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## Nata

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### Client:

LumCAT: 1451-E

Luminaire: 92.70.046.00

Report No: nata-0100

Test No:

LampCAT: CITIZEN CLU026

Lamp flux(lm): 974.7

Number of Lamps: 1

Length(mm): 44

Phm Type: C

Voltage(V): 35.4000

Current(A): 0.1800

Power (W): 6.3720

PF: 0.0000

Ballast type:

Width(mm): 44

Height(mm): 0

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## Photometric Results

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Lumens(lm): 862.61, Efficiency(%): 88.50% , Luminous Efficacy(lm/W): 135.38

Central intensity(cd): 1447.502, Maximum intensity(cd): 1447.502

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

Beam Angle(50%Imax): [C0/180]Total=41.0

[C90/270]Total=41.0

Field angle(10%Imax): [C0/180]Total=79.0

[C90/270]Total=79.0

Maximum s/h(1/2): C0\_180=0.65 C90\_270=0.65

Maximum s/h(1/4): C0\_180=0.69 C90\_270=0.69

Up flux rate of lamp(%): 0.00%

Down flux rate of lamp(%): 89.30%

Up flux rate of LUM(%): - -

Down flux rate of LUM(%): 100.00%

CIE Type : Direct lighting

Output flux ratio in  $\pi$  solid angle : 96.925%

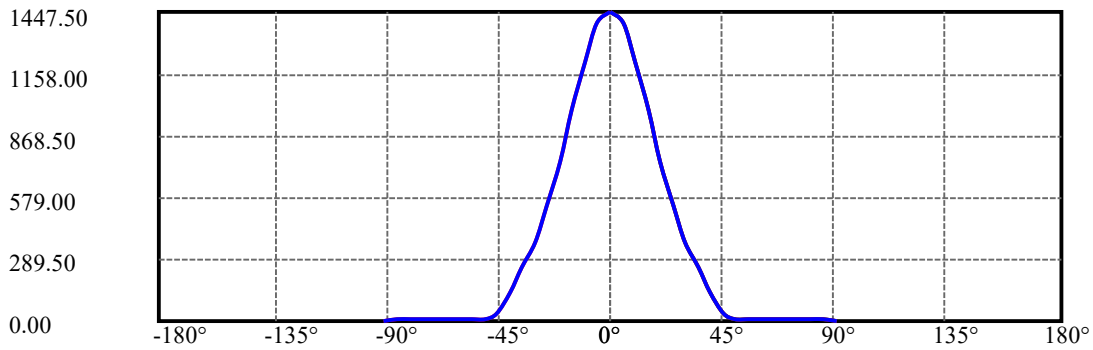
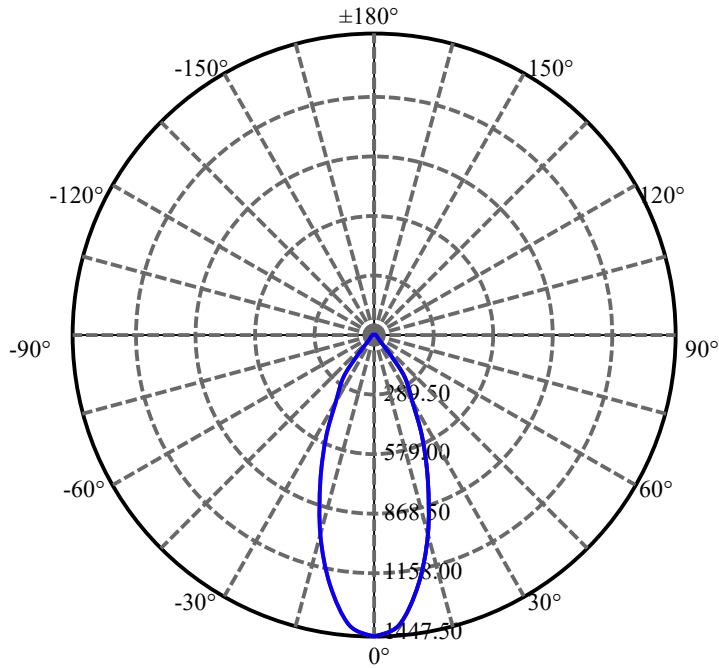
$\gamma(^{\circ})$	Average I(cd)	Zonal F(lm)	Sum F(lm)	Eff Flux(%)	Eff Sum(%)
0.0	1447.502	8.656	8.656	.888%	1.004%
5.0	1393.828	66.588	75.244	6.832%	8.723%
10.0	1212.445	115.404	190.648	11.840%	22.101%
15.0	987.925	140.155	330.804	14.379%	38.349%
20.0	746.985	140.040	470.844	14.368%	54.584%
25.0	535.031	123.942	594.785	12.716%	68.952%
30.0	370.302	101.488	696.274	10.412%	80.717%
35.0	249.935	78.579	774.853	8.062%	89.827%
40.0	132.913	46.830	821.683	4.805%	95.255%
45.0	38.120	14.775	836.458	1.516%	96.968%
50.0	6.937	2.913	839.371	.299%	97.306%
55.0	4.583	2.058	841.429	.211%	97.544%
60.0	4.749	2.254	843.683	.231%	97.806%
65.0	5.382	2.674	846.357	.274%	98.116%
70.0	7.102	3.658	850.015	.375%	98.540%
75.0	8.513	4.507	854.522	.462%	99.062%
80.0	7.921	4.276	858.798	.439%	99.558%
85.0	5.265	2.875	861.673	.295%	99.891%
90.0	3.420	0.937	862.61	.096%	100.000%

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-30	696.27	71.43%	80.72%
0-40	821.68	84.30%	95.26%
0-60	843.68	86.56%	97.81%
0-90	861.67	88.40%	99.89%
0-120	861.67	88.40%	99.89%
0-180	862.61	88.50%	100.00%
60-90	20.24	2.08%	2.35%
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%
0-29.70	690.09	70.80%	80.00%

ZONAL LUMEN SUMMARY

0-10	190.65
10-20	280.20
20-30	225.43
30-40	125.41
40-50	17.69
50-60	4.31
60-70	6.33
70-80	8.78
80-90	2.87
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): —————

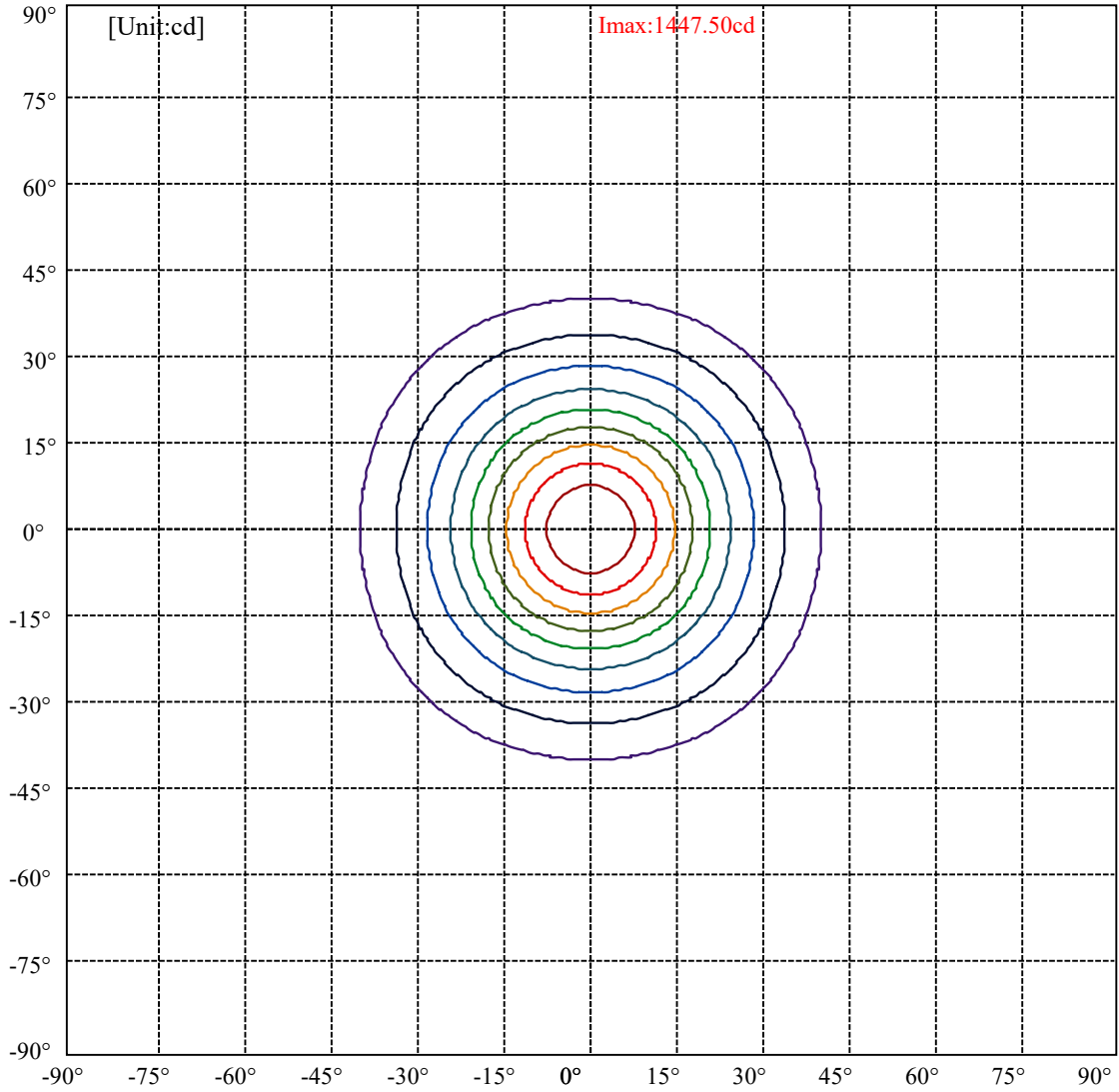
C0/C180: —————

C90/C270: —————

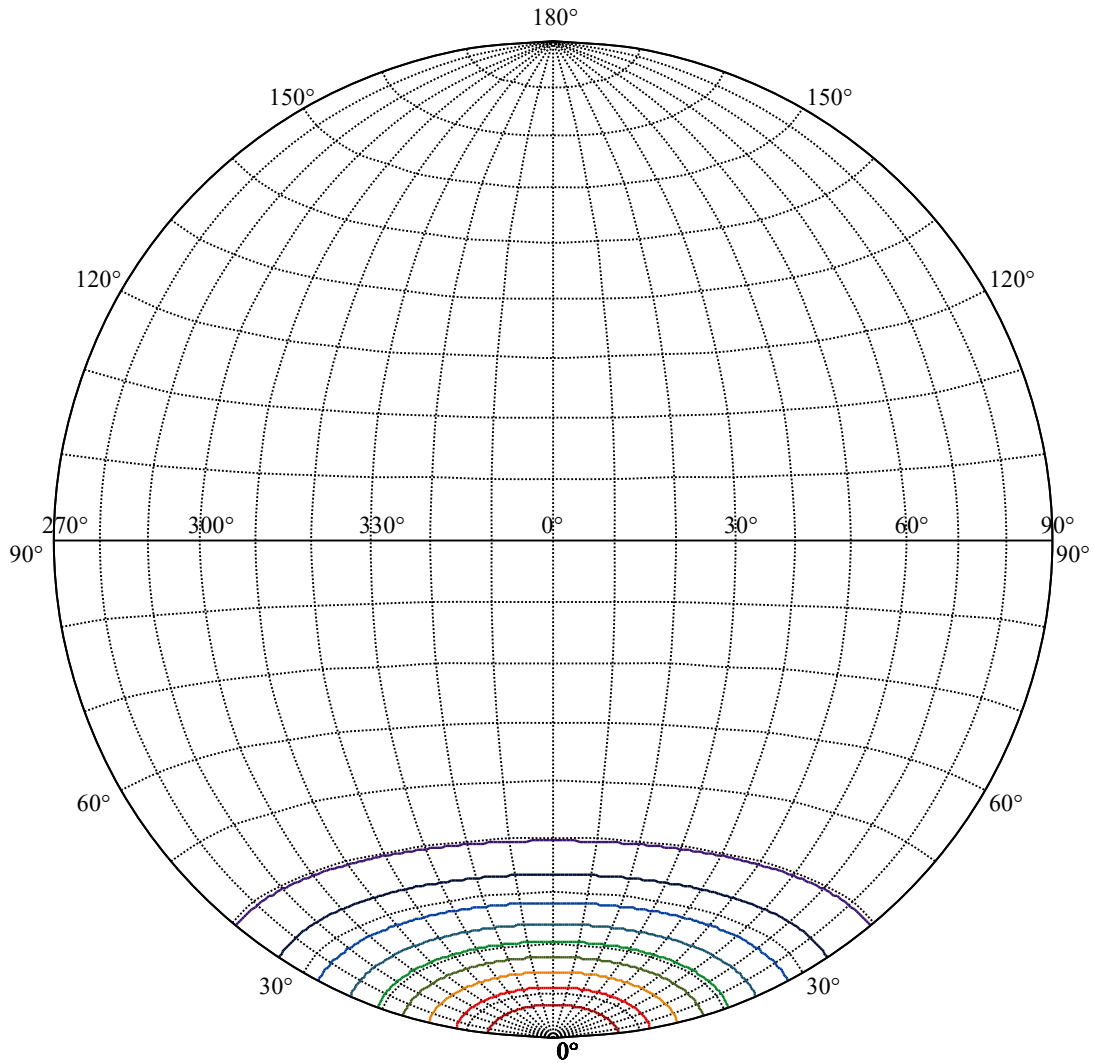
Field angle(10%Imax):C0/180Left:39.5 Right:39.5  
:C90/270Left:39.5 Right:39.5

Beam Angle(50%Imax):C0/180Left:20.5 Right:20.5  
:C90/270Left:20.5 Right:20.5





(10%Imax) 144.75	—
(20%Imax) 289.5	—
(30%Imax) 434.251	—
(40%Imax) 579.001	—
(50%Imax) 723.751	—
(60%Imax) 868.501	—
(70%Imax) 1013.25	—
(80%Imax) 1158	—
(90%Imax) 1302.75	—



House

[Unit:cd]

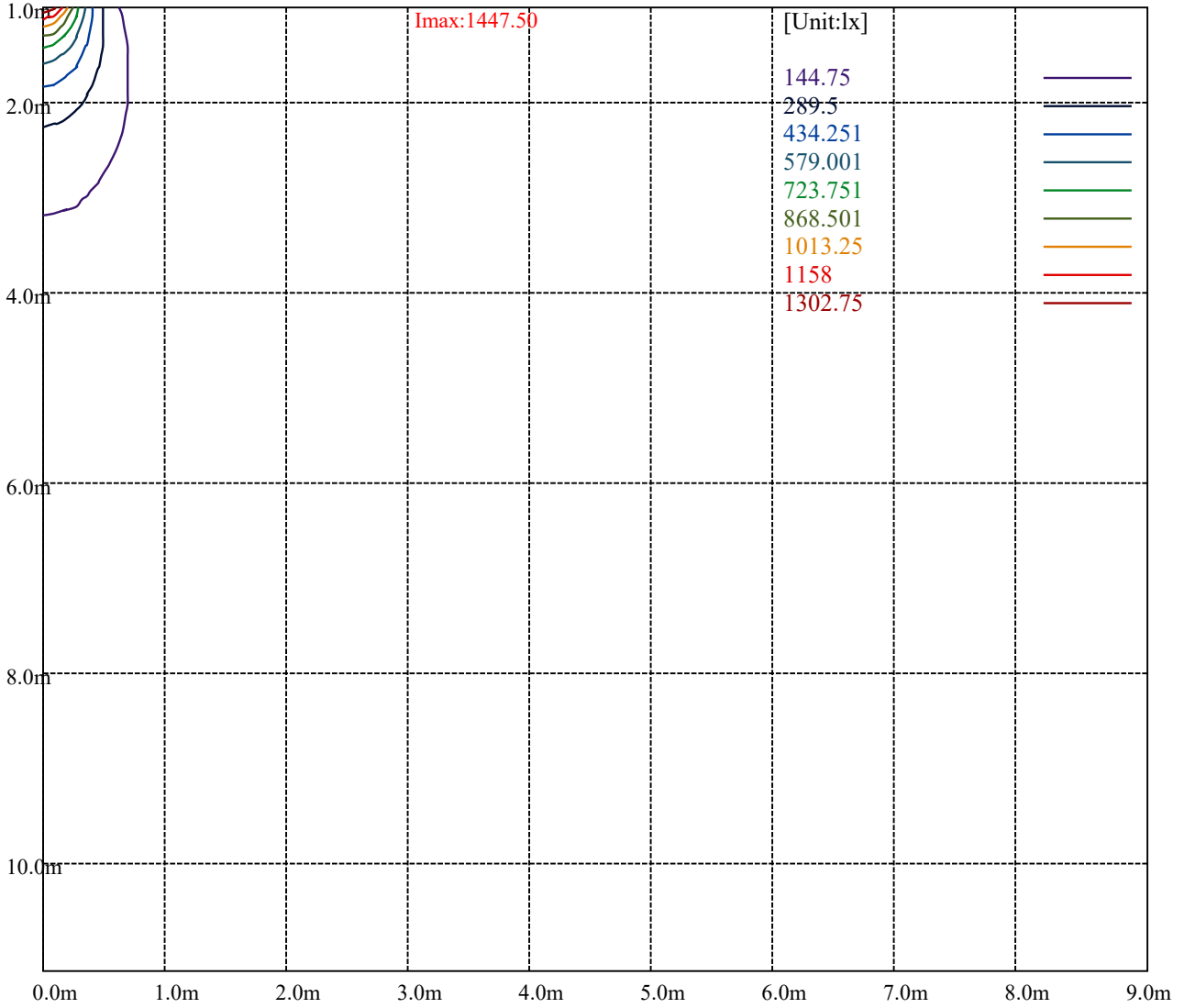
Road

Imax:1447.50

(10%Imax) 144.75	—
(20%Imax) 289.5	—
(30%Imax) 434.251	—
(40%Imax) 579.001	—
(50%Imax) 723.751	—
(60%Imax) 868.501	—
(70%Imax) 1013.25	—
(80%Imax) 1158	—
(90%Imax) 1302.75	—







Luminance Table

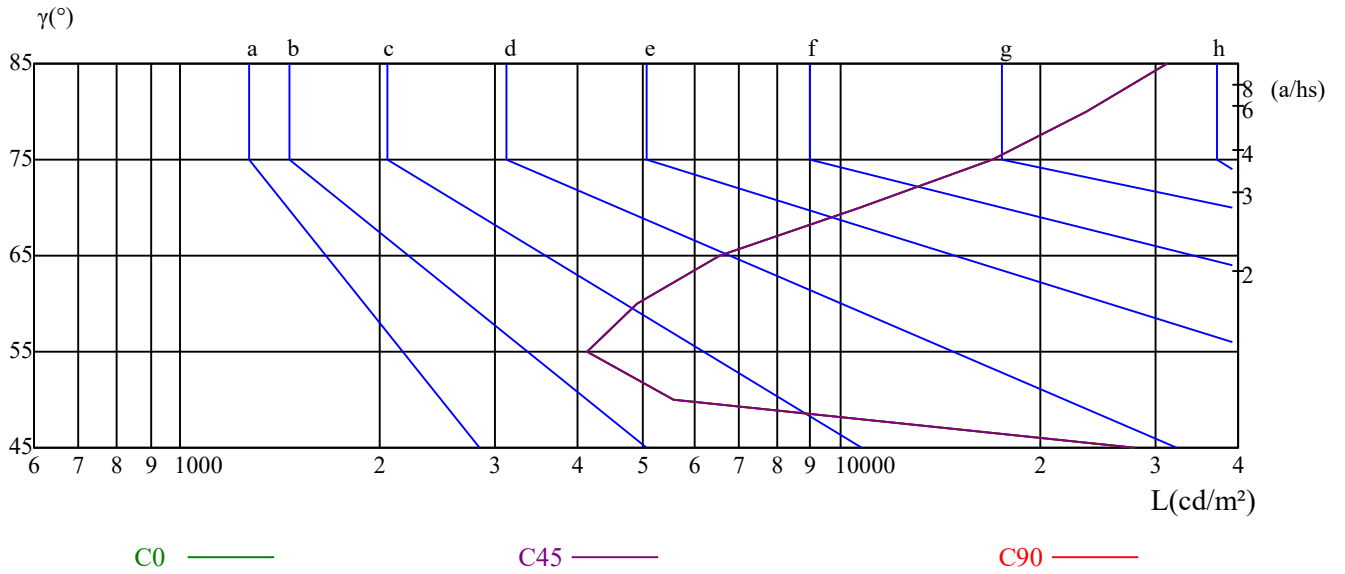
$\gamma$	45	50	55	60	65	70	75	80	85
C0	27846	5574	4128	4906	6578	10726	16990	23562	31202
C45	27846	5574	4128	4906	6578	10726	16990	23562	31202
C90	27846	5574	4128	4906	6578	10726	16990	23562	31202

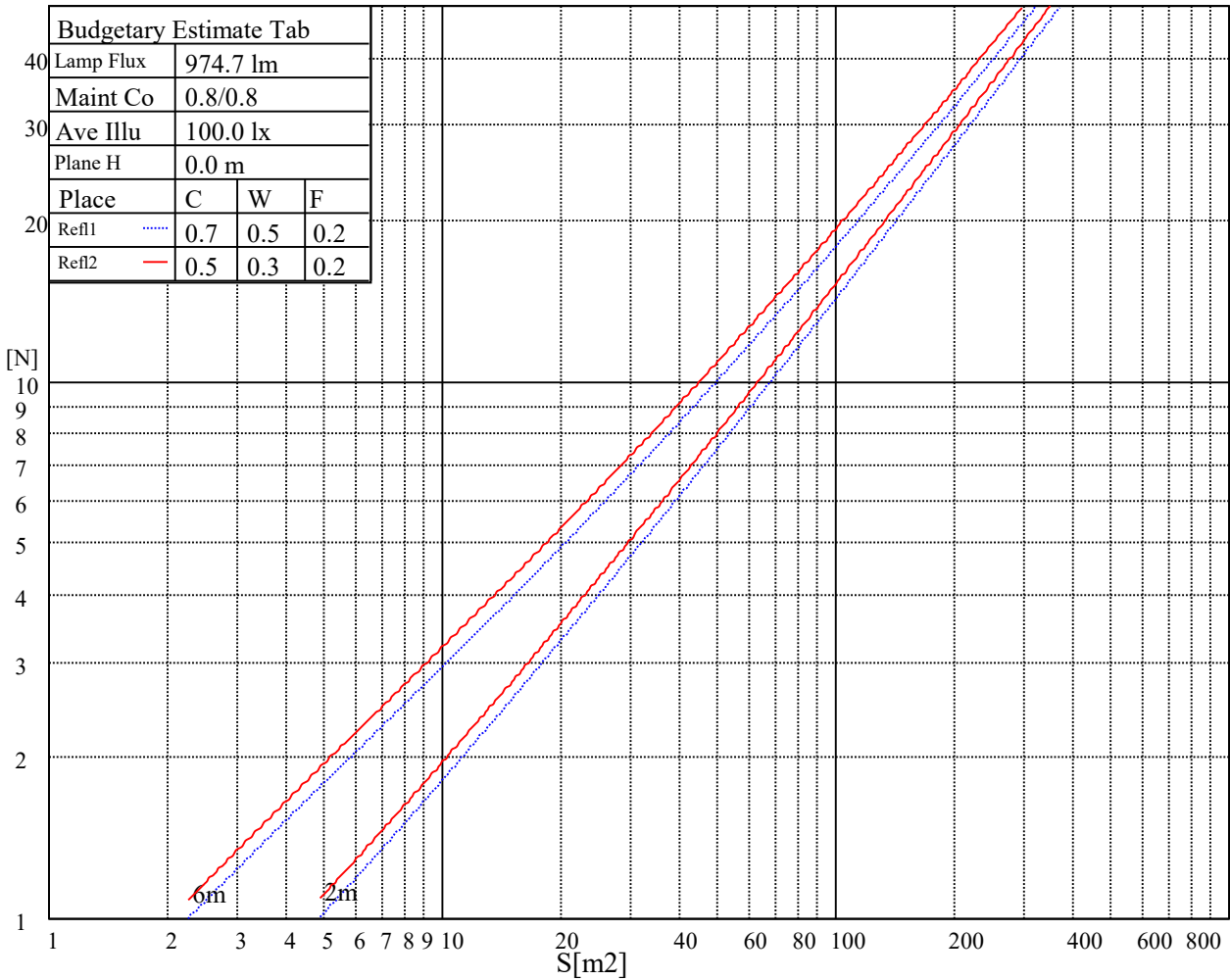
L(Hor)(65)	L(Ver)(65)	L45(65)	L(Hor)(75)	L(Ver)(75)	L45(75)	L(Hor)(85)	L(Ver)(85)	L45(85)
6578	6578	6578	16990	16990	16990	31202	31202	31202

Glare Table

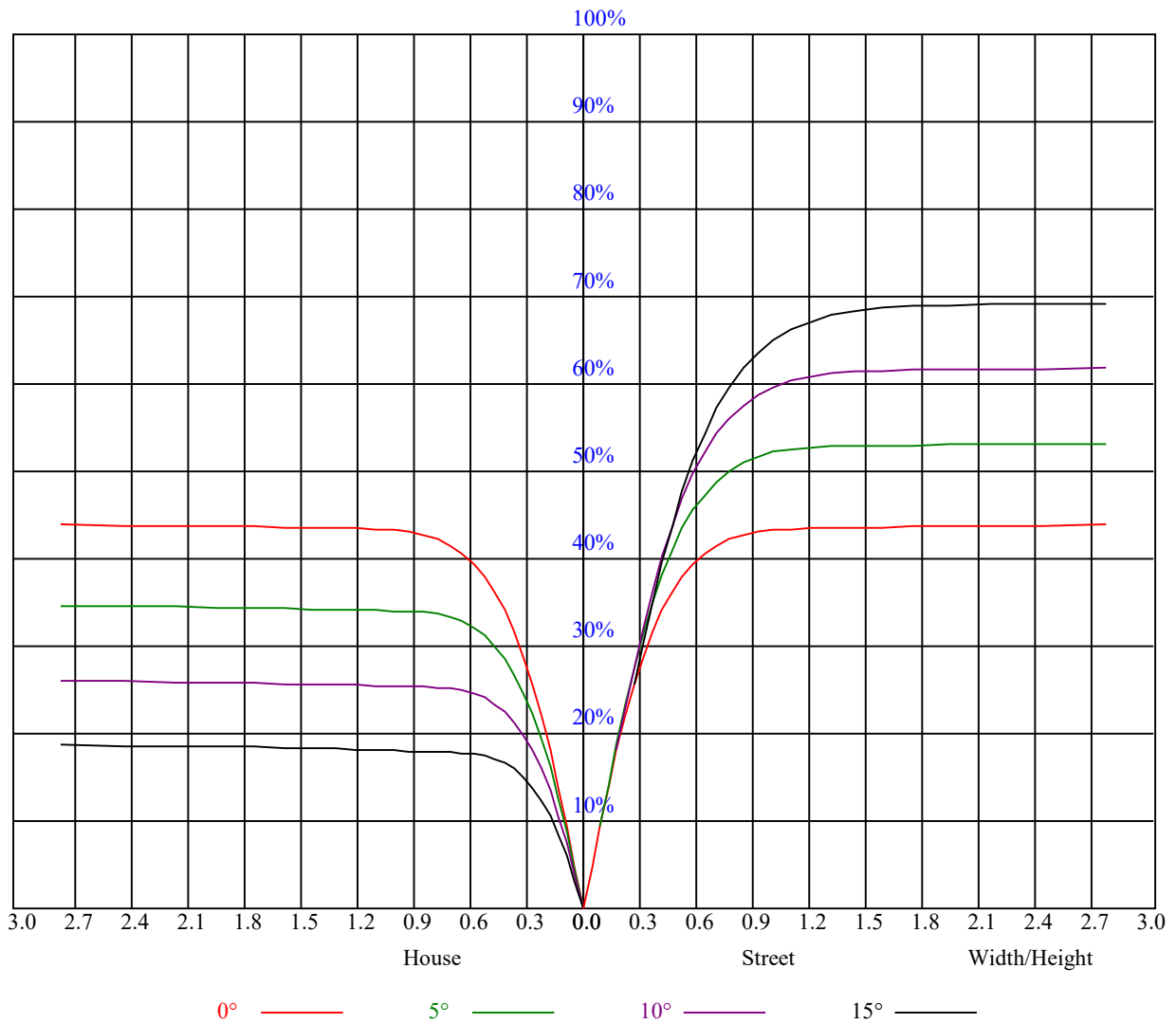
Glare	Quality	Service Values Illuminance(lx)							
1.15	A	2000	1000	500	<=300				
1.5	B		2000	1000	500	<=300			
1.85	C			2000	1000	500	<=300		
2.2	D				2000	1000	500	<=300	
2.55	E					2000	1000	500	<=300
		a	b	c	d	e	f	g	h

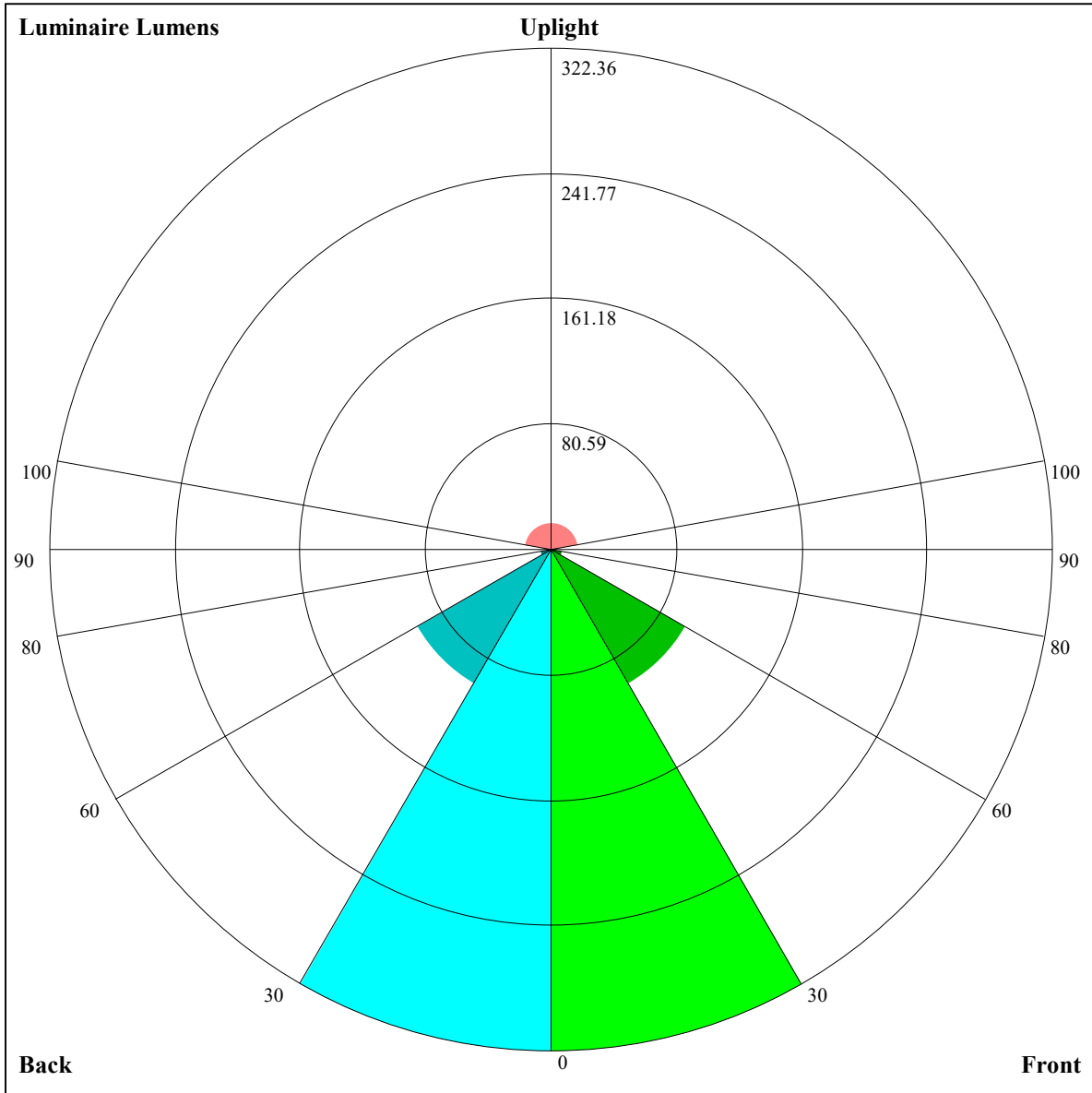
Luminance Limiting Curve





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	1.06	1.06	1.06	1.04	1.04	1.04	0.99	0.99	0.99	0.95	0.95	0.95	0.91	0.91	0.91	0.89
1	0.98	0.96	0.94	0.96	0.94	0.92	0.93	0.91	0.89	0.89	0.88	0.87	0.86	0.85	0.84	0.82
2	0.92	0.88	0.85	0.90	0.87	0.84	0.88	0.85	0.83	0.85	0.83	0.81	0.82	0.81	0.79	0.78
3	0.87	0.82	0.79	0.85	0.82	0.78	0.83	0.80	0.77	0.81	0.78	0.76	0.79	0.77	0.75	0.73
4	0.82	0.77	0.74	0.81	0.77	0.73	0.79	0.75	0.72	0.77	0.74	0.72	0.76	0.73	0.71	0.70
5	0.78	0.73	0.69	0.77	0.72	0.69	0.75	0.71	0.68	0.74	0.70	0.68	0.73	0.70	0.67	0.66
6	0.74	0.69	0.65	0.73	0.69	0.65	0.72	0.68	0.65	0.71	0.67	0.64	0.70	0.66	0.64	0.63
7	0.70	0.65	0.62	0.70	0.65	0.62	0.69	0.65	0.62	0.68	0.64	0.61	0.67	0.63	0.61	0.60
8	0.67	0.62	0.59	0.67	0.62	0.59	0.66	0.62	0.59	0.65	0.61	0.58	0.64	0.61	0.58	0.57
9	0.64	0.60	0.56	0.64	0.59	0.56	0.63	0.59	0.56	0.62	0.59	0.56	0.62	0.58	0.56	0.55
10	0.62	0.57	0.54	0.61	0.57	0.54	0.61	0.56	0.54	0.60	0.56	0.54	0.59	0.56	0.53	0.52





Luminaire Lumens:

FL=322.36,FM=99.66,FH=6.97,FVH=2.95

BL=322.36,BM=99.66,BH=6.97,BVH=2.95

UL=3.73,UH=17.76

BUG Rating:B1-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	1450.74	1395.96	1226.93	990.79	746.67	540.93	371.25	246.05	132.69
22.5	1456.24	1394.30	1224.56	989.91	746.34	531.57	371.96	245.66	132.30
45.0	1436.42	1393.48	1218.62	988.98	749.21	535.75	369.92	249.57	133.02
67.5	1451.84	1394.74	1201.66	984.30	747.01	534.65	369.04	254.42	133.40
90.0	1445.78	1389.62	1182.94	986.23	744.09	535.37	369.32	254.14	133.18
112.5	1447.43	1394.74	1201.66	984.30	747.01	534.65	369.04	254.42	133.40
135.0	1452.39	1393.48	1218.62	988.98	749.21	535.75	369.92	249.57	133.02
157.5	1439.17	1394.30	1224.56	989.91	746.34	531.57	371.96	245.66	132.30
180.0	1450.74	1395.96	1226.93	990.79	746.67	540.93	371.25	246.05	132.69
202.5	1456.24	1394.30	1224.56	989.91	746.34	531.57	371.96	245.66	132.30
225.0	1436.42	1393.48	1218.62	988.98	749.21	535.75	369.92	249.57	133.02
247.5	1451.84	1394.74	1201.66	984.30	747.01	534.65	369.04	254.42	133.40
270.0	1445.78	1389.62	1182.94	986.23	744.09	535.37	369.32	254.14	133.18
292.5	1447.43	1394.74	1201.66	984.30	747.01	534.65	369.04	254.42	133.40
315.0	1452.39	1393.48	1218.62	988.98	749.21	535.75	369.92	249.57	133.02
337.5	1439.17	1394.30	1224.56	989.91	746.34	531.57	371.96	245.66	132.30
360.0	1450.74	1395.96	1226.93	990.79	746.67	540.93	371.25	246.05	132.69
C/ $\gamma$ (°)	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0
0.0	40.14	7.21	4.68	4.96	5.84	7.98	9.80	7.60	4.96
22.5	41.57	7.71	4.68	4.96	5.73	7.87	9.74	9.03	6.11
45.0	38.48	7.10	4.57	4.79	5.56	7.32	9.03	8.81	5.29
67.5	34.96	6.22	4.46	4.46	4.73	5.78	6.99	6.83	4.73
90.0	34.80	6.22	4.57	4.62	5.18	6.88	6.77	6.44	4.90
112.5	34.96	6.22	4.46	4.46	4.73	5.78	6.99	6.83	4.73
135.0	38.48	7.10	4.57	4.79	5.56	7.32	9.03	8.81	5.29
157.5	41.57	7.71	4.68	4.96	5.73	7.87	9.74	9.03	6.11
180.0	40.14	7.21	4.68	4.96	5.84	7.98	9.80	7.60	4.96
202.5	41.57	7.71	4.68	4.96	5.73	7.87	9.74	9.03	6.11
225.0	38.48	7.10	4.57	4.79	5.56	7.32	9.03	8.81	5.29
247.5	34.96	6.22	4.46	4.46	4.73	5.78	6.99	6.83	4.73
270.0	34.80	6.22	4.57	4.62	5.18	6.88	6.77	6.44	4.90
292.5	34.96	6.22	4.46	4.46	4.73	5.78	6.99	6.83	4.73
315.0	38.48	7.10	4.57	4.79	5.56	7.32	9.03	8.81	5.29
337.5	41.57	7.71	4.68	4.96	5.73	7.87	9.74	9.03	6.11
360.0	40.14	7.21	4.68	4.96	5.84	7.98	9.80	7.60	4.96
C/ $\gamma$ (°)	90.0								
0.0	3.41								
22.5	3.41								
45.0	3.41								
67.5	3.41								
90.0	3.47								
112.5	3.41								
135.0	3.41								
157.5	3.41								
180.0	3.41								
202.5	3.41								
225.0	3.41								
247.5	3.41								
270.0	3.47								
292.5	3.41								
315.0	3.41								
337.5	3.41								
360.0	3.41								