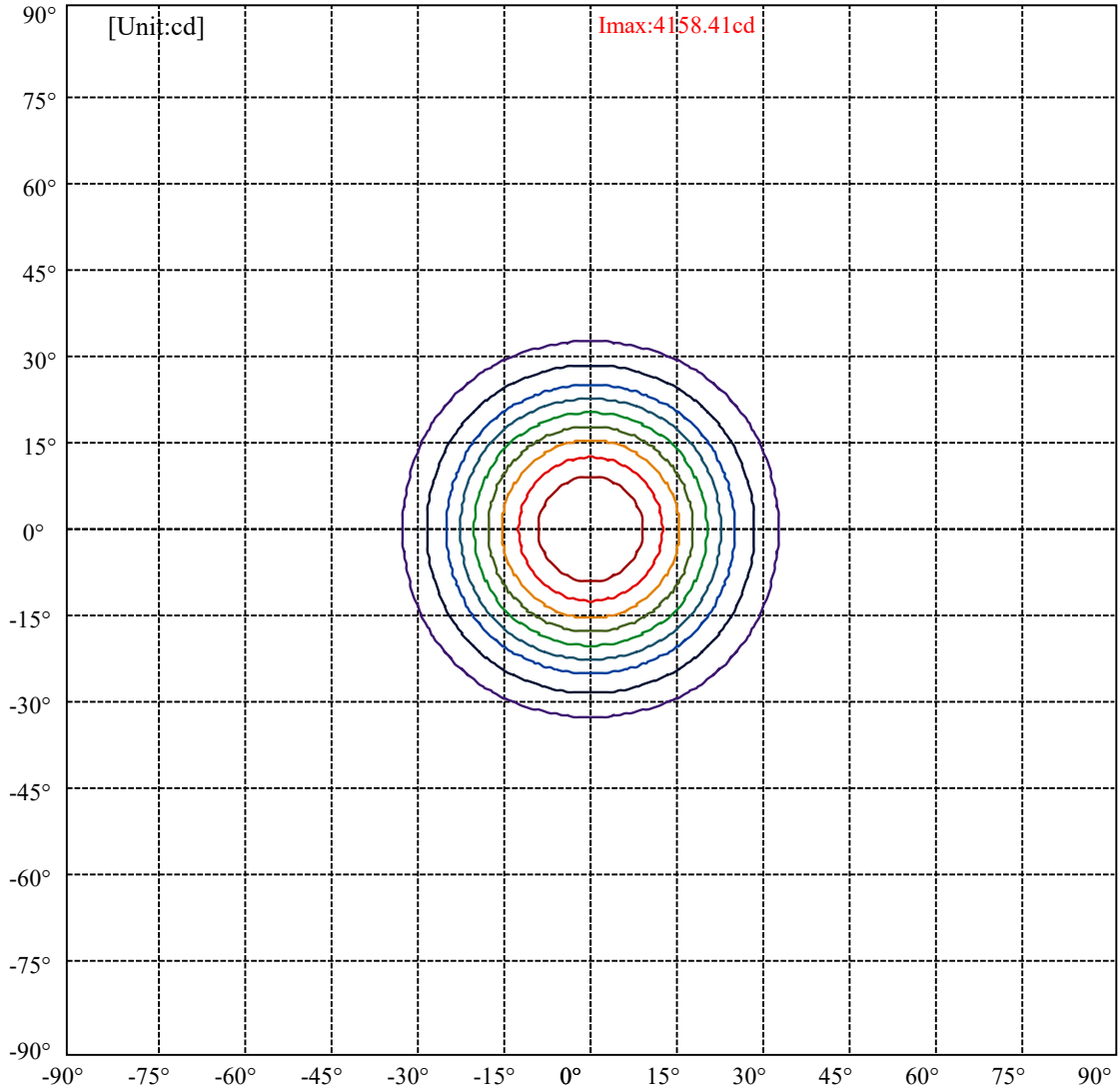
C0/C180: —————

C90/C270: —————

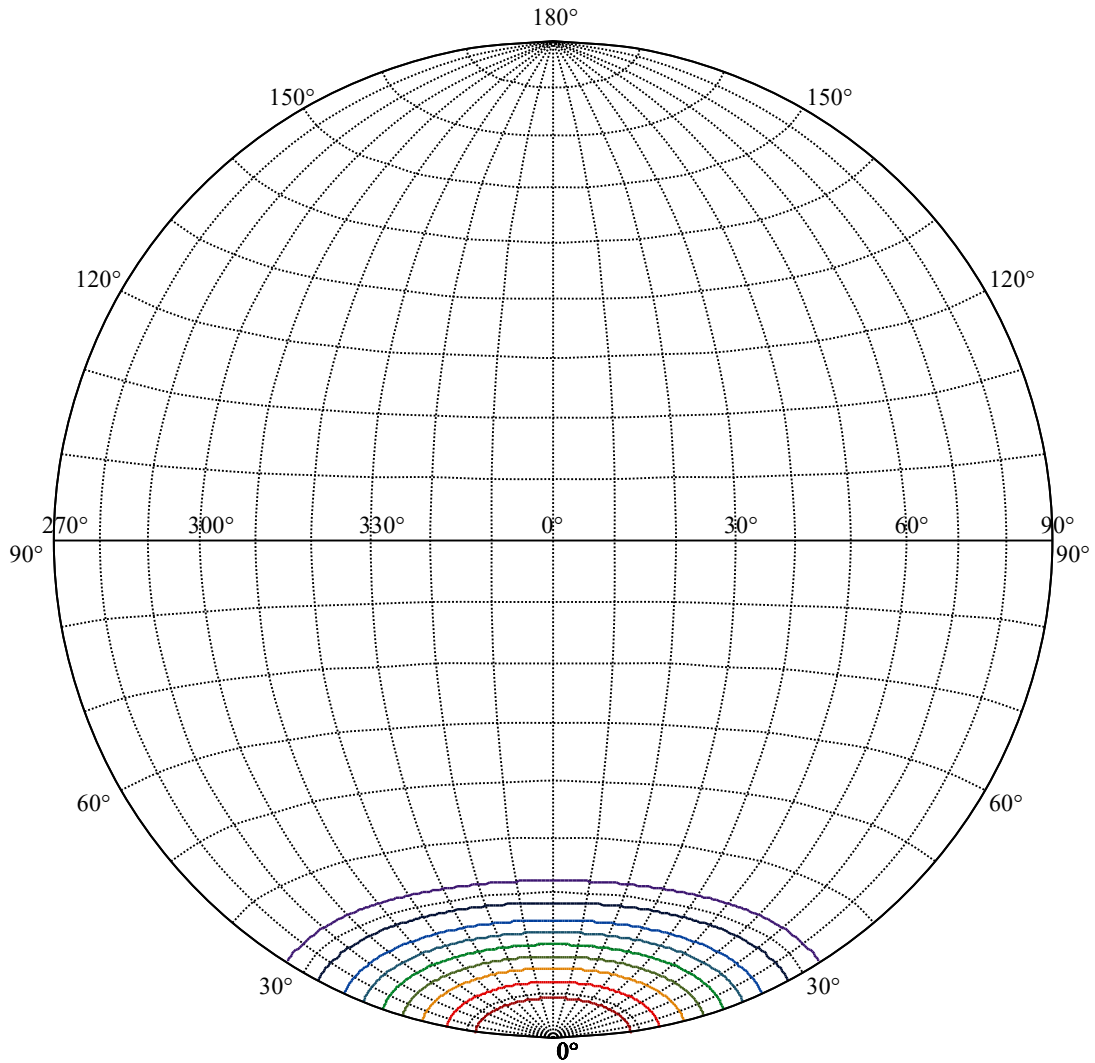
Field angle(10%Imax):C0/180Left:32.2 Right:32.2
:C90/270Left:32.2 Right:32.2

Beam Angle(50%Imax):C0/180Left:20.0 Right:20.0
:C90/270Left:20.0 Right:20.0





(10%Imax) 415.841	—
(20%Imax) 831.682	—
(30%Imax) 1247.52	—
(40%Imax) 1663.36	—
(50%Imax) 2079.21	—
(60%Imax) 2495.05	—
(70%Imax) 2910.89	—
(80%Imax) 3326.73	—
(90%Imax) 3742.57	—



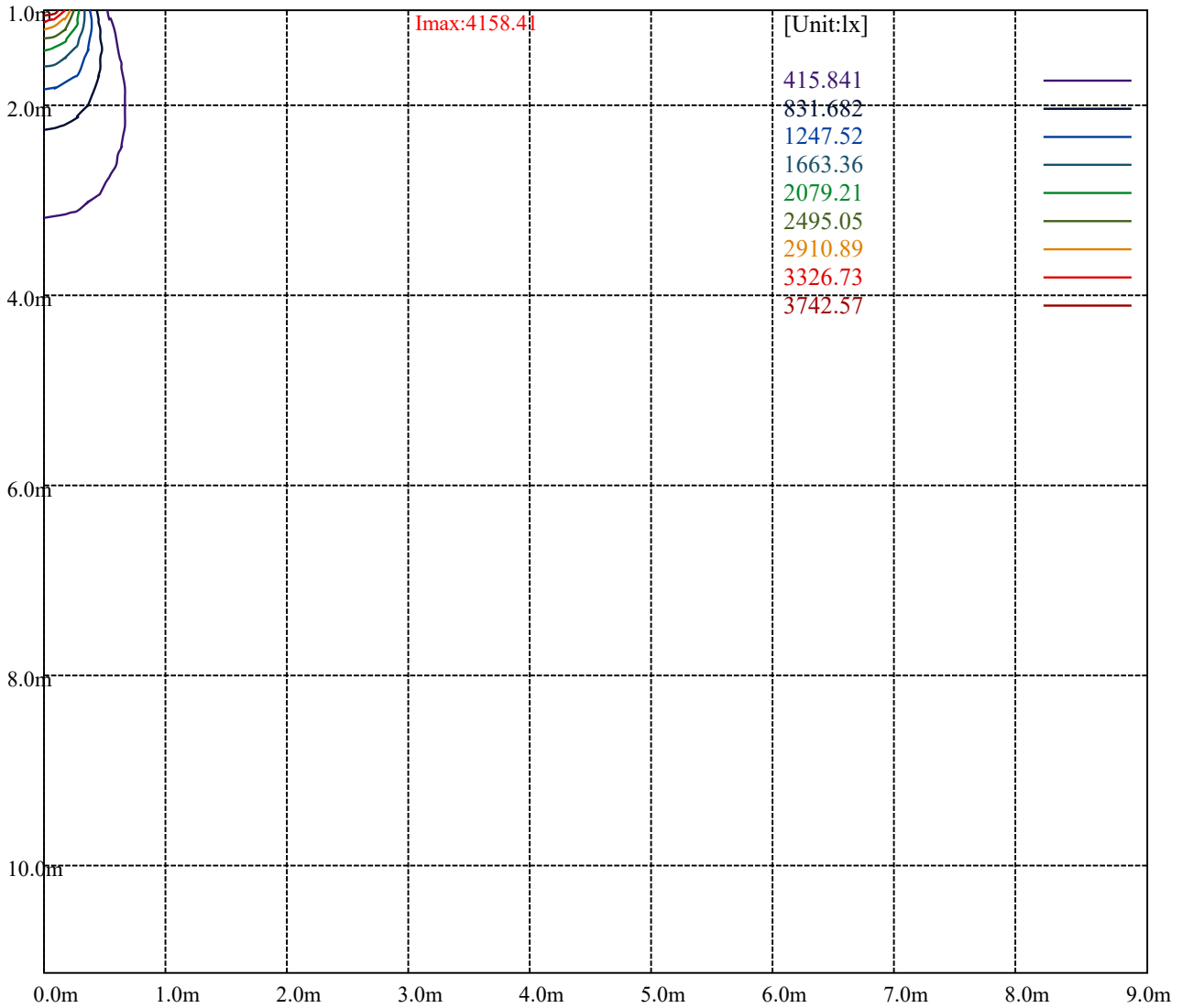
House

[Unit:cd]

Road

Imax:4158.41

(10%Imax) 415.841	—
(20%Imax) 831.682	—
(30%Imax) 1247.52	—
(40%Imax) 1663.36	—
(50%Imax) 2079.21	—
(60%Imax) 2495.05	—
(70%Imax) 2910.89	—
(80%Imax) 3326.73	—
(90%Imax) 3742.57	—



Luminance Table

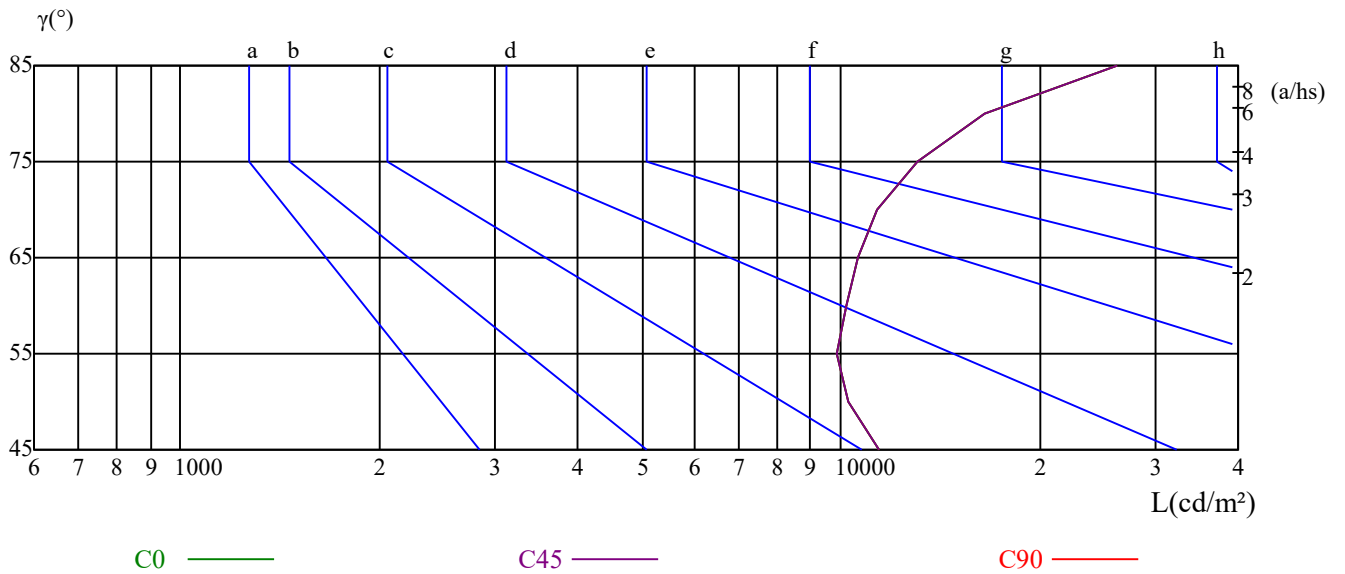
γ	45	50	55	60	65	70	75	80	85
C0	11407	10243	9892	10214	10613	11335	13041	16515	26172
C45	11407	10243	9892	10214	10613	11335	13041	16515	26172
C90	11407	10243	9892	10214	10613	11335	13041	16515	26172

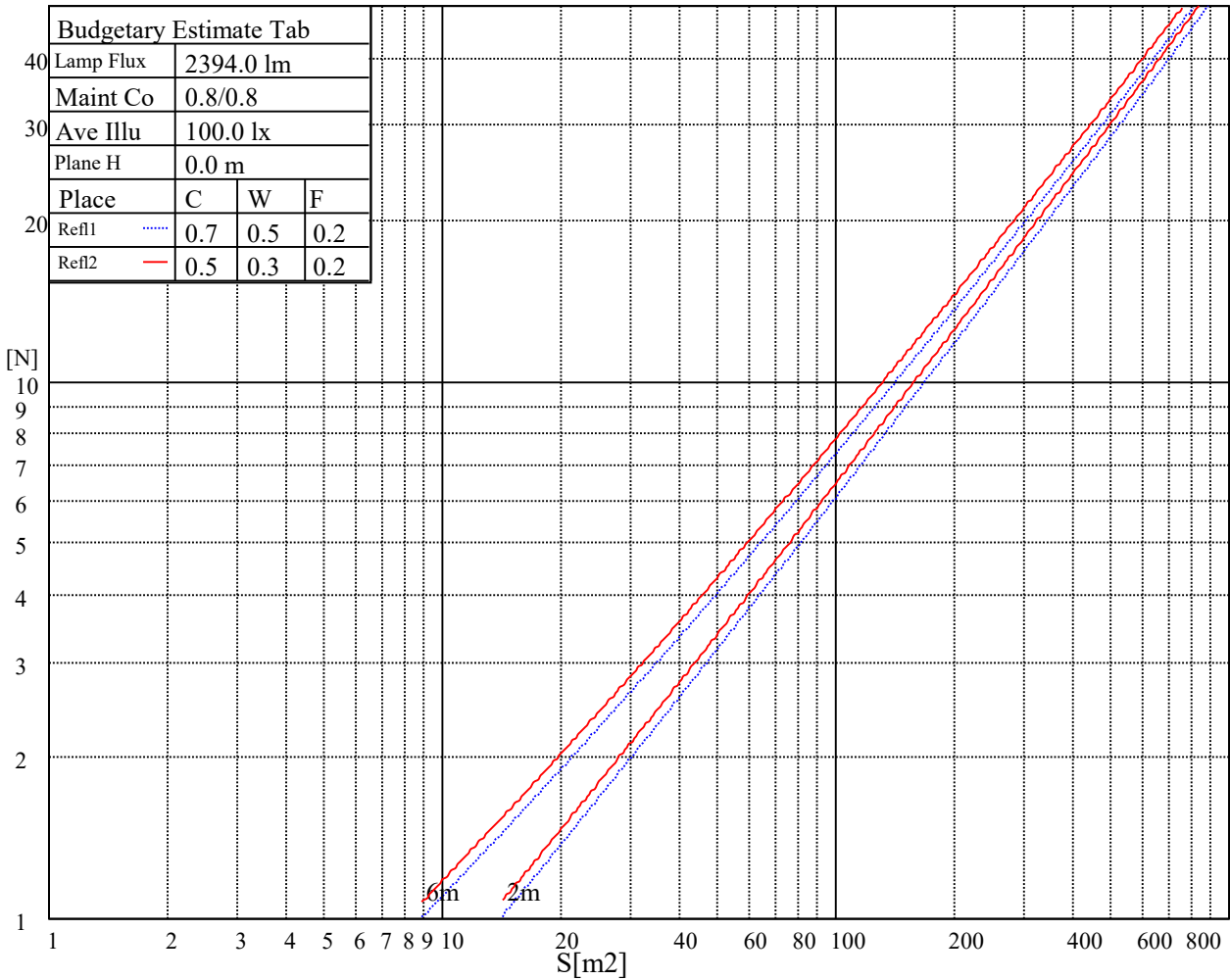
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
10613	10613	10613	13041	13041	13041	26172	26172	26172

Glare Table

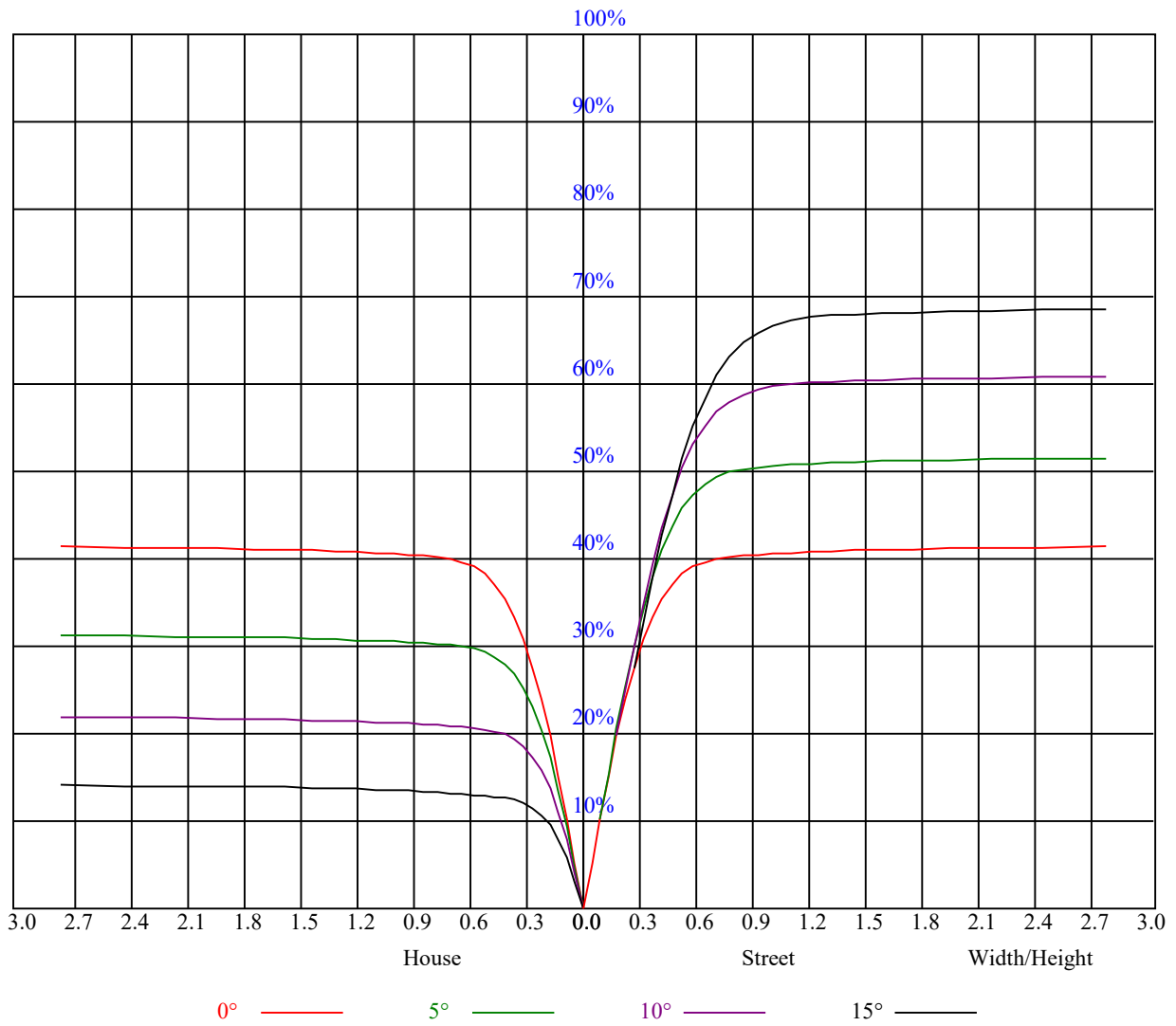
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

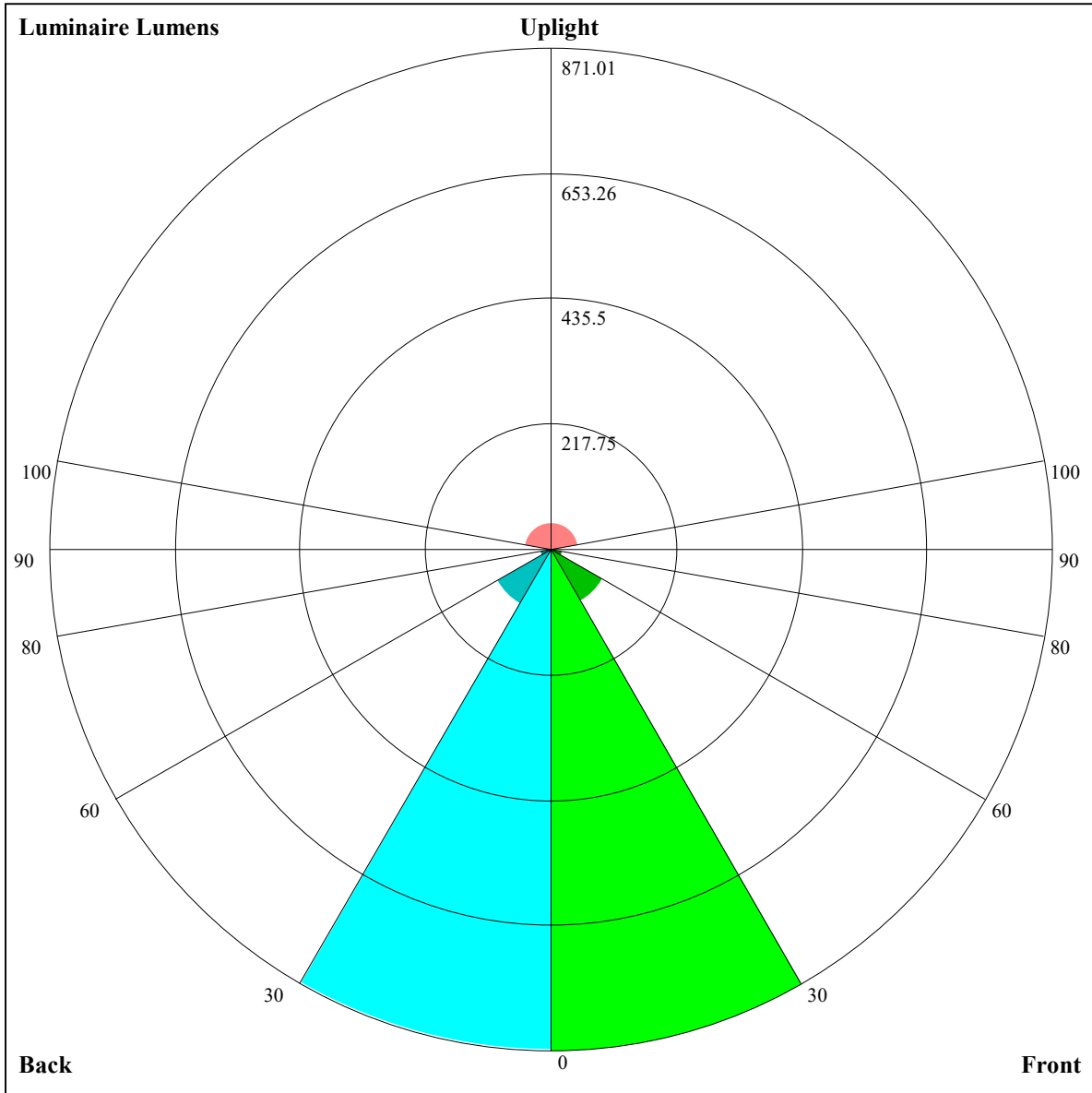
Luminance Limiting Curve





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	1.00	1.00	1.00	0.98	0.98	0.98	0.94	0.94	0.94	0.90	0.90	0.90	0.86	0.86	0.86	0.84
1	0.93	0.91	0.89	0.91	0.89	0.87	0.88	0.86	0.85	0.84	0.83	0.82	0.82	0.81	0.80	0.78
2	0.88	0.85	0.82	0.86	0.83	0.81	0.84	0.81	0.79	0.81	0.79	0.77	0.79	0.77	0.76	0.74
3	0.83	0.80	0.77	0.82	0.79	0.76	0.80	0.77	0.75	0.78	0.76	0.74	0.76	0.74	0.72	0.71
4	0.79	0.75	0.72	0.78	0.75	0.72	0.77	0.74	0.71	0.75	0.72	0.70	0.74	0.71	0.69	0.68
5	0.76	0.72	0.69	0.75	0.71	0.68	0.74	0.70	0.68	0.72	0.70	0.67	0.71	0.69	0.67	0.66
6	0.73	0.69	0.66	0.72	0.68	0.65	0.71	0.68	0.65	0.70	0.67	0.65	0.69	0.66	0.64	0.63
7	0.70	0.66	0.63	0.69	0.66	0.63	0.68	0.65	0.62	0.68	0.64	0.62	0.67	0.64	0.62	0.61
8	0.67	0.63	0.61	0.67	0.63	0.60	0.66	0.63	0.60	0.65	0.62	0.60	0.65	0.62	0.60	0.59
9	0.65	0.61	0.58	0.65	0.61	0.58	0.64	0.60	0.58	0.63	0.60	0.58	0.63	0.60	0.58	0.57
10	0.63	0.59	0.56	0.63	0.59	0.56	0.62	0.58	0.56	0.61	0.58	0.56	0.61	0.58	0.56	0.55





Luminaire Lumens:

FL=871.01,FM=103.35,FH=19.05,FVH=6.1

BL=870.47,BM=109.76,BH=19.12,BVH=6.11

UL=10.26,UH=48.85

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	4161.16	4038.39	3720.71	3045.17	2107.56	1315.30	606.17	194.62	57.92
45.0	4162.26	4010.86	3609.50	2881.65	2015.61	1202.43	531.29	126.96	52.80
90.0	4158.96	3938.18	3482.87	2654.82	1818.51	1092.76	447.06	108.52	50.71
135.0	4151.25	4018.57	3673.91	2951.02	2091.59	1316.40	628.74	290.70	62.32
180.0	4161.16	4015.26	3646.39	2936.16	2052.50	1070.19	593.07	148.05	56.76
225.0	4162.26	4065.92	3710.25	2932.85	2164.82	1061.32	616.36	174.20	61.33
270.0	4158.96	4119.32	3804.40	3236.22	2315.67	1493.13	795.56	294.00	71.35
315.0	4151.25	4042.79	3699.79	2935.06	2058.01	1093.53	593.62	148.49	58.64
360.0	4161.16	4038.39	3720.71	3045.17	2107.56	1315.30	606.17	194.62	57.92
C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	38.26	30.94	26.59	24.17	21.09	18.17	16.08	14.04	10.96
45.0	36.50	30.89	26.48	23.73	20.81	17.95	15.86	13.21	10.90
90.0	36.34	30.23	26.48	23.62	20.54	17.62	15.20	12.44	10.74
135.0	39.03	32.04	27.75	25.11	22.30	19.10	16.85	14.09	10.63
180.0	37.71	30.67	26.43	24.00	20.92	18.06	15.47	13.54	10.79
225.0	37.66	30.72	26.43	23.89	21.03	18.33	15.91	13.65	11.07
270.0	42.17	33.36	28.30	25.11	22.46	19.60	16.85	14.76	11.01
315.0	39.53	31.93	27.64	24.89	21.69	18.83	16.35	13.49	10.79
360.0	38.26	30.94	26.59	24.17	21.09	18.17	16.08	14.04	10.96
C/ γ (°)	90.0								
0.0	9.36								
45.0	9.36								
90.0	9.47								
135.0	9.36								
180.0	9.36								
225.0	9.47								
270.0	9.47								
315.0	9.41								
360.0	9.36								