
Nata

Client:

LumCAT: 1547-E

Luminaire: 92.70.064.00

Report No: nata-0100

Test No:

LampCAT: CITIZEN CLU028

Lamp flux(lm): 1566.0

Number of Lamps: 1

Length(mm): 21

Phm Type: C

Voltage(V): 38.2000

Current(A): 0.3600

Power (W): 13.7520

PF: 0.0000

Ballast type:

Width(mm): 21

Height(mm): 0

Photometric Results

Lumens(lm): 1385.88, Efficiency(%): 88.50% , Luminous Efficacy(lm/W): 100.78

Central intensity(cd): 1180.065, Maximum intensity(cd): 1180.065

Angle of maximum intensity: C=0.0 γ =0.0

Beam Angle(50%Imax): [C0/180]Total=68.2

[C90/270]Total=68.2

Field angle(10%Imax): [C0/180]Total=99.4

[C90/270]Total=99.4

Maximum s/h(1/2): C0_180=0.99 C90_270=0.99

Maximum s/h(1/4): C0_180=1.01 C90_270=1.01

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 88.86%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in π solid angle : 98.204%

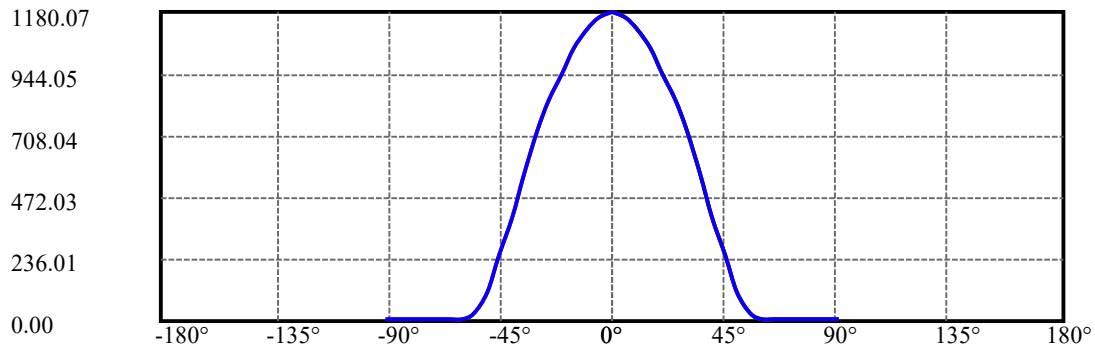
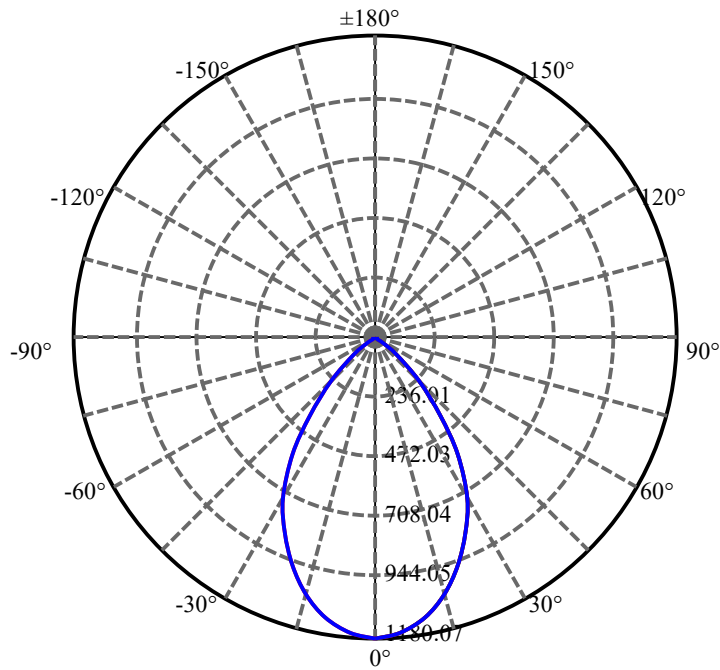
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1180.065	7.057	7.057	.451%	.509%
5.0	1159.453	55.391	62.448	3.537%	4.506%
10.0	1114.689	106.100	168.547	6.775%	12.162%
15.0	1040.855	147.664	316.212	9.429%	22.817%
20.0	947.892	177.705	493.917	11.348%	35.639%
25.0	844.713	195.680	689.597	12.496%	49.759%
30.0	726.707	199.168	888.765	12.718%	64.130%
35.0	559.222	175.819	1064.583	11.227%	76.817%
40.0	399.331	140.699	1205.282	8.985%	86.969%
45.0	246.298	95.463	1300.745	6.096%	93.857%
50.0	110.670	46.470	1347.215	2.967%	97.210%
55.0	32.769	14.713	1361.929	.940%	98.272%
60.0	9.872	4.686	1366.615	.299%	98.610%
65.0	7.061	3.508	1370.123	.224%	98.863%
70.0	6.583	3.391	1373.514	.217%	99.108%
75.0	6.438	3.409	1376.922	.218%	99.354%
80.0	7.305	3.943	1380.866	.252%	99.638%
85.0	6.830	3.730	1384.596	.238%	99.908%
90.0	4.673	1.281	1385.876	.082%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	888.76	56.75%	64.13%
0-40	1205.28	76.97%	86.97%
0-60	1366.62	87.27%	98.61%
0-90	1384.60	88.42%	99.91%
0-120	1384.60	88.42%	99.91%
0-180	1385.88	88.50%	100.00%
60-90	22.67	1.45%	1.64%
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%
0-36.57	1108.70	70.80%	80.00%

ZONAL LUMEN SUMMARY

0-10	168.55
10-20	325.37
20-30	394.85
30-40	316.52
40-50	141.93
50-60	19.40
60-70	6.90
70-80	7.35
80-90	3.73
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



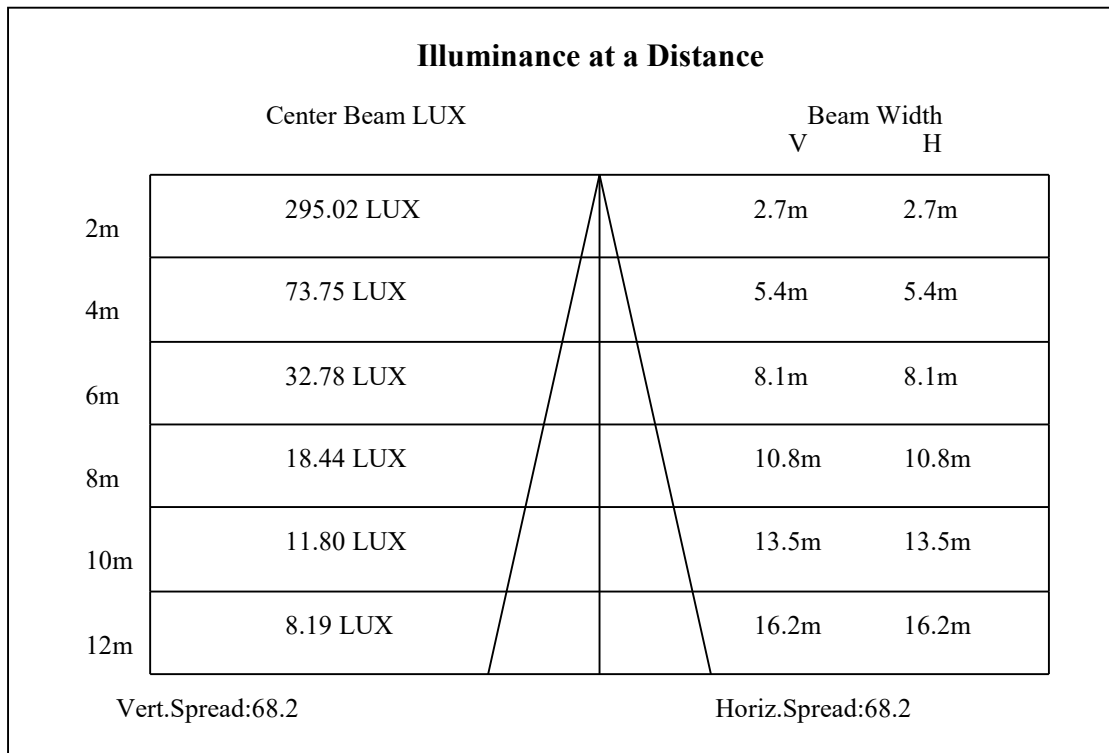
C0(Max): —————

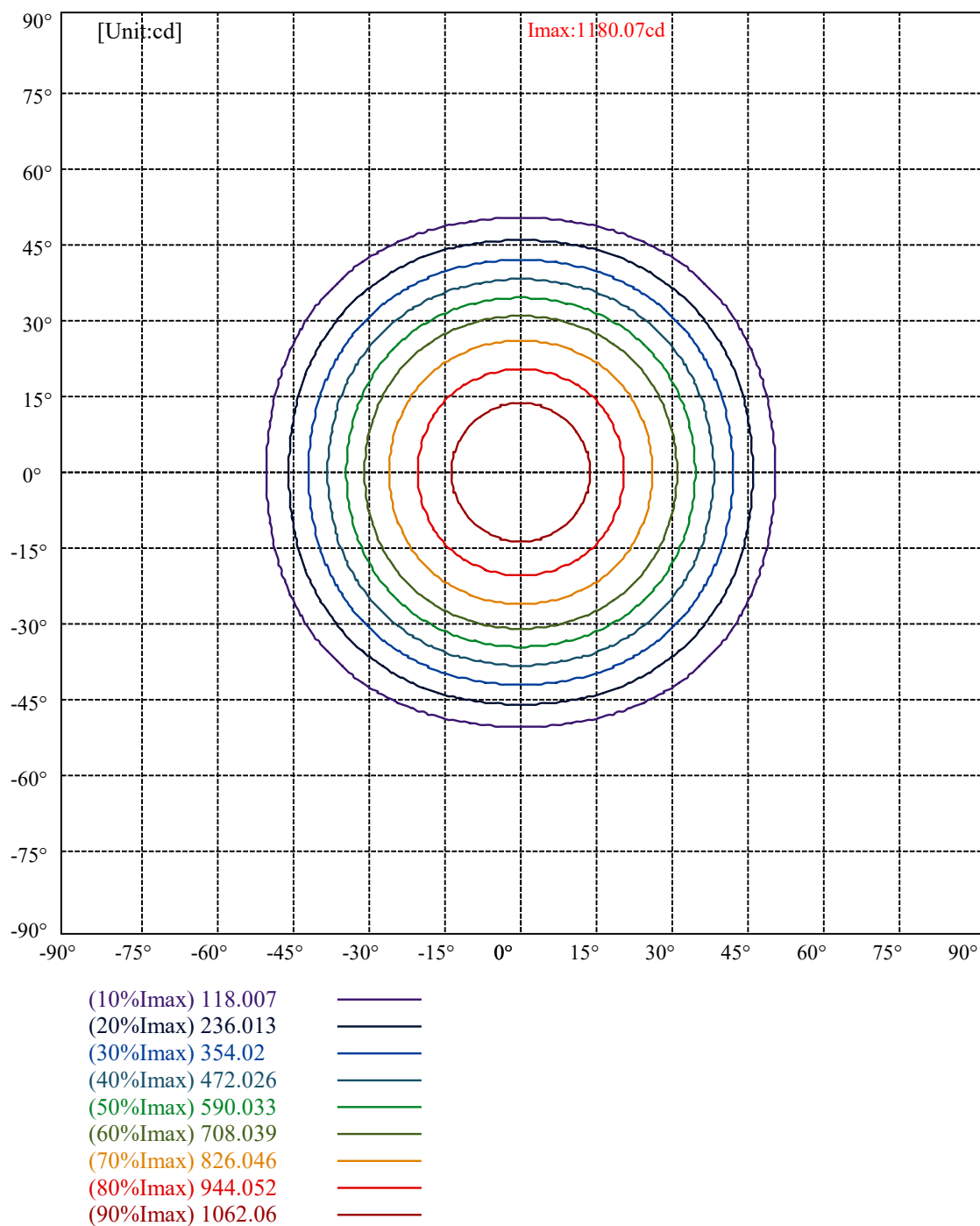
C0/C180: —————

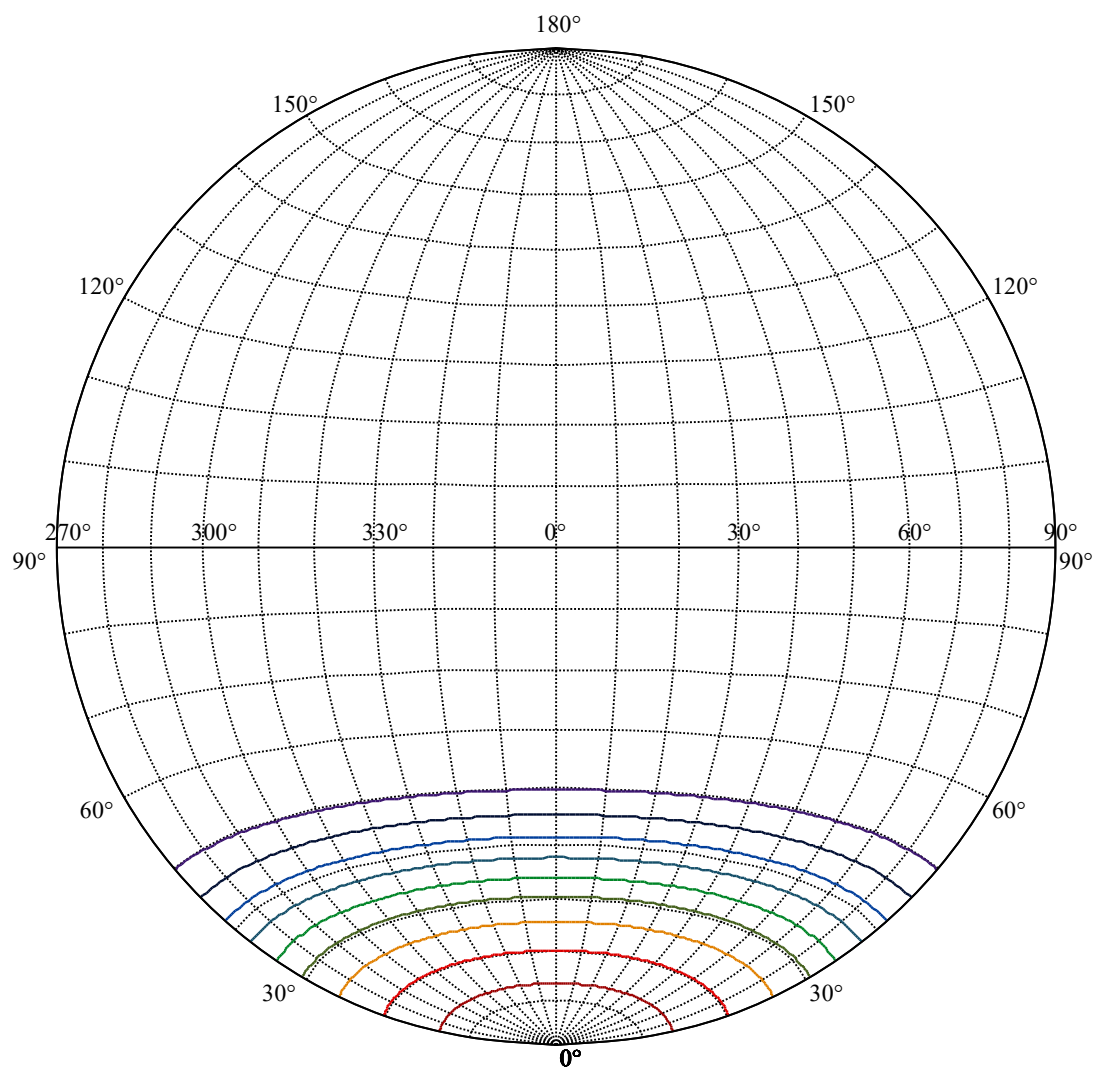
C90/C270: —————

Field angle(10%Imax):C0/180Left:49.7 Right:49.7
:C90/270Left:49.7 Right:49.7

Beam Angle(50%Imax):C0/180Left:34.1 Right:34.1
:C90/270Left:34.1 Right:34.1







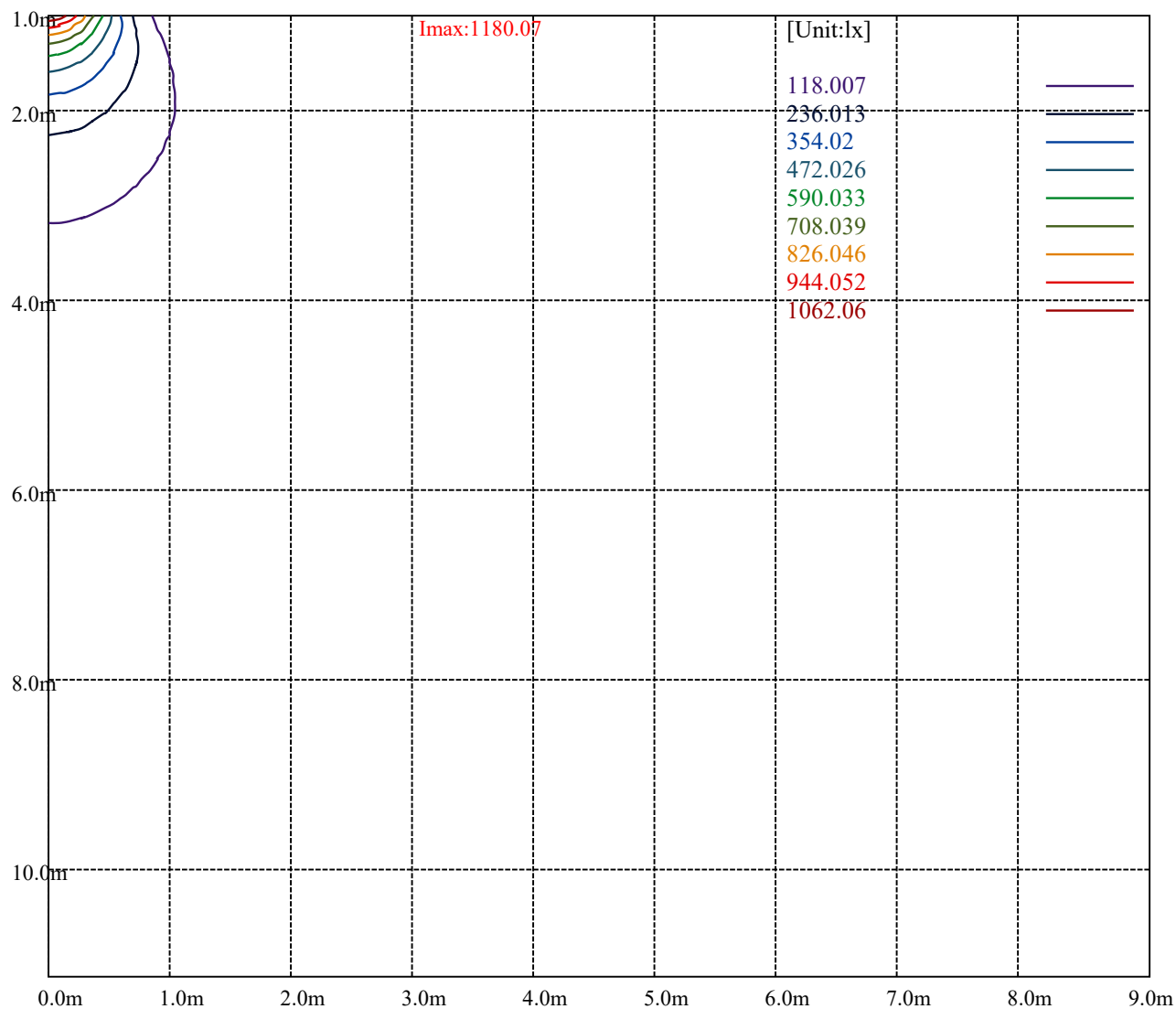
House

[Unit:cd]

Road

Imax:1180.07

(10%Imax)	118.007	—
(20%Imax)	236.013	—
(30%Imax)	354.02	—
(40%Imax)	472.026	—
(50%Imax)	590.033	—
(60%Imax)	708.039	—
(70%Imax)	826.046	—
(80%Imax)	944.052	—
(90%Imax)	1062.06	—



Luminance Table

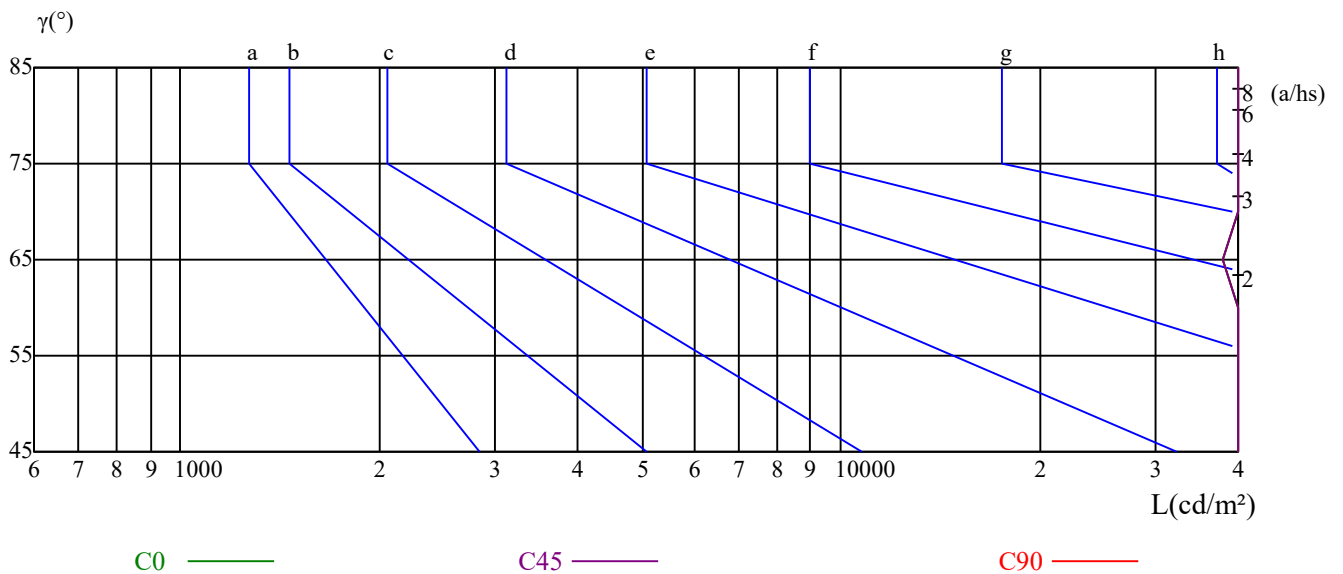
γ	45	50	55	60	65	70	75	80	85
C0	789838	390414	129548	44772	37886	43643	56406	95396	177711
C45	789838	390414	129548	44772	37886	43643	56406	95396	177711
C90	789838	390414	129548	44772	37886	43643	56406	95396	177711

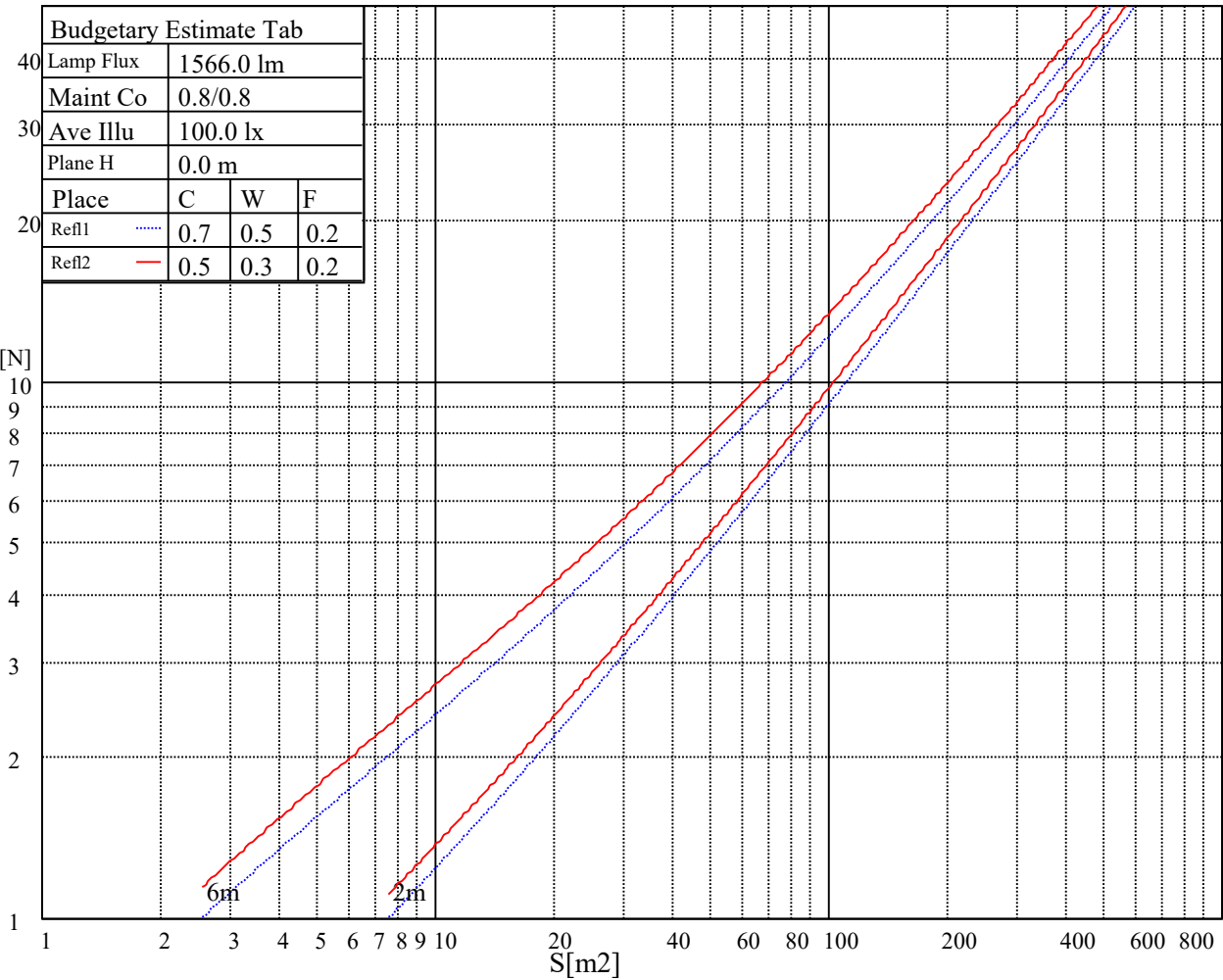
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
37886	37886	37886	56406	56406	56406	177711	177711	177711

Glare Table

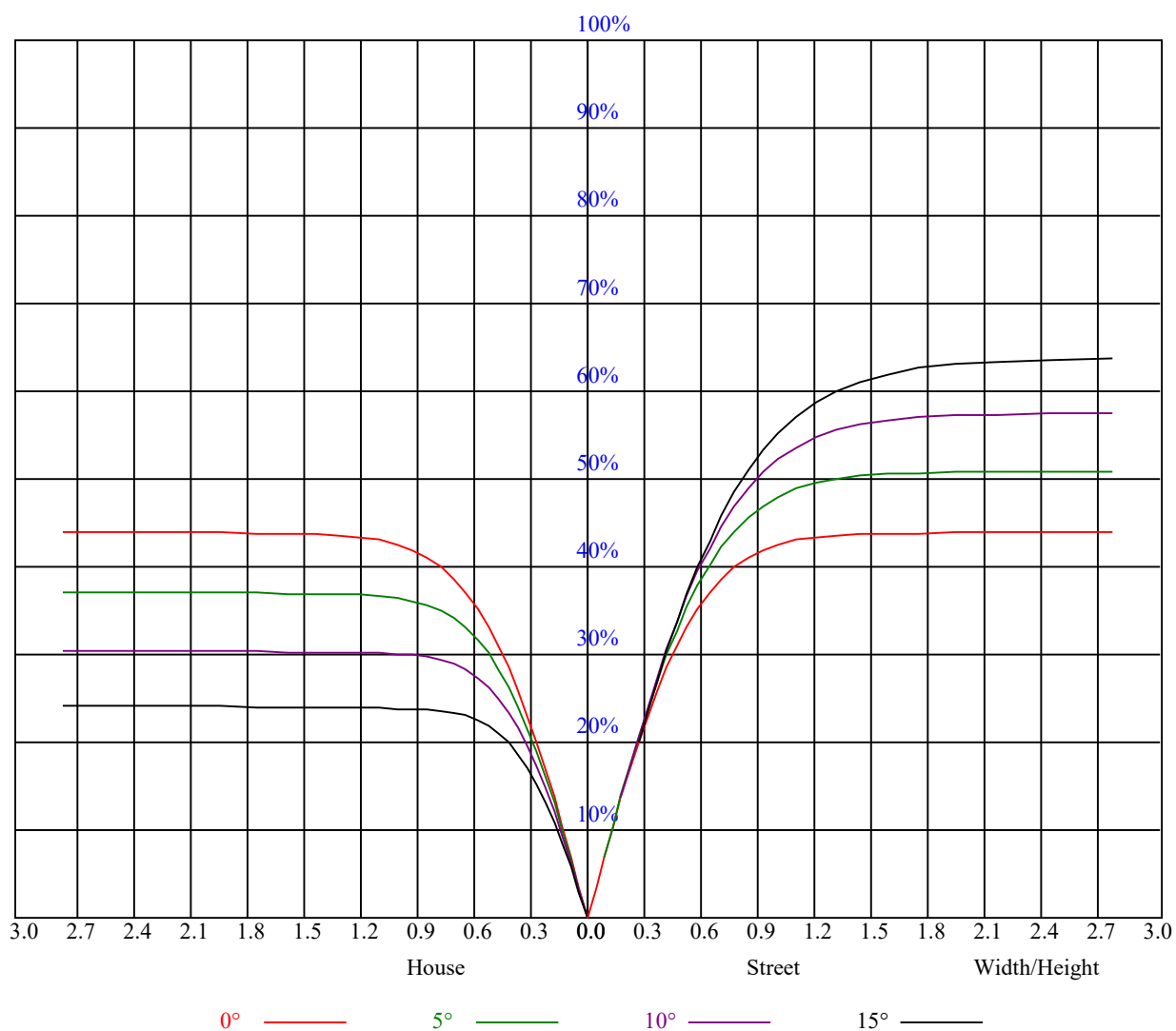
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	≤ 300				
1.5	B		2000	1000	500	≤ 300			
1.85	C			2000	1000	500	≤ 300		
2.2	D				2000	1000	500	≤ 300	
2.55	E					2000	1000	500	≤ 300
		a	b	c	d	e	f	g	h

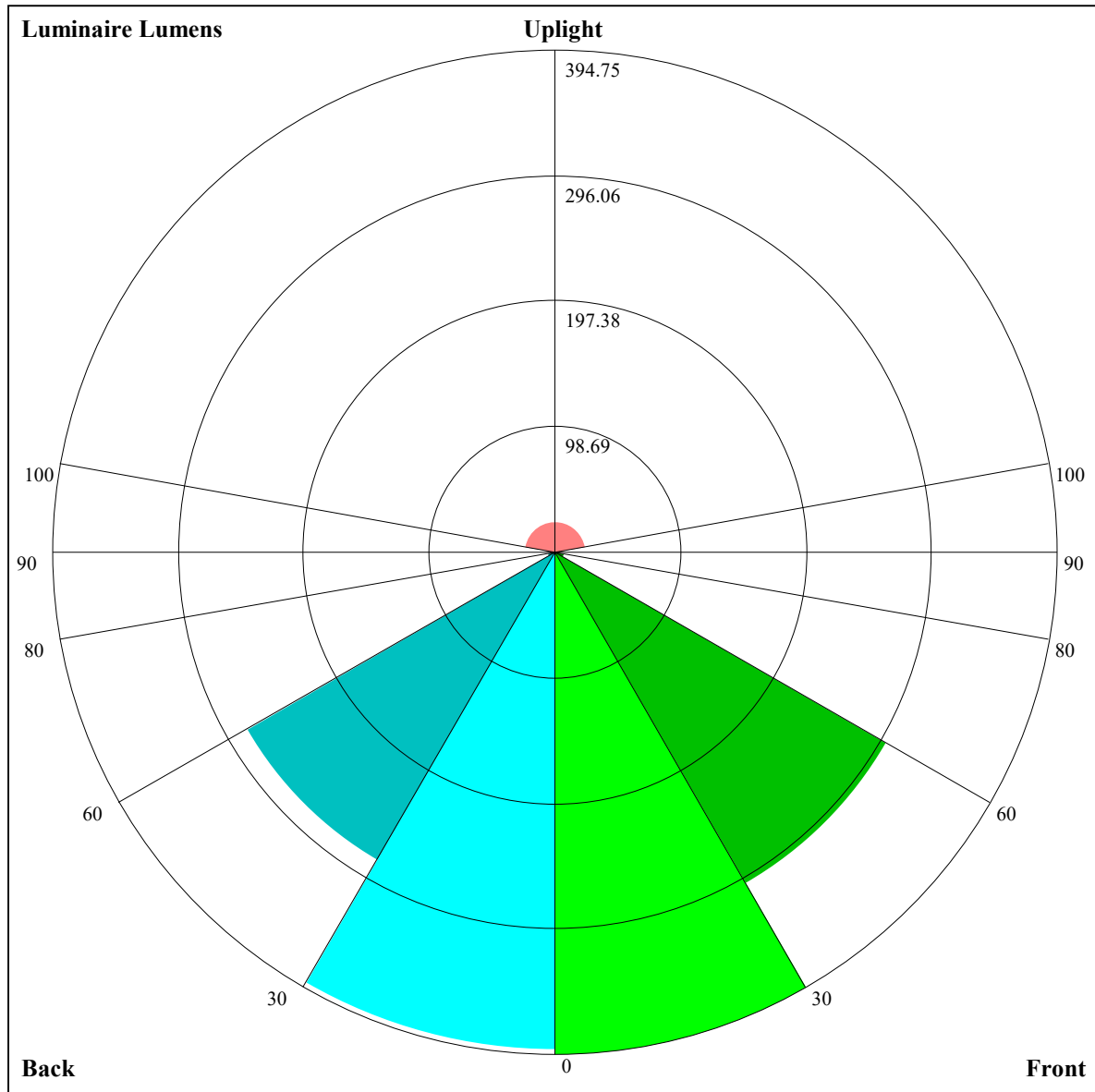
Luminance Limiting Curve





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	1.06	1.06	1.06	1.03	1.03	1.03	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.89
1	0.97	0.95	0.93	0.95	0.93	0.91	0.92	0.90	0.88	0.88	0.87	0.86	0.85	0.84	0.83	0.82
2	0.90	0.86	0.83	0.89	0.85	0.82	0.86	0.83	0.80	0.83	0.81	0.79	0.81	0.79	0.77	0.75
3	0.84	0.79	0.75	0.82	0.78	0.75	0.80	0.76	0.73	0.78	0.75	0.72	0.76	0.73	0.71	0.70
4	0.78	0.73	0.69	0.77	0.72	0.68	0.75	0.71	0.67	0.73	0.69	0.67	0.71	0.68	0.66	0.64
5	0.73	0.67	0.63	0.72	0.67	0.63	0.70	0.66	0.62	0.69	0.65	0.62	0.67	0.64	0.61	0.60
6	0.68	0.62	0.58	0.67	0.62	0.58	0.66	0.61	0.58	0.65	0.60	0.57	0.63	0.60	0.57	0.56
7	0.64	0.58	0.54	0.63	0.58	0.54	0.62	0.57	0.54	0.61	0.57	0.53	0.60	0.56	0.53	0.52
8	0.60	0.54	0.50	0.59	0.54	0.50	0.58	0.53	0.50	0.57	0.53	0.50	0.56	0.53	0.50	0.48
9	0.56	0.51	0.47	0.56	0.51	0.47	0.55	0.50	0.47	0.54	0.50	0.47	0.53	0.49	0.47	0.45
10	0.53	0.48	0.44	0.53	0.48	0.44	0.52	0.47	0.44	0.51	0.47	0.44	0.51	0.47	0.44	0.43





Luminaire Lumens:

FL=394.75,FM=300.03,FH=7.87,FVH=3.72

BL=391.41,BM=279.56,BH=6.8,BVH=3.28

UL=5.1,UH=24.26

BUG Rating:B1-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	1173.25	1162.24	1116.54	1051.58	959.08	855.03	760.33	593.51	428.89
22.5	1192.52	1172.15	1127.56	1054.33	956.33	850.07	743.26	572.59	408.52
45.0	1186.47	1155.08	1097.55	1019.59	923.08	815.28	694.32	524.41	359.79
67.5	1183.71	1153.43	1106.08	1024.05	928.25	833.55	710.23	539.00	378.24
90.0	1173.80	1136.36	1081.86	1000.60	897.58	793.58	669.38	495.29	324.17
112.5	1179.86	1142.42	1089.02	1011.94	912.84	811.53	701.42	527.44	363.92
135.0	1175.45	1135.26	1076.52	988.92	895.11	790.55	655.94	496.66	334.25
157.5	1175.45	1149.58	1106.08	1021.85	925.50	831.35	700.32	529.09	374.93
180.0	1173.25	1144.62	1097.00	1021.02	919.44	815.94	684.30	501.62	361.89
202.5	1192.52	1173.80	1139.12	1057.85	969.60	863.23	733.52	549.85	399.71
225.0	1186.47	1178.21	1145.17	1082.96	999.27	893.01	775.19	606.72	450.36
247.5	1183.71	1172.70	1141.32	1067.82	978.35	875.01	755.65	584.86	419.86
270.0	1173.80	1176.00	1147.38	1087.36	999.82	901.27	784.00	632.05	472.38
292.5	1179.86	1169.95	1135.81	1057.41	966.90	862.73	751.02	588.94	443.81
315.0	1175.45	1171.05	1132.51	1068.64	984.41	876.50	768.04	630.40	465.78
337.5	1175.45	1158.39	1095.51	1037.76	950.71	846.77	740.40	575.12	402.79
360.0	1173.25	1162.24	1116.54	1051.58	959.08	855.03	760.33	593.51	428.89

C/ γ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	283.54	138.41	42.17	15.53	7.82	7.38	7.87	10.68	9.80
22.5	293.45	118.98	36.17	9.58	7.65	7.27	7.65	9.41	8.31
45.0	190.50	92.94	27.86	8.09	7.27	6.83	7.27	7.93	6.77
67.5	278.03	95.14	25.82	8.15	7.16	6.61	6.66	7.10	6.44
90.0	181.69	70.53	19.82	7.38	6.72	6.28	6.22	6.50	5.84
112.5	200.13	81.81	21.25	7.10	6.44	6.00	5.62	5.51	5.29
135.0	172.11	71.30	19.88	6.77	6.17	5.73	5.45	5.12	4.96
157.5	239.00	88.59	22.96	6.99	6.33	5.84	5.56	6.61	5.23
180.0	202.44	84.62	23.56	6.94	6.39	6.00	5.73	7.49	5.78
202.5	230.91	106.81	32.15	7.49	6.77	6.44	6.17	6.61	6.83
225.0	280.24	137.59	43.66	10.24	7.10	6.66	6.33	6.39	6.94
247.5	261.24	126.08	34.85	9.63	7.16	6.72	6.44	7.60	8.15
270.0	301.16	150.52	47.46	14.48	7.38	6.88	6.55	8.09	8.37
292.5	270.33	127.40	41.73	12.44	7.21	6.72	6.22	6.94	6.94
315.0	295.65	154.60	48.95	15.53	7.65	6.99	6.22	5.89	5.78
337.5	260.36	125.42	36.01	11.62	7.76	6.99	7.05	9.03	7.87
360.0	283.54	138.41	42.17	15.53	7.82	7.38	7.87	10.68	9.80

C/ γ (°)	90.0
0.0	4.62
22.5	4.73
45.0	4.73
67.5	4.68
90.0	4.68
112.5	4.62
135.0	4.68
157.5	4.62
180.0	4.62
202.5	4.79
225.0	4.73
247.5	4.68
270.0	4.68
292.5	4.68
315.0	4.62
337.5	4.57
360.0	4.62